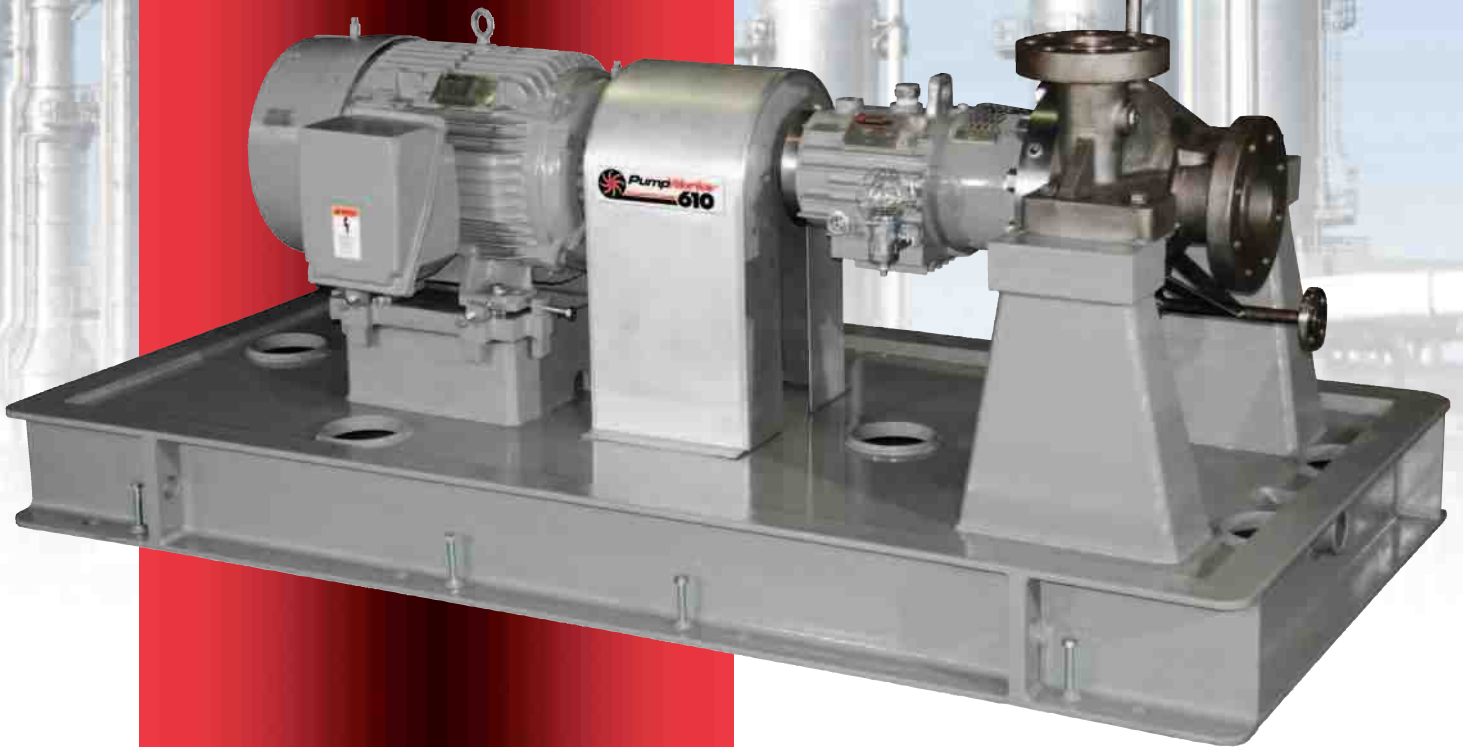




PWH

**API 610
SINGLE STAGE OH2**



PWH API 610 PROCESS PUMP

DESIGN FEATURES AND BENEFITS

Quality

- Manufactured and tested in the USA

Dual Volute Casing

- On larger pump sizes
- Minimizes radial loads and shaft deflection increasing mechanical seal and bearing life

Discharge Nozzle

- Tangential discharge maximizes hydraulic efficiency

Drain & Vent Ports

- Threaded or socket welded
- Socket welded drain port two-plane gusseted and piped to skid edge 3/4" SCH 160 300# RF

Casing Mounting Feet

- Gusseted and oversized to meet stringent API nozzle loading criteria

Nozzle Load

- Casing & baseplate design exceeds current edition API 610 nozzle load requirement

Impeller Retention

- Keyed and secured to shaft with exclusive dual set-screw locknut

Pump Casing

- Precision machining and fully confined controlled compression gasket ensures proper sealing and ease to cover alignment

Impeller

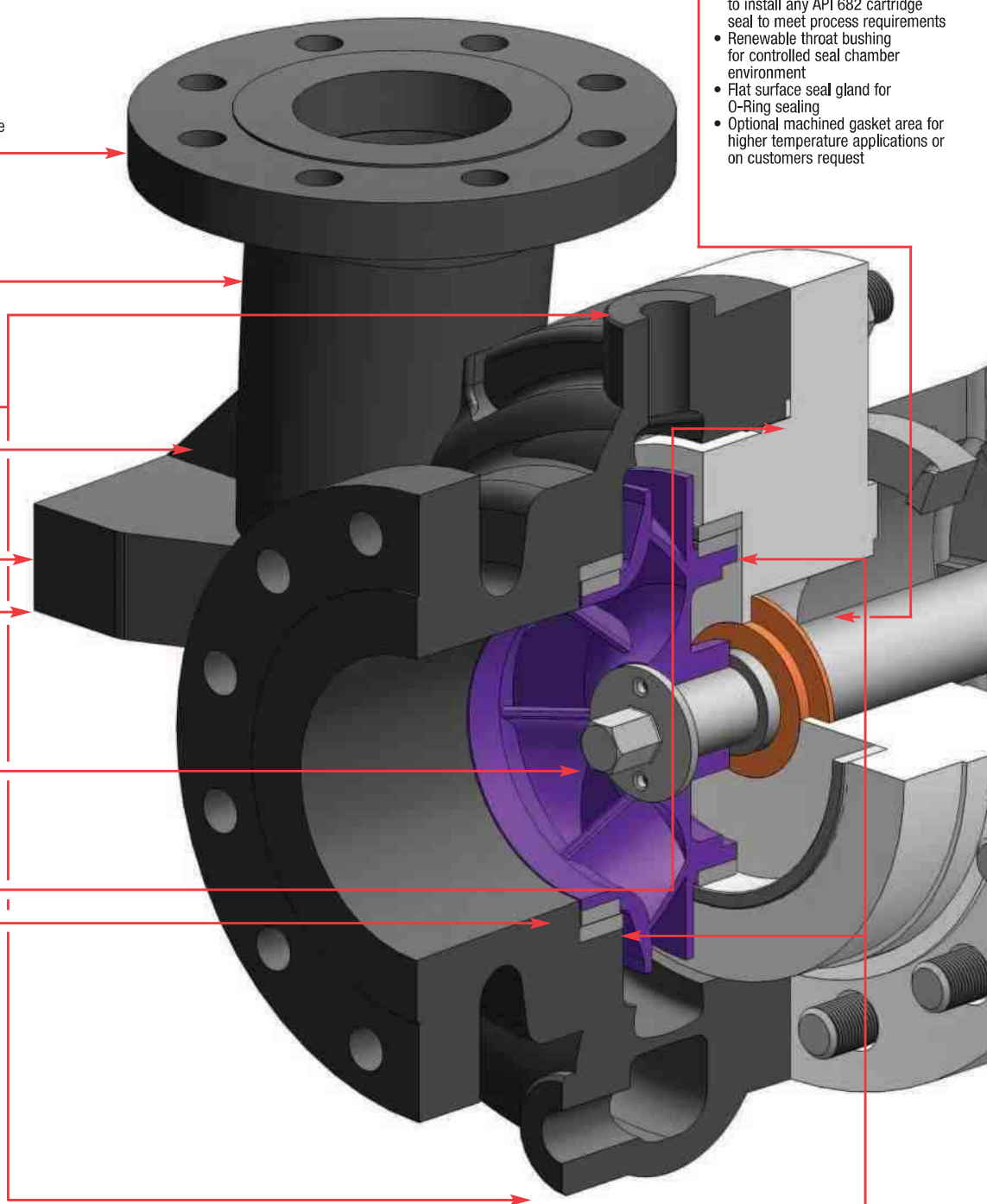
- Fully enclosed design provides increased efficiency
- Dynamically balanced to ISO G1.0 criteria before mounting

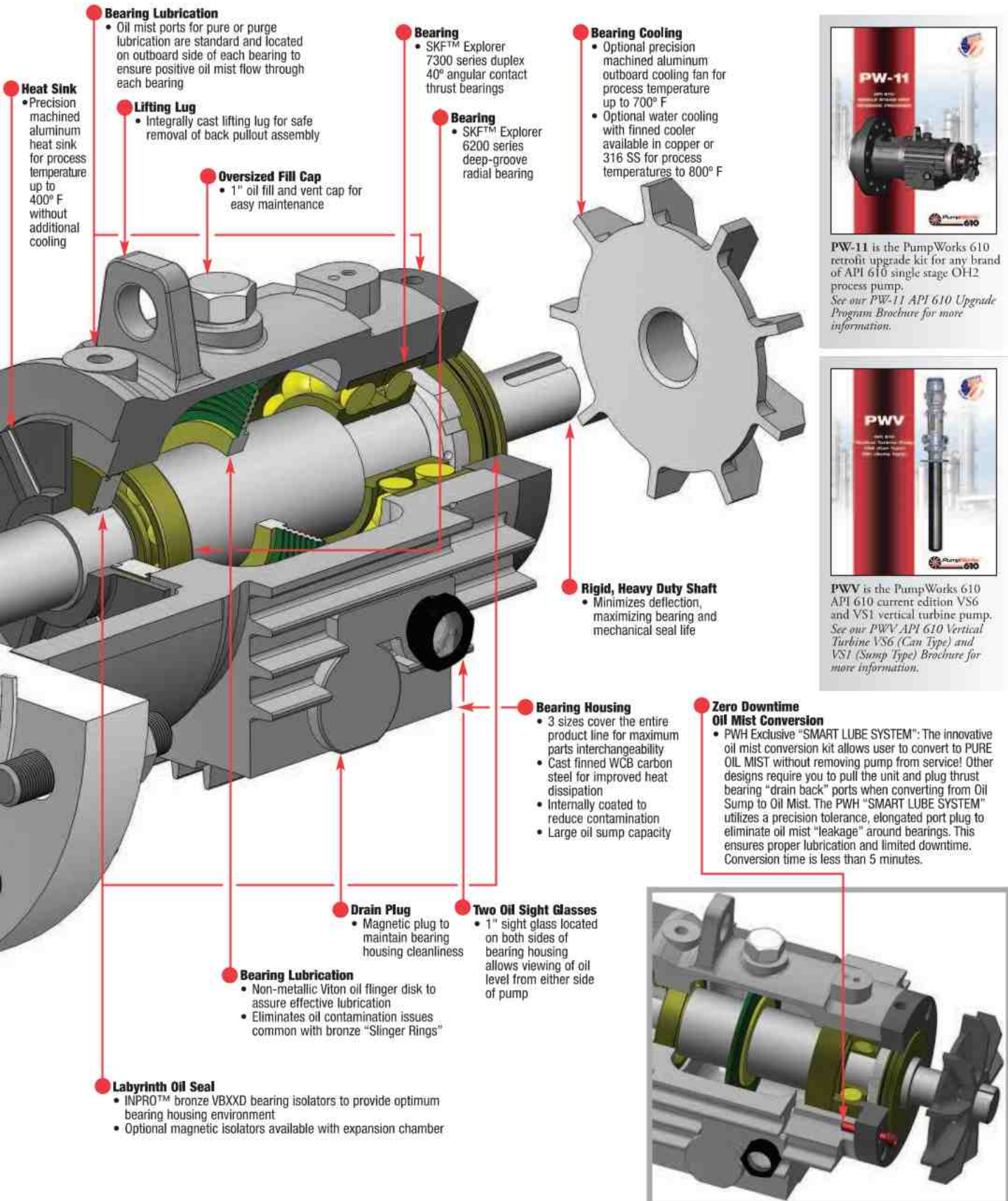
Casing Cover and Seal Chamber

- API 610 seal chamber allows user to install any API 682 cartridge seal to meet process requirements
- Renewable throat bushing for controlled seal chamber environment
- Flat surface seal gland for O-Ring sealing
- Optional machined gasket area for higher temperature applications or on customers request

Renewable Casing and Impeller Wear Rings

- Front and back rings control seal chamber pressure and provides impeller stability
- Optional non-metallic rings for improved efficiency and dry running





Heat Sink

- Precision machined aluminum heat sink for process temperature up to 400° F without additional cooling

Bearing Lubrication

- Oil mist ports for pure or purge lubrication are standard and located on outboard side of each bearing to ensure positive oil mist flow through each bearing

Lifting Lug

- Integrally cast lifting lug for safe removal of back pullout assembly

Oversized Fill Cap

- 1" oil fill and vent cap for easy maintenance

Bearing

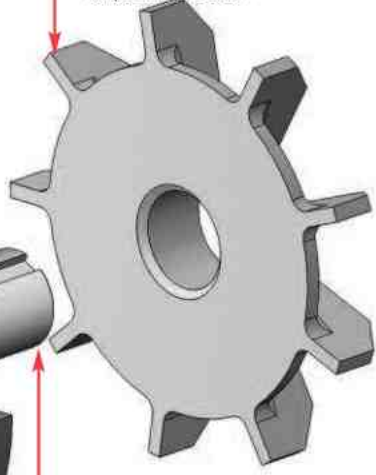
- SKF™ Explorer 7300 series duplex 40° angular contact thrust bearings

Bearing

- SKF™ Explorer 6200 series deep-groove radial bearing

Bearing Cooling

- Optional precision machined aluminum outboard cooling fan for process temperature up to 700° F
- Optional water cooling with finned cooler available in copper or 316 SS for process temperatures to 800° F



Rigid, Heavy Duty Shaft

- Minimizes deflection, maximizing bearing and mechanical seal life

Bearing Housing

- 3 sizes cover the entire product line for maximum parts interchangeability
- Cast finned WCB carbon steel for improved heat dissipation
- Internally coated to reduce contamination
- Large oil sump capacity

Zero Downtime Oil Mist Conversion

- PWH Exclusive "SMART LUBE SYSTEM": The innovative oil mist conversion kit allows user to convert to PURE OIL MIST without removing pump from service! Other designs require you to pull the unit and plug thrust bearing "drain back" ports when converting from Oil Sump to Oil Mist. The PWH "SMART LUBE SYSTEM" utilizes a precision tolerance, elongated port plug to eliminate oil mist "leakage" around bearings. This ensures proper lubrication and limited downtime. Conversion time is less than 5 minutes.

Drain Plug

- Magnetic plug to maintain bearing housing cleanliness

Two Oil Sight Glasses

- 1" sight glass located on both sides of bearing housing allows viewing of oil level from either side of pump

Bearing Lubrication

- Non-metallic Viton oil flinger disk to assure effective lubrication
- Eliminates oil contamination issues common with bronze "Slinger Rings"

Labyrinth Oil Seal

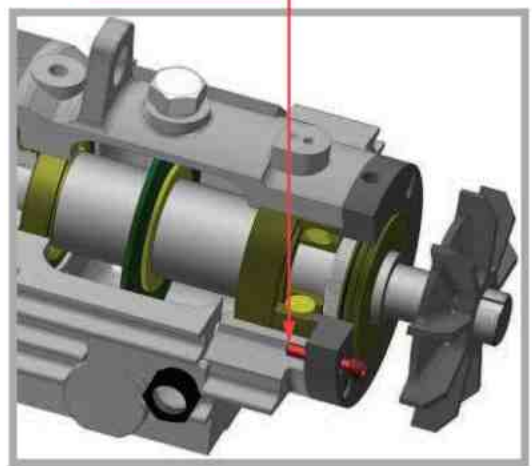
- INPRO™ bronze VBXXD bearing isolators to provide optimum bearing housing environment
- Optional magnetic isolators available with expansion chamber



PW-11 is the PumpWorks 610 retrofit upgrade kit for any brand of API 610 single stage OH2 process pump. See our PW-11 API 610 Upgrade Program Brochure for more information.



PWV is the PumpWorks 610 API 610 current edition VS6 and VS1 vertical turbine pump. See our PWV API 610 Vertical Turbine VS6 (Can Type) and VS1 (Sump Type) Brochure for more information.



SHORT PANEL DOTTED LINE DOES NOT PRINT

PWH API 610 PROCESS PUMP

PUMP AND DRIVER DIMENSIONS

PUMP	FRAME SIZE	CP	X	Y	Z	SUCTION	DISCHARGE	MOTOR	BASEPLATE #	MIN. CL.
1x2x9	IA	25.15	8.5	5.375	5.188	2	1	184T, 213-215T	API # 3	8.50
								254-256TS 324T	API # 3.5	9.50
1.5x3x9	IA	25.29	8.5	6.642	5.125	3	1.5	213-215T	API # 3	8.25
								254-256T 284TS, 286T 324-326T	API # 3.5	8.50 9.50
3x4x9		25.28	9.50	7.38	5.38	4	3	254-256T, 284-286T/TS, 324-326T/TS, 364T/TS, 365T	API # 3.5	14.00
1.5x3x10	IB	25.53	10.50	6.91	5.88	3	1.5	404-405T 215T	API # 4 API # 3	9.25
								254-256T, 284-286T/TS 324-326T/TS 364-365T	API # 3.5	9.50 10.50
2x4x10		25.28	10.03	5.44	5.85	4	2	404T	API # 4	11.50
3x4x10A	IB	25.65	10.06	7.44	6.31	4	3	254-256T, 284-286T/TS 324-326T/TS 364T/TS, 365T	API # 3.5	9.25 9.50 10.50
								404-405T	API # 4	11.50
3x4x10B	IB	25.65	10.06	7.44	6.31	4	3	286T/TS, 324-326T/TS 364-365T/TS	API # 3.5 API # 4	10.00 10.50
								404-405T	API # 4	11.50
4x6x10	IB	25.62	10.50	6.84	6.88	6	4	444T/TS, 445T, 447T	API # 6.5	12.50
								256T, 284-286T/TS, 324-326T/TS	API # 3.5	10.00
6x6x10	IB	25.65	11.19	6.63	8.69	6	6	364-365T/TS 404-405T, 405TS	API # 4 API # 6.5	10.50 11.50
								444-445T	API # 6.5	12.50
1x2x11	IB	25.53	10.00	6.88	5.69	2	1	324-326T/TS 364,365T/TS	API # 5.5 API # 6	11.25 11.50
								404-405T, 405TS	API # 6	12.50
1.5x3x13	IIA	27.88	11.88	7.00	6.88	3	1.5	444-445T/TS, 447-449T	API # 6.5	12.50
								256T, 284-286T/TS, 324-326T/TS	API # 5.5	10.50
3x4x13	IIA	27.75	13.06	7.50	8.38	4	3	364,365T/TS 404-405T, 405TS	API # 6 API # 6.5	10.50 11.50
								444-445T	API # 6.5	12.50
4x6x13	IIA	27.88	14.00	9.94	9.25	6	4	326T, 364-365T/TS 404-405T, 405TS	API # 6 API # 6	11.00 11.50
								444-445T/TS 447T/TS, 449T	API # 6.5 PW610 # 1	12.50 13.25
3x6x17		28.00	13.38	8.06	10.19	6	3	365T/TS, 405T/TS	API # 6	14.00
6x8x13	IIB	28.44	15.06	9.19	10.50	8	6	444-445T/TS 447-449T/TS	API # 6.5 PW610 # 1	13.25 14.50
								445T/TS	API # 8	14.00
2x4x15	IIB	28.19	13.00	8.00	8.38	4	2	447-449T/TS	API # 8	14.00
								364-365T/TS, 404-405T, 405TS	API # 6	11.75
3x6x15	IIB	27.91	12.37	8.06	9.19	6	3	444-445T/TS 447-449T/TS	API # 6.5 PW610 # 1	12.50 13.50
								405T/TS	API # 6	12.50
4x6x15	IIB	28.38	13.69	9.31	10.31	6	4	445T/TS	API # 7	14.25
								447-449T/TS	API # 7.5	14.25
6x6x15	IIB	28.13	14.88	9.56	10.31	6	6	447-449T/TS	PW610 # 2	14.25
								405T, 444-445T	API # 10	18.00
8x10x15	IIB	28.57	16.06	10.43	12.25	10	8	447-449T	PW610 # 3	18.00
								444-445T	API # 10	18.00
8x10x15H	IIB	28.57	16.06	10.43	12.25	10	8	447-449T	PW610 # 3	18.00
								405T,444-445T	API # 10	16.75
4x6x21	IIC	29.00	16.06	11.38	12.69	6	4	447-449T	PW610 # 3	19.25
								447-449T	PW610 # 4	19.25
6x8x21	IIC	29.13	16.06	10.03	14.44	8	6	444-445T	API # 10	19.25
								447-449T	PW610 # 4	19.25
6x8x21L	IIC	29.13	16.06	10.03	14.44	8	6	447-449T	PW610 # 4	19.25
								444-445T	API # 10	19.25
8x10x21		29.50	19.13	10.25	15.50	10	8	447-449T	PW610 # 4	20.75

BASEPLATE DIMENSIONS

BASEPLATE #	HA	HB	HE	# HOLES PER SIDE	HF	HK
API # 3	36.00	72.50	16.50	3	30.25	8
API # 3.5	36.00	84.50	16.50	4	24.16	8
API # 4	36.00	96.50	16.50	4	28.16	8
API # 5.5	42.00	84.50	19.50	4	24.16	8
API # 6	42.00	96.50	19.50	4	28.16	8
API # 6.5	42.00	108.50	19.50	5	24.12	8
API # 7	49.00	84.50	23.00	4	24.16	8
API # 7.5	49.00	96.50	23.00	4	28.16	8
API # 8	49.00	108.50	23.00	5	24.12	8
API # 10	55.00	108.50	26.00	5	24.12	8
PW610 # 1	42.00	118.50	19.50	5	26.63	8
PW610 # 2	49.00	118.50	23.00	5	26.63	8
PW610 # 3	55.00	118.50	26.00	5	26.63	8
PW610 # 4	61.00	118.50	29.00	5	26.63	8

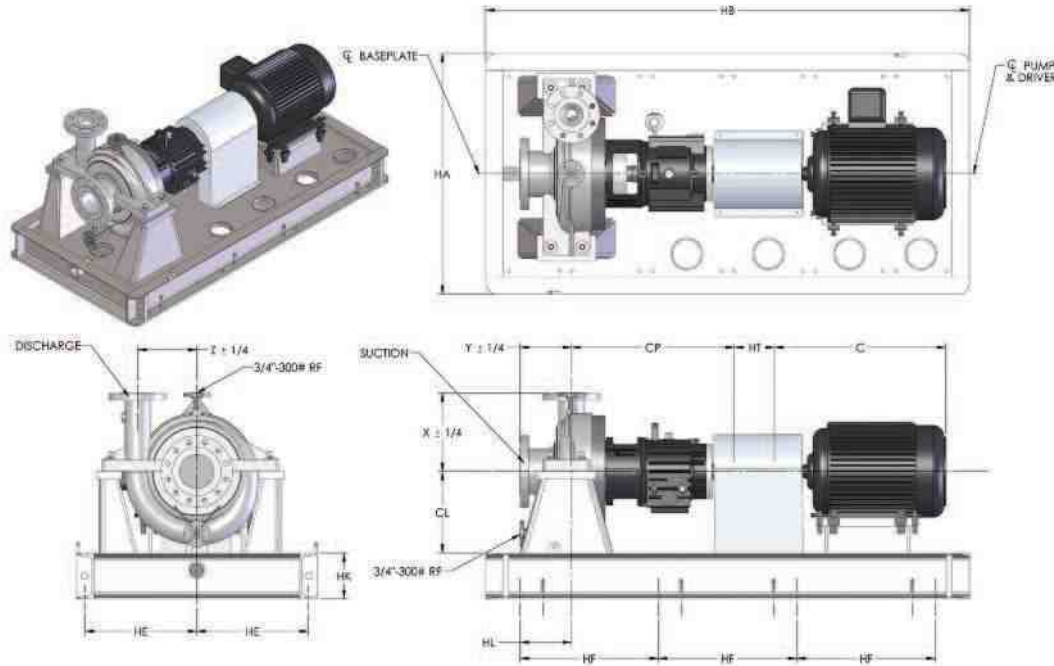
NOTES

1. DIMENSIONS ARE IN INCHES
2. DIMENSIONS OF PUMP ARE ± 0.12" UNLESS OTHERWISE NOTED
3. DIMENSIONAL TOLERANCES OF MOTOR ARE IN COMPLIANCE WITH NEMA MG-1
4. PUMP FLANGE RATINGS ARE ANSI B16.5 300# RF
5. CCW ROTATION VIEWED FROM COUPLING END
6. BASEPLATE DIMENSIONS NOT TO BE USED FOR CONSTRUCTION

SHORT PANEL DOTTED LINE DOES NOT PRINT

PWH API 610 PROCESS PUMP

OUTLINE DIMENSIONS



MOTOR DIMENSIONS

FRAME SIZE	C*
184T	16.25
213-215T	19.50
254-256T/TS	25.25
284-286T/TS	28.18
324-326T/TS	31.19
364-365T/TS	33.44
404-405T	38.38
404-405TS	37.00
444-445T	45.88
444-445TS	44.00
447-449T	55.12
447-449TS	54.00

* = Dimensions may vary

TECHNICAL DATA

PUMP SIZE		1.5x3x9	1x2x9	3x4x9	1.5x3x10	1x2x11	2x4x10	3x4x10	4x6x10	6x6x10	2x4x13	1.5x3x13	3x4x13	3x6x17	4x6x13	6x6x15	6x8x13	2x4x15	3x6x15	4x6x15	8x10x15	4x6x21	6x8x21	8x10x21	8x10x21										
FLANGE	SUCTION - 300# RF [IN]	3	2	4	3	2	4	4	6	6	4	3	4	6	6	6	8	4	6	6	10	6	8	10	10										
	DISCHARGE - 300# RF [IN]	1.5	1	3	1.5	1	2	3	4	6	2	1.5	3	3	4	6	6	2	3	4	8	4	6	8	8										
MAWP	S-6 [PSIG 100 DEG F]	740																																	
	S-8 [PSIG 100 DEG F]	740																																	
	C-6 [PSIG 100 DEG F]	740																																	
	A-8 [PSIG 100 DEG F]	740																																	
		740																																	
MECHANICAL GROUP	Mechanical Group	IA				IB				IIA				IIB				IIC		IIIA															
	Bearing Frame	I				II				III																									
	Volute Type	SINGLE				DOUBLE				SINGLE		DOUBLE		SINGLE		DOUBLE																			
AUX PORTS	Discharge (Flush) [IN]	3/4																																	
	Vent [IN]	3/4																																	
	Drain [IN]	3/4																																	
	Suction [IN]	1/2																																	
SHAFT	Max Impeller [IN]	9.0	9.0	9.0	10.5	11.1	10.5	10.5	10.5	10.5	13.3	13.3	13.3	17.0	13.3	15.5	13.3	15.5	15.5	15.5	15.5	21.0	21.0	21.0	21.0										
	Min Impeller [IN]	7.0	7.0	7.0	8.0	8.8	7.5	8.0	8.0	8.0	10.0	10.0	10.0	13.5	10.0	10.0	10.0	12.0	12.0	12.0	12.0	14.0	14.0	14.0	14.0										
	Diameter at Coupling [IN]	1.63				1.88				2.00		2.38		1.88		2.38		2.00		2.25		2.25		2.75											
	Keyway at Coupling [IN]	0.38				0.5				0.5		0.5		0.5		0.5		0.5		0.5		0.63		0.63											
	Extension at Coupling [IN]	3.5				3.5				3.5		3.5		3.5		3.5		3.5		3.5		3.5		4.50											
	Diameter at Mechanical Seal [IN]	2				2				2.75		2.75		2.75		2.75		2.75		2.75		2.75		3.37											
	Diameter Between Bearings [IN]	3				3				3.5		3.5		3.5		3.5		3.5		3.5		3.5		4.25											
	Distance Between Bearings [IN]	7.74				7.74				8.81		8.81		8.81		8.81		8.81		8.81		8.81		9.64											
	Radial Bearing	6212				6212				6215		6215		6215		6215		6215		6215		6215		6218		6218									
	Thrust Bearing	7312x2				7312x2				7314x2		7314x2		7314x2		7314x2		7314x2		7314x2		7314x2		7317x2		7317x2									
	Maximum RPM	3600				3600				1800		1800		3600		3600		1780		1780		1780		1780		1780									
	Maximum HP/100 RPM	2.0				4.5				6.9		7.7		6.9		11.5		7.7		19		9.5		19		11.5		16.3		10.5		16.3		25	

