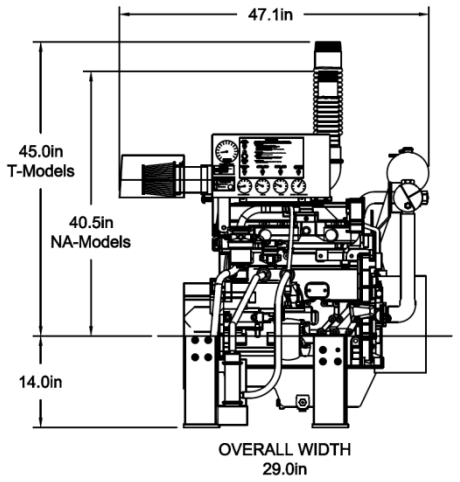
CLARKE®
FIRE PUMP ENGINES

MODELS

JU4H-UF10 JU4H-UF12 JU4H-UF14 JU4H-UF20 JU4H-UF22 JU4H-UFAB26 JU4H-UF24 JU4H-UF30 JU4H-UF32 JU4H-UF34 JU4H-UFH8 JU4H-UFH0 JU4H-UFH2 JU4H-UF40 JU4H-UF42 JU4H-UF58 JU4H-UF50 JU4H-UF52 JU4H-UF54

FM-UL-cUL APPROVED RATINGS BHP/*KW*

JU4H MODEL ♦	RATED SPEED 1470		1760		2100		2350		2600		2800		3000		US-EPA (NSPS) Available Until ●
UF10			41	*31*	51	*38*	55	*41*							*12/31/10*
UF12							55	*41*	59	*44*					*12/31/10*
UF14											70	*52*	71	*53*	*12/31/13 +*
UF20			60	*45*	67	*50*	72	*54*							*12/31/10*
UF22							72	*54*	75	*56*					*12/31/10*
UFAB26											80	*60*			*12/31/13 +*
UF24											80	*60*	83	*62*	*12/31/13 +*
UF30			64	*48*	79	*59*	85	*63*							*12/31/10*
UF32							85	*63*	85	*63*					*12/31/10*
UF34											104	*78*	115	*86*	*12/31/12 +*
UFH8	63	*47*	73	*54*											*12/31/10*
UFH0			73	*54*	88	*66*	98	*73*							*12/31/10*
UFH2							98	*73*	99	*74*					*12/31/10*
UF40			94	*70*	105	*78*	106	*79*							*12/31/10* ▼ *12/31/09* ▲
UF42							106	*79*	106	*79*					*12/31/09*
UF58	79	*59*	110	*82*											*12/31/09*
UF50			110	*82*	130	*97*	127	*95*							*12/31/09*
UF52							127	*95*	127	*95*					*12/31/09*
UF54											145	*108*	145	*108*	*12/31/12 +*



● USA EPA (NSPS) Emissions Compliant. Applies to John Deere model year per Table 4 of 40 CFR Part 60 Sub Part IIII.

♦ All Models are available for Export

\+ Not Available in California

▼ Less than 100HP

▲ Greater than 99HP

SPECIFICATIONS

ITEM	JU4H MODELS UF10/12/14	UF20/22/AB26/24	UF30/32/34	UFH8/H0/H2	UF40/42	UF58/50/52/54
Number of Cylinders	4					
Aspiration	NA		T			
Rotation*	CW					
Weight – lb (kg)	910 (413)		935 (424)			
Compression Ratio	17.6:1		17.0:1			
Displacement – cu. in. (L)	275 (4.5)					
Engine Type	4 Stroke Cycle – Inline Construction					
Bore & Stroke – in. (mm)	4.19 x 5.00 (106 x 127)					
Installation Drawing	D534					
Wiring Diagram AC	C07591					
Wiring Diagram DC	C071590					
Engine Series	John Deere 4045 Series					
Speed Interpolation	OPT.					

Abbreviations: CW – Clockwise NA – Naturally Aspirated T – Turbocharged
*Rotation viewed from Heat Exchanger / Front of engine

CERTIFIED POWER RATING

- Each engine is factory tested to verify power and performance.
- Although FM-UL ratings are shown at specific speeds, Clarke engines with optional speed interpolation can be applied at any intermediate speed. To determine the intermediate speed power; make a linear interpolation from the Clarke FM-UL power curve. Contact Clarke or your Pump OEM Representative to obtain details.

c UL us

Meets NFPA 20 Requirements

FM C US APPROVED

ENGINE RATINGS BASELINES

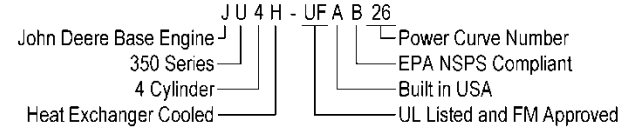
- Engines are to be used for stationary emergency standby fire pump service only. Engines are to be tested in accordance with NFPA 25.
- Engines are rated at standard SAE conditions of 29.61 in. (752.1 mm) Hg barometer and 77°F (25°C) inlet air temperature [approximates 300 ft. (91.4 m) above sea level] 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.

ENGINE EQUIPMENT

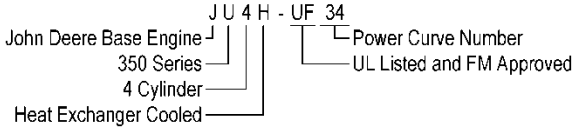
EQUIPMENT	STANDARD	OPTIONAL
Air Cleaner	Direct Mounted, Washable, Indoor Service with Drip Shield	Disposable, Drip Proof, Indoor Service Outdoor Type, Single or Two Stage
Alternator	12V-DC, 42 Amps with Poly-Vee Belt and Guard	24V-DC, 40 Amps with Poly-Vee Belt and Guard
Exhaust Protection	Blankets on UF10/12/14/20/22/AB26/24; Metal Guards on Manifolds and Turbocharger on UF30/32/34/H8/H0/H2/40/42/58/50/52/54	
Coupling	Bare Flywheel	Listed Driveshaft and Guard, UF10/12/14, UF20/22/AB26/24 – CDS10-SC; UF30/32/34, UFH8/H0/H2, UF40/42 – CDS20-SC; UF58/50/52/54 – CDS30-S1
Exhaust Flex Connection	For NA Engines - Stainless Steel Flex, NPT(M) Connection, 3” For T Engines – Stainless Steel Flex, NPT(M) Connection, 4”	For NA Engines – Stainless Steel Flex, NPT(M) Connection, 4” For T Engines - Stainless Steel Flex, 150# ANSI Flanged Connection, 5”
Flywheel Housing	SAE #3	
Flywheel Power Take Off	11.5” SAE Industrial Flywheel Connection	
Fuel Connections	Fire Resistant, Flexible, USA Coast Guard Approved, Supply and Return Lines	Stainless Steel, Braided, cUL Listed, Supply and Return Lines
Fuel Filter	Primary Filter with Priming Pump	
Fuel Injection System	Stanadyne Direct Injection	
Engine Heater	115V-AC, 1000 Watt	230V-AC, 1000 Watt
Governor, Speed	Constant Speed, Mechanical	
Heat Exchanger	Tube and Shell Type, 60 PSI (4 BAR), NPT(F) Connections – Sea/Salt Water Compatible	
Instrument Panel	English and Metric, Tachometer, Hourmeter, Water Temperature, Oil Pressure and Two (2) Voltmeters	
Junction Box	Integral with Instrument Panel; For DC Wiring Interconnection to Engine Controller	
Lube Oil Cooler	Engine Water Cooled, Plate Type	
Lube Oil Filter	Full Flow with By-Pass Valve	
Lube Oil Pump	Gear Driven, Gear Type	
Manual Start Control	On Instrument Panel with Control Position Warning Light	
Overspeed Control	Electronic with Reset and Test on Instrument Panel	
Raw Water Solenoid Operation	Automatic from Fire Pump Controller and from Engine Instrument Panel	
Run – Stop Control	On Instrument Panel with Control Position Warning Light	
Run Solenoid	12V-DC Energized to Run	12V-DC Energized to Stop; 24V-DC Energized to Run; 24V-DC Energized to Stop
Starters	Two (2) 12V-DC	Two (2) 24V-DC
Throttle Control	Adjustable Speed Control, Tamper Proof	
Water Pump	Centrifugal Type, Poly-Vee Belt Drive with Guard	

Abbreviations: DC –Direct Current, AC – Alternating Current, SAE – Society of Automotive Engineers, NPT(F) – National Pipe Tapered Thread (Female), NPT(M) – National Pipe Tapered Thread (Male), NA – Naturally Aspirated, T- Turbocharged, ANSI – American National Standards Institute

MODEL NOMENCLATURE (10 Digit Models)



MODEL NOMENCLATURE (8 Digit Models)



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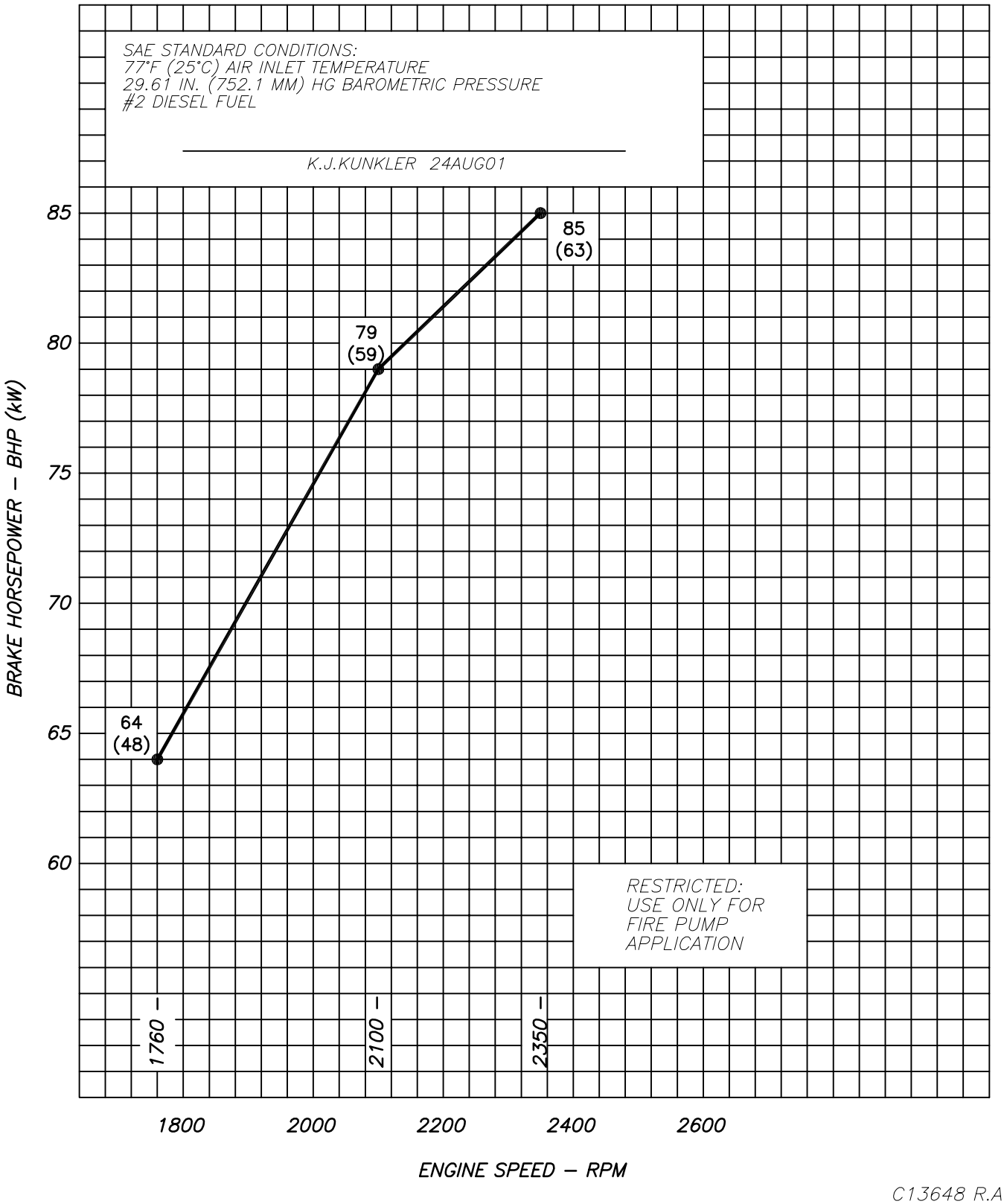
CLARKE

FIRE PUMP MODEL JU4H-UF30
HEAT EXCHANGER
TURBOCHARGED
4.5L 4 CYLINDER



C13648 R.A
24AUG01

CLARKE
Fire Protection Products, Inc.

JU4H-UF30
INSTALLATION & OPERATION DATA (I&O Data)
USA Produced

Basic Engine Description

Engine Manufacturer	John Deere Co.
Ignition Type	Compression (Diesel)
Number of Cylinders	4
Bore and Stroke - in (mm)	4.19 (106) X 5 (127)
Displacement - in³ (L)	275 (4.5)
Compression Ratio	17.0:1
Valves per cylinder	
Intake	1
Exhaust	1
Combustion System	Direct Injection
Engine Type	In-Line, 4 Stroke Cycle
Fuel Management Control	Mechanical, Rotary Pump
Firing Order (CW Rotation)	1-3-4-2
Aspiration	Turbocharged
Charge Air Cooling Type	None
Rotation, viewed from front of engine, Clockwise (CW)	Standard
Engine Crankcase Vent System	Open
Installation Drawing	D534
Weight - lb (kg)	935 (424)

Power Rating	**1760**	**2100**	**2350**
Nameplate Power - HP (kW)	64 (48)	79 (59)	85 (63)

Cooling System - [C051128]	**1760**	**2100**	**2350**
Engine Coolant Heat - Btu/sec (kW)	40 (42.2)	47 (49.6)	47 (49.6)
Engine Radiated Heat - Btu/sec (kW)	14 (14.8)	18 (19)	19 (20)
Heat Exchanger Minimum Flow			
60°F (15°C) Raw H_20 - gal/min (L/min)	8 (30.3)	10 (37.9)	10 (37.9)
100°F (37°C) Raw H_20 - gal/min (L/min)	10 (37.9)	11 (41.6)	11 (41.6)

Heat Exchanger Maximum Cooling Raw Water	
Inlet Pressure - psi (bar)	60 (4.1)
Flow - gal/min (L/min)	40 (151)
Typical Engine H_20 Operating Temp - °F (°C)[1]	180 (82.2) - 195 (90.6)
Thermostat	
Start to Open - °F (°C)	187 (86.1)
Fully Opened - °F (°C)	196 (91.1)
Engine Coolant Capacity - qt (L)	14.79 (14)
Coolant Pressure Cap - lb/in² (kPa)	10 (68.9)
Maximum Engine Coolant Temperature - °F (°C)	200 (93.3)
Minimum Engine Coolant Temperature - °F (°C)	160 (71.1)
High Coolant Temp Alarm Switch - °F (°C)	205 (96.1)

Electric System - DC	**Standard**		**Optional**	
System Voltage (Nominal)	12		24	
Battery Capacity for Ambients Above 32°F (0°C)				
Voltage (Nominal)	12	[C07633]	24	[C07633]
Qty. Per Battery Bank	1		2	
SAE size per J537	8D		8D	
CCA @ 0°F (-18°C)	1400		1400	
Reserve Capacity - Minutes	430		430	
Battery Cable Circuit, Max Resistance - ohm	0.0012		0.0012	
Battery Cable Minimum Size				
0-120 in. Circuit Length[2]	00		00	
121-160 in. Circuit Length[2]	000		000	
161-200 in. Circuit Length[2]	0000		0000	
Charging Alternator Maximum Output - Amp,	40	[C07639]	18	[C071048]
Starter Cranking Amps, Rolling - @60°F (15°C)	345	[RE59595/RE59589]	250	[C07819/C07820]

NOTE: This engine is intended for indoor installation or in a weatherproof enclosure. [1]Engine H_2O temperature is dependent on raw water temperature and flow. [2]Positive and Negative Cables Combined Length.

CLARKE
Fire Protection Products, Inc.

JU4H-UF30
INSTALLATION & OPERATION DATA (I&O Data)
USA Produced

Exhaust System	**1760**	**2100**	**2350**
Exhaust Flow - ft.³/min (m³/min)	330 (9.3)	448 (12.7)	518 (14.7)
Exhaust Temperature - °F (°C)	744 (396)	781 (416)	761 (405)
Maximum Allowable Back Pressure - in H_20 (kPa)	30 (7.5)	30 (7.5)	30 (7.5)
Minimum Exhaust Pipe Dia. - in (mm)[3]	4 (102)	4 (102)	4 (102)

Fuel System	**1760**	**2100**	**2350**
Fuel Consumption - gal/hr (L/hr)	1.7 (6.4)	2.2 (8.3)	2.7 (10.2)
Fuel Return - gal/hr (L/hr)	7.9 (29.9)	8.5 (32.2)	9 (34.1)
Fuel Supply - gal/hr (L/hr)	9.6 (36.3)	10.7 (40.5)	11.7 (44.3)
Fuel Pressure - lb/in² (kPa)	3 (20.7) - 6 (41.4)		
Minimum Line Size - Supply - in.	.50 Schedule 40 Steel Pipe		
Pipe Outer Diameter - in (mm)	0.848 (21.5)		
Minimum Line Size - Return - in.	.375 Schedule 40 Steel Pipe		
Pipe Outer Diameter - in (mm)	0.675 (17.1)		
Maximum Allowable Fuel Pump Suction Lift with clean Filter - in H_20 (mH_20)	31 (0.8)		
Maximum Allowable Fuel Head above Fuel pump, Supply or Return - ft (m)	4.5 (1.4)		
Fuel Filter Micron Size	5		

Heater System	**Standard**	**Optional**
Engine Coolant Heater		
Wattage (Nominal)	1000	1000
Voltage - AC, 1 Phase	115 (+5%, -10%)	230 (+5%, -10%)
Part Number	[C122188]	[C122192]

Air System	**1760**	**2100**	**2350**
Combustion Air Flow - ft.³/min (m³/min)	147 (4.2)	194 (5.5)	227 (6.4)
Air Cleaner	**Standard**		**Optional**
Part Number	[C03249]		[C03327]
Type	Indoor Service Only, with Shield		Canister, Single-Stage
Cleaning method	Washable		Disposable
Air Intake Restriction Maximum Limit			
Dirty Air Cleaner - in H_20 (kPa)	10 (2.5)		10 (2.5)
Clean Air Cleaner - in H_20 (kPa)	5 (1.2)		5 (1.2)
Maximum Allowable Temperature (Air To Engine Inlet) - °F (°C)[4]	130 (54.4)		

Lubrication System	
Oil Pressure - normal - lb/in² (kPa)	35 (241) - 50 (345)
Low Oil Pressure Alarm Switch - lb/in² (kPa)	20 (138)
In Pan Oil Temperature - °F (°C)	220 (104) - 245 (118)
Total Oil Capacity with Filter - qt (L)	15.5 (14.7)

Lube Oil Heater	**Optional**	**Optional**
Wattage (Nominal)	150	150
Voltage	120V (+5%, -10%)	240V (+5%, -10%)
Part Number	C04430	C04431

Performance	**1760**	**2100**	**2350**
BMEP - lb/in² (kPa)	105 (724)	108 (745)	104 (717)
Piston Speed - ft/min (m/min)	1467 (447)	1750 (533)	1958 (597)
Mechanical Noise - dB(A) @ 1m	C13909		
Power Curve	C13648		

[3]Based on Nominal System. Back pressure flow analysis must be done to assure maximum allowable back pressure is not exceeded. (Note: minimum exhaust Pipe diameter is based on: 15 feet of pipe, one 90° elbow, and a silencer pressure drop no greater than one half of the maximum allowable back pressure.) [4]Review for horsepower derate if ambient air entering engine exceeds 77°F (25°C). [ ] indicates component reference part number.

CLARKE®

JU4H, JU4R & JU6H, JU6R ENGINE MODELS
ENGINE MATERIALS AND CONSTRUCTION

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

Air Cleaner - Optional
Type..... Canister
Material..... Pleated Paper
Housing..... Enclosed

Camshaft
Material..... Cast Iron
Chill Hardened
Location..... In Block
Drive..... Gear, Spur
Type of Cam..... Ground

Charge Air Cooler (JU6H-60,62,68,74,84, ADK0, AD58, ADNG, ADN0, ADQ0, ADR0, AAQ8, AARG, ADP8, ADP0, ADT0, AD88, ADR8, AD98, ADS0, ADW8, ADX8, AD98 only)
Type..... Raw Water Cooled
Materials (in contact with raw water)
Tubes..... 90/10 CU/NI
Headers ..... 36500 Muntz
Covers ..... 83600 Red Brass
Plumbing ..... 316 Stainless Steel/ Brass
90/10 Silicone

Charge Air Cooler (JU6R-AA67, 59, 61, PF, Q7, RF, S9, 83 only)
Type..... Air to Air Cooled
Materials
Core..... Aluminum

Coolant Pump
Type..... Centrifugal
Drive..... Poly Vee Belt

Coolant Thermostat
Type..... Non Blocking
Qty..... 1

Cooling Loop (Galvanized)
Tees, Elbows, Pipe..... Galvanized Steel
Ball Valves..... Brass ASTM B 124,
Solenoid Valve..... Brass
Pressure Regulator..... Bronze
Strainer..... Cast Iron (1/2" - 1" loops) or
Bronze (1.25" - 2" loops)

Cooling Loop (Sea Water)
Tees, Elbows, Pipe..... 316 Stainless Steel
Ball Valves..... 316 Stainless Steel
Solenoid Valve..... 316 Stainless Steel
Pressure Regulator/Strainer Cast Brass ASTM B176
C87800

Cooling Loop (316SS)
Tees, Elbows, Pipe..... 316 Stainless Steel
Ball Valves..... 316 Stainless Steel
Solenoid Valve..... 316 Stainless Steel
Pressure Regulator/Strainer 316 Stainless Steel

Connecting Rod
Type..... I-Beam Taper
Material..... Forged Steel Alloy

Crank Pin Bearings
Type..... Precision Half Shell
Number..... 1 Pair Per Cylinder
Material..... Wear-Guard

Crankshaft
Material..... Forged Steel
Type of Balance..... Dynamic

Cylinder Block
Type..... One Piece with
Non-Siamese Cylinders
Material..... Annealed Gray Iron

Cylinder Head
Type..... Slab 2 Valve
Material..... Annealed Gray Iron

Cylinder Liners
Type..... Centrifugal Cast, Wet Liner
Material..... Alloy Iron Plateau, Honed

Fuel Pump
Type..... Diaphragm
Drive..... Cam Lobe

Heat Exchanger (USA) - JU4H & JU6H Only
Type..... Tube & Shell
Materials
Tube & Headers..... Copper
Shell..... Copper
Electrode..... Zinc

Heat Exchanger (UK) - JU4H & JU6H Only
Type..... Tube & Bundle

Materials
Tube & Headers..... Copper
Shell..... Aluminum

Injection Pump
Type..... Rotary
Drive..... Gear

Lubrication Cooler
Type..... Plate

Lubrication Pump
Type..... Gear
Drive..... Gear

Main Bearings
Type..... Precision Half Shells
Material..... Steel Backed-Aluminum
Lined

Piston
Type and Material..... Aluminum Alloy with
Reinforced Top Ring Groove
Cooling..... Oil Jet Spray

Piston Pin
Type..... Full Floating - Offset

Piston Rings
Number/Piston..... 3
Top..... Keystone Barrel Faced -
Plasma Coated
Second..... Tapered Cast Iron
Third..... Double Rail Type
w/Expander Spring

Radiator - JU4R & JU6R Only
Type..... Plate Fin
Materials
Core..... Copper & Brass
Tank & Structure..... Steel

Optional
Marine Coating..... Baked Phenolic

Valves
Type..... Poppet
Arrangement..... Overhead Valve
Number/Cylinder..... 1 intake
1 exhaust
Operating Mechanism..... Mechanical Rocker Arm
Type of Lifter..... Large Head
Valve Seat Insert..... Replaceable

DATUMS

-A- - MOUNTING FACE OF FLYWHEEL

-B- - ENGINE CRANKSHAFT HORIZONTAL CENTERLINE

-C- - ENGINE CRANKSHAFT VERTICAL CENTERLINE

- CENTER OF GRAVITY OF ENGINE

- CLOCKWISE ROTATION WHEN VIEWED FROM FRONT OF ENGINE

NOTE:
THE LOOP SHOWN IS BASED ON STANDARD LOOP CONSTRUCTION AND FM SIZING CONDITIONS

FOR ALTERNATE LOOP CONSTRUCTION (STAINLESS STEEL, SEA WATER, AND HIGH PRESSURE) SIZES MAY VARY

CAUTION

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

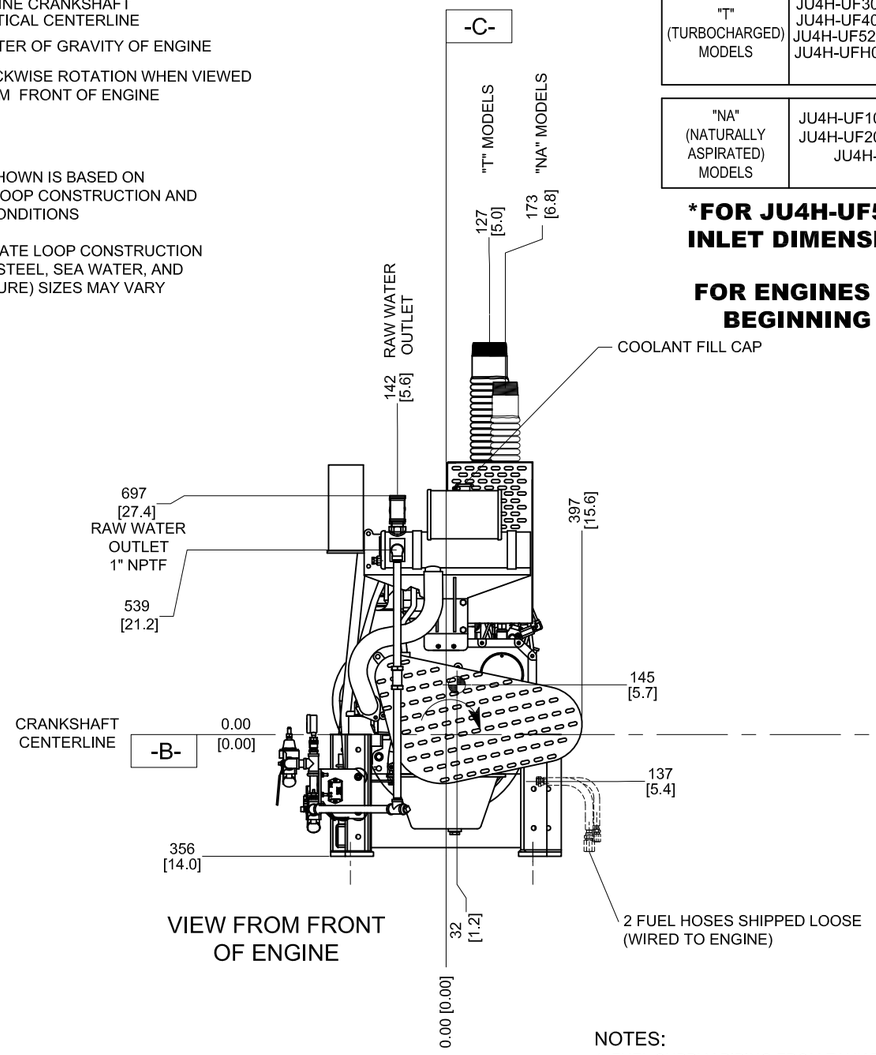
ATTENTION

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

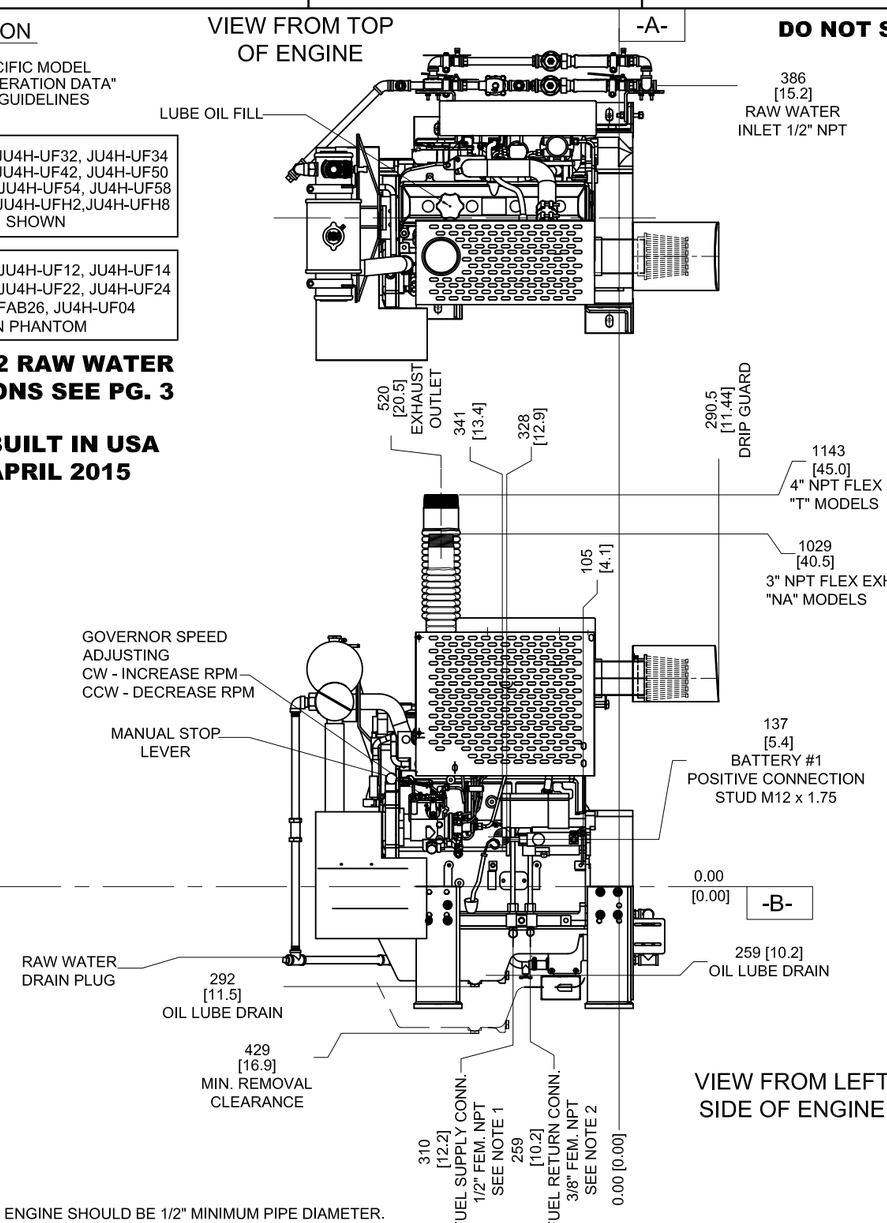
"T" (TURBOCHARGED) MODELS	JU4H-UF30, JU4H-UF32, JU4H-UF34 JU4H-UF40, JU4H-UF42, JU4H-UF50 JU4H-UF52*, JU4H-UF54, JU4H-UF58 JU4H-UFH0, JU4H-UFH2,JU4H-UFH8 SHOWN
"NA" (NATURALLY ASPIRATED) MODELS	JU4H-UF10, JU4H-UF12, JU4H-UF14 JU4H-UF20, JU4H-UF22, JU4H-UF24 JU4H-UFAB26, JU4H-UF04 IN PHANTOM

***FOR JU4H-UF52 RAW WATER INLET DIMENSIONS SEE PG. 3**

FOR ENGINES BUILT IN USA BEGINNING APRIL 2015



VIEW FROM FRONT OF ENGINE



VIEW FROM LEFT SIDE OF ENGINE

NOTES:
1. FUEL SUPPLY PIPING FROM TANK TO ENGINE SHOULD BE 1/2" MINIMUM PIPE DIAMETER.
2. FUEL RETURN PIPING FROM ENGINE TO TANK SHOULD BE 3/8" MINIMUM PIPE DIAMETER.

DO NOT SCALE

DRAWING SUBJECT TO CHANGE WITHOUT NOTICE

REV	DESCRIPTION	ECN#	DWN	APVD	DATE
U	ADDED FLYWHEEL / REAR VIEW OF ENGINE	3448	AWP	KRW	11DEC13
V	ADDED COOLING LOOP / PIPING KIT	3835	BKK	ASC	16OCT14
W	ADDED MODEL JU4H-UF04	4101	MJD	MJD	19MAY15
X	ADDED FLYWHEEL SIZE CALLOUTS SECOND PAGE	4179	JGV	JGV	13JUL15
Y	ADDED INDICATOR PLATES & UPDATED VALVE HAND. TO COOL. LOOP AND ADDED GROUND STUD LOC. AND BRACKET	4359	PMK	ASC	12JAN16

MACHINE TOLERANCES

DECIMAL	mm	inch
X,	±1.4	
X.X	±0.8	±0.06
X.XX	±0.3	±0.03
X.XXX	±0.025	±0.01
X.XXXX		±0.001

ANGULAR: ±0.5°

FABRICATION TOLERANCES

DECIMAL	mm	inch
X,	±3	
X.X	±1.5	±0.12
X.XX		±0.06

ANGULAR: ±1.0°

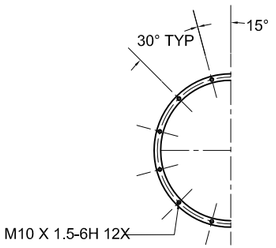
NTES NTK CONTROLLED DRAWING

CLARKE *Fire Protection Products, Inc.*

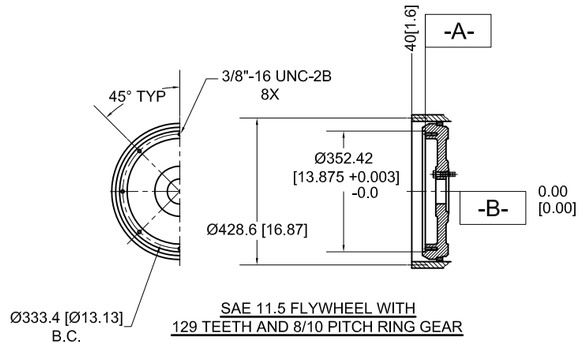
DRWN	KJMYERS
DATE	12JAN09
ENGR	KKUNKLER
MATERIAL	
NAME	INSTALLATION DRAWING, FIRE PUMP ENGINE JU4H-UF MODELS
PART NO.	D534
REV	Y
SIMILAR TO	
USED ON/LAYOUT PART NO.	
UNITS	MM [INCH]
PAGE OF	1 3

DO NOT SCALE

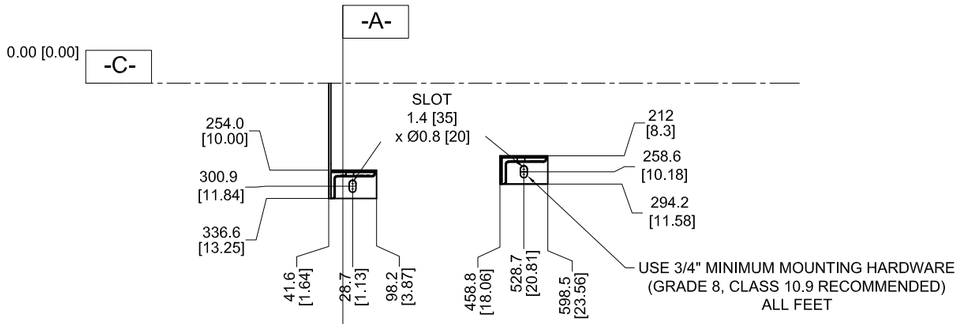
DETAIL DATUM -A-

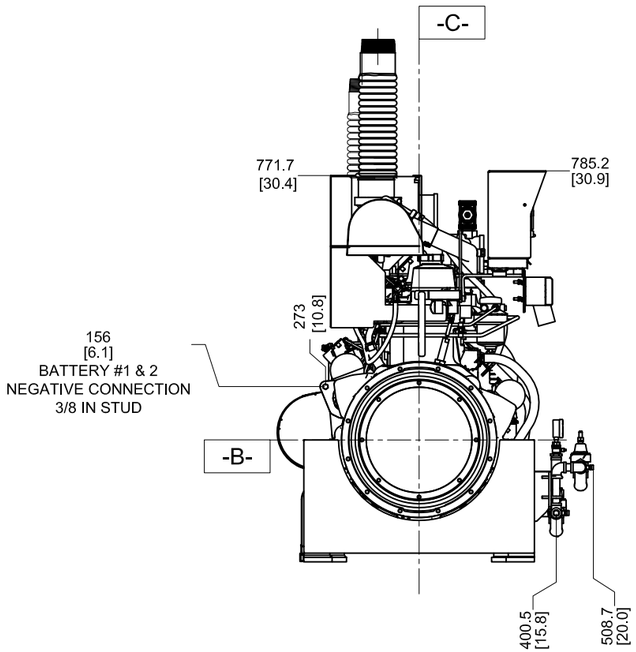


SAE #3
FLYWHEEL HOUSING

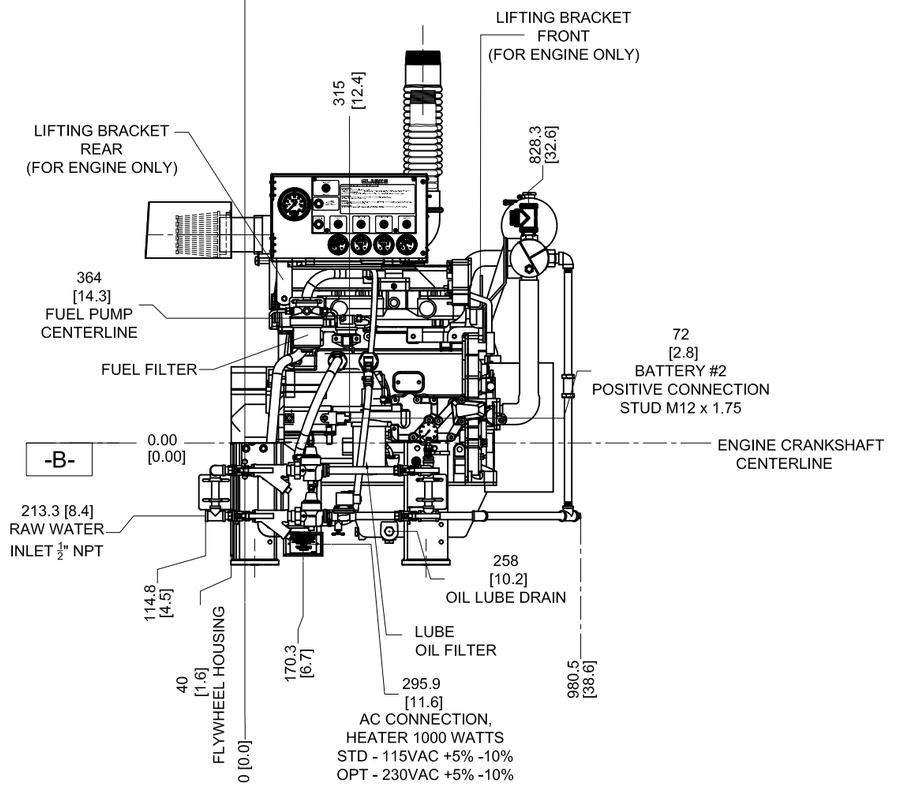


SAE 11.5 FLYWHEEL WITH
129 TEETH AND 8/10 PITCH RING GEAR





VIEW FROM REAR
OF ENGINE



VIEW FROM RIGHT
SIDE OF ENGINE

FOR ENGINE SPECIFIC OPTIONS
SEE www.CLARKEFIRE.com

MACHINE TOLERANCES

DECIMAL	mm	inch
X.	±1.5	
X.X	±0.8	±0.06
X.XX	±0.3	±0.03
X.XXX	±0.025	±0.01
X.XXXX		±0.001

ANGULAR: ±0.5°

FABRICATION TOLERANCES

DECIMAL	mm	inch
X.	±3	
X.X	±1.5	±0.12
X.XX		±0.06

ANGULAR: ±1.0°

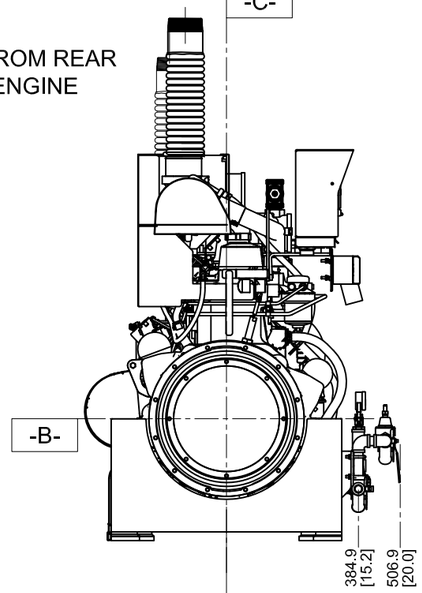
YES / NO
CONTROLLED DRAWING

CLARKE
Fire Protection Products, Inc.

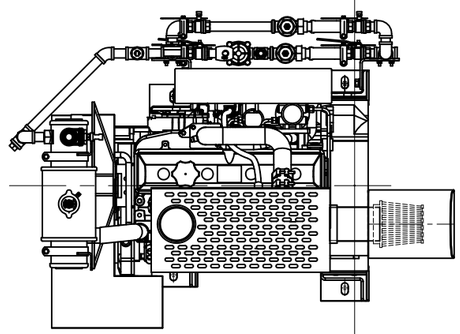
DRWN	KJMYERS
DATE	12JAN09
ENGR	KKUNKLER
MATERIAL	
NAME	INSTALLATION DRAWING, FIRE PUMP ENGINE JU4H-UF MODELS
PART NO.	D534
REV	Y
SIMILAR TO	
USED ON/LAYOUT PART NO.	
UNITS	MM [INCH]
PAGE OF	2 3

DO NOT SCALE

VIEW FROM REAR OF ENGINE



VIEW FROM TOP OF ENGINE



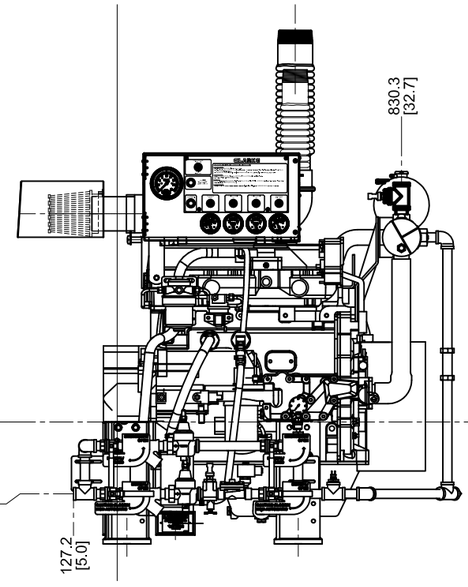
"T" (TURBOCHARGED) MODELS	JU4H-UF52*

FOR ALL OTHER MODELS SEE PAGE 2

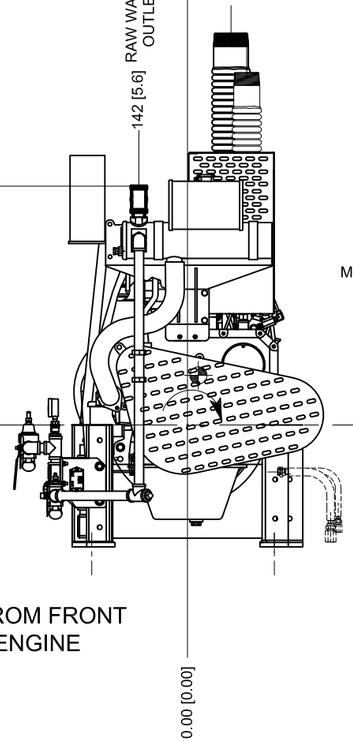
DATUMS

- -A- - MOUNTING FACE OF FLYWHEEL
- -B- - ENGINE CRANKSHAFT HORIZONTAL CENTERLINE
- -C- - ENGINE CRANKSHAFT VERTICAL CENTERLINE
- - CENTER OF GRAVITY OF ENGINE
- - CLOCKWISE ROTATION WHEN VIEWED FROM FRONT OF ENGINE

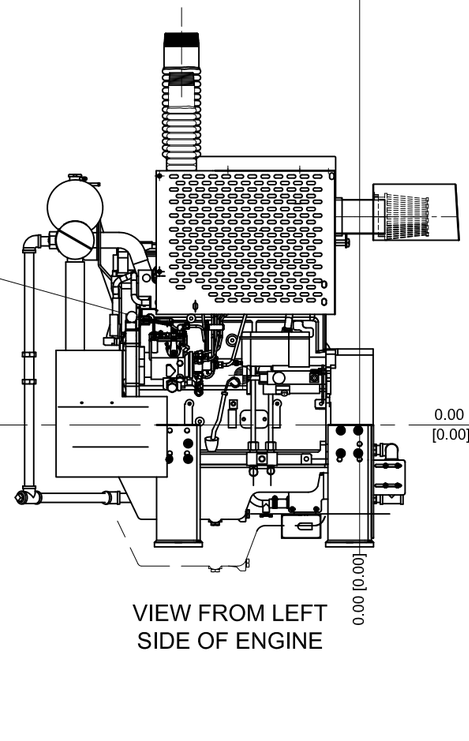
VIEW FROM RIGHT SIDE OF ENGINE



VIEW FROM FRONT OF ENGINE



VIEW FROM LEFT SIDE OF ENGINE



MACHINE TOLERANCES

DECIMAL	mm	Inch
X.	±1.5	
X.X	±0.8	±0.06
X.XX	±0.3	±0.03
X.XXX	±0.025	±0.01
X.XXXX		±0.001

ANGULAR: ±0.5°

FABRICATION TOLERANCES

DECIMAL	mm	Inch
X.	±3	
X.X	±1.5	±0.12
X.XX		±0.06

ANGULAR: ±1.0°

CONTROLLED DRAWING: YES / NO

CLARKE
Fire Protection Products, Inc.

DRWN	KJMYERS
DATE	12JAN09
ENGR	KKUNKLER
MATERIAL	
NAME	INSTALLATION DRAWING, FIRE PUMP ENGINE JU4H-UF MODELS
PART NO.	D534
REV	Y
SIMILAR TO	
USED ON/LAYOUT PART NO.	
UNITS	MM [INCH]
PAGE OF	3 3

JU4H-UF30
Stationary Fire Pump Engine Driver
EMISSION DATA
EPA 40 CFR Part 60

4 *Cylinders*
Four *Cycle*
Lean *Burn*
Turbocharged

500 PPM SULFUR #2 DIESEL FUEL								
RPM	BHP [3]	FUEL GAL/HR (L/HR)	GRAMS / HP- HR				EXHAUST	
			NMHC	NOx	CO	PM [4]	°F (°C)	CFM (m^3/min)
1760	64	1.7 (6.4)	0.40	5.41	0.50	0.17	744 (396)	330 (9)
2100	79	2.2 (8.3)	0.37	4.66	0.46	0.16	781 (416)	448 (13)
2350	85	2.7 (10.2)	0.45	4.33	0.51	0.20	761 (405)	518 (15)

Notes:

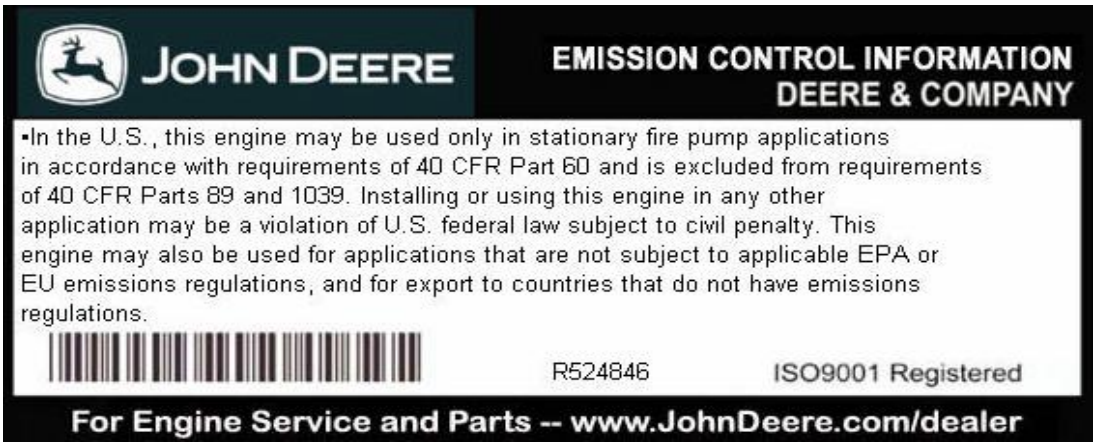
1) *4045TF220 Base Engine Model manufactured by John Deere Corporation. For John Deere Emissions Conformance to EPA 40 CFR Part 60 see Page 2 of 2.*
2) *The Emission Warranty for this engine is provided directly to the owner by John Deere Corporation. A copy of the John Deere Emission Warranty can be found in the Clarke Operation and Maintenance Manual.*
3) *Engines are rated at standard conditions of 29.61in. (7521 mm) Hg barometer and 77°F (25° C) inlet air temperature. (SAE J1349)*
4) *PM is a measure of total particulate matter, including PM_{10}.*

John Deere Power Systems
3801 W. Ridgeway Ave., PO Box 5100
Waterloo, Iowa USA 50704-5100

31 October 2007

Subject: Fire Pump Ratings – Conformance to EPA 40 CFR Part 60 (NSPS requirements)

All John Deere stationary fire pump engines conform to the requirements of 40 CFR Part 60. All such engines include an emission label, stating the engine conforms to the requirements of 40 CFR Part 60. An example of the emission label is show below:



This label applies to all of the following engine models, sold to Clarke Fire Protection, for use in stationary fire pump applications:

John Deere Engine Model
4045DF120
4045DF159
4045TF252
4045TF254
4045TF220
6068TF252
6068TF254
6068HF252
6068HF254
6068HF120
6068TF220
6081AF001
6081HF001
6125AF001
6125HF070

All engines conforming to 40 CFR Part 60 (identified by emission label, as shown above) are covered under the emissions warranty of 40 CFR Part 89.

Sincerely,

Kyle J. Tingle
Regional Sales Manager, JDPS

JU4H-UF30

FIRE PUMP DRIVER

NOISE DATA

Mechanical Engine Noise *

RPM	BHP	OVERALL dB(A)	Octave Band 31.5 Hz dB(A)	63 Hz dB(A)	125 Hz dB(A)	250 Hz dB(A)	500 Hz dB(A)	1k Hz dB(A)	2k Hz dB(A)	4k Hz dB(A)	8k Hz dB(A)	16k Hz dB(A)
1760	64	101.5	59.8	64.6	77.2	85.1	90.5	93.6	97.5	96.2	92.5	81
2100	79	100.9	58.9	63.2	79.6	84.5	90.5	93.2	95.5	95.5	91.8	80.2
2350	85	102.7	63.2	66.3	74.3	86.1	91.8	95.0	97.8	97.5	94.5	82.4

Raw Exhaust Engine Noise **

RPM	BHP	OVERALL dB(A)	Octave Band 31.5 Hz dB(A)	63 Hz dB(A)	125 Hz dB(A)	250 Hz dB(A)	500 Hz dB(A)	1k Hz dB(A)	2k Hz dB(A)	4k Hz dB(A)	8k Hz dB(A)	16k Hz dB(A)
1760	64											
2100	79					To be Provided Later						
2350	85											

** Values above are provided at 3.3ft (1m) from engine block and do* ***not*** *include the raw exhaust noise.*

*** Values above are provided at 3.3ft (1m), 90^{o} horizontal, from a vertical exhaust outlet and does* ***not*** *include noise created mechanically by the engine*

The above data reflects values for a typical engine of this model, speed and power in a free-field environment.

Installation specifics such as background noise level and amplification of noise levels from reflecting off of surrounding objects, will affect the overall noise levels observed. As a result of this, Clarke makes no guarantees to the above levels in an actual installation.