

Progressive central lubrication system

Progressive distributor

LX-4

Technical description

The progressive distributor LX-4 is built in a variable disk construction. Therefore the distributor can be, depending on the number of lubrication points, extended or shortened.

Due to the disk construction the individual elements (first, middle and end element) can be combined to one progressive distributor with different metering volumes.

The different metering volume per piston stroke is reached by different piston diameters.

For a perfect function the progressive distributor needs min. three pistons, this means an initial and end element and minimum one middle element.

Technical data

Operating pressure inlet: max. 300 bar

Temperature range: -30 °C to 80 °C

Metering medium: oil - fluid grease - grease up to NLGI-cl. 2

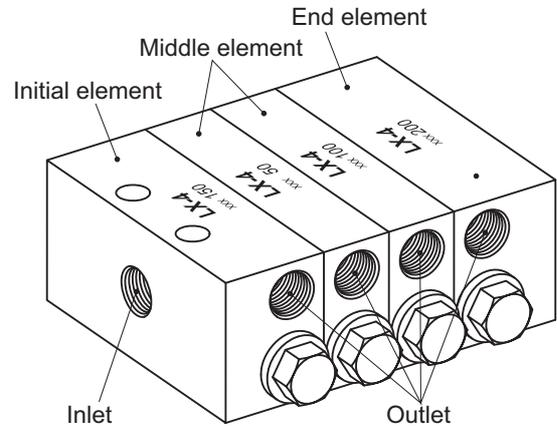
Number of revol. max. 180 rev. / min
Material: steel, zinc nickel coating acc. to DIN 50979

No. of piston elements:
min. 3 piston elements: LX-4 3/6
max. 10 piston elements: LX-4 10/20

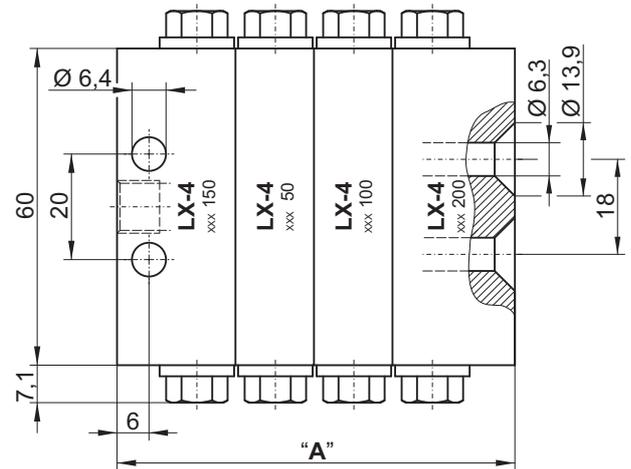
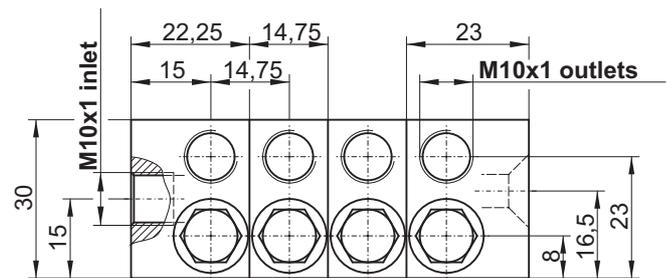
Table of metering volume:

| Description piston element | Metering volume (mm ³ /stroke) | | Code |
|----------------------------|---|------------|------|
| | p. outlet | p. element | |
| LX-4 50 | 50 | 100 | 50 |
| LX-4 100 | 100 | 200 | 100 |
| LX-4 150 | 150 | 300 | 150 |
| LX-4 200 | 200 | 400 | 200 |

Progressive distributor LX-4 with four piston elements and eight outlets:



Dimensional drawing:



| Number of piston element | Number of outlets (max.) | Dim. "A" (mm) |
|--------------------------|--------------------------|---------------|
| 3 | 6 | 60,00 |
| 4 | 8 | 74,75 |
| 5 | 10 | 89,50 |
| 6 | 12 | 104,25 |
| 7 | 14 | 119,00 |
| 8 | 16 | 133,75 |
| 9 | 18 | 148,50 |
| 10 | 20 | 163,25 |

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Elements

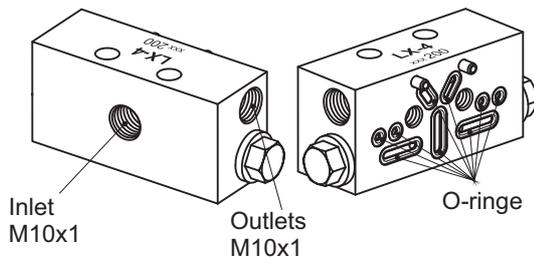
The progressive distributor LX-4 consists of an initial element, up to eight middle elements and one end element. All elements contain a piston.

The inlet (at initial element) as well as all outlets (at initial, middle and end element) are designed as threaded connections M10x1.

All pipe fittings with suitable connection threads and nominal pressure can be screwed into the inlet of the initial element as well as into the outlets of all elements (see "accessories progressive distributor" or "fittings and accessories").

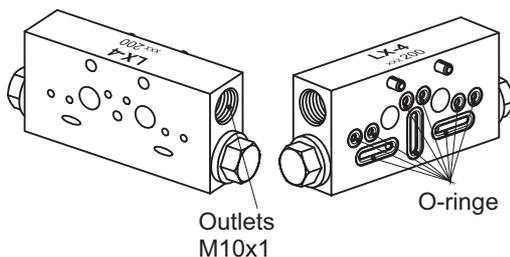
Initial element

| Initial element | Order-no. |
|-----------------|------------|
| LX-4 50 | 3950971000 |
| LX-4 100 | 3950972000 |
| LX-4 150 | 3950973000 |
| LX-4 200 | 3950974000 |



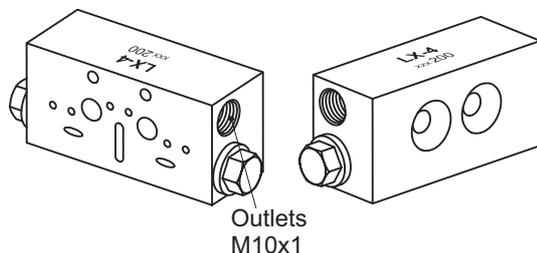
Middle element

| Middle element | Order-no. |
|----------------|------------|
| LX-4 50 | 3950981000 |
| LX-4 100 | 3950982000 |
| LX-4 150 | 3950983000 |
| LX-4 200 | 3950984000 |



End element

| End element | Order-no. |
|-------------|------------|
| LX-4 50 | - |
| LX-4 100 | 3950992000 |
| LX-4 150 | 3950993000 |
| LX-4 200 | 3950994000 |



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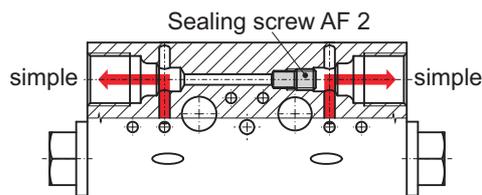
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Combination of outlets

For larger lubrication points it could be necessary to combine two or more outlets at the progressive distributor.

The individual disks have two outlets.

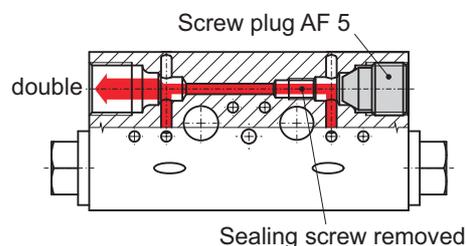


Combination of outlets at one element

When two outlets are combined, the two outlets of one element are connected. To this purpose, the sealing screw, which separates the two sides, is removed and a screw plug is screwed into the side to be closed. The metering volume of the locked side now comes out of the other side, i.e. the metering volume at the open side doubles.

Combination of outlets

Screw plug for closing outlets:



Order number

Screw plug M10x1 (ZnNi): 3976960050000

Separation of outlets

To separate combined outlets again, the sealing screw has to be screwed in again.

Sealing screw for separating outlets at progressive distributors:



Order number

Sealing screw: 0802000455

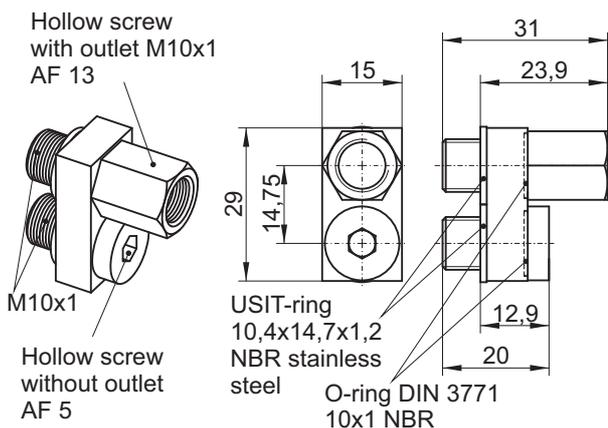
Combination of outlets at several elements

When the total metering volume of the outlets combined in one element should be insufficient, for very large bearing points or main distributors e.g., there is also the possibility to combine the outlets of several elements.

Distributor bridge with outlet

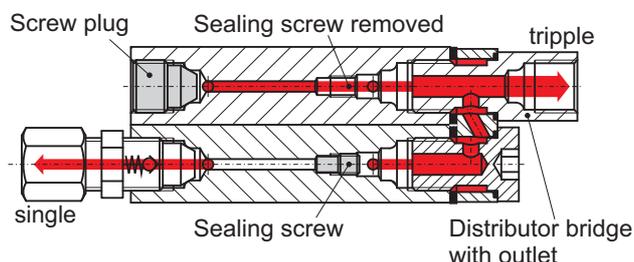
With the help of distributor bridges with outlet two, three or four outlets can be connected at different adjacent distributor disks.

Order-no. total: 3976960010012
 Material: ZnNi



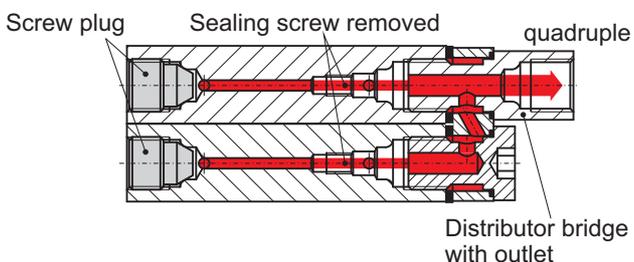
Three outlets combined at two elements

When three outlets shall be combined, the sealing screw has to be removed from one of the concerned elements. The outlet opposite the distributor bridge of the distributor disk at which that sealing screw has been removed, must be locked with a screw plug. All three outlets' metering volume then comes out of the outlet of the distributor bridge.



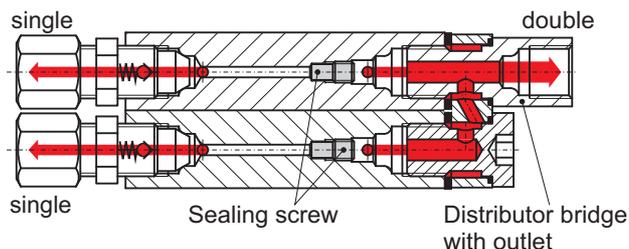
Four outlets combined at two elements

When four outlets of two adjacent elements should be combined, the sealing screws have to be removed from both elements and a screw plug has to be screwed into each of the two outlets opposite to the distributor bridge. All four outlets' metering volume then comes out of the distributor bridge's outlet.



Two outlets combined at two elements

When only two outlets at different, adjacent distributor disks are combined, the sealing screw must not be removed. The metering volume of both outlets comes out at the distributor bridge outlet.



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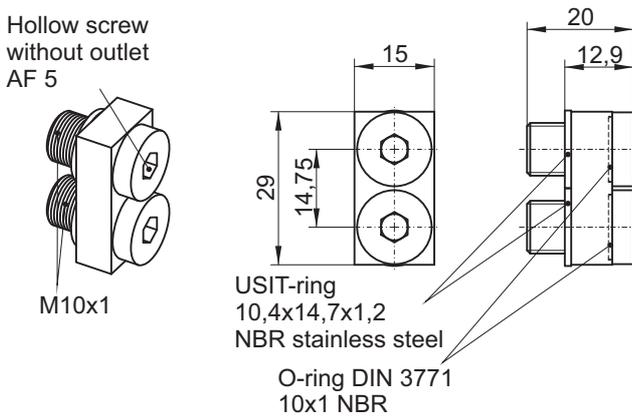
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Distributor bridges without outlet

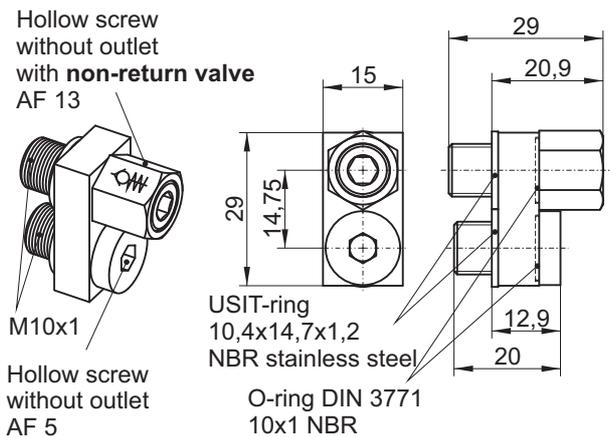
Distributor bridges without outlet can combine, three or four outlets at different, adjacent elements.

Order-no. total 3976960010013
Material: ZnNi



Distributor bridge without outlet, with non-return valve

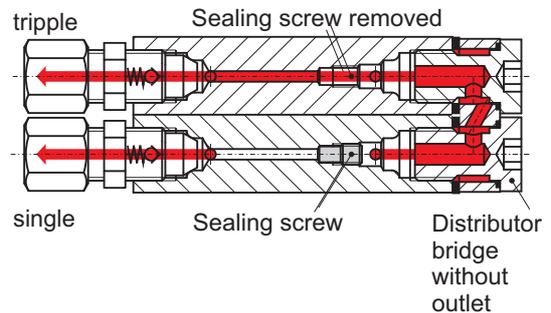
Order number total: 3976960010016
Material: ZnNi



When LX-4 3/2 is used where three outlets are combined, a distributor bridge without outlet but **with integrated non-return valve** has to be used.

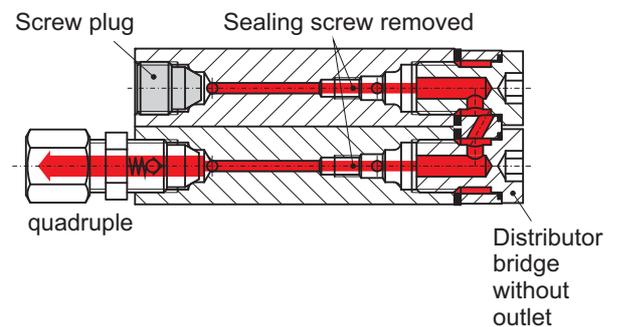
Three outlets combined at two elements

When outlets are combined with a distributor bridge without outlet, at least three outlets are always concerned, as the metering volume has to be directed through one of the disks of the progressive distributor. The sealing screw always has to be removed in one of the two combined distributor disks.



Four outlets combined at two elements

Also four outlets can be combined with a distributor bridge without outlet. To this purpose, the sealing screws have to be removed from both distributor disks and one of the two outlets opposite to the pipe bridge have to be closed with a screw plug.



Proximity switch

For monitoring the system or when using stroke controls to count the piston strokes, proximity switches can be installed at the progressive distributors LX-4.

Proximity switches can be retrofit at all elements at any time. Remove the screw with O-ring and insert the proximity switch.

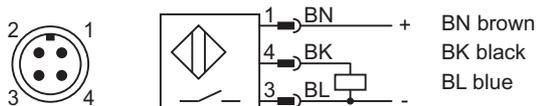
Attention: Take care of utmost cleanness.

The proximity switches are delivered with a cable of 0,3 m and cable and plug M12x1. Depending on the application, bushes with different cable lengths can be connected to the plug, but those bushes must be ordered separate (see accessories progressive distributor).

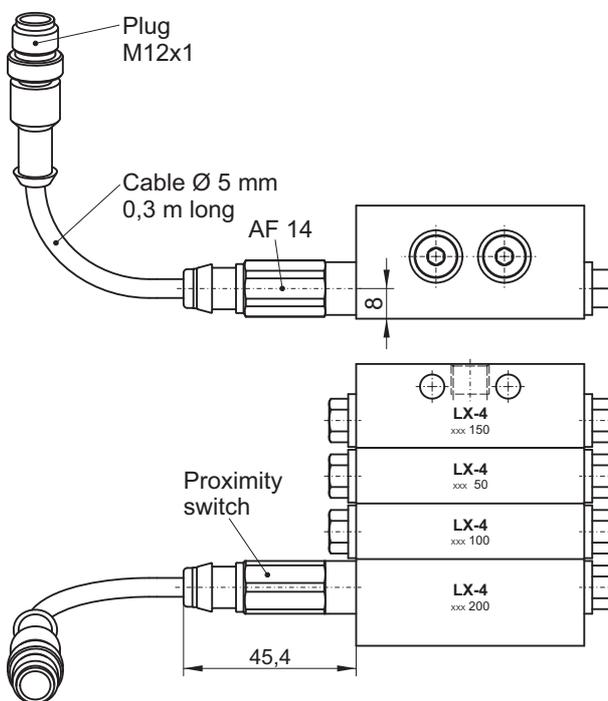
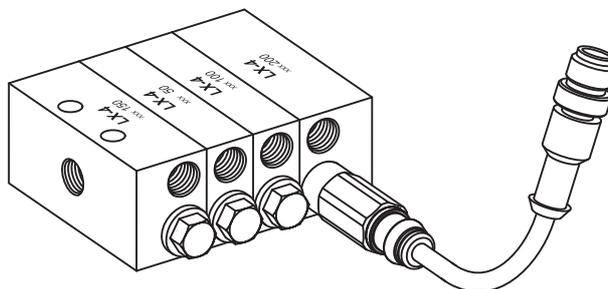
Technical data of proximity switch

| | |
|----------------------------------|---------------------------------------|
| Connection: | M12x1 plugable |
| Switch type: | PNP NO contact |
| Operating voltage: | 10 - 60 V DC incl. residual ripple |
| Current load, | Duration: 100 mA |
| | Short-term: 100 mA |
| Current consumption: | < 15 mA |
| Permitted temperature (ambient): | -25 °C to 70 °C |
| Function indication: | LED yellow |
| Protection class: | IP 67 |
| Housing material: | V4A(1.4571) |
| Threaded connection: | M11x1 |

Circuit diagram



Progressive distributor LX-4 with proximity switch:



Order-no:

Proximity switch with 0,3 m cable and plug M12x1
1000912960

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Extension or shortening of distributors

The distributors LX-4 can any time be adapted to the application conditions because of their disk construction. If new lubrication points should be added or some become unnecessary, the distributor can be extended or shortened by mounting additional distributor disks or removing unnecessary ones.

Description:

- Remove the countersunk screws, which keep the distributor together
- Separate the distributor at the desired point
- Add new middle elements or remove the unnecessary ones
- Screw the distributor together again with the corresponding countersunk screws with internal hexagon socket and one tooth lock washer each (see table)

Note: A LX-4 distributor always has to consist of at least 3 piston elements and 10 as a maximum.

Should one of the O-rings, which are used for sealing the distributor between the individual elements be damaged and does not seal anymore, a set of seals can be ordered, containing all O-rings installed into the LX-4 distributors.

Set of seals for initial elements:

Order-no.: 395097D000

Set of seals for middle elements:

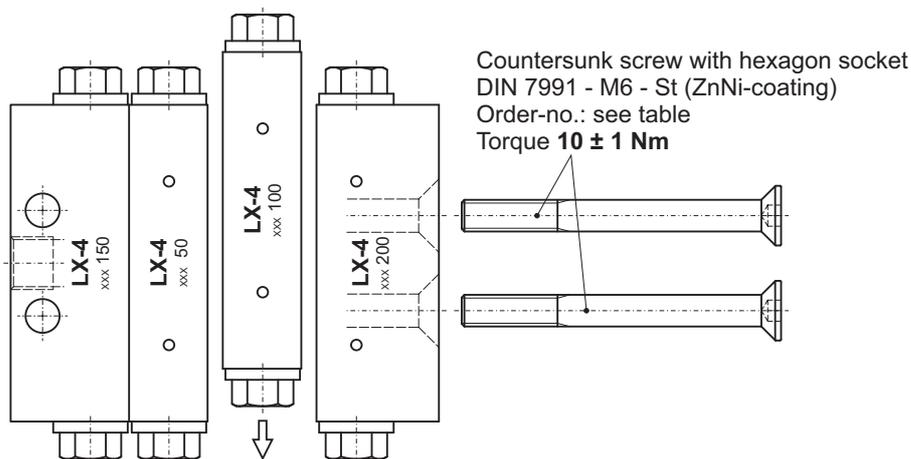
Order-no.: 395098D000

Table for order number for countersunk screws with hexagon socket DIN 7991 (ZnNi), (1 pcs):

| Distributor size | Counter sunk screw | Order-no. |
|------------------|--------------------|--------------|
| LX-4 3/6 | M6 x 45 | 090799103014 |
| LX-4 4/8 | M6 x 60 | 090799103114 |
| LX-4 5/10 | M6 x 75 | 090799103214 |
| LX-4 6/12 | M6 x 90 | 090799103314 |
| LX-4 7/14 | M6 x 105 | 090799103414 |
| LX-4 8/16 | M6 x 120 | 090799103514 |
| LX-4 9/18 | M6 x 135 | 090799103614 |
| LX-4 10/20 | M6 x 150 | 090799103714 |

Figure shows an LX-4 3/6 distributor enlarged by a middle element:

Attention: Take care of utmost cleanness.



Order key

Distributor inlet

The LX-4 distributor can be delivered with or without fittings. If the inlet fitting shall already be installed in the distributor, indicate this by means of fitting type, pipe diameter and the series when order (see table).

| Inlet | Description |
|-------|---|
| M10x1 | without fitting |
| GE06L | Male stud coupling, pipe-Ø 6, series L |
| WE06L | Elbow screw fitting, pipe-Ø 6, series L |
| WS06L | Elbow swivelling fitting, pipe-Ø 6, series L |

Fittings can also be ordered separate (see accessories progressive distributor or fittings and accessories).

When no indication concerning the fittings is made, the delivery is without fittings as standard!

Outlet fitting

The fitting type of the outlets must be indicated with diameter and construction type (see table) when ordering.

| Outlets | Description |
|---------|---|
| M10x1 | without fitting |
| ÜS06 | Union screw, pipe-Ø 6 |
| RVB06 | Non-return valve, pipe-Ø 6 (with cutting ring and union nut) |
| RVS06 | Non-return valve with plug version for pipe-Ø 6 |

If there are no details regarding the fittings, the LX-4 is delivered without fittings as standard.

Metering volume

The metering code number **50** (only for initial and middle elements), **100**, **150** or **200** of the elements have to be indicated on each side of the distributor inlet and they have to be separated by a **slash (/)**. For distributor bridges, a **plus (+)** has to be indicated instead of the slash.

Non-return valves in the distributor bridges are marked with **RV**.

For combined outlets, the metering code numbers accumulate (see "Combination of outlets").

Screw plugs and outlets which are closed with distributor bridges are marked with a **line (---)**. The sealing screw, which has to be removed, is marked with a **star (*)** in the drawing (see "Combination of outlets").

Proximity switch

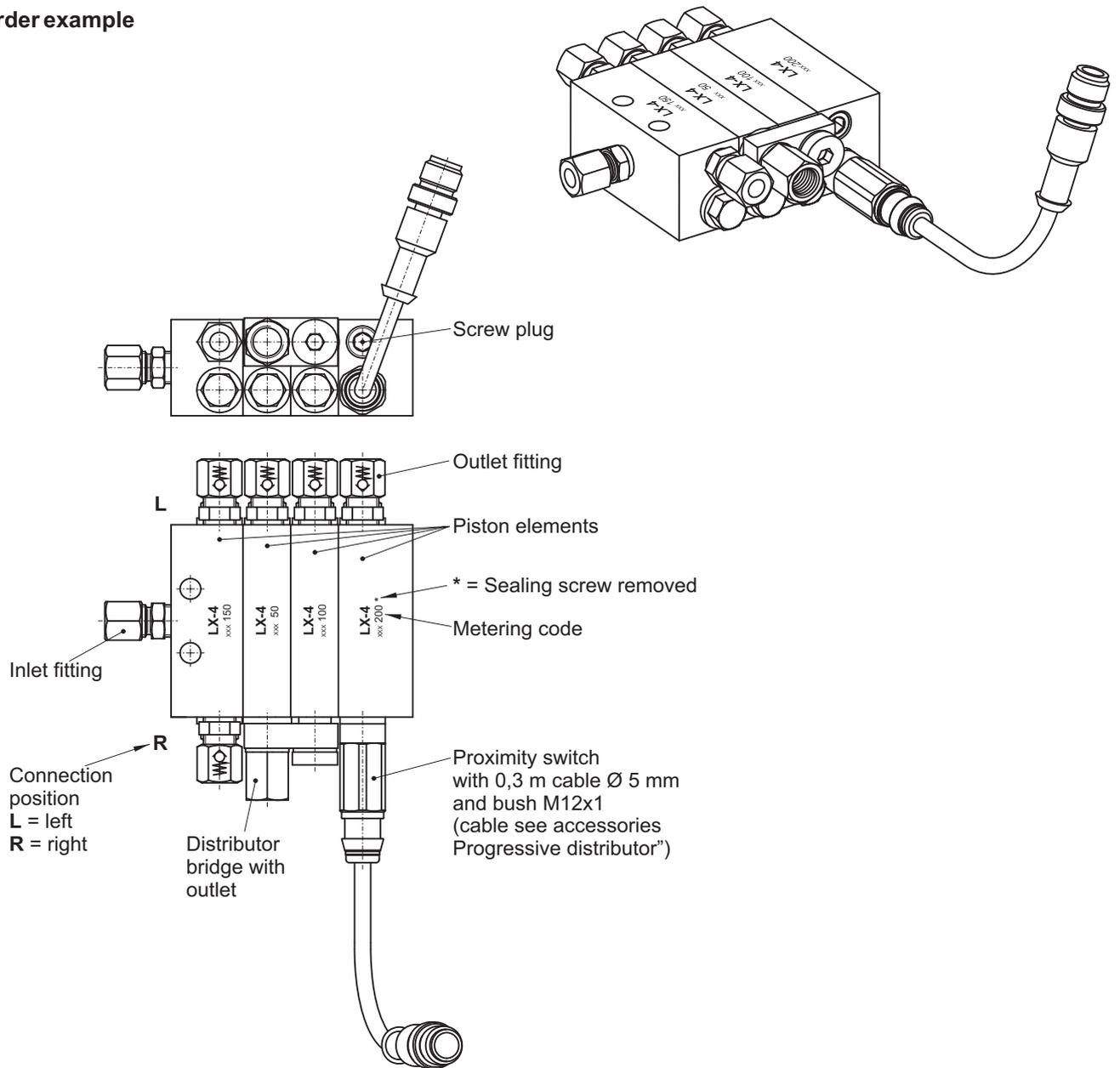
Distributor elements to which a proximity switch should be attached, have to be marked with **NS** (proximity switch) after the number for the metering volume.

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Order example



| | | | |
|----------------------------------|------------------------------|---|--------------------------|
| Type | LX-4 04 / 06 - GE06L / RVB06 | R | 150 / 150 + --- / --- NS |
| No. of piston elements | | L | 150 / 50 / 100 / 400 |
| No. of outlets | | | |
| Inlet fitting | | | |
| Outlet fitting | | | |
| Connection position | | | |
| Metering code numbers at outlets | | | |