

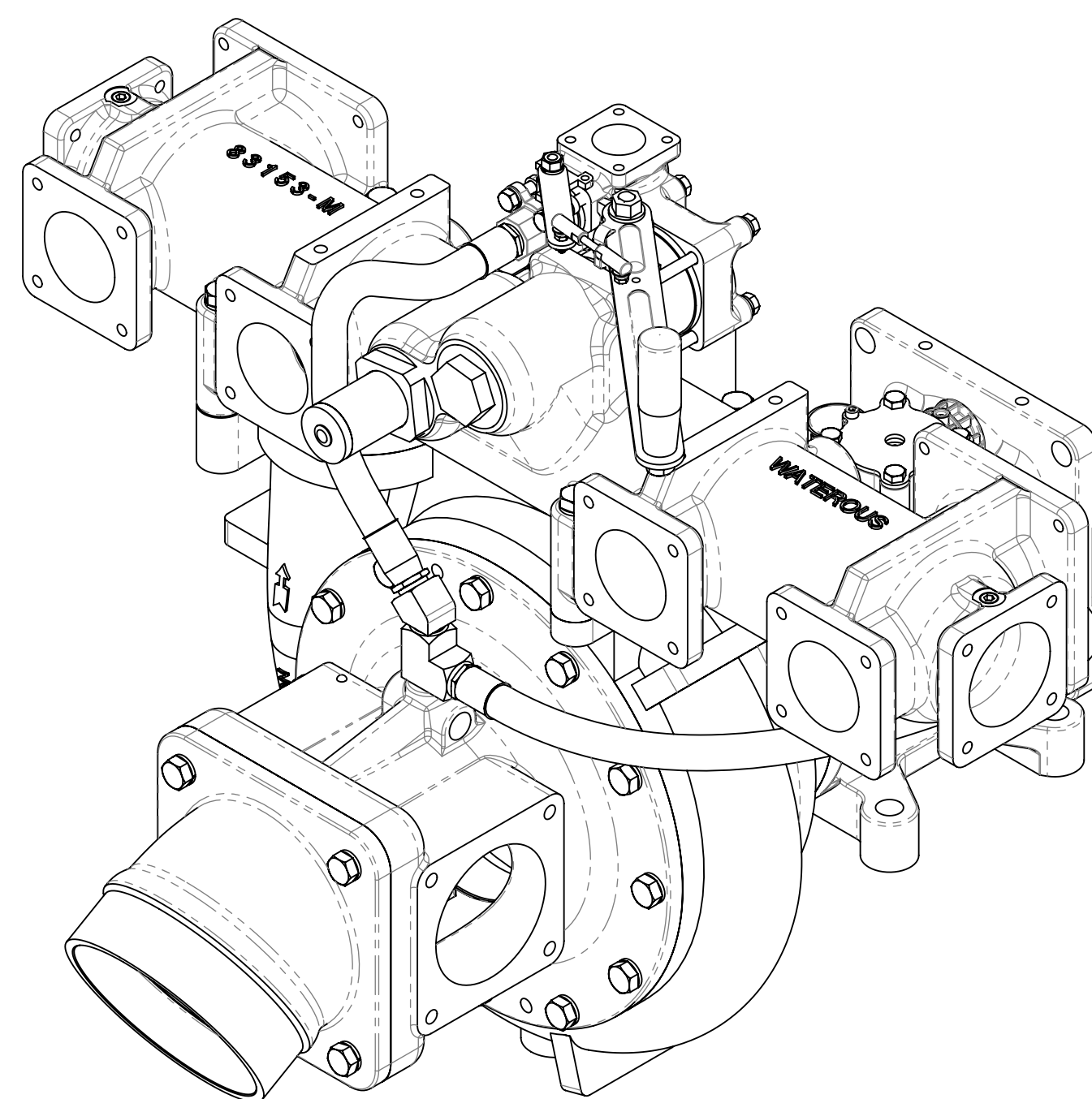
HL400 Series Pump Dimensional Drawings

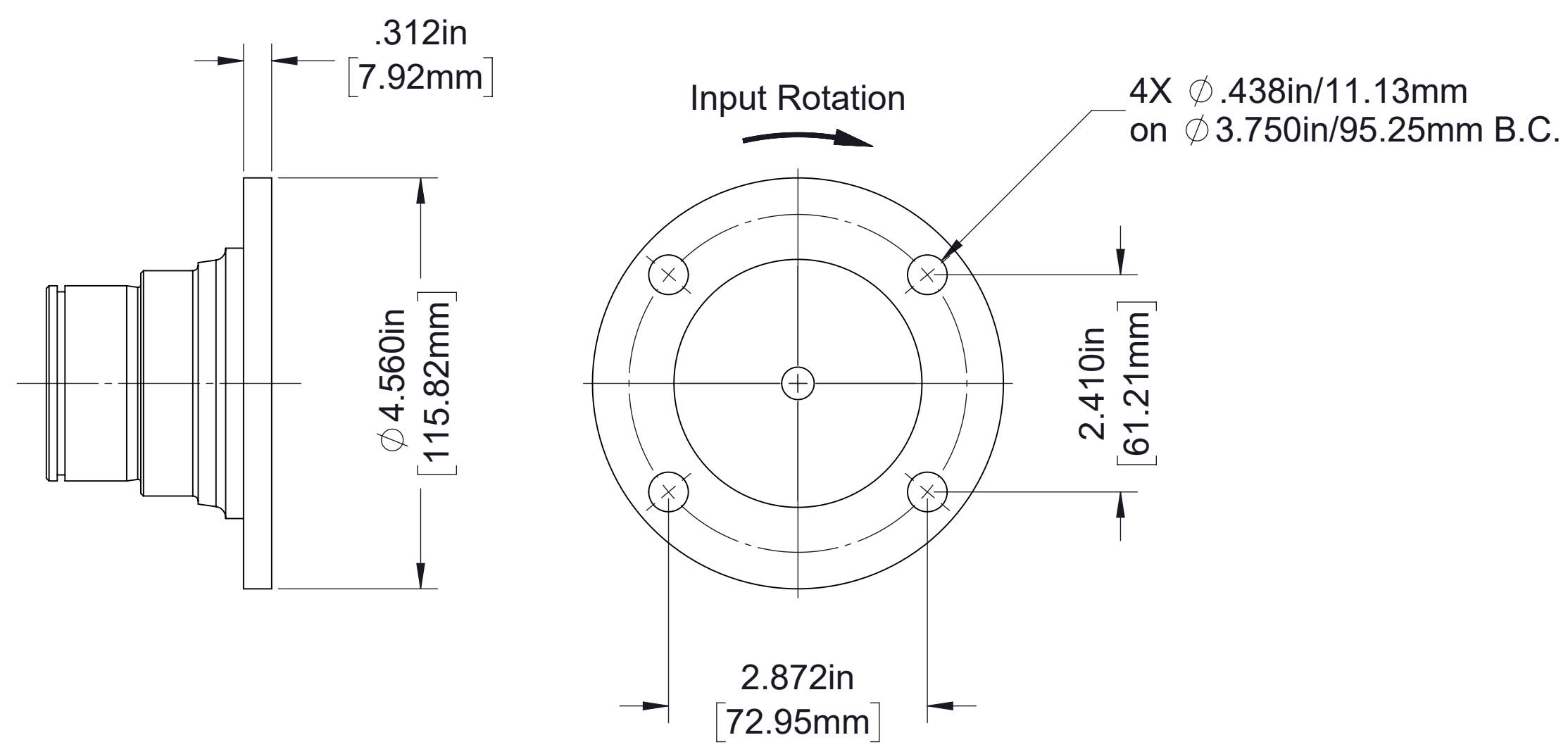
Without Piston Primers

Pump Model	Drive			Impeller Rotation (2)	See Page									
	Type	Input Shaft	Input Rotation (1)		Pump and Transmission		Available			Optional				
					Pump	Transmission Mounting Positions	Intake Connections	Discharge Manifold	Auxiliary Fittings	RTP Foam System		Control Panels		Gauges and Monitors
										Mounted on Pump	Remotely Mounted	Panels	Wiring Schematic	
HL400D	Direct Drive	1410 Series Companion Flange	CW	CCW	2	--	Standard (7) Short (8)	9	10, 11	12	See DPL83197	13	14	15
			CCW	CW	3									
HL400K	Heavy Duty K Series Transmission	1-3/8-10 SAE Spline	CW	CW	4	6								
			CCW	CCW	5	6								

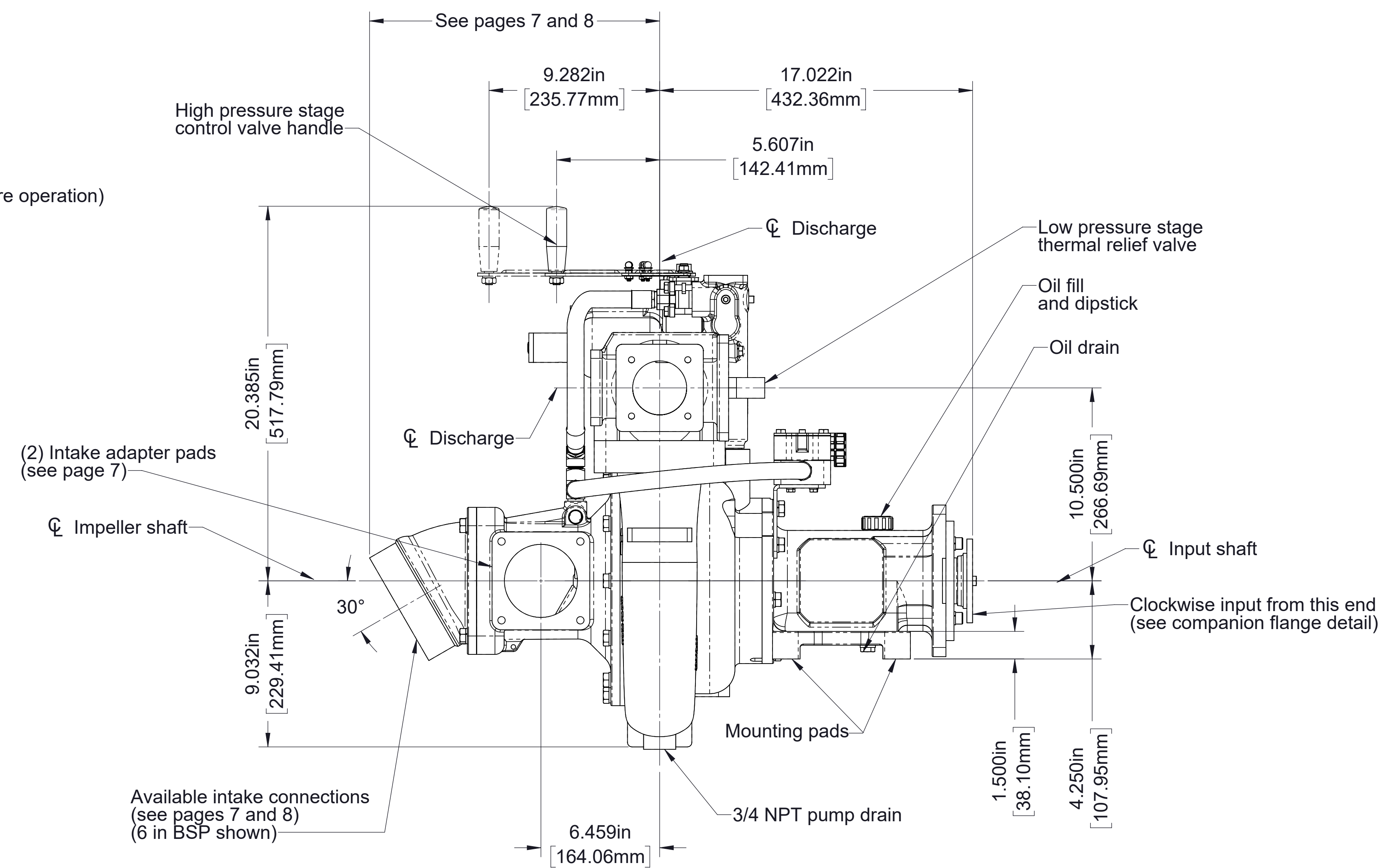
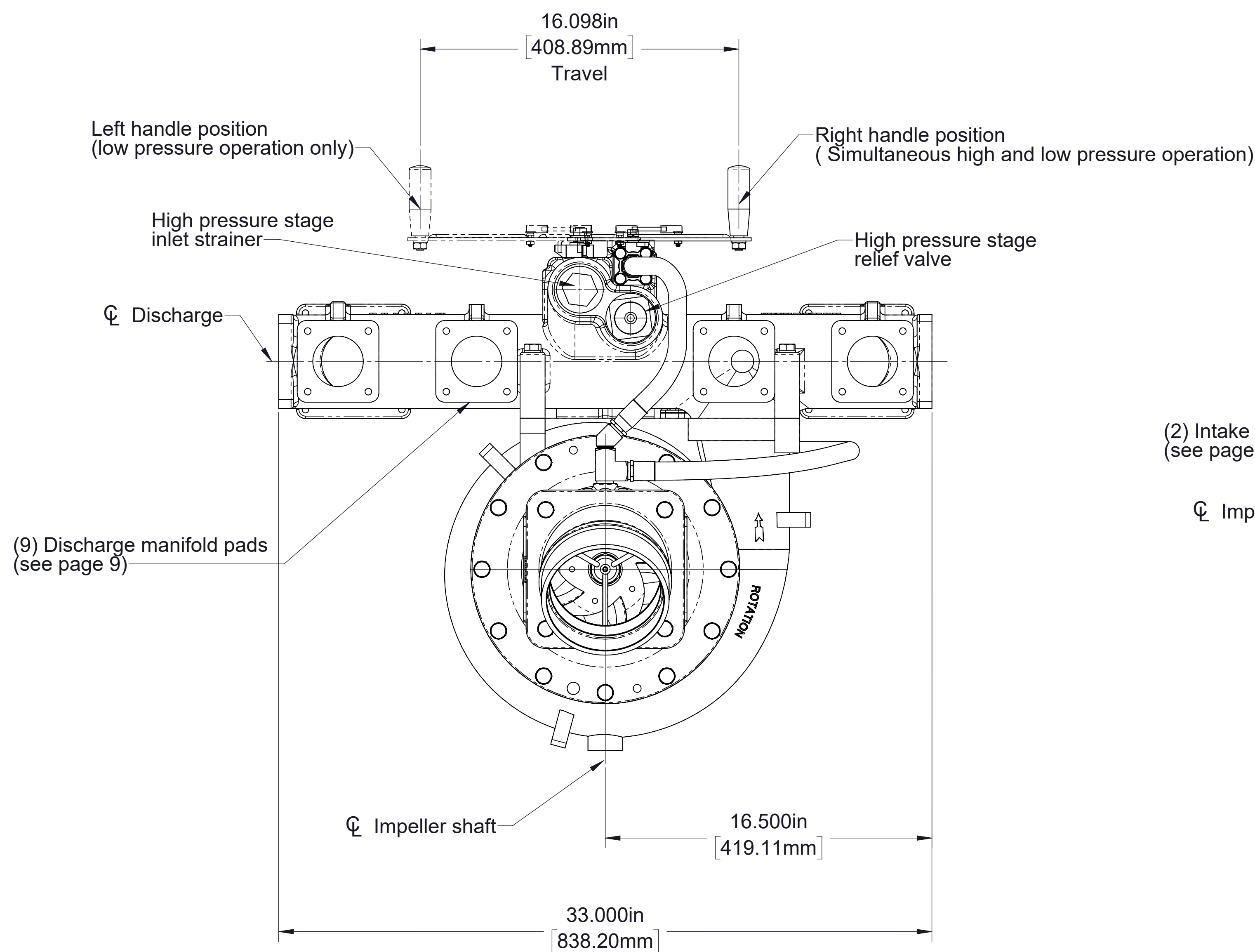
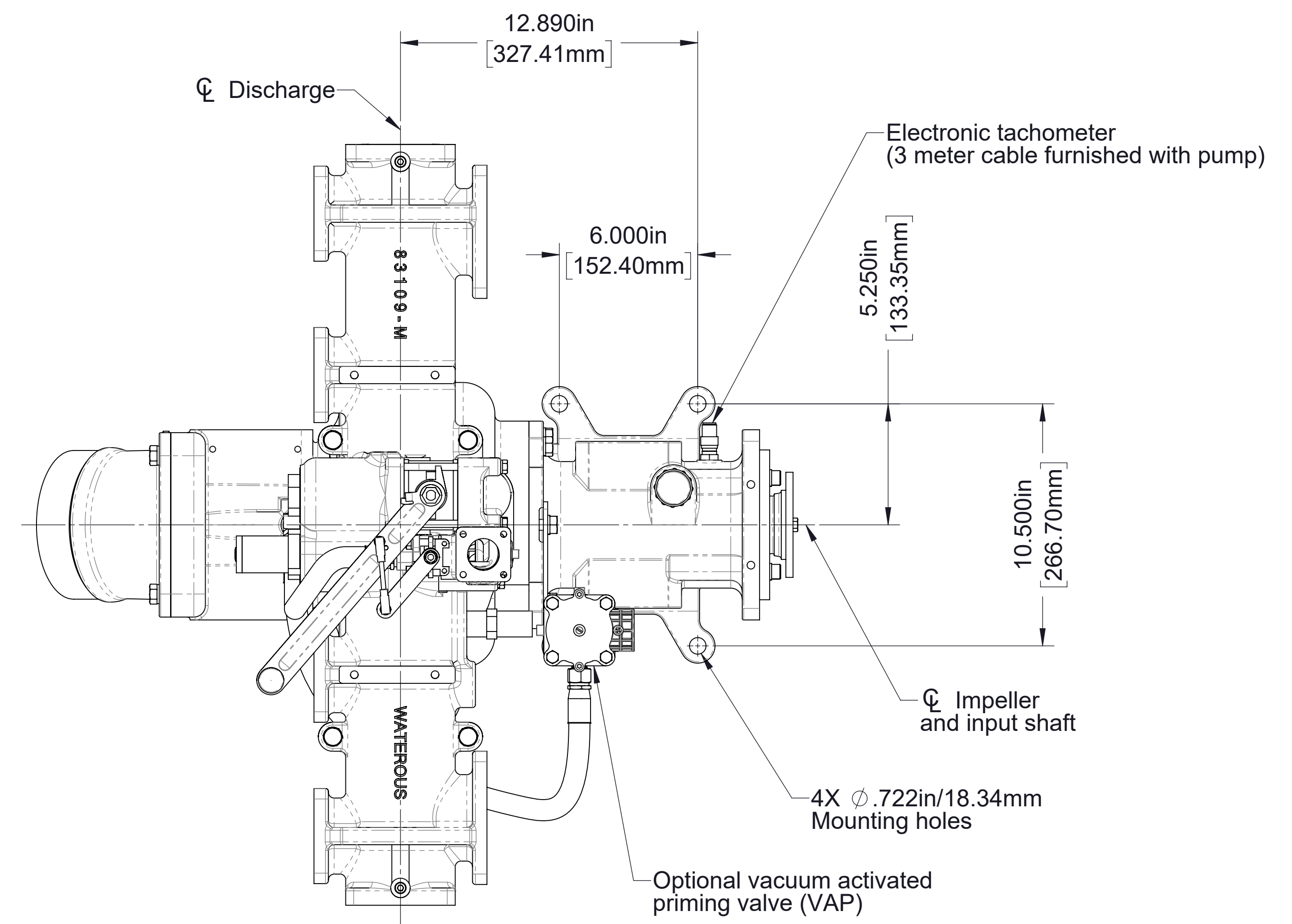
Notes:

1. Drive input rotation defined as viewed looking directly at direct drive or transmission input shaft.
2. Impeller rotation defined as viewed looking directly into impeller eye from intake end of pump.

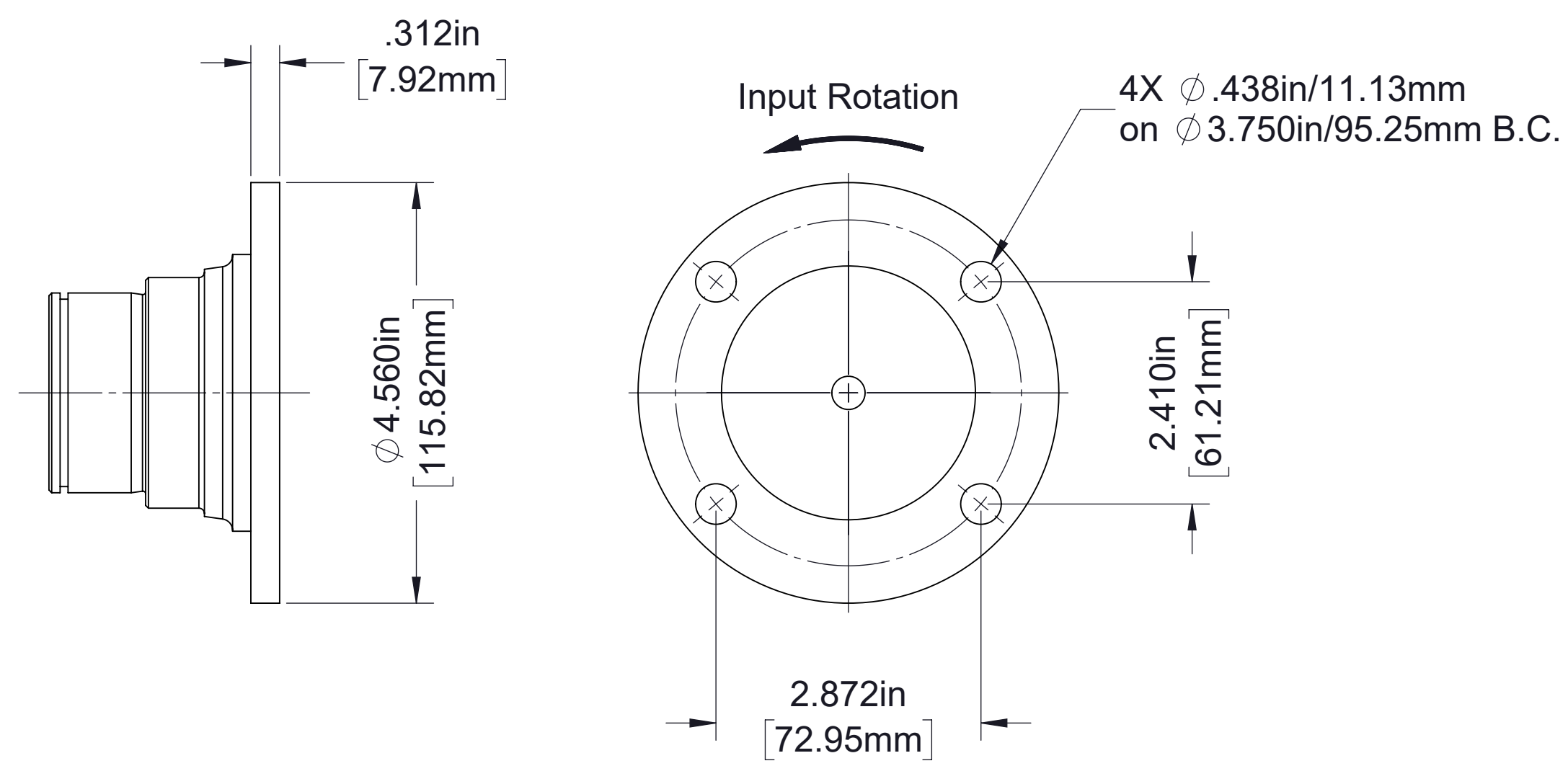




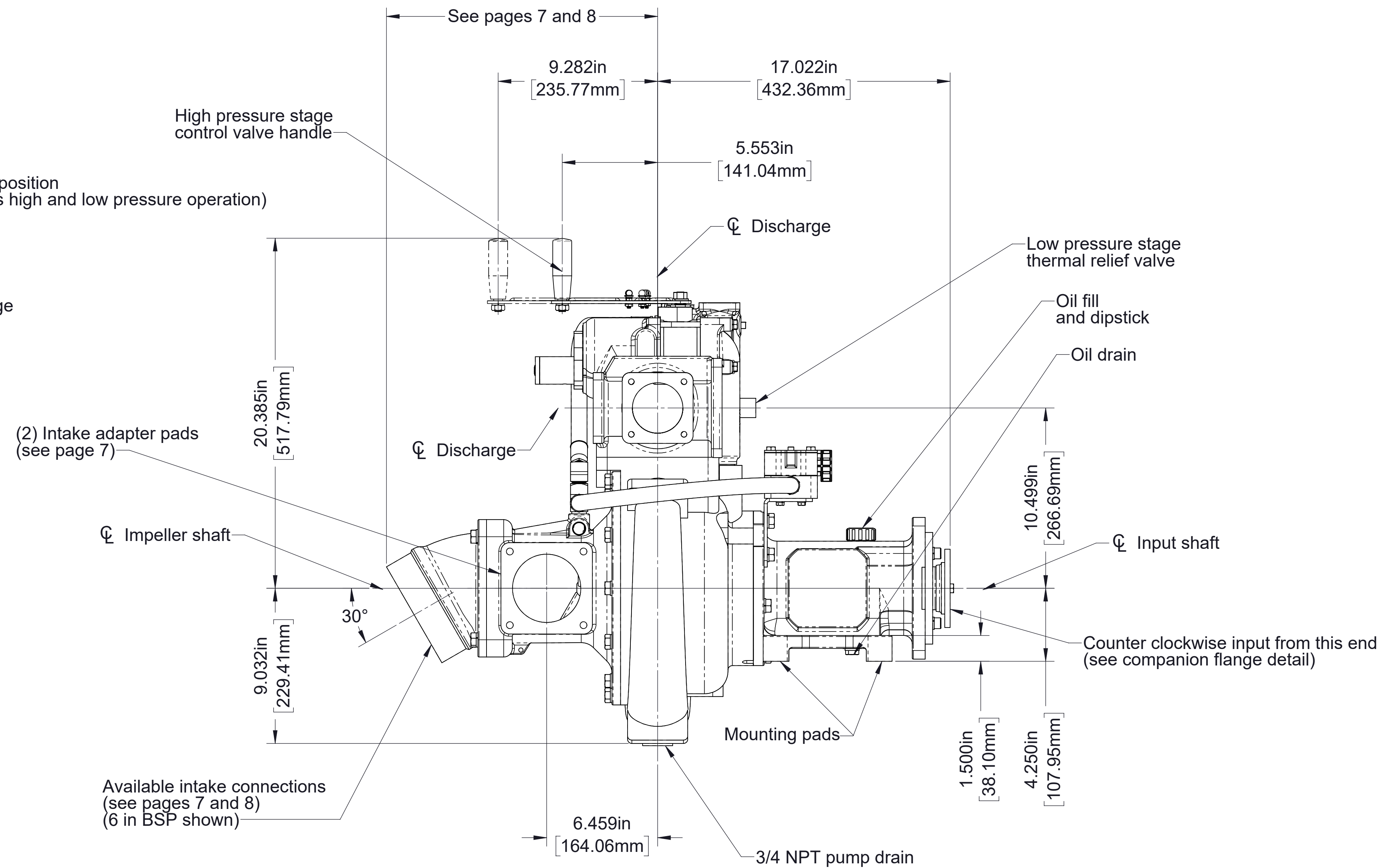
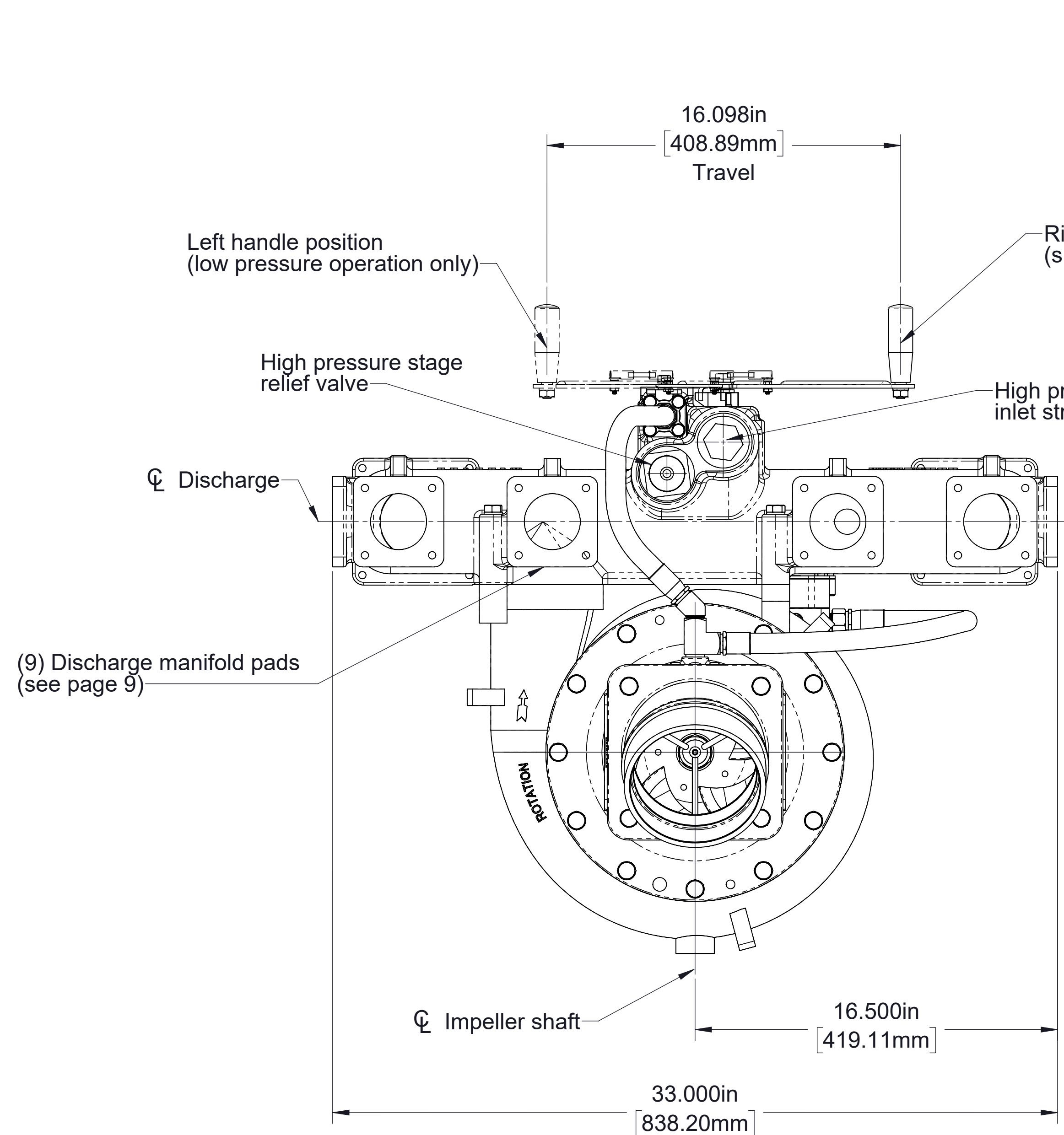
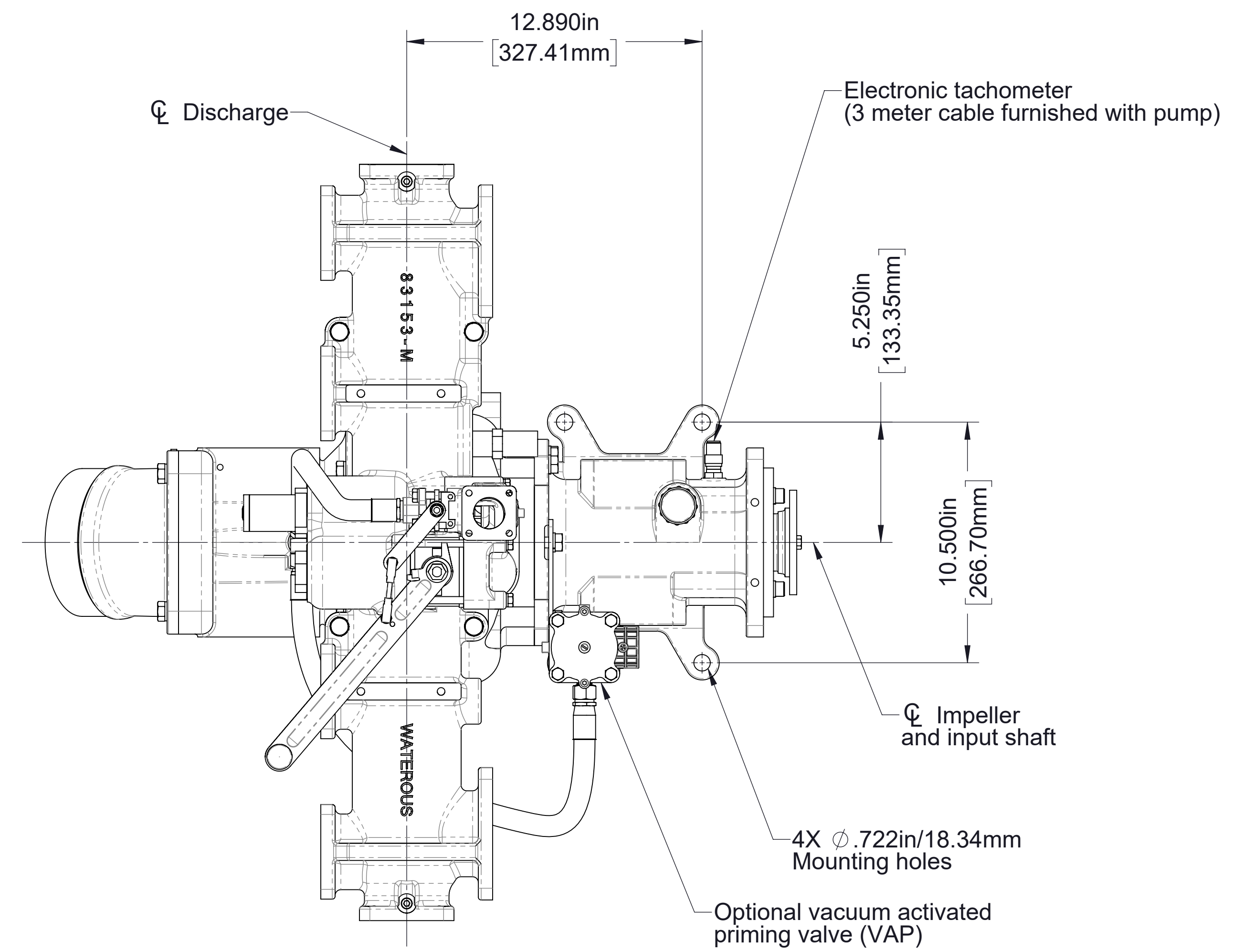
1410 Series Companion Flange Detail



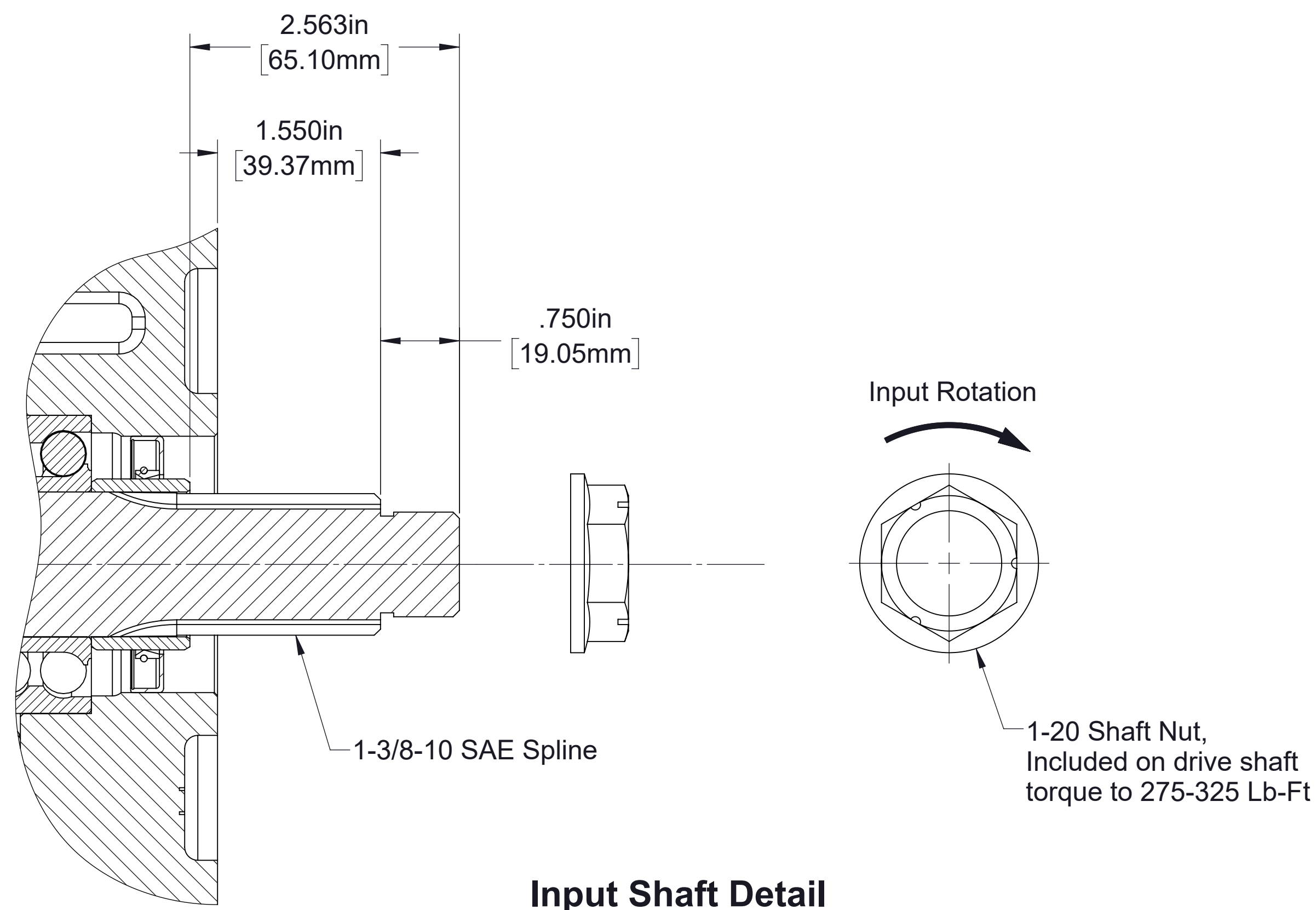
**HL400D Pump
Clockwise Input Rotation**



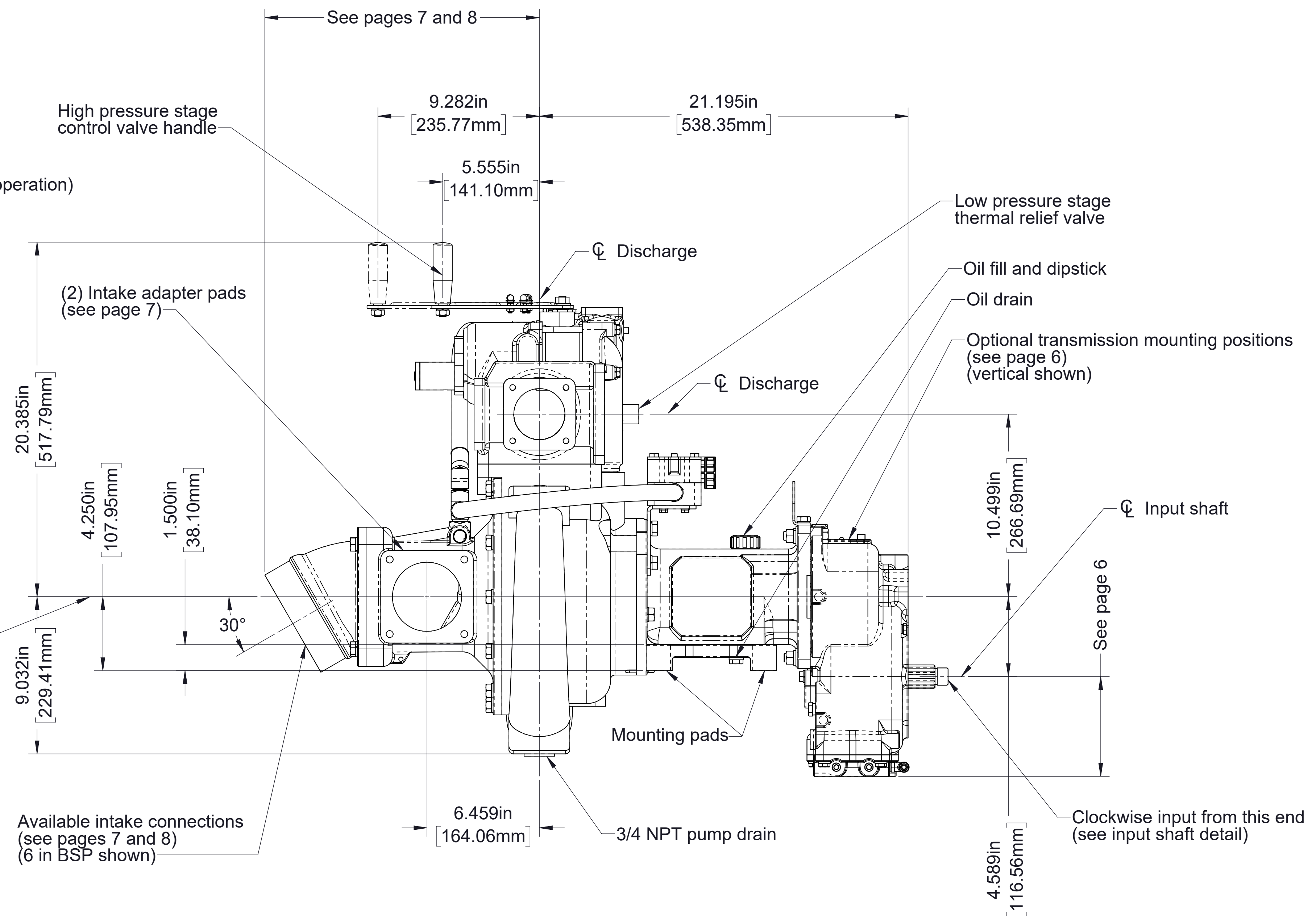
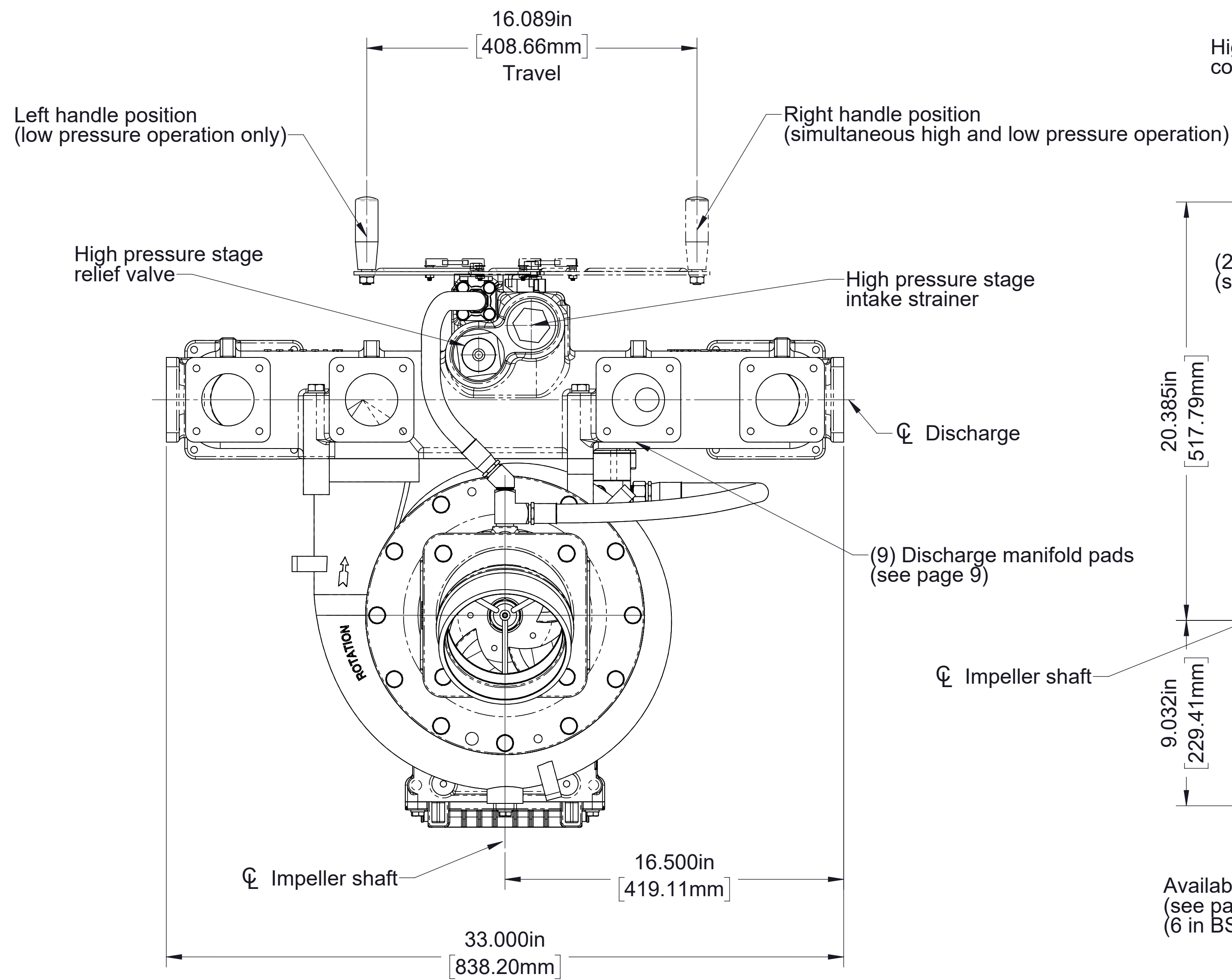
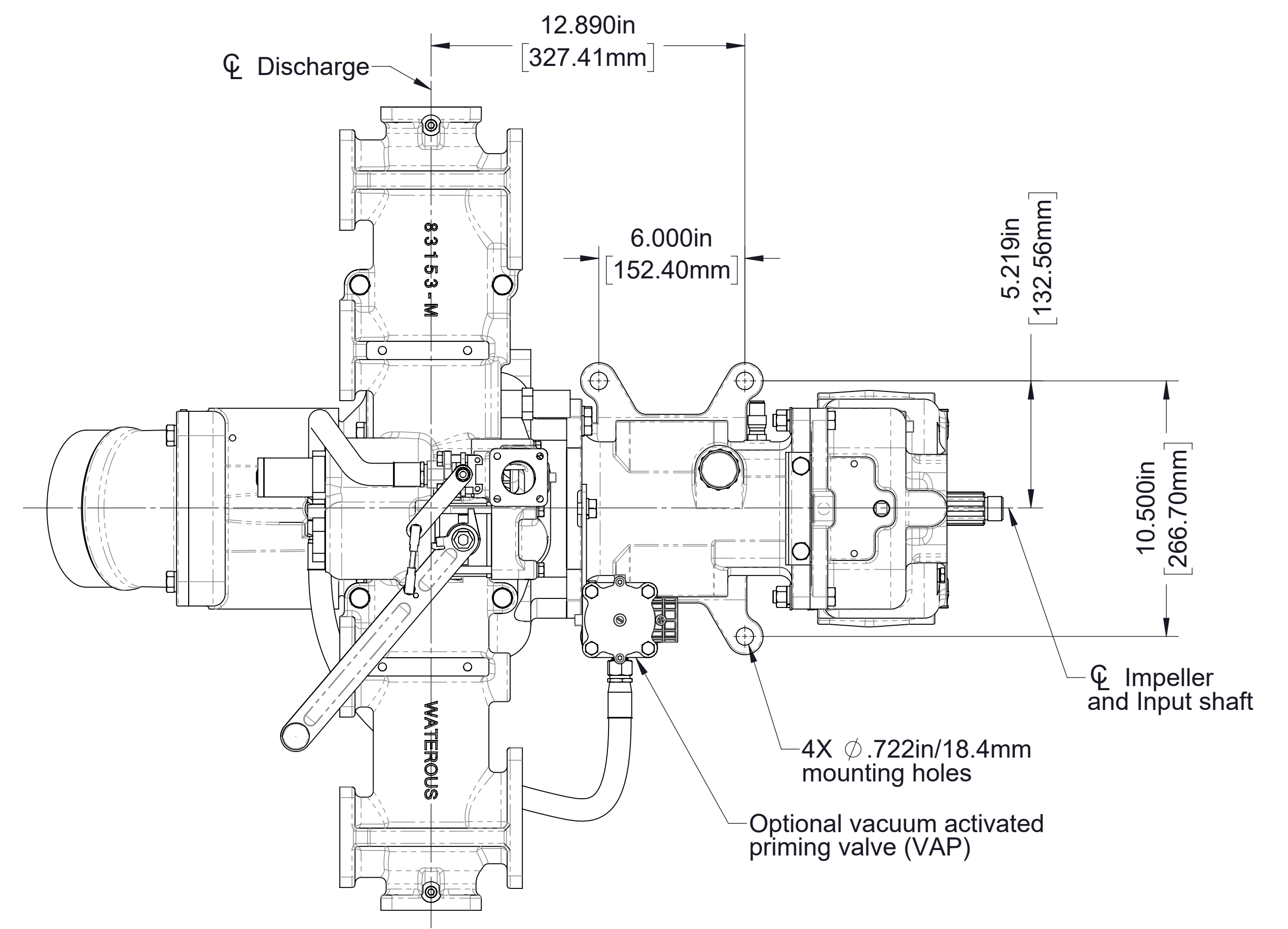
1410 Series Companion Flange Detail



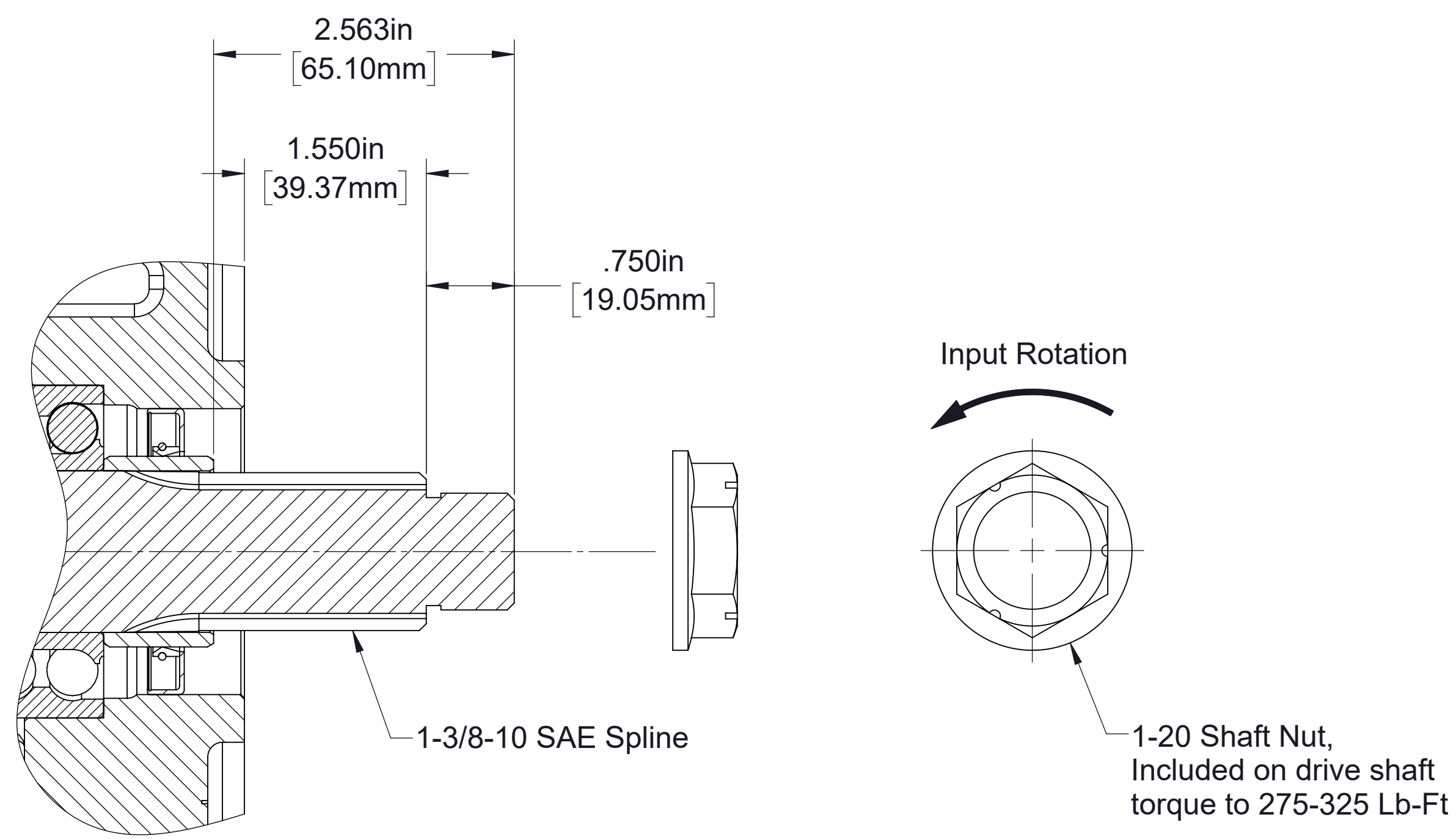
**HL400D Pump
Counter Clockwise Input Rotation**



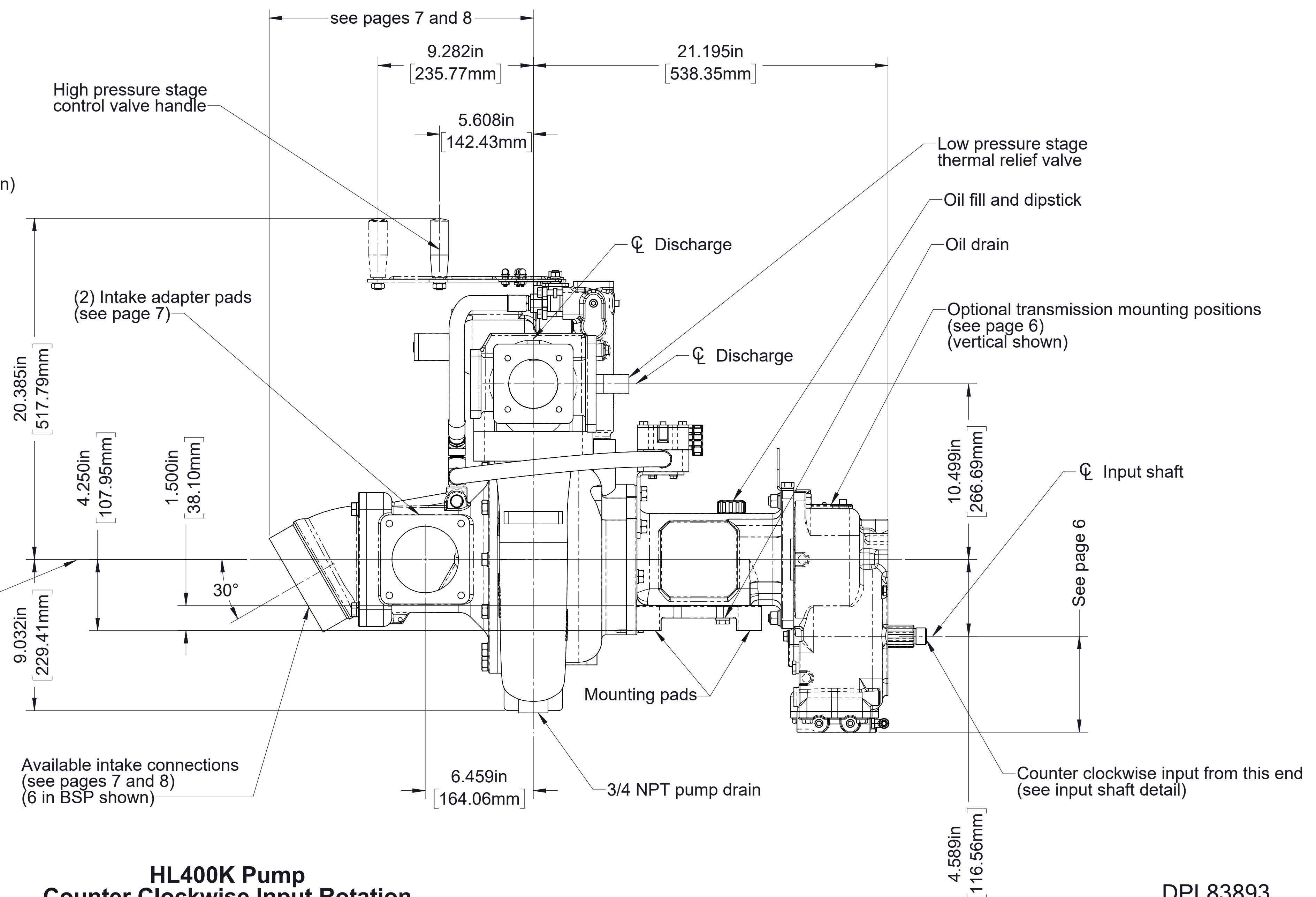
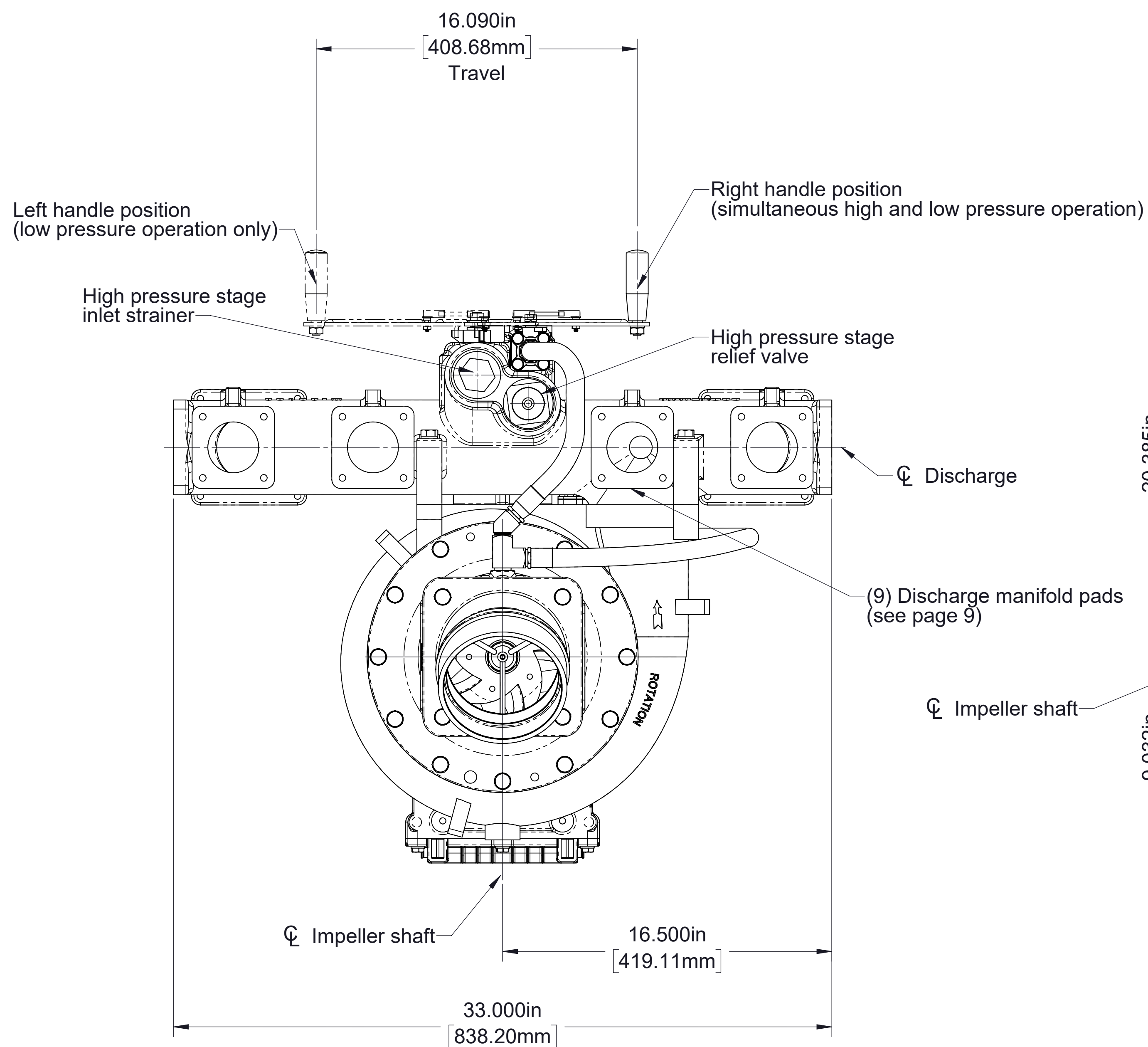
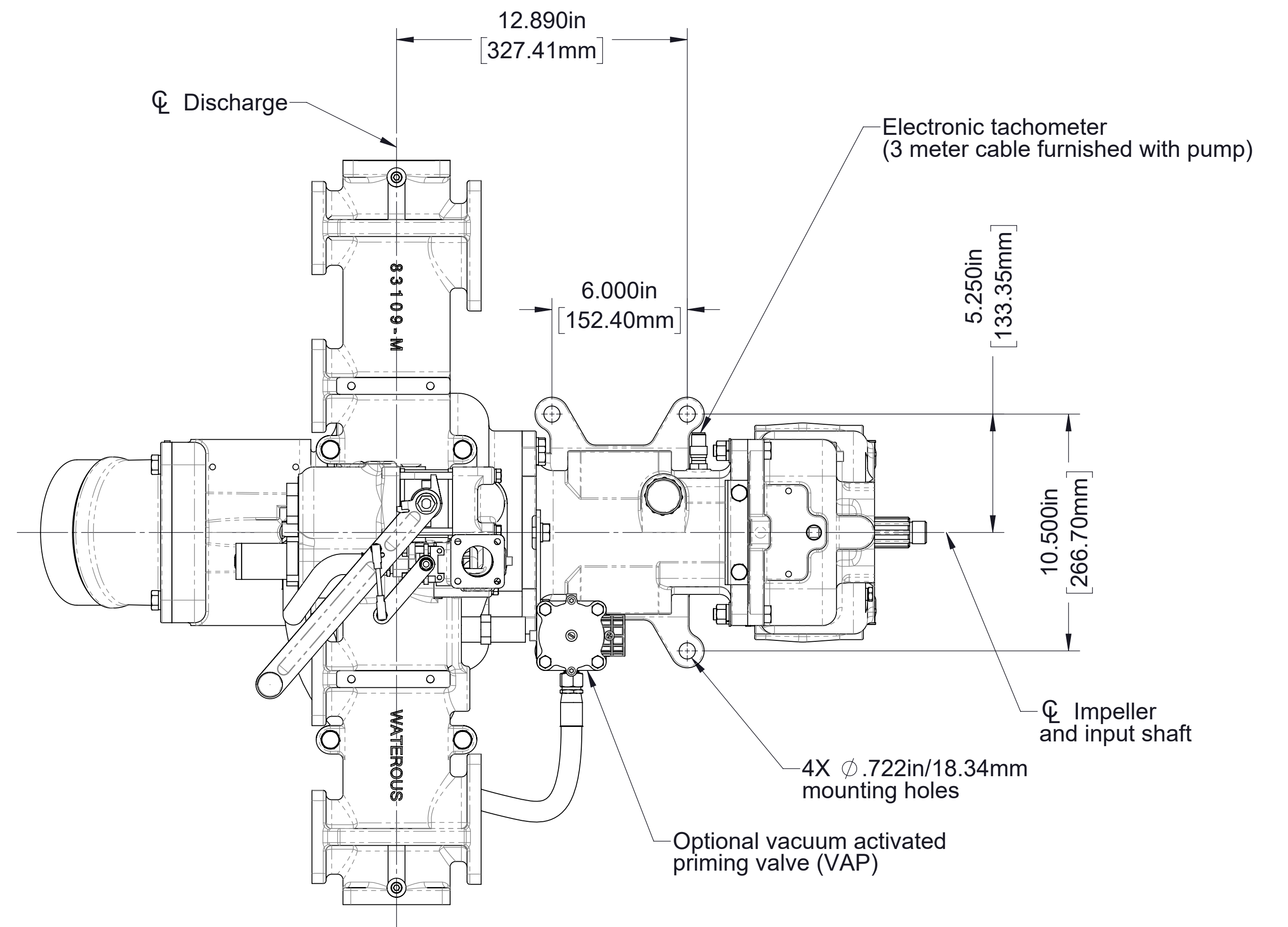
Input Shaft Detail



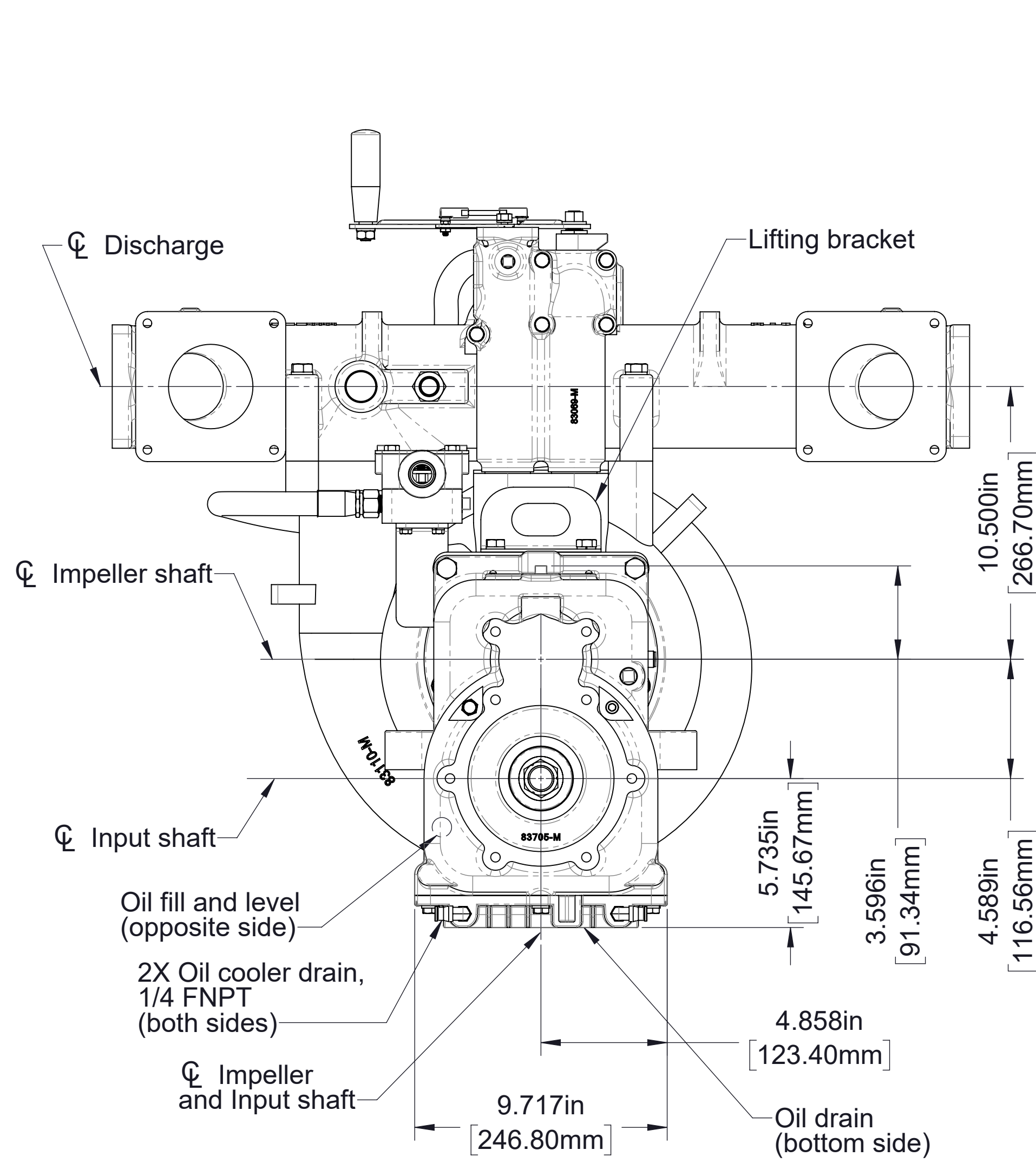
**HL400K Pump
Clockwise Input Rotation**



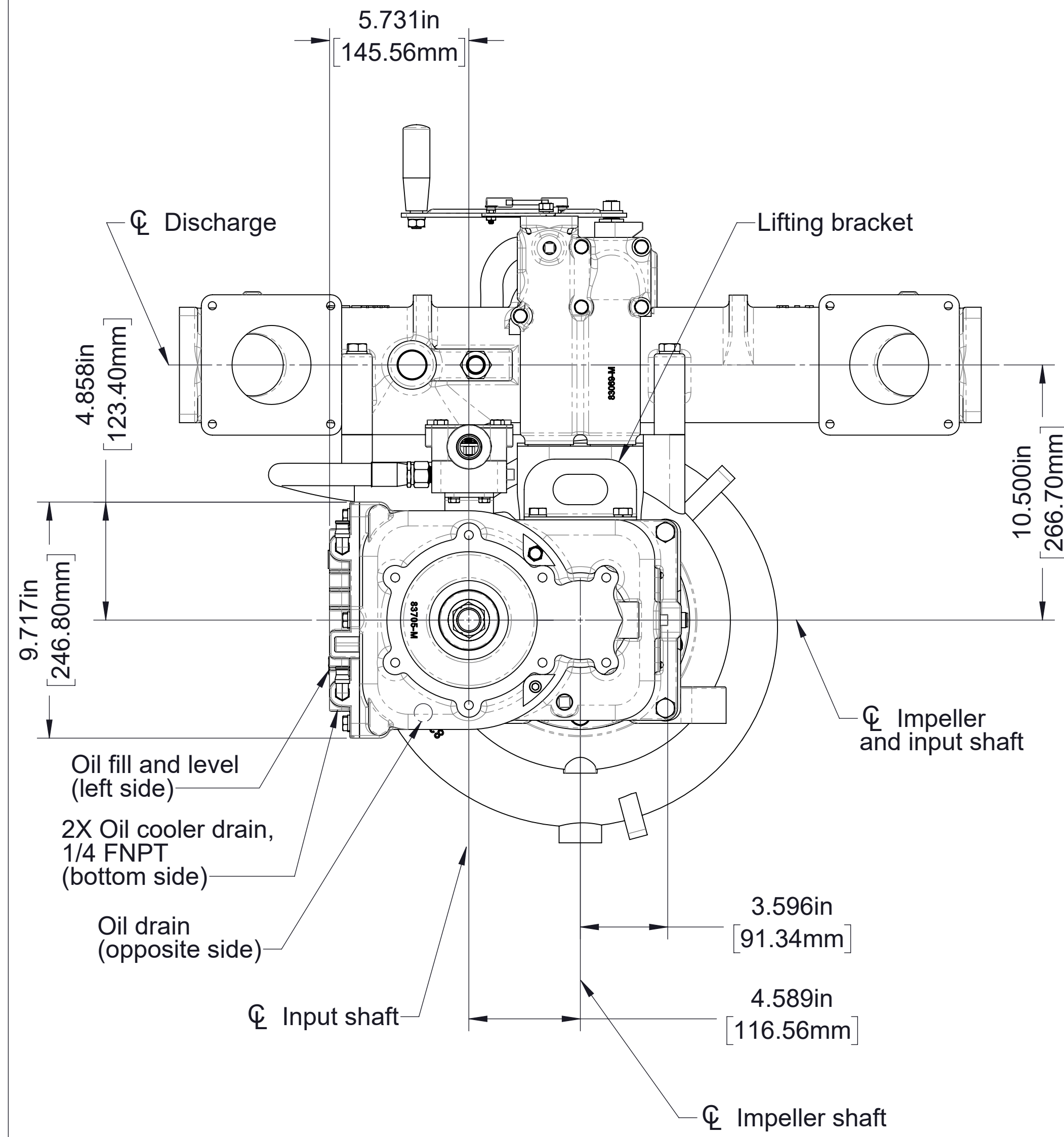
Input Shaft Detail



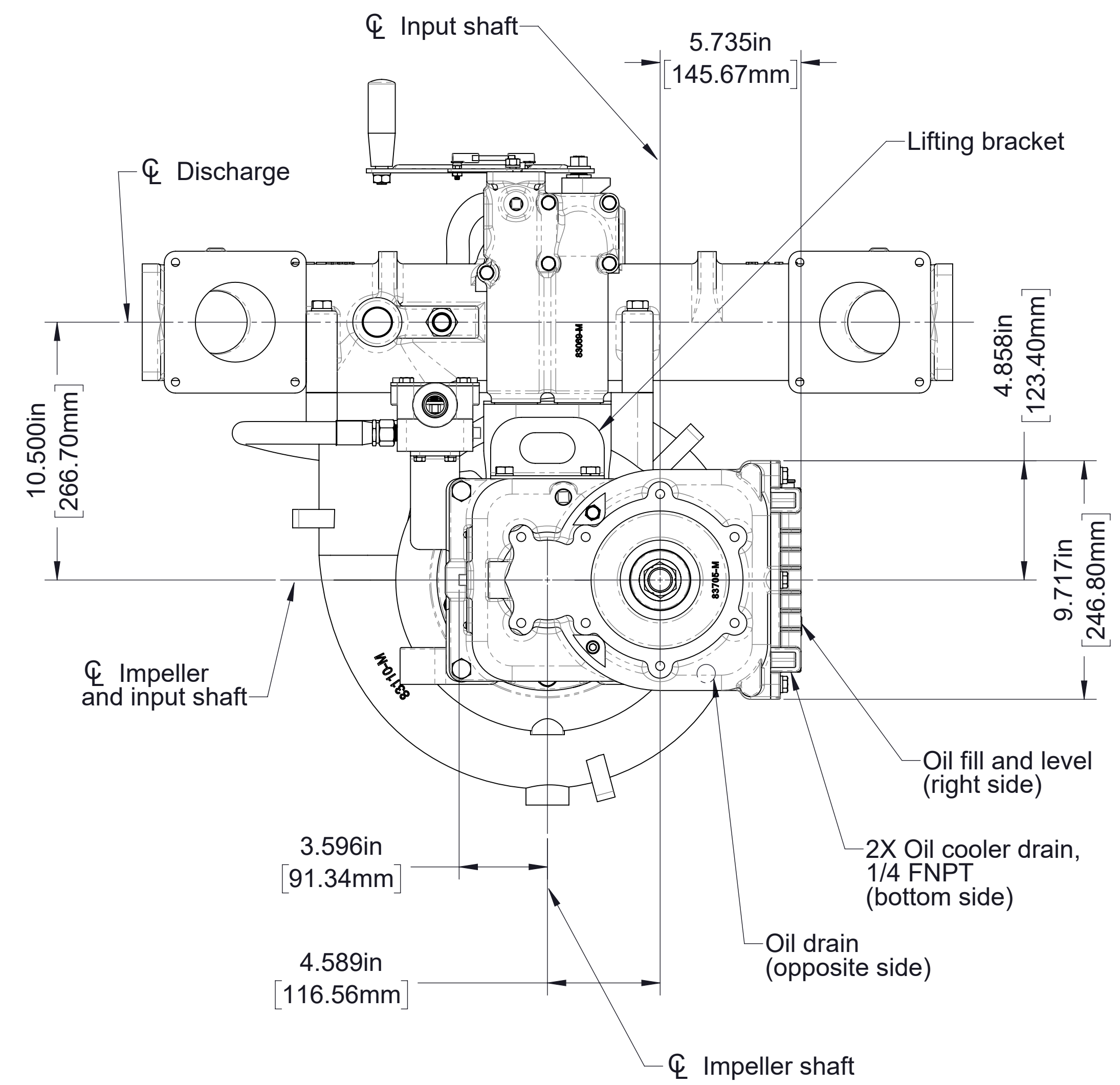
**HL400K Pump
Counter Clockwise Input Rotation**



Vertical



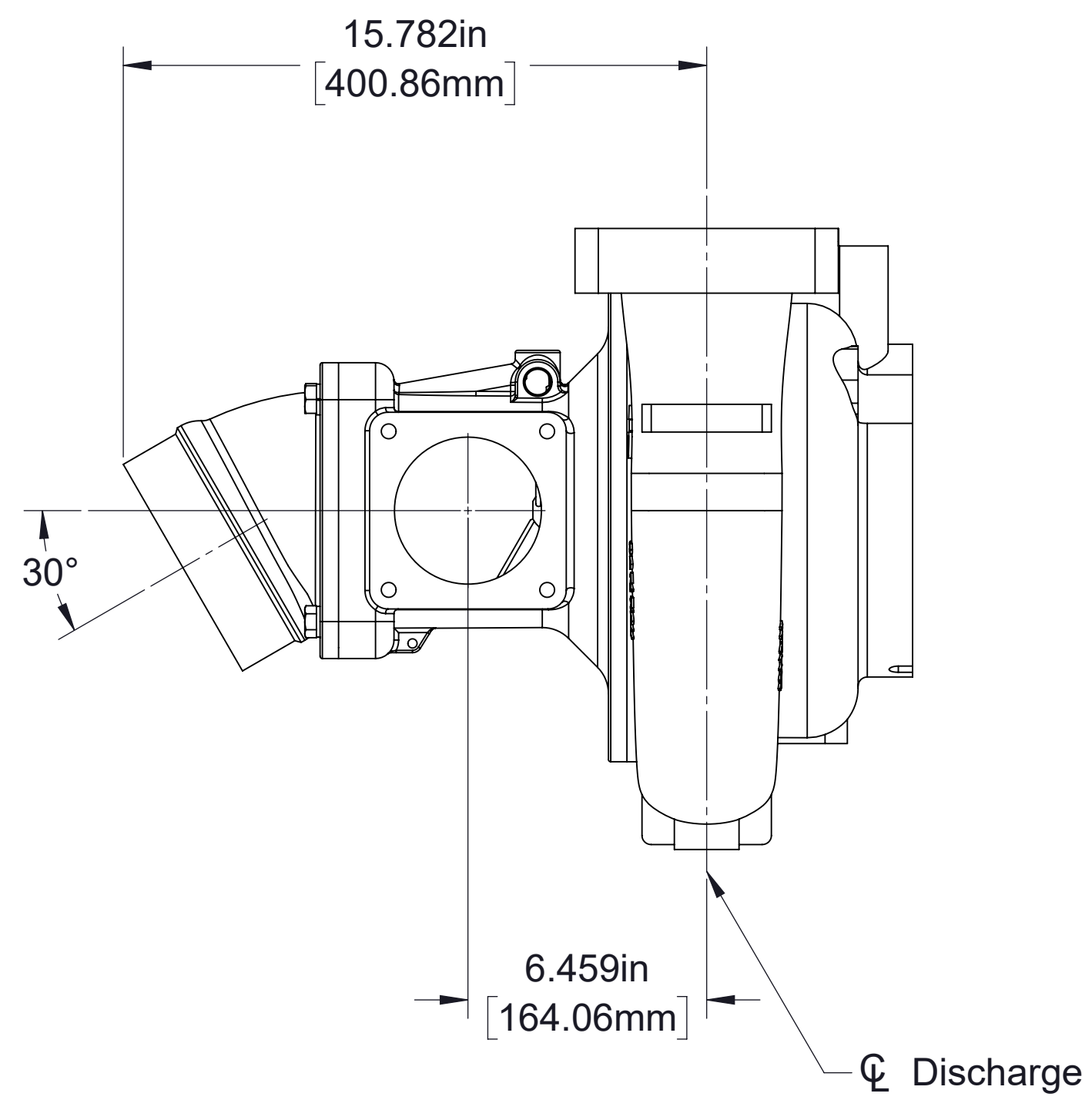
Left



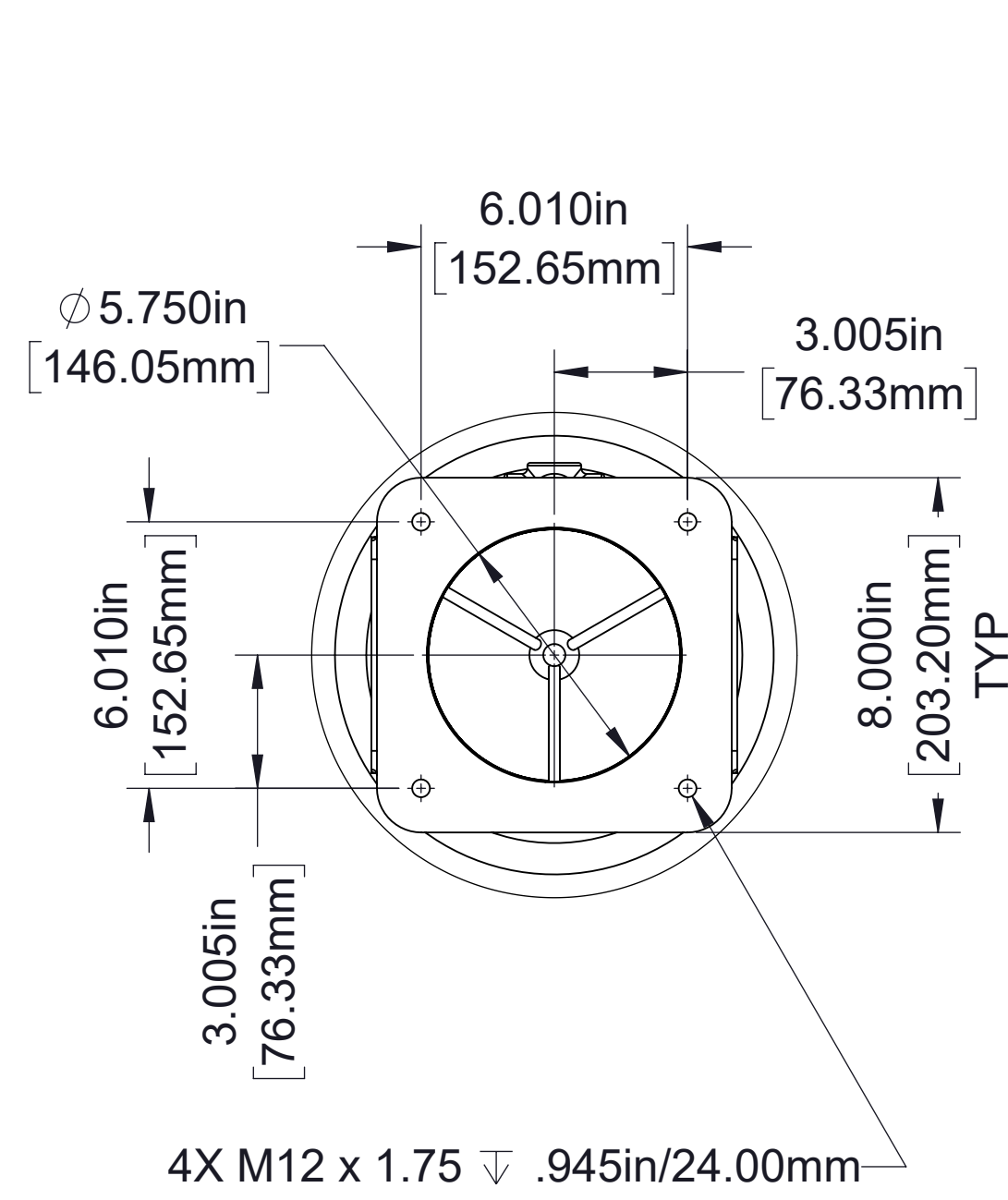
Right

Horizontal

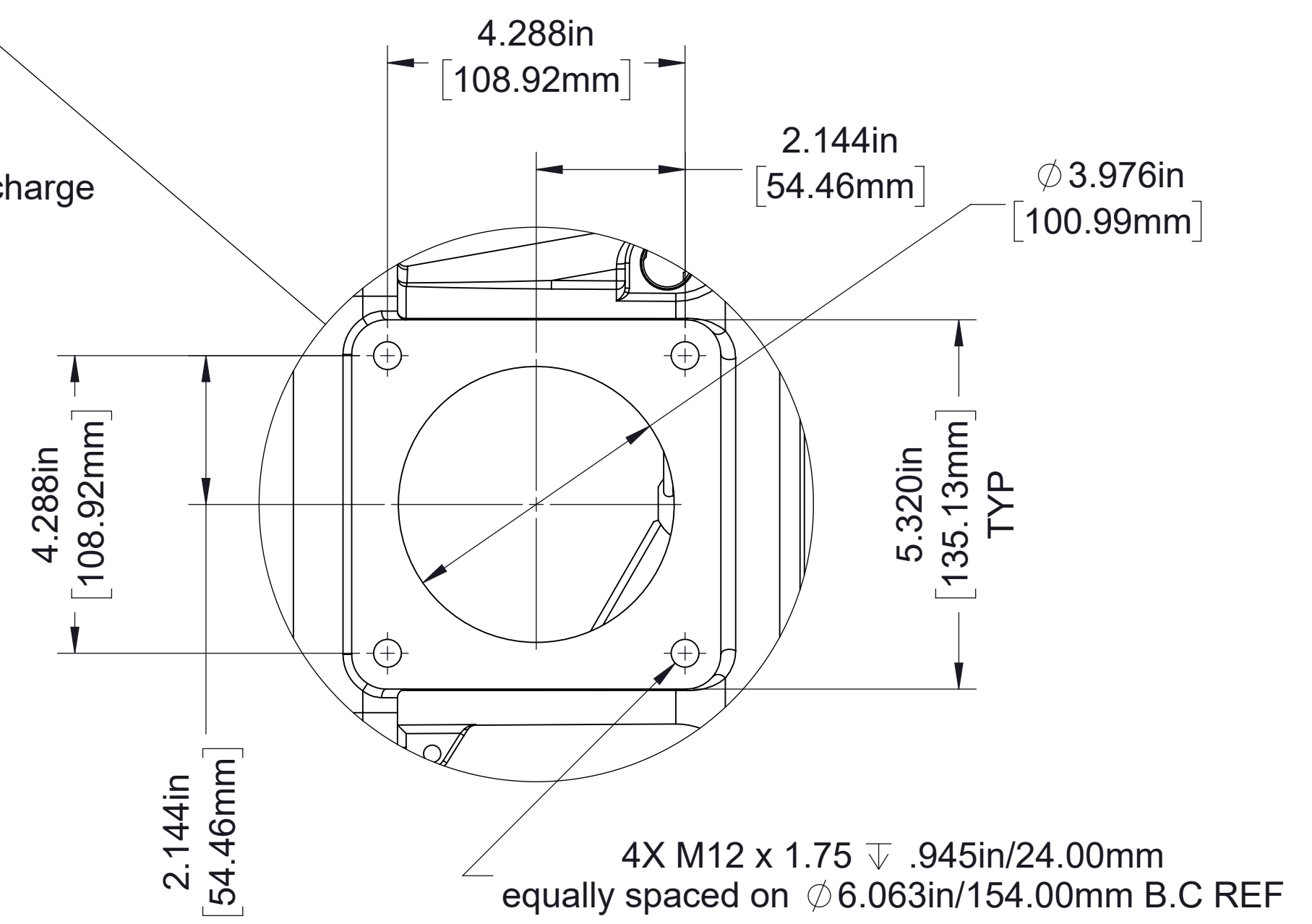
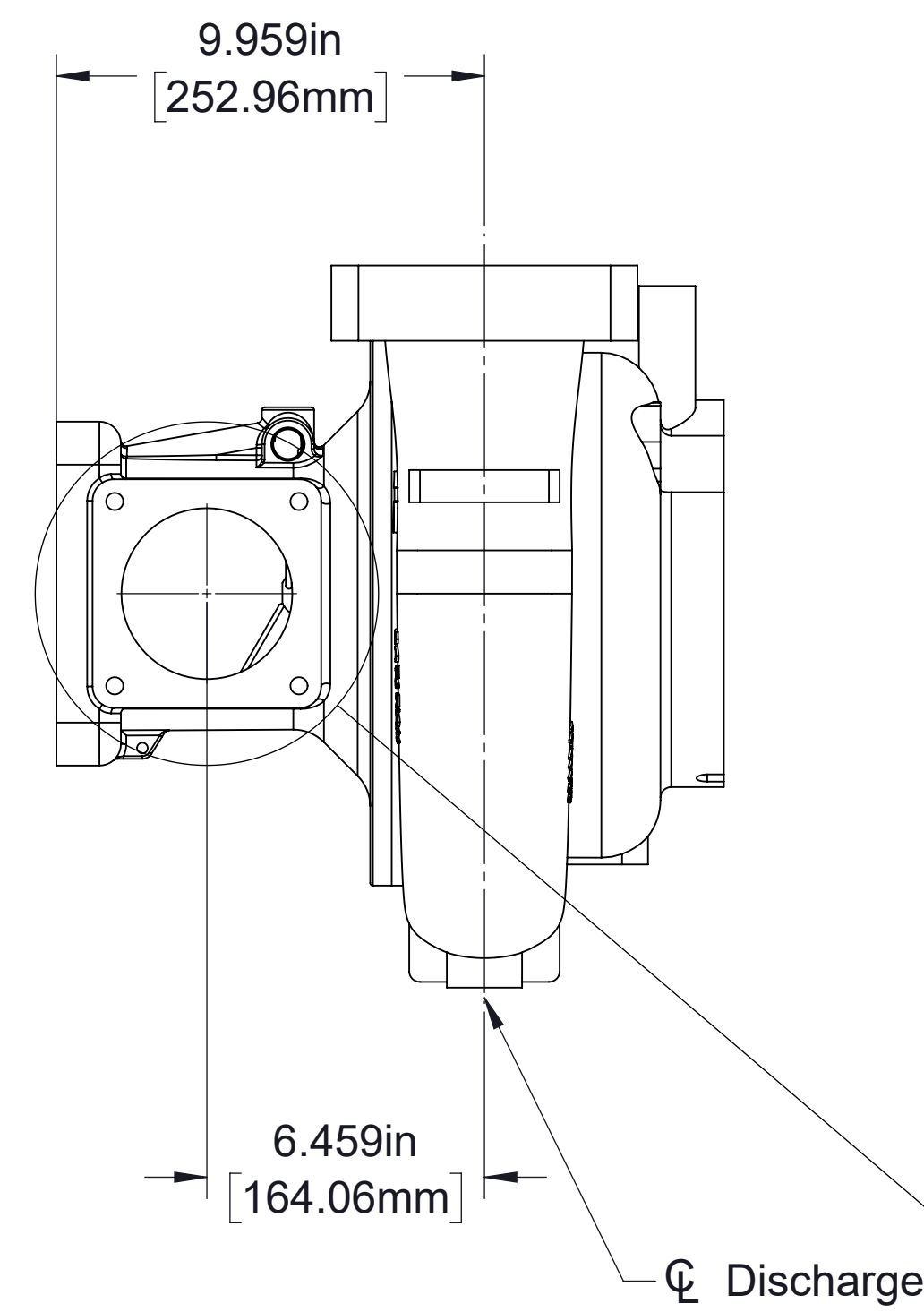
Transmission Mounting Positions
(Defined as viewed from drive end of pump)



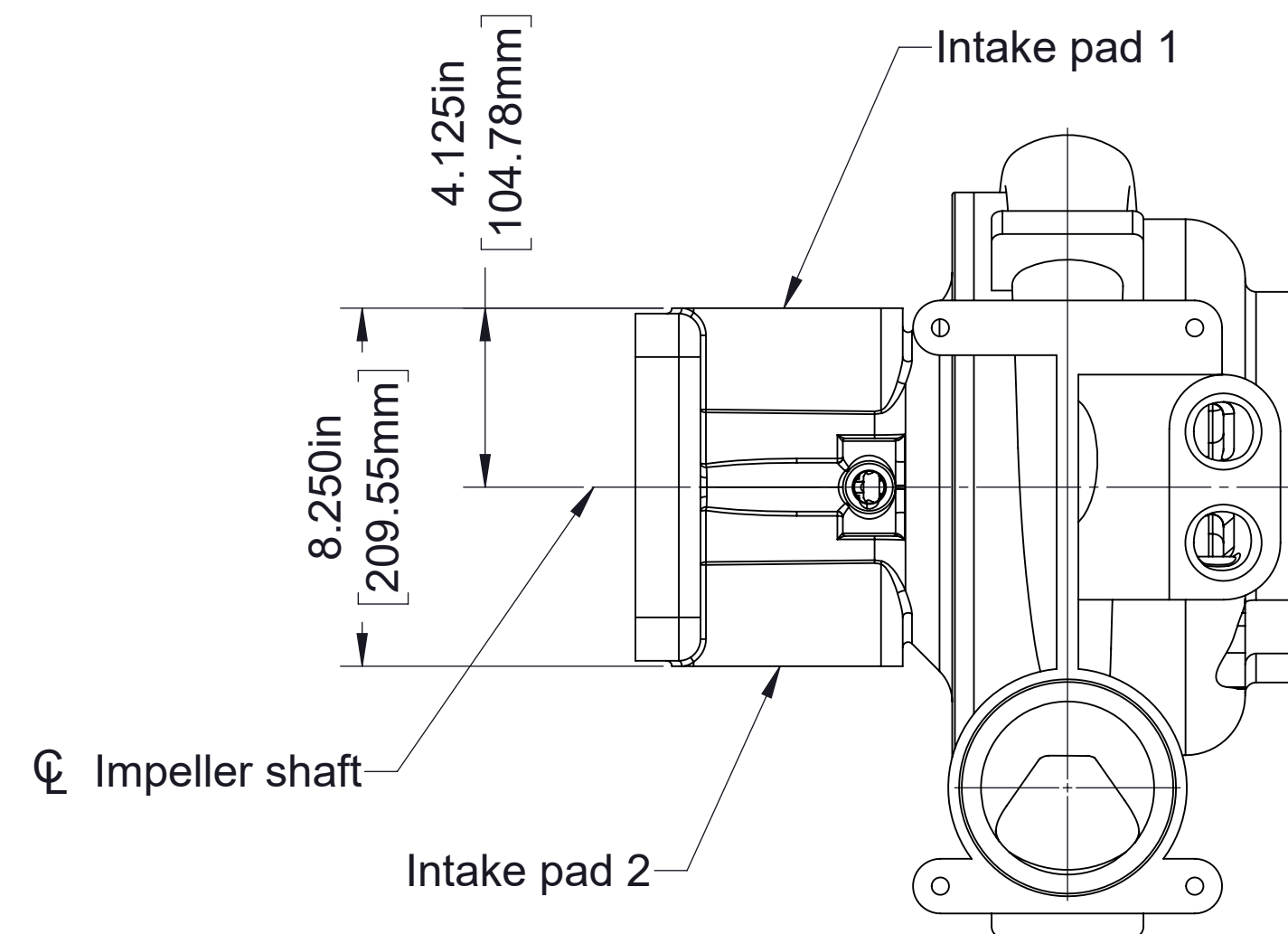
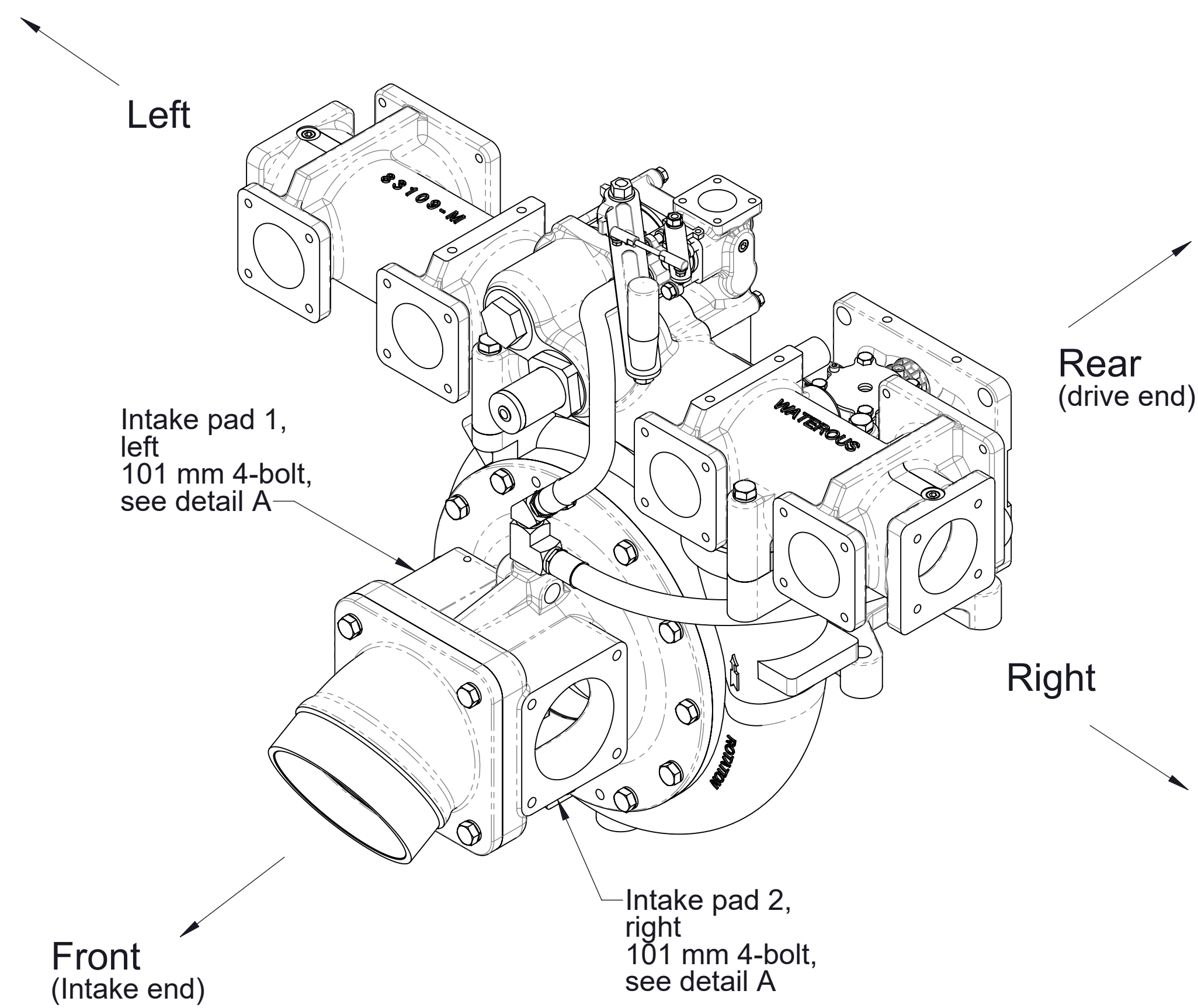
6 in BSP Thread



4-Bolt Flange



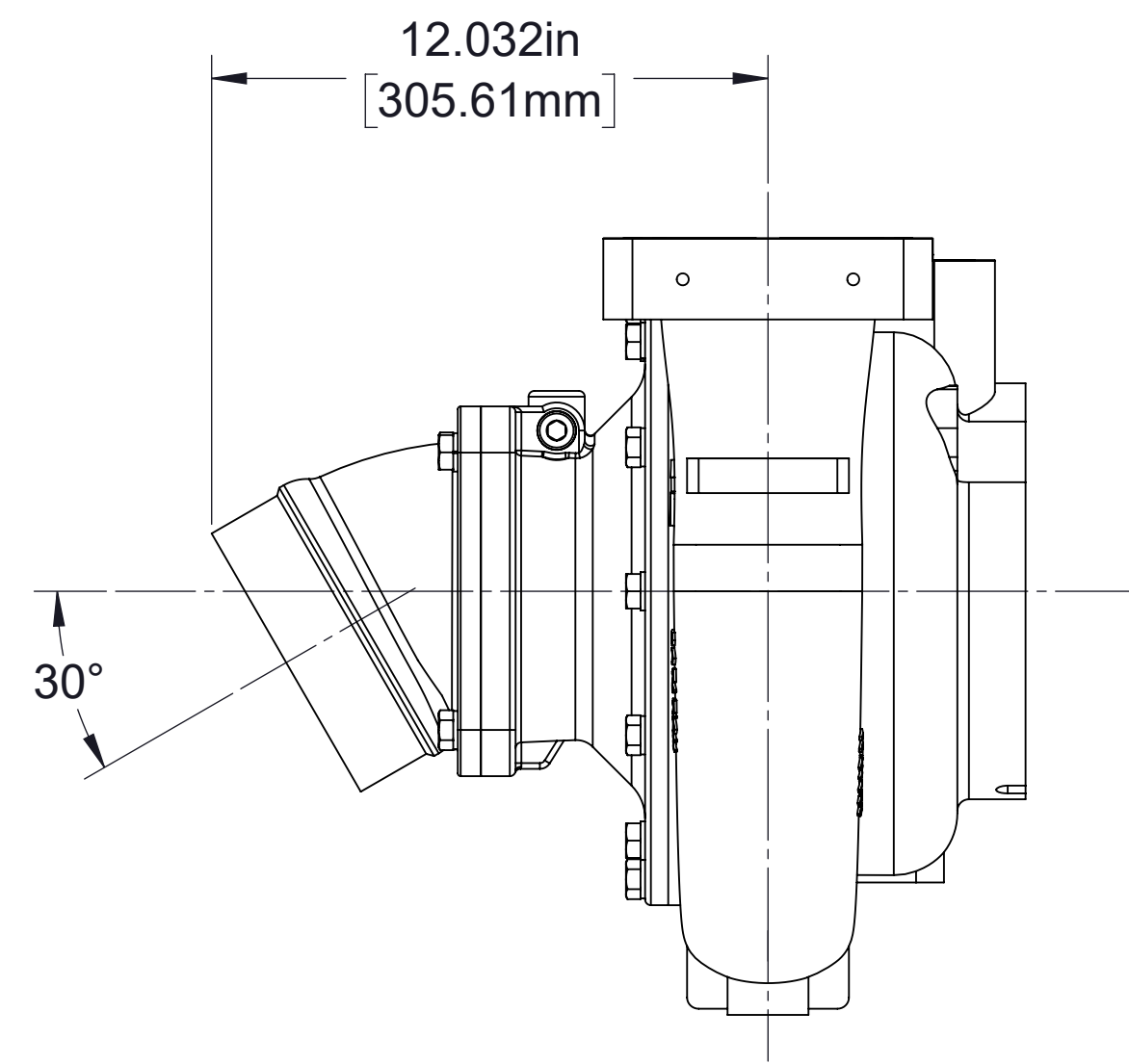
Detail A
101 mm 4-Bolt
See page 11 for auxiliary fittings
which may be mounted on this pad



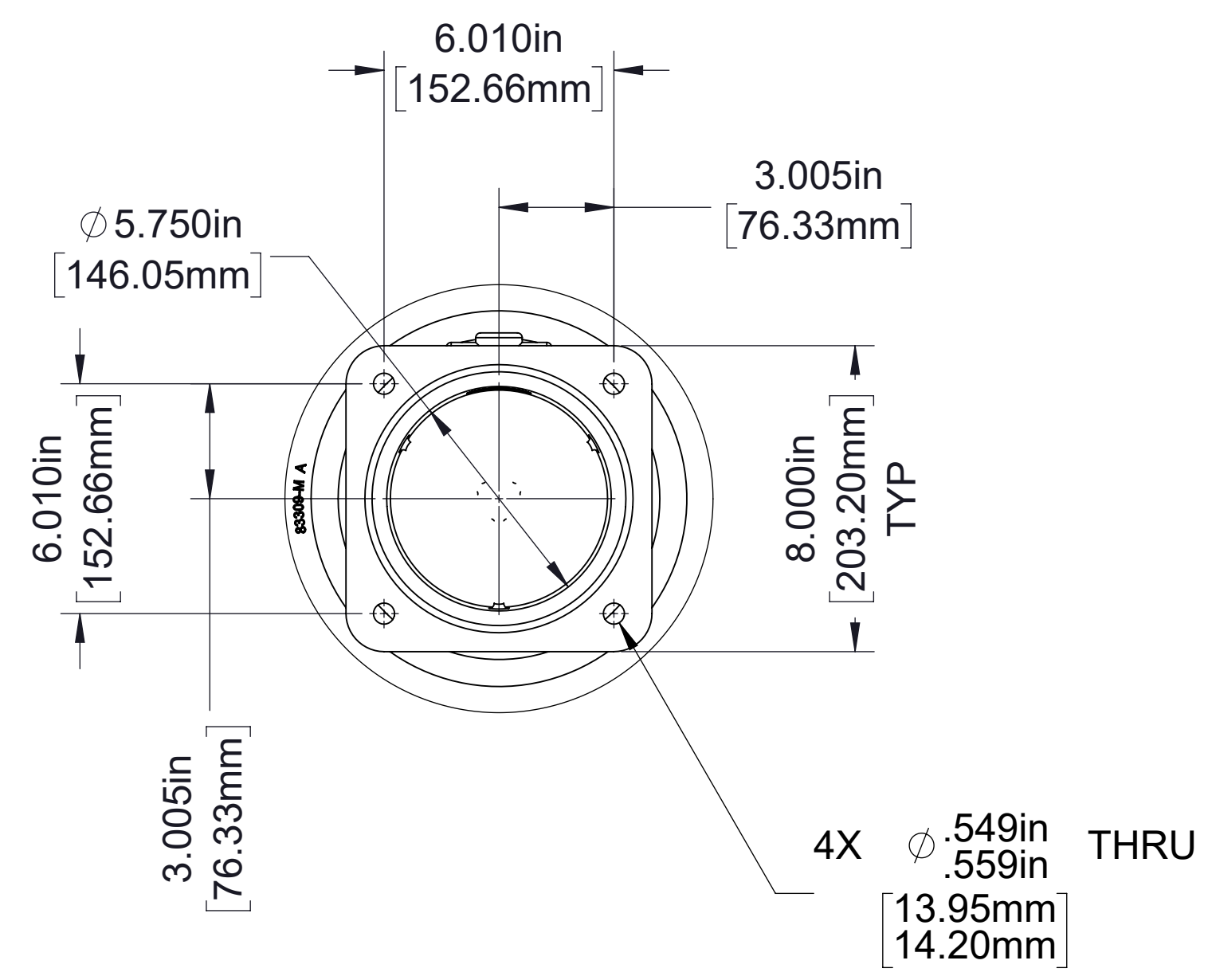
(Top view of Pump and Intake)
Dimensions typical for all HL series
intake connections
See detail A for dimensions of pad 1 and 2

Available Intake Connections

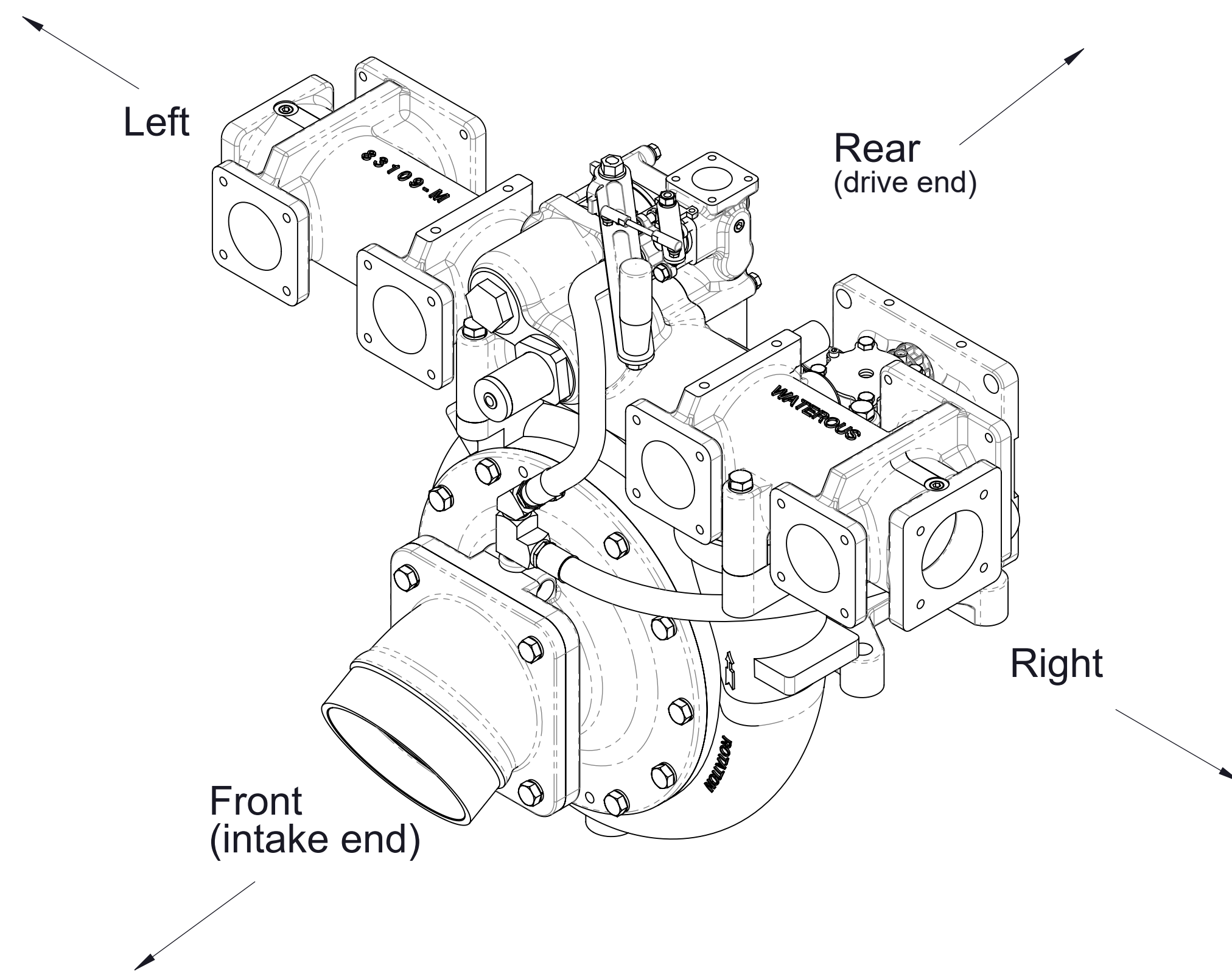
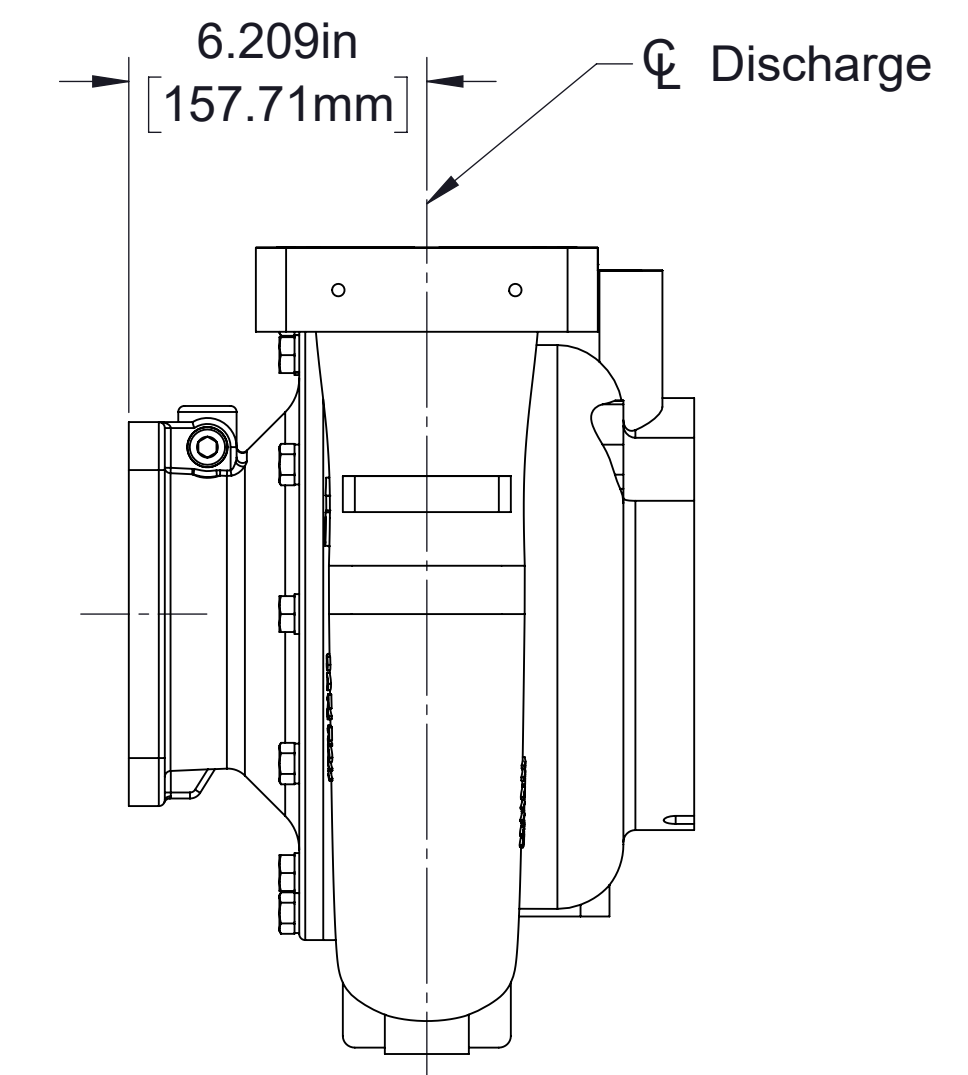
Standard length



6 in BSP Thread

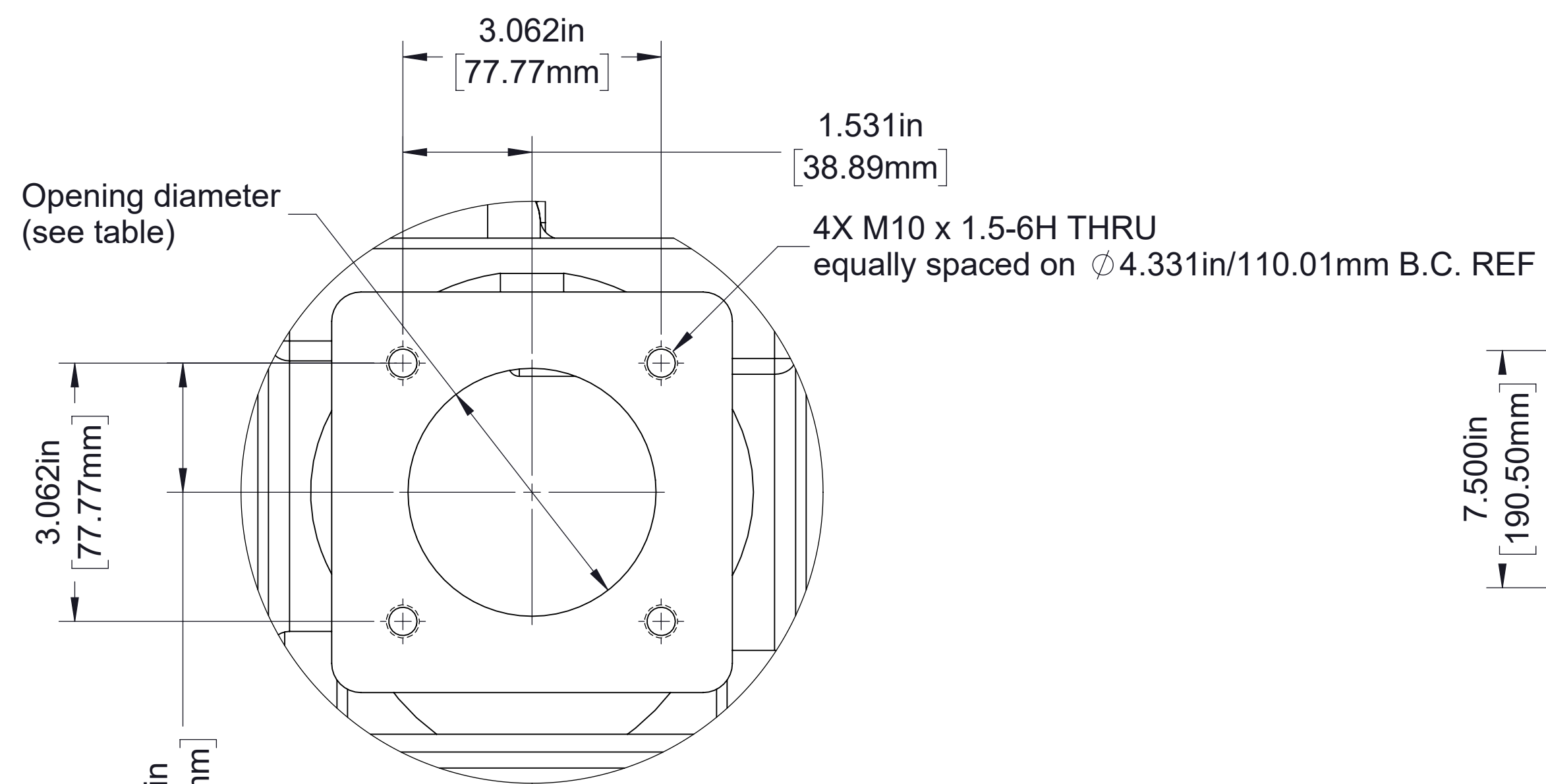


4-Bolt Flange



Available Intake Connections

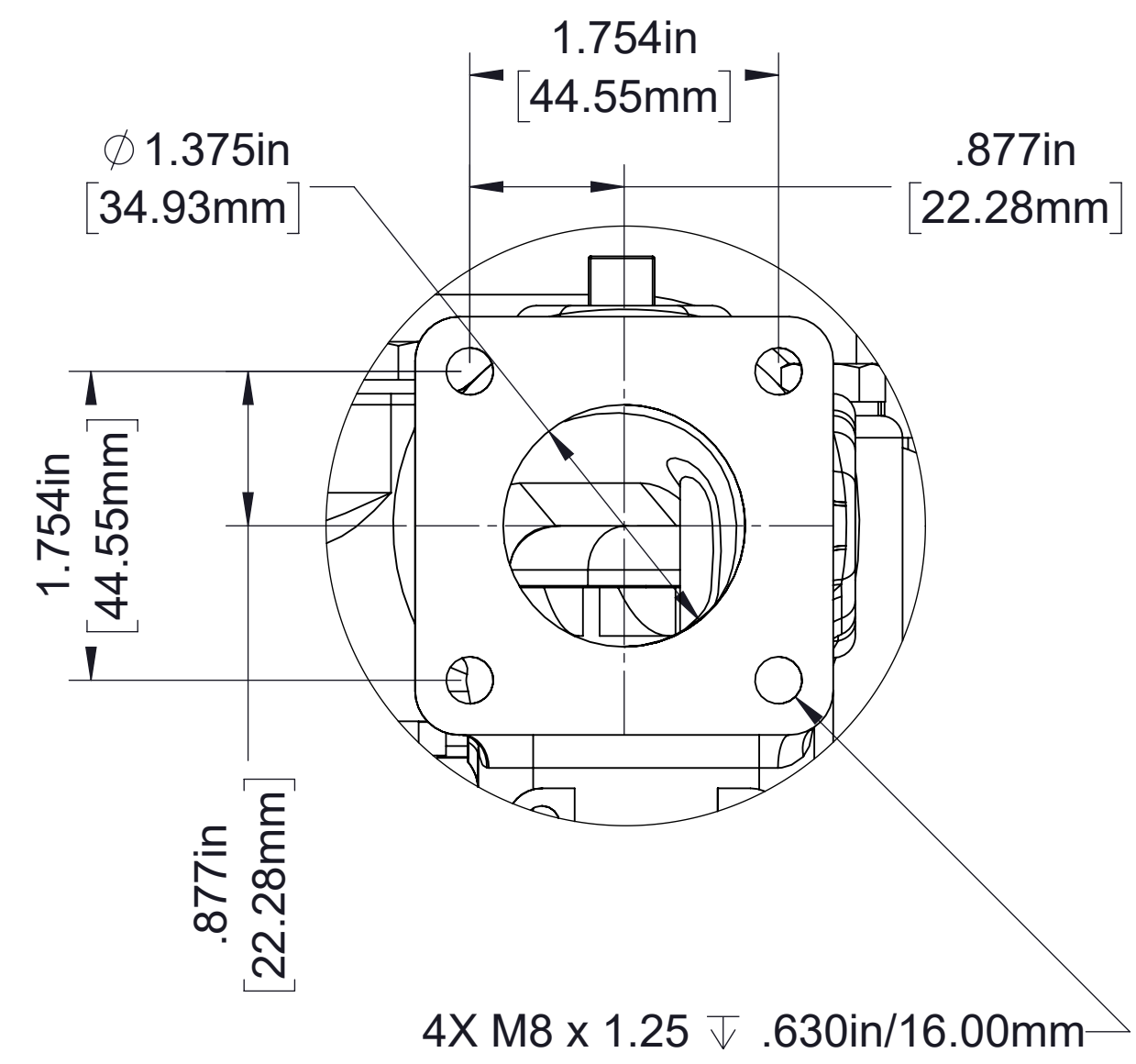
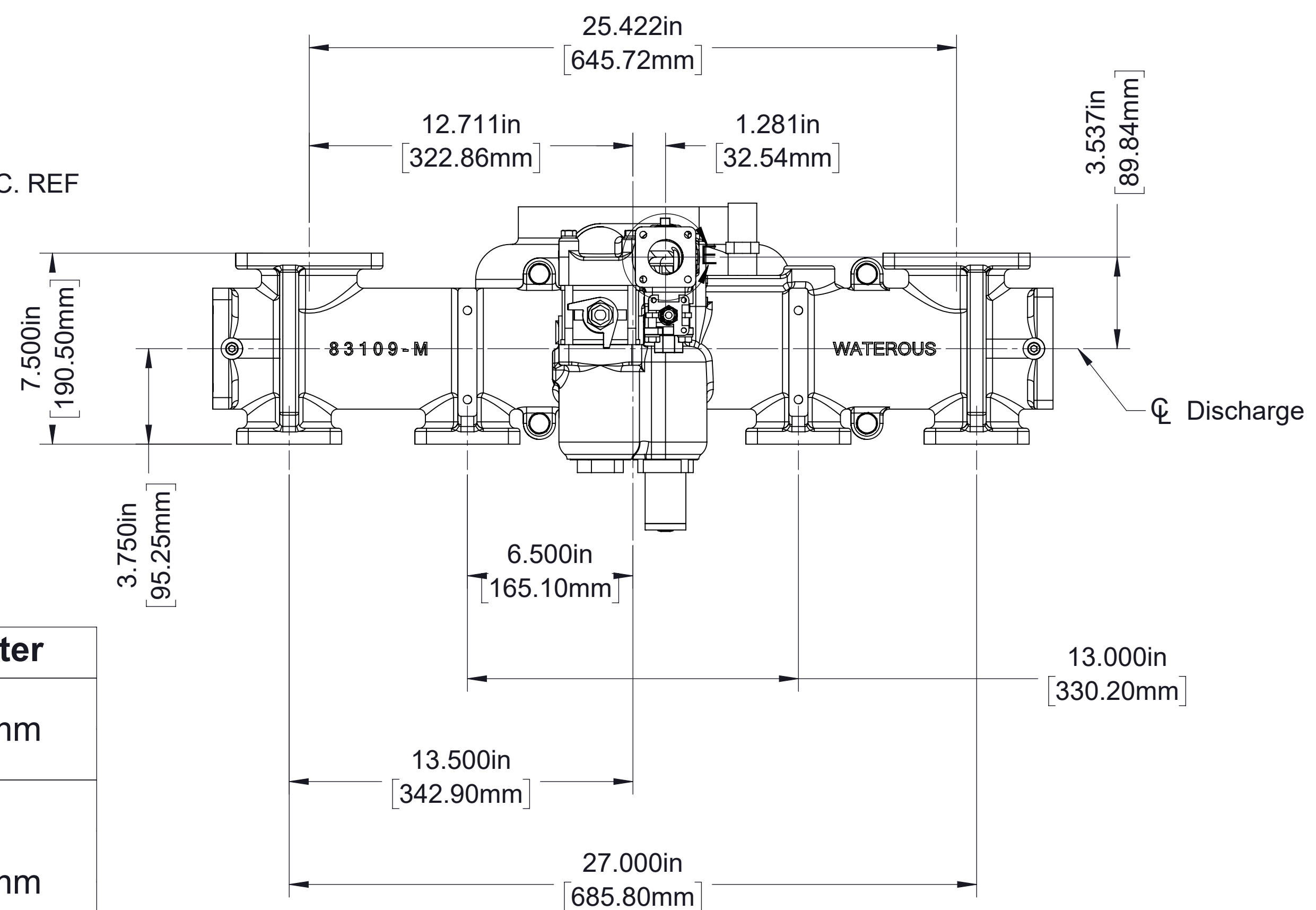
Short length



Detail C
65 mm 4-Bolt

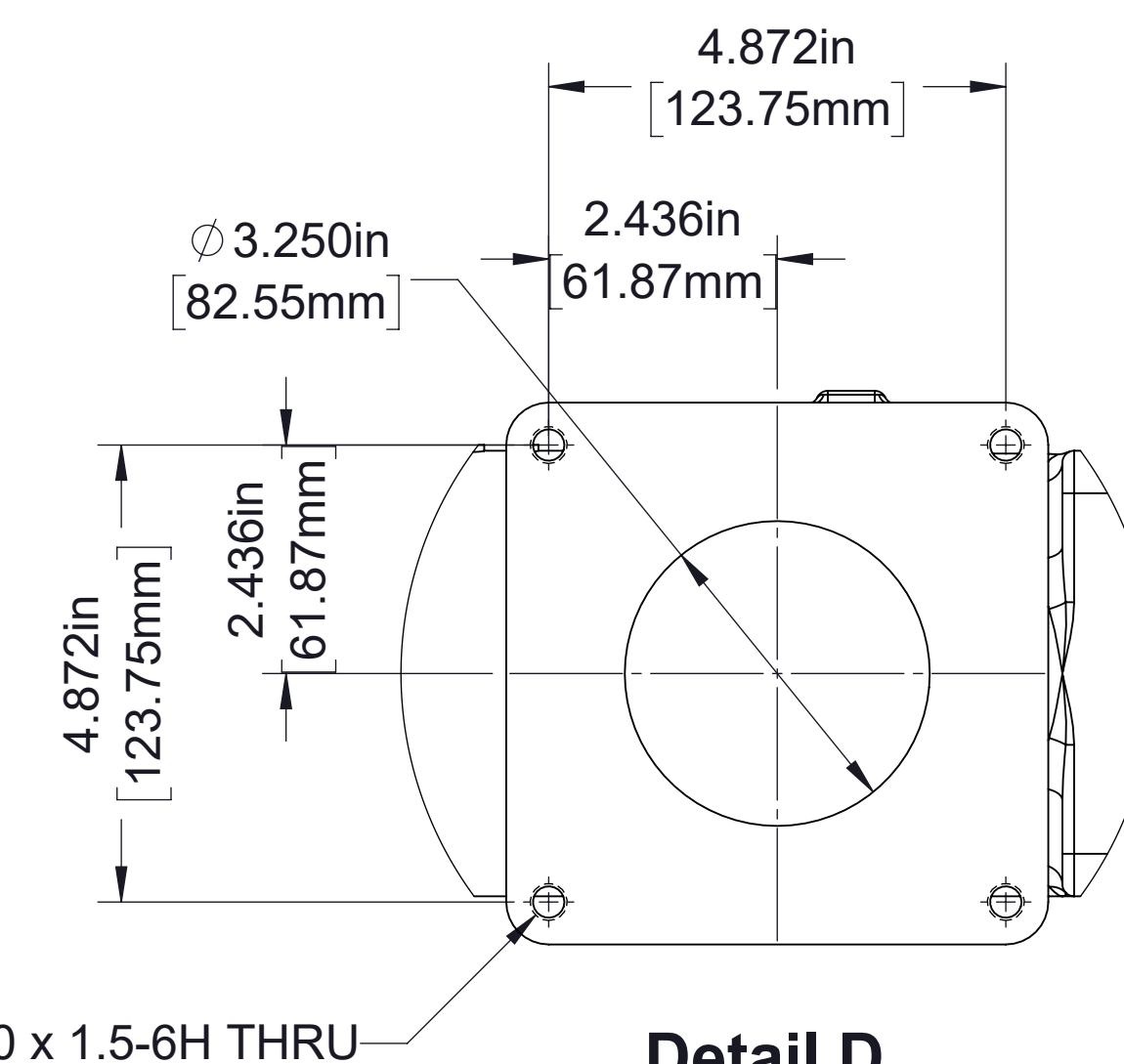
See page 10 for auxiliary fittings which may be mounted on this pad

Pad	Opening Diameter
1	Ø2.940in/74.68mm
2	
3	Ø2.550in/64.77mm
4	
8	
9	



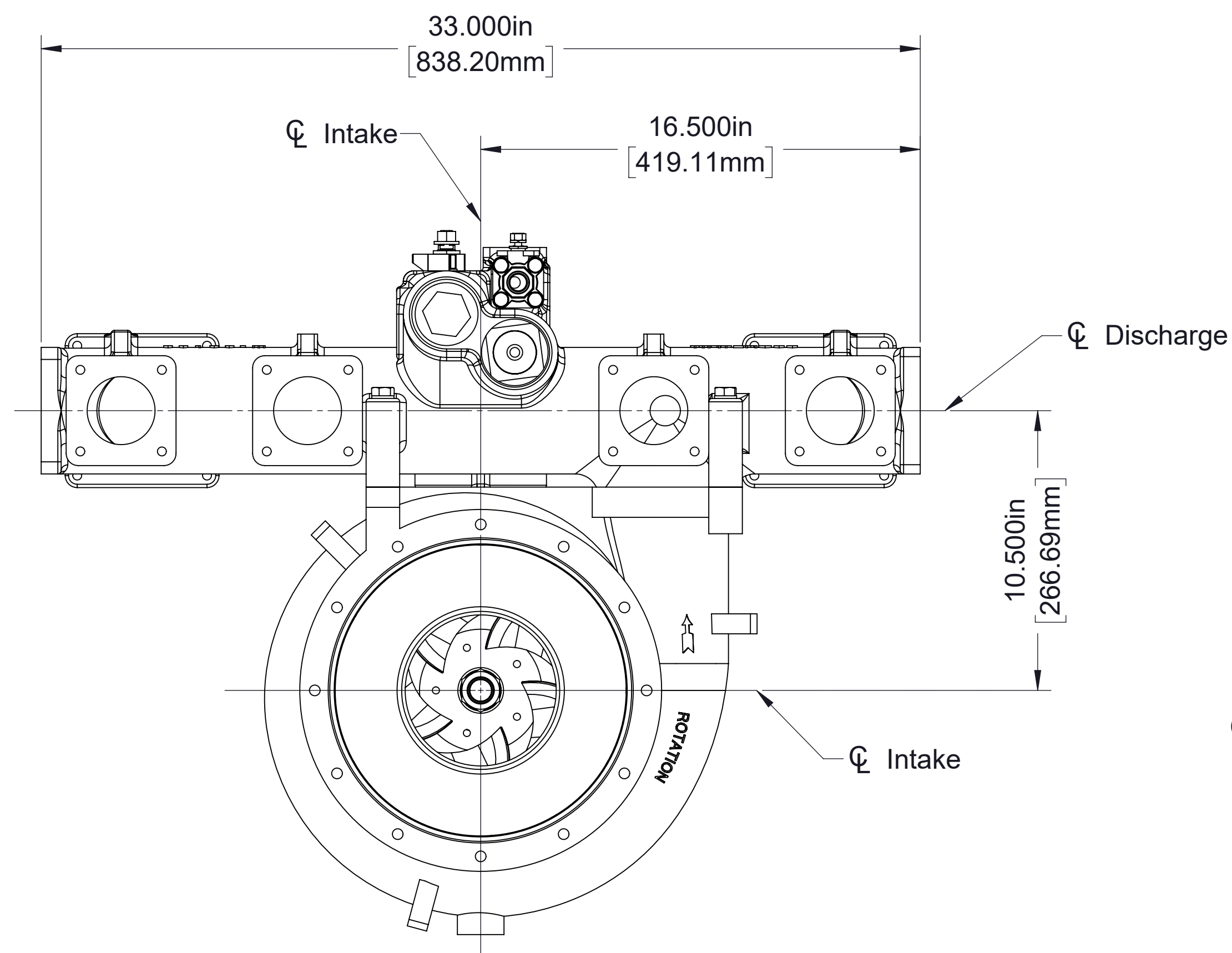
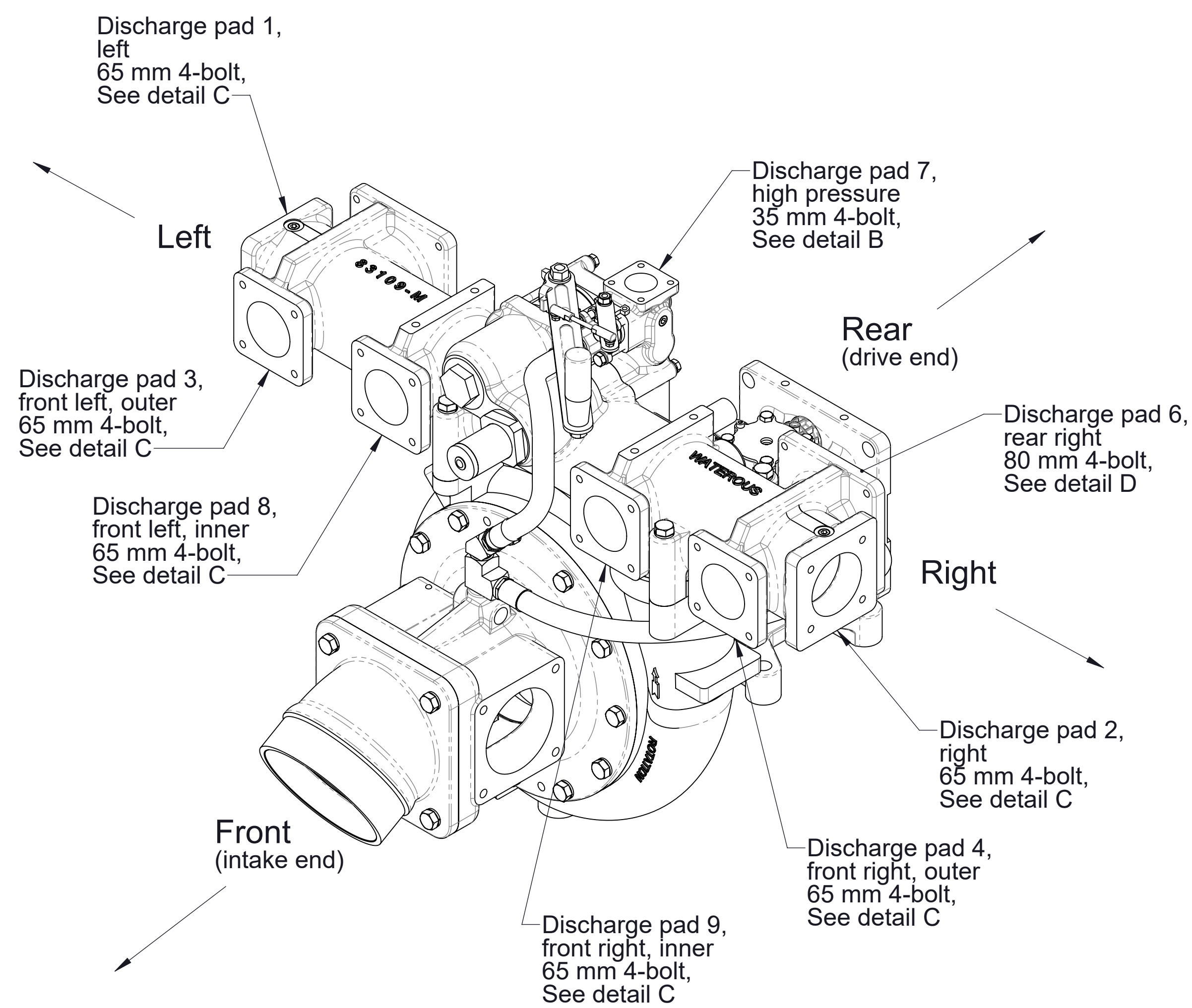
Detail B
35 mm 4-Bolt

See page 10 for auxiliary fittings which may be mounted on this pad

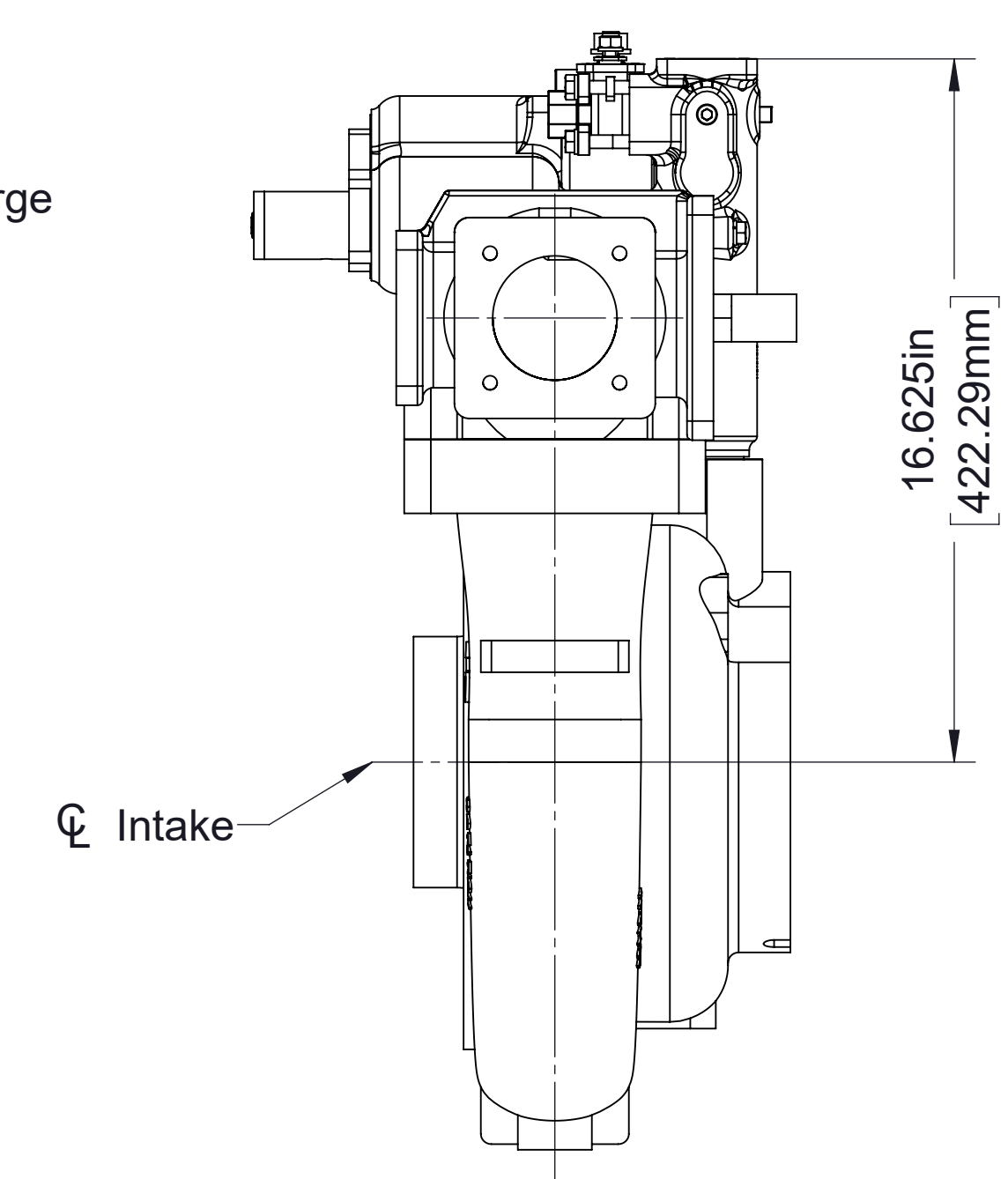


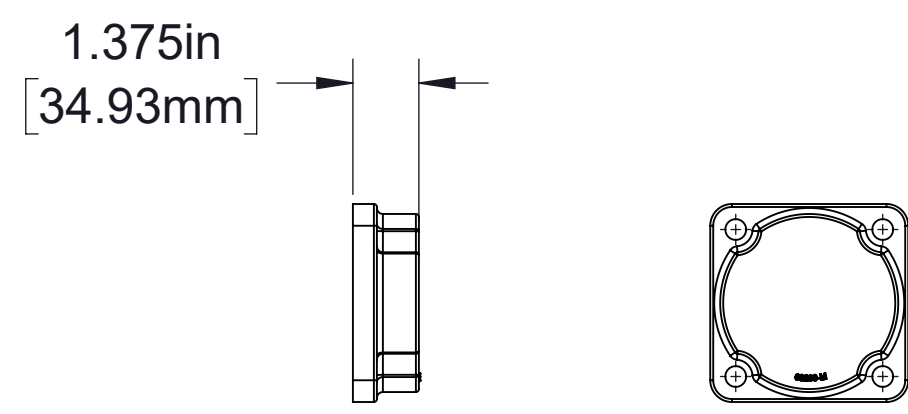
Detail D
80 mm 4-Bolt

See page 11 for auxiliary fittings which may be mounted on this pad

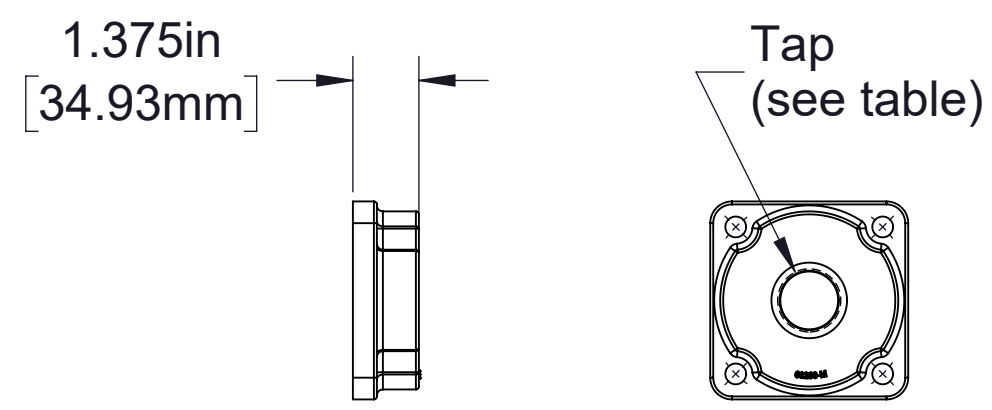


Discharge Manifold



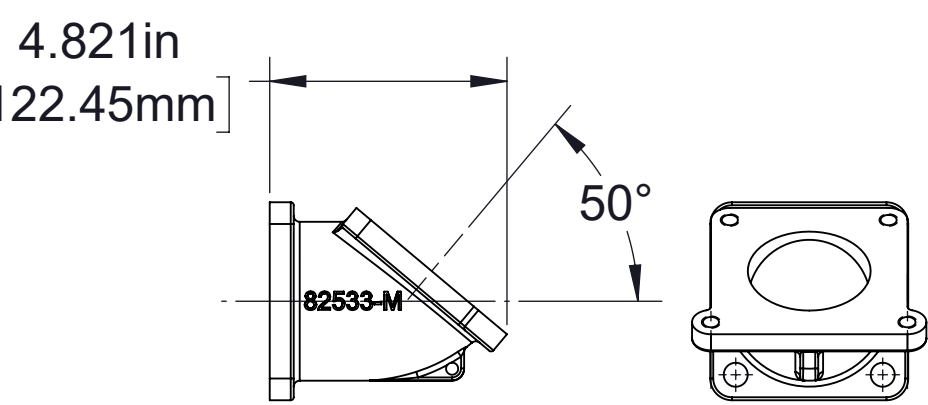


Blind Flange

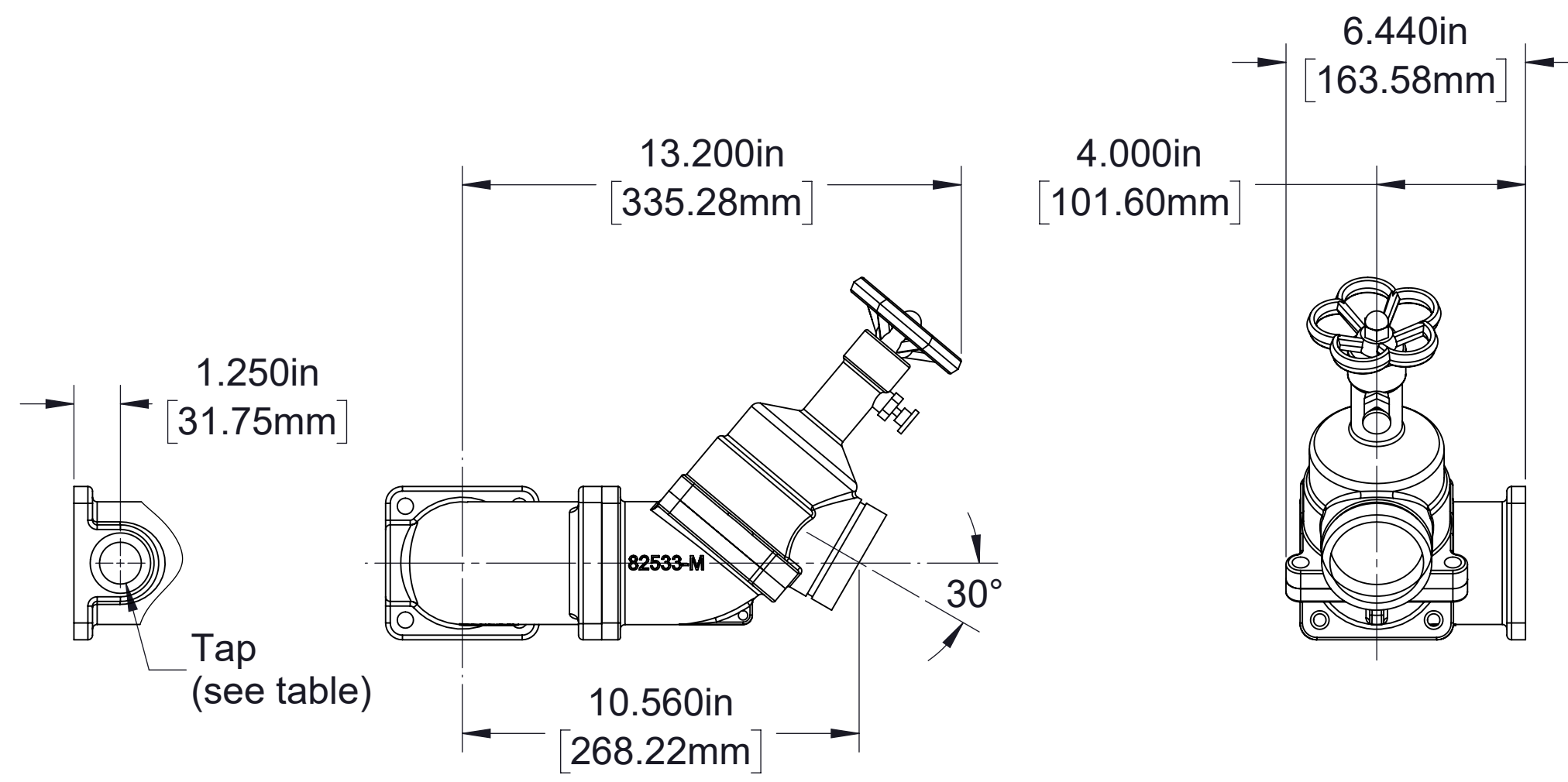


Tap Options
1 in BSP
2-1/2 in BSP
1 in NPT

Tapped Flanges

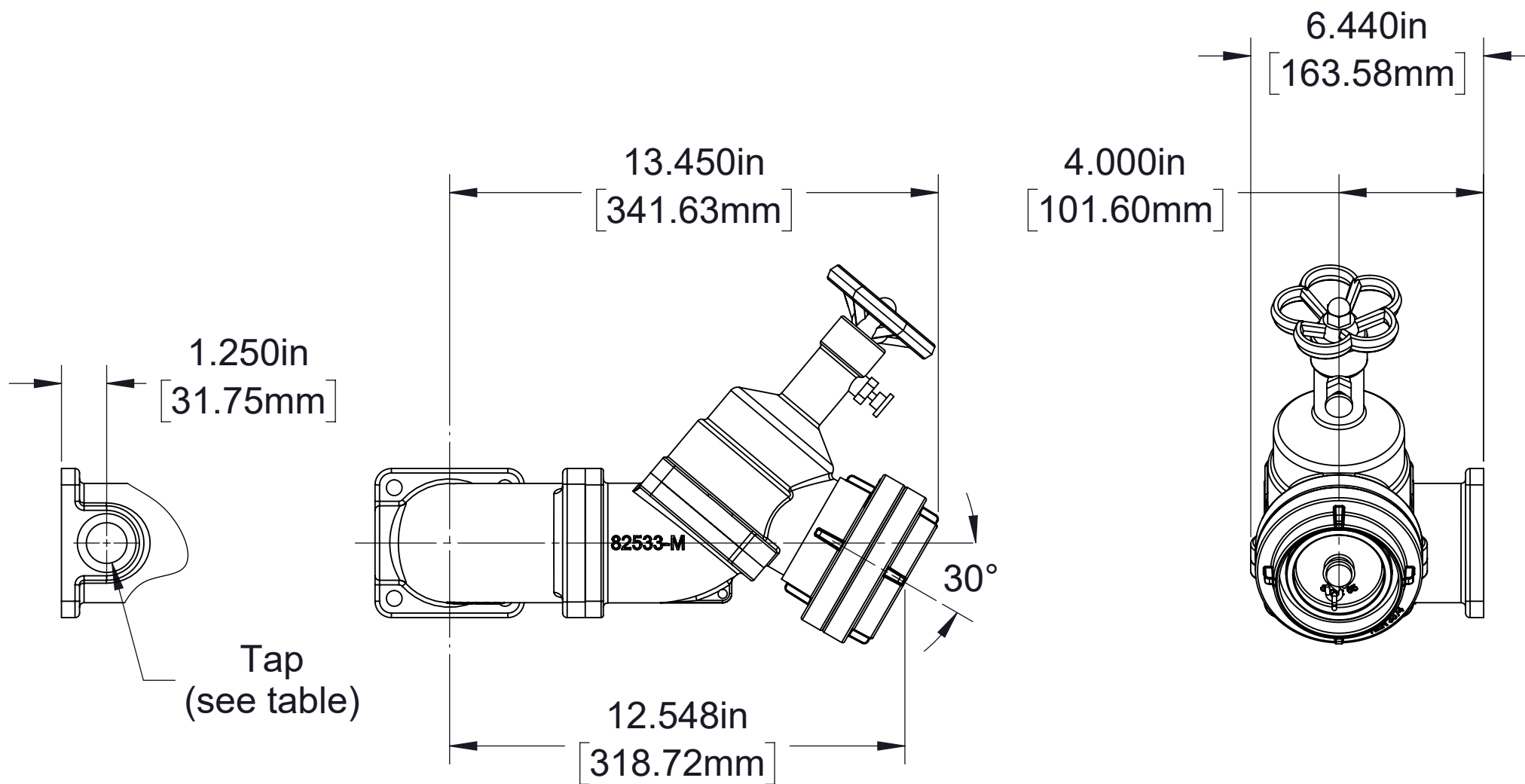


30° Elbow



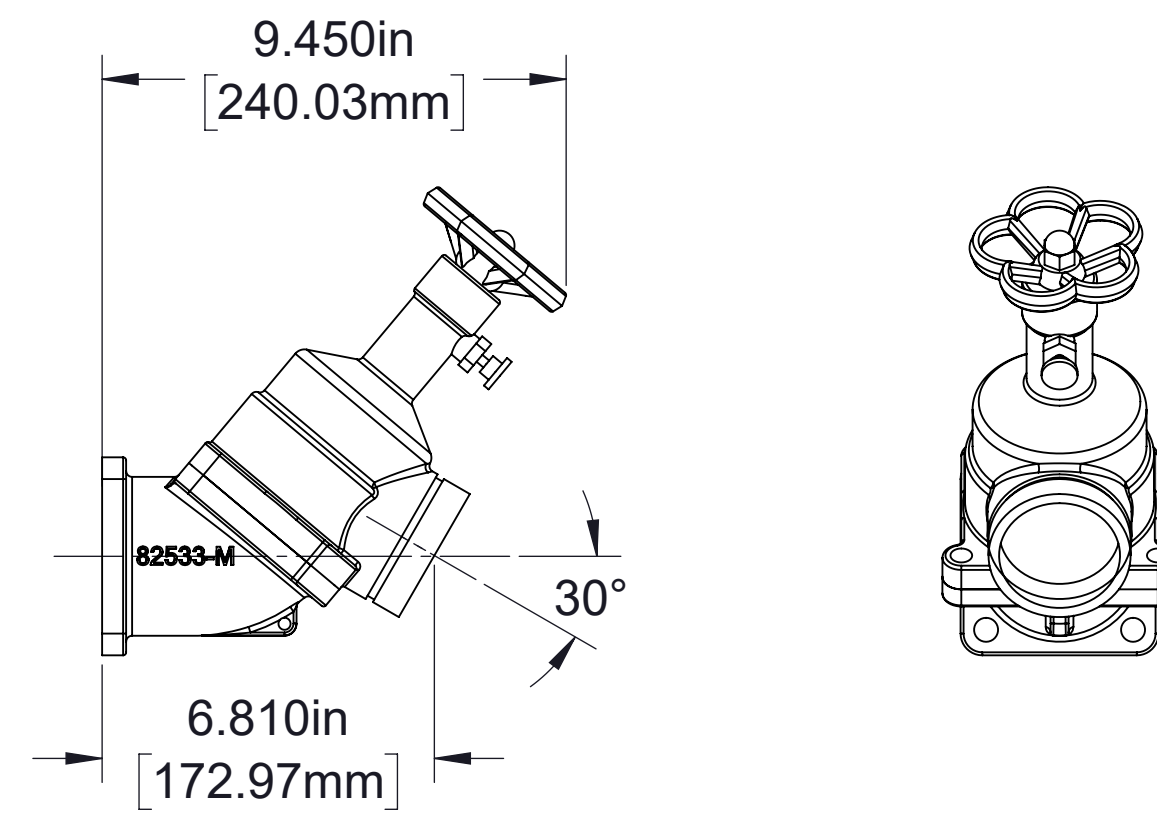
Tap Options
1 in BSP (open)
1 in BSP (plugged)
1 in NPT (open)
1 in NPT (plugged)

2-1/2 in BSP Valve with 30° and 90° Elbows

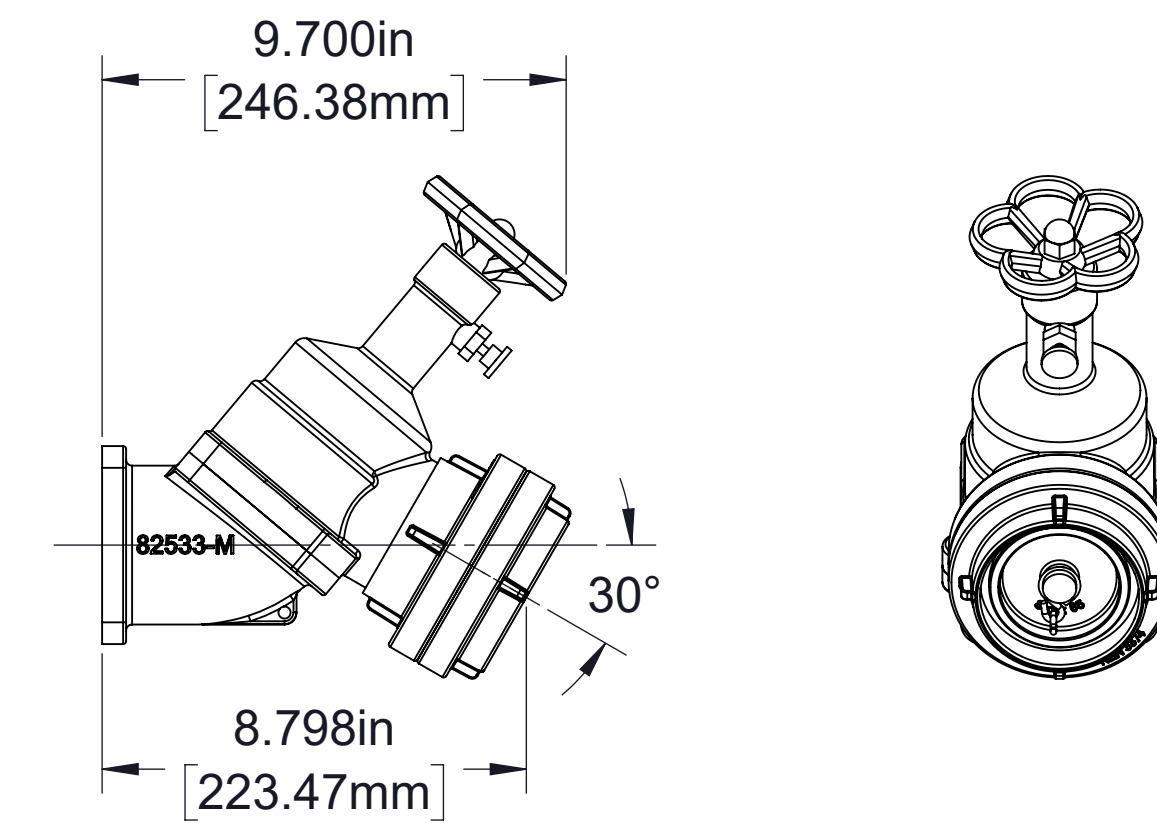


Tap Options
1 in BSP (open)
1 in BSP (plugged)
1 in NPT (open)
1 in NPT (plugged)

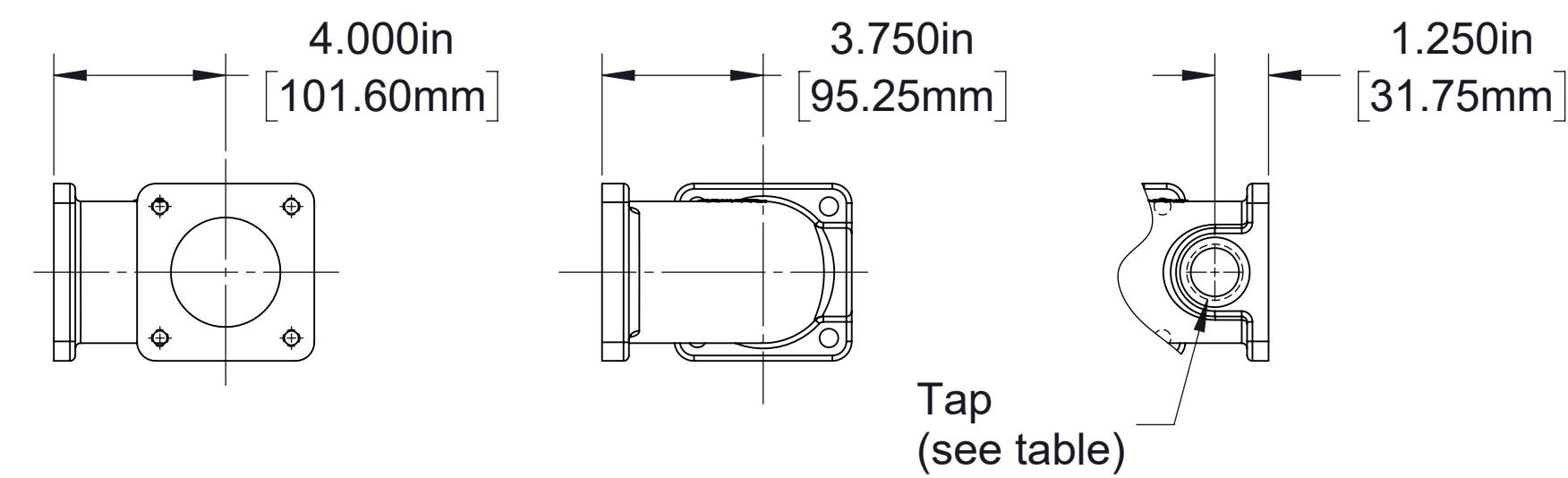
65 mm Storz Valve with 30° and 90° Elbows



2-1/2 in BSP Valve with 30° Elbow

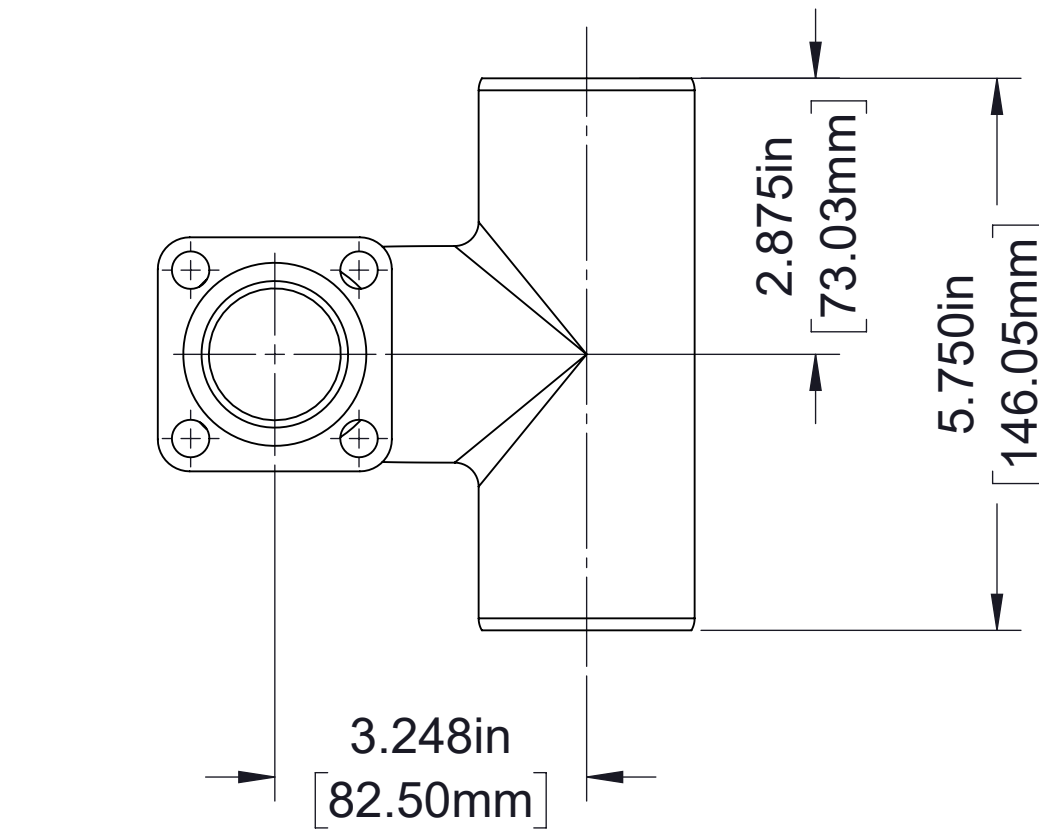
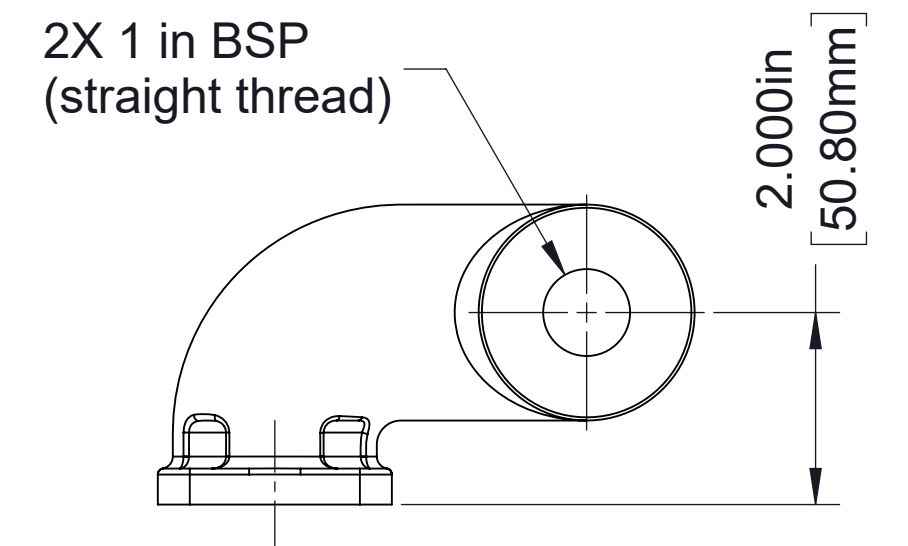


65 mm Storz Valve with 30° Elbow

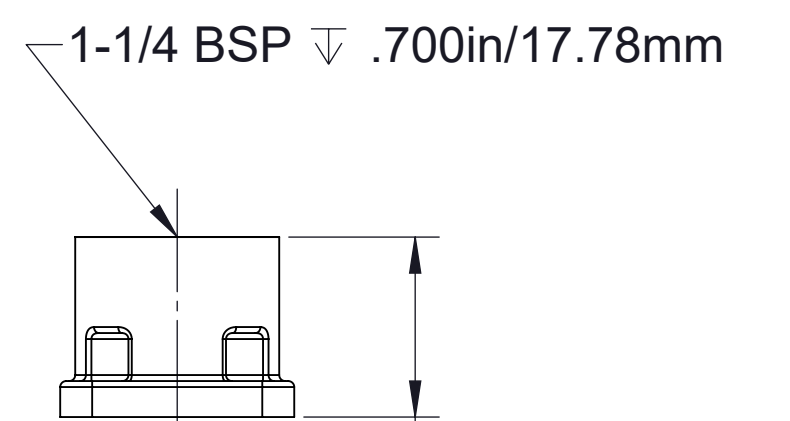


Tap Options
1 in BSP (open)
1 in BSP (plugged)
1 in NPT (open)
1 in NPT (plugged)

90° Elbows



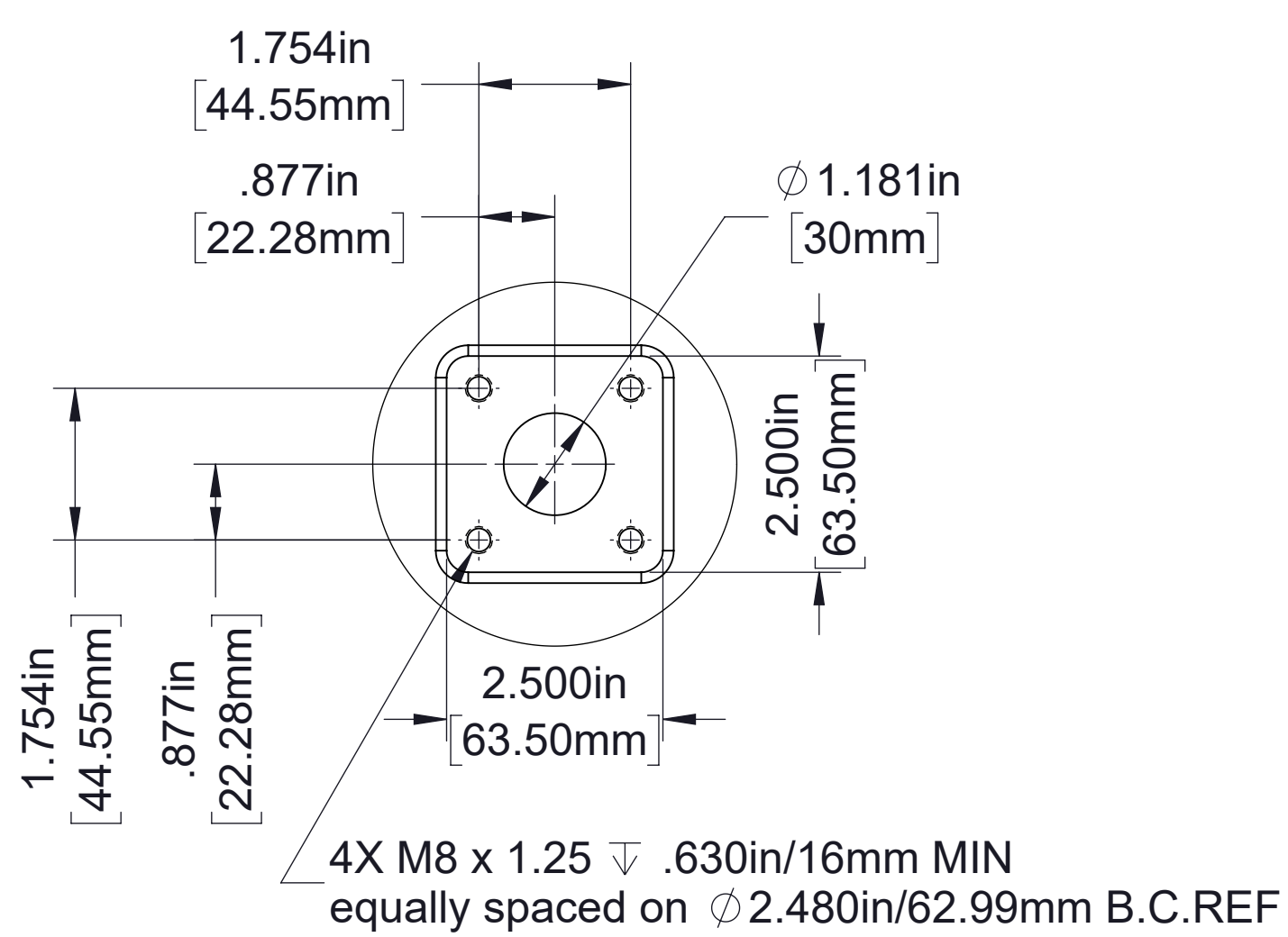
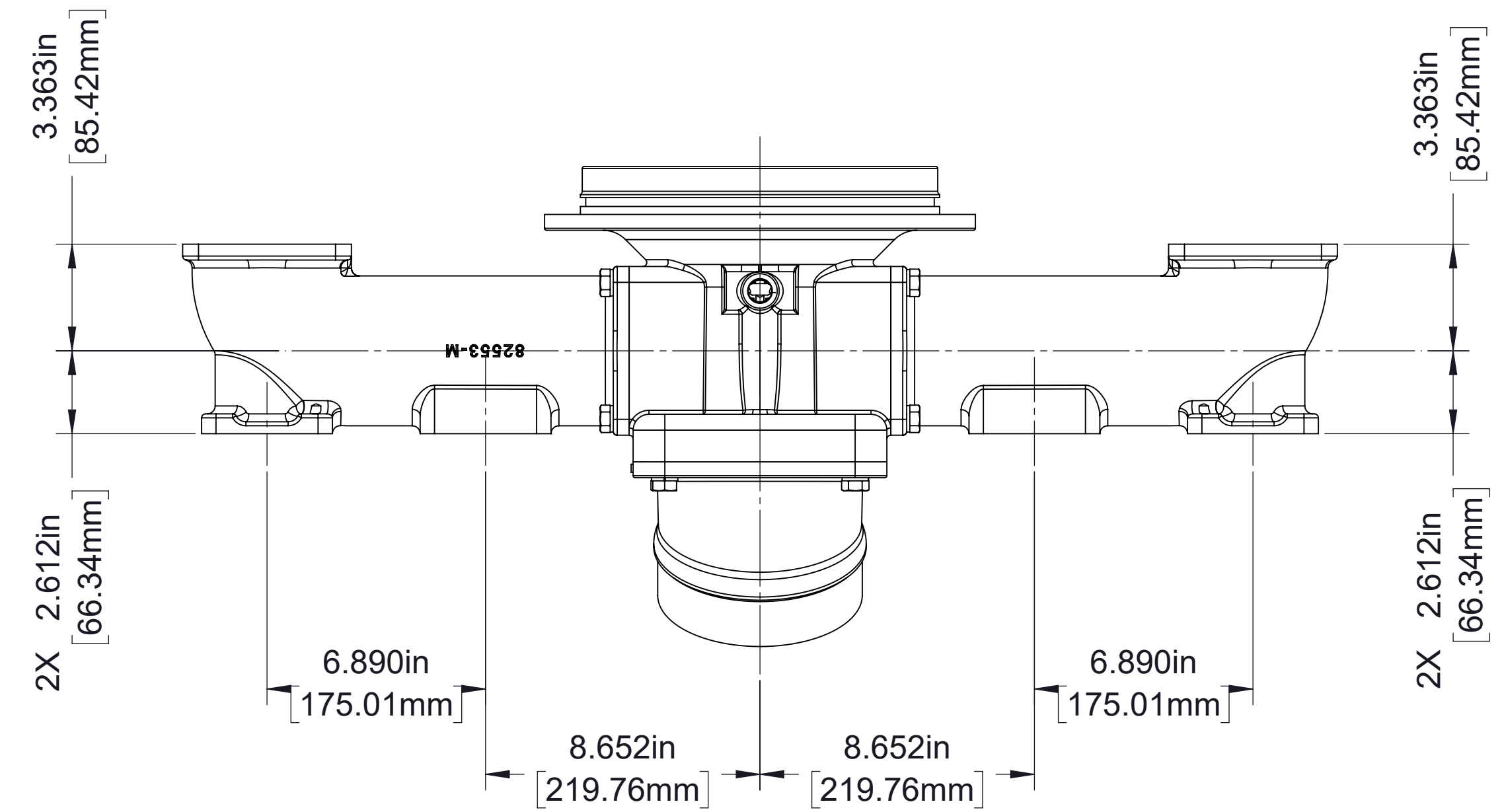
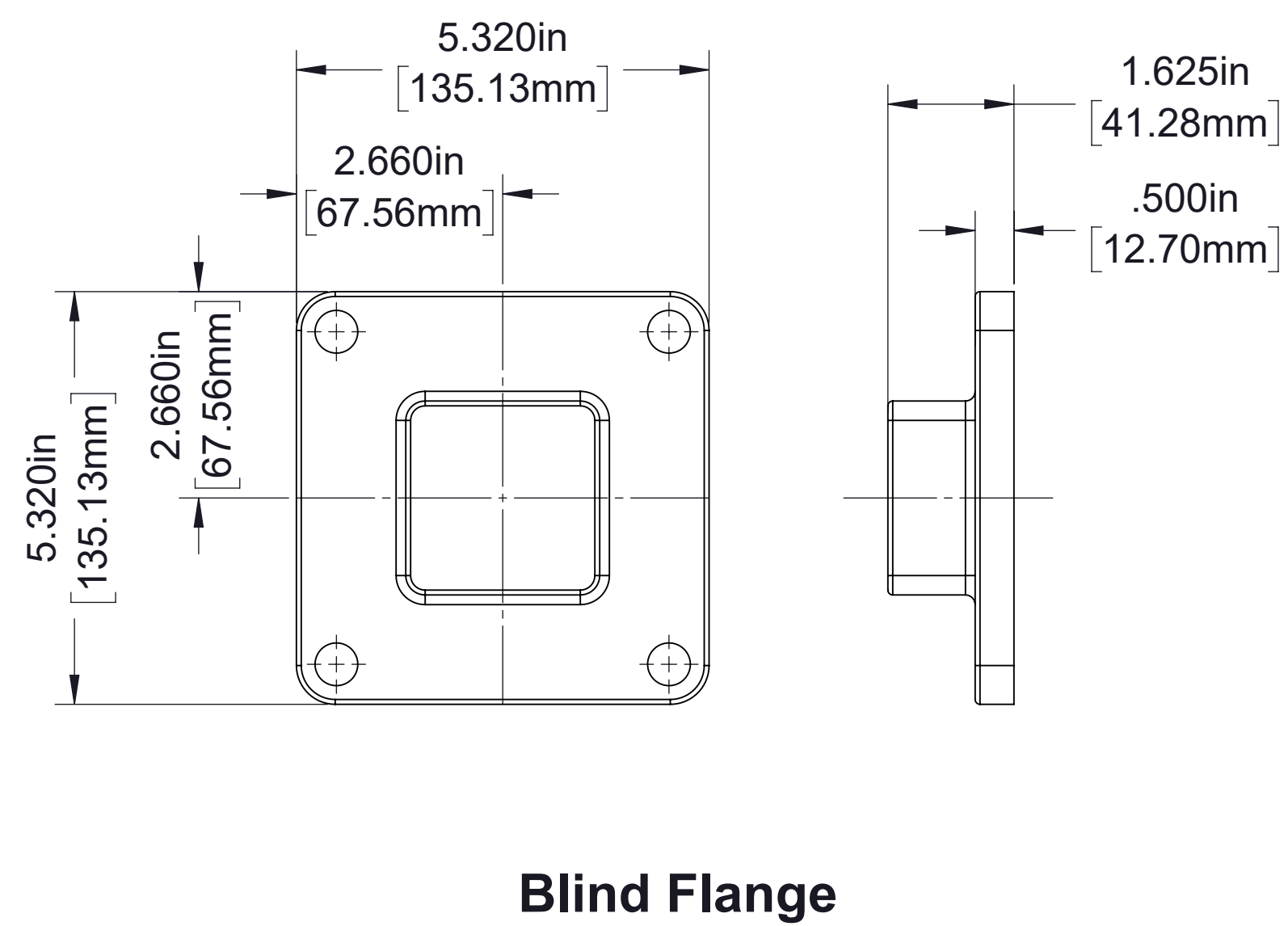
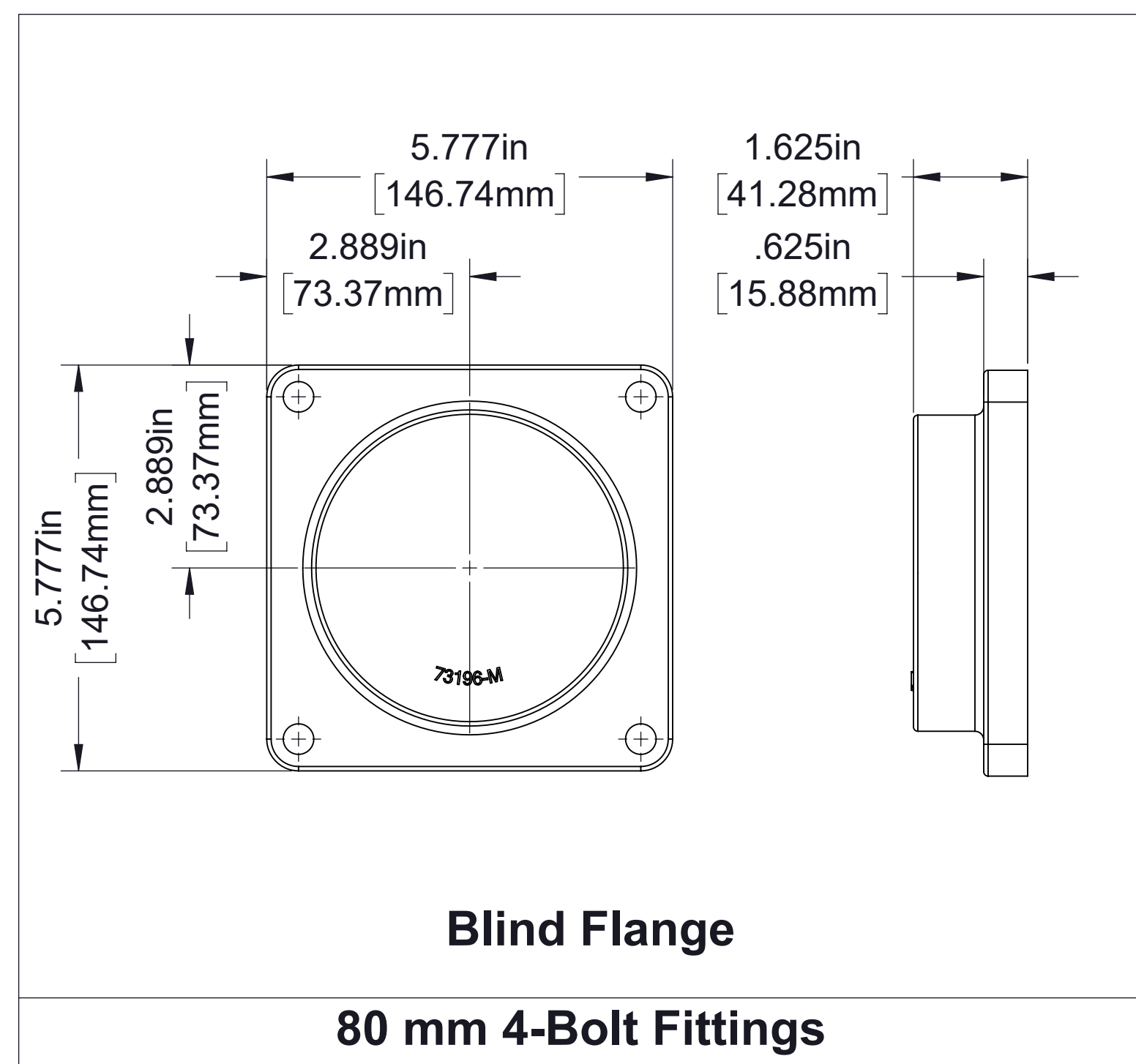
Manifold



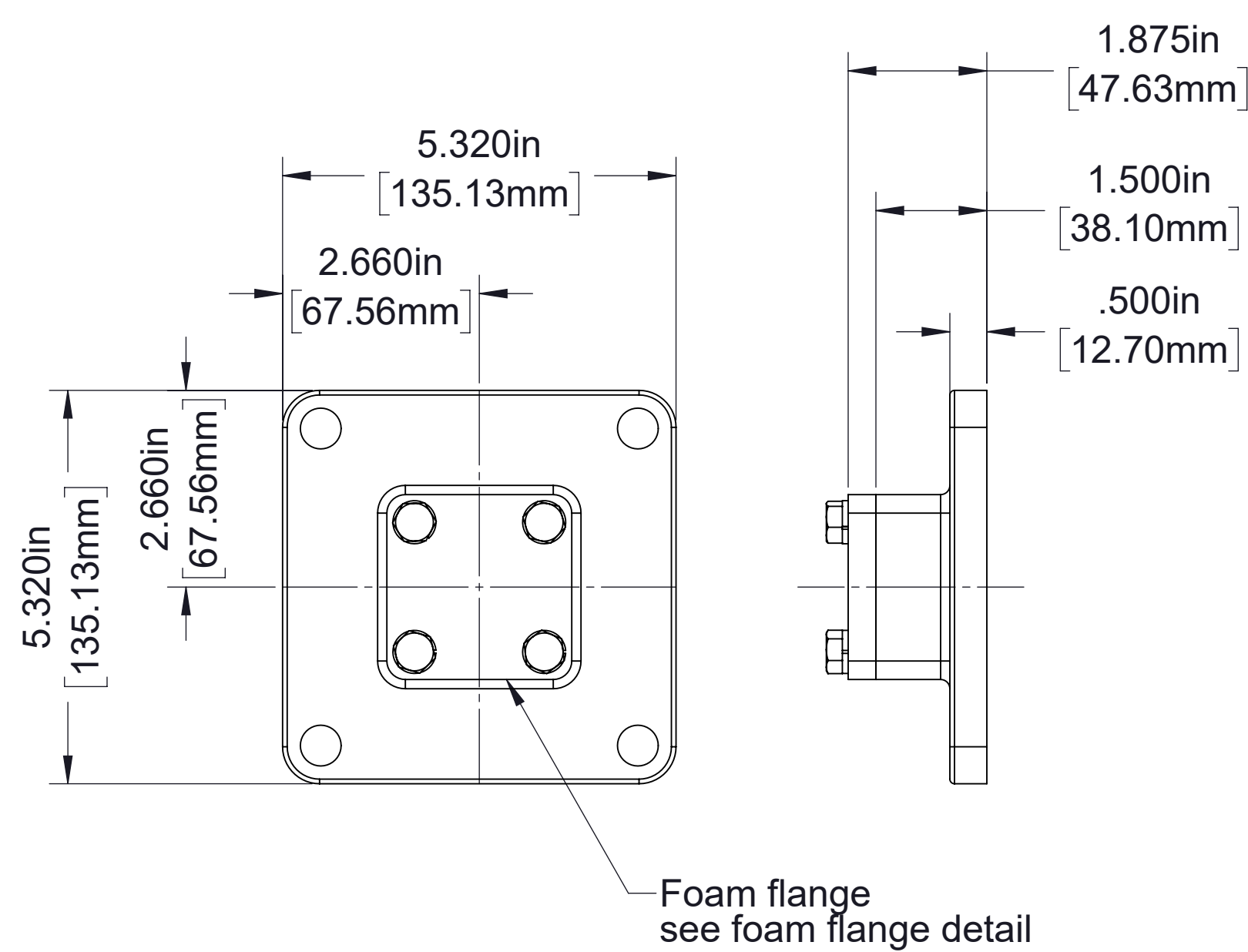
Tapped Flange

35 mm 4-Bolt

65 mm 4-Bolt

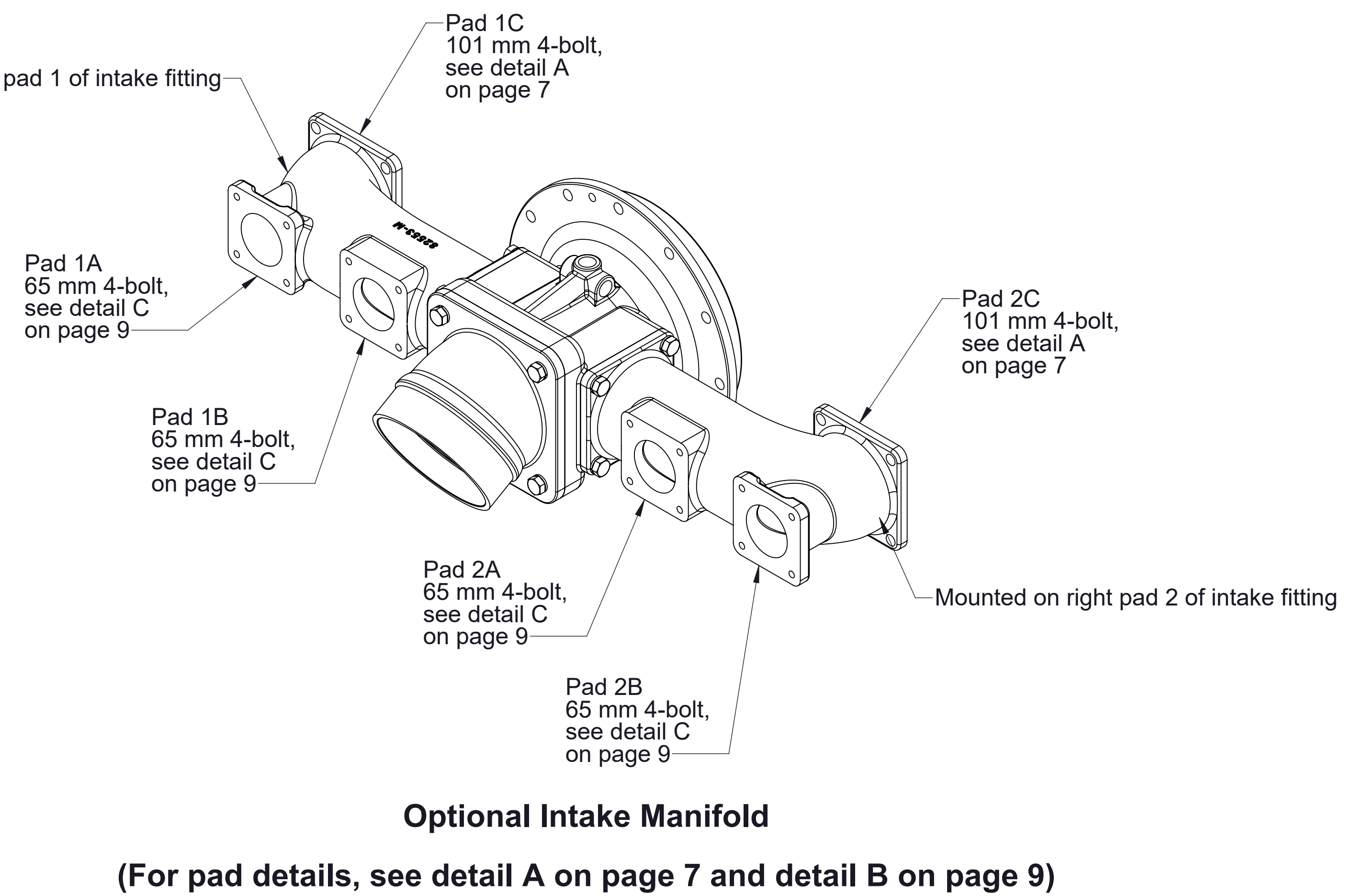


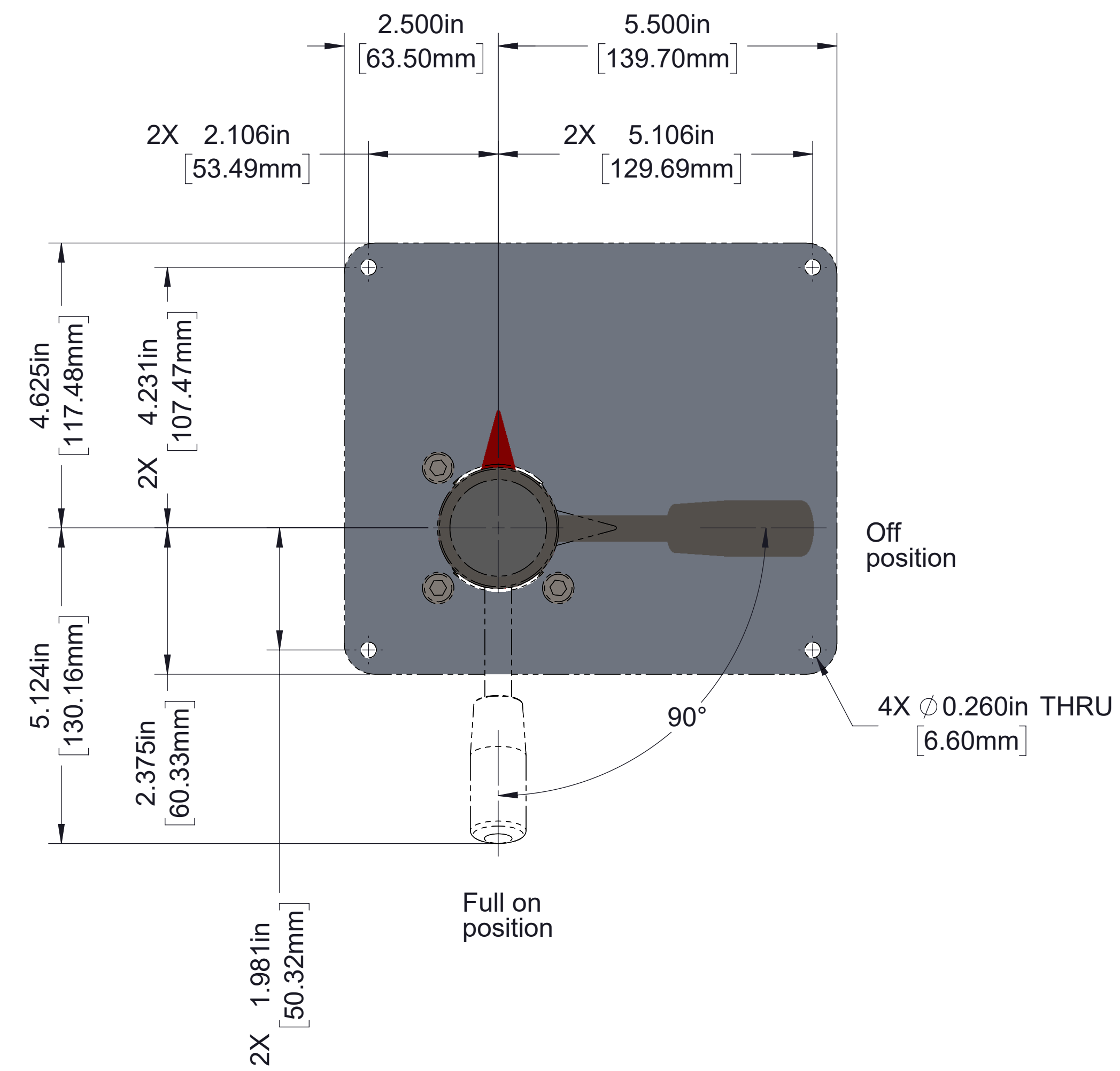
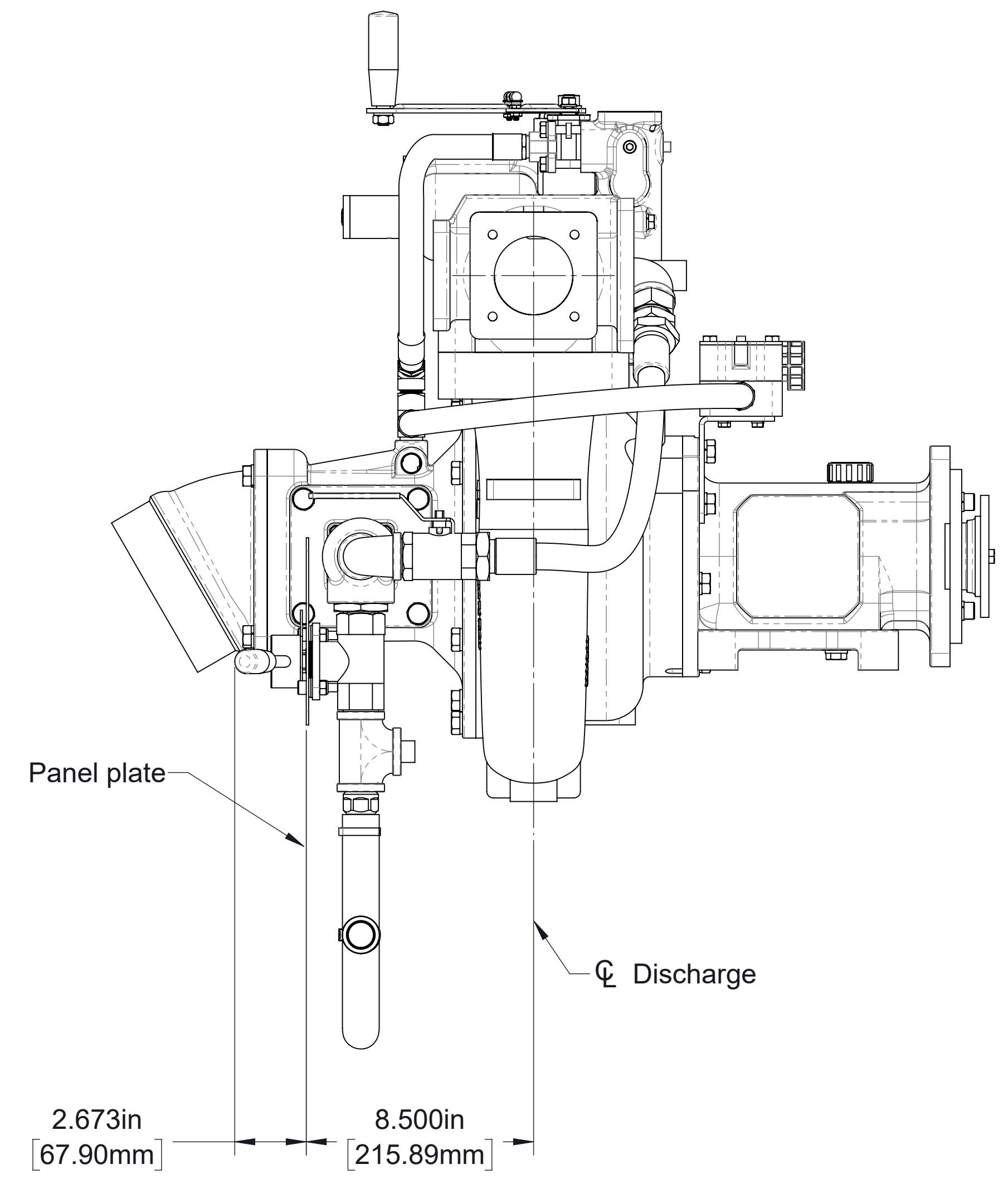
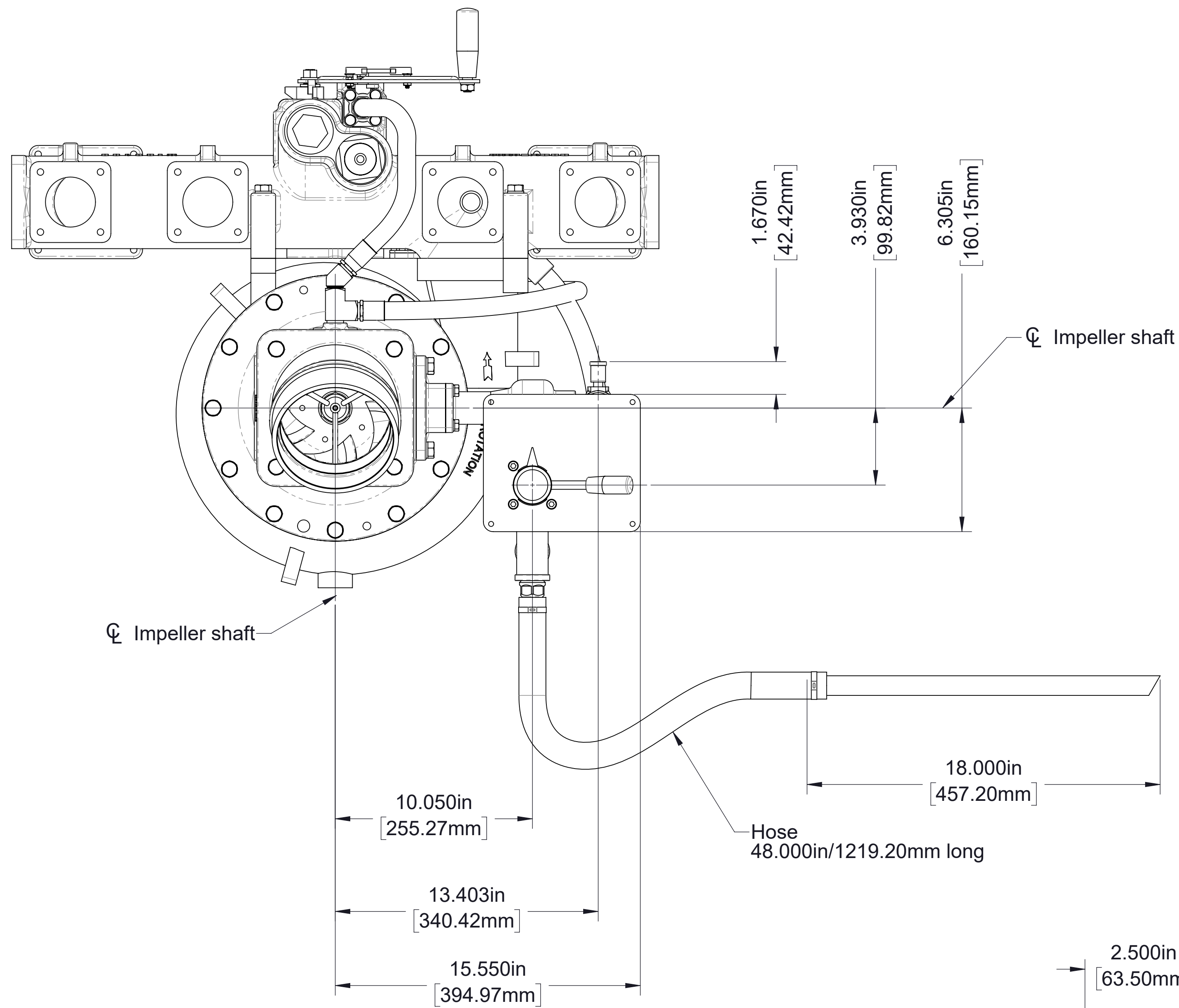
Foam Flange Detail



Foam Flange with Blind Foam Pad

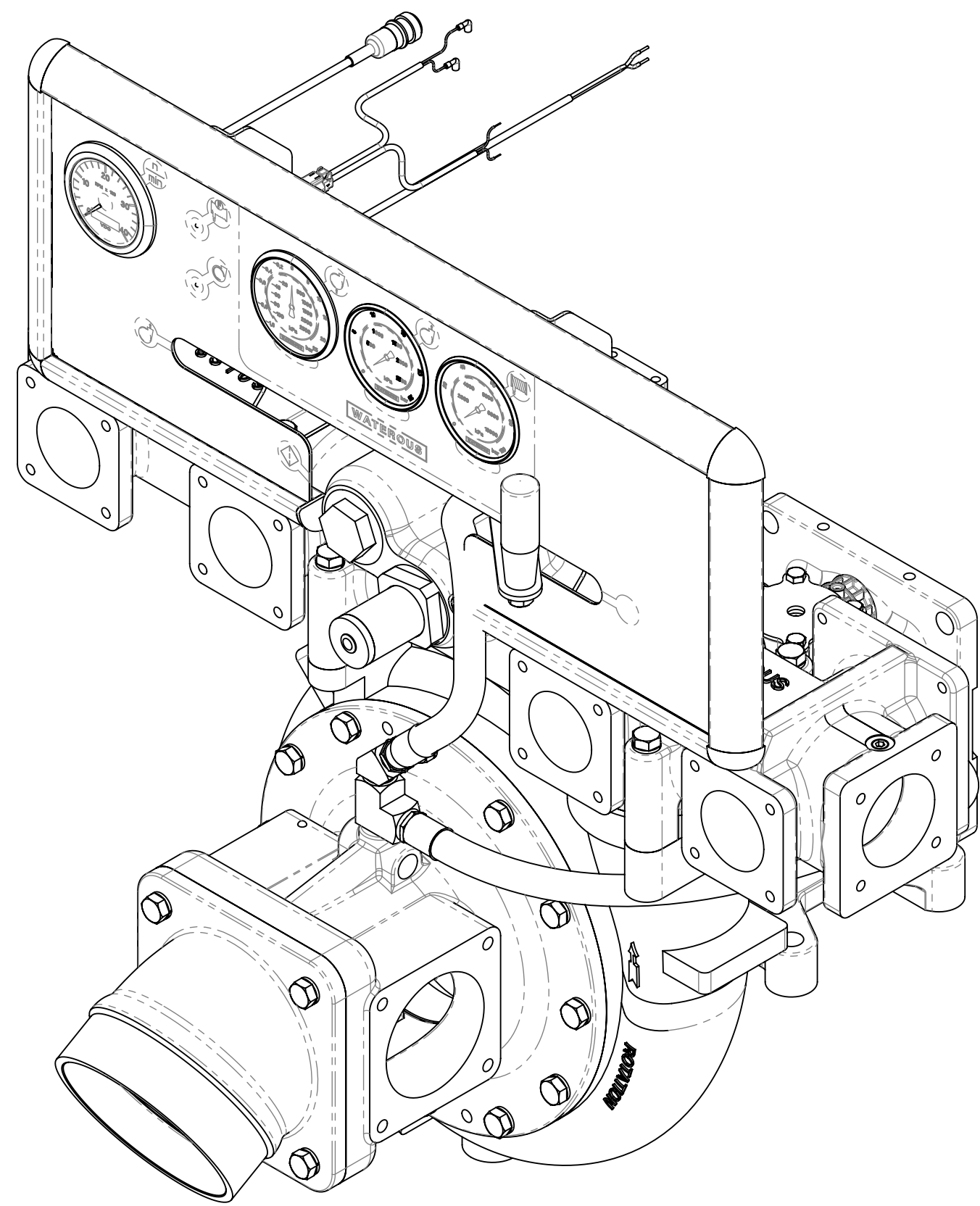
**101 mm 4-Bolt
Auxiliary Fittings**



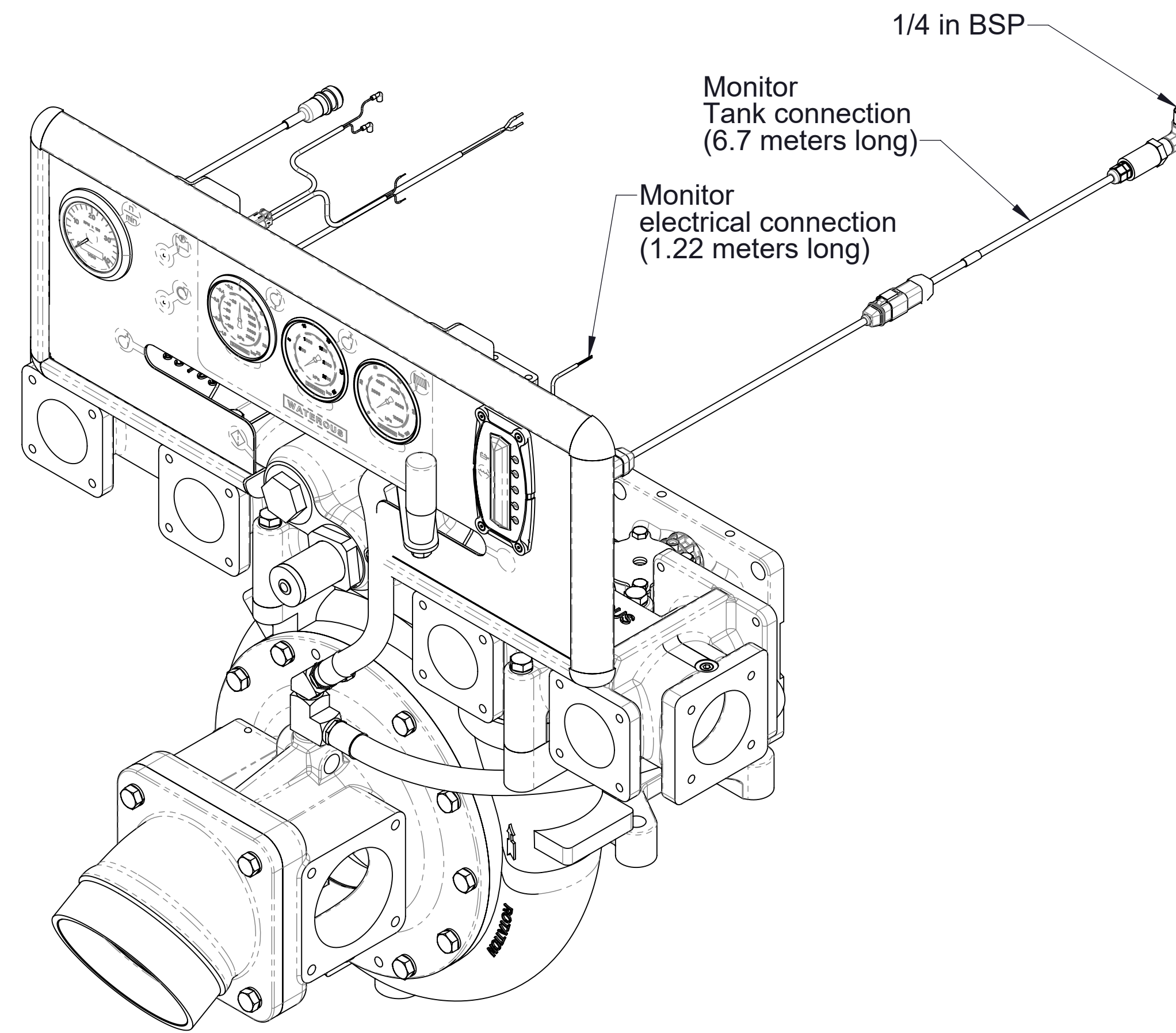


Optional RTP Foam System
Mounted on pump at factory

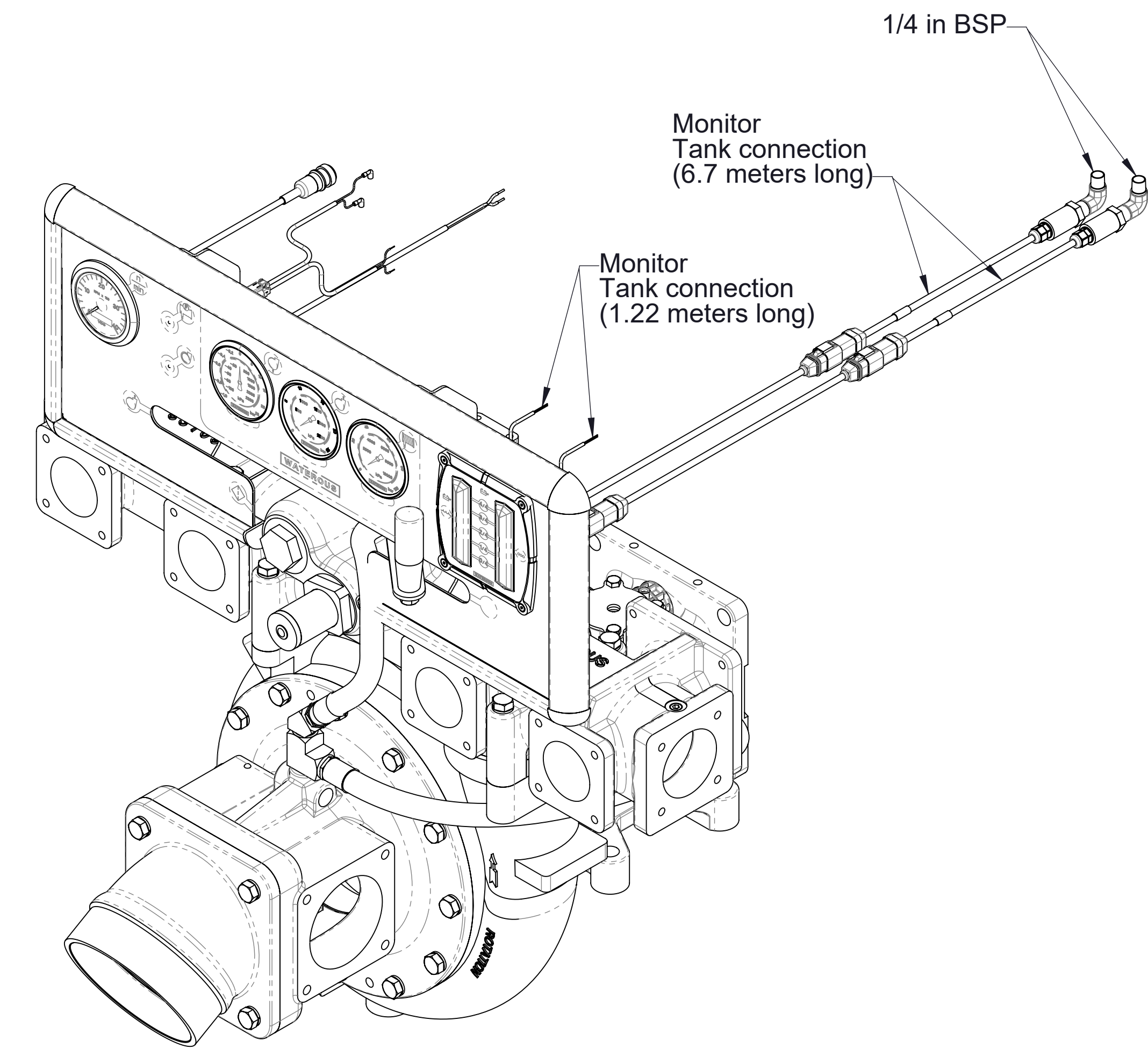
Available Panel Configurations



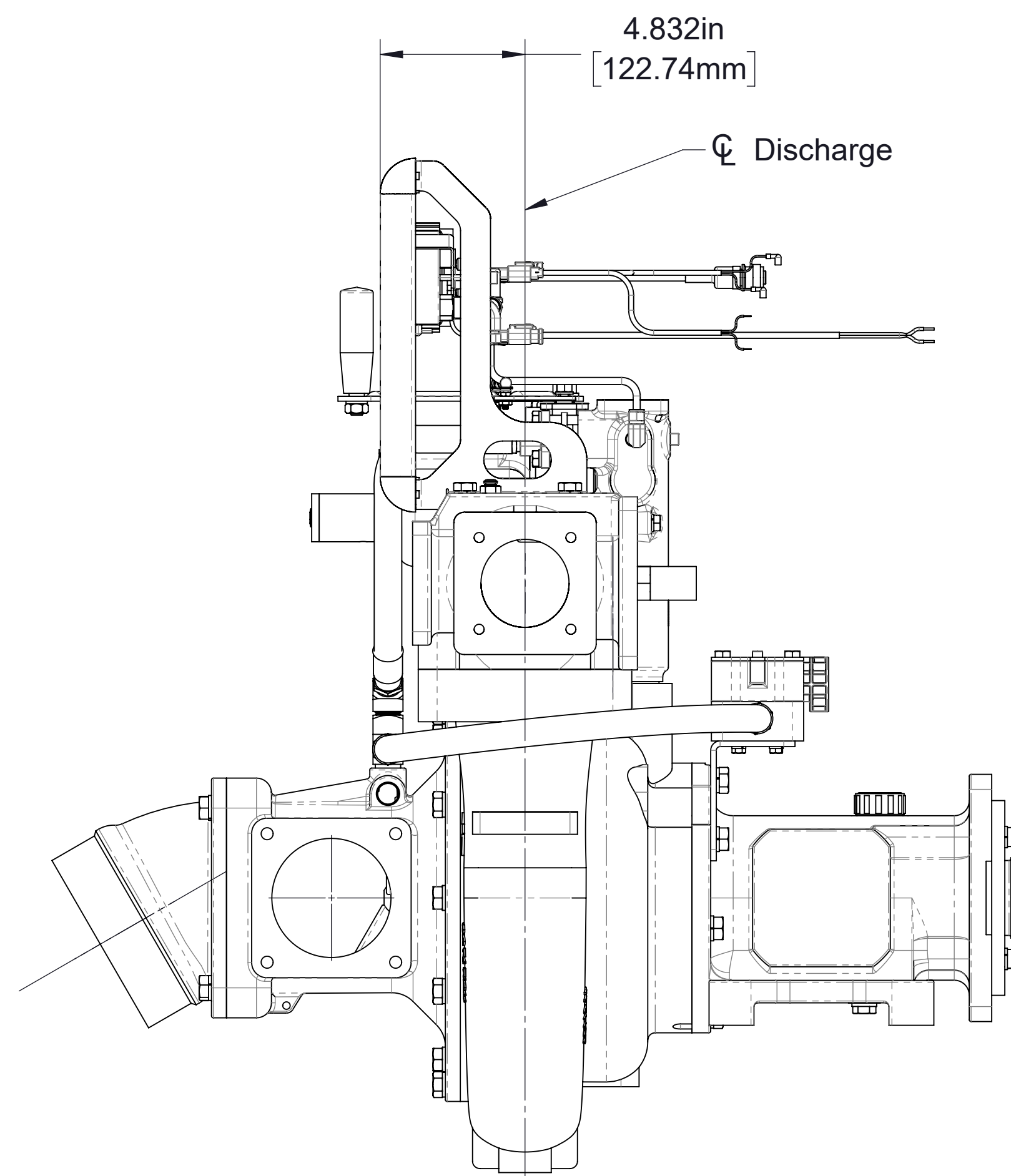
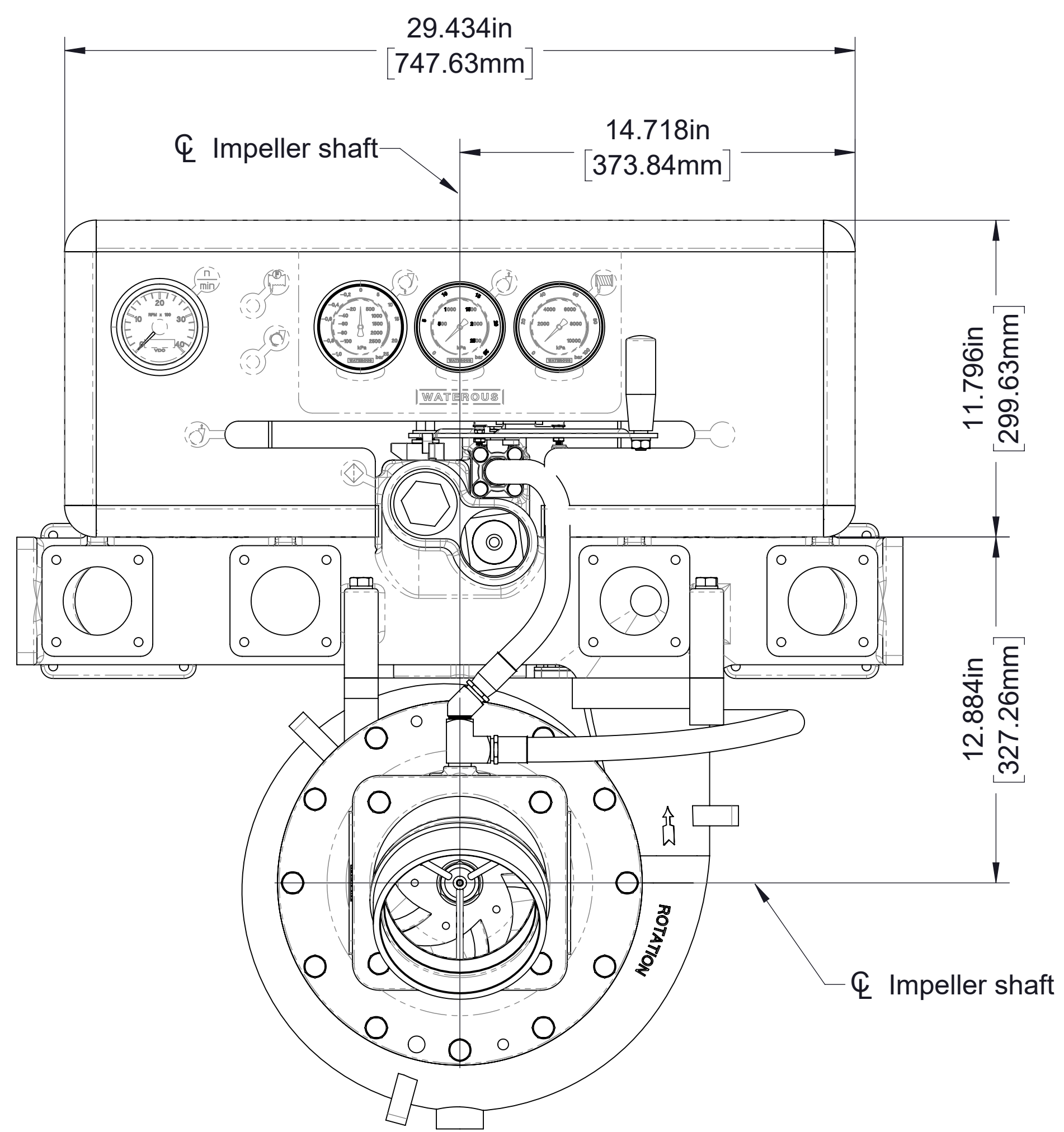
Without Tank Level Monitors



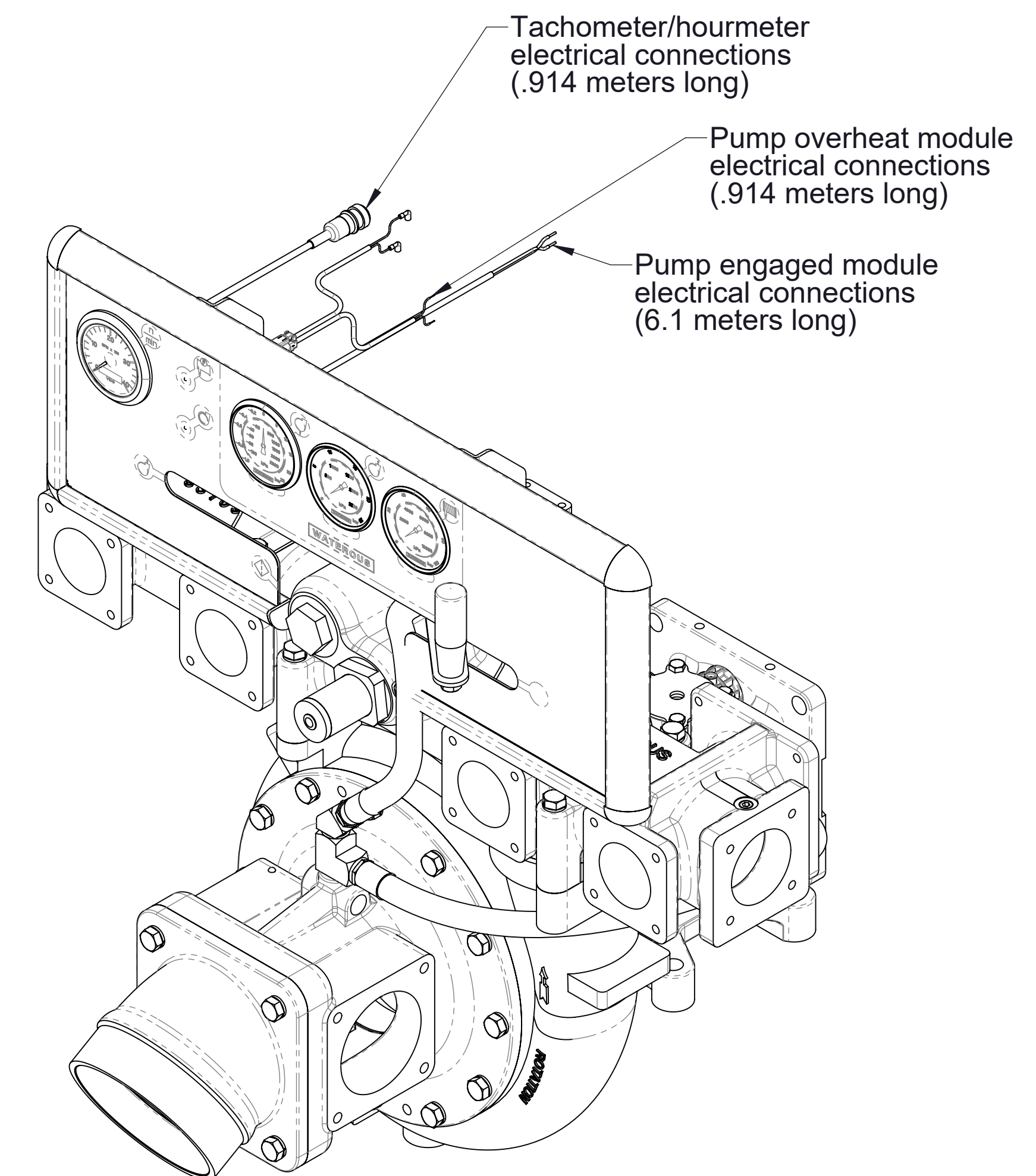
With Water Tank Level Monitor Only

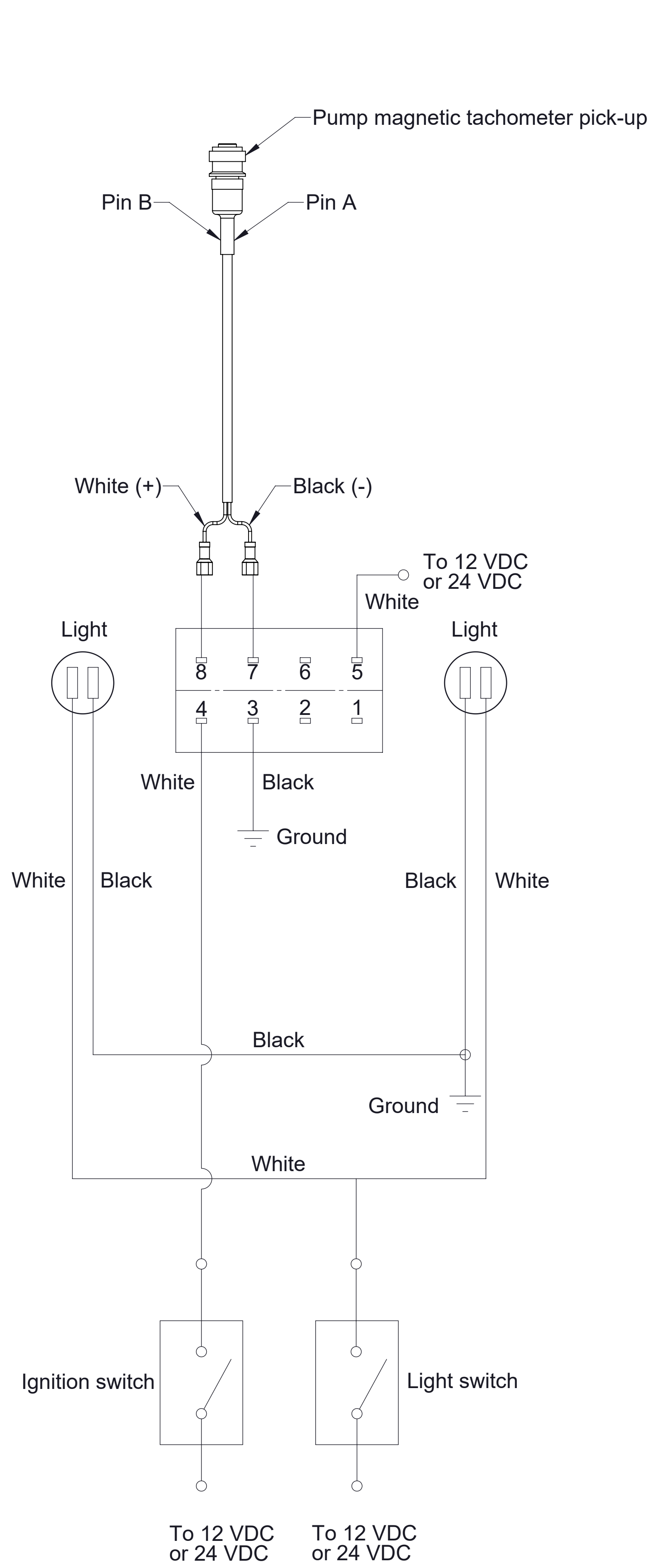


With Water Tank and Foam Tank Level Monitors



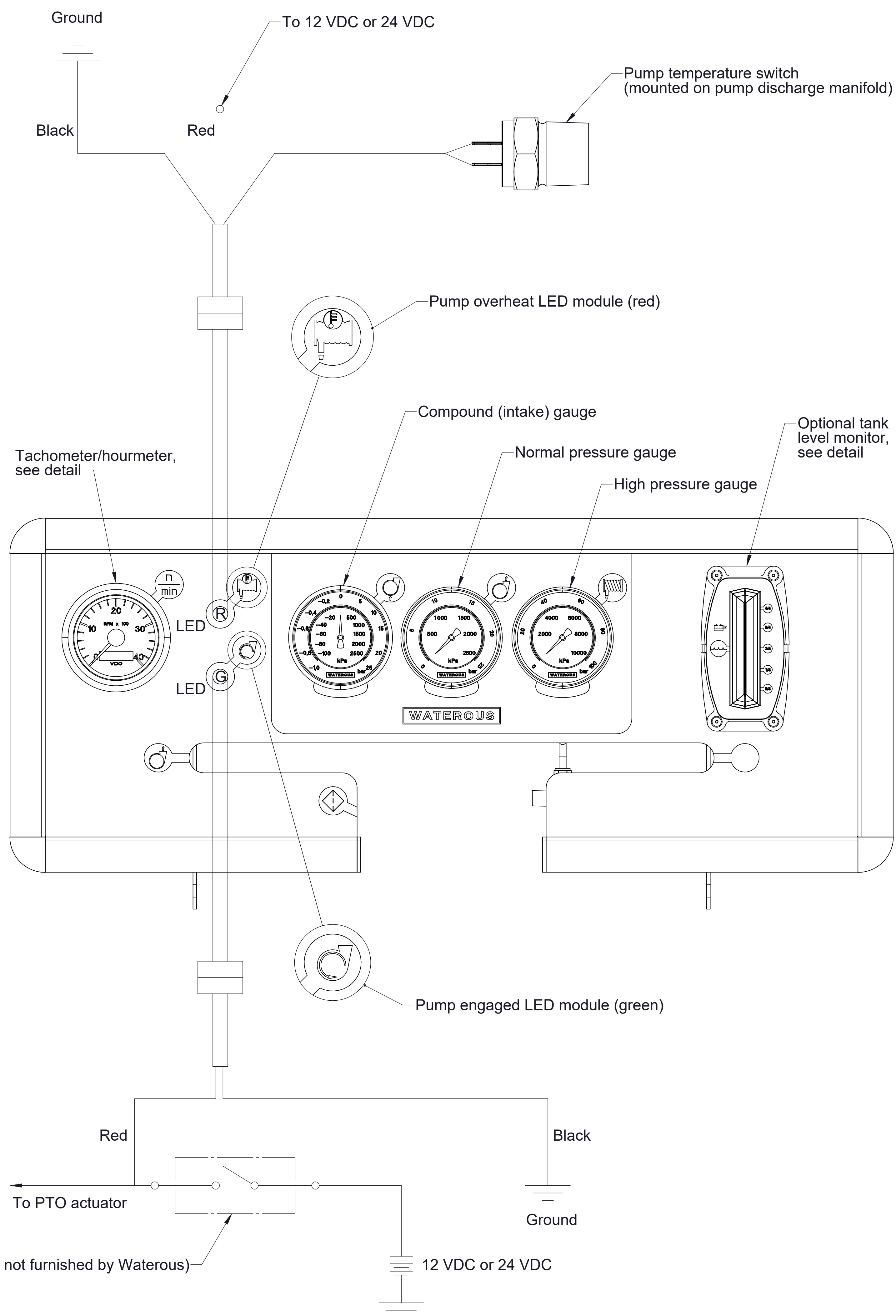
Optional Control Panels



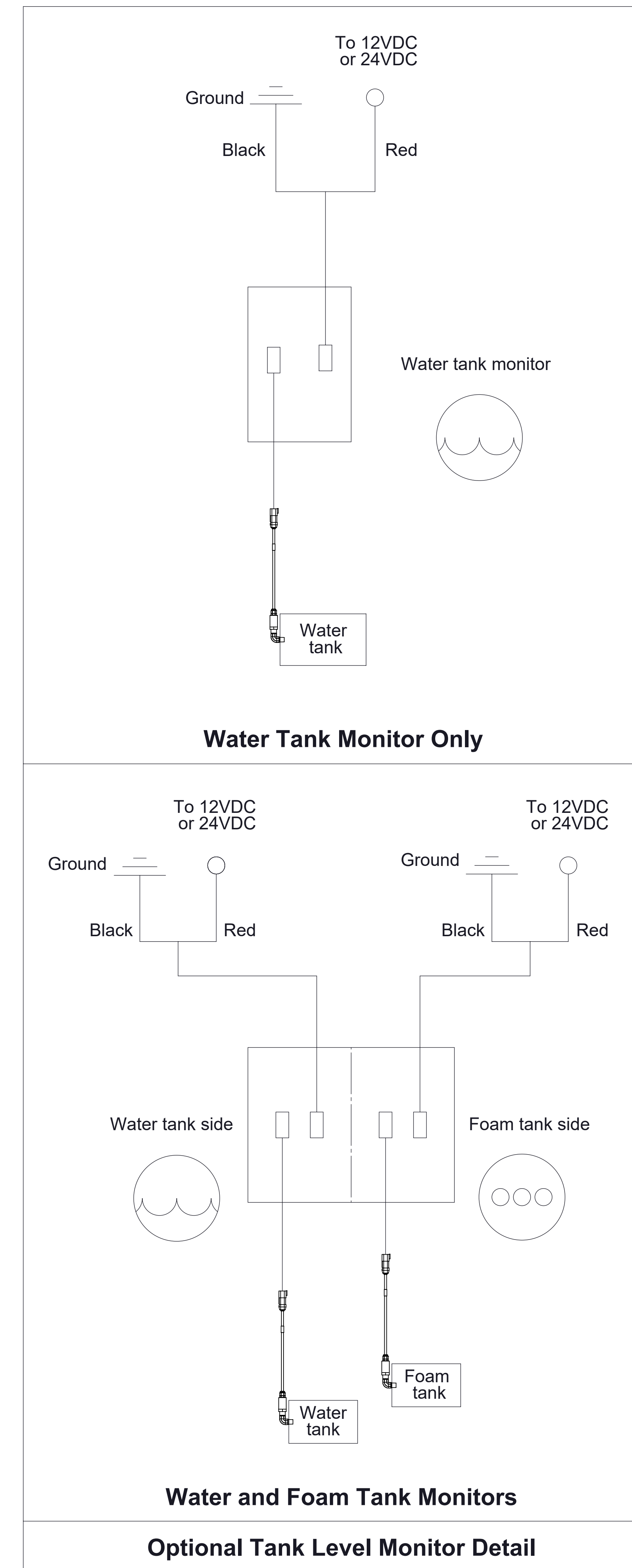


Note: Switches and wiring not furnished by Waterous

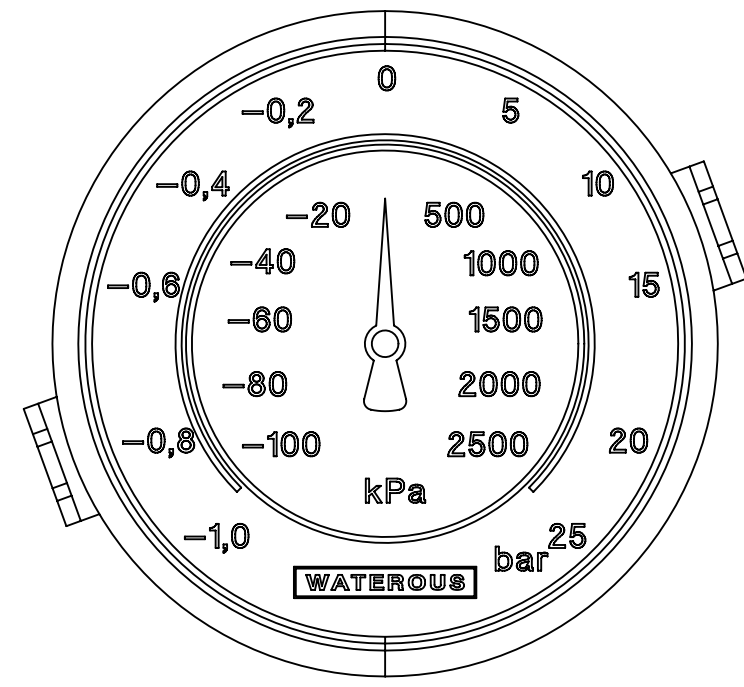
Tachometer/Hourmeter Detail



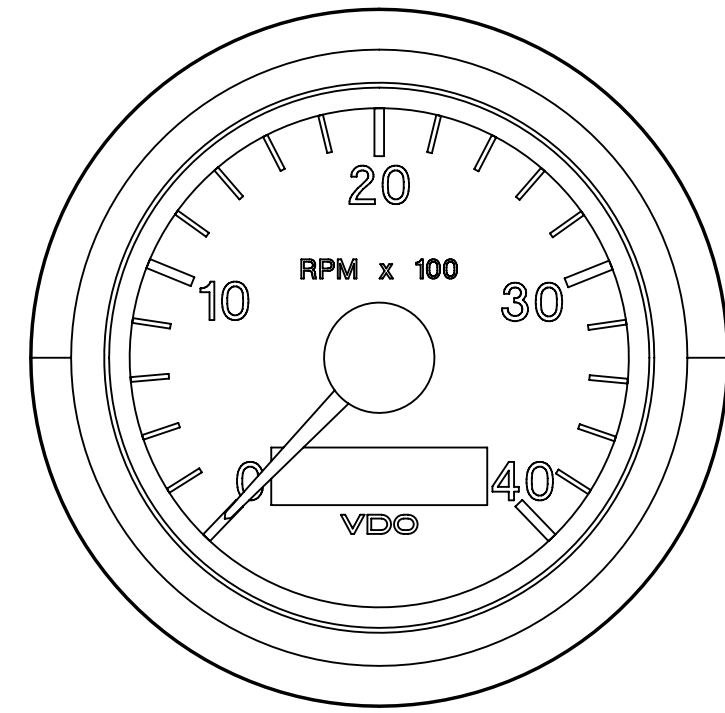
Optional Control Panel Wiring Schematic



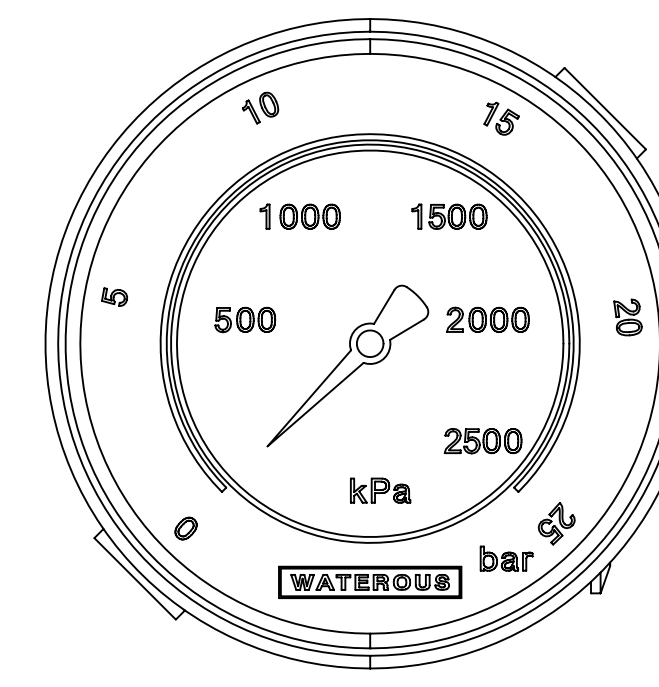
Compound Gauge
Panel Cutout
Ø3.19in/81.03mm



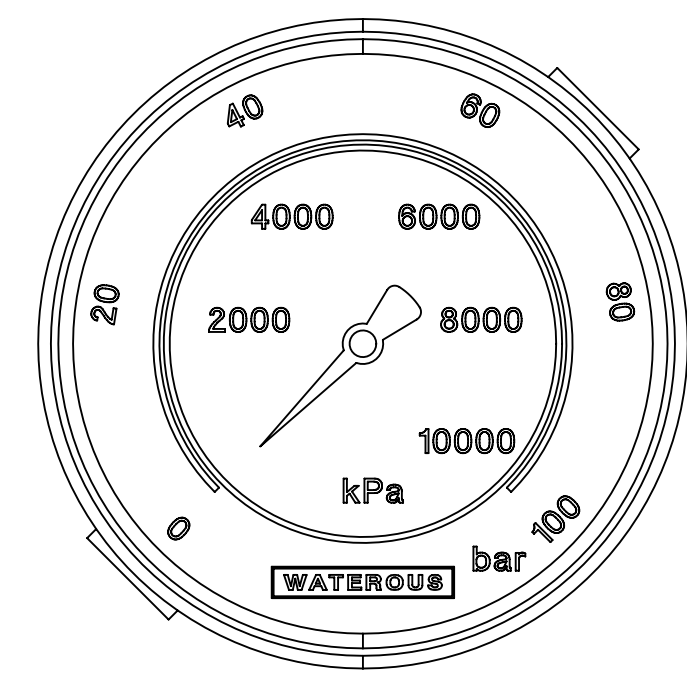
Tachometer/Hourmeter
Panel Cutout
Ø3.375in/85.73mm



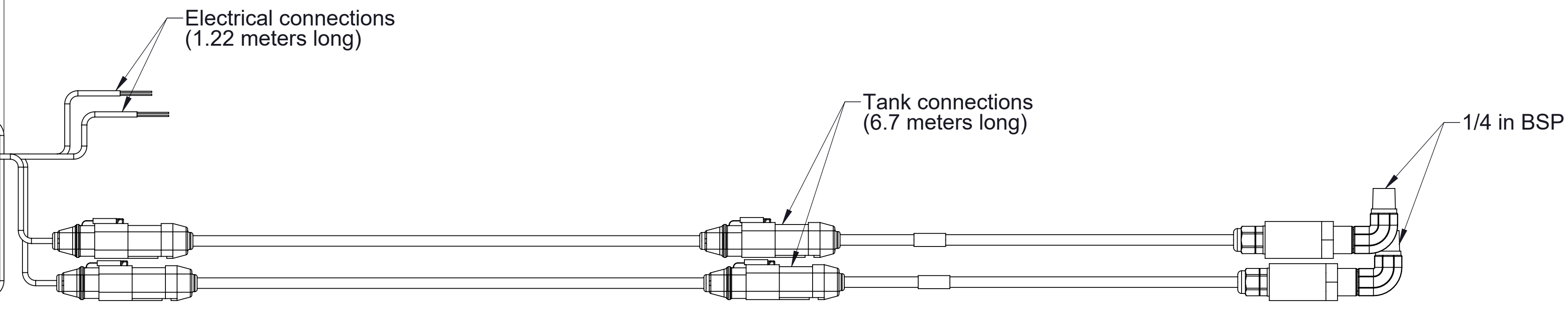
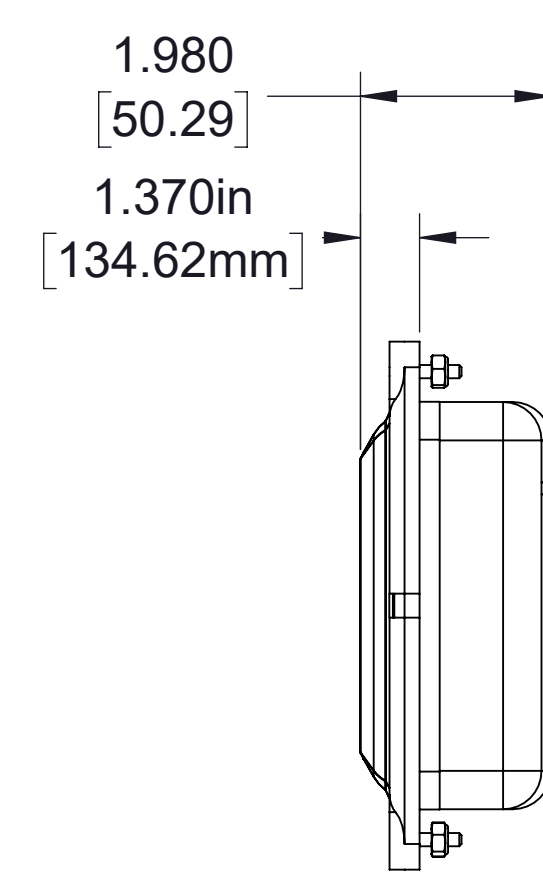
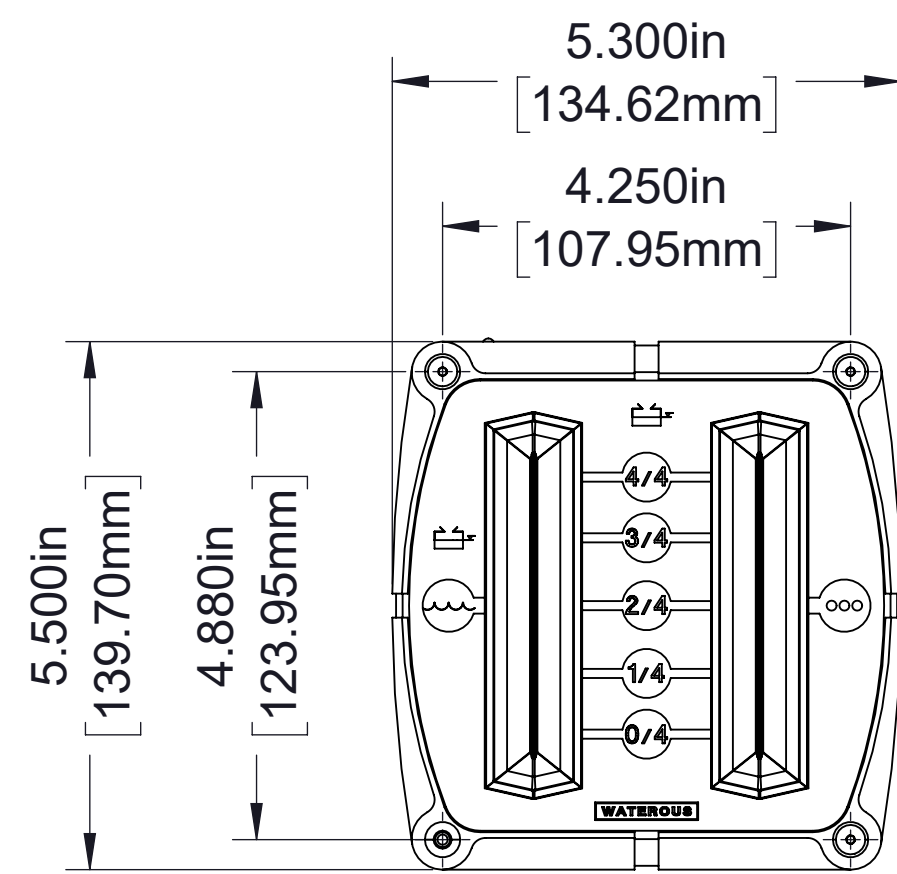
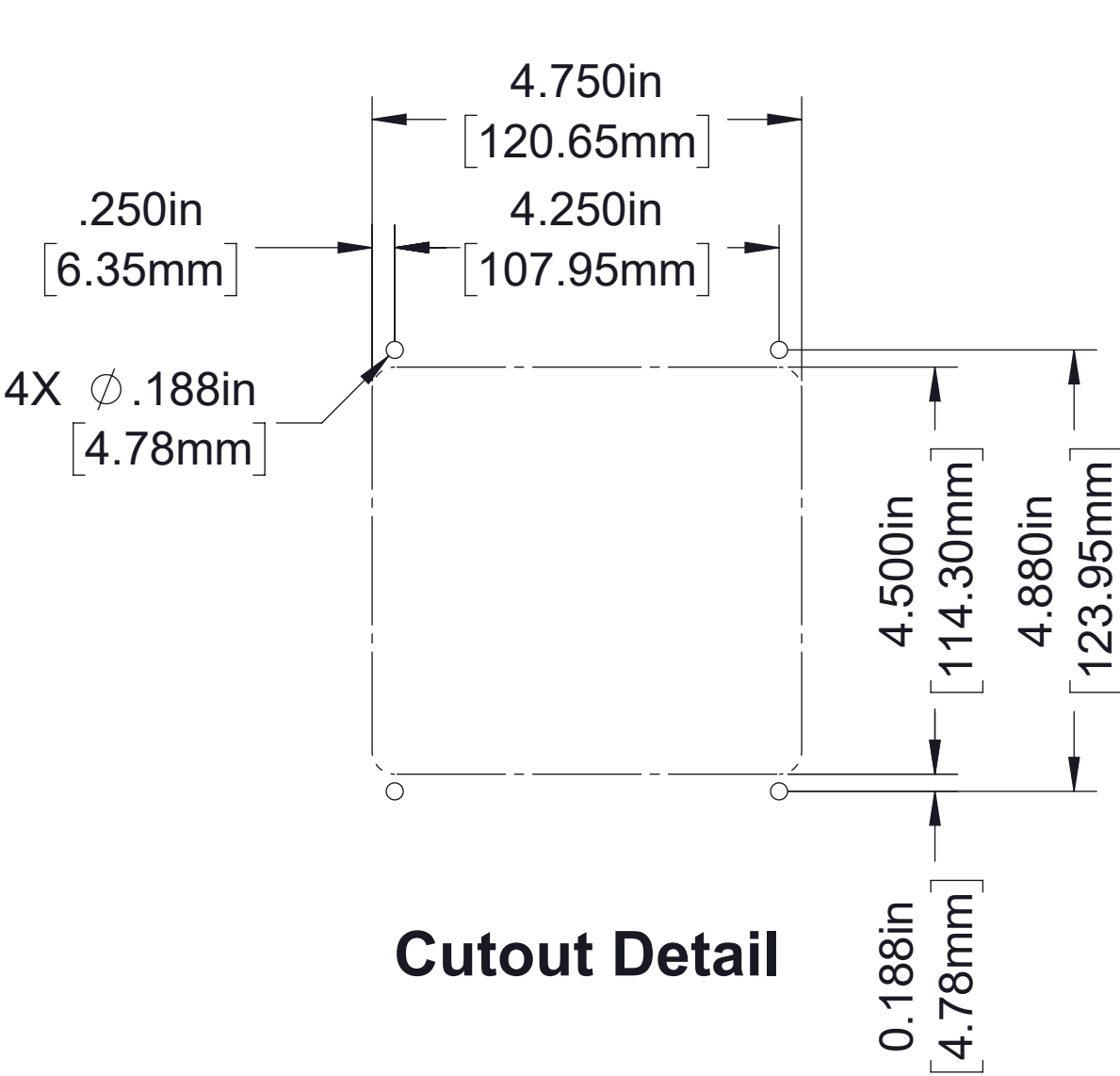
Normal Pressure Gauge
Panel Cutout
Ø3.19in/81.03mm



High Pressure Gauge
Panel Cutout
Ø3.19in/81.03mm

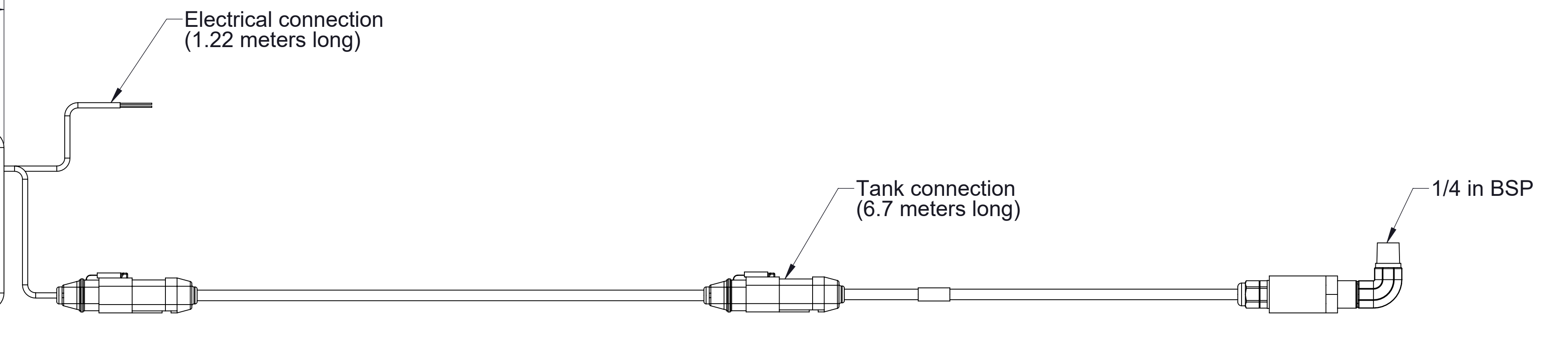
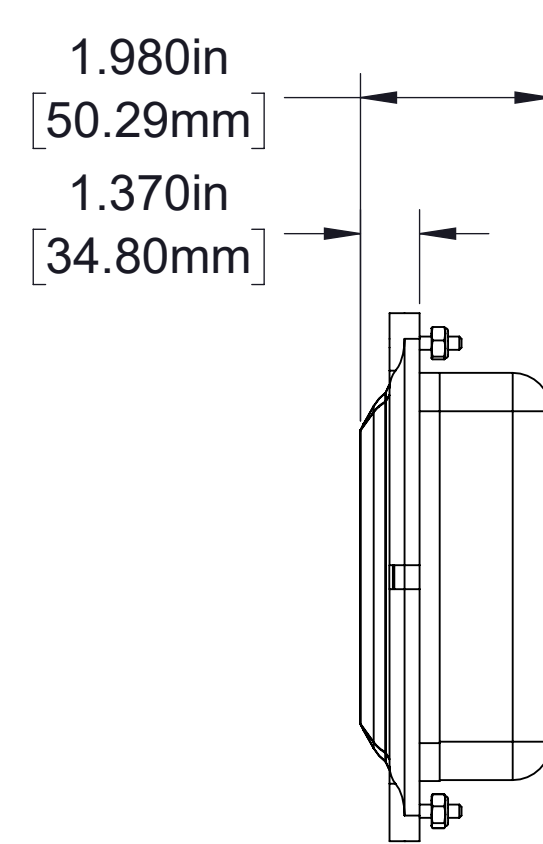
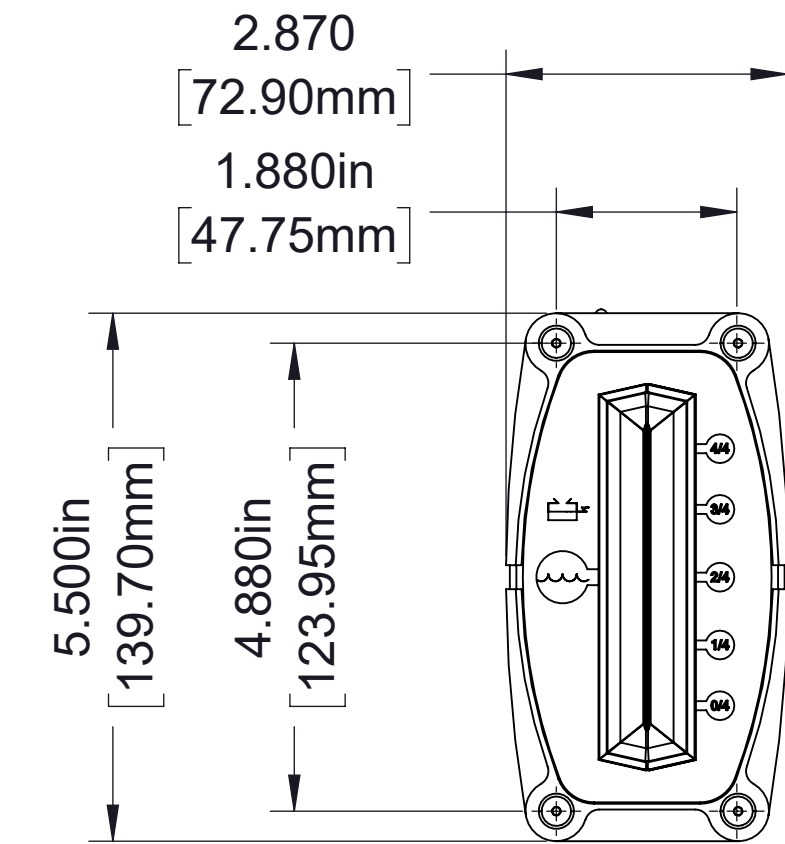
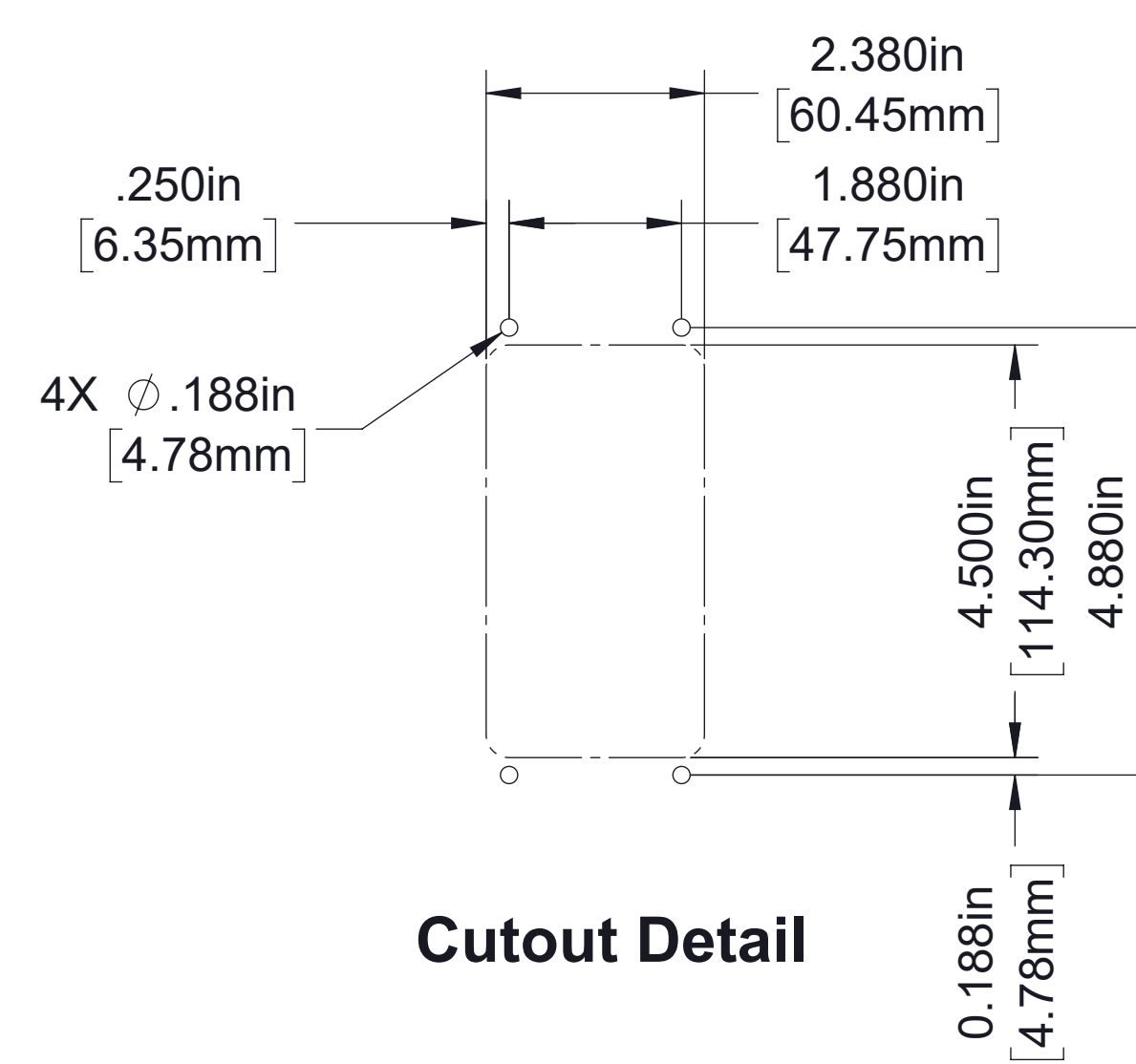


Pump Panel Instrument Package



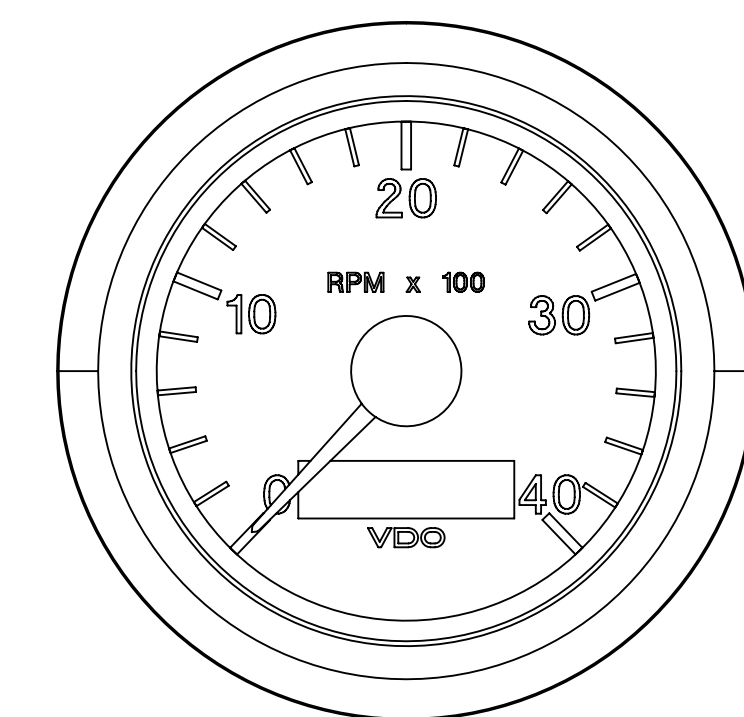
Cutout Detail

Dual Tank Level Monitor
(water and foam tanks)



Cutout Detail

Water Tank Level Monitor



12 or 24 Volt Tachometer
Panel Cutout
Ø3.375in/85.73mm

Optional Gauges and Monitors