

GTS

INSTALLATION GUIDE

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Revision / 2nd Issue

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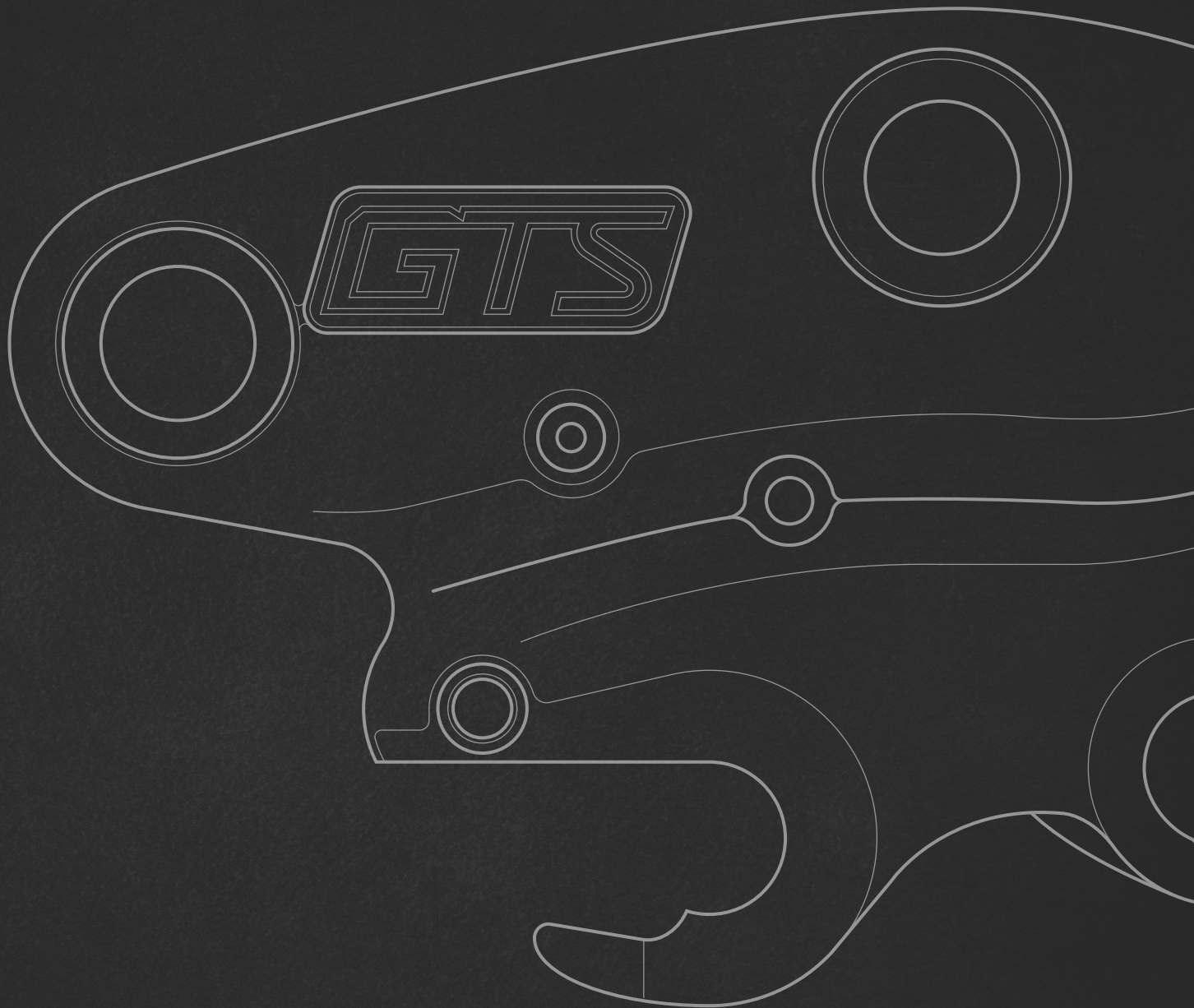
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Miller Control Document

GTS Installation Guide Second Issue

Document No.

GTS-INS-EXT-FI



THANK YOU...

for purchasing a Miller GTS Quick Coupler – the number one in the market for efficiency, safety, and versatility.

With over 40 years in the industry, this coupler is a product of decades of Miller engineering, manufacturing and quality control know how.

We take great pride in you owning and using something we have put our heart and soul into designing and manufacturing and we hope you will feel the same. We would love to see what applications, projects and results you achieve when using our latest compact quick coupler. Our staff would like to share your experiences, please use the **#mymiller** on all social media posts and we can join in on your journey.

If you have any challenges or queries – let us fix it by contacting our dedicated Technical Support Team on **01670 707 272**.

We trust that you will enjoy many trouble-free years with your Miller Coupler and hope to be of service to you again soon.

IMPORTANT:

This book should always be kept with the machine during and after coupler Installation.

Machine operators should be fully trained on the correct operational procedures for this coupler.

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PRODUCT SAFETY

I. PRODUCT SAFETY INFORMATION

The following information details the correct installation and operation procedure for your Miller GTS Coupler. Please take the time to read the instructions carefully and install the coupler in accordance with Miller's recommendations.

Prior to the install it is advised that the installer executes the appropriate workplace assessment to ensure the work area is adequate to carry out each step of the installation in a safe and systematic manner.

Miller recommend that couplers be installed and operated by appropriately trained and competent personnel. Miller can provide additional direct training, an installation service as well as operator training if required. Please contact Miller and/or an authorised distributor for details. Further information on our Field Service Division can be found on our website at www.millergroundbreaking.com/services.

Miller cannot anticipate every possible circumstance that might involve a potential hazard. The warnings in this following section and on the product therefore, are not all-inclusive. If a tool, procedure, work method or operating technique that is not specifically recommended by Miller is used; you must satisfy yourself that it is safe for you and for others. Please contact Miller at convenience if such a scenario occurs and we will be happy to assist.



SAFETY NOTICE

The industry's “**Safety Alert Symbol**”, is used throughout this guide and on specific end user machines to warn of the possibility of personal injury. Read the following instructions carefully. It is imperative that you read the instructions and safety regulations before you attempt to install the coupler to the machine.

Danger: Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

Warning: Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

Caution: Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

Important: Indicates that equipment or property damage could occur if instructions are not followed.

Note: Gives helpful information.

SAFETY NOTICE

Warning: We recommend protective oil resistant safety gloves must be worn during installation and dismantling. Field Service personnel and operators must be fully conversant with the installation and operating procedures. If in doubt, seek advice.

Caution: Metal splinters flying - metal splinters can cause injury when driving metal pins in and out. Use a soft-faced hammer or drift to fit and remove metal pins. Always wear safety glasses.

Danger: Hydraulic fluid - never use your hands to search for hydraulic fluid leaks, use a piece of paper or cardboard. Escaping fluid under pressure can be invisible and can penetrate the skin and cause serious injury. If affected, see a doctor at once.

Warning: Modification and/or welding non-approved modifications can result in making your coupler unsafe and invalidate your warranty. Please call Miller for advice and service requirements.

Warning: Machine operation - always stop the machine and shut off the engine when leaving the machine. Never keep the machine running whilst installing or servicing the coupler.

Caution: Manual handling - take care when manually handling coupler & components, bucket and installation pins please take relevant precautions when attempting to lift items – weights and sizes of components are included with this manual.

Caution: Lifting - always use the correctly rated shackle and lifting equipment. Refer to the product table below to ascertain product weight. Never use worn, damaged or undersized lifting equipment.

Warning: Safety shutdown procedure - work of any type on machinery is always more dangerous when the machine is operating. Before cleaning, lubricating, or servicing this unit, the following Safety Shutdown Procedure should always be followed:

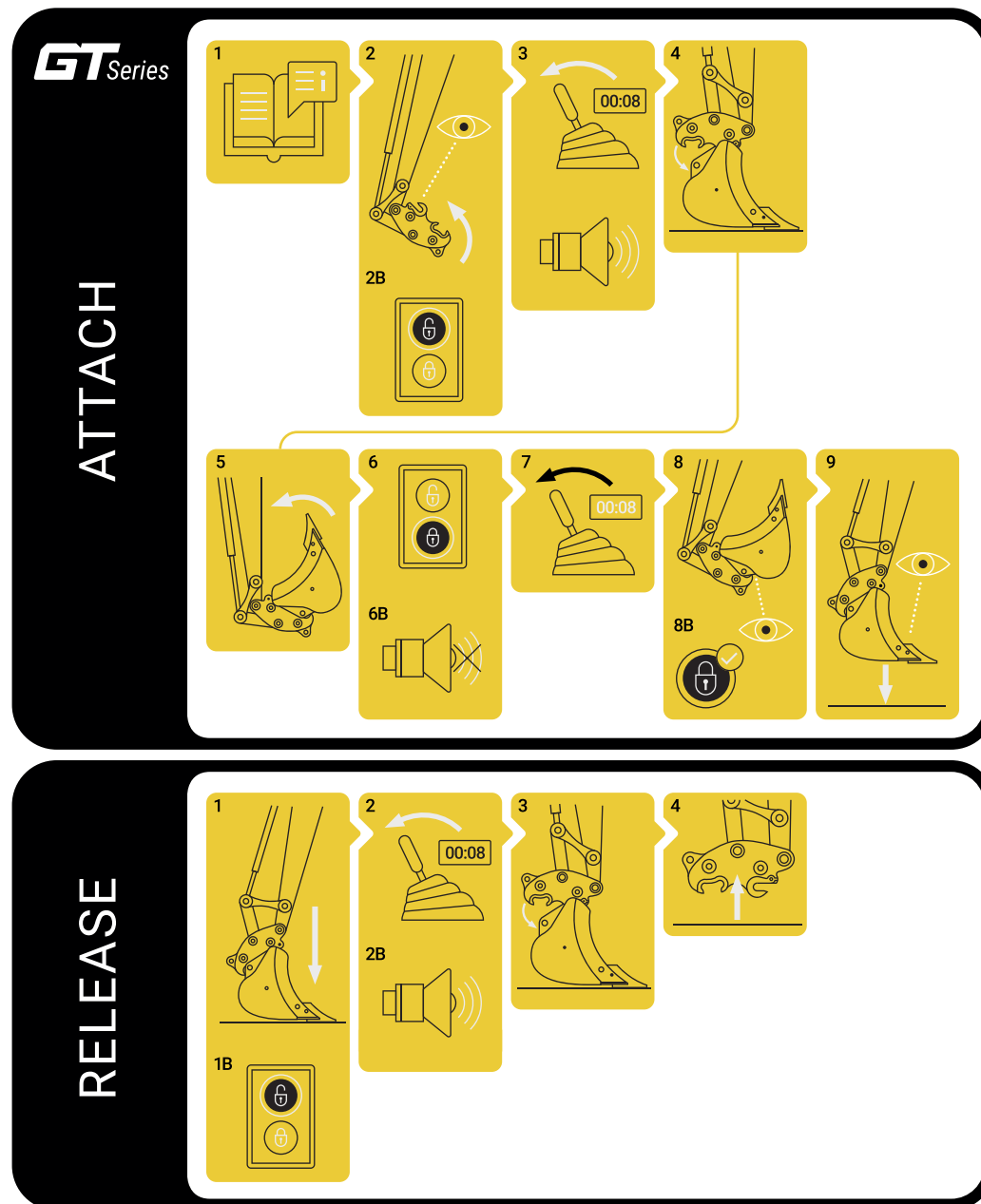
1) move the host machines propulsion control to the neutral position and idle the engine down. **2)** shut off the hydraulic fluid flow to the coupler. **3)** position the coupler so that it is completely resting on the ground. **4)** engage the host machine's park brake. **5)** move the host machine's throttle to slow idle, shut the engine off and remove the ignition key.



1.2. IN CAB DECALS

A safety decal detailing the safe operation of the quick coupler is supplied with the product.

Important: To ensure the safe operation of the quick coupler you must place the coupler decal in the machine cab where it can be seen clearly. Replace unreadable or missing decals with new ones before operating the machine.



1.3. COUPLER IDENTIFICATION

To ascertain the serial number, weight, and safe working load (SWL) of the coupler please refer to the data plate detailed below.

The I.D plate can be located on the inside of the coupler frame.

		Miller UK Ltd, Bassington Lane, Cramlington, UK, NE23 8AD. Tel: +44 (0) 1670 707 272 www.millergroundbreaking.com			
COUPLER TYPE		MASS			
		kg			
SERIAL No.		LIFTING EYE RATING			
		kg			
PART No.		WORKING PRESSURE	MIN - MAX	BAR / MPA	
MANUFACTURE DATE		ATTACHMENT PIN DIAMETER	PIN CENTRE		
		MM	MM		



PRE-INSTALL INFORMATION AND CHECKS

2. RECOMMENDED PRE-INSTALL CHECKS AND PRODUCT INFORMATION

Note: This manual has been written in conjunction with expert installation personnel to ensure that the most time efficient process is achieved.

Should you encounter any technical problems during the install please feel free to contact the Miller Technical Support Team.

2.1. COUPLER INTERNAL COMPONENTS DRAWING

Example shown opposite: GTS Coupler Components Drawing – please refer to the Miller GTS drawing guide for alternative drawings specific to your machine

2.2. INSTALL KIT & PARTS LIST

Open the installation kit and cross check the items with the supplied picklist to familiarise yourself with the contents of this installation. To ensure a timely install - all items should be accounted for prior to each phase of the installation such that the install can be approached systematically.

If you require additional part(s) or indeed an instance where part(s) are misplaced please contact the Miller Technical Support Team for additional items.

INSTALL KIT

Note: Each hydraulic coupler is supplied with the following items:

- Installation guide (this document)
- All required paperwork, certificates, and decals.

Note: Coupler ready (factory fitted) machines will be supplied with:

- Coupler hoses
- Pressure switch system

Note: Coupler ready machines (Non-Factory fitted)

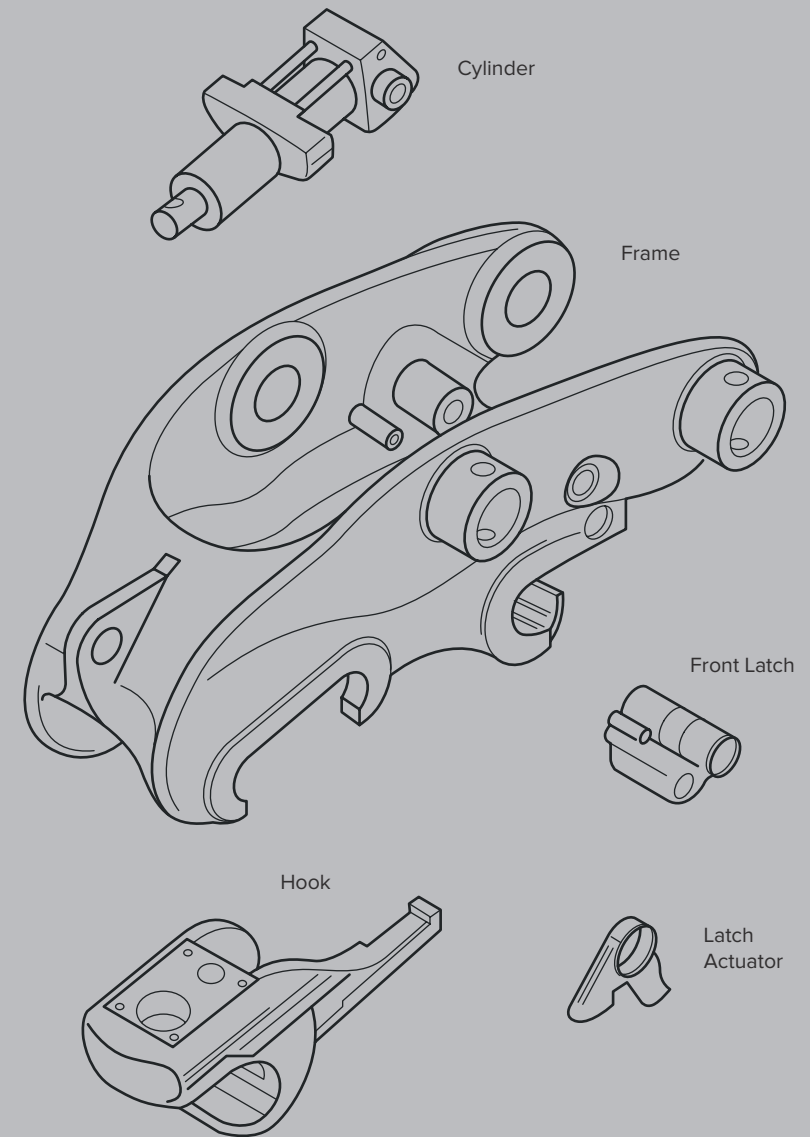
- Full hydraulic kit
- Pressure switch system
- Coupler controlling switch system
- Solenoid valve

Important: In the event your coupler has been ordered with additional pins. Do not use the dummy pins to fit the coupler directly to the machine. The dummy pins are only intended for use with the bucket or attachment. Use the machine's original OEM specification hardened pins to connect the coupler to the dipper stick and link.

Important: Solenoid valves supplied may be 12 or 24 volts depending on machine; check you have the correct voltage solenoid valve before installation. The voltage of the solenoid is stamped on each valve body.

Important: All hydraulic hoses are specified to DIN-EN 853 2SN (DIN 20022). All hoses require the appropriate fittings to make a safe connection to the machine. Fitting requirements may vary depending on the make and model of the machine.

Note: Spare parts and hydraulic hose kits suitable for most excavator types are available by contacting Miller or an authorised distributor. If in doubt, please ask.



2.3. PPE REQUIREMENTS

Tie back long hair and do not wear loose fitting clothing, dangling jewellery or long hair that can catch on controls or other moving parts of the machine.

Wear relevant personal protective equipment (PPE) such as a hard hat, safety glasses, safety shoes and oil resistant safety gloves along with a high visibility jacket when operating or servicing the coupler or machine.



2.4. PREPARATION FOR INSTALLATION

Miller recommend the following checks in advance of the coupler installation. Surveying specific locations of the machine ahead of the installation will ensure a fast and systematic install is achieved and avoid repeat work scope being carried out due to the discovery of component clashes mid-way through the install.

Note: Pre checks should take no longer than five minutes and will help identify any special mounting components or fittings which can be requested from Miller Technical Support Team. The following steps have been listed below to assist the operator during this stage.

1. **Workplace safety** – put down working and fluid spill mats where necessary.
2. **Identify relevant work tools** prior to each phase of the install and place them in a convenient location for easy access.
3. **Remove any protective covers, pipe routing and pipe clamps** that may cause any interferences during phase three of the install.
4. **Identify a suitable location on the machine to fit the solenoid valve.** Miller would recommend mounting the solenoid bracket next to the main control valve in the hydraulic bay.
5. **Check for any clashes with moving machine parts.** Pay particular attention to interferences with the boom and bucket **RAMS** as well as the kingpost at the base of the boom.

Important: Point 4 – please avoid fitting the solenoid valve close to a heat source and ensure easy accessibility to allow for attaching of hoses.

HOSE INSTALL

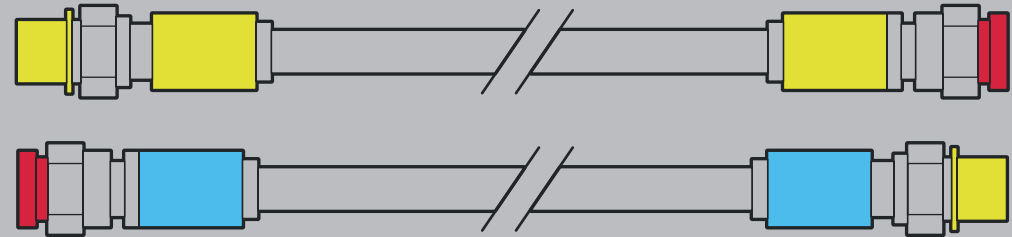
3. PREPARATION & SAFETY NOTES

Note: Please have on hand the coupler internal components drawings located in the GTS drawings guide to assist with the identification of key components required for the installation of the coupler.

Important: For specific torque requirements please refer to Appendix B.

PARTS REQUIRED

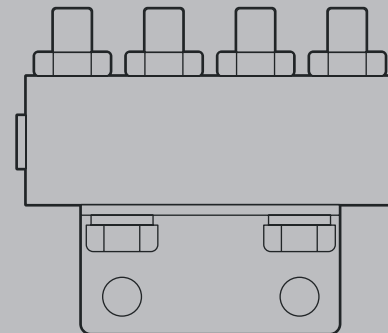
- (1) Coupler hose A (blue)
- (2) Coupler hose B (yellow)



- (3) Burst sleeve



- (4) Manifold block

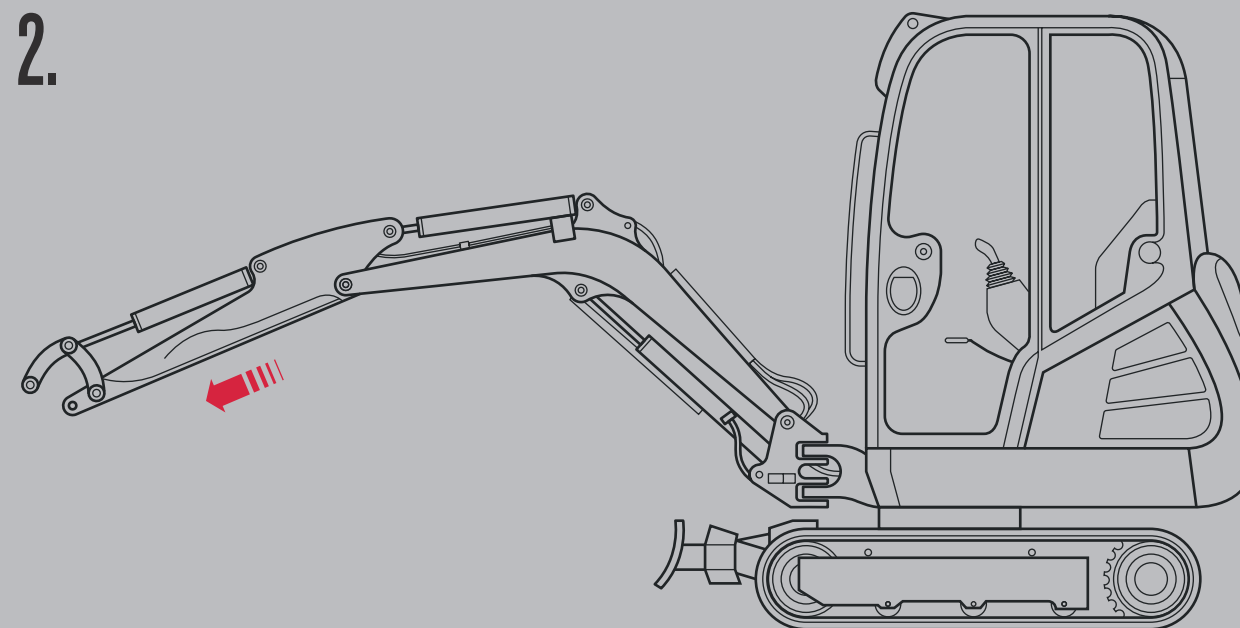
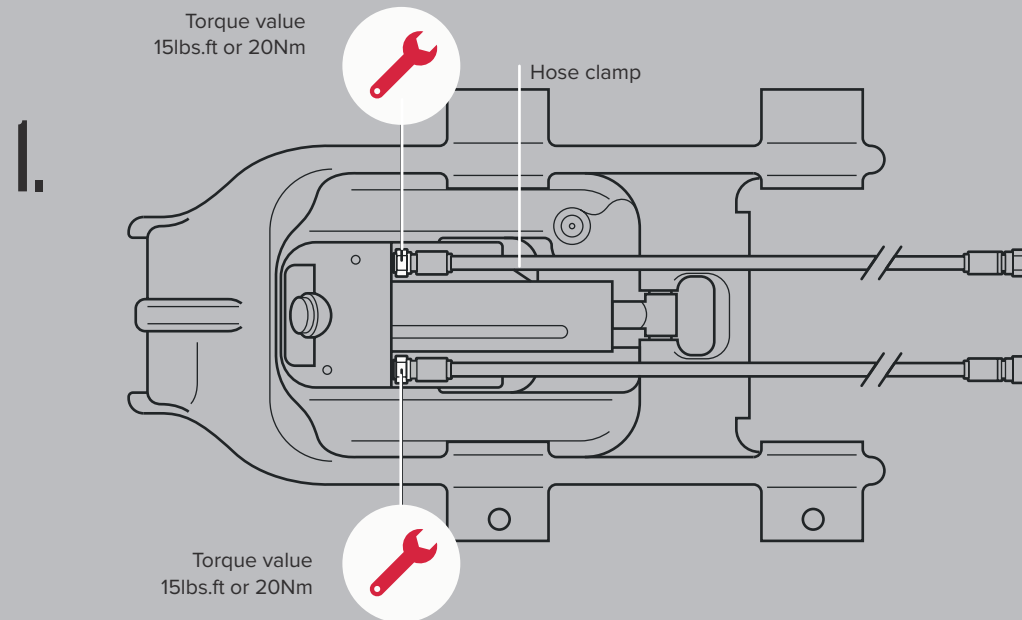


3.1.1 ATTACHING COUPLER HOSES

1. Fit hose A (blue) and hose B (yellow) to the hydraulic ports identified on the RAM case. Tighten both hoses to the correct torque value (torque value 15lbs.ft or 20Nm); this can be completed without removing any coupler internals.

Important: When both hydraulic hoses are fitted, the coupler should be positioned such that the lifting eye is pointing away from the excavator and placed on the ground.

2. Once the coupler is reassembled manoeuvre the excavator stick in a horizontal position to allow for the marking out of the steel pipe position. Please use the template provided in the installation kit.



COUPLER INSTALL



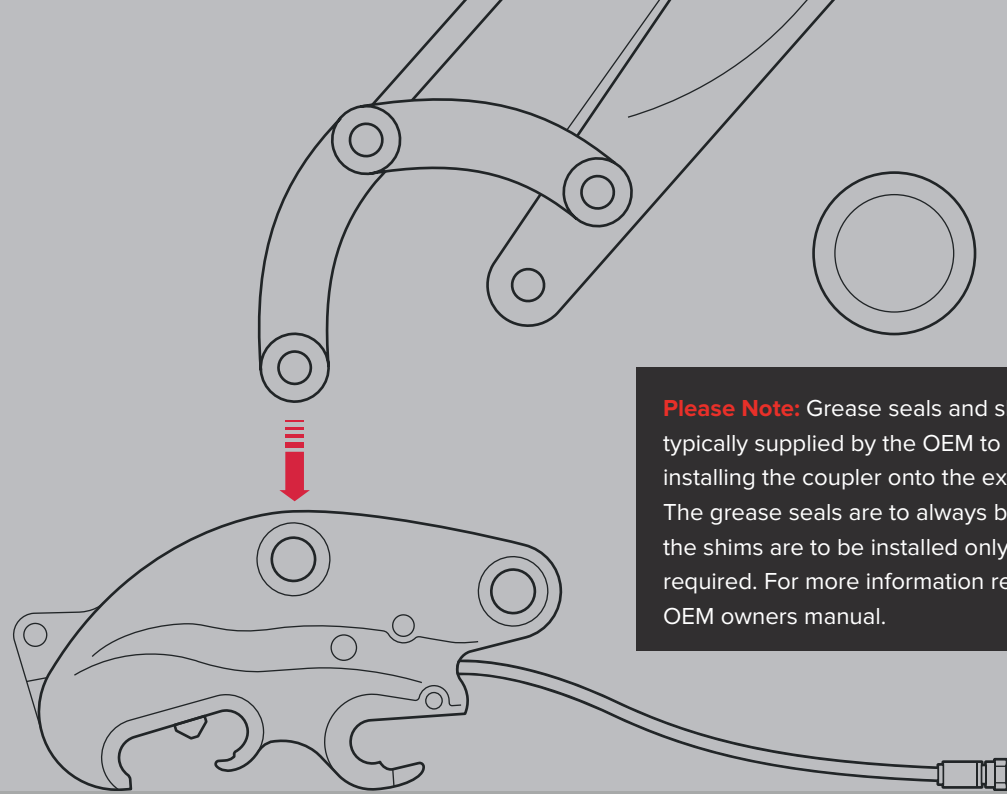
3.2. ATTACHING THE COUPLER

Important: Install the original OEM pin through the coupler and link arm bores and fit the locking bolt and nuts (if supplied).

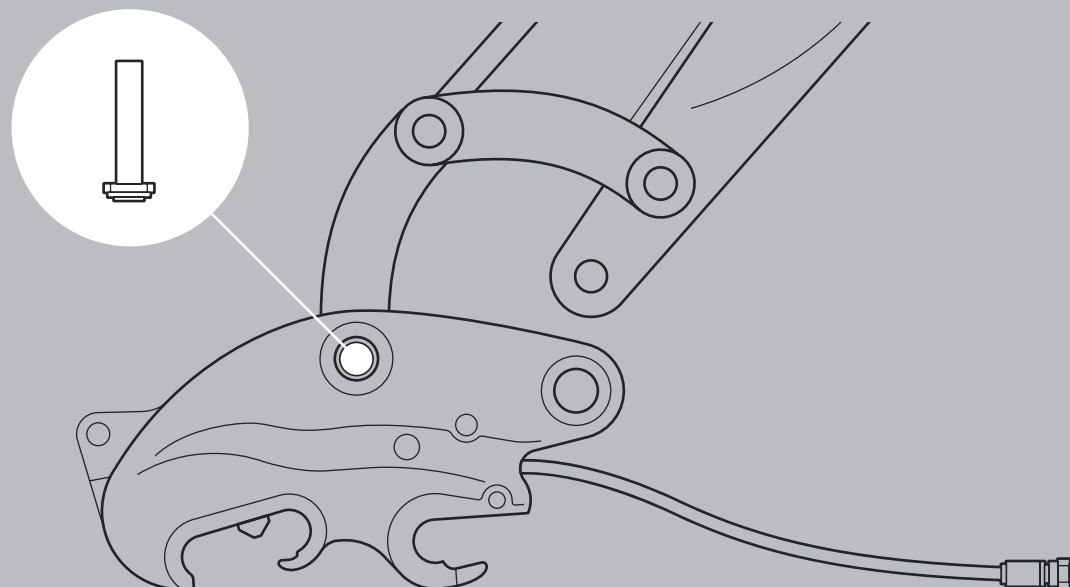
Important: Do not use dummy pins to fit the coupler directly to the machine. This may cause damage to the coupler. The dummy pins are only intended to be attached to the bucket or attachment. Use the machine's original OEM specification hardened pins to install the coupler to the dipper stick and link.

1. Lower the excavator stick and align the link arm directly above the coupler – once in position manoeuvre both the dipper and link arm in line with the inside boss faces.

1.



Please Note: Grease seals and shims are typically supplied by the OEM to use when installing the coupler onto the excavator. The grease seals are to always be installed, the shims are to be installed only if required. For more information refer to the OEM owners manual.



ATTACHING THE COUPLER

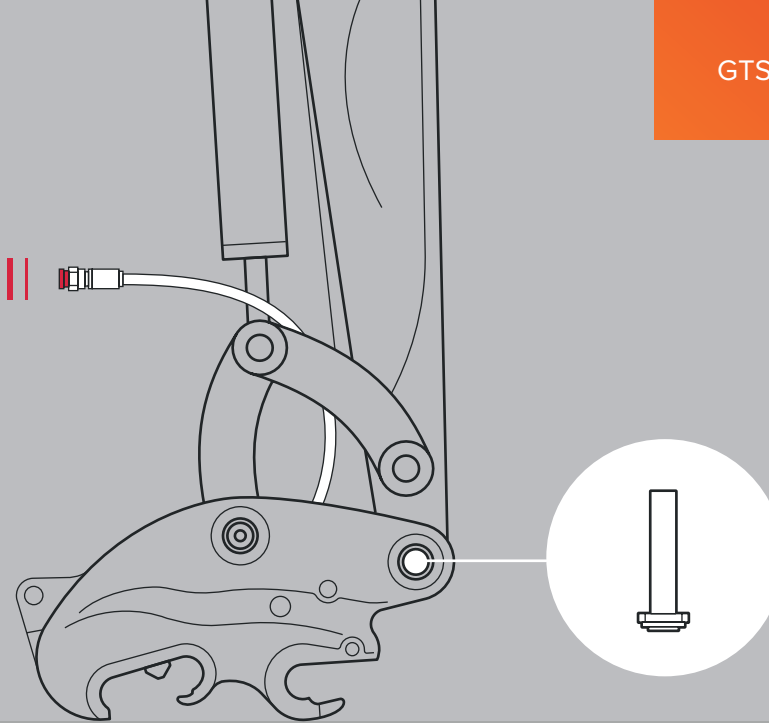
2. Align the coupler with the end of the link arm and fit seals and shims where required. Please start with the linkage pin first which will be inserted in between the rear bosses. Whilst lowering the linkage into the rear boss, place lightly greased O-rings on either side of the link before fully aligning.

Note: Please do not insert or move shims with bare hands.

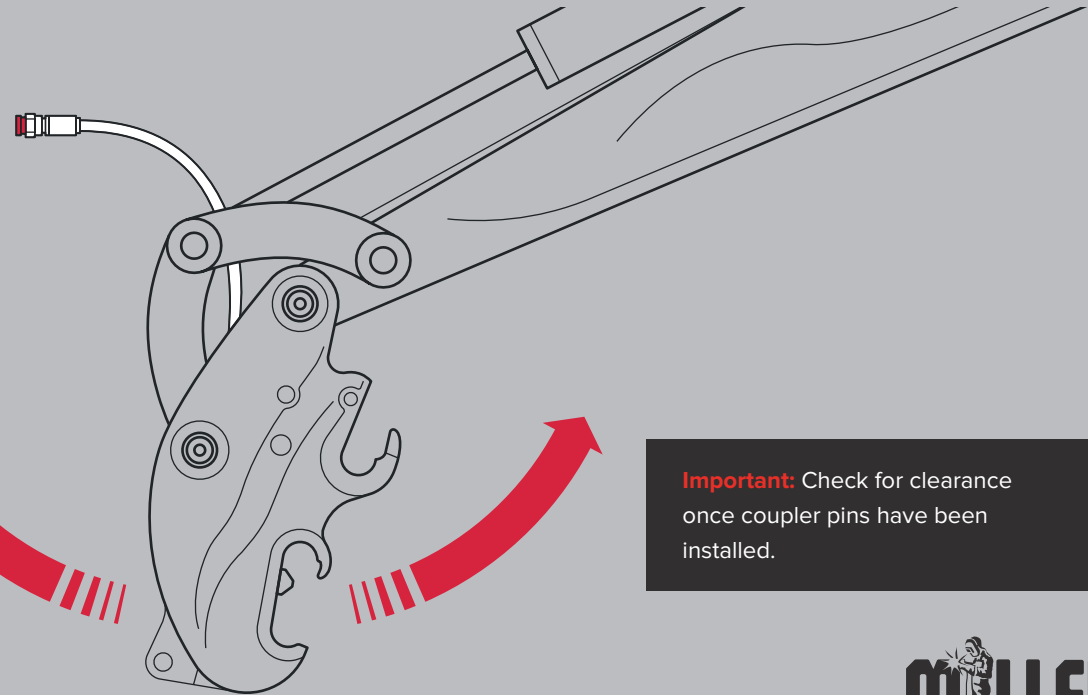
3. Slowly lower the link arm into place to align the bores on the coupler with the bores of the link arm. Be careful that the O-ring seals do not nip between the machine and coupler bores.

4. Proceed to insert the OEM pins and secure them using the lock-in nut and bolts provided by the OEM. Return the coupler to the horizontal position.

2.



3.



Important: Check for clearance once coupler pins have been installed.

HOSE MOUNTING & MANIFOLD BLOCK INSTALL

4.1. FACTORY FITTED VS NON FACTORY FITTED

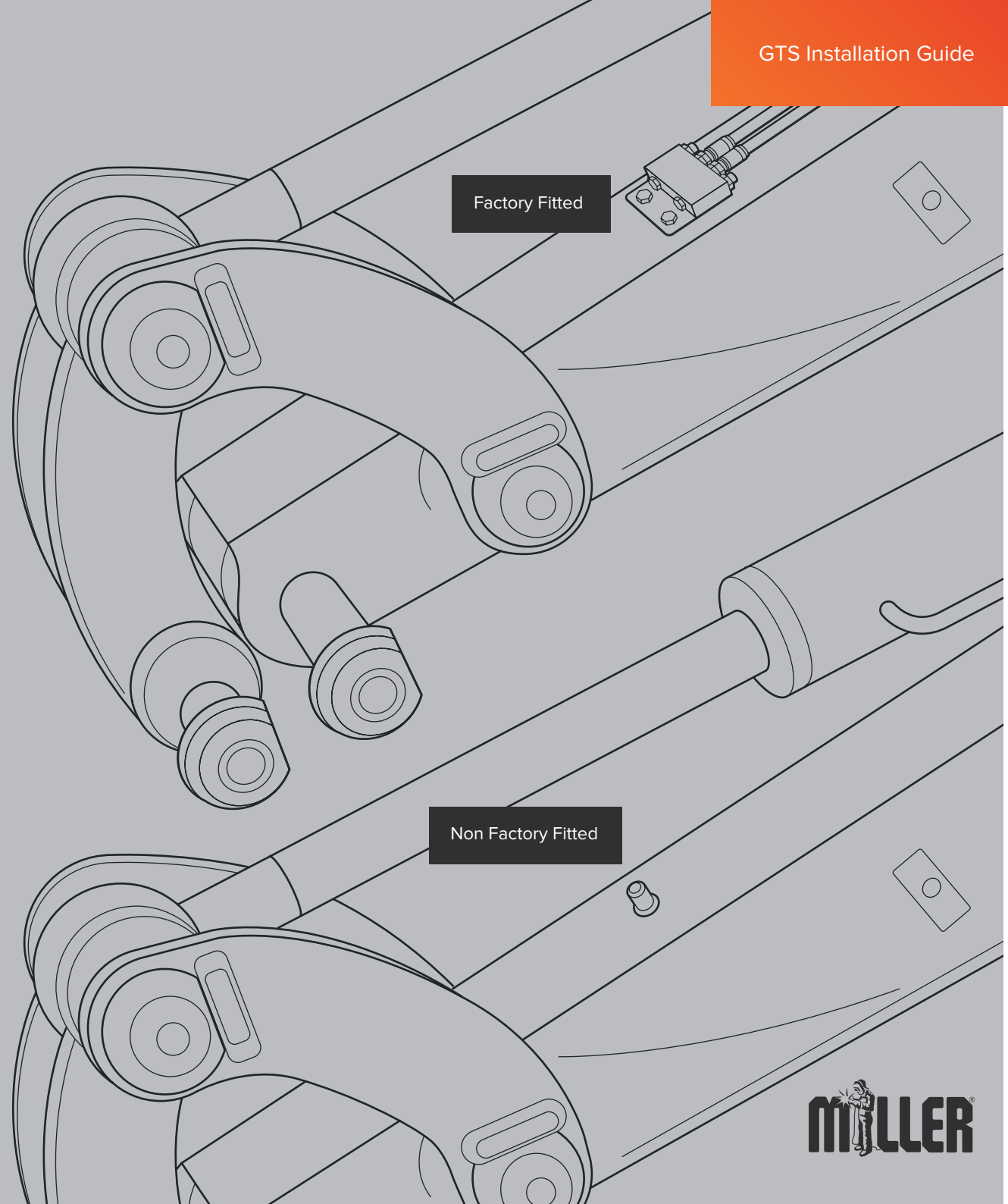
Factory Fitted Machines (Coupler ready) – are machines that have had a quick coupler system installed onto the machine by the OEM. Quick coupler systems include:

- Either a manifold block or steel pipes on the front of the dipper
- Steel pipes or rubber hosing running up the boom
- Solenoid valve
- Pressure & tank lines
- In-cab switching system

If the machine you are installing the coupler on does have a factory fitted system then please turn to page 22.

Non-Factory Fitted machines (non coupler ready) – are machines that do not have a quick coupler system installed. These machines will always need a full kit to operate the coupler.

If the machine you are installing the coupler on does NOT have a factory fitted system then please turn to page 23.



4.2. CONNECTING COUPLER HOSES IN OEM SYSTEM

Coupler hose orientation

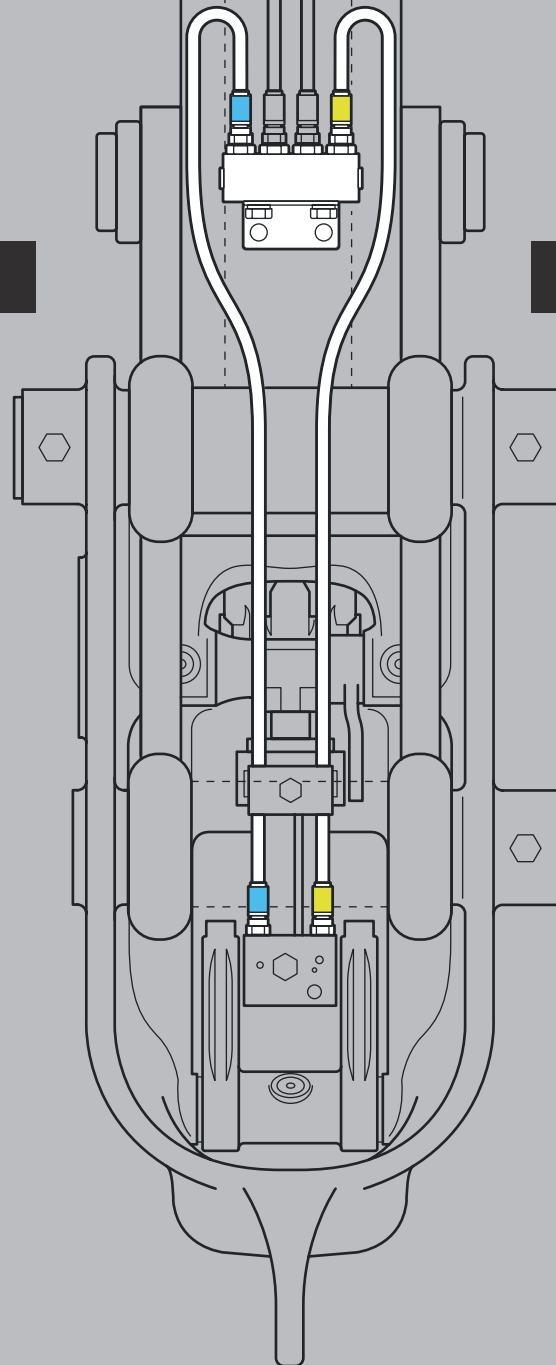
The factory fitted steel pipes/manifold can terminate in various locations on the dipper front depending on the OEM.

Connect the coupler hoses into the OEM system and tighten fittings – for torque specifications please refer to appendix B.

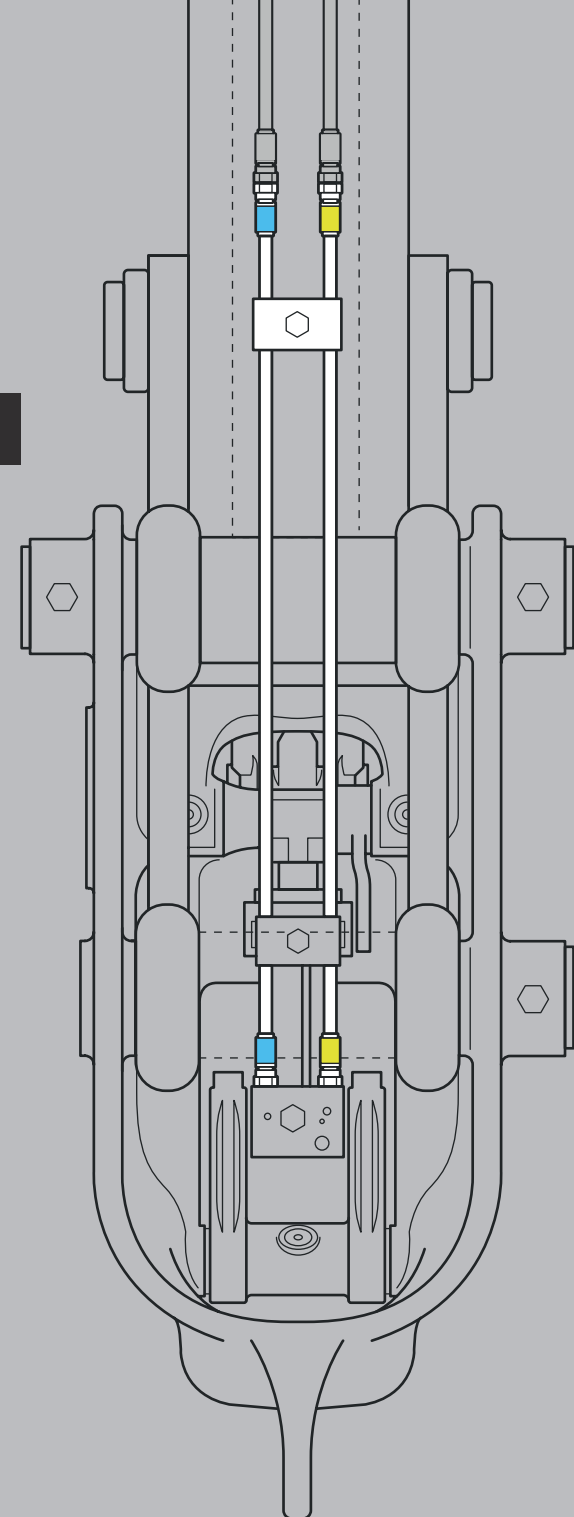
Once tight, start the machine and tip/crowd the coupler to ensure coupler hoses don't foul and are not taut, contact Miller if you have any issues with this step.

Once installed please turn to page 36.

Type 1



Type 2



4.3. ATTACHING THE MOUNTING BLOCK

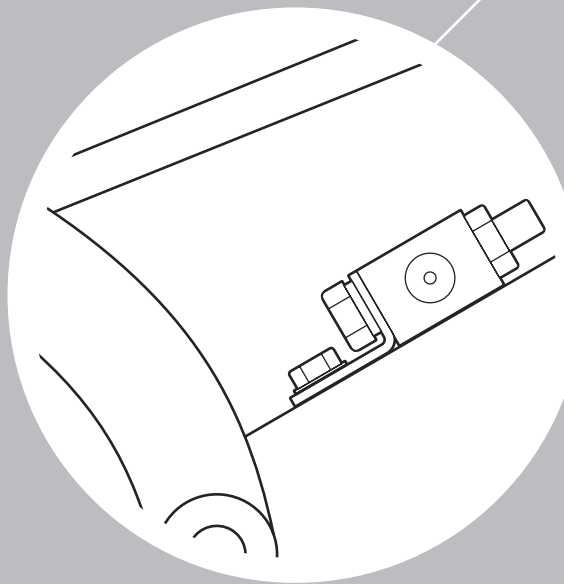
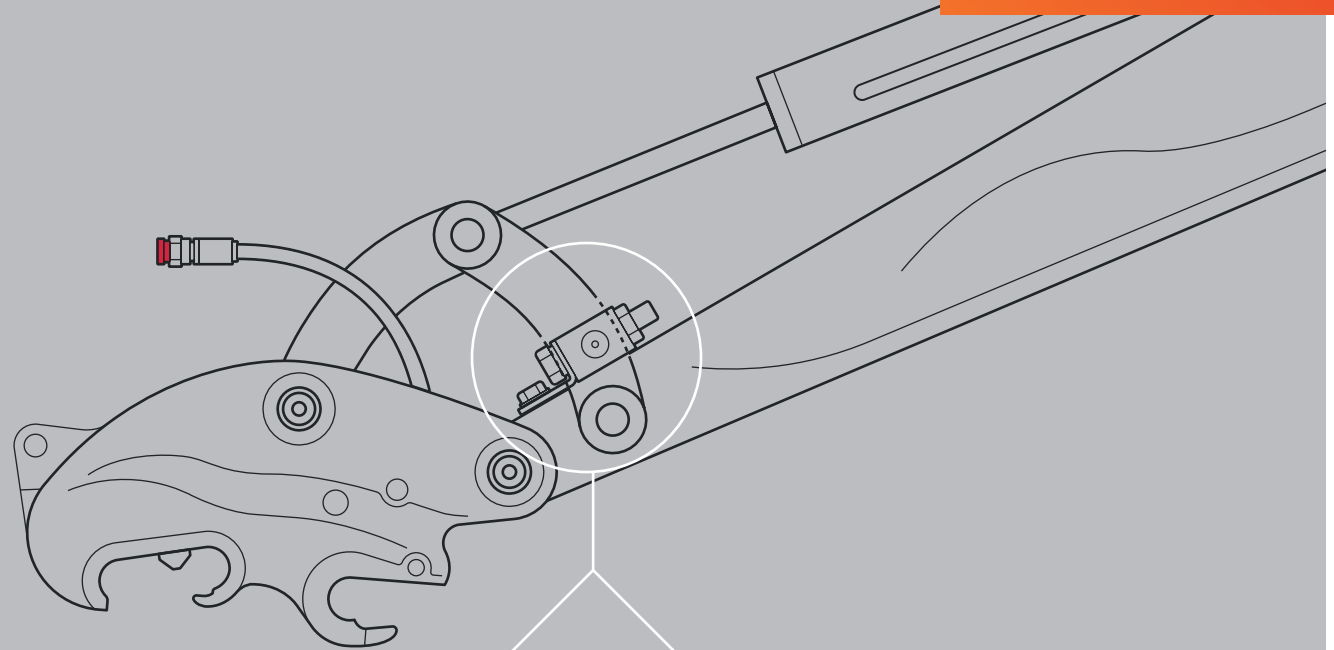
1. Identify a suitable location at the lower part of the stick to mount the hydraulic hose clamp. Ensure surface is clean of any contaminants prior to welding.

Note: We would recommend securing the mount in line with the link arm as shown in the image to the right.

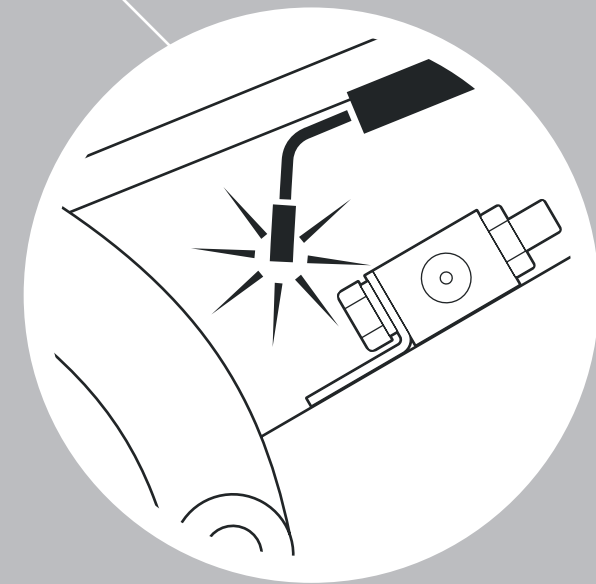
2. Position the manifold block in desired location and spot weld in correspondence to holes in bracket.

If welding isn't available then a clamp or manifold may be installed by drilling and tapping the dipper. The installer will require a 6.8mm drill bit and an M8 tap.

Note: Once the manifold block or clamp is fully welded make sure they will not interfere with the bucket RAM when fully extended or retracted.



OPT 1

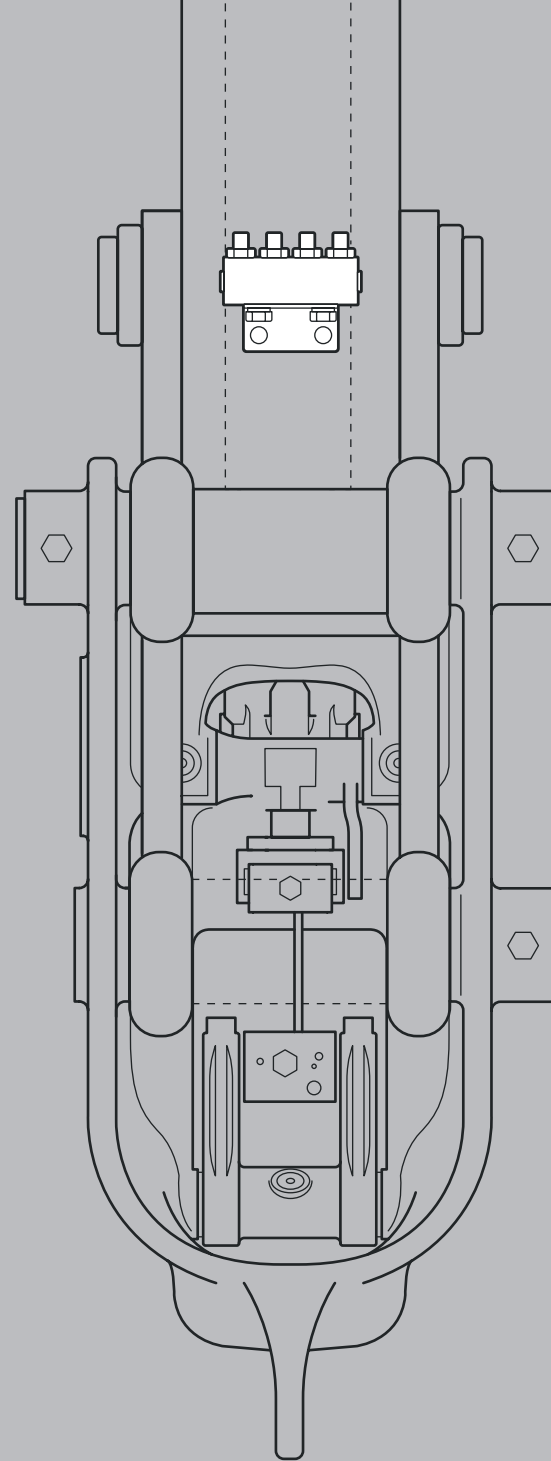


OPT 2

4.4. ATTACHING THE MOUNTING BLOCK

3. Clean the welds using a solvent and cloth and re-paint the affected areas with etch primer. Once the primer is dried, paint the area with the OEM machine specified paint.

4. Connect the hoses from the coupler RAM making sure both hoses are straight prior to tightening. Ensure full clearance by fully extending and retracting the bucket RAM rotating the coupler in a crowded and horizontal position.



HYDRAULIC INSTALL – COUPLER TO SOLENOID VALVE

5.1. PREPARATION & SAFETY NOTES

Note: To help with this phase of the install please refer to the solenoid drawing located in the GTX drawing pack.

Important: Please refer to Appendix B for torque specifications.

Important: This coupler needs full working pressure to ensure satisfactory operation. Do not use low/servo pressure.

PARTS REQUIRED

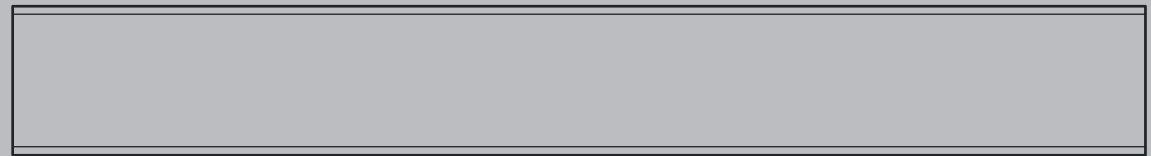
(1) Hydraulic hose A (blue)



(2) Hydraulic hose A (yellow)



(3) Spiral Wrap



(4) 1 x pack of cable ties

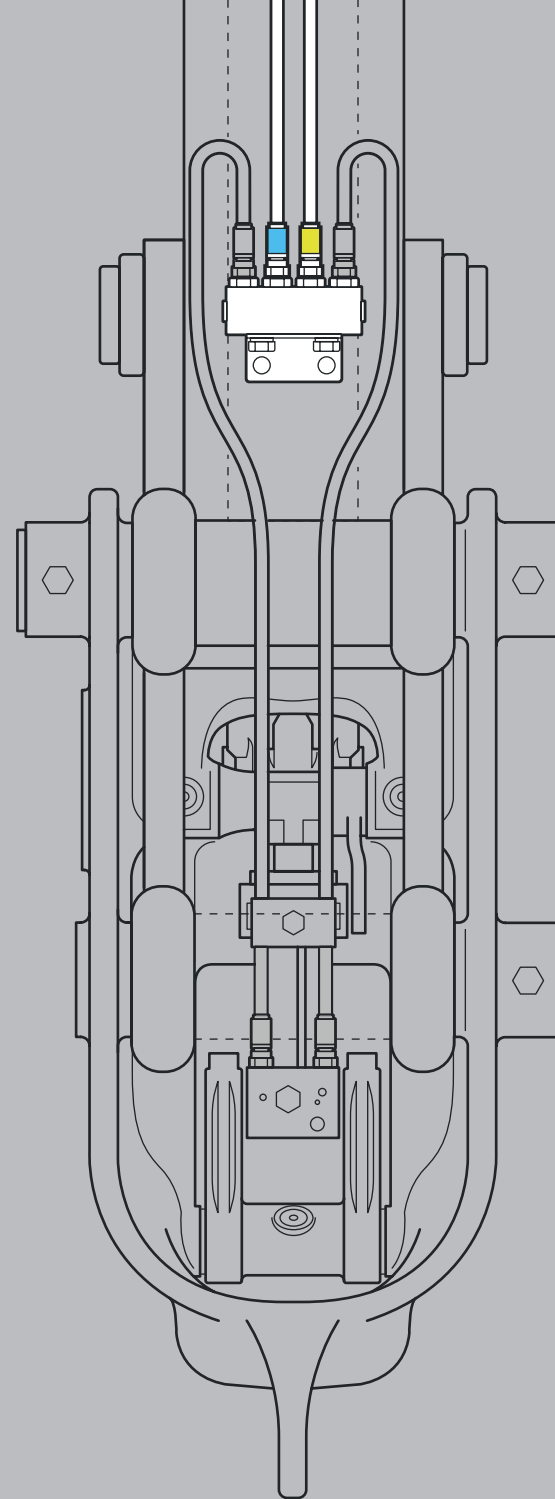


5.2. INSTALLATION OF HYDRAULICS

1. Connect the hydraulic boom hoses to the manifold block ensuring that both the A & B line are running parallel with the coupler hoses.

Important: Ensure that the hydraulic pressure is set to a minimum 150 bar. Please use a pressure gauge to determine the pressure.

Important: Please refer to Appendix B for torque specifications.

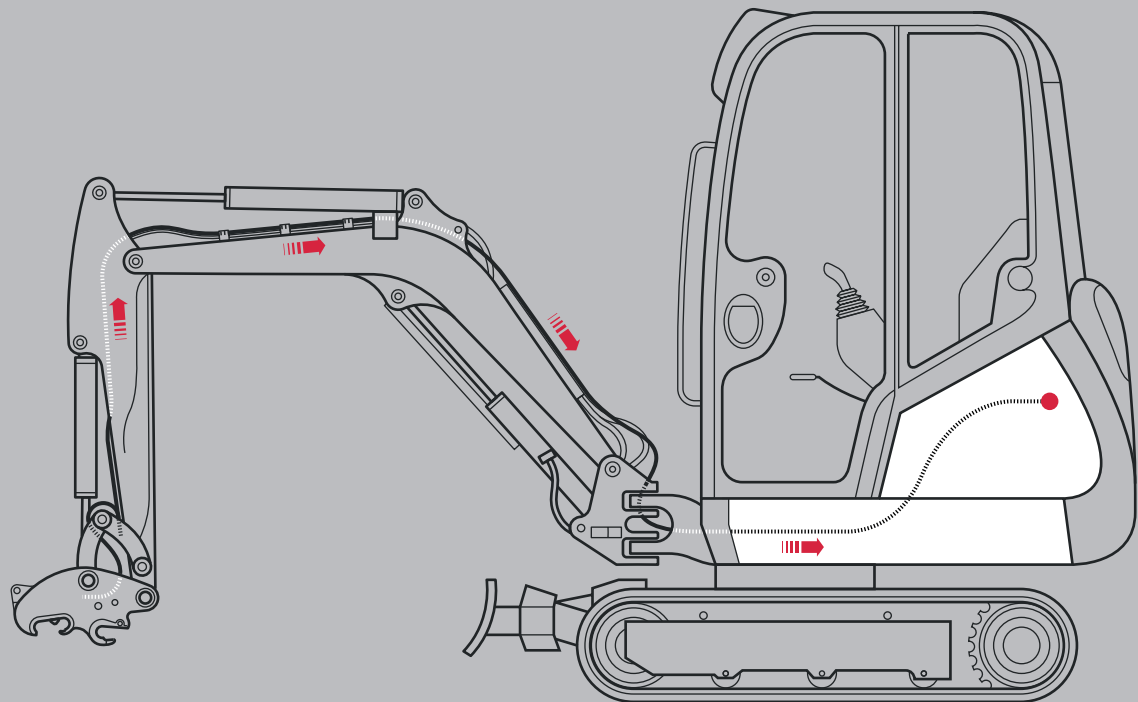


INSTALLATION OF HYDRAULICS

2. Follow the natural curve of the existing excavator hydraulic hoses and steel pipes and clamp or cable tie where required up to the solenoid valve. Make sure that the hoses are not twisted.

Important: The operator may need to remove top clamps already mounted on the digger machine to feed the hydraulic hoses along the stick and boom.

3. Route the hoses through the machine internals to the solenoid valve.



Important: If you find that the hoses are too short and do not reach the ports located on the solenoid valve, extension hoses have been supplied and are included in the installation kit. Please ensure that Hose A (blue) is connected to Port A and Hose B (yellow) to port B on the solenoid valve.

Important: Only to be used from the boom hoses to the solenoid valve.

HYDRAULIC INSTALL – SOLENOID TO PRESSURE & TANK

6.1. PREPARATION & SAFETY NOTES

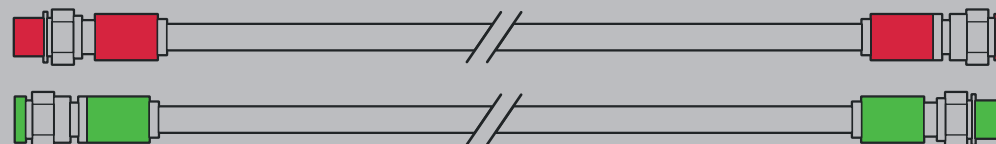
Note: Pre checks should take no longer than five minutes to complete prior to the installation of the secondary hydraulic system. Please adhere to the following preparation instructions to ensure a safe and timely installation.

Important: Connect all hoses to solenoid valve, tank and pressure. (Green, Red, Blue and Yellow hoses) (maximum working pressure = 400 bar).

Danger: Hydraulic Fluid - never use your hands to search for hydraulic fluid leaks, use a piece of paper or cardboard. Escaping fluid under pressure can be invisible and can penetrate the skin and cause serious injury. If affected, see a doctor at once.

PARTS REQUIRED

(1) Pressure hose (red) (2) Tank hose (green)



(3) 2 x compact elbow fittings

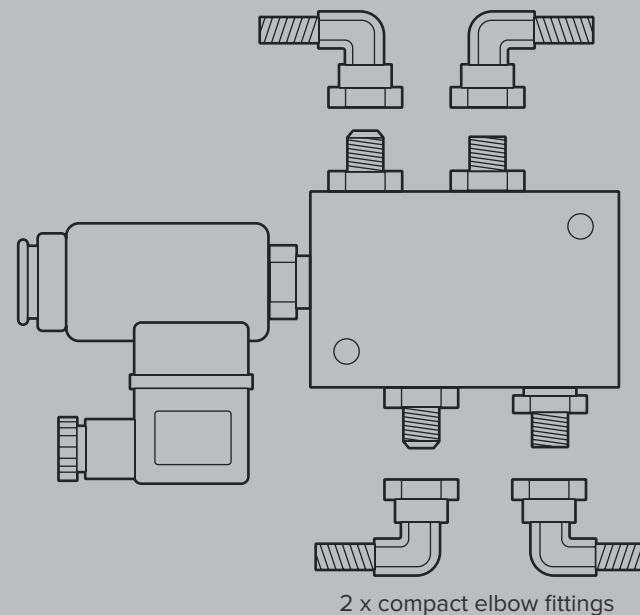


(4) 2 x male/female/male tee pieces



Solenoid Valve

2 x compact elbow fittings



6.2. INSTALLATION OF HYDRAULICS

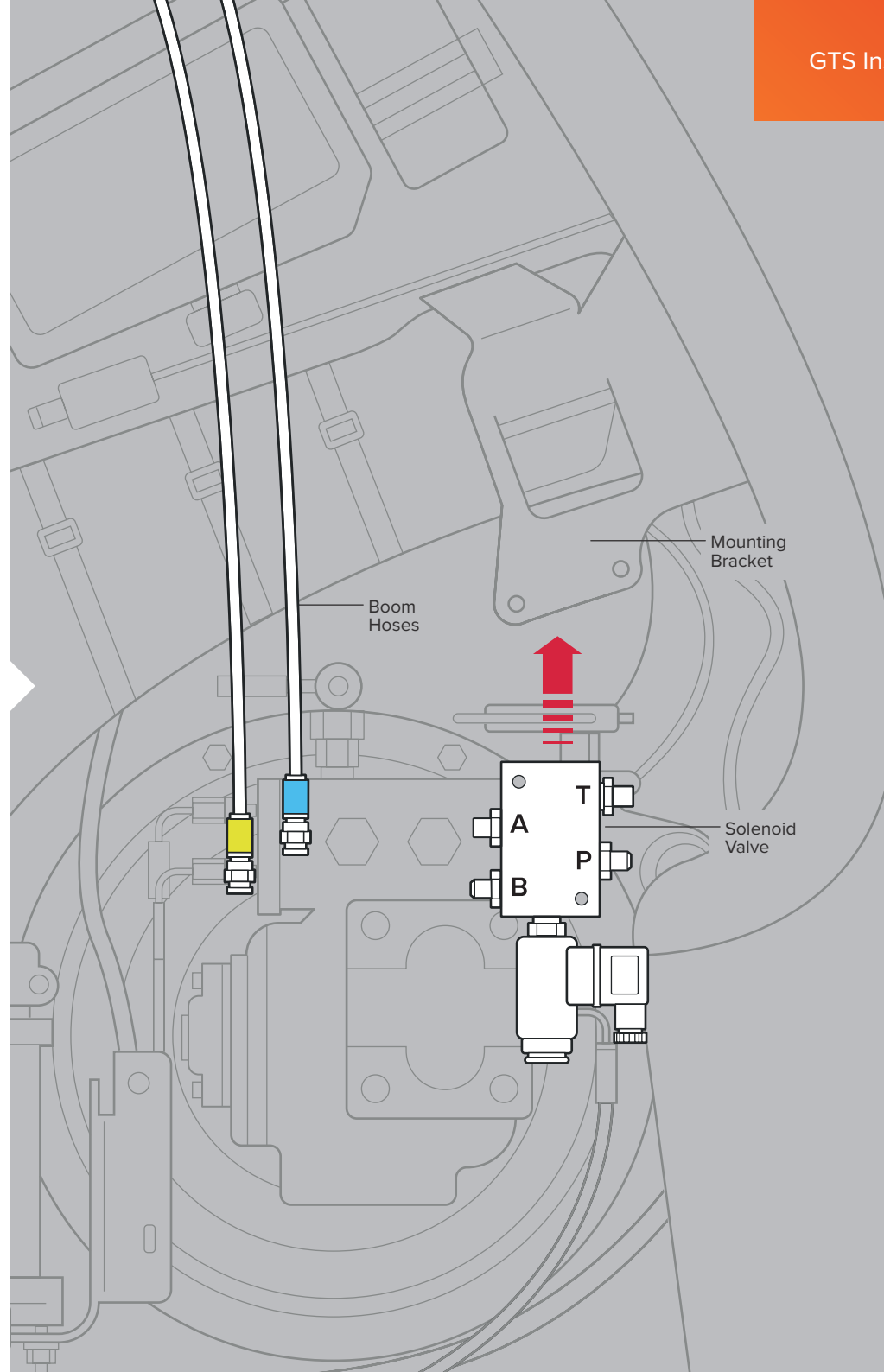
Note: Please refer to solenoid kit drawing in the GTS drawing pack to assist you through the installation of the solenoid valve and hydraulic hoses.

Important: In tight areas use 90 degree fittings supplied in the installation kit to help connect the P & T line to the solenoid valve.

Important: Ensure that the hydraulic pressure is a minimum of 150 bar. Please use a pressure gauge to determine the pressure.

Important: Please refer to Appendix B for torque specifications.

1. Position the coupler on the ground and vent the tank on the machine to allow the flow of air out of the storage tank. If needed refer to machine manual for further assistance.

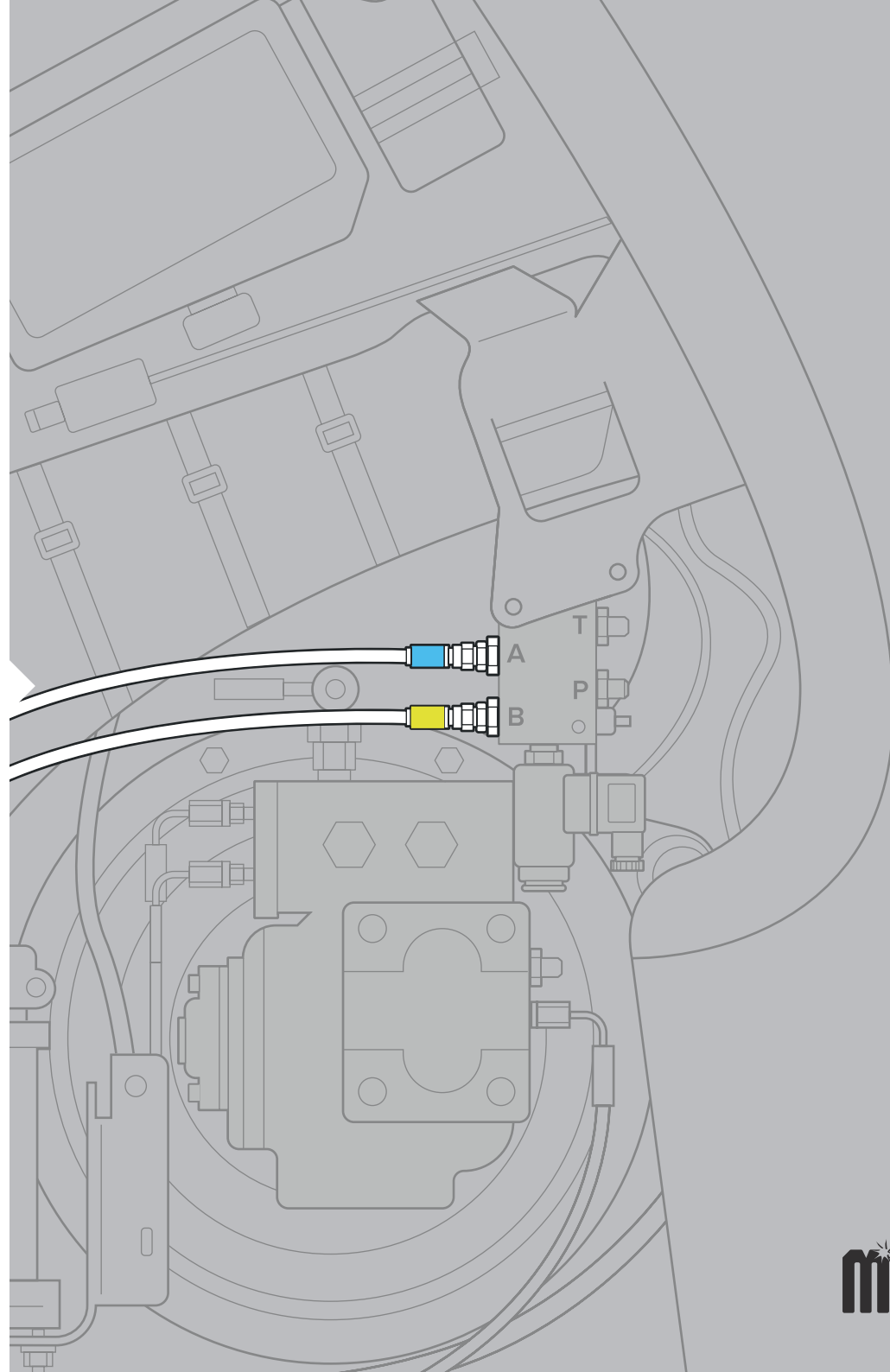


6.3. INSTALLATION OF HYDRAULICS

Note: The location of the solenoid valve may vary from OEM.

2. Securely fit the solenoid valve to a suitable location - a mounting bracket has been included in the installation kit if needed. We would advise bolting the solenoid/solenoid bracket to an existing hole inside the machine. A new hole may have to be drilled if an existing one is not available.

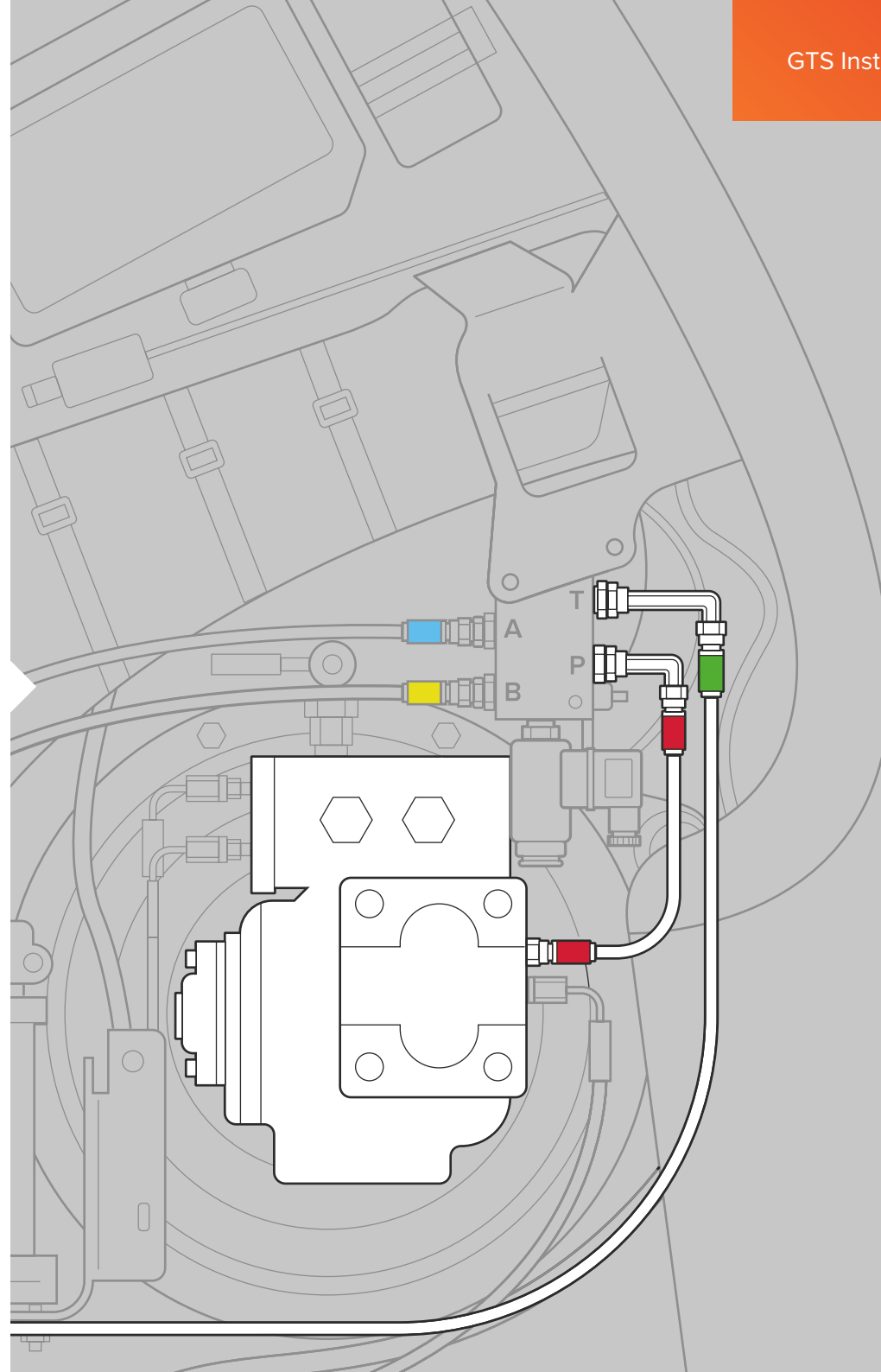
3. Once secure, feed the hoses up to the valve ensuring there is adequate length on each hose to securely connect them to the A & B ports on the solenoid valve.



6.4. INSTALLATION OF HYDRAULICS

4. Install pressure line (red) into the P port on the solenoid valve and connect the other side to the main hydraulic pump.

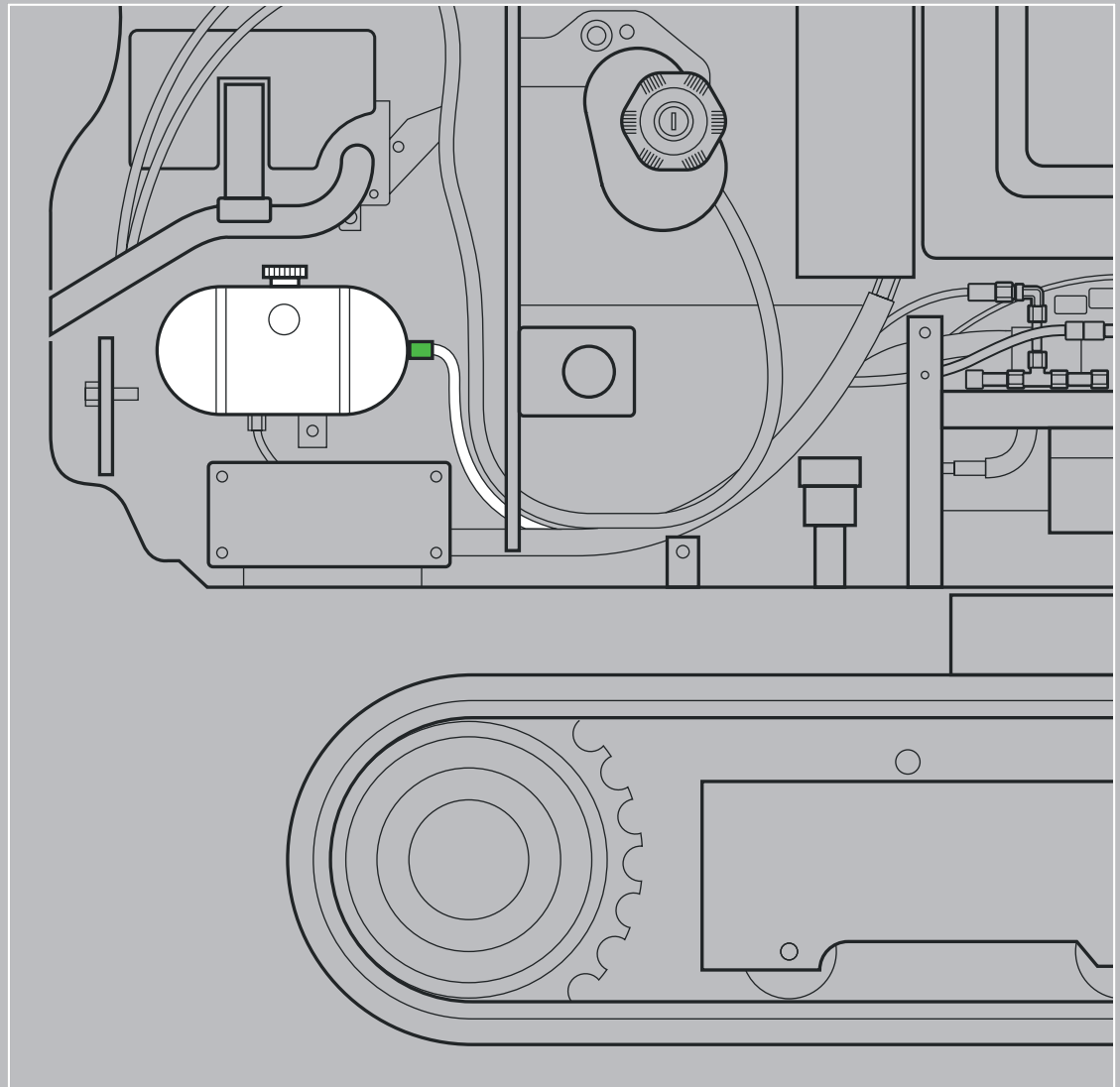
Please note: Hydraulic pumps can have a high and low pressure. Please ensure adequate pressure is achieved by using a pressure test gauge. The pressure needs to be a minimum of 150 bar.



6.5. INSTALLATION OF HYDRAULICS

5. Install the tank line (green) into the machines hydraulic tank in the most suitable place.

Please note: Removing fittings from the hydraulic tank can cause the tank to drain substantially, a drip tray, service bungs and oil spill mats are required in this stage.



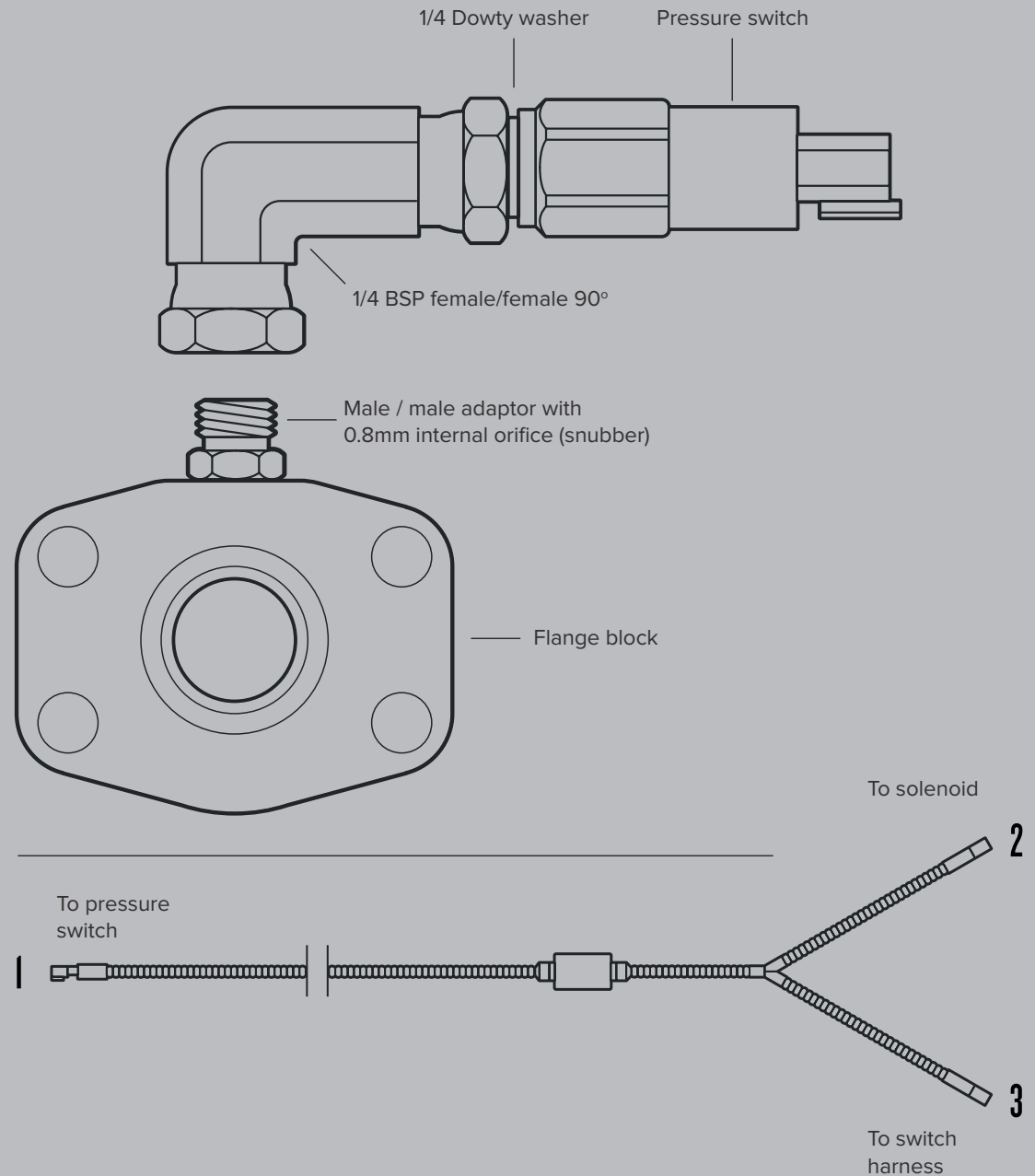
PRESSURE SWITCH INSTALLATION

7.1. INSTALLATION OF THE PRESSURE SWITCH SYSTEM

The pressure switch kit will include:

- 1 x pressure switch harness
- 1 x pressure switch
- 1 x pressure switch TEE piece or flange block
- 1 x pressure switch adaptor kit

Note: Flange blocks will be supplied with bolts and an O-ring seal.



INSTALLATION OF THE PRESSURE SWITCH SYSTEM

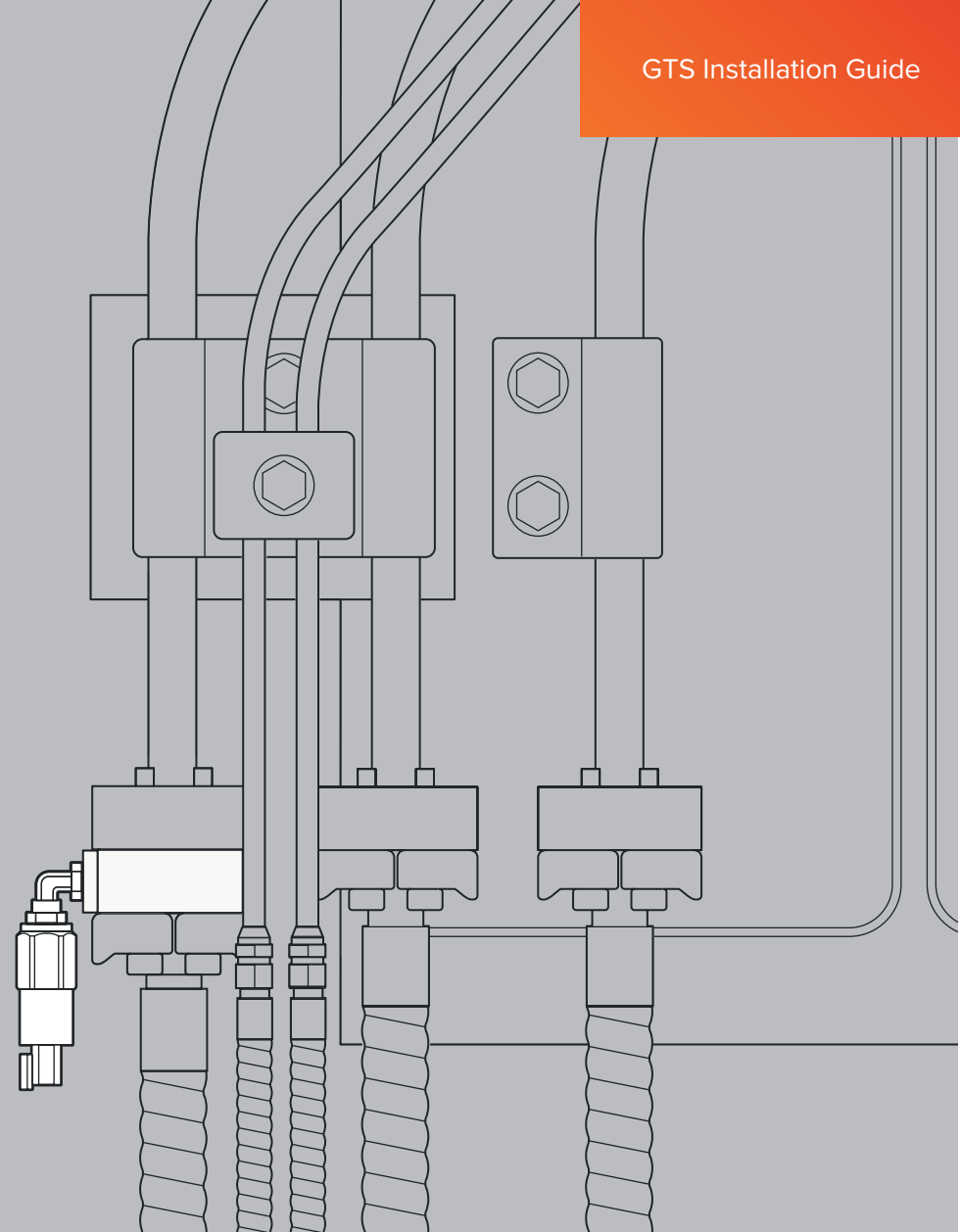
Important: Pre-installation please use oil spill mats and a drip tray for this part of the installation. Ensure all built up pressure is released from the system prior to taking any machine hydraulic hoses off.

Install the flange block or tee piece at the base of the boom into the pressure side of the bucket ram cylinder using the fittings provided in the installation kit.

To ensure correct port is used, trace hoses back from the bucket ram cylinder to the base of the boom. You can also refer to the OEM's maintenance manual for further assistance.

Note: Additional fittings are provided in the installation kit to assist with this phase of the install.

Important: To remove fluid (pressure) build up ensure the excavator arm is straight and positioned as low as possible on the floor. This is to try and prevent as much residual oil from coming back down the steel pipes on the boom. Once complete, turn to page 45.



ELECTRICAL INSTALL

8.1. PREPARATION & SAFETY NOTES

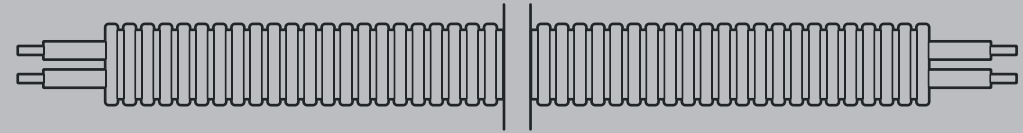
Before you commence installation work, identify cab electrical access points. This can be located directly under the hand controls at either side of the driver seat where you will feed the electrical harness through as part of the switch and buzzer installation process.

Important: Do not connect a 12-volt solenoid to a 24-volt supply, or vice versa as damage to the solenoid will result.

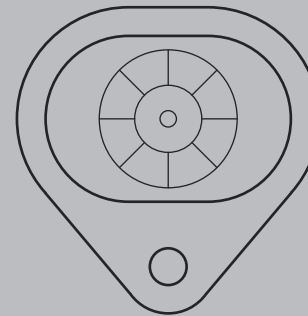
Caution: Ensure the switch is installed in an area where it cannot be accidentally activated.

Important: Ensure the battery is disconnected or isolated and machine is locked off and tagged.

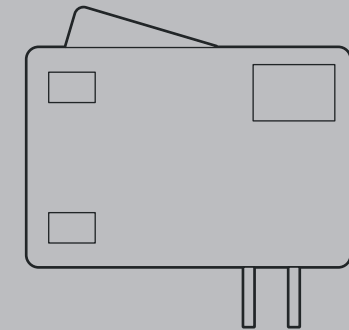
PARTS REQUIRED:



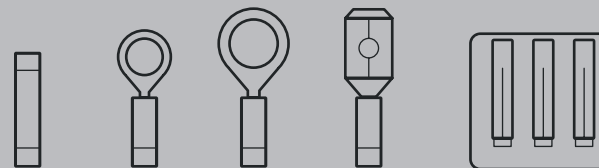
(1) Wiring Harness



(2) 12v Buzzer



(3) ISO Toggle Switch



(4) 1 x Electric Connector Pack

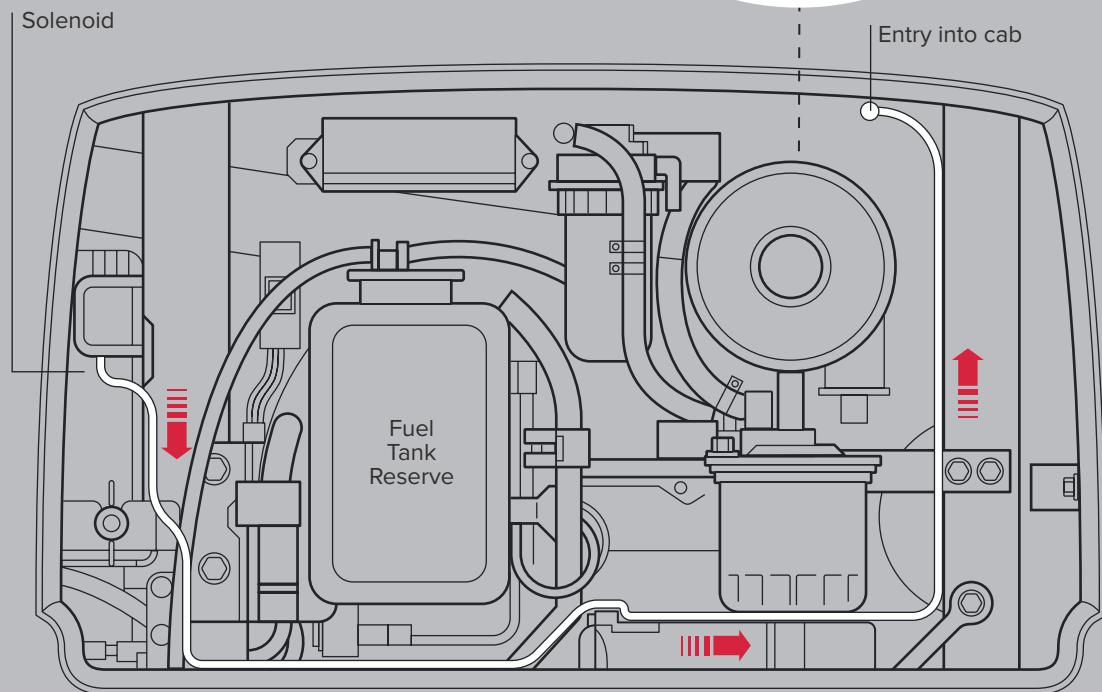
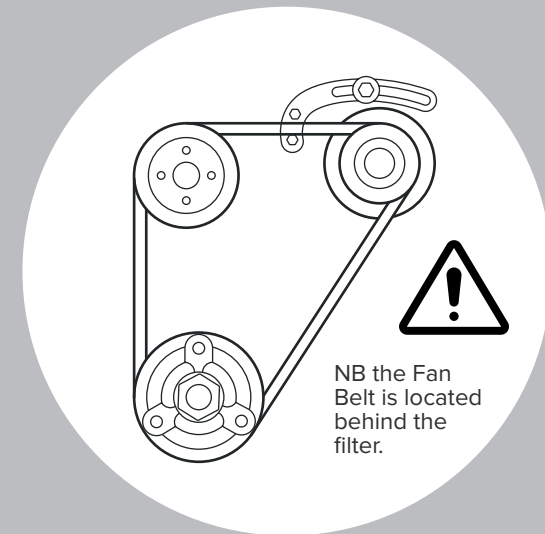


(5) 1 x Pack of Cable Ties

8.2. INSTALLATION OF ELECTRICAL HARNESS

1. Attach the supplied Hirschman plug onto the solenoid valve via the solenoid pins and screw into place and tighten securely.
2. Take the wiring harness supplied in the installation kit and trace from the solenoid valve to the entry access point to the cab by tracing any pre-existing electronic routing. This will ensure that the harness is refrained from touching any hot surfaces within the engine bay. Carefully move the wiring harness through the cab access point and into the cab.

2.



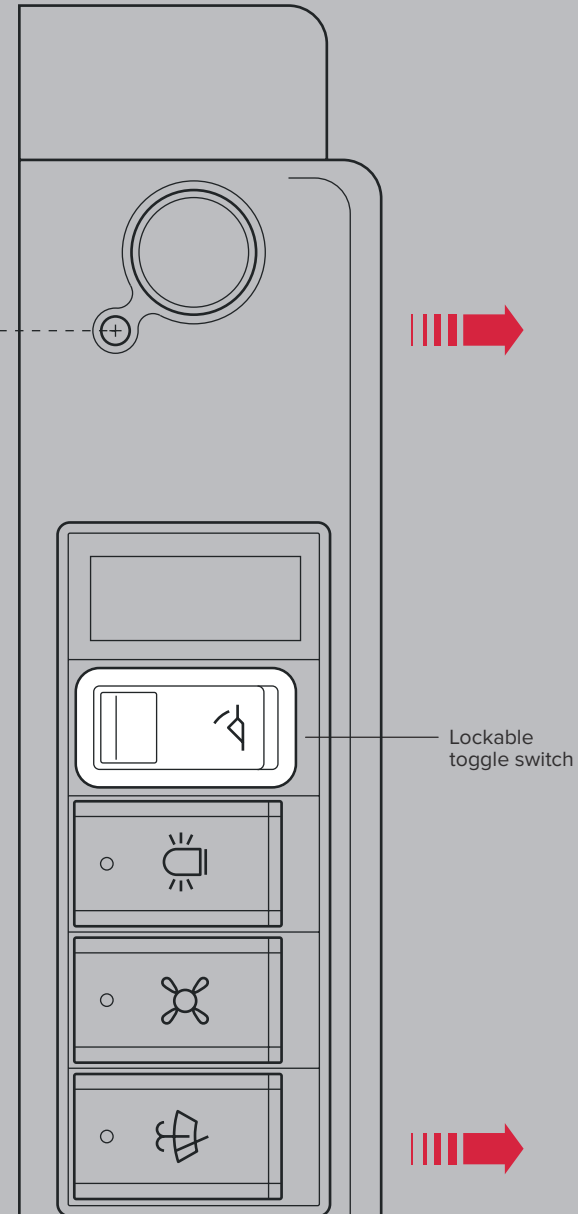
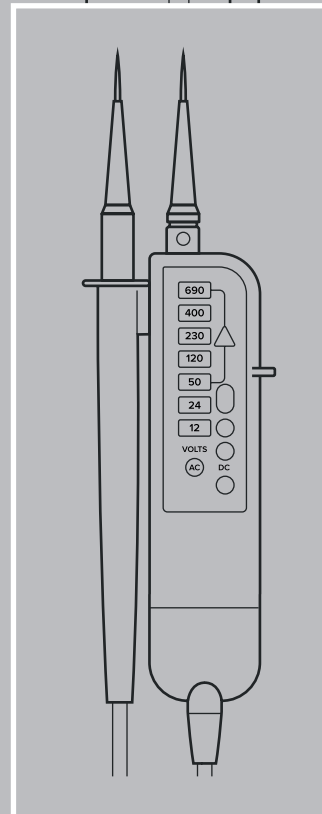
8.3. INSTALLATION OF ELECTRICAL HARNESS

3. Moving into the cab area, identify your ignition live point followed by your location for the switch and buzzer to be installed. Typically, your switch location will utilize one of the dummy switch points on the drivers control panel. Run the wiring harness between your ignition live and switch location to ensure that you have enough wiring length to complete the install.

4. To install your switch, remove one of the control panel dummy switches (depending upon machine make and model you may have to manually cut or adjust the space where you wish to insert the new switch). Connect the switch to the wiring harness using the shovel connection points on the back of the switch and then fix your switch into the control panel slot.

5. Secure wiring harness and all loose cables inside the cab with cable ties provided.

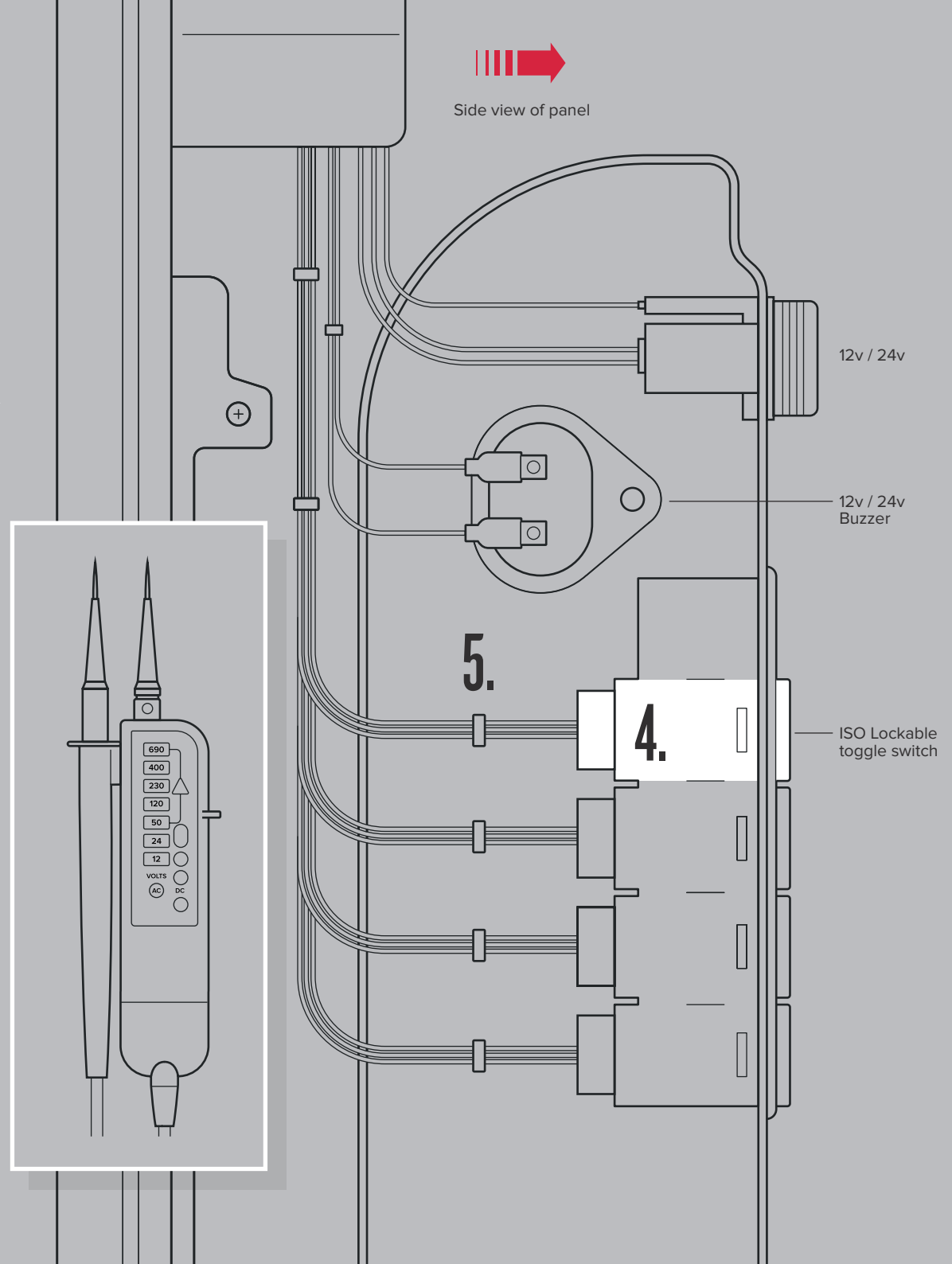
3.



8.4. INSTALLATION OF ELECTRICAL HARNESS

Note: When identifying your live location point some coupler manufacturers recommend using the lighter socket if the machine is 12v. Many operators use this socket to charge up mobile phones and run USB cables. This increases the risk of damaging this socket which if it was to happen would lead to your coupler switch out of service until socket connection was restored. Therefore, Miller recommend that you locate your source point from another ignition live.

Note: Ensure the switch is installed in an area where it cannot be accidentally activated.



INSTALLATION OF ELECTRICAL HARNESS

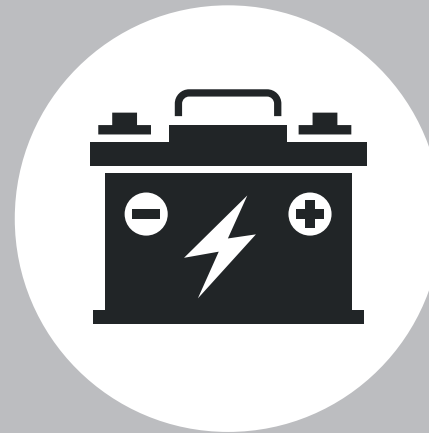
Note: The solenoid is energised when the switch is in the release or off position. In normal working conditions, the solenoid should be electrically disconnected and the switch in attach or on position. The buzzer should only sound when the switch is in the release or on position. Install the buzzer inside the instrument console, in a safe convenient position and fasten securely. You should now be ready to test the coupler and the hydraulic system.

6. Finally, carry out the following system tests:

1. Reconnect the battery.
2. Switch the Ignition ON.
3. Activate coupler switch – buzzer should sound in the cab.
4. Locate solenoid valve and check that the Hirschman plug has a glowing amber light.

Warning: Please make sure the wiring harness is not loose inside the engine bay and is tucked away from any moving parts.

6.



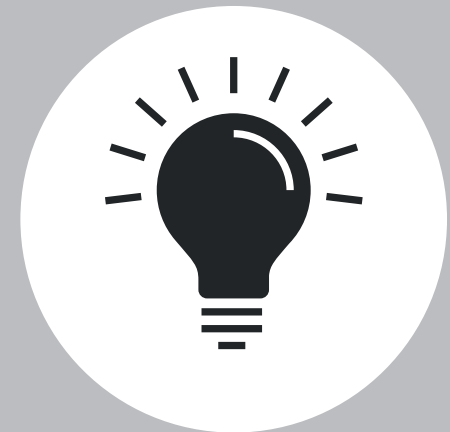
1. Reconnect the battery.



2. Switch the Ignition ON.



3. Activate coupler switch – buzzer should sound in the cab.



4. Locate solenoid valve and check that the Hirschman plug has a glowing amber light.

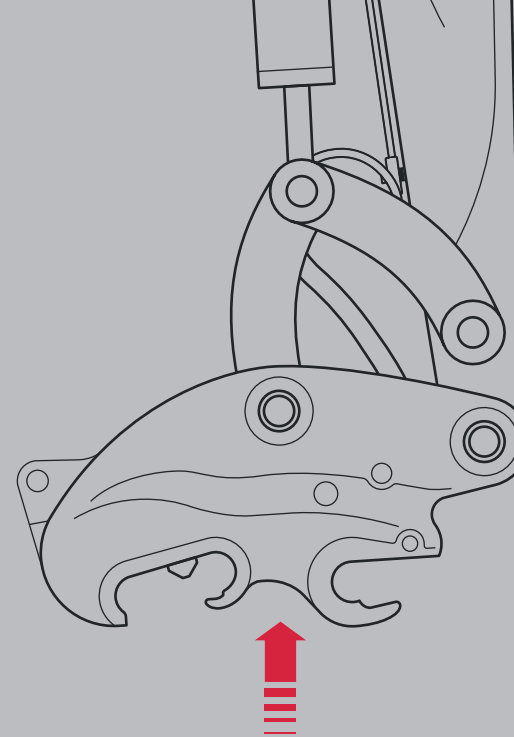
COMMISSIONING

9.1. COMMISSIONING

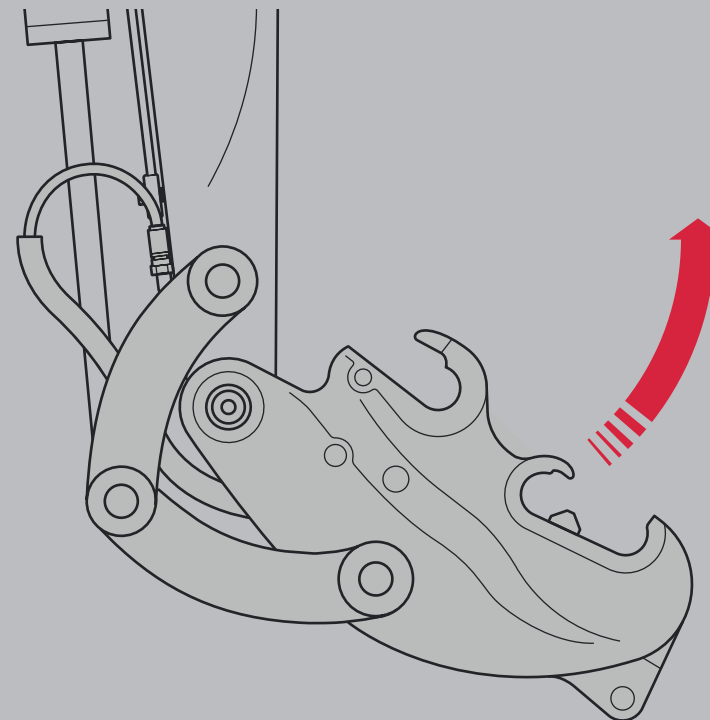
1. Turn on the machine ignition and activate switch, if the in-cab buzzer sounds then the coupler system is connected properly.
2. Turn on the machine and leave to idle, whilst machine is idling, check all hoses/fittings for any leaks. If leaks are present then turn off machine and rectify leak. If no leaks are present then proceed with step 1.
3. Whilst machine is on, move arm to the “safe curl to release” position as shown on 2, Activate and deactivate the coupler hydraulic system to ensure there is no air in the coupler hoses. To complete this step, operate the switch.

Note: Fully operate the coupler multiple times to ensure the full system is working and all air is removed from the system.

1.



2.



TROUBLESHOOTING

10.1 TROUBLESHOOTING

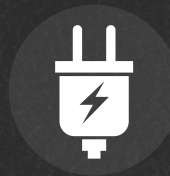
If the coupler begins to operate erratically or fails to work, please consider the following checks.



GENERAL

Check:

- Snapped, bent or lost pins.
- Hydraulics leaks.
- Hose leaks, wear or damage to hoses.
- Damaged or bent cylinder.
- Loose or broken nuts and bolts.



ELECTRICAL

Check:

- The in line fuse to the cab switch has not blown.
- The magnetic coil on the solenoid valve has not become loose or burnt out through vibration.
- That no electrical wires are broken.
- That the switch and/or buzzer is not broken.
- That the voltage to the magnetic coil is correct (24 volts main line feed, to a 24 volt system).
- Electrical wiring.



HYDRAULIC

Check:

Warning: Always remove the electrical supply to the switch before commencing work on the hydraulics (Remove machine key and disconnect battery).

Contamination - The most common cause of coupler failure is contaminated hydraulic oil (dirty oil or rubber hose particles in the system, caused by incorrect installation of hose lines). If this occurs, the coupler may work slowly, release or attach erratically, or lock on or off. In this situation the following procedure needs to be applied:

Check the solenoid valve block assembly for contamination as follows:

1. Switch off the machine and operate the controls to vent residual pressure in the hydraulic system.
2. Vent pressure from the hydraulic tank by releasing the hydraulic tank filler cap.
3. Remove the coil and spool from the solenoid valve and inspect for any blockages or damage.
4. Clean and replace all seals if necessary.
5. Clean or change filter fittings.
6. Re-assemble solenoid unit and install to the machine. If in doubt, change solenoid valve unit.

7. Re-connect all hydraulic hoses to correct ports as detailed in the installation procedure. Ensure the pressure feed hose connects to the port marked P and the tank return hose connects to the port marked T.

8. Check that the coupler hydraulic cylinder has not 'locked on' due to contamination as follows:

- Switching the coupler to the release position and disengage the machine hydraulics.
- When the cylinder is fully retracted, switch off the machine and operate the controls to vent residual pressure in the hydraulic system.
- Slowly unscrew the check valve in the hydraulic cylinder.
- Inspect the check valve, clean or replace the O-ring seals.
- Clean all cavities including the cylinder.
- Reassemble the check valve into the cylinder.
- If there is any damage to the cylinder replace the complete unit including the check valve.

Warning: Care must be taken whilst unscrewing the check valve as there may be some residual pressure in the hydraulic cylinder. Unscrew the valve slowly to allow any trapped pressure to escape.



OPERATION

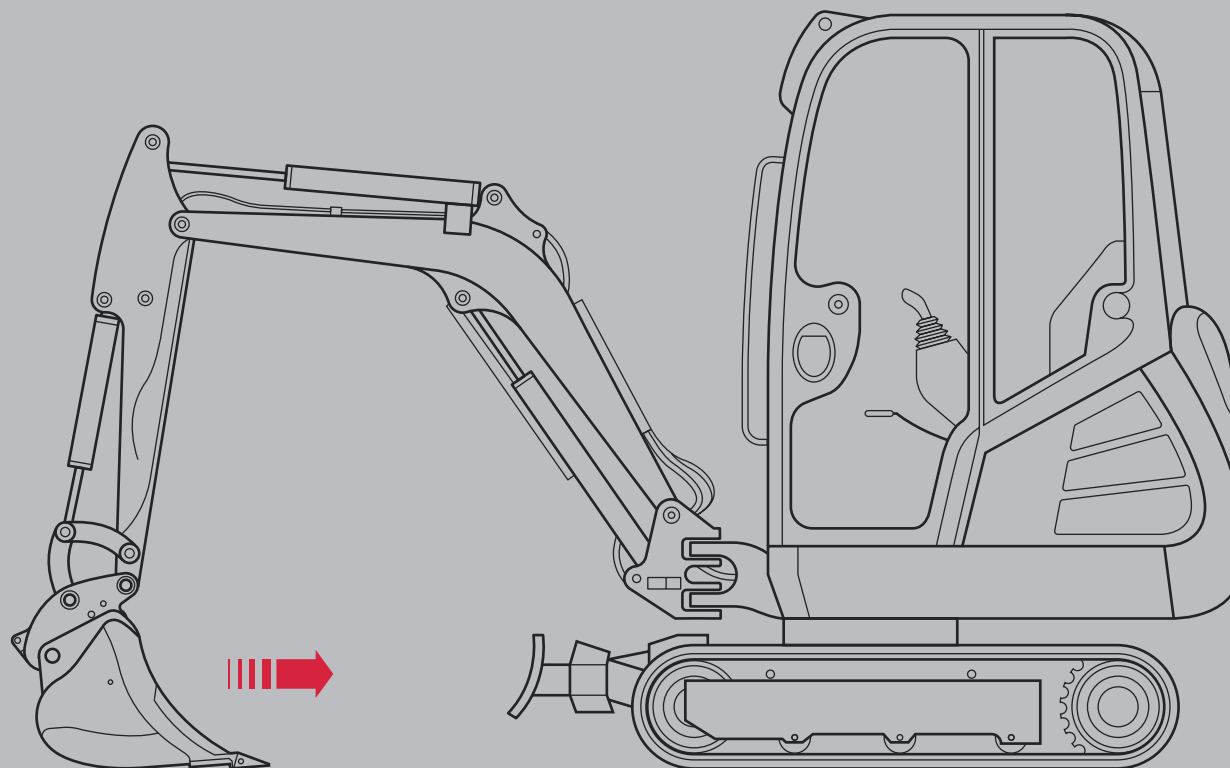
Check:

If the coupler is switched to the attach mode or on position but the bucket can be taken off, then the cylinder or the cylinder non-return valve is losing hydraulic pressure and may need re-sealing or replacing.

Loss of pressure, place the bucket on the ground and attempt to move the coupler on the bucket. If the coupler does not hold firmly, this means the coupler is losing hydraulic pressure due to a failed cylinder. If in doubt then contact Miller immediately for further assistance.

Please refer to the Miller GTS Operations Guide below for more information.

Important: Do not operate the coupler in this condition. Have repairs carried out immediately.



WARRANTY REGISTRATION

WARRANTY PERIOD

The warranty period is 36 months for the coupler frame and 12 months for internals or 2,000 hours from date of delivery, whichever is the sooner.

Limitation of Liability

Miller shall not be liable for or in respect of:

- 1.** Repair or replacement of (i) any normal wearing parts, (ii) any ageing or deterioration caused by foreign substances or by exposure to the natural elements or (iii) any consumable items, such as oil, grease, filters etc.
- 2.** Any cost of repairs, alterations or replacements made without official Miller authorisation.
- 3.** Any warranted product which has been subjected to:-

(a) Misuse, improper operation or misapplication, including but not limited to operation beyond the rated capacity expressly prohibited by the manufacturer of the prime moving machine, as shown in the operator's manual or rated capacity chart furnished with the prime moving machine. **(b)** Neglect, including but not limited to **(i)** improper maintenance and storage, **(ii)** use of the product while any parts are loose, broken or out of order. **(c)** Accident.

(d) Improper or unauthorised installation, adjustment, repair or alteration, including but not limited to **(i)** adjustment or assembly procedures not recommended or authorised in the User Guide manual. **(ii)** use of unauthorised parts or attachments, **(iii)** unauthorised modification or alteration.

Miller shall be liable only for repair or replacement of parts as described under 'warranty coverage', and Miller shall not be liable, whether under breach of warranty, negligence or strict liability, for any other injury, loss, damage or expenses, whether direct or consequential, including but not limited to loss of use, income, profit or production, increased cost of operation, or spoilage of or damage to material.

Alterations

Miller reserves the right to make alterations or modifications to their products and literature at any time, which in their opinion may improve the performance and efficiency of the product. Miller shall not be obliged to make such alterations or modifications to products already in service. Miller reserves the rights to replace or repair parts where deemed necessary.

The foregoing warranty is exclusively and in lieu of all other warranties, including warranties concerning merchantability or fitness for a particular purpose, which are expressly disclaimed, whether written, oral, express or implied. Miller assumes no other obligations or responsibility with respect to the products whatsoever, and no employee or representative is authorized to change or extend this warranty in any way or grant any other warranty whatsoever. If in doubt please contact Miller for free advice and assistance, please find contact details on back cover.

Warranty Claims

In the event of any warranty claim being honoured, the following information must be provided to the Seller:- Serial No., **ii)** hours worked, **iii)** host machine model and hours worked, **iv)** working environment/application, **v)** failure details including photographic evidence and **vi)** general overview of the concern and how the failure occurred.

APPENDIX

TORQUE SPECIFICATIONS

SPECIFICATIONS

FITTINGS
GTS 30lb.ft 40Nm (Fit Thread locking adhesive)
Non-return valve 30lb.ft 40Nm
B hose connection male
(Cylinder hose) 15lb.ft 20Nm
A hose connection male
(Cylinder hose) 26lb.ft 35Nm
Pressure hose connection
Female 20lb.ft 27Nm
Tank return hose connection
Female 55lb .ft 75Nm
Weld on block 20lb.ft 27Nm
Solenoid Valve

FITTINGS
A Line filter fitting ¼ BSP
M/M Adapter 25lb.ft 34Nm
B Line filter fitting 7/16
JIC x 7/16 UNF 15lb.ft 20Nm
P Line 9/16 JIC x 9/16 UNF 26lb.ft 35Nm
T Line 3/8 BSP
M/M Adapter 55lb.ft 75Nm
Spool Valve 40.6lb.ft 54.2Nm
Non-return valve 33.8lb.ft 40.6Nm
Electro-magnetic lock nut 5.4lb.ft 8.1Nm

Plug 9.3lb.ft 13Nm



GTS

INSTALLATION GUIDE

Date / 09.07.2024

Revision / 2nd Issue

Checked / PG

Checked / CL

Miller Control Document

GTS Installation Guide Second Issue

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