

# Гидравлический цилиндр низкого давления

## CHM

Ø20 ~ 40

- Легкий алюминиевый корпус
- Возможность установки датчиков положения

### Технические характеристики

|                                       |                                                      |          |
|---------------------------------------|------------------------------------------------------|----------|
| Среда                                 | Гидравлическая жидкость                              |          |
| Номинальное давление (МПа)            | 3.5                                                  |          |
| Испытательное давление (МПа)          | 5.0                                                  |          |
| Максимально допустимое давление (МПа) | 3.5                                                  |          |
| Минимальное рабочее давление (МПа)    | 0.25                                                 |          |
| Рабочая температура (°C)              | Без датчиков положения:                              | -10 ~ 80 |
|                                       | С датчиками положения:                               | -10 ~ 60 |
| Скорость поршня (мм/с)                | 8 ~ 300                                              |          |
| Демпфирование                         | Нет                                                  |          |
| Допуск на длину хода (мм)             | (до 250) <sup>*1,0</sup> , (251~800) <sup>*1,4</sup> |          |



### Совместимость с гидравлическими жидкостями

| Гидравлическая жидкость    | Совместимость |
|----------------------------|---------------|
| Минеральные гидравл. масла | Совместимы    |
| Эмульсии «Вода в масле»    |               |
| Эмульсии «Масло в воде»    |               |
| Водно-гликолевые жидкости  | Несовместимы  |
| Фосфаты                    |               |

### Стандартные длины хода

| Диаметр цилиндра (мм) | Стандартные длины хода (мм) |
|-----------------------|-----------------------------|
| 20, 25, 32, 40        | 25 ~ 800                    |

См. таблицу минимальных длин хода при использовании датчиков положения.

Заказ цилиндра со стандартной длиной хода гарантирует минимальный срок поставки.

Консультируйтесь с SMC о возможности производства цилиндров с иной длиной хода.

### Номинальные усилия (Н)

Номинальное усилие (Н) = Давление (МПа) x Площадь Поршня (мм<sup>2</sup>)

| Диаметр цилиндра (мм) | Диаметр штока (мм) | Направление перемещения | Площадь поршня (мм <sup>2</sup> ) | Рабочее давление (МПа) |      |      |      |      |      |
|-----------------------|--------------------|-------------------------|-----------------------------------|------------------------|------|------|------|------|------|
|                       |                    |                         |                                   | 1                      | 1.5  | 2    | 2.5  | 3    | 3.5  |
| 20                    | 10                 | выдвижение              | 314                               | 314                    | 471  | 628  | 785  | 942  | 1099 |
|                       |                    | втягивание              | 235                               | 235                    | 352  | 470  | 587  | 705  | 822  |
| 25                    | 12                 | выдвижение              | 490                               | 490                    | 735  | 980  | 1225 | 1470 | 1715 |
|                       |                    | втягивание              | 377                               | 377                    | 565  | 754  | 942  | 1131 | 1319 |
| 32                    | 16                 | выдвижение              | 804                               | 804                    | 1206 | 1608 | 2010 | 2412 | 2814 |
|                       |                    | втягивание              | 603                               | 603                    | 904  | 1206 | 1507 | 1809 | 2110 |
| 40                    | 18                 | выдвижение              | 1256                              | 1256                   | 1884 | 2512 | 3140 | 3768 | 4396 |
|                       |                    | втягивание              | 1002                              | 1002                   | 1503 | 2004 | 2505 | 3006 | 3507 |

### Масса цилиндров (кг)

| Диаметр цилиндра (мм)         |               | 20   | 25   | 32   | 40   |
|-------------------------------|---------------|------|------|------|------|
| Базовая масса                 | Базовый (B)   | 0.20 | 0.29 | 0.50 | 0.82 |
|                               | На лапах (L)  | 0.44 | 0.55 | 0.88 | 1.36 |
|                               | Фланец (F, G) | 0.29 | 0.46 | 0.69 | 1.03 |
|                               | Шарнир (C)    | 0.18 | 0.37 | 0.64 | 0.77 |
| Дополнит. масса на 50 мм хода |               | 0.06 | 0.08 | 0.12 | 0.16 |

### Пример расчета:

|                                                |            |
|------------------------------------------------|------------|
| Цилиндр                                        | CHML20-100 |
| (крепление на лапах, Ø20 мм, ход штока 100 мм) |            |
| Базовая масса                                  | 0.44 кг    |
| Дополнительная масса                           | 0.06/50 мм |
| Ход штока                                      | 100 мм     |
| <b>0.44 + 0.06x100/50 = 0.56 кг</b>            |            |

Номер для заказа

СН D M L 25 - 100

-

Без магнитного кольца

D

С магнитным кольцом

Ход (мм)  
См. таблицу стандартных ходов

Диаметр

20

20 мм

25

25 мм

32

40

Тип крепления

B

Базовый

L

F

G

C

Принадлежности

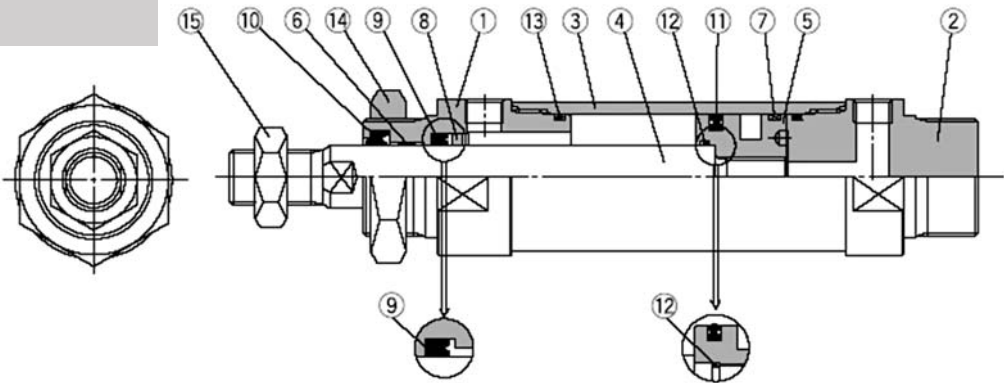
| Тип крепления |                          | Базовый      | На лапах     | Задний фланец | Передний фланец | Шарнир |
|---------------|--------------------------|--------------|--------------|---------------|-----------------|--------|
| Стандарт      | Гайка крепежная          | •<br>(2 шт.) | •<br>(2 шт.) | •<br>(1 шт.)  | •<br>(1 шт.)    | -      |
|               | Гайка штока              | •            | •            | •             | •               | •      |
| Исполнения    | Ось шарнира              | -            | -            | -             | -               | -      |
|               | Шарнирный наконечник     | •            | •            | •             | •               | •      |
|               | Шарнирная вилка (с осью) | •            | •            | •             | •               | •      |
|               | Кронштейн шарнирный      | •            | •            | •             | •               | •      |

Номер для заказа элементов крепления цилиндра

| Диаметр цилиндра (мм) | 20       | 25       | 32       | 40       |
|-----------------------|----------|----------|----------|----------|
| Лапы*                 | СНМ-L020 | СНМ-L025 | СНМ-L032 | СНМ-L040 |
| Фланец                | СНМ-F020 | СНМ-F025 | СНМ-F032 | СНМ-F040 |

\* для одного цилиндра следует заказывать две лапы

Конструкция



Спецификация

| Поз. | Наименование             | Материал               | Примечания                     |
|------|--------------------------|------------------------|--------------------------------|
| 1    | Крышка штоковая          | Алюминиевый сплав      | Чернение                       |
| 2    | Крышка задняя            |                        | анодированием                  |
| 3    | Гильза цилиндра          | Углеродистая сталь     | Анодирование                   |
| 4    | Шток                     |                        | Хромирование (гальваническое)* |
| 5    | Поршень                  | Алюминиевый сплав      | Хромирование                   |
| 6    | Вкладыш направляющий     | Импregnированный сплав |                                |
| 7    | Поршневое кольцо         | Пластик                |                                |
| 8    | Стопор                   | Медный сплав           |                                |
| 9    | Уплотнение штока         | Нитрильный каучук      |                                |
| 10   | Грязеуловительное кольцо |                        |                                |
| 11   | Уплотнение цилиндра      |                        |                                |
| 12   | Прокладка                |                        |                                |
| 13   | Прокладка гильзы         | Углеродистая сталь     | Цинк-хромовое чернение         |
| 14   | Гайка установочная       |                        |                                |
| 15   | Гайка штока              | Стальной прокат        | Никелирование                  |

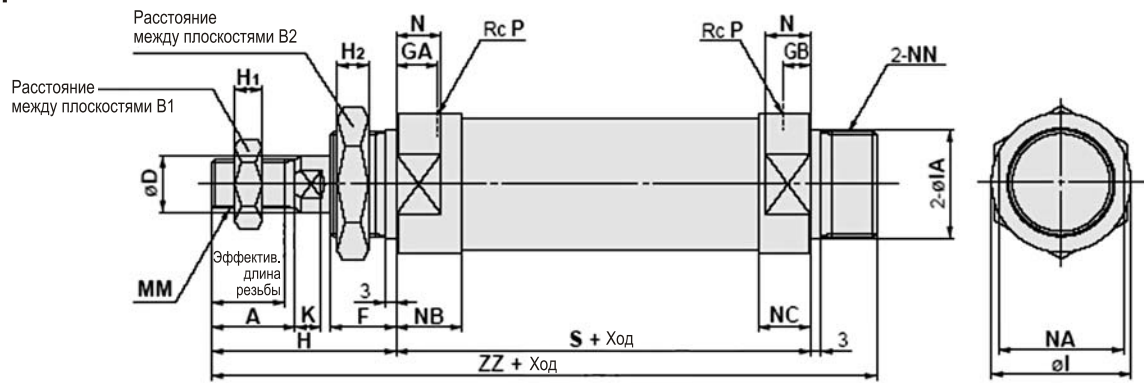
\* Для цилиндров Ø20 и Ø25 с датчиками положения материал штока - нержавеющая сталь

Гидравлический цилиндр низкого давления

СНМ

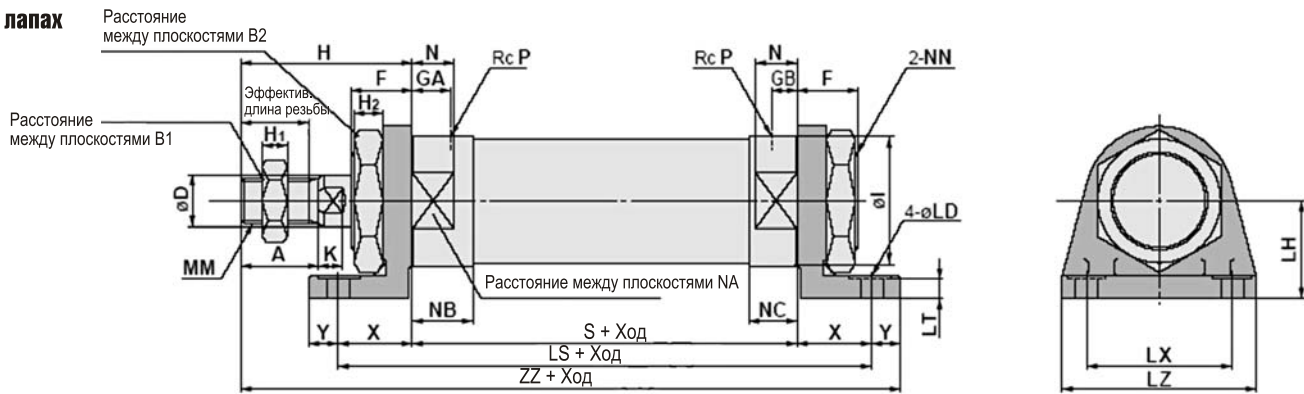
Размеры

СНМВ  
стандарт



| Диаметр цилиндра (мм) | Длина резьбы (мм) | A  | B1 | B2 | D  | F  | GA | GB | H  | H1 | H2 | I  | IA (f8) | K      | MM  | P        | S   | NN  | N       | NA | NB | NC | ZZ |     |
|-----------------------|-------------------|----|----|----|----|----|----|----|----|----|----|----|---------|--------|-----|----------|-----|-----|---------|----|----|----|----|-----|
| 20                    | 15.5              | 18 | 13 | 26 | 10 | 16 | 12 | 8  | 41 | 5  | 8  | 30 | 23      | -0.020 | 5   | M8x1.25  | 1/8 | 81  | M22x1.5 | 13 | 26 | 19 | 15 | 138 |
| 25                    | 19.5              | 22 | 17 | 32 | 12 | 16 | 12 | 8  | 46 | 6  | 8  | 32 | 25      | -0.053 | 5.5 | M10x1.25 | 1/8 | 81  | M24x1.5 | 13 | 28 | 19 | 15 | 143 |
| 32                    | 21                | 24 | 22 | 38 | 16 | 19 | 12 | 8  | 53 | 8  | 9  | 40 | 31      | -0.025 | 7.5 | M14x1.5  | 1/8 | 87  | M30x1.5 | 13 | 36 | 19 | 15 | 159 |
| 40                    | 21                | 24 | 24 | 41 | 18 | 21 | 14 | 11 | 54 | 10 | 11 | 48 | 34      | -0.064 | 7.5 | M16x1.5  | 1/4 | 108 | M33x2   | 19 | 44 | 24 | 21 | 183 |

СНМЛ  
на лапах

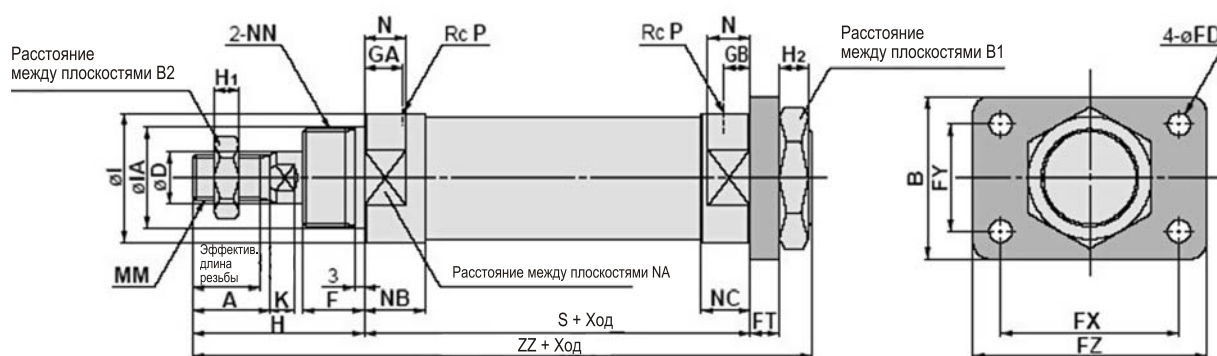
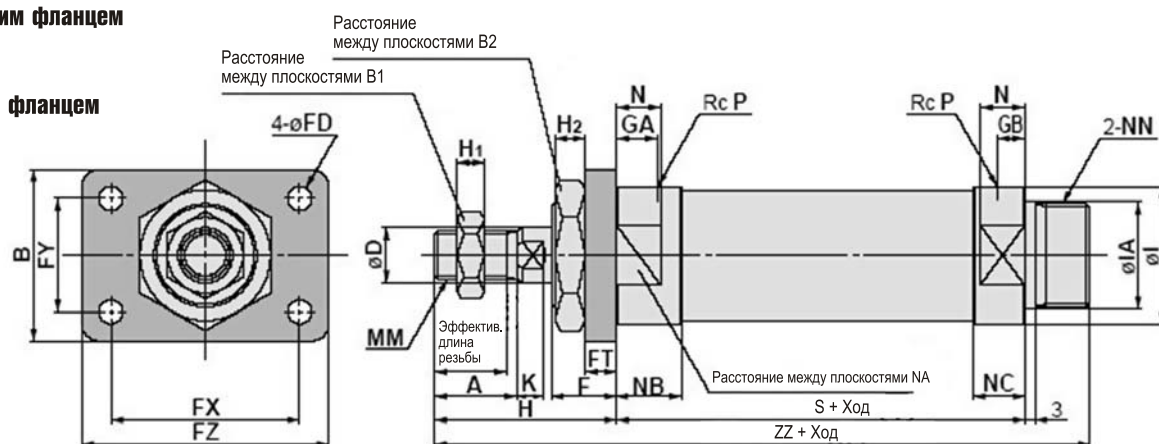


| Диаметр цилиндра (мм) | Длина резьбы (мм) | A  | B1 | B2 | D  | F  | GA | GB | H  | H1 | H2 | I  | K   | LD | LH  | MM       | P   | S   | NN      | N  | NA | NB | NC |
|-----------------------|-------------------|----|----|----|----|----|----|----|----|----|----|----|-----|----|-----|----------|-----|-----|---------|----|----|----|----|
| 20                    | 15.5              | 18 | 13 | 26 | 10 | 16 | 12 | 8  | 41 | 5  | 8  | 30 | 5   | 7  | 5   | M8x1.25  | 1/8 | 81  | M22x1.5 | 13 | 26 | 19 | 15 |
| 25                    | 19.5              | 22 | 17 | 32 | 12 | 16 | 12 | 8  | 46 | 6  | 8  | 32 | 5.5 | 7  | 5.5 | M10x1.25 | 1/8 | 81  | M24x1.5 | 13 | 28 | 19 | 15 |
| 32                    | 21                | 24 | 22 | 38 | 16 | 19 | 12 | 8  | 53 | 8  | 9  | 40 | 7.5 | 7  | 7.5 | M14x1.5  | 1/8 | 87  | M30x1.5 | 13 | 36 | 19 | 15 |
| 40                    | 21                | 24 | 24 | 41 | 18 | 21 | 14 | 11 | 54 | 10 | 11 | 48 | 7.5 | 9  | 7.5 | M16x1.5  | 1/4 | 108 | M33x2   | 19 | 44 | 24 | 21 |

| Диаметр цилиндра (мм) | LS  | LT  | LX | LZ | X  | Y  | ZZ  |
|-----------------------|-----|-----|----|----|----|----|-----|
| 20                    | 121 | 5.5 | 40 | 55 | 20 | 9  | 151 |
| 25                    | 121 | 5.5 | 40 | 55 | 20 | 9  | 156 |
| 32                    | 133 | 6   | 45 | 60 | 23 | 9  | 172 |
| 40                    | 158 | 6   | 55 | 75 | 25 | 11 | 198 |

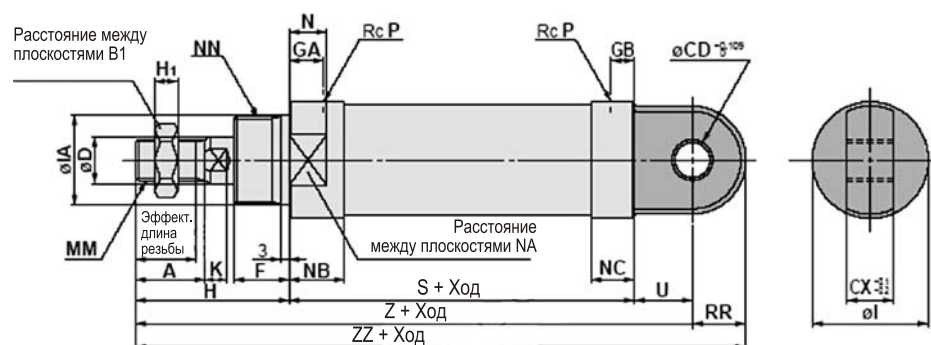
### СНМФ с передним фланцем

### СНМ6 с задним фланцем



| Диаметр цилиндра (мм) | Длина резьбы (мм) | A  | B  | B1 | B2 | D  | F  | GA | GB | H  | H1 | H2 | I  | K   | IA (f8) | MM     | P        | S   | NN  | N       | NA | NB |    |
|-----------------------|-------------------|----|----|----|----|----|----|----|----|----|----|----|----|-----|---------|--------|----------|-----|-----|---------|----|----|----|
| 20                    | 15,5              | 18 | 38 | 13 | 26 | 10 | 16 | 12 | 8  | 41 | 5  | 8  | 30 | 5   | 23      | -0,020 | M8x1,25  | 1/8 | 81  | M22x1,5 | 13 | 26 | 19 |
| 25                    | 19,5              | 22 | 44 | 17 | 32 | 12 | 16 | 12 | 8  | 46 | 6  | 8  | 32 | 5,5 | 25      | -0,053 | M10x1,25 | 1/8 | 81  | M24x1,5 | 13 | 28 | 19 |
| 32                    | 21                | 24 | 50 | 22 | 38 | 16 | 19 | 12 | 8  | 53 | 8  | 9  | 40 | 7,5 | 31      | -0,025 | M14x1,5  | 1/8 | 87  | M30x1,5 | 13 | 36 | 19 |
| 40                    | 21                | 24 | 60 | 24 | 41 | 18 | 21 | 14 | 11 | 54 | 10 | 11 | 48 | 7,5 | 34      | -0,064 | M16x1,5  | 1/4 | 108 | M33x2   | 19 | 44 | 24 |

### СНМС с шарнирной опорой



| Диаметр цилиндра (мм) | FD | FT | FX | FY | FZ | NC | ZZ  |
|-----------------------|----|----|----|----|----|----|-----|
| 20                    | 7  | 6  | 51 | 21 | 68 | 15 | 138 |
| 25                    | 7  | 9  | 53 | 27 | 70 | 15 | 143 |
| 32                    | 7  | 9  | 55 | 33 | 72 | 15 | 159 |
| 40                    | 9  | 9  | 66 | 36 | 84 | 21 | 183 |

| Диаметр цилиндра (мм) | Длина резьбы (мм) | A  | B1 | CD | D  | F  | GA | GB | H  | H1 | CX | I  | IA (f8) | K      | MM  | P        | S   | NN  | N       | NA | NB | NC | ZZ | RR  | U    | Z  |     |
|-----------------------|-------------------|----|----|----|----|----|----|----|----|----|----|----|---------|--------|-----|----------|-----|-----|---------|----|----|----|----|-----|------|----|-----|
| 20                    | 15.5              | 18 | 13 | 10 | 10 | 16 | 12 | 8  | 41 | 5  | 16 | 30 | 23      | -0.020 | 5   | M8x1.25  | 1/8 | 81  | M22x1.5 | 13 | 26 | 19 | 15 | 138 | 13.5 | 14 | 136 |
| 25                    | 19.5              | 22 | 17 | 10 | 12 | 16 | 12 | 8  | 46 | 6  | 16 | 32 | 25      | -0.053 | 5.5 | M10x1.25 | 1/8 | 81  | M24x1.5 | 13 | 28 | 19 | 15 | 143 | 14.5 | 15 | 142 |
| 32                    | 21                | 24 | 22 | 12 | 16 | 19 | 12 | 8  | 53 | 8  | 16 | 40 | 31      | -0.025 | 7.5 | M14x1.5  | 1/8 | 87  | M30x1.5 | 13 | 36 | 19 | 15 | 159 | 18.5 | 20 | 160 |
| 40                    | 21                | 24 | 24 | 12 | 18 | 21 | 14 | 11 | 54 | 10 | 24 | 48 | 34      | -0.064 | 7.5 | M16x1.5  | 1/4 | 108 | M33x2   | 19 | 44 | 24 | 21 | 183 | 22.5 | 20 | 182 |



Гидравлический цилиндр низкого давления
СНМ

Размеры. Принадлежности

Принадлежности
(стандарт)



Материал:
углеродистая сталь

Table with 2 main sections. Left section: Order number, Cylinder diameter (mm), d, H, B, C, D. Right section: Order number, d, H, B, C, D. Rows include NT-02, NT-03, NT-04, AC-NI-50 and SO-02, SO-03, SO-04, SO-05.

Принадлежности стыковочные
(по исполнениям)

Шарнирный наконечник

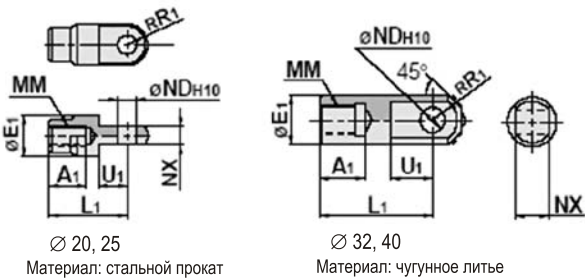


Table with 12 columns: Order number, Cylinder diameter (mm), A1, E1, L1, MM, R1, U1, ND (H10), NX, and two empty columns. Rows include I-01, I-03, I-04, and IA-04.

Кронштейн шарнирный

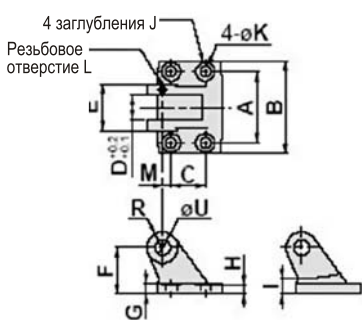


Table with 17 columns: Order number, Cylinder diameter (mm), A, B, C, D, U (H8), E, F, G, H, I, J, K, L, M, R. Rows include AD-FI-20, AD-FI-25, AD-FI-32, and AD-FI-40.

Материал: Чугунное литье

Шарнирная
вилка

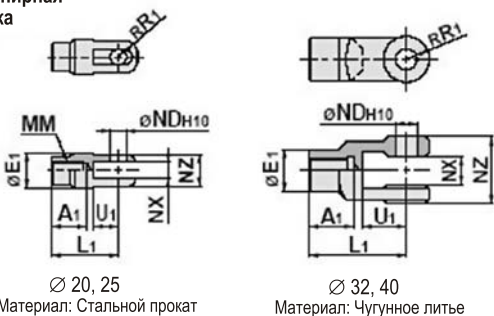
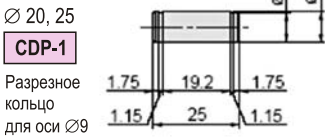


Table with 12 columns: Order number, Cylinder diameter (mm), A1, E1, L1, MM, R1, U1, ND (H10), NX, and two empty columns. Rows include Y-02, Y-03, Y-04A, and Y-04B.

Table with 4 columns: Order number, Cylinder diameter (mm), Axis of ball joint (order number), and Ring fastener / shim. Rows include Y-02, Y-03, Y-04A, and Y-04B.

Оси шарнира
и шарнирной вилки

Материал:
Углеродистая сталь



Ось шарнирного
кронштейна

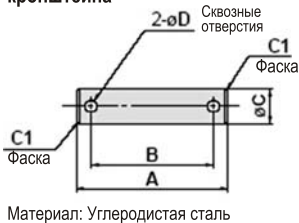


Table with 7 columns: Order number, Cylinder diameter (mm), A, B, C (f8), D, and Shim. Rows include AD-EI-20, AD-EI-25, AD-EI-32, and AD-EI-40.

Шплинт:
ø3x18/



### Датчики положения

#### Применяемые датчики

| Обозначение | Тип         | Эл.вход        | Световая индикация | Выход                | Рабочее напряжение (В) |     | Характер нагрузки |
|-------------|-------------|----------------|--------------------|----------------------|------------------------|-----|-------------------|
|             |             |                |                    |                      | DC                     | AC  |                   |
| D-C73L      | Герконовый  | Кабель залитый | Есть               | 2-х проводной        | 24                     | 110 | Реле, ПЛК         |
| D-C73CN     |             | Штекер         | Есть               |                      |                        | -   |                   |
| D-C80L      |             | Кабель залитый | Нет                |                      |                        | 110 |                   |
| D-C80CN     |             | Штекер         | Нет                |                      |                        | -   |                   |
| D-H7A2L     | Электронный | Кабель залитый | Есть               | р-п-р. 3-х проводной | 5, 12, 24              | -   |                   |

Примечание:  
более детальная информация о датчиках положения содержится во вводном разделе.

#### Номер для заказа крепления датчика (включая хомут и винты)

| Диаметр цилиндра (мм) | Номер для заказа |
|-----------------------|------------------|
| 20                    | BMA2-020         |
| 25                    | BMA2-025         |
| 32                    | BMA2-032         |
| 40                    | BMA2-040         |

Примечания:

- Хомуты для крепления датчиков на цилиндре заказываются отдельно.
- Для работы в особых условиях можно заказать набор установочных винтов (с гайками) из нержавеющей стали.  
Номер для заказа: BBA4.

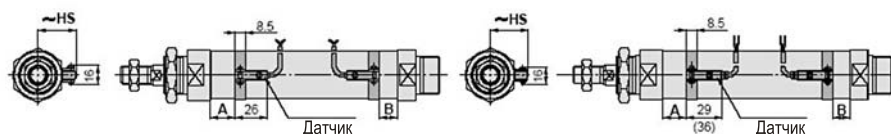
#### Минимальная длина хода (мм) при использовании датчиков положения

| Модель           | Количество датчиков положения |                            |                                   |                            |         |
|------------------|-------------------------------|----------------------------|-----------------------------------|----------------------------|---------|
|                  | 2 штуки                       |                            | "n" штук                          |                            | 1 штука |
|                  | Разностороннее расположение   | Одностороннее расположение | Разностороннее расположение       | Одностороннее расположение |         |
| D-C73L, D-C80L   | 15                            | 50                         | $15+45x(n-2)/2$                   | $50+45x(n-2)$              | 10      |
| D-H7A2L          | 15                            | 60                         | $n=2, 4, 6...$                    | $60+45x(n-2)$              | 10      |
| D-C73CN, D-C80CN | 15                            | 65                         | $15+50x(n-2)/2$<br>$n=2, 4, 6...$ | $65+50x(n-2)$              | 10      |

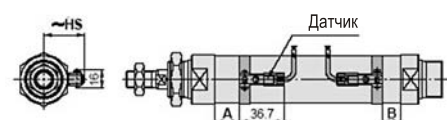
#### Монтаж датчиков

D-C73L, D-C80L

D-H7A2L



D-C73CN, D-C80CN



| Диаметр цилиндра (мм) | D-C73L, D-C80L<br>D-C73CN, D-C80CN |      | D-H7A2L |      | D-C73L, D-C80L<br>D-H7A2L | D-C73CN<br>D-C80CN |
|-----------------------|------------------------------------|------|---------|------|---------------------------|--------------------|
|                       | A                                  | B    | A       | B    | HS                        | HS                 |
| 20                    | 15                                 | 13   | 14      | 12   | 24,5                      | 27                 |
| 25                    | 15,5                               | 12,5 | 14,5    | 11,5 | 27                        | 29,5               |
| 32                    | 19,5                               | 14,5 | 18,5    | 13,5 | 30,5                      | 33                 |
| 40                    | 24                                 | 20   | 23      | 19   | 35                        | 37,5               |

### Указания по монтажу гидроцилиндров

При монтаже цилиндра с помощью установочных гаек используйте момент затяга в соответствии с таблицей:

| Диаметр цилиндра (мм) | Резьба гайки | Размер под ключ (мм) | Момент затяга (Н·м) |
|-----------------------|--------------|----------------------|---------------------|
| 20                    | M22x1.5      | 26                   | 45                  |
| 25                    | M24x1.5      | 32                   | 60                  |
| 32                    | M30x1.5      | 38                   | 85                  |
| 40                    | M33x1.5      | 41                   | 110                 |

При креплении цилиндра только с одной стороны (базовый тип, фланцевый тип) и при высокой скорости поршня появляется осциллирующий изгибающий момент, действующий на цилиндр со стороны конца штока, способный вызвать разрушение цилиндра. В такой ситуации установите арматуру, снижающую вибрацию цилиндра или уменьшите скорость поршня так, чтобы корпус цилиндра не вибрировал по действием штока.

Так как гидроцилиндры серии СНМ не имеют клапана сброса, сбрасывайте воздух через другие элементы (трубопроводы и т.п.)

В первоначальный период эксплуатации цилиндра будьте внимательны к сбросу воздуха при низком давлении. Когда сброс воздуха будет завершен, подайте пониженное давление, затем постепенно повышайте его до номинального рабочего давления

Hydraulic Cylinder  
7MPa Nominal Pressure

# *Series CHN*

ø20, ø25, ø32, ø40



Our Series CHN stainless steel tube hydraulic cylinder comes in four small bore sizes and can handle nominal pressures of up to 7MPa.

# Our stainless steel tube hydraulic cylinder comes in 4 small bore sizes that can accommodate up to 7MPa of nominal pressure.

## Series CHN

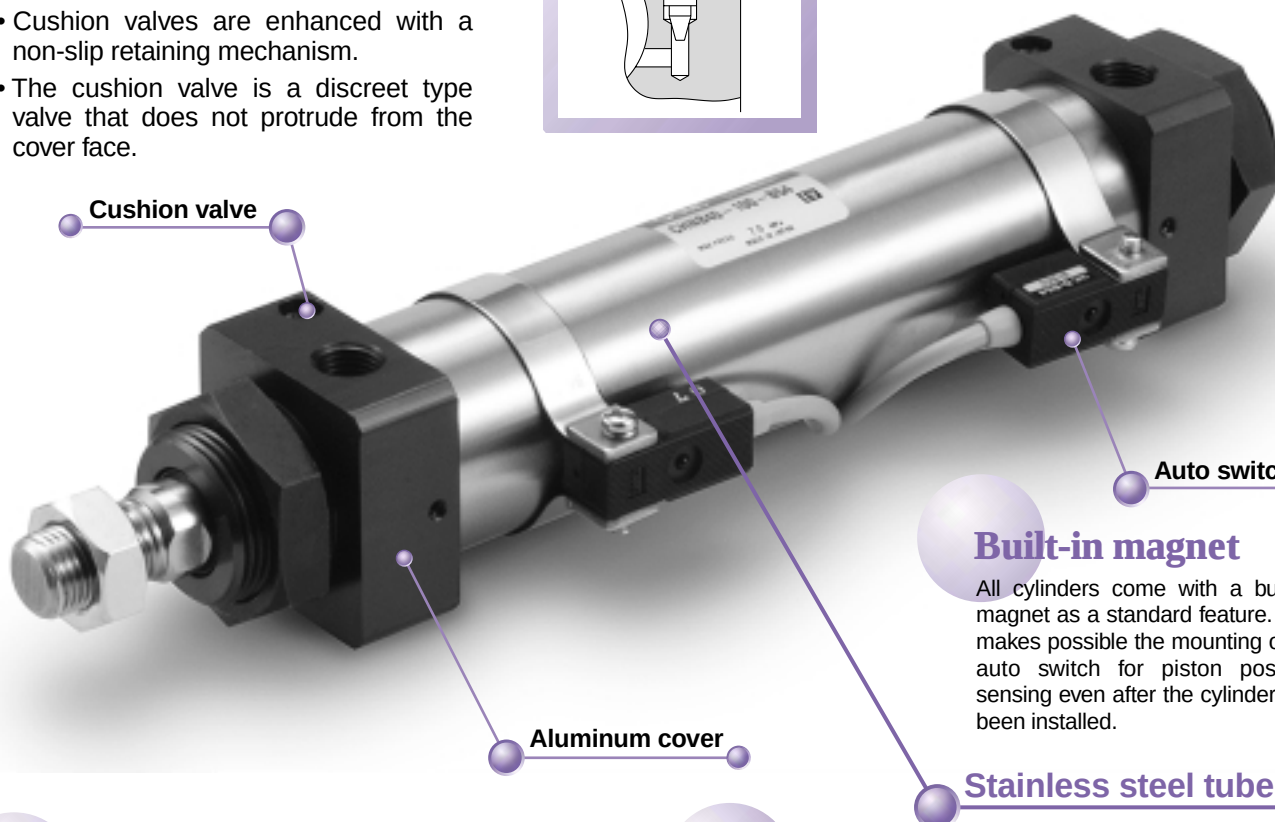
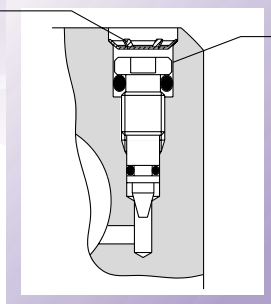
Ø20, Ø25, Ø32, Ø40

### Equipped with cushion mechanism

- A cushion seal system mechanism is now a standard feature.
- Cushion valves are enhanced with a non-slip retaining mechanism.
- The cushion valve is a discreet type valve that does not protrude from the cover face.

Retaining snap ring

Cushion valve

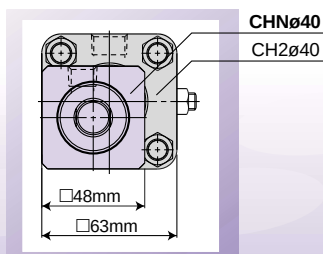


### Built-in magnet

All cylinders come with a built-in magnet as a standard feature. This makes possible the mounting of an auto switch for piston position sensing even after the cylinder has been installed.

### Reduced cross sectional area

When compared to the same size tie-rod cylinder, the cross sectional area of our Series CHN cylinder projects less than 45%, thereby attaining a better space savings.



CHNØ40

CH2Ø40

### Light weight

Using aluminum alloy for both the rod cover and head cover reduces overall weight.

| Model      | Weight (kg) |
|------------|-------------|
| CHNB20-100 | 0.51        |
| CHNB25-100 | 0.63        |
| CHNB32-100 | 0.89        |
| CHNB40-100 | 1.51        |

Basic type with a 100 mm stroke

### Series Variations

| Series | Nominal pressure | Bore size (mm) | Mounting bracket                                                                             | Auto Switch                                         |
|--------|------------------|----------------|----------------------------------------------------------------------------------------------|-----------------------------------------------------|
| CHN    | 7.0MPa           | 20             | Basic type<br>Axial foot type<br>Front flange type<br>Rear flange type<br>Single clevis type | Band mounting type<br>Reed type<br>Solid state type |
|        |                  | 25             |                                                                                              |                                                     |
|        |                  | 32             |                                                                                              |                                                     |
|        |                  | 40             |                                                                                              |                                                     |



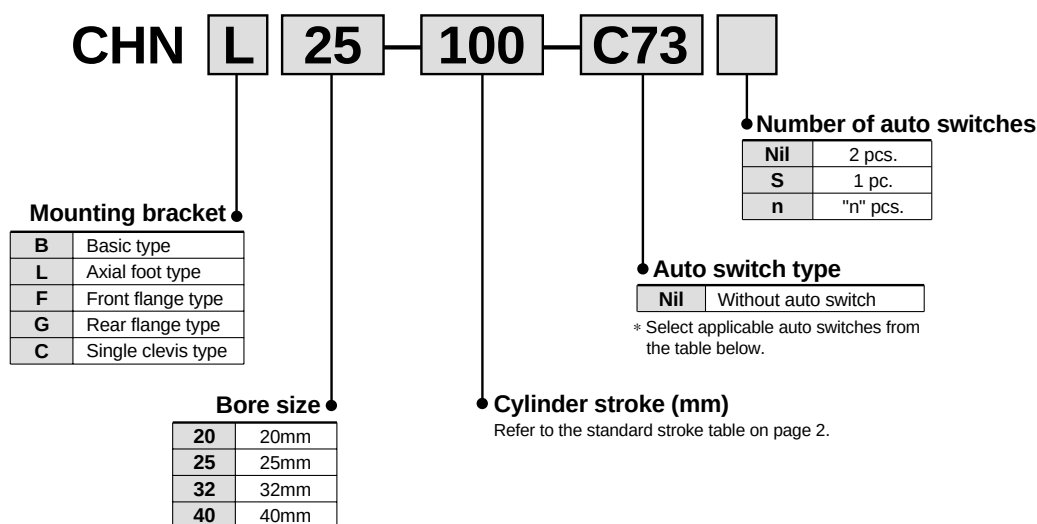
7MPa

# Hydraulic Cylinder

## Series *CHN*

ø20, ø25, ø32, ø40

### How to Order



**Applicable auto switches:** Refer to "Best Pneumatics 2" for detailed auto switch specifications. Refer to pages 15 and 16 for auto switch circuits.

| Type                                    | Special function | Electrical entry | Indicator light | Wiring (output)     | Load voltage |              |              | Auto switch model | Lead wire length (m)* |       |            |          | Applicable load |           |            |   |
|-----------------------------------------|------------------|------------------|-----------------|---------------------|--------------|--------------|--------------|-------------------|-----------------------|-------|------------|----------|-----------------|-----------|------------|---|
|                                         |                  |                  |                 |                     | DC           | AC           |              |                   | 0.5 (Nil)             | 3 (L) | 5 (Z)      | None (N) |                 |           |            |   |
| Reed switch                             | —                | Grommet          | Yes             | 3-wire (NPN equiv.) | —            | 5V           | —            | C76               | ●                     | ●     | —          | —        | IC circuit      | —         |            |   |
|                                         |                  |                  |                 | 2-wire              | 24V          | 12V          | —            | B53               | ●                     | ●     | ●          | —        | —               | PLC       |            |   |
|                                         |                  |                  |                 |                     |              |              | 200V or less | B54               | ●                     | ●     | ●          | —        | —               | Relay PLC |            |   |
|                                         |                  |                  |                 |                     |              |              | B64          | ●                 | ●                     | —     | —          |          |                 |           |            |   |
|                                         |                  |                  | 100V            |                     |              |              | C73          | ●                 | ●                     | ●     | —          |          |                 |           |            |   |
|                                         |                  | 5V, 12V          | 100V or less    |                     |              | C80          | ●            | ●                 | —                     | —     | IC circuit | —        |                 |           |            |   |
|                                         |                  | 12V              | —               |                     |              | C73C         | ●            | ●                 | ●                     | ●     | —          |          |                 |           |            |   |
|                                         |                  | 5V, 12V          | 24V             |                     |              | C80C         | ●            | ●                 | ●                     | ●     | IC circuit |          |                 |           |            |   |
|                                         |                  | 12V              | —               |                     |              | A33          | —            | —                 | —                     | ●     | —          | PLC      |                 |           |            |   |
|                                         |                  | Connector        | Yes             |                     |              | No           | 12V          | 100V, 200V        | A34                   | —     | —          | —        | ●               | —         | Relay PLC  |   |
|                                         | A44              |                  |                 |                     |              |              |              |                   | —                     | —     | —          | ●        | —               |           |            |   |
|                                         | Terminal conduit | Yes              | No              |                     |              | 12V          | 100V, 200V   | A33               | —                     | —     | —          | ●        | —               | Relay PLC |            |   |
| DIN terminal                            | A34              |                  |                 | —                   | —            |              |              | —                 | ●                     | —     |            |          |                 |           |            |   |
| Diagnostic indication (2-color display) | Grommet          |                  |                 |                     | —            | —            | B59W         | ●                 | ●                     | —     | —          | —        |                 |           |            |   |
| Solid state switch                      | —                | Grommet          | Yes             | 3-wire (NPN)        | 24V          | 5V, 12V      | —            | H7A1              | ●                     | ●     | ○          | —        | IC circuit      | Relay PLC |            |   |
|                                         |                  |                  |                 | 3-wire (PNP)        |              |              |              | H7A2              | ●                     | ●     | ○          | —        |                 |           |            |   |
|                                         |                  | Connector        |                 | 2-wire              |              | 12V          |              | H7B               | ●                     | ●     | ○          | —        | —               |           |            |   |
|                                         |                  |                  |                 | Terminal conduit    |              | 3-wire (NPN) |              | 5V, 12V           | H7C                   | ●     | ●          | ●        | ●               |           | IC circuit |   |
|                                         | 2-wire           | 12V              |                 |                     |              | K39          |              | —                 | —                     | —     | ●          | —        |                 |           |            |   |
|                                         | Grommet          | 3-wire (NPN)     |                 | 5V, 12V             |              | —            |              | H7NW              | ●                     | ●     | ○          | —        | IC circuit      |           |            |   |
|                                         |                  | 3-wire (PNP)     |                 |                     |              |              |              | H7PW              | ●                     | ●     | ○          | —        |                 |           |            |   |
|                                         |                  | 2-wire           |                 |                     |              |              |              | 12V               | H7BW                  | ●     | ●          | ○        | —               |           | —          |   |
|                                         |                  | 3-wire (NPN)     |                 |                     |              |              |              | 5V, 12V           | H7BA                  | —     | ●          | ○        | —               |           | IC circuit |   |
|                                         |                  | 4-wire (NPN)     |                 |                     |              |              |              |                   | —                     | G5NT  | —          | ●        | ○               |           |            | — |
|                                         |                  |                  |                 |                     |              |              |              |                   |                       | H7NF  | ●          | ●        | ○               |           |            | — |
|                                         |                  |                  |                 |                     |              |              |              |                   |                       | H7LF  | ●          | ●        | ○               |           |            | — |
|                                         |                  |                  |                 |                     |              |              |              |                   |                       |       |            |          |                 |           |            |   |

\* Lead wire length symbols: 0.5m ..... Nil (example) C73C    5m ..... Z (example) C73CZ  
3m ..... L (example) C73CL    None ..... N (example) C73CN

Notes) • Solid state switches marked "○" are produced upon receipt of order.

• You do not need to specify "N" (i.e., without lead wire) for D-A3□, D-A44, D-G39, and D-K39. This is the only standard specification automatically available for these models.

## Specifications



|                               |                                                                                          |
|-------------------------------|------------------------------------------------------------------------------------------|
| Action                        | Double acting/Single rod                                                                 |
| Fluid                         | Hydraulic fluid                                                                          |
| Nominal pressure              | 7MPa                                                                                     |
| Proof pressure                | 10.5MPa                                                                                  |
| Maximum allowable pressure    | 9MPa                                                                                     |
| Minimum operating pressure    | 0.3MPa                                                                                   |
| Ambient and fluid temperature | Without auto switch: -10° to 80°C                                                        |
|                               | With auto switch: -10° to 60°C                                                           |
| Piston speed                  | 8 to 300mm/s                                                                             |
| Cushion                       | Cushion seal                                                                             |
| Rod end thread                | Male thread                                                                              |
| Thread tolerance              | JIS class 2                                                                              |
| Stroke length tolerance       | to 250mm $\begin{smallmatrix} +1.0 \\ 0 \end{smallmatrix}$                               |
|                               | 251 to 800mm $\begin{smallmatrix} +1.4 \\ 0 \end{smallmatrix}$                           |
| Mounting types                | Basic type, Axial foot type<br>Rear flange type, Front flange type<br>Single clevis type |

Note) Refer to page 26 for definitions of terms related to pressure.

## Accessories

JIS symbol



| Mounting types |                                 | Basic         | Axial foot    | Rear flange  | Front flange | Single clevis |
|----------------|---------------------------------|---------------|---------------|--------------|--------------|---------------|
| Standard       | Mounting nut                    | ●<br>(2 pcs.) | ●<br>(2 pcs.) | ●<br>(1 pc.) | ●<br>(1 pc.) | —             |
|                | Rod end nut                     | ●             | ●             | ●            | ●            | ●             |
|                | Clevis pin                      | —             | —             | —            | —            | —             |
| Option         | Single knuckle joint            | ●             | ●             | ●            | ●            | ●             |
|                | Double knuckle joint (with pin) | ●             | ●             | ●            | ●            | ●             |
|                | Knuckle bracket                 | ●             | ●             | ●            | ●            | ●             |

**Standard Strokes:** Refer to page 3 for minimum strokes for auto switch mounting.

| Bore size (mm) | Standard strokes (mm) | Long stroke |
|----------------|-----------------------|-------------|
| 20             | 25 to 300             | 800         |
| 25             | 25 to 400             |             |
| 32             | 25 to 500             |             |
| 40             |                       |             |

\* Standard strokes above have a minimal delivery time.  
Consult with SMC for the manufacture of strokes other than the above.

## Hydraulic Fluid Compatibility

| Hydraulic fluid                  | Compatibility  |
|----------------------------------|----------------|
| Standard mineral hydraulic fluid | Compatible     |
| W/O hydraulic fluids             | Compatible     |
| O/W hydraulic fluids             | Compatible     |
| Water/Glycol hydraulic fluids    | *              |
| Phosphate hydraulic fluids       | Not compatible |

\* Consult with SMC.

## Mounting Brackets: Part Nos.

| Bore size (mm) | 20       | 25       | 32       | 40       |
|----------------|----------|----------|----------|----------|
| Axial foot*    | CHN-L020 | CHN-L025 | CHN-L032 | CHN-L040 |
| Flange         | CHN-F020 | CHN-F025 | CHN-F032 | CHN-F040 |

\* When ordering the axial foot type, order 2 pieces for each cylinder.

## Auto Switch Mounting Brackets: Part Nos. (incl. band & screws)

| Bore size (mm) | Auto switch models |                          |            |
|----------------|--------------------|--------------------------|------------|
|                | D-C7, D-C8<br>D-H7 | D-B5, D-B6<br>D-G5, D-K5 | D-A3, D-A4 |
| 20             | BMA2-020           | BA-01                    | BD1-01M    |
| 25             | BHN3-025           | BHN2-025                 | BD1-02M    |
| 32             | BHN3-032           | BGS1-032                 | BHN1-032   |
| 40             | BHN3-040           | BH2-040                  | BDS-04M    |

[Stainless steel mounting screw kits]

The following stainless steel mounting screw kits are available for use depending on the operating environment. (Switch mounting bands are not included and should be ordered separately.)

BBA3: D-B5, D-B6, D-G5, and D-K5

BBA4: D-C7, D-C8, D-H7

\* When D-H7BAL switches are shipped mounted on a cylinder, the above stainless steel screws are used. Also, when switches are shipped separately, BBA4 is included.



## Minimum Strokes for Auto Switch Mounting

| Auto switch models                   | No. of auto switches |           |                                                             |                                             |       |
|--------------------------------------|----------------------|-----------|-------------------------------------------------------------|---------------------------------------------|-------|
|                                      | 2 pcs.               |           | "n" pcs.                                                    |                                             | 1 pc. |
|                                      | Different sides      | Same side | Different sides                                             | Same side                                   |       |
| D-C7<br>D-C8                         | 15                   | 50        | $15 + 45 \left( \frac{n-2}{2} \right)$<br>(n = 2, 4, 6 ...) | $50 + 45 (n - 2)$<br>(n = 2, 3, 4, 5 ...)   | 10    |
| D-H7□<br>D-H7□W<br>D-H7BAL<br>D-H7NF | 15                   | 60        |                                                             | $60 + 45 (n - 2)$<br>(n = 2, 3, 4, 5 ...)   | 10    |
| D-C73C<br>D-C80C<br>D-H7C            | 15                   | 65        | $15 + 50 \left( \frac{n-2}{2} \right)$<br>(n = 2, 4, 6 ...) | $65 + 50 (n - 2)$<br>(n = 2, 3, 4, 5 ...)   | 10    |
| D-H7LF                               | 20                   | 65        | $20 + 50 \left( \frac{n-2}{2} \right)$<br>(n = 2, 4, 6 ...) |                                             | 10    |
| D-B5<br>D-B6                         | 15                   | 75        | $15 + 50 \left( \frac{n-2}{2} \right)$<br>(n = 2, 4, 6 ...) | $75 + 55 (n - 2)$<br>(n = 2, 3, 4, 5 ...)   | 10    |
| D-B59W                               | 20                   | 75        | $20 + 50 \left( \frac{n-2}{2} \right)$<br>(n = 2, 4, 6 ...) |                                             | 15    |
| D-A3<br>D-G39<br>D-K39<br>D-A44      | 35                   | 100       | $35 + 30 (n - 2)$<br>(n = 2, 3, 4, 5 ...)                   | $100 + 100 (n - 2)$<br>(n = 2, 3, 4, 5 ...) | 10    |

n: Number of auto switches

## Theoretical Output

| Bore size (mm) | Rod size (mm) | Operating direction | Piston area (mm <sup>2</sup> ) | Operating pressure (MPa) |      |      |      |
|----------------|---------------|---------------------|--------------------------------|--------------------------|------|------|------|
|                |               |                     |                                | 1                        | 3    | 5    | 7    |
|                |               |                     |                                |                          |      |      |      |
| 20             | 10            | OUT                 | 314                            | 314                      | 942  | 1570 | 2198 |
|                |               | IN                  | 235                            | 235                      | 705  | 1175 | 1645 |
| 25             | 12            | OUT                 | 490                            | 490                      | 1470 | 2450 | 3430 |
|                |               | IN                  | 377                            | 377                      | 1131 | 1885 | 2639 |
| 32             | 16            | OUT                 | 804                            | 804                      | 2412 | 4020 | 5628 |
|                |               | IN                  | 603                            | 603                      | 1809 | 3015 | 4221 |
| 40             | 18            | OUT                 | 1256                           | 1256                     | 3768 | 6280 | 8792 |
|                |               | IN                  | 1002                           | 1002                     | 3006 | 5010 | 7014 |

Theoretical output (N) = Pressure (MPa) x Piston area (mm<sup>2</sup>)

## Weights

| (kg)                       |                 |      |      |      |      |
|----------------------------|-----------------|------|------|------|------|
| Bore size (mm)             |                 | 20   | 25   | 32   | 40   |
| Basic weight               | Basic type      | 0.27 | 0.37 | 0.53 | 1.05 |
|                            | Axial foot type | 0.51 | 0.63 | 0.91 | 1.59 |
|                            | Flange type     | 0.36 | 0.54 | 0.72 | 1.26 |
|                            | Clevis type     | 0.25 | 0.45 | 0.67 | 1.00 |
| Additional weight per 50mm |                 | 0.12 | 0.13 | 0.18 | 0.23 |

- Calculation method (Example) CHNL20-100 (Foot type, ø20, 100mm stroke)
- Basic weight ..... 0.51kg
- Additional weight ..... 0.12/50mm
- Cylinder stroke ..... 100mm
- $0.51 + 0.12/50 \times 100 = 0.75\text{kg}$

## ⚠ Specific Product Precautions

**Be sure to read before handling. Refer to pages 25 through 31 for safety instructions, hydraulic cylinder precautions and auto switch precautions.**

## ⚠ Caution

When operating a cylinder for the first time, make sure to release the air at low pressure. When the air release is complete, operate the cylinder at reduced pressure, gradually increasing it to the normal operating pressure. However, the piston speed at this time should be adjusted to the minimum speed.

## Mounting

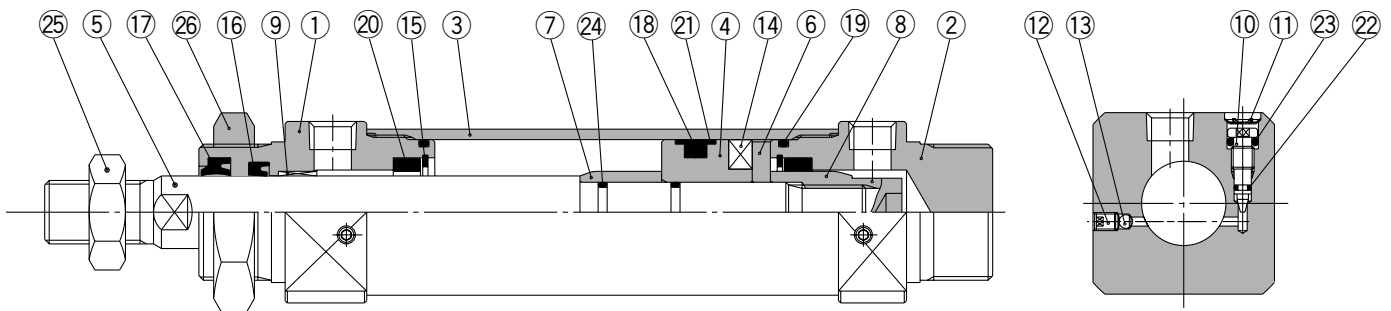
## ⚠ Caution

1. When mounting with bracket mounting nuts, tighten them using the tightening torques in the table below as a guide.

| Bore size (mm) | Mounting nut thread | Mounting nut width across flats (mm) | Tightening torque (N·m) |
|----------------|---------------------|--------------------------------------|-------------------------|
| 20             | M22 x 1.5           | 26                                   | 45                      |
| 25             | M24 x 1.5           | 32                                   | 60                      |
| 32             | M30 x 1.5           | 38                                   | 85                      |
| 40             | M33 x 1.5           | 41                                   | 110                     |

2. When mounted with one side attached and one side unattached (basic type and flange type) and operating at high speed, bending moment acts on the cylinder due to oscillation at the stroke end, which may cause cylinder damage. In this case, install brackets to suppress the oscillation of the cylinder body, or reduce the piston speed enough so that the cylinder body does not oscillate at the stroke end.

## Construction



### Parts list

| No. | Description       | Material                                                                          | Note                          |
|-----|-------------------|-----------------------------------------------------------------------------------|-------------------------------|
| 1   | Rod cover         | Aluminum alloy                                                                    | Black anodized                |
| 2   | Head cover        | Aluminum alloy                                                                    | Black anodized                |
| 3   | Cylinder tube     | Stainless steel                                                                   |                               |
| 4   | Piston            | Stainless steel                                                                   |                               |
| 5   | Piston rod        | <div> <div>ø20, 25: Stainless steel</div> <div>ø32, 40: Carbon steel</div> </div> | Hard chromium electro plating |
| 6   | Magnet plate      | Stainless steel                                                                   |                               |
| 7   | Cushion ring A    | Carbon steel                                                                      |                               |
| 8   | Cushion ring B    | Carbon steel                                                                      |                               |
| 9   | Bushing           | Lead bronze                                                                       |                               |
| 10  | Cushion valve     | Carbon steel                                                                      |                               |
| 11  | Snap ring         | Spring steel                                                                      |                               |
| 12  | Air release valve | Alloy steel                                                                       |                               |
| 13  | Check ball        | Bearing steel                                                                     |                               |

| No. | Description          | Material     | Note |
|-----|----------------------|--------------|------|
| 14  | Magnet               | —            |      |
| 15  | Snap ring            | Spring steel |      |
| 16  | Rod seal             | NBR          |      |
| 17  | Scraper              | NBR          |      |
| 18  | Piston seal          | NBR          |      |
| 19  | Tube gasket          | NBR          |      |
| 20  | Cushion seal         | —            |      |
| 21  | Back-up ring         | Resin        |      |
| 22  | Cushion valve seal A | NBR          |      |
| 23  | Cushion valve seal B | NBR          |      |
| 24  | Piston gasket        | NBR          |      |
| 25  | Rod end nut          | Carbon steel |      |
| 26  | Mounting nut         | Carbon steel |      |

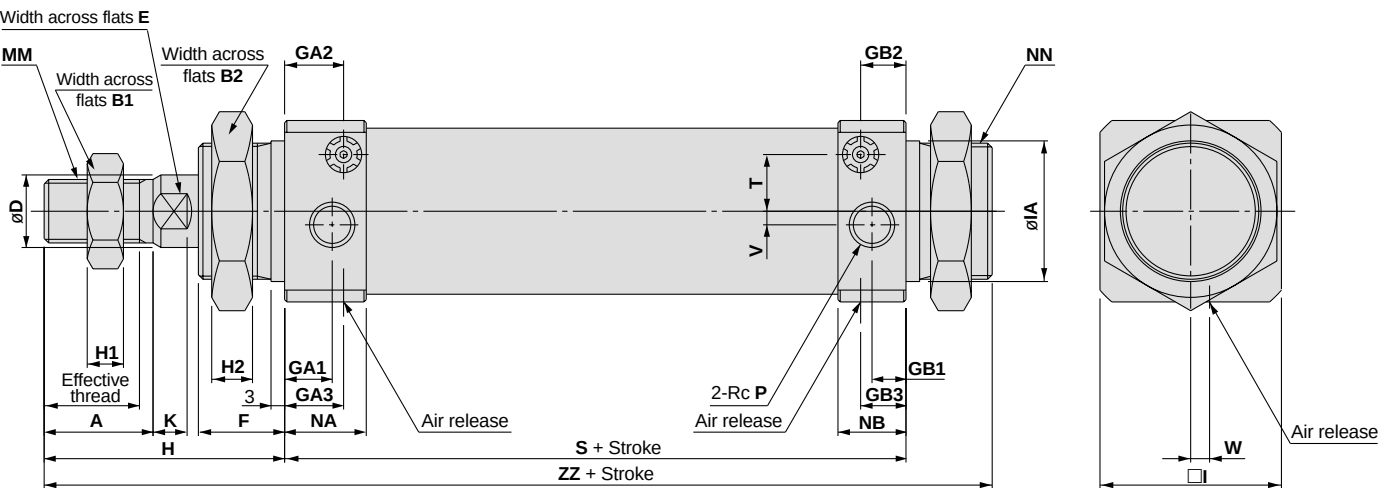
### Replacement parts: Seal kits

| Bore size (mm) | Seal kit no. | Kit components                         |
|----------------|--------------|----------------------------------------|
| 20             | CHN20-PS     | Nos.16 to 20, and 22<br>from the chart |
| 25             | CHN25-PS     |                                        |
| 32             | CHN32-PS     |                                        |
| 40             | CHN40-PS     |                                        |

\* Seal kits consist of items 16 to 20, and 22, and can be ordered by using the seal kit number for each bore size.

Dimensions

Basic type: **CHNB**



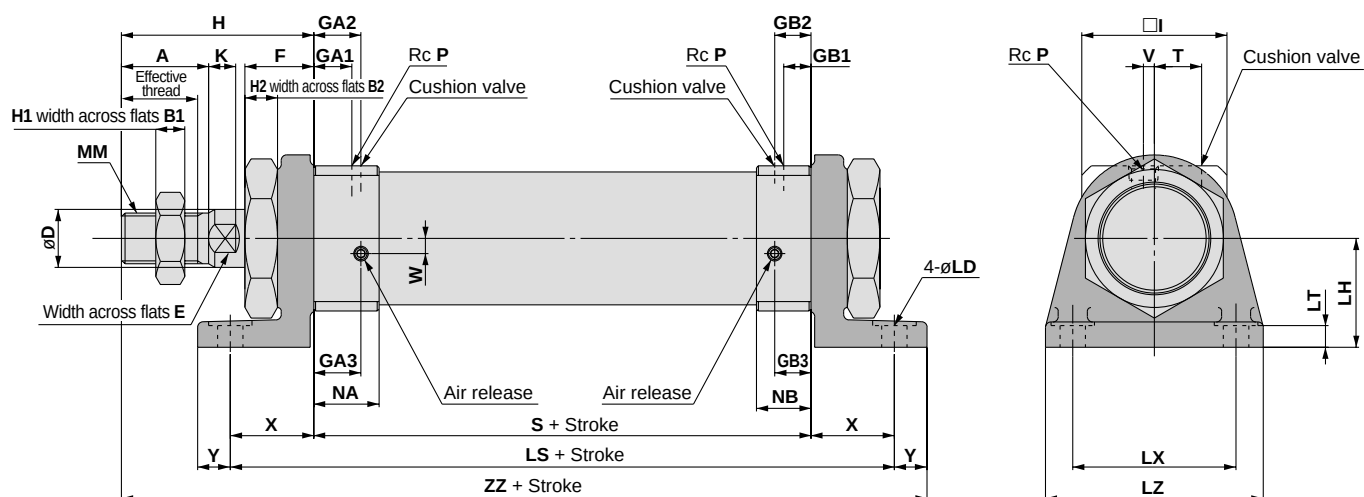
(mm)

| Bore size (mm) | Stroke range (mm) | Effective thread length (mm) | A  | B1 | B2 | D  | E  | F  | GA1 | GA2 | GA3 | GB1 | GB2 | GB3 | H  | H1 | H2 | I  |
|----------------|-------------------|------------------------------|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|----|----|----|----|
| 20             | 25 to 300         | 15.5                         | 18 | 13 | 26 | 10 | 8  | 16 | 10  | 12  | 12  | 8   | 10  | 10  | 41 | 5  | 8  | 31 |
| 25             | 25 to 400         | 19.5                         | 22 | 17 | 32 | 12 | 10 | 16 | 10  | 12  | 12  | 8   | 10  | 10  | 46 | 6  | 8  | 34 |
| 32             | 25 to 500         | 21                           | 24 | 22 | 38 | 16 | 14 | 19 | 11  | 13  | 13  | 8   | 10  | 10  | 53 | 8  | 9  | 40 |
| 40             | 25 to 500         | 21                           | 24 | 24 | 41 | 18 | 16 | 21 | 12  | 17  | 17  | 11  | 16  | 16  | 54 | 10 | 11 | 48 |

(mm)

| Bore size (mm) | IA                                       | K   | MM         | NA | NB | NN        | P   | S   | T   | V   | W   | ZZ  |
|----------------|------------------------------------------|-----|------------|----|----|-----------|-----|-----|-----|-----|-----|-----|
| 20             | 23f8 <sup>-0.020</sup> <sub>-0.053</sub> | 5   | M8 x 1.25  | 17 | 15 | M22 x 1.5 | 1/8 | 81  | 9.5 | 4.5 | 6.5 | 138 |
| 25             | 25f8 <sup>-0.020</sup> <sub>-0.053</sub> | 5.5 | M10 x 1.25 | 17 | 15 | M24 x 1.5 | 1/8 | 81  | 11  | 3.5 | 5.5 | 143 |
| 32             | 31f8 <sup>-0.025</sup> <sub>-0.064</sub> | 7.5 | M14 x 1.5  | 18 | 15 | M30 x 1.5 | 1/8 | 87  | 13  | 3   | 4   | 159 |
| 40             | 34f8 <sup>-0.025</sup> <sub>-0.064</sub> | 7.5 | M16 x 1.5  | 22 | 21 | M33 x 2   | 1/4 | 108 | 16  | 5   | 0   | 183 |

# Axial foot type: CHNL



(mm)

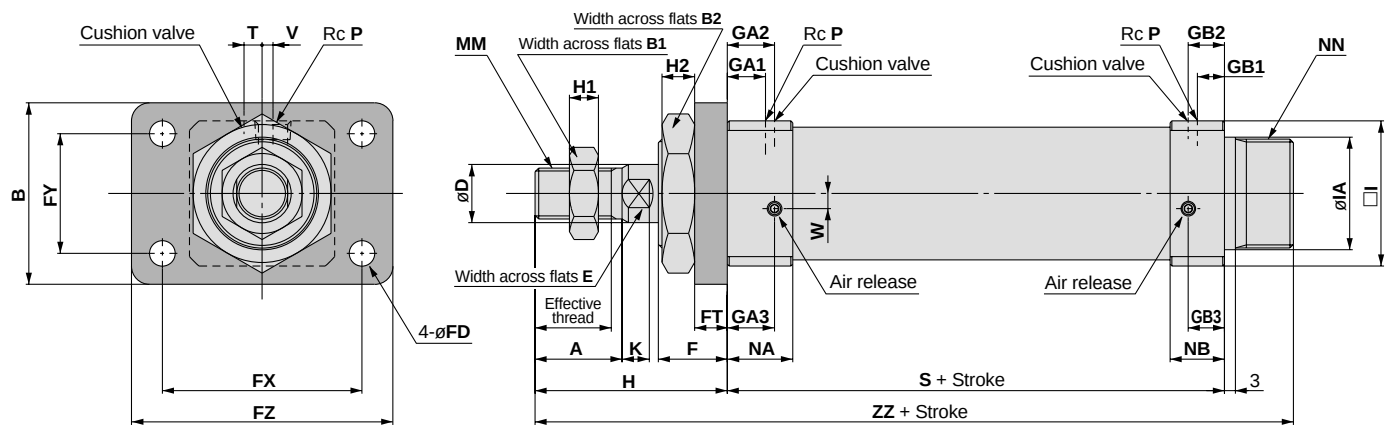
| Bore size (mm) | Stroke range (mm) | Effective thread length (mm) | A  | B1 | B2 | D  | E  | F  | GA1 | GA2 | GA3 | GB1 | GB2 | GB3 | H  | H1 | H2 | I  | K   |
|----------------|-------------------|------------------------------|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|----|----|----|----|-----|
| 20             | 25 to 300         | 15.5                         | 18 | 13 | 26 | 10 | 8  | 16 | 10  | 12  | 12  | 8   | 10  | 10  | 41 | 5  | 8  | 31 | 5   |
| 25             | 25 to 400         | 19.5                         | 22 | 17 | 32 | 12 | 10 | 16 | 10  | 12  | 12  | 8   | 10  | 10  | 46 | 6  | 8  | 34 | 5.5 |
| 32             | 25 to 500         | 21                           | 24 | 22 | 38 | 16 | 14 | 19 | 11  | 13  | 13  | 8   | 10  | 10  | 53 | 8  | 9  | 40 | 7.5 |
| 40             | 25 to 500         | 21                           | 24 | 24 | 41 | 18 | 16 | 21 | 12  | 17  | 17  | 11  | 16  | 16  | 54 | 10 | 11 | 48 | 7.5 |

(mm)

| Bore size (mm) | LD | LH | LS  | LT  | LX | LZ | MM         | NA | NB | P   | S   | T   | V   | W   | X  | Y  | ZZ  |
|----------------|----|----|-----|-----|----|----|------------|----|----|-----|-----|-----|-----|-----|----|----|-----|
| 20             | 7  | 25 | 121 | 5.5 | 40 | 55 | M8 x 1.25  | 17 | 15 | 1/8 | 81  | 9.5 | 4.5 | 6.5 | 20 | 9  | 151 |
| 25             | 7  | 28 | 121 | 5.5 | 40 | 55 | M10 x 1.25 | 17 | 15 | 1/8 | 81  | 11  | 3.5 | 5.5 | 20 | 9  | 156 |
| 32             | 7  | 30 | 133 | 6   | 45 | 60 | M14 x 1.5  | 18 | 15 | 1/8 | 87  | 13  | 3   | 4   | 23 | 9  | 172 |
| 40             | 9  | 35 | 158 | 6   | 55 | 75 | M16 x 1.5  | 22 | 21 | 1/4 | 108 | 16  | 5   | 0   | 25 | 11 | 198 |

## Dimensions

### Front flange type: CHNF



(mm)

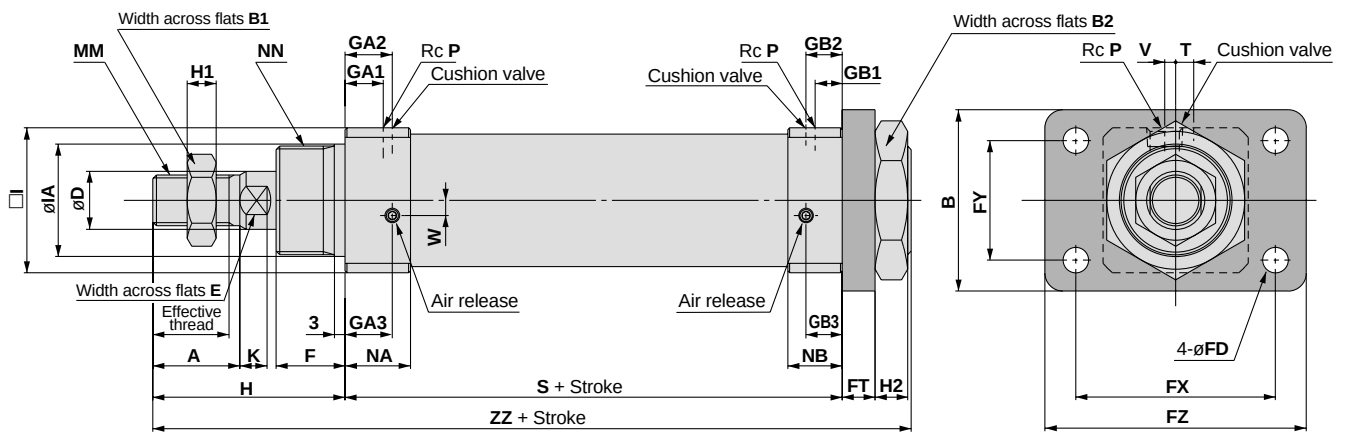
| Bore size (mm) | Stroke range (mm) | Effective thread length (mm) | A  | B  | B1 | B2 | D  | E  | F  | FD | FT | FX | FY | FZ | GA1 | GA2 | GA3 | GB1 | GB2 |
|----------------|-------------------|------------------------------|----|----|----|----|----|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|
| 20             | 25 to 300         | 15.5                         | 18 | 38 | 13 | 26 | 10 | 8  | 16 | 7  | 6  | 51 | 21 | 68 | 10  | 12  | 12  | 8   | 10  |
| 25             | 25 to 400         | 19.5                         | 22 | 44 | 17 | 32 | 12 | 10 | 16 | 7  | 9  | 53 | 27 | 70 | 10  | 12  | 12  | 8   | 10  |
| 32             | 25 to 500         | 21                           | 24 | 50 | 22 | 38 | 16 | 14 | 19 | 7  | 9  | 55 | 33 | 72 | 11  | 13  | 13  | 8   | 10  |
| 40             | 25 to 500         | 21                           | 24 | 60 | 24 | 41 | 18 | 16 | 21 | 9  | 9  | 66 | 36 | 84 | 12  | 17  | 17  | 11  | 16  |

(mm)

| Bore size (mm) | GB3 | H  | H1 | H2 | I  | IA                                       | K   | MM         | NA | NB | NN        | P   | S   | T   | V   | W   | ZZ  |
|----------------|-----|----|----|----|----|------------------------------------------|-----|------------|----|----|-----------|-----|-----|-----|-----|-----|-----|
| 20             | 10  | 41 | 5  | 8  | 31 | 23f8 <sup>-0.020</sup> <sub>-0.053</sub> | 5   | M8 x 1.25  | 17 | 15 | M22 x 1.5 | 1/8 | 81  | 9.5 | 4.5 | 6.5 | 138 |
| 25             | 10  | 46 | 6  | 8  | 34 | 25f8 <sup>-0.020</sup> <sub>-0.053</sub> | 5.5 | M10 x 1.25 | 17 | 15 | M24 x 1.5 | 1/8 | 81  | 11  | 3.5 | 5.5 | 143 |
| 32             | 10  | 53 | 8  | 9  | 40 | 31f8 <sup>-0.025</sup> <sub>-0.064</sub> | 7.5 | M14 x 1.5  | 18 | 15 | M30 x 1.5 | 1/8 | 87  | 13  | 3   | 4   | 159 |
| 40             | 16  | 54 | 10 | 11 | 48 | 34f8 <sup>-0.025</sup> <sub>-0.064</sub> | 7.5 | M16 x 1.5  | 22 | 21 | M33 x 2   | 1/4 | 108 | 16  | 5   | 0   | 183 |



## Rear flange type: CHNG

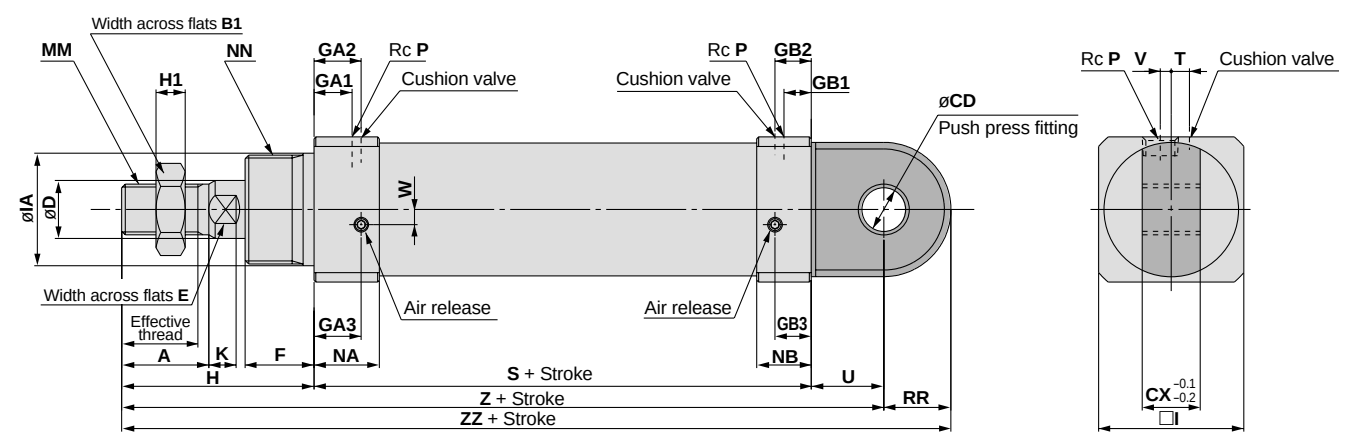


| Bore size (mm) | Stroke range (mm) | Effective thread length (mm) | A  | B  | B1 | B2 | D  | E  | F  | FD | FT | FX | FY | FZ | GA1 | GA2 | GA3 | GB1 | GB2 |
|----------------|-------------------|------------------------------|----|----|----|----|----|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|
| 20             | 25 to 300         | 15.5                         | 18 | 38 | 13 | 26 | 10 | 8  | 16 | 7  | 6  | 51 | 21 | 68 | 10  | 12  | 12  | 8   | 10  |
| 25             | 25 to 400         | 19.5                         | 22 | 44 | 17 | 32 | 12 | 10 | 16 | 7  | 9  | 53 | 27 | 70 | 10  | 12  | 12  | 8   | 10  |
| 32             | 25 to 500         | 21                           | 24 | 50 | 22 | 38 | 16 | 14 | 19 | 7  | 9  | 55 | 33 | 72 | 11  | 13  | 13  | 8   | 10  |
| 40             | 25 to 500         | 21                           | 24 | 60 | 24 | 41 | 18 | 16 | 21 | 9  | 9  | 66 | 36 | 84 | 12  | 17  | 17  | 11  | 16  |

| Bore size (mm) | GB3 | H  | H1 | H2 | I  | IA                                       | K   | MM         | NA | NB | NN        | P   | S   | T   | V   | W   | ZZ  |
|----------------|-----|----|----|----|----|------------------------------------------|-----|------------|----|----|-----------|-----|-----|-----|-----|-----|-----|
| 20             | 10  | 41 | 5  | 8  | 31 | 23f8 <sup>-0.020</sup> <sub>-0.053</sub> | 5   | M8 x 1.25  | 17 | 15 | M22 x 1.5 | 1/8 | 81  | 9.5 | 4.5 | 6.5 | 138 |
| 25             | 10  | 46 | 6  | 8  | 34 | 25f8 <sup>-0.020</sup> <sub>-0.053</sub> | 5.5 | M10 x 1.25 | 17 | 15 | M24 x 1.5 | 1/8 | 81  | 11  | 3.5 | 5.5 | 143 |
| 32             | 10  | 53 | 8  | 9  | 40 | 31f8 <sup>-0.025</sup> <sub>-0.064</sub> | 7.5 | M14 x 1.5  | 18 | 15 | M30 x 1.5 | 1/8 | 87  | 13  | 3   | 4   | 159 |
| 40             | 16  | 54 | 10 | 11 | 48 | 34f8 <sup>-0.025</sup> <sub>-0.064</sub> | 7.5 | M16 x 1.5  | 22 | 21 | M33 x 2   | 1/4 | 108 | 16  | 5   | 0   | 183 |

Dimensions

Single clevis type: **CHNC**



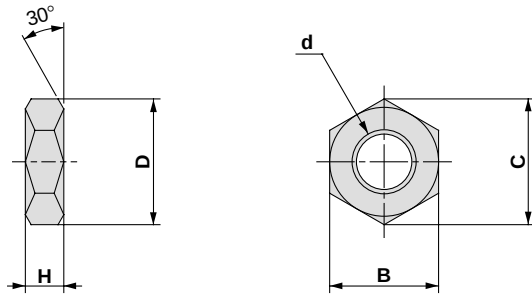
| (mm)           |                   |                              |    |    |                                        |    |    |    |    |     |     |     |     |     |     |    |    |    |
|----------------|-------------------|------------------------------|----|----|----------------------------------------|----|----|----|----|-----|-----|-----|-----|-----|-----|----|----|----|
| Bore size (mm) | Stroke range (mm) | Effective thread length (mm) | A  | B1 | CD                                     | CX | D  | E  | F  | GA1 | GA2 | GA3 | GB1 | GB2 | GB3 | H  | H1 | I  |
| 20             | 25 to 300         | 15.5                         | 18 | 13 | 10 <sup>+0.109</sup> <sub>0</sub>      | 16 | 10 | 8  | 16 | 10  | 12  | 12  | 8   | 10  | 10  | 41 | 5  | 31 |
| 25             | 25 to 400         | 19.5                         | 22 | 17 | 10 <sup>+0.109</sup> <sub>0</sub>      | 16 | 12 | 10 | 16 | 10  | 12  | 12  | 8   | 10  | 10  | 46 | 6  | 34 |
| 32             | 25 to 500         | 21                           | 24 | 22 | 12 <sup>+0.109</sup> <sub>0</sub>      | 16 | 16 | 14 | 19 | 11  | 13  | 13  | 8   | 10  | 10  | 53 | 8  | 40 |
| 40             | 25 to 500         | 21                           | 24 | 24 | 16 <sup>+0.034</sup> <sub>-0.015</sub> | 24 | 18 | 16 | 21 | 12  | 17  | 17  | 11  | 16  | 16  | 54 | 10 | 48 |

| (mm)           |                                          |     |            |    |    |           |     |      |     |     |    |     |     |     |     |
|----------------|------------------------------------------|-----|------------|----|----|-----------|-----|------|-----|-----|----|-----|-----|-----|-----|
| Bore size (mm) | IA                                       | K   | MM         | NA | NB | NN        | P   | RR   | S   | T   | U  | V   | W   | Z   | ZZ  |
| 20             | 23f8 <sup>-0.020</sup> <sub>-0.053</sub> | 5   | M8 x 1.25  | 17 | 15 | M22 x 1.5 | 1/8 | 13.5 | 81  | 9.5 | 14 | 4.5 | 6.5 | 136 | 150 |
| 25             | 25f8 <sup>-0.020</sup> <sub>-0.053</sub> | 5.5 | M10 x 1.25 | 17 | 15 | M24 x 1.5 | 1/8 | 14.5 | 81  | 11  | 15 | 3.5 | 5.5 | 142 | 157 |
| 32             | 31f8 <sup>-0.025</sup> <sub>-0.064</sub> | 7.5 | M14 x 1.5  | 18 | 15 | M30 x 1.5 | 1/8 | 18.5 | 87  | 13  | 20 | 3   | 4   | 160 | 179 |
| 40             | 34f8 <sup>-0.025</sup> <sub>-0.064</sub> | 7.5 | M16 x 1.5  | 22 | 21 | M33 x 2   | 1/4 | 22.5 | 108 | 16  | 20 | 5   | 0   | 182 | 205 |

## Accessories (Standard)

### Rod end nut

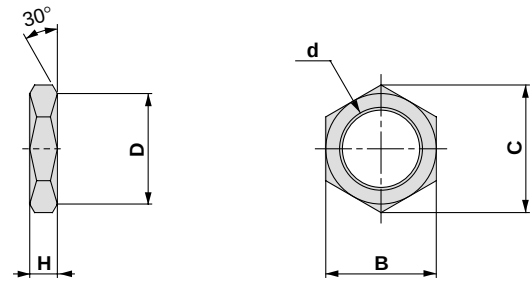
Material: Carbon steel



| Part no.        | Applicable bore size (mm) | d          | H  | B  | C    | D    |
|-----------------|---------------------------|------------|----|----|------|------|
| <b>NT-02</b>    | 20                        | M8 x 1.25  | 5  | 13 | 15.0 | 12.5 |
| <b>NT-03</b>    | 25                        | M10 x 1.25 | 6  | 17 | 19.6 | 16.5 |
| <b>NT-04</b>    | 32                        | M14 x 1.5  | 8  | 22 | 25.4 | 21.0 |
| <b>AC-NI-50</b> | 40                        | M16 x 1.5  | 10 | 24 | 27.7 | 23   |

### Mounting nut

Material: Carbon steel



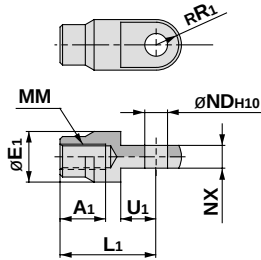
| Part no.     | Applicable bore size (mm) | d         | H  | B  | C    | D  |
|--------------|---------------------------|-----------|----|----|------|----|
| <b>SO-02</b> | 20                        | M22 x 1.5 | 8  | 26 | 30   | 26 |
| <b>SO-03</b> | 25                        | M24 x 1.5 | 8  | 32 | 36.9 | 32 |
| <b>SO-04</b> | 32                        | M30 x 1.5 | 9  | 38 | 43.9 | 38 |
| <b>SO-05</b> | 40                        | M33 x 2.0 | 11 | 41 | 47.3 | 41 |

## Accessory Brackets (Optional)

### I-shaped single knuckle joint

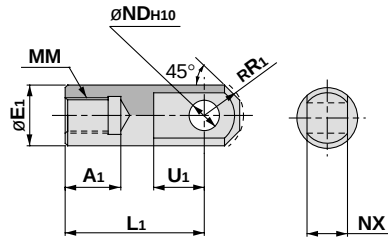
ø20: I-02  
ø25: I-03

Material: Rolled steel plate



ø32: I-04  
ø40: IHN-04

Material: Rolled steel plate

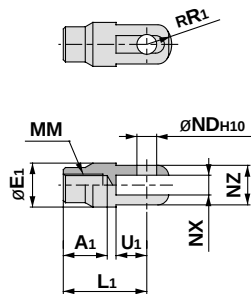


| Part no. | Applicable bore size (mm) | A1 | E1 | L1 | MM         | R1   | U1 | NDH10                             | NX                                 |
|----------|---------------------------|----|----|----|------------|------|----|-----------------------------------|------------------------------------|
| I-02     | 20                        | 16 | 20 | 36 | M8 x 1.25  | 10   | 14 | 9 <sup>+0.058</sup> <sub>0</sub>  | 9 <sup>-0.1</sup> <sub>-0.2</sub>  |
| I-03     | 25                        | 18 | 20 | 38 | M10 x 1.25 | 10   | 14 | 9 <sup>+0.058</sup> <sub>0</sub>  | 9 <sup>-0.1</sup> <sub>-0.2</sub>  |
| I-04     | 32                        | 22 | 24 | 55 | M14 x 1.5  | 15.5 | 20 | 12 <sup>+0.070</sup> <sub>0</sub> | 16 <sup>-0.1</sup> <sub>-0.3</sub> |
| IHN-04   | 40                        | 22 | 24 | 55 | M16 x 1.5  | 15.5 | 20 | 15 <sup>+0.070</sup> <sub>0</sub> | 16 <sup>-0.1</sup> <sub>-0.3</sub> |

### Y-shaped double knuckle joint

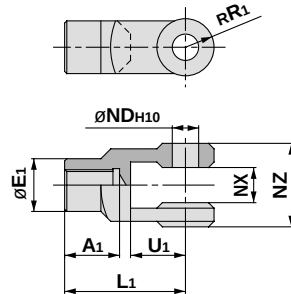
ø20: Y-02  
ø25: Y-03

Material: Rolled steel plate



ø32: Y-04C  
ø40: YHN-04

Material: Cast iron

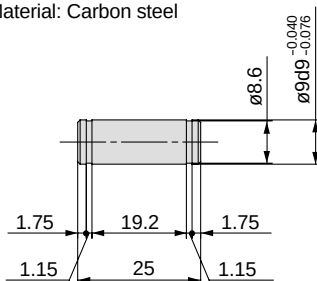


| Part no. | Applicable bore size (mm) | A1 | E1 | L1 | MM         | R1 | U1 | NDH10                             | NX                                 | NZ |
|----------|---------------------------|----|----|----|------------|----|----|-----------------------------------|------------------------------------|----|
| Y-02     | 20                        | 16 | 20 | 36 | M8 x 1.25  | 12 | 14 | 9 <sup>+0.058</sup> <sub>0</sub>  | 9 <sup>+0.2</sup> <sub>+0.1</sub>  | 18 |
| Y-03     | 25                        | 18 | 20 | 38 | M10 x 1.25 | 12 | 14 | 9 <sup>+0.058</sup> <sub>0</sub>  | 9 <sup>+0.2</sup> <sub>+0.1</sub>  | 18 |
| Y-04C    | 32                        | 22 | 24 | 55 | M14 x 1.5  | 13 | 25 | 12 <sup>+0.070</sup> <sub>0</sub> | 16 <sup>+0.3</sup> <sub>+0.1</sub> | 38 |
| YHN-04   | 40                        | 22 | 24 | 55 | M16 x 1.5  | 13 | 25 | 15 <sup>+0.070</sup> <sub>0</sub> | 16 <sup>+0.3</sup> <sub>+0.1</sub> | 38 |

### Knuckle pin

ø20, ø25  
Part no.: CDP-1

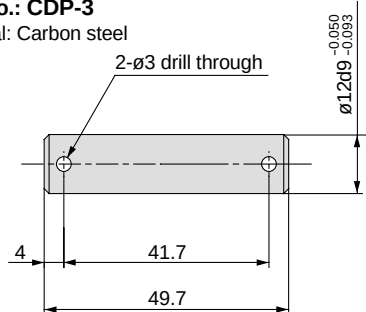
Material: Carbon steel



Snap ring: C type 9 for shaft

ø32  
Part no.: CDP-3

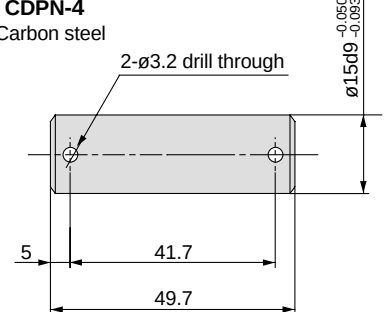
Material: Carbon steel



Cotter pin: ø3 x 18/

ø40  
Part no.: CDPN-4

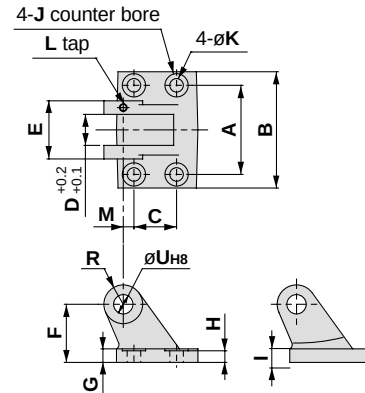
Material: Carbon steel



Cotter pin: ø3.2 x 20/

### Bracket for clevis type

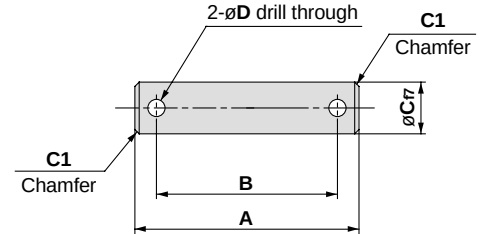
Material: Cast iron



| Part no.  | Applicable bore size (mm) | A  | B  | C  | D  | UH8                               | E  | F  | G   | H   | I  | J  | K | L  | M   | R  |
|-----------|---------------------------|----|----|----|----|-----------------------------------|----|----|-----|-----|----|----|---|----|-----|----|
| AD-FI-20  | 20                        | 46 | 60 | 22 | 16 | 10 <sup>+0.027</sup> <sub>0</sub> | 30 | 28 | 6.5 | 5.5 | 10 | 12 | 7 | M4 | 5.5 | 10 |
| AD-FI-25  | 25                        | 46 | 60 | 22 | 16 | 10 <sup>+0.027</sup> <sub>0</sub> | 30 | 30 | 6.5 | 5.5 | 10 | 12 | 7 | M4 | 5.5 | 10 |
| AD-FI-32  | 32                        | 56 | 80 | 30 | 16 | 12 <sup>+0.027</sup> <sub>0</sub> | 36 | 40 | 10  | 9   | 13 | 12 | 7 | M5 | 7   | 12 |
| AD-CHN-40 | 40                        | 64 | 88 | 30 | 24 | 16 <sup>+0.027</sup> <sub>0</sub> | 44 | 43 | 10  | 9   | 13 | 16 | 9 | M5 | 10  | 12 |

### Bracket pin

Material: Carbon steel



| Part no.  | Bore size (mm) | A    | B    | C7                                     | D   | Cotter pin |
|-----------|----------------|------|------|----------------------------------------|-----|------------|
| AD-EI-20  | 20             | 45.5 | 35.5 | 10 <sup>-0.016</sup> <sub>-0.034</sub> | 3.2 | ø3.2 x 16/ |
| AD-EI-25  | 25             | 45.5 | 35.5 | 10 <sup>-0.016</sup> <sub>-0.034</sub> | 3.2 |            |
| AD-EI-32  | 32             | 52   | 42   | 12 <sup>-0.016</sup> <sub>-0.034</sub> | 4   | ø4 x 20/   |
| AD-CHN-40 | 40             | 60   | 50   | 16 <sup>-0.016</sup> <sub>-0.034</sub> | 4   |            |

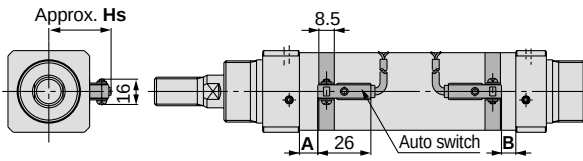
# Series CHN Auto Switch Specifications

Refer to "Best Pneumatics 2" for detailed auto switch specifications.

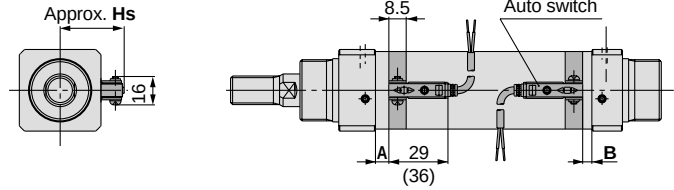


## Auto Switches: Proper Mounting Positions and Mounting Heights for Stroke End Detection

D-C7, D-C8

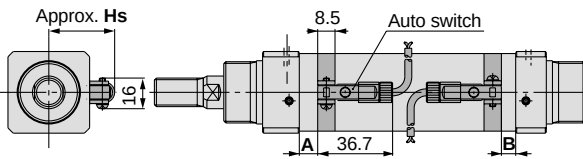


D-H7□, D-H7□W, D-H7□F, D-H7BAL

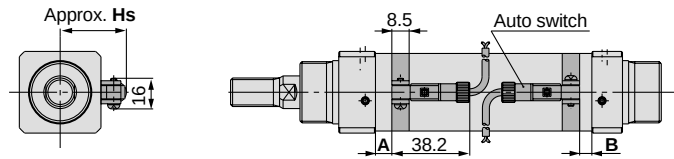


\* Dimensions inside ( ) are for D-H7LF.

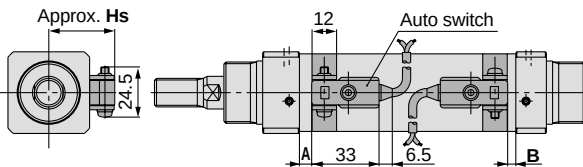
D-C73C, D-C80C



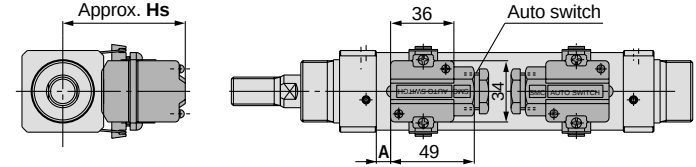
D-H7C



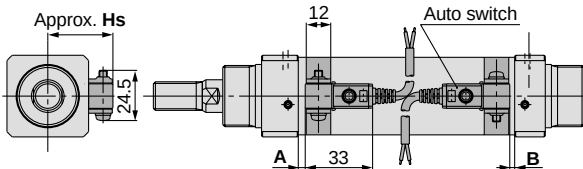
D-B5, D-B6, D-B59W



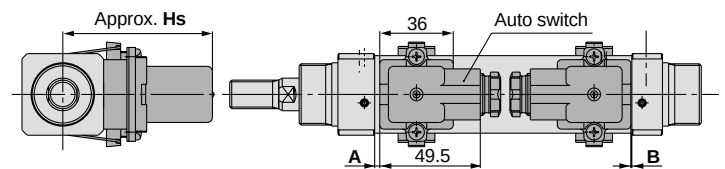
D-A3, D-G3, D-K3



D-G5, D-K5, D-G5□W, D-G5BA, D-K9W, D-G59F, D-G5NT



D-A44



## Proper auto switch mounting positions

(mm)

| Bore size<br>(mm) | D-C7□<br>D-C80<br>D-C73C<br>D-C80C |      | D-B5□<br>D-B64 |     | D-H7□<br>D-H7C<br>D-H7□W<br>D-H7BAL |     | D-G5NTL |      | D-H7□F |      | D-B59W |     | D-G39<br>D-K39<br>D-A3□<br>D-A44 |      |
|-------------------|------------------------------------|------|----------------|-----|-------------------------------------|-----|---------|------|--------|------|--------|-----|----------------------------------|------|
|                   | A                                  | B    | A              | B   | A                                   | B   | A       | B    | A      | B    | A      | B   | A                                | B    |
| 20                | 19                                 | 11   | 12.5           | 4.5 | 17.5                                | 9.5 | 14      | 6    | 16     | 8    | 15.5   | 7.5 | 12                               | 4    |
| 25                | 20.5                               | 10.5 | 14             | 4   | 19                                  | 9   | 15.5    | 5.5  | 17.5   | 7.5  | 17     | 7   | 13.5                             | 3.5  |
| 32                | 23.5                               | 12.5 | 17             | 6   | 22                                  | 11  | 18.5    | 7.5  | 20.5   | 9.5  | 20     | 9   | 16.5                             | 5.5  |
| 40                | 28.5                               | 18.5 | 22             | 12  | 27                                  | 17  | 23.5    | 13.5 | 25.5   | 15.5 | 25     | 15  | 21.5                             | 11.5 |

## Auto switch mounting heights

(mm)

| Bore size<br>(mm) | D-C7<br>D-C8<br>D-H7<br>D-H7□W<br>D-H7□F<br>D-H7BAL | D-B5<br>D-B6<br>D-B59W<br>D-G5NTL | D-C73C<br>D-C80C<br>D-H7C | D-G39<br>D-K39<br>D-A33<br>D-A34 | D-A44 |
|-------------------|-----------------------------------------------------|-----------------------------------|---------------------------|----------------------------------|-------|
|                   | HS                                                  | HS                                | HS                        | HS                               | HS    |
| 20                | 25                                                  | 28                                | 27.5                      | 62                               | 72    |
| 25                | 27                                                  | 30                                | 29.5                      | 64                               | 74    |
| 32                | 30.5                                                | 33.5                              | 32.5                      | 66                               | 76    |
| 40                | 34.5                                                | 37.5                              | 37.0                      | 70.5                             | 80.5  |

# Hydraulic Cylinder Auto Switch Specifications



## Specific Product Precautions

Be sure to confirm auto switch precautions on pages 29 through 31 before handling auto switches.

### Auto Switch Common Specifications

| Type                  | Reed switch                                                      | Solid state switch                                |
|-----------------------|------------------------------------------------------------------|---------------------------------------------------|
| Leakage current       | None                                                             | 3-wire: 100μA or less<br>2-wire: 1mA or less      |
| Operating time        | 1.2ms                                                            | 1ms or less <sup>*2)</sup>                        |
| Impact resistance     | 300m/s <sup>2</sup>                                              | 1000m/s <sup>2</sup>                              |
| Insulation resistance | 50MΩ or more at 500VDC (between lead wire and case)              |                                                   |
| Withstand voltage     | 1500VAC for 1min. <sup>*1)</sup><br>(between lead wire and case) | 1000VAC for 1min.<br>(between lead wire and case) |
| Ambient temperature   | -10° to 60°C                                                     |                                                   |

\* 1) Electrical entry: Connector types (C73C and C80C) are 1000VAC for 1 minute (between lead wire and case).

\* 2) Except solid state switch with timer (G5NTL).

### Lead Wire Length

#### Lead wire length indication (Example)

D-B54

**L**

#### Lead wire length

|     |      |
|-----|------|
| Nil | 0.5m |
| L   | 3m   |
| Z   | 5m   |
| N*  | None |

\* Applicable only to connector type switch D-□□C.

Note 1) Lead wire length: Z (5m) applicable auto switches  
Reed: D-B53, D-B54, D-C73(C), D-C80C  
Solid state: All types are produced upon receipt of order (standard).

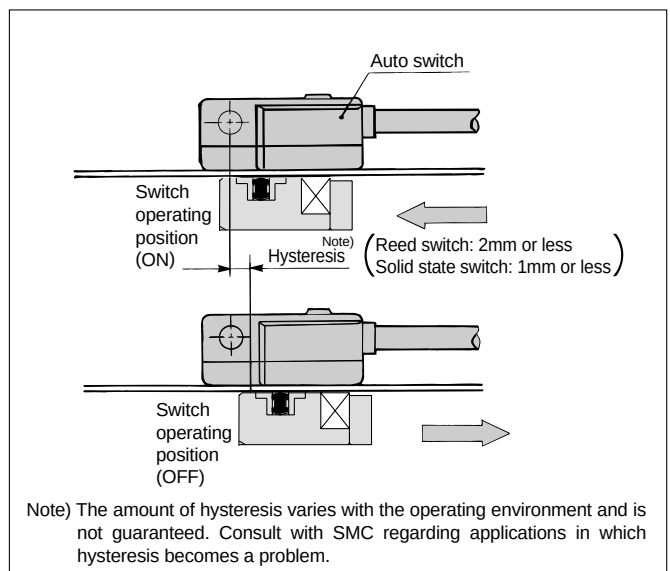
Note 2) The standard lead wire length is 3m for solid state switches with timer and water resistant 2-color display solid state switches (0.5m is not available).

#### Part nos. for lead wire with connector (applicable only to connector type)

| Part no. | Lead wire length |
|----------|------------------|
| D-LC05   | 0.5m             |
| D-LC30   | 3m               |
| D-LC50   | 5m               |

### Auto Switch Hysteresis

Hysteresis is the distance between the position at which piston movement operates an auto switch and the position at which movement in the opposite direction turns the switch OFF. This hysteresis is included in part (one side) of the operating range.



## Contact Protection Boxes: CD-P11, CD-P12

1

### <Applicable switch models>

D-C7, D-C8, D-C73C, D-C80C

The above auto switches do not have built-in contact protection circuits.

1. The operating load is an induction load.

2. The length of wiring to the load is 5m or more

3. The load voltage is 100VAC or 200VAC.

A contact protection box should be used in any of the above conditions. Otherwise, the life of the contacts may be reduced. (They may stay on continuously.)

2

Furthermore, even in the case of a type having an internal contact protection circuit (D-A34, D-A44, D-B54, D-B64, D-B59W), if the length of the wiring to the load is extremely long (30m or more) and a PLC having a large rush current is used, consult with SMC as a contact protection box may be necessary.

### Contact protection box specifications

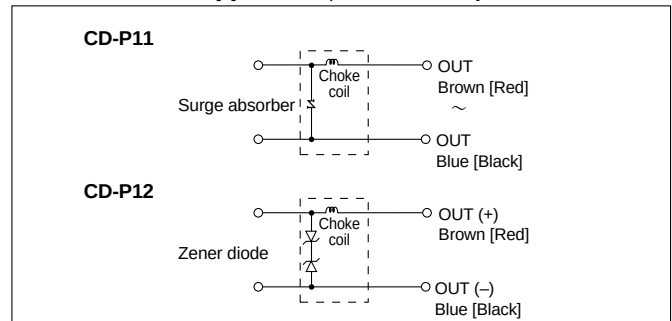
| Part no.             | CD-P11 |        | CD-P12 |
|----------------------|--------|--------|--------|
| Load voltage         | 100VAC | 200VAC | 24VDC  |
| Maximum load current | 25mA   | 12.5mA | 50mA   |

\* Lead wire length — Switch connection side: 0.5m  
Load connection side: 0.5m

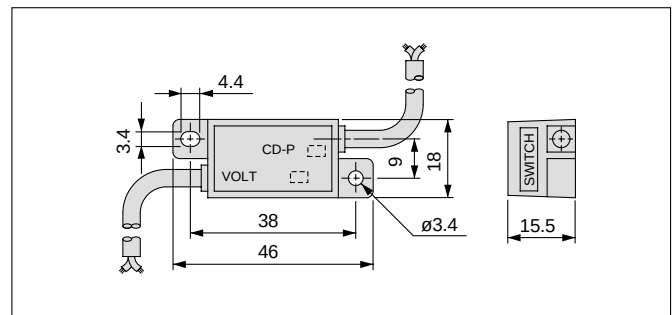


### Internal circuits

Lead wire colors inside [ ] are those prior to conformity with IEC standards.



### Dimensions



### Connection

To connect a switch unit to a contact protection box, connect the lead wire from the side of the contact protection box marked SWITCH to the lead wire coming out of the switch unit.

The length of the lead wires between the switch unit and contact protection box should be no more than 1m, and they should be placed as close together as possible.

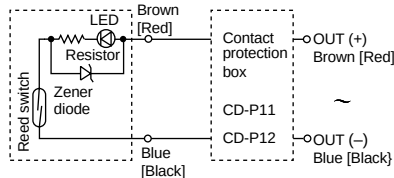
# Hydraulic Cylinder Auto Switch Specifications

## Auto Switch Internal Circuits

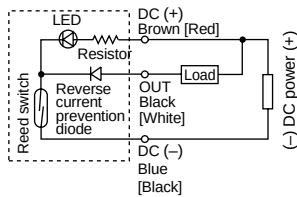
Lead wire colors inside [ ] are those prior to conformity with IEC standards.

### Reed switches

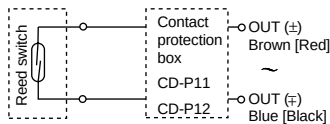
**D-C73**



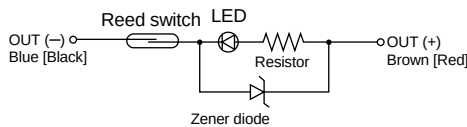
**D-C76**



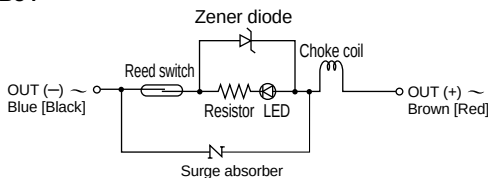
**D-C80, D-C80C**



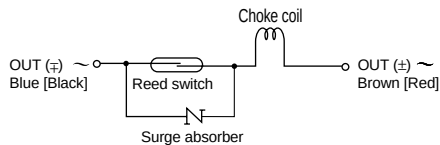
**D-B53**



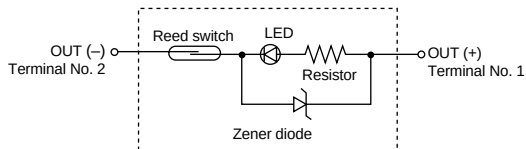
**D-B54**



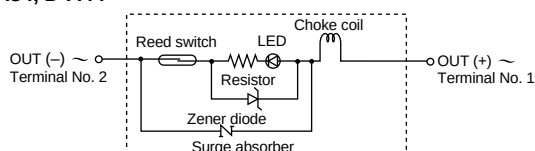
**D-B64**



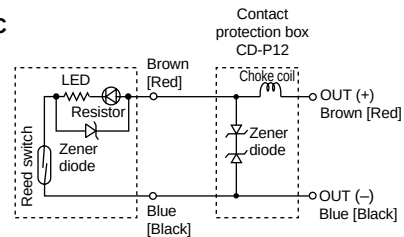
**D-A33**



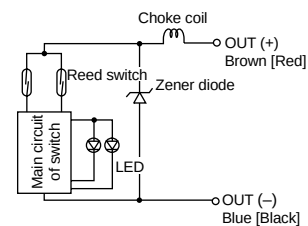
**D-A34, D-A44**



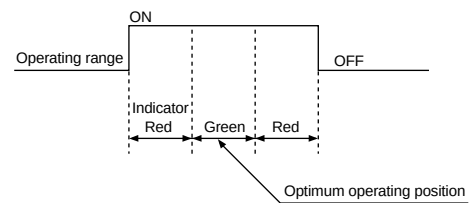
**D-C73C**



**D-B59W**



Indicator light: Display method

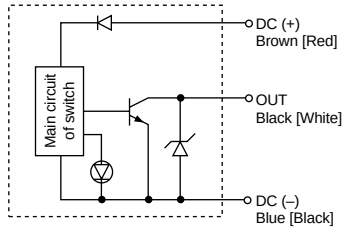




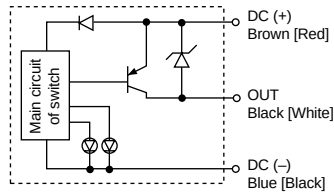
Lead wire colors inside [ ] are those prior to conformity with IEC standards.

## Solid state switches

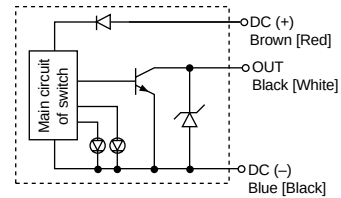
**D-H7A1**



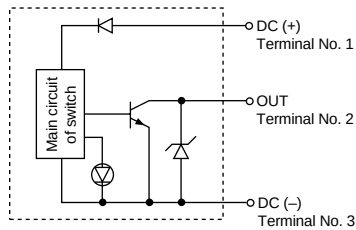
**D-H7PW**



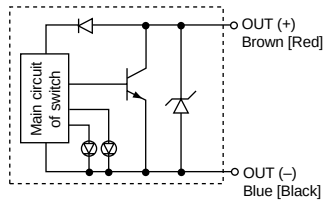
**D-H7NW**



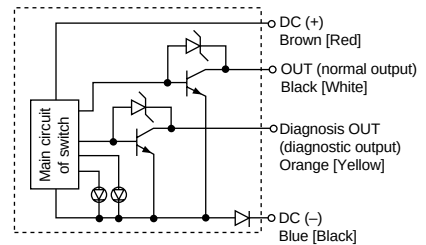
**D-G39, D-G39C**



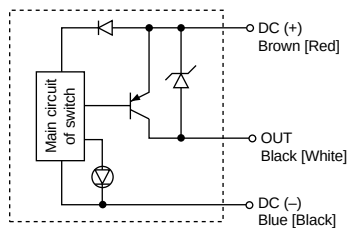
**D-H7BAL, D-H7BW**



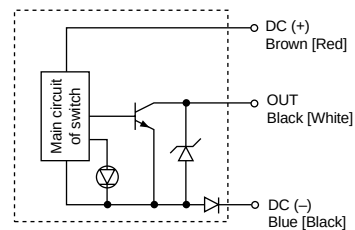
**D-H7NF**



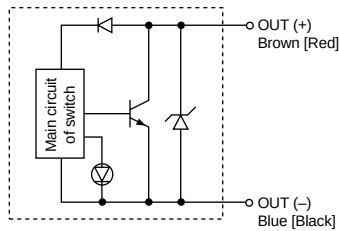
**D-H7A2**



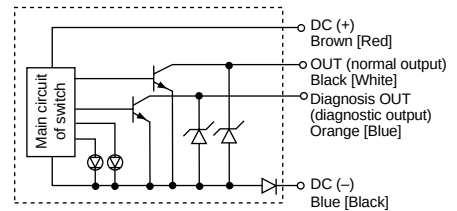
**D-G5NTL**



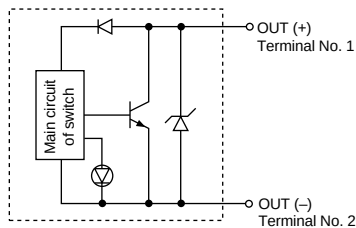
**D-H7B, D-H7C**



**D-H7LF**



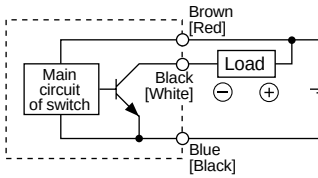
**D-K39, D-K39C**



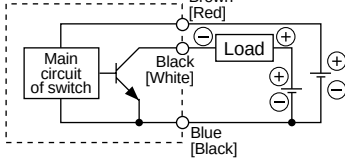
# Hydraulic Cylinder Auto Switch Connections and Examples

## Basic Wiring

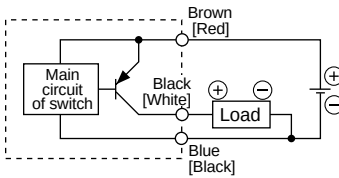
### Solid state 3-wire, NPN



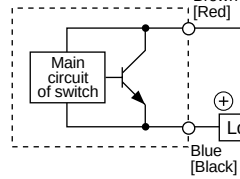
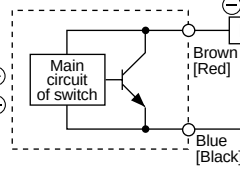
(Power supplies for switch and load are separate.)



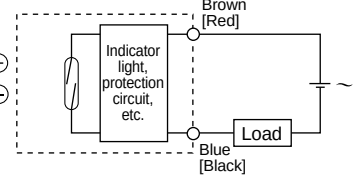
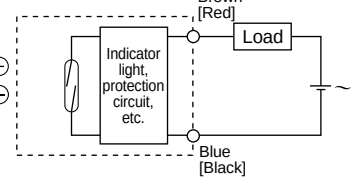
### Solid state 3-wire, PNP



### Solid state 2-wire

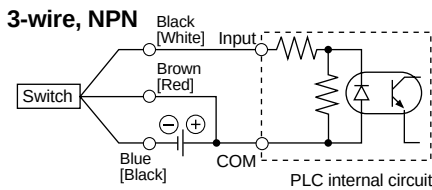


### Reed switch 2-wire

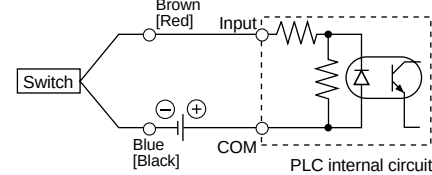


## Examples of Connection to PLC

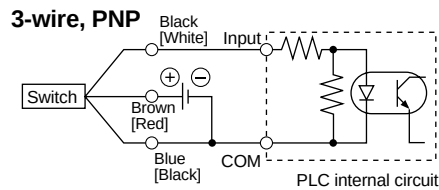
### Sink input specifications



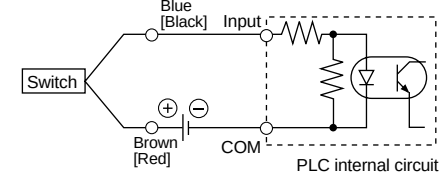
### 2-wire



### Source input specifications



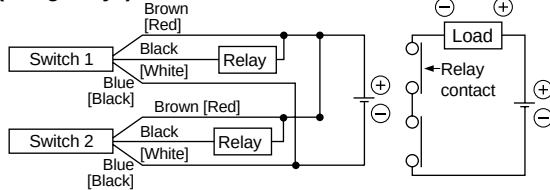
### 2-wire



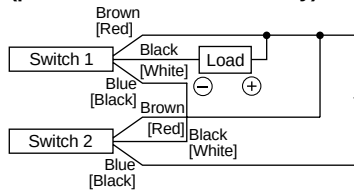
The connection method will vary depending on the PLC input specifications. Connect accordingly.

## Connection Examples for AND (Series) and OR (Parallel)

### 3-wire AND connection for NPN output (using relays)

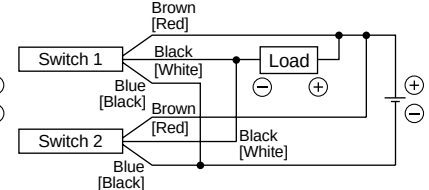


### AND connection for NPN output (performed with switches only)

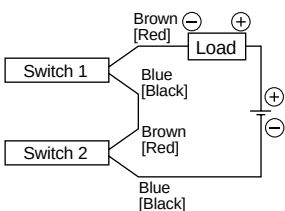


The indicator lights will light up when both switches are turned ON.

### OR connection for NPN output



### 2-wire with 2-switch AND connection

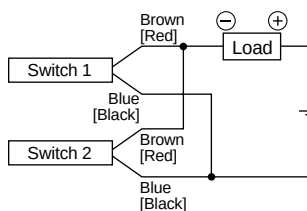


When 2 switches are connected in series, the load may malfunction because the load voltage will decline when in the ON state. The indicator lights will light up when both of the switches are in the ON state.

$$\begin{aligned} \text{Load voltage at ON} &= \text{Power supply voltage} - \text{Residual voltage} \times 2 \text{ pcs.} \\ &= 24\text{V} - 4\text{V} \times 2 \text{ pcs.} \\ &= 16\text{V} \end{aligned}$$

Example: Power supply is 24VDC.  
Internal voltage drop in switch is 4V.

### 2-wire with 2-switch OR connection



<Solid state>

When 2 switches are connected in parallel, malfunction may occur because the load voltage will increase when in the OFF state.

<Reed switch>

Because there is no current leakage, the load voltage will not increase when turned OFF. However, depending on the number of switches in the ON state, the indicator lights may sometimes grow dim or not light up because of the dispersion and reduction of current flowing to the switches.

$$\begin{aligned} \text{Load voltage at OFF} &= \text{Leakage current} \times 2 \text{ pcs.} \times \text{Load impedance} \\ &= 1\text{mA} \times 2 \text{ pcs.} \times 3\text{k}\Omega \\ &= 6\text{V} \end{aligned}$$

Example: Load impedance is 3k $\Omega$ .  
Leakage current from switch is 1mA.

## Bore Size Selection

### Relationship among generated force, bore size and pressure

A cylinder's generated force will be lower than the theoretical output due to the following factors.

- (1) Sliding resistance on the cylinder bearings, seals, etc.
- (2) Pressure loss in hydraulic equipment and piping
- (3) Frictional resistance in moving parts of machinery

It is necessary to select bore sizes considering these factors.

When a cylinder is nearly at rest, the relation of generated force, bore size and pressure can be expressed with the following formulas.

$$\begin{aligned} F_{p1} &= \mu_1 \times F_{f1} \dots \dots \dots \text{Formula (1)} \\ F_{p2} &= \mu_2 \times F_{f2} \dots \dots \dots \text{Formula (2)} \\ F_{f1} &= \frac{\pi}{4} D^2 \times P \dots \dots \dots \text{Formula (3)} \\ F_{f2} &= \frac{\pi}{4} (D^2 - d^2) \times P \dots \dots \dots \text{Formula (4)} \end{aligned}$$

$F_{p1}$ : Generated extension force of cylinder (N)  
 $F_{p2}$ : Generated retraction force of cylinder (N)  
 $F_{f1}$ : Theoretical extension output (N)  
 $F_{f2}$ : Theoretical retraction output (N)  
 $P$ : Operating pressure (MPa)  
 $D$ : Bore size (mm)  
 $d$ : Piston rod diameter (mm)  
 $\mu_1$ : Cylinder extension load pressure coefficient 0.9  
 $\mu_2$ : Cylinder retraction load pressure coefficient 0.9

### Selection standards

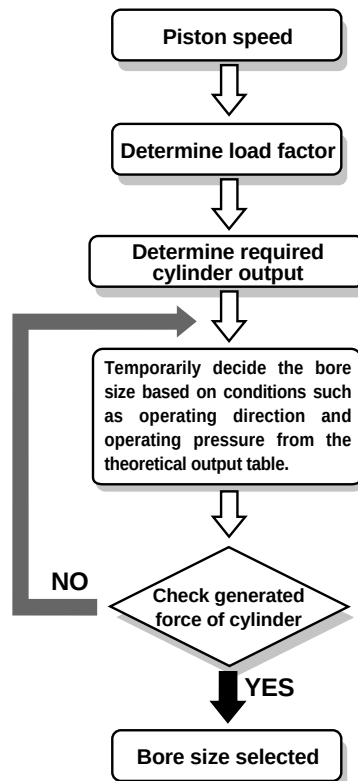
The ratio of the load to the theoretical output is the load factor. It is imperative to understand the relationship between this load factor and the piston speed in order to make the proper bore size selection. Use the table below as a guide for understanding the correlation between load factor and piston speed.

| Piston speed (mm/s) | Maximum load factor |
|---------------------|---------------------|
| 8 to 100            | 70%                 |
| 101 to 200          | 30%                 |
| 201 to 300          | 10%                 |

### Example

To find the cylinder bore size that is required to operate:

- On a load weight of 1000N.
- With operating pressure of 5MPa, and
- The operating piston speed when the cylinder is extended at 150mm/s.



150mm/s (initial condition)

30% (from the table above)

Load weight: 1000N, Load factor: 30%  
 Required cylinder output:  $F = 1000/0.3 = 3333(N)$

According to the theoretical output table, the bore size that satisfies the required cylinder output  $F$  with operating pressure 5MPa when the operating direction is OUT is  $\phi 32$ .

$$\text{Formula (1)} \quad F_{p1} = \mu_1 \times F_{f1} = 0.9 \times 4020 = 3618(N) > F(3333N)$$

## Series CHN Theoretical Output



Unit: N

| Bore size (mm) | Rod size (mm) | Operating direction | Piston area (mm <sup>2</sup> ) | Operating pressure (MPa) |      |      |      |
|----------------|---------------|---------------------|--------------------------------|--------------------------|------|------|------|
|                |               |                     |                                | 1                        | 3    | 5    | 7    |
| 20             | 10            | OUT                 | 314                            | 314                      | 942  | 1570 | 2198 |
|                |               | IN                  | 235                            | 235                      | 705  | 1175 | 1645 |
| 25             | 12            | OUT                 | 490                            | 490                      | 1470 | 2450 | 3430 |
|                |               | IN                  | 377                            | 377                      | 1131 | 1885 | 2639 |
| 32             | 16            | OUT                 | 804                            | 804                      | 2412 | 4020 | 5628 |
|                |               | IN                  | 603                            | 603                      | 1809 | 3015 | 4221 |
| 40             | 18            | OUT                 | 1256                           | 1256                     | 3768 | 6280 | 8792 |
|                |               | IN                  | 1002                           | 1002                     | 3006 | 5010 | 7014 |

## Stroke Selection (Maximum Usable Stroke Based on Buckling Strength)

Refer to stroke range limit charts regarding rod buckling due to load weight.

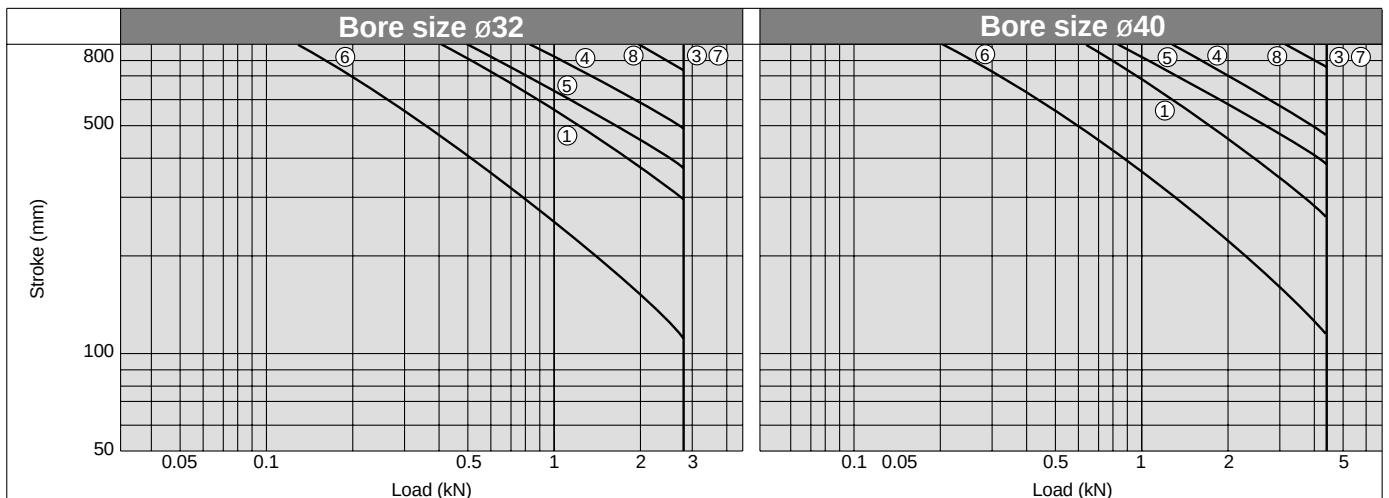
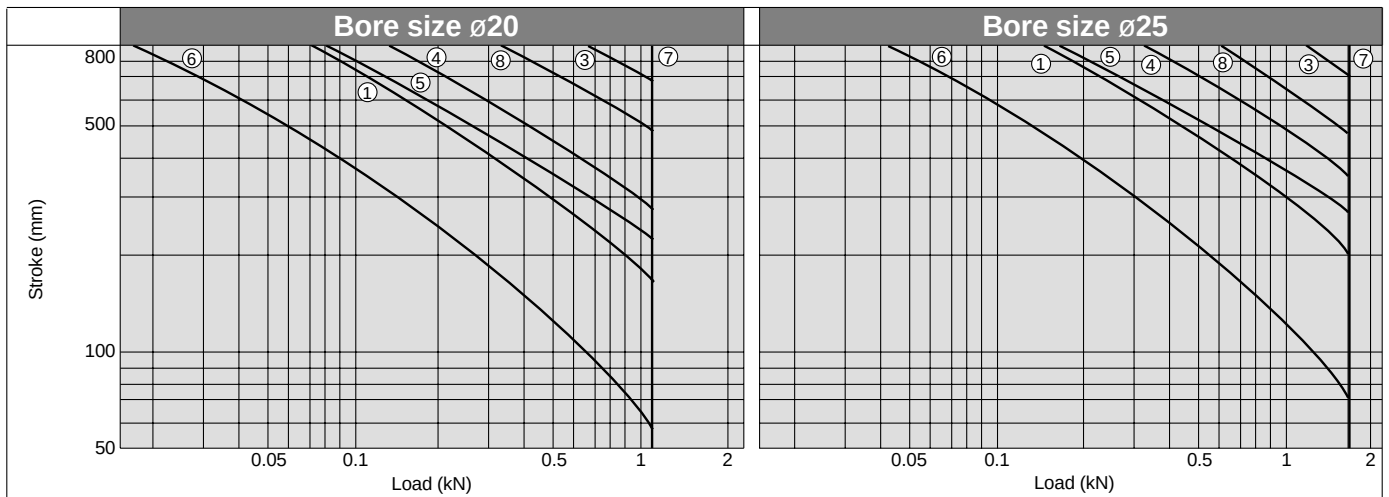
The values in these tables indicate the maximum stroke that can be used in a situation when air is being supplied while the cylinder is stopped in an intermediate position by a) an external force acting on

the piston rod and/or b) by an external stopper.

Since the maximum usable stroke varies depending on the diameter of the piston rod and operating conditions, verify the applicability using the stroke range limit charts.

### Series CHN Stroke range limit charts: Bore size $\varnothing 20$ , $\varnothing 25$ , $\varnothing 32$ , $\varnothing 40$

| Symbol | Mounting orientation | Symbol | Mounting orientation | Symbol | Mounting orientation | Symbol | Mounting orientation |
|--------|----------------------|--------|----------------------|--------|----------------------|--------|----------------------|
| ①      |                      | ③      |                      | ③      |                      | ③      |                      |
| ④      |                      |        |                      | ⑤      |                      | ⑥      |                      |
| ⑦      |                      | ⑦      |                      | ⑧      |                      |        |                      |

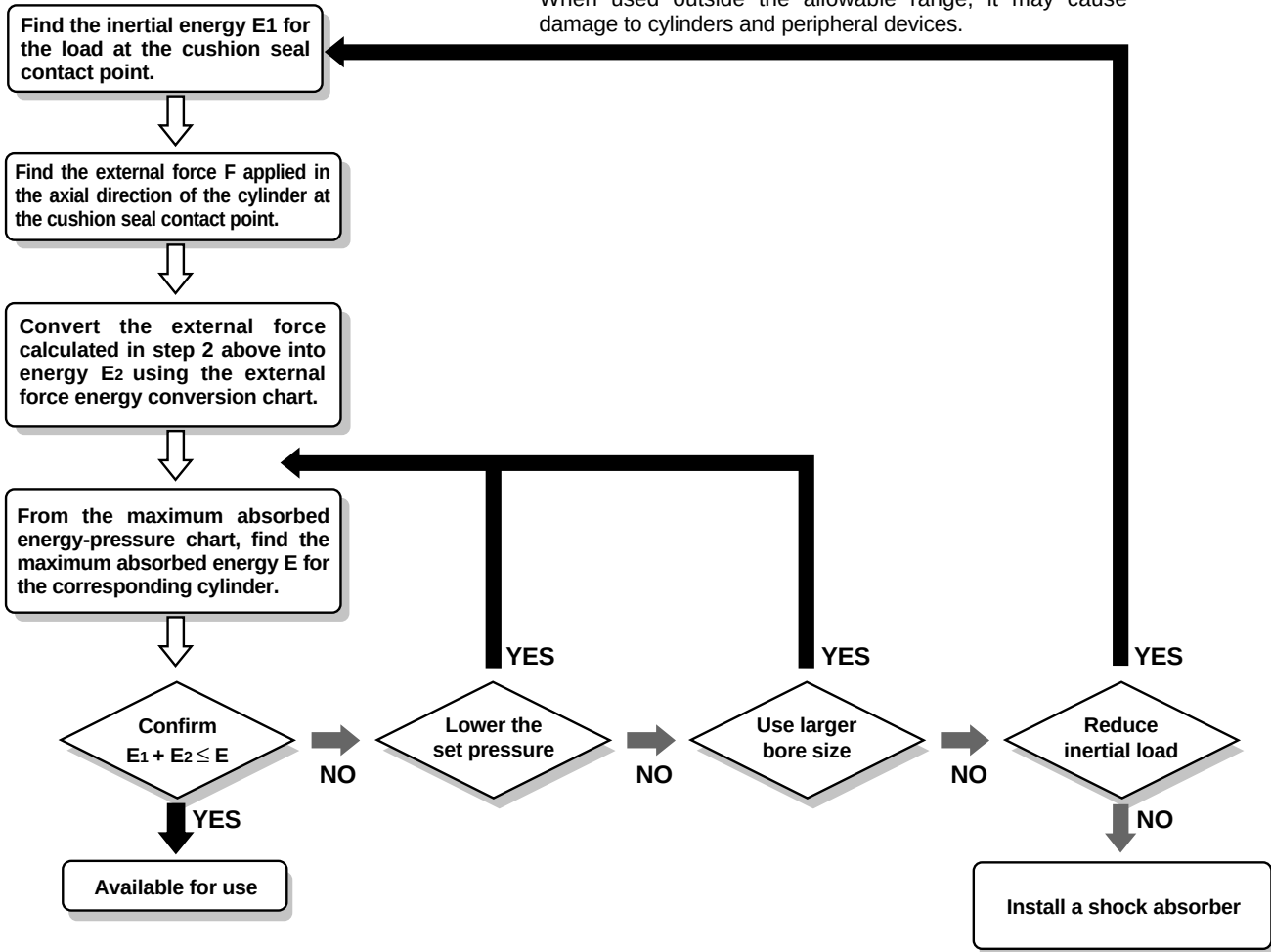


## Cylinder Cushion Selection

### Procedure

### Caution

Use a cylinder cushion within the maximum absorbed energy range.  
When used outside the allowable range, it may cause damage to cylinders and peripheral devices.



### Calculation Example

<Design conditions>

Cylinder: CHN25

Set pressure P1: 5MPa

Load weight M: 50kg

Piston speed V: 0.3m/s (at the cushion seal contact point)

Load transfer direction: Downward  $\theta$ : 30°

(External force applied to the cylinder is gravity only).

Operating direction: Out

Gravitational acceleration g: 9.8m/s<sup>2</sup>

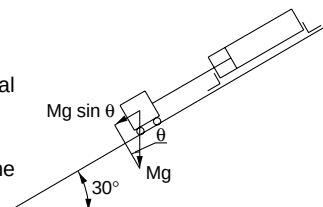
<Calculation>

1. Load inertial energy E1 at the cushion seal contact point

$$E_1 = MV^2/2 = 50 \times 0.3^2/2 = 2.25\text{J}$$

2. External force F applied in axial direction of the cylinder at the cushion seal contact point

$$F = Mg \sin \theta = 50 \times 9.8 \times \sin 30^\circ = 245\text{N}$$



3. Convert the external force calculated in step 2 into energy E2.

In the "External force and energy conversion chart" on page 22, draw a vertical line from the value of F (= 245N). The point where this line intersects with the diagonal line (0.27J) is the energy caused by external force.

$$E_2 = 0.27\text{J}$$

4. Find the maximum absorbed energy E for a cylinder.

In the "Maximum absorbed energy and pressure chart" on page 22, draw a vertical line from the set pressure 5MPa. The point where this line intersects with the line for  $\phi 25$  (3.7J) is the maximum absorbed energy.

$$E = 3.7\text{J}$$

5. Confirm that  $E_1 + E_2 \leq E$

$$E_1 + E_2 = 2.25 + 0.27 = 2.52\text{J}$$

$$\text{Since } E = 3.7\text{J}, E_1 + E_2 \leq E$$

Therefore, the cylinder cushion is available for use.

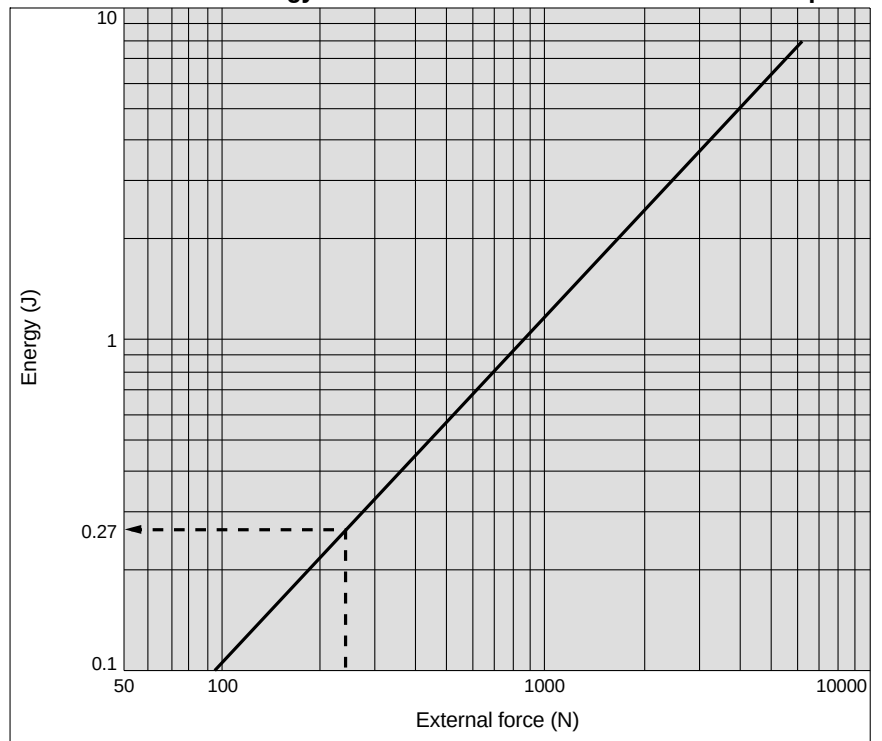
# Technical Data 3-2

## Maximum Absorbed Energy Chart & External Force and Energy Conversion Chart at Cushion Seal Contact Point

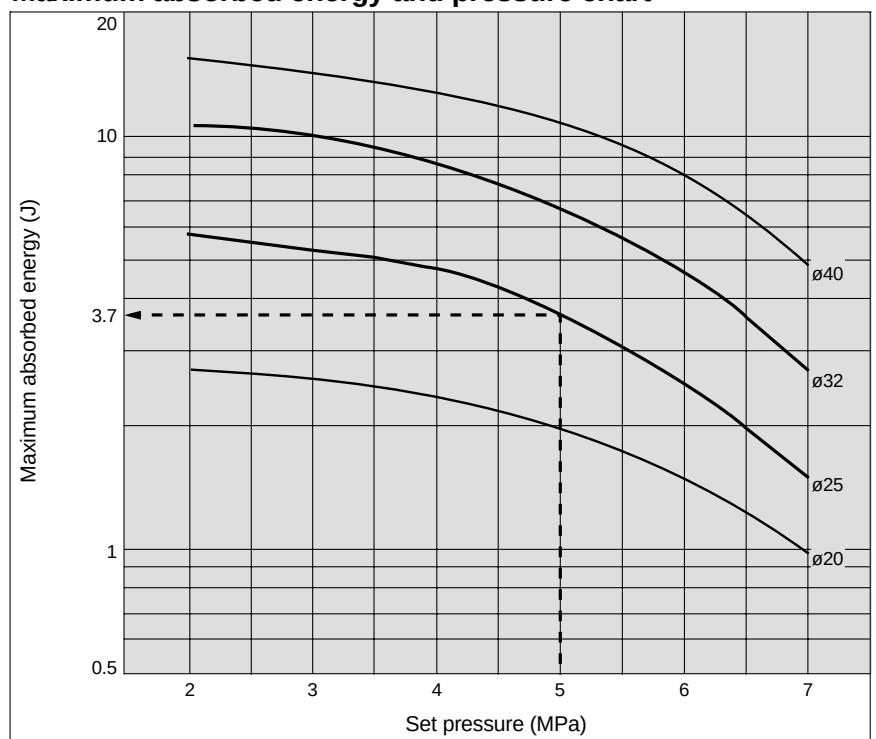
### Maximum absorbed energy pressure and chart in terms of cushion performance characteristics

Be sure to keep the combined values of kinetic energy of the load operated by the cylinder and the energy generated by the external force within the values that are shown in the bottom chart.

### External force and energy conversion chart at cushion seal contact point



### Maximum absorbed energy and pressure chart



## Piston Speed, Required Fluid Volume, and Piping Size Selection

This information is intended to help you find the required fluid volume and piping size to operate a cylinder at a specified speed.

### Relationship between piston speed and fluid volume

$$Q_1 = \frac{\pi}{4} D^2 \cdot v \cdot \frac{6}{1000} \dots\dots\dots \text{Formula (1)}$$

$$Q_2 = \frac{\pi}{4} (D^2 - d^2) \cdot v \cdot \frac{6}{1000} \dots\dots\dots \text{Formula (2)}$$

Q<sub>1</sub> : Required fluid volume for extension (l/min)  
 Q<sub>2</sub> : Required fluid volume for retraction (l/min)  
 D : Bore size (cm)  
 d : Piston rod diameter (cm)  
 v : Piston speed (mm/s)

In general, it is necessary to select a piping diameter that will not allow the fluid flow velocity to exceed the values shown in the chart below.

If the fluid flow velocity exceeds this value, turbulent flow and overheating may occur in conjunction with pressure loss.

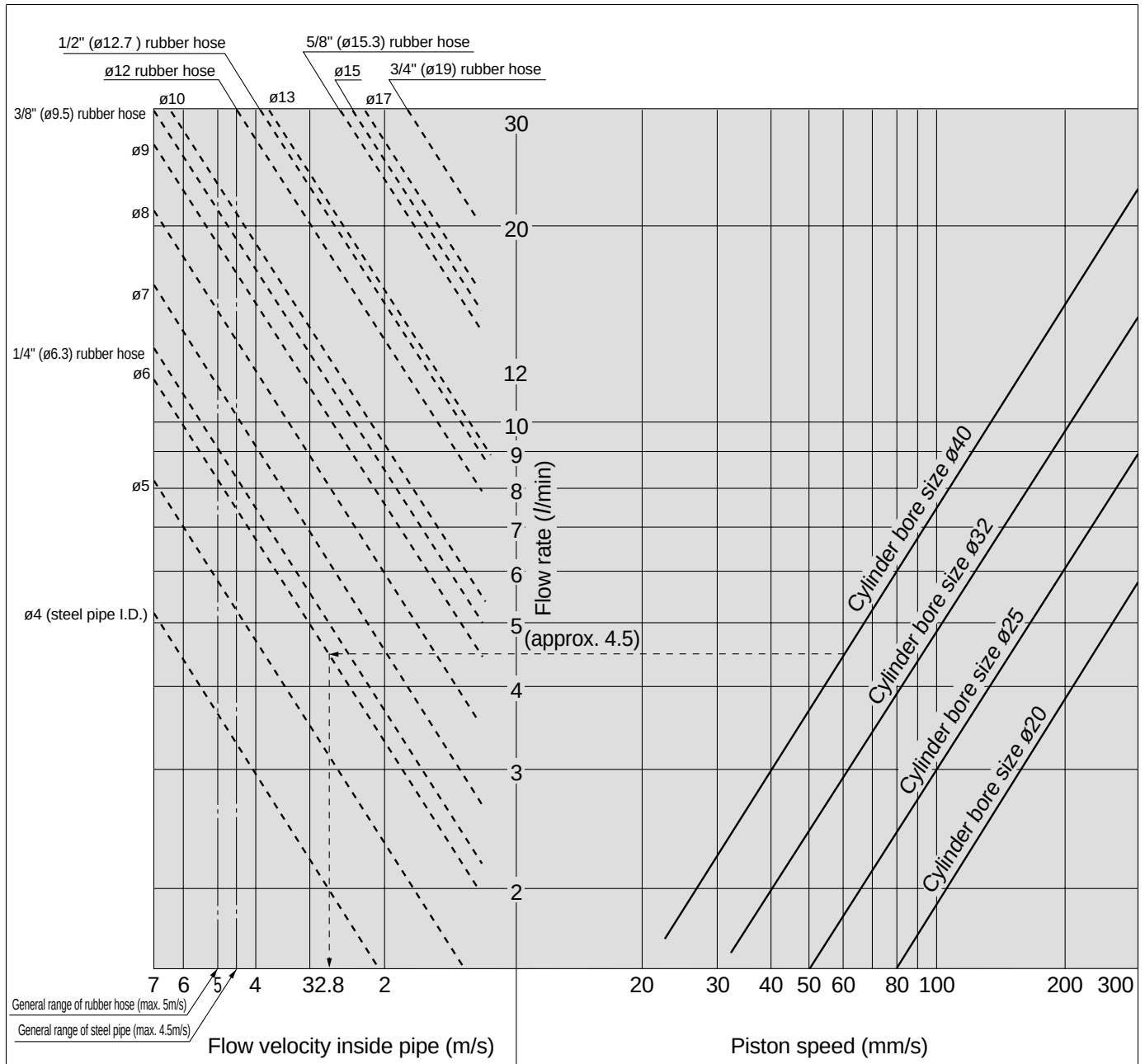
### Effective inside diameter of piping

$$V = \frac{Q}{\frac{\pi}{4} d_{in}^2 \times 10^{-3}} \cdot \frac{1}{60} \dots\dots\dots \text{Formula (3)}$$

V : Fluid flow velocity (m/s)  
 Q : Fluid volume (l/min)  
 d<sub>in</sub> : Effective inside diameter of piping (mm)

### Fluid flow velocity

|              |        |
|--------------|--------|
| Rubber hose  | 5m/s   |
| Steel piping | 4.5m/s |



How to read the chart:

Example) The required flow rate to operate a ø40 cylinder at a speed of 60mm/s is approximately 4.5l/min.

When a ø6 (I.D.) steel pipe is used for piping, the flow velocity in the piping will be approximately 2.7m/s.



*Series CHN*

# Safety Instructions

These safety instructions are intended to prevent a hazardous situation and/or equipment damage. These instructions indicate the level of potential hazard by a label of "**Caution**", "**Warning**", or "**Danger**". To ensure safety, be sure to observe ISO 4413 Note 1), JIS B 8361 Note 2) and other safety practices.

**⚠ Caution :** Operator error could result in injury or equipment damage.

**⚠ Warning :** Operator error could result in serious injury or loss of life.

**⚠ Danger :** In extreme conditions, there is a possible result of serious injury or loss of life.

Note 1) ISO 4413: Hydraulic fluid power — General rules for the application of equipment to transmission and control systems

Note 2) JIS B 8361: General Rules for Hydraulic Equipment

## **⚠ Warning**

**1. The compatibility of hydraulic cylinders is the responsibility of the person who designs the hydraulic system or decides its specifications.**

Since the products specified here are used in various operating conditions, their compatibility with the specific hydraulic system must be based on specifications or after analysis and/or tests to meet your specific requirements.

**2. Only trained personnel should operate hydraulic machinery and equipment.**

Oil hydraulics can be dangerous if an operator is unfamiliar with it. Assembly, handling, or repair of hydraulic systems should be performed by trained and experienced operators.

**3. Do not service machinery/equipment or attempt to remove components until safety is confirmed.**

1. Inspection and maintenance of machinery/equipment should only be performed after confirmation of safe locked-out control positions.
2. When equipment is to be removed, confirm the safety process as mentioned above. Cut the oil supply pressure and electric power for this equipment and confirm that there is no pressure in the system.
3. Before machinery/equipment is restarted, take measures to prevent shooting-out of cylinder piston rod, etc., and proceed with caution.

**4. Contact SMC if the product is to be used in any of the following conditions:**

1. Conditions and environments beyond the given specifications, or if product is used outdoors.
2. Installation on equipment in conjunction with atomic energy, railway, air navigation, vehicles, medical equipment, food and beverages, recreation equipment, emergency stop circuits, press applications, or safety equipment.
3. An application which has the possibility of having negative effects on people, property, or animals, and therefore requires special safety analysis.





## Design

### Warning

1. There is a danger of sudden erratic action by air cylinders if sliding parts of machinery are twisted, causing changes in forces to occur.

In such cases, human injury may occur, e.g., by catching hands or feet in the machinery, or damage to the machinery itself may occur. Therefore, the machine should be adjusted to operate smoothly and designed to prevent such dangers.

2. A protective cover is recommended to minimize the risk of personal injury.

If driven objects and moving parts of a cylinder pose a likely threat of personal injury, design the structure to avoid direct human contact with that area.

3. Securely tighten all of the cylinder's stationary parts and connected parts so that they will not become loose.

Especially when a cylinder operates with high frequency or is installed where there is a lot of vibration, ensure tightening so that all parts remain secure.

4. Cases when a deceleration circuit or shock absorber may be required

When a driven object is operated at high speed or the load is heavy, a cylinder's cushion will most likely not be sufficient to absorb the impact. Install a deceleration circuit to reduce the speed before cushioning, or install an external shock absorber to relieve the impact. In this case, the rigidity of the machinery should also be examined.

5. Take into account a possible drop in circuit pressure due to a power outage.

When the cylinder is used as a clamping mechanism, there is a danger of work pieces dropping out of it if there is a decrease in clamping force due to a drop in circuit pressure caused by a power outage. Therefore, safety equipment should be installed to prevent damage to machinery and human injury. Also apply drop prevention measures to suspension mechanisms and lifting devices.

6. Take into account a possible loss of power supply.

Measures should be taken to protect against human injury and equipment damage in the event that there is a loss of power to equipment controlled by air pressure, electricity, or hydraulics.

7. Design circuitry to prevent sudden lurching of driven objects.

When hydraulic pressure in a cylinder is zero, the driven object will lurch at high speed if pressure is applied to one side of the piston. Therefore, equipment should be selected and circuits designed to prevent sudden lurching because there is a danger of human injury and/or damage to equipment when this occurs.

8. Take into account emergency stops.

Design the system so that human injury and/or damage to machinery and equipment will not occur when machinery is stopped by a manual emergency stop or a safety device triggered by abnormal conditions such as a power outage.

## Design

### Warning

9. Consider the action of the system when operation is restarted after an emergency stop or abnormal stop.

Design machinery so that human injury or equipment damage will not occur upon restart of operation. In the case that the cylinder needs to be reset at the starting position, install safe manual control equipment.

## Selection

### Warning

1. Confirm the specifications.

The products featured in this catalog are designed strictly for use in industrial oil hydraulic system applications. If the products are used in conditions that are outside the range of pressure and temperature specifications, damage and/or malfunction may occur. Do not use in these conditions. (Refer to specifications.)

Consult with SMC if a fluid other than hydraulic fluid is to be used.

2. Intermediate stops

Since hydraulic cylinders are not guaranteed for zero oil leakage, it may not be possible to hold a stopped position for an extended period of time.

3. Take surge pressure into consideration.

Use cylinders which can withstand the surge pressures (maximum allowable pressure) generated in hydraulic systems. (Refer to specifications.)

Inside cylinders, pressure may be generated that is higher than the set pressure for the relief valve, e.g., internal pressure due to load inertia or surge pressure when switching valves.

Consider these factors and determine the operating pressure so that the pressure generated inside cylinders will be within the maximum allowable pressure.

**Pressure terminology used in this catalog is defined as follows:**

**Nominal pressure:** Pressure assigned to a cylinder for convenient identification. It is not necessarily the same as the operating pressure which guarantees performance under specified conditions.

**Maximum allowable pressure:** The maximum allowable value for the pressure that is generated inside cylinders (such as surge pressure).

**Proof pressure:** Test pressure that the cylinder must be able to withstand without lowering system performance when returning to the nominal pressure.

**Minimum operating pressure:** Minimum pressure at which a horizontally installed cylinder operates with no-load.

4. Take into account compatibility with hydraulic fluids.

| Hydraulic fluid                  | Compatibility  |
|----------------------------------|----------------|
| Standard mineral hydraulic fluid | Compatible     |
| W/O hydraulic fluids             | Compatible     |
| O/W hydraulic fluids             | Compatible     |
| Water/Glycol hydraulic fluids    | *              |
| Phosphate hydraulic fluids       | Not compatible |

\* Consult with SMC.



## Series CHN

# Hydraulic Cylinder Precautions 2

Be sure to read before handling.

### Selection

#### ⚠ Caution

##### 1. Operate within the limits of the maximum stroke.

The piston rod will be damaged if operated beyond the maximum stroke. Refer to the stroke selection on page 20 for maximum strokes.

##### 2. Operate the piston within a range that will prevent impact damage from occurring at the stroke end.

Ensure a safety margin so that damage will not occur when the piston, having inertial force, stops by striking the cover at the stroke end.

Take load factors and piston speed on page 19 into consideration and determine the operability by referring to the chart under "Selection Standards".

##### 3. Use a flow control valve to adjust the hydraulic cylinder drive speed, gradually increasing from a low speed to the desired speed setting.

##### 4. Provide intermediate supports for long stroke cylinders.

Provide intermediate supports for cylinders with long strokes to prevent piston rod damage due to sagging of the piston rod, deflection of the tube, vibration, and external loads.

### Mounting

#### ⚠ Caution

##### 1. Make sure to align the axis center of the piston with the load and direction of movement when connecting.

When not properly aligned, twisting of the piston rod and tubing may occur, and damage may be caused due to wear on areas such as the inner tube surface, bushings, piston rod surface and seals.

Allow for decentering of the axis either by aligning the axis center or using a floating joint.

##### 2. When an external guide is used, connect the piston rod end and the load in such a way that there is no interference at any point within the stroke.

##### 3. Do not scratch or gouge the sliding parts of the cylinder tube by striking or grasping it with other objects.

Cylinder bores are manufactured to precise tolerances, so that even a slight deformation may cause faulty operation.

##### 4. Do not use until you can verify that equipment can operate properly.

Following mounting, repairs, or conversions, verify correct mounting by conducting suitable function and leakage tests after piping and power connections have been made.

##### 5. Instruction manual

The product should be mounted and operated only after thoroughly reading the manual and understanding its contents.

Keep the instruction manual readily available for easy reference as needed.

### Piping

#### ⚠ Caution

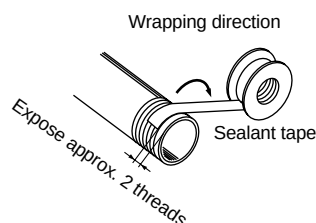
##### 1. Preparation before piping

Before piping is connected, it should be thoroughly flushed out with air or water to remove chips, cutting oil and other debris.

##### 2. Wrapping of sealant tape

When screwing together pipes and fittings, be certain that chips from the pipe threads and sealing material do not get inside the piping.

Also, when sealant tape is used, leave 1.5 to 2 thread ridges exposed at the end of the threads.



##### 3. Set up so that air cannot accumulate inside piping.

### Cushion

#### ⚠ Caution

##### 1. Readjust using the cushion needle.

Cushions are adjusted at the time of shipment. However, the cushion needle on the cover should be readjusted when the product is put into service, based on factors such as the size of the load and the operating speed. When the cushion needle is turned clockwise, the restriction becomes smaller and the cushion's effectiveness is increased.

##### 2. Do not operate with the cushion needle fully closed.

This will contribute to the generation of surge pressure, and the cylinder or equipment can be damaged.

### Air Release

#### ⚠ Caution

##### 1. Operate after opening the air release valve and completely releasing any internal air.

Residual air can cause a malfunction.

##### 2. When adjusting the air release, do not loosen the plug too much.

Use caution, since loosening the plug too much may cause it to fly out or fluid to blow out, posing a danger of human injury.



## Series CHN

# Hydraulic Cylinder Precautions 3

Be sure to read before handling.

### Hydraulic Fluid

#### Warning

##### 1. Use clean fluid.

Do not use deteriorated fluid or fluid containing foreign matter, moisture or corrosive additives, as this can cause the malfunction and damage or corrosion of parts.

#### Caution

##### 1. Install hydraulic fluid filters.

Provide your hydraulic system with hydraulic fluid filters with a filtration degree of 10mm or finer.

Refer to SMC's hydraulic filter specifications.

##### 2. Use the product within the specified range of fluid and ambient temperature.

Take measures to prevent freezing, since moisture in hydraulic fluid will freeze at 0°C or below, and this may cause damage to seals and lead to a malfunction.

##### 3. Use hydraulic fluid with a viscosity grade equivalent to ISO VG32 or VG46.

### Operating Environment

#### Warning

##### 1. Do not use in environments where there is a danger of corrosion.

Refer to the construction drawings for cylinder materials.

##### 2. Install a protective cover if the product is to be used in a dusty environment or where it will be exposed to chips and spatter.

### Maintenance

#### Warning

##### 1. Perform maintenance according to the procedures indicated in the instruction manual.

Improper handling and maintenance may cause malfunctioning and damage of machinery or equipment to occur.

##### 2. Removal of equipment

When machinery is removed, first ensure that there are measures in place to prevent the fall or sudden, erratic movement of driven objects and equipment. Then cut off the air supply and electric power, and reduce the pressure in the system to zero.

When machinery is restarted, proceed with caution after confirming measures to prevent cylinder lurching.

#### Caution

##### 1. Perform periodic maintenance on filters installed in a hydraulic system in order to keep the fluid clean.

If the fluid used in hydraulic cylinders contains foreign matter, parts such as the piston seals and rod seals will be damaged.



## Series CHN

# Auto Switch Precautions 1

Be sure to read before handling.

### Design and Selection

## Warning

### 1. Confirm the specifications.

Read the specifications carefully and use this product appropriately. The product may be damaged or malfunction if it is used outside the range of specifications for current load, voltage, temperature, or impact.

### 2. Take precautions when cylinders are used close together.

When two or more cylinders with auto switches are lined up in close proximity to each other, magnetic field interference may cause the switches to malfunction. Maintain a minimum cylinder separation of 40mm.

### 3. Monitor the length of time that a switch is ON at an intermediate stroke position.

When an auto switch is placed at an intermediate position of the stroke and a load is driven at the time the piston passes, the auto switch will operate, but if the speed is too great the operating time will be shortened and the load may not move properly. The maximum detectable piston speed is:

$$V(\text{mm/s}) = \frac{\text{Auto switch operating range (mm)}}{\text{Load operating time (ms)}} \times 1000$$

In case of a high piston speed, it is possible to extend the operating time of the load by using an auto switch (G5NT) with a built-in off delay timer (approximately 200ms).

### 4. Keep wiring as short as possible.

<Reed switches>

As the length of the wiring to a load gets longer, the rush current at switching ON becomes greater, and this may shorten the product's life. (The switch will stay ON all the time.)

- 1) For an auto switch without a contact protection circuit, use a contact protection box when the wire length is 5m or longer.
- 2) Even when an auto switch has a built-in contact protection circuit, if the lead wire length is 30m or more, the rush current cannot be adequately absorbed and the life of the switch may be shortened. Contact SMC, as it is also necessary in this case to connect a contact protection box to extend the switch life.

<Solid state switches>

- 3) Although wire length should not affect switch function, use a wire 100m or shorter.

### 5. Monitor the internal voltage drop of the switch.

<Reed switches>

- 1) Switches with an indicator light

- If auto switches are connected in series as shown below, take note that there will be a large voltage drop because of internal resistance in the light emitting diodes. (Refer to internal voltage drop in the auto switch specifications.)

[The voltage drop will be "n" times larger when "n" auto switches are connected.]

Even though an auto switch operates normally, the load may not move.



- Similarly, when operating below a specified voltage, although an auto switch may operate normally, the load may not operate. Therefore, the formula below should be satisfied after confirming the minimum operating voltage of the load.

$$\text{Supply voltage} - \text{Internal voltage drop of switch} > \text{Minimum operating voltage of load}$$

- 2) If the internal resistance of a light emitting diode causes a problem, select a switch without an indicator light (D-C80□ or D-B64).

<Solid state switch>

- 3) Generally, the internal voltage drop will be greater with a 2-wire solid state auto switch than with a reed switch. Take the same precautions as in 1).

Also, note that a 12VDC relay is not applicable.

### 6. Be careful of leakage current.

<Solid state switch>

With a 2-wire solid state auto switch, current (leakage current) flows to the load to operate the internal circuit even when in the OFF state.

$$\text{Operating current of load (OFF condition)} > \text{Leakage current}$$

If the condition given in the above formula is not met, it will not reset correctly (stays ON). Use a 3-wire switch if this specification cannot be satisfied.

Moreover, leakage current flow to the load will be "n" times larger when "n" auto switches are connected in parallel.

### 7. Do not use a load that generates surge voltage.

<Reed switches>

If driving a load such as a relay that generates surge voltage, use a switch with a built-in contact protection circuit or a contact protection box.

<Solid state switch>

Although a zener diode for surge protection is connected at the output side of a solid state auto switch, damage may still occur if the surge is applied repeatedly. When a load, such as a relay or solenoid, which generates surge is directly driven, use a type of switch with a built-in surge absorbing element.

### 8. Cautions for use in an interlock circuit

When an auto switch is used for an interlock signal requiring high reliability, devise a double interlock system to avoid trouble by providing a mechanical protection function, or by also using another switch (sensor) together with the auto switch.

Also perform periodic maintenance and confirm proper operation.

### 9. Ensure sufficient clearance for maintenance activities.

When designing an application, be sure to allow sufficient clearance for maintenance and inspections.



# Series CHN Auto Switch Precautions 2

Be sure to read before handling.

## Mounting and Adjustment

### Warning

#### 1. Do not drop or bump.

Do not drop, bump or apply excessive impacts (300m/s<sup>2</sup> or more for reed switches and 1000m/s<sup>2</sup> or more for solid state switches) while handling. Although the external body of the switch (switch case) may not be damaged, the inside of the switch could be damaged and cause a malfunction.

#### 2. Do not carry a cylinder by the auto switch lead wires.

Never carry a cylinder table by its lead wires, as this may not only cause broken lead wires, but it may cause internal elements of the switch to be damaged by the stress.

#### 3. Mount switches using the proper tightening torque.

When a switch is tightened beyond the range of tightening torque, the mounting screws, mounting bracket, or switch may be damaged. On the other hand, tightening below the range of tightening torque may cause the switch to slip out of position. (Refer to pages 12 through 17 for detailed auto switch specifications.)

#### 4. Mount a switch at the center of the operating range.

Adjust the mounting position of an auto switch so that the piston stops at the center of the operating range (the range in which a switch is ON). (The mounting positions shown in the catalog indicate the optimum positions at stroke end.) If mounted at the end of the operating range (around the borderline of ON and OFF), operation may be unstable.

## Wiring

### Warning

#### 1. Avoid repeatedly bending or stretching lead wires.

Broken lead wires will result from installation or applications that repeatedly apply bending stress or stretching force to the lead wires.

#### 2. Be sure to connect the load before power is applied.

<2-wire type>

If the power is turned ON when an auto switch is not connected to a load, the switch will be instantly damaged because of excess current.

#### 3. Confirm proper insulation of wiring.

Be certain that there is no faulty wiring insulation (such as contact with other circuits, ground fault, or improper insulation between terminals). Damage may occur due to excess current flow into a switch.

#### 4. Do not wire with power lines or high voltage lines.

Wire separately from power lines or high voltage lines, avoiding parallel wiring or wiring in the same conduit with these lines. Control circuits containing auto switches may malfunction due to noise from these other lines.

## Wiring

### Warning

#### 5. Do not allow short circuit of loads.

<Reed switches>

If the power is turned ON with a load in a short circuited condition, the switch will be instantly damaged because of excess current flow into the switch.

<Solid state switch>

D-J51 and all models of PNP output type switches do not have built-in short circuit protection circuits. As in the case of reed switches, if loads are short circuited, the switches will be instantly damaged.

\* Take special care to avoid reverse wiring with the brown [red] power supply line and the black [white] output line on 3-wire type switches.

#### 6. Avoid incorrect wiring.

<Reed switches>

\* A 24VDC switch with indicator light has polarity. The brown [red] lead wire or terminal No.1 is (+), and the blue [black] lead wire or terminal No. 2 is (-).

1) If connections are reversed, the switch will still operate, but the light emitting diode will not light up.

Also note that a current greater than specified will damage a light emitting diode and make it inoperable.

Applicable models: D-A33, D-A34, D-A44, D-C73□, D-B53, D-B54

2) Note however, in the case of 2-color display type auto switch (D-B59W), if the wiring is reversed, the switch will be in a normally ON condition.

<Solid state switches>

1) Even if connections are reversed on a 2-wire type switch, the switch will not be damaged because it is protected by a protection circuit, but it will remain in a normally ON state. But reverse wiring in a load short circuit condition should be avoided to protect the switch from being damaged.

\*2) Even if (+) and (-) power supply line connections are reversed on a 3-wire type switch, the switch will be protected by a protection circuit. However, if the (+) power supply line is connected to the blue [black] wire and the (-) power supply line is connected to the black [white] wire, the switch will be damaged.

#### \* Lead wire color changes

Lead wire colors of SMC switches have been changed in order to meet NECA Standard 0402 for production beginning September, 1996 and thereafter. Please refer to the tables provided.

Special care should be taken regarding wire polarity during the time that the old colors still coexist with the new colors.

##### 2-wire

|            | Old   | New   |
|------------|-------|-------|
| (+) Output | Red   | Brown |
| (-) Output | Black | Blue  |

##### 3-wire

|                  | Old   | New   |
|------------------|-------|-------|
| (+) Power supply | Red   | Brown |
| Power supply GND | Black | Blue  |
| Output           | White | Black |

##### Solid state with diagnostic output

|                   | Old    | New    |
|-------------------|--------|--------|
| (+) Power supply  | Red    | Brown  |
| Power supply GND  | Black  | Blue   |
| Output            | White  | Black  |
| Diagnostic output | Yellow | Orange |

##### Solid state with latch type diagnostic output

|                              | Old    | New    |
|------------------------------|--------|--------|
| (+) Power supply             | Red    | Brown  |
| Power supply GND             | Black  | Blue   |
| Output                       | White  | Black  |
| Latch type diagnostic output | Yellow | Orange |



## Series CHN

# Auto Switch Precautions 3

Be sure to read before handling.

### Operating Environment

#### Warning

##### 1. Never use in an atmosphere of explosive gases.

The construction of auto switches is not intended to prevent explosion. Never use in an atmosphere with an explosive gas since this may cause a serious explosion.

##### 2. Do not use in an area where a magnetic field is generated.

Auto switches will malfunction or magnets inside cylinders will become demagnetized. (Consult with SMC regarding the availability of a magnetic field resistant auto switches.)

##### 3. Do not use in an environment where the auto switch will be continually exposed to water.

With the exception of some models (D-A3□, D-A44, D-G39□, D-K39□), switches satisfy IEC standard IP67 construction (JIS C 0920: watertight construction). Nevertheless, they should not be used in applications where they are continually exposed to water splash or spray. This may cause deterioration of the insulation or swelling of the potting resin inside switches and may cause a malfunction.

##### 4. Do not use in an environment with oil or chemicals.

Consult with SMC if auto switches will be used in an environment laden with coolants, cleaning solvents, various oils, or chemicals. If auto switches are used under these conditions for even a short time, they may be adversely affected by a deterioration of the insulation, a malfunction due to swelling of the potting resin, or hardening of the lead wires.

##### 5. Do not use in an environment with temperature cycles.

Consult with SMC if switches are to be used where there are temperature cycles other than normal temperature changes, as they may be adversely affected internally.

##### 6. Do not use in an environment where there is excessive impact shock.

<Reed switches>

When excessive impact (300m/s<sup>2</sup> or more) is applied to a reed switch during operation, the contact point may malfunction and generate or cut off a signal momentarily (1ms or less). Consult with SMC regarding the need to use a solid state switch depending on the environment.

##### 7. Do not use in an area where surges are generated.

<Solid state switch>

When there are units (such as solenoid type lifters, high frequency induction furnaces, motors) that generate a large amount of surge in the area around cylinders with solid state auto switches, their proximity or presence may cause deterioration or damage to the internal circuit elements of the switches. Avoid sources of surge generation and crossed lines.

##### 8. Avoid accumulation of iron waste or close contact with magnetic substances.

When a large accumulated amount of ferrous waste such as machining chips or welding spatter, or a magnetic substance (something attracted by a magnet) is brought into close proximity to an cylinder with auto switches, this may cause the auto switches to malfunction due to a loss of the magnetic force inside the cylinder.

### Maintenance

#### Warning

##### 1. Perform the following maintenance practices periodically in order to prevent possible danger due to unexpected auto switch malfunction.

###### 1) Securely tighten switch mounting screws.

If screws become loose or the mounting position is dislocated, retighten them after readjusting the mounting position.

###### 2) Confirm that there is no damage to lead wires.

To prevent faulty insulation, replace switches or repair lead wires if damage is discovered.

###### 3) Confirm that the green light on the 2-color display type switch lights up.

Confirm that the green LED is on when stopped at the set position. If the red LED is on, the mounting position is not appropriate. Readjust the mounting position until the green LED lights up.

### Other

#### Warning

##### 1. Consult with SMC concerning water resistance, elasticity of lead wires and usage at welding sites.

# Гидравлический цилиндр низкого давления

## СНА

Ø40 ~160

- Легкий алюминиевый корпус
- Исполнения с одно- и двусторонним штоком
- Возможность установки датчиков положения
- Регулируемое демпфирование в конце хода

### Технические характеристики

|                                       |                                                                                                                                              |          |
|---------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|----------|
| Среда                                 | Гидравлическая жидкость                                                                                                                      |          |
| Номинальное давление (МПа)            | 3.5                                                                                                                                          |          |
| Испытательное давление (МПа)          | 5.0                                                                                                                                          |          |
| Максимально допустимое давление (МПа) | 3.5                                                                                                                                          |          |
| Минимальное рабочее давление (МПа)    | 0.25                                                                                                                                         |          |
| Рабочая температура (°C)              | Без датчиков положения:                                                                                                                      | -10 ~ 80 |
|                                       | С датчиками положения:                                                                                                                       | -10 ~ 60 |
| Скорость поршня (мм/с)                | 8 ~ 300                                                                                                                                      |          |
| Демпфирование                         | Регулируемое                                                                                                                                 |          |
| Допуск на длину хода (мм)             | (до 100) <sup>+0.8</sup> , (101~250) <sup>+1.0</sup> , (251~630) <sup>+1.25</sup> , (631~1000) <sup>+1.4</sup> , (1000~1500) <sup>+1.8</sup> |          |

### Исполнения

| Модель      | Материал гильзы   | Диаметр цилиндра (мм)         |
|-------------|-------------------|-------------------------------|
| СНА, СНАW   | Алюминиевый сплав | 40, 50, 63, 80, 100           |
| СНАF, СНАFw | Сталь             | 40, 50, 63, 80, 100, 125, 160 |

### Совместимость с гидравлическими жидкостями

| Гидравлическая жидкость    | Совместимость |
|----------------------------|---------------|
| Минеральные гидравл. масла | Совместимы    |
| Эмульсии «Вода в масле»    |               |
| Эмульсии «Масло в воде»    |               |
| Водно-гликолевые жидкости  | Несовместимы  |
| Фосфаты                    |               |

### Путь демпфирования

| Диаметр (мм) | Путь демпфирования (мм) |
|--------------|-------------------------|
| 40, 50       | 15                      |
| 63           | 17                      |
| 80, 100, 125 | 20                      |
| 160          | 22                      |

3.5 МПа



### Стандартные длины хода

| Диаметр цилиндра (мм) | Стандартные длины хода (мм) |                      |
|-----------------------|-----------------------------|----------------------|
|                       | с 1-сторонним штоком        | с 2-сторонним штоком |
| 40                    | 25 ~ 1000                   | 25 ~ 800             |
| 50                    | 25 ~ 1000                   | 25 ~ 800             |
| 63                    | 25 ~ 1000                   | 25 ~ 800             |
| 80                    | 25 ~ 1300                   | 25 ~ 1000            |
| 100                   | 25 ~ 1500                   | 25 ~ 1000            |
| 125                   | 50 ~ 1300                   | 50 ~ 1000            |
| 160                   | 50 ~ 1500                   | 50 ~ 1200            |

### Номер для заказа

СН D A W L 50 - 100

- Тип**
  - Без магнитного кольца
  - D С магнитным кольцом
- Тип крепления**
  - С односторонним штоком
  - W С двусторонним штоком
- Исполнения**
  - Без защиты штока
  - J Нейлон (до 60°C)
  - K Неопределенная ткань (до 110°C)
- Демпфирование**
  - Двусторонний демпфер
  - N Без демпфирования
  - R На выдвижении
  - H На втягивании
- Ход (мм)**  
См. таблицу стандартных ходов
- Диаметр**

|     |        |                    |
|-----|--------|--------------------|
| 40  | 40 мм  | Алюминиевая гильза |
| 50  | 50 мм  |                    |
| 63  | 63 мм  |                    |
| 80  | 80 мм  |                    |
| 100 | 100 мм | Стальная гильза    |
| 125 | 125 мм |                    |
| 160 | 160 мм |                    |
- Материал гильзы**
  - Алюминиевый сплав
  - F Сталь

\*) Только для цилиндров с односторонним штоком

Датчики положения заказываются отдельно.

### Номинальные усилия (Н)

| Диаметр цилиндра (мм) | Диаметр штока (мм) | Направление перемещения | Площадь поршня (мм²) | Рабочее давление (МПа) |       |       |       |       |       |
|-----------------------|--------------------|-------------------------|----------------------|------------------------|-------|-------|-------|-------|-------|
|                       |                    |                         |                      | 1                      | 1.5   | 2     | 2.5   | 3     | 3.5   |
| 40                    | 18                 | ВЫДВИЖЕНИЕ              | 1257                 | 1257                   | 1886  | 2514  | 3143  | 3771  | 4400  |
|                       |                    | ВТЯГИВАНИЕ              | 1002                 | 1002                   | 1503  | 2004  | 2505  | 3006  | 3507  |
| 50                    | 20                 | ВЫДВИЖЕНИЕ              | 1963                 | 1963                   | 2945  | 3926  | 4908  | 5889  | 6871  |
|                       |                    | ВТЯГИВАНИЕ              | 1649                 | 1649                   | 2474  | 3298  | 4123  | 4947  | 5772  |
| 60                    | 22.4               | ВЫДВИЖЕНИЕ              | 3117                 | 3117                   | 4676  | 6234  | 7793  | 9351  | 10910 |
|                       |                    | ВТЯГИВАНИЕ              | 2723                 | 2723                   | 4085  | 5446  | 6808  | 8169  | 9531  |
| 80                    | 28                 | ВЫДВИЖЕНИЕ              | 5027                 | 5027                   | 7541  | 10054 | 12568 | 15081 | 17595 |
|                       |                    | ВТЯГИВАНИЕ              | 4411                 | 4411                   | 6617  | 8822  | 11028 | 13233 | 15439 |
| 100                   | 35.5               | ВЫДВИЖЕНИЕ              | 7854                 | 7854                   | 11781 | 15708 | 19636 | 23562 | 27489 |
|                       |                    | ВТЯГИВАНИЕ              | 6864                 | 6864                   | 10296 | 13728 | 17160 | 20592 | 24024 |
| 125                   | 35.5               | ВЫДВИЖЕНИЕ              | 12272                | 12272                  | 18408 | 24544 | 30680 | 36816 | 42952 |
|                       |                    | ВТЯГИВАНИЕ              | 11282                | 11282                  | 16923 | 22564 | 28205 | 33846 | 39487 |
| 160                   | 45                 | ВЫДВИЖЕНИЕ              | 20106                | 20106                  | 30159 | 40212 | 50265 | 60318 | 70371 |
|                       |                    | ВТЯГИВАНИЕ              | 18516                | 18516                  | 27774 | 37032 | 46290 | 55548 | 64806 |

### Массы цилиндров (кг)

#### СНА (встроенный магнит)

##### Пример расчета для СНА50-100

- базовая масса 2.9 (крепление на лапах, Ø50)
- дополнительная масса 0.07/10 мм хода
- ход штока 100 мм

$$2.9 + 0.07 \times 100 / 10 = 3.6 \text{ кг}$$

|                                    | Тип крепления         | Диаметр цилиндра (мм) |      |      |      |      |
|------------------------------------|-----------------------|-----------------------|------|------|------|------|
|                                    |                       | 40                    | 50   | 63   | 80   | 100  |
| Базовая масса<br>(нулевой ход)     | Базовый (B)           | 1.3                   | 2.0  | 2.6  | 4.3  | 6.5  |
|                                    | На лапах (L)          | 1.8                   | 2.9  | 3.8  | 6.4  | 10.0 |
|                                    | Фланец (F&G)          | 1.6                   | 2.4  | 3.2  | 5.2  | 8.2  |
|                                    | Шарнир (C)            | 1.7                   | 2.6  | 3.6  | 5.8  | 9.0  |
|                                    | Проушина (D)          | 1.8                   | 2.9  | 3.8  | 6.5  | 9.9  |
|                                    | Передняя цапфа (U)    | 1.6                   | 2.4  | 3.1  | 6.0  | 9.4  |
|                                    | Центральная цапфа (T) | 1.7                   | 2.8  | 3.4  | 5.8  | 9.2  |
| Дополнительная масса на 10 мм хода |                       | 0.05                  | 0.07 | 0.09 | 0.12 | 0.16 |

#### СНА (стальная гильза)

|                                    | Тип крепления         | Диаметр цилиндра (мм) |      |      |      |      |      |      |
|------------------------------------|-----------------------|-----------------------|------|------|------|------|------|------|
|                                    |                       | 40                    | 50   | 63   | 80   | 100  |      |      |
| Базовая масса<br>(нулевой ход)     | Базовый (B)           | 1.5                   | 2.1  | 2.7  | 4.7  | 7.1  | 9.2  | 15.8 |
|                                    | На лапах (L)          | 2.0                   | 3.1  | 3.9  | 6.8  | 10.6 | 15.8 | 26.5 |
|                                    | Фланец (F&G)          | 1.7                   | 2.6  | 3.2  | 5.7  | 8.8  | 12.1 | 26.7 |
|                                    | Шарнир (C)            | 1.9                   | 2.8  | 3.6  | 6.3  | 9.6  | 13.0 | 22.9 |
|                                    | Проушина (D)          | 2.0                   | 3.1  | 3.9  | 7.0  | 10.5 | 14.7 | 25.6 |
|                                    | Передняя цапфа (U)    | 1.7                   | 2.6  | 3.2  | 6.5  | 10.0 | 13.7 | 23.6 |
|                                    | Центральная цапфа (T) | 1.9                   | 2.9  | 3.4  | 6.2  | 9.8  | 12.9 | 22.7 |
| Дополнительная масса на 10 мм хода |                       | 0.09                  | 0.08 | 0.10 | 0.19 | 0.24 | 0.31 | 0.47 |

#### СНАW (алюминиевая гильза)

|                                    | Тип крепления     | Диаметр цилиндра (мм) |      |      |      |       |
|------------------------------------|-------------------|-----------------------|------|------|------|-------|
|                                    |                   | 40                    | 50   | 63   | 80   | 100   |
| Базовая масса<br>(нулевой ход)     | Базовый           | 1.44                  | 2.16 | 2.78 | 4.58 | 6.90  |
|                                    | На лапах          | 1.95                  | 3.08 | 4.02 | 6.71 | 10.34 |
|                                    | Фланец            | 1.69                  | 2.56 | 3.35 | 5.54 | 8.60  |
|                                    | Передняя цапфа    | 1.71                  | 2.57 | 3.28 | 3.40 | 9.80  |
|                                    | Центральная цапфа | 1.86                  | 2.89 | 3.55 | 3.67 | 9.59  |
| Дополнительная масса на 10 мм хода |                   | 0.1                   | 0.14 | 0.18 | 0.24 | 0.32  |

#### СНАW (стальная гильза)

##### Пример расчета для СНАW50-100

- базовая масса 3.08 (крепление на лапах, Ø50)
- дополнительная масса 0.14/10 мм хода
- ход штока 100 мм

$$3.08 + 0.14 \times 100 / 10 = 4.48 \text{ кг}$$

|                                    | Тип крепления     | Диаметр цилиндра (мм) |      |      |      |       |       |       |
|------------------------------------|-------------------|-----------------------|------|------|------|-------|-------|-------|
|                                    |                   | 40                    | 50   | 63   | 80   | 100   | 125   | 160   |
| Базовая масса<br>(нулевой ход)     | Базовый           | 1.59                  | 2.27 | 2.85 | 5.01 | 7.49  | 9.55  | 16.55 |
|                                    | На лапах          | 2.10                  | 3.23 | 4.09 | 7.14 | 10.93 | 16.14 | 27.25 |
|                                    | Фланец            | 1.84                  | 2.71 | 3.42 | 5.97 | 9.19  | 12.51 | 27.42 |
|                                    | Передняя цапфа    | 1.86                  | 2.72 | 3.35 | 6.77 | 10.39 | 14.05 | 24.39 |
|                                    | Центральная цапфа | 2.01                  | 2.99 | 3.62 | 6.52 | 10.18 | 13.31 | 23.46 |
| Дополнительная масса на 10 мм хода |                   | 0.18                  | 0.16 | 0.16 | 0.38 | 0.48  | 0.62  | 0.94  |

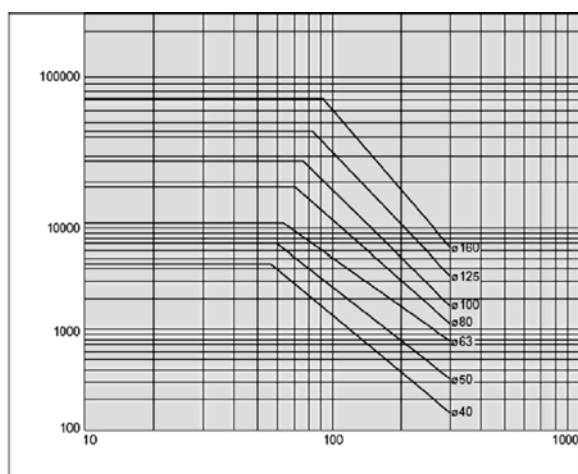
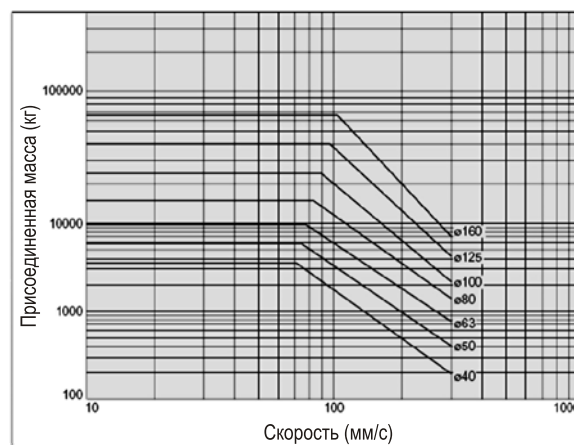
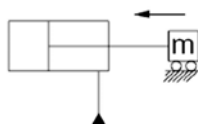


# Гидравлический цилиндр низкого давления СНА

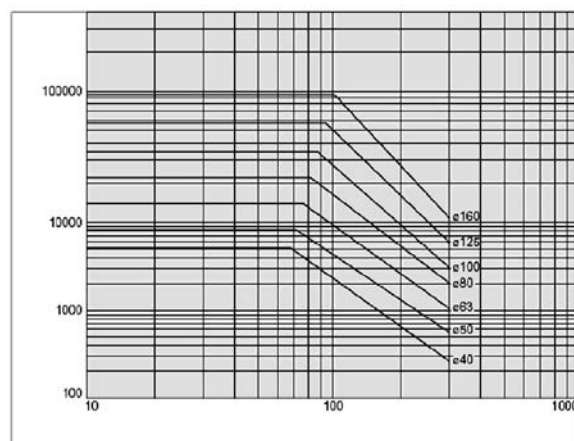
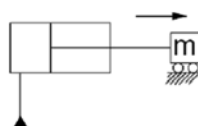
## Демпфирование в конце хода

Демпфер полностью поглощает кинетическую энергию движущихся частей, если точка, соответствующая массе нагрузки и скорости движения поршня, располагается не выше линии, показанной на графике.

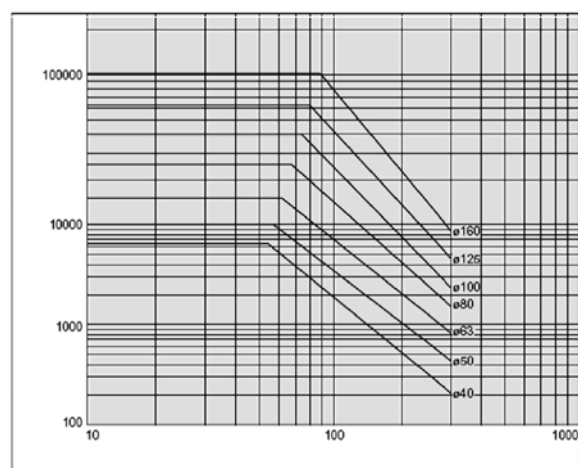
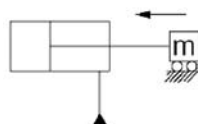
**Алюминиевая гильза, втягивание штока,  
давление 3.5 МПа**



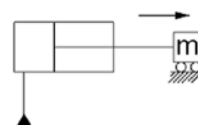
**Алюминиевая гильза, выдвижение штока,  
давление 3.5 МПа**



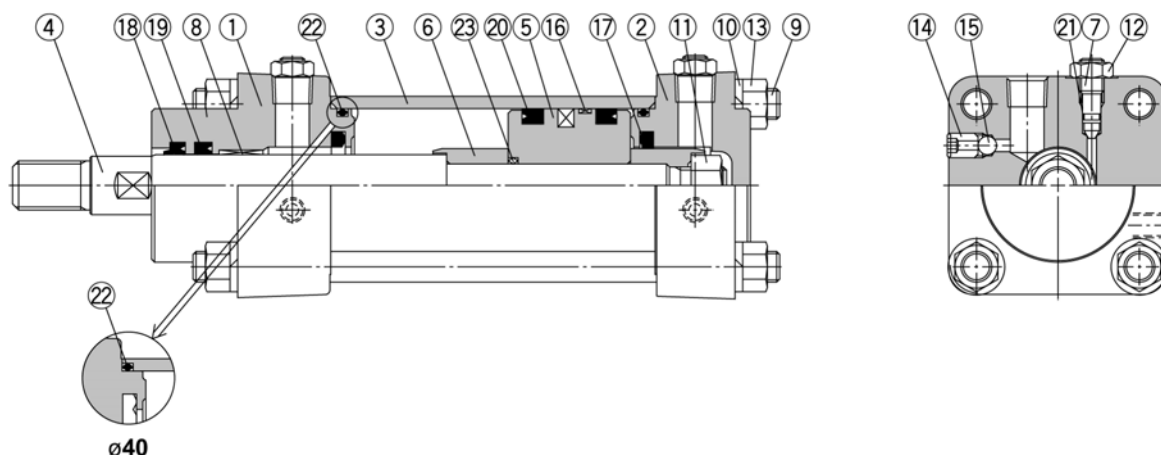
**Стальная гильза, втягивание штока,  
давление 5 МПа**



**Стальная гильза, выдвижение штока,  
давление 5 МПа**



### Конструкция



### Спецификация

| Поз. | Наименование                | Материал                                | Примечания                       |
|------|-----------------------------|-----------------------------------------|----------------------------------|
| 1    | Крышка штоковая             | Алюминиевый сплав                       | 70% чернение                     |
| 2    | Крышка задняя               | Алюминиевый сплав                       | 70% чернение                     |
| 3    | Гильза цилиндра             | Алюминиевый сплав<br>Углеродистая сталь | Анодирование                     |
| 4    | Шток                        | Углеродистая сталь                      | Хромирование<br>(гальваническое) |
| 5    | Поршень                     | Алюминиевый сплав                       |                                  |
| 6    | Демпферная втулка           | Стальной прокат                         |                                  |
| 7    | Клапан игольчатый           | Стальной прокат                         |                                  |
| 8    | Вкладыш направляющий        | Свинцовистая бронза                     |                                  |
| 9    | Шпилька                     | Углеродистая сталь                      |                                  |
| 10   | Шайба                       | Стальная проволока                      |                                  |
| 11   | Гайка поршневая             | Стальной прокат                         |                                  |
| 12   | Гайка                       | Углеродистая сталь                      |                                  |
| 13   | Гайка                       | Углеродистая сталь                      |                                  |
| 14   | Клапан сброса воздуха       | Легированная сталь                      |                                  |
| 15   | Шарик обратного клапана     | Подшипниковая сталь                     |                                  |
| 16   | Поршневое кольцо            | Пластик                                 |                                  |
| 17   | Уплотнение демпфера         | -                                       |                                  |
| 18   | Грязесъемное кольцо         | NBR                                     |                                  |
| 19   | Уплотнение штока            | NBR                                     |                                  |
| 20   | Уплотнение цилиндра         | NBR                                     |                                  |
| 21   | Упл-ние клапана игольчатого | NBR                                     |                                  |
| 22   | Уплотнительное кольцо       | NBR                                     |                                  |
| 23   | Прокладка                   | NBR                                     |                                  |

### Рекомплеты

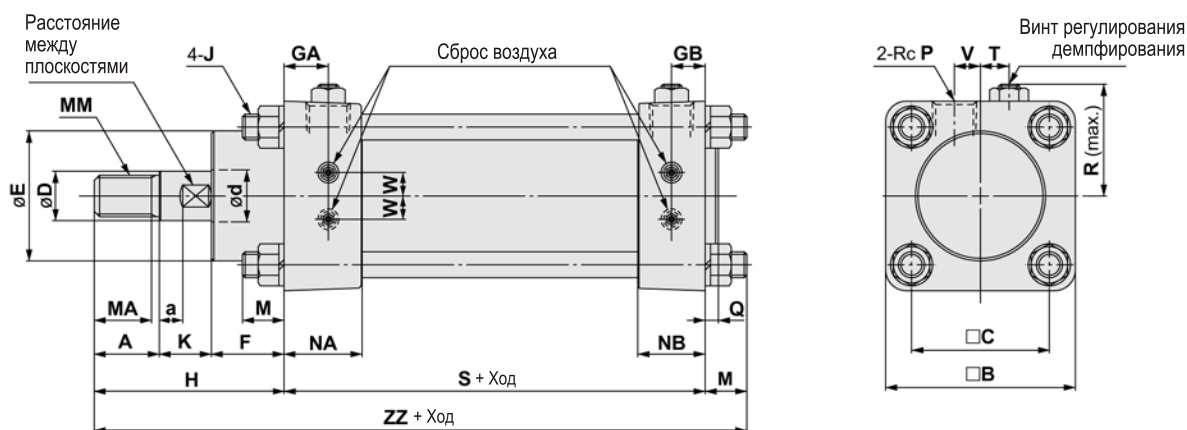
| Диаметр цилиндра (мм) | Номер для заказа |            |
|-----------------------|------------------|------------|
|                       | CHA              | CHAW       |
| 40                    | CHA40-PS         | CHAW40-PS  |
| 50                    | CHA50-PS         | CHAW50-PS  |
| 63                    | CHA63-PS         | CHAW63-PS  |
| 80                    | CHA80-PS         | CHAW80-PS  |
| 100                   | CHA100-PS        | CHAW100-PS |
| 125                   | CHA125-PS        | CHAW125-PS |
| 160                   | CHA160-PS        | CHAW160-PS |

\* Ремкомплект содержит уплотнения (поз. 17-22) и может быть заказан для каждого из указанных диаметров цилиндров.

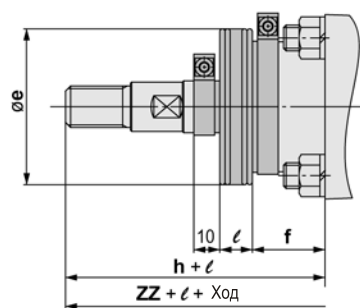
# Гидравлический цилиндр низкого давления СНА

## Размеры

### Стандарт СНАВ

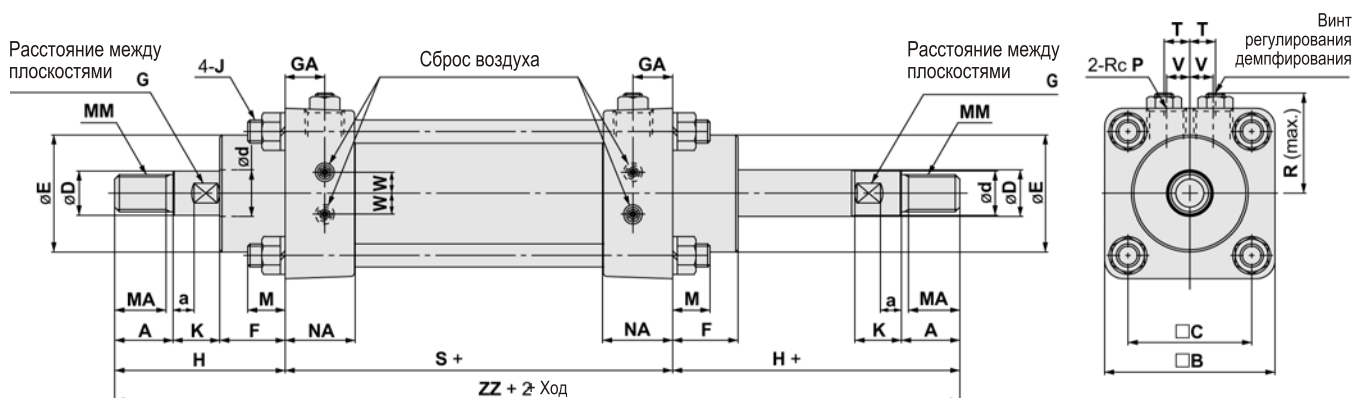


### С защитой штока



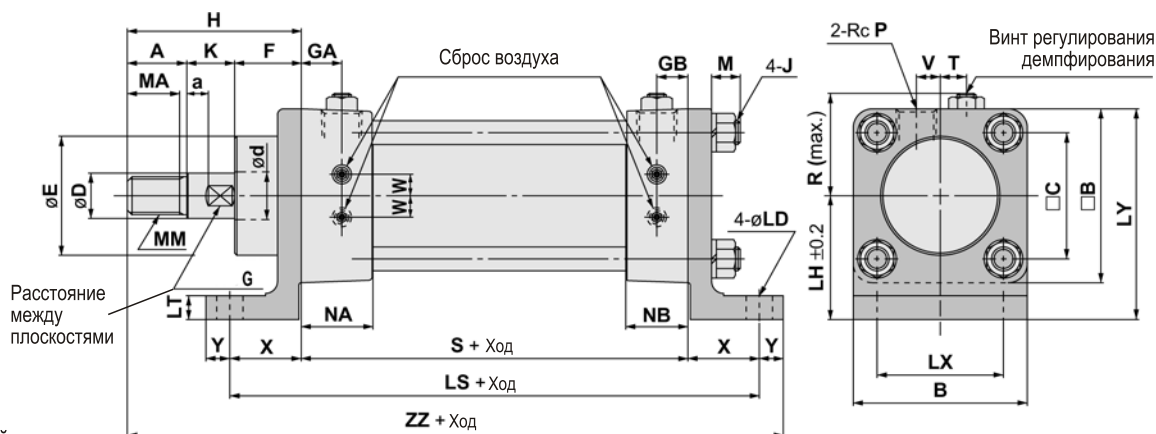
| Ø<br>(мм) |    |     |     |     |                                   |      |                                    |    |    |      |     |            |    |    |    |           |    |    |     |   |    |     |    |     | С защитой штока |     |     |     | Без защиты штока |     |     |     |
|-----------|----|-----|-----|-----|-----------------------------------|------|------------------------------------|----|----|------|-----|------------|----|----|----|-----------|----|----|-----|---|----|-----|----|-----|-----------------|-----|-----|-----|------------------|-----|-----|-----|
|           | A  | a   | B   | C   | D                                 | d    | E                                  | F  | G  | GA   | GB  | J          | K  | M  | MA | MM        | NA | NB | P   | Q | R  | S   | T  | V   | W               | H   | ZZ  | e   | f                | h   | ℓ   | Z   |
| 40        | 23 | 10  | 60  | 44  | 17 <sup>0</sup> <sub>-0.018</sub> | 18   | 45 <sup>0</sup> <sub>-0.062</sub>  | 25 | 14 | 17.5 | 9.5 | M8 x 1.25  | 18 | 13 | 20 | M14 x 1.5 | 30 | 22 | 1/4 | 5 | 37 | 106 | 11 | 7.5 | 8               | 66  | 185 | 55  | 25               | 92  | 1/4 | 211 |
| 50        | 25 | 9   | 73  | 53  | 19 <sup>0</sup> <sub>-0.021</sub> | 20   | 50 <sup>0</sup> <sub>-0.062</sub>  | 28 | 17 | 17   | 13  | M10 x 1.5  | 20 | 16 | 22 | M16 x 1.5 | 30 | 26 | 3/8 | 5 | 43 | 112 | 11 | 10  | 9               | 73  | 201 | 60  | 28               | 99  |     | 227 |
| 63        | 28 | 8   | 80  | 60  | 21 <sup>0</sup> <sub>-0.021</sub> | 22.4 | 55 <sup>0</sup> <sub>-0.074</sub>  | 30 | 17 | 17   | 13  | M10 x 1.5  | 22 | 16 | 25 | M18 x 1.5 | 30 | 26 | 3/8 | 5 | 47 | 116 | 11 | 12  | 10              | 80  | 212 | 65  | 30               | 106 |     | 238 |
| 80        | 32 | 8   | 100 | 75  | 26 <sup>0</sup> <sub>-0.021</sub> | 28   | 65 <sup>0</sup> <sub>-0.074</sub>  | 32 | 22 | 20   | 15  | M12 x 1.75 | 26 | 19 | 29 | M22 x 1.5 | 35 | 30 | 1/2 | 5 | 57 | 127 | 11 | 16  | 13              | 90  | 236 | 80  | 32               | 116 | 1/5 | 262 |
| 100       | 38 | 6.5 | 118 | 90  | 34 <sup>0</sup> <sub>-0.025</sub> | 35.5 | 80 <sup>0</sup> <sub>-0.074</sub>  | 35 | 27 | 19   | 16  | M12 x 1.75 | 27 | 21 | 34 | M27 x 2   | 35 | 32 | 1/2 | 8 | 66 | 137 | 12 | 20  | 16              | 100 | 258 | 100 | 35               | 123 |     | 281 |
| 125       | 38 | 6.5 | 140 | 112 | 34 <sup>0</sup> <sub>-0.025</sub> | 35.5 | 80 <sup>0</sup> <sub>-0.074</sub>  | 35 | 27 | 19   | 16  | M14 x 2    | 27 | 24 | 34 | M27 x 2   | 35 | 32 | 1/2 | 8 | 77 | 137 | 12 | 20  | 16              | 100 | 261 | 100 | 35               | 123 |     | 284 |
| 160       | 42 | 9   | 174 | 140 | 43 <sup>0</sup> <sub>-0.025</sub> | 45   | 100 <sup>0</sup> <sub>-0.087</sub> | 38 | 36 | 22   | 18  | M16 x 2    | 28 | 27 | 38 | M33 x 2   | 40 | 36 | 3/4 | 8 | 94 | 155 | 12 | 24  | 20              | 108 | 290 | 120 | 38               | 131 |     | 313 |

### СНАWB

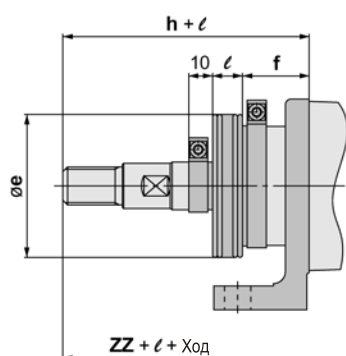


| $\varnothing$<br>(мм) | A  | a   | B   | C   | D                                 | d    | E                                  | F  | G  | GA   | J          | K  | M  | MA | MM        | NA | P   | R  | S   | T  | V   | W  | H   | ZZ  |
|-----------------------|----|-----|-----|-----|-----------------------------------|------|------------------------------------|----|----|------|------------|----|----|----|-----------|----|-----|----|-----|----|-----|----|-----|-----|
| 40                    | 23 | 10  | 60  | 44  | 17 <sup>0</sup> <sub>-0.018</sub> | 18   | 45 <sup>0</sup> <sub>-0.062</sub>  | 25 | 14 | 17.5 | M8 x 1.25  | 18 | 13 | 20 | M14 x 1.5 | 30 | 1/4 | 37 | 114 | 11 | 7.5 | 8  | 66  | 246 |
| 50                    | 25 | 9   | 73  | 53  | 19 <sup>0</sup> <sub>-0.021</sub> | 20   | 50 <sup>0</sup> <sub>-0.062</sub>  | 28 | 17 | 17   | M10 x 1.5  | 20 | 16 | 22 | M16 x 1.5 | 30 | 3/8 | 43 | 116 | 11 | 10  | 9  | 73  | 262 |
| 63                    | 28 | 8   | 80  | 60  | 21 <sup>0</sup> <sub>-0.021</sub> | 22.4 | 55 <sup>0</sup> <sub>-0.074</sub>  | 30 | 17 | 17   | M10 x 1.5  | 22 | 16 | 25 | M18 x 1.5 | 30 | 3/8 | 47 | 120 | 11 | 12  | 10 | 80  | 280 |
| 80                    | 32 | 8   | 100 | 75  | 26 <sup>0</sup> <sub>-0.021</sub> | 28   | 65 <sup>0</sup> <sub>-0.074</sub>  | 32 | 22 | 20   | M12 x 1.75 | 26 | 19 | 29 | M22 x 1.5 | 35 | 1/2 | 57 | 132 | 11 | 16  | 13 | 90  | 312 |
| 100                   | 38 | 6.5 | 118 | 90  | 34 <sup>0</sup> <sub>-0.025</sub> | 35.5 | 80 <sup>0</sup> <sub>-0.074</sub>  | 35 | 27 | 19   | M12 x 1.75 | 27 | 21 | 34 | M27 x 2   | 35 | 1/2 | 66 | 140 | 12 | 20  | 16 | 100 | 340 |
| 125                   | 38 | 6.5 | 140 | 112 | 34 <sup>0</sup> <sub>-0.025</sub> | 35.5 | 80 <sup>0</sup> <sub>-0.074</sub>  | 35 | 27 | 19   | M14 x 2    | 27 | 24 | 34 | M27 x 2   | 35 | 1/2 | 77 | 140 | 12 | 20  | 16 | 100 | 340 |
| 160                   | 42 | 9   | 174 | 140 | 43 <sup>0</sup> <sub>-0.025</sub> | 45   | 100 <sup>0</sup> <sub>-0.087</sub> | 38 | 36 | 22   | M16 x 2    | 28 | 27 | 38 | M33 x 2   | 40 | 3/4 | 94 | 159 | 12 | 24  | 20 | 108 | 375 |

### На лапах СНАЛ

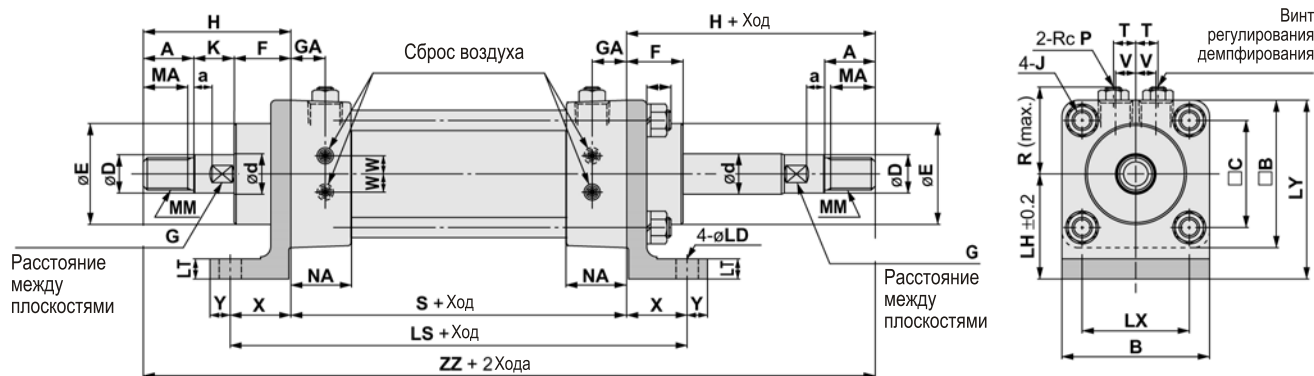


### С защитой штока



| Ø<br>(mm) |    |     |     |     |     |                                   |      |                                    |    |    |      |     |            |    |    |     |     |    |     |      |    |    |           |    |    |     |    |     |    |     | С защитой |    | Без защиты штока |     |     |     |    |     |     |     |
|-----------|----|-----|-----|-----|-----|-----------------------------------|------|------------------------------------|----|----|------|-----|------------|----|----|-----|-----|----|-----|------|----|----|-----------|----|----|-----|----|-----|----|-----|-----------|----|------------------|-----|-----|-----|----|-----|-----|-----|
|           | A  | a   | B   | □B  | C   | D                                 | d    | E                                  | F  | G  | GA   | GB  | J          | K  | LD | LH  | LS  | LT | LX  | LY   | M  | MA | MM        | NA | NB | P   | R  | S   | T  | V   | W         | X  | Y                | H   | ZZ  | e   | f  | h   | ℓ   | ZZ  |
| 40        | 23 | 10  | 60  | 60  | 44  | 17 <sup>0</sup> <sub>-0.018</sub> | 18   | 45 <sup>0</sup> <sub>-0.062</sub>  | 25 | 14 | 17.5 | 9.5 | M8 x 1.25  | 18 | 9  | 47  | 160 | 8  | 44  | 77   | 10 | 20 | M14 x 1.5 | 30 | 22 | 1/4 | 37 | 106 | 11 | 7.5 | 8         | 27 | 8                | 66  | 207 | 55  | 25 | 92  |     | 233 |
| 50        | 25 | 9   | 73  | 73  | 53  | 19 <sup>0</sup> <sub>-0.021</sub> | 20   | 50 <sup>0</sup> <sub>-0.062</sub>  | 28 | 17 | 17   | 13  | M10 x 1.5  | 20 | 11 | 52  | 172 | 10 | 53  | 88.5 | 12 | 22 | M16 x 1.5 | 30 | 26 | 3/8 | 43 | 112 | 11 | 10  | 9         | 30 | 10               | 73  | 225 | 60  | 28 | 99  | 1/4 | 251 |
| 63        | 28 | 8   | 80  | 80  | 60  | 21 <sup>0</sup> <sub>-0.021</sub> | 22.4 | 55 <sup>0</sup> <sub>-0.074</sub>  | 30 | 17 | 17   | 13  | M10 x 1.5  | 22 | 11 | 55  | 190 | 10 | 60  | 95   | 12 | 25 | M18 x 1.5 | 30 | 26 | 3/8 | 47 | 116 | 11 | 12  | 10        | 37 | 10               | 80  | 243 | 65  | 30 | 106 |     | 269 |
| 80        | 32 | 8   | 100 | 100 | 75  | 26 <sup>0</sup> <sub>-0.021</sub> | 28   | 65 <sup>0</sup> <sub>-0.074</sub>  | 32 | 22 | 20   | 15  | M12 x 1.75 | 26 | 13 | 65  | 207 | 12 | 75  | 115  | 14 | 29 | M22 x 1.5 | 35 | 30 | 1/2 | 57 | 127 | 11 | 16  | 13        | 40 | 13               | 90  | 270 | 80  | 32 | 116 |     | 296 |
| 100       | 38 | 6.5 | 118 | 118 | 90  | 34 <sup>0</sup> <sub>-0.025</sub> | 35.5 | 80 <sup>0</sup> <sub>-0.074</sub>  | 35 | 27 | 19   | 16  | M12 x 1.75 | 27 | 13 | 80  | 231 | 14 | 90  | 139  | 14 | 34 | M27 x 2   | 35 | 32 | 1/2 | 66 | 137 | 12 | 20  | 16        | 47 | 13               | 100 | 299 | 100 | 35 | 123 | 1/5 | 322 |
| 125       | 38 | 6.5 | 140 | 140 | 112 | 34 <sup>0</sup> <sub>-0.025</sub> | 35.5 | 80 <sup>0</sup> <sub>-0.074</sub>  | 35 | 27 | 19   | 16  | M14 x 2    | 27 | 15 | 100 | 247 | 16 | 112 | 170  | 16 | 34 | M27 x 2   | 35 | 32 | 1/2 | 77 | 137 | 12 | 20  | 16        | 55 | 15               | 100 | 305 | 100 | 35 | 123 |     | 328 |
| 160       | 42 | 9   | 174 | 174 | 140 | 43 <sup>0</sup> <sub>-0.025</sub> | 45   | 100 <sup>0</sup> <sub>-0.087</sub> | 38 | 36 | 22   | 18  | M16 x 2    | 28 | 17 | 110 | 275 | 18 | 140 | 197  | 18 | 38 | M33 x 2   | 40 | 36 | 3/4 | 94 | 155 | 12 | 24  | 20        | 60 | 20               | 108 | 343 | 120 | 38 | 131 |     | 366 |

### СНАУЛ



| Ø<br>(мм) | A  | a   | B   | B   | C   | D                                 | d    | E                                  | F  | G  | GA   | H   | J          | K  | LD | LH  | LS  | LT | LX  | LY   | M  | MA | MM        | NA | P   | R  | S   | T  | V   | W  | X  | Y  | ZZ  |
|-----------|----|-----|-----|-----|-----|-----------------------------------|------|------------------------------------|----|----|------|-----|------------|----|----|-----|-----|----|-----|------|----|----|-----------|----|-----|----|-----|----|-----|----|----|----|-----|
| 40        | 23 | 10  | 60  | 60  | 44  | 17 <sup>0</sup> <sub>-0.018</sub> | 18   | 45 <sup>0</sup> <sub>-0.062</sub>  | 25 | 14 | 17.5 | 66  | M8 x 1.25  | 18 | 9  | 47  | 168 | 8  | 44  | 77   | 10 | 20 | M14 x 1.5 | 30 | 1/4 | 37 | 114 | 11 | 7.5 | 8  | 27 | 8  | 246 |
| 50        | 25 | 9   | 73  | 73  | 53  | 19 <sup>0</sup> <sub>-0.021</sub> | 20   | 50 <sup>0</sup> <sub>-0.062</sub>  | 28 | 17 | 17   | 73  | M10 x 1.5  | 20 | 11 | 52  | 176 | 10 | 53  | 88.5 | 12 | 22 | M16 x 1.5 | 30 | 3/8 | 43 | 116 | 11 | 10  | 9  | 30 | 10 | 262 |
| 63        | 28 | 8   | 80  | 80  | 60  | 21 <sup>0</sup> <sub>-0.021</sub> | 22.4 | 55 <sup>0</sup> <sub>-0.074</sub>  | 30 | 17 | 17   | 80  | M10 x 1.5  | 22 | 11 | 55  | 194 | 10 | 60  | 95   | 12 | 25 | M18 x 1.5 | 30 | 3/8 | 47 | 120 | 11 | 12  | 10 | 37 | 10 | 280 |
| 80        | 32 | 8   | 100 | 100 | 75  | 26 <sup>0</sup> <sub>-0.021</sub> | 28   | 65 <sup>0</sup> <sub>-0.074</sub>  | 32 | 22 | 20   | 90  | M12 x 1.75 | 26 | 13 | 65  | 212 | 12 | 75  | 115  | 14 | 29 | M22 x 1.5 | 35 | 1/2 | 57 | 132 | 11 | 16  | 13 | 40 | 13 | 312 |
| 100       | 38 | 6.5 | 118 | 118 | 90  | 34 <sup>0</sup> <sub>-0.025</sub> | 35.5 | 80 <sup>0</sup> <sub>-0.074</sub>  | 35 | 27 | 19   | 100 | M12 x 1.75 | 27 | 13 | 80  | 234 | 14 | 90  | 139  | 14 | 34 | M27 x 2   | 35 | 1/2 | 66 | 140 | 12 | 20  | 16 | 47 | 13 | 340 |
| 125       | 38 | 6.5 | 140 | 140 | 112 | 34 <sup>0</sup> <sub>-0.025</sub> | 35.5 | 80 <sup>0</sup> <sub>-0.074</sub>  | 35 | 27 | 19   | 100 | M14 x 2    | 27 | 15 | 100 | 250 | 16 | 112 | 170  | 16 | 34 | M27 x 2   | 35 | 1/2 | 77 | 140 | 12 | 20  | 16 | 55 | 15 | 340 |
| 160       | 42 | 9   | 174 | 174 | 140 | 43 <sup>0</sup> <sub>-0.025</sub> | 45   | 100 <sup>0</sup> <sub>-0.087</sub> | 38 | 36 | 22   | 108 | M16 x 2    | 28 | 17 | 110 | 279 | 18 | 140 | 197  | 18 | 38 | M33 x 2   | 40 | 3/4 | 94 | 159 | 12 | 24  | 20 | 60 | 20 | 375 |

**CHA**

## CHAF

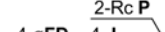


## C 321



| Ø<br>(mm) |    |     |     |     |     |                                   |      |                                    |    |    |    |     |     |     |    |      |     |          |    |    |    |           |    |    | С защиты |    |     |    | Без защиты штока |    |     |     |     |    |     |   |     |
|-----------|----|-----|-----|-----|-----|-----------------------------------|------|------------------------------------|----|----|----|-----|-----|-----|----|------|-----|----------|----|----|----|-----------|----|----|----------|----|-----|----|------------------|----|-----|-----|-----|----|-----|---|-----|
|           | A  | a   | B   | C   | D   | d                                 | E    | F                                  | FD | FT | FX | FY  | FZ  | G   | GA | GB   | J   | K        | M  | MA | MM | NA        | NB | P  | R        | S  | T   | V  | W                | H  | ZZ  | e   | f   | h  | ℓ   | Z |     |
| 40        | 23 | 10  | 60  | 60  | 44  | 17 <sup>0</sup> <sub>-0,018</sub> | 18   | 45 <sup>0</sup> <sub>-0,062</sub>  | 25 | 9  | 10 | 77  | 44  | 95  | 14 | 17,5 | 9,5 | M8x1,25  | 18 | 16 | 20 | M14 x 1,5 | 30 | 22 | 1/4      | 37 | 106 | 11 | 7,5              | 8  | 66  | 188 | 55  | 25 | 92  |   | 214 |
| 50        | 25 | 9   | 73  | 73  | 53  | 19 <sup>0</sup> <sub>-0,021</sub> | 20   | 50 <sup>0</sup> <sub>-0,062</sub>  | 28 | 11 | 10 | 95  | 53  | 115 | 17 | 17   | 13  | M10x1,5  | 20 | 22 | 22 | M16 x 1,5 | 30 | 26 | 3/8      | 43 | 112 | 11 | 10               | 9  | 73  | 207 | 60  | 28 | 99  |   | 233 |
| 63        | 28 | 8   | 80  | 80  | 60  | 21 <sup>0</sup> <sub>-0,021</sub> | 22,4 | 55 <sup>0</sup> <sub>-0,074</sub>  | 30 | 11 | 12 | 102 | 60  | 122 | 17 | 17   | 13  | M10x1,5  | 22 | 20 | 25 | M18 x 1,5 | 30 | 26 | 3/8      | 47 | 116 | 11 | 12               | 10 | 80  | 216 | 65  | 30 | 106 |   | 242 |
| 80        | 32 | 8   | 100 | 100 | 75  | 26 <sup>0</sup> <sub>-0,021</sub> | 28   | 65 <sup>0</sup> <sub>-0,074</sub>  | 32 | 13 | 12 | 130 | 75  | 155 | 22 | 20   | 15  | M12x1,75 | 26 | 26 | 29 | M22 x 1,5 | 35 | 30 | 1/2      | 57 | 127 | 11 | 16               | 13 | 90  | 243 | 80  | 32 | 116 |   | 269 |
| 100       | 38 | 6,5 | 118 | 118 | 90  | 34 <sup>0</sup> <sub>-0,025</sub> | 35,5 | 80 <sup>0</sup> <sub>-0,074</sub>  | 35 | 13 | 16 | 145 | 90  | 172 | 27 | 19   | 16  | M12x1,75 | 27 | 26 | 34 | M27 x 2   | 35 | 32 | 1/2      | 66 | 137 | 12 | 20               | 16 | 100 | 263 | 100 | 35 | 123 |   | 286 |
| 125       | 38 | 6,5 | 140 | 140 | 112 | 34 <sup>0</sup> <sub>-0,025</sub> | 35,5 | 80 <sup>0</sup> <sub>-0,074</sub>  | 35 | 15 | 18 | 170 | 112 | 200 | 27 | 19   | 16  | M14x2    | 27 | 30 | 34 | M27 x 2   | 35 | 32 | 1/2      | 77 | 137 | 12 | 20               | 16 | 100 | 267 | 100 | 35 | 123 |   | 290 |
| 160       | 42 | 9   | 174 | 174 | 140 | 43 <sup>0</sup> <sub>-0,025</sub> | 45   | 100 <sup>0</sup> <sub>-0,087</sub> | 38 | 17 | 20 | 205 | 140 | 240 | 36 | 22   | 18  | M16x2    | 28 | 34 | 38 | M33 x 2   | 40 | 36 | 3/4      | 94 | 155 | 12 | 24               | 20 | 108 | 297 | 120 | 38 | 131 |   | 320 |

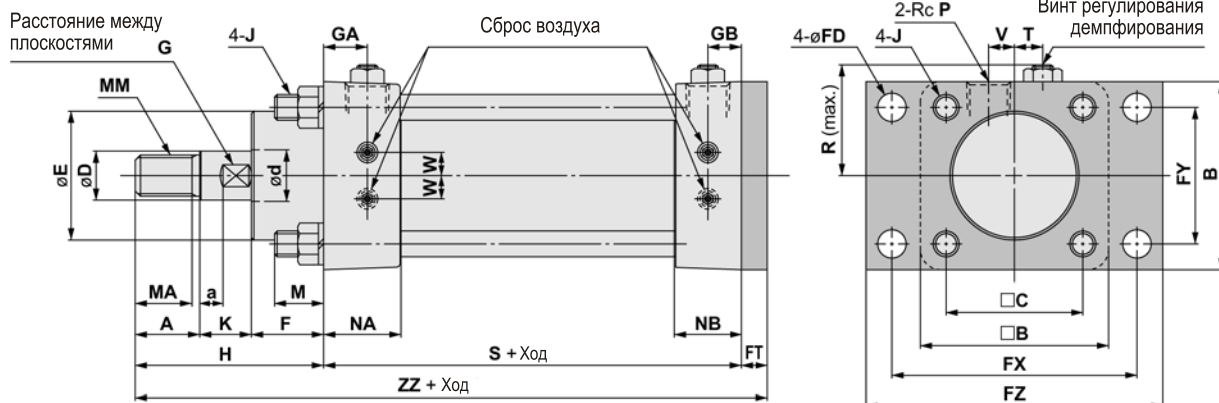
## CHAV



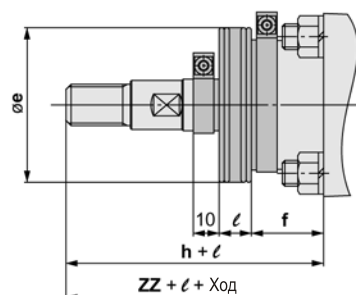
| Ø<br>(mm) |    |     |     |     |     |                      |      |                       |    |    |    |     |     |     |    |      |     |            |    |    |    |           |    |     |    |     |    |     |    |     |  |  |  |  |  |  |  |
|-----------|----|-----|-----|-----|-----|----------------------|------|-----------------------|----|----|----|-----|-----|-----|----|------|-----|------------|----|----|----|-----------|----|-----|----|-----|----|-----|----|-----|--|--|--|--|--|--|--|
|           | A  | a   | B   | B   | C   | D                    | d    | E                     | F  | FD | FT | FX  | FY  | FZ  | G  | GA   | H   | J          | K  | M  | MA | MM        | NA | P   | R  | S   | T  | V   | W  | ZZ  |  |  |  |  |  |  |  |
| 40        | 23 | 10  | 60  | 60  | 44  | 17 <sub>-0,019</sub> | 18   | 45 <sub>-0,062</sub>  | 25 | 9  | 10 | 77  | 44  | 95  | 14 | 17.5 | 66  | M8 x 1.25  | 18 | 16 | 20 | M14 x 1.5 | 30 | 1/4 | 37 | 114 | 11 | 7.5 | 8  | 246 |  |  |  |  |  |  |  |
| 50        | 25 | 9   | 73  | 73  | 53  | 19 <sub>-0,021</sub> | 20   | 50 <sub>-0,062</sub>  | 28 | 11 | 10 | 95  | 53  | 115 | 17 | 17   | 73  | M10 x 1.5  | 20 | 22 | 22 | M16 x 1.5 | 30 | 3/8 | 43 | 116 | 11 | 10  | 9  | 262 |  |  |  |  |  |  |  |
| 63        | 28 | 8   | 80  | 80  | 60  | 21 <sub>-0,021</sub> | 22.4 | 55 <sub>-0,074</sub>  | 30 | 11 | 12 | 102 | 60  | 122 | 17 | 17   | 80  | M10 x 1.5  | 22 | 20 | 25 | M18 x 1.5 | 30 | 3/8 | 47 | 120 | 11 | 12  | 10 | 280 |  |  |  |  |  |  |  |
| 80        | 32 | 8   | 100 | 100 | 75  | 26 <sub>-0,021</sub> | 28   | 65 <sub>-0,074</sub>  | 32 | 13 | 12 | 130 | 75  | 155 | 22 | 20   | 90  | M12 x 1.75 | 26 | 26 | 29 | M22 x 1.5 | 35 | 1/2 | 57 | 132 | 11 | 16  | 13 | 312 |  |  |  |  |  |  |  |
| 100       | 38 | 6.5 | 118 | 118 | 90  | 34 <sub>-0,025</sub> | 35.5 | 80 <sub>-0,074</sub>  | 35 | 13 | 16 | 145 | 90  | 172 | 27 | 19   | 100 | M12 x 1.75 | 27 | 26 | 34 | M27 x 2   | 35 | 1/2 | 66 | 140 | 12 | 20  | 16 | 340 |  |  |  |  |  |  |  |
| 125       | 38 | 6.5 | 140 | 140 | 112 | 34 <sub>-0,025</sub> | 35.5 | 80 <sub>-0,074</sub>  | 35 | 15 | 18 | 170 | 112 | 200 | 27 | 19   | 100 | M14 x 2    | 27 | 30 | 34 | M27 x 2   | 35 | 1/2 | 77 | 140 | 12 | 20  | 16 | 340 |  |  |  |  |  |  |  |
| 160       | 42 | 9   | 174 | 174 | 140 | 43 <sub>-0,025</sub> | 45   | 100 <sub>-0,087</sub> | 38 | 17 | 20 | 205 | 140 | 240 | 36 | 22   | 108 | M16 x 2    | 28 | 34 | 38 | M33 x 2   | 40 | 3/4 | 94 | 159 | 12 | 24  | 20 | 375 |  |  |  |  |  |  |  |



### С задним фланцем СНАG



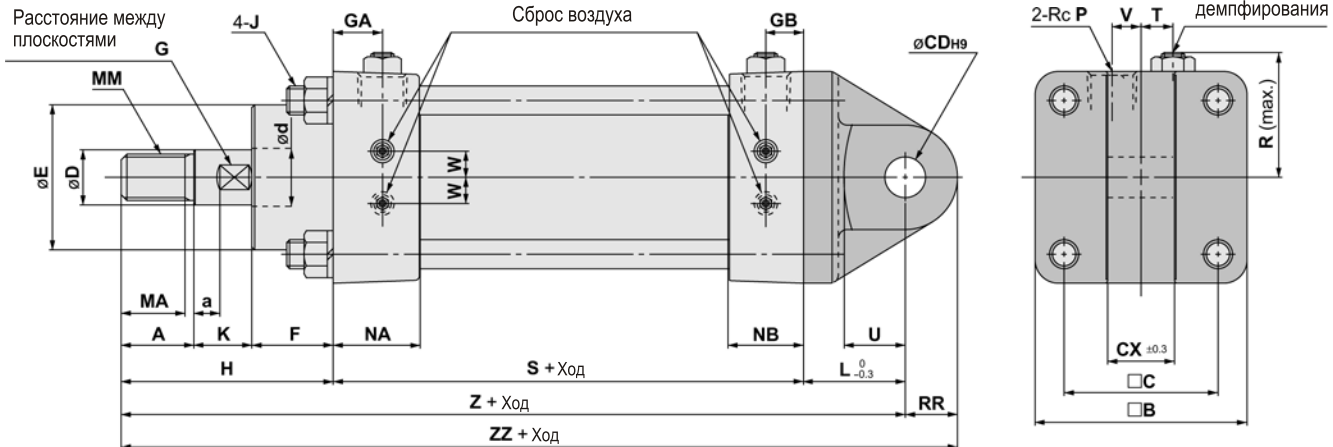
### С защитой штока



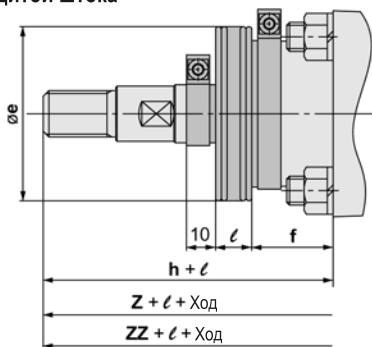
| $\phi$<br>(мм) | A  | a   | B   | C   | D                                 | d    | E                                  | F  | FD | FT | FX  | FY  | FZ  | G  | GA   | GB  | J          | K  | M  | MA | MM        | NA | NB | P   | R  | S   | T  | V   | W  | H   | ZZ  | e   | f  | h   | $\ell$ | Z   |
|----------------|----|-----|-----|-----|-----------------------------------|------|------------------------------------|----|----|----|-----|-----|-----|----|------|-----|------------|----|----|----|-----------|----|----|-----|----|-----|----|-----|----|-----|-----|-----|----|-----|--------|-----|
| 40             | 23 | 10  | 60  | 44  | 17 <sup>0</sup> <sub>-0.018</sub> | 18   | 45 <sup>0</sup> <sub>-0.062</sub>  | 25 | 9  | 10 | 77  | 44  | 95  | 14 | 17.5 | 9.5 | M3 x 1.25  | 18 | 16 | 20 | M14 x 1.5 | 30 | 22 | 1/4 | 37 | 106 | 11 | 7.5 | 8  | 66  | 182 | 55  | 25 | 92  |        | 208 |
| 50             | 25 | 9   | 73  | 53  | 19 <sup>0</sup> <sub>-0.021</sub> | 20   | 50 <sup>0</sup> <sub>-0.062</sub>  | 28 | 11 | 10 | 95  | 53  | 115 | 17 | 17   | 13  | M10 x 1.5  | 20 | 22 | 22 | M16 x 1.5 | 30 | 26 | 3/8 | 43 | 112 | 11 | 10  | 9  | 73  | 195 | 60  | 28 | 99  | 1/4    | 221 |
| 63             | 28 | 8   | 80  | 60  | 21 <sup>0</sup> <sub>-0.021</sub> | 22.4 | 55 <sup>0</sup> <sub>-0.074</sub>  | 30 | 11 | 12 | 102 | 60  | 122 | 17 | 17   | 13  | M10 x 1.5  | 22 | 20 | 25 | M18 x 1.5 | 30 | 26 | 3/8 | 47 | 116 | 11 | 12  | 10 | 80  | 208 | 65  | 30 | 106 |        | 234 |
| 80             | 32 | 8   | 100 | 75  | 26 <sup>0</sup> <sub>-0.021</sub> | 28   | 65 <sup>0</sup> <sub>-0.074</sub>  | 32 | 13 | 12 | 130 | 75  | 155 | 22 | 20   | 15  | M12 x 1.75 | 26 | 26 | 29 | M22 x 1.5 | 35 | 30 | 1/2 | 57 | 127 | 11 | 16  | 13 | 90  | 229 | 80  | 32 | 116 |        | 255 |
| 100            | 38 | 6.5 | 118 | 90  | 34 <sup>0</sup> <sub>-0.025</sub> | 35.5 | 80 <sup>0</sup> <sub>-0.074</sub>  | 35 | 13 | 16 | 145 | 90  | 172 | 27 | 19   | 16  | M12 x 1.75 | 27 | 26 | 34 | M27 x 2   | 35 | 32 | 1/2 | 66 | 137 | 12 | 20  | 16 | 100 | 253 | 100 | 35 | 123 | 1/5    | 276 |
| 125            | 38 | 6.5 | 140 | 112 | 34 <sup>0</sup> <sub>-0.025</sub> | 35.5 | 80 <sup>0</sup> <sub>-0.074</sub>  | 35 | 15 | 18 | 170 | 112 | 200 | 27 | 19   | 16  | M14 x 2    | 27 | 30 | 34 | M27 x 2   | 35 | 32 | 1/2 | 77 | 137 | 12 | 20  | 16 | 100 | 255 | 100 | 35 | 123 |        | 278 |
| 160            | 42 | 9   | 174 | 140 | 43 <sup>0</sup> <sub>-0.025</sub> | 45   | 100 <sup>0</sup> <sub>-0.087</sub> | 38 | 17 | 20 | 205 | 140 | 240 | 36 | 22   | 18  | M16 x 2    | 28 | 34 | 38 | M33 x 2   | 40 | 36 | 3/4 | 94 | 155 | 12 | 24  | 20 | 108 | 283 | 120 | 38 | 131 |        | 306 |

**CHA**

## CHAC

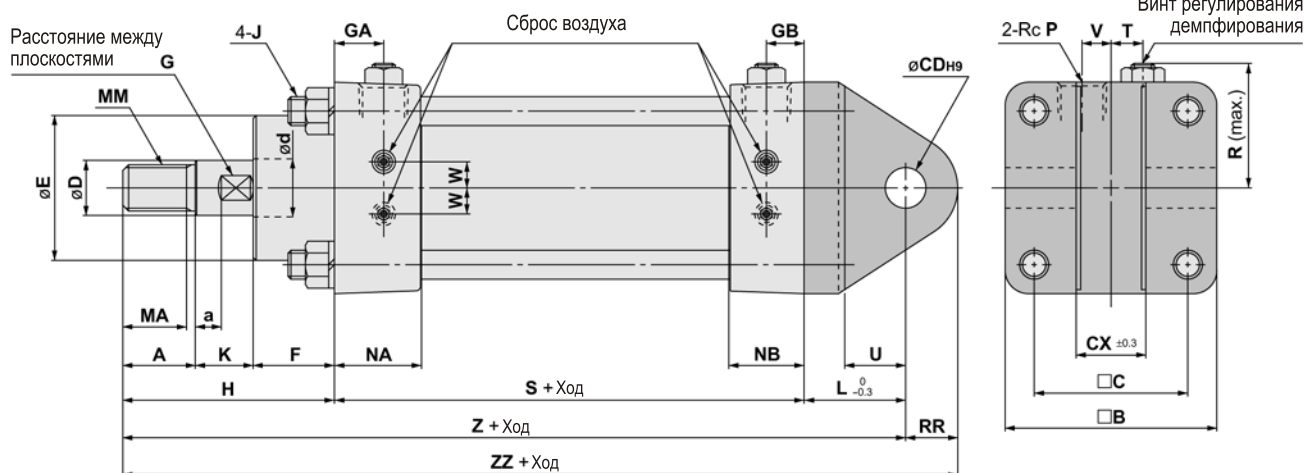


### С защитой штока

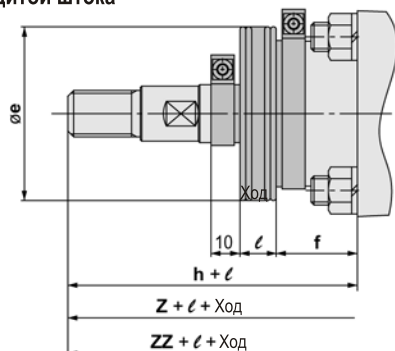


| Ø<br>(mm) |    |     |     |     |                            |    |                            |      |                             |    |    |      |     |            |    |    |    |           |    |    |     |    |    |     |    |    |     |    | С защитой |     |     |     | Без защиты штока |     |     |     |     |
|-----------|----|-----|-----|-----|----------------------------|----|----------------------------|------|-----------------------------|----|----|------|-----|------------|----|----|----|-----------|----|----|-----|----|----|-----|----|----|-----|----|-----------|-----|-----|-----|------------------|-----|-----|-----|-----|
|           | A  | a   | B   | C   | CD <sub>H9</sub>           | CX | D                          | d    | E                           | F  | G  | GA   | GB  | J          | K  | L  | MA | MM        | NA | NB | P   | R  | RR | S   | T  | U  | V   | W  | H         | Z   | ZZ  | e   | f                | h   | ℓ   | Z   | ZZ  |
| 40        | 23 | 10  | 60  | 44  | 12 <sup>+0.043<br/>0</sup> | 21 | 17 <sup>0<br/>-0.018</sup> | 18   | 45 <sup>0<br/>-0.062</sup>  | 25 | 14 | 17.5 | 9.5 | M8 x 1.25  | 18 | 32 | 20 | M14 x 1.5 | 30 | 22 | 1/4 | 37 | 15 | 106 | 11 | 18 | 7.5 | 8  | 66        | 204 | 219 | 55  | 25               | 92  |     | 230 | 245 |
| 50        | 25 | 9   | 73  | 53  | 14 <sup>+0.043<br/>0</sup> | 23 | 19 <sup>0<br/>-0.021</sup> | 20   | 50 <sup>0<br/>-0.062</sup>  | 28 | 17 | 17   | 13  | M10 x 1.5  | 20 | 35 | 22 | M16 x 1.5 | 30 | 26 | 3/8 | 43 | 18 | 112 | 11 | 21 | 10  | 9  | 73        | 220 | 238 | 60  | 28               | 99  | 1/4 | 246 | 264 |
| 63        | 28 | 8   | 80  | 60  | 16 <sup>+0.043<br/>0</sup> | 27 | 21 <sup>0<br/>-0.021</sup> | 22.4 | 55 <sup>0<br/>-0.074</sup>  | 30 | 17 | 17   | 13  | M10 x 1.5  | 22 | 40 | 25 | M18 x 1.5 | 30 | 26 | 3/8 | 47 | 20 | 116 | 11 | 23 | 12  | 10 | 80        | 236 | 258 | 65  | 30               | 106 |     | 262 | 284 |
| 80        | 32 | 8   | 100 | 75  | 18 <sup>+0.043<br/>0</sup> | 31 | 26 <sup>0<br/>-0.021</sup> | 28   | 65 <sup>0<br/>-0.074</sup>  | 32 | 22 | 20   | 15  | M12 x 1.75 | 26 | 45 | 29 | M22 x 1.5 | 35 | 30 | 1/2 | 57 | 22 | 127 | 11 | 26 | 16  | 13 | 90        | 262 | 284 | 80  | 32               | 116 |     | 288 | 310 |
| 100       | 38 | 6.5 | 118 | 90  | 20 <sup>+0.052<br/>0</sup> | 35 | 34 <sup>0<br/>-0.025</sup> | 35.5 | 80 <sup>0<br/>-0.074</sup>  | 35 | 27 | 19   | 16  | M12 x 1.75 | 27 | 50 | 34 | M27 x 2   | 35 | 32 | 1/2 | 66 | 24 | 137 | 12 | 30 | 20  | 16 | 100       | 287 | 311 | 100 | 35               | 123 | 1/5 | 310 | 334 |
| 125       | 38 | 6.5 | 140 | 112 | 22 <sup>+0.052<br/>0</sup> | 41 | 34 <sup>0<br/>-0.025</sup> | 35.5 | 80 <sup>0<br/>-0.074</sup>  | 35 | 27 | 19   | 16  | M14 x 2    | 27 | 55 | 34 | M27 x 2   | 35 | 32 | 1/2 | 77 | 26 | 137 | 12 | 30 | 20  | 16 | 100       | 292 | 318 | 100 | 35               | 123 |     | 315 | 341 |
| 160       | 42 | 9   | 174 | 140 | 25 <sup>+0.052<br/>0</sup> | 54 | 43 <sup>0<br/>-0.025</sup> | 45   | 100 <sup>0<br/>-0.087</sup> | 38 | 36 | 22   | 18  | M16 x 2    | 28 | 65 | 38 | M33 x 2   | 40 | 36 | 3/4 | 94 | 30 | 155 | 12 | 40 | 24  | 20 | 108       | 328 | 358 | 120 | 38               | 131 |     | 351 | 381 |

**С двойной шарнирной опорой CHAD**



### С защитой штока

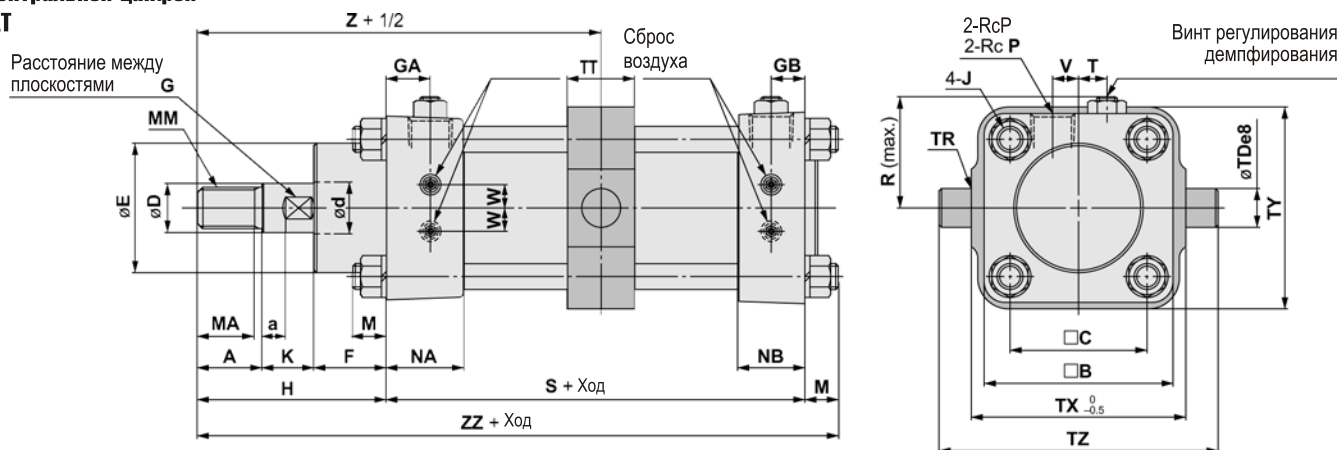


| Ø<br>(мм) |    |     |     |     |                                      |    |                                   |      |                                    |    |    |      |    |            |    |    |    |           |    |    |     |    |    |     |    |    |     |    | С защитой |     |     |     | Без защиты штока |     |     |     |     |  |  |  |
|-----------|----|-----|-----|-----|--------------------------------------|----|-----------------------------------|------|------------------------------------|----|----|------|----|------------|----|----|----|-----------|----|----|-----|----|----|-----|----|----|-----|----|-----------|-----|-----|-----|------------------|-----|-----|-----|-----|--|--|--|
|           | A  | a   | B   | C   | CDH9                                 | CX | D                                 | d    | E                                  | F  | G  | GA   | GB | J          | K  | L  | MA | MM        | NA | NB | P   | R  | RR | S   | T  | U  | V   | W  | H         | Z   | ZZ  | e   | f                | h   | ℓ   | Z   | ZZ  |  |  |  |
| 40        | 23 | 10  | 60  | 44  | ø12H9 <sup>+0.043</sup> <sub>0</sub> | 22 | 17 <sup>0</sup> <sub>-0.018</sub> | 18   | 45 <sup>0</sup> <sub>-0.062</sub>  | 25 | 14 | 17.5 | 11 | M8 x 1.25  | 18 | 32 | 20 | M14 x 1.5 | 30 | 22 | 1/4 | 37 | 15 | 106 | 11 | 18 | 7.5 | 8  | 66        | 204 | 219 | 55  | 25               | 92  |     | 230 | 245 |  |  |  |
| 50        | 25 | 9   | 73  | 53  | ø14H9 <sup>+0.043</sup> <sub>0</sub> | 24 | 19 <sup>0</sup> <sub>-0.021</sub> | 20   | 50 <sup>0</sup> <sub>-0.062</sub>  | 28 | 17 | 17   | 13 | M10 x 1.5  | 20 | 35 | 22 | M16 x 1.5 | 30 | 26 | 3/8 | 43 | 18 | 112 | 11 | 21 | 10  | 9  | 73        | 220 | 238 | 60  | 28               | 99  | 1/4 | 246 | 264 |  |  |  |
| 63        | 28 | 8   | 80  | 60  | ø16H9 <sup>+0.043</sup> <sub>0</sub> | 28 | 21 <sup>0</sup> <sub>-0.021</sub> | 22.4 | 55 <sup>0</sup> <sub>-0.074</sub>  | 30 | 17 | 17   | 13 | M10 x 1.5  | 22 | 40 | 25 | M18 x 1.5 | 30 | 26 | 3/8 | 47 | 20 | 116 | 11 | 23 | 12  | 10 | 80        | 236 | 258 | 65  | 30               | 106 |     | 262 | 284 |  |  |  |
| 80        | 32 | 8   | 100 | 75  | ø18H9 <sup>+0.043</sup> <sub>0</sub> | 32 | 26 <sup>0</sup> <sub>-0.025</sub> | 28   | 65 <sup>0</sup> <sub>-0.074</sub>  | 32 | 22 | 20   | 15 | M12 x 1.75 | 26 | 45 | 29 | M22 x 1.5 | 35 | 30 | 1/2 | 57 | 22 | 127 | 11 | 26 | 16  | 13 | 90        | 262 | 284 | 80  | 32               | 116 |     | 288 | 310 |  |  |  |
| 100       | 38 | 6.5 | 118 | 90  | ø20H9 <sup>+0.052</sup> <sub>0</sub> | 36 | 34 <sup>0</sup> <sub>-0.025</sub> | 35.5 | 80 <sup>0</sup> <sub>-0.074</sub>  | 35 | 27 | 19   | 16 | M12 x 1.75 | 27 | 50 | 34 | M27 x 2   | 35 | 32 | 1/2 | 66 | 24 | 137 | 12 | 30 | 20  | 16 | 100       | 287 | 311 | 100 | 35               | 123 | 1/5 | 310 | 334 |  |  |  |
| 125       | 38 | 6.5 | 140 | 112 | ø22H9 <sup>+0.052</sup> <sub>0</sub> | 42 | 34 <sup>0</sup> <sub>-0.025</sub> | 35.5 | 80 <sup>0</sup> <sub>-0.074</sub>  | 35 | 27 | 19   | 16 | M14 x 2    | 27 | 55 | 34 | M27 x 2   | 35 | 32 | 1/2 | 77 | 26 | 137 | 12 | 30 | 20  | 16 | 100       | 292 | 318 | 100 | 35               | 123 |     | 315 | 341 |  |  |  |
| 160       | 42 | 9   | 174 | 140 | ø25H9 <sup>+0.052</sup> <sub>0</sub> | 55 | 43 <sup>0</sup> <sub>-0.025</sub> | 45   | 100 <sup>0</sup> <sub>-0.087</sub> | 38 | 36 | 22   | 18 | M16 x 2    | 28 | 65 | 38 | M33 x 2   | 40 | 36 | 3/4 | 94 | 30 | 155 | 12 | 40 | 24  | 20 | 108       | 328 | 358 | 120 | 38               | 131 |     | 351 | 381 |  |  |  |

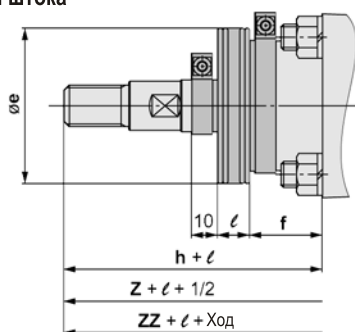


# Гидравлический цилиндр низкого давления СНА

## С центральной цапфой СНАТ

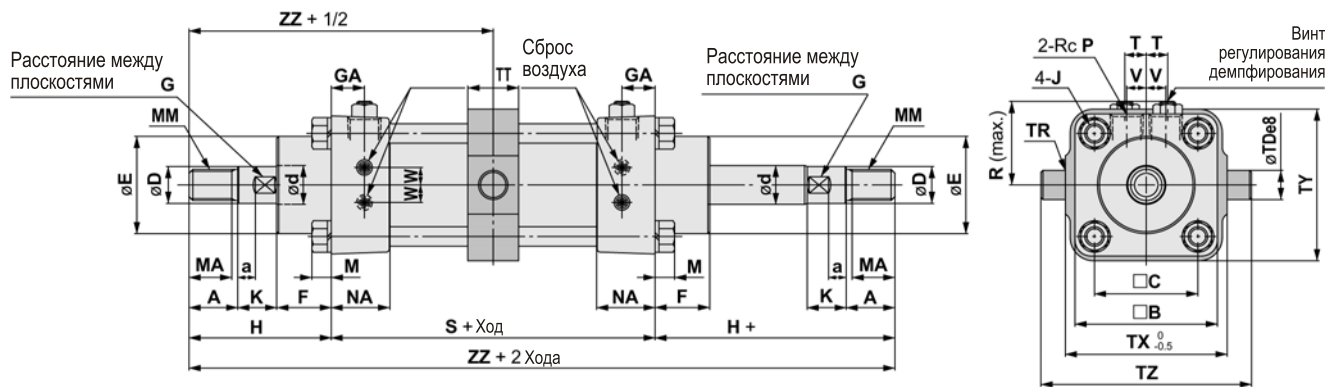


## С защитой штока



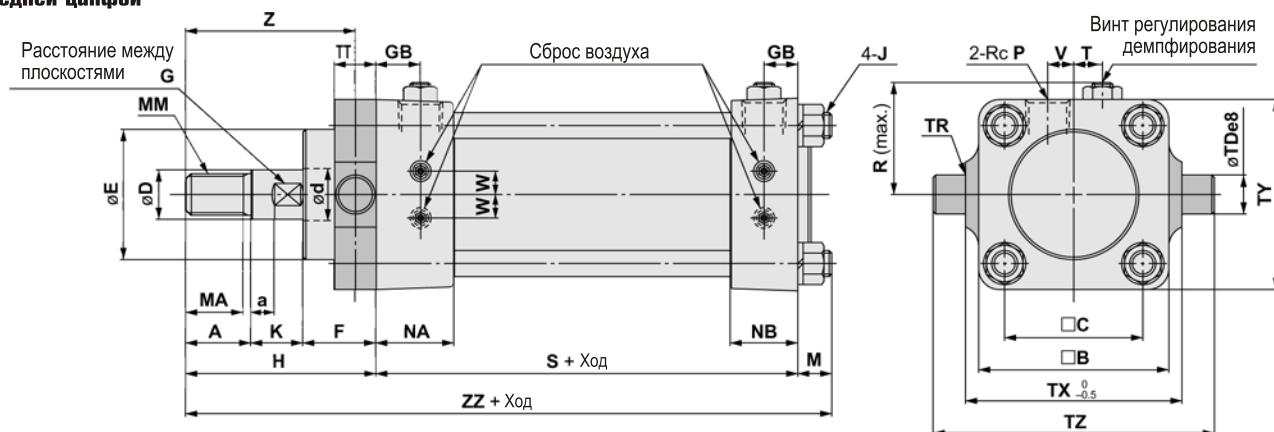
| Ø<br>(mm) |    |     |     |     |                                        |      |                                         |    |    |      |     |            |    |    |    |           |    |    |     |    |     |    |                                        |      |    |     |     |     | С защитой |    |     |       | Без защиты штока |     |    |     |     |       |     |  |
|-----------|----|-----|-----|-----|----------------------------------------|------|-----------------------------------------|----|----|------|-----|------------|----|----|----|-----------|----|----|-----|----|-----|----|----------------------------------------|------|----|-----|-----|-----|-----------|----|-----|-------|------------------|-----|----|-----|-----|-------|-----|--|
|           | A  | a   | B   | C   | D                                      | d    | E                                       | F  | G  | GA   | GB  | J          | K  | M  | MA | MM        | NA | NB | P   | R  | S   | T  | Tde8                                   | TR   | TT | TX  | TY  | TZ  | V         | W  | H   | Z     | ZZ               | e   | f  | h   | ℓ   | Z     | ZZ  |  |
| 40        | 23 | 10  | 60  | 44  | 17 <sup>+0.018</sup> <sub>-0.021</sub> | 18   | 45 <sup>+0.062</sup> <sub>-0.062</sub>  | 25 | 14 | 17.5 | 9.5 | M8 x 1.25  | 18 | 10 | 20 | M14 x 1.5 | 30 | 22 | 1/4 | 37 | 106 | 11 | 15 <sup>+0.032</sup> <sub>-0.059</sub> | R0.5 | 24 | 70  | 65  | 95  | 7.5       | 8  | 66  | 123   | 182              | 55  | 25 | 92  | 1/4 | 149   | 208 |  |
| 50        | 25 | 9   | 73  | 53  | 19 <sup>+0.021</sup> <sub>-0.021</sub> | 20   | 50 <sup>+0.062</sup> <sub>-0.062</sub>  | 28 | 17 | 17   | 13  | M10 x 1.5  | 20 | 10 | 22 | M16 x 1.5 | 30 | 26 | 3/8 | 43 | 112 | 11 | 15 <sup>+0.032</sup> <sub>-0.059</sub> | R0.5 | 26 | 83  | 78  | 108 | 10        | 9  | 73  | 131   | 195              | 60  | 28 | 99  |     | 157   | 221 |  |
| 63        | 28 | 8   | 80  | 60  | 21 <sup>+0.021</sup> <sub>-0.021</sub> | 22.4 | 55 <sup>+0.074</sup> <sub>-0.074</sub>  | 30 | 17 | 17   | 13  | M10 x 1.5  | 22 | 10 | 25 | M18 x 1.5 | 30 | 26 | 3/8 | 47 | 116 | 11 | 15 <sup>+0.032</sup> <sub>-0.059</sub> | R0.5 | 26 | 90  | 86  | 115 | 12        | 10 | 80  | 140   | 206              | 65  | 30 | 106 |     | 166   | 232 |  |
| 80        | 32 | 8   | 100 | 75  | 26 <sup>+0.021</sup> <sub>-0.021</sub> | 28   | 65 <sup>+0.074</sup> <sub>-0.074</sub>  | 32 | 22 | 20   | 15  | M12 x 1.75 | 26 | 13 | 29 | M22 x 1.5 | 35 | 30 | 1/2 | 57 | 127 | 11 | 25 <sup>+0.040</sup> <sub>-0.073</sub> | R2.5 | 36 | 112 | 106 | 162 | 16        | 13 | 90  | 156   | 230              | 80  | 32 | 116 |     | 182   | 256 |  |
| 100       | 38 | 6.5 | 118 | 90  | 34 <sup>+0.025</sup> <sub>-0.025</sub> | 35.5 | 80 <sup>+0.074</sup> <sub>-0.074</sub>  | 35 | 27 | 19   | 16  | M12 x 1.75 | 27 | 13 | 34 | M27 x 2   | 35 | 32 | 1/2 | 66 | 137 | 12 | 32 <sup>+0.050</sup> <sub>-0.089</sub> | R2.5 | 42 | 140 | 130 | 204 | 20        | 16 | 100 | 170   | 250              | 100 | 35 | 123 | 1/5 | 193   | 273 |  |
| 125       | 38 | 6.5 | 140 | 112 | 34 <sup>+0.025</sup> <sub>-0.025</sub> | 35.5 | 80 <sup>+0.074</sup> <sub>-0.074</sub>  | 35 | 27 | 19   | 16  | M14 x 2    | 27 | 15 | 34 | M27 x 2   | 35 | 32 | 1/2 | 77 | 137 | 12 | 32 <sup>+0.050</sup> <sub>-0.089</sub> | R2.5 | 42 | 170 | 162 | 234 | 20        | 16 | 100 | 170   | 252              | 100 | 35 | 123 |     | 193   | 275 |  |
| 160       | 42 | 9   | 174 | 140 | 43 <sup>+0.025</sup> <sub>-0.025</sub> | 45   | 100 <sup>+0.087</sup> <sub>-0.087</sub> | 38 | 36 | 22   | 18  | M16 x 2    | 28 | 17 | 38 | M33 x 2   | 40 | 36 | 3/4 | 94 | 155 | 12 | 36 <sup>+0.050</sup> <sub>-0.089</sub> | R2.5 | 52 | 212 | 200 | 284 | 24        | 20 | 108 | 187.5 | 280              | 120 | 38 | 131 |     | 210.5 | 303 |  |

## СНАУТ

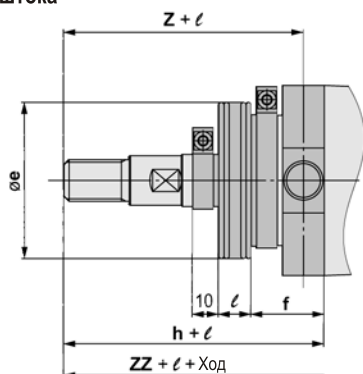


| Ø<br>(мм) | A  | a   | B   | C   | D                                      | d    | E                                       | F  | G  | GA   | H   | J          | K  | M  | MA | MM        | NA | P   | R  | S   | T  | Td8                                    | TR   | TT | TX  | TY  | TZ  | V   | W  | Z     | ZZ  |
|-----------|----|-----|-----|-----|----------------------------------------|------|-----------------------------------------|----|----|------|-----|------------|----|----|----|-----------|----|-----|----|-----|----|----------------------------------------|------|----|-----|-----|-----|-----|----|-------|-----|
| 40        | 23 | 10  | 60  | 44  | 17 <sup>+0.018</sup> <sub>-0.018</sub> | 18   | 45 <sup>+0.062</sup> <sub>-0.062</sub>  | 25 | 14 | 17.5 | 66  | M8 x 1.25  | 18 | 10 | 20 | M14 x 1.5 | 30 | 1/4 | 37 | 114 | 11 | 15 <sup>+0.032</sup> <sub>-0.059</sub> | R0.5 | 24 | 70  | 65  | 95  | 7.5 | 8  | 123   | 246 |
| 50        | 25 | 9   | 73  | 53  | 19 <sup>+0.021</sup> <sub>-0.021</sub> | 20   | 50 <sup>+0.062</sup> <sub>-0.062</sub>  | 28 | 17 | 17   | 73  | M10 x 1.5  | 20 | 10 | 22 | M16 x 1.5 | 30 | 3/8 | 43 | 116 | 11 | 15 <sup>+0.032</sup> <sub>-0.059</sub> | R0.5 | 26 | 83  | 78  | 108 | 10  | 9  | 131   | 262 |
| 63        | 28 | 8   | 80  | 60  | 21 <sup>+0.021</sup> <sub>-0.021</sub> | 22.4 | 55 <sup>+0.074</sup> <sub>-0.074</sub>  | 30 | 17 | 17   | 80  | M10 x 1.5  | 22 | 10 | 25 | M18 x 1.5 | 30 | 3/8 | 47 | 120 | 11 | 15 <sup>+0.032</sup> <sub>-0.059</sub> | R0.5 | 26 | 90  | 86  | 115 | 12  | 10 | 140   | 280 |
| 80        | 32 | 8   | 100 | 75  | 26 <sup>+0.021</sup> <sub>-0.021</sub> | 28   | 65 <sup>+0.074</sup> <sub>-0.074</sub>  | 32 | 22 | 20   | 90  | M12 x 1.75 | 26 | 13 | 29 | M22 x 1.5 | 35 | 1/2 | 57 | 132 | 11 | 25 <sup>+0.040</sup> <sub>-0.073</sub> | R2.5 | 36 | 112 | 106 | 162 | 16  | 13 | 156   | 312 |
| 100       | 38 | 6.5 | 118 | 90  | 34 <sup>+0.025</sup> <sub>-0.025</sub> | 35.5 | 80 <sup>+0.074</sup> <sub>-0.074</sub>  | 35 | 27 | 19   | 100 | M12 x 1.75 | 27 | 13 | 34 | M27 x 2   | 35 | 1/2 | 66 | 140 | 12 | 32 <sup>+0.050</sup> <sub>-0.089</sub> | R2.5 | 42 | 140 | 130 | 204 | 20  | 16 | 170   | 340 |
| 125       | 38 | 6.5 | 140 | 112 | 34 <sup>+0.025</sup> <sub>-0.025</sub> | 35.5 | 80 <sup>+0.074</sup> <sub>-0.074</sub>  | 35 | 27 | 19   | 100 | M14 x 2    | 27 | 15 | 34 | M27 x 2   | 35 | 1/2 | 77 | 140 | 12 | 32 <sup>+0.050</sup> <sub>-0.089</sub> | R2.5 | 42 | 170 | 162 | 234 | 20  | 16 | 170   | 340 |
| 160       | 42 | 9   | 174 | 140 | 43 <sup>+0.025</sup> <sub>-0.025</sub> | 45   | 100 <sup>+0.087</sup> <sub>-0.087</sub> | 38 | 36 | 22   | 108 | M16 x 2    | 28 | 17 | 38 | M33 x 2   | 40 | 3/4 | 94 | 159 | 12 | 36 <sup>+0.050</sup> <sub>-0.089</sub> | R2.5 | 52 | 212 | 200 | 284 | 24  | 20 | 187.5 | 375 |

### С передней цапфой CHAU

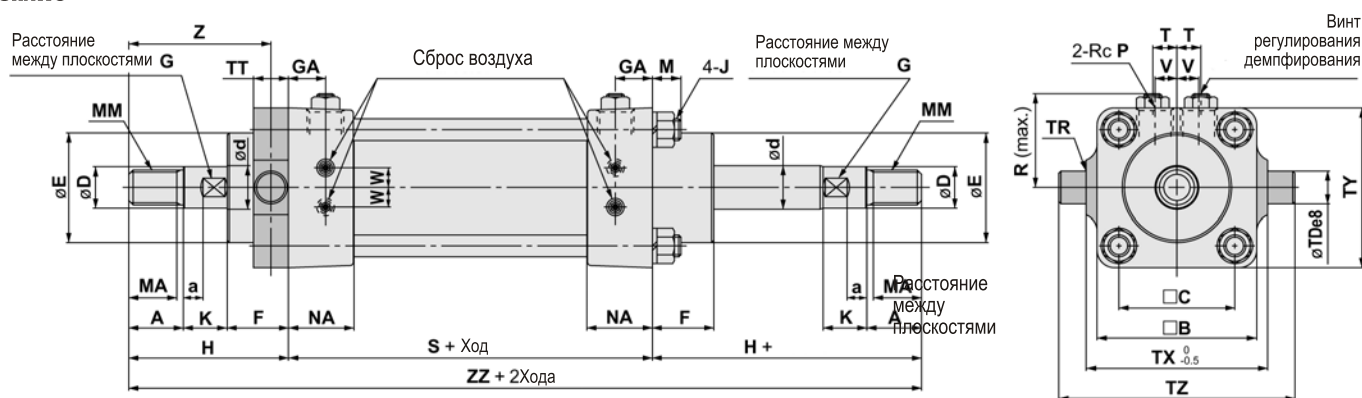


### С защитой штока



| Ø (mm) | A  | a   | B   | C   | D                                 | d    | E                                  | F  | G  | GA   | GB  | J          | K  | M  | MA | MM        | NA | NB | P   | R  | S   | T  | TDe8                                   | TR   | TT | TX  | TY  | TZ  | V   | W  | H   | Z  | ZZ  | e   | f  | h   | ℓ   | Z   | ZZ  |
|--------|----|-----|-----|-----|-----------------------------------|------|------------------------------------|----|----|------|-----|------------|----|----|----|-----------|----|----|-----|----|-----|----|----------------------------------------|------|----|-----|-----|-----|-----|----|-----|----|-----|-----|----|-----|-----|-----|-----|
| 40     | 23 | 10  | 60  | 44  | 17 <sup>0</sup> <sub>-0.018</sub> | 18   | 45 <sup>0</sup> <sub>-0.062</sub>  | 25 | 14 | 17.5 | 9.5 | M8 x 1.25  | 18 | 10 | 20 | M14 x 1.5 | 30 | 22 | 1/4 | 37 | 106 | 11 | 15 <sup>-0.032</sup> <sub>-0.059</sub> | R0.5 | 16 | 70  | 60  | 95  | 7.5 | 8  | 66  | 58 | 182 | 55  | 25 | 92  |     | 84  | 208 |
| 50     | 25 | 9   | 73  | 53  | 19 <sup>0</sup> <sub>-0.021</sub> | 20   | 50 <sup>0</sup> <sub>-0.062</sub>  | 28 | 17 | 17   | 13  | M10 x 1.5  | 20 | 16 | 22 | M16 x 1.5 | 30 | 26 | 3/8 | 43 | 112 | 11 | 15 <sup>-0.032</sup> <sub>-0.059</sub> | R0.5 | 16 | 83  | 73  | 108 | 10  | 9  | 73  | 65 | 201 | 60  | 28 | 99  | 1/4 | 91  | 227 |
| 63     | 28 | 8   | 80  | 60  | 21 <sup>0</sup> <sub>-0.021</sub> | 22.4 | 55 <sup>0</sup> <sub>-0.074</sub>  | 30 | 17 | 17   | 13  | M10 x 1.5  | 22 | 16 | 25 | M18 x 1.5 | 30 | 26 | 3/8 | 47 | 116 | 11 | 15 <sup>-0.032</sup> <sub>-0.059</sub> | R0.5 | 16 | 90  | 80  | 115 | 12  | 10 | 80  | 72 | 212 | 65  | 30 | 106 |     | 98  | 238 |
| 80     | 32 | 8   | 100 | 75  | 26 <sup>0</sup> <sub>-0.021</sub> | 28   | 65 <sup>0</sup> <sub>-0.074</sub>  | 32 | 22 | 20   | 15  | M12 x 1.75 | 26 | 13 | 29 | M22 x 1.5 | 35 | 30 | 1/2 | 57 | 127 | 11 | 25 <sup>-0.040</sup> <sub>-0.073</sub> | R2.5 | 30 | 112 | 100 | 162 | 16  | 13 | 90  | 75 | 230 | 80  | 32 | 116 |     | 101 | 256 |
| 100    | 38 | 6.5 | 118 | 90  | 34 <sup>0</sup> <sub>-0.025</sub> | 35.5 | 80 <sup>0</sup> <sub>-0.074</sub>  | 35 | 27 | 19   | 16  | M12 x 1.75 | 27 | 13 | 34 | M27 x 2   | 35 | 32 | 1/2 | 66 | 137 | 12 | 32 <sup>-0.050</sup> <sub>-0.089</sub> | R2.5 | 34 | 140 | 118 | 204 | 20  | 16 | 100 | 83 | 250 | 100 | 35 | 123 | 1/5 | 106 | 273 |
| 125    | 38 | 6.5 | 140 | 112 | 34 <sup>0</sup> <sub>-0.025</sub> | 35.5 | 80 <sup>0</sup> <sub>-0.074</sub>  | 35 | 27 | 19   | 16  | M14 x 2    | 27 | 15 | 34 | M27 x 2   | 35 | 32 | 1/2 | 77 | 137 | 12 | 32 <sup>-0.050</sup> <sub>-0.089</sub> | R2.5 | 34 | 170 | 140 | 234 | 20  | 16 | 100 | 83 | 252 | 100 | 35 | 123 |     | 106 | 275 |
| 160    | 42 | 9   | 174 | 140 | 43 <sup>0</sup> <sub>-0.025</sub> | 45   | 100 <sup>0</sup> <sub>-0.087</sub> | 38 | 36 | 22   | 18  | M16 x 2    | 28 | 17 | 38 | M33 x 2   | 40 | 36 | 3/4 | 94 | 155 | 12 | 36 <sup>-0.050</sup> <sub>-0.089</sub> | R2.5 | 38 | 212 | 174 | 284 | 24  | 20 | 108 | 89 | 280 | 120 | 38 | 131 |     | 112 | 303 |

### CHAWU



| Ø (mm) | A  | a   | B   | C   | D                                 | d    | E                                  | F  | G  | GA   | H   | J          | K  | M  | MA | MM        | NA | P   | R  | S   | T  | TDe8                                   | TR   | TT | TX  | TY  | TZ  | V   | W  | Z  | ZZ  |
|--------|----|-----|-----|-----|-----------------------------------|------|------------------------------------|----|----|------|-----|------------|----|----|----|-----------|----|-----|----|-----|----|----------------------------------------|------|----|-----|-----|-----|-----|----|----|-----|
| 40     | 23 | 10  | 60  | 44  | 17 <sup>0</sup> <sub>-0.018</sub> | 18   | 45 <sup>0</sup> <sub>-0.062</sub>  | 25 | 14 | 17.5 | 66  | M8 x 1.25  | 18 | 10 | 20 | M14 x 1.5 | 30 | 1/4 | 37 | 114 | 11 | 15 <sup>-0.032</sup> <sub>-0.059</sub> | R0.5 | 16 | 70  | 60  | 95  | 7.5 | 8  | 58 | 246 |
| 50     | 25 | 9   | 73  | 53  | 19 <sup>0</sup> <sub>-0.021</sub> | 20   | 50 <sup>0</sup> <sub>-0.062</sub>  | 28 | 17 | 17   | 73  | M10 x 1.5  | 20 | 13 | 22 | M16 x 1.5 | 30 | 3/8 | 43 | 116 | 11 | 15 <sup>-0.032</sup> <sub>-0.059</sub> | R0.5 | 16 | 83  | 73  | 108 | 10  | 9  | 65 | 262 |
| 63     | 28 | 8   | 80  | 60  | 21 <sup>0</sup> <sub>-0.021</sub> | 22.4 | 55 <sup>0</sup> <sub>-0.074</sub>  | 30 | 17 | 17   | 80  | M10 x 1.5  | 22 | 15 | 25 | M18 x 1.5 | 30 | 3/8 | 47 | 120 | 11 | 15 <sup>-0.032</sup> <sub>-0.059</sub> | R0.5 | 16 | 90  | 80  | 115 | 12  | 10 | 72 | 280 |
| 80     | 32 | 8   | 100 | 75  | 26 <sup>0</sup> <sub>-0.021</sub> | 28   | 65 <sup>0</sup> <sub>-0.074</sub>  | 32 | 22 | 20   | 90  | M12 x 1.75 | 26 | 13 | 29 | M22 x 1.5 | 35 | 1/2 | 57 | 132 | 11 | 25 <sup>-0.040</sup> <sub>-0.073</sub> | R2.5 | 30 | 112 | 100 | 162 | 16  | 13 | 75 | 312 |
| 100    | 38 | 6.5 | 118 | 90  | 34 <sup>0</sup> <sub>-0.025</sub> | 35.5 | 80 <sup>0</sup> <sub>-0.074</sub>  | 35 | 27 | 19   | 100 | M12 x 1.75 | 27 | 13 | 34 | M27 x 2   | 35 | 1/2 | 66 | 140 | 12 | 32 <sup>-0.050</sup> <sub>-0.089</sub> | R2.5 | 34 | 140 | 118 | 204 | 20  | 16 | 83 | 340 |
| 125    | 38 | 6.5 | 140 | 112 | 34 <sup>0</sup> <sub>-0.025</sub> | 35.5 | 80 <sup>0</sup> <sub>-0.074</sub>  | 35 | 27 | 19   | 100 | M14 x 2    | 27 | 15 | 34 | M27 x 2   | 35 | 1/2 | 77 | 140 | 12 | 32 <sup>-0.050</sup> <sub>-0.089</sub> | R2.5 | 34 | 170 | 140 | 234 | 20  | 16 | 83 | 340 |
| 160    | 42 | 9   | 174 | 140 | 43 <sup>0</sup> <sub>-0.025</sub> | 45   | 100 <sup>0</sup> <sub>-0.087</sub> | 38 | 36 | 22   | 108 | M16 x 2    | 28 | 17 | 38 | M33 x 2   | 40 | 3/4 | 94 | 159 | 12 | 36 <sup>-0.050</sup> <sub>-0.089</sub> | R2.5 | 38 | 212 | 174 | 284 | 24  | 20 | 89 | 375 |

Гидравлический цилиндр низкого давления
СНА

Принадлежности. Размеры

Палец шарнирный
Материал: углеродистая сталь



Table with dimensions for pin: Ø (мм), A, B, C(f8) (Размер, Допуск), D, E, Чистота поверх-ти, Шплинт, Ø шарнира. Rows for diameters 40 to 160 mm.

Номер для заказа
AC-C1- диаметр цилиндра

Кронштейн шарнирный
Материал: чугуное литье

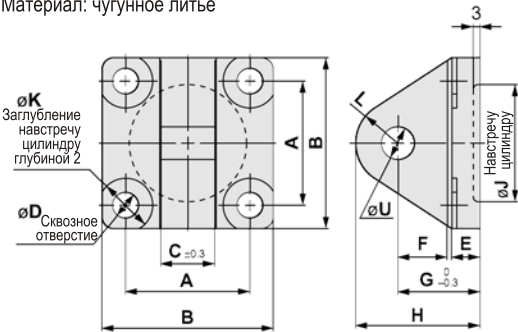


Table with dimensions for bracket: Ø (мм), A, B, C, D, E, F, G, H, J, K, L, U(H8), Болт, Ø 2-го шарнира. Rows for diameters 40 to 160 mm.

Номер для заказа
AC-A1- диаметр цилиндра

Ось шарнира
Материал: углеродистая сталь

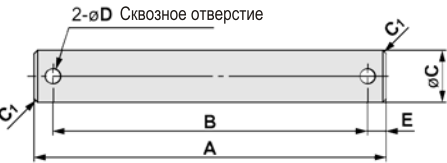


Table with dimensions for axle: Ø (мм), A, B, C(f8) (Размер, Допуск), D, E, Чистота пов-ти, Шплинт, Ø крепления. Rows for diameters 40 to 160 mm.

Номер для заказа
AC-D1- диаметр цилиндра

Шарнир
Материал: углеродистая сталь

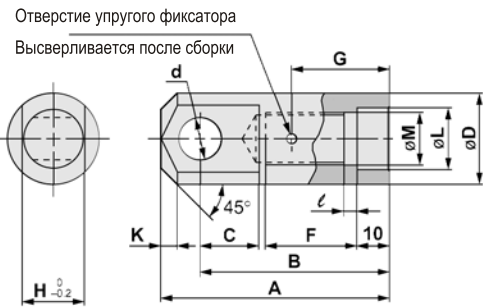


Table with dimensions for joint: Ø (мм), A, B, C, D, E, F, G, H, J, K, L(F8) (размер/допуск), M, N, P, Q, R, S, T, U, V, W, X, Y, Z. Rows for diameters 40 to 160 mm.

Номер для заказа
AC-B1- диаметр цилиндра

Вилка шарнирная
Материал: углеродистая сталь

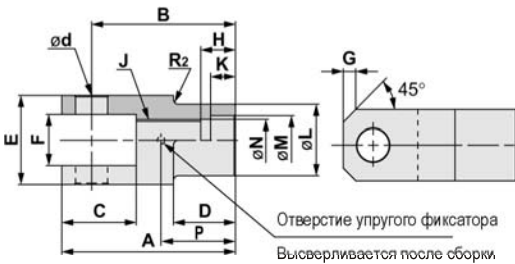


Table with dimensions for fork: Ø (мм), A, B, C, D, E, F, G, H, J, K, L(F8) (размер/допуск), M, N, P, Q, R, S, T, U, V, W, X, Y, Z. Rows for diameters 40 to 160 mm.

Номер для заказа
AC-3Y- диаметр цилиндра

### Датчики положения

#### Применяемые датчики

| Обозначение | Тип         | Монтаж     | Эл.вход        | Световая индикация | Выход               | Рабочее напряжение (В) |          | Характер нагрузки |
|-------------|-------------|------------|----------------|--------------------|---------------------|------------------------|----------|-------------------|
|             |             |            |                |                    |                     |                        |          |                   |
| D-A54L      | Герконовый  | На шпильке | Кабель залитый | Есть               | 2-х проводной       | 24                     | 110, 220 | Реле, ПЛК         |
| D-A44       |             | На хомуте  | DIN-разъем     |                    |                     |                        |          |                   |
| D-F5PL      | Электронный | На шпильке | Кабель залитый |                    | 3-х проводной р-п-р | 5, 12, 24              | -        |                   |

Примечание: более детальная информация о датчиках положения содержится во вводном разделе.

#### Номер для заказа крепления датчика

| Диаметр цилиндра (мм) | Датчик положения |                |
|-----------------------|------------------|----------------|
|                       | D-A44            | D-A54L, D-F5PL |
| 40                    | BD1-04M          | BT-04          |
| 50                    | BD1-05M          | BT-06          |
| 63                    | BD1-06M          | BT-06          |
| 80                    | BD1-08M          | BT-08          |
| 100                   | BD1-10M          | BT-08          |

#### Минимальная длина хода (мм) при использовании датчиков положения

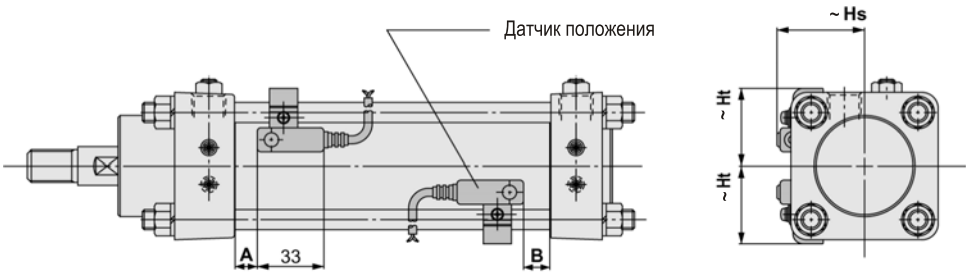
| Модель  | Количество датчиков | Расположение           | Для всех типов крепления кроме центральной цапфы | Крепление с центральной цапфой                      |                                              |                                                      |                                                      |
|---------|---------------------|------------------------|--------------------------------------------------|-----------------------------------------------------|----------------------------------------------|------------------------------------------------------|------------------------------------------------------|
|         |                     |                        |                                                  | Ø40 и Ø50                                           | Ø63                                          | Ø80                                                  | Ø100                                                 |
| D-A54L, | 1 или 2             | одно- и разностороннее | 10                                               | 100                                                 | 100                                          | 110                                                  | 120                                                  |
| D-F5PL  | n                   | одностороннее          | $10 + 55 \cdot (n - 2) / 2$<br>$n=2,4,6,8,\dots$ | $100 + 55 \cdot (n - 4) / 2$<br>$n=4,8,12,16,\dots$ |                                              | $110 + 100 \cdot (n - 4) / 2$<br>$n=4,8,12,16,\dots$ | $120 + 100 \cdot (n - 4) / 2$<br>$n=4,8,12,16,\dots$ |
| D-A44   | 2                   | Разностороннее         | 35                                               | 75                                                  | 80                                           | 90                                                   |                                                      |
|         |                     | Одностороннее          | 55                                               | 75                                                  | 80                                           | 90                                                   |                                                      |
|         | n                   | Разностороннее         | $35 - 30 \cdot (n - 2)$<br>$n=2,3,4,\dots$       | $75 + 30 \cdot (n - 2)$<br>$n=2,4,6,8,\dots$        | $85 + 30 \cdot (n - 2)$<br>$n=2,4,6,8,\dots$ | $90 + 30 \cdot (n - 2)$<br>$n=2,4,6,8,\dots$         |                                                      |
|         |                     | Одностороннее          | $55 - 50 \cdot (n - 2)$<br>$n=2,3,4,\dots$       | $75 + 50 \cdot (n - 2)$<br>$n=2,4,6,8,\dots$        | $80 + 50 \cdot (n - 2)$<br>$n=2,4,6,8,\dots$ | $90 + 50 \cdot (n - 2)$<br>$n=2,4,6,8,\dots$         |                                                      |
|         | 1                   | -                      | 10                                               | 75                                                  | 80                                           | 90                                                   |                                                      |

# Гидравлический цилиндр низкого давления СНА

## Монтаж датчиков

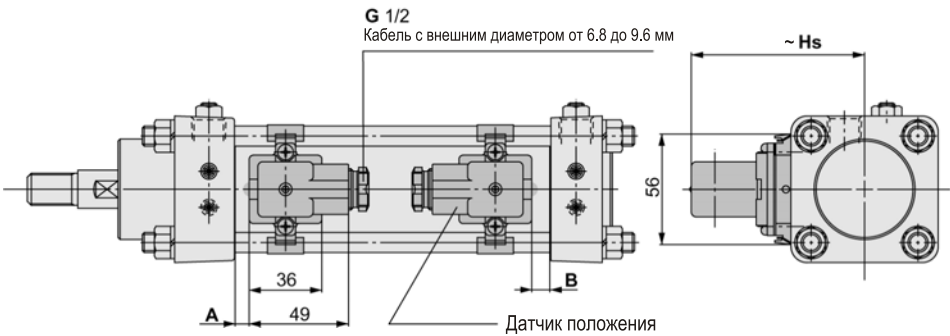
### Крепление на стягивающих шпильках

Герконовый датчик **D-A54L**  
Электронный датчик **D-F5PL**



### Крепление на хомуте

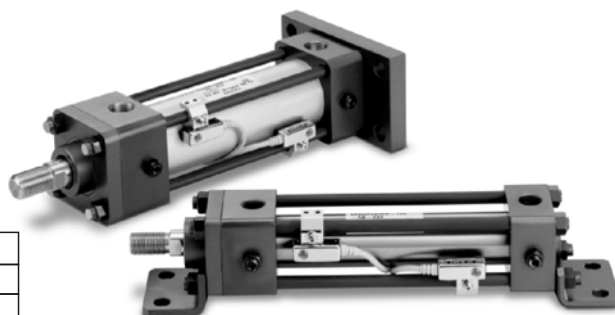
Герконовый датчик **D-A44**



| Ø<br>(мм) | D-A54L |      |      |      | D-F5PL |      |      | D-A44 |      |      |      |
|-----------|--------|------|------|------|--------|------|------|-------|------|------|------|
|           | A      | B    | Hs   | Ht   | A      | B    | Hs   | A     | B    | Ht   | Hs   |
| 40        | 10.5   | 11.5 | 39.5 | 33.5 | 17     | 18   | 38   | 10.5  | 11.5 | 33.5 | 82.5 |
| 50        | 11     | 13   | 44   | 39   | 17.5   | 19.5 | 43   | 11    | 13   | 39   | 88   |
| 63        | 13.5   | 14.5 | 50   | 43   | 20     | 21   | 48.5 | 13.5  | 14.5 | 43   | 95   |
| 80        | 13.5   | 16.5 | 57   | 51   | 20     | 23   | 56   | 13.5  | 16.5 | 51   | 104  |
| 100       | 17     | 21   | 65   | 58.5 | 23.5   | 27.5 | 63.5 | 17    | 21   | 58.5 | 114  |

- Исполнения с одно- и двусторонним штоком
- Возможность установки датчиков положения
- Демпфирование в конце хода
- Наличие водозащищенного исполнения
- Различные исполнения законцовок штока

**3.5 / 7 / 14 МПа**



### Технические характеристики

| Модель                          |                        |        | CH2E                                                                                                                                               | CH2F | CH2G, CH2H |
|---------------------------------|------------------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------|------|------------|
| Среда                           |                        |        | Гидравлическая жидкость                                                                                                                            |      |            |
| Рабочее давление (МПа)          |                        |        | 3.5                                                                                                                                                | 7    | 14         |
| Макс. допустимое давление (МПа) | При выдвигении         |        | 3.5                                                                                                                                                | 9    | 18         |
|                                 | При втягивании         | В-шток |                                                                                                                                                    | 13.5 | 18         |
|                                 |                        | С-шток |                                                                                                                                                    | 11   | 14         |
| Испытательное давление (МПа)    |                        |        | 5.0                                                                                                                                                | 10.5 | 21         |
| Мин. рабочее давление (МПа)     | При выдвигении         |        | 0.15                                                                                                                                               |      |            |
|                                 | При втягивании         |        | 0.2                                                                                                                                                |      |            |
| Рабочая температура (°C)        | Без датчиков положения |        | -10 ~ 80                                                                                                                                           |      |            |
|                                 | С датчиками положения  |        | -10 ~ 60                                                                                                                                           |      |            |
| Скорость поршня (мм/с)          |                        |        | 8 ~ 300                                                                                                                                            |      |            |
| Демпфирование                   |                        |        | Регулируемое                                                                                                                                       |      |            |
| Допуск на длину хода (мм)       |                        |        | (до 100) <sup>+0,8</sup> , (101~ 250) <sup>+1,0</sup> , (251~ 630) <sup>+1,25</sup> , (631 ~ 1000) <sup>+1,4</sup> , (1001 ~ 1800) <sup>+1,8</sup> |      |            |

Примечание:  
для CH2EW и CH2FW минимальное рабочее давление 0.3 МПа

### Исполнения

| Модель                 | CH2E, CH2EW             | CH2F, CH2FW | CH2G  | CH2H        |
|------------------------|-------------------------|-------------|-------|-------------|
| Материал гильзы        | Алюминиевый сплав       | Нерж. сталь | Сталь | Нерж. сталь |
| Рабочее давление (МПа) | 3.5                     | 7           | 14    | 14          |
| Диаметр поршня (мм)    | 32, 40, 50, 63, 80, 100 |             |       |             |
| С магнитным кольцом    | Есть                    | Есть        | Нет   | Есть        |

### Стандартные длины хода

| Диаметр цилиндра (мм) | Стандартные длины хода (мм) |
|-----------------------|-----------------------------|
| 32, 40, 50, 63        | 25 ~ 800                    |
| 80, 100               | 25 ~ 1000                   |

### Максимально возможная длина хода (для исполнений с односторонним штоком)

| Диаметр цилиндра (мм) | Максимально возможные длины хода (мм)                        |
|-----------------------|--------------------------------------------------------------|
| 32, 40, 50            | 1800 (>1400 - при использовании кольца жесткости на стяжках) |
| 63                    | 1800 (>1500 - при использовании кольца жесткости на стяжках) |
| 80, 100               | 1800                                                         |

Максимально возможная длина хода зависит также от типа крепления гидроцилиндра и характера приложения нагрузки. Более подробную информацию об ограничениях длины хода можно получить по запросу.

### Диаметр штока (мм)

| Тип штока | Диаметр цилиндра (мм) |      |      |      |      |     |
|-----------|-----------------------|------|------|------|------|-----|
|           | 32                    | 40   | 50   | 63   | 80   | 100 |
| B         | 18                    | 22.4 | 28   | 35.5 | 45   | 56  |
| C         |                       | 18   | 22.4 | 28   | 35.5 | 45  |

### Совместимость с гидравлическими жидкостями

| Гидравлическая жидкость    | Совместимость |
|----------------------------|---------------|
| Минеральные гидравл. масла | Совместимы    |
| Эмульсии «Вода в масле»    |               |
| Эмульсии «Масло в воде»    |               |
| Водно-гликолевые жидкости  | *             |
| Фосфаты                    | Несовместимы  |

\* информацию можно получить по запросу

### Путь демпфирования

| Диаметр (мм) | Путь демпфирования (мм) |
|--------------|-------------------------|
| 32, 40       | 16                      |
| 50           | 17                      |
| 63           | 16                      |
| 80           | 20                      |
| 100          | 23                      |



# Гидравлический цилиндр по JIS

## CH2

### Номинальные усилия (Н)

| CH2E/CH2F/CH2G/CH2H   |     |                    |                         |                      |                        |       |       |       |       |        |
|-----------------------|-----|--------------------|-------------------------|----------------------|------------------------|-------|-------|-------|-------|--------|
| Диаметр цилиндра (мм) |     | Диаметр штока (мм) | Направление перемещения | Площадь поршня (мм²) | Рабочее давление (МПа) |       |       |       |       |        |
|                       |     |                    |                         |                      | 1                      | 3,5   | 5     | 7     | 10    | 14     |
| Исполнение В          | 32  | 18                 | ВЫДВИЖЕНИЕ              | 804                  | 804                    | 2813  | 4019  | 5627  | 8038  | 11254  |
|                       |     |                    | ВТЯГИВАНИЕ              | 550                  | 550                    | 1923  | 2748  | 3847  | 5495  | 7693   |
|                       | 40  | 22.4               | ВЫДВИЖЕНИЕ              | 1256                 | 1256                   | 4396  | 6280  | 8792  | 12560 | 17584  |
|                       |     |                    | ВТЯГИВАНИЕ              | 862                  | 862                    | 3017  | 4311  | 6035  | 8621  | 12070  |
|                       | 50  | 28                 | ВЫДВИЖЕНИЕ              | 1963                 | 1963                   | 6869  | 9813  | 13738 | 19625 | 27475  |
|                       |     |                    | ВТЯГИВАНИЕ              | 1347                 | 1347                   | 4715  | 6735  | 9429  | 13471 | 18859  |
|                       | 63  | 35.5               | ВЫДВИЖЕНИЕ              | 3116                 | 3116                   | 10905 | 15578 | 21810 | 31157 | 43619  |
|                       |     |                    | ВТЯГИВАНИЕ              | 2126                 | 2126                   | 7442  | 10632 | 14885 | 21264 | 29769  |
|                       | 80  | 45                 | ВЫДВИЖЕНИЕ              | 5024                 | 5024                   | 17584 | 25120 | 35168 | 50240 | 70336  |
|                       |     |                    | ВТЯГИВАНИЕ              | 3434                 | 3434                   | 12020 | 17172 | 24041 | 34344 | 48081  |
|                       | 100 | 56                 | ВЫДВИЖЕНИЕ              | 7850                 | 7850                   | 27475 | 39250 | 54950 | 78500 | 109900 |
|                       |     |                    | ВТЯГИВАНИЕ              | 5388                 | 5388                   | 18859 | 26941 | 37718 | 53882 | 75435  |
| Исполнение С          | 40  | 18                 | ВЫДВИЖЕНИЕ              | 1256                 | 1256                   | 4396  | 6280  | 8792  | 12560 | 17584  |
|                       |     |                    | ВТЯГИВАНИЕ              | 1002                 | 1002                   | 3506  | 5008  | 7012  | 10017 | 14023  |
|                       | 50  | 22.4               | ВЫДВИЖЕНИЕ              | 1963                 | 1963                   | 6869  | 9813  | 13738 | 19625 | 27475  |
|                       |     |                    | ВТЯГИВАНИЕ              | 1569                 | 1569                   | 5490  | 7843  | 10980 | 15686 | 21961  |
|                       | 63  | 28                 | ВЫДВИЖЕНИЕ              | 3116                 | 3116                   | 10905 | 15578 | 21810 | 31157 | 43619  |
|                       |     |                    | ВТЯГИВАНИЕ              | 2500                 | 2500                   | 8751  | 12501 | 17502 | 25002 | 35003  |
|                       | 80  | 35.5               | ВЫДВИЖЕНИЕ              | 5024                 | 5024                   | 17584 | 25120 | 35168 | 50240 | 70336  |
|                       |     |                    | ВТЯГИВАНИЕ              | 4035                 | 4035                   | 14121 | 20174 | 28243 | 40347 | 56486  |
|                       | 100 | 45                 | ВЫДВИЖЕНИЕ              | 7850                 | 7850                   | 27475 | 39250 | 54950 | 78500 | 109900 |
|                       |     |                    | ВТЯГИВАНИЕ              | 6260                 | 6260                   | 21911 | 31302 | 43823 | 62604 | 87645  |

| CH2EW/CH2FW           |     |                    |                      |                        |       |       |       |
|-----------------------|-----|--------------------|----------------------|------------------------|-------|-------|-------|
| Диаметр цилиндра (мм) |     | Диаметр штока (мм) | Площадь поршня (мм²) | Рабочее давление (МПа) |       |       |       |
|                       |     |                    |                      | 1                      | 3.5   | 5     | 7     |
| Исполнение В          | 32  | 18                 | 550                  | 550                    | 1923  | 2748  | 3847  |
|                       | 40  | 22.4               | 862                  | 862                    | 3017  | 4311  | 6035  |
|                       | 50  | 28                 | 1347                 | 1347                   | 4715  | 6735  | 9429  |
|                       | 63  | 35.5               | 2126                 | 2126                   | 7442  | 10632 | 14885 |
|                       | 80  | 45                 | 3434                 | 3434                   | 12020 | 17172 | 24041 |
|                       | 100 | 56                 | 5388                 | 5388                   | 18859 | 26941 | 37718 |
| Исполнение С          | 40  | 18                 | 1002                 | 1002                   | 3506  | 5008  | 7012  |
|                       | 50  | 22.4               | 1569                 | 1569                   | 5490  | 7843  | 10980 |
|                       | 63  | 28                 | 2500                 | 2500                   | 8751  | 12501 | 17502 |
|                       | 80  | 35.5               | 4035                 | 4035                   | 14121 | 20174 | 28243 |
|                       | 100 | 45                 | 6260                 | 6260                   | 21911 | 31302 | 43823 |

### Масса цилиндров (кг)

| CH2EW/CH2FW            |        |                             |       |       |       |       |           |                               |  |
|------------------------|--------|-----------------------------|-------|-------|-------|-------|-----------|-------------------------------|--|
| Со штоком исполнения В |        |                             |       |       |       |       |           |                               |  |
| Ø (мм)                 | Модель | Базовая масса (нулевой ход) |       |       |       |       |           | Дополнит. масса на 10 мм хода |  |
|                        |        | В                           | LA    | FC    | TC    | LB    | FA (7МПа) |                               |  |
| 32                     | CH2E   | 2.94                        | 3.93  | 3.79  | 3.43  | 3.44  | 3.38      | 0.04                          |  |
|                        | CH2F   | 2.93                        | 3.92  | 3.78  | 3.42  | 3.43  | 3.37      | 0.04                          |  |
| 40                     | CH2E   | 3.82                        | 5.12  | 4.91  | 4.41  | 4.40  | 4.41      | 0.08                          |  |
|                        | CH2F   | 3.79                        | 5.09  | 4.88  | 4.38  | 4.37  | 4.38      | 0.08                          |  |
| 50                     | CH2E   | 6.37                        | 8.97  | 8.33  | 7.21  | 7.17  | 7.45      | 0.09                          |  |
|                        | CH2F   | 6.27                        | 8.87  | 8.23  | 7.11  | 7.07  | 7.35      | 0.10                          |  |
| 63                     | CH2E   | 9.75                        | 13.63 | 12.56 | 11.29 | 11.37 | 11.36     | 0.17                          |  |
|                        | CH2F   | 9.16                        | 13.04 | 12.06 | 10.70 | 10.78 | 10.77     | 0.17                          |  |
| 80                     | CH2E   | 15.00                       | 20.35 | 19.59 | 17.02 | 17.36 | 17.69     | 0.24                          |  |
|                        | CH2F   | 14.36                       | 19.71 | 18.95 | 16.38 | 16.72 | 17.05     | 0.26                          |  |
| 100                    | CH2E   | 21.82                       | 32.63 | 29.29 | 25.47 | 25.24 | 26.42     | 0.41                          |  |
|                        | CH2F   | 21.26                       | 32.06 | 28.73 | 24.91 | 24.68 | 25.86     | 0.46                          |  |

| Со штоком исполнения С |        |                             |       |       |       |       |           |                               |  |
|------------------------|--------|-----------------------------|-------|-------|-------|-------|-----------|-------------------------------|--|
| Ø (мм)                 | Модель | Базовая масса (нулевой ход) |       |       |       |       |           | Дополнит. масса на 10 мм хода |  |
|                        |        | В                           | LA    | FC    | TC    | LB    | FA (7МПа) |                               |  |
| 40                     | CH2E   | 3.74                        | 5.04  | 4.83  | 4.33  | 4.32  | 4.33      | 0.07                          |  |
|                        | CH2F   | 3.71                        | 5.01  | 4.80  | 4.30  | 4.29  | 4.30      | 0.07                          |  |
| 50                     | CH2E   | 6.21                        | 8.81  | 8.17  | 7.05  | 7.01  | 7.29      | 0.07                          |  |
|                        | CH2F   | 6.11                        | 8.71  | 8.07  | 6.95  | 6.91  | 7.19      | 0.08                          |  |
| 63                     | CH2E   | 9.44                        | 13.32 | 12.34 | 10.98 | 11.06 | 11.05     | 0.14                          |  |
|                        | CH2F   | 8.66                        | 12.74 | 11.76 | 10.40 | 10.48 | 10.47     | 0.14                          |  |
| 80                     | CH2E   | 14.56                       | 19.91 | 19.15 | 16.58 | 16.92 | 17.25     | 0.18                          |  |
|                        | CH2F   | 13.92                       | 19.27 | 18.51 | 15.94 | 16.28 | 16.61     | 0.21                          |  |
| 100                    | CH2E   | 20.76                       | 31.57 | 28.23 | 24.41 | 24.18 | 25.36     | 0.29                          |  |
|                        | CH2F   | 20.20                       | 31.01 | 27.67 | 23.85 | 23.62 | 24.80     | 0.30                          |  |

## CH2E/CH2F/CH2G/CH2H

### Со штоком исполнения В

| Ø<br>(мм) | Модель | Базовая масса (нулевой ход) |       |        |        |       |       |       |       |                  | Дополнительная<br>масса на 10 мм<br>хода |
|-----------|--------|-----------------------------|-------|--------|--------|-------|-------|-------|-------|------------------|------------------------------------------|
|           |        | B                           | LA    | FY, FZ | FC, FD | CA    | CB    | TC    | LB    | FA, FB<br>(7МПа) |                                          |
| 32        | CH2E   | 2.50                        | 3.49  | -      | 3.35   | 2.95  | 3.06  | 2.99  | 3.00  | 2.94             | 0.04                                     |
|           | CH2F   | 2.49                        | 3.48  | -      | 3.34   | 2.94  | 3.05  | 2.98  | 2.99  | 2.93             | 0.04                                     |
|           | CH2G   | 2.59                        | 3.58  | 3.12   | 3.44   | 3.04  | 3.15  | 3.08  | -     | -                | 0.06                                     |
|           | CH2H   | 2.60                        | 3.59  | 3.13   | 3.45   | 3.05  | 3.16  | 3.09  | -     | -                | 0.05                                     |
| 40        | CH2E   | 3.27                        | 4.57  | -      | 4.36   | 3.91  | 4.12  | 3.86  | 3.85  | 3.86             | 0.08                                     |
|           | CH2F   | 3.33                        | 4.63  | -      | 4.42   | 3.97  | 4.18  | 3.92  | 3.91  | 3.92             | 0.08                                     |
|           | CH2G   | 3.66                        | 4.96  | 4.36   | 4.75   | 4.30  | 4.51  | 4.25  | -     | -                | 0.10                                     |
|           | CH2H   | 3.55                        | 4.85  | 4.25   | 4.64   | 4.19  | 4.40  | 4.14  | -     | -                | 0.10                                     |
| 50        | CH2E   | 4.90                        | 7.50  | -      | 6.86   | 6.06  | 6.07  | 5.74  | 5.70  | 5.98             | 0.09                                     |
|           | CH2F   | 4.98                        | 7.58  | -      | 6.94   | 6.14  | 6.15  | 5.82  | 5.78  | 6.06             | 0.10                                     |
|           | CH2G   | 5.49                        | 8.09  | 6.98   | 7.45   | 6.65  | 6.66  | 6.33  | -     | -                | 0.14                                     |
|           | CH2H   | 5.32                        | 7.92  | 6.81   | 7.28   | 6.48  | 6.49  | 6.16  | -     | -                | 0.14                                     |
| 63        | CH2E   | 7.93                        | 11.81 | -      | 10.83  | 10.67 | 10.68 | 9.47  | 9.55  | 9.54             | 0.17                                     |
|           | CH2F   | 7.69                        | 11.57 | -      | 10.59  | 10.43 | 10.44 | 9.23  | 9.31  | 9.30             | 0.17                                     |
|           | CH2G   | 8.49                        | 12.37 | 10.64  | 11.39  | 11.23 | 11.24 | 10.03 | -     | -                | 0.20                                     |
|           | CH2H   | 8.43                        | 12.31 | 10.58  | 11.33  | 11.17 | 11.18 | 9.97  | -     | -                | 0.20                                     |
| 80        | CH2E   | 13.00                       | 18.35 | -      | 17.59  | 16.40 | 16.40 | 15.02 | 15.36 | 15.69            | 0.24                                     |
|           | CH2F   | 12.89                       | 18.24 | -      | 17.48  | 16.29 | 16.29 | 14.91 | 15.25 | 15.58            | 0.26                                     |
|           | CH2G   | 14.77                       | 20.12 | 18.34  | 19.36  | 18.17 | 18.17 | 16.79 | -     | -                | 0.34                                     |
|           | CH2H   | 14.21                       | 19.56 | 17.78  | 18.80  | 17.61 | 17.61 | 16.23 | -     | -                | 0.30                                     |
| 100       | CH2E   | 18.97                       | 29.78 | -      | 26.44  | 25.15 | 25.15 | 22.62 | 22.39 | 23.57            | 0.41                                     |
|           | CH2F   | 19.37                       | 30.17 | -      | 26.84  | 25.55 | 25.55 | 23.02 | 22.79 | 23.97            | 0.46                                     |
|           | CH2G   | 22.17                       | 32.98 | 28.62  | 29.64  | 28.35 | 28.35 | 25.82 | -     | -                | 0.49                                     |
|           | CH2H   | 21.81                       | 32.62 | 28.26  | 29.28  | 27.99 | 27.99 | 25.46 | -     | -                | 0.54                                     |

### Со штоком исполнения С

| Ø<br>(мм) | Модель | Базовая масса (нулевой ход) |       |        |        |       |       |       |       |                  | Дополнительная<br>масса на 10 мм<br>хода |
|-----------|--------|-----------------------------|-------|--------|--------|-------|-------|-------|-------|------------------|------------------------------------------|
|           |        | B                           | LA    | FY, FZ | FC, FD | CA    | CB    | TC    | LB    | FA, FB<br>(7МПа) |                                          |
| 40        | CH2E   | 3.19                        | 4.49  | -      | 4.28   | 3.83  | 4.04  | 3.78  | 3.77  | 3.78             | 0.07                                     |
|           | CH2F   | 3.25                        | 4.55  | -      | 4.34   | 3.89  | 4.10  | 3.84  | 3.83  | 3.84             | 0.07                                     |
|           | CH2G   | 3.58                        | 4.88  | 4.28   | 4.67   | 4.22  | 4.43  | 4.17  | -     | -                | 0.09                                     |
|           | CH2H   | 3.47                        | 4.77  | 4.17   | 4.56   | 4.11  | 4.32  | 4.06  | -     | -                | 0.09                                     |
| 50        | CH2E   | 4.74                        | 7.34  | -      | 6.70   | 5.90  | 5.91  | 5.58  | 5.54  | 5.82             | 0.07                                     |
|           | CH2F   | 4.82                        | 7.42  | -      | 6.78   | 5.98  | 5.99  | 5.66  | 5.62  | 5.90             | 0.08                                     |
|           | CH2G   | 5.33                        | 7.93  | 6.82   | 7.29   | 6.49  | 6.50  | 6.17  | -     | -                | 0.12                                     |
|           | CH2H   | 5.16                        | 7.76  | 6.65   | 7.12   | 6.32  | 6.33  | 6.00  | -     | -                | 0.12                                     |
| 63        | CH2E   | 7.62                        | 11.50 | -      | 10.52  | 10.36 | 10.37 | 9.16  | 9.24  | 9.23             | 0.14                                     |
|           | CH2F   | 7.39                        | 11.27 | -      | 10.29  | 10.13 | 10.14 | 8.93  | 9.01  | 9.00             | 0.14                                     |
|           | CH2G   | 8.19                        | 12.07 | 10.34  | 11.09  | 10.93 | 10.94 | 9.73  | -     | -                | 0.17                                     |
|           | CH2H   | 8.13                        | 12.01 | 10.28  | 11.03  | 10.87 | 10.88 | 9.67  | -     | -                | 0.17                                     |
| 80        | CH2E   | 12.56                       | 17.91 | -      | 17.15  | 15.96 | 15.96 | 14.58 | 14.92 | 15.25            | 0.18                                     |
|           | CH2F   | 12.45                       | 17.80 | -      | 17.04  | 15.85 | 15.85 | 14.47 | 14.81 | 15.14            | 0.21                                     |
|           | CH2G   | 14.32                       | 19.67 | 17.89  | 18.91  | 17.72 | 17.72 | 16.34 | -     | -                | 0.28                                     |
|           | CH2H   | 13.77                       | 19.12 | 17.34  | 18.36  | 17.17 | 17.17 | 15.79 | -     | -                | 0.25                                     |
| 100       | CH2E   | 17.91                       | 28.72 | -      | 25.38  | 24.09 | 24.09 | 21.56 | 21.33 | 22.51            | 0.29                                     |
|           | CH2F   | 18.31                       | 29.12 | -      | 25.78  | 24.49 | 24.49 | 21.96 | 21.73 | 22.91            | 0.30                                     |
|           | CH2G   | 21.11                       | 31.92 | 27.56  | 28.58  | 27.29 | 27.29 | 24.76 | -     | -                | 0.42                                     |
|           | CH2H   | 20.75                       | 31.56 | 27.20  | 28.22  | 26.93 | 26.93 | 24.40 | -     | -                | 0.38                                     |



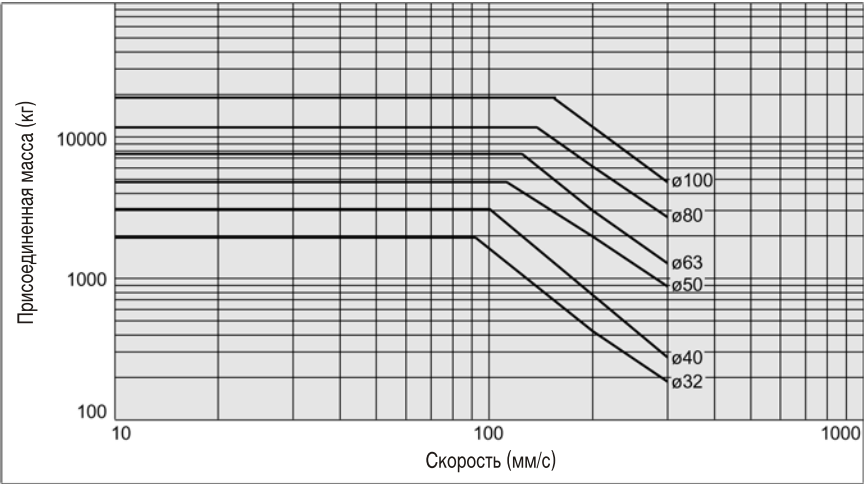
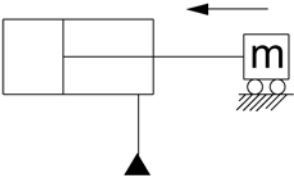
# Гидравлический цилиндр по JIS CH2

## Демпфирование в конце хода

Демпфер полностью поглощает кинетическую энергию движущихся частей, если точка, соответствующая массе нагрузки и скорости движения поршня, располагается не выше линии, показанной на графике

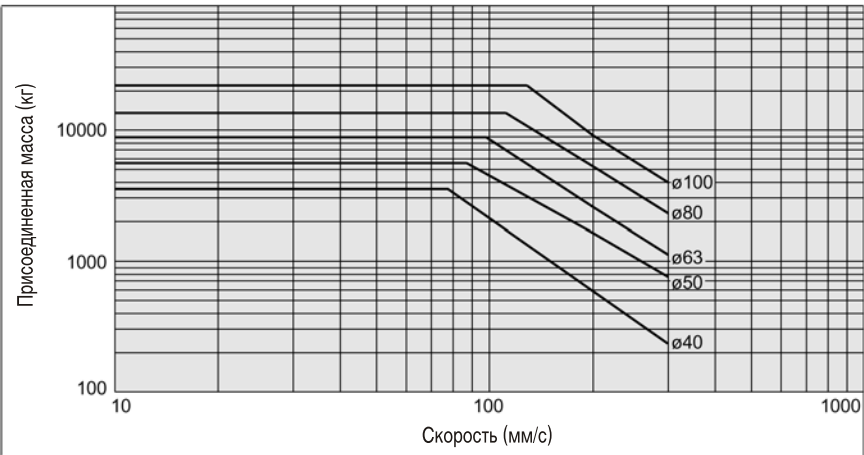
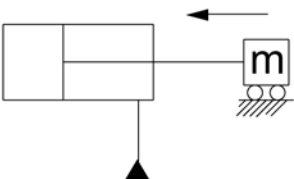
### CH2E

шток исполнения В, втягивание, давление 3.5 МПа



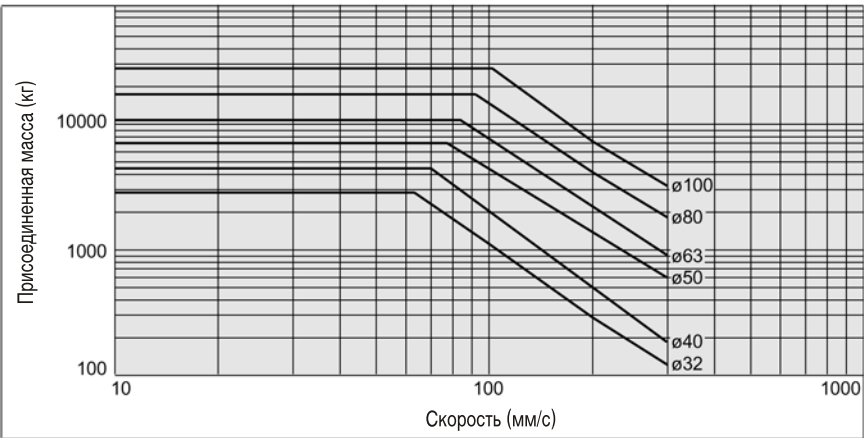
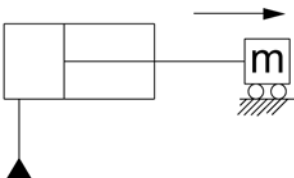
### CH2E

шток исполнения С, втягивание, давление 3.5 МПа



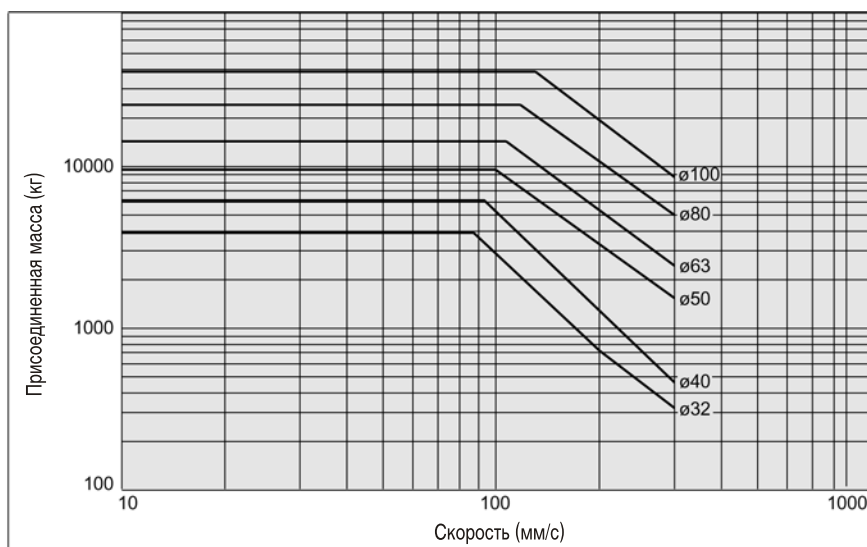
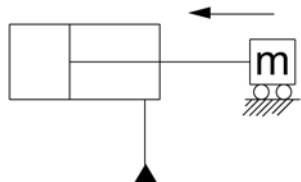
### CH2E

выдвижение штока, давление 3.5 МПа



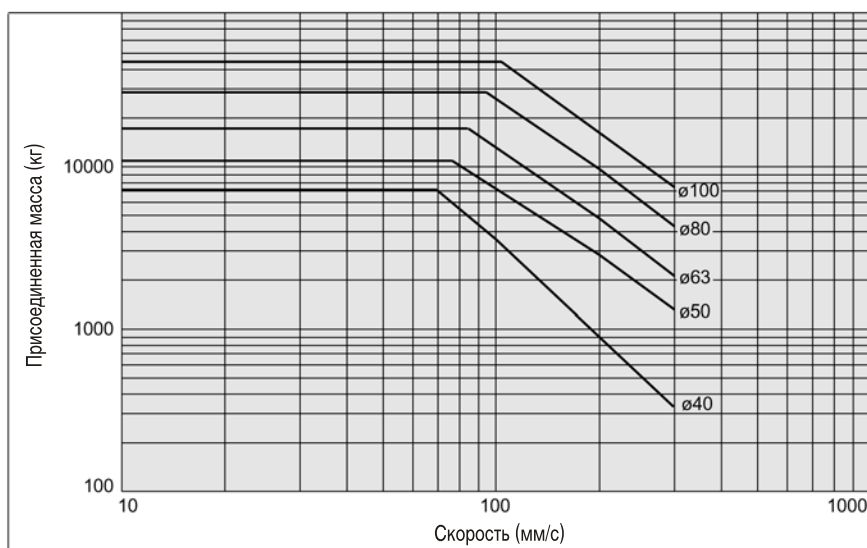
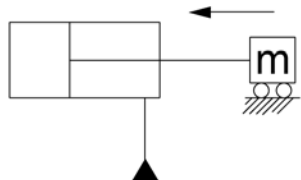
## CH2F

шток исполнения В, втягивание, давление 7 МПа



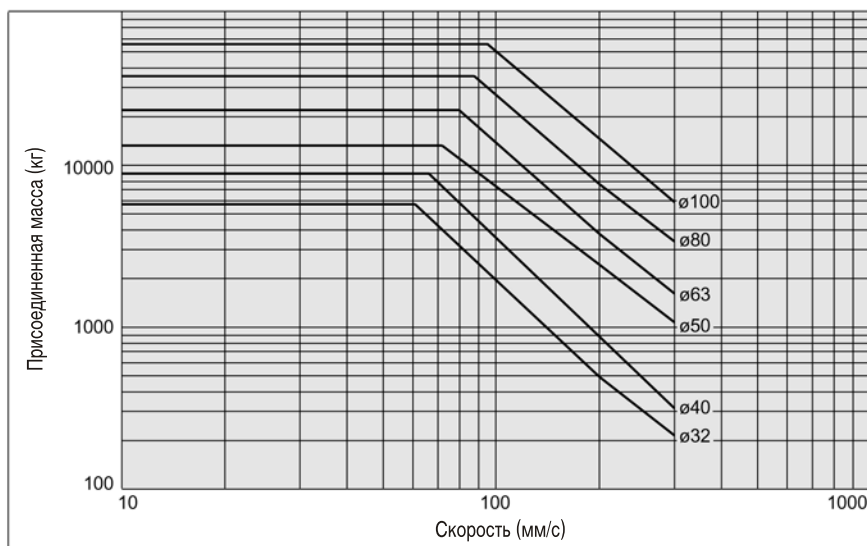
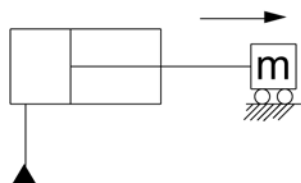
## CH2F

шток исполнения С, втягивание, давление 7 МПа



## CH2F

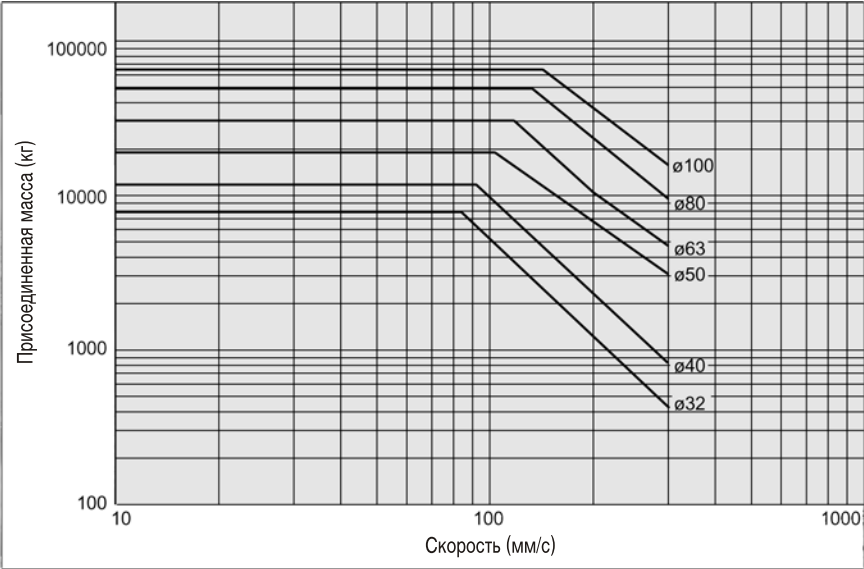
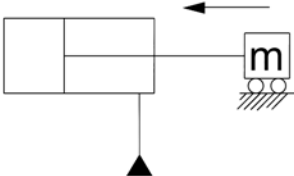
выдвижение штока, давление 7 МПа



# Гидравлический цилиндр по JIS CH2

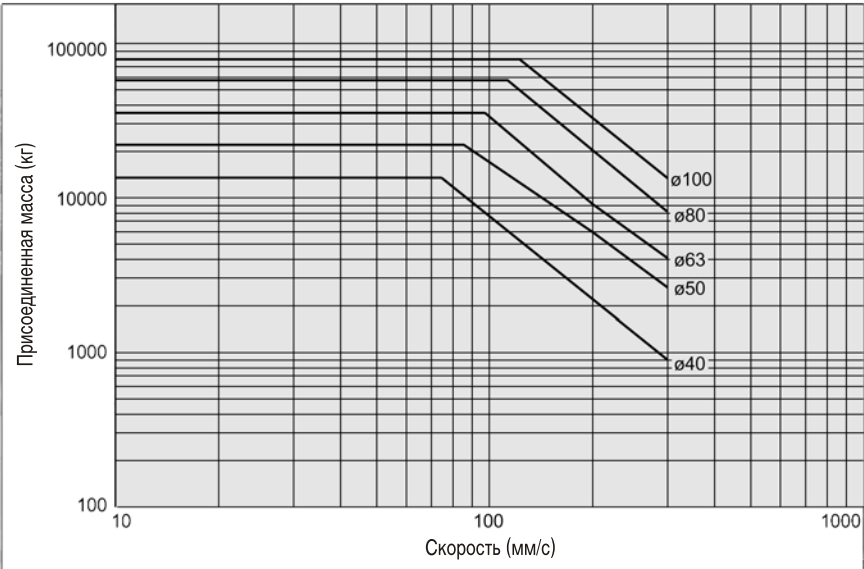
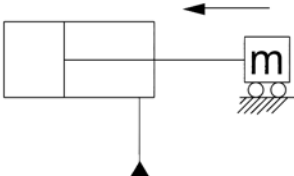
## CH2G, CH2H

шток исполнения В, втягивание, давление 14 МПа



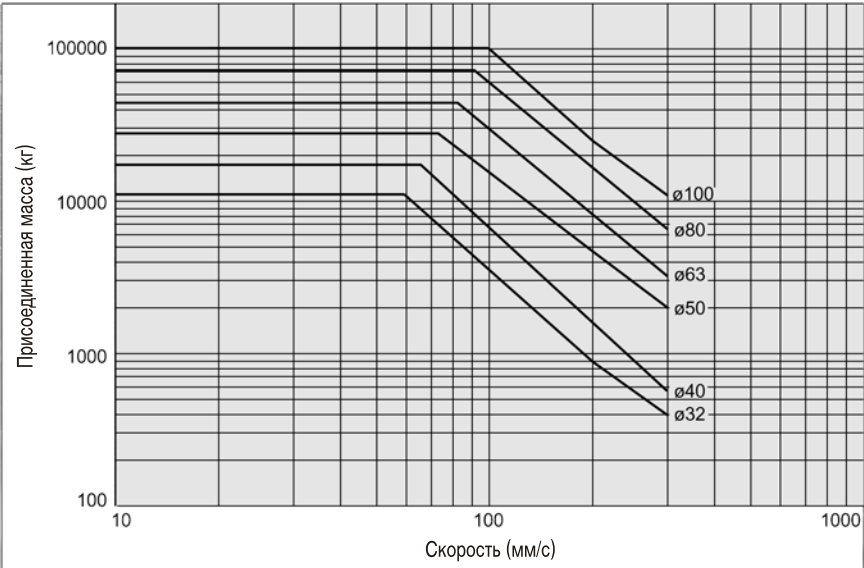
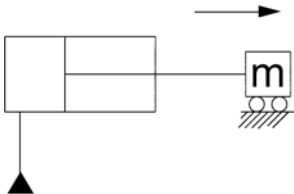
## CH2G, CH2H

шток исполнения С, втягивание, давление 14 МПа



## CH2G, CH2H

выдвижение штока, давление 14 МПа



## Номер для заказа

CH D 2 F W LA 50 B - 100

|   |                       |
|---|-----------------------|
| - | Без магнитного кольца |
| D | С магнитным кольцом   |

### Материал гильзы

|   | Материал гильзы   | Номинальное давление |
|---|-------------------|----------------------|
| E | Алюминиевый сплав | 3.5МПа               |
| F | Нержавеющая сталь | 7 МПа                |
| G | Сталь             | 14 МПа               |
| H | Нержавеющая сталь |                      |

### Тип

|   |                        |
|---|------------------------|
| - | С односторонним штоком |
| W | С двусторонним штоком  |

### Тип крепления

|     |                               |               |
|-----|-------------------------------|---------------|
| B   | Базовый                       |               |
| LA  | На лапах                      |               |
| LB  | На лапах                      |               |
| FA  | Передний прямоугольный фланец | Для 3.5, 7МПа |
| FB* | Задний прямоугольный фланец   | Для 14МПа     |
| FY* | Передний прямоугольный фланец |               |
| FZ* | Задний прямоугольный фланец   |               |
| FC  | Передний квадратный фланец    |               |
| FD* | Задний квадратный фланец      |               |
| CA* | Шарнирная опора               |               |
| CB* | Двойная шарнирная опора       |               |
| TC  | Центральная цапфа             |               |

\*) Только для цилиндров с односторонним штоком

### Диаметр

|     |        |
|-----|--------|
| 32  | 32 мм  |
| 40  | 40 мм  |
| 50  | 50 мм  |
| 63  | 63 мм  |
| 80  | 80 мм  |
| 100 | 100 мм |

### Исполнения

|                |   |                                 |
|----------------|---|---------------------------------|
| Гайка на штоке | - | Нет                             |
|                | A | Есть                            |
| Защита штока * | - | Без защиты штока                |
|                | J | Нейлон (до 60°C)                |
|                | K | Неопределенная ткань (до 110°C) |
| Демпфирование  | - | Двусторонний демпфер            |
|                | N | Без демпфирования               |
|                | R | На выдвижении                   |
|                | H | На втягивании                   |

\*) Только для цилиндров с односторонним штоком

### Ход (мм)

См. таблицу стандартных ходов

### Диаметр штока

|   |              |
|---|--------------|
| B | Исполнение B |
| C | Исполнение C |

Для цилиндров Ø32 шток имеет только исполнение B

### Расположение присоединительного отверстия и клапана демпфера

|   | Тип крепления |                                     |   |
|---|---------------|-------------------------------------|---|
|   | LA, LB        | FA,FB,FC,FD<br>FY, FZ<br>CA, CB, TC | B |
| - |               |                                     |   |
| A |               |                                     |   |
| C |               |                                     |   |
| D |               |                                     |   |
| E |               |                                     |   |
| F |               |                                     |   |
| G |               |                                     |   |
| H |               |                                     |   |

Присоединительное отверстие

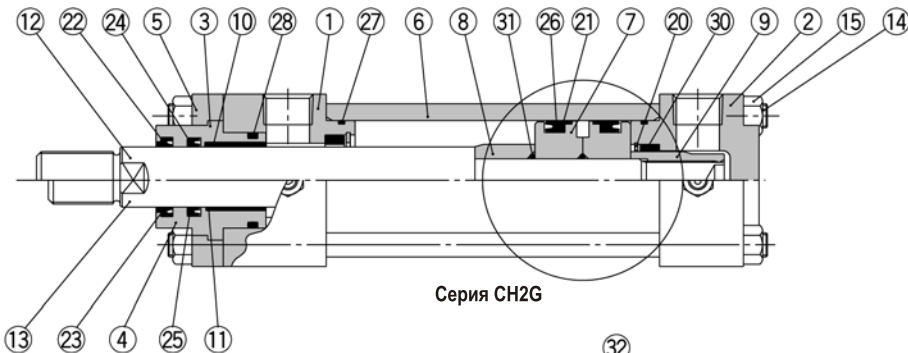
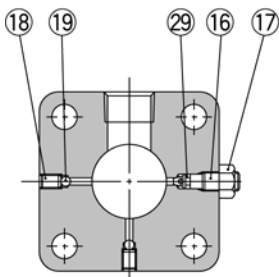
Клапан демпфера

На рисунках показан вид со стороны конца штока

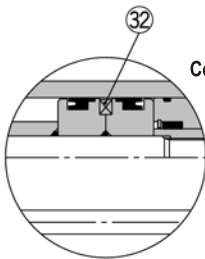
Датчики положения заказываются отдельно.

Гидравлический цилиндр по JIS  
CH2

Конструкция



Серия CH2G



Серии CH2E, CH2F, CH2H

Спецификация

| Поз. | Наименование                              | Материал                   | Примечания                    |
|------|-------------------------------------------|----------------------------|-------------------------------|
| 1    | Крышка штоковая                           | Углеродистая сталь         | Окраска металллик             |
| 2    | Крышка задняя                             | Углеродистая сталь         | Окраска металллик             |
| 3    | Обойма (исполнение штока В)               | Углеродистая сталь         | Окраска металллик             |
| 4    | Обойма (исполнение штока С)               | Углеродистая сталь         | Окраска металллик             |
| 5    | Стопор                                    | Углеродистая сталь         | Окраска металллик             |
| 6    | Гильза цилиндра                           | CH2E<br>Алюминиевый сплав  | Анодирование                  |
|      |                                           | CH2F<br>Нержавеющая сталь  |                               |
|      |                                           | CH2G<br>Углеродистая сталь | Окраска металллик             |
|      |                                           | CH2H<br>Нержавеющая сталь  |                               |
| 7    | Поршень                                   | CH2E<br>Алюминиевый сплав  |                               |
|      |                                           | CH2F<br>Нержавеющая сталь  |                               |
|      |                                           | CH2G<br>Углеродистая сталь |                               |
|      |                                           | CH2H<br>Нержавеющая сталь  |                               |
| 8    | Демпферная втулка                         | Стальной прокат            |                               |
| 9    | Демпферная втулка - гайка                 | Стальной прока             |                               |
| 10   | Направляющий вкладыш (исполнение штока В) | Медный сплав               |                               |
| 11   | Направляющий вкладыш (исполнение штока С) | Медный сплав               |                               |
| 12   | Шток (исполнение В)                       | Углеродистая сталь         | Хромирование (гальваническое) |
| 13   | Шток (исполнение С)                       | Углеродистая сталь         | Хромирование (гальваническое) |
| 14   | Шпилька                                   | Углеродистая сталь         |                               |
| 15   | Гайка                                     | Углеродистая сталь         |                               |
| 16   | Клапан демпфирующий                       | Легированная сталь         |                               |
| 17   | Гайка                                     | Углеродистая сталь         |                               |
| 18   | Клапан сброса воздуха                     | Легированная сталь         |                               |
| 19   | Шарик обратного клапана                   | Подшипниковая сталь        |                               |
| 20   | Кольцо стопорное                          | Инструментальная сталь     |                               |
| 21   | Манжета                                   | Пластик                    |                               |
| 22   | Скрепер (исполнение В)                    | NBR                        |                               |
| 23   | Скрепер (исполнение С)                    | NBR                        |                               |
| 24   | Уплотнение штока (исполн. В)              | NBR                        |                               |
| 25   | Уплотнение штока (исполн. С)              | NBR                        |                               |
| 26   | Уплотнение цилиндра                       | NBR                        |                               |
| 27   | Уплотнительное кольцо                     | NBR                        |                               |
| 28   | Прокладка обоймы                          | NBR                        |                               |
| 29   | Уплотнение клапана                        | NBR                        |                               |
| 30   | Уплотнение демпфера                       | -                          |                               |
| 31   | Прокладка                                 | NBR                        |                               |
| 32   | Магнит                                    | -                          |                               |

Рекомплкты  
CH2E/CH2F/CH2G/CH2H

| Ø<br>(мм) | Номер комплекта                                          |                                                          |
|-----------|----------------------------------------------------------|----------------------------------------------------------|
|           | Исполнение штока В                                       | Исполнение штока С                                       |
| 32        | CH2E32B-PS<br>CH2F32B-PS<br>CH2G32B-PS<br>CH2H32B-PS     | -                                                        |
| 40        | CH2E40B-PS<br>CH2F40B-PS<br>CH2G40B-PS<br>CH2H40B-PS     | CH2E40C-PS<br>CH2F40C-PS<br>CH2G40C-PS<br>CH2H40C-PS     |
| 50        | CH2E50B-PS<br>CH2F50B-PS<br>CH2G50B-PS<br>CH2H50B-PS     | CH2E50C-PS<br>CH2F50C-PS<br>CH2G50C-PS<br>CH2H50C-PS     |
| 63        | CH2E63B-PS<br>CH2F63B-PS<br>CH2G63B-PS<br>CH2H63B-PS     | CH2E63C-PS<br>CH2F63C-PS<br>CH2G63C-PS<br>CH2H63C-PS     |
| 80        | CH2E80B-PS<br>CH2F80B-PS<br>CH2G80B-PS<br>CH2H80B-PS     | CH2E80C-PS<br>CH2F80C-PS<br>CH2G80C-PS<br>CH2H80C-PS     |
| 100       | CH2E100B-PS<br>CH2F100B-PS<br>CH2G100B-PS<br>CH2H100B-PS | CH2E100C-PS<br>CH2F100C-PS<br>CH2G100C-PS<br>CH2H100C-PS |

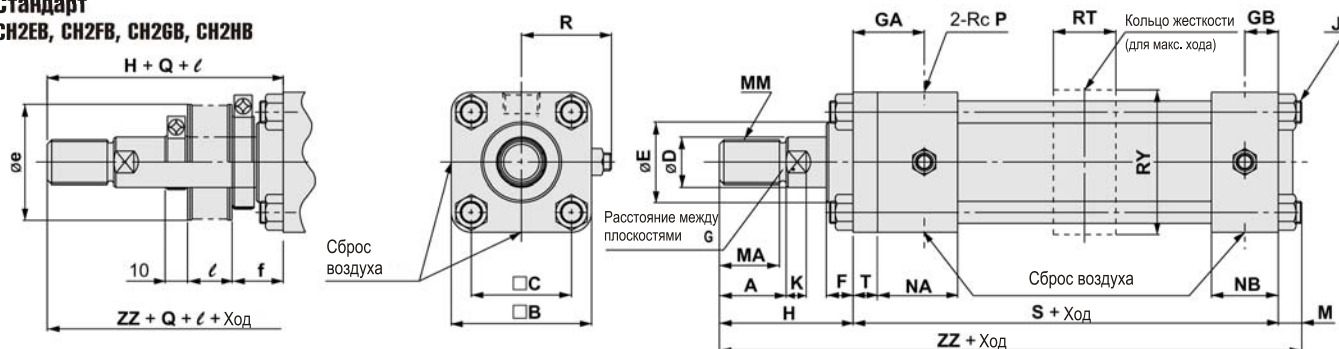
Ремкомплект содержит уплотнения (поз.21- 30)  
и может быть заказан для каждого из указанных диаметров цилиндров

CH2EW/CH2FW

| Ø<br>(мм) | Номер комплекта              |                              |
|-----------|------------------------------|------------------------------|
|           | Исполнение штока В           | Исполнение штока С           |
| 32        | CH2EW32B-PS<br>CH2FW32B-PS   | CH2EW32C-PS<br>CH2FW32C-PS   |
| 40        | CH2EW40B-PS<br>CH2FW40B-PS   | CH2EW40C-PS<br>CH2FW40C-PS   |
| 50        | CH2EW50B-PS<br>CH2FW50B-PS   | CH2EW50C-PS<br>CH2FW50C-PS   |
| 63        | CH2EW63B-PS<br>CH2FW63B-PS   | CH2EW63C-PS<br>CH2FW63C-PS   |
| 80        | CH2EW80B-PS<br>CH2FW80B-PS   | CH2EW80C-PS<br>CH2FW80C-PS   |
| 100       | CH2EW100B-PS<br>CH2FW100B-PS | CH2EW100C-PS<br>CH2FW100C-PS |

## Размеры

### Стандарт CH2EB, CH2FB, CH2GB, CH2HB



### Размеры

| Ø (мм) | Ход (мм)  | B   | C   | F  | GA | GB | J          | M  | NA | NB | P   | R  | S   | T  |
|--------|-----------|-----|-----|----|----|----|------------|----|----|----|-----|----|-----|----|
| 32     | 25 ~ 1400 | 58  | 38  | 16 | 32 | 15 | M10 x 1.25 | 11 | 37 | 31 | 3/8 | 39 | 141 | 11 |
| 40     | 25 ~ 1400 | 65  | 45  | 12 | 32 | 15 | M10 x 1.25 | 11 | 36 | 30 | 3/8 | 42 | 141 | 11 |
| 50     | 25 ~ 1400 | 76  | 52  | 15 | 40 | 19 | M10 x 1.25 | 11 | 43 | 35 | 1/2 | 46 | 155 | 13 |
| 63     | 25 ~ 1500 | 90  | 63  | 15 | 42 | 19 | M12 x 1.5  | 14 | 43 | 35 | 1/2 | 52 | 163 | 15 |
| 80     | 25 ~ 1800 | 110 | 80  | 17 | 40 | 22 | M16 x 1.5  | 16 | 44 | 44 | 3/4 | 65 | 184 | 18 |
| 100    | 25 ~ 1800 | 135 | 102 | 19 | 42 | 22 | M18 x 1.5  | 18 | 44 | 44 | 3/4 | 75 | 192 | 20 |

### Максимальный ход (с кольцом жесткости на стяжках)

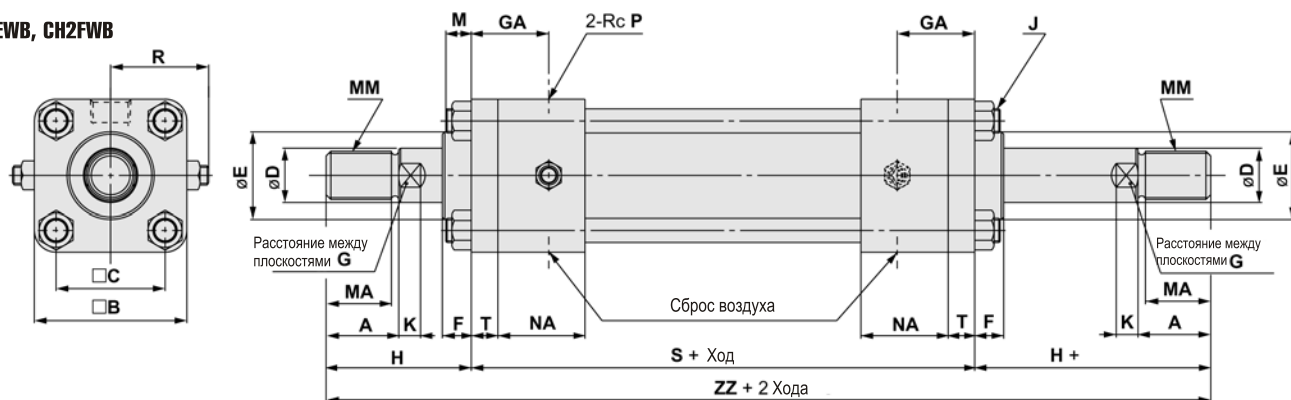
| Ø (мм) | Ход* (мм)   | RT | RY |
|--------|-------------|----|----|
| 32     | 1401 ~ 1800 | 28 | 58 |
| 40     | 1401 ~ 1800 | 28 | 65 |
| 50     | 1401 ~ 1800 | 33 | 75 |
| 63     | 1501 ~ 1800 | 43 | 90 |
| 80     | —           | —  | —  |
| 100    | —           | —  | —  |

\* Используются в сериях CH2E, CH2F, CH2H. Контактируйте с SMC по вопросам, касающимся использования серии CH2G с вышеуказанным ходом штока.

### Исполнения штоков

| Ø<br>(мм) | Исполнение штока В |    |    |      |    |                  |                  |    |    |     | Исполнение штока С |           |    |      |    |                  |    |    |    |     |
|-----------|--------------------|----|----|------|----|------------------|------------------|----|----|-----|--------------------|-----------|----|------|----|------------------|----|----|----|-----|
|           | ММ                 | А  | МА | Д    | Е  | К                | Г                | Н  | ЗЗ | ММ  | А                  | МА        | Д  | Е    | К  | Г                | Н  | ЗЗ |    |     |
| 32        | M16 x 1.5          | 25 | 22 | 18   | 34 | -0.025<br>-0.064 | 7                | 14 | 55 | 207 | —                  | —         | —  | —    | —  | —                | —  | —  |    |     |
| 40        | M20 x 1.5          | 30 | 27 | 22.4 | 40 |                  | 9                | 19 | 60 | 212 | M16 x 1.5          | 25        | 22 | 18   | 36 | -0.025<br>-0.064 | 7  | 14 | 55 | 207 |
| 50        | M24 x 1.5          | 35 | 32 | 28   | 46 |                  | 11               | 24 | 65 | 231 | M20 x 1.5          | 30        | 27 | 22.4 | 40 |                  | 9  | 19 | 60 | 226 |
| 63        | M30 x 1.5          | 45 | 42 | 35.5 | 55 | -0.030<br>-0.076 | 13               | 30 | 80 | 257 | M24 x 1.5          | 35        | 32 | 28   | 46 |                  | 11 | 24 | 70 | 247 |
| 80        | M39 x 1.5          | 60 | 57 | 45   | 65 |                  | 15               | 41 | 95 | 295 | M30 x 1.5          | 45        | 42 | 35.5 | 55 | -0.030<br>-0.076 | 13 | 30 | 80 | 280 |
| 100       | M48 x 1.5          | 75 | 72 | 56   | 80 |                  | -0.036<br>-0.090 | 16 | 50 | 115 | 325                | M39 x 1.5 | 60 | 57   | 45 |                  | 65 | 15 | 41 | 100 |

### CH2EWB, CH2FWB



### Размеры

| Ø (мм) | Ход (мм)  | B   | C   | F  | GA | J          | M  | NA | P   | R  | S   | T  |
|--------|-----------|-----|-----|----|----|------------|----|----|-----|----|-----|----|
| 32     | 25 ~ 800  | 58  | 38  | 16 | 32 | M10 x 1.25 | 11 | 37 | 3/8 | 39 | 158 | 11 |
| 40     | 25 ~ 800  | 65  | 45  | 12 | 32 | M10 x 1.25 | 11 | 36 | 3/8 | 42 | 158 | 11 |
| 50     | 25 ~ 800  | 76  | 52  | 15 | 40 | M10 x 1.25 | 11 | 43 | 1/2 | 46 | 176 | 13 |
| 63     | 25 ~ 800  | 90  | 63  | 15 | 42 | M12 x 1.5  | 14 | 43 | 1/2 | 52 | 186 | 15 |
| 80     | 25 ~ 1000 | 110 | 80  | 17 | 40 | M16 x 1.5  | 16 | 44 | 3/4 | 65 | 202 | 18 |
| 100    | 25 ~ 1000 | 135 | 102 | 19 | 42 | M18 x 1.5  | 18 | 44 | 3/4 | 75 | 212 | 20 |

### Размеры для исполнений с защитой штока

| Ø (мм) | e      | f      | Q      | I      |
|--------|--------|--------|--------|--------|
| 32     | Исп. В | Исп. С | Исп. В | Исп. С |
| 32     | 52     | -      | 21.5   | 15     |
| 40     | 52     | 52     | 12     | 15     |
| 50     | 55     | 52     | 15     | 15     |
| 63     | 65     | 55     | 15     | 20     |
| 80     | 80     | 65     | 17     | 20     |
| 100    | 100    | 80     | 19     | 15     |

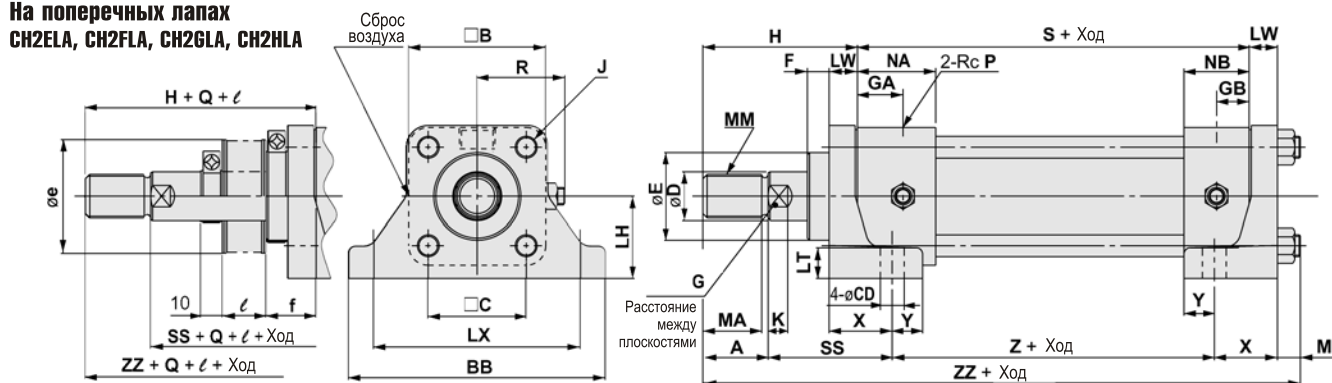
### Исполнения штоков

| Ø<br>(мм) | Исполнение штока В |    |    |      |    |                  |    |    |     |     | Исполнение штока С |    |    |      |    |                  |    |    |     |     |
|-----------|--------------------|----|----|------|----|------------------|----|----|-----|-----|--------------------|----|----|------|----|------------------|----|----|-----|-----|
|           | MM                 | A  | MA | D    | E  | K                | G  | H  | ZZ  | MM  | A                  | MA | D  | E    | K  | G                | H  | ZZ |     |     |
| 32        | M16 x 1.5          | 25 | 22 | 18   | 34 | -0.025<br>-0.064 | 7  | 14 | 55  | 268 | —                  | —  | —  | —    | —  | —                | —  | —  |     |     |
| 40        | M20 x 1.5          | 30 | 27 | 22.4 | 40 |                  | 9  | 19 | 60  | 278 | M16 x 1.5          | 25 | 22 | 18   | 36 | -0.025<br>-0.064 | 7  | 14 | 55  | 268 |
| 50        | M24 x 1.5          | 35 | 32 | 28   | 46 |                  | 11 | 24 | 65  | 306 | M20 x 1.5          | 30 | 27 | 22.4 | 40 |                  | 9  | 19 | 60  | 296 |
| 63        | M30 x 1.5          | 45 | 42 | 35.5 | 55 | -0.030           | 13 | 30 | 80  | 346 | M24 x 1.5          | 35 | 32 | 28   | 46 |                  | 11 | 24 | 70  | 326 |
| 80        | M39 x 1.5          | 60 | 57 | 45   | 65 | -0.076           | 15 | 41 | 95  | 392 | M30 x 1.5          | 45 | 42 | 35.5 | 55 | -0.030<br>-0.076 | 13 | 30 | 80  | 362 |
| 100       | M48 x 1.5          | 75 | 72 | 56   | 80 | -0.038<br>-0.076 | 16 | 50 | 115 | 442 | M39 x 1.5          | 60 | 57 | 45   | 65 |                  | 15 | 41 | 100 | 412 |



# Гидравлический цилиндр по JIS CH2

На поперечных лапах  
CH2ELA, CH2FLA, CH2GLA, CH2HLA



## Исполнения штоков

| Ø<br>(мм) | Исполнение штока В |    |    |      |    |                  |    |    |     |     | Исполнение штока С |    |    |      |    |    |    |     |     |   |
|-----------|--------------------|----|----|------|----|------------------|----|----|-----|-----|--------------------|----|----|------|----|----|----|-----|-----|---|
|           | MM                 | A  | MA | D    | E  | K                | G  | H  | ZZ  | MM  | A                  | MA | D  | E    | K  | G  | H  | ZZ  |     |   |
| 32        | M16 x 1.5          | 25 | 22 | 18   | 34 | -0.025<br>-0.064 | 7  | 14 | 66  | 220 | —                  | —  | —  | —    | —  | —  | —  | —   | —   | — |
| 40        | M20 x 1.5          | 30 | 27 | 22.4 | 40 | -0.025<br>-0.064 | 9  | 19 | 71  | 225 | M16 x 1.5          | 25 | 22 | 18   | 36 | 7  | 14 | 66  | 220 |   |
| 50        | M24 x 1.5          | 35 | 32 | 28   | 46 | -0.030<br>-0.076 | 11 | 24 | 78  | 249 | M20 x 1.5          | 30 | 27 | 22.4 | 40 | 9  | 19 | 73  | 244 |   |
| 63        | M30 x 1.5          | 45 | 42 | 35.5 | 55 | -0.030<br>-0.076 | 13 | 30 | 95  | 277 | M24 x 1.5          | 35 | 32 | 28   | 46 | 11 | 24 | 85  | 267 |   |
| 80        | M39 x 1.5          | 60 | 57 | 45   | 65 | -0.036<br>-0.090 | 15 | 41 | 113 | 319 | M30 x 1.5          | 45 | 42 | 35.5 | 55 | 13 | 30 | 98  | 304 |   |
| 100       | M48 x 1.5          | 75 | 72 | 56   | 80 | -0.036<br>-0.090 | 16 | 50 | 135 | 353 | M39 x 1.5          | 60 | 57 | 45   | 65 | 15 | 41 | 120 | 338 |   |

Максимальный ход  
(с кольцом жесткости на стяжках)

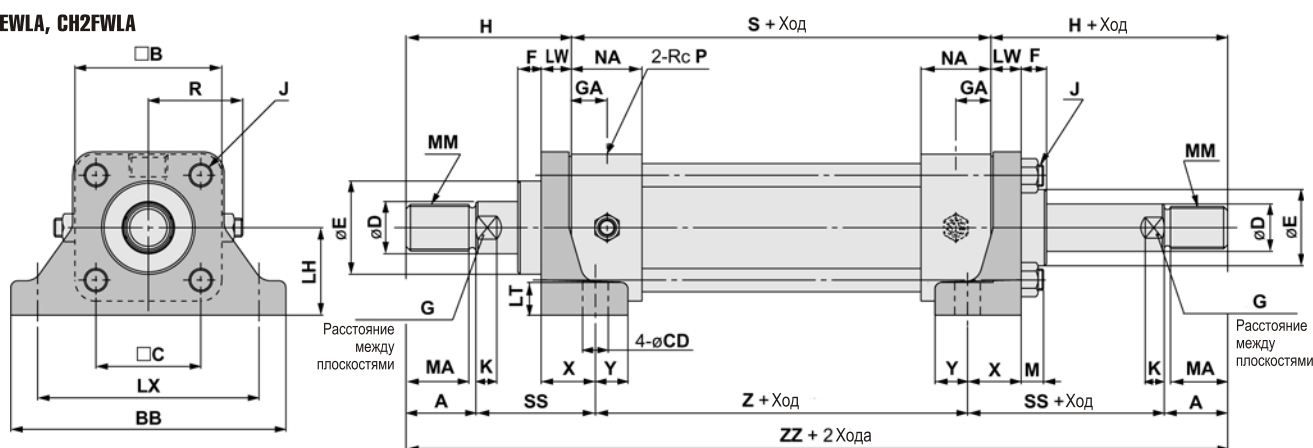
| Ø (мм) | Ход* (мм)   | RT | RY |
|--------|-------------|----|----|
| 32     | 1401 ~ 1800 | 28 | 58 |
| 40     | 1401 ~ 1800 | 28 | 65 |
| 50     | 1401 ~ 1800 | 33 | 75 |
| 63     | 1501 ~ 1800 | 43 | 90 |
| 80     | —           | —  | —  |
| 100    | —           | —  | —  |

\* Используются в сериях CH2E, CH2F, CH2H. Контактуйте с SMC по вопросам, касающимся использования серии CH2G с вышеуказанным ходом штока.

## Размеры

| Ø<br>(мм) | Ход (мм)  | B   | BB  | C   | F  | GA | GB | J          | M  | NA | NB | P   | R  | S   | CD | LH<br>/Допуск | LT    | LW | LX  | LX<br>/Допуск | Y     | Z     | SS  |     |     |
|-----------|-----------|-----|-----|-----|----|----|----|------------|----|----|----|-----|----|-----|----|---------------|-------|----|-----|---------------|-------|-------|-----|-----|-----|
| 32        | 25 ~ 1400 | 58  | 109 | 38  | 14 | 21 | 15 | M10 x 1.25 | 11 | 37 | 31 | 3/8 | 39 | 130 | 11 | 35            | ±0.15 | 14 | 13  | 88            | ±0.18 | 29    | 14  | 98  | 57  |
| 40        | 25 ~ 1400 | 65  | 118 | 45  | 10 | 21 | 15 | M10 x 1.25 | 11 | 36 | 30 | 3/8 | 42 | 130 | 11 | 37.5          |       | 14 | 13  | 95            |       | 29    | 14  | 98  | 57  |
| 50        | 25 ~ 1400 | 76  | 145 | 52  | 10 | 27 | 19 | M10 x 1.25 | 11 | 43 | 35 | 1/2 | 46 | 142 | 14 | 45            |       | 17 | 18  | 115           |       | 35    | 18  | 108 | 60  |
| 63        | 25 ~ 1500 | 90  | 165 | 63  | 10 | 27 | 19 | M12 x 1.5  | 14 | 43 | 35 | 1/2 | 52 | 148 | 18 | 50            |       | 19 | 20  | 132           |       | ±0.20 | 41  | 19  | 106 |
| 80        | 25 ~ 1800 | 110 | 190 | 80  | 11 | 22 | 22 | M16 x 1.5  | 16 | 44 | 44 | 3/4 | 65 | 166 | 18 | 60            | 24    | 24 | 155 | 45            | 20    |       | 124 | 74  |     |
| 100       | 25 ~ 1800 | 135 | 230 | 102 | 11 | 22 | 22 | M18 x 1.5  | 18 | 44 | 44 | 3/4 | 75 | 172 | 22 | 71            | 27    | 28 | 190 | ±0.23         | 53    |       | 22  | 122 | 85  |

CH2EWLA, CH2FWLA



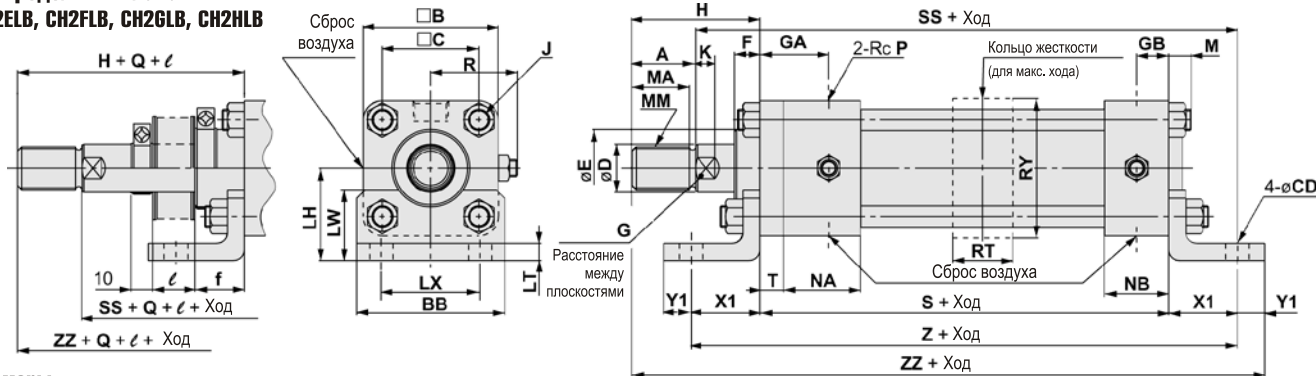
## Размеры

| Ø (мм) | Ход (мм)  | BB  | B   | C   | CD | F  | GA | J          | LH   | LT | LW | LX  | M  | NA | P   | R  | S   | SS | X  | Y  | Z   |
|--------|-----------|-----|-----|-----|----|----|----|------------|------|----|----|-----|----|----|-----|----|-----|----|----|----|-----|
| 32     | 25 ~ 800  | 109 | 58  | 38  | 11 | 14 | 21 | M10 x 1.25 | 35   | 14 | 13 | 88  | 11 | 37 | 3/8 | 39 | 136 | 57 | 29 | 14 | 104 |
| 40     | 25 ~ 800  | 118 | 65  | 45  | 11 | 10 | 21 | M10 x 1.25 | 37.5 | 14 | 13 | 95  | 11 | 36 | 3/8 | 42 | 136 | 57 | 29 | 14 | 104 |
| 50     | 25 ~ 800  | 145 | 76  | 52  | 14 | 10 | 27 | M10 x 1.25 | 45   | 17 | 18 | 115 | 11 | 43 | 1/2 | 46 | 150 | 60 | 35 | 18 | 116 |
| 63     | 25 ~ 800  | 165 | 90  | 63  | 18 | 10 | 27 | M12 x 1.5  | 50   | 19 | 20 | 132 | 14 | 43 | 1/2 | 52 | 156 | 71 | 41 | 19 | 114 |
| 80     | 25 ~ 1000 | 190 | 110 | 80  | 18 | 11 | 22 | M16 x 1.5  | 60   | 24 | 24 | 155 | 16 | 44 | 3/4 | 65 | 166 | 74 | 45 | 20 | 124 |
| 100    | 25 ~ 1000 | 230 | 135 | 102 | 22 | 11 | 22 | M18 x 1.5  | 71   | 27 | 28 | 190 | 18 | 44 | 3/4 | 75 | 172 | 85 | 53 | 22 | 122 |

## Исполнения штоков

| Ø (мм) | Исполнение штока В |    |    |      |    |                  |    |    |     |     | Исполнение штока С |    |    |      |    |    |    |     |     |   |
|--------|--------------------|----|----|------|----|------------------|----|----|-----|-----|--------------------|----|----|------|----|----|----|-----|-----|---|
|        | MM                 | A  | MA | D    | E  | K                | G  | H  | ZZ  | MM  | A                  | MA | D  | E    | K  | G  | H  | ZZ  |     |   |
| 32     | M16 x 1.5          | 25 | 22 | 18   | 34 | -0.025<br>-0.064 | 7  | 14 | 66  | 268 | —                  | —  | —  | —    | —  | —  | —  | —   | —   | — |
| 40     | M20 x 1.5          | 30 | 27 | 22.4 | 40 | -0.025<br>-0.064 | 9  | 19 | 71  | 278 | M16 x 1.5          | 25 | 22 | 18   | 36 | 7  | 14 | 66  | 268 |   |
| 50     | M24 x 1.5          | 35 | 32 | 28   | 46 | -0.030<br>-0.076 | 11 | 24 | 78  | 306 | M20 x 1.5          | 30 | 27 | 22.4 | 40 | 9  | 19 | 73  | 296 |   |
| 63     | M30 x 1.5          | 45 | 42 | 35.5 | 55 | -0.030<br>-0.076 | 13 | 30 | 95  | 346 | M24 x 1.5          | 35 | 32 | 28   | 46 | 11 | 24 | 85  | 326 |   |
| 80     | M39 x 1.5          | 60 | 57 | 45   | 65 | -0.036<br>-0.090 | 15 | 41 | 113 | 392 | M30 x 1.5          | 45 | 42 | 35.5 | 55 | 13 | 30 | 98  | 362 |   |
| 100    | M48 x 1.5          | 75 | 72 | 56   | 80 | -0.036<br>-0.090 | 16 | 50 | 135 | 442 | M39 x 1.5          | 60 | 57 | 45   | 65 | 15 | 41 | 120 | 412 |   |

## На продольных лапах CH2FLB, CH2FLB, CH2GLB, CH2HLB



### Размеры

| ∅ (мм) | Ход (мм)  | B   | BB  | C   | F  | GA | GB | J          | M  | NA | NB | P   | R  | S   | T  | CD | LH | LT | LX  | LW | X1 | Y1 | SS  | Z   |
|--------|-----------|-----|-----|-----|----|----|----|------------|----|----|----|-----|----|-----|----|----|----|----|-----|----|----|----|-----|-----|
| 32     | 25 ~ 1400 | 58  | 62  | 38  | 16 | 32 | 15 | M10 x 1.25 | 11 | 37 | 31 | 3/8 | 39 | 141 | 11 | 11 | 40 | 8  | 40  | 30 | 32 | 13 | 203 | 205 |
| 40     | 25 ~ 1400 | 65  | 69  | 45  | 12 | 32 | 15 | M10 x 1.25 | 11 | 36 | 30 | 3/8 | 42 | 141 | 11 | 11 | 43 | 8  | 46  | 33 | 32 | 13 | 203 | 205 |
| 50     | 25 ~ 1400 | 76  | 85  | 52  | 15 | 40 | 19 | M10 x 1.25 | 11 | 43 | 35 | 1/2 | 46 | 155 | 13 | 14 | 50 | 8  | 58  | 37 | 35 | 15 | 220 | 225 |
| 63     | 25 ~ 1500 | 90  | 98  | 63  | 15 | 42 | 19 | M12 x 1.5  | 14 | 43 | 35 | 1/2 | 52 | 163 | 15 | 18 | 60 | 10 | 65  | 45 | 42 | 18 | 240 | 247 |
| 80     | 25 ~ 1800 | 110 | 118 | 80  | 17 | 40 | 22 | M16 x 1.5  | 16 | 44 | 44 | 3/4 | 65 | 184 | 18 | 18 | 72 | 12 | 87  | 50 | 50 | 20 | 269 | 284 |
| 100    | 25 ~ 1800 | 135 | 150 | 102 | 19 | 42 | 22 | M18 x 1.5  | 18 | 44 | 44 | 3/4 | 75 | 192 | 20 | 22 | 85 | 12 | 109 | 55 | 55 | 23 | 287 | 302 |

Максимальный ход  
(с кольцом жесткости  
на стержнях)

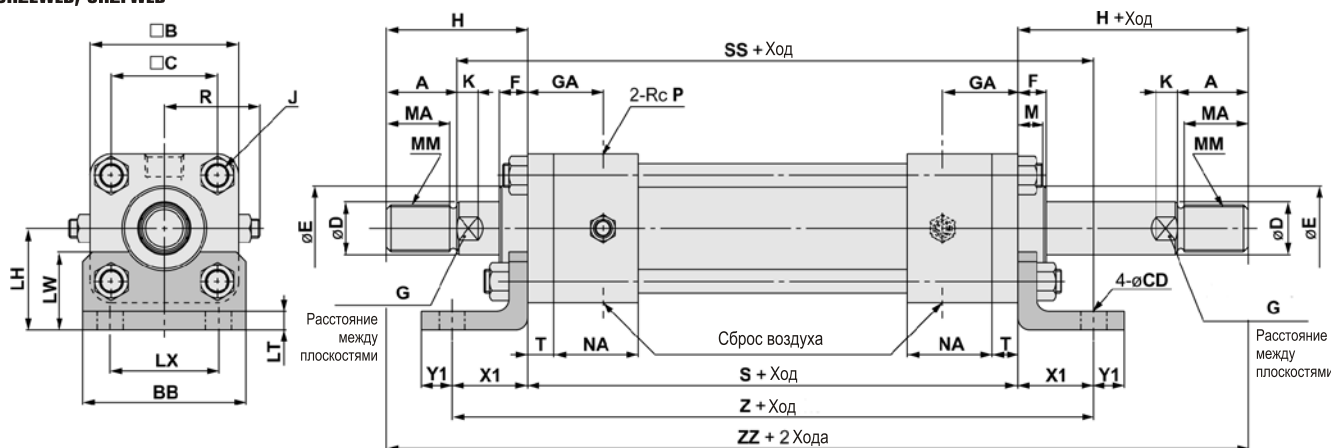
### Исполнения штоков

| ∅ (мм) | Исполнение штока B |    |    |      |    |                  |    |    |     |     | Исполнение штока C |    |    |      |    |                  |    |    |     |     |
|--------|--------------------|----|----|------|----|------------------|----|----|-----|-----|--------------------|----|----|------|----|------------------|----|----|-----|-----|
|        | MM                 | A  | MA | D    | E  | K                | G  | H  | ZZ  | MM  | A                  | MA | D  | E    | K  | G                | H  | ZZ |     |     |
| 32     | M16 x 1.5          | 25 | 22 | 18   | 34 | -0.025<br>-0.064 | 7  | 14 | 55  | 241 | —                  | —  | —  | —    | —  | —                | —  | —  | —   | —   |
| 40     | M20 x 1.5          | 30 | 27 | 22.4 | 40 | -0.025<br>-0.064 | 9  | 19 | 60  | 246 | M16 x 1.5          | 25 | 22 | 18   | 36 | -0.025<br>-0.064 | 7  | 14 | 55  | 241 |
| 50     | M24 x 1.5          | 35 | 32 | 28   | 46 | -0.030<br>-0.076 | 11 | 24 | 65  | 270 | M20 x 1.5          | 30 | 27 | 22.4 | 40 | -0.025<br>-0.064 | 9  | 19 | 60  | 265 |
| 63     | M30 x 1.5          | 45 | 42 | 35.5 | 55 | -0.030<br>-0.076 | 13 | 30 | 80  | 303 | M24 x 1.5          | 35 | 32 | 28   | 46 | -0.030<br>-0.076 | 11 | 24 | 70  | 293 |
| 80     | M39 x 1.5          | 60 | 57 | 45   | 65 | -0.036<br>-0.090 | 15 | 41 | 95  | 349 | M30 x 1.5          | 45 | 42 | 35.5 | 55 | -0.030<br>-0.076 | 13 | 30 | 80  | 334 |
| 100    | M48 x 1.5          | 75 | 72 | 56   | 80 | -0.036<br>-0.090 | 16 | 50 | 115 | 385 | M39 x 1.5          | 60 | 57 | 45   | 65 | -0.036<br>-0.090 | 15 | 41 | 100 | 370 |

| ∅ (мм) | Ход* (мм)   | RT | RY |
|--------|-------------|----|----|
| 32     | 1401 ~ 1800 | 28 | 58 |
| 40     | 1401 ~ 1800 | 28 | 65 |
| 50     | 1401 ~ 1800 | 33 | 75 |
| 63     | 1501 ~ 1800 | 43 | 90 |
| 80     | —           | —  | —  |
| 100    | —           | —  | —  |

\* Используются в сериях CH2E, CH2F, CH2H  
Контактируйте с SMC по вопросам,  
касающимся использования серии CH2G  
с вышеуказанным ходом штока.

## CH2EWLB, CH2FWLB



### Размеры

| ∅ (мм) | Ход (мм)  | BB  | B   | C   | CD | F  | GA | J          | LH | LT | LW | LX  | M  | NA | P   | R  | S   | SS  | T  | X1 | Y1 | Z   |
|--------|-----------|-----|-----|-----|----|----|----|------------|----|----|----|-----|----|----|-----|----|-----|-----|----|----|----|-----|
| 32     | 25 ~ 800  | 62  | 58  | 38  | 11 | 16 | 32 | M10 x 1.25 | 40 | 8  | 30 | 40  | 11 | 37 | 3/8 | 39 | 158 | 220 | 11 | 32 | 13 | 222 |
| 40     | 25 ~ 800  | 69  | 65  | 45  | 11 | 12 | 32 | M10 x 1.25 | 43 | 8  | 33 | 46  | 11 | 36 | 3/8 | 42 | 158 | 220 | 11 | 32 | 13 | 222 |
| 50     | 25 ~ 800  | 85  | 76  | 52  | 14 | 15 | 40 | M10 x 1.25 | 50 | 8  | 37 | 58  | 11 | 43 | 1/2 | 46 | 176 | 241 | 13 | 35 | 15 | 246 |
| 63     | 25 ~ 800  | 98  | 90  | 63  | 18 | 15 | 42 | M12 x 1.5  | 60 | 10 | 45 | 65  | 14 | 43 | 1/2 | 52 | 186 | 263 | 15 | 42 | 18 | 270 |
| 80     | 25 ~ 1000 | 118 | 110 | 80  | 18 | 17 | 40 | M16 x 1.5  | 72 | 12 | 50 | 87  | 16 | 44 | 3/4 | 65 | 202 | 287 | 18 | 50 | 20 | 302 |
| 100    | 25 ~ 1000 | 150 | 135 | 102 | 22 | 19 | 42 | M18 x 1.5  | 85 | 12 | 55 | 109 | 18 | 44 | 3/4 | 75 | 212 | 307 | 20 | 55 | 23 | 322 |

### Исполнения штоков

| ∅ (мм) | Исполнение штока B |    |    |      |    |                  |    |    |     |     | Исполнение штока C |    |    |      |    |                  |    |    |     |     |
|--------|--------------------|----|----|------|----|------------------|----|----|-----|-----|--------------------|----|----|------|----|------------------|----|----|-----|-----|
|        | MM                 | A  | MA | D    | E  | K                | G  | H  | ZZ  | MM  | A                  | MA | D  | E    | K  | G                | H  | ZZ |     |     |
| 32     | M16 x 1.5          | 25 | 22 | 18   | 34 | -0.025<br>-0.064 | 7  | 14 | 55  | 268 | —                  | —  | —  | —    | —  | —                | —  | —  | —   | —   |
| 40     | M20 x 1.5          | 30 | 27 | 22.4 | 40 | -0.025<br>-0.064 | 9  | 19 | 60  | 278 | M16 x 1.5          | 25 | 22 | 18   | 36 | -0.025<br>-0.064 | 7  | 14 | 55  | 268 |
| 50     | M24 x 1.5          | 35 | 32 | 28   | 46 | -0.030<br>-0.076 | 11 | 24 | 65  | 306 | M20 x 1.5          | 30 | 27 | 22.4 | 40 | -0.030<br>-0.076 | 9  | 19 | 60  | 296 |
| 63     | M30 x 1.5          | 45 | 42 | 35.5 | 55 | -0.030<br>-0.076 | 13 | 30 | 80  | 346 | M24 x 1.5          | 35 | 32 | 28   | 46 | -0.030<br>-0.076 | 11 | 24 | 70  | 326 |
| 80     | M39 x 1.5          | 60 | 57 | 45   | 65 | -0.036<br>-0.090 | 15 | 41 | 95  | 392 | M30 x 1.5          | 45 | 42 | 35.5 | 55 | -0.036<br>-0.090 | 13 | 30 | 80  | 362 |
| 100    | M48 x 1.5          | 75 | 72 | 56   | 80 | -0.036<br>-0.090 | 16 | 50 | 115 | 442 | M39 x 1.5          | 60 | 57 | 45   | 65 | -0.036<br>-0.090 | 15 | 41 | 100 | 412 |

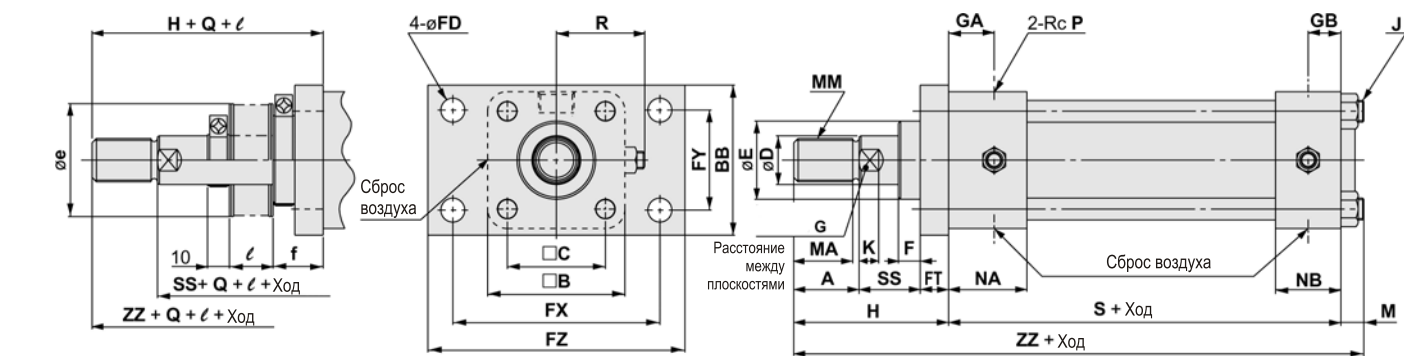


Гидравлический цилиндр по JIS

CH2

С передним прямоугольным фланцем

CH2EFA, CH2FFA, CH2GFY, CH2HFY



CH2EFA, CH2FFA

Размеры

| Ø<br>(мм) | Ход (мм)  | B   | BB  | C   | F  | GA | GB | J          | M  | NA | NB | P   | R  | S   | FD | FT | FX  | FY  | FZ  | SS |
|-----------|-----------|-----|-----|-----|----|----|----|------------|----|----|----|-----|----|-----|----|----|-----|-----|-----|----|
| 32        | 25 ~ 1400 | 58  | 62  | 38  | 16 | 21 | 15 | M10 x 1.25 | 11 | 37 | 31 | 3/8 | 39 | 130 | 11 | 11 | 88  | 40  | 109 | 30 |
| 40        | 25 ~ 1400 | 65  | 69  | 45  | 12 | 21 | 15 | M10 x 1.25 | 11 | 36 | 30 | 3/8 | 42 | 130 | 11 | 11 | 95  | 46  | 118 | 30 |
| 50        | 25 ~ 1400 | 76  | 85  | 52  | 15 | 27 | 19 | M10 x 1.25 | 11 | 43 | 35 | 1/2 | 46 | 142 | 14 | 13 | 115 | 58  | 145 | 30 |
| 63        | 25 ~ 1500 | 90  | 98  | 63  | 15 | 27 | 19 | M12 x 1.5  | 14 | 43 | 35 | 1/2 | 52 | 148 | 18 | 15 | 132 | 65  | 165 | 35 |
| 80        | 25 ~ 1800 | 110 | 118 | 80  | 17 | 22 | 22 | M16 x 1.5  | 16 | 44 | 44 | 3/4 | 65 | 166 | 18 | 18 | 155 | 87  | 190 | 35 |
| 100       | 25 ~ 1800 | 135 | 150 | 102 | 19 | 22 | 22 | M18 x 1.5  | 18 | 44 | 44 | 3/4 | 75 | 172 | 22 | 20 | 190 | 109 | 230 | 40 |

Исполнения штоков

| Ø<br>(мм) | Исполнение штока B |    |    |      |    |    |    |     |     |           | Исполнение штока C |    |      |    |    |    |     |     |  |  |
|-----------|--------------------|----|----|------|----|----|----|-----|-----|-----------|--------------------|----|------|----|----|----|-----|-----|--|--|
|           | MM                 | A  | MA | D    | E  | K  | G  | H   | ZZ  | MM        | A                  | MA | D    | E  | K  | G  | H   | ZZ  |  |  |
| 32        | M16 x 1.5          | 25 | 22 | 18   | 34 | 7  | 14 | 66  | 207 | —         | —                  | —  | —    | —  | —  | —  | —   | —   |  |  |
| 40        | M20 x 1.5          | 30 | 27 | 22.4 | 40 | 9  | 19 | 71  | 212 | M16 x 1.5 | 25                 | 22 | 18   | 36 | 7  | 14 | 66  | 207 |  |  |
| 50        | M24 x 1.5          | 35 | 32 | 28   | 46 | 11 | 24 | 78  | 231 | M20 x 1.5 | 30                 | 27 | 22.4 | 40 | 9  | 19 | 73  | 226 |  |  |
| 63        | M30 x 1.5          | 45 | 42 | 35.5 | 55 | 13 | 30 | 95  | 257 | M24 x 1.5 | 35                 | 32 | 28   | 46 | 11 | 24 | 85  | 247 |  |  |
| 80        | M39 x 1.5          | 60 | 57 | 45   | 65 | 15 | 41 | 113 | 295 | M30 x 1.5 | 45                 | 42 | 35.5 | 55 | 13 | 30 | 98  | 280 |  |  |
| 100       | M48 x 1.5          | 75 | 72 | 56   | 80 | 16 | 50 | 135 | 325 | M39 x 1.5 | 60                 | 57 | 45   | 65 | 15 | 41 | 120 | 310 |  |  |

CH2GFY, CH2HFY

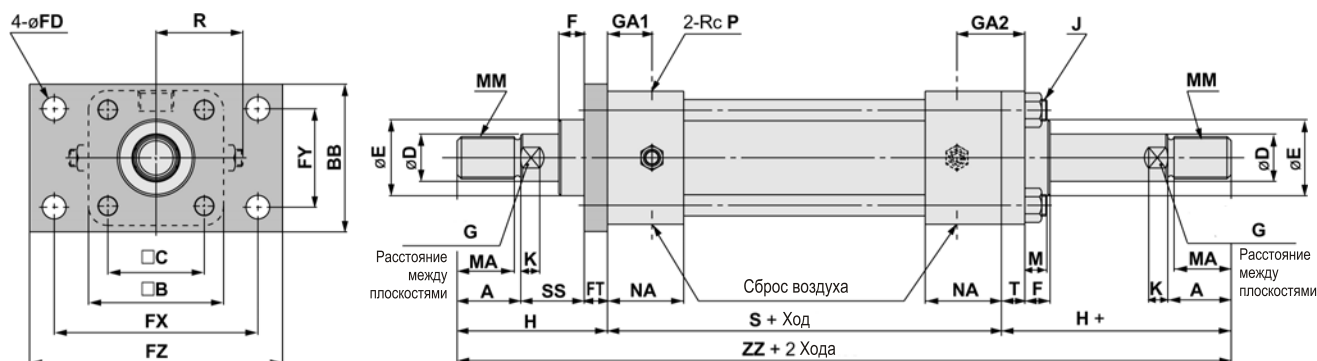
Размеры

| Ø<br>(мм) | Ход (мм)  | B   | BB  | C   | F  | GA | GB | J          | M  | NA | NB | P   | R  | S   | FD | FT | FX  | FY  | FZ  | SS |
|-----------|-----------|-----|-----|-----|----|----|----|------------|----|----|----|-----|----|-----|----|----|-----|-----|-----|----|
| 32        | 25 ~ 1400 | 58  | 62  | 38  | 14 | 21 | 15 | M10 x 1.25 | 11 | 37 | 31 | 3/8 | 39 | 130 | 11 | 13 | 88  | 40  | 109 | 30 |
| 40        | 25 ~ 1400 | 65  | 69  | 45  | 10 | 21 | 15 | M10 x 1.25 | 11 | 36 | 30 | 3/8 | 42 | 130 | 11 | 13 | 95  | 46  | 118 | 30 |
| 50        | 25 ~ 1400 | 76  | 85  | 52  | 10 | 27 | 19 | M10 x 1.25 | 11 | 43 | 35 | 1/2 | 46 | 142 | 14 | 18 | 115 | 58  | 145 | 30 |
| 63        | 25 ~ 1500 | 90  | 98  | 63  | 10 | 27 | 19 | M12 x 1.5  | 14 | 43 | 35 | 1/2 | 52 | 148 | 18 | 20 | 132 | 65  | 165 | 35 |
| 80        | 25 ~ 1800 | 110 | 118 | 80  | 11 | 22 | 22 | M16 x 1.5  | 16 | 44 | 44 | 3/4 | 65 | 166 | 18 | 24 | 155 | 87  | 190 | 35 |
| 100       | 25 ~ 1800 | 135 | 150 | 102 | 11 | 22 | 22 | M18 x 1.5  | 18 | 44 | 44 | 3/4 | 75 | 172 | 22 | 28 | 190 | 109 | 230 | 40 |

Исполнения штоков

| Ø<br>(мм) | Исполнение штока B |    |    |      |    |    |    |     |     |           | Исполнение штока C |    |      |    |    |    |     |     |  |  |
|-----------|--------------------|----|----|------|----|----|----|-----|-----|-----------|--------------------|----|------|----|----|----|-----|-----|--|--|
|           | MM                 | A  | MA | D    | E  | K  | G  | H   | ZZ  | MM        | A                  | MA | D    | E  | K  | G  | H   | ZZ  |  |  |
| 32        | M16 x 1.5          | 25 | 22 | 18   | 34 | 7  | 14 | 68  | 209 | —         | —                  | —  | —    | —  | —  | —  | —   | —   |  |  |
| 40        | M20 x 1.5          | 30 | 27 | 22.4 | 40 | 9  | 19 | 73  | 214 | M16 x 1.5 | 25                 | 22 | 18   | 36 | 7  | 14 | 68  | 209 |  |  |
| 50        | M24 x 1.5          | 35 | 32 | 28   | 46 | 11 | 24 | 83  | 236 | M20 x 1.5 | 30                 | 27 | 22.4 | 40 | 9  | 19 | 78  | 231 |  |  |
| 63        | M30 x 1.5          | 45 | 42 | 35.5 | 55 | 13 | 30 | 100 | 262 | M24 x 1.5 | 35                 | 32 | 28   | 46 | 11 | 24 | 90  | 252 |  |  |
| 80        | M39 x 1.5          | 60 | 57 | 45   | 65 | 15 | 41 | 119 | 301 | M30 x 1.5 | 45                 | 42 | 35.5 | 55 | 13 | 30 | 104 | 286 |  |  |
| 100       | M48 x 1.5          | 75 | 72 | 56   | 80 | 16 | 50 | 143 | 333 | M39 x 1.5 | 60                 | 57 | 45   | 65 | 15 | 41 | 128 | 318 |  |  |

## CH2EWFA, CH2FWFA



### Размеры

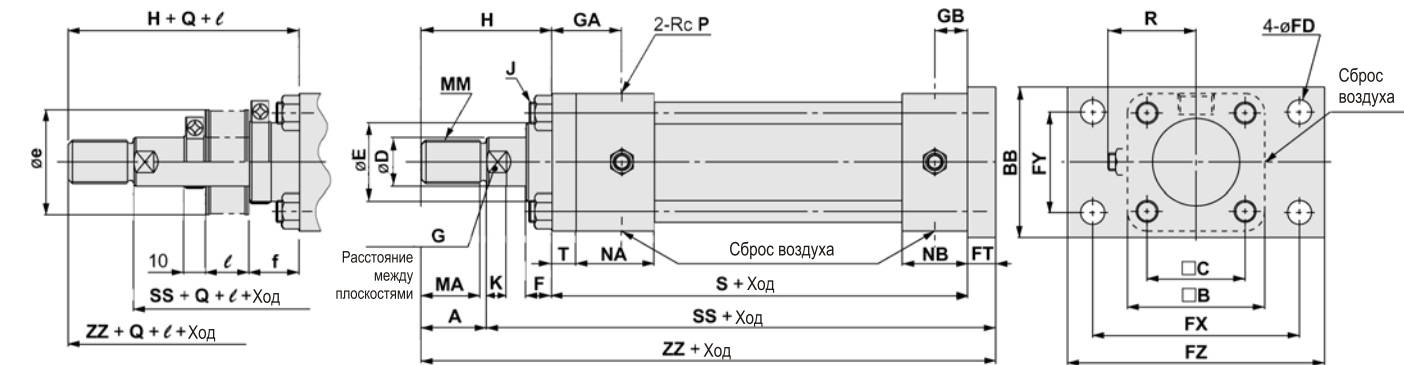
| ∅ (мм) | Ход (мм)  | BB  | B   | C   | F  | FD | FT | FX        | FY        | FZ  | GA1 | GA2 | J          | M  | NA | P   | R  | S   | SS | T  |
|--------|-----------|-----|-----|-----|----|----|----|-----------|-----------|-----|-----|-----|------------|----|----|-----|----|-----|----|----|
| 32     | 25 ~ 800  | 62  | 58  | 38  | 16 | 11 | 11 | 88        | 40        | 109 | 21  | 32  | M10 x 1.25 | 11 | 37 | 3/8 | 39 | 136 | 30 | 11 |
| 40     | 25 ~ 800  | 69  | 65  | 45  | 12 | 11 | 11 | 95 ±0.18  | 46 ±0.13  | 118 | 21  | 32  | M10 x 1.25 | 11 | 36 | 3/8 | 42 | 136 | 30 | 11 |
| 50     | 25 ~ 800  | 85  | 76  | 52  | 15 | 14 | 13 | 115       | 58 ±0.15  | 145 | 27  | 40  | M10 x 1.25 | 11 | 43 | 1/2 | 46 | 150 | 30 | 13 |
| 63     | 25 ~ 800  | 98  | 90  | 63  | 15 | 18 | 15 | 132 ±0.2  | 65 ±0.15  | 165 | 27  | 42  | M12 x 1.5  | 14 | 43 | 1/2 | 52 | 156 | 35 | 15 |
| 80     | 25 ~ 1000 | 118 | 110 | 80  | 17 | 18 | 18 | 155 ±0.3  | 87 ±0.18  | 190 | 22  | 40  | M16 x 1.5  | 16 | 44 | 3/4 | 65 | 166 | 35 | 18 |
| 100    | 25 ~ 1000 | 150 | 135 | 102 | 19 | 22 | 20 | 190 ±0.23 | 109 ±0.18 | 230 | 22  | 42  | M18 x 1.5  | 18 | 44 | 3/4 | 75 | 172 | 40 | 20 |

### Исполнения штоков

| Ø<br>(мм) | Исполнение штока В |    |    |      |    |                  |    |    |     |     | Исполнение штока С |    |    |      |    |                  |    |    |     |     |
|-----------|--------------------|----|----|------|----|------------------|----|----|-----|-----|--------------------|----|----|------|----|------------------|----|----|-----|-----|
|           | MM                 | A  | MA | D    | E  | K                | G  | H  | ZZ  | MM  | A                  | MA | D  | E    | K  | G                | H  | ZZ |     |     |
| 32        | M16 x 1.5          | 25 | 22 | 18   | 34 | -0.025<br>-0.064 | 7  | 14 | 66  | 268 | —                  | —  | —  | —    | —  | —                | —  | —  | —   |     |
| 40        | M20 x 1.5          | 30 | 27 | 22.4 | 40 |                  | 9  | 19 | 71  | 278 | M16 x 1.5          | 25 | 22 | 18   | 36 | -0.025<br>-0.064 | 7  | 14 | 66  | 268 |
| 50        | M24 x 1.5          | 35 | 32 | 28   | 46 |                  | 11 | 24 | 78  | 306 | M20 x 1.5          | 30 | 27 | 22.4 | 40 |                  | 9  | 19 | 73  | 296 |
| 63        | M30 x 1.5          | 45 | 42 | 35.5 | 55 | -0.030           | 13 | 30 | 95  | 346 | M24 x 1.5          | 35 | 32 | 28   | 46 |                  | 11 | 24 | 85  | 326 |
| 80        | M39 x 1.5          | 60 | 57 | 45   | 65 | -0.076           | 15 | 41 | 113 | 392 | M30 x 1.5          | 45 | 42 | 35.5 | 55 | -0.030           | 13 | 30 | 98  | 362 |
| 100       | M48 x 1.5          | 75 | 72 | 56   | 80 | -0.036<br>-0.090 | 16 | 50 | 135 | 442 | M39 x 1.5          | 60 | 57 | 45   | 65 | -0.076           | 15 | 41 | 120 | 412 |

Гидравлический цилиндр по JIS
CH2

С задним прямоугольным фланцем
CH2EFB, CH2FFB, CH2GFZ, CH2HFZ



CH2EFB, CH2FFB

Размеры

Table with dimensions for CH2EFB, CH2FFB. Columns include diameter, stroke, and various geometric parameters (B, BB, C, F, GA, GB, J, NA, NB, P, R, S, T, FD, FT, FX, FY, FZ, SS).

Исполнения штоков

Table showing rod options (Исполнения штоков) for different diameters, categorized by B and C types with sub-columns for MM, A, MA, D, E, K, G, H, ZZ.

CH2EFZ, CH2FFZ

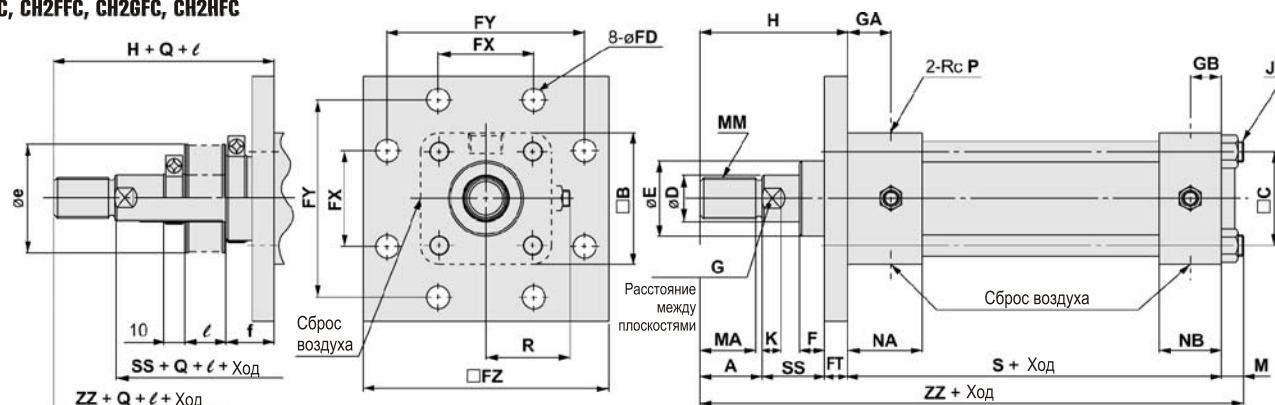
Размеры

Table with dimensions for CH2EFZ, CH2FFZ. Columns include diameter, stroke, and various geometric parameters (B, BB, C, F, GA, GB, J, NA, NB, P, R, S, T, FD, FT, FX, FY, FZ, SS).

Исполнения штоков

Table showing rod options (Исполнения штоков) for different diameters, categorized by B and C types with sub-columns for MM, A, MA, D, E, K, G, H, ZZ.

## С передним квадратным фланцем CH2EFC, CH2FFC, CH2GFC, CH2HFC



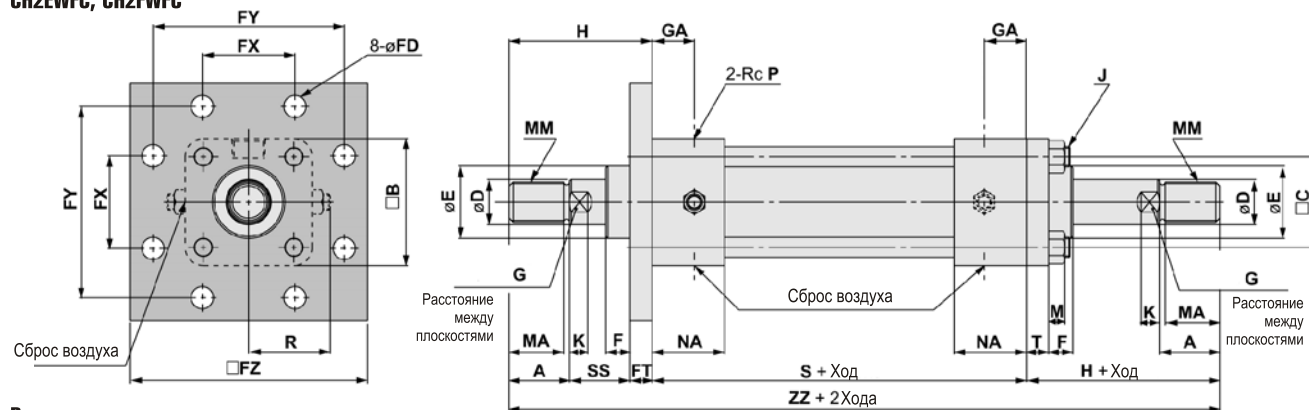
### Размеры

| Ø (мм) | Ход (мм)  | B   | C   | F  | GA | GB | J          | M  | NA | NB | P   | R  | S   | FD | FT | FX   |     | FY    |     | FZ    | SS  |    |
|--------|-----------|-----|-----|----|----|----|------------|----|----|----|-----|----|-----|----|----|------|-----|-------|-----|-------|-----|----|
| 32     | 25 ~ 1400 | 58  | 38  | 16 | 21 | 15 | M10 x 1.25 | 11 | 37 | 31 | 3/8 | 39 | 130 | 11 | 11 | ±0.2 | 40  | ±0.13 | 88  | ±0.18 | 109 | 30 |
| 40     | 25 ~ 1400 | 65  | 45  | 12 | 21 | 15 | M10 x 1.25 | 11 | 36 | 30 | 3/8 | 42 | 130 | 11 | 11 |      | 46  |       | 95  |       | 118 | 30 |
| 50     | 25 ~ 1400 | 76  | 52  | 15 | 27 | 19 | M10 x 1.25 | 11 | 43 | 35 | 1/2 | 46 | 142 | 14 | 13 |      | 58  | ±0.15 | 115 | ±0.2  | 145 | 30 |
| 63     | 25 ~ 1500 | 90  | 63  | 15 | 27 | 19 | M12 x 1.5  | 14 | 43 | 35 | 1/2 | 52 | 148 | 18 | 15 |      | 65  |       | 132 |       | 165 | 35 |
| 80     | 25 ~ 1800 | 110 | 80  | 17 | 22 | 22 | M16 x 1.5  | 16 | 44 | 44 | 3/4 | 65 | 166 | 18 | 18 | ±0.3 | 87  | ±0.18 | 155 | ±0.23 | 190 | 35 |
| 100    | 25 ~ 1800 | 135 | 102 | 19 | 22 | 22 | M18 x 1.5  | 18 | 44 | 44 | 3/4 | 75 | 172 | 22 | 20 |      | 109 |       | 190 |       | 230 | 40 |

### Исполнения штоков

| Ø (мм) | Исполнение штока В |    |    |      |    |                  |    |    |     |     | Исполнение штока С |    |    |      |    |                  |    |    |     |     |
|--------|--------------------|----|----|------|----|------------------|----|----|-----|-----|--------------------|----|----|------|----|------------------|----|----|-----|-----|
|        | MM                 | A  | MA | D    | E  | K                | G  | H  | ZZ  | MM  | A                  | MA | D  | E    | K  | G                | H  | ZZ | MM  | MA  |
| 32     | M16 x 1.5          | 25 | 22 | 18   | 34 | -0.025<br>-0.064 | 7  | 14 | 66  | 207 | —                  | —  | —  | —    | —  | —                | —  | —  | —   | —   |
| 40     | M20 x 1.5          | 30 | 27 | 22.4 | 40 | -0.025<br>-0.064 | 9  | 19 | 71  | 212 | M16 x 1.5          | 25 | 22 | 18   | 36 | -0.025<br>-0.064 | 7  | 14 | 66  | 207 |
| 50     | M24 x 1.5          | 35 | 32 | 28   | 46 | -0.030<br>-0.076 | 11 | 24 | 78  | 231 | M20 x 1.5          | 30 | 27 | 22.4 | 40 | -0.025<br>-0.064 | 9  | 19 | 73  | 226 |
| 63     | M30 x 1.5          | 45 | 42 | 35.5 | 55 | -0.030<br>-0.076 | 13 | 30 | 95  | 257 | M24 x 1.5          | 35 | 32 | 28   | 46 | -0.030<br>-0.076 | 11 | 24 | 85  | 247 |
| 80     | M39 x 1.5          | 60 | 57 | 45   | 65 | -0.036<br>-0.090 | 15 | 41 | 113 | 295 | M30 x 1.5          | 45 | 42 | 35.5 | 55 | -0.030<br>-0.076 | 13 | 30 | 98  | 280 |
| 100    | M48 x 1.5          | 75 | 72 | 56   | 80 | -0.036<br>-0.090 | 16 | 50 | 135 | 325 | M39 x 1.5          | 60 | 57 | 45   | 65 | -0.036<br>-0.090 | 15 | 41 | 120 | 310 |

## CH2EWFC, CH2FWFC



### Размеры

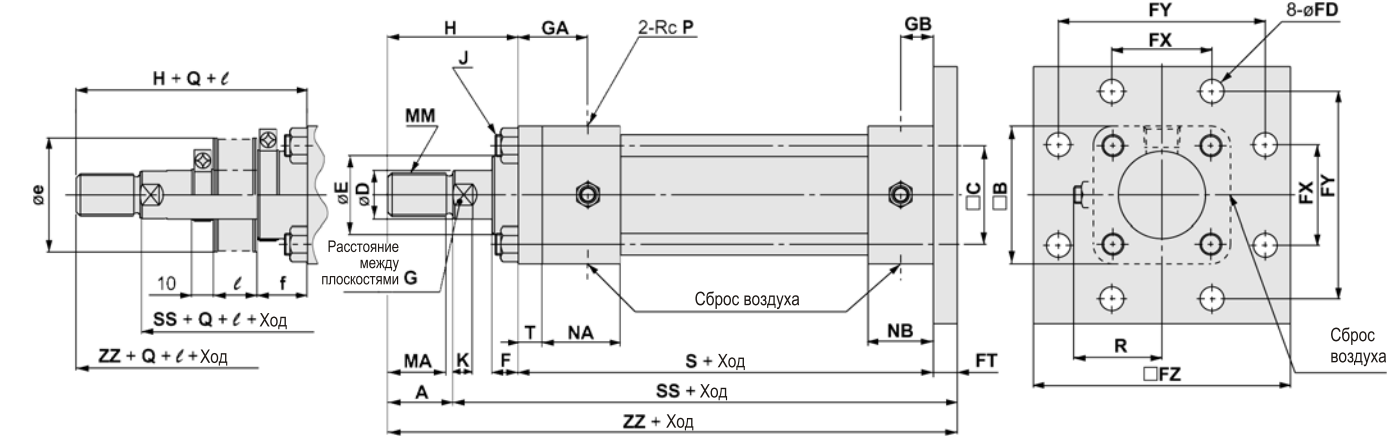
| Ø (мм) | Ход (мм)  | B   | C   | F  | FD | FT | FX   |     | FY    |       | FZ    | GA    | J     | M          | NA         | P         | R   | S   | SS  | T   |     |    |
|--------|-----------|-----|-----|----|----|----|------|-----|-------|-------|-------|-------|-------|------------|------------|-----------|-----|-----|-----|-----|-----|----|
| 32     | 25 ~ 800  | 58  | 38  | 16 | 11 | 11 | ±0.2 | 40  | ±0.13 | 88    | ±0.18 | 109   | 21    | M10 x 1.25 | 11         | 37        | 3/8 | 39  | 136 | 30  | 11  |    |
| 40     | 25 ~ 800  | 65  | 45  | 12 | 11 | 11 |      | 46  | ±0.13 | 95    |       | ±0.18 | 118   | 21         | M10 x 1.25 | 11        | 36  | 3/8 | 42  | 136 | 30  | 11 |
| 50     | 25 ~ 800  | 76  | 52  | 15 | 14 | 13 |      | 58  | ±0.15 | 115   |       | ±0.18 | 145   | 27         | M10 x 1.25 | 11        | 43  | 1/2 | 46  | 150 | 30  | 13 |
| 63     | 25 ~ 800  | 90  | 63  | 15 | 18 | 15 |      | 65  | ±0.15 | 132   |       | ±0.2  | 165   | 27         | M12 x 1.5  | 14        | 43  | 1/2 | 52  | 156 | 35  | 15 |
| 80     | 25 ~ 1000 | 110 | 80  | 17 | 18 | 18 | ±0.3 | 87  | ±0.18 | 155   | ±0.23 | 190   | 22    | M16 x 1.5  | 16         | 44        | 3/4 | 65  | 166 | 35  | 18  |    |
| 100    | 25 ~ 1000 | 135 | 102 | 19 | 22 | 20 |      | 109 |       | ±0.18 |       | 190   | ±0.23 | 230        | 22         | M18 x 1.5 | 18  | 44  | 3/4 | 75  | 172 | 40 |

### Исполнения штоков

| Ø (мм) | Исполнение штока В |    |    |      |    |                  |    |    |     |     | Исполнение штока С |    |    |      |    |                  |    |    |     |     |
|--------|--------------------|----|----|------|----|------------------|----|----|-----|-----|--------------------|----|----|------|----|------------------|----|----|-----|-----|
|        | MM                 | A  | MA | D    | E  | K                | G  | H  | ZZ  | MM  | A                  | MA | D  | E    | K  | G                | H  | ZZ | MM  | MA  |
| 32     | M16 x 1.5          | 25 | 22 | 18   | 34 | -0.025<br>-0.064 | 7  | 14 | 66  | 268 | —                  | —  | —  | —    | —  | —                | —  | —  | —   | —   |
| 40     | M20 x 1.5          | 30 | 27 | 22.4 | 40 | -0.025<br>-0.064 | 9  | 19 | 71  | 278 | M16 x 1.5          | 25 | 22 | 18   | 36 | -0.025<br>-0.064 | 7  | 14 | 66  | 268 |
| 50     | M24 x 1.5          | 35 | 32 | 28   | 46 | -0.030<br>-0.076 | 11 | 24 | 78  | 306 | M20 x 1.5          | 30 | 27 | 22.4 | 40 | -0.025<br>-0.064 | 9  | 19 | 73  | 296 |
| 63     | M30 x 1.5          | 45 | 42 | 35.5 | 55 | -0.030<br>-0.076 | 13 | 30 | 95  | 346 | M24 x 1.5          | 35 | 32 | 28   | 46 | -0.030<br>-0.076 | 11 | 24 | 85  | 326 |
| 80     | M39 x 1.5          | 60 | 57 | 45   | 65 | -0.036<br>-0.090 | 15 | 41 | 113 | 392 | M30 x 1.5          | 45 | 42 | 35.5 | 55 | -0.030<br>-0.076 | 13 | 30 | 98  | 362 |
| 100    | M48 x 1.5          | 75 | 72 | 56   | 80 | -0.036<br>-0.090 | 16 | 50 | 135 | 442 | M39 x 1.5          | 60 | 57 | 45   | 65 | -0.036<br>-0.090 | 15 | 41 | 120 | 412 |

Гидравлический цилиндр по JIS  
CH2

С задним квадратным фланцем  
CH2EFD, CH2FFD, CH2GFD, CH2HFD



Размеры

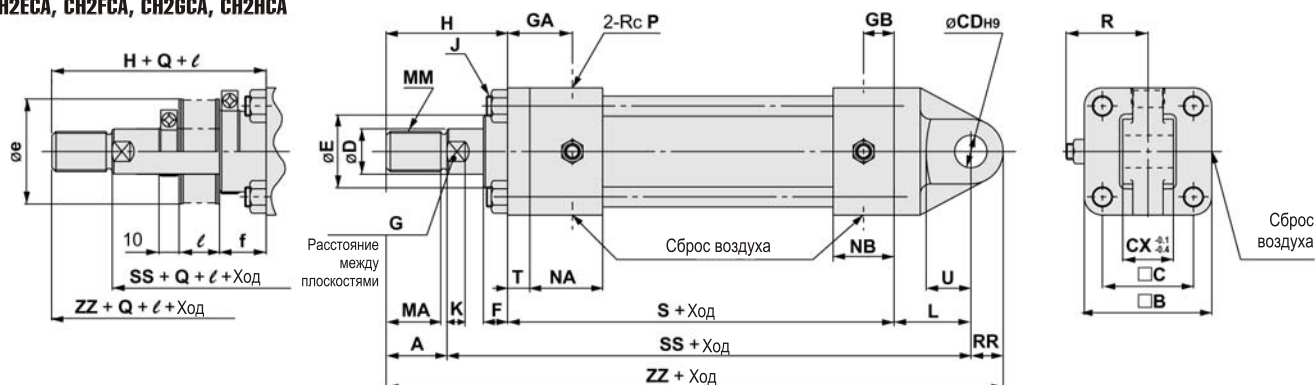
| Ø<br>(мм) | Ход (мм)  | B   | C   | F  | GA | GB | J          | NA | NB | P   | R  | S   | T  | FD | FT | FX  | FY  | FZ  | SS  |
|-----------|-----------|-----|-----|----|----|----|------------|----|----|-----|----|-----|----|----|----|-----|-----|-----|-----|
| 32        | 25 ~ 1400 | 58  | 38  | 16 | 32 | 15 | M10 x 1.25 | 37 | 31 | 3/8 | 39 | 141 | 11 | 11 | 11 | 40  | 88  | 109 | 182 |
| 40        | 25 ~ 1400 | 65  | 45  | 12 | 32 | 15 | M10 x 1.25 | 36 | 30 | 3/8 | 42 | 141 | 11 | 11 | 11 | 46  | 95  | 118 | 182 |
| 50        | 25 ~ 1400 | 76  | 52  | 15 | 40 | 19 | M10 x 1.25 | 43 | 35 | 1/2 | 46 | 155 | 13 | 14 | 13 | 58  | 115 | 145 | 198 |
| 63        | 25 ~ 1500 | 90  | 63  | 15 | 42 | 19 | M12 x 1.5  | 43 | 35 | 1/2 | 52 | 163 | 15 | 18 | 15 | 65  | 132 | 165 | 213 |
| 80        | 25 ~ 1800 | 110 | 80  | 17 | 40 | 22 | M16 x 1.5  | 44 | 44 | 3/4 | 65 | 184 | 18 | 18 | 18 | 87  | 155 | 190 | 237 |
| 100       | 25 ~ 1800 | 135 | 102 | 19 | 42 | 22 | M18 x 1.5  | 44 | 44 | 3/4 | 75 | 192 | 20 | 22 | 20 | 109 | 190 | 230 | 252 |

Исполнения штоков

| Ø<br>(mm) | Исполнение штока В |    |    |      |    |                  |    |    |     |           | Исполнение штока С |    |      |    |                  |                  |    |     |     |     |
|-----------|--------------------|----|----|------|----|------------------|----|----|-----|-----------|--------------------|----|------|----|------------------|------------------|----|-----|-----|-----|
|           | MM                 | A  | MA | D    | E  | K                | G  | H  | ZZ  | MM        | A                  | MA | D    | E  | K                | G                | H  | ZZ  |     |     |
| 32        | M16 x 1.5          | 25 | 22 | 18   | 34 | -0.025<br>-0.064 | 7  | 14 | 55  | 207       | —                  | —  | —    | —  | —                | —                | —  | —   |     |     |
| 40        | M20 x 1.5          | 30 | 27 | 22.4 | 40 |                  | 9  | 19 | 60  | 212       | M16 x 1.5          | 25 | 22   | 18 | 36               | -0.025<br>-0.064 | 7  | 14  | 55  | 207 |
| 50        | M24 x 1.5          | 35 | 32 | 28   | 46 | 11               | 24 | 65 | 233 | M20 x 1.5 | 30                 | 27 | 22.4 | 40 | 9                |                  | 19 | 60  | 228 |     |
| 63        | M30 x 1.5          | 45 | 42 | 35.5 | 55 | -0.030<br>-0.076 | 13 | 30 | 80  | 258       | M24 x 1.5          | 35 | 32   | 28 | 46               | 11               | 24 | 70  | 248 |     |
| 80        | M39 x 1.5          | 60 | 57 | 45   | 65 | 15               | 41 | 95 | 297 | M30 x 1.5 | 45                 | 42 | 35.5 | 55 | -0.030<br>-0.076 | 13               | 30 | 80  | 282 |     |
| 100       | M48 x 1.5          | 75 | 72 | 56   | 80 | -0.036<br>-0.090 | 16 | 50 | 115 | 327       | M39 x 1.5          | 60 | 57   | 45 | 65               | 15               | 41 | 100 | 312 |     |



## С шарнирной опорой CH2FCA, CH2FCA, CH2GCA, CH2HCA



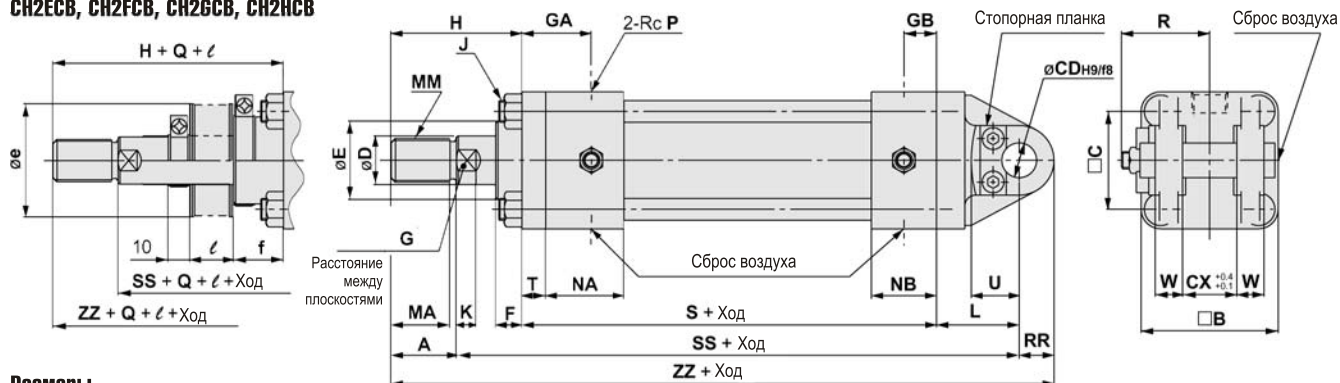
### Размеры

| Ø (мм) | Ход (мм)  | B   | C   | F  | GA | GB | J          | NA | NB | P   | R  | S   | T  | CX   | CD   | CDH9        | RR   | SS  | U  | L  |
|--------|-----------|-----|-----|----|----|----|------------|----|----|-----|----|-----|----|------|------|-------------|------|-----|----|----|
| 32     | 25 ~ 1400 | 58  | 38  | 16 | 32 | 15 | M10 x 1.25 | 37 | 31 | 3/8 | 39 | 141 | 11 | 25   | 16   | +0.043<br>0 | 16   | 209 | 22 | 38 |
| 40     | 25 ~ 1400 | 65  | 45  | 12 | 32 | 15 | M10 x 1.25 | 36 | 30 | 3/8 | 42 | 141 | 11 | 25   | 16   | 0           | 16   | 209 | 22 | 38 |
| 50     | 25 ~ 1400 | 76  | 52  | 15 | 40 | 19 | M10 x 1.25 | 43 | 35 | 1/2 | 46 | 155 | 13 | 31.5 | 20   | +0.052<br>0 | 20   | 230 | 25 | 45 |
| 63     | 25 ~ 1500 | 90  | 63  | 15 | 42 | 19 | M12 x 1.5  | 43 | 35 | 1/2 | 52 | 163 | 15 | 40   | 31.5 | +0.062<br>0 | 31.5 | 261 | 40 | 63 |
| 80     | 25 ~ 1800 | 110 | 80  | 17 | 40 | 22 | M16 x 1.5  | 44 | 44 | 3/4 | 65 | 184 | 18 | 40   | 31.5 | 0           | 31.5 | 291 | 40 | 72 |
| 100    | 25 ~ 1800 | 135 | 102 | 19 | 42 | 22 | M18 x 1.5  | 44 | 44 | 3/4 | 75 | 192 | 20 | 50   | 40   | 0           | 40   | 316 | 50 | 84 |

### Исполнения штоков

| Ø (мм) | Исполнение штока В |    |    |      |    |    |    |     |       |           | Исполнение штока С |    |      |    |    |    |     |       |   |   |
|--------|--------------------|----|----|------|----|----|----|-----|-------|-----------|--------------------|----|------|----|----|----|-----|-------|---|---|
|        | MM                 | A  | MA | D    | E  | K  | G  | H   | ZZ    | MM        | A                  | MA | D    | E  | K  | G  | H   | ZZ    |   |   |
| 32     | M16 x 1.5          | 25 | 22 | 18   | 34 | 7  | 14 | 55  | 250   | —         | —                  | —  | —    | —  | —  | —  | —   | —     | — | — |
| 40     | M20 x 1.5          | 30 | 27 | 22.4 | 40 | 9  | 19 | 60  | 255   | M16 x 1.5 | 25                 | 22 | 18   | 36 | 7  | 14 | 55  | 250   | — | — |
| 50     | M24 x 1.5          | 35 | 32 | 28   | 46 | 11 | 24 | 65  | 285   | M20 x 1.5 | 30                 | 27 | 22.4 | 40 | 9  | 19 | 60  | 280   | — | — |
| 63     | M30 x 1.5          | 45 | 42 | 35.5 | 55 | 13 | 30 | 80  | 337.5 | M24 x 1.5 | 35                 | 32 | 28   | 46 | 11 | 24 | 70  | 327.5 | — | — |
| 80     | M39 x 1.5          | 60 | 57 | 45   | 65 | 15 | 41 | 95  | 382.5 | M30 x 1.5 | 45                 | 42 | 35.5 | 55 | 13 | 30 | 80  | 367.5 | — | — |
| 100    | M48 x 1.5          | 75 | 72 | 56   | 80 | 16 | 50 | 115 | 431   | M39 x 1.5 | 60                 | 57 | 45   | 65 | 15 | 41 | 100 | 416   | — | — |

## С двойной шарнирной опорой CH2GCB, CH2GCB, CH2GCB, CH2HCB



### Размеры

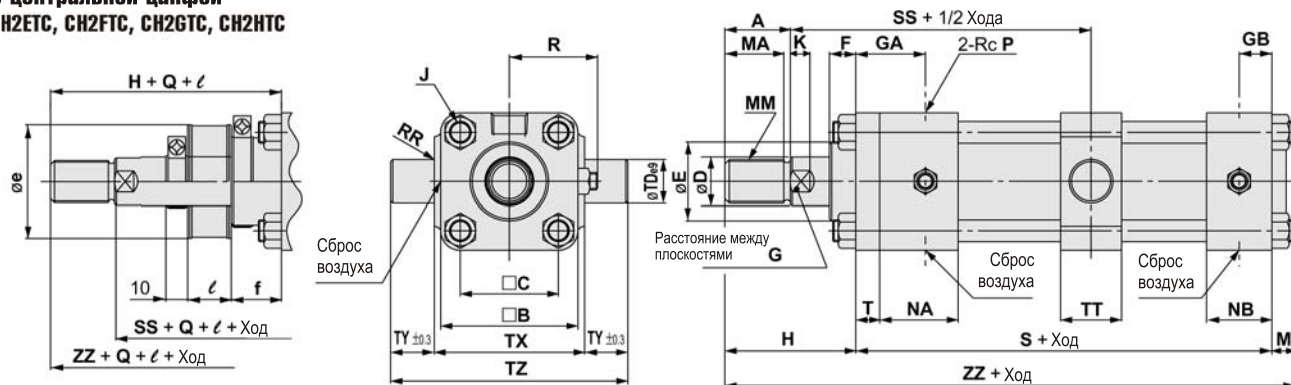
| Ø (мм) | Ход (мм)  | B   | C   | F  | GA | GB | J          | NA | NB | P   | R  | S   | T  | CX   | CD   |             |                  | RR   | SS  | L  | U  | W    |
|--------|-----------|-----|-----|----|----|----|------------|----|----|-----|----|-----|----|------|------|-------------|------------------|------|-----|----|----|------|
|        |           |     |     |    |    |    |            |    |    |     |    |     |    |      |      | H9          | f8               |      |     |    |    |      |
| 32     | 25 ~ 1400 | 58  | 38  | 16 | 32 | 15 | M10 x 1.25 | 37 | 31 | 3/8 | 39 | 141 | 11 | 25   | 16   | +0.043<br>0 | -0.016<br>-0.043 | 16   | 209 | 38 | 22 | 12.5 |
| 40     | 25 ~ 1400 | 65  | 45  | 12 | 32 | 15 | M10 x 1.25 | 36 | 30 | 3/8 | 42 | 141 | 11 | 25   | 16   | 0           | -0.043<br>-0.053 | 16   | 209 | 38 | 22 | 12.5 |
| 50     | 25 ~ 1400 | 76  | 52  | 15 | 40 | 19 | M10 x 1.25 | 43 | 35 | 1/2 | 46 | 155 | 13 | 31.5 | 20   | +0.052<br>0 | -0.020<br>-0.053 | 20   | 230 | 45 | 25 | 16   |
| 63     | 25 ~ 1500 | 90  | 63  | 15 | 42 | 19 | M12 x 1.5  | 43 | 35 | 1/2 | 52 | 163 | 15 | 40   | 31.5 | +0.062<br>0 | -0.025<br>-0.064 | 31.5 | 261 | 63 | 40 | 20   |
| 80     | 25 ~ 1800 | 110 | 80  | 17 | 40 | 22 | M16 x 1.5  | 44 | 44 | 3/4 | 65 | 184 | 18 | 40   | 31.5 | 0           | -0.025<br>-0.064 | 31.5 | 291 | 72 | 40 | 20   |
| 100    | 25 ~ 1800 | 135 | 102 | 19 | 42 | 22 | M18 x 1.5  | 44 | 44 | 3/4 | 75 | 192 | 20 | 50   | 40   | 0           | -0.064           | 40   | 316 | 84 | 50 | 25   |

### Исполнения штоков

| Ø (мм) | Исполнение штока В |    |    |      |    |    |    |     |       |           | Исполнение штока С |    |      |    |    |    |     |       |   |   |
|--------|--------------------|----|----|------|----|----|----|-----|-------|-----------|--------------------|----|------|----|----|----|-----|-------|---|---|
|        | MM                 | A  | MA | D    | E  | K  | G  | H   | ZZ    | MM        | A                  | MA | D    | E  | K  | G  | H   | ZZ    |   |   |
| 32     | M16 x 1.5          | 25 | 22 | 18   | 34 | 7  | 14 | 55  | 250   | —         | —                  | —  | —    | —  | —  | —  | —   | —     | — | — |
| 40     | M20 x 1.5          | 30 | 27 | 22.4 | 40 | 9  | 19 | 60  | 255   | M16 x 1.5 | 25                 | 22 | 18   | 36 | 7  | 14 | 55  | 250   | — | — |
| 50     | M24 x 1.5          | 35 | 32 | 28   | 46 | 11 | 24 | 65  | 285   | M20 x 1.5 | 30                 | 27 | 22.4 | 40 | 9  | 19 | 60  | 280   | — | — |
| 63     | M30 x 1.5          | 45 | 42 | 35.5 | 55 | 13 | 30 | 80  | 337.5 | M24 x 1.5 | 35                 | 32 | 28   | 46 | 11 | 24 | 70  | 327.5 | — | — |
| 80     | M39 x 1.5          | 60 | 57 | 45   | 65 | 15 | 41 | 95  | 382.5 | M30 x 1.5 | 45                 | 42 | 35.5 | 55 | 13 | 30 | 80  | 367.5 | — | — |
| 100    | M48 x 1.5          | 75 | 72 | 56   | 80 | 16 | 50 | 115 | 431   | M39 x 1.5 | 60                 | 57 | 45   | 65 | 15 | 41 | 100 | 416   | — | — |

# Гидравлический цилиндр по JIS CH2

С центральной цапфой  
CH2ETC, CH2FTC, CH2GTC, CH2HTC



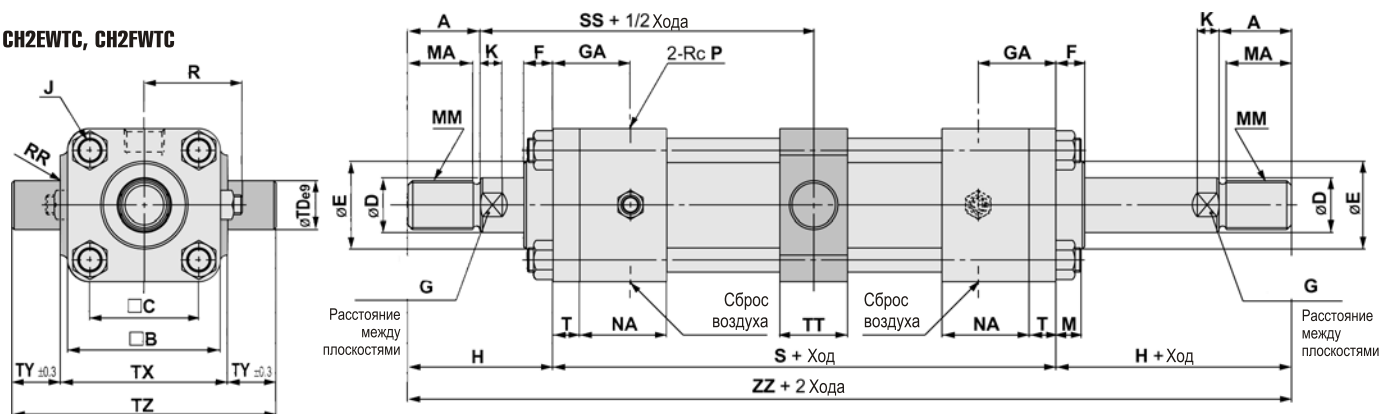
## Размеры

| Ø (мм)           | Ход (мм)  | B   | C   | F  | GA | GB | J          | M  | NA | NB | P   | R  | S   | T  | RR  | SS  | TD   |                  |    |     | TT | TX   |     |       | TY   | TZ  |
|------------------|-----------|-----|-----|----|----|----|------------|----|----|----|-----|----|-----|----|-----|-----|------|------------------|----|-----|----|------|-----|-------|------|-----|
| 32 <sup>+1</sup> | 25 ~ 1800 | 58  | 38  | 16 | 32 | 15 | M10 x 1.25 | 11 | 37 | 31 | 3/8 | 39 | 141 | 11 | 2   | 113 | 20   | -0.040<br>-0.092 | 28 | 58  | 0  | 20   | 98  | -0.3  | 20   | 98  |
| 40 <sup>+1</sup> | 25 ~ 1800 | 65  | 45  | 12 | 32 | 15 | M10 x 1.25 | 11 | 36 | 30 | 3/8 | 42 | 141 | 11 | 2   | 113 | 20   |                  | 28 | 69  |    | 20   | 109 |       |      |     |
| 50 <sup>+1</sup> | 25 ~ 1800 | 76  | 52  | 15 | 40 | 19 | M10 x 1.25 | 11 | 43 | 35 | 1/2 | 46 | 155 | 13 | 2.5 | 121 | 25   | -0.050<br>-0.112 | 33 | 85  | 0  | 25   | 135 | -0.35 | 25   | 135 |
| 63 <sup>+2</sup> | 25 ~ 1800 | 90  | 63  | 15 | 42 | 19 | M12 x 1.5  | 14 | 43 | 35 | 1/2 | 52 | 163 | 15 | 2.5 | 132 | 31.5 |                  | 43 | 98  |    | 31.5 | 161 |       |      |     |
| 80               | 25 ~ 1800 | 110 | 80  | 17 | 40 | 22 | M16 x 1.5  | 16 | 44 | 44 | 3/4 | 65 | 184 | 18 | 2.5 | 146 | 31.5 | -0.050<br>-0.112 | 43 | 118 | 0  | 31.5 | 181 | -0.4  | 31.5 | 181 |
| 100              | 25 ~ 1800 | 135 | 102 | 19 | 42 | 22 | M18 x 1.5  | 18 | 44 | 44 | 3/4 | 75 | 192 | 20 | 3   | 156 | 40   |                  | 53 | 145 |    | 40   | 225 |       |      |     |

## Исполнения штоков

| Ø (мм) | Исполнение штока B |    |    |      |    |                  |    |    |     |     | Исполнение штока C |    |    |      |    |                  |    |    |     |     |
|--------|--------------------|----|----|------|----|------------------|----|----|-----|-----|--------------------|----|----|------|----|------------------|----|----|-----|-----|
|        | MM                 | A  | MA | D    | E  | K                | G  | H  | ZZ  | MM  | A                  | MA | D  | E    | K  | G                | H  | ZZ |     |     |
| 32     | M16 x 1.5          | 25 | 22 | 18   | 34 | -0.025<br>-0.064 | 7  | 14 | 55  | 207 | —                  | —  | —  | —    | —  | —                | —  | —  | —   | —   |
| 40     | M20 x 1.5          | 30 | 27 | 22.4 | 40 | -0.025<br>-0.064 | 9  | 19 | 60  | 212 | M16 x 1.5          | 25 | 22 | 18   | 36 | -0.025<br>-0.064 | 7  | 14 | 55  | 207 |
| 50     | M24 x 1.5          | 35 | 32 | 28   | 46 | -0.030<br>-0.076 | 11 | 24 | 65  | 231 | M20 x 1.5          | 30 | 27 | 22.4 | 40 | -0.025<br>-0.064 | 9  | 19 | 60  | 226 |
| 63     | M30 x 1.5          | 45 | 42 | 35.5 | 55 | -0.030<br>-0.076 | 13 | 30 | 80  | 257 | M24 x 1.5          | 35 | 32 | 28   | 46 | -0.030<br>-0.076 | 11 | 24 | 70  | 247 |
| 80     | M39 x 1.5          | 60 | 57 | 45   | 65 | -0.036<br>-0.090 | 15 | 41 | 95  | 295 | M30 x 1.5          | 45 | 42 | 35.5 | 55 | -0.030<br>-0.076 | 13 | 30 | 80  | 280 |
| 100    | M48 x 1.5          | 75 | 72 | 56   | 80 | -0.036<br>-0.090 | 16 | 50 | 115 | 325 | M39 x 1.5          | 60 | 57 | 45   | 65 | -0.030<br>-0.076 | 15 | 41 | 100 | 310 |

CH2EWTC, CH2FWTC



## Размеры

| Ø<br>(мм) | Ход (мм)  | B   | C   | F  | GA | J          | M  | NA | P   | R  | RR  | S   | SS  | T  | TD <sub>e9</sub> | TT               | TX | TY  | TZ        |      |     |
|-----------|-----------|-----|-----|----|----|------------|----|----|-----|----|-----|-----|-----|----|------------------|------------------|----|-----|-----------|------|-----|
| 32        | 25 ~ 800  | 58  | 38  | 16 | 32 | M10 x 1.25 | 11 | 37 | 3/8 | 39 | 2   | 158 | 113 | 11 | 20               | -0.040<br>-0.092 | 28 | 58  | 0         | 20   | 98  |
| 40        | 25 ~ 800  | 65  | 45  | 12 | 32 | M10 x 1.25 | 11 | 36 | 3/8 | 42 | 2   | 158 | 113 | 11 | 20               |                  | 28 | 69  | -0.3      | 20   | 109 |
| 50        | 25 ~ 800  | 76  | 52  | 15 | 40 | M10 x 1.25 | 11 | 43 | 1/2 | 46 | 2.5 | 176 | 121 | 13 | 25               | -0.050<br>-0.112 | 33 | 85  | 0         | 25   | 135 |
| 63        | 25 ~ 800  | 90  | 63  | 15 | 42 | M12 x 1.5  | 14 | 43 | 1/2 | 52 | 2.5 | 186 | 132 | 15 | 31.5             |                  | 43 | 98  | -0.35     | 31.5 | 161 |
| 80        | 25 ~ 1000 | 110 | 80  | 17 | 40 | M16 x 1.5  | 16 | 44 | 3/4 | 65 | 2.5 | 202 | 146 | 18 | 31.5             | -0.050<br>-0.112 | 43 | 118 | 0         | 31.5 | 181 |
| 100       | 25 ~ 1000 | 135 | 102 | 19 | 42 | M18 x 1.5  | 18 | 44 | 3/4 | 75 | 3   | 212 | 156 | 20 | 40               |                  | 53 | 145 | 0<br>+0.4 | 40   | 225 |

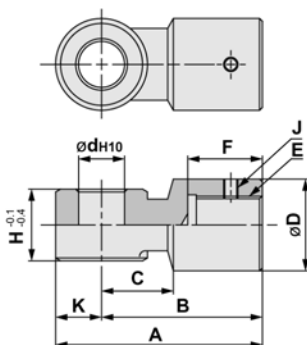
## Исполнения штоков

| Ø (мм) | Исполнение штока B |    |    |      |    |                  |    |    |     |     | Исполнение штока C |    |    |      |    |                  |    |    |     |     |
|--------|--------------------|----|----|------|----|------------------|----|----|-----|-----|--------------------|----|----|------|----|------------------|----|----|-----|-----|
|        | MM                 | A  | MA | D    | E  | K                | G  | H  | ZZ  | MM  | A                  | MA | D  | E    | K  | G                | H  | ZZ |     |     |
| 32     | M16 x 1.5          | 25 | 22 | 18   | 34 | -0.025<br>-0.064 | 7  | 14 | 55  | 268 | —                  | —  | —  | —    | —  | —                | —  | —  | —   | —   |
| 40     | M20 x 1.5          | 30 | 27 | 22.4 | 40 | -0.025<br>-0.064 | 9  | 19 | 60  | 278 | M16 x 1.5          | 25 | 22 | 18   | 36 | -0.025<br>-0.064 | 7  | 14 | 55  | 268 |
| 50     | M24 x 1.5          | 35 | 32 | 28   | 46 | -0.030<br>-0.076 | 11 | 24 | 65  | 306 | M20 x 1.5          | 30 | 27 | 22.4 | 40 | -0.025<br>-0.064 | 9  | 19 | 60  | 296 |
| 63     | M30 x 1.5          | 45 | 42 | 35.5 | 55 | -0.030<br>-0.076 | 13 | 30 | 80  | 346 | M24 x 1.5          | 35 | 32 | 28   | 46 | -0.030<br>-0.076 | 11 | 24 | 70  | 326 |
| 80     | M39 x 1.5          | 60 | 57 | 45   | 65 | -0.036<br>-0.090 | 15 | 41 | 95  | 392 | M30 x 1.5          | 45 | 42 | 35.5 | 55 | -0.030<br>-0.076 | 13 | 30 | 80  | 362 |
| 100    | M48 x 1.5          | 75 | 72 | 56   | 80 | -0.036<br>-0.090 | 16 | 50 | 115 | 442 | M39 x 1.5          | 60 | 57 | 45   | 65 | -0.030<br>-0.076 | 15 | 41 | 100 | 412 |

## Принадлежности

### Шарнирный наконечник

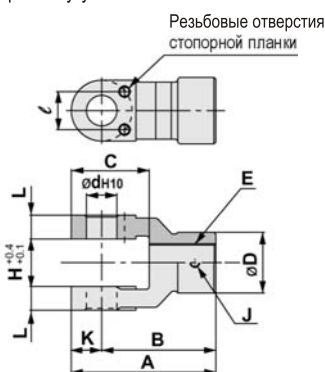
Материал: чугунное литье



| Шток | Номер для заказа | Ø (мм) | A   | B   | C  | D  | d    |            | E       | F  | H    | J       | K  |
|------|------------------|--------|-----|-----|----|----|------|------------|---------|----|------|---------|----|
|      | IH2-03B          | 32     | 76  | 60  | 25 | 32 | 16   | +0.07 / 0  | M16x1.5 | 26 | 25   | M5x0.8  | 16 |
|      | IH2-04B          | 40     | 76  | 60  | 25 | 32 | 16   | +0.07 / 0  | M20x1.5 | 31 | 25   | M5x0.8  | 16 |
|      | IH2-05B          | 50     | 90  | 70  | 30 | 40 | 20   | +0.084 / 0 | M24x1.5 | 36 | 31.5 | M5x0.8  | 20 |
|      | IH2-06B          | 63     | 145 | 115 | 45 | 60 | 31.5 | +0.1 / 0   | M30x1.5 | 50 | 40   | M6x1    | 30 |
|      | IH2-08B          | 80     | 145 | 115 | 45 | 60 | 31.5 | +0.1 / 0   | M39x1.5 | 61 | 40   | M6x1    | 30 |
|      | IH2-10B          | 100    | 185 | 145 | 57 | 79 | 40   | +0.1 / 0   | M49x1.5 | 76 | 50   | M8x1.25 | 40 |
|      | IH2-03B          | 40     | 76  | 60  | 25 | 32 | 16   | +0.07 / 0  | M16x1.5 | 26 | 25   | M5x0.8  | 16 |
|      | IH2-05C          | 50     | 90  | 70  | 30 | 40 | 20   | +0.084 / 0 | M20x1.5 | 31 | 31.5 | M5x0.8  | 20 |
|      | IH2-06C          | 63     | 145 | 115 | 45 | 60 | 31.5 | +0.1 / 0   | M24x1.5 | 40 | 40   | M6x1    | 30 |
|      | IH2-06B          | 80     | 145 | 115 | 45 | 60 | 31.5 | +0.1 / 0   | M30x1.5 | 50 | 40   | M6x1    | 30 |
|      | IH2-10C          | 100    | 185 | 145 | 57 | 79 | 40   | +0.1 / 0   | M39x1.5 | 63 | 50   | M8x1.25 | 40 |

### Шарнирная вилка

Материал: чугунное литье

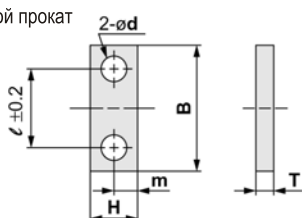


| Шток | Номер   | Ø (мм) | A   | B   | C  | D  | d | E       | H    | J       | K  | L    | I  | P       |
|------|---------|--------|-----|-----|----|----|---|---------|------|---------|----|------|----|---------|
|      | YH2-03B | 32     | 76  | 60  | 41 | 32 |   | M16x1.5 | 25   | M5x0.8  | 16 | 12.5 | 20 | M6x1    |
|      | YH2-04B | 40     | 76  | 60  | 41 | 32 |   | M20x1.5 | 25   | M5x0.8  | 16 | 12.5 | 20 | M6x1    |
|      | YH2-05B | 50     | 90  | 70  | 50 | 40 |   | M24x1.5 | 31.5 | M5x0.8  | 20 | 16   | 20 | M6x1    |
|      | YH2-06B | 63     | 145 | 115 | 75 | 60 |   | M30x1.5 | 40   | M6x1    | 30 | 20   | 24 | M8x1.25 |
|      | YH2-08B | 80     | 145 | 115 | 75 | 60 |   | M39x1.5 | 40   | M6x1    | 30 | 20   | 24 | M8x1.25 |
|      | YH2-10B | 100    | 185 | 145 | 95 | 80 |   | M49x1.5 | 50   | M8x1.25 | 40 | 25   | 26 | M10x1.5 |
|      | YH2-03B | 40     | 76  | 60  | 41 | 32 |   | M16x1.5 | 25   | M5x0.8  | 16 | 12.5 | 20 | M6x1    |
|      | YH2-05C | 50     | 90  | 70  | 50 | 40 |   | M20x1.5 | 31.5 | M5x0.8  | 20 | 16   | 20 | M6x1    |
|      | YH2-06C | 63     | 145 | 115 | 75 | 60 |   | M24x1.5 | 40   | M6x1    | 30 | 20   | 24 | M8x1.25 |
|      | YH2-06B | 80     | 145 | 115 | 75 | 60 |   | M30x1.5 | 40   | M6x1    | 30 | 20   | 24 | M8x1.25 |
|      | YH2-10C | 100    | 185 | 145 | 95 | 80 |   | M39x1.5 | 50   | M8x1.25 | 40 | 25   | 26 | M10x1.5 |

Примечание: палец, стопорная планка и болт входят в поставку шарнира

### Стопорная планка

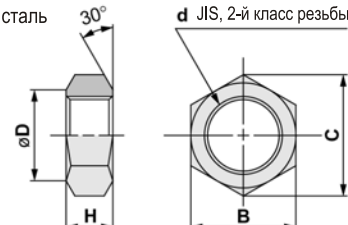
Материал: стальной прокат



| Номер | Ø (мм)     | B  | H  | I  | m    | T  | d   | Болт         |
|-------|------------|----|----|----|------|----|-----|--------------|
| KP-05 | 32, 40, 50 | 32 | 12 | 20 | ±0.2 | 6  | 4.5 | 6.5 M6x10/   |
| KP-08 | 63, 80     | 44 | 18 | 24 | ±0.2 | 9  | 4.5 | 9 M8x12/     |
| KP-10 | 100        | 44 | 22 | 26 | ±0.2 | 11 | 6   | 11.5 M10x14/ |

### Гайка штока

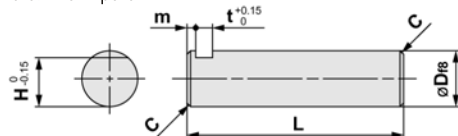
Материал: углеродистая сталь



| Шток | Номер   | Ø (мм) | B  | C    | D  | H  | d       |
|------|---------|--------|----|------|----|----|---------|
| B    | NTH-040 | 32     | 22 | 25.4 | 21 | 10 | M16x1.5 |
|      | NTH-050 | 40     | 27 | 31.2 | 26 | 12 | M20x1.5 |
|      | NTH-060 | 50     | 32 | 37   | 31 | 14 | M24x1.5 |
|      | NTH-080 | 63     | 41 | 47.3 | 40 | 17 | M30x1.5 |
|      | NTH-100 | 80     | 55 | 63.5 | 54 | 20 | M39x1.5 |
|      | NTH-040 | 100    | 70 | 80.8 | 69 | 26 | M49x1.5 |
| C    | NTH-040 | 40     | 22 | 25.4 | 21 | 10 | M16x1.5 |
|      | NTH-050 | 50     | 27 | 31.2 | 26 | 12 | M20x1.5 |
|      | NTH-060 | 63     | 32 | 37   | 31 | 14 | M24x1.5 |
|      | NTH-080 | 80     | 41 | 47.3 | 40 | 17 | M30x1.5 |
|      | NTH-100 | 100    | 55 | 63.5 | 54 | 20 | M39x1.5 |

### Палец для двойного шарнира или шарнирной вилки

Материал: стальной прокат



| Номер  | Ø (мм) | D (f8) | C               | L   | m    | T   | d      |
|--------|--------|--------|-----------------|-----|------|-----|--------|
| CDH-04 | 32, 40 | 16     | -0.016 / -0.043 | 1   | 62   | 2.5 | 4.8 14 |
| CDH-04 | 50     | 20     | -0.016 / -0.043 | 1   | 76.5 | 3.5 | 4.8 18 |
| CDH-04 | 63, 80 | 31.5   | -0.016 / -0.043 | 1.5 | 93   | 3.5 | 4.8 29 |
| CDH-04 | 100    | 40     | -0.016 / -0.043 | 2   | 117  | 6   | 6.3 35 |



Гидравлический цилиндр по JIS

CH2

Датчики положения

Применяемые датчики

| Обознач. | Тип         | Монтаж     | Эл.вход        | Световая индикация | Выход               | Рабочее напряжение (В) |          | Характер нагрузки |
|----------|-------------|------------|----------------|--------------------|---------------------|------------------------|----------|-------------------|
|          |             |            |                |                    |                     |                        |          |                   |
| D-A54L   | Герконовый  | На шпильке | Кабель залитый | Есть               | 2-х проводной       | 24                     | 110, 220 | Реле, ПЛК         |
| D-A44    |             | На хомуте  | DIN-разъем     |                    |                     |                        |          |                   |
| D-F5PL   | Электронный | На шпильке | Кабель залитый |                    | 3-х проводной р-п-р | 5, 12, 24              | -        |                   |

Примечание: более детальная информация о датчиках положения содержится во вводном разделе.

Номер для заказа крепления датчика

| Ø (мм) | D-A44           |          |                 | D-A54L, D-F5PL |
|--------|-----------------|----------|-----------------|----------------|
|        | для CH2E, CH2EW | для CH2H | для CH2F, CH2FW |                |
| 32     | -               | -        | -               | BT-06          |
| 40     | BD1-04M         | BD1-04M  | BDS-04M         | BT-06          |
| 50     | BD1-05M         | BD1-05M  | BDS-05M         | BT-06          |
| 63     | BD1-06M         | BD1-06M  | BDS-06M         | BT-08          |
| 80     | BD1-08M         | BN1-080  | BDS-08M         | BT-16          |
| 100    | BD1-10M         | BN1-100  | BDS-10M         | BT-18          |

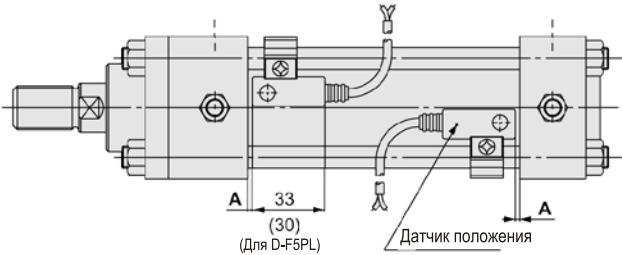
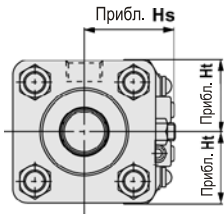
Минимальная длина хода (мм) при использовании датчиков положения

| Модель | Кол-во датчиков и их расположение |                | Для всех типов крепления кроме центральной цапфы |       | Крепление с центральной цапфой |     |     |     |     |      |  |
|--------|-----------------------------------|----------------|--------------------------------------------------|-------|--------------------------------|-----|-----|-----|-----|------|--|
|        |                                   |                | Ø32                                              | Ø40 < | Ø32                            | Ø40 | Ø50 | Ø63 | Ø80 | Ø100 |  |
| D-A54L | 2                                 | Разностороннее | 10                                               | 10    | 110                            | 110 | 110 | 125 | 135 | 145  |  |
|        |                                   | Одностороннее  | -                                                |       |                                |     |     |     |     |      |  |
|        | 1                                 | -              | 10                                               |       |                                |     |     |     |     |      |  |
| D-F5PL | 2                                 | Разностороннее | 10                                               | 10    | 115                            | 115 | 115 | 130 | 140 | 150  |  |
|        |                                   | Одностороннее  | -                                                |       |                                |     |     |     |     |      |  |
|        | 1                                 | -              | 10                                               |       |                                |     |     |     |     |      |  |
| D-A44  | 2                                 | Разностороннее | -                                                | 35    | -                              | 85  | 85  | 100 | 110 | 120  |  |
|        |                                   | Одностороннее  |                                                  | 55    |                                |     |     |     |     |      |  |
|        | 1                                 | -              |                                                  | 10    |                                |     |     |     |     |      |  |

Монтаж датчиков

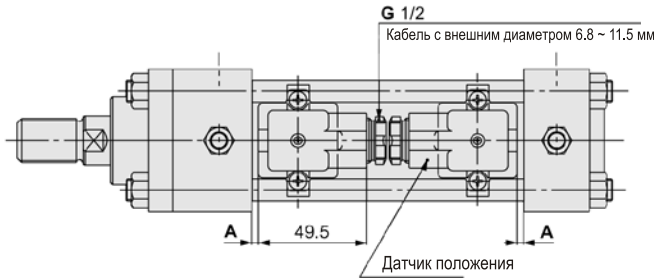
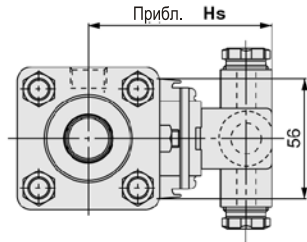
Крепление на стягивающих шпильках

Герконовый датчик D-A54L  
Электронный датчик D-F5PL



Крепление на хомуте

Герконовый датчик D-A44



| Ø (мм) |      | D-A54L |      | D-F5PL |      | D-A44 |
|--------|------|--------|------|--------|------|-------|
|        |      | Hs     | Ht   | Hs     | Ht   |       |
| 32     | CH2E | 35     | 29.5 | 35     | 29.5 | -     |
|        | CH2F | 34.5   | 30   | 34.5   | 30   | -     |
|        | CH2H | 34.5   | 29.5 | 34.5   | 29.5 | -     |
| 40     | CH2E | 38.5   | 32.5 | 38.5   | 32.5 | 82.5  |
|        | CH2F | 38     | 33.5 | 38     | 33.5 | 81    |
|        | CH2H | 38     | 33   | 38     | 33   | 81.5  |
| 50     | CH2E | 43     | 36.5 | 42     | 36.5 | 88    |
|        | CH2F | 41.5   | 36.5 | 41.5   | 36.5 | 86    |
|        | CH2H | 42     | 36   | 42     | 36   | 87    |
| 63     | CH2E | 48.5   | 43   | 47     | 43   | 95    |
|        | CH2F | 46.5   | 43   | 46.5   | 43   | 93    |
|        | CH2H | 48.5   | 43   | 47     | 43   | 95    |
| 80     | CH2E | 58.5   | 55.5 | 57     | 55.5 | 103.5 |
|        | CH2F | 56.5   | 55.5 | 56.5   | 55.5 | 102   |
|        | CH2H | 59     | 55.5 | 57.5   | 55.5 | 104   |
| 100    | CH2E | 66.5   | 67   | 66.5   | 67   | 114   |
|        | CH2F | 65.5   | 67   | 65.5   | 67   | 112.5 |
|        | CH2H | 67.5   | 67   | 67.5   | 67   | 115.5 |

Размер A

| Ø (мм) | D-A54L, D-A44    | D-F5PL |
|--------|------------------|--------|
| 32     | 15 <sup>1)</sup> | 21.5   |
| 40     | 16               | 22.5   |
| 50     | 16               | 22.5   |
| 63     | 19               | 25.5   |
| 80     | 23               | 29.5   |
| 100    | 26               | 32.5   |

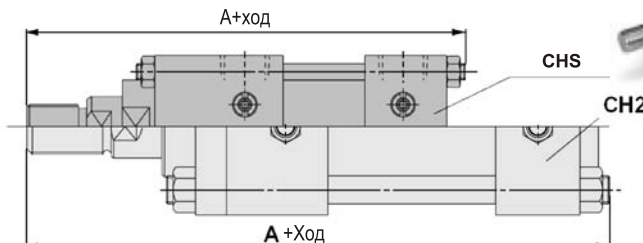
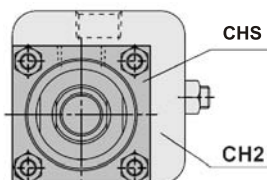
<sup>1)</sup> Датчики D-A44 не устанавливаются на цилиндрах диаметром 32 мм.

- Соответствует стандартам ISO 10762 (серия CHSD / 10МПа) и ISO 6020-2 (серия CHSG / 16МПа)
- Простая разборка и сборка.
- Уменьшенные габариты и вес в сравнении с аналогичными гидроцилиндрами серии CH2:

**10 / 16 МПа**

Площадь поперечного сечения составляет не более 76% от аналогичного показателя изделий серии CH2

Меньшие, чем у изделий серии CH2, продольные габаритные размеры (см.таблицу)



Максимальный вес составляет не более 50% (CHSD) или 52% (CHSG) от веса аналогичных изделий серии CH2.

| Диаметр цилиндра (мм) | Общая длина (размер A) |      |     |
|-----------------------|------------------------|------|-----|
|                       | CHSD                   | CHSG | CH2 |
| 32                    |                        | 153  | 207 |
| 40                    | 163                    | 184  | 212 |
| 50                    | 177                    | 200  | 231 |
| 63                    | 199                    | 217  | 257 |
| 80                    | 225                    | 251  | 295 |
| 100                   | 260                    | 275  | 325 |

### Технические характеристики

| Модель                                                    |                       | CHSD                             | CHSG                    |
|-----------------------------------------------------------|-----------------------|----------------------------------|-------------------------|
| Среда                                                     |                       | Минеральное гидравлическое масло |                         |
| Диаметр цилиндра (мм)                                     |                       | 40, 50, 63, 80, 100              | 32, 40, 50, 63, 80, 100 |
| Номинальное давление (МПа)                                |                       | 10                               | 16                      |
| Максимально допустимое давление (МПа)                     |                       | 12                               | 20                      |
| Испытательное давление (МПа)                              |                       | 15                               | 24                      |
| Миним. рабочее давление (МПа)<br>Рабочая температура (°C) | На выдвижении         | 0.25                             | 0.25                    |
|                                                           | На втягивании         | 0.15                             | 0.15                    |
|                                                           | Без магнитного кольца | -10 ~ 80                         |                         |
|                                                           | С магнитным кольцом   | -10 ~ 60                         |                         |
| Скорость поршня (мм/с)                                    |                       | 8 ~ 300                          |                         |
| Допуск на длину хода (мм)                                 | 100 мм и менее        | 0 ~ +0.8                         |                         |
|                                                           | от 101 до 250 мм      | 0 ~ +1.0                         |                         |
|                                                           | от 251 до 630 мм      | 0 ~ +1.25                        |                         |
|                                                           | от 631 до 800 мм      | 0 ~ +1.4                         |                         |

### Стандартные длины хода

| Диаметр цилиндра (мм) | Стандартные длины хода (мм) |
|-----------------------|-----------------------------|
| 32*, 40, 50, 63, 80   | 25 ~ 800                    |
| 100                   | 25 ~ 1000                   |

\*) Только для серии CHSG

### Номинальные усилия (Н)

| Ø (мм) | Ø штока (мм) | Направление перемещения | Площадь поршня (мм²) | Рабочее давление (МПа) |       |       |         |
|--------|--------------|-------------------------|----------------------|------------------------|-------|-------|---------|
|        |              |                         |                      | 3.5                    | 7     | 10    | 16      |
| 32*    | 18*          | выдвижение              | 804*                 | 2814*                  | 5628* | 8040* | 12864*  |
|        |              | втягивание              | 549*                 | 1922*                  | 3843* | 5490* | 8784*   |
| 40     | 22           | выдвижение              | 1256                 | 4396                   | 8792  | 12560 | 20096*  |
|        |              | втягивание              | 876                  | 3066                   | 6132  | 8760  | 14016*  |
| 50     | 28           | выдвижение              | 1963                 | 6871                   | 13741 | 19630 | 31408*  |
|        |              | Втягивание              | 1347                 | 4715                   | 9429  | 13470 | 21552*  |
| 63     | 36           | выдвижение              | 3117                 | 10910                  | 21819 | 31170 | 49872*  |
|        |              | втягивание              | 2099                 | 7346                   | 14693 | 20990 | 33584*  |
| 80     | 45           | выдвижение              | 5026                 | 17591                  | 35182 | 50260 | 80416*  |
|        |              | втягивание              | 3436                 | 12026                  | 24052 | 34360 | 54976*  |
| 100    | 56           | выдвижение              | 7853                 | 27486                  | 57971 | 78530 | 125648* |
|        |              | втягивание              | 5390                 | 18865                  | 37730 | 53900 | 86240*  |

\*) Только для серии CHSG

# Гидравлический цилиндр по ISO

## CHS

### Масса (кг)

#### CHSD

| Диаметр цилиндра (мм)              |                 |    | 40   | 50   | 63   | 80   | 100  |
|------------------------------------|-----------------|----|------|------|------|------|------|
| Базовая масса (нулевой ход)        | Стандарт        | B  | 2.10 | 3.20 | 5.10 | 8.90 | 14.5 |
|                                    | На лапах        | LA | 2.40 | 3.60 | 5.50 | 9.70 | 16.0 |
|                                    | Передний фланец | FY | 2.60 | 3.80 | 5.90 | 10.1 | 16.0 |
|                                    | Задний фланец   | FZ | 2.50 | 3.80 | 6.00 | 10.0 | 16.4 |
|                                    | Двойной шарнир  | CB | 2.30 | 3.50 | 6.10 | 9.90 | 16.2 |
|                                    | Передняя цапфа  | TA | 2.10 | 3.40 | 5.40 | 9.40 | 15.5 |
| Дополнительная масса на 10 мм хода |                 |    | 0.06 | 0.09 | 0.13 | 0.21 | 0.32 |

#### CHSG

| Диаметр цилиндра (мм)              |                   |    | 32   | 40   | 50   | 63   | 80   | 100  |
|------------------------------------|-------------------|----|------|------|------|------|------|------|
| Базовая масса (нулевой ход)        | Стандарт          | B  | 1.60 | 3.20 | 4.70 | 7.80 | 14.7 | 20.8 |
|                                    | На лапах          | LA | 1.80 | 4.00 | 5.70 | 8.65 | 17.0 | 23.3 |
|                                    | Передний фланец   | FY | 1.90 | 4.10 | 6.00 | 9.10 | 16.7 | 22.9 |
|                                    | Задний фланец     | FZ | 1.70 | 3.90 | 5.60 | 8.20 | 16.4 | 24.8 |
|                                    | Шарнир            | CA | 1.60 | 3.40 | 5.60 | 8.20 | 16.4 | 24.8 |
|                                    | Двойной шарнир    | CB | 1.60 | 3.40 | 5.60 | 8.20 | 16.4 | 24.8 |
|                                    | Передняя цапфа    | TA | 1.70 | 3.40 | 5.20 | 8.40 | 15.9 | 22.5 |
|                                    | Центральная цапфа | TC | 1.90 | 3.90 | 5.80 | 9.40 | 18.2 | 25.4 |
| Дополнительная масса на 10 мм хода |                   |    | 0.05 | 0.07 | 0.12 | 0.18 | 0.28 | 0.42 |

### Демпфирование в конце хода

Энергия, поглощаемая демпфером:

$$E = E_1 + E_2,$$

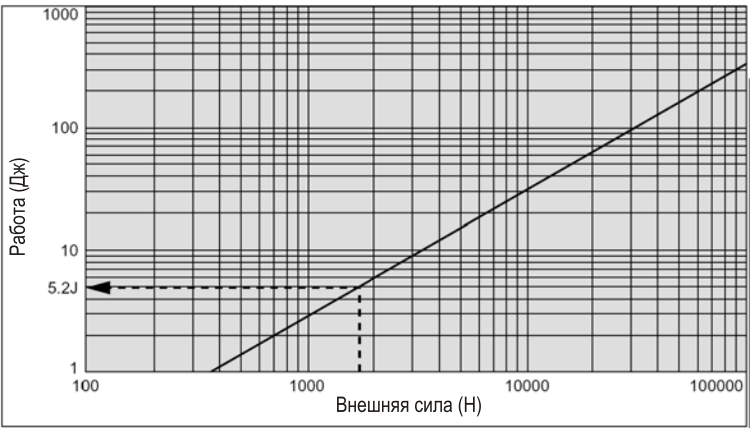
где  $E_1$  — кинетическая энергия движущихся частей,  
 $E_2$  — работа осевой составляющей внешней силы на длине демпфирования (определяется по графику, приведенному ниже).

Демпфер полностью поглощает энергию, если выполняется условие:

$$E \leq [E],$$

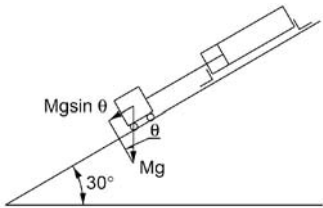
где  $[E]$  — максимально допустимая энергия, которую может поглотить демпфер (определяется по приведенным графикам)..

### Работа внешней силы на длине демпфирования



### Пример

Гидроцилиндр CHSD50 перемещает груз массой 400 кг по наклонной плоскости (см. рисунок). Давление 7 МПа, скорость в момент начала демпфирования 0.2 м/с.



1. Определяем кинетическую энергию движущихся частей:

$$E_1 = \frac{Mv^2}{2} = \frac{400 \cdot 0.2^2}{2} = 8 \text{ Дж}$$

2. Определяем осевую составляющую внешней силы (в данном примере — силы тяжести):

$$F = m \cdot g \cdot \sin \theta = 400 \cdot 9.8 \cdot \sin 30^\circ = 1960 \text{ Н}$$

3. По графику определяем работу  $E_2$  при величине силы 1960 Н:

$$E_2 = 5.2 \text{ Дж.}$$

4. По графику определяем максимально допустимую энергию демпфера при давлении 7 МПа и диаметре цилиндра 50 мм:

$$[E] = 21 \text{ Дж.}$$

5. Проверяем условие полного поглощения энергии демпфером:

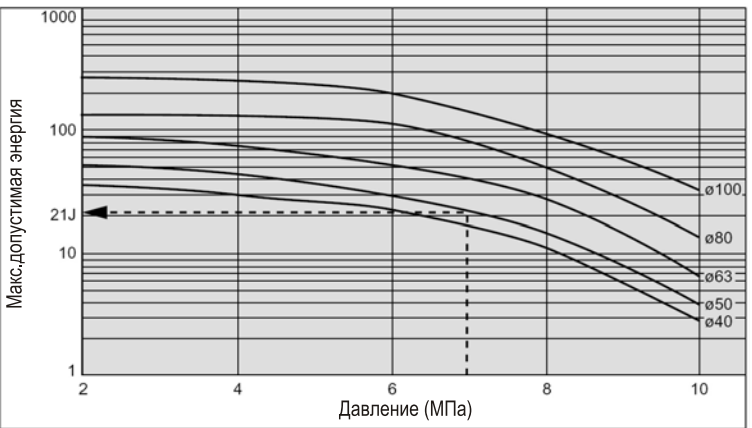
$$E_1 + E_2 = 8 + 5.2 = 13.2 \text{ Дж}$$

$$[E] = 21 \text{ Дж}$$

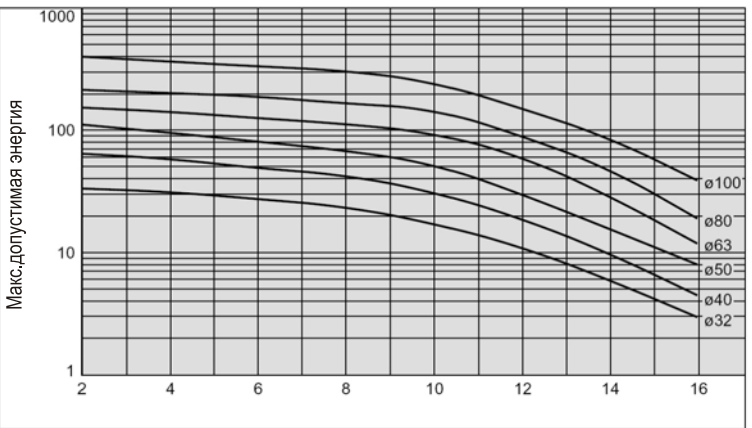
Таким образом,  $E \leq [E]$ , т.е. энергия, поглощаемая демпфером, не превышает предельно допустимый уровень.

### Максимально допустимая энергия демпфера

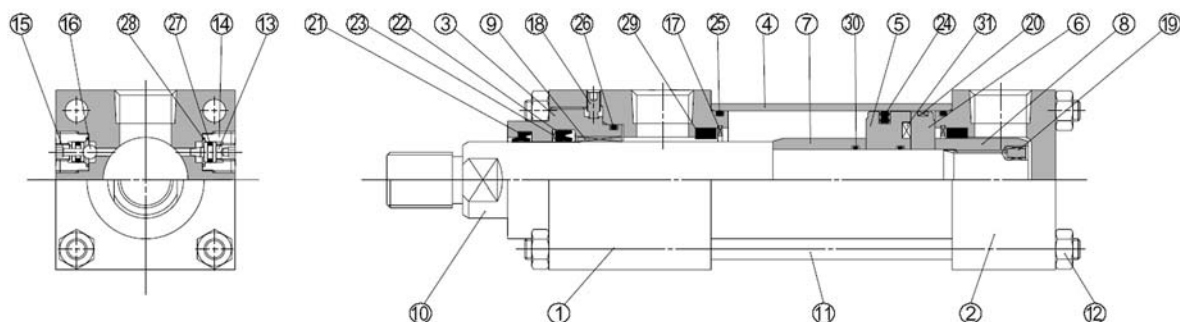
#### CHSD



#### CHSG



## Конструкция



### Спецификация

| Поз. | Наименование              | Материал                  |
|------|---------------------------|---------------------------|
| 1    | Крышка штоковая           | Углеродистая сталь        |
| 2    | Крышка задняя             | Углеродистая сталь        |
| 3    | Обойма                    | Углеродистая сталь        |
| 4    | Гильза                    | Нержавеющая сталь         |
| 5    | Поршень                   | Нержавеющая сталь         |
| 6    | Пластина                  | Нержавеющая сталь         |
| 7    | Демпферная втулка         | Углеродистая сталь        |
| 8    | Демпферная втулка - гайка | Углеродистая сталь        |
| 9    | Направляющий вкладыш      | Медный сплав              |
| 10   | Шток                      | Углеродистая сталь        |
| 11   | Шпилька                   | Хром - молибденовая сталь |
| 12   | Гайка                     | Углеродистая сталь        |
| 13   | Клапан демпфирующий       | Легированная сталь        |
| 14   | Обойма клапана            | Углеродистая сталь        |
| 15   | Клапан сброса воздуха     | Легированная сталь        |
| 16   | Шарик обратного клапана   | Подшипниковая сталь       |
| 17   | Кольцо стопорное          | Инструментальная сталь    |
| 18   | Винт стопорный            | Легированная сталь        |
| 19   | Штифт                     | Нержавеющая сталь         |
| 20   | Кольцо направляющее       | Пластик                   |
| 21   | Скрепер                   | NBR                       |
| 22   | Уплотнение штока          | NBR                       |
| 23   | Манжета                   | Пластик                   |
| 24   | Уплотнение поршня         | NBR                       |
| 25   | Уплотнительное кольцо     | NBR                       |
| 26   | Прокладка обоймы          | NBR                       |
| 27   | Уплотнение клапана        | NBR                       |
| 28   | Прокладка обоймы клапана  | NBR                       |
| 29   | Уплотнение демпфера       | -                         |
| 30   | Прокладка                 | NBR                       |
| 31   | Магнит                    | -                         |

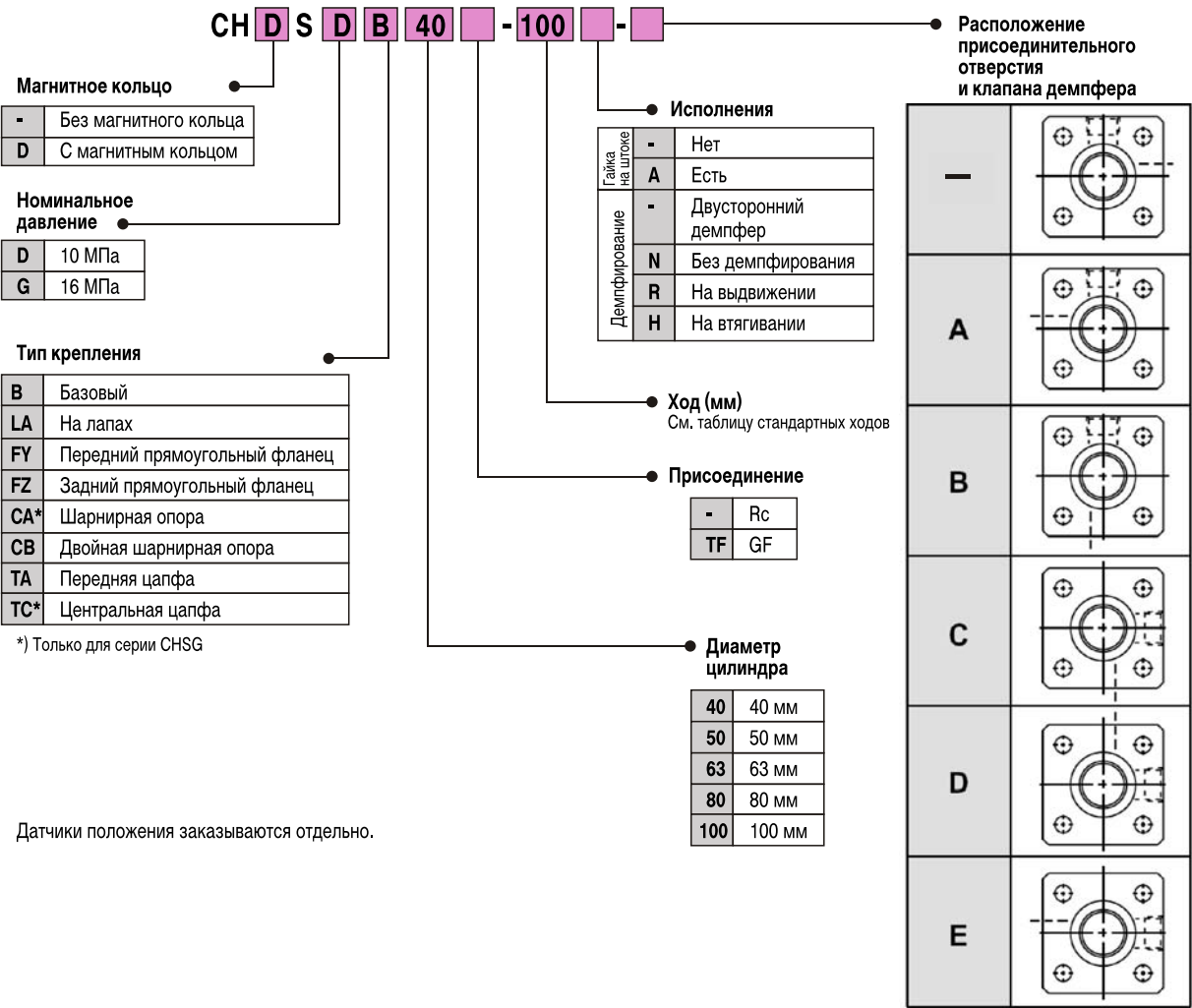
### Ремкомплекты

| Ø<br>(мм) | Номер для заказа |            |
|-----------|------------------|------------|
|           | CHSD             | CHSG       |
| 32        | -                | CHSG32-PS  |
| 40        | CHSD40-PS        | CHSG40-PS  |
| 50        | CHSD50-PS        | CHSG50-PS  |
| 63        | CHSD63-PS        | CHSG63-PS  |
| 80        | CHSD80-PS        | CHSG80-PS  |
| 100       | CHSD100-PS       | CHSG100-PS |

Ремкомплект содержит уплотнения (поз.21-25, 29)  
и может быть заказан для каждого из указанных диаметров цилиндров.

# Гидравлический цилиндр по ISO CHS

Номер для заказа



Датчики положения заказываются отдельно.

Присоединительное отверстие  
--- Ось клапана демпфера

Примечания:  
На рисунках показан вид со стороны конца штока  
При заказе необходимо убедиться в существовании  
выбранного исполнения (см.таблицу)

| Существующие исполнения                   |   | Тип крепления |    |       |    |    |                  |
|-------------------------------------------|---|---------------|----|-------|----|----|------------------|
|                                           |   | B             | LA | FY·FZ | CB | TA | TC <sup>1)</sup> |
| Расположение присоединительного отверстия | - |               |    |       |    | -  |                  |
|                                           | A |               |    |       |    | -  |                  |
|                                           | B |               |    |       |    |    |                  |
|                                           | C | *             | -  |       |    | -  |                  |
|                                           | D | *             | -  |       |    | -  |                  |
|                                           | E | *             | -  |       |    | -  |                  |

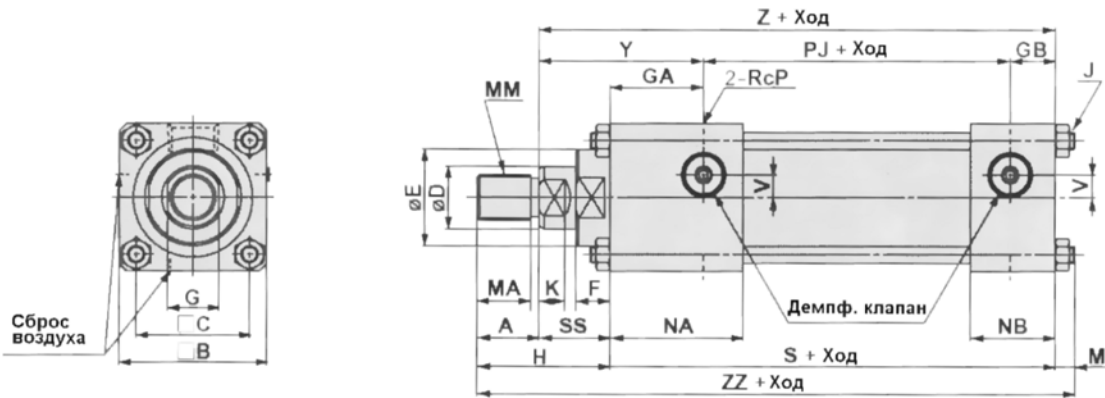
⊙ Стандартное исполнение,  
○ Изготавливается по заказу,  
— Такого исполнения не существует,  
\* C, D и E идентичны повернутым -, A и B.

<sup>1)</sup> Только для серии CHSG

Размеры

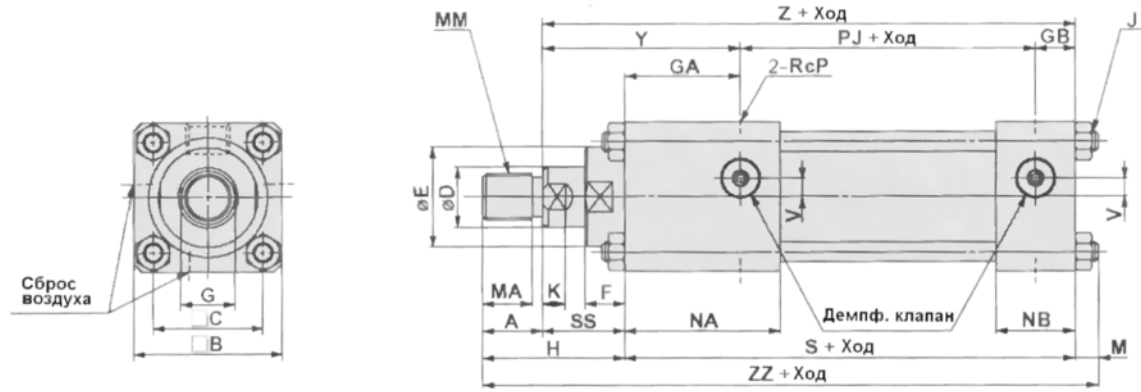
Стандарт

CHSDB



| Ø<br>(мм) | Ход<br>штока | A  | B   | C  | D  | E  | F  | G  | GA | GB | H  | J        | K  | M    | MA | MM      | NA   | NB   | P   | PJ | S   | SS | V   | Y  | Z   | ZZ    |
|-----------|--------------|----|-----|----|----|----|----|----|----|----|----|----------|----|------|----|---------|------|------|-----|----|-----|----|-----|----|-----|-------|
| 40        | 25~800       | 22 | 52  | 40 | 22 | 34 | 12 | 19 | 33 | 16 | 47 | M6x1     | 8  | 7.5  | 19 | M16x1.5 | 46   | 29   | 3/8 | 58 | 107 | 25 | 6.5 | 58 | 132 | 161.5 |
| 50        | 25~800       | 28 | 65  | 50 | 28 | 42 | 15 | 24 | 34 | 16 | 59 | M8x1     | 11 | 9    | 25 | M20x1.5 | 46.5 | 28.5 | 3/8 | 58 | 108 | 31 | 8   | 65 | 139 | 176   |
| 63        | 25~800       | 36 | 77  | 58 | 36 | 50 | 19 | 30 | 31 | 17 | 74 | M8x1     | 13 | 9    | 32 | M27x2   | 46   | 33   | 1/2 | 66 | 115 | 38 | 12  | 69 | 153 | 198   |
| 80        | 25~800       | 45 | 96  | 75 | 45 | 60 | 13 | 41 | 42 | 17 | 80 | M10x1.25 | 17 | 10.5 | 41 | M33x2   | 57   | 32   | 1/2 | 74 | 133 | 35 | 15  | 77 | 168 | 223.5 |
| 100       | 25~1000      | 56 | 115 | 90 | 56 | 72 | 16 | 50 | 38 | 22 | 97 | M14x1.5  | 19 | 14.5 | 52 | M42x2   | 58   | 42   | 3/4 | 86 | 146 | 41 | 15  | 79 | 187 | 257.5 |

CHSGB



| Ø<br>(мм) | Ход<br>штока | A  | B   | C    | D  | E  | F  | G  | GA | GB | H  | J        | K  | M   | MA | MM      | NA | NB | P   | PJ  | S   | SS | V   | Y  | Z   | ZZ    |
|-----------|--------------|----|-----|------|----|----|----|----|----|----|----|----------|----|-----|----|---------|----|----|-----|-----|-----|----|-----|----|-----|-------|
| 32        | 25~800       | 18 | 45  | 33.2 | 18 | 30 | 12 | 14 | 35 | 12 | 43 | M6x1     | 7  | 7.5 | 15 | M14x1.5 | 46 | 23 | 1/4 | 56  | 103 | 25 | 5.5 | 60 | 128 | 153.5 |
| 40        | 25~800       | 22 | 63  | 41.7 | 22 | 34 | 12 | 19 | 37 | 18 | 47 | M8x1     | 9  | 10  | 19 | M16x1.5 | 51 | 32 | 3/8 | 73  | 128 | 25 | 6.5 | 62 | 153 | 185   |
| 50        | 25~800       | 28 | 75  | 52.3 | 28 | 42 | 9  | 24 | 42 | 18 | 53 | M12x1.25 | 11 | 12  | 25 | M20x1.5 | 57 | 33 | 1/2 | 74  | 134 | 25 | 7   | 67 | 159 | 199   |
| 63        | 25~800       | 36 | 90  | 64.3 | 36 | 50 | 13 | 30 | 39 | 17 | 68 | M12x1.25 | 13 | 12  | 32 | M27x2   | 55 | 33 | 1/2 | 80  | 136 | 32 | 12  | 71 | 168 | 216   |
| 80        | 25~800       | 45 | 115 | 82.7 | 45 | 60 | 9  | 41 | 46 | 20 | 76 | M16x1.5  | 17 | 16  | 41 | M33x2   | 66 | 40 | 3/4 | 93  | 159 | 31 | 15  | 77 | 190 | 251   |
| 100       | 25~1000      | 56 | 130 | 96.9 | 56 | 72 | 10 | 50 | 47 | 20 | 91 | M16x1.5  | 19 | 16  | 52 | M42x2   | 67 | 40 | 3/4 | 101 | 168 | 35 | 15  | 82 | 203 | 275   |

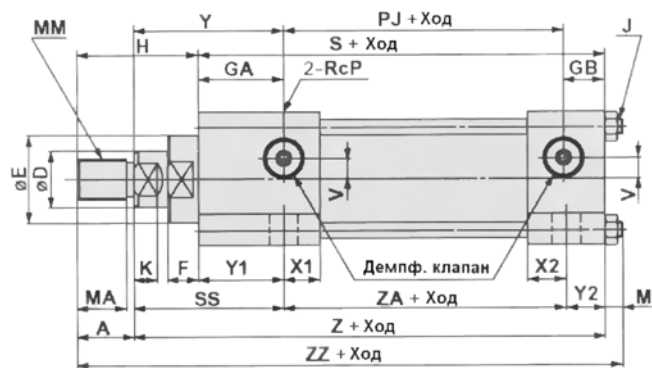
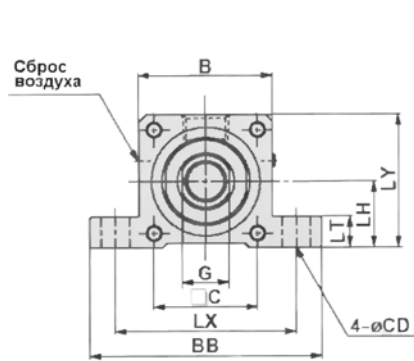


Гидравлический цилиндр по ISO

CHS

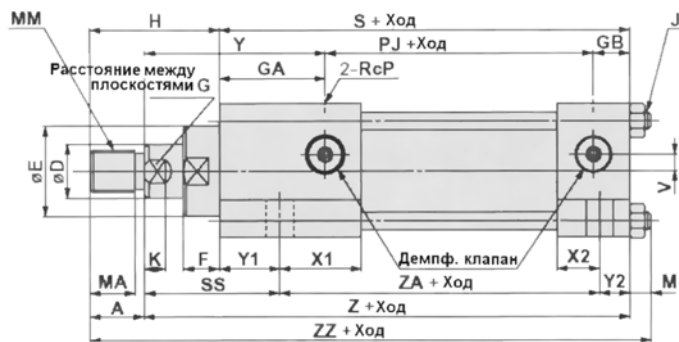
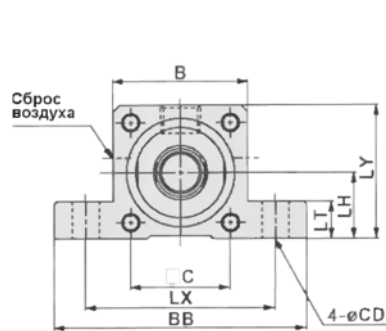
На лапах

CHSDLA



| Ø<br>(мм) | Ход<br>штока | A  | B   | BB  | C  | CD | D  | E  | F  | G  | GA | GB | H  | J        | K  | LH   | LT | LX  | LY    | M    | MA | MM      | P   | PJ | S   | SS | V   | X1   | X2   | Y1 | Y2 | ZA | Z   | ZZ    |
|-----------|--------------|----|-----|-----|----|----|----|----|----|----|----|----|----|----------|----|------|----|-----|-------|------|----|---------|-----|----|-----|----|-----|------|------|----|----|----|-----|-------|
| 40        | 25~800       | 22 | 52  | 90  | 40 | 11 | 22 | 34 | 12 | 19 | 33 | 16 | 47 | M6x1     | 8  | 25.5 | 12 | 70  | 51.5  | 7.5  | 19 | M16x1.5 | 3/8 | 58 | 107 | 58 | 6.5 | 13   | 14   | 33 | 15 | 59 | 132 | 161.5 |
| 50        | 25~800       | 28 | 65  | 103 | 50 | 11 | 28 | 42 | 15 | 24 | 34 | 16 | 59 | M8x1     | 11 | 32   | 12 | 83  | 64.5  | 9    | 25 | M20x1.5 | 3/8 | 58 | 108 | 65 | 8   | 12.5 | 13.5 | 34 | 15 | 59 | 139 | 176   |
| 63        | 25~800       | 36 | 77  | 115 | 58 | 11 | 36 | 50 | 19 | 30 | 31 | 18 | 74 | M8x1     | 13 | 38   | 12 | 95  | 76.5  | 9    | 32 | M27x2   | 1/2 | 66 | 115 | 68 | 12  | 16   | 16   | 30 | 17 | 68 | 153 | 198   |
| 80        | 25~800       | 45 | 96  | 147 | 75 | 14 | 45 | 60 | 13 | 41 | 42 | 17 | 80 | M10x1.25 | 17 | 47.5 | 18 | 121 | 95.5  | 10.5 | 41 | M33x2   | 1/2 | 74 | 133 | 77 | 15  | 15   | 15   | 42 | 17 | 74 | 168 | 223.5 |
| 100       | 25~1000      | 56 | 115 | 179 | 90 | 18 | 56 | 72 | 16 | 50 | 38 | 22 | 97 | M14x1.5  | 19 | 57   | 25 | 145 | 114.5 | 14.5 | 52 | M42x2   | 3/4 | 86 | 146 | 79 | 15  | 20   | 20   | 38 | 22 | 86 | 187 | 257.5 |

CHSGLA

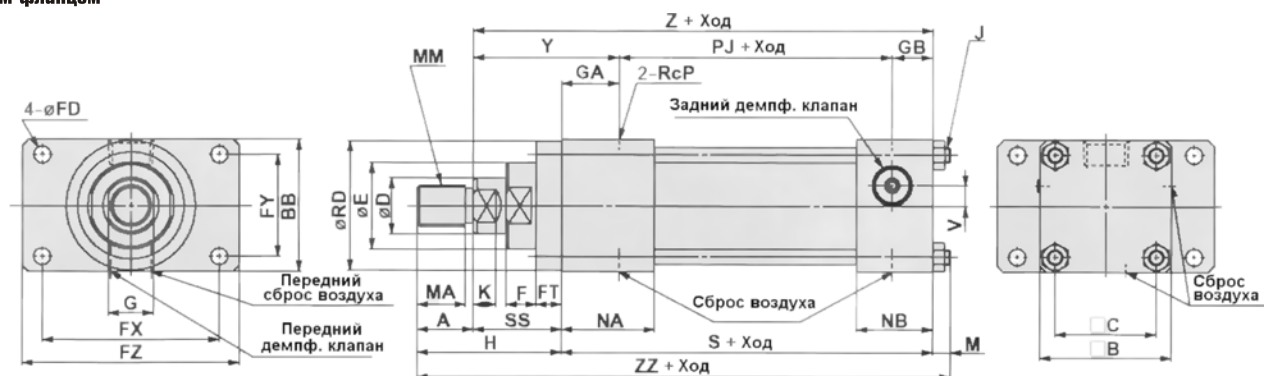


| Ø<br>(мм) | Ход<br>штока | A  | B   | BB  | C    | CD | D  | E  | F  | G  | GA | GB | H  | J        | K  | LH | LT   | LX  | LY    | M   | MA | MM      | P   | PJ  | S   | SS | V   | X1 | X2 | Y  | Y1 | Y2 | ZA  | Z   | ZZ    |
|-----------|--------------|----|-----|-----|------|----|----|----|----|----|----|----|----|----------|----|----|------|-----|-------|-----|----|---------|-----|-----|-----|----|-----|----|----|----|----|----|-----|-----|-------|
| 32        | 25–800       | 18 | 45  | 84  | 33.2 | 9  | 18 | 30 | 12 | 14 | 35 | 12 | 43 | M6x1     | 7  | 22 | 12.5 | 63  | 44.5  | 7.5 | 15 | M14x1.5 | 1/4 | 56  | 103 | 45 | 5.5 | 26 | 13 | 60 | 20 | 10 | 73  | 128 | 153.5 |
| 40        | 25–800       | 22 | 63  | 103 | 41.7 | 11 | 22 | 34 | 12 | 19 | 37 | 18 | 47 | M8x1     | 9  | 31 | 12.5 | 83  | 62.5  | 10  | 19 | M16x1.5 | 3/8 | 73  | 128 | 45 | 6.5 | 31 | 22 | 62 | 20 | 10 | 98  | 153 | 185   |
| 50        | 25–800       | 28 | 75  | 127 | 52.3 | 14 | 28 | 42 | 9  | 24 | 42 | 18 | 53 | M12x1.25 | 11 | 37 | 19   | 102 | 74.5  | 12  | 25 | M20x1.5 | 1/2 | 74  | 134 | 54 | 7   | 28 | 20 | 67 | 29 | 13 | 92  | 159 | 199   |
| 63        | 25–800       | 36 | 90  | 161 | 64.3 | 18 | 36 | 50 | 13 | 30 | 39 | 17 | 68 | M12x1.25 | 13 | 44 | 26   | 124 | 89    | 12  | 32 | M27x2   | 1/2 | 80  | 136 | 65 | 12  | 22 | 16 | 71 | 33 | 17 | 86  | 168 | 216   |
| 80        | 25–800       | 45 | 115 | 186 | 82.7 | 18 | 45 | 60 | 9  | 41 | 46 | 20 | 76 | M16x1.5  | 17 | 57 | 26   | 149 | 114.5 | 16  | 41 | M33x2   | 3/4 | 93  | 159 | 68 | 15  | 29 | 23 | 77 | 37 | 17 | 105 | 190 | 251   |
| 100       | 25–1000      | 56 | 130 | 216 | 96.9 | 26 | 56 | 72 | 10 | 50 | 47 | 20 | 91 | M16x1.5  | 19 | 63 | 32   | 172 | 128   | 16  | 52 | M42x2   | 3/4 | 101 | 168 | 79 | 15  | 23 | 18 | 82 | 44 | 22 | 102 | 203 | 275   |



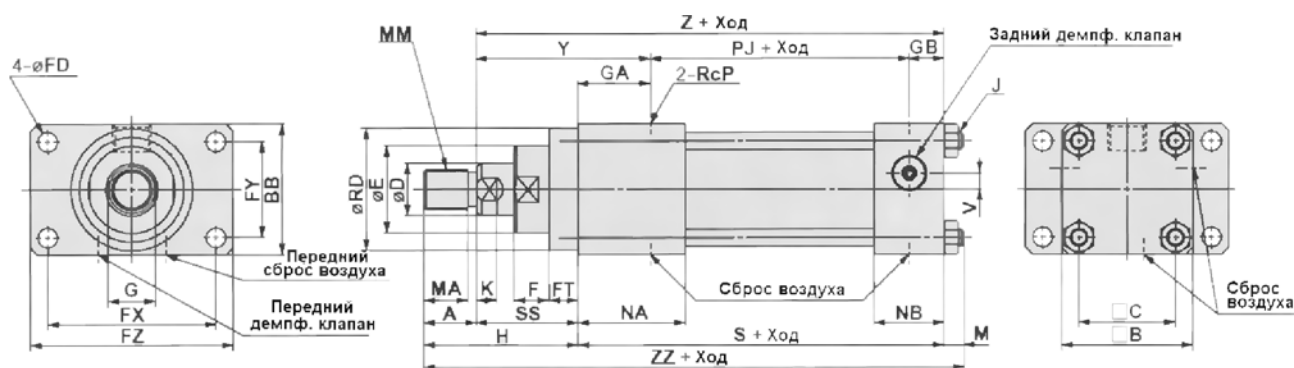
## С передним фланцем

CHSDFY



| Ø<br>(мм) | Ход<br>штока | A  | B   | BB  | C  | D  | E  | F  | FD   | FT | FX  | FY | FZ  | G  | GA | GB | H   | J        | K  | M    | MA | MM      | NA   | NB   | P   | PJ | RD  | S      | SS  | V  | Y   | Z  | ZZ  |       |
|-----------|--------------|----|-----|-----|----|----|----|----|------|----|-----|----|-----|----|----|----|-----|----------|----|------|----|---------|------|------|-----|----|-----|--------|-----|----|-----|----|-----|-------|
| 40        | 25~800       | 22 | 52  | 52  | 40 | 22 | 34 | 12 | 6.6  | 10 | 70  | 40 | 86  | 19 | 23 | 16 | 57  | M6x1     | 8  | 7.5  | 19 | M16x1.5 | 36   | 29   | 3/8 | 58 | 51  | -0.003 | 97  | 35 | 6.5 | 58 | 132 | 161.5 |
| 50        | 25~800       | 28 | 65  | 65  | 50 | 28 | 42 | 15 | 9    | 10 | 86  | 50 | 105 | 24 | 24 | 16 | 69  | M8x1     | 11 | 9    | 25 | M20x1.5 | 36.5 | 28.5 | 3/8 | 58 | 62  | -0.076 | 98  | 41 | 8   | 65 | 139 | 176   |
| 63        | 25~800       | 36 | 77  | 77  | 58 | 36 | 50 | 19 | 9    | 10 | 98  | 56 | 118 | 30 | 21 | 18 | 84  | M8x1     | 13 | 9    | 32 | M27x2   | 36   | 33   | 1/2 | 66 | 72  |        | 105 | 48 | 12  | 69 | 153 | 198   |
| 80        | 25~800       | 45 | 96  | 96  | 75 | 45 | 60 | 13 | 11   | 16 | 119 | 70 | 143 | 41 | 26 | 17 | 96  | M10x1.25 | 17 | 10.5 | 41 | M33x2   | 41   | 32   | 1/2 | 74 | 92  | -0.036 | 117 | 51 | 15  | 77 | 168 | 223.5 |
| 100       | 25~1000      | 56 | 115 | 115 | 90 | 56 | 72 | 16 | 13.5 | 16 | 138 | 90 | 162 | 50 | 22 | 22 | 113 | M14x1.5  | 19 | 14.5 | 52 | M42x2   | 42   | 42   | 3/4 | 86 | 110 | -0.090 | 130 | 57 | 15  | 79 | 187 | 257.5 |

CHSGFY

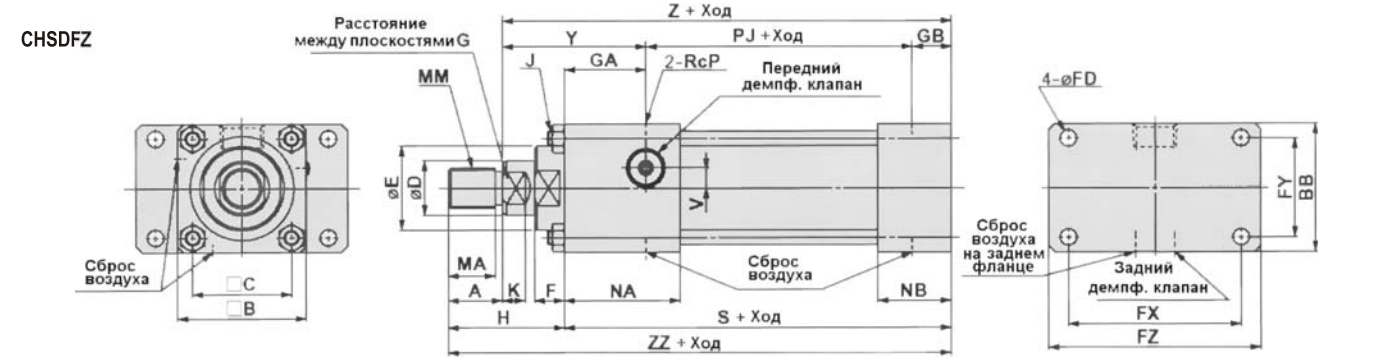


| Ø<br>(мм) | Ход<br>штока | A  |     | BB  |      | D  | E  | F  | FD  | FT | FX  | FY | FZ  | G  | GA | GB | H   | J        | K  | M   | MA | MM      | NA | NB | P   | PJ  | RD  |                  | S   | SS | V   | Y  | Z   | ZZ    |
|-----------|--------------|----|-----|-----|------|----|----|----|-----|----|-----|----|-----|----|----|----|-----|----------|----|-----|----|---------|----|----|-----|-----|-----|------------------|-----|----|-----|----|-----|-------|
| 32        | 25–800       | 18 | 45  | 45  | 33.2 | 18 | 30 | 12 | 6.6 | 10 | 58  | 33 | 70  | 14 | 25 | 12 | 53  | M6x1     | 7  | 7.5 | 15 | M14x1.5 | 36 | 23 | 1/4 | 56  | 42  | -0.025<br>-0.064 | 93  | 35 | 5.5 | 60 | 128 | 153.5 |
| 40        | 25–800       | 22 | 63  | 63  | 41.7 | 22 | 34 | 12 | 11  | 10 | 87  | 41 | 110 | 19 | 27 | 18 | 57  | M8x1     | 9  | 10  | 19 | M16x1.5 | 41 | 32 | 3/8 | 73  | 62  | -0.030           | 118 | 35 | 6.5 | 62 | 153 | 185   |
| 50        | 25–800       | 28 | 75  | 75  | 52.3 | 28 | 42 | 9  | 14  | 16 | 105 | 52 | 130 | 24 | 26 | 18 | 69  | M12x1.25 | 11 | 12  | 25 | M20x1.5 | 41 | 33 | 1/2 | 74  | 74  | -0.076           | 118 | 41 | 7   | 67 | 159 | 199   |
| 63        | 25–800       | 36 | 90  | 90  | 64.3 | 36 | 50 | 13 | 14  | 16 | 117 | 65 | 145 | 30 | 23 | 17 | 84  | M12x1.25 | 13 | 12  | 32 | M27x2   | 39 | 33 | 1/2 | 80  | 82  | -0.036           | 120 | 48 | 12  | 71 | 168 | 216   |
| 80        | 25–800       | 45 | 115 | 115 | 82.7 | 45 | 60 | 9  | 18  | 20 | 149 | 83 | 180 | 41 | 26 | 20 | 96  | M16x1.5  | 17 | 16  | 41 | M33x2   | 46 | 40 | 3/4 | 93  | 92  | -0.090           | 139 | 51 | 15  | 77 | 190 | 251   |
| 100       | 25–1000      | 56 | 130 | 130 | 96.9 | 56 | 72 | 10 | 18  | 22 | 162 | 97 | 200 | 50 | 25 | 20 | 113 | M16x1.5  | 19 | 16  | 52 | M42x2   | 45 | 40 | 3/4 | 101 | 105 |                  | 146 | 57 | 15  | 82 | 203 | 275   |

Гидравлический цилиндр по ISO
CHS

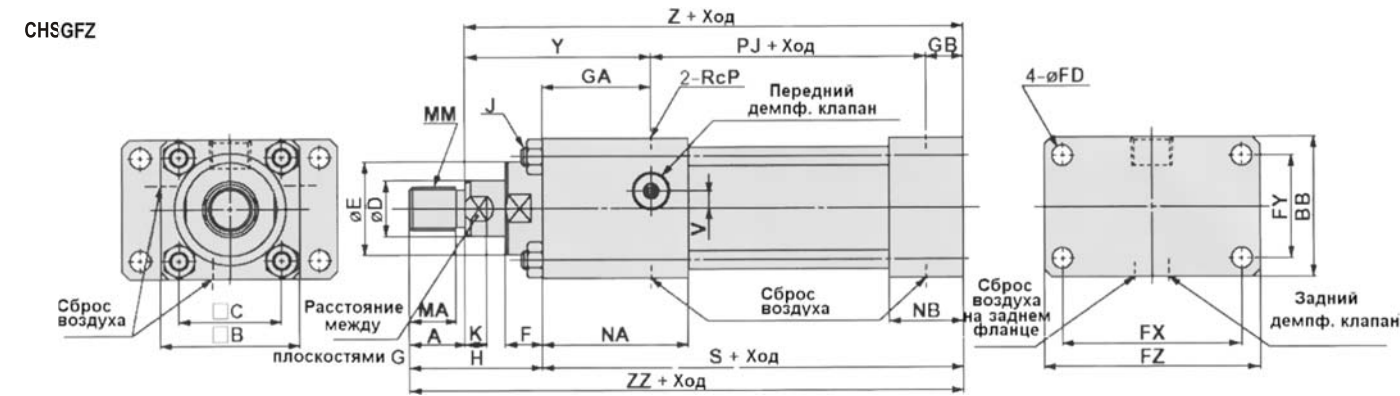
С задним фланцем

CHSDFZ



| Ø (мм) | Ход штока | A  | B   | BB  | C  | D  | E  | F  | FD   | FX  | FY | FZ  | G  | GA | GB | H  | J        | K  | MA | MM      | NA   | NB   | P   | PJ | S   | V   | Y  | Z   | ZZ  |
|--------|-----------|----|-----|-----|----|----|----|----|------|-----|----|-----|----|----|----|----|----------|----|----|---------|------|------|-----|----|-----|-----|----|-----|-----|
| 40     | 25~800    | 22 | 52  | 52  | 40 | 22 | 34 | 12 | 6.6  | 70  | 40 | 86  | 19 | 33 | 16 | 47 | M6x1     | 8  | 19 | M16x1.5 | 46   | 29   | 3/8 | 58 | 107 | 6.5 | 58 | 132 | 154 |
| 50     | 25~800    | 28 | 65  | 65  | 50 | 28 | 42 | 15 | 9    | 86  | 50 | 105 | 24 | 34 | 16 | 59 | M8x1     | 11 | 25 | M20x1.5 | 46.5 | 28.5 | 3/8 | 58 | 108 | 8   | 65 | 139 | 167 |
| 63     | 25~800    | 36 | 77  | 77  | 58 | 36 | 50 | 19 | 9    | 98  | 56 | 118 | 30 | 31 | 18 | 74 | M8x1     | 13 | 32 | M27x2   | 46   | 33   | 1/2 | 66 | 115 | 12  | 69 | 153 | 189 |
| 80     | 25~800    | 45 | 96  | 96  | 75 | 45 | 60 | 13 | 11   | 119 | 70 | 143 | 41 | 42 | 17 | 80 | M10x1.25 | 17 | 41 | M33x2   | 57   | 32   | 1/2 | 74 | 133 | 15  | 77 | 168 | 213 |
| 100    | 25~1000   | 56 | 115 | 115 | 90 | 56 | 72 | 16 | 13.5 | 138 | 90 | 162 | 50 | 38 | 22 | 97 | M14x1.5  | 19 | 52 | M42x2   | 58   | 42   | 3/4 | 86 | 148 | 15  | 79 | 187 | 243 |

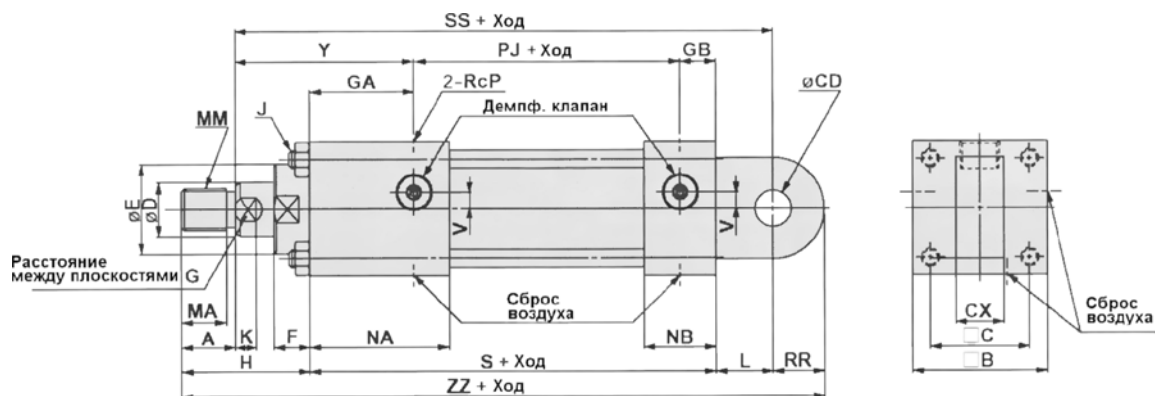
CHSGFZ



| Ø (мм) | Ход штока | A  | B   | BB  | C    | D  | E  | F  | FD  | FX  | FY | FZ  | G  | GA | GB | H  | J        | K  | MA | MM      | NA | NB | P   | PJ  | S   | V   | Y  | Z   | ZZ  |
|--------|-----------|----|-----|-----|------|----|----|----|-----|-----|----|-----|----|----|----|----|----------|----|----|---------|----|----|-----|-----|-----|-----|----|-----|-----|
| 32     | 25~800    | 18 | 45  | 45  | 33.2 | 18 | 30 | 12 | 6.6 | 58  | 33 | 70  | 14 | 35 | 12 | 43 | M6x1     | 7  | 15 | M14x1.5 | 46 | 23 | 1/4 | 56  | 103 | 5.5 | 60 | 128 | 146 |
| 40     | 25~800    | 22 | 63  | 63  | 41.7 | 22 | 34 | 12 | 11  | 87  | 41 | 110 | 19 | 37 | 18 | 47 | M8x1     | 9  | 19 | M16x1.5 | 51 | 32 | 3/8 | 73  | 128 | 6.5 | 62 | 153 | 175 |
| 50     | 25~800    | 28 | 75  | 75  | 52.3 | 28 | 42 | 9  | 14  | 105 | 52 | 130 | 24 | 42 | 18 | 53 | M12x1.25 | 11 | 25 | M20x1.5 | 57 | 33 | 1/2 | 74  | 134 | 7   | 67 | 159 | 187 |
| 63     | 25...800  | 36 | 90  | 90  | 64.3 | 36 | 50 | 13 | 14  | 117 | 65 | 145 | 30 | 39 | 17 | 68 | M12x1.25 | 13 | 32 | M27x2   | 55 | 33 | 1/2 | 80  | 136 | 12  | 71 | 168 | 204 |
| 80     | 25...800  | 45 | 115 | 115 | 82.7 | 45 | 60 | 9  | 18  | 149 | 83 | 180 | 41 | 46 | 20 | 76 | M16x1.5  | 17 | 41 | M33x2   | 66 | 40 | 3/4 | 93  | 159 | 15  | 77 | 190 | 235 |
| 100    | 25...1000 | 56 | 130 | 130 | 96.9 | 56 | 72 | 10 | 18  | 162 | 97 | 200 | 50 | 47 | 20 | 91 | M16x1.5  | 19 | 52 | M42x2   | 67 | 40 | 3/4 | 101 | 168 | 15  | 82 | 203 | 259 |

## С шарнирной опорой

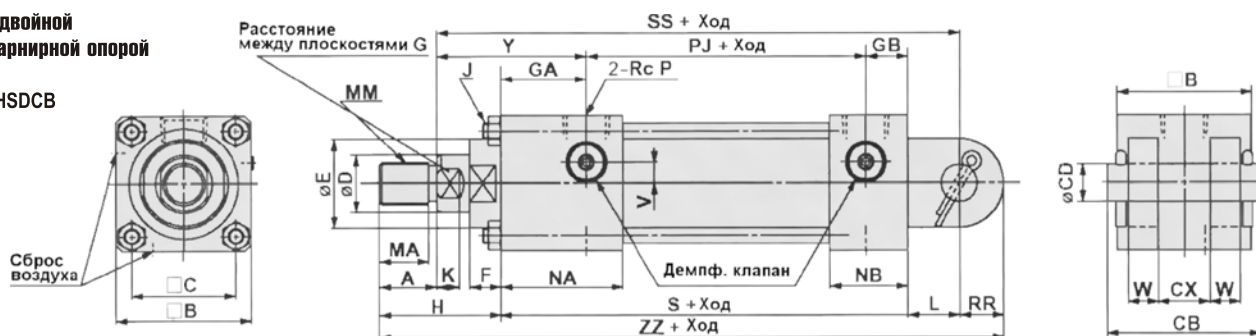
### CHSGCA



| Ø<br>(мм) | Ход<br>штока | A  | B   | C    | CD |             | CX | D  | E  | F  | G  | GA | GB | H  | J        | K  | L  | MA | MM      | NA | NB | P   | PJ  | RR | S   | SS  | V   | Y  | ZZ  |
|-----------|--------------|----|-----|------|----|-------------|----|----|----|----|----|----|----|----|----------|----|----|----|---------|----|----|-----|-----|----|-----|-----|-----|----|-----|
| 32        | 25~800       | 18 | 45  | 33.2 | 12 | +0.043      | 16 | 18 | 30 | 12 | 14 | 35 | 12 | 43 | M6x1     | 7  | 19 | 15 | M14?1.5 | 46 | 23 | 1/4 | 56  | 17 | 103 | 147 | 5.5 | 60 | 182 |
| 40        | 25~800       | 22 | 63  | 41.7 | 14 | 0           | 20 | 22 | 34 | 12 | 19 | 37 | 18 | 47 | M8x1     | 9  | 19 | 19 | M16?1.5 | 51 | 32 | 3/8 | 73  | 17 | 128 | 172 | 6.5 | 62 | 211 |
| 50        | 25~800       | 28 | 75  | 52.3 | 20 | +0.052      | 30 | 28 | 42 | 9  | 24 | 42 | 18 | 53 | M12x1.25 | 11 | 32 | 25 | M20x1.5 | 57 | 33 | 1/2 | 74  | 29 | 134 | 191 | 7   | 67 | 248 |
| 63        | 25~800       | 36 | 90  | 64.3 | 20 | 0           | 30 | 36 | 50 | 13 | 30 | 39 | 17 | 68 | M12x1.25 | 13 | 32 | 32 | M27x2   | 55 | 33 | 1/2 | 80  | 29 | 136 | 200 | 12  | 71 | 265 |
| 80        | 25~800       | 45 | 115 | 82.7 | 28 |             | 40 | 45 | 60 | 9  | 41 | 46 | 20 | 76 | M16x1.5  | 17 | 41 | 41 | M33x2   | 66 | 40 | 3/4 | 93  | 34 | 159 | 229 | 15  | 77 | 308 |
| 100       | 25~1000      | 56 | 130 | 96.9 | 36 | +0.062<br>0 | 50 | 56 | 72 | 10 | 50 | 47 | 20 | 91 | M16x1.5  | 19 | 54 | 52 | M42x2   | 67 | 40 | 3/4 | 101 | 50 | 168 | 257 | 15  | 82 | 363 |

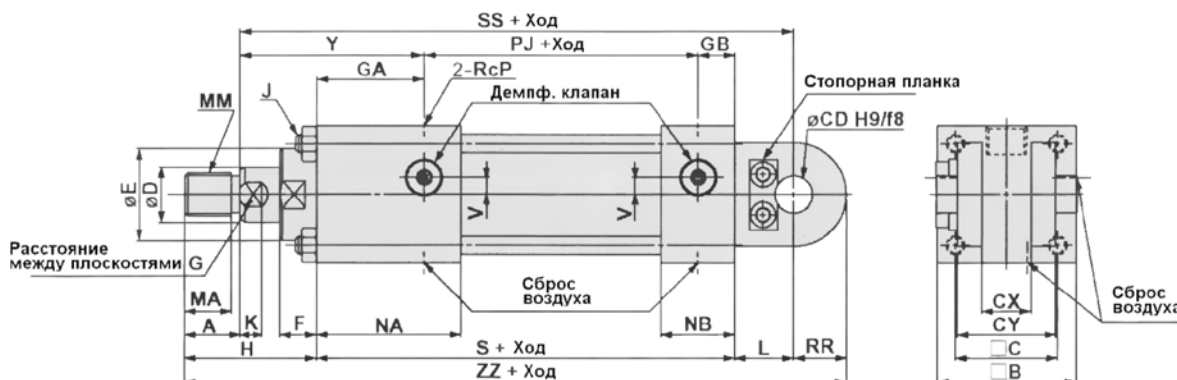
## С двойной шарнирной опорой

### CHSDCB



| Ø<br>(мм) | Ход<br>штока | A  | B   | C  | CB  | CD |             | CX | D  | E  | F  | G  | GA | GB | H  | J        |    | K  | L  | MA      | MM   | NA   | NB  | P  | PJ | RR  | S   | SS  | V    | W  | Y   | ZZ |
|-----------|--------------|----|-----|----|-----|----|-------------|----|----|----|----|----|----|----|----|----------|----|----|----|---------|------|------|-----|----|----|-----|-----|-----|------|----|-----|----|
| 40        | 25~800       | 22 | 52  | 40 | 64  | 14 | +0.043      | 20 | 22 | 34 | 12 | 19 | 33 | 16 | 47 | M6x1     | 8  | 19 | 19 | M16x1.5 | 46   | 29   | 3/8 | 58 | 17 | 107 | 151 | 6.5 | 11.5 | 58 | 190 |    |
| 50        | 25~800       | 28 | 65  | 50 | 64  | 14 | 0           | 20 | 28 | 42 | 15 | 24 | 34 | 16 | 59 | M8x1     | 11 | 19 | 25 | M20x1.5 | 46.5 | 28.5 | 3/8 | 58 | 17 | 108 | 158 | 8   | 11.5 | 65 | 203 |    |
| 63        | 25~800       | 36 | 77  | 58 | 93  | 20 |             | 30 | 36 | 50 | 19 | 30 | 31 | 18 | 74 | M8x1     | 13 | 32 | 32 | M27x2   | 46   | 33   | 1/2 | 66 | 29 | 115 | 185 | 12  | 17.5 | 69 | 250 |    |
| 80        | 25~800       | 45 | 96  | 75 | 93  | 20 |             | 30 | 45 | 60 | 13 | 41 | 42 | 17 | 80 | M10x1.25 | 17 | 32 | 41 | M33x2   | 57   | 32   | 1/2 | 74 | 29 | 133 | 200 | 15  | 17.5 | 77 | 274 |    |
| 100       | 25~1000      | 56 | 115 | 90 | 113 | 28 | +0.052<br>0 | 40 | 56 | 72 | 16 | 50 | 38 | 22 | 97 | M14x1.5  | 19 | 39 | 52 | M42x2   | 58   | 42   | 3/4 | 86 | 34 | 146 | 226 | 15  | 21.5 | 79 | 316 |    |

### CHSGCB



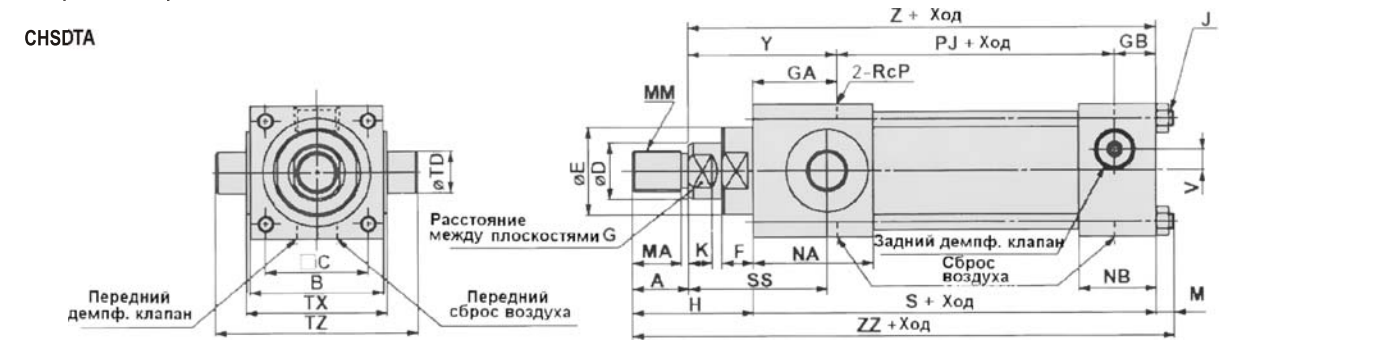
| ø (мм) | Ход штока | A  | B   | C    | CD | H9    | f8     | CX | CY  | D  | E  | F  | G  | GA | GB | H  | J        | K  | L  | MA | MM      | NA | NB | P   |
|--------|-----------|----|-----|------|----|-------|--------|----|-----|----|----|----|----|----|----|----|----------|----|----|----|---------|----|----|-----|
| 32     | 25~800    | 18 | 45  | 33.2 | 12 | 0.043 | -0.016 | 16 | 32  | 18 | 30 | 12 | 14 | 35 | 12 | 43 | M6x1     | 7  | 19 | 15 | M14x1.5 | 46 | 23 | 1/4 |
| 40     | 25~800    | 22 | 63  | 41.7 | 14 | 0     | -0.043 | 20 | 43  | 22 | 34 | 12 | 19 | 37 | 18 | 47 | M8x1     | 9  | 19 | 19 | M16x1.5 | 51 | 32 | 3/8 |
| 50     | 25~800    | 28 | 75  | 52.3 | 20 | 0.052 | -0.020 | 30 | 60  | 28 | 42 | 9  | 24 | 42 | 18 | 53 | M12x1.25 | 11 | 32 | 25 | M20x1.5 | 57 | 33 | 1/2 |
| 63     | 25~800    | 36 | 90  | 64.3 | 20 | 0     | -0.053 | 30 | 60  | 36 | 50 | 13 | 30 | 39 | 17 | 68 | M12x1.25 | 13 | 32 | 32 | M27x2   | 55 | 33 | 1/2 |
| 80     | 25~800    | 45 | 115 | 82.7 | 28 |       |        | 40 | 80  | 45 | 60 | 9  | 41 | 46 | 20 | 76 | M16x1.5  | 17 | 39 | 41 | M33x2   | 66 | 40 | 3/4 |
| 100    | 25~1000   | 56 | 130 | 96.9 | 36 | 0.062 | -0.064 | 50 | 100 | 56 | 72 | 10 | 50 | 47 | 20 | 91 | M16x1.5  | 19 | 54 | 52 | M42x2   | 67 | 40 | 3/4 |

Гидравлический цилиндр по ISO

CHS

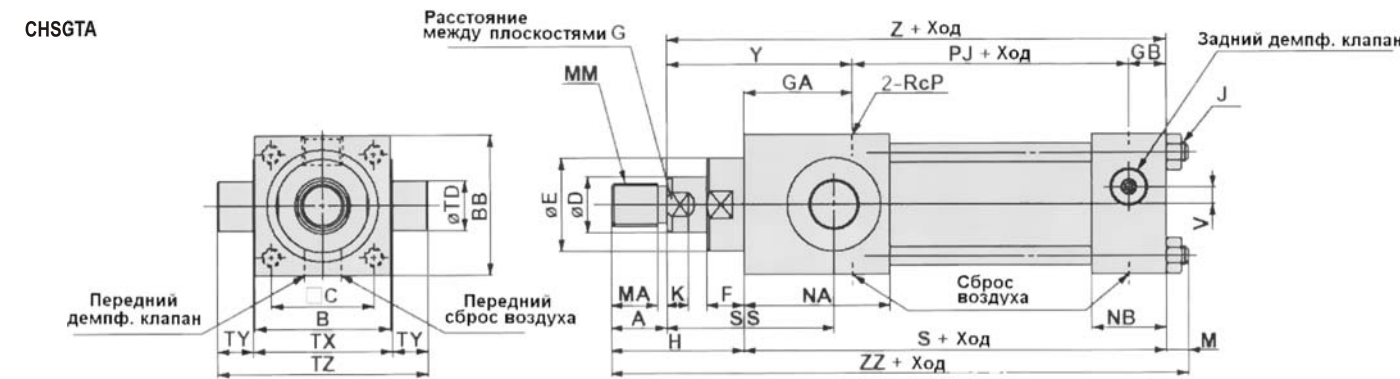
С передней цапфой

CHSDTA



| Ø<br>(мм) | Ход<br>штока | A  | B   | C  | D  | E  | F  | G  | GA | GB | H   | J        | K  | M    | MA | MM      | NA   | NB   | P   | PJ | S   | SS | TD                     | TX  | TZ  | V   | Z   | ZZ    |
|-----------|--------------|----|-----|----|----|----|----|----|----|----|-----|----------|----|------|----|---------|------|------|-----|----|-----|----|------------------------|-----|-----|-----|-----|-------|
| 40        | 25~800       | 22 | 52  | 40 | 22 | 34 | 12 | 19 | 33 | 16 | 57  | M6x1     | 8  | 7.5  | 19 | M16x1.5 | 46   | 29   | 3/8 | 58 | 107 | 54 | 16<br>-0.016<br>-0.043 | 55  | 79  | 6.5 | 132 | 161.5 |
| 50        | 25~800       | 28 | 65  | 50 | 28 | 42 | 15 | 24 | 34 | 16 | 69  | M8x1     | 11 | 9    | 25 | M20x1.5 | 46.5 | 28.5 | 3/8 | 58 | 108 | 61 | 20<br>-0.020           | 68  | 100 | 8   | 139 | 176   |
| 63        | 25~800       | 36 | 77  | 58 | 36 | 50 | 19 | 30 | 31 | 18 | 84  | M8x1     | 13 | 9    | 32 | M27x2   | 46   | 33   | 1/2 | 66 | 115 | 67 | 25<br>-0.053           | 80  | 120 | 12  | 153 | 198   |
| 80        | 25~800       | 45 | 96  | 75 | 45 | 60 | 13 | 41 | 42 | 17 | 96  | M10x1.25 | 17 | 10.5 | 41 | M33x2   | 57   | 32   | 1/2 | 74 | 133 | 73 | 32<br>-0.025           | 100 | 150 | 15  | 168 | 223.5 |
| 100       | 25~1000      | 56 | 115 | 90 | 56 | 72 | 16 | 50 | 38 | 22 | 113 | M14x1.5  | 19 | 14.5 | 52 | M42x2   | 58   | 42   | 3/4 | 86 | 146 | 79 | 40<br>-0.064           | 120 | 184 | 15  | 187 | 257.5 |

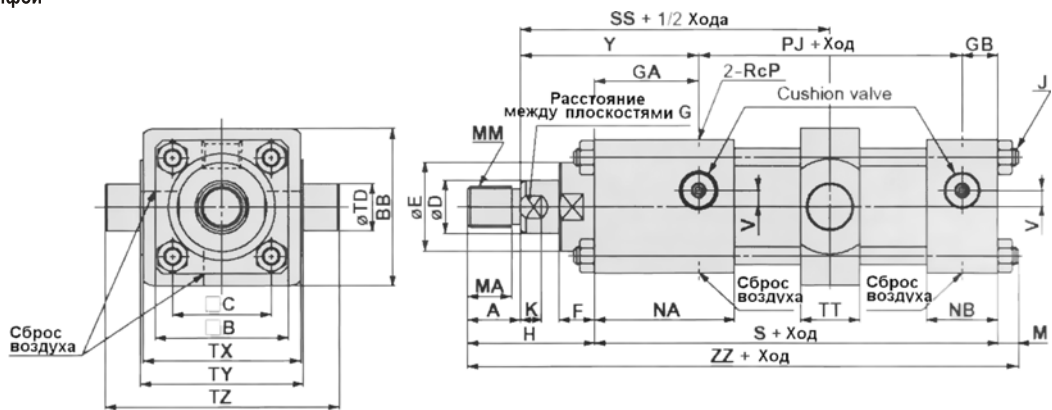
CHSGTA



| Ø<br>(мм) | Ход<br>штока | A  | B   | BB  | C    | D  | E  | F  | G  | GA | GB | H  | J        | K  | M   | MA | MM      | NA | NB | P   | PJ  | S   | SS | TD |                  | TX  | TZ  | V   | Y  | Z   | ZZ    |
|-----------|--------------|----|-----|-----|------|----|----|----|----|----|----|----|----------|----|-----|----|---------|----|----|-----|-----|-----|----|----|------------------|-----|-----|-----|----|-----|-------|
| 32        | 25~800       | 18 | 44  | 45  | 33.2 | 18 | 30 | 12 | 14 | 35 | 12 | 43 | M6x1     | 7  | 7.5 | 15 | M14x1.5 | 46 | 23 | 1/4 | 56  | 103 | 54 | 16 | -0.016           | 45  | 68  | 5.5 | 60 | 128 | 153.5 |
| 40        | 25~800       | 22 | 61  | 63  | 41.7 | 22 | 34 | 12 | 19 | 37 | 18 | 47 | M8x1     | 9  | 10  | 19 | M16x1.5 | 51 | 32 | 3/8 | 73  | 128 | 57 | 20 | -0.043           | 63  | 95  | 6.5 | 62 | 153 | 185   |
| 50        | 25~800       | 28 | 75  | 75  | 52.3 | 28 | 42 | 9  | 24 | 42 | 18 | 53 | M12x1.25 | 11 | 12  | 25 | M20x1.5 | 57 | 33 | 1/2 | 74  | 134 | 64 | 25 | -0.020<br>-0.053 | 76  | 116 | 7   | 67 | 159 | 199   |
| 63        | 25~800       | 36 | 87  | 90  | 64.3 | 36 | 50 | 13 | 30 | 39 | 17 | 68 | M12x1.25 | 13 | 12  | 32 | M27x2   | 55 | 33 | 1/2 | 80  | 136 | 70 | 32 | -0.025           | 89  | 139 | 12  | 71 | 168 | 216   |
| 80        | 25~800       | 45 | 112 | 115 | 82.7 | 45 | 60 | 9  | 41 | 46 | 20 | 76 | M16x1.5  | 17 | 16  | 41 | M33x2   | 66 | 40 | 3/4 | 93  | 159 | 76 | 40 | -0.064           | 114 | 178 | 15  | 77 | 190 | 251   |
| 100       | 25~1000      | 56 | 125 | 130 | 96.9 | 56 | 72 | 10 | 50 | 47 | 20 | 91 | M16x1.5  | 19 | 16  | 52 | M42x2   | 67 | 40 | 3/4 | 101 | 168 | 71 | 50 |                  | 127 | 207 | 15  | 82 | 203 | 275   |

С центральной цапфой

CHSGTC



| Ø<br>(мм) | Ход<br>штока | A  | B   | BB  | C    | D  | E  | F  | G  | GA | GB | H  | J        | K  | M   | MA | MM      | NA | NB | P   | PJ  | S   | SS    | TD | TX               | TY  | TZ  | V   | Y   | Z  | ZZ  |       |
|-----------|--------------|----|-----|-----|------|----|----|----|----|----|----|----|----------|----|-----|----|---------|----|----|-----|-----|-----|-------|----|------------------|-----|-----|-----|-----|----|-----|-------|
| 32        | 25~800       | 18 | 45  | 57  | 33.2 | 18 | 30 | 12 | 14 | 35 | 12 | 43 | M6x1     | 7  | 7.5 | 15 | M14x1.5 | 46 | 23 | 1/4 | 56  | 103 | 88    | 16 | -0.016           | 53  | 55  | 79  | 5.5 | 60 | 128 | 153.5 |
| 40        | 25~800       | 22 | 63  | 65  | 41.7 | 22 | 34 | 12 | 19 | 37 | 18 | 47 | M8x1     | 9  | 10  | 19 | M16x1.5 | 51 | 32 | 3/8 | 73  | 128 | 98.5  | 20 | -0.033           | 72  | 76  | 108 | 6.5 | 62 | 153 | 185   |
| 50        | 25~800       | 28 | 75  | 75  | 52.3 | 28 | 42 | 9  | 24 | 42 | 18 | 53 | M12x1.25 | 11 | 12  | 25 | M20x1.5 | 57 | 33 | 1/2 | 74  | 134 | 104   | 25 | -0.004<br>-0.043 | 88  | 89  | 129 | 7   | 67 | 159 | 199   |
| 63        | 25~800       | 36 | 90  | 90  | 64.3 | 36 | 50 | 13 | 30 | 39 | 17 | 68 | M12x1.25 | 13 | 12  | 32 | M27x2   | 55 | 33 | 1/2 | 80  | 136 | 11    | 32 | -0.009           | 90  | 100 | 150 | 12  | 71 | 168 | 216   |
| 80        | 25~800       | 45 | 115 | 115 | 82.7 | 45 | 60 | 9  | 41 | 46 | 20 | 76 | M16x1.5  | 17 | 16  | 41 | M33x2   | 66 | 40 | 3/4 | 93  | 159 | 123.5 | 40 | -0.054           | 123 | 127 | 191 | 15  | 77 | 190 | 251   |
| 100       | 25~1000      | 56 | 130 | 130 | 96.9 | 56 | 72 | 10 | 50 | 47 | 20 | 91 | M16x1.5  | 19 | 16  | 52 | M42x2   | 67 | 40 | 3/4 | 101 | 168 | 132.5 | 50 |                  | 130 | 140 | 220 | 15  | 82 | 203 | 275   |

# Гидравлический цилиндр по ISO

## CHS

### Датчики положения

#### Применяемые датчики

| Обозначение          | Тип         | Монтаж     | Эл.вход        | Световая индикация | Выход               | Рабочее напряжение (В) DC | напряжение (В) AC | Характер нагрузки |
|----------------------|-------------|------------|----------------|--------------------|---------------------|---------------------------|-------------------|-------------------|
| D-A54L <sup>1)</sup> | Герконовый  | На шпильке | Кабель залитый | Есть               | 2-х проводной       | 24                        | 110, 220          | Реле, ПЛК         |
| D-Z73L <sup>2)</sup> |             |            |                |                    | 3-х проводной р-п-р | 5, 12, 24                 | 100               |                   |
| D-F5PL               | Электронный |            |                |                    |                     |                           | -                 |                   |

Более детальная информация о датчиках положения содержится во вводном разделе.

<sup>1)</sup> Кроме цилиндров CHSD Ø40, Ø50 и CHSG Ø32.  
<sup>2)</sup> Кроме цилиндров CHSG Ø32.

#### Номер для заказа крепления датчика

| Датчик | Диаметр цилиндра (мм) |         |         |         |         |
|--------|-----------------------|---------|---------|---------|---------|
|        | 40                    | 50      | 63      | 80      | 100     |
| D-A54L | -                     | -       | BT-04   | BT-06   | BT-12   |
| D-Z73L | BMB4-032              | BA4-040 | BA4-040 | BA4-063 | BS4-125 |
| D-F5PL | BT-03                 | BT-04   | BT-04   | BT-06   | BT-12   |

| Датчик | Диаметр цилиндра (мм) |          |         |         |         |         |
|--------|-----------------------|----------|---------|---------|---------|---------|
|        | 32                    | 40       | 50      | 63      | 80      | 100     |
| D-A54L | BT-03                 | BT-04    | BT-08   | BT-08   | BT-16   | BT-16   |
| D-Z73L | -                     | BMB4-050 | BA4-080 | BA4-080 | BS4-160 | BS4-160 |
| D-F5PL | BT-03                 | BT-04    | BT-08   | BT-08   | BT-16   | BT-16   |

#### Зона переключения датчиков положения (мм)

| Модель | Диаметр цилиндра (мм) |     |      |     |      |
|--------|-----------------------|-----|------|-----|------|
|        | 40                    | 50  | 63   | 80  | 100  |
| D-A54L | -                     | -   | 10,5 | 12  | 14,5 |
| D-Z73L | 8                     | 9   | 10   | 12  | 14,5 |
| D-F5PL | 4                     | 4,5 | 4,5  | 5,5 | 5,5  |

| Модель | Диаметр цилиндра (мм) |     |     |      |      |  |
|--------|-----------------------|-----|-----|------|------|--|
|        | 32                    | 40  | 50  | 63   | 80   |  |
| D-A54L | -                     | 9   | 10  | 11   | 14   |  |
| D-Z73L | -                     | 8,5 | 9,5 | 10,5 | 14,5 |  |
| D-F5PL | 4                     | 4,5 | 5   | 4    | 5,5  |  |

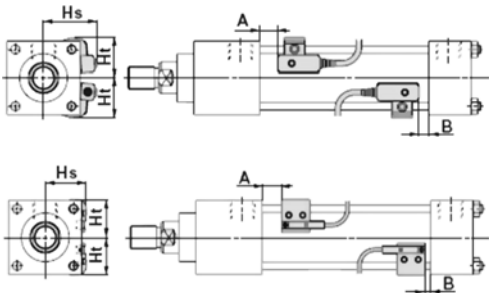
#### Минимальная длина хода (мм) при использовании датчиков положения

| Модель | Количество датчиков | Для всех типов крепления кроме центральной цапфы | Крепление с центральной цапфой                |                                               |                                               |                                               |                                               |                                               |
|--------|---------------------|--------------------------------------------------|-----------------------------------------------|-----------------------------------------------|-----------------------------------------------|-----------------------------------------------|-----------------------------------------------|-----------------------------------------------|
|        |                     |                                                  | Ø32                                           | Ø40                                           | Ø50                                           | Ø63                                           | Ø80                                           | Ø100                                          |
| D-A54L | 1 или 2             | 25                                               | -                                             | 120                                           |                                               | 130                                           | 135                                           | 145                                           |
|        | n                   | $25+55 \cdot (n-2)/2$<br>n=2, 4, 6, 8, ...       |                                               | $120+55 \cdot (n-4)/2$<br>n=4, 8, 12, 16, ... |                                               | $130+55 \cdot (n-4)/2$<br>n=4, 8, 12, 16, ... | $135+55 \cdot (n-4)/2$<br>n=4, 8, 12, 16, ... | $145+55 \cdot (n-4)/2$<br>n=4, 8, 12, 16, ... |
| D-Z73L | 1 или 2             | 25                                               |                                               | 95                                            | 100                                           | 105                                           | 115                                           | 125                                           |
|        | n                   | $25+40 \cdot (n-2)/2$<br>n=2, 4, 6, 8, ...       |                                               | $95+40 \cdot (n-4)/2$<br>n=4, 8, 12, 16, ...  | $100+40 \cdot (n-4)/2$<br>n=4, 8, 12, 16, ... | $105+40 \cdot (n-4)/2$<br>n=4, 8, 12, 16, ... | $115+40 \cdot (n-4)/2$<br>n=4, 8, 12, 16, ... | $125+40 \cdot (n-4)/2$<br>n=4, 8, 12, 16, ... |
| D-F5PL | 1 или 2             | 20                                               | 110                                           | 125                                           | 130                                           | 135                                           | 140                                           | 150                                           |
|        | n                   | $20+55 \cdot (n-2)/2$<br>n=2, 4, 6, 8, ...       | $110+55 \cdot (n-4)/2$<br>n=4, 8, 12, 16, ... | $125+55 \cdot (n-4)/2$<br>n=4, 8, 12, 16, ... | $130+55 \cdot (n-4)/2$<br>n=4, 8, 12, 16, ... | $135+55 \cdot (n-4)/2$<br>n=4, 8, 12, 16, ... | $140+55 \cdot (n-4)/2$<br>n=4, 8, 12, 16, ... | $150+55 \cdot (n-4)/2$<br>n=4, 8, 12, 16, ... |

#### CHSD

| Модель         | 2 (разностороннее и одностороннее) или 1 | n                                          |
|----------------|------------------------------------------|--------------------------------------------|
| D-A54L, D-F5PL | 20                                       | $20+55 \cdot (n-2)/2$<br>n=2, 4, 6, 8, ... |
| D-Z73L         | 20                                       | $20+40 \cdot (n-2)/2$<br>n=2, 4, 6, 8, ... |

### Монтаж датчиков



#### CHSD

| Ø (мм) | D-A54L |     |      |      | D-Z73L |     |    |      | D-F5PL |      |      |      |
|--------|--------|-----|------|------|--------|-----|----|------|--------|------|------|------|
|        | A      | B   | Ht   | Hs   | A      | B   | Ht | Hs   | A      | B    | Ht   | Hs   |
| 40     | -      | -   | -    | -    | 5      | 2   | 27 | 29   | 8      | 5    | 28,5 | 35,5 |
| 50     | -      | -   | -    | -    | 6,5    | 1,5 | 33 | 33   | 9,5    | 4,5  | 34,5 | 39,5 |
| 63     | 4,5    | 0   | 38,5 | 47,5 | 8      | 3   | 37 | 38   | 11     | 6    | 38,5 | 45   |
| 80     | 8,5    | 3,5 | 48   | 54   | 12     | 7   | 46 | 46,5 | 15     | 10   | 48   | 51   |
| 100    | 8,5    | 6   | 58   | 66,5 | 12     | 9,5 | 57 | 59   | 15     | 12,5 | 58   | 63,5 |

#### CHSG

| Ø (мм) | D-A54L |     |      |      | D-Z73L |      |      |      | D-F5PL |      |      |      |
|--------|--------|-----|------|------|--------|------|------|------|--------|------|------|------|
|        | A      | B   | Ht   | Hs   | A      | B    | Ht   | Hs   | A      | B    | Ht   | Hs   |
| 32     | -      | -   | -    | -    | -      | -    | -    | -    | 10,5   | 4,5  | 25   | 32,5 |
| 40     | 12,5   | 0,5 | 30   | 38,5 | 16     | 4    | 28,5 | 29   | 19     | 7    | 30   | 36   |
| 50     | 12,5   | 0   | 37,5 | 43,5 | 16     | 3    | 36   | 37   | 19     | 6    | 37,5 | 41   |
| 63     | 14,5   | 1,5 | 43,5 | 49   | 18     | 5    | 42   | 42,5 | 21     | 8    | 43,5 | 46,5 |
| 80     | 17,5   | 3,5 | 56,5 | 59,5 | 21     | 7    | 54,5 | 54   | 24     | 10   | 56,5 | 57   |
| 100    | 21     | 25  | 64,5 | 69   | 24,5   | 11,5 | 61,5 | 62,5 | 27,5   | 14,5 | 64,5 | 66   |



- Минимальная длина гидроцилиндра делает возможным создание предельно компактных приводов
- Исполнения с одно- и двусторонним штоком
- Возможность установки датчиков положения

**3.5 МПа**

### Технические характеристики

|                                       |                         |        |
|---------------------------------------|-------------------------|--------|
| Среда                                 | Гидравлическая жидкость |        |
| Номинальное давление (МПа)            | 3.5                     |        |
| Испытательное давление (МПа)          | 5.0                     |        |
| Максимально допустимое давление (МПа) | 3.5                     |        |
| Минимальное рабочее давление (МПа)    | 0.3                     |        |
| Рабочая температура (°C)              | Без датчиков положения  | -10~80 |
|                                       | С датчиками положения   | -10~60 |
| Скорость поршня (мм/с)                | 8~100                   |        |
| Демпфирование                         | Нет                     |        |
| Резьба на штоке                       | Внутренняя/наружная     |        |
| Допуск на длину хода (мм)             | 0~+1.0                  |        |



### Стандартные длины хода

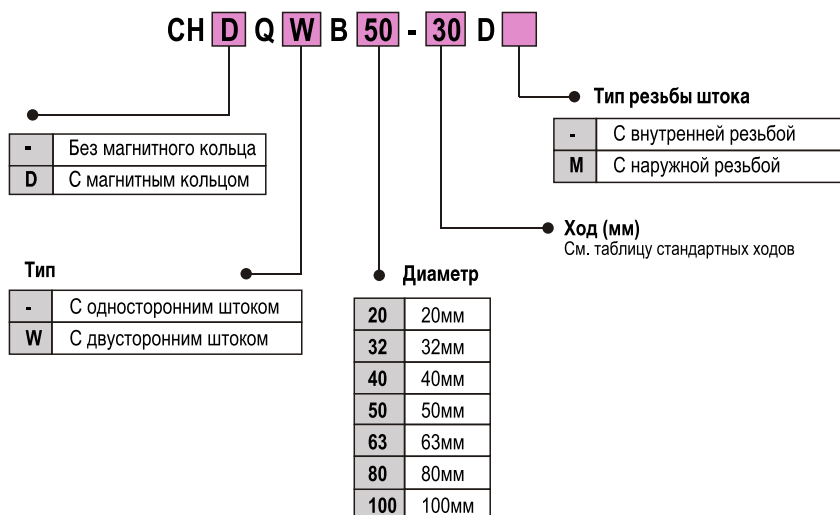
| Диаметр цилиндра (мм) | Стандартные длины хода (мм)                    |
|-----------------------|------------------------------------------------|
| 20                    | 5, 10, 15, 20, 25, 30, 35, 40, 45, 50          |
| 32, 40                | 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 75, 100 |
| 50, 63, 80, 100       | 10, 15, 20, 25, 30, 35, 40, 45, 50, 75, 100    |

### Совместимость с гидравлическими жидкостями

| Гидравлическая жидкость    | Совместимость |
|----------------------------|---------------|
| Минеральные гидравл. масла | Совместимы    |
| Эмульсии «Вода в масле»    |               |
| Эмульсии «Масло в воде»    |               |
| Водно-гликолевые жидкости  | Несовместимы  |
| Фосфаты                    |               |

Цилиндры с промежуточными значениями длины хода поставляются по запросу

### Номер для заказа



Датчики положения заказываются отдельно.



# Компактный гидравлический цилиндр низкого давления

## CHQ

### Номинальные усилия (Н)

#### CHQ

| Ø<br>(Мм) | Ø штока<br>(мм) | Направление<br>перемещения | Площадь<br>поршня (мм²) | Рабочее давление (МПа) |       |       |       |       |       |
|-----------|-----------------|----------------------------|-------------------------|------------------------|-------|-------|-------|-------|-------|
|           |                 |                            |                         | 1                      | 1.5   | 2     | 2.5   | 3     | 3.5   |
| 20        | 10              | выдвижение                 | 314                     | 314                    | 471   | 628   | 785   | 942   | 1099  |
|           |                 | втягивание                 | 235                     | 235                    | 352   | 470   | 587   | 705   | 822   |
| 32        | 16              | выдвижение                 | 804                     | 804                    | 1206  | 1608  | 2010  | 2412  | 2814  |
|           |                 | втягивание                 | 603                     | 603                    | 904   | 1206  | 1507  | 1809  | 2110  |
| 40        | 16              | выдвижение                 | 1256                    | 1256                   | 1884  | 2512  | 3140  | 3768  | 4396  |
|           |                 | втягивание                 | 1055                    | 1055                   | 1582  | 2110  | 2634  | 3165  | 3692  |
| 50        | 20              | выдвижение                 | 1963                    | 1963                   | 2944  | 3926  | 4907  | 5889  | 6870  |
|           |                 | втягивание                 | 1649                    | 1649                   | 2473  | 3298  | 4122  | 4947  | 5771  |
| 63        | 20              | выдвижение                 | 3117                    | 3117                   | 4675  | 6234  | 7792  | 9351  | 10909 |
|           |                 | втягивание                 | 2803                    | 2803                   | 4204  | 5606  | 7007  | 8409  | 9810  |
| 80        | 25              | выдвижение                 | 5026                    | 5026                   | 7539  | 10052 | 12565 | 15078 | 17591 |
|           |                 | втягивание                 | 4535                    | 4535                   | 6802  | 9070  | 11337 | 13605 | 15872 |
| 100       | 30              | выдвижение                 | 7853                    | 7853                   | 11779 | 15706 | 19632 | 23559 | 27485 |
|           |                 | втягивание                 | 7147                    | 7147                   | 10720 | 14294 | 17867 | 21441 | 25014 |

#### CHQW

| Ø<br>(мм) | Ø<br>(мм) | Площадь<br>поршня (мм²) | Рабочее давление (МПа) |       |       |       |       |       |
|-----------|-----------|-------------------------|------------------------|-------|-------|-------|-------|-------|
|           |           |                         | 1                      | 1.5   | 2     | 2.5   | 3     | 3.5   |
| 20        | 10        | 235                     | 235                    | 352   | 470   | 587   | 705   | 822   |
| 32        | 16        | 603                     | 603                    | 904   | 1206  | 1507  | 1809  | 2110  |
| 40        | 16        | 1055                    | 1055                   | 1582  | 2110  | 2637  | 3165  | 3692  |
| 50        | 20        | 1649                    | 1649                   | 2473  | 3296  | 4122  | 4947  | 5771  |
| 63        | 20        | 2803                    | 2803                   | 4204  | 5606  | 7007  | 8409  | 9810  |
| 80        | 25        | 4535                    | 4535                   | 6802  | 9070  | 11337 | 13605 | 15872 |
| 100       | 30        | 7147                    | 7147                   | 10720 | 14294 | 17867 | 21441 | 25014 |

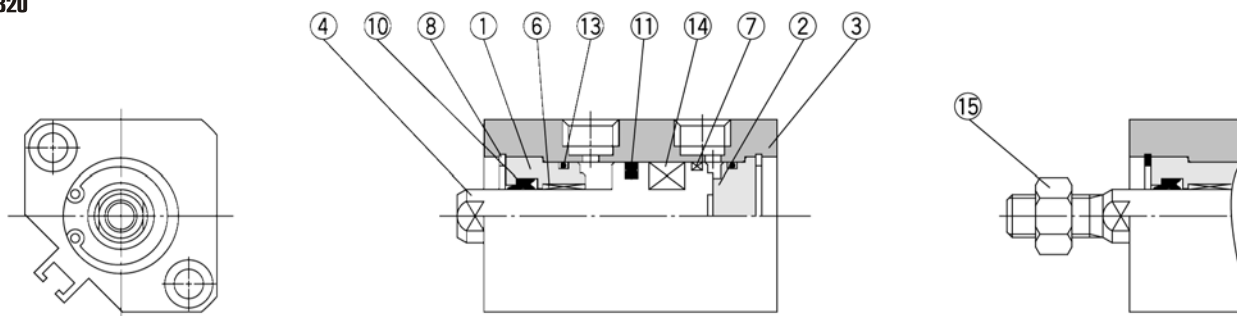
Номинальное усилие (Н) = Давление (МПа) × Площадь поршня (мм2)

### Масса цилиндров (г)

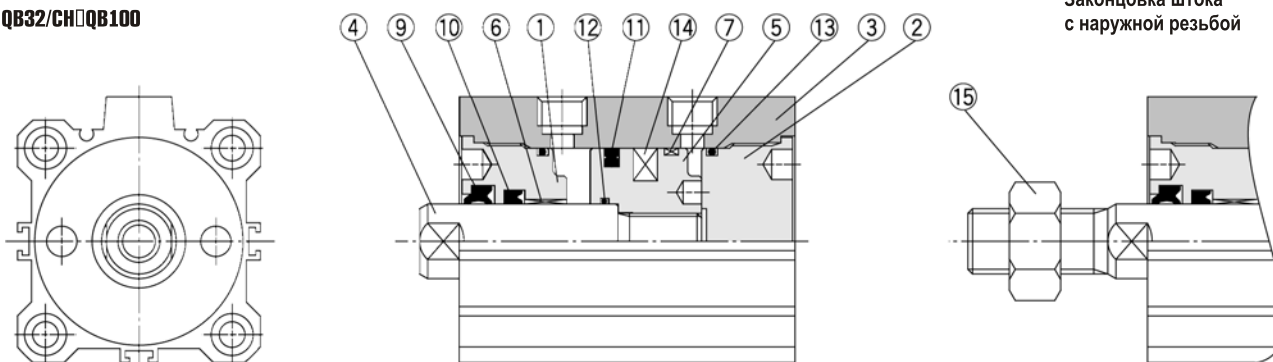
| Ø<br>(мм) |      | Стандартная длина хода |      |      |      |      |      |      |      |      |      |      |      | Дополнительная<br>масса при<br>законцовке штока<br>с наруж., резьбой |
|-----------|------|------------------------|------|------|------|------|------|------|------|------|------|------|------|----------------------------------------------------------------------|
|           |      | 5                      | 10   | 15   | 20   | 25   | 30   | 35   | 40   | 45   | 50   | 75   | 100  |                                                                      |
| 20        | CHQ  | 180                    | 200  | 220  | 240  | 260  | 280  | 300  | 320  | 340  | 360  | -    | -    | 10                                                                   |
|           | CHQW | 205                    | 230  | 255  | 280  | 305  | 330  | 355  | 380  | 405  | 430  | -    | -    | 20                                                                   |
| 32        | CHQ  | 330                    | 350  | 370  | 390  | 410  | 430  | 450  | 470  | 490  | 510  | 610  | 710  | 52                                                                   |
|           | CHQW | 410                    | 445  | 480  | 515  | 550  | 585  | 620  | 655  | 690  | 725  | 900  | 1075 | 104                                                                  |
| 40        | CHQ  | 480                    | 500  | 520  | 540  | 560  | 580  | 600  | 620  | 640  | 660  | 760  | 860  | 52                                                                   |
|           | CHQW | 570                    | 605  | 640  | 675  | 710  | 745  | 780  | 815  | 850  | 885  | 1060 | 1235 | 104                                                                  |
| 50        | CHQ  | -                      | 860  | 890  | 920  | 950  | 980  | 1010 | 1040 | 1070 | 1100 | 1250 | 1400 | 100                                                                  |
|           | CHQW | -                      | 1030 | 1080 | 1130 | 1180 | 1230 | 1280 | 1330 | 1380 | 1430 | 1680 | 1930 | 200                                                                  |
| 63        | CHQ  | -                      | 1250 | 1290 | 1330 | 1370 | 1410 | 1450 | 1490 | 1530 | 1570 | 1770 | 1970 | 100                                                                  |
|           | CHQW | -                      | 1430 | 1485 | 1540 | 1595 | 1650 | 1705 | 1760 | 1815 | 1870 | 2145 | 2420 | 200                                                                  |
| 80        | CHQ  | -                      | 2380 | 2470 | 2560 | 2650 | 2740 | 2830 | 2920 | 3010 | 3100 | 3550 | 4000 | 172                                                                  |
|           | CHQW | -                      | 2680 | 2805 | 2930 | 3055 | 3180 | 3305 | 3430 | 3555 | 3680 | 4350 | 4930 | 344                                                                  |
| 100       | CHQ  | -                      | 3520 | 3630 | 3740 | 3850 | 3960 | 4070 | 4180 | 4290 | 4400 | 4950 | 5500 | 283                                                                  |
|           | CHQW | -                      | 4075 | 4235 | 4395 | 4555 | 4715 | 4875 | 5035 | 5195 | 5355 | 6155 | 6955 | 566                                                                  |

### Конструкция

CHQВ20



CHQВ32/CHQВ100



### Спецификация

| Поз. | Наименование                         | Материал                  | Примечания                       |
|------|--------------------------------------|---------------------------|----------------------------------|
| 1    | Крышка штоковая                      | Алюминиевый сплав         | Чернение                         |
| 2    | Крышка задняя                        | Алюминиевый сплав         | анодированием                    |
| 3    | Гильза цилиндра                      | Алюминиевый сплав         | Анодирование                     |
| 4    | Шток                                 | Ø20                       | Хромирование<br>(гальваническое) |
|      |                                      | Ø32-Ø100                  |                                  |
| 5    | Поршень                              | Алюминиевый сплав         | Хромирование                     |
| 6    | Вкладыш направляющий                 | Медный сплав              |                                  |
| 7    | Поршневое кольцо                     | Пластик                   |                                  |
| 8    | Кольцо стопорное<br>(только для Ø20) | Инструментальная<br>сталь | Цинк-хромовое<br>чернение        |
| 9    | Грязесъемное кольцо                  | NBR                       |                                  |
| 10   | Уплотнение штока                     | NBR                       |                                  |
| 11   | Уплотнение цилиндра                  | NBR                       |                                  |
| 12   | Прокладка поршня                     | NBR                       |                                  |
| 13   | Прокладка гильзы                     | NBR                       |                                  |
| 14   | Резино-магнит                        | NBR                       |                                  |
| 15   | Гайка штока                          | Углеродистая сталь        | Никелирование                    |

### Рекомплеты

| Ø<br>(мм) | Номер для заказа |            |
|-----------|------------------|------------|
|           | CHQ              | CHQW       |
| 20        | CHQ20-PS         | CHQW20-PS  |
| 32        | CHQ32-PS         | CHQW32-PS  |
| 40        | CHQ40-PS         | CHQW40-PS  |
| 50        | CHQ50-PS         | CHQW50-PS  |
| 63        | CHQ63-PS         | CHQW63-PS  |
| 80        | CHQ80-PS         | CHQW80-PS  |
| 100       | CHQ100-PS        | CHQW100-PS |

### Примечание:

ремкомплект содержит уплотнения (поз. 9, 10, 11, 13) и может быть заказан для каждого из указанных диаметров цилиндров.

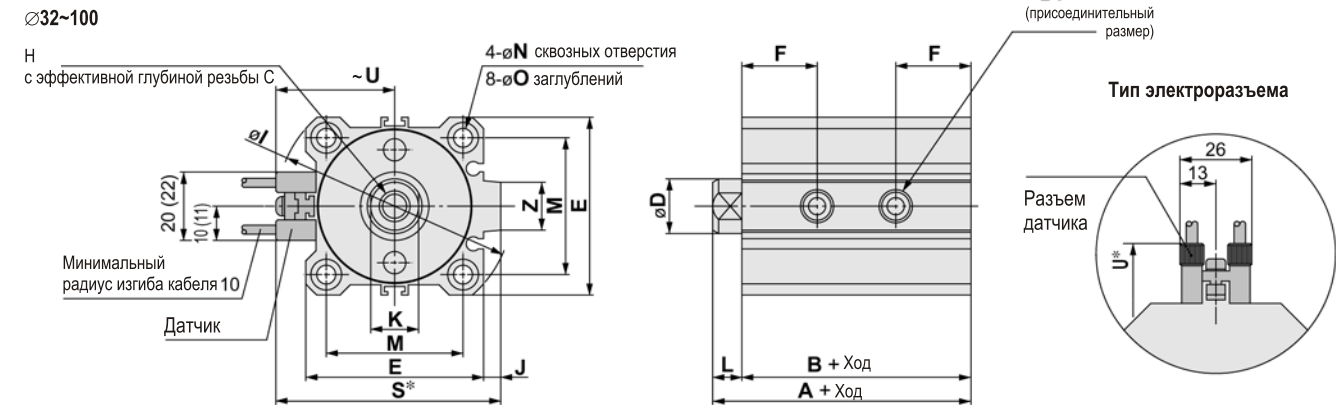
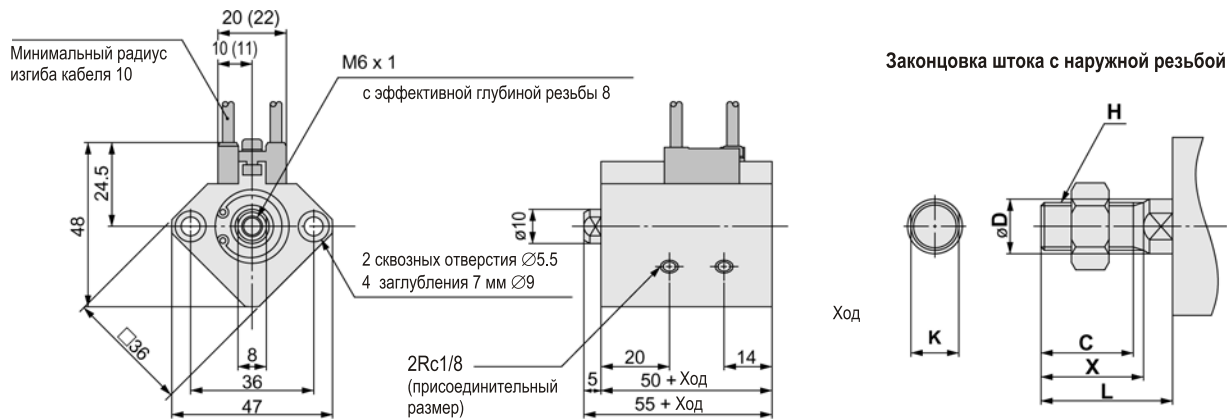
Компактный гидравлический цилиндр низкого давления

СНҚ

Размеры

СНҚ

Ø20



\* Размеры S и U для разъемов датчиков типа D-A7C, D-A80C и D-J79C на 7 мм больше

Примечания:

На рисунках показаны герконовые датчики D-A7 и D-A8.

Величины, указанные в скобках относятся к типам датчиков, отличающихся от D-A7 и D-A8.

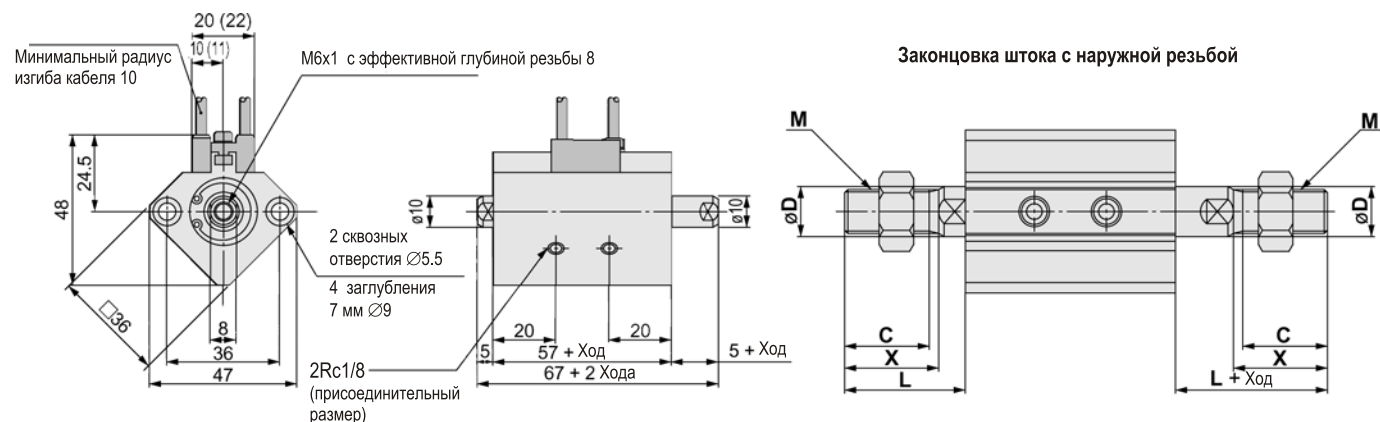
| Ø (мм) | A    | B  | C  | D  | E   | F  | H   | I   | J   | K  | L   | M  | N   | O (глубина) | S     | P      | U    | Z  |
|--------|------|----|----|----|-----|----|-----|-----|-----|----|-----|----|-----|-------------|-------|--------|------|----|
| 32     | 73.5 | 65 | 12 | 16 | 45  | 20 | M10 | 60  | 4.5 | 14 | 8.5 | 34 | 5.5 | 9 (7)       | 58.5  | Rc 1/8 | 31.5 | 14 |
| 40     | 75.5 | 67 | 12 | 16 | 52  | 22 | M10 | 69  | 5   | 14 | 8.5 | 40 | 5.5 | 9 (7)       | 66    | Rc 1/8 | 35   | 14 |
| 50     | 87   | 76 | 15 | 20 | 64  | 25 | M12 | 86  | 7   | 18 | 11  | 50 | 6.6 | 11 (8)      | 80    | Rc 1/4 | 41   | 19 |
| 63     | 91   | 80 | 15 | 20 | 77  | 27 | M12 | 103 | 7   | 18 | 11  | 60 | 9   | 14 (10.5)   | 93    | Rc 1/4 | 47.5 | 19 |
| 80     | 100  | 89 | 20 | 25 | 98  | 28 | M16 | 132 | 6   | 22 | 11  | 77 | 11  | 17.5 (13.5) | 112.5 | Rc 3/8 | 57.5 | 26 |
| 100    | 107  | 95 | 24 | 30 | 117 | 29 | M20 | 156 | 6.5 | 26 | 12  | 94 | 11  | 17.5 (13.5) | 132.5 | Rc 3/8 | 67.5 | 26 |

Законцовка штока с наружной резьбой

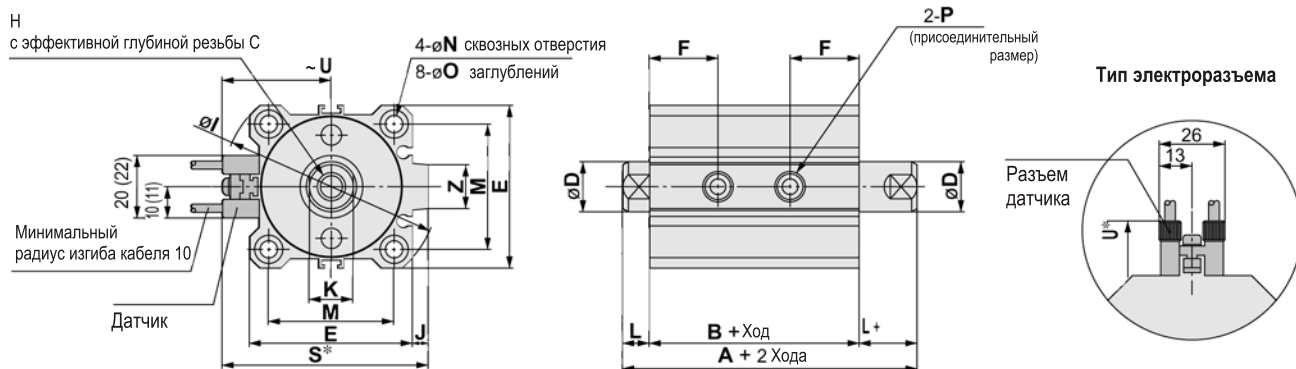
| Ø (мм) | C    | X  | D  | H   | L    | K  |
|--------|------|----|----|-----|------|----|
| 20     | 15.5 | 18 | 10 | M8  | 23   | 8  |
| 32     | 27   | 30 | 16 | M14 | 38.5 | 14 |
| 40     | 27   | 30 | 16 | M14 | 38.5 | 14 |
| 50     | 32   | 35 | 20 | M18 | 46   | 18 |
| 63     | 32   | 35 | 20 | M18 | 46   | 18 |
| 80     | 37   | 40 | 25 | M22 | 51   | 22 |
| 100    | 37   | 40 | 30 | M26 | 52   | 26 |

### CHQW

Ø20



Ø32~100



\* Размеры S и U для разъемов датчиков типа D-A7C, D-A80C и D-J79C на 7 мм больше

### Примечания:

На рисунках показаны герконовые датчики D-A7 и D-A8.

Величины, указанные в скобках относятся к типам датчиков, отличающихся от D-A7 и D-A8.

| Ø (мм) | A   | B  | C  | D  | E   | F  | H   | I   | J   | K  | L   | M  | N   | О (глубина) | S     | P      | U    | Z  |
|--------|-----|----|----|----|-----|----|-----|-----|-----|----|-----|----|-----|-------------|-------|--------|------|----|
| 32     | 82  | 65 | 12 | 16 | 45  | 20 | M10 | 60  | 4.5 | 14 | 8.5 | 34 | 5.5 | 9 (7)       | 58.5  | Rc 1/8 | 31.5 | 14 |
| 40     | 84  | 67 | 12 | 16 | 52  | 22 | M10 | 69  | 5   | 14 | 8.5 | 40 | 5.5 | 9 (7)       | 66    | Rc 1/8 | 35   | 14 |
| 50     | 98  | 76 | 15 | 20 | 64  | 25 | M12 | 86  | 7   | 18 | 11  | 50 | 6.6 | 11 (8)      | 80    | Rc 1/4 | 41   | 19 |
| 63     | 102 | 80 | 15 | 20 | 77  | 27 | M12 | 103 | 7   | 18 | 11  | 60 | 9   | 14 (10.5)   | 93    | Rc 1/4 | 47.5 | 19 |
| 80     | 111 | 89 | 20 | 25 | 98  | 28 | M16 | 132 | 6   | 22 | 11  | 77 | 11  | 17.5 (13.5) | 112.5 | Rc 3/8 | 57.5 | 26 |
| 100    | 119 | 95 | 24 | 30 | 117 | 29 | M20 | 156 | 6.5 | 26 | 12  | 94 | 11  | 17.5 (13.5) | 132.5 | Rc 3/8 | 67.5 | 26 |

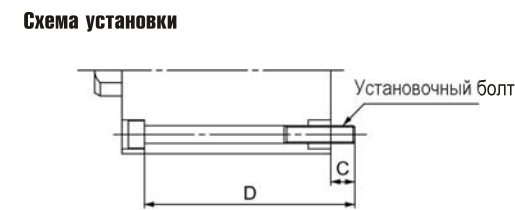
### Законцовка штока с наружной резьбой

| Ø (мм) | C    | X  | D  | H   | L    | K  |
|--------|------|----|----|-----|------|----|
| 20     | 15.5 | 18 | 10 | M8  | 23   | 8  |
| 32     | 27   | 30 | 16 | M14 | 38.5 | 14 |
| 40     | 27   | 30 | 16 | M14 | 38.5 | 14 |
| 50     | 32   | 35 | 20 | M18 | 46   | 18 |
| 63     | 32   | 35 | 20 | M18 | 46   | 18 |
| 80     | 37   | 40 | 25 | M22 | 51   | 22 |
| 100    | 37   | 40 | 30 | M26 | 52   | 26 |

# Компактный гидравлический цилиндр низкого давления

## CHQ

### Установочные болты для CHQB и CHQWB



| Модель        | C | D   | Установочный болт | Модель         | C  | D   | Установочный болт |
|---------------|---|-----|-------------------|----------------|----|-----|-------------------|
| CHQB20-5D(M)  | 7 | 55  | M5x55/            | CHQWB20-5D(M)  | 10 | 65  | M5x65/            |
| CHQB20-10D(M) |   | 60  | M5x60/            | CHQWB20-10D(M) |    | 70  | M5x70/            |
| CHQB20-15D(M) |   | 65  | M5x65/            | CHQWB20-15D(M) |    | 75  | M5x75/            |
| CHQB20-20D(M) |   | 70  | M5x70/            | CHQWB20-20D(M) |    | 80  | M5x80/            |
| CHQB20-25D(M) |   | 75  | M5x75/            | CHQWB20-25D(M) |    | 85  | M5x85/            |
| CHQB20-30D(M) |   | 80  | M5x80/            | CHQWB20-30D(M) |    | 90  | M5x90/            |
| CHQB20-35D(M) |   | 85  | M5x85/            | CHQWB20-35D(M) |    | 95  | M5x95/            |
| CHQB20-40D(M) |   | 90  | M5x90/            | CHQWB20-40D(M) |    | 100 | M5x100/           |
| CHQB20-45D(M) |   | 95  | M5x95/            | CHQWB20-45D(M) |    | 105 | M5x105/           |
| CHQB20-50D(M) |   | 100 | M5x100/           | CHQWB20-50D(M) |    | 110 | M5x110/           |

| Модель            | C   | D   | Установочный болт | Модель                        | C   | D   | Установочный болт |
|-------------------|-----|-----|-------------------|-------------------------------|-----|-----|-------------------|
| CHQ(W)B32-5D(M)   | 7   | 70  | M5x70/            | CHQB40-5D(M)<br>CHQWB40-5D(M) | 10  | 75  | M5x75/<br>M5x70/  |
| CHQ(W)B32-10D(M)  |     | 75  | M5x75/            | CHQ(W)B40-10D(M)              |     | 80  | M5x80/            |
| CHQ(W)B32-15D(M)  |     | 80  | M5x80/            | CHQ(W)B40-15D(M)              |     | 85  | M5x85/            |
| CHQ(W)B32-20D(M)  |     | 85  | M5x85/            | CHQ(W)B40-20D(M)              |     | 90  | M5x90/            |
| CHQ(W)B32-25D(M)  |     | 90  | M5x90/            | CHQ(W)B40-25D(M)              |     | 95  | M5x95/            |
| CHQ(W)B32-30D(M)  |     | 95  | M5x95/            | CHQ(W)B40-30D(M)              |     | 100 | M5x100/           |
| CHQ(W)B32-35D(M)  |     | 100 | M5x100/           | CHQ(W)B40-35D(M)              |     | 105 | M5x105/           |
| CHQ(W)B32-40D(M)  |     | 105 | M5x105/           | CHQ(W)B40-40D(M)              |     | 110 | M5x110/           |
| CHQ(W)B32-45D(M)  |     | 110 | M5x110/           | CHQ(W)B40-45D(M)              |     | 115 | M5x115/           |
| CHQ(W)B32-50D(M)  |     | 115 | M5x115/           | CHQ(W)B40-50D(M)              |     | 120 | M5x120/           |
| CHQ(W)B32-75D(M)  | 140 | 140 | M5x140/           | CHQ(W)B40-75D(M)              | 145 | 145 | M5x145/           |
| CHQ(W)B32-100D(M) |     | 165 | M5x165/           | CHQ(W)B40-100D(M)             |     | 170 | M5x170/           |

| Модель            | C   | D   | Установочный болт | Модель            | C    | D   | Установочный болт |
|-------------------|-----|-----|-------------------|-------------------|------|-----|-------------------|
| CHQ(W)B50-10D(M)  | 12  | 90  | M6x90/            | CHQ(W)B63-10D(M)  | 15.5 | 95  | M8x95/            |
| CHQ(W)B50-15D(M)  |     | 95  | M6x95/            | CHQ(W)B63-15D(M)  |      | 100 | M8x100/           |
| CHQ(W)B50-20D(M)  |     | 100 | M6x100/           | CHQ(W)B63-20D(M)  |      | 105 | M8x105/           |
| CHQ(W)B50-25D(M)  |     | 105 | M6x105/           | CHQ(W)B63-25D(M)  |      | 110 | M8x110/           |
| CHQ(W)B50-30D(M)  |     | 110 | M6x110/           | CHQ(W)B63-30D(M)  |      | 115 | M8x115/           |
| CHQ(W)B50-35D(M)  |     | 115 | M6x115/           | CHQ(W)B63-35D(M)  |      | 120 | M8x120/           |
| CHQ(W)B50-40D(M)  |     | 120 | M6x120/           | CHQ(W)B63-40D(M)  |      | 125 | M8x125/           |
| CHQ(W)B50-45D(M)  |     | 125 | M6x125/           | CHQ(W)B63-45D(M)  |      | 130 | M8x130/           |
| CHQ(W)B50-50D(M)  |     | 130 | M6x130/           | CHQ(W)B63-50D(M)  |      | 135 | M8x135/           |
| CHQ(W)B50-75D(M)  | 155 | 155 | M6x155/           | CHQ(W)B63-75D(M)  | 160  | 160 | M8x160/           |
| CHQ(W)B50-100D(M) |     | 180 | M6x180/           | CHQ(W)B63-100D(M) |      | 185 | M8x185/           |

| Модель            | C    | D   | Установочный болт | Модель             | C    | D   | Установочный болт |
|-------------------|------|-----|-------------------|--------------------|------|-----|-------------------|
| CHQ(W)B80-10D(M)  | 14.5 | 100 | M10x100/          | CHQ(W)B100-10D(M)  | 13.5 | 105 | M10x105/          |
| CHQ(W)B80-15D(M)  |      | 105 | M10x105/          | CHQ(W)B100-15D(M)  |      | 110 | M10x110/          |
| CHQ(W)B80-20D(M)  |      | 110 | M10x110/          | CHQ(W)B100-20D(M)  |      | 115 | M10x115/          |
| CHQ(W)B80-25D(M)  |      | 115 | M10x115/          | CHQ(W)B100-25D(M)  |      | 120 | M10x120/          |
| CHQ(W)B80-30D(M)  |      | 120 | M10x120/          | CHQ(W)B100-30D(M)  |      | 125 | M10x125/          |
| CHQ(W)B80-35D(M)  |      | 125 | M10x125/          | CHQ(W)B100-35D(M)  |      | 130 | M10x130/          |
| CHQ(W)B80-40D(M)  |      | 130 | M10x130/          | CHQ(W)B100-40D(M)  |      | 135 | M10x135/          |
| CHQ(W)B80-45D(M)  |      | 135 | M10x135/          | CHQ(W)B100-45D(M)  |      | 140 | M10x140/          |
| CHQ(W)B80-50D(M)  |      | 140 | M10x140/          | CHQ(W)B100-50D(M)  |      | 145 | M10x145/          |
| CHQ(W)B80-75D(M)  | 165  | 165 | M10x165/          | CHQ(W)B100-75D(M)  | 170  | 170 | M10x170/          |
| CHQ(W)B80-100D(M) |      | 190 | M10x190/          | CHQ(W)B100-100D(M) |      | 195 | M10x195/          |

### Указания по монтажу цилиндров

- При монтаже цилиндра используйте шестигранные торцевые ключи класса прочности 10.9 или выше (Ø20 - 2 шт., Ø32-Ø100 - 4 шт.).
- Устанавливайте сборочно-монтажное приспособление таким образом, чтобы боковая нагрузка не действовала на шток поршня
- Убедитесь в том, что длина свинчивания штока и присоединенной к нему детали составляет не менее 80% от диаметра резьбы (внутренней или наружной)
- В начальный период эксплуатации цилиндра убедитесь в том, что воздух выпущен из полостей цилиндра и трубопроводов.  
После полного выпуска воздуха сначала нагрузите цилиндр пониженным давлением, а затем постепенно повышайте его до номинального рабочего уровня
- Поскольку гидроцилиндры серии CHQ не имеют отверстия для выпуска воздуха, сбрасывайте воздух через другие элементы (трубопроводы и т.п.)
- При монтаже цилиндра с помощью установочных болтов используйте момент затяжки в соответствии с таблицей:

| Моменты затяжки установочных болтов |            | 20 | 32 | 40 | 50 | 63   | 80  | 100 |
|-------------------------------------|------------|----|----|----|----|------|-----|-----|
| Диаметр цилиндра (мм)               | Размер     | M5 | M5 | M5 | M6 | M8   | M10 | M10 |
|                                     | Количество | 2  | 4  | 4  | 4  | 4    | 4   | 4   |
| Момент затяжки (Н·м)                |            | 3  | 3  | 3  | 6  | 11.5 | 24  | 34  |

### Датчики положения

#### Применяемые датчики

| Обозн. | Тип         | Крепление | Эл.вход        | Световая индикация | Выход               | Рабочее напряжение (В) |      | Характер нагрузки |
|--------|-------------|-----------|----------------|--------------------|---------------------|------------------------|------|-------------------|
|        |             |           |                |                    |                     | DC                     | AC   |                   |
| D-A73L | Герконовый  | На рельсе | Кабель залитый | Есть               | 2-х проводной       | 24                     | 110  | Реле, ПЛК         |
| D-A80L |             | Прямое    |                | Нет                |                     |                        | <110 |                   |
| D-A90L |             |           |                | Нет                |                     |                        | <110 |                   |
| D-A93L |             |           |                | Есть               |                     |                        | 110  |                   |
| D-F7PL | Электронный | На рельсе |                | Есть               | 3-х проводной р-н-р | 5, 12, 24              | -    |                   |
| D-J79L |             |           |                | Есть               | 2-х проводной       | 12, 24                 |      |                   |

#### Номер для заказа крепления датчика

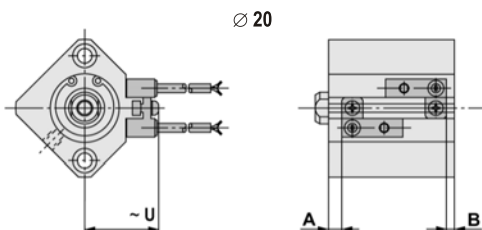
| Ø (мм)                  | Примечания                                                | Номер | Номер датчика положения |                  |
|-------------------------|-----------------------------------------------------------|-------|-------------------------|------------------|
|                         |                                                           |       | Герконовый              | Электронный      |
| 20                      | - установочный винт (M3x0.5x8/)<br>- гайка четырехгранная | BQ-1  | D-A73L<br>D-A80L        | D-F7PL<br>D-J79L |
| 32, 40, 50, 63, 80, 100 | - установочный винт (M3x0.5x8/)<br>- распорка; - гайка    | BQ-2  |                         |                  |

#### Минимальная длина хода (мм) при использовании датчиков положения

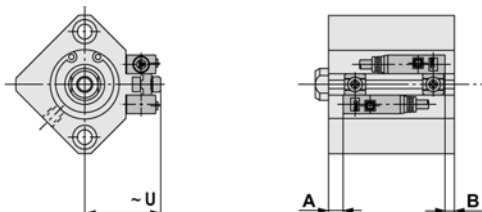
| Количество датчиков | D-A73L, D-A80L, D-A90L, D-A93L | D-F7PL, D-J79L |
|---------------------|--------------------------------|----------------|
| 1 шт.               | 5                              | 10             |
| 2 шт.               | 10                             | 10             |

#### Монтаж датчиков

D-A73L, D-A80L



D-F7PL, D-J79L



#### Размеры

| Ø (мм) |      | D-A73L, D-A80L |      | D-F7PL, D-J79L |      | D-A90L, D-A93L |      |
|--------|------|----------------|------|----------------|------|----------------|------|
|        |      | A              | B    | A              | B    | A              | B    |
| 20     | CHQ  | 20,5           | 11,5 | 21             | 12   | -              | -    |
|        | CHQW | 20,5           | 18,5 | 21             | 19   | -              | -    |
| 32     | CHQ  | 27             | 20   | 27,5           | 20,5 | 26             | 19   |
|        | CHQW | 25,5           | 21,5 | 26             | 22   | 24,5           | 20,5 |
| 40     | CHQ  | 26             | 23   | 26,5           | 23,5 | 25             | 22   |
|        | CHQW | 27,5           | 21,5 | 28             | 22   | 26,5           | 20,5 |
| 50     | CHQ  | 33,5           | 24,5 | 34             | 25   | 32,5           | 23,5 |
|        | CHQW | 33,5           | 24,5 | 34             | 25   | 32,5           | 23,5 |
| 63     | CHQ  | 33,5           | 28,5 | 34             | 29   | 32,5           | 27,5 |
|        | CHQW | 35,5           | 26,5 | 36             | 27   | 34,5           | 25,5 |
| 80     | CHQ  | 40,5           | 30   | 41             | 30,5 | 39,5           | 29   |
|        | CHQW | 40,5           | 30,5 | 41             | 31   | 39,5           | 29,5 |
| 100    | CHQ  | 44,5           | 32,5 | 45             | 33   | 43,5           | 31,5 |
|        | CHQW | 44,5           | 32,5 | 45             | 33   | 43,5           | 31,5 |

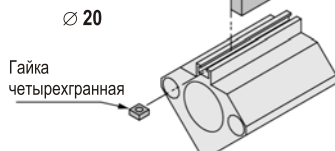
#### Размер U (мм)

| Ø (мм) | D-A73L, D-A80L | D-F7PL, D-J79L |
|--------|----------------|----------------|
| 20     | 24,5           | 25,5           |
| 32     | 31,5           | 32,5           |
| 40     | 35             | 36             |
| 50     | 41             | 42             |
| 63     | 47,5           | 48,5           |
| 80     | 57,5           | 58,5           |
| 100    | 67,5           | 68,5           |

Винт установочный (M3 x 0.5 x 8/)

Ø 20

Гайка четырехгранная

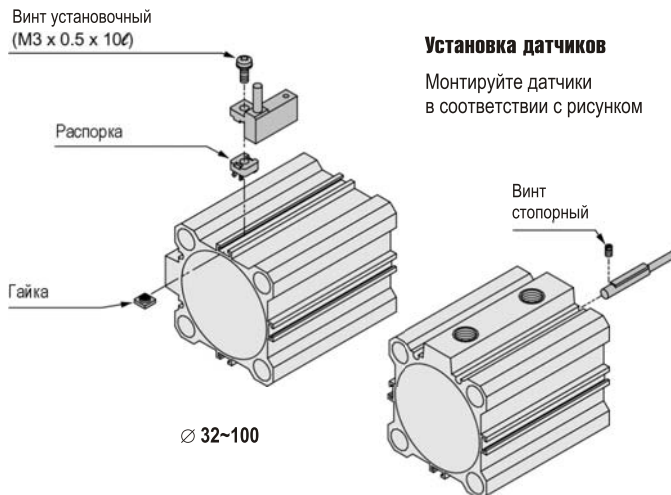


Винт установочный (M3 x 0.5 x 10/)

Распорка

Гайка

Ø 32~100



#### Установка датчиков

Монтируйте датчики в соответствии с рисунком



# Компактный гидравлический цилиндр высокого давления

## CHK

Ø20 ~100

10 / 16 МПа

- Легкий и компактный алюминиевый корпус
- Возможность установки датчиков положения, при этом продольный габаритный размер не увеличивается
- Широкий диапазон рабочих давлений, диаметров цилиндра и стандартных длин хода.
- Водозащищенное исполнение
- Исполнение с клапаном выпуска воздуха

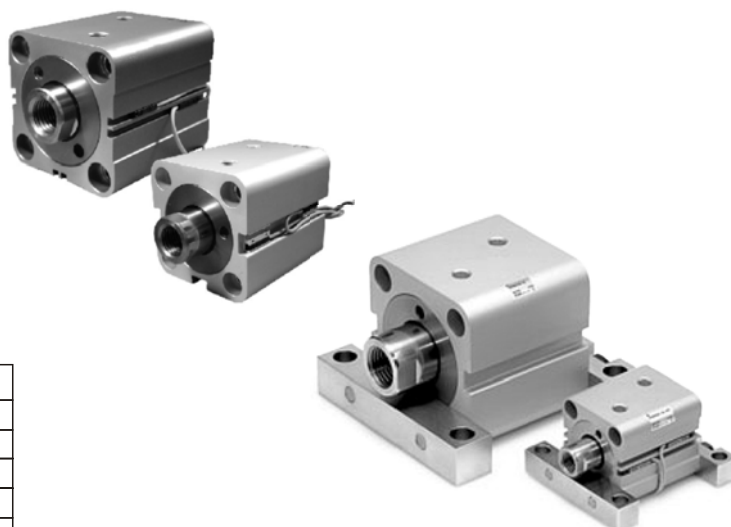
### Технические характеристики

| Модель                                | CHKDB                      | CHKGB    |
|---------------------------------------|----------------------------|----------|
| Среда                                 | Гидравлическая жидкость    |          |
| Номинальное давление (МПа)            | 10                         | 16       |
| Испытательное давления (МПа)          | 15                         | 24       |
| Максимальн. допустимое давление (МПа) | 13                         | 16       |
| Минимальн. рабочее давление (МПа)     | 0,3                        |          |
| Рабочая температура (°C)              | Без датчиков положения     | -10 ~ 80 |
|                                       | С датчиками положения      | -10 ~ 60 |
| Скорость поршня (мм/с)                | 8 ~ 100                    |          |
| Демпфирование                         | Нет                        |          |
| Резьба на штоке                       | Внутренняя/наружная резьба |          |
| Допуск на длину хода (мм)             | 0~+0,8                     |          |

### Стандартные длины хода

| Диаметр цилиндра (мм) | Стандартные длины хода (мм)                    |
|-----------------------|------------------------------------------------|
| 20, 25                | 5, 10, 15, 20, 25, 30, 35, 40, 45, 50          |
| 32                    | 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 75      |
| 40, 50, 63, 80, 100   | 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 75, 100 |

Цилиндры с промежуточными значениями длины хода поставляются по запросу

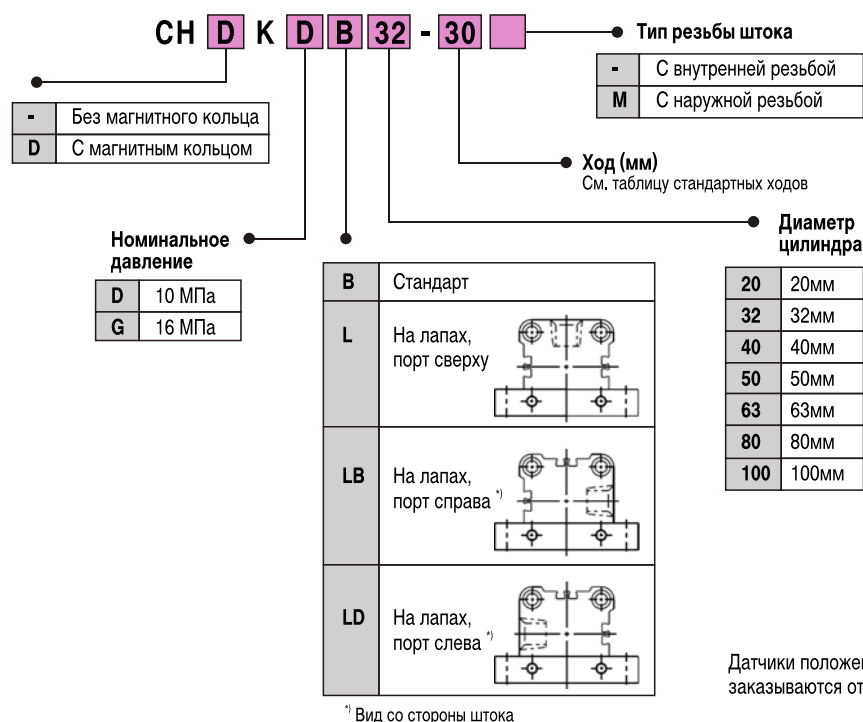


### Совместимость с гидравлическими жидкостями

| Гидравлическая жидкость    | Совместимость |
|----------------------------|---------------|
| Минеральные гидравл. масла | Совместимы    |
| Эмульсии «Вода в масле»    |               |
| Эмульсии «Масло в воде»    |               |
| Водно-гликолевые жидкости  | *             |
| Фосфаты                    | Несовместимы  |

\* информацию можно получить по запросу

### Номер для заказа





### Номинальные усилия (Н)

| Ø (мм) | Ø штока (мм) | Направление перемещения | Площадь поршня (мм²) | Рабочее давление (МПа) |       |       |         |
|--------|--------------|-------------------------|----------------------|------------------------|-------|-------|---------|
|        |              |                         |                      | 3.5                    | 7     | 10    | 16      |
| 20     | 12           | выдвижение              | 314                  | 1099                   | 2198  | 3140  | 5024*   |
|        |              | втягивание              | 201                  | 704                    | 1407  | 2010  | 3216*   |
| 25     | 14           | выдвижение              | 490                  | 1715                   | 3430  | 4900  | 7840*   |
|        |              | втягивание              | 336                  | 1176                   | 2352  | 3360  | 5376*   |
| 32     | 18           | выдвижение              | 804                  | 2814                   | 5628  | 8040  | 12864*  |
|        |              | втягивание              | 549                  | 1922                   | 3843  | 5490  | 8784*   |
| 40     | 22.4         | выдвижение              | 1256                 | 4396                   | 8792  | 12560 | 20096*  |
|        |              | втягивание              | 862                  | 3017                   | 6034  | 8620  | 13792*  |
| 50     | 28           | выдвижение              | 1963                 | 6871                   | 13741 | 19630 | 31408*  |
|        |              | втягивание              | 1347                 | 4715                   | 9429  | 13470 | 21552*  |
| 63     | 35.5         | выдвижение              | 3117                 | 10910                  | 21819 | 31170 | 49872*  |
|        |              | втягивание              | 2127                 | 7445                   | 14889 | 21270 | 34032*  |
| 80     | 45           | выдвижение              | 5026                 | 17591                  | 35182 | 50260 | 80416*  |
|        |              | втягивание              | 3436                 | 12026                  | 24052 | 34360 | 54976*  |
| 100    | 56           | выдвижение              | 7853                 | 27486                  | 54971 | 78530 | 125648* |
|        |              | втягивание              | 5390                 | 18865                  | 37730 | 53900 | 86240*  |

\* Только для серии CHKG

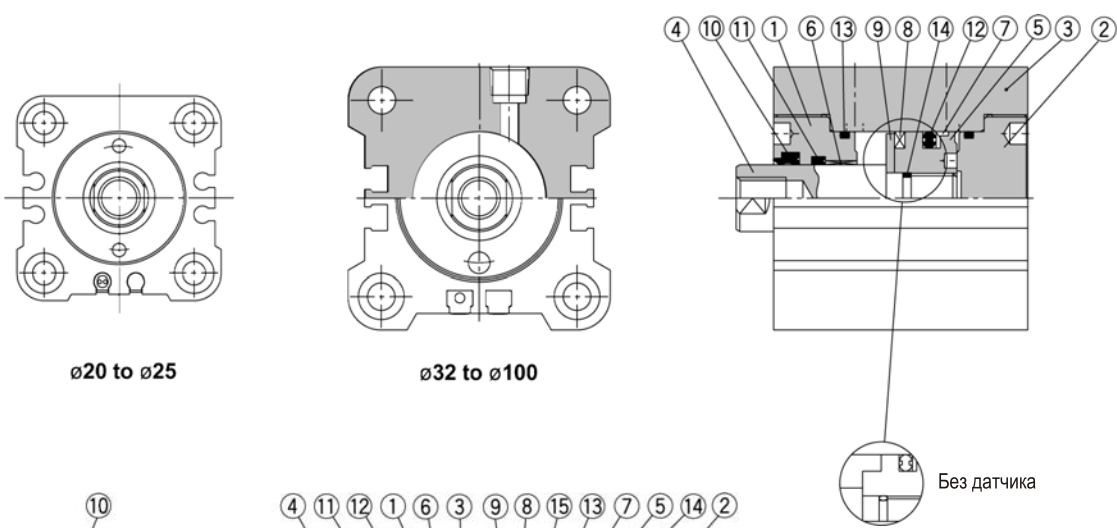
### Масса цилиндров (г)

| Ø (мм) |      | Стандартная длина хода |      |      |      |      |      |      |      |      |      |       |       |
|--------|------|------------------------|------|------|------|------|------|------|------|------|------|-------|-------|
|        |      | 5                      | 10   | 15   | 20   | 25   | 30   | 35   | 40   | 45   | 50   | 75    | 100   |
| 20     | CHKD | 218                    | 240  | 262  | 282  | 304  | 326  | 348  | 370  | 392  | 414  | -     | -     |
|        | CHKG | 221                    | 242  | 263  | 284  | 305  | 326  | 347  | 368  | 389  | 410  | -     | -     |
| 25     | CHKD | 299                    | 327  | 355  | 383  | 411  | 439  | 467  | 495  | 523  | 551  | -     | -     |
|        | CHKG | 312                    | 339  | 366  | 393  | 420  | 447  | 474  | 501  | 528  | 555  | -     | -     |
| 32     | CHKD | 515                    | 558  | 601  | 644  | 687  | 730  | 773  | 816  | 859  | 902  | 1117  | -     |
|        | CHKG | 581                    | 625  | 669  | 713  | 757  | 801  | 845  | 889  | 933  | 977  | 1197  | -     |
| 40     | CHKD | 729                    | 784  | 839  | 894  | 949  | 1004 | 1059 | 1114 | 1161 | 1224 | 1499  | 1774  |
|        | CHKG | 927                    | 989  | 1045 | 1104 | 1163 | 1222 | 1281 | 1340 | 1399 | 1458 | 1753  | 2048  |
| 50     | CHKD | 1065                   | 1139 | 1213 | 1287 | 1361 | 1435 | 1509 | 1583 | 1657 | 1731 | 2101  | 2471  |
|        | CHKG | 1351                   | 1430 | 1509 | 1588 | 1667 | 1746 | 1825 | 1904 | 1983 | 2062 | 2457  | 2852  |
| 63     | CHKD | 1773                   | 1862 | 1991 | 2100 | 2209 | 2318 | 2427 | 2536 | 2645 | 2754 | 3299  | 3844  |
|        | CHKG | 1813                   | 1936 | 2059 | 2182 | 2305 | 2428 | 2551 | 2674 | 2797 | 2920 | 3535  | 4150  |
| 80     | CHKD | 3216                   | 3379 | 3542 | 3868 | 4031 | 4194 | 4357 | 4520 | 4683 | 4846 | 5661  | 6476  |
|        | CHKG | 3870                   | 4053 | 4236 | 4419 | 4602 | 4785 | 4968 | 5151 | 5334 | 5517 | 6432  | 7347  |
| 100    | CHKD | 6142                   | 6384 | 6626 | 6868 | 7110 | 7352 | 7594 | 7836 | 8078 | 8320 | 9530  | 10740 |
|        | CHKG | 7188                   | 7457 | 7726 | 7995 | 8264 | 8533 | 8802 | 9071 | 9340 | 9609 | 10954 | 12299 |

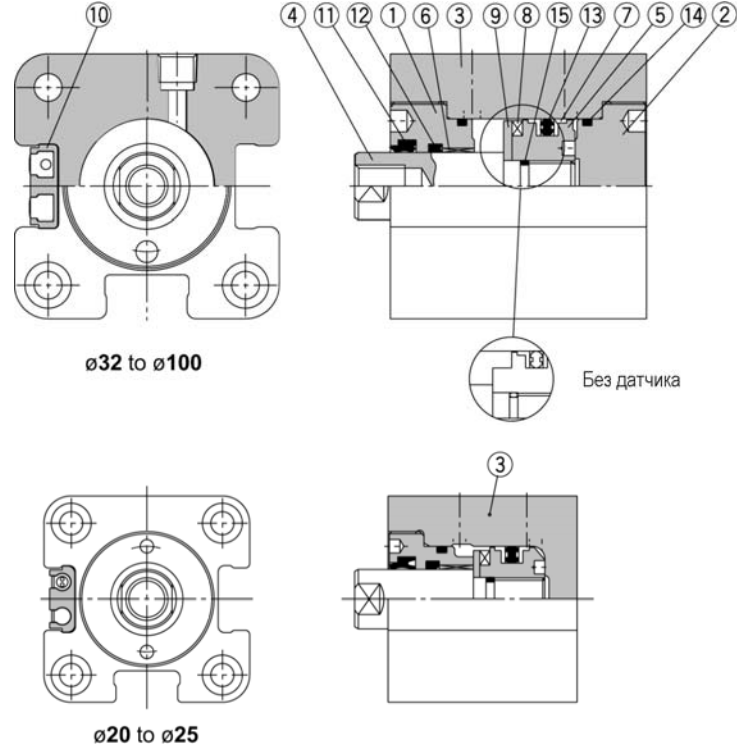
# Компактный гидравлический цилиндр высокого давления СНК

## Конструкция

СНКD



СНКГ



### Спецификация

| Позиция |      | Наименование                   | Материал                      | Примечания                       |
|---------|------|--------------------------------|-------------------------------|----------------------------------|
| СНКD    | СНКГ |                                |                               |                                  |
| 1       |      | Крышка штоковая                | Алюминиевый сплав             | Чернение                         |
| 2       |      | Крышка задняя                  |                               | анодированием                    |
| 3       |      | Гильза цилиндра                |                               | Анодирование                     |
| 4       |      | Шток                           | ø20~25<br>Нержавеющая сталь   | Хромирование<br>(гальваническое) |
|         |      |                                | ø32~100<br>Углеродистая сталь |                                  |
| 5       |      | Поршень                        | Нержавеющая сталь             |                                  |
| 6       |      | Вкладыш направляющий           | Медный сплав                  |                                  |
| 7       |      | Манжета                        | Пластик                       |                                  |
| 8       |      | Магнит                         | -                             | Только с датчиками               |
| 9       |      | Пластина магнита               | Нержавеющая сталь             | Только с датчиками               |
| -       | 10   | Установочный кронштейн датчика | Алюминиевый сплав             | Только с датчиками               |
| 10      | 11   | Грязеъемное кольцо             | NBR                           |                                  |
| 11      | 12   | Уплотнение штока               |                               | С манжетой (СНКГ)                |
| 12      | 13   | Уплотнение цилиндра            |                               |                                  |
| 13      | 14   | Прокладка гильзы               |                               |                                  |
| 14      | 15   | Прокладка поршня               |                               |                                  |

### Рекомплеты

| Ø<br>(мм) | Номер для заказа |            |
|-----------|------------------|------------|
|           | СНКD             | СНКГ       |
| 20        | СНКD20-PS        | СНКГ20-PS  |
| 25        | СНКD25-PS        | СНКГ25-PS  |
| 32        | СНКD32-PS        | СНКГ32-PS  |
| 40        | СНКD40-PS        | СНКГ40-PS  |
| 50        | СНКD50-PS        | СНКГ50-PS  |
| 63        | СНКD63-PS        | СНКГ63-PS  |
| 80        | СНКD80-PS        | СНКГ80-PS  |
| 100       | СНКD100-PS       | СНКГ100-PS |

\* Ремкомплект содержит уплотнения (СНКD: поз. 7, 10 - 13, СНКГ: поз. 7, 11 - 14) и может быть заказан для каждого из указанных диаметров цилиндров.

### Размеры

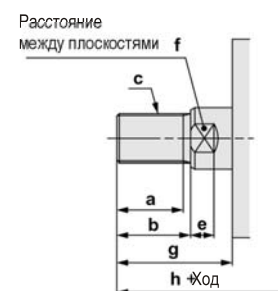
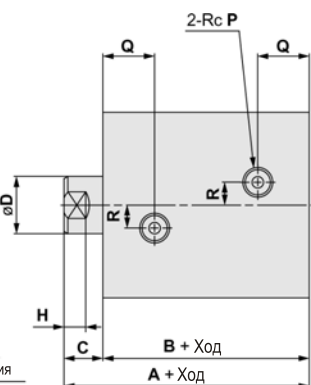
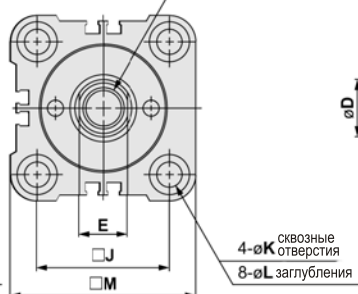
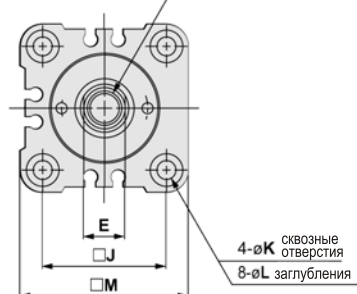
СНКD

Ø 20

Ø 32~100

F с эффективной глубиной резьбы G

F с эффективной глубиной резьбы G

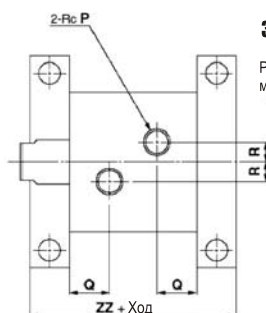
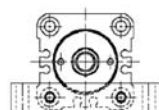


### Законцовка штока с наружной резьбой

| Ø (мм) | A   | B  | C  | D    | E  | F   | G  | H  | J   | K   | L (глубина) | M   | P   | Q    | R  |
|--------|-----|----|----|------|----|-----|----|----|-----|-----|-------------|-----|-----|------|----|
| 20     | 51  | 43 | 8  | 12   | 10 | M8  | 10 | 6  | 30  | 5.5 | 9.5 (5.4)   | 43  | 1/8 | 16.5 | 6  |
| 25     | 53  | 45 | 8  | 14   | 12 | M10 | 12 | 6  | 36  | 5.5 | 9.5 (5.4)   | 49  | 1/8 | 17   | 8  |
| 32     | 61  | 51 | 10 | 18   | 14 | M12 | 15 | 7  | 47  | 6.6 | 11 (6.5)    | 63  | 1/4 | 19.5 | 10 |
| 40     | 65  | 55 | 10 | 22.4 | 19 | M16 | 20 | 7  | 52  | 9   | 14 (8.6)    | 71  | 1/4 | 20.5 | 10 |
| 50     | 71  | 60 | 11 | 28   | 24 | M20 | 24 | 8  | 58  | 11  | 17.5 (10.8) | 81  | 1/4 | 22   | 10 |
| 63     | 80  | 67 | 13 | 35.5 | 30 | M27 | 33 | 9  | 69  | 13  | 20 (13)     | 97  | 1/4 | 25.5 | 15 |
| 80     | 95  | 78 | 17 | 45   | 41 | M30 | 36 | 14 | 86  | 15  | 23 (15.5)   | 117 | 3/8 | 30   | 15 |
| 100    | 122 | 96 | 26 | 56   | 50 | M39 | 45 | 21 | 106 | 17  | 26 (17.5)   | 142 | 3/8 | 36   | 15 |

| Ø (мм) | a  | b  | c        | e  | f  | g   | h   |
|--------|----|----|----------|----|----|-----|-----|
| 20     | 11 | 15 | M10x1.25 | 6  | 10 | 23  | 66  |
| 25     | 14 | 18 | M12x1.25 | 6  | 12 | 26  | 71  |
| 32     | 21 | 25 | M16x1.5  | 7  | 14 | 35  | 86  |
| 40     | 26 | 30 | M20x1.5  | 7  | 19 | 40  | 95  |
| 50     | 31 | 35 | M24x1.5  | 8  | 24 | 46  | 106 |
| 63     | 41 | 45 | M30x1.5  | 9  | 30 | 58  | 125 |
| 80     | 56 | 60 | M39x1.5  | 14 | 41 | 77  | 155 |
| 100    | 71 | 75 | M48x1.5  | 21 | 50 | 101 | 197 |

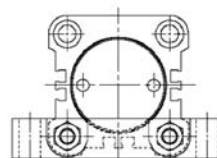
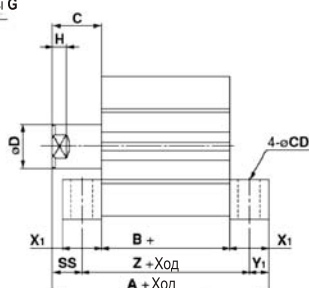
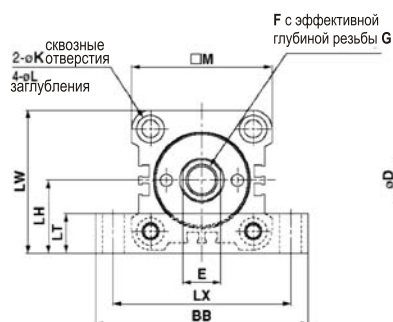
СНКDL



### Законцовка штока с наружной резьбой



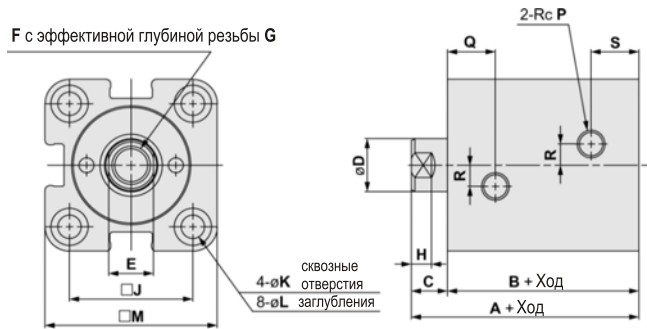
| Ø (мм) | a  | b  | c        | e  | f  | g   | h   |
|--------|----|----|----------|----|----|-----|-----|
| 20     | 11 | 15 | M10x1.25 | 6  | 10 | 33  | 91  |
| 25     | 14 | 18 | M12x1.25 | 6  | 12 | 36  | 96  |
| 32     | 21 | 25 | M16x1.5  | 7  | 14 | 44  | 111 |
| 40     | 26 | 30 | M20x1.5  | 7  | 19 | 53  | 128 |
| 50     | 31 | 35 | M24x1.5  | 8  | 24 | 62  | 146 |
| 63     | 41 | 45 | M30x1.5  | 9  | 30 | 78  | 175 |
| 80     | 56 | 60 | M39x1.5  | 14 | 41 | 98  | 221 |
| 100    | 71 | 75 | M48x1.5  | 21 | 50 | 118 | 254 |



| Ø (мм) | A   | B  | BB  | C  | CD  | D    | E  | F   | G  | H  | K   | L (глубина) | LH | LT | LX  | LW    | M   | P   | Q    | R  | SS   | X1 | Y1   | Z   | ZZ  |
|--------|-----|----|-----|----|-----|------|----|-----|----|----|-----|-------------|----|----|-----|-------|-----|-----|------|----|------|----|------|-----|-----|
| 20     | 76  | 43 | 70  | 18 | 6.6 | 12   | 10 | M8  | 10 | 6  | 5.5 | 9.5 (5.4)   | 23 | 15 | 58  | 44.5  | 43  | 1/8 | 16.5 | 6  | 10.5 | 15 | 7.5  | 58  | 73  |
| 25     | 78  | 45 | 76  | 18 | 6.6 | 14   | 12 | M10 | 12 | 6  | 5.5 | 9.5 (5.4)   | 26 | 15 | 64  | 50.5  | 49  | 1/8 | 17   | 8  | 10.5 | 15 | 7.5  | 60  | 75  |
| 32     | 86  | 51 | 94  | 19 | 9   | 18   | 14 | M12 | 15 | 7  | 6.6 | 11 (6.5)    | 33 | 16 | 79  | 64.5  | 63  | 1/4 | 19.5 | 10 | 11   | 16 | 8    | 67  | 83  |
| 40     | 98  | 55 | 108 | 23 | 11  | 22.4 | 19 | M16 | 20 | 7  | 9   | 14 (8.6)    | 37 | 20 | 90  | 72.5  | 71  | 1/4 | 20.5 | 10 | 13   | 20 | 10   | 75  | 95  |
| 50     | 111 | 60 | 126 | 27 | 14  | 28   | 24 | M20 | 24 | 8  | 11  | 17.5 (10.8) | 43 | 24 | 104 | 83.5  | 81  | 1/4 | 22   | 10 | 15   | 24 | 12   | 84  | 108 |
| 63     | 130 | 67 | 146 | 33 | 16  | 35.5 | 30 | M27 | 33 | 9  | 13  | 20 (13)     | 52 | 30 | 121 | 100.5 | 97  | 1/4 | 25.5 | 10 | 18   | 30 | 15   | 97  | 127 |
| 80     | 151 | 78 | 172 | 38 | 18  | 45   | 41 | M30 | 36 | 14 | 15  | 23 (15.2)   | 63 | 35 | 144 | 121.5 | 117 | 3/8 | 30   | 15 | 20.5 | 35 | 17.5 | 113 | 148 |
| 100    | 179 | 96 | 208 | 43 | 22  | 56   | 50 | M39 | 45 | 21 | 17  | 26 (17.5)   | 76 | 40 | 174 | 147   | 142 | 3/8 | 36   | 15 | 23   | 40 | 20   | 136 | 176 |

Компактный гидравлический цилиндр высокого давления
СНК

СНКГ



Законцовка штока с наружной резьбой

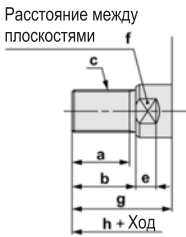
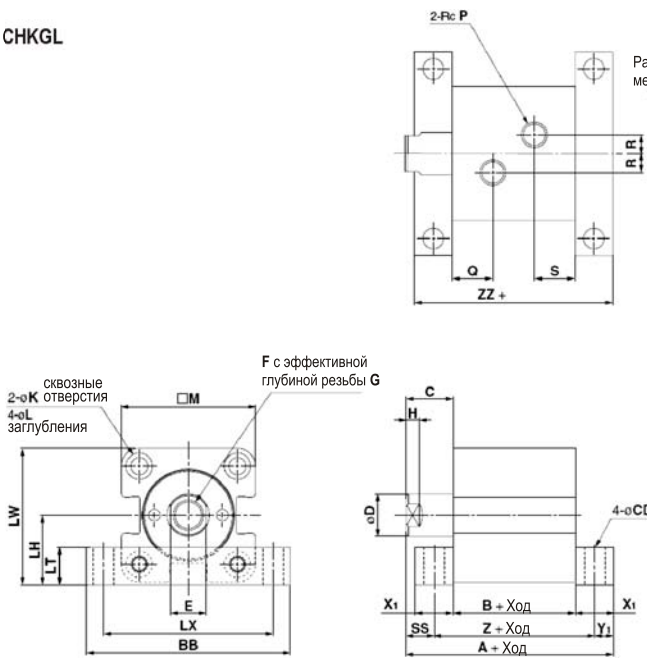


Table with 9 columns: (мм), a, b, c, e, f, g, h. It lists dimensions for various cylinder diameters from 20 to 100 mm.

Table with 16 columns: Ø (мм), A, B, C, D, E, F, G, H, J, K, L (глубина), M, P, Q, R, S. It provides a comprehensive list of dimensions for the SNKG series.

СНКГЛ



Законцовка штока с наружной резьбой

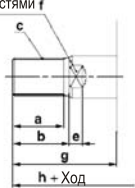
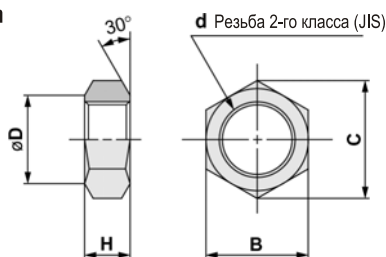


Table with 9 columns: Ø (мм), a, b, c, e, f, g, h. It lists dimensions for various cylinder diameters from 20 to 100 mm for the SNKGL series.

Table with 24 columns: Ø (мм), A, B, BB, C, CD, D, E, F, G, H, K, L (глубина), LH, LT, LX, LW, M, P, Q, R, S, SS, X1, Y1, Z, ZZ. This is the largest table, providing detailed dimensions for the SNKGL series.

### Принадлежности

Гайка штока

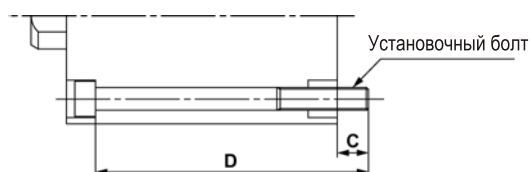


| Номер заказа | Ø (мм) | B  | C    | d        | D    | H  |
|--------------|--------|----|------|----------|------|----|
| NHT-025      | 20     | 17 | 19.6 | M10x1.25 | 16.5 | 6  |
| NHT-032      | 32     | 19 | 21.9 | M12x1.25 | 18   | 7  |
| NHT-040      | 40     | 22 | 25.4 | M16x1.5  | 21   | 10 |
| NHT-050      | 50     | 27 | 31.2 | M20x1.5  | 26   | 12 |
| NHT-060      | 63     | 32 | 37   | M24x1.5  | 31   | 14 |
| NHT-080      | 80     | 41 | 47.3 | M30x1.5  | 40   | 17 |
| NHT-100      | 100    | 55 | 63.5 | M39x1.5  | 54   | 20 |
| NHT-125      | 125    | 70 | 80.8 | M48x1.5  | 69   | 26 |

Установочные болты

Ø 20, 25\*

Схема установки



\*) Болты одинаковые для СНКД и СНКГ

| Модель       | C    | D   | Болт    | Модель       | C    | D   | Болт    |
|--------------|------|-----|---------|--------------|------|-----|---------|
| СНКВ20-5(М)  | 12.4 | 55  | M5x55/  | СНКВ25-5(М)  | 10.4 | 55  | M5x55/  |
| СНКВ20-10(М) |      | 60  | M5x60/  | СНКВ25-10(М) |      | 60  | M5x60/  |
| СНКВ20-15(М) |      | 65  | M5x65/  | СНКВ25-15(М) |      | 65  | M5x65/  |
| СНКВ20-20(М) |      | 70  | M5x70/  | СНКВ25-20(М) |      | 70  | M5x70/  |
| СНКВ20-25(М) |      | 75  | M5x75/  | СНКВ25-25(М) |      | 75  | M5x75/  |
| СНКВ20-30(М) |      | 80  | M5x80/  | СНКВ25-30(М) |      | 80  | M5x80/  |
| СНКВ20-35(М) |      | 85  | M5x85/  | СНКВ25-35(М) |      | 85  | M5x85/  |
| СНКВ20-40(М) |      | 90  | M5x90/  | СНКВ25-40(М) |      | 90  | M5x90/  |
| СНКВ20-45(М) |      | 95  | M5x95/  | СНКВ25-45(М) |      | 95  | M5x95/  |
| СНКВ20-50(М) |      | 100 | M5x100/ | СНКВ25-50(М) |      | 100 | M5x100/ |

Ø 32

| Модель        | C    | D   | Болт    | Модель        | C    | D   | Болт    |
|---------------|------|-----|---------|---------------|------|-----|---------|
| СНКДВ32-5(М)  | 10.5 | 60  | M6x60/  | СНКГВ32-5(М)  | 10.5 | 65  | M6x65/  |
| СНКДВ32-10(М) |      | 65  | M6x65/  | СНКГВ32-10(М) |      | 70  | M6x70/  |
| СНКДВ32-15(М) |      | 70  | M6x70/  | СНКГВ32-15(М) |      | 75  | M6x75/  |
| СНКДВ32-20(М) |      | 75  | M6x75/  | СНКГВ32-20(М) |      | 80  | M6x80/  |
| СНКДВ32-25(М) |      | 80  | M6x80/  | СНКГВ32-25(М) |      | 85  | M6x86/  |
| СНКДВ32-30(М) |      | 85  | M6x85/  | СНКГВ32-30(М) |      | 90  | M6x90/  |
| СНКДВ32-35(М) |      | 90  | M6x90/  | СНКГВ32-35(М) |      | 95  | M6x95/  |
| СНКДВ32-40(М) |      | 95  | M6x95/  | СНКГВ32-40(М) |      | 100 | M6x100/ |
| СНКДВ32-45(М) |      | 100 | M6x100/ | СНКГВ32-45(М) |      | 105 | M6x105/ |
| СНКДВ32-50(М) |      | 105 | M6x105/ | СНКГВ32-50(М) |      | 110 | M6x110/ |
| СНКДВ32-75(М) |      | 130 | M6x130/ | СНКГВ32-75(М) |      | 135 | M6x135/ |

Ø 50

| Модель         | C    | D   | Болт     | Модель         | C    | D   | Болт     |
|----------------|------|-----|----------|----------------|------|-----|----------|
| СНКДВ50-5(М)   | 15.8 | 70  | M10x70/  | СНКГВ50-5(М)   | 15.5 | 80  | M10x80/  |
| СНКДВ50-10(М)  |      | 75  | M10x75/  | СНКГВ50-10(М)  |      | 85  | M10x85/  |
| СНКДВ50-15(М)  |      | 80  | M10x80/  | СНКГВ50-15(М)  |      | 90  | M10x90/  |
| СНКДВ50-20(М)  |      | 85  | M10x85/  | СНКГВ50-20(М)  |      | 95  | M10x95/  |
| СНКДВ50-25(М)  |      | 90  | M10x90/  | СНКГВ50-25(М)  |      | 100 | M10x100/ |
| СНКДВ50-30(М)  |      | 95  | M10x95/  | СНКГВ50-30(М)  |      | 105 | M10x105/ |
| СНКДВ50-35(М)  |      | 100 | M10x100/ | СНКГВ50-35(М)  |      | 110 | M10x110/ |
| СНКДВ50-40(М)  |      | 105 | M10x105/ | СНКГВ50-40(М)  |      | 115 | M10x115/ |
| СНКДВ50-45(М)  |      | 110 | M10x110/ | СНКГВ50-45(М)  |      | 120 | M10x120/ |
| СНКДВ50-50(М)  |      | 115 | M10x115/ | СНКГВ50-50(М)  |      | 125 | M10x125/ |
| СНКДВ50-75(М)  |      | 140 | M10x140/ | СНКГВ50-75(М)  |      | 150 | M10x150/ |
| СНКДВ50-100(М) |      | 165 | M10x165/ | СНКГВ50-100(М) |      | 175 | M10x175/ |

Ø 80

| Модель         | C    | D   | Болт     | Модель         | C  | D   | Болт     |
|----------------|------|-----|----------|----------------|----|-----|----------|
| СНКДВ80-5(М)   | 22.2 | 90  | M14x90/  | СНКГВ80-5(М)   | 22 | 100 | M14x100/ |
| СНКДВ80-10(М)  |      | 95  | M14x95/  | СНКГВ80-10(М)  |    | 105 | M14x105/ |
| СНКДВ80-15(М)  |      | 100 | M14x100/ | СНКГВ80-15(М)  |    | 110 | M14x110/ |
| СНКДВ80-20(М)  |      | 105 | M14x105/ | СНКГВ80-20(М)  |    | 115 | M14x115/ |
| СНКДВ80-25(М)  |      | 110 | M14x110/ | СНКГВ80-25(М)  |    | 120 | M14x120/ |
| СНКДВ80-30(М)  |      | 115 | M14x115/ | СНКГВ80-30(М)  |    | 125 | M14x125/ |
| СНКДВ80-35(М)  |      | 120 | M14x120/ | СНКГВ80-35(М)  |    | 130 | M14x130/ |
| СНКДВ80-40(М)  |      | 125 | M14x125/ | СНКГВ80-40(М)  |    | 135 | M14x135/ |
| СНКДВ80-45(М)  |      | 130 | M14x130/ | СНКГВ80-45(М)  |    | 140 | M14x140/ |
| СНКДВ80-50(М)  |      | 135 | M14x135/ | СНКГВ80-50(М)  |    | 145 | M14x145/ |
| СНКДВ80-75(М)  |      | 160 | M14x160/ | СНКГВ80-75(М)  |    | 170 | M14x170/ |
| СНКДВ80-100(М) |      | 185 | M14x185/ | СНКГВ80-100(М) |    | 195 | M14x195/ |

Ø 40

| Модель         | C    | D   | Болт    | Модель         | C    | D   | Болт    |
|----------------|------|-----|---------|----------------|------|-----|---------|
| СНКДВ40-5(М)   | 13.5 | 65  | M8x65/  | СНКГВ40-5(М)   | 13.5 | 75  | M8x75/  |
| СНКДВ40-10(М)  |      | 70  | M8x70/  | СНКГВ40-10(М)  |      | 80  | M8x80/  |
| СНКДВ40-15(М)  |      | 75  | M8x75/  | СНКГВ40-15(М)  |      | 85  | M8x85/  |
| СНКДВ40-20(М)  |      | 80  | M8x80/  | СНКГВ40-20(М)  |      | 90  | M8x90/  |
| СНКДВ40-25(М)  |      | 85  | M8x85/  | СНКГВ40-25(М)  |      | 95  | M8x95/  |
| СНКДВ40-30(М)  |      | 90  | M8x90/  | СНКГВ40-30(М)  |      | 100 | M8x100/ |
| СНКДВ40-35(М)  |      | 95  | M8x95/  | СНКГВ40-35(М)  |      | 105 | M8x105/ |
| СНКДВ40-40(М)  |      | 100 | M8x100/ | СНКГВ40-40(М)  |      | 110 | M8x110/ |
| СНКДВ40-45(М)  |      | 105 | M8x105/ | СНКГВ40-45(М)  |      | 115 | M8x115/ |
| СНКДВ40-50(М)  |      | 110 | M8x110/ | СНКГВ40-50(М)  |      | 120 | M8x120/ |
| СНКДВ40-75(М)  |      | 135 | M8x135/ | СНКГВ40-75(М)  |      | 145 | M8x145/ |
| СНКДВ40-100(М) |      | 160 | M8x160/ | СНКГВ40-100(М) |      | 170 | M8x170/ |

Ø 63

| Модель         | C  | D   | Болт     | Модель         | C  | D   | Болт     |
|----------------|----|-----|----------|----------------|----|-----|----------|
| СНКДВ63-5(М)   | 16 | 75  | M12x75/  | СНКГВ63-5(М)   | 16 | 85  | M12x85/  |
| СНКДВ63-10(М)  |    | 80  | M12x80/  | СНКГВ63-10(М)  |    | 90  | M12x90/  |
| СНКДВ63-15(М)  |    | 85  | M12x85/  | СНКГВ63-15(М)  |    | 95  | M12x95/  |
| СНКДВ63-20(М)  |    | 90  | M12x90/  | СНКГВ63-20(М)  |    | 100 | M12x100/ |
| СНКДВ63-25(М)  |    | 95  | M12x95/  | СНКГВ63-25(М)  |    | 105 | M12x105/ |
| СНКДВ63-30(М)  |    | 100 | M12x100/ | СНКГВ63-30(М)  |    | 110 | M12x110/ |
| СНКДВ63-35(М)  |    | 105 | M12x105/ | СНКГВ63-35(М)  |    | 115 | M12x115/ |
| СНКДВ63-40(М)  |    | 110 | M12x110/ | СНКГВ63-40(М)  |    | 120 | M12x120/ |
| СНКДВ63-45(М)  |    | 115 | M12x115/ | СНКГВ63-45(М)  |    | 125 | M12x125/ |
| СНКДВ63-50(М)  |    | 120 | M12x120/ | СНКГВ63-50(М)  |    | 130 | M12x130/ |
| СНКДВ63-75(М)  |    | 145 | M12x145/ | СНКГВ63-75(М)  |    | 155 | M12x155/ |
| СНКДВ63-100(М) |    | 170 | M12x170/ | СНКГВ63-100(М) |    | 180 | M12x180/ |

Ø 100

| Модель          | C    | D   | Болт     | Модель          | C    | D   | Болт     |
|-----------------|------|-----|----------|-----------------|------|-----|----------|
| СНКДВ100-5(М)   | 26.5 | 110 | M16x110/ | СНКГВ100-5(М)   | 26.5 | 120 | M16x120/ |
| СНКДВ100-10(М)  |      | 115 | M16x115/ | СНКГВ100-10(М)  |      | 125 | M16x125/ |
| СНКДВ100-15(М)  |      | 120 | M16x120/ | СНКГВ100-15(М)  |      | 130 | M16x130/ |
| СНКДВ100-20(М)  |      | 125 | M16x125/ | СНКГВ100-20(М)  |      | 135 | M16x135/ |
| СНКДВ100-25(М)  |      | 130 | M16x130/ | СНКГВ100-25(М)  |      | 140 | M16x140/ |
| СНКДВ100-30(М)  |      | 135 | M16x135/ | СНКГВ100-30(М)  |      | 145 | M16x145/ |
| СНКДВ100-35(М)  |      | 140 | M16x140/ | СНКГВ100-35(М)  |      | 150 | M16x150/ |
| СНКДВ100-40(М)  |      | 145 | M16x145/ | СНКГВ100-40(М)  |      | 155 | M16x155/ |
| СНКДВ100-45(М)  |      | 150 | M16x150/ | СНКГВ100-45(М)  |      | 160 | M16x160/ |
| СНКДВ100-50(М)  |      | 155 | M16x155/ | СНКГВ100-50(М)  |      | 165 | M16x165/ |
| СНКДВ100-75(М)  |      | 180 | M16x180/ | СНКГВ100-75(М)  |      | 190 | M16x190/ |
| СНКДВ100-100(М) |      | 205 | M16x205/ | СНКГВ100-100(М) |      | 215 | M16x215/ |



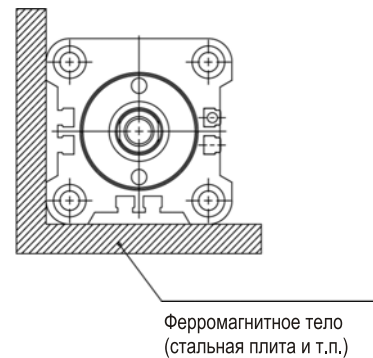
# Компактный гидравлический цилиндр высокого давления СНК

## Указания по монтажу цилиндров

1. При монтаже цилиндра используйте шестигранные торцевые ключи класса прочности 10.9 или выше.
2. Устанавливайте сборочно-монтажное приспособление таким образом, чтобы боковая нагрузка не действовала на шток поршня
3. Убедитесь в том, что длина свинчивания штока и присоединенной к нему детали составляет не менее 80% от диаметра резьбы (внутренней или наружной)
4. В начальный период эксплуатации цилиндра убедитесь в том, что воздух выпущен из полостей цилиндра и трубопроводов.  
После полного выпуска воздуха сначала нагрузите цилиндр пониженным давлением, а затем постепенно повышайте его до номинального рабочего уровня
5. Поскольку гидроцилиндры серии СНК, за исключением специального исполнения ХС64, не имеют отверстия для выпуска воздуха, сбрасывайте воздух через другие элементы (трубопроводы и т.п.)
6. При монтаже цилиндра с помощью установочных болтов используйте момент затяжки в соответствии с таблицей:

|                                     |     |    |    |    |     |     |     |     |
|-------------------------------------|-----|----|----|----|-----|-----|-----|-----|
| Моменты затяжки установочных болтов |     |    |    |    |     |     |     |     |
| Диаметр цилиндра (мм)               | 20  | 25 | 32 | 40 | 50  | 63  | 80  | 100 |
| Установочный болт                   | M5  | M5 | M6 | M8 | M10 | M12 | M14 | M16 |
| Момент затяжки (Н·м)                | 2.5 | 4  | 7  | 17 | 30  | 40  | 70  | 100 |

7. Консультируйтесь с SMC при использовании цилиндра в близком соседстве с ферромагнитным предметом (см.рисунок), так как в этих условиях работа датчиков положения может быть нестабильной.



## Датчики положения

| Применяемые датчики |             |                                       |                |                    |                     |                        |      |                   |
|---------------------|-------------|---------------------------------------|----------------|--------------------|---------------------|------------------------|------|-------------------|
| Обозначение         | Тип         | Крепление                             | Эл.вход        | Световая индикация | Выход               | Рабочее напряжение (В) |      | Характер нагрузки |
|                     |             |                                       |                |                    |                     | DC                     | AC   |                   |
| D-A90L              | Герконовый  | Прямое или на установочном кронштейне | Кабель залитый | Нет                | 2-х проводной       | 24                     | <110 | Реле, ПЛК         |
| D-A93L              |             |                                       |                | Есть               |                     |                        | 110  |                   |
| D-Y7PL              | Электронный |                                       |                | Есть               | 3-х проводной р-п-р | 5, 12, 24              | -    |                   |
| D-Y59BL             |             |                                       |                |                    | Есть                |                        |      |                   |

### Номер для заказа крепления датчика (винты)

| Ø (мм)   | Номер    | Номер датчика положения |                 |
|----------|----------|-------------------------|-----------------|
|          |          | Герконовый              | Электронный     |
| 20, 25   | BHK1-020 | D-A90L, D-A93L          | -               |
| 32 ~ 100 | BHK2-032 | -                       | D-Y7PL, D-Y59BL |

### Минимальная длина хода (мм) при использовании датчиков положения

| Количество датчиков | Ø20, Ø25       | Ø32 ~ 100       |
|---------------------|----------------|-----------------|
|                     | D-A90L, D-A93L | D-Y7PL, D-Y59BL |
| 1 шт.               | 5              | 5               |
| 2 шт.               | 10             | 5               |

### Монтаж датчиков

| Ø20, Ø25 |      |                |    | Ø32~100 |      |                 |      |
|----------|------|----------------|----|---------|------|-----------------|------|
|          |      |                |    |         |      |                 |      |
| Ø (мм)   |      | D-A90L, D-A93L |    | Ø (мм)  |      | D-Y7PL, D-Y59BL |      |
|          |      | A              | B  |         |      | A               | B    |
| 20       | CHKD | 8              | 15 | 32      | CHKD | 10              | 16.5 |
|          | CHKG | 12             | 11 |         | CHKG | 13.5            | 18   |
| 25       | CHKD | 9              | 16 | 40      | CHKD | 12              | 18.5 |
|          | CHKG | 13             | 12 |         | CHKG | 19              | 21.5 |
|          |      |                |    | 50      | CHKD | 13              | 22.5 |
|          |      |                |    |         | CHKG | 19              | 26.5 |
|          |      |                |    | 63      | CHKD | 16.5            | 26   |
|          |      |                |    |         | CHKG | 21.5            | 31   |
|          |      |                |    | 80      | CHKD | 18.5            | 35   |
|          |      |                |    |         | CHKG | 24.5            | 39   |
|          |      |                |    | 100     | CHKD | 26.5            | 44.5 |
|          |      |                |    |         | CHKG | 34.5            | 46.5 |

### Указания по монтажу датчиков

1. При прямом монтаже датчиков на цилиндр их следует вставлять в установочные пазы в направлении, показанном на рисунке.  
После установки в требуемое место используйте часовую отвертку для затягивания стопорных винтов.
2. При монтаже датчиков с помощью кронштейна их следует вначале установить на кронштейн, а последний вставить в установочные пазы в направлении, показанном на рисунке. После установки в требуемое место используйте шестигранный ключ для затягивания винтов кронштейна.
3. При затягивании стопорных винтов используйте часовую отвертку с диаметром рукоятки 5~6 мм. Для затягивания винтов кронштейна используйте 1.5 мм шестигранный ключ  
Момент затяжки:  
для датчиков D-A90L, D-A93L - 0.1~0.2 Н·м,  
для датчиков D-Y7PL, D-Y59BL - 0.05~0.1 Н·м.

Как правило, стопорные винты Достаточно повернуть на 90°.

