

# COMPACT 50M-230 TOTEM 50M-230 MECHANICAL SUPPLY KITS

## INSTRUCTION MANUAL WARRANTY AND CONFORMITY DECLARATION



### 1. TECHNICAL SPECIFICATIONS

Supply kits suitable for the DIESEL transfer, composed of:

- Steel chassis
- Self-suction pump
- Mechanical meter
- 4 m hose
- Nozzle
- Noise level:  $L_{EQA} < 85$  dBA (1 m)

Please see the enclosed manuals to consult the technical specifications of each kit component.



**ATTENTION:** Please take into account the flow of the supply kit is lower than the pump one because of the charge losses caused by the own supply kit (nozzle, hose, adapters and so on).

- COMPACT size (approx.): 380x345x360 mm (length x width x height)
- COMPACT weight: 22 kg (approx.)
- TOTEM size (approx.): 385x435x1,500 mm (length x width x height)
- TOTEM weight: 48 kg (approx.)

### 2. WARNINGS

The main aim of this manual is to advise the users how to make the kit installation and location, how to use it and how to maintain adequately.

**Please read all the instructions carefully before using the product. The people who do not know the instructions must not use it.**

This manual describes how to use the machine according to the project hypothesis, the technical features, the types of installation, the use, the maintenance and the training regarding to possible dangers.

**The instruction manual must be considered as a part of it and keep it for future inquiries during all its working life. We suggest keeping it in a dry and protected place.**

The manual reflects the technical situation at the moment of the kit sale and cannot be considered inadequate for the reason of being updated afterwards according to the new experiences. The manufacturer is keeping the right to update the production and the manuals without being forced to update the production and previous manuals.

### 3. SECURITY INSTRUCTIONS

To use the supply kit without suffering any danger, it is essential to read and follow each and every one of the following warnings and cautions:

3.1. PLEASE FOLLOW ALL THE INSTRUCTIONS CAREFULLY. The supply kit must be connected adequately up the ground and use suitable cables and pipes.

3.2. The broken down supply kits must be repaired in an authorized workshop or in our factory.



#### 3.3. ATTENTION

**Do not smoke near the kit or use it near a flame. This can cause an explosion and even the death.**

3.4. It is advisable to install a filter in the suction to avoid solid impurities sinking in the pump and/or the meter. The absence of these impurities means the long-life of the supply kit.

ATTENTION: If the hose and the nozzle are out in the open, in summer weather and/or in very hot countries, after the refuelling (once the supply kit is stopped), we recommend you to open the nozzle to purge the stored up pressure in the hose.

#### INSTALLED PUMP

IRON-50 230 V

#### FLOW (l/min)\*

40-50

\* Real COMPACT and TOTEM flows

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Otherwise the high temperature of the sun makes possible that an overpressure is created by the expansion due to the diesel and/or petrol dilation that there is in the tubes, which could cause a retainer and mechanic element breaking of the pump and/or the meter.

3.5. **RECOMMENDATION:** To avoid possible retainer breaking, it is advisable to install a check valve between the 90° elbow placed in supply kit outlet and the delivery hose. So, the retainer breakings because of the thermal expansion or an accidental delivery hose footfall are avoided.

**ATTENTION:** Make sure that the check valve is placed in the correct direction. The arrow must indicate the flow direction.

3.6. Whenever there is a fuel leak, please clean it immediately to avoid a possible ignition or explosion or personal injuries.

3.7. If the supply kit remains without operating in a place exposed to freezing temperatures or ice, it is necessary to empty the hoses and the pump body. In the same way, it is advisable to make this operation if the supply kit is without operating during a long time (even though the temperature is normal).



### 3.8. ATTENTION

The kit must not be turned on before finishing the installation. It is strictly forbidden to put fingers or other parts of the body inside the holes. Before starting the dismantling or assembly of the supply kit, switch it off to avoid accidental ignitions or electrical discharges.

## 4. INSTALLATION

The systems must be designed to work with a minimum suction height.

The equivalent maximum suction height is 4.5 m for diesel. (This equivalence is the vertical distance from the bottom of the suction tube to the inlet tube of the supply kit plus the wastages by friction in the vertical and horizontal route of the tube, the elbows etc). It is necessary to install a retention valve of 1" – 1 1/4" suitable for diesel. The top drop levels will affect the flow, cause the pump-accelerated fatigue, and the possibility of "cavitation" will drastically increase.

All the supply kits can be installed on aerial or buried tanks.

### 4.1. General

Before assembling the supply kit, please check there are the following elements in the installation:

- Flexible hose to join the suction group with the suction pipe
- Cable according to the current regulation with 2x2.5 mm² + T mechanical protection
- Enough space: A service station must be placed in a wide space to allow the vehicle movement. You have to take into account the space exigencies, both for the assembly and its maintenance.

### TOTEM KIT FIXATION:

The TOTEM must be fixed by 4 point with M8 screws with its own washers. Please see the drawing.

### COMPACT/MSGM KIT FIXATION:

The COMPACT must be fixed in a pedestal or wall support with M6 screws. The hole placing depends on each model.

### 4.2. Buried tank

The tank must be at a depth of 60 cm from the ground level to hold the suction elevation at the minimum.

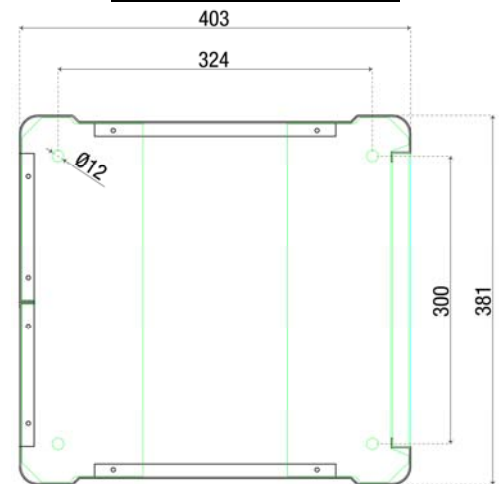
### 4.3. Base

Install a concrete base with enough space for the suction tube and the electrical cables.

### 4.4. Suction tube

Use a tube on the suction line, in accordance with the regulation, with suitable elbows and couplings, forming articulated joints over the tank or below the supply kit to prevent the tank settlement from freezing.

**TOTEM FIXATION DRAWING**



### ATENCIÓN:

Remove the suction hole plug of the hydraulic group before connecting the flexible tube.

The horizontal suction line must be 45 cm below, and, if it is possible, it must have a continuous drop to the tank of 1-2 %.

In the suction tube of the supply kit you must assemble an angle valve if it is a buried tank, or an anti-siphon valve in the event of the aerial tanks.

### 4.5. Ventilation tank tube

Use the tube to allow the tank ventilation in accordance with the regulation. The joints must be articulated, and the tube must stick out a minimum of 0.5 m over the ground level. On its top it must have the protection against the rain. In the event of tanks with a capacity lower than 10,000 litres, you can use a 1 1/2" tube.

The horizontal tube sections must have a light drop to the tank.

### 4.6. Electric installation



**IT IS OBLIGATORY TO INSTALL A MOTOR PROTECTION DEVICE FOR THE EQUIPMENT WARRANTY ACCORDING TO THE EN 60947 RULE, SUITABLE FOR THE SUPPLY KIT POWER AND CONSUMPTION.**

**Precaution:** A qualified electrician, who knows the right electrical codes and regulations at local level, must do the cables and the electrical installation.

The supply kit must be adequately earthen and use suitable tubes and cables.

**Warning:** The above given information is to help the installer. It is on a general sense so that it can include a wide range of applications. This information is the result of many working years, and it can be considered like exact and trustworthy. However, TOT COMERCIAL SA does not assume the responsibility derived from its use.

## 5. CALIBRATION AND OPERATION INSTRUCTIONS

Please read the enclosed meter or controller operation manuals for its calibration and operation. To get the best results, the supply kit must be installed according to that described in this INSTALLATION section. For its initial starting, please let the nozzle open during some seconds. Then the pump will be primed.

## 6. MAINTENANCE



### ATTENTION

Check the hose and the nozzle to see whether these are worn or damaged. The hoses or nozzles in bad state can be a potential risk of insecurity and/or attempt against the environment.

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### 7. REPAIR

The authorized repair workshops are the only ones which can repair the motor in bad state. The supply kit has to be cleaned and drained before its delivery. If a supply kit is used by mistake with fluids not derived from diesel, it has to be thinned as many times as it is necessary and enclosed a note indicating the chemical substances, which have been pumped with this unit. The supply kit, which does not contain these specifications, will be admitted neither in the workshops nor in the factory. When you order spare parts, make sure that you give the code number of the spare part and the supply kit serial number. Only on this way you will receive the adequate spare part.

### 8. WARRANTY

1. All the products manufactured by TOT COMERCIAL SA have a WARRANTY of 12 (twelve) months from their purchase, against any manufacturing defect.
2. TOT COMERCIAL SA guarantees, in the warranty period, the change/the devolution of the defective part or product. This material must be sent with prepaid freight to our factory or any appointed technical service. After our technical inspection, it will be determined whether the responsibility is from the manufacturer, the user, the installer or the delivery transport.
3. The warranty does not cover: Inadequate use, negligence, corrosion, abuse, manipulation or the wrong installation of the products, a use of non-original spare parts or not concerning to the specific pattern. All the manufactured and/or commercialized equipment must be installed according to the given instructions by the manufacturer.
4. The accessories and the products not manufactured by TOT COMERCIAL SA are liable for their original manufacturer's warranty.
5. Because of the constant innovations and development, TOT COMERCIAL SA keeps the right to modify the specifications of its products and publicity, without prior notice.

**TOT comercial, s.a.**

### 9. CONFORMITY DECLARATION

Manufacturer:

TOT COMERCIAL sa Partida Horta d'Amunt s/n Apartado Correos nº 149  
25600 BALAGUER (Lleida) SPAIN

#### DECLARES:

Under its own responsibility the supplied product:

**FUEL SUPPLY KIT**

Trademark: **GESPASA**

Model:

**COMPACT 50M-230**

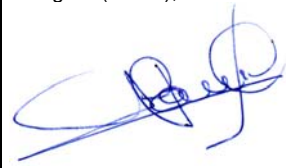
**TOTEM 50M-230**

It is in accordance with the following legislative and/or regulative documents:

DIRECTIVES	No. and date
2006/42/CE: on machine safety	EN ISO 12100:2012 EN 809:1999+A1:2010

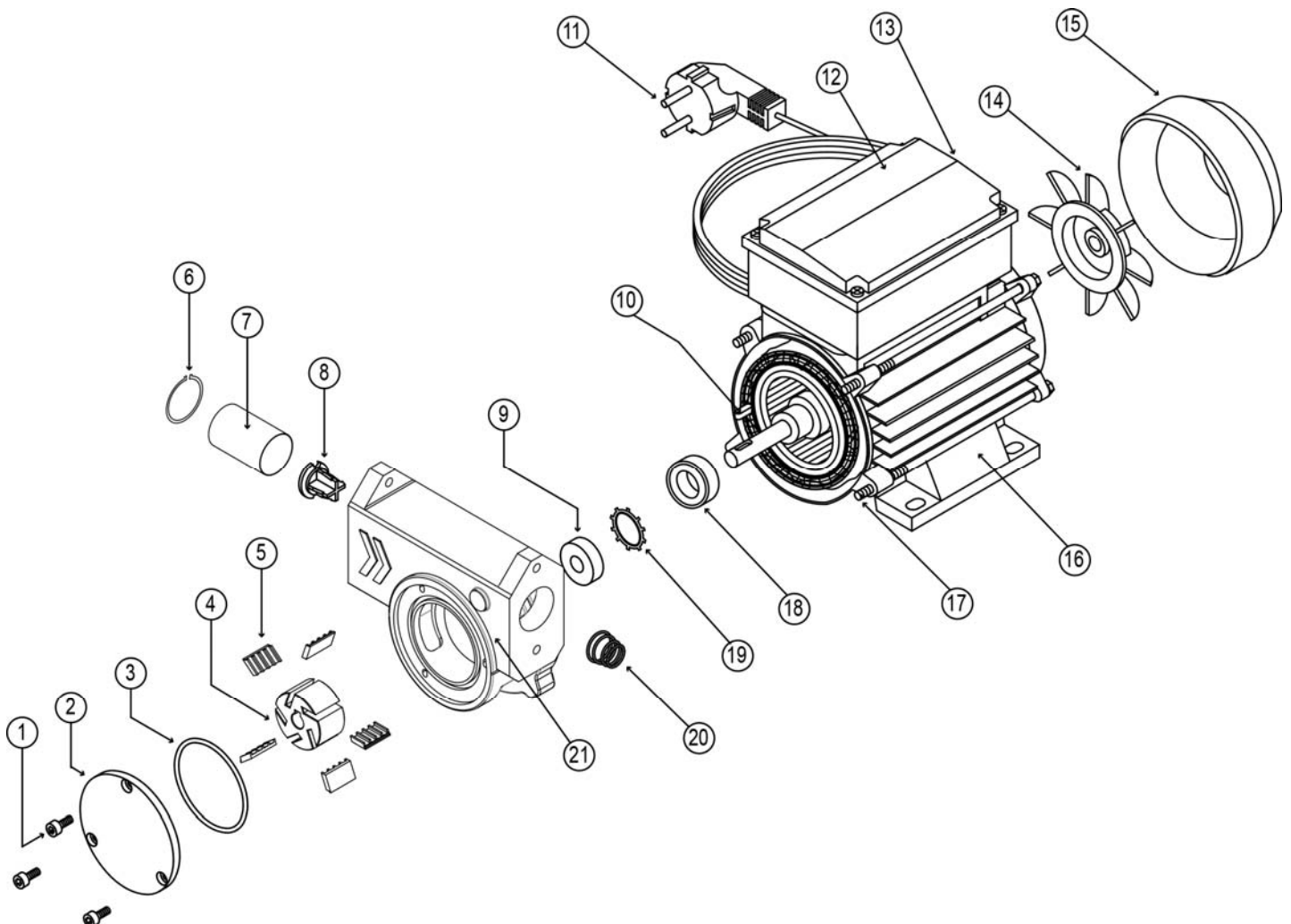
- This Declaration will lose its validity in case that any modification is made without the explicit manufacturer's consent.

Balaguer (Lleida), November 2017



Andreu Pané

**COMPACT 50M-230 · TOTEM 50M-230 INSTRUCTION MANUAL**



No.	DESCRIPTION	CODE
1	M-4x12 DIN. 912 SCREW	805400035
2	PUMP BODY COVER	003504000
3	58x3 NBR JOINT	803101061
4	F211 ROLLER	000002210
5	5-BLADE SET	000002109
6	SEGER RING INT.30	800303012
7	PUMP FILTER	003502001
8	BYPASS VALVE	805606102
9	12x26x7 RETAINER	804600012
10	4x4x10 SHAFT KEY	000002002
11	3 m 230 V CONNECTION CABLE WITH INJECTED PLUG	800900010

No.	DESCRIPTION	CODE
12	CONNECTION BOX	000201503
13	SWITCH	000206017
14	FAN	000201504
15	FAN COVER	000201507
16	0.25 kW MOTOR	000201502
17	M-6x126 STUD	000201506
18	BEARING	804603004
19	OUTSIDE RETENTION RING	804600013
20	IRON-50 230 V BYPASS SPRING	000002007
21	IRON-50 230 V PUMP BODY	003503002

**TECHNICAL SPECIFICATIONS**

- IRON-50 230 V pump of grey foundry with filter built-in. Self-suction.
- Eccentric with self-adjusting blades
- With bypass recirculation
- Motor: 0.25 kW 230 VAC self-ventilated 50/60 Hz single-phase
- Noise level:  $L_{EQA} < 85$  dBA (1 m)
- Continuous duty – IP-55 Protection
- Consumption: 1.2-2 A
- 3000 rpm
- Bypass pressure: 2-2.5 bar
- Connection through F1" threads and flanges
- It has a self-cleaning steel filter of 350 µm (micron)
- NOTE: When using an automatic nozzle, the flow will be reduced.

**FLUID COMPATIBILITY**

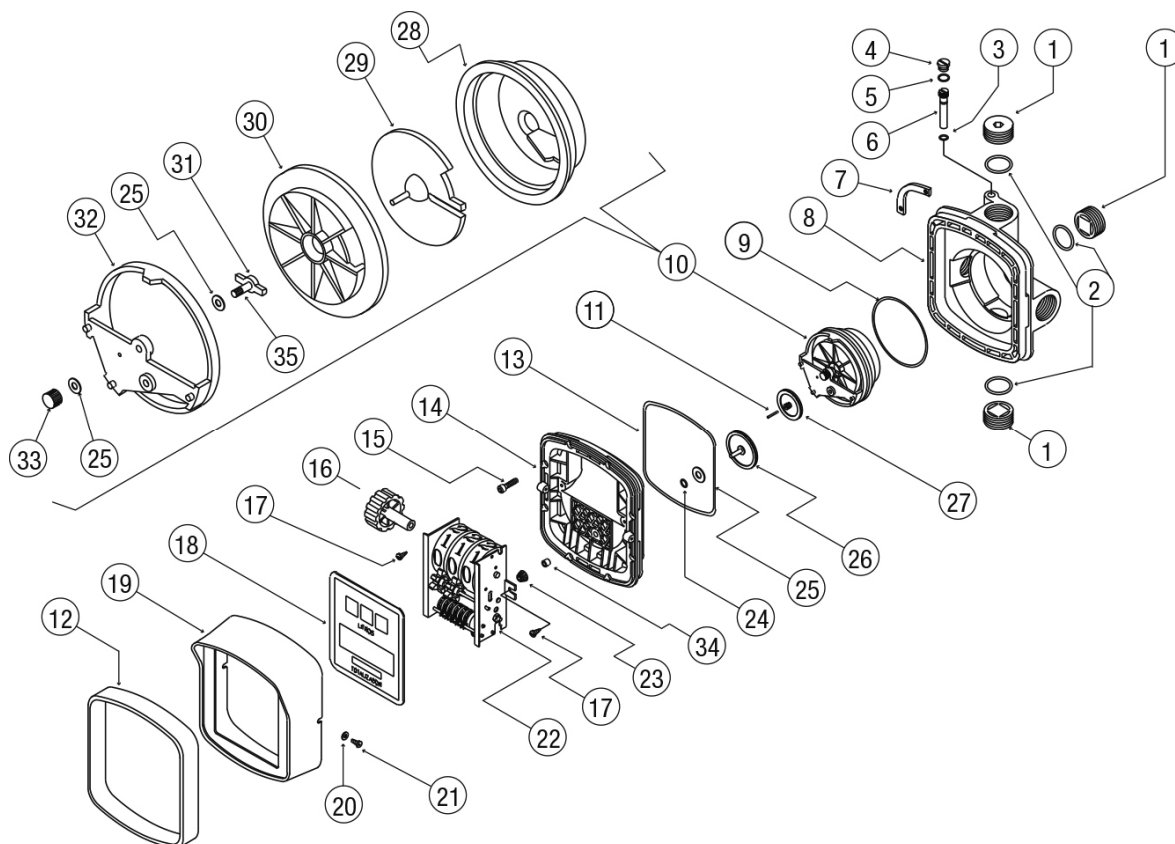
The IRON-50 230 V pumps are especially for the diesel transfer; they must not be used to transfer other liquids. This pump is suitable for its use on the agriculture, building, public works and industry.

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**PROBLEM GUIDE**

BREAKDOWN	POSSIBLE CAUSE	SOLUTION
The tank is full. The pump is working, but the liquid does not go out through the automatic nozzle.	- There is created an air chamber in the delivery line, and the automatic nozzle cannot be opened.	- remove the automatic nozzle from the hose. Start the pump until it is primed, and the liquid automatically goes out. Then install again the automatic nozzle.
The pump works, but no fluid comes out.	- problem in suction line - opened bypass valve - blade friction - retainer leak - blade or roller wear - blocked outlet pipe or nozzle  - motor breakdown	- check loss in suction line. - remove and check the valve. - verify blades to see whether these are worn out. - change the retainer. - check roller and blades whether they are worn out, and replace them - check whether the pump outlet pipe, the hose, the nozzle and the filter are blocked or not. - the rotor must turn anticlockwise, looking at the pump from the heading; if not, return it for repairing
The pump makes noise, but it does not work.	- dirt inside the pump, blade friction - motor breakdown	- clean pump inside. - return for repairing to the factory.
Low flow rate	- excess of dirt in filter - problem in suction line or in delivery  - the bypass is blocked. - blade friction - blade or roller wear  - dirtiness on the red adaptor	- disassemble and clean the filter. - verify suction line to check whether there are leakages or restrictions, or not; it may be too narrow, too long or no hermetic. - remove and check bypass valve. Clean it. - verify blades to see whether these are worn out. - verify blades and roller whether these are worn out or there is something wrong, and replace them. - clean the inner sieve.
The pump works slowly making strange noise.	- wrong voltage current - motor breakdown	- verify inlet voltage. - return for repairing to the factory.
The motor stops or is burning.	- low voltage current - solid impurities inside the pump	- verify inlet voltage. - disassemble and clean the pump.
The motor heats up excessively.	- it pumps high viscosity fluids. - blocked filter - narrow suction/delivery tube - motor breakdown	- these fluids only can be pumped for a short period. - remove and clean filter. - replace with an adequate tube. - return for repairing to the factory.
The motor does not start.	- there is no electricity. - motor breakdown - switch connection not lined up / connected	- verify inlet current. - return for repairing to the factory. - adjust connection switch/connect.
Leak of liquid	- connection joint in bad state - mechanical seal in bad state	- verify all connection joints. - replace the mechanic seal.

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No.	DESCRIPTION	CODE	No.	DESCRIPTION	CODE
1	INLET/OUTLET HOLE PLUGS	320004001	19	NUMERATION COVER	320004014
2	24x3.5 JOINT	803100022	20	M-4 RING	800300001
3	D. 5.28x1.78 JOINT	803100024	21	D. 3.5x9.5 DIN.7981 ZINC-PLATED SCREW	805404002
4	REGULATION PROTECTION PLUG	320004004	22	NUMERATION	320005002
5	D. 9.5x1.5 mm JOINT	803100045	23	CONICAL GEAR	320001002
6	10x47 FLOW SCREW	320004006	24	D. 3.69x1.78 JOINT	803100023
7	HOUSING FIXATION SUPPORT	320004007	25	GEAR WHEEL RING	320001005
8	METER HOUSING	320004008	26	GEAR WHEEL	320001003
9	80x3 VITON JOINT	803101025	27	DOUBLE PINION	320001004
10	MEASURING CHAMBER	320002000	28	MEASURING CHAMBER	320002001
11	D.2x16 DIN. 6325 PIN	804000001	29	NUTATING DISC	320002002
12	BLACK FRAME	320004010	30	TOP COVER	320002003
13	SPECIAL SQUARE VITON JOINT	320704011	31	COVER LEVER	320002004
14	CENTRAL COVER	320004012	32	MEASURING BOX SUPPORT	320002006
15	M-5x22 DIN. 912 SCREW	805400008	33	GEAR MEASURING UNIT PINION	320002005
16	RESET DRIVE	320005001	34	D.7 x D.4x6 SLEEVE	320004016
17	D.4.2x9.5 DIN.7981 ZINC-PLATED SCREW	805404003	35	4x15 LEVER SHAFT	320002007
18	3-DIGIT PLATE	320004013			

## 1. TECHNICAL SPECIFICATIONS

MG-80 Volumetric Mechanical Meter

Accuracy:  $\pm 1\%$

Connections: 1" GAS (BSP) inlet, with three optional positions  
1" GAS (BSP) outlet, with two optional positions

Meter: Mechanical. 999 litres partial indicator (3 digits)  
999999 litres totalizer (6 digits)

Resistance Pressure: 13 bar

Test Pressure: 6 bar

Max. Operating Pressure: 3,5 bar

Measuring Chamber: Disc fireproof

Made of: Non-toxic recyclable plastic with Viton-nitrilic joints and fire-proof chamber

Max. Ambient Temperature: 60 °C

Additional Adapters: It can be supplied with special male/female adapters in NPT, BSW, BSF, BRIGGS thread sizes

## DESIGN FACTORS

1" GAS (BSP) Female Inlet and Outlet Threads are part of the housing. It has 3 inlets. They can be seen from the back: frontal, left side and bottom. It also has 2 outlets. They can be seen from the back: right side and top.

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The meter is given with a horizontal inlet and outlet. Nevertheless, the user can change their position in a short time, the plugs of the desired direction must be taken out and put them on the non-desired direction. The inner threads have joints that guarantee the sealing; you must only tighten them till its locking, giving up pastes, liquids, and sealing products.

The MG-80 meters are for private use. The MG-80 Volumetric Mechanical Meters has two numeration types:

- Partial with three big numbers where you can read up to 999 litres. It can be reset through a lateral wheel after each transfer.
- 6-digit totalizer with capacity of 999.999 litres; after that and with its operation, it is automatically reset, starting the program again.

## 2. CALIBRATION

The meters are precalibrated in the factory. IT IS ADVISABLE TO MAKE A CALIBRATION ONCE IT IS INSTALLED. Each liquid type has its own density and viscosity. To achieve a trustworthy measurement, it is advisable that the recalibration is done with a homologated test tube or dekalitre. It can be used a container from which we have to know its capacity.

### Calibration procedure

2.1. For an exact calibration, the meter, the hose, the nozzle and the pump must be full of liquid and free of air. This is achieved emptying from 10 to 20 litres of liquid and closing the nozzle, without stopping the pump until the operation is finished.

2.2. Fill the homologated dekalitre recipient until the exact measurement (10 or 20 litres). The bigger the recipient is, the better calibration accuracy you have.



**The calibration process must be done with the nozzle totally open. Never calibrate it with the nozzle half opened.**

2.3. If the quantity does not correspond with the emptied liquid on the recipient, it needs to be calibrated.

2.4. To make this operation, take out the plug (4) and turn the screw (6) clockwise. Then the flow percentage decreases. If you turn it anticlockwise, it increases. A complete turn varies the measurement more or less in 0,4 litres, per each 10 litres.

2.5. If we want to guarantee a correct calibration, we have to repeat it three or four times. If the result is correct, a good adjustment will be achieved and the meter will be ready to work. Do not exceed 3.5 bar pressure, and do not work less than 1 bar.

2.6. The MG-80 meter can work by gravity or with pump. Remember that the suitable minimum pressure is 1 bar with a minimum flow of 15 l/min, and with an accuracy of  $\pm 1\%$ . If you decide to use it by gravity, it can give errors on the measurement due to the different liquid heights in the tank. We recommend you to always install a pump.

## 3. PROBLEM GUIDE

BREAKDOWN	POSSIBLE CAUSE	SOLUTION
Litres are passing but the numeration does not count.	- there are impurities on the measuring chamber.	- clean the measuring chamber (10).
Loss of liquid	- Allen screws loose - because of the overpressure the joint has been moved. - joint breaking	- tighten up Allen screws (15). - replace joint (9 or 13). - replace joint (9 or 13).
The total or partial numeration does not point correctly.	- numeration breaking	- replace numeration (22).
You read more or less litres than those supplied.	- calibration failure - the minimum flow is not respected.	- calibrate the meter according to the section 2. - the minimum supply flow has to be 20 l/min to guarantee a trustworthy measurement.
Low flow rate	- impurities on the measuring chamber - dirtiness on the red adaptor	- clean the measuring chamber (10). - clean the inner sieve.
It counts too quick or too slow.	- bad calibration - air inlet  - blocked gears - the minimum flow is not respected.	- calibrate the meter according to the section 2. - look for and repair the possible losses or air inlets on the system. - clean and replace the gears (23, 26, 27 or 33). - the minimum supply flow has to be 20 l/min to guarantee a trustworthy measurement.