



## Technical Data 9-350 KVA

1500 RPM (50 HZ)	KVA	Prime Power	9	13	20	30	45	60	80	100	135	150	165	200	250	300	350
	Stand by	10	14.5	22.7	33	49.6	66	88	110	150	165	178	229	275	350	400	400
1800 RPM (60 HZ)	KW	Prime Power	7.3	10.6	16.3	24	36	48	64	80	109	120	130	166	200	240	280
	Stand by	8	11.6	18.2	26.4	39.7	52.8	70.5	88	120	132	143	183	220	280	320	320
1500 RPM (50 HZ)	KVA	Prime Power	11.4	16.1	23.4	34.9	53.1	68.1	90	112.5	151.5	N/A	N/A	231	N/A	344	400
	Stand by	12.4	17.5	25.3	38.2	58.7	75	100	125	165.5	N/A	N/A	253	N/A	379	438	438
1800 RPM (60 HZ)	KW	Prime Power	9.1	12.9	18.7	27.9	42.5	54.5	72	90	120.5	N/A	N/A	185	N/A	275	320
	Stand by	9.9	14.0	20.2	30.6	46.9	60	80	100	132.5	N/A	N/A	202	N/A	303	350	350
Engine Model		403 C - 11G	403 C - 15G	404 C - 22G	1103 A - 33G	1103 A - 33TG1	1103 A - 33TG2	1104 A - 44 TG2	1104 C - 44TAG2	1006 TAG	1006 TAG2	1306 - E87 TG2	1306C - E87 TAG3	1306C - E87 TAG6	2306C - E14 TAG1A	2306C - E14 TAG2	
Alternator Type		LSA 37 M6	LSA 37 M7	LSA 42.2 S5	LSA 42.2 L9	LSA 43.2 S25	LSA 43.2 M45	LSA 43.2 L8	LSA 44.2 VS45	LSA 44.2 S75	LSA 44.2 M95	LSA 44.2 L12	LSA 46.2 M5	LSA 46.2 L6	LSA 46.2 VL12	LSA 47.2 VS2	
Number Of Cylinders		3	3	4	3	3	3	4	4	6	6	6	6	6	6	6	6
Cycle (Stroke)		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Cooling Systems		Water - Cooled															
Bore & Stroke (mm)		77x81	84x90	84x100	105x127	105x127	105x127	105x127	105x127	100x127	100x127	116.6 x 135.9	116.6 x 135.9	116.6 x 135.9	137x165	137x165	
Displacement		1131 cc	1496 cc	2216 cc	3.3 L	3.3 L	3.3 L	4.41 L	4.41 L	5.99 L	5.99 L	8.7 L	8.7 L	8.7 L	14.6 L	14.6 L	
Compression Ratio		23:1	22.5:1	23.3:1	19.25:1	17.25:1	17.25:1	18.2:1	18.2:1	17.0:1	17.0:1	17.2:1	16.9:1	16.9:1	15.9:1	15.9:1	
Aspiration		N a t u r a l T u r b o c h a r g e d															
Lubrication Capacity (Liters)		4.9	6.10	6.98	7.9	7.9	7.9	8.0	8.0	19.0	19.0	26.4	26.4	26.4	68	68	
Coolant Capacity (Liters)		5.21	5.98	10.2	10.2	10.2	10.2	12.6	12.6	37.22	41	36.4	37.2	37.2	47	47	
Fuel Tank Capacity (Liters)		55	55	55	100	140	140	140	180	180	180	240	240	240	275	275	
Fuel Specification		BS2869: Part 2 1998 Class A2 or ASTM D975 D2			BS2869: Part 2 1998 Class A2 or DIN EN 590			BS2869: Part 2 1998 Class A2 or AS TM D975 D2									

## Fuel Consumption - Liters / Hours

1500 RPM	At Stand Power	2.9	4.1	6.2	7.9	12.0	15.6	20.3	24.9	34.6	45.0	41.7	49.1	59.9	70.6	81.1
	At Prime Power	2.6	3.7	5.4	7.1	10.7	14.1	18.6	22.6	31.5	41.0	39.5	45.2	55.0	62.4	70.6
1800 RPM	At 75% Prime Power	2	2.8	4.0	5.4	8.2	10.5	14.3	17.1	24.1	31.0	32.5	35.0	42.0	46.6	52.5
	At 50% Prime Power	1.5	2.1	2.9	3.9	5.7	7.3	9.8	11.2	16.5	20.0	22.2	24.0	28.7	31.5	38.0
1500 RPM	At Stand Power	3.8	4.8	7.3	9.5	14.3	17.9	24.1	29.7	41.3	N/A	N/A	12.5	N/A	84.2	91.5
	At Prime Power	3.3	4.3	6.4	8.6	12.9	15.7	22.0	26.9	37.6	N/A	N/A	11.3	N/A	77.4	85.7
	At 75% Prime Power	2.4	3.3	4.8	6.6	9.9	12.3	17.0	20.2	28.9	N/A	N/A	8.5	N/A	58.2	66.0
	At 50% Prime Power	1.8	2.4	3.5	4.9	7.1	8.7	11.7	14.1	19.4	N/A	N/A	5.8	N/A	39.2	45.3

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	Width	Height	Net
		KVA	KW	mm.	mm.	mm.	Weight (kg)
9	403C-11G	9	7.3	1250	600	1050	350
13	403C-15G	13	10.6	1250	600	1065	375
20	404C-22G	20	16.3	1250	600	1100	420
30	1103A-33G	30	24	1500	700	1220	670
45	1103A-33TG1	45	36	1700	700	1220	810
60	1103A-33TG2	60	48	1800	700	1250	920
80	1104A-44TG2	80	64	1900	700	1265	1080
100	1104C-44TAG2	100	80	2200	750	1300	1145
135	1006TAG	135	109	2400	750	1325	1385
150	1006TAG2	150	120	2500	800	1325	1410
165	1306-E87TG2	165	130	2500	950	1620	1750
200	1306C-E87TAG3	200	166	2750	950	1620	2220
250	1306C-E87TAG6	250	200	2750	950	1620	2415
300	2306C-E14TAG1A	300	240	3300	1150	1870	2950
350	2306C-E14TAG2	350	280	3400	1150	1870	3340

## 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

Power & Industrial Machinery Company - KVA

9 To KVA 350

### 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 keystore 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.