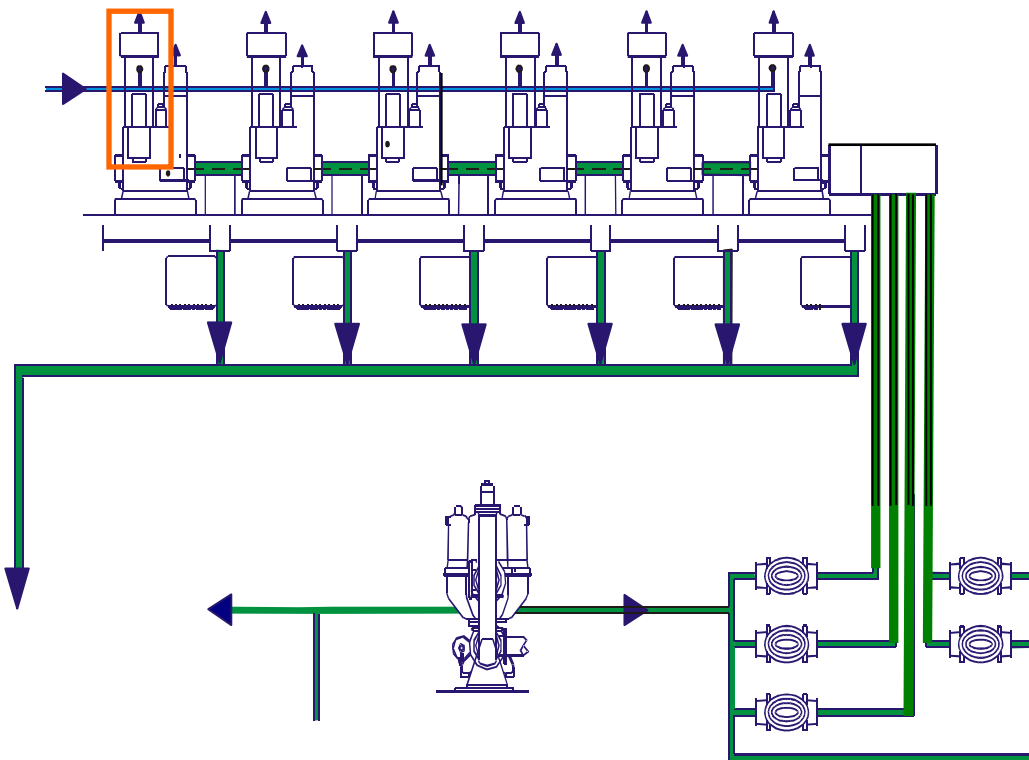


MAN Diesel PrimeServ Academy

Fuel Oil System



Fuel Oil System



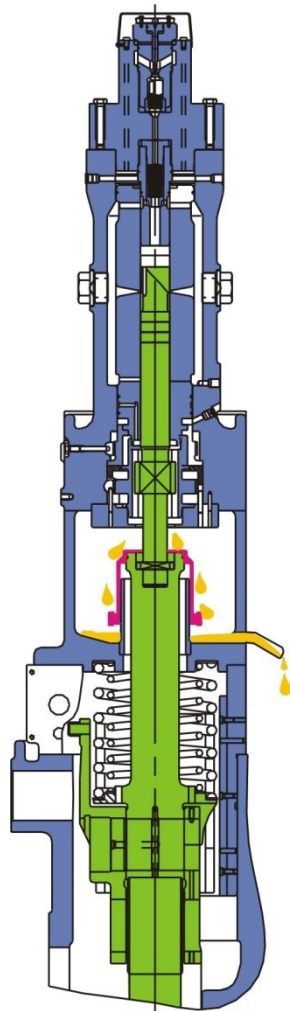
1) Fuel oil pressure booster

2) Adjustments

Fuel Oil Pressure Booster



S50MC-C



S50ME-C

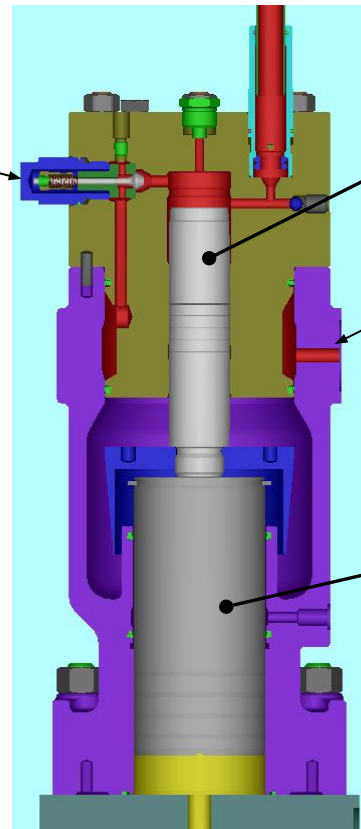
Suction Valve



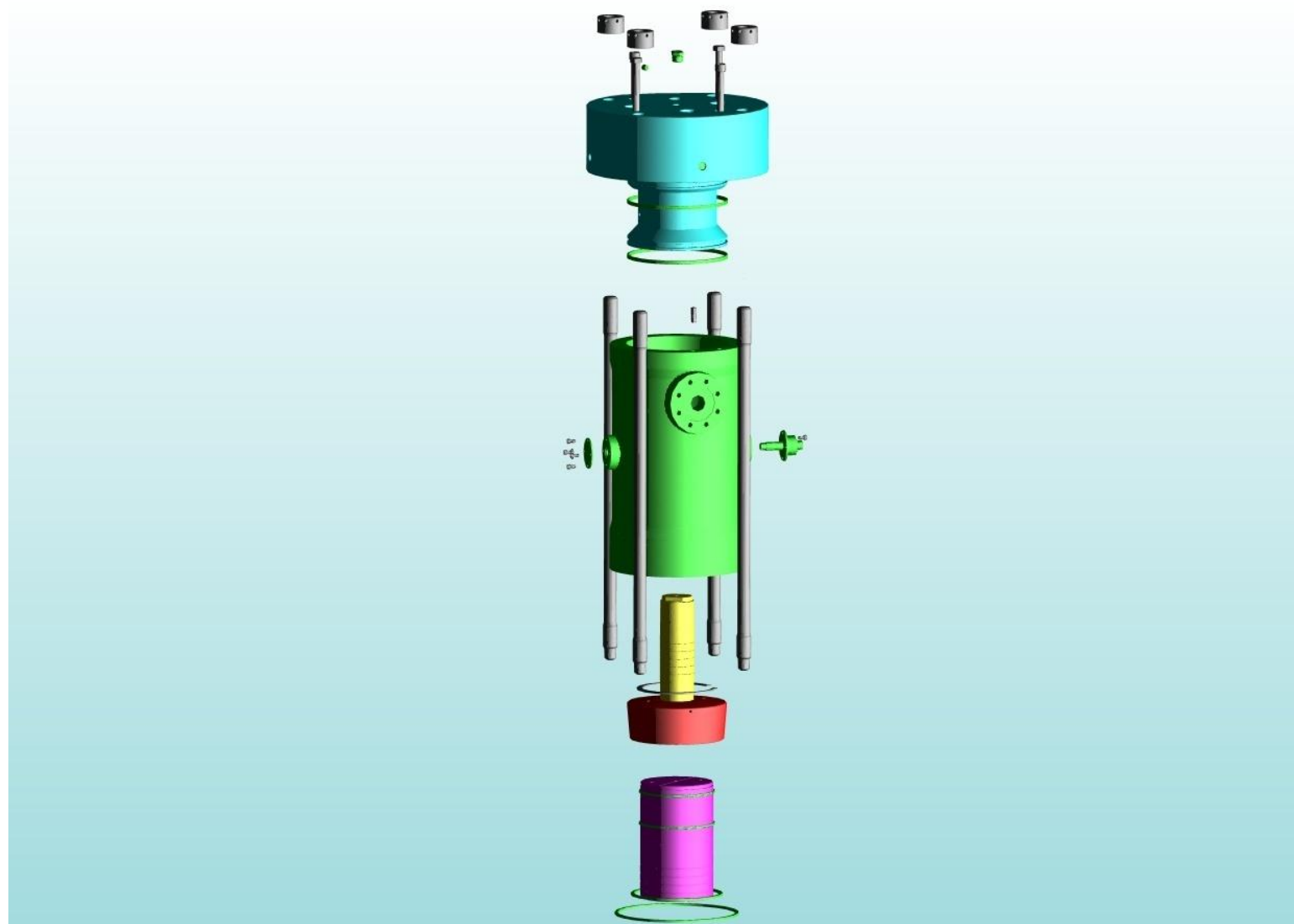
Fuel Plunger

**Fuel Oil inlet
pressure 7 - 8 bar**

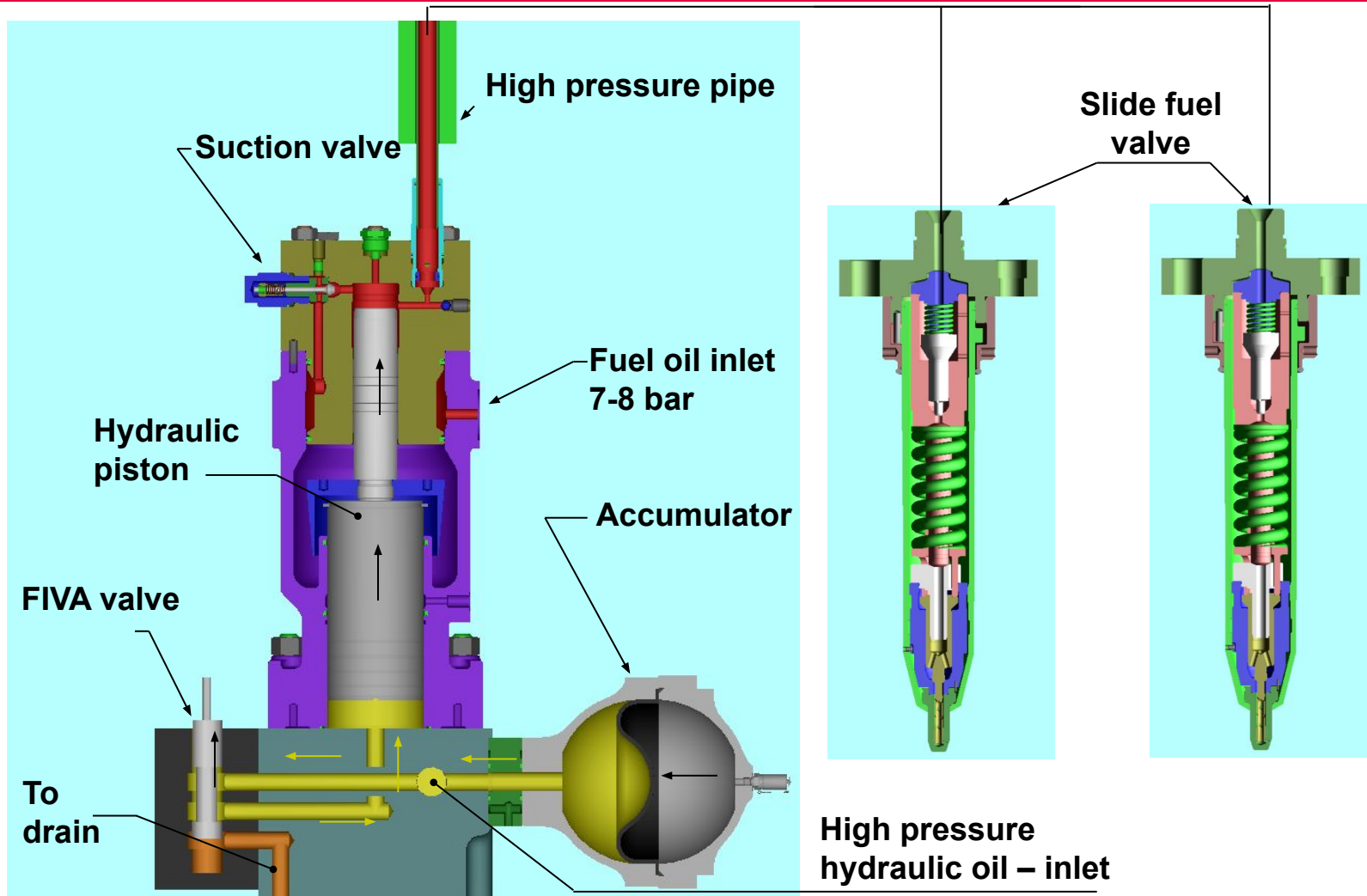
Hydraulic Actuator



Fuel Oil Pressure Booster



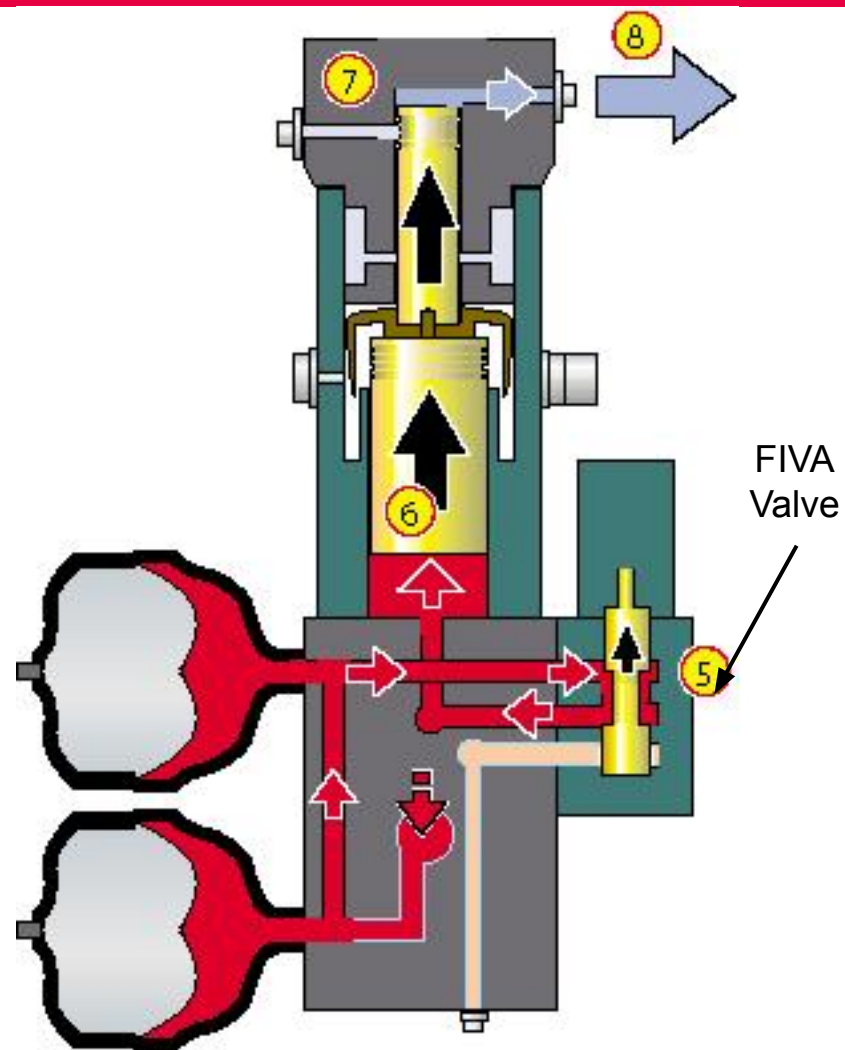
Fuel Oil System



Fuel Oil Injection working principle



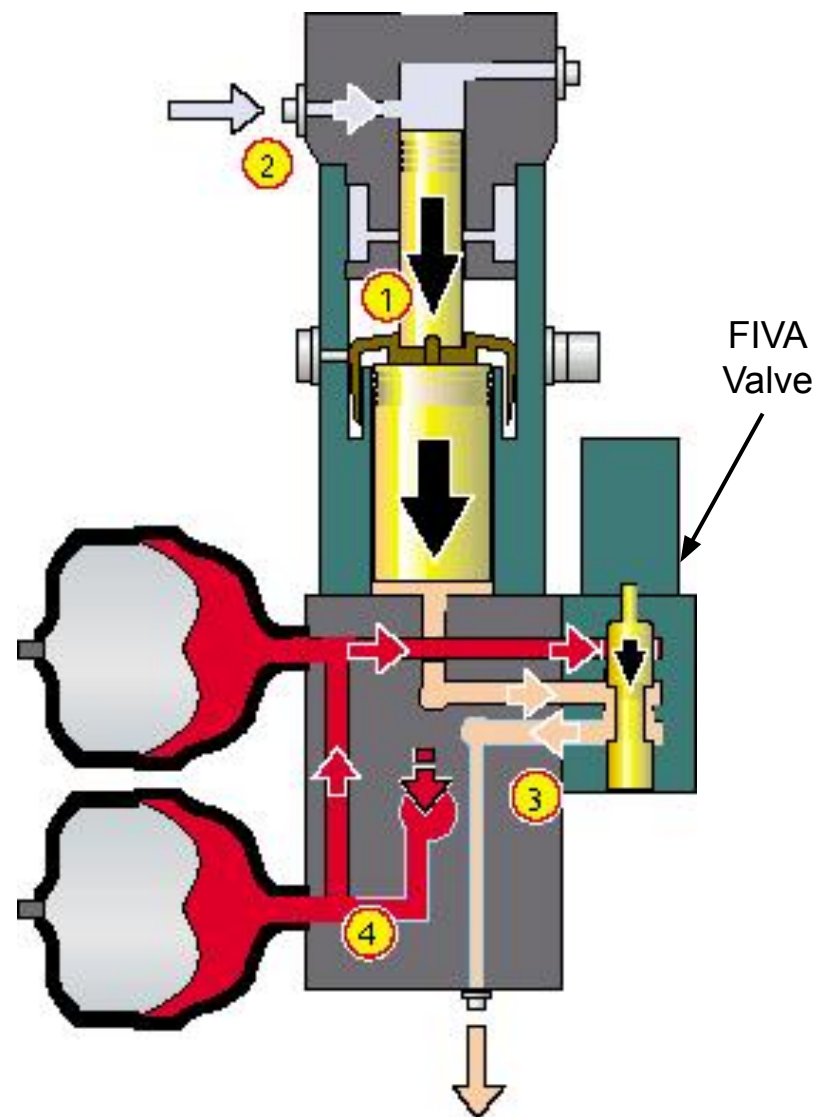
- Unpressurised fuel oil
- Pressurised fuel oil
- Unpressurised hydraulic oil
- Pressurised hydraulic oil



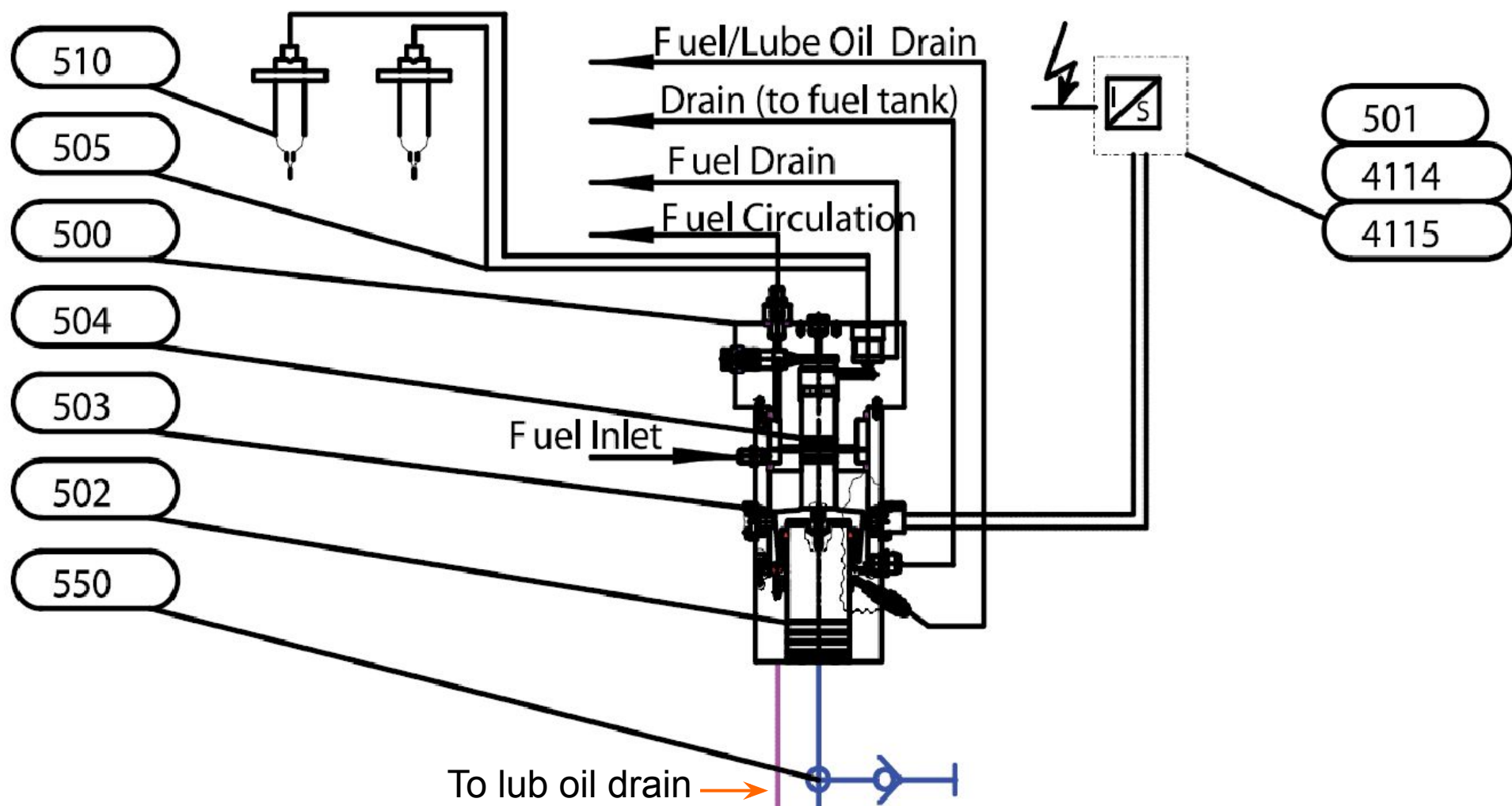
Fuel Oil Injection working principle



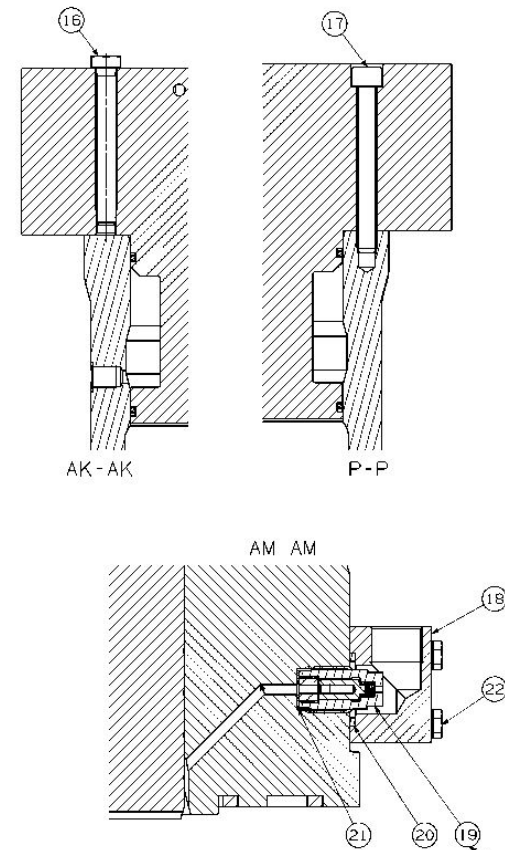
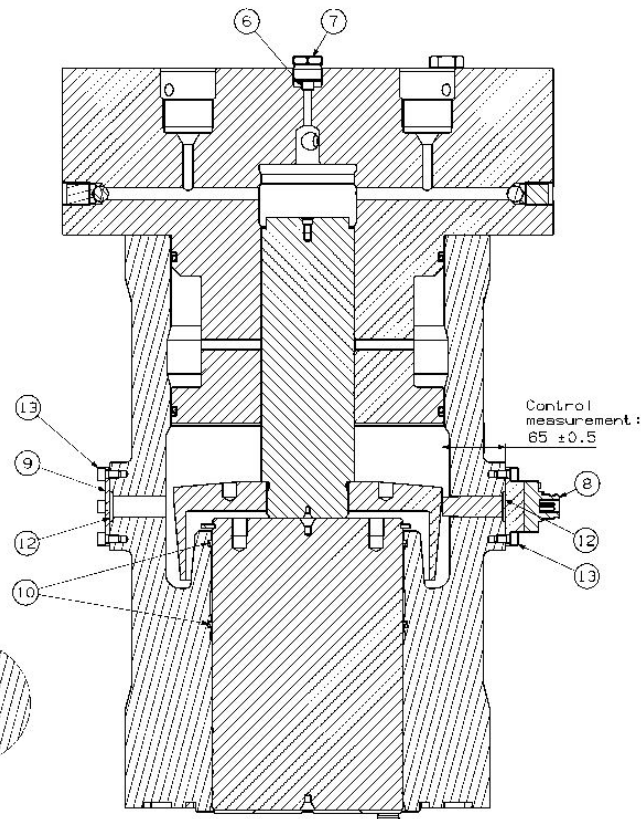
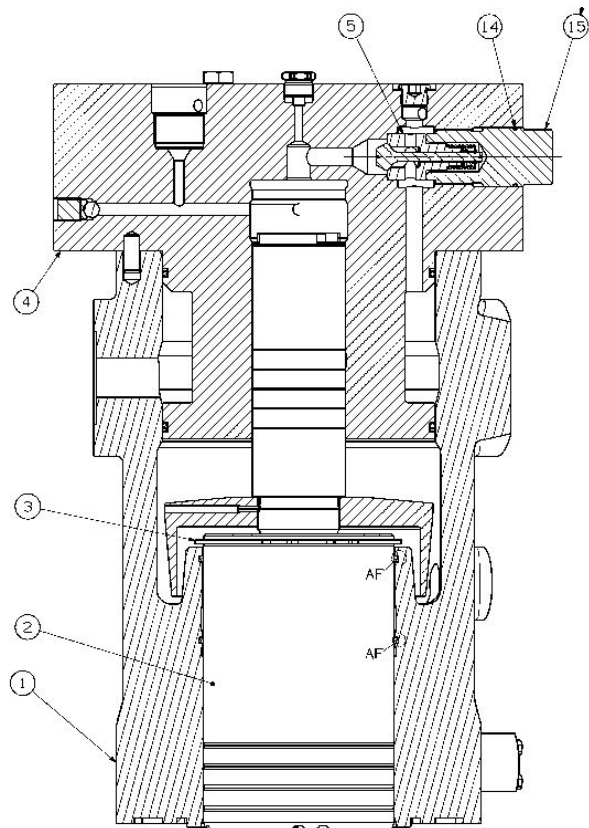
- Unpressurised fuel oil
- Pressurised fuel oil
- Unpressurised hydraulic oil
- Pressurised hydraulic oil



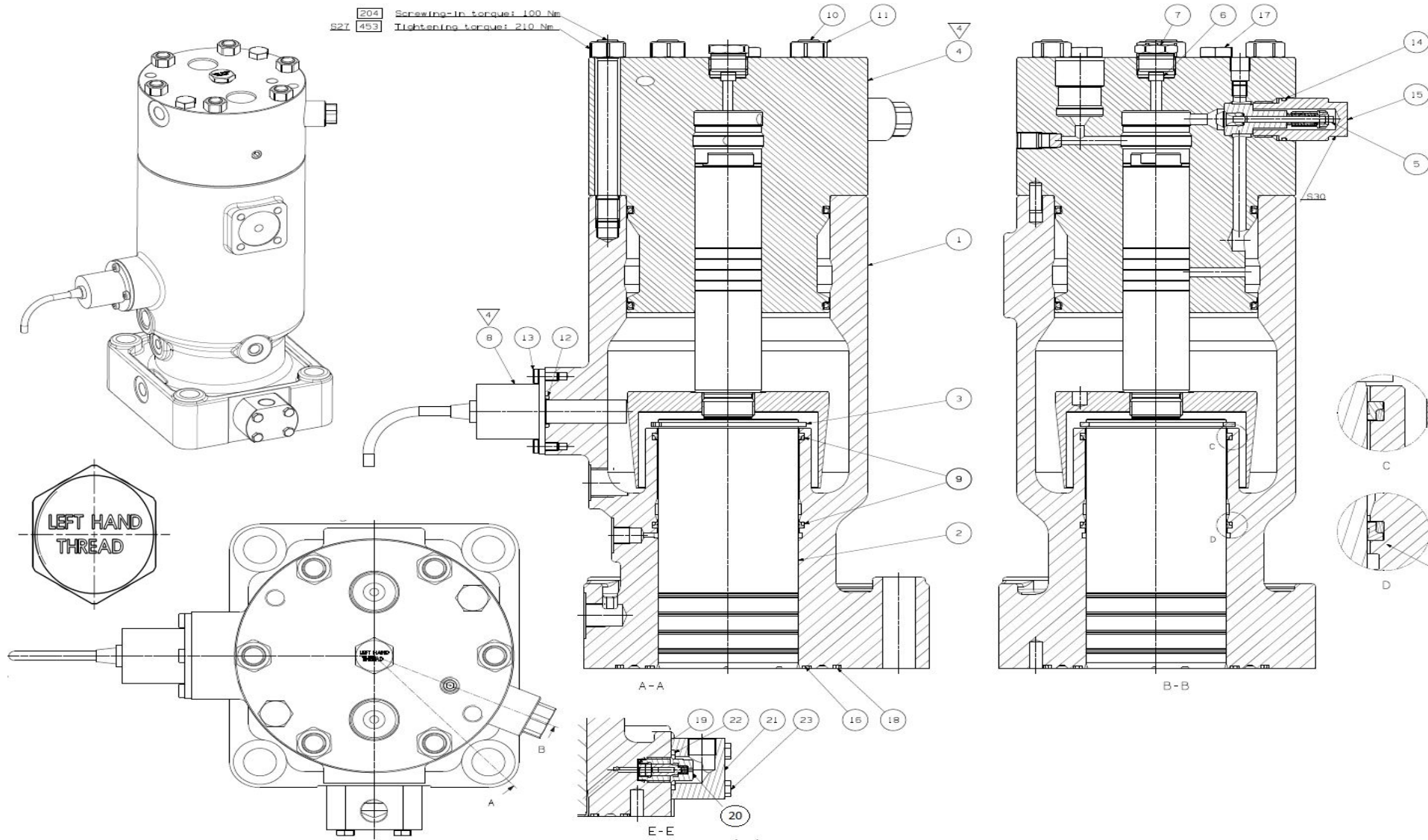
Fuel Oil Booster Pipe Connections



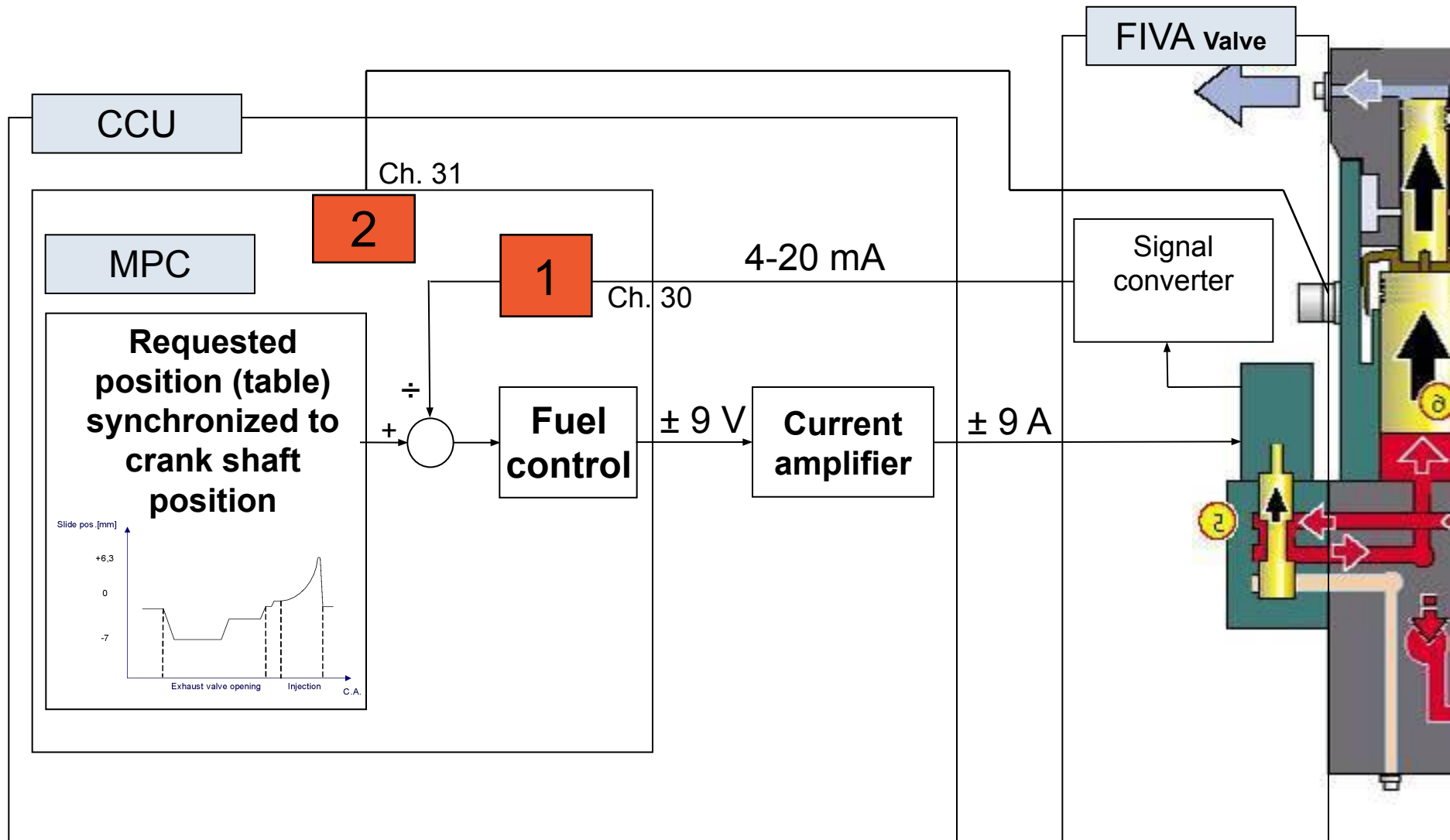
Fuel Oil Pressure Booster, K98ME



Fuel Oil Pressure Booster, S50ME-C



FIVA Valve Position Control



Supervision of FIVA Feedback Signal & Plunger Position



The FIVA is immediately set to exhaust valve open position: (Safe position) if:

1

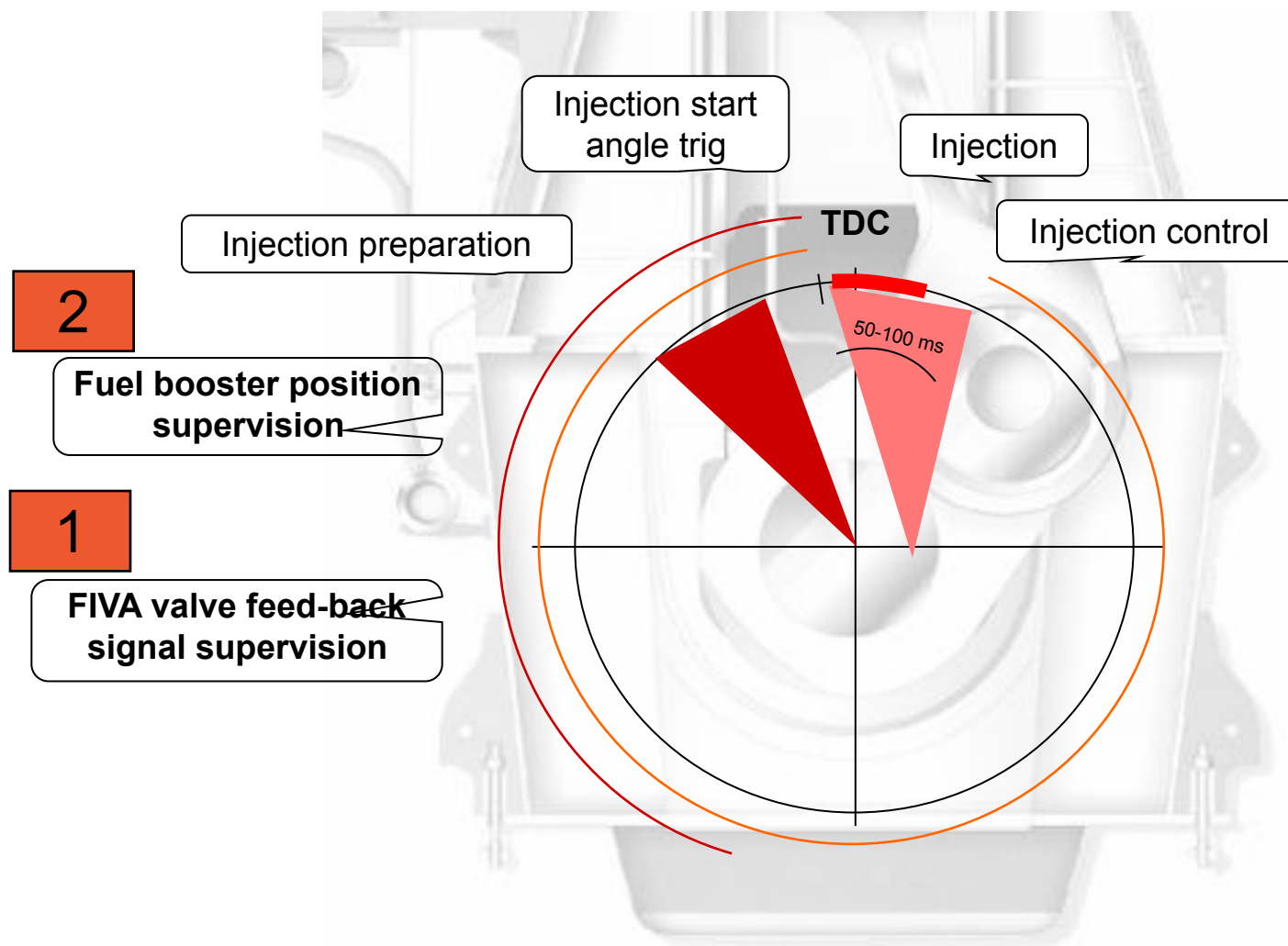
- The FIVA valve feed back signal is not valid, i.e. outside 4-20 mA
- The FIVA valve feed back signal indicates a too high (not physical possible) speed
- The FIVA valve feed back signal indicates a position not allowed outside a window around TDC

2

- The fuel booster position feed back signal indicates that the fuel booster is moving during the compression stroke.

Reset by resetting CCU in question, or invalid / valid these 2 inputs Ch. 30 & 31

Feed Back Supervision



Fuel Index Adjustment



ECUB_50324 13:42:48 Ctrl air press low Normal - - ! 1 0 8 1

Engine ▶ Cylinder Load 2005-12-07 08:49:44

All 1 2 3 4 5 6 7 8 9 10

Offset High Load [%]

1	2	3	4	5	6	7	8	9	10
10	10	0	0	-1	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
-10	-10	-10	-10	-10	-10	-10	-10	-10	-10

Offset Low Load [%]

1	2	3	4	5	6	7	8	9	10
5	5	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
-5	-5	-5	-5	-5	-5	-5	-5	-5	-5

Chief Index Limit [%]

1	2	3	4	5	6	7	8	9	10
110	110	110	110	110	110	110	110	110	110
100	100	100	100	100	100	100	100	100	100
50	50	50	50	50	50	50	50	50	50
0	0	0	0	0	0	0	0	0	0

Exhaust Valve Operation

1	2	3	4	5	6	7	8	9	10
Enabled	Enabled	Enabled	Enabled	Enabled	Enabled	Enabled	Enabled	Enabled	Enabled

Alarms...
Engine:
Operation
Process Information
Cylinder Pressure
Auxiliaries...
Admin...
Access
Chief

Index offset at 100 % load

Index offset at 0 % load

Individual Chief limiter

Adjustment of Maximum Pressure



ECUB_50324 13:42:48 Ctrl air press low Normal - - [Warning Icon] 1 0 8 1

Engine ▶ Cylinder Pressure 2005-12-07 08:50:08

All 1 2 3 4 5 6 7 8 9 10

Maximum Cylinder Pressure Offset [Bar]

0 0

20 0 -20

Compression Ratio Offset [-]

0.0

Timing of fuel injection
(corresponding to VIT adjustment on the MC engine)

Exhaust Valve Open Timing Offset [DEG]

0.0 0.0

0 -1 -2

Alarms...

Engine:

Operation

Status

Process Information

Cylinder Load

Cylinder Pressure

Auxiliaries...

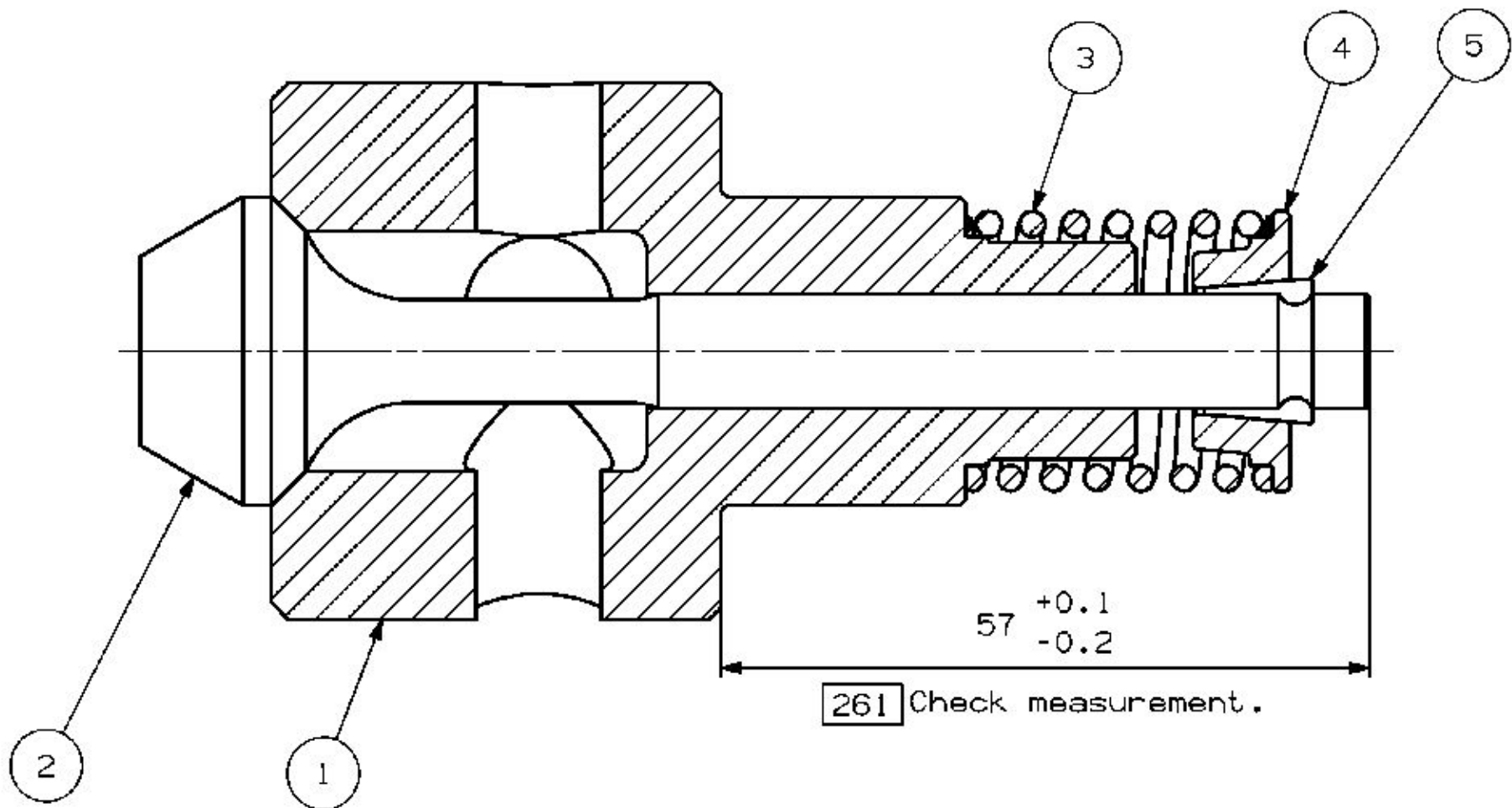
Maintenance...

Admin...

Access

Chief [User Icon]

Suction Valve, K98ME



Fuel Oil Pressure Booster

Technical Data, K98ME



- Hydraulic pressure mounting: 2200 bar
- Hydraulic pressure dismantling: 2000 – 2400 bar
- Booster housing, weight: 260 kg
- Booster complete, weight: 700 kg
- Hydraulic plunger, weight: 70 kg
- Fuel plunger weight: 35 kg
- Top cover, weight: 260 kg
- Suction valve, tightening torque: 1165 Nm