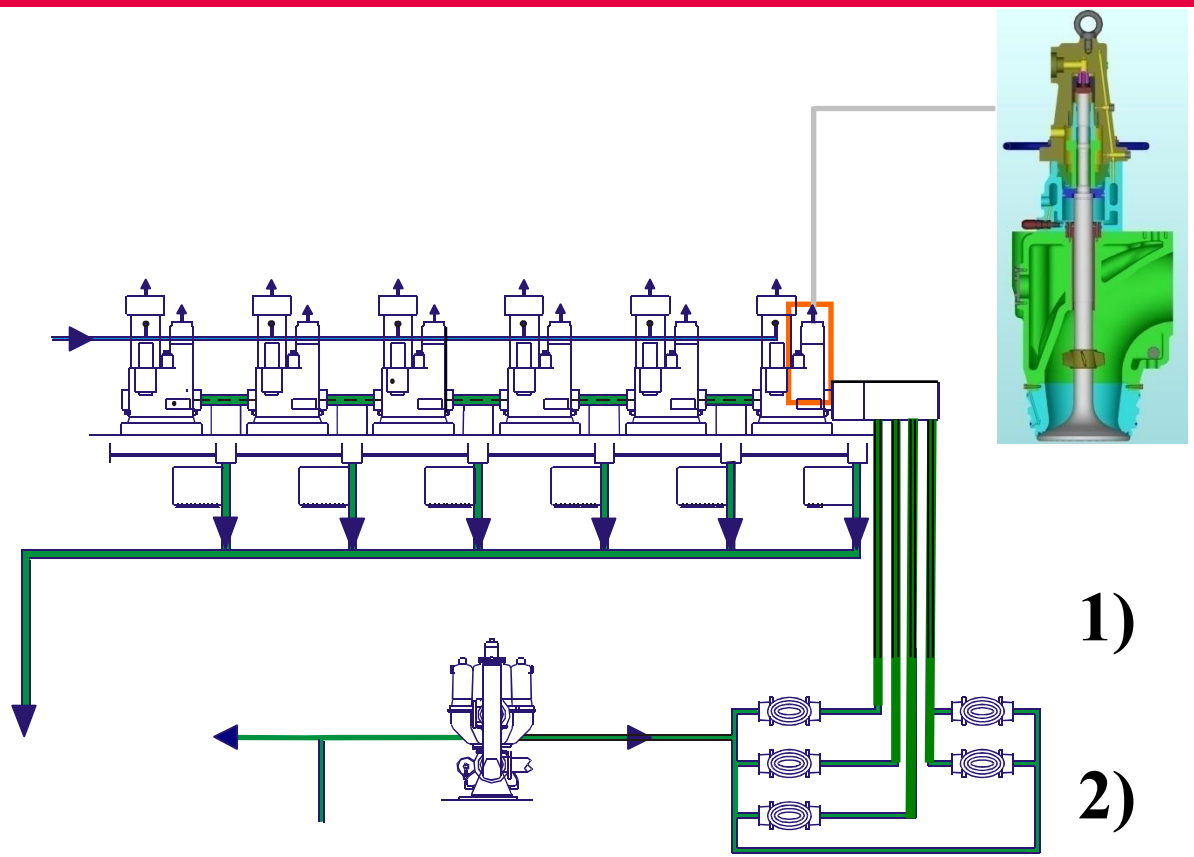
MAN Diesel PrimeServ Academy
Exhaust Valve Design

Exhaust Valve System

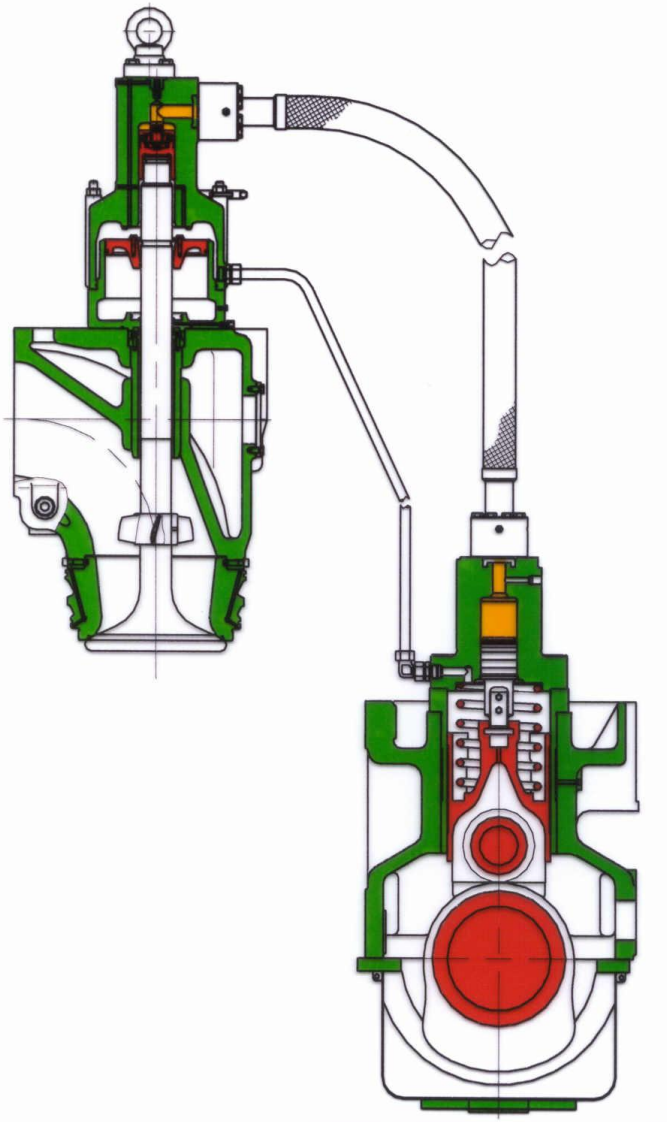


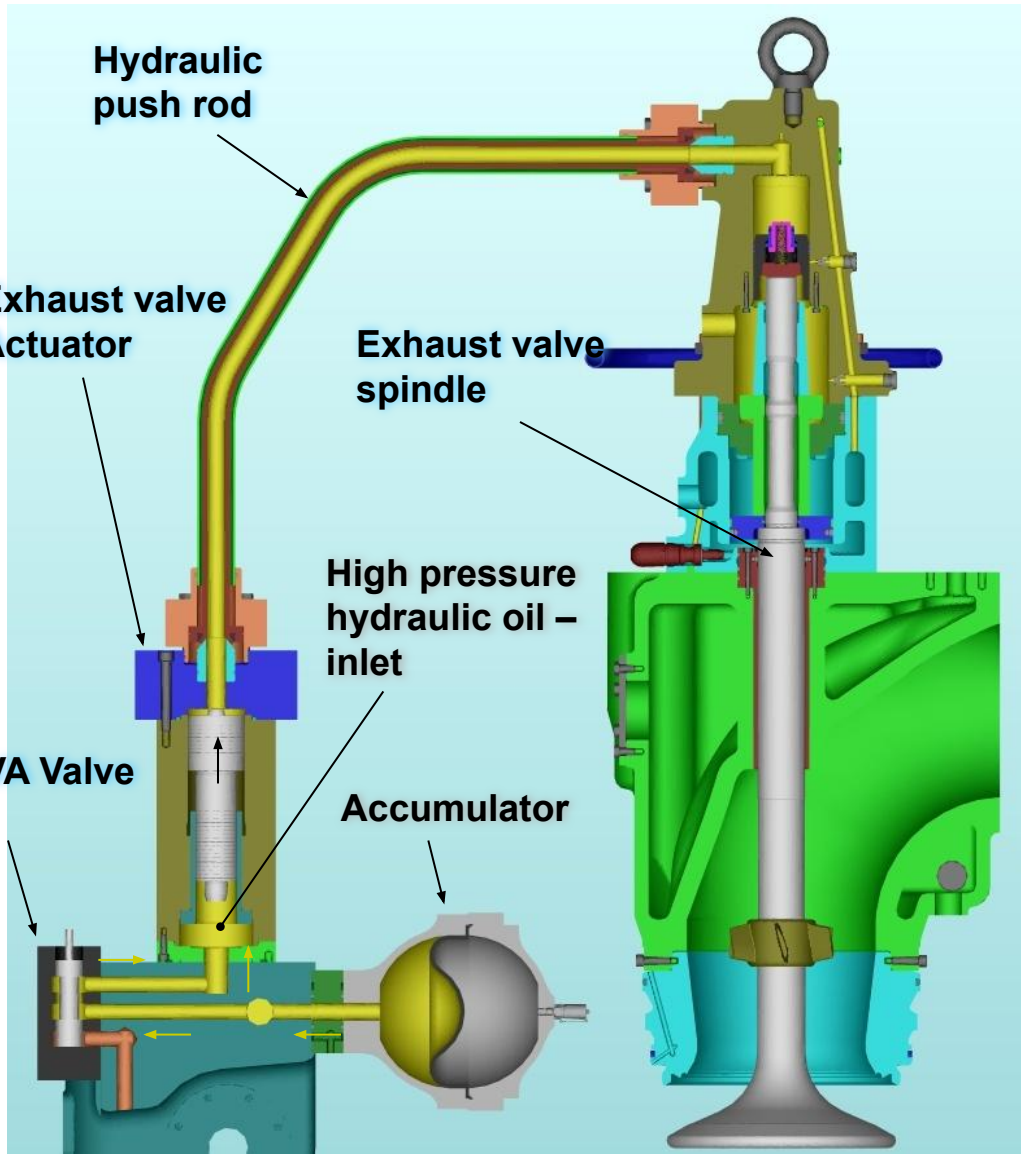
1) Exhaust valve actuator

2) Exhaust valve

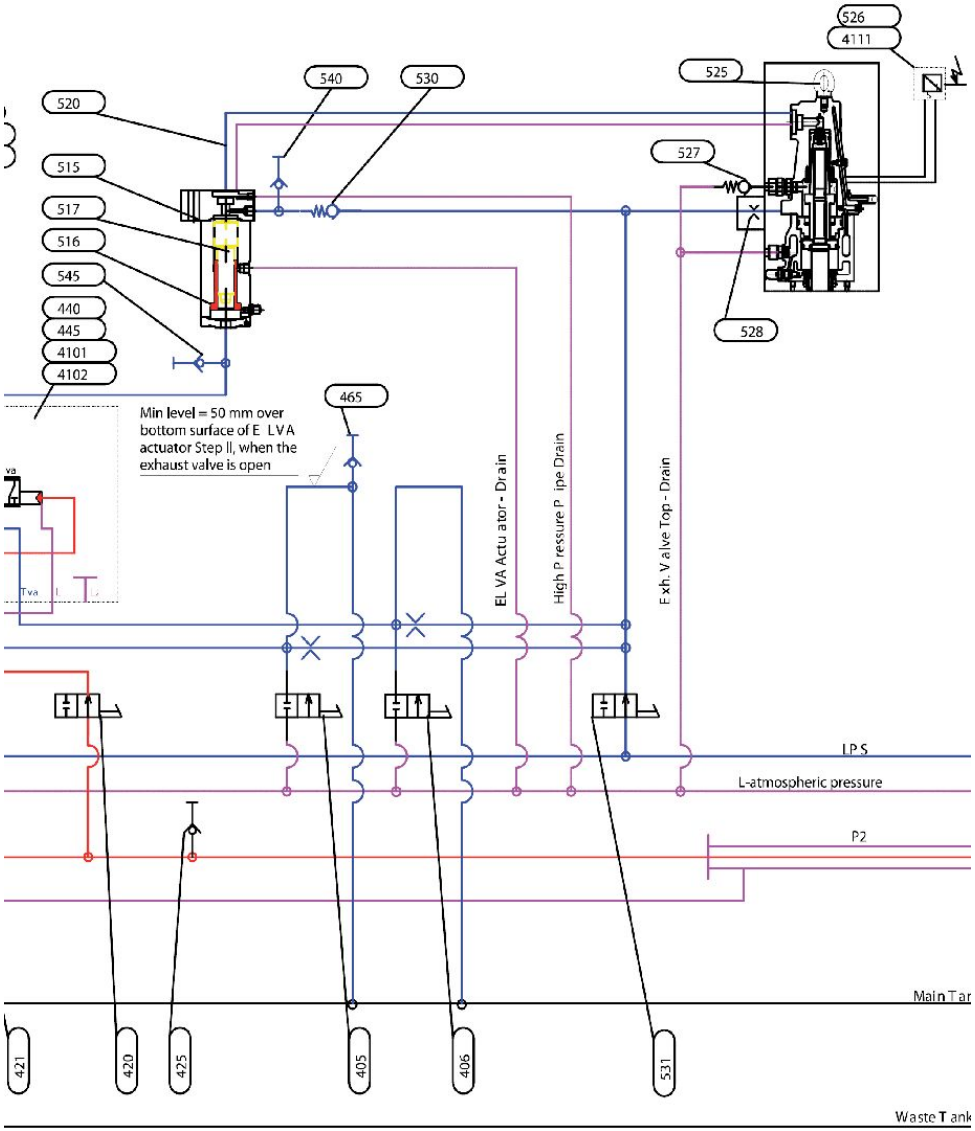
3) Special running conditions

Exhaust Valve Actuation
MC versus ME





Exhaust Valve
Pipe Connections



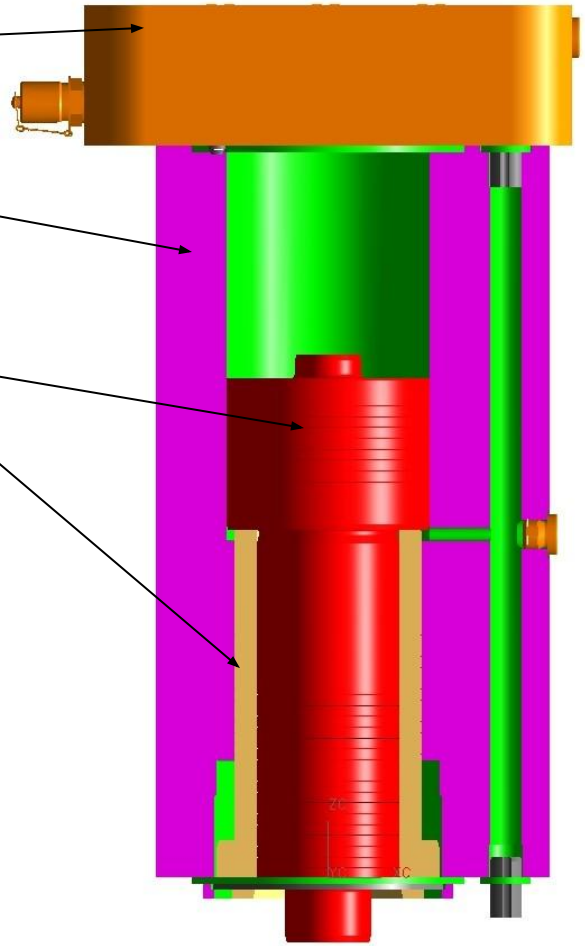
Exhaust Valve Actuator

Top Cover

Minimesh

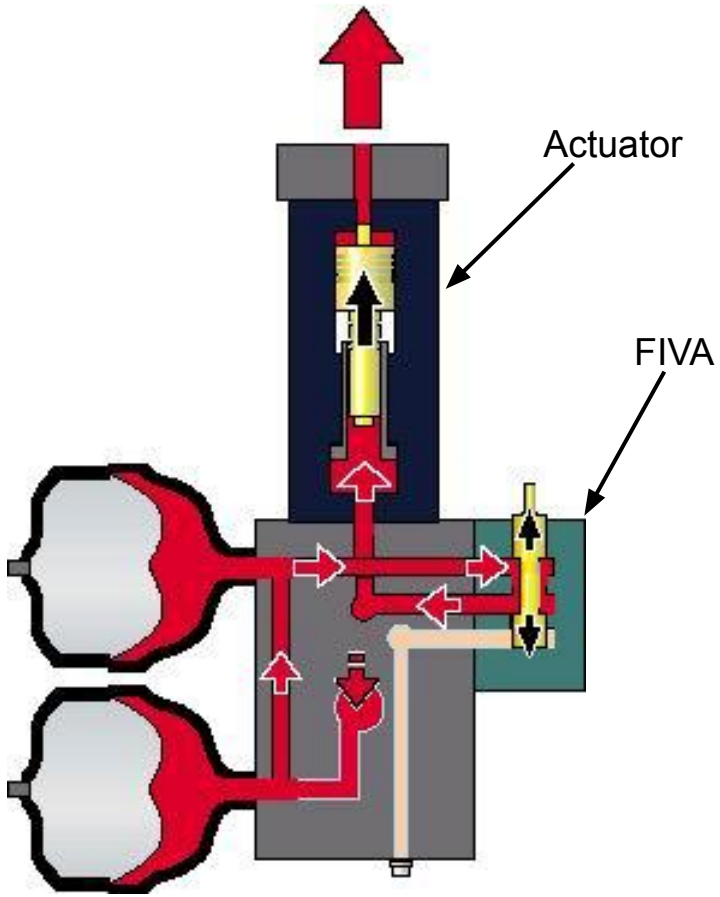
Actuator Housing

Actuator Pistons



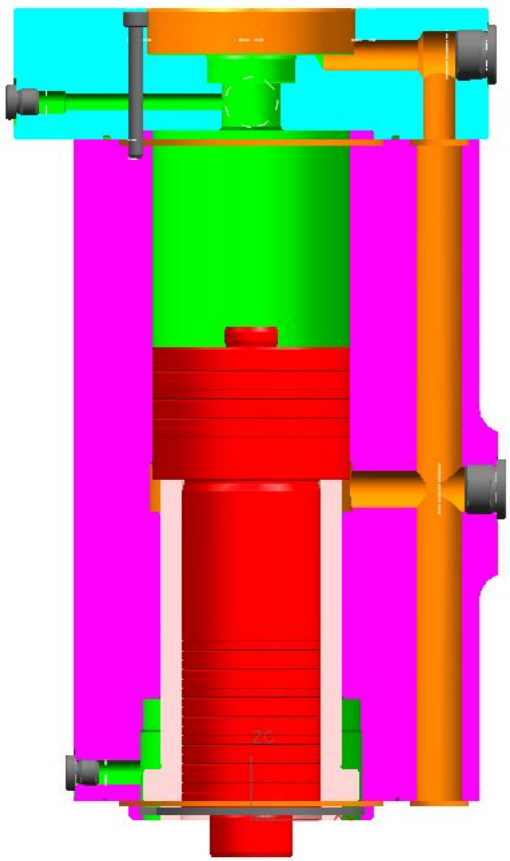
Exhaust Valve Actuator
Working Principle

Unpressurised hydraulic oil
Pressurised hydraulic oil

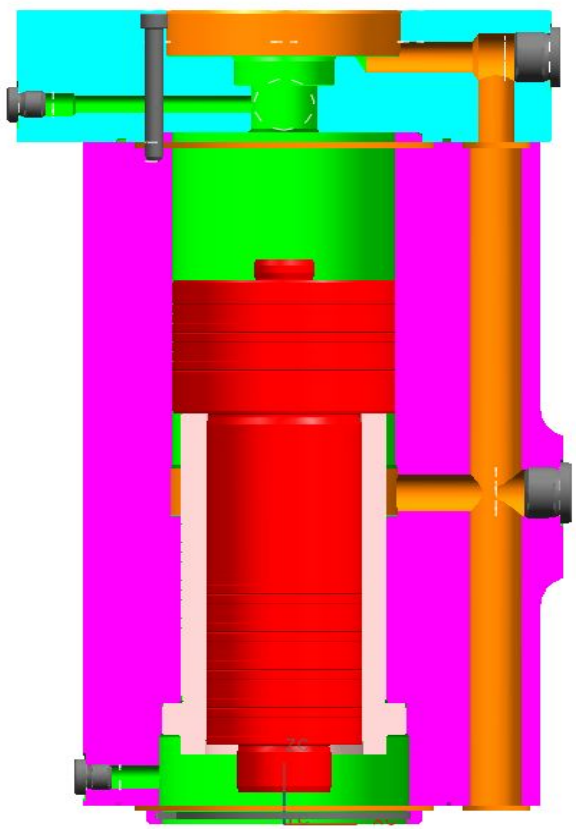


Exhaust Valve Actuation

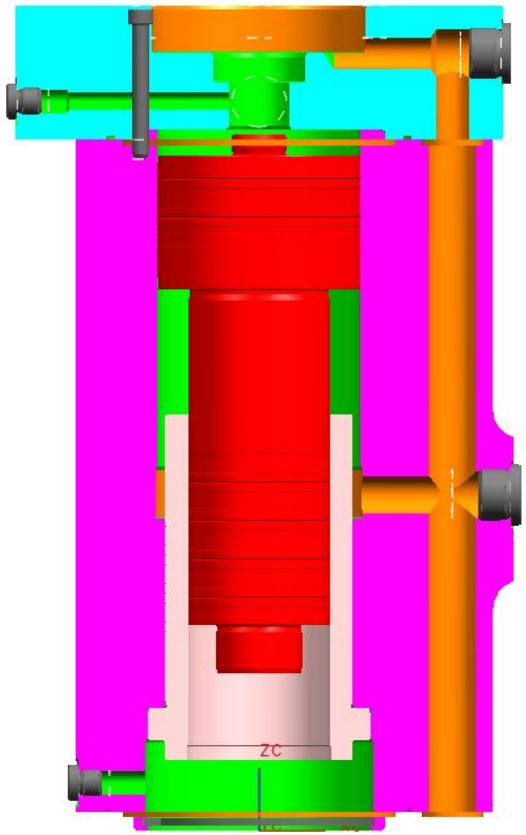
Initial Position



Step 1

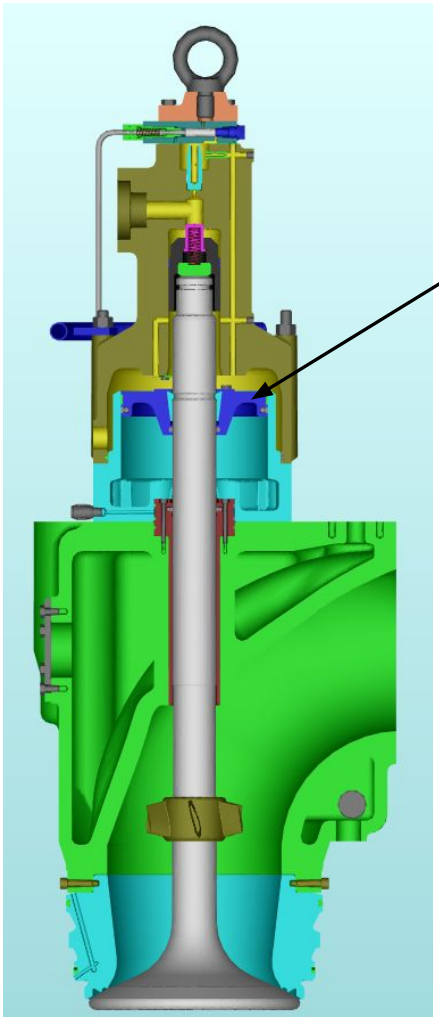


Step 2



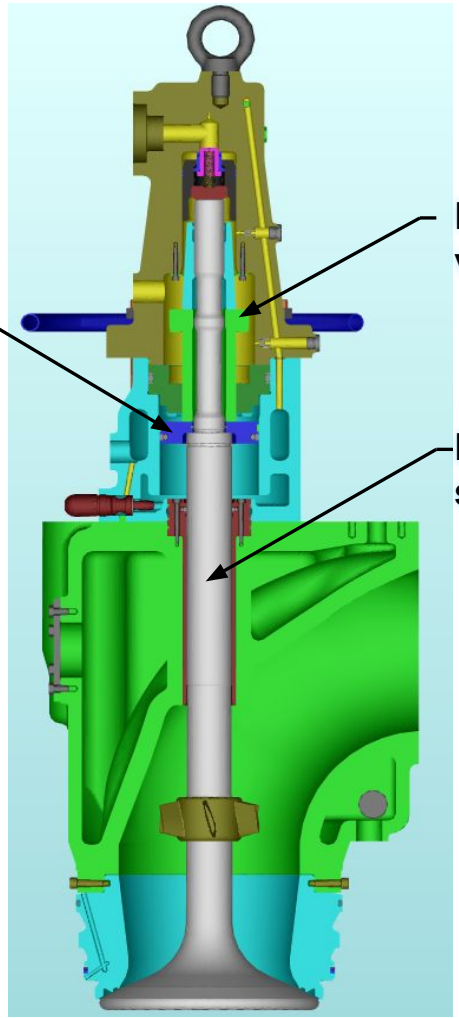
Design Features
MC versus ME

S50MC-C



Air spring size for closing the exhaust valve reduced

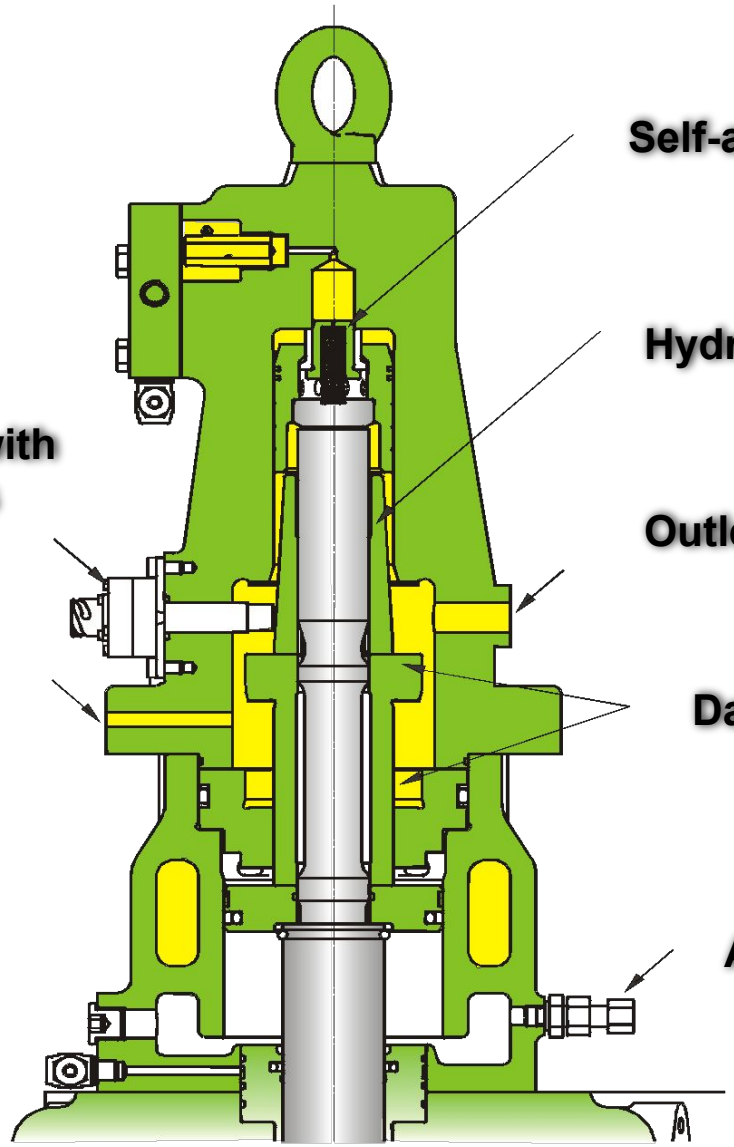
S50ME-C



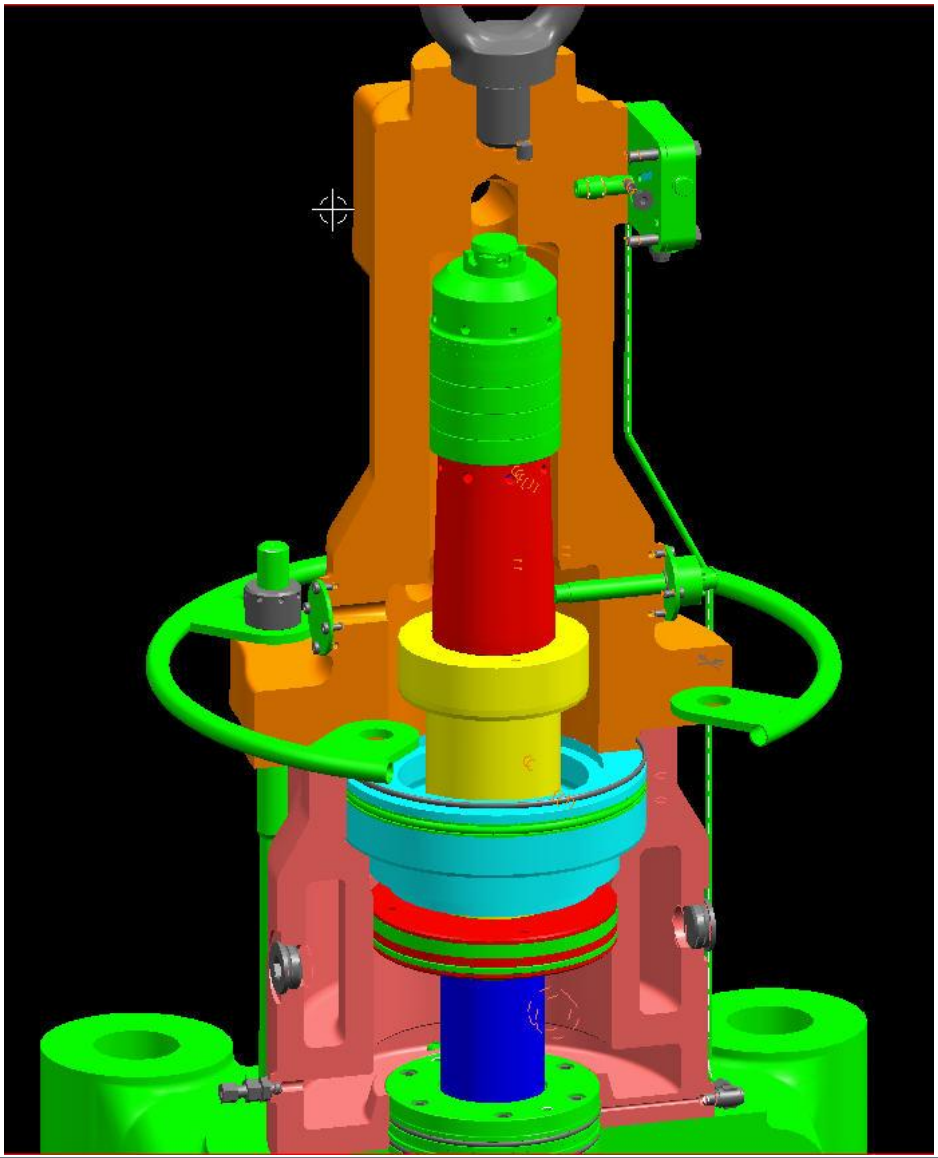
Hydraulic damper for fixed valve stroke

Different valve spindle design

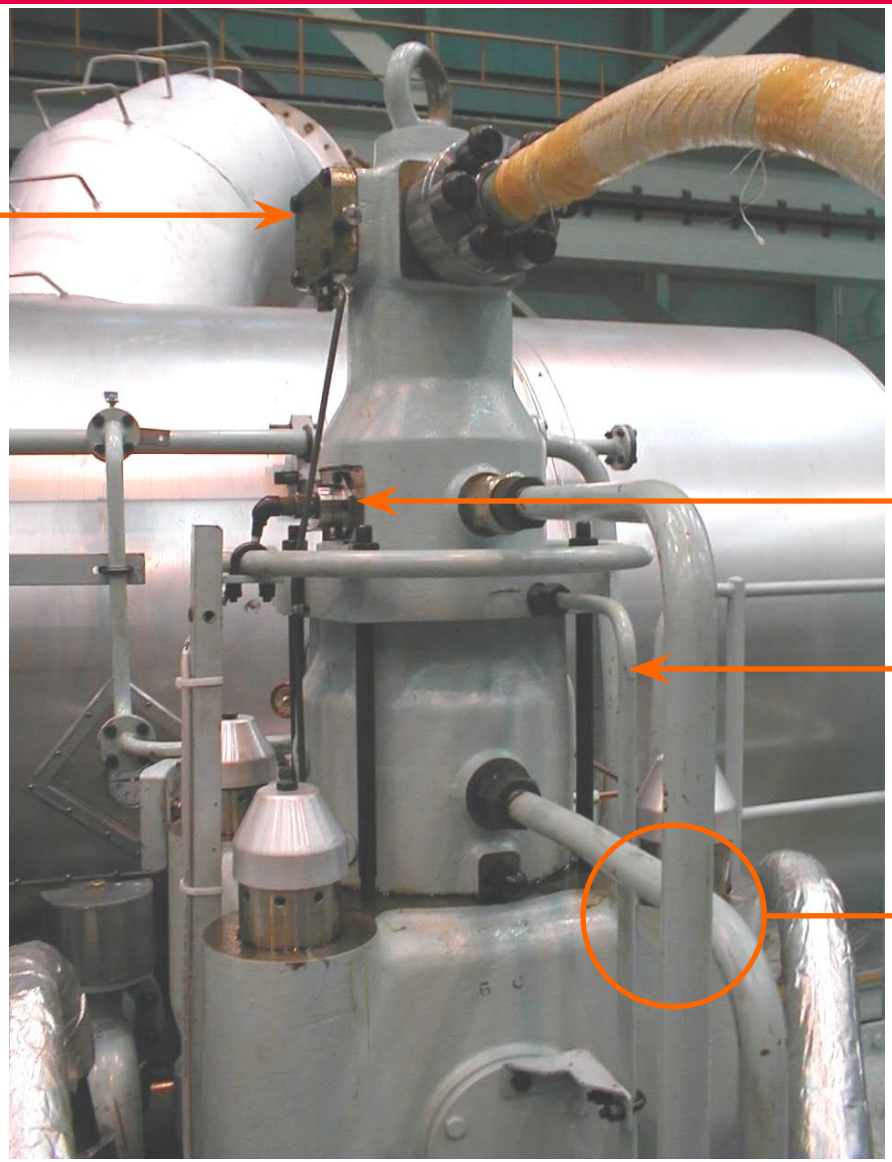
Design Details



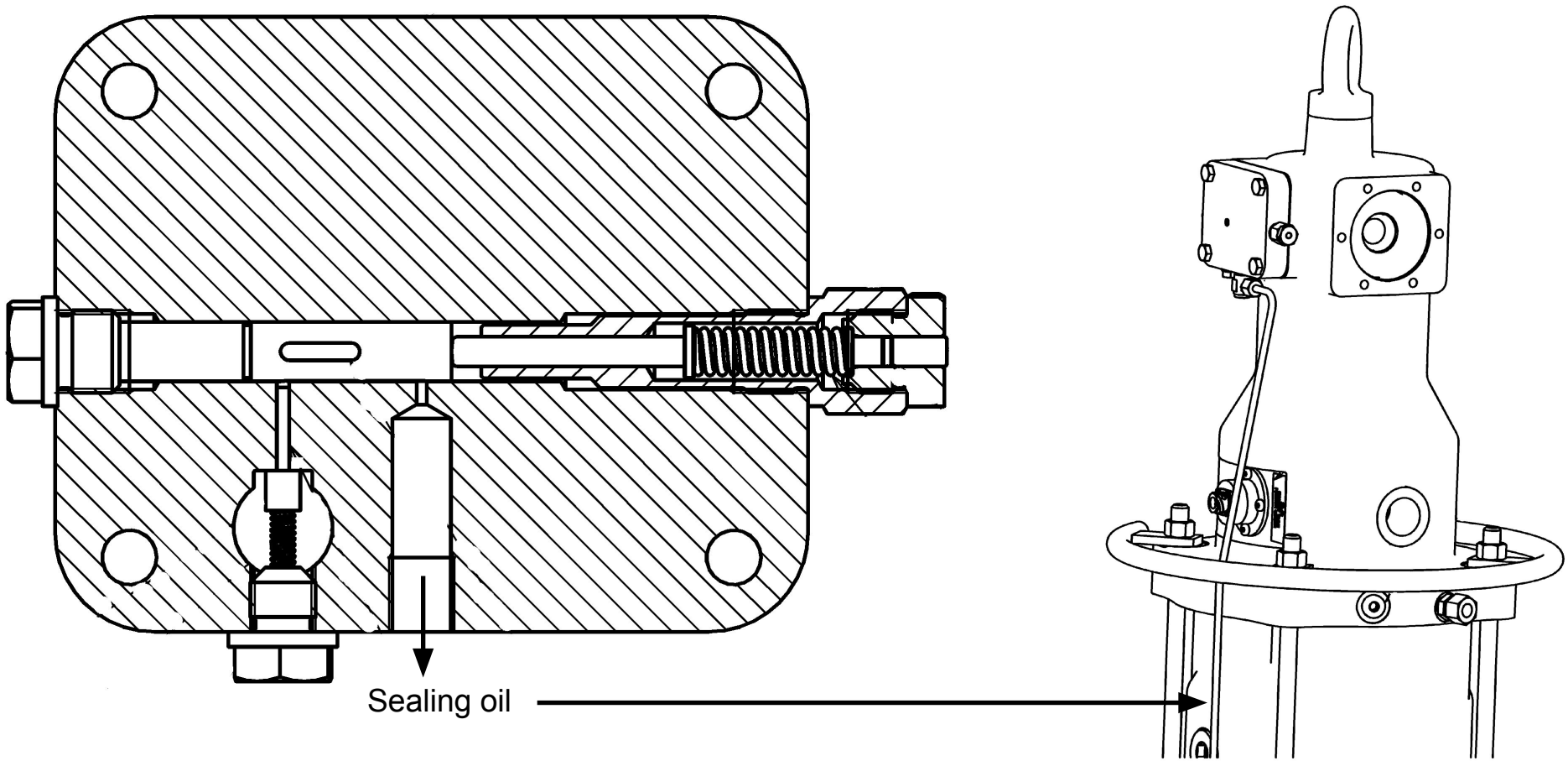
Exhaust Valve Assembly



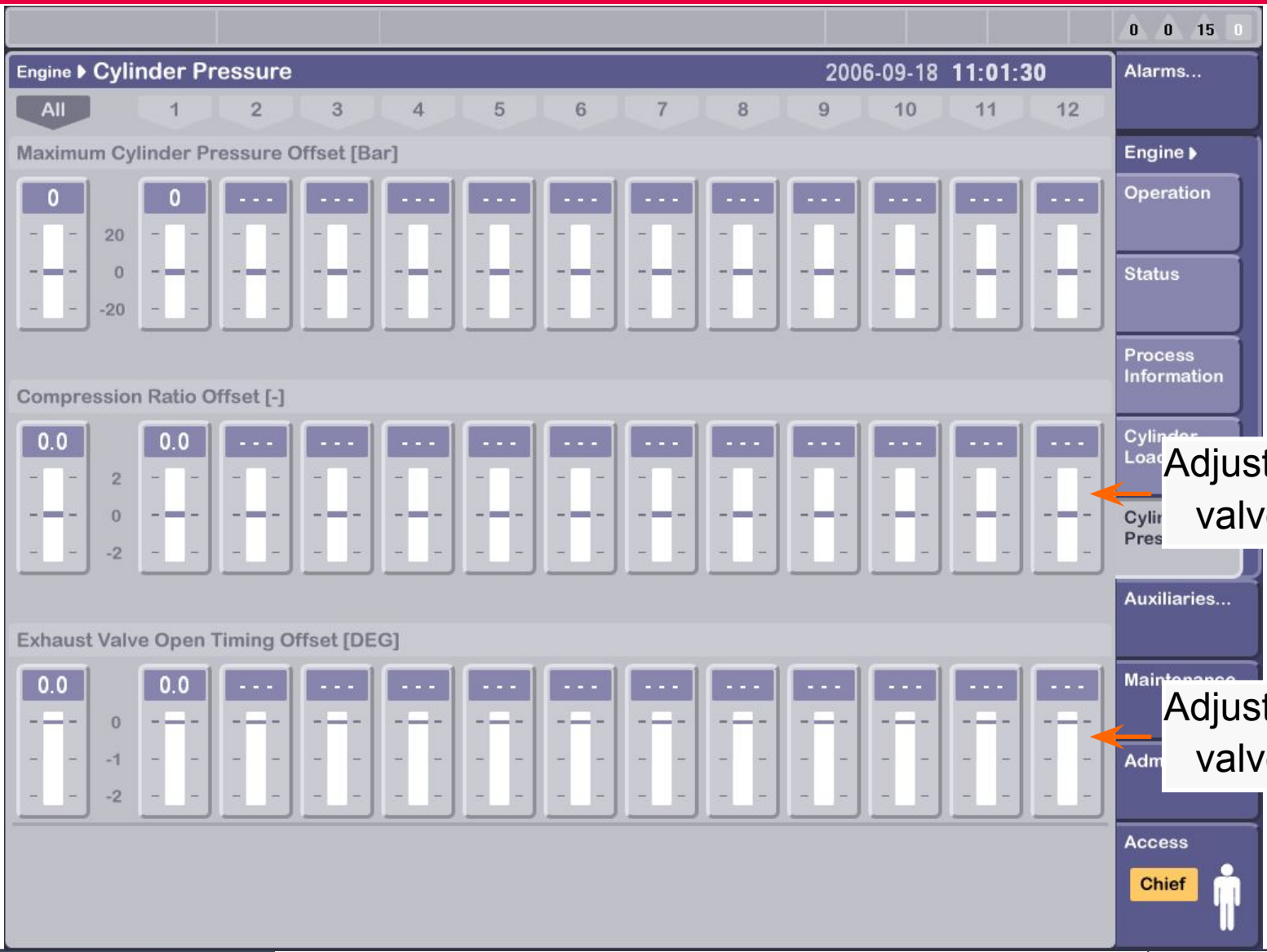
Exhaust Valve



Sealing Oil Control Unit



MOP Exhaust Valve Adjustments



Adjustment of exhaust valve closing time

Adjustment of exhaust valve opening time

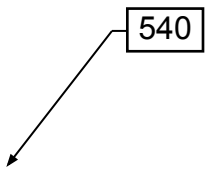
Special running conditions, open exh-valve Small Bore Program (50 ME)

Check pressure free at “minimess” point 455

Close

Open

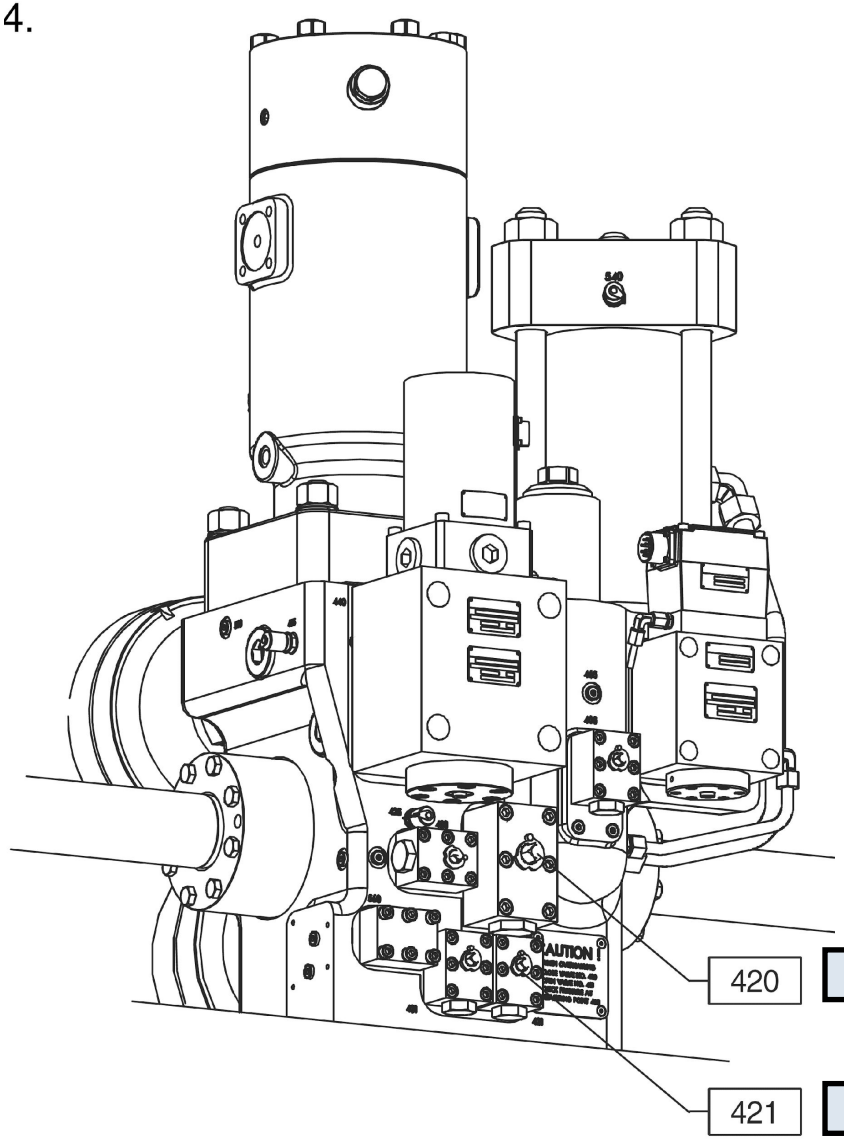
Special running conditions, open exh-valve
Small Bore Program (50 ME)



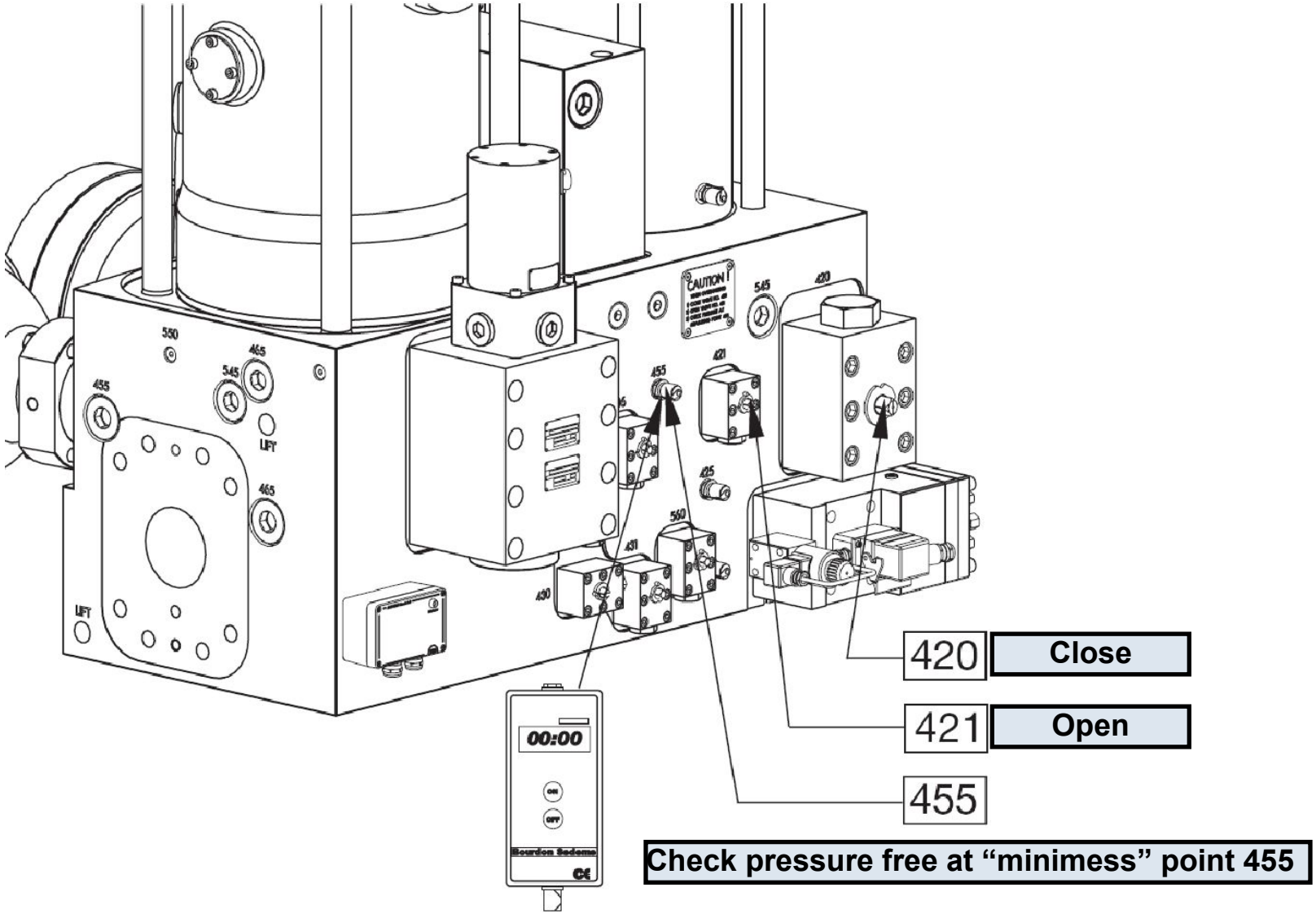
Connect the mini-mesh hose between top flange on actuator point 540 and point 425 at the hydraulic block

Special running conditions, open exh-valve
Small Bore Program (50 ME)

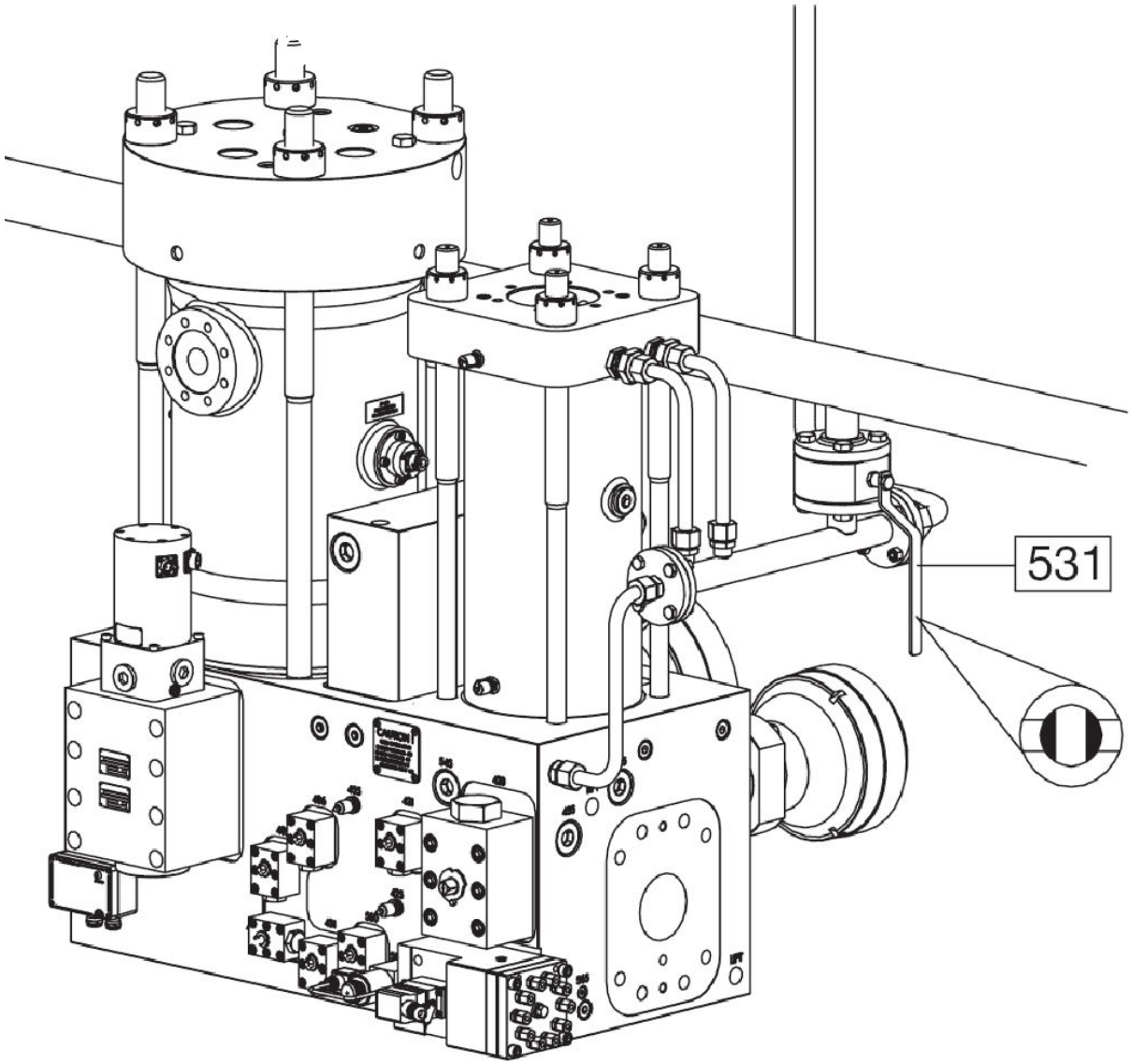
4.



Special running conditions, open exh-valve
Large Bore Program (From 60 and up)

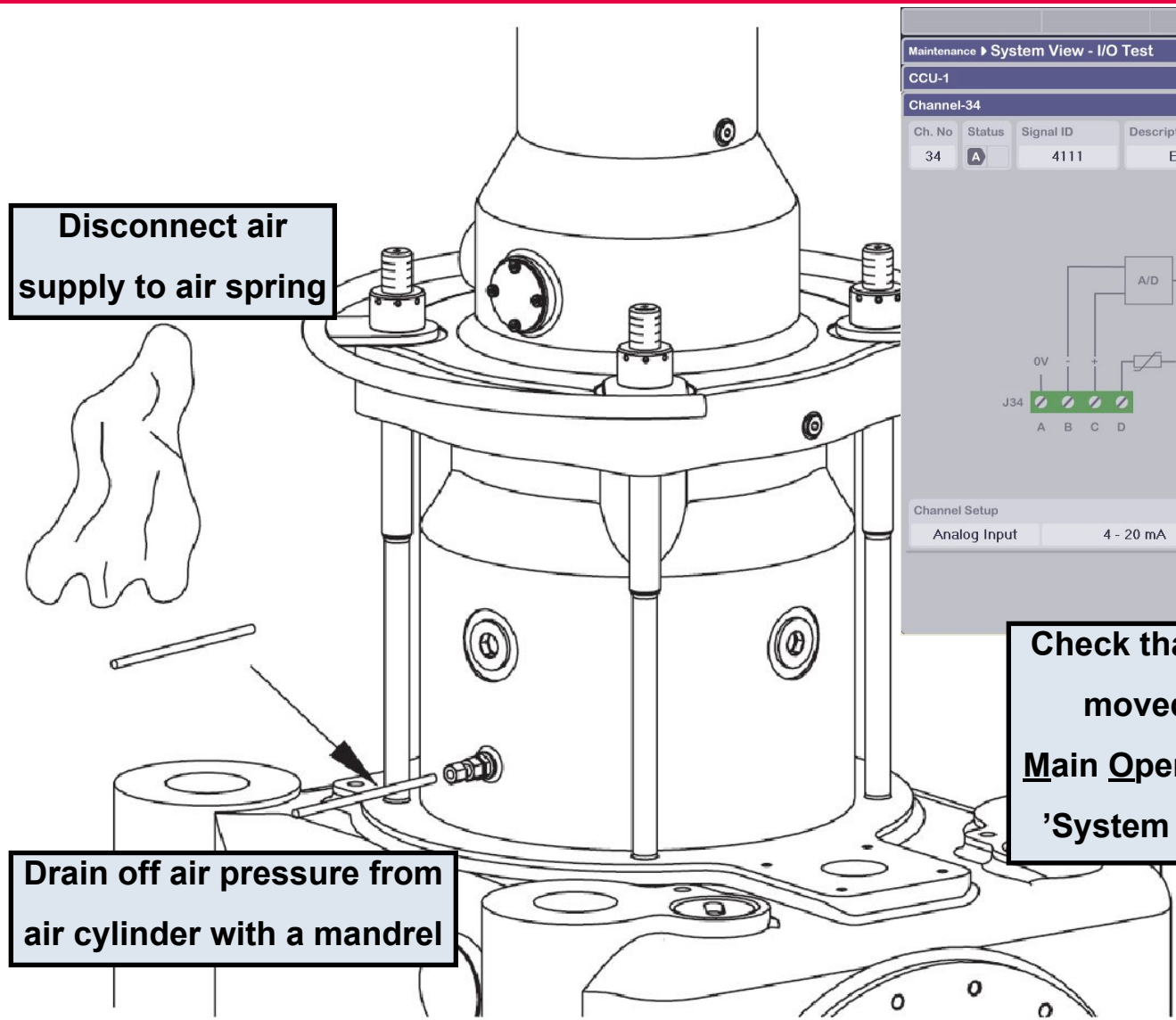


Special running conditions, open exh-valve
Large Bore Program (From 60 and up)



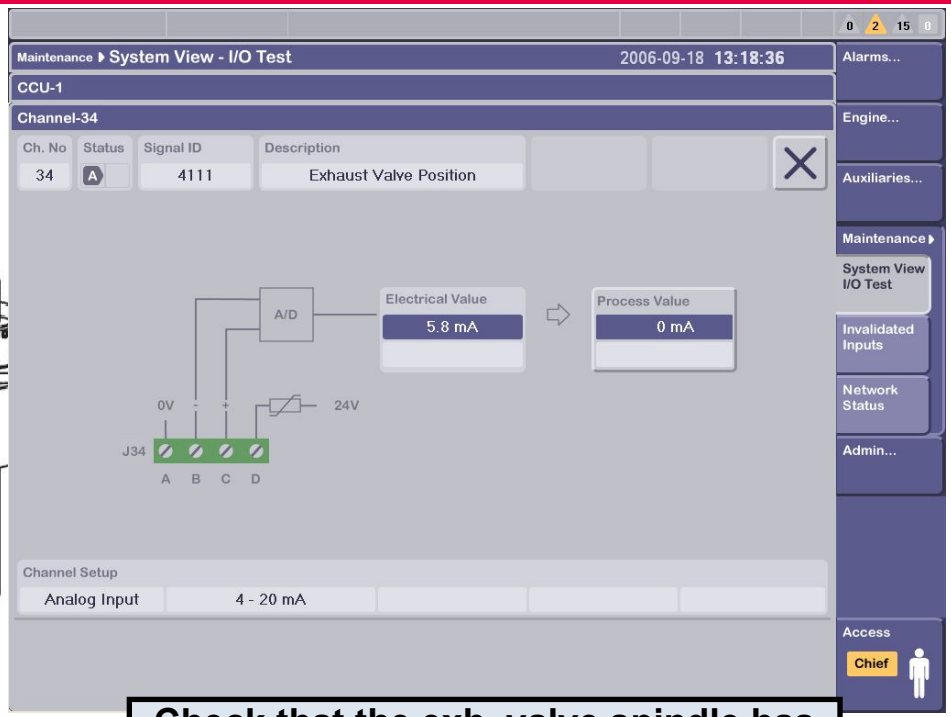
Close valve 531 to shut off oil to damper

Special running conditions, open exh-valve
Large Bore Program (From 60 and up)



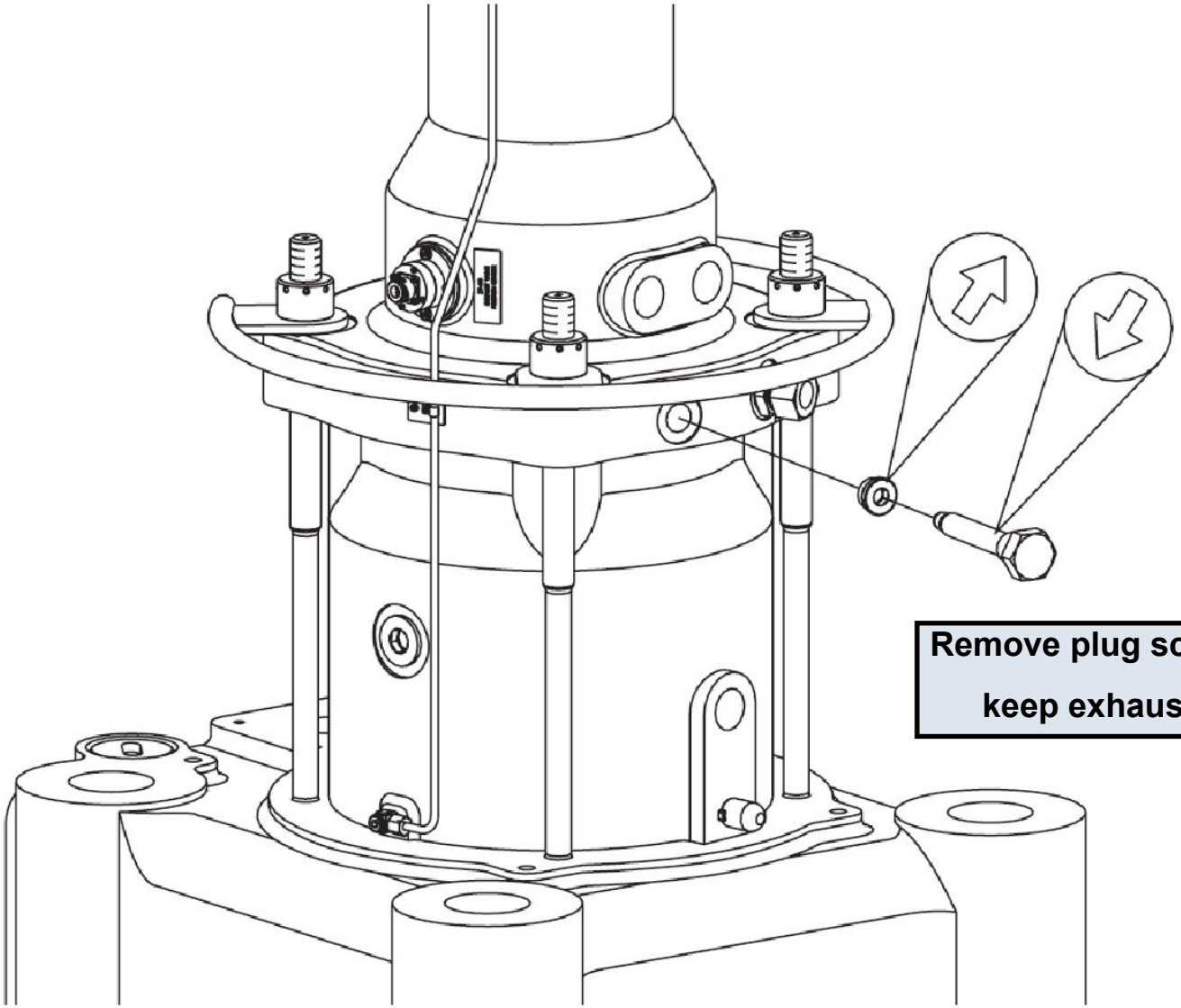
Disconnect air supply to air spring

Drain off air pressure from air cylinder with a mandrel



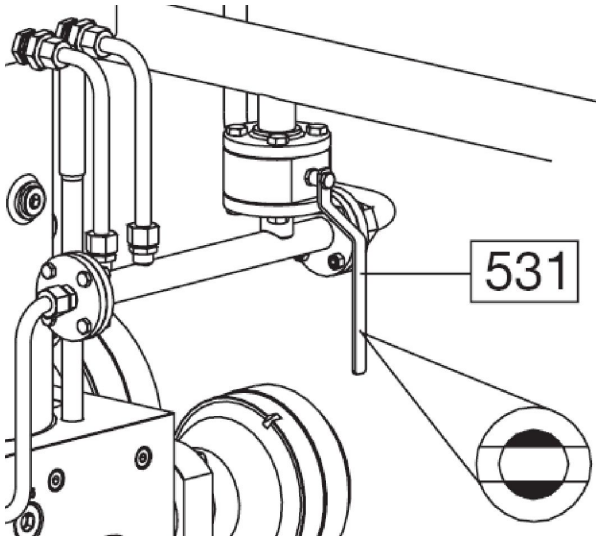
Check that the exh. valve spindle has moved to open position on the Main Operating Panel, 'Maintenance' – 'System View I/O Test' – CCU, Ch 34

Special running conditions, open exh-valve
Large Bore Program (From 60 and up)



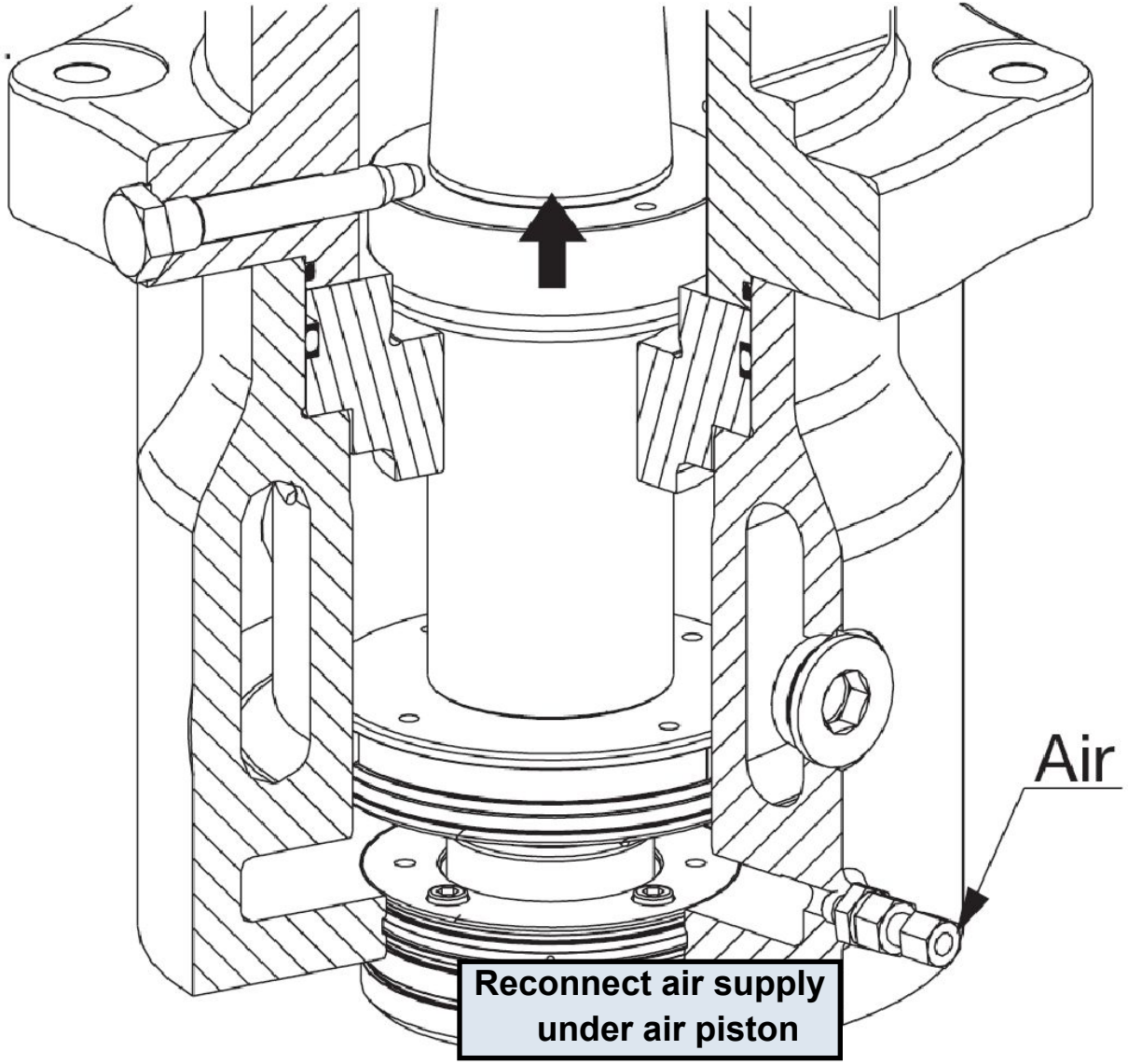
Remove plug screw and mount tools to keep exhaust valve spindle open

Special running conditions, open exh-valve
Large Bore Program (From 60 and up)



Open damper oil supply

Valve 531



Reconnect air supply under air piston