

FUEL OIL SYSTEM COMPONENTS



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Watts Cazzaniga designs a large part of the components used in building up a fuel oil system such as: mechanical and pneumatic level indicators, multi-function dip units, various types of filters, leak detection systems and various accessories. Range and quality, combined with rigid commercial professional standards and continuous search for new solutions and improvements, lie behind the current success of WATTS Cazzaniga: such success is also thanks to the relationship of respect and trust with all operators in the heating industry.

REGULATORY ASPECTS

Italian D.P.R. N° 1391, 22.12.1970: Regulation of the implementation of Act N° 615, 13th July 1966, carrying measures against atmospheric pollution.

Art. 5 - TANKS FOR COMUSTIBLE LIQUIDS

- 5.3 - The fill holes for the combustible liquids should be designed for hermetic sealing (TC50/65 filler cap with hermetically sealed cover).
- 5.6 - The burner supply pipes should be provided with a device to allow easy withdrawal of test samples of the fuel circulating in the pipe. (Filters RG2-RV2-RV1-RZ: allow shutting off the piping through a valve and unscrewing the bowl containing the fuel to be tested).

Art. 10 - BURNERS

- 10.11 - It is obligatory to install a fuel filter device on the burner supply lines; such device should be located so as to allow its easy cleaning and inspection (Filters RG2-RV2-RV1-RZ-V1).

Interior Ministry, Central Management. Fire-fighting services, circular N° 73, 29.7.1971, carrying the new safety regulations for heating systems running on combustible liquids.

FIELD OF APPLICATION

These regulations apply to heating systems with capacity higher than 30,000 kcal/h up to 4,000,000 kcal/h running on petroleum-derived combustible liquids.

TANK CHARACTERISTICS

- 3.1. The tanks should have adequate protection against corrosion and they should be provided with:
- omission
 - omission
 - device designed to interrupt, during the filling phase, the flow of fuel when 90% of the geometric capacity of the tank is reached. Such device must have the approval of the Interior Ministry following tests carried out at the Centro Studi ed Esperienze Antincendi (Centre for Fire Studies and Experiments), Rome. (SW90 relief valve)

BURNER FEED SYSTEM

- 4.1 The burner can be fed by suction, gravity or forced circulation. In the case of gravity feed or via siphon or forced circulation, the pipe supplying liquid to the burner should be provided with an

automatic shut-off device which allows the fuel to flow only while the burner is operating. Such device should have suitable characteristics in relation to the upstream pressure of the device. When such device has successfully passed the tests carried out on the prototype at the Centro Studi ed Esperienze Antincendio, it is to be considered as suitable. (SIC10 diaphragm valve, M10/M15 solenoid valve).

- 4.2 The fuel supply pipe should also be provided with a quick shut-off device which can be remotely controlled outside the tank and boiler rooms. (MB220 dip unit for tanks, LAC fire lever)
- 4.3 In the case of gravity feed, directly or via siphon, the return pipe should be provided with check valve (RG2-RV2 filters, VRU check valve)

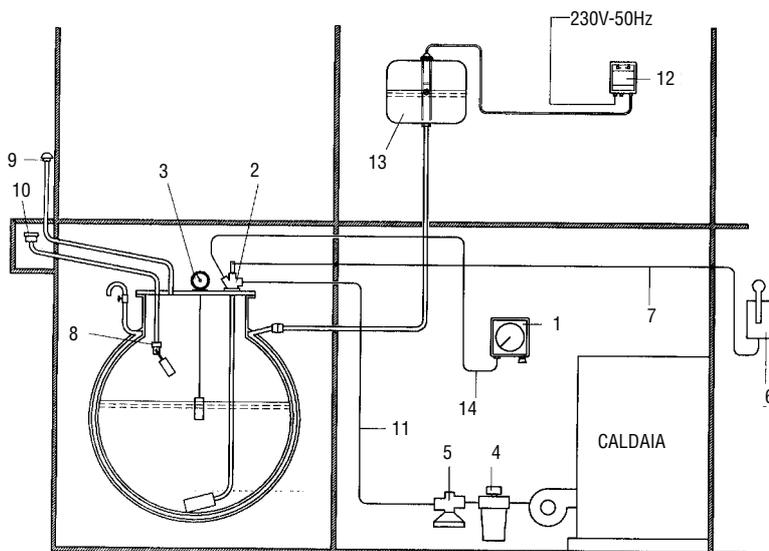
At least one of the shut-off devices in accordance with points 4.1 and 4.2 should be installed outside the boiler room.

N.B. During the design and manufacturing stages of the system, due observance should also be made of Act 10/91 and relative implementation regulation (DPR 412/93).

DIN standard and European Directives for double-wall tanks

The risk of hazardous contaminations caused by leaks from the tanks of inflammable liquids falling in Classes IIA, IIB and IIC, has required legislators to adapt the standards to avoid such problems.

Application example is the DIN standard which imposes installation of double wall tanks with LAG device to indicate leaks of hazardous liquids before they can be dispersed in the environment.



Key :

- | | |
|--------------|-----------------------------|
| 1. TLM | Pneumatic lever indicator |
| 2. MB | Multi-function dip valve |
| 3. M200V | Mechanical level indicator |
| 4. RG-RV | Fuel oil filter |
| 5. SIC10 | Diaphragm valve |
| 6. LAC | Fire lever |
| 7. CL50 | Pull lever cable |
| 8. SW90 | Load limiting valve |
| 9. C25/32 | Vent cap |
| 10. TC50/65 | Filler cap |
| 11. TECAL-AR | Coated aluminium pipe |
| 12. LAG/N | Leak indicator unit |
| 13. BA | Tank, leak indicator system |
| 14. PE50 | Polyethylene tube 4x6 |

MOUNTING

The TELEVAR pneumatic level indicator is fastened to the wall via the 3 external mounting slots with screws and wall plugs. Plastering and decorating should be finished before proceeding to mount the indicator on the wall to avoid risk of damage to the instrument.

If it is really necessary to mount the instrument before such work, protect it properly against knocks or deposits of foreign matter.

CALIBRATION

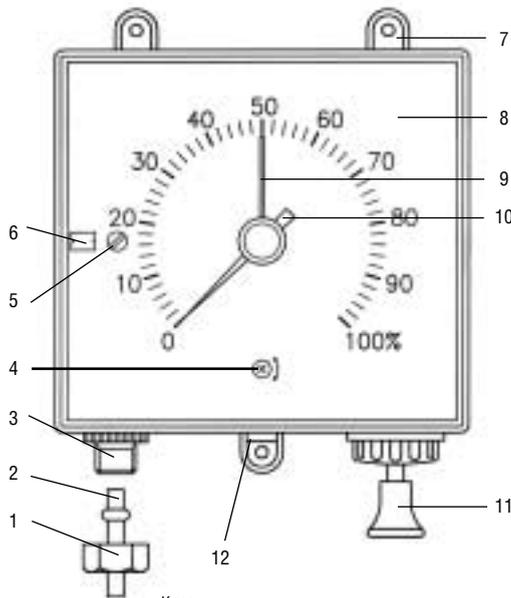
To calibrate the level indicator, proceed as follows:

1. Remove the transparent cover by pressing the opening tab (12).
2. Make sure that the instrument is at atmospheric pressure (nut 1 loosened).
3. Calibrate the instrument by turning calibration screw (5) until index K appears in the sight window (6). Index K corresponds to the tank diameter (or height) in metres.
4. Reset pointer (10) by turning resetting screw (4).
5. Refit the transparent cover.
6. Insert pipe (2) fully home in connection (3), then securely tighten nut (1).

THE TELEVAR LEVEL INDICATOR IS CALIBRATED FOR MEASURING THE CONTENTS OF A FUEL OIL TANK

To measure contents of other liquids:

1. Identify the K coefficient corresponding to the specific gravity of the liquid concerned in relative chart.
2. Calibrate the instrument as described in previous point 3 with reference to the K coefficient deduced from the chart.



Key :

1. Lock nut
2. Connecting tube
3. Tube connection
4. Pointer resetting screw
5. Calibration screw
6. K coefficient index
7. Mounting slot
8. % reading dial
9. Manual reference index
10. Indicating pointer
11. Pump
12. Cover opening tab



TLM

TELEVAR.

Universal remote pneumatic level indicator. For tanks of any shape and height between 900 and 3000 mm (Item ...103), and between 3000 and 5000 mm (Item ... 105).

Part No.

Tank

0101103
0101105

h = 3 m
h = 5 m

DESIGN FEATURES

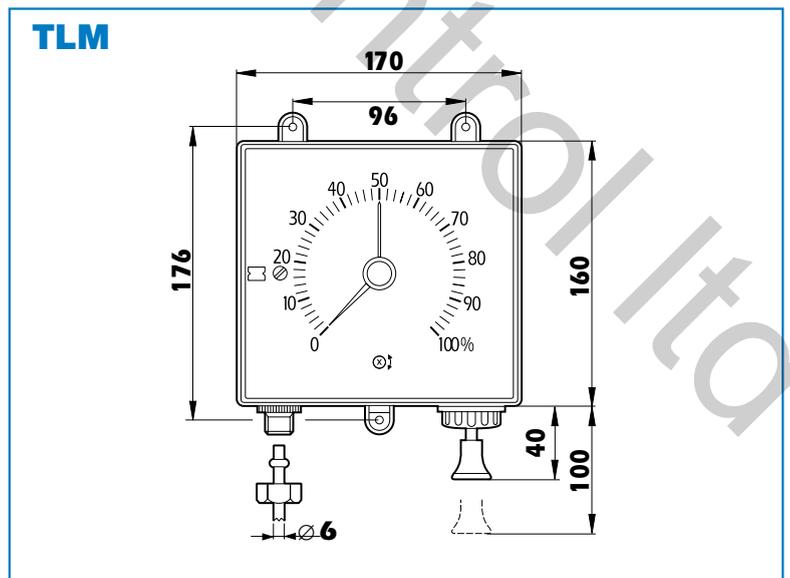
Dimensions	170 x 160 x 65 mm
Casing	High impact plastic with wall mounting slots
Cover	Transparent high impact plastic with opening tab
Connections	With O-ring and nut suitable for any tube OD 6 mm
Diaphragm	Brass sheet, with pneumatic linear expansion
Transmission mechanism	Type with precision clock mechanism
Internal connections	Silicone tubing
Pressure protection	Air metering capillary with mechanical stop

TECHNICAL CHARACTERISTICS

Range of adjustment of the measurable height	From 900 mm to 3.000 mm fuel oil column (d = 0,84 kg/dm ³)
Dial	Graduated in % cylindrical tank volume
Accuracy	±2%
Max. measuring distance	50 metres

It is possible to superimpose a dial in litres, for cylindrical, parallelepiped and spherical tanks, without any modification to the instrument or the calibration. Complete with compensating screw for resetting the pointer.

Overall dimensions (mm)



K COEFFICIENT CHART

	SPECIFIC GRAVITY OF THE LIQUID															
	0,70	0,72	0,74	0,76	0,78	0,80	0,82	0,84	0,86	0,88	0,90	0,92	0,94	0,96	0,98	1,00
900								0,90	0,92	0,94	0,96	0,99	1,01	1,03	1,05	1,07
950								0,95	0,97	1,00	1,02	1,04	1,06	1,08	1,11	1,13
1000						0,95	0,98	1,00	1,02	1,05	1,07	1,10	1,12	1,14	1,17	1,19
1100				1,00	1,02	1,05	1,07	1,10	1,13	1,15	1,18	1,20	1,23	1,26	1,28	1,31
1200	1,00	1,03	1,06	1,08	1,11	1,14	1,17	1,20	1,23	1,26	1,29	1,31	1,34	1,37	1,40	1,43
1300	1,08	1,11	1,14	1,18	1,21	1,24	1,27	1,30	1,33	1,36	1,39	1,42	1,45	1,48	1,52	1,55
1400	1,17	1,20	1,23	1,27	1,30	1,33	1,37	1,40	1,43	1,47	1,50	1,53	1,57	1,60	1,63	1,65
1500	1,25	1,26	1,32	1,36	1,39	1,43	1,46	1,50	1,54	1,57	1,60	1,64	1,70	1,70	1,75	1,80
1600	1,33	1,37	1,41	1,45	1,48	1,52	1,56	1,60	1,64	1,67	1,70	1,75	1,80	1,80	1,85	1,90
1700	1,42	1,46	1,50	1,54	1,58	1,62	1,65	1,70	1,75	1,80	1,80	1,85	1,90	1,95	2,00	2,00
1800	1,50	1,54	1,59	1,63	1,67	1,70	1,75	1,80	1,85	1,90	1,90	1,95	2,00	2,05	2,10	2,15
1900	1,58	1,63	1,67	1,72	1,75	1,80	1,85	1,90	1,95	2,00	2,05	2,10	2,10	2,15	2,20	2,25
2000	1,67	1,70	1,75	1,80	1,85	1,90	1,95	2,00	2,05	2,10	2,15	2,20	2,25	2,30	2,35	2,40
2100	1,75	1,80	1,85	1,90	1,95	2,00	2,05	2,10	2,15	2,20	2,25	2,30	2,35	2,40	2,45	2,50
2200	1,85	1,90	1,95	2,00	2,05	2,10	2,15	2,20	2,25	2,30	2,35	2,40	2,45	2,50	2,55	2,60
2300	1,95	2,00	2,05	2,10	2,15	2,20	2,25	2,30	2,35	2,40	2,45	2,50	2,55	2,60	2,65	2,70
2400	2,00	2,05	2,10	2,15	2,20	2,30	2,35	2,40	2,45	2,50	2,55	2,60	2,70	2,75	2,80	2,85
2500	2,10	2,15	2,20	2,52	2,30	2,40	2,45	2,50	2,55	2,60	2,70	2,75	2,80	2,85	2,90	3,00
2600	2,20	2,25	2,30	2,35	2,40	2,50	2,55	2,60	2,65	2,70	2,80	2,85	2,90	2,95	3,00	
2700	2,25	2,30	2,40	2,45	2,50	2,55	2,65	2,70	2,75	2,85	2,90	2,95				
2800	2,35	2,40	2,45	2,55	2,60	2,65	2,75	2,80	2,85	2,95	3,00					
2900	2,45	2,50	2,55	2,60	2,70	2,75	2,85	2,90	2,95							
3000	2,50	2,55	2,65	2,70	2,80	2,85	2,95	3,00								

CAUSES OF INCORRECT OR MISSING INDICATION :

Incorrect indication :

1. Coefficient K appearing in sight window (6) does not correspond to the actual tank diameter (or height): if tank contents differ from fuel oil, is the specific gravity correct ?
2. The probe immersed in the tank does not reach the bottom: the bottom part is not measured.
3. There is a small leak in the connecting tube or tube fitting.
4. Connecting tube clogged.

No indication :

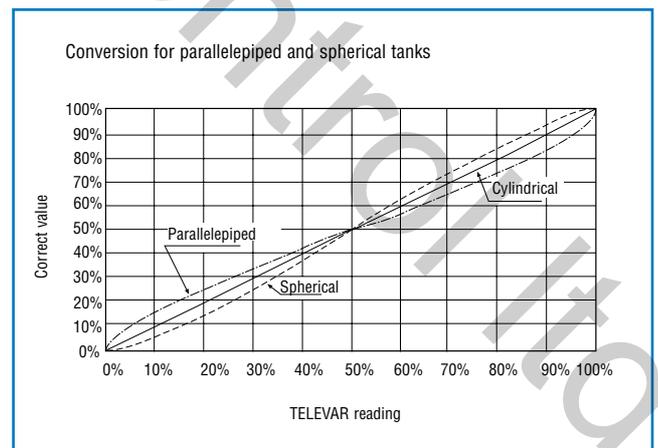
1. There are appreciable air leaks in the tube connecting to the tank thus preventing formation of the measuring pressure.
2. Connection fittings to the indicator or tank have not been made correctly thus causing considerable air leaks.
3. The tank is empty or the probe is incorrectly immersed in the liquid.

The pointer exceeds 100%:

1. The connecting tube between the indicator and tank is clogged thus preventing the air from flowing.
2. The end of the probe immersed in the liquid is clogged (e.g. because of sludge) thus preventing air from flowing out.

CALCULATION OF CONTENTS FOR TANKS OF DIFFERENT SHAPES

It is possible to deduce from the graph below at what percentage volume of parallelepiped or spherical tanks does the value indicated on the standard equipment (cylindrical tank) correspond to.



CALIBRATION

To calibrate the MECAV mechanical level indicator merely turn the scale graduated in cm until the bringing of number corresponding to the tank height (diameter) to the reference point indicated.

A very simple method can be adopted when the tank is empty: introduce the float into the tank and gradually lower it until it rests vertically on the bottom. Next screw the instrument on the connection and turn the dial until the zero point coincides with the indicator pointer.

N.B. Insert the mechanical level indicator into the tank at a certain distance from the fill connection or in the "protective tube" to avoid the float from being pulled by the fuel jet when filling the tank.

DESIGN-TECHNICAL CHARACTERISTICS

Casing	High impact plastic
Cover	transparent plastic with adjusting screw
Tank connection	1 1/2" M
Range of measurement	0 to 2000 mm in height (diameter)
Casing	ø 95 x 50 mm



MECAV

Universal remote mechanical level indicator for remote measurement of any level of non aggressive liquid at atmospheric pressure, suitable for tanks of any shape for heights not exceeding 2000 m.

Part No.	Nd
0103100	1.1/2"

ID922 Combustion Control Ltd



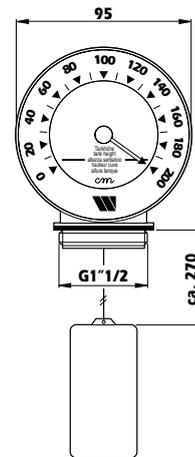
MECAH

Like MECAV but with horizontal reading.

Part No.	Nd
0103200	1.1/2"

Overall dimensions (mm)

MECAV/MECAH



DESIGN-TECHNICAL CHARACTERISTICS

Casing	Galvanized steel
Tank connection	1" M
Dip tube	Perbunan
Bottom weight with spacer	

Make sure that after lowering the dip tube in the tank it does not get kinked or bent which would block the air flow and therefore impair measurement of the remote level indicator.



G20

Fuel oil probe. Mounted on the tank for connection to the TELEVAR remote level indicator.

Part No.	Nd	Dip
0104120	1"	L = 220 cm
0104130	1"	L = 320 cm
0104150	1"	L = 520 cm



PE50

Black polyethylene flexible tubing dia. 4x6, suitable for connection of the TELEVAR pneumatic level indicator to the tank. To ensure correct operation of the indicator, install the polyethylene tube carefully avoiding very narrow bends which could cause obstruction. The tubing must not have any holes and/or cracks: it should be possible for the pressure exerted by the indicator pump to reach the tank bottom.

Part No.
0105150

ASSEMBLY

1. Introduce counterweight (11) in the tank, shortening the dip tubes if too long.
2. Screw the valve body into the 1" fitting on the tank.
3. Insert tube holder bushings (5) in relation to the tube diameter (8, 10, 12 mm) into the suction and return fittings.
4. Slightly tighten lock nuts (6) in the connection.
5. Insert the tubes in the bushings fully home, bend them exactly so they are not submitted to stress which could impair their operation.
6. Tighten lock nuts (6) securely.
7. With the same procedure, attach the tube of level indicator (16) to connection (13) with nut (15) and O-ring (14).



MB

MULTIBLOC.

Multi-function dip unit for connection between the fuel tank and burner.

Combines 5 different functions:

- connection of burner suction pipe until bottom of tank
- dip length 2200 mm
- return connection to tank
- check valve on suction pipe
- quick shut-off lever on the suction pipe
- connection with dip probe for remote pneumatic level indicator TELEVAR-TLM.

Part No.	Nd	Dip
0108100	1" M x 3/8" F	L=220 cm
0108500	1" M x 3/8" F	L=320 cm

OPERATION

When the burner is started, it causes a negative pressure in the suction pipe, which lifts the plug of the dip valve from the seal seat and draws fuel oil into the suction pipe up to the burner.

When the burner is stopped, owing to lack of negative pressure, there is no longer a suction effect and the valve plug, under its own weight, is placed back in position on the seat thus closing the flow of fuel gas. Hence the plug acts as check valve by not allowing the emptying of the suction pipe when the burner is turned off.

The top pull lever can be used for quick shut-off of the suction pipe: when the lever is horizontal, fluid flow is stopped. The lever can also be moved remotely through a cable and fire lever LAC.



MKF200

MULTIBLOC.

Multi-function dip unit like MB220 but with overlapping 3/8" male connections and metal bushings for tube dia. 8 and dia. 10. The body is provided with an extra 3/8" male connection for suction from a second bank-mounted tank. The return pipe from the burner is conveyed to the tank bottom.

Part No.	Nd	Dip
0115110	1"	L=200 cm

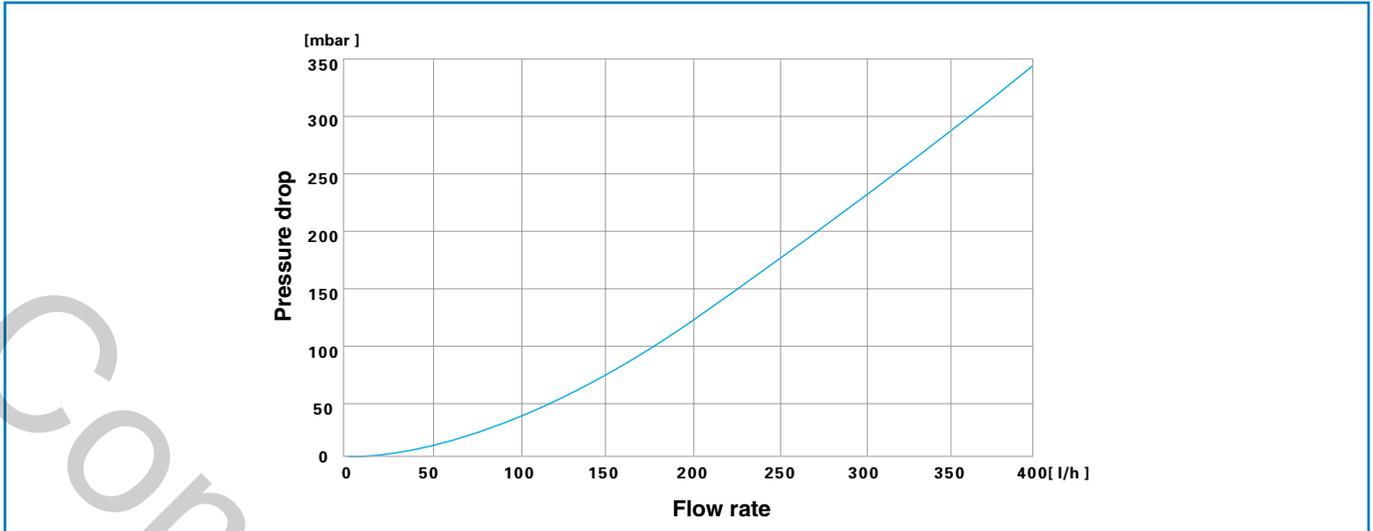
APPROVALS

Approved by the Interior Ministry (only MULTIBLOC MB).

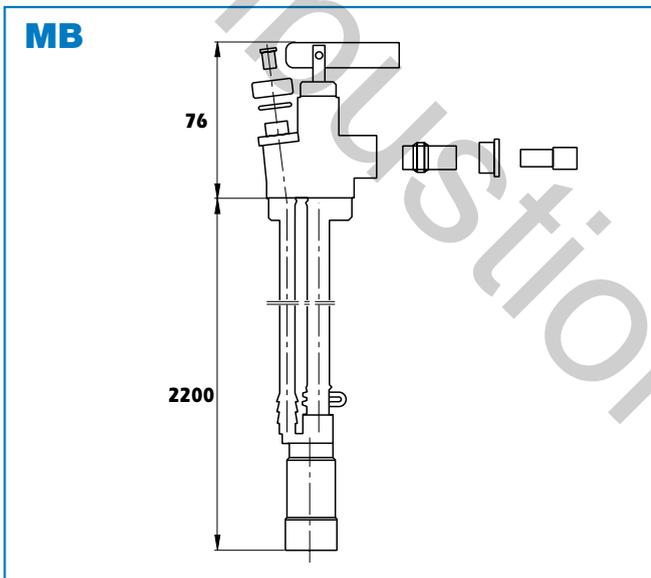
DESIGN-TECHNICAL CHARACTERISTICS

Body	Shot-blasted stamped brass
Dip tubes	Perbunan according to DIN4798, size 2200 mm (MB220) and 2000 mm (MKF200); different tube lengths can be supplied on request (e.g. 3200 mm)
Ballast carrier end	Oil-resistant plastic
Check valve	Brass with NBR seal
Pull lever	Tropicalized steel
Tube holder bushings	LDPE
Tank connection	1" male
Connections	3/8" female with tube holder bushings \varnothing 8, \varnothing 10 and \varnothing 12

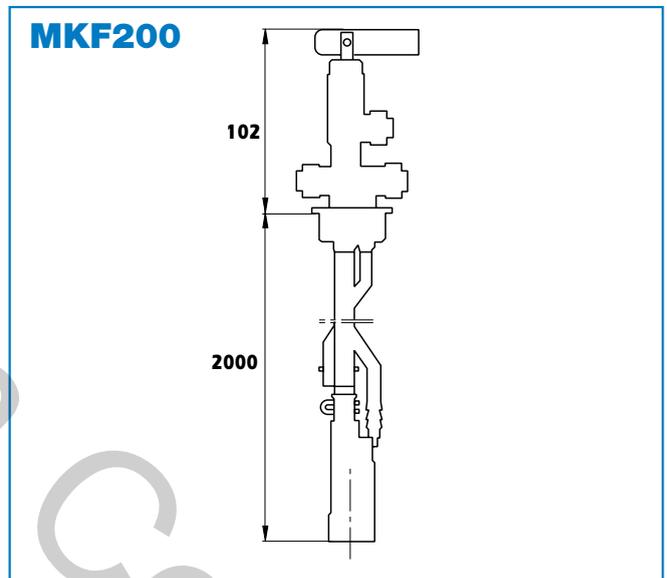
Flow rate/Pressure drop diagram



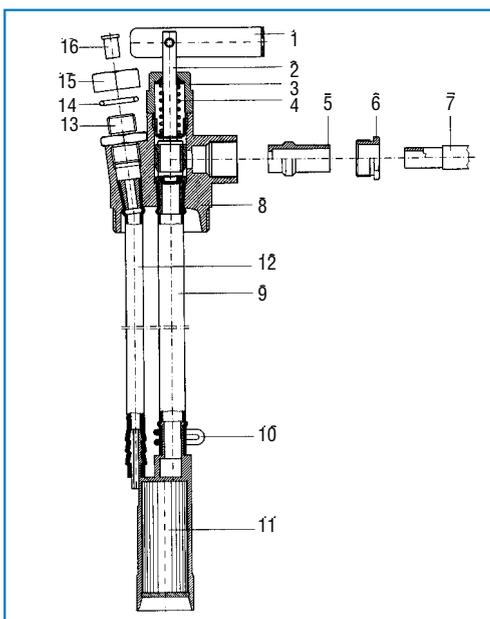
Overall dimensions (mm)



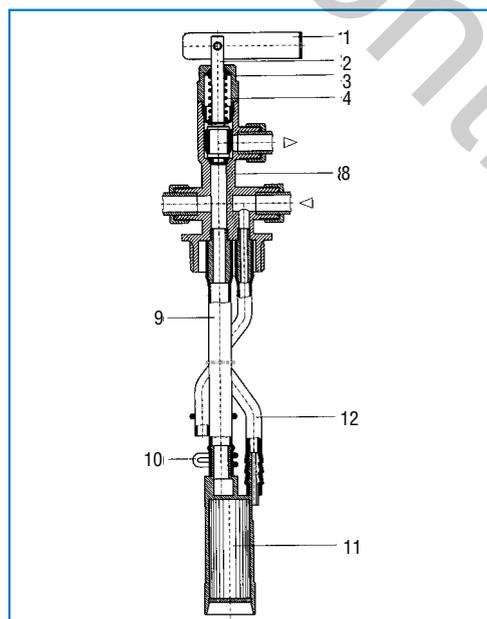
Overall dimensions (mm)



Characteristics BM



Characteristics MKF200

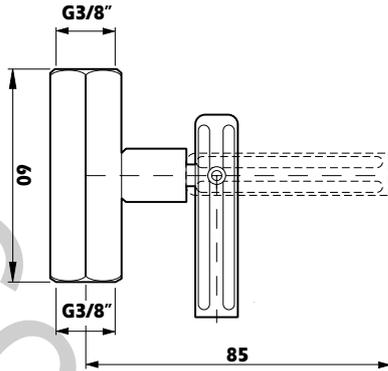


Key :

1. Pull lever
2. Control pin
3. Top bushing
4. Spring
5. Tube holder bushing
6. Lock nut
7. Suction pipe
8. Valve body
9. Suction dip tube
10. Clip
11. Counterweight
12. Measuring dip tube
13. Nipples
14. O-ring
15. Mounting nut

Overall dimensions (mm)

RIS



RIS

Quick shut-off valve for fuel oil in the burner suction pipe :
Ministerial Decree N° 73 prescribes a quick shut-off device designed also for remote control. The pull lever can be remotely controlled by cable and fire lever LA, LAC, LA/CPT, LAC/CPT.

Part No. Nd
0120100 3/8" F

DESIGN-TECHNICAL CHARACTERISTICS

Body	Hexagonal brass bar
Connections	3/8" female with plastic bushings for pipes $\varnothing 6 \times 8$, $\varnothing 8 \times 10$, $\varnothing 10 \times 12$
Pressure drops	30 mm WG with flow rate 50 litres/h 85 mm WG with flow rate 100 litres/h

DESIGN-TECHNICAL CHARACTERISTICS

Body	Hexagonal brass bar
Check valve	Plastic with O-ring
Connections	3/8" female with plastic bushings for pipes $\varnothing 6 \times 8$, $\varnothing 8 \times 10$, $\varnothing 10 \times 12$



VRU

Check valve for fuel oil suction pipes.

Part No. Nd
0120140 3/8" F

DESIGN-TECHNICAL CHARACTERISTICS

Body	Hexagonal brass bar
Bottom spacer	Plastic
Check valve	Plastic with O-ring
Connections	3/8" female with plastic bushings for pipes $\varnothing 6 \times 8$, $\varnothing 8 \times 10$, $\varnothing 10 \times 12$



VFU

Foot valve with check for fuel oil tanks. The valve is provided with a bottom spacer which prevents drawing on the bottom surface so as not to suck up any foreign matter deposited together with the fuel oil.

Part No. Nd
0120160 3/8" F

DESIGN-TECHNICAL CHARACTERISTICS

Body	Hexagonal brass bar
Body	Shot- blasted stamped brass
Tank connection	1" male
Suction and return	3/8" female with plastic bushings for pipes connections $\varnothing 6 \times 8$, $\varnothing 8 \times 10$, $\varnothing 10 \times 12$



RDA

Double angle fitting (45°) for connection to the tank of the suction and return pipes of the burner; the suction connection is the through type and allows inserting the pipe on the tank bottom without interruptions.

Part No. Nd
0120120 1" M x 3/8" F

MAINTENANCE

For all models provided with shut-off valve (RG2, RZ, RV2, RV1) it is possible, with the valve closed, to remove the bowl, then clean the filter cartridge, without emptying the piping. For other models (V1, V1AP) it is necessary to shut off the piping at upstream side and empty it.

To clean the filter cartridge, proceed with a low pressure jet of water (or air) from inside to the outside of the filter cartridge.

Removal of the bowl also allows withdrawal of samples of fuel in accordance with DPR 1391, 22.12.1970, under Article 5.6.



RG2

Two-way fuel oil filter, with shut-off and check valve on the return line, bowl locked by ring nut and filter cartridge by bayonet coupling (universal).

Part No. **Nd**
0130100 **3/8" F**

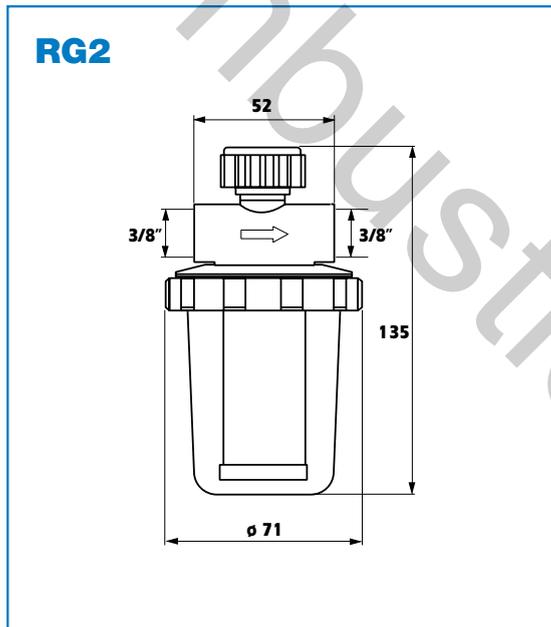


RV2

Two-way fuel oil filter, with shut-off and check valve on the return line, complete with threaded bowl and pressure filter cartridge.

Part No. **Nd**
0133100 **3/8" F**

Overall dimensions (mm)



RV2M

Like RV2, but with metal bowl.

Part No. **Nd**
0133200 **3/8" F**



RV1

One-way fuel oil filter, with shut-off valve, complete with threaded bowl and pressure filter cartridge.

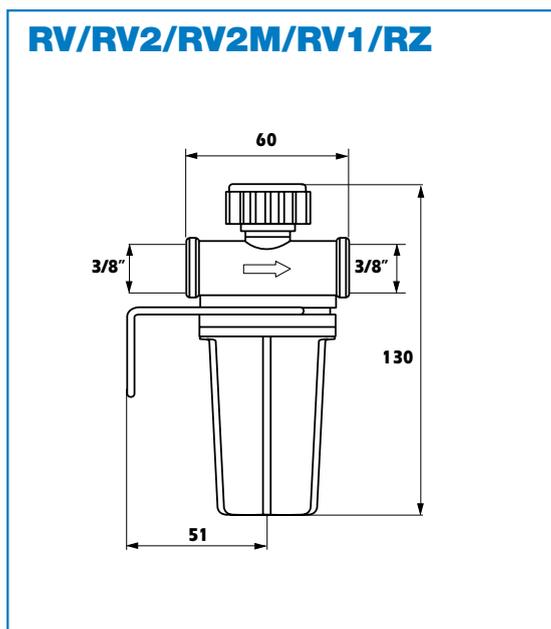
Part No. **Nd**
0135100 **3/8" F**



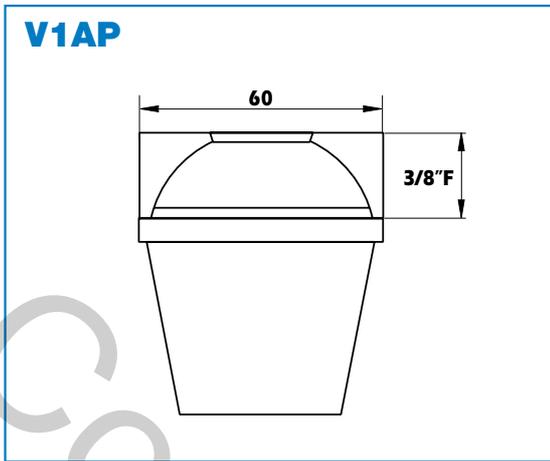
V1

One-way fuel oil filter, with threaded bowl and pressure filter cartridge.

Part No. **Nd**
0138100 **3/8" F**



Overall dimensions (mm)



RZ

Two-way fuel oil filter, with shut-off and check valve on the return line, complete with threaded bowl and pressure filter cartridge, as well as recirculation (return to the filter instead of the tank).

Part No. **Nd**
0137100 **3/8" F**



V1AP

One-way fuel oil filter, with bowl fastened by screw and rest -on filter cartridge.

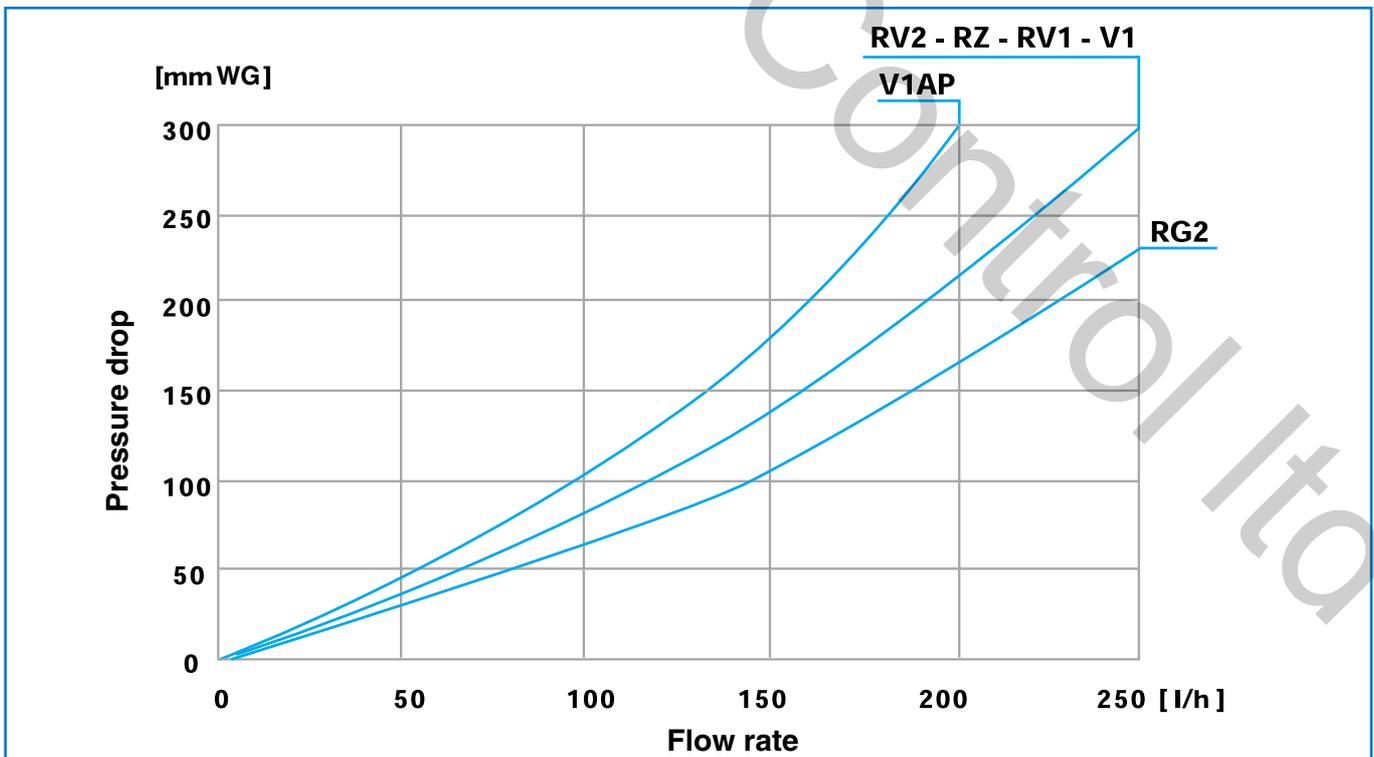
Part No. **Nd**
0138300 **3/8" F**

DESIGN-TECHNICAL CHARACTERISTICS

Body	Shot- blasted stamped brass except for model V1AP in aluminium
Bowl	Transparent plastic with O-ring
Connections	3/8" female with plastic bushings for pipes $\varnothing 6 \times 8$, $\varnothing 8 \times 10$, $\varnothing 10 \times 12$ (except for model V1AP)
Mounting bracket	Tropicalized steel (except for V1AP)
Stainless steel filter cartridge	260 μ (RG2) 140 μ (RV2-RZ-RV1-V1) 100 μ (V1AP)

N.B. Models RV2 – RZ – RV1 – V1 can be supplied, on request, with a metal bowl. A sintered (60 μ) or felt (50 μ) cartridge can be supplied for model RG2.

Flow rate/Pressure drop diagram



INSTALLATION

The SICUREX diaphragm valve should be installed on the burner supply pipe, close to the burner and at the same height, and before the filter so that the latter is included in the section of protected piping.

OPERATION

The valve diaphragm in direct contact with the outlet, has a surface 36 times greater than the surface of the seal seat. The spring, which tends to close the plug, is set at 18,000 mm WG (1.8 bar). The plug is opened when a force $F = 18,000/36 = 500$ mm WG is applied on the diaphragm. Hence the negative pressure created by the burner commands the opening of the SICUREX diaphragm valve. As a result its action is progressive and jerk-free because the fuel oil acts as shock absorber. When the burner stops, the negative pressure is decreased until it ceases, thus allowing the spring to gradually close the plug.

APPROVALS

Approved by the Interior Ministry.



SIC10

SICUREX.

Diaphragm valve for automatic shut-off of fuel oil in the burner supply pipe. Used to advantage instead of the solenoid valve; It does not run risk of seizing of the plug as it is commanded directly by the suction of the burner pump.

Part No.

0150110

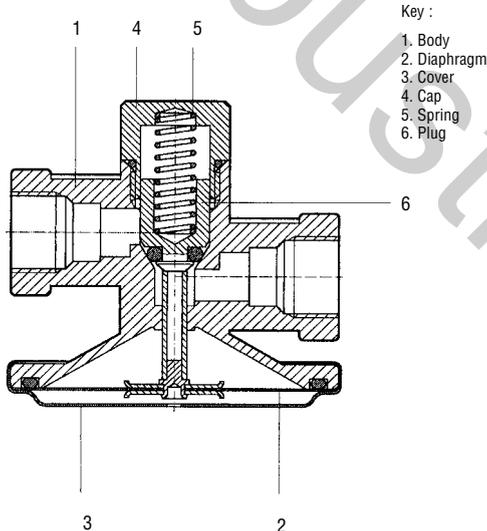
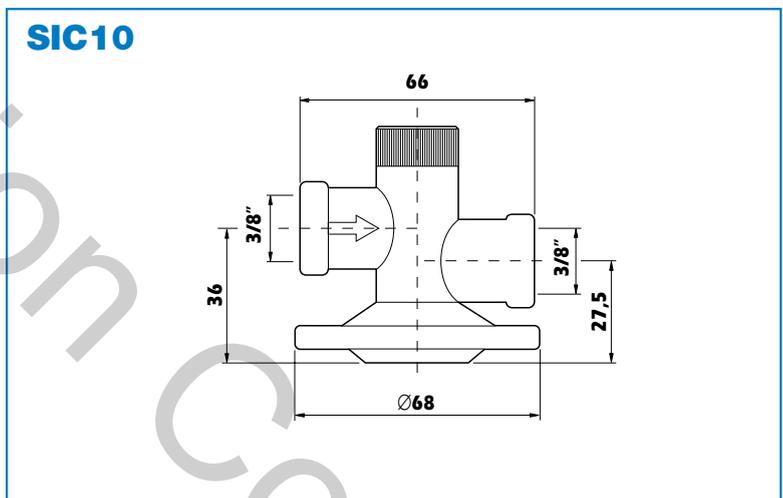
DESIGN FEATURES

Body	Die-cast aluminium
Diaphragm	Oil-resistant rubber
Connections	3/8" female with plastic bushings for pipes $\varnothing 6 \times 8$, $\varnothing 8 \times 10$, $\varnothing 10 \times 12$

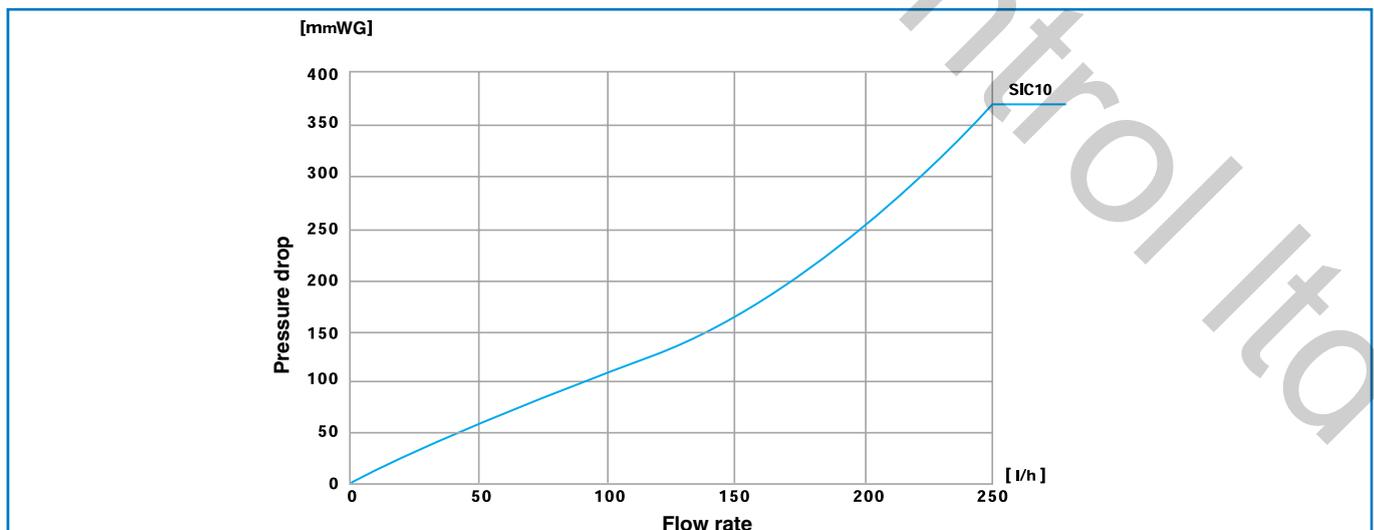
TECHNICAL CHARACTERISTICS

Max. operating capacity	200,000 kcal/h
Max. operating pressure	3 bar
Min. opening negative pressure	500 mm WG

Overall dimensions (mm)



Flow rate/Pressure drop diagram



N.B. Max. difference in level between SICUREX and burner should not exceed 300 mm.

APPROVALS

Approved by the Interior Ministry, EEC 89/336, EEC 73/23. CE marking in accordance with European Directive 97/23/EEC PED CE 0497.

DESIGN-TECHNICAL CHARACTERISTICS

Body	Stamped brass
Power supply	230V-50Hz (on request also 12 Vac/Vdc; 24 Vac/Vdc)
Max. operating pressure	4 bar
Operating temp. range	-5 ÷ 60 °C
Orifice diameter	5,6 mm
Connections	3/8" for model M10 1/2" for model M15
Degree of protection	IP65

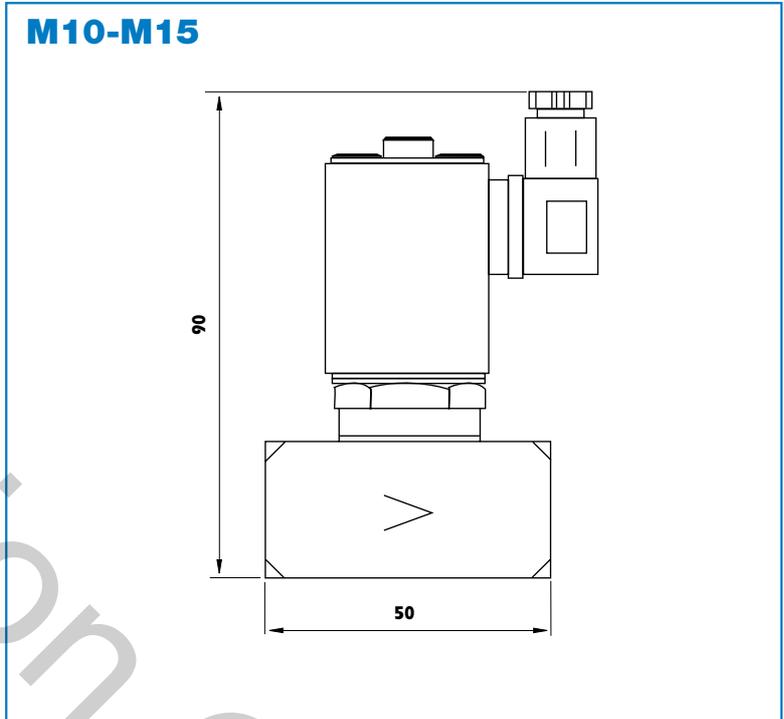


M10-M15

Normally closed solenoid valves, for shut-off of fuel oil burner supply pipes when the burner is turned off.

Part No.	Nd	Power
0150210	3/8" F	230V
0150215	1/2" F	230V

Overall dimensions (mm)



OPERATION

During the tank filling phase, the liquid level rises until reaching the float. When the float rises, it lowers a cylinder that closes the two side slots through which the fuel passes.

APPROVALS

Approved by the Interior Ministry



SW90

Load limiting valve for fuel oil tank, in accordance with the requirements of Ministerial circular N° 73 which prescribes a device designed to interrupt the flow of fuel when it reaches 90% of the geometric capacity of the tank.

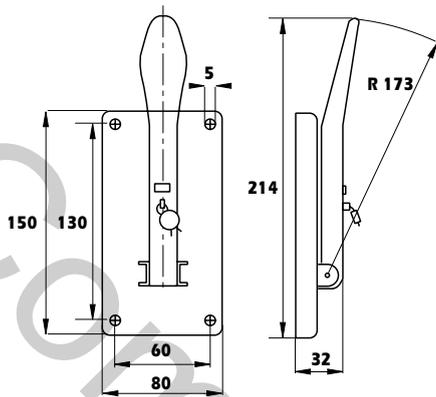
Part No.	Nd
0152100	2" MF

DESIGN FEATURES

Body	Die-cast aluminium
Float	Oil-resistant rubber
Connections	2" male on tank 2" female for fill hose

Overall dimensions (mm)

LA/LAC/LACP/LACPT



LA

Fire lever with screws and wall plugs, for remote control, through metal cable, of quick shut-off valves for shutting off flow of fuel (MB220, MKF200, RIS).

Part No.

0153100



LAC

Fire lever like LA, complete with PVC-coated metal cable, intermediate slots with wall plugs.

Part No.

0153110



LACP

Fire lever like LA but with transparent protective cover.

Part No.

0153120



LACPT

Fire lever like LAC but with transparent protective cover.

Part No.

0153130

DESIGN FEATURES

Body	Brass-plated mazak
Base connection	2" female to tank
Cover connection	2 1/2" female with seal
Slots for padlock and chain	



TC

Tank fill plug, meeting requirements of Act N° 615 which specifies that tank fill holes should be provided with hermetic closing.

Part No.

0155100 2" F x 2.1/2" M

Nd

DESIGN FEATURES

Locking ring and cap	High impact plastic
Metal mesh flame spreader	



CTS

Caps for tank vent pipe, threadless, with fixed spacers and mounting screws, adaptable to pipes of different diameters.

Codice

0160125
0160140

DN

1" - 1.1/4"
1.1/2" - 2"



TECAL

PVC clad aluminium pipe. Mainly used as connecting pipe between the fuel tank (fuel oil) and the burner. Its lightweight and malleability properties make for easy insulation as it is possible to work without welding. The Tecal PVC clad aluminium pipe also finds application in low pressure hydraulic and pneumatic systems. The protective sheath covering the pipe is made up of PVC (polyvinyl chloride) film 0.75 mm thick, applied by co-extrusion to form a continuous sheath.

Part No. ø est. ø int. Rotolo

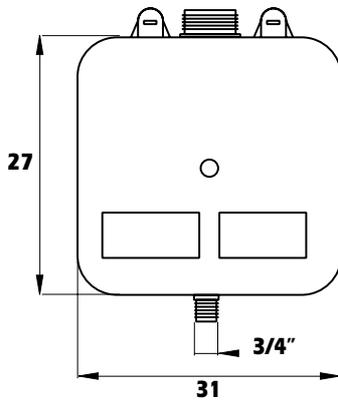
0701208	6	8	50
0701210	8	10	50
0701212	10	12	50

DESIGN-TECHNICAL FEATURES

Power supply	230V-50Hz
Power consumption	10VA
Relay for additional alarm	5A-250V (NO/NC)
Standard front panel	in English

Overall dimensions (mm)

BAE10



LAG

Leak indicator system for double chamber tanks designed for storage of inflammable liquids.

Complete with indicator unit LAGN, level indicator BAE10.

- Power consumption 10VA
- Relay for additional alarm 5A-250V (NO/NC)
- Standard front panel in English

Conforms with DIN6608, EEC 89/336 EEC 73/23.

Part No.

Power

0190100

230V



LAGN

Electronic indicator unit for tank leak detector system. Standard front panel in English

Conforms with DIN6608, EEC 89/336 EEC 73/23.

Part No.

Power

0190200

230V



BAE10

Auxiliary tank for test liquid. Complete with seal

Part No.

0191011

OPERATION

The leak indicator monitors the intermediate chamber (test chamber) filled with indicator liquid and signals any leak from the outer or inner shell. The device consists of an electronic unit (indicator element) designed to activate a visual and audible alarm, and a tank containing indicator liquid with transducer (probe), perhaps one or more tanks without transducer if the configuration requires two or more tanks of indicator liquids installed in parallel. The tank of indicator liquid is connected to the test chamber of the main tank with special piping and is normally filled with a suitable liquid up to the max. liquid mark.

The indicator works on the principle of conductivity and is provided with electrodes which activate the alarm without any moving mechanical part, i.e. solely by measuring the resistance between the electrodes immersed in the tank of indicator liquid.

The green (power on) indicator lamp on the electronic unit indicates operating condition of the device.

In the event of a leak from the tank, the indicator liquid flows from the tank thus interrupting the transducer circuit and activating a comparator which immediately actuates a visual alarm (red), an audible alarm and a relay for additional and/or remote alarm.

N.B. The indicator liquid used should be BAM certified (anti-pollution).

APPROVALS

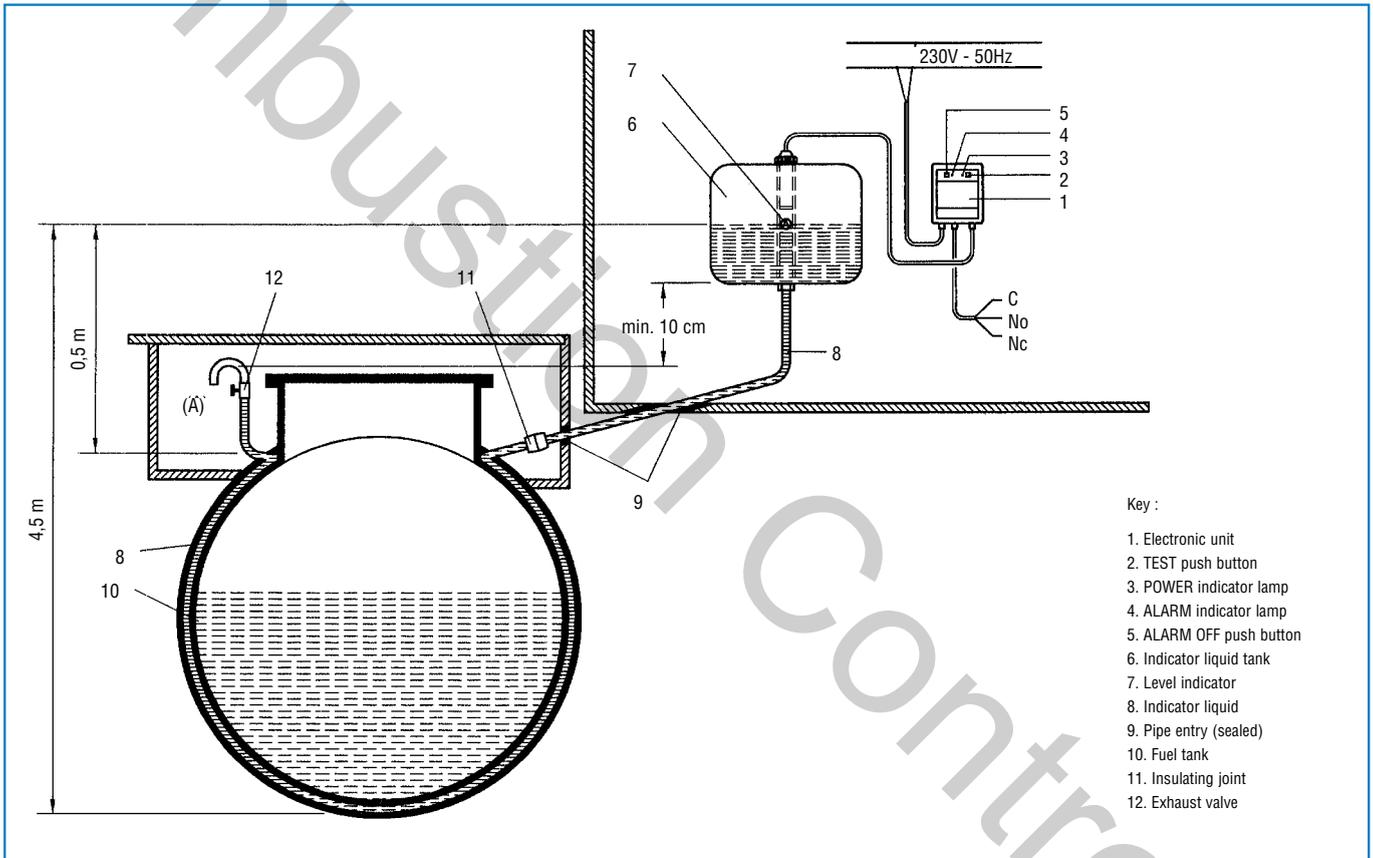
CESI certificate Ex 94.c.054 - [Eex ia] IIC

PTB certificate (Germany) 01/PTB Nr.III B/S 2401

Type approval: Interior Ministry NS 4517 – 4113 sub 227

Meets requirements of: DIN6608 - EEC 89/336 - EEC 73/23.

LEAK INDICATOR SYSTEM FOR DOUBLE CHAMBER TANKS



Combustion Control Ltd

The descriptions and photographs contained in this product specification sheet are supplied by way of information only and are not binding.
WATTS CAZZANIGA reserves the right to carry out any technical and design improvements to its products without prior notice.



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