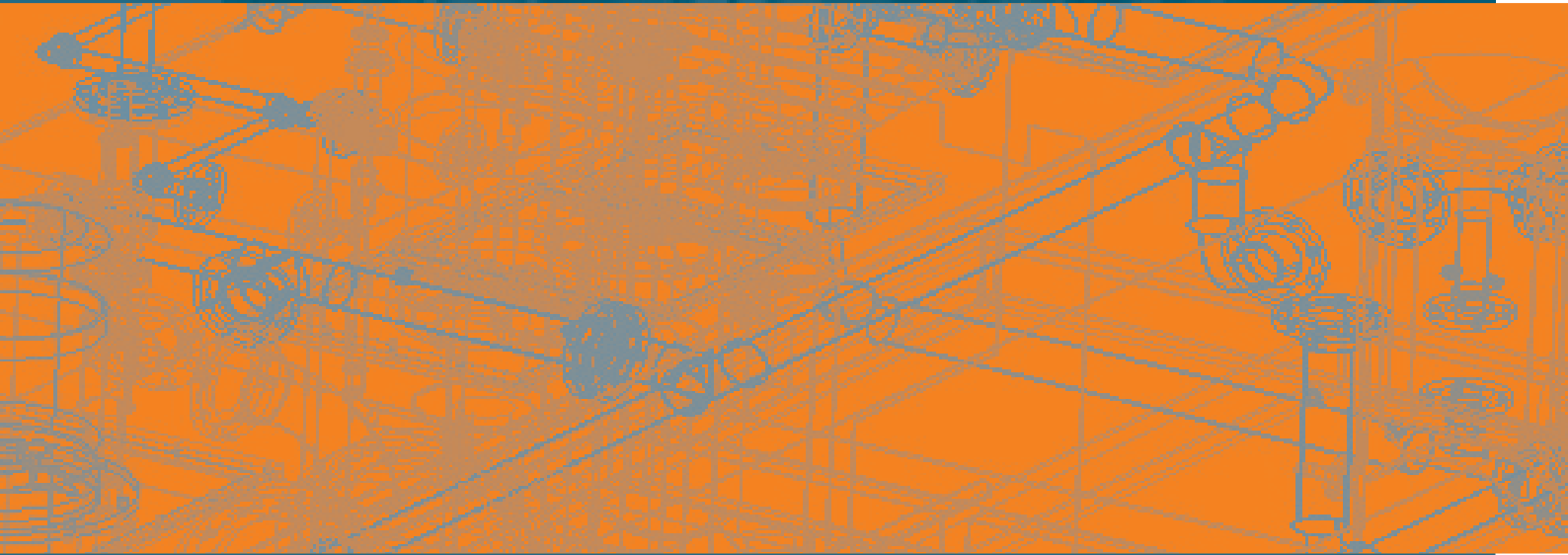


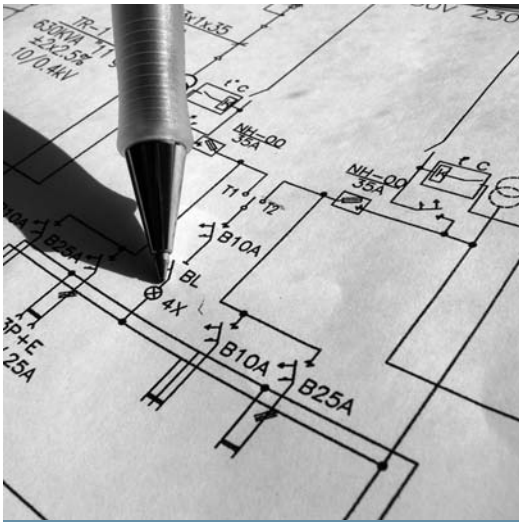


LUBRICATION oil systems



COES

 **lubisystem**



COES LUBISYSTEM

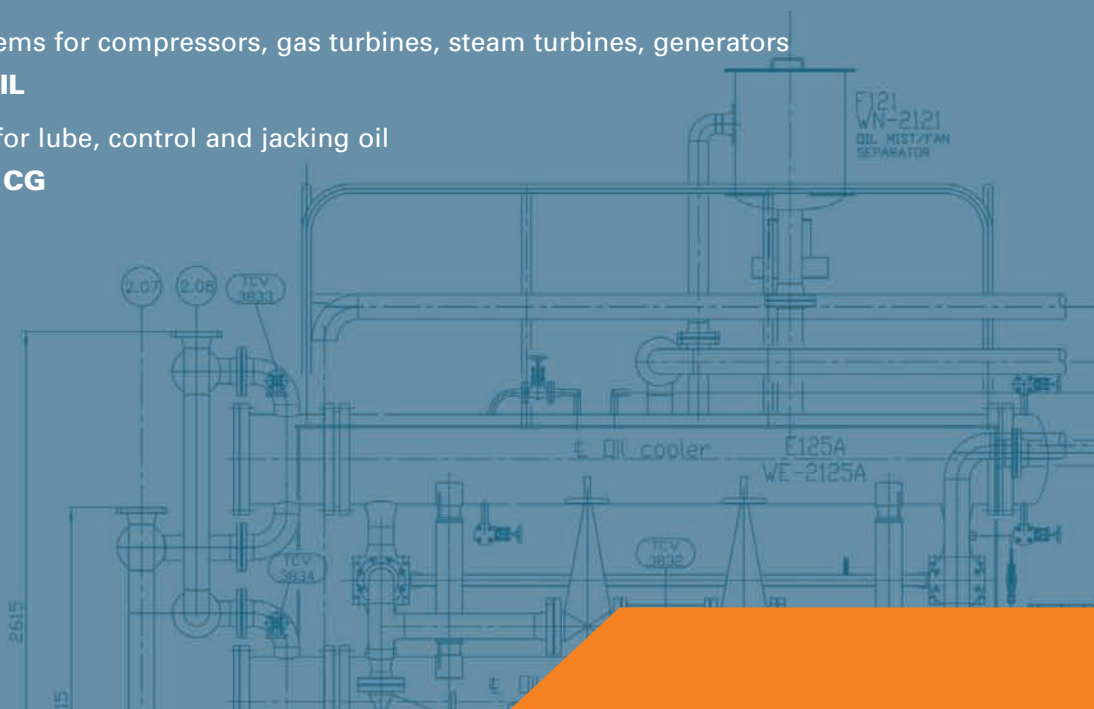
Multi-year experience together with the high number of machines, worldwide installed, assure high quality and availability for our oil systems.

Oil system production is followed by a dedicated division for design and research of upgraded solutions.

Manufacturing and test of oil systems is performed in a dedicated workshop.

The Coes Lubisystem product range includes:

- Lubrication oil systems for motors
Series SM
- Lubrication oil systems for compressors, gas turbines, steam turbines, generators
Series SL, series IL
- Complete systems for lube, control and jacking oil
Series CV, series CG



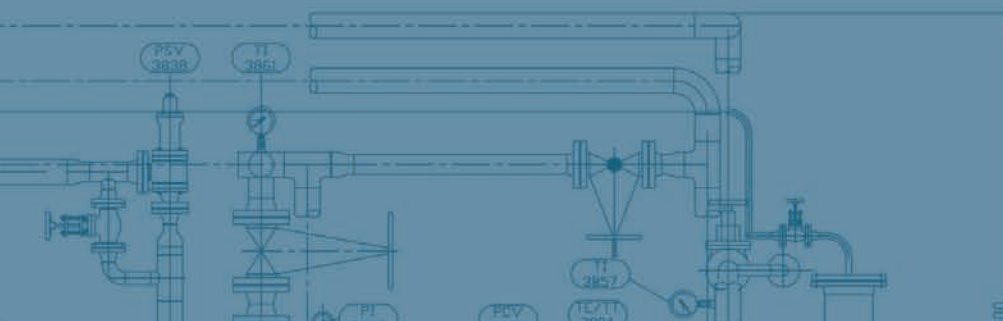


The system supplies oil to machines like compressors, turbines and generators to ensure the proper thermal and physical conditions and cleaning, and providing a stable film of separation between the shaft and the bearing casing under all operating conditions.

The system can also supply control and jacking oil to machines, which is indispensable during the starting and stopping stages of the group, and oil for driving the barring device.

The lubrication, control and jacking oil system is of primary importance for the safety, availability and continuity of service of the machines. Insufficient or generally inadequate supply of oil to the bearings causes the complete breakdown of the machine, as well as creating high risks for the safety of the personnel and good conditions of the system elements. In general, we can identify three separate subsystems referable to the entire complex, which all draw from a common oil reservoir.

The oil system is a fully assembled skid, inclusive of all the elements and instruments wired to terminal board.



General description / 1

LUBRICATION SYSTEM

The lubrication system performs the following functions:

- To ensure the formation of oil film that keeps the rotating parts (shaft) separate from the bearing casing to minimize friction.
- To remove the heat dissipated through the bearings.
- To remove any impurities in the conduit due to wear and friction.

Since during operation of the machine the oil temperature increase (heat dissipated through the bearings) an exchanger is necessary to remove heat by oil.

The oil may be soiled in its contact with rotating parts subject to wear, and therefore requires a filtration mechanism.

The machine cannot function at all without lubricating oil, and that means it can be provided 100% redundancy for the following parts:

- pump
- heat exchanger
- filter





The machine requires lubricating oil even after it has been ordered to stop or after an emergency block, to ensure safe stoppage down to 0 revolutions of the shaft.

This means that an emergency pump with DC power can be provided to perform this function and must be able to function even under conditions of malfunction of the lubricating oil system (e.g. low level, filters clogged, etc.) or of the power system (e.g. black out, power outage on electrical supply to utilities). After reaching the bearings, the oil returns into the reservoir, facilitated both by the depression generated from the mist extractor and by an appropriate gradient to be established for the pipelines.

The oil system can be equipped with dedicated circuit to supply control and jacking oil to the machines.

Dedicated lines can be provided for control or jacking oil with pumps driven by AC or DC motors.

Control and jacking oil lines are equipped with dedicated single or duplex oil filters.

The control and jacking piping can be either in carbon steel or stainless steel material.

CONTROL AND JACKING OIL SYSTEM





Machines use oil as a lubricant to seal the compression chamber and reduce wear and friction. The heat increases the oil temperature, reducing its viscosity. If the oil temperature becomes too high, the low viscosity makes the protective oil

OIL COOLER

film too thin for effective protection and sealing. The result is increased wear on moving parts, reduced efficiency for the machine and a shorter life for the oil. The excess heat in the lube oil must be removed efficiently with minimal pressure-drop by oil cooler.

The lube oil system can be equipped with either oil to air cooling system (radiator type) or oil to water cooling system (shell & tube or plate type). Coes proposes single type or duplex type coolers.

OIL MIST SEPARATOR

Since the oil in contact with the bearings traps air, and to facilitate its return to the reservoir aside from the proper gradient on return pipeline, a system for oil mist extraction is provided to maintain a slight underpressure in the oil reservoir. A cartridge filter-separator eliminates the air trapped in the contact between the oil and the shaft-bearings.

The oil mist separator can be directly installed on the oil reservoir.



OIL FILTER

The total flow of lubricating oil is filtered downstream of the coolers, by using single or duplex oil filter.

Pressure drop of the filter can be monitored by a differential pressure instrument (indicator, switch or transmitter).





COES Srl – LUBISYSTEM Division

OFFICE AND WORKSHOP

Via Pontida 265 - 24040 STEZZANO BG Italy

+39 035 2050511

coes@coessrl.com www.coessrl.com

TEST WORKSHOP

Via Europa 9 - 24040 COMUN NUOVO BG Italy

