APPLICATION AND INSTALLATION GUIDE

TECHNICAL INFORMATION
3600 DIESEL ENGINES

3606 • 3608
3612 • 3616

CATERPILLAR®

Contents

Foreword

This section of the Application and Installation Guide lists Technical Information for Caterpillar® engines listed on the cover of this section. Additional engine systems, components and dynamics are addressed in other sections of this Application and Installation Guide.

Engine-specific information and data are available from a variety of sources. Refer to the Introduction section of this guide for additional references.

Systems and components described in this guide may not be available or applicable for every engine.

Technical Information – 3600 Diesel Engines

This guide provides technical data for the Caterpillar 3600 engine family. At the time of publishing, this data is correct; updates will be included periodically and this section republished. Dealers may use the Technical Marketing Information system for the most current data.

SECTION CONTENTS

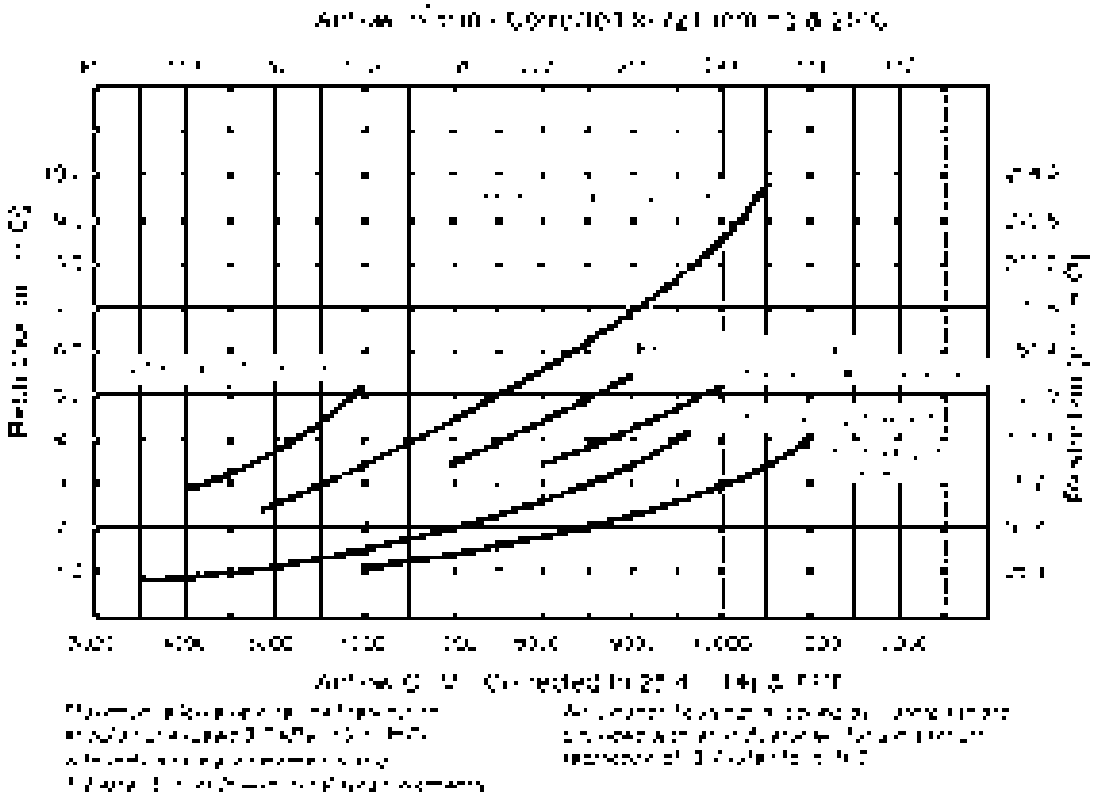
General Data

System Description Metric (English)	3606	3608	3612	3616
Cylinder Bore mm (in)	280 (11)	280 (11)	280 (11)	280 (11)
Stroke mm (in)	300 (11.8)	300 (11.8)	300 (11.8)	300 (11.8)
Displacement/Cylinder L (in^3)	18.5 (1127)	18.5 (1127)	18.5 (1127)	18.5 (1127)
Firing Pressure, maximum (Continuous/CSR) kPa (psi)	16,200 (2350)	16,200 (2350)	16,200 (2350)	16,200 (2350)
Firing Pressure, maximum (Prime Power/MCR) kPa (psi)	17,334 (2514)	17,334 (2514)	17,334 (2514)	17,334 (2514)
Firing Pressure, maximum (Standby) kPa (psi)	18,500 (2684)	18,500 (2684)	18,500 (2684)	18,500 (2684)
Rated Speed rpm	700 to 1000	700 to 1000	700 to 1000	700 to 1000
Mean Piston Speed m/s (ft/s)	7.2 – 10.0 (23.6 – 32.8)	7.2 – 10.0 (23.6 – 32.8)	7.2 – 10.0 (23.6 – 32.8)	7.2 – 10.0 (23.6 – 32.8)
Idle speed (low) rpm	300 to 400	300 to 400	300 to 400	300 to 400
Idle speed (high) rpm	720 to 1000	720 to 1000	720 to 1000	720 to 1000
Firing Order – CCW	1-5-3-6-2-4	1-6-2-5-8-3-7-4	1-12-9-4-5-8-11-2-3-10-7-6	1-2-5-6-3-4-9-10 -15-16-11-12-13-14-7-8
Firing Order – CW	1-4-2-6-3-5	1-4-7-3-8-5-2-6	1-6-7-10-3-2-11-8-5-4-9-12	1-8-7-14-13-12-11-15 -16-10-9-4-3-6-5-2
Wet weight kg (lb)	16,804 (36,775)	20,221 (44,486)	26,848 (59,065)	32,104 (70,489)
Dry weight kg (lb)	15,680 (34,500)	19,000 (41,800)	25,140 (55,300)	29,950 (65,900)
Center of Gravity Distance from Cylinder Block Rear Face mm (in)	1290 (50.8)	1700 (66.9)	1411 (55.6)	1858 (73.1)
Vertical Distance Above Crankshaft Centerline mm (in)	350 (13.8)	350 (13.8)	380 (14.9)	380 (14.9)
Transverse Distance from Crankshaft Centerline	On Crank Center	On Crank Center	On Crank Center	On Crank Center
NOTE: Center of gravity locations apply to dry runable engines.				

Combustion Air System

System Description Metric (English)	3606	3608	3612	3616
Air Temperature @ Air Cleaner, maximum °C (°F)	45 (113)	45 (113)	45 (113)	45 (113)
Air Temperature After Aftercooler (Inlet Manifold), HPAC (50°C water) alarm °C (°F)	78 (172)	78 (172)	78 (172)	78 (172)
Air Temperature After Aftercooler (Inlet Manifold), HPAC (32°C water) alarm °C (°F)	61 (142)	61 (142)	61 (142)	61 (142)
Air Inlet Restriction, new/maximum mm H_2O (in H_2O)	125/380 (5/15)	125/380 (5/15)	125/380 (5/15)	125/380 (5/15)
Aftercooler Pressure Difference @ 100% Load, clean state kPa (psi)	3.4 (0.5)	3.4 (0.5)	3.4 (0.5)	3.4 (0.5)

Air Cleaner Performance Curves



Air Cleaner Weight and Capacity, kg (lb)					
		Clean Element Weight	Dirt Retention Capacity	Total Weight Including Housing	
Duty	Quantity Elements	(Each)	(Each)	Clean	Dirty
Low Volume	2	6.4 (14)	29 (64)	252 (554)	290 (638)
High Volume	3	6.4 (14)	29 (64)	520 (1144)	584 (1285)

Loading on Turbocharger Inlet, Maximum

Maximum Loads for ABB VTC Turbocharger Intake

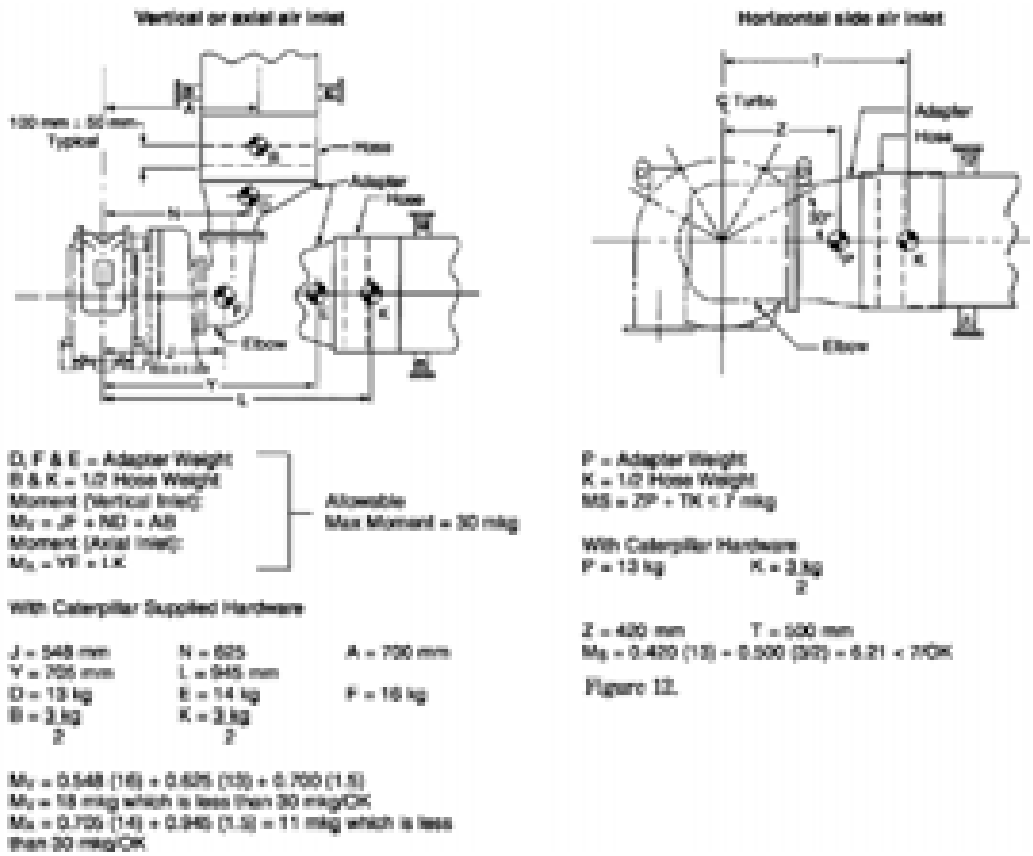


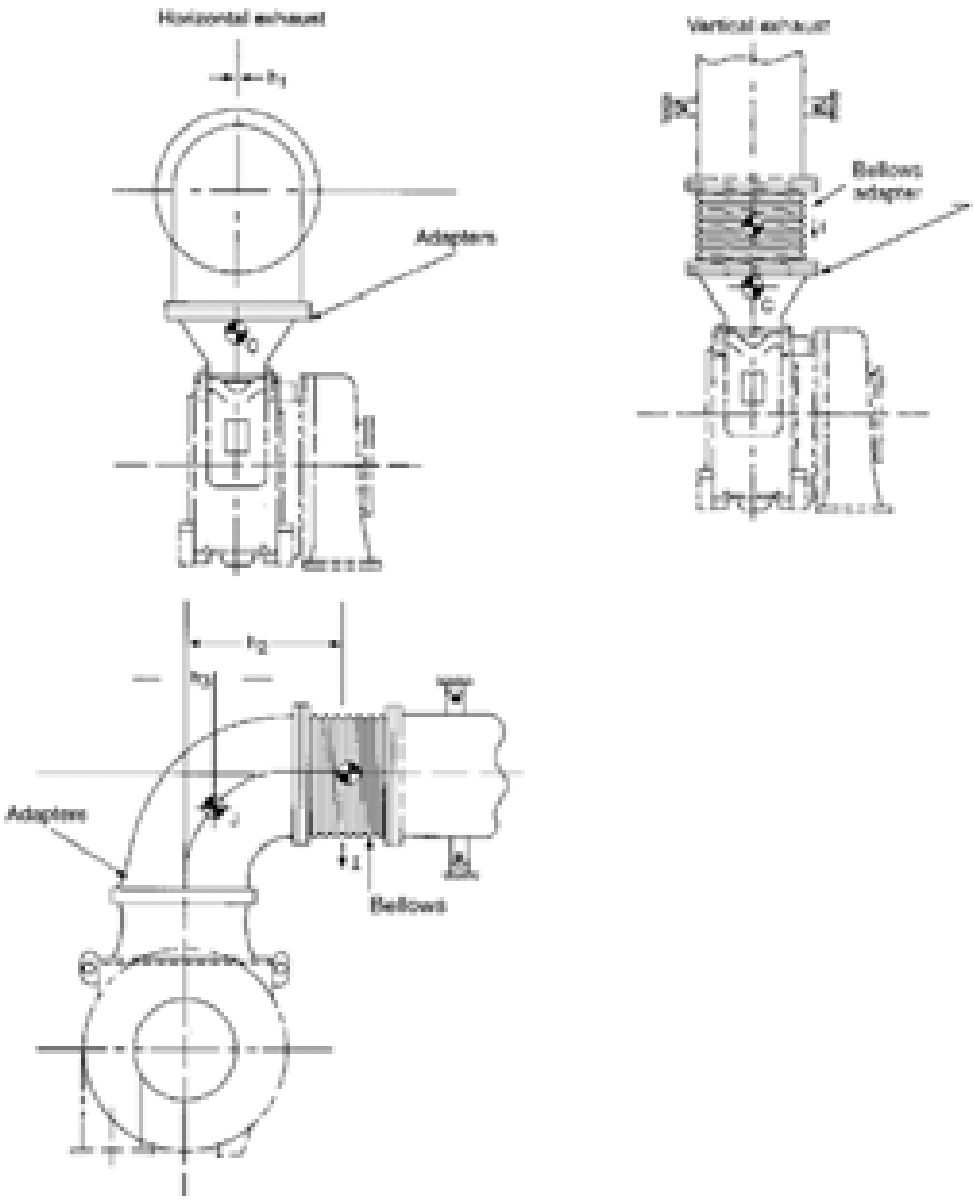
Figure 12.

Exhaust Gas System

System Description Metric (English)	3606	3608	3612	3616
Exhaust System Backpressure, maximum mm H_2O (in H_2O)	254 (10)	254 (10)	254 (10)	254 (10)
Loading on Turbocharger Outlet, Maximum	For 3600/G3600 series engines, the Caterpillar supplied bellows and adapter, or elbow and bellows options, account for the maximum allowable loading on the turbocharger. All other external piping must be self-supporting.			

Loading on Turbocharger Outlet, Maximum

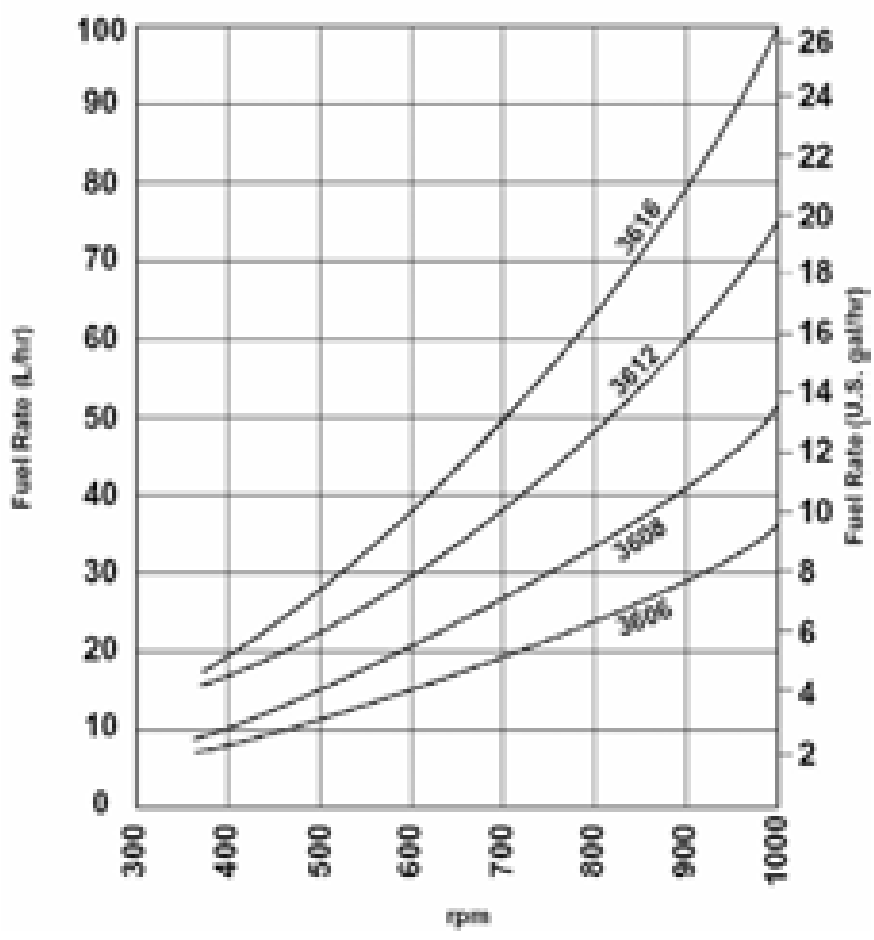
Vertical and Horizontal Exhaust



Fuel System

System Description Metric (English)	3606	3608	3612	3616
Pump Suction Restriction, maximum kPa (psi)	–20 (–2.9)	–20 (–2.9)	–20 (–2.9)	–20 (–2.9)
Return Line Backpressure, maximum kPa (psi)	350 (51)	350 (51)	350 (51)	350 (51)
Manifold Pressure @ 100% Load kPa (psi)	430 – 676 (62.4 – 98)	430 – 676 (62.4 – 98)	430 – 676 (62.4 – 98)	430 – 676 (62.4 – 98)
Emergency Fuel Pump Flow Rate Lpm (gpm)	42 (11)	42 (11)	79 (21)	79 (21)
Fuel Cooler Inlet Temperature Limit °C (°F)	66 (150)	66 (150)	66 (150)	66 (150)

Engine Idle Fuel Rates



Fuel Cooler Fuel Flow & Heat Rejection			
3600 Engine Fuel Flow			
	Rated Speed rpm	**Fuel Flow to Engine L/min (gal/min)**	**Fuel Heat Rejection Without Injector Tip Cooling kW (Btu/min)**
3606	1000	41.5 (11.0)	12.5 (712)
	900	38.0 (10.0)	11.0 (626)
	750	31.5 (8.3)	10.5 (598)
	720	30.0 (7.9)	10.0 (567)
3608	1000	41.5 (11.0)	16.7 (951)
	900	38.0 (10.0)	14.6 (831)
	750	31.5 (8.3)	14.0 (797)
	720	30.0 (7.9)	13.3 (757)
3612	1000	78.5 (20.7)	25.0 (1423)
	900	72.0 (19.0)	22.0 (1252)
	750	61.2 (16.2	20.2 (1150)
	720	58.1 (15.3)	19.1 (1087)
3616	1000	78.5 (20.7)	33.3 (1895)
	900	72.0 (19.0)	29.3 (1668)
	750	61.2 (16.2	26.9 (1531)
	720	58.1 (15.3)	25.4 (1446)

Maximum inlet restriction on pump = -39 kPa (-5.7 psi).
Maximum return line restriction = 350 kPa (51 psi) at rated speed.
Fuel flow to fuel cooler = fuel flow to engine – fuel consumed (engine specific).

Lubricating Oil System

System Description Metric (English)	3606	3608	3612	3616
Manifold Pressure, nominal kPa (psi)	380 (55)	380 (55)	380 (55)	380 (55)
Manifold Pressure, alarm (650 – 1000 rpm) kPa (psi)	320 (46)	320 (46)	320 (46)	320 (46)
Manifold Pressure, alarm (0 – 650 rpm) kPa (psi)	120 (17)	120 (17)	120 (17)	120 (17)
Manifold Pressure, stop (650 – 1000 rpm) kPa (psi)	260 (38)	260 (38)	260 (38)	260 (38)
Manifold Pressure, stop (0 – 650 rpm) kPa (psi)	105 (15)	105 (15)	105 (15)	105 (15)
Manifold Temperature, alarm °C (°F)	92 (198)	92 (198)	92 (198)	92 (198)
Manifold Temperature, stop °C (°F)	98 (208)	98 (208)	98 (208)	98 (208)
Manifold Temperature, nominal °C (°F)	85 (185)	85 (185)	85 (185)	85 (185)
Prelube Pump Capacity, intermittent (pneumatic) Lpm (gpm)	76 (20)	76 (20)	76 (20)	76 (20)
Prelube Pump Capacity, intermittent (electric) Lpm (gpm)	50 – 65 (13 – 17)	50 – 65 (13 – 17)	50 – 65 (13 – 17)	50 – 65 (13 – 17)
Prelube Pump Capacity, continuous Lpm (gpm)	23 (6)	23 (6)	23 (6)	23 (6)
BSOC @ 100% Load, typical g/bkW-hr (lb/bhp-hr)	0.7 (0.0012)	0.7 (0.0012)	0.7 (0.0012)	0.7 (0.0012)
Lube Oil Filter Differential Pressure, maximum kPa (psi)	104 (15)	104 (15)	104 (15)	104 (15)
Lube Oil Flow Lpm (gpm)	577 (152)	728 (192)	868 (229)	1117 (295)
Emergency Oil Pump Flow Rate Lpm (gpm)	750 (198)	770 (203)	890 (235)	1200 (317)

Lube Oil Capacities and Oil Change Intervals for 3600 (Distillate Fuel)						
Engine	Industrial Engines and Generator Set Engines		Marine Engines (Zero Degree Tilt)		Engines with Shallow Oil Pan for Restricted Clearance Applications	
	Lube Oil Capacity[1] L (US gal)	Oil Change Interval[2] Service Hours	Lube Oil Capacity[1] L (US gal)	Oil Change Interval[2] Service Hours	Lube Oil Capacity[1] L (US gal)	Oil Change Interval[2] Service Hours
3606	830 (229)	1400	731 (190)	1000	784 (207)	1250
3608	1112 (289)	1350	795 (207)	900		
3612	1302 (339)	1000	943 (245)	800	946 (250)	800
3616	1677 (443)	1000	1051(284)	600		

(1) The capacity includes the oil sump plus oil filters that are installed at the factory. Engines with auxiliary oil filters will require additional oil. The capacity is approximate. The actual capacity may vary by 5 percent. Caterpillar recommends using the capacity that is listed and then adjusting the oil level according to the oil level gauge (dipstick).

(2) Use this oil change interval in the absence of oil analysis.

Tilt Angle Capability

Continuous Tilt Angle Capability	Marine Propulsion	Marine Auxiliary
Tilt Criteria	+/- 10° Trim & +/- 22.5° List (any combination)	+/- 10° Trim & +/- 22.5° List (any combination)
	Installation Angle / Rear Down (Degrees)	Level Installation
Engine Model	0 1 2 3 4 5	
3606	X X X X X X	X
3608	X X X S S S	X
3612	X X X X X X	X
(Standard Pan)		
3612	Y Y Y Y Y D	Y
(Shallow Pan)		
3616	X X X X S S	X

X = Standard Sump, capable of meeting the indicated tilt criteria.

Y = Optional Sump for 3612, capable of meeting the indicated tilt criteria.

S = Requires increased depth oil sump (special order)

D = Requires Dry Sump option to achieve the indicated tilt criteria.

Note: If the sump engine is installed at >0° tilt, it will reduce oil capacity and reduce the oil change interval. Consult Caterpillar for specific details.

Cooling Water System

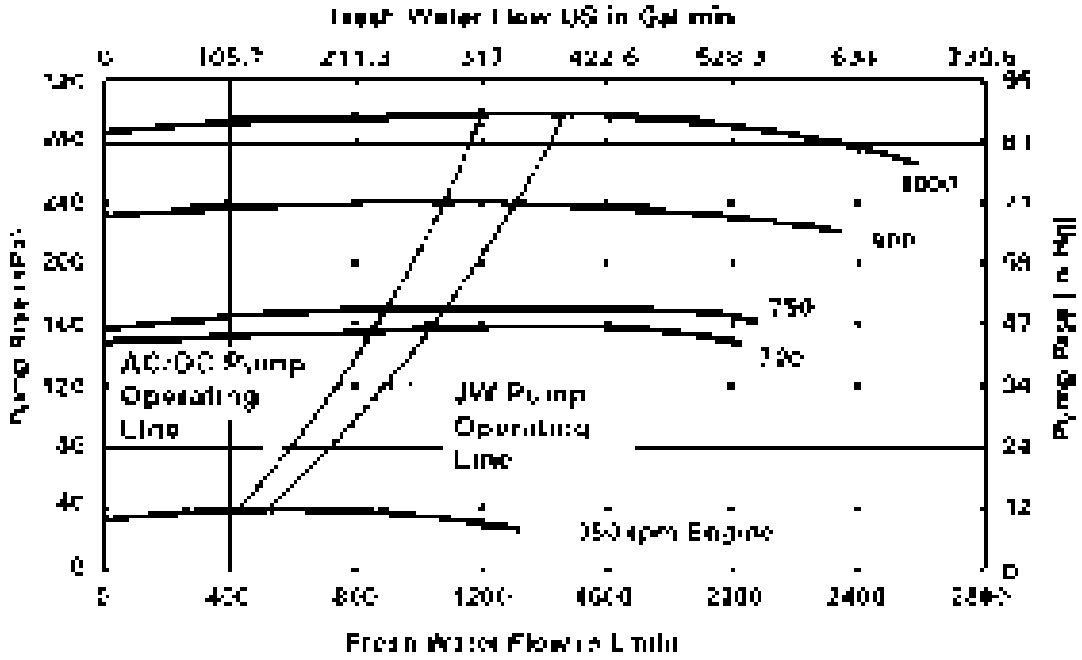
Block Cooling

System Description Metric (English)	3606	3608	3612	3616
Inlet Temperature, nominal °C (°F)	90 (194)	90 (194)	90 (194)	90 (194)
Inlet Temperature, maximum °C (°F)	95 (203)	95 (203)	95 (203)	95 (203)
Inlet Temperature, minimum °C (°F)	83 (181)	83 (181)	83 (181)	83 (181)
Outlet Temp Before Regulator, maximum °C (°F)	99 (210)	99 (210)	99 (210)	99 (210)
Outlet Temperature, alarm °C (°F)	103 (217)	103 (217)	103 (217)	103 (217)
Outlet Temperature, stop °C (°F)	109 (228)	109 (228)	109 (228)	109 (228)
Minimum System Pressure, alarm kPa (psi)	70 (10)	70 (10)	70 (10)	70 (10)
Pump Inlet Pressure, minimum kPa (psi)	30 (4.3)	30 (4.3)	30 (4.3)	30 (4.3)

Water Pump Capacity & Water Pump Rise								
	AC/OC Pump @ 32°C-				JW Pump @ 90°C			
	Flow		Rise		Flow		Rise	
	L/min	gpm	kPa	psi	L/min	gpm	kPa	psi
3606/3608								
1000 rpm	1200	317	295	42.8	1460	385	295	42.8
900 rpm	1080	285	240	34.8	1315	347	240	34.8
750 rpm	900	238	170	24.7	1095	289	170	24.7
720 rpm	860	227	160	23.2	1050	277	160	23.2
3612/3616								
1000 rpm	1730	457	305	44.3	2920	771	290	42.1
900 rpm	1560	412	245	35.6	2630	694	240	34.8
750 rpm	1300	343	170	24.7	2190	578	170	24.7
720 rpm	1250	330	160	23.2	2100	554	155	22.5

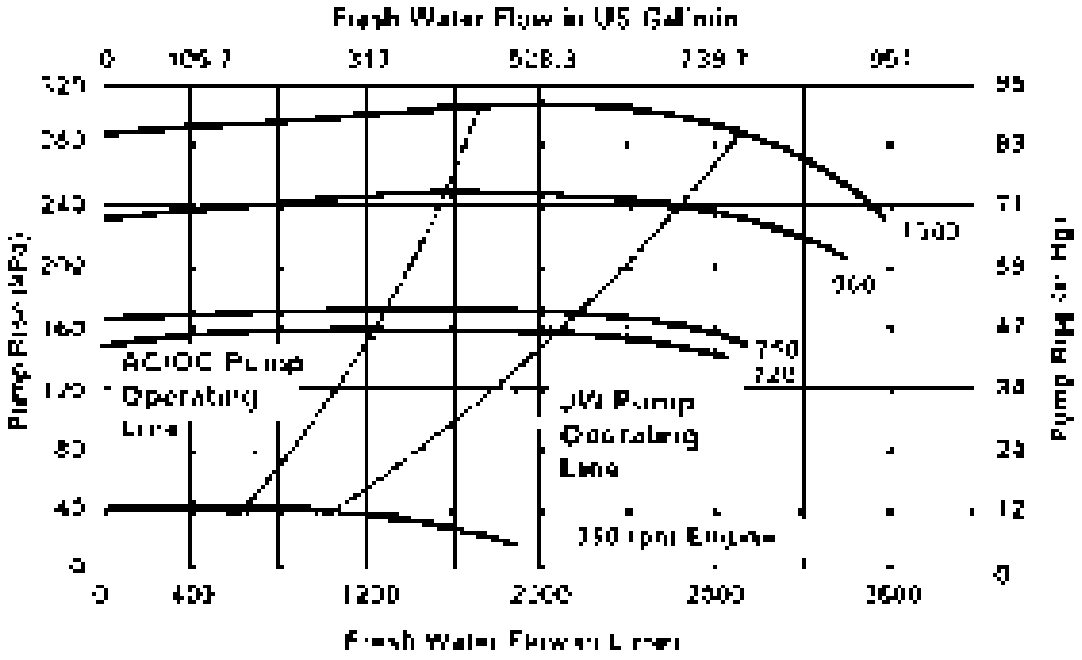
Water Pump Performance

3606 & 3608 Engines



Water Pump Performance

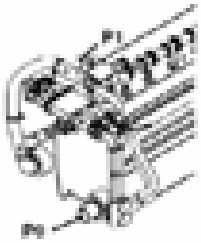
3606 & 3608 Engines



External Cooling System Pressure Drop

3606 and 3608 Combined Circuit

External Circuit Resistance, kPa (psi)



Engine Speed rpm	Low Temperature Circuit Δ P (P1-P2)	High Temperature Circuit Δ P (P3-P4)
1000	91 (13)	—
900	71 (10)	—
750	45 (6.5)	—
720	40 (5.8)	—
Tolerance:	± 10%	—

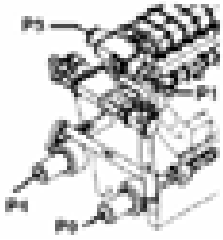
3606 and 3608 Separate Circuit

1000	104 (15)	99 (14)
900	84(12)	77 (11)
750	58 (8)	50 (7)
720	52 (7.5)	44 (6)
Tolerance:	± 10%	± 10%

3612 and 3616 Combined Circuit

1000	85 (12)	—
900	66 (9.6)	—
750	42 (6)	—
720	38 (5.5)	—
Tolerance:	± 10%	—

3612 and 3616 Separate Circuit



1000	85 (12)	103 (15)
900	66 (9.6)	81 (12)
750	42 (6)	52 (7.5)
720	38 (5.5)	47 (7)
Tolerance:	± 10%	± 10%

NOTE: The above external resistance settings must be made with blocked-open regulators to assure full heat exchanger flow. Refer to Engine Data Sheet Cooling System Field Test.

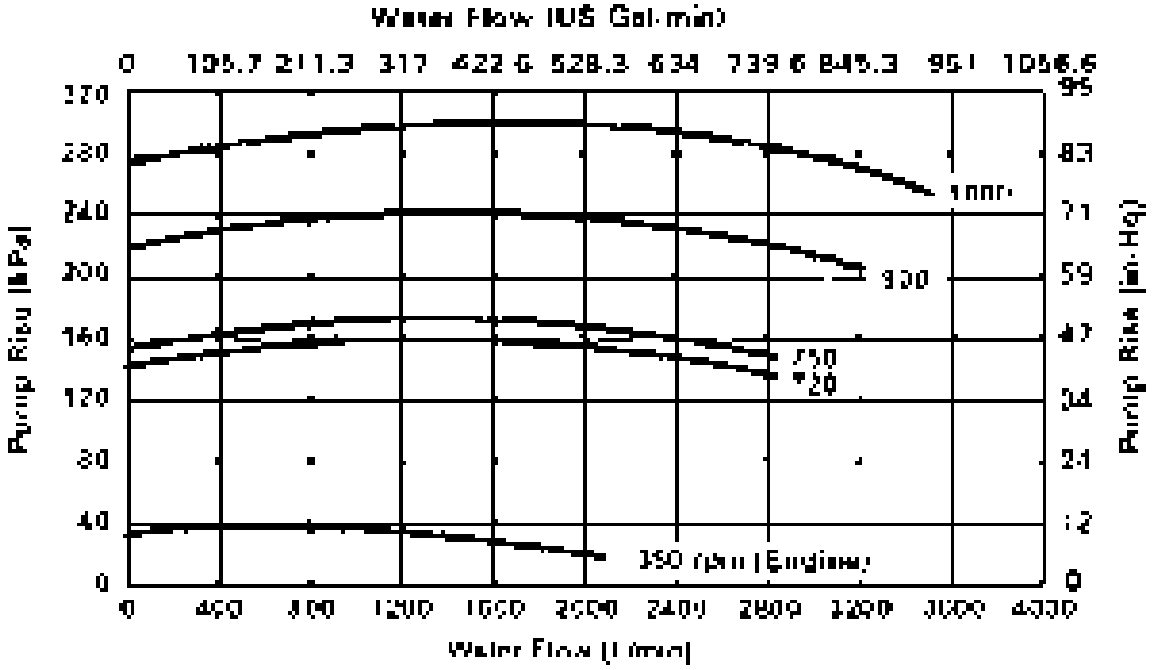
NOTE: A lockable plug valve is preferred for setting external resistance. A plate type orifice or other adjustable valve may be used, but it must not include an elastomer seal element.

Sea Water Cooling

System Description Metric (English)	3606	3608	3612	3616
Minimum System Pressure, alarm kPa (psi)	70 (10)	70 (10)	70 (10)	70 (10)

Pump Rise and Pump Capacity

3600 Auxiliary Water Pump

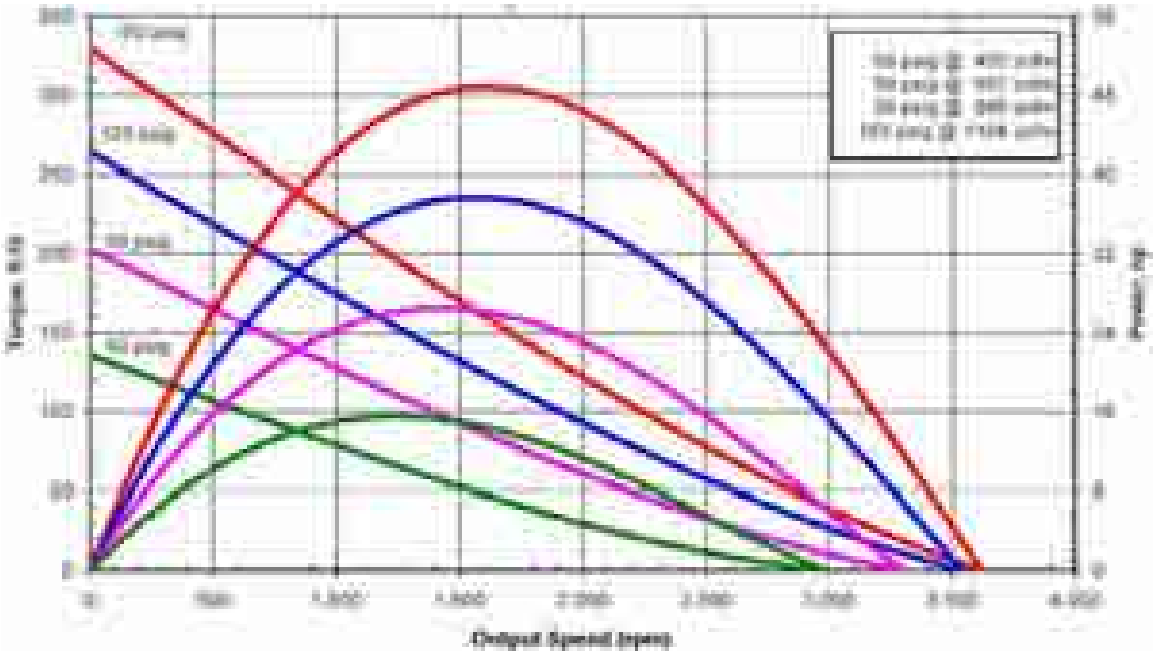


Starting Air System

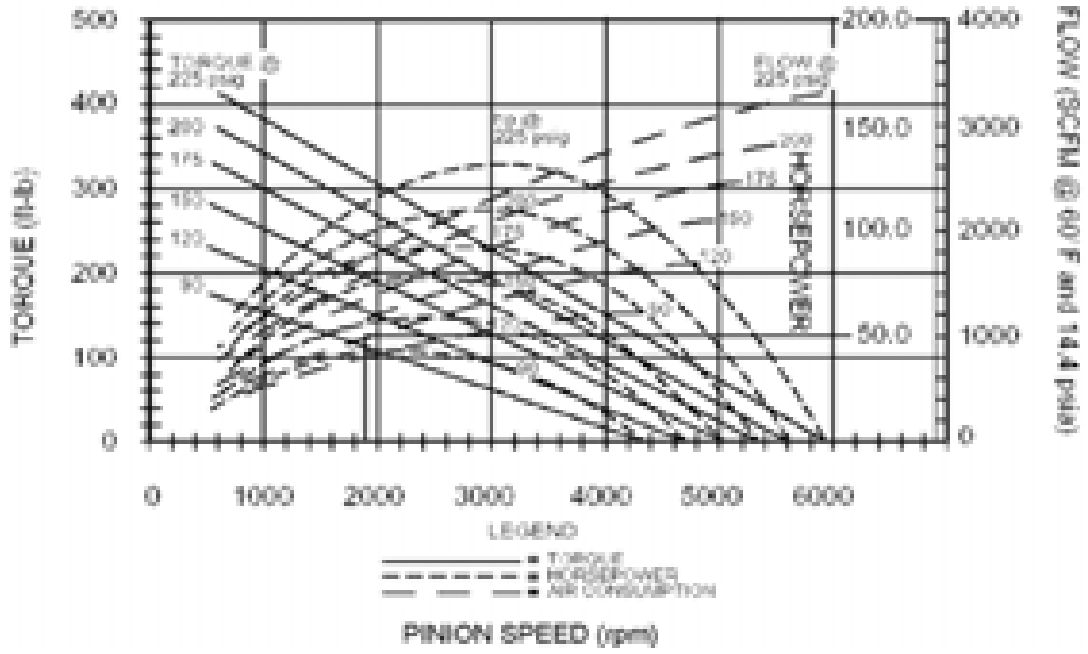
System Description Metric (English)	3606	3608	3612	3616
Air Pressure, nominal kPa (psi)	1225 (175)	1225 (175)	1225 (175)	1225 (175)
Air Pressure, minimum kPa (psi)	620 (90)	620 (90)	620 (90)	620 (90)
Air Pressure, maximum (Vane Starters) kPa (psi)	1575 (225)	1575 (225)	1575 (225)	1575 (225)
Air Pressure, maximum (TDI Starters)	1035 (150)	1035 (150)	1035 (150)	1035 (150)
Low Air Pressure, alarm kPa (psi)	750 (109)	750 (109)	750 (109)	750 (109)

Turbine Starter Performance Curves

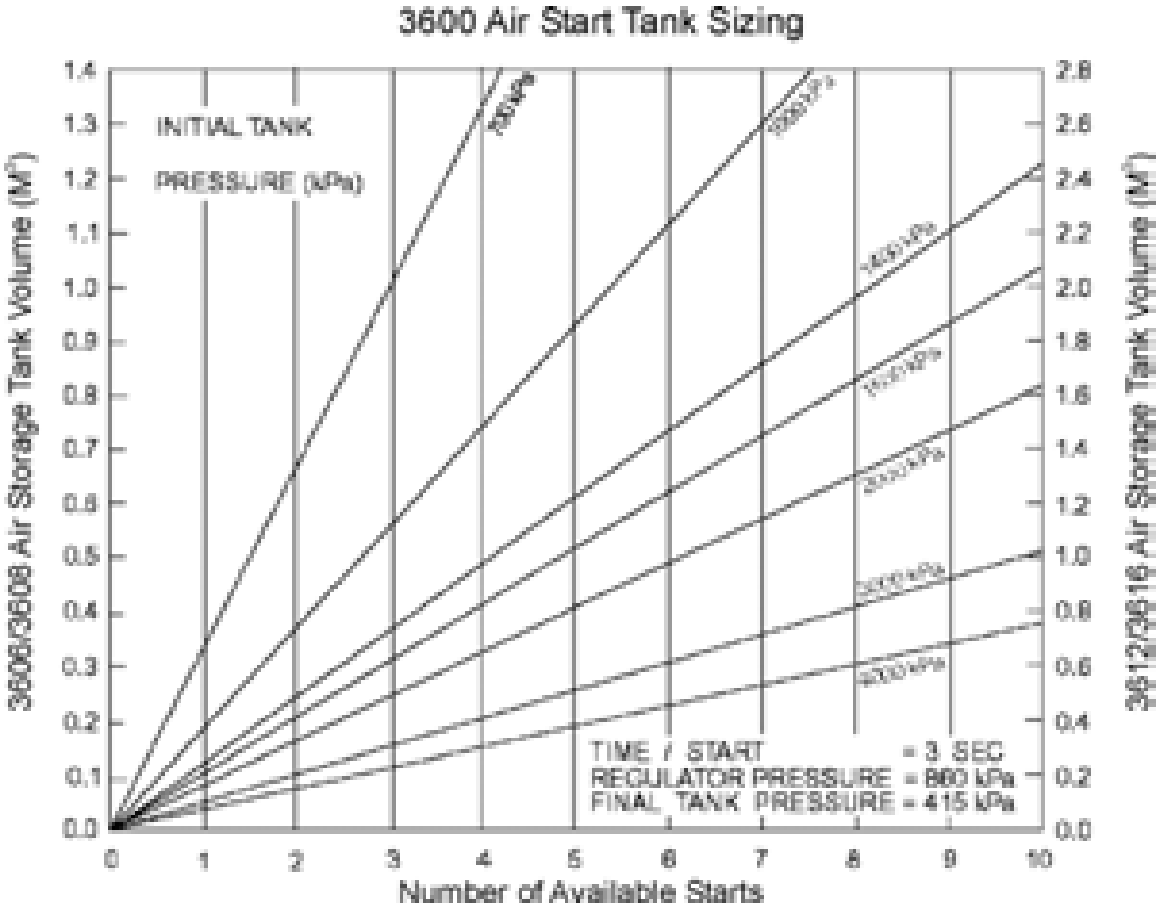
Model: T109V Performance Curve
9 Nozzles, Compressed Air, 11.7:1 Ratio



Vane Starter Performance Curves



Air Start Tank Sizing



Starter Pressures and Flows

Static Regulator Outlet Pressure kPag (psig)	Estimated Dynamic Pressure at the Starter kPag (psig)	Air Flow Capacity Per Starter L/sec (SCFM)
862 (125	620 – 655 (90 – 95)	400 (720)
1550 (225)	1172 (170)	615 (1300)

Power Supply Requirements

System Description Metric (English)	3606	3608	3612	3616
Jacket Water Heater (Optional) kW (Btu/min)	18 (1024)	18 (1024)	18 (1024)	18 (1024)
Lube Oil Heater (Optional) kW (Btu/min)	9 (512)	9 (512)	9 (512)	9 (512)
Combination Jacket Water/Lube Oil Heater (Optional) kW (Btu/min)	18/9 (1024/512)	18/9 (1024/512)	18/9 (1024/512)	18/9 (1024/512)

Additional Data

Torsional Vibration Analysis Information

Marine Applications

Marine Propulsion Damper Criteria					Marine Auxiliary Damper Criteria				
rpm	3606	3608	3612	3616	rpm	3606	3608	3612	3616
750	A1	A2		B3	720	A1	A2	B1	B3
800	A1	A2	C2	B3	750	A1	A2	B1	B3
900	A1	C1	C2	B3	900	A1	C1	C2	A3
1000	A1	C1	C2	B3	1000	A1	C1	C2	A3

Two bearing generators only.

Damper Data	A1	A2	A3	B1	B2	B3	C1	C2
Lumped mass J*	6.1	6.1	6.1	23.1	23.1	23.1	26.2	26.2
Separated Damper Data								
Damper Housing J*	3.2	3.2	3.2	8.6	8.6	8.6	11.6	11.6
Damper Flywheel J	5.8	5.8	5.8	28.9	28.9	28.9	29.2	29.2
Damper Constant C	1243	1000	1550	5100	6600	8100	14123	7000
Damper Rigidity K	0.73	0.41	0.60	1.80	1.60	1.35	4.52	2.85

* Add to Front of Crank
J (N•m -sec2)
K (N•m x 106/radian)
C (N•m-sec sec/radian)

EPG Applications

Application	Rated Speed (rpm)	Engines			
		3606	3608	3612	3616
Two bearing	720	A	B	E	H
Two bearing	750	A	B	E	H
Two bearing	900	A	C	F	I
Two bearing	1000	A	C	F	I
Single bearing	720	A	D	F	J
Single bearing	750	A	D	F	J
Single bearing	900	A	D	G	J
Single bearing	1000	A	D	G	J

Damper Data	A	B	C	D	E	F	G	H	I	J
Lumped mass J*	6.56	6.56	29.29	46.15	22.82	26.29	22.82	22.82	6.56	22.82
Separated Damper Data										
Damper Housing J*	3.64	3.64	11.69	17.25	8.37	11.69	8.37	8.37	3.64	8.37
Damper Flywheel J*	5.84	5.84	29.2	57.80	28.90	29.20	28.90	28.90	5.84	28.90
Damper Constant C	1243	1000	14123	22500	5100	7000	6600	7500	1500	8100
Damper Rigidity K	0.73	0.41	4.52	6.50	1.80	2.85	1.60	1.48	0.60	1.35

* Add to Front of Crank J (N•m sec) K (N•m x 10^6/radian) C (N•m sec/radian)

Torsional Calculation Values

- Reciprocating Mass per Cylinder = 68.36 kg (150.71 lb)
- Rotating Mass per Cylinder = 39.61 kg (87.33 lb)
- Connecting Rod Length (between pin centers) = 600 mm (23.62 in)

Cyclic Irregularity

Calculated Cyclic Irregularities		
	Speed-rpm	
Engine	900	1000
3606	1:152	1:188
3608	1:145	1:179
3612	1:254	1:314
3616	1:450	1:556

Empirical Damping

Engine	N•m sec per radian
3606	384
3608	441
3612	531
3616	531

Note: The damping values for the inline engines are for each cylinder; the 3612 and 3616 damping values are for a pair of cylinders since the vee engines have two cylinders on each crankshaft throw.

Flywheel Inertia Data

Most marine propulsion applications use the high inertia flywheel to allow the use of a single element torsional coupling. A lighter weight standard flywheel is also available. Inertia valves include the ring gear and should be added to the rear crank inertia.

- Standard Flywheel Inertia = 74.90 N•m sec^2
- High Inertia Flywheel; = 140.29 N•m sec^2

For Harmonic Component of Tangential Pressure, see TD3310 at the bottom of each TVA table.

Torsional Vibration Data – Model 3606

Degrees to Firing After #1 Fires		Engine	J	K	Minimum Diameter
CW (Reverse) Rotation	CCW (Standard) Rotation				
		Front Crank	5.4652		
		|		72.53	216
0	0	Cylinder #1	9.743		
		|		42.85	216
240	480	Cylinder #2	8.685		
		|		42.85	216
480	240	Cylinder #3	8.685		
		|		42.85	216
120	600	Cylinder #4	8.685		
		|		42.85	216
600	120	Cylinder #5	8.685		
		|		42.85	216
360	360	Cylinder #6	9.743		
		|		72.53	216
		Rear Crank	5.8060		

J = N•m sec^2

K = N•m x 10^6 /radian

C = N•m sec/radian

Diameter in millimeters

Total Inertia without Flywheel and Damper: J = 65.50 N•m sec^2

For Harmonic Component of Tangential Pressure, see TD3310 at the bottom of each TVA table.

Torsional Vibration Data – Model 3608

Front Driven Equipment					
3608 Mass Elastic System					
Degrees to Firing After #1 Fires		Engine	J	K	Minimum Diameter
CW (Reverse) Rotation	CCW (Standard) Rotation				
		Front Crank	5.6452		
		|		69.28	216
0	0	Cylinder #1	9.434		
		|		41.50	216
540	180	Cylinder #2	8.997		
		|		41.50	216
270	450	Cylinder #3	8.997		
		|		41.50	216
90	630	Cylinder #4	8.997		
		|		41.50	216
450	270	Cylinder #5	8.997		
		|		41.50	216
630	90	Cylinder #6	8.997		
		|		41.50	216
180	540	Cylinder #7	8.997		
		|		41.50	216
360	360	Cylinder #8	9.434		
		|		69.28	216
		Rear Crank	5.9203		

J = N•m sec^2

K = N•m x 10^6 /radian

C = N•m sec/radian

Diameter in millimeters

Total Inertia without Flywheel and Damper: J = 84.42 N•m sec^2

For Harmonic component of Tangential Pressure, see TD3310 at the bottom of each TVA table.

Torsional Vibration Data – Model 3612

Degrees to Firing After #1 Fires				Engine	J	K	Minimum Diameter
CW (Reversed) Rotation		CCW (Standard) Rotation					
				Front Crank	5.6452		
				|		67.79	216
1R-0	1L-290	1R-0	1L-410	Cylinder #1	17.00		
				|		40.11	216
2R-240	2L-530	2R-480	2L-170	Cylinder #2	16.31		
				|		40.11	216
3R-480	3L-50	3R-240	3L-650	Cylinder #3	16.31		
				|		40.11	216
4R120	4L-410	4R-600	4L-290	Cylinder #4	16.31		
				|		40.11	216
5R-600	5L-170	5R-120	5L-530	Cylinder #5	16.31		
				|		40.11	216
6R-310	6L-650	6R-360	6L-50	Cylinder #6	17.00		
				|		67.79	216
				Rear Crank	5.8263		

J = N•m sec^2

K = N•m x 10^6 /radian

C = N•m sec/radian

Diameter in millimeters

Total Inertia without Flywheel and Damper: J = 110.71 N•m sec^2

For Harmonic component of Tangential Pressure, see TD3310 at the bottom of each TVA table.

Torsional Vibration Data – Model 3616

Degrees to Firing After #1 Fires				Engine	J	K	Minimum Diameter
CW (Reversed) Rotation		CCW (Standard) Rotation					
				Front Crank	5.6452		
				|		67.79	216
1R-0	1L-680	1R-0	1L-50	Cylinder #1	17.17		
				|		40.11	216
2R-540	2L-500	2R-180	2L-230	Cylinder #2	16.50		
				|		40.11	216
3R-630	3L-590	3R-90	3L-140	Cylinder #3	16.50		
				|		40.11	216
4R-90	4L-50	4R-630	4L-680	Cylinder #4	16.50		
				|		40.11	216
5R-450	5L-410	5R-270	5L-320	Cylinder #5	16.50		
				|		40.11	216
6R-270	6L-230	6R-450	6L-500	Cylinder #6	16.50		
				|		40.11	216
7R-180	7L-140	7R-540	7L-590	Cylinder #7	16.50		
				|		40.11	216
8R-360	8L-320	8R360	8L-410	Cylinder #8	17.17		
				|		67.79	216
				Rear Crank	5.8263		

J = N•m sec^2

K = N•m x 10^6 /radian

C = N•m sec/radian

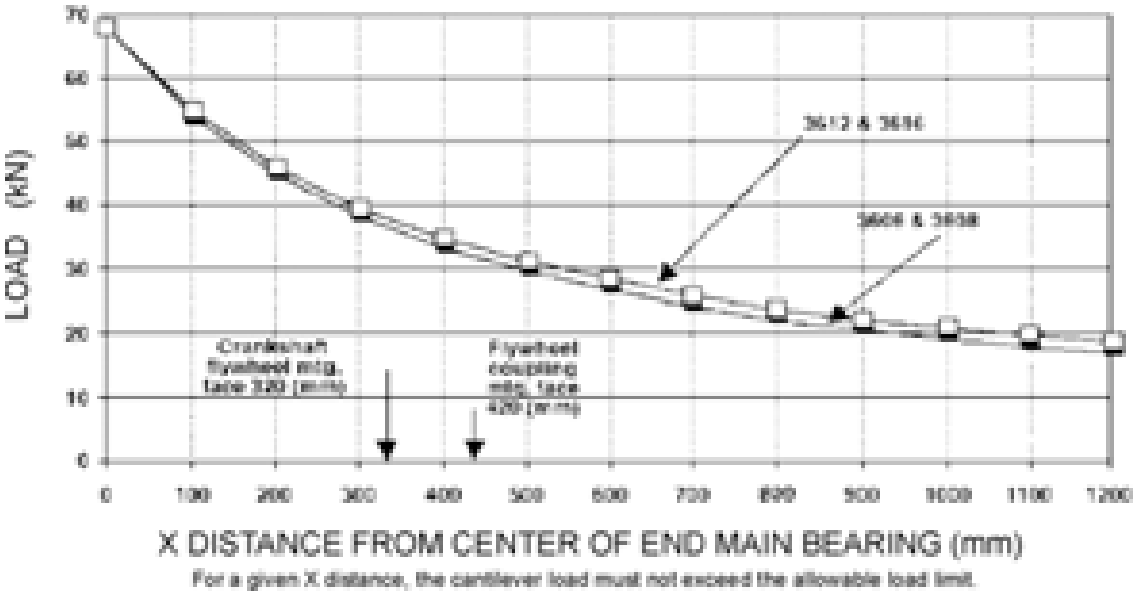
Diameter in millimeters

Total Inertia without Flywheel and Damper: J = 144.81 N•m sec^2

For Harmonic component of Tangential Pressure, see TD3310 at the bottom of each TVA table.

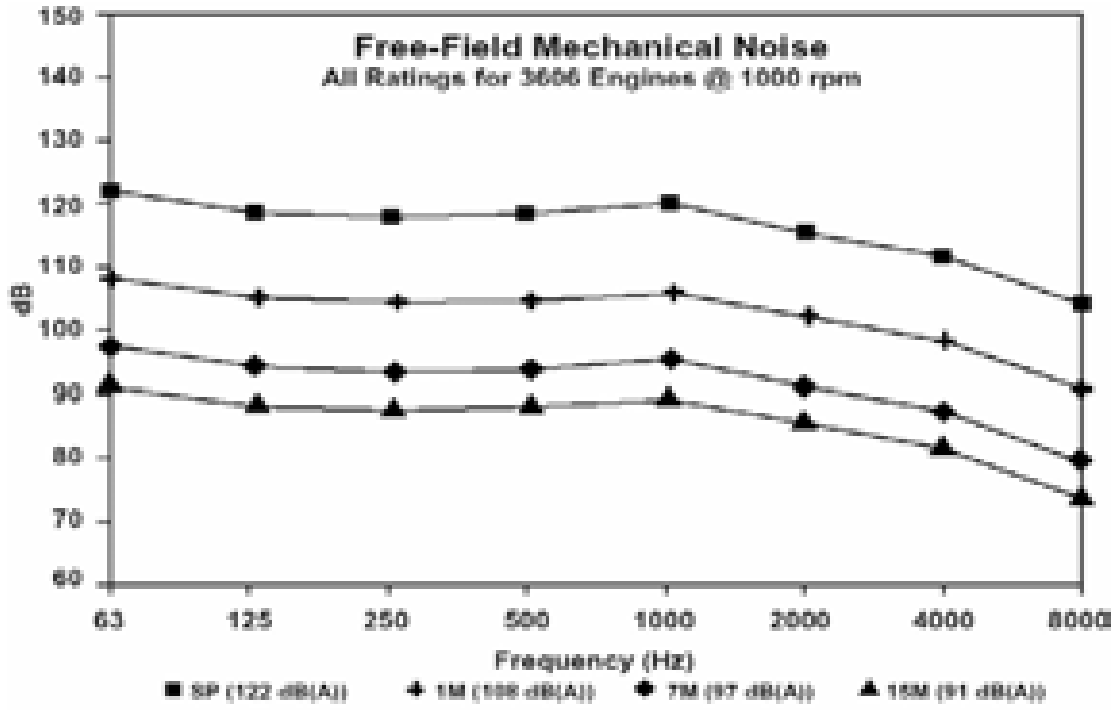
Crankshaft Cantilever Load

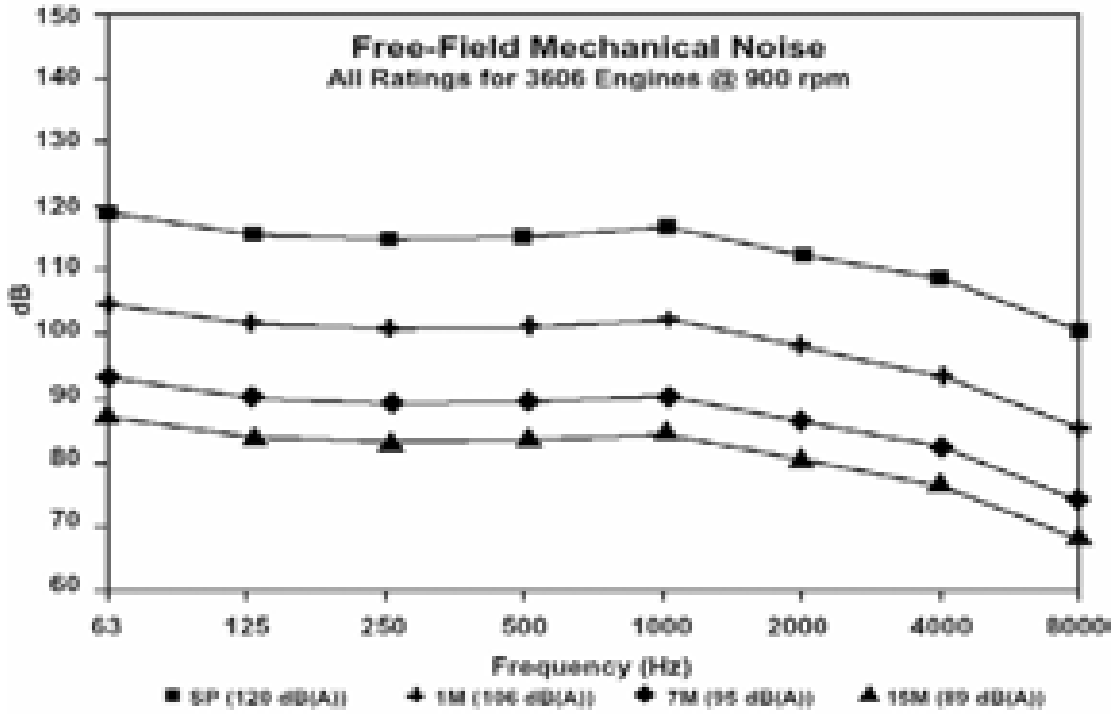
Crankshaft Maximum Cantilever Load

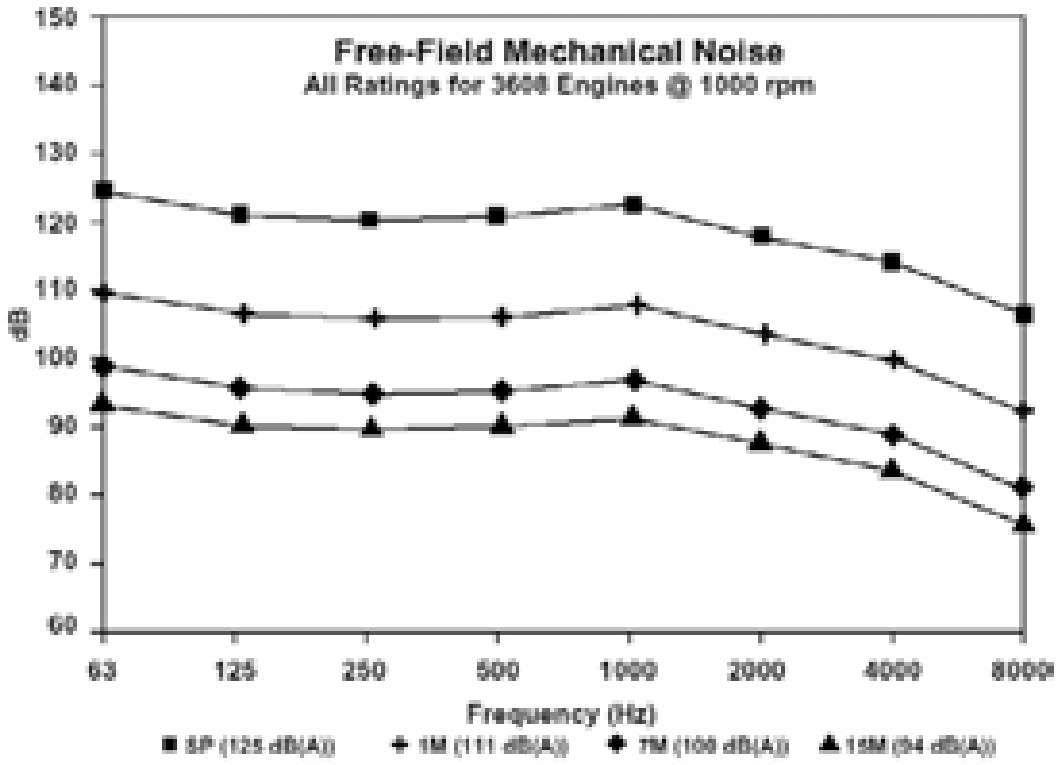


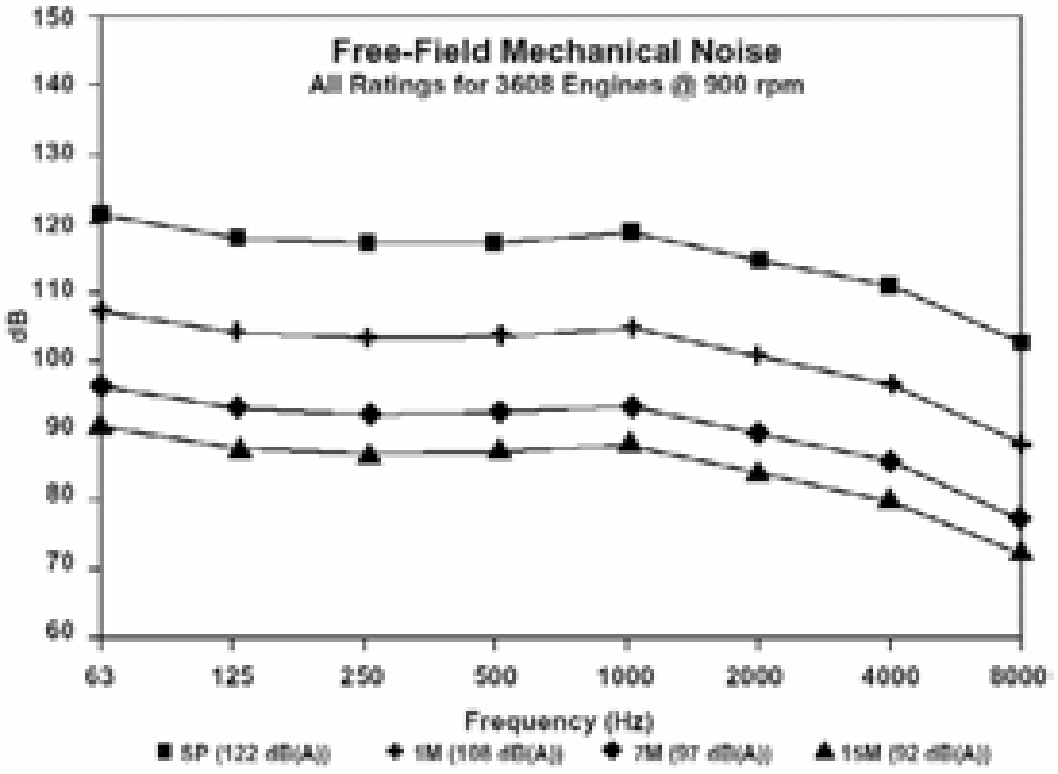
For a given X distance, the cantilever load must not exceed the allowable load limit.

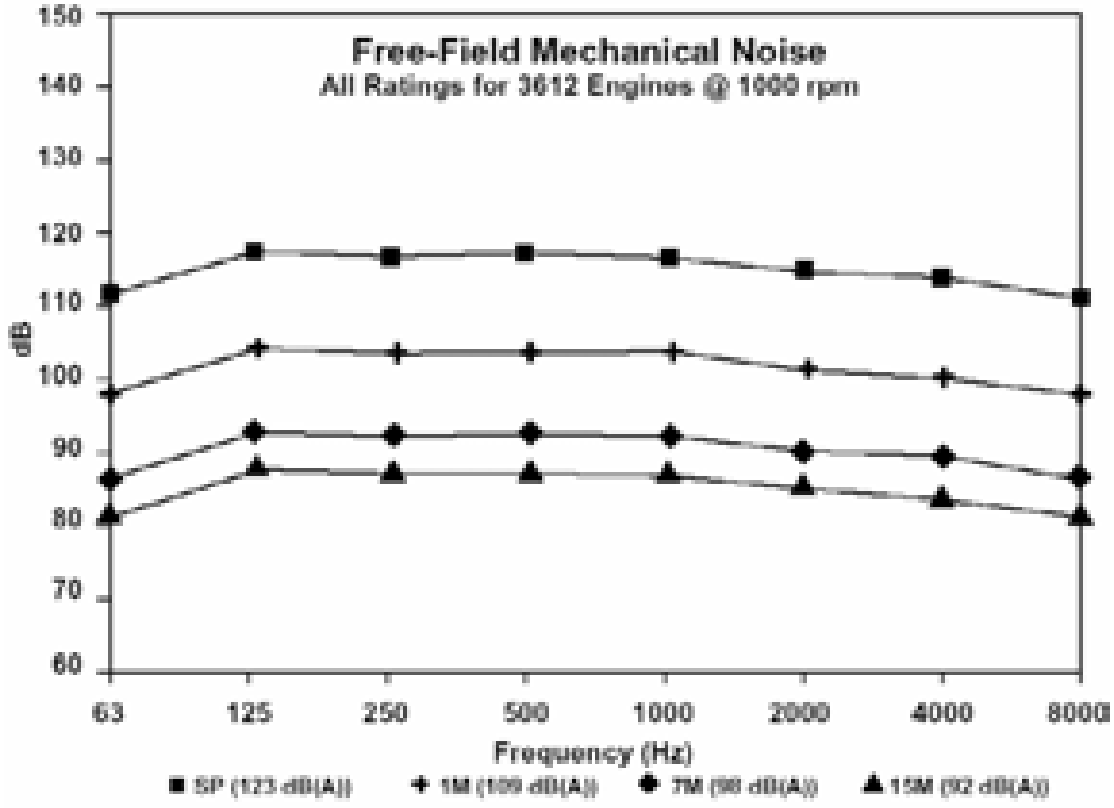
Free-Field Mechanical Noise

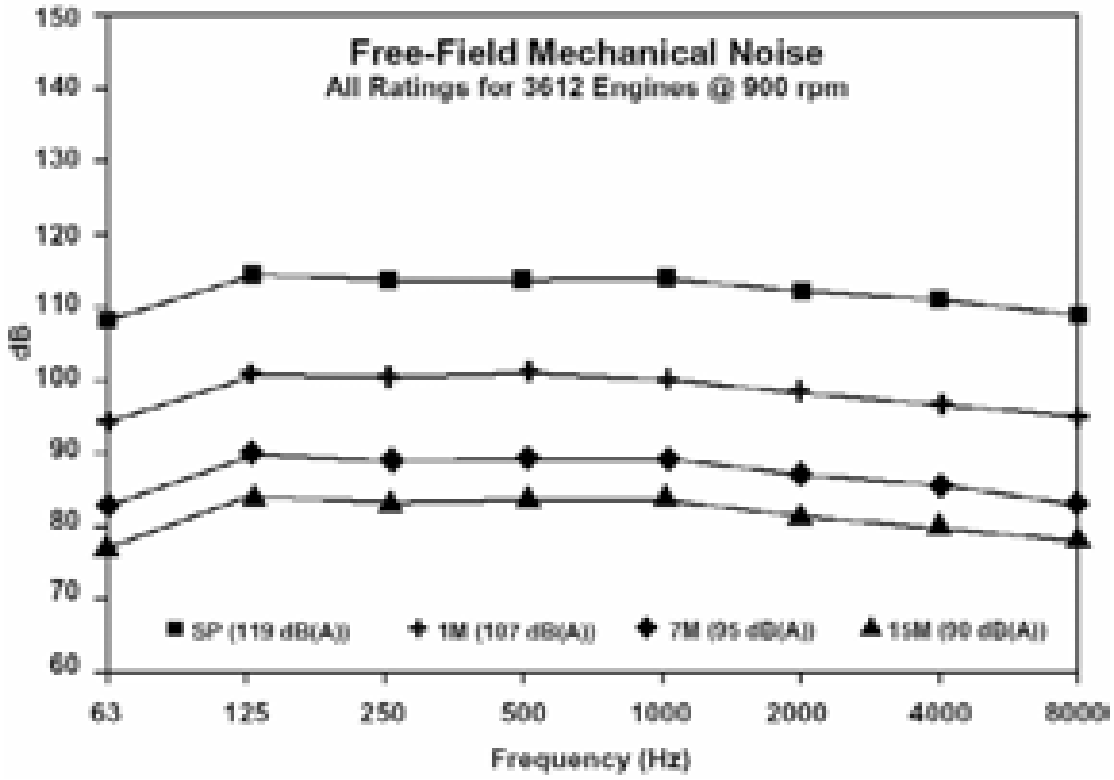


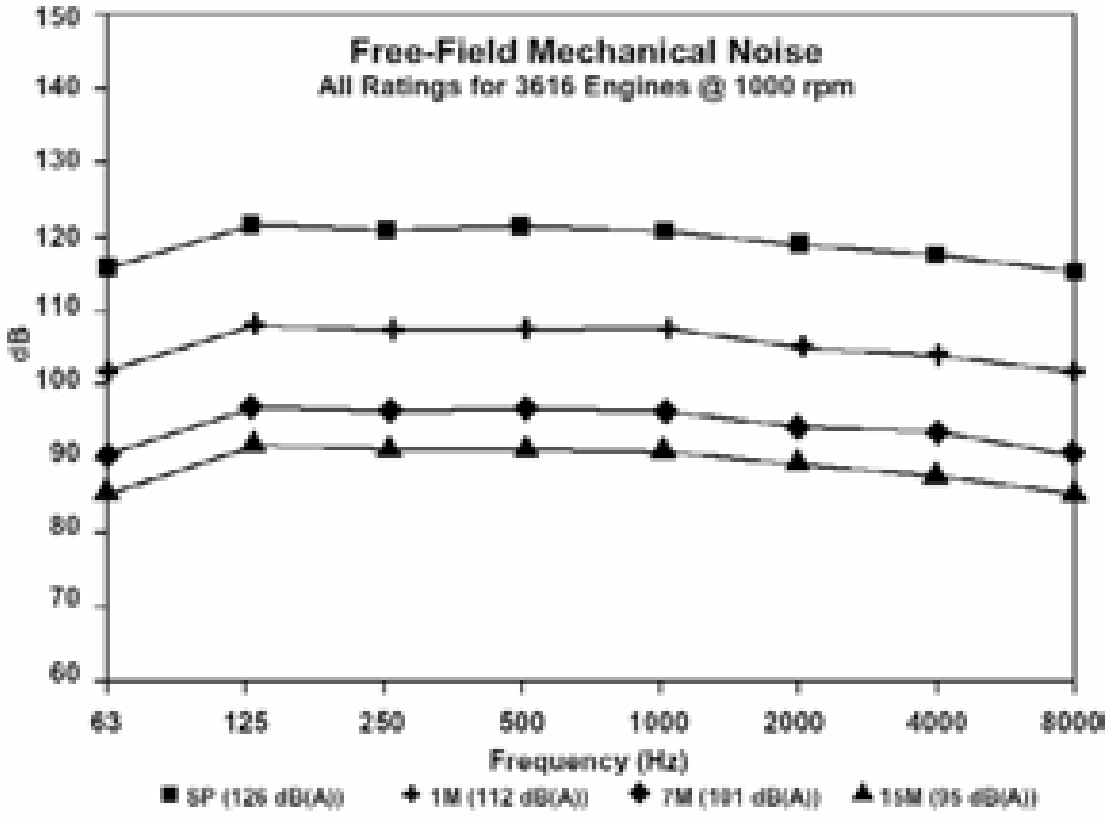


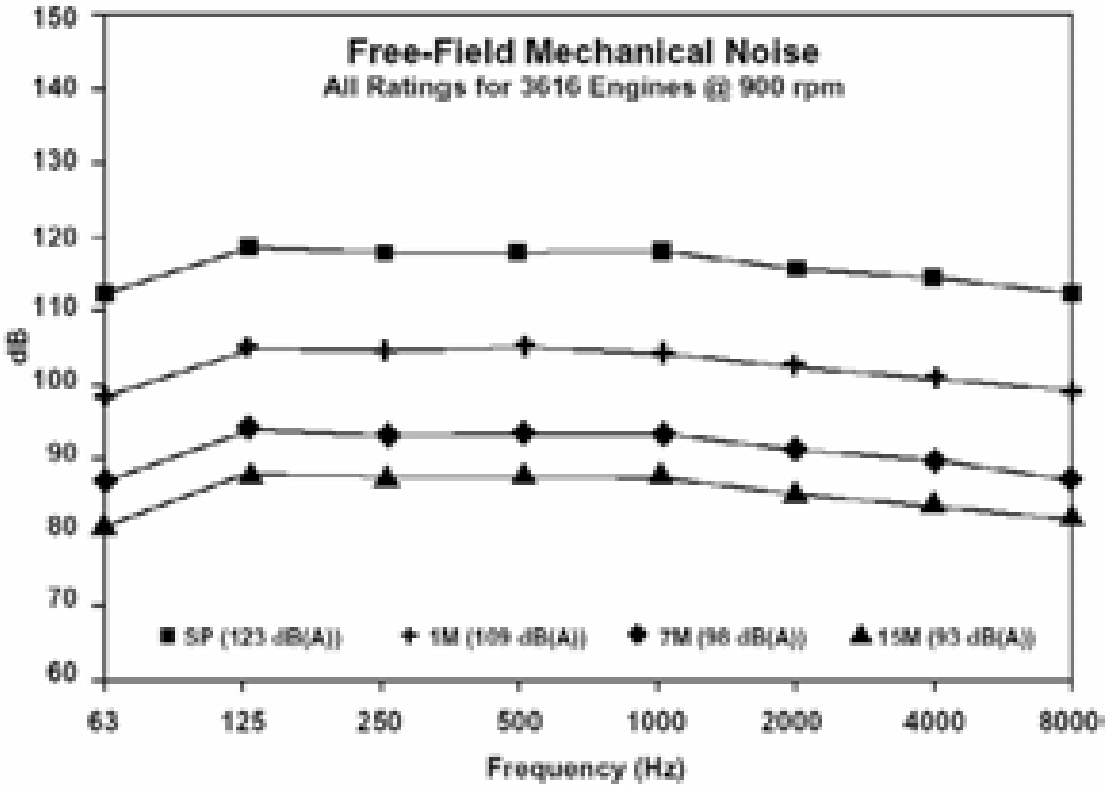




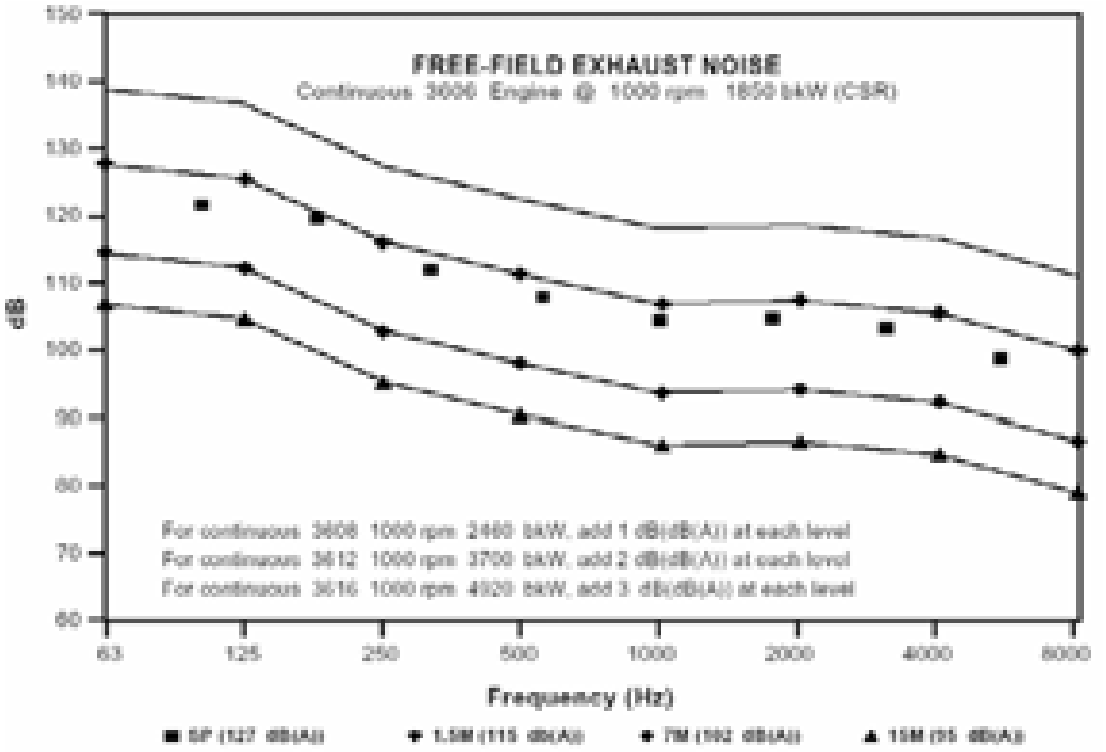


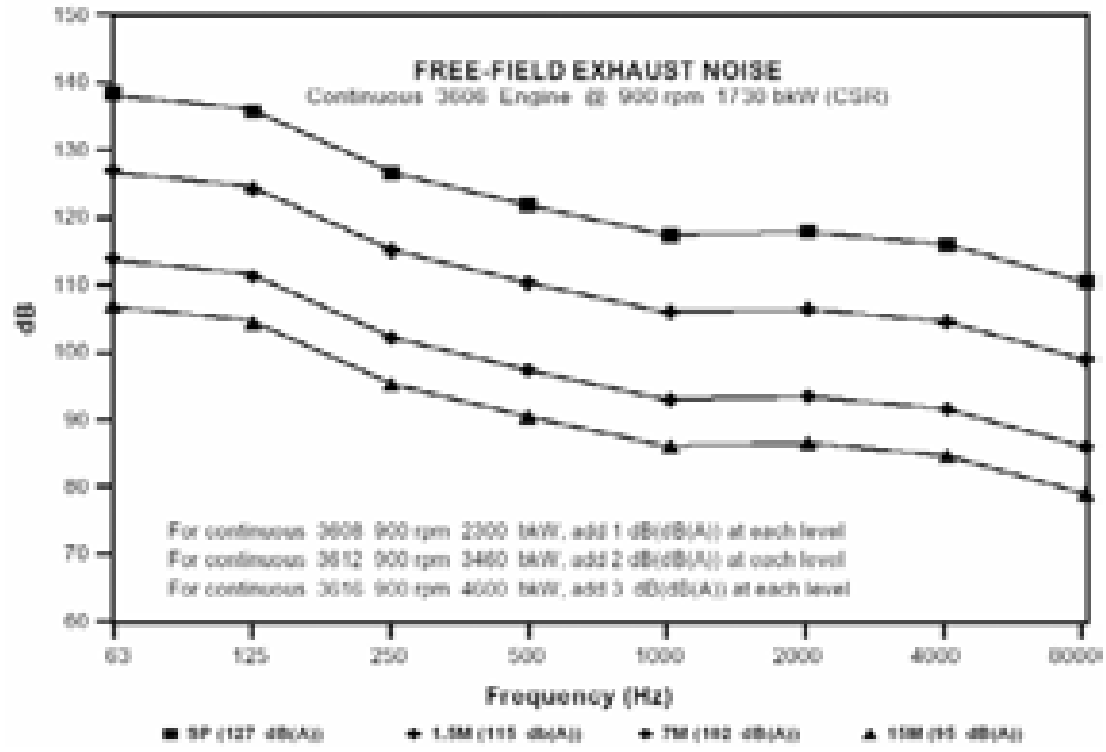


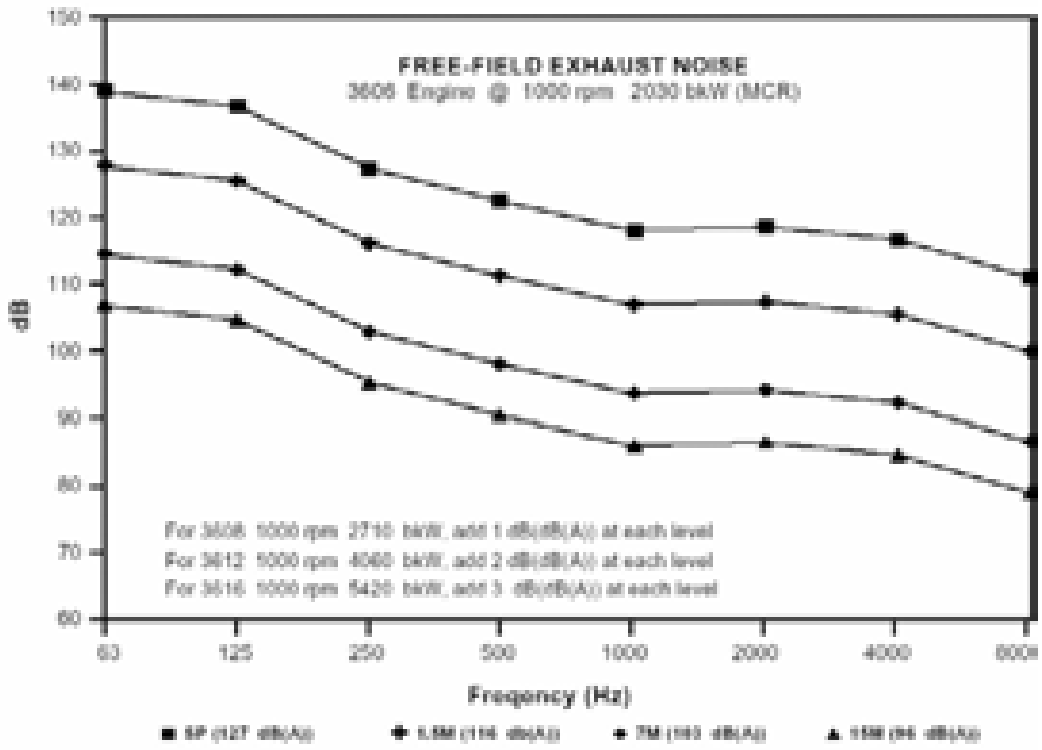


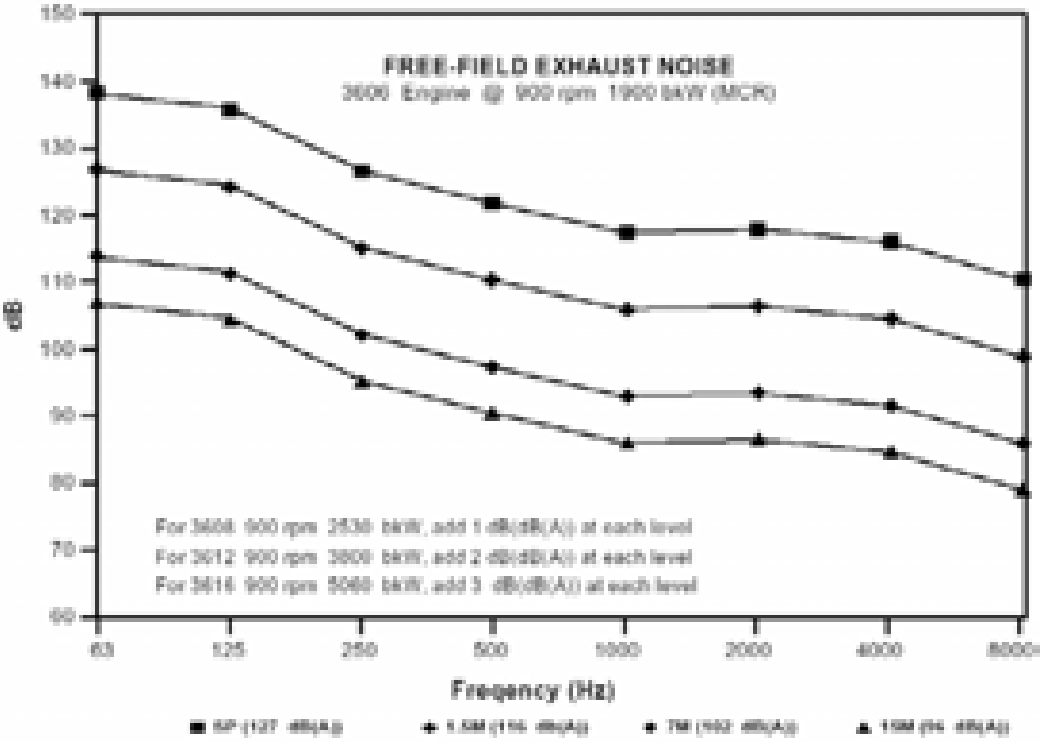


Free-Field Exhaust Noise









Reference Material

The following information is provided as additional reference to subjects discussed in this guide.

SENR3593
Systems Operation, Testing and Adjusting (3612 and 3616 Engines)

SEBU6965
Operation and Maintenance Manual (3600 Distillate Fuel Engines)

CATERPILLAR®

LEBW5337-00

Printed in U.S.A.