



Document Number DPL 82843	Issue Date 02/06/09	Rev. Date 8/4/21
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Iron CM Series Fire Pump Dimensional Drawings

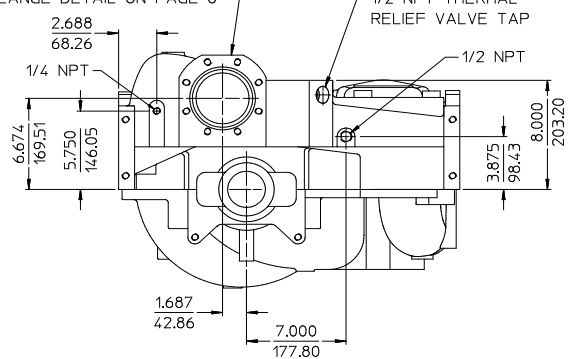
Basic Pump Dimensions (Without Transmission)	
Feature	See Page
Body Dimensions	2
Optional Rear Intake Adapters	3
Intake Fitting Options	4
Tank to Pump Flange Options	5
Discharge Connections	6

Pump and Transmission											
Pump Type	Transmission		Pump Model	Assem- bly Num- ber	Drive			Hydraulic Pump Mounting Provi- sion	See Page		
	Model	Drive			Loca- tion	Input Rotation (1)	Driveline Type				
Two Stage Series/Paral- lel (CM, CMU)	C20 Series	Split Shaft, Chain Drive	CMC20B, CMC20C CMC20D, CMC20E CMC20F	82843	Rear	CW	Input and Output Shaft	No	7, 11		
								Yes	8, 11		
							No	9, 11			
						Yes	10, 11				
						83129	Front	CW	See DPL83129	See DPL83129	See DPL83129
				CMUC20B, CMUC20C CMUC20D, CMUC20E, CMUC20F	82843-1	Rear	CW	Input and Output Shaft	No	7, 11	
							Yes		8, 11		
							No	9, 11			
					83129-1	Front	CW	See DPL83129	See DPL83129	See DPL83129	
		K Series	Heavy Duty Two Gear Increaser, PTO Drive	CMK	82843-2	Rear	CW	-	N/A	12	
	D Series	Direct Drive Connection from P.T.O.	CMD	82843-4	Front	CW	-	N/A	13		
					Rear	CCW					
			CMUD	82843-5	Front	CW					
					Rear	CCW					
	PA Series	PTO Driven, Chain Drive	CMPA, CMUPA	82843-6	Rear	CW	-	N/A	14		

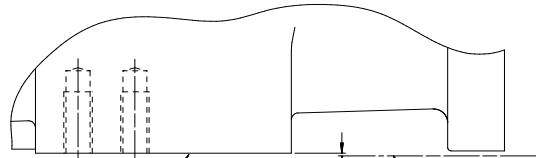
Note:

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

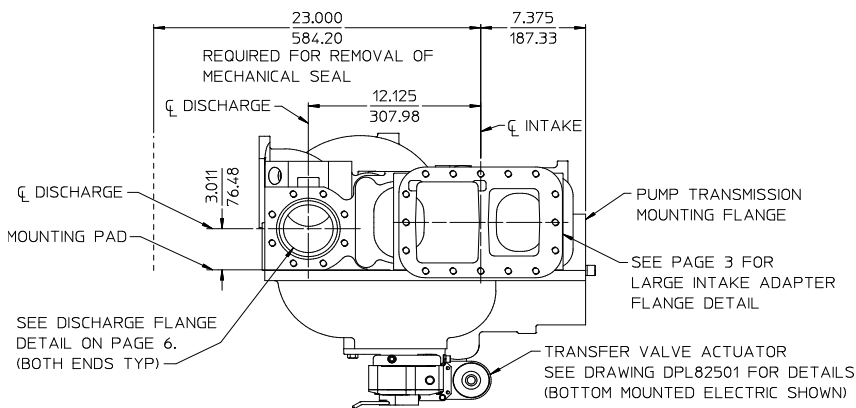
SEE FRONT DISCHARGE
FLANGE DETAIL ON PAGE 6



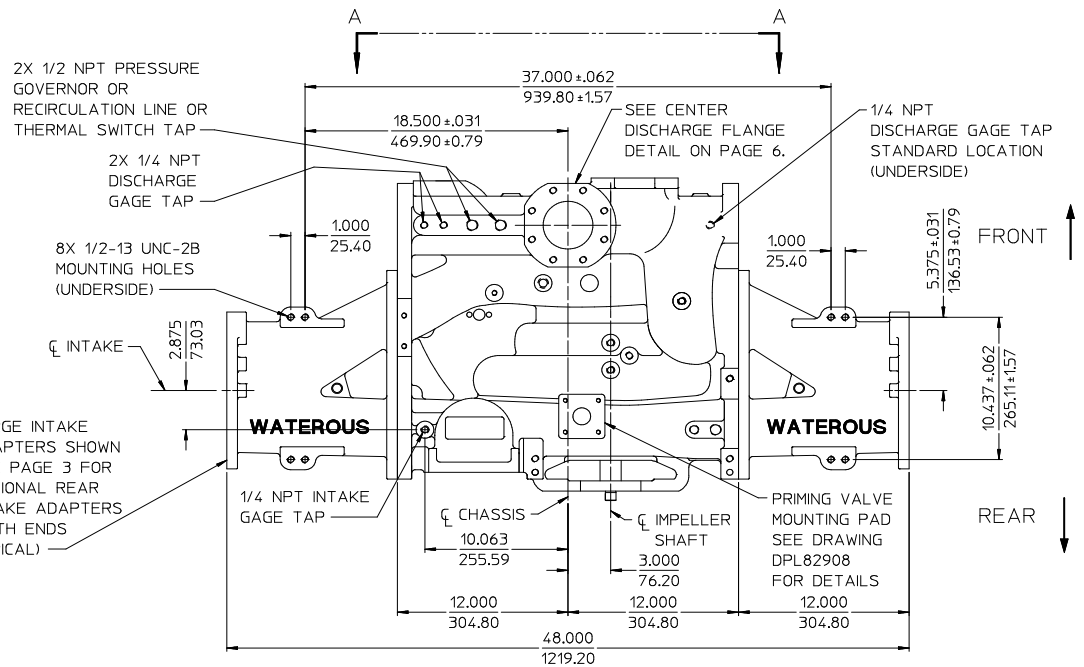
VIEW A-A
ROTATED 180°



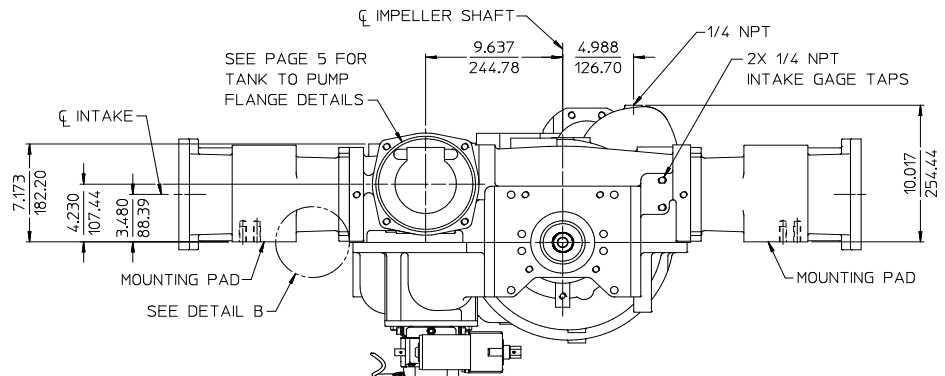
DETAIL B

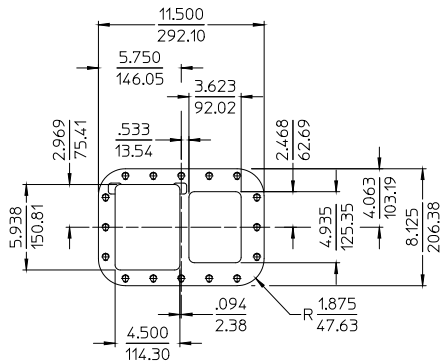
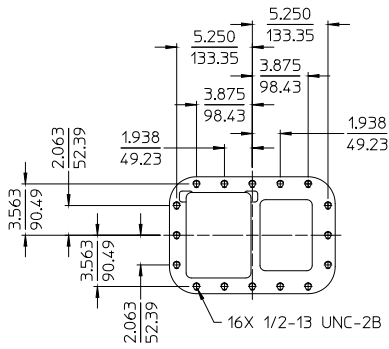


ALL DIMENSIONS SHOWN AS INCH/MILLIMETER
($\frac{\text{INCH}}{\text{MILLIMETER}}$)

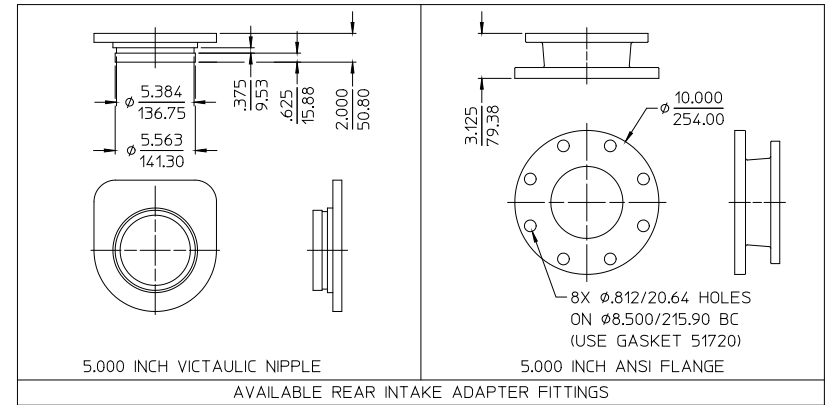


BODY DIMENSIONS

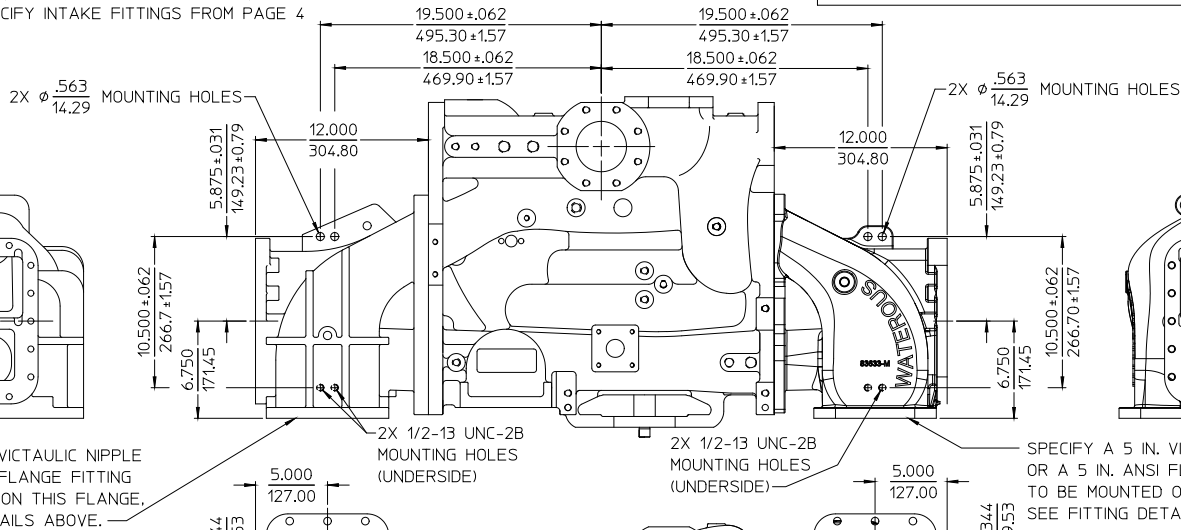
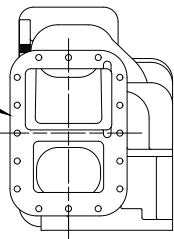




LARGE INTAKE ADAPTER FLANGE DETAIL
SPECIFY INTAKE FITTINGS FROM PAGE 4

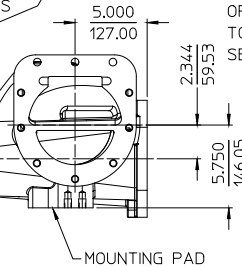
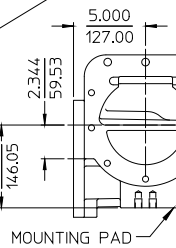


SEE LARGE INTAKE ADAPTER FLANGE DETAIL ABOVE.



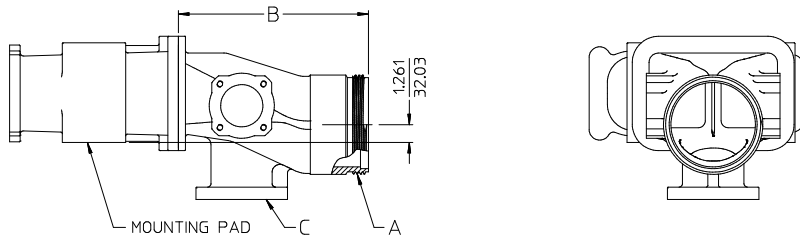
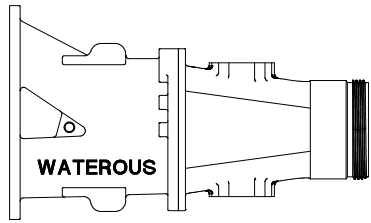
SPECIFY A 5 IN. VICTAULIC NIPPLE OR A 5 IN. ANSI FLANGE FITTING TO BE MOUNTED ON THIS FLANGE. SEE FITTING DETAILS ABOVE.

SPECIFY A 5 IN. VICTAULIC NIPPLE OR A 5 IN. ANSI FLANGE FITTING TO BE MOUNTED ON THIS FLANGE. SEE FITTING DETAILS ABOVE.



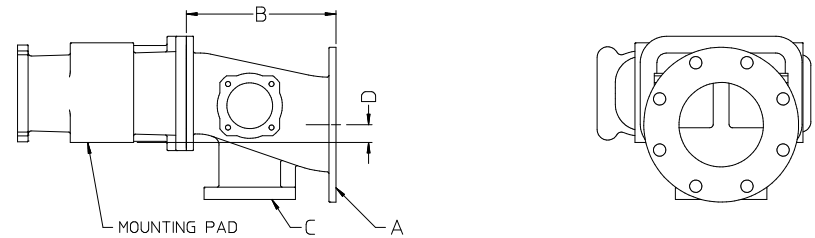
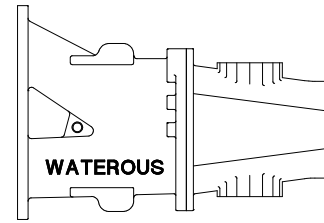
ALL DIMENSIONS SHOWN AS INCH/MILLIMETER
(INCH / MILLIMETER)

OPTIONAL REAR INTAKE ADAPTERS
AVAILABLE WITH 5.000 INCH ANSI FLANGE OR 5.000 INCH VICTAULIC NIPPLE



TYPE	END SIZE A	LENGTH B	BOTTOM FLG C	RELIEF VALVE	PART NO.	
THREADED	5 IN. NH	13.500	3-1/2 IN. 8 BOLT	NO	82768	
		342.90				
		15.000	3-1/2 IN. 8 BOLT	NO	82767	
	6 IN. NH	10.500	266.70	3-1/2 IN. 8 BOLT	NO	81929
				NO	YES	82164
				5 IN. ANSI	YES	82167
		13.500	342.90	3-1/2 IN. 8 BOLT	NO	81916
				NO	YES	82173
				5 IN. ANSI	YES	82174
		15.000	381.00	3-1/2 IN. 8 BOLT	NO	81915
				NO	YES	82163
				5 IN. ANSI	YES	82166

THREADED INTAKE FITTING
PART 81916 SHOWN



TYPE	END SIZE A	LENGTH B	BOTTOM FLG C	D	RELIEF VALVE	PART NO.
FLANGED	6 IN. ANSI	6.750	2-1/2 IN. 4 BOLT	1.980	NO	82289
			NO		YES	82301
			171.45	5 IN. ANSI	50.29	YES
		10.625	3-1/2 IN. 8 BOLT	1.261	NO	82011
			NO		YES	82165
			269.88	5 IN. ANSI	32.03	YES

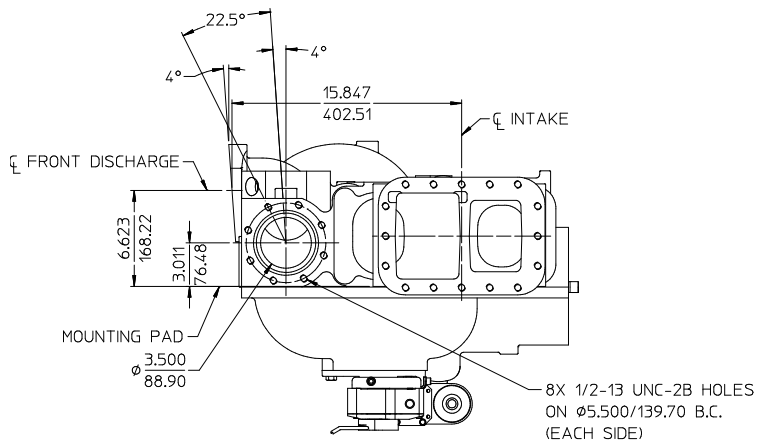
FLANGED INTAKE FITTING
PART 82011 SHOWN

NOTE:
1. REFER TO DIMENSIONAL DPL81867 FOR ADDITIONAL INTAKE FITTING DIMENSIONS AND PAD DETAILS.

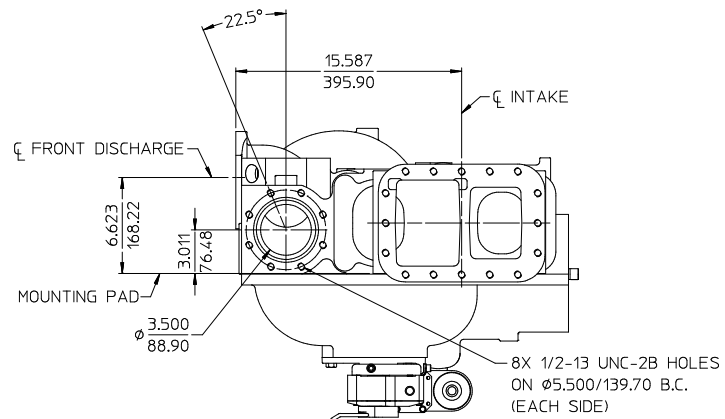
ALL DIMENSIONS SHOWN AS INCH/MILLIMETER
($\frac{\text{INCH}}{\text{MILLIMETER}}$)

INTAKE FITTING OPTIONS

CM SERIES FIRE PUMPS
DPL82843
WATEROUS COMPANY
SOUTH ST. PAUL, MN 55075

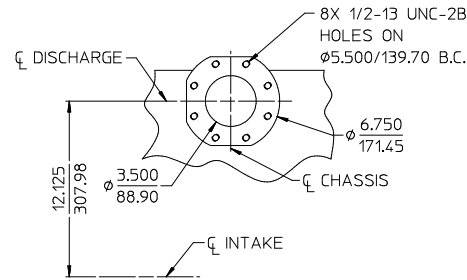
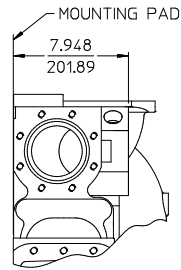


4° ANGLE COMPENSATED
SIDE AND FRONT DISCHARGE



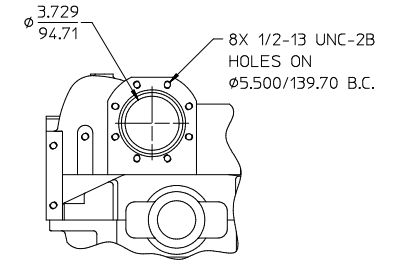
NON-ANGLE COMPENSATED
SIDE AND FRONT DISCHARGE

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

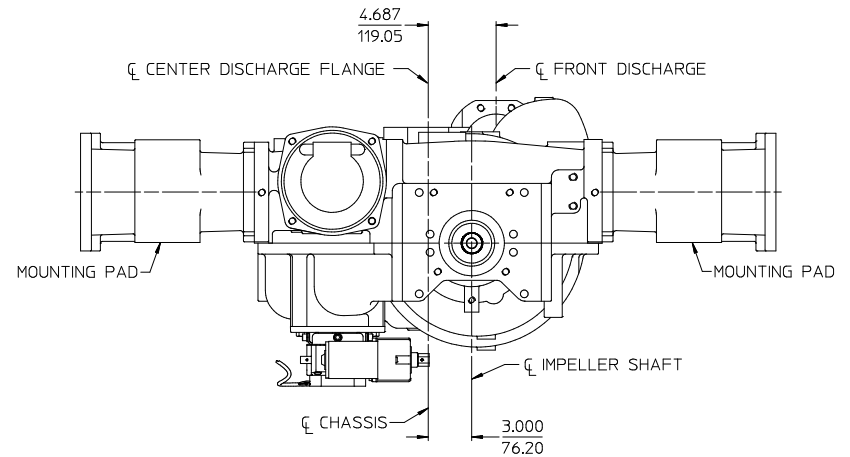


CENTER DISCHARGE FLANGE

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



FRONT DISCHARGE FLANGE
(USE O-RING W 3770-4)
(NON-ANGLE COMPENSATED SHOWN)

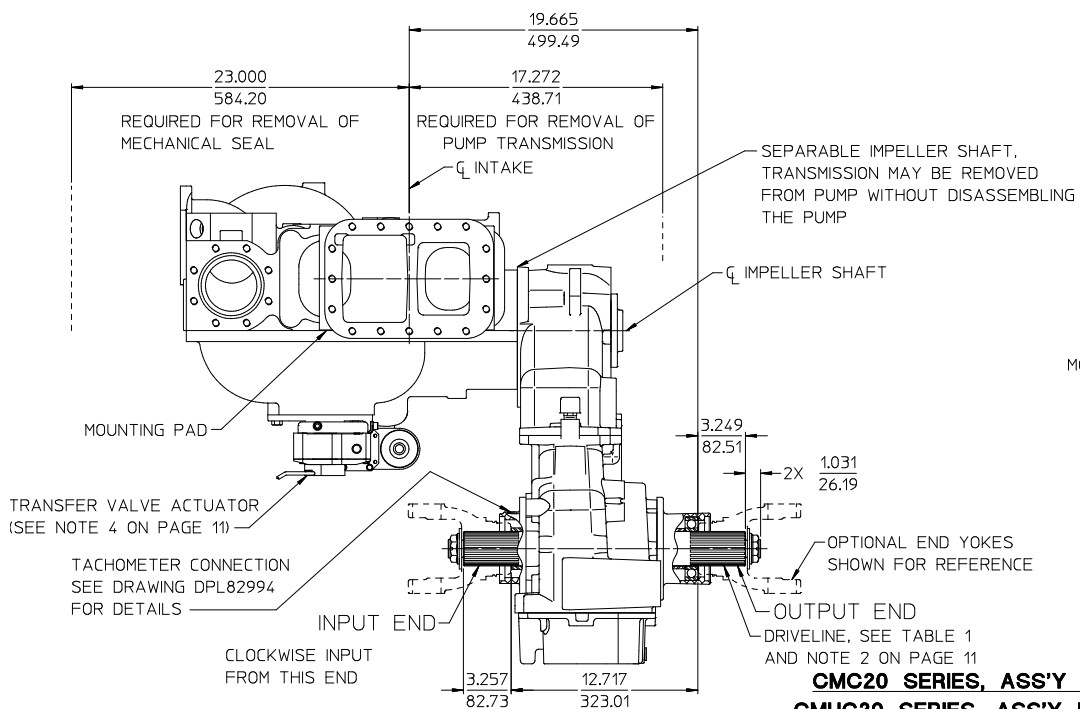


ALL DIMENSIONS SHOWN AS INCH/MILLIMETER
($\frac{\text{INCH}}{\text{MILLIMETER}}$)

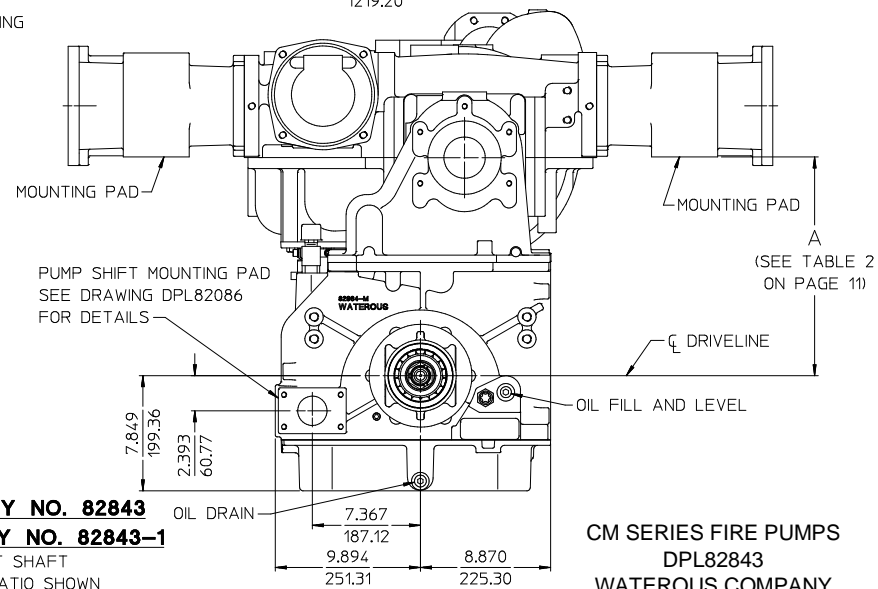
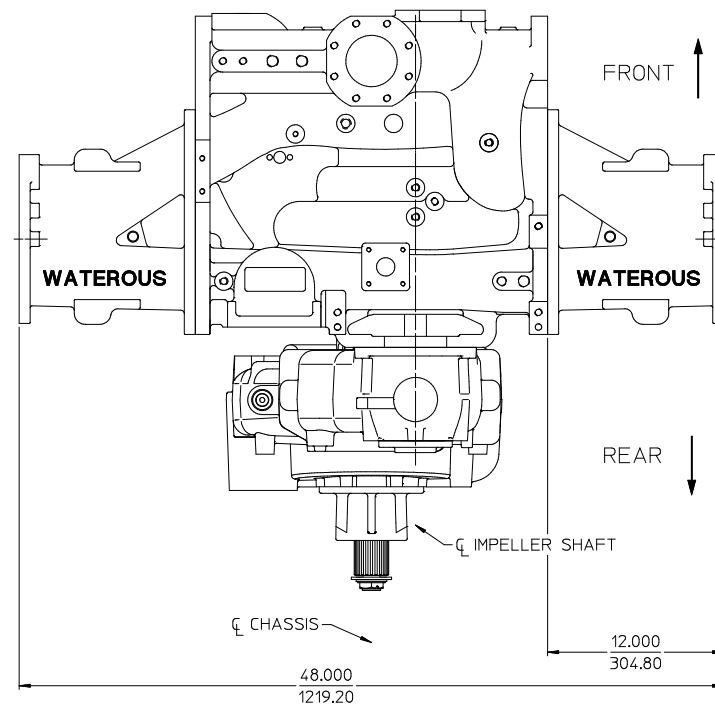
DISCHARGE CONNECTIONS

CM SERIES FIRE PUMPS
DPL82843
WATEROUS COMPANY
SOUTH ST. PAUL, MN 55075

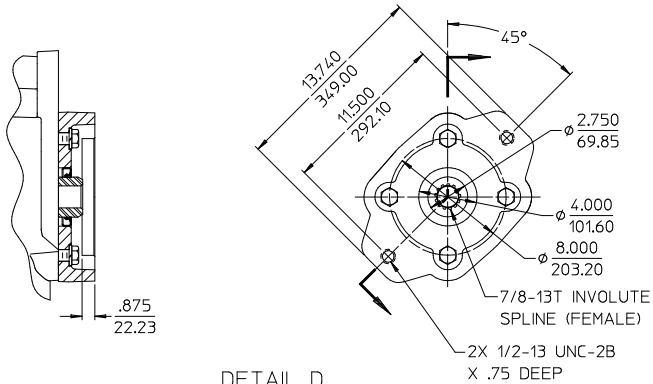
ALL DIMENSIONS SHOWN AS INCH/MILLIMETER
($\frac{\text{INCH}}{\text{MILLIMETER}}$)



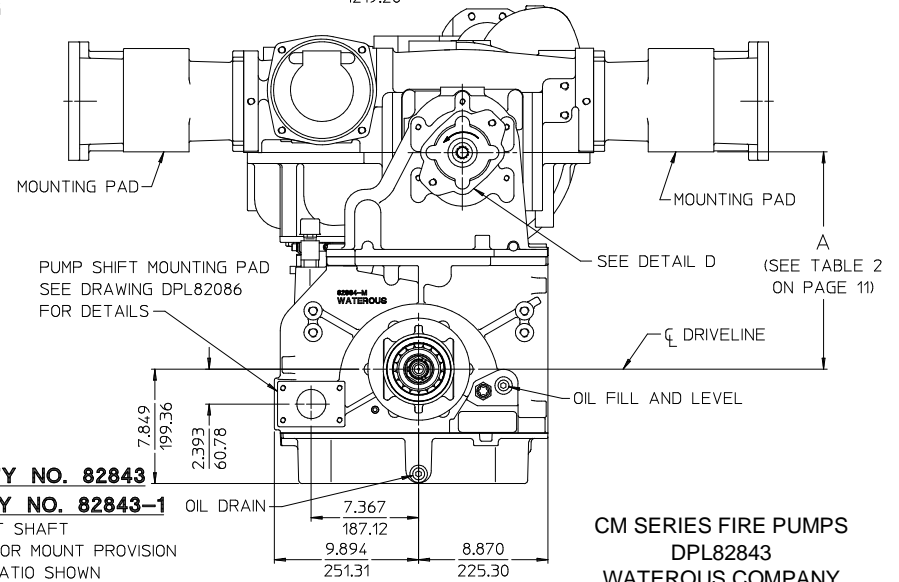
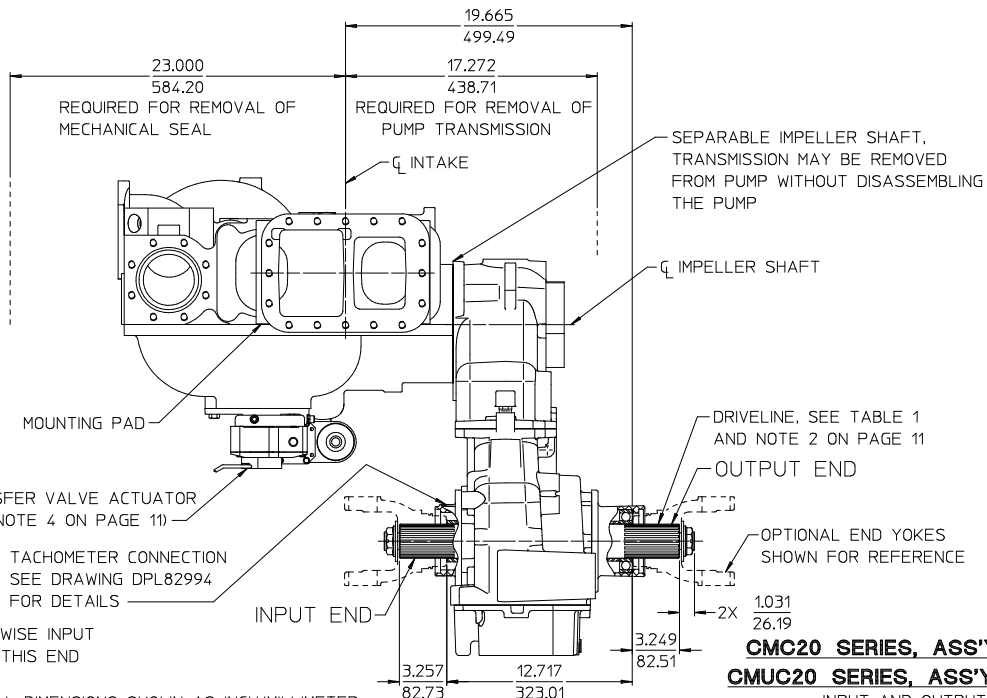
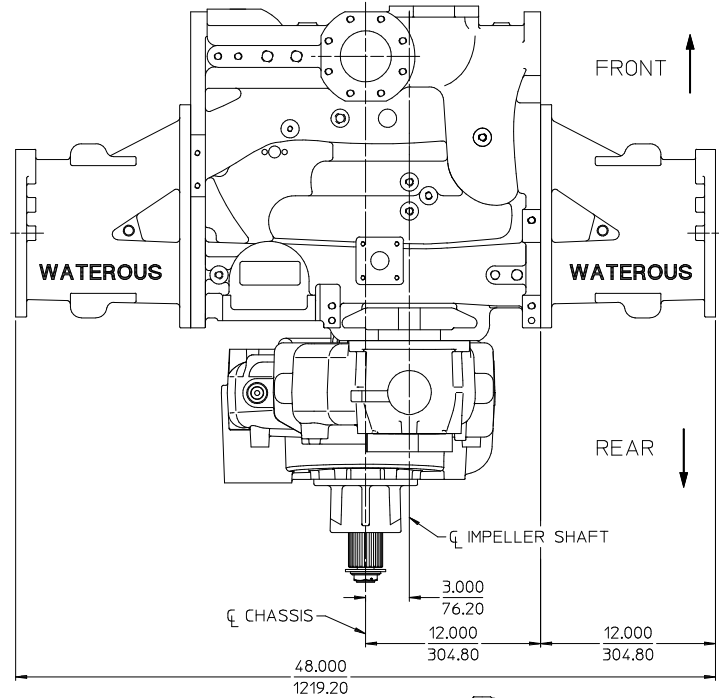
CMC20 SERIES, ASS'Y NO. 82843
CMUC20 SERIES, ASS'Y NO. 82843-1
INPUT AND OUTPUT SHAFT
MODEL CMC20D, 2.27 RATIO SHOWN



CM SERIES FIRE PUMPS
DPL82843
WATEROUS COMPANY
SOUTH ST. PAUL, MN 55075



DETAIL D
 HYDRAULIC PUMP ADAPTER FLANGE
 USED FOR SAE J744 CLASS B 2-BOLT
 HYDRAULIC PUMP WITH MALE
 7/8-13T 16/32 PITCH INVOLUTE SPLINE

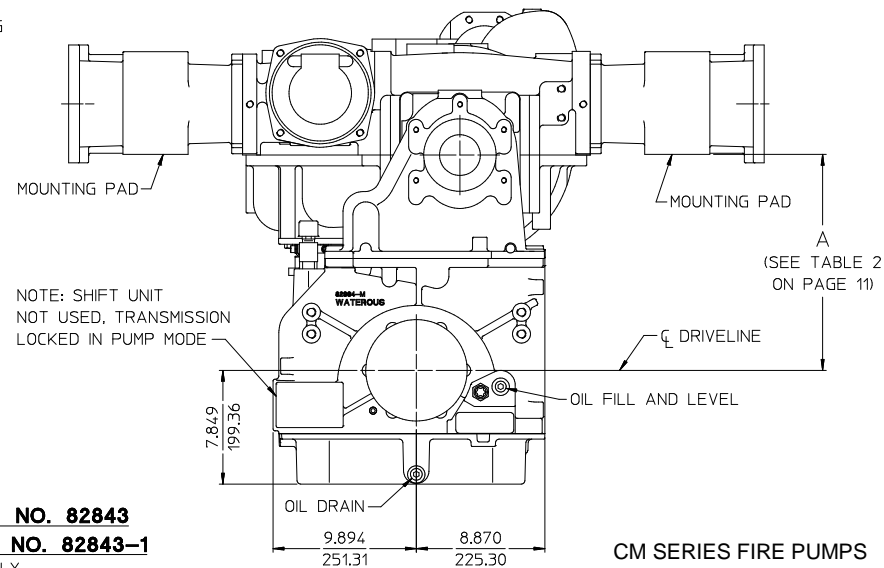
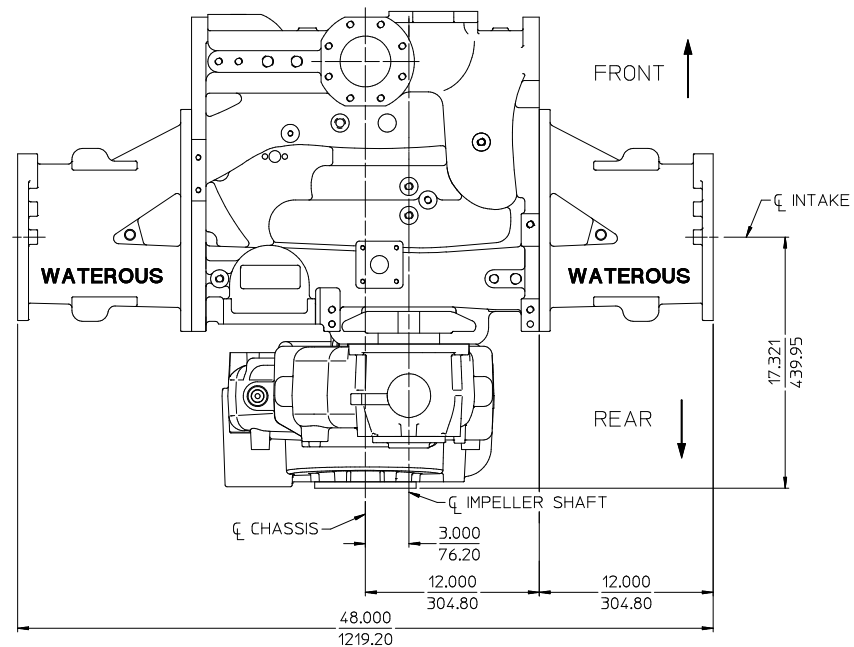
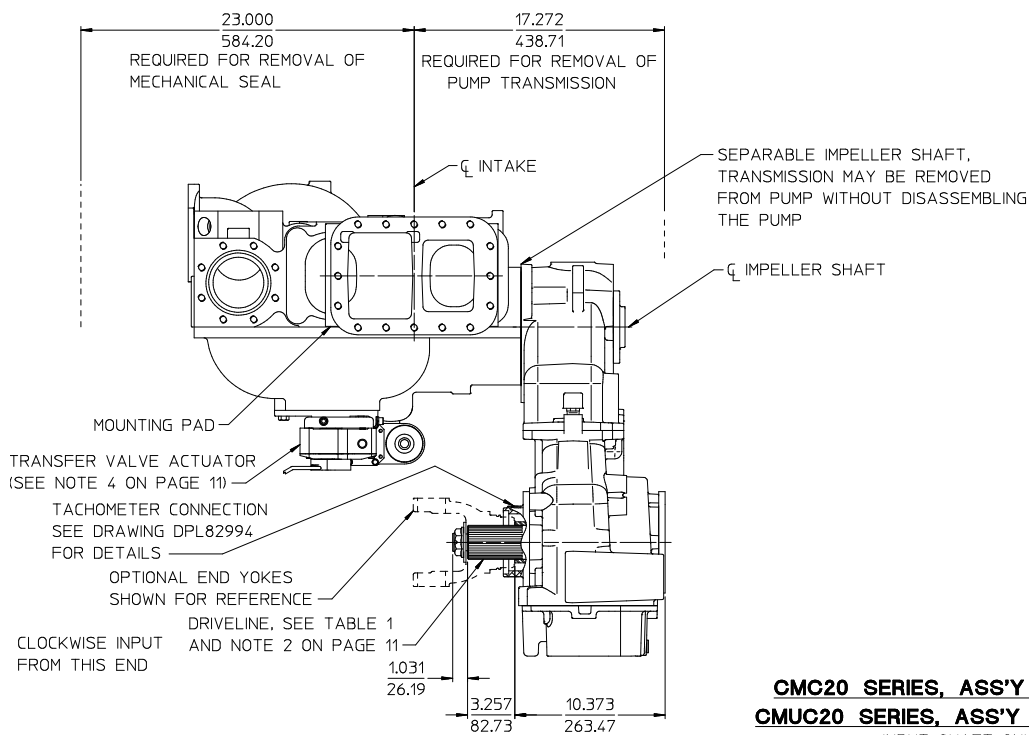


CMC20 SERIES, ASS'Y NO. 82843
CMUC20 SERIES, ASS'Y NO. 82843-1
 INPUT AND OUTPUT SHAFT
 WITH OPTIONAL HYDRAULIC MOTOR MOUNT PROVISION
 MODEL CMC20D, 2.27 RATIO SHOWN

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

CM SERIES FIRE PUMPS
DPL82843
WATEROUS COMPANY
 SOUTH ST. PAUL, MN 55075

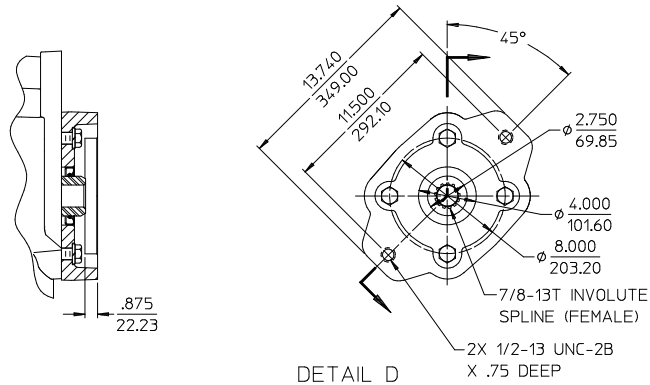
ALL DIMENSIONS SHOWN AS INCH/MILLIMETER
(INCH / MILLIMETER)



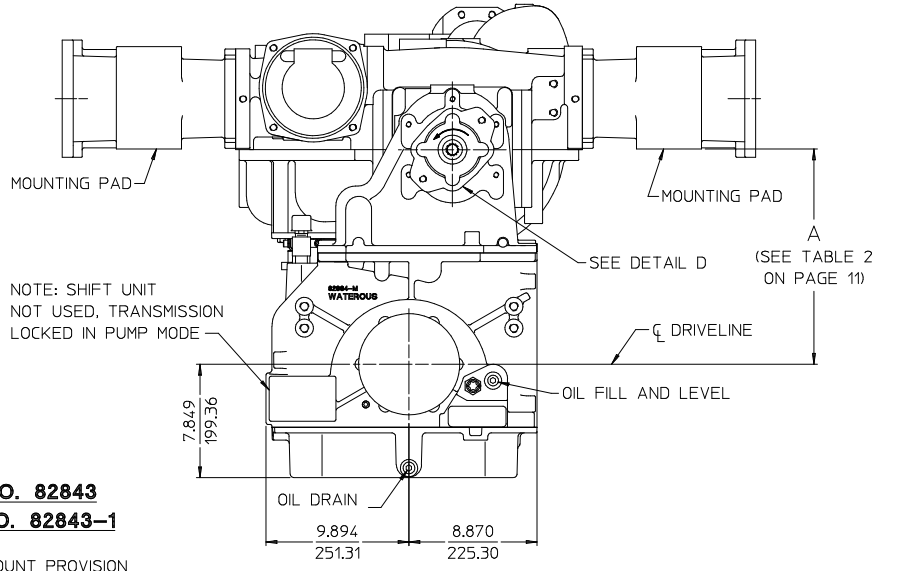
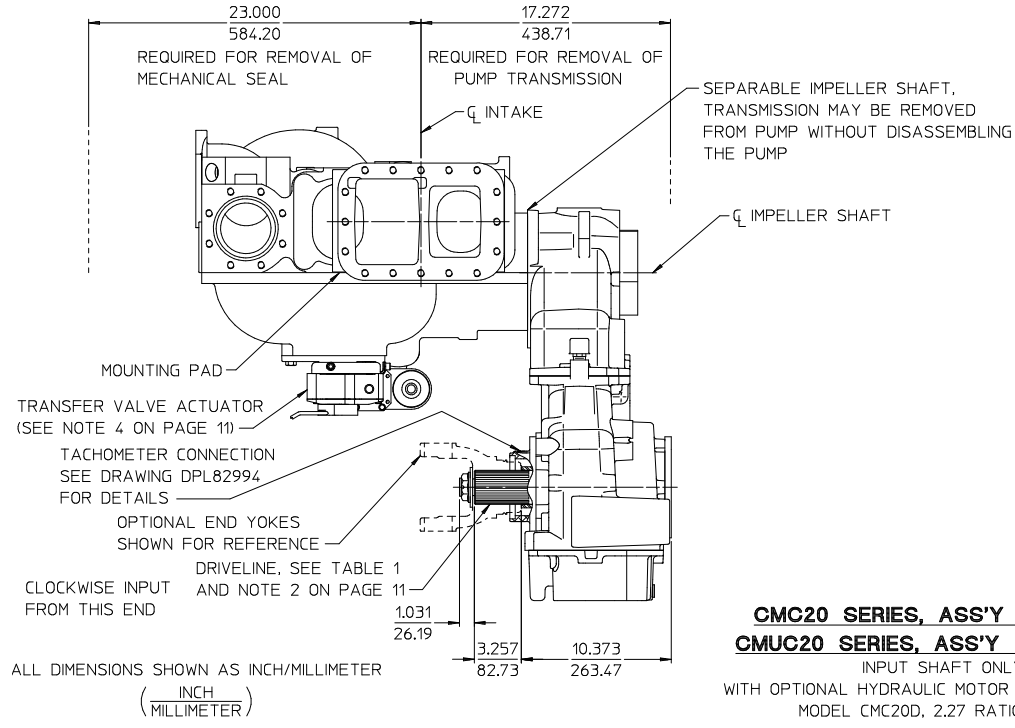
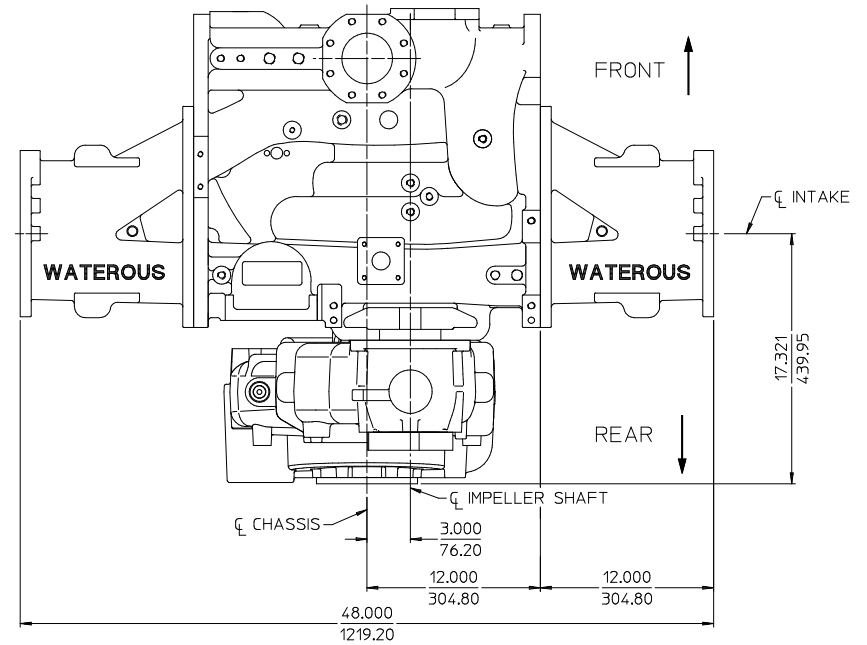
CMC20 SERIES, ASS'Y NO. 82843
CMUC20 SERIES, ASS'Y NO. 82843-1

INPUT SHAFT ONLY
MODEL CMC20D, 2.27 RATIO SHOWN

CM SERIES FIRE PUMPS
DPL82843
WATEROUS COMPANY
SOUTH ST. PAUL, MN 55075



DETAIL D
 HYDRAULIC PUMP ADAPTER FLANGE
 USED FOR SAE J744 CLASS B 2-BOLT
 HYDRAULIC PUMP WITH MALE
 7/8-13T 16/32 PITCH INVOLUTE SPLINE



CMC20 SERIES, ASS'Y NO. 82843
CMUC20 SERIES, ASS'Y NO. 82843-1
 INPUT SHAFT ONLY
 WITH OPTIONAL HYDRAULIC MOTOR MOUNT PROVISION
 MODEL CMC20D, 2.27 RATIO SHOWN

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

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

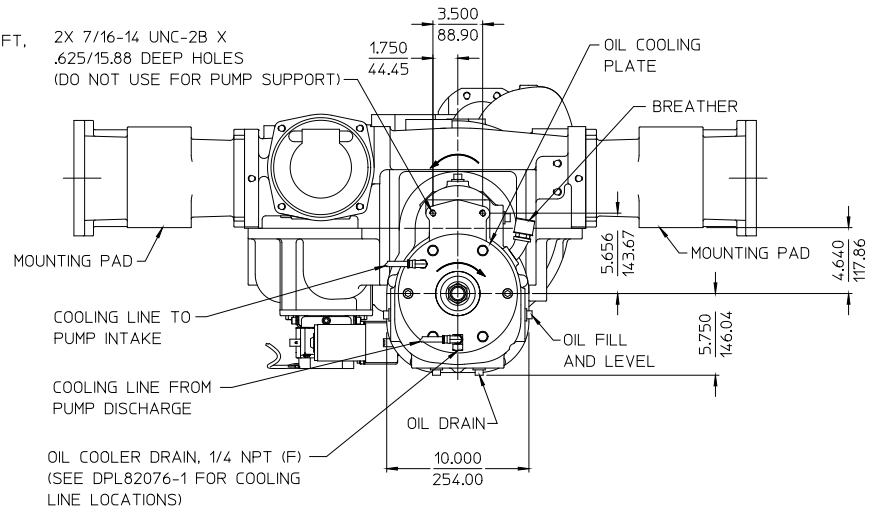
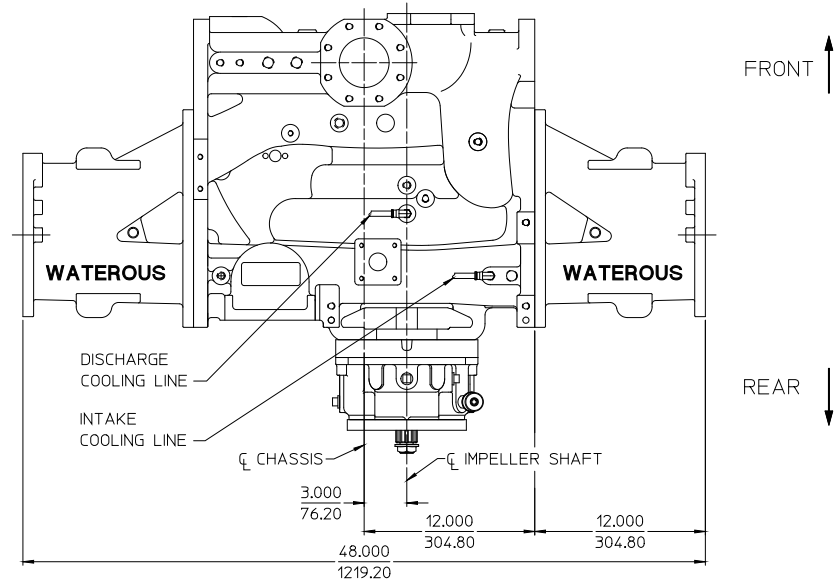
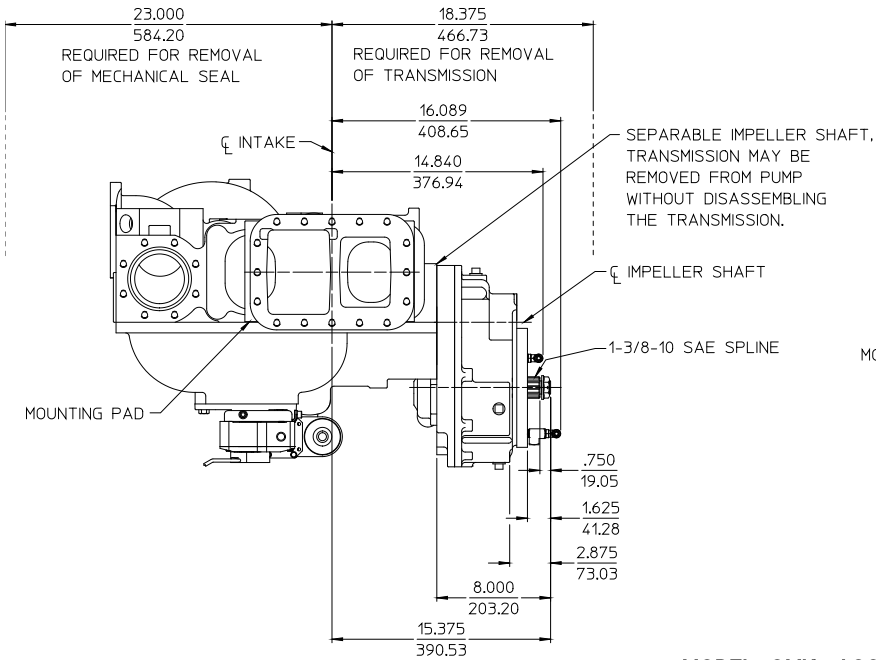
($\frac{\text{INCH}}{\text{MILLIMETER}}$)

CMC20 SERIES, ASS'Y NO. 82843
CMUC20 SERIES, ASS'Y NO. 82843-1

MODEL CMK AVAILABLE AS FOLLOWS				
TRANSMISSION				
MODEL	INPUT	LOCATION	MOUNTING	AVAILABLE RATIOS
HEAVY DUTY K	CLOCKWISE	REAR	VERTICAL	1.16, 1.30, 1.38, 1.56, 1.65, 1.88, 2.14, 2.45, 2.83

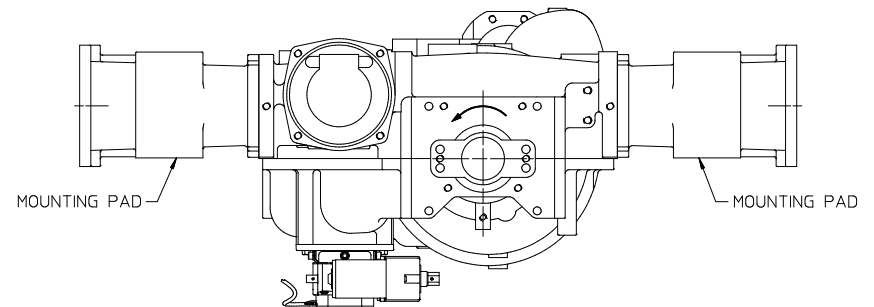
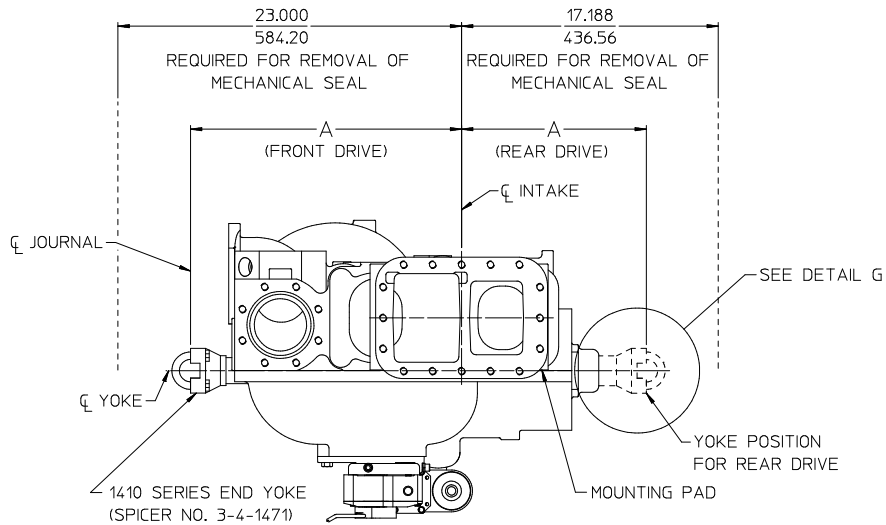
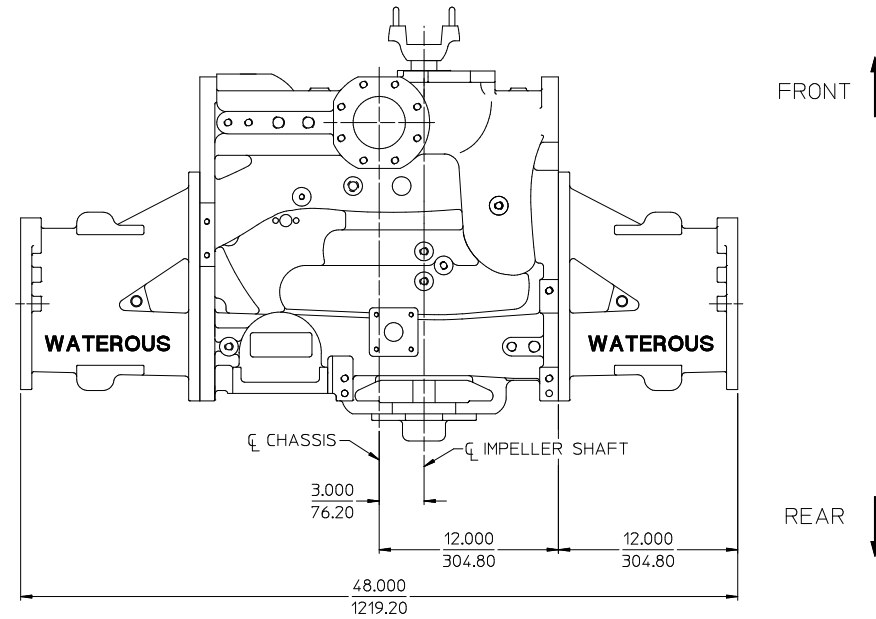
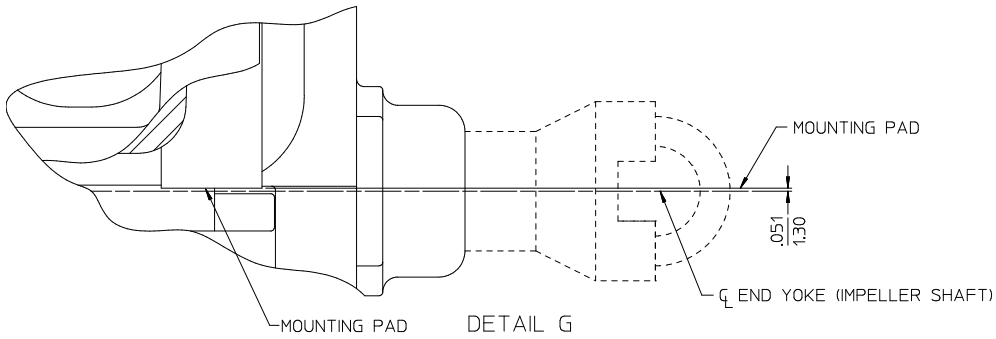
- NOTES:
 1. SEE DRAWING DPL82076-1 FOR ADDITIONAL TRANSMISSION DETAILS.
 2. SEE DRAWINGS DPL82084-1 AND DPL82084-5 FOR PRESSURE CONTROL SYSTEMS.

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



MODEL CMK, ASS'Y NO. 82843-2

AVAILABLE AS FOLLOWS			
DRIVE LOCATION	DIMENSION A		INPUT ROTATION (VIEWED LOOKING AT YOKE)
	WITH PACKING	WITH MECHANICAL SEALS	
FRONT	18.600 472.44	18.600 472.44	CLOCKWISE
REAR	12.250 311.15	12.250 311.15	COUNTERCLOCKWISE



MODEL CMD, ASS'Y NO. 82843-4
MODEL CMUD, ASS'Y NO. 82843-5

(USED WITH TC20 SERIES OR OTHER FULL TORQUE P.T.O.)
 (MODEL CMD, FRONT DRIVE WITH MECHANICAL SEALS SHOWN)

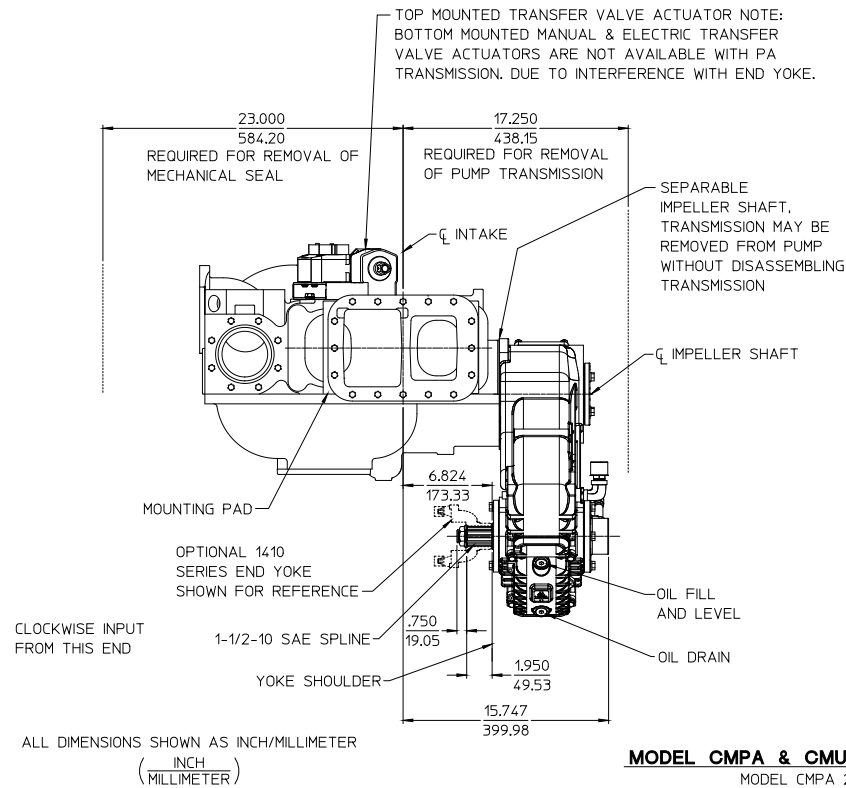
ALL DIMENSIONS SHOWN AS INCH/MILLIMETER
 (INCH / MILLIMETER)

NOTE:
 1. SEE DRAWINGS DPL82084-1, DPL82084-2 AND DPL82084-5 FOR PRESSURE CONTROL SYSTEMS.

TABLE 1 - AVAILABLE AS FOLLOWS							
DRIVE LINE		RATIO	DIM A	DIM B	DIM C	DIM D	MODEL
SIZE	SPLINE						
1-1/2 INCH	1-1/2-10 SAE	1.70	11.288/286.71	10.994/279.25	6.162/156.51	4.737/120.32	CMPA
		1.90	11.269/286.24	10.975/278.77	6.181/157.00	4.755/120.79	
		2.10	11.239/285.46	10.945/278.00	6.211/157.76	4.786/121.56	

NOTES:

- SEE DRAWING DPL82080 FOR ADDITIONAL DETAILS OF P SERIES TRANSMISSION
- SEE DRAWINGS DPL82084-1, DPL82084-2 AND DPL82084-5 FOR PRESSURE CONTROL SYSTEMS.



MODEL CMPA & CMUPA, ASS'Y NO. 82843-6
MODEL CMPA 2.10 RATIO SHOWN

