

A guide to select the correct bell-housing and drive coupling components

DATA REQUIRED

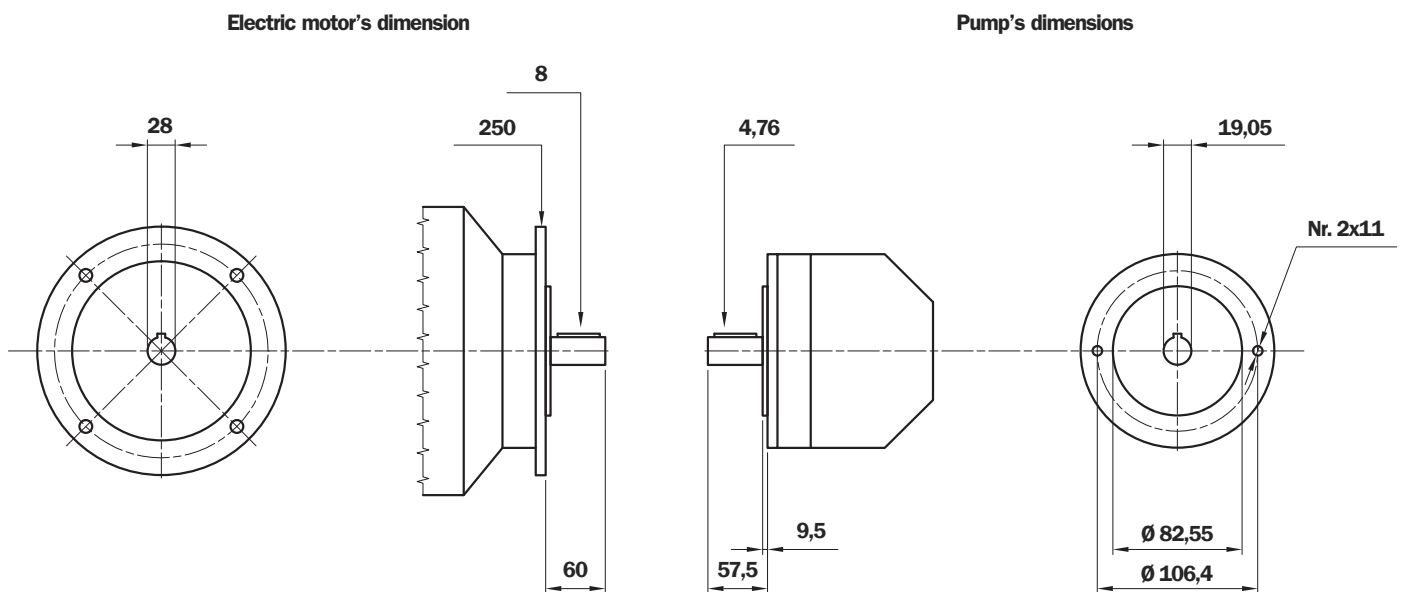
Electric motor power/motor size
 Manufacturer and pump type

TO VERIFY:

- 1 - Pump and motor shaft dimensions (see page 67)
- 2 - Shaft and flange pump (see pump data sheet)

Example:

- Electric motor 2 kW - 4 poles - Motor size 110/112
- Atos pump code PFE31 - Shaft 1



Bell-Housing's length calculation

- $H = 60 + 18 + 57,5 = 135,5$ mm (18= Sp spider - see page 49)
- Choose type of bell-housing (LMC - LMS)
 - For LMC see tab. 3 at page 11
 - For LMS see tab. 22 at page 32
 - For MODUL 2/3 see at page 36

Note: The length of bell-housing must be \geq than the length calculated (135,5 mm)

Case A - solution with LMC bell-housing

Tab. 3 at page 11 - for electric motor 2 kW LMC 250
 LMC 250 bell-housing with height $\geq 135,5$ - LMC250AFSQ

- The bell-housing code must be completed with drilling pump code (see tab. 35 at page 47)
 For the specific case C= 82,5 - Nr. 2 holes M10: Code drilling O60
- Definitive bell-housing code **LMC250AFSQ060**

Case B - solution with LMS bell-housing

Tab. 22 at page 32 - for electric motor 2 kW LMS 250
 LMS 250 bell-housing with height $\geq 135,5$ - LMS250AFSQ

- The bell-housing code must be completed with drilling pump code (see tab. 35 at page 47)
 For the specific case C= 82,5 - Nr. 2 holes M10: Code for. 060
- Definitive bell-housing code **LMS250AFSQ060**

Choose coupling

- **Motor half-coupling** (see tab. 38 at page 50)

- For electric motor Gr. 100/112, the half-coupling is **SGEA21M05060**

- **Spider** (see tab. 36 - 37 at page 49)

- For SGEA21, EGE2 - EGE2RR

- (choose spider material on the base of the application, oil, temperature and cycle machine, etc.)

- **Pump half-coupling**

- Choose the drilling code tab. 44 - 45 at page 53 for shaft 19,05 - Ch. 4,76 - code: **G01**

- Half-coupling length = L BH length - THK Spider - THK Spigot

- LMC= 138 mm - 60 - 18 - 9,5= 50,5 mm

- LMS= 148 mm - 60 - 18 - 9,5= 60,5 mm

- LMC - Choose the half-coupling's length on tab. 39 at page 50 $\leq 50,5$ mm.

- LMS - Choose the half-coupling's length on tab. 39 at page 50 $\leq 60,5$ mm.

- LMC - Availabe length for SGEA21= 50 mm

- LMS - Availabe length for SGEA21= 60 mm

- LMC=LMS - Code half-coupling code: **SGEA21G01050**

Software for automatic calculation available on the web site

www.mpiltri.com - tools - software

Vano / Pinn / Screw pumps

AKM913ZD064

HYDRAULIC PUMP - Technical Data

L1:	97.5
d1:	19.05
Ch1:	4.76
e:	9.5
Pd1:	82.55
De1:	105
Rc:	2
F:	M20

ELECTRIC MOTOR - Technical Data

L:	60
d1:	19.05
Rg:	250
Ch:	8

Coupling material: Aluminium Cast iron Alternative material

Result

Coupling:	M01 - 21066
Drilling Pump:	S000
Pump Shaft:	G01
Motor Shaft:	M20

Result

Monobloc Bellhousing:	<input type="checkbox"/>
Modular Bellhousing:	<input checked="" type="checkbox"/>
Silenced Bellhousing:	<input checked="" type="checkbox"/>

Monobloc Bellhousing:
Pump half-coupling with grub screw
For other solution please contact technical department

Modular Bellhousing: OK
Silenced Bellhousing: OK

CLICK HERE TO PROCEED

Note: For multi pumps we recommend to use a specific support on the base of the pump's dimensions and weight.

Half-coupling SGE*** series

The half-couplings series SGE*** allow secure transmission between the electric motor and the driven side; they are able to absorb shocks and vibration, in addition to compensating radial misalignment, angular and axial.
The assembly of the couplings can be horizontal/vertical, withstanding vibration and load reversals.

The complete range of couplings are extrapolated from the on-line software, with a length equal than the shaft on which must be mounted and they are completed with grub screw for fixing located on the key.
Available for cylindrical shaft with metric and imperial dimensions as well for splined shafts as per specification DIN, ISO and SAE.

Admissible misalignment radial, angular and axial

Max admissible radial misalignment

Half coupling	R (mm)
SGE * 01	0,5
SGE * 21	1,0
SGE * 31	1,0
SGE * 40	1,0
SGE * 51	1,5
SGE * 60	1,5
SGE * 80	2,0
SGE * 90	2,0

Max admissible angular misalignment

Half coupling	β (°)
SGE * 01	
SGE * 21	
SGE * 31	
SGE * 40	1,5°
SGE * 51	
SGE * 60	
SGE * 80	
SGE * 90	

Max admissible angular misalignment

Half coupling	A (mm)
SGE * 01	2,0
SGE * 21	2,5
SGE * 31	3,0
SGE * 40	3,5
SGE * 51	3,5
SGE * 60	3,5
SGE * 80	4,0
SGE * 90	5,0

Normative ATEX 94/9/CE

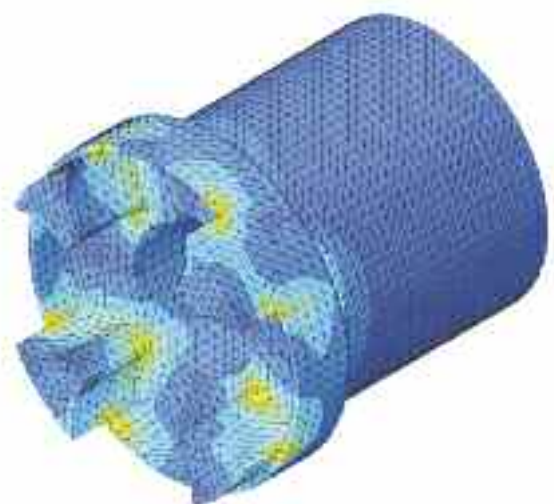
Half-couplings SGE*** series are available to use in hazardous area.
The couplings are certified according to ATEX 94/9/CE (ATEX 95).
Category certified 2G - area 1 and 2.
Other information available on our web site "www.mpfiltri.com".

MP Filtri couplings are developed with:

CAD 3D



FEM (calculation)



Drawings 3D available on website www.mpfiltri.com at section TOOLS/2D-3D COMPONENTS

Sizing of half-coupling

The half-couplings SGE*** series are in conformity to normative **DIN 740/2**.
The max torque to transmit is always less than the max torque that the coupling can transmit.

Examples verification of the coupling

Torque transmitted by electric motor:

Mt: $9560 \times \text{kW} / \text{rpm} = \text{Nm}$

Me > $\text{Mt} \times \text{S} = \text{Nm}$

Where:

Mt: Torque transmitted by electric motor

Me: Torque transmitted by coupling (see table 14)

kW: Power of electric motor

Rpm: Revolutions per minute of electric motor

S: Service factor (see table 14)

TABLE 1

Small pumps, uniform load, low operating pressures e.g. rotary action machine tools - 5/8 work cycles per hour	1.3
Small pumps, uniform load, high working pressures e.g. lifting equipment - 120-150 work cycles per hour	1.5
Pumps, non-uniform load e.g. lifting equipment - 280-300 work cycles per hour	1.7

Example

Electric motor, 4 pole - 4 kW

hydraulic pump, uniform load, low operating pressure

Mt: $9560 \times 4 / 1500 = 25.45 \text{ Nm}$

Me > $25.49 \times 1.3 = 33 \text{ Nm}$

Half-coupling SGEA21 meets the above requirement.

Select the half-coupling of the calculated size from the motor half-couplings table.

Note: When selecting the coupling, remember that for pumps with splined shaft, only cast iron couplings of the SGEG series can be used.

Determine the size of the coupling according to the type of installation and application envisaged, on the basis of the following formulas and tables:

TABLE 2

Half-coupling type	External diameter mm	Nominal torque Me - Nm	Maximum transmissible torque Me - Nm	
ALUMINIUM	SGEA01	43	15	20
	SGEA21	68	160	190
	SGEA31	85	340	380
	SGEA51	109,5	550	620
CAST IRON	SGEG01	40	20	30
	SGEG30	80	400	450
	SGEG40	95	550	620
	SGEG60	120	760	850
	SGEG80	160	2200	2500
	SGEG90	200	5500	6100
STEEL	SGES40	95	550	620
	SGES60	120	760	850
	SGES80	160	2200	2500

Nominal and maximum torque values are referred to couplings assembled with standard flexible spiders of the **EGE**** series (see page 49).

Where higher torques are to be transmitted, use flexible spiders of the **EGE**RR** series (see page 49).

Noise

Noise is a particularly pervasive problem so much so that there have been statutory regulations in place now for some years, designed to limit harmful occupational exposure. Many of the machines used in industry today are equipped with oil-hydraulic systems, which happen to be a major source of noise.

1. Theory and definition of noise

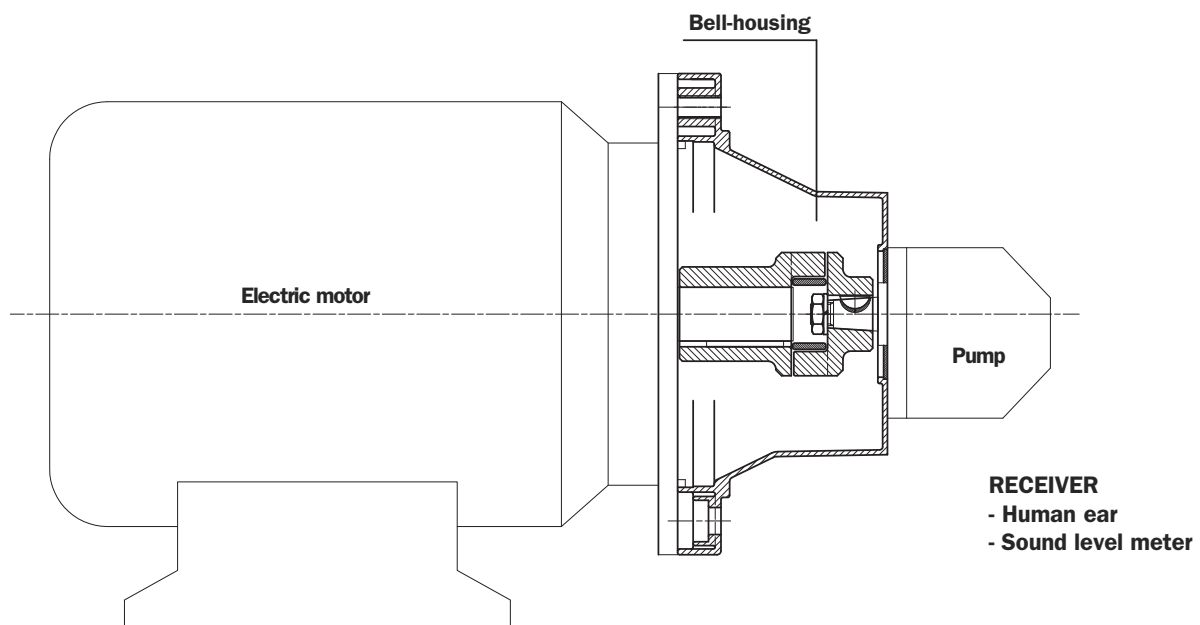
From a health and hygiene standpoint, noise can be defined as an unpleasant and undesirable sound, or an unpleasant and annoying or intolerable auditory sensation (noise being any sound phenomena that may be accompanied by sensations of disturbance and pain). By definition, acoustic phenomena are oscillatory in character, propagated in a flexible medium and causing pressure variations at the points, and the areas adjacent to those points, through which they pass.

2. Sound

Technically considered, certain elements must be present simultaneously for acoustic phenomena to occur:

- Sound source
- Transmission medium
- Receiver

Motor and pump unit



The **electric motor** and the **pump**, together with the drive coupling, are the **SOURCE OF THE NOISE**.

The **Bell-housing** is the noise transmission medium.

Depending on whether the monobloc bell-housing is a rigid or low noise type, there will be variations in the flexible properties of the transmission medium.

The acoustic phenomena are dissimilar in the two cases, given the differences in pressure variation and particle displacement.

Assembly of motor and pump unit

As mentioned in the presentation, low noise bell-housing will help to attenuate the transmission of vibrations and the emission of noise generated by the system.

Self-evidently, however, the mere adoption of a low noise bell-housing will achieve little unless the motor and pump are correctly installed on the machine, or on the tank of the hydraulic power unit.

- Should be followed in order to achieve best possible results and correct installation:

1. Motor and pump unit mounted horizontally on oil tank lid

- The suction pipe attached to the pump must be rigid, and fitted using a resilient bulkhead flange of the FTA series, which helps to cushion the vibrations propagated between the pipe and the tank lid. If pipes need to be bent, the radius of curvature must be at least 3 times the pipe diameter. Do not use elbow fittings, as these will significantly increase pressure losses.
- The pressure pipeline of the pump must be flexible, and long enough to include bends with the minimum radius of curvature recommended by the manufacturer for the specified operating pressure.
- The return pipeline running from the service to the filter must be flexible. Where oil is returned directly to the tank of the hydraulic power unit through a rigid pipe, it is advisable to use a resilient bulkhead flange of the FTR series, which helps to cushion the vibrations propagated between the pipe and the tank lid.
- Anti-vibration devices (resilient mounts or damping rods) must be located under the feet of the electric motor or the PDM foot brackets, depending on the mounting position of the motor.
- The lids of hydraulic oil tanks must be sturdy enough to support the load they carry.

2. Motor and pump unit mounted horizontally on machine

- As a matter of good practice, the oil tank and motor-pump unit should be mounted on a single supporting frame of strength sufficient to support the load.
- If the hydraulic system is fitted with a side-mounted filter, the suction pipeline to the pump must be flexible, and long enough to include bends with the minimum radius of curvature recommended by the manufacturer.
- If the suction filter is not side mounted, the pipeline should be rigid and installed in conjunction with a compensating coupling.
- The pressure pipeline of the pump must be flexible, and long enough to include bends with the minimum radius of curvature recommended by the manufacturer for the specified operating pressure.
- The return pipeline running from the service to the filter must be flexible. Where oil is returned directly to the tank of the hydraulic power unit through a rigid pipe, it is advisable to use a resilient bulkhead flange of the FTR series, which helps to cushion the vibrations propagated between the pipe and the tank lid.
- Anti-vibration devices (resilient mounts or damping rods) must be located under the feet of the electric motor or the PDM foot brackets, depending on the mounting position of the motor.

Note: The above guidelines are indicative only, and subordinate to the solutions adopted ultimately by design engineers.

In conclusion: For best results, in any event, the motor-and-pump unit should be incorporated into the hydraulic system in such a way that no one component is rigidly associated with another, resulting in the propagation of vibration, and consequently noise.

Table of summary MODUL 2/3

	5.5 - 7.5 kW	11 - 22	30	37 - 45	55 - 90	110 - 200	250 - 400
	7.5 - 10.2 Hp	15 - 30 Hp	40.80 Hp	50.32 - 61.2 Hp	75 - 125 Hp	150 - 272 Hp	340 - 544 Hp
	Size 225 - D. 450	Size 160/180 D. 350	Size 200 - D. 350	Size 225 - D. 450	Size 250/280 D. 550	Size 315 - D. 660	Size 355/400 D. 800
MODUL 3	<p>BMT300 BMT350 FR1*</p> <p>AR*</p> <p>Ø 190 Ø 85</p> <p>Kit of assembly KVG5 (Q.ty 1) + Kit of assembly KVG1 (Q.ty 1)</p>						
	<p>BMT350 BMT400 BMT450 FP5 FP6 FP7</p> <p>AD*</p> <p>Ø 190 Ø 140 Ø 288</p> <p>Kit of assembly KVG5/7 (Q.ty 2)</p>						
MODUL 2	<p>BMT550 BMT660 BAD800 FP6 FP7 (BAD800 ONLY FP7)</p> <p>Ø 288</p> <p>Kit of assembly KVG6/7 (Q.ty 1)</p>						
	5.5 - 7.5 kW	11 - 22	30	37 - 45	55 - 90	110 - 200	250 - 400
7.5 - 10.2 Hp	15 - 30 Hp	40.80 Hp	50.32 - 61.2 Hp	75 - 125 Hp	150 - 272 Hp	340 - 544 Hp	340 - 544 Hp
Size 225 - D. 450	Size 160/180 D. 350	Size 200 - D. 350	Size 225 - D. 450	Size 250/280 D. 550	Size 315 - D. 660	Size 355/400 D. 800	Size 355/400 D. 800

ACCESSORIES

The range of products is completed by a number of accessories, including:

Foot brackets, which serve to support the motor-and-pump unit in the event that the selected electric motor does not have mounting feet.

Damping rings, intended mainly for use with motor-pump units positioned vertically and with the pump submerged in the oil tank.

Damping rods, to be mounted under the electric motor feet or under the foot brackets (see page 55).

Inspection covers, facilitating the maintenance of oil tanks in hydraulic power units, without necessarily having to dismantle the unit.

Aluminium tanks of 10 litres capacity, allowing the assembly of a compact hydraulic power unit

Technical specifications

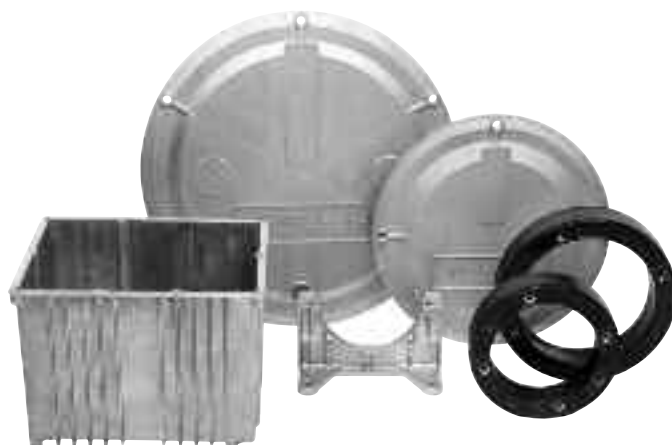
ACCESSORIES

Materials

- **Foot bracket**
Pressure diecast aluminium alloy.
- **Damping ring**
Vulcanized aluminium.
- **Damping rod**
Vulcanized aluminium.
- **Inspection covers**
Pressure diecast aluminium alloy.
- **Tanks**
Pressure diecast aluminium alloy.

Temperature

- $-30^{\circ}\text{C} \div +80^{\circ}\text{C}$
For temperatures outside this range,
contact the MP Filtri Technical and Sales Department.



Compatibility with fluids

- **Modular bell-housing components compatible for use with:**

Mineral oils

Types HH-HL-HM-HR-HV-HG, to ISO 6743/4 standard

Water based emulsions

Types HFAE - HFAS, to ISO 6743/4 standard

Water glycol

Type HFC, to ISO 6743/4 standard

Ask for anodized version

Special Applications

- **Any applications not covered by the normal indications contained in this catalogue must be evaluated and approved by the MP Filtri Technical and Sales Department.**

Foot brackets

Made of pressure die-cast aluminium and featuring superior mechanical strength, these brackets are proportioned to support **UNEL - MEC** frame electric motors with **B5** mounting flange and no feet.

There are brackets available for a range of motors from **size 71, rated 0.37 kW**, up to **size 180 rated 22 kW**.

(For sizes other than those indicated in the table, contact the MP Filtri Technical and Sales Department).

As already indicated under the heading **“ASSEMBLY OF MOTOR AND PUMP UNIT”**, foot brackets of the **PDM** series should be fitted preferably in conjunction with anti-vibration mounts.

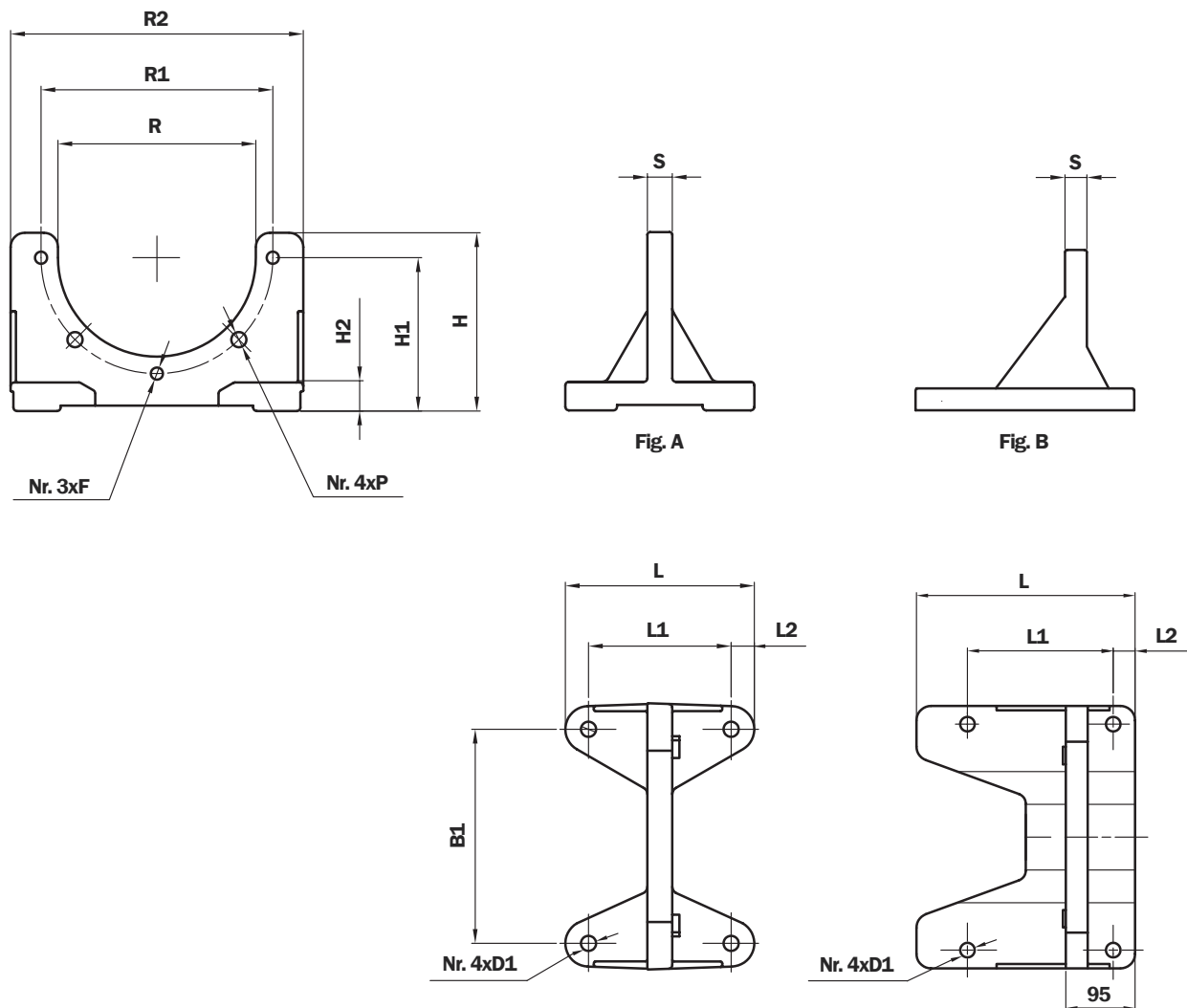


TABLE 46

Foot bracket	Fig.	B	B1	R2	L	L1	L2	H	H1	H2	R	R1	S	P	D1	F	Weight (kg)
PDM A 160	A	160	135	180	106	80	13	100	86	16	111	130	14	8,5	8,5	M8	0,45
PDM A 200	A	200	175	207	128	98	21	128	115	14	146	165	14	11	11,5	M10	0,60
PDM A 250	A	250	220	262	172	130	21	157	145	18	191	215	16	13	13,5	M12	1,20
PDM A 300	A	300	270	320	210	160	25	188	170	18	235	265	20	13	13,5	M12	1,80
PDM A 350	B	350	310	360	300	200	30	220	200	30	261	300	30	18	13	M16	4,80

Damping rings

These vulcanized components consist of two aluminium rings embedded in oil-resistant rubber, which guarantee superior mechanical strength and are particularly suitable for vertically mounted motor-and-pump units.

Positioned between the bell-housing motor flange and the lid of the tank lid, they help to reduce the transmission of vibrations and the emission of noise generated by the system.

Damping rings provide a perfect hydraulic sealing actions by virtue of their special profile, which resembles an O-ring surrounded by a flange with fixing holes.

Rings are available for a range of motors from **size 80, rated 0.5 kW**, up to **size 180 rated 22 kW**.

The noise level of the motor-pump unit can be reduced by as much as 5 Db (A).

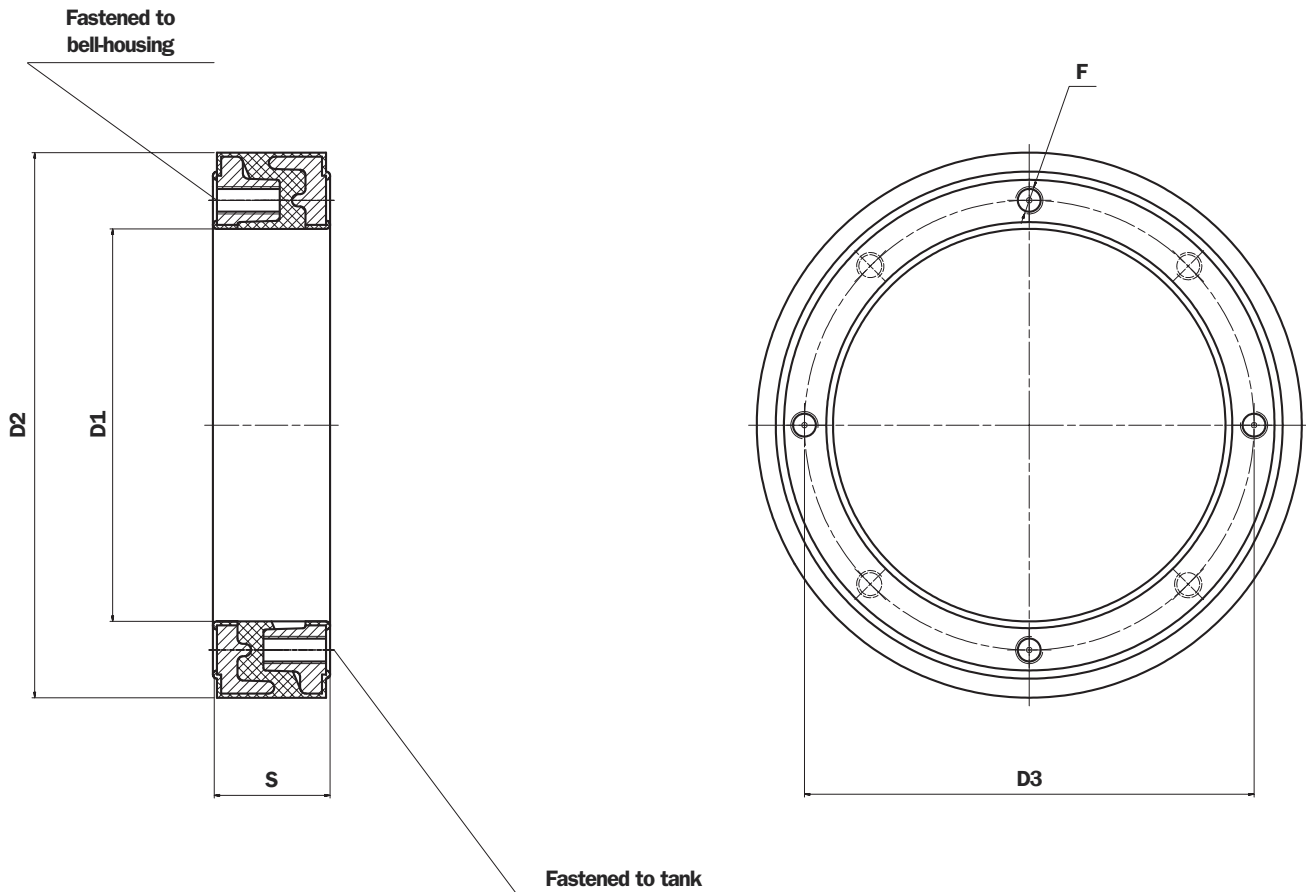


TABLE 47

Foot bracket	D1	D2	D3	S	F	Weight (kg)
ANM A 200	146	200	165	43	M10 (profondità: 16 mm)	1,70
ANM A 250	190	250	215	48	M12 (profondità: 16 mm)	2,53
ANM A 300	239	300	265	53	M12 (profondità: 16 mm)	2,15
ANM A 350	260	350	300	62	M16 (profondità: 20 mm)	3,95

Note: For dimensions other than those indicated in the table, contact the MP Filtri Technical and Sales Department.

Series MPDR and MPDR - PDMA damping rods are elements that are used to reduce the vibrations generated by the motor pump unit; realized with two steel plates and an intermediate element made of vulcanized rubber, they are available for mounting of electric motors according to normative UNEL-MEC, and for the mounting of the series of foot brackets PDMA series.

Available for electric motors **from 0,37 kW Gr. 71** to motors **200 kW Gr. 315**, they are able to reduce the noise level of about **3 ÷ 5 Db (A)**.

Technical specifications

Materials

- Steel plates, painted black.
- Element in NBR 60 Sh.A
- Element polyurethane on request.

Temperature

- -20°C ÷ +80°C

Special Applications

- Any applications not covered by the normal indications contained in this catalogue must be evaluated and approved by the MP Filtri Technical and Sales Department

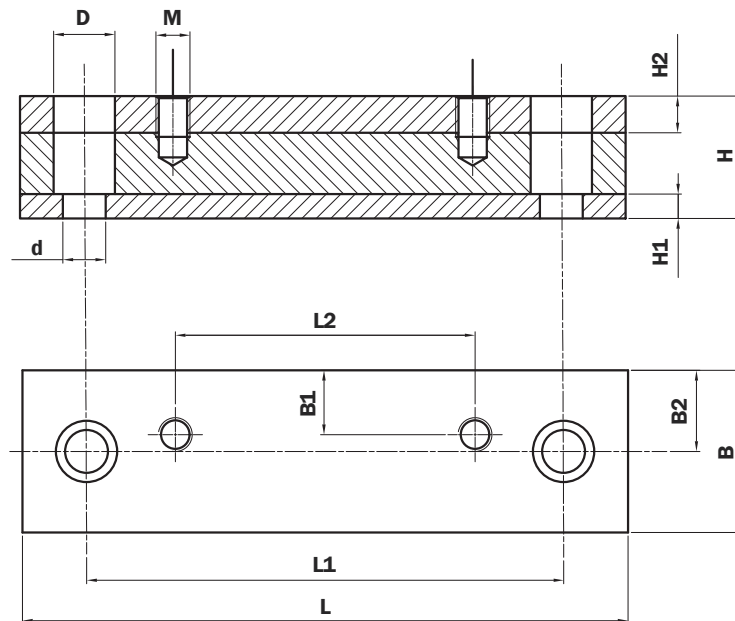


TABLE 48 - Damping rods for foot brackets PDMA series*

Code	L	L1	L2	B	B1	B2	H	H1	H2	D	d	M	Weight (kg)
MPDR PDMA160	196	156	80	50	21	25	40	8	12	20	14	M8	1,5
MPDR PDMA200	196	156	98	50	21	25	40	8	12	20	14	M10	1,5
MPDR PDMA250	240	205	130	50	24	25	40	8	12	20	14	M12	2,0
MPDR PDMA300	280	245	160	50	20	25	45	8	12	20	14	M12	2,5
MPDR PDMA350	446	400	279	70	35	35	60	15	15	26	14	M12	8,0

*For foot brackets see page 55 - table 46

TABLE 49 - Damping rods for electrical motors UNEL-MEC

Code	L	L1	L2	B	B1	B2	H	H1	H2	D	d	M	Weight (kg)
MPDR 71			90		21							M6	1,5
MPDR 80	196	156	100		22								1,7
MPDR 90S						24,5	40					M8	1,7
MPDR 90L	240	205	125	50	24	25		8	12	20	14		2,0
MPDR 100L			140		22								2,0
MPDR 132S	280	245				20		45					M10
MPDR 132M			178										2,5
MPDR 160M	340	300	210										6,0
MPDR 160L			254		28								7,5
MPDR 180M	416	370	241							26	18	M12	7,5
MPDR 180L	446	400	279	70		35							8,0
MPDR 200L			305		35								8,9
MPDR 225S			286				60	15	15			M16	8,9
MPDR 225M	492		311										8,9
MPDR 250M			349										12,5
MPDR 280S			368	100	50	50				33	22	M20	15,1
MPDR 280M			419										15,1
MPDR 315S	614	570	406										26,5
MPDR 315M			457	120	60	60						M24	26,5
MPDR 315L	704	660	508										29,2

Aluminium tanks

Made of pressure diecast aluminium alloy, these tanks feature superior strength and optimum design and are ideal for compact hydraulic power units.

Generously proportioned fins ensure efficient cooling.

The tank is supplied with:

- M6 threaded fixing holes for lid
- feet with M8 threaded fixing holes
- G 3/8" threaded drain hole

The lid is sealed by a gasket made of special paper, which must be ordered separately indicating code "GUS 10,0".

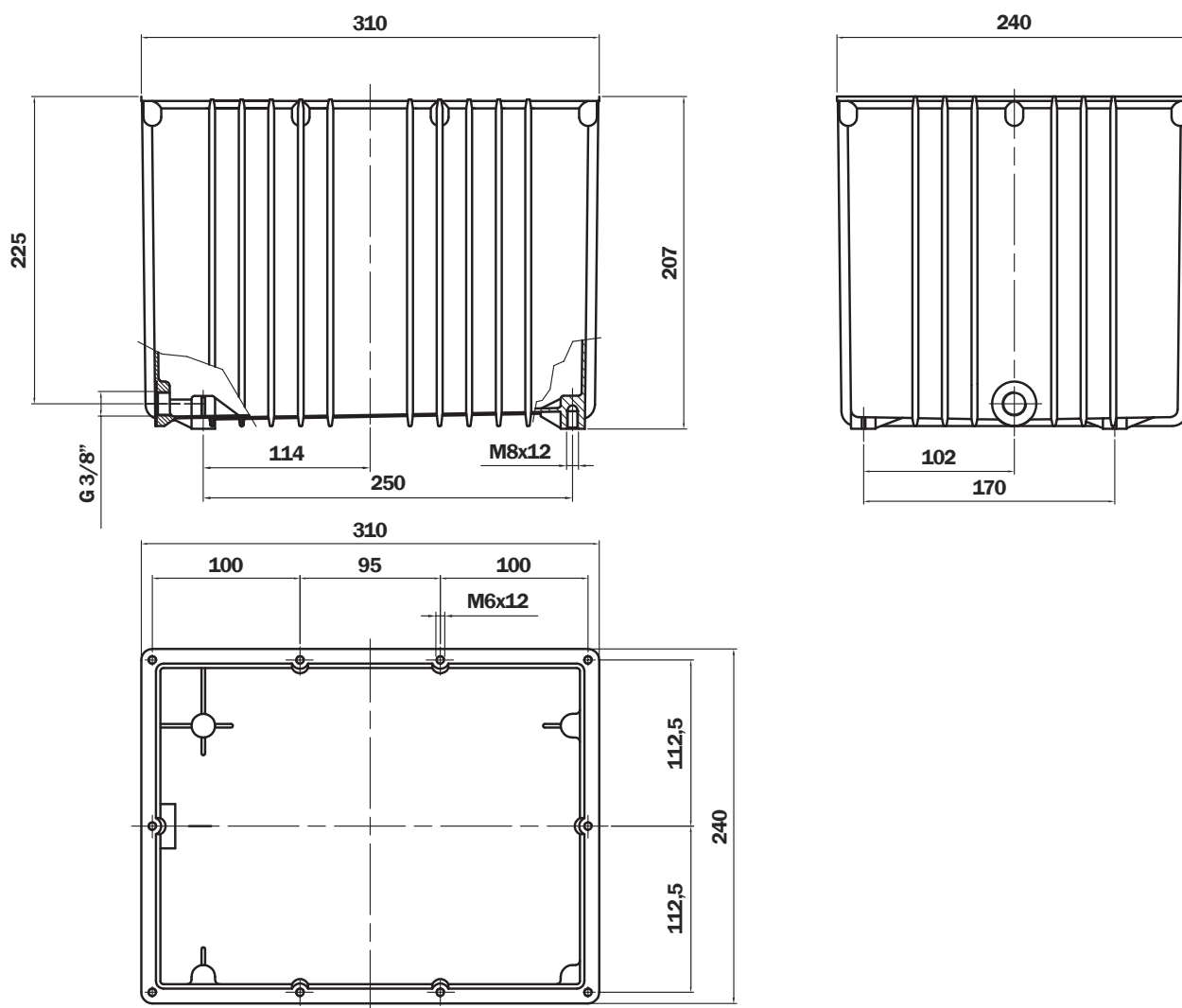


TABLE 50

Code	Weight (kg)
SE10LT	3,95

Seals made of special paper provide the sealing action between the lid of the oil tank and the bell-housing (motor interface) and between the bell-housing and the pump flange.

They are available for motors from size **63** rated **0.12 kW**, up to **size 180** rated **22 kW**, and for all gear pumps listed in this catalogue.

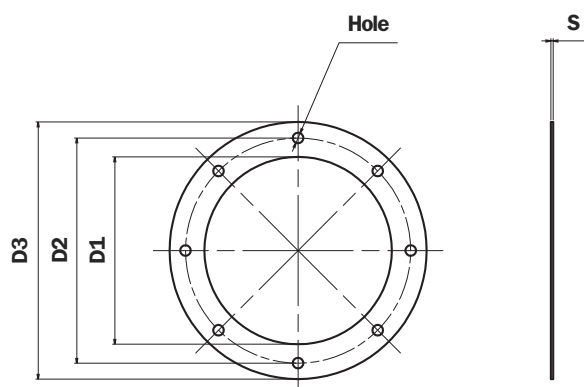


TABLE 51

Bell-housing code	Seals code	D1	D2	D3	S	Hole
LMC 120	GUM P 120	84	100	120	1	7
LMC 140	GUM P 140	96	115	140		9
LMC 160	GUM P 160	110	130	160		9
LMC 200	GUM P 200	145	165	200		11
LMC 250	GUM P 250	190	215	250		14
LMC 300	GUM P 300	234	265	300		14
LMC 350	GUM P 350	260	300	350		18

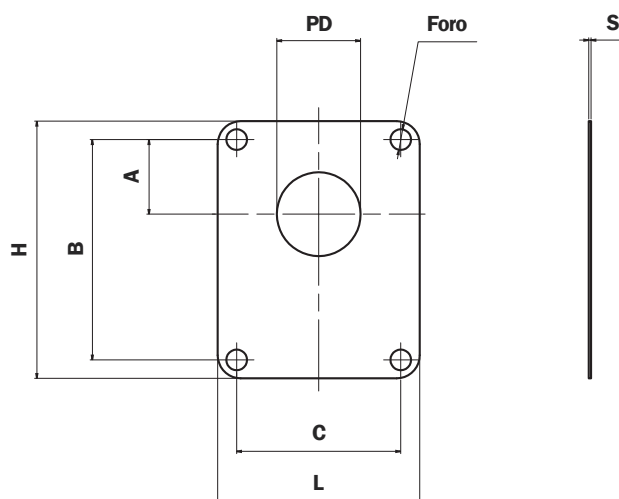


TABELLA 52

Pump code	Seals code	PD	A	B	C	H	L	S	Hole
FS05M	GUP P001	22	25.6	66	-	80	48	1	6.5
FS100	GUP P002	25.4	26.6	72	52.4	87	67		6.5
FS1M0	GUP P003	30	24.5	73	56	85	68		6.5
FS200	GUP P004	36.5	32.5	96	71.5	112	88		8.5
FS300	GUP P005	50.8	43	128	98.5	148	118		10.5
FSZBR	GUP P013	32	10.35	40	40	75	62		8.5
FSZFR	GUP P014	80	34.5	100	72	118	90		9

Note: Motor seals and pump seals must be ordered separately,

For seals with dimensions different to those indicated in tables 51 - 52, contact the MP Filtri Technical and Sales Department.

Inspection doors

These pressure diecast aluminium alloy doors offer superior mechanical strength and are manufactured to DIN 24339 standard. They provide easy access to the inside of the oil tank for inspection and cleaning purposes.

On request and for small quantities, to be agreed with MP Filtri Technical and Sales Department, inspection doors can be supplied with:

- Customer logo.
- Hole cut for visual level indicator.
- Hole cut for visual and electrical level indicator.
- Oil sample plug

Technical specifications

INSPECTION DOORS

Materials

- **Inspection cover**
Pressure diecast aluminium alloy/cast iron
- **Seal**
Oil-resistant rubber, Sh.A hardenss 70.

Temperature

- $-30^{\circ}\text{C} \div +80^{\circ}\text{C}$
For temperatures outside this range, contact the MP Filtri Technical and Sales Department.

Compatibility with fluids

- **Components compatible for use with:**

Mineral oils

Types HH-LL-HM-HR-HV-HC, to ISO 6743/4 standard

Water based emulsions

Types HFAE - HFAS, to ISO 6743/4 standard

Water glycol

Type HFC, to ISO 6743/4 standard

Ask for anodized version

Special Applications

- **Any applications not covered by the normal indications contained in this catalogue must be evaluated and approved by the MP Filtri Technical and Sales Department.**

Reminders for correct fitting of inspection covers

- The thickness of the tank wall must be at least 4 mm or greater
- Observe the specified hole dimensions when drilling tank wall (see next page)
- Make certain that after welding stud screws or bolts, the tank wall does not present any noticeable deformation
- Thoroughly clean the surface of the wall on which the seal will be seated.
- Wet the seal with hydraulic oil to prevent the rubber from cracking
- Fit the seal carefully to the inspection cover
- Tighten the retaining nuts, torquing to 15 Nm

OB275

Tank wall fixing holes

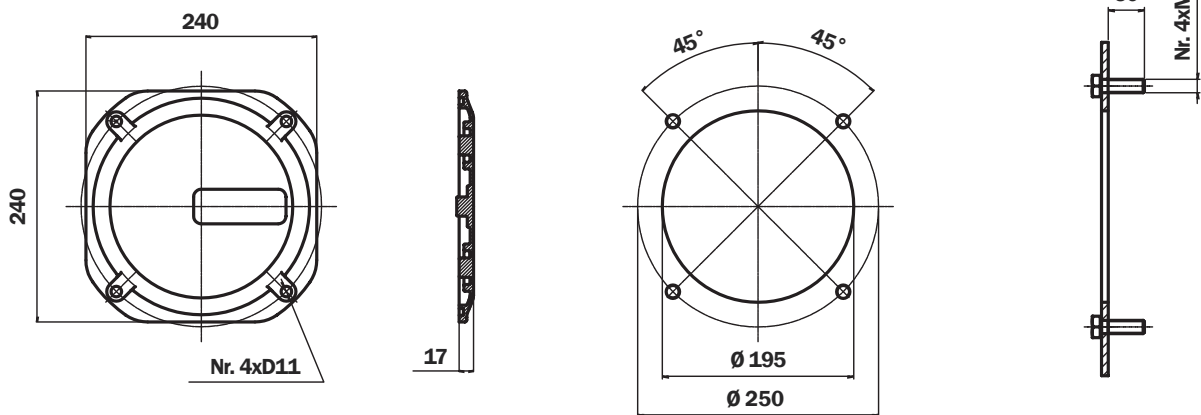


TABLE 53

Code	Weight (kg)
Door with MP Filtri OB275P01	1,76
Blank door OB275P02	
Seal GU0275NBR	
Seal FPM GU275VTN	

OB350

Tank wall fixing holes

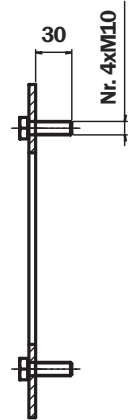
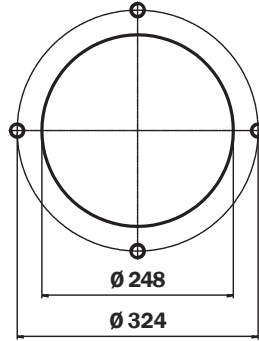
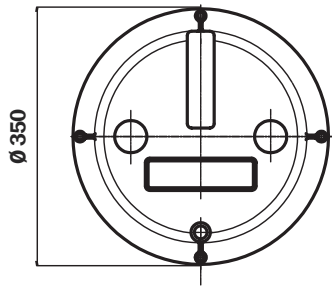


TABLE 54

Code	Weight (kg)
Door OB350DIN000	
Seal GU0350DINNBR	1,80
Seal FPM GU0350DINVTN	

OB356

Tank wall fixing holes

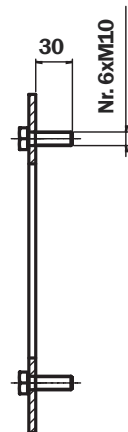
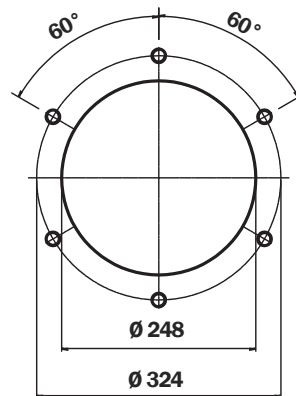
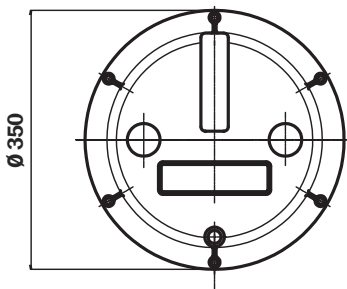


TABLE 55

Code	Weight (kg)
Door OB356DIN000	
Seal GU0350DINNBR	1,80
Seal FPM GU0350DINVTN	

OB400

Tank wall fixing holes

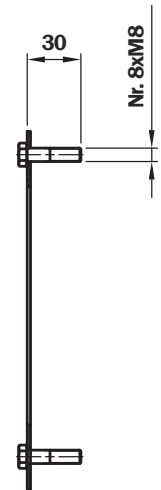
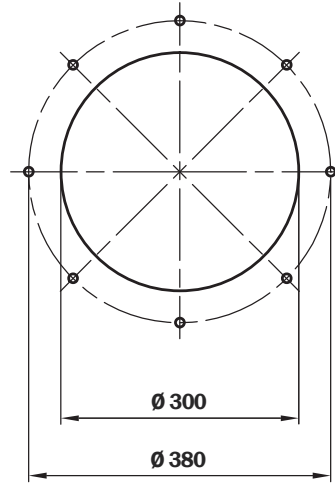
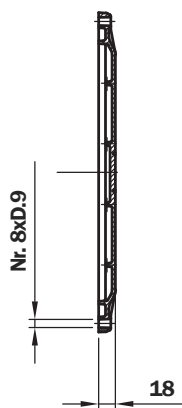
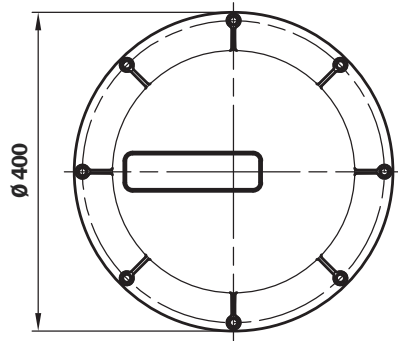


TABLE 56

Code	Weight (kg)
Door with MP Filtri OB400P01	2,90
Blank door OB400P02	
Seal GU0400DINNBR	
Seal FPM GU0400DINVTN	

OB475

Tank wall fixing holes

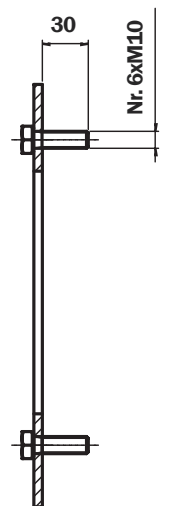
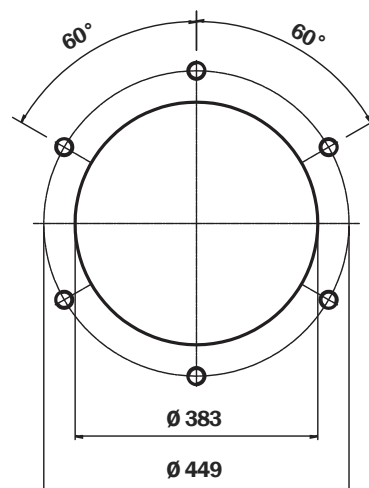
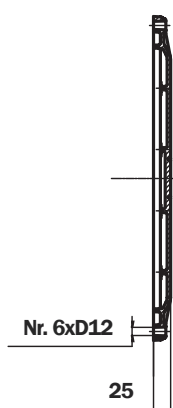
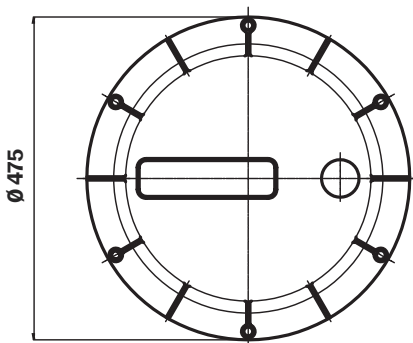
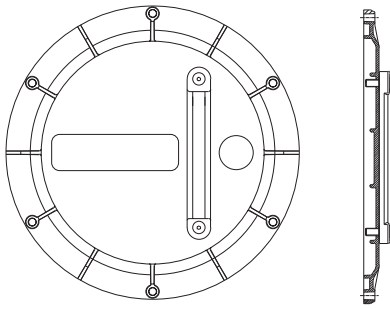


TABLE 57

Code	Weight (kg)
Door with MP Filtri OB475P01	3,40
Blank door OB475P02	
Seal GU0475DINNBR	
Seal FPM GU0475DINVTN	

Visual level indicators LVA series



Materials:

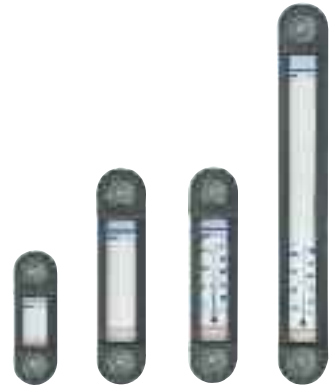
Trasparent amorphous polyamide lens
Nylon guard
Seal: Series A-NBR - Series V-FPM

Operating pressure: Max 1 bar at +80 °C

Operating temperature: From -25 °C to +80 °C

Tightening torque: 10 Nm max.

Mineral oils - Synthetic oils - Water base emulsions
- Phosphoric esters



Fixing
holes

LVA...S

LVA...T

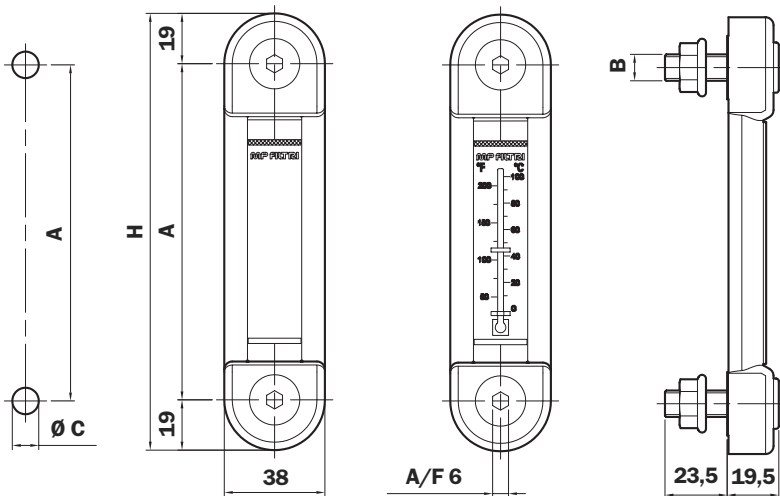


TABLE 58

Size	A mm	H mm
LVA 10	76	114
LVA 20	127	165
LVA 30	254	292

Preparing for to fit the level on request

Code door	Code level
OB275**	LVA 10**
OB350**	LVA 10**
OB356**	LVA 20**
OB400**	LVA 10**
OB475**	LVA 20**
	LVA 30**

Type	B mm	C mm
LVA...M10	M10	10,5
LVA...M12	M12	12,5
LVA...U38	3/8" UNC	10
LVA...U12	1/2" UNC	13,5

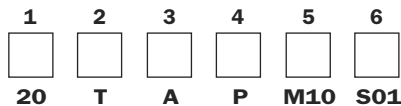
Packaging

Type	Nr. pieces per pack
LVA	10

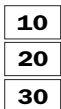
Ordering information LVA

LVA

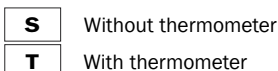
Example: LVA



1 - Style



2 - Accessories



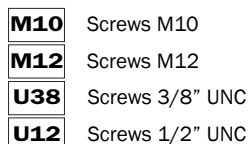
3 - Seal



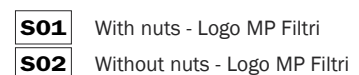
4 - Cover



5 - Connections

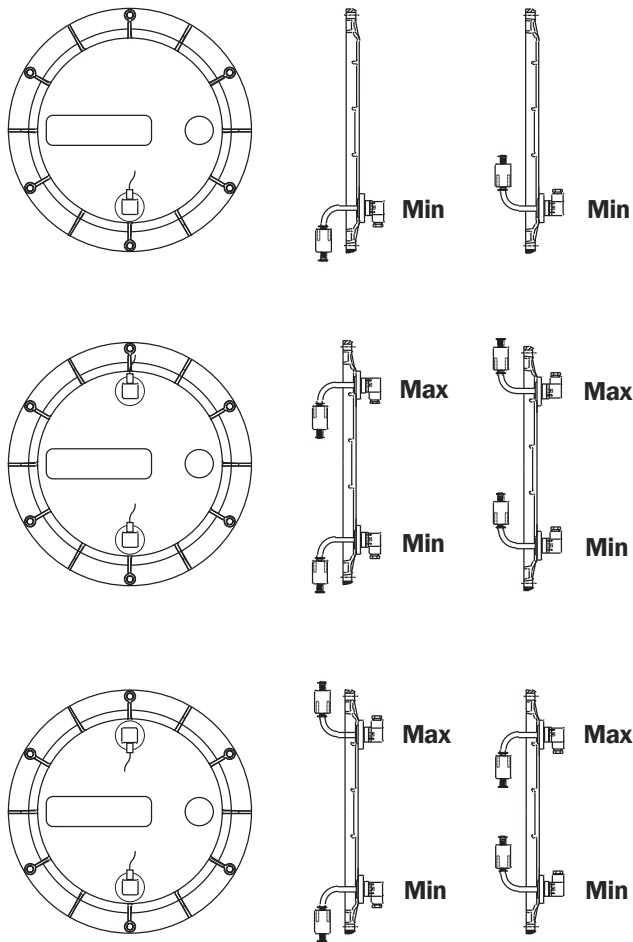


6 - Option

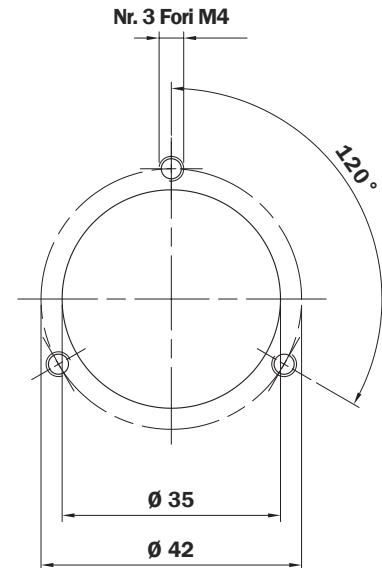


Inspection door options

Electrical float level indicators LEG series



Layout of fixing holes for LEG level indicator



Note: Arrange the holes according to the position of the level indicator

Prepared for visual indicator - on request

Technical specifications

LEG series electrical level indicators are supplied with a 3-hole fixing flange and a reed switch having NC-NO contacts. Designed typically for installation on the vertical walls of oil tanks, these instruments can also be mounted to inspection doors of the OB475 series as indicators of minimum and maximum oil levels in the tank.

DIN 43650 CONNECTOR

Materials

- **Flange**
Aluminum
- **Rod**
Brass
- **Float**
Nylon foam
- **Seals**
A= NBR
V= FPM

Temperature

- $-15^{\circ}\text{C} \div +80^{\circ}\text{C}$
For temperatures outside this range,
contact the MP Filtri Technical and Sales Department.

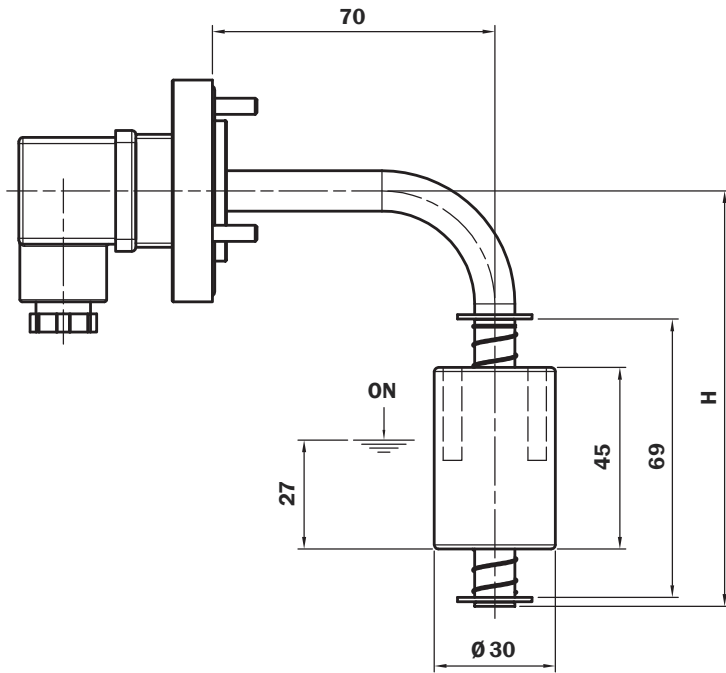
Warning

To operate correctly, the float must be positioned vertically and at a minimum distance of 35 mm from walls made of ferrous metal.

To change the contact from NC to NO, simply turn the float upside down.

The electrical properties indicated are referred to resistive loads; for capacitive and inductive loads and incandescent lamps, use protection circuits.

Inspection door options



LEG 1 Float



To invert the contact status from NO to NC and vice versa, simply invert the float.

Size	H mm
LEG 102	103
LEG 200	200
LEG 300	300
LEG 350	350

Ordering information LEG

Electrical float level indicators

LEG

Example: LEG

1	2	3	4	5	6	7	8	9
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A	102	2	A	1	A	F	S	P01

1 - Tube material

A Brass

2 - Length

- 102
- 200
- 300
- 350

3 - Number of floats

1 Nr. 1 float

4 - Float material

A Nylon foam

5 - Changeover contacts

1 NC

6 - Seals

- A NBR
- V FPM

7 - Type of fixing

F 3 hole flange

8 - Electrical connection

S DIN 43650 connector

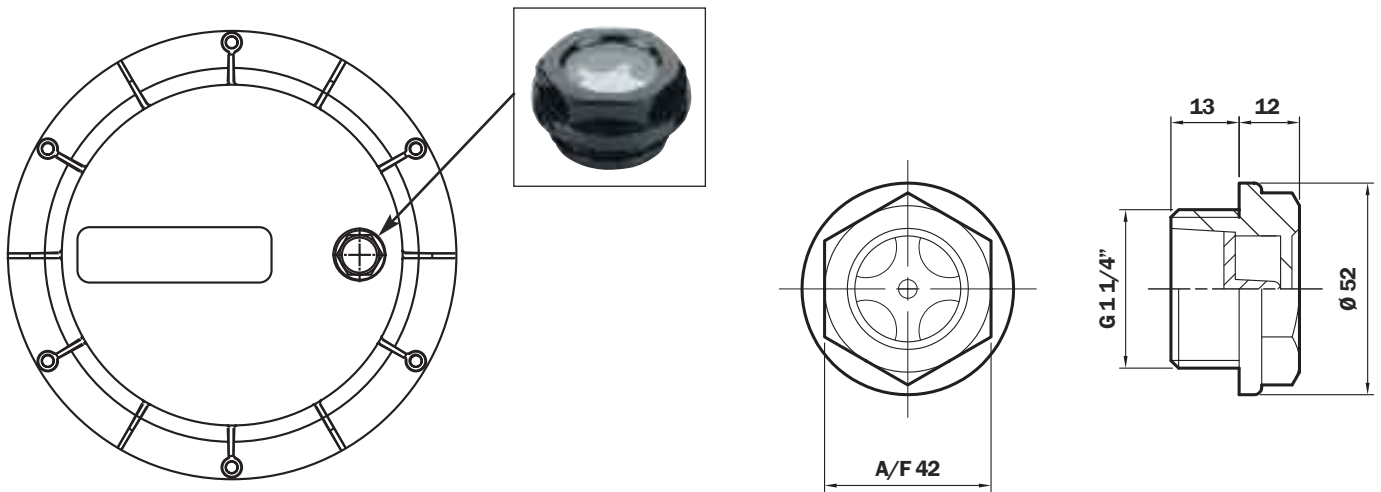
9 - Option

P01 MP Filtri standard

Note: For customization features other than those indicated on this page, contact the MP Filtri Technical and Sales Department.

Inspection door options

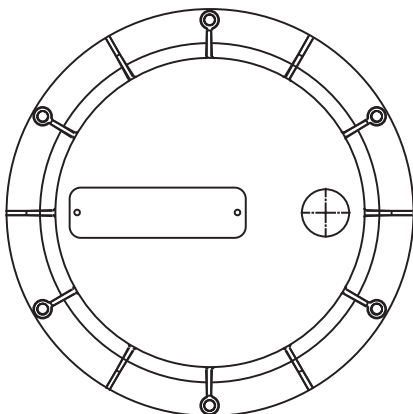
Visual level indicators code: LCP42N...S



Prepared for electrical indicator on request

Customer customization

Nameplate with customer logo
Ordering information: **OB475LOGOP05**



The nameplates applied to the new inspection door are identical to those applied to the old door.
The difference with the new door is that nameplates are fixed with rivets.

For ordering information codes, minimum order quantities, fixing hole positions and other details not indicated in this publication, contact the MP Filtri Technical and Sales Department.

Summary table, electric motors

TABLE 59

8 pole 50 Hz 750 RPM		Power				Frame	Dimension	Code	Flange dimensions			
		6 pole 50 Hz 1000 RPM		4 pole 50 Hz 1500 RPM					2 pole 50 Hz 3000 RPM		B5/V1	B1/V18
kW	Hp	kW	Hp	kW	Hp	kW	Hp					
-	-	0,06	0,08	0,12	0,16	0,18	0,24	63	11x23	M01	140	-
-	-	0,09	0,12	0,18	0,24	0,25	0,34				-	90
0,09	0,12	0,18	0,24	0,25	0,34	0,37	0,50	71	14x30	M02	160	-
0,12	0,16	0,25	0,34	0,37	0,50	0,55	0,75				-	105
0,18	0,24	0,37	0,50	0,53	0,75	0,75	1,02	80	19x40	M03	200	-
0,25	0,34	0,55	0,75	0,75	1,02	1,10	1,50				-	120
0,37	0,50	0,75	1,02	1,10	1,50	1,50	2,04	90	24x50	M04	200	-
0,55	0,75	1,10	1,50	1,50	2,04	2,20	3,00				-	140
0,75	1,02	1,50	2,04	2,20	3,00	3,00	4,05	100	28x60	M05	250	-
1,50	2,04	2,20	3,00	4,00	5,44	4,00	5,44				112	-
2,20	3,00	3,00	4,08	5,50	7,50	5,50	7,50	132	38x80	M06	300	-
3,00	4,08	5,50	7,50	7,50	10,20	7,50	10,20				-	-
4,00	5,44	7,50	10,20	11,00	15,00	11,00	15,00	160	42x110	M07	350	-
7,50	10,20	11,00	15,00	15,00	20,40	18,00	25,16				-	-
11,00	15,00	15	20,40	18,50	25,16	22,00	30,00	180	48x110	M08	350	-
				22,00	30,00						-	-
15,00	20,40	18,5	25,16	30,00	40,80	30,00	40,80	200	55x110	M09	400	-
		22,00	30,00			37,00	50,32				-	-
-	-	-	-	-	-	45,00	61,20	225	55x110	M09	450	-
18,50	24,18			37,00	50,32	-	-				-	-
22,00	30,00	30,00	40,80	45,00	61,20	-	-	225	60x140	M10	450	-
-	-	-	-	-	-	55,00	74,80				-	-
30,00	40,80	37,00	50,32	55,00	74,80			250	60x140	M10	550	-
-	-	-	-	-	-	75,00	102,00				-	-
-	-	-	-	-	-	90,00	122,40	280	65x140	M11	550	-
37,00	50,32	45,00	61,20	75,00	102,00	-	-				-	-
45,00	61,20	55,00	74,80	90,00	122,40	-	-	280	75x140	M12	550	-
-	-	-	-	-	-	110,00	148,60				-	-
-	-	-	-	-	-	200,00	272,00	315	65x140	M11	660	-
55,00	74,80	75,00	102,00	110,00	149,60	-	-				-	-
110,00	149,60	132,00	179,50	200,00	272,00	-	-	315	80x170	M13	660	-
-	-	-	-	-	-	250,00	340,00				-	-
-	-	-	-	-	-	315,00	428,40	355	75x140	M12	800	-
132,00	178,52	160,00	217,80	250,00	340,00	-	-				-	-
20,00	272,00	250,00	340,00	315,00	428,40	-	-	355	95x170	M15	800	-
-	-	-	-	-	-	355,00	482,80				-	-
-	-	-	-	-	-	400,00	544,00	400	80x170	M13	800	-
250,00	340	315,00	428,40	355,00	482,80	-	-				-	-
				400,00	544,00	-	-	400	100x210	M16	800	-
						-	-				-	-