



## Technical Data 400-2000 KVA

1500 RPM (50 HZ)	KVA	Prime Power	400	455	500	550	635	725	800	900	1000	1250	1325	1500	1750	2000	
		Stand by	450	500	553	635	700	800	900	996	1125	1385	1401	1656	1928	2264	
1500 RPM (50 HZ)	KW	Prime Power	320	364	403	440	508	584	640	724	818	1002	1019	1204	1402	1646	
		Stand by	360	400	443	508	560	640	720	797	900	1108	1121	1325	1543	1811	
1800 RPM (60 HZ)	KVA	Prime Power	438	513	569	625	675	750	844	884	995	1258	N/A	1512	N/A	N/A	
		Stand by	500	563	625	688	750	844	938	975	1098	1385	N/A	1663	N/A	N/A	
1800 RPM (60 HZ)	KW	Prime Power	350	410	455	500	540	600	675	707	796	1002	N/A	1210	N/A	N/A	
		Stand by	400	450	500	550	600	675	750	780	878	1108	N/A	1331	N/A	N/A	
Engine Model			2306 C-E14 TAG 3	2506A-E 15 TAG1-3	2506A-E 15 TAG2-4	2806 C-E 18 TAG 1	2806 C-E 18 TAG2-3	4006 C -23 TAG 2A	4006 C -23 TAG 3A	4008 TAG 1A	4008 TAG 2A	4012 TWG 2	4012 TAG	4012 TAG 2A	4016 TAG	4016 TAG 2	
Alternator Type			LSA 47.2 S4	LSA 47.2 S5	LSA 47.2 M7	LSA 47.2 M8	LSA 49.1 S4	LSA 49.1 M6	LSA 49.1 M75	LSA 49.1 L10	LSA 50.1 S4	LSA 50.1 M6	LSA 50.1 M7	LSA 50.1 VL10	LSA 51.2 S55	LSA 51.2 M60	
Number of Cylinders			6	6	6	6	6	6	6	8	8	12	12	12	16	16	
Cycle (Stroke)			4	4	4	4	4	4	4	4	4	4	4	4	4	4	
Cooling Systems			Water - Cooled														
Bore & Stroke (mm)			137x165	140x171	140x171	145x183	145x183	160x190	160x190	160x190	160x190	160x190	160x190	160x190	160x190	160x190	
Displacement			14.6 L	15.8 L	15.8 L	18.1 L	18.1 L	22.921 L	22.921 L	30.561 L	30.561 L	45.842 L	45.842 L	45.842 L	61.123L	61.123L	
Compression Ratio			15.9:1	15.8:1	15.8:1	14.5:1	14.5:1	13:1	13:1	13.6:1	13.6:1	13.6:1	13.6:1	13.6:1	13.6:1	13.6:1	
Aspiration			Turbo charged and air to air Charged cooled														
Lubrication Capacity (Liters)			68	68	68	55.5	55.5	122.7	122.7	165.6	165.6	177.6	177.6	177.6	237.2	237.2	
Coolant Capacity (Liters)			47	50	50	61	61	156	156	162	162	210	200	235	255	316	
Fuel Tank Capacity (Liters)			300	300	300	300	350	400	450	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Fuel Specification			BS : 2869 : Part 21998 Class A2 or ASTM D975 D2						BS : 2869 : Class A1 + A2 or ASTM D975 No. D2								

## Fuel Consumption - Liters / Hours

1500 RPM	At Stand Power	88.3	104.9	113.2	128	141	168	193	210	214	207	207	206	207	212
	At Prime Power	81.1	95	104.9	108	125	152	167	206	218	205	206	201	205	209
	At 75% Prime Power	60.9	71.6	79.2	81	92	113	126	201	202	204	199	197	205	203
	At 50% Prime Power	42.3	49.4	54.2	56	63	75	84	207	205	210	204	195	209	202
1800 RPM	At Stand Power	103.9	134.1	148.4	140	140	189	213	212	216	215	N/A	209	N/A	N/A
	At Prime Power	94.2	117.8	134.1	127	127	168	189	211	213	211	N/A	208	N/A	N/A
	At 75% Prime Power	72.4	89.1	96	95	95	123	137	208	206	213	N/A	204	N/A	N/A
	At 50% Prime Power	48.4	63.6	69.9	66	66	85	91	210	205	223	N/A	203	N/A	N/A

Generator powers are typical and based on typical alternator efficiencies and a power factor of: 0.8 pf

Rating definitions:

- Prime power: Power available at variable load in view of a main power network.

Overload 10% is permitted for 1 hour in every 12 hours' operation.

- Standby (maximum) : Power available at variable load in the event of a main power network failure, no overload permitted.

# The range of Perkins powered diesel generation sets

Model	Engine	Prime Power		Length mm.	Width mm.	Height mm.	Net Weight (kg)
		KVA	KW				
400	2306C-E14TAG3	400	320	3500	1150	1900	3775
450	2506C-E16TAG1-3	450	363	3500	1150	1980	4205
500	2506C-E16TAG2-4	500	403	3650	1150	1980	4340
550	2806C-E18TAG1	550	440	3650	1150	2125	4780
653	2806C-E18TAG2-3	635	508	3892	1400	2195	5250
725	4006C-23TAG2A	725	584	3892	1400	2195	5910
800	4006C-23TAG3A	800	640	3892	1400	2195	6425
900	4008 TAG1A	900	724	5050	2039	2225	8750
1000	4008 TAG2A	1000	818	5050	2039	2225	9250
1250	4012 TWG2	1250	1002	5050	2039	2400	10246
1325	4012 TAG	1325	1019	5075	2039	2400	10315
1500	4012 TAG2A	1500	1204	5085	2039	2400	11375
1750	4016 TAG	1750	1204	5818	2000	2400	12200
2000	4016 TAG2	2000	1642	6039	2000	2400	13150

## NOTES

1- KVA figures quoted are based on a power factor of 0.8

2- All ratings are in accordance with newly-released ISO 8528-1 and ISO 3046, BS 5514 and DIN 6271 Standard as previous.

3- All ratings quoted are based upon nominal 380V 3ph 60Hz. Voltages outside these parameters may alter the quoted ratings.

4 Ratings quoted are based on standard alternator. Customer preference may alter rating to suit available frame sizes.

5- Ratings based on Perkins supplied test data at a nominal 27C ambient and NTP conditions.

Please contact PIMCO to assess any derated required.

## STANDARD SPECIFICATION

### PERKINS POWERED DIESEL GENERATING SETS - KVA 400 To KVA 2000

#### 1. OUTRATINGS

Output ratings are listed for each generator on the back sheet specification. The generator set is normally supplied connected for 380 or 415 Volt, 3 Phase, 50Hz, but alternative voltages/frequencies are available.

#### 2. ENGINE

Perkins heavy duty industrial diesel engine. Technical details are contained on the single sheet specifications.

#### 2.1 Governor

Mechanical compliant with BS5514 Class A1. Electronic Governor Class A1.

#### 2.2 Electrical System

12 Volt DC up to model J135, 24 Volt DC on all other models. Energised to run shutdown solenoid. Oil pressure and water temperature shutdown switches and gauge senders.

#### 3. COOLING RADIATOR

Radiator and cooling fan complete with protection guards, designed to cool the engine at specified output in air-on temperature up to 52 C (125 F).

#### 4. ELECTRICAL SYSTEM

12 or 24 Volt system with battery charging alternator, axial type start motor, high capacity maintenance free lead acid starting battery, battery rack mounted on the generator set baseframe, and heavy duty interconnecting cables with terminations.

#### 5. ALTERNATOR

Screen protected and drip-proof, self exciting, self regulating brushless alternator with fully interconnected damper windings, ICO6 cooling system and sealed - for - life bearing. 12 wire reconnected windings provide a wide range of 3 phase voltages.

#### 5.1 Insulation System

The insulation system is class H. All windings are impregnated in either a triple dip thermosetting moisture, oil and acid resisting polyester varnish or vacuum pressure impregnated with a special polyester resin. heavy coat of anti-tacking varnish for additional protection against moisture or condensation.

#### 5.2 Electrical Characteristics

Electrical design in accordance with BS5000 part 99, IEC34-1, VDE51100, NEMA MG-122.

#### 5.3 Automatic Voltage Regulator

The fully sealed automatic voltage regulator maintains the voltage within the limits of +/- 1% from no load to full load including cold to hot variations at any power factor between 0.8 lagging and unity and inclusive of a speed variations of 4.5%. Nominal adjustment is by means of a trimmer incorporated in the AVR.

#### 5.4 Waveform distortion, TIF Factors

The total distortion of the voltage waveform with open circuit between phases or phase and neutral is in the order of 2%. On a 3 phase balanced harmonic-free load the total distortion is in the order of 3.5%. Machines are designed to have a THF less than 2% and a TIF less than 50. A2/3 pitch factor is standard on all stator windings.

#### 5.5 Radio Interference

Suppression is in line with the provisions of BS800 and VDE class G and N.

#### 5.6 Motor Starting

An overload capacity equivalent to between 160% and 300% (depending on a motor frame size) of full load impedance at zero power factor can be sustained for 10 seconds.

#### 6. MOUNTING ARRANGEMENT

##### 6.1 Coupling

The engine and alternator are directly coupled by means of an SAE flange so that there is no possibility of misalignment after prolonged use. The engine flywheel is flexibly coupled to the alternator rotor and a full torsional analysis has been carried out to guarantee no harmful vibration will occur into the assembly.

##### 6.2 Anti-Vibration Mounting Pads

Anti-Vibration pads are affixed between engine/alternator feet and the baseframe thus ensuring complete vibration isolation of the rotating assemblies and enabling the machine to be placed on and uneven surface without any detrimental effects.

#### 7. FUEL SYSTEM

On all sets, the baseframe design incorporates an integral fuel tank with a capacity of approx. 8 hours. The tank is supplied complete with contents indicator, fuel fill cap with breather, fuel feed and return lines to engine and drain plug. (Upon Request)

#### 8. CONTROL SYSTEM

##### 8.1 Standard Control Panel

Set mounted keystack panel in a vibration isolated sheet steel enclosure with a hinged lockable door. The control panel is equipped as follows:

##### a. Instruments

Voltmeter  
Ammeter  
Frequency Meter  
Hours Run Meter  
Coolant Temperature Gauge  
Oil Pressure Gauge  
Battery Condition Voltmeter

##### b. Controls

Start/Stop Keyswitch  
Voltmeter Phase Set Switch, 7Pos  
Ammeter Phase set Switch, 4Pos

##### c. Shutdown Protection Devices With Indicators for:

High Coolant Temperature  
Low Oil Pressure

##### d. DC and AC Wiring Looms

DC and AC wiring looms utilising industrial type multipin connectors, thus permitting fast fault finding and simple retrofitting of alternative or remote control systems.

##### 8.2 Circuit Breaker

3 Pole moulded case circuit breaker mounted on the generator in a vibration isolated sheet steel box with adequate access for incoming and outgoing cables

#### 9. WARRANTY

All Equipment is guaranteed for a period of 12 months from date of commissioning or 18 months from shipping whichever occurs first. Extended warranty terms are available.