

Guidelines for water and steam quality

COMBUSTION CHAMBER

	Steam injection SGT-600 ^{d)}	Steam injection SGT-500 ^{d)}	Water injection SGT-600 ^{e)}	Water injection SGT-500 ^{d)}
Mass flow kg/kg (lb/lb) fuel ^{a)}	<1.5 (or max 2 kg/s (4.4 lb/s)) ^{g)}	<2.0 (or max 2 kg/s (4.4 lb/s)) ^{f)}	<1.1	<1.1
Pressure bar(a) (psia), (min/max)	25/80 (363/1160) ^{g)}	25/50 (363/725) ^{f)}	2/10 (29/145)	2/10 (29/145)
Pressure variation %, (max)	±5	±5	N.A.	N.A.
Pressure variation rate %/s	<0.5	<0.5	N.A.	N.A.
Temperature °C (°F), (min/max)	^{b)} /400 (752)	^{b)} /400 (752)	5/40 (41/104)	5/40 (41/104)
Temperature variation °C (°F), (max)	±10 (18)	±10 (18)	±10 (18)	±10 (18)
Temperature variation rate °C/s (°F/s)	1 (1.8)	1 (1.8)	5 (9)	5 (9)
Conductivity µS/cm	<0.2 ^{c)}	<0.2 ^{c)}	<0.2	<0.2
Na + K ppm	<0.01	<0.01	<0.01	<0.01
Total dissolved solids ppm	-	-	<0.1	<0.1
Silica (SiO₂) ppm	<0.02	<0.02	<0.02	<0.02
Iron (Fe) ppm	<0.02	<0.02	<0.02	<0.02
Copper (Cu) ppm	<0.003	<0.003	<0.003	<0.003
Oil ppm	-	-	N.D.	N.D.
KMnO₄ ppm	-	-	<5	<5
pH	-	-	5-9	5-9

a) Based on fuel LHV 48.8MJ/kg (20 994 BTU/lb)

b) Dry, superheated >20°C (36°F)

c) Cation conductivity

d) Valid for conventional burner only

e) Valid for conventional burner and DLE burner with liquid fuel operation only

f) Required pressure to achieve max mass flow 2 kg/s (4.4 lb/s) is 41 bar(a) (595 psia)

g) Required pressure to achieve max mass flow 2 kg/s (4.4 lb/s) (hold) N.D. Not Detectable

COMPRESSOR AND POWER TURBINE

	COMPRESSOR TURBINE
	Steam injection SGT-600
Mass flow kg/kg (lb/lb) fuel ^{a)}	<1.5 (or max 2 kg/s (4.4 lb/s))
Pressure bar(a) (psia), (min/max)	17/80 (247/1160)
Pressure variation %, (max)	±5
Pressure variation rate %/s	<0.5
Temperature °C (°F), (min/max)	^{b)} /350 (662)
Temperature variation °C (°F), (max)	±10 (18)
Temperature variation rate °C/s (°F/s)	1 (1.8)
Conductivity μS/cm	<0.2 ^{c)}
Na + K ppm	<0.01
Silica (SiO₂) ppm	<0.02
Iron (Fe) ppm	<0.02
Copper (Cu) ppm	<0.003

a) Based on fuel LHV 48.8MJ/kg (20 994 BTU/lb)

b) Dry, superheated >20°C (36°F)

c) Cation conductivity

COMPRESSOR INLET, SGT-500, SGT-600, SGT-700 & SGT-800

	Evaporating Cooler, Water in the sump
Temperature °C (°F), (min/max)	10/60 (50/140)
Ca Hardness ppm as CaCO ₃	<375
Suspended solids ppm ^{a)}	<10
Na + K ppm	<150
Silica (SiO₂) ppm	<80
Iron (Fe) ppm	<0.5
Chlorides (Cl) ppm	<200
Sulphate (SO₄) ppm	<300
Langlier index ^{b)}	0.5±0.25
Ryznar index ^{b)}	6.0±0.5
Practical scaling index ^{b)}	6.6±0.5
Oil ppm	<2.0
pH	7-8.5

a) Injection of biocide may be used to control the formation of biological growth

b) These are the limiting factors for blow down and can be calculated from temperature, Ca hardness, alkalinity, pH and TDS

WASHING, SGT-500, SGT-600, SGT-700 & SGT-800

Special Note: On- line washing is not recommended for SGT-600, SGT-700 or SGT-500. On- line washing is not allowed in SGT-800.

	Off-line washing water	On-line washing water
Temperature °C (°F), (min/max)	10/60 (50/140)	10/60 (50/140)
Conductivity µS/cm	-	<0.2
Na + K ppm	<200	<0.01
Total dissolved solids ppm	<1000	<0.1
Hardness ppm as CaCO ₃	<500	-
Turbidity NTU	<1	-
Silica (SiO₂) ppm	-	<0.02
Iron (Fe) ppm	<0.3	<0.02
Copper (Cu) ppm	<1.0	<0.003
Oil ppm	-	N.D.
KMnO₄ ppm	-	<5
pH	5-9	5-9

N.D. Not Detectable

STANDARD FUEL SEPARATORS; SGT-700 & SGT-800

Requirements for raw water when including water treatment option for fuel separators. Requirements for separator feed water apply in all cases.

	Raw Water	Separator feed water
Temperature °C (°F), (min/max)	5/30 (41/86)	5/40 (41/104)
Conductivity µS/cm	<600	<30
Solid Contents Volume-%	-	<0.001
Na + K ppm	<30	<5
Alkalinity (HCO₃⁻) ppm	<200	-
Chloride Cl⁻ ppm	<50	-
Sulphate SO₄²⁻ ppm	<30	-
Hardness, total ppm as CaCO ₃	<375	-
Nitrate NO₃⁻ ppm	<20	-
Turbidity NTU	<0.5	-
Silica (SiO₂) ppm	<10	-
Iron, total (Fe) ppm	<0.05	-
KMnO₄-demand ppm	<10	-
TOC ppm	<2	-
Manganese, Mn ppm	<0.05	-
Aluminium Al³⁺ ppm	<0.05	-
Free Chlorine, Cl₂ ppm	<0.1	-
pH	6-8.5	6-8.5