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DTO EN 12285-2
USE AND MAINTENANCE MANUAL

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USE AND MAINTENANCE MANUAL



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2. INTRODUCTION



This manual is divided into 10 chapters and contains important information on how to carry out all operational phases of **DIESEL TANK – DTO EN**: transport, installation, use and maintenance.

All the components of the system are in accordance with the European Standards in force.

This manual should be saved and be easily available to all operators and other workers at site.

Before starting to use the DIESEL TANK, this manual must be read carefully, as well as all other manuals relevant to the equipment that constitutes the system. The manual should be considered as an integral part of the system, and must always be available for consultation.



The system installation and operation must only be performed by qualified and authorised personnel, who must also be familiar with safety and first aid rules, as specified in this manual.

AMA S.p.A. is not responsible for injuries to people or damages to things resulting from the misuse of the DTO EN, or from the inobservance of the instructions and rules contained in this manual.

AMA S.p.A. has the right to update the manufacturing procedures and the manual, without the obligation to update the previously produced or provided products and manuals.

Should the instructions contained in this manual be insufficient or unclear, the client can contact AMA S.p.A. at any time for further information about the correct use of the DIESEL TANK.

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3. SAFETY RULES

3.1 PERMITTED USE



The DTO EN must be used for the purpose intended only, which is fuel storage and dispensing, according to the instructions set forth in this manual.

Any other use must be considered inappropriate, and *AMA S.p.A.* shall not be held responsible for any damage caused at site or to the system and deriving from the system inappropriate use.



Lethal voltage runs through the system while in operation (400V - 50Hz - 3ph and 230V - 50 Hz - Mph); for this reason, failure to observe all safety precautions may result in serious injury.

The electrical components of the system can only be handled by qualified and authorized personnel.



Grounding connection must be in place before starting any operation (loading or dispensing). Each skid must have its own grounding point.

***AMA S.p.A.* shall not be held responsible for:**



- ◆ Inappropriate use of the system
- ◆ Use of the DTO EN by unqualified and/or unauthorised personnel.
- ◆ Incorrect installation
- ◆ Incorrect power or fluid feed
- ◆ Lack of maintenance
- ◆ Unauthorised modifications or interventions
- ◆ Use of non-original spare parts, which do not comply with the technical specifications indicated.
- ◆ Partial or total inobservance of the instructions contained in this manual.

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3.2 PROTECTIVE CLOTHING



Protection goggles must be worn during fuelling, air bleeding, disassembling and discharging operations.



Prolonged contact with hydrocarbons can cause skin irritation: always use PVC gloves when dispensing and handling fuel.



Protective and anti-static footwear should be worn when operating the DTO EN.

3.3 FIRE RISK



Fire precautions must be observed during fuel handling and maintenance procedures. The risk of fire can be minimized if safety regulations are carefully followed during all operations.



In the event of fire, immediately use the dry powder extinguisher supplied with the Skid.

The fire extinguisher should be checked periodically and inspected monthly, according to the regulations in force for the type of extinguisher used.



Familiarize with the location of the fire extinguishing equipment in your working area. Make sure that fire extinguishers are readily available in case of emergency.

DO NOT COVER or hide fire protection equipment from the view.



SMOKING PROHIBITED: DO NOT SMOKE when operating the station or performing refuelling or maintenance operations.



OPEN FLAMES PROHIBITED: DO NOT USE NEAR OPEN FLAMES when operating the station or performing refuelling or maintenance operations. Every ignition source, such as cigarettes, matches, portable heating equipment, unguarded light bulbs, etc. must be considered a potential danger and eliminated.



Under certain circumstances, car/truck engines can also be a source of ignition and therefore all **VEHICLES MUST BE TURNED OFF** during fuel transfer and maintenance operations.



NEVER USE WATER TO PUT OUT FIRE where electrical equipment is involved.

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3.4 SPILLS AND DRIPS



In case of spills or drips during fuel handling activities, identify and stop the source of the spill and clean up IMMEDIATELY. DO NOT POUR WATER on spills or drips.

Spills or leaks must be cleaned up using absorbent material specific for fuel, which must be disposed correctly after use.



During fuel transfer and maintenance operations, an operator must never work alone. A second person should always be standing by to assist and provide immediate assistance in case of need.

3.5 HEALT PROTECTION



Always wash your hands after contact with fuel, especially before eating, smoking cigarettes or anything else which involves contact between your hands and your mouth.



Immediately wash any part of your body which has come in contact with fuel, using a waterless hand cleaner first and then regular soap and water. Never wear fuel stained/soaked clothes. Launder or dry-clean soaked clothes.



Always clean up spills after fuel transfer or the system maintenance. Fuel, oil or solvent soaked rags must be kept inside covered metal containers until they can be safely disposed.



Minimize the number of personnel in the risk area.



Handle with care fuel-impregnated hoses, cans and funnels.

3.6 FIRST AID RULES



Should a small quantity of fuel be accidentally swallowed, DO NOT INDUCE VOMITING.

If the fuel accidentally gets in contact with your eyes, keep rinsing with fresh running water for at least 15 minutes. Remove contact lenses, if worn, after the first five minutes, and then continue with the eye rinsing.



In case of vapour inhalation, take the victim away from the refuelling area. Rescuers must use respiratory protection such as breathing masks.

If the victim stops breathing, perform artificial respiration.



In case of burns, immediately cool affected skin for as long as possible with low pressure cold water.

DO NOT REMOVE clothing if it is adhering to the skin.



In all case, try and keep the injured person calm and seek medical assistance immediately.

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4. HANDLING AND TRANSPORT



Loading, unloading and handling operations must be performed by authorized, qualified personnel. This manual does not give instructions on how to use fork-lifts, cranes and/or any other type of lifting equipment.



The DTO EN must be transported or moved only when empty.



Safety rules and precautions must be taken into due consideration before starting any operation:

- 1) Make sure that the Skid structure has no evident signs of damages;
- 2) Close securely the pump unit doors;
- 3) The lifting equipment (cranes or fork-lift) used should have appropriate characteristics to suit the dimensions and weight of the Skid.

Handle all equipment with extreme care, in order to avoid equipment damage and injuries to the operators.



Any damages caused during transport must be reported immediately to AMA S.p.A., or max. within a week from the completion date of the customs clearance

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5. GENERAL INFORMATION

The mobile storage and dispensing **DIESEL TANK** in the **DTO EN** version is designed in accordance with the EN 12285-2 regulation – (*Workshop fabricated steel tanks - horizontal cylindrical single and double skin tanks for the aboveground storage of flammable and non-flammable water polluting liquids*).

Be aware that the DTO EN must be installed in total compliance with the local environmental and fire risks assessment rules in force.

Follow these general rules for a safe operation site:

- Avoid fuel spill or drips, which can damage the environment
- Particular attention must be paid to the distance from the following elements when selecting the site: buildings, main roads, water sources, railways, overhead power lines and high voltage cables, gas pipelines. The minimum distance requirements from the above mentioned elements are indicated in the regulations in force for the specific Country.
- The ground on the installation site must be flat, even, free from any debris and suitable to withstand the weight of the unit when completely filled with fuel.
- The DTO EN is externally coated with bicomponent paint. If desired, it can also be internally coated with appropriate paint specific to withstand the contact with a specific fuel, at an extra cost.
- The grounding system must be already in place before connecting the DTO EN to the main electrical supply. Always adhere to local regulations for the electrical connection of the DTO EN.
- General fire prevention rules must be followed carefully: no naked flames, do not smoke, always shut off the engines when refuelling.
- Always make sure an escape way is easily accessible while installing the DTO EN at site. Fire extinguishers must be readily available for use at all times during all operations.

Before starting the DTO EN installation read carefully the "Safety Rules" contained in chapter 3 and the "Tank preparation" information contained in chapter 6.1.2, 6.3.1 and 7.2.

6. PRODUCT GENERAL DESCRIPTION

The DTO EN tanks consist of two the following main elements:

Ⓐ TANK

Ⓑ FUEL DISPENSER UNIT

6.1 TANK DESCRIPTION - DTO EN (DOUBLE WALL)

Horizontal cylindrical metal tank with supporting bases, complete with compensation plates. Capacity from 5.000 L to 50.000 L, supplied with the following accessories:

- lugs for lifting when empty
- manhole Ø 620 mm complete with:
 - ① 2" quick fit bottom loading filling connection
 - ② internal 3" pressure relief valve;
 - ③ 1½" suction pipe with NR angle valve and foot strainer;
 - ④ 1" Dipstick with plug;
 - ⑤ 1½" breather pipe with end-of-line flame arrester;
 - ⑥ floating level gauge;
 - ⑥ Pneumatic level gauge OCIO (Optional)
 - ⑦ Leak detection system:



MODEL	TYPE
Afriso - LAS 72	Glycol
Afriso - LAG 14	Glycol
Afriso - LAD 10	Pressure
Afriso - LAZ 10	Vacuum

- ⑧ Inspection ladder



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6.1.1 SPECIFICATIONS - DTO EN (DOUBLE WALL)

MOD. DOUBLE WALL EN 12285-2	NOMINAL CAPACITY - l.	DIMENSIONS mm Ø x Tot L.	THICKNESS mm.	MANHOLE Ø mm.	WEIGH T kg
DTO EN 30	3.000	1.550-1.600 x 1.815	5+3	620	1.062
DTO EN 50	5.000	1.550-1.600 x 2.500	5+3	620	1.360
DTO EN 50	5.000	2.000-2.034 x 1.920	6+4	620	1.844
DTO EN 70	7.000	2.000-2.034 x 2.420	6+4	620	2.174
DTO EN 90	9.000	2.000-2.034 x 3.020	6+4	620	2.542
DTO EN 100	10.000	2.000-2.034 x 3.420	6+4	620	2.747
DTO EN 120	12.000	2.000-2.034 x 4.020	6+4	620	3.093
DTO EN 150	15.000	2.000-2.034 x 4.920	6+4	620	3.611
DTO EN 200	20.000	2.280-2.310 x 5.320	6+4	620	4.291
DTO EN 250	25.000	2.280-2.310 x 6.520	6+4	620	5.065
DTO EN 300	30.000	2.280-2.310 x 7.620	6+4	620	5.774
DTO EN 400	40.000	2.280-2.310 x 10.320	6+4	620	7.346
DTO EN 500	50.000	2.280-2.310 x 12.520	6+4	620	8.934

6.1.2 TANK COMMISSIONING



Follow below instructions and recommendations before filling the tank.

⇒ BREATHER PIPE - VENT

Upon first installation, it can be found inside the dispenser unit (for the Box version) and must be fitted in the dedicated 1 ½" coupling on the manhole.

- Remove the protective plastic cap.
- After applying some teflon to the pipe threading, screw the pipe into the manhole dedicated port.

⇒ LEVEL GAUGE (floating system)

Upon first installation, it can be found inside the dispenser unit (for the Box version) and must be fitted in the dedicated 1 ½" coupling on the manhole.

- Remove the protective plastic cap.
- Place the float inside the tank and after applying some teflon to the level gauge threading screw the level gauge into the manhole dedicated port.
- Remove the transparent cover and make sure the pointer indicates level "0" (as the tank is empty) by rotating the circle indicator.
- Refit the transparent cover.

The pointer will now indicate the exact level of liquid in the tank.

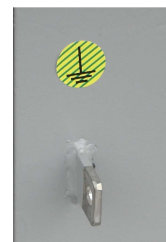
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⇒ EARTHING or GROUNDING



The DTO EN is fitted with a welded-on earthing/grounding plate.

- Connect the stainless steel plate to a suitable earth connection.
- If the **DTO** is fitted with metal containment basin, also the containment basin must be connected to the same earth connection.

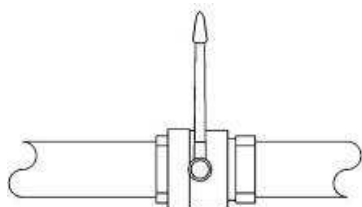


⇒ SUCTION PIPE

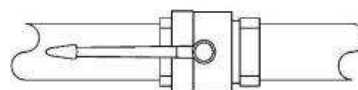
Make sure that the on-off valve is open.

N.B. the on-off valves:

- ARE CLOSED WHEN THE LEVER IS PERPENDICULAR TO THE PIPELINE;
- ARE OPEN WHEN THE LEVER IS PARALLEL TO THE PIPELINE.



CLOSED



OPEN

THE DTO EN IS NOW READY TO BE FILLED WITH FUEL

6.1.3 ROUTINE MAINTENANCE

The tank only requires periodic internal cleaning. The cleaning operations frequency depends on the quality of the fuel stored. No special maintenance is necessary.

The suction pipe is situated at about 12 - 13 cm from the bottom, in order to leave sufficient space for bottom sediment collection.

ATTENTION

BEFORE THE INTERNAL INSPECTION OF THE TANK, ALL NECESSARY DRAINING AND DEGASSING OPERATION MUST BE PERFORMED.



THE TANK INTERNAL INSPECTION MUST BE CARRIED OUT ONLY BY QUALIFIED PERSONNEL.

THE PERSONNEL IN CHARGE MUST BE EQUIPPED WITH PPE (PERSONAL PROTECTION EQUIPMENT).

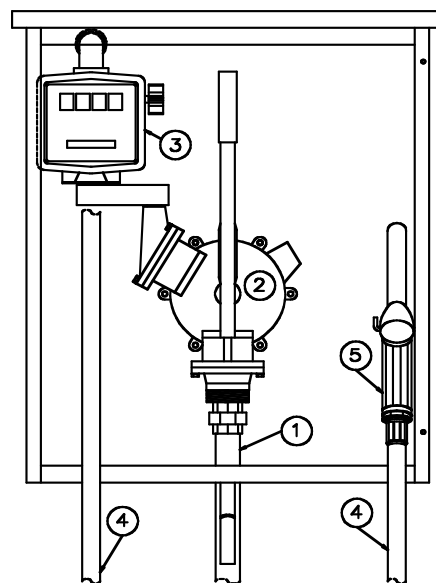
6.2 FUEL DISPENSER UNITS ®

MODEL	FLOW RATE litres/min	PUMP	TYPE 50 Hz	FLOW METER AND ACCESSORIES	DIMENSIONS L x H x W mm.	WEIGHT kg
Box M K	50	GPI	Hand	K 33	600 x 700 x 270	40
Box 5 K	50	Panther 56	E. 230/400V	K 33 K 44 K 24 K 600	600 x 700 x 270	43
Box 6 K	70	Panther 72	E. 230/400V		600 x 700 x 270	43
Box 12/24 K	60	Panther DC	E. 12/24Vcc		600 x 700 x 270	45
Box 8 K	80	E 80	E. 230/400V		600 x 700 x 270	49
Box 10 K	100	E 120	E. 230/400V		600 x 700 x 270	55
Box CABINET	60	Panther 72	E. 230/400V	K 24-FILTER HOSE REEL	800 x 905 x 600	85
CUBE CK50	40	Panther 56	E. 230/400V	K 33	380 x 480 x 380	23
CUBE CK70	65	Electric	230/400V	K 33 / 44	380 x 480 x 380	25
CUBE CK70-MC				K 600	380 x 480 x 380	27
SS70 K44/K44F	70	Panther 72	Electric 230/400V	K 33 K 44 K 600	300 X 1000 X 400	57
SS70 PULSER	70	Panther 72			300 X 1000 X 400	60
SS70-MC F/P/FM	70	Panther 72			300 X 1000 X 400	65
SS100 K44/K44F	100	E 120	Electric 230/400V	K 33 K 44 K 600	300 X 1000 X 400	57
SS100 PULSER	100	E 120			300 X 1000 X 400	60
SS100-MC F/P/FM	100	E 120			300 X 1000 X 400	65

6.3 Box MK (HAND PUMP)

Metal cabinet, dimensions 600 x 270 x h 700 mm with tamperproof door, including:

- ① 1" suction line.
- ② Double-acting hand diaphragm pumps mod. GPI, flow rate 50 l/min.
- ③ Flow meter K33 for private use, with partial reset and progressive totalizer.
- ④ ¾" delivery hose - 19 x 27, 10 bar with pressure couplings.
- ⑤ Normal 1" nozzle with swivel connection.



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6.3.1 STARTING

Once the pump-tank has been positioned according to the instructions given under "GENERAL INFORMATION" (Section 5) and "TANK PREPARATION" (Section 6.1.3), and once the tank has been correctly earthed, it is advisable to control the following before starting the system:

- make sure that the suction line on-off valve is open (Sect. 6.1.3);
- make sure that the fuel level in the tank is above the level of the suction pipe;
- make sure that the connections are perfectly tight.

6.3.2 OPERATION

High-capacity hand diaphragm pumps used for the DT-O MK tanks are self-priming.

Refuelling operations can be performed by one operator, proceeding as follows:

- put the dispenser nozzle into the vehicle tank;
- pull the nozzle trigger. Please note that the nozzle supplied is fitted with a lock system that automatically keeps the nozzle open;
- operate the pump in alternate directions using the relative lever.

Upon completion of the refuelling operation, just release the nozzle trigger to stop it.

6.3.3 MK MAINTENANCE - TROUBLESHOOTING

The MK pump dispenser is fitted with self-lubricating equipment and generally requires no routine maintenance.

A few problems which could occur over a period of time are listed below.

IF THE PUMP DELIVERS SMALL FUEL QUANTITY:

- check the line filter, if any, and clean if necessary;
- check the nozzle;
- check pump diaphragm (read manufacturer manual).

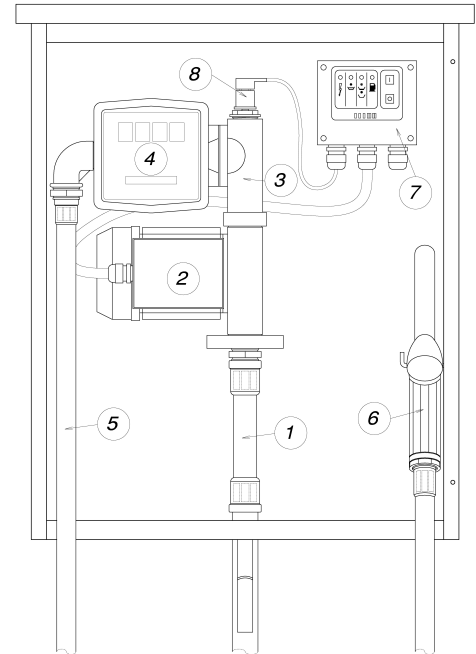
IF THE PUMP DOES NOT DELIVER AT ALL:

- check if the suction valve is closed;
- check the fuel level in the tank;
- check the the safety check valve;
- check the hand pump;
- check the nozzle;

6.4 Box 5K AND 6K (220/400V dc)

Metal cabinet, dimensions 600 x 270 x h 700 mm with tamperproof door, including:

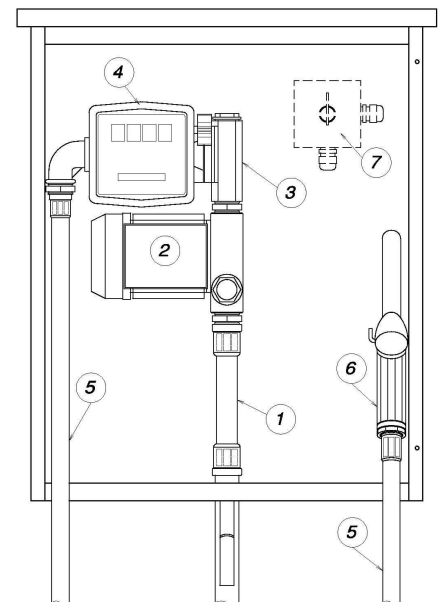
- ① 1" suction line;
- ② Electric pump with built-in by-pass and filter, (5K): Panther 56 - 50 l/min., motor 370W; (6K): Panther 72 - 70 l/min., motor 500w; 230V single-ph / 400V 3 ph- 50 Hz;
- ③ Flanged connection between pump and flow meter;
- ④ Flow meter K33 for private use, with partial reset and progressive totalizer.;
- ⑤ ¾" delivery hose - 19x27/10 bar with pressure fittings;
- ⑥ Automatic nozzle - 60 / 80 l/min. with 1" swivel connection;
- ⑦ Electrical ON-OFF ACP 3.2 device - IP55.
- ⑧ Pressure switch mod. GP 600



6.5 Box 12K AND 24 K (12/24V dc)

Metal cabinet, dimensions 600 x 270 x h 700 mm with tamperproof door, including:

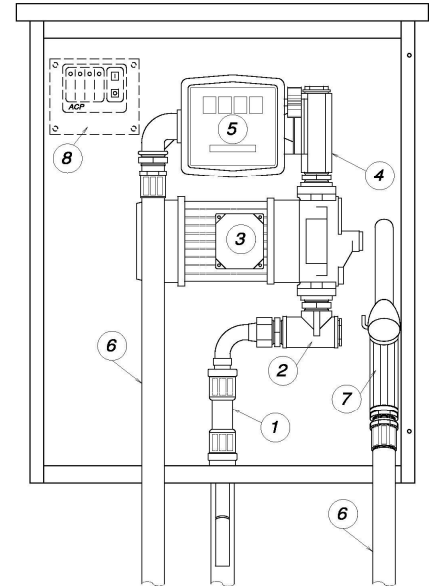
- ① 1" suction pipe;
- ② by-pass electric Panther 12/24V DC - 60 l/min, built-in by-pass and filter, DC motor - 500 w 12 or 24V DC;
- ③ flanged connection between pump and flow meter;
- ④ Flow meter K33 for private use, with partial reset and progressive totalizer.;
- ⑤ ¾" delivery hose - 19x27/10 bar with pressure fittings;
- ⑥ automatic dispenser nozzle - 60 l/min. with 1" swivel connection;
- ⑦ switch box IP55 with rotary switch (battery cut-out) and fuse 50 A dc provided.



6.6 Box 8K AND 10K (220/400V DC)

Metal cabinet, dimensions 600 x 270 x h 700 mm with tamperproof door, including:

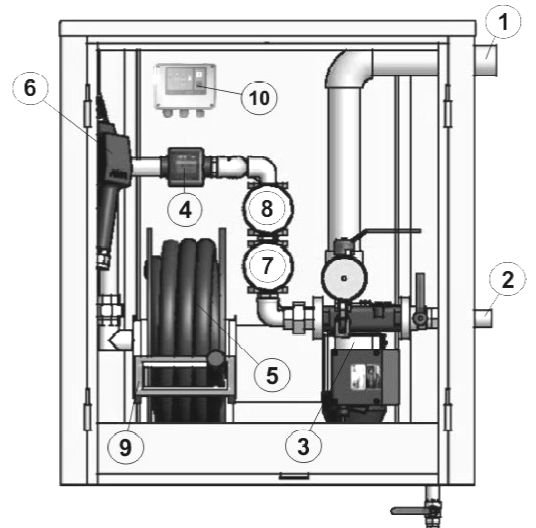
- ① 1" suction pipe;
- ② 1" flanged line filter;
- ③ electric pump with built-in by-pass :
(8K): E 80 - 80 l/min., motor 550 W;
(10K): E 120 - 100 l./min., motor 750w;
230V single-ph / 400V 3 ph- 50 Hz;
- ④ flanged connection between pump and flow meter;
- ⑤ Flow meter K33 for private use, with partial reset and progressive totalizer.;
- ⑥ 1" delivery hose - 25x35/10 bar with pressure fittings;
- ⑦ automatic dispenser nozzle – 80 / 120 l/min. with 1" swivel connection;
- ⑧ electrical ON-OFF ACP 3 - IP55.



6.7 BOX CABINET (220/400V dc)

Metal cabinet, dimensions 800 x 600 x h 905 mm with tamperproof door, including:

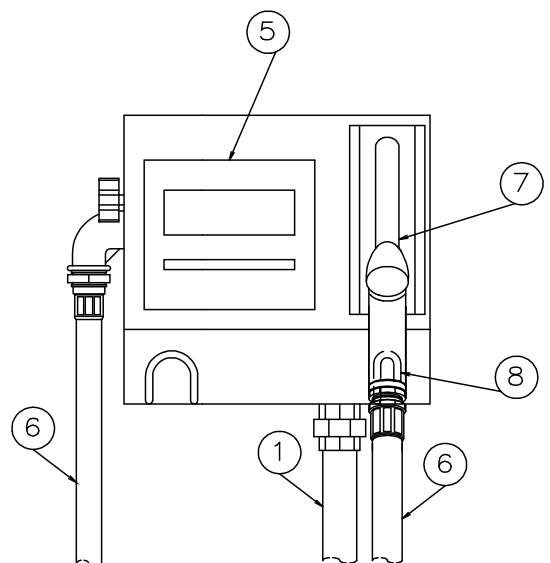
- ① 2" Inlet line with ball valve;
- ② 1" suction pipe with ball valve;
- ③ electric pump Panther 72 - 70 l/min. with built-in by-pass and filter, motor 500 W - 230V single-ph / 400V 3 ph- 50 Hz;
- ④ Flow meter K33 for private use, with partial reset and progressive totalizer.;
- ⑤ ¾" delivery hose - 19x27/10 bar with push-fit connections;
- ⑥ automatic dispenser nozzle - 80 l/min with 1" swivel connection;
- **OPTIONAL :**
- ⑦ 1" Fuel filter, suitable to solid contaminates, 70 l/min, filter rating 10 µ;
- ⑧ 1" Fuel filter, to remove water, flow rate 70 l/min., filter rating 30 µm ;
- ⑨ Hose reel fitted with. Ø ¾" delivery hose, 8 m length;
- ⑩ electrical ON-OFF ACP 3 - IP55.



6.8 CUBE 56 / CUBE 70 / CUBE 70 MC AND PRESET (220V dc)

Mini pump dispenser, dimensions 310 x 300 x 285 mm with housing in painted sheet metal :

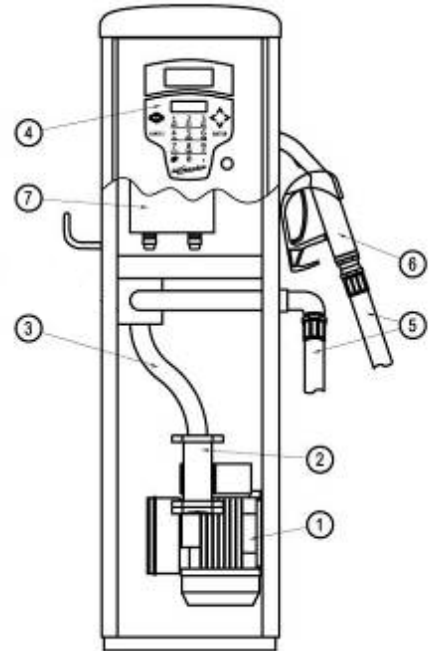
- ① 1" suction pipe;
- ② electric pump with built-in by-pass and filter, (**Cube 56**) Panther 56 - 50 l/min., motor 370W; (**Cube 70**) Panther 72 - 70 l/min., motor 500w; 230V single-ph / 400V 3 ph- 50 Hz;
- ③ mechanical or electronic flow meter for private use, with partial reset progressive totalizer;
- ④ ¾"/1" delivery hose, 10 bar with pressure fittings;
- ⑤ automatic dispenser nozzle with 1" swivel connection;



6.9 SELF SERVICE SS70 K44/K44F/PULSER/MC/F/P/FM(220/400V dc)

Dispenser, dimensions 280 x 360 x h 990 mm, including:

- ① electric pump Panther 72 – 70 l/min. with built-in by-pass and filter, motor 500 W, 230V single-ph/ 400V 3 ph- 50 Hz;
- ② 1" flanged in line filter;
- ③ 1" connection pipe;
- ④ mechanical or electronic flow meter for private use, with trip control and progressive total recorder;
- ⑤ ¾" delivery hose 19x27/10 bar with pressure fittings;
- ⑥ automatic dispenser nozzle - 80 l/min. with 1" swivel connection;
- ⑦ switch box IP 55.

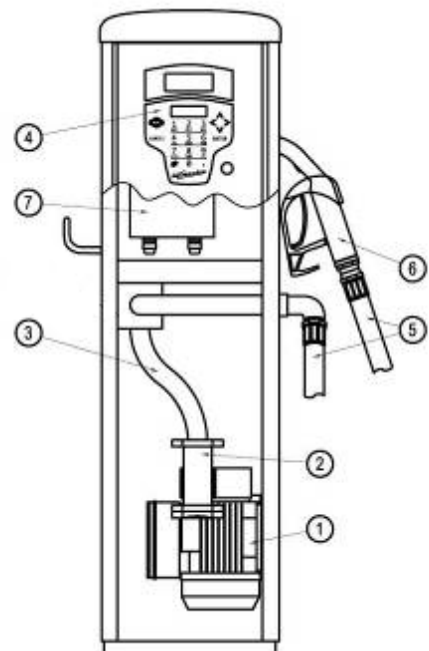


* The Pulser version is fitted with pulse emitter for connection to an external fuel management system.

6.10 SELF SERVICE SS 100 K44/K44F / PULSER / MC F/P/FM

Dispenser, dimensions 280 x 360 x h 990 mm, including:

- ① electric pump wit by-pass E 120 – 100 l/min., motor 750w - 230V single-ph/ 400V 3ph- 50 Hz;
- ② 1" flanged line filter;
- ③ 1" connection pipe;
- ④ mechanical or electronic meter for private use, with partial reset and progressive totalizer;
- ⑤ 1" delivery hose 25x35/10 bar with pressure fittings;
- ⑥ automatic dispenser nozzle - 120 l/min. with 1" swivel connection;
- ⑦ switch box IP 55.



* The Pulser version is fitted with pulse emitter for connection to an external fuel management system.

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7. STARTING

7.1 ELECTRICAL CONNECTION



ATTENTION

READ CAREFULLY THE MANUFACTURERS MANUAL FOR ALL ELECTRIC COMPONENTS AND FOR POWER SUPPLY CONNECTION

7.2 STARTING

ALL MODELS (MK EXCLUDED)

Once the pump-tank has been positioned according to the instructions given under "**GENERAL INFORMATION**" (Section 5.) and "**TANK PREPARATION**" (Section 7.3), the tank has been earthed and the pump electrically connected, it is advisable to carry out the following checks before starting the plant:

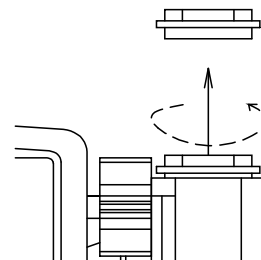
- check that the mains voltage corresponds to the motor voltage;
- check the direction of rotation of the motor if three-phase or if direct current operated;
- make sure that the suction pipe on-off valve is open (Section 6.1.2);
- make sure that the fuel level in the tank is above that of the suction pipe.
- make sure that the connections are perfectly tight, including the filter cap.

The tank is ready for use.

Due to the calibrated check valve, even though the dispenser pump is self-priming it may be necessary, when starting up for the first time, to prime the pump as follows:

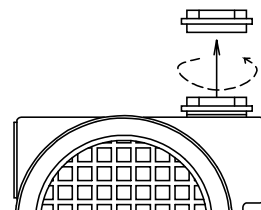
Mod. 5K - 6K - 8K - 10K - 220V – 400V AC

- through the 1" cap of the pump - litre-counter connection.



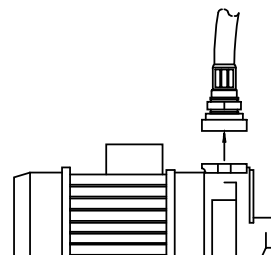
Mod. CUBE 50 - CUBE 70

- through the 1" cap of the pump filter.



Mod. SELF SERVICE 70 - SELF SERVICE 100

- through the flange fitting between the pump and the litre-counter connecting pipe



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7.3 OPERATION

ALL MODELS (MK EXCLUDED)

When the pipes and various parts of the pump are being primed, air bubbles may form which disturb the flow; it is therefore advisable to prolong first delivery until all the air has been eliminated.

This can be facilitated by repeatedly opening and closing the dispenser nozzle.

After a sufficient amount of fuel has been dispensed, shut off the nozzle and leave the pump in the by-pass mode of operation.

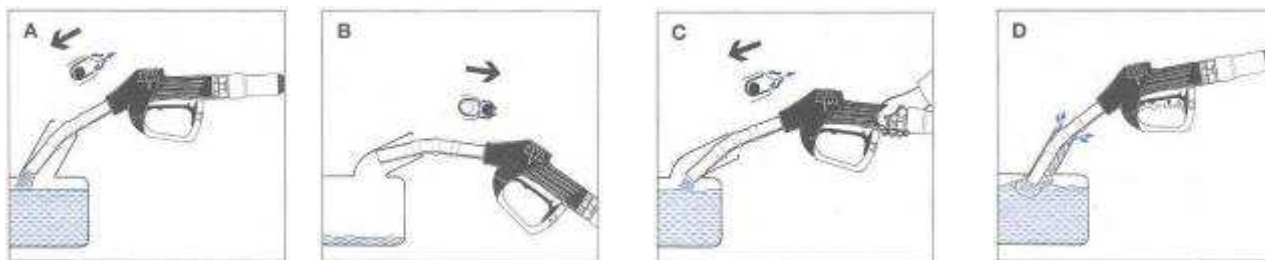
Check for and eliminate any leaks.

The dispenser nozzle is automatically stops operating upon completion of filling.

Let the nozzle drain for a moment and stop the pump by pressing the mushroom-head button - 0 - of the overload cut-out (5 - 6 - 8 - 10K) or by turning the selector switch (4Kdc), then rewind the hose and put back the nozzle in its housing.

In the dispenser version (CK - SS70 - SS100) it is sufficient to just put back the nozzle in its support.

It is recommended that the spout of the nozzle be kept pointing downwards or in a horizontal position during dispensing, otherwise the nozzle may trip before the tank is full.



Note



Due to the safety check valve, there is a minimum over-pressure inside the hydraulic circuit equivalent to the pump by-pass pressure when the dispenser unit stops. In case the installation is not used for a long time, it is advisable to release the internal over-pressure by opening the automatic nozzle without the pump being put into operation.

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7.4 FUEL DISPENSER ROUTINE MAINTENANCE (MK EXCLUDED)

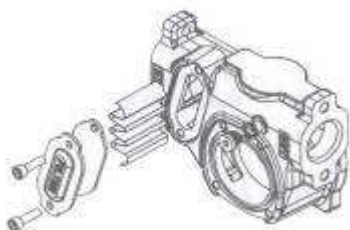
The Box pump dispenser has self-lubricating parts and generally requires no routine maintenance, except for the suction pump filter and the nozzle filter.

It is, however, advisable to schedule periodic maintenance of the pump unit every six – twelve months to verify that it is operating correctly and to check the various parts (for example the impeller blades) for wear, to check seals/gaskets and nipples, hoses, etc.

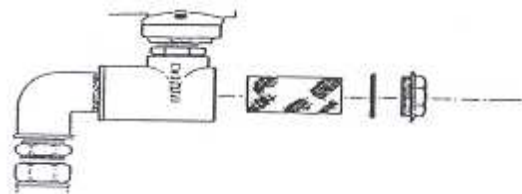
⇒ CLEANING THE PUMP FILTER



- unscrew the filter cap;
- remove the stainless steel mesh and clean with Diesel oil and compressed air;
- refit all the parts making sure that the cap gasket is inserted;
- make sure that the cap is perfectly tight.



PANTHER 56 - 72 - 12/24Vdc



E 80 - E 120

NOTE



If the pump dispenser is fitted with a ZVA automatic nozzle (capacities 70 and 100 l/min.), the filter installed on this type of nozzle between the nozzle body and the swivel must be cleaned periodically.

⇒ CLEANING THE ZVA NOZZLE FILTER



- unscrew the swivel from the nozzle body;
- remove the nylon filter and clean with Diesel oil and compressed air;
- refit all the parts, inserting the appropriate gasket.



7.5 TROUBLE SHOOTING

ATTENTION



PERSONNEL IN CHARGE OF MAINTENANCE MUST BE ADEQUATELY TRAINED. ALL OPERATIONS MUST BE CARRIED OUT IN SAFETY CONDITIONS. MAKE SURE THE POWER SUPPLY IS CUT OFF BEFORE COMMENCING ANY MAINTENANCE SESSION.

A few problems which could occur over a period of time are listed below.

PUMP LOW FLOW RATE	<ul style="list-style-type: none"> • check the filters (pump and nozzle); 	<ul style="list-style-type: none"> • clean the filter if necessary (sect. 7.4);
	<ul style="list-style-type: none"> • check the pump by-pass; 	<ul style="list-style-type: none"> • unscrew the cap and replace the spring if broken;
	<ul style="list-style-type: none"> • check the condition of the pump vanes; 	<ul style="list-style-type: none"> • replace the spring if broken; replace the vanes if they are worn
THE PUMP WORKS BUT DOES NOT DELIVER	<ul style="list-style-type: none"> • check if the suction valve is closed; 	<ul style="list-style-type: none"> • open the valve (sect. 6.1.2);
	<ul style="list-style-type: none"> • check if the pump is primed or not; 	<ul style="list-style-type: none"> • if necessary prime according to instructions (sect. 7.2);
	<ul style="list-style-type: none"> • check if the pump takes in air; 	<ul style="list-style-type: none"> • eliminate any leaks;
	<ul style="list-style-type: none"> • check the pump by-pass; 	<ul style="list-style-type: none"> • unscrew the cap and replace the spring if broken;
	<ul style="list-style-type: none"> • check the condition of the pump vanes; 	<ul style="list-style-type: none"> • replace the spring if broken;
THE ELECTRIC MOTOR DOES NOT WORK:	<ul style="list-style-type: none"> • check whether the current arrives or not at the terminals on the overload cut-out 	<ul style="list-style-type: none"> • verify the power supply • check the fuse in the switch box on the 12/24Vdc;
	<ul style="list-style-type: none"> • check if the pump impeller is locked and release if necessary 	<ul style="list-style-type: none"> • release if necessary;
	<ul style="list-style-type: none"> • check the electric motor; 	<ul style="list-style-type: none"> • replace if necessary;

⇒ **CONTACT OUR OFFICES FOR ANY OTHER MALFUNCTION.**

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7.6 FLOW METER CALIBRATION

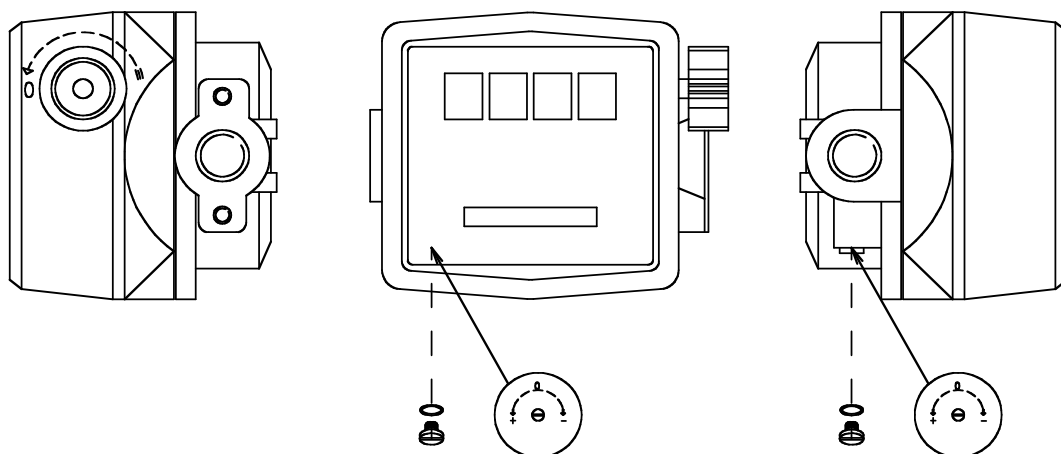
THE LITRE-COUNTER IS CALIBRATED IN THE TESTING CENTRE FOR THE DISPENSING OF DIESEL OIL.

Any inaccuracy exceeding $0.5 \div 1.5 \%$ (percentage allowed for private use), may be due to various factors and can be corrected by means the calibrating screw located at the side of the outlet connection as described below.

FULLY UNSCREW THE CAP AND PROCEED AS FOLLOWS:

- A)** the indicated quantity of liquid is less than the actual quantity:
⇒ **tighten the adjusting screw until correct calibration is reached.**
- B)** the indicated quantity of liquid is more than the actual quantity:
⇒ **loosen the adjusting screw until correct calibration is reached.**

N.B. Adjustment must be done gradually by quarter-turns.



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8. SPARE PARTS

8.1 SPARE PARTS DTO EN

CODE	SECTION	POSITION	No.	DESCRIPTION
107148	6.1.1	-	1	- Gasket for manhole D 620 mm.
101132		1	1	2" inlet ball valve
100017		2	1	3" overfill prevention valve
100152		(2)	1	3" overfill prevention valve with low drain (OPTIONAL)
100744		3	1	1½" outlet angle check valve
BL 201021		3	1	1" filter inside
100022		4	1	1" gauging set
100023		(4)	1	- aluminium dip stick
		5	1	2" breather pipe
100018		6	1	- float gauge 200 cm.
000191		(6)	1	- float gauge OCIO type (optional)
111204		7	1	- Leak detection systems – LAS 72

8.2 SPARE PARTS FUEL DISPENSER UNITS

CODE	N.	DESCRIPTION	FUEL DISPENSER TYPE						
			MK	5 / 6K	12/24 DC	8 / 10K	Box CABINET	CUBE	SS 70/100
100038	1	Box cabinet 580X320XH700	X	X	X	X			
111164	1	Vera Cabinet 800X600XH905					X		
101926	1	Pipe stand 19 x 27	X	X	X	X			
100426	1	Oil-res. grommet D 22.5 x Box		X	X	X	X		
100427	1	Oil-resist. pipe guide D 43 x Box		X	X	X	X		
100042	4	Vib. isol. mountings 20x15 - M6		X	X	X	X		
100068		Hand pump GPI	X						
Man. GPI	-	- Spare parts Hand pump GPI	X						
100041		Pump Panther 56 Sph 230V/50Hz		X					
100041-1		Pump Panther 56 Tph 400V/50Hz		X					
Man. Piusi	-	- Spare parts Pump Panther 56		X					
100054		Pump Panther 72 Sph 230V/50Hz		X					
100054-1		Pump Panther 72 Tph 400V/50Hz		X					
Man. Piusi	-	- Spare parts Pump Panther 72		X					
100677		Pump Panther 12/24V 12VDC			X				
100678		Pump Panther 12/24V 24VDC			X				
Man. Piusi	-	- Spare parts Pump Panther 12/24			X				

CODE	N.	DESCRIPTION	PUMP DISPENSER TYPE						
			MK	5 / 6K	12/24 DC	8 / 10K	VERA CABINET	CUBE	SS 70/100
100058		Pump E 80 Sph. 230V/50Hz				X			
100058-1		Pump E 80 Tph. 400V/50Hz				X			
Man. Piusi	-	- Spare parts Pump E 80				X			
100062		Pump E 120 Sph. 230V/50Hz				X			
100062-1		Pump E 120 Tph. 400V/50Hz				X			
Man. Piusi	-	- Spare parts Pump E 120				X			
200000	1	Dispenser CUBE 56						X	
200050	1	Dispenser CUBE 70						X	
200100	1	Dispenser CUBE 70-MC						X	
Man. Piusi	-	- Spare parts CUBE 56 ÷ 70-MC						X	
300100	1	Dispenser SS 70 K44 / F_Tank							X
300150	1	Dispenser SS70 Pulser_T.							X
400100	1	Dispenser SS70 MC/F/P_T.							X
400200		Dispenser SS70 FM_T.							X
300300		Dispenser SS100 K44 / F_Tank							X
300350		Dispenser SS100 Pulser_T.							X
400350		Dispenser SS100 MC/F_T.							X
400450		Dispenser SS100 FM_T.							X
Man. Piusi	-	- Spare parts SS 70 ÷ 100							X
100048	1	Flow meter K33	X	X	X				
100205		Flow meter K44				X			
Man. Piusi	-	- Spare parts K33 / K44	X	X	X	X			
106794		Flow meter K24 electronic					X		
Man. Piusi	-	- Spare parts K24					X		
100511	1	Fuel filter for water 70 l.					X		
100256	1	Fuel filter for solid contam. 70 l.					X		
100046	1	AMA Al pump-litre-c. connect.		X	X	X			
100735	1	Litre-counter connection O-ring		X	X	X			
100734	1	1" plug O ring		X	X	X			
100049	x m	Pipe H K ¾" 19 x 27 – 10 bar	X	X	X			X	
100055	x m	Pipe H K 1" 25 x 35 – 10 bar				X	X		X
104162	1	Normal nozzle 60 l/min.	X						
100050	1	Automatic nozzle PA 60 - 60 l/min.		X	X			X	
100056	1	Automatic nozzle PA 80 - 80 l/min.		X		X	X	X	X
100063	1	Automatic nozzle PA 120 - 120 l/min.				X			X
100043	1	Switch box ACP 3.2							
100140	1	Battery cut-out 35 A DC			X				
100141	1	Fuse holder w/fuse DC 50 A			X				

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9. TECHNICAL ASSISTANCE

If you need technical assistance or need to report an equipment failure, please e-mail us at tecnico@amaspa.com.

If you prefer to contact us by phone, call

+39 0422 7831

Monday - Friday : 9:00-12:00 / 15:00-18:00 (GMT +1.00).

In order to avoid unnecessary waiting over the phone, we suggest to contact us via e-mail, trying to give as many details as possible about the problems you wish to report.



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