Appendix B—Specifications for HG600/THG600 Series

Operating Specifications

Cylinder Data

Description	Cylinder Code					
	A	B	C	D	E	F
Cylinder Bore in. (mm)	8.0 (203.2)	6.0 (152.4)	5.0 (127)	4.0 (101.6)	3.25 (82.6)	2.75 (69.9)
Maximum allowable working pressure psia (bar g)	330 (22.8)	385 (26.5)	825 (56.9)	1,100 (75.8)	1,320 (91.0)	1,815 (125.1)
Piston ring radial thickness (minimum) inches (mm)	0.215 (5.46)	0.155 (3.98)	0.155 (3.98)	0.082 (2.08)	0.082 (2.08)	0.090 (2.29)

NOTE: The minimum inlet pressure is atmospheric pressure. The maximum working pressure for horizontal compressors is determined by cylinder size. Single-stage horizontal compressors begin with HG601 or THG601 and do not have an interstage section, thus no intermediate pressure. Two-stage units begin with HG602 or THG602 and have an interstage section with an intermediate pressure at a level between that of the inlet and outlet pressures.

Frame Data

Stroke inches (mm)	3.0 (76.2)
Maximum gas rod load lb (kg.)	7,500 (3,401.9)
Maximum motor size hp (kg.)	75 (55.9)
Maximum discharge temp °F (°C)[1]	350.6 (177)
Minimum temp °F (°C)[1]	-20 (-28.9)
RPM range	400 - 1,200

THG/HG600 Series Clearances and Dimensions

Specification	Inches
Piston clearance	See piston clearance details
Clearance: connecting rod bearing to crankshaft journal	0.0013 0.0033
Clearance: wrist pin to wrist pin bushing (maximum)[2]	0.001
Cylinder finish	16–32 RMS
Clearance: oil pump adapter shaft to bushing (maximum)[2]	0.0036
Crankshaft end play (cold)	0.002 0.003
Flywheel runout at O.D. (maximum)	0.020
Clearance: crosshead to crosshead guide bore (maximum)	0.008
Crosshead guide bore finish in crankcase	32 RMS (limited number of small pits and scratches are acceptable)

[1] Inlet, intermediate, and discharge operating temperatures vary based on the gas being handled, the compression ratio, compressor speed, type of coolant, and coolant flow rate. The type and size of intercoolers are also factors.
[2] Dimensions for honing are included with new bushings (which must be installed, then honed).

Appendix B—Specifications for HG600/THG600 Series

Single-stage Horizontal Compressors

Single Cylinder Models	HG601AX THG601AX	HG601BX THG601BX	HG601CX THG601CX	HG601DX THG601DX	HG601EX THG601EX	HG601FX THG601FX
Size	8"	6"	5"	4"	3.25"	2.75"
Displacement cfm (m^3/hr)						
400 rpm	68.8 (116.9)	38.4 (65.2)	26.4 (44.9)	16.8 (28.5)	10.8 (18.3)	7.4 (12.6)
1200 rpm	207.0 (351.7)	115.0 (195.4)	79.2 (134.4)	49.8 (84.6)	32.2 (54.5)	22.2 (37.7)
Approximate shipping weight lb. (kg.)						
HG model	730 (331.1)	650 (295.0)	640 (290.3)	630 (285.8)	620 (281.2)	620 (281.2)
THG model	780 (353.8)	700 (317.5)	690 (313.0)	680 (308.4)	670 (303.9)	670 (303.9)

Two Cylinder Models	HG601AA THG601AA	HG601BB THG601BB	HG601CC THG601CC	HG601DD THG601DD	HG601EE THG601EE	HG601FF THG601FF
Size	8" x 8"	6" x 6"	5" x 5"	4" x 4"	3.25" x 3.25"	2.75" x 2.75"
Displacement cfm (m^3/hr)						
400 rpm	138 (234.5)	76.8 (130.5)	52.8 (89.7)	33.2 (56.4)	21.2 (36.0)	14.8 (25.1)
1200 rpm	414 (704)	231 (393)	158.4 (268.8)	99.6 (169.2)	64 (108.7)	44.4 (75.6)
Approximate shipping weight lb. (kg.)						
HG model	1,070 (485.4)	910 (412.8)	890 (403.7)	870 (394.6)	845 (383.3)	845 (383.3)
THG model	1,170 (530.7)	1,010 (458.1)	990 (449.1)	970 (440.0)	945 (428.7)	945 (428.7)

Two-stage Horizontal Compressors

Two Cylinder Models	HG602AB THG602AB	HG602AC THG602AC	HG602AD THG602AD	HG602BC THG602BC	HG602BD THG602BD	HG602BF THG602BF
Size	8" x 6"	8" x 5"	8" x 4"	6" x 5"	6" x 4"	6" x 2.75"
Displacement cfm (m^3/hr)						
400 rpm	68.8 (116.9)	68.8 (116.9)	68.8 (116.9)	38.4 (65.2)	38.4 (65.2)	38.4 (65.2)
1200 rpm	207.0 (351.7)	207.0 (351.7)	207.0 (351.7)	115.0 (195.4)	115.0 (195.4)	115.0 (195.4)
Approximate shipping weight lb. (kg.)						
HG model	990 (449.1)	980 (444.5)	970 (440.0)	930 (421.9)	895 (406.0)	880 (399.2)
THG model	1,090 (494.4)	1,080 (489.9)	1,070 (485.4)	1,030 (467.2)	995 (451.3)	980 (444.5)

Two Cylinder Models	HG602BE THG602BE	HG602CD THG602CD	HG602CF THG602CF	HG602DE THG602DE	HG602DF THG602DF	HG602EF THG602EF
Size	6" x 3.25"	5" x 4"	5" x 2.75"	4" x 3.25"	4" x 2.75"	3.25" x 2.75"
Displacement cfm (m^3/hr)						
400 rpm	38.4 (65.2)	26.4 (44.9)	26.4 (44.9)	16.8 (28.5)	16.8 (28.5)	10.8 (18.3)
1200 rpm	115 (195.4)	79.2 (134.4)	79.2 (134.4)	49.8 (84.6)	49.8 (84.6)	32.2 (54.5)
Approximate shipping weight lb. (kg.)						
HG model	880 (399.2)	880 (399.2)	867 (393.3)	860 (390.1)	860 (390.1)	845 (383.3)
THG model	980 (444.5)	980 (444.5)	967 (438.6)	960 (435.5)	960 (435.5)	945 (428.7)

Appendix B—Specifications for HG600/THG600 Series

Machine mass

The machine mass varies with the compressor model and is shown in the following tables:

Horizontal Compressor Model	Machine Mass (kg.)	Horizontal Compressor Model	Machine Mass (kg.)
HG601AX	331	THG601AX	354
HG601BX	295	THG601BX	318
HG601CX	290	THG601CX	313
HG601DX	286	THG601DX	308
HG601EX	281	THG601EX	304
HG601FX	281	THG601FX	304
HG601AA	485	THG601AA	531
HG601BB	413	THG601BB	458
HG601CC	404	THG601CC	449
HG601DD	395	THG601DD	440
HG601EE	383	THG601EE	429
HG601FF	383	THG601FF	429
HG602AB	449	THG602AB	494
HG602AC	444	THG602AC	490

Horizontal Compressor Model	Machine Mass (kg.)	Horizontal Compressor Model	Machine Mass (kg.)
HG602AD	440	THG602AD	485
HG602AE	435	THG602AE	471
HG602AF	435	THG602AF	471
HG602BC	422	THG602BC	467
HG602BD	406	THG602BD	451
HG602BE	399	THG602BE	444
HG602BF	399	THG602BF	444
HG602CD	399	THG602CD	444
HG602CE	393	THG602CE	439
HG602CF	393	THG602CF	439
HG602DE	390	THG602DE	436
HG602DF	390	THG602DF	436
HG602EF	383	THG602EF	429

Noise Level

The noise level generated by the compressor unit on its own is < 85 dB(A) at 1 meter. The end user must take all necessary precautions dependent on the noise levels generated by the complete system.

Appendix B—Specifications for HG600/THG600 Series

Material Specifications

Part	Model No.	Standard Material	Optional Material
Crankcase	All	Ductile iron ASTM A536, Grade 80-55-06	
Adapters	All	Ductile iron ASTM A536, Grade 65-45-12	
Cylinders	All	Ductile iron ASTM A536, Grade 65-45-12	
Cylinder heads (adjustable and standard)	All	Ductile iron ASTM A536, Grade 65-45-12	
Valve caps	All	Ductile iron ASTM A536, Grade 65-45-12	
Bearing carrier	All	Gray iron ASTM A48, Class 30	
Flanges	All	Steel slip-on weld	
Valve bumper (guard)	All	Stainless steel	
Valve seat	All	Stainless steel	
Valve plates	2.75", 3.25", 4"	Stainless steel	
	5", 6"	PEEK	
Valve springs	All	Stainless steel	
Valve gaskets	2.75", 3.25", 4", 5", 6", 8"	Steel (industrial models)	
	6", 8"	Aluminum (LPG models)	
Pistons	2.75", 3.25", 4", 5"	Steel	
	6", 8"	Aluminum A356-T6	Ductile iron A536 Grade 65-45-12 (single stage only)
Piston rod	All	1045 Steel Nitrotec®[1]	
Crosshead	All	Gray iron ASTM A48, Class 30	
Connecting rod and packing cartridge	All	Ductile iron ASTM A536, Grade 65-45-12	
Piston rings	All	PTFE (glass and moly filled)	
Rider rings	All	PTFE (glass and moly filled)	
Packing: segmented rings	All	PTFE (carbon filled)	
Packing: segmented oil wiper rings	All	Brass	
Connecting rod bearing	All	Bimetal steel backing tinbase babbit plate	
Crankshaft	All	Ductile iron ASTM A536, Grade 80-55-06	
Wrist pin	All	Mild steel	
Wrist pin bushing	All	Bronze SAE 660	
Main bearings	All	Tapered roller	
Inspection plate	All	Carbon steel	
O-rings	All	Buna-N	PTFE, Viton®[2], Neoprene®[2]
Retainer rings	All	Carbon steel	
Lubricator tubing	Lube models	Steel	
Lubricator	Lube models	Force feed with divider block — no flow shutdown	

[1] Registered trademark of TTI Group Ltd.
[2] Registered trademark of the DuPont company.

Appendix B—Specifications for HG600/THG600 Series

Bolt Torque Values (in ft•lb)

Cylinder Size	2.75"	3.25"	4"	5"	6"	8"
Connection rod bolt	40	40	40	40	40	40
Bearing carrier	40	40	40	40	40	40
Bearing cover	40	40	40	40	40	40
Crankcase inspection plate	8	8	8	8	8	8
Adapter to crankcase or distance piece[1]	65	65	65	65	65	65
Distance piece to crankcase[1]	65	65	65	65	65	65
Cylinder to adapter[1]	65	65	65	65	65	65
Valve cover plate bolt	35	35	40	40	40	40
Valve holddown screw[2]	40	40	40	40	40	40
Piston nut torque	150	150	150	150	150	150
Piston screw torque	100	50	100	100	100	100
Valve unloader cap torque	25	25	25	25	25	25
Head to cylinder[1]	65	65	65	65	65	65

[1] Preliminary tightening: Snug all head bolts in the sequence show. Final tightening: Torque all head bolts in the sequence shown to the value listed above.
[2] Retorque to the value listed above after 2 to 5 hours of running time.

Horizontal Compressor Bolt Tightening Sequence