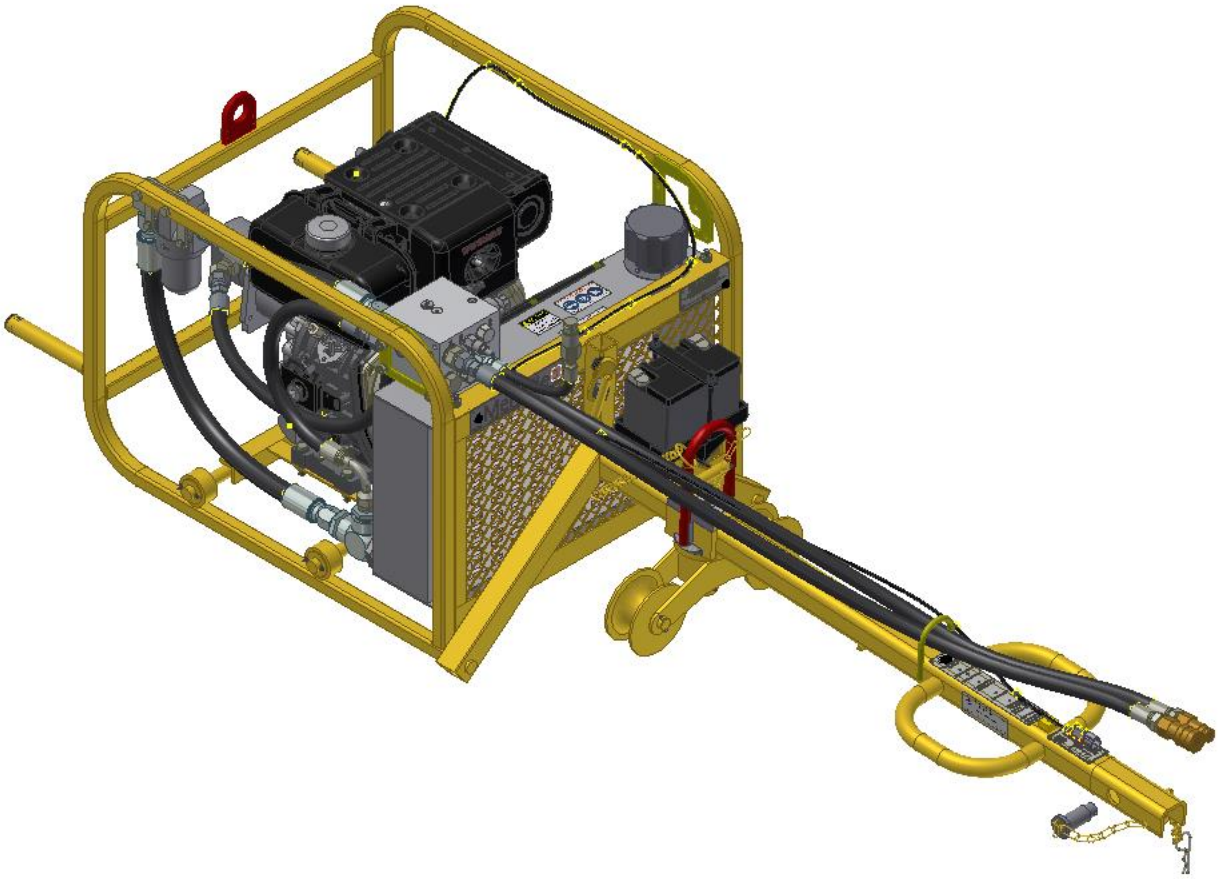
Melvelle Equipment Corp Pty Ltd

"Proud Australian Manufacturers"

143 Trackpack

Operation, Training & Maintenance Manual



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1. Preface

Every attempt has been made to present accurate and current information within this manual. However, as product development on the Trackpack and components used within is continuous, the information contained herein may be subject to change without notice, and without incurring obligation.

The information provided within this manual is the sole property of Melvelle Equipment Corporation Pty Ltd (MEC) and as such, reproduction or replication of any material contained within is not allowed without the written consent of MEC.

Information provided within this manual assumes:

- The person(s) operating the machinery have read and understand this manual and other manuals provided for specific components.
- The person(s) operating are properly trained and equipped to safely and professionally operate this machinery.
- The person(s) operating utilise the correct attachments and/or tools, and are trained and equipped to use them safely and professionally.

SERVICING THE 143 TRACKPACK

This manual contains safety, operation and periodic maintenance instructions. MEC recommends that servicing of equipment, other than periodic maintenance, must be performed by MEC or certified and authorised dealer. Please read the following warning.

WARNING

SERIOUS INJURY OR DEATH COULD RESULT FROM THE IMPROPER REPAIR OR SERVICE OF THIS EQUIPMENT.

REPAIRS AND / OR SERVICE OF THIS EQUIPMENT MUST ONLY BE PERFORMED BY MELVELLE EQUIPMENT CORP. PTY LTD. OR CERTIFIED AND AUTHORISED DEALER.

THE USER SHALL NOT MODIFY THE DESIGN OR CONFIGURATION OF EQUIPMENT WITHOUT CONSULTING MEC

2. Safety Information

This operation and training manual is intended to complement existing site procedures.

The following site documentation must be reviewed by the trainee before commencing training:

- Safe Work Procedures (SWP)
- Isolation Procedures

If the training package information conflicts with existing site documentation, then the authorised site and/or end user is to consult with MEC in regards to any possible amendments or modifications required.

The following practices and procedures must be adhered to:

- Always complete Pre-Operation Checks prior to use and report any defects if found.
- Only connect equipment with compatible MEC equipment.
- Only operate the equipment for its intended purpose.
- Never operate equipment with guards missing or damaged.
- PPE Equipment as a minimum should be worn at all times according to this manual and as per site specifications.
- Ensure Isolation Procedures are followed prior to carrying out any maintenance.
- If any faults or damage to this machine are found during pre-operation checks or operation, tag the machine “Out-of-Service” and follow site procedures.

Following the above mentioned and the information contained within this manual will ensure safe, efficient operation of the equipment.

3. Safety Symbols

The safety symbols and signal words, as shown below, are used to emphasise all operator, maintenance and repair actions which, if not strictly followed, could result in a life-threatening situation, bodily injury or damage to the equipment.

3.1. Safety Symbols & Signal Words

	**This safety alert and signal word indicates a hazardous situation which, if not avoided, will result in death or serious injury.**
	**This safety alert and signal word indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.**
	**This safety alert and signal word indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.**
	**This signal word indicates a potentially hazardous situation which, if not avoided, may result in property damage.**
	**This signal word indicates a situation which, if not avoided, will result in damage to the equipment.**
	**This signal word indicates a situation which, if not avoided, may result in damage to the equipment.**

3.2. Hazard Warning Signs

	**This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all instructions to avoid possible injury or death.**
	**This is the fire risk symbol. It is used to alert you to the potential of a fire starting if ignition sources are present.**
	**This is the explosive risk symbols. It is used to alert you to the potential of an explosion /explosive substances present.**
	**This is the toxic hazard symbol. It is used to alert you to the presence of toxic substances.**
	**This is the corrosive risk symbol. It is used to alert you to the presence of corrosive substances.**
	**This is the electric shock risk symbols. It is used to alert you to the presence of an electrical supply.**
	**This is the battery symbol. It is used to alert you to the potential hazard of electrical supply, battery acid and leaking batteries.**

	**This is the hot surface symbol. It is used to alert you that the surfaces may be hot.**
	**This is the dangerous gases symbol. It is used to alert you to the presence of dangerous gases.**
	**This is the fluid under pressure symbol. It is used to alert you that there are fluids under pressure in this machinery.**
	**This is the sharp edges symbol. It is used to alert you to the presence of sharp edges or cutting hazard.**
	**This is the keep hands clear symbol. It is used to warn you to keep hands clear as there are pinch points present.**
	**This is the rotating parts symbols. It is used to warn you of rotating parts on the machinery. Keep clear of rotating parts.**

3.3. Personal Protection Symbols

	**This is the eye protection symbol. It is used when eye protection must be worn.**
	**This is the hearing protection symbol. It is used when hearing protection must be worn.**
	**This is the head protection symbol. It is used when head protection must be worn.**
	**This is the hand protection symbol. It is used when hand protection must be worn.**
	**This is the foot protection symbol. It is used when feet protection must be worn.**
	**This is the protective body clothing symbol. It is used when protective clothing must be worn.**

	**This is the face protection symbol. It is used when face protection must be worn.**
	**This is the long hair protection symbol. It is used when long hair is required to be contained or restrained.**

3.4. Prohibition Symbols

	**This is the naked flame symbol. It is used when there is not to be a fire, naked flame, ignition sources and smoking nearby.**

4. Safety Precautions

To ensure safe operation, please read and understand the following statements and their meanings. Also refer to supporting manuals from the engine manufacturer on specific operation and maintenance of the engine. This manual contains safety precautions which are outlined below.

WARNING

Ensure all personnel operating this equipment are properly trained to ensure safe operation

WARNING

Wear personal protective equipment around this machinery.
For example: safety glasses, hearing protection, head protection, protective clothing and safety shoes at all times.

WARNING

Accidental Starts can cause severe death or injury.
Disable engine by disconnecting negative (-) battery cable. Ensure machinery is started in the neutral position.

WARNING

Rotating parts can cause severe injury
Stay away whilst machine is in operation. Ensure ALL guarding is in place and secured before operation.

WARNING

Hot parts can cause severe burns.
Beware of hot parts on the machinery – i.e. exhaust, engine, hoses, radiator, solenoids, exposed metal components, etc.

WARNING

Carbon monoxide can cause severe nausea, fainting or death.
Avoid inhaling exhaust fumes and never operate the engine in a closed or refined area.

WARNING

Fuel can cause fires and severe burns.
Do not fill the fuel tank while the engine is hot or running.

WARNING

Explosive gas can cause fires and severe acid burns.
Charge battery only in a well-ventilated area. Keep sources of ignition away.

WARNING

High Pressure fluids can puncture skin and cause severe injury or death.
Do not work on fuel or hydraulic system without proper training and safety equipment. Ensure all hose connections are tight.

WARNING

Clamping parts can cause severe injury.
Stay away whilst machine is in operation. Ensure ALL guarding is in place and secured before operation.

WARNING

Loose hair, clothing and jewellery can cause severe injury.
Ensure hair is restrained; loose clothing not to be worn and jewellery must be removed before operating the machinery.

CAUTION

Electrical shock can cause injury.
Do not touch wires whilst engine is running.

WARNING

Attachment hoses must have a minimum working pressure rating of 2500psi. Do not use hoses and fittings that are not pressure rated.

WARNING

Ignition sources can cause fires and severe burns.
There is not to be a fire, naked flame, ignition sources or smoking around any MEC machinery.

WARNING

Toxic and/or Hazardous substances utilised in this machinery.
Beware of toxic and/or hazardous substances used within this machinery. Do not inhale, swallow or touch toxic/hazardous substances.

WARNING

Injury can occur due to terrain and operating speeds.
To ensure safe work is achieved, do not exceed walking pace whilst operating this equipment. Also note the terrain conditions (underfoot and rail conditions). Do not walk on sleepers or the rail head.

WARNING

Electrification can occur if used on live third rail and/or fourth rail.
Do not use equipment on live third rail and/or fourth rail electrification.

WARNING

Injury can occur through incorrect operation of the equipment.
Only operate the equipment for its intended use. Failure to do so may result in injury. Do not ride on or tow the equipment.

WARNING

Vibration Hazard
Normal and proper use of this equipment will expose the operator to vibration. Vibration exposure may cause and/or contribute to injury throughout the body. Ensure proper procedures are followed for vibration exposure levels to reduce the risk of injury. Refer to Specifications for vibration level data.

WARNING

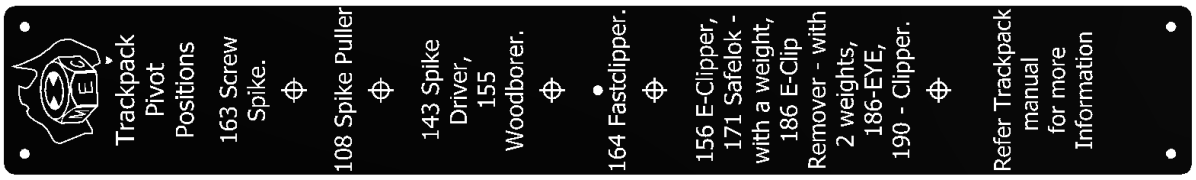
Noise Hazard.
Ensure adequate hearing protection is worn whilst using this machinery. High sound levels may cause permanent hearing loss.
Refer to Specifications for noise level data.

5. Equipment Stickers & Tags

Below are the stickers and tags utilised on this equipment.

IDTAG01 – Melvelle Identification Tag

IDTAG02 – Model & Serial No. Tag



IDTAG07 – Trackpack Pivot Positions

IDTAG09 – Lifting Point WLL 100kg

IDTAG10 – Lifting Point WLL 300kg

IDTAG15 – Lifting Point WLL 220lb

LAB0003 – Melvelle Newcastle Sticker

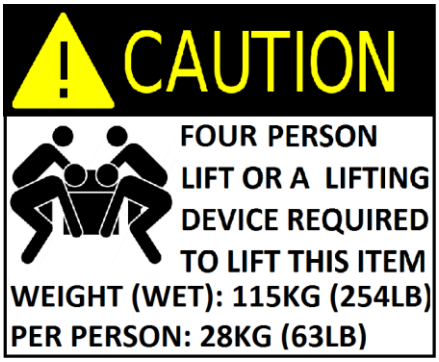
LAB0004 – Melvelle Achieving Excellence Sticker

LAB0008 – Safety Label

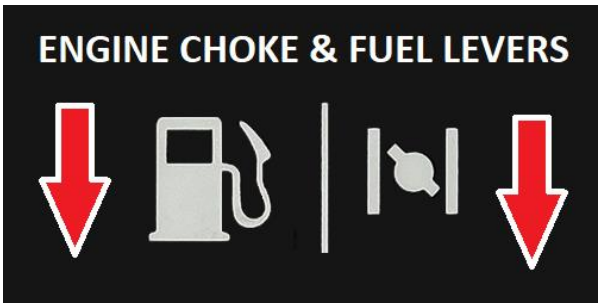
LAB0009 – Hydraulic Oil Label

LAB0012 – Attention – Key Must Be Turned Off Sticker

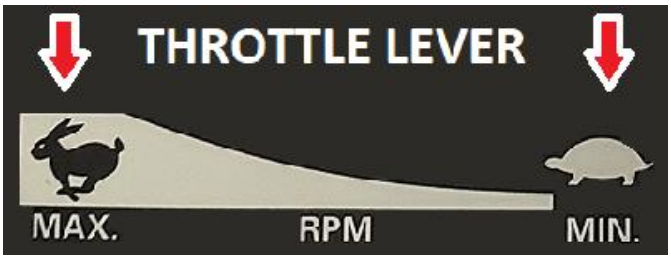
LAB0013 – Do Not Manually Lift Sticker



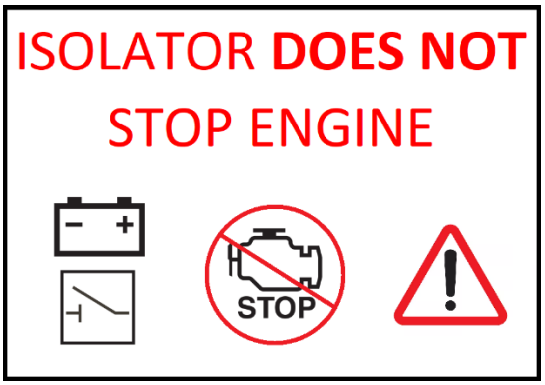
LAB0032 - Four Person Lift Sticker – Trackpacks



LAB0116 – Fuel and Choke Sticker



LAB0117 – Throttle Lever Sticker



LAB0119 – Isolator Does Not Stop Engine

Stickers & Tags Locations

Refer to Further Documents section: 13.10 (Pg.70) for sticker locations drawings for all models.

6. Emergency Stop

This machine has been fitted with an emergency stop to increase the operational safety of MEC machinery.

Important information about the Emergency Stop:

- The emergency stop is designed to stop the engine and hence the workhead in Emergency situations.
- Dedicated machines have a dedicated emergency stop to the power pack – they are wired into the machine.
- Trackpacks fitted with a wiring harness will not operate unless a workhead with an emergency stop is connected and the wiring harness connectors are joined.
- The emergency stop **WILL NOT OPERATE** unless it is electrically connected to the power pack. For Trackpack heads, if the Trackpack is not fitted with a wiring harness and plug, the Emergency Stop will not work.

The emergency stop is not intended to be used for normal stopping of the machinery.

7. Introduction

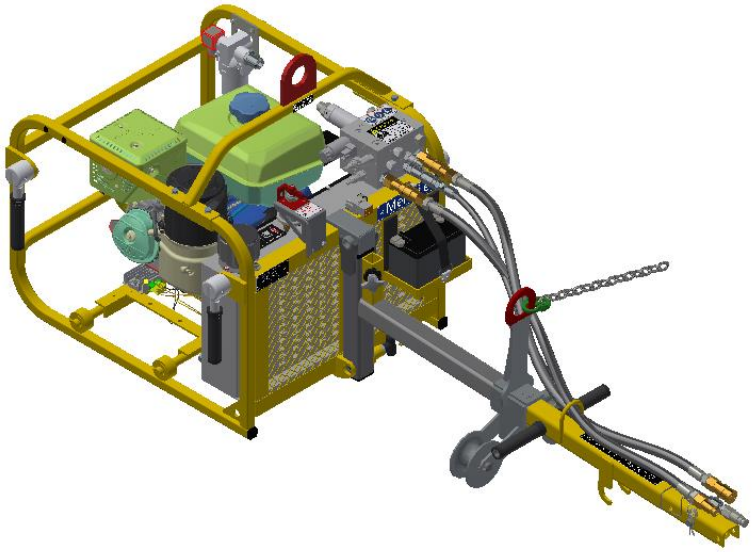
Melvelle Equipment Corp Pty Ltd (MEC) supply Trackpacks to the rail industry. The 143 Trackpack is designed to supply hydraulic power to MEC workheads and the brake cylinder on the machine trolleys. The Trackpack also acts as a counterbalance for MEC workheads that assemble to it.

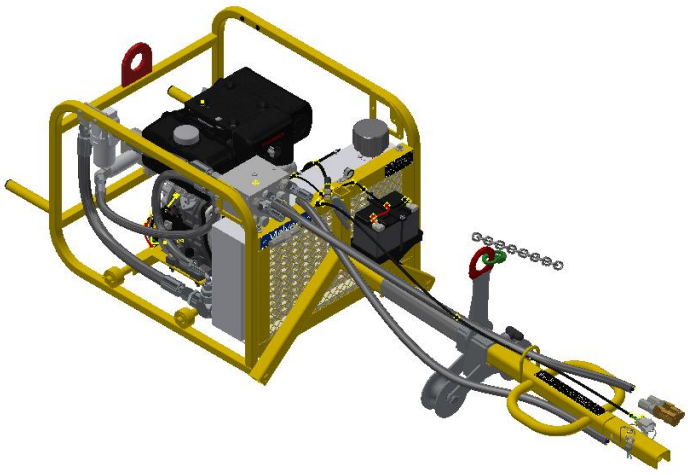
At time of printing, the Trackpack has a total of nine (9) different rail maintenance workheads able to be assembled to it for use. This is achieved by utilising a Hayman-Reese style attachment along with hydraulic quick snap connectors. This functionality allows the operators/company a cost-effective solution as an array of various workheads are able to be transported to site with only a few Trackpacks required (equal to the number of required operators).

The some Trackpack models incorporates a detachable boom allowing for a smaller space requirement for transport. The detachable boom also allows for easier assembly if the Trackpack and workhead are being manually assembled on site.

By utilising the adjustable pivot point ensures the counterbalance feature of MEC equipment is maintained across the workheads. This allows the operators to lift <5kg during the use of the machinery, preventing injuries obtained due to manual lifting.

As well as the counterbalance feature, the 143 has inherent safety features built into the design. This includes emergency stop circuit, hose covers and lifting points (mechanical lifts). By providing equipment with these features ensure safe and efficient operation of MEC machinery.





8. Specifications

8.1. FP-143-HE - HONDA (PETROL) ELECTRIC START

Engine	13HP Honda® Petrol Electric Start (Trackpack)
Dimensions	2050mm long x 600mm wide x 520mm high
Weight (wet)	115kg
Pressure (max)	177.5bar / 2574psi @ 21 L/min (2500 rpm)
Flow (max)	30L/min @ 170.5 Bar/2473 psi (3600 rpm)
Fuel Type	Petrol
Battery	12V
Hydraulic Oil	ISO68
Hydraulic Oil Capacity	9L
Engine Oil	10W-30
Engine Oil Capacity	1.1L
Hydraulic Hose Connection Size	½" Flush Face snap fitting
Pressure Settings:	
Pressure to Cylinder (Sequence Valve in Manifold)	20.7bar /300psi
Pressure to Cylinder (Pressure Reducing Valve in Manifold)	27.6bar / 400psi
System Pressure Relief	206.8bar / 3000psi

8.2. FP-143-HE-02A - HONDA (PETROL) ELECTRIC START – IMPERIAL (USA)

Engine	13HP Honda® Petrol Electric Start (Trackpack)
Dimensions – Boom attached (Normal Operation)	1960mm Long x 706mm Wide x 745mmm High
Dimensions – Boom in stowage	1235mm Long x 706mm Wide x 1210mm High
Dimensions – Boom Removed (Trackpack Only)	865mm Long x 706mm Wide x 745mm High
Dimensions – Boom Only (No Trackpack)	1160mm Long x 330mm Wide x 485mm High
Weight (Wet) - Includes Complete Trackpack with all fluids	300lb (136kg)
Weight (Dry) – No fluids included battery included	269lb (122kg)
Weight (Wet) – Trackpack only (no boom) includes all fluids	262lb (119kg)
Pressure (max)	177.5bar / 2574psi @ 21 L/min (2500 rpm)
Flow (max)	30L/min @ 170.5 Bar/2473 psi (3600 rpm)
Fuel Type	Petrol
Battery	12V
Hydraulic Oil	ISO68
Hydraulic Oil Capacity	2.35 gal (9L)
Engine Oil	10W-30
Engine Oil Capacity	0.29 gal (1.1L)
Hydraulic Hose Connection Size	½" Flush Face snap fitting
Pressure Settings:	
Pressure to Cylinder (Sequence Valve in Manifold)	20.7bar /300psi
Pressure to Cylinder (Pressure Reducing Valve in Manifold)	27.6bar / 400psi
System Pressure Relief	206.8bar / 3000psi

8.3. FP-143-HR – HONDA (PETROL) RECOIL START

Engine	13HP Honda® Petrol Electric Start (Trackpack)
Dimensions	2050mm long x 600mm wide x 520mm high
Weight (wet)	110kg
Pressure (max)	177.5bar / 2574psi @ 21 L/min (2500 rpm)
Flow (max)	30L/min @ 170.5 Bar/2473 psi (3600 rpm)
Fuel Type	Petrol
Hydraulic Oil	ISO68
Hydraulic Oil Capacity	9L
Engine Oil	10W-30
Engine Oil Capacity	1.1L
Hydraulic Hose Connection Size	½" Flush Face snap fitting
Pressure Settings:	
Pressure to Cylinder (Sequence Valve in Manifold)	20.7bar /300psi
Pressure to Cylinder (Pressure Reducing Valve in Manifold)	27.6bar / 400psi
System Pressure Relief	206.8bar / 3000psi

8.4. FP-143-KE-02A – KOHLER (PETROL) ELECTRIC START – IMPERIAL (USA)

Engine	14HP Kohler® Petrol Electric Start (Trackpack)
Dimensions – Boom attached (Normal Operation)	1960mm Long x 706mm Wide x 745mmm High
Dimensions – Boom in stowage	1235mm Long x 706mm Wide x 1210mm High
Dimensions – Boom Removed (Trackpack Only)	865mm Long x 706mm Wide x 745mm High
Dimensions – Boom Only (No Trackpack)	1160mm Long x 330mm Wide x 485mm High
Weight (Wet) - Includes Complete Trackpack with all fluids	309lb (140kg)
Weight (Dry) – No fluids included battery included	282lb (128kg)
Weight (Wet) – Trackpack only (no boom) includes all fluids	272lb (123.5kg)
Pressure (max)	177.5bar / 2574psi @ 21 L/min (2500 rpm)
Flow (max)	30L/min @ 170.5 Bar/2473 psi (3600 rpm)
Fuel Type	Petrol
Battery	12V
Hydraulic Oil	ISO68
Hydraulic Oil Capacity	2.35 gal (9L)
Engine Oil	KOHLER® PRO 10W-50
Engine Oil Capacity	0.29 gal (1.1L)
Hydraulic Hose Connection Size	½" Flush Face snap fitting
Pressure Settings:	
Pressure to Cylinder (Sequence Valve in Manifold)	20.7bar /300psi
Pressure to Cylinder (Pressure Reducing Valve in Manifold)	27.6bar / 400psi
System Pressure Relief	206.8bar / 3000psi

8.5. FP-143-YE – YANMAR (DIESEL) ELECTRIC START

Engine	7HP Yanmar® Diesel Electric Start (Trackpack)
Dimensions	2050mm long x 600mm wide x 520mm high
Weight (wet)	115kg
Pressure (max)	150.5bar / 2182.8psi @ 15 L/min (2200 rpm)
Flow (max)	24L/min @ 100 Bar/1450 psi (3600 rpm)
Fuel Type	Diesel
Battery	12V
Hydraulic Oil	ISO68
Hydraulic Oil Capacity	9L
Engine Oil	10W-30
Engine Oil Capacity	1L
Hydraulic Hose Connection Size	½" Flush Face snap fitting
Pressure Settings:	
Pressure to Cylinder (Sequence Valve in Manifold)	20.7bar /300psi
Pressure to Cylinder (Pressure Reducing Valve in Manifold)	27.6bar / 400psi
System Pressure Relief	206.8bar / 3000psi

8.6. FP-143-YE-UK - YANMAR (DIESEL) ELECTRIC START WITH PURIFIER

Engine	7HP Yanmar® Diesel Electric Start (Trackpack)
Dimensions	2050mm long x 600mm wide x 520mm high
Weight (wet)	254lb (115kg)
Pressure (max)	150.5bar / 2182.8psi @ 15 L/min (2200 rpm)
Flow (max)	24L/min @ 100 Bar/1450 psi (3600 rpm)
Fuel Type	Diesel
Battery	12V
Hydraulic Oil	ISO68
Hydraulic Oil Capacity	9L
Engine Oil	10W-30
Engine Oil Capacity	1L
Hydraulic Hose Connection Size	½" Flush Face snap fitting
Pressure Settings:	
Pressure to Cylinder (Sequence Valve in Manifold)	20.7bar /300psi
Pressure to Cylinder (Pressure Reducing Valve in Manifold)	27.6bar / 400psi
System Pressure Relief	206.8bar / 3000psi
Exhaust System	Purifier and Muffler

9. Operation

9.1. Operating Conditions

The following outlines the duties and conditions for which the equipment is intended to be operated:

- Used on the intended rail line (gauge)
- Used within a possession
- Not to be used on third and/or fourth rail electrification
- Has the ability to be used in all environmental conditions providing the rail is clean and accessible (i.e. snow, extreme heat, etc may be considered hazardous to operation of the equipment)
- Correct engine oil, fuel, and hydraulic fluid for climate the machine is being used in
- Ensure operators are using hearing protection when using this machinery that is applicable to industry standards to reduce noise to acceptable levels
- Ensure operators adhere to industry accepted operating times for vibration exposure levels

9.2. Pre-Operation Checks

Overall Inspection

1. Check that the equipment is free from damage or defects.
2. If damaged, DO NOT USE. Contact MEC for repairs.

Engine Oil

1. Check the level and quality of the engine oil and add if required.
2. If contaminated or old, engine oil will be dark (nearly black).
3. If contaminated with water, engine oil will be a milky colour.
4. Refer to manufacturer's instructions for specific data.
5. If engine oil contaminated, replace before use.

Hydraulic Oil

1. Check the level and quality of the hydraulic oil and add if required.
2. Oil level to be 20mm above the bottom of the strainer in the filler breather.
3. If contaminated, hydraulic oil will be discoloured.
4. If contaminated with water, hydraulic oil will be a milky colour.
5. If hydraulic oil contaminated, replace before use.

Fuel

1. Check the level of fuel and add if required.

Battery (if applicable)

1. Visually inspect the condition of the battery.
2. Ensure there is no damage. Both output wires must read above 12V.
   This can be tested with a multimeter on the isolator. Note: the cells will read different voltages (difference of approximately 0.7V) due to separation diode within the battery pack.
3. If damaged, replace before use.

Light (if applicable)

1. Visually inspect condition and leads of light. Ensure there is no damage and leads are free from defects.
2. If damaged, replace before use.

Hydraulic Hoses & Filter

1. Visually inspect the hoses and filter. Look for leaks, tear, swelling & exposed wire.
2. Ensure there is no damage.
3. If damaged, replace before use.

Guards & Stickers/Tags

1. Inspect all guards and stickers/tags are in place and secure – refer to further document drawings for locations.
2. Ensure there is no damage.
3. If damaged, DO NOT use machinery. Contact MEC for repairs.

Emergency Stop System

1. Ensure all electrical plugs are connected.
2. Inspect the wiring and ensure free from damage and defects.
3. Ensure all connections are clean and dry.

Wiring

1. Ensure all electrical plugs are connected.
2. Inspect the wiring and ensure free from damage and defects.
3. Ensure all connections are clean and dry.

Braking System

1. Ensure the wiring is connected or the manual pull brake cable is connected to the brake trigger.
2. Ensure the brake trigger is free from damage and moves through its full range of motion.
3. Ensure the brake cable if applicable is free from damage.

9.3. Assembly Procedures

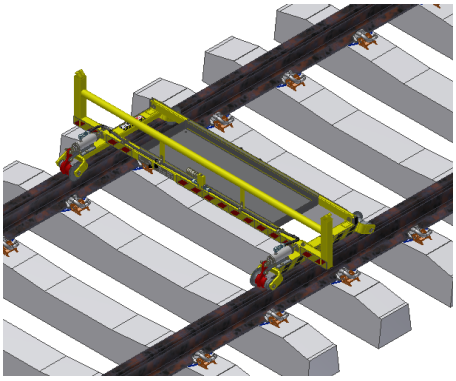
WARNING

Before any assembly and/or maintenance are performed, ensure the work head and engine are off and in a neutral position

9.3.1. Machine Trolley (Braked and Un-Braked)

1. Inspect the trolley and ensure it is not damaged and free from defects, and all pre operation checks are done as per section 9.2.

2. The machine trolley weighs approximately 36kg. Using a minimum of 2 people or certified lifting device, lift the trolley onto the rail lines. This can be achieved by lifting from the cross bar (tube).



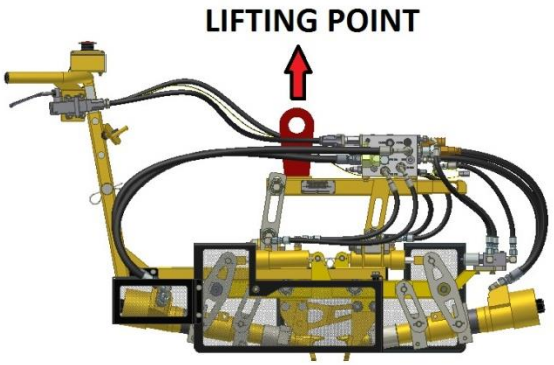
3. Ensure the trolley sits stationary before attaching Trackpack and workhead, if braked trolley attach brakes (refer to braked machine trolley operation manual for more information).

9.3.2. Trackpack Workhead and Power Pack

9.3.2.1. Connecting Workhead to Trackpack (Fixed boom) – Mechanical Lift

Note - 186 E-Clip Remover shown, however all workheads and Trackpacks are connected in a similar manner.

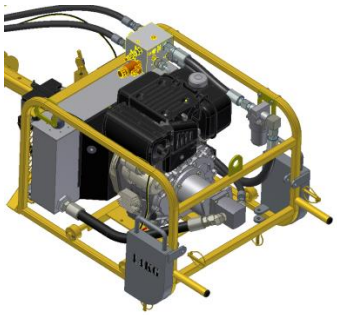
1. Observe all safety precautions. Ensure the operation is being performed on safe and steady ground (no excessive slopes or dangerous terrain).
2. Inspect the E-Clip Remover Head and Trackpack and ensure they are not damaged and are free from defects.
3. A Trackpack E-Clip Remover Head weighs approximately 120 kg and a Trackpack weighs approximately 120kg. The counterweights weigh 14kg each (total 28kg extra).



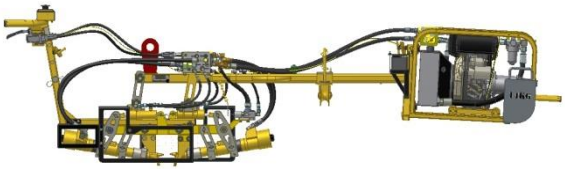
4. Place work head onto ground (Follow safe lifting procedures).
5. Adjust the pivot position (cross trolley rollers) to the correct position for the machine. For the E-Clip Remover this is the furthest hole from the engine (refer further document drawing for pin locations). Attach slings to the lifting lugs on the Trackpack.

6. By following safe lifting procedures, lift the Trackpack using slings ensuring it is kept level and easy to move.
7. Guide the Trackpack towards the work head and align the square attachment (Hayman-Reese style) and slide the items together. Insert the locking pin between the items and lock in position with the R -Clip. Lower the Trackpack to the ground and remove the slings.

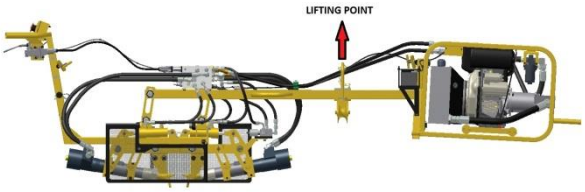
8. Clip the electrical plug together between Trackpack and workhead to connect Emergency Stop and brake. Attach the counterweights for the E-Clip Remover to the Trackpack and place the Lynch pins to secure.



9. The Trackpack and workhead are now attached and can be lifted onto the machine trolley (the same as a dedicated machine).



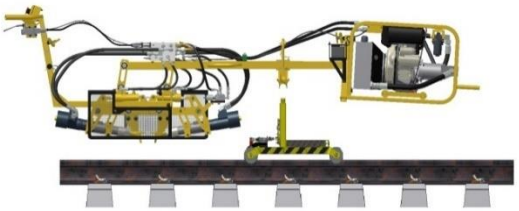
10. By following safe lifting procedures, lift the machine onto the trolley. The cross trolley rollers will sit onto the cross bar (tube).



⚠ CAUTION

When placing the machine onto the trolley, ensure hands are clear of the cross trolley rollers and cross bar (tube) as personal injury may occur.

11. Remove the slings and/or hooks. The machine can now be moved to either rail for use. This is achieved by raising the head off the ground and sliding across the trolley. A second person may be required to assist and push the engine across the trolley.



12. Attach the chain to the trolley to ensure the machine will not roll during operation.

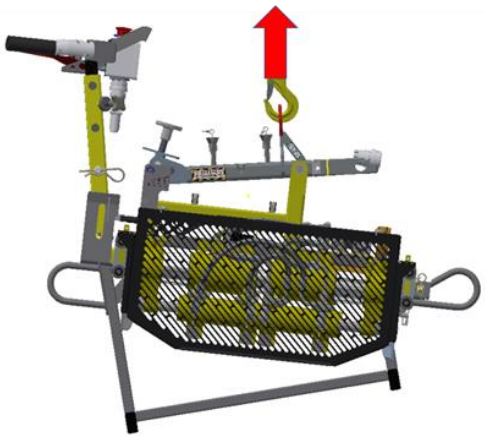
13. Connect the Brake hose to the cylinder on the trolley.

14. The equipment is now ready for use.

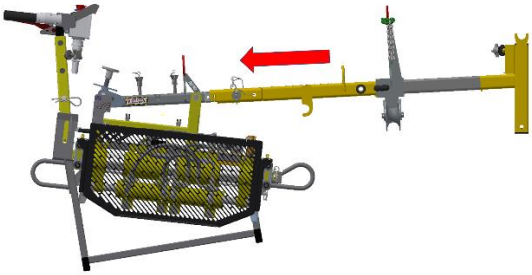
9.3.2.2. Connecting Workhead to Trackpack (Removable Boom) – Mechanical Lift

<u>Note</u> - 190 E-Clip remover shown, however all workheads and Trackpacks are connected in a similar manner, Only Gen 2 Trackpacks have removable booms

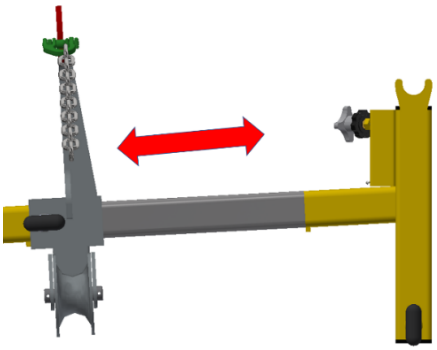
1. Observe all safety precautions. Ensure the operation is being performed on safe and steady ground (no excessive slopes or dangerous terrain).
2. Inspect the workhead and Trackpack and ensure they are not damaged and are free from defects.
3. By following safe lifting procedures, lift the workhead onto ground.
   A 190 E-Clip workhead weighs approximately 100 kg.
   MEC Trackpack workhead range from 40kg to 150kg.
   *See relevant workhead manual for correct lifting procedure.



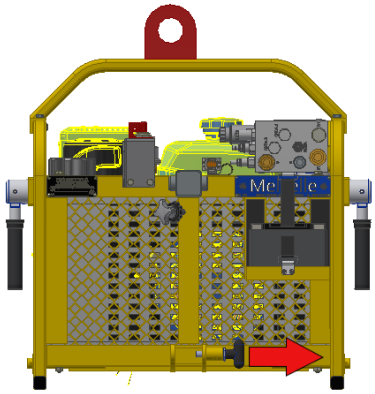
4. Insert the removable boom onto the workhead, align the square attachment (Hayman-Reese style) and slide the items together. Insert the locking pin between the items and lock in position with the R -Clip.



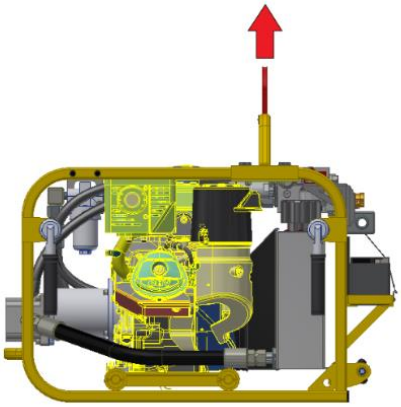
5. Adjust the pivot position (cross trolley rollers) to the correct position for the machine.
   For the 190 E-Clipper this is the furthest hole from the engine
   *see section drawing for pin locations.

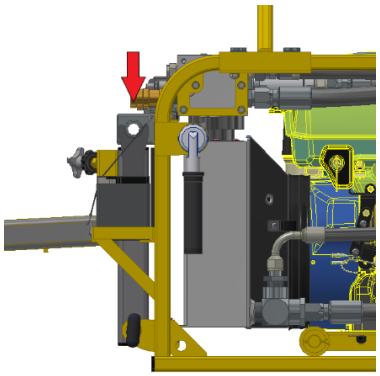


6. Ensure both the boom lock off pins are in the disengaged position.

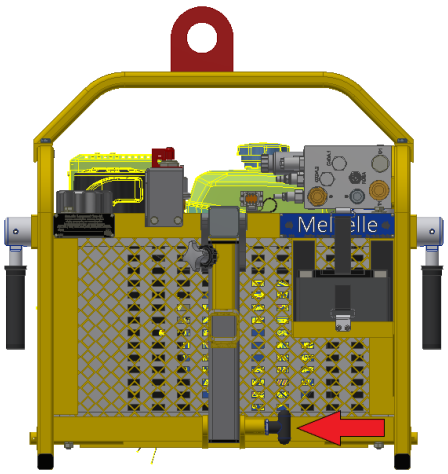


7. By following safe lifting procedures, lift the Trackpack ensuring it is kept level and easy to move.
*See section for information on lifting procedure.

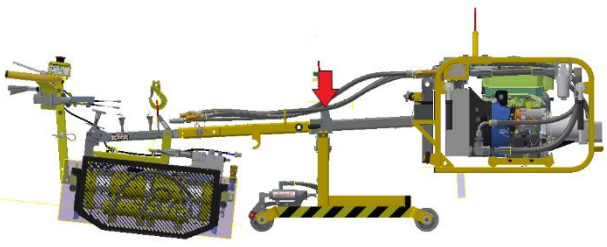




8. Lower the trackpack onto the boom cups.
Once the load of the Trackpack is supported by the boom and workhead engage both the boom lockoff pins (Attach the Counterweights for the 186 E-Clip Remover workhead only).



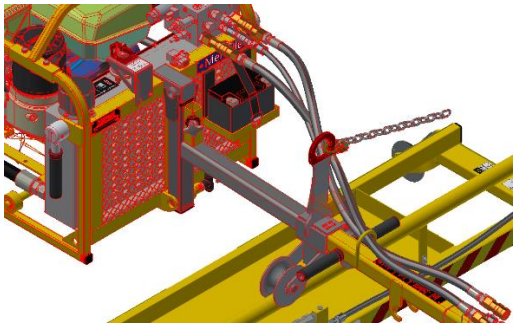
9. By following safe lifting procedures, lift the workhead and trackpack assembly onto the trolley on track. The cross trolley rollers on the boom will sit onto the cross bar (tube) on the trolley.
A Trackpack Boom weighs approximately 18kg.
*See section for information on lifting procedure.



⚠ CAUTION

When placing the machine onto the trolley, ensure hands are clear of the cross trolley rollers and cross bar (tube) as injury to personell may occur.

10. Remove the slings and/or hooks. The machine can now be moved to either rail for use. This is achieved by raising the workhead off the ground and sliding across the trolley. A second person may be required to assist and push the Trackpack across the trolley.



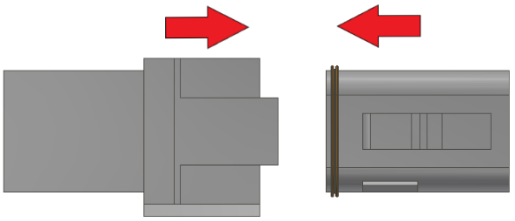
11. Attach the chain to the trolley to ensure the machine will not roll during operation.

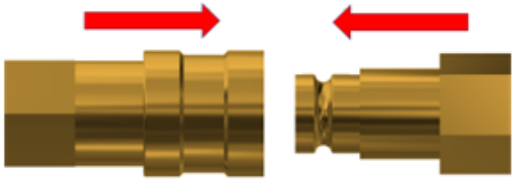
12. Connect the wiring harness to Trackpack wiring harness (DT connector).

13. Connect both the pressure and return hydraulic hose lines to both the Trackpack and workhead.

14. Connect the Brake hose to hydraulic fitting on trolley.

15. The equipment is now ready for use.





9.4. Operation Procedures

Only authorised personnel shall start, operate, or interfere with the normal working of portable machines or trolleys. The user shall be careful to use the machine in the intended way, avoiding over-loading.

9.4.1. Starting the Engine – Electric Start[1]

1. Observe all safety precautions
2. Ensure all pre-operation checks have been conducted
3. Ensure the workhead and Trackpack are on safe and steady grounding (no excessive slopes or dangerous terrain conditions)
4. Attach tooling hoses to power pack. Ensure the snap connectors are clean and tool is in 'NEUTRAL' position (both handles released)
5. Ensure Emergency Stop is electrically connected to power pack and not activated
6. Place the throttle at 50% power
7. Turn the key to its first position (on position)
8. If diesel:
    a. Operate the decompression lever.
    b. Turn key to second position (starting position). The starter motor will engage and turn the engine over
    c. After 2-3 seconds there will be enough momentum in the fly wheel. Release the decompression lever and the engine will start
    d. Allow the key to return to the on-position, disengaging the starter motor
9. If petrol:
    a. Engage choke if cold starting
    b. Turn key to second position (starting position). The starter motor will engage and turn the engine over
    c. After the engine starts allow the key to return to the on-position, disengaging the starter motor, disengage choke.

[1] Refer to engine manual for detailed engine instructions and requirements

10. Note: if the track-pack has a push button start, ignore key first position steps. Pressing the push button is the same as the key second position.

11. Place throttle in idle (min) position and allow engine to warm up – refer manufacturers manual for required times. If applicable disengage choke once engine warms up.

12. Move throttle to required rpm position, normally full throttle[1]

13. Power pack and hydraulic circuit are now in operation and tooling is able to be used. Refer to Equipment Operation for instructions on using tooling

[1] During first 50hrs do not exceed 70% maximum rated power

9.4.2. Starting the Engine – Recoil Start[1]

1. Observe all safety precautions
2. Ensure all pre-operation checks have been conducted
3. Ensure the workhead and Trackpack are on safe and steady grounding (no excessive slopes or dangerous terrain conditions)
4. Attach tooling hoses to power pack. Ensure the snap connectors are clean and tool is in 'NEUTRAL' position (both handles released)
5. Ensure Emergency Stop is electrically connected to power pack and not engaged
6. Place the throttle at 50% power
7. Turn the key to its first position (on position)
8. Hold the grip and pull the cord until compression is found
9. Completely rewind the cord (allow to retract)
10. Operate the decompression lever (if diesel)
11. Using two hands, firmly and quickly pull the cord to start
12. Place throttle in idle (min) position and allow engine to warm up – refer manufacturers manual for required times
13. Place throttle at required rpm position, normally full throttle[2]
14. Power pack and hydraulic circuit are now in operation and tooling is able to be used. Refer to Equipment Operation for instructions on using tooling

[1] Refer to engine manual for detailed engine instructions and requirements
[2] During first 50hrs do not exceed 70% maximum rated power

9.4.3. Equipment Operation

As the Trackpack is used as a means of providing power to the coupled workheads, the operating instructions are detailed in the assembly and starting procedures.

9.4.4. Stopping the Engine[1]

1. Place tooling and power pack to “NEUTRAL” position
2. Set the engine speed to idle (min) using throttle lever
3. Turn the ignition key to OFF

[1]Refer to engine manual for detailed engine instructions and requirements

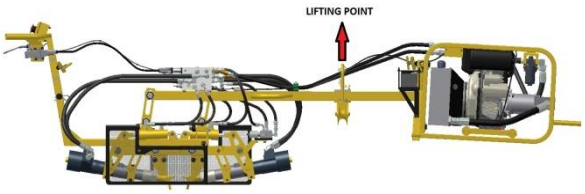
9.5. Disassembly Procedures

9.5.1. Removal of Trackpack from Track

1. Observe all safety precautions
2. Ensure engine is off and no hydraulic flow is operating to cylinder.
3. Disconnect the brake hose from the trolley cylinder.

4. Disconnect the chain from the retaining profile to release the machine from the trolley.

5. Lift and remove the workhead and Trackpack from the trolley using a certified lifting device (>250kg).



*Expected time for removal of trolley with workhead assembled is approximately five (5) minutes (using certified lifting devices). These times may increase or decrease depending on location, conditions, etc.

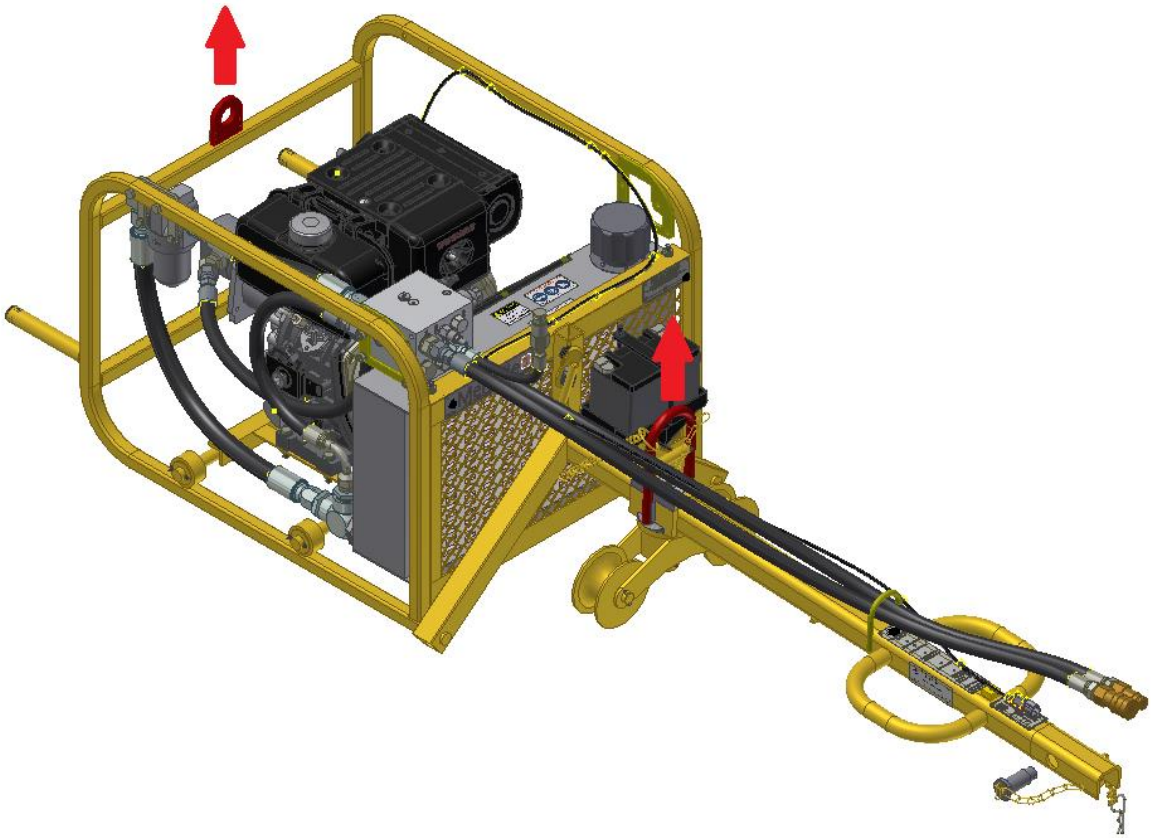
6. The Trackpack is now able to be placed onto transport or in storage. For a Trackpack and Workhead, these can be stored and/or transported coupled together or separated.

9.5.2. Lifting the Machinery

9.5.2.1. Mechanical lifting of Trackpack

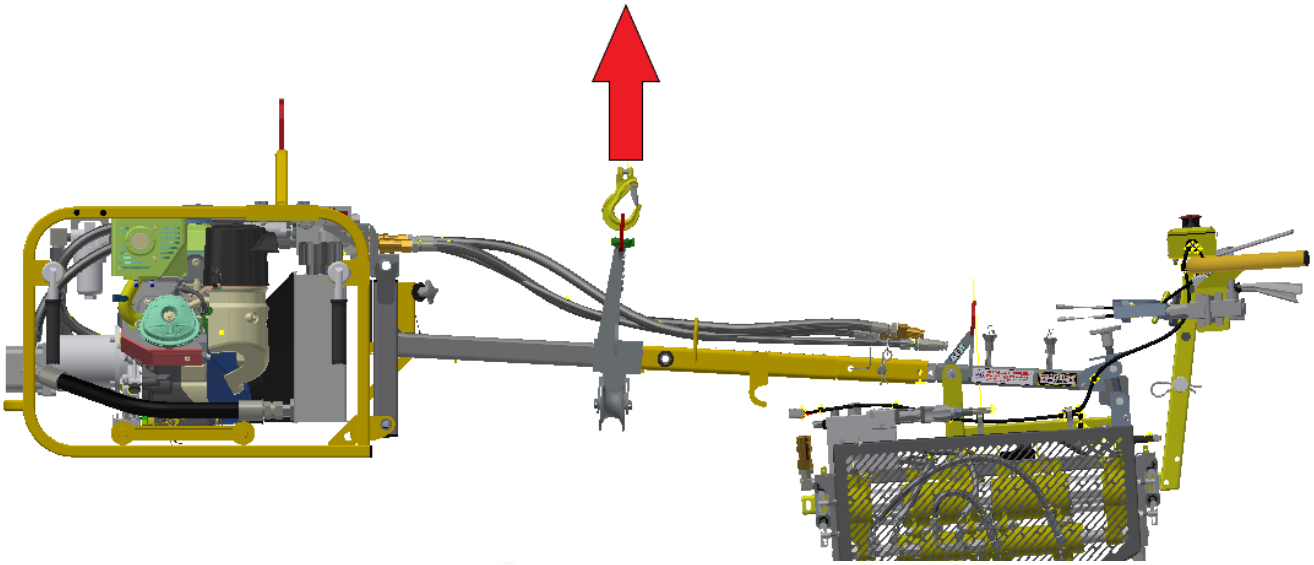
1. DO NOT manually lift machinery with fixed booms
2. Observe all safety precautions
3. Ensure all pre-operation checks have been conducted
4. Attach slings or hooks into lifting points on the machinery – see below
5. Using a certified lifting device to >250kg, lift the machinery to required position

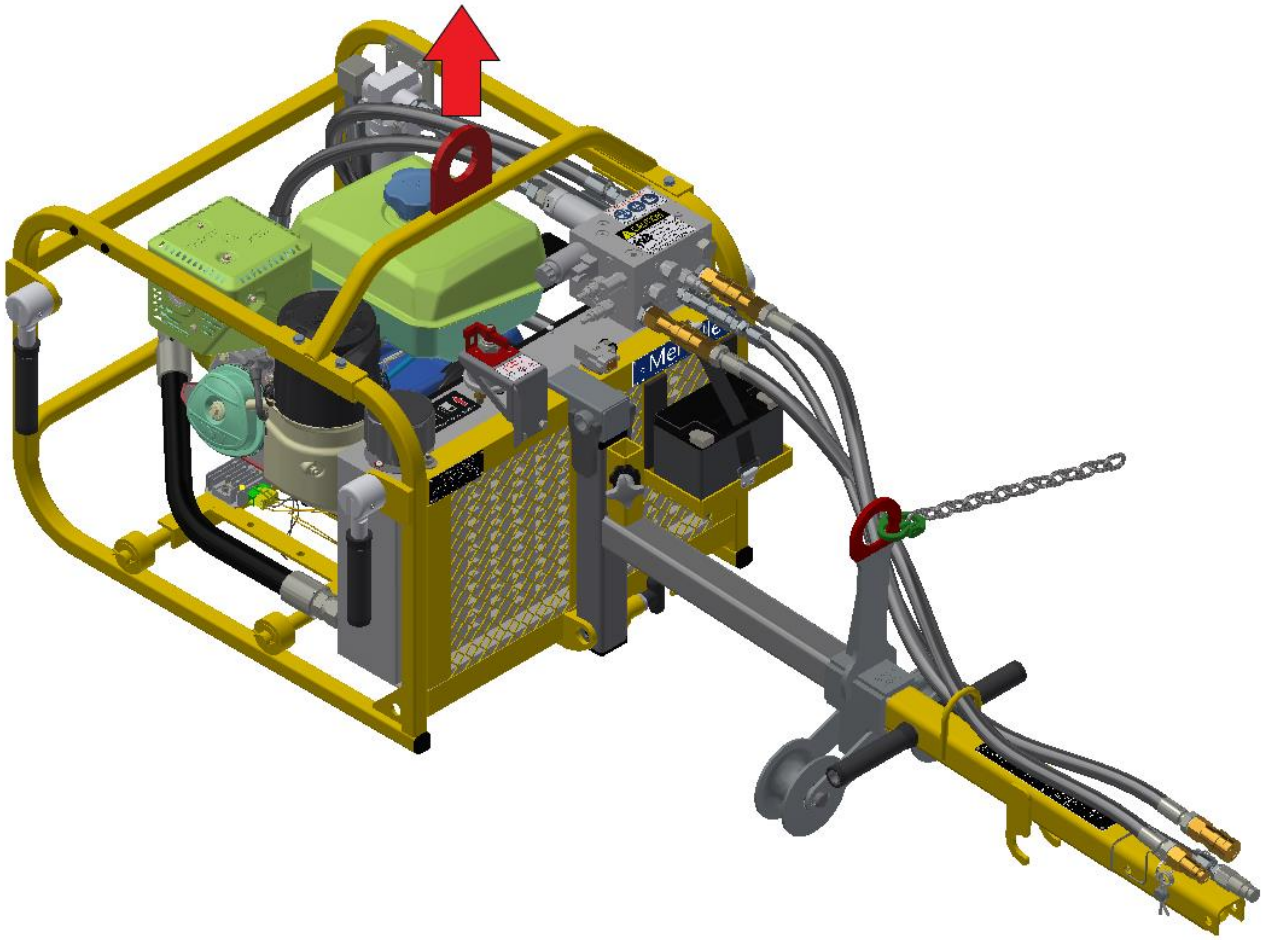
Fixed Boom version

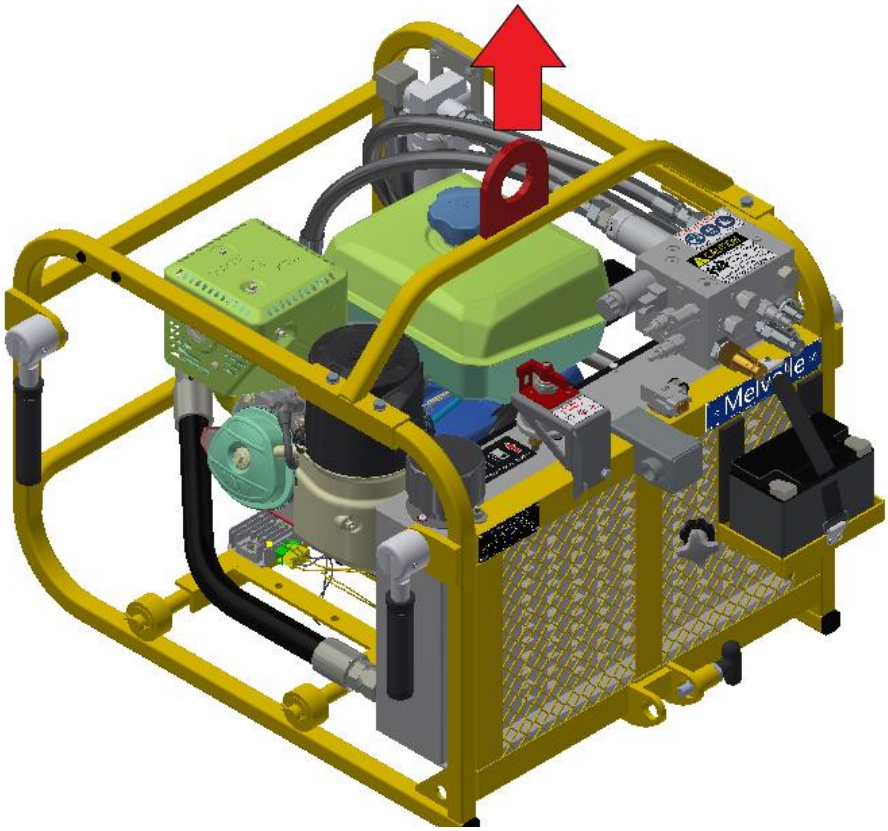


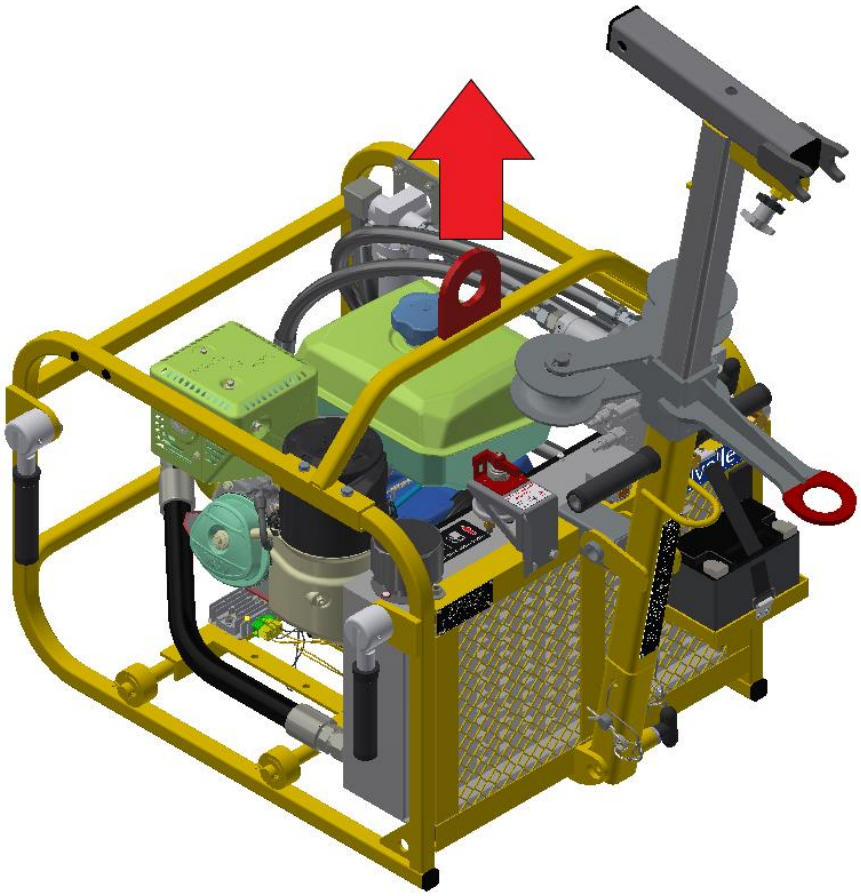
Removeable boom version

Lifting Diagrams on this page and the next two pages:







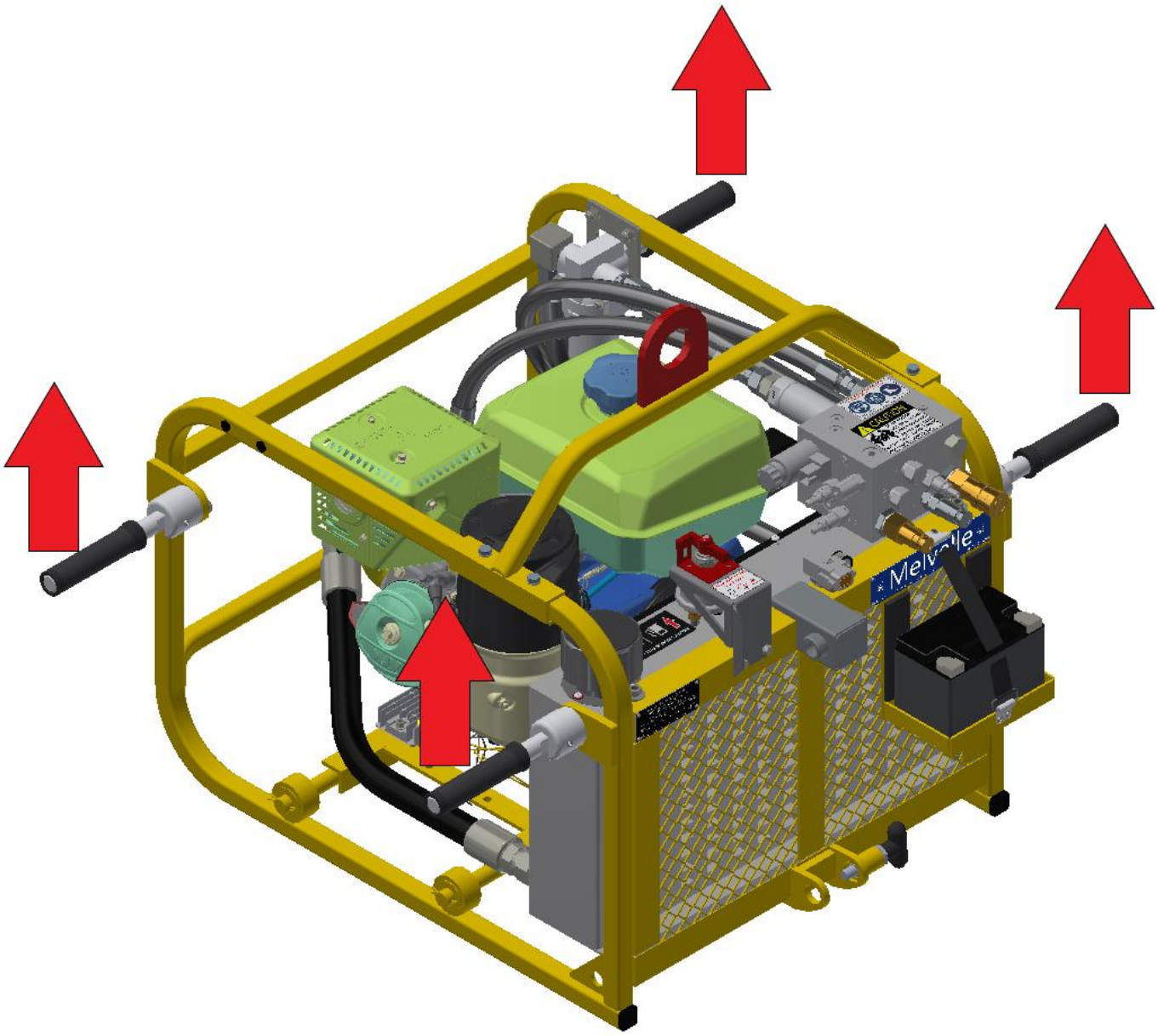


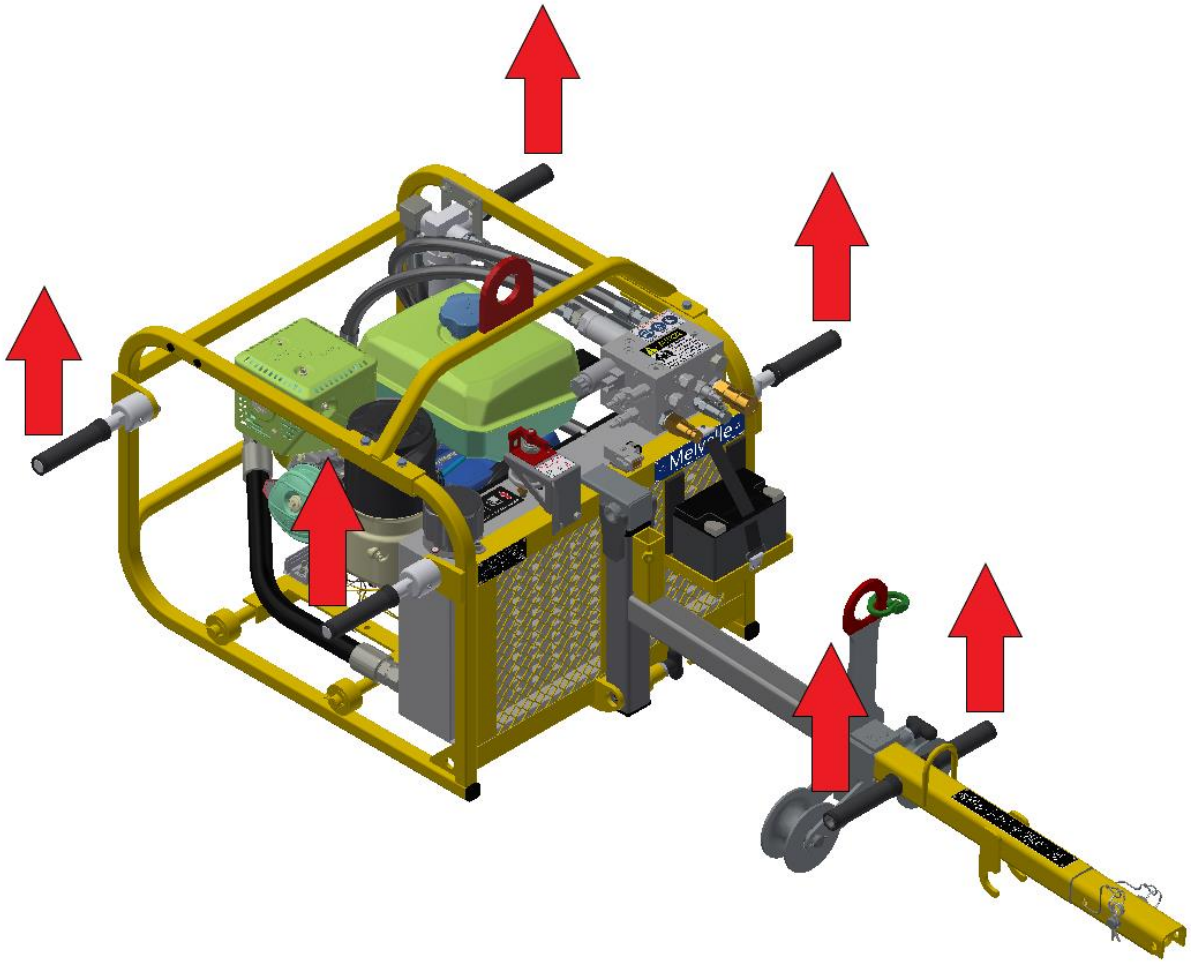
9.5.2.2. Manual lifting of Trackpack – Removavle boom

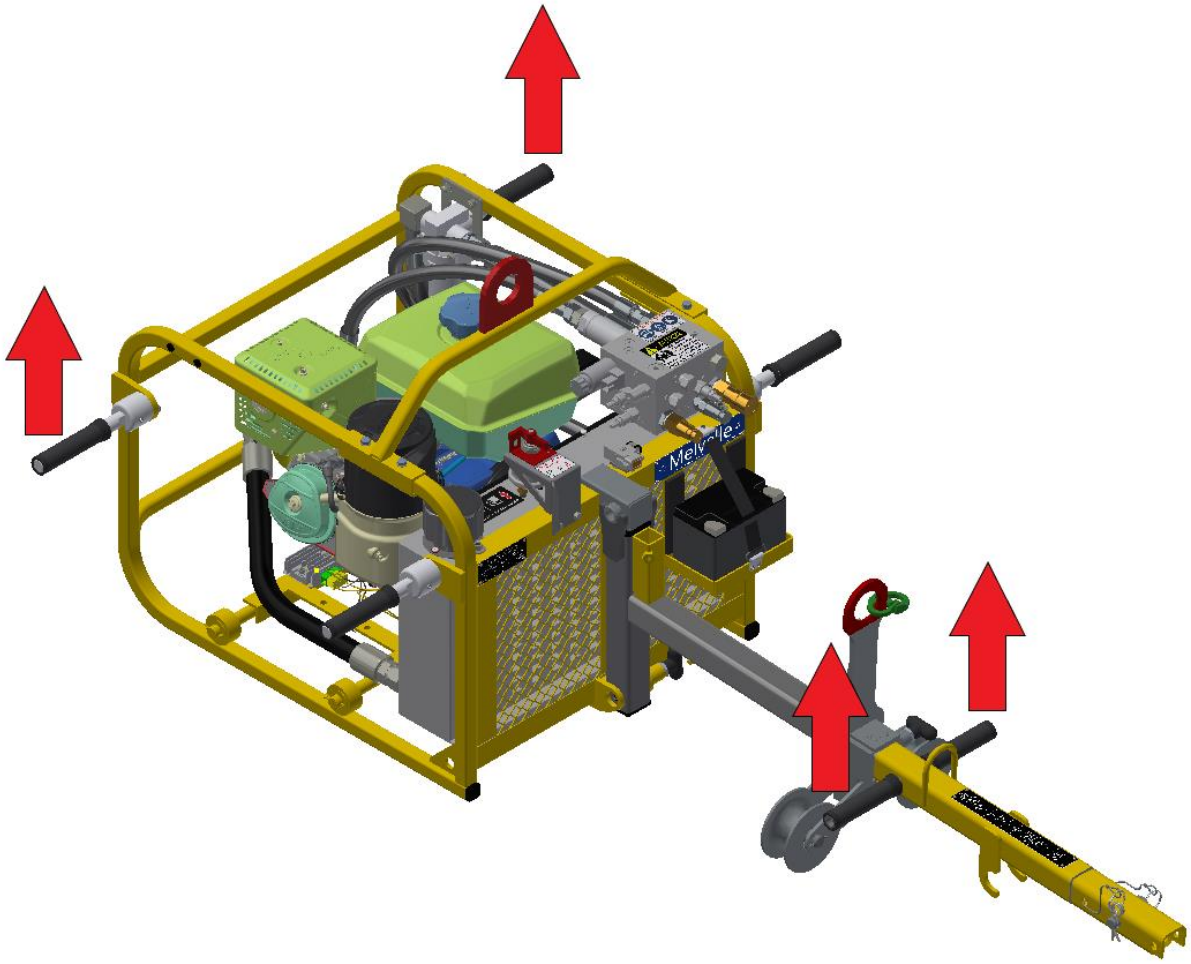
1. Manual lifting of this Tracking should only be used if mechanical lifting is not possible, MEC recommends using mechanical lifting only.
2. Observe all safety precautions.
3. Ensure all pre-operation checks have been conducted.
4. Lift from the carry handles as shown below – See table for estimated lifting load per handle.

Manual Lifting Approximate Mass Per Person	
Number of Persons lifting	**Mass per person**
4 Persons (Boom attached)	35kg
6 Persons (Boom attached)	23.5kg
4 Persons (Boom removed – Trackpack only)	30.9kg

Lifting Diagrams are on this and the next page:







9.6. Storage & Transport

9.6.1. Storage of Trolley

MEC equipment should be stored in a secure, safe, dry location to ensure the equipment is not damaged and maintained in good working order.

If possible, machines may be placed onto racks or placed on the ground for storage. Storing the machines in the storage/transport frames will also help to keep the equipment free from damage and allow it to sit level.

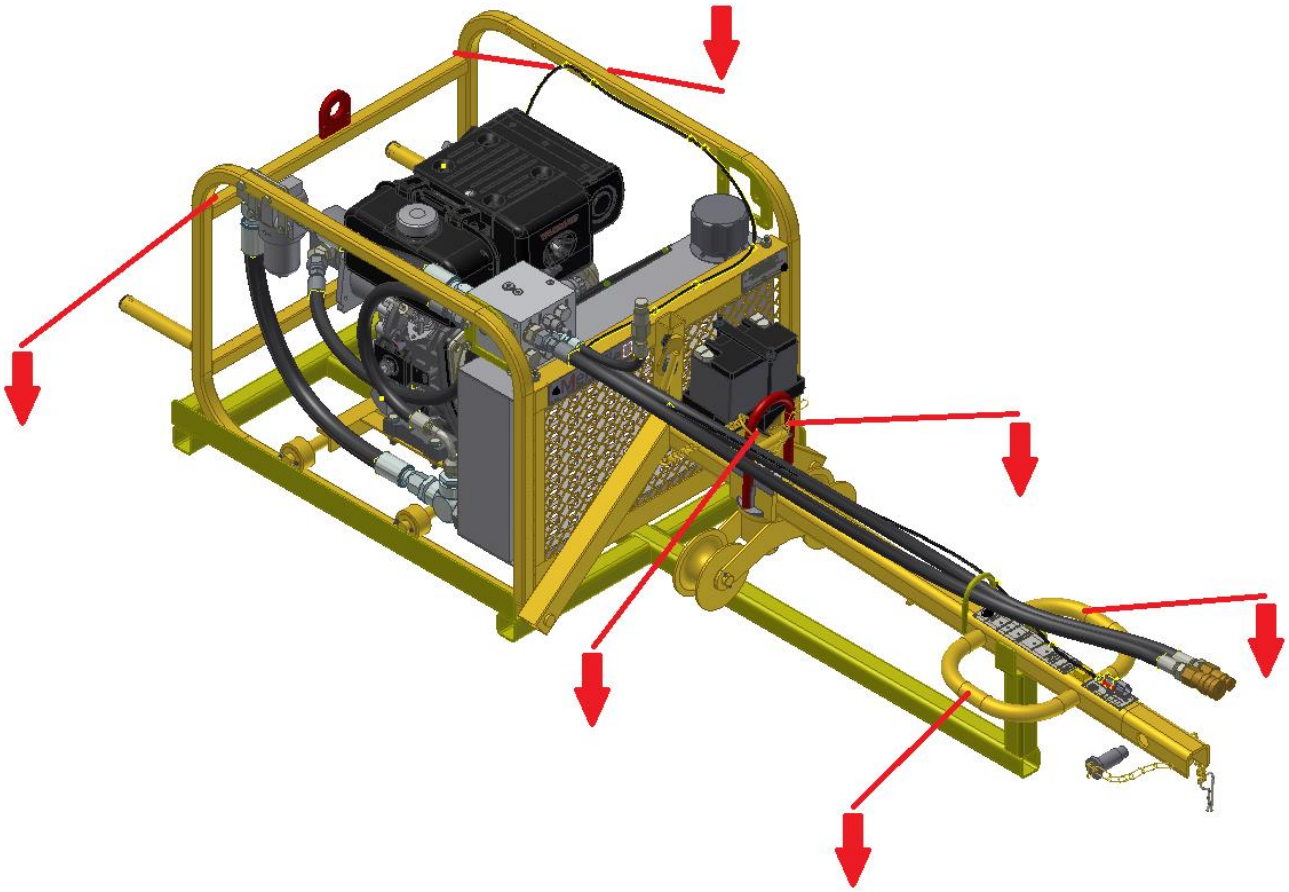
9.6.2. Transport of Trolley

9.6.2.1. Transport and Stowage of trackpack

Place the Trackpack onto a flat surface (truck or trailer) and strap down ensuring the equipment is unable to move. By utilising the storage/transport frames will help to reduce damage and make it easier to store/transport. See below for possible recommended lashing points.

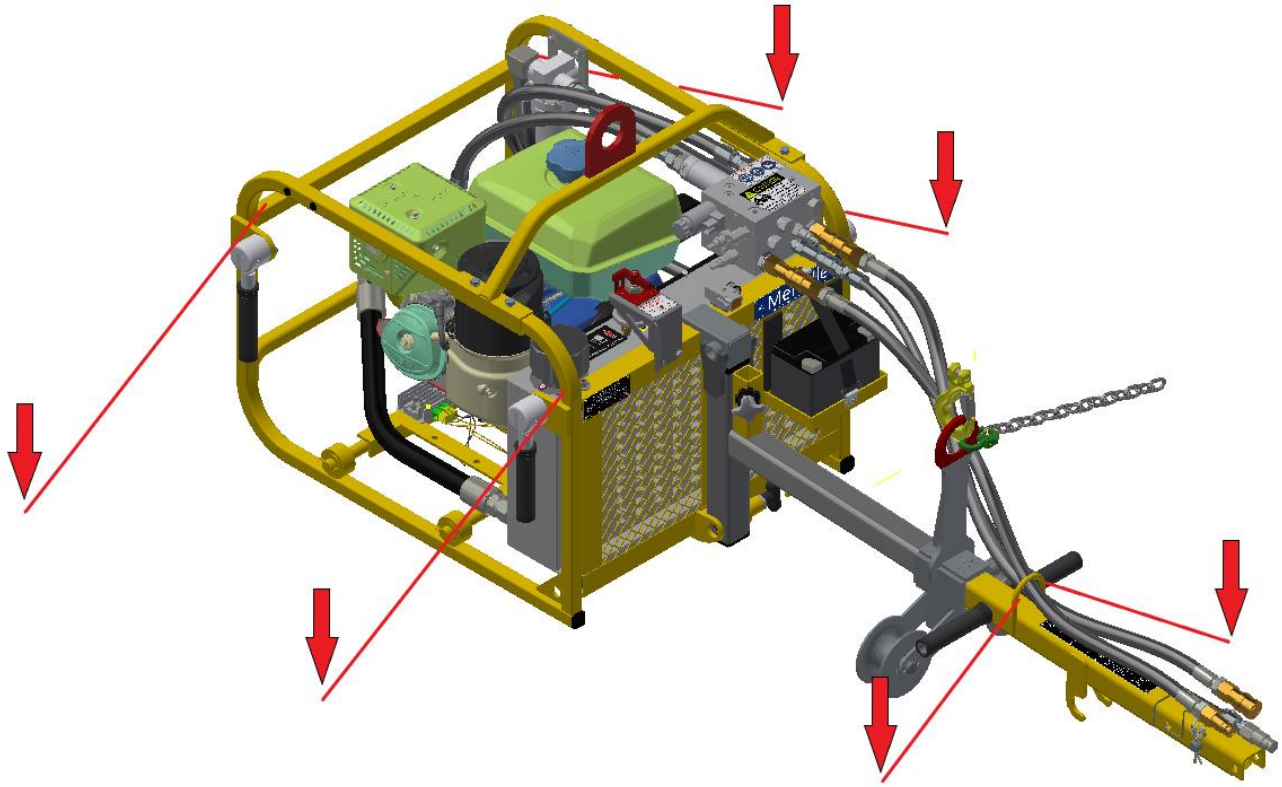
When strapping the equipment down, ensure that the straps are used on the main frames of the equipment to avoid damage. Ensure hoses/cables and other lighter parts of the machinery are not used to secure the equipment during transport.

The boom on some model Trackpacks are removable. This allows for smaller freight footprint on a track or transportation crate. The section 9.6.2.2, 9.6.2.3, and 9.6.2.4 on the next few pages show the different possible transportation options.



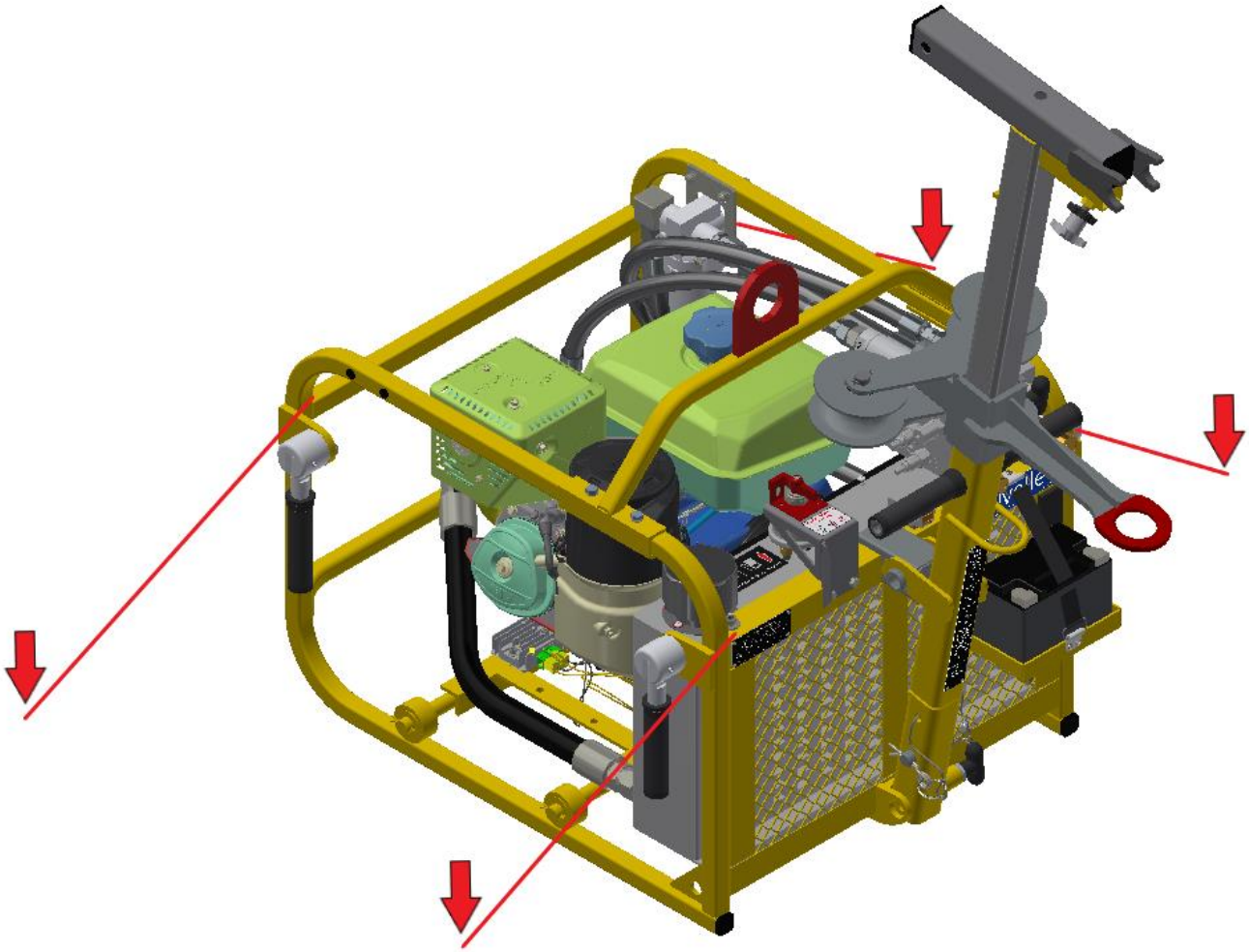
9.6.2.2. Transport And Stowage Of Trackpack (Removable Boom) In Operation Position

The Trackpack can be stored or transported with the boom in the normal operation position. This is how the Trackpack in used with a workhead.



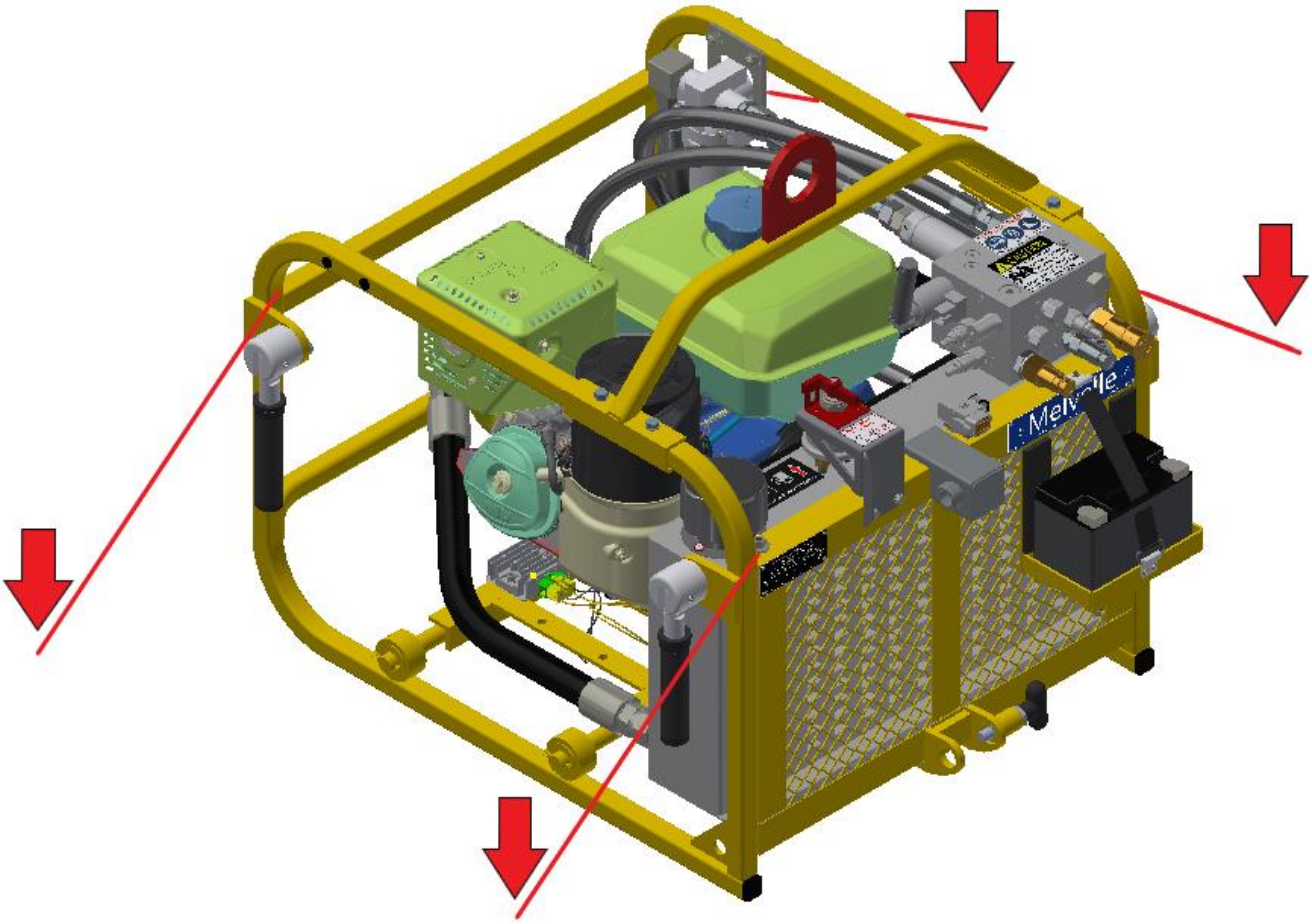
9.6.2.3. Transport And Stowage Of Trackpack In Stowage Position

The Trackpack can be stored or transported with the boom in the stowage position. This is with the boom rotated up in the stowage position on the front of the Trackpack. This position reduces the footprinted taken up by the Trackpack but increases its height. This position allows the boom to remain attached to the Trackpack during transport or storage.



9.6.2.4. Transport And Stowage Of Trackpack With Boom Removed

The Trackpack can be stored or transported with the boom completely removed from the Trackpack. This position reduces the footprinted taken up by the Trackpack but the boom must still be transported separately. This position allows for easier storage on racking.



10. Equipment Protection & Care

NOTICE

In addition to the Safety Precautions found in this manual and the supporting tool and engine manuals, observe the following for equipment protection and care

- Make sure all couplers are wiped clean before connection.
- The hydraulic circuit control valve in “NEUTRAL” position when coupling or uncoupling hydraulic tools. Failure to do so may result in damage to the couplers and cause overheating of the hydraulic system.
- Always store hoses coupled together in a ‘loop’ to stop hydraulic lock due to the hoses and hydraulic oil heating.
- Always store the Trackpack in a clean dry space, safe from damage or pilferage.
- Make sure the power pack hydraulic circuit PRESSURE hose (male quick disconnect) is connected the PRESSURE hose for the tool (female quick disconnect) and vice versa for the RETURN hoses. Do not reverse circuit flow. This can cause damage to the internal seals of the equipment.
- Always replace hoses, couplings and other components with replacement parts recommended by MEC. Hydraulic hoses must have a minimum working pressure of 3000 psi.
- Always keep critical tool markings such as warning stickers and tags legible.
- Power pack and tooling repairs and/or service work must only be performed by MEC or certified and authorised dealer.
- Do not use the power pack and/or tooling for applications for which it is not intended.
- Ensure all bolts are tight and all covers/guards are fitted.

11. Maintenance

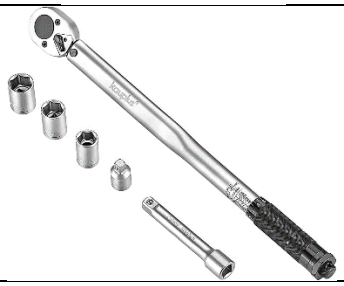
WARNING

Before any maintenance of the machine or trolley is performed, ensure the workhead and engine are off and in a neutral position. Ensure all potential energy is released from the system (springs, cylinders, etc). Ensure maintenance is performed by a competent and authorised person.

11.1. Tools Required to Complete Maintenance

Below are initial tools required to complete general maintenance tasks. Additional tools may be required.

• Metric Hex Wrenches (Allen Keys) – 3mm, 4mm, 5mm, 6mm, 10mm	
• Combination Wrenches (Spanner) – 8mm, 10mm, 12mm, 13mm, 14mm, 16mm, 17mm, 18mm, 19mm, 22mm, 27mm, 29mm, 7/8”, 3/4"	
• Adjustable Wrench X2 (Shifter)	
• Pin Punch Set – 3/16” (4mm), 8mm	
• Metric Socket Set - 8mm, 10mm, 12mm, 13mm, 14mm, 16mm, 17mm, 18mm, 19mm, 22mm, 27mm, 29mm, 7/8”, 3/4"	
• Ball Pien Hammer	

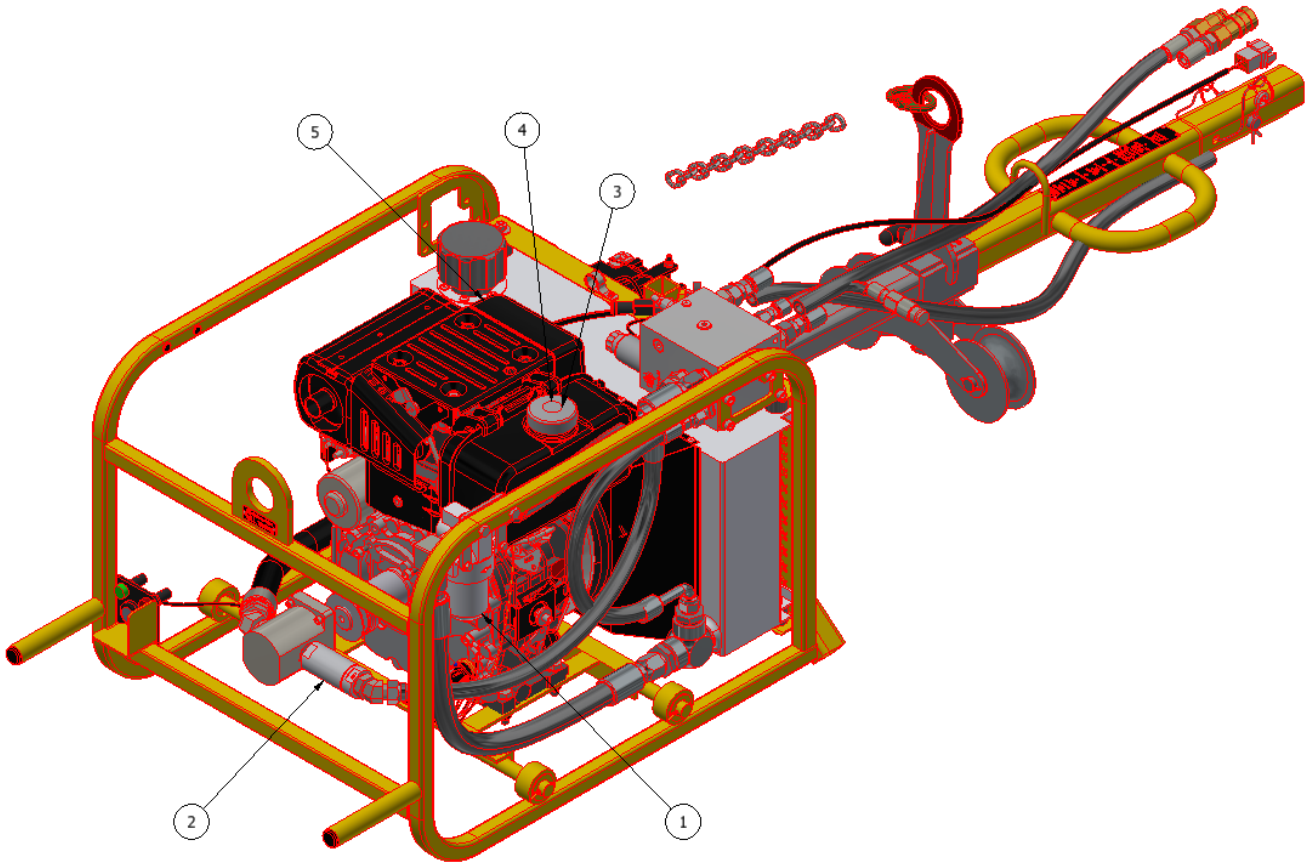
• Soft Face Mallet	
• Phillips Head Screwdriver	
• Flat Blade Screwdriver	
• Multimeter	
• Ruler and/or Verniers	
• Long Nose Pliers	
• Torque Wrench and Sockets	

11.2. Maintenance Spares

143 Yanmar Trackpack (FP-143-YE) Spares

Below is a list of spares that may be required for general maintenance during the life of the 143 Yanmar Trackpack.

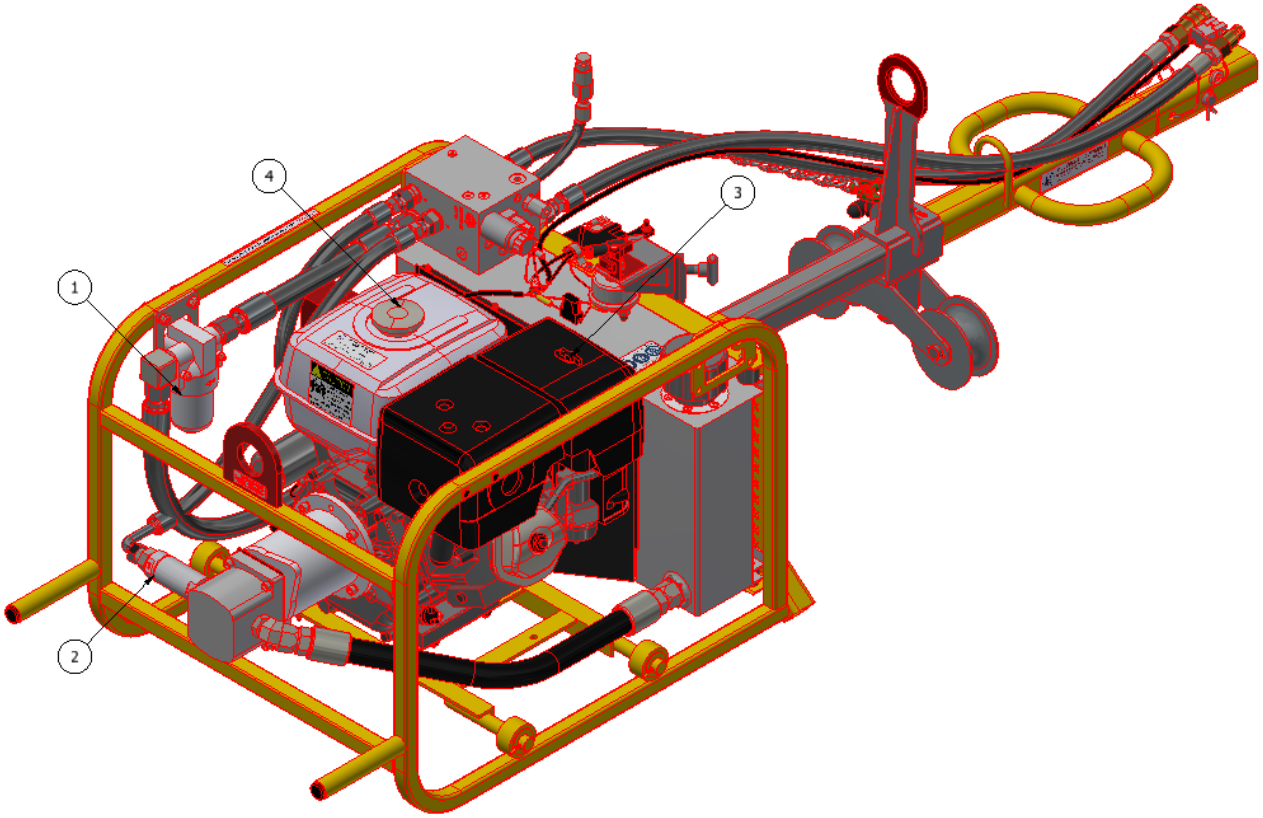
Item	MEC Part Number	Description
1	1081289-01	Hydraulic Oil Filter Element
2	1430122	In-line Pressure Filter 1/2” BSPP
3	1540004	Yanmar L70 Outlet Fuel Filter
4	1540662	Yanmar Fuel Tank Strainer
5	1540818	Yanmar L70N6 Air Filter



143 Honda Trackpack (FP-143-HE) Spares

Below is a list of spares that may be required for general maintenance during the life of the 143 Honda Trackpack.

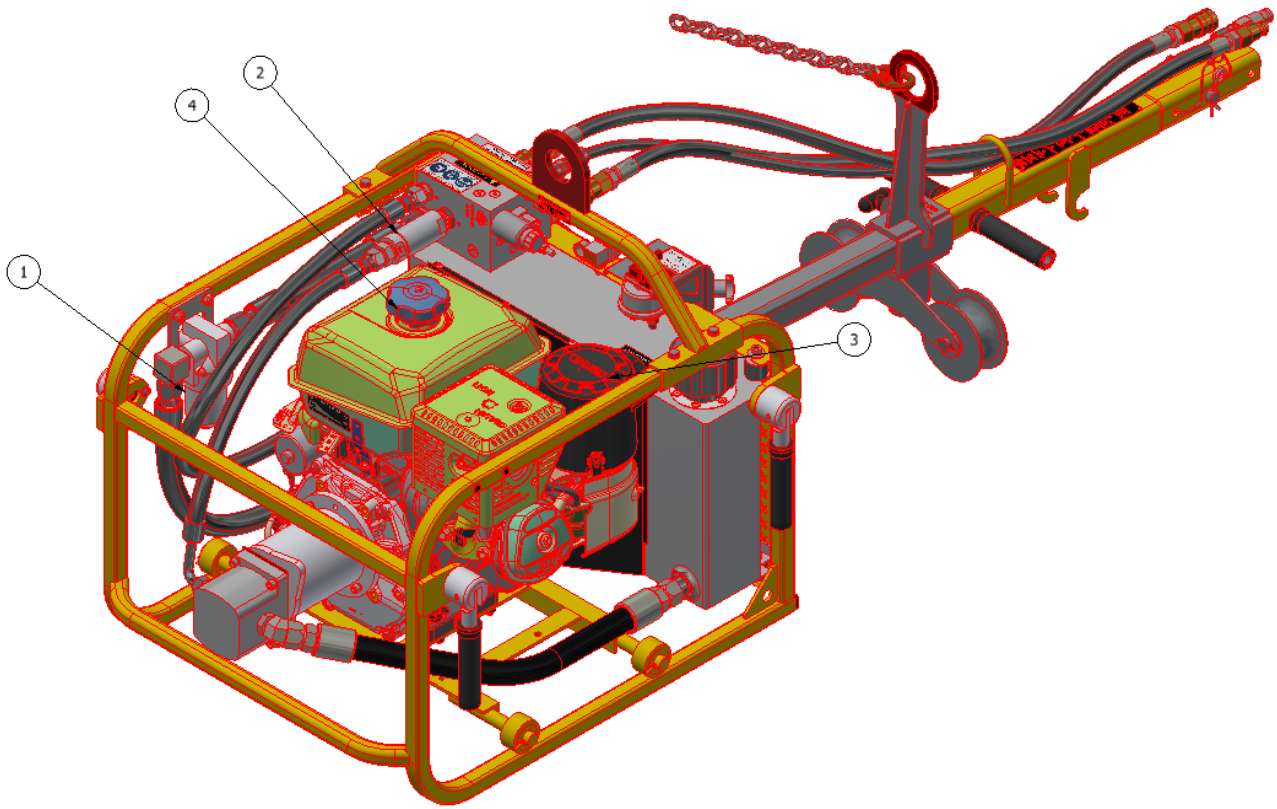
Item	MEC Part Number	Description
1	1081289-01	Hydraulic Oil Filter Element
2	1430122	In-line Pressure Filter 1/2” BSPP
3	1540242	Honda Air Filter
4	1540243	Honda Fuel Filter



143 Kohler Trackpack (FP-143-KE) Spares

Below is a list of spares that may be required for general maintenance during the life of the 143 Kohler Trackpack.

Item	MEC Part Number	Description
1	1081289-01	Hydraulic Oil Filter Element
2	1430122	In-line Pressure Filter 1/2” BSPP
3	1542710	Kohler Air Filter
4	1542711	Kohler Fuel Filter



11.3. Maintenance Period[1]

REGULAR SERVICE PERIOD* Perform at every indicated month or operating hour interval, whichever comes first. ITEM		Each use	Every 1 month or 10hrs	Every 3 months or 50hrs	Every 6 months or 250hrs	Every year or 500hrs
Engine oil	Check level	X				
	Change			X (1)	X	
Engine oil filter	Change			X (1)		X
Fuel Level	Check/Fill	X				
Fuel Lines	Check		X			
	Replace					X
Fuel Filter	Check/Clean			X		
	Change					X
Air Filter	Check			X		
	Replace				X	
Engine cooling fins	Clean					X
Rocker arms clearance	Check & set					X (2)
Injectors	Clean & set					X (2)
Spark Plug	Check				X	
	Replace					X
Hydraulic oil Filter	Change			X (1)	X	
Hydraulic oil	Check	X				
	Change				X	
Hydraulic hoses	Check	X				
	Check/Change					X (3)
Hydraulic pump	Check			X (1) (4)		X (4)
Battery	Check	X				
Emergency Stop	Check	X				
Nuts, Bolts, Screws, Fittings	Check					X

*If heavy machine use, the service period may be less.

(1) After the first 50 hrs of use.
(2) Only to be performed by MEC or certified and authorised dealer.
(3) A thorough inspection is required. If hoses undamaged, may leave in service. However, replace hoses every 3 years of operation.
(4) Flow and Pressure Check is required.

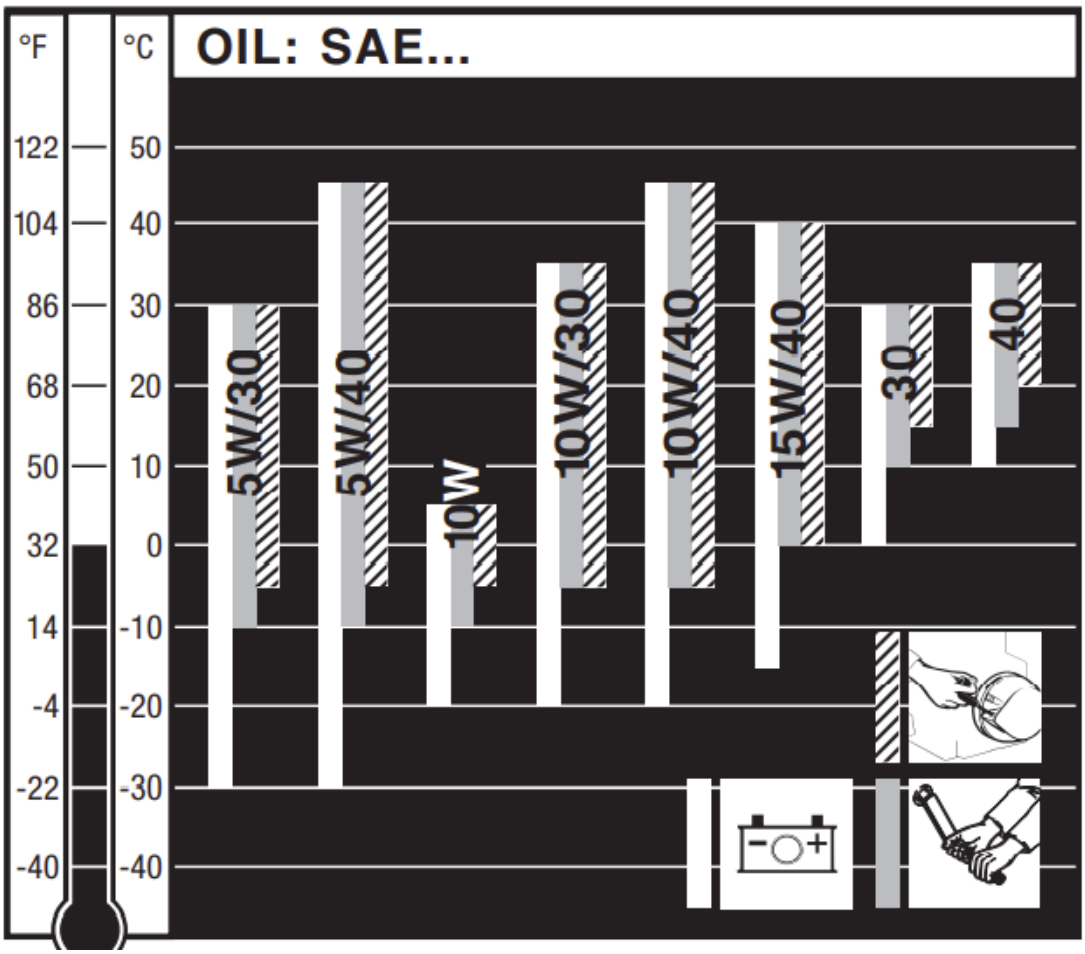
[1]Refer to engine manual for detailed engine instructions and requirements

11.4. Recommended Fluids

11.4.1. Engine Oil

Below are all the recommended engine oils based of ambient temperature.

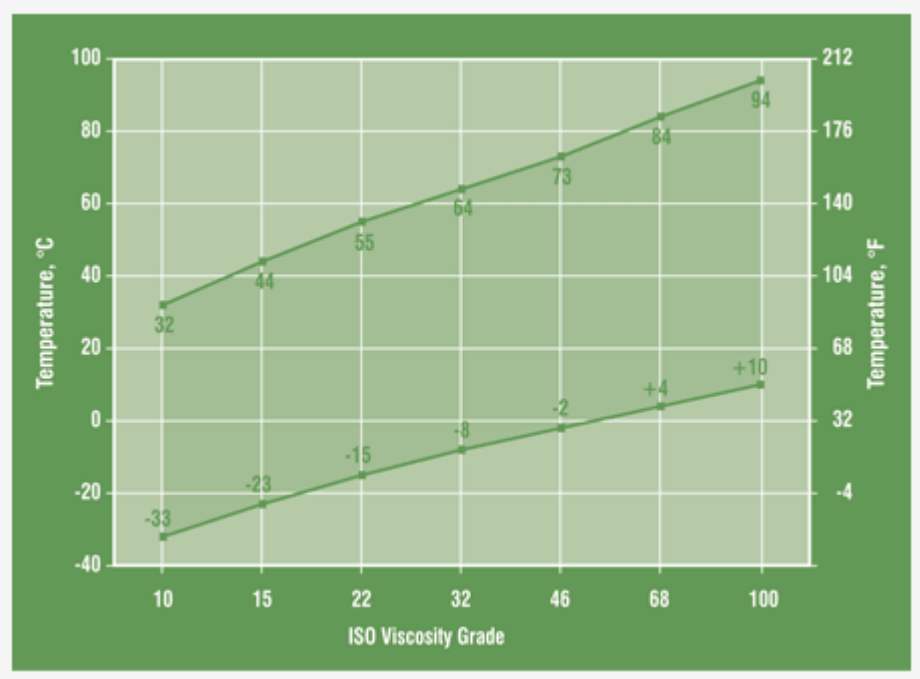
Unsuitable engine oil considerably reduces engine service life. Only use engine oil that fulfills the specifications stipulated below.



11.4.2. Hydraulic Oil

Below are all the recommended hydraulic oils viscosities based of ambient temperature.

Unsuitable hydraulic oil or using the wrong viscosity oil can considerably reduce hydraulic component service life and result in poor performance of tools. Only use hydraulic oil that fulfills the specifications stipulated below.



12. Troubleshooting[1]

PROBLEM	POSSIBLE CAUSE	CORRECTION
Engine won't start	Battery charge low (<11V)	Charge battery through "battery restart" poles
	Battery connections loose/not attached Battery terminals oxidized	Check battery connections
	Emergency stop pressed	Check for emergency warning on screen
	No engine oil	Check achieving oil pressure on screen when attempting to start Check engine oil
	No fuel	Check fuel quantity
	Fuel filter blocked	Check both fuel filters
	Fuel pump not functioning	Check cabling, listen for pump activating when attempting to start
	Fuel injection nozzle not functional	Contact MEC or Hatz
	Warning on screen	Check diagnostic screen for warnings. Accept warnings or investigate
	Faulty Starter	Check starter is getting current Contact MEC for replacement
	Faulty stater solenoid relay	Contact MEC
Engine won't start In cold temperatures	Pre glow defective (If fitted – optional extra)	Contact MEC
	Fuel gelled due to insufficient cold resistance.	Check whether the fuel that emerges from the fuel feed line is clear and not cloudy. Thaw the engine or drain the entire fuel supply system and change the fuel filter. Fill with a temperature-resistant fuel mixture
	Oil is too viscous and causes a too low starter speed	Change the engine oil. Add engine oil with a suitable viscosity class
	Insufficiently charged battery	Batteries require a higher voltage for starting in cold temperatures Batteries must be warmed to >0°C for starting
Engine shuts down while running	The tank ran out of fuel during operation	Check fuel quantity
	Fuel filter blocked	Check both fuel filters
	Tank vent is clogged	Ensure that the tank is sufficiently vented

[1]Refer to engine manual for detailed engine instructions and requirements

	Electrical wiring issue	Contact MEC
	Blown fuse	Check fuse panel
	Emergency stop pressed or system in error state	Check control panel
	Engine mechanical fault	Contact MEC
	Seized hydraulic pump	Check pump
	Blocked relief valve	Check valve
Engine loses power and RPM	Dirty / blocked air filter	Clean or replace
	Tappet clearance not OK	Contact MEC
	Injector nozzle not OK	Contact MEC
	The tank ran out of fuel during operation	Check fuel quantity
	Fuel filter blocked	Check both fuel filters
	Tank vent is clogged	Ensure that the tank is sufficiently vented
No hydraulic oil flow/little flow	No hydraulic oil	Check hydraulic oil level. Fill if required.
	Pressure and Tank (return) hoses interchanged	Check connection
	Couplers or hoses blocked	Remove restriction
	Filter blocked or old	Replace filter
	Hoses leaking	Check hoses and replace if required
	Contamination in valves	Check and clean or replace if required
	Pumps damaged	Check pump and replace if required
	Air obstruction	Remove obstruction to ensure sufficient air flow around heat exchanger
Hydraulic oil overheating	Incorrect oil for operating temperature	Replace oil with correct grade for operating conditions
	Dirty/old oil	Replace oil
	Oil temperature and pressure increase in hoses	Allow hoses to cool
Unable to connect hoses	Pressure stored in hoses	Allow hoses to cool down Ensure powerpack and workhead are returning to tank (not in function)
	Operation button in function position	Place workhead in neutral
Emergency stop does not work	Wiring and/or connections damaged	Inspect wiring and replace damaged parts
	Switch Damaged	Check/Replace switch
Worklights do not turn on	Blown fuse	Check fuse panel
	Defective relay	Check workhead and/or powerpack relays
	Deflective light	Check light on 12V Contact MEC for replacement

13. Further Documents

Please refer to the further documents within for drawing, risk assessment and other related information.

Further documents for the 143 Trackpack:

Document No.	Description	Type
143-OPRA	Operational Risk Assessment	Document
143-PRESSURE1	Trackpack pressure Setting Procedure (Old Version - Pre 2013)	Document
143-PRESSURE2	Trackpack pressure Setting Procedure (Current Version - Post 2013)	Document
108-215	Trolley to Power Pack Attachment	Drawing
143-48	Trackpack Boom Adjustment	Drawing
143-55	Trackpack Honda Electric Start	Drawing
143-56	Trackpack Yanmar Electric Start	Drawing
143-62	Trackpack Sticker Assembly	Drawing
143-63	Trackpack Hydraulic Circuit Diagram	Drawing
143-64	Honda Trackpack Electric Schematic	Drawing
143-65	Yanmar Trackpack Electric Schematic	Drawing
143-71	Trackpack Yanmar Electric Start with Purifier	Drawing
143-101	Honda Recoil Start Braked Trackpack	Drawing
143-141	Trackpack Honda Electric Start – Imperial Version (USA)	Drawing
143-270	Trackpack Kohler Electric Start – Imperial Version (USA)	Drawing

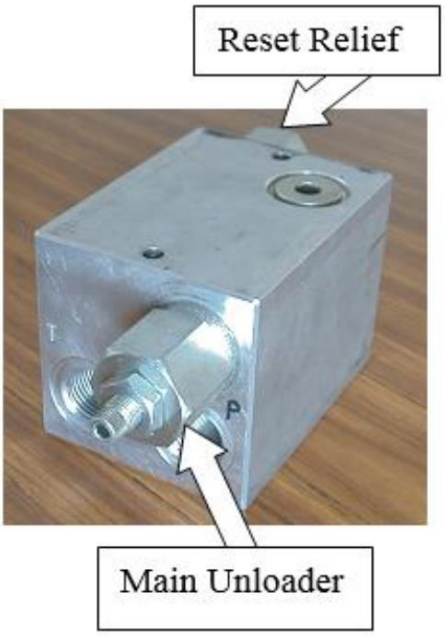
13.1. Trackpack pressure Setting Procedure (Old Version - Pre 2013)

143 - Trackpack (pre 2013) – Kick down Manifold Trackpack.

Test point	Pressure Setting (PSI)	Notes	Valve controlling pressure
N/A	2650	Kick down valve. Seen when cylinder reaches end of stroke.	Kick down
N/A	900	Pressure relief – Seen after the kick down has been reached.	Relief valve

To Set individual pressures

1) MEC recommend testing the trackpack on its own for most accurate results.
2) Connect the whip hoses together and connect a ball valve in between them with a pressure gauge on the pressure side. (See below photo)
3) Start the engine and place at full throttle.
4) To set the kick down cartridge slowly close the ball valve and watch the pressure build. Set the kick down point to 2650psi. A few attempts will be needed to set the correct pressure.
5) Next set the relief valve by closing the ball valve and wait until the kick down has dropped and set the secondary relief to 900psi.
6) The pressures should be set and the machine is ready to operate.



13.2 Trackpack pressure Setting Procedure (Current Version – Post 2013)

143 - Trackpack (post 2013) – Brake Manifold Trackpack.

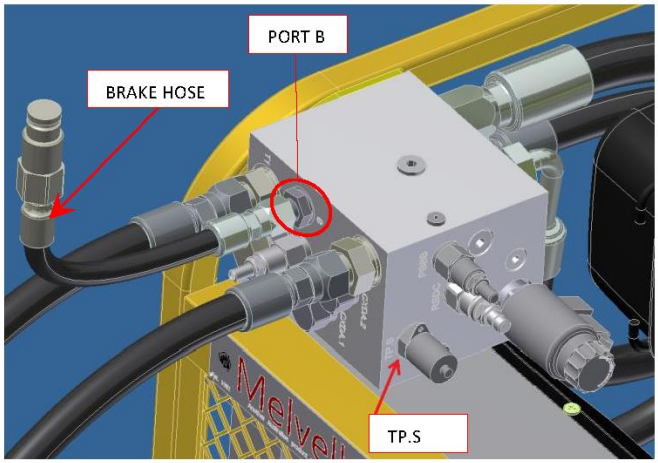
Test point	Pressure Setting (PSI)	Notes	Valve controlling pressure
(TP.S) - On Manifold face	3000	Maximum of 3000psi via stopping flow in supply hose via the use of a ball valve or similar.	RDBA
(N/A) - Brake Hose	300	Operating the brake trigger only	RSDC
(N/A) - Brake Hose	400	Operating the brake trigger only	PBBB

To Set individual pressures

1) Place a pressure gauge at test point (TP.S).

2) Place a pressure gauge in the brake hose. (Port B).

3) Connect the Trackpack to an MEC work head and add a ball valve in the supply hose.
4) Open the ball valve and start the power pack. Place at full throttle, and let the engine warm up.
5) To set the system pressure cartridge RDBA, close the ball valve and watch the pressure at TP.S. Set to 3000psi. (Note the engine may not be able to hold the 3000psi continuously. Once set, lock off the cartridge nut and open the ball valve.
6) Next wind the PBBB cartridge out completely (Counter clockwise).
7) Next wind the RSDC in (Clockwise) approximately 3 turns from completely out.
8) Press the brake trigger only, and watch pressure in the brake hose. Wind the PBBB cartridge in (Clockwise) until 400 psi is seen. Lock off the cartridge nut.
9) While still operating the brake trigger only, slowly wind the RSDC out (Counter clockwise) until 300psi is seen in the brake hose. Lock off the cartridge nut.
10) The pressures are now set and the machine is ready to operate.



13.3 Operational Risk Assessment

	Machine: FP-143 Spike Driver/FP-143 Trackpack							Form No.: :	
	ABN							Issue Date	18/07/2012
	WORKPLACE GENERIC HIRARC FORM							Version:	0

Company	**MELVELLE EQUIPMENT CORP**	**Department / Workplace:**	**Melvelle Offices**	**Date of Assessment 20-02-2012**	**Commenced:**	9am	**Completed:**	12md

Scope of Assessment: Identify the risks and hazards associated with the operation of a rail maintenance machine to remove rusted pandrol e-clips from in situ tracks.

Names of Risk Assessment Team: Gary Morris,	**Names of additional personnel consulted during Risk Assessment:**	**Identified limitations of risk assessment: Only applies to risks identified as part of the operation of the machine.**
		Information Sources / References: AS4024.1-2006 Safety of Machinery, AS4024-2601-Two Handed Control Device

RISK ASSESSMENT MATRIX

Potential Consequences			Likelihood				
			Almost Certain	Likely	Possible	Unlikely	Rare
Keyword	**Description Safety Health & Hygiene**	**Description Environmental**	*Expected to occur*	*Will occur occasionally*	*May Occur*	*Not expected to occur*	*Requires unusual chain of events*
Minor	First Aid Injury	On-site release immediately contained with business unit resources	**Medium 8**	**Medium 7**	**Low 3**	**Low 2**	**Low 1**
Significant	Medical Treated Injury or illness	On-site release or offsite release immediately contained with smelter resources	**High 14**	**Medium 10**	**Medium 9**	**Low 5**	**Low 4**
Serious	Lost Time Injury or illness	Off-site release causing nuisance or community complaint. Breach of license condition	**High 16**	**High 15**	**Medium 12**	**Medium 11**	**Low 6**
Severe	Fatality or Permanently disabling injury of illness	Off-site release with detrimental impact to environment or community. Repeated breach of license conditions	**Extreme 24**	**Extreme 22**	**High 20**	**High 18**	**Medium 13**
Disastrous	Multiple Fatalities or work-related fatal diseases	Toxic release off-site with detrimental impact to environment or community	**Extreme 25**	**Extreme 23**	**Extreme 21**	**High 19**	**High 17**

LEGEND	**ACTION REQUIRED**	**NOTIFY**
LOW 1-6	Tolerable - Manage by Routine Procedures	
MEDIUM 7-13	Risk reduction required to "As low as Reasonably Practicable" ALARP	Design Team/Engineer
HIGH 14-20	Immediate action required to reduce risk. Authorisation required before proceeding on task	CEO
EXTREME 21-25	Intolerable. Cease activity until controls in place to reduce risk. Immediate & urgent Senior Management Team action required	CEO

MANAGEMENT ACTIONS	
Comments	Refer to Action Plan
Risk Assessment Referred to:	Design Team
Risk Assessment Accepted by:	Andrew Melvelle
Risk Assessment findings recorded in the Project Design Folder	Design Team
Risk Assessment Findings communicated to:	Design Team, Melvelle Equipment Corp.

		Raw Risk Rating (no controls)				Residual Risk Rating (after controls)					
Ref no	Description / hazard / risk	Consequence (no controls)	Likelihood	Risk Level & Score	Controls	Consequence	Likelihood	Risk Level & Score	Is Risk Tolerable Y/N	Additional Controls Req	Action By / Name & date required
	Manual lifting of machine or segments of machine is dangerous to the operators back, and other areas	Serious	Likely	15	Use of lifting points for machines(crane) to lift the machine. No person to lift any machine at all	Serious	Rare	6	Y	Document lifting points	
	Weight at handles through incorrect trackpack setup causing strain on operator (trackpack only)	Significant	Likely	10	Correctly adjust trackpack pin location. Details shown in manual	Significant	Rare	4	Y	Documented in trackpack manual	
	Machine handles too low/high causing injury	Significant	Possible	9	Handles adjusted to the correct height. Procedure shown in manual	Significant	Rare	4	Y	Procedure shown in manual	
	Fluid levels too high causing overflow and low causing machine damage	Significant	Likely	10	Pre-start checklist requiring operator to check fluid levels before operating machine	Significant	Rare	4	Y	Pre start checklist	
	Exposure to hazardous materials such as fuel and oils	Significant	Likely	10	Hazardous material documentation in MSDS.	Significant	Rare	4	Y	MSDS	
	Fueling the fuel tank can lead to explosions, fires, and dangerous fumes being inhaled	Serious	Possible	12	Engine must only be re-filled when the power pack is stopped and in well ventilated area	Serious	Rare	6	Y		
	Injury can occur through connection of quick snap connections	Minor	Possible	3	Must be connected parellel to each other.	Minor	Rare	1	Y		
	General machine operation	Significant	Likely	10	Procedures developed such as prestart checklist	Significant	Rare	4	Y	Pre start checklist	
	Injury through oil injection through hydraulic failure	Serious	Possible	12	Checking of all hydraulics eg Hose's for damage	Serious	Rare	6	Y	Procedure on hose checks	
	Loud noise from engine and machine causing permanent hearing damage	Serious	Likely	15	Manufacturer specifications rate the motor at 94dba at 1m.Motor fitted with muffler. Operator required to wear hearing protection.	Serious	Unlikely	11	Y		

		Raw Risk Rating (no controls)				Residual Risk Rating (after controls)					
Ref no	Description / hazard / risk	Consequence (no controls)	Likelihood	Risk Level & Score	Controls	Consequence	Likelihood	Risk Level & Score	Is Risk Tolerable Y/N	Additional Controls Req	Action By / Name & date required
	Serious burns can occur through the touching of hot surfaces	Significant	Likely	10	Include warning signs. Include warnings in training and operating manuals.	Significant	Unlikely	5	Y	Warning sticker list	
	Battery contains corrosive material. Operator can be exposed to injury from battery acid spills	Serious	Possible	12	Batteries securely mounted.Wear protective clothing when handling battery.	Serious	Rare	6	Y		
	Trip hazard through ballast and loose items on rail way	Significant	Likely	10	Correct training in railway safety	Significant	rare	4	Y	Railway Safety	
	Crushing injury through falling machine if incorrectly supported	Serious	Likely	15	Correctly secured to rail trolley and powerpack (if applicabe)	Serious	Rare	6	Y		
	Pinch points exist through the connection of power pack to trolley and powerpack to work head	Significant	Possible	9	Procedure shown on connection of powerpack, trolley, and work head. Gloves to be worn	Significant	Unlikely	5	Y	procedure shown in connection of items	

13.4 Trolley to Power Pack Attachment

LOWERING POWERPACK AND WORK HEAD ONTO TROLLEY

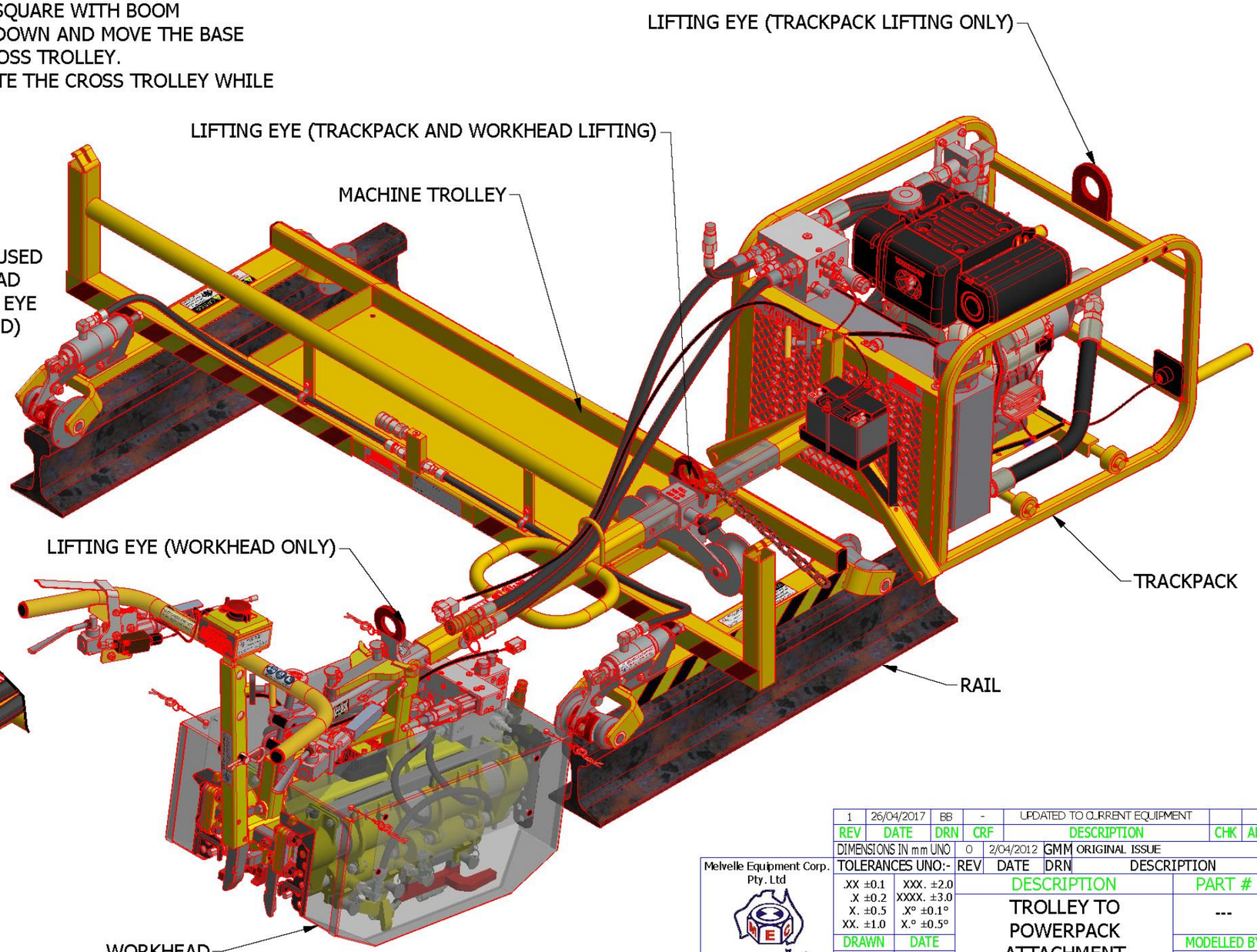
1. PLACE TROLLEY ONTO RAIL
2. LIFT POWERPACK AND WORKHEAD BY LIFTING EYE AS SHOWN
3. ROTATE CROSS TROLLEY UNTIL SQUARE WITH BOOM
4. SLOWLY LOWER THE ASSEMBLY DOWN AND MOVE THE BASE TROLLEY TO LINE UP WITH THE CROSS TROLLEY.

NOTE: DO NOT ATTEMPT TO ROTATE THE CROSS TROLLEY WHILE MACHINE IS BEING LOWERED.

NOTE

*SAME LIFTING PROCEDURE USED REGARDLESS OF WORKHEAD BEING USED

* WHEN LIFTING COMBINE WORKHEAD AND TRACKPACK LIFT FROM CENTER EYE ONLY (ENSURE BOOM PIN IS SECURED)



TRACKPACK TO WORK HEAD CONNECTION

REV	DATE	DRN	CRF	DESCRIPTION	CHK	APP
1	26/04/2017	BB	-	UPDATED TO CURRENT EQUIPMENT		
DIMENSIONS IN mm UNO			0	2/04/2012 GMM ORIGINAL ISSUE		

TOLERANCES UNO:-		REV	DATE	DRN	DESCRIPTION
.XX ±0.1	XXX. ±2.0				
.X ±0.2	XXXX. ±3.0				
X. ±0.5	.X° ±0.1°				
XX. ±1.0	X.° ±0.5°				

DESCRIPTION	PART #
TROLLEY TO POWERPACK ATTACHMENT	---

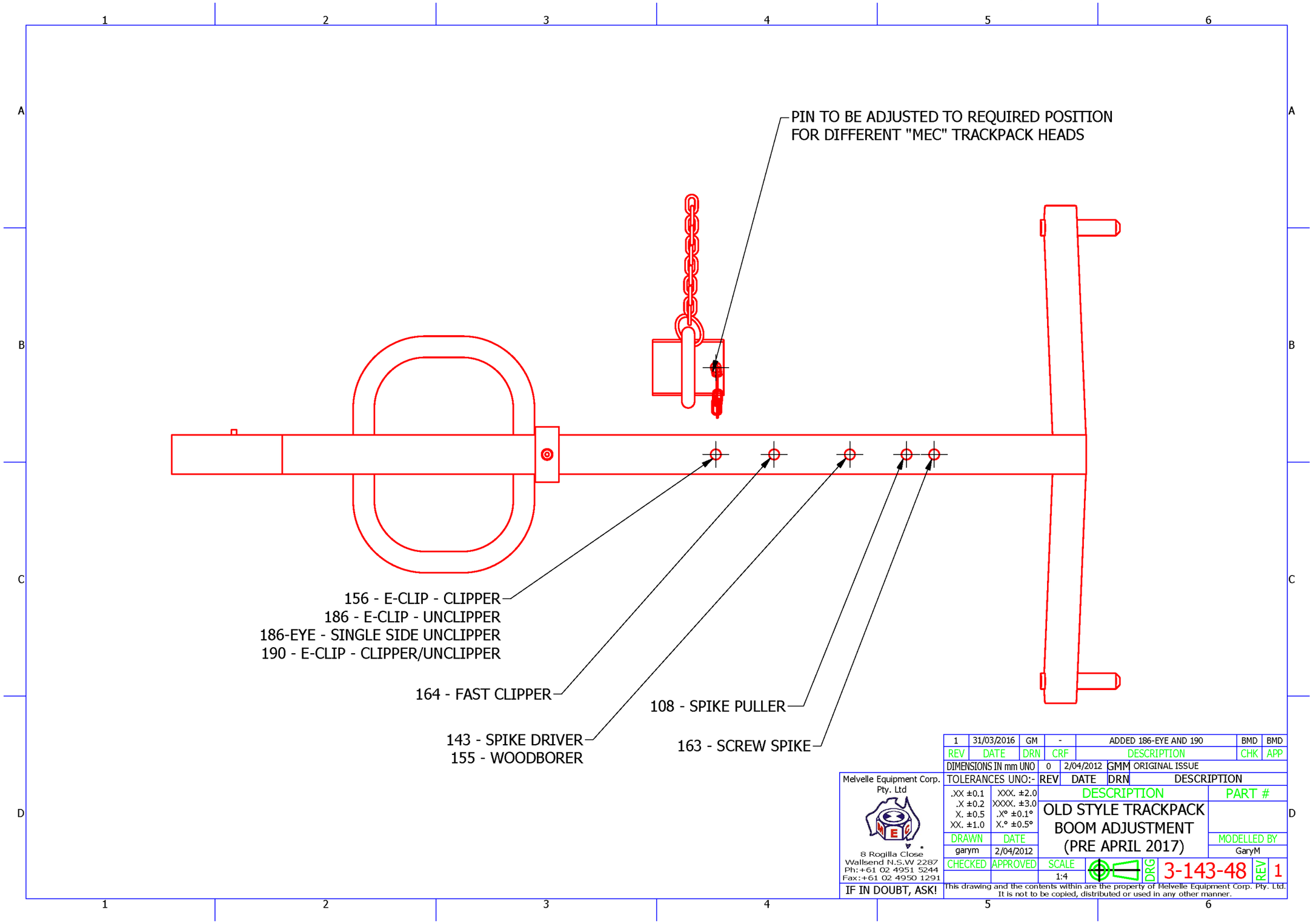
DRAWN	DATE	MODELLED BY
garym	2/04/2012	garym

CHECKED	APPROVED	SCALE	DRG	REV
		1:8	3-108-215	1

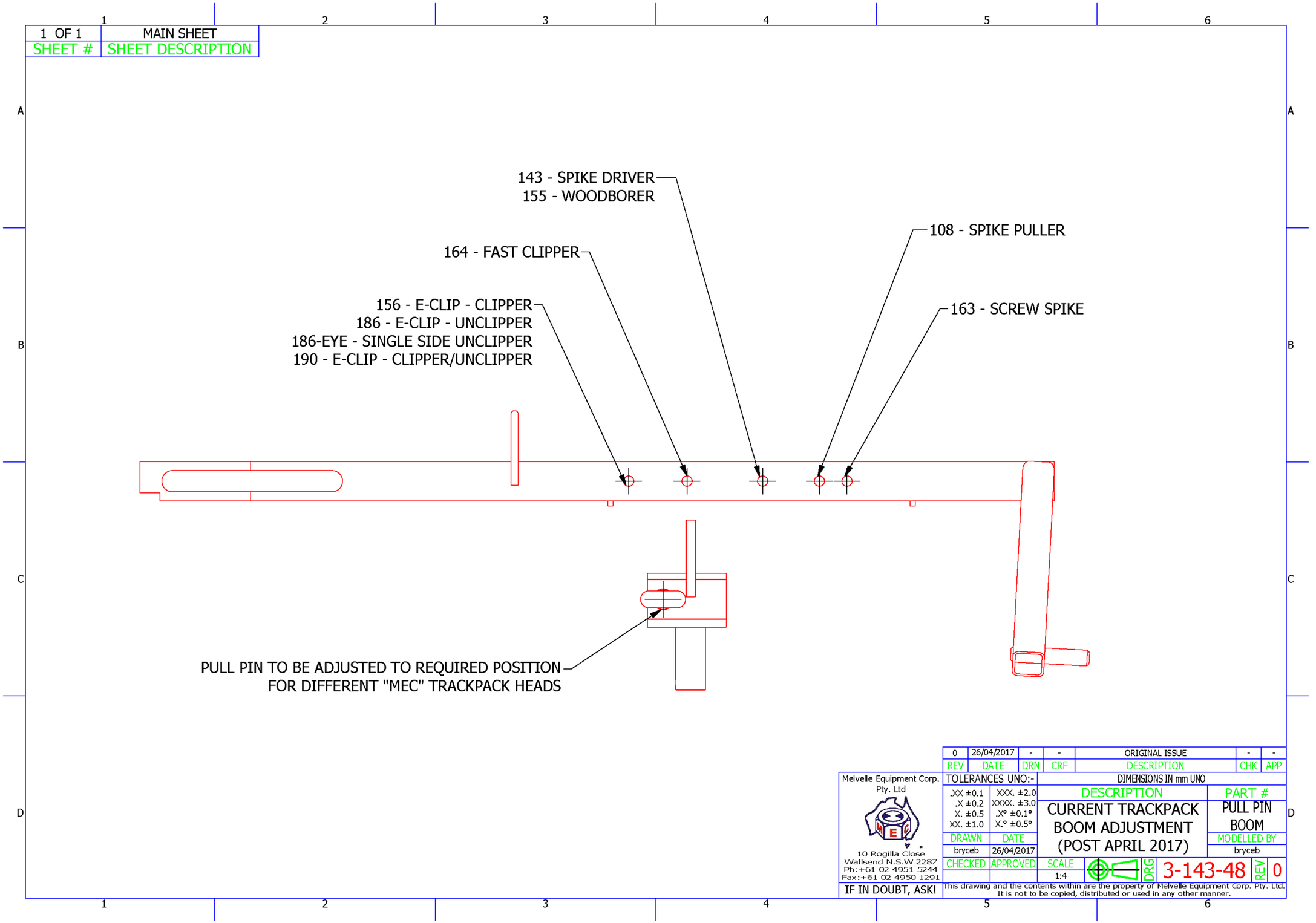
Melvelle Equipment Corp. Pty. Ltd
8 Rogilla Close
Wallsend N.S.W 2287
Ph:+61 02 4951 5244
Fax:+61 02 4950 1291

IF IN DOUBT, ASK!

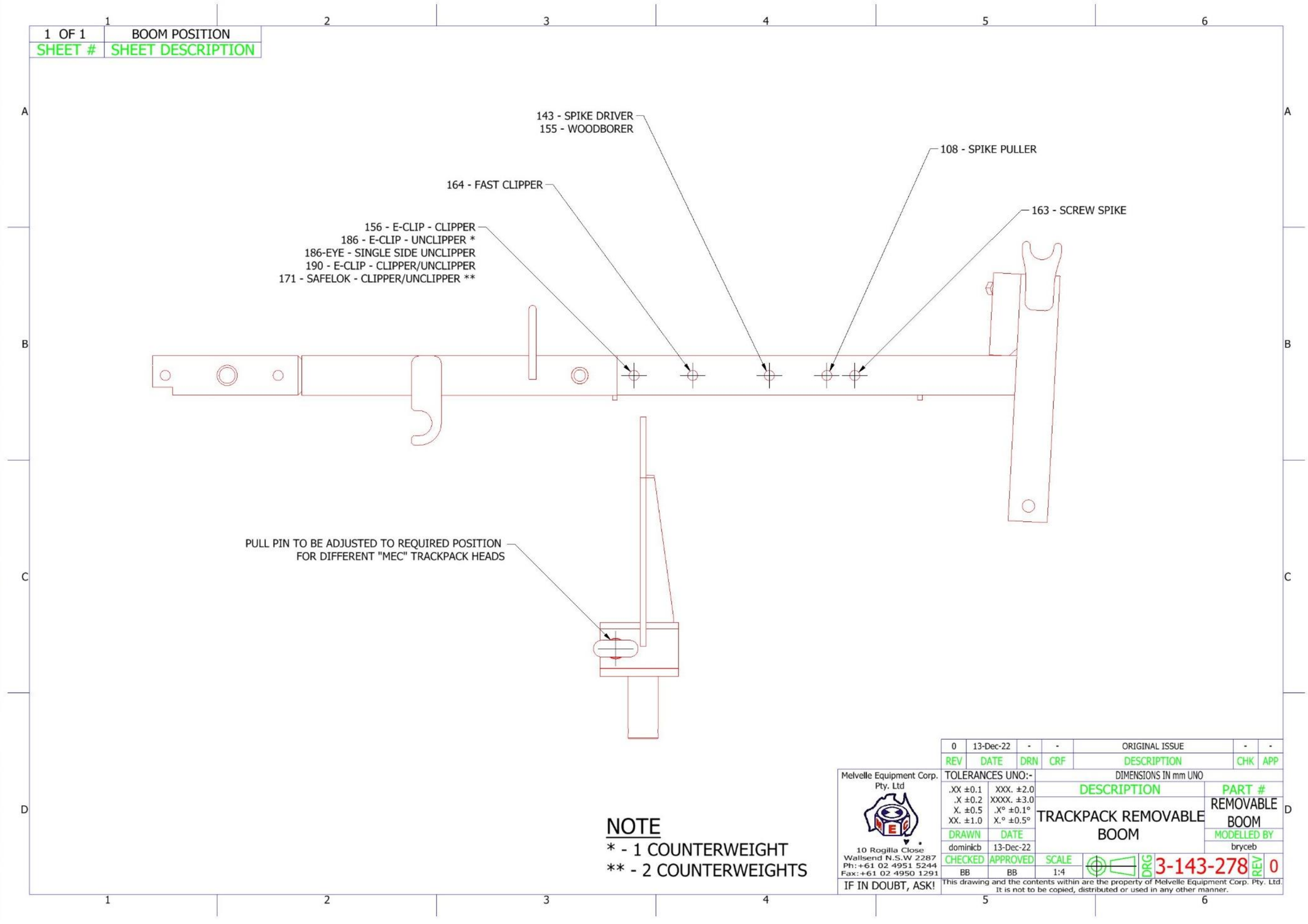
13.5 Trackpack Boom Adjustment (Old Version – Pre April 2017)



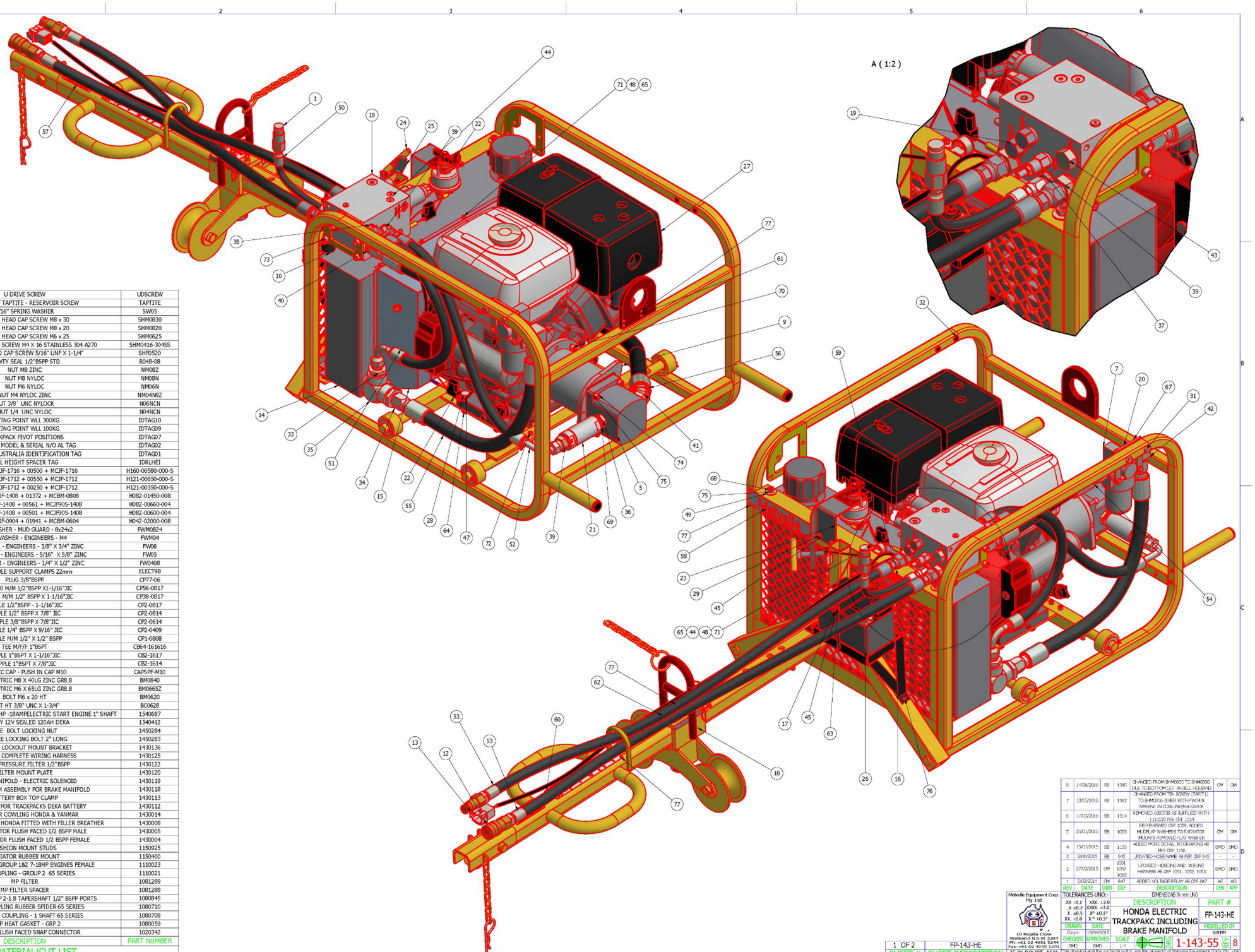
13.6 Trackpack Boom Adjustment (Current Version – Post April 2017)



13.7 Trackpack Boom Adjustment (Removable Boom)



13.8 Trackpack Honda Electric Start



ITEM	QTY	DESCRIPTION	PART NUMBER
		MATERIAL/CUT LIST	
1	1	MALE 3/8" FLUSH FACED SNAP CONNECTOR	1020342
2	1	PUMP HEAT GASKET - GRP 2	1080059
3	1	ENGINE HALF COUPLING - 1 SHAFT 65 SERIES	1080708
4	1	ENGINE COUPLING RUBBER SPIDER 65 SERIES	1080710
5	1	PUMP 8.2cc GROUP 2-1 8 TAPERSHAFT 1/2" BSPP PORTS	1080845
6	2	MP FILTER SPACER	1081288
7	1	MP FILTER	1081289
8	1	PUMP COUPLING - GROUP 2 65 SERIES	1110021
9	1	BELL HOUSING - GROUP 1&2 7-18HP ENGINES FEMALE	1110023
10	4	RADIATOR RUBBER MOUNT	1150400
11	8	CUSHION MOUNT STUDS	1150925
12	1	SNAP CONNECTOR FLUSH FACED 1/2 BSPP FEMALE	1430004
13	1	SNAP CONNECTOR FLUSH FACED 1/2 BSPP MALE	1430005
14	1	COOLER/RADIATOR - HONDA FITTED WITH FILLER BREATHER	1430008
15	1	COOLER AIR COWLING HONDA & YANMAR	1430014
16	1	BATTERY BOX FOR TRACKPACKS DEKA BATTERY	1430112
17	1	BATTERY BOX TOP CLAMP	1430113
18	1	ROLL BAR/BOOM ASSEMBLY FOR BRAKE MANIFOLD	1430118
19	1	BRAKE MANIFOLD - ELECTRIC SOLENOID	1430119
20	1	FILTER MOUNT PLATE	1430120
21	1	IN-LINE PRESSURE FILTER 1/2" BSPP	1430122
22	1	HONDA TP COMPLETE WIRING HARNESS	1430125
23	1	BATTERY LOCKOUT MOUNT BRACKET	1430136
24	1	1/2" TEE LOCKING BOLT 2" LONG	1450283
25	1	TEE BOLT LOCKING NUT	1450284
26	1	BATTERY 12V SEALED 120AH DEKA	1540412
27	1	HONDA ENGINE GX390 13HP -18AMPELECTRIC START ENGINE 1" SHAFT	1540687
28	4	BOLT HT 3/8" UNC X 1-3/4"	BC0628
29	2	BOLT M6 x 20 HT	BM0620
30	2	BOLT METRIC M6 X 65LG ZINC GR8.8	BM0665Z
31	2	BOLT METRIC M8 X 40LG ZINC GR8.8	BM0840
32	4	PLASTIC CAP - PUSH IN CAP M10	CAPSPF-M10
33	1	NIPPLE 1"BSPT X 7/8"JIC	CB2-1614
34	2	NIPPLE 1"BSPT X 1-1/16"JIC	CB2-1617
35	1	TEE M/F/F 1"BSPT	CB64-161616
36	1	NIPPLE M/M 1/2" X 1/2" BSPP	CP1-0808
37	1	NIPPLE 1/4" BSPP X 9/16" JIC	CP2-0409
38	1	NIPPLE 3/8"BSPP X 7/8"JIC	CP2-0614
39	4	NIPPLE 1/2" BSPP X 7/8" JIC	CP2-0814
40	2	NIPPLE 1/2"BSPP - 1-1/16"JIC	CP2-0817
41	1	ELBOW 45 M/M 1/2" BSPP X 1-1/16"JIC	CP38-0817
42	1	ELBOW 90 M/M 1/2"BSPP X1-1/16"JIC	CP56-0817
43	1	PIPE/CABLE SUPPORT CLAMPS 22mm	ELECT98
44	1	PLUG 3/8"BSPP	CP77-06
45	10	FLAT WASHER - ENGINEERS - 1/4" X 1/2" ZINC	FW0408
46	8	FLAT WASHER - ENGINEERS - 5/16" X 5/8" ZINC	FW05
47	8	FLAT WASHER - ENGINEERS - 3/8" X 3/4" ZINC	FW06
48	9	FLAT WASHER - ENGINEERS - M4	FWM04
49	2	FLAT WASHER - MUD GUARD - 8x24x2	FWM0824
50	1	H042 + MCJF-0904 + 01941 + MCBM-0604	H042-02000-008
51	1	H082 + MCJF-1408 + 00501 + MCJP905-1408	H082-00600-004
52	1	H082 + MCJF-1408 + 00561 + MCJP905-1408	H082-00660-004
53	2	H082 + MCJF-1408 + 01372 + MCBM-0808	H082-01450-008
54	1	H121 + MCJF-1712 + 00250 + MCJF-1712	H121-00350-000-S
55	1	H121 + MCJF-1712 + 00550 + MCJF-1712	H121-00650-000-S
56	1	H161 + MCJF-1716 + 00500 + MCJF-1716	H160-00580-000-S
57	1	RAIL HEIGHT SPACER TAG	IDRLHEI
58	1	MELVELLE AUSTRALIA IDENTIFICATION TAG	IDTAG01
59	1	MELVELLE MODEL & SERIAL N/O AL TAG	IDTAG02
60	1	TRACKPACK PIVOT POSITIONS	IDTAG07
61	1	LIFTING POINT WLL 100KG	IDTAG09
62	1	LIFTING POINT WLL 300KG	IDTAG10
63	2	NUT 1/4 UNC NYLOC	N04NCN
64	4	NUT 3/8` UNC NYLOCK	N06NCN
65	9	NUT M4 NYLOC ZINC	NM04NBZ
66	6	NUT M6 NYLOC	NM06N
67	2	NUT M8 NYLOC	NM08N
68	8	NUT M8 ZINC	NM08Z
69	1	DOWTY SEAL 1/2"BSPP STD	R04B-08
70	4	SOCKET HEAD CAP SCREW 5/16" UNF X 1-1/4"	SHF0520
71	9	SOCKET HEAD CAP SCREW M4 X 16 STAINLESS 304 A270	SHM0416-304SS
72	2	SOCKET HEAD CAP SCREW M6 x 25	SHM0625
73	4	SOCKET HEAD CAP SCREW M8 x 20	SHM0820
74	4	SOCKET HEAD CAP SCREW M8 x 30	SHM0830
75	20	5/16" SPRING WASHER	SW05
76	5	TEK SCREW TAPTITE - RESERVOIR SCREW	TAPTITE
77	24	U DRIVE SCREW	UDSCREW

REV	DATE	DRN	ORF	DESCRIPTION	CHK	APP
8	14/06/2016	BB	1395	CHANGED FROM SHM0835 TO SHM0830 DUE TO BOTTOM OUT IN BELL HOUSING	GM	GM
7	13/05/2016	BB	1362	CHANGED FROM "TEK SCREW (TAPTITE)" TO SHM0816-30HSS WITH FW08 & NYMONC IN COWLING/RADIATOR		
6	17/03/2016	BB	1314	REMOVED 1080728 AS SUPPLIED WITH 1110332 PER ORF 1314		
5	25/01/2016	BB	1059	RB REVISED ORF 1059, ADDED M6 CAP WASHERS TO RADIATOR MOUNTS REMOVED FLAT WASHER	GM	GM
4	15/07/2015	BB	1156	ADDED MORE DETAIL TO DRAWING AS PER ORF 1156	BMD	BMD
3	2/06/2015	BB	945	UPDATED HOSE NAME AS PER ORF 945	-	-
2	27/03/2015	GM	1051 1052 1053	UPDATED HOSEING AND WIRING HARNESS AS ORF 1051, 1052, 1053	BMD	BMD
1	5/02/2014	GM	847	ADDED VOLTAGE RELAY AS ORF 847	AC	AG

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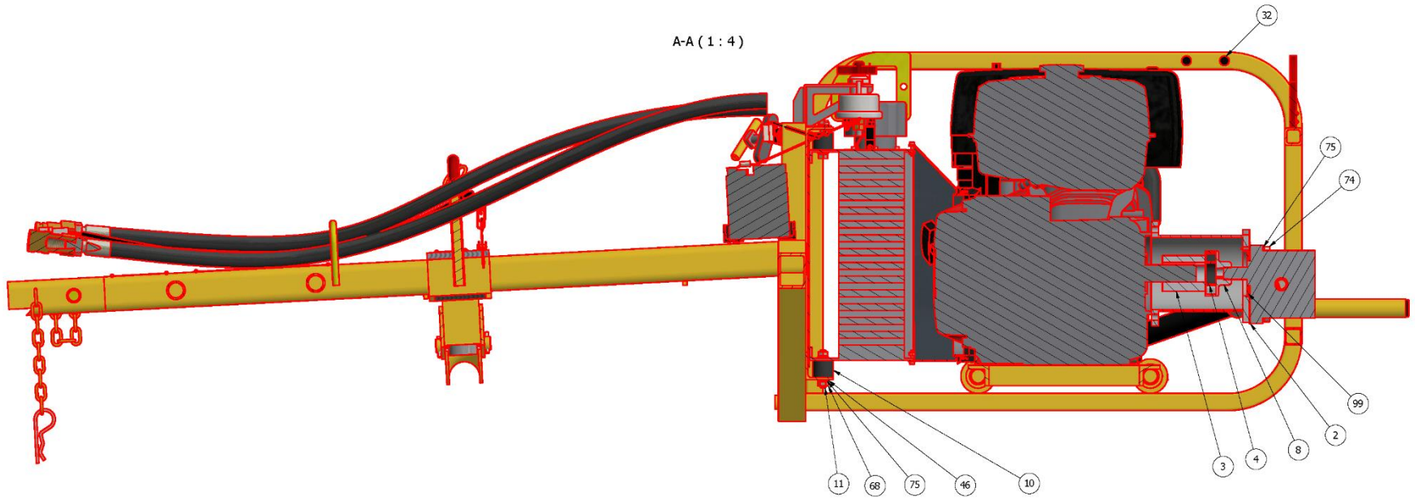
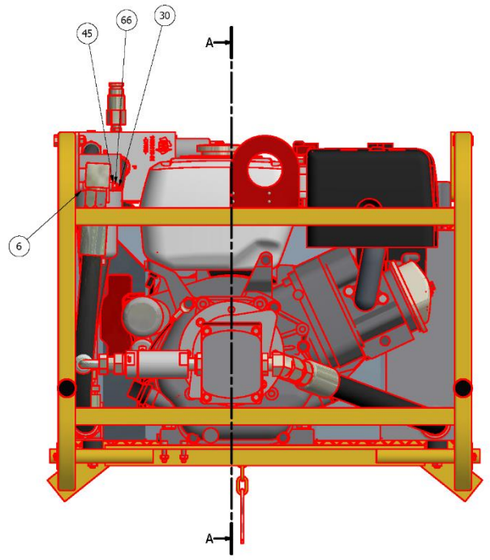
TOLERANCES UNO:- DIMENSIONS IN mm UNO
.XX ±0.1 XXX. ±2.0
.X ±0.2 XXXX. ±3.0
X. ±0.5 X° ±0.1°
XX. ±1.0 X.° ±0.5°

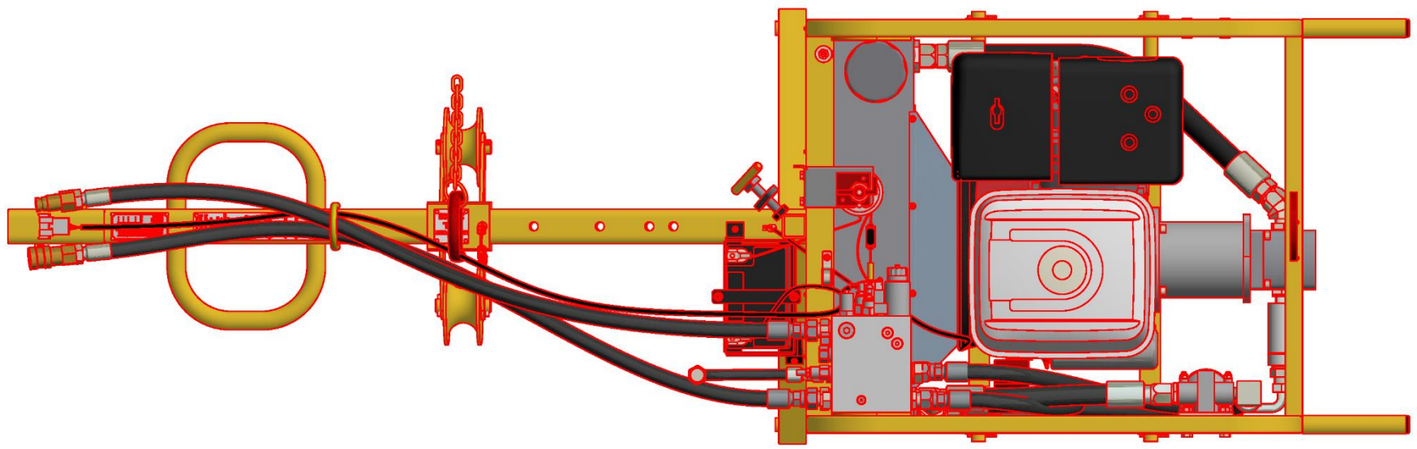
DESCRIPTION: HONDA ELECTRIC TRACKPAKC INCLUDING BRAKE MANIFOLD
PART #: FP-143-HE
MODELLED BY: garym
DRAWN: Gaym 18/04/2013
CHECKED: BMD APPROVED: BMD
SCALE: 1:4
SIZE: A3
DWG NO: 1-143-55
REV: 8

1 OF 2 | FP-143-HE
SHEET # | SHEET DESCRIPTION
IF IN DOUBT, ASK!

A-A (1 : 4)







REV	DATE	DRN	DESCRIPTION	CHK	APP
8	14/06/2016		CHANGED FROM SHIMDERS TO SHIM030 DUE TO BOTTOM OUT IN BELL HOUSING	BMD	BMD
7	13/05/2016	EB	CHANGED FROM TEK SCREW (TAPIT1) TO SHIM2016-30HSS WITH FWD4 & NMXHNZ IN COWLING/RADIATOR		
6	17/03/2016	EB	REMOVED 1080726 AS SUPPLIED WITH 1110228 PER CRF 1214		
5	25/01/2016	EB	RE-REVIEWED CRF 1059, ADDED MUDFLAP WASHERS TO RADIATOR MOUNTS REMOVED FLAT WASHER	GM	GM
4	15/07/2015	EB	ADDED MORE DETAIL TO DRAWING AS PER CRF 1126	BMD	BMD
3	2/06/2015	EB	UPDATED HOSE NAME AS PER CRF 945		
2	27/03/2015	GM	UPDATED HOSEING AND WIRING HARNESS AS CRF 1051, 1052, 1053	BMD	BMD
1	5/03/2014	GM	ADDED VOLTAGE RELAY AS CRF 847	AG	AG

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TOLERANCES UNO:- DIMENSIONS IN mm UNO
XX ±0.1 XXX. ±2.0
X ±0.2 XXXX. ±3.0
X. ±0.5 X° ±0.1°
XX. ±1.0 X.° ±0.5°

DESCRIPTION: HONDA ELECTRIC TRACKPAKC INCLUDING BRAKE MANIFOLD
PART #: FP-143-HE
DRAWN: gprm 18/04/2013
MODELLED BY:
CHECKED: BMD APPROVED: BMD SCALE: 1:4
DWG: 1-143-55 REV: 8

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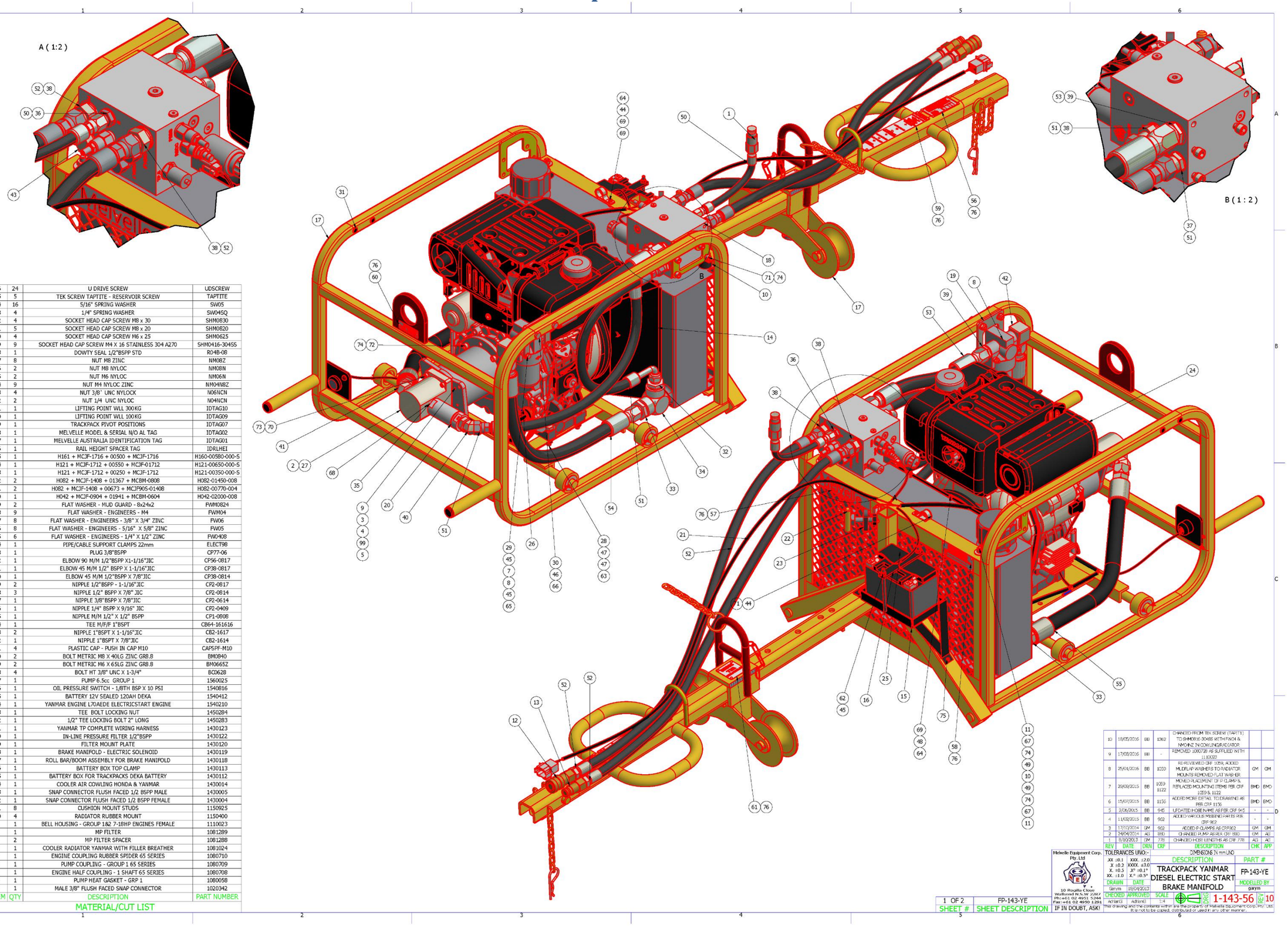
2 OF 2	FP-143-HE	IF IN DOUBT, ASK
SHEET #	SHEET DESCRIPTION	

13.9 Trackpack Yanmar Electric Start



ITEM	QTY	DESCRIPTION	PART NUMBER
76	24	U DRIVE SCREW	UDSCREW
75	5	TEK SCREW TAPTITE - RESERVOIR SCREW	TAPTITE
74	16	5/16" SPRING WASHER	SW05
73	4	1/4" SPRING WASHER	SW04SQ
72	4	SOCKET HEAD CAP SCREW M8 x 30	SHM0830
71	5	SOCKET HEAD CAP SCREW M8 x 20	SHM0820
70	4	SOCKET HEAD CAP SCREW M6 x 25	SHM0625
69	9	SOCKET HEAD CAP SCREW M4 X 16 STAINLESS 304 A270	SHM0416-304SS
68	1	DOWTY SEAL 1/2"BSPP STD	R04B-08
67	8	NUT M8 ZINC	NM08Z
66	2	NUT M8 NYLOC	NM08N
65	2	NUT M6 NYLOC	NM06N
64	9	NUT M4 NYLOC ZINC	NM04N8Z
63	4	NUT 3/8" UNC NYLOCK	N06NCN
62	2	NUT 1/4 UNC NYLOC	N04NCN
61	1	LIFTING POINT WLL 300KG	IDTAG10
60	1	LIFTING POINT WLL 100KG	IDTAG09
59	1	TRACKPACK PIVOT POSITIONS	IDTAG07
58	1	MELVELLE MODEL & SERIAL N/O AL TAG	IDTAG02
57	1	MELVELLE AUSTRALIA IDENTIFICATION TAG	IDTAG01
56	1	RAIL HEIGHT SPACER TAG	IDRLHEI
55	1	H161 + MCJF-1716 + 00500 + MCJF-1716	H160-00580-000-S
54	1	H121 + MCJF-1712 + 00550 + MCJF-01712	H121-00650-000-S
53	1	H121 + MCJF-1712 + 00250 + MCJF-1712	H121-00350-000-S
52	2	H082 + MCJF-1408 + 01367 + MCBM-0808	H082-01450-008
51	2	H082 + MCJF-1408 + 00673 + MCJF90S-01408	H082-00770-004
50	1	H042 + MCJF-0904 + 01941 + MCBM-0604	H042-02000-008
49	2	FLAT WASHER - MUD GUARD - 8x24x2	FWM0824
48	9	FLAT WASHER - ENGINEERS - M4	FWM04
47	8	FLAT WASHER - ENGINEERS - 3/8" X 3/4" ZINC	FW06
46	8	FLAT WASHER - ENGINEERS - 5/16" X 5/8" ZINC	FW05
45	6	FLAT WASHER - ENGINEERS - 1/4" X 1/2" ZINC	FW0408
44	1	PIPE/CABLE SUPPORT CLAMPS 22mm	ELECT98
43	1	PLUG 3/8"BSPP	CP77-06
42	1	ELBOW 90 M/M 1/2"BSPP X1-1/16"JIC	CP56-0817
41	1	ELBOW 45 M/M 1/2" BSPP X 1-1/16"JIC	CP38-0817
40	1	ELBOW 45 M/M 1/2"BSPP X 7/8"JIC	CP38-0814
39	2	NIPPLE 1/2"BSPP - 1-1/16"JIC	CP2-0817
38	3	NIPPLE 1/2" BSPP X 7/8" JIC	CP2-0814
37	1	NIPPLE 3/8"BSPP X 7/8"JIC	CP2-0614
36	1	NIPPLE 1/4" BSPP X 9/16" JIC	CP2-0409
35	1	NIPPLE M/M 1/2" X 1/2" BSPP	CP1-0808
34	1	TEE M/F/F 1"BSPT	CB64-161616
33	2	NIPPLE 1"BSPT X 1-1/16"JIC	CB2-1617
32	1	NIPPLE 1"BSPT X 7/8"JIC	CB2-1614
31	4	PLASTIC CAP - PUSH IN CAP M10	CAPSPF-M10
30	2	BOLT METRIC M8 X 40LG ZINC GR8.8	BM0840
29	2	BOLT METRIC M6 X 65LG ZINC GR8.8	BM0665Z
28	4	BOLT HT 3/8" UNC X 1-3/4"	BO3628
27	1	PUMP 6.5cc GROUP 1	1560025
26	1	OIL PRESSURE SWITCH - 1/8TH BSP X 10 PSI	1540B16
25	1	BATTERY 12V SEALED 120AH DEKA	1540412
24	1	YANMAR ENGINE L70AEDE ELECTRICSTART ENGINE	1540210
23	1	TEE BOLT LOCKING NUT	1450284
22	1	1/2" TEE LOCKING BOLT 2" LONG	1450283
21	1	YANMAR TP COMPLETE WIRING HARNESS	1430123
20	1	IN-LINE PRESSURE FILTER 1/2"BSPP	1430122
19	1	FILTER MOUNT PLATE	1430120
18	1	BRAKE MANIFOLD - ELECTRIC SOLENOID	1430119
17	1	ROLL BAR/BOOM ASSEMBLY FOR BRAKE MANIFOLD	1430118
16	1	BATTERY BOX TOP CLAMP	1430113
15	1	BATTERY BOX FOR TRACKPACKS DEKA BATTERY	1430112
14	1	COOLER AIR COWLING HONDA & YANMAR	1430014
13	1	SNAP CONNECTOR FLUSH FACED 1/2 BSPP MALE	1430005
12	1	SNAP CONNECTOR FLUSH FACED 1/2 BSPP FEMALE	1430004
11	8	CUSHION MOUNT STUDS	1150925
10	4	RADIATOR RUBBER MOUNT	1150400
9	1	BELL HOUSING - GROUP 1&2 7-18HP ENGINES FEMALE	1110023
8	1	MP FILTER	1081289
7	2	MP FILTER SPACER	1081288
6	1	COOLER RADIATOR YANMAR WITH FILLER BREATHER	1081024
5	1	ENGINE COUPLING RUBBER SPIDER 65 SERIES	1080710
4	1	PUMP COUPLING - GROUP 1 65 SERIES	1080709
3	1	ENGINE HALF COUPLING - 1 SHAFT 65 SERIES	1080708
2	1	PUMP HEAT GASKET - GRP 1	1080058
1	1	MALE 3/8" FLUSH FACED SNAP CONNECTOR	1020342

MATERIAL/CUT LIST

REV	DATE	DRN	CRF	DESCRIPTION	CHK	APP
10	18/05/2016	BB	1262	CHANGED FROM TEK SCREW (TAPTITE) TO SHM0816-304SS WITH FWO4 & NM04NZ IN COWLINGS/RADIATOR		
9	17/08/2016	BB	-	REMOVED J060728 AS SUPPLIED WITH 1130223		
8	25/01/2016	BB	1059	RE-REVIEWED CRF 1059, ADDED MUDFLAP WASHERS TO RADIATOR MOUNTS REMOVED FLAT WASHER	GM	GM
7	29/09/2015	BB	1059 1122	MOVED ALIGNMENT OF P CLAMPS & REPLACED MOUNTING ITEMS PER CRF 1059 & 1122	BMD	BMD
6	15/07/2015	BB	1156	ADDED MORE DETAIL TO DRAWING AS PER CRF 1156	BMD	BMD
5	2/06/2015	BB	945	UPDATED HOSE NAME AS PER CRF 945	-	-
4	11/02/2015	BB	902	ADDED VARIOUS WASHERS PARTS PER CRF 902	-	-
3	17/12/2014	GM	902	ADDED P CLAMPS AS CRF902	GM	GM
2	24/04/2014	AD	880	CHANGED PUMP ASHER QTY 880	GM	AD
1	8/10/2013	GM	778	CHANGED HOSE LENGTHS AS CRF 778	AD	AD

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TOLERANCES UNO:- DIMENSIONS IN mm UNO
XX ±0.1 XXX ±2.0
X ±0.2 XXXX ±3.0
X. ±0.5 X° ±0.1°
XX ±1.0 X.° ±0.5°

DESCRIPTION: TRACKPACK YANMAR DIESEL ELECTRIC START BRAKE MANIFOLD
PART #: FP-143-YE
MODELLED BY: garym
DRAWN: Garym 18/04/2013
CHECKED: Action3
APPROVED: Action3
SCALE: 1:4
SIZE: A3
1-143-56
REV: 10

1 OF 2 | FP-143-YE
SHEET # | SHEET DESCRIPTION

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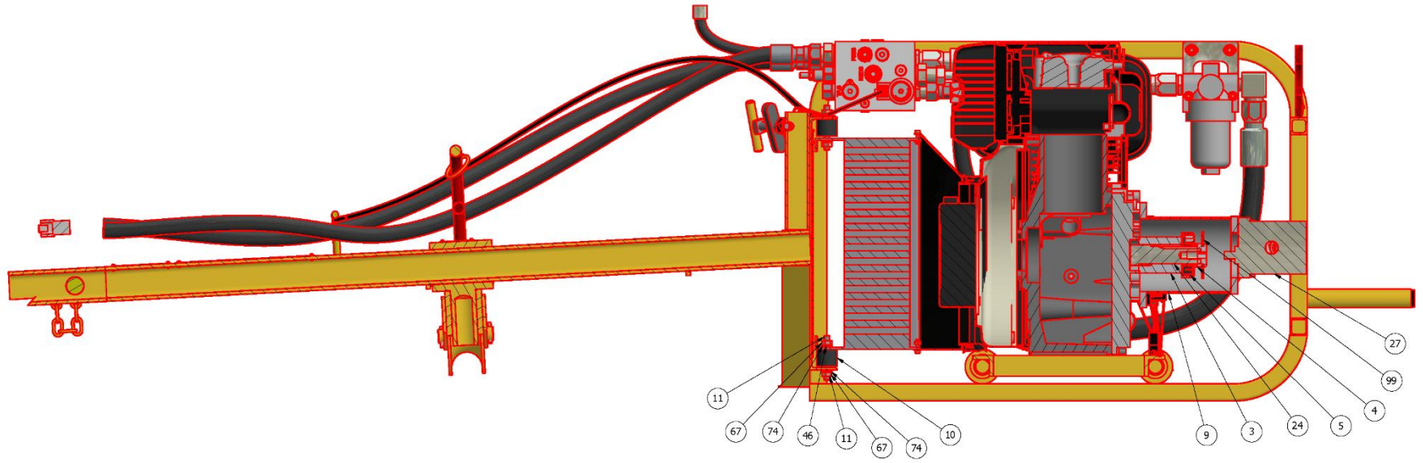
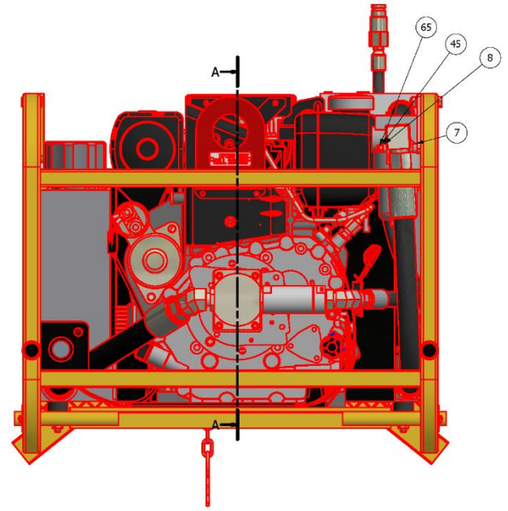
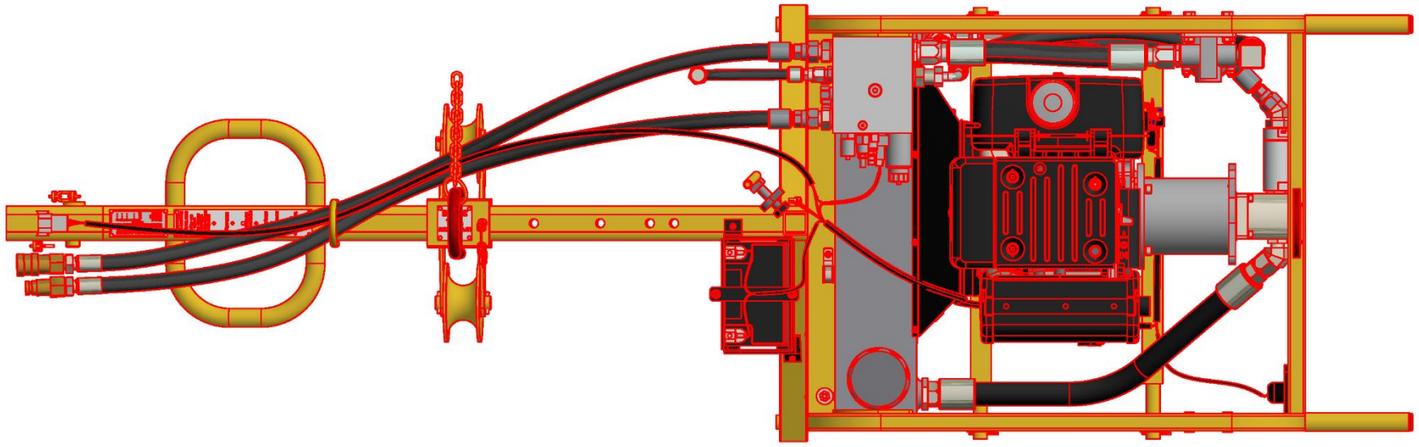
A-A (1 : 4)







REV	DATE	DRN	ORF	DESCRIPTION	CHK	APP
10	19/05/2016	BB	1362	CHANGED FROM TEK SCREW (TAPIT1) TO SI-M0816-2048S WITH FW04 & NM04N2 IN COWLING/RADIATOR		
9	17/03/2016	BB	-	REMOVED 1000728 AS SUPERSEDED WITH 1110023		
8	25/01/2016	BB	1059	RE-REVIEWED ORF 1059, ADDED MUDFLAP WASHERS TO RADIATOR MOUNTS REMOVED FLAT WASHER	GM	GM
7	29/09/2015	BB	1059 1122	MOVED PLACEMENT OF P CLAMP & REPLACED MOUNTING ITEMS PER ORF 1059 & 1122	BMD	BMD
6	15/07/2015	BB	1156	ADDED MORE DETAIL TO DRAWING AS PER ORF 1156	BMD	BMD
5	2/06/2015	BB	945	UPDATED HOSE NAME AS PER ORF 945	-	-
4	11/02/2015	BB	902	ADDED VARIOUS MISSING PARTS PER ORF 902	-	-
3	17/10/2014	GM	902	ADDED P CLAMPS AS ORF902	GM	GM
2	24/04/2014	AS	880	CHANGED PUMP AS PER ORF 880	GM	AS
1	8/10/2013	GM	778	CHANGED HOSE LENGTHS AS ORF 778	AS	AS

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TOLERANCES UNO:-
XX ±0.1 XXX. ±2.0
X ±0.2 XXX. ±3.0
X. ±0.5 X° ±0.1°
XX. ±1.0 X.° ±0.5°

DIMENSIONS IN mm UNO

DESCRIPTION: TRACKPACK YANMAR DIESEL ELECTRIC START BRAKE MANIFOLD

PART #: FP-143-YE

DRAWN	DATE
Garym	18/04/2013
CHECKED	APPROVED
Adrian/S	Adrian/S

MODELLED BY: garym

SCALE: 1:4

SIZE: A3

DWG NO: 1-143-56

REV: 10

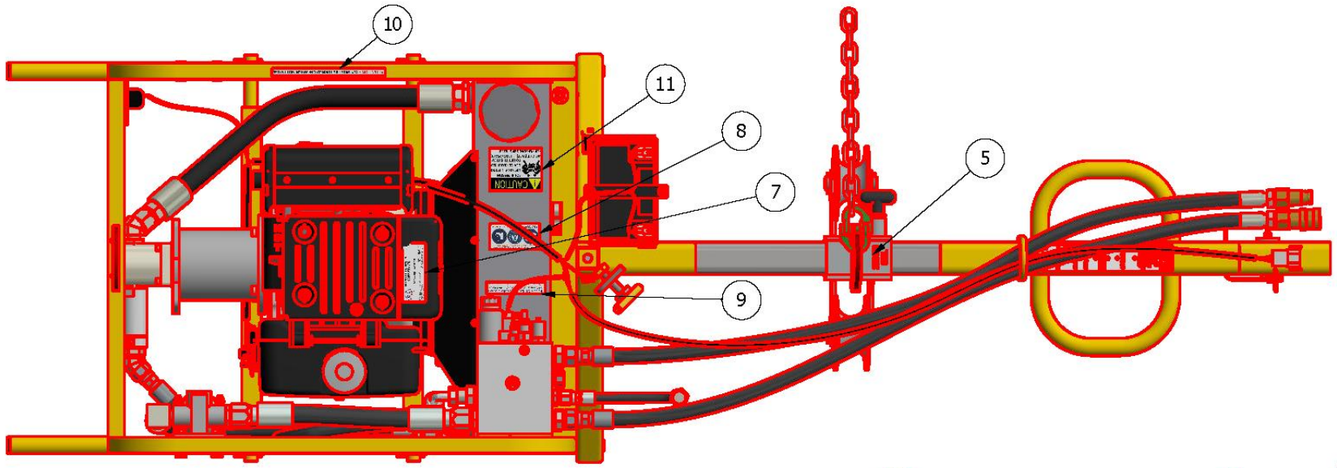
2 OF 2 SHEET #

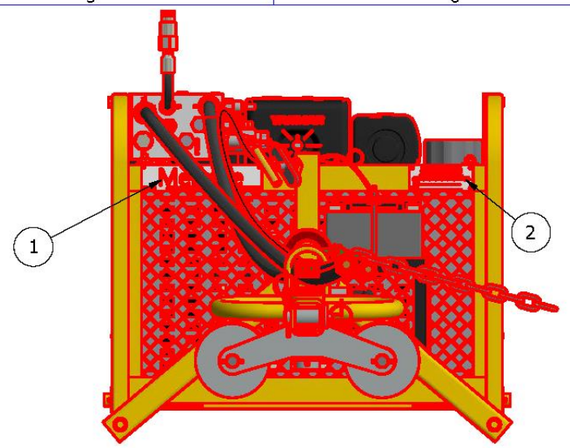
FP--143-YE SHEET DESCRIPTION

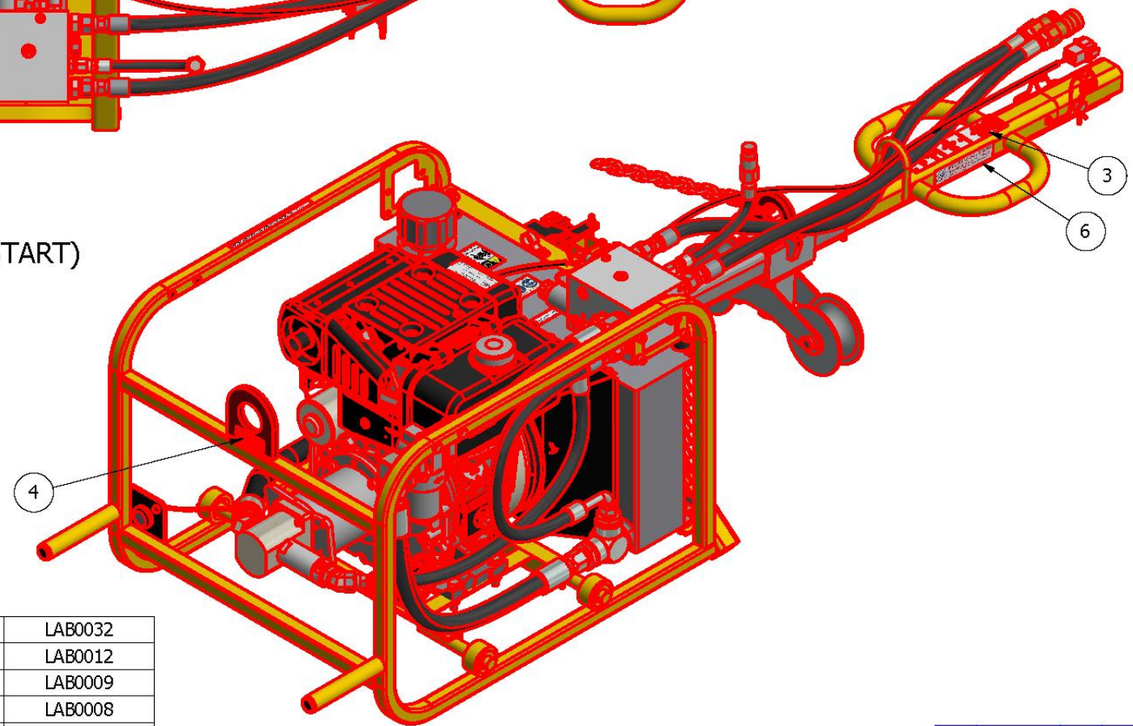
IF IN DOUBT, ASK!

13.10 Trackpack Sticker Assembly

NOTES:
IDTAG10 IS NO LONGER USED POST APRIL 2017







STICKERS FOR:
FP-143-YE (YANMAR DIESEL ELECTRIC START)

ITEM	QTY	DESCRIPTION	PART NUMBER
11	1	FOUR PERSON LIFT STICKER - TRACKPACKS	LAB0032
10	1	ATTENTION - KEY MUST BE TURNED OFF STICKER	LAB0012
9	1	HYDRAULIC OIL STICKER	LAB0009
8	1	PPE SAFETY STICKER	LAB0008
7	1	MELVELLE ACHIEVING EXCELLENCE STICKER	LAB0004
6	2	MELVELLE NEWCASTLE STICKER	LAB0003
5	1	LIFTING POINT WLL 300KG (USED IN PRE APRIL 2017)	IDTAG10
4	1	LIFTING POINT WLL 100KG	IDTAG09
3	1	TRACKPACK PIVOT POSITIONS	IDTAG07
2	1	MELVELLE MODEL & SERIAL N/O AL TAG	IDTAG02
1	1	MELVELLE AUSTRALIA IDENTIFICATION TAG	IDTAG01

PARTS LIST

SHEET #	SHEET DESCRIPTION
1 OF 3	YANMAR STICKERS

REV	DATE	DRN	CRF	DESCRIPTION	CHK	APP
1	28/04/2017	BB	-	ADDED MORE STICKER DETAIL	BMD	BMD

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TOLERANCES UNO:-
.XX ±0.1 XXX. ±2.0
.X ±0.2 XXXX. ±3.0
X. ±0.5 .X° ±0.1°
XX. ±1.0 X.° ±0.5°

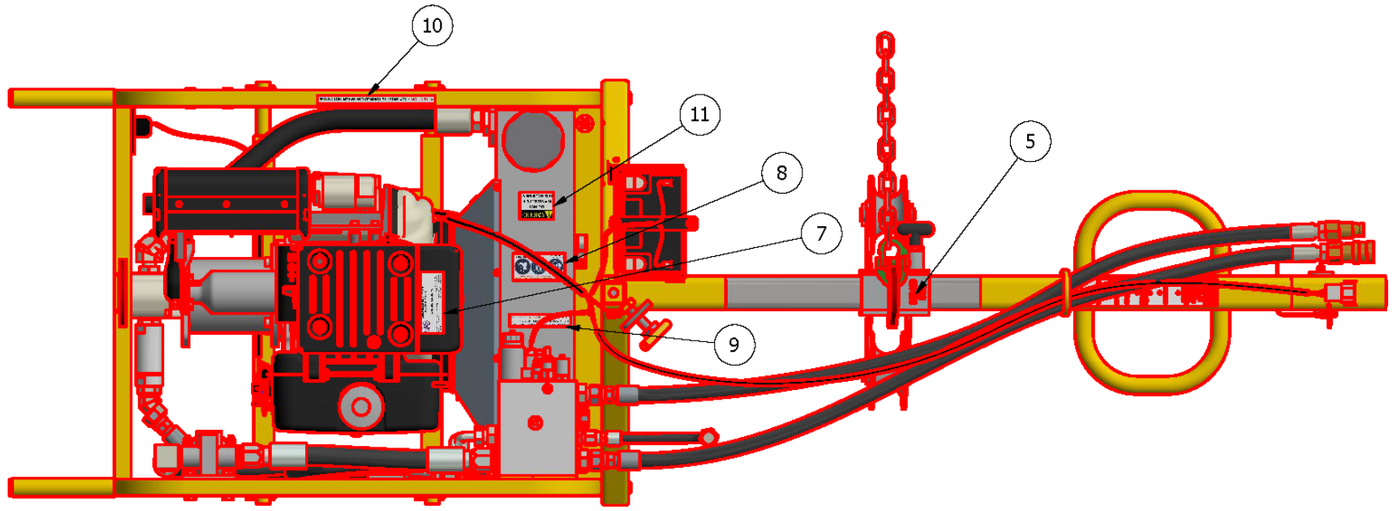
DIMENSIONS IN mm UNO

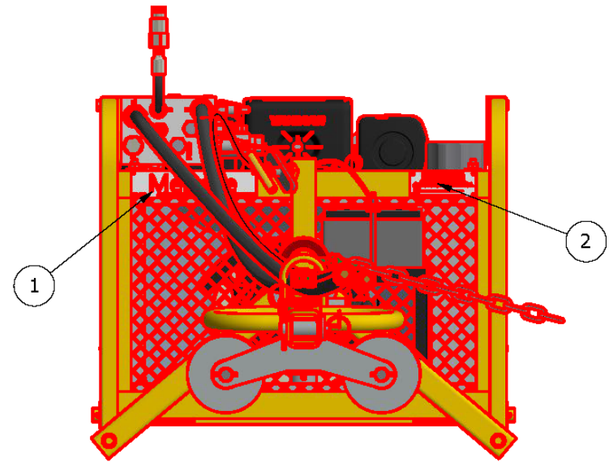
DRAWN	DATE
AdrianG	29/04/2013
CHECKED	APPROVED
GaryM	AdrianG

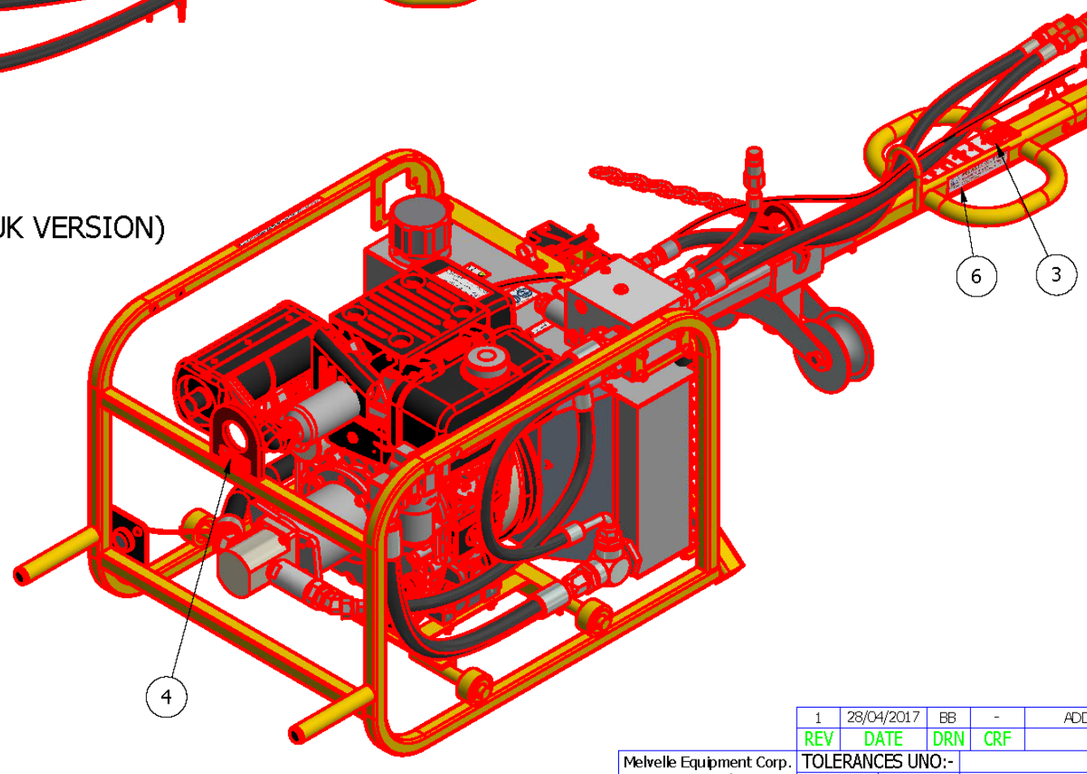
DESCRIPTION: TRACKPACK YANMAR DIESEL ELECTRIC START BRAKE MANIFOLD
PART #: FP-143-YE - STICKERS
MODELLED BY: garym
SCALE: NTS
DRG: 3-143-62
REV: 1

NOTES:

IDTAG10 IS NO LONGER USED POST APRIL 2017







STICKERS FOR:

FP-143-YE-UK (YANMAR DIESEL ELECTRIC START - UK VERSION)

PARTS LIST

ITEM	QTY	DESCRIPTION	PART NUMBER
11	1	DO NOT MANUALLY LIFT STICKER	LAB0013
10	1	ATTENTION - KEY MUST BE TURNED OFF STICKER	LAB0012
9	1	HYDRAULIC OIL STICKER	LAB0009
8	1	PPE SAFETY STICKER	LAB0008
7	1	MELVELLE ACHIEVING EXCELLENCE STICKER	LAB0004
6	2	MELVELLE NEWCASTLE STICKER	LAB0003
5	1	LIFTING POINT WLL 300KG (USED IN PRE APRIL 2017)	IDTAG10
4	1	LIFTING POINT WLL 100KG	IDTAG09
3	1	TRACKPACK PIVOT POSITIONS	IDTAG07
2	1	MELVELLE MODEL & SERIAL N/O AL TAG	IDTAG02
1	1	MELVELLE AUSTRALIA IDENTIFICATION TAG	IDTAG01

SHEET #	SHEET DESCRIPTION
2 OF 3	YANMAR UK STICKERS

REV	DATE	DRN	CRF	DESCRIPTION	CHK	APP
1	28/04/2017	BB	-	ADDED MORE STICKER DETAIL	BMD	BMD

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TOLERANCES UNO:-

.XX ±0.1	XXX. ±2.0
.X ±0.2	XXXX. ±3.0
X. ±0.5	.X° ±0.1°
XX. ±1.0	X.° ±0.5°

DIMENSIONS IN mm UNO

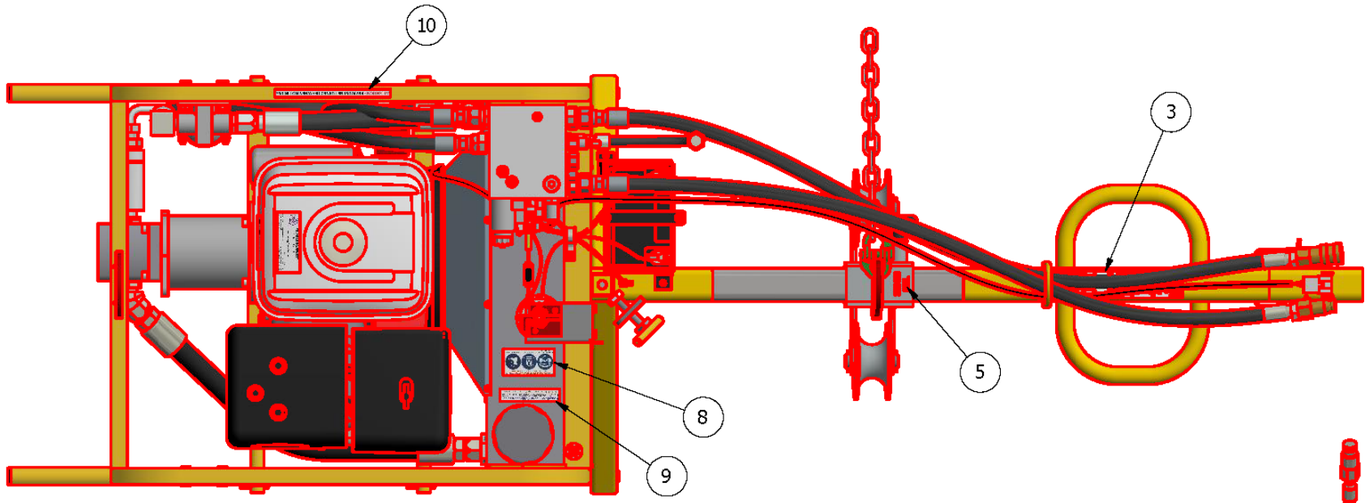
DESCRIPTION	PART #
TRACKPACK YANMAR DIESEL ELECTRIC START BRAKE UK VERSION	FP-143-YE-UK - STICKER

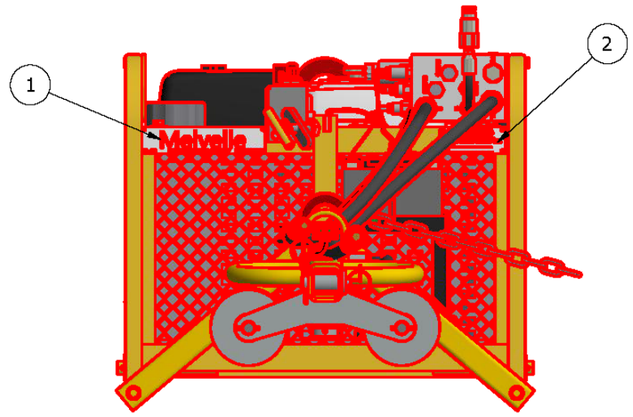
DRAWN	DATE	MODELLED BY
AdrianG	29/04/2013	garym

CHECKED	APPROVED	SCALE	DRG	REV
GaryM	AdrianG	1:8	3-143-62	1

NOTES:

IDTAG10 IS NO LONGER USED POST APRIL 2017



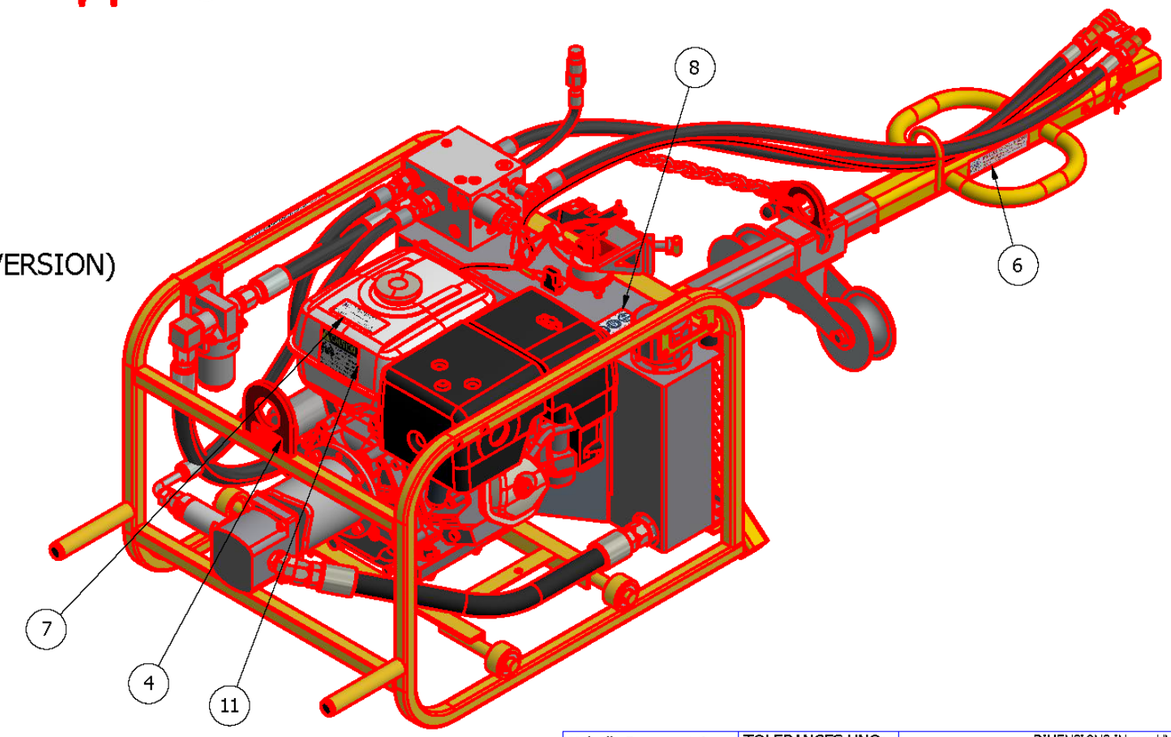


STICKERS FOR:

FP-143-HE (HONDA PETROL ELECTRIC START)

FP-143-HR (HONDA PETROL RECOIL START)

FP-143-HE-02A (HONDA PETROL ELECTRIC START - USA VERSION)



ITEM	QTY	DESCRIPTION	PART NUMBER
11	1	FOUR PERSON LIFT STICKER - TRACKPACKS	LAB0032
10	1	ATTENTION - KEY MUST BE TURNED OFF STICKER	LAB0012
9	1	HYDRAULIC OIL STICKER	LAB0009
8	1	PPE SAFETY STICKER	LAB0008
7	1	MELVELLE ACHIEVING EXCELLENCE STICKER	LAB0004
6	2	MELVELLE NEWCASTLE STICKER	LAB0003
5	1	LIFTING POINT WLL 300KG (USED IN PRE APRIL 2017)	IDTAG10
4	1	LIFTING POINT WLL 100KG	IDTAG09
3	1	TRACKPACK PIVOT POSITIONS	IDTAG07
2	1	MELVELLE MODEL & SERIAL N/O AL TAG	IDTAG02
1	1	MELVELLE AUSTRALIA IDENTIFICATION TAG	IDTAG01

PARTS LIST

SHEET #	SHEET DESCRIPTION
3 OF 3	HONDA STICKERS

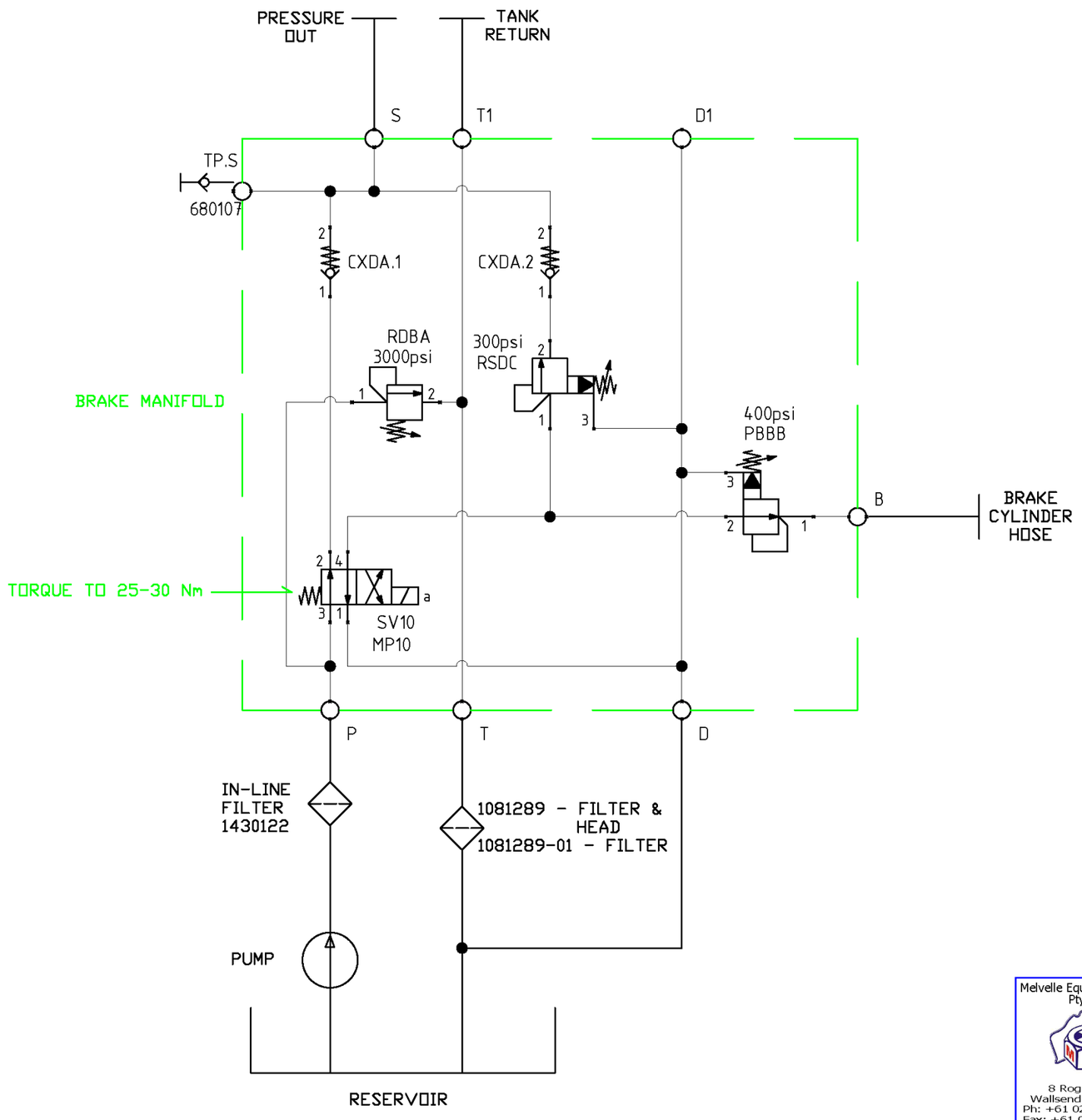
Melvelle Equipment Corp. Pty. Ltd

8 Rogilla Close
Wallsend N.S.W 2287
Ph:+61 02 4951 5244
Fax:+61 02 4950 1291

IF IN DOUBT, ASK!

TOLERANCES UNO:-		DIMENSIONS IN mm UNO	
.XX ±0.1	XXX. ±2.0	DESCRIPTION	PART #
.X ±0.2	XXXX. ±3.0	HONDA ELECTRIC TRACKPAKC INCLUDING BRAKE MANIFOLD	FP-143-HE - STICKER
X. ±0.5	.X° ±0.1°		
XX. ±1.0	X.° ±0.5°		MODELLED BY garym
DRAWN	DATE		
AdrianG	29/04/2013		
CHECKED	APPROVED	SCALE	DRG 3-143-62 REV 1
GaryM	AdrianG	1:8	

13.11 Trackpack Hydraulic Circuit Diagram



REV	DATE	DRN	DESCRIPTION	CHK	APP
1	12/06/2013	AFG	UPDATED TO NEW MANIFOLD	GMM	AFG

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IF IN DOUBT, ASK!

TOLERENCES UNO:-
.XX ±0.1 XXX. ±2.0
.X ±0.2 XXXX. ±3.0
X. ±0.5 .X° ±0.1°
XX. ±1.0 X.° ±0.5°

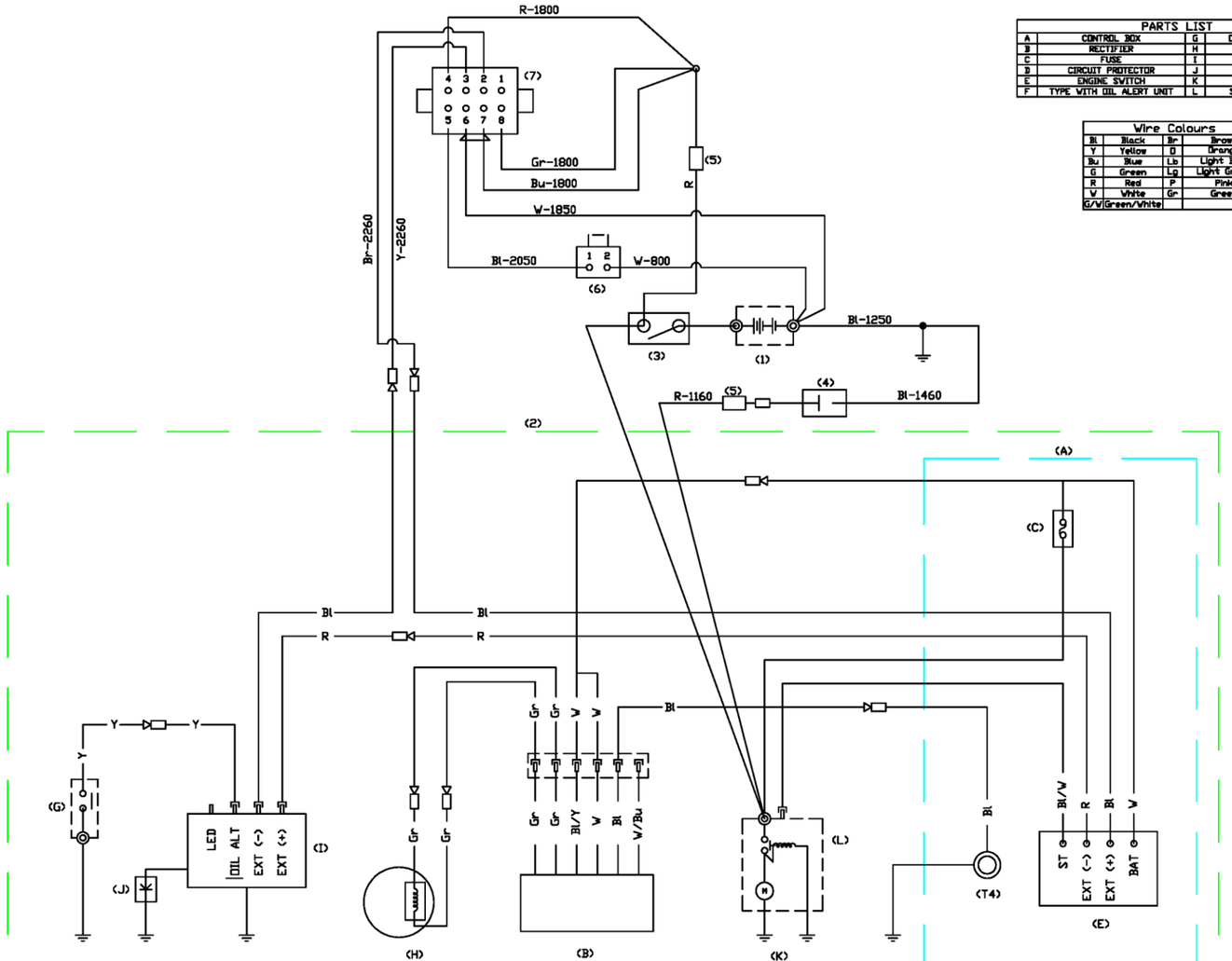
DIMENSIONS IN mm UNO

DESCRIPTION	PART#
143 TRACKPACK HYDRAULIC CIRCUIT DIAGRAM	

DRAWN	DATE	AUTOCAD
GMM	01/05/2013	DRAWING
CHECKED	APPROVED	SCALE
AFG	AFG	NTS

DRG 3-143-63 REV 1

13.12 Honda Trackpack Electric Schematic



PARTS LIST			
A	CONTROL BOX	G	OIL LEVEL SWITCH
B	RECTIFIER	H	CHARGING COIL
C	FUSE	I	IGNITION COIL
D	CIRCUIT PROTECTOR	J	SPARK PLUG
E	ENGINE SWITCH	K	STARTER MOTOR
F	TYPE WITH OIL ALERT UNIT	L	STARTER SOLENOID

Wire Colours			
Bl	Black	Br	Brown
Y	Yellow	O	Orange
Bu	Blue	Lb	Light Blue
G	Green	Lg	Light Green
R	Red	P	Pink
W	White	Gr	Green
G/W	Green/White		

ITEM	QTY	DESCRIPTION	LENGTH	PART No.
7	1	DT8 FEMALE HOUSING 8 WAY	N/A	ELECT90
6	1	DT2 MALE HOUSING 2 WAY	N/A	ELECT88
5	2	ELECTRICAL IN LINE FUSE HOLDER 30AMP	N/A	ELECT38
4	1	CONNECTOR HOUSING MALE - 2 WIRE	N/A	ELECT23
3	1	ISOLATER SWITCH	N/A	1540813
2	1	HONDA ELECTRIC START ENGINE	N/A	1540687
1	1	BATTERY	N/A	1540412

MATERIAL/CUT LIST

REV	DATE	DRN	DESCRIPTION	CHK	APP
3	21/01/2015	BMD	EXTENDED 8 PIN PLUG 500mm	GM	BMD
2	21/01/2015	GM	CHANGED TO ISOLATER FROM RELAY	BMD	BMD
1	03/02/2014	AG	UPDATED AS PER CRF 847	GM	AG

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IF IN DOUBT, ASK!

TOLERENCES UNO:-
.XX ±0.1 XXX. ±2.0
.X ±0.2 XXXX. ±3.0
X. ±0.5 .X° ±0.1°
XX. ±1.0 X.° ±0.5°

DIMENSIONS IN mm UNO

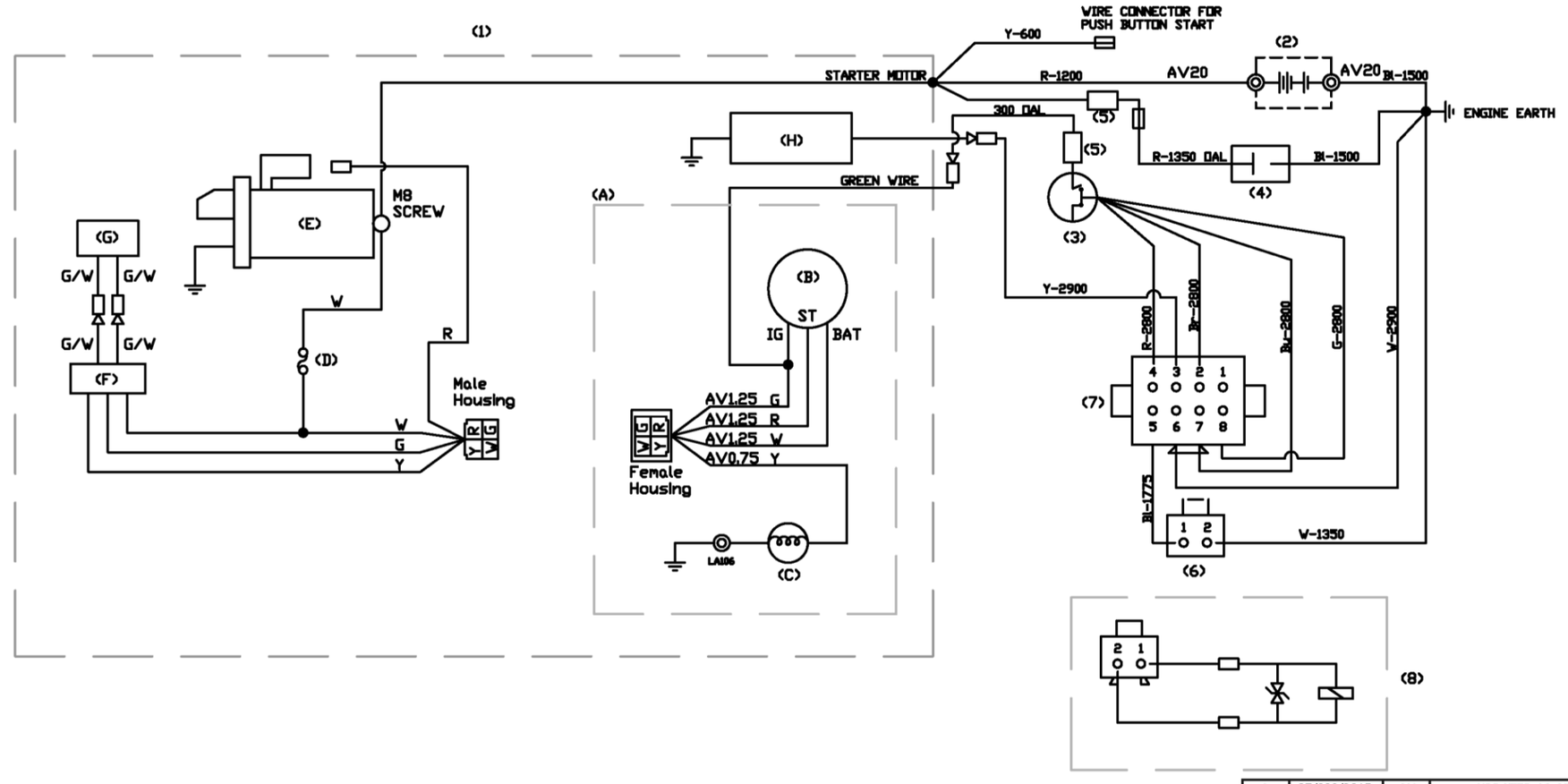
DESCRIPTION: HONDA ELECTRIC TRACKPACK ELECTRIC SCHEMATIC
PART#: FP-143-HE
AUTOCAD DRAWING

DRAWN	DATE	CHECKED	APPROVED	SCALE	DRG	REV
AdrianG	15/01/2014	GaryM	AdrianG	NTS	3-143-64	3

13.13 Yanmar Trackpack Electric Schematic

ENGINE PARTS LIST			
A	CONTROL BOX	E	STARTER MOTOR
B	ENGINE SWITCH	F	REGULATOR
C	CHARGE LAMP	G	DYNAMO
D	FUSE	H	FUEL CUT OFF VALVE

Wire Colours			
Bl	Black	Br	Brown
Y	Yellow	O	Orange
Bu	Blue	Lb	Light Blue
G	Green	Lg	Light Green
R	Red	P	Pink
W	White	Gr	Grey
G/W	Green/White		



ITEM	QTY	DESCRIPTION	LENGTH	PART No.
8	1	BRAKE LIFT MANIFOLD SOLENOID	N/A	SOLENOID
7	1	DT8 FEMALE HOUSING 8 WAY	N/A	ELECT90
6	1	DT2 MALE HOUSING 2 WAY	N/A	ELECT88
5	2	ELECTRICAL IN LINE FUSE HOLDER 30AMP	N/A	ELECT38
4	1	CONNECTOR HOUSING MALE - 2 WIRE	N/A	ELECT23
3	1	OIL PRESSURE SWITCH - 1/8TH BSP X 10 PSI	N/A	1540816
2	1	BATTERY	N/A	1540412
1	1	YANMAR ELECTRIC START ENGINE	N/A	1540210

MATERIAL/CUT LIST

REV	DATE	DRN	DESCRIPTION	CHK	APP
3	27/003/2015	GM	UPDATED AS CRF 1056	BMD	BMD
2	3/02/2014	GM	UPDATED AS CRF 848	AG	AG
1	30/10/2013	GM	OIL SWITCH & WIRES PER CRF792	AG	AG

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IF IN DOUBT, ASK!

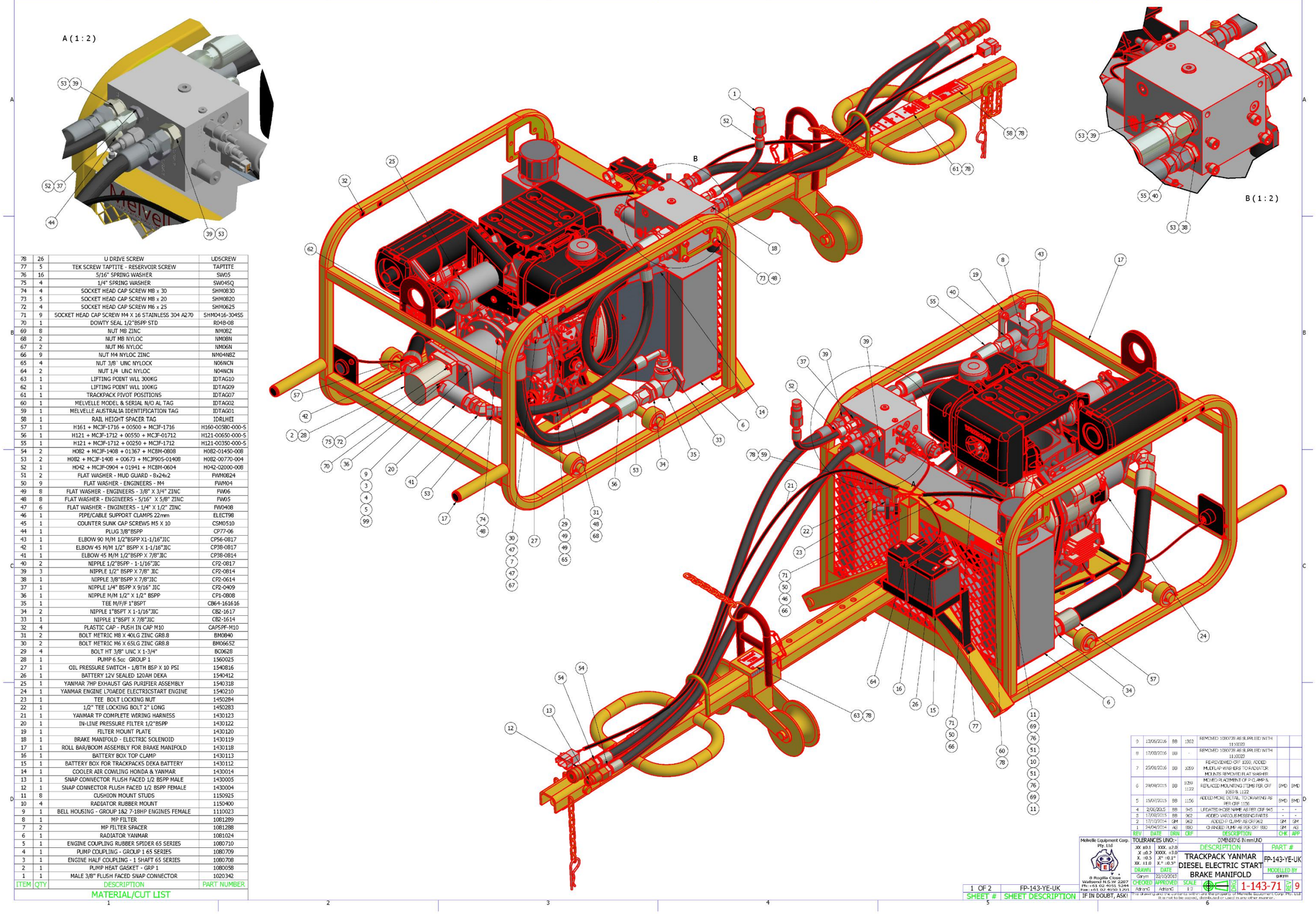
TOLERENCES UNO:-
.XX ±0.1 XXX. ±2.0
.X ±0.2 XXXX. ±3.0
X. ±0.5 .X° ±0.1°
XX. ±1.0 X.° ±0.5°

DIMENSIONS IN mm UNO

DRAWN	DATE
AdrianG	15/01/2013
CHECKED	APPROVED
GaryM	AdrianG

DESCRIPTION: YANMAR ELECTRIC TRACKPACK ELECTRIC SCHEMATIC
PART#: FP-143-YE
AUTOCAD DRAWING: 3-143-65
SCALE: NTS
DRG
REV: 3

13.14 Trackpack Yanmar Electric Start with Purifier



ITEM	QTY	DESCRIPTION	PART NUMBER
		MATERIAL/CUT LIST	
1	1	MALE 3/8" FLUSH FACED SNAP CONNECTOR	1020342
2	1	PUMP HEAT GASKET - GRP 1	1080058
3	1	ENGINE HALF COUPLING - 1 SHAFT 65 SERIES	1080708
4	1	PUMP COUPLING - GROUP 1 65 SERIES	1080709
5	1	ENGINE COUPLING RUBBER SPIDER 65 SERIES	1080710
6	1	RADIATOR YANMAR	1081024
7	2	MP FILTER SPACER	1081288
8	1	MP FILTER	1081289
9	1	BELL HOUSING - GROUP 1&2 7-18HP ENGINES FEMALE	1110023
10	4	RADIATOR RUBBER MOUNT	1150400
11	8	CUSHION MOUNT STUDS	1150925
12	1	SNAP CONNECTOR FLUSH FACED 1/2 BSPP FEMALE	1430004
13	1	SNAP CONNECTOR FLUSH FACED 1/2 BSPP MALE	1430005
14	1	COOLER AIR COWLING HONDA & YANMAR	1430014
15	1	BATTERY BOX FOR TRACKPACKS DEKA BATTERY	1430112
16	1	BATTERY BOX TOP CLAMP	1430113
17	1	ROLL BAR/BOOM ASSEMBLY FOR BRAKE MANIFOLD	1430118
18	1	BRAKE MANIFOLD - ELECTRIC SOLENOID	1430119
19	1	FILTER MOUNT PLATE	1430120
20	1	IN-LINE PRESSURE FILTER 1/2"BSPP	1430122
21	1	YANMAR TP COMPLETE WIRING HARNESS	1430123
22	1	1/2" TEE LOCKING BOLT 2" LONG	1450283
23	1	TEE BOLT LOCKING NUT	1450284
24	1	YANMAR ENGINE L70AEDE ELECTRICSTART ENGINE	1540210
25	1	YANMAR 7HP EXHAUST GAS PURIFIER ASSEMBLY	1540318
26	1	BATTERY 12V SEALED 120AH DEKA	1540412
27	1	OIL PRESSURE SWITCH - 1/8TH BSP X 10 PSI	1540816
28	1	PUMP 6.5cc GROUP 1	1560025
29	4	BOLT HT 3/8" UNC X 1-3/4"	BC0628
30	2	BOLT METRIC M6 X 65LG ZINC GR8.8	BM0665Z
31	2	BOLT METRIC M8 X 40LG ZINC GR8.8	BM0840
32	4	PLASTIC CAP - PUSH IN CAP M10	CAPSPF-M10
33	1	NIPPLE 1"BSPT X 7/8"JIC	CB2-1614
34	2	NIPPLE 1"BSPT X 1-1/16"JIC	CB2-1617
35	1	TEE M/F/F 1"BSPT	CB64-161616
36	1	NIPPLE M/M 1/2" X 1/2" BSPP	CP1-0808
37	1	NIPPLE 1/4" BSPP X 9/16" JIC	CP2-0409
38	1	NIPPLE 3/8"BSPP X 7/8"JIC	CP2-0614
39	3	NIPPLE 1/2" BSPP X 7/8" JIC	CP2-0814
40	2	NIPPLE 1/2"BSPP - 1-1/16"JIC	CP2-0817
41	1	ELBOW 45 M/M 1/2"BSPP X 7/8"JIC	CP38-0814
42	1	ELBOW 45 M/M 1/2" BSPP X 1-1/16"JIC	CP38-0817
43	1	ELBOW 90 M/M 1/2"BSPP X1-1/16"JIC	CP56-0817
44	1	PLUG 3/8"BSPP	CP77-06
45	1	COUNTER SUNK CAP SCREWS M5 X 10	CSM0510
46	1	PIPE/CABLE SUPPORT CLAMPS 22mm	ELECT98
47	6	FLAT WASHER - ENGINEERS - 1/4" X 1/2" ZINC	FWM0408
48	8	FLAT WASHER - ENGINEERS - 5/16" X 5/8" ZINC	FWM05
49	8	FLAT WASHER - ENGINEERS - 3/8" X 3/4" ZINC	FWM06
50	9	FLAT WASHER - ENGINEERS - M4	FWM04
51	2	FLAT WASHER - MUD GUARD - 8x24x2	FWM0824
52	1	H042 + MCJF-0904 + 01941 + MCBM-0604	H042-02000-008
53	2	H082 + MCJF-1408 + 00673 + MCJF905-01408	H082-00770-004
54	2	H082 + MCJF-1408 +01367 + MCBM-0808	H082-01450-008
55	1	H121 + MCJF-1712 + 00250 + MCJF-1712	H121-00350-000-S
56	1	H121 + MCJF-1712 + 00550 + MCJF-01712	H121-00650-000-S
57	1	H161 + MCJF-1716 + 00500 + MCJF-1716	H160-00580-000-S
58	1	RAIL HEIGHT SPACER TAG	IDRLHEI
59	1	MELVELLE AUSTRALIA IDENTIFICATION TAG	IDTAG01
60	1	MELVELLE MODEL & SERIAL N/O AL TAG	IDTAG02
61	1	TRACKPACK PIVOT POSITIONS	IDTAG07
62	1	LIFTING POINT WLL 100KG	IDTAG09
63	1	LIFTING POINT WLL 300KG	IDTAG10
64	2	NUT 1/4 UNC NYLOC	N04NCN
65	4	NUT 3/8" UNC NYLOCK	N06NCN
66	9	NUT M4 NYLOC ZINC	NM04NBZ
67	2	NUT M6 NYLOC	NM06N
68	2	NUT M8 NYLOC	NM08N
69	8	NUT M8 ZINC	NM08Z
70	1	DOWTY SEAL 1/2"BSPP STD	R04B-08
71	9	SOCKET HEAD CAP SCREW M4 X 16 STAINLESS 304 A270	SHM0416-304SS
72	4	SOCKET HEAD CAP SCREW M6 x 25	SHM0625
73	5	SOCKET HEAD CAP SCREW M8 x 20	SHM0820
74	4	SOCKET HEAD CAP SCREW M8 x 30	SHM0830
75	4	1/4" SPRING WASHER	SW045Q
76	16	5/16" SPRING WASHER	SW05
77	5	TEK SCREW TAPTITE - RESERVOIR SCREW	TAPTITE
78	26	U DRIVE SCREW	UDSCREW

REV	DATE	DRN	CRF	DESCRIPTION	CHK	APP
9	13/06/2016	BB	1362	REMOVED 1080728 AS SUPPLIED WITH 1110023		
8	17/03/2016	BB	-	REMOVED 1080728 AS SUPPLIED WITH 1110023		
7	25/01/2016	BB	1059	RE-REVIEWED CRF 1059, ADDED MUDFLAP WASHERS TO RADIATOR MOUNTS REMOVED FLAT WASHER		
6	29/09/2015	BB	1059 1122	MOVED HARDPOINT FOR P-CLAMP & REPLACED MOUNTING ITEMS PER CRF 1059 & 1122	BMD	BMD
5	15/07/2015	BB	1156	ADDED MORE DETAIL TO DRAWING PER CRF 1156	BMD	BMD
4	2/06/2015	BB	945	UPDATED HOSE NAME AS PER CRF 945	-	-
3	17/09/2015	BB	902	ADDED VARIOUS MISSING PARTS	-	-
2	17/12/2014	GM	862	ADDED P CLAMP AS PER CRF 862	GM	GM
1	24/04/2014	AG	880	CHANGED PUMP AS PER CRF 880	GM	AG

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Fax: +61 02 4950 1351

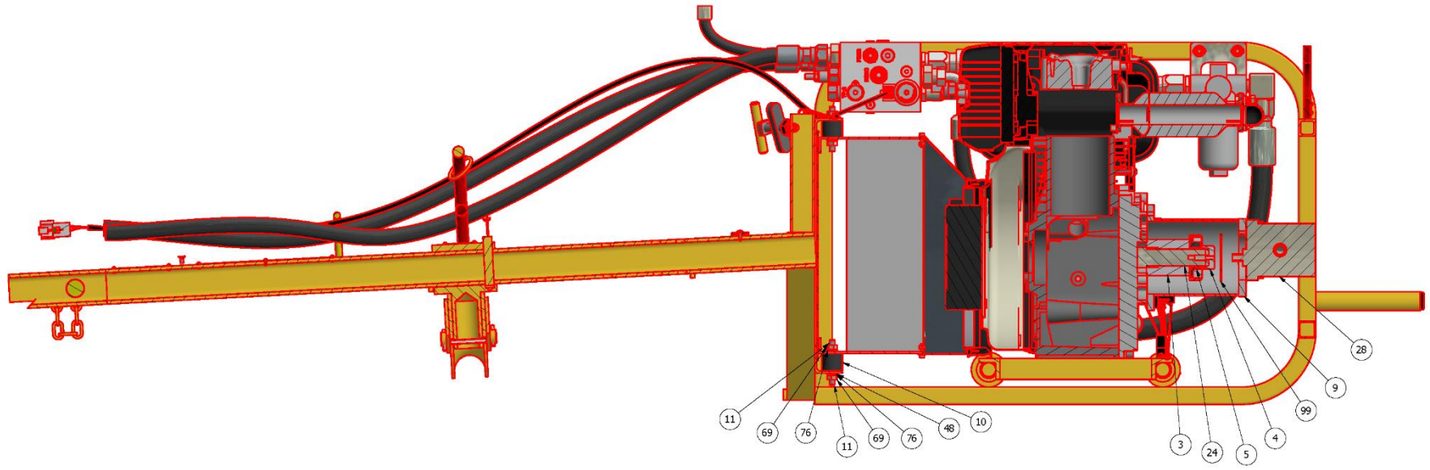
TOLERANCES UNO: - DIMENSION IN mm UNO
.XX ±0.1 | XXX. ±2.0
.X ±0.2 | XXX. ±3.0
.X. ±0.5 | X° ±0.1°
.XX. ±1.0 | X.° ±0.5°

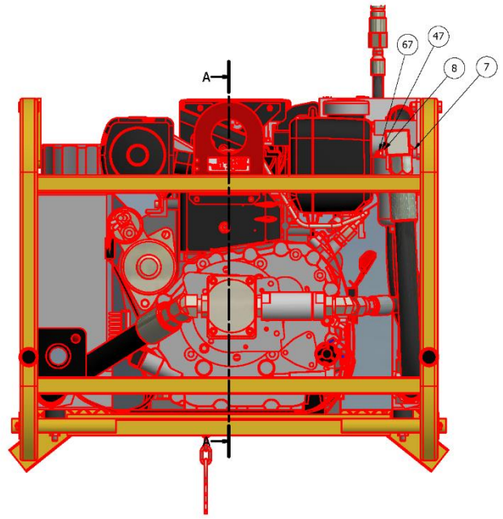
DESCRIPTION: TRACKPACK YANMAR DIESEL ELECTRIC START BRAKE MANIFOLD
PART #: FP-143-YE-UK
DRAWN: Garym | DATE: 22/10/2013
MODELLED BY: garym
CHECKED: AdrianG | APPROVED: AdrianG | SCALE: 1:3
SIZE: A3 | DWG #: 1-143-71 | REV: 9

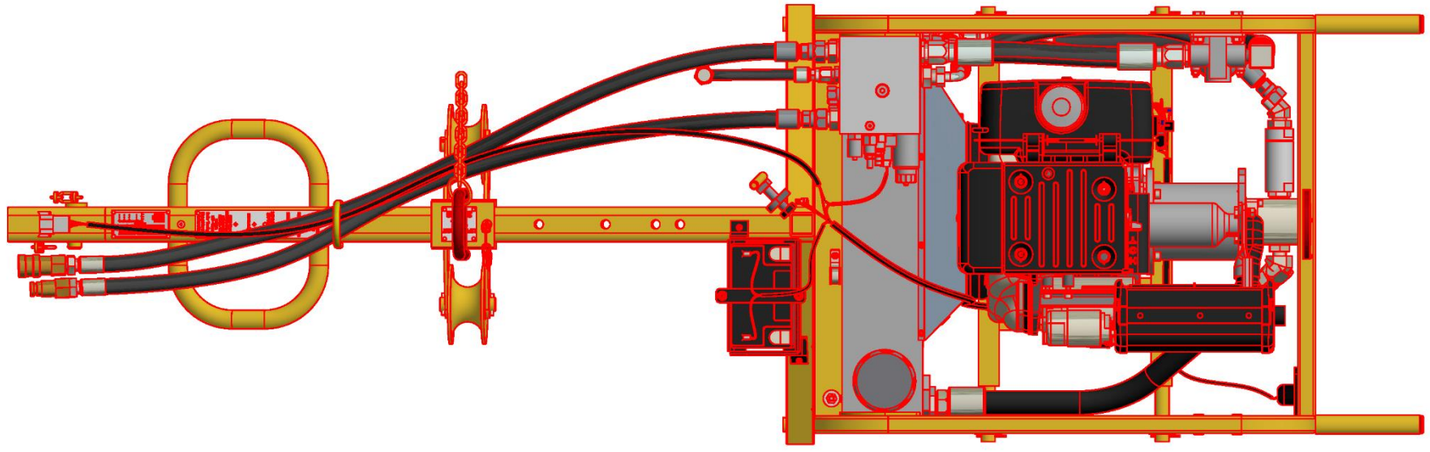
1 OF 2 | FP-143-YE-UK
SHEET # | SHEET DESCRIPTION

IF IN DOUBT, ASK!

A-A (1 : 4)







REV	DATE	DRN	DESCRIPTION	CHK	APP
9	13/05/2016		REMOVED 1080728 AS SUPPLIED WITH 1110323	Adrian G	Adrian G
8	17/03/2016	BB	REMOVED 1080728 AS SUPPLIED WITH 1110323		
7	25/01/2016	BB	RE-REVIEWED CRF 1059, ADDED M.DPLAY WASHERS TO RADIATOR MOUNTS REMOVED FLAT WASHER		
6	29/09/2015	BB	MOVED PLACEMENT OF P CLAMP & REPLACED MOUNTING ITEMS PER CRF 1059 & 1122	BMD	BMD
5	15/07/2015	BB	ADDED MORE DETAIL TO DRAWING AS PER CRF 1156	BMD	BMD
4	2/06/2015	BB	UPDATED HOSE NAME AS PER CRF 945		
3	17/02/2015	BB	ADDED WELDS MISSING PARTS		
2	17/10/2014	GM	ADDED P CLAMP AS CRF962	GM	GM
1	24/04/2014	AG	CHANGED PUMP AS PER CRF 880	GM	AG

Melwelle Equipment Corp. Pty. Ltd
8 Rogilla Close
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Fax:+61 02 4950 1291

TOLERANCES UNO:-
.XX ±0.1 | XXX. ±2.0
.X ±0.2 | XXXX. ±3.0
.X ±0.5 | X° ±0.1°
.XX ±1.0 | X.° ±0.5°

DESCRIPTION: TRACKPACK YANMAR DIESEL ELECTRIC START BRAKE MANIFOLD
PART #: FP-143-YE-UK
DRAWN: Gerym 22/10/2013
MODELLED BY: gerym
CHECKED: Adrian3
APPROVED: Adrian3
SCALE: 1:4
DWG: 1-143-71
REV: 9

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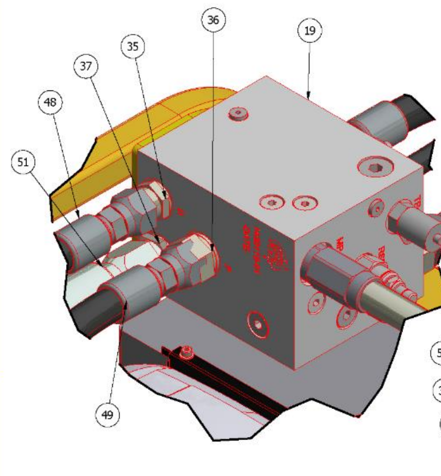
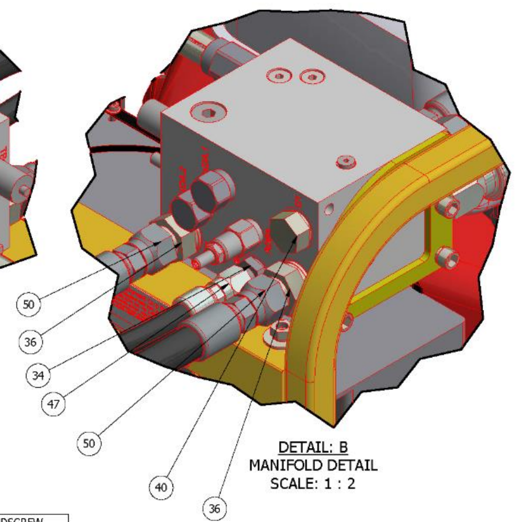
2 OF 2 | FP-143-YE-UK
SHEET # | SHEET DESCRIPTION
IF IN DOUBT, ASK!

13.15 Honda Recoil Start Braked Trackpack

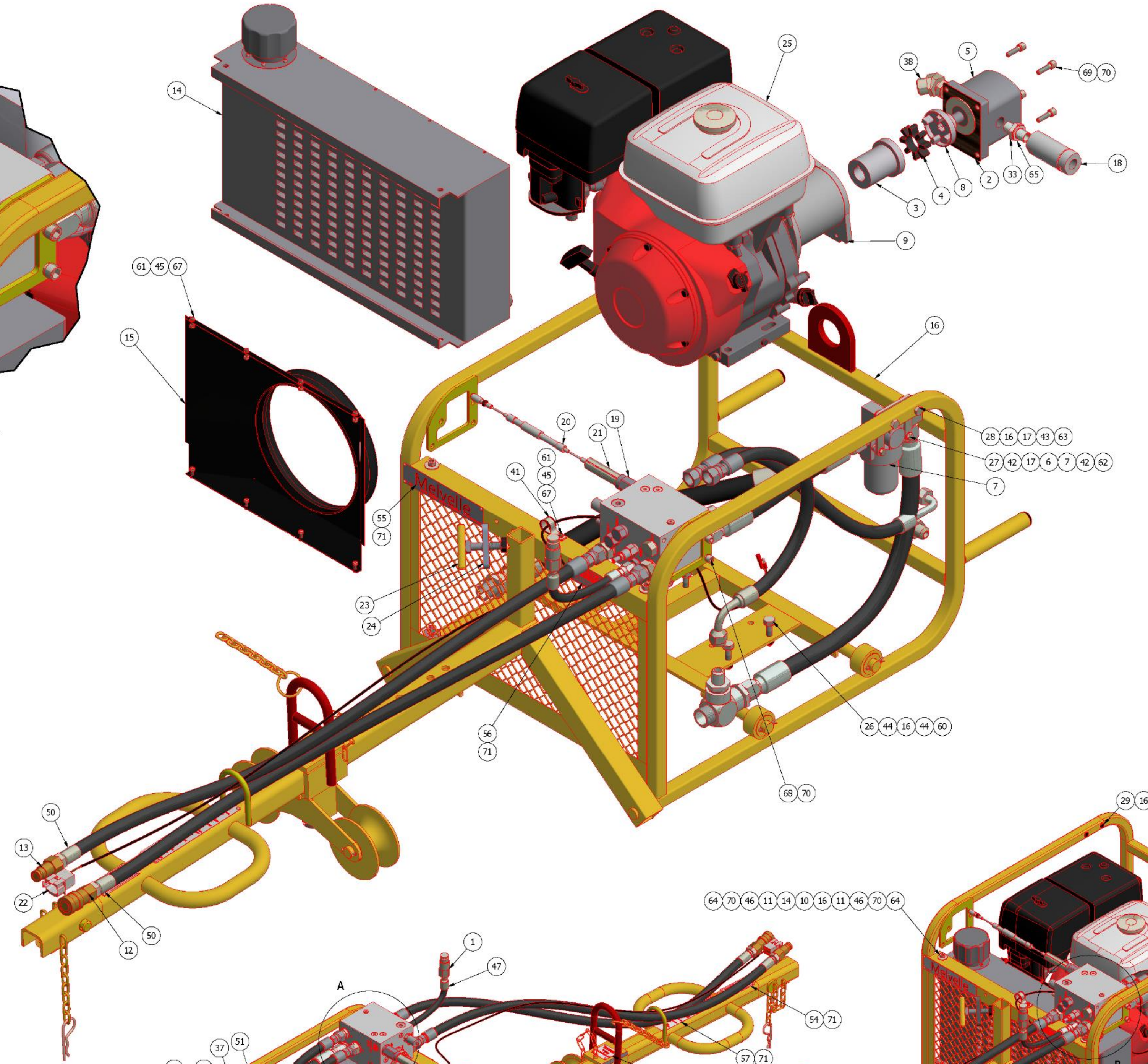
SHEET #	SHEET DESCRIPTION
1 OF 1	ASSEMBLY DRG

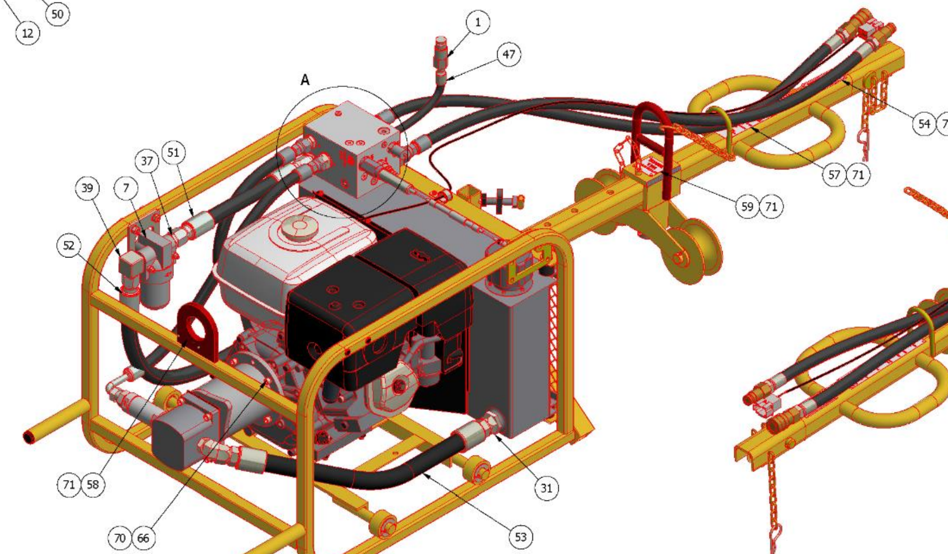


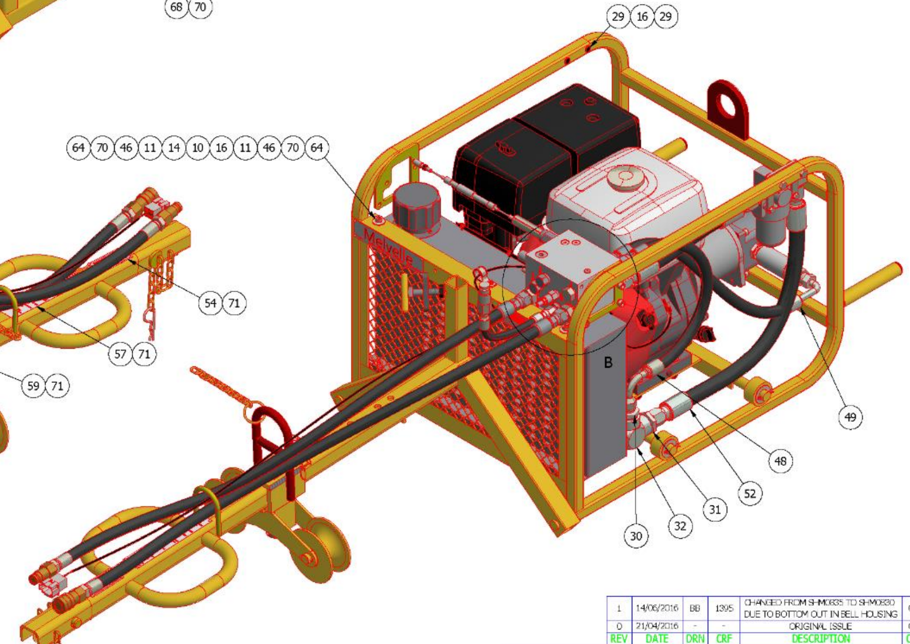
DETAIL: A
MANIFOLD DETAIL
SCALE: 1 : 2



DETAIL: B
MANIFOLD DETAIL
SCALE: 1 : 2







ITEM	QTY	DESCRIPTION	PART NUMBER
71	23	U DRIVE SCREW	UDSCREW
70	20	5/16" SPRING WASHER	SW05
69	4	SOCKET HEAD CAP SCREW M8 x 30	SHM0830
68	4	SOCKET HEAD CAP SCREW M8 x 20	SHM0820
67	9	SOCKET HEAD CAP SCREW M4 X 16 STAINLESS 304 A270	SHM0416-304SS
66	4	SOCKET HEAD CAP SCREW 5/16" UNF X 1-1/4"	SHF0520
65	1	DOWTY SEAL 1/2"BSPP STD	R04B-08
64	8	NUT M8 ZINC	NM08Z
63	2	NUT M8 NYLOC	NM08N
62	2	NUT M6 NYLOC	NM06N
61	9	NUT M4 NYLOC ZINC	NM04N8Z
60	4	NUT 3/8` UNC NYLOCK	N06NCN
59	1	LIFTING POINT WLL 300KG	IDTAG10
58	1	LIFTING POINT WLL 100KG	IDTAG09
57	1	TRACKPACK PIVOT POSITIONS	IDTAG07
56	1	MELVELLE MODEL & SERIAL N/O AL TAG	IDTAG02
55	1	MELVELLE AUSTRALIA IDENTIFICATION TAG	IDTAG01
54	1	RAIL HEIGHT SPACER TAG	IDRLHEI
53	1	H161 + MCJF-1716 + 00500 + MCJF-1716	H160-00580-000-S
52	1	H121 + MCJF-1712 + 00550 + MCJF-1712	H121-00650-000-S
51	1	H121 + MCJF-1712 + 00250 + MCJF-1712	H121-00350-000-S
50	2	H082 + MCJF-1408 + 01372 + MCBM-0808	H082-01450-008
49	1	H082 + MCJF-1408 + 00561 + MCJF90S-1408	H082-00660-004
48	1	H082 + MCJF-1408 + 00501 + MCJF90S-1408	H082-00600-004
47	1	H042 + MCJF-0904 + 01941 + MCBM-0604	H042-02000-008
46	2	FLAT WASHER - MUD GUARD - 8x24x2	FWM0824
45	9	FLAT WASHER - ENGINEERS - M4	FWM04
44	8	FLAT WASHER - ENGINEERS - 3/8" X 3/4" ZINC	FW06
43	8	FLAT WASHER - ENGINEERS - 5/16" X 5/8" ZINC	FW05
42	4	FLAT WASHER - ENGINEERS - 1/4" X 1/2" ZINC	FW0408
41	1	PIPE/CABLE SUPPORT CLAMPS 22mm	ELECT98
40	1	PLUG 3/8"BSPP	CP77-06
39	1	ELBOW 90 M/M 1/2"BSPP X1-1/16"JIC	CP56-0817
38	1	ELBOW 45 M/M 1/2" BSPP X 1-1/16"JIC	CP38-0817
37	2	NIPPLE 1/2"BSPP - 1-1/16"JIC	CP2-0817
36	4	NIPPLE 1/2" BSPP X 7/8" JIC	CP2-0814
35	1	NIPPLE 3/8"BSPP X 7/8"JIC	CP2-0614
34	1	NIPPLE 1/4" BSPP X 9/16" JIC	CP2-0409
33	1	NIPPLE M/M 1/2" X 1/2" BSPP	CP1-0808
32	1	TEE M/F/F 1"BSPT	CB64-161616
31	2	NIPPLE 1"BSPT X 1-1/16"JIC	CB2-1617
30	1	NIPPLE 1"BSPT X 7/8"JIC	CB2-1614
29	4	PLASTIC CAP - PUSH IN CAP M10	CAPSPF-M10
28	2	BOLT METRIC M8 X 40LG ZINC GR8.8	BM0840
27	2	BOLT METRIC M6 X 65LG ZINC GR8.8	BM0665Z
26	4	BOLT HT 3/8" UNC X 1-3/4"	BC0628
25	1	HONDA ENGINE GX390 13HP RECOIL START	1540230
24	1	TEE BOLT LOCKING NUT	1450284
23	1	1/2" TEE LOCKING BOLT 2" LONG	1450283
22	1	HONDA TP RECOIL START WIRING HARNESS (ESTOP ONLY)	1430130
21	1	BRAKE MANIFOLD OUTER CABLE HOLDER	1430127
20	1	BRAKE CABLE	1430126
19	1	BRAKE MANIFOLD - MANUAL PULL - S13L80E	1430124
18	1	IN-LINE PRESSURE FILTER 1/2"BSPP	1430122
17	1	FILTER MOUNT PLATE	1430120
16	1	ROLL BAR/BOOM ASSEMBLY FOR BRAKE MANIFOLD	1430118
15	1	COOLER AIR COWLING HONDA & YANMAR	1430014
14	1	COOLER/RADIATOR - HONDA FITTED WITH FILLER BREATHER	1430008
13	1	SNAP CONNECTOR FLUSH FACED 1/2 BSPP MALE	1430005
12	1	SNAP CONNECTOR FLUSH FACED 1/2 BSPP FEMALE	1430004
11	8	CUSHION MOUNT STUDS	1150925
10	4	RADIATOR RUBBER MOUNT	1150400
9	1	BELL HOUSING - GROUP 1&2 7-18HP ENGINES FEMALE	1110023
8	1	PUMP COUPLING - GROUP 2 65 SERIES	1110021
7	1	MP FILTER	1081289
6	2	MP FILTER SPACER	1081288
5	1	PUMP 8.2cc GROUP 2-1 8 TAPERSHAFT 1/2" BSPP PORTS	1080845
4	1	ENGINE COUPLING RUBBER SPIDER 65 SERIES	1080710
3	1	ENGINE HALF COUPLING - 1 SHAFT 65 SERIES	1080708
2	1	PUMP HEAT GASKET - GRP 2	1080059
1	1	MALE 3/8" FLUSH FACED SNAP CONNECTOR	1020342

PARTS LIST

REV	DATE	DRN	CRF	DESCRIPTION	CHK	APP
1	14/06/2016	BB	1395	CHANGED FROM SHM0835 TO SHM0830 DUE TO BOTTOM OUT IN BELL HOUSING	GM	GM
0	21/04/2016	-	-	ORIGINAL ISSUE	GM	GM

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IF IN DOUBT, ASK!

TOLERANCES UNO:-
.XX ±0.1 XXX. ±2.0
.X ±0.2 XXXX. ±3.0
X. ±0.5 .X° ±0.1°
XX. ±1.0 X.° ±0.5°

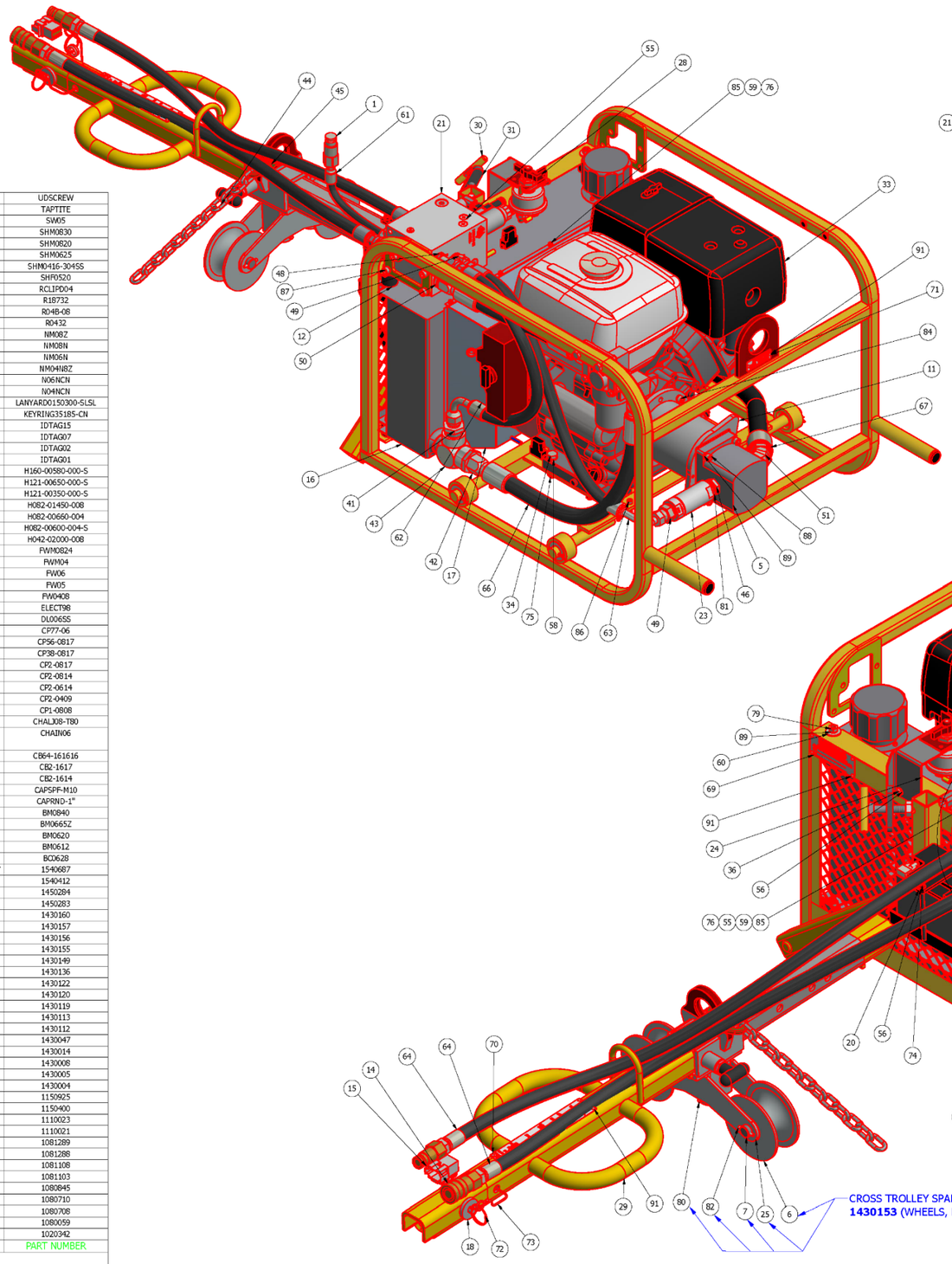
DIMENSIONS IN mm UNO

DESCRIPTION	PART #
HONDA RECOIL START BRAKED TRACKPACK	FP-143-HR

DRAWN	DATE	MODELLED BY
bryceb	21/04/2016	garym

CHECKED	APPROVED	SCALE	DRG	REV
GM	GM	VARIOUS	1-143-101	1

13.16 Trackpack Honda Electric Start – Imperial Version (USA)



ITEM	QTY	LENGTH	DESCRIPTION	PART NUMBER
91	14	N/A	U DRIVE SCREW	UDSCREW
90	5	N/A	TEK SCREW TAPTITE - RESERVOIR SCREW	TAPTITE
89	20	N/A	5/16" SPRING WASHER	SW05
88	4	N/A	SOCKET HEAD CAP SCREW M8 x 30	SHM0830
87	4	N/A	SOCKET HEAD CAP SCREW M8 x 20	SHM0820
86	2	N/A	SOCKET HEAD CAP SCREW M6 x 25	SHM0625
85	9	N/A	SOCKET HEAD CAP SCREW M4 X 16 STAINLESS 304 A270	SHM0416-304SS
84	4	N/A	SOCKET HEAD CAP SCREW 5/16" UNF X 1-1/4"	SHF0520
83	1	N/A	R CLIP DOUBLE COIL 4mm ZINC PL	RCLIPD04
82	4	N/A	SEL LOK PIN 3/16in x 1-1/4in	R18732
81	1	N/A	DOWTY SEAL 1/2"BSPP STD	R04B-08
80	1	N/A	SEL LOK PIN 1/4` X 2`	R0432
79	8	N/A	NUT M8 ZINC	NM08Z
78	2	N/A	NUT M8 NYLOC	NM08N
77	6	N/A	NUT M6 NYLOC	NM06N
76	9	N/A	NUT M4 NYLOC ZINC	NM04N8Z
75	4	N/A	NUT 3/8` UNC NYLOCK	N06NCN
74	2	N/A	NUT 1/4 UNC NYLOC	N04NCN
73	1	N/A	LANYARD 1.5mm 7X7 SOFT LOOP BOTH ENDS 300mm OAL	LANYARD0150300-SLSL
72	2	N/A	KEY RING 35mm OD x 1.85mm CS NICKEL PLATED COPPER	KEYRING35185-CN
71	1	N/A	LIFTING POINT WLL 220 LB	IDTAG15
70	1	N/A	TRACKPACK PIVOT POSITIONS	IDTAG07
69	1	N/A	MELVELLE MODEL & SERIAL N/O AL TAG	IDTAG02
68	1	N/A	MELVELLE AUSTRALIA IDENTIFICATION TAG	IDTAG01
67	1	N/A	H161 + MCJF-1716 + 00500 + MCJF-1716	H160-00580-000-S
66	1	N/A	H121 + MCJF-1712 + 00550 + MCJF-1712	H121-00650-000-S
65	1	N/A	H121 + MCJF-1712 + 00250 + MCJF-1712	H121-00350-000-S
64	2	N/A	H082 + MCJF-1408 + 01372 + MCBM-0808	H082-01450-008
63	1	N/A	H082 + MCJF-1408 + 00561 + MCJF905-1408	H082-00660-004
62	1	N/A	H082 + MCJF-1408 + 00501 + MCJF905-1408	H082-00600-004-S
61	1	N/A	H042 + MCJF-0904 + 01941 + MCBM-0604	H042-02000-008
60	2	N/A	FLAT WASHER - MUD GUARD - 8x24x2	FWM0824
59	9	N/A	FLAT WASHER - ENGINEERS - M4	FWM04
58	8	N/A	FLAT WASHER - ENGINEERS - 3/8" X 3/4" ZINC	FW06
57	8	N/A	FLAT WASHER - ENGINEERS - 5/16" X 5/8" ZINC	FW05
56	10	N/A	FLAT WASHER - ENGINEERS - 1/4" X 1/2" ZINC	FW0408
55	1	N/A	PIPE/CABLE SUPPORT CLAMPS 22mm	ELECT98
54	4	N/A	DISK LOCK WASHER 6mm STAINLESS STEEL	DL0065S
53	1	N/A	PLUG 3/8"BSPP	CP77-06
52	1	N/A	ELBOW 90 M/M 1/2"BSPP X1-1/16"JIC	CP56-0817
51	1	N/A	ELBOW 45 M/M 1/2" BSPP X 1-1/16"JIC	CP38-0817
50	2	N/A	NIPPLE 1/2"BSPP - 1-1/16"JIC	CP2-0817
49	4	N/A	NIPPLE 1/2" BSPP X 7/8" JIC	CP2-0814
48	1	N/A	NIPPLE 3/8"BSPP X 7/8"JIC	CP2-0614
47	1	N/A	NIPPLE 1/4" BSPP X 9/16" JIC	CP2-0409
46	1	N/A	NIPPLE M/M 1/2" X 1/2" BSPP	CP1-0808
45	1	N/A	LIFTING CHAIN CONNECTIN LINK GR T80 WLL 2.0T -8mm	CHALI08-T80
44	1	331 (12 LINKS)	REGULAR PROOF COIL CHAIN SIZE 6mm	CHAIN06
43	1	N/A	TEE M/F/F 1"BSPT	CB64-161616
42	2	N/A	NIPPLE 1"BSPT X 1-1/16"JIC	CB2-1617
41	1	N/A	NIPPLE 1"BSPT X 7/8"JIC	CB2-1614
40	4	N/A	PLASTIC CAP - PUSH IN CAP M10	CAPSPF-M10
39	2	N/A	PLASTIC CAP TO SUIT 20NB PIPE	CAPRND-1"
38	2	N/A	BOLT METRIC M8 X 40LG ZINC GR8.8	BM0840
37	2	N/A	BOLT METRIC M6 X 65LG ZINC GR8.8	BM0665Z
36	2	N/A	BOLT M6 x 20 HT	BM0620
35	2	N/A	BOLT M6 x 12 ZINC	BM0612
34	4	N/A	BOLT HT 3/8" UNC X 1-3/4"	BC0628
33	1	N/A	HONDA ENGINE GX390 13HP -1BAMPELECTRIC START ENGINE 1" SHAFT	1540687
32	1	N/A	BATTERY 12V SEALED 120AH DEKA	1540412
31	1	N/A	TEE BOLT LOCKING NUT	1450284
30	1	N/A	1/2" TEE LOCKING BOLT 2" LONG	1450283
29	1	N/A	ROLL BAR_BOOM ASSBLY FOR BRAKE MANIFOLD_IMPERIAL	1430160
28	1	N/A	WIRING HARNESS HONDA TP FOR FP-143-HE02A	1430157
27	1	N/A	IGNTION ROTATION LOWER ROTATION BRACKET HONDA GX	1430156
26	1	N/A	IGNTION ROTATION UPPER ROTATION BRACKET HONDA GX	1430155
25	1	N/A	CROSS TROLLEY FRAME LIGHT DUTY (PIVOT PIN VERSION)	1430149
24	1	N/A	BATTERY LOCKOUT MOUNT BRACKET	1430136
23	1	N/A	IN-LINE PRESSURE FILTER 1/2"BSPP	1430122
22	1	N/A	FILTER MOUNT PLATE	1430120
21	1	N/A	BRAKE MANIFOLD - ELECTRIC SOLENOID	1430119
20	1	N/A	BATTERY BOX TOP CLAMP	1430113
19	1	N/A	BATTERY BOX FOR TRACKPACKS DEKA BATTERY	1430112
18	1	N/A	BOOM QUICK CHANGE ADAPTOR RETAINING PIN	1430047
17	1	N/A	COOLER AIR COWLING HONDA & YANMAR	1430014
16	1	N/A	COOLER/RADIATOR - HONDA FITTED WITH FILLER BREATHER	1430008
15	1	N/A	SNAP CONNECTOR FLUSH FACED 1/2 BSPP MALE	1430005
14	1	N/A	SNAP CONNECTOR FLUSH FACED 1/2 BSPP FEMALE	1430004
13	8	N/A	CUSHION MOUNT STUDS	1150925
12	4	N/A	RADIATOR RUBBER MOUNT	1150400
11	1	N/A	BELL HOUSING - GROUP 1&2 7-18HP ENGINES FEMALE	1110023
10	1	N/A	PUMP COUPLING - GROUP 2 65 SERIES	1110021
9	1	N/A	MP FILTER	1081289
8	2	N/A	MP FILTER SPACER	1081288
7	2	N/A	CROSS TROLLEY AXLE	1081108
6	2	N/A	CROSS TROLLEY ROLLERS	1081103
5	1	N/A	PUMP 8.2cc GROUP 2-1 8 TAPERSHAFT 1/2" BSPP PORTS	1080845
4	1	N/A	ENGINE COUPLING RUBBER SPIDER 65 SERIES	1080710
3	1	N/A	ENGINE HALF COUPLING - 1 SHAFT 65 SERIES	1080708
2	1	N/A	PUMP HEAT GASKET - GRP 2	1080059
1	1	N/A	MALE 3/8" FLUSH FACED SNAP CONNECTOR	1020342

MATERIAL/CUT LIST

REV	DATE	DRN	DESCRIPTION	CHK	APP
1	24/04/2017	JMC	-	SWAPPED MELVELLE & SERIAL TAG POSITIONS. MELVELLE TAG WAS FOLLOWED ON ISOLATOR BRACKET	EMD	EMD
0	20/03/2017	GM	-	ORIGINAL ISSUE	EMD	EMD

TOLERANCES UNO - DIMENSIONS in mm UNO
XX ±0.1 XXX. ±2.0
X ±0.2 XXXX. ±3.0
X. ±0.5 X° ±0.1°
XX. ±1.0 X.° ±0.5°

DESCRIPTION: HONDA ELECTRIC TRACKPAKC INCLUDING BRAKE MANIFOLD
PART #: FP-143-HE-02A
DRAWN: Garry 19/04/2017
MODELLED BY: garym
CHECKED: EMD
APPROVED: EMD
SCALE: 1:4
DWG NO: 1-143-141
REV: 1

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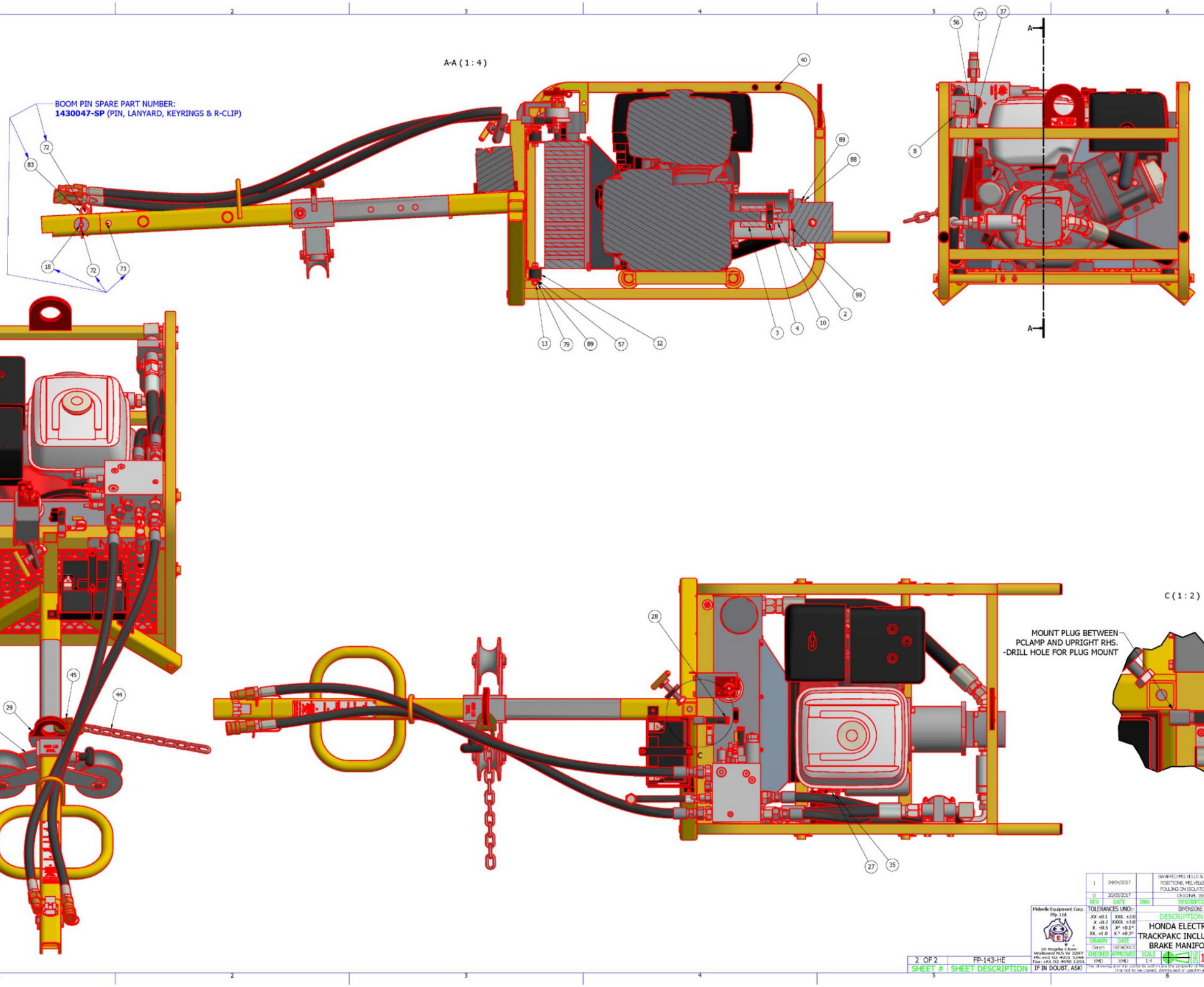
Fax:+61 02 4950 1291

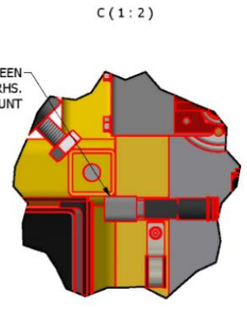
1 OF 2 SHEET #
FP-143-HE SHEET DESCRIPTION
IF IN DOUBT, ASK!

A-A (1 : 4)

BOOM PIN SPARE PART NUMBER:
1430047-SP (PIN, LANYARD, KEYRINGS & R-CLIP)



C (1 : 2)



REV	DATE	DRN	DESCRIPTION	CHK	APP
1	24/04/2017		WARPED MS HELLE & SERIAL TAG POSITIONS, MELVILLE TAG WAS FOLLING ON ISOLATOR BRACKET	BMD	BMD
0	20/03/2017		ORIGINAL ISSUE	BMD	BMD

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TOLERANCES UNO:-
.XX ±0.1 XXX. ±2.0
.X ±0.2 XXXX. ±3.0
X. ±0.5 X° ±0.1°
XX. ±1.0 X.° ±0.5°

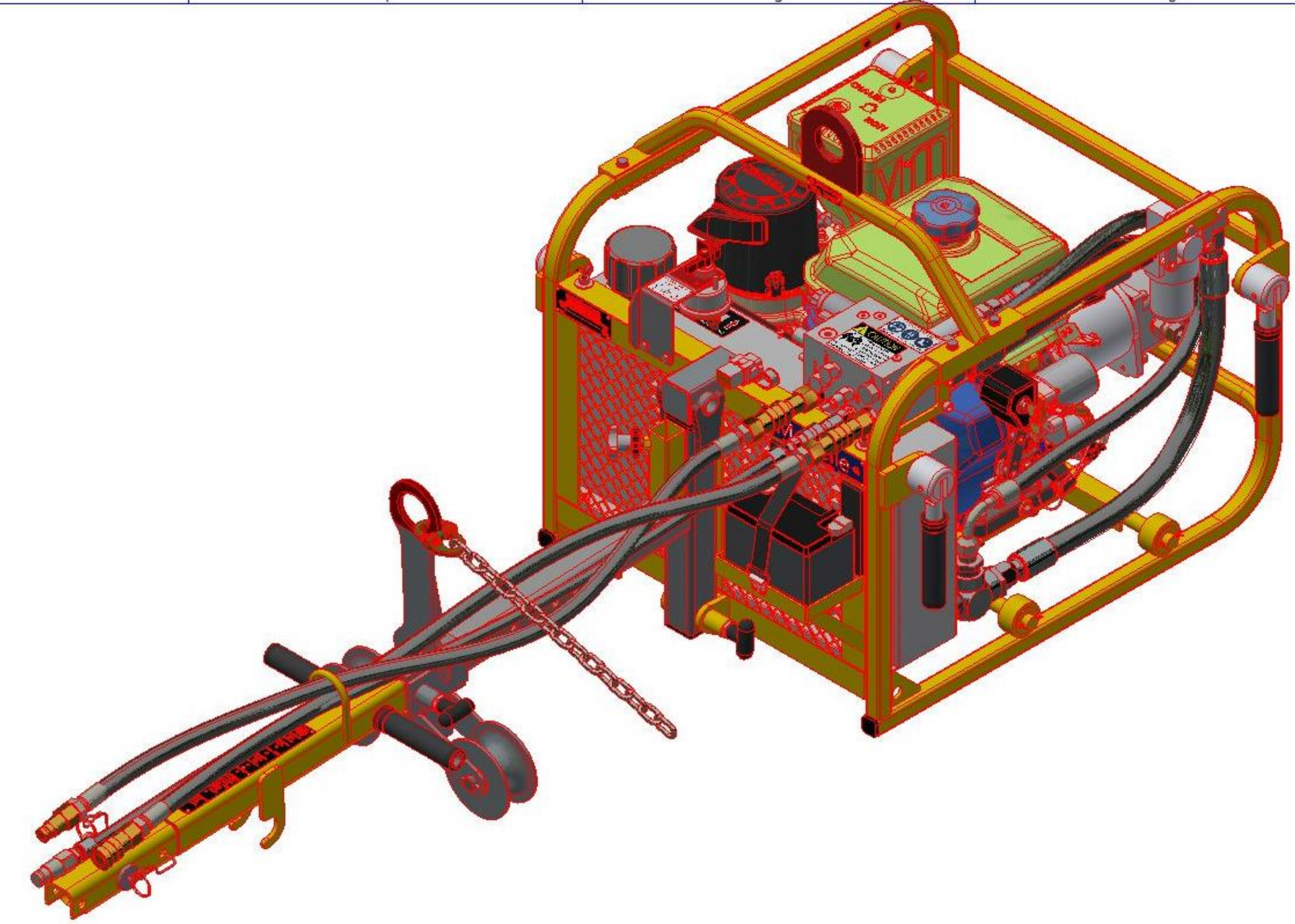
DIMENSIONS IN mm UNO

DESCRIPTION: HONDA ELECTRIC TRACKPAKC INCLUDING BRAKE MANIFOLD
PART #: FP-143-HE-02A
DRAWN: Garym DATE: 18/04/2017
MODELLED BY: garym
CHECKED: BMD APPROVED: BMD
SCALE: 1:4
SIZE: A1
1-143-141
REV: 1

2 OF 2 FP-143-HE
SHEET # SHEET DESCRIPTION
IF IN DOUBT, ASK

13.17 Trackpack Kohler Electric Start – Imperial Version (USA)

SHEET #	SHEET DESCRIPTION
1 OF 4	BOM



ITEM	DESCRIPTION	PART NUMBER	ITEM QTY
84	ROUND POLYAMIDE KNOB M10X10 BRASS THREAD	KNOB-PA-RND-M10X10	1
83	STAR ALUMINIUM KNOB M10X30 SS THREAD	KNOB-AL-ST-M10X30	1
82	KEY RING 35mm OD x 1.85mm CS NICKEL PLATED COPPER	KEYRING35185-CN	2
81	INSERTION RUBBER STRIP 6.0mm THICK 35mm WIDE	INSRUBST60035	2
80	INSERTION RUBBER STRIP 3.0mm THICK 25mm WIDE	INSRUBST30025	2
79	WLL 220 POUNDS	IDTAG15	1
78	MELVELLE MODEL & SERIAL N-O AL TAG	IDTAG02	1
77	MELVELLE AUSTRALIA IDENTIFICATION TAG	IDTAG01	1
76	HANDLE GRIPS FLANGLESS SOFT BLACK 7/8" ID X 127mm	HANDLE-NF-S-B	4
75	H161 + MCJF-1716 + 00500 + MCJF-1716	H160-00580-000-S	1
74	H121 + MCJF-1712 + 00550 + MCJF-1712	H121-00650-000-S	1
73	H121 + MCJF-1712 + 00250 + MCJF-1712	H121-00350-000-S	1
72	H082 + MCJF-1408 + 00990 + MCJF90S-1408 SUCTION	H082-01090-004-S	1
71	H082 + MCJF-1408 + 00480 + MCJF90M-1408	H082-00580-005	1
70	GRUB SCREW M10 SPRING PLUNGER KN SPRING 6mm BALL	GRSM10-SS PLUNG SLOT	4
69	FLAT WASHER - MUD GUARD - 8x24x2	FWM0824	2
68	FLAT WASHER - ENGINEERS - M5	FWM05	1
67	FLAT WASHER - ENGINEERS - 1/4" X 1/2" ZINC	FW0408	11
66	FLAT WASHER - ENGINEERS - 3/8" X 3/4" ZINC	FW06	8
65	FLAT WASHER - ENGINEERS - 5/16" X 5/8" ZINC	FW05	24
64	PIPE-CABLE SUPPORT CLAMPS PVC (VINYL) COATED 18MM	ELECT479	1
63	PIPE-CABLE CLAMP NYLON COATED 22mm M10	ELECT458	1
62	PIPE/CABLE SUPPORT CLAMPS 22mm	ELECT98	1
61	MOUNTING BRACKET, DEUTSCH, SUITS DT & DTM, GREY PLASTIC	D-MOUNT-DT-PL	1
60	PLUG 3/8"BSPP	CP77-06	1
59	ELBOW 90 M/M 1/2"BSPP X1-1/16"JIC	CP56-0817	1
58	ELBOW 45 M/M 1/2" BSPP X 1-1/16"JIC	CP38-0817	1
57	NIPPLE 1/2"BSPP - 1-1/16"JIC	CP2-0817	2
56	NIPPLE 1/2" BSPP X 7/8" JIC	CP2-0814	2
55	NIPPLE 3/8"BSPP X 7/8"JIC	CP2-0614	1
54	NIPPLE M/M 1/2" X 1/2" BSPP	CP1-0808	3
53	NIPPLE 1/4" BSPP x 1/4" BSPP	CP1-0404	1
52	LIFTING CHAIN CONNECTIN LINK GR T80 WLL 2.0T -8mm	CHALJ08-T80	1
51	REGULAR PROOF COIL CHAIN SIZE 6mm	CHAIN06	1
50	TEE M/F/F 1"BSPT	CB64-161616	1
49	NIPPLE 1"BSPT X 1-1/16"JIC	CB2-1617	2
48	NIPPLE 1"BSPT X 7/8"JIC	CB2-1614	1
47	PLASTIC CAP TO SUIT 25mm RHS - 1-2mm WT	CAPSQ-M025	2
46	PLASTIC CAP - PUSH IN CAP M10	CAPSPF-M10	4
45	BOLT METRIC M8 x 45LG ZINC GR8.8	BM0845	4
44	BOLT METRIC M8 X 40LG ZINC GR8.8	BM0840	2
43	BOLT METRIC M6 X 65LG ZINC GR8.8	BM0665Z	2
42	BOLT M6 x 20 HT	BM0620	2
41	BOLT HT 3/8" UNC X 1-3/4"	BC0628	4
40	BATTERY 12V SEALED AGM 220CCA 12AH DEKA - ETX14	1541633	1
39	ENGINE KOHLER 14HP PETROL ELECTRIC START 1" SHAFT	1541632	1
38	BATTERY ISOLATOR SWITCH - INCLUDING RED LOCKOUT	1540813	1
37	BATTERY 12V SEALED 120AH DEKA	1540412	1
36	KOHLER HANDLE	1430236	1
35	KOHLER ROLL BAR ASSEMBLY REMOVABLE BOOM	1430233	1
34	OVER TOP LIFTING BRACKET LOAD PLATE 100mm HOLES	1430231	1
33	OVER TOP LIFTING BRACKET LOAD PLATE 75mm HOLES	1430230	1
32	POWER PACK OVER TOP LOW CLEARANCE LIFTING BRACKET	1430229	1
31	KOHLER FUSE BRACKET	1430228	1
30	KOHLER ENGINE KEY RE-POSITION BRACKET	1430227	1
29	GEN 2 BRAKE HOSE ASSEMBLY	1430223	1
28	TIER 4 TO WORKHEAD PRESSURE HOSE ASSEMBLY	1430222	1
27	TRACKPACK REMOVABLE BOOM FOR HONDA	1430218	1
26	TRACKPACK HANDLE PIVOT MOUNT	1430202	4
25	TRACKPACK CARRY HANDLE	1430201	4
24	SNAP CONNECTOR FLUSH FACED 1/4 BSPP MALE	1430187	1
23	CROSS TROLLEY FRAME LIGHT DUTY (PIVOT PIN VERSION)	1430149	1
22	BATTERY LOCKOUT MOUNT BRACKET	1430136	1
21	IN-LINE PRESSURE FILTER 1/2"BSPP	1430122	1
20	FILTER MOUNT PLATE	1430120	1
19	BRAKE MANIFOLD - ELECTRIC SOLENOID	1430119	1
18	BOOM QUICK CHANGE ADAPTOR RETAINING PIN	1430047	1
17	COOLER AIR COWLING HONDA & YANMAR	1430014	1
16	COOLER/RADIATOR - HONDA FITTED WITH FILLER BREATHER	1430008	1
15	SNAP CONNECTOR FLUSH FACED 1/2 BSPP MALE	1430005	1
14	SNAP CONNECTOR FLUSH FACED 1/2 BSPP FEMALE	1430004	1
13	CUSHION MOUNT STUDS	1150925	8
12	RADIATOR RUBBER MOUNT	1150400	4
11	BELL HOUSING - GROUP 1&2 7-18HP ENGINES FEMALE	1110023	1
10	PUMP COUPLING - GROUP 2 65 SERIES	1110021	1
9	MP FILTER	1081289	1
8	MP FILTER SPACER	1081288	2
7	CROSS TROLLEY AXLE	1081108	2
6	CROSS TROLLEY ROLLERS	1081103	2
5	PUMP 8.2cc GROUP 2-1 8 TAPERSHAFT 1/2" BSPP PORTS	1080845	1
4	BELL HOUSING CENTERING RING GROUP 2	1080765	1
3	ENGINE COUPLING RUBBER SPIDER 65 SERIES	1080710	1
2	ENGINE HALF COUPLING - 1 SHAFT 65 SERIES	1080708	1
1	PUMP HEAT GASKET - GRP 2	1080059	1

PARTS LIST

ITEM	DESCRIPTION	PART NUMBER	ITEM QTY
118	KOLHER TP WIRING HARNESS PREMANUFACTURED	WIRHAR-143-KE	1
117	U DRIVE SCREW	UDSCREW	10
116	5/16" SPRING WASHER	SW05	20
115	SOCKET HEAD CAP SCREW M8 x 30	SHM0830	4
114	SOCKET HEAD CAP SCREW M8 x 20	SHM0820	4
113	SOCKET HEAD CAP SCREW M6 x 25	SHM0625	2
112	SOCKET HEAD CAP SCREW 5/16" UNF X 1-1/4"	SHF0520	4
111	SOCKET HEAD BUTTON M8 X 25 STAINLESS 316 A470	SHBM08025-A470SS	8
110	SOCKET HEAD BUTTON SCREW M6x30LG STAINLESS 304	SHBM06030-304SS	1
109	SOCKET HEAD BUTTON SCREW M6 x 20 STAINLESS 304 A270	SHBM06020-304SS	3
108	SOCKET HEAD BUTTON SCREW M5X16 STAINLESS 316 A470	SHBM05016-316SS	1
107	SOCKET HEAD BUTTON M5 x 10 STAINLESS 304 A270	SHBM05010-304SS	1
106	SEL LOK PIN M8 X 50 ZINC	RM080050-Z	4
105	RIVET ALUM. TRUSS HD 3/16" DIA 1=3/16" - 1/4" GRIP	RIV-73AS-6-6-8	4
104	RIVET ALUM. TRUSS HD 3/16" DIA. 1/8" - 3/16" GRIP	RIV-73AS-6-2-6	8
103	R CLIP DOUBLE COIL 4mm ZINC PL	RCLIPD04	1
102	SEL LOK PIN 3/16in x 1-1/4in	R18732	4
101	SEL LOK PIN 1/4` X 2`	R0432	1
100	DOWTY SEAL 1/2"BSPP STD	R04B-08	3
99	DOWTY SEAL 1/4"BSPP STD	R04B-04	1
98	M6 LARGE FLANGE NUTSERT	NSM06L	3
97	NUT M10 x 1.5 METRIC COARSE HALF NUT 316 STAINLESS	NM10H-316	4
96	NUT M8 ZINC	NM08Z	8
95	NUT M8 NYLOC	NM08N	6
94	NUT M6 NYLOC	NM06N	6
93	NUT M5 NYLOC	NM05N	1
92	NUT 3/8` UNC NYLOCK	N06NCN	4
91	OVER CENTER LATCH LARGE WIDE KEEPER ZINC	LATCH-LWKEEPER-Z	2
90	LANYARD 1.5mm 7X7 SOFT LOOP BOTH ENDS 300mm OAL	LANYARD0150300-SLSL	1
89	ISOLATOR DOES NOT STOP ENGINE	LAB0119	1
88	THROTTLE LEVER STICKER	LAB0117	1
87	FUEL AND CHOKE STICKER	LAB0116	1
86	FOUR PERSON LIFT STICKER - TRACKPACKS	LAB0032	1
85	PPE SAFETY STICKERICKER (EAR VEST SAFETY)	LAB0008	1

PARTS LIST

REV	DATE	DRN	CRF	DESCRIPTION	CHK	APP
1	06/12/2022	DB	1975	RUBBER ADDED BEHIND BATTERY, RUBBER RETAINING STRAP ADDED, MANIFOLD FITTINGS CHANGED FROM BSPPxJIC TO BSPPxBSPP, DETENTS AND NUTS ADDED TO HANDLES, SNAP CONNECTORS ADDED TO BRAKE HOSE. SHEET SIZE INCREASE FROM A3.	-	-
0	8/10/2022	-	-	ORIGINAL ISSUE	-	-

Melvelle Equipment Corp. Pty. Ltd
10 Rogilla Close
Wallsend N.S.W 2287
Ph: +61 02 4951 5244
Fax: +61 02 4950 1291

TOLERANCES UNO:-
.XX ±0.1 | XXX. ±2.0
.X ±0.2 | XXXX. ±3.0
X. ±0.5 | .X° ±0.1°
XX. ±1.0 | X.° ±0.5°

DIMENSIONS IN mm UNO

DESCRIPTION: KOHLER ELECTRIC START TRACKPACK - IMPERIAL UNITS

PART #: FP-143-KE-02A

DRAWN: bryceb | DATE: 10-Aug-22 | MODELLED BY: garym

CHECKED: JMC | APPROVED: JMC | SCALE: N/A | DRG: 2-143-270 | REV: 1

IF IN DOUBT, ASK!

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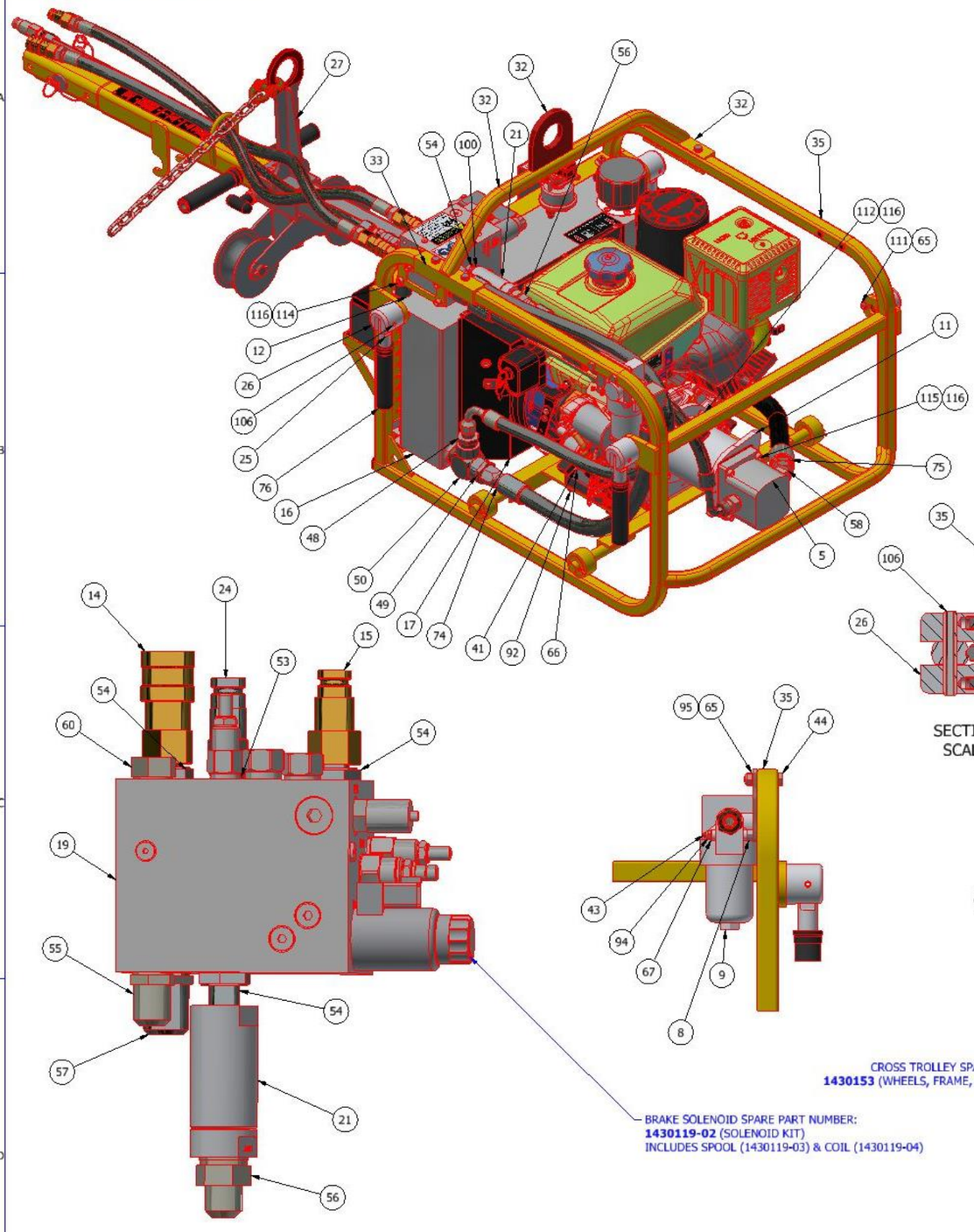
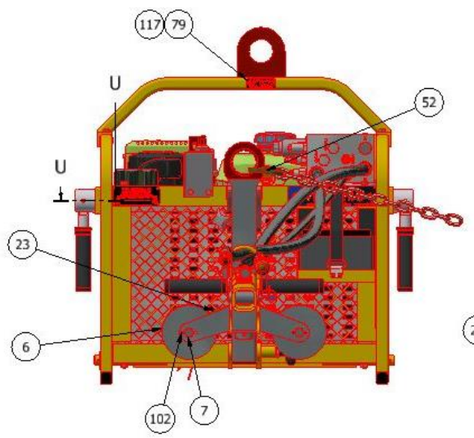
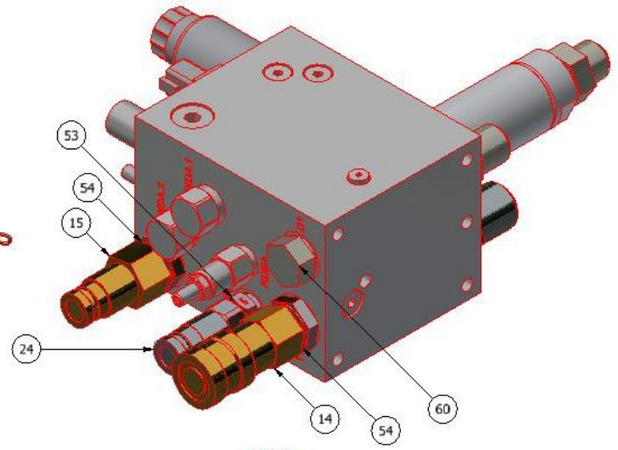
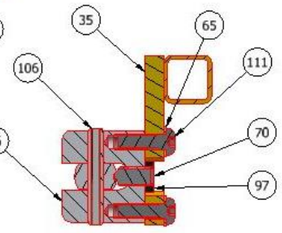
2 OF 4	ASSEMBLY
SHEET #	SHEET DESCRIPTION

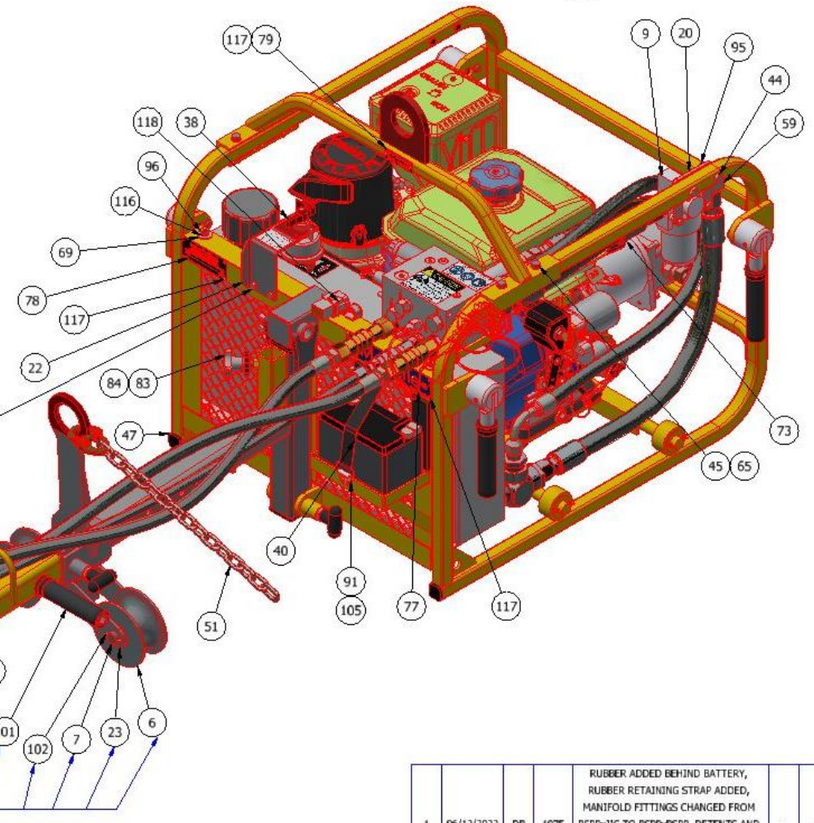








SECTION U-U
SCALE 1 : 2



BRAKE SOLENOID SPARE PART NUMBER:
1430119-02 (SOLENOID KIT)
INCLUDES SPOOL (1430119-03) & COIL (1430119-04)

CROSS TROLLEY SPARE PART NUMBER:
1430153 (WHEELS, FRAME, AXLE & ROLL PINS)

REV	DATE	DRN	CRF	DESCRIPTION	CHK	APP
1	06/12/2022	DB	1975	RUBBER ADDED BEHIND BATTERY, RUBBER RETAINING STRAP ADDED, MANIFOLD FITTINGS CHANGED FROM BSPPxJIC TO BSPPxBSPP, DETENTS AND NUTS ADDED TO HANDLES, SNAP CONNECTORS ADDED TO BRAKE HOSE. SHEET SIZE INCREASE FROM A3.	-	-
0	8/10/2022	-	-	ORIGINAL ISSUE	-	-

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TOLERANCES UNO:-
.XX ±0.1 XXX. ±2.0
.X ±0.2 XXXX. ±3.0
X. ±0.5 .X° ±0.1°
XX. ±1.0 X.° ±0.5°

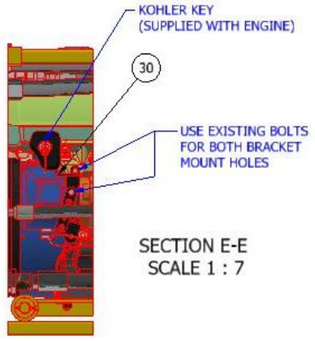
DIMENSIONS IN mm UNO

DESCRIPTION	PART #
KOHLER ELECTRIC START TRACKPACK - IMPERIAL UNITS	FP-143-KE-02A

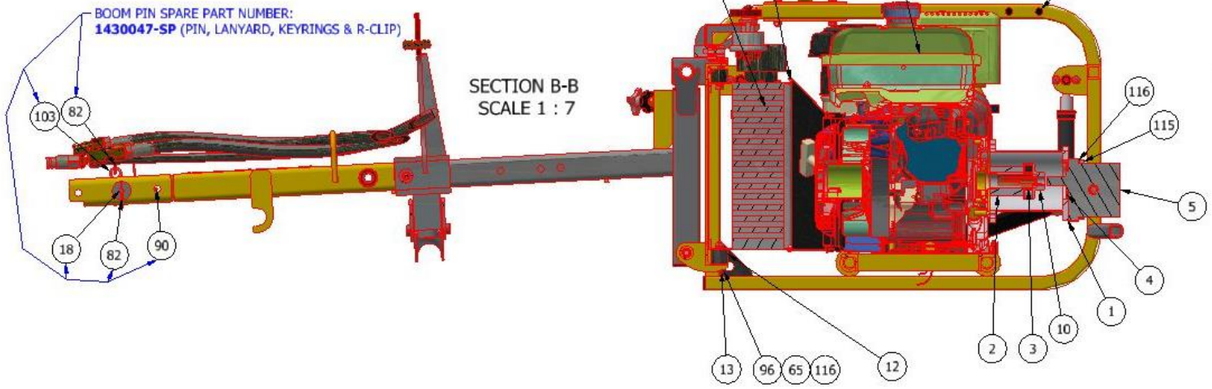
DRAWN	DATE	MODELLED BY
bryceb	10-Aug-22	garym
CHECKED	APPROVED	SCALE
JMC	JMC	1:7

DRG 2-143-270 REV 1

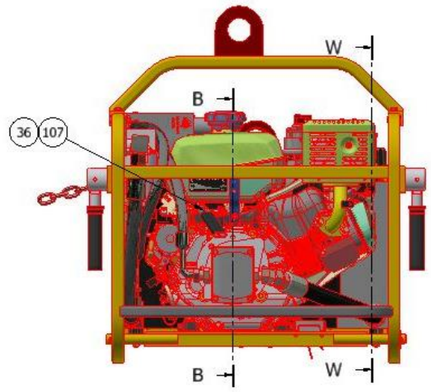
3 OF 4	ASSEMBLY
SHEET #	SHEET DESCRIPTION

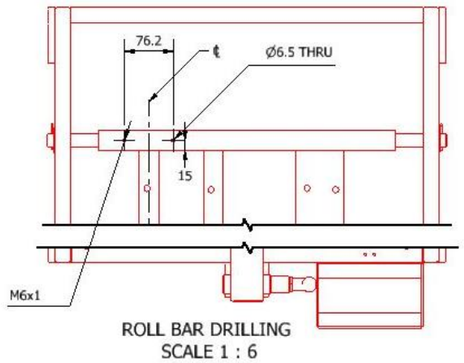


SECTION E-E
SCALE 1 : 7

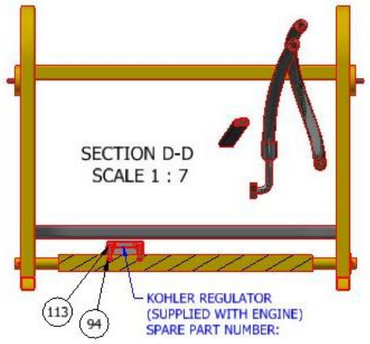


SECTION B-B
SCALE 1 : 7

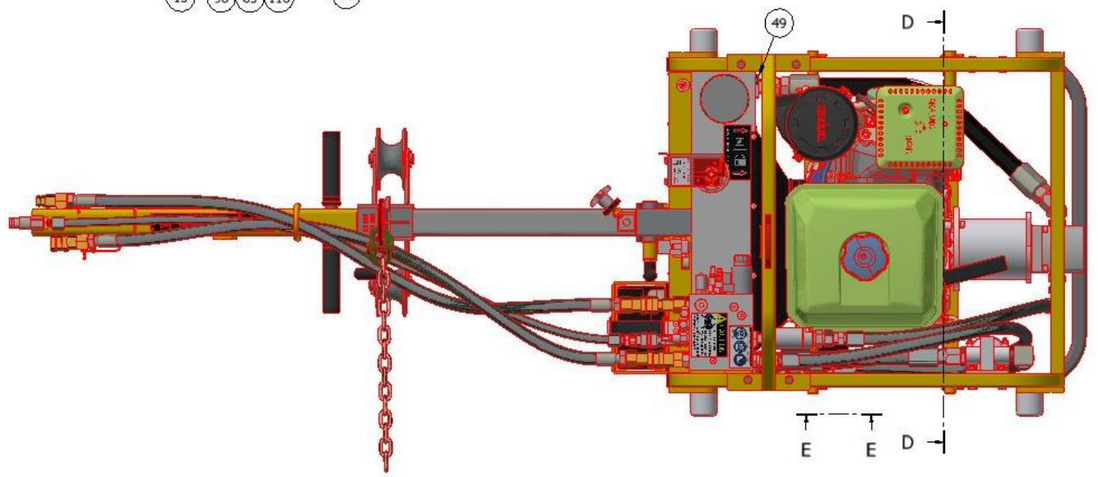




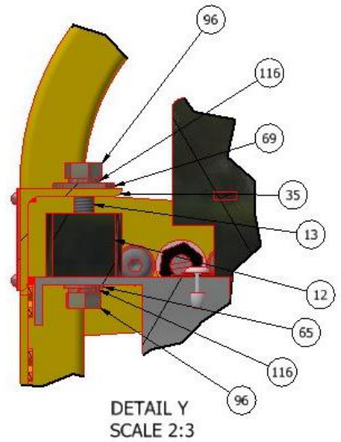
ROLL BAR DRILLING
SCALE 1 : 6



SECTION D-D
SCALE 1 : 7



SECTION W-W
SCALE 1 : 8



DETAIL Y
SCALE 2:3

REV	DATE	DRN	CRF	DESCRIPTION	CHK	APP
1	06/12/2022	DB	1975	RUBBER ADDED BEHIND BATTERY, RUBBER RETAINING STRAP ADDED, MANIFOLD FITTINGS CHANGED FROM BSPPxJIC TO BSPPxBSPP, DETENTS AND NUTS ADDED TO HANDLES, SNAP CONNECTORS ADDED TO BRAKE HOSE. SHEET SIZE INCREASE FROM A3.	-	-
0	8/10/2022	-	-	ORIGINAL ISSUE	-	-

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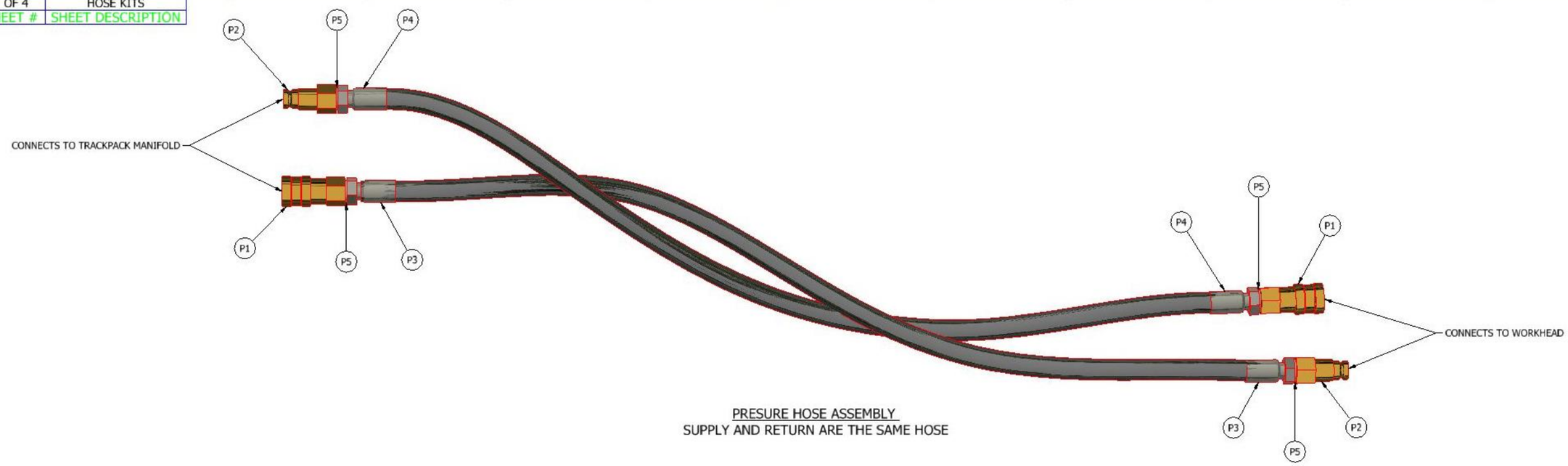
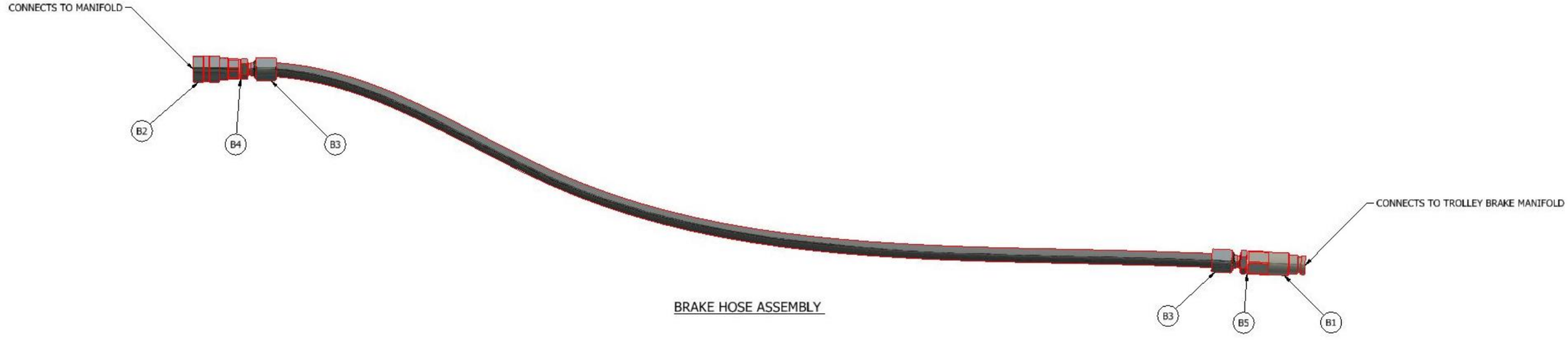
TOLERANCES UNO:-		DIMENSIONS IN mm UNO	
.XX ±0.1	XXX. ±2.0	DESCRIPTION	PART #
.X ±0.2	XXXX. ±3.0	KOHLER ELECTRIC START TRACKPACK - IMPERIAL UNITS	FP-143-KE-02A
X. ±0.5	.X° ±0.1°		
XX. ±1.0	X.° ±0.5°		
DRAWN	DATE		MODELLED BY
bryceb	10-Aug-22		garym
CHECKED	APPROVED	SCALE	DWG 2-143-270 REV 1
JMC	JMC	1:8	

4 OF 4	HOSE KITS
SHEET #	SHEET DESCRIPTION



PRESURE HOSE ASSEMBLY
SUPPLY AND RETURN ARE THE SAME HOSE



BRAKE HOSE ASSEMBLY

ITEM	DESCRIPTION	PART NUMBER	ITEM QTY
B5	DOWTY SEAL 3/8" BSPP	R04B-06	1
B4	DOWTY SEAL 1/4"BSPP STD	R04B-04	1
B3	H042 + MCBPM-0404 + 01936 + MCBPM-0604 (BSPP)	H042-02000-0915-0604	1
B2	SNAP CONNECTOR FLUSH FACED 1/4 BSPP FEMALE	1430189	1
B1	MALE 3/8" FLUSH FACED SNAP CONNECTOR	1020342	1

PARTS LIST

ITEM	DESCRIPTION	PART NUMBER	ITEM QTY
P5	DOWTY SEAL 3/8" BSPP	R04B-06	4
P4	H082 + MCBPM-0808 + 01367 + MCBPM-0808	H082-01450-0915	1
P3	H082 + MCBPM-0808 + 01367 + MCBPM-0808	H082-01450-0915	1
P2	SNAP CONNECTOR FLUSH FACED 1/2 BSPP MALE	1430005	2
P1	SNAP CONNECTOR FLUSH FACED 1/2 BSPP FEMALE	1430004	2

PARTS LIST

REV	DATE	DRN	CRF	DESCRIPTION	CHK	APP
1	06/12/2022	DB	1975	RUBBER ADDED BEHIND BATTERY, RUBBER RETAINING STRAP ADDED, MANIFOLD FITTINGS CHANGED FROM BSPPxJIC TO BSPPxBSPP, DETENTS AND NUTS ADDED TO HANDLES, SNAP CONNECTORS ADDED TO BRAKE HOSE. SHEET SIZE INCREASE FROM A3.	-	-
0	8/10/2022	-	-	ORIGINAL ISSUE	-	-

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TOLERANCES UNO:-		DIMENSIONS IN mm UNO	
.XX ±0.1	XXX. ±2.0	DESCRIPTION	PART #
.X ±0.2	XXXX. ±3.0	GEN 2 BRAKE HOSE ASSEMBLY	1430223
X. ±0.5	.X° ±0.1°		
XX. ±1.0	X.° ±0.5°		
DRAWN	DATE		MODELLED BY
bryceb	10-Aug-22		dominicb
CHECKED	APPROVED	SCALE	DRG 2-143-270 REV 1
JMC	JMC	1:3	