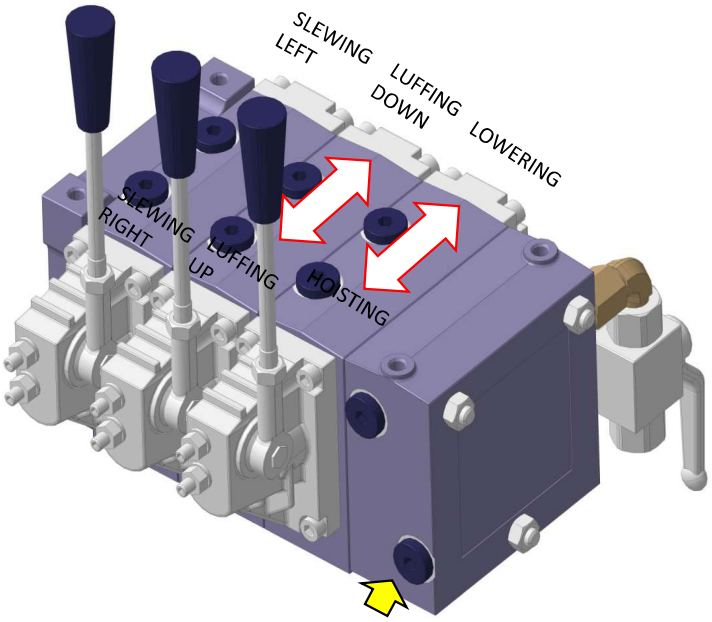
MAIN CONTROL VALVE



Pressure Gauge port

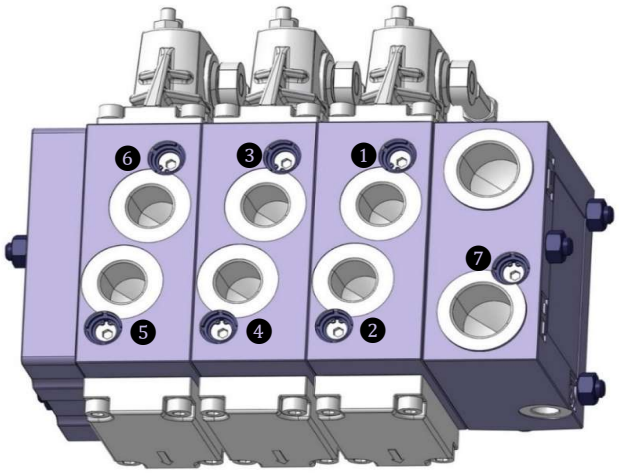
Note :
The idle pressure for each operational function can be easily checked under unloaded conditions by individually actuating each control lever. This allows for a basic check of system response and pressure.

Relief Valve Adjustment:
System pressure can be adjusted by turning each individual relief valve using an Allen key:

- To increase pressure: Rotate the adjustment screw clockwise after removing the black protective cap.
- To decrease pressure: Rotate the screw counter-clockwise.

Main Relief Valve: If individual function pressures do not rise to the expected levels, it may be necessary to adjust the main relief valve. Rotate the main relief valve clockwise to increase the pressure. Note that adjusting the main relief valve will proportionally affect all function pressures simultaneously.

Important Note:
Hoisting pressure must be adjusted under loaded conditions. This is essential to verify that the crane achieves its rated lifting capacity. Detailed instructions and procedures are provided in the description on page 2/2.



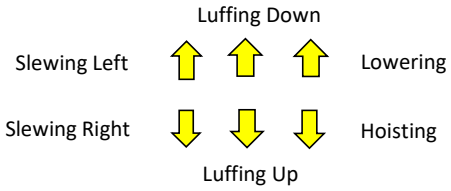
❶ Hoisting relief valve
❷ Lowering relief valve
❸ Luffing up relief vavle
❹ Luffing down relief valve
❺ Slewing left relief valve
❻ Slewing right relief valve
❼ Main relief valve

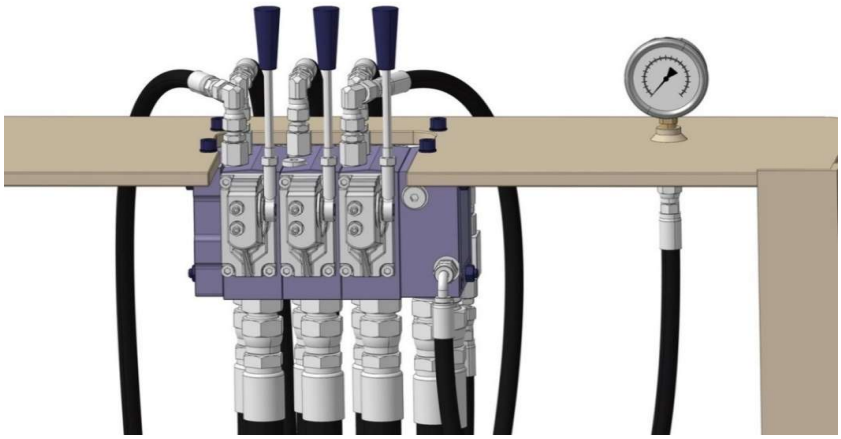
For correct assessment of the crane's hoisting performance, the following are the procedures :

The crane shall be operated while hooked to a solid structural part of the vessel capable of withstanding a minimum load of 30 tons, using a sling belt as illustrated in the drawing below.

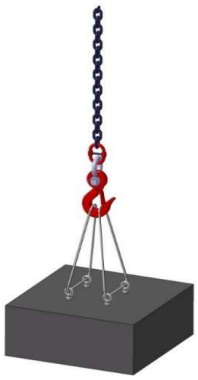
A test weight of at least 1 ton may be used to simulate load conditions during the hoisting function test.
The primary objective of this procedure is to verify the correct build-up of hoisting pressure under load. During the test:

- Confirm that the hoisting system can build pressure up to approximately 200 bar
- It is not required to exceed 200 bar during operations.

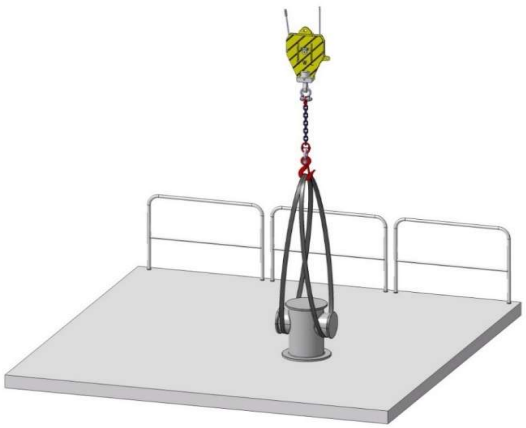




Using weight of **1ton** is more accurate and easy to handle

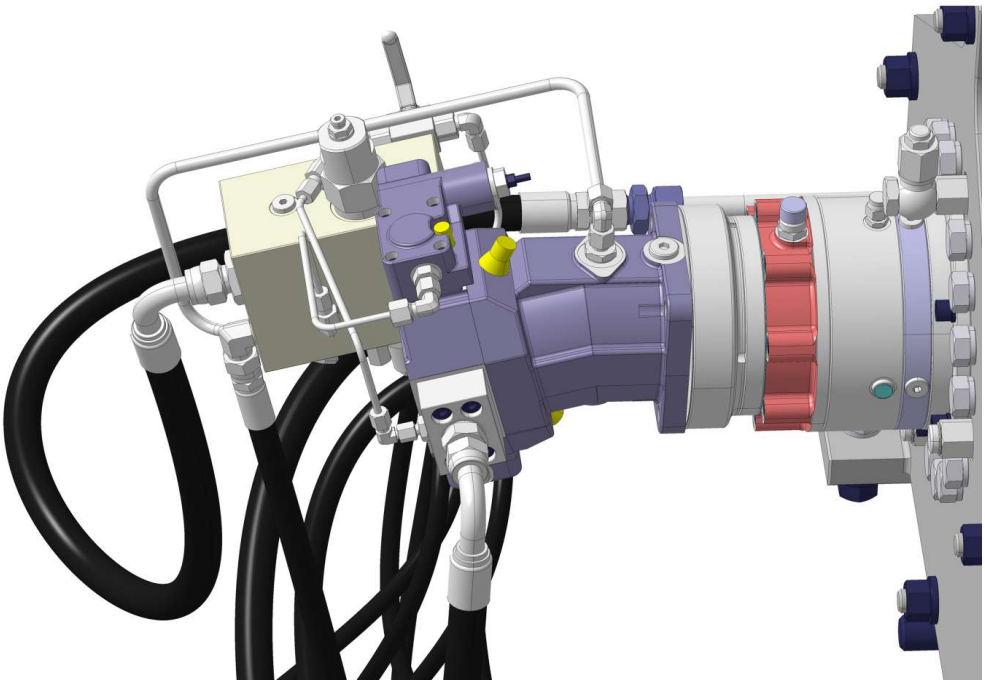


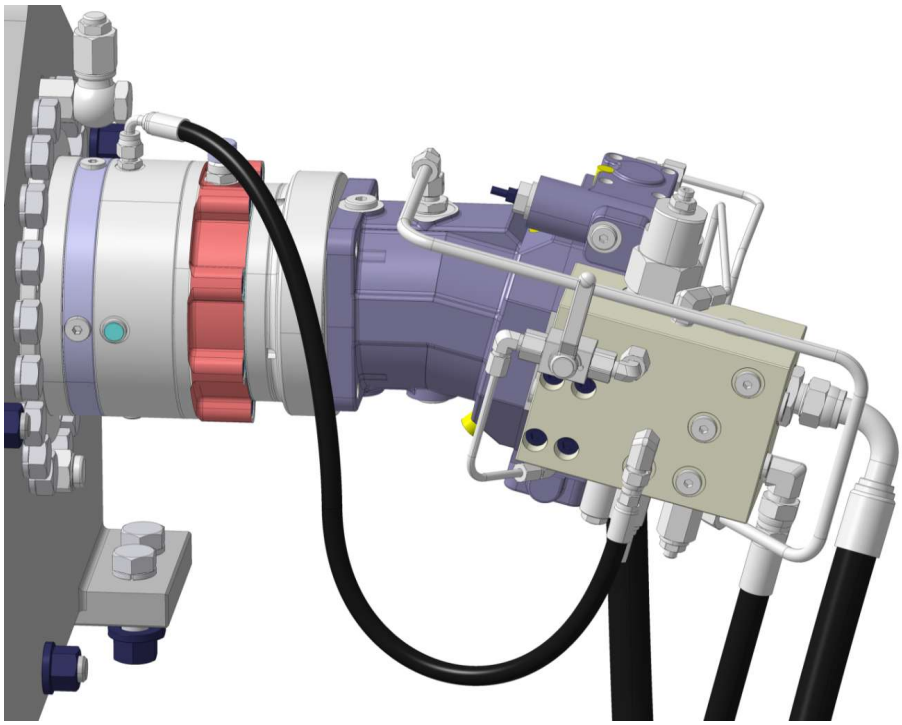
Using solid structure of vessel might be more realistic as its not easy to find a proper weight in vessel and difficult to move it on right spot



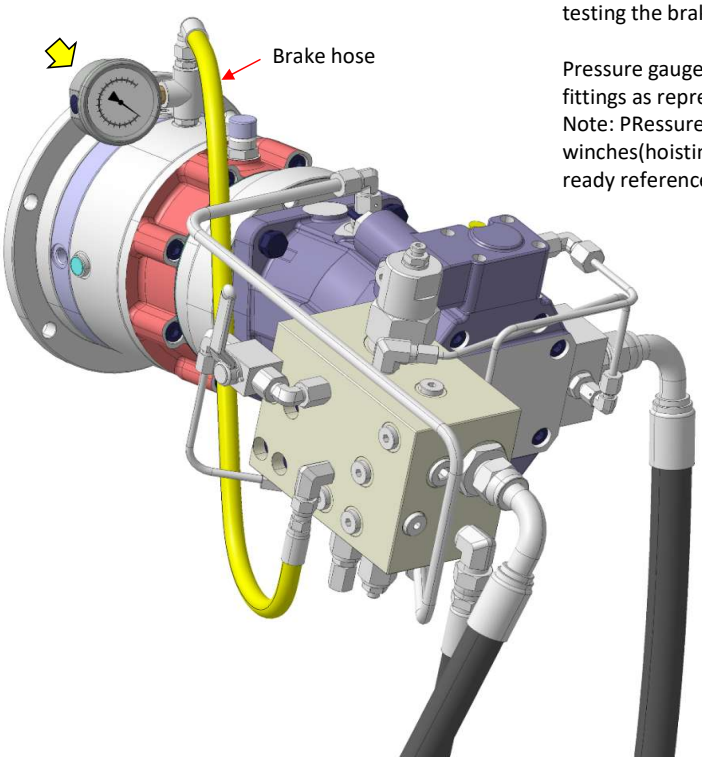
Photos for hoisting winch **both sides** as below are required.

HOISTING WINCH





HOISTING WINCH



While the brake pressure can be verified under unloaded (idle running) condition, for accuracy, it is advisable to perform this check under load.
For this, we recommend to apply approximately 0.5 ton of load at the hook to simulate the operational conditions for testing the brake pressure.

Pressure gauge should be directly connected on to brake using fittings as represented in photo below.
Note: PRessure gauge fitting is standard for both the winches(hoisting and slewing) and are mentioned below for ready reference.

- BSPT 1/4" + DIN 10S
- Both swivel female DIN 10S for brake

OR

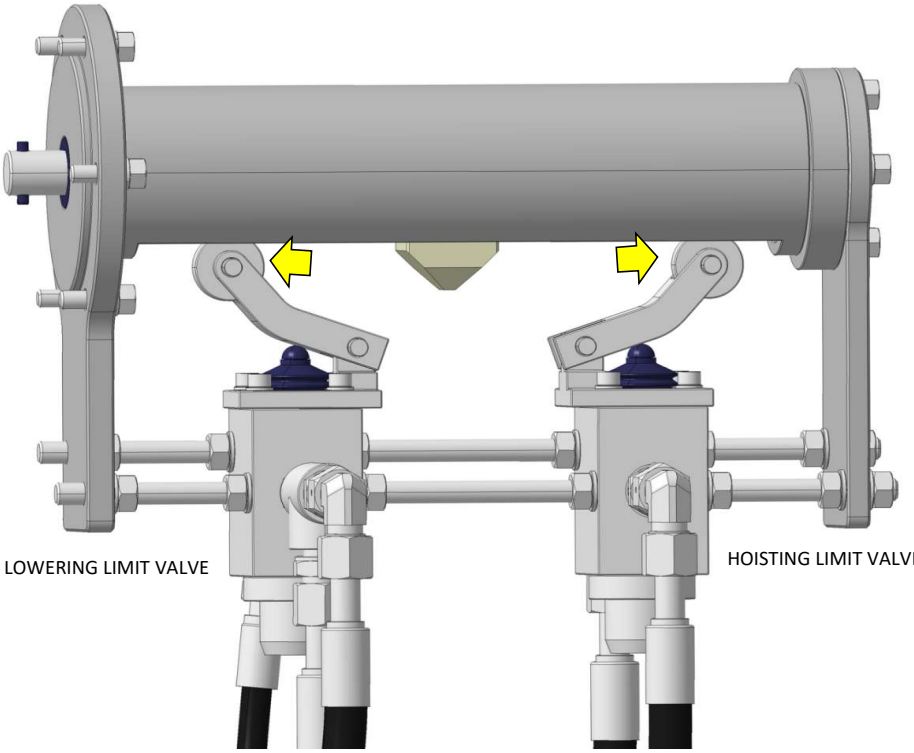
- BSPT 1/4" + UNF(JIC 37°) 1/4" Swivel for brake

Attachement for fitting specification drawing in page 11,12/13

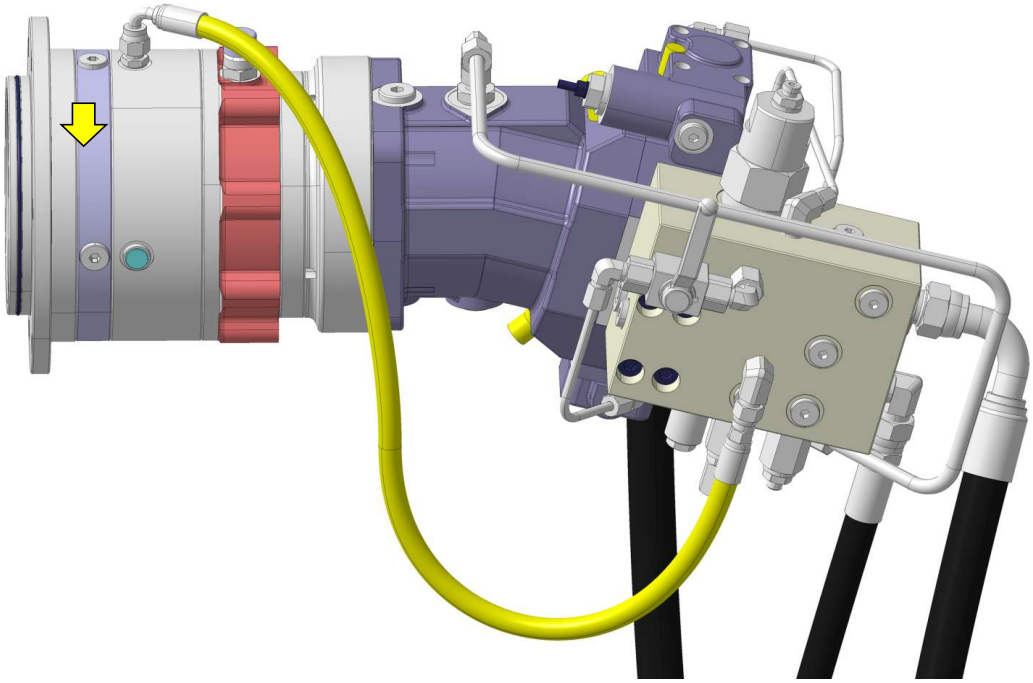
SLEWING WINCH

It is of utmost importance that the limit valves are periodically checked, cleaned of any debry/ salt deposit and testes by depressing the knob with help of a wrench/spanner to ascertain its working condition all the times. This is important for the safety of the personnel as well as the crane.

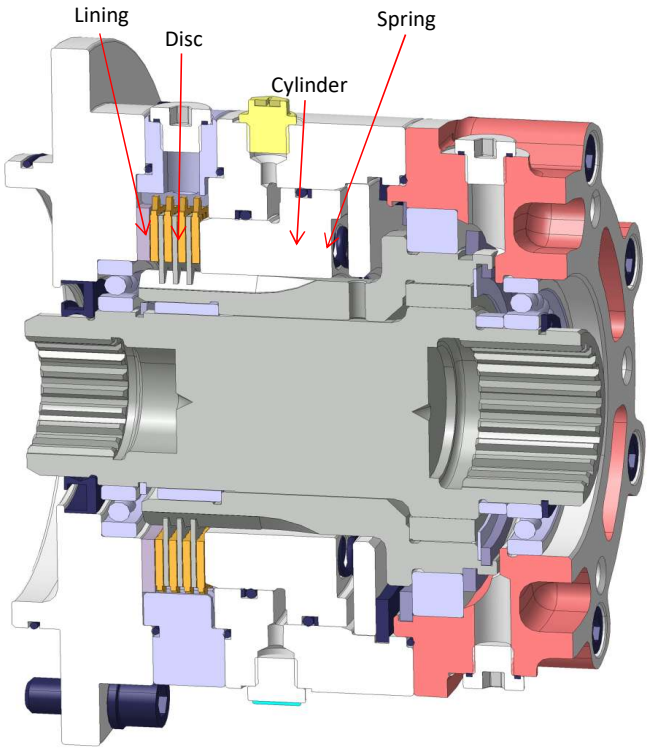
HOISTING LIMIT DEVICE



The brake could slip due to many reasons:
* Internal contamination.
* Wear of lining and disc.
*Loss of spring tension.
The brake overhaul is very strongly recommended every DD and any sign of brake sluggishness should be attended to immediately. Feel free to seek advise from Zenith marinetech when required.



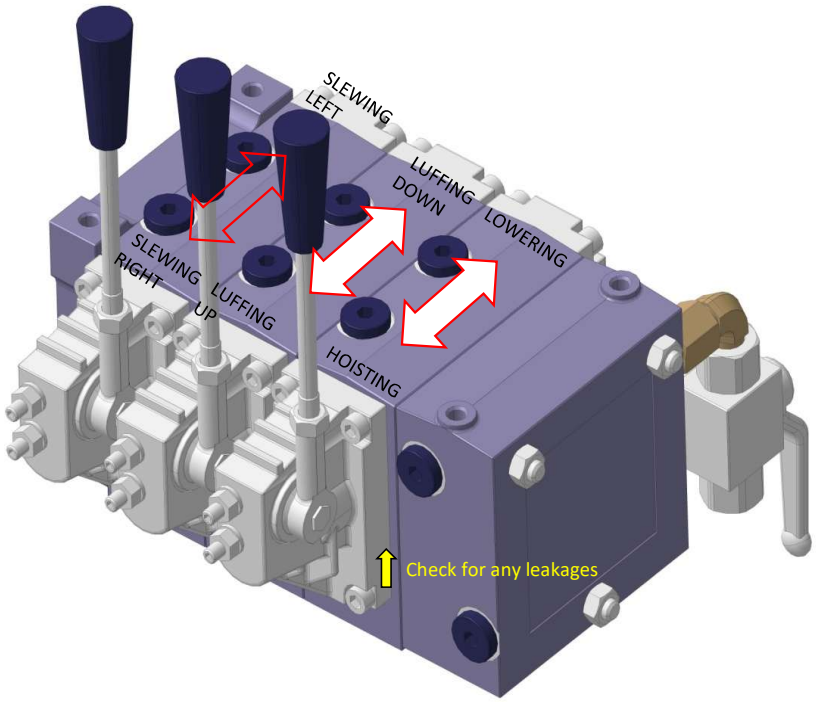
BRAKE CROSS SECTION

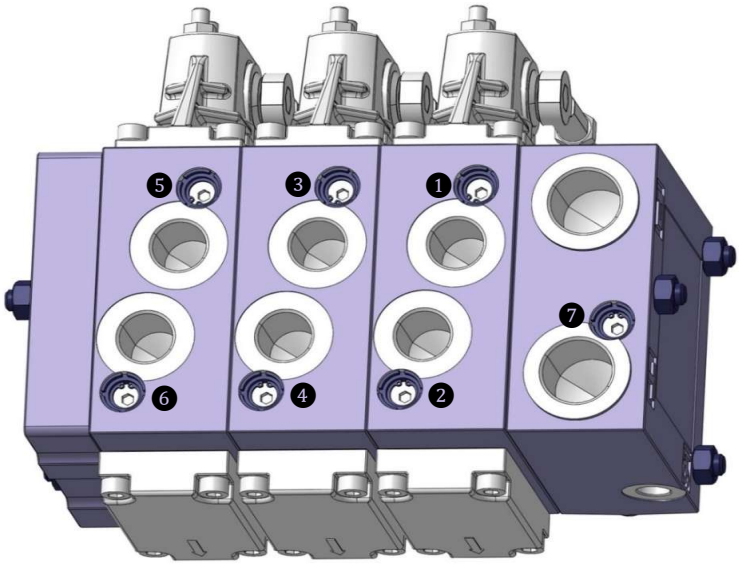


Relief Valve Check
Verify whether each relief valve on the main control valve can be adjusted for both pressure increase and decrease as described below.

Ensure that the control lever for after each operation returns to the neutral position at normal speed.

MAIN CONTROL VALVE

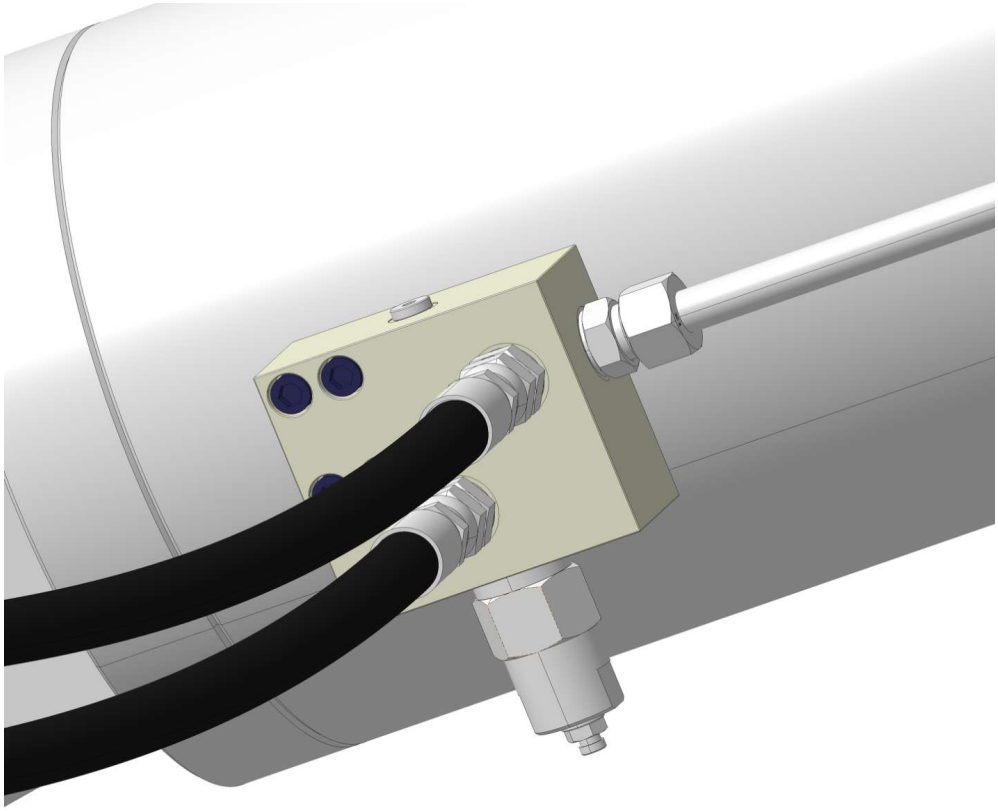




1. Hoisting relief valve
2. Lowering relief valve
3. Luffing up relief valve
4. Luffing down relief valve
5. Slewing left relief valve
6. Slewing right relief valve
7. Main relief valve

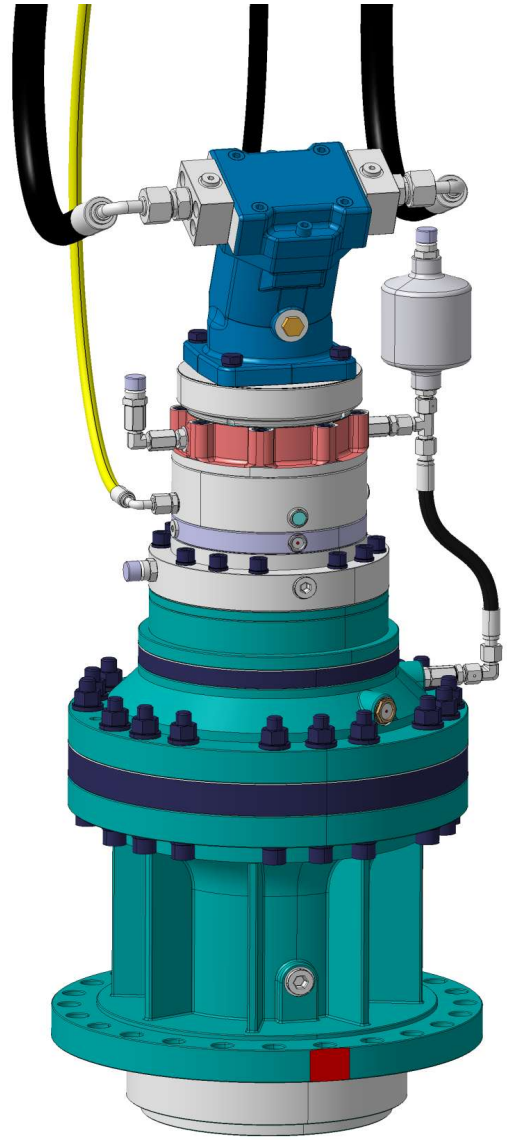
Photo for cylinder hydraulic block is required as below

CYLINDER BLOCK



Photos for slewing winch complete are required

SLEWING WINCH



The slewing limit valve can be checked by following methods:

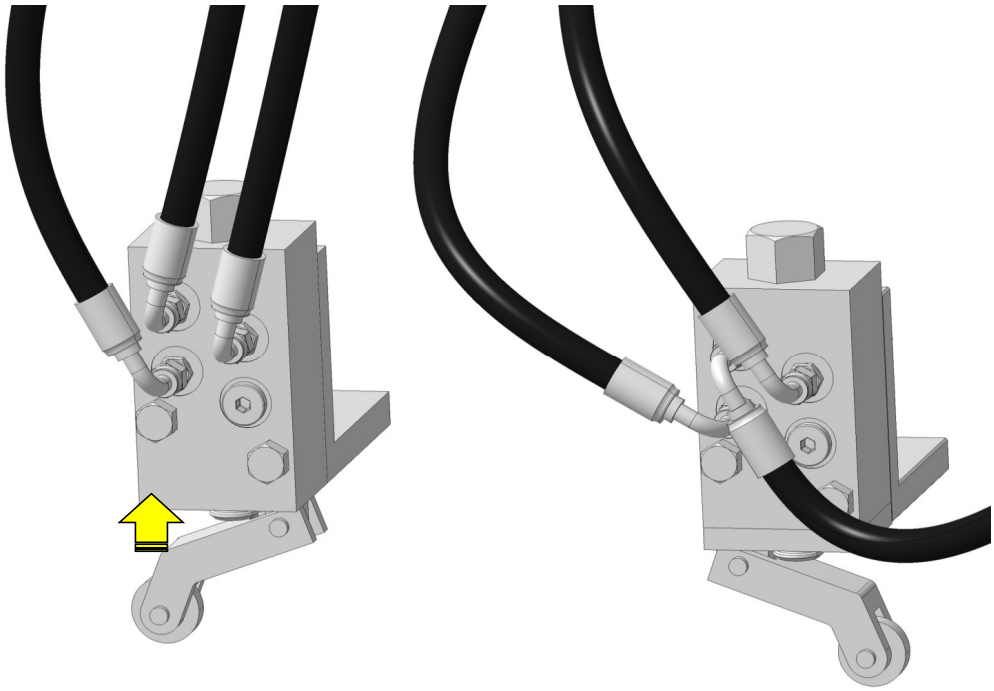
Operational Slewing Test
Observe the valve function during the slewing operation. If the valve does not actuate or the motion fails to stop at the intended limit, the valve may be faulty or stuck.

Manual Actuation Test
Manually push the arm of the slewing limit valve using a spanner or similar tool (as indicated in the diagram).
- If the valve actuates, the mechanism is mechanically responsive.
- If there is no movement or resistance, the internal components may be seized or damaged.

.

Note: DongNam slewing limit valves are available in two designs as shown. Refer to page 11/11.

SLEWING LIMIT VALVE



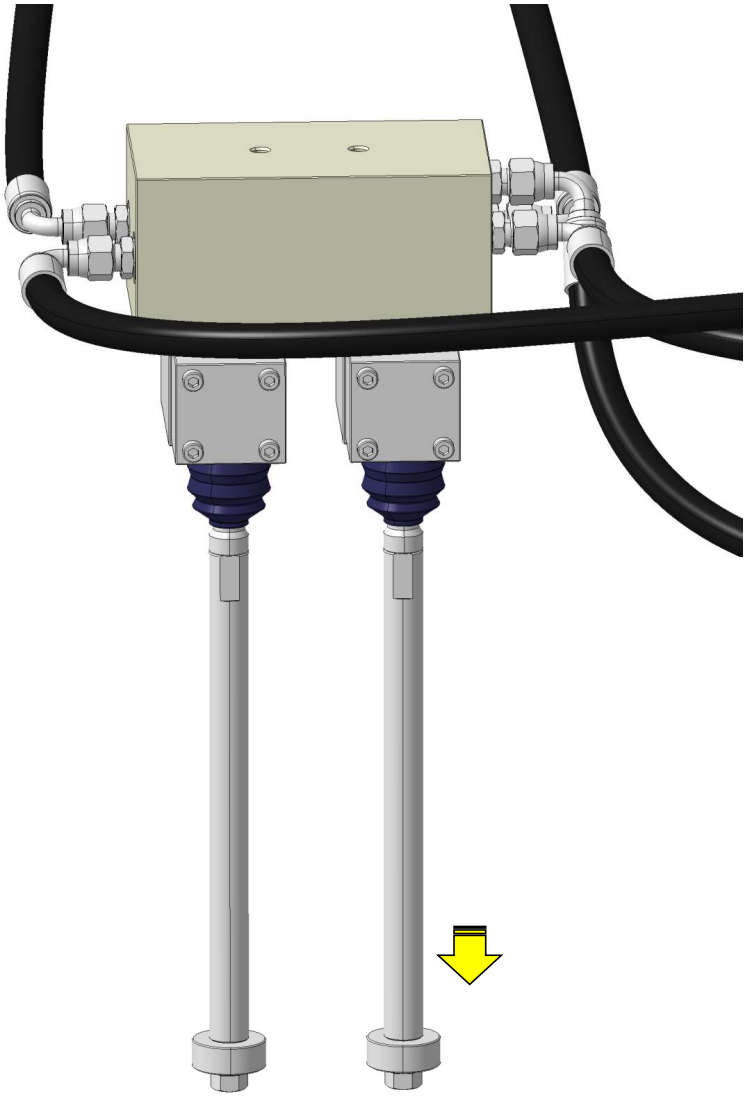
The slewing limit valve can be checked by following methods:

Operational Slewing Test
Observe the valve function during the slewing operation. If the valve does not actuate or the motion fails to stop at the intended limit, the valve may be faulty or stuck.

Manual Actuation Test
Manually push the arm of the slewing limit valve using a spanner or similar tool (as indicated in the diagram).
- If the valve actuates, the mechanism is mechanically responsive.
- If there is no movement or resistance, the internal components may be seized or damaged.

.
Note: DongNam has slewing limit valve of two different designs as below and page 10/11.

SLEWING LIMIT VALVE



Pressure gauge supplied must be connected to point below of main control valve.