



# **SMAC 90-H Frameless Owners & Operators Manual**



## **SERVICE MAINTENANCE AIR COMPRESSOR – HYDRAULIC DRIVEN**

Revision: 3  
Reviewed: 19/12/2022

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**MEA Product Registration Form**

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

**ALTERNATIVELY, PLEASE GO ONLINE AND  
COMPLETE WARRANTY FORM**

[www.mobileenergyaustralia.com.au/warranty-registration](http://www.mobileenergyaustralia.com.au/warranty-registration)



## MEA Product Registration Form

CUT HERE



**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 Name: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Country : \_\_\_\_\_

Installation Date:    \_\_\_\_ / \_\_\_\_ / \_\_\_\_  
                                  Day    Month    Year

### Owner Information

Company Name: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Country : \_\_\_\_\_

Postcode: \_\_\_\_\_ Phone #: \_\_\_\_\_

### Product Information

MEA Serial Number: \_\_\_\_\_

Model Number: \_\_\_\_\_

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## 1. PRODUCT SAFETY

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### (COMPRESSOR / COMPRESSED AIR)

**MEA DISCLAIMS ALL LIABILITIES FOR DAMAGE OR LOSS OF EQUIPMENT AND PROPERTY, PERSONAL INJURIES (INCLUDING DEATH), AND CONSEQUENTIAL DAMAGES ARISING OUT OF ANY MEA SYSTEM NOT USED IN ACCORDANCE WITH THE OPERATOR'S MANUAL.**

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

Care is required when working with an air compressor or compressed air. Compressed air is one of the many ways energy can be stored. Releasing the stored energy in an uncontrolled manner can result in catastrophic consequences. Death and permanent disability are possibilities that can occur due to misuse. The following are suggested as minimum precautions to be used when operating the SMAC Air Compressor. It is important that each work site shall perform a risk analysis and produce a procedure to eliminate or control the hazardous condition to minimise the risk to personnel and equipment. Health and Safety Regulations necessitate that this is a compulsory process to be carried out on each site. These, together with site specific safety procedures will help to minimize the risk of accidents, personnel injury, and loss of life. It is the responsibility of the employer to ensure that the work site is safe for all employees and that the safety procedures are followed by all employees.

### **SAFETY WHEN OPERATING AN AIR COMPRESSOR**

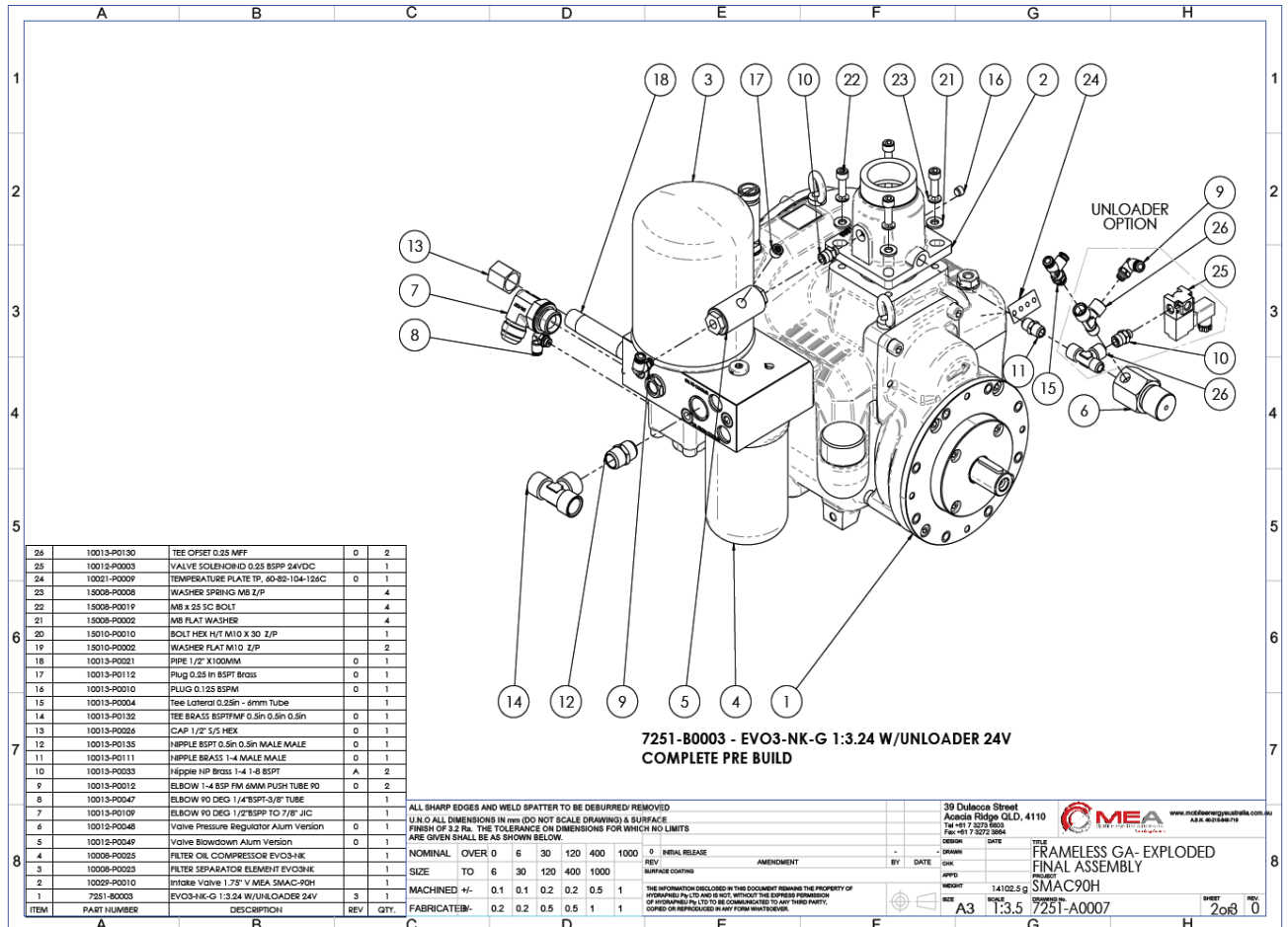
- Do not bypass or disable the oil temperature and pressure sensors – unless planning on running to failure (MEA does not recommend the practice).
- Do not expose the tank or compressor to extreme heat.
- Do not perform any service or repairs until the system has been completely relieved of air pressure.
- Maintenance and repairs on the system should only be done by qualified personnel.
- Do not operate the compressor while driving (vehicle mounted systems).
- Do not tamper with the pressure relief valve.
- Follow safe work practice, wear the appropriate personal protective equipment (PPE) when operating air-powered equipment, particularly eye and hearing protection.
- Avoid contact with rotating components, ensure all safety guards are in place.
- Avoid all contact with pressurized air. If it penetrates the skin, it can enter blood stream and cause death.
- Vaporized oil propelled by high pressure is an explosive mixture. To prevent compressor explosion or fire, make sure that the air entering the compressor is free of flammable vapours.
- Do not breathe the compressor air, vaporized oil is a respiratory hazard.
- Stay clear of all moving parts when the system is operating.
- Follow safety procedures for service operations as set by the authority.
- Run the system at idle speed and under no load conditions for 2 to 3 minutes before turning the system off to allow system cooling and lubrication to occur.

## HYDRAULIC SAFETY

ALL HYDRAULIC EQUIPMENT MUST BE TREATED WITH EXTREME RESPECT AND CARE. AS THE WORKING FLUID IS UNDER EXTREME PRESSURE, UP TO 5000PSI, WITH HIGH FLOW RATES GENERATING HIGH HEAT, ALL APPROPRIATE SAFETY PRECAUTIONS MUST BE TAKEN IN TO ACCOUNT AND SAFETY EQUIPMENT MUST BE WORN IF IN CONTACT WITH THE EQUIPMENT UNDER OPERATION. ALL LEAKS, NO MATTER HOW MINOR, MUST BE RECTIFIED IMMEDIATELY AND ANY WEAR IN THE HOSES MUST BE ADDRESSED AND EQUIPMENT REPLACED. HYDRAULIC INJECTION IS DANGEROUS AND LIFE THREATENING AND EVEN A PINHOLE LEAK WILL BLANKET AN ENTIRE ENCLOSED SPACE VERY QUICKLY WITH HAZARDOUS VAPORISED HYDRAULIC OIL MIST.

## 2. INTRODUCTION

This MEA vehicle mounted air compressor system utilizes the available hydraulic power for the running of the installed compressor to supply compressed air at the specified flow rate and pressure.



This Manual contains vital information of the compressor system and its integration into the existing hydraulic system to ensure that it is operated in a safe and efficient manner.



### 3. SPECIFICATIONS

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<b>Compressor Model:</b>	EVO3-NK-G
<b>Compressor Type:</b>	Oil flooded rotary screw compressor
<b>Hydraulic Motor Type:</b>	32cc Gear Motor @ 75lpm oil flow
<b>Optional Motor Type:</b>	34cc Piston Motor @ 70lpm oil flow
<b>Control:</b>	24V/12V Electronic Control
<b>Maximum Air Delivery:</b>	75cfm @ 100psi
<b>Pressure Regulation:</b>	Mechanical Inlet control valve modulates flow in response to demand
<b>Safety Features:</b>	200 PSI relief valve in compressor sump Temperature safety sensor in compressor Rapid blow-down valve to discharge system pressure on shutdown
<b>Lubrication:</b>	MEA Certified and Approved synthetic Oil
<b>Filters:</b>	Paper-type replaceable air filter Spin-on type oil filter Coalescing separator element

## 4. OPERATING PROCEDURE

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**WARNING**

**CAREFULLY READ THE OPERATING INSTRUCTIONS BELOW. FAILURE TO ADHERE TO THE FOLLOWING COMPRESSOR OPERATING INSTRUCTION COULD RESULT IN SERIOUS INJURY.**

1. Check Oil Level
2. Check Hoses and fittings for leaks. Make sure the hoses are not loosened nor damaged.
3. Check and make sure hydraulic supply/return/drain (if applicable) are installed correctly.
4. Check Air Filter for Blockage.
5. Check the Safety circuit switch operation (Reset Switch).
6. Switch on the vehicle and activate the vehicle flow control (turn PTO on).
7. Turn on the compressor either at the control box or in the cab and ensure it is in the unloaded state (check load/unload switch).
8. Turn on the unload/load switch to load and see if the compressor builds pressure to the regulated setting.
9. Plug an air tool into the air outlet and operate. Ensure that the compressor works as required.
10. When the work is finished, switch the compressor to unload.
11. Switch off at either the control box or in Cab and switch off the vehicle.
12. It is good practice to check for any visible signs of hydraulic fluid leakage and or compressor fluid leakage after each use.

## 5. INSTALLATION

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The SMAC90H is designed as an integrated compressor system for connection to an existing hydraulic system. SMAC90H only requires connection of a pressure line in, a return line out and a connection of the motor drain line (if applicable) to the tank.

**WARNING(!) When setting the compressor unit up, ensure there is a safety mechanism in place to prevent any excessive flow or pressure into the compressor hydraulic circuit. MEA will not warrant any damage caused and will void warranty due to inadequate safety protection of the existing hydraulic system.**

1. Install SMAC90H into position on the vehicle using 4 x min. M12 x 1.75 Grade 8.8 Fasteners.
2. Install the hydraulic lines, i.e., pressure in, return out and drain line.
3. The hydraulics flow needs to be set at 75LPM to run the motor at 2370RPM.
4. If purchased the Frameless version only; install the cooler and connect the compressor cooler lines to both the cooler and the compressor.
5. Connect the electrical control box to the vehicle; be sure to place an in-line weatherproof fuse (30A – 12V and 20A – 24V) within 300mm of the vehicle battery. Ensure the control box is compatible with your vehicle's voltage rating.
6. Connect the pressure gauge line to the SMAC90H. See circuit diagram.
7. Connect the terminals of the electrical loom as per the circuit diagram relevant to your vehicle to both the vehicle and the SMAC90H.
8. Check the level of oil in the compressor.
9. Switch on the vehicle, turn on the compressor at the control box and test the hydraulic solenoid for operation.
10. Turn the unload/load switch to load and check the compressor builds pressure to the regulated pressure setting.
11. Plug an air tool into the air outlet and operate, checking that the compressor works as required. Run for a minimum of 10mins.
12. Unload the compressor, switch off the control box, switch off the vehicle and check for any visible signs of hydraulic fluid leakage.
13. When cool (safe to touch), and switched off, re-check compressor oil level

## 6. SCHEDULE MAINTENANCE

Maintenance schedules are given as per components' manufacturer standards under normal operation. If the operating conditions deviate from standard (such as severe environmental conditions), it is necessary to take steps for the affected areas to be maintained at shorter intervals.

**For details on maintenance procedures, consult "Compressor Information (APPENDIX-A)".**

Before first start	Check the oil level in the separating tank
Periodically	Observe all gauge readings. Note any change from the normal readings and determine the cause. Have the necessary repairs been made?
	(Note: "Normal" is the usual gauge reading when operating at similar conditions on a day-to-day basis.)
Periodically or as required	Inspect and clean oil cooler fins.
	Check system for oil and/or air leaks.
	Inspect and replace spin-on coalescing element if necessary
Once after 50 operating hours	Check the oil level in the separating tank
	Tighten all screw pipe fittings and electrical screw terminal fittings.
	Check all other connections for firm seating
Every 100 hours	System Inspection:
	(1) Check oil level in separating tank, top up if oil is low
	(2) Check maintenance indicator (if applicable)
	(3) Listen for abnormal running noise during operation
	(4) Check all lines, hoses, and screw fittings for leaks and externally visible damage
Every 1,000 Hours depending on application Recommendation: at least every 12 months (if operated in dusty environment, shorter frequency or as required)	Replace the air-oil separating element
	Replace compressor oil
	Replace oil filter
	Replace filter element in intake air filter
	Check system for leaks
	Clean the system
Every 2 years with increased demand (multi-shift operation, mobile unit)	Replace hose (if attached to the compressor module)
Every 6 years with normal demand	Replace hose (if attached to the compressor module)

## 7. TROUBLESHOOTING

Fault	Possible cause	Remedy
Not functioning	Control box or electrical connection faulty	Have control box or electrical connection repaired. Incorrect rotation direction Phases reversed Reconnect
Incorrect rotation direction	Hoses are connected wrongly	Reconnect supply and return hoses
Screw compressor system has difficulty starting	Flow and pressure not insufficient	Inspect
	Drive transmission ratio too fast	Check flow and pressure
	Star-delta switchover incorrect	Set
	Compressor is flooded with oil	Check
	System has not been depressurized yet	Check, depressurize if necessary
	Ambient temperature too low Oil filling too viscous	Check viscosity of the oil Check viscosity of the oil
Pressure losses at filter cartridges	Excessive pressure loss at air-oil separating element	Replace air-oil separating element
Combi stat switches off due to excessively high temperature	Oil shortage	Check the oil level in the oil reservoir, fill if necessary
	Oil filter soiled	Replace oil filter cartridge
	Oil thermostat faulty	Replace oil thermostat
	Oil cooler soiled	Clean oil cooler on air side, clean on oil side if necessary
	Incorrect setup a) Room ventilation b) Exhaust air obstructed c) Thermal short-circuit	Follow recommendations for installation of the compressor system
	Combi stat defective	Replace combi stat
Safety valve blows off (at a permissible operating pressure)	Safety valve defective	Replace safety valve
	Air-oil separating element dirty	Replace air-oil separating element
	Compressor system does not switch off automatically, control valve operates intermittently	Check the solenoid valve, replace if necessary
Oil in compressed air	Operating pressure and delivery quantity is not in the permissible range	Check pressures
	Oil exhaust system contaminated	Clean oil extraction system
	Air-oil separating element faulty	Check air-oil separating element and replace if necessary
	Oil level in oil reservoir too high; possibly excessive condensate	Observe oil level marking; drain and replace if necessary

Compressor system is not discharged during continuous operation, system does not switch off automatically in case of intermittent operation, i.e., safety valve blows off	Upper switching point of network pressure monitor set too high	Readjust network pressure monitor
	Solenoid valve defective Relief valve defective	Replace solenoid valve/ relief valve
	Minimum pressure valve jams	Check minimum pressure valve for smooth movement; if necessary, ensure smooth movement or replace
Compressor system continually discharges, low delivery quantity	Solenoid valve defective	Replace solenoid valve
	Break in electric supply line to solenoid valve	Eliminate break
No or insufficient feed quantity	Intake filter soiled	Replace filter insert
	Oil shortage	Check oil level, top up if necessary
	Intake control valve jams or is incorrectly positioned	Check control valve and control valve flap, clean bearing and guides, check stroke, replace if necessary
	Leaks in system	Check seal
Control valve does not open	Compressor system leaky	Check system and seal off if necessary
	Solenoid valve/electrical system, bypass valve, piston gasket, and minimum pressure valve not functioning	Check and replace parts
Control valve does not control (two-point/step-less)	Pressure switch in system is set incorrectly	Check setting, adjust and replace if necessary
Oil escapes during stop	Sealing surfaces in control valve damaged, spring in control valve broken	Check and replace parts
Compressor system does not discharge (discharge time 100 - 200 seconds, depending on separator size)	Solenoid valve/electrical system not functioning	Check and replace parts
Control valve constantly discharges	Solenoid valve/electrical system not functioning	Check and replace parts
Oil escapes during discharging (oil foam in air-oil separating element)	Oil type incorrect	Change oil
	Oil foam forms during stop	Check and replace discharge delay valve, with a different nozzle diameter if necessary
	Oil level too high	Drain off oil
Abnormal noise during operation	Insufficient lubrication, loose parts, damage to drive, transmission, bearings, or shaft, etc.	Check, if necessary, replace parts or have them replaced

## 8. SPARE PARTS

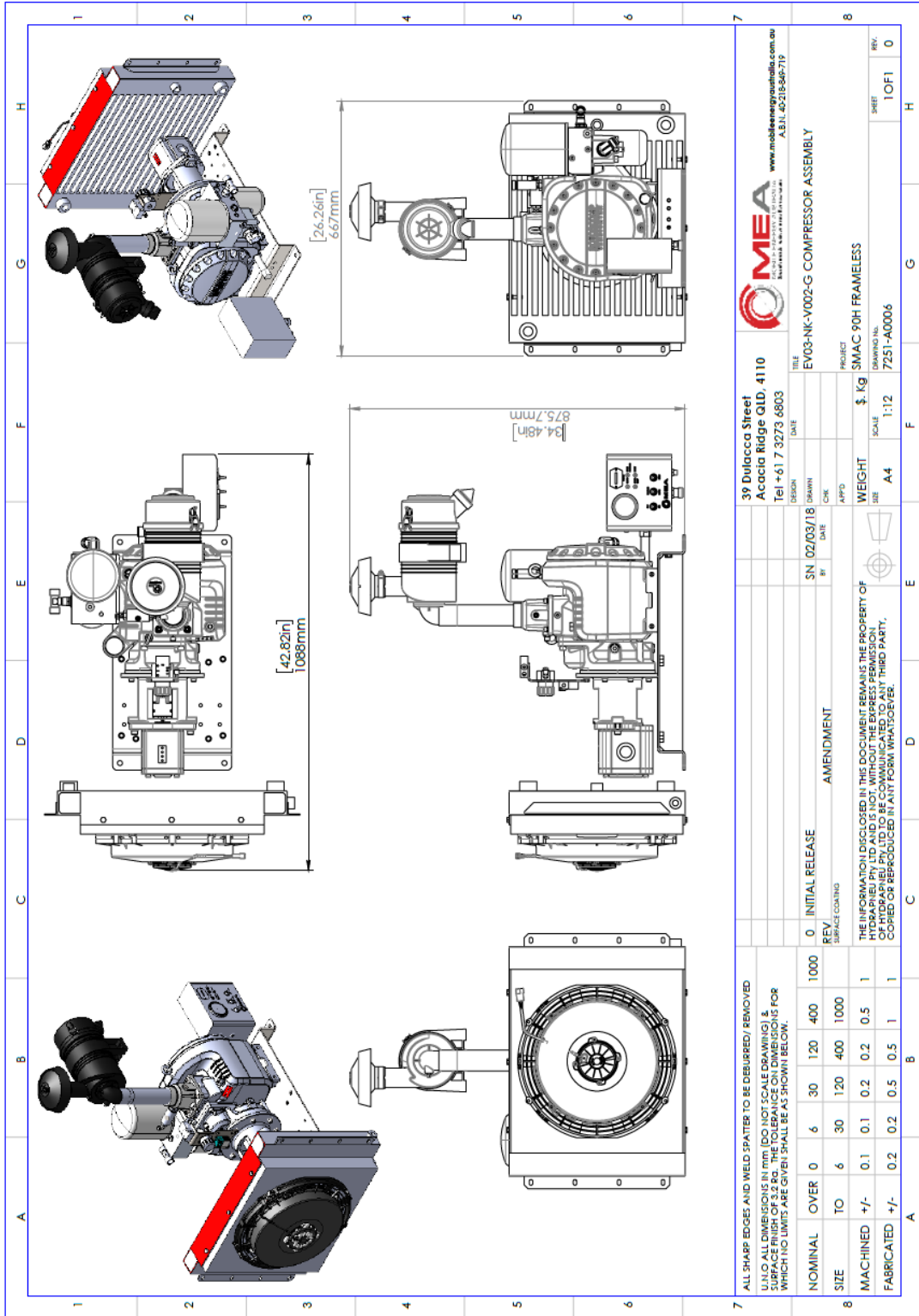
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Part Number	Description
10008-P0024	AIR FILTER ELEMENT
10008-P0023	SPIN ON COALESCER
4000-P0123	KIT SHAFT SEAL
10019-K0007	5 LITRES COMPRESSOR OIL
10008-P0025	OIL FILTER
7201-KB0001	REGULATOR REPAIR KIT

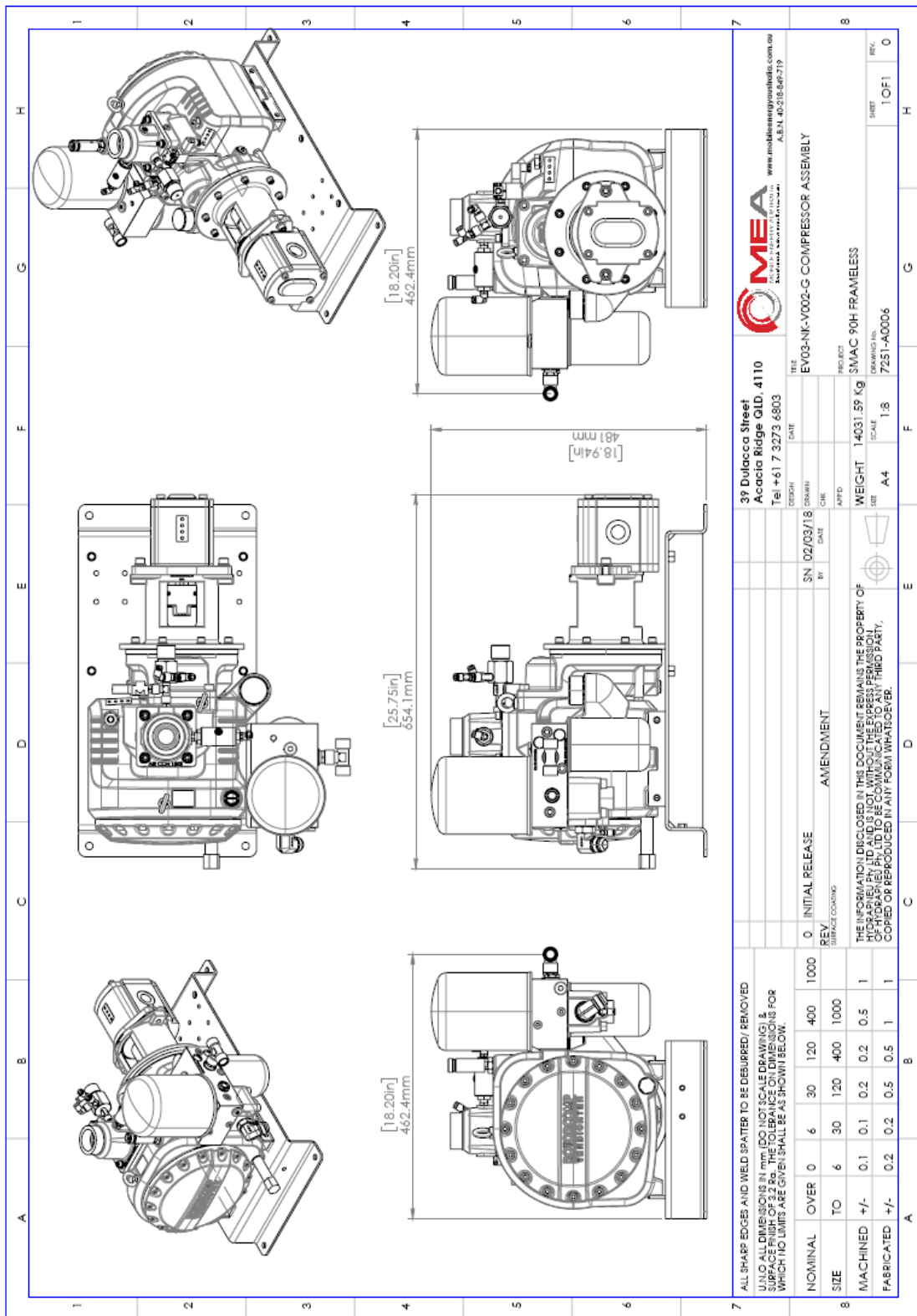
\*CONTACT MEA SALE DEPARTMENT FOR SPARE PARTS THAT ARE NOT COVERED HEREIN.

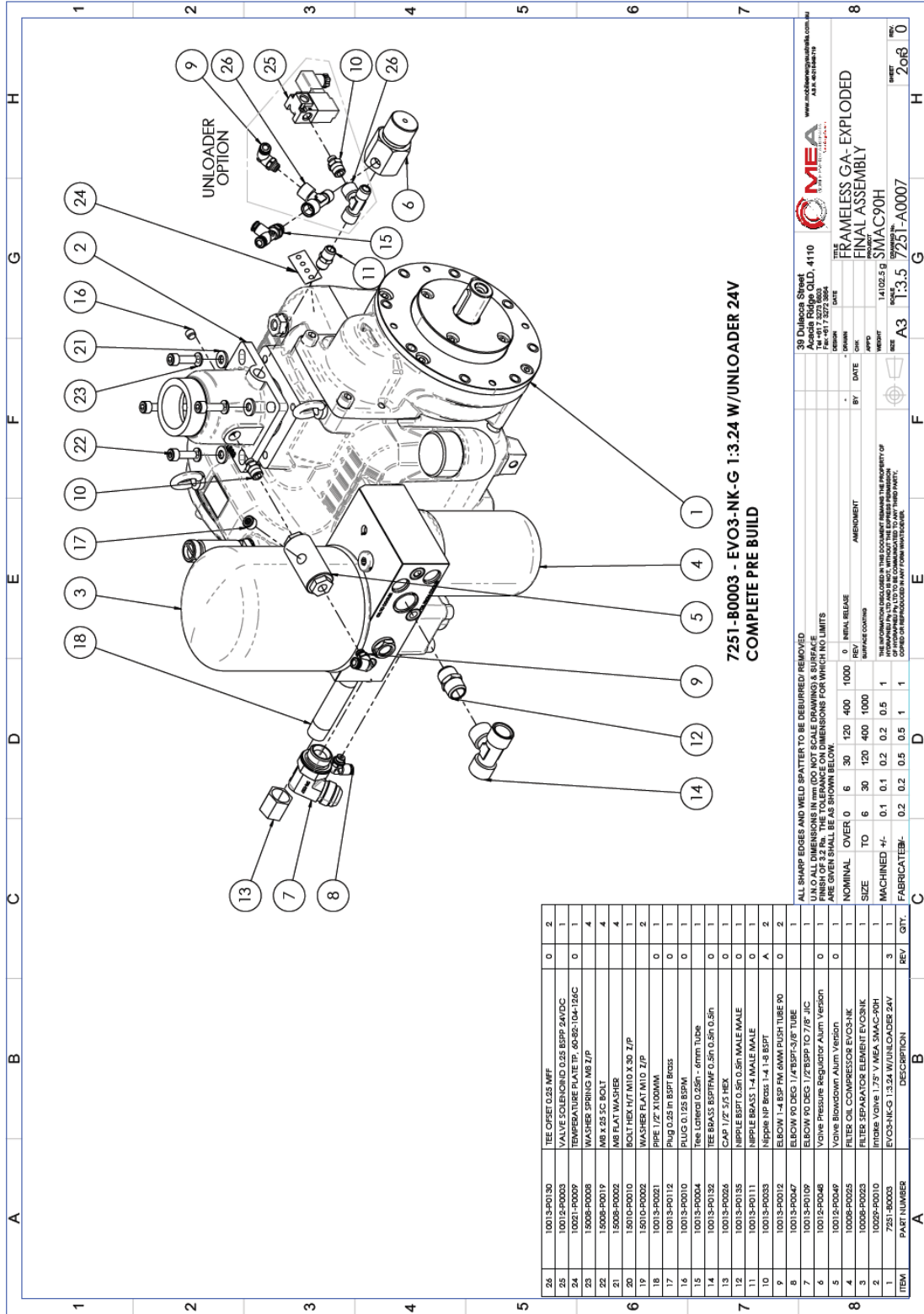
## 9. DRAWINGS & ILLUSTRATIONS

### SMAC-90-H – GENERAL ARRANGEMENT DRAWINGS

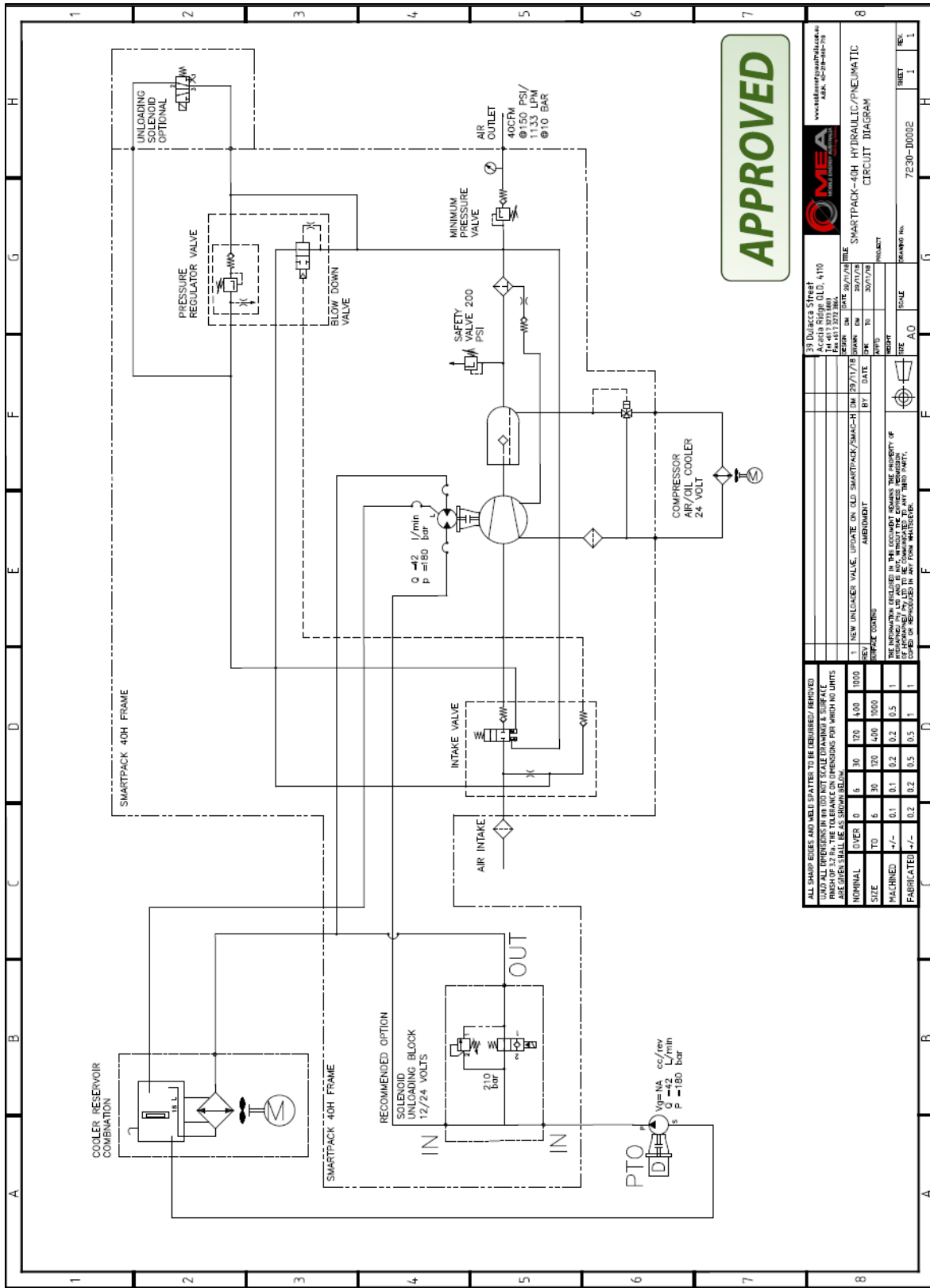




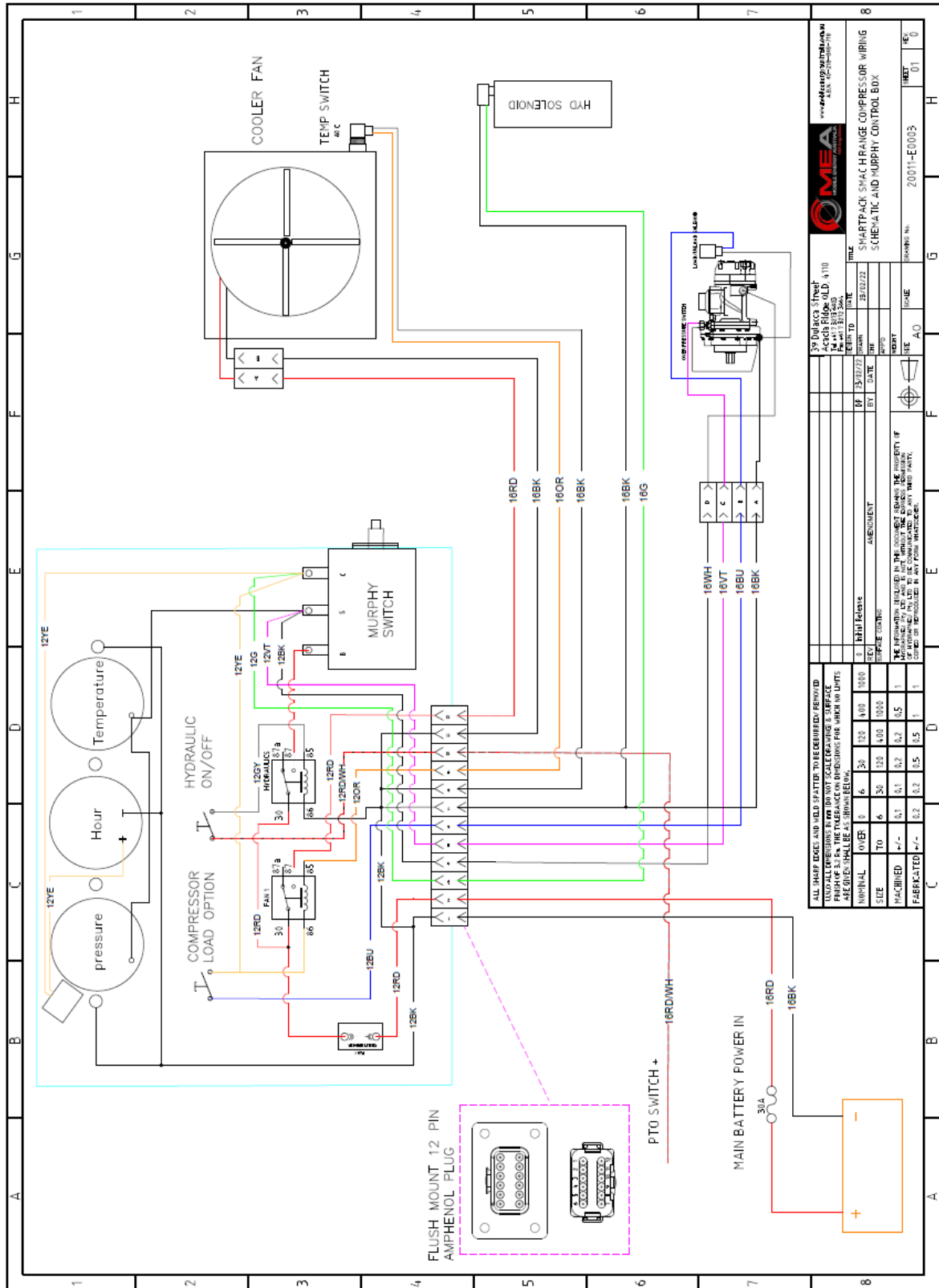




# HYDRAULIC/PNEUMATIC CIRCUIT DIAGRAM



# MURPHY CONTROL BOX - FRAMELESS



## 10. WARRANTY

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### 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.

## **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 labor costs claimed more than MEA's set rate and/or times are not provided by this warranty. If applicable, any labor costs more than MEA rate schedules caused by, but not limited to, location or inaccessibility of the equipment, travel time or labor 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.

# **WARNING!!!**

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

## 11. MOBILE ENERGY AUSTRALIA - CONTACTS

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### **Sales**

Office: 07 3273 6803

Email: [sales@mobileenergyaustralia.com.au](mailto:sales@mobileenergyaustralia.com.au)

### **Spare Parts**

Office: 07 3273 6803

Email: [sales@mobileenergyaustralia.com.au](mailto:sales@mobileenergyaustralia.com.au)

### **Service**

Office: 07 3273 6803

Email: [workshop@mobileenergyaustralia.com.au](mailto:workshop@mobileenergyaustralia.com.au)

## 12. APPENDIX A – DESIGN REGISTRATION

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[www.mobileenergyaustralia.com.au](http://www.mobileenergyaustralia.com.au)

TRHC Pty Ltd ATF for the ThoroughClean Trust  
ABN 98 674 578 946

07 November 2022

To whom it may concern

### SMAC 90H Design Registration

The SMAC 90H design has been assessed against the requirements of the Work Health & Safety Act 2011 and Australian Standard 4343:2014. The SMAC 90H has been found to comply with the requirements of AS4343:2014 Hazard Level E and as such does not require design registration.

Regards



**Nicholas Groothoff**  
Engineering Manager  
Mobile Energy Australia

39 Dulacca St, Acacia Ridge QLD 4110

Ph: +61 7 3273 6803

[www.mobileenergyaustralia.com.au](http://www.mobileenergyaustralia.com.au)



### 13. APPENDIX B – FLUIDS & MATERIAL SAFETY DATA SHEETS

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FLUID TYPE	DESCRIPTION	PART NUMBER
Compressor Oil	Semi Synthetic Compressor Oil 68	10019-P0002

Please use QR code to link you to relevant MSDS

