



general catalogue
2011

 **MISELLI**
ACCESSORIES FOR
HYDRAULIC COMPONENTS



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GENERAL CATALOGUE

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Reggio Emilia, January 2011

The company **Miselli & Bedogni** was founded in the late fifties, following the closure of the nationally well-known company "Officine Reggiane" a manufacturer of military equipment in the province of Reggio Emilia. Several of its former employees created their own companies, laying the foundation for a new economy in the province.

Two of the former employees, Mr. Miselli and Mr. Bedogni created "Miselli & Bedogni" a company with two partners, designing and manufacturing moulds for thermoplastics and producing components for third parties.

During the economic boom in the sixties and seventies the company grew steadily with the addition of several employees. In 1980 a diversification took place, leading Miselli & Bedogni into production of accessories for hydraulic industry.

Based on the company technical knowledge and experience Miselli & Bedogni was able to meet the demand of a growing economy servicing an increasing number of local manufacturers of hydraulic equipment.

In the following years, Miselli & Bedogni enlarged and improved his production range adding **oil level indicators, caps and filler plugs, filler breather caps with dipstick and protective caps and plugs**, thereby offering a complete range of accessories to the hydraulic industry.

During the 90's the company expanded their market abroad through a network of both resellers and OEM's, initially enlarging the European customer base and



then continuing to expand worldwide.

In early 1998 the company changed its trade name, becoming **Miselli s.r.l.** (limited)

It is Miselli's goal to continually improve its products and to extend its production range to meet the growing demand for its quality products, in the local marketplace and abroad.

In May 2004, to satisfy increasing customer demand the company decided to increase their production facilities by opening a new plant in Prato di Correggio (RE).

In April 2007 Miselli srl acquired ISO 9001 quality status from BVQI Bureau Veritas Italia

the same institute has renewed the certification according to the new ISO standard 9001:2008 and is valid until 2013. Nowadays in the company there are 18 employees shared among moulding and assembly department, stock & deliveries, commercial, purchasing, quality and administration offices.

The main sectors of O.E.M., who represent almost the 50% of the yearly turnover, served with Miselli's products are:

- Hydraulic System, Components and Accessories
- Gear Boxes & Power Transmission
- Agricultural & High Pressure Pumps
- Air compressor units
- Agricultural and Earth Moving Machines



Miselli s.r.l. is present in all EU countries and overseas (U.S.A., Canada, South Africa, Australia, Chile, etc.) markets through the collaboration of a comprehensive network of distributors and agents.



INDUSTRIAL POWER PACKS



COMPRESSOR PISTON PUMPS



HIGH PRESSURE PUMPS



MINI POWER PACKS



AGRICULTURAL MACHINERY



GEAR BOXES & POWER TRANSMISSIONS



LOG SPLITTERS



PUMPING GROUPS
FOR AGRICULTURAL
MACHINERY

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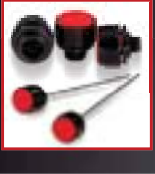


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SLV - VERTICAL LEVEL GAUGES

SLVT - VERTICAL LEVEL GAUGES WITH THERMOMETER



Thermoplastic level gauges made from transparent polyamide which provides good mechanical resistance and is impervious to mineral oil, gasoline, lubricants, petroleum, solvents and most chemical agents.

Avoid contact with alcohol based solutions and antifreeze liquids at high temperatures and hot water over 80°C

Max working temperature 90°C, max pressure suggested 2 bar

These level gauges are used in oil and fuel tanks of many types, due to their ability to remain clear in the majority of conditions; the transparent body of the level gauge retains its transparency under most climatic conditions.

The body of the level gauge is made by ultrasonically welding two halves together to ensure a leak free seal around the body. Inside is fitted a white screen with minimum and maximum level indication. External seal is guaranteed by o'rings and flat rubber washers on each fixing bolt.

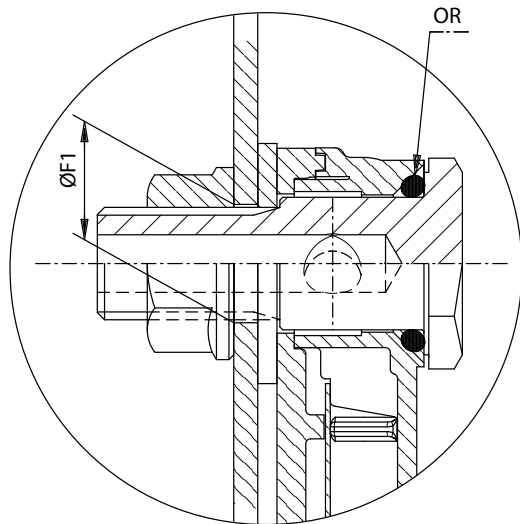
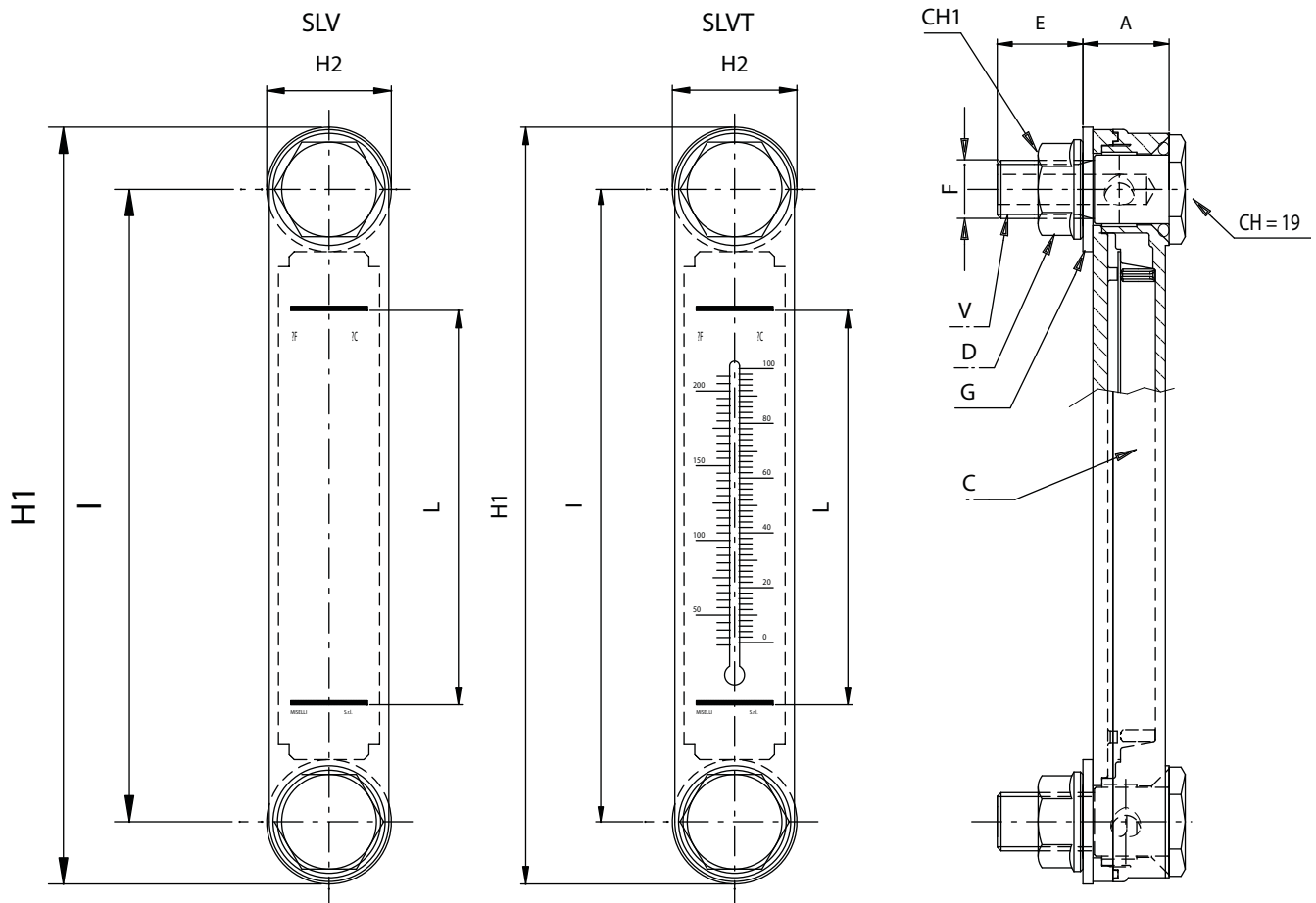
The mounting of the level gauge can be made externally by providing 2 threaded holes M10 or M12 on 76 mm or 127 mm centre distance, tolerance +/- 0.3mm. Alternatively they can be secured internally through 2 plain holes 10.2 mm or 12.2 mm, tolerance 0 + 0.2 mm using the flanged nuts provided. Maximum tightening torque suggested 5 Nm.

Model SLVT is equipped with an inside thermometer scaled in degrees Celsius 0-100°C and Fahrenheit 50-200°F 50-200° F (0-80°C / 50-150F model SLVT/76).

Model SLV-T/CX made from special resin resistant to fluid containing alcohol.

Model SLV-T/RB with floating red ball to improve visibility of the fluid level of light colored liquid.

New model SLV-T/INOX provided with stainless steel nuts and bolts suitable for applications in corrosive environments such as marine.



V= Hollow bolt
 D= Flanged hex nut
 G= Flat NBR seal
 C= Transparent body

Code	I	H1	H2	F	E	A	L	CH1	ØF1	weight gr
SLV/76	76	100	27	M10	19	23	39	15	10,2	100
SLV/76/M12	76	100	27	M12	19	23	39	18	12,2	100
SLVT/76	76	100	27	M10	19	23	39	15	10,2	100
SLVT/76/M12	76	100	27	M12	19	23	39	18	12,2	100
SLV/127	127	150	27	M12	19	23	80	18	12,2	135
SLV/127/M10	127	150	27	M10	19	23	80	15	10,2	135
SLVT/127	127	150	27	M12	19	23	80	18	12,2	135
SLVT/127/M10	127	150	27	M10	19	23	80	15	10,2	135

XL - VERTICAL LEVEL GAUGES WITH METAL CASING

XLT - VERTICAL LEVEL GAUGES WITH METAL CASING WITH THERMOMETER

XLT/PLAST - VERTICAL LEVEL GAUGES WITH PLASTIC CASING



External protection made from painted steel

External protection made from DA66 fiberglass

Thermoplastic level gauges made from transparent polyamide which provides good mechanical resistance and is impervious to mineral oil, gasoline, lubricants, petroleum, solvents and most chemical agents.

External protection is provided by a pressed steel casing with black painted finish. Also available in **version VL** with side openings to allow visibility from both sides.

Avoid contact with alcohol based solutions and antifreeze liquids at high temperatures and hot water over 80°C

Max working temperature 90°C , max pressure suggested 2 bar

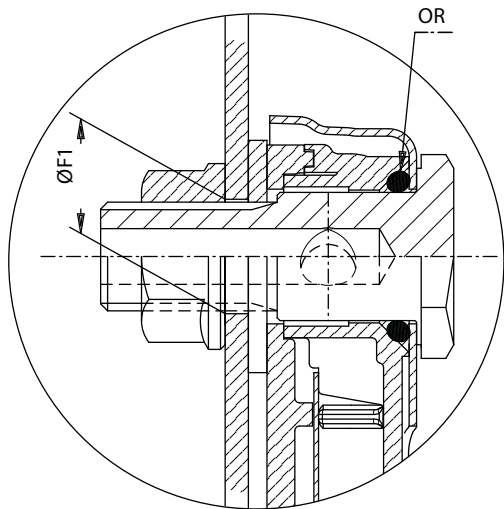
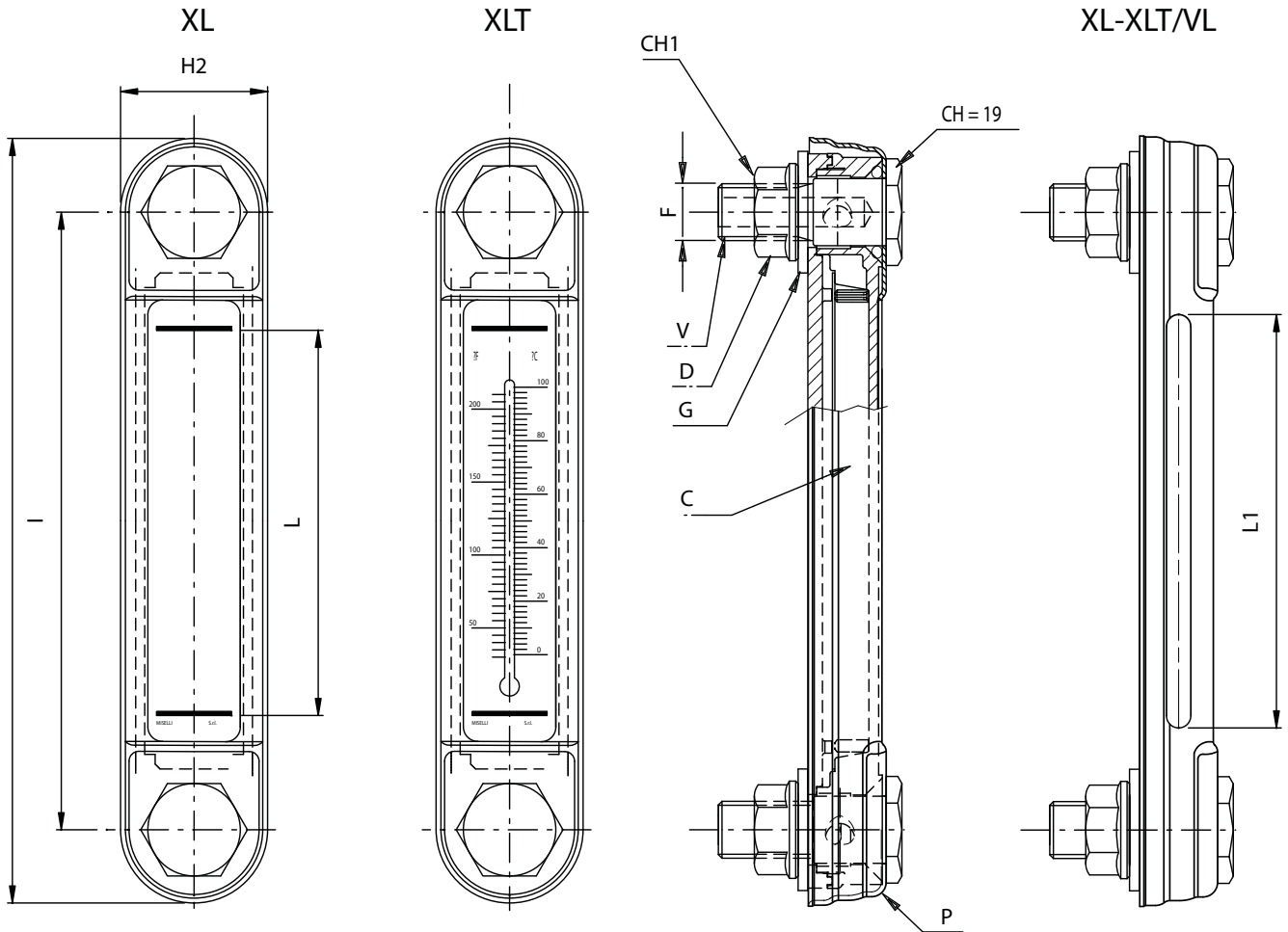
These level gauges are used in oil and fuel tanks of many types , due to their ability to remain clear in the majority of the conditions; the transparent body of the level gauge retains its transparency under most climatic conditions.

The body of the level gauge is made by ultrasonically welding two halves together to ensure a leak free seal

around the body. Inside is fitted a white screen with minimum and maximum level indication. External seal is guaranteed by o'rings and flat rubber washers on each fixing bolt.

The mounting of the level gauge can be made externally by providing 2 threaded holes M10 or M12 on 76 mm or 127 mm centre distance, tolerance +/- 0.3mm. Alternatively they can be secured internally through 2 plain holes 10.2 mm or 12.2 mm, tolerance 0 + 0.2 mm using the flanged nuts provided. Maximum tightening torque suggested 5 Nm.

Model XLT is equipped with an internal thermometer scaled in degrees Celsius 0-100°C and Fahrenheit 50-200°F (0-80°C / 50-150F model XL/03T).



P= Metal shell
 V= Hollow bolt
 D= Flanged hex nut
 G= Flat NBR seal
 C= Transparent body

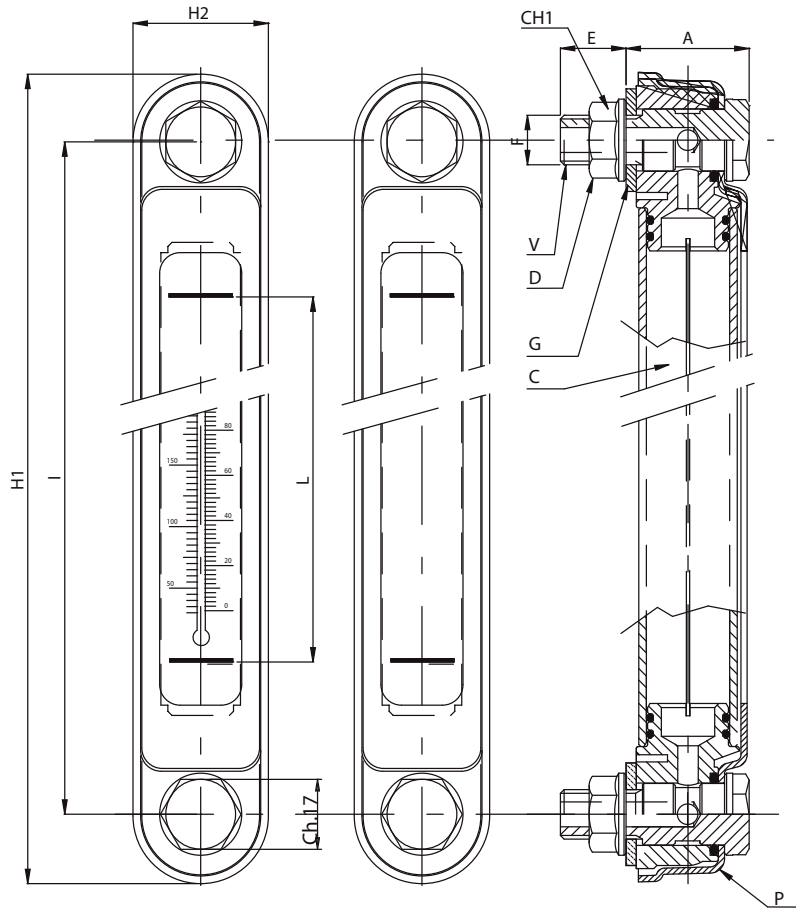
Special versions

- XL-T/CX made from special resin resistant to fluid containing alcohol
- XL-T/RB "with floating" red ball to improve visibility of the fluid level of light colored liquid
- XL-T/PLAST: external casing made from polyamide 66 30% fiberglass.

Code	I	H1	H2	F	E	A	L	CH1	ØF1	L1	weight gr
XL/03/M10	76	107	31	M10	17,5	24,5	39	15	10,2	34	135
XL/03/M12	76	107	31	M12	17,5	24,5	39	18	12,2	34	135
XL/03T/M10	76	107	31	M10	17,5	24,5	39	15	10,2	34	135
XL/03T/M12	76	107	31	M12	17,5	24,5	39	18	12,2	34	135
XL/05/M10	127	156	31	M10	17,5	24,5	80	15	10,2	85	187
XL/05/M12	127	156	31	M12	17,5	24,5	80	18	12,2	85	187
XL/05T/M10	127	156	31	M10	17,5	24,5	80	15	10,2	85	187
XL/05T/M12	127	156	31	M12	17,5	24,5	80	18	12,2	85	187

XL/10 - VERTICAL LEVEL GAUGES 10" WITH METAL CASING

XL/10T - VERTICAL LEVEL GAUGES 10" WITH METAL CASING AND THERMOMETER



P= Metal shell
V= Hollow bolt
D= Flanged hex nut

G= Flat NBR seal
C= Transparent body

Vertical level gauges center-to-center distance 10" (254 mm); external protection is provided by a pressed steel casing with black painted finish.

Transparent internal pipe made from Polycarbonate; avoid contact with Gasoline, Diesel fuel, Alcohol and most solvents.

Max working temperature 100°C, max pressure suggested 2 bar

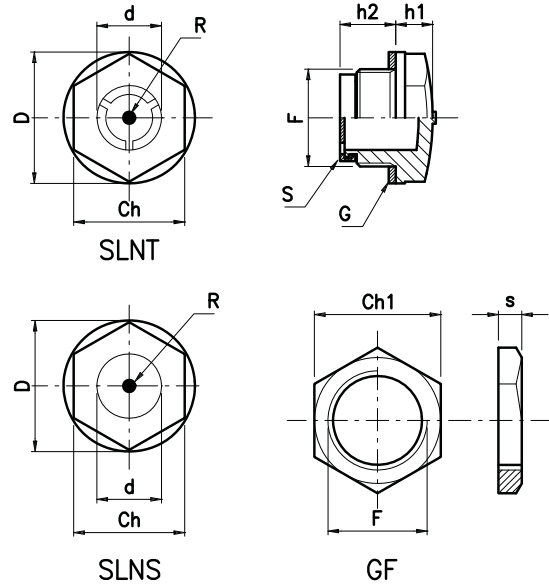
The mounting of the level gauge can be made externally by providing 2 threaded holes M12 on 254 mm centre distance, tolerance +/- 0.3mm. Alternatively they can be secured internally through 2 plain holes 12.2 mm, tolerance 0 + 0.2 mm using the flanged nuts provided. Maximum tightening torque suggested 5-7 Nm.

Model XLT is equipped with an internal thermometer scaled in degrees Celsius 0-100°C and Fahrenheit 50-200°F

Code	I	H1	H2	F	E	A	L	CH1	weight gr
XL/10/M12	254	286	34	M12	17	33	178	18	400
XL/10T/M12	254	286	34	M12	17	33	178	18	400

SLNS - OIL LEVEL INDICATORS

SLNT - OIL LEVEL INDICATORS WITH CONTRAST SCREEN



R= red incator
S= contrast screen

G= fiber gasket

-Threaded oil level indicators, hex head with shoulder. Utilized in oil tanks, gearboxes and general hydraulic machinery and tools.

-Made from transparent polyamide which provides good mechanical resistance and is impervious to mineral oil, gasoline, lubricants, petroleum, solvents and most chemical agents. Avoid contact with alcohol based solutions and antifreeze liquids at high temperatures and hot water over 80 °C

-Asbestos-free flat gasket (optional NBR flat seal on request)

-The level indicator features a "hot painted" red point in the center (model SLNS). The model SLNT is provided with a contrast white screen for clearer indication of the oil level.

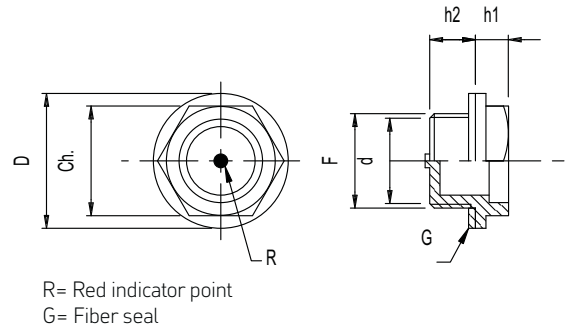
-Dimensional stability up to temperature of 100°C

-Maximum tightening torque suggested for installation is indicated in the table (Nm)

-For wall thickness less than 5 mm use the brass fixing nuts GF

Code	Ch	F	D	d	h1	h2	Nm	Ch1	s
SLNS/14	17	G 1/4	20,5	12	8	8,50	8		
SLNS/38	SLNT/38	G 3/8	22	12	6,5	12	12	19	5
SLNS/12	SLNT/12	G 1/2	28	16	8	12	16	27	5
SLNS/34	SLNT/34	G 3/4	36	21	8,5	13,5	21	32	6
SLNS/1	SLNT/1	G 1	42	30	9	14	24	36	6
SLNS/114	SLNT/114	G 1 1/4	51	32	10	17		46	6
SLNS/112	SLNT/112	G 1 1/2	58	39	10	21			
SLNS/2	SLNT/2	G 2	74	48	12	20			
SLNS/14.15		M14x1,5	20	12	7,5	8	8		
SLNS/16.15	SLNT/16.15	M16x1,5	22	12	6,5	12,5	12		
SLNS/18.15	SLNT/18.15	M18x1,5	25,5	14	6	12,5	12		
SLNS/20.15	SLNT/20.15	M20x1,5	28	16	7,5	12	16		
SLNS/22.15	SLNT/22.15	M22x1,5	28	16	7,5	12,5	16		
SLNS/40.15	SLNT/40.15	M40x1,5	51	32	10	17			

SLC - LEVEL SIGHT GLASSES



-Threaded oil level indicators, hex head with shoulder. Utilized in oil tanks, gearboxes and general hydraulic machinery and tools.

-Made from transparent polyamide which provides good mechanical resistance and is impervious to mineral oil, gasoline, lubricants, petroleum, solvents and most chemical agents. Avoid contact with alcohol based solutions and antifreeze liquids at high temperatures and hot water over 80 °C

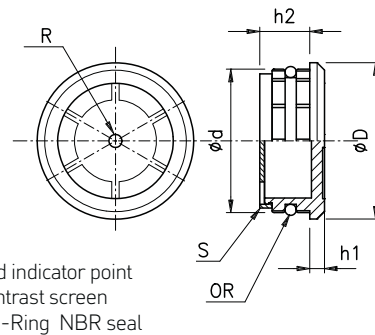
-Asbestos-free flat gasket (optional NBR flat seal on request). Dimensional stability up to temperature of 90°C

-Maximum tightening torque suggested for installation is indicated in the table (Nm)

-The base of the threaded end is solid therefore residual fluid which could give false indication is not trapped inside when level drops down.

Code	Ch	F	D	d	H1	H2	Nm
SLC/38	18	G 3/8"	22	12	7	10	8÷10
SLC/12	24	G.1/2"	29	16	5	10	12÷14

SLP - PRESS FIT LEVEL SIGHT GLASSES



-Press-fit oil level indicators, utilized in tanks and reservoirs with a wall thickness exceeding 5 mm; tolerance of the predrilled hole $-0 +0.1$ mm

-Excellent sealing ability due to the oil resistant NBR 70 Shore O-Ring

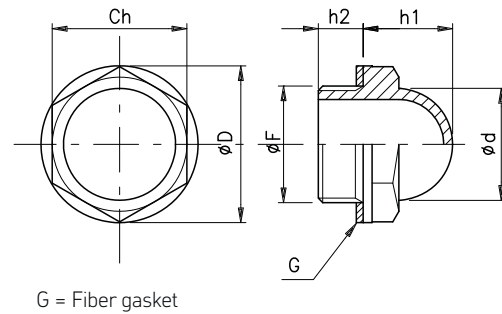
-“Hot Painted” red point , located in the centre of the level indicator, combined with the white contrast screen enable easy reading of the oil level.

-Made from transparent polyamide **TROGAMID T** which provides good mechanical resistance and is impervious to mineral oil, gasoline, lubricants, petroleum, solvents and most chemical agents (please refer to technical table, page 57). Avoid contact with alcohol based solutions and antifreeze liquids at high temperatures and hot water over 80 °C

-Good dimensional stability at low and high temperatures (max operating temperature 100°C) ; only recommended for low pressure application

Code	Ø	D	d	h1	h2
SLP/17	17	18	10	3	7
SLP/20	20	24	14	4	10
SLP/26	26	30	20	4	11,5
SLP/32	32	36	24	4	13
SLP/38	38	42	30	4	14
SLP/40	40	44	32	4	14

LSB - DOME SHAPED OIL LEVEL GLASSES



G = Fiber gasket

-Dome shaped transparent level glasses, enabling oil level to be read from any angle

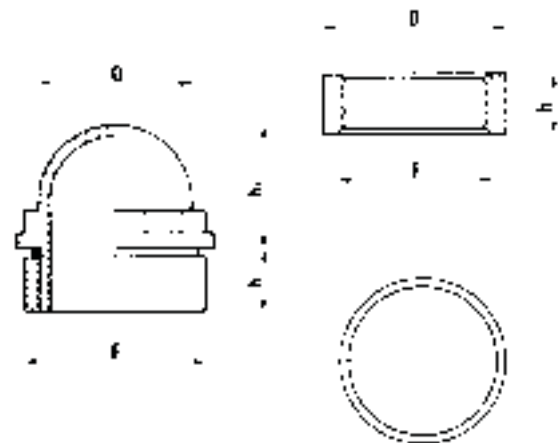
-Made from transparent polyamide which provides good mechanical resistance and is impervious to mineral oil, gasoline, lubricants, petroleum, solvents and most chemical agents. Avoid contact with alcohol based solutions and anti-freeze liquids at high temperatures and hot water over 80 °C

-Asbestos-free flat gasket (optional NBR flat seal on request). Dimensional stability up to temperature of 90°C

-Maximum tightening torque suggested for installation is indicated in the table (Nm)

Code	F	Ch	D	d	h1	h2	Nm
LSB-38	G 3/8"	19	22	15	14	10	8÷10
LSB-12	G 1/2"	24	28	20	18	10	12÷14
LSB-34	G 3/4"	30	35	25	20	10	16÷18
LSB-1	G 1"	36	42	31	24	10,5	18÷20

CF - DOME SHAPED FLUID LEVEL INDICATORS GF - STEEL MOUNTING FLANGE



-Transparent half ball shaped level indicators, available with 2" and 3" threaded weld-on steel flanges

-Made from thermoplastic resin for optimal shock resistance and high strength ; max operating temperature 70°C

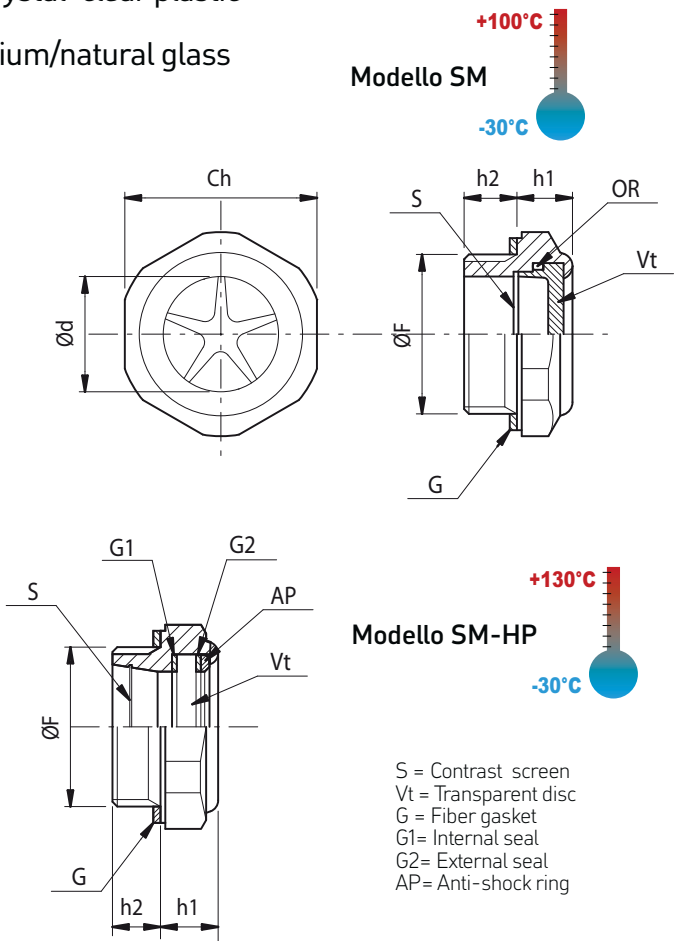
-Product is utilized on trucks / tankers and large reservoir containing liquids, especially in agricultural machinery

-A 70 shore 0-Ring is available on request

Code	F	D	h1	h2
CF-2	G 2"	59	22	32
CF-3	G 3"	85	32	63
GF-2	G 2"	70	20	
GF-3	G 3"	102	30	

SM – OIL LEVEL INDICATORS – Aluminium/Crystal-clear plastic

SM/HP – OIL LEVEL INDICATORS – Aluminium/natural glass



-Threaded hex-head level indicators manufactured from Aluminium 11S

-**Model SM** Sightglass made from transparent polyamide TROGAMID® T, which provides good mechanical resistance and is impervious to mineral oil, gasoline, lubricants, petroleum, solvents and most chemical agents. Avoid contact with alcohol based solutions and antifreeze liquids at high temperatures and hot water over 80 °C

Max operating pressure 10 Bar

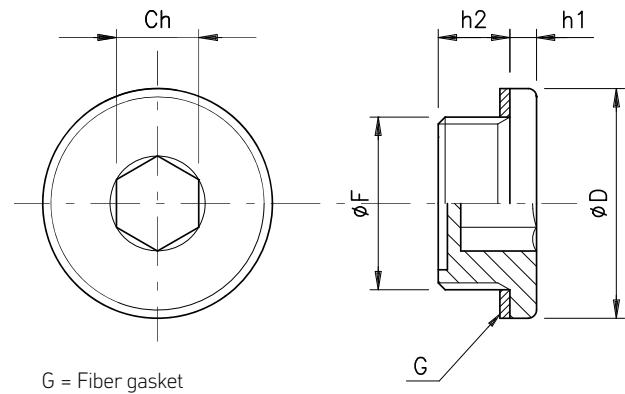
-Model **SM-HP** with sightglass made from natural glass, internal seal in VITON suitable for application until 150°C and working pressure 20 Bar internal pressure

-**New model CX** made from special resin resistant to fluid containing alcohol available on request in minimum quantities.

-Asbestos-free flat gasket (optional available on request au washer)-

Code	F	Ch	d	h1	h2	weight gr	Min. pack.
SM/14	G. 1/4	18	11	9,50	7,50	6	100
SM/38	G. 3/8	22	13	10	9	10	100
SM/12	G. 1/2	27	16	10	9	13	100
SM/34	G. 3/4	32	20	9	12	20	50
SM/1	G. 1	40	26	11	11	32	50
SM/114	G. 1 1/4"	50	34	14	12	54	1
SM/18.15	M 18x1,5	22	13	10	9	10	100
SM/22.15	M 22x1,5	27	16	10	9	13	100
SM-12/HP	G. 1/2	27	12	11	9	18	1
SM-34/HP	G. 3/4	32	16	10	11	28	1
SM-1/HP	G. 1	40	23	11	11	43	1

TCNB - PLASTIC PLUGS WITH INTERNAL HEX HEAD



-Socket style low profile threaded plugs

-Made from reinforced thermoplastic material with 30% fiberglass providing an excellent mechanical resistance at both low and high temperatures

-Max operating temperature 100°C

-Asbestos-free flat seal (optional flat NBR seal or O-Ring available on request)-

-For tightening torques (Nm = maximum allowable tightening torque) see the above table

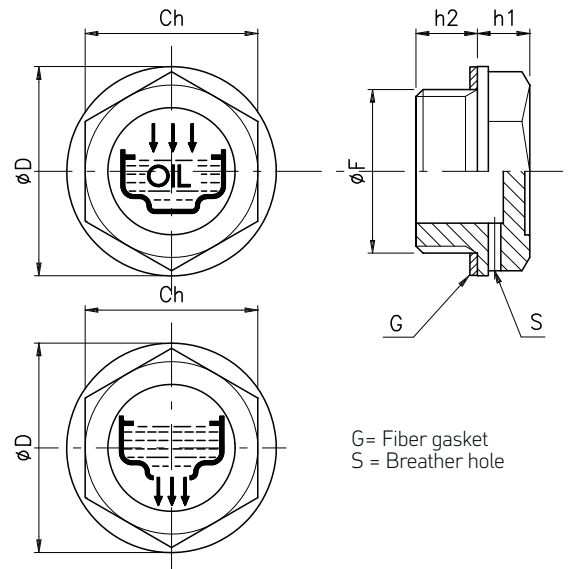
-Special execution in PPA **Ixef 1022** (trade mark SOLVAY) reinforced with 50% fiberglass suggested to be used on industrial application where high resistance to deformation and to mechanical shocks are requested. Max operating temperature 150°C

Code	F	Ch	D	h1	h2	Nm	Nm(PPA)
TCNB/14	G 1/4"	6	18	3	8	3÷5	5÷7
TCNB/38	G 3/8"	8	22,5	3,5	10,5	6÷8	8÷10
TCNB/12	G 1/2"	10	28	4	10	8÷10	10÷12
TCNB/34	G 3/4"	12	35	4	10,5	10÷12	18÷20
TCNB/14.15	M 14x1,5	6	20	2,5	9	3÷5	5÷7
TCNB/16.15	M 16x1,5	8	22,5	3,5	10,5	6÷8	8÷10
TCNB/18.15	M 18x1,5	10	26	3	10	7÷9	10÷12
TCNB/20.15	M 20x1,5	10	28	3,5	10,5	7÷9	10÷12
TCNB/22.15	M 22x1,5	10	28	3,5	10,5	7÷9	10÷12
TCNB/26.15	M 26x1,5	12	35	3	11,5	10÷12	18÷20

TCN - OIL FILL PLUGS

TCNS - OIL FILL PLUGS WITH BREATHER HOLE

TSN - OIL DRAIN PLUGS



G = Fiber gasket
 S = Breather hole

-Hex threaded oil fill plugs in thermoplastic material (Polyamide 66) ensuring high mechanical resistance at both low and high temperatures (max operating temp. 100°C), dimensional stability and shock resistance-

-Asbestos-free flat gasket (rubber seal available on request)-

-Standard colour: black, red available on request

-TCN and TCNS style have the fill graphic symbol and

the word OIL moulded on the top; the model TCNS has a breather hole located on the side of the hex with a diameter from 2 to 3,5 mm, depending on the plug size.

-Model TSN has a graphic drain symbol moulded on the top.

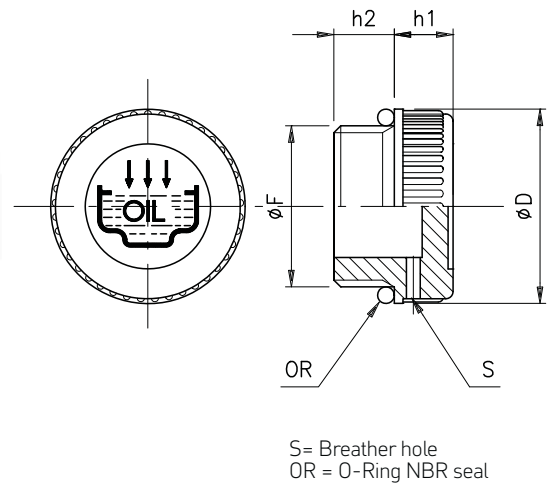
-Nm = maximum applicable tightening torque

* Hex surface blank

Code			F	Ch	D	h2	h1	Nm
TCN-14	TCNS-14	TSN-14	G 1/4"	17	19,5	9	7	5
TCN-38	TCNS-38	TSN-38	G 3/8"	18	22	10	7,5	8
TCN-12	TCNS-12	TSN-12	G 1/2"	24	28	11	7,5	9
TCN-34	TCNS-34	TSN-34	G 3/4"	30	34	11	9	11
TCN-1	TCNS-1	TSN-1	G 1"	35	42	12	10,5	20
TCN-114	TCNS-114	TSN-114	G 1 1/4"	42	51	13,5	12	
TCN-112	TCNS-112	TSN-112	G 1 1/2"	50	58	16	10	
TCN-2	TCNS-2	TSN-2	G 2"	64	74	16	12	
TCN-10.15*	TCNS-10.15*		M 10x1,5	17	19,5	9	7	5
TCN-12.15*	TCNS-12.15*		M 12x1,5	17	19,5	9	7	5
TCN-14.15	TCNS-14.15	TSN-14.15	M 14x1,5	17	19,5	9	7	5
TCN-16.15	TCNS-16.15	TSN-16.15	M 16x1,5	18	21	10	7,5	6
TCN-18.15	TCNS-18.15	TSN-18.15	M 18x1,5	21	26	10	7,5	7
TCN-20.15	TCNS-20.15	TSN-20.15	M 20x1,5	24	28	10	8	8
TCN-22.15	TCNS-22.15	TSN-22.15	M 22x1,5	24	28	11	8	10
TCN-40.15	TCNS-40.15	TSN-22.15	M 40x1,5	42	52	13	10	

TCZ - KNURLED OIL FILL PLUGS

TCZS - KNURLED OIL FILL PLUGS WITH BREATHER HOLE



-Threaded plugs with knurled head made from thermoplastic material (Polyamide 66) ensuring high mechanical resistance at both low and high temperatures (max operating temp. 100°C), dimensional stability and shock resistance-

-O-Ring seal NBR 70 Shore

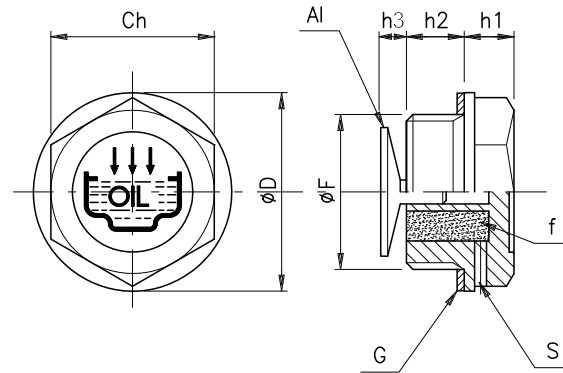
-Standard colour: black, red available on request

-TCZ style have the graphic symbol and the word OIL moulded on the top ; the model TCZS has a breather hole located in the side of the hex with a diameter from 2 to 3,5 mm , depending on the plug size.

Code	F	D	h2	h1
TCZ-14 TCZS-14	G 1/4"	20	9	9
TCZ-38 TCZS-38	G 3/8"	20,5	10	9
TCZ-12 TCZS-12	G 1/2"	28	10,5	10,5
TCZ-34 TCZS-34	G 3/4"	31	11	12
TCZ-1 TCZS-1	G 1"	39	12	12
TCZ-114 TCZS-114	G 1 1/4"	49	13,5	13
TCZ-112 TCZS-112	G 1 1/2"	55	14,5	14,7
TCZ-2 TCZS-2	G 2"	68,5	16	15
TCZ-14.15 TCZS-14.15	M 14x1,5	20	9	9
TCZ-16.15 TCZS-16.15	M 16x1,5	20	10	9
TCZ-18.15 TCZS-18.15	M 18x1,5	28	10	10,5
TCZ-20.15 TCZS-20.15	M 20x1,5	28	10	10,5
TCZ-22.15 TCZS-22.15	M 22x1,5	28	10	10,5

TCSA - OIL FILL PLUGS WITH BREATHER AND ANTI-SPLASH DISC

TCSF - OIL FILL PLUGS WITH BREATHER, FILTER AND ANTI-SPLASH DISC



Al = Anti-splash disc
 G = Fiber gasket
 S = Breather hole
 f = Air filter

plugs, breathers and dipsticks

-Hex threaded oil fill plugs made from thermoplastic material (Polyamide 66) ensuring high mechanical resistance at both low and high temperatures (max operating temp. 100°C), dimensional stability and shock resistance

-Asbestos-free flat gasket (rubber seal available on request)-

-Standard colour: black

-The plugs are marked with the fill graphic symbol and the word OIL moulded on the top; the breather hole is located

on the side of the hex with a diameter from 2 to 3,5 mm, depending on the plug size.

The incorporated anti-splash disc, positioned under the thread, will reduce spillage when heavy oil movement in the reservoir or gearbox takes place

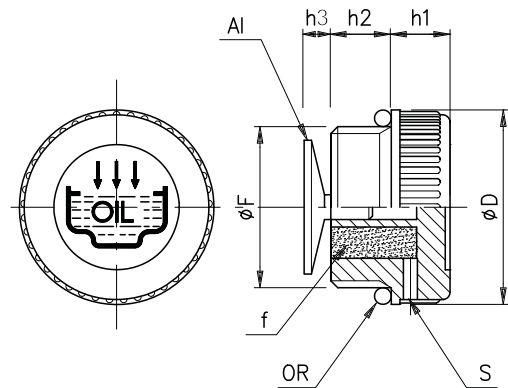
-The polyurethane foam filter element prevents contaminations from the ambient atmosphere polluting the oil

-Nm = maximum applicable tightening torque

Code	F	Ch	D	h2	h1	h3	Nm	
TCSA-14	G 1/4"	17	19,5	9	7	3	5	
TCSA-38	TCSF-38	G 3/8"	18	22	10	7,5	3	8
TCSA-12	TCSF-12	G 1/2"	24	28	11	7,5	3	9
TCSA-34	TCSF-34	G 3/4"	30	34	11	9	4	11
TCSA-1	TCSF-1	G 1"	35	42	12	10,5	4	20
TCSA-114	TCSF-114	G 1 1/4"	42	51	13,5	12	4	
TCSA-14.15		M 14x1,5	17	19,5	9	7	3	5
TCSA-16.15	TCSF-16.15	M 16x1,5	18	21	10	7,5	3	6
TCSA-18.15	TCSF-18.15	M 18x1,5	21	26	10	7,5	3	7
TCSA-20.15	TCSF-20.15	M 20x1,5	24	28	10	8	3	8
TCSA-22.15	TCSF-22.15	M 22x1,5	24	28	11	8	3	10

TCSZA - KNURLED OIL FILL PLUGS WITH BREATHER AND ANTI-SPLASH DISC

TCSZF - KNURLED OIL FILL PLUGS WITH BREATHER, FILTER AND ANTI-SPLASH DISC



AL = Anti-splash disc
 OR = O-Ring NBR seal
 S = Breather hole
 f = Air filter

-Threaded plugs with knurled head made from thermoplastic material (Polyamide 66) ensuring high mechanical resistance at both low and high temperatures (max operating temp. 100°C), dimensional stability and shock resistance-

-O-Ring NBR 70 Shore oil resistant seal

-Standard colour: black

-The plugs are marked with the fill graphic symbol and the

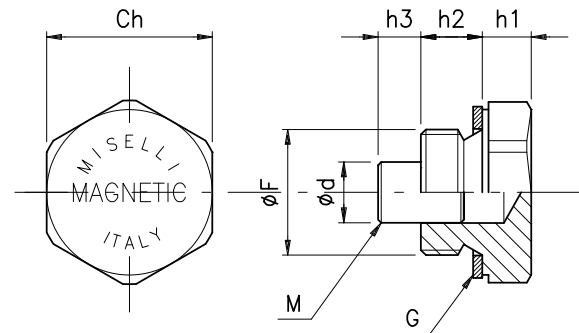
word OIL moulded on the top; the breather hole is located on the side of the hex with a diameter from 2 to 3, 5 mm, depending on the plug size.

The incorporated anti-splash disc, positioned under the thread, will reduce spillage when heavy oil movement in the reservoir or gearbox takes place

-The polyurethane foam filter element prevents contaminations from the ambient atmosphere polluting the oil

Code	F	D	h2	h1	h3
TCSZA-14	G 1/4"	20	9	9	3
TCSZA-38 TCSZF-38	G 3/8"	20,5	10	9	3
TCSZA-12 TCSZF-12	G 1/2"	28	10,5	10,5	3
TCSZA-34 TCSZF-34	G 3/4"	31	11	12	4
TCSZA-1 TCSZF-1	G 1"	39	12	12	4
TCSZA-114 TCSZF-114	G 1 1/4"	49	13,5	13	4
TCSZA-14.15	M 14x1,5	20	9	9	3
TCSZA-16.15 TCSZF-16.15	M 16x1,5	20	10	9	3
TCSZA-18.15 TCSZF-18.15	M 18x1,5	28	10	10,5	3
TCSZA-20.15 TCSZF-20.15	M 20x1,5	28	10	10,5	3
TCSZA-22.15 TCSZF-22.15	M 22x1,5	28	11	10,5	3

TMA - ALUMINIUM DRAIN PLUGS WITH MAGNET



G = Fiber gasket
M = Magnet

-Hex plugs manufactured from aluminium 11S, complete with asbestos-free flat seal (aluminium washer available as an option)

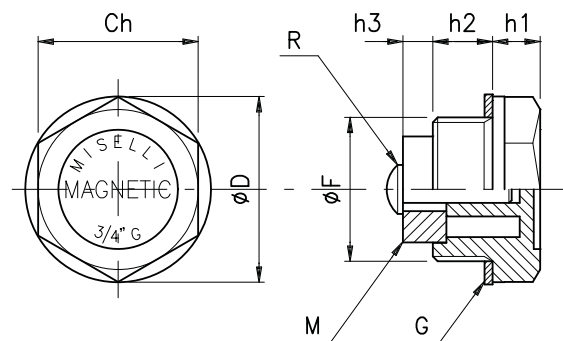
-These plugs are fitted to the bottom of the reservoir or tank, and will collect ferrous particles that are floating in the oil, helping to protect pumps, valves and cylinders

-This plug is equipped with a pressed-in cylindrical magnet, located in the base of the plug

-The plug comes with text "MAGNETIC" on the hex surface

Code	Ch	F	d	h1	h2	h3
TMA-14	19	G 1/4"	5	7	10	6
TMA-38	22	G 3/8"	8	7	10	7
TMA-12	27	G 1/2"	10	8	10	7
TMA-34	34	G 3/4"	13	8	10	7
TMA-1	40	G 1"	13	8	14	7

TM - DRAIN PLUGS WITH MAGNET (PLASTIC)



R = Fitting rivet
M = Magnet
G = Fiber gasket

-Thermoplastic hex plug with magnet

-Production colour black, marked MAGNETIC on the hex surface.

-The plug is fitted to the bottom of the transmission or tank, to be used as drain plug; the magnet attract ferrous metal parts, preventing damage to gears and other moving components

-Oil resistant asbestos-free seal

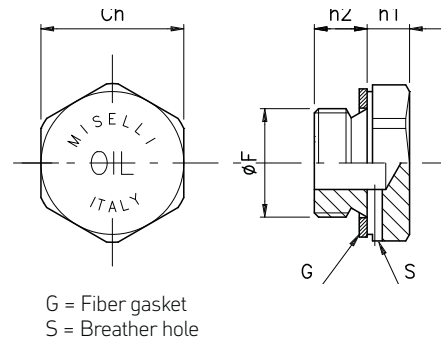
-In larger quantities, these plugs are available with threads other than those shown, ie M16-18-20-22

Code	F	Ch	D	h2	h1	h3
TM-14	G 1/4"	17	20	9	7	5
TM-38	G 3/8"	18	22	10	7,5	10
TM-12	G 1/2"	24	27	11	8	9
TM-34	G 3/4"	30	34	11	9	6,5
TM-1	G 1"	35	42	12	10,5	14
TM-1415	M14X1,5	17	20	9	7	5

M/TCN - ALUMINIUM FILLER PLUGS

M/TCNS - ALUMINIUM FILLER PLUGS WITH BREATHER HOLE

M/TSN - ALUMINIUM DRAIN PLUGS



-Hex head plugs, with or without hole for breather, made from Aluminium alloy 11S

-Models M/TCN - M/TCNS comes marked OIL, M/TSN

model comes blank

-Flat asbestos-free seal, oil resistant (aluminium flat washers are optionally available)

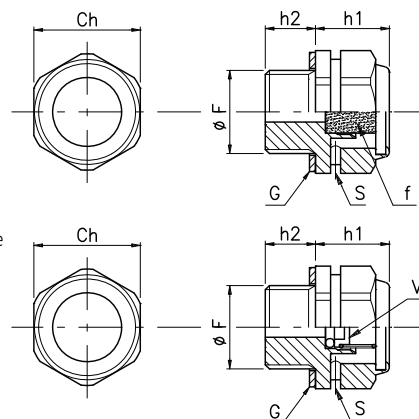
Code	F	Ch	h2	h1
M/TCN-14 M/TCNS-14 M/TSN-14	G 1/4"	19	10	7
M/TCN-38 M/TCNS-38 M/TSN-38	G 3/8"	22	10	7
M/TCN-12 M/TCNS-12 M/TSN-12	G 1/2"	27	10	8
M/TCN-34 M/TCNS-34 M/TSN-34	G 3/4"	34	10	8
M/TCN-1 M/TCNS-1 M/TSN-1	G 1"	40	14	8

KMF - BRASS FILLER PLUGS WITH FILTER

KMV - BRASS FILLER PLUGS WITH VENT VALVE



G = Fiber gasket
S = Breather holes
f = Air Filter
V = One-way check valve



-Threaded metal plugs made from brass, asbestos-free flat seal (aluminium washers available)

-Two breather holes are located under the hex head, providing an adequate airflow capacity.

-KMF model is equipped with a metal filter inside (filtration degree 50 μ) to avoid pollution of the oil

-The KMV version is used when venting of the reservoir is required, only in case of internal over-pressurization.

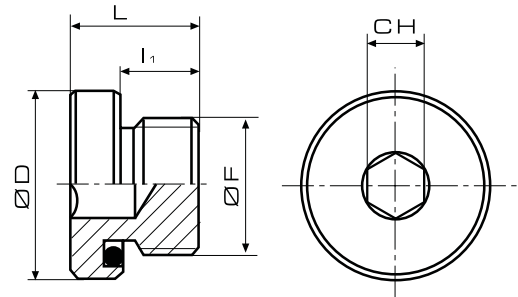
-The pre-tensioned spring of the valve will allow the valve

disc to be lifted from its seat at a pressure of **0.4 bar (\pm 0.05)**, thus allowing the air to escape : when the pressure is reduced after venting, the valve will close and stop air to entering the reservoir; it will also prevent oil overflow through the plug's valve due to oil movement whilst in the closed position.

-These plugs are applied in gear reducers, gearboxes, bearing housings and transmission of all kinds

Code	F	Ch	h1	h2
KMF-14 KMV-14	G 1/4"	18	15,5	9
KMF-38 KMV-38	G 3/8"	22	14,5	10
KMF-12 KMV-12	G 1/2"	27	14,5	10

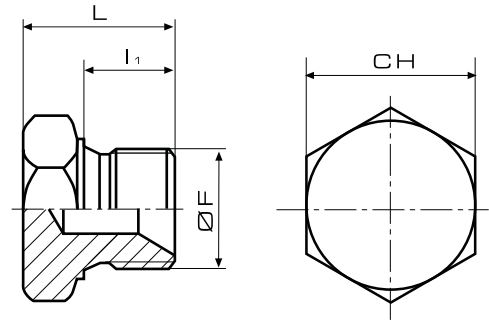
TTCE - CYLINDRICAL STEEL PLUGS WITH INTERNAL HEX AND RUBBER SEAL



- Material : Steel 11SMnPb37
- Rubber O-Ring seal 90 shore
- Working temperature : -20°C +100°C
- Max working pressure : 70 bar in static applications

Code	ØF	I1	L	ØD	CH	Min. pack. pz
TTCE-18	G 1/8"	9	13	15	4	1000
TTCE-14	G 1/4"	11	16	19	6	500
TTCE-38	G 3/8"	11	17	22	6	400
TTCE-12	G 1/2"	14	20	27	8	250
TTCE-34	G 3/4"	14	20	32	12	150
TTCE-1	G 1"	16	22	40	12	100
TTCE-114	G 1 1/4"	18	25	50	12	40
TTCE-112	G 1 1/2"	17	24	55	24	50
TTCE-2	G 2"	17	24	70	32	10
TTCE-10.1	M 10x1	8	12	14	5	1000
TTCE-12.15	M 12x1,5	10	16	17	6	1000
TTCE-14.15	M 14x1,5	10	16	19	6	500
TTCE-16.15	M 16x1,5	10	16	22	6	400
TTCE-18.15	M 18x1,5	11	17	25	6	400
TTCE-20.15	M 20x1,5	12	18	27	8	250
TTCE-22.15	M 22x1,5	12	18	28	8	250
TTCE-26.15	M 26x1,5	13,5	20	32	12	150
TTCE-27.2	M 27x2	13,5	20	32	12	150
TTCE-33.2	M 33x2	15	21	40	17	100
TTCE-42.2	M 42x2	17	24	50	22	50
TTCE-48.2	M 48x2	17	24	55	24	40

TTE - HEX HEAD STEEL PLUGS

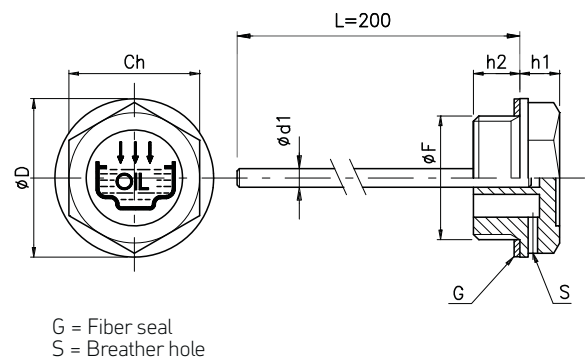


- Material : Steel 11SMnPb37
- Working temperature : -20°C +100°C
- Max working pressure : 70 bar in static applications

Code	ØF	l1	L	CH	Min. pack. pz
TTE-18	G 1/8"	8	13	14	1000
TTE-14	G 1/4"	11	17	19	900
TTE-38	G 3/8"	12	19	22	500
TTE-12	G 1/2"	14	22	27	250
TTE-34	G 3/4"	16	25	32	150
TTE-1	G 1"	19	29	41	100
TTE-114	G 1 1/4"	20	31	50	50
TTE-112	G 1 1/2"	21	33	55	30
TTE-2	G 2"	23	36	70	10
TTE-10.1	M 10x1	8	12	14	1000
TTE-12.15	M 12x1,5	10	15	17	1000
TTE-14.15	M 14x1,5	11	17	19	900
TTE-16.15	M 16x1,5	12	19	22	500
TTE-18.15	M 18x1,5	13	20	24	200
TTE-20.15	M 20x1,5	14	22	27	250
TTE-22.15	M 22x1,5	15	23	27	250
TTE-24.15	M 24x1,5	16	25	30	100
TTE-26.15	M 26x1,5	16	25	32	150
TTE-28.15	M 28x1,5	17	27	36	100
TTE-30.15	M 30x1,5	18	28	38	100

TCA - HEX PLUGS WITH DIPSTICK

TCAS - HEX PLUGS WITH DIPSTICK AND BREATHER HOLE



-Hex threaded oil fill plugs with dipstick made from thermoplastic material (Polyamide 66) ensuring high mechanical resistance at both low and high temperatures (max operating temp. 100°C), dimensional stability and shocks resistance ; Asbestos-free flat gasket

-TCA and TCAS style have the fill graphic symbol and the word OIL moulded on the top; the model TCAS has a

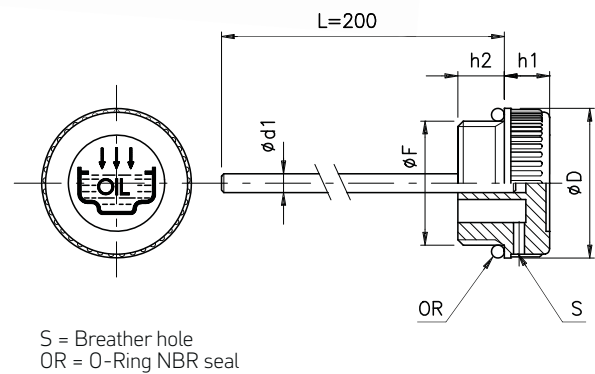
breather hole located on the side of the hex with a diameter from 2 to 3,5 mm. depending on the plug size.

-Steel level dipstick with zinc phosphate surface (cylindrical section). standard length mm. 200, on quantities of a least 250 pcs they can be manufactured to the customers specific length and MIN-MAX notches can be placed in the desired position.

	Code	F	Ch	D	h1	h2	d1
TCA-14	TCAS-14	G 1/4"	17	19	7	9	4
TCA-38	TCAS-38	G 3/8"	18	22	7,5	10	4
TCA-12	TCAS-12	G 1/2"	24	28	7,5	11	4
TCA-34	TCAS-34	G 3/4"	30	34	9	11	5
TCA-1	TCAS-1	G 1"	35	42	10,5	12	5
TCA-114	TCAS-114	G 1 1/4"	42	51	12	13,5	5
TCA-2	TCAS-2	G 2"	64	74	13,5	16	5
TCA-14.15	TCAS-14.15	M 14x1,5	17	19	7	9	4
TCA-16.15	TCAS-16.15	M 16x1,5	18	21	7,5	10	4
TCA-18.15	TCAS-18.15	M 18x1,5	21	26	7,5	10	4
TCA-20.15	TCAS-20.15	M 20x1,5	24	28	8	10	4
TCA-22.15	TCAS-22.15	M 22x1,5	24	28	8	11	4

TCAZ - KNURLED PLUGS WITH DIPSTICK

TCASZ - KNURLED PLUGS WITH DIPSTICK AND BREATHER HOLE



-Knurled threaded oil fill plugs with dipstick made from thermoplastic material (Polyamide 66) ensuring high mechanical resistance at both low and high temperatures (max operating temp. 100°C), dimensional stability and shocks resistance; Asbestos-free flat gasket

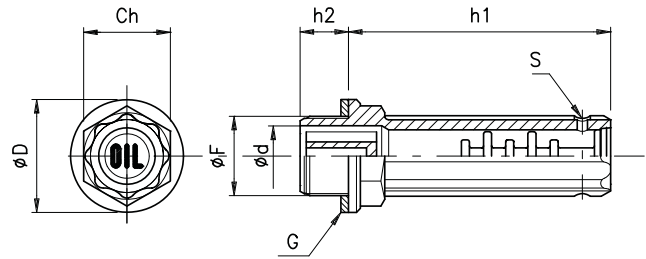
-TCAZ and TCASZ style have the fill graphic symbol and the word OIL moulded on the top ; the model TCASZ has a

breather hole located on the side of the hex with a diameter from 2 to 3.5 mm, depending on the plug size.

-Steel level dipstick with zinc phosphate surface (cylindrical section). standard length mm. 200, on quantities of a least 250 pcs they can be manufactured to the customers specific length and MIN-MAX notches can be placed in the desired position.

	Code	F	D	h2	h1	d1
	TCAZ-14 TCASZ-14	G 1/4"	20	9	9	4
	TCAZ-38 TCASZ-38	G 3/8"	20,5	10	9	4
	TCAZ-12 TCASZ-12	G 1/2"	28	10,5	10,5	4
	TCAZ-34 TCASZ-34	G 3/4"	31	11	12	5
	TCAZ-1 TCASZ-1	G 1"	39	12	12	5
	TCAZ-114 TCASZ-114	G 1 1/4"	49	13,5	13	5
	TCAZ-14.15 TCASZ-14.15	M 14x1,5	20	9	9	4
	TCAZ-16.15 TCASZ-16.15	M 16x1,5	20	10	9	4
	TCAZ-18.15 TCASZ-18.15	M 18x1,5	28	10	10,5	4
	TCAZ-20.15 TCASZ-20.15	M 20x1,5	28	10	10,5	4
	TCAZ-22.15 TCASZ-22.15	M 22x1,5	28	11	10,5	4

TK - EXTENDED FILLER PLUGS WITH BUILD-IN LABYRINTH OVERFLOW PROTECTION



G = Fiber seal
 S = Breather hole

- Threaded extended plug with labyrinth vane located in its body; produced from thermoplastic material (Polyamide 66), max operating temp. 100° C (212 F)

- These series of breather plugs reduce the possibility of oil overflow through the breather hole when strong oil movement is present, whilst the labyrinth is incorporated within the top of the plug, thus reducing the space needed at

the bottom side.

- Breather hole diameter: 2,5 mm, located at the top side of plug

- Asbestos-free, oil resistant glat seal

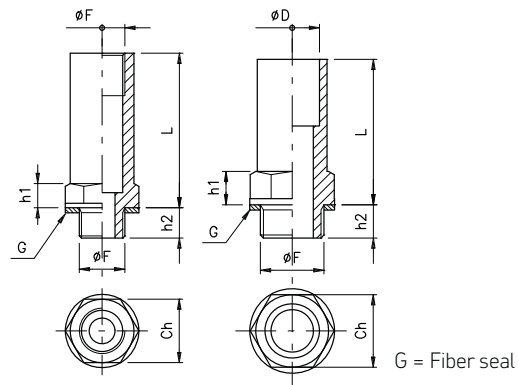
- Hex bottom to allow tightening by wrench

- Standard colour: black, encased text "OIL" on top

Code	F	Ch	D	d	h1	h2
TK-14	G 1/4"	17	20	9	55	12
TK-38	G 3/8"	19	22	12	60	12
TK-12	G 1/2"	22	28	15	65	12
TK-16.15	M 16x1,5	19	22	12	60	12
TK-18.15	M 18x1,5	19	22	12	60	12

PFP - EXTENDED RECEPTACLE FOR PRESS-FIT BREATHERS AND PLUGS

PFF - EXTENDED RECEPTACLE FOR THREADED BREATHERS AND PLUGS



G = Fiber seal

- Extension casing with bottom male thread M16x1,5 and top female thread M16x1,5 (model PFF-16.15). Also available with bottom thread 1/2" male, and top hole 18 mm diameter for press-fit components (model PFP-12)

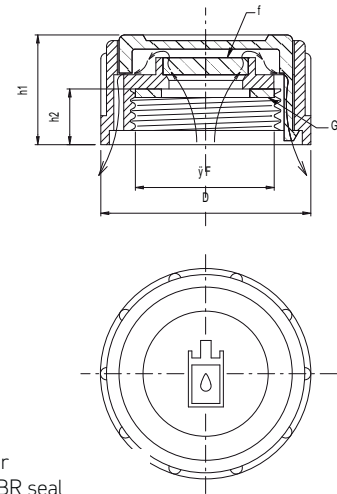
- Extension PFF can be used in combination with our TCNS-TCAS-TMD-TMDA M16x1,5, extension PFP can be used combined with our TP-TPBS-ALS/18

- Due to this extension, the breather hole in the press-fit breathers and/or dipsticks will be located at an increased height, helping to reduce overflow of oil through the breather hole.

- The extension is manufactured out of thermoplastic material (Polyamide 66), the seal is asbestos-free fibre

Code	F	D	L	Ch	h2	h1
PFF-16.15	M16X1,5	18	50	20	10	8
PFP-12	G 1/2"	18	49	24	12	10

TF - FILLER BREATHER WITH FILTER, internal thread



F= Air filter
G= Flat NBR seal

- Plastic filler breather with air filter and 3/4" BSP internal thread
- Material: Polyamide 66, polyurethane air filter (40 microns)
- Internal flat rubber seal in NBR 70 shore

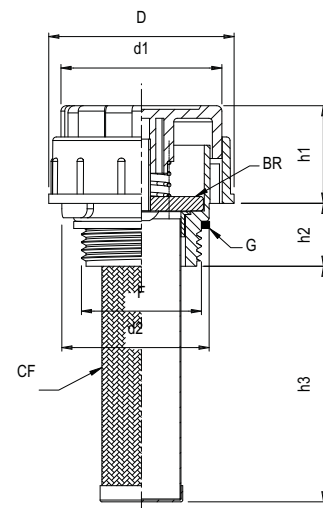
- Red cap with graphic symbol "fill oil"
- Specifically designed for use on plastic moulded reservoir; the internal thread allows mounting on to a moulded external thread. This makes the design and manufacture of the plastic reservoir easier

Code	F	D	h1	h2
TF/34	G 3/4"	37,50	20	10,50

TMDF/1/BRC - FILLER BREATHERS with metal strainer



BR= Bronze filter
G= Flat NBR seal
CF = Metal strainer

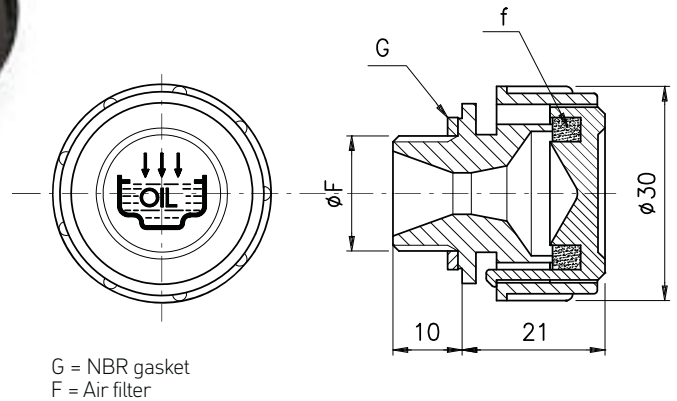


- Filler Breathers constructed from thermoplastic resin (polyamide 66) designed for use on small and medium reservoir from 25 to 100 litres; they are equipped with bronze sintered air filter (filtration degree 30 microns) and with a zinc stainless steel filter strainer to protect the reservoir from dirt

- ingress (filtration degree 300 microns)
- Black cap with graphic symbol "fill oil"
- The thread connections is 1" BSP and filling is achieved by removing the top of the assembly

Code	F	D	d1	h1	h2	h3
TMDF/1/BRC	G 1"	52,5	45	27	17	65

TSF - FILLER BREATHER WITH FILTER



-Filler breathers with easy grip vertical ribs, manufactured from thermoplastic material (Polymide 66), maximum working temperature 100°C (212 F)

-These style filler breathers are produced in black, with a red lid, with encased the text "OIL".

On large orders a custom text or company logo is possible.

A standard flat rubber seal is used, but a 'O' Ring seal is available, both in NBR 70 shore.

-Located under the lid is a polyurethane foam filter (40 microns) installed, which is easy to be cleaned once the lid is removed.

-The series TSF has a specially designed cavity which prevents oil from escaping through the breather holes when it is splashed in an upward direction, often occurring when there is strong oil movement, due to rotating gears.

-The inside of the TSF features a conical cavity (see drawing), which, due to its design entraps oil but allows air to escape and enter (within limitations).

-Airflow capacity (P) is indicated on the table expressed in liters/minute with a tank pressure of 50 mbar (0,73 psi).

Cod.	F	P
TSF-14	G 1/4"	105
TSF-38	G 3/8"	135
TSF-12	G 1/2"	130
TSF-24.15	M 24x1,5	130

On request available in NPT

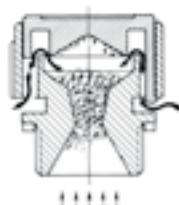


Fig. 1

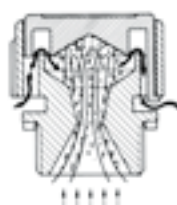


Fig. 2

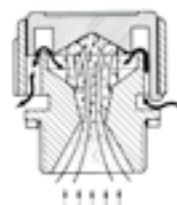


Fig. 3

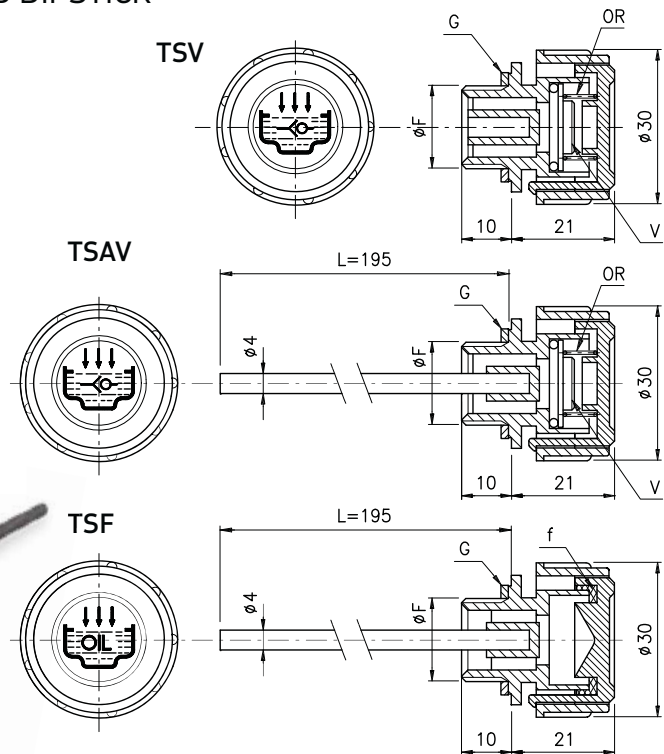
The following results were obtained on an oiltest bench with Oil type SAE 90, Oil sprayed from within a Gearbox, at 600 - 3600 RPM. Started with cold oil and strong oil spray consisting of an Oil/Air mixture, sprayed into the restrictive orifice of the filler breather, causing the air to escape, but containing the oil. (FIG. 1). In a second stage, at a temperature of 60-70° C, with the same procedure, the oil droplets centralize, and with the progressive rate of increase in weight, are falling back into the reservoir (FIG. 2). In the final stage (FIG. 3) with the same procedure, at maximum working Temperature of the Gearbox (100° C), the high temperature causes a very difficult to repress Oil Damp, but the inner structure of the TSF gives excellent results, even after an extended period of time.

By usage of low Viscosity Oils, (i.e. SAE 20) the conditions are less severe and results will be similar even at lower starting temperatures.

TSV - FILLER BREATHER WITH CHECK VALVE

TSAV - FILLER BREATHER WITH CHECK VALVE AND DIPSTICK

TSAF - FILLER BREATHER WITH FILTER AND DIPSTICK



G = Fiber gasket
 V = One way check valve
 F = Air filter

-Threaded filler breathers, cylindrical head with easy grip vertical ribs. Manufactured from thermoplastic material (Polyamide 66), max operating temperature 100°C (212 F)

-TSV-TSAV models are as standard produced in black with red lid, complete with encased hydraulic symbol for check valve. For large quantities a company logo can be encased besides the symbol.

-Standard seal: flat rubber seal, 70 shore (O-Ring available on request)

-The model TSAV with a steel dipstick, is as standard produced in length 195 mm measured from the point making contact with the surface of the tank to the bottom of the dipstick.

-In case of large orders the dipstick can be cut to customer's required length and can be provided with MIN-MAX notches.

-The filler breathers TSV-TSAV have small external space requirements; they are used in applications where a pressure needs to be maintained within the tank.

-The checkvalve will open when a pressure is reached of approx. **.20-.25 bar** (3-3.6 PSI), and will close reset at similar pressure.

-The check valve will allow air to vent out under the above conditions, but does not allow air to move back in, thus preventing dust particles or other forms of contamination from the atmosphere to enter the oil.

-Extensively used in small oil tanks, gearboxes, gear reducers, torque multipliers and transmissions

-The model TSAF has all the characteristics of "TSAV", but is fitted with a polyurethane air filter instead of the check valve.

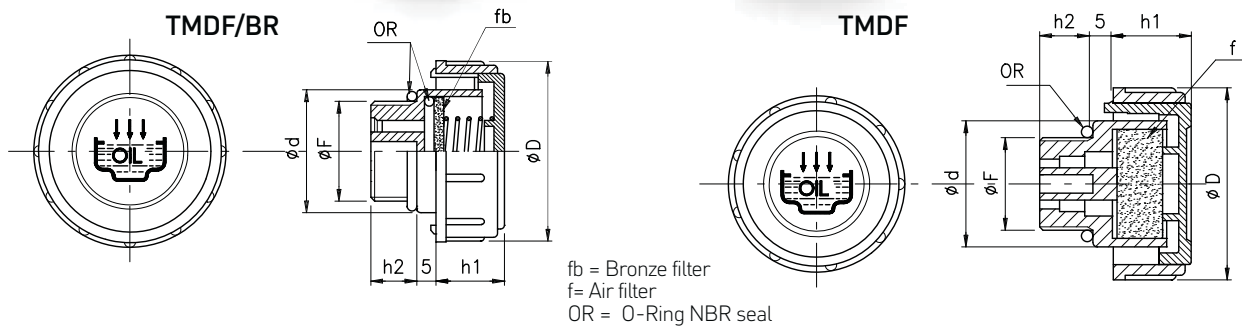
Cod.	F
TSV-14 TSAV-14	G 1/4"
TSV-38 TSAV-38	G 3/8"
TSV-12 TSAV-12	G 1/2"
TSAF-14	G 1/4"
TSAF-38	G 3/8"
TSAF-12	G 1/2"

On request available in NPT

TMD - FILLER BREATHERS

TMDF - FILLER BREATHERS WITH FILTER

TMDF/BR - FILLER BREATHERS WITH FILTER IN SINTERED BRONZ



-Round headed filler breather, with vertical ribs for better grip, threaded connection

-Standard production: black with red lid complete with graphic fill symbol and the text "OIL"; the models 114-112 has a yellow lid, available with text "DIESEL" upon request

-On request, for larger quantities the lid can be neutral or equipped with company logo

-Manufactured from Polyamide 66 ensuring high mechanical resistance at both low and higher temperatures (max working temp. 100°C-212 F); oil resistant O-Ring seal 70 Shore.

-The polyurethane air filter is located under the lid, easy to remove clean and reinstall; degree of filtration 40 micron.

-These filler breathers allow air passage at high volume, through the vents located on the bottom of the head; they

are recommended to be used in systems where frequent oil level changes take place in short amount of time, allowing the air to enter and leave the system, without any unwanted air pressure increase or decrease; the airflow capacity (P) indicated on the table expressed in liters/minute with a tank pressure of 50 mbar (0.73 psi)

-In the kind of applications where the vent hole is subject to strong oil splashes, especially during the starting of the machine when the oil is still thick, we suggest to utilize the model **TMDF/BR** with air filter element in sintered bronze (30 ± filtration degree). This allows the air to flow but stops fluid overflowing due to the bronze filter being not absorbent.

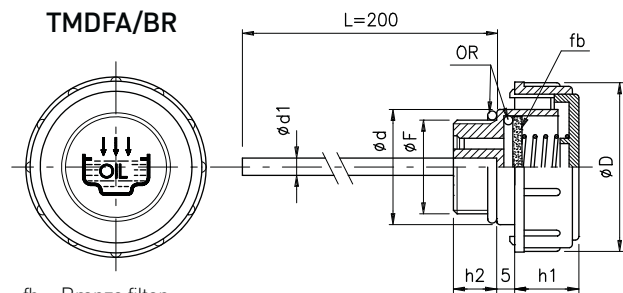
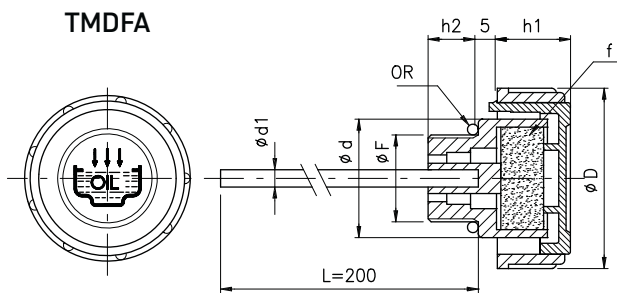
-NPT Threads available on 3/8"-1/2"-3/4"-1"

Cod.	P	Cod.	P	F	D	d	h1	h2
TMD-38	230	TMDF-38	200	G 3/8"	36	23	17	11
TMD-12	260	TMDF-12	230	G 1/2"	41	28	18	12
TMD-34	430	TMDF-34	350	G 3/4"	47	33	17	12
TMD-1	430	TMDF-1	400	G 1"	52	38	20	12
TMD-114	660	TMDF-114	600	G 1 1/4"	63	49	23	13
TMD-112	660	TMDF-112	600	G 1 1/2"	63	55	23	13,5
TMD-16.15	260	TMDF-16.15	230	M 16x1,5	36	23	17	11
TMD-18.15	260	TMDF-18.15	230	M 18x1,5	41	28	17,5	12
TMD-20.15	260	TMDF-20.15	230	M 20x1,5	41	28	17,5	12
TMD-22.15	260	TMDF-22.15	230	M 22x1,5	41	28	17,5	12

TMDA - FILLER BREATHERS WITH DIPSTICK

TMDFA - FILLER BREATHERS WITH DIPSTICK AND FILTER

TMDFA/BR - FILLER BREATHERS WITH DIPSTICK AND SINTERED BRONZ FILTER



fb = Bronze filter
 f = Air filter
 OR = O-Ring NBR seal

These filler breathers have the same characteristics as the models TMD-TMDF, but are equipped with a steel level dipstick with zinc phosphate surface.

- The standard dipstick is 200 mm in length, but on orders that exceed 250 pieces, the dipstick can be cut to custom length, and notches can be placed to indicate "MIN-MAX" oil level.

-Airflow capacity (P) indicated in the table expressed in liters/minute using a tank pressure of 50 mbar (0,73 psi)

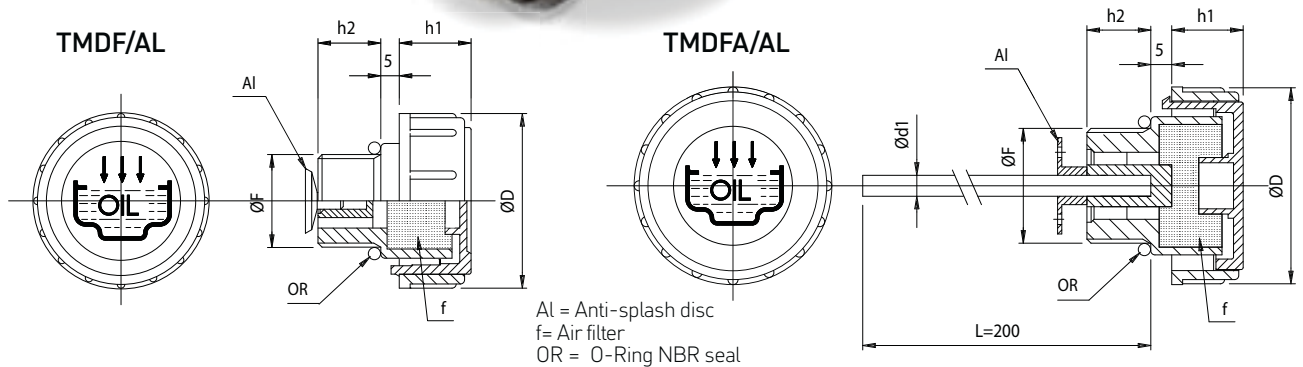
-In the kind of applications where the vent hole is subject to strong oil splashes, especially during the starting of the machine when the oil is still thick, we suggest to utilize the model **TMDFA/BR** with air filter element in sintered bronz (30 micron). This allows the air to flow but stops fluid overflowing due to the bronze filter being non absorbent.

-NPT Threads available on 3/8"-1/2"-3/4"-1"

Cod.	P	Cod.	P	F	D	d	d1	h1	h2
TMDA-38	230	TMDFA-38	200	G 3/8"	36	23	4	17	11
TMDA-12	260	TMDFA-12	230	G 1/2"	41	28	4	18	12
TMDA-34	430	TMDFA-34	350	G 3/4"	47	33	5	17	12
TMDA-1	430	TMDFA-1	400	G 1"	52	38	5	20	12
TMDA-114	660	TMDFA-114	600	G 1 1/4"	63	49	5	23	13
TMDA-112	660	TMDFA-112	600	G 1 1/2"	63	55	5	23	13,5
TMDA-16.15	260	TMDFA-16.15	230	M 16x1,5	36	23	4	17	11
TMDA-18.15	260	TMDFA-18.15	230	M 18x1,5	41	28	4	17,5	12
TMDA-20.15	260	TMDFA-20.15	230	M 20x1,5	41	28	4	17,5	12
TMDA-22.15	260	TMDFA-22.15	230	M 22x1,5	41	28	4	17,5	12

TMDF/AL - FILLER BREATHERS WITH ANTI-SPLASH DISC AND FILTER

TMDFA/AL - FILLER BREATHERS WITH DIPSTICK ,ANTI-SPLASH DISC AND FILTER



-Round headed filler breather, with vertical ribs for better grip, threaded connection steel level dipstick with zinc phosphate surface (round section) standard length 200mm.; on orders that exceed 250 pieces, the dipstick can be cut to custom length, and notches can be placed to indicate "MIN-MAX" oil level. Also upon request and for adequate quantities the steel dipstick can be supplied with the surface zinc phosphated (dark grey) or burnished (black)

-Manufactured from Polyamide 66 ensuring high mechanical resistance at both low and higher temperatures (max working temp. 100°C-212 F); oil resistant O-Ring seal 70 Shore .

-The polyurethane air filter is located under the lid, easy to remove clean and reinstall; filtration degree 40 micron.

-These filler breathers allow air passage at high volume, through the vents located on the bottom of the head; they are recommended to be used in systems where frequent oil level changes take place in a short amount of time, allowing the air to enter and leave the system, without any unwanted air pressure increase or decrease; the **airflow capacity (P)** indicated on the table expressed in liters/minute with a tank pressure of 50 mbar (0,73 psi)

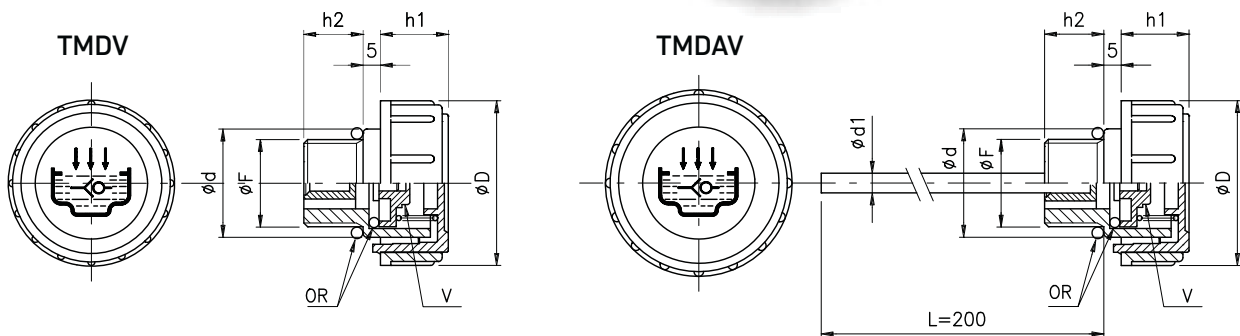
-An additional anti-splash disc is fitted under the thread to protect the vent sections against occasional oil splashes (either during the running of the machine or during transport of the hydraulic unit)

-NPT Threads available on 3/8"-1/2"-3/4"-1"

	Cod.	F	P	D	d	d1	h1	h2
	TMDF-38/AL TMDFA-38/AL	G 3/8"	115	36	23	4	17	11
	TMDF-12/AL TMDFA-12/AL	G 1/2"	180	41	28	4	18	12
	TMDF-34/AL TMDFA-34/AL	G 3/4"	190	47	33	5	17	12
	TMDF-1/AL TMDFA-1/AL	G 1"	305	52	38	5	20	12
	TMDF-16.15/AL TMDFA-16.15/AL	M 16x1,5	115	36	23	4	17	11
	TMDF-18.15/AL TMDFA-18.15/AL	M 18x1,5	180	41	28	4	17,5	12
	TMDF-20.15/AL TMDFA-20.15/AL	M 20x1,5	180	41	28	4	17,5	12
	TMDF-22.15/AL TMDFA-22.15/AL	M 22x1,5	180	41	28	4	17,5	12

TMDV - FILLER BREATHERS WITH ONE WAY AIR VENT VALVE

TMDAV - FILLER BREATHERS WITH ONE WAY AIR VENT VALVE AND DIPSTICK



V= One-way check valve
 OR = O-Ring NBR seal

- Cylindrical filler breather with easy grip vertical ribs.
- The standard filler breather is manufactured in black, with a red top encased with the UNI valve symbol.
- Oil resistant, 70 shore 'O' ring seal.
- The filler breather is produced from thermoplastic material, and features excellent dimensional stability whilst shock proof.

They offer high mechanical resistance at both low and higher temperature.(working temp.: 100°C (212 F)).

- The models TMDV - TMDAV are applied where an air pressure in the tank is to be maintained.

The filler breather allows air to breathe out only.

- When inside the tank a pressure builds up , that exceeds the spring pressure of the internal check- disk (0.20 - 0.25

bar) the disk will lift and allow the air to escape.

The disk will return to its seated position when the pressure is lower or equal to the preset value.

These filler breathers are applied in compressor housings, gearboxes, and all applications that require a maintained air pressure of .20 - .25 bar (3 - 3.6 PSI)

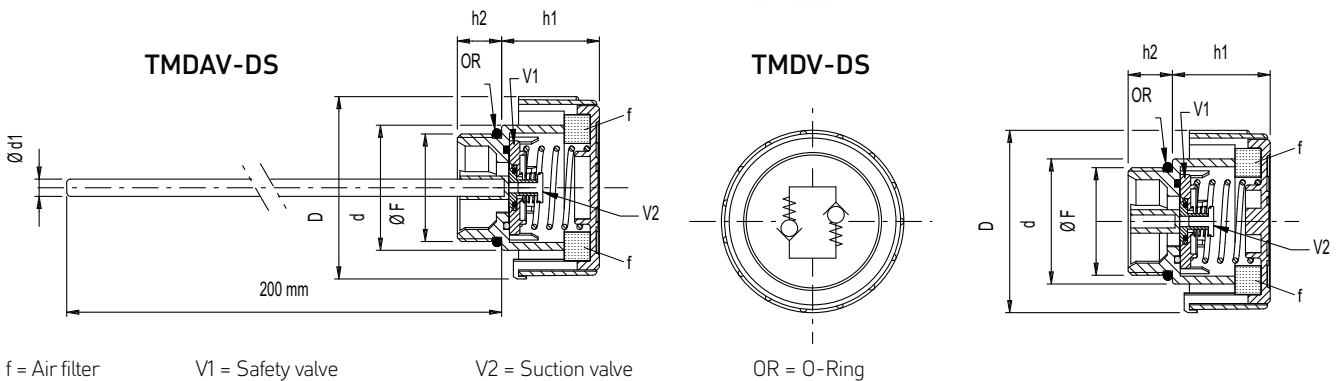
-The model TMDAV is standard produced with a dipstick of 200 mm, measured from contact point filler breather with surface of tank, to the end of the dipstick, when the filler breather is inserted all the way.

On orders that exceed 250 pieces, the dipstick can be cut to a custom length, whilst "MIN - MAX" notches can be placed at the desired heights.

	Cod.	F	D	d	d1	h1	h2
	TMDV-38 TMDAV-38	G 3/8"	36	23	4	17	11
	TMDV-12 TMDAV-12	G 1/2"	41	28	4	18	12
	TMDV-34 TMDAV-34	G 3/4"	47	33	5	17	12
	TMDV-1 TMDAV-1	G 1"	52	38	5	20	12
	TMDV-114 TMDAV-114	G 1 1/4"	63	49	5	23	13
	TMDV-16.15 TMDAV-16.15	M 16x1.5	36	23	4	17	11
	TMDV-18.15 TMDAV-18.15	M 18x1.5	41	28	4	17.5	12
	TMDV-20.15 TMDAV-20.15	M 20x1.5	41	28	4	17.5	12
	TMDV-22.15 TMDAV-22.15	M 22x1.5	41	28	4	17.5	12

TMDV-DS - DOUBLE-VALVE PRESSURISED FILLER BREATHERS

TMDAV-DS - DOUBLE-VALVE PRESSURISED FILLER BREATHERS WITH DIPSTICK



-Round headed filler breather, with vertical ribs for better grip, threaded connection.

-Standard production: complete black with graphic "double-valve" symbol.

-Manufactured from Polyamide 66 ensuring high mechanical resistance at both low and higher temperatures (max working temp. 100°C-212 F); oil resistant O-Ring seal 70 Shore.

-The polyurethane air filter is located under the lid, easy to remove clean and reinstall; filtration degree 40 micron

-Inside there is a plastic safety device with a double-valve system; set at 0.25 bar (± 0.05), suction valve set at around

0.05 bar.

-This model is used on hydraulic applications where the airflow needs to be controlled in both directions, externally when internal overpressure is created and internally when, decreasing the fluid level and a vacuum is created.

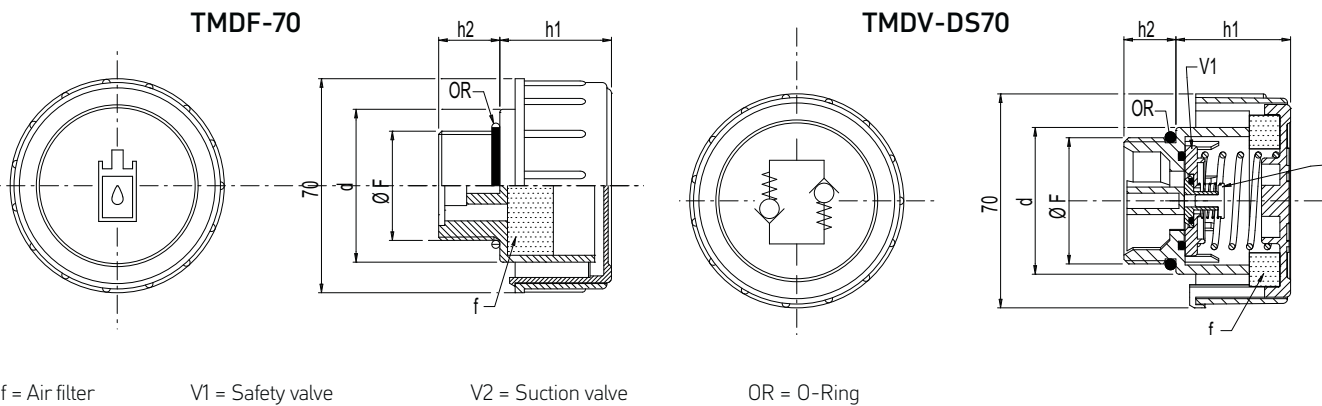
-The air filter protects the reservoir from dirt ingress and the safety valve protects from oil spillage in mobile or semi-mobile hydraulic applications.

-The TMDAV model is equipped with a steel level dipstick with zinc phosphate surface. On orders that exceed 250 pieces, the dipstick can be cut to custom length, and notches can be placed to indicate "MIN-MAX" oil level.

	Cod.	F	D	d	h1	h2	d1
	TMDV-DS/38 TMDAV-DS/38	3/8	41	28	22	11	4
	TMDV-DS/12 TMDAV-DS/12	1/2	41	28	23	12	4
	TMDV-DS/34 TMDAV-DS/34	3/4	47	33	22	12	5
	TMDV-DS/1 TMDAV-DS/1	1	52	38	25	12	5

TMDF-70 - FILLER BREATHERS WITH FILTER

TMDV-DS70 - DOUBLE-VALVE PRESSURISED FILLER BREATHERS



- Round headed filler breather, with vertical ribs for better grip, threaded connection.

- Model TMDV-DS70: complete black with graphic "double-valve" symbol.

- Model TMDF/70: black body red lid and graphic symbol "fill oil".

- Manufactured from Polyamide 66 ensuring high mechanical resistance at both low and higher temperatures (max working temp. 100°C-212 F); oil resistant O-Ring seal 70 Shore.

- The polyurethane air filter is located under the lid, easy to remove clean and reinstall; filtration degree 50 micron.

- Inside there is a plastic safety device with a double-valve

system; set at 0.35 bar (± 0.05), suction valve set at around 0.05 bar.

- This model is used on hydraulic applications where the airflow needs to be controlled in both directions, externally when internal overpressure is created and internally when, decreasing the fluid level and a vacuum is created.

- The air filter protects the reservoir from dirt ingress and the safety valve protects from oil spillage in mobile or semi-mobile hydraulic applications.

- The TMDAV model is equipped with a steel level dipstick with zinc phosphate surface. On orders that exceed 250 pieces, the dipstick can be cut to custom length, ant and notches can be placed to indicate "MIN-MAX" oil level.

Cod.				F	d	h1	h2
TMDF/114/70	TMDV/114/DS70	TMDFA/114/70	TMDAV/114/DS70	G 1 1/4"	53	41	14,5
TMDF/112/70	TMDV/112/DS70	TMDFA/112/70	TMDAV/112/DS70	G 1 1/2"	43	41	14,5
TMDF/2/70	TMDV/2/70			G 2"	69	42	16

TMDF/FC/70 - FILLER BREATHERS WITH FILTER , BAYONET AND STRAINER
TMDV/FC/DS70 - DOUBLE-VALVE PRESSURISED FILLER BREATHERS WITH
 BAYONET AND STRAINER

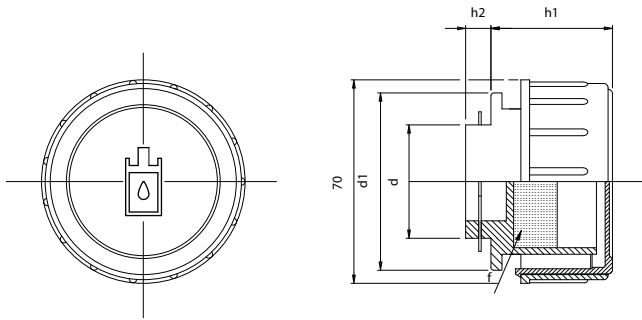


plugs, breathers and dipsticks

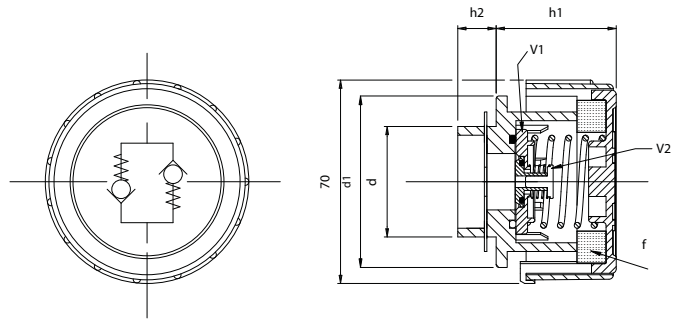
- Round headed filler breather, with vertical ribs for better grip, bayonet connection, safety chain and zinc plated steel flange, with filtering basket
- Model TMDF/FC/70: Black body, red lid with graphic symbol "fill oil" symbol .
- Model TMDV/FC/DS70: Black body, black lid with "double-valve" graphic symbol
- Manufactured from Polyamide 66 ensuring high mechanical resistance at both low and higher temperatures (max working temp. 100°C-212 F); oil resistant O-Ring seal 70 Shore.
- The polyurethane air filter is located under the lid, easy to remove clean and reinstall; filtration degree 40 micron.
- Strainer basket made from Polypropylene (PP) black colour. Resistant to oils, solvents and others chemical agents;

- flat flange gasket made from cork.
- Hardware included six zinc-plated steel screws for assembling.
- Inside the model (**TMDV/FC/DS70**) there is a plastic safety device with a double-valve system; set at 0.35 bar (± 0.05) , suction valve set at around 0.05 bar. On the model **TMDV/FC/70** the airflow capacity at a pressure of 50 unbat (0.73 psi) is 250 liters/minute.
- This model is used on hydraulic applications where the airflow needs to be controlled in both directions, externally when internal overpressure is created, internally when, decreasing the fluid level, a vacuum is created
- The air filter protect the reservoir from dirt ingress and the safety valve protect from oil spillage in mobile or semi-mobile hydraulic applications

T MDF/BY/70

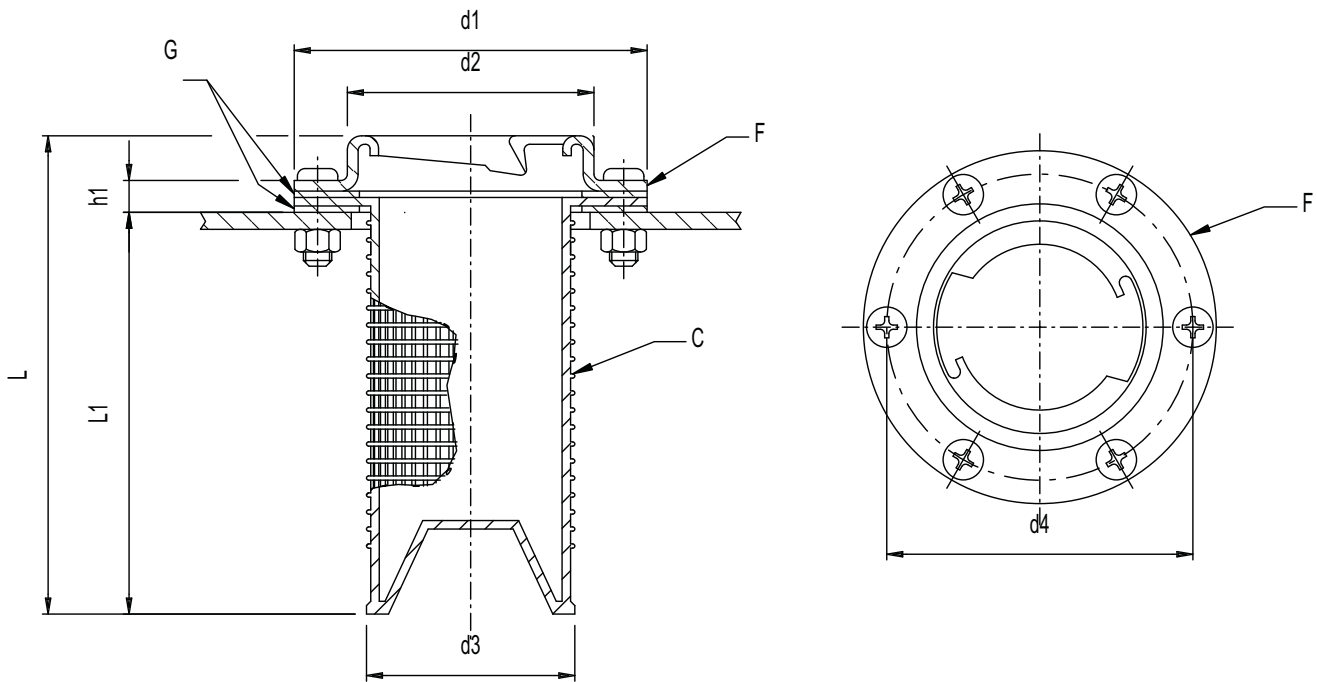


T MDV/BY/DS70



f = Air filter V1 = Safety valve V2 = Suction valve

Cod.	h1	h2	d
T MDF/BY/70 model with filter	41	14	37
T MDV/BY/DS70 model with double vent valve	41	14	37

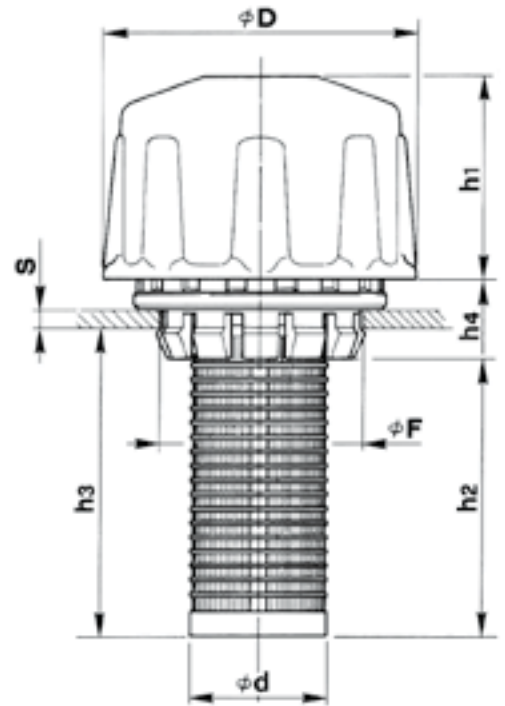
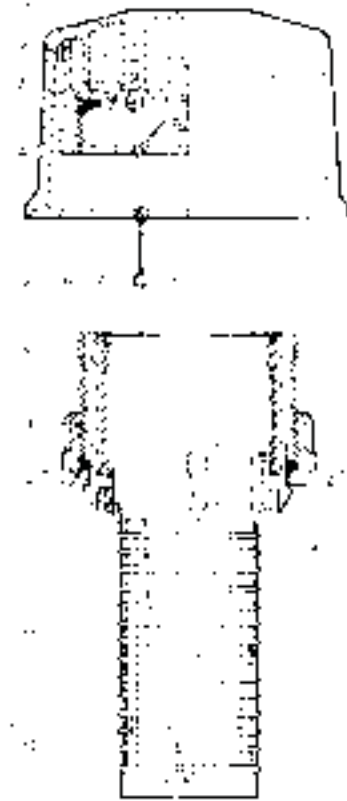


F = Fixing steel flange C = Plastic strainer G = Cork seal

Cod.	h1	d1	d2	d3	d4	L	L1
Flange and strainer	7	83	58	46	72±0,5	115	94

CTR - FILLER BREATHER WITH STRAINER – TANK TOP MOUNT

Cod.	Descrizione / Description
CTR	Filler breather without safety chain
CTR/C	Filler breather with safety chain



-Filler breather with strainer basket for tank-top installation. Assembly contains 3 parts:

-Top cap with breather made from Polyamide 66, black colour.

Contained in the cap is the filter made out of Polyurethane, with a Micron rating of 50 microns. The cap has an internal thread and screws onto the main body, located in the tank.

-Main body manufactured from technopolymer black contains threaded lockin ring and inside locking ring. The main body is placed in a pre-drilled hole (55 mm. min.,max 55,3 mm. diameter) in the top of the reservoir .

The wall thickness must not exceed 8 mm. and not be less than 2 mm.

With this filler breather drilling and tapping of mounting holes is not needed.

A safety chain is available, which connects the cap to the body, preventing misplacement of cap when removed.

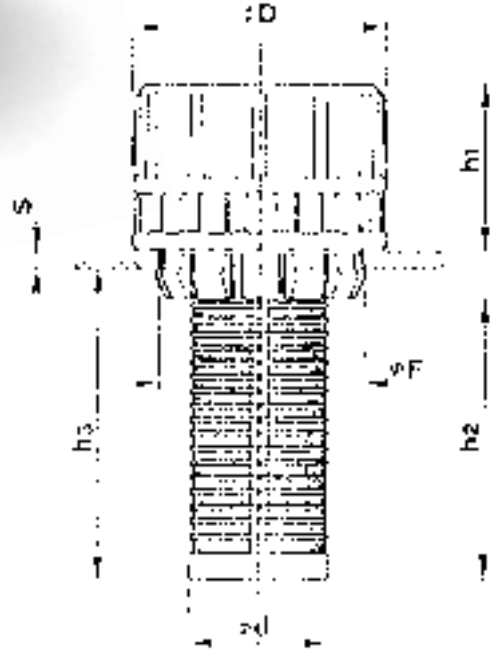
-Strainer basket material : Polypropilene, colored black, max operating temperature **80°C/176F**.

-Seal between tank and main body : O-Ring 70 shore

-Airflow capacity at a pressure of 50 mbar (0,73 psi) = 300 liters/minute

1	Filler Breather cap.	8	Main Body	D	88
2	Polyuretane Filter	9	Lock ring	h1	55
3	Inner Cap threaded (M60 x 2)	10	O-Ring	h2	80
4	Flat seal	11	Inside lock ring	h3	88
5	Breather holes	12	Filterbasket	h4	21
6	Connecting self tapping screws (3x)	13	Safety Chain screw (1)	d	38
7	Safety Chain	14	Tank top	S	2-8 mm

CTR/2 - FILLER BREATHER WITH STRAINER - TANK TOP MOUNT



-Filler breather for tank-top installation with strainer basket. Assembly contains 3 parts:

- Breather cap**, with vertical ribs, for easy tightening.
- Breather cap is produced from Polyamide 66, with a built in Polyurethane 50 microns foam filter element.
- The cap is female threaded and threads onto the main body located in the tank top.
- Red lid available with standard inscription OIL or GASOIL, or without description
- A safety chain is available, on the CTR-2/C model, which connects the cap to the body.
- Main body**: manufactured from technopolymer coloured

black. The inside locking ring has to be removed to insert the main body into a pre-drilled hole in the tank-top (Ø 55 mm. Ø 0,3 mm).

Once inserted the inside locking ring has to be installed, and the external locking ring can be tightened.

Tanktop thickness should be min. 2 mm, max. 8 mm

-**Strainer basket** manufactured from Polypropilene colour black.

-Max operating temperature **80°C/176F**, airflow capacity at a pressure of 50 mbar (0,73 psi) = 100 liters/minute

-Seal between tank-top and body : O-Ring 70 shore

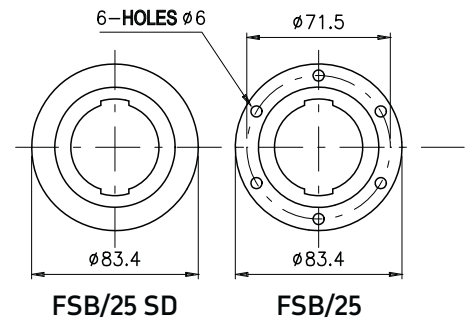
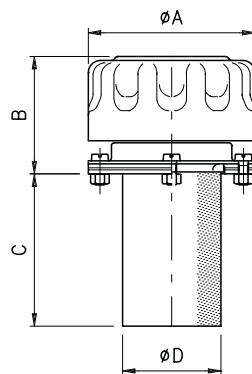
Cod.	ØF	ØD	Ød	h1	h2	h3	S
CTR-2	55 mm	70	38	46,5	80	88	2-8 mm
CTR-2/C	55 mm	70	38	46,5	80	88	2-8 mm

FSB - METAL FILLER BREATHER WITH STRAINER



FSB/05

FSB/25



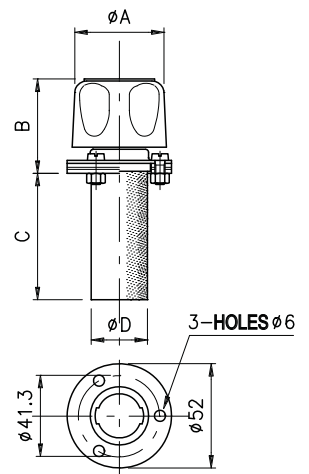
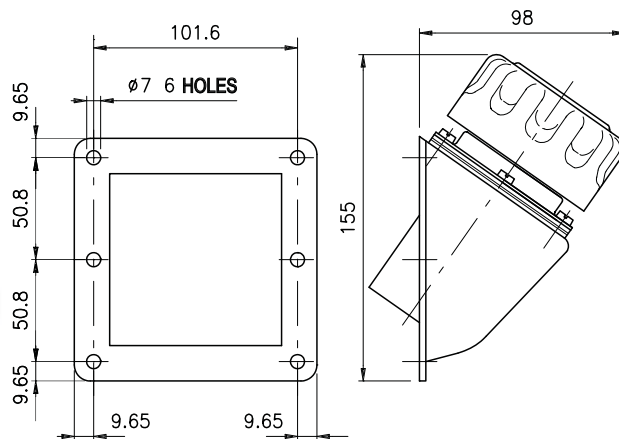
FSB/25 SD

FSB/25

plugs, breathers and dipsticks



FSB/25 BM



- Chrome plated steel ventilated cap, Polyurethane filter element 40 microns, airflow capacity 720 Litres/minute-max.
- Base, flange mounted with 6 bolts
Cap, bayonet fitting
- Version FSB/SD for welding to tank surface

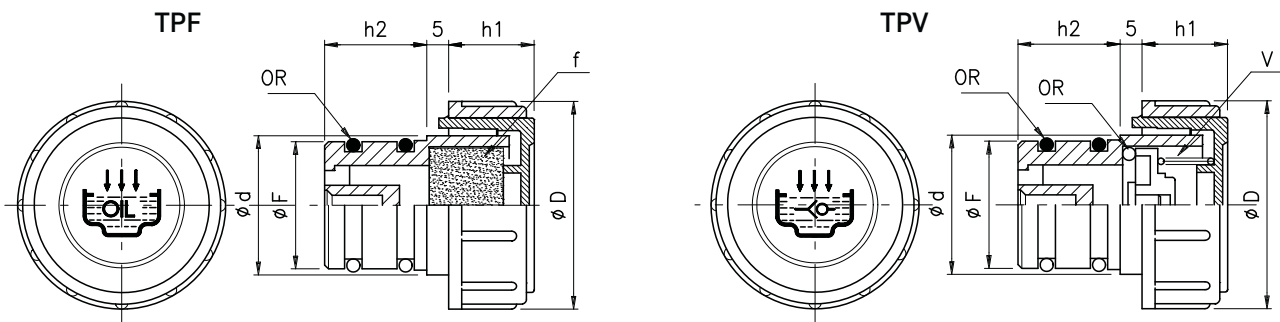
- Rugged cast aluminium housing (model FSB/BM)
- Standard metal strainer
- Supplied with gasket and M5 fixing bolts

Cod.	Aria / Airflow	A	B	C	D	Peso / weight gr.
FSB/05	150 Lt/min	46,5	44	65	27,5	96
FSB/25	720 Lt/min	80	58,5	78,5	49	300
FSB/25SD	720 Lt/min	80	55	105	38	290

TP - PRESS FIT FILLER BREATHERS

TPF - PRESS-FIT FILLER BREATHERS WITH FILTER

TPV - PRESS FIT FILLER BREATHERS WITH VENT VALVE



f = Air filter V = One-way check valve
OR = O-Ring NBR seal

- Press-fit filler breathers, with easy grip vertical ribs, they fit snugly into a pre-drilled hole and seal by means of two O-Rings seals located on the stem; hole tolerances $-0 +0.1$ mm.

- Manufactured from Polyamide 66 ensuring high mechanical resistance at both low and higher temperatures (max working temp. 100°C-212 F)

- The polyurethane air filter is located under the lid, easy to remove clean and reinstall; filtration degree 40 micron.

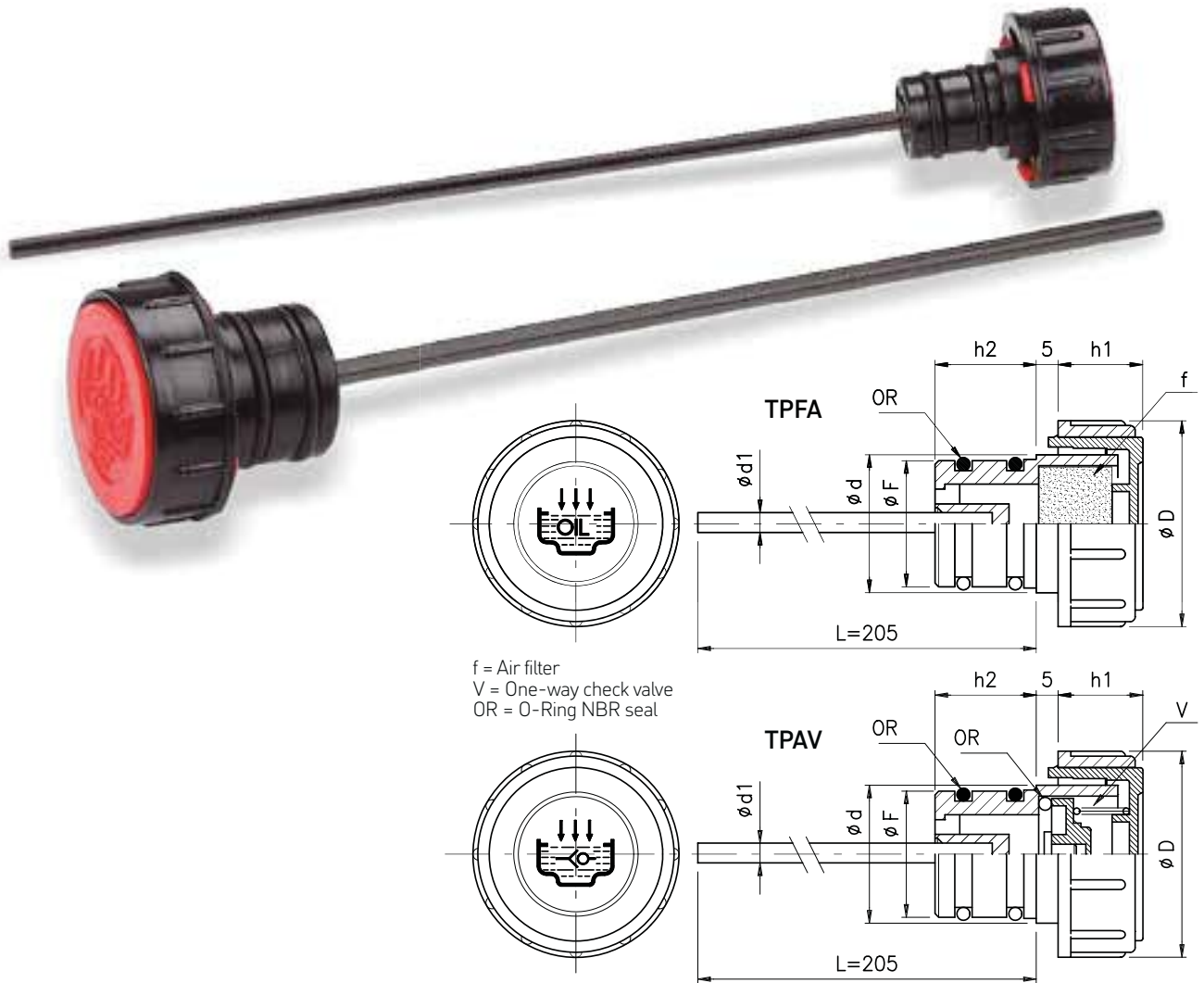
- Standard colour is black, red lid, with encased the graphic "fill" symbol and the text "OIL" (TP-TPF model), the TPV model also has the "vent valve" graphic symbol.

- The filler breathers model TP-TPF have a large breathing capacity and are suggested where a high volume of airflow takes place, for example hydraulic systems that utilize high ratio hydraulic cylinders; not recommended for usage on mobile equipment, where strong movement of the oil tank is present.

- The model TPV is equipped with a one-way vent valve, which opens when an overpressure of **0.20-0.25** bar takes place in the tank; under normal conditions of working this valve remains closed.

	Cod.		F	D	d	h1	h2
TP-18	TPF-18	TPV-18	18	36	23	17	20
TP-20	TPF-20	TPV-20	20	36	24	17	19
TP-26	TPF-26	TPV-26	26	41	28	17	21
TP-30	TPF-30		30	47	33	17	21

TPA - PRESS-FIT FILLER BREATHERS WITH DIPSTICK
TPFA - PRESS-FIT FILLER BREATHERS WITH DIPSTICK
TPAV - PRESS-FIT FILLER BREATHERS WITH VENT VALVE



- Press-fit filler breathers with level dipstick, with easy grip vertical ribs, they fits snugly into a pre-drilled hole and seal by means of two O-Rings seals located on the stem; hole tolerances -0 +0,1 mm.

- Manufactured from Polyamide 66 ensuring high mechanical resistance at both low and higher temperatures (max working temp. 100°C-212 F)

- The polyurethane air filter is located under the lid, easy to remove clean and reinstall; filtration degree 40 microns.

- Standard colour is black, red lid, with encased the graphic "fill" symbol and the text "OIL" (TPA-TPFA model), the TPAV model is additionally encased with the "vent valve" graphic symbol.

- The filler breathers model TPA-TPFA have a large

breathing capacity and are suggested where a high volume of airflow take place, for example hydraulic systems that utilize high ratio hydraulic cylinders; not recommended for usage on mobile equipment, where strong movement of the oil tank is present.

- The model TPAV is equipped with a one-way vent valve, which opens when an overpressure of 0.20-0.25 bar takes place in the tank; under normal conditions of working this valve remains closed.

- The standard dipstick version is 200 mm in length, measured from the surface that contacts the reservoir.

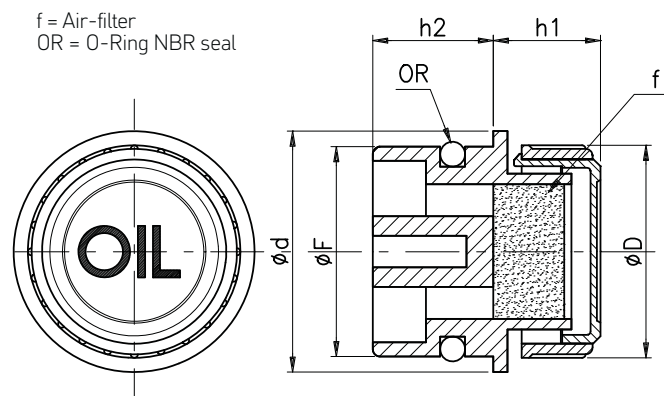
- On orders over than 250 pieces, the dipstick can be cut to a custom length and provided with "MIN-MAX" notches.

	Cod.			F	D	d	d1	h1	h2
TPA-18	TPFA-18	TPAV-18		18	36	23	4	17	20
TPA-20	TPFA-20	TPAV-20		20	36	24	4	17	19
TPA-26	TPFA-26	TPAV-26		26	41	28	4	17	21
TPA-30	TPFA-30			30	47	33	5	17	21

TPB - LOW PROFILE PUSH-FIT FILLER PLUGS

TPBS - LOW PROFILE PUSH-FIT BREATHER

TPBSF - LOW PROFILE PUSH-FIT BREATHER WITH FILTER



- Knurled profile filler plug produced from polyamide 66 maximum working temperature 100 degree Celsius.

- Push fit mounting into drilled hole (refer to corresponding sizes shown in table below), tolerance -0 mm + 0.1 mm with 1 mm/45 degree chamfer. The seal is made by NBR 70 Shore hardness o'ring fitted into external moulded groove.

- The TPBS/TPBSF models allow high levels of air passage through the vents located on the bottom of the head.

- The series series TPBSF includes a foam air filter element made from Polyurethane, filtration degree rate 40 micron.

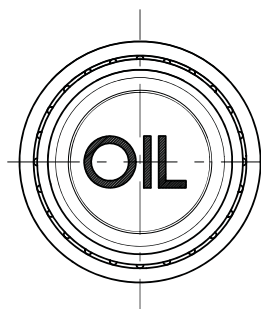
- These low profile plugs and breathers are normally applied where overhead space is limited.

	Cod.	F	D	d	h1	h2
TPB-18	TPBS-18 TPBSF-18	18	30	23	14	14
TPB-20	TPBS-20 TPBSF-20	20	30	24	14	15,5
TPB-26	TPBS-26 TPBSF-26	26	30	30	14	16,5
TPB-30	TPBS-30 TPBSF-30	30	30	34	14	17

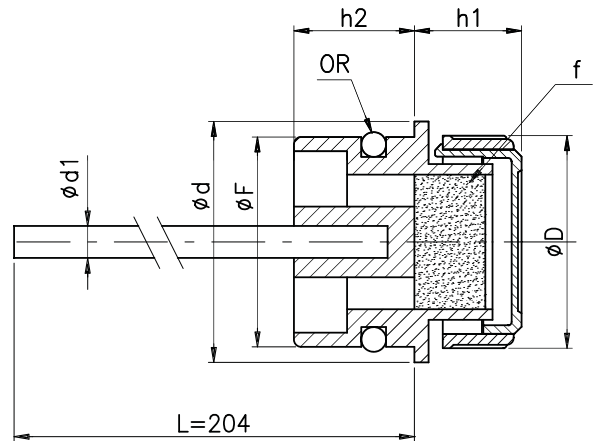
TPBA - LOW PROFILE PUSH-FIT FILLER PLUGS WITH DIPSTICK

TPBAS - LOW PROFILE PUSH-FIT BREATHER WITH DIPSTICK

TPBAF - LOW PROFILE PUSH-FIT BREATHER WITH FILTER AND DIPSTICK



f = Air-filter
OR = O-Ring NBR seal



- Knurled profile filler plug produced from polyamide 66 (max working temp. 100° Celsius) equipped with a level dipstick made from zinc plated round section.

- Push fit mounting into drilled hole (refer to corresponding sizes shown in table below), tolerance -0 mm + 0.1 mm with 1 mm/45 degree chamfer. The seal is made by NBR 70 Shore hardness o-ring fitted into external moulded groove.

- The standard dipstick is 200 mm in length, but on orders that exceed 250 pieces, the dipstick can be cut to custom length, and notches can be placed to indicate "MIN-MAX" oil level.

- **Special model FLEX:** the flexible version of level dipstick can be provided upon request for adequate quantities in flat

section. The surface finish is protected with zinc phosphate. Laser inscription min / max level indication can also be provided upon request. The flexible dipstick is suitable for applications that require special shaped profiles to be followed.

- The TPBAS/TPBAF models allow high levels of air passage through the vents located on the bottom of the head.

- The TPBAF includes a foam air filter element made from Polyurethane, filtration degree rate 40 micron.

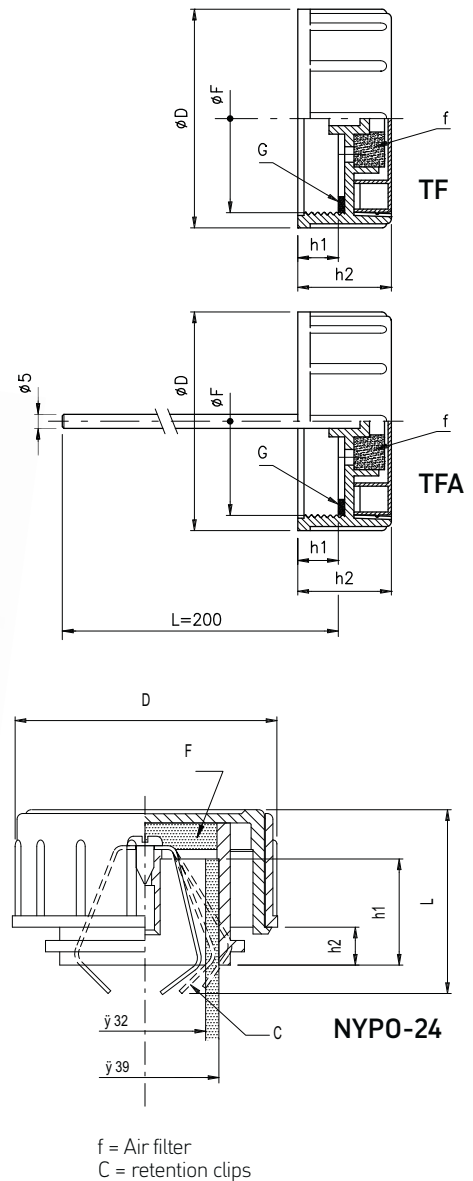
- These low profile plugs and breathers are normally applied where overhead space is limited.

	Cod.			F	D	d	h1	h2
TPBA/18	TPBAS/18	TPBAF/18		18	30	23	14	14
TPBA/20	TPBAS/20	TPBAF/20		20	30	24	14	15,5
TPBA/26	TPBAS/26	TPBAF/26		26	30	30	14	16,5
TPBA/30	TPBAS/30	TPBAF/30		30	30	34	14	17

TF - FILLER BREATHER CAPS WITH INTERNAL THREAD

TFA - FILLER BREATHER CAPS WITH INTERNAL THREAD AND DIPSTICK

NYPO-24 - PUSH-FIT FILLER BREATHER



Model TF/TFA

- Female threaded filler breather caps, thread: M60x2, or 2" BSP.

- Produced from Polyamide 66, this cap offers high mechanical resistance at both low and higher temperatures (max 100° C), whilst shock resistant.

- The standard Filler Breather cap is produced in the color Red for oil and Yellow for Diesel fuel. On large orders the Breather can be provided in custom colors.

- Inside the Filler Breather cap a Polyurethane foam filter resides, with a filtering degree of 50 Microns.

- Flat, Oil resistant NBR 70 shore seal.

- Model TFA comes with plated, steel dipstick (diameter 5 mm), produced in a length of 200 mm.

- In case of large orders, the dipstick can be cut to customers requirements. Further, the dipstick can be provided with "MIN-MAX" notches.

Model NYPO-24

- Filler breather with spring retention clips to suit 39mm OD and 32 mm ID steel boss.

- Red lid with "fill" graphic symbol.

- Filter element is 40 microns rating in polyurethane ; option of 10 microns for more arduous applications.

Cod.	F	D	h1	h2
TF/2 TFA/2	G 2"	67,5	15	30
TF/60.2 TFA/60.2	M60x2	67,5	15	30

Cod.	D	L	h1	h2
NYPO-24	70	49	35	8

AL/1 - DIPSTICKS, PRESS-FIT - ONE SEAL

ALS/1 - DIPSTICKS, PRESS-FIT, ONE SEAL AND BREATHER HOLE



- Press-fit dipstick with eye-handle made from zinc plated round section steel.

- Handle produced from thermoplastic material (Polyamide 66) featuring excellent mechanical resistance, dimensional stability and shocks resistance ; max working temperature 100°C.

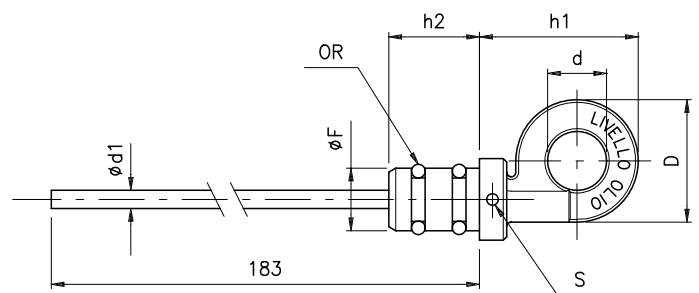
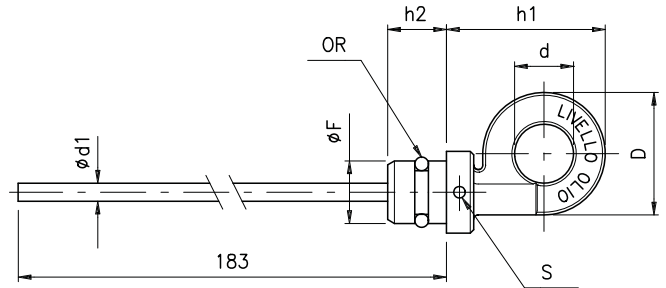
- Delivered with one O-Ring seal (model AL-S/1) or with two O-Rings (model AL-S/2) in NBR 70 Shore.

- Model ALS is provided with a breather hole located in the shoulder of the dipstick handle.

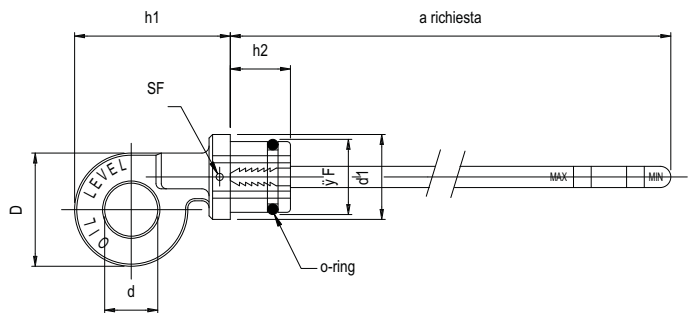
- The standard dipstick is 183 mm in length. but on orders that exceed 250 pieces, the dipstick can be cut to custom

AL/2 - DIPSTICKS, PRESS-FIT , TWO SEALS

ALS/2 - DIPSTICKS, PRESS-FIT, TWO SEALS AND BREATHER HOLE



S = Breather hole
 OR = O-Ring NBR seal

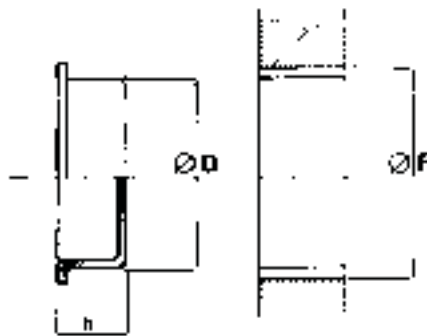


length, and notches can be placed to indicate "MIN-MAX" oil level ; upon request and for adequate quantities the steel dipstick can be supplied with the surface zinc phosphated (dark grey) or burnished (black).

- Special model FLEX - the flexible version level dipstick can be provided upon request for adequate quantities in flat section. The surface finish is protected with zinc phosphate. Laser inscription min/max level indication can also be provided upon request. The flexible dipstick is suitable for applications that require special shaped profiles to be followed.

Cod.	Ø F	D	d	d1	h2	h1
AL-1-14 ALS-1-14	14	27	13	4	13	34
AL-1-18 ALS-1-18	18	32	14	5	17	45
AL-1-20 ALS-1-20	20	32	14	5	18	44,5
AL-2-12	12	30	14	4	20	36
AL-2-14 ALS-2-14	14	27	13	4	20	34
AL-2-18 ALS-2-18	18	32	14	5	21	44
AL-2-20 ALS-2-20	20	32	16	5	21	44

PF - PROTECTION PLUGS



- Protection plugs manufactured from Low Density Polyethylene for female threaded items .

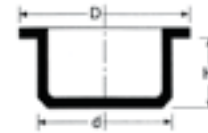
- Standard colour : Red

- Protects female threads and valves from dirt and damage under storage or shipping

- This product offers protection at affordable cost

Cod.	min. packing	Ø F	D	h
PF-18R	2000	G 1/8"	9	8,5
PF-14R	2000	G 1/4"	12	9
PF-38R	2000	G 3/8"	15,5	10,5
PF-12R	1000	G 1/2"	19	11,5
PF-34R	1000	G 3/4"	25	12,7
PF-1R	500	G 1"	30,5	11
PF-114R	500	G 1 1/4"	39,5	11,5
PF-112R	500	G 1 1/2"	46	11,5
PF-14.15R	2000	M14x1,5	12,5	10
PF-16.15R	2000	M16x1,5	14,2	10
PF-18.15R	2000	M18x1,5	16,5	10
PF-20.15R	1000	M20x1,5	18,5	10
PF-22.15R	1000	M22x1,5	20,2	10

01 S/T - PROTECTION PLUGS FOR FEMALE THREADS



Material: L.D. Polyethylene

Colour: Natural

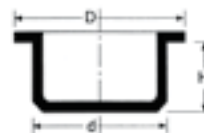
Minimum packing: 1000 pcs codes 01 ST/02 - 01 ST/40,5

500 pcs codes 01 ST/41 - 01 ST/67

for bigger dimensions ask for the quantities

Cod.	d	D	H	Metric threads		B.S.P.	Cod.	d	D	H	Metric threads		B.S.P.
01ST/02	2	6,5	3				01ST/25,5	25,5	29	10,5	M27x2		
01ST/02,5	2,5	6,5	3,5				01ST/26	26	30,5	10,5		M27x1,5	
01ST/03	3	6,5	4,5				01ST/26,5	26,5	30	10,5			
01ST/03,5	3,5	7	4,5	M4			01ST/27	27	31	9,5	M30		M28x1,5
01ST/04	4	7,5	5				01ST/27,5	27,5	31	10,5			
01ST/04,5	4,5	8	5	M5			01ST/28	28	32,5	10,5			
01ST/05	5	9	6	M6			01ST/28,5	28,5	32	10		M30x2	G 7/8"
01ST/05,5	5,5	9	6				01ST/29	29	32	9,5			M30x1,5
01ST/06	6	9,5	6	M7			01ST/29,5	29,5	33	10,5			
01ST/06,5	6,5	10	7				01ST/30	30	33	9,5	M33		
01ST/07	7	10	6	M8			01ST/30,5	30,5	34	10,5			G 1"
01ST/07,5	7,5	10,5	6,5		M8x1		01ST/31	31	35,5	10,5			M32x1,5
01ST/08	8	11	7				01ST/31,5	31,5	35	10,5		M33x2	
01ST/08,5	8,5	11,5	7,5	M10			01ST/32	32	37	10,5			
01ST/09	9	11,5	7,5		M10x1	G 1/8"	01ST/32,5	32,5	37	10,5	M36		
01ST/9,5	9,5	12,5	7,5				01ST/33	33	38	10,5			
01ST/10	10	13	8,5				01ST/33,5	33,5	37,5	10,5		M36x3	
01ST/10,5	10,5	13,5	8	M12	M12x1,5		01ST/34	34	38,5	10,5			
01ST/11	11	14	8,5		M12x1,25		01ST/34,5	34,5	38	10,5			
01ST/11,5	11,5	14,5	9		M12x1		01ST/35	35	40	10,5		M36x2	M36x1,5
01ST/12	12	15	8,5			G 1/4"	01ST/35,5	35,5	39	10,5	M39		
01ST/12,5	12,5	15,5	9	M14			01ST/36	36	41	11			
01ST/13	13	16	9		M14x1,5		01ST/36,5	36,5	40	10,5		M39x3	
01ST/13,5	13,5	16,5	9,5				01ST/37	37	42	10,5			M39x2
01ST/14	14	17	9,5				01ST/37,5	37,5	41,5	10,5			M39x1,5
01ST/14,5	14,5	17,5	9,5	M16			01ST/38	38	43	10,5	M42		
01ST/15	15	18	9,5		M16x1,5		01ST/38,5	38,5	42	10,5			
01ST/15,5	15,5	18,5	9,5			G 3/8"	01ST/39	39	44	10,5			
01ST/16	16	19,5	10	M18			01ST/39,5	39,5	43	11		M42x3	G 11/4"
01ST/16,5	16,5	19,5	10,5		18x2	M18x1,5	01ST/40	40	44,5	10,5			
01ST/17	17	20,5	10,5				01ST/40,5	40,5	45	11		M42x2	
01ST/17,5	17,5	20,5	10,5				01ST/41	41	45,5	10,5	M45		M42x1,5
01ST/18	18	21,5	10,5	M20			01ST/42	42	46,5	10,5			
01ST/18,5	18,5	23	10		20x2		01ST/43	43	47,5	10,5			
01ST/19	19	22	10,5		M20x1,5	G 1/2"	01ST/44	44	49	10,5	M48	M45x2	M45x1,5
01ST/19,5	19,5	23	10,5				01ST/45	45	50,5	10,5			
01ST/20	20	23,5	11	M22			01ST/46	46	50,5	10,5			G 11/2"
01ST/20,5	20,5	24,5	10,5		22x2		01ST/47	47	51,5	10,5	M52	M48x2	M48x1,5
01ST/21	21	24,5	11		M22x1,5	G 5/8"	01ST/48	48	52,5	10,5			
01ST/21,5	21,5	25,5	11	M24			01ST/48,5	48,5	53	10,5			
01ST/22	22	25,5	11				01ST/49	49	54,5	11		M52x3	
01ST/22,5	22,5	25,5	10,5		24x2		01ST/50	50	54	10			
01ST/23	23	27	10,5		M24x1,5		01ST/51	51	56	11	M56	M52x2	M52x1,5
01ST/23,5	23,5	27	10,5				01ST/52	52	57,5	11			
01ST/24	24	28	11				01ST/53	53	59	11			
01ST/24,5	24,5	28	10,5	M27			01ST/54	54	61	11			M55x1,5
01ST/25	25	28	12			G 3/4"	01ST/55	55	61	11			M56x1,5
							01ST/56	56	63	12		60x4	

01 S/T - PROTECTION PLUGS FOR FEMALE THREADS



Material: L.D. Polyethylene

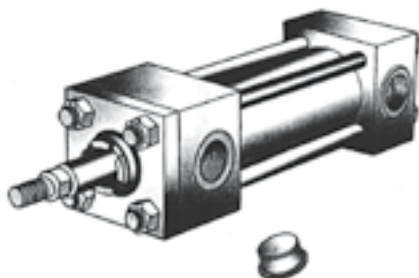
Colour: Natural

Minimum packing: 1000 pcs codes 01 ST/02 - 01 ST/40,5

500 pcs codes 01 ST/41 - 01 ST/67

for bigger dimensions ask for the quantities

Cod.	d	D	H	Rif. Ø	Cod.	d	D	H	Rif. Ø
01ST/57	56,5	61	10		01ST/90	89,5	93,5	9,5	
01ST/57,5	57,5	63	13,5	G. 2"	01ST/91	90	94,5	9,5	
01ST/58	58	65	11		01ST/92	91	95,5	9,5	
01ST/59	59	65	11		01ST/93	93	101	13,5	
01ST/60	60	64	11		01ST/94	93,5	98	9,5	
01ST/61	61	67,5	11		01ST/95	94	98	9,5	
01ST/61,5	61,5	67,5	13		01ST/96	96	104	13,5	
01ST/62	62	68	11		01ST/97	96,5	101	9,5	
01ST/63	62,5	66,5	9,5		01ST/98	97,5	102	9,5	
01ST/64	63,5	67,5	9,5		01ST/99	98	103	9,5	
01ST/65	65	69	10		01ST/100	99	104	10,5	
01ST/66	65,5	71	10,5		01ST/101	100,5	105	10,5	
01ST/67	67	73	10		01ST/102	102	104	10	
01ST/68	68	75	11		01ST/103	103	113	13,5	
01ST/69	68,5	75	10,5		01ST/104	103,5	107	10,5	
01ST/70	69,5	74	11		01ST/105	104,5	108	10,5	
01ST/71	71	77	11		01ST/106	105,5	109	10,5	
01ST/72	71,5	79	12		01ST/107	107	115	13,5	
01ST/73	72	76,5	9,5		01ST/108	107,5	112	10,5	
01ST/74	73	77,5	10,5	G. 1 1/2"	01ST/110	109,5	114	12	
01ST/74,5	74,5	80	12	G. 1 1/2"	01ST/111	111	116,5	13	G. 4"
01ST/75	75	79	9,5		01ST/112	111,5	115	10	
01ST/76	75,5	80	10,5		01ST/115	115	124	15	
01ST/77	76	81	9,5		01ST/120	120	130	15,5	
01ST/78	77	82	10,5		01ST/121	121	123	12	
01ST/79	79	86	13,5		01ST/125	125	136	16	
01ST/80	79,5	84	9,5		01ST/130	129,5	134,5	13	
01ST/81	80,5	85	9,5		01ST/132	132	141	13,5	
01ST/82	81	85,5	9,5		01ST/140	140	151	15,5	
01ST/83	82	86,5	9,5		01ST/150	150	160	16	
01ST/84	83,5	90	10		01ST/160	160	170	16	
01ST/85	84	88,5	9,5		01ST/167	167	178	17,5	
01ST/85,5	85,5	92	11	G. 3"	01ST/170	170	175	13,5	
01ST/86	85	90	9,5		01ST/180	180	191	16	
01ST/86,5	86	90,5	9,5		01ST/184	184	194	16	
01ST/87	86,5	90,5	9,5		01ST/186	186	194	16	
01ST/88	87	91,5	9,5		01ST/190	190	195	13,5	
01ST/89	88	92,5	9,5		01ST/200	200	211	15	



13 PT - PIPE PROTECTION CAPS



Material : L.D. Polyethylene
Colour : Natural or Yellow

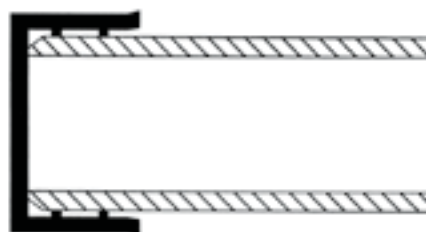
Cod.	Ø d	Threads reference	H	Min. packing
13PT/04	4		22	1.000
13PT/05	5		18	1.000
13PT/06	6		18	1.000
13PT/06,35	6,35		18	1.000
13PT/07	7		18	1.000
13PT/08	8		19	1.000
13PT/09,6	9,6	G.1/8"	18	1.000
13PT/10	10		18	1.000
13PT/11	11		15	1.000
13PT/11,5	11,5		19,5	1.000
13PT/12	12		18	1.000
13PT/12,7	12,7		18	1.000
13PT/13	13	G.1/4"	18	1.000
13PT/13,7	13,7		18	1.000
13PT/14	14		20	1.000
13PT/15	15		19	1.000
13PT/15,5	15,5		19,5	1.000
13PT/16	16		20	1.000
13PT/17	17	G.3/8"	20	1.000
13PT/18	18		20	1.000
13PT/18,5	18,5		20	1.000
13PT/19	19		20	1.000
13PT/20	20		20	1.000
13PT/21,3	21,3	G.1/2"	16	1.000
13PT/22	22		20	1.000
13PT/23,2	23,2		19	1.000
13PT/24	24		20	1.000
13PT/24,8	25,4		20	1.000
13PT/26	26		20	1.000
13PT/26,9	26,9	G.3/4"	20	1.000
13PT/28,5	28,5		23,5	1.000
13PT/30	30		25	1.000
13PT/31,8	31,8		20	1.000
13PT/33,7	33,7	G.1"	20	1.000
13PT/35	35		25	1.000
13PT/36,5	36,5		20	1.000
13PT/38	38		20	1.000
13PT/40	40		25	1.000
13PT/41,3	41,3		20	1.000
13PT/42,4	42,4	G 1 1/4"	25	1.000
13PT/44,5	44,5		25	1.000
13PT/45,4	45,4		20	1.000

13 PT - PIPE PROTECTION CAPS

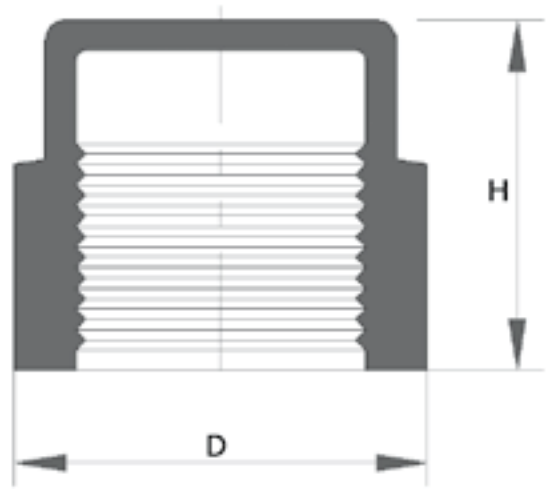


Material : L.D. Polyethylene
Colour : Natural or Yellow

Cod.	Ø d	Threads refer- ence	H	Min. packing
13PT/47,5	47,5		25	1.000
13PT/48,3	48,3		25	1.000
13PT/50	50	G 1 1/2"	28	1.000
13PT/51	51		27,5	1.000
13PT/52	52		28	800
13PT/54	54		28	1.000
13PT/55	55		29	750
13PT/57	57	G 1 3/4"	27	1.000
13PT/59	59		27	1.000
13PT/60,3	60,3		27	1.000
13PT/63,5	63,5		27	600
13PT/65	65	G. 2"	35	500
13PT/67	67		35	500
13PT/70	70		35,5	500
13PT/73	73		30	600
13PT/75	75		28	600
13PT/76	76	G. 2 1/2"	30	600
13PT/77	77		35	700
13PT/78	78		29,5	500
13PT/80	80		29,5	500
13PT/81	81		29,5	500
13PT/82	82		30	500
13PT/83	83		30	500
13PT/85	85		30	350
13PT/88,9	88,9		35	500
13PT/90	90		35	500
13PT/92,4	92,4		25	350
13PT/95	95	G. 3"	37,5	400
13PT/98	98		37,5	350
13PT/100	100		31	250



EP 510 - THREADED CAPS



Material : L.D. Polyethylene
 Colour : Yellow

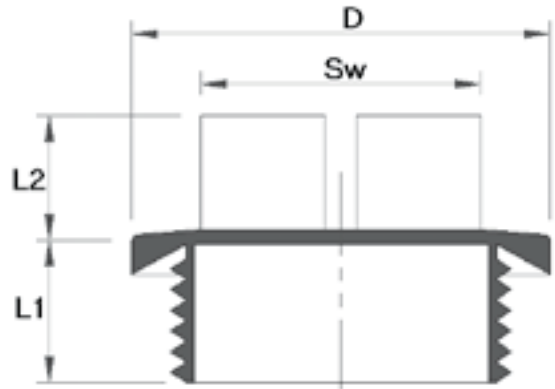
Cod.	Metric threads	Dimensions		Min. packing
		D	H	
EP510/ M8x1	M8x1	12	12	1.000
EP510/M10x1	M10x1	14,5	14	1.000
EP510/M 12x1	M12x1	16,5	14	1.000
EP510/ M 12x1,5	M12x1,5	16,5	14	1.000
EP510/ M 14x1,5	M14x1,5	18,5	14	1.000
EP510/ M 16x1,5	M16x1,5	20,5	14	1.000
EP510/ M 18x1,5	M 18x1,5	22	15	1.000
EP510/ M 20x1,5	M 20x1,5	24,5	16	1.000
EP510/ M 22x1,5	M 22x1,5	26,5	16	1.000
EP510/ M 24x1,5	M 24x1,5	28,5	16	1.000
EP510/ M 26x1,5	M 26x1,5	31	15	1.000
EP510/ M 27x2	M 27x2	32	15	1.000
EP510/ M 30x1,5	M 30 x1,5	35	16	1.000
EP510/ M 30x2	M 30 x 2	35	16	1.000
EP510/ M 36x1,5	M 36x1,5	42	18,5	500
EP510/ M 36x2	M 36 x 2	42	18,5	500
EP510/ M 42x2	M 42 x 2	50,5	18	250
EP510/ M 45x1,5	M 45 x 1,5	51,5	20,5	250
EP510/ M 45x2	M 45 x 2	51,5	20,5	250
EP510/ M 52x2	M 52 x 2	59	20	250
GAS (B.S.P.)				
EP510/ 1/8"	G. 1/8"	13	12	1.000
EP510/ 1/4"	G. 1/4"	16	13	1.000
EP510/ 3/8"	G. 3/8"	20,5	14,5	1.000
EP510/ 1/2"	G. 1/2"	24,5	15,5	1.000
EP510/ 5/8"	G. 5/8"	28	15,5	1.000
EP510/ 3/4"	G. 3/4"	30,5	16,5	1.000
EP510/ 1"	G. 1"	40	19,5	500
EP510/ 1 1/4"	G. 1 1/4"	48	17,5	500
EP510/ 1 1/2"	G 1 1/2"	56	18	250
EP510/ 2"	G 2"	68	19	250
EP510/ 2 1/2"	G 2 1/2"	83	31	50

APPLICATIONS



Made to protect male threads

EP 434 - THREADED CAPS



Material : Polyethylene
 Colour : Red

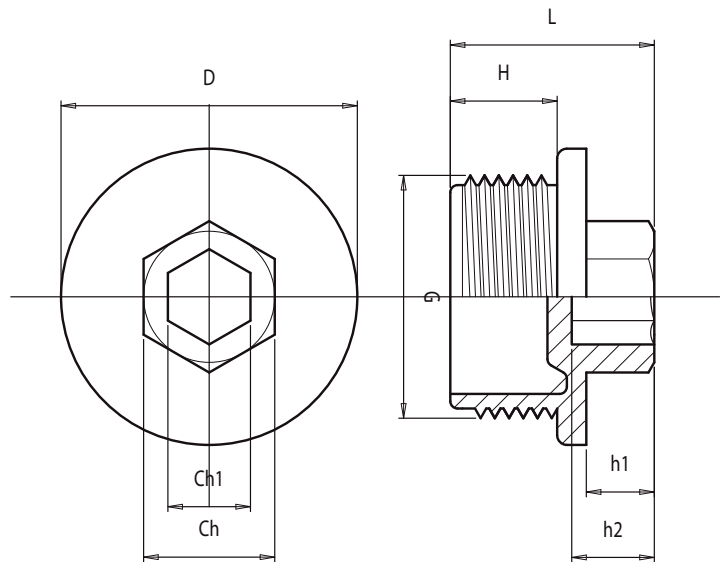
APPLICATIONS



Made to protect threaded holes

Cod.	Metric threads	Dimensions				Min. packing
		D	L1	L2	Sw	
EP434/M10x1	M10x1	14,2	7	10	10	2.000
EP434/M 12x1,5	M12x1,5	17,2	10	10	13	2.000
EP434/ M 14x1,5	M14x1,5	19,2	10	10	13	2.000
EP434/ M 16x1,5	M16x1,5	22	10	10	17	2.250
EP434/ M 18x1,5	M 18x1,5	24	10	11	17	1.800
EP434/ M 20x1,5	M 20x1,5	26	10	14	19	1.400
EP434/ M 22x1,5	M 22x1,5	27,2	10	14	19	1.250
EP434/ M 24x1,5	M 24x1,5	31,5	12	14	24	1.700
EP434/ M 26x1,5	M 26x1,5	32	10	14	24	1.700
EP434/ M 27x2	M 27x2	32,3	13	14	24	1.500
EP434/ M 33x2	M 33x2	40,4	13	14	27	900
EP434/ M 42x2	M 42 x 2	50	13	15	36	550
GAS (B.S.P.)						
EP434/ 1/8"	G. 1/8"	16,8	9	10	13	2.000
EP434/ 1/4"	G. 1/4"	19,2	9	10	13	2.000
EP434/ 3/8"	G. 3/8"	22,2	9	11	17	2.000
EP434/ 1/2"	G. 1/2"	27,2	12	13	19	2.500
EP434/ 3/4"	G. 3/4"	32,3	12	13	24	1.600
EP434/ 1"	G. 1"	40	15	14	27	1.800
EP434/ 1 1/4"	G. 1 1/4"	50,4	15	15	36	1.100
EP434/ 1 1/2"	G 1 1/2"	55,4	15	15	41	900
EP434/ 2"	G 2"	68,4	15	15	55	500

TMEG - THREADED CAPS



Material : Polyethylene
 Colour : Red

Cod.	Threads GAS (B.S.P.)	Dimensions		Min. packing
		D	H	
TMEG 1/8"	G. 1/8"	16,2	9	1.000
TMEG 1/4"	G. 1/4"	18,1	10	1.000
TMEG 3/8"	G. 3/8"	21	8,5	1.000
TMEG 1/2"	G. 1/2"	25,2	10,6	500
TMEG 3/4"	G. 3/4"	31,3	11	500
TMEG 1"	G. 1"	38	12,7	500

Chemical Resistance TROGAMID T

General remarks

The chemical resistance of TROGAMID T was measured by storing test specimens in the media to be analyzed for six months at 23 °C. At higher temperatures, both the dissolving capacity and tendency toward stress-crack formation increase. If you are considering applying TROGAMID at a higher temperature, it is important to first check whether TROGAMID would be suitable at the planned operating temperature. Testing consists of storing test specimens so that they are

strain-free and completely surrounded by the test medium. Internal stresses, which always occur in finished products to a more or less strong extent in practice, have a marked effect on the resistance of TROGAMID T. Suitability for use should therefore be tested in each case. More information about the durability of TROGAMID T products in different media can be obtained from our Technical Marketing department.

Chemical and solvent resistance of TROGAMID T5000

Medium (23°C):	Evaluation
Acetone	●
Acrylonitrile	□ (1)
Adipinic acid, sat.	■
Allyl alcohol	□ (2)
Aluminum sulfate, sat.	■
Ammonium acetate, sat.	■
Ammonium carbonate, sat.	■
Ammonium iron(II) sulfate, sat.	■
Ammonium iron(III) sulfate, sat.	■
Ammonium nitrate, sat.	■
Ammonium phosphate, sat.	■
Ammonium sulfide, 40%	● (3)
Amyl acetate	■
Amyl alcohol	□ (2)
Aniline	□ (2)
Anisole	■
B	
Barium hydroxide, 10%	■
Benzaldehyde	□ (1)
Benzene	■
Benzoic acid, sat.	● (3)
Bromine, liquid	□ (2)
1,3-butanediol	□ (1)
1,4-butanediol	□ (1)
2,3-butanediol	□ (1)
Butyl acetate	■
n-butyl alcohol	□ (2)
t-butyl alcohol	□ (1)
Butylene glycol	□
t-butyl methyl ether	■
C	
Carbon disulfide	■
Carbon tetrachloride	■

Medium (23°C):	Evaluation
Chloroform	□ (1)
Chlorosulfuric acid	□ (2)
Crotonaldehyde	□ (2)
Cyclohexane	●
D	
Dibutylphthalate	■
1,2-dichlorobenzene	■
1,2-dichloroethane	●
1,2-dichloroethylene	□ (1)
Difluorodichloromethane	■
Difluoromonochloromethane	●
Diisobutylketone	■
Diisopropyl ether	■
Dimethylformamide	□ (2)
1,4-dioxane	● (3)
E	
Ethyl acetate	■
Ethyl alcohol	□ (1)
Ethylamine, 33%	● (3)
Ethylbenzene	■
Ethylene diamine	□ (2)
Ethylene glycol	□ (3)
Ethyl ether	■
F	
Fluorodichloromethane	□
Formaldehyde solution	■
Formic acid, conc.	□ (2)
Furfuralcohol	□ (2)
G	
Gasoline (5% methanol)	□ (2)
Gasoline	■
Glacial acetic acid	□ (2)
H	

Medium (23°C):	Evaluation
n-heptane	■
n-hexane	■
Hexanetriol	● (3)
Hydrazine hydrate, 2%	■
Hydrochloric acid, 2%	■
Hydrochloric acid, 10%	■
Hydrochloric acid, conc.	□ (1)
Hydroxylamine, 30%	■
I	
Iron (II) sulfate, sat.	■
Iron (III) sulfate, sat.	■
Isoamyl alcohol	□ (2)
Isooctane	■
Isopropanol	□ (1)
K	■
Kerosene	■
M	
Methylene chloride	□
Methyl ethyl ketone	□ (1)
Monofluorotrichloromethane	■
N	
Nitric acid, 2%	●
Nitric acid, 10%	●
Nitric acid, 30%	■
Nitrobenzene	□
P	
Paraffin oil	■
Potassium chlorate, sat.	●

Medium (23°C):	Evaluation
Potassium chloride, sat.	■
Potassium dichromate, sat.	■
Potassium hydroxide solution, 50%	■
Potassium iodide, sat.	■
Potassium nitrate, sat.	■
Potassium perchlorate, 10%	■
n-propanol	□ (2)
Propylene glycol	□ (1)
S	
Sodium hydroxide solution, 5%	■
Sodium hydroxide solution, 10%	■
Sodium hydroxide solution, 50%	■
Sulfuric acid, 10%	■
Sulfuric acid, 40%	■
Sulfuric acid, conc.	□ (1)
T	
Tartaric acid, sat.	● (1)
1,1,2,2-tetrafluorodichloroethane	■
Toluene	■
Trichloroethylene	■
1,2,2-trifluorotrichloroethane	■
Trioctyl phosphate	■
X	
Xylene	■

- = resistant
- = conditionally resistant
- = not resistant

Supplementary abbreviations for the chemicals listed:
sat. = saturated solution in water at 23 °C
conc. = concentrated

Supplementary numbers for "conditionally resistant" and "not resistant":
(1) = stress-crack formation, (2) = dissolving
(3) = discoloration, impairment of transparency



ACCESSORIES FOR
HYDRAULIC COMPONENTS