# LMP 400-401 series

**Maximum working pressure up to 6 MPa (60 bar) - Flow rate up to 780 l/min**



## Description

### Low & Medium Pressure filters

**Maximum working pressure up to 6 MPa (60 bar)**
**Flow rate up to 780 l/min**

LMP400 is a range of low pressure filter with large filtration surface mainly suitable for lubrication, off-line filtration of the reservoirs and filtration equipment.
They are directly connected to the lines of the system through the hydraulic fittings.

**Available features:**
- Female threaded connections up to 2" and flanged connections up to 2 1/2", for a maximum flow rate of 780 l/min
- In line or 90° connections, to meet any type of application
- Base-mounting design also available, for ease of the replacement of the filter element
- Fine filtration rating, to get a good cleanliness level into the system
- Water removal elements, to remove the free water from the hydraulic fluid. For further information, see the Contamination Management document and the dedicate leaflet.
- Bypass valve, to relieve excessive pressure drop across the filter media
- Vent ports, to avoid air trapped into the filter going into the system
- Drain ports, to remove the fluid from the housing prior the maintenance work
- Visual, electrical and electronic differential clogging indicators

**Common applications:**
- Off-line filtration of reservoirs
- Filtration systems

## Technical data

**Filter housing materials**
- Head: Anodized Aluminium
- Housing: Anodized Aluminium
- Bypass valve: Steel

**Pressure LMP 400-401 length 2 -3 - 4**
- Working pressure: 6 MPa (60 bar)
- Test pressure: 9 MPa (90 bar)
- Min. Burst pressure: 18 MPa (180 bar)
- Pulse pressure fatigue test: 1 000 000 cycles with pressure from 0 to 6 MPa (60 bar)

**Pressure LMP 400-401 length 5 - 6**
- Working pressure: 5 MPa (50 bar)
- Test pressure: 7.5 MPa (75 bar)
- Min. Burst pressure: 15 MPa (150 bar)
- Pulse pressure fatigue test: 1 000 000 cycles with pressure from 0 to 5 MPa (50 bar)

**Bypass valve**
- Opening pressure 0.35 MPa (3.5 bar) ±10%
- Other opening pressures on request.

**Filter element features**

| Filter | | Filter element | |
|---|---|---|---|
| LMP 400 - 401 | | CU | |
| Δp Element type | | | |
| **Element media** | **Construction** | **Δp Series** | **Δp** |
| A - Microfiber | Standard | N | 20 bar |
| M - Wire mesh | Standard | N | 20 bar |
| P - Paper | Standard | N | 20 bar |
| *Please see ordering code tables to check element Δp series availability based on filter features.* | | | |
| **Flow direction through the filter element:** From OUT to IN | | | |

**Seals**
- Standard NBR series A
- Optional FPM series V

**Connections**
LMP 400: In-line Inlet/Outlet
LMP 401: 90° Inlet/Outlet

**Temperature**
From -25 °C to +110 °C

**Note**
LMP 400 filters are provided for vertical mounting

## Weights [kg] and volumes [dm³]

| Filter series | Weights [kg] | | | | | | Volumes [dm³] | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Length | 2 | 3 | 4 | 5 | 6 | Length | 2 | 3 | 4 | 5 | 6 |
| **LMP 400-401** | | 7.20 | 8.10 | 8.80 | 11.90 | 14.40 | | 3.50 | 5.00 | 6.50 | 9.50 | 13.50 |

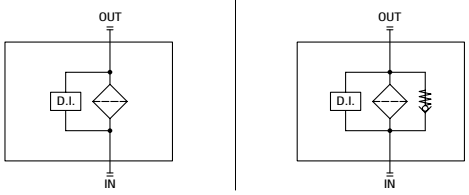
## Flow rates [l/min]

| Filter series | Length | Filter element design - N Series | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | A03 | A06 | A10 | A16 | A25 | M25 M60 M90 | P10 | P25 |
| LMP 400 | 2 | 205 | 244 | 370 | 411 | 515 | 720 | 524 | 556 |
| | 3 | 280 | 333 | 474 | 515 | 602 | 760 | 637 | 660 |
| | 4 | 347 | 400 | 535 | 564 | 637 | 769 | 660 | 688 |
| | 5 | 459 | 501 | 610 | 660 | 717 | 781 | 700 | 721 |
| | 6 | 504 | 575 | 676 | 689 | 728 | 783 | 708 | 727 |
| LMP 401 | 2 | 200 | 236 | 347 | 382 | 468 | 628 | 475 | 501 |
| | 3 | 268 | 315 | 434 | 468 | 537 | 659 | 565 | 582 |
| | 4 | 328 | 373 | 484 | 507 | 565 | 665 | 582 | 603 |
| | 5 | 423 | 456 | 544 | 582 | 626 | 674 | 613 | 629 |
| | 6 | 459 | 516 | 594 | 604 | 634 | 676 | 619 | 633 |

**Maximum flow rate for a complete low and medium pressure filter with a pressure drop Δp = 0.7 bar.**
The reference fluid has a kinematic viscosity of 30 $mm^2/s$ (cSt) and a density of 0.86 $kg/dm^3$.
For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.
You can also calculate the right size using the formulas present on the FILTER SIZING paragraph at the beginning of the full catalogue or at the beginning of the filter family brochure.
Please, contact our Sales Department for further additional information.

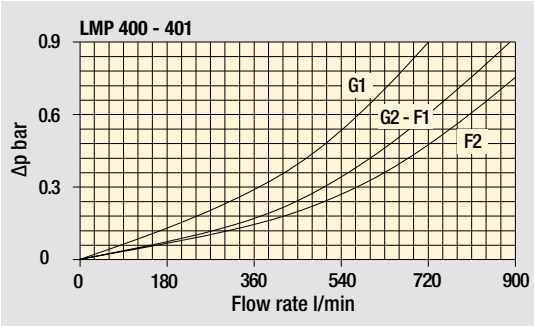
## Hydraulic diagram

| Filter series | Execution S | Execution B |
|---|---|---|
| LMP 400-401 | • | • |

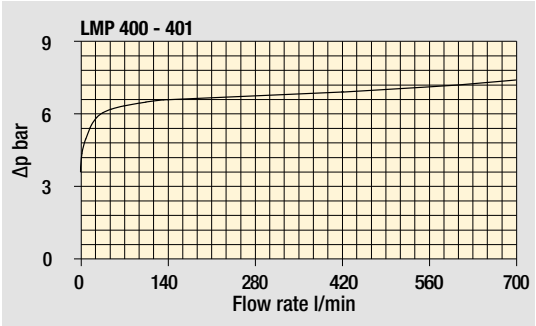



## Pressure drop

Filter housings Δp pressure drop




Bypass valve pressure drop




The curves are plotted using mineral oil with density of 0.86 $kg/dm^3$ in compliance with ISO 3968. Δp varies proportionally with density.

# LMP 400-401

## Designation & Ordering code

### COMPLETE FILTER

Configuration example: LMP401 | 3 | B | A | G1 | A10 | N | P01

**Series and size**

**LMP400** | **LMP401**

**Length**

**2** | **3** | **4** | **5** | **6**

**Bypass valve**

| | | | |
|---|---|---|---|
| **S** | Without bypass | **B** | With bypass 3.5 bar |

**Seals and treatments**

| | | Filtration rating Axx | Mxx | Pxx |
|---|---|---|---|---|
| **A** | NBR | • | • | • |
| **V** | FPM | • | • | • |
| **W** | NBR with surface-treatment on filter element's tube | • | • | - |

**Connections**

| | | | |
|---|---|---|---|
| **G1** | G 1 1/2" | **F1** | 2" SAE 3000 psi/M |
| **G2** | G 2" | **F2** | 2 1/2" SAE 3000 psi/M |
| **G3** | 1 1/2" NPT | **F3** | 2" SAE 3000 psi/UNC |
| **G4** | 2" NPT | **F4** | 2 1/2" SAE 3000 psi/UNC |
| **G5** | SAE 24 - 1 7/8" - 12 UN | | |
| **G6** | SAE 32 - 2 1/2" - 12 UN | | |

**Filtration rating (filter media)**

| | | | | | |
|---|---|---|---|---|---|
| **A03** | Inorganic microfiber | 3 µm | **M25** | Wire mesh | 25 µm |
| **A06** | Inorganic microfiber | 6 µm | **M60** | Wire mesh | 60 µm |
| **A10** | Inorganic microfiber | 10 µm | **M90** | Wire mesh | 90 µm |
| **A16** | Inorganic microfiber | 16 µm | **P10** | Resin impregnated paper | 10 µm |
| **A25** | Inorganic microfiber | 25 µm | **P25** | Resin impregnated paper | 25 µm |

**WA025** Water absorber inorganic microfiber 25 µm

**Element Δp**

| | |
|---|---|
| **N** | 20 bar |

**Execution**

| | | Filter length 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| **P01** | MP Filtri standard | • | • | • | • | • |
| **P02** | Maintenance from the bottom of the housing | | | | • | • |
| **Pxx** | Customized | | | | | |

### FILTER ELEMENT

Configuration example: CU400 | 3 | A10 | A | N | P01

**Element series and size**

**CU400**

**Element length**

**2** | **3** | **4** | **5** | **6**

**Filtration rating (filter media)**

| | | | | | |
|---|---|---|---|---|---|
| **A03** | Inorganic microfiber | 3 µm | **M25** | Wire mesh | 25 µm |
| **A06** | Inorganic microfiber | 6 µm | **M60** | Wire mesh | 60 µm |
| **A10** | Inorganic microfiber | 10 µm | **M90** | Wire mesh | 90 µm |
| **A16** | Inorganic microfiber | 16 µm | **P10** | Resin impregnated paper | 10 µm |
| **A25** | Inorganic microfiber | 25 µm | **P25** | Resin impregnated paper | 25 µm |

**WA025** Water absorber inorganic microfiber 25 µm

**Seals**

| | | Filtration rating Axx | Mxx | Pxx |
|---|---|---|---|---|
| **A** | NBR | • | • | • |
| **V** | FPM | • | • | • |
| **W** | NBR with surface-treatment on tube | • | • | - |

**Element Δp**

| | |
|---|---|
| **N** | 20 bar |

**Execution**

| | |
|---|---|
| **P01** | MP Filtri standard |
| **Pxx** | Customized |

### CLOGGING INDICATORS

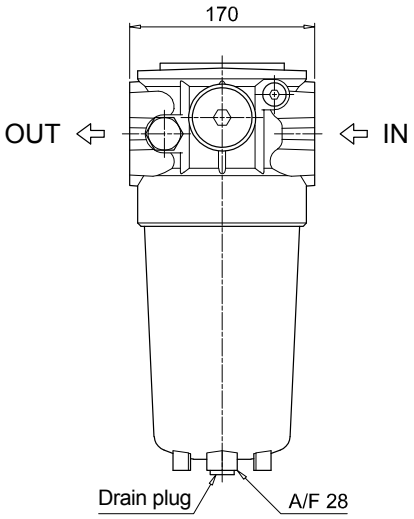
See page 784

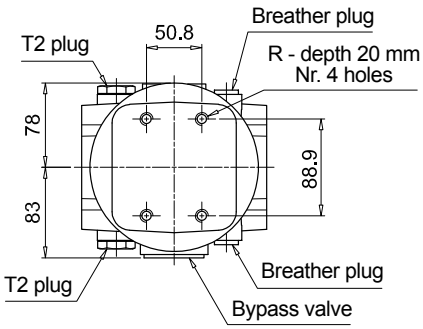
| | | | |
|---|---|---|---|
| **DEA** | Electrical differential pressure indicator | **DTA** | Electronic differential pressure indicator |
| **DEM** | Electrical differential pressure indicator | **DTI** | I-O Link electronic differential pressure indicator |
| **DEU** | Electrical differential pressure indicator | **DVA** | Visual differential pressure indicator |
| **DLA** | Electrical / visual differential pressure indicator | **DVM** | Visual differential pressure indicator |
| **DLE** | Electrical / visual differential pressure indicator | | |

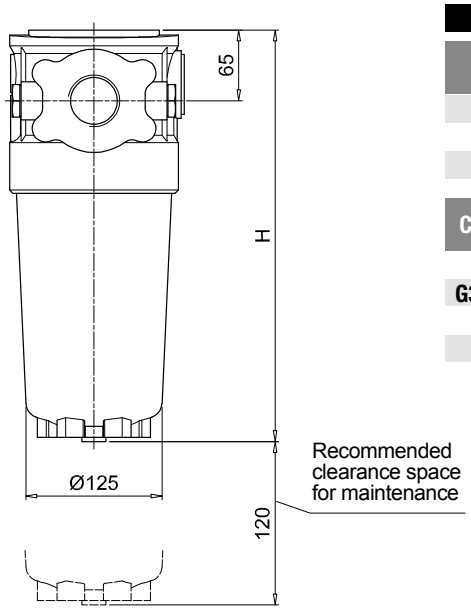
### PLUGS

See page 807

**T2** Plug



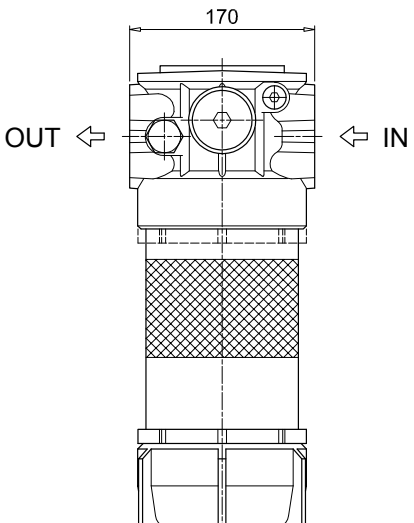

T2 plug =
connection for diff. pressure indicator

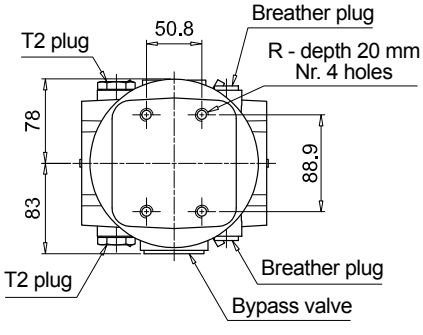
LMP400

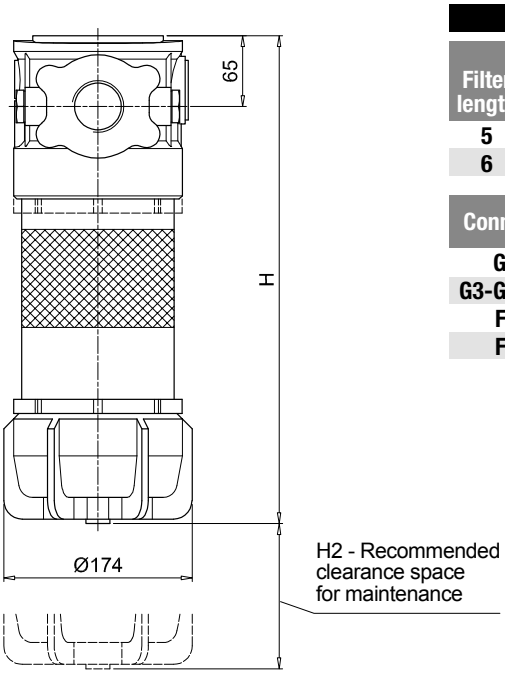
**Length 2 - 3 - 4**

| Filter length | H [mm] |
|---|---|
| **2** | 378 |
| **3** | 478 |
| **4** | 578 |

| Connections | R |
|---|---|
| **G1-G2** | M12 |
| **G3-G4-G5-G6** | 1/2" UNC |
| **F1-F2** | M12 |
| **F3-F4** | 1/2" UNC |




T2 plug =
connection for diff. pressure indicator

LMP400

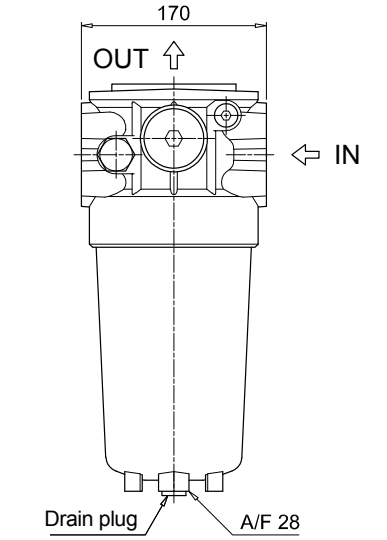
**Length 5 - 6**

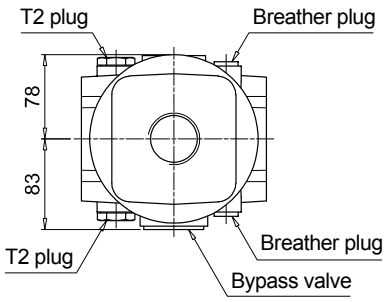
| Filter length | H [mm] | H2 [mm] Execution P01 | H2 [mm] Execution P02 |
|---|---|---|---|
| **5** | 828 | 120 | 660 |
| **6** | 1158 | 120 | 690 |

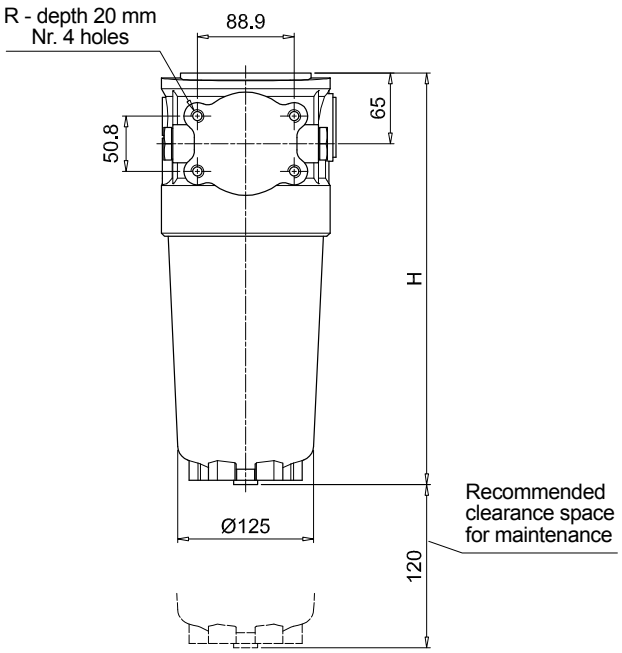
| Connections | R |
|---|---|
| **G1-G2** | M12 |
| **G3-G4-G5-G6** | 1/2" UNC |
| **F1-F2** | M12 |
| **F3-F4** | 1/2" UNC |

# LMP 400-401

## Dimensions



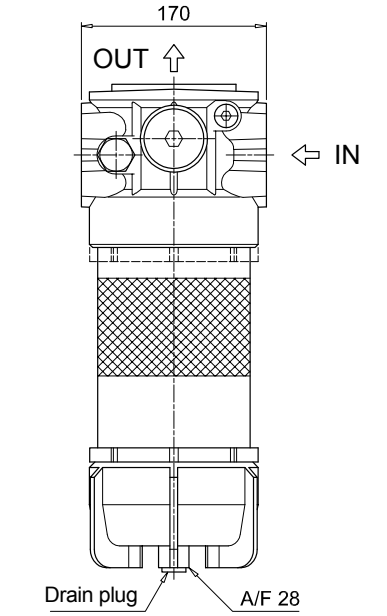

T2 plug =
connection for diff. pressure indicator

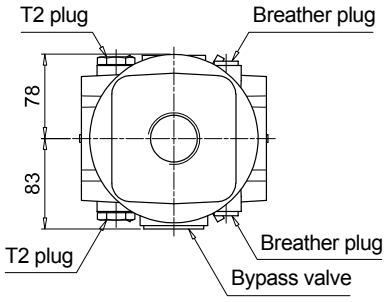
**LMP401**

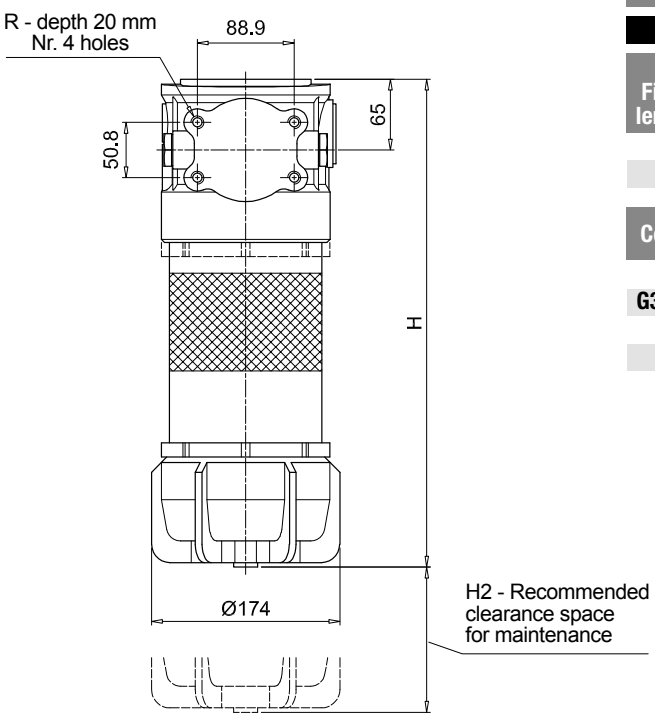
**Length 2 - 3 - 4**

| Filter length | H [mm] |
|---|---|
| **2** | 378 |
| **3** | 478 |
| **4** | 578 |

| Connections | R |
|---|---|
| **G1-G2** | M12 |
| **G3-G4-G5-G6** | 1/2" UNC |
| **F1-F2** | M12 |
| **F3-F4** | 1/2" UNC |




T2 plug =
connection for diff. pressure indicator

**LMP401**

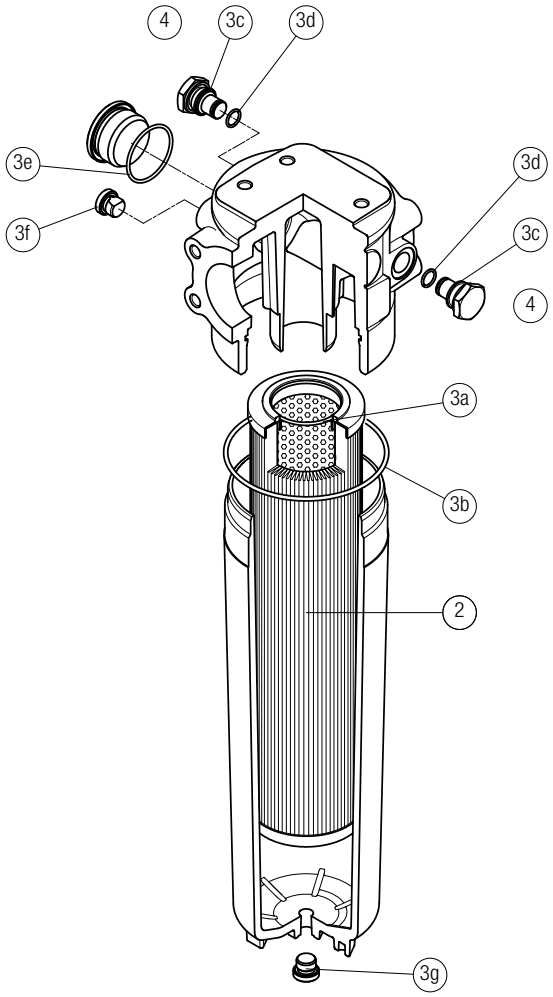
**Length 5 - 6**

| Filter length | H [mm] | H2 [mm] Execution P01 | H2 [mm] Execution P02 |
|---|---|---|---|
| **5** | 828 | 120 | 660 |
| **6** | 1158 | 120 | 690 |

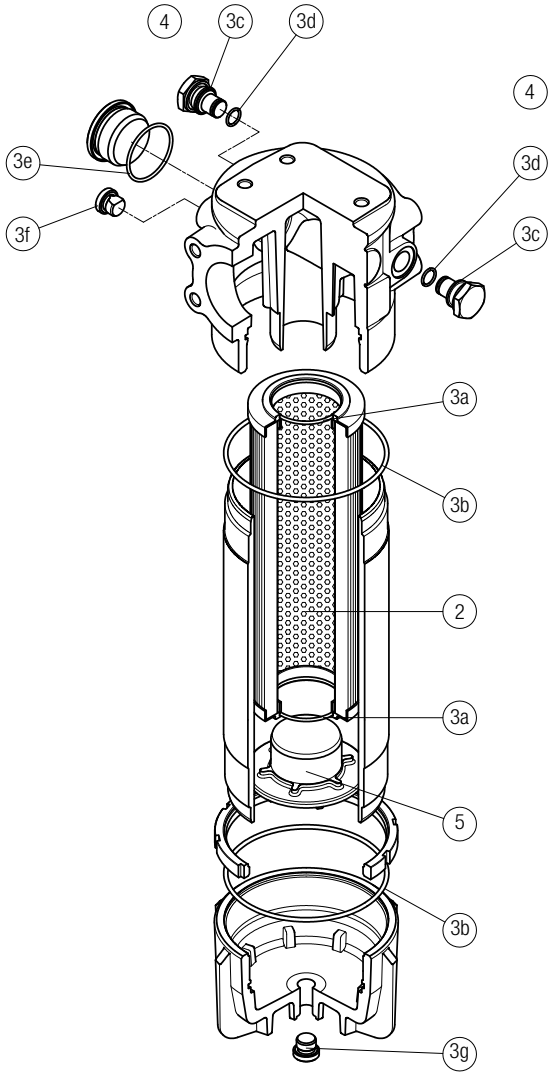
| Connections | R |
|---|---|
| **G1-G2** | M12 |
| **G3-G4-G5-G6** | 1/2" UNC |
| **F1-F2** | M12 |
| **F3-F4** | 1/2" UNC |

## LMP 400 - 401

### length 2 - 3 - 4




### length 5 - 6




| Item: | Q.ty: 1 pc. (2) | Q.ty: 1 pc. (3) (3a ÷ 3g) | | Q.ty: 2 pcs. (4) | | Q.ty: 2 pcs. (5) |
|---|---|---|---|---|---|---|
| **Filter series** | **Filter element** | **Seal Kit code number NBR** | **FPM** | **Indicator connection plug NBR** | **FPM** | **Housing spigot no bypass** |
| **LMP 400-401 length 2-3-4** | See order | 02050391 | 02050392 | T2H | T2V | - |
| **LMP 400-401 length 5-6** | table | 02050393 | 02050394 | | | 01044108 |