

## 2-way Logic Cartridge Valves Directional Function

Model: LC...7XJ(logic cartridge valves)  
LFA...7XJ(control cover)



- ◆ Size 16/63
- ◆ Maximum working pressure 420 bar
- ◆ Maximum working flow 3000 l/min

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### Features

- Valve poppet with or without damping nose
- 2 area ratios
- 4 types of springs
- 4 stroke limitations
- Control cover with integrated seat valve
- Control cover with integrated shuttle valve
- Control cover for set-up of directional spool valves with or without installed shuttle valve
- Control cover for set-up of directional seat valves with or without installed shuttle valve

## Function description, sectional drawing

The 2-way logic cartridge valves are designed as components for integrated blocks. The main valve component with oil ports A and B is installed into the control block in a receiving hole standardized according to DIN ISO 7368 and closed with a cover. In most cases, the control cover is the connection between the control side of the main valve component and the pilot valve.

By control with respective pilot control valves, the main valve component can be applied for pressure, directional and throttle functions or a combination of these functions. The special economical structural designs can be achieved by matching the size of various flows of the valves and the actuators. If the main valve component can undertake more than one function, the special economical structure can be achieved.

### Directional function

The 2-way logic cartridge valves generally consist of control cover (1) and cartridge element (2). The control cover contains control holes, optional stroke limitation according to function, hydraulic control directional seat valve or shuttle valve. In addition, the directional spool valve or directional seat valve can be installed onto the control cover. The cartridge element mainly includes valve sleeve (3), adjustment ring (4) (only applicable to size 32), seat valve (5), optional damping (7) and reset spring (8).

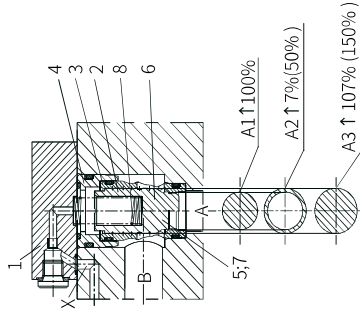
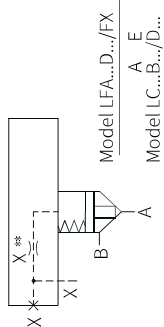
### Function

The function of 2-way logic cartridge valves depends on the pressure. Therefore, there are three important pressure-bearing areas A1, A2, A3 for actuation of the valve. The area of the valve seat A1 is taken as 100%. Depending on the type, the annulus area A2 is 7% or 50% of the area A1. Therefore, the area ratio A1:A2 is either 14:3:1 or 2:1. The area A3 is equal to A1+A2. Due to the different area ratios A1:A2, the annulus area A2 is also different. The area A3 may be 107% or 150% when 100% area at seat A1.

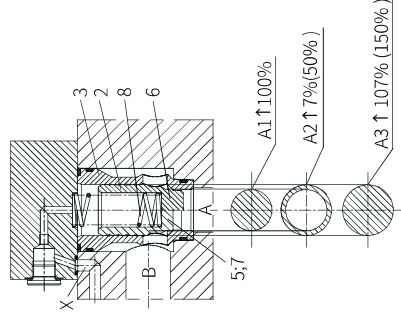
### Basic application

The areas A1 and A2 are operated in the opening direction. The area A3 and the spring are operated in the closing direction. The effective direction generated by the combination of the opening and closing directions determines the position of the spool of the 2-way logic cartridge valve.

The oil can flow from A to B or B to A through the 2-way logic cartridge valve. When the area A3 is compressed by the pilot oil of channel B or external pilot oil supply, the channel A is closed without leakage."



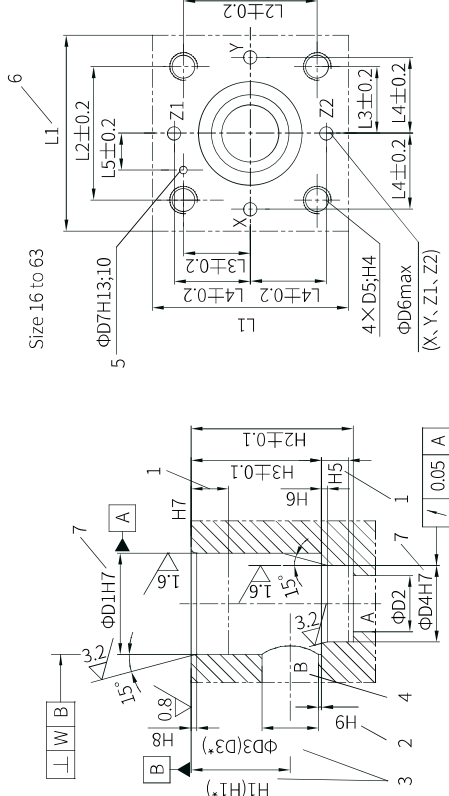
Size 16 to 32



Size 40 to 63

## Component size

Control cover and installation hole according to ISO 7368



1 Depth of fit

2 Reference dimension

3 If the diameter of port B is not  $\Phi D3$  or ( $\Phi D3^*$ ), then the distance from the cover support surface to the center of the hole must be calculated.

4 Port B can be installed around the central axis of port A, but it must be ensured that the installation hole and pilot hole are not damaged

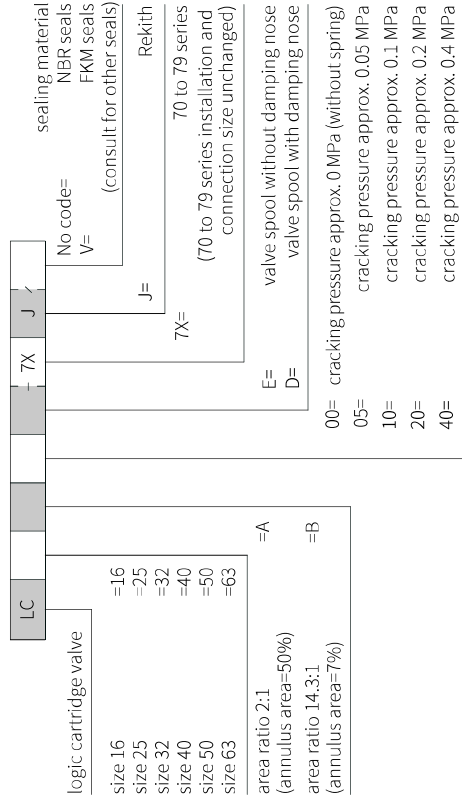
5 Locating pin hole

6 The length L1 (x-y axis of the hole) of the control cover (with directional valve) is 80mm for size 16.

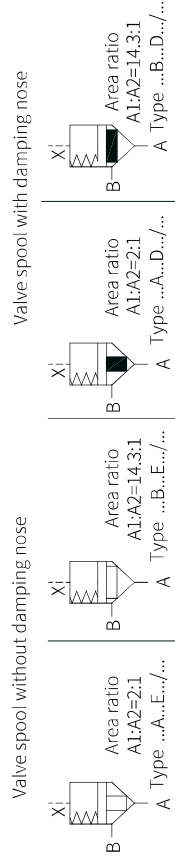
7 If  $D \leq 45\text{mm}$ , H8 is allowed to be installed.

| Size      | 16    | 25   | 32  | 40   | 50   | 63   |
|-----------|-------|------|-----|------|------|------|
| $\Phi D1$ | 32    | 45   | 60  | 75   | 90   | 120  |
| $\Phi D2$ | 16    | 25   | 32  | 40   | 50   | 63   |
| $\Phi D3$ | 16    | 25   | 32  | 40   | 50   | 63   |
| $\Phi D4$ | 25    | 34   | 45  | 55   | 68   | 90   |
| $\Phi D5$ | M8    | M12  | M16 | M20  | M20  | M30  |
| $\Phi D6$ | 4     | 6    | 8   | 10   | 10   | 12   |
| $\Phi D7$ | 4     | 6    | 6   | 6    | 8    | 8    |
| H1        | 34    | 44   | 52  | 64   | 72   | 95   |
| (H1*)     | 29.5  | 40.5 | 48  | 59   | 65.5 | 96.5 |
| H2        | 56    | 72   | 85  | 105  | 122  | 155  |
| H3        | 43    | 58   | 70  | 87   | 100  | 130  |
| H4        | 20    | 25   | 35  | 45   | 45   | 65   |
| H5        | 11    | 12   | 13  | 15   | 17   | 20   |
| H6        | 2     | 2.5  | 2.5 | 3    | 3    | 4    |
| H7        | 20    | 30   | 30  | 30   | 35   | 40   |
| H8        | 2     | 2.5  | 2.5 | 3    | 4    | 4    |
| H9        | 0.5   | 1    | 1.5 | 2.5  | 2.5  | 3    |
| L1        | 65/80 | 85   | 102 | 125  | 140  | 180  |
| L2        | 46    | 58   | 70  | 85   | 100  | 125  |
| L3        | 23    | 29   | 35  | 42.5 | 50   | 62.5 |
| L4        | 25    | 33   | 41  | 50   | 58   | 75   |
| L5        | 10.5  | 16   | 17  | 23   | 30   | 38   |
| W         | 0.05  | 0.05 | 0.1 | 0.1  | 0.1  | 0.2  |

## Logic cartridge valves models and specifications



## Logic cartridge valves functional symbols



## Technical parameters

|                                   |                           |                    |                                                                                          |
|-----------------------------------|---------------------------|--------------------|------------------------------------------------------------------------------------------|
| Maximum working pressure          | without directional valve | bar                | 420                                                                                      |
|                                   | port A, B, X, Z1, Z2      | bar                | 315;350; 420 (dependent on the attached directional valve)                               |
| Pressure medium                   | port Y                    | bar                | Depending on the return oil pressure of the directional valve                            |
|                                   | Pressure medium           |                    | Mineral oil - for NBR seal or FKM seal                                                   |
| Pressure medium temperature range |                           | °C                 | Phosphate ester - for FKM seal                                                           |
|                                   |                           | °C                 | -30 to +80 (NBR seal)<br>-20 to +80 (FKM seal)                                           |
| Viscosity range                   |                           | mm <sup>2</sup> /s | 2.8 to 380                                                                               |
| Cleanliness of oil                |                           |                    | The maximum allowable pollution level of oil is ISO4406 Class 20 / 18 / 15 <sup>1)</sup> |

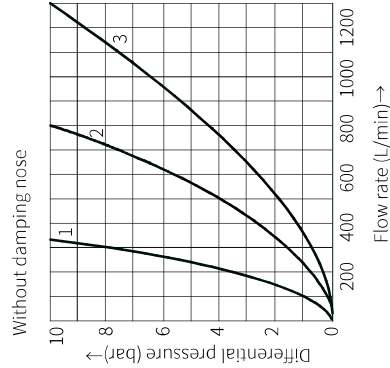
<sup>1)</sup> The oil must meet the cleanliness degree requested by the components in the hydraulic system. Effective oil filtration can prevent failure and increase the service life of the components.

## 2-way logic cartridge valves-directional function

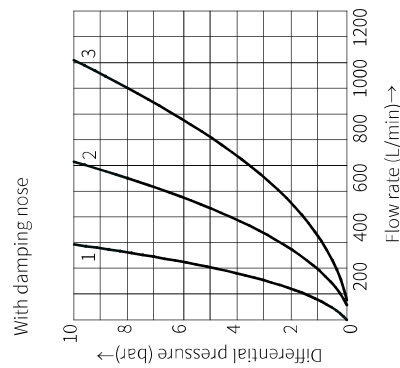
| Area                                            | Model                     | 16   | 25   | 32    | 40    | 50    | 63    |
|-------------------------------------------------|---------------------------|------|------|-------|-------|-------|-------|
| A1<br>cm <sup>2</sup>                           | LC..A..                   | 1.89 | 4.26 | 6.79  | 11.1  | 19.63 | 30.2  |
|                                                 | LC..B..                   | 2.66 | 5.73 | 9.51  | 15.55 | 26.42 | 41.28 |
| A2<br>cm <sup>2</sup>                           | LC..A..                   | 0.95 | 1.89 | 3.39  | 5.52  | 8.64  | 14    |
|                                                 | LC..B..                   | 0.18 | 0.43 | 0.67  | 1.07  | 1.85  | 2.90  |
| A3<br>cm <sup>2</sup>                           | LC..A..                   | 2.84 | 6.16 | 10.18 | 16.62 | 28.27 | 44.2  |
|                                                 | LC..B..                   | 2.84 | 6.16 | 10.18 | 16.62 | 28.27 | 44.2  |
| Stroke<br>cm                                    | LC..E..                   | 0.9  | 1.17 | 1.4   | 1.7   | 2.1   | 2.3   |
|                                                 | LC..D..                   | 0.9  | 1.17 | 1.4   | 1.9   | 2.3   | 2.8   |
| Pilot volume<br>cm <sup>3</sup>                 | LC..E..                   | 2.56 | 7.21 | 14.3  | 28.3  | 59.4  | 102   |
|                                                 | LC..D..                   | 2.56 | 7.21 | 14.3  | 31.6  | 65.0  | 124   |
| Theoretical pilot Flow <sup>1)</sup><br>(L/min) | LC..E..                   | 15.4 | 43.3 | 86    | 170   | 356   | 612   |
|                                                 | LC..D..                   | 15.4 | 43.3 | 86    | 190   | 390   | 744   |
| Weight<br>kg                                    | Logic cartridge valves LC | 0.25 | 0.5  | 1.1   | 1.9   | 3.9   | 7.2   |
|                                                 | LC..A 00..                | 0.02 | 0.02 | 0.05  | 0.05  | 0.05  | 0.07  |
| Cracking pressure<br>bar                        | LC..A 05..                | 0.35 | 0.35 | 0.36  | 0.35  | 0.37  | 0.31  |
|                                                 | LC..A 10..                | 0.70 | 0.68 | 0.72  | 0.71  | 0.67  | 0.64  |
| Direction of flow<br>A to B                     | LC..A 20..                | 2.03 | 2.18 | 2.12  | 2.02  | 2.01  | 2     |
|                                                 | LC..A 30..                | —    | —    | —     | —     | —     | —     |
|                                                 | LC..A 40..                | 3.50 | 3.90 | 3.80  | 4.0   | 4.11  | 3.8   |
|                                                 | LC..B 00..                | 0.01 | 0.02 | 0.04  | 0.04  | 0.04  | 0.05  |
| Direction of flow<br>B to A                     | LC..B 05..                | 0.25 | 0.26 | 0.26  | 0.25  | 0.28  | 0.23  |
|                                                 | LC..B 10..                | 0.49 | 0.50 | 0.51  | 0.51  | 0.48  | 0.47  |
|                                                 | LC..B 20..                | 1.44 | 1.62 | 1.52  | 1.44  | 1.5   | 1.5   |
|                                                 | LC..B 30..                | —    | —    | —     | —     | —     | —     |
| Cracking pressure<br>bar                        | LC..B 40..                | 2.48 | 2.90 | 2.70  | 2.86  | 3.05  | 2.8   |
|                                                 | LC..A 00..                | 0.04 | 0.05 | 0.1   | 0.1   | 0.1   | 0.14  |
|                                                 | LC..A 05..                | 0.69 | 0.78 | 0.72  | 0.7   | 0.84  | 0.68  |
|                                                 | LC..A 10..                | 1.38 | 1.53 | 1.42  | 1.43  | 1.47  | 1.37  |
| Direction of flow<br>B to A                     | LC..A 20..                | 4.05 | 4.91 | 4.25  | 4.06  | 4.57  | 4.33  |
|                                                 | LC..A 30..                | —    | —    | —     | —     | —     | —     |
|                                                 | LC..A 40..                | 6.96 | 8.74 | 7.6   | 8.05  | 9.34  | 8.15  |
|                                                 | LC..B 00..                | 0.24 | 0.25 | 0.5   | 0.5   | 0.5   | 0.8   |
| Direction of flow<br>B to A                     | LC..B 05..                | 3.69 | 3.4  | 3.64  | 3.64  | 3.95  | 3.27  |
|                                                 | LC..B 10..                | 7.43 | 6.69 | 7.24  | 7.37  | 6.88  | 6.62  |
|                                                 | LC..B 20..                | 21.3 | 21.5 | 21.6  | 20.9  | 21.4  | 20.9  |
|                                                 | LC..B 30..                | —    | —    | —     | —     | —     | —     |
|                                                 | LC..B 40..                | 36.6 | 38.3 | 38.6  | 41.5  | 43.6  | 39.4  |

Characteristic curve

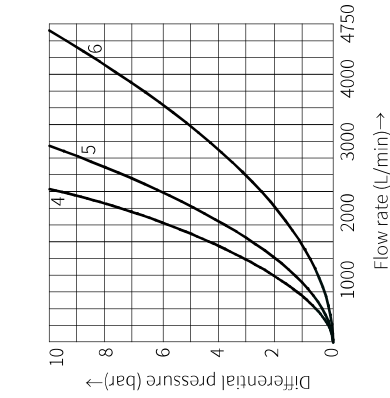
(Measured when using HLP46,  $\vartheta_{oil}=40^{\circ}\text{C} \pm 5^{\circ}\text{C}$ )



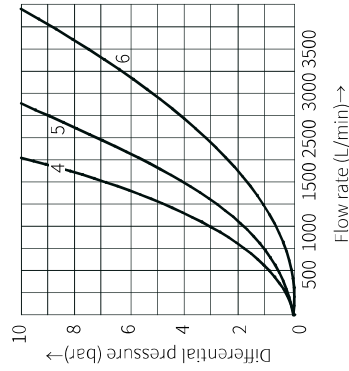
1 Size 16  
2 Size 25  
3 Size 32



1 Size 16  
2 Size 25  
3 Size 32

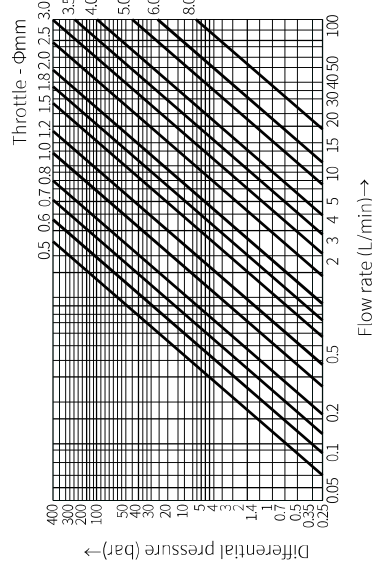


4 Size 40  
5 Size 50  
6 Size 63



4 Size 40  
5 Size 50  
6 Size 63

Characteristic curve for throttle selection



| Thread | Throttle - $\Phi$ mm |
|--------|----------------------|
| ZM6    | 0.5 to 3.0           |
| ZM8    | 0.5 to 4.0           |
| R3/8   | 0.8 to 6.0           |
| R1/2   | 1.0 to 8.0           |

Ordering code for throttle

| Nominal size | Throttle $\Phi$ mm |        | Ordering code     |                   |                  |                  |
|--------------|--------------------|--------|-------------------|-------------------|------------------|------------------|
|              | Throttle           | Thread | ZM6               | ZM8               | R3/8             | R3/8             |
|              | 0.5                |        | ZM6×1- $\Phi$ 0.5 | ZM8×1- $\Phi$ 0.5 | —                | —                |
|              | 0.6                |        | ZM6×1- $\Phi$ 0.6 | ZM8×1- $\Phi$ 0.6 | —                | —                |
|              | 0.7                |        | ZM6×1- $\Phi$ 0.7 | ZM8×1- $\Phi$ 0.7 | —                | —                |
| 16           | 0.8                |        | ZM6×1- $\Phi$ 0.8 | ZM8×1- $\Phi$ 0.8 | R3/8- $\Phi$ 0.8 | —                |
| 25           | 1                  |        | ZM6×1- $\Phi$ 1.0 | ZM8×1- $\Phi$ 1.0 | R3/8- $\Phi$ 1.0 | R1/2- $\Phi$ 1.0 |
| 32           | 1.2                |        | ZM6×1- $\Phi$ 1.2 | ZM8×1- $\Phi$ 1.2 | R3/8- $\Phi$ 1.2 | R1/2- $\Phi$ 1.2 |
| 40           | 1.5                |        | ZM6×1- $\Phi$ 1.5 | ZM8×1- $\Phi$ 1.5 | R3/8- $\Phi$ 1.5 | R1/2- $\Phi$ 1.5 |
| 50           | 1.8                |        | ZM6×1- $\Phi$ 1.8 | ZM8×1- $\Phi$ 1.8 | R3/8- $\Phi$ 1.8 | R1/2- $\Phi$ 1.8 |
| 63           | 2                  |        | ZM6×1- $\Phi$ 2.0 | ZM8×1- $\Phi$ 2.0 | R3/8- $\Phi$ 2.0 | R1/2- $\Phi$ 2.0 |
|              | 2.5                |        | ZM6×1- $\Phi$ 2.5 | ZM8×1- $\Phi$ 2.5 | R3/8- $\Phi$ 2.5 | R1/2- $\Phi$ 2.5 |
|              | 3                  |        | ZM6×1- $\Phi$ 3.0 | ZM8×1- $\Phi$ 3.0 | R3/8- $\Phi$ 3.0 | R1/2- $\Phi$ 3.0 |
|              | 3.5                |        | —                 | ZM8×1- $\Phi$ 3.5 | R3/8- $\Phi$ 3.5 | R1/2- $\Phi$ 3.5 |
|              | 4                  |        | —                 | ZM8×1- $\Phi$ 4.0 | R3/8- $\Phi$ 4.0 | R1/2- $\Phi$ 4.0 |
|              | 5                  |        | —                 | —                 | R3/8- $\Phi$ 5.0 | R1/2- $\Phi$ 5.0 |
|              | 6                  |        | —                 | —                 | R3/8- $\Phi$ 6.0 | R1/2- $\Phi$ 6.0 |
|              | 8                  |        | —                 | —                 | —                | R1/2- $\Phi$ 8.0 |

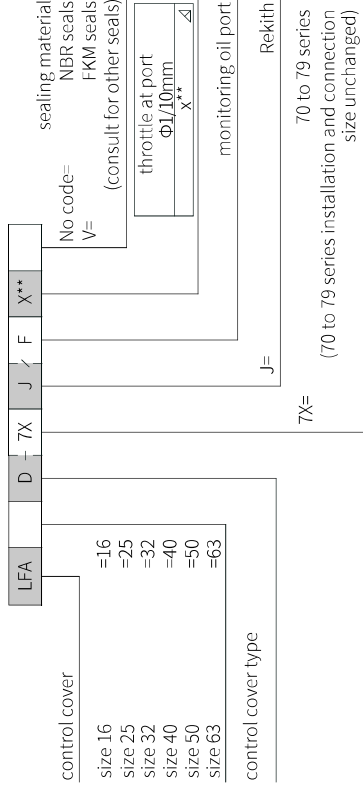
## Valve fixing screw

Infernal hexagon according to GB/T70.1-10.9 grade (included in the supply list)

| Size         | Control cover type | Dimension    | Quantity | Tightening torque <sub>M</sub> (Nm) | Size    | Control cover type | Dimension | Quantity | Tightening torque <sub>M</sub> (Nm) |
|--------------|--------------------|--------------|----------|-------------------------------------|---------|--------------------|-----------|----------|-------------------------------------|
| 16           | D                  | M8×40        | 4        | 34.3                                | 40      | D                  | M20×70    | 4        | 373                                 |
|              | G                  | M8×40        |          |                                     |         | G                  | M20×70    |          |                                     |
|              | GW A, GW B         | M8×45        |          |                                     |         | GW A, GW B         | M20×70    |          |                                     |
|              | H1, H2             | M8×40        |          |                                     |         | H1, H2             | M20×110   |          |                                     |
|              |                    |              |          |                                     |         | R, RF              | M20×70    |          |                                     |
|              | KW A, KW B         | M8×45        |          |                                     |         | KW A, KW B         | M20×70    |          |                                     |
|              | W E A, WEB         | M8×45        |          |                                     |         | W E A, WEB         | M20×70    |          |                                     |
|              | W ECA              | M8×40        |          |                                     |         | W ECA              | M20×70    |          |                                     |
| 25           | WEMA, WEMB         | M8×70        | 4        | 95                                  | 50      | WEMA, WEMB         | M20×70    | 4        | 373                                 |
|              | D                  | M12×50       |          |                                     |         | D                  | M20×80    |          |                                     |
|              | G                  | M12×50       |          |                                     |         | G                  | M20×80    |          |                                     |
|              | GW A, GW B         | M12×50       |          |                                     |         | GW A, GW B         | M20×80    |          |                                     |
|              | H1, H2             | M12×50       |          |                                     |         | H2                 | M20×120   |          |                                     |
|              | R, RF              | M12×50       |          |                                     |         | R, RF              | M20×80    |          |                                     |
|              | KW A, KW B         | M12×50       |          |                                     |         | KW A, KW B         | M20×80    |          |                                     |
|              | WEA, WEB           | M12×50       |          |                                     |         | WEA, W EB          | M20×80    |          |                                     |
| 32           | W ECA              | M12×50       | 4        | 196                                 | 63      | W ECA              | M20×80    | 4        | 1315                                |
|              | WEMA, WEMB         | M12×50       |          |                                     |         | W ECA              | M20×80    |          |                                     |
|              |                    |              |          |                                     |         | WEMA, WEMB         | M20×80    |          |                                     |
|              | D, G, R, RF        | M16×60       |          |                                     |         | D, G, R, RF        | M30×100   |          |                                     |
|              | GW A, GW B,        |              |          |                                     |         | GW A, GW B,        |           |          |                                     |
|              | KW A, KW B,        |              |          |                                     |         | KW A, KW B,        |           |          |                                     |
|              | W EA, W EB,        |              |          |                                     |         | W EA, W EB,        |           |          |                                     |
|              | W ECA,             |              |          |                                     |         | W ECA,             |           |          |                                     |
| W EMA, W EMB |                    | W EMA, W EMB |          |                                     |         |                    |           |          |                                     |
|              | H1H2               | M16×80       |          | H2                                  | M30×150 |                    |           |          |                                     |

## Control cover "D" with remote control

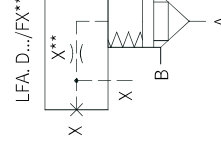
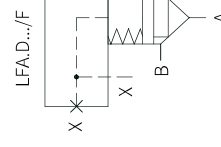
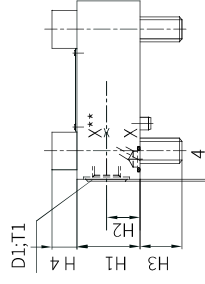
Size 16 to 63



05

0.5

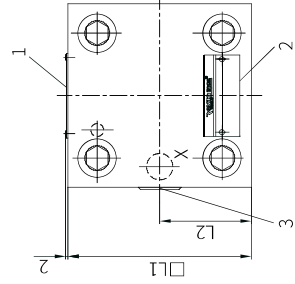
If necessary, please provide specifications of the throttle  
e.g. X12= throttle  $\Phi$  1.2mm  
Standard throttle see page 07/24



| Size      | 16   | 25   | 32   | 40   | 50   | 63   |
|-----------|------|------|------|------|------|------|
| D1        | G1/8 | G1/4 | G1/4 | G1/2 | G1/2 | G3/4 |
| X**1)     | ZM6  | ZM6  | ZM6  | ZM8  | ZM8  | R3/8 |
| H1        | 27   | 30   | 35   | 60   | 68   | 82   |
| H2        | 12   | 16   | 16   | 30   | 32   | 40   |
| H3        | 15   | 20   | 25   | 32   | 34   | 50   |
| H4        | 6    | 12   | 16   | —    | —    | —    |
| L1        | 65   | 85   | 100  | 125  | 140  | 180  |
| L2        | 32.5 | 42.5 | 50   | 72   | 80   | 90   |
| T1        | 8    | 12   | 12   | 14   | 14   | 16   |
| Weight kg | 0.9  | 1.7  | 2.7  | 6.6  | 9.4  | 18.7 |

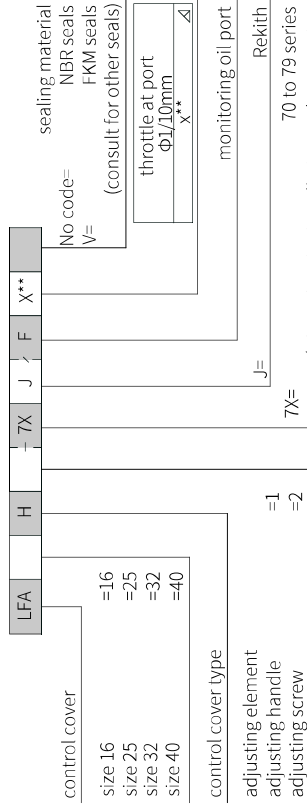
1) Ordering code of throttle see page 07/24

- 1 Name plate for size 16/25/32  
2 Name plate for size 40/50/63  
3 Optional port X used as thread



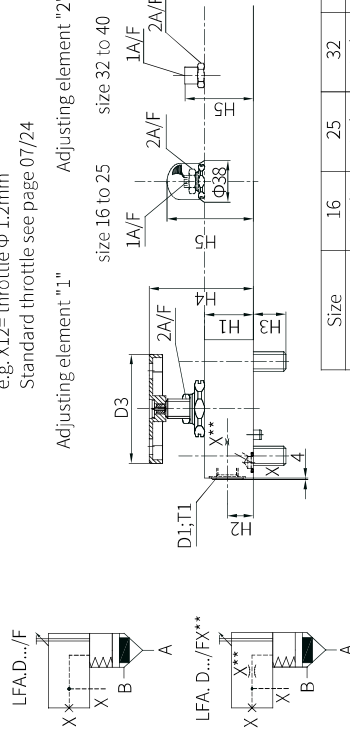
### Control cover "H" with stroke limitation and remote control

Size 16 to 40



05

If necessary, please provide specifications of the throttle  
 e.g. X12= throttle Ø 1.2mm  
 Standard throttle see page 07/24



| Size               | 16   | 25   | 32   | 40   |
|--------------------|------|------|------|------|
| D1                 | G1/8 | G1/4 | G1/4 | G1/2 |
| X**1)              | ZM6  | ZM6  | ZM6  | ZM8  |
| D3                 | 60   | 80   | 80   | 100  |
| H1                 | 35   | 40   | 75   | 95   |
| H2                 | 12   | 16   | 16   | 30   |
| H3                 | 15   | 24   | 28   | 32   |
| H4max              | 90   | 95   | 120  | 160  |
| H5max              | 76   | 80   | 100  | 146  |
| □L1                | 65   | 85   | 100  | 125  |
| L2                 | 32.5 | 42.5 | 50   | 72   |
| T1                 | 8    | 12   | 12   | 14   |
| 1A/F <sup>2)</sup> | 6    | 6    | 10   | 14   |
| 2A/F               | 21   | 22   | 27   | 46   |
| Weight kg          | 1.3  | 2.3  | 5.5  | 11.2 |

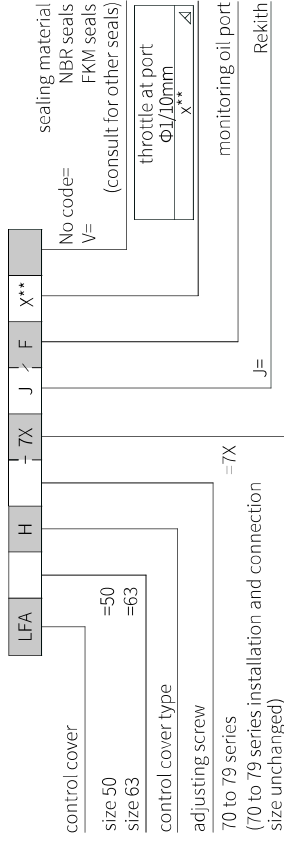
<sup>1)</sup> Ordering code of throttle see page 07/24  
<sup>2)</sup> Internal hexagon

1 Name plate for size 16/25/32  
 2 Name plate for size 40  
 3 Optional port X used as threaded connection port

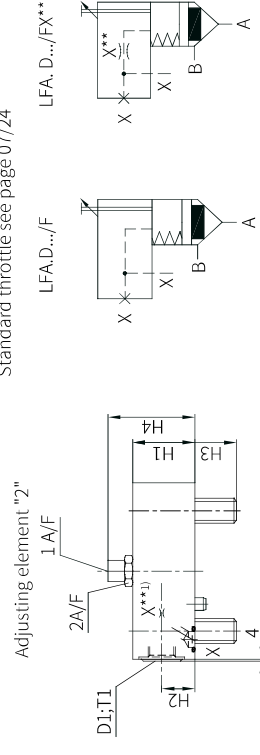
0850

### Control cover "H" with stroke limitation and remote control

Size 50 to 63



If necessary, please provide specifications of the throttle  
 e.g. X12= throttle Ø 1.2mm  
 Standard throttle see page 07/24



| Size               | 50   | 63   |
|--------------------|------|------|
| D1                 | G1/2 | G3/4 |
| X**1)              | ZM8  | R3/8 |
| H1                 | 110  | 125  |
| H2                 | 32   | 40   |
| H3                 | 34   | 50   |
| H4max              | 156  | 175  |
| □L1                | 140  | 180  |
| L2                 | 80   | 90   |
| T1                 | 14   | 16   |
| 1A/F <sup>2)</sup> | 17   | 24   |
| 2A/F               | 55   | 65   |
| Weight kg          | 15.8 | 30.2 |

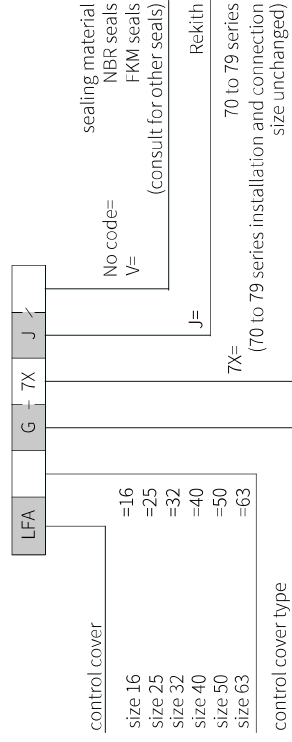
<sup>1)</sup> Ordering code of throttle see page 07/24  
<sup>2)</sup> Internal hexagon

1 Name plate  
 2 Optional port X used as threaded connection port

0851

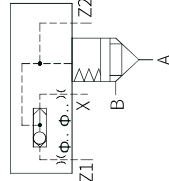
## Control cover "G" with integrated shuttle valve

Size 16 to 63

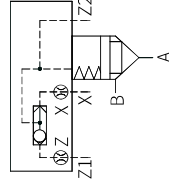


05

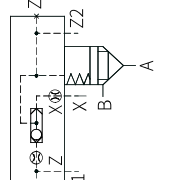
LFA G ...  
size 16 to 32



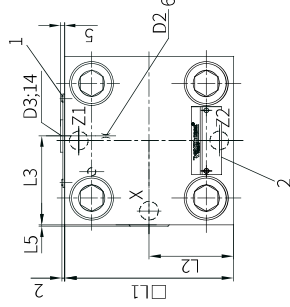
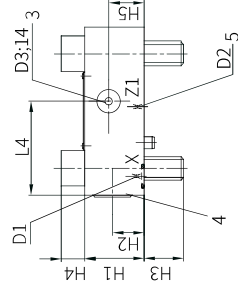
LFA G ...  
size 40



LFA G ...  
size 50 and 63



| Size             | 16   | 25   | 32   | 40   | 50   | 63   |
|------------------|------|------|------|------|------|------|
| D1 <sup>2)</sup> | Φ1.2 | Φ1.5 | Φ2.0 | M6   | M8x1 | M8x1 |
| D2 <sup>2)</sup> | Φ1.2 | Φ1.5 | Φ2.0 | M6   | M8x1 | M8x1 |
| D3               | —    | —    | —    | —    | G1/2 | G1/2 |
| H1               | 35   | 30   | 35   | 60   | 68   | 82   |
| H2               | 17   | 17   | 21.5 | 30   | 32   | 42   |
| H3               | 15   | 24   | 28   | 32   | 34   | 50   |
| H4               | —    | 12   | 16   | —    | —    | —    |
| H5               | —    | —    | —    | —    | 32   | 40   |
| L1               | 65   | 85   | 100  | 125  | 140  | 180  |
| L2               | 36.5 | 45.5 | 50   | 62.5 | 70   | 90   |
| L3               | —    | —    | —    | —    | 72   | 81   |
| L4               | —    | —    | —    | —    | 72   | 90   |
| L5               | 4.5  | 4    | 1    | —    | 6    | 4    |

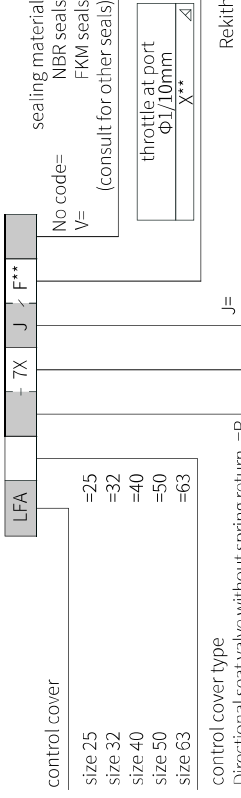


- 1 Name plate for size 16/25/32
- 2 Name plate for size 40/50/63
- 3 Optional ports Z1 and Z2 used as threaded connection ports for size 25/32/50/63
- 4 Shuttle valve
- 5 D2 for size 16 to 40

0852

## Control cover "R" and "RF" with integrated directional seat valve

Size 25 to 63

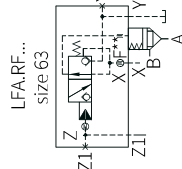
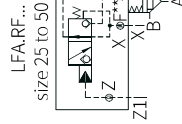
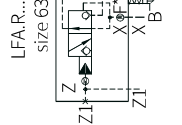
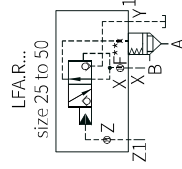


If necessary, please provide specifications of the throttle

e.g. X12= throttle Φ 1.2mm

Standard throttle see page 07/24

70 to 79 series  
(70 to 79 series installation and connection size unchanged)



| Size              | Type | 25   | 32  | 40   | 50  | 63   |
|-------------------|------|------|-----|------|-----|------|
| F** <sup>2)</sup> |      | ZM6  | ZM6 | ZM8  | ZM8 | ZM8  |
| H1                |      | 40   | 50  | 60   | 68  | 82   |
| H2                |      | 20   | 26  | 30   | 34  | 40   |
| H3                |      | 24   | 28  | 32   | 34  | 50   |
| H4                |      | 15.5 | 26  | 30   | 34  | 40   |
| □L1               |      | 85   | 100 | 125  | 140 | 180  |
| L2                |      | 50   | 50  | 65.7 | 70  | 78.5 |
| L3                | R    | 3    | 3   | 4    | 4   | —    |
|                   | RF   | 18   | 18  | 25   | 25  | 16   |
| Weight kg         |      | 2.1  | 3.6 | 6.7  | 9.5 | 18.3 |

<sup>1)</sup> Maximum working pressure at port Y 5 bar

<sup>2)</sup> Ordering code of throttle see page 07/24

1 Name plate for size 16/25/32

2 Name plate for size 40/50/63

3 Optional port Z1 used as threaded connection port for size 25 to 63

4 Optional port Z1 used as threaded connection port for size 25 to 63

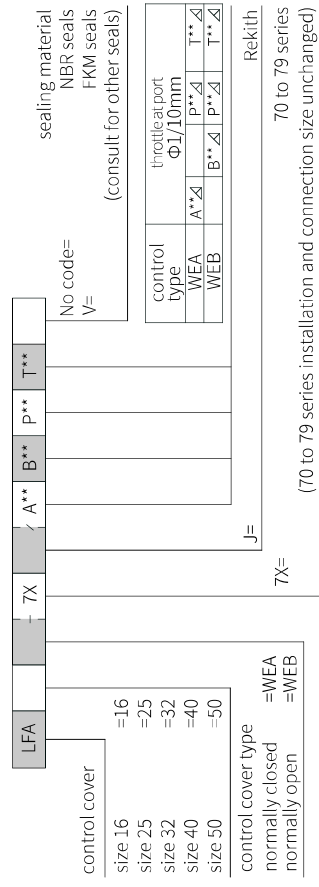
5 D1 for size 25 to 50

6 D1 for size 63

0853

## Control cover "WEA" and "WEB" for set-up of a directional spool or directional seat valve

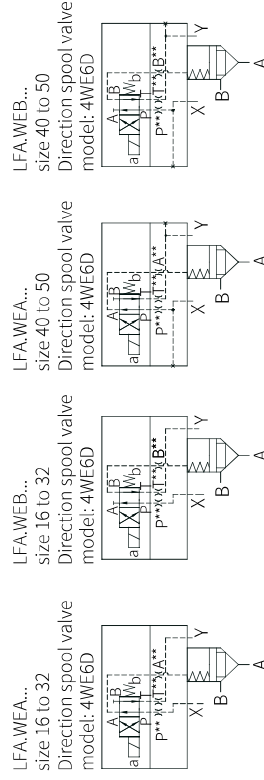
Size 16 to 50



▲ If necessary, please provide specifications of the throttle

e.g. X12=throttle  $\Phi$  1.2mm

Standard throttle see page 07/24



| Size                                                   | 16  | 25   | 32   | 40   | 50   |
|--------------------------------------------------------|-----|------|------|------|------|
| D1                                                     | —   | —    | —    | G1/2 | G1/2 |
| H1                                                     | 40  | 40   | 50   | 60   | 68   |
| H2                                                     | —   | —    | —    | 30   | 32   |
| H3                                                     | 15  | 24   | 28   | 32   | 34   |
| L1                                                     | 65  | 85   | 100  | 125  | 140  |
| L2                                                     | 80  | 85   | 100  | 125  | 140  |
| L3                                                     | —   | —    | —    | 72   | 80   |
| L4                                                     | —   | —    | —    | 53   | 60   |
| L5                                                     | 17  | 27   | 34.5 | 47   | 54.5 |
| L6                                                     | 7   | 23.5 | 31   | 43.5 | 51   |
| A <sup>B</sup> •••<br>T <sup>•</sup> •P <sup>•</sup> • | ZM6 | ZM6  | ZM6  | ZM6  | ZM6  |
| Weight kg                                              | 1.5 | 2.1  | 3.6  | 6.6  | 9.3  |

<sup>1)</sup> Ordering code of throttle see page 07/24

1 Name plate for size 16/25/32

2 Nameplate for size 40/50

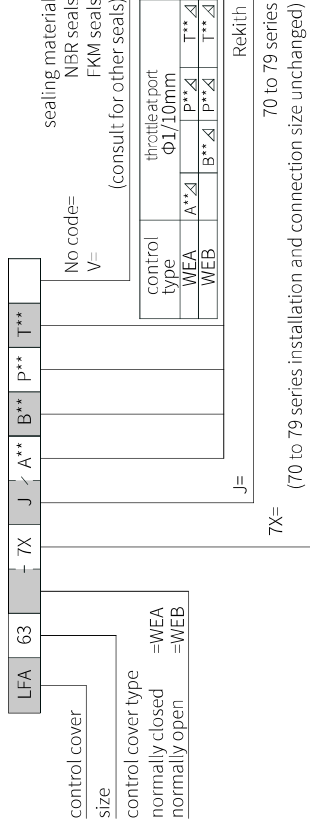
3 Optional ports X and Y used as threaded connection ports for size 40/50

4 Direction spool valve 4WE6D and screw

M5x50-10.9 GB T70.1 must be ordered separately

## Control cover "WEA" and "WEB" for set-up of a directional spool or directional seat valve

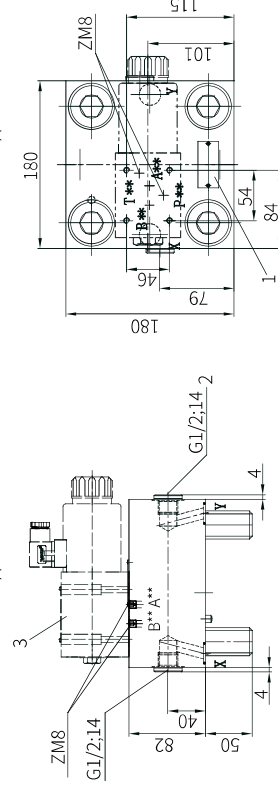
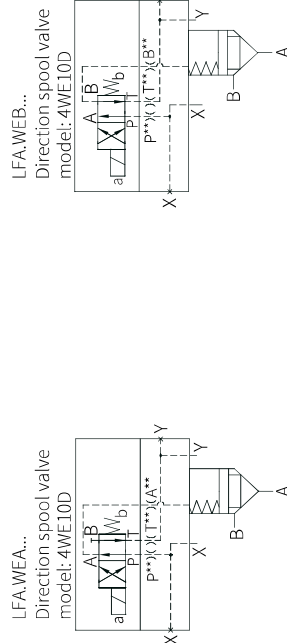
Size 63



△ If necessary, please provide specifications of the throttle

e.g. X12=throttle  $\Phi$  1.2mm

Standard throttle see page 07/24



|                                   |     |
|-----------------------------------|-----|
| $A^{**}B^{**}$<br>$T^{**}P^{**I}$ | ZM8 |
|-----------------------------------|-----|

1 Name plate

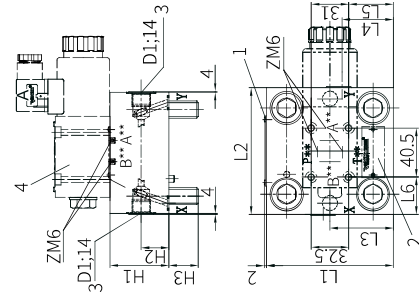
2 Optional ports X and Y used as threaded connection ports

3 Direction spool valve 4WE10D and screw M6x40-10.9 GB

T70.1 must be ordered separately

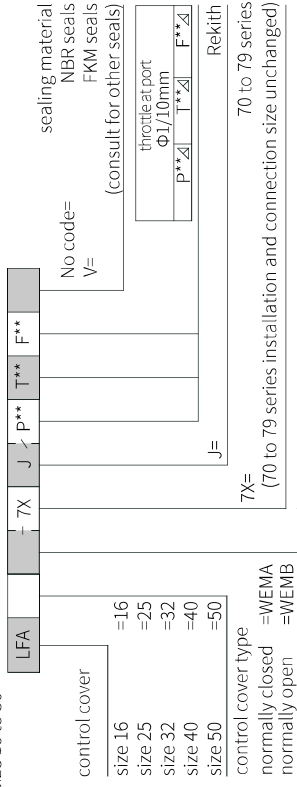
Weight (kg): 18.6

1) Ordering code of throttle see page 07/24



Control cover "WEMA" and "WEMB" for set-up of a directional spool or directional seat valve

Size 16 to 50

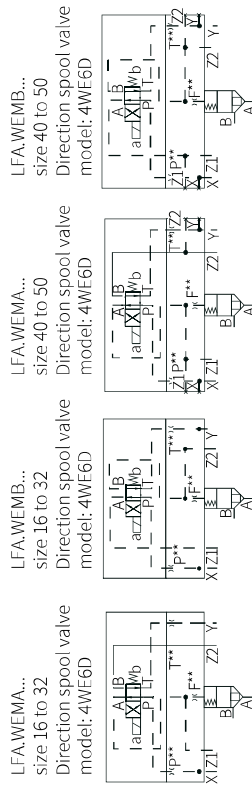


Δ If necessary, please provide specifications of the throttle

e.g. X12= throttle Ø 1.2mm

Standard throttle see page 07/24

05



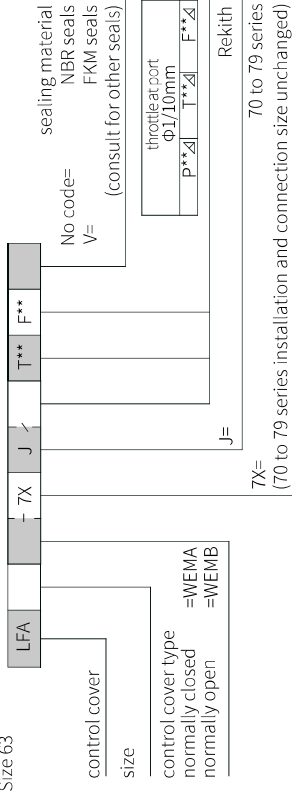
| Size    | 16  | 25   | 32   | 40   | 50   |
|---------|-----|------|------|------|------|
| D1      | —   | —    | —    | G1/2 | G1/2 |
| H1      | 65  | 40   | 50   | 60   | 68   |
| H2      | —   | —    | —    | 30   | 32   |
| H3      | 15  | 24   | 28   | 32   | 34   |
| L1      | 65  | 85   | 100  | 125  | 140  |
| L2      | 80  | 85   | 100  | 125  | 140  |
| L3      | —   | —    | —    | 53   | 60   |
| L4      | 17  | 27   | 34.5 | 47   | 54.5 |
| L5      | 7   | 23.5 | 31   | 43.5 | 51   |
| L6      | —   | —    | —    | 72   | 80   |
| P** T** | ZM6 | ZM6  | ZM6  | ZM6  | ZM6  |
| F** T** | 23  | 21   | 36   | 6.6  | 9.3  |

<sup>1)</sup> Ordering code of throttle see page 07/24

- 1 Name plate for size 16/25/32
- 2 Name plate for size 40/50
- 3 2 Optional ports X and Y used as threaded connection ports for size 40/50
- 4 Plug ZM6 for model: ..WEMB... (port B with or without throttle F \*\*, port A with plug)
- 5 Plug ZM6 for model: ..WEMA... (port A with or without throttle F \*\*, port B with plug)
- 6 Direction spool valve 4WE6D and screw M5x50-10.9 GB T70.1 must be ordered separately

0856

Size 63

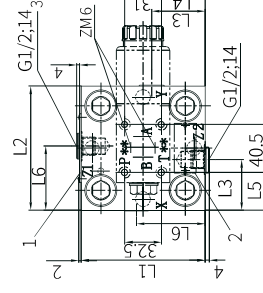
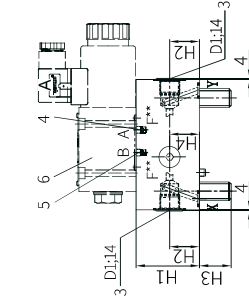
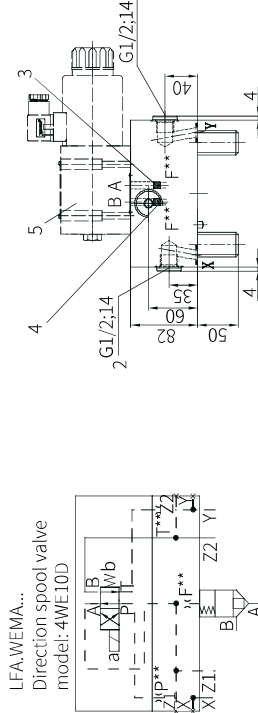


Δ If necessary, please provide specifications of the throttle

e.g. X12= throttle Ø 1.2mm

Standard throttle see page 07/24

05



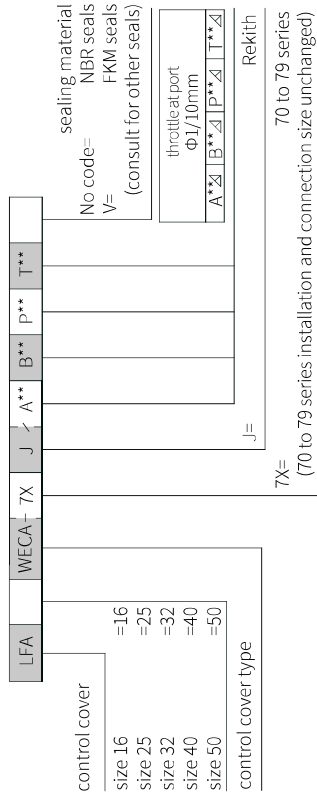
<sup>1)</sup> Ordering code of throttle see page 07/24

- 1 Name plate
- 2 Optional ports X/Y/Z1/Z2 used as threaded connection ports
- 3 Plug ZM8 for model: ..WEMB... (port B with or without throttle F \*\*, port A with plug)
- 4 Plug ZM8 for model: ..WEMA... (port A with or without throttle F \*\*, port B with plug)
- 5 Direction spool valve 4WE10D and screw M6x40-10.9 GB T70.1 must be ordered separately

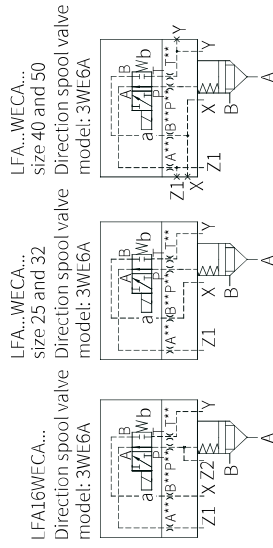
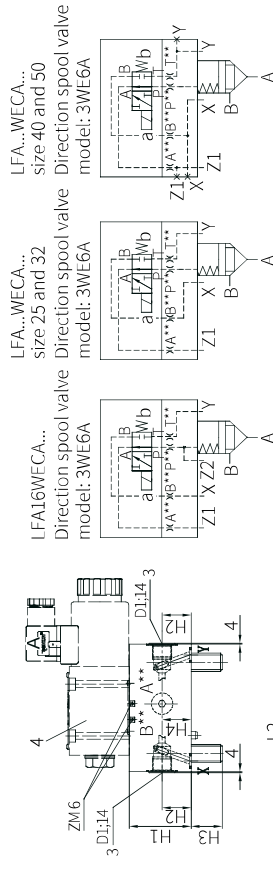
0857

## Control cover "WECA" for set-up of a directional spool valve

Size 16 to 50



Δ If necessary, please provide specifications of the throttle  
e.g. X12= throttle  $\Phi 1.2\text{mm}$   
Standard throttle see page 07/24



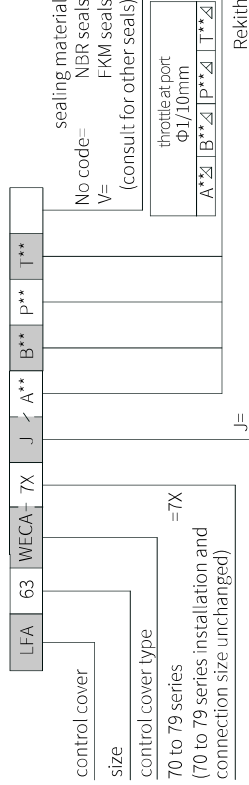
| Size       | 16   | 25   | 32   | 40   | 50   |
|------------|------|------|------|------|------|
| D1         | —    | —    | —    | G1/2 | G1/2 |
| H1         | 40   | 40   | 50   | 60   | 68   |
| H2         | —    | —    | —    | 30   | 32   |
| H3         | 15   | 24   | 28   | 32   | 34   |
| H4         | —    | —    | —    | 30   | 32   |
| L1         | 65   | 85   | 100  | 125  | 140  |
| L2         | 80   | 85   | 100  | 125  | 140  |
| L3         | —    | —    | —    | 53   | 60   |
| L4         | 17   | 27   | 34.5 | 47   | 54.5 |
| L5         | 7    | 23.5 | 31   | 43.5 | 51   |
| L6         | —    | —    | —    | 62.5 | 70   |
| L7         | —    | —    | —    | 72   | 80   |
| A**B**     | ZM 6 | ZM 6 | ZM 6 | ZM 6 | ZM 6 |
| P**, T**1) | ZM 6 | ZM 6 | ZM 6 | ZM 6 | ZM 6 |
| Weight kg  | 1.5  | 2.1  | 3.6  | 6.6  | 9.3  |

1) Ordering code of throttle see page 07/24

- 1 Name plate for size 16/25/32
- 2 Name plate for size 40/50
- 3 Optional ports X/Y/Z1 used as threaded connection ports for size 40 and 50
- 4 Direction spool valve 3WE6A and screw M5x50-10.9 GB T70.1 must be ordered separately

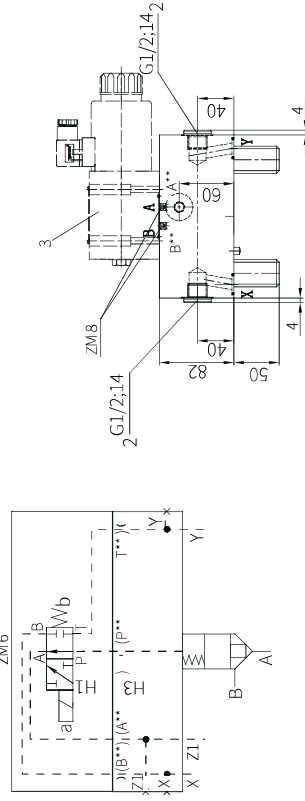
## Control cover "WECA" for set-up of a directional spool valve

Size 63



Δ If necessary, please provide specifications of the throttle  
e.g. X12= throttle  $\Phi 1.2\text{mm}$   
Standard throttle see page 07/24

LFA63WECA...  
Direction spool valve  
model: 3WE10A



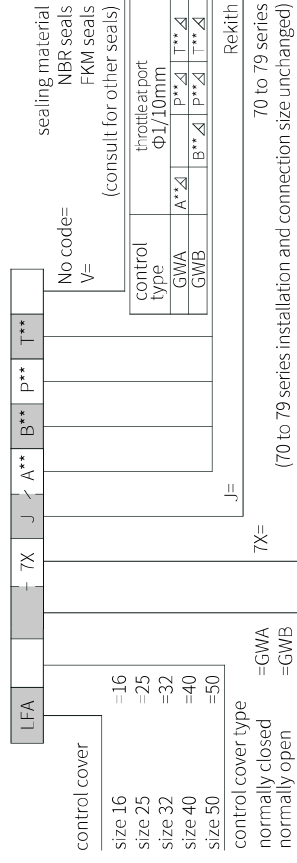
|            |     |
|------------|-----|
| A**B**     | ZM8 |
| P**, T**1) |     |

1) Ordering code of throttle see page 07/24

- 1 Name plate
- 2 Optional ports X/Y/Z1/Z2 used as threaded connection ports
- 3 Direction spool valve 3WE10A and screw M6x40-10.9 GB T70.1 must be ordered separately

Control cover "GWA" and "GWB" for set-up of a directional spool or directional seat valve

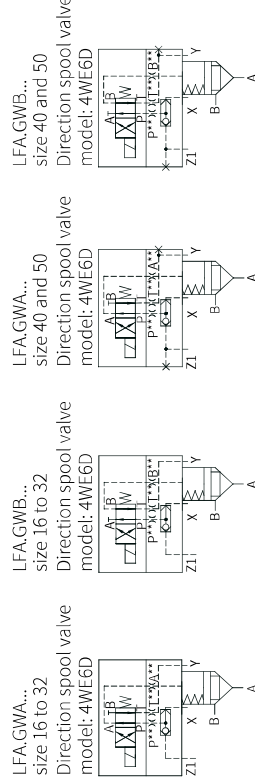
Size 16 to 50



△If necessary, please provide specifications of the throttle

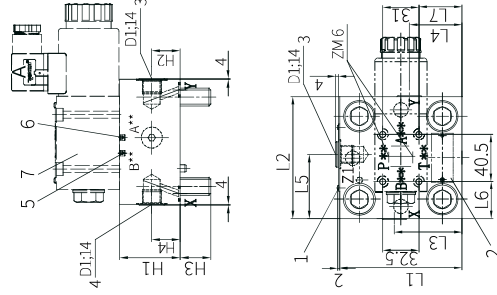
e.g. X12=throttle  $\Phi$  1.2mm

Standard throttle see page 07/24



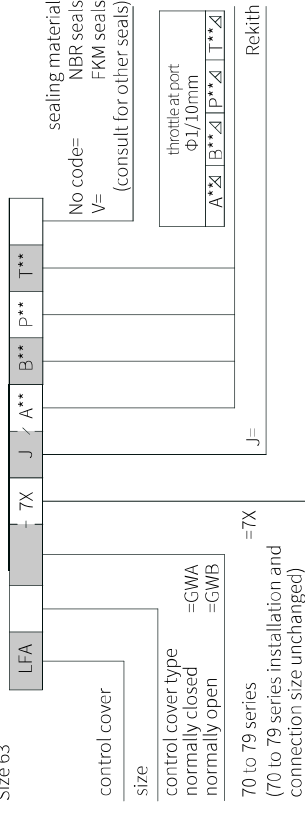
| Size               | 16   | 25   | 32   | 40   | 50   |
|--------------------|------|------|------|------|------|
| D1                 | —    | —    | —    | G1/2 | G1/2 |
| H1                 | 40   | 40   | 50   | 60   | 68   |
| H2                 | —    | —    | —    | 30   | 32   |
| H3                 | 15   | 24   | 28   | 32   | 34   |
| H4                 | 17   | 17   | 21.5 | 30   | 32   |
| L1                 | 65   | 85   | 100  | 125  | 140  |
| L2                 | 80   | 85   | 100  | 125  | 140  |
| L3                 | 36.5 | 45.5 | 50   | 62.5 | 72   |
| L4                 | —    | —    | —    | 53   | 60   |
| L5                 | —    | —    | —    | 62.5 | 70   |
| L6                 | 7    | 23.5 | 31   | 43.5 | 51   |
| L7                 | 17   | 27   | 34.5 | 47   | 54.5 |
| A**B*<br>P*(T**1)) | ZM 6 | ZM 6 | ZM 6 | ZM 6 | ZM 6 |
| Weight kg          | 15   | 2.1  | 3.6  | 6.4  | 9.3  |

- 1 Name plate for size 16/25/32
- 2 Name plate for size 40/50
- 3 Optional ports Y and Z1 used as threaded connection ports for size 40/50
- 4 Shuttle valve
- 5 Plug ZM6 for model: ..GWA... (port B with plug only)
- 6 Plug ZM6 for model: ..GW3... (port A with plug only)
- 7 Direction spool valve 4WF60 and screw M5x50-10.9 GB  
TT01 must be ordered separately



Control cover "GWA" and "GWB" for set-up of a directional spool or directional seat valve

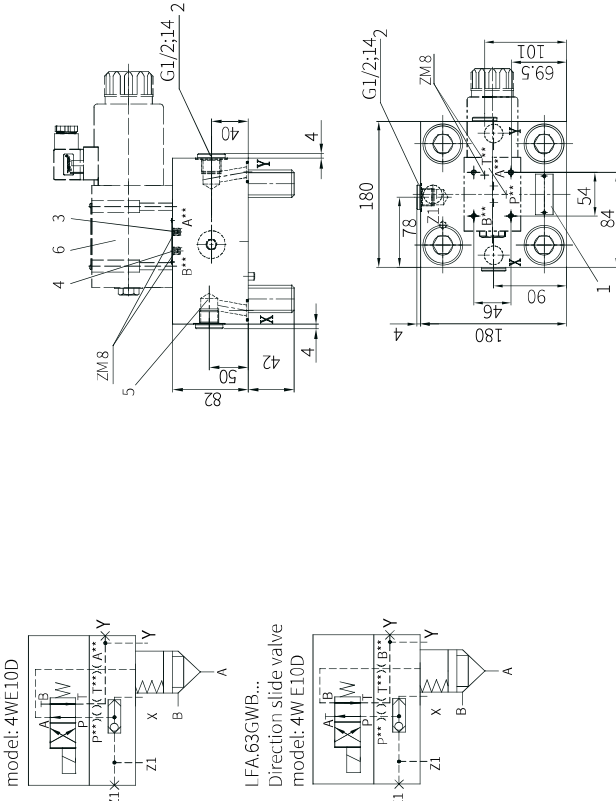
Size 63



△ If necessary, please provide specifications of the throttle

e.g. X12=throttle  $\Phi$  1.2mm

Standard throttle see page 07/24

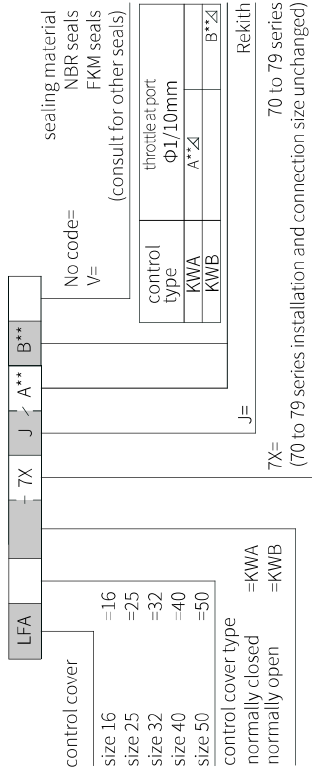


- 1 Name plate
- 2 Optional ports Y and Z1 used as threaded connection ports for size 40/50
- 3 Plug ZM8 for mode1: ..GWB...(port A with plug only)
- 4 Plug ZM8 for mode1: ..GWA...(port B with plug only)
- 5 Shutoff valve
- 6 Direction spool valve 4WE10D and screw M5x50-10.9 GB  
TT0.1 must be ordered separately
- Weight (kg): 18.6

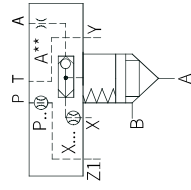
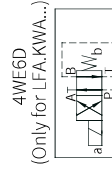
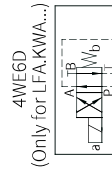
<sup>1)</sup>Ordering code of throttle see page 07/24

Control cover "KWA" and "KWB" for set-up of a directional spool or directional seat valve

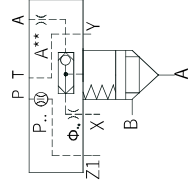
Size 16 to 50



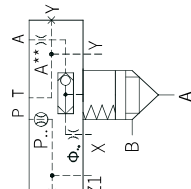
Δ If necessary, please provide specifications of the throttle  
e.g. X12= throttle φ 1.2mm  
Standard throttle see page 07/24



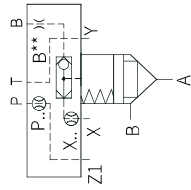
LFA16KWA...  
(see above model 4WE6D...)



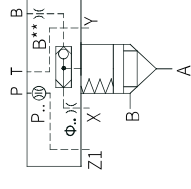
LFA.KWA...  
size 25 and 32  
(see above model 4WE6D...)



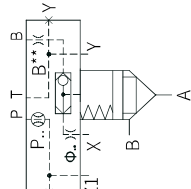
LFA.KWA...  
size 40 and 50  
(see above model 4WE6D...)



LFA16KWB...  
(see above model 4WE6D...)



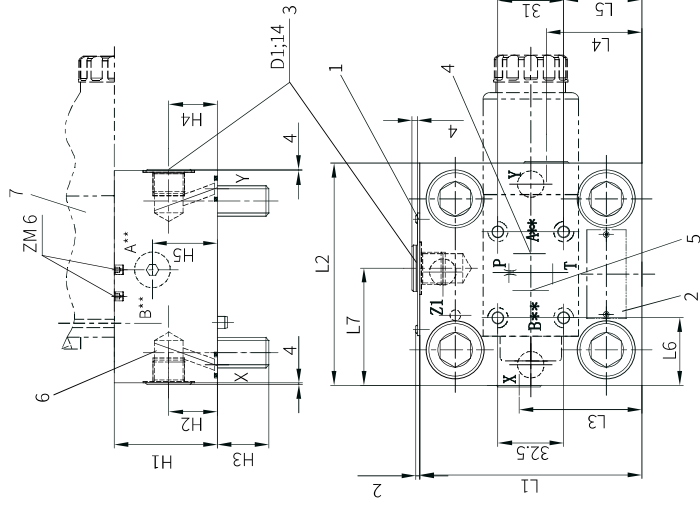
LFA.KWB...  
size 25 and 32  
(see above model 4WE6D...)



LFA.KWB...  
size 40 and 50  
(see above model 4WE6D...)

Control cover "KWA" and "KWB" for set-up of a directional spool or directional seat valve

Model ..KWA/..KWB.. (size 16 to 50)



1 Name plate for size 16/25/32

2 Name plate for size 40/50

3 optional ports Y and Z1 used as threaded connection ports for size 40/50

4 Plug ZM6 for model ..KWB... (port A with plug only)

5 Plug ZM6 for model ..KWA... (port B with plug only)

6 Shuttle valve

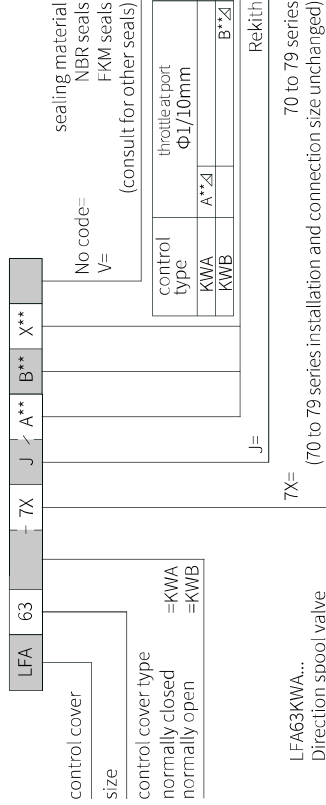
7 Direction spool valve 4WE6D and screw M5x50-10.9 GB 170.1 must be ordered separately

| Size      | 16   | 25   | 32   | 40   | 50   |
|-----------|------|------|------|------|------|
| D1        | —    | —    | —    | G1/2 | G1/2 |
| H1        | 40   | 40   | 50   | 60   | 68   |
| H2        | 17   | 17   | 21.5 | 30   | 32   |
| H3        | 15   | 24   | 28   | 32   | 34   |
| H4        | —    | —    | —    | 30   | 32   |
| H5        | —    | —    | —    | 30   | 50   |
| L1        | 65   | 85   | 100  | 125  | 140  |
| L2        | 80   | 85   | 100  | 125  | 140  |
| L3        | 36.5 | 45.5 | 50   | 62.5 | 72   |
| L4        | —    | —    | —    | 53   | 60   |
| L5        | 17   | 27   | 34.5 | 47   | 54.5 |
| L6        | 7    | 23.5 | 31   | 43.5 | 51   |
| L7        | —    | —    | —    | 62.5 | 70   |
| A**B**1)  | ZM 6 | ZM 6 | ZM 6 | ZM 6 | ZM 6 |
| Weight kg | 1.5  | 2.1  | 3.6  | 6.6  | 9.3  |

1) Ordering code of throttle see page 07/24

Control cover "KWA" and "KWB" for set-up of a directional spool or directional seat valve

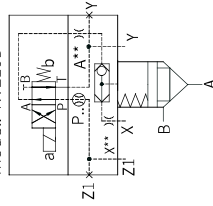
Size 63



LFA63KWA...

Direction spool valve

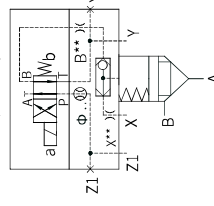
model: 4WE10D



LFA63KWB...

Direction spool valve

model: 4WE10D



A\*\*B\*\*Δ

<sup>1)</sup>Ordering code of throttle see page 07/24

- 1 Name plate
  - 2 Optional ports Y and Z1 used as threaded connection ports for size 40/50
  - 3 Plug for model ..KWB...
  - 4 Plug for model ..KWA...
  - 5 Shuttle valve
  - 6 Direction spool valve 4WE10D and screw M6x40-10.9 GB T70.1 must be ordered separately
- Weight (kg): 18.6

## 2-way Logic Cartridge Valves Pressure Function

Model: LC...7XJ(logic cartridge valves)  
LFA...7XJ(control cover)



- ◆ Size 16/63
- ◆ Maximum working pressure 420 bar
- ◆ Maximum working flow 2500 L/min

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### Features

- Cartridge spool and various sleeves to meet relief and reducing function
- One sleeve with multi-spool in cartridge structure
- Area ratio 1:1 and 1.07:1
- Optional throttle
- Different cracking pressures