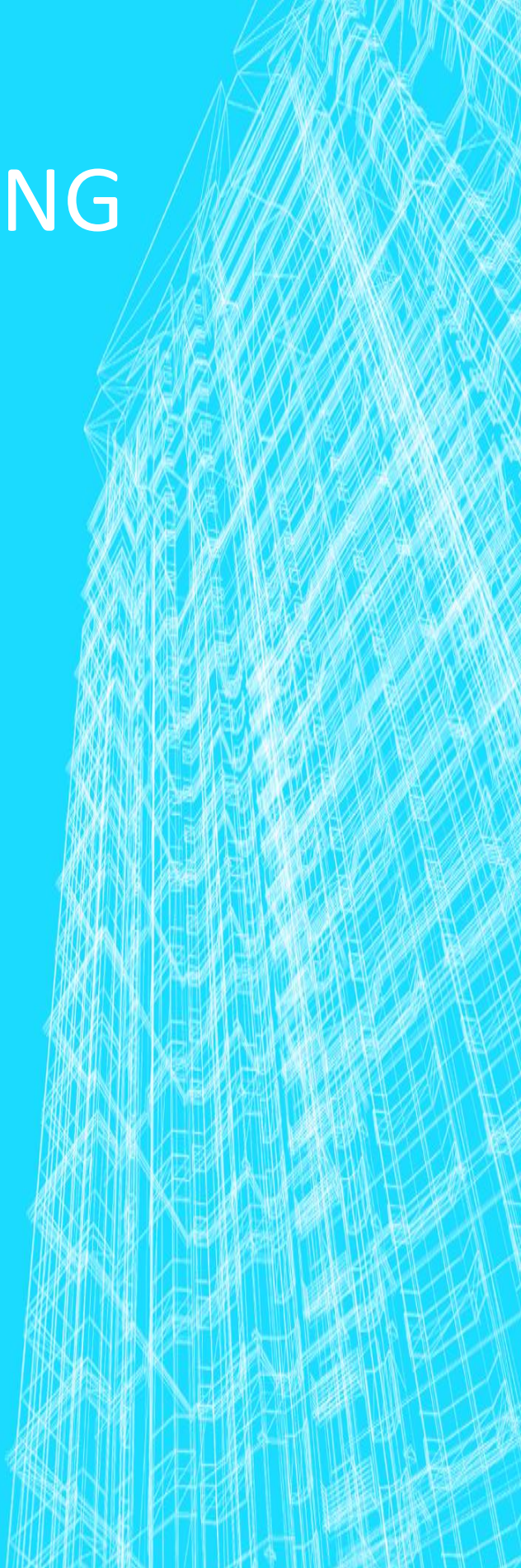


# HEADSTOCK REMOVAL/FITTING



Guidelines for the safe  
removal and refitting of  
telehandler and tractor  
loader headstocks

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# INTRODUCTION

This manual is a broad guide on how to remove and re-fit/replace a headstock on a telehandler or tractor loader.

The information included is intended as a guide for dealers/distributors and their technicians. Please be aware that only experienced or suitably competent technicians should undertake this operation.

The original equipment manufacturers (OEM) authorised dealer is responsible for the following:-

- To ensure that the vehicles load charts are correct for the attachments that will be used.
- To undertake a Pre-Delivery Inspection (PDI) by a trained technician.
- To ensure End User training is undertaken.
- To ensure the supplied QR Headstock Manual sticker is placed in the machine manual.

A digital version of this manual is available via the QR code



# ALWAYS OBSERVE THE ORIGINAL EQUIPMENT MANUFACTURERS (OEM) TELEHANDLER/TRACTOR LOADER GUIDELINES ON SAFE PRACTICES WHEN WORKING AROUND THE MACHINE

## **Section 1**      **Removal of Machine Headstock**

- Select a suitable flat location.
- Ensure the machine cannot move, apply park brake and chock the wheels.
- Position a pallet or work surface under the headstock. Make sure it can support the weight of the headstock (50kg to 500kg).
- Remove any protection cover plates from the headstock.
- Remove auxiliary hydraulic supply pipes, blank off the ends with high pressure blank stops, tie up out of the way. Also, blank off the inlet/outlet for the hydraulic cylinder. If fitted, disconnect change over valve and rotation sensor control wires and tie up the way.
- Position the headstock hydraulically in a flat (horizontal) position, just resting on the pallet or work surface. (TIP - it may be helpful to have guidance from a colleague to get the right position)
- Remove rotation pivot pin retaining bolt or plate.
- Remove rotation pivot pin, keep a note of shim numbers and location. (TIP - it may help to have a prybar to nudge the headstock up/down by a few millimetres)
- Remove main pivot pin retaining bolt or plate.
- Remove main pivot pin, keep a note of shim numbers and location. (TIP - it may help to have a prybar to nudge the headstock up/down by a few millimetres)
- Check headstock is free and able to be moved without fouling any components on the machine.
- Lower pallet/work surface with headstock. Secure to pallet if required.
- Replace pins, retainer bolts and shims in the order they came off to the OEM machine for safe keeping.
- Pack the removed headstock ready for shipping, clearly labelled with machine details, order number, dealer name and branch.



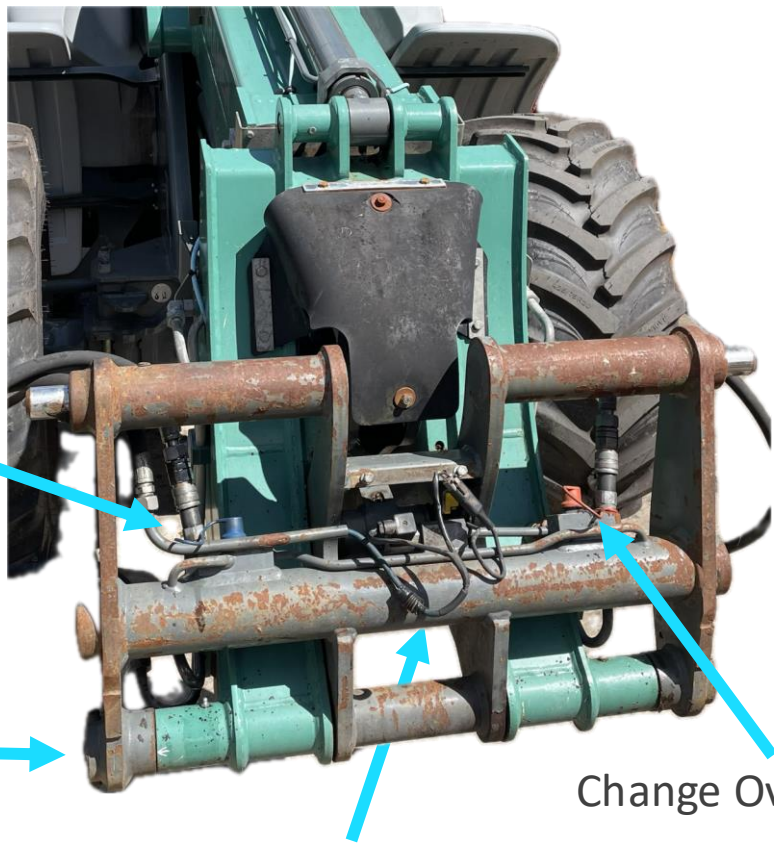
# EXAMPLE MACHINE

AUX Hydraulic Supply

Main Pivot

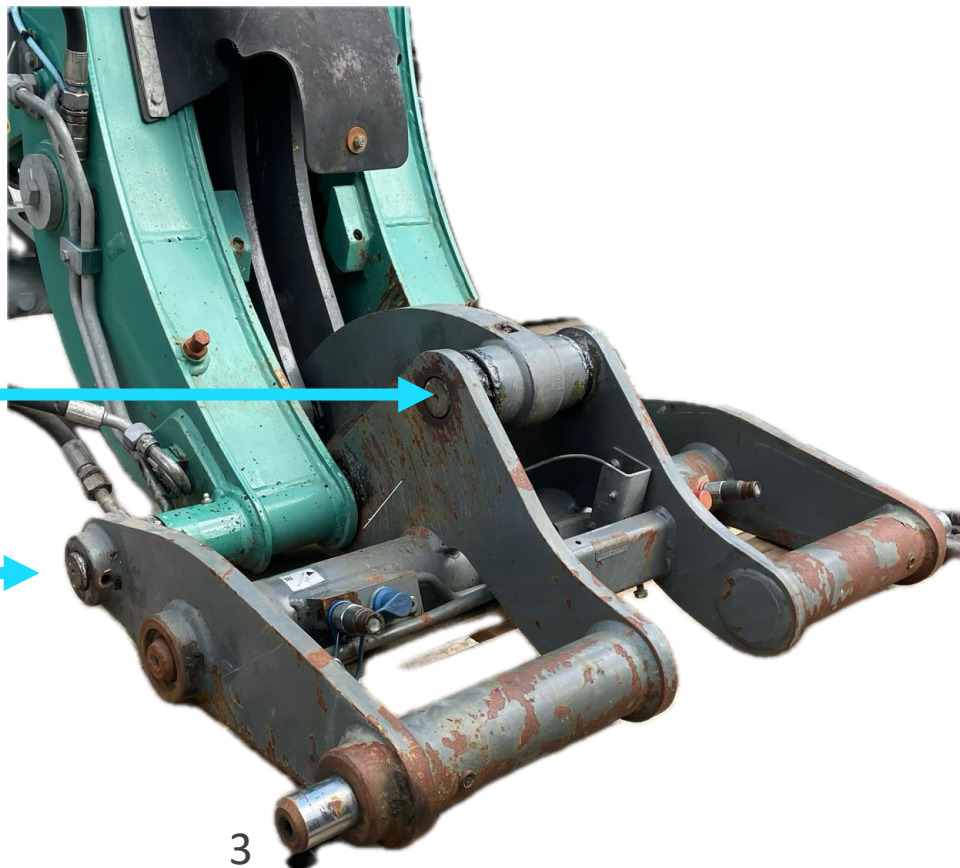
Change Over Valve

Electrical Change Over Valve Wiring



Rotation Pivot Pin

Main Pivot



# ALWAYS OBSERVE THE OEM TELEHANDLER/TRACTOR LOADER GUIDELINES ON SAFE PRACTICES WHEN WORKING AROUND THE MACHINE

## **Section 2**      **Fitting of Machine Headstock**

- Return to the suitable flat location.
- Ensure the machine cannot move, apply park brake and chock the wheels.
- Position the returned headstock back in the horizontal mounting position either on a pallet or suitable work surface. Make sure it can support the weight of the headstock (50kg to 500kg).
- Line up the headstock main pivot bushes, once in line replace the main pivot pin including shims as per the order they came off in. Secure the pin with the correct retaining clip/plate/bolt. (TIP - it may help to have a prybar to nudge the headstock up/down by a few millimetres)
- Line up the rotation pivot bushes. Refit the rotation pivot pin, including the shims if required. Secure the pin with the correct retaining clip/plate/bolt. (TIP - it may help to have a prybar to nudge the headstock up/down by a few millimetres)
- You will need to check if the machine's converted headstock needs additional hydraulic circuit adaptation. **Please also refer to the Hydraulic page in this manual.**
  - **Merlo** Machines with double acting hydraulic locking cylinders will require an additional pilot operated check valve to lock the hydraulic oil in the cylinders, along with manual operated high pressure ball valves to prevent the AUX hydraulic supply activating the locking cylinders when not required.
  - **CAT** Machines with double acting hydraulic locking cylinders will require an additional pilot operated check valve to lock the hydraulic oil in the cylinders, along with manual operated high pressure ball valves to prevent the AUX hydraulic supply activating the locking cylinders when not required.
  - **Kramer** Machines will require an electrically operated change over valve to be fitted to the cylinder rod side of the hydraulic circuit. (Agricultural specification machine should, from factory, be pre-wired with the change-over function) Please follow the additional Hydraulic page in this manual.
  - **Other Telehandlers/Tractor loaders** should be checked that they have a pilot operated check valve fitted to the AUX hydraulic circuit. Make sure there is a system in place to lock the AUX hydraulic oil in the headstock locking cylinders. As a minimum requirement, high-pressure ball valves to secure the attachments once locked on should be fitted. Some manufacturers will have a suitable change over system that can be connected in to.
- Reinstall the auxiliary hydraulic supply pipes by removing the blanked off ends. If required, fit the change-over valve, pilot operated check valve, manual operated high pressure ball valves. Some systems will need the cylinders to be pre-filled with oil as bleeding air out the system is not easy/possible. If fitted also reconnect rotation sensor control wires.
- Check the hydraulic pipe/electric cables route for pinch points.
- Run up and test the headstock in a controlled manner achieving full rotation. Make sure rotation stops are adjusted and touching correctly. Check for hydraulic oil leaks.
- Replace protection cover plates if fitted.

# ALWAYS OBSERVE THE OEM TELEHANDLER/TRACTOR LOADER GUIDELINES ON SAFE PRACTICES WHEN WORKING AROUND THE MACHINE

## Section 3                      Hydraulics

Headstock conversions with the option to have hydraulic locking. The following aspects need to be checked and implemented, if required.

What controls will stop the locking pins retracting (unlocking attachments).

Industry systems available:-                      Dual pilot operated check valve (most machines will have this system as standard for the AUX hydraulic line. Merlo and CAT telehandlers do not and should have it retro fitted.

Manual high pressure ball valves (one per AUX line) are a positive locking system to keep the locking cylinders in the out position.

Electric change over valve. Standard on Kramer, Liebherr and Wiedemann. Powered up via a dedicated cab switch.

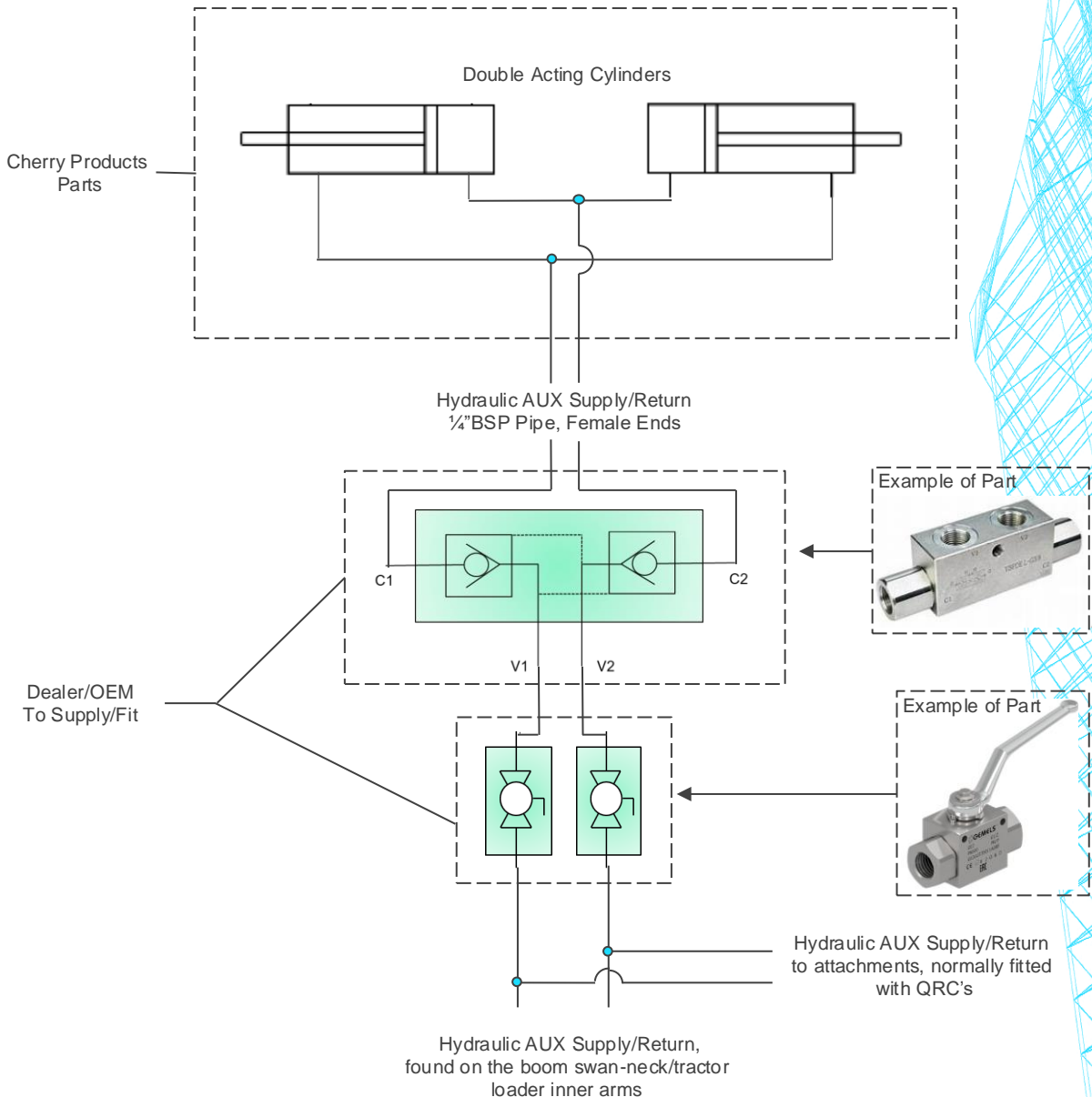
You will need to check if the machine needs the above additional hydraulic circuit adaptation listed above. The information below has been determined from current machine models produced in 2024.

- **Merlo** Machines with double-acting hydraulic locking cylinders will require an additional pilot operated check valve to lock the hydraulic oil in the cylinders, along with manual operated high pressure ball valves to prevent the AUX hydraulic supply activating the locking cylinders when not required. Further information can be found in Section 3a. (Hydraulic page).
- **CAT** Machines with double-acting hydraulic locking cylinders will require an additional pilot operated check valve to lock the hydraulic oil in the cylinders, along with manual operated high pressure ball valves to prevent the AUX hydraulic supply activating the locking cylinders when not required. Further information can be found in Section 3a. (Hydraulic page).
- **Kramer – Liebherr** Machines will require an electrically operated change-over valve to be fitted to the cylinder rod side of the hydraulic circuit. Agricultural specification machine should from factory be prewired with the changeover function. Further information can be found in Section 3b. (Hydraulic page).
- **Other Telehandlers/Tractor loaders** should be checked that they have a pilot operated check valve fitted to the AUX hydraulic circuit. Make sure there is a system in place to lock the AUX hydraulic oil in the headstock locking cylinders. As a minimum requirement, high-pressure ball valves to secure the attachments once locked on should be fitted. Some manufacturers will have a suitable change-over system that can be connected in to. Further information can be found in Section 3c. (Hydraulic page).



## Section 3a

# Headstock Hydraulic Circuit Merlo – CAT Machines



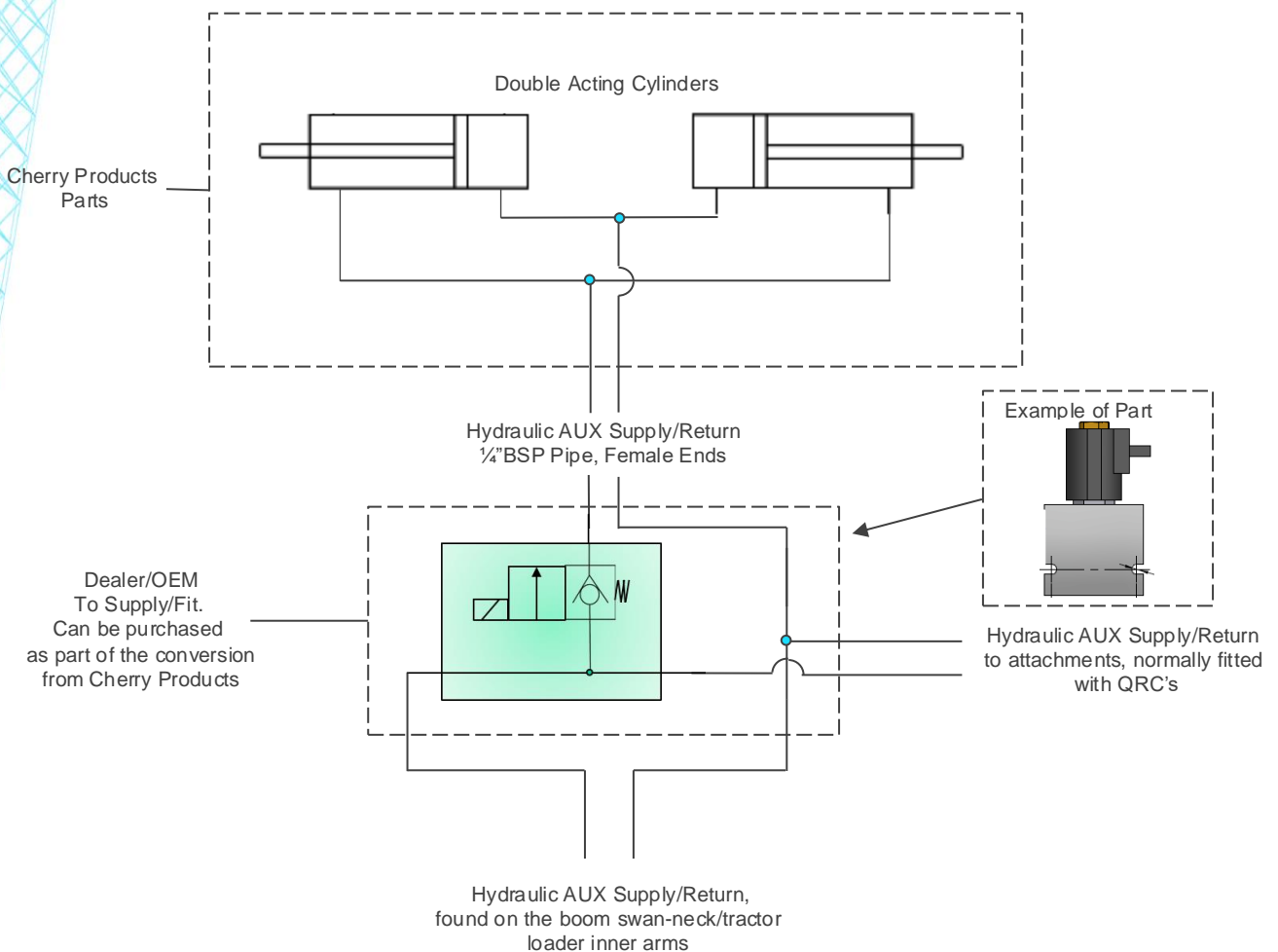
Safety control measures and tips to complete a safe installation:-

- Wear the correct PPE when working on hydraulic systems. Follow the OEM safety guidelines.
- The circuit needs to be air-lock free. We recommend pre-filling the cylinders with oil, with the rods out.
- Flush through the pipes and valve before connecting the pipes to the hydraulic cylinders.
- Test the new installation to full pressure until the machine's main pressure relief valve activates.
- Rotate the headstock fully to make sure the pipe work is clear of any pinch/wear points.
- Check for hydraulic oil leaks.



## Section 3b

# Headstock Hydraulic Circuit Kramer – Liebherr – Wiedemann Machines



Safety control measures and tips to complete a safe installation: -

Wear the correct PPE when working on hydraulic systems. Follow the OEM safety guidelines. The circuit needs to be air-lock free. We recommend pre-filling the cylinders with oil, with the rods out.

Flush through the pipes and valve before connecting the pipes to the hydraulic cylinders.

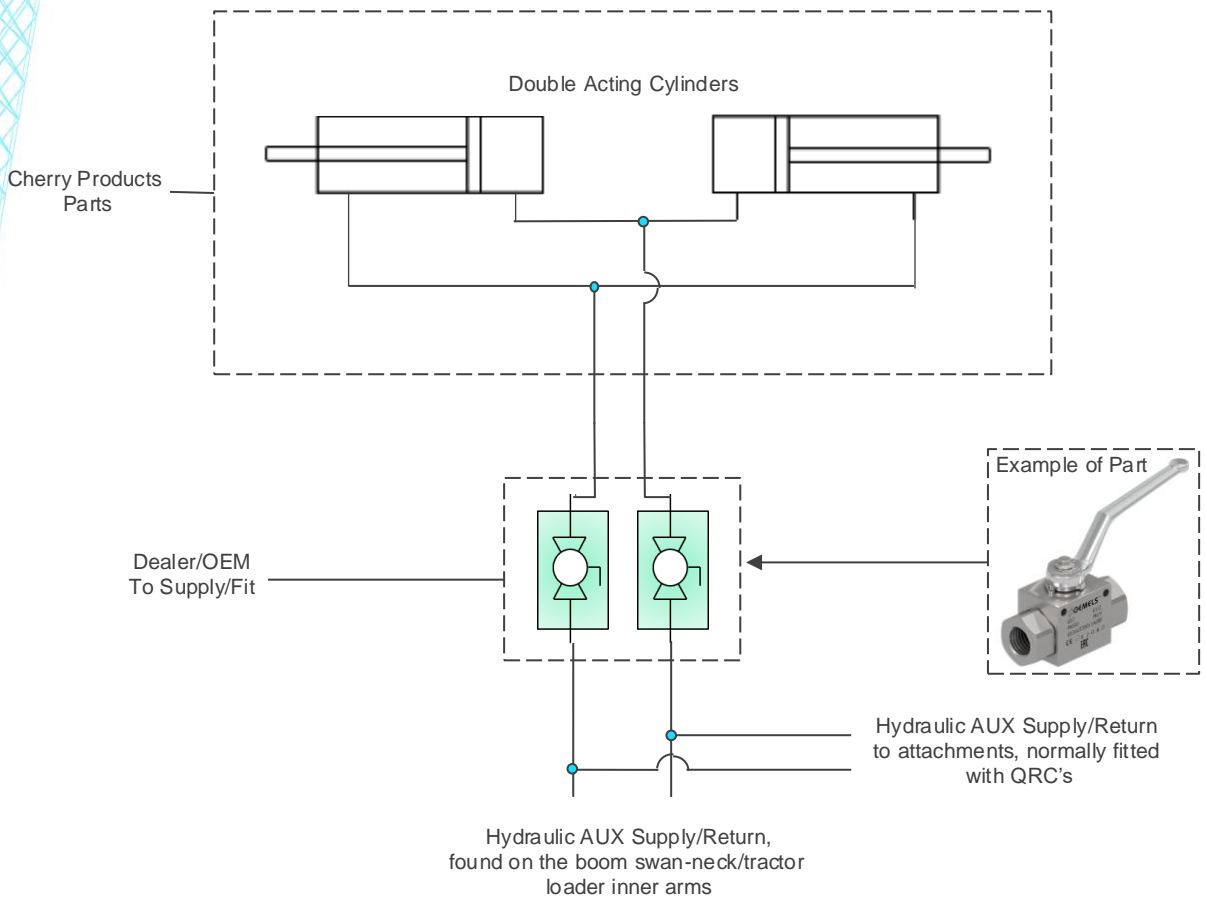
Test the new installation to full pressure until the machine's main pressure relief valve activates.

Rotate the headstock fully to make sure the pipe work is clear of any pinch/wear points.

Check for hydraulic oil leaks.

## Section 3c

# Headstock Hydraulic Circuit Telehandlers and Tractor Loaders Fitted with check valves at the spool block



Safety control measures and tips to complete a safe installation:-

- Wear the correct PPE when working on hydraulic systems. Follow the OEM safety guidelines.
- The circuit needs to be air-lock free. We recommend pre-filling the cylinders with oil, with the rods out.
- Flush through the pipes and valve before connecting the pipes to the hydraulic cylinders.
- Test the new installation to full pressure until the machine's main pressure relief valve activates.
- Rotate the headstock fully to make sure the pipe work is clear of any pinch/wear points.
- Check for hydraulic oil leaks.