



MODEL: TD450



Ratings Range — 60 Hertz Operation

Standby:	kW	384-450
	kVA	480-563
Prime:	kW	350-405
	kVA	438-506

FEATURES

- Single source responsibility for the generator set and accessories.
- Prototype and production tested to insure one step load acceptance per NFPA 110.
- Two year limited warranty on generator sets and accessories. Extended warranties also available.
- Unit conforms to CSA, NEMA, EGSA, ANSI and other standards.
- Heavy duty 4 cycle industrial engine for reliability and fuel efficiency.
- Brushless rotating field generator with class H insulation.
- Heavy duty steel base with integral vibration isolators.
- Cooling system designed for ambient temperatures up to 50°C (122°F)
- EPA Tier 3 Certified Engine.
- Tier 3 EPA-Certified for Stationary Emergency Applications.

GEN SET RATINGS

Genset Model Number	Alternator	Voltage L-N / L-L	Phase	Hertz	130° Rise Standby Rating		105° Rise Prime Rating	
					kW / kVA	Amps	kW / kVA	Amps
TD450	572RSL4027	277/480	3	60	450/563	677	405/506	609
		139/240	3	60	450/563	1354	405/506	1217
		254/440	3	60	450/563	739	405/506	664
		127/220	3	60	450/563	1477	405/506	1328
		240/416	3	60	450/563	781	405/506	702
		120/208	3	60	450/563	1562	405/506	1405
		120/240	3	60	450/563	1354	405/506	1217
		219/380	3	60	405/506	798	365/456	714
		120/240	1	60	283/283	958	255/255	867

RATINGS: All three-phase units are rated at 0.8 power factor. All single-phase units are rated at 1.0 power factor.
STANDBY RATINGS: Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. There is no overload capability for this rating. Ratings are in accordance with ISO-3046/1, BS 5514, AS 2789, and DIN 6271.
PRIME POWER RATINGS: Prime power ratings apply to installations where utility power is unavailable or unreliable. At varying load the number of generator set operating hours is unlimited. A 10% overload capacity is available for one hour in twelve. Ratings are in accordance with ISO-8528/1, overload power in accordance with ISO-3046/1, BS5514, AS2789, and DIN 6271. For limited running time and base load ratings consult the factory. The generator set manufacturer reserves the right to change the design or specifications without notice and without any obligation or liability whatsoever.
GENERAL GUIDELINES FOR DERATION: Altitude: Derate 0.5% per 100m (3279 ft.) elevation above 1000m (3279 ft.) Temperature: Derate 1.0% per 10°C (18°F) temperature above 40°C (104°F).



Application and Engineering Data

Basic Technical Data		Lubrication System	
Manufacturer	Perkins	Lubricating oil capacity total system	16.4 gal (62 L)
Model	2506D-E15TAG1	Maximum sump capacity	14.0 gal (53 L)
Number of cylinders	6	Minimum sump capacity	11.9 gal (45 L)
Cylinder arrangement	Vertical in-line	Maximum engine operating angles (front up, front down, right side or left side)	7°
Cycle	Four stroke		
Induction system	Turbocharged, air to air charge cooled		
Compression ratio	16:1		
Bore	5.37 in. (137 mm)	Lubricating Oil Pressure	
Stroke	6.73 in. (171 mm)	Oil Temperature (continuous operation)	237 °F (114 °C)
Cubic capacity	815.2 cu in. (15.2 L)	Oil Temperature (maximum intermittent operation)	
Direction of rotation	Counter clockwise (from flywheel)		
Firing order	1,5,3,6,2,4	Electrical System	
Governor type	Electronic, Isochronous 0.25%	Type	24 volt negative earth
Gross engine power	689 hp (514 kWb)	Alternator type	22SI
Electropak net engine power		Alternator Voltage	24V
		Alternator Output	70A
		Starter motor type	42MT
Brake mean effective pressure	331 psi (2284 kPa)	Starter motor voltage	24V
Engine coolant flow (against 5 psi (35 kPa) restriction)	1.64 gal/sec (6.2 L/sec)	Starter motor power	10 hp (7.5 kW)
Cooling fan air flow (29 psi (200 kPa) external restriction)	N/A	Minimum cranking speed	100 rev/min
Combustion air flow (at rated speed)	1466 cfm (41.5 m ³ /min)	Induction System	
Exhaust gas flow (max)	3955 cfm (112 m ³ /min)	Maximum air intake restriction	
Exhaust gas mass flow (max)		Clean filter	0.54 psi (3.7 kPa)
Exhaust gas temperature in manifold (max)	1022 °F (550 °C)	Dirty filter	0.90 psi (6.2 kPa)
Boost pressure ratio		Air filter type	Paper element
Overall thermal efficiency (net)	38.1%		
		Duct allowance with 50% glycol	
Cooling System			
Coolant			
Total System Capacity	13.6 gal (51.4 L)		
With radiator	N/A		
Without radiator	N/A		
Coolant Pump Drive	Gear		
Coolant pump drive ratio	N/A		
Maximum top tank temperature	225° F (107° C)	Fuel System	
Temperature rise across engine (rating dependent)	50° F (10 °C)	Type of injection	MEUI
Thermostat operation range	190-208° F (88-98 °C)	Fuel injection pump	MEUI
Recommended coolant:	50% ethylene glycol with a corrosion inhibitor (BS 658 : 1992 or MOD AL39) and 50% clean fresh water.	Fuel atomizer	
Exhaust System		Fuel Lift Pump	
Maximum back pressure	0.99 psi (6.8 kPa)	Max flow through customer filter	120.7 gal/hr (457 L/hr)
Exhaust outlet size	5.9 in (150 mm)	Maximum suction head	3 m
		Fuel Consumption	
		110% Load	33.3 gal/hr (126.0 L/hr)
		100% Load	29.9 gal/hr (113.0 L/hr)
		75% Load	24.6 gal/hr (93.0 L/hr)
		50% Load	17.7 gal/hr (67.0 L/hr)

Generator Controller Options



- Dashboard Style LCD Panel
- NFPA 110
- SAE J1939 ECU Communications
- Load Share Synch Features
- Metering, Data Trending, Alarms
- Engine Status Indicators
- Fuel Consumption
- CanBus, ModBus
- Ethernet Communications
- Remote Contacts Form C, RS 232/485

- Internet Bridge Module
- Internet Connection & Web Browser
- Remote Access & Control
- IntelliMonitor Network Management
- SNMP, PC SCADA
- Site Overview & Statistic Settling
- Automatic Downloads, Report Writer
- Receive Emails or IM Text
- CAT 5e, RS232/485, RJ 45
- Ethernet or Dial Up Connection
- Fleet Scalability

Alternator Specifications

Manufacturer	Marathon	<ul style="list-style-type: none"> • NEMA MG1, IEEE, AND ANSI standards compliance for temperature and motor starting. • Sustained short-circuit current of the rated current for up to 10 seconds. • Sustained short-circuit current enabling downstream circuit breakers to trip without collapsing the alternator field. • Self-ventilated and dripproof construction. • Superior voltage waveform from a two-thirds pitch stator and skewed rotor. • Linkboards • Optimized Electrical Design • Enhanced Ventilation • Fully Guarded • Heavy Duty Bearings
Type	Ext. Voltage Regulated, Brushless	
Gen Frame	MAGNAMAX	
Insulation	NEMA	
Material	Class H	
Temperature Rise	130 °C, Standby	
Hertz	60	
Phase	3	
RPM	1800	
Exciter	Rotating	
# Leads	12 Reconnectable or 4 Single Phase	
PF	0.8	
Ambient	40°C	
Coupling Single Bearing	Flexible	
Amortisseur Windings	Full	
Cooling Air Volume	250 CFM	
Peak Motor Starting	30% Voltage Dip, 900 kVA	
Voltage Regulation no-load and full-load	3 Phase Sensing 1/2%	

STANDARD FEATURES

- Heavy Duty Steel Base
- Vibration Isolators
- Oil Drain Valve with Extension
- Battery Rack
- Battery Cables
- High Ambient Unit Mounted Radiator
- Battery Charging Alternator
- Factory Paint
- Factory Test Prior to Shipment
- 2 Year Warranty
- Owners Manual

AVAILABLE ACCESSORIES

OPEN UNIT

- Narrow Skid Base
- Radiator Duct Flange
- Ship Loose Flex Exhaust
- Ship Loose Critical Silencer

ENCLOSED UNIT

- Wide Skid Base
- Standard Enclosure With Internal Silencer
- Sound Attenuated Enclosure With Silencer
- Load Center With Lights and GFI Receptacle
- Sub-Base Fuel Tank

CONTROLLER

InteliLite Model IL-NT-MRS19
Ethernet Bridge
Remote Annunciator



MISCELLANEOUS

- Flexible Fuel Lines
- Coolant Drain Kit
- Water Jacket Heater
- Oil Pan Heater
- Generator Strip Heater
- Battery
- Battery Charger
- Pad Type Battery Heater
- Battery Heater Blanket with Thermostat
- Line Circuit Breaker

WARRANTY

- 3 Year Warranty
- 5 Year Warranty

APPROVALS AND LISTINGS

- UL Standard 2200

WEIGHTS AND DIMENSIONS

OVERALL SIZE, L x W x H, in.: 156 in. x 66 in. x 79 in.
WEIGHT: 8029 lbs.

Note: Dim and weights reflect standard open unit with no options



Note: This drawing is provided for reference only and should not be used for planning installation. Contact your local distributor for more detailed information.

DISTRIBUTED BY:

PENNCAT CORPORATION
404 ELM AVENUE
NORTH WALES, PA 19454
TEL: (610) 272-0505
www.PENNCAT.com