



130 CFM PTO UNDERDECK AIR COMPRESSOR AND PRACTICO 36



OPERATION, INSTALLATION AND MAINTENANCE MANUAL

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INTENTIONALLY.**

MEA Product Registration Form

**THIS FORM MUST BE COMPLETED AND
RETURNED WITHIN 30 DAYS OF INSTALLATION
OR
WARRANTY WILL BE VOID**



MEA Product Warranty Registration Form

This form must be completed and returned to MEA at the time of Installation. Warranty will be void if this form is not received by MEA within 30 days of installation.

MEA Dealer Information

Company Name: _____

City: _____ State: _____ Country: _____

MEA Installer Information

Company: _____

City: _____ State: _____ Country: _____

Installation Date: ____ / ____ / ____
 Day Month Year

Owner Information

Company: _____

Address: _____

City: _____ State: _____ Country: _____

Postcode: _____ Phone #: _____

Product Information

MEA Serial Number: _____

Model: _____

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SPECIFICATIONS

Compressor – Oil Flooded Rotary Screw Compressor 130 CFM V110 Underdeck Mount

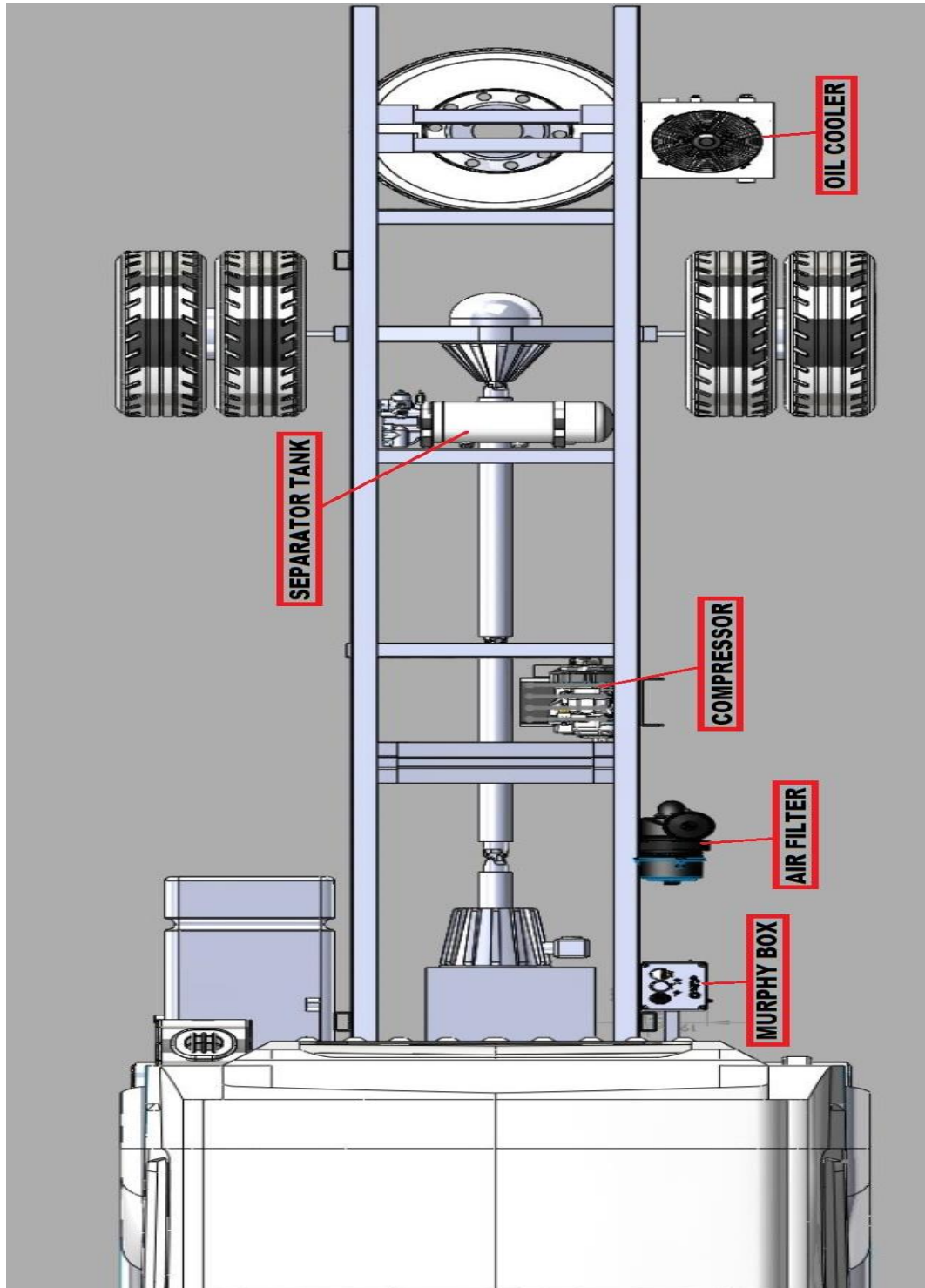
| | |
|---------------------------------|---------------|
| Outside male diameter: | mm 111.3 |
| Outside female diameter: | mm 88 |
| Air Capacity: | CFM 31 - 212 |
| Max Working Pressure: | bar g 13 |
| Min Working Pressure: | bar g 5 |
| Oil injected Quantity: | L/min 50 – 70 |
| Max Input Power: | kW 37 hp 50 |
| Max main rotor speed: | RPM 6700 |
| Max outlet air/oil Temperature: | °C 105 |
| Weight: | kg 45 |

Practico 36 Separator Tank and Combined Filter Manifold.

| | |
|--|---|
| Max. working pressure | bar (g) 15 psi 217.56 |
| Separator tank capacity | L 16.5 |
| Oil to fill up the separator tank | L 6 |
| Temperature Range | °C -10 +230 |
| Max. Air Flowrate | m ³ /min 4 cfm 141.2 |
| Max. Oil Flowrate | L/min 70 cfm 2.47 |
| Oil nipple size | 3/4" G – 3/4" 16UNF – 1"12UNF |
| Air nipple size | M39x1.5 - M32x1.5 |
| Temperature for thermal valve opening | °C 55-71-83 |
| Medium | Mineral oils and synthetic oils |
| Materials | Housing Parts: Aluminium alloy Internal parts: Galvanized aluminium alloy, Steel, Brass, PTFE, Viton |
| Weight Excluding filters and oil | kg 23 lb 50.7 |

GENERAL ARRANGEMENT / TYPICAL INSTALLATIONS

Practico 36 installation



Part Number 5001-D0002

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SAFETY

WARNING

ALL UNITS ARE SHIPPED WITH A DETAILED OPERATORS AND PARTS MANUAL. THIS MANUAL CONTAINS VITAL INFORMATION FOR THE SAFE USE AND EFFICIENT OPERATION OF THIS UNIT. CAREFULLY READ THE OPERATORS MANUAL BEFORE STARTING THE UNIT. FAILURE TO ADHERE TO THE INSTRUCTIONS COULD RESULT IN SERIOUS BODILY INJURY OR PROPERTY DAMAGE.

AIR COMPRESSOR SAFETY PRECAUTIONS

Working with a compressed air system, you must be aware of the hazards and precautionary measures. While there are standard procedures given to be followed, there may be some unforeseeable conditions that have their own peculiarities that cannot always be covered by general standard procedures. Therefore, it is recommended that you have experience in working with systems such as compressed air, and you are in a position of being aware of hazards regarding your personal safety and risk to damaging equipment.

Lack of awareness and attention to safety measures can result in accidents, personal injury, reduction of efficiency and worst of all - loss of life. Watch out for hazards and eliminate the cause of them promptly. Use the following safety precautions as a general guide to safe operation:

- Do not attempt to remove any compressor parts without first relieving the entire system of pressure.
- Do not attempt to service any part while machine is operating.

DANGER

CHECK THE COMPRESSOR SUMP OIL LEVEL ONLY WHEN THE COMPRESSOR IS NOT OPERATING AND SYSTEM IS COMPLETELY RELIEVED OF PRESSURE. OPEN SERVICE VALVE TO ENSURE RELIEF OF SYSTEM AIR PRESSURE WHEN PERFORMING MAINTENANCE ON COMPRESSOR AIR/OIL SYSTEM. FAILURE TO COMPLY WITH THIS WARNING MAY CAUSE DAMAGE TO PROPERTY AND SERIOUS BODILY HARM.

- Do not operate the compressor at pressure or speed more than its rating as indicated in "Compressor Specifications".
- Periodically check all safety devices for proper operation.
- Do not play with compressed air. Pressurized air can cause serious injury to personnel.
- Exercise cleanliness during maintenance and when making repairs. Keep dirt away from parts by covering parts and exposed openings.
- Do not install a shut-off valve between the compressor and compressor oil sump.

SAFETY-continued

DANGER

DO NOT USE MOBILE ENERGY AUSTRALIA COMPRESSOR SYSTEMS TO PROVIDE BREATHING AIR. SUCH USAGE, WHETHER SUPPLIED IMMEDIATELY FROM THE COMPRESSOR SOURCE, OR SUPPLIED TO BREATHING TANKS FOR

SUBSEQUENT USE CAN CAUSE SERIOUS BODILY INJURY.

MOBILE ENERGY AUSTRALIA DISCLAIMS ANY AND ALL LIABILITIES FOR DAMAGE FOR LOSS; PERSONAL INJURIES, INCLUDING DEATH, AND/OR PROPERTY

DAMAGE INCLUDING CONSEQUENTIAL DAMAGES ARISING OUT OF ANY MOBILE ENERGY AUSTRALIA COMPRESSORS USED TO SUPPLY BREATHING AIR.

- Do not disconnect or bypass safety circuit system.
- Do not install safety devices other than authorized **Mobile Energy Australia** replacement devices.
- Close all openings and replace all covers and guards before operating compressor unit.
- Tools, rags, or loose parts must not be left on the compressor or drive parts.
- Do not use flammable solvents for cleaning parts.
- Keep combustibles out of and away from the compressor and any associated enclosures.
- The owner, lessor, or operator of the compressor are hereby notified and forewarned that any failure to observe these safety precautions may result in damage or injury.
- **Mobile Energy Australia** expressly disclaims responsibility or liability for any injury or damage caused by failure to observe these specified precautions or by failure to exercise that ordinary caution and due care required when operating or handling the compressor, even though not expressly specified above.

SAFETY-continued

⚠ WARNING



Read the operators manual before starting this unit. Failure to adhere to instructions can result in severe personal injury.

⚠ DANGER



**HOT OIL UNDER PRESSURE!
Will cause SEVERE PERSONAL INJURY OR DEATH. Do not remove valves, caps, plugs or piping when compressor is running or pressurized. Shut down compressor and relieve system of all pressure before removing valves, caps, plugs or piping**

300038

SAFETY-continued

⚠ DANGER



Discharge air used for breathing will cause severe injury or death consult filtration specialist for additional filtration and treatment equipment to meet occupational safety and health administration standards

⚠ WARNING



Driveshaft in rotation. Switch off engine and disconnect battery or electrical supply before attempting to work or perform maintenance on the compressor package.

SAFETY-continued

! WARNING



Do not operate without fan guard in place.

! WARNING



Connect air hoses only in full compliance with OSHA Standard 29 CFR 1926:(b)(7) The required safety devices should be tested in accordance with their manufacturer's recommendations to verify that they reduce pressure in case of hose failure and will not nuisance trip with the hose and tool combinations in use.

SAFETY-continued

COMPRESSOR FLUID

USE ONLY ATF DEXTRON III OIL

- 1. BEFORE STARTING COMPRESSOR CHECK FLUID LEVEL WITH TRUCK ENGINE TURNED OFF AND PARKED ON LEVEL GROUND**
- 2. ADD OIL IF NONE IS SHOWING IN THE SIGHT GLASS**
- 3. DO NOT FILL ABOVE THE CENTRE OF THE SIGHT GLASS**

To be placed on body near separator tank oil fill cap



To be placed inside door sill near the VIN number label

COMPRESSOR TERMINOLOGY

SCREW COMPRESSOR – Produces pressurized air with high volume flow (CFM)

INTAKE VALVE – Control valve that controls how much air in draw into the compressor

COALESCING FILTER - Performs second stage separation of oil from compressed air feeding air tools. Sometimes referred to as the separator element.

OIL SEPARATOR TANK - The first stage of oil separation from compressed air. Also serves as reservoir area for compressor lubricant and sometimes referred to as the receiver tank.

CFM - The volume of compressed air produced expressed as cubic feet of air per minute.

PSI - Refers to the operating pressure the system is set up at, expressed as pounds per square inch.

SAFETY VALVE - A valve located on the oil sump which opens in case of excessive pressure. It is sometimes referred to as the pop-off or pressure relief valve.

SHUTDOWN SWITCH - Works in conjunction with a temperature and pressure switch gauges, sending a signal to stop the compressor power source in cases of high temperature of oil/air or high pressure build up within the system.

SIDE MOUNT PTO - Power take off gearbox that bolts to the side of the transmission. The PTO input gear meshes with one of the gears in the vehicle's transmission. The rotation developed by the engine drives the transmission which turns the PTO gear box and rotates the PTO output shaft. Special care during PTO selection should be taken to ensure proper compressor rotation and PTO % is achieved for specific compressor kit.

DESCRIPTION OF COMPONENTS

COMPRESSOR ASSEMBLY

The **Mobile Energy Australia** Series 5000 PTO compressor assembly is a positive displacement, oil flooded, rotary screw type unit employing one stage of compression to achieve the desired pressure. Components include a housing (stator), two screws (rotors), bearings, and bearing supports. Power from the engine is transferred to the male rotor through a drive shaft and gears in the gear housing. The female rotor is driven by the male rotor. There are four lobes on the male rotor while the female rotor has five roots.

PRINCIPLES OF OPERATION

In operation, two helical grooved rotors mesh to compress air. Inlet air is trapped as the male lobes roll down the female grooves, pushing trapped air along, compressing it until it reaches the discharge port in the end of the stator and delivers smooth-flowing, pulse-free air to the receiver.

During the compression cycle, oil is injected into the compressor and serves these purposes:

1. Lubricates the rotating parts and bearings.
2. Serves as a cooling agent for the compressed air.
3. Seals the running clearances.

LUBRICATION SYSTEM

Oil from the compressor oil sump, at compressor discharge pressure, is directed through the oil filter, cooling system, and to the side of the compressor stator, where it is injected into the compressor. At the same time oil is directed internally to the bearings and shaft seal of the compressor. The oil-laden air is then discharged back into the sump.

OIL SUMP

Compressed, oil-laden air enters the sump from the compressor. As the oil-laden air enters the sump, most of the oil is separated from the air as it passes through a series of baffles and de-fusion plates. The oil accumulates at the bottom of the sump for recirculation. However, some small droplets of oil remain suspended in the air and are passed on to the Coalescing Filter. The Coalescing Filter is self-contained within the separator tank dry side. When air is demanded at the service line, it passes through the Coalescing Filter which efficiently provides the final stage of oil separation.

SAFETY VALVE

The pop safety valve is set at 175 PSI and is located at the end of the separator. This valve acts as a backup (secondary pressure safety) to protect the compressor system from excessive pressure that might result from a malfunction of equipment downstream.

DESCRIPTION OF COMPONENTS – continued

OIL RETURN LINE

The oil that is removed by the Coalescing Filter accumulates at the bottom of the can and is returned through an oil return line leading to the compressor. The oil return line is 6mm tube from the bottom of the Coalescing Filter cover plate and goes to a check valve fitting which is located at the compressor.

OIL FILTER

The compressor oil filter is the full-flow replaceable element type and has a safety bypass built into it.

COMPRESSOR COOLING SYSTEM (STANDARD)

The compressor cooling system consists of an oil cooler remote mounted. Oil temperature is controlled by the cooler and fan which maintains compressor oil temperatures in the range of 70° - 100° C.

INSTRUMENTATION

The **MEA** PTO unit incorporates a gauge panel that monitors temperature, hours of operation and pressure. There is a warning buzzer on the panel as an audible warning. It is designed to be mounted in a protected area outside of the cab.

COMPRESSOR DISCHARGE PRESSURE SWITCH GAUGE

This switch gauge indicates the discharge air/oil pressure. Operate compressor within the discharge pressure limits as indicated in specifications section. The switch gauge ensures high pressure safety shutdown is triggered before the safety relief valve on the sump discharges, preventing hot pressurized oil spraying on the vehicle and/or compressor components.

HOUR METER

The hour meter records the total number of operating hours. It serves as a guide in following the recommended inspection and maintenance schedule. The hour meter will only run when there is pressure in the system.

COMPRESSOR DISCHARGE AIR/OIL TEMPERATURE SWITCH GAUGE

This switch gauge indicates compressor air/oil discharge temperature. The switch gauge ensures safety shutdown in case of excessive operating temperatures, preventing compressor damage.

DESCRIPTION OF COMPONENTS – continued

ELECTRICAL AND SAFETY SYSTEM

The **MEA** compressor's standard electrical system consists of a gauge panel; a remote mount 12/24 VDC fan package with a relay assembly (for standard cooling system only); and a resettable normally closed shutdown switch. These components are integrated together to provide a safety shutdown system that is activated when extreme high temperature or pressure conditions are present. When the temperature or pressure exceeds the maximum set parameter of the respective switch gauge a signal is sent to "trip" the shutdown switch from normally closed to open. This signal will then shut off the engine in vehicles equipped with a CABLE PTO or disengage the PTO in "HOT SHIFT" PTO applications.

ELECTRONIC ENGINE INTERFACE

Electronic engine interface for the compressor speed control incorporates several **MEA** supplied electrical components that are chassis specific. A chassis specific wiring diagram and electrical components are supplied per the vehicle application data at the time of the order. Most electronic engines will require programming by your dealer for the truck chassis.

AUTOMATIC BLOW DOWN VALVE

There is one blow down valve in the compressor system. It is located at the downstream side of the Coalescing Filter head and will automatically bleed the sump to zero pressure when the compressor is disengaged. Blow down time interval takes between 30 to 60 seconds.

CONTROL SYSTEM

The prime component of the compressor control system is the compressor inlet valve. The control system is designed to match air supply to air demand and to prevent excessive discharge pressure when compressor is at idle. Control of air delivery is accomplished by the inlet valve regulation and modulation as directed by the discharge pressure regulator.

DISCHARGE PRESSURE REGULATOR VALVE

This valve located on the compressor intake it is used to set the desired discharge pressure within the operating pressure range. Turning the regulator screw clockwise increases the working pressure, a counter clockwise movement of the screw reduces the working pressure. This system has a maximum operating pressure of 175 psi.

NOTE: Most air tools operating pressure range is between 90 and 125 psi. Operating above the tools recommended pressures will decrease the life of the tool. Higher operating pressure can also over torque nut and bolts fatiguing the fastener and mating parts. Strictly adhere to tool operating pressures and torque standards set forth by the tool manufacturer and the specifications of the equipment that work is being performed on.

DESCRIPTION OF COMPONENTS – continued

INLET VALVE

The compressor inlet valve is a piston operated disc valve that regulates the inlet opening to control capacity. It also serves as a check valve at shutdown.

CONTROL SYSTEM OPERATION (ELECTRONIC ENGINES)

The following discussion explains the operation of the control system from a condition of “no load” to a condition of “full capacity” at working pressure. For the working pressure range of your machine, refer to applicable data in “Specifications”.

The pressure regulator, mounted on the compressor intake, operates as follows:

1. As the demand for air decreases, the receiver pressure rises. When this pressure exceeds the set point of the pressure regulator, the regulator opens sending a pressure signal to the inlet valve. The poppet valve moves towards the valve inlet seat against the force of the modulating spring inside the valve. This regulates the opening area of the inlet valve and keeps the compressor at a constant flow.
2. If the air demand goes to zero, (service valve closed, or air dead headed at tool) the inlet valve will close completely.
3. As the demand for air increases, the pressure signal to the inlet valve is removed and the inlet valve poppet modulates to fully open, and the engine speed returns to the programmed compressor high RPM.

INSPECTION, LUBRICATION, AND MAINTENANCE

This section contains instructions for performing the inspection, lubrication, and maintenance procedures required to maintain the compressor in proper operating condition.

The importance of performing the maintenance described herein cannot be over emphasized.

The periodic maintenance procedures to be performed on the equipment covered by this manual are listed below. It is imperative to understanding of any users that the intervals between inspections specified are maximum intervals. More frequent inspections shall be made if the unit is operating in a challenging environment such as dusty environment, in a high ambient temperature, or in other abnormal conditions. A planned program of periodic inspection and maintenance will help to avoid premature failure and costly repairs. Daily visual inspections should become a routine.

LUBRICATION AND MAINTENANCE CHART lists serviceable items of the compressor package. The items are listed according to their frequency of maintenance required, followed by the items which need only “As Required” maintenance.

The maintenance time intervals are expressed in hours. The hour meter indicates the total number of hours the compressor has run. Use the hour meter readings for determining the maintenance schedule. Perform maintenance at every interval of the hours shown. For example, when the hour meter shows “100” on the dial, all items listed under “EVERY 10 HOURS” should be serviced for the tenth time, and all items under “EVERY 50 HOURS” should be serviced for the second time, and so on.

DANGER

COMPRESSOR MUST BE SHUT DOWN AND COMPLETELY RELIEVED OF PRESSURE PRIOR TO CHECKING FLUID LEVELS. OPEN SERVICE VALVE TO ENSURE RELIEF OF SYSTEM AIR PRESSURE. FAILURE TO COMPLY WITH THIS WARNING MAY CAUSE DAMAGE TO PROPERTY AND SERIOUS BODILY HARM.

PLEASE NOTE: COMPRESSOR OIL AND FILTER MUST BE REPLACED AT 50 HOURS OF OPERATION. AFTER THEN FOLLOW NORMAL SERVICE SCHEDULING

INSPECTION, LUBRICATION, AND MAINTENANCE-continued

LUBRICATION AND MAINTENANCE CHART

| INTERVAL | ACTION |
|-------------------------------|--|
| PERIODICALLY DURING OPERATION | 1 Observe all gauge reading. Note any change from the normal reading and determine the cause. Have necessary repairs made. (NOTE: "NORMAL" is the usual gauge reading when operating at similar conditions on a day-to-day operation.) |
| EVERY 10 HOURS OR DAILY | 1 . Check the compressor oil level. 2 . Check air filter. 3 . Check for oil and air leaks. 4 . Check safety circuit switches. |
| EVERY 25 HOURS OR MONTHLY | 1. Inspect and clean oil cooler fins. |
| EVERY 100 HOURS OR 6 MONTHS | 1 . Grease compressor drive shaft slip yoke assembly. |
| EVERY 500 HOURS OR 6 MONTHS | 1 . Change compressor oil and oil filter. 2. Check compressor shaft seal for leakage. 3 . Check air filter piping, fittings, and clamps. 4 . Check compressor supports. 5 . Install new air filter element. (Shorter interval may be necessary under dusty conditions.) 6 . Check sump safety valve. |
| EVERY 1000 HOURS OR ANNUALLY | 1 . Change coalescing filter element. |
| PERIODICALLY OR AS REQUIRED | 1 . Inspect and clean air filter element. 2 . Inspect and replace spin-on coalescing filter element if necessary. 3 . Inspect and clean oil cooler fins. |

INSPECTION, LUBRICATION, AND MAINTENANCE-continued

LUBRICANT RECOMMENDATIONS

WARNING

IT IS IMPORTANT THAT THE COMPRESSOR OIL BE OF A RECOMMENDED TYPE AND THAT THIS OIL AS WELL AS THE AIR FILTER, OIL FILTER, AND COALESCING ELEMENTS BE INSPECTED AND REPLACED AS STATED IN THIS MANUAL.

THE COMBINATION OF A COALESCING ELEMENT LOADED WITH DIRT AND OXIDIZED OIL PRODUCTS TOGETHER WITH INCREASED AIR VELOCITY (AS A RESULT OF A CLOGGED CONDITION) MAY PRODUCE A CRITICAL POINT WHILE THE MACHINE IS IN OPERATION WHERE IGNITION CAN TAKE PLACE AND COULD RESULT A FIRE IN THE OIL SUMP.

FAILURE TO COMPLY WITH THIS WARNING MAY CAUSE DAMAGE TO PROPERTY AND SERIOUS BODILY HARM.

CAUTION

MIXING DIFFERENT TYPES OR BRANDS OF LUBRICANTS IS NOT RECOMMENDED DUE TO THE POSSIBILITY OF A DILUTION OF THE ADDITIVES OR A REACTION BETWEEN ADDITIVES OF DIFFERENT TYPES

The followings are general characteristics for a rotary screw lubricant. Due to impracticality of establishing limits on all physical and chemical properties of lubricants which can affect their performance in the compressor over a broad range of environmental influences, the responsibility for recommending and consistently furnishing a suitable heavy-duty lubricant must rest with the individual supplier should they choose not to use the recommended **MOBILE ENERGY AUSTRALIA** rotary screw lubricant.

The lubricant supplier's recommendation must, therefore, be based upon not only the following general characteristics, but also upon his own knowledge of the suitability of the recommended lubricant in PTO helical screw type air compressors operating in the intended environment of use.

LUBRICANT CHARACTERISTICS

1. Flash point 400°F (204°C) minimum.
2. Pour point -40°F (-40°C) maximum.
3. Contains rust and corrosion inhibitors.
4. Contains foam suppressors.
5. Contains oxidation stabilizer.

CONTROLS / INDICATORS AND PURPOSE

| CONTROL OR INDICATOR | PURPOSE |
|--------------------------------|---|
| TEMPERATURE SWITCH GAUGES | Monitors the temperature of the air/fluid mixture leaving the compressor. The normal reading should be approximately 80 to 100 degrees C. Sends signal to high temperature pressure switch when the compressor reaches 115 degrees temperature, and the compressor will shut down. |
| PRESSURE SWITCH GAUGES | Monitors the pressure inside the sump tank. When the pressure reaches 150 PSI the compressor will shut down. |
| HOUR METER | Indicator accumulated hours of actual compressor operation. |
| FLUID LEVEL SIGHT GLASS | Indicates fluid level in the sump. Proper level should be halfway mark of the glass. Check this level when the compressor is disengaged and the vehicle is parked on level ground. |
| PRESSURE RELIEF VALVE | Vents sump pressure to the atmosphere if the pressure inside the sump exceeds 175 PSI. |
| COMPRESSOR INLET CONTROL VALVE | Regulates the amount of air intake in accordance with the amount of compressed air being used. Isolates fluid in compressor unit on shutdown. |
| PRESSURE REGULATING VALVE | Senses air pressure from sump to provide automatic regulation of the compressor inlet control valve and load controller. |
| BLOW DOWN VALVE | Coalescing filter, blow down valve vents the sump pressure to the atmosphere at shut down. |
| MINIMUM PRESSURE ORIFICE | Restricts air flow to balance sump and service air pressure. Assures a minimum of 65 PSI to maintain compressor lubrication. |
| RETURN LINE CHECK VALVE | Ensures that the back flow to coalescing filter element does not occur during shut down. |

COMPRESSOR OPERATION

The following conditions should exist for maximum performance of the PTO/compressor.

- The truck should be as close to level as possible when operating.
- The compressor will operate on a 15-degree sideward and lengthwise tilt without any adverse problems. Fluid carry over and/or oil starvation may occur if operated beyond this tilt.

NOTE

IF THE COMPRESSOR IS BEING USED TO POWER SANDBLASTING EQUIPMENT, OR AN AIR STORAGE TANK, USE A CHECK VALVE DIRECTLY AFTER THE MINIMUM PRESSURE ORIFICE TO PREVENT BACKFLOW INTO THE SUMP.

THIS CHECK VALVE SHOULD HAVE A MAXIMUM PRESSURE DROP RATING OF 2 PSI (13.78kPa) OPERATING AND A CAPACITY RATING EQUAL TO THE COMPRESSOR.

THE COMPRESSOR SERVICE VALVE SHOULD BE RELOCATED TO THE HOSE REEL INLET OR BE THE CUSTOMERS AIR CONNECTION PORT WHEN A HOSE REEL IS NOT USED.

TYPICAL PLUMBING FROM MINIMUM PRESSURE ORIFICE SHOULD FLOW IN THE FOLLOWING ORDER:

- 1. MINIMUM PRESSURE ORIFICE.**
- 2. CHECK VALVE.**
- 3. AIR TANK (WHEN USED).**
- 4. SERVICE VALVE.**
- 5. MOISTURE TRAP/GAUGE/OILER COMBINATION (WHEN USED).**

COMPRESSOR OPERATION continued

STARTING/STOPPING

Basic operating procedure for every PTO Compressor.

BE SURE TO FULLY READ MANUAL PRIOR TO OPERATING EQUIPMENT

Start-Up Procedure

1. Set brakes per company procedure and chock wheels.
2. Close air service valves. Engine speed control will not elevate if left open.
3. Check compressor oil level add if low.
4. Place transmission in Park.
5. Engage P.T.O.

Shutdown Procedure

1. Close air service valves.
2. Disengage P.T.O.
3. Verify compressor begins to blow down.

TROUBLESHOOTING

This section contains instructions for troubleshooting of the equipment following a malfunction. The troubleshooting procedures to be performed on the equipment are listed below.

1. TRUCK ENGINE WILL NOT START

Most problems in this area will not relate to the compressor and should therefore consult the engine manual.

- Manual transmission requires safety shutdown switch of the compressor system to shut the engine off in
- cases of high temperature or pressure. If this occurs, the truck can be restarted by pushing the reset button on the shutdown switch.
- If the shut off occurs due to compressor hi-temperature or high pressure (from switch gauge), the truck should be taken in for service/troubleshooting.
- Trucks that have automatic transmissions that use hot shift PTO's should be wired so the PTO disengages in the event of a safety shutdown instead of shutting off the truck engine.

UNPLANNED SHUTDOWN

When the operation of the machine has been interrupted by an unexplained shutdown, check the following:

- Check the fuel level and truck dash gauges for any indications of possible engine problems.
- Check the compressor discharge temperature/pressure shutdown switch, which is normally closed. If it is popped out, it had opened the circuit and will need to be reset. Push the button in to reset it. You will then hear the button click if it was tripped by the switch gauges.
- Check that the compressor oil is at proper level.
- Check oil cooler for dirt, sludge, or any other obstructions to the cooling air flow.
- Make a thorough external check for any cause of shutdown such as broken hose, broken oil lines, loosened or broken wire, etc

IMPROPER DISCHARGE PRESSURE

If discharge pressure is too low, check the following:

- Too much air demand. (Air tools require more air than what the compressor can produce, air tools are freewheeling without resistance.)
- Service valve wide open to atmosphere.
- Leaks in service line.
- Restricted compressor inlet air filter.
- Faulty control system operation (i.e., regulator is always sending a signal to close inlet valve)

TROUBLESHOOTING-continued

If discharge pressure is too high, safety valve blows, or system shuts down on high pressure, check the following:

- Faulty discharge pressure switch.
- Coalescing filter is blocked.
- Faulty safety valve.
- Faulty regulator (regulator air pressure signal is not getting to inlet valve)
- Hi pressure shutdown at compressor idle:
- Inlet valve leaking or open
- Faulty regulator

SUMP PRESSURE DOES NOT BLOW DOWN

If after the compressor is shutdown, pressure does not automatically blow down, check for:

- Automatic blow down valve may be inoperative at coalescing filter head.
- Blockage in air line from side of inlet valve to blow down valve.
- Muffler at blow down clogged.

ABNORMAL OIL CONSUMPTION

Abnormal oil consumption or oil in service line, check for the following:

- Overfilling of oil sump.
- Leaking oil lines or oil cooler.
- Plugged oil return line: check entire line, to the compressor.
- Defective coalescing filter element.
- Compressor shaft seal leakage.
- Discharge pressure below 65 PSI or above 175 PSI.

ENGINE LUGGING

If engine does not accelerate or will not maintain full load speed, check the following:

- Engine problem (refer to engine manual).
- Compressor discharge pressure too high.
- Improper compressor speed. (Compressor running at truck idle.)
- Operating above maximum altitude rating of compressor and truck.

TROUBLESHOOTING-continued

COALESCING FILTER NEED TO BE CHANGED FREQUENTLY

If the coalescing filter element must be replaced frequently, it is an indication that foreign material may be entering the compressor inlet, or the compressor oil is breaking down.

Compressor oil can break down prematurely for a number of reasons.

- Extreme operating temperature,
- Negligence in draining condensate from oil sump
- Using the improper type of oil,
- Dirty oil,
- Oil return line plugged.

The complete air inlet system should be checked for leaks.

HIGH COMPRESSOR DISCHARGE TEMPERATURE

- Check compressor oil level. Add oil if required (see Section for oil specifications).
- Check thermal valve operation. (Front mounting coolers only).
- Clean outside of oil cooler.
- Check fan switch/relay harness.
- Clean oil system (cooler) internally.

COMPRESSOR TROUBLESHOOTING LIST

| SYMPTOMS | PROBABLE CAUSE | CORRECTIVE ACTION |
|---|--|---|
| The compressors don't change to loaded | <ol style="list-style-type: none"> 1 Suction valve keeps closed 2 Losses on the control air line 3 Solenoid valve of intake valve badly working | <ol style="list-style-type: none"> 1 worn parts 2 Check the pipes, connections and repair 3 Check and replace if needed |
| Compressor capacity or pressure lower than normal | <ol style="list-style-type: none"> 1 Air consumption higher than capacity 2 Suction air filter cartridge clogged 3 Suction valve doesn't open completely 4 Loss of air in the safety valve | <ol style="list-style-type: none"> 1 Check the connected devices to use the compressor air 2 Remove the cartridge. Clean or replace it 3 Check the valve and replace the whom parts 4 Remove and check. Replace if after assembly it isn't sealed |
| The compressor doesn't change to empty: the safety valve intervenes | <ol style="list-style-type: none"> 1 Pressure switch erroneously set 2 Air loss from the pressure switch feeding pipe 3 Solenoid valve of intake valve badly working | <ol style="list-style-type: none"> 1 Check the setting 2 Check the connections 3 Check and replace if needed |
| Compressor overheating | <ol style="list-style-type: none"> 1 Insufficient cooling 2 Dirty oil refrigerant 3 Oil level too low 4 Thermostat erroneously set | <ol style="list-style-type: none"> 1 Improve the ventilation of the compressor 2 Check and clean 3 Add oil, if necessary 4 Set it at the required temperature |
| The safety valve intervenes soon after the loaded setup | <ol style="list-style-type: none"> 1 Bad operation of the safety valve 2 Bad operation of the minimum pressure valve | <ol style="list-style-type: none"> 1 Remove and check. Replace if necessary 2 Remove and check. Replace the damaged items |
| Compressor is conveyed to empty setup from the pressure switch but the pressure keeps raising and the safety valve intervenes | <ol style="list-style-type: none"> 1 Solenoid valve of intake valve badly working 2 Bad operation of the quick discharge valve | <ol style="list-style-type: none"> 1 Check. Replace if necessary 2 Remove and check. Replace the damaged items |
| Oil leak from suction during stop | <ol style="list-style-type: none"> 1 Anomalous operation of the compressor check valve | <ol style="list-style-type: none"> 1 Remove and check. Replace if needed |
| Leak from seal | <ol style="list-style-type: none"> 1 Bad seal | <ol style="list-style-type: none"> 1 Replace sealing and inner rings |
| The rotor group isn't revolving | <ol style="list-style-type: none"> 1 Foreign matter entry 2 Wrong lubrication | <ol style="list-style-type: none"> 1 Contact MEA technical service 2 Contact MEA technical service |

MAINTENANCE



WARNINGS



Before starting any operations, read this document carefully. The disregard of the information herein contained can damage and injure people and things.

Use cylinder thread connections, unless otherwise indicated. The position and minimum dimensions of pipes and fittings as indicated on CIRCUIT SCHEME must be complied with. If not, malfunctioning of the product can be caused.

Installation and maintenance must be carried out only by qualified staff. Always comply with current safety and accident prevention regulation.

Use suitable protective garments during installation and maintenance (for example: overalls, gloves, protective glasses, ear plugs and caps, etc).

All installation and maintenance operations must be carried out both when the machine is switched-off (environment pressure) and when the electrical circuit is off.

Transmission parts like couplings and pulleys must be safe. Check air/oil pipe seals. Do not touch the mobile elements of the product when the machine is on.

Equipment and/or other systems used for motion, installation and maintenance will have to be adequately dimensioned in terms of weight and geometry. Projecting parts must be sheltered when the machine is on.

The manufacturer is not liable for damages to people and/or objects that may be caused by product misuse, non-compliance or partial compliance with safety standards mentioned in this document, changes even small ones, as well as tampering and use of non-original spare parts.

At the end of its lifetime, a product will have to be disposed of, complying with current law rules regarding industrial waste disposal

While some of the maintenance intervals in the schedule outlined in this manual seem to be rather short, it should be considered that one hour's operation of a compressor is equivalent to about travelling 80 kilometres (km) of an engine. Thus, eight hours of operation is equivalent to 640km, and 250 hours is equivalent to 20,000km, and so on.

MAINTENANCE-continued

DO NOT SUBSTITUTE ELEMENT. USE ONLY A GENUINE MOBILE ENERGY AUSTRALIA REPLACEMENT ELEMENT. THIS ELEMENT IS RATED AT 295 PSI WORKING PRESSURE. USE OF ANY OTHER ELEMENT MAY BE HAZARDOUS AND COULD IMPAIR THE PERFORMANCE AND RELIABILITY OF THE COMPRESSOR, POSSIBLY VOIDING THE WARRANTY AND/OR RESULTING IN DAMAGE TO PROPERTY AND SERIOUS BODILY HARM.

COMPRESSOR OIL SUMP FILL, LEVEL, AND DRAIN

- Before adding or changing compressor oil make sure that the separator tank is completely relieved of pressure.
- A drain plug is provided at the bottom of the separator tank.
- The correct oil level is at the top most mark on the sight glass.
- Oil is added at the fill cap on the side of the separator tank.
- The truck must be level when checking the oil. **DO NOT OVERFILL.**

DO NOT ATTEMPT TO DRAIN CONDENSATE, REMOVE THE OIL LEVEL FILL PLUG, OR BREAK ANY CONNECTION IN THE AIR OR OIL SYSTEM WITHOUT SHUTTING OFF COMPRESSOR AND MANUALLY RELIEVING PRESSURE FROM THE RECEIVER/SUMP. FAILURE TO COMPLY WITH THIS WARNING MAY CAUSE DAMAGE TO PROPERTY AND SERIOUS BODILY HARM.

GREASE

Lubricate the compressor drive shaft every time the truck is lubricated, or every 100 hours of compressor operation, whichever comes first.

AIR INTAKE FILTER

The air intake filter is a heavy-duty two-stage dry type, high efficiency filter designed to protect the compressor from dust and foreign objects.

The filter is equipped with an evacuator cup for continuous dust ejection while operating and when stopped.

Frequency of maintenance of the filter depends on dust condition at the operating site. The filter element must be serviced when clogged

MAINTENANCE-continued

AIR/OIL COALESCING FILTER

The air/oil coalescing filter employs an element permanently housed within a spin-on canister. This is a single piece unit that requires replacement when it fails to remove the oil from the discharge air, or pressure drop across it exceeds 15 PSI. Dirty oil clogs the element and increases the pressure drop across it.

To replace element, proceed as follows:

1. Shutdown compressor and wait for complete blow down (to zero pressure).
2. Turn element counterclockwise for removal (as in viewing the element from bottom).
3. Install new rubber seal in head and supply a film of fluid directly to seal.
4. Rotate element clockwise by hand until element contacts seal (as in viewing the element from bottom).
5. Rotate element approximately one more turn clockwise with band wrench near the top of element.
6. Run system and check for leaks.

OIL RETURN LINE

This line originates at the top of the air/oil coalescing filter and flows through a special 1/4 tube elbow located at the air-end. This elbow incorporates an oil return line check valve stopping the flow of oil into the coalescing filter at shutdown.

OIL FILTER

The compressor oil filter is a spin-on, throw away type. To replace filter, proceed as follows:

1. Make sure system pressure is relieved.
2. Remove filter by unscrewing from filter head (turn counterclockwise by hand as in viewing the element from bottom) and discard.
3. Install a new filter by applying a little oil to the seal and then screw the filter on by hand (turning it clockwise, as in viewing from bottom, until hand tightened. And then tighten one – third of a turn more).
4. Check for leaks in operation.

MAINTENANCE-continued

OIL COOLER

The interior of the oil cooler should be cleaned when the pressure-drop across it at full flow exceeds 25 PSI. The following procedure has been recommended by the vendor who supplies the cooler:

1. Remove cooler.
2. Circulate a suitable solvent to dissolve and remove varnish and sludge.
3. Flush generously with **Mobile Energy Australia compressor lubricant**.
4. After cooler is re-installed and compressor is filled with fresh oil, change compressor oil after 50 hours of normal operation

PTO & SHAFT SEAL

The PTO should be serviced in accordance with the PTO manual. The SAE side-mount type of PTO is lubricated by the transmission oil and thus requires little maintenance. It is strongly recommended that you periodically torque the fasteners in accordance with the PTO manual *SHAFT SEAL INSTALLATION INSTRUCTIONS*:

1. Remove PTO drive shaft, companion flange and key.
2. Remove (5) socket head retaining bolts on cover and slide cover off shaft. Cover has the seal and snap ring assembled in it.
3. Press old snap ring and seal off the cover for assembly of new seal.
4. Pull seal wear sleeve off shaft with puller, adding heat to one area only on wear sleeve will help enlarge and aid in its removal.
5. Clean shaft and surface of bearing removing all burrs from shaft where the wear sleeve gets installed.
6. Press new wear sleeve onto shaft. Oil heating new wear sleeve to 100°c approximately aids in the installation of this ring.
7. Clean seal cover and snap ring with solvent before installation.
8. Press new seal into cover (included in repair kit) and insert snap ring.
9. Place the assembly tool on the drive shaft until it sits on the end of the wear sleeve. Slightly lubricate the assembly tool on the external surface and add Loctite 573 to seal cover.
10. Install cover, seal, and snap ring assembly, over shaft and assembly tool. Note: Assembly tool is slip fit on shaft and allows new seal in cover to slide on to wear sleeve without cutting the lip of shaft seal. Reinstall the dirt ring retainer once the new seal and cover assembly is in place.
11. Place seal cover against rotor casting paying attention not to damage the seal and slide off assembly tool.
12. Screw down the socket head retaining bolts on the cover with a torque of 25Nm.
13. Reinstall companion flange, key and drive shaft assembly.

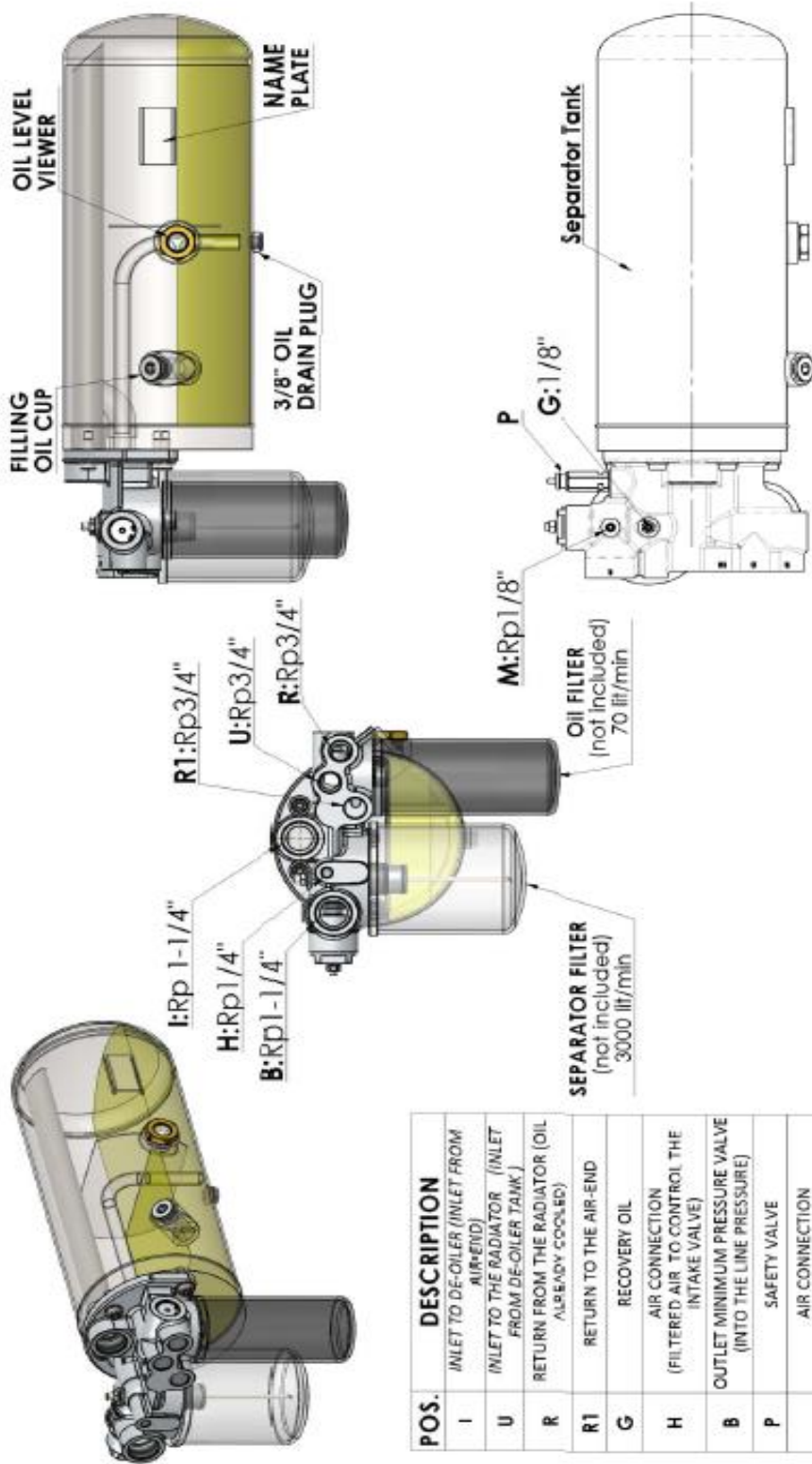
RECOMMENDED SPARE PARTS LIST

| <u>PART NUMBER</u> | <u>DESCRIPTION</u> |
|---------------------------|------------------------------|
| 10008-P0020 | OIL FILTER ELEMENT |
| 10008-P0200 | COALESCING FILTER |
| 10008-P0028 | AIR FILTER ELEMENT |
| 10019-K0005 | SEMI-SYNTH 68 COMPRESSOR OIL |

For spare parts not covered above, contact MEA spare parts sale team for assistance.

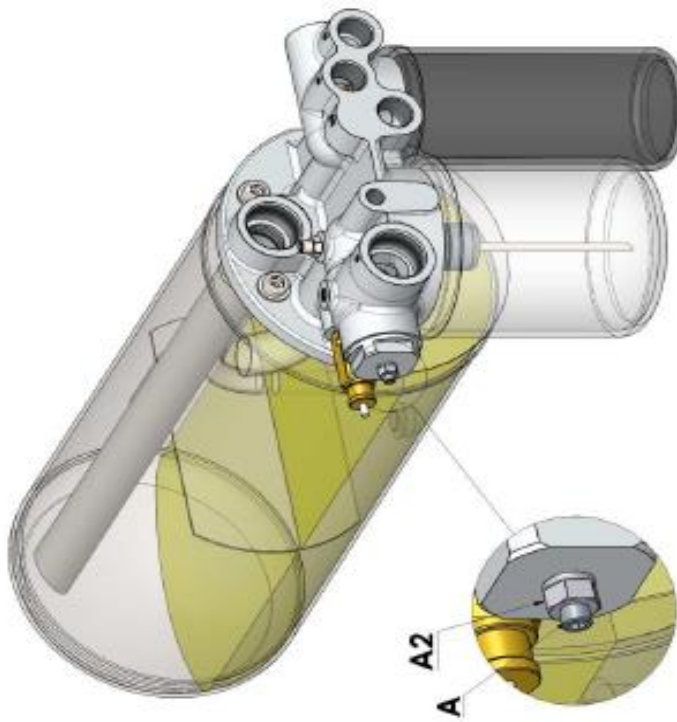
PRACTICO 36 SEPARATOR TANK OPTION

SCHEMA DI ASSEMBLAGGIO
ASSEMBLING SCHEME



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**SCHEMA DI REGOLAZIONE MINIMA PRESSIONE
MINIMUM PRESSURE ADJUSTING SCHEME**

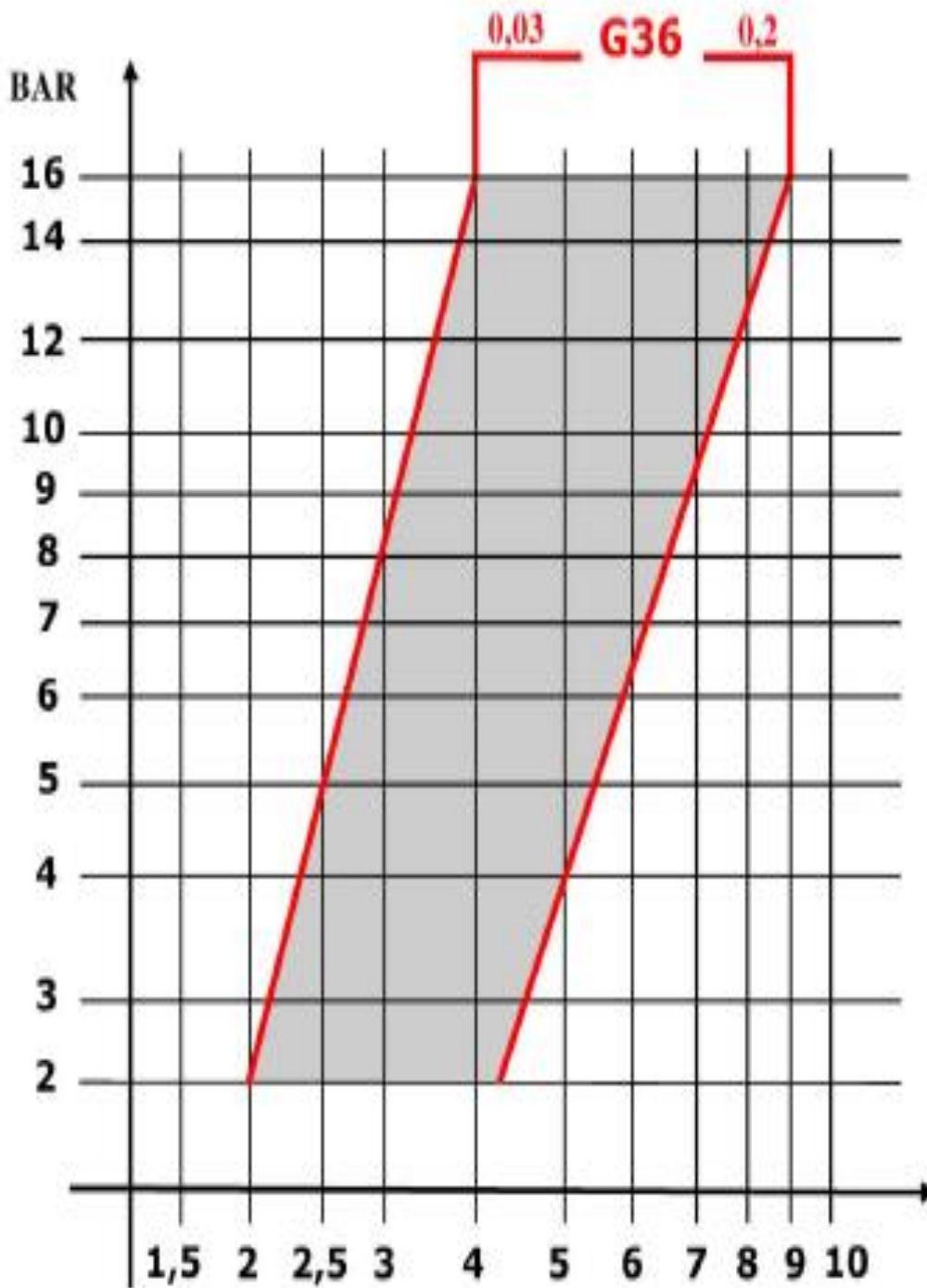


**CADUTA DI PRESSIONE
PRESSURE DROP**

| ISTRUZIONI REGOLAZIONE VALVOLA MINIMA PRESSIONE | |
|--|---|
| PER AUMENTARE LA MINIMA PRESSIONE | SVITARE IL DADO (A2) E AVVITARE LENTAMENTE LA VITE (A); QUANDO SI ARRIVA ALLA MINIMA PRESSIONE IDEALE AVVITARE IL DADO (A2) PER FISSARE IL RISULTATO RAGGIUNTO . |
| PER DIMINUIRE LA MINIMA PRESSIONE | SVITARE IL DADO (A2) E SVITARE LENTAMENTE LA VITE (A) ; QUANDO SI ARRIVA ALLA MINIMA PRESSIONE IDEALE, AVVITARE IL DADO (A2) PER FISSARE IL RISULTATO RAGGIUNTO . |

| MIN. PRESSURE VALVE REGULATION INSTRUCTIONS | |
|--|--|
| TO INCREASE THE MIN. PRESSURE | TO UNSCREW THE STOP NUT (A2) AND SLOWLY THE PRESSURE CONTROL SCREW (A) ; WHEN YOU FIND YOUR RIGHT MIN. PRESSURE, YOU MUST TO SCREW THE STOP NUT (A2) TO FIX THE RIGHT PRESSURE . |
| TO DECREASE THE MIN. PRESSURE | TO UNSCREW THE STOP NUT (A2) AND UNSCREW SLOWLY THE PRESSURE CONTROL SCREW (A) ; WHEN YOU FIND YOUR RIGHT MIN. PRESSURE, YOU MUST TO SCREW THE STOP NUT (A2) TO FIX THE RIGHT PRESSURE . |

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Air intake capacity of compressor (m3/1')



WARNING:

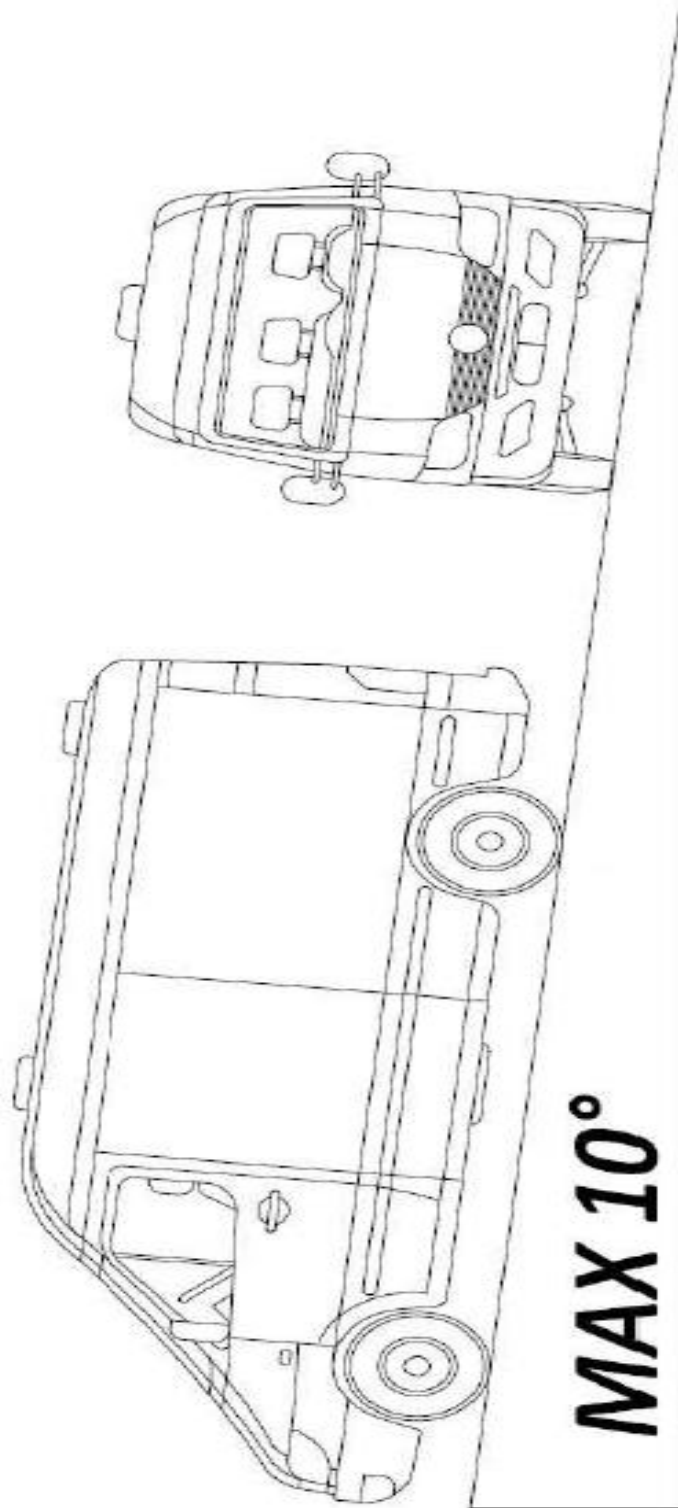
The integrated air/oil separation Practiko 36FT UD must be installed as shown in the picture below, with the separator cartridge filter oriented downward in perfectly vertical line to allow a correct air/oil separation and a correct lubrication.



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WARNING:

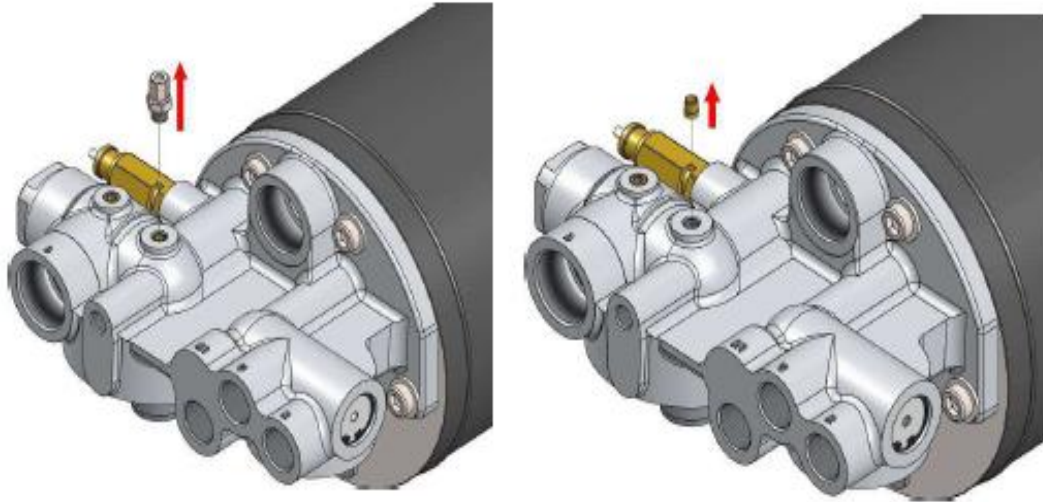
During working of the compressor system, the vehicle, in which the integrated system is installed, must not be parked on grades exceeding 10° in slope as this may affect lubrication and air/oil separation.



INSTRUCTION TO ASSEMBLE THE RECOVERY PIPE OF SEPARATOR FILTER

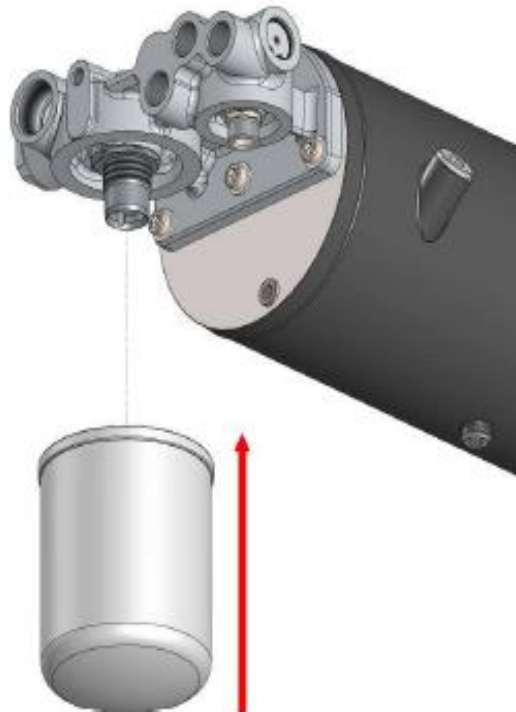
1.

Unscrew the straight junction and remove the olive from the body valve.



2.

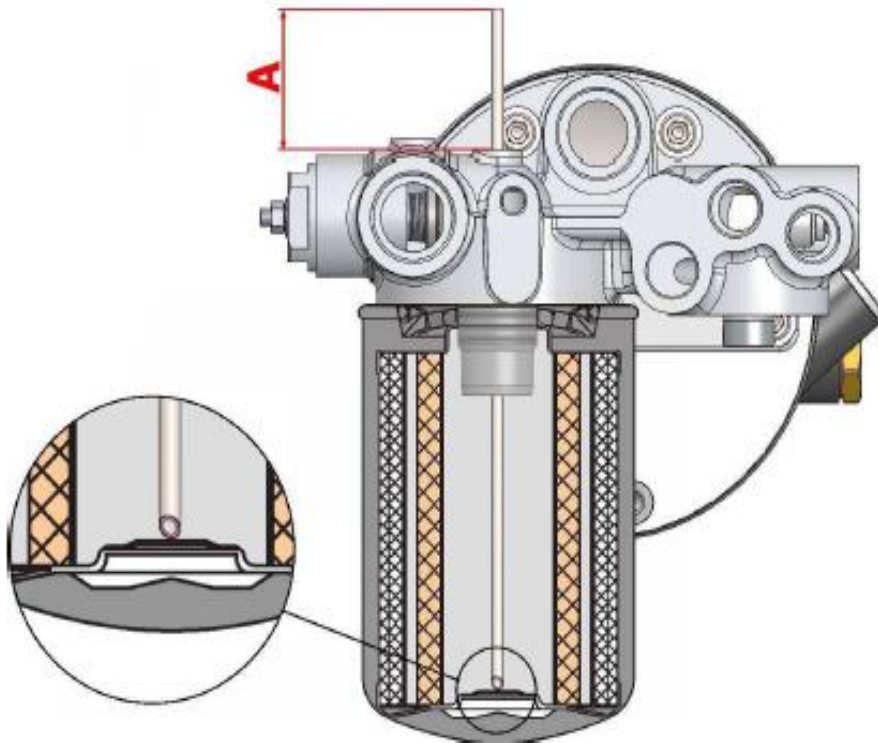
Screw the separator filter on the separator nipple.



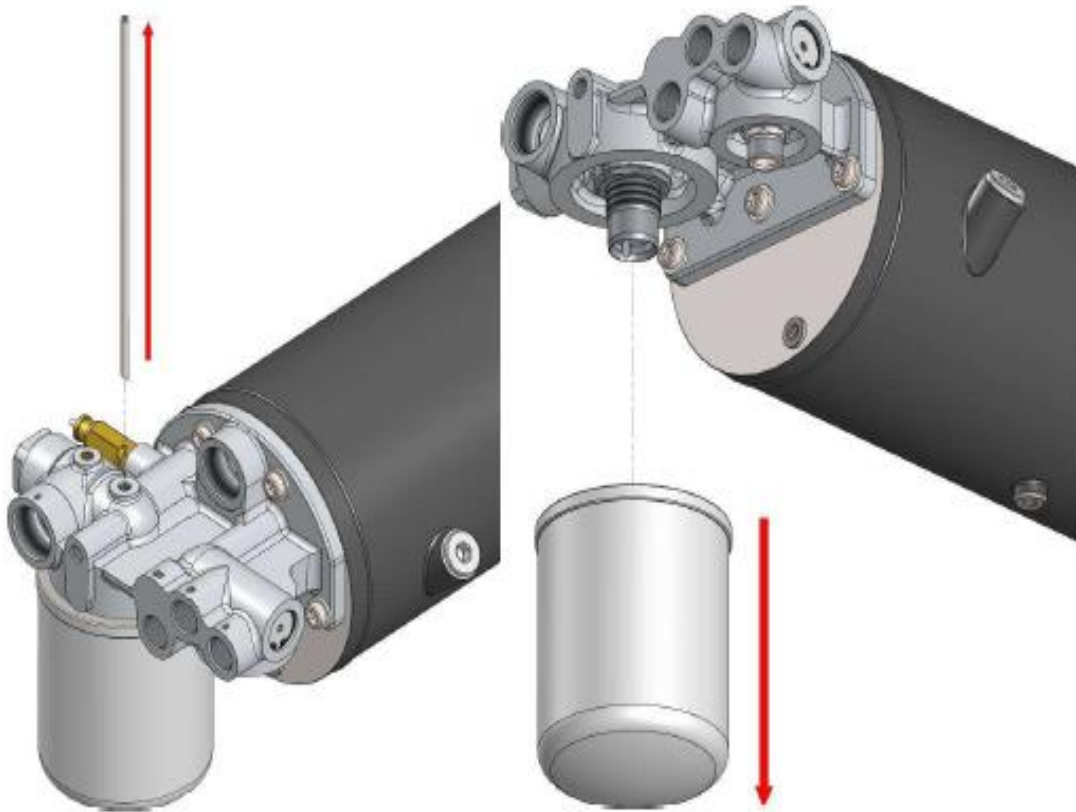
Insert the steel pipe until it touches the bottom of the filter.



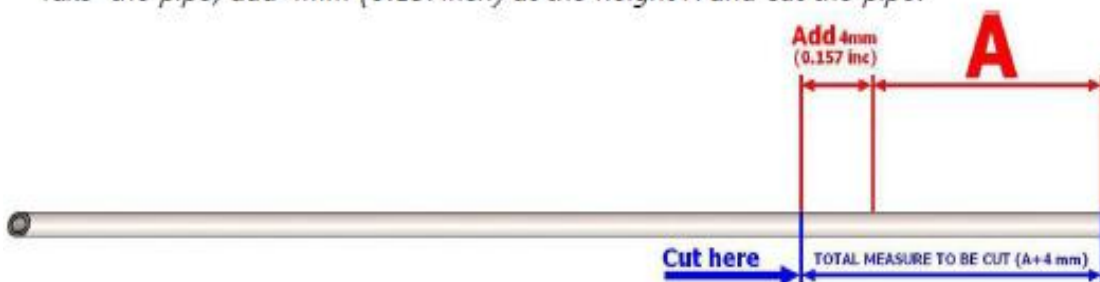
With a caliper gauge measure the height A, as indicated in the below picture.



Remove the steel pipe and unscrew the separator filter.



Take the pipe, add 4mm (0.157inch) at the height A and cut the pipe.



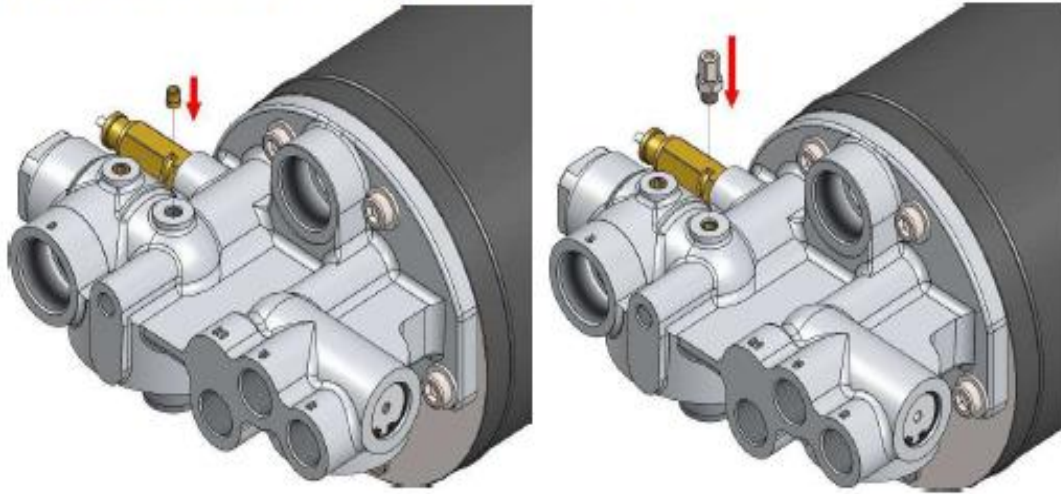
EXAMPLE:

Height A = 60mm (see the point 4)

Add 4mm

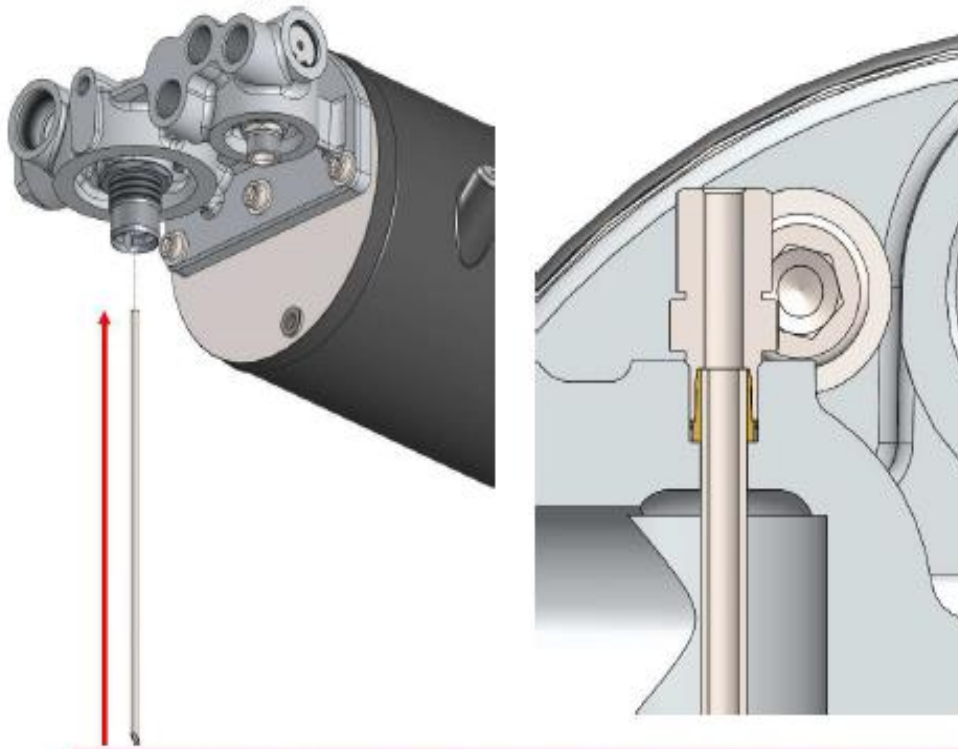
Total measure to be cut = 64mm

Insert the olive and screw the straight junction (DON'T FASTEN!!!).

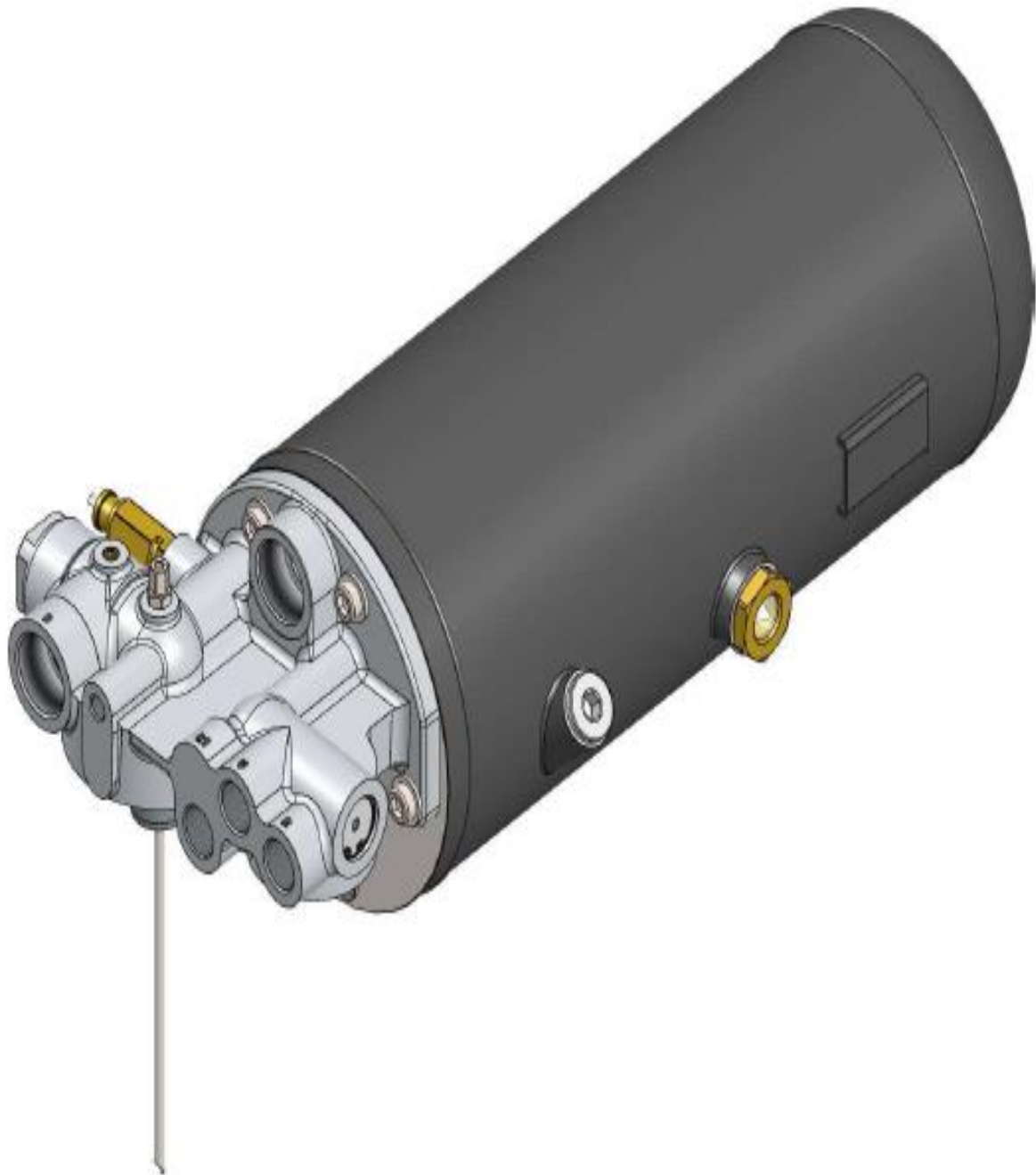


WARNING! !!!
Lubricated the olive before to insert on the body valve.

Insert the steel pipe through the separator nipple and the olive, until the end of stroke into the straight junction.



Keep pushed the steel pipe into the straight junction and fasten the straight junction until to block the pipe.

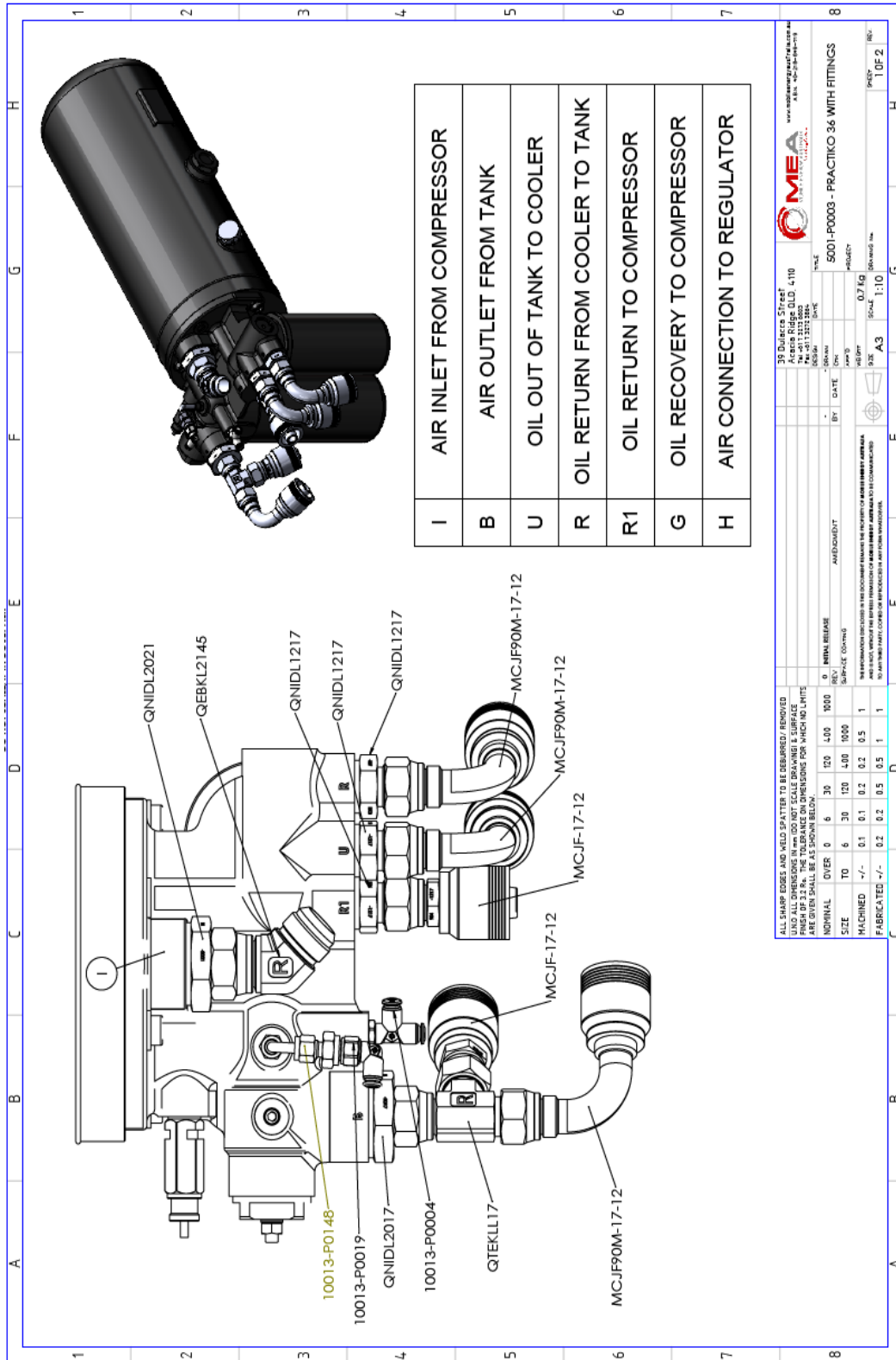




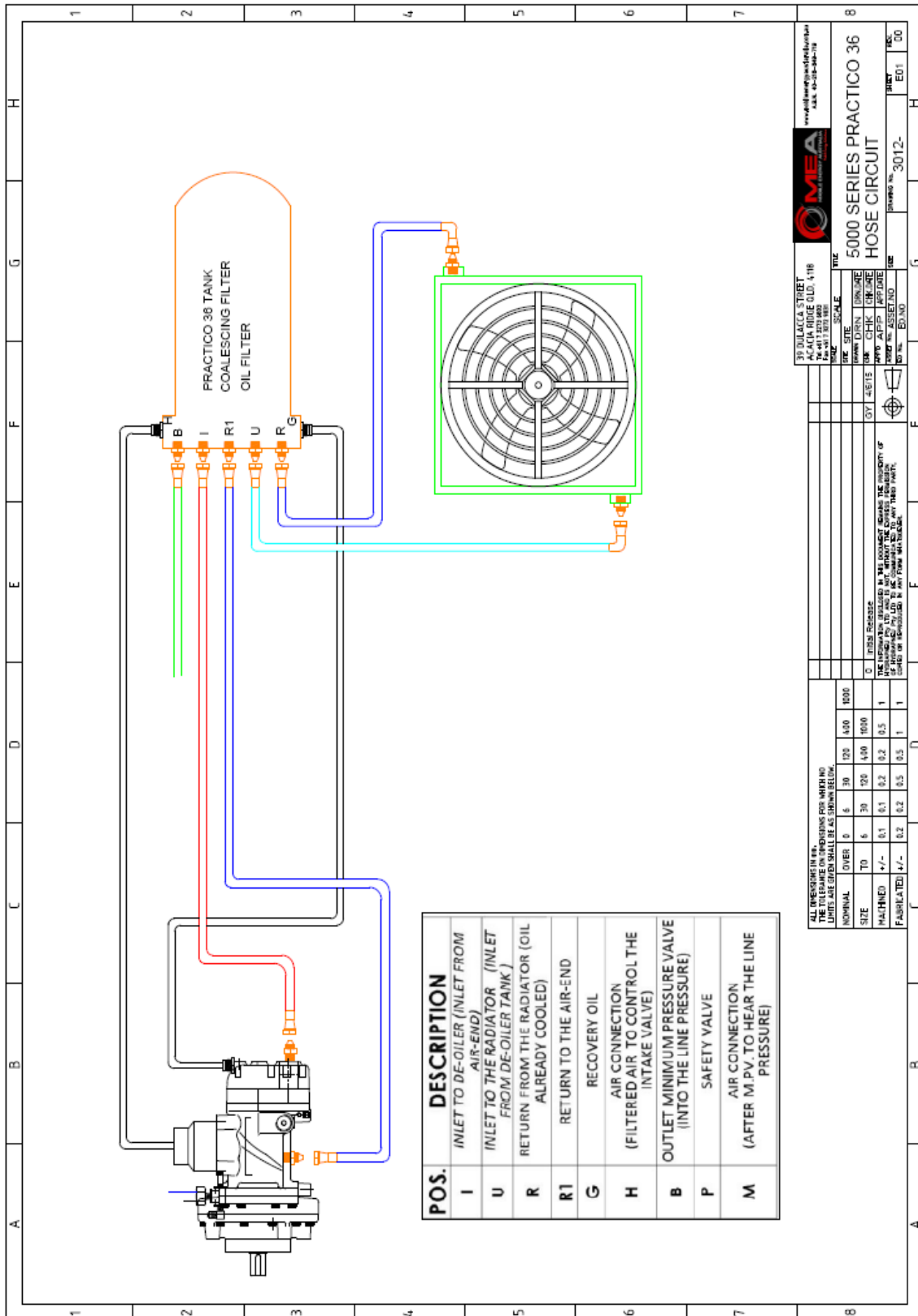
- 1) Before starting any operations, read this document carefully. The disregard of the information herein contained can damage and injure people and things.
- 2) Use cylinder thread connections, unless otherwise indicated. The position and minimum dimensions of pipes and fittings as indicated on CIRCUIT SCHEME must be complied with. If not, malfunctioning of the product can be caused.
- 3) Installation and maintenance must be carried out only by qualified staff. Always comply with current safety and accident prevention regulation.
- 4) Use suitable protective garments during installation and maintenance (for example: overalls, gloves, protective glasses, ear plugs and caps, etc).
- 5) All installation and maintenance operations must be carried out both when the machine is switched-off (environment pressure) and when the electrical circuit is off.
- 6) Transmission parts like couplings and pulleys must be safe. Check air/oil pipe seals. Do not touch the mobile elements of the product when the machine is on.
- 7) Equipment and/or other systems used for motion, installation and maintenance will have to be adequately dimensioned in terms of weight and geometry. Projecting parts must be sheltered when the machine is on.
- 8) The manufacturer is not liable for damages to people and/or objects that may be caused by product misuse, non-compliance or partial compliance with safety standards mentioned in this document, changes even small ones, as well as tampering and use of non-original spare parts.
- 9) The **warranty period**, unless otherwise stated in written form, is **15 (fifteen) months** from production date, based on the **lot no.** reported on the item. Anyhow it cannot be earlier than **12 months** from dispatch date. Commodities and wear-and-tear materials are not eligible to warranty. The warranty is not valid if MEA products turn out to be:
 - tampered or modified by people who have not been directly authorized in written form by MEA Technical Support.
 - damaged by bad usage or carelessness in setting-up and/or management by the Customer.
 - returns with **NON-ORIGINAL** and/or **UNSUITABLE** packaging that does not guarantee their initial conditions.The returns must be intact and complete with:
 - manufacturer's recognition tags.
 - any warranty seals.
 - all the accessories supplied with the first dispatch.
 - returns with **NON-ORIGINAL** and/or **UNSUITABLE** packaging that does not guarantee their initial conditions.
- 10) At the end of its lifetime, a product will have to be disposed of, complying with current law rules regarding industrial waste disposal.

MEA reserves the right to modify the installation and run book without prior notice.

PRACTICO 36 HOSE LAYOUT



PNEUMATIC DIAGRAM (COMPRESSOR SYSTEM)



WARRANTY

1. GENERAL PROVISIONS AND LIMITATIONS

- 1.1 Mobile Energy Australia (hereafter "MEA") warrants to each original retail purchaser (hereafter "Buyer") that such product(s) are, at the time of delivery to the buyer, free of manufacturing defects in material and workmanship.

2. NO WARRANTY IS MADE WITH RESPECT TO

- 2.1 Any product(s) which in the judgment of MEA has been subject to negligence, accident, improper storage, improper installation, improper application, improper operation, or maintenance or has been repaired or altered by others without the written authority of MEA.
- 2.2 Components or accessories manufactured, warranted, and serviced by others.
- 2.3 Damages caused by the lack of normal maintenance, service, and repairs such as the replacement and service of filters and seals.
- 2.4 Damages caused by the lack of normal minimum action, such as adjustments and inspections, replacement of items, such as service filters, seals, and service kits.
- 2.5 Consequential damages caused by product(s) failure.
- 2.6 Any product(s) if other than MEA's genuine components are used in the product(s).
- 2.7 Normal wear and tear of product(s).

3. WARRANTY PERIOD

- 3.1 The warranty period will commence upon installation of the product(s). The returned registration form marks the date of installation. If the registration form is not received, the warranty period will be deemed to commence 30 days from date of shipment from MEA.
- 3.2 The Product(s) is warranted against manufacturer defects in materials and workmanship for a period of 12 months.
- 3.3 The compressor air end is warranted to be free from defects in material and workmanship for a period of two (2) years from the date of installation.
- 3.4 Components supplied under warranty shall be warranted for the remainder of the original warranty period.
- 3.5 MEA factory rebuilt components shall be warranted for a period of 6 months from date of shipment.

4. MEA OBLIGATIONS

- 4.1 The obligation of MEA is limited to repairing or replacing parts, during normal business hours, at an authorized service facility, any component, that in the judgment of MEA are defective.
- 4.2 The obligation of MEA is limited to replacement of faulty parts. No liability is accepted for any freight costs, consequential damages, injuries, or expenses directly or indirectly related to the Product(s) failure.

WARRANTY (continued)

5. BUYER OBLIGATIONS

- 5.1 Buyer shall notify MEA of the alleged defect within 10 days of initial discovery and return the allegedly defective component(s) within 30 days of initial discovery.
- 5.2 The Buyer must prepay all costs associated with the warranty.
- 5.3 The Buyer must return components claimed under this warranty to a facility designated by MEA for evaluation, to establish a claim under this warranty.
- 5.4 Buyer shall maintain and service MEA Product(s) in accordance with the MEA Product(s) Owner's Manual.

6. WARRANTY REGISTRATION VALIDATION

- 6.1 A registration form is provided to the Buyer with the product(s). The form must be fully completed by the Buyer and returned to MEA upon completion of the installation of the product(s) to validate the warranty. No warranty claims will be processed unless MEA has received a fully completed warranty registration form.

7. DISCLAIMER AND WARRANTY SERVICE

- 7.1 Any labour costs claimed more than MEA's set rate and/or times are not provided by this warranty. If applicable, any labour costs more than MEA rate schedules caused by, but not limited to, location or inaccessibility of the equipment, travel time or labour provided by unauthorized service personnel are not provided by this warranty.
- 7.2 This warranty is in lieu of all other warranties or obligations expressed or implied. MEA expressly disclaims all implied warranties of merchantability or fitness for a particular purpose.
- 7.3 Warranty claims must be pre-authorized by MEA, and the components returned via prepaid freight using the designated "Returned Merchandise Authorization" number and form.

PLEASE NOTE:

Both the MEA Product Registration Form and the Kubota Engine Warranty Registration Form **MUST** be returned to MEA.

WARNING!!!

Failure to return PRODUCT WARRANTY REGISTRATION FORMS detailed above may result in the delayed processing of warranty claims.

MOBILE ENERGY AUSTRALIA - CONTACTS

Sales

Office: 07 3273 6803

Email: sales@mobileenergyaustralia.com.au

Spare Parts

Office: 07 3273 6803

Email: sales@mobileenergyaustralia.com.au

Service

Office: 07 3273 6803

Email: workshop@mobileenergyaustralia.com.au