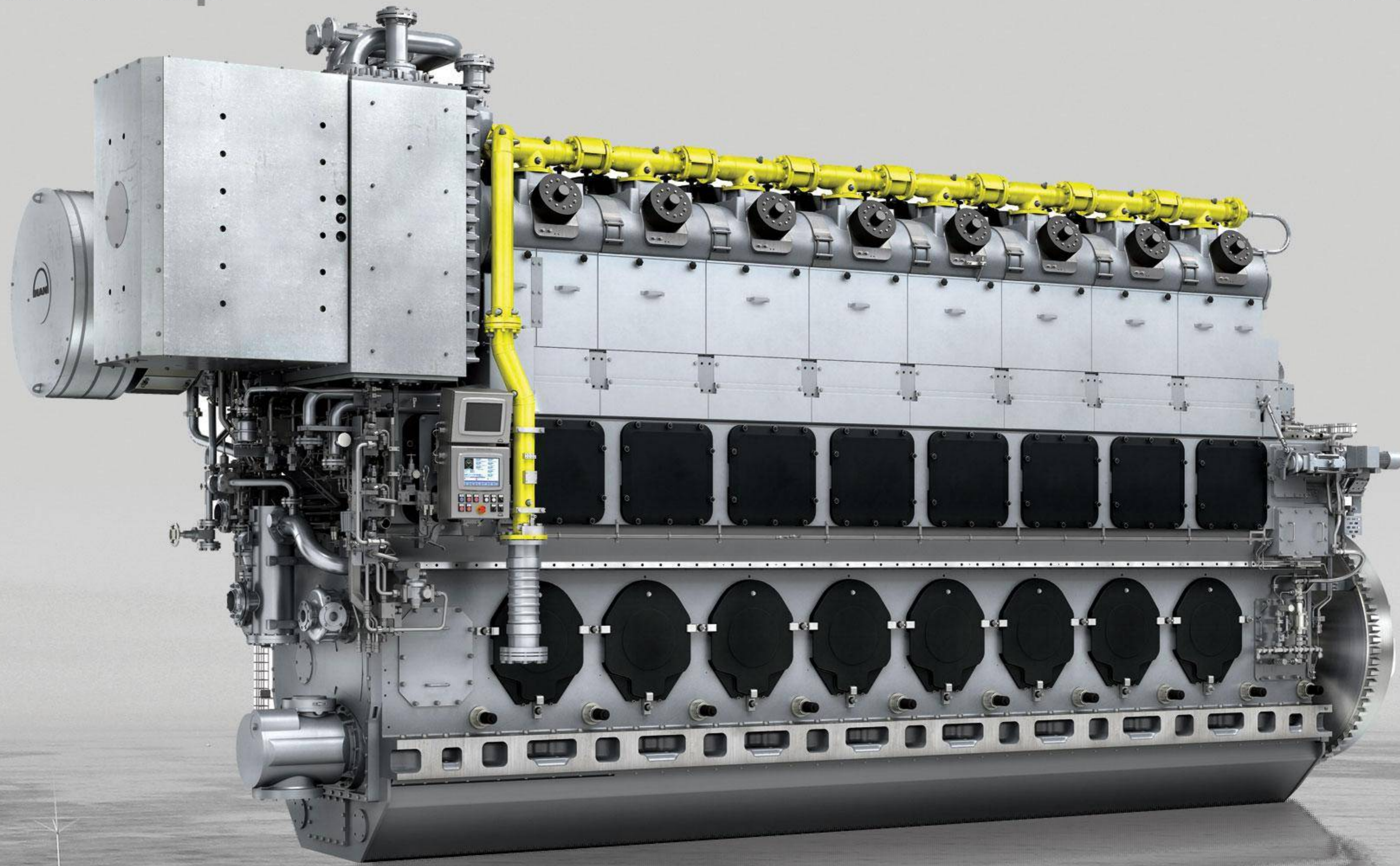


**Rexroth**  
Bosch Group

**SMEC**  
www.smecc.sg



# MAIN ENGINE REMOTE CONTROL SYSTEM

Maintenance , Inspection & Troubleshooting  
Drydock repairs & on voyage service



# Introduction

SMEC Automation has the expertise to take up a range of Automation jobs for the Marine Industry. We have built end-to-end control, monitoring and automated systems for clients over the last 15 years with 180 technical experts working round the clock between India, UAE and Singapore

SMEC Automation is venturing into Main engine remote control system service (MERCs) with complete set of original spares.

We can undertake planned period maintenance/trouble shooting/servicing of main engine remote control system components, MAN B&W / SULZER / PIELSTIK / UEC ENGINES.

Our engineers can also do card level checks for the various control/safety systems.

Authorized for REXROTH BOSCH PNEUMATIC in India





# Main Engine Remote Control System

## Main Engine Remote Control System repair and maintenance

Main engine control system's behavior is first observed carefully to locate the problem then the fault is identified and rectified. System consists of electro mechanical and digital controls for start, stop, speed control, shut down, slow-down, safety, and alarm systems are repaired and tested.

The whole system can be overall in 3-5 days during last phase of drydocking. so as to attend the trial on completion of the job.

**24/7 online support after repairs.**



UEC

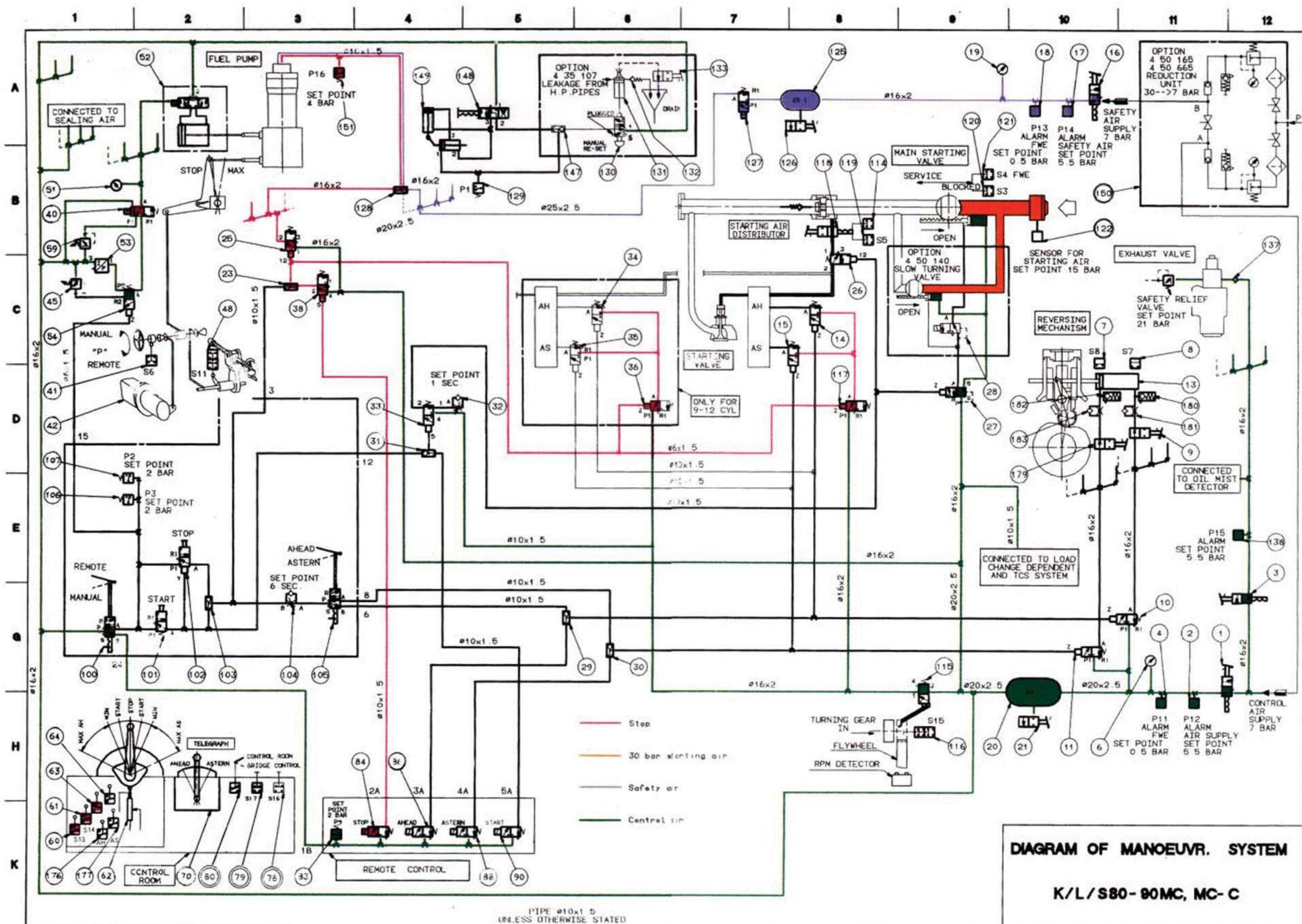
SULZER



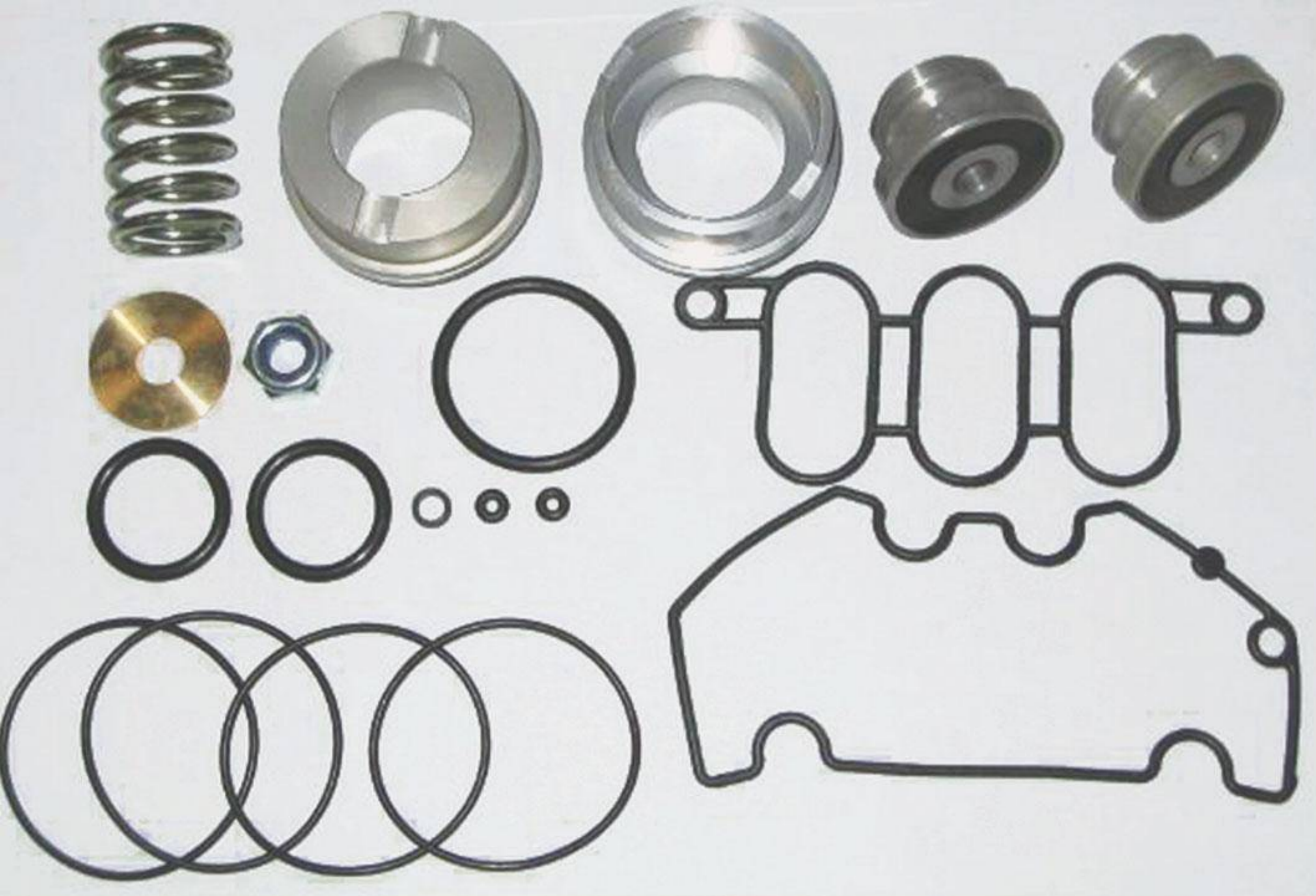
PIELSTICK

many more ...

## Manoeuvring Diagram







### Main Engine Overspeed System Maintenance, Troubleshooting

Over speed control system, is used to protect the engine from over speed. This safety system prevents the accident in advance. The system output activated at a predefined speed level controls the stop system and stops the engine. Our experienced technicians can solve the problems, help your crew in tests and simulations in survey operations. Technicians find out if any part to be replaced as stop coil inside governor, solenoid valve, tacho-generator, rpm sensor i.e.

### Main Engine Alarm System Maintenance, Troubleshooting

Main Engine Alarm System should always be fully operational. Otherwise, a defective system can put the vessel at risk. Main engine alarm systems should be periodically tested to ensure all are operating properly. Our technicians arrange a report by testing each alarm channel. Defective sensors or cables are replaced. Faulty boards are repaired as soon as possible.

Some of the main engine alarms are:

- Exhaust Temperature
- Overspeed
- Oil Pressure
- Cooling Water
- Turning wheel
- Fuel Leakage
- Oilmist

Com ponets during overallinginhg



### 3/2 and 5/2-Way-Valve Manually Operated 3/2 and 5/2-way-valve, ND7, M14 x 1.5



Type		Slide valve
Operating pressure	p max.	10 bar
Nominal flow rate	Q <sub>n</sub>	
at 6 bar, p = 1 bar		350 NI/min.
Operating force	N	
Ambient temperature range		- 15 to + 80°C
Admissible medium		Compressed air, lubricated or non-lubricated
Weight		0.4 kg

### 3/2-Way-Valve, Pneumatically Operated 3/2-way-valve, normally closed or normally open, ND7, M14x1.5



Type		Poppet valve
Operating pressure range		Max. 10 bar
Control pressure range		3.5 bis 10 bar
Nominal flow rate Q <sub>n</sub> at 6 bar, p=1 bar		350 NI/min
Ambient temperature range		- 20°C to + 70°C - 15 to + 40°C (at max. 10 bar)
Admissible medium		Compressed air, lubricated or non-lubricated
Weight		0.5 kg



## 3/2 and 5/2-Way-Valve Manually Operated

### 3/2 and 5/2-way-valve, ND7, M14 x 1.5

Type		Poppet valve
Operating pressure range	1, 2, 4	Max. 10 bar
	5	Max. 8 bar
Control pressure range		
Nominal flow rate $Q_n$ at 6 bar, $p = 1$ bar		350 Nl/min
Ambient temperature range		- 20°C to + 80°C
Admissible medium		Compressed air, lubricated or non-lubricated
Weight		1.2 kg



## 3/2 and 5/2-Way-Solenoid-Valves

### 5/2-way-valve, electromagnetically operated, monostable, ND7, M14x1.5



Type		Slide valve
Operating pressure range		
Nominal flow rate $Q_n$		
	at 6 bar, $p = 1$ bar	100 Nl/min
Ambient temperature range		- 15°C to upper limit see table
Admissible medium		Compressed air, lubricated or non-lubricated
Weight		0.85 kg
Materials	Housing	Zn-diecasting
	Seals	BUNA-N
Operating voltages		24 V DC
		- 20 % to upper limit see table
Current consumption	DC 24V	190 mA
Insulation class		F according to VDE 0580
Protection with el. connector		IP 65 according to DIN VDE 0470
Duty cycle	ED	100%



## Electro-Pneumatic Regulating Valve

### Pressure control valves ND 3, M14x1.5, analogue actuation

Type		Poppet valve
Operating pressure		max. 8 bar *
Output pressure		0 ... 6 bar
Hysteresis		0.02 bar
Nominal flow	$Q_n$	300 NI/min.
At supply pressure	= 7 bar	
Output pressure	= 6 bar	
and $p = 0,2$ bar		
Ambient temperature range		-20° bis + 60° C
Admissible medium		Condensate-free and non-lubricated compressed air, filtered 50 m
Weight		3.0 kg
Materials	Housing / Seals	Al-diecasting / NBR
Supply voltage		DC 24 V $\pm$ 20 %
Admissible ripple		5%
Current consumption max.		0.3 A
Protection with plug		IP 65 according to DIN VDE 0470
Assembly position		Vertical
Strength of vibration		4g / 2...100Hz





## Services we offer :

- Boiler Automation
- Gas monitoring System
- Calibration Services
- IG System
- General Automation
- IAS (Integrated Alarm System)

Quality, Reliability and Flexibility  
are some of the main ingredients of our success



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