Dear Customer,
compliments on your purchase: the IMER concrete pump, resulting from years of research, offers maximum reliability and features innovative technical solutions.

⚠ - WORKING IN SAFETY.
For safety purposes, make sure to carefully read the following instructions, as well as the instructions given in the enclosed manuals relevant to the compressor and the Diesel engine.
This OPERATION AND MAINTENANCE MANUAL must be kept by the firm's manager at the worksite, and be always available for consultation, together with the user's manuals for the compressor and the Diesel engine.
The manual is considered part of the machine and must be stored for future reference (EN ISO 12100-2) through to scrapping of the machine itself. Should the manual be lost or damaged, a replacement copy can be ordered from the manufacturer.
The manual contains the EC declaration of conformity (2006/42/EC) important information on worksite preparation, installation, use, maintenance and ordering spare parts. Nevertheless, the user must both have adequate experience and knowledge of the machine prior to use: the user should be trained by a person totally familiar with the operation and use of this machine.
To guarantee the operator's safety, safe operation and long life of the machine, the instructions in this manual must be observed, together with the current regulations on safety and accident-prevention at work (use of adequate footwear, clothing, dust masks, gloves, glasses, etc.).

⚠ - Make sure that all signs are legible.

⚠ - Do not make any modifications to the metal structure or systems of the concrete pump.
⚠ - Always work with the casing closed.
Pay attention when opening the casing: on the inside there are very hot parts (in particular, engine, compressor, radiator), moving parts (alternator, motor fan, compressor flywheel) and there may be traces of harmful liquids (in particular, battery acid).

⚠ - Check the perfect efficiency of the safety devices, and in particular the emergency button and the devices for stopping mixer and agitator in case of opening of the grill and mixer material door and hopper grill.

IMER INTERNATIONAL declines any liability in case of improper use, feed defects, lack of maintenance, unauthorised modifications, and partial or total non-compliance with the instructions contained in this manual.

1. TECHNICAL DATA
Table 1 gives the technical specifications of the concrete pump, with reference to figure 1.

2. DESIGN AND CONSTRUCTION STANDARDS
The pumps are designed and built in accordance with the standards given in table 1.

3. NOISE EMISSION LEVEL
Table 1 gives the sound pressure levels of the pump measured at the operator's ear (LpA at 1 m) and the noise level in the environment (power LWA) measured according to EN ISO 3744 (2000/14/EC).

4. DESCRIPTION OF OPERATION OF CONCRETE PUMP

⚠ - THE CONCRETE PUMP is designed for use on building sites, for pumping concrete. The mixtures in use must be pumpable: aggregate granulometry (e.g.: 45% 0-4mm, 10% 4-8mm, 45% 8-16mm) and consistence class (e.g.: fluid, slump 16-22 cm) suited to pumping.

4.1 DESCRIPTION OF CONCRETE PUMP (see fig. 1)
The pump has the following major parts:
- A pumping unit composed of two concrete pumping pipes (Page 2 Ref. 1) housing the pumping pistons (Page 2 Ref. 2) which are driven by hydraulic cylinders (Page 2 Ref. 3), a lubricant tank (Page 2 Ref. 4), an S valve (Page 2 Ref. 5) driven by two hydraulic switching cylinders (Page 2 Ref. 6), a lower hopper (Page 2 Ref. 7) with mixer (Page 2 Ref. 8) driven by a hydraulic motor and material delivery flange (Page 2 Ref. 9), an upper hopper (Page 2 Ref. 10) with grill (Page 2 Ref. 11) to which is mounted a vibrator (Page 2 Ref. 12)
- A hydraulic circuit, which including the above mentioned cylinders, is composed of a variable rate pump (Page 2 Ref. 13) driven by a diesel engine (Page 2 Ref. 14), and pumping and switching valve block (Page 2 Ref. 15), and auxiliary pump (Page 2 Ref. 16) and an auxiliary manifold (Page 2 Ref. 17), a fluid reservoir (Page 2 Ref. 18) with suction and return filters, a heat exchanger (Page 2 Ref. 19)
- A control panel (Page 2 Ref. 20) with cabled remote control (Page 2 Ref. 21) and radio control (Page 2 Ref. 22) (optional).
- A supporting chassis (Page 2 Ref. 23), a casing (Page 2 Ref. 24), a frame with wheels (Page 2 Ref. 25), available both in road-towable and on-site versions.
- Accessory equipment such as various diameters of steel or rubber delivery pipes, collars and gaskets, reducers from one diameter to another, and cleaning sponges and other materials.
- Accessories like the set accelerant pump (Page 2 Ref. 26), automatic greasing system (Page 2 Ref. 27), hydraulically controlled water cleaner (Page 2 Ref. 28), Spritz Beton jet (Page 2 Ref. 29).

5. GENERAL SAFETY WARNINGS

⚠ - Before using the concrete pump make sure the protection devices have not been removed. Check the following safety devices:
- Opening the grill on the upper hopper should stop the mixer in the lower hopper, the S valve and the pumping pistons by tripping the sensor (Fig. 1 Ref. 1).
- Pressing the emergency button (Fig. 2 Ref. 1) should stop the machine.
- the hopper drain hatch (Fig. 3 Ref. 1) should be closed and locked.
- The moving parts guard, tank guard and engine fan guard - must be present and securely mounted;
- The upper hopper must be closed and locked;
- The casing must be closed by key during use.
Furthermore:
- Make sure the material delivery flange fitting is in perfect condition;
- Check the condition of the pipes and the tightness of the couplings, both when setting up the line and placing the column and before starting any pumping. The pipes must be correctly secured, using brackets if necessary (e.g. Fig. 4 Ref. 1) .
- The terminal (pipe or jet) must NEVER be directed at other persons or oneself

⚠ - Before disconnecting the pipelines, ensure that the pressure gauge reads zero (Fig. 2 Ref. 2);

ORIGINAL INSTRUCTIONS

if this is not the case, run the pump in suction for a few seconds. If rubber hoses are being used, check that no sections of hose are still pressurised after this operation. In this case, the operator uncoupling the pipes must be specially trained in how to do the job.

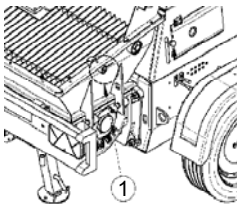


Fig. 1

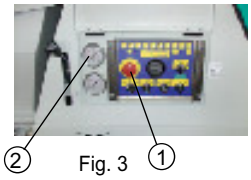


Fig. 3

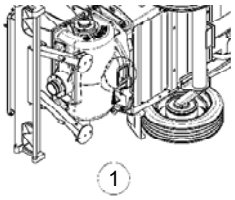


Fig. 3

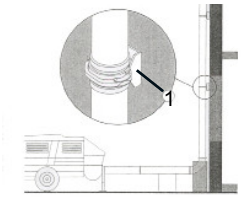


Fig. 4

⚠ ***- Switch off the machine before accessing the lower hopper or opening the upper hopper. The panel hatch must be padlocked to prevent anyone starting up the machine.***
⚠ ***- The casing must be closed by key during use.***
⚠ ***-Always switch off the Diesel engine before opening the casing.***
⚠ ***-Pay attention when opening the casing, because there may be very hot parts and flammable and/or corrosive liquids inside the engine compartment.***
⚠ ***-The machine must not be used in places where there is risk of explosion and/or fire, or in underground excavations.***

The pump is not fitted with its own lighting and therefore the workplace must be sufficiently lit for this purpose.

6. ELECTRICAL SAFETY

The BOOSTER 15 pump has a 12 V DC electrical circuit.

7. MECHANICAL SAFETY

The hazardous parts of the IMER pump are protected by suitable safety devices, which must remain fitted and kept in perfect condition, such as the Diesel engine cooling fan guard and in particular the grill and the guard in the hopper, which prevent contact with the mixer located inside the hopper itself: opening the these automatically stops the mixer, the S valve and the pumping pistons.

⚠ ***-The grills must not be tampered with in any way or for any reason: tampering with the grills can be the cause of serious accidents at work with these types of machines.***

8. TRANSPORTABILITY AND TOWABILITY

Before moving the pump, it is advisable to disconnect the material delivery pipe and, if present, the pressure water cleaner suction and delivery hoses, the set accelerant suction and delivery pipes, and the cabled control. This must always be done when lifting the machine.

There must also not be any material in the hopper.

⚠ ***- Caution! Before lifting or towing the pump***
- Always disconnect the material delivery pipe and, if present, the pressure water cleaner and set accelerant pipes
- If present, remove the remote control , which must always be carried separately.
- Always make sure all components of the machine are correctly secured and fixed and, in particular, that the upper hopper is secured and the casing locked shut.

To lift the machine, use the provided attachment points (Fig. 5), using a yoke (Fig. 5 Ref. 1) (not provided) and n°4 straps (not provided).

⚠ ***- Caution! Lift with care to avoid hazardous oscillations.***

⚠ ***- Caution! Never use attachment points other than as specified in the figure (Fig. 5) to lift the machine.***

Use lifting equipment suitable for the overall weight of the machine indicated in Table 1.

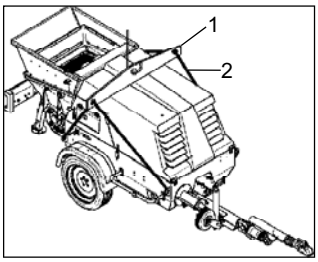


Fig. 5

Before towing the machine, position the tiller correctly so that the attachment point, with the machine horizontal and the end of the tiller horizontal (Fig. 6 Ref. 1), is at the height of the towing hitch (Fig. 6 Ref. 2), tighten down the tiller's various parts (Fig. 6 Ref. 3), hook on the safety cable, secure the lights bar (Fig. 6 Ref. 4), hook up the lights cable, make sure the upper hopper is secured and locked, that the grill on the upper hopper is closed, that the hopper's drain hatch is closed (Fig. 3 Ref. 1), light and secure the stabiliser feet, check the tyre inflation pressure and the operation of the lights, check that no foreign materials are resting on or inside the machine (bags of cement, pipes, tools, etc.), and make sure the machine is good order overall.

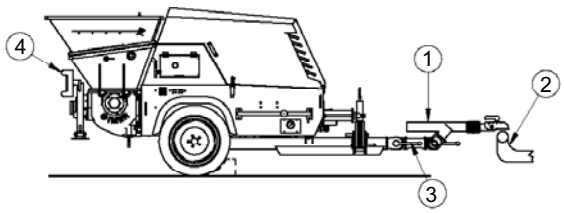


Fig. 6

9. INSTALLATION

The pump must be securely located on a stable horizontal surface with its supporting feet (Fig. 7 Ref. 1) and the wheels chocked (Fig. 7 Ref. 2) with the jockey wheel support placed on the ground (Fig. 7 Ref. 3). It is advisable to chock the wheels and pull the hand brake in the road trailer version.
The ground on which the machine stands must be firm, and in particular the feet support points must be very solid.
All current standards governing accident prevention and safety devices must be observed in the workplace.
In particular, there must be a completely free area of at least a couple of metres around the machine and a flat treadable surface where only the machine operator stands.
When using the pump, the operator must constantly make sure that no one else is near the work area.
When loading the material into the hopper: avoid splashing the material as this is a hazard for the eyes, and wear certified gloves and eye guards.
The machine must also be placed in such a way as to use the least possible piping, without any obstacles during use and cleaning.

⚠ ***- Caution! The machine must rest on a flat and firm surface, so as not to jeopardise the stability of the pump during use.***

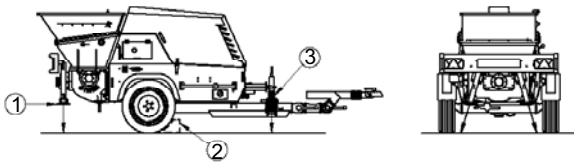


Fig. 7

Extend the machine pipes to where the product is to be taken, avoiding tight bends or constrictions when using rubber hoses for this purpose.
Fully tighten down the Victaulic fittings (Fig. 8 Ref. 1) and the cam couplings if present (Fig. 8 Ref. 2) - make sure to fit the gaskets correctly (Fig. 8 Ref. 3-4).
The pipes must be in good condition, neither worn nor damaged, and the collars, couplings and gaskets must be undamaged.
Check the delivery manifold collar with special care.
If pumping vertically fit a manual shutter along the pipe line (Fig. 9 Ref. 1): this prevent material spills if you have to disconnect the pipes when washing the machine.
If using D.50 pipes, fit the reducer cone (Fig. 9 Ref. 2) with its gasket.

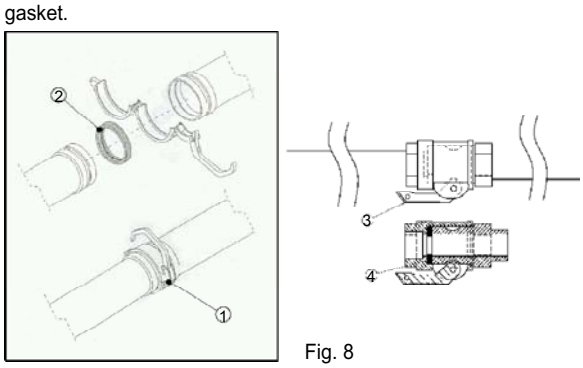


Fig. 8

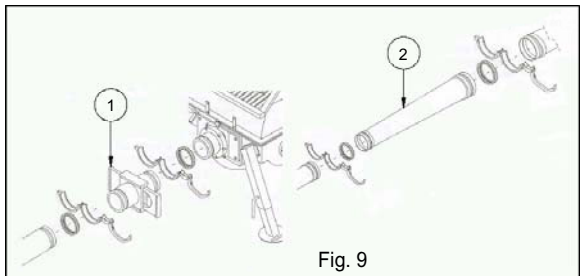


Fig. 9

10. PUMPING SYSTEMS

10.1 HORIZONTAL PUMPING

For horizontal pumping, the pipes must be aligned and supported with bags of cement or bricks.

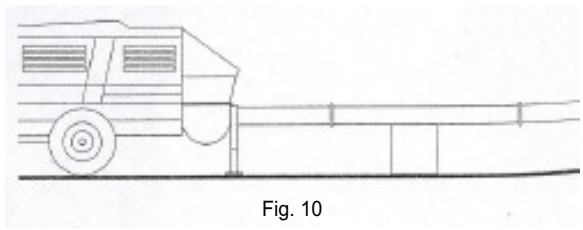


Fig. 10

10.2 SIDEWAYS PUMPING

Sideways pumping is the same as horizontal pumping, but with a bend fitted to the pipe line.

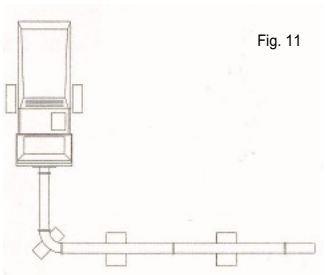


Fig. 11

10.3 VERTICAL PUMPING

For vertical pumping, the horizontal section of pipe must be aligned and supported with bags of cement or bricks. Use a wide bend for the connection between the horizontal and vertical sections. Use a solid support under the bend itself (Fig. 12 Ref. 1).
The vertical section of pipe must be secured with special collars.

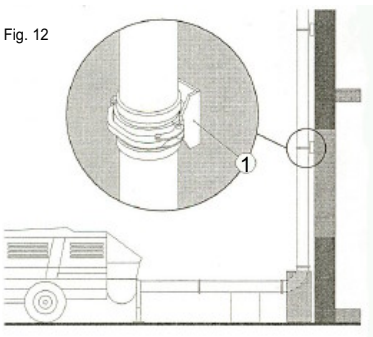


Fig. 12

10.4 DOWNWARDS PUMPING

For downwards pumping, the horizontal section of pipe must be aligned and supported with bags of cement or bricks. Use a wide bend for the connection between the horizontal and downwards sections. Use a solid support under the bend itself (Fig. 13 Ref. 1). In the downwards section, the material flow must be decelerated with a bend and opposing bend (Fig. 13 Ref. 2).

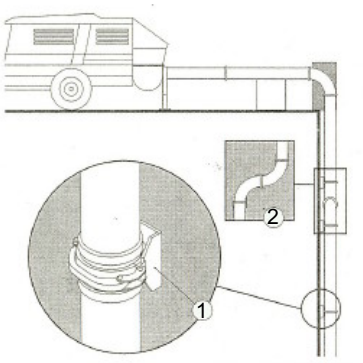


Fig. 13

11. The pump can also be used with the following accessories: standard remote control, remote control, Spritz Beton, set accelerant pump and high pressure water cleaner.

11.1 STANDARD REMOTE CONTROL

The machine is equipped with a cabled remote (Fig. 14 Ref. 1) which connects to the socket (Fig. 14 Ref. 2) on the machine's chassis. When using the remote, the switch (Fig. 14 Ref. 3) on the panel must be set to "LOC".

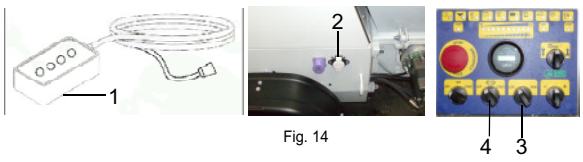


Fig. 14

11.2 OPTIONAL REMOTE CONTROL

The machine is equipped with a remote control (Fig. 15), which is enabled by setting the switch (Fig. 14 Ref. 3) on the panel to REM. If necessary, connected the remote (Fig. 14 Ref. 1) to the provided socket (Fig. 14 Ref. 2).

Fig. 15

11.3 SPRITZ BETON VERSION

When the machine is used for spraying concrete, use the 15mm grill, the vibrator, the Spritz Beton jet and an auxiliary compressor. Connect the delivery pipe to the jet (Fig. 16 Ref. 1) and the air delivery pipe to the intake (Fig. 16 Ref. 2)

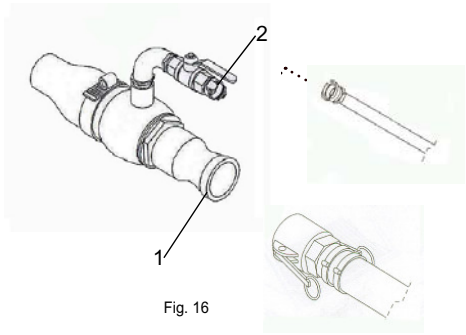


Fig. 16

11.4 SET ACCELERANT PUMP

⚠ ***-Caution!*** *Set accelerants are aggressive for the eyes and skin. Use appropriate protective equipment - gloves and face mask: always handle this material with the greatest care and following the manufacturer's instructions to the letter.*

When using the accelerant pump, connect the material intake pipe to the quick release (Fig. 17 Ref. 1), and the other end of the pipe to the tank containing the accelerant itself.
Check that the accelerant tank suction fitting is at least 50cm above the connector (Fig. 17 Ref. 1).
The accelerant delivery pipe must be connected to the quick release (Fig. 17 Ref. 2) on the machine and the jet's quick release fitting (Fig. 17 Ref. 3).

- Only use original IMER pipes and fittings. The use of pipes and fittings not complying with IMER specifications can compromise correct machine operation as well as the safety of operators.

- Before starting work, always check that the pipes, fittings and gaskets are in perfect condition.

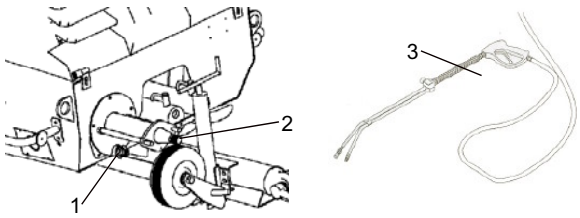


Fig. 17

12. PRELIMINARY CHECKS

Before operating the machine, check the engine oil, radiator coolant, hydraulic fluid and diesel levels.
Check that the safety grill (Fig. 18 Ref. 1) on the hopper is securely mounted, that the opening safety device is operational (Fig. 18 Ref. 2), and that the outlet is closed and locked (Fig. 3 Ref. 1).
Check that the upper hopper is closed and its nuts fully tightened down (Fig. 18 Ref. 3).
Check that the lubricant tank (Fig. 18 Ref. 4) is filled with water, top it up if necessary: not doing so quickly leads to serious damage to the pumping pistons.

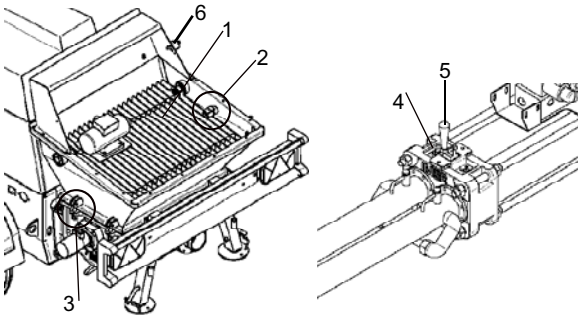


Fig. 18

⚠ ***- IMPORTANT: at low temperatures the water in the lubricant tank may freeze and thus damage the sensor mount grill and the sensors themselves.***

If there is any danger of this occurring, open the cap (Fig. 4 Ref. 5) to drain the tank.

- The casing must be locked.
- Before starting the machine, make sure that no unauthorised persons are closer than 2 m or within the radius of action of the final pipe.
- Check that the emergency button is operational.

13. STARTING UP

Prepare a suitable quantity of grout.
Pumping up to 20 metres: 40-50 litres
Pumping more than 20 metres: 50-80 litres
Pour the grout into the tank:

Make sure the levers of the distributor (Fig. 19, Ref. 2-3) are all in the middle position.
Make sure the emergency button is not pressed (Fig. 19, Ref. 1) and release it if necessary.
Check that the switch (Fig. 19 Ref. 4) is in the LOC position, to enable the local controls. Turn the selector (Fig. 19 Ref.5) to ON, wait for the spark plug indicator light (Fig. 19 Ref. 6) to switch off and then turn the switch to START (Fig. 19 Ref. 5): the Diesel engine starts.

Turn the switch (Fig. 19 Ref. 7) to the right (arrow upwards): the machine starts to pump. Use the flow switch (+/-) (Fig. 19 Ref. 8) to adjust the flow rate as shown on the LED indicator bar (Fig. 21). The flow rate can be set to twenty different positions, which represent the following percentages of the maximum flow rate (Fig. 21).
Otherwise the machine can be started using the electric remote control, by setting the selector (Fig. 19 Ref. 4) to REM which enables the remote control.
With the switch (Fig. 19 Ref. 4) set to REM, the machine is controlled exclusively by means of the electric remote control. Depending on the machine configuration, wait until the grout in the hopper reaches the level of the mixer, or until the product no longer comes out of the pipe. At this point shut down the machine with the electric control, fill the hopper and start working. Adjust the quantity of material delivered from the pipe or jet with pushbuttons (+) and (-) (Fig. 19 Ref. 8).
The machine can be equipped with a set accelerant pump which can operate either manually or automatically. To enable manual operation, turn the switch (Fig. 20) to the right and hold it there for 3 seconds, then release it; the led for the selected function will light up. In manual mode, the pump runs at maximum speed.
To enable automatic operation, turn the switch (Fig. 20) to the left and hold it there for 3 seconds, then release it; the function light lights up and the led indicator bar (Fig. 21) on the control panel starts to flash to indicate the previous setting. To increase/decrease the percentage of accelerant, use the switch (Fig. 20) in small steps to the right/left respectively. If you do not operate the switch for a few seconds, the led indicator bar (Fig. 21) stops flashing and the previously set percentage is stored. The speed of the accelerant pump is a function of the flow rate of the pistons and the percentage set on the led bar. To deactivate manual or automatic operation, turn the switch to the same position to which it is set for a few seconds and release it. The accelerant percentage is in the range of 1 to 5% of the weight of cement. The pressure gauge (Fig. 19, Ref. 9) indicates the pressure of the S valve's hydraulic circuit; it will rise to 160 bar in case of blockage.
Try operating the mixer with the distributor lever (Fig. 19 Ref. 2): with the top lever the mixer turns correctly; with the bottom lever it turns in the other direction. The pressure gauge (Fig. 19, Ref. 10) indicates the pressure of the mixer's hydraulic circuit; it will rise to 140 bar in case of blockage. The RH (shorter) lever of the distributor (Fig. 19, Ref. 3) is used for operating the hydraulically controlled pressure water cleaner: it must be in the middle position when the pressure water cleaner hoses are not connected to the water supply. Otherwise the pressure water cleaner will quickly become permanently damaged
In case of an emergency, press the red emergency button (Fig 19, Ref. 1) to stop the machine. The BOOSTER 15 is also equipped with throttle lever to
adjust the Diesel engine speed from 2400 to 2700 RPM.

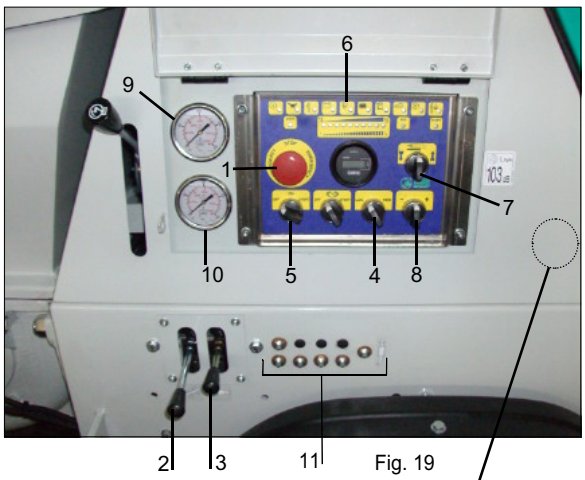


Fig. 19

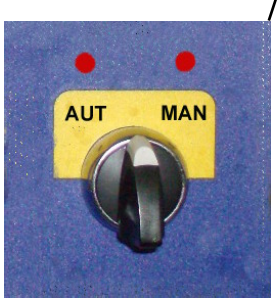
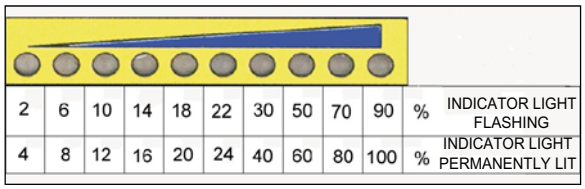


Fig. 20



2	6	10	14	18	22	30	50	70	90	%	INDICATOR LIGHT FLASHING
4	8	12	16	20	24	40	60	80	100	%	INDICATOR LIGHT PERMANENTLY LIT

Fig. 21

14. OPERATION

⚠ The hopper safety grid must always be fitted and secured in place.
Never place materials other than concrete materials in the hopper.

⚠ Opening the hopper grill stops the relevant moving parts.
Always check the operation of the safety equipment - in this case, the electrical safety (Fig. 18 Ref. 2) and the mechanical safety (Fig. 18 Ref. 6).

⚠ Wear envisaged personal protection devices before starting work.

Interruptions exceeding 30min should be avoided, and in any event these pauses should be reduced to the minimum possible when using rapid-drying materials
Prolonged shutdown can cause clogging in the material delivery lines: in this case no material is delivered from the jet and the pressure gauge (Fig. 19 Ref. 9) indicates a higher pressure than the normal working value.
In this case, turn the switch so its arrow is pointing down (Fig. 19 Ref. 7) (opposite to the normal working position) thus inverting the timing between the S valve and using the pump in suction to depressurise the pipes. As soon as the pipeline becomes soft and flexible (the pressure gauge reads 0 bar), stop the machine.
Locate the point of clogging in the hose and remove by tapping the hose with a rubber mallet and totally empty by hand. (Fig. 24)

⚠ **If necessary, disconnect the Spritz Beton jet and open the pipeline couplings, checking previously if any residual pressure is present. The pressure gauge (Fig. 19 Ref. 9) must indicate 0 bar and the pipelines, excluding the clogged sections, must be flexible. The operator carrying this out must be specially trained in these procedures.**

Reconnect the pipelines and spray jet, set the main switch to the correct position and restart the machine.

⚠ Do not move the machine with the hopper full.

A reduction in material flow to the jet may indicate worn pistons. Replace them.
Otherwise, to replace the pistons, proceed as follows. Bring the delivery to minimum and stop the machine in a position which facilitates working. With the machine empty and clean, and with the engine switched off, slacken off the tie-rod nuts and raise the hopper.
Use the lubricant available from IMER when replacing the pistons.

⚠ ***Never use mineral oil or grease for fitting the pistons, as this may damage them. Avoid all types of benzene.***

Whenever the fuel reserve light flashes during work, the machine will automatically stop in about 20 minutes if refuelling is not carried out, in order to avoid pointless lost time due to the engine shutting down due to no fuel.
If an engine, electrical or hydraulic system anomaly occurs, preventing the continuation of work, wash the machine and the pipes immediately. On completion reassemble all components.

15. MACHINE SHUTDOWN AND CLEANING

After pumping the last mixture, stop the agitator (Page 2 Ref. 8), the pump unit (Page 2 Ref. 1) the grill vibrator (Page 2 Ref. 12) by pressing the button in question, if the machine is equipped with a set accelerant pump, stop it with the switch (Fig. 20)
Before disconnecting the delivery hose, fill the tank with water and pump for a while to start the cleaning procedure.

⚠ ***Stop pumping before you disconnect the hoses! Before slackening off the material delivery hose fitting, make sure that no parts are moving and that there is no residual pressure inside it.***

Disconnect the delivery hose from the tank.
If you have fit the manual or hydraulic shutter (Fig. 9 Ref. 1) between the machine and the hose, close and connect it;
Open the tank evacuation hatch (Fig. 3 Ref. 1) to expel any remaining material and then clean the tank with a jet of water.
Now start the pistons in suction mode by turning the switch (Fig. 19 Ref. 1) to the left and direct the water into the S valve's delivery hose (Page 2 Ref. 9). Continue until clean water runs out of the tank.
Now stop the pump and close the hatch.
Let the diesel engine idle for 2-3 minutes; then switch it off with the ON/OFF button.
Check for residual concrete inside the tank and the S valve.
Coat the tank walls and the interior of the S valve with oil or some other lubricant.
If necessary, cover the tank with a tarp to prevent foreign matter falling into it.
If the pressure water cleaner is present, after connecting the suction pipes (Fig. 22, Ref. 1) to a water supply with an adequate flowrate (at least 25 l/min) - **do not suck water from a drum** - and the delivery pipes, with the lance supplied (Fig. 22, Ref. 2), to the connection on the machine (Fig. 22, Ref. 3), start it with the left lever (shorter) of the distributor (Fig. 19, Ref. 3) and begin washing operations. **Make sure not to accidentally operate the pressure water cleaner control lever during work: by turning empty it will quickly become permanently damaged.**
Never direct the water jet at other persons or towards yourself. Never direct the water jet towards the electrical panel or other delicate parts of the machine. Do not use the pressure water cleaner to wash inside the pump.

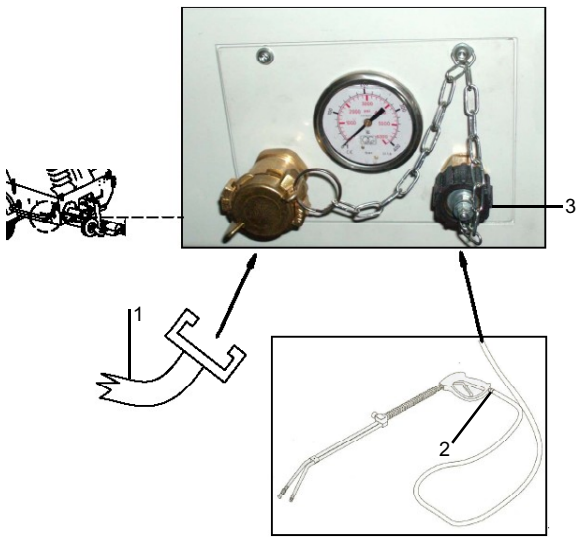


Fig. 22

16. CLEANING THE PIPES

The pipes can be cleaned in three ways: with pressurised water, compressed air, or by suction (vertical pumping only).

In particular:
- with suction cleaning, the material in the pipe is returned to the tank; note that the tank has a recovery capacity of around 200 l.
- On the other hand, compressed water/compressed air cleaning allows all the concrete to be used and unloaded on site.

16.1 CLEANING WITH WATER

Wet a sponge and fit it into the pipe (Fig. 23 Ref. 1). Reconnect the pipe to the machine. Connect the sponge recovery container (Fig. 23 Ref. 2) to the outlet of the hose using the Victaulic fitting with gasket.
Fill the tank with water and start pumping.

⚠ ***The sponge may be expelled from the pipe with force, make sure the container is of a suitable shape. In case of obstructions or blockages inside the pipe, the sponge does not pass through it, so pumping must be inverted to discharge the pressure in the pipe. Now stop the machine.***

⚠ ***The operator must be specially instructed to do this job; in particular, before opening a coupling, he must check for residual pressure in the hoses and make sure that no-one is in the vicinity. This operation must always be supervised by an expert operator and done with the utmost caution.***

⚠ ***During cleaning, do not allow anyone to loiter, for any reason whatsoever, in the vicinity of the terminal hose.***

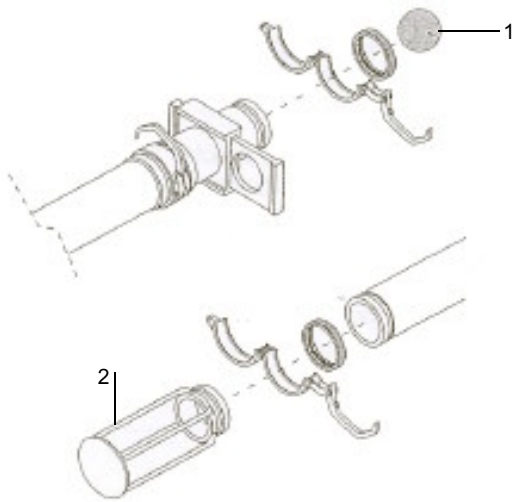


Fig. 23

If a blockage has formed in the metal pipe, disconnect the couplings and clear it with a jet of water or steel bar. If it has formed in a rubber section, find the obstruction; the hose will be rigid at this point. Disconnect the blocked hose and hit it with a hammer to break the blockage up and allow the material to flow out of the hose (Fig. 24).

Fig. 24

Now restart the cleaning procedure with the hoses connected to the machine.

16.2 CLEANING WITH COMPRESSED AIR

You will need:
- A compressor
- A sponge of a size suited to the diameter of the hose
- A container to recover the sponge.

Connect the sponge recovery container (Fig. 23 Ref. 2) to the outlet of the hose using the Victaulic fitting. Insert the sponge at the hose inlet (wet and of a suitable diameter) (Fig. 25 Ref. 1) and connect the provided cleaning device with ball valve (Fig. 25 Ref. 2), making sure it is correctly locked.

Warning!
⚠ The sponge may be expelled violently from the end of the hose: lay out the terminal hose correctly; if the hose is blocked, the sponge will not be expelled. Switch off the air supply by pulling the lever (Fig. 25 Ref. 2).

⚠ Before opening a material delivery hose coupling, make sure the safety lever is open, the pressure gauge (Fig. 19 Ref. 9) ***reads zero bar and there is no residual pressure in the hoses.***

⚠ The operator must be specially instructed to do this job; in particular, before opening a coupling, he must check for residual pressure in the hoses and make sure that no-one is in the vicinity. This hazardous operation must always be supervised by an expert operator and done with the utmost caution.

During cleaning, do not allow anyone to loiter, for any reason whatsoever, in the vicinity of the terminal hose.

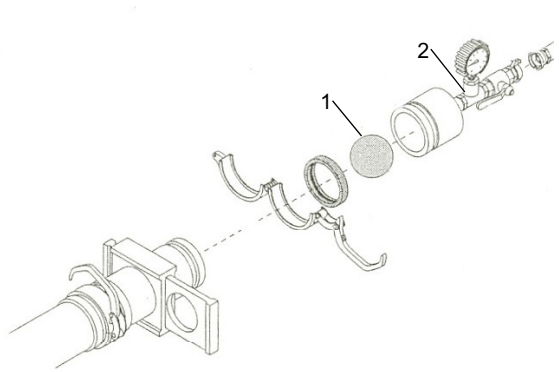


Fig. 25

16.3 SUCTION CLEANING
If pumping is vertical, the sponge can be inserted at the end of the terminal hose, and suction activated by turning the switch to the left (Fig. 19 Ref. 7). The concrete will be drawn back into the tank.

Warning!

⚠ Every meter of D.50mm hose contains around 2 L of material, while every metre of D.100 hose contains around 8 L of material. If the hose is very long, the material may spill out of the tank.

17. MAINTENANCE

⚠ Do not move the machine with the hopper raised or the tank full of material

⚠ Maintenance must be performed by expert personnel, after switching the machine off.

If the pump stops due to a fault during operation, clean the machine and pipelines immediately.
Make sure there are no oil leaks from the hydraulic system, engine or the compressor during the stop. In case of doubt, check the oil levels with the machine perfectly flat.
Perform the periodical maintenance operations specified in the Diesel engine manual.

17.1 DAILY MAINTENANCE
Check that there is enough clean water in the tank (Fig. 18 Ref. 4) and top it up if necessary.
If it is dirty or dense, concrete liquid has infiltrated from the pistons and pumping pipe; if this is the case, replace the pistons.
To drain the tank, pull the evacuation lever; then close it again and fill it up with water to the rim.

Replace the lubricating water at least once a week.

In cold conditions, empty the tank out at the end of the shift and use antifreeze liquid.

Every day, at the end of work and with the machine running, grease the affected points with the greasers located at (Fig. 19 Ref. 11) . A grease pump is supplied with the machine for that purpose.
The operation is complete when grease comes out of the shaft gaskets and couplings.
Do not apply more grease, so as not to pollute the material to be pumped at the start of work.
Every day, check correct operation of the safety devices, and in particular the grill safeties (Fig. 18, Ref.2), and the emergency pushbutton. Top-up the fuel tank at the end of work. Check the engine oil level and the Diesel fuel tank level before starting work.
At the start of work, make sure there were no oil leaks from the hydraulic system, engine or the compressor during the stop. Check the oil levels with the machine perfectly flat.

17.2 WEEKLY MAINTENANCE
Every week a specialised person must grease all the necessary points on the machine and also perform a general machine check.

In particular, make sure:
- the mixer shaft and S valve seals are in good condition;
- the S valve is clean and not worn;
- the air filter is clean; replace it if necessary;
- the engine and hydraulic system radiators are clean;
- the battery is charged, the level and specific gravity of the electrolyte are correct;

- the cleaning device pressure gauge is working properly;
Also make sure that:
- the pipes, connections and respective gaskets and supports are in good condition and properly tightened;
- the distributor, solenoid valves, pressure gauges and pressure switches are operating correctly;
- In general, that the entire machine and relevant accessories are perfectly efficient;

All the indications regarding the type and frequency of intervention given in the diesel engine operation and maintenance manual must be respected.

After the first 50 hours, in addition to the maintenance operations indicated in the Diesel engine manual, and in particular, oil change, oil filter change and Diesel filter change, alternator belt, change the compressor oil and the hydraulic circuit oil filter.

17.3 SIX-MONTHLY MAINTENANCE

Every six months arrange for an inspection of the machine by an authorised IMER service centre.

⚠ ***Spent oil is a special waste. Therefore it must be disposed of according to current legislation.***

⚠ ***Always keep notices and symbols on the machine legible.***

In particular, every 500 hours or 6 months (whichever comes first) have the hydraulic system filter changed and every 1000 hours or 1 year (whichever comes first) change the hydraulic fluid.

18 REPLACING THE PUMPING PISTONS

Prepare the equipment supplied for removing and fitting the pistons. To remove the pistons, proceed as follows:
Drain out the water tank, pull the evacuation lever (Fig. 25 Ref. 2) to the vertical position.

- Start the machine and run the engine at low speed and adjust the pump flow rate to its minimum using the switch (Fig. 25 Ref. 2) on the electrical cabinet.
- Turn the inversion switch (Fig. 25 Ref. 2)
- While looking into the tank, raise the safety grill when one of the two pistons reaches the end of the cylinder
- Switch the machine off

⚠ ***The following procedures should be done with the machine SWITCHED OFF.***

It is advisable to remove the upper hopper to facilitate the work.

⚠ ***Use vaseline grease the fit the new rubber pistons.***

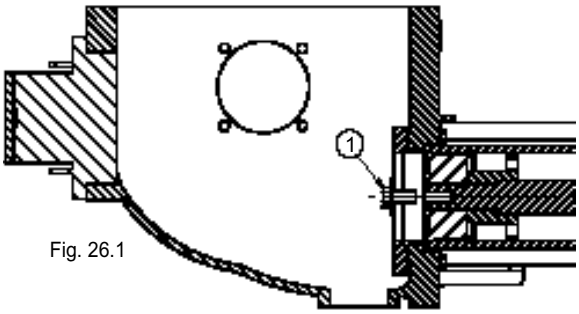


Fig. 26.1

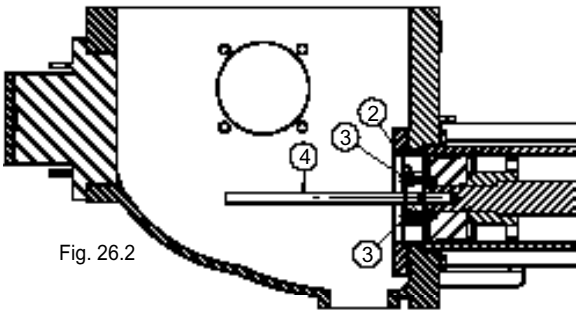


Fig. 26.2

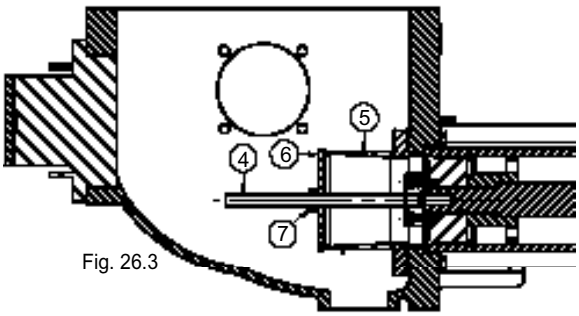


Fig. 26.3

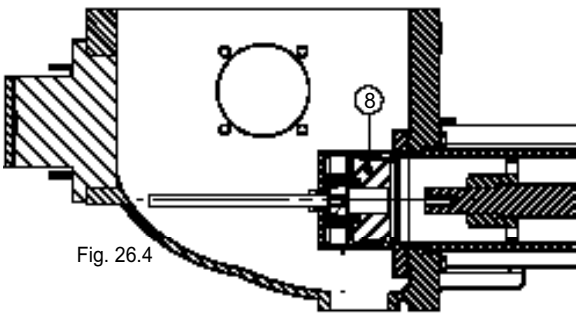


Fig. 26.4

Fig. 26

18.1 REMOVAL

- Undo the head bolt (Fig. 26.1 Ref. 1), mount the extractor (Fig. 26.2 Ref. 2) to the piston and screw in the two bolts (Fig. 26.2 Ref. 3).
- Screw the tie-rod (Fig. 26.2 Ref. 4) fully into the extractor, locate the centring bush (Fig. 26.3 Ref. 5) on the wear plate, fit the cap (Fig. 26.3 Ref. 6) and start screwing in the nut (Fig. 26.3 Ref. 7) ; screwing the nut in extracts the piston (Fig. 26.4 Ref. 8) from the cylinder.

18.2 FITTING

- Fit the centring bush (Fig. 27.1 Ref. 1) to the wear plate (Fig. 27.1 Ref. 2).
- Screw the tie-rod (Fig. 27.1 Ref. 3) into the shaft (Fig. 27.1 Ref. 4), locate the piston at the mouth of the centring bush (Fig. 27.1 Ref. 5), fit the washer (Fig. 27.1 Ref. 6) and start screwing in the nut (Fig. 27.2 Ref. 7) until the piston is fully inside the bush (Fig. 27.2 Ref. 5).
- Unscrew the nut (Fig. 27.2 Ref. 7), remove the washer (Fig. 27.2 Ref. 6) and add the extension (Fig. 27.3 Ref. 8), then repeat the screwing-in procedure to drive the piston fully home.
- Screw in the bolt (Fig. 27.4 Ref. 9).
- Repeat the procedure for the other piston.
- If removed, reinstall the upper hopper.

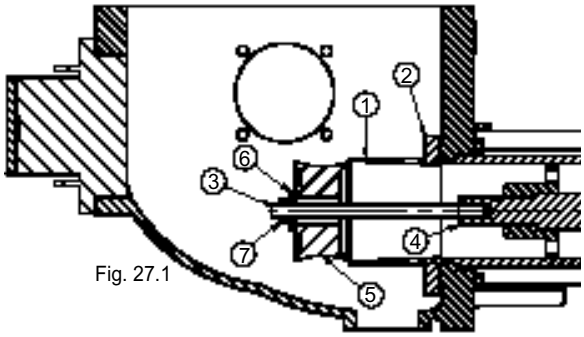


Fig. 27.1

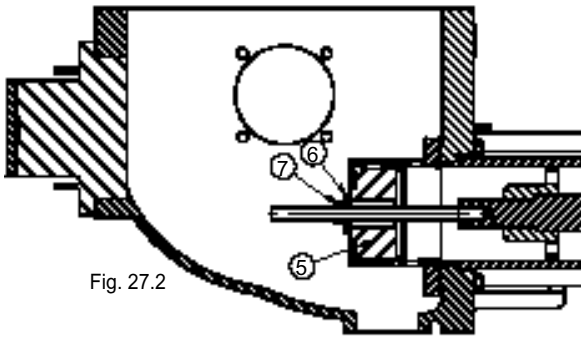


Fig. 27.2

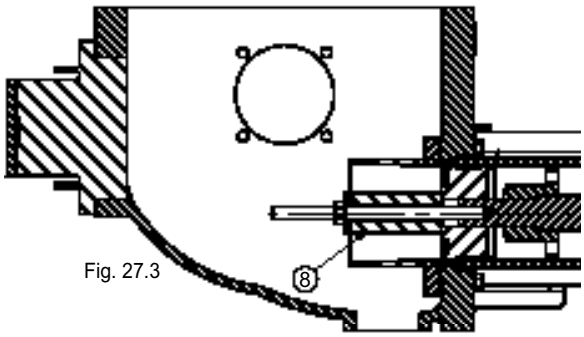


Fig. 27.3

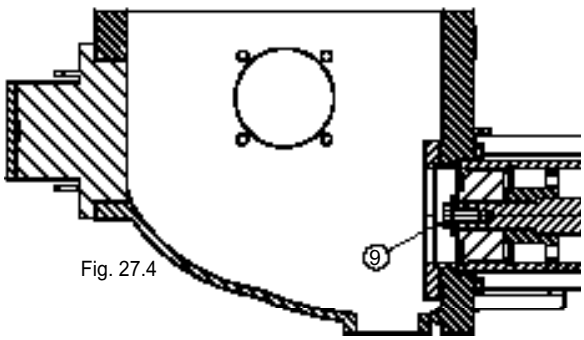


Fig. 27.4

Fig. 27

19 FITTING THE S VALVE

To protect the gaskets (Fig. 28 Ref. 1-2) before fitting the S valve (Fig. 28 Ref. 3), fit the cone (Fig. 28 Ref. 4) to the toothed shaft and then fit the valve itself.
Before refitting the mobile bearing race (Fig. 28 Ref. 5), extract the cone (Fig. 28 Ref. 4) in the direction of the arrow and refit all components to secure the S valve.

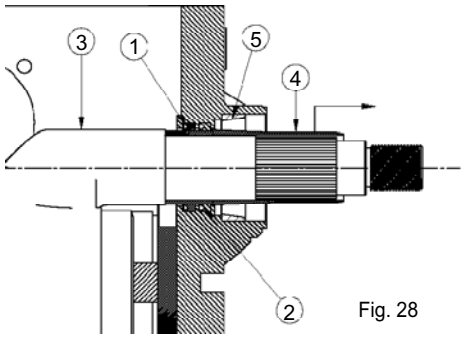


Fig. 28

20 S VALVE REGISTRATION

The S valve requires registration if the distance between the disc (Fig. 29 Ref. 1) and the wear plate (Fig. 29 Ref. 2) is greater than 0.25 mm or the S valve itself blocks repeatedly.
Incorrect registration of the valve results in a drop in pressure, and hence the material flow during pumping is less than in normal operation, while it may cause water leakage between the disc (Fig. 29 Ref. 1) and the wear plate (Fig. 29 Ref. 2) during washing.

⚠ ***The following procedures should be done with the machine SWITCHED OFF.***

To register the S valve, proceed as follows:
- Remove the bracket (Fig. 30 Ref. 1) and then screw in the register nut (Fig. 30 Ref. 2) to recover the backlash.
- Now fit the nut bracket again (Fig. 30 Ref. 1) with its bolts.
- Start the machine up at a low speed and check that the S valve is switching properly.

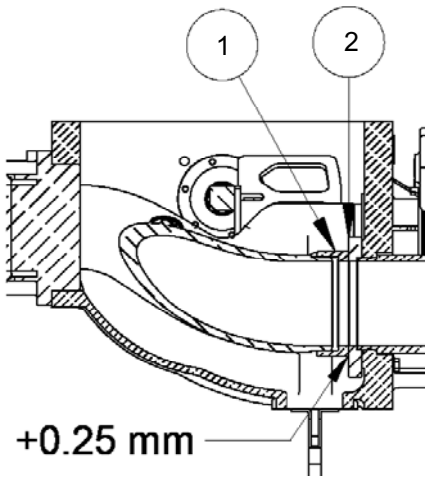


Fig. 29

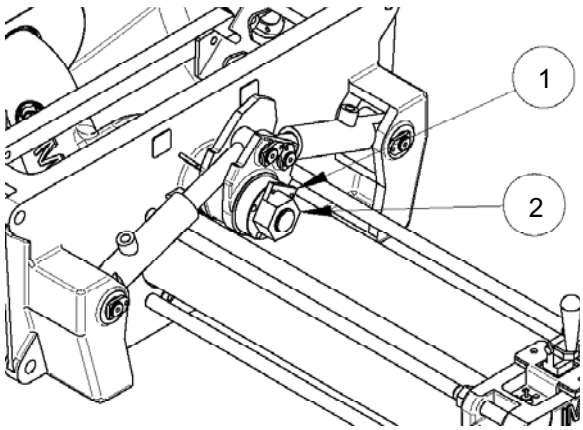


Fig. 30

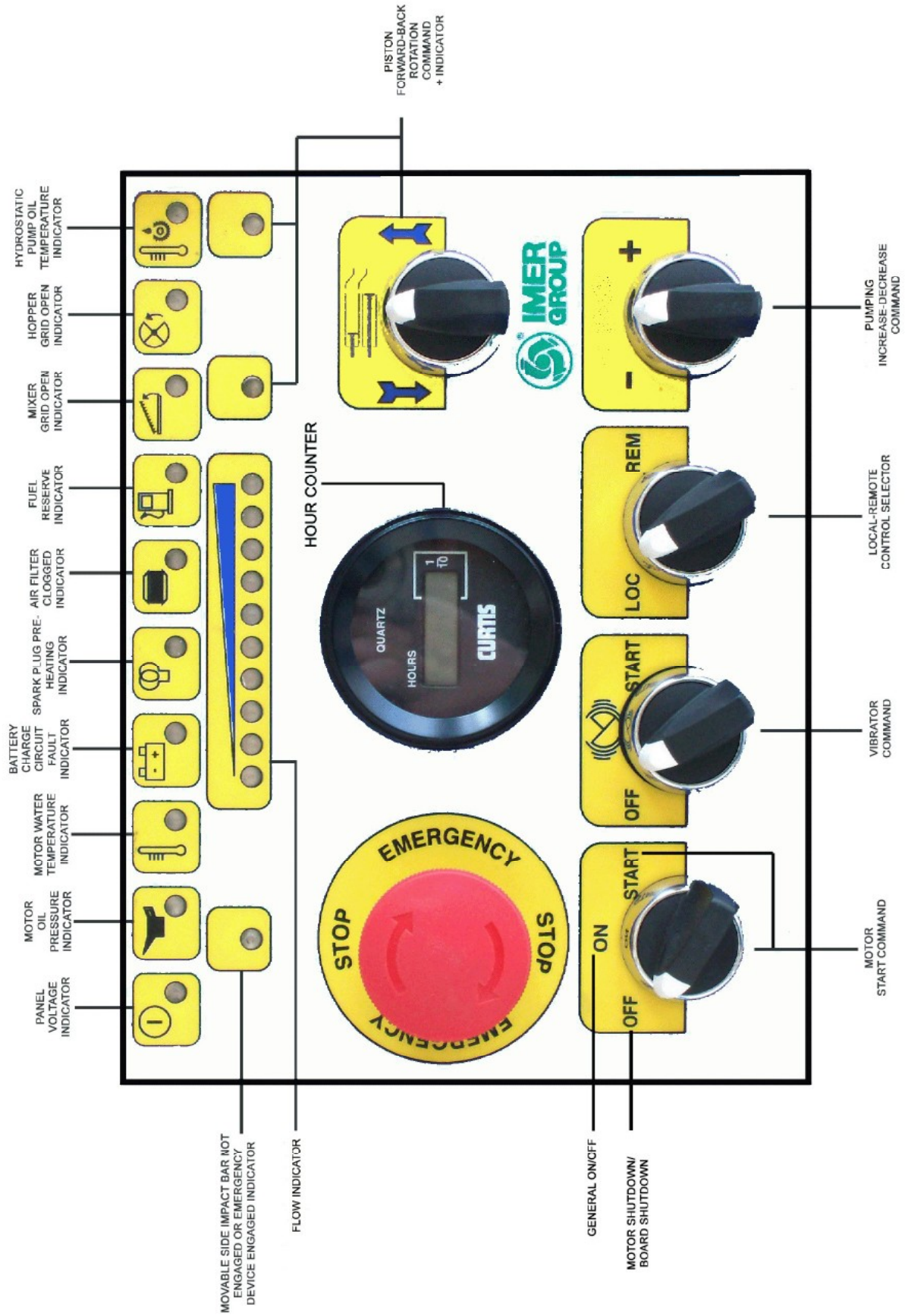
21. REPAIRS

⚠ ***Repair, maintenance or lubrication operations must always be carried out with the machine stopped and the engine switched off, except for the greasing indicated in par. 13.1***
All maintenance operations, except for daily maintenance in any case to be carried out by professionally qualified personnel, can only performed by specialised personnel.
Use exclusively original IMER spare parts; modifications to parts are strictly prohibited.

⚠ **If any guards are removed for repairs, ensure they are correctly refitted at the end of work and check the operation of protection devices.**

NOTE:
IMER INTERNATIONAL reserves the right to modify the characteristics of the pump and/or the contents of this manual, without having to update the previous manuals and/or machine.

PROBLEM	CAUSE	CORRECTIVE ACTION
The control panel does not switch on	- No electric power supply.	- Check the battery charge and the master fuse.
	- Circuit board fault.	- Stop pumping operations and contact the authorised service centre
The starter motor does not run	- No power to the start motor.	- Check the battery charge, the master fuse and start motor wiring.
The control panel switches on, but the spark plug preheating indicator light does not illuminate.	- Possible fault in the sparkplug preheating relay.	- Check the operation of the relay and replace it if necessary.
The starter motor runs but the diesel engine does not start.	- Emergency button engaged.	- Reset the emergency button.
	- Engine oil level too low.	- Top up the oil.
	- No fuel.	- Fill the fuel tank and try again.
	- Fuel is not being delivered to the engine	- Check the operation of the diesel solenoid valve relay.
The battery light is on but the engine does not start.	- The alternator is not charging.	- Check the alternator cable and replace it if necessary.
The water temperature light is on but the engine does not start.	- Insufficient coolant or radiator dirty.	- Add coolant, clean the radiator.
Pumping operations are interrupted.	- Unsuitable mixture	- Make the mixture more fluid.
	- Safety grill open.	- Close the grill.
	- Hydraulic fluid level too low.	- Top up the reservoir.
	- Hydraulic fluid temperature too high.	- Check the fluid level and clean the radiator; wait for the fluid to cool down, with the engine running.
	- One of the S valve or pumping piston control solenoid valves is faulty.	- Check the solenoid valve wiring (see wiring diagram) and check the led in question lights up.
	- Fault in one of the position sensors for the S valve or the pumping pistons (check that the led in question lights up).	- Check the position sensor wiring (see wiring diagram).
The mixer does not work	- Distributor lever not raised.	- Raise the distributor lever
	- Safety grill open.	- Close the grill.
	- Foreign matter jamming the mixer. Check the pressure on the pressure gauge.	- Remove the foreign matter / blockage in the hose.
Pumping performance downgraded	- Wear plate or S valve disc worn.	- Adjust the S valve.
	- Pumping pistons worn.	- Replace the pistons.
	- Pumping mixture too dense.	- Make the mixture more fluid.
	- S valve out of register	- Adjust the S valve.
Reduced pressure reading on the pressure gauge (Fig. 19 Ref. 9) or repeated S valve blockages	- S valve out of register	- Adjust the S valve.
Dirty water in the piston cooling tank.	- Pumping pistons worn.	- Replace the pistons.
The vibrating grill does not work	- Function deactivated at the control panel.	- Turn the switch (Fig. 14 Ref. 4) to the right position.
	- No electric power supply	- Check the wiring, the fit of the plug in its socket and the operation of the relay.
The pressure water cleaner pump does not work	- Distributor lever not raised	- Raise the distributor lever.
	- No water delivery to the pump.	- Check that the intake hose is not crimped or crushed. If necessary, place a water tank at a suitable height and run the pump.
The set accelerant pump does not work	- Function not activated at the auxiliary control panel.	- Activate the pump with the control panel switch.
	- Function activated in automatic, but with pumping deactivated.	- Activate manual mode on the control panel.
	- Possible pump or hose blockage.	- Check for blockages in the hose and remove them, taking the usual precautions against contact with the skin and eyes.
	- Electric board or control solenoid valve fault.	- Check the wiring. If possible, stop working, disconnect the solenoid valve connector and manually adjust the accelerant flow rate with the knob on the solenoid valve.


PISTON FORWARD-BACK ROTATION COMMAND + INDICATOR
HYDROSTATIC PUMP OIL TEMPERATURE INDICATOR
HOPPER GRID OPEN INDICATOR
MIXER GRID OPEN INDICATOR
FUEL RESERVE INDICATOR
AIR FILTER CLOGGED INDICATOR
SPARK PLUG PRE-HEATING INDICATOR
BATTERY CHARGE CIRCUIT FAULT INDICATOR
MOTOR WATER TEMPERATURE INDICATOR
MOTOR OIL PRESSURE INDICATOR
PANEL VOLTAGE INDICATOR
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QUARTZ
HOURS
CURTIS
IMER GROUP
EMERGENCY
STOP
STOP
EMERGENCY
PUMPING INCREASE-DECREASE COMMAND
LOCAL-REMOTE CONTROL SELECTOR
REM
LOC
VIBRATOR COMMAND
START
OFF
MOTOR START COMMAND
START
ON
OFF
MOVABLE SIDE IMPACT BAR NOT ENGAGED OR EMERGENCY DEVICE ENGAGED INDICATOR
FLOW INDICATOR
GENERAL ON/OFF
MOTOR SHUTDOWN/ BOARD SHUTDOWN

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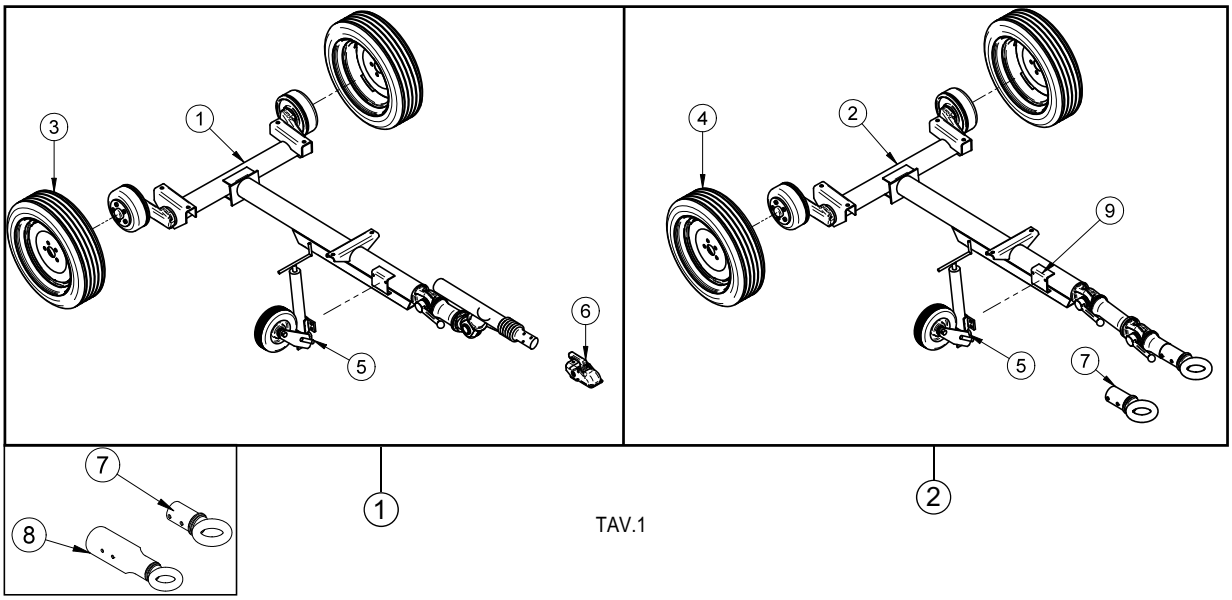
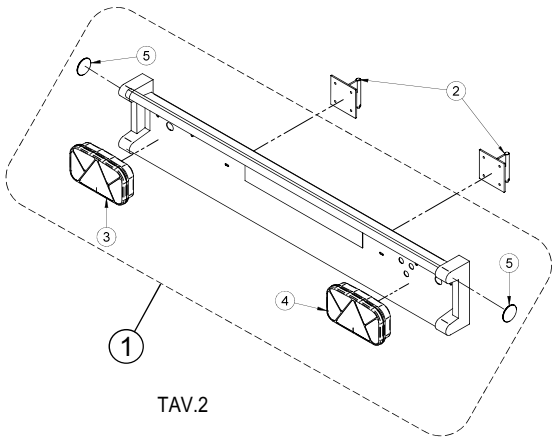
SPARE PARTS
ERSATZTEILE
REPUESTOS



TAV.1

TAV.1 ASSALE - ESSIEU - AXLE - ACHSE - EJE							
Rif.	**Cod.**	**I**	**F**	**GB**	**D**	**E**	**NOTE**
1	3223942	ASSALE STRADALE	ESSIEU À LA ROUTIER	AXLE TO ROAD	ACHSE STRAßENVER-KEHR	EJE DE LA CARRE-TERA	
2	3225534	ASSALE NON STRA-DALE	ESSIEU PAS À LA ROUTIER	AXLE NOT TO ROAD	ACHSE NICHT ZUM STRAßENVERKEHR	EJE NO A LA CARRE-TERA	
3	3224847	RUOTA	ROUE	WHEEL	RAD	RUEDA	185/R14C
4	3225336	RUOTA	ROUE	WHEEL	RAD	RUEDA	205/65-R15
5	3224848	RUOTINO	ROUE	JOCKEY WHEEL	KLEINES RAD	RUEDA	
6	3228193	TESTINA TRAINO	TETE D'ATTELAGE	TOWING HEAD	ZUGAUGE	CABEZAL REMOLQUE	
7	OPTIONAL 1107157	OCCHIONE FRANCIA	ANNEAU FRANCE	TOWIN EYE TIPE FRANCE	GESCHWEISSTE	ANILLO REMOLQUE	OPTIONAL 68x42
8	OPTIONAL 1107158	OCCHIONE ITALIA	ANNEAU FRANCE	TOWIN EYE TIPE ITALY	GESCHWEISSTE	ANILLO REMOLQUE	OPTIONAL 45X31
9	3229643	STAFFA					



TAV.2

TAV.2 BARRA LUCI - BARRE ECLAIRAGE - LIGHTS BAR - LEUCHTEINLEISTE - BARA DE LUCES							
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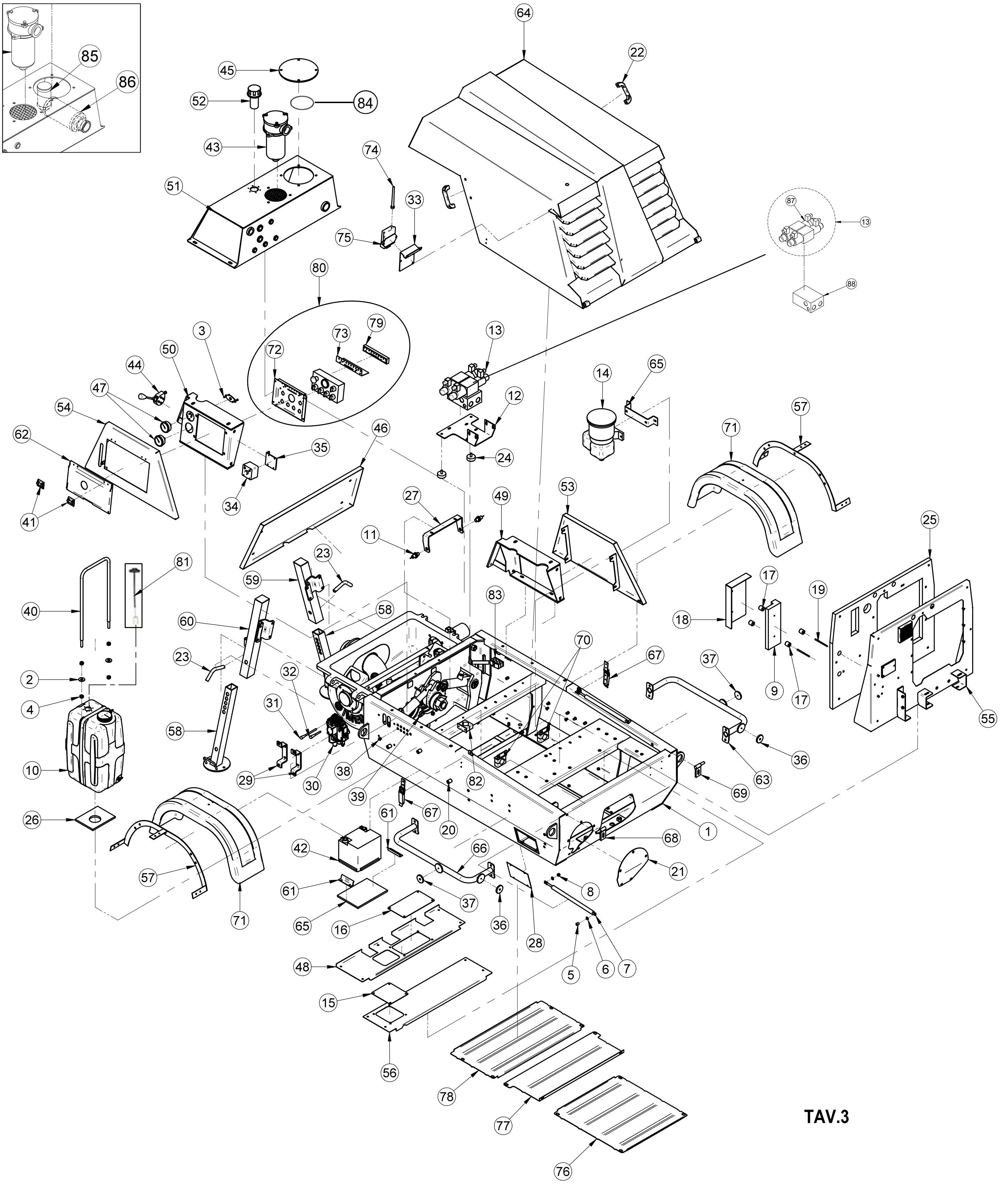
1	3223944	BARRA LUCI	BARRE ECLAIRAGE	LIGHTS BAR	LEUCHTENLEISTE	BARRA LUCES	
2	323946	SUPPORTO BARRA LUCI	SUPPORT BARRE ECLAIRAGE DROITE	LIGHTS BAR SUPPORT HALTERUNG	LEUCHTENLEISTE	SOPORTE BARRA LUCES	
3	3224520	FANALE MULPTIPOINT SX	LANTERNE MULTIPOINT GAUCHE	LH MULTIPOINT LIGHT	MULTIPOINT-SCHEIN-WERFER LI	FARO MULTIPOINT IZQ.	
4	3224519	FANALE MULPTIPOINT DX	LANTERNE MULTIPOINT DROITE	RH MULTIPOINT LIGHT	MULTIPOINT-SCHEIN-WERFER RE	FARO MULTIPOINT DER.	
5	3224855	CATADIOTTRO GIALLO	REFLÉCHISSANT BLANC	REFLECTOR YELLOW	RÜCKSTRAHLER GELGB	REFLEXIVO	D.60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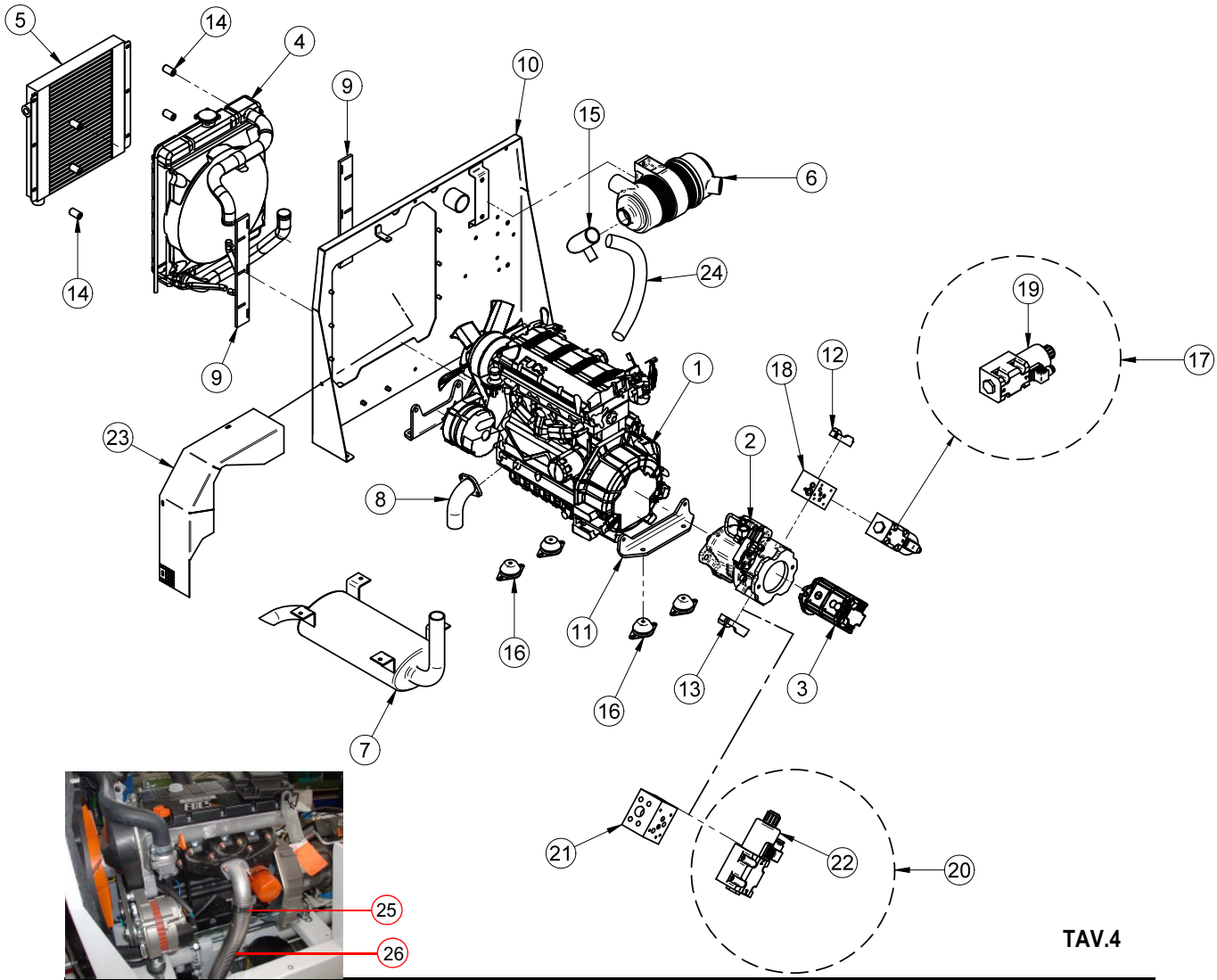
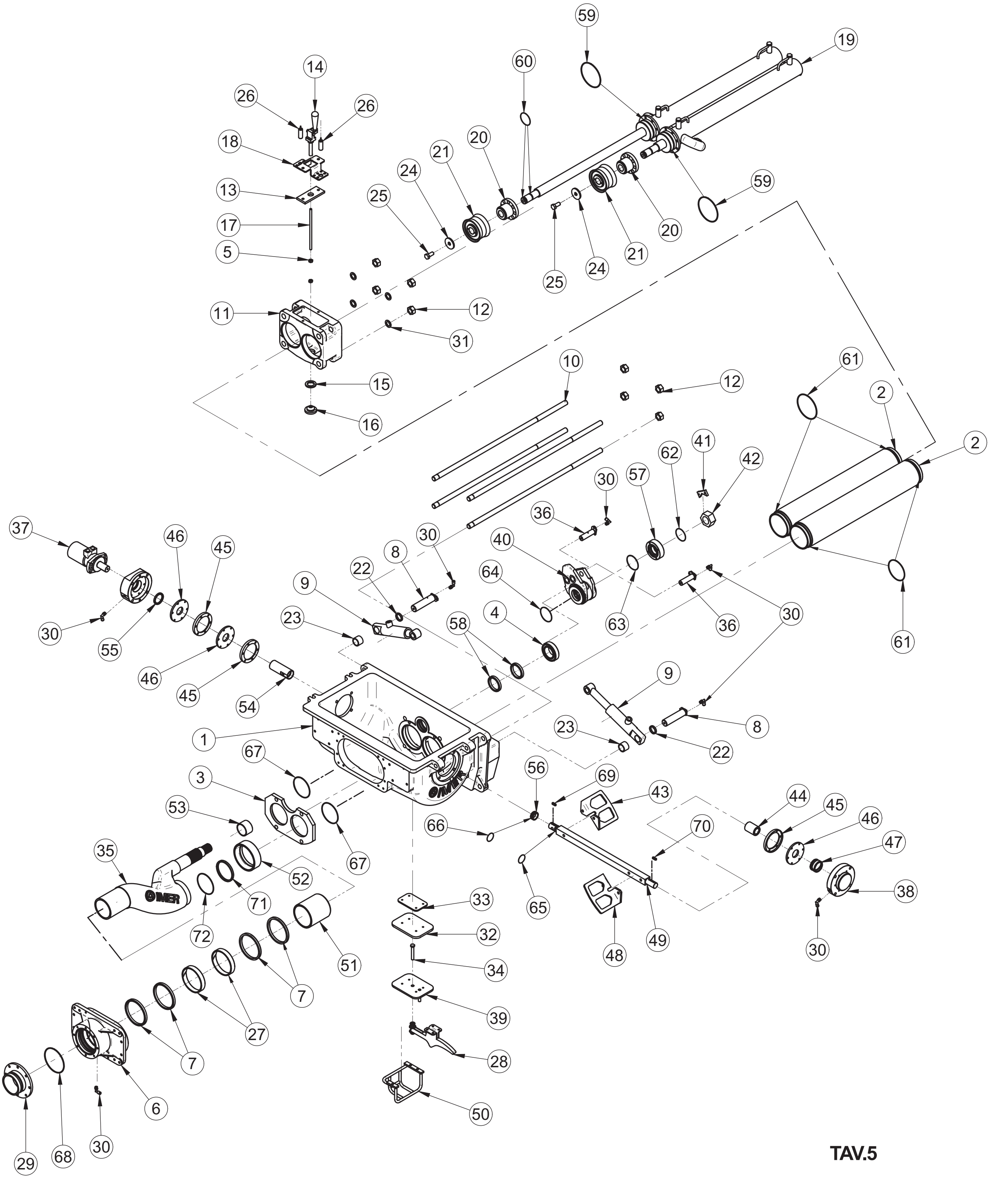
TAV.3

TAV. 3							
RIF.	COD.	I	F	GB	D	E	NOTE
1	3227509	TELAIO					
2	2224430	RONDELLA					
3	3224780	STAFFA MANOMETRO					
4	2223921	DADO M12					
5	3228922	DISTANZIALE					
6	2224140	RONDELLA					
7	3228995	MOLLA A GAS					
8	2223923	DADO M8					
9	3228878	SCHEDA					
10	3228920	SERBATOIO GASOLIO					
11	3228885	SENSORE					
12	3228847	SUPPORTO BLOCCO VALVOLE					
13	3229488	ELETTROVALVOLE					
14	3229000	ELETTROPOMPA GRASSO					
15	3228857	COPERCHIO ISPEZIONE					
16	3228858	COPERCHIO SIPEZIONE					
17	3228871	DISTANZIALE					
18	3228870	CARTER					
19	3228872	BARRA FILETTATA					
20	3228874	DISTANZIALE					
21	3228875	COPERCHIO					
22	3204888	MANIGLIA					
23	3228906	PERNO					
24	3228924	ANTIVIBRANTE					
25	3228918	PANNELLO INSONORIZZANTE					
26	3228921	GOMMA DI APPOGGIO					
27	3229161	STAFFA SENSORI					
28	3229164	COPERCHIO					
29	3229399	STAFFA DISTRIBUTORE					
30	3229398	DISTRIBUTORE					
31	3225844	LEVA					
32	3225959	LEVA					
33	3229459	SUPPORTO RADIOCOMANDO					
34	3229472	COMANDO POMPA SILICATO					
35	3229611	SUPPORTO					
36	3224854	CATADIOTTRO BIANCO					
37	3224855	CATADIOTTRO GIALLO					
38	2230600	INGRASSATORE					
39	3224366	RACCORDO					
40	3227568	BLOCCAGGIO SERBATOIO					
41	3224778	CERNIERA					
42	3224465	BATTERIA					
43	3228929	FILTRO DI RITORNO					
44	2284805	MANETTO ACCELERATORE					
45	3228846	TAPPO SERBATOIO					
46	3227586	PANNELLO ANTERIORE					
47	3224779	MANOMETRO 0-400 BAR					
48	3227569	DEFLETTORE ANTERIORE					
49	3227512	SUPPORTO SX					
50	3227511	SUPPORTO SX					
51	3227510	SERBATOIO OLIO					
52	3224516	BOCCHETTONE CARICO OLIO					
53	3227584	PANNELLO SX					
54	3227585	PANNELLO DX					
55	3227581	PARATIA					
56	3227570	DEFLETTORE POSTERIORE					
57	3223946	SUPPORTO PARAFANGO					
58	3227822	PIEDE					
59	3228905	SUPPORTO PIEDE SX					
60	3227817	SUPPORTO PIEDE DX					
61	3224295	STAFFA BATTERIA					
62	3227833	SPORTELLO					
63	3223947	BARRA ANTICICLISTICA SX					
64	3228895	COFANO					
65	3228848	STAFFA					
66	3226182	BARRA ANTICICLISTICA DX					
67	3225311	CHIUSURA					
68	3228940	CERNIERA DX					
69	3228939	CERNIERA SX					
70	3228912	COLLARE					
71	3223945	PARAFANGO					
72	3227832	PANNELLO DISPLAY					
73	3227943	LAMIERA SCHEDA A LEDS					
74	3226486	RICEVENTE					
75	3226487	ANTENNA					
76	3228851	CARTER					
77	3228876	CARTER					
78	3228850	CARTER					
79	XX	SCHEDA A LEDS					
80	3228879	QUADRO ELETTRICO					
81	3225671	GALLEGGIANTE					
82	3228913	COLLARE					
83	3225215	COLLARE DOPPIO					
84	3224356	OR					
85	3228928	FILTRO ASPIRAZIONE					
86	3228927	FILTRO ASPIRAZIONE					
87		BOBINA ELETTROVALVOLA					
88	3229487	PIASTRA BASE					



TAV.4

TAV.4							
Rif.	Cod.	I	F	GB	D	E	NOTE
1	3224508	MOTORE					
2	3228989	POMPA A PISTONI					
3	3229033	POMPA DOPPIA					
4	3226736	RADIATORE					
5	3227626	SCAMBIATORE DI CALORE					
6	1235970	FILTRO ARIA					
7	3227625	MARMITTA					
8	3225277	COLLETTORE MARMITTA					
9	3225222	STAFFA RADIATORE					
10	3227581	PARATIA					
11	3228898	SUPPORTO MOTORE					
12	3228990	SEMIFLANGIA					SAE SFS3 1"
13	3228991	SEMIFLANGIA					SAE SFS3 -1/2"
14	3228873	DISTANZIALE					
15	3228873	COLLETTORE FILTRO ARIA					
16	3224447	ANTIVIBRANTI					
17	3229094	ELETTROVALVOLA					
18	3229105	BLOCCHETTO					
19		BOBINA ELETROVALVOLA					
20		ELETTROVALVOLA					
21		BLOCCHETTO					
22		BOBINA ELETROVALVOLA					
23	3224376	PROTEZIONE CINGHIA					
24	3225679	TUBO ASPIRAZIONE					
25	3225279	FASCETTA					
26	3227626	TUBO MARMITTA					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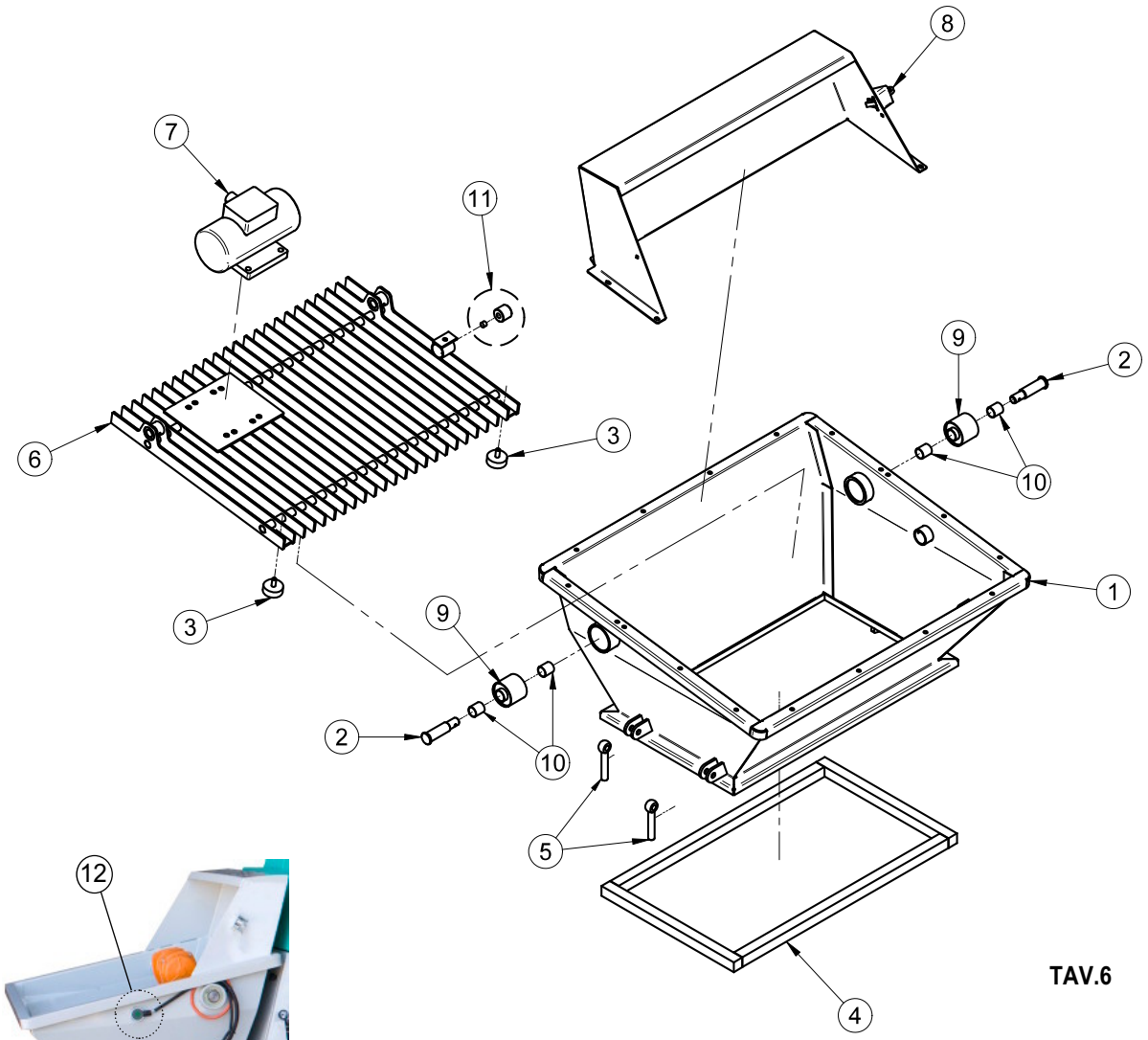
TAV.5

DA MATRICOLA: FROM SERIAL NUMBER: À PARTIR DU NUMÉRO DE ÉRIE: VON SERIENNUMMER: A PARTIR DU NUMÉRO DE ÉRIE:	TAV. 5								
	RIF.	COD.	I	F	GB	D	E	NOTE
	1	3227248	TRAMOGGIA					
	2	3227583	CANNA CROMATA					
	3	3229495	PIASTRA USURA					
	4	3228972	CUSCINETTO	PALIER	BEARING	LAGER	COJINETE	
	5	2223650	DADO	ECROU	NUT	MUTTER	TUERCA	
	6	3227577	FLANGIA LATO SCARICO					
	7	3227640	GUARNIZIONE	JOINT	SEAL	DICHTUNG	JUNTA	130X145X11
	8	3229342	PERNO					
	9	3228800	CILINDRO					M24
	10	3229345	TIRANTE					
	11	3227576	VASCA DI REFRIGERAZIONE					
	12	3228975	DADO M24					
	13	3228798	SUPPORTO CHIUSURA					
	14	3228977	CHIUSURA VASCA DI REFRIGERZINE					
	15	3228802	GUARNIZIONE TAPPO	JOINT	SEAL	DICHTUNG	JUNTA	
	16	3229352	TAPPO VASCA					
	17	3228803	TIRANTE TAPPO					
	18	3228799	SUPPORTO SENSORI					
	19	3228801	CILINDRI DI POMPAGGIO					
	20	3229351	FLANGIA SENSORE VASCA					
	21	3227823	PISTONE					35X43X7
	22	3229354	SPESSORE	ENTRETOISE	SPACER	ABSTANDHALTER		35X43X31
	23	3229357	SPESSORE					
	24	3228976	RONDELLA	RONDELLE	WASHER	UNTERLEGSCHEIBE	ARANDELA	17X60X6
	25	1222173	VITE	VITE	VIS	SCREW	SCHRAUBE	TORNILLO
	26	3228886	SENSORE CABLATO					
	27	3227639	ANELLO					
	28	3228978	CHIUSURA TRAMOGGIA					
	29	3229350	FLANGIA DI SCARICO 4”					
	30	3224345	RACCORDO 1/4” M. 90°					
	31	3229456	ROSETTA D.24	RONDELLE	WASHER	UNTERLEGSCHEIBE	ARANDELA	D.24
	32	3229093	GUARNIZIONE CHIUSURA					
	33	3229327	PROTEZIONE GUARNIZIONE					
	34	2222054	VITE					M12X80
	35	3227567	TUBO SCARICO A “S”					
	36	3229336	PERNO BIELLA					
	37	3227146	MOTORE IDRAULICO					
	38	3224313	FLANGIA OPPOSTA					
	39	3229318	CHIUSURA TRAMOGGIA					
	40	3227619	BIELLA DENTATA					
	41	3228807	BLOCCO DADO					
	42	3228974	DADO					M42X3
	43	3227615	PALA DX					
	44	3224284	BOCCOLA LATO CIECO					
	45	3224311	FLANGIA GUARNIZIONI					
	46	3224315	GUARNIZIONE DI TENUTA	JOINT	SEAL	DICHTUNG	JUNTA	D.48
	47	3224314	BOCCOLA INGRASSAGGIO					
	48	3227614	PALA SX					
	49	3229343	ALBERO TRAMOGGIA					
	50	3229086	GRIGLIA PROTEZIONE CHIUSURA					
	51	3227636	BOCCOLA PER TUBO “S”	DOUILLE	BUSHING	BUCHSE	CASQUILLO	
	52	3229497	FLANGIA					
	53	3228973	ANELLO					JR 68X60X45
	54	3224285	PROLUNGA MOTORE					
	55	2207510	ANELLO PARAOLIO	JOINT PARE-HUILE	OIL SEAL RING	ÖLABSTREIFRING		ANILLO RETÉN ACEITE
	56	3227622	ANELLO ALBERO					
	57	3229353	FLANGIA PER BIELLA					
	58	3227641	GUARNIZIONE	JOINT	SEAL	DICHTUNG	JUNTA	68X83X11
	59	3229048	ANELLO “OR”	jOINT OR	O-RING	RUNDRING	JUNTA TORICA	100X3
	60	3229044	ANELLO “OR”	jOINT OR	O-RING	RUNDRING	JUNTA TORICA	30X3
	61	3229049	ANELLO “OR”	jOINT OR	O-RING	RUNDRING	JUNTA TORICA	124,5X3
	62	3229045	ANELLO “OR”	jOINT OR	O-RING	RUNDRING	JUNTA TORICA	50X3
	63	3229046	ANELLO “OR”	jOINT OR	O-RING	RUNDRING	JUNTA TORICA	65X3
	64	3229047	ANELLO “OR”	jOINT OR	O-RING	RUNDRING	JUNTA TORICA	95X3
	65	3229042	ANELLO “OR”	jOINT OR	O-RING	RUNDRING	JUNTA TORICA	28X3
	66	3229043	ANELLO “OR”	jOINT OR	O-RING	RUNDRING	JUNTA TORICA	36X3
	67	3229386	ANELLO “OR”	jOINT OR	O-RING	RUNDRING	JUNTA TORICA	129,5X3
	68	3229050	ANELLO “OR”	jOINT OR	O-RING	RUNDRING	JUNTA TORICA	139,5X3
	69	2229549	LINGUETTA					10X8X30
	70	3226187	LINGUETTA					5X5X40
0003007231	71	3230286	GUARNIZIONE TRAPEZIOIDALE					Ø 138 H.11.6
0003007231	72	3230363	ANELLO “OR”	jOINT OR	O-RING	RUNDRING	JUNTA TORICA	Ø 135x2.5



TAV.6

TAV.6							
Rif.	Cod.	I	F	GB	D	E	NOTE
1	3227571	TRAMOGGIA					
2	3227605	PERNO GRIGLIA					
3	3228924	ANTIVIBRANTE					M10 50X20
4	3227608	GUARNIZIONE					
5	3227630	TIRANTE					M16X20
6	3227600	GRIGLIA					
7	3225829	MOTOVIBRATORE					
8	3229492	PARASCHIZZI					
9	3225820	BOCCOLA					
10	3225821	BOCCOLA					
11	3226027	BOCCOLA+CALAMITA					
12	3226898	SENSORE CABLATO					