

BOILER MALFUNCTIONS

Boiler Malfunctions

Malfunction	Possible reasons	Effect
No flame	Safety trip is active Steam pressure too high Water level too low Fuel pressure too low Insufficient supply of combustion air Ignition not successful within safe time Water level too high Superheated steam temperature too high	Steam pressure sinks
Steam pressure too high	Setpoint of burner power control set too high Burner power control too slow-acting	Danger to boiler: over-production condenser responds in case of combined operation of auxiliary boilers and exhaust gas steam boilers
Water level too low	Absent or insufficient feed Water loss due to leakage in boiler or feedwater system	Danger to boiler (burn through)
Fuel pressure too low	Detritus-clogged fuel filter Fuel pump defective Fuel pressure controller defective	Flame extinguishes
Combustion air supply insufficient	Boiler fan defective Air volume controller defective Setting of air volume controller too low	Incomplete combustion Flame extinguishes
Ignition not successful within safe time interval	Defective electric ignition device Starting electrode gap too large Fuel supply to lighting-up burner interrupted	Boiler program starts anew up to two times
Water level too high	Excessive feed Expansion during start-up not taken into account	Boiler spews Water hammer in steam system
Superheated steam temperature too high	Superheating too high Superheated steam temperature controller defective	Superheated steam consumer endangered
Steam pressure too low	Set-point of burner power control set too low Burner power control too slow-acting	Consumers do not achieve full output (e. g. heavy fuel oil final feed temperature)

Source: Meler-Peter, Hansheirrich, Bernhardt, Frank (Eds.), Compendium Marine Engineering: Operation – Monitoring – Maintenance, 2009, by courtesy of PMC Media House GmbH: www.pmcmedia.com