

# CLARKE

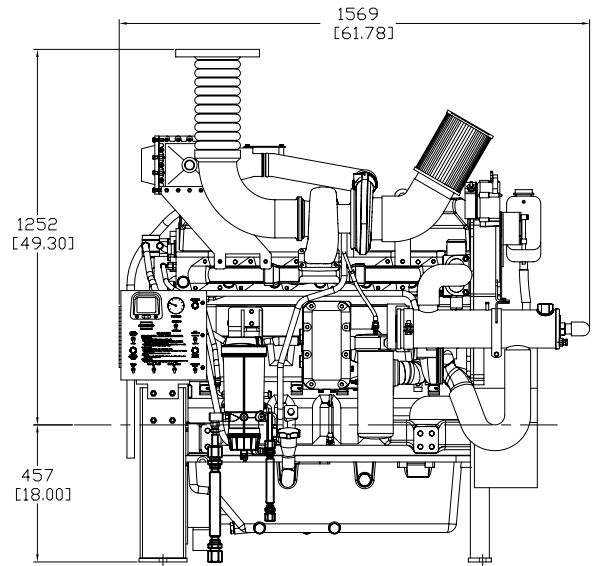
## FIRE PUMP DRIVERS

JX6H-UF30  
JX6H-UF40

**MODELS**  
JX6H-UF50  
JX6H-UF60  
JX6H-UF70

FM-UL-cUL Approved Ratings BHP/kW				
JX6H MODEL	OPERATING SPEED			
	1470	1760	2100	
UF30	350 261	420 313	430	322
UF40	380 283	460 343	485	362
UF50	405 302	485 362	510	380
UF60	430 321	510 380	525	392
UF70	485 362	575 429	575	429

All engine models and ratings are USA EPA emissions compliant per NSPS (40 CFR Part 60 Sub Part IIII)



JX6H-UF70  
OVERALL WIDTH  
881[34.69]

## Engine Equipment

Equipment	Standard	Optional
<b>Air Cleaner</b>	Direct Mounted, Washable, Indoor Service	Disposable, Drip proof, Indoor Service Outdoor Type
<b>Alternator</b>	24V-DC, 40 Amps; w/Belt Guard	
<b>Coupling</b>	Falk Coupling, Engine Half 1090T10 Coupling	Drive Shaft & Guard; SC2140 for UF30 & UF40 models, SC2155 for UF50, UF60 & UF70 models Bare Flywheel
<b>Droop</b>	4.5%	0%
<b>Exhaust Blankets</b>	For Manifolds & Turbocharger	
<b>Exhaust Flex Connection</b>	SS Flex, 150# Flange, 6"	SS Flex, 150# Flange, 8"
<b>Flywheel Housing</b>	S.A.E. #2	
<b>Flywheel Power Take Off</b>	11.5" S.A.E. Industrial Flywheel Connection	
<b>Fuel Connections</b>	Fire Resistant Flexible Supply & Return Lines	
<b>Fuel Filter</b>	Primary Filter w/Priming Pump	
<b>Fuel Injection System</b>	Unit Injectors w/electronic control	
<b>Engine Heater</b>	230V-AC, 2500 Watt	115V-AC, 2500 Watt
<b>Governor, Speed</b>	Electronic, dual electronic control modules	
<b>Heat Exchanger</b>	Tube & Shell Type, 60 PSI w/NPTF Connections	

Equipment	Standard	Optional
<b>Instrument Panel</b>	Multimeter to display: Tachometer, Hourmeter, Water Temperature & Oil Pressure. Voltmeter with selector switch	
<b>Junction Box</b>	Integral with Instrument Panel; For DC Wiring Interconnection to Engine Controller	
<b>Lube Oil Cooler</b>	Engine Water Cooled, Plate Type	
<b>Lube Oil Filter</b>	Full Flow w/By-Pass Valve	
<b>Lube Oil Pump</b>	Gear Driven, Gear Type	
<b>Manual Start Controls</b>	On Instrument Panel	
<b>Overspeed Control</b>	Electronic w/Reset	
<b>Raw Water Solenoid Operation</b>	Automatic from Engine Controller & from Instrument Panel	
<b>Run-Stop Control</b>	On Instrument Panel With Control Position Warning Light	
<b>Starter</b>	One (1) 24V-DC w/2 Start Contactors	
<b>Throttle Control</b>	Adjustable Speed Control by increase/decrease button, Tamper Proof	
<b>Water Pump</b>	Gear Driven, Centrifugal Type	

Note: Engine Controller needs 2 additional signals: Injector Failure, Alternate ECM Selected



### Specifications

Item	JX6H Models				
	UF30	UF40	UF50	UF60	UF70
Number of Cylinders	6				
Aspiration	TJWA	TRWA			
Rotation*	Clockwise (CW)				
Weight - lb (kg)	3150 (1429)	3250 (1474)			
Compression Ratio	16:1				
Displacement - cu. in. (l)	766 (12.5)				
Engine Type	4 Cycle - Inline				
Bore & Stroke - in. (mm)	5.00 (127) x 6.50 (165)				
Installation Drawing	D - 546				
Wiring Diagram	C07957				
Engine Series	John Deere 6125 Series				

**Abbreviations:** CW – Clockwise TJWA – Turbocharged with Jacket Water Aftercooling TRWA – Turbocharged with Raw Water Aftercooling  
 \*Rotation viewed from Heat Exchanger / Front of engine CCW Rotation is not available.  
 Engine intended for Indoor use or inside weatherproof enclosure only

#### † ENGINE RATINGS BASELINES

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.

#### CERTIFIED POWER AT ANY SPEED

Although FM-UL Certified BHP ratings are shown at specific speeds, Clarke engines can be applied at any intermediate speed, but must be factory set for final desired speed. To determine the intermediate certified power, make a linear interpolation from the Clarke FM-UL certified power curve. Contact Clarke or your Pump OEM representative to obtain details.

# CLARKE

[www.clarkefire.com](http://www.clarkefire.com)

#### CLARKE Fire Protection Products, Inc.

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United States of America

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C131121 4/07

#### Fire Protection Products

#### CLARKEUK, Ltd.

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Tel +44-1236-429946 Fax +44-1236-427274

Specifications and information contained in this brochure subject to change without notice.

Printed in U.S.A.

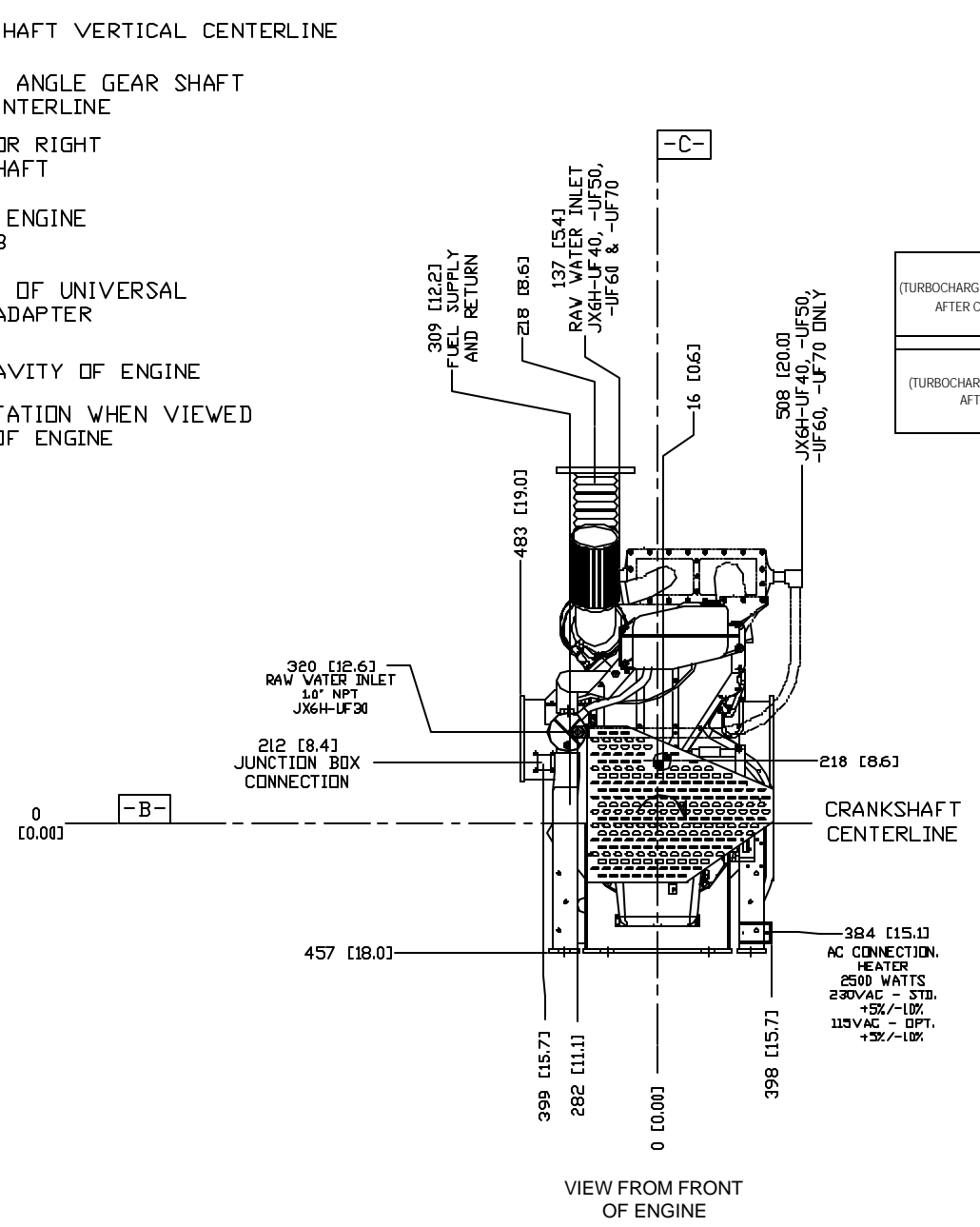
8 7 6 5 4 3 2 1

**DATUMS:**

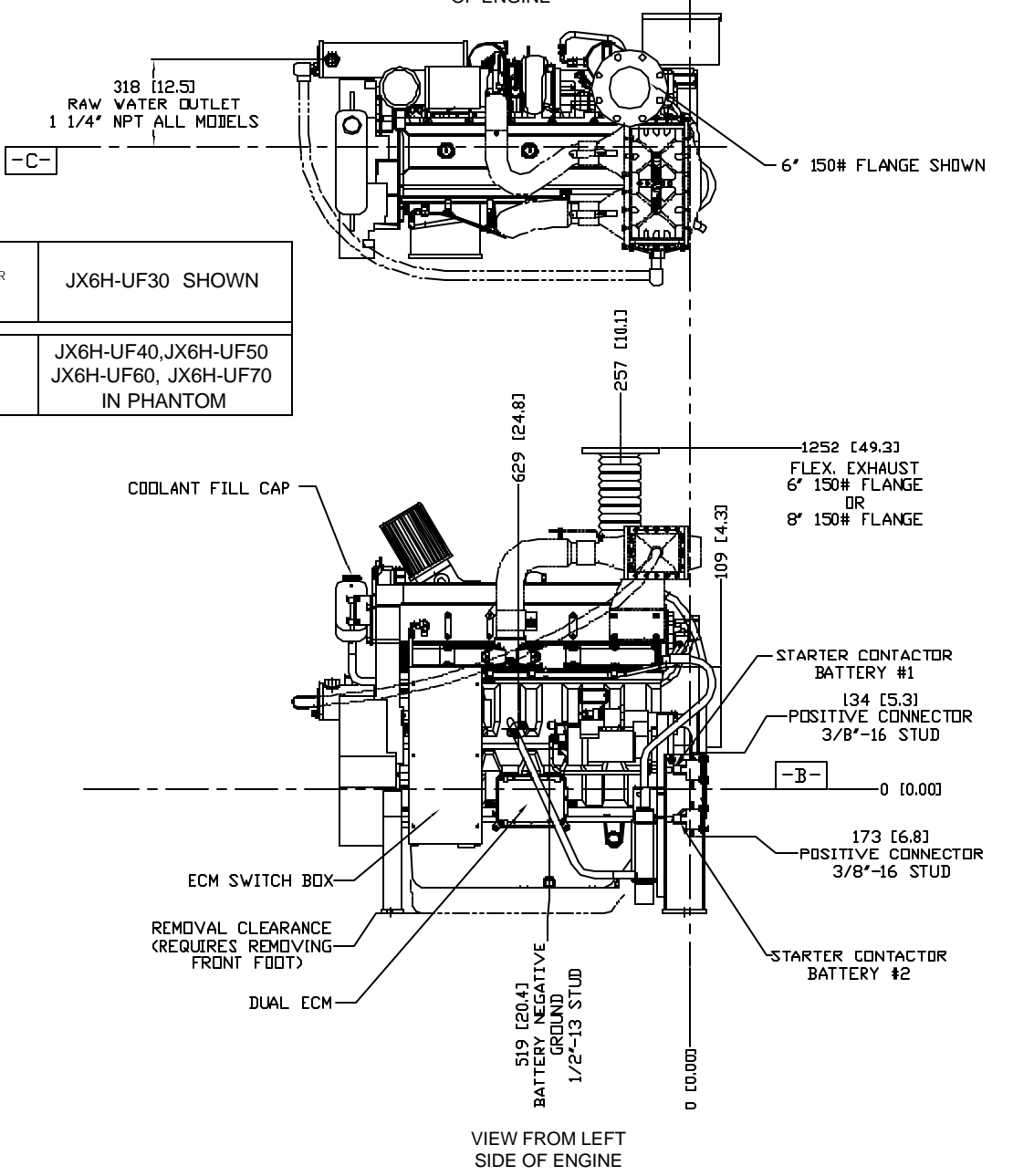
- A- - MOUNTING FACE OF FLYWHEEL
- B- - ENGINE CRANKSHAFT HORIZONTAL CENTERLINE
- C- - ENGINE CRANKSHAFT VERTICAL CENTERLINE
- D- - PUMP OR RIGHT ANGLE GEAR SHAFT HORIZONTAL CENTERLINE
- E- - END OF PUMP OR RIGHT ANGLE GEAR SHAFT
- F- - REAR FACE OF ENGINE HALF FALK HUB
- G- - MOUNTING FACE OF UNIVERSAL DRIVE SHAFT ADAPTER
- ⊙ - CENTER OF GRAVITY OF ENGINE
- ↻ - CLOCKWISE ROTATION WHEN VIEWED FROM FRONT OF ENGINE

**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



"TJWA" (TURBOCHARGED w/ JACKET WATER AFTER COOLING) MODEL	JX6H-UF30 SHOWN
"TRWA" (TURBOCHARGED w/ RAW WATER AFTER COOLING) MODELS	JX6H-UF40, JX6H-UF50 JX6H-UF60, JX6H-UF70 IN PHANTOM



DRAWING SUBJECT TO CHANGE WITHOUT NOTICE DO NOT SCALE

REV	DESCRIPTION	ECN#	DN	APVD	DATE
E	ADDED TOP VIEW OF ENGINE	925	SK	KJE	13FEB06
F	REWORD FUEL SIZE CALLOUT, ADDED NOTES 182, DIM FROM DATUM -A- TO REAR MOUNT HOLE WAS 37mm, DIM FROM DATUM -A- TO FRONT MOUNT HOLE WAS 114mm, DIM FROM DATUM -A- TO FLEX EXHAUST CENTER LINE WAS 223mm	1022	MWL	KJE	31AUG06
G	REMOVED 'OPTIONAL' WORDING FROM FLEX EXHAUST CALLOUT ADDED ENGINE MODEL BOX- 'SHOWN' & 'PHANTOM', REVERSED TITLE BLOCK NAME	1157	JJV	KJE	19DEC06
H	(P.2) DISTANCE BETWEEN ENGINE FEET BOLT HOLES WAS 1082	1408	ASC	KJE	29NOV07

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CONTROLLED DRAWING

DRWN S.KORENBLIT

DATE 21SEP04

ENGR K.J.KUNKLER

MATERIAL

MACHINE TOLERANCES:

DECIMAL	FR	MM	INCH
X	±1.5		±0.06
XX	±0.8		±0.06
XXX	±0.3		±0.03

ANGULAR: ±0.5°

SIMILAR TO

**CLARKE**  
Fire Protection Products, Inc.

INSTALLATION DRAWING, FIRE PUMP ENGINE JX6H-UF MODELS

PART NO. D546

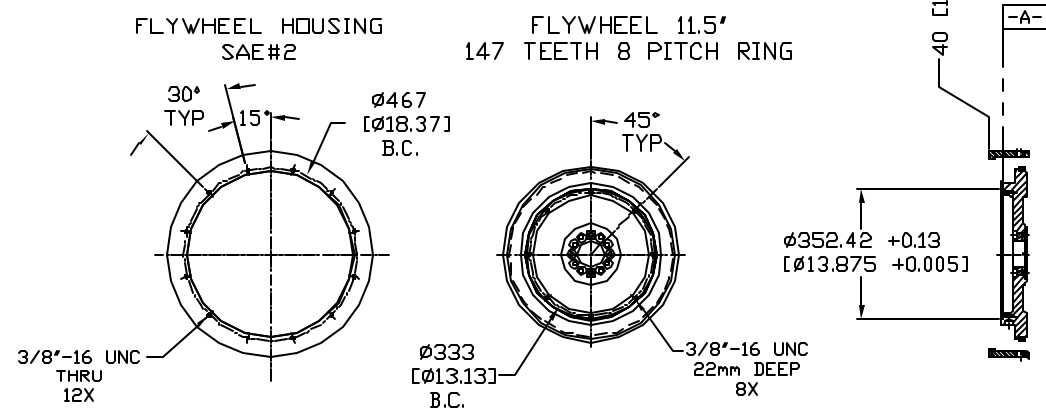
SCALE: NTS UNITS: MM [INCH]

PAGE 1 OF 2

8 7 6 5 4 3 2 1

8 7 6 5 4 3 2 1

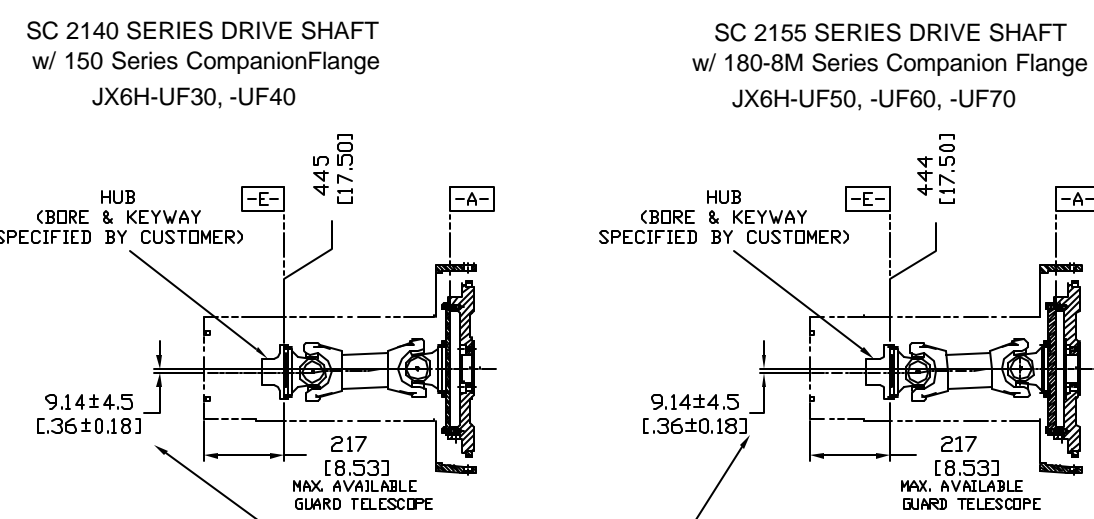
DETAIL DATUM -A-



USE 7/8" MOUNTING HARDWARE (GRADE 8, CLASS 10.9 RECOMMENDED) 2X

USE 3/4" MOUNTING HARDWARE (GRADE 8, CLASS 10.9 RECOMMENDED) 2X

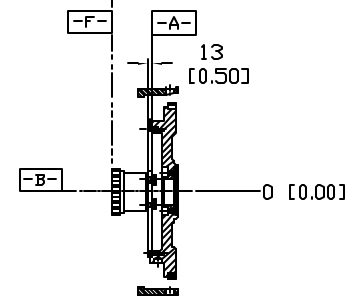
DETAIL DATUM -E-



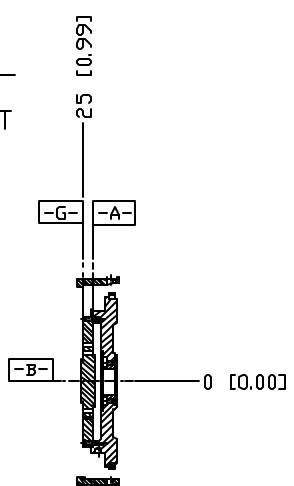
866 [34.11] RAW WATER INLET 1 1/4" NPT JX6H-UF40, -UF50, -UF60, -UF70

597 [23.50] FUEL PUMP CENTERLINE

DETAIL DATUM -F- FALK COUPLING DRIVE SIZE 1090T10

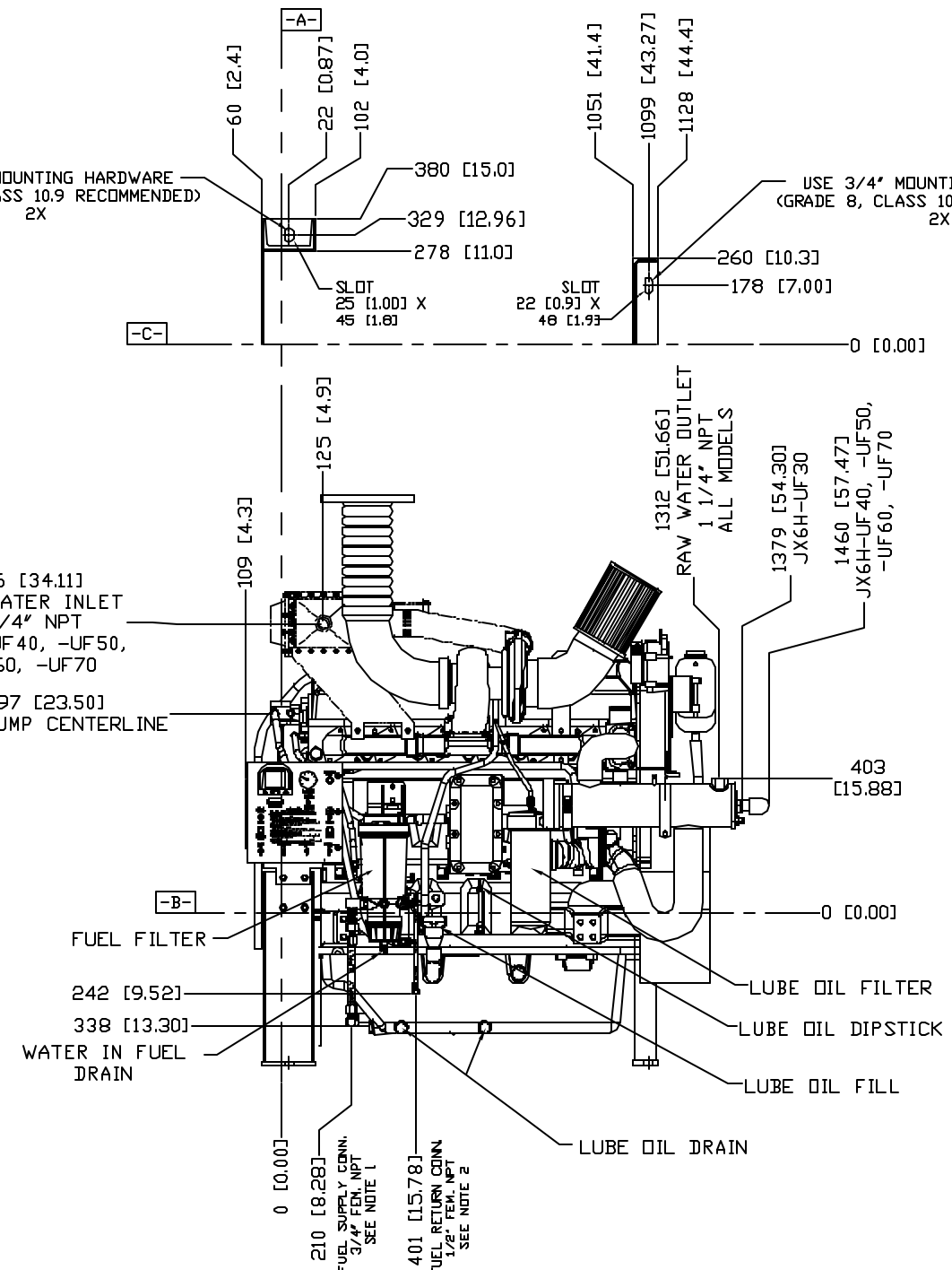


DETAIL DATUM -G- UNIVERSAL DRIVE SHAFT ADAPTER



FLANGE SERIES NO.	HARDWARE REQUIRED
180-10M	M16-2 X 2" LONG 10X
225-8M	M16-2 X 2" LONG 8X

NOTES:  
 1. FUEL SUPPLY PIPING FROM TANK TO ENGINE SHOULD BE 3/4" MINIMUM PIPE DIAMETER.  
 2. FUEL RETURN PIPING FROM ENGINE TO TANK SHOULD BE 1/2" MINIMUM PIPE DIAMETER.



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**CLARKE**  
 Fire Protection Products, Inc.

CONTROLLED DRAWING

DRWN: S.KIRENBLIT  
 DATE: 21SEP04  
 ENGR: K.J.KUNKLER

MACHINE TOLERANCES:  
 DECIMAL .015  
 X .015  
 XX .018  
 XXX .023

ANGULAR: ±0.5°

SIMILAR TO: D542

NAME: INSTALLATION DRAWING, FIRE PUMP ENGINE JX6H-UF MODELS

PART NO.: D546

SCALE: NTS UNITS: MM [INCH]

PAGE 2 OF 2

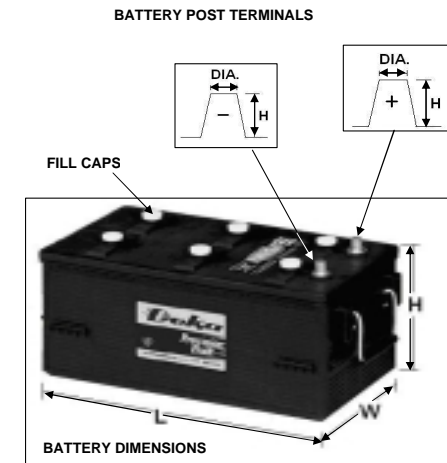
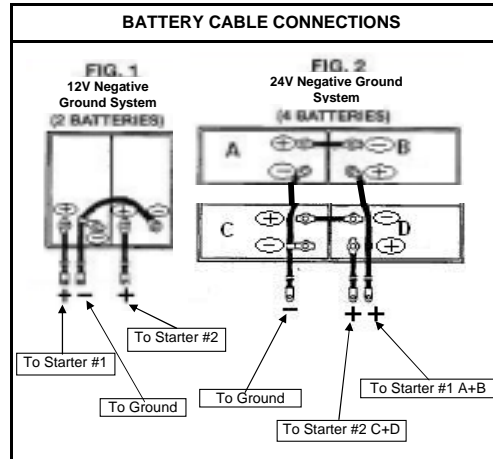
REV H

8 7 6 5 4 3 2 1

## CLARKE USA SUPPLIED LEAD-ACID BATTERY SPECIFICATIONS

Clarke P/N	Battery Model #	SAE # per J537	Mfg.	Charge? Wet/Dry	Volts (V)	Dimensions L x W x H in. (mm)	Weight		Post Connector Dimensions in. (mm) Dia. x H		Number of Quarts of Battery Acid (Liters)	PERFORMANCE DATA			
							Wet lb (kg)	Dry lb (kg)	positive	negative		Cold Cranking Amps @ 0° F (CCA) <sup>3A</sup>	Cranking Amps @ 32° F (CA)	Reserve @ 80° F (min) <sup>3B</sup>	Rating @ 80° F (Amp Hours)
C07634	904D-DRY	4D-640	DEKA	Dry	12	20.75 x 8.50 x 10.50	98 (44.5)	58 (26.3)	3/4 x 3/4	5/8 x 3/4	16 (15.1)	1010	1235	290	135
						(512.1 x 215.9 x 266.7)			(19.1 x 19.1)	(15.9 x 19.1)					
C07633	908D-DRY	8D-900	DEKA	Dry	12	20.75 x 11.00 x 10.00	130.5 (59.2)	80 (36.3)	3/4 x 3/4	5/8 x 3/4	18.5 (17.5)	1300	1550	430	185
						(521.1 x 279.4 x 254)			(19.1 x 19.1)	(15.9 x 19.1)					

BATTERY REQUIRED		
Engine Model	Battery Model #	Battery P/N
JU4H-UF10/12/14/20/22/24/28/30/32/34/H8/H0/H2/40/42/44/58/50/52/54/84	904D-DRY	C07634
JU6H-UFD0/D2/30/32/34/G8/M8/M0/M2/58/50/52/54/68/60/62/84		
JW6H-UF38/30/48/40/58/50/60	908D-DRY	C07633
JX6H-UF30/40/50/60/70		



**Notes:**

- 1) Battery equipped with handles or lifting edges.
- 2) Battery Construction- polypropylene container and cover.
- 3) Meets SAE storage battery requirements for SAE J537 JUN92
  - 3A) While discharging specified amps, the battery voltage across terminals after 30 seconds is 1.2 Volts/cell or greater.
  - 3B) Time (minutes) to discharge battery at 25 amps when voltage across battery terminals has fallen to 1.75 Volts/cell.
- 4) Battery should set into a battery rack on 1/2" plywood (or equal) to provide insulation and support.

4

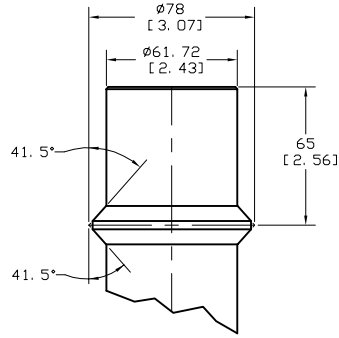
3

2

1

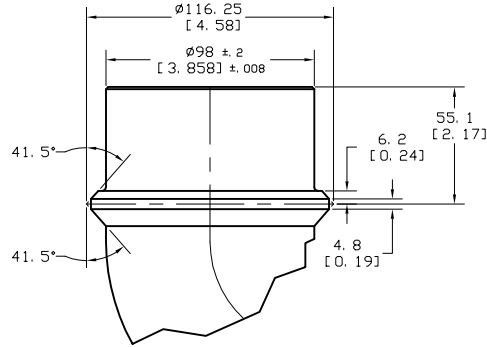
### JU4H-NA MODELS

JU4H-UF10, -UF12, -UF14, -UF20, -UF22, -UF24

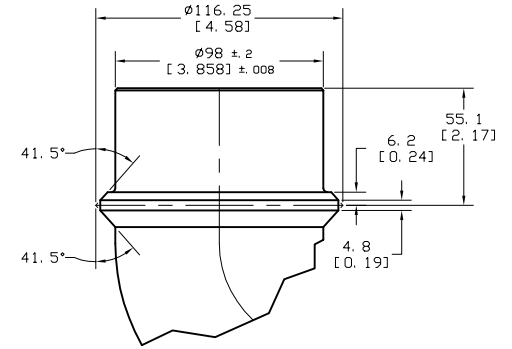


### JU4H-T MODELS

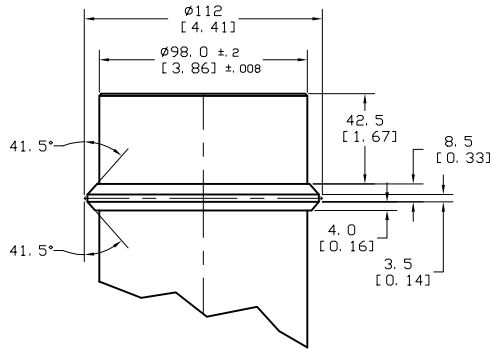
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### JU6H- ALL MODELS

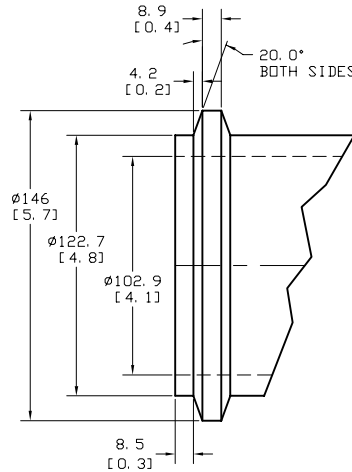


### JW6H- ALL MODELS



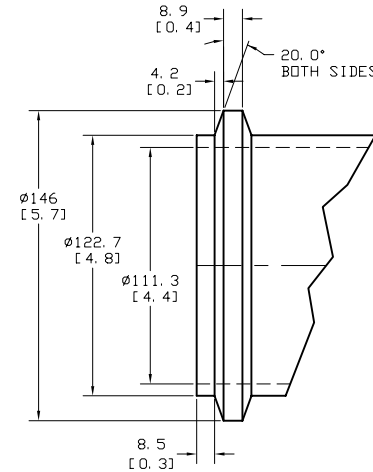
### JX6H- TJWA

JX6H-UF30



### JX6H- TRWA

JX6H-UF40, -UF50, -UF60, -UF70



D

C

B

A

D

C

B

A

REV	DESCRIPTION	ECN#	DWN	APVD	DATE
A	ISSUED ENGINEERING DRAWING	494	MAL	KRW	16JUN05

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UNLESS OTHERWISE SPECIFIED TO DIMENSIONS ARE: MM IN

DECIMAL .XX .125 .0625

FRACTIONAL 1/32 1/16

ANGULAR TO ±.5°

SIMILAR TO ±.5°

CONTROLLED DRAWING

DATE 16JUN05

ENGINEER KRWALIGMAN

SCALE NTS

UNITS MM (INCH)

PAGE 1 OF 1

**CLARKE**  
Fire Protection Products, Inc.

DRWN MALAUER  
DATE 16JUN05  
ENGINEER KRWALIGMAN

**EXHAUST OUTLET DETAIL**  
**JD-ENGINE MODELS**

PART NO. **D550**

SCALE NTS UNITS MM (INCH) PAGE 1 OF 1

4

3

2

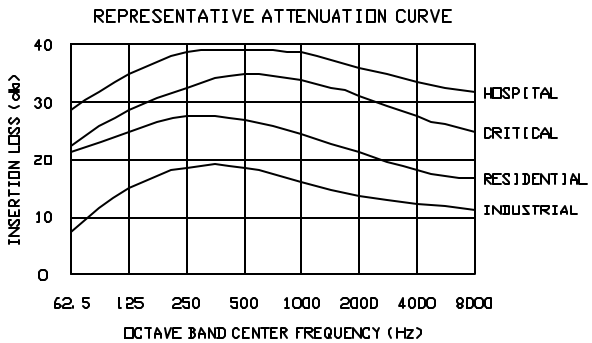
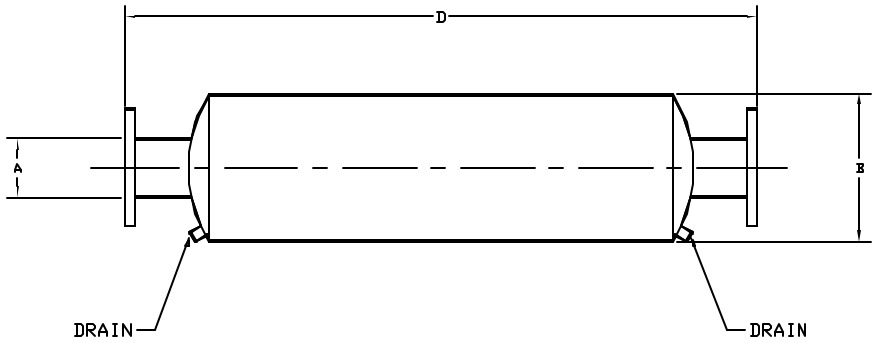
1

**1"-3.5" NPT CONNECTIONS**

CRITICAL					RESIDENTIAL					INDUSTRIAL					HOSPITAL				
CDDA P/N	A	B	D	Wgt#	CDDA P/N	A	B	D	Wgt#	CDDA P/N	A	B	D	Wgt#	CDDA P/N	A	B	D	Wgt#
C06512	1.0	4.0	30.0	6	C06526	1.0	4.0	24.0	5	-----	1.0	4.0	---	-	C06714	1.0	---	---	---
C06513	1.5	6.0	30.0	10	C06527	1.5	6.0	24.0	8	-----	1.5	6.0	---	-	C06715	1.5	---	---	---
C06514	2.0	6.0	42.0	29	C06528	2.0	6.0	30.0	17	C06540	2.0	6.0	24.0	12	C06716	2.0	10.0	44.0	44
C06515	2.5	8.0	42.0	38	C06529	2.5	8.0	30.0	24	C06541	2.5	8.0	24.0	18	C06717	2.5	12.0	46.0	50
C06516	3.0	8.0	42.0	43	C06530	3.0	8.0	31.0	26	C06542	3.0	8.0	25.0	20	C06718	3.0	12.0	46.0	50
C06517	3.5	10.0	55.0	58	C06531	3.5	10.0	43.0	42	C06543	3.5	10.0	31.0	30	C06719	3.5	14.0	60.0	72

**4"-16" MATCHES 125# ASA FLANGE**

CRITICAL					RESIDENTIAL					INDUSTRIAL					HOSPITAL				
CDDA P/N	A	B	D	Wgt#	CDDA P/N	A	B	D	Wgt#	CDDA P/N	A	B	D	Wgt#	CDDA P/N	A	B	D	Wgt#
C06518	4.0	10.0	56.0	64	C06532	4.0	10.0	44.0	44	C06544	4.0	10.0	32.0	31	C06720	4.0	14.0	60.0	74
C06519	5.0	12.0	68.0	84	C06533	5.0	12.0	56.0	54	C06545	5.0	12.0	44.0	45	C06721	5.0	18.0	68.0	160
C06520	6.0	12.0	68.0	86	C06534	6.0	12.0	56.0	68	C06546	6.0	12.0	44.0	50	C06722	6.0	18.0	68.0	165
C06521	8.0	18.0	92.0	249	C06535	8.0	18.0	68.0	135	C06547	8.0	18.0	56.0	120	C06723	8.0	26.0	96.0	325
C06522	10.0	22.0	108.0	370	C06536	10.0	22.0	84.0	220	C06548	10.0	22.0	72.0	180	C06724	10.0	30.0	110.0	450
C06523	12.0	26.0	120.0	506	C06537	12.0	26.0	96.0	325	C06549	12.0	26.0	72.0	250	C06725	12.0	36.0	126.0	740
C06524	14.0	30.0	132.0	743	C06538	14.0	30.0	120.0	505	C06550	14.0	30.0	84.0	375	C06726	14.0	42.0	138.0	1130
C06525	16.0	36.0	160.0	1050	C06539	16.0	36.0	136.0	870	C06551	16.0	36.0	100.0	470	C06727	16.0	42.0	162.0	1150



- NOTES**
- 1-MAY BE MOUNTED HORIZONTALLY OR VERTICALLY.
  - 2-HIGH TEMPERATURE PRIMER, STANDARD.
  - 3-EQUIPPED WITH DRAIN.
  - 4-ALL WELD CONSTRUCTION.

REV	REVISION	ISSUED BY	DATE	APP'D BY	DATE	SCALE	NO. OF SHEETS	TOTAL SHEETS
A	ISSUED DRAWING	DMP	20 JUL 92	JTV				
B	ADDED HOSPITAL GRADE	TP	10 MAY 93					

DESIGNED BY	DATE	SCALE	NO. OF SHEETS	TOTAL SHEETS

MANUFACTURER	DATE	SCALE	NO. OF SHEETS	TOTAL SHEETS
IMPOTTER	20 JUL 92			
IMPOTTER				

**SILENCER, EXHAUST**

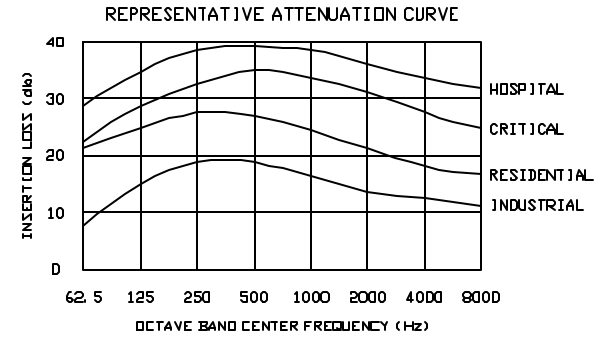
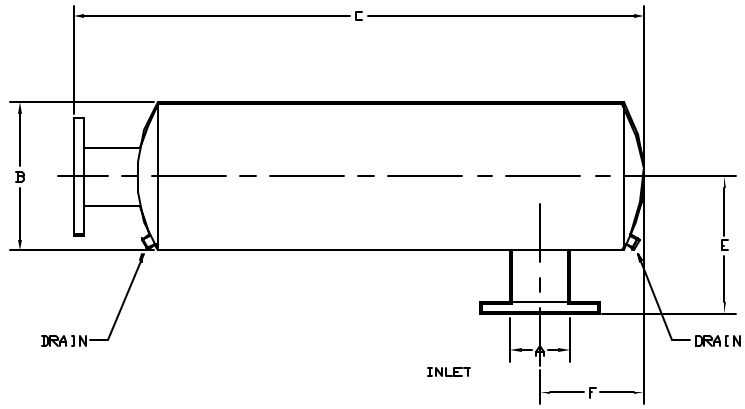
D-451

1"-3.5" NPT CONNECTIONS

CRITICAL							RESIDENTIAL							INDUSTRIAL							HOSPITAL						
CDDA P/N	A	B	C	E	F	Wgt#	CDDA P/N	A	B	C	E	F	Wgt#	CDDA P/N	A	B	C	E	F	Wgt#	CDDA P/N	A	B	C	E	F	Wgt#
CD6552	1.0	4.0	27.75	4.0	5.25	6	CD6566	1.0	4.0	21.75	4.0	2.75	5	-----	1.0	---	-----	4.0	---	---	CD6728	1.0	---	---	---	---	---
CD6553	1.5	6.0	27.75	5.0	5.25	10	CD6567	1.5	6.0	21.75	5.0	2.75	8	-----	1.5	---	-----	5.0	---	---	CD6729	1.5	---	---	---	---	---
CD6554	2.0	6.0	39.75	5.5	7.25	29	CD6568	2.0	6.0	28.00	5.5	3.00	17	CD6580	2.0	6.0	22.00	5.5	3.00	12	CD6730	2.0	10.0	41.5	8.5	5.50	44
CD6555	2.5	8.0	39.00	6.5	7.38	38	CD6569	2.5	8.0	28.50	6.5	3.60	24	CD6581	2.5	8.0	22.20	6.5	3.70	18	CD6731	2.5	12.0	42.5	10.0	7.75	50
CD6556	3.0	8.0	40.62	7.0	7.38	49	CD6570	3.0	8.0	29.00	7.0	4.10	26	CD6582	3.0	8.0	22.70	7.0	4.20	20	CD6732	3.0	12.0	42.5	10.0	7.75	50
CD6557	3.5	10.0	53.00	8.0	9.25	58	CD6571	3.5	10.0	41.00	8.0	5.00	42	CD6583	3.5	10.0	29.00	8.0	5.00	30	CD6733	3.5	14.0	56.5	11.0	9.50	72

4"-16" MATCHES 125# ASA FLANGE

CRITICAL							RESIDENTIAL							INDUSTRIAL							HOSPITAL						
CDDA P/N	A	B	C	E	F	Wgt#	CDDA P/N	A	B	C	E	F	Wgt#	CDDA P/N	A	B	C	E	F	Wgt#	CDDA P/N	A	B	C	E	F	Wgt#
CD6558	4.0	10.0	53.50	8.5	9.25	64	CD6572	4.0	10.0	41.50	8.5	5.50	44	CD6584	4.0	10.0	29.50	8.5	5.50	31	CD6734	4.0	14.0	56.5	11.0	9.50	74
CD6559	5.0	12.0	65.62	10.0	12.25	84	CD6573	5.0	12.0	54.00	10.0	6.60	54	CD6585	5.0	12.0	41.60	10.0	6.60	45	CD6735	5.0	18.0	66.5	13.0	10.50	160
CD6560	6.0	12.0	65.62	10.0	12.25	86	CD6574	6.0	12.0	54.00	10.0	7.60	68	CD6586	6.0	12.0	41.60	10.0	7.60	50	CD6736	6.0	18.0	66.5	13.0	10.50	165
CD6561	8.0	18.0	90.50	13.0	16.50	249	CD6575	8.0	18.0	66.50	13.0	10.50	155	CD6587	8.0	18.0	54.50	13.0	10.50	120	CD6737	8.0	26.0	93.5	17.0	17.50	325
CD6562	10.0	22.0	105.00	15.0	20.00	370	CD6576	10.0	22.0	81.00	15.0	15.00	220	CD6588	10.0	22.0	69.00	15.0	15.00	180	CD6738	10.0	30.0	108.0	19.0	20.00	450
CD6563	12.0	26.0	117.50	17.0	21.50	506	CD6577	12.0	26.0	93.50	17.0	17.50	325	CD6589	12.0	26.0	69.50	17.0	17.00	250	CD6739	12.0	36.0	122.0	22.0	23.00	750
CD6564	14.0	30.0	130.00	19.0	23.00	743	CD6578	14.0	30.0	118.00	19.0	20.00	505	CD6590	14.0	30.0	82.00	19.0	20.00	375	CD6740	14.0	42.0	135.0	25.0	24.00	1130
CD6565	16.0	36.0	157.00	22.0	29.00	1050	CD6579	16.0	36.0	133.00	22.0	23.00	870	CD6591	16.0	36.0	97.00	22.0	23.00	470	CD6741	16.0	42.0	159.0	25.0	28.00	1150



- NOTES
- 1-MAY BE MOUNTED HORIZONTALLY OR VERTICALLY.
  - 2-HIGH TEMPERATURE PRIMER, STANDARD.
  - 3-EQUIPPED WITH DRAIN.
  - 4-ALL WELD CONSTRUCTION.

REV	REVISION	DRN	APPD	DATE	REV	DATE	BY	CHKD	DATE
A	ISSUED DRAWING	JMP	JTV	23 JUL 92					
B	ADDED HOSPITAL BRANCH	TP	JHWATER						

DESIGNED BY: [Signature]

SCALE: NONE

DATE: 23 JUL 92

BY: JMP

CHKD: JTV

**BLARKE**

**EXHAUST SYSTEMS - ALLISON**

6100 EAST KODAK BLVD. CHANDLER, AZ 85224

**SILENCER, EXHAUST**

SIZE: D

PRINT NO: D-451

SCALE: NONE

UNIT: INCH

SHEET: 2 OF 2



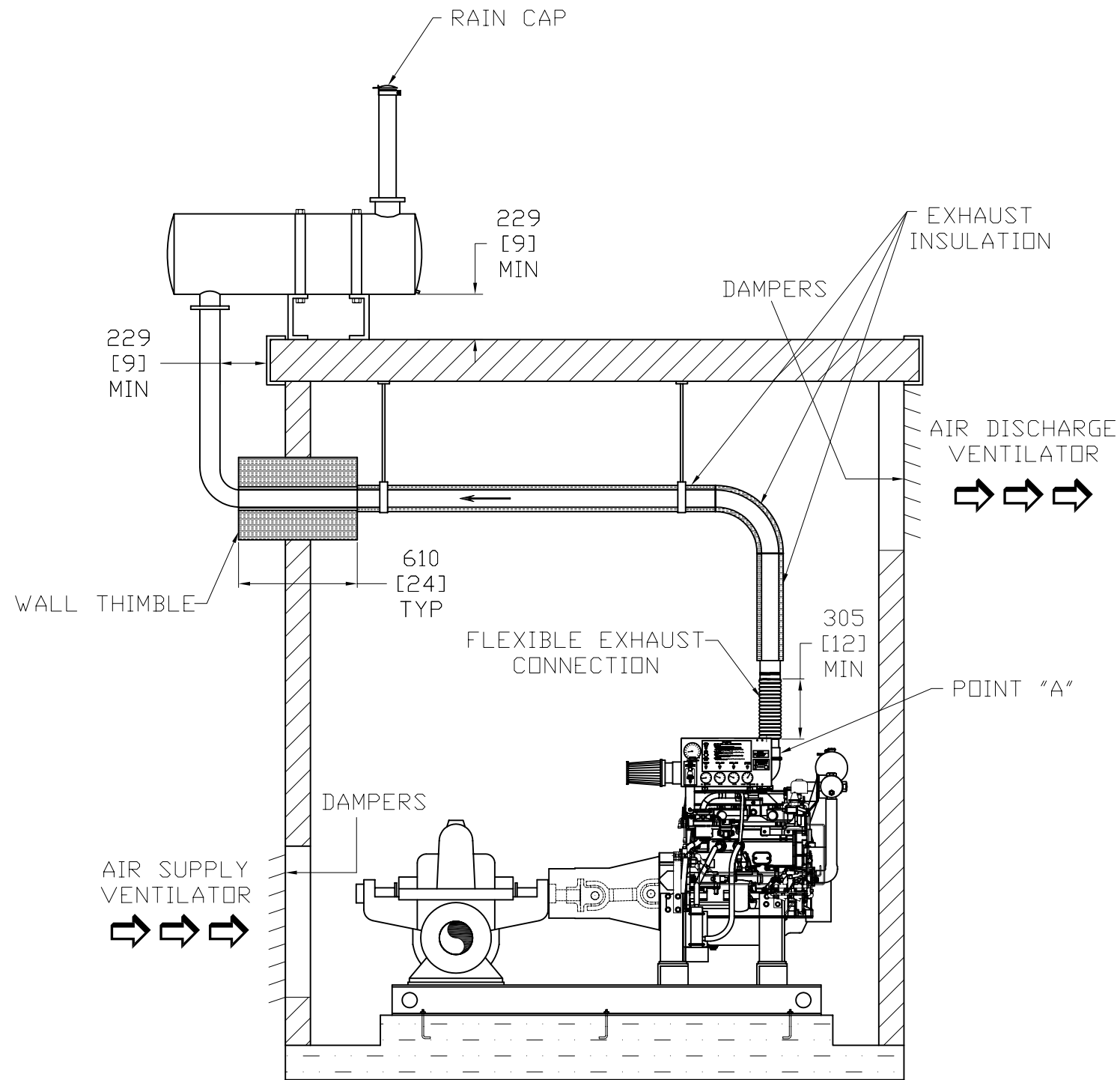
REV	DESCRIPTION	ECN#	DWN	APVD	DATE
A	ISSUED ENGINEERING DRAWING	494	SK	KRW	31AUG04
B	ADDED SUPPLY & DISCHARGE VENTILATORS	494	MAL	KRW	25OCT04
C	CORRECTED DWG GEOMETRY AND ADDED PAD	494	JJW	KRW	15MAY06

**INSTALLATION GUIDELINES:**

1. REFER TO NFPA-20 2003, SECTION 11.5 FOR ADDITIONAL INFORMATION. NOTE, OTHER PIPING SYSTEMS ARE POSSIBLE. SCHEMATIC SHOWN IS FOR EGRESS THRU WALL, AND SIDE IN, SIDE OUT SILENCER.
2. THE EXHAUST PIPING SYSTEM AND SILENCER SHALL BE SUITABLE FOR THE USE INTENDED, AND THE EXHAUST BACK PRESSURE SHALL NOT EXCEED THE ENGINE MANUFACTURER'S RECOMENDATIONS (SEE WARNING BELOW).
3. THE EXHAUST PIPE SHALL NOT BE ANY SMALLER IN DIAMETER THAN THE ENGINE EXHAUST OUTLET.
4. THE EXHAUST PIPE SHALL BE COVERED WITH HIGH-TEMPERATURE INSULATION OR OTHERWISE GUARDED TO PROTECT PERSONNEL FROM INJURY.
5. THE SYSTEM MUST BE SUPPORTED SUCH THAT THERE IS NO WEIGHT ON THE FLEXIBLE EXHAUST CONNECTION.
6. THE EXHAUST PIPE SHALL BE POSITIONED IN SUCH A WAY AS TO PREVENT EXHAUST GASES FROM RE-ENTERING THE PUMP ROOM.
7. EXHAUST PIPE AND THE POINT OF EGRESS FROM THE PUMP ROOM SHALL BE CONSTRUCTED OR INSULATED SO THAT IT DOES NOT CAUSE A FIRE IGNITION RISK TO THE STRUCTURE.
8. EXHAUST SYSTEM SHALL TERMINATE OUTSIDE THE STRUCTURE AT A POINT WHERE HOT GASES, SPARKS, OR PRODUCTS OF COMBUSTION WILL DISCHARGE TO A SAFE LOCATION.
9. EXHAUST SYSTEM TERMINATIONS SHALL NOT BE DIRECTED TOWARDS COMBUSTIBLE MATERIAL OR STRUCTURES, OR INTO ATMOSPHERES CONTAINING FLAMMABLE GASES, FLAMMABLE VAPORS, OR COMBUSTIBLE DUST.
10. PROPERLY SIZED LOUVERS FOR COMBUSTION AIR AND FOR ROOM COOLING AND VENTILATION SHALL BE PROVIDED. THE TOTAL AIR SUPPLY PATH TO THE PUMP ROOM SHALL NOT RESTRICT THE FLOW OF AIR MORE THAN 5.1mm (.2in) WATER COLUMN. THE TOTAL AIR DISCHARGE PATH FROM THE PUMP ROOM SHALL NOT RESTRICT THE FLOW OF AIR MORE THAN 5.1mm (.2in) WATER COLUMN.

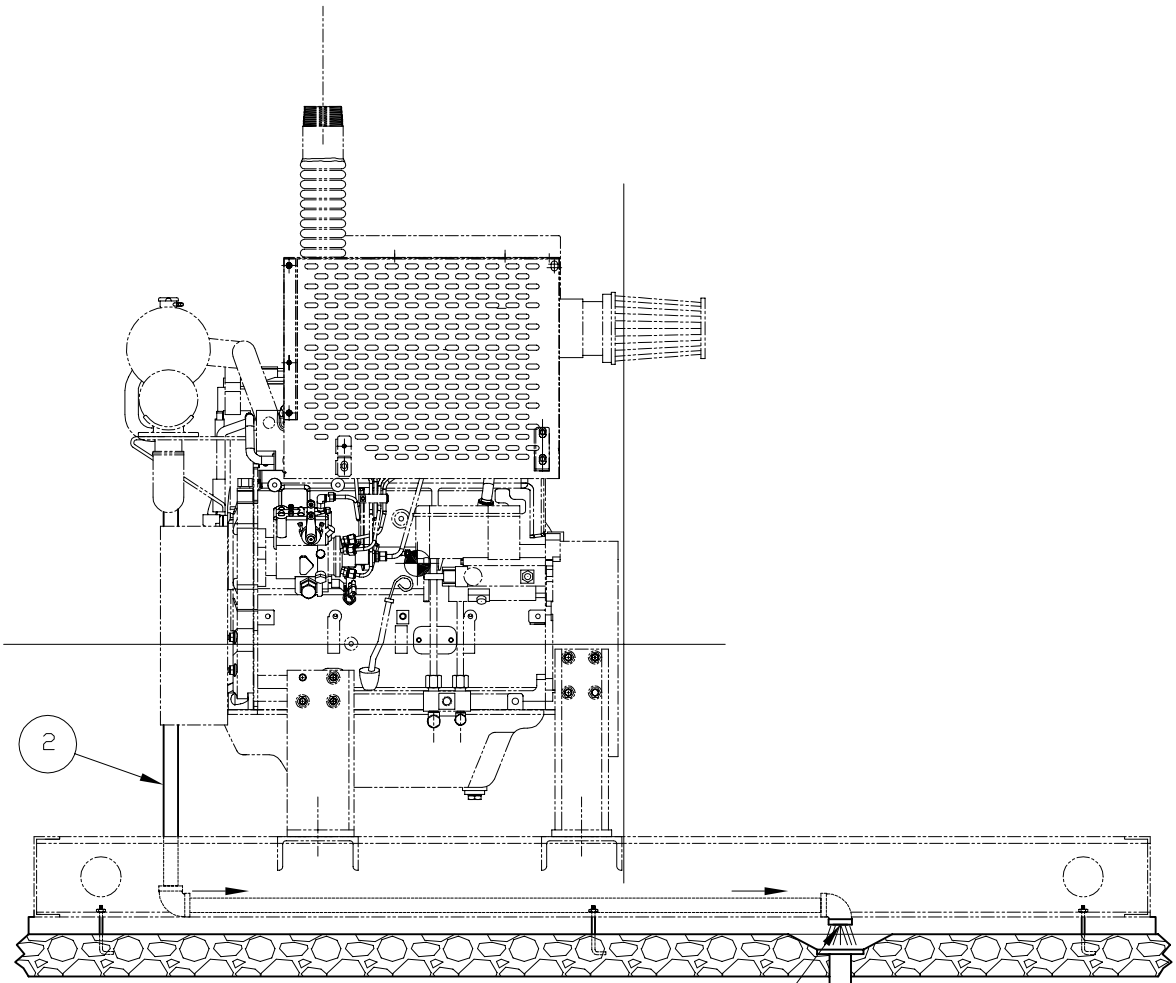
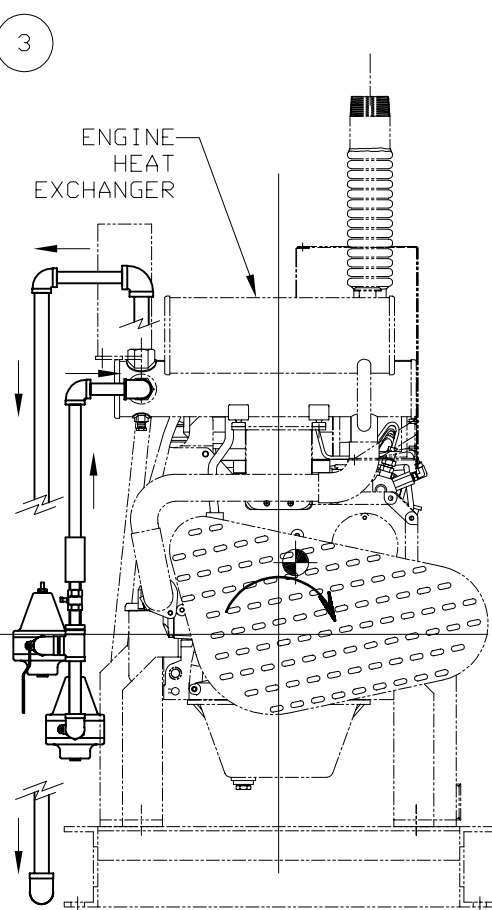
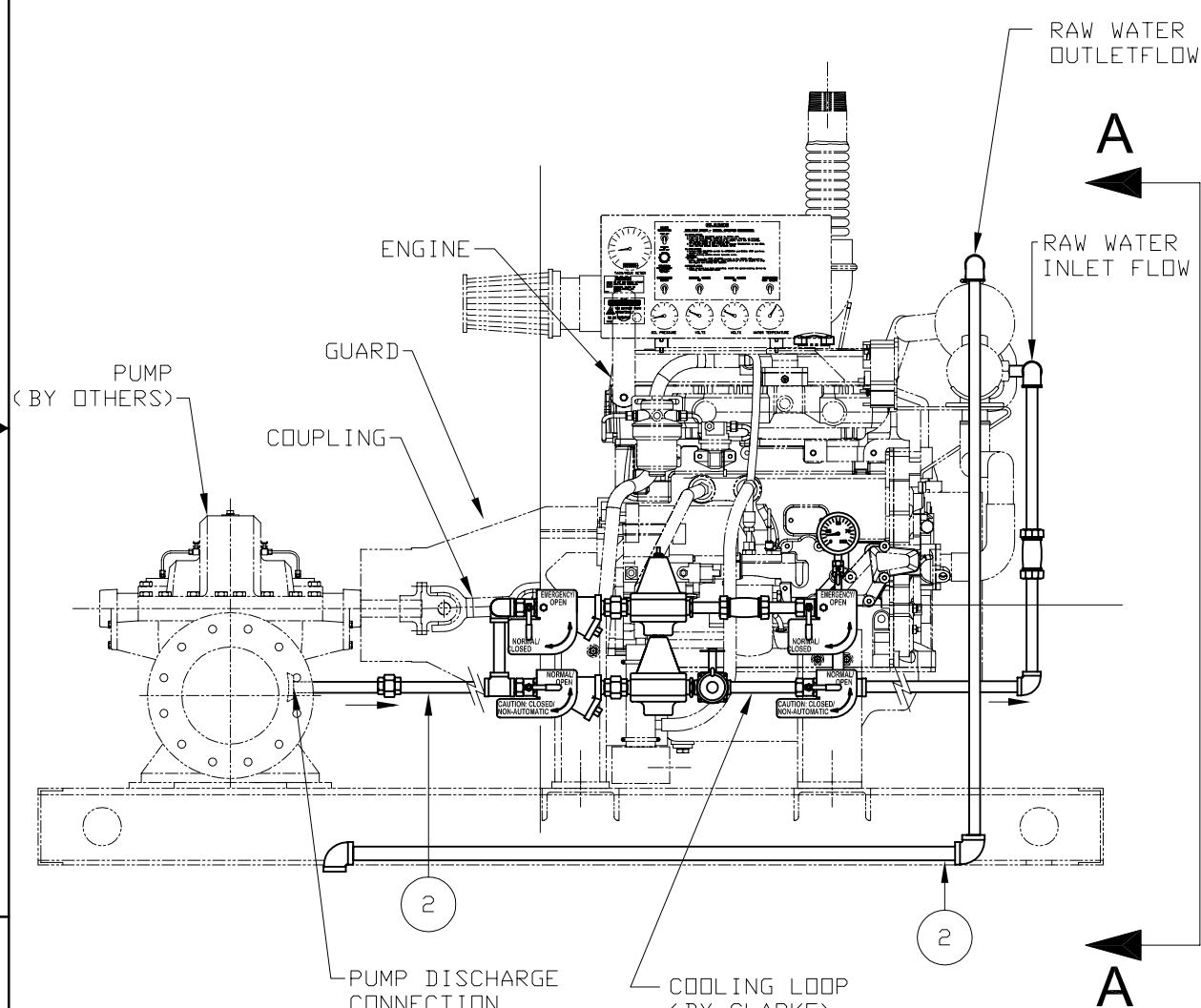
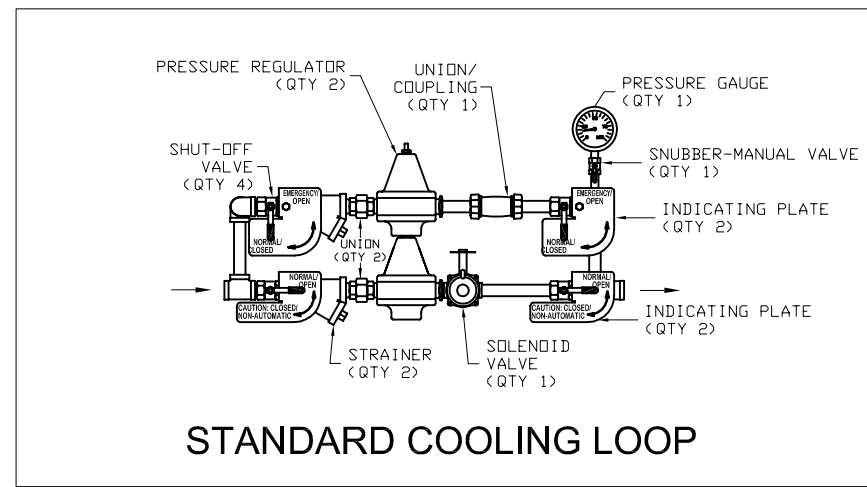
**WARNING:**

THE BACK PRESSURE TO THE ENGINE EXHAUST CONSIDERABLY INFLUENCES THE POWER OF THE ENGINE AND IT'S THERMAL LOADINGS. EXCESSIVE BACK PRESSURE MEASURED AT THE ENGINE EXHAUST OUTLET CONNECTION (POINT "A") DECREASES POWER, INCREASES THE TEMPERATURE OF THE EXHAUST GAS, PRODUCES SMOKE, INCREASES FUEL CONSUMPTION, SULPHURISES THE INTERNAL COOLING WATER (WITH SUBSEQUENT DAMAGE TO THE LUBRICANTS) AND PRODUCES SERIOUS CONSEQUENCES FOR OTHER ENGINE ELEMENTS (i.e. TURBOCHARGER, etc.).



<small>THIS DRAWING AND THE INFORMATION HEREIN ARE OUR PROPERTY AND MAY BE USED BY OTHERS ONLY AS AUTHORIZED BY US. UNPUBLISHED--ALL RIGHTS RESERVED UNDER THE COPYRIGHT LAWS.</small>	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<b>CLARKE</b> Fire Protection Products, Inc.	
	CONTROLLED DRAWING	DRWN S.KORENBLIT	NAME
<small>UNLESS OTHERWISE SPECIFIED TOLERANCES ARE:</small>	DATE 31AUG04	TYPICAL EXHAUST PIPING DETAIL PER NFPA-20 2003	
<small>DECIMAL</small> X .15 ±0.06 XX .08 ±0.03 XXX .025 ±0.01	ENGR KRWALIGMAN	MATERIAL	PART NO. C06918
<small>FRACTIONAL</small> ±1/32 <small>ANGULAR</small> ±5° <small>MACHINED SURFACE</small> 3.2 <small>TEXTURE</small> ✓	SIMILAR TO	USED ON/LAYOUT PART NO.	UNITS MM [INCH]
		PAGE 1	OF 1

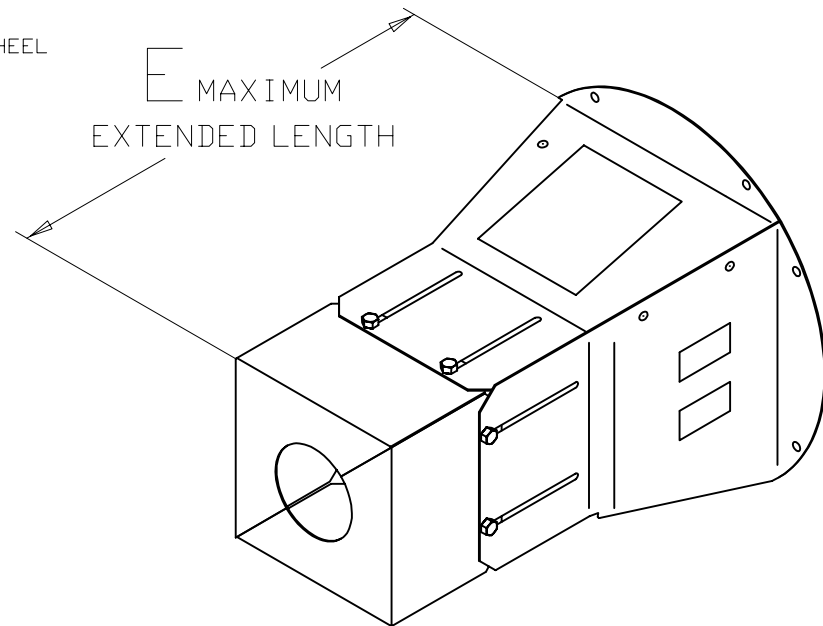
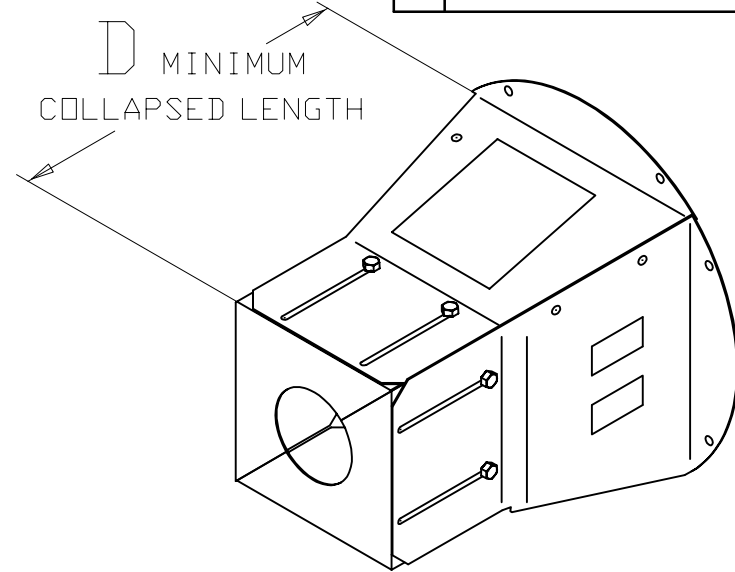
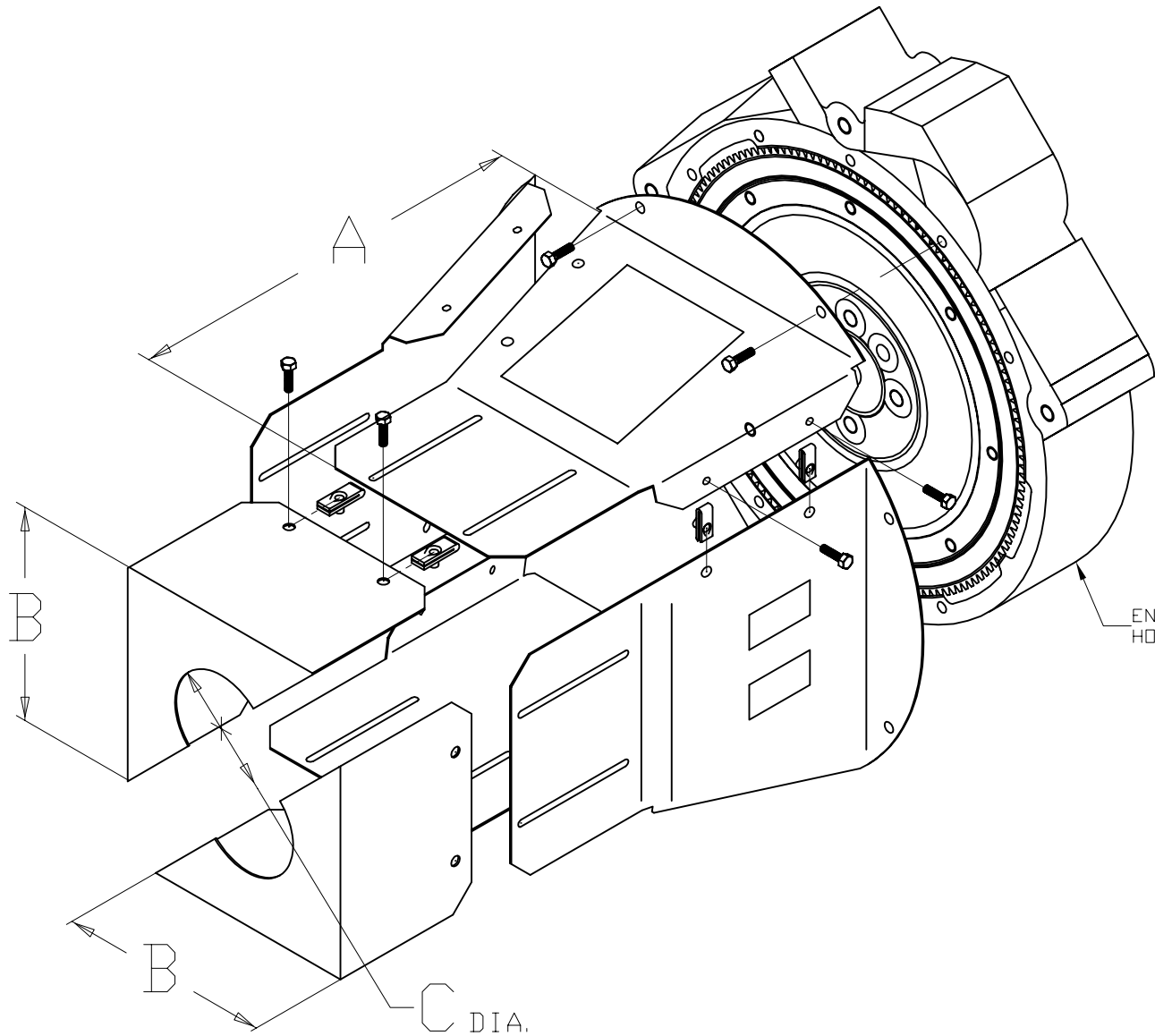
REV	DESCRIPTION	ECN#	DWN	APVD	DATE
A	ISSUED ENGINEERING DRAWING	N/A	MAL	KRW	14AUG03
B	ADDED VALVE INDICATOR OPEN/CLOSED TO LOOP	540	JJW	KRW	04APR06



- NOTES:
- ① PIPING ARRANGEMENT PER NFPA-20.
  - ② PIPING BY OTHERS.
  - ③ DISCHARGE PIPING FROM HEAT EXCHANGER OUTLET IS ONE PIPE SIZE LARGER THAN THE INLET PIPING TO THE HEAT EXCHANGER.
- COOLING LOOP WATER - DIRECTION OF FLOW

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	DRWN MALAUER DATE 14AUG03 ENGR KRWAULIGMAN	NAME <b>NFPA-20 COOLING LOOP PIPING DETAIL</b>	
<small>UNLESS OTHERWISE SPECIFIED TOLERANCES ARE:</small> DECIMAL    MM    IN .X           ±1.5   ±0.06 .XX          ±0.8   ±0.03 .XXX        ±0.25 ±0.01 FRACTIONAL ANGULAR    ±1/32 SIMILAR TO   ±.5°	MATERIAL		PART NO. <b>C13977</b>
SCALE    NTS    UNITS    MM [ INCH ]		REV    B PAGE 1 OF 1	

REV	DESCRIPTION	ECN#	DWN	APVD	DATE
A	ISSUED ENGINEERING DRAWING	979	JJW	KRW	31MAR06



DRIVE SHAFT KIT P/N	USED ON	DIMENSIONS					SAE FLY' HSG NUMBER
		A	B	C	D	E	
C10382	JU4H	247.7 [9.75]	222.5 [8.76]	109.5 [4.31]	296.1 [11.66]	372.3 [14.66]	#3
C10383	JU6H	381.0 [15.00]	222.5 [8.76]	109.5 [4.31]	381.8 [15.03]	505.7 [19.91]	#3
C10384	JW6H	381.0 [15.00]	222.5 [8.76]	109.5 [4.31]	381.8 [15.03]	505.7 [19.91]	#3
C10385	JX6H	475.0 [18.70]	270.0 [10.63]	125.0 [4.92]	475.0 [18.70]	619.0 [24.37]	#2

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UNLESS OTHERWISE SPECIFIED TOLERANCES ARE:

DECIMAL	MM	IN
.X	±1.5	±0.06
.XX	±0.8	±0.03
.XXX	±0.25	±0.01
FRACTIONAL		
ANGULAR	±1/32	
	±5°	
SIMILAR TO	D438	

**CLARKE**  
Fire Protection Products, Inc.

CONTROLLED DRAWING

DRWN: JWQJKIEWICZ  
DATE: 31MAR06  
ENGR: KWAULIGMAN

NAME: INSTALLATION DWG. - DRIVE SHAFT/ FLYWHEEL GUARD

MATERIAL: \_\_\_\_\_

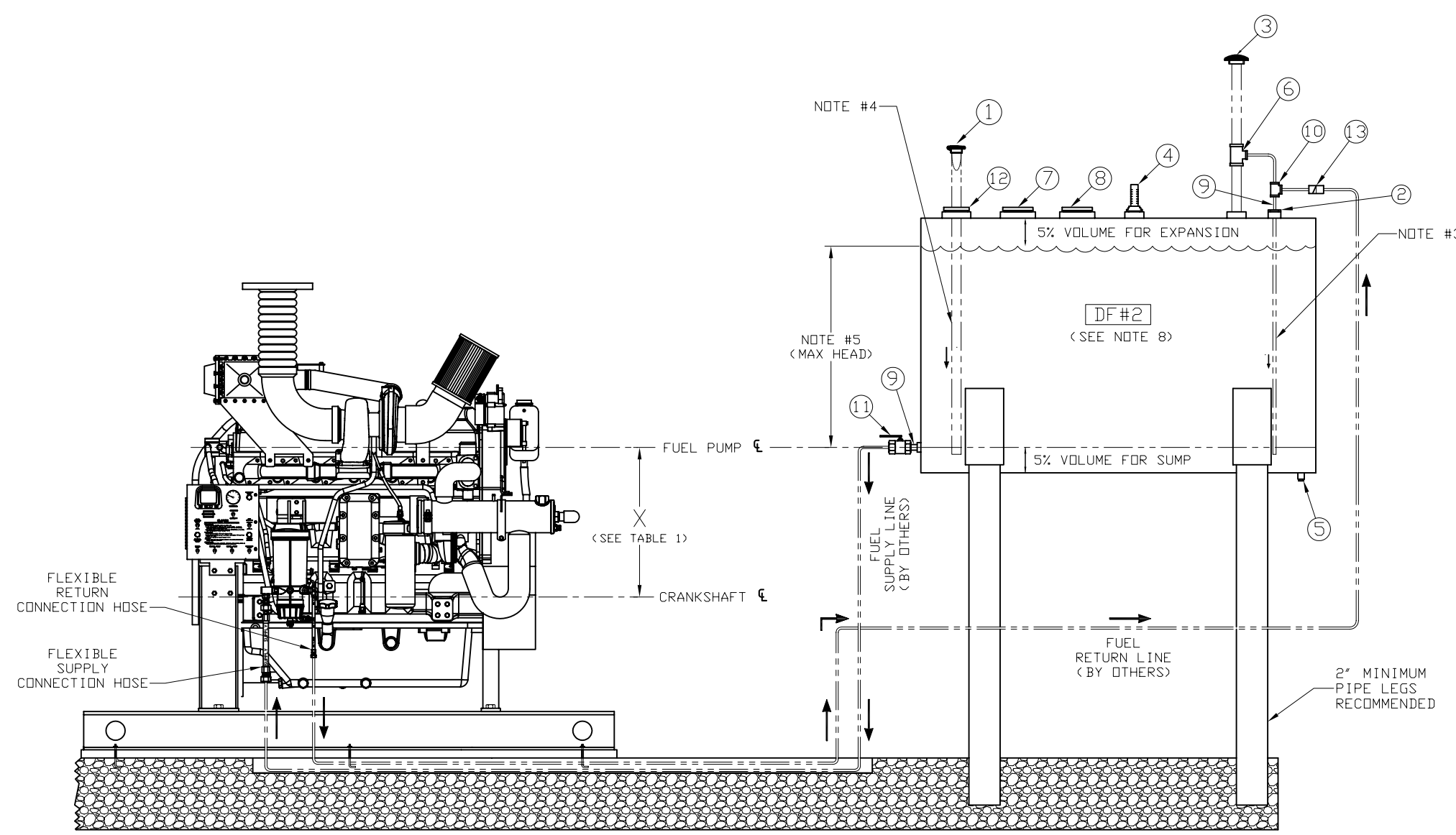
PART NO.: D556

SCALE: NTS  
UNITS: MM [ INCH ]

PAGE 1 OF 1

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8 7 6 5 4 3 2 1



**JX6H SHOWN  
WITH SINGLE WALL FUEL TANK**

TABLE 1	
ENGINE MODEL	X
JU4H	14.33' [364.0]
JU6H	14.33' [364.0]
JW6H	8.52' [216.4]
JX6H	23.50' [597.0]

TABLE 2		
ENGINE MODEL	MINIMUM FUEL SUPPLY SIZE IN [MM]	MINIMUM FUEL RETURN SIZE IN [MM]
JU4H	1/2"	3/8"
JU6H	1/2"	3/8"
JW6H	1/2"	3/8"
JX6H	3/4"	1/2"

- TYPICAL -

REV	DESCRIPTION	ECN#	DWN	APVD	DATE
A	ISSUED ENGINEERING DRAWING	1022	JJW	KRW	28NOV06
B	REVISED FOR CLARITY	1022	MWL	KRW	10JAN07
C	ADDED TABLE 2	1022	MWL	KRW	08JUN07

- NOTES:
- REFER TO THE LATEST EDITION OF NFPA 20 FOR ADDITIONAL REQUIREMENTS. ALSO, INSTALL TANK IN ACCORDANCE WITH THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION
  - FUEL SUPPLY TANK SHALL HAVE A CAPACITY AT LEAST EQUAL TO 1 GAL PER HP (5.07L PER KW), PLUS 5 PERCENT VOLUME FOR EXPANSION AND 5 PERCENT VOLUME FOR SUMP
  - DOWNPIPE RECOMMENDED FOR FUEL RETURN LINE TO PREVENT FOAMING INSIDE TANK. TERMINATE 3'-6" [76.2mm-152.4mm] FROM TANK BOTTOM
  - DOWNPIPE RECOMMENDED FOR FUEL LINE TO PREVENT FOAMING INSIDE TANK. TERMINATE 3'-6" [76.2mm-152.4mm] FROM TANK BOTTOM
  - THE ENGINE MANUFACTURER'S FUEL PUMP STATIC HEAD PRESSURE LIMITS SHALL NOT BE EXCEEDED WHEN THE LEVEL OF FUEL IN THE TANK IS AT A MAXIMUM
  - FUEL PIPING SHALL NOT BE GALVANIZED STEEL OR COPPER
  - THE FUEL SUPPLY TANK AND FUEL SHALL BE RESERVED EXCLUSIVELY FOR THE FIRE PUMP DIESEL ENGINE
  - THE FUEL RETURN LINE SHALL BE INSTALLED ACCORDING TO THE ENGINE MANUFACTURER'S RECOMMENDATION. IN ZONES WHERE FREEZING TEMPERATURES [32°F (0°C)] COULD BE ENCOUNTERED, THE FUEL TANK SHALL BE LOCATED IN THE PUMP ROOM
  - IN AREAS WHERE LOCAL AIR QUALITY MANAGEMENT REGULATIONS ONLY ALLOW THE USE OF DF#1 FUEL, AND NO DIESEL FIRE PUMP DRIVER IS AVAILABLE LISTED FOR USE WITH DF#1 FUEL, AN ENGINE LISTED FOR DF#2 SHALL BE PERMITTED TO BE USED BUT SHALL HAVE THE NAMEPLATE RATED HORSEPOWER DERATED 10 PERCENT, PROVIDED THE ENGINE MANUFACTURER APPROVES THE USE OF DF#1 FUEL
  - THE GRADE OF THE FUEL OIL SHALL BE INDICATED ON THE FUEL TANK BY LETTERS THAT ARE A MINIMUM OF 6" (152mm) IN HEIGHT AND IN CONTRASTING COLOR TO THE TANK
  - CONSULT ENGINE MANUFACTURER'S INSTALLATION AND OPERATION DATA SHEET FOR THE SPECIFIC ENGINE MODEL TO DETERMINE MINIMUM FUEL SUPPLY AND RETURN PIPE DIAMETERS.

ITEM	QTY.	DESCRIPTION (ALL FITTINGS BY OTHERS)
1	1	2" FILL CAP- WITH PROVISION FOR PADLOCK, COMBINED WITH REMOVABLE STRAINER (MAX. .06 MESH)
2	1	DOUBLE TAP BUSHING, 1" X .50"
3	1	VENT CAP, 1.25" NPT
4	1	DIRECT READING TANK GAUGE, 2" NPT
5	1	PIPE PLUG FOR DRAIN, 1" NPT
6	1	PIPE TEE, 1.25" x 1.25" x TABLE 2 (MIN. FUEL RETURN SIZE)
7	1	PIPE PLUG, 4" NPT (PROVISION FOR EMERGENCY RELIEF VENT)
8	1	PIPE PLUG, 2" NPT (PROVISION FOR LOW FUEL ALARM ACCESS)
9	1	PIPE NIPPLE, TABLE 2 (MIN. FUEL SUPPLY SIZE) x CLOSE
10	1	PIPE TEE, .50" x .50" x TABLE 2 (MIN. FUEL RETURN SIZE)
11	1	STOP COCK, TABLE 2 (MIN. FUEL SUPPLY SIZE) (WITH PROVISION FOR PADLOCK)
12	1	DOUBLE TAP BUSHING, 3" x 2"
13	1	CHECK VALVE, TABLE 2 (MIN. FUEL RETURN SIZE) (PREVENTS SIPHONING)

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**CLARKE**  
Fire Protection Products, Inc.

DRWN: JWOJTKIEWICZ  
DATE: 28NOV06  
ENGR: KRWAULIGMAN

NAME: FUEL TANK AND FUEL SUPPLY SCHEMATIC PER NFPA 20

DWG. NO: C132026  
SCALE: NTS  
UNITS: INCH [MM]  
PAGE: 1 OF 1

8 7 6 5 4 3 2 1