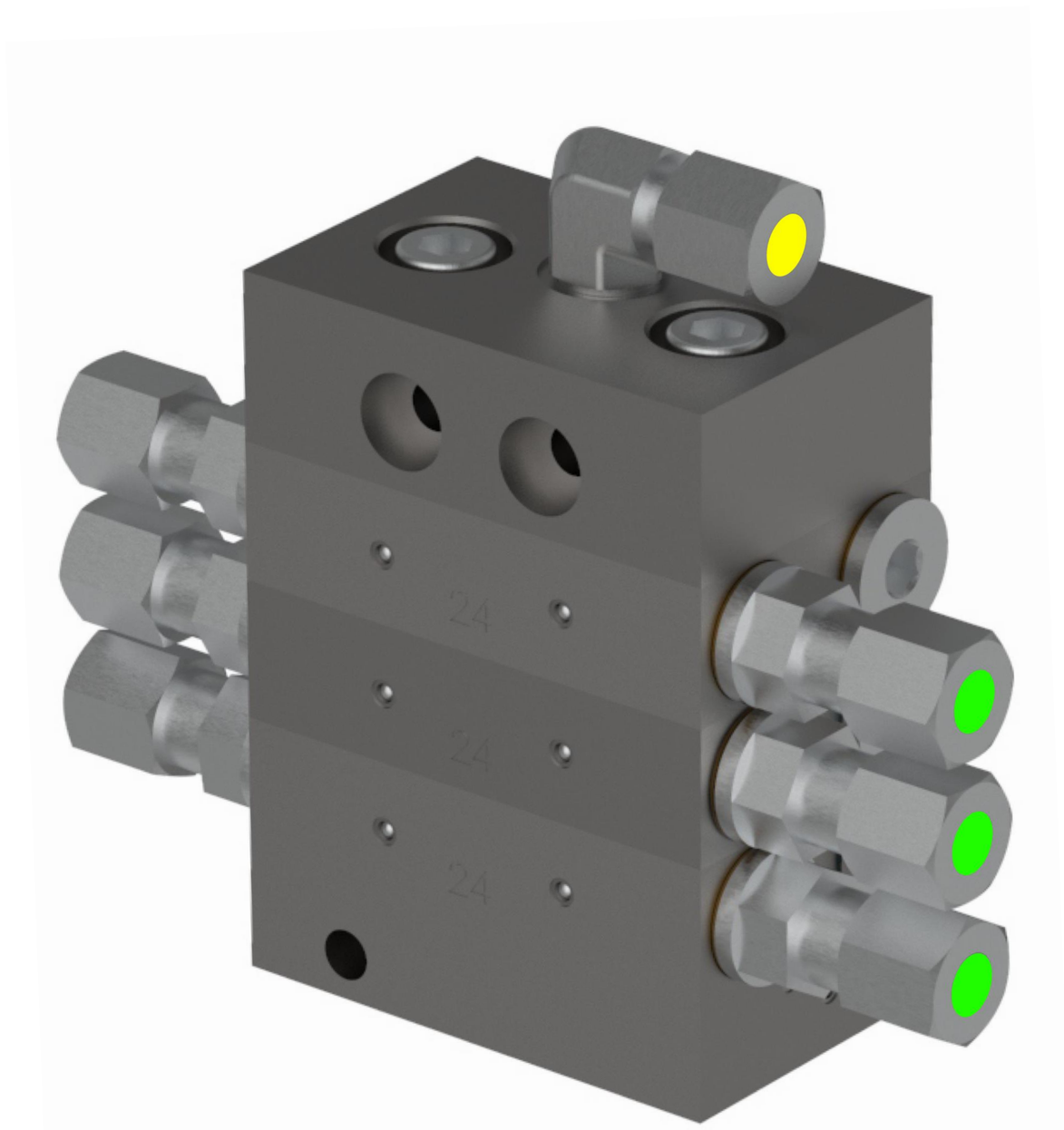
Instruction Manual

Progressive Lubrication Divider

Serie JPQ



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Overview

The progressive piston dividers are divider devices with a hydraulic sequence control, the pistons of which are regulated by the supplied lubricant in a way that the lubricant inevitably and successively escapes at the individual outlets. In the case of malfunction during the flow of lubricant, e.g. plugging of lubricating line or lubricating points, the divider will block up.

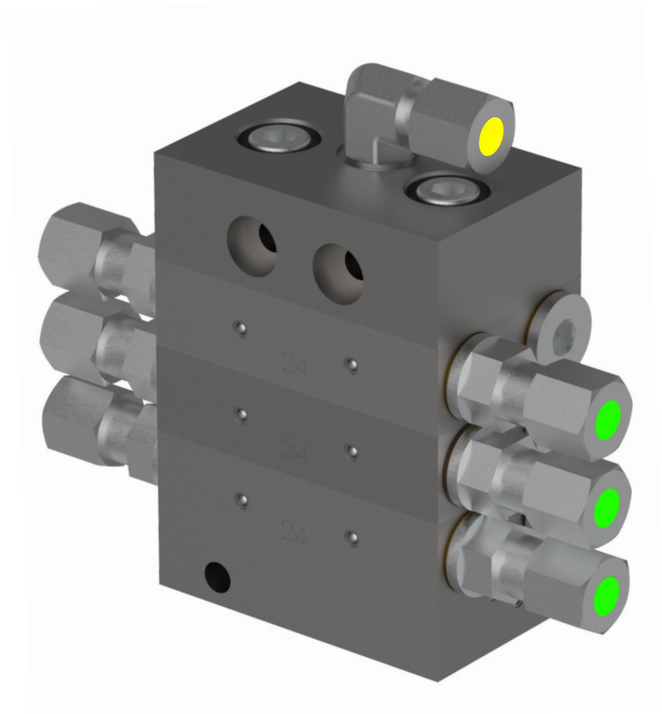
The divider sensor or indication pin (***Dia. 5.1*** - 13 and 14) are used for the monitoring of the distributors. In the case of manually operated pumps a virtually insurmountable counter pressure occurs during the blockage. In the case of automatic pumps such as e.g. the electrical pump ALP811/ALPA or ALPB the lubricant escapes at the safety valve.

The progressive JPQ dividers are manufactured in a variable chip construction, which offers the advantage that the divider can be extended or shortened at random according to the amount of lubrication points. Due to this chip construction there is also the possibility of constructing an overall progressive divider from individual distributor disks with different outputs per piston stroke.

The difference in output per piston stroke is created by different piston diameters. To get the correct functioning of a progressive divider a minimum of three pistons, i.e., a minimum of three output elements is a must.

Technical data:

Operating pressure - Inlet:	max. 300 bar
Temperature range:	-35°C to +70°C
Carrier vehicle:	Oil - viscous oil - grease
In- / Outlet Thread:	M10x1

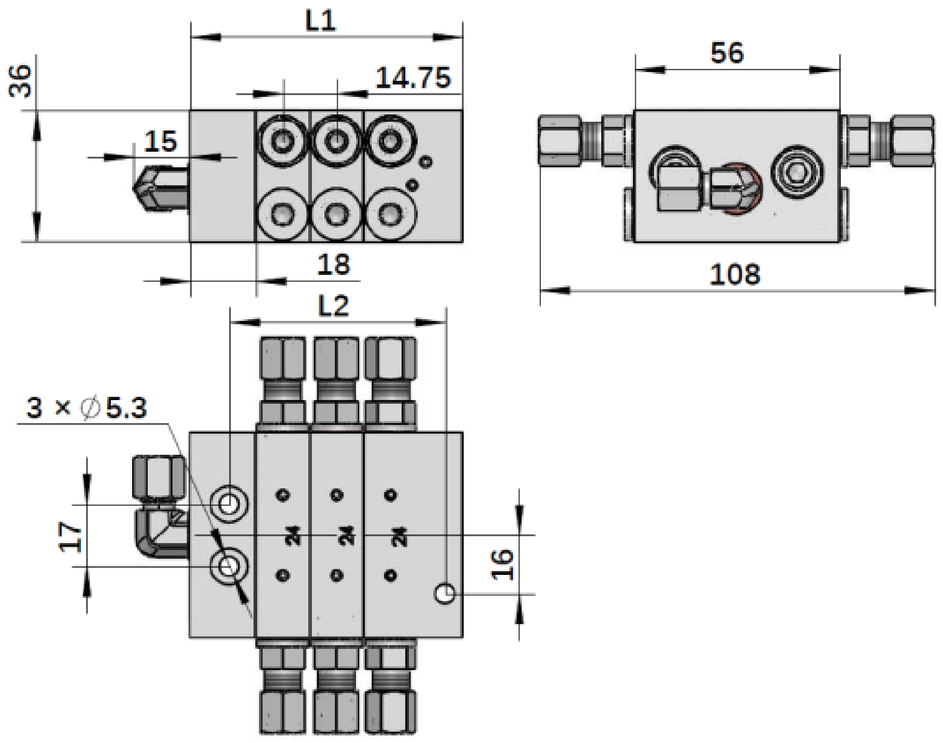


Number of elements:

Min.: JPQ 3/6 (3 output elements)

Max.: JPQ 8/16 (8 output elements)

Element	Delivery Quantity (mm³/Stroke)		Piston Dia. mm
	Per outlet	Per element	
ME 08	80	160	4.0
ME 16	160	320	5.7
ME 24	240	480	7.0
ME 32	320	640	8.0
EE 08	80	160	4.0
EE 16	160	320	5.7
EE 24	240	480	7.0
EE 32	320	640	8.0

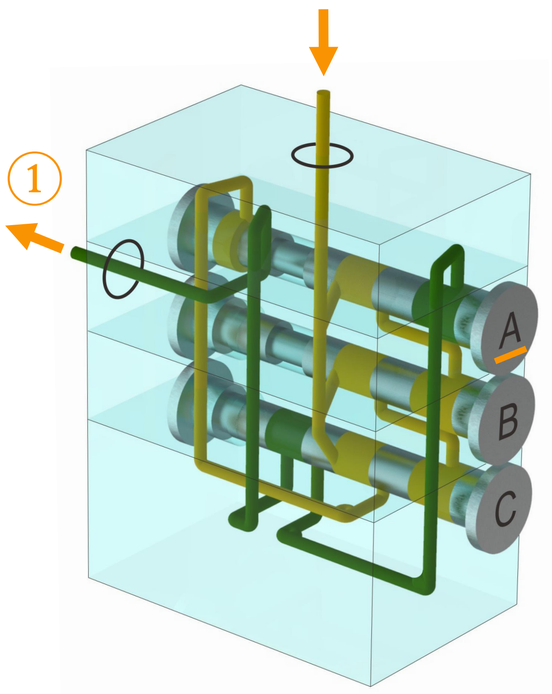


Outlets	6	8	10	12	14	16
L1 mm	74.5	89.3	104.0	118.8	133.5	148.3
L2 mm	59.0	73.8	88.5	103.3	118.0	132.8

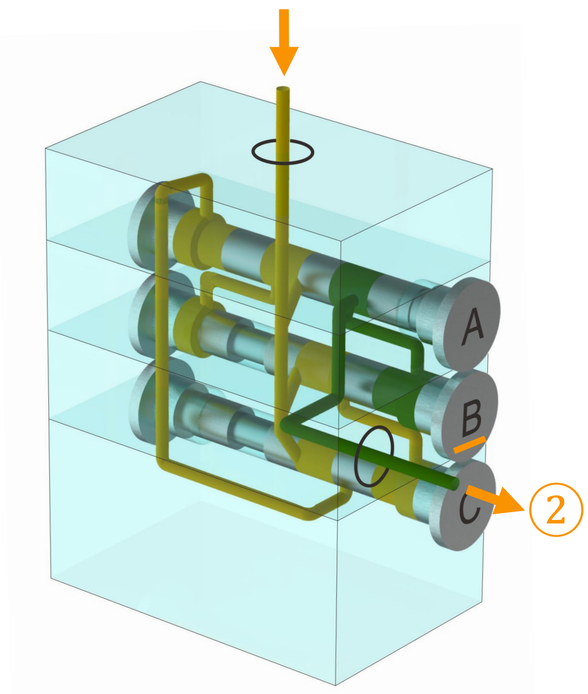
Working Principle

The progressive divider consist of the individual components start element SE (without piston), 2-7 mid element ME and end element EE, all of which are assembled in distributor blocks using tension rods (hexagon socket screws) with lock washers. The individual elements are sealed with O-rings between each other.

The lubricant flows via the inlet of the distributor through all distributor disks to the piston A. The piston (A) is shifted to the left and the lubricant is pressed from the left pressure range of the delivery piston to the outlet ① (***Dia. 4.1***).



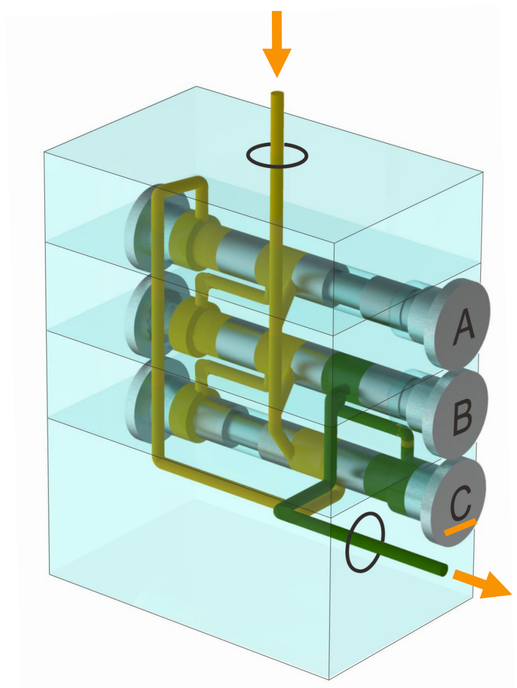
Dia. 4.1 Step A



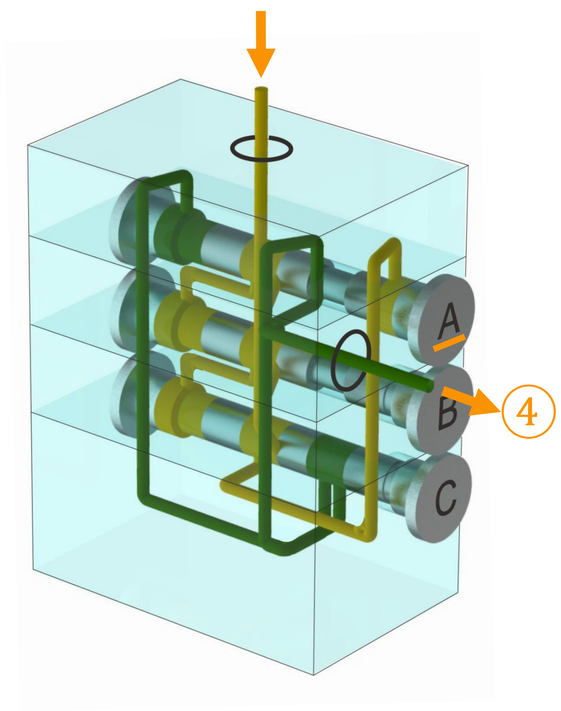
Dia. 4.2 Step B

After that, the proportioning pistons B and C are progressively shifted and the lubricant is primed to the outlets ② (***Dia. 4.2***) and ③ (***Dia. 4.3***).

After the piston C has been shifted, the lubricant is directed to the left side of the delivery pi ston A (***Dia. 4.4***) and primed from the right pressure range of the delivery piston to the outlet ④.



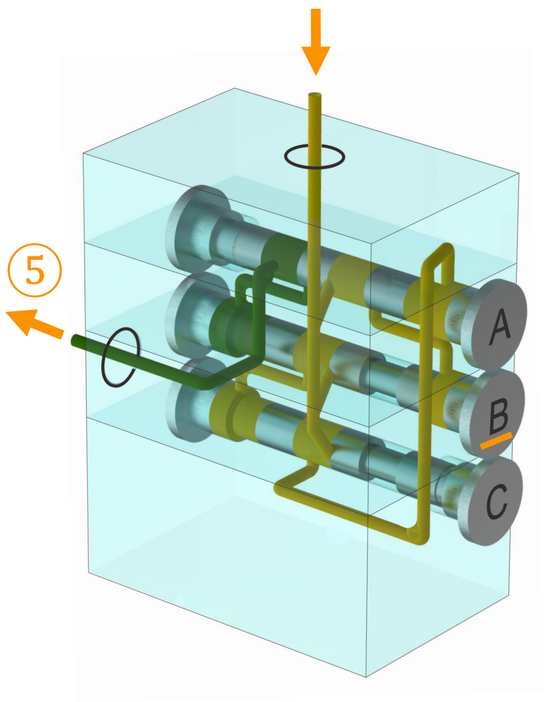
Dia. 4.3 Step C



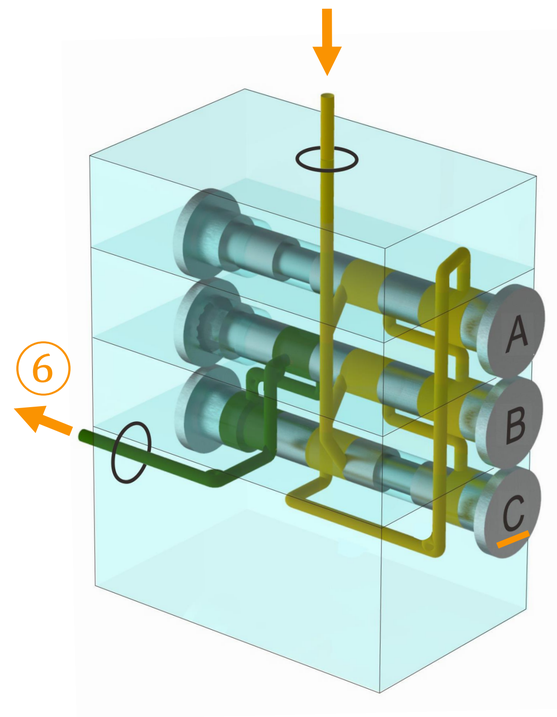
Dia. 4.4 Step D

Subsequently, the delivery pistons B and C are shifted and lubricant is pressed to the outlets ⑤ (***Dia. 4.5***) and ⑥ (***Dia. 4.6***).

After the delivery piston has been shifted, the lubricant is once more directed to the right side of the delivery piston (***Dia. 4.1***) and a new cycle of the progressive divider is initiated. The described function is repeated as long as lubricant is fed to the progressive divider.



Dia. 4.5 Step E



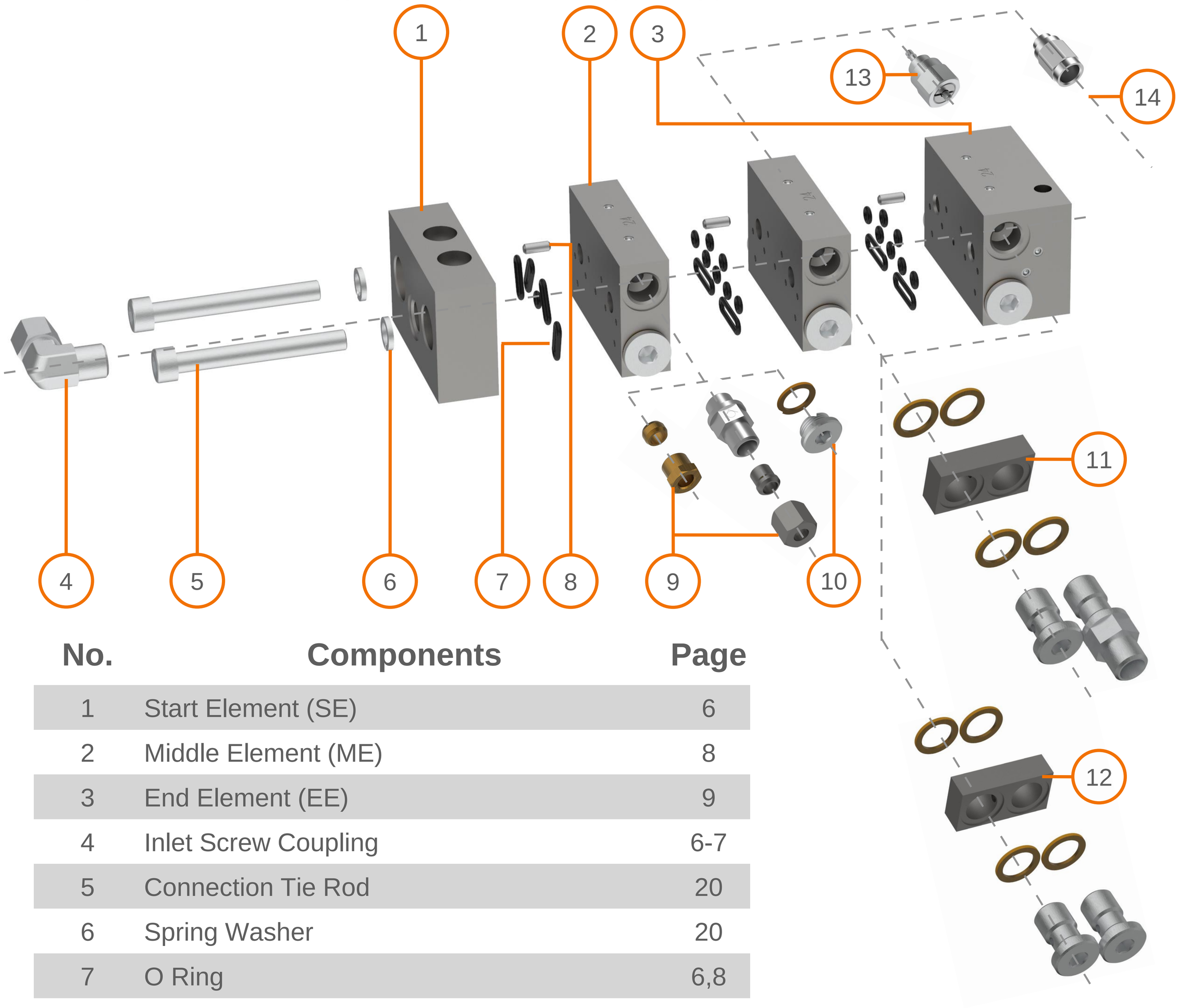
Dia. 4.6 Step F

Assembly and Components

The divider is made of a series of at least 4 elements:
1x start element,
2x middle elements,
1x end element.

Always start with the largest delivery quantity of the distributor chip behind the start element!

With components e.g., bridge with outlet or blind plug, the divider can be built with multiple configurations to match the grease requests of the greasing points.



No.	Components	Page
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6	Spring Washer	20
7	O Ring	6,8
8	Connecting Pin between Elements	8
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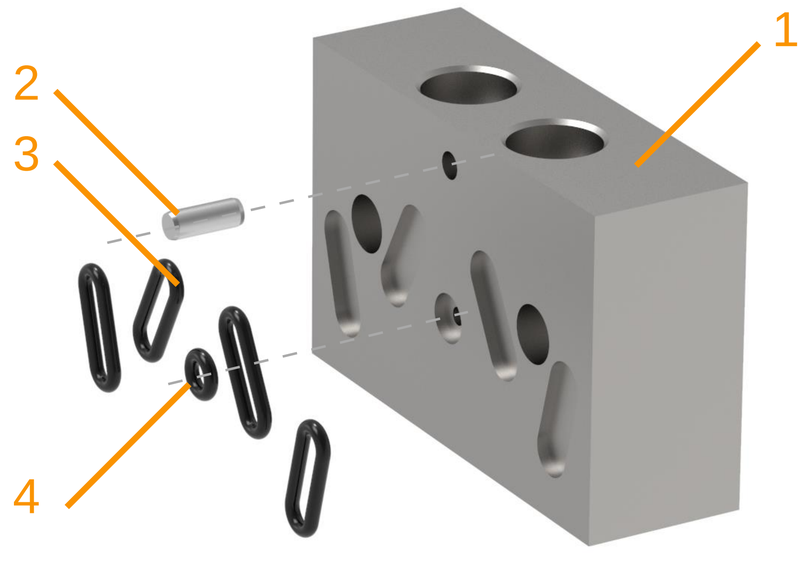
Dia. 5.1 Divider Components

Start Element (SE)

Start element is the element without outlets (***Dia. 6.1***).
Every divider must have a start element.

Description	Part No.
SE	2020520330

Spare Parts	Qty. per Set	
OR M 7.5x1.5mm	4	3040201120
OR S 2.5x1.5mm	1	3040201140
CP	1	3040100050



1- Start Element Body
2- (CP) Connection Pin
3- (OR) O Ring M 7.5x1.5mm
4- (OR) O Ring S 2.5x1.5mm

Dia. 6.1 (SE) Start Element

Inlet Screw Couplings

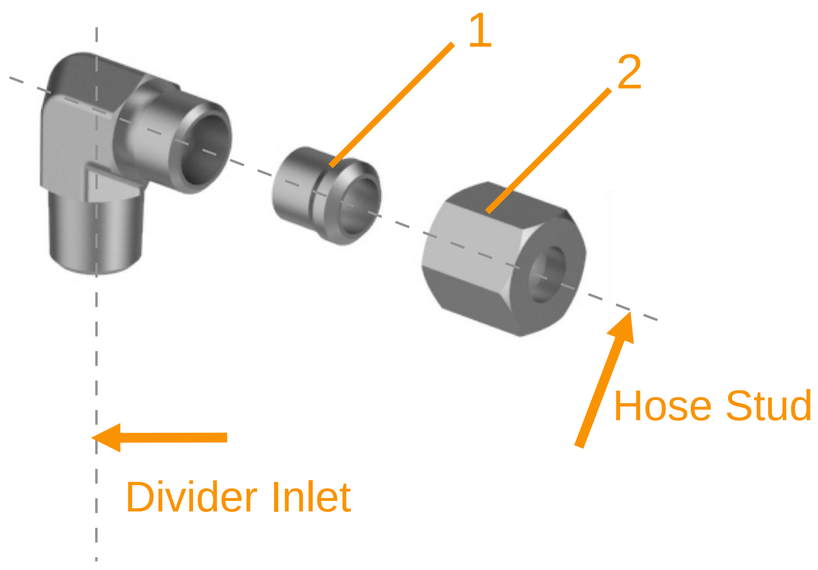
The JPQ progressive divider can be used as either a main divider or a secondary divider.

When used as a main divider, the pump and main divider are connected by a high pressure hose and hose studs with outer diameter 6mm or 8mm. When used as a secondary divider, the main divider and secondary dividers are normally connected by a high pressure hose and hose studs with outer diameter 6mm.

All screw couplings with M10x1k threads can be directly used for the inlet connection of the JPQ divider. All screw couplings with M10x1 threads can be used together with a copper ring (or ED sealed) for the input connection.

Elbow Inlet Screw Couplings (***Dia. 6.2***)

Description	Part No.
WE-ZN M10KD6	9900147
WE-ZN M10KD8	9900149
Spare Parts 1 – Cutting Ring for Cap Nut	
SR-ZN D6	9900209
SR-ZN D8	9900211
Spare Parts 2 – Cap Nut	
U-ZN D6	9900199
U-ZN D8	9900202



1- (SR-ZN) Cutting Ring for Cap Nut
2- (U-ZN) Cap Nut

Dia. 6.2 (WE-ZN) Elbow Inlet Screw Coupling

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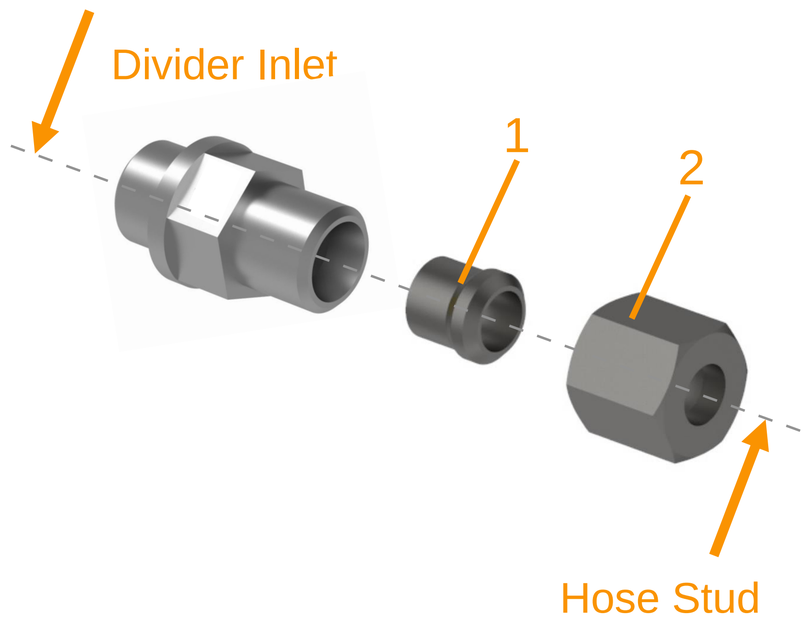
Inlet Screw Couplings

Straight Inlet Screw Couplings (***Dia. 7.1***)

Description	Part No.
GE-ZN M10KD6	9900111
GE-ZN M10KD8	9900112
GE-ZN M10D6 (ED sealed)	3050100890
GE-ZN M10D8 (ED sealed)	3050104830
Spare Parts 1 – Cutting Ring for Cap Nut	
SR-ZN D6	9900209
SR-ZN D8	9900211
Spare Parts 2 – Cap Nut	
U-ZN D6	9900199
U-ZN D8	9900202

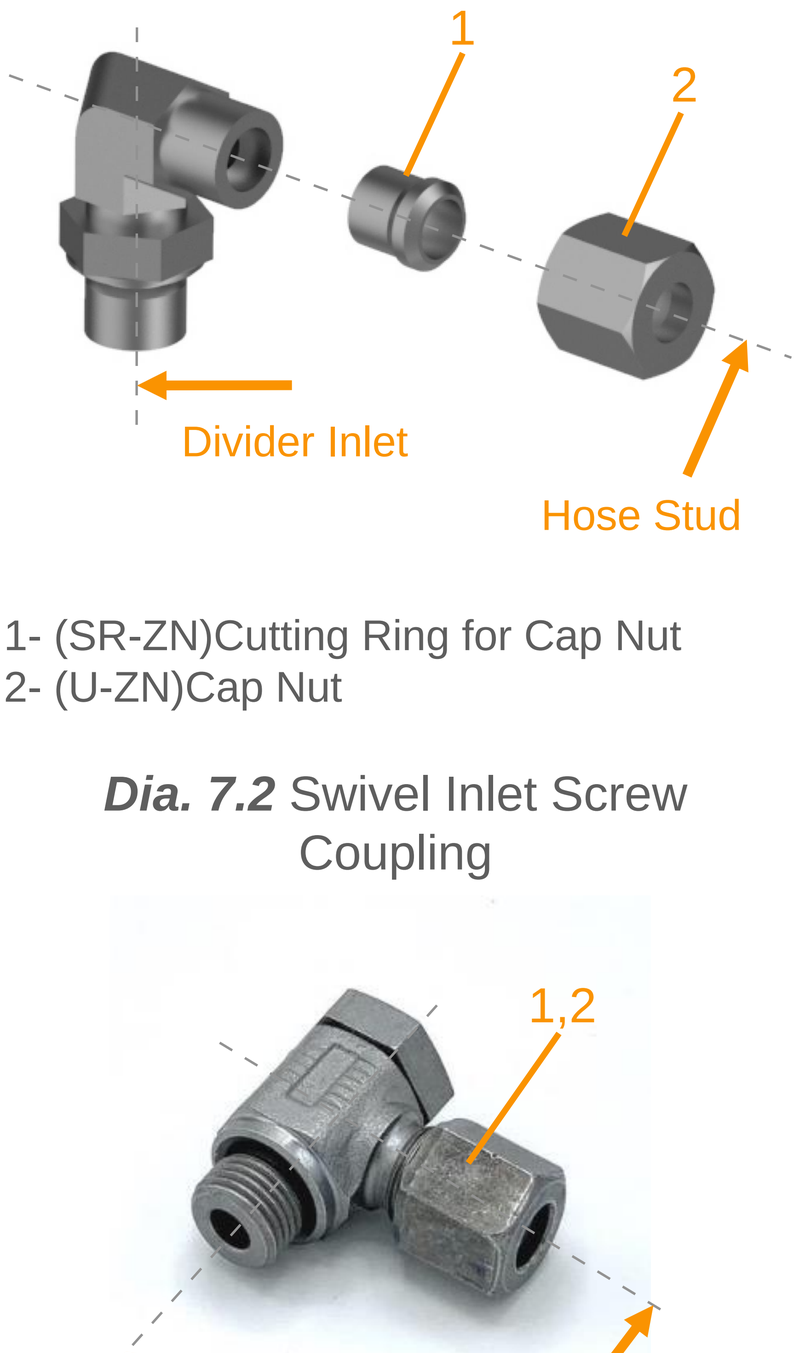


1- (SR-ZN)Cutting Ring for Cap Nut
2- (U-ZN)Cap Nut

Dia. 7.1 Straight Inlet Screw Coupling

Swivel Inlet Screw Couplings (***Dia. 7.2*** and ***Dia. 7.3***)

Description	Part No.
WSA-ZN M10D6 (ED sealed) Dia. 7.2	3050100620
WSA-ZN M10D8 (ED sealed) Dia. 7.2	3050105150
WS-ZN M10D6 (ED sealed) Dia. 7.3	9900323
WS-ZN M10D8 (ED sealed) Dia. 7.3	9900324
Spare Parts 1 – Cutting Ring for Cap Nut	
SR-ZN D6	9900209
SR-ZN D8	9900211
Spare Parts 2 – Cap Nut	
U-ZN D6	9900199
U-ZN D8	9900202



1- (SR-ZN)Cutting Ring for Cap Nut
2- (U-ZN)Cap Nut

Dia. 7.2 Swivel Inlet Screw Coupling

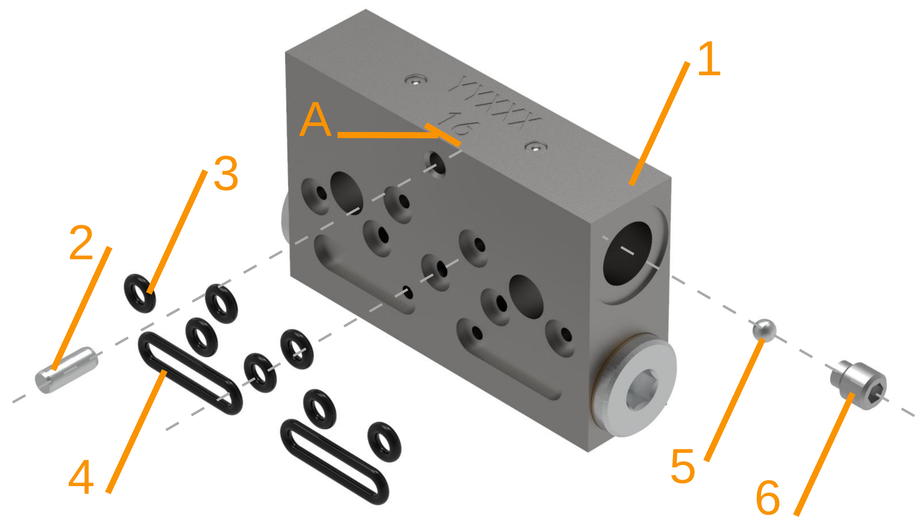
1- (SR-ZN)Cutting Ring for Cap Nut
2- (U-ZN)Cap Nut

Dia. 7.3 Swivel Inlet Screw Coupling

Middle Element (ME)

The middle element of JPQ divider has multiple output flow rates.

On the front side of the JPQ ME, the Sign A as in ***Dia. 8.1*** shows the flow rate for the single element:
08 = 80 mm^3 per outlet/stroke
16 = 160 mm^3 per outlet/stroke
24 = 240 mm^3 per outlet/stroke
32 = 320 mm^3 per outlet/stroke



1- Middle Element Body
2- (CP) Connection Pin
3- (OR) O Ring S 2.5x1.5mm
4- (OR) O Ring L11.5x1.5mm
5- Sealing Steel Ball D3
6- Sealing Screw M4

Dia. 8.1 (ME) Middle Element

The middle element 16, 24 and 32 are available with attached divider monitoring sensor (proximity switch) to the function control of the device (***Dia. 8.2***). The divider monitoring cable must be ordered separately (Page 18)*.

The middle element 24 and 32 are available with attached divider monitoring rod to check the function control of the device as well (***Dia. 8.3***)*.

** More details for divider monitoring sensor and rod please check in the following pages.*

Description*	With Divider Monitoring Sensor (NPN - EU Ver.)	With Divider Indication Pin	Part No.
ME 08-N	No	No	2020520290
ME 16-N	No	No	2020520300
ME 24-N	No	No	2020520310
ME 32-N	No	No	2020520320
ME 16-S	Yes	No	2020520420
ME 24-S	Yes	No	2020520430
ME 32-S	Yes	No	2020520440
ME 24-P	No	Yes	2020520470
ME 32-P	No	Yes	2020520480

** For all middle element Part No. in the above table includes connecting pin, o rings, internal sealing screw set.*

Dia. 8.2 Middle Element with pre-assembled Divider Monitoring Sensor

Spare Parts - ME	Qty. per Set	Part No.
CP	1	3040100050
OR S 2.5x1.5mm	7	3040201140
OR L 11.5x1.5mm	2	3040201150
Sealing Screw M4*	1	3040102550
Sealing Steel Ball D3*	1	3049000450

Dia. 8.3 Middle Element with pre-assembled Divider Indication Pin

** The sealing screw and steel ball can only be taken out from the right side outlet of the elements (**Dia. 8.1**). For more details of the function of sealing screw set please check page xx.*

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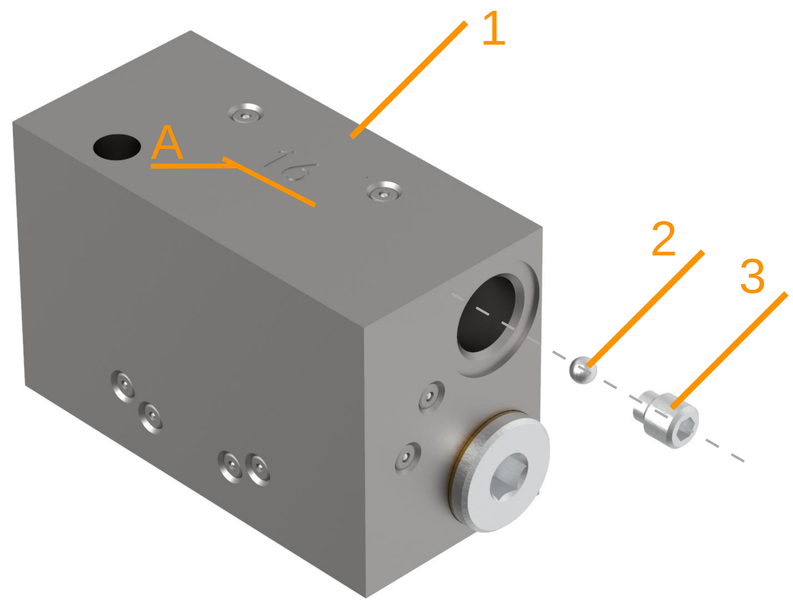
End Element (EE)

The end element of JPQ divider has multiple output flow rates. Every divider must have a end element.

On the front side of the JPQ EE, the Sign A as in ***Dia. 9.1*** shows the flow rate fo the single element:

08 = 80 mm^3 per outlet/stroke
16 = 160 mm^3 per outlet/stroke
24 = 240 mm^3 per outlet/stroke
32 = 320 mm^3 per outlet/stroke

The end element 16, 24 are available with attached divider monitoring sensor (proximity switch) to the function control of the device (***Dia. 9.2***). The divider monitoring cable must be ordered separately (Page 18)*.



1- End Element Body
2- Sealing Steel Ball D3
3- Sealing Screw M4

Dia. 9.1 (EE) End Element

The middle element 24 is available with attached divider monitoring rod to check the function control of the device as well (***Dia. 9.3***)*.

** More details for divider monitoring sensor and rod please check in the following pages.*

Description*	With Divider Monitoring Sensor (NPN - EU Ver.)	With Divider Indication Pin	Part No.
EE 08-N	No	No	2020520260
EE 16-N	No	No	2020520270
EE 24-N	No	No	2020520280
EE 32-N	No	No	2020530630
EE 16-S	Yes	No	2020520450
EE 24-S	Yes	No	2020520460
EE 24-P	No	Yes	2020520490

** For all middle element Part No. in the above table includes connecting pin and o rings.*

Dia. 9.2 Middle Element with pre-assembled Divider Monitoring Sensor

Spare Parts - ME	Qty. per Set	Part No.
Sealing Screw M4*	1	3040102550
Sealing Steel Ball D3	1	3049000450

** The sealing screw and steel ball can only be taken out from the right side outlet of the elements (**Dia. 8.1**). For more details of the function of sealing screw set please check page xx.*

Dia. 9.3 Middle Element with pre-assembled Divider Monitoring Rod

Outlet Screw Couplings

The JPQ progressive divider can be used as either a main divider or a secondary divider.

From the main divider to the secondary divider, a screw coupling with non return valve is mainly used as the outlet fitting of the main divider for the connection with a high pressure hose and hose stud with outer diameter 6mm. From the secondary divider to the greasing points, a screw coupling without non return valve is mainly used as the outlet fitting of the secondary divider for the connection with a polyamide pipe with diameter 6x1.5mm or steel pipe with a diameter 6x1mm.

⚠ *For construction machinery application like excavators, wheel loaders, please use non return valves for all divider outlets due to the high back pressure from the greasing points.*

All screw couplings (including double cone socket union, non return valve and coupling without non return valve) with M10x1k threads can be directly used for the inlet connection of the JPQ divider. All screw couplings with M10x1 threads can be used together with a copper ring (or ED sealed) for the input connection.

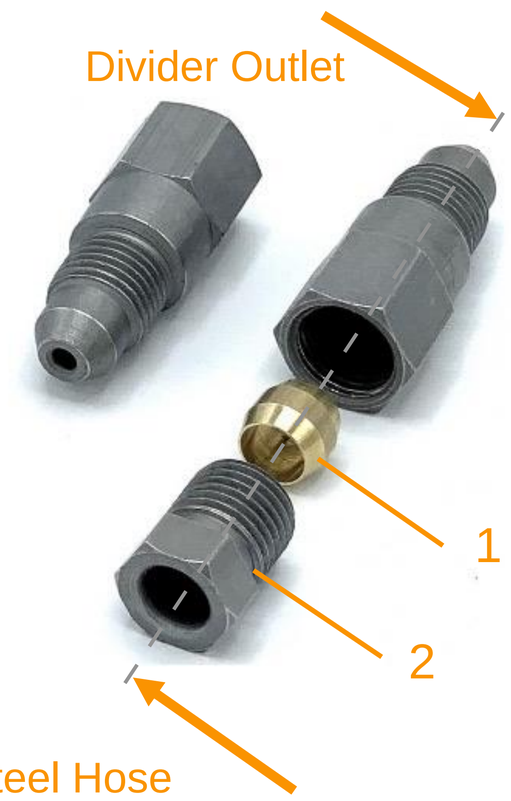
Type of Couplings*	Main Divider Outlet with High Pressure Hose with Hose Stud D6mm	Secondary Divider Outlet with High Pressure Hose with Hose Stud D6mm	Secondary Divider Outlet with PA Hose or Steel Pipe D6mm
RDGE	✗	✗	✓
RGE	✓	✓	✗
GE	✗	✓	✗
UDK	✗	✗	✓
PGE	✗	✗	✓

* *RDGE Rückschlagventile mit Doppelkegelring / Non Return Valves with Double Cone Drives*
RGE Rückschlagventile / Non Return Valves
GE Gerade Einschraubverschraubungen / Straight Screw Couplings
UDK Überwurfschrauben für Doppelkegelring / Socket Unions for Double Cone Drives
PGE Push-in Gerade Einschraubverschraubungen / Straight Push-in Quick Couplings

*Non-Return Valves with Double Cone Drives (**Dia. 10.1**)*

Description	Part No.
RDGE-ZN M10D6 (double cone drive and socket union are **NOT** included in the PN)	9901653
Spare Parts 1 - Double Cone Drive	
DK-MS D6	9900226
Spare Parts 2 – Cap Screw	
UDK-ZN M10D6	9900223

** Even RDGE has a M10x1 thread, the copper ring or ED sealed is not necessary here.*



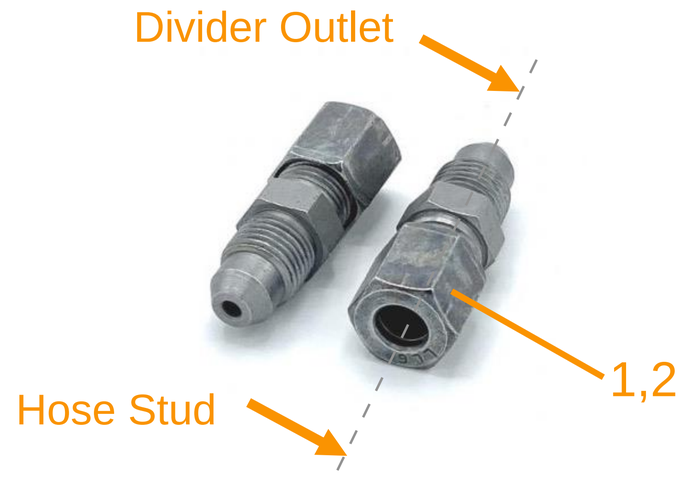
1- (DK-MS) Double Cone Drive
2- (UDK-ZN) Cap Screw

Dia. 10.1 (RDGE-ZN) Non-Return Valve with Double Cone Drive

Outlet Screw Couplings

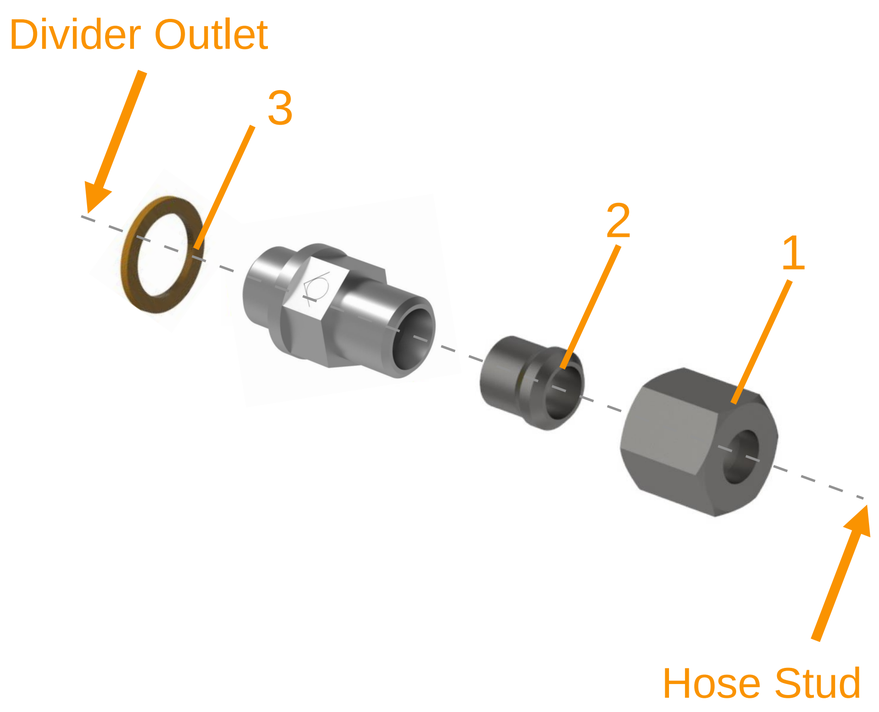
RGE (***Dia. 11.1*** and ***Dia. 11.2***)

Description	Part No.
RGE-ZN M10D6 (***Dia. 11.1***)	9901652
RGE-ZN M10D6A (***Dia. 11.2)***	2020120150
Spare Parts 1 – Cutting Ring for Cap Nut	
SR-ZN D6	9900209
Spare Parts 2 – Cap Nut	
U-ZN D6	9900199
Spare Parts 3 - Copper Ring	
CR 10-14x1	3010401930



1- (SR-ZN) Cutting Ring for Cap Nut
2- (U-ZN) Cap Nut

Dia. 11.1 (RGE-ZN) Non-Return Valve

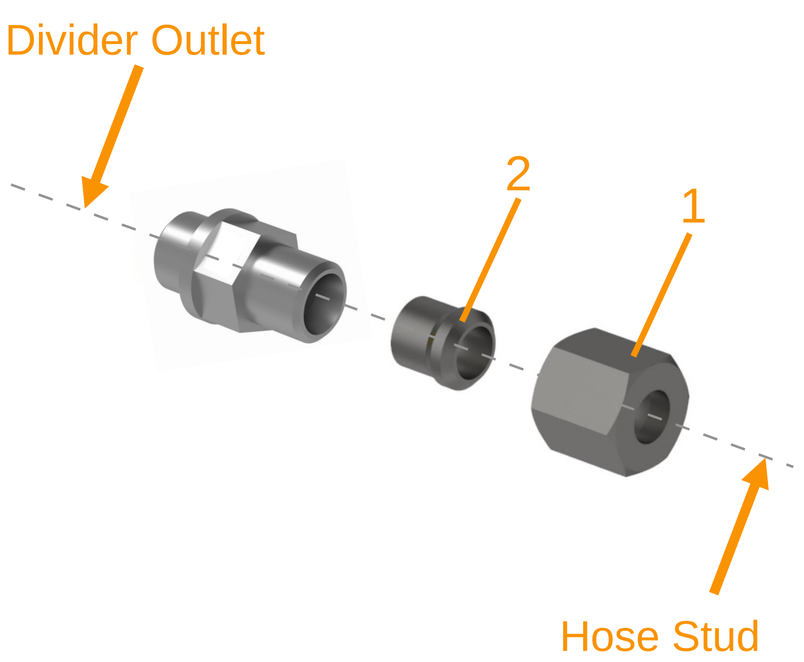


1- (U-ZN) Cap Nut
2- (SR-ZN) Cutting Ring for Cap Nut
3- (CR) Coppering Rin (not incl. in RGE Part No.)

Dia. 11.2 (RGE-ZN) Non-Return Valve with Copper Ring

GE (***Dia. 11.3***)

Description	Part No.
GE-ZN M10KD6	9900111
GE-ZN M10D6 (ED sealed)	2020420350
Spare Parts – Cap Nut	
SR-ZN D6	9900209
Spare Parts – Cutting Ring for Cap Nut	
U-ZN D6	9900199



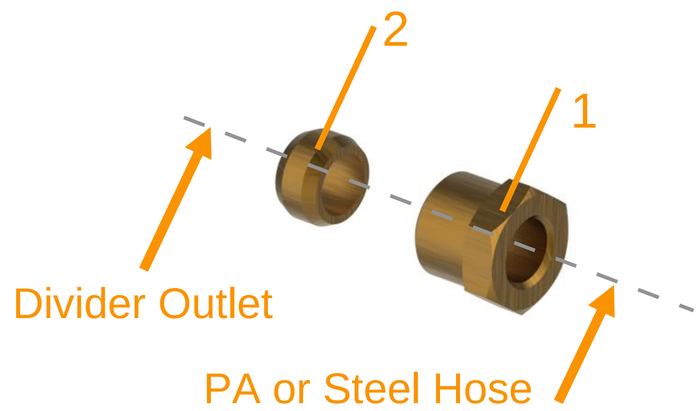
1- (SR-ZN) Cutting Ring for Cap Nut
2- (U-ZN) Cap Nut

Dia. 11.3 (GE-ZN) Straight Screw Coupling

Outlet Screw Couplings

UDK (***Dia. 12.1***)

Description	Part No.
UDK-ZN M10D6	9900223
DK-MS D6	9900226

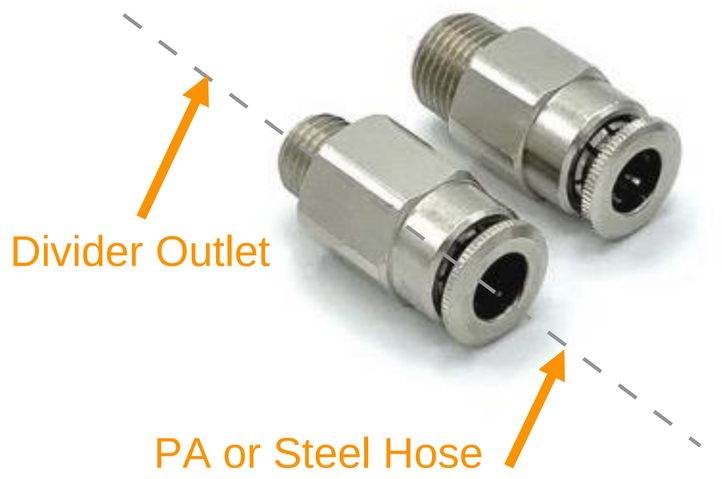


1- (UDK-ZN) Cap Screw
2- (DK-MS) Double Cone Drive

Dia. 12.1 (UDK) Socket Union with Double Cone Drive

PGE (***Dia. 12.2***)

Description	Part No.
PGE-MS M10KD6	9900233



Dia. 12.2 (PGE) Straight Push-in Quick Couplings

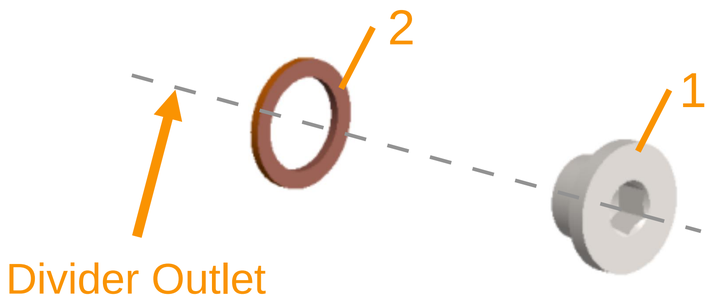
Outlet Blind Plug

The function of the blind plug of the JPQ divider outlet is to achieve a double flow rate by direct blinding one of the 2 sides on a same middle or end element.

To achieve this function, before the blinding, the sealing screw and sealing screw ball of the element must be taken out in advance, otherwise the divider will be blocked.

** More details regarding the working principle please check on page xx.*

Description	Part No.
BP M10	3010401940
CR 10-14x1	3010401930



1- (BP) Blind Plug
2- (CR) Copper Ring

Dia. 12.3 (BP) Blind Plug of Outlet

Bridge with / without Outlet

The function of the bridge with or without outlet of the JPQ divider is to achieve a combined flow rate by external blinding the outlets on the same side of 2 adjacent elements.

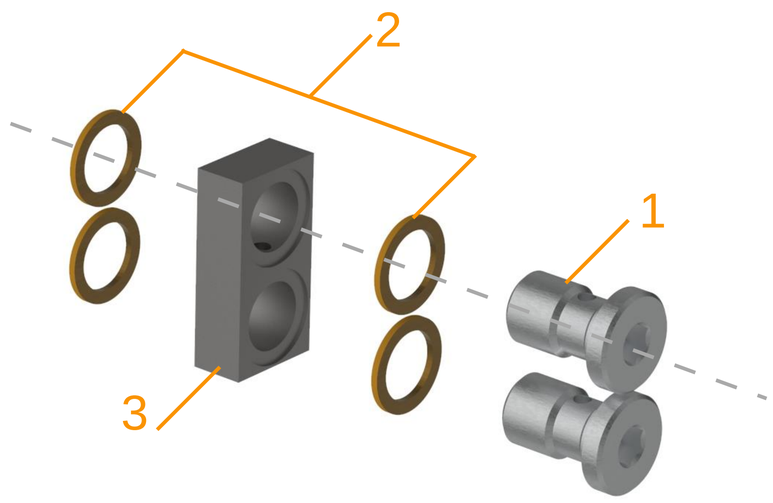
The sealing screw and sealing ball of the element can be taken out or kept depends on the configuration.

** More details regarding the working principle please check on page xx.*

OB-0 Bridge without Outlet (***Dia. 13.1***)

Description	Part No.
OB-0	2090110380

Spare Parts	Qty. per Set	
BBP	2	3010402080
BB	1	3010402070
CR 10-14x1	4	3010401930



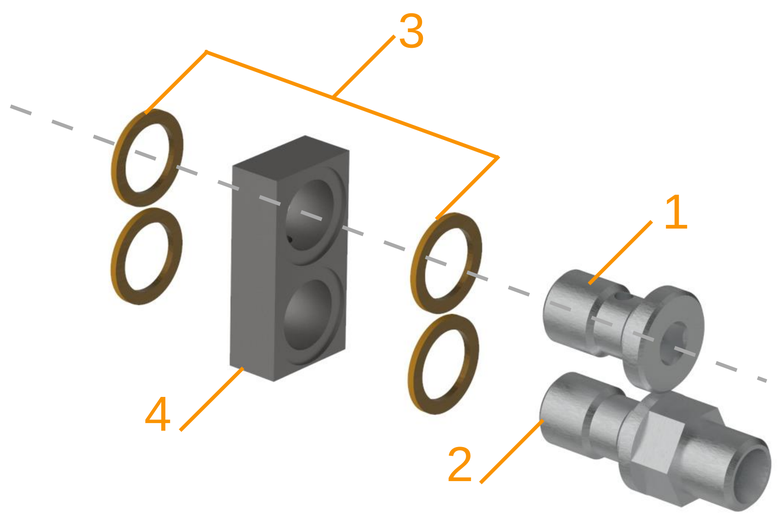
1- (BBP) Bridge Blind Plug
2- (CR) Copper Ring
3- (BB) Bridge Block

Dia. 13.1 (OB-0) Bridge without Outlet

OB-1 Bridge with Outlet and Non-Return Valve (***Dia. 13.2***)

Description	Part No.
OB-1	2090100160

Spare Parts	Qty. per Set	
BBP	1	3010402080
BO*	1	3010402580
BB	1	3010402070
CR 10-14x1	4	3010401930



1- (BBP) Bridge Blind Plug
2- (BO) Bridge Outlet
3- (CR) Copper Ring
4- (BB) Bridge Block

Dia. 13.2 (OB-1***)*** Bridge with Outlet and Non-Return Valve

Element Combination Principle

In order to meet the volume demand of the different greasing points under various application environment, even if the JPQ divider provides 4 different flow rate single element (8/16/24/32), sometimes it is still necessary to combine the outlets of the divider internally or externally to achieve more possibilities of the flow rate combination.

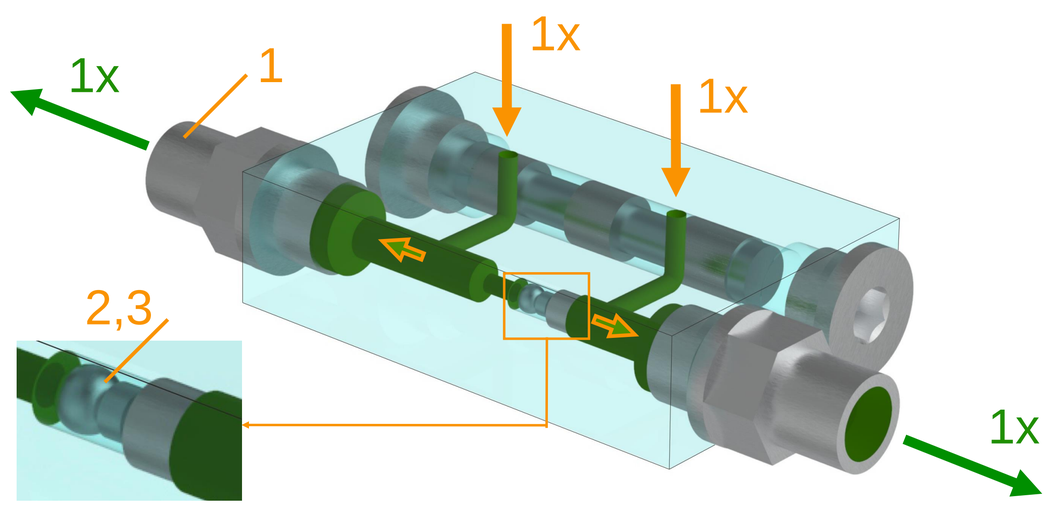
With the help of e.g. element internal bridge* - sealing screw and sealing ball, external bridge* - OB-0 and OB-1, JPQ divider can achieve these possibilities.

** Internal Bridge - the divider element bridged left and right*
External Bridge - the divider elements bridged up and down

Single Element without Combination

Dia. 14.1 shows the divider middle element with 2 separate outlets which have the same output flow rates. The grease channel has been separated by a sealing ball and sealing screw.

Description	Part No.
Divider Outlet Screw Coupling	Page 10-12
Sealing Steel Ball D3	3049000450
Sealing Screw M4 SW2	3040102550



1- Divider Outlet Screw Coupling
2- Sealing Steel Ball
3- Sealing Screw

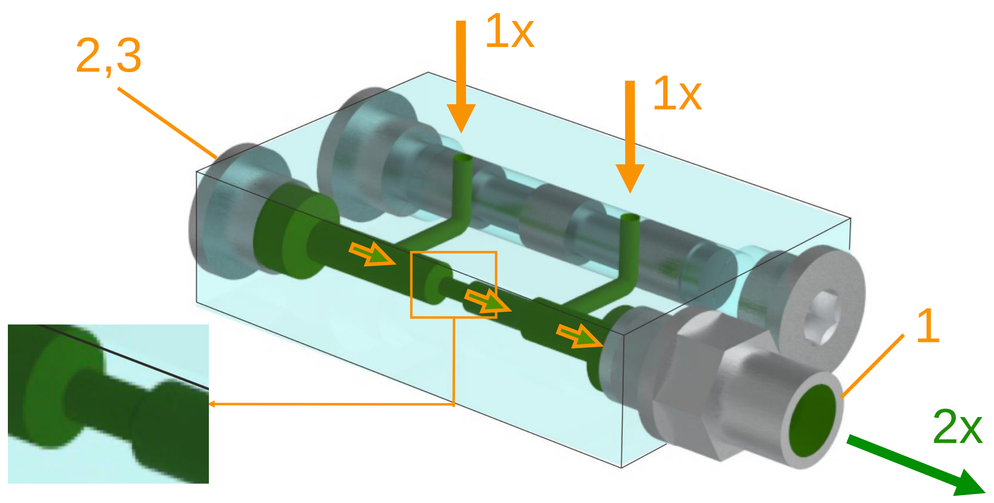
Dia. 14.1 Single Element without Combination

Single Element with Combination

Dia. 14.2 shows the divider middle element with 1 outlet (either on left side or on right side), which the other of the element has been locked by an outlet blind plug and removing the sealing steel ball and sealing screw. The flow rate of the left outlet is doubled.

Attention: In this case, the sealing steel ball and sealing screw must be removed, otherwise the divider blocks!

Description	Part No.
Divider Outlet Screw Coupling	Page 10-12
BP M10x1,5	3010401940
CR 10-14x1	3010401930



1- Divider Outlet Screw Coupling
2- BP - Blind Plug
3- CR - Copper Ring

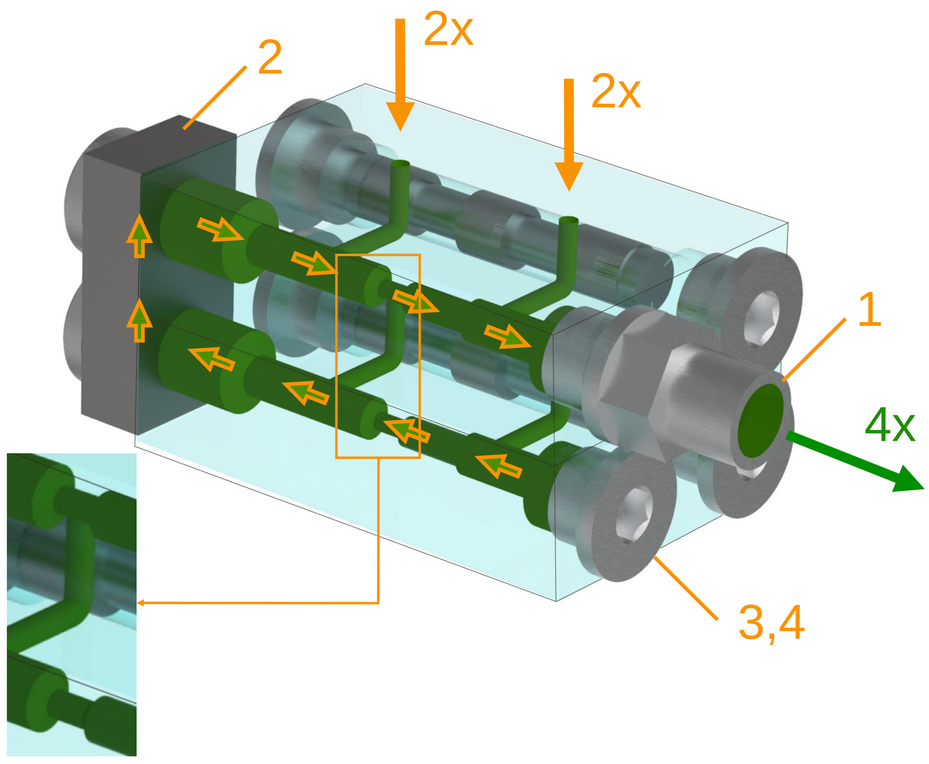
Dia. 14.2 Single Element with Combination

Element Combination Principle

Combination A with OB-0 (1 Outlet)

Dia. 15.1 shows the 2 divider elements are connected by an outlet bridge OB-0 on left side which bridges the outlets up and down. In the mean time, both element's middle sealing screws and steel balls are removed. In this case, all 4 outlets are bridged with each other.

Description	Part No.
Divider Outlet Screw Coupling	Page 10-12
OB-0	2090110380
BP M10x1,5	3010401940
CR 10-14x1	3010401930



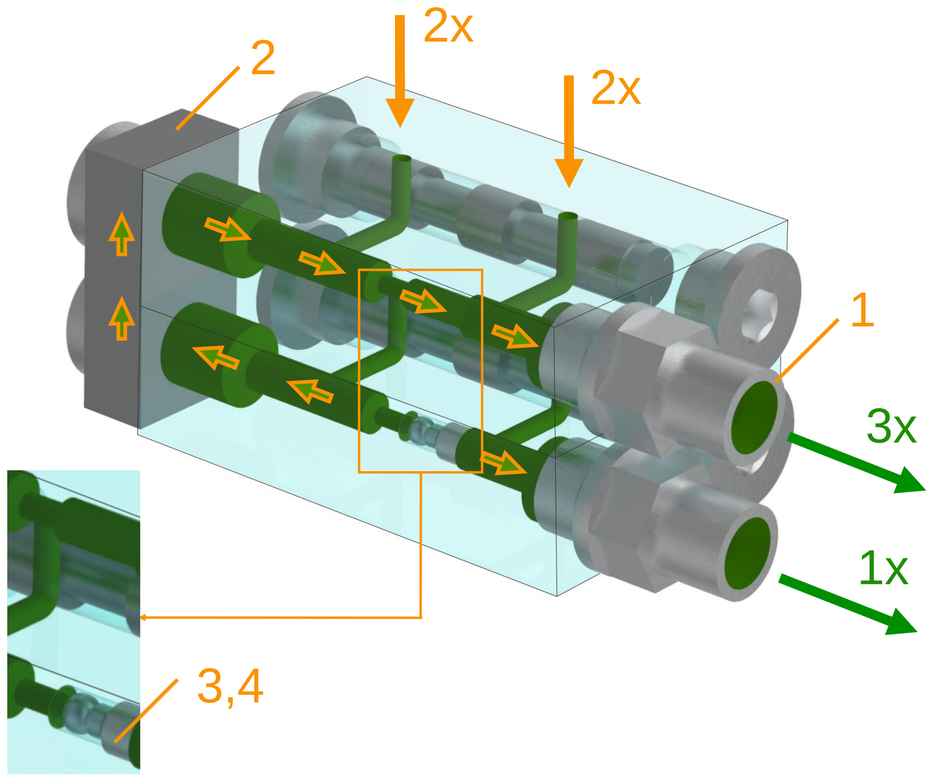
1- Divider Outlet Screw Coupling
2- BO-0 - Bridge without Outlet
3- BP Outlet Blind Plug
4- Copper Ring

Dia. 15.1 2 Divider Elements with OB-0 Combination A

Combination B with OB-0 (2 Outlets)

Dia. 15.2 shows the 2 divider elements are connected by an outlet bridge OB-0 on left side which bridges the outlets up and down. In the mean time, 1 of the 2 elements' middle sealing screw and steel ball is removed. In this case, the grease channel is separated by the sealing screw and steel ball, only 3 outlets are bridged with each other.

Description	Part No.
Divider Outlet Screw Coupling	Page 10-12
OB-0	2090110380
Sealing Screw M4	3040102550
Sealing Steel Ball D3	3049000450



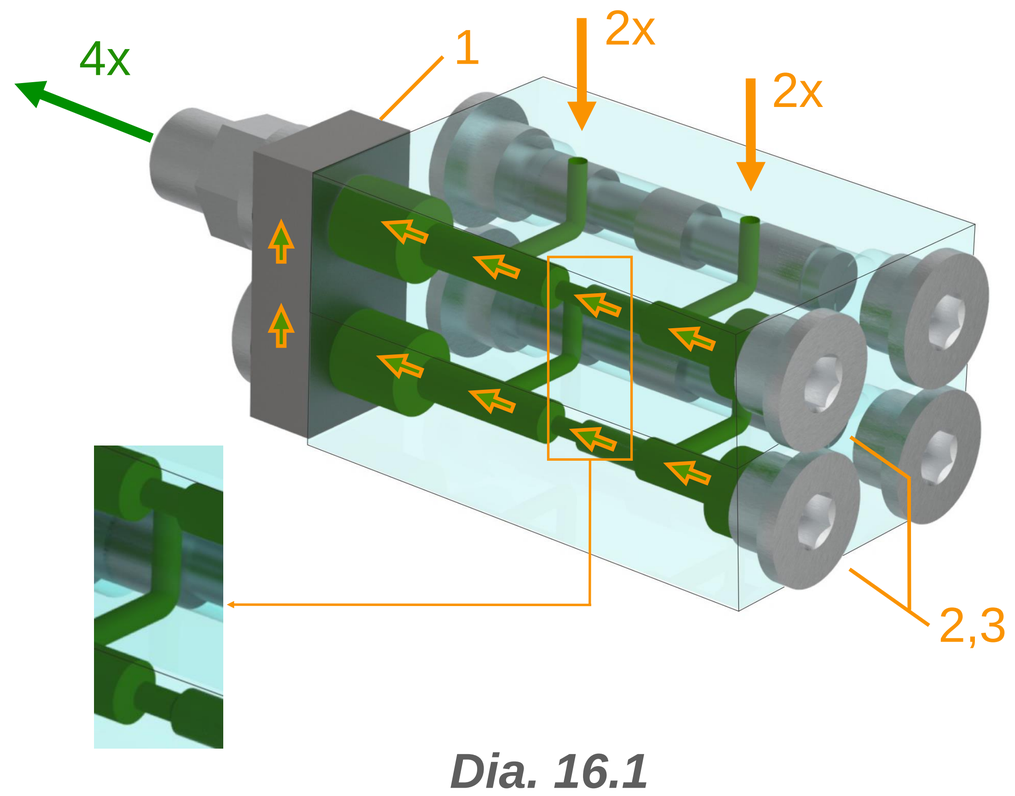
1- Divider Outlet Screw Coupling
2- BO-0 - Bridge without Outlet
3- Sealing Screw
4- Sealing Steel Ball

Dia. 15.2 2 Divider Elements with OB-0 Combination B

Element Combination Principle

Combination A with OB-1 (1 Outlet)

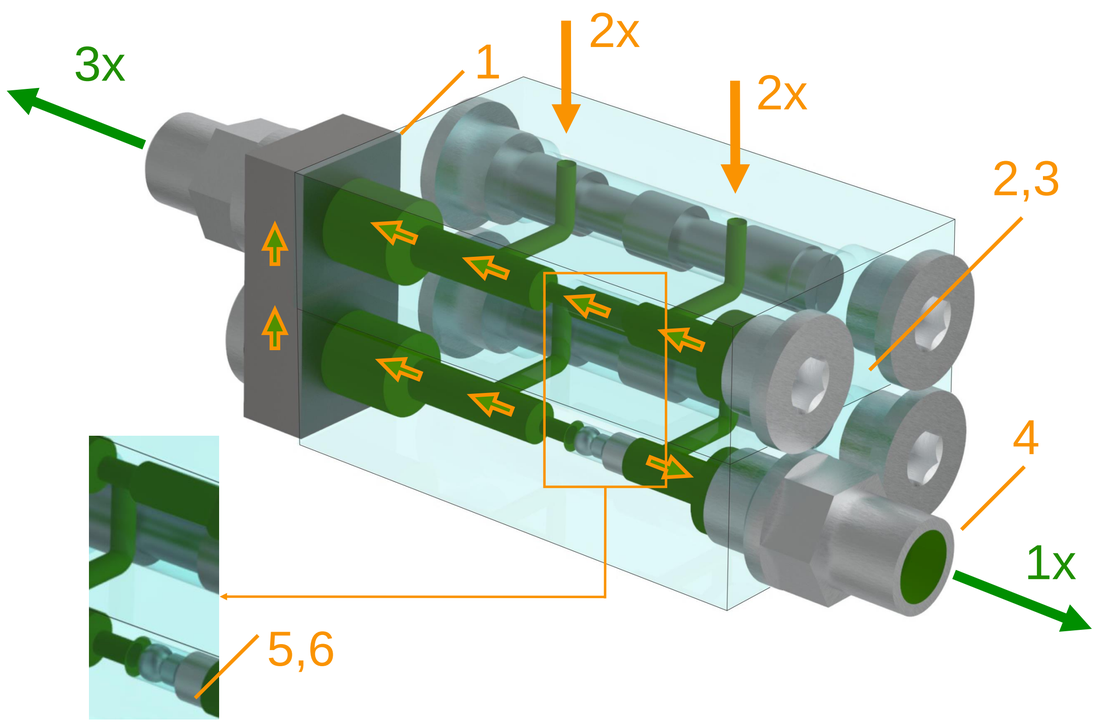
Dia. 16.1 shows the 2 divider elements are connected by an outlet bridge OB-1 on left side which bridges the outlets up and down. In the mean time, both element's middle sealing screws and steel balls are removed. In this case, all 4 outlets are bridged with each other.



Dia. 16.1

Combination B with OB-1 (2 Outlets)

Dia. 16.2 shows the 2 divider elements are connected by an outlet bridge on left side which bridges the outlets up and down. In the mean time, 1 of the 2 elements' middle sealing screw and steel ball is removed. In this case, the grease channel is separated in 2 ways by the sealing screw and steel ball, only 3 outlets are bridged with each other.

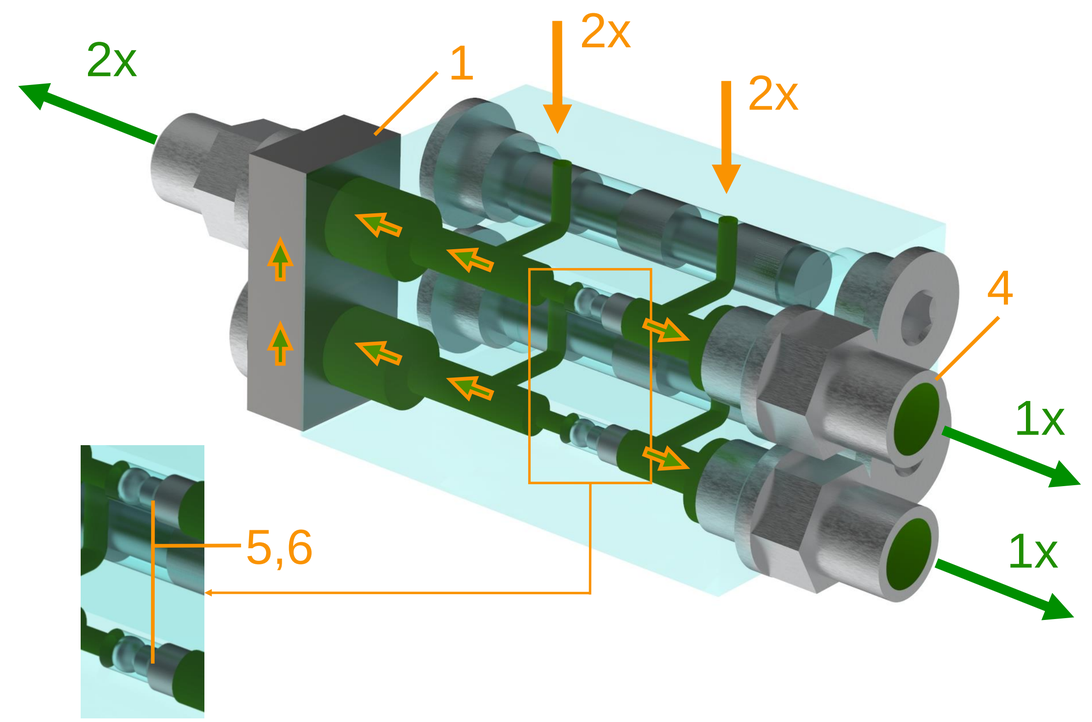


Dia. 16.2

Combination C with OB-1 (3 Outlets)

Dia. 16.3 shows the 2 divider elements are connected by an outlet bridge on left side which bridges the outlets up and down. In the mean time, both elements' middle sealing screws and steel balls keep in position. In this case, the grease channel is separated in 3 ways and only 2 outlets on left side are bridged.

Description	Part No.
Divider Outlet Screw Coupling	Page 10-12
OB-1	2090100160
BP M10x1,5	3010401940
CR 10-14x1	3010401930
Sealing Steel Ball D3	3040102550
Sealing Screw M4	3049000450



Dia. 16.3

1- BO-1 - Bridge with Outlet
2- Outlet Blind Plug
3- Copper Ring
4- Divider Outlet Screw Coupling
5- Sealing Screw
6- Sealing Steel Ball

Divider Monitoring

Digital Divider Monitoring Sensor

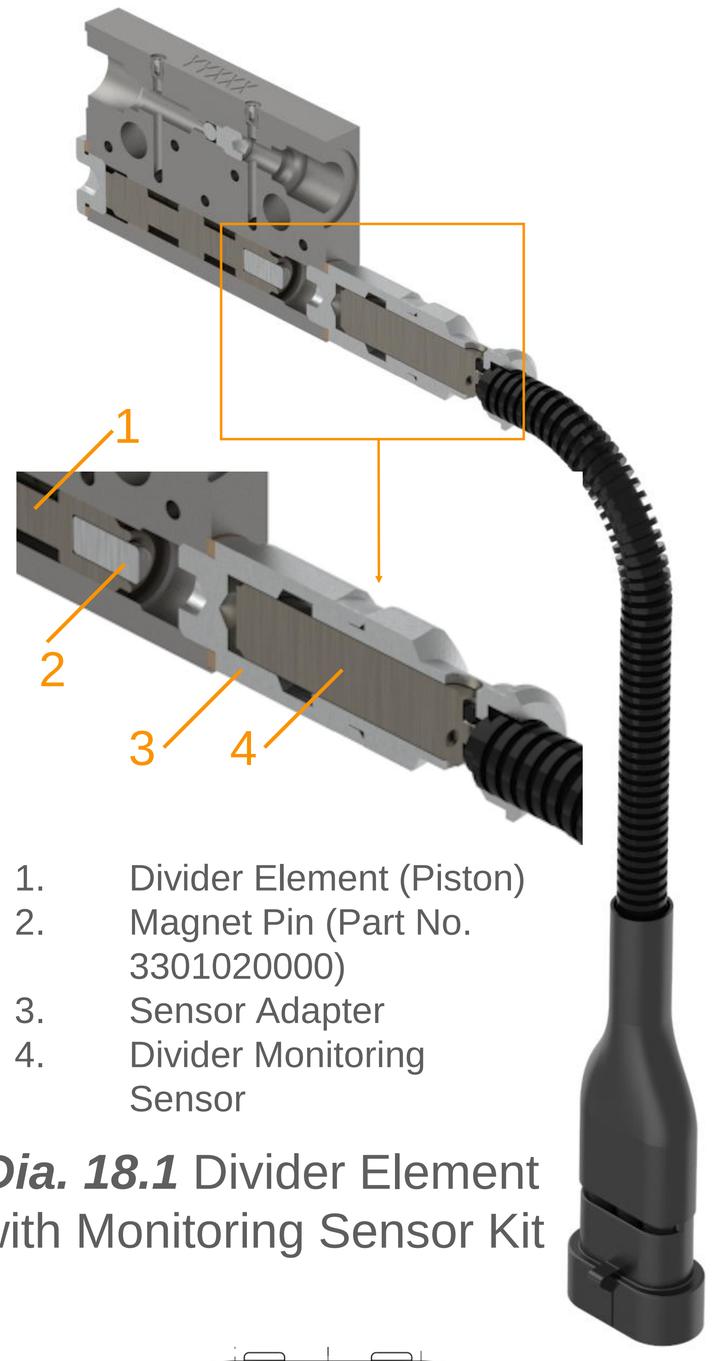
The digital divider monitoring sensor is designed to monitor the operation status of the progressive divider. The working principle is like a proximity switch by a pre-assembled magnet pin on the slot of the piston (***Dia. 18.1***). During the running time of the divider, the sensor checks the moving status of the piston and send signal back to pump. As soon as the piston stops moving, the pump gets the warning signal.

The sensor can send 2 different types of signal as below:

NPN: Sensor signal is (+) positive. Normally open type contact can be used. ***Standard Version for ALPB/ALP811 Hirschmann Ver.***

PNP: sensor signal is (-) negative. Normally open type contact can be used. ***Standard Version for ALPB/ALP811 Bayonet Ver.***

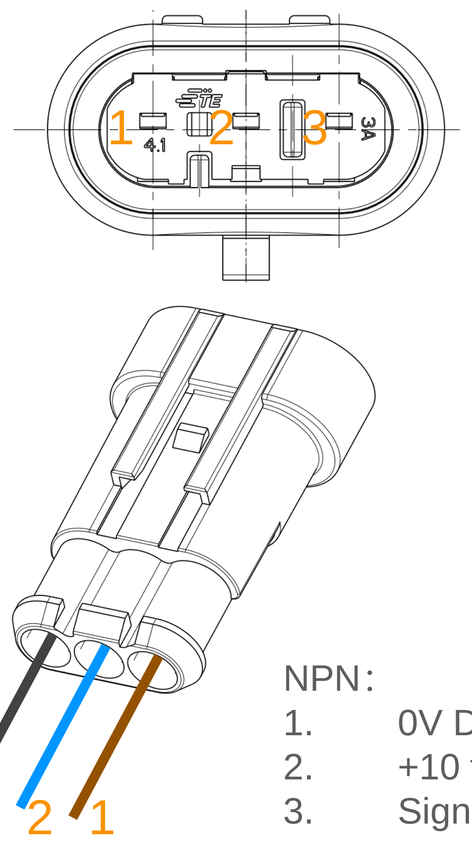
Attention: Only ME 16/24/32 and EE 16/24 are available for a divider monitoring sensor.



1. Divider Element (Piston)
2. Magnet Pin (Part No. 3301020000)
3. Sensor Adapter
4. Divider Monitoring Sensor

Dia. 18.1 Divider Element with Monitoring Sensor Kit

Part No. (Sensor Kit like in ***Dia. 18.1***)*:	EU Version	CN Version
NPN:	2020420500	2020420480
PNP:	2020420510	2020420490
Technical Data:		
Approval/Conformity:	cULus/CE/WEEE/EAC	
Connection with Divider:	M12x1 plug in	
Connection with Cable:	AMP Super Seal 1.5 SRS. 3P Tab	
Switching Output:	NPN /PNP	
Switching Distance:	>20 mm possible	
Operating Current Ie:	200 mA	
Operating Voltage ub:	10 to 30 V DC	
Temperature Range:	-25 ℃ to +85 ℃	
Function Display:	LED Yellow	LED Red
Housing Material:	Stainless Steel	
Protection Type:	IP 67	



NPN:
1. 0V DC
2. +10 to 30V DC
3. Signal

Dia. 18.2 Divider Monitoring Sensor Wiring Connection

Dia. 18.3 Divider Monitoring Sensor Connector M10x1 - M12x1 (Part No. 3501103160)

** **Attention**: For the Part No. Of divider monitoring sensor, the sensor connector, and magnet pin are included (Part 2,3 and 4 in **Dia. 18.1**). The connecting cable between sensor and pump, the divider element are NOT included (Part 1 in **Dia. 18.1**). More information for cables please check on the next page. Upon request, we provide the technical data from the manufacturer.*

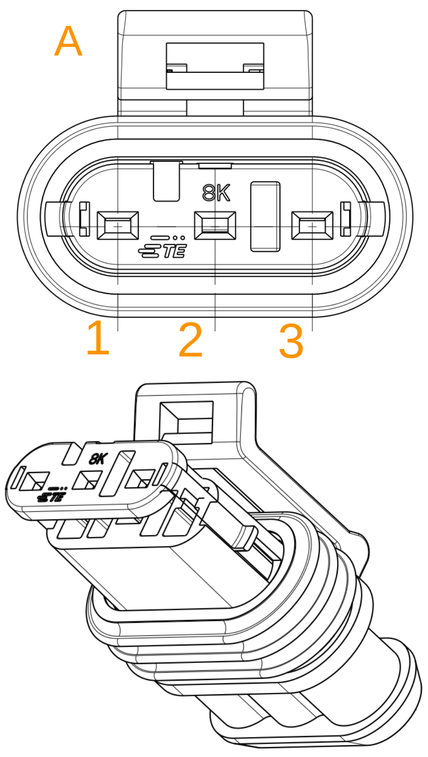
Divider Monitoring

Connecting Cable - Divider Monitoring Sensor

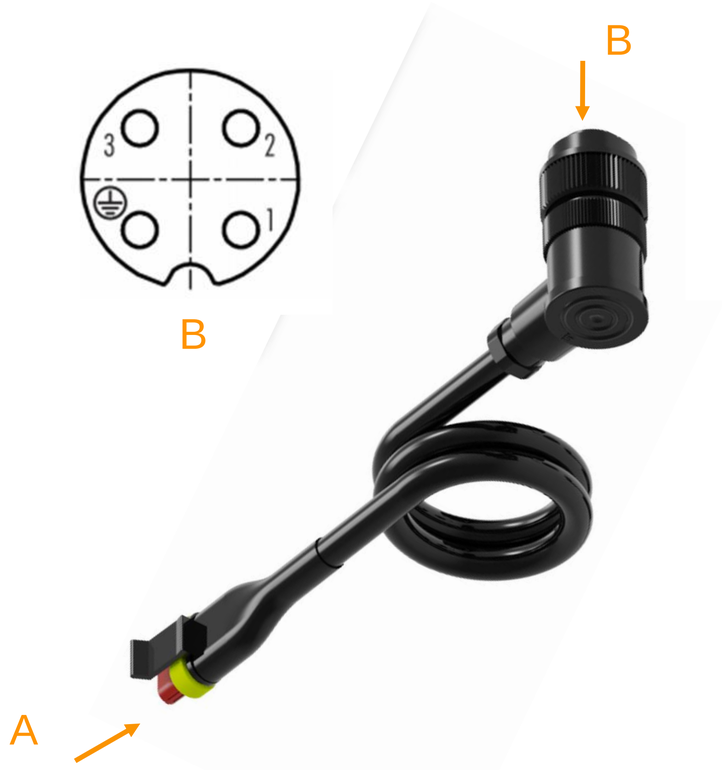
No mater in the part No. for ME and EE with monitoring sensor on page 8 and 9, or the part No. for monitoring sensor on page 18, the sensor cable is NOT included.

Depends on the various application, the sensor cable need be ordered separately as following description.

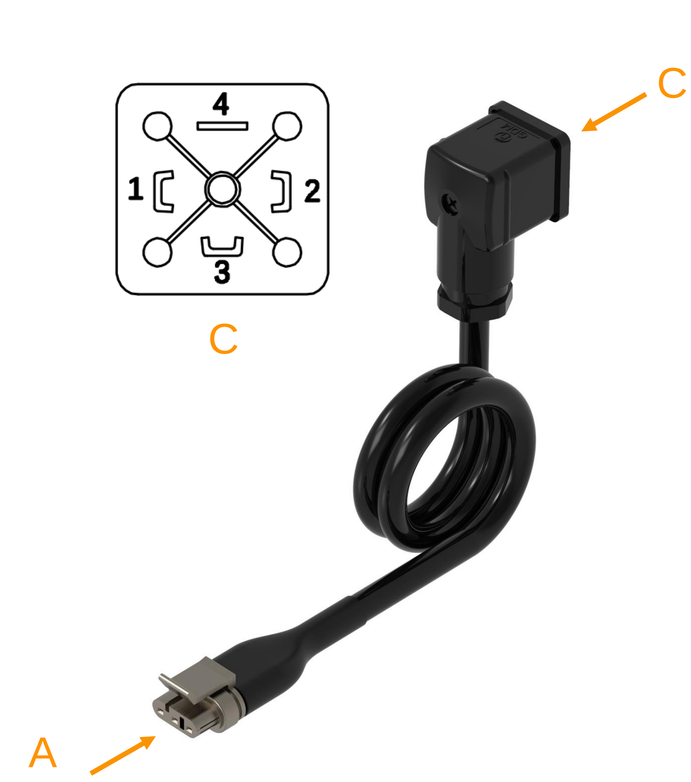
Part No. (Cable):	Binder Plug	Cubic (Hirschmann) Plug
Length 5m:	2110012410	2110010539
Length 7.5m:	2110012409	2110002734
Cable Connection at Divider:	TE - AMP Super Seal 1.5 SRS. 3P Plug Connector (IEC 529 and ISO 20653)	
Cable Connection at Pump:	RD24 series 693	Cubic GDM 3011 J (DIN EN 175 301-803-A)



Dia. 19.1 Cable Connection at Divider



Dia. 19.2 Cable Connection with Binder 4 polig



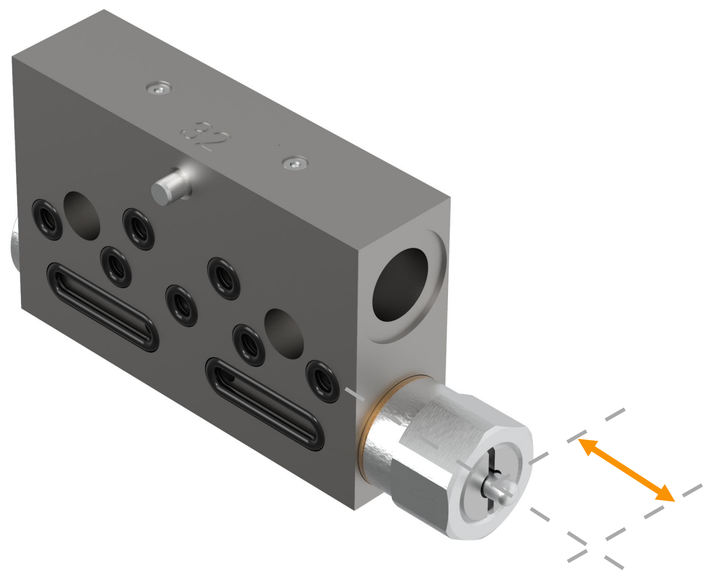
Dia. 19.3 Cable Connection with Cubic GDM 3011 J

Indication Pin

The divider monitoring indication pin is designed to monitor the operation status of the progressive divider in a mechanical and practical way. During a normal running time of the lubrication system, the indication pin keeps moving vertically (***Dia. 19.1***).

Attention: Only ME 24/32 and EE 24 are available for a divider monitoring sensor.

Part No. without divider element: 2020520500



Dia. 19.4 Divider Element with Monitoring Indication Pin

Divider Accessories

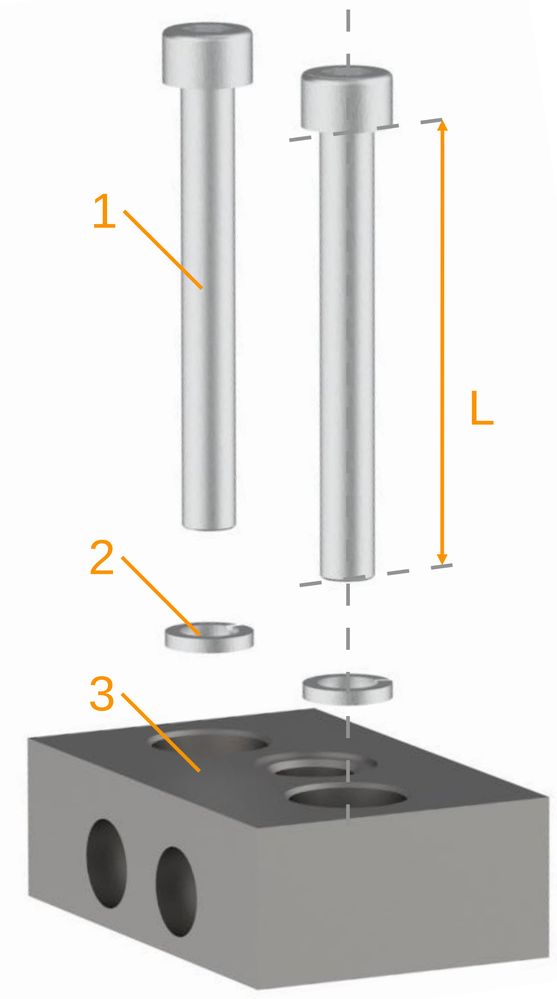
Divider Tie Rod

To mount the elements to a divider, the tie rods and spring washers are needed with a recommended torque value. The standard torque value setting of Lubmann pre-mounted divider is 20 N/m.

The recommended self-mounting torque value is 12 +/- 1N.m.

Divider Type	Tie Rod Type (L=50 to 125))	Part No.
JPQ - 3/6	Inner Hex Screw M6 x 50	3040103160
JPQ - 4/8	Inner Hex Screw M6 x 65	3040103170
JPQ - 5/10	Inner Hex Screw M6 x 80	3040103180
JPQ - 6/12	Inner Hex Screw M6 x 95	3040103190
JPQ - 7/14	Inner Hex Screw M6 x 110	3040102940
JPQ - 8/16	Inner Hex Screw M6 x 125	3040102950
JPQ - 9/18	Inner Hex Screw M6 x 140	

Part No. for spring washer D6: 3040100100



1- Tie Rod
2- Spring Washer
3- Start Element

Dia. 20.1 Tie Rod and Spring Washer for Divider Elements Connection

Standard Package for Divider Elements

Description	Package Size	Pieces per Box	Part No.
SE	340mm x 200 mm x 145mm	60	2020520330
ME 08-N		70	2020520290
ME 16-N		70	2020520300
ME 24-N		70	2020520310
ME 32-N		70	2020520320
EE 08-N		40	2020520260
EE 16-N		40	2020520270
EE 24-N		40	2020520280
EE 32-N		40	2020530630

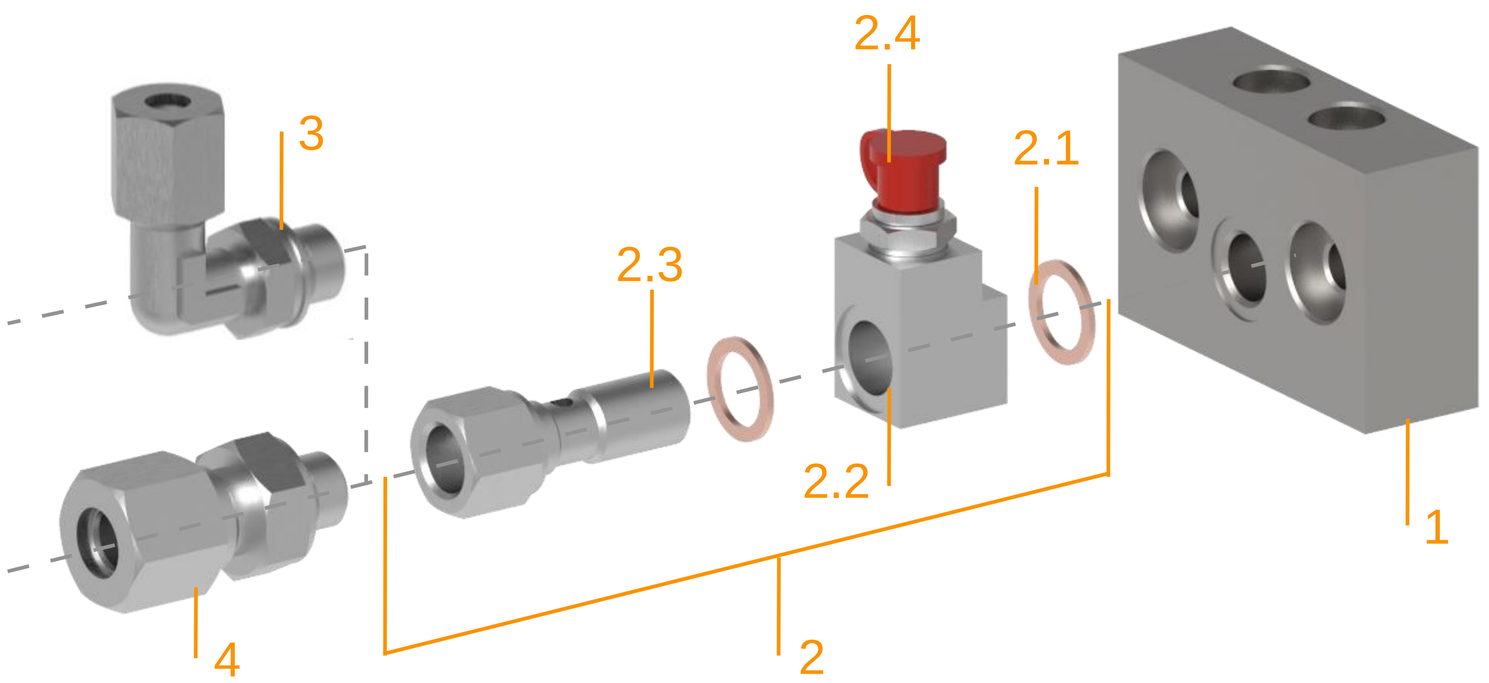
Only normal SE, ME and EE divider elements (without in/outlets, sensors or indication pins) can be ordered with a standard package.

Divider Accessories

Manual Emergency Lubrication via Banjo Grease Nipple

As an option, a banjo with grease nipple is provided to using a manual or hydraulic pump to refill the grease direct from the start element of the divider when the automatic lubrication pump does not work.

Attention: Please check the hoses between the banjo and the pump outlet before starting refilling grease from the banjo!



1- Start Element
2- Banjo Grease Nipple
 2.1- (CR) Copper Ring
 2.2- Banjo Block Body
 2.3- Extension Coupling
 2.4- (GN-SR)Grease Nipple
3- Swivel/Elbow Inlet Screw Coupling
4- Straight Inlet Screw Coupling

Dia. 21.1 (BGN) Manual emergency lubrication via Banjo grease nipple

Description		Part No.
BGN M10M10 (incl. Part 2.1, 2.2, 2.3, 2.4 in ***Dia. 21.1***)		3050105240
Spare Parts 2.1 - Copper Ring	Qty. per Set	
CR 10-14x1	2	3010401930
Spare Parts 2.4 – Grease Nipple		
GN-SR M10	1	5010000080

Order Key

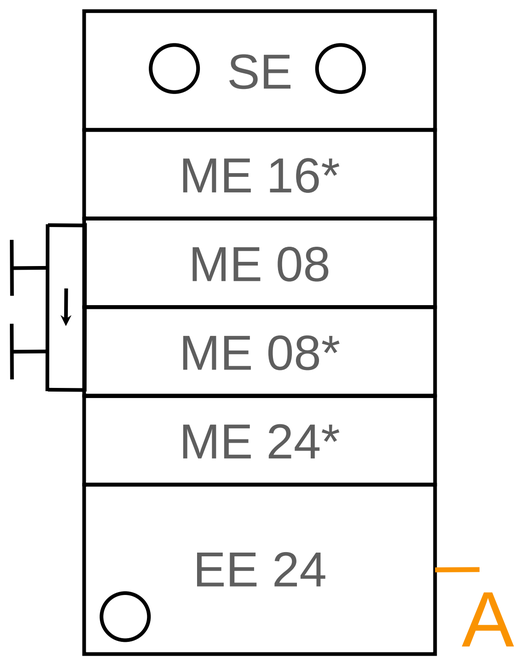
JPQ - 5 / 6 - 100 - 16*-8L0-8*-24*-24S

No. Of Valid Elements (ME+EE)	
3 = 2ME+1EE	6 = 5ME+1EE
4 = 3ME+1EE	7 = 6ME+1EE
5 = 4ME+1EE	8 = 7ME+1EE

No. Of Valid Outlets
X* = No. Of valid outlets

*X <= ((Number of Middle piece+1)*2)*

Fittings in Inlet and Outlets							
Outlet \ Inlet	None	Straight D6mm	Straight D8mm	Elbow D6mm	Elbow D8mm	Swivel D6mm	Swivel D8mm
None	100	106	112	118	124	130	136
RDGE	101	107	113	119	125	131	137
RGE	102	108	114	120	126	132	138
GE	103	109	115	121	127	133	139
UDK	104	110	116	122	128	134	140
PGE	105	111	117	123	129	135	141



Dia. 22.1 Divider JPQ - 5/6 - 100 - 16*-8L0-8*-24*-24S

Type of -	Middle Elements				End Elements		
Normal (Without sensor or indication pin)	8	16	24	32	8	16	24
With sensor (NPN on Side A in Dia. 22.1)*	/	16SN	24SN	32SN	/	16SN	24SN
With indicator pin on side A in Dia. 22.1	/	/	24P	32P	/	/	24S
Without sealing Ball and screw	XX*				XX*		
Combined element and outlet on left	XX*L				XX*L		
Combined element and outlet on right	XX*R				XX*R		
Bridged with next element with outlets on left	XX*L1 or XXL1				/		
Bridged with next element without outlets on left	XX*L0 or XXL0				/		
Bridged with next element with outlets on right	XX*R1 or XXR1				/		
Bridged with next element without outlets on right	XX*R0 or XXR0				/		

** For the type of Middle or End Elements with sensor (PNP on side A in Dia. 21.1) : XXSP*