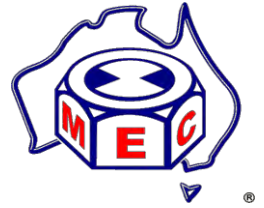


Melville Equipment Corp Pty Ltd

“Proud Australian Manufacturers”



143 Spike Driver Operation Manual



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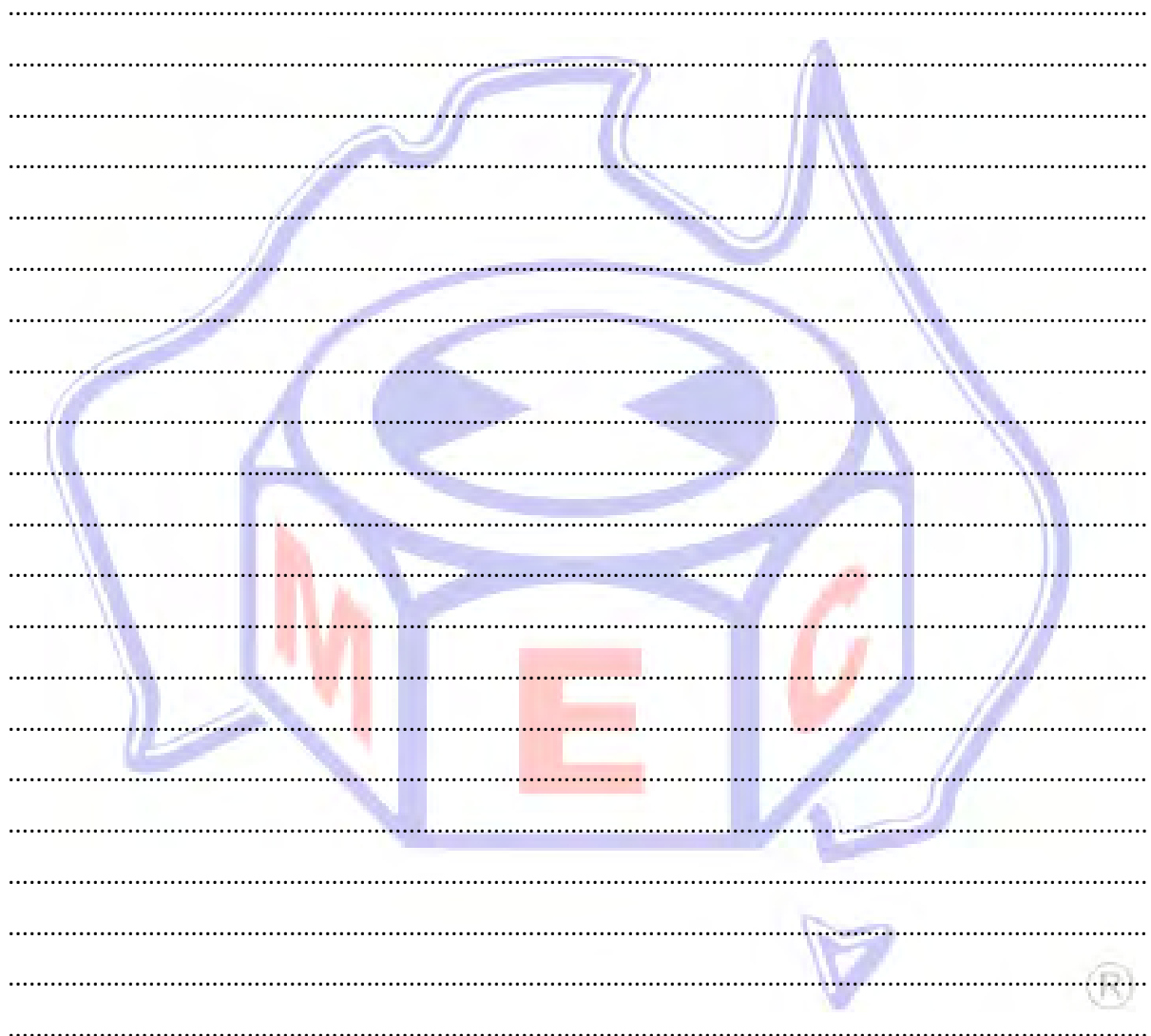
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Notes:



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Preface

Every attempt has been made to present accurate and current information within this manual. However, as product development on the Spike Driver 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 Melville 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 SPIKE DRIVER AND POWERPACKS

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.



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 MELVILLE EQUIPMENT CORP. PTY LTD. OR CERTIFIED AND AUTHORISED DEALER.








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.

Safety Symbols & Signal Words







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



Hazard Warning Signs

	<p>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.</p>
	<p>This is the fire risk symbol. It is used to alert you to the potential of a fire starting if ignition sources are present.</p>
	<p>This is the explosive risk symbols. It is used to alert you to the potential of an explosion /explosive substances present.</p>
	<p>This is the toxic hazard symbol. It is used to alert you to the presence of toxic substances.</p>
	<p>This is the corrosive risk symbol. It is used to alert you to the presence of corrosive substances.</p>
	<p>This is the electric shock risk symbols. It is used to alert you to the presence of an electrical supply.</p>
	<p>This is the battery symbol. It is used to alert you to the potential hazard of electrical supply, battery acid and leaking batteries.</p>


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

Personal Protection Symbols

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

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

Prohibition Symbols

	<p>This is the naked flame symbol. It is used when there is not to be a fire, naked flame, ignition sources and smoking nearby.</p>
-------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------

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.



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



Wear personal protective equipment around this machinery.

For example: safety glasses, hearing protection, head protection, protective clothing and safety shoes at all times.



Accidental Starts can cause severe death or injury.

Disable engine by disconnecting negative (-) battery cable. Ensure machinery is started in the neutral position.



Rotating parts can cause severe injury

Stay away whilst machine is in operation. Ensure ALL guarding is in place and secured before operation.



Hot parts can cause severe burns.

Do not touch machinery whilst in operation.



Carbon monoxide can cause severe nausea, fainting or death.

Avoid inhaling exhaust fumes and never operate the engine in a closed or refined area.



Fuel can cause fires and severe burns.

Do not fill the fuel tank while the engine is hot or running.



Explosive gas can cause fires and severe acid burns.

Charge battery only in a well-ventilated area. Keep sources of ignition away.



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.



Clamping parts can cause severe injury.



Stay away whilst machine is in operation. Ensure ALL guarding is in place and secured before operation.



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.



<p>Electrical shock can cause injury. Do not touch wires whilst engine is running.</p>



<p>Attachment hoses must have a minimum working pressure rating of 3000psi. Do not use hoses and fittings that are not pressure rated.</p>



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



<p>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.</p>

Equipment Stickers & Tags

Below are the stickers and tags utilised on this equipment.



IDTAG01 – Melville Identification Tag



IDTAG02 – Model & Serial No. Tag



LAB0008 – Safety Label



LAB0009 – Hydraulic Oil Label



IDTAG04 – Emergency Stop Warning Label



IDRLHEI - Rail Height Spacer Tag

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 work head
- Dedicated machines have a dedicated Emergency Stop to the power pack – they are wired into the machine
- Trackpacks and removable power packs that are fitted with a wiring harness **WILL NOT OPERATE** unless a work head 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

Specifications

FP-143-BZ - Spike Driver Head

Engine	MEC Trackpack
Dimensions	450mm long x 400mm wide x 1000mm high
Weight (wet)	45kg
Pressure (max)	150 bar / 2200psi
Pump Flow	30L/min Max
Fuel Type	MEC Trackpack
Hydraulic Oil*	ISO68
Hydraulic Hose Connection Size	½"

*The type of hydraulic oil depends on ambient air temperatures. ISO68 is a good, general purpose oil for ambient conditions between 10-30°C. If the ambient temperature is between 0-10°C use the next lighter oil grade. If the ambient temperature is between 30-50°C, use the next heavier oil grade.

Operation

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 just above the centre cone under the filter breather cover by 2-20mm
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, acid levels are OK, the battery has charge and the battery leads are free from defects
3. If damaged, replace before use

Halogen Light (if applicable)

1. Visually inspect condition and leads of light
2. Ensure there is no damage and leads are free from defects
3. Before starting, ensure the light is off
4. If damaged, replace before use

Hydraulic Hoses & Filter

1. Visually inspect the hoses and filter
2. Ensure there is no damage
3. If damaged, replace before use

Guards

1. Inspect all guards 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 Emergency stop is electrically connected
2. Ensure the wires are free from damage and connections are clean and dry

Assembly Procedures



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

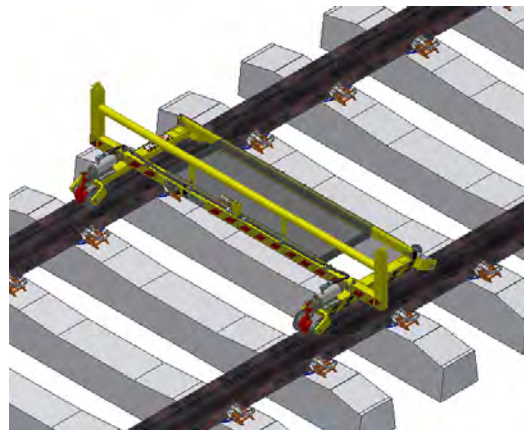
Braked Machine Trolley

1. Inspect the trolley and ensure it is not damaged and free from defects, and all pre operation checks are done as per section **Error! Reference source not found..**



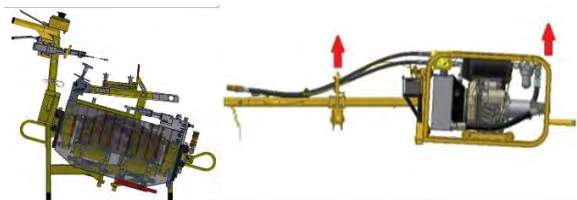
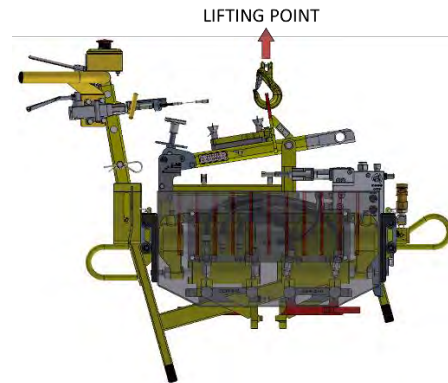
2. Assemble the trolley to the rail lines.

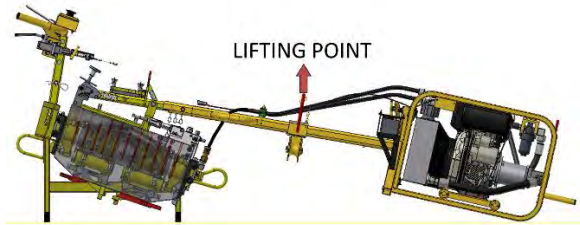
Refer to Braked Machine Trolley Operation Manual for more information



Machine Assembly – Trackpack

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 work head and Trackpack and ensure they are not damaged and are free from defects.
3. A work head weighs approximately 60 kg and a Trackpack weighs approximately 120kg.
4. Lift work head from vehicle, keeping stowage frame attached. Place work head onto ground and support.
5. Adjust the pivot position (cross trolley rollers) to the correct position for the machine. 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 (For more information refer to the Trackpack Manual).
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. Connect the hydraulic quick snaps together. Connect the electrical deutsch plugs together to ensure the Emergency stop and brake is connected to the trackpack.



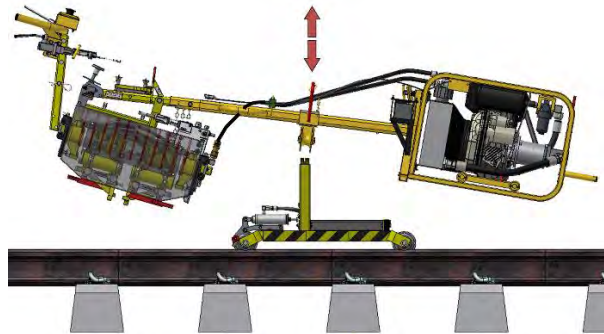


9. By following safe lifting procedures, lift the machine onto the trolley. The cross trolley rollers will sit onto the cross bar (tube).



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.

10. 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.

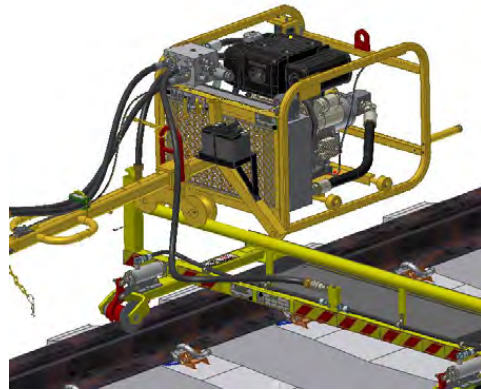


11. Attach the chain to the trolley to ensure the machine will not roll during operation.



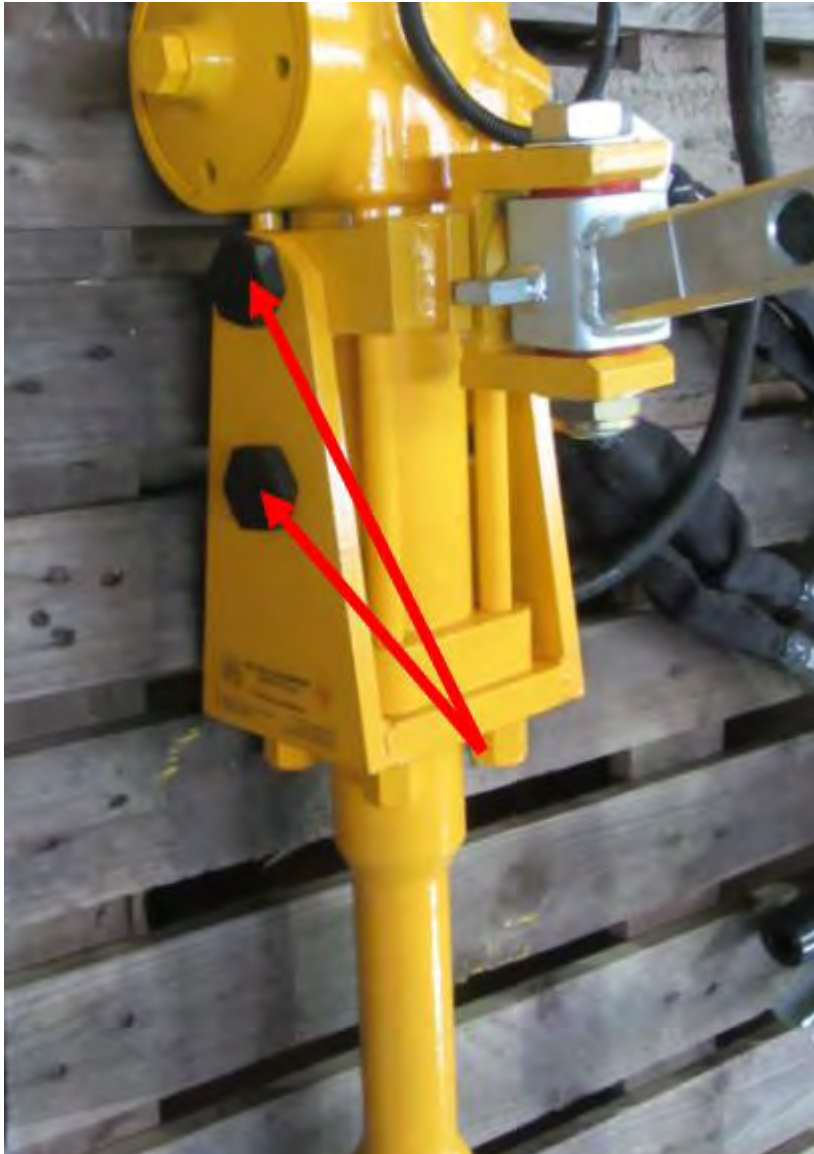
12. Connect the Brake hose to the
Cylinder on the trolley.

13. The equipment is now ready for use.



Machine Adjustment – Workhead Angle

The head angle adjustment is required to ensure the hammer is as vertical as possible when hammering in the spikes. With the unit over a spike adjust the pivot bolts then tighten before using.



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.

Starting the Engine – Electric Start¹

1. Observe all safety precautions as per section **Error! Reference source not found..**
2. Ensure all pre-operation checks have been conducted as per section **Error! Reference source not found..**
3. Assemble the work head, track pack and trolley as per section **Error! Reference source not found..**
4. Ensure Emergency Stop is electrically connected to power pack and not activated
5. Place the throttle at 50% power
6. Turn the key to its first position (on position)
7. Press the decompression lever and hold (if Diesel)
8. Turn key to second position (starting position). Hold until engine starts and the release, allowing the key to return to its first position.
 - a. If Diesel, with the decompression lever pressed, the fly wheel will quickly gain momentum (2-3 seconds) as the starter motor is activated.
 - b. With the engine spinning, release the decompression lever whilst maintaining the key in the start position.
 - c. The engine will start almost immediately. Once started return key to first position.
 - d. 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

¹ Refer to engine manual for detailed engine instructions and requirements

9. Place throttle in idle (min) position and allow engine to warm up – refer manufacturers manual for required times
10. Move throttle to required rpm position, normally full throttle¹
11. Power pack and hydraulic circuit are now in operation and tooling is able to be used.

1.1.1. Starting the Engine – Recoil Start²

1. Observe all safety precautions as per section **Error! Reference source not found..**
2. Ensure all pre-operation checks have been conducted as per section **Error! Reference source not found..**
3. Assemble the work head, track pack and trolley as per section **Error! Reference source not found..**
4. Ensure Emergency Stop is electrically connected to power pack and not activated
5. Place the throttle at 50% power
6. Turn the key to its first position (on position) if applicable.
7. Hold the grip and pull the cord until compression is found
8. Completely rewind the cord (allow to retract)
9. Press the decompression lever (if Diesel)
10. Using two hands, firmly and quickly pull the cord to start
11. Place throttle in idle (min) position and allow engine to warm up – refer manufacturers manual for required times
12. Place throttle at required rpm position, normally full throttle³
13. Power pack and hydraulic circuit are now in operation and tooling is able to be used.

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

² Refer to engine manual for detailed engine instructions and requirements

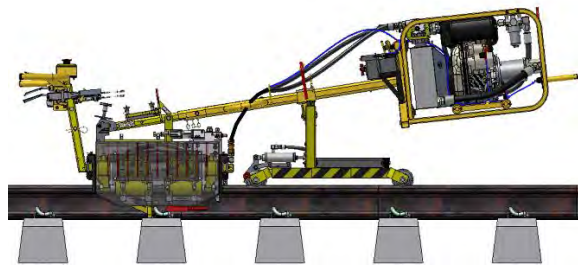
³ During first 50hrs do not exceed 70% maximum rated power

1.1.2. Equipment Operation – Releasing the Brake

All new machine trolleys are fitted with fail-safe brakes. These brakes are released by hydraulic pressure, supplied by connecting the ¼" hydraulic hose line to the trolley as stated in assembly procedures.

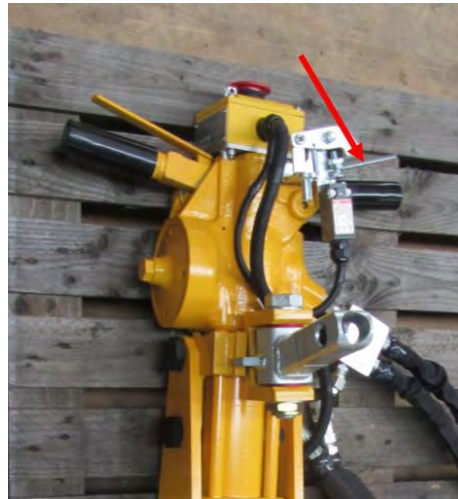
To release the brake on the trolley:

1. Observe all safety precautions as per section **Error! Reference source not found.**
2. Ensure all pre-operation checks have been conducted as per section **Error! Reference source not found.**
3. Assemble to work head, track pack and trolley as per section **Error! Reference source not found.**
4. Ensure any necessary machine adjustments have been complete as per section 0
5. Ensure all hydraulic and electrical connectors are connected – these control the operation of the brakes and also the machine.
6. If there is a manual pull cable for the brake manifold (small flexible cable), connect this to the trigger – as shown.
7. To assemble a manual pull cable to the brake trigger, slide the cable through the outer cable holder. Pull down on the cable connection at the end of the cable to open and slide over the ball located on the trigger. The outer cable should locate on the back of the outer cable holder. Adjustment of the cable may be



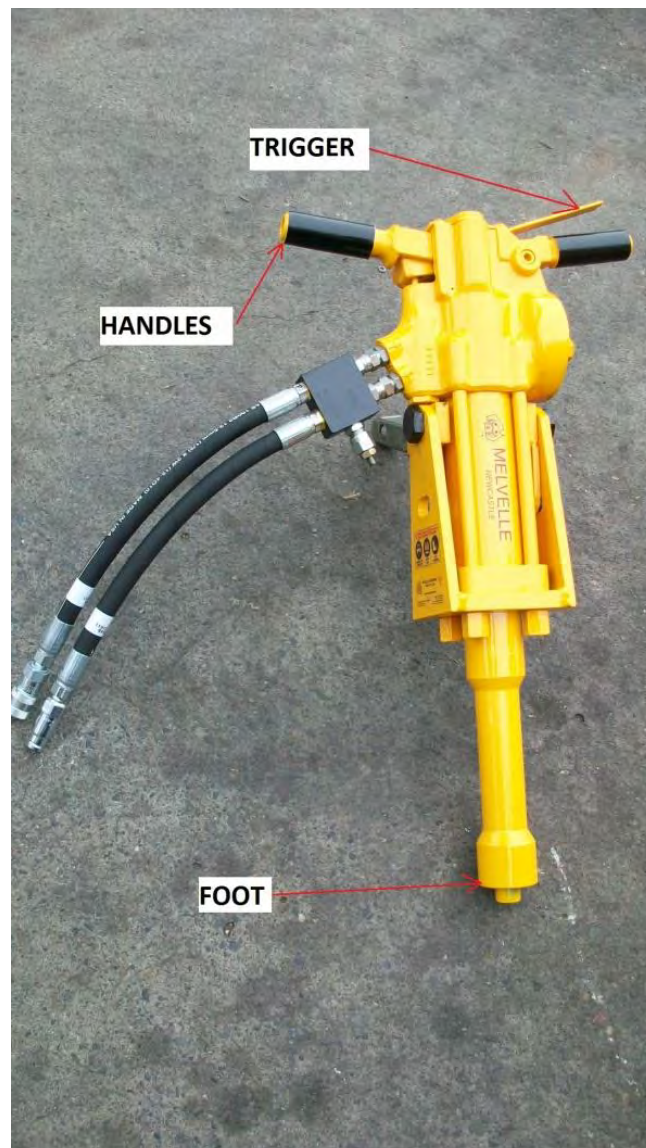
required before and after
assembly of the cable to the
trigger.

8. Start the engine as per Starting
the Engine instructions **Error!**
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9. To release the brakes, push down
the trigger on top of the handles
10. The brakes will release and allow
movement of the machine. For
further information, please see
trolley manual or contact MEC.



Equipment Operation – Spike Driving

1. Observe all safety precautions
2. Ensure all pre-operation checks have been conducted
3. Ensure the Driver is on safe and steady grounding (no excessive slopes or dangerous terrain conditions)
4. Using two Hands on the Handles position the Workhead over a spike that is sitting in a hole. Squeeze the handle and apply a small amount of vertical force on top of the hammer to start driving the spike into the wood. Ensure to remain square with the spike on insertion.
5. Once the base of the hammer (foot) has touched the sleeper release the trigger and move forward to the next spike to be inserted.
6. Inspect inserted spike to ensure the spike is inserted to the correct depth etc

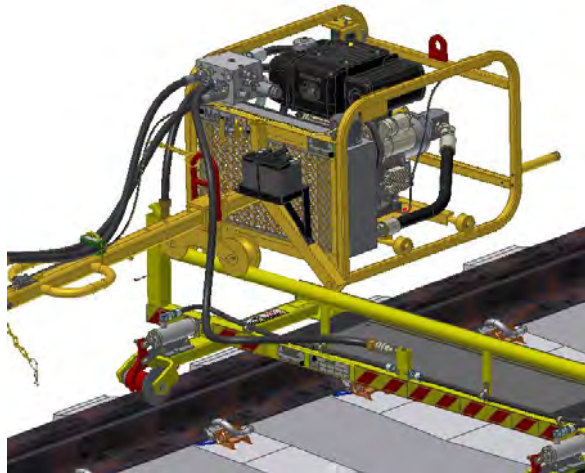


Stopping the Engine¹

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

Removal of Machine from Track

1. Observe all safety precautions as per section **Error! Reference source not found.**
2. Ensure engine is off and no hydraulic flow is operating to cylinder
3. Disconnect the brake hose from the trolley cylinder



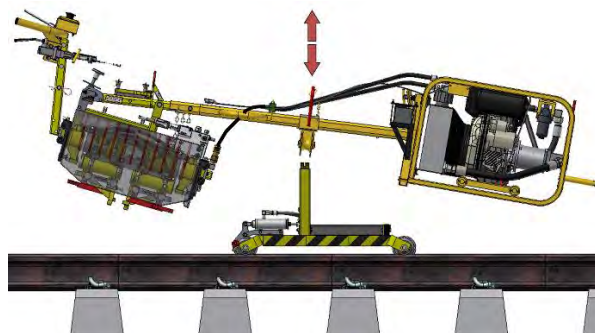
4. Disconnect the chain from the retaining profile to release the machine from the trolley



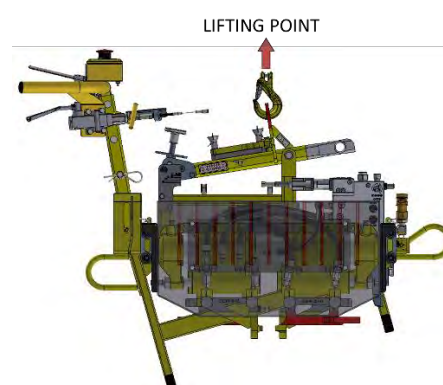
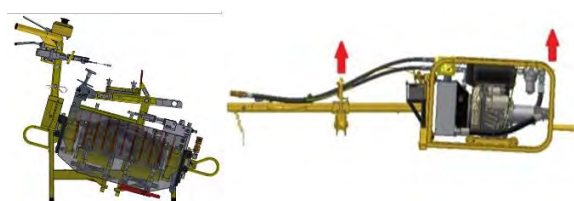
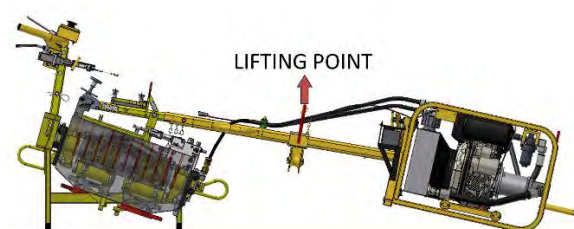
¹Refer to engine manual for detailed engine instructions and requirements

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. Whilst still coupled together, fit work head to stowage frame as per details below. The unit can now be safely loaded onto a truck/trailer for transport.



7. If required the unit can also be further separated as shown.

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 Machine 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 3000psi
- 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

Maintenance¹

REGULAR SERVICE PERIOD*		Each use	Every 1 month or 10hrs	Every 3 months or 50hrs	Every 6 months or 250hrs	Every year or 500hrs
Perform at every indicated month or operating hour interval, whichever comes first.						
ITEM						
Engine oil	Check level	X				
	Change			X (1)	X	
Engine oil filter	Change			X (1)		X
Fuel lines	Check		X			
Fuel Filter	Change					X
Air cleaner	Clean		X			
Engine cooling fins	Clean					X
Rocker arms clearance	Check & set					X (2)
Injectors	Clean & set					X (2)
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)		X (4)
Battery	Check	X				
Grease Nipples	Fill			X		
Nuts, Bolts, Screws, Fittings	Check					X
Jack Hammer	Check					X

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

- (1) 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

¹Refer to engine manual for detailed engine instructions and requirements

Troubleshooting¹

PROBLEM	POSSIBLE CAUSE	CORRECTION
Engine won't start	Refer to engine manual for details	
	Battery charge low	Charge battery
	Battery connections loose/not attached	Check battery connections
	Emergency Stop not connected	Check Emergency stop connection
	No engine oil	Check engine oil
	No fuel	Check fuel quantity
	Fuel filter blocked	Check fuel filter
	Fuel solenoid is off	Check fuel solenoid position
No hydraulic oil flow/little flow	No hydraulic oil	Check hydraulic oil level
	Pressure and Tank (return) hoses interchanged	Check connection.
	Operation lever in neutral	Check operation lever position
	Couplers or hoses blocked	Remove restriction
	Filter Blocked or Old	Replace filter
	Hoses leaking	Check hoses
	Contamination in relief valve	Clean relief valve
	Pump damaged	Check pump
Hydraulic oil overheating	Air obstruction	Remove obstruction to ensure sufficient air flow around heat exchanger
	Incorrect oil for operating temperature	Replace oil with correct grade for operating conditions
	Dirty/old oil	Replace oil
	Tool valve closed	Change tool or valve to 'open centre'
Unable to connect hoses	Oil temperature and pressure increase in hoses	Allow hoses to cool
	Operation lever in operation position	Place lever in neutral
Emergency Stop does not work	Emergency Stop not connected to the machine	Connect Emergency Stop to the power pack
	Wiring and/or connections damaged	Inspect wiring and replace damaged parts
	Switch Damaged	Check/Replace switch
Driver does not run	Mechanical failure in piston or automatic valve	Have inspected and repaired by MEC
Driver does not hit effectively	No hydraulic flow	Check hoses, pump etc
	Low accumulator charge	Charge accumulator(see MEC)
	Ram not sliding freely	Remove, clean/replace
	Fluid too hot	Wait to cool. Try different oil
Driver Operates slowly	Low oil flow	Check hoses, pump
	High Back pressure	Check filter, hoses etc

¹Refer to engine manual for detailed engine instructions and requirements

Further Documents

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

Further documents for the 143 Spike Driver and Powerpacks:

Document No.	Description	Type
108-215	Trolley to Power Pack Attachment	Drawing
143-48	Boom pivot Positions	Drawing
143-224	Spike Driver top level drawing	Drawing
143-BZ-OPRA	Operational Risk Assessment	Document

Trolley to Power Pack Attachment

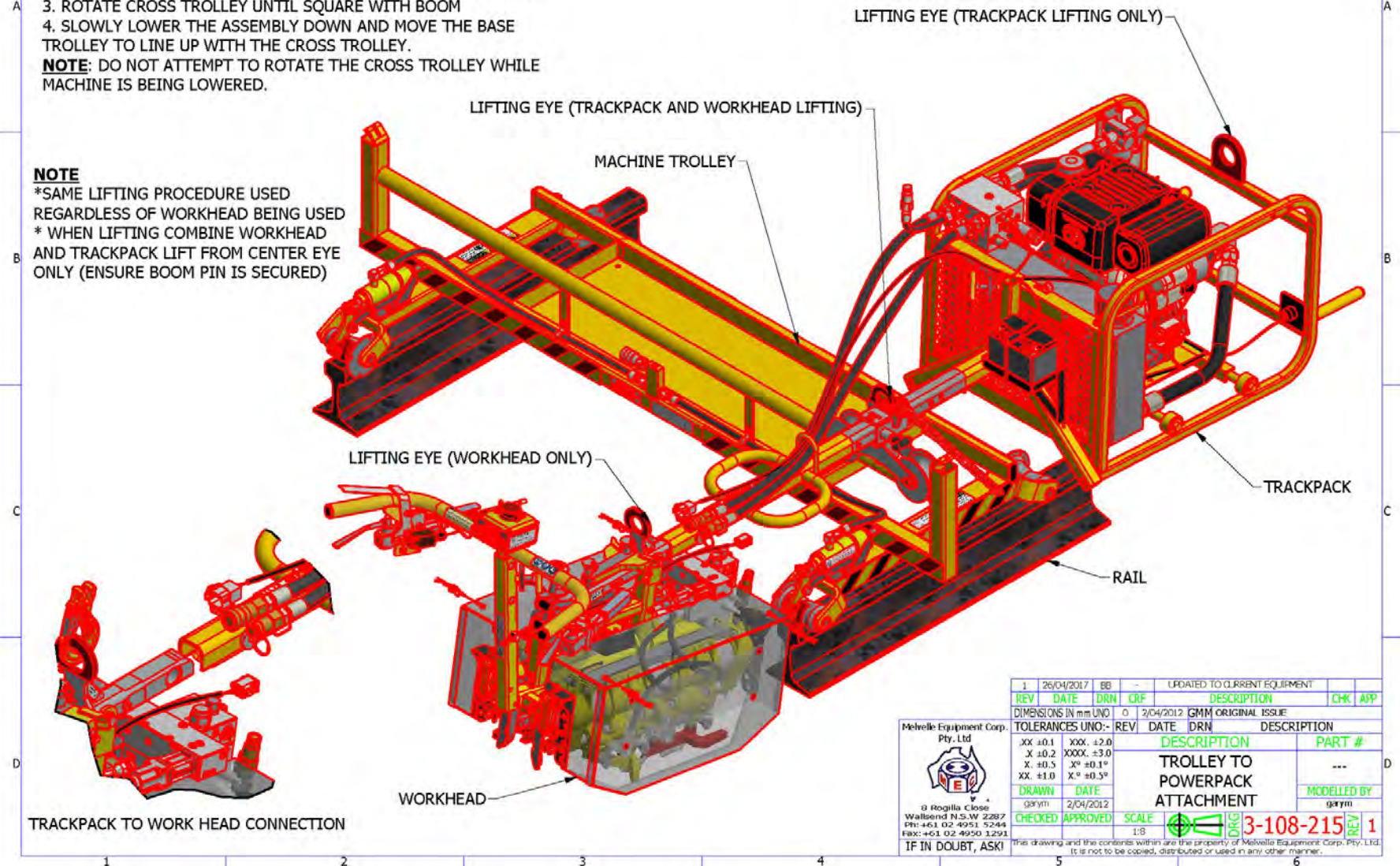
LOWERING POWERPACK AND WORK HEAD ONTO TROLLEY

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)

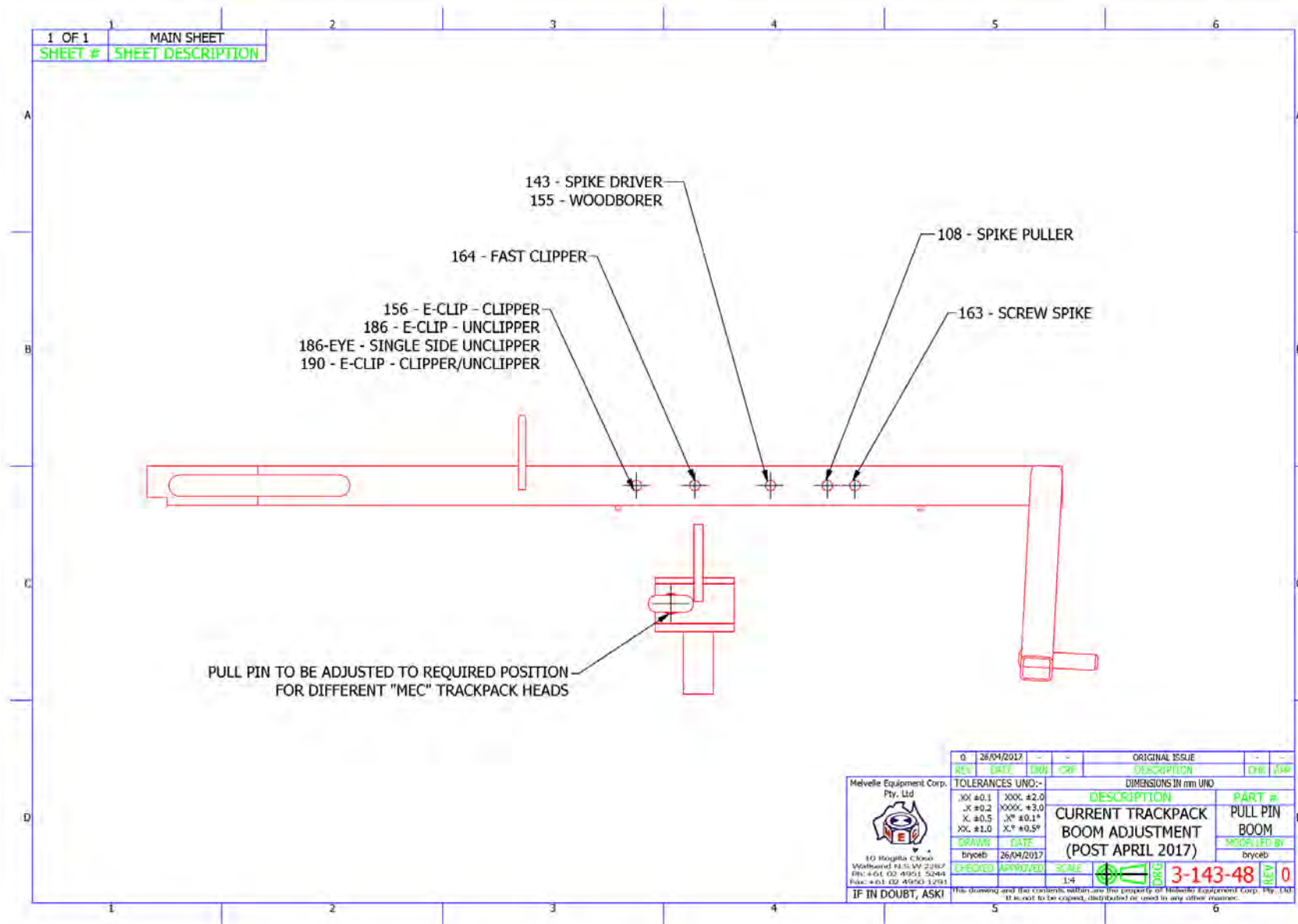


1	26/04/2017	BB	-	UPDATED TO CURRENT EQUIPMENT		
REV	DATE	DRN	CRF	DESCRIPTION	CHK	APP
				DIMENSIONS IN mm UNO		
				2/04/2012 GMM ORIGINAL ISSUE		
TOLERANCES UNO:-	REV	DATE	DRN	DESCRIPTION	PART #	
XX ±0.1	XXX ±2.0					
X ±0.2	XXXX ±3.0					
X ±0.5	X" ±0.1"					
XX ±1.0	X" ±0.5"					
DRAWN	DATE			DESCRIPTION	MODELLED BY	
grym	2/04/2012				grym	
CHECKED	APPROVED	SCALE				
		1:3				
THIS DRAWING AND THE CONTENTS WITHIN ARE THE PROPERTY OF MELVILLE EQUIPMENT CORP. PTY. LTD. IT IS NOT TO BE COPIED, DISTRIBUTED OR USED IN ANY OTHER MANNER.				3-108-215	REV 1	

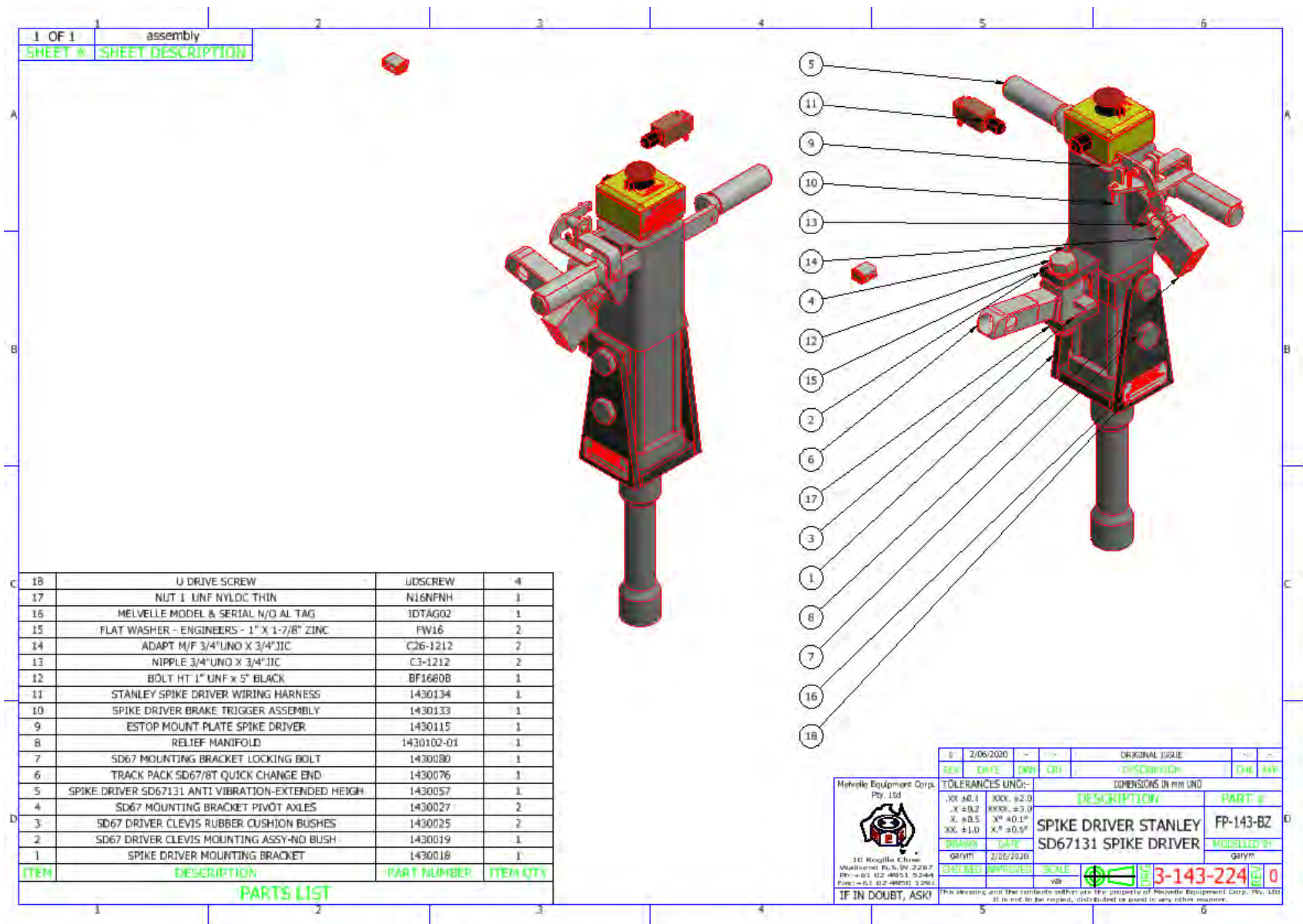
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 Pty. Ltd

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 IF IN DOUBT, ASK!

Trolley to Power Pack Attachment



FP-143-BZ – Drawing top level



FP-143-BZ – Risk Assessment

Machine: FP-143 Spike Driver								Form No.:																																														
ABN								Issue Date:	2/08/2020																																													
WORKPLACE GENERIC HIRARC FORM								Version:	0																																													
Company	MELVELLE EQUIPMENT CORP	Department / Workplace:	Melville Offices	Date of Assessment 2-06-2020	Commenced:	9am		Completed:	12md																																													
Scope of Assessment: Identify the risks and hazards associated with the operation of a rail maintenance machine to instal railway dog and lock spikes																																																						
Names of Risk Assessment Team: Gary Morris				Names of additional personnel consulted during Risk Assessment: Jason Casboul		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																																															
MANAGEMENT ACTIONS																																																						
Comments		Refer to Action Plan																																																				
Risk Assessment Referred to:		Design Team																																																				
Risk Assessment Accepted by:		Andrew Melville																																																				
Risk Assessment findings recorded in the Project Design Folder		Design Team																																																				
Risk Assessment Findings communicated to:		Design Team, Melville Equipment Corp.																																																				
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="3" style="text-align: center;">LEGEND</td> <td colspan="3" style="text-align: center;">ACTION REQUIRED</td> <td colspan="3" style="text-align: center;">NOTIFY</td> </tr> <tr> <td style="background-color: green;">LOW 1-6</td> <td colspan="2">Tolerable - Manage by Routine Procedures</td> <td colspan="3"></td> <td colspan="3"></td> </tr> <tr> <td style="background-color: yellow;">MEDIUM 7-13</td> <td colspan="2">Risk reduction required to "As low as Reasonably Practicable" ALARP</td> <td colspan="3"></td> <td colspan="3">Design Team/Engineer</td> </tr> <tr> <td style="background-color: red;">HIGH 14-20</td> <td colspan="2">Immediate action required to reduce risk. Authorisation required before proceeding on task</td> <td colspan="3"></td> <td colspan="3">CEO</td> </tr> <tr> <td style="background-color: blue;">EXTREME 21-25</td> <td colspan="2">Intolerable. Cease activity until controls in place to reduce risk. Immediate & urgent Senior Management Team action required</td> <td colspan="3"></td> <td colspan="3">CEO</td> </tr> </table>										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		
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Ref no	Description / hazard / risk	Raw Risk Rating (no controls)			Controls	Residual Risk Rating (after controls)			Is Risk Tolerable Y/N	Additional Controls Req	Action By / Name & date required
		Consequence (no controls)	Likelihood	Risk Level & Score		Consequence	Likelihood	Risk Level & Score			
	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	8	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	
	Loud noise from hammer 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		
	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	
	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 applicable)	Serious	Rare	8	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	
	Injury Through spike projectile	Significant	Possible	9	Correct operation of machine through training in manual	Significant	Rare	4	Y		
	Injury through vibration during operation of machine	Significant	Possible	9	Correct operation of machine using anti vibrations handles	Significant	Rare	4	Y		
	Injury through crushing between spike and hammer	Serious	Possible	12	Correct operation of machine through training in manual	Serious	Rare	8	Y		