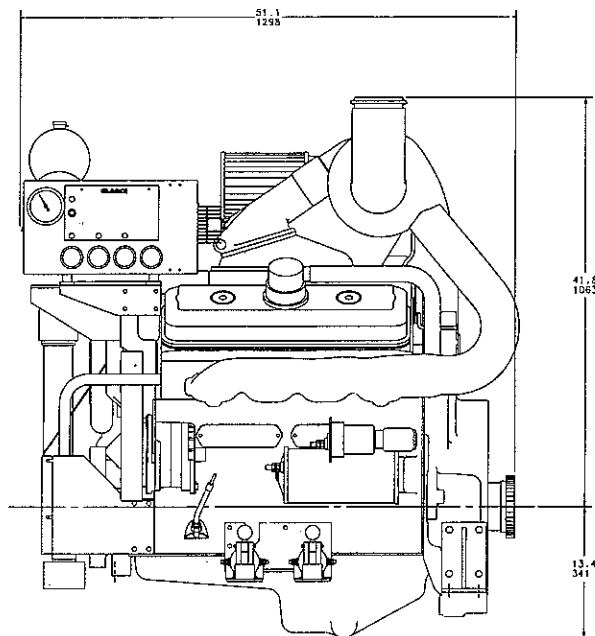


CLARKE FIRE PUMP DRIVERS



DDFP-08FA
OVERALL WIDTH
41.02 (1041.86)

MODELS

DDFP-L6FA DDFP-T6FA
DDFP-06FA DDFP-06FH
DDFP-L8FA DDFP-08FA
DDFP-08FH

APPROVED RATINGS BHP/kw FM-UL-ULC*

MODEL	SPEED (RPM)			
	1470	1760	2100	2350
DDFP-L6FA	218 163	265 200	305 227	310 231
DDFP-T6FA	254 189	302 225	341 254	348 259
DDFP-06FA	315 235	368 275	412 307	443 331
DDFP-06FH	350 260	425 316	460 343	465 346
DDFP-L8FA	380 283	460 343	500 373	515 384
DDFP-08FA	420 313	509 380	552 412	570 425
DDFP-08FH	468 349	575 429	669 499	708 528

*Engines are rated at standard SAE conditions of 29.61 in. (7521 mm) Hg barometer and 77°F (25°C) inlet air temperature [approximates 300 ft. (91.4 m) above sea level] by the testing laboratory (see SAE Standard J 1349).

A deduction of 3 percent from engine horsepower rating at standard SAE conditions shall be made for diesel engines for each 1000 ft. (305 m) altitude above 300 ft. (91.4 m).

A deduction of 1 percent from engine horsepower rating as corrected to standard SAE conditions shall be made for diesel engines for every 10°F (5.6°C) above 77°F (25°C) ambient temperature.

STANDARD EQUIPMENT

Air Cleaner — Direct Mounted, Washable, For Indoor Service Only

Alternator — Integral Regulator, 24V-DC, 40 Ampere, with Belt Guard

Cooling Water Control — Automatic At Local Control Panel

Exhaust Blankets — For Manifolds & Turbo Charger

Flywheel Housing — SAE #1

Fuel Check Valve — Per NFPA-20

Fuel Pump — Gear Driven, Gear Type

Fuel Filters — Primary & Secondary

Engine Heater — 230 Voltage (AC), 2500 Watts With Thermostat

Governor — Mechanical 10%

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 Match NFPA 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 — Per NFPA-20

Power Take Off — Includes Engine Half of Falk T10 Coupling

Run-Stop Control — On Instrument Panel With Control Position Warning Light.

Overspeed Control — Electronic w/Reset

Starter 24 VDC — High Torque, Prewired To Manual Contactors

Throttle Control — Tamper Proof

Water Pump — Gear Driven, Centrifugal Type



LISTED
513Y



meets
NFPA-20
Requirements



approved
1333



listed
C448A

SPECIFICATIONS

	DDFP-L6FA DDFP-T6FA DDFP-06FA	DDFP-06FH	DDFP-L8FA DDFP-08FA	DDFP-08FH
DDC Engine Series	V-92	V-92	V-92	V-92
No. Cylinders	6	6	8	8
Aspiration	TA	TA	TA	TA
Rotation**	CW STD. CCW AVAILABLE			
Displacement (cu. in.)*	552	552	736	736
Net Wt. (lbs.)	2217	2217	2560	2605
Bore (in.)	4.84	4.84	4.84	4.84
Stroke (in.)	5.0	5.0	5.0	5.0
Compression Ratio	17:1	15:1	17:1	15:1
Installation Drawing	D-433	D-433	D-433	D-433

DDC - DETROIT DIESEL CORP.
TA - TURBOCHARGED AND AFTERCOOLED
CW - CLOCKWISE

*V-92 UNITS ARE 2 STROKE CYCLE
**VIEW FROM FRONT

DESIGN FEATURES

- Direct Mounted Drive Coupling Hub
- Direct Attachment Of Driveshaft Available
- 24 Volt DC Starting System
- Low Watt Density Coolant Heater
- Compact Size
- High Horsepower To Weight Ratio
- Jacket Water Cooled Aftercooler
- Direct Injection
- Individual Cylinder Fuel Injectors
- Roller Camshaft Lifters
- By-Pass Type Blower
- Replaceable Cylinder Liners
- Crosshead Pistons To Eliminate Side Load Wear

CERTIFIED POWER AT ANY SPEED

Although specific FM-UL Certified BHP ratings are shown at four (4) specific speeds, these Clarke engines can be applied to fire pumps at any intermediate speed between 1470 to 2350 RPM. To determine the applicable intermediate certified power, make a linear interpolation of the Clarke FM-UL certified power curve. Contact Clarke or your Pump OEM representative to obtain details.



3133 EAST KEMPER ROAD
CINCINNATI, OH 45241

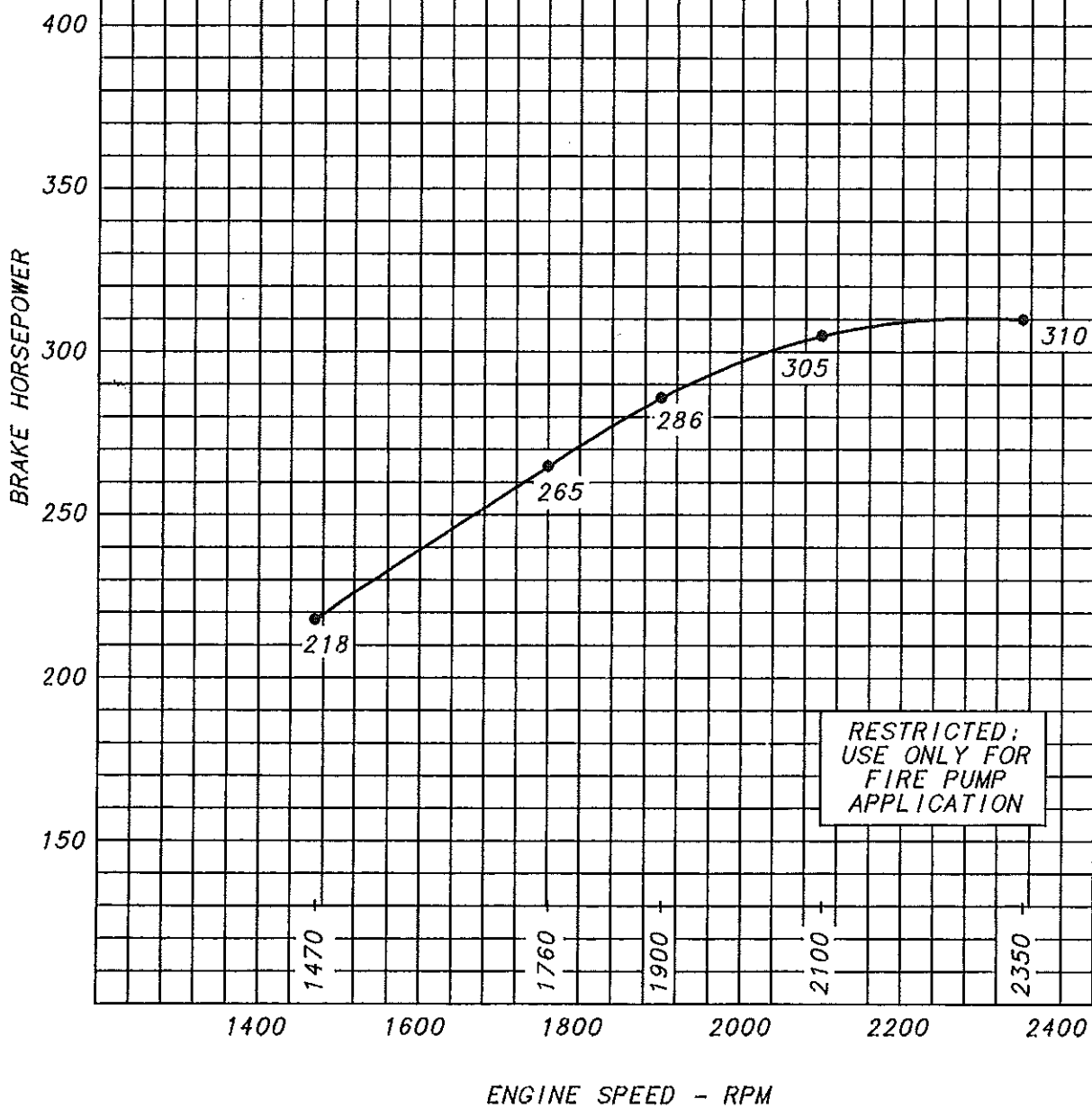
☎ 513-771-2200 FAX 513-771-0520



FIRE PUMP MODEL DDFP-L6FA
6V92TA INDUSTRIAL
HEAT EXCHANGER COOLED
9225 INJECTOR, 1.490 TIMING
TV8102 1.23A/R 5102353 TURBO
JACKET WATER CHARGE COOLING

SAE STD CONDITIONS:
77°F AIR INLET TEMPERATURE
#2 DIESEL FUEL
29.61 IN.HG BAROMETRIC PRESSURE
VALIDATED BY:
FACTORY MUTUAL RESEARCH
UNDERWRITERS LABORATORIES, INC
UNDERWRITERS LABORATORIES OF CANADA

J. T. Whitney
J. T. WHITNEY 1/25/95





CLARKE

DETROIT DIESEL-ALLISON



3133 EAST KEMPER ROAD
CINCINNATI, OH 45241

DDFP-L6FA INSTALLATION & OPERATION DATA

Basic Engine Description

Engine Manufacturer
 Ignition Type
 Number of Cylinders
 Bore and Stroke - in. (mm)
 Displacement - in.³ (L)
 Compression Ratio
 Valves per Cylinder
 Intake
 Exhaust
 Combustion System
 Engine Type
 Aspiration
 Firing Order (CW Rotation)
 Turbocharger
 Charge Air Cooling Type
 Blower Type
 Blower Drive Ratio
 Rotation (Viewed from Front)
 Clockwise
 Counter-Clockwise
 Engine Crankcase Vent System
 Dimensions and Weight
 Length - in. (mm) (From Drive Flange)
 Width - in. (mm)
 Height - in. (mm) (Above Crankshaft Center Line)
 Weight, Dry - lb. (kg)
 Wet - lb. (kg)
 Installation Drawing

All Speeds

Detroit Diesel Corp.
 Compression (Diesel)
 6
 4.84 x 5.00 (123 x 127)
 552 (9.1)
 17:1

 None
 4
 Direct Injection
 63.5° VEE - 2 Cycle
 Turbocharged
 1R-1L-3R-3L-2R-2L
 1.23 A/R
 Jacket Water
 Roots By-Pass
 1.95:1

 Standard
 Optional
 Open

 45.35 (1152)
 40.34 (1025)
 43.75 (1111)
 2217 (1005)
 2325 (1055)
 D-433

Cooling System

	1470	1760	1900	2100	2350
Heat Exchanger Minimum Flow					
60°F Raw H ₂ O - gal./min. (L/min.)	9 (34)	13 (49)	15 (57)	17 (64)	18 (68)
95°F Raw H ₂ O - gal./min. (L/min.)	14 (53)	17 (64)	19 (72)	23 (87)	25 (95)
Engine H ₂ O Heat - Btu/sec. (kw/sec.)	90 (1.6)	138 (2.4)	154 (2.7)	157 (2.8)	175 (3.1)
Engine Radiated Heat - Btu/sec. (kw/sec.)			42 (0.7)		
Thermostat, Start to Open - °F (°C)			177 (81)		
Fully Open - °F (°C)			197 (92)		
Engine Coolant Capacity - qt. (L)			43 (41)		
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)		
Heat Exchanger Maximum Raw H ₂ O Inlet Pressure - lb./in. ² (kPa)			60 (414)		

Electric System - DC

System Voltage (Nominal)
 Battery Capacity for Ambients Above 32°F - CCA @ 0°F
 Voltage (Nominal)
 Qty. per Battery Bank
 SAE size per J537
 Battery Cable Circuit*, Max Resistance - ohm
 Battery Cable Minimum Size
 0-225 in. Circuit* Length
 225-300 in. Circuit* Length
 301-380 in. Circuit* Length
 Charging Alternator Output - Amp.
 Starter Cranking Amps - @ 40° F

All Speeds

24
 900
 12
 2
 8D-900
 0.002

 No. 00
 No. 000
 No. 0000
 40
 595

*Positive and Negative Cables Combined Length

(Continued)

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

DDFP-L6FA INSTALLATION & OPERATION DATA (Continued)

<u>Exhaust System</u>	<u>1470</u>	<u>1760</u>	<u>1900</u>	<u>2100</u>	<u>2350</u>
Exhaust Flow - ft. ³ /min. (m ³ /min.)	1570 (44)	1930 (55)	2120 (60)	2320 (66)	2440 (69)
Exhaust Temperature - °F (°C)	723 (383)	680 (360)	655 (346)	649 (343)	639 (337)
Maximum Allowable Back Pressure - in. H ₂ O (kPa)	19 (4.7)	26 (6.6)	27 (6.9)	28 (7.1)	30 (7.6)
Minimum Exhaust Pipe Dia. - in. (mm)**	5 (127)	5 (127)	6 (152)	6 (152)	6 (152)

<u>Fuel System</u>	<u>1470</u>	<u>1760</u>	<u>1900</u>	<u>2100</u>	<u>2350</u>
Fuel Pressure - lb./in. ² (kPa)	58 (400)	62 (428)	63 (435)	64 (442)	65 (449)
Fuel Consumption - gal./hr. (L/hr.)	12 (45)	14 (53)	16 (61)	17 (64)	17 (64)
Fuel Return Rate - gal./hr. (L/hr.)	63 (239)	71 (269)	74 (280)	80 (303)	83 (315)
Total Fuel Flow - gal./hr. (L/hr.)	75 (284)	85 (322)	90 (341)	97 (367)	100 (379)
Minimum Line Size - Supply - in. (mm)**75 (19) Sch. 40 - Black	
Return - in. (mm)**50 (13) Sch. 40 - Black	
Maximum Allowable Fuel Pump Suction Clean System - in. H ₂ O (kPa)				82 (20)	
Dirty System - in. H ₂ O (kPa)				164 (40)	
Fuel Filter Micron Size - Primary				30	
Secondary				12	
Fuel Injector/Timing				9225/1.490	
Fuel Modulator/Setting				None	

<u>Heater System</u>	<u>All Speeds</u>
Jacket Water Heater	Standard
Wattage (Nominal)	2500
Voltage, Reconnectable - VAC, 1P	120/208/240
Other Voltages	Optional
Lube Oil Heater	Optional
Wattage	125

<u>Induction Air System</u>	<u>1470</u>	<u>1760</u>	<u>1900</u>	<u>2100</u>	<u>2350</u>
Air Cleaner Type					Indoors Service Only - Washable
Air Intake Restriction Maximum Limit Dirty Air Cleaner - in. H ₂ O (kPa)	6.5 (1.7)	7.0 (1.8)	7.5 (1.9)	8.0 (2.0)	9.0 (2.3)
Clean Air Cleaner - in. H ₂ O (kPa)	3.3 (0.8)	4.3 (1.1)	4.9 (1.2)	5.8 (1.4)	6.5 (1.6)
Engine Air Flow - ft. ³ /min. (m ³ /min.)	760 (22)	875 (25)	926 (26)	990 (28)	1060 (30)
Maximum Allowable Temperature (Ambient Air To Engine Inlet) - °F (°C)				30 (17)	

<u>Lubrication System</u>	<u>All Speeds</u>
Oil Pressure - normal - lb./in. ² (kPa)	40-70 (276-433)
In Pan Oil Temperature - °F (°C)	190-220 (88-104)
Oil Pan Capacity - High - qt. (L)	20 (19)
Low - qt. (L)	16 (15)
Total Oil Capacity with Filters - qt. (L)	22 (21)

<u>Performance</u>	<u>1470</u>	<u>1760</u>	<u>1900</u>	<u>2100</u>	<u>2350</u>
BMEP - lb./in. ² (kPa)	106 (731)	108 (745)	108 (745)	104 (717)	95 (655)
Piston Speed - ft./min. (m/min.)	1225 (373)	1467 (447)	1583 (483)	1750 (533)	1958 (597)
Noise - dB (A) @ 1m	95 (EST)	96 (EST)	97 (EST)	98 (EST)	98 (EST)
Power Curve				CDDA - 8064 - 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.)



CLARKE

DETROIT DIESEL-ALLISON



3133 EAST KEMPER ROAD
CINCINNATI, OH 45241

**DDFP-L6FA; -T6FA; -06FA
DDFP-06FH; -L8FA; -08FA
DDFP-08FH
ENGINE MATERIALS
& CONSTRUCTION**

Air Cleaner

Type Indoor Usage Only
Oiled Fabric Pleats
Material Surgical Cotton
Aluminum Mesh

Camshaft

Material Steel (SAE 1513)
Location In Block, 1 Per Bank
Drive Gear
Type of Cam Ground

Camshaft Bearing - End

Journal Diameter 1.50 in. (38.0 mm)
Length 2.12 in. (53.8 mm)
Material Steel Backed Bronze

Camshaft Bearing - Intermediate

Journal Diameter 1.50 in. (38.0 mm)
Length 1.32 in. (33.5 mm)
Materials Aluminum

Connecting Rod

Type Forged I Section
Material Forged Steel, (SAE 1141)

Crank Pin Bearings

Type Precision Half Shell
Number 1 Pair Per Cylinder
Journal Diameter 3.00 in. (76.2 mm)
Length 1.20 in. (30.5 mm)
Projected Area/Bearing 3.60 in.² (2323 mm²)
Material Steel Backed Copper Lead

Crankshaft

Material Steel (SAE 1548)
Heat Treat Induction Hardened
Type of Balance Dynamic

Cylinder Block

Type One Piece
Material Cast Iron

Cylinder Head

Type Slab 4 Valve
Material Cast Iron

Exhaust Valve

Type Poppet
Arrangement Overhead Valve
Number/Cylinder 4
Operating Mechanism Mechanical Rocker Arm
Type of Lifter Roller
Valve Spring
Number/Valve 1
Valve Seat Insert
Material GM3544M

Heat Exchanger

Type Tube & Shell
Materials
Tubes & Headers 90/10 CU/NI
Shell Copper
Electrode Zinc

Liners

Type Wet Liner
Material Cast Iron
Ports
Type Oval
Number 18

Main Bearings

Type Precision Half Shells
Journal Diameter 4.50 in. (114.3 mm)
Length 1.24 in. (31.5 mm)
Projected Area/Bearing 5.58 in.² (3600 mm²)
Material Steel Backed Copper Lead

Piston

Type and Material Crosshead Malleable Iron
Cooling Oil - Cocktail Shaker

Piston Pin Bushing

Material Steel Backed Bronze

Piston Rings - Compression

Type
Top Ring Chrome Faced Keystone
Remaining 2 Barrel And Chrome Faced

Piston Rings - Oil

Type Double Scraper with Expander
Number per Piston 2 Sets
Location Bottom of Skirt

Piston Pin

Type Crosshead - Polished & Hardened

CAUTION

ALL PLUMBING MUST BE SUPPORTED AND/OR ISOLATED SO THAT NO WEIGHT OR STRESS IS APPLIED TO ANY ENGINE COMPONENT

ATTENTION

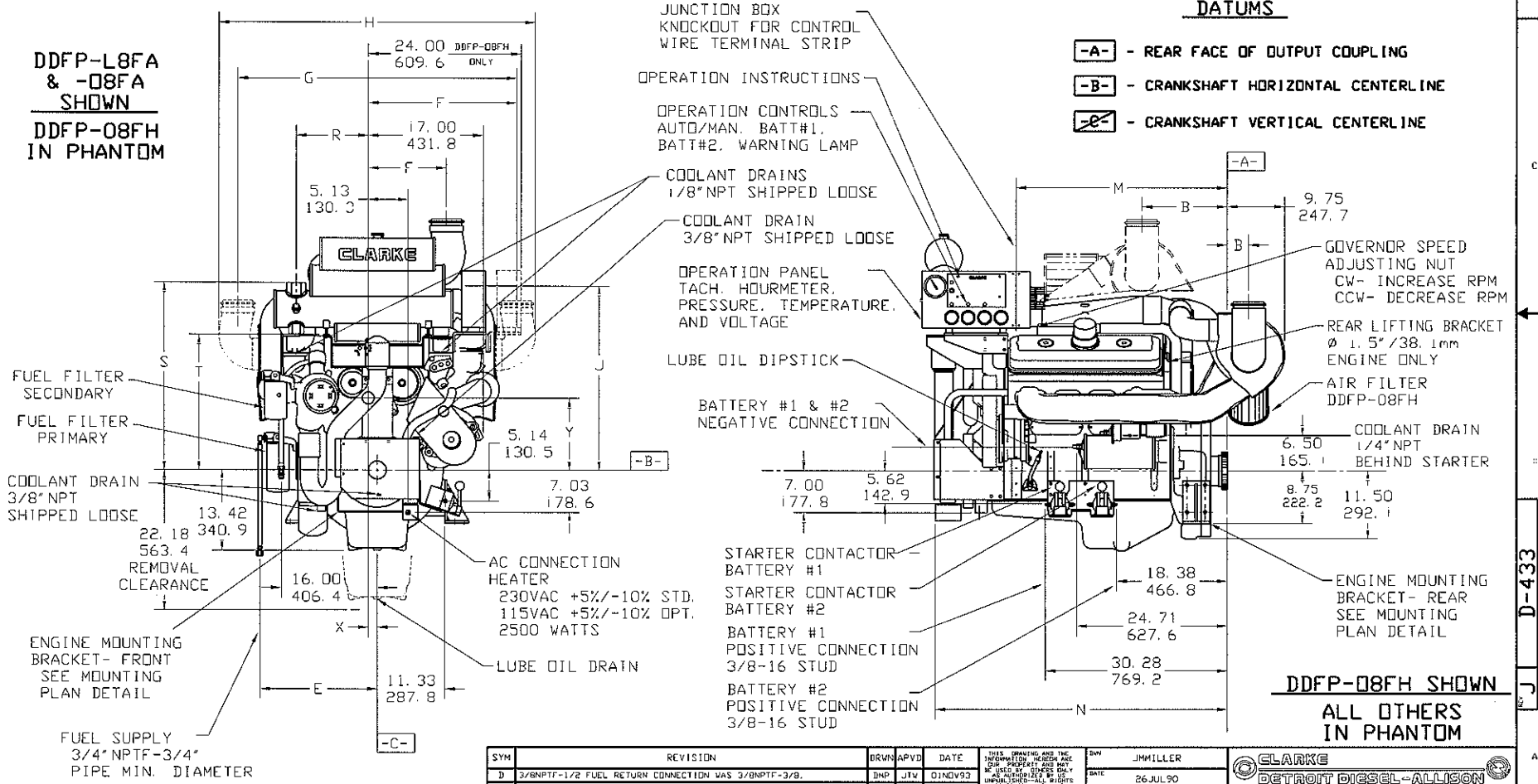
REFER TO THE SPECIFIC MODEL "INSTALLATION AND OPERATION DATA" FOR INSTALLATION GUIDELINES

REDUCED DRAWING

DO NOT SCALE UNKNOWN DIMENSIONS

MODEL	B	E	F	G	H	J	M	N	R	S	T	X	Y
DDFP-L6FA		18.67 474.2								28.74 730.0			11.12 282.5
DDFP-T6FA							29.06 738.1	42.52 1080.0	15.50 393.7		25.85 656.6	-0.06 -1.5	11.35 288.2
DDFP-D6FA	11.75 298.5		11.56 293.6	-0-	41.02 1041.9	43.75 1111.3				29.81 757.2			11.12 282.5
DDFP-D6FH		19.55 496.6											
DDFP-L8FA							35.18 893.6	48.64 1235.5	13.50 342.9	31.38 797.1	22.63 574.9	-0.05 -1.3	12.26 311.4
DDFP-D8FA	3.55 90.2	19.13 485.9	23.25 590.6	46.50 1181.1	52.75 1339.9	28.25 717.6						0.34 8.64	9.56 242.8

DDFP-L8FA & -D8FA SHOWN
DDFP-D8FH IN PHANTOM



DDFP-D8FH SHOWN
ALL OTHERS
IN PHANTOM

DRAWING SUBJECT
TO CHANGE
WITHOUT NOTICE

SYM	REVISION	DRWN	APVD	DATE
D	3/8NPT-1/2 FUEL RETURN CONNECTION WAS 3/8NPT-3/8.	DMP	JTW	01NOV93
	3/4NPT-3/4 FUEL SUPPLY CONNECTION WAS 3/8NPT-1/2. 1 1/2" NPT			
	RAW WATER INLET WAS 2" NPT. ADDED MODEL -D6FH			
E	RELOCATED FUEL FILTERS, CORRECTED DIMS "E", "L", & "V"	DMP	JTW	12SEP94
F	MODELS -L6FA, -T6FA WERE -L6VT, -T6VT	DMP	JTW	22NOV94
G	REVISED J.V. HEATER AND ADDED NEW INSTRUMENT PANEL	DMP	DMP	28DEC95
H	REVISED TO NEW FORMAT WITH NO OTHER CHANGES	SEN	JTW	25JUN97
J	DIM "A" ON PG 2 WAS 298.5mm IN ERROR	SK	KJK	18APR01

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DRW: JMMILLER
DATE: 26 JUL 90
ENGR: JWHITNEY
CHK:

CLARKE
DETROIT DIESEL-ALLISON
3133 EAST KEMPER ROAD, CINCINNATI, OHIO 45241

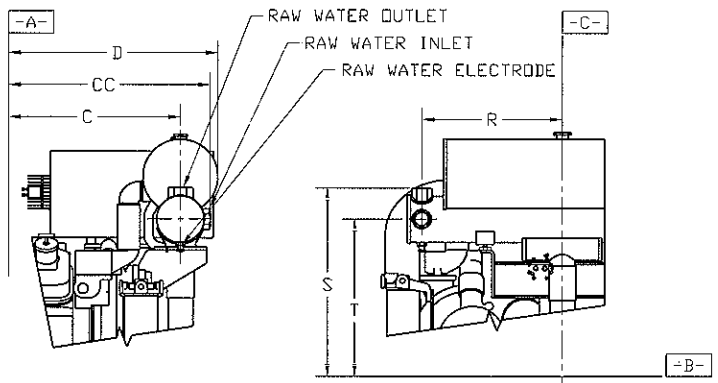
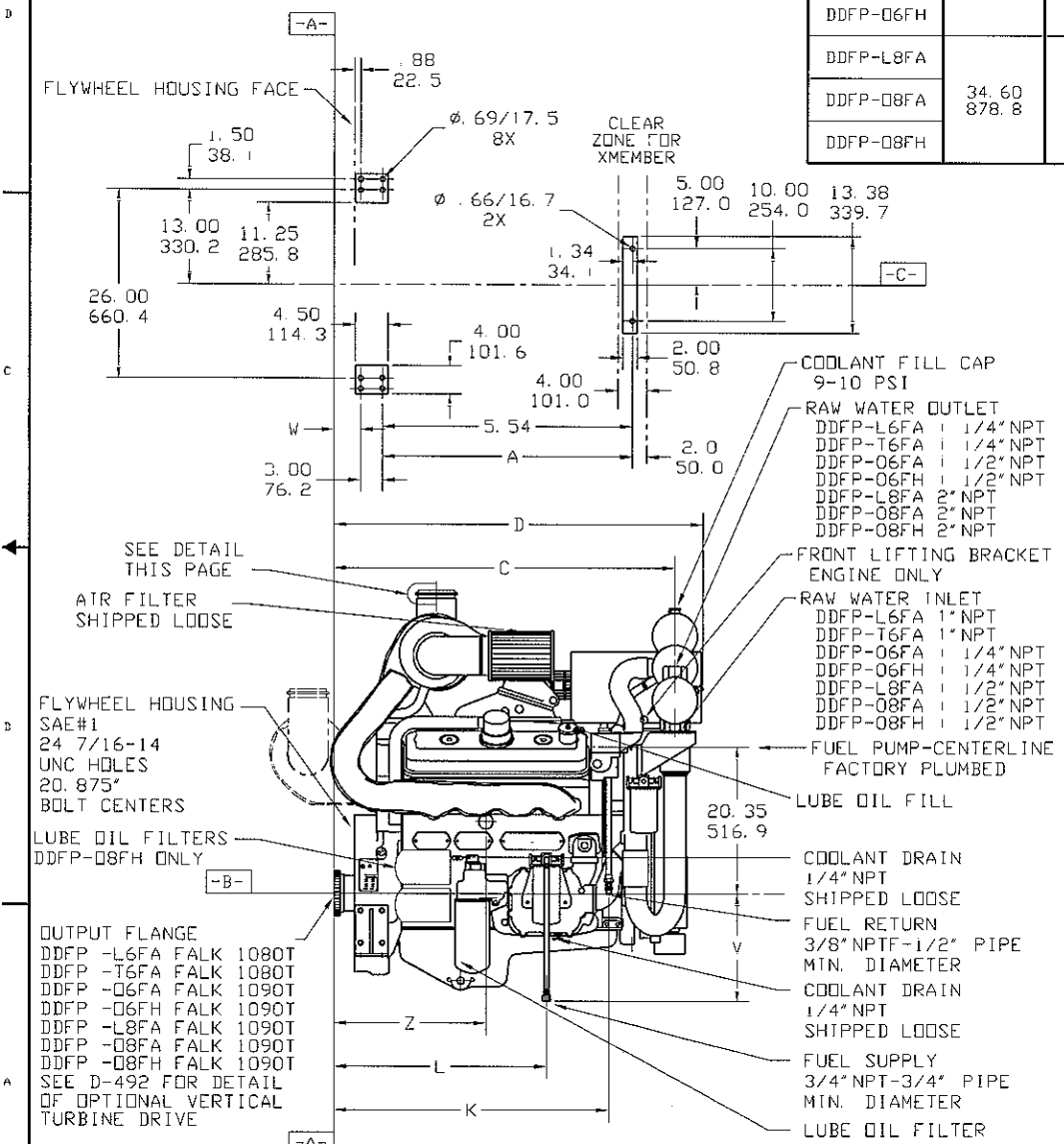
NAME: INSTALLATION DRAWING
FIRE PUMP ENGINE -
DDFP-L6FA, -T6FA, -D6FA, -D6FH,
-L8FA, -D8FA, & -D8FH

SIC: R PART NO: D-433 REV: J

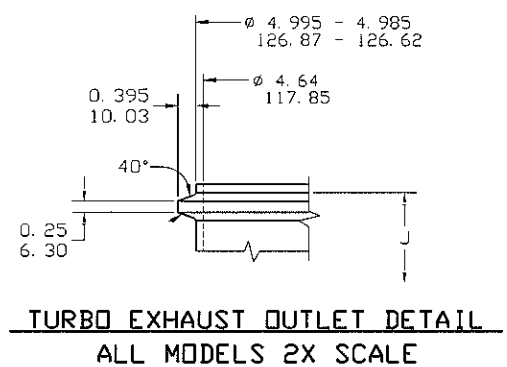
SCALE: 3/16 UNITS: IN/31.75 OR MM

D-433 J

MODEL	A	C	CC	D	K	L	V	W	Z
DDFP-L6FA	28.84 732.5	41.08 1043.4	43.75 1111.3	45.23 1148.8	31.91 810.5	26.51 673.4	14.93 379.2	3.31 84.1	19.85 504.2
DDFP-T6FA		41.45 1052.8	44.75 1136.7	45.60 1158.2	32.28 819.9	23.65 600.7		20.31 515.9	
DDFP-O6FA		47.20 1198.9	-0-	51.10 1297.8	38.03 965.8	29.40 746.8		19.85 504.2	
DDFP-O6FH								3.68 93.6	24.03 610.5
DDFP-L8FA	34.60 878.8								22.37 568.2
DDFP-O8FA							15.77 400.6		
DDFP-O8FH									



**DDFP-L6FA, -T6FA, -O6FA, -O6FH
RAW WATER CONNECTIONS**



**TURBO EXHAUST OUTLET DETAIL
ALL MODELS 2X SCALE**

DRAWING SUBJECT TO CHANGE WITHOUT NOTICE

**DDFP-L8FA & -O8FA SHOWN
DDFP-O8FH IN PHANTOM**

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	DATE	26 JUL 90								
	ENGR	JTHITNEY								
	CHK									
SCALE	3/16	UNITS: IN DN/WH OF MM	THIRD ANGLE PROJ	SHEET OF						
USAG	B	INSR	N	SERIES CODE	BP	SIZE	PART NO	D-433	REV	J

D-433

FIRE PUMP DRIVERS

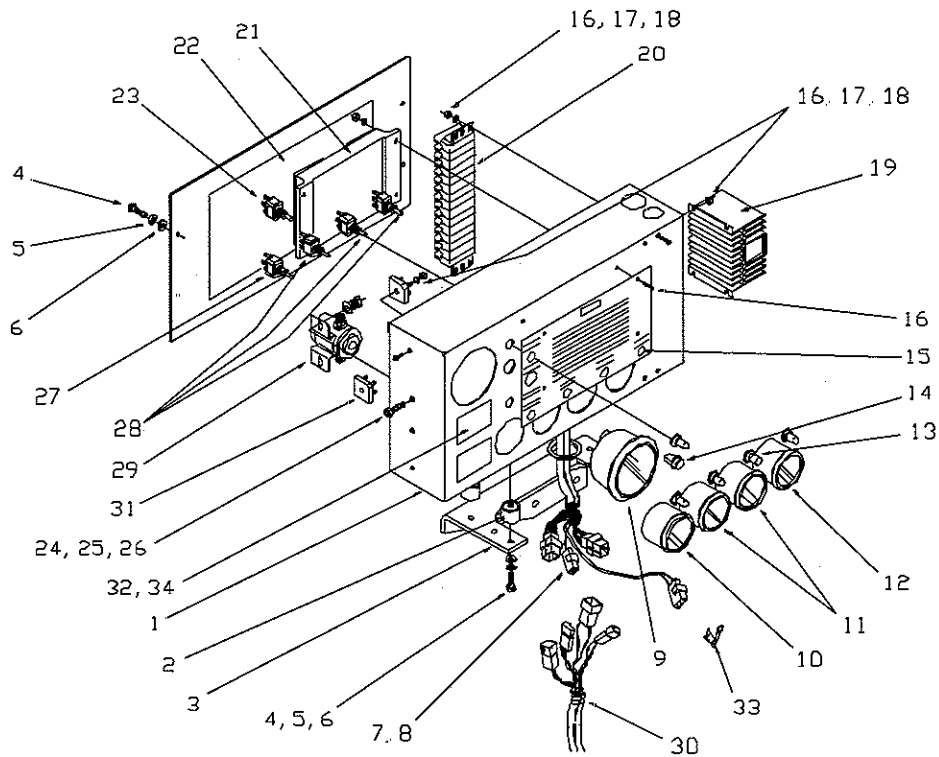
"CLARKE PARTS"

for

DDFP-L6FA, -T6FA, -O6FA, -O6FH, -L8FA, -O8FA, & -O8FH

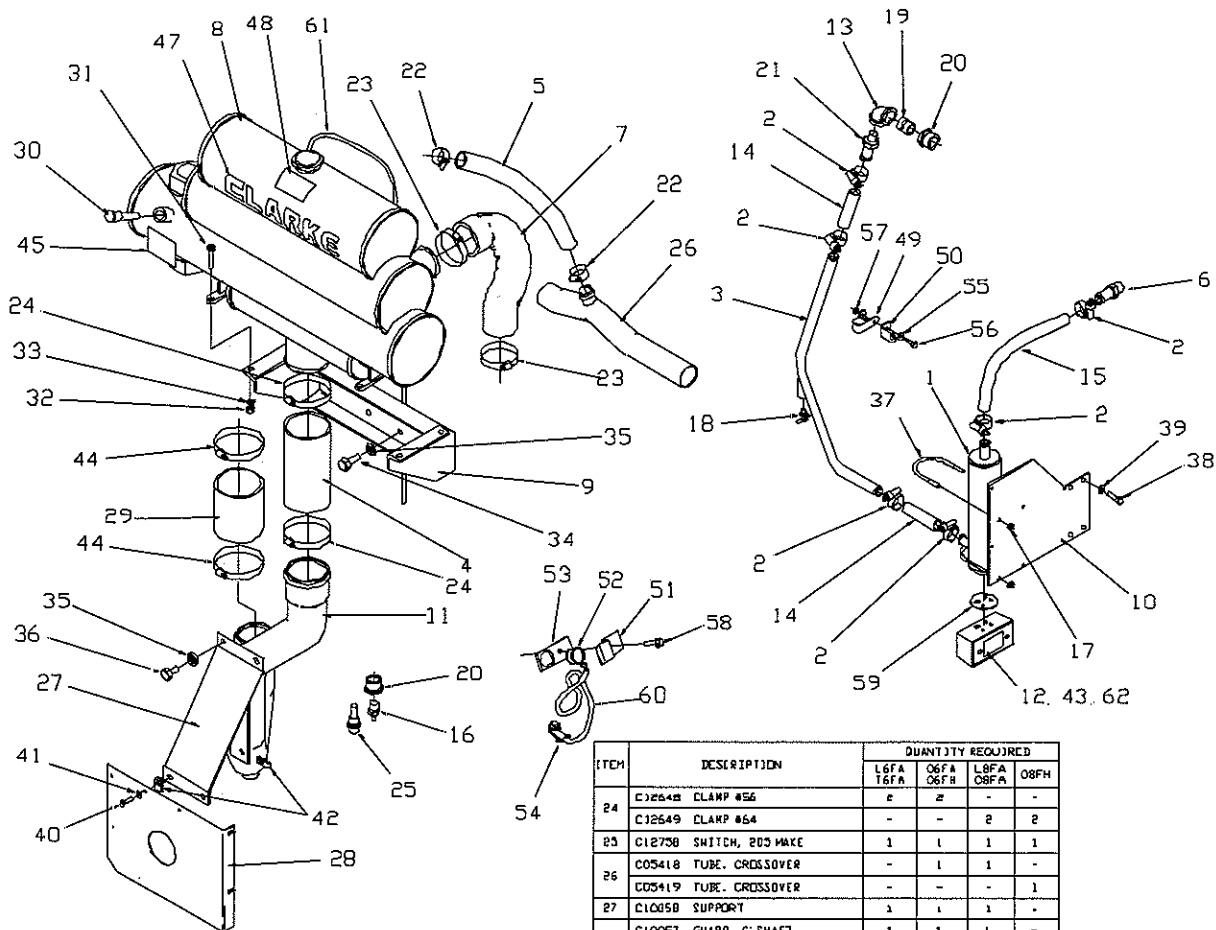
Replacement "CLARKE PARTS" can be ordered through the authorized DDC Distributor/Dealer in your area. When ordering provide your Distributor/Dealer with data from the FM/UL Nameplate and item P/N required:

A. Model No _____ B. Unit S/N _____
 C. Manufacturing Date _____ D. P/N _____



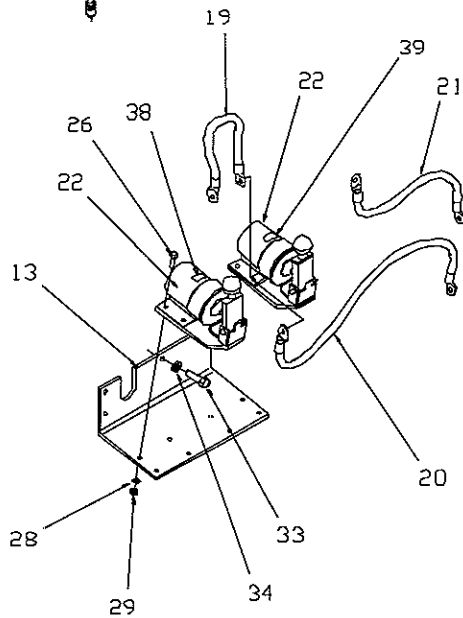
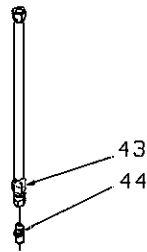
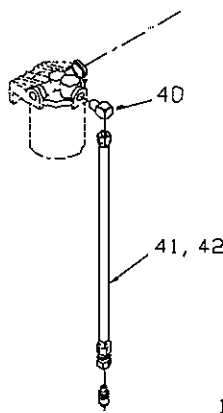
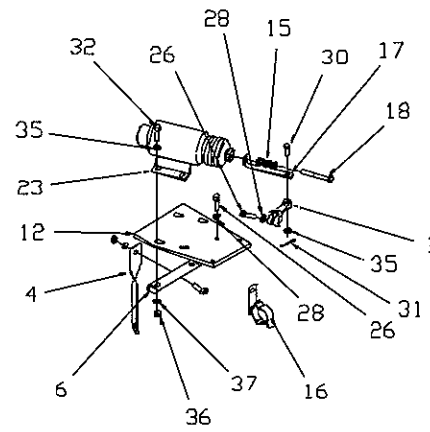
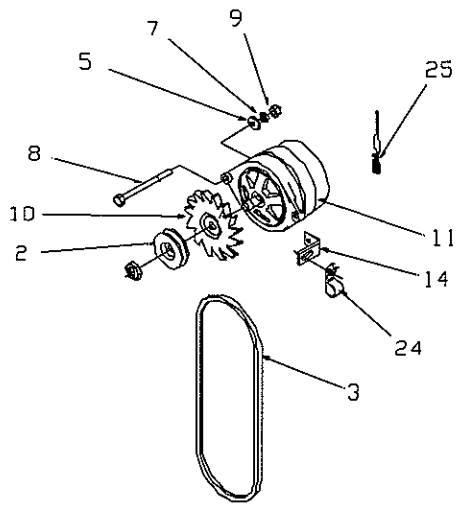
ITEM	DESCRIPTION	QTY. REQ'D
--	C07662 INSTRUMENT PANEL ASSEMBLY-24VDC	1
1	C07548 INSTRUMENT PANEL w/SCREW COVER	1
2	C07589 MOUNT, ELASTOMER	4
3	C07648 BRACKET, MOUNTING	1
4	180021 BOLT, 1/4-20 X 7/8" L	4
5	120380 LOCKWASHER, 1/4	4
6	102383 FLATWASHER, 1/4	4
7	C07587 HARNESS ASSEMBLY, INSTRU PANEL	1
8	C121804 BUSHING, INSTRU PANEL	1
9	C07477 TACH w/ HOURMETER	1
10	C07475 GAUGE, PRESSURE	1
11	C07474 VOLTMETER, 24VDC	2
12	C07476 GAUGE, TEMPERATURE	1
13	C12881 BOOT, TOGGLE	3
14	C07647 LIGHT, INDICATOR	1
15	C121635 PLATE, INSTRUCTION	1
16	132776 SCREW 8-32 X 1" L	4
17	178364 LOCKWASHER, INT/EXT TOOTH 8-32	4

ITEM	DESCRIPTION	QTY. REQ'D
18	120622 NUT, 8-32	14
19	C07378 ISOLATOR, BATTERY	1
20	C07592 TERMINAL STRIP, 14 POSITION	1
21	C07590 ELECTRONIC SPEED SWITCH	1
22	C13214 LABEL, 3C SCHEMATIC	1
23	C07580 SWITCH, TOGGLE	1
24	132911 SCREW, 10-32 X 5/8" L	10
25	178378 LOCKWASHER, 10-32	10
26	120614 NUT, 10-32	10
27	C07538 SWITCH, TOGGLE	1
28	C07578 SWITCH, TOGGLE	3
29	C07586 SOLENOID, 24VDC	1
30	C07653 ENGINE HARNESS	1
31	C07581 BATTERY BRIDGE	2
32	C13187 LABEL, AUTO START WARNING	1
33	C07480 RESISTOR, 24VDC	2
34	C13191 LABEL, AIR FILTER	1

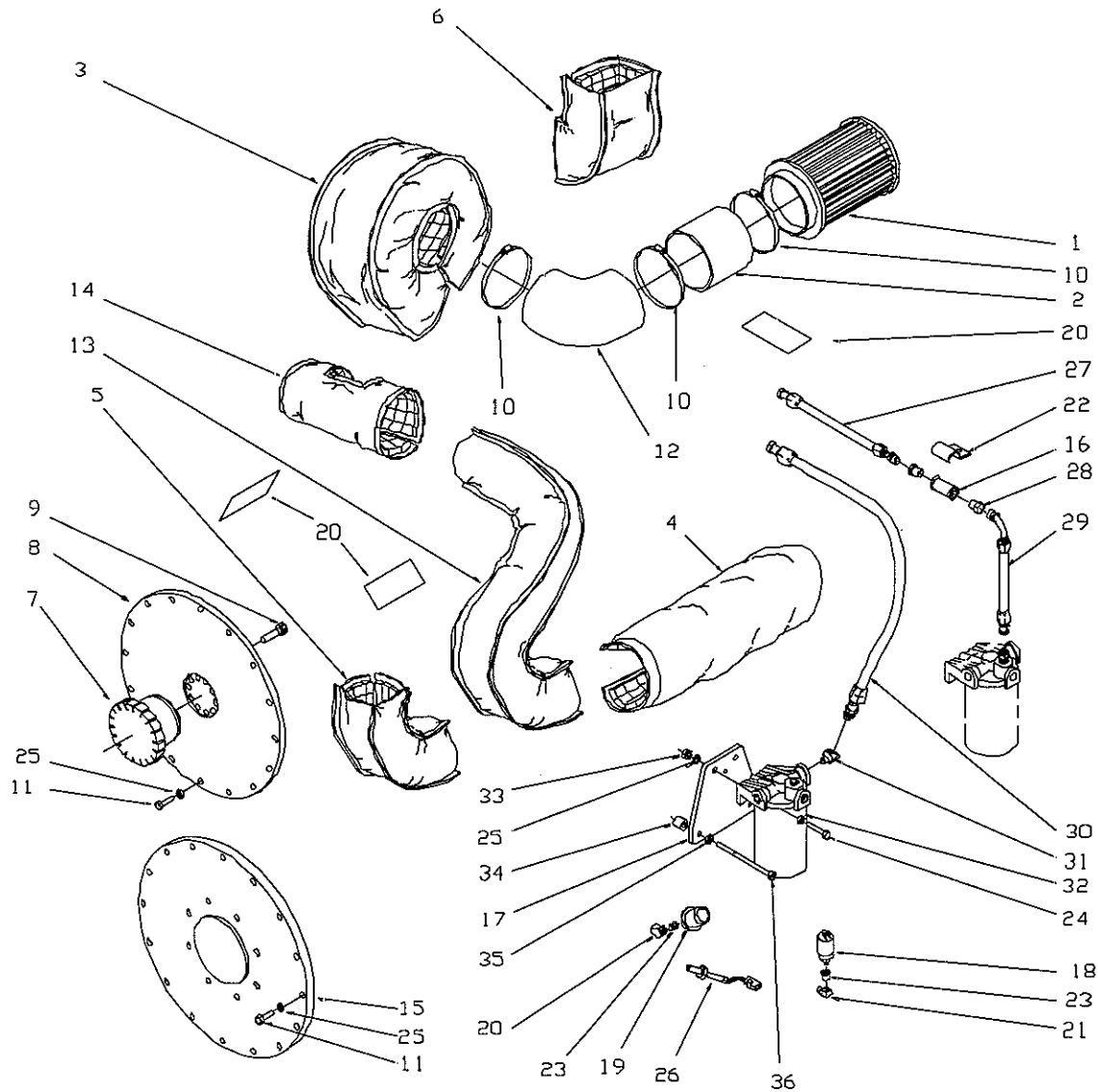


ITEM	DESCRIPTION	QUANTITY REQUIRED			
		L6FA 16FA	06FA 06FH	L8FA 08FA	08FH
1	C122191 J.V. HTR, 115VAC	1	1	1	1
	C122195 J.V. HTR, 230VAC	1	1	1	1
2	C121708 CLAMP	6	6	6	6
3	C05509 TUBE	1	1	1	1
4	C05032 HOSE	-	-	1	1
	C05056 HOSE	1	1	-	-
5	C05048 HOSE	-	1	1	1
6	C05153 CONNECTOR	1	1	1	1
7	C05054 HOSE, STRAIGHT	2	2	-	-
	C05386 HOSE, FORMED-LEFT	-	-	-	1
	C05387 HOSE, FORMED-RIGHT	-	-	-	1
	C05384 HOSE, FORMED-LEFT	-	-	1	-
	C05385 HOSE, FORMED-RIGHT	-	-	1	-
8	C05388 HEAT EXCHANGER	-	-	1	1
	C05433 HEAT EXCHANGER	-	1	-	-
	C05434 HEAT EXCHANGER	1	-	-	-
9	C05389 BRACKET-H. E.	1	1	1	1
10	C05390 BRACKET-HTR.	1	1	1	1
	C05391 TUBE, W.P. INLET	-	-	1	-
11	C05392 TUBE, W.P. INLET	-	-	-	1
	C05440 TUBE, W.P. INLET	1	1	-	-
12	C07659 JUNCTION BOX	1	1	1	1
13	C12163 ELBOW, 90°	1	1	1	1
14	C05397 HOSE	2	2	2	2
15	C05405 HOSE, SPLICED	1	1	1	1
16	C07479 SENDER, TEMPERATURE	1	1	1	1
17	C12094 NUT, NPLDCK	4	4	4	4
18	C12153 DRAINCOCK	1	1	1	1
19	C12233 NIPPLE, CLOSE	1	1	1	1
20	C12349 BUSHING	2	2	2	2
21	C05143 ADAPTER	1	1	1	1
22	C12643 CLAMP #16	-	2	2	2
23	C12646 CLAMP #40	4	4	4	4

ITEM	DESCRIPTION	QUANTITY REQUIRED			
		L6FA 16FA	06FA 06FH	L8FA 08FA	08FH
24	C12648 CLAMP #56	2	2	-	-
	C12649 CLAMP #64	-	-	2	2
25	C12738 SWITCH, 205 MAKE	1	1	1	1
26	C05418 TUBE, CROSSOVER	-	1	1	-
	C05419 TUBE, CROSSOVER	-	-	-	1
27	C10058 SUPPORT	1	1	1	-
28	C10057 GUARD, C' SHAFT	1	1	1	-
	C10060 GUARD, C' SHAFT	-	-	-	1
29	C05056 HOSE	1	1	1	1
30	C05396 ELECTRODE	1	1	1	1
31	186622 BOLT 3/8-16 X 1 1/4	4	4	4	4
32	123221 NUT 3/8-16	4	4	4	4
33	120382 L.W. 3/8	4	4	4	4
34	181427 IDLT 1/2-13 X 1	4	4	4	4
35	120898 L.W. 1/2	6	6	6	6
36	179879 BOLT 1/2-13 X 3/4	2	2	2	2
37	C122196 U-BOLT	2	2	2	2
38	180145 BOLT 7/16-14 X 1	4	4	4	4
39	120383 L.W. 7/16	4	4	4	4
40	180021 BOLT 1/4-20 X 7/8	2	4	4	4
41	120380 L.W. 1/4	2	4	4	4
42	C121508 CLIP 1/4-20	2	4	4	4
43	C07658 J.B. COVER	1	1	1	1
44	C12648 CLAMP #56	2	2	2	2
45	C12744 CAUTION LABEL	1	1	1	1
46	C12974 WARNING LABEL	1	1	1	1
47	C13180 LABEL, LOGO	1	1	1	1
48	C13185 LABEL, PRE-MIX	1	1	1	1
49	C12661 CLAMP, RUBBERIZED	1	1	1	1
50	C05553 BRACKET, SUPPORT	1	1	1	1
51	C07650 RETAINER, THERMOSTAT	1	1	1	1
52	C07648 THERMOSTAT	1	1	1	1
53	C07649 LOCATOR, THERMOSTAT	1	1	1	1
54	C12143 AC 90° CONNECTOR	1	1	1	1
55	446220 WASHER	1	1	1	1
56	186678 BOLT	1	1	1	1
57	123221 NUT	1	1	1	1
58	8927379 BOLT	1	1	1	1
59	C05626 GASKET, JUNCTION BDX	1	1	1	1
60	C07646 SLEEVE, BRAIDED	48	48	48	48
61	C12677 TUBE, OVERFLOW	28	28	28	28
62	C13307 LABEL, HTR VOLTAGE	1	1	1	1
	C13309 LABEL, HTR VOLTAGE	1	1	1	1



ITEM	DESCRIPTION	QTY. REQ'D
1	5102851 LEVER	1
2	5103072 PULLEY	1
3	5103271 BELT	1
4	C02233 BRACE, SUPPORT	1
5	5164294 WASHER	1
6	C02232 BRACKET, SUPPORT	1
7	1500192 WASHER	1
8	1500730 BOLT	1
9	1501052 NUT	1
10	800394 FAN, ALTERNATOR	1
11	1101285 ALT, 40AMP/24V	1
12	C02161 BRKT. GOV. -SOLENOID	1
13	C07469 BRKT. CONTACTOR	1
14	C05593 BRACKET	1
15	6B36128 SPRING	1
16	12040836 CLIP, HARNESS	14
17	C02168 LINK	1
18	C02173 BDLT. GOV. -SOLENOID	1
19	C07822 BATTERY CABLE	1
20	C07827 BATTERY CABLE	1
21	C07849 BATTERY CABLE	1
22	C07142 CONTACTOR-24V	2
23	C07481 SOLENOID-24V	1
24	C12663 CLAMP, RUBBERIZED	2
25	C07493 WIRE ASSEMBLY	1
26	213546 BOLT 1/4-20 X 1	2
27	120385 F.W. 1/4	4
28	120380 L.W. 1/4	32
29	123179 NUT 1/4-20	8
30	103493 CLEVIS PIN	1
31	103407 COTTER PIN	1
32	180078 BOLT 5/16-18 X 7/8	5
33	179839 BOLT 3/8-16 X 1	1
34	120382 L.W. 3/8	3
35	106261 F.W. 5/16	1
36	123197 NUT 5/16-18	5
37	120214 L.W. 5/16	5
38	C12734 LABEL, SCR1	1
39	C12755 LABEL, SCR2	1
40	C121567 ELBDV, 90°	1
41	C02270 FUEL LINE, SUPPLY	1
42	C121585 ADAPTOR, SUPPLY	1
43	C02280 FUEL LINE, RETURN	1
44	C12697 ADAPTOR, RETURN	1



ITEM	DESCRIPTION	QUANTITY REQUIRED			
		LBFA TOPA	DBFA DOPH	LBFA DBFA	DBFA
1	C02244 AIR FILTER	1	1	1	2
2	C03250 TUBE	1	1	1	2
3	C06109 BLNKT, TURBO	1	1	1	2
4	C06450 BLNKT, MANIFOLD	-	-	2	2
	C06466 BLNKT, MANIFOLD	2	2	-	-
5	C06431 BLNKT, R. TUBE	-	-	-	1
	C06432 BLNKT, L. TUBE	-	-	-	1
6	C06453 BLNKT, TURBO OUT EL	-	-	-	2
7	C08099 HUB, DRIVE	-	1	1	1
	C08098 HUB, DRIVE	1	-	-	-
8	C08103 DRIVE DISC	1	1	1	1
9	S103251 BOLT	5	10	10	10
10	C12632 CLAMP #88	3	3	3	6
11	C12634 BOLT, GR. 8 3/8-16	16	16	16	16
	C03086 ELBOW, RUBBER	-	-	1	-
12	C03072 ELBOW, RUBBER	1	1	-	-
	C03091 ELBOW, RUBBER	-	-	-	2
13	C06447 BLNKT, R. TUBE	1	1	1	-
	C06448 BLNKT, L. TUBE	1	1	1	-
14	C06449 BLNKT, NYC	1	1	1	-
15	C08110 DISC 180-10/225	-	-	1	1
	C08127 DISC 61-71-81-88-91	1	1	-	-
16	C02059 CHECK VALVE	1	1	1	1

ITEM	DESCRIPTION	QUANTITY REQUIRED			
		LBFA TOPA	DBFA DOPH	LBFA DBFA	DBFA
17	C02229 BRACKET, FUEL FILTER	1	1	1	-
18	C07645 SWITCH, 2DN SPDT	1	1	1	1
19	C07478 SENSOR, PRESS GAUGE	1	1	1	1
20	C13186 LABEL, LIFT BRACKET	3	3	3	3
21	C12234 ELBOW, BRASS	-	1	1	1
22	C02230 CLAMP, MOUNTING	1	1	1	1
23	C12563 BUSHING	2	2	2	2
24	454906 BOLT 3/8-16 X 1 1/2	2	2	2	2
25	120382 L.W. 3/8	10	18	18	18
26	C07485 MAG P/U ASSEMBLY	1	1	1	1
27	C121727 HOSE ASSEMBLY	1	1	1	-
	C121728 HOSE ASSEMBLY	-	-	-	1
28	C12697 CONNECTOR, HOSE	2	2	2	2
29	C121729 HOSE ASSEMBLY	1	1	1	1
30	C121730 HOSE ASSEMBLY	1	1	1	1
31	C12717 CONNECTOR, HOSE	1	1	1	1
32	446200 F.W. 3/8	2	2	2	2
33	123221 NUT 3/8-16	2	2	2	2
34	C05358 SPACER	-	-	2	2
	C05362 SPACER	3	3	-	-
35	120300 L.W. 3/16	3	3	3	3
36	446397 BOLT 5/16-18 X 6 1/2	3	3	3	-