



PWH

**API 610
SINGLE STAGE OH2**



HYDRAULIC PERFORMANCE COVERAGE

60 Hz Performance Coverage

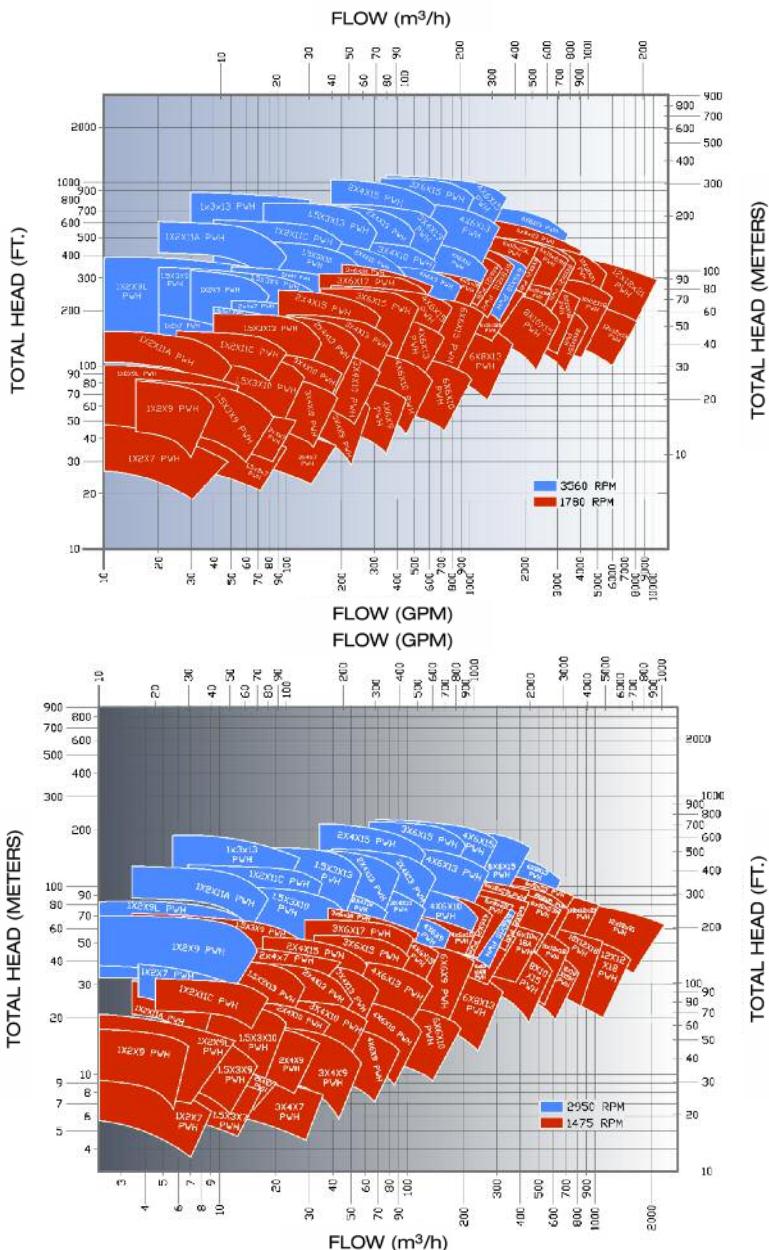


Visit our web site at
www.pumpworks610.com
and specify flow and
performance needs and
obtain pump selection and
performance curve.

50 Hz Performance Coverage



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Performances
shown are nominal
and are to be used
for preliminary
selection only.

STANDARD MATERIALS OF CONSTRUCTION

API MATERIAL CLASS	S-6	S-8	C-6	A-8
CASING	A216 GRADE WCB	A216 GRADE WCB	A487 GRADE CA6NM	A351 GRADE CF3M
COVER	A516 GRADE 70	A516 GRADE 70	A479 TYPE 410SS	A479 TYPE 316/316L
IMPELLER	A743 GRADE CA6NM	A743 CF3M 316SS	A743 GRADE CA6NM	A743 CF3M 316SS
SHAFT	A276 TYPE 410SS CONDITION "T"	ASTM A479 TYPE XM 19	A276 TYPE 410SS CONDITION "T"	ASTM A479 TYPE XM 19
IMPELLER LOCK NUT	A479 TYPE 316L	NITRONIC 60	A479 TYPE 316L	NITRONIC 60
BEARING HOUSING	A216 GRADE WCB CARBON STEEL	A216 GRADE WCB CARBON STEEL	A216 GRADE WCB CARBON STEEL	A216 GRADE WCB CARBON STEEL
IMPELLER WEAR RINGS	410 SS HT: 262-302 BHN	NITRONIC 50	410 SS HT: 262-302 BHN	NITRONIC 50
CASING WEAR RINGS	420 SS HT: 400-450 BHN	NITRONIC 60	420 SS HT: 400-450 BHN	NITRONIC 60
THROAT BUSHING	420 SS HT: 400-450 BHN	NITRONIC 60	420 SS HT: 400-450 BHN	NITRONIC 60
CASING STUDS	A193 GRADE B-7	A193 GRADE B-7	A193 GRADE B-7	A193 GRADE B-8
CASING NUTS	A194 GRADE 2H	A194 GRADE 2H	A194 GRADE 2H	A194 GRADE B8M

*Other API 610 Material Classes and Combinations are available

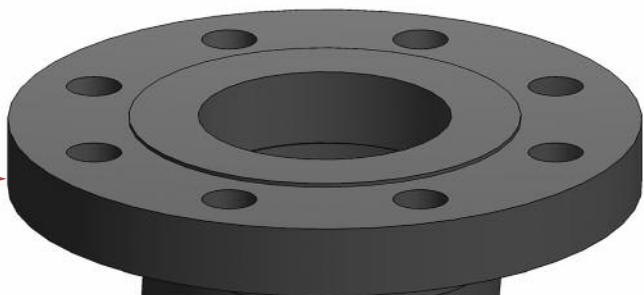
DESIGN FEATURES AND BENEFITS

Quality

- Manufactured and tested in the USA

Dual Volute Casing

- On 4" discharge and larger pump sizes
- Minimizes radial loads and shaft deflection increasing mechanical seal and bearing life
- Suction and discharge flanges are ANSI Class 300# RF as standard. Other flange ratings available for higher pressure applications



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

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

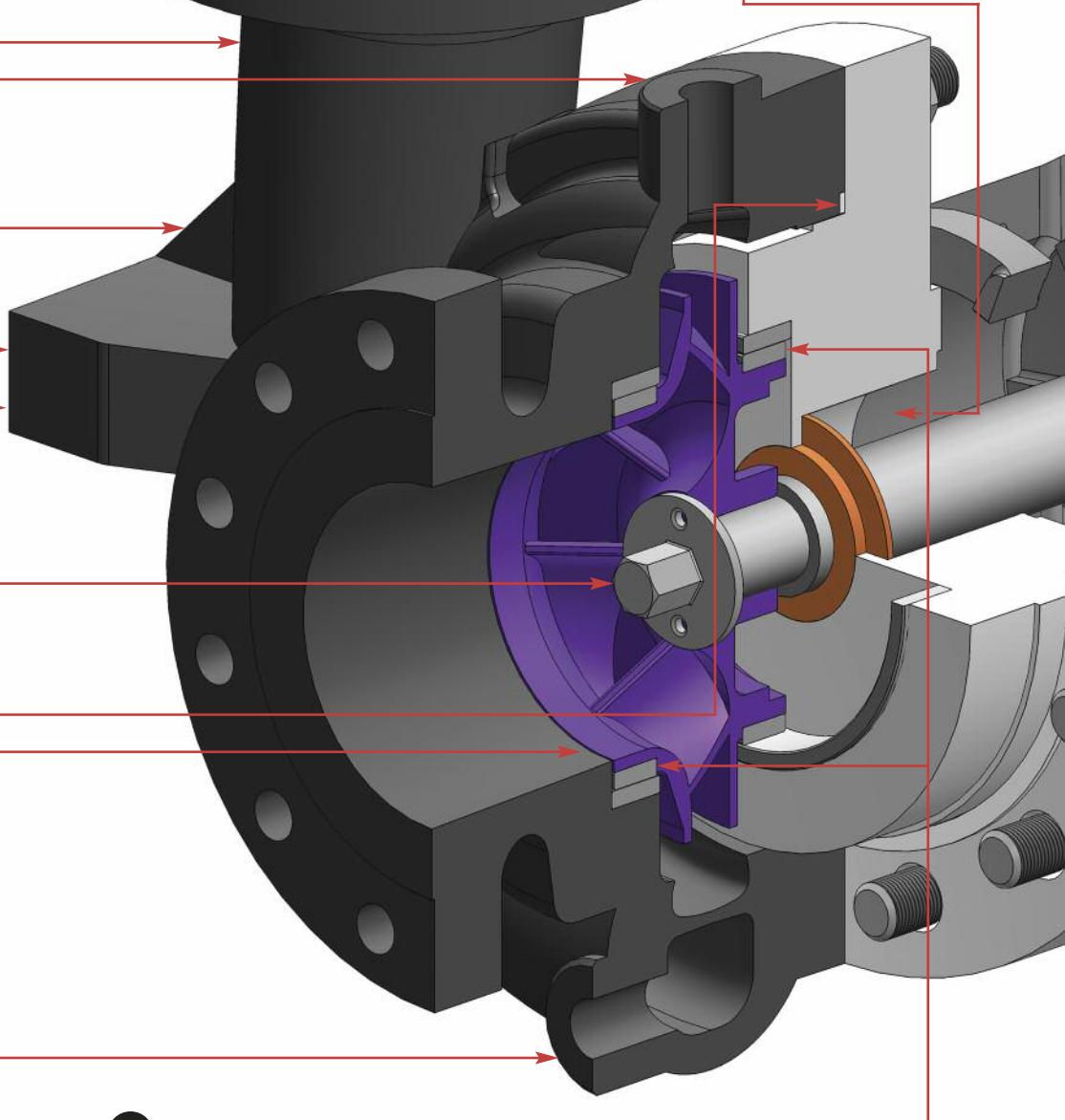
- Keyed and secured to shaft with exclusive dual set-screw locknut

Pump Casing

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

Impeller

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



ePOD Pump Selector

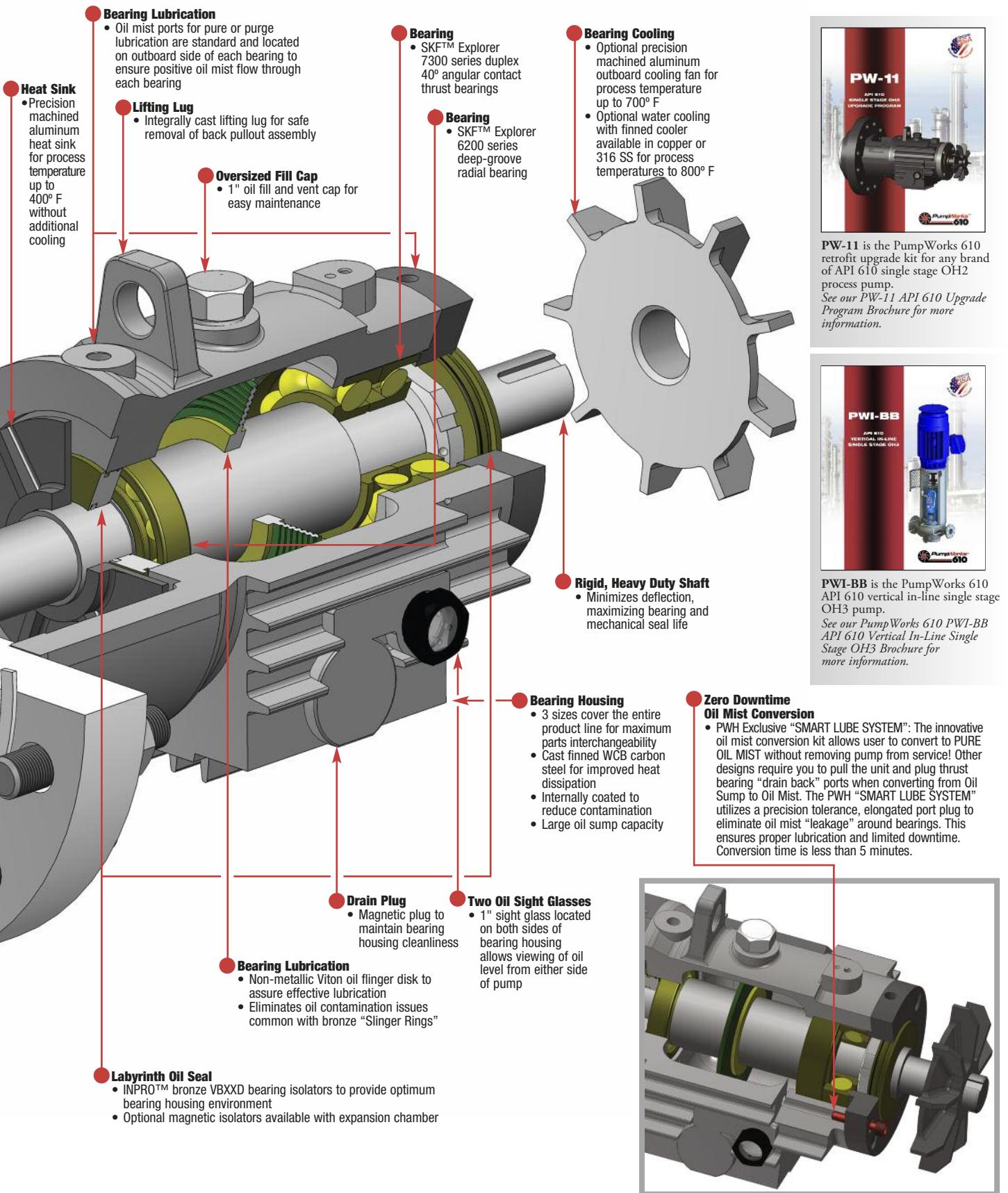
- Access to end users and specifiers to select your pump online at www.pumpworks610.com – no password or login required.

Delivery

- 16 weeks for API 610 material class S-6, S-8 and C-6
- Refer to the factory for deliveries for other API material classes and customer specific material combinations

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



PWH API 610 PROCESS PUMP

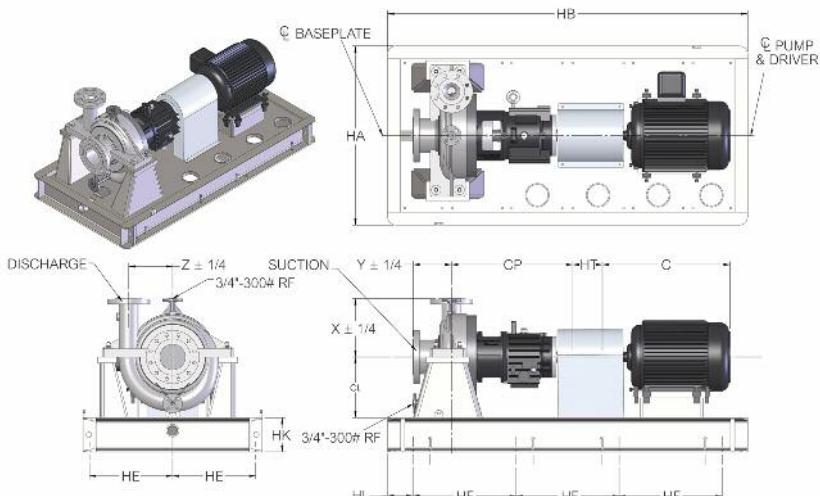
PUMP AND DRIVER DIMENSIONS

PUMP SIZE	FRAME SIZE	CP (Brg)	X	Y	Z	SUCTION	DISCHARGE
1x2x7	I-7	25.15	8.5	5.75	4.125	2	1
1.5x3x7		25.28	8.75	6.25	4.25	3	1.5
2x4x7		25.28	9.25	6.25	4.5	4	2
3x4x7		25.28	9.5	6.25	4.75	4	3
1x2x9	I-9	25.15	8.500	5.375	5.188	2	1
1x2x9L		25.15	8.500	5.375	5.188	2	1
1.5x3x9		25.29	8.500	6.642	5.125	3	1.5
2x4x9		25.21	9.500	7.000	5.500	4	2
3x4x9	I-9A	25.28	9.500	7.375	5.375	4	3
6x6x9		26.34	13.000	8.000	7.875	6	6
1.5x3x10		25.53	10.500	6.906	5.875	3	1.5
2x4x10		25.28	10.031	5.438	5.847	4	2
3x4x10A	I-10	25.65	10.063	7.438	6.313	4	3
3x4x10B		25.65	10.063	7.438	6.313	4	3
4x6x10		25.62	10.500	6.671	6.875	6	4
6x6x10		25.65	11.188	6.625	6.868	6	6
1x2x11A	I-11	25.53	10.000	6.875	5.688	2	1
1x2x11B		25.53	10.000	6.875	5.688	2	1
1x2x11BL		25.53	10.000	6.875	5.688	2	1
1x2x11C		25.53	10.000	6.875	5.688	2	1
1x3x13	II-13	28.19	12.500	8.687	6.750	3	1
1x3x13LL		28.19	12.500	8.687	6.750	3	1
1.5x3x13		27.88	11.875	7.000	6.875	3	1.5
2x4x13		27.75	13.063	7.625	7.815	4	2
3x4x13	II-13	27.75	13.063	7.500	8.375	4	3
4x6x13		27.88	14.000	9.938	9.250	6	4
6x8x13		28.44	15.063	9.188	10.500	8	6
2x4x15	II-15	28.19	13.000	8.000	8.375	4	2
3x6x15		27.91	12.368	8.063	9.188	6	3
4x6x15		28.38	13.688	9.313	10.313	6	4
4x6x15B		28.38	13.688	9.313	10.313	6	4
6x6x15	II-15	28.13	14.875	9.562	10.312	6	6
8x10x15		28.57	16.063	10.430	12.250	10	8
8x10x15H		28.57	16.063	10.430	12.250	10	8
3x6x17		28.00	13.375	8.063	10.188	6	3
3x6x18	II-18	29.94	14.500	9.000	11.000	6	3
4x6x18		30.19	15.000	11.000	12.000	6	4
6x10x18A		29.94	16.000	11.187	12.250	10	6
6x10x18B		29.94	16.000	11.187	12.250	10	6
6x10x18C	II-18	29.94	16.000	11.187	12.250	10	6
8x10x18		29.94	19.000	10.000	14.500	10	8
4x6x21		29.00	16.063	11.375	12.688	6	4
6x8x21		29.13	16.063	10.031	14.440	8	6
6x8x21L	II-21	29.13	16.063	10.031	14.440	8	6
8x10x21		29.50	19.125	10.250	15.500	10	8
10x12x18		31.38	18.250	16.000	15.000	12	10
12x12x18		31.44	24.000	20.000	19.500	12	12
10x12x21	III-21	31.44	18.000	16.000	15.750	12	10
12x12x21		31.50	24.500	22.000	20.250	12	12
6x8x23	III-23	31.31	18.000	11.500	15.750	8	6
6x10x23L		31.50	18.000	12.000	16.000	10	6
6x10x23M		31.50	18.000	11.500	16.000	10	6

PUMP	MOTOR	BASEPLATE #	MIN. CL	PUMP	MOTOR	BASEPLATE #	MIN. CL
1x2x7	184T, 213-215T	API # 3	8.250	1x3x13 1x3x13LL	256T, 284-286T/TS, 324-326T/TS	API # 5	10.500
	254-256TS	API # 3.5	9.500		364,365T/TS	API # 5.5	10.500
	324T				404-405T	API # 6	12.000
					256T, 284-286T/TS, 324-326T/TS	API # 5.5	10.500
1.5x3x7	184T, 213-215T	API # 3	8.250	1.5x3x13 1.5x3x13LL	364,365T/TS	API # 6	10.500
	254-256TS	API # 3.5	9.500		404-405T, 405TS	API # 6	11.500
	324T				444-445T/TS	API # 6.5	12.500
					326T, 364-365T/TS	API # 7	11.000
2x4x7	184T, 213-215T	API # 3	8.250	2x4x13 2x4x13LL	404-405T, 405TS	API # 7	12.000
	254-256TS	API # 3.5	9.500		444-445T/TS	API # 7.5	13.000
	324T				447T/TS, 449T	API # 7.5	13.000
					326T, 364-365T/TS	API # 6	11.000
3x4x7	184T, 213-215T	API # 3	8.250	3x4x13 3x4x13LL	404-405T, 405TS	API # 6.5	11.500
	254-256TS	API # 3.5	9.500		444-445T/TS	API # 6.5	12.500
	324T				447T/TS, 449T	API # 8	12.500
					365T/TS, 405T/TS	API # 6	11.750
1x2x9L	184T, 213-215T	API # 3	8.500	4x6x13 4x6x13LL	444-445T/TS	API # 6.5	13.250
	254-256TS	API # 3.5	9.500		447-449T/TS	API # 10	
	324T				326T, 364-365T/TS	API # 7.5	14.000
					404-405T, 405TS	API # 8	14.000
1.5x3x9	213-215T	API # 3	8.500	6x8x13 6x8x13LL	444-445T/TS	API # 12	14.000
	254-256T				447-449T/TS	API # 12	14.500
	324-326T				364-365T/TS, 404-405T, 365T	API # 6	11.750
					404-405T	API # 6.5	12.500
2x4x9	213-215T	API # 3	8.500	2x4x10 2x4x10LL	444-445T/TS	API # 10	12.500
	254-256T				447-449T/TS	API # 10	12.500
	324-326T				405T/TS	API # 6	13.500
					444-445T/TS	API # 6.5	13.500
3x4x9	215T	API # 3	9.000	3x6x15 3x6x15LL	444-445T/TS	API # 10	12.500
	254-256T				447-449T/TS	API # 10	12.500
	324-326T				405T/TS	API # 6	13.500
					444-445T/TS	API # 6.5	13.500
2x4x10	215T	API # 3	9.000	3x4x10 3x4x10LL	444-445T/TS	API # 10	12.500
	254-256T				447-449T/TS	API # 10	12.500
	324-326T				404-405T, 364T, 365T	API # 4	11.500
					404-405T	API # 4	11.500
1.5x3x10	254-256T			3x6x17 3x6x17LL	444-445T/TS	API # 8	14.000
	284-286T/TS				447-449T/TS	API # 12	14.500
	324-326T/TS				445T/TS	API # 10	14.000
	364-365T/TS				447-449T/TS	API # 12	14.500
1.5x3x12	254-256T			3x6x18 3x6x18LL	445T/TS	API # 10	14.000
	284-286T/TS				447-449T/TS	API # 12	14.500
	324-326T/TS				447-449T/TS	API # 12	14.500
	364-365T/TS				447-449T/TS	API # 10	14.000
2x4x12	254-256T			3x6x19 3x6x19LL	447-449T/TS	API # 10	14.000
	284-286T/TS				447-449T/TS	API # 12	14.500
	324-326T/TS				447-449T/TS	API # 12	14.500
	364-365T/TS				447-449T/TS	API # 10	14.000
3x4x12	254-256T			3x6x20 3x6x20LL	447-449T/TS	API # 10	14.000
	284-286T/TS				447-449T/TS	API # 12	14.500
	324-326T/TS				447-449T/TS	API # 12	14.500
	364-365T/TS				447-449T/TS	API # 10	14.000
4x6x12	254-256T			3x6x21 3x6x21LL	447-449T/TS	API # 10	14.000
	284-286T/TS				447-449T/TS	API # 12	14.500
	324-326T/TS				447-449T/TS	API # 12	14.500
	364-365T/TS				447-449T/TS	API # 10	14.000
5x8x12	254-256T			3x6x22 3x6x22LL	447-449T/TS	API # 10	14.000
	284-286T/TS				447-449T/TS	API # 12	14.500
	324-326T/TS				447-449T/TS	API # 12	14.500
	364-365T/TS				447-449T/TS	API # 10	14.000
6x8x12	254-256T			3x6x23 3x6x23LL	447-449T/TS	API # 10	14.000
	284-286T/TS				447-449T/TS	API # 12	14.500
	324-326T/TS				447-449T/TS	API # 12	14.500
	364-365T/TS				447-449T/TS	API # 10	14.000
7x10x12	254-256T			3x6x24 3x6x24LL	447-449T/TS	API # 10	14.000
	284-286T/TS				447-449T/TS	API # 12	14.500
	324-326T/TS				447-449T/TS	API # 12	14.500
	364-365T/TS				447-449T/TS	API # 10	14.000
8x10x12	254-256T			3x6x25 3x6x25LL	447-449T/TS	API # 10	14.000
	284-286T/TS				447-449T/TS	API # 12	14.500
	324-326T/TS				447-449T/TS	API # 12	14.500
	364-365T/TS				447-449T/TS	API # 10	14.000
9x12x12	254-256T			3x6x26 3x6x26LL	447-449T/TS	API # 10	14.000
	284-286T/TS				447-449T/TS	API # 12	14.500
	324-326T/TS				447-449T/TS	API # 12	14.500
	364-365T/TS				447-449T/TS	API # 10	14.000</

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		1x2x7	1x3x7	2x4x7	3x4x7	1x2x9	1x2x9L	1x3x9	2x4x9	3x4x9	6x6x9	1x3x10	2x4x10	3x4x10	4x6x10	6x6x10	1x2x11A	1x2x11B	1x2x11C	
Flange	Suction - 300# RF (IN)	2.00	3.00	4.00	4.00	2.00	2.00	3.00	4.00	4.00	6.00	3.00	4.00	4.00	6.00	2.00	2.00	2.00		
	Discharge - 300# RF (IN)	1.00	1.50	2.00	3.00	1.00	1.00	1.50	2.00	3.00	6.00	1.50	2.00	3.00	4.00	6.00	1.00	1.00	1.00	
MANIF	S-6 (PSIG @ 100°F)	2.00	3.00	4.00	4.00	2.00	2.00	3.00	2.00	3.00	740.00									
	S-8 (PSIG @ 100°F)																			
	C-6 (PSIG @ 100°F)																			
	A-6 (PSIG @ 100°F)																			
AUX PORTS	Mechanical Group	I-7		I-9		I-9A		I-10		I-11										
	Bearing Frame						I													
	Volute Type	SINGLE		SINGLE		DOUBLE		SINGLE		DOUBLE										
SHAFT	Discharge (Flush) (IN)																			
	Vent (IN)																			
	Drain (IN)																			
	Suction (IN)																			
	Max Impeller (IN)	7.00	7.00	7.00	7.00	9.00	9.00	9.00	9.00	9.00	9.00	10.50	10.50	10.50	10.50	10.50	11.12	11.12	11.12	
	Min Impeller (IN)	5.50	5.50	5.50	5.50	7.00	7.00	7.00	7.00	7.00	7.00	8.00	7.50	8.00	8.00	8.00	8.75	9.50	8.75	9.50
	Diameter at Coupling (IN)											1.63								
	Keyway at Coupling (IN)											0.38								
	Extension at coupling (IN)											3.50								
	Diameter at Mechanical Seal (IN)											2.00								
	Diameter Between Bearings (IN)											3.00								
	Distance Between Bearings (IN)											7.74								
	Radial Bearing											6212.00								
	Thrust Bearing											7312x2								
	Maximum RPM											3560.00								
	Maximum HP/100 RPM											2.00								
												4.50								

Pump Size		1x3x13	1x3x13LL	1x5x13	2x4x13	3x4x13	4x6x13	6x8x13	2x4x15	3x6x15	4x6x15	4x6x15B	6x6x15	8x10x15	3x6x17	4x6x18	6x10x18A	6x10x18B	8x10x18C	4x6x21	6x8x21	8x10x21	10x12x18	12x12x21	10x12x21	12x12x21	6x8x23	6x10x23M				
Flange	Suction - 300# RF (IN)	3.00	3.00	3.00	4.00	4.00	6.00	8.00	4.00	6.00	6.00	6.00	6.00	10.00	10.00	6.00	6.00	10.00	6.00	8.00	8.00	10.00	12.00	12.00	12.00	8.00	10.00					
	Discharge - 300# RF (IN)	1.00	1.00	1.50	2.00	3.00	4.00	6.00	2.00	3.00	4.00	4.00	4.00	6.00	8.00	3.00	3.00	4.00	6.00	6.00	8.00	10.00	12.00	12.00	12.00	6.00	6.00					
MANIF	S-6 (PSIG @ 100°F)	3.00	3.00	3.00	4.00	4.00	6.00	8.00	4.00	6.00	6.00	6.00	6.00	10.00	10.00	6.00	6.00	10.00	6.00	8.00	8.00	10.00	12.00	12.00	12.00	8.00	10.00					
	S-8 (PSIG @ 100°F)																															
	C-6 (PSIG @ 100°F)																															
	A-6 (PSIG @ 100°F)																															
AUX PORTS	Mechanical Group	II-13			II-15		II-17		II-18		II-21		III-18		III-21		III-23															
	Bearing Frame											II																				
	Volute Type	SINGLE		DOUBLE	SINGLE		DOUBLE		DOUBLE		DOUBLE		DOUBLE		DOUBLE		DOUBLE															
SHAFT	Discharge (Flush) (IN)																															
	Vent (IN)																															
	Drain (IN)																															
	Suction (IN)																															
	Max Impeller (IN)	13.25	13.25	13.25	13.25	13.25	13.25	13.25	15.50	15.50	15.50	15.50	15.50	15.50	15.50	17.00	18.00	18.00	18.00	18.00	21.00	21.00	21.00	21.00	21.00	23.50	23.00	23.00				
	Min Impeller (IN)	10.00	10.00	10.00	10.00	10.00	10.00	10.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	11.63	13.50	14.00	14.00	14.00	14.00	14.00	14.00	13.75	16.00	14.00	14.00	13.50	17.00	17.50	18.00
	Diameter at Coupling (IN)												2.25																			
	Keyway at Coupling (IN)												0.50																			
	Extension at coupling (IN)												3.50																			
	Diameter at Mechanical Seal (IN)												2.75																			
	Diameter Between Bearings (IN)												3.50																			
	Distance Between Bearings (IN)												8.96																			
	Radial Bearing												6215.00																			
	Thrust Bearing												7317x2																			
	Maximum RPM												3560.00																			
	Maximum HP/100 RPM	5.00	1.90	6.90	8.00	11.50	15.00	6.10	7.50	13.20	13.50	7.70	8.80	11.90	12.50	3.50	6.00	12.00	8.00	11.00	15.00	9.00	15.00	13.00	23.00	23.00	28.00	35.38	51.43	31.87	25.73	



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