



TECHNICAL SPECIFICATIONS

		CSM-15 Standard	CSM-15 With Super Economiser	CSM-30 Standard	CSM-30 With Super Economiser	CSM-45 Standard	CSM-45 With Super Economiser
BOILER HORSEPOWER	BHP	15	15	30	30	45	45
NET HEAT OUTPUT	kcal/h	126611	126611	253222	253222	379833	379833
NET HEAT OUTPUT	kW	147	147	294	294	441	441
EQUIVALENT MAXIMUM OUTPUT SATURATED STEAM (from and at 100°C feedwater and 0 barg steam)	kg/h	235	235	469	469	703	703
EQUIVALENT MAXIMUM OUTPUT SATURATED STEAM (at 7 barg and from 100°C feedwater)	kg/h	225	225	450	450	675	675
DESIGN PRESSURE	barg	10 / 13	10 / 13	10 / 13	10 / 13	10 / 13	10 / 13
STEAM MAX OPERATING PRESSURE (determined by design pressure)	barg	7 / 11	7 / 11	7 / 11	7 / 11	7 / 11	7 / 11
STEAM MIN. OPERATING PRESSURE	barg	4	4	4	4	4	4
OIL CONSUMPTION at maximum steam output (See note 1)	kg/h	13,8	13,1	27,6	26,1	41,4	39,2
GAS CONSUMPTION at maximum steam output (See note 3)	Nm ³ /h	15,9	15,1	31,8	30,1	47,7	45,2
GAS SUPPLY PRESSURE REQUIRED (See note 3 and 5)	mbarg	25..300	25..300	25..300	25..300	100..300	100..300
WATER CONTENT							
- Filled	l	35	37	76,7	80,3	83,2	87,7
- In operation	l	18,6	20,6	39,5	43,1	42,7	47,2
COMBUSTION EFFICIENCIES (See notes 2 and 4)							
Gas Fired -100% / 25% load	%	90 / 94	95 / 96	90 / 94	95 / 96	90 / 94	95 / 96
Diesel Oil Fired - 100% / 50% load	%	90 / 92	95 / 95	90 / 92	95 / 95	90 / 92	95 / 95
FIRING RATE							
- Step fired oil (See note 4)	%	0-60-100	0-60-100	0-60-100	0-60-100	0-60-100	0-60-100
- Modulating gas (See note 4)	%	25-100	25-100	25-100	25-100	25-100	25-100
HEATING SURFACE	m ²	7,3	10,3	13,1	18,5	14,2	21,2
ELECTRIC MOTOR (Up to 10 barg)							
- Blower	kW	0,5	0,5	0,5	0,5	0,62	0,62
- Pump	kW	0,37	0,37	0,55	0,55	1,1	1,1
- Electrical Power		230VAC 50Hz 16A	230VAC 50Hz 16A	230VAC 50Hz 16A	230VAC 50Hz 16A	230VAC 50Hz 16A	230VAC 50Hz 16A
APPROXIMATE OVERALL DIMENSIONS							
- Length	mm	1600	1600	1800	1800	1800	1800
- Width	mm	1172	1172	1350	1350	1350	1350
- Height	mm	1710	1710	2237	2237	2460	2460
- Transport Height without burner and safety valve	mm	1710	1710	1936	1936	2058	2058
- Maintenance height above burner	mm	250	250	250	250	250	250
APPROXIMATE WEIGHT							
- Filled	kg	1135	1220	1510	1610	1605	1720
- Empty	kg	1100	1180	1430	1520	1520	1630
EXHAUST GAS							
- STACK CONNECTION (Outer Diameter)	mm	200	200	250	250	250	250
- Recommended diameter of Chimney (Inner diameter) (See note 6)	mm	200	200	250	250	300	300
- typical Nox values at ref 3% O2 natural gas	mg/Nm ³	<80	<80	<80	<80	<80	<80
- typical Nox values at ref 3% O2 diesel oil	mg/Nm ³	<180	<180	<180	<180	<250*	<250*
NOISE LEVEL (sound pressure level Lp at 1m) - in free field	dBA	<80	<80	<80	<80	<80	<80

NOTES

- 1) Based on N° 2 fuel oil with a Low Heat Value (LHV) = 42700 kJ/kg - **calculated using the announced combustion efficiencies**
- 2) Efficiencies are based on 60°C feed water temperature. Please consult factory for guaranteed values
- 3) Based on natural gas with Low Heat Value (LHV) > 37000 kJ/Nm³ - **calculated using the announced combustion efficiencies**
- 4) No dual fuel burners available till further notice!
- 5) For all units with natural gas supply pressures between 150 (min.) and 300 (max.) mbar, a gas pressure regulating valve has to be provided / purchased. For CSM-45 with a natural gas supply pressure between 25 (min.) and 100 (max.) mbar a "low pressure gas train" must be provided / purchased
- 6) The required draft at the stack outlet of the Steam generator should be between 0 and -6 mmWK. Depending on the length and height of the chimney, the diameter might change or a draft regulator should be added.

* NOx on diesel oil can be < 180 mg/Nm³ if the CSM-45 is derated down to 35 BHP.

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All specified values are subject to change without notice.

Connections		CSM-15 Standard	CSM-15 With Super Economiser	CSM-30 Standard	CSM-30 With Super Economiser	CSM-45 Standard	CSM-45 With Super Economiser
Steam outlet	S1	DN25 PN40	DN25 PN40	DN40 PN40	DN40 PN40	DN40 PN40	DN40 PN40
Safety valve outlet	S2	3/4" R Female	3/4" R Female	1 1/4" R Female	1 1/4" R Female	1 1/4" R Female	1 1/4" R Female
Feed water inlet	S10	1 1/2" R Female	1 1/2" R Female	1 1/2" R Female	1 1/2" R Female	2" NPT Female	2" NPT Female
Steam trap outlet	S12	3/4" R Female	3/4" R Female	1" R Female	1" R Female	1" R Female	1" R Female
Drain	S13	3/4" R Female	3/4" R Female	1" R Female	1" R Female	1" R Female	1" R Female
Automatic blowdown outlet	S11	1/2" NPT Female	1/2" NPT Female	1/2" NPT Female	1/2" NPT Female	1/2" NPT Female	1/2" NPT Female
Gas inlet	S8	1" R Female	1" R Female	1" R Female	1" R Female	1 1/2" R Female *	1 1/2" R Female *
Diesel oil inlet	S8.1	3/8" G	3/8" G	3/8" G	3/8" G	3/8" G	3/8" G
Diesel oil return	S8.2	3/8" G	3/8" G	3/8" G	3/8" G	3/8" G	3/8" G

* Gas inlet CSM-45 for natural gas pressures < 100 mbar: 2" R Female
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