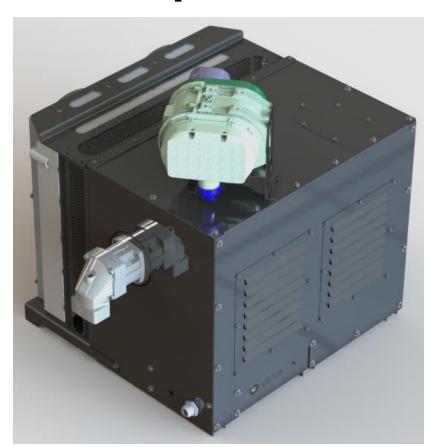


# SMARTPACK 400-H HIGH PRESSURE

# **Owners & Operators Manual**



SERVICE MAINTENANCE AIR COMPRESSOR – HYDRAULIC DRIVEN



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# **MEA Product Warranty 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:			<del>-</del>		
City: S	State:	Country	:		
MEA Installer Informa	ation				
Company Name:					
	State: /	Country	:		
Owner Information Company Name:					
Address:					
•	State:				
Posicode.	Phone #: _				
Product Information  MEA Serial Number:					
Model Number:					



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Both the MEA Product Warranty Registration Form (located at the FRONT of this Manual) is to be returned to MEA.

FAILURE TO RETURN EITHER FORM MAY RESULT IN THE PRODUCT WARRANTY BEING VOID.



#### 1. PRODUCT SAFETY

#### (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 way's 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 misusage. The following are suggested as minimum precautions to be used when operating the SMARTPACK 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 to 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 vapors.
- 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 (344Bar), 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.

Only those who have been properly trained and delegated to do so, and who have read and understand the operation and installation procedures should install MEA compressor systems.

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.

The air is drawn via the intake filter, and then through the intake valve into the compression Chamber. In the compression chamber, the air is compressed, and oil is injected for lubrication and cooling. The oil-air mixture then enters the separating tank in which most of the oil is separated from the air. The air travels to the compressed air outlet via the air-oil separating element and the minimum pressure valve and ready to be utilized.

In the air-oil separating element, the oil is filtered out down to a residual content of < 3 mg/m3 and is then conveyed back into the compressor housing via a nozzle and the non-return valve.

When the compressor module is switched off, the minimum pressure valve with a non-return function prevents backflow of the compressed air out of the system into the compression chamber.

During start up a faster pressure build-up is also ensured, which is required for optimum lubrication and oil separation.

The heat resulting during compression is dissipated via the oil-air mixture. The oil circulation also results from the pressure difference between the outlet and inlet pressure. The optimum operating temperature for the oil is adjusted by the integrated oil thermostat Depending on the oil temperature, the oil thermostat valve routes the oil flow via the oil cooler or directly to the oil filter. The oil then flows via the oil filter to the various injection points in the compressor block.





#### 3. SPECIFICATIONS

Compressor Model: PACKSMART 400H

**Compressor Type:** Oil flooded rotary screw compressor

Hydraulic Motor Type: 80cc Bent-Axis Piston Motor

**Control:** 24V/12V Electronic Control, optional unloading valve for hydraulic flow control

Maximum Air Delivery: 340cfm @ 200psi

Oil Flow Requirements: 168 LPM

Oil Pressure (Nominal): 371 Bar

Drive coupling speed: 2107 rpm

Pressure Regulation: Mechanical Inlet control valve modulates flow in response to demand

Safety Features: 217psi (15 bar) over pressure valve in compressor sump

Over temperature sensor in compressor

Rapid blow-down valve to discharge system pressure on shutdown

**Lubrication:** MEA Certified and Approved Synthetic Oil for compressor.

Filters: Paper type replaceable air filter

Spin-on type oil filter

Coalescing separator element

Weight: 585 kg



#### 4. OPERATING PROCEDURE

**WARNING** 

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

- Check Oil level when compressor is turned OFF AND DEPRESSURIZED before reading level on sight glass (Refer to Page 16).
- 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 are installed correctly (Refer to Page 10).
- 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; for vehicle mounted system). In other systems, start the hydraulic system by starting the hydraulic pump.
- 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

The SMARTPACK 400H is designed as an integrated compressor system for connection to an existing hydraulic system. The SMARTPACK 400H only requires connection of a pressure line in, a return line out and a connection of the motor drain line to the existing hydraulic system (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 SMARTPACK 400H into position on the vehicle, using 8 x M12 x 1.75 Grade 8.8 Fasteners.
- 2. Install the hydraulic lines (i.e. pressure in, return out and drain lines).

HOSE	PORT ON MOTOR
PRESSURE LINE	Α
RETURN LINE	В
DRAIN LINE	DRAIN

For units with unloader valve, inlet and outlet ports are marked and easily identifiable on the valve body.

- 3. In installing a frameless version; install the cooler in place and connect the compressor cooler lines between the cooler and the compressor.
- 4. 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.
- 5. Connect the terminals of the electrical loom as per the electrical harness diagram (Page 17-19).
- 6. Check the oil level in the compressor (Page 16).
- 7. Switch on the vehicle (or switch on the hydraulic system if its standalone), turn on the compressor at the control box and test the hydraulic solenoid for operation.
- 8. Turn the unload/load switch to load and check the compressor builds pressure to the regulated pressure setting.
- 9. Plug an air tool into the air outlet and operate checking that the compressor works as required, run for 10mins.
- 10. Unload the compressor, switch off the control box, switch off the vehicle and check for any visible signs of hydraulic fluid leakage.
- 11. When the compressor has cooled down (safe to touch) and is depressurized, re-check the compressor oil level.



## **6. SCHEDULE MAINTENANCE**

Interval	Compressor		
	ACTION TO BE TAKEN		
Periodically During Operation	Observe all gauge readings. Note any change from the normal readings and determine the cause. Have the necessary repairs made		
	(Note: "Normal" is the usual gauge reading when operating at similar conditions on a day to day basis.)		
	Inspect and replace spin-on coalescing element if necessary.		
Periodically or as required	Inspect and clean oil cooler fins.		
	Check system for oil and/or air leaks.		
	Check the compressor oil level.		
Every 10 Hours or Daily	Check air filter/s and connecting hose and clamps.		
	Check for oil and air system, including hoses, for leaks.		
Every 25 Hours or Monthly	Drain water from tank and check Compressor oil level.		
	Check system for oil and/or air leaks.		
After first 50 hours of operation	Check compressor mounts fastener torque.		
·			
	Check compressor oil level.		
Every 100 Hours	Clean air cleaner element.		
Every 100 Hours	Check compressor mounts for excessive wear and fastener torque.		
	Change compressor oil approx. 10L.		
Every 400 Hours of operation or 9	Change compressor oil filter.		
months (See Service Kit List)	Change compressor air filter.		
(200 2011100 1111 2101)			
800 Hours / 18 months	Change compressor coalescing filter.		



## 7. TROUBLESHOOTING

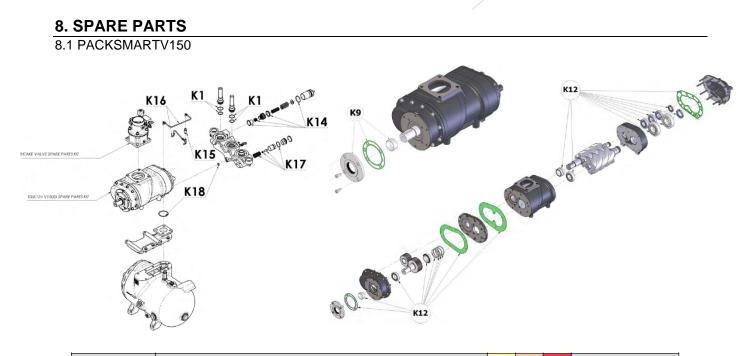
SYMTOMS	PROBABLE CAUSE	CORRECTIVE ACTION		
	1-The intake valve remains closed.	1-Check the valve. If necessary, replace the damaged parts with the spare parts kit.		
The compressor does not load.	2-The solenoid valve does not work accurately	2-Check the solenoid valve. If necessary, replace it.		
	3-Losses on the pressure line.	3-Check pipes and cables. If necessary, replace them.		
During idling phase, the compressor does not	1-The solenoid valve does not work accurately.	1-Check the solenoid valve. If necessary, replace it.		
discharge pressure from separator tank	2-The calibrated nozzle is clogged.	2-Remove the calibrated nozzle. Clean or replace it.		
Compressor conscitu or	1-The air filter is clogged.	1-Remove the air filter. Clean or replace it.		
Compressor capacity or pressure lower than usual standard.	2-The intake valve does not open.	2-Check the valve. If necessary, replace the damaged parts with the spare parts kit.		
Staridard.	3-Air loss from safety valve.	3-Replace the valve.		
Compressor keeps on loading over working	1-The solenoid valve does not work accurately.	1-Check the solenoid valve. If necessary, replace it.		
pressure: safety valve opens	2-Clogged separator filter.	2-Replace the separator filter.		
	1-Insufficient cooling.	1-Check the cooling system. Check coolant level on tank.		
	2-Dirty oil	2-Replace it with new oil.		
Compressor systems	3-Oil level is too low.	3-Check coolant level on tank and if necessary, add oil.		
Compressor overheating.	4-Clogged-up cooler or pipe connection	4-Clean cooler and pipes.		
	5-The thermostatic valve does not work correctly.	5-Check the thermostatic valve. If necessary, replace the damaged parts with K17 spare parts kit (Contact MEA for parts required)		
	6-Clogged oil filter	6-Replaced oil filter		
During unloading phase, pressure increases up to	1-The intake valve remains open.	1-Check the valve. If necessary, replace the damaged parts with spare parts kit.		
safety valve opening	2-The calibrated nozzle is clogged.	2-Remove the calibrated nozzle. Clean or replace it.		
Oil leakage from intake	1-The intake valve does not work properly (does not close)	1-Check the valve. If necessary, replace the damaged parts with K9 spare parts kit.		
valve only when the machine is switched off: oil soaked-up air filter	2-The no-return valve of intake valve does not work correctly.	2-Check it and clean it.		
	1-Too high level of oil in the tank	1-Check oil level on separator tank.		
Oil soaked-up air filter during	2- Clogged separator filter	2- Replace the separator filter.		
unloading phase	3-The recovery oil viewer is dirty or does not work appropriately.	Clean it or if necessary, replace the damaged parts with K15 spare parts kit.  If separator filter is clogged up, replace it.		
The compressor remains under loading phase.	1-The intake valve does not work properly (does not close)	1-Check the valve. If necessary, replace the damaged parts with spare parts kit.		
-	1-Unknown particles inside.	1-Call MEA technical support.		
Rotor seizure	2-Insufficient lubrication.	2-Call MEA technical support.		
Presence of oil in the outlet	1-Separator filter damaged.	1-Replace the separator filter.		
of minimum pressure valve	2-Oil recovery viewer obstructed.	2-Clean the oil recovery viewer.		
c procedic valve	3-Separator nipple with O-rings damaged.	3-Replace K1 spare parts kit.		

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#### 8. SPARE PARTS

#### 8.1 PACKSMARTV150



•	CODE	DDE DESCRIPTION		PACK SMART 71°	PACK SMART 83°	WORKING TIME
K1	270.0595	SEPARATOR NIPPLE M32-39 SPARE PARTS KIT	•	•	•	after 8000 hours
К9	930.0249	V150 SHAFT SEAL SPARE PARTS KIT	•	•	•	after 8000 hours
K12	930.0148	V150G BEARINGS SPARE PARTS KIT	•	•	•	after 20000 hours
K14	220.0350	MINIMUN PRESSURE VALVE G35-36 SPARE PARTS KIT	•	•	•	after 20000 hours
K15	220.1805	VRO19 OIL RECOVERY VIEWER	•	•	•	Corrective Maintenance
K16	727.2070	PACK SMART V150 OIL RECOVERY FITTING SPARE PARTS KIT	•	•	•	Corrective Maintenance
	270.1280	VT-VTFT25/27-55° SPARE PARTS KIT	•			
K17	270.1290	VT-VTFT25/27-71° SPARE PARTS KIT		•		after 8000 hours
	270.1285	VT-VTFT25/27-83° SPARE PARTS KIT			•	
K18	727.2090	PACK SMART BASE FLANGE O-RING SPARE PARTS KIT	•	•	•	Corrective Maintenance

8.2 OTHERS	
10008-P0164	AIR FILTER
10008-P0029	SPIN-ON COALESCING FILTER
10008-P0133	OIL FILTER
10019-K0005	COMPRESSOR OIL 5L (INCL. CONTAINER) (5 X 5 litre CONTAINERS)
10022-P0069	SHAFT SEAL KIT
20012-P0004	RELAY 12V
20012-P0005	RELAY 24V
10010-P0020	FAN & MOTOR ASSEMBLY 12V PULLER 16"
10010-P0021	FAN & MOTOR ASSEMBLY 24V PULLER 16"
10012-P0117	12 VOLT LOAD SOLENOID
10012-P0116	24 VOLT LOAD SOLENOID
*Cantact MEA and	us mout color for information reporting items (such as meter seel and sec.

\*Contact MEA spare part sales for information regarding items (such as motor seal and coupling)

Mobile Energy Australia Pty Ltd P: +61 7 3273 6803

Document No 7238-D0001-Version 1

39 Dulacca Street, Acacia Ridge QLD 4110 Australia

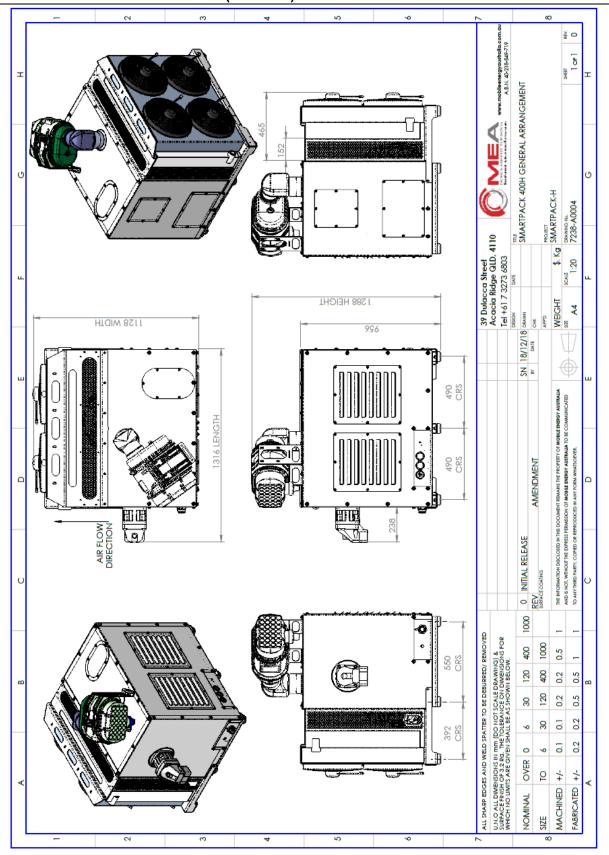
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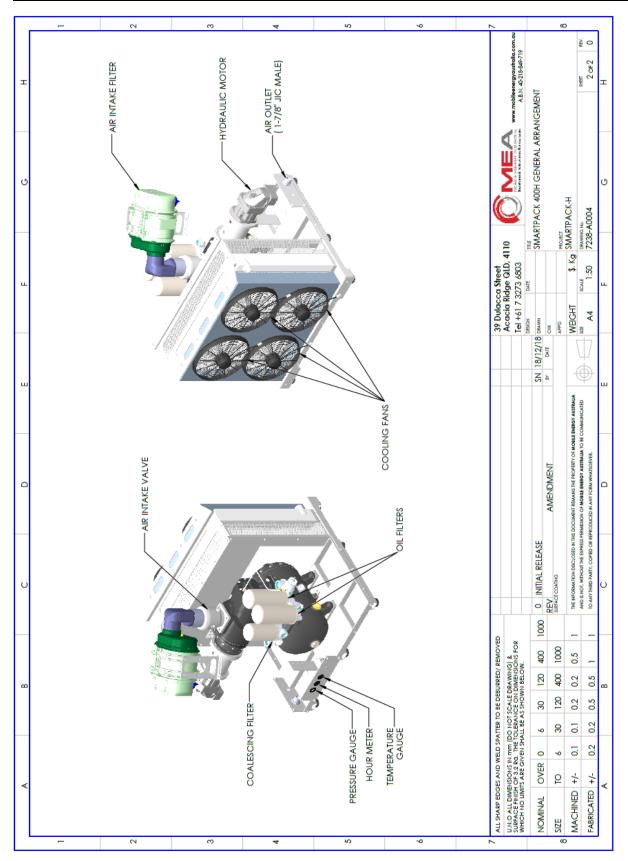
#### 9. DRAWINGS & ILLUSTRATIONS

#### **GENERAL ARRANGEMENT DRAWING (FRAMED)**



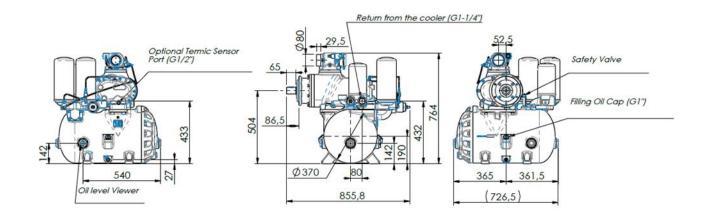


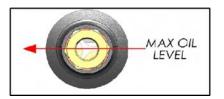
#### **GENERAL ARRANGEMENT DRAWING (FRAMED)**

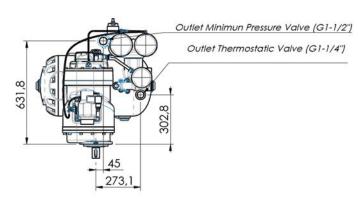


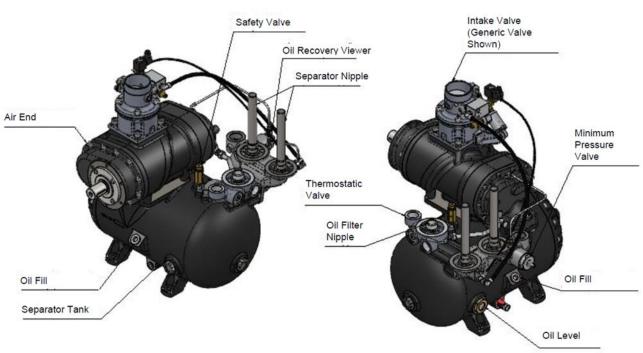


#### **GENERAL ARRANGEMENT DRAWING (PACKSMART-V150)**

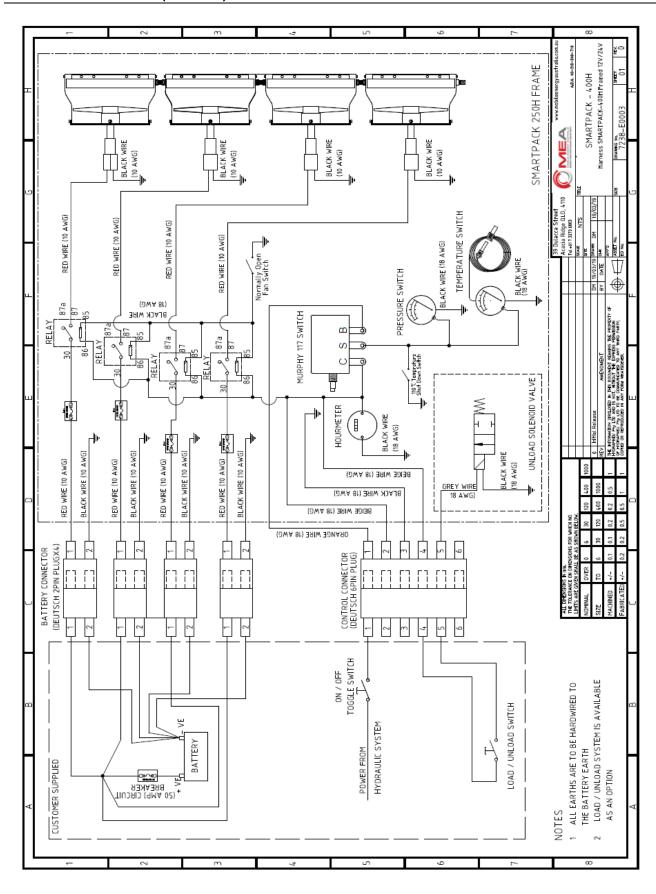




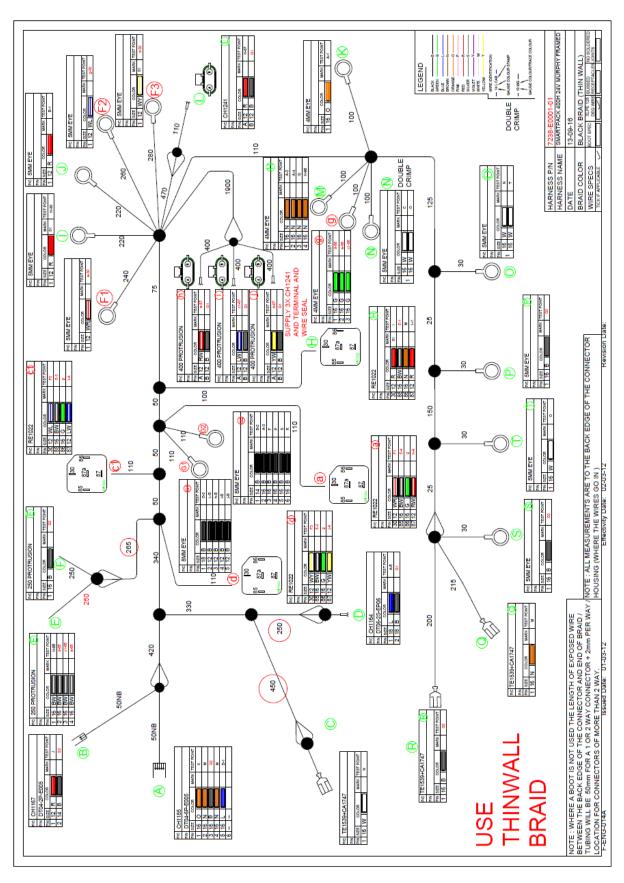




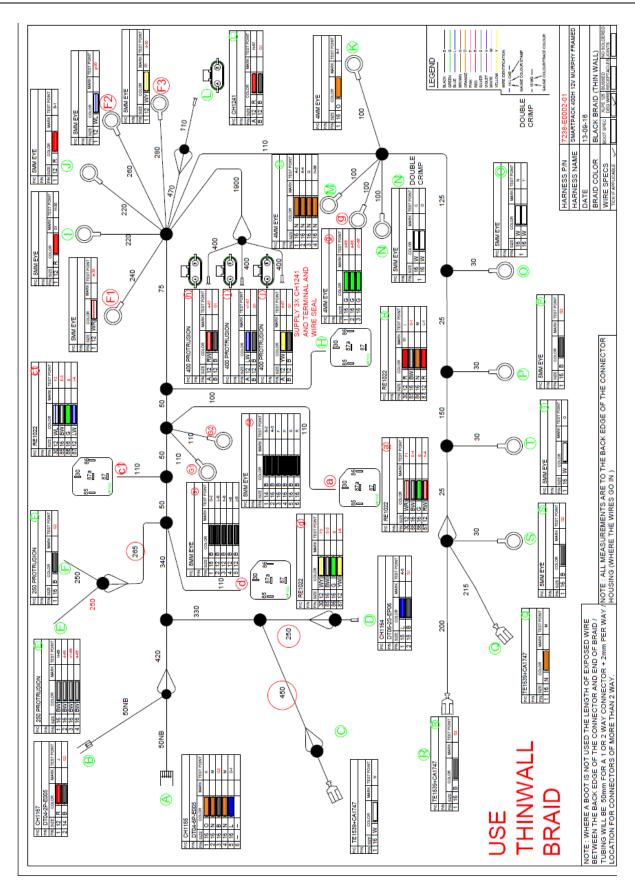






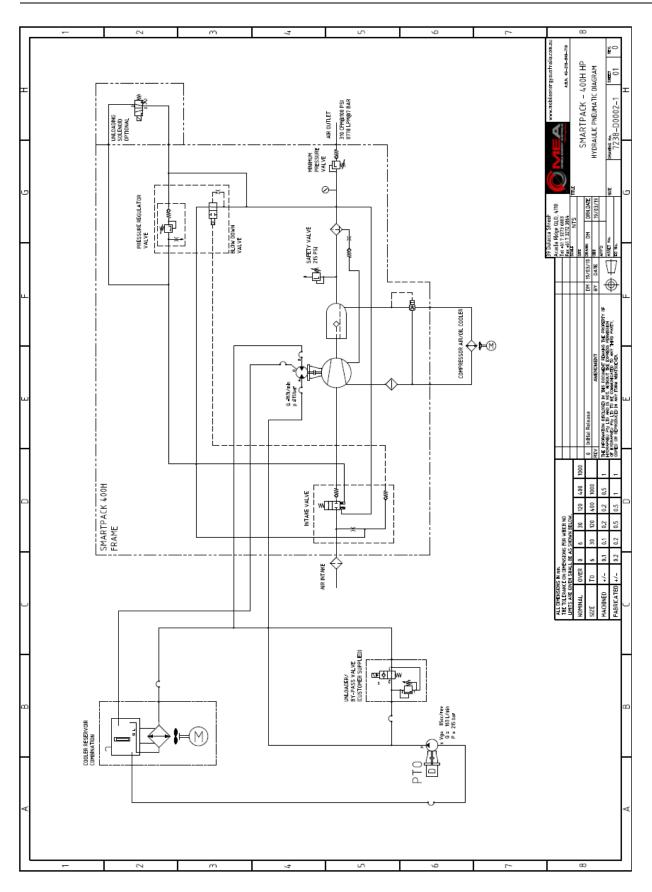


#### **ELECTRICAL WIRING LOOM DIAGRAM - 12V**





## **SMARTPACK 400H HYDRAULIC CIRCUIT**



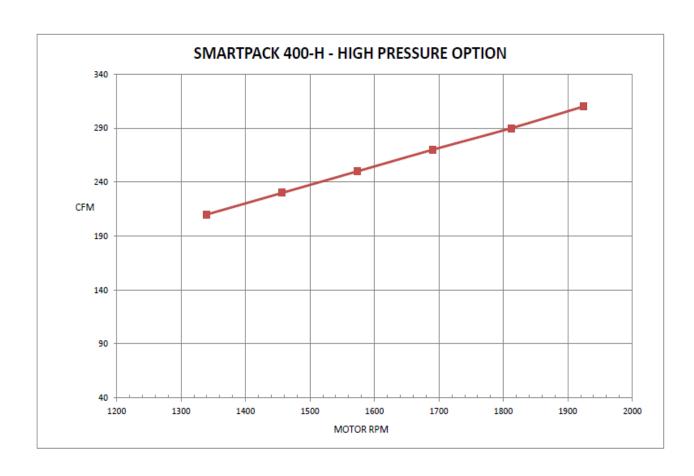


#### **SMARTPACK 400-H - HIGH PRESSURE OPTION**

Motor Displacement CC/Rev 80 Gear Ratio 1: 1.97

Nominal Hyd Operating Pressure 325 Bar
Discharge Air Pressure 200 psi

CFM	HYD MOTOR RPM	M^3/MIN LOBE SPEED KW@100 PSI HP @100 PSI		OIL FLOW LPM		
210	1340	5.95	2640	50.5	67.7	113
230	1457	6.51	2870	55.3	74.2	123
250	1574	7.08	3100	60.2	80.7	133
270	1690	7.65	3330	65.1	87.3	142
290	1812	8.21	3570	70.3	94.3	153
310	1924	8.78	3790	75.1	100.7	162





#### **10. WARRANTY**

#### 1 GENERAL PROVISIONS AND LIMITATIONS

Mobile Energy Australia (hereafter "MEA") warrants to each original retail purchaser (hereafter 1.1 "Buyer") that such product(s) are, at the time of delivery to the buyer, free of manufacture ring 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.
- Damages caused by the lack of normal minimum action, such as adjustments and inspections, 2.4 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.
- The Product(s) is warranted against manufacturer defects in materials and workmanship for a period 3.2 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.

#### **MEA OBLIGATIONS** 4

- 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.
- The obligation of MEA is limited to replacement of faulty parts. No liability is accepted for any freight 4.2 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.
- The Buyer must prepay all costs associated with the warranty. 5.2
- The Buyer must return components claimed under this warranty to a facility designated by MEA for 5.3 evaluation, to establish a claim under this warranty.
- Buyer shall maintain and service MEA Product(s) in accordance with the MEA Product(s) Owner's 5.4

#### WARRANTY REGISTRATION VALIDATION 6

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

#### DISCLAIMER AND WARRANTY SERVICE 7

- 7.1 Any labor costs claimed in excess of MEA's set rate and/or times are not provided by this warranty. If applicable, any labor costs in excess of 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.
- Warranty claims must be pre-authorized by MEA, and the components returned via prepaid freight 7.3 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 in the stamped, self-addressed envelope.

# WARNING!!!

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



## 11. MOBILE ENERGY AUSTRALIA - CONTACTS

#### **Sales**

Email: <a href="mailto:sales@mobileenergyaustralia.com.au">sales@mobileenergyaustralia.com.au</a>

Office: 07 3273 6803

#### **Spare Parts**

BH Office: 07 3273 6803

Email: sales@mobileenergyaustralia.com.au

#### **Service**

Email: workshop@mobileenergyaustralia.com.au

Office: 07 3273 6803