

CLARKE FIRE PUMP DRIVERS

PDFP SERIES MODELS

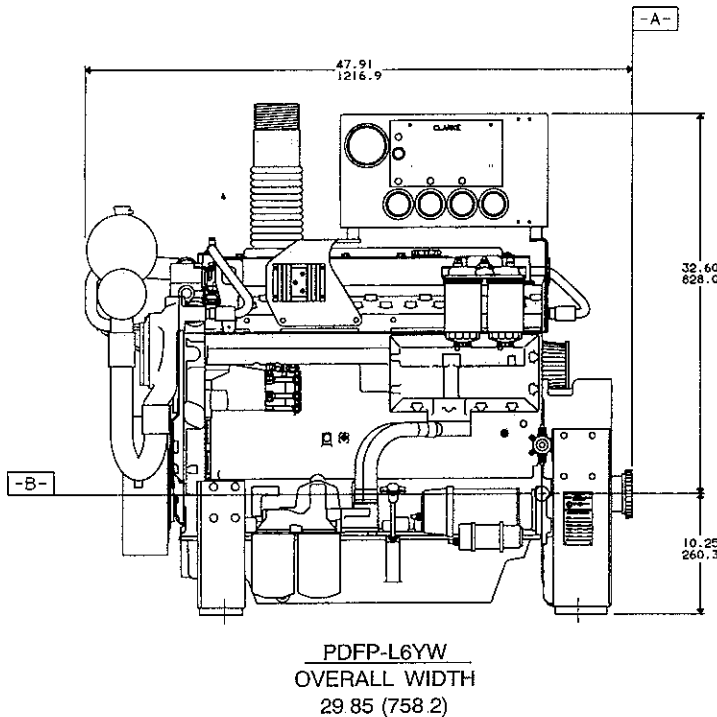
PDFP-L4YN
PDFP-06YT

PDFP-L4YT
PDFP-L6YW

PDFP-04YT
PDFP-J6YT

PDFP-L6YN
PDFP-K6YT

PDFP-L6YT
PDFP-06YR



APPROVED RATINGS BHP/kw FM-UL-ULC†

PDFP MODEL	SPEED (RPM)				
	1470	1760	2100	2350	2600
L4YN	45 34	60 45	67 50	72 54	73 54
L4YT	50 37	73 54	80 60	87 65	92 69
04YT	54 40	80 60	91 68	95 71	100 75
L6YN	75 56	90 68	100 75	105 78	110 82
L6YT	90 67	110 82	120 89	125 93	135 101
06YT	97 72	120 89	133 99	140 104	145 108
L6YW	106 79	130 97	151 113	157 117	165 123
	RPM	1470	1760	1800	
J6YT	106 79	130 97	133 99	—	—
K6YT	115 86	140 104	144 107	—	—
06YR	160 119	183 137	185 138	—	—

STANDARD EQUIPMENT

- Air Cleaner** — Direct Mounted, Washable, For Indoor Service Only
- Alternator** — Integral Regulator, 12V-DC, 40 Ampere, with Belt Guard
- Cooling Water Control** — Automatic At Local Control Panel
- Exhaust Blankets** — For Manifolds & Turbo
- Exhaust Connection** — Flexible SS Bellows
- Flywheel Housing** — SAE #2
- Fuel Connections** — Flexible Supply & Return
- Fuel Injection** — Stanadyne Direct Injection
- Fuel Filters** — Primary & Secondary
- Engine Heater** — 120 Voltage (AC), 1500 Watts With Thermostat
- Governor** — Constant Speed
- Heat Exchanger** — NPTF Connections, Tube & Shell Type, Rated 60 PSI
- Instrument Panel** — English & Metric, Tachometer, Hourmeter, Water Temperature, Oil Pressure, Voltmeter (2)

- Junction Box** — Integral With Instrument Panel. For Customer Wiring (DC) To Engine Controller
- Lube Oil Cooler** — Engine Water Cooled, Plate Type
- Lube Oil Filter** — Full Flow W/By-Pass Valve
- Lube Pump** — Gear Driven, Gear Type
- Manual Start Controls** — On Instrument Panel
- Overspeed Control** — Electronic w/Reset on Instrument Panel
- Power Take Off** — Includes Engine Half of Falk T10 Coupling
- Raw Water Solenoid Operation** — Automatic With Emergency Local Control
- Run-Stop Control** — On Instrument Panel With Control Position Warning Light.
- Starters** — Two (2) 12V-DC Motors
- Throttle Control** — Tamper Proof
- Water Pump** — Gear Driven, Centrifugal Type



LISTED
513Y



meets
NFPA-20
Requirements



approved
1333



listed
C448A

PDFP-L6YT

FIRE PUMP DRIVER

EMISSION DATA

To complete an application for a Permit to Operate, the following data is provided.

6 Cylinders
Four Cycle
Lean Burn
Turbocharged
Diesel Oil - Fuel
No - Energy Recovery from Exhaust
No - Emission Control Device

RPM	BHP	FUEL GAL / HR	AIR/FUEL RATIO	GM / BHP / HR					% O ₂	EXHAUST		TIMING* DEGREES
				HC	NOx	CO	SO ₂	PART.		°F	CFM	
2600	135	7.68	34.2	0.67	15.53	0.92	0.69		12.3	841	1025	8.0
2350	125	6.70	33.6	0.58	15.20	0.61	0.65		12.2	815	826	8.0
2100	120	6.09	31.3	0.52	14.66	0.72	0.62		11.4	831	738	8.0
1760	110	5.34	32.9	0.44	13.67	2.42	0.59		11.8	874	591	8.0
1470	90	4.25	26.1	0.41	12.60	6.45	0.58		9.5	873	444	8.0

For specific RPM & BHP ratings, some of the above data may have been extrapolated from the best available test data.

Degrees of timing RETARD for 'beginning of injection' based on comparison with pre-emission controlled engines.

*This timing requires a specific request when ordering the engine.

Sulfur Dioxide based on 0.2% sulfur content in fuel (by weight).

1006-6T Base Model Engine Manufactured by Perkins Engines Limited
0.84 A/R Turbocharger



PDFP-L6YT INSTALLATION & OPERATION DATA

Basic Engine Description

All Speeds

Engine Manufacturer	Perkins/Detroit Diesel
Ignition Type	Compression (Diesel)
Number of Cylinders	6
Bore and Stroke - in. (mm)	3.937 (100) 5.0 (127)
Displacement - in ³ (L)	365 (5.98)
Compression Ratio	16:1
Combustion System	Direct Injection
Engine Type	In-Line, 4 Cycle
Aspiration	Turbocharged
Firing Order (CW Rotation)	1 - 5 - 3 - 6 - 2 - 4
Charge Air Cooling Type	None
Rotation (Viewed from Front)	
Clockwise	Standard
Counter-Clockwise	Not Available
Engine Crankcase Vent System	Open
Dimensions and Weight	
Length - in. (mm) (From Drive Flange)	47.9 (1217)
Width - in. (mm)	27.9 (709)
Height - in. (mm) (Above Crankshaft Center Line)	32.6 (828)
Weight, Dry - lb. (kg)	1223 (555)
Wet - lb. (kg)	1304 (591)
Installation Drawing	D-472

Cooling System

1470 1760 2100 2350 2600

Engine H ₂ O Heat - Btu/sec (kJ/sec)	49 (52)	52 (55)	58 (61)	6.3 (67)	68 (73)
Engine Radiated Heat - Btu/sec (kJ/sec)	10 (11)	11 (12)	12 (13)	13 (14)	15 (16)
Heat Exchanger Minimum Flow					
60°F Raw H ₂ O - gal./min. (L/min)	7 (26)	8.7 (33)	10 (38)	11 (42)	14 (53)
95°F Raw H ₂ O - gal./min. (L/min)	8.8 (33)	11 (42)	12 (45)	14 (53)	16 (61)
Heat Exchanger Maximum Cooling H ₂ O					
Inlet Pressure - lb./in. ² (kPa)			60 (414)		
Flow - gal./min. (L/min)			40 (151)		
Thermostat, Start to Open - °F (°C)			170 (77)		
Fully Open - °F (°C)			198 (92)		
Engine Coolant Capacity - qt (L)			26 (25)		
Coolant Pressure Cap - lb./in. ² (kPa)			9 (62)		
Maximum Engine H ₂ O Temperature - °F (°C)			200 (93)		
Minimum Engine H ₂ O Temperature - °F (°C)			160 (71)		

Electric System - DC

All Speeds

System Voltage (Nominal)	12
Battery Capacity for Ambients Above 32°F - CCA @ 0°F	640
Voltage (Nominal)	12
Qty. per Battery Bank	1
SAE size per J537	4D-640
Battery Cable Circuit*, Max Resistance - ohm	0.0017
Battery Cable Minimum Size	
0-120 in. Circuit* Length	No. 00
121-160 in. Circuit* Length	No. 000
161-200 in. Circuit* Length	No. 0000
Charging Alternator Output - Amp	42
Starter Cranking Amps - @ 60° F	394

*Positive and Negative Cables Combined Length

NOTE: This Engine Is Intended For Indoor Installation Or In A Weatherproof Enclosure.

(Continued)

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PDFP-L6YT INSTALLATION & OPERATION DATA (Continued)

<u>Exhaust System</u>	<u>1470</u>	<u>1760</u>	<u>2100</u>	<u>2350</u>	<u>2600</u>
Exhaust Flow - ft ³ /min. (m ³ /min)	444 (13)	591 (17)	738 (21)	862 (24)	1025 (29)
Exhaust Temperature - °F (°C)	873 (467)	874 (468)	831 (444)	815 (435)	841 (449)
Maximum Allowable Back Pressure - in. H ₂ O (kPa)	30 (7.5)	30 (7.5)	30 (7.5)	30 (7.5)	30 (7.5)
Minimum Exhaust Pipe Dia. - in (mm)**	3.0 (76)	3.0 (76)	4.0 (102)	4.0 (102)	4.0 (102)

<u>Fuel System</u>	<u>1470</u>	<u>1760</u>	<u>2100</u>	<u>2350</u>	<u>2600</u>
Fuel Consumption - gal/hr (L/hr.)	4.3 (16)	5.3 (20)	6.1 (23)	6.7 (25)	7.7 (23)
Fuel Pressure - lb./in. ² (kPa)			5-10 (35-70)		
Minimum Line Size - Supply - in (mm)**			0.37 Sch 40 - Black		
Minimum Line Size - Return - in (mm)**			0.25 Sch 40 - Black		
Maximum Allowable Fuel Pump Suction with Clean Filter - in. H ₂ O (kPa)			54 (100)		
Maximum Allowable Head on Fuel Pump - ft(m)			9.8 (3.0)		
Fuel Filter Micron Size - Primary			30		
Secondary			5		
Fuel Modulator/Setting			None/None		

<u>Heater System</u>	<u>All Speeds</u>
Jacket Water Heater	Standard
Wattage (Nominal)	1500
Voltage - AC, 1P	120 (+5%, -10%)
Optional Voltage - AC, 1P	240 (+5%, -10%)
Lube Oil Heater (Required When Ambient Is Below 32°F (0°C))	Consult Factory

<u>Induction Air System</u>	<u>1470</u>	<u>1760</u>	<u>2100</u>	<u>2350</u>	<u>2600</u>
Air Cleaner Type	Indoors Service Only - Washable				
Air Intake Restriction Maximum Limit					
Dirty Air Cleaner - in. H ₂ O (kPa)	32 (8.0)	32 (8.0)	32 (8.0)	32 (8.0)	32 (8.0)
Clean Air Cleaner - in. H ₂ O (kPa)	20 (5.0)	20 (5.0)	20 (5.0)	20 (5.0)	20 (5.0)
Engine Air Flow - ft ³ /min (m ³ /min.)	179 (5)	238 (7)	307 (9)	363 (10)	423 (12)
Maximum Allowable Temperature (Air To Engine Inlet) - °F (°C)***			130 (54)		

<u>Lubrication System</u>	<u>All Speeds</u>
Oil Pressure - normal - lb./in. ² (kPa)	40-60 (276-414)
In Pan Oil Temperature - °F (°C)	220-240 (88-116)
Oil Pan Capacity - High - qt. (L)	13.8 (13.1)
Low - qt. (L)	11.5 (10.9)
Total Oil Capacity with Filters - qt. (L)	15.2 (14.4)

<u>Performance</u>	<u>1470</u>	<u>1760</u>	<u>2100</u>	<u>2350</u>	<u>2600</u>
BMEP - lb./in. ² (kPa)	133 (917)	136 (938)	124 (855)	115 (793)	113 (779)
Piston Speed - ft./min (m/min)	1225 (373)	1467 (447)	1750 (583)	1958 (597)	2167 (660)
Noise - dB (A) @ 1m	100 (EST)	102 (EST)	103 (EST)	104 (EST)	96 (EST)
Power Curve	CDDA - Y064 - 03				

**Based On Nominal System. Flow Analysis Must Be Done To Assure Adherence To System Limitations.
(Minimum Exhaust Pipe Diameter is based on 15 feet of pipe, one elbow, and a silencer
pressure drop no greater than one half the max. allowable back pressure)