



Document Number <b>DPL 82847</b>	Issue Date <b>06/16/05</b>	Rev. Date <b>10/28/19</b>
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# Iron CM Series Fire Pump Dimensional Drawings

## CM/CGV High Rise

Basic Pump Dimensions (Without Transmission and CGV High Rise Stage)	
Feature	See Page
Body Dimensions	2
Optional Rear Intake Adapters	3
Tank to Pump Flange Options	4
Discharge Connections	5

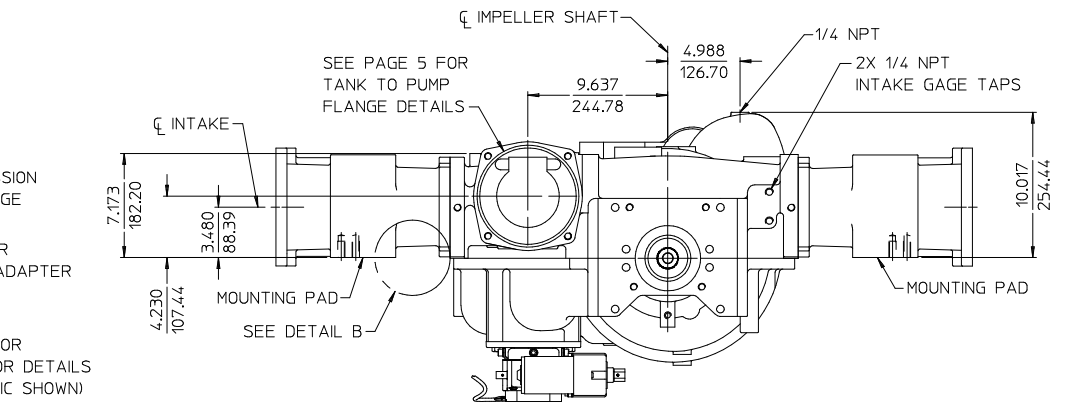
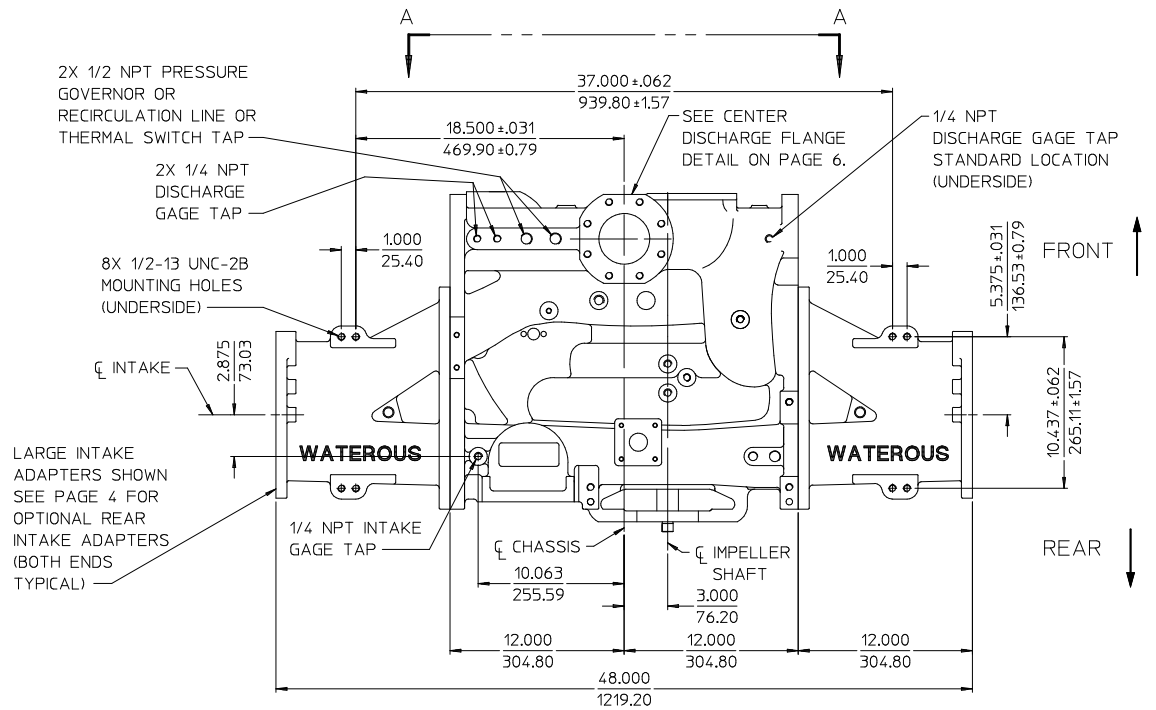
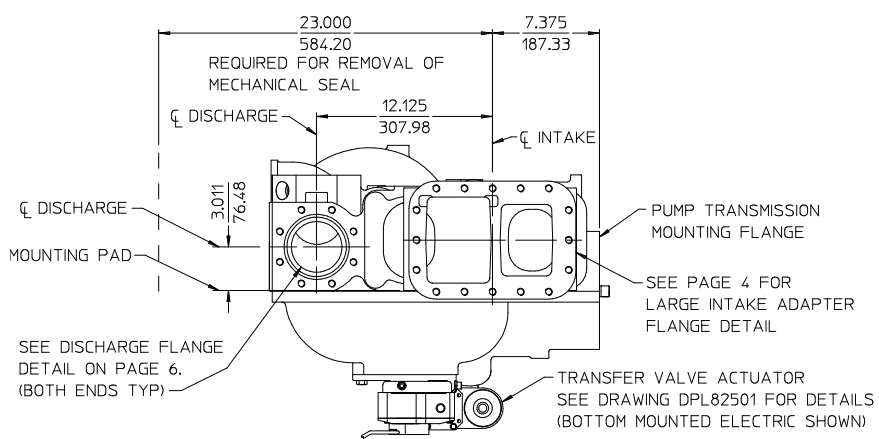
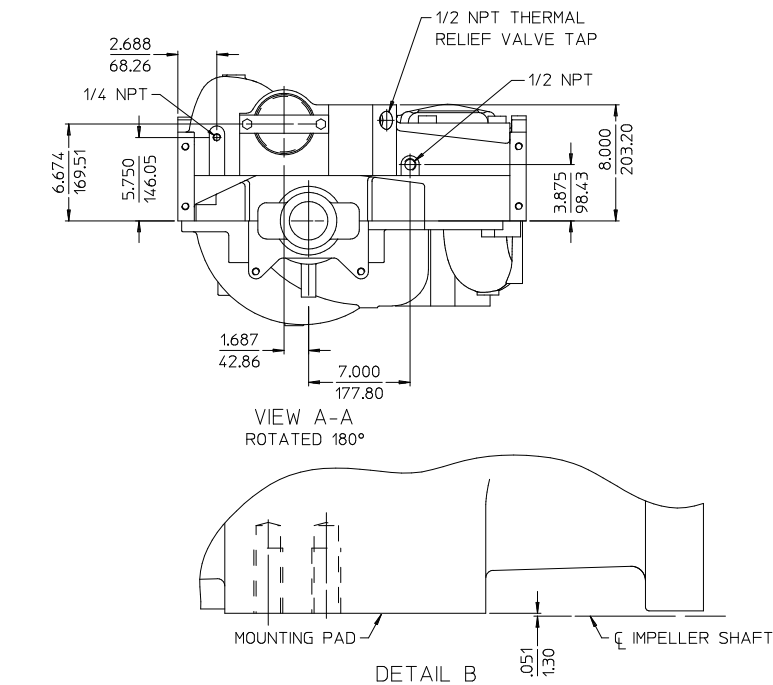
Main CM Pump and Transmission									
Pump Type	Transmission		Pump Model		Assembly Number	Drive		Hydraulic Pump Mounting Provision	See Page
	Model	Drive	Main CM Pump	High Rise Stage		Input Rotation (1)	Driveline Type		
Two Stage Series/Parallel with High Rise Stage	<b>C20 Series</b>	Split Shaft, Chain Drive	CMC20B, CMC20C, CMC20D, CMC20E, CMC20F	CGV	82847	CW	Input and Output Shaft	Not Available	6, 7
			CMUC20B, CMUC20C, CMUC20D, CMUC20E, CMUC20F	CGV	82847-1				

Notes:

- Input rotation is viewed looking directly at the transmission input shaft or direct drive end yoke.

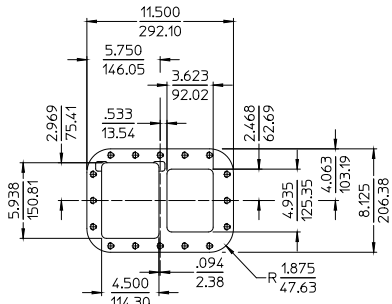
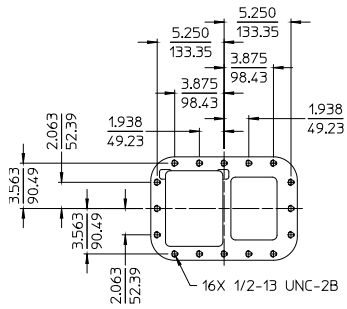
CGV High Rise Stage			
	Component	See Page	
Pump Body and Piping	Configuration 81344-1C	8	
	Configuration 81344-1D	9	
Optional Discharge Valves	3-1/2 in. Standard with Manual Actuator	Valve	10
		Control Panel Layout	11
		Actuator Mounting	
	3-1/2 in. Standard with Electric Actuator	Valve	12
		Control Panel Layout	13
		Actuator Mounting	

**C20 Series Transmission Oil Cooler:  
See Page 14**

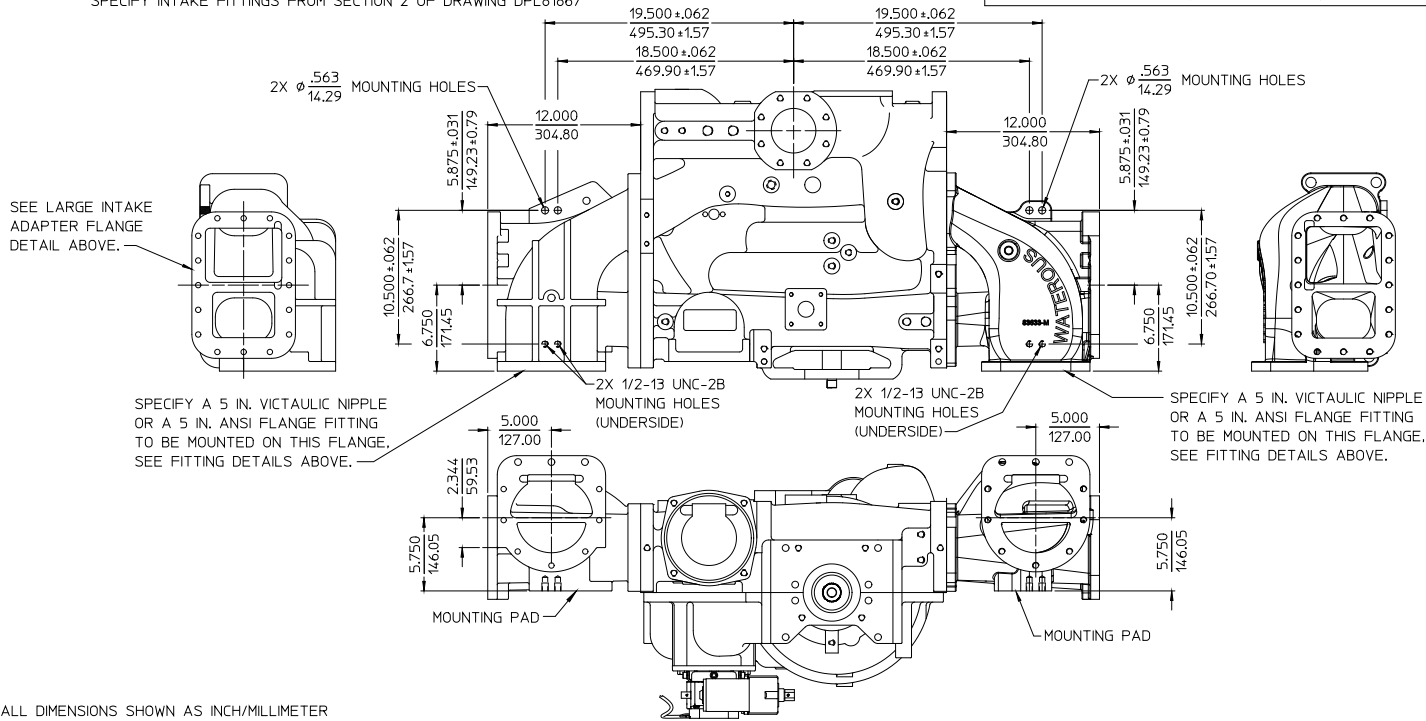
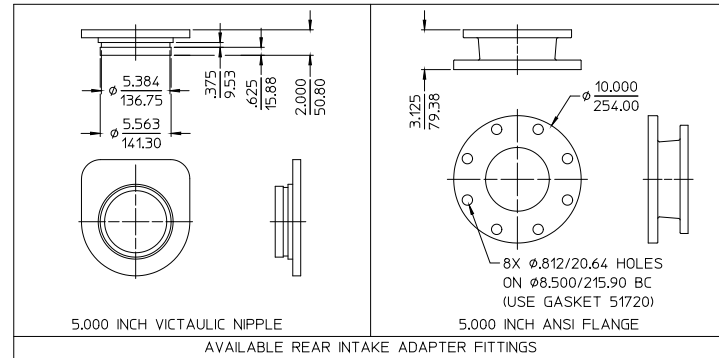


ALL DIMENSIONS SHOWN AS INCH/MILLIMETER  
( INCH )  
( MILLIMETER )

**BODY DIMENSIONS**



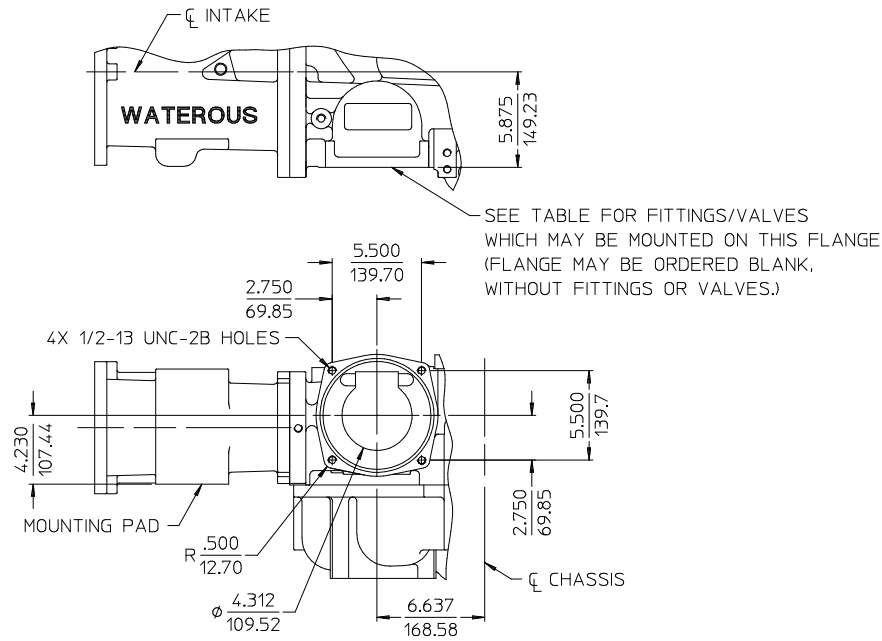
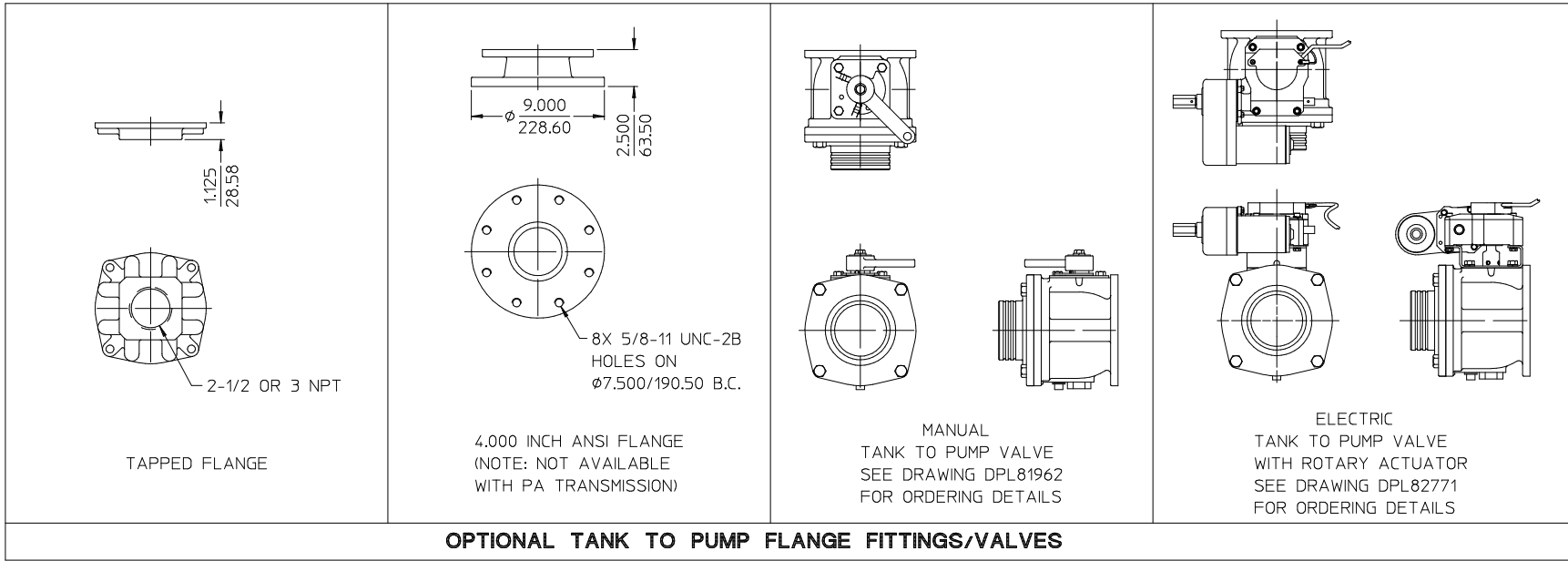
**LARGE INTAKE ADAPTER FLANGE DETAIL**  
SPECIFY INTAKE FITTINGS FROM SECTION 2 OF DRAWING DPL81867



ALL DIMENSIONS SHOWN AS INCH/MILLIMETER  
( $\frac{\text{INCH}}{\text{MILLIMETER}}$ )

**OPTIONAL REAR INTAKE ADAPTERS**

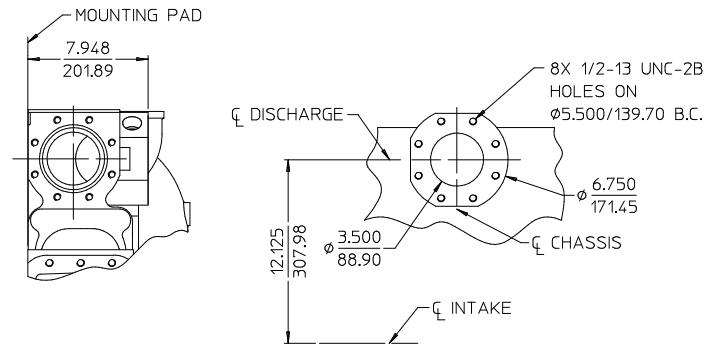
AVAILABLE WITH 5,000 INCH ANSI FLANGE OR 5,000 INCH VICTAULIC NIPPLE



**TANK TO PUMP FLANGE**  
USE O-RING W37108-4  
(AVAILABLE WITH OR WITHOUT CHECK VALVE)

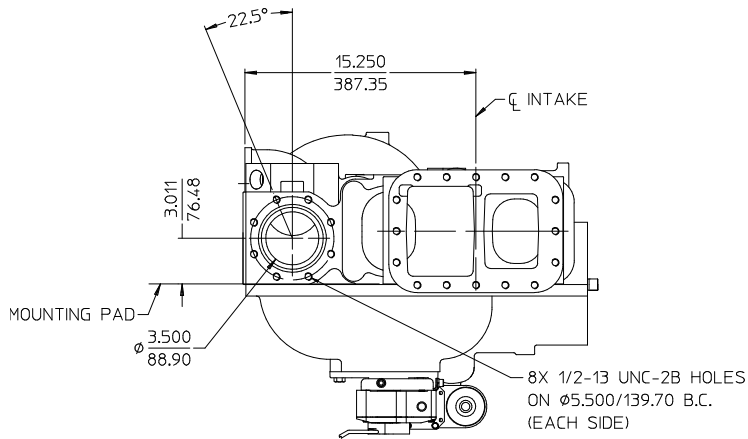
ALL DIMENSIONS SHOWN AS INCH/MILLIMETER  
( $\frac{\text{INCH}}{\text{MILLIMETER}}$ )

CM SERIES FIRE PUMPS  
DPL82847  
WATEROUS COMPANY  
SOUTH ST. PAUL, MN 55075  
PAGE 4 OF 15



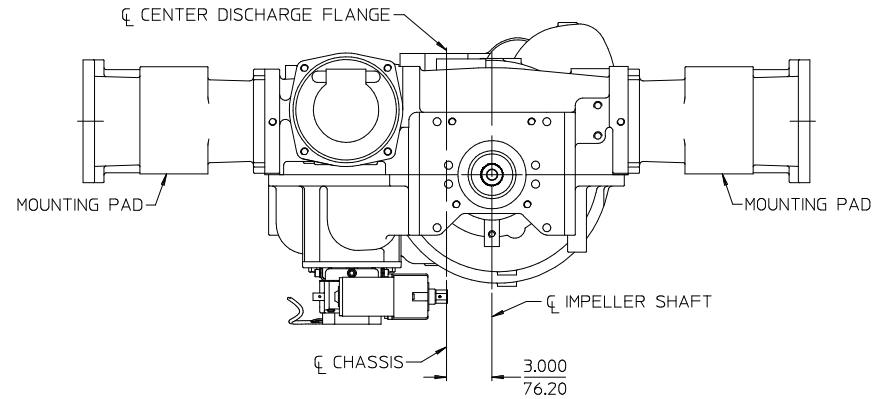
**CENTER DISCHARGE FLANGE**

SEE DRAWING DPL82089 FOR INFORMATION ON ORDERING DISCHARGE FITTINGS  
OR SEE WATEROUS "CENTER DISCHARGE PIPING MANUAL" FOR AVAILABLE  
EXISTING ARRANGEMENTS



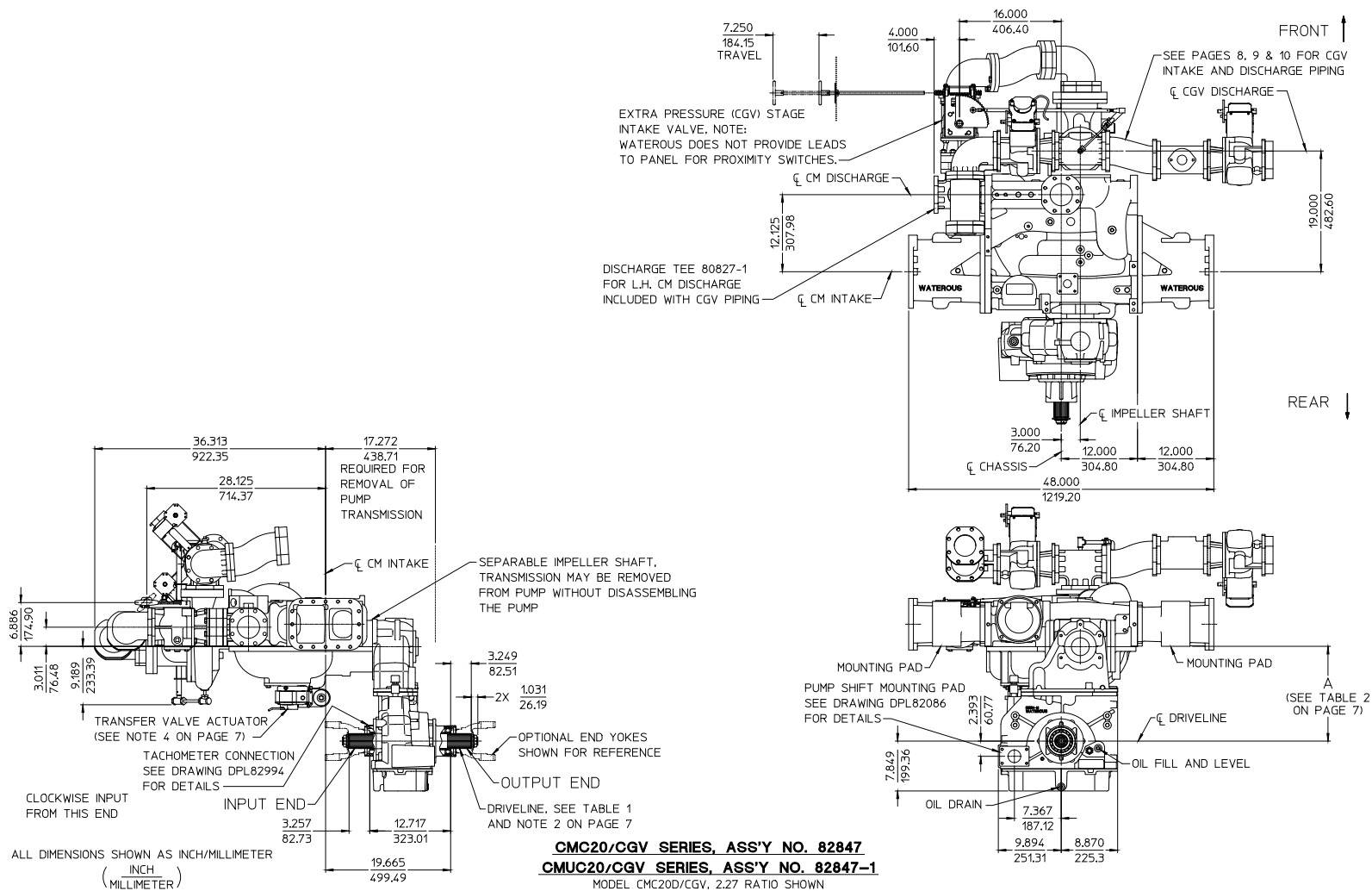
**NON-ANGLE COMPENSATED  
SIDE AND FRONT DISCHARGE**

DISCHARGE FLANGE CONFIGURATION  
SEE DRAWING DPL82085 FOR INFORMATION ON  
ORDERING DISCHARGE FITTINGS AND VALVES



ALL DIMENSIONS SHOWN AS INCH/MILLIMETER  
( $\frac{\text{INCH}}{\text{MILLIMETER}}$ )

**DISCHARGE CONNECTIONS**



CM SERIES FIRE PUMPS  
DPL82847  
WATEROUS COMPANY  
SOUTH ST. PAUL, MN 55075  
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TABLE 1 - AVAILABLE DRIVELINES / MODELS									
DRIVELINE			OPTIONAL END YOKES AND COMPANION FLANGES AVAILABLE FROM WATEROUS				PUMP MODELS		
TYPE	SIZE	SPLINE	YOKE		CROSS AND BEARING KIT	COMPANION FLANGE		CMC20 SERIES	CMUC20 SERIES
			SPICER SERIES	PART NUMBER		SPICER SERIES	PART NUMBER		
EXTRA HEAVY DUTY	2.35 INCH	2.35-46T INVOLUTE	1710 BP	V 2837	V 2839	1480/1610	V 3719	CMC20B, CMC20C, CMC20D, CMC20E, CMC20F	CMUC20B, CMUC20C, CMUC20D, CMUC20E, CMUC20F
			1810 BP	V 2838	V 2840				
			1710 HR	V 4101	-	1650/1710	V 3619		
			1810 HR	V 4102	-				
			SPL140	V 3388	V 3389	-	-		

TABLE 2 - AVAILABLE RATIOS					
DRIVE TO DRIVEN RATIO	C20B	C20C	C20D	C20E	C20F
	DIMENSION A	DIMENSION A	DIMENSION A	DIMENSION A	DIMENSION A
1.27	12.301/312.45	14.363/364.82	14.876/377.85	16.912/429.56	18.943/481.15
1.41	11.891/302.03	13.950/354.33	14.982/380.54	17.022/432.36	19.053/483.95
1.48	12.377/314.38	13.929/353.80	14.958/379.93	17.002/431.85	19.032/483.41
1.58	12.256/311.30	13.807/350.70	14.839/376.91	16.881/428.78	18.912/480.36
1.69	12.341/313.46	13.890/352.81	14.927/379.15	16.974/431.14	19.012/482.90
1.79	12.009/305.03	14.096/358.04	15.123/384.12	17.178/436.32	19.219/488.16
1.88	12.180/309.37	13.741/349.02	14.768/375.11	16.824/427.33	18.860/479.04
1.97	12.357/313.87	13.921/353.59	14.963/380.06	17.021/432.33	19.063/484.20
2.03	11.947/303.45	14.035/356.49	15.079/383.01	17.137/435.28	19.183/487.25
2.27	12.291/312.19	13.862/352.09	14.907/378.64	16.971/431.06	19.022/483.16
2.46	11.992/304.60	14.093/357.96	15.138/384.51	17.205/437.01	19.256/489.10
2.68	12.220/310.39	13.797/350.44	14.844/377.04	16.916/429.67	18.974/481.94

NOTES:

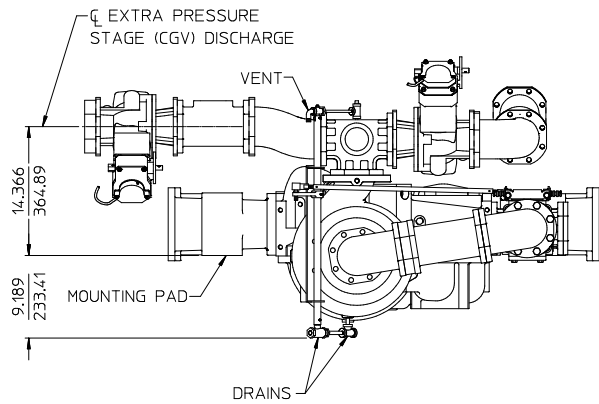
1. SEE DRAWINGS DPL82084-1, DPL82084-2 AND DPL82084-5 FOR PRESSURE CONTROL SYSTEMS.
2. DRIVELINE, SPLINE TYPICAL ON BOTH ENDS, OPTIONAL END YOKES AVAILABLE.
3. SEE DRAWING DPL82994 FOR ADDITIONAL DETAILS OF C20 SERIES TRANSMISSION.
4. BOTTOM MOUNTED ELECTRIC TRANSFER VALVE ACTUATOR IS NOT AVAILABLE WITH C20B TRANSMISSION. THE DRIVELINE END YOKE WILL INTERFERE WITH THE ELECTRIC MOTOR.

ALL DIMENSIONS SHOWN AS INCH/MILLIMETER

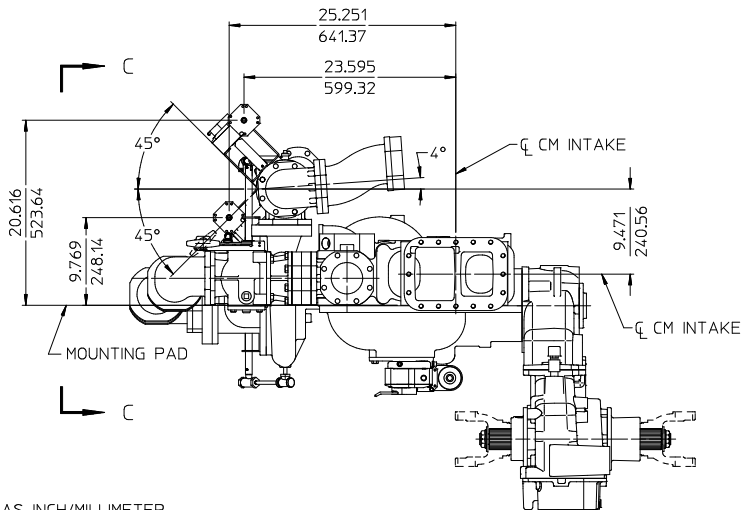
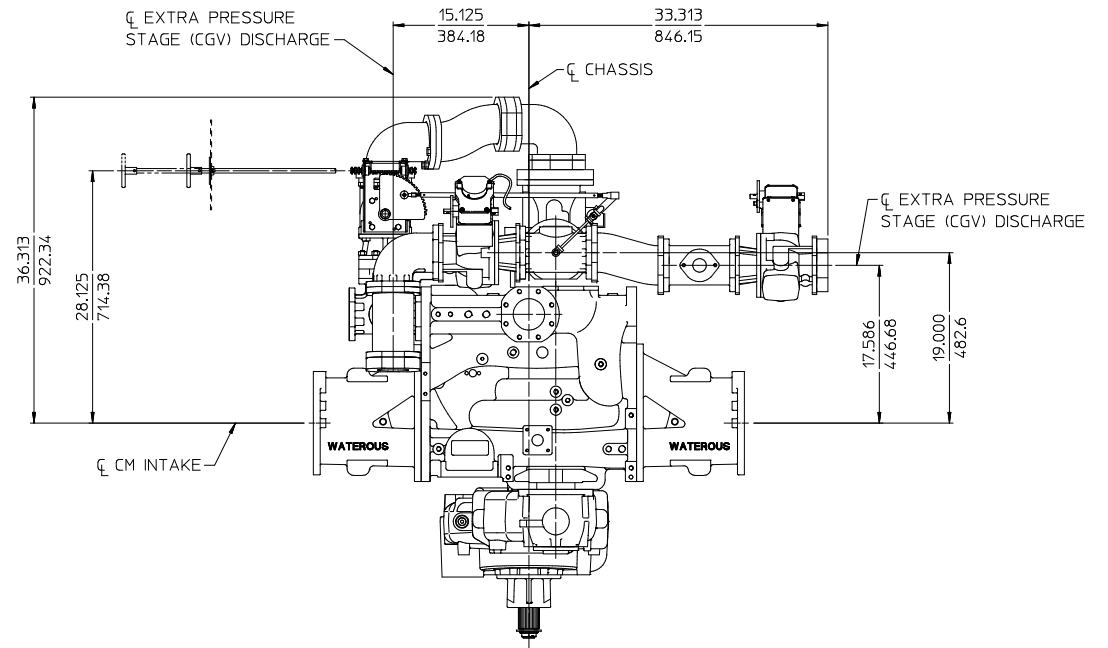
( $\frac{\text{INCH}}{\text{MILLIMETER}}$ )

**CMC20/CGV SERIES, ASS'Y NO. 82847**  
**CMUC20/CGV SERIES, ASS'Y NO. 82847-1**

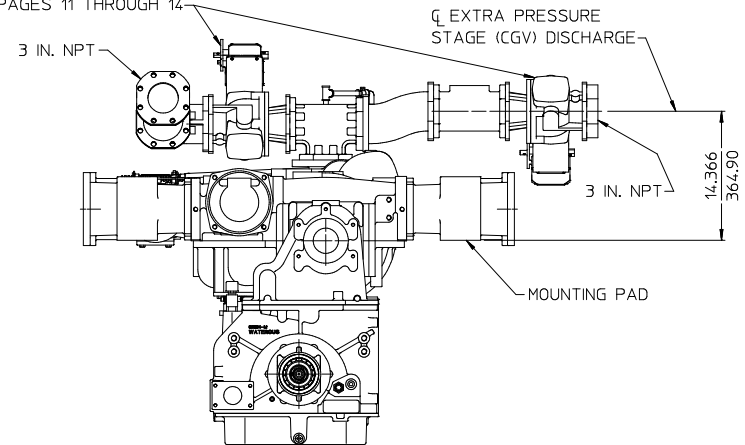
CM SERIES FIRE PUMPS  
DPL82847  
WATEROUS COMPANY  
SOUTH ST. PAUL, MN 55075  
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VIEW C-C



MANUAL OR ELECTRIC DISCHARGE VALVES MAY BE MOUNTED HERE. SEE PAGES 11 THROUGH 14

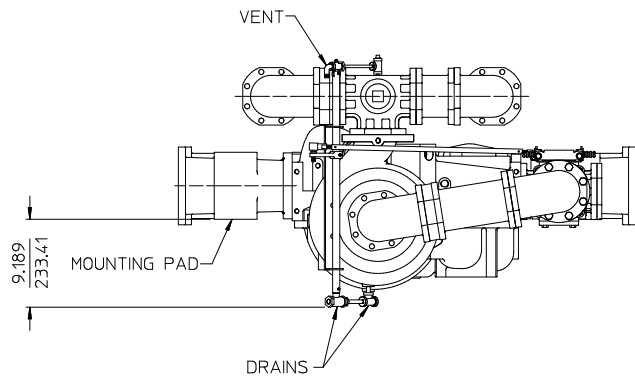


ALL DIMENSIONS SHOWN AS INCH/MILLIMETER  
 ( INCH / MILLIMETER )

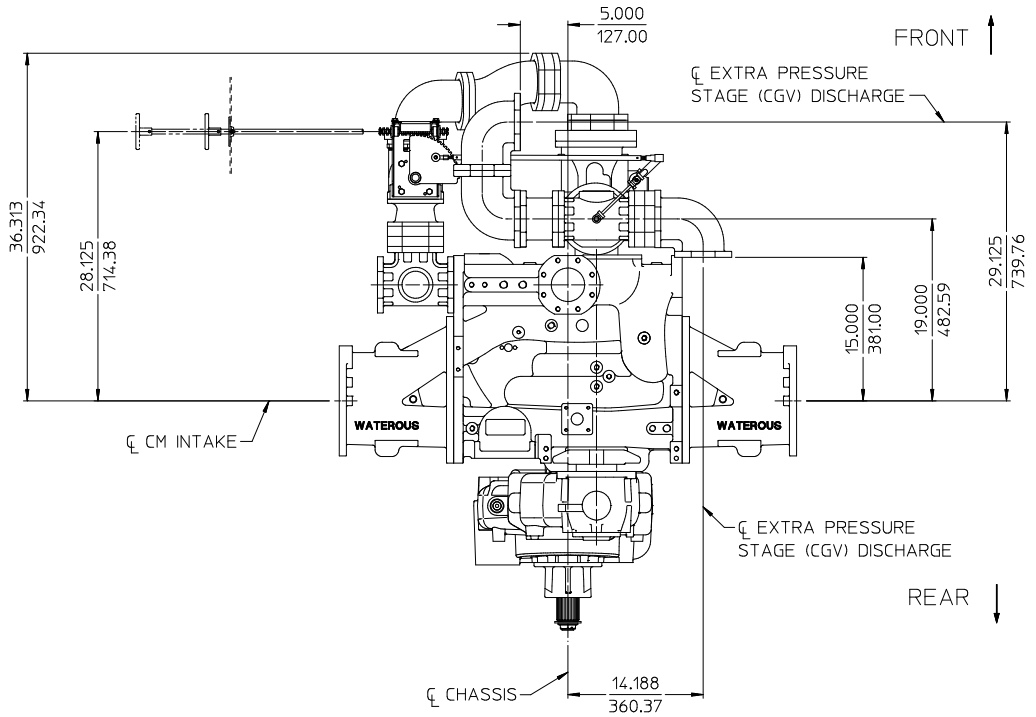
**CGV BODY & PIPING**  
 CONFIGURATION 81344-1C

CM SERIES FIRE PUMPS  
 DPL82847  
 WATEROUS COMPANY  
 SOUTH ST. PAUL, MN 55075  
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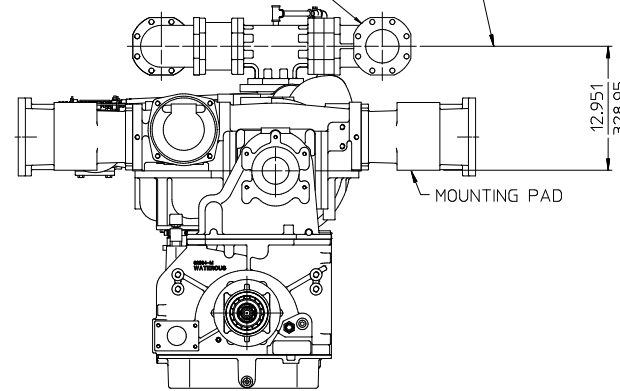
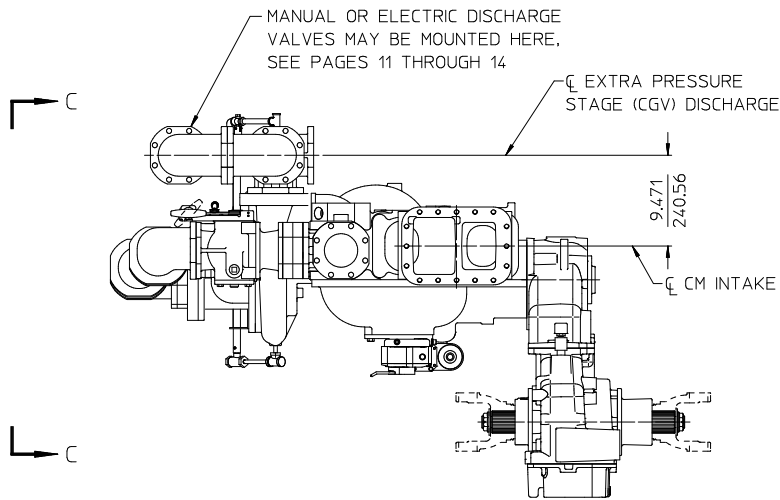


VIEW C-C



MANUAL OR ELECTRIC DISCHARGE VALVES MAY BE MOUNTED HERE, SEE PAGES 11 THROUGH 14

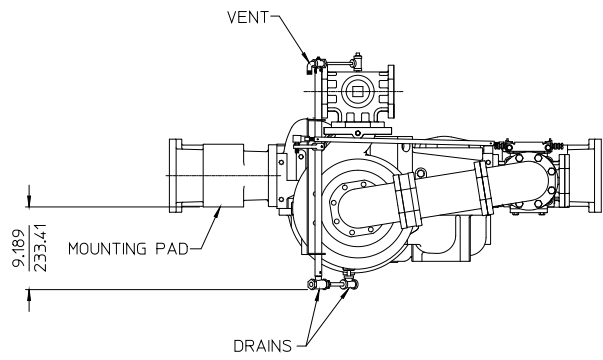
CL EXTRA PRESSURE STAGE (CGV) DISCHARGE



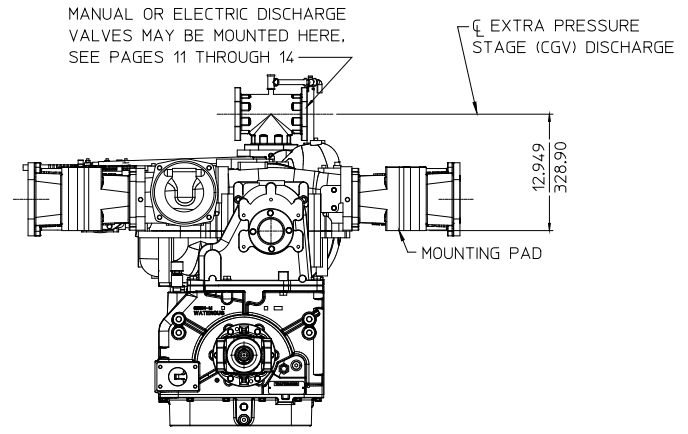
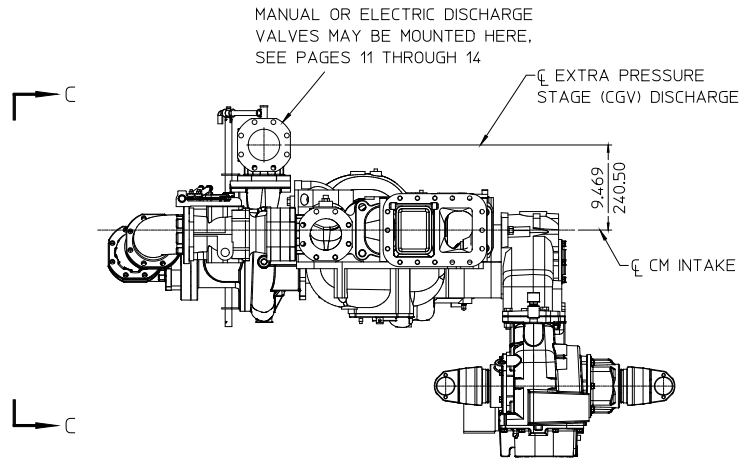
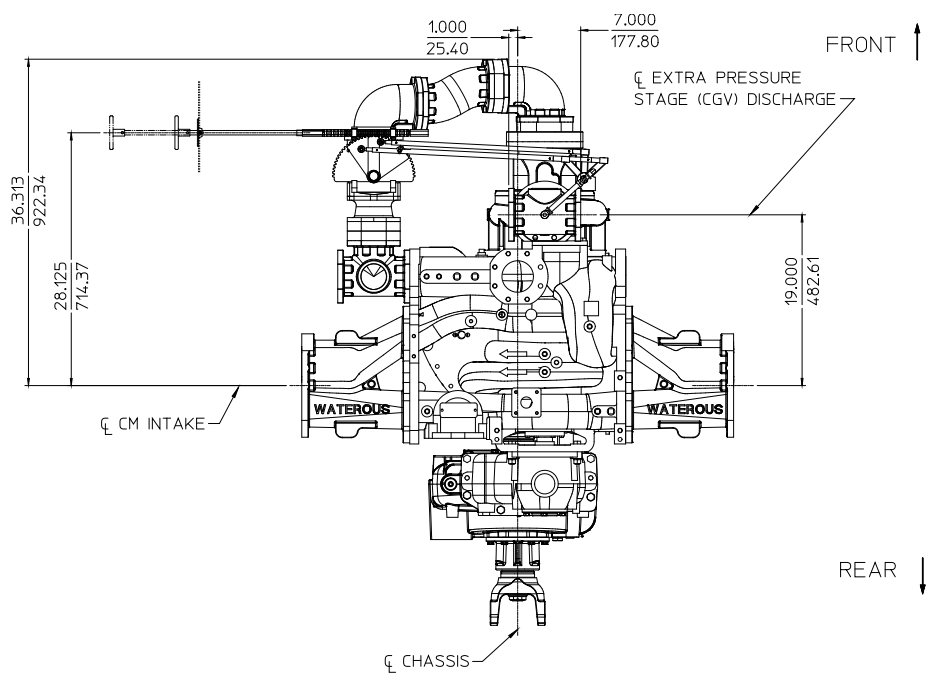
ALL DIMENSIONS SHOWN AS INCH/MILLIMETER  
(INCH / MILLIMETER)

**CGV BODY & PIPING**  
CONFIGURATION 81344-1D

**CM SERIES FIRE PUMPS**  
DPL82847  
WATEROUS COMPANY  
SOUTH ST. PAUL, MN 55075  
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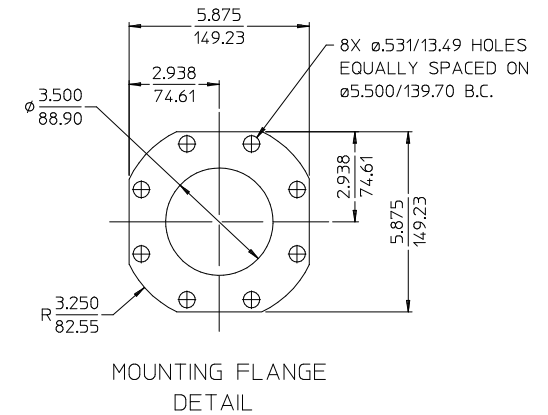
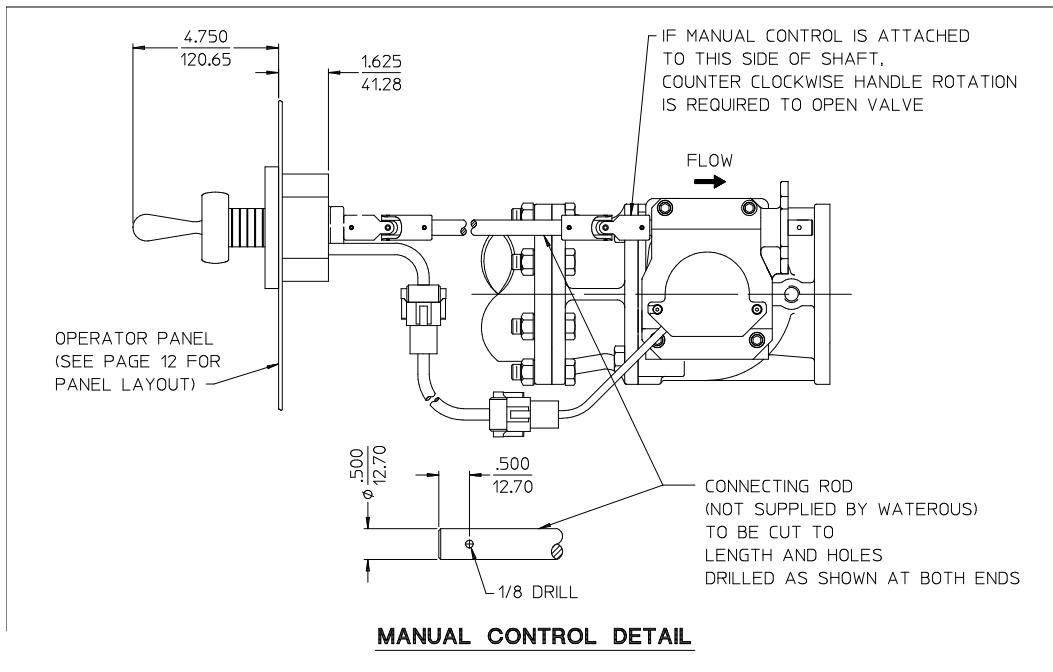
VIEW C-C



ALL DIMENSIONS SHOWN AS INCH/MILLIMETER  
 ( INCH / MILLIMETER )

**CGV BODY & PIPING**  
 CONFIGURATION 81344-1E

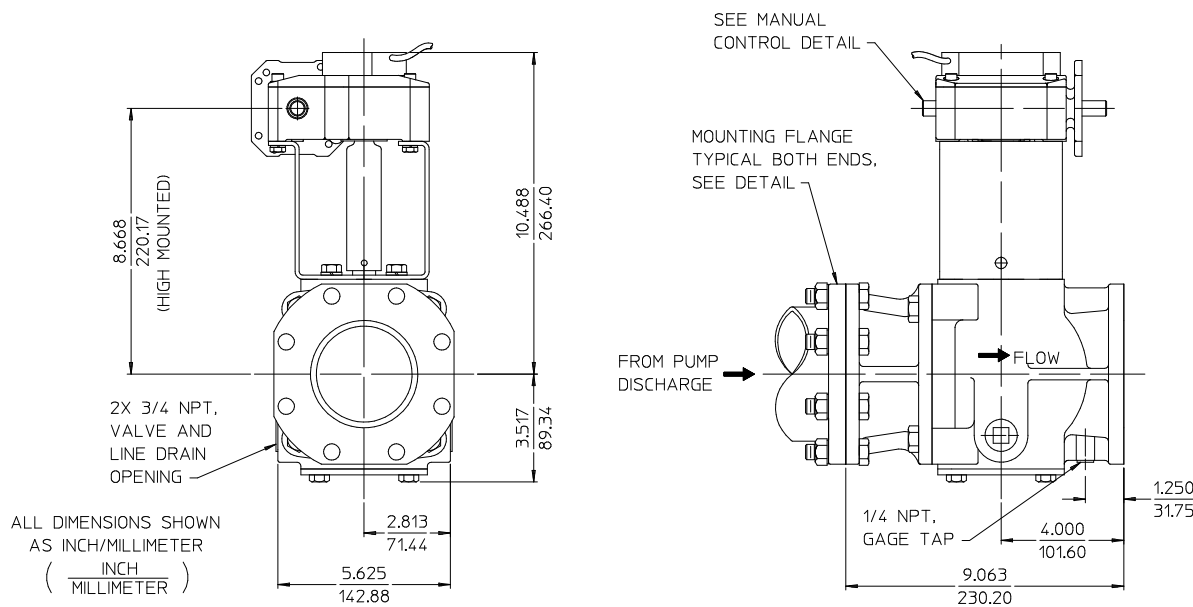
CM SERIES FIRE PUMPS  
 DPL82847  
 WATEROUS COMPANY  
 SOUTH ST. PAUL, MN 55075  
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NOTE: WIRING FURNISHED WITH VALVE IS 10 FEET LONG. IF LONGER WIRING IS NEEDED, ORDER 10 FOOT WIRE EXTENSION KIT K 1051.

NOTES:  
WHEN ORDERING SUPPLY THE FOLLOWING INFORMATION:  
1. VALVE PART NUMBER 82732  
2. SUFFIXES WHICH INDICATE ACTUATOR MOUNTING.

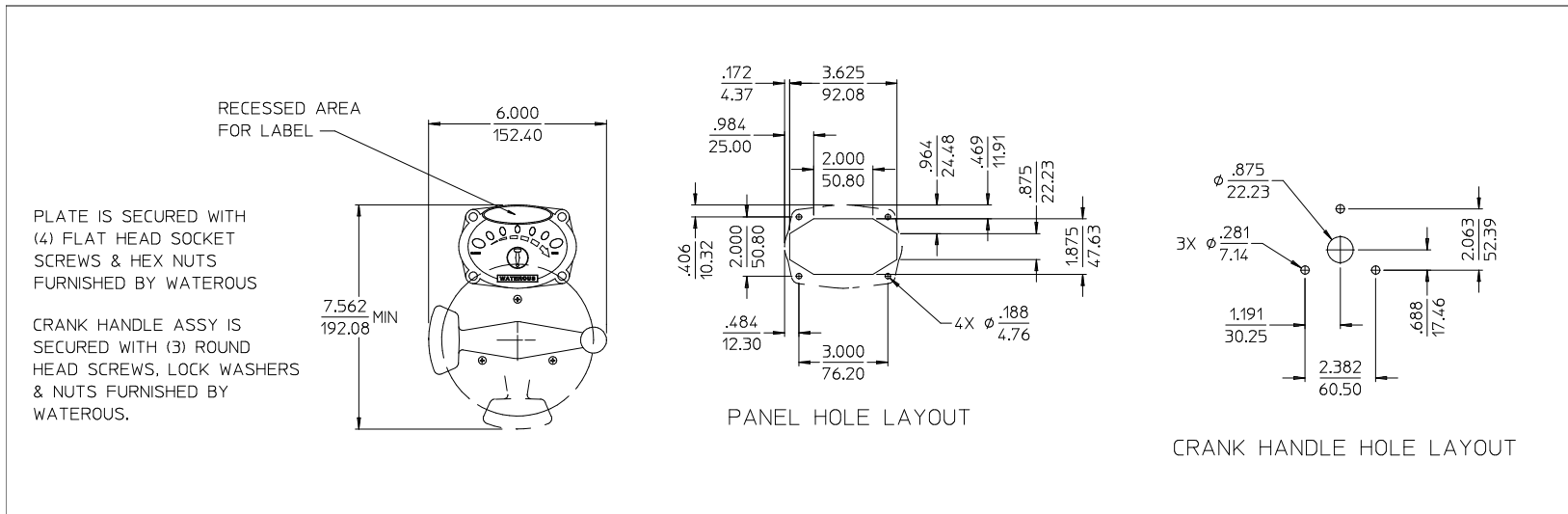
82732-2B (1)  
ACTUATOR MOUNTING CONFIGURATIONS TO VALVE. FIGURE NUMBERS 1 OR 4 SEE PAGE 12 FOR DETAILS.



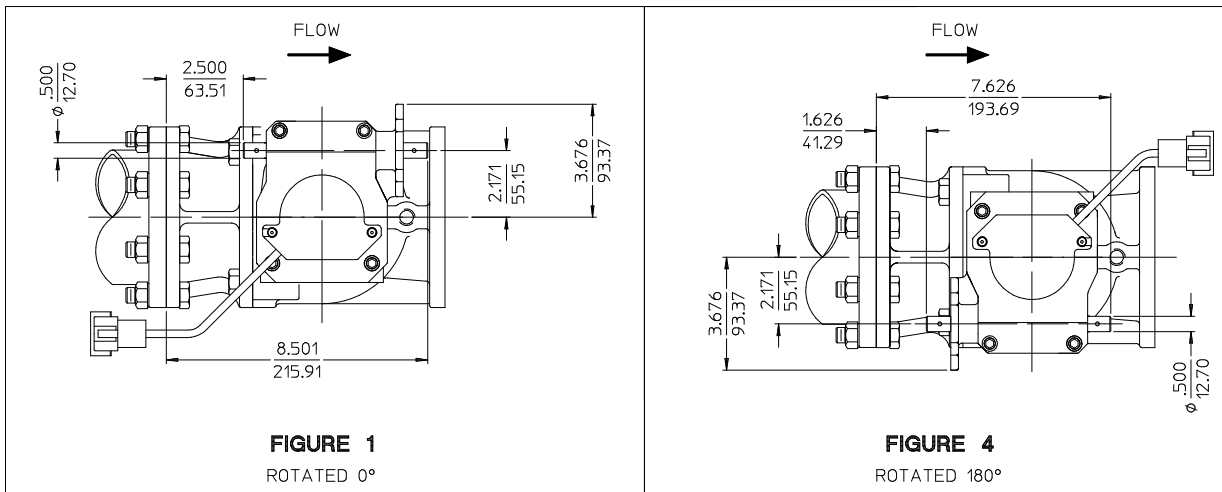
**3-1/2 STANDARD DISCHARGE VALVE WITH MANUAL ROTARY ACTUATOR**

(FIGURE 1 SHOWN)

CM SERIES FIRE PUMPS  
DPL82847  
WATEROUS COMPANY  
SOUTH ST. PAUL, MN 55075  
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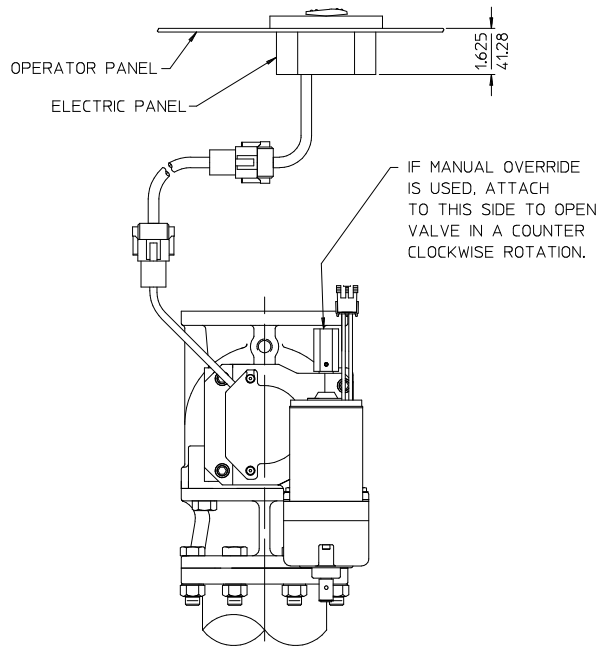


**MANUAL PANEL LAYOUT**

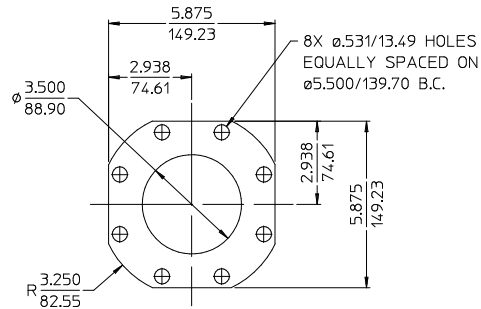


**ACTUATOR MOUNTING CONFIGURATIONS**

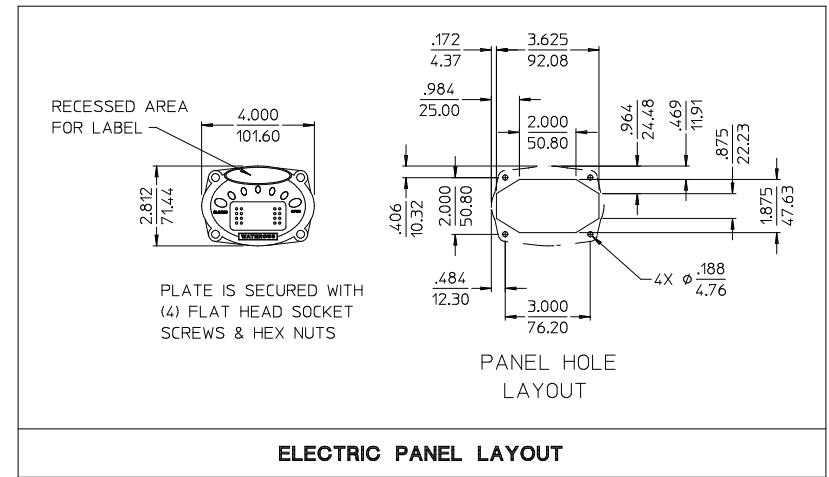
ALL DIMENSIONS SHOWN  
AS INCH/MILLIMETER  
(  $\frac{\text{INCH}}{\text{MILLIMETER}}$  )



ALL DIMENSIONS SHOWN AS INCH/MILLIMETER (INCH MILLIMETER)



MOUNTING FLANGE DETAIL



NOTE: WIRING FURNISHED WITH VALVE IS 10 FEET LONG. IF LONGER WIRING IS NEEDED, ORDER 10 FOOT WIRE EXTENSION KIT K 1050.

NOTES:

WHEN ORDERING SUPPLY THE FOLLOWING INFORMATION:

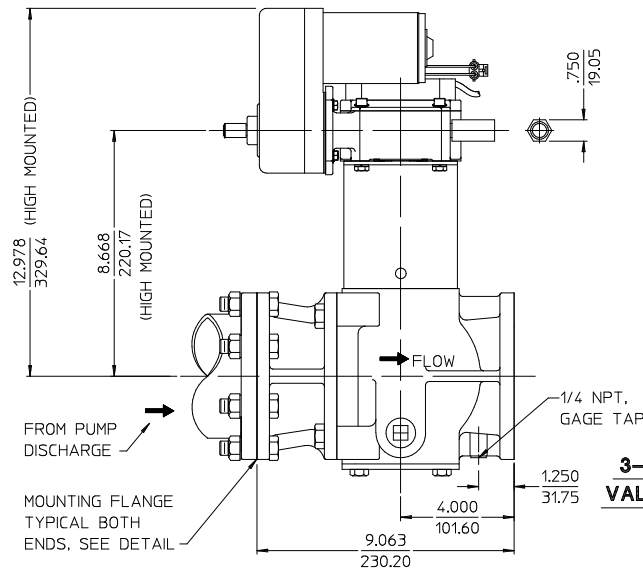
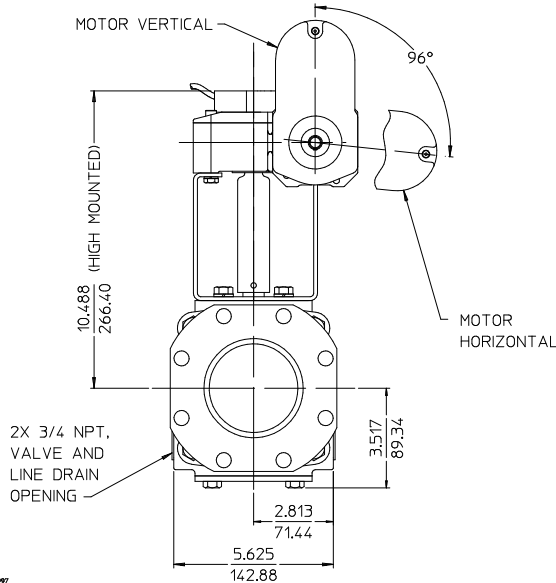
1. VALVE PART NUMBER 82731
2. SUFFIXES WHICH INDICATE ACTUATOR MOUNTING

82731-2A (1)

ACTUATOR MOUNTING CONFIGURATION. FIGURE NUMBERS 1, & 7 FOR A VERTICAL MOTOR, FIGURE NUMBERS 4, & 8 FOR A HORIZONTAL MOTOR. SEE PAGE 14 FOR DETAILS.

ACTUATOR OPTIONS:

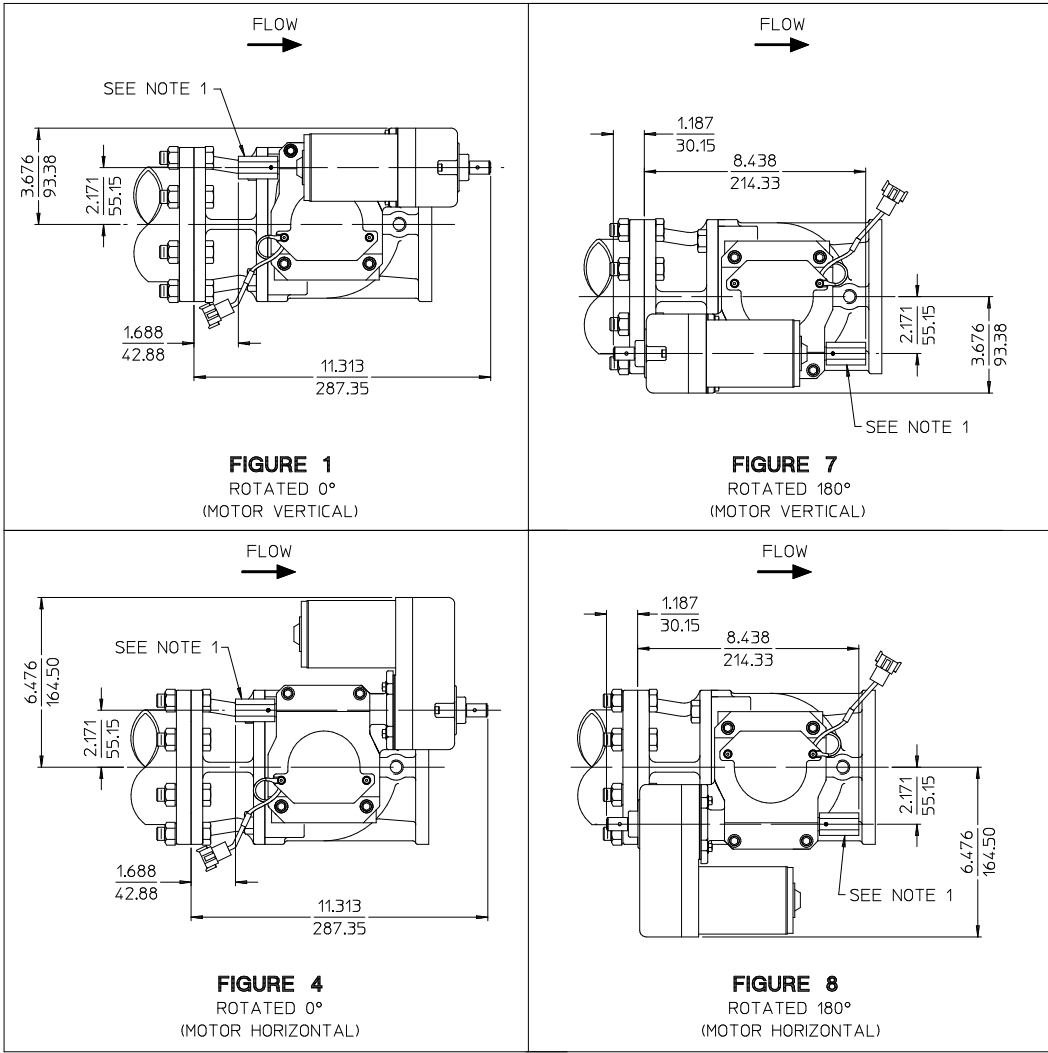
- 2A (12 VOLT, LOW MOUNTED, MOTOR VERTICAL)
- 2B (12 VOLT, LOW MOUNTED, MOTOR HORIZONTAL)
- 2C (12 VOLT, HIGH MOUNTED, MOTOR VERTICAL)
- 2D (12 VOLT, HIGH MOUNTED, MOTOR HORIZONTAL)
- 2E (24 VOLT, LOW MOUNTED, MOTOR VERTICAL)
- 2F (24 VOLT, LOW MOUNTED, MOTOR HORIZONTAL)
- 2G (24 VOLT, HIGH MOUNTED, MOTOR VERTICAL)
- 2H (24 VOLT, HIGH MOUNTED, MOTOR HORIZONTAL)



**3-1/2 STANDARD DISCHARGE VALVE WITH ELECTRIC ROTARY ACTUATOR**

(FIGURE 7 SHOWN)

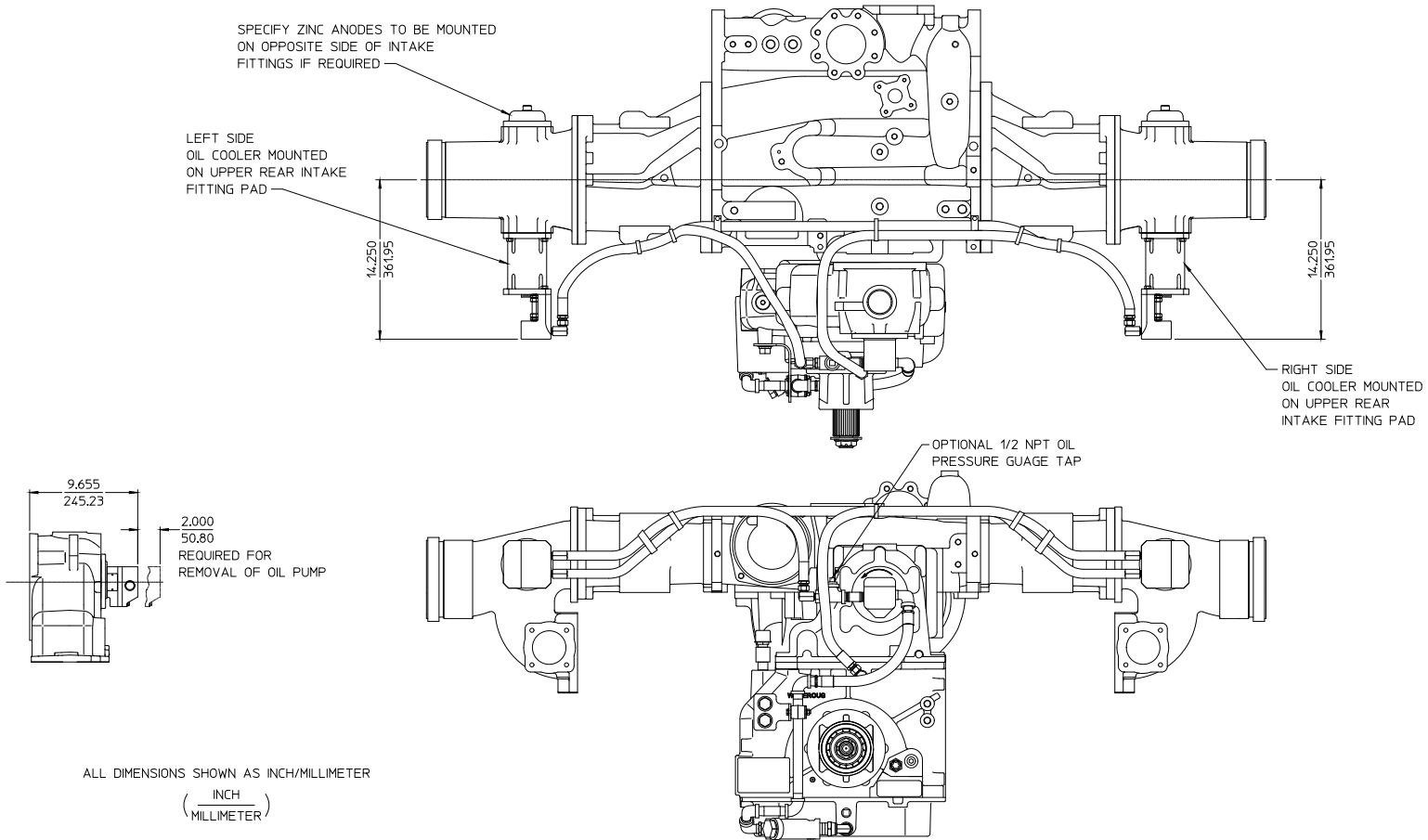
CM SERIES FIRE PUMPS  
DPL82847  
WATEROUS COMPANY  
SOUTH ST. PAUL, MN 55075  
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ALL DIMENSIONS SHOWN  
AS INCH/MILLIMETER  
( INCH / MILLIMETER )

NOTE:  
1. ADAPTER NUT SHOWN  
(USED FOR MANUAL OVERRIDE)  
WILL ADD .750 TO LENGTH OF SHAFT,  
OR IF NOT USED WILL DECREASE  
LENGTH BY .750.

**ACTUATOR MOUNTING CONFIGURATIONS**



**C20 SERIES TRANSMISSION OIL COOLER**