



MP Filter
LMD 400-401-431
Series



 HYDRAULIC
COMPONENTS
& FLUID CONTAMINATION
CONTROL

LMD 400-401 & 431 series

Maximum working pressure up to 1.6 MPa (16 bar) - Flow rate up to 600 l/min



Description

Technical data

Low & Medium Pressure filters**Duplex****Maximum working pressure up to 1.6 MPa (16 bar)****Flow rate up to 600 l/min**

LMD400 is a range of versatile low pressure duplex filter with integrated changeover function to allow the filter element replacement without the system shut-down.

They are directly connected to the lines of the system through the hydraulic fittings.

Available features:

- 2 1/2" flanged connections, for a maximum flow rate of 600 l/min
- LMD400: In-line connections
- LMD401: In-line connections with compact design
- LMD431: In-line connections with compact design and base mounting
- 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.
- Balancing valve, to equalize the housing pressure before the switch
- 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:

- Systems where shut-down causes high costs
- Systems where shut-down causes safety issues

Filter housing materials

- Head: Anodized Aluminium
- Housing: Anodized Aluminium
- Manifolds: Steel - Painted black
- Bypass valve: Steel
- 3-way ball valve: Steel housings - Stainless Steel ball
- Valve: Phosphatized Steel - Stainless Steel

Pressure

- Test pressure: 2.4 MPa (24 bar)
- Min. Burst pressure: 4.8 MPa (48 bar)
- Pulse pressure fatigue test: 1 000 000 cycles with pressure from 0 to 1.6 MPa (16 bar)

Bypass valve

- Opening pressure 0.35 MPa (3.5 bar) $\pm 10\%$
- Other opening pressures on request.

Filter element features

Filter LMD400-401 / 431		Filter element CU	
Δp Element type			
Element media	Construction	Δp Series	Δp
A - Microfiber	Standard	N	20 bar
WA - Water absorber 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

FPM series V

Temperature

From -25° C to +110° C

Connections

- LMD 400-401: In-line Inlet/Outlet
- LMD 401: Same side
- LMD 400-401-431: In-Line

Note

LMP 400 - 401 - 431 filters are provided for vertical mounting

Weights [kg] and volumes [dm³]

Filter series	Weights [kg]				Volumes [dm ³]			
	Length	4	5	6	Length	4	5	6
LMD 400 - 401	60	65	72		20	28	33	
LMD 431	-	68	78		-	28	33	

Flow rates [l/min]

Filter series	Length	Filter element design - N Series							
		A03	A06	A10	A16	A25	M25 M60 M90	P10	P25
LMD 400 - 401	4	308	349	453	474	530	628	547	567
	5	395	427	509	547	589	637	577	592
	6	429	483	558	568	597	639	583	597
LMD 431	5	395	427	509	547	589	637	577	592
	6	429	483	558	568	597	639	583	597

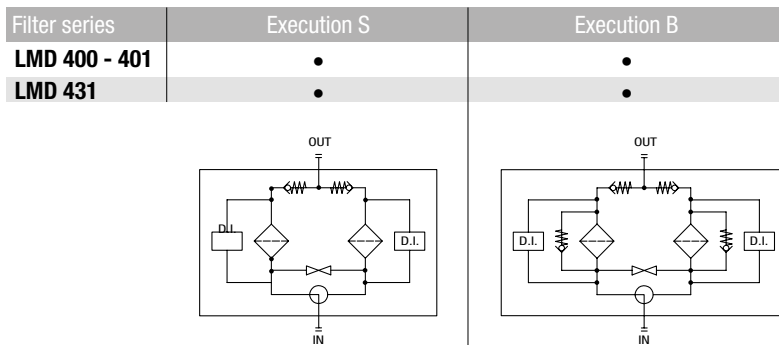
Maximum flow rate for a complete low and medium pressure filter with a pressure drop $\Delta p = 0.7$ bar.

The reference fluid has a kinematic viscosity of 30 mm²/s (cSt) and a density of 0.86 kg/dm³.

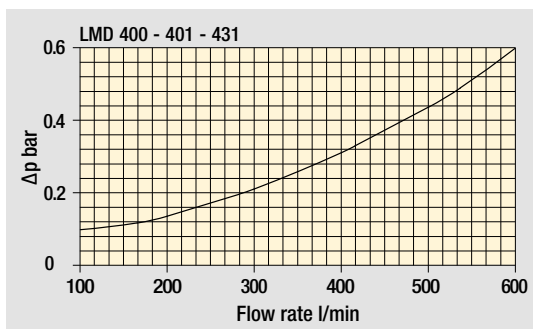
For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.

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.

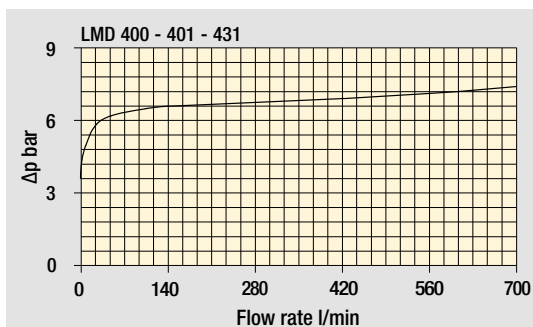
Hydraulic symbols



Pressure drop
Filter housings Δp pressure drop



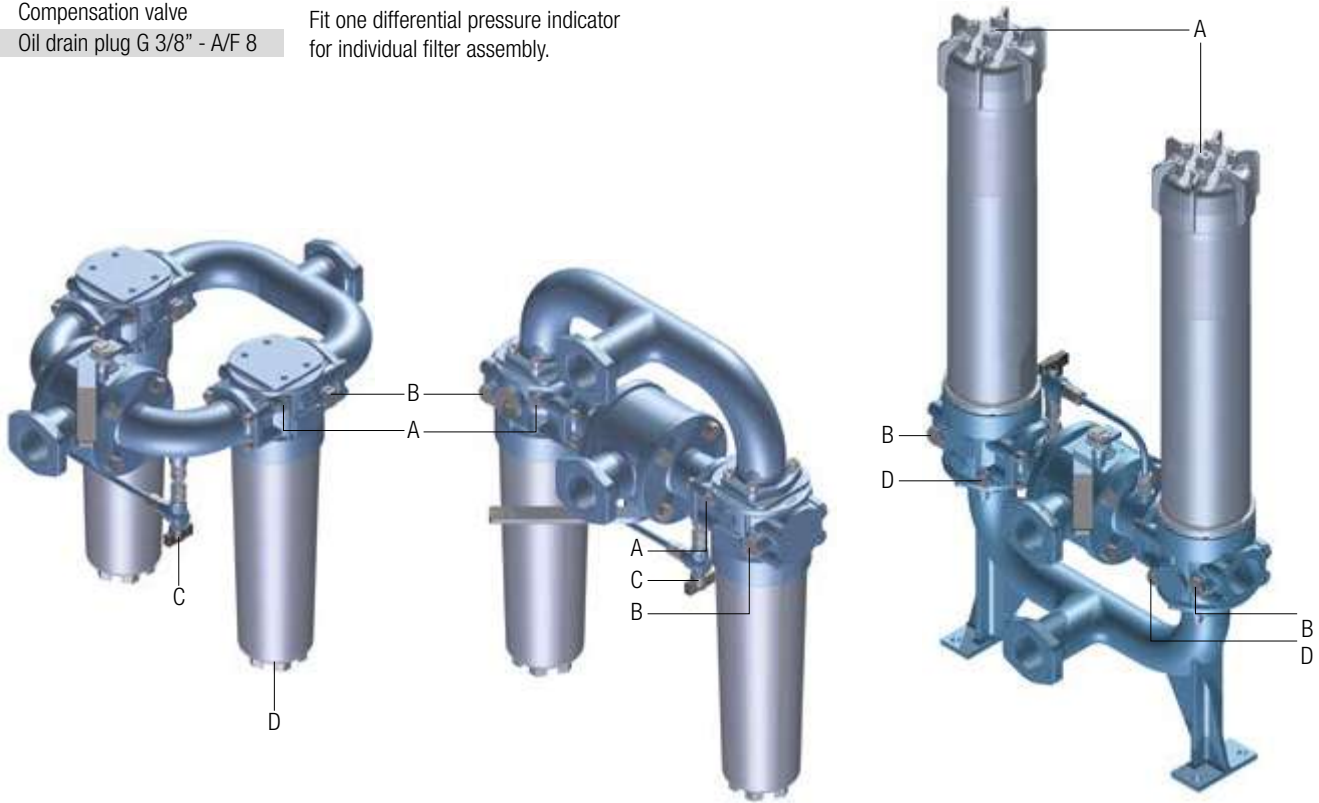
Bypass valve pressure drop



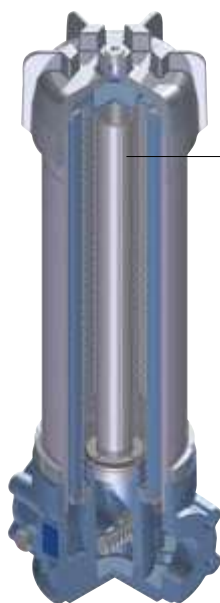
The curves are plotted using mineral oil with density of 0.86 kg/dm³ in compliance with ISO 3968. Δp varies proportionally with density.

Focus on

- A** Breather plug G 3/8" - A/F 8
 - B** Indicator port Plug T2 - A/F 30
 - C** Compensation valve
 - D** Oil drain plug G 3/8" - A/F 8
- LMP 400 - 401 & 431
Fit one differential pressure indicator
for individual filter assembly.



LMD 431: Execution P02



"Internal tube for low flow rate" is recommended for flow rate values below 150 l/min.

The use of option P02 makes it easier to fill the housing with the operating fluid.

LMD 400-401

Designation & Ordering code

COMPLETE FILTER

Series and size **LMD400** | **LMD401** Configuration example: **LMD401** **4** **B** **V** **F1** **A10** **N** **P01**

Length **4** | **5** | **6**

Bypass valve **S** Without bypass | **B** With bypass 3.5 bar

Seals and treatments **V** FPM

Connections	LMD400	LMD401
F1 2 1/2" SAE 3000 psi/M	•	•
F2 2 1/2" SAE 3000 psi/UNC	•	•
F3 2 1/2" SAE 3000 psi/M, In-line connections	-	•
F4 2 1/2" SAE 3000 psi/UNC, In-line connections	-	•

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	Execution		
	4	5	6
N 20 bar			
	P01 MP Filtri standard	•	•
	P02 Maintenance from the bottom of the housing	-	•
	Pxx Customized	-	-

FILTER ELEMENT

Element series and size **CU400** Configuration example: **CU400** **4** **A10** **V** **N** **P01**

Element length **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 **V** FPM

Element Δp	Execution		
	4	5	6
N 20 bar			
	P01 MP Filtri standard	•	•
	Pxx Customized	-	-

CLOGGING INDICATORS

See page 720

DEA Electrical differential pressure indicator

DEM Electrical differential pressure indicator

DEU Electrical differential pressure indicator

DLA Electrical / visual differential pressure indicator

DLE Electrical / visual differential pressure indicator

DTA Electronic differential pressure indicator

DVA Visual differential pressure indicator

DVM Visual differential pressure indicator

PLUGS

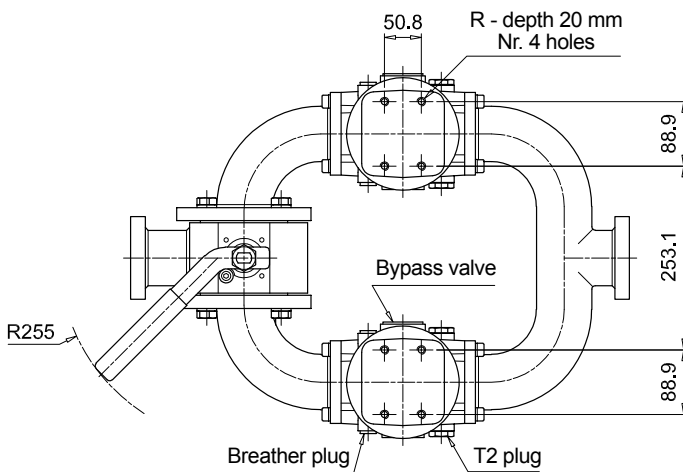
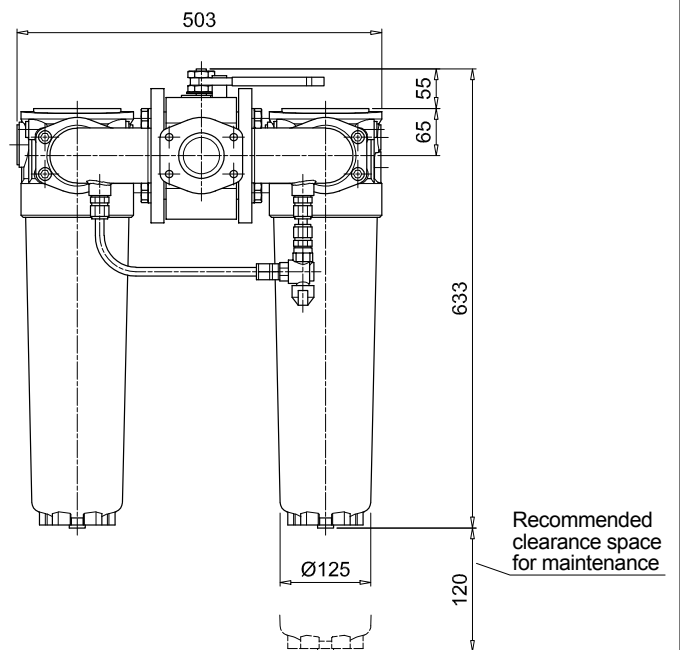
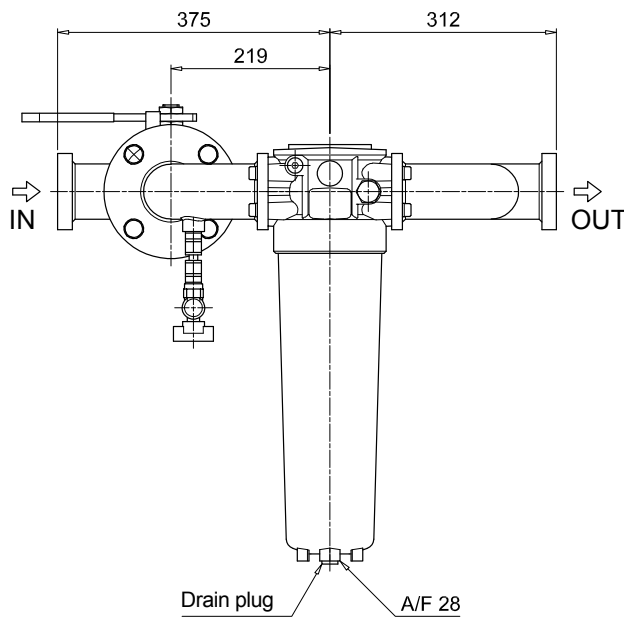
See page 741

T2 Plug

LMD 400-401

Dimensions

LMD400	
Length 4	
Connections	R
F1	M12
F2	1/2" UNC
F3	M12
F4	1/2" UNC



T2 plug = connection for differential pressure indicator

LMD 400-401

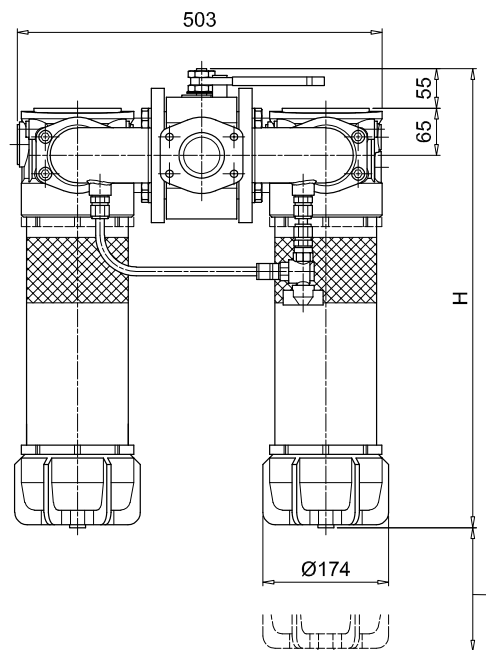
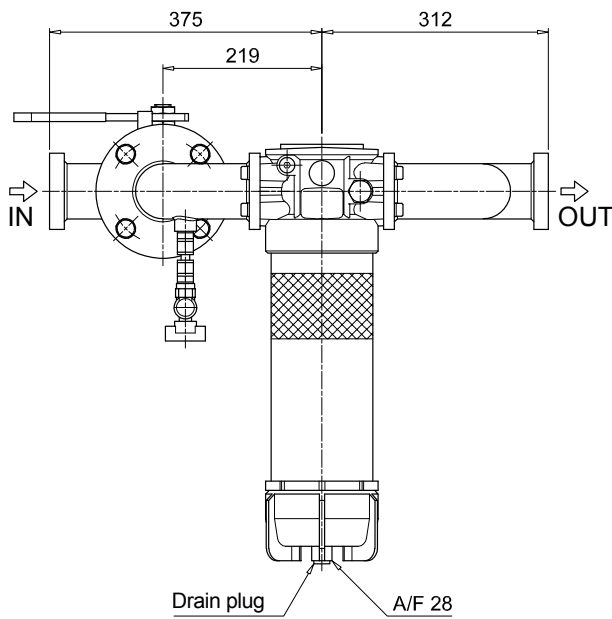
Dimensions

LMD400

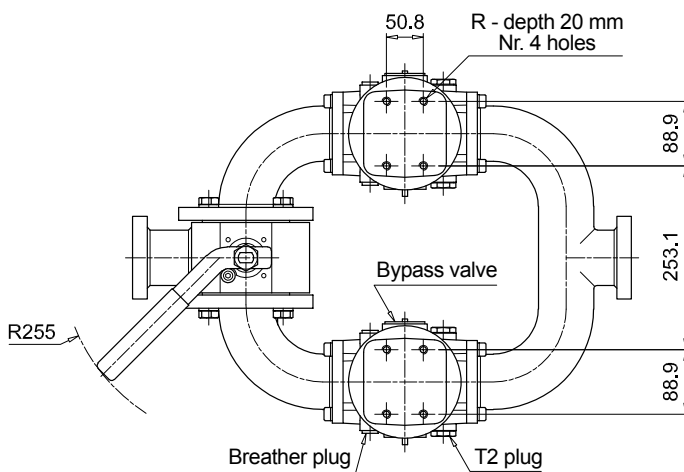
Length 5 - 6

Filter length	H [mm]	H2 [mm] Execution	
		P01	P02
5	883	120	660
6	1213	120	690

Connections	R
F1	M12
F2	1/2" UNC
F3	M12
F4	1/2" UNC



H2 - Recommended clearance space for maintenance

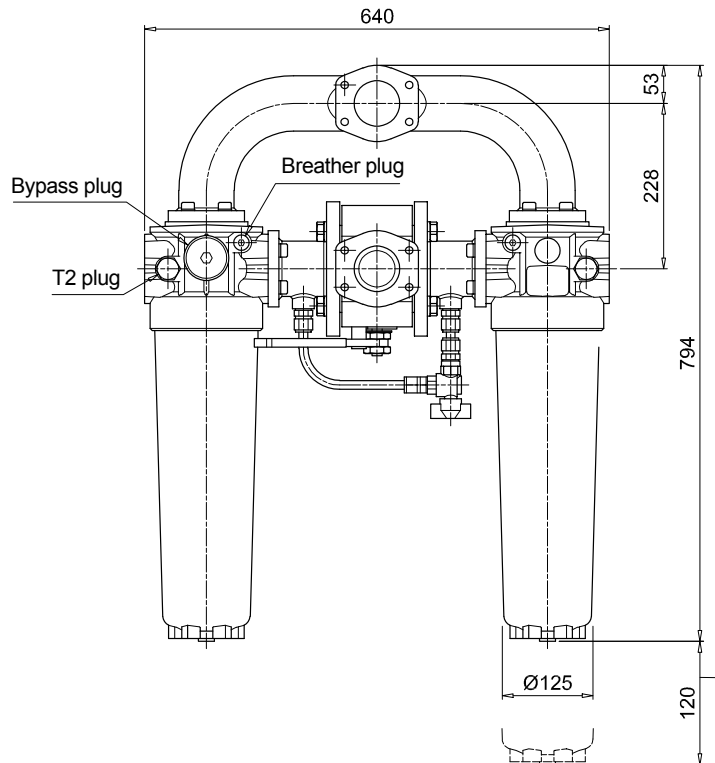
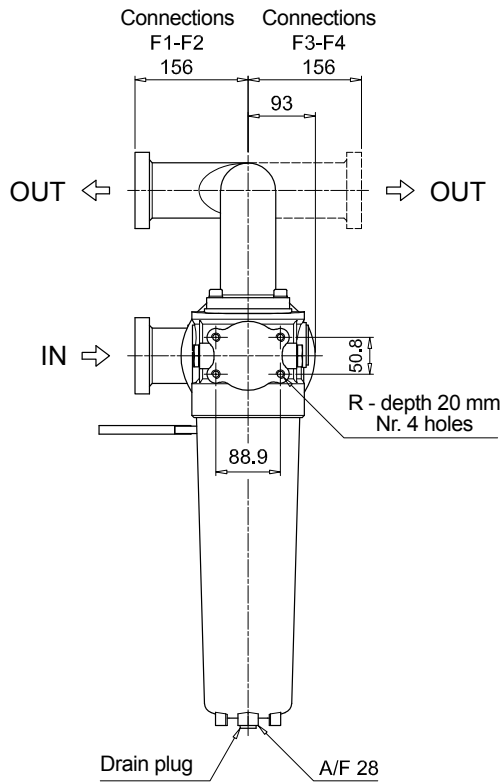


T2 plug = connection for differential pressure indicator

LMD 400-401

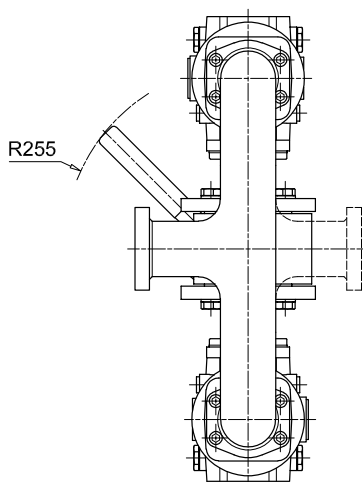
Dimensions

LMD401	
Length 4	
Connections	R
F1	M12
F2	1/2" UNC
F3	M12
F4	1/2" UNC



T2 plug = connection for differential pressure indicator

Recommended clearance space for maintenance



LMD 400-401

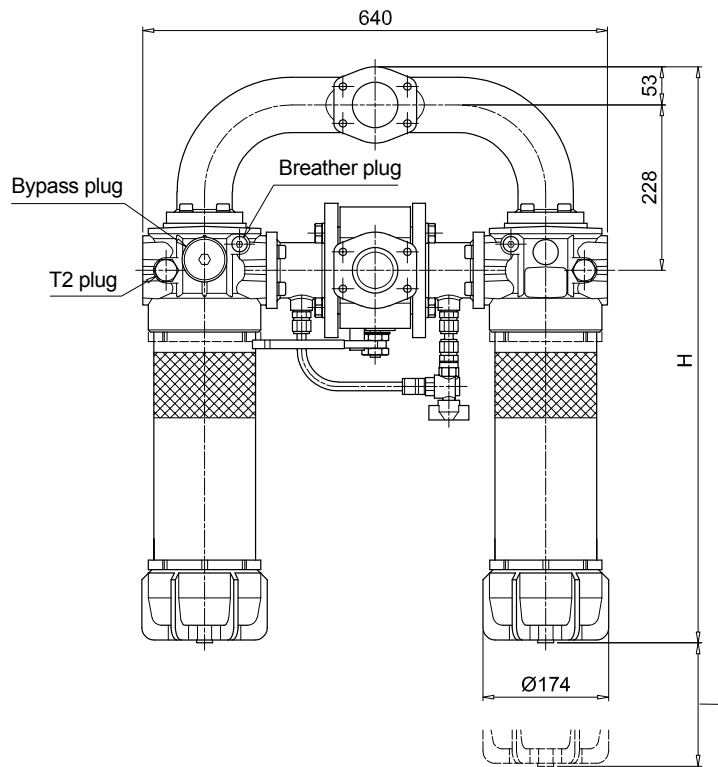
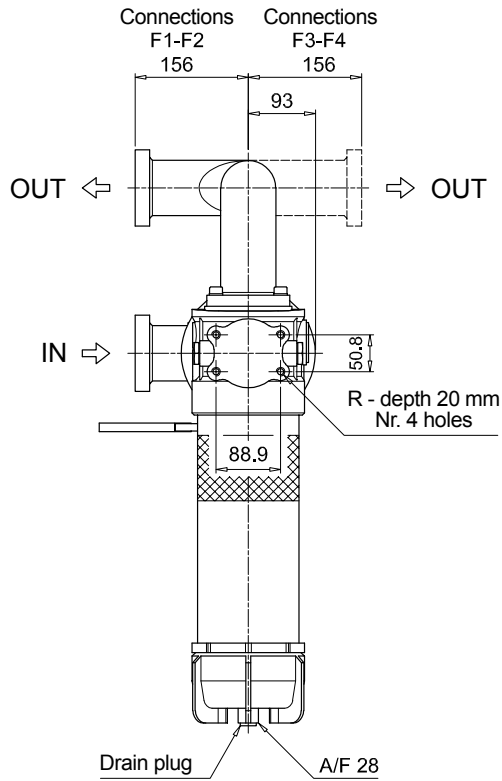
Dimensions

LMD401

Length 5 - 6

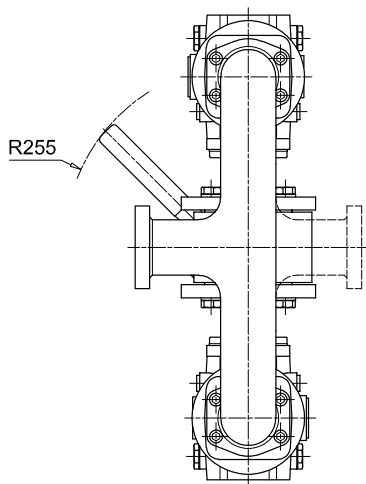
Filter length	H [mm]	H2 [mm] Execution	
		P01	P02
5	1044	120	660
6	1374	120	690

Connections	R
F1	M12
F2	1/2" UNC
F3	M12
F4	1/2" UNC



T2 plug = connection for differential pressure indicator

H2 - Recommended clearance space for maintenance



LMD 431

Designation & Ordering code

COMPLETE FILTER

Series and size	Configuration example: LMD431 5 B V F1 A10 N P01									
LMD431										
Length	5 6									
Bypass valve	S Without bypass B With bypass 3.5 bar									
Seals and treatments	V FPM									
Connections	F1 2 1/2" SAE 3000 psi/M F2 2 1/2" SAE 3000 psi/UNC F3 2 1/2" SAE 3000 psi/M, In-line connections F4 2 1/2" SAE 3000 psi/UNC, In-line connections									
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	P01 MP Filtri standard P02 With internal tube for low flow rate Pxx Customized									

FILTER ELEMENT

Element series and size	Configuration example: CU400 5 A10 V N P01						
CU400							
Element length	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	V FPM						
Element Δp	N 20 bar						
Execution	P01 MP Filtri standard Pxx Customized						

CLOGGING INDICATORS

See page 720

DEA Electrical differential pressure indicator	DLE Electrical / visual differential pressure indicator
DEM Electrical differential pressure indicator	DTA 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

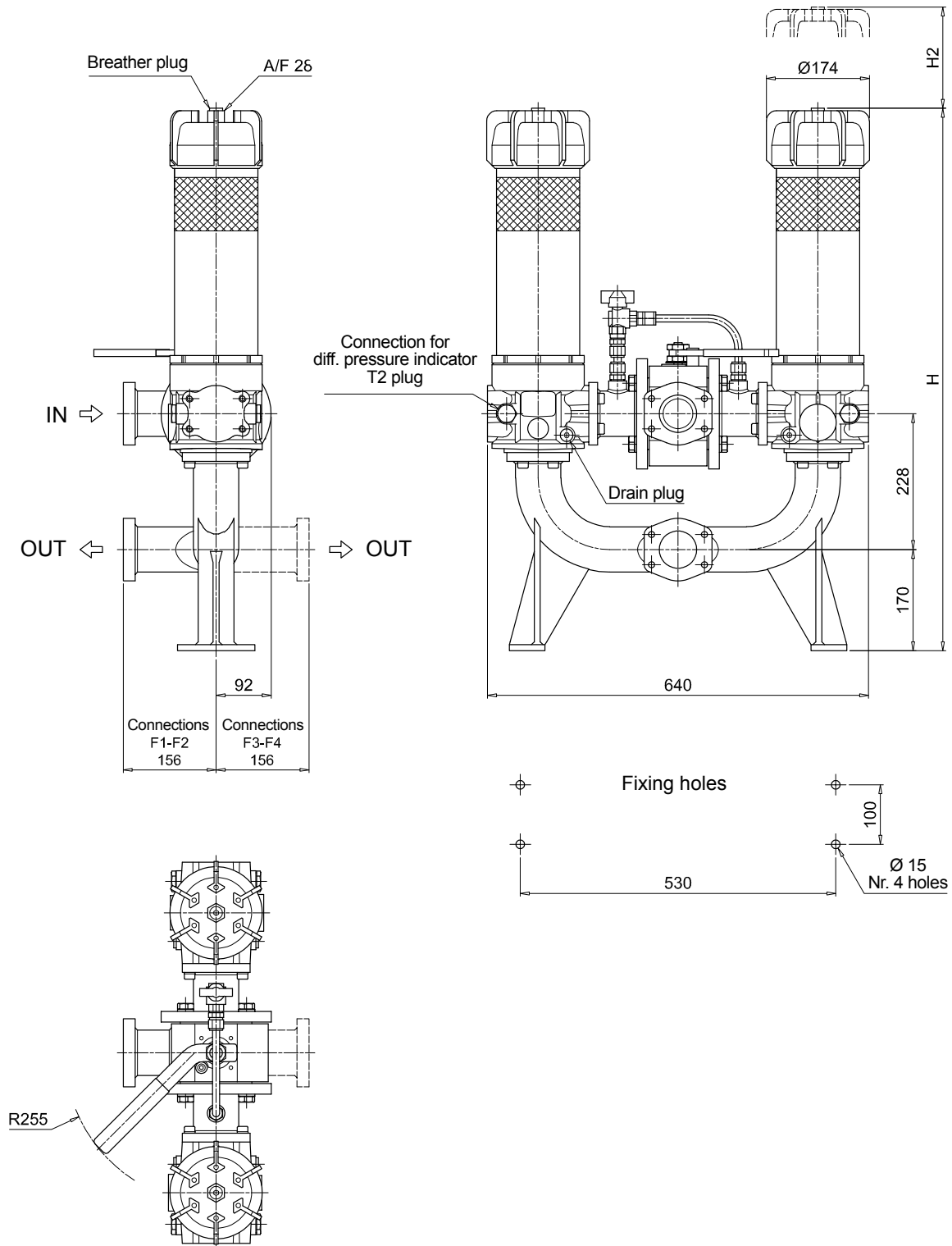
PLUGS

See page 741

T2 Plug

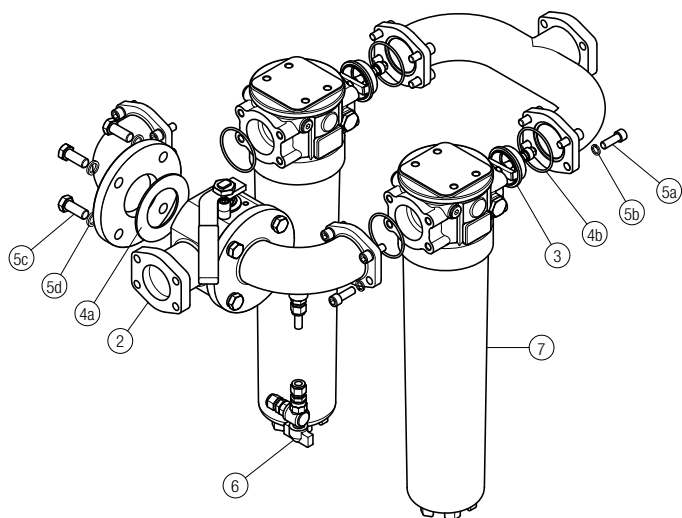
LMD431

Filter length	H [mm]	H2 [mm]
5	1161	660
6	1491	690

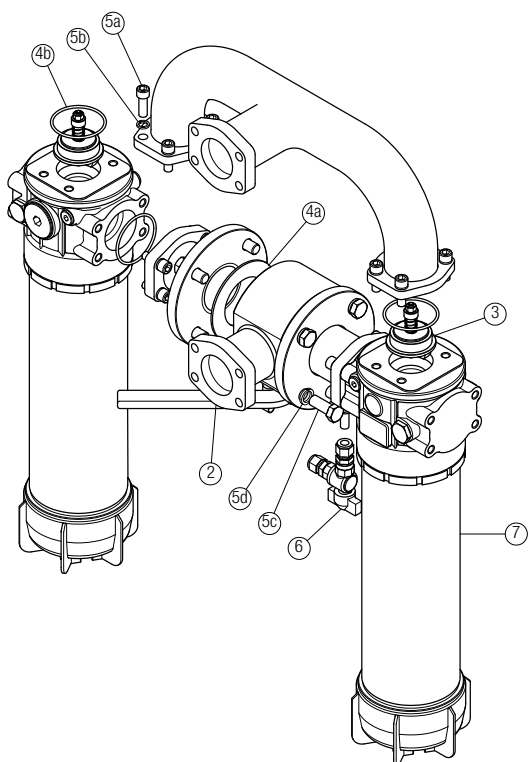


Order number for spare parts

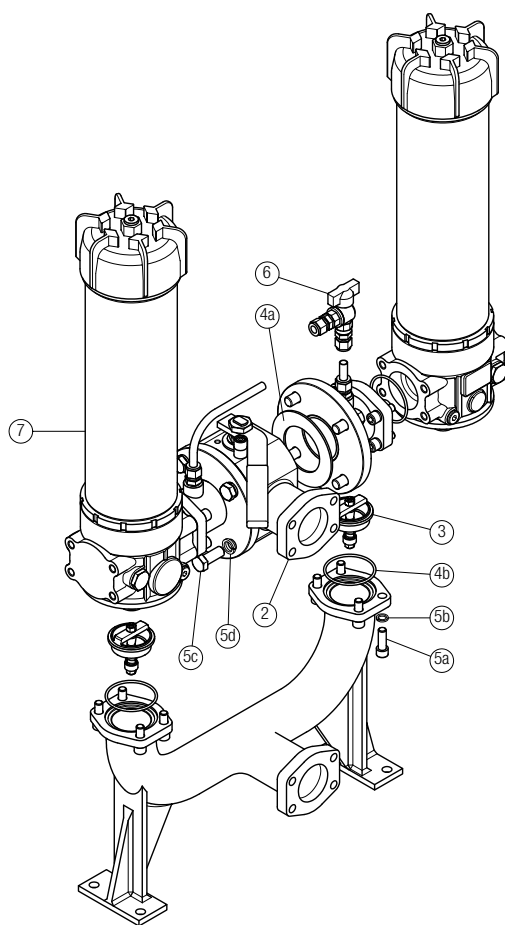
LMD 400



LMD 401



LMD 431



Item:	Q.ty: 1 pc.		Q.ty: 2 pcs.	Q.ty: 1 pc.	Q.ty: 1 pc.	Q.ty: 1 pc.	Q.ty: 2 pcs.
Filter series	3-way ball valve PN 16 2 1/2" SAE 3000 psi/M 2 1/2" SAE 3000 psi/UNC		One-way valve	Seal Kit	Threaded fasteners kit	Kit ball valve with hose fitting	Filter See order table
LMD 400-401-431	02001440	02001441	02001429	02050399	02049062	02025043	LMP400xF2.....

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