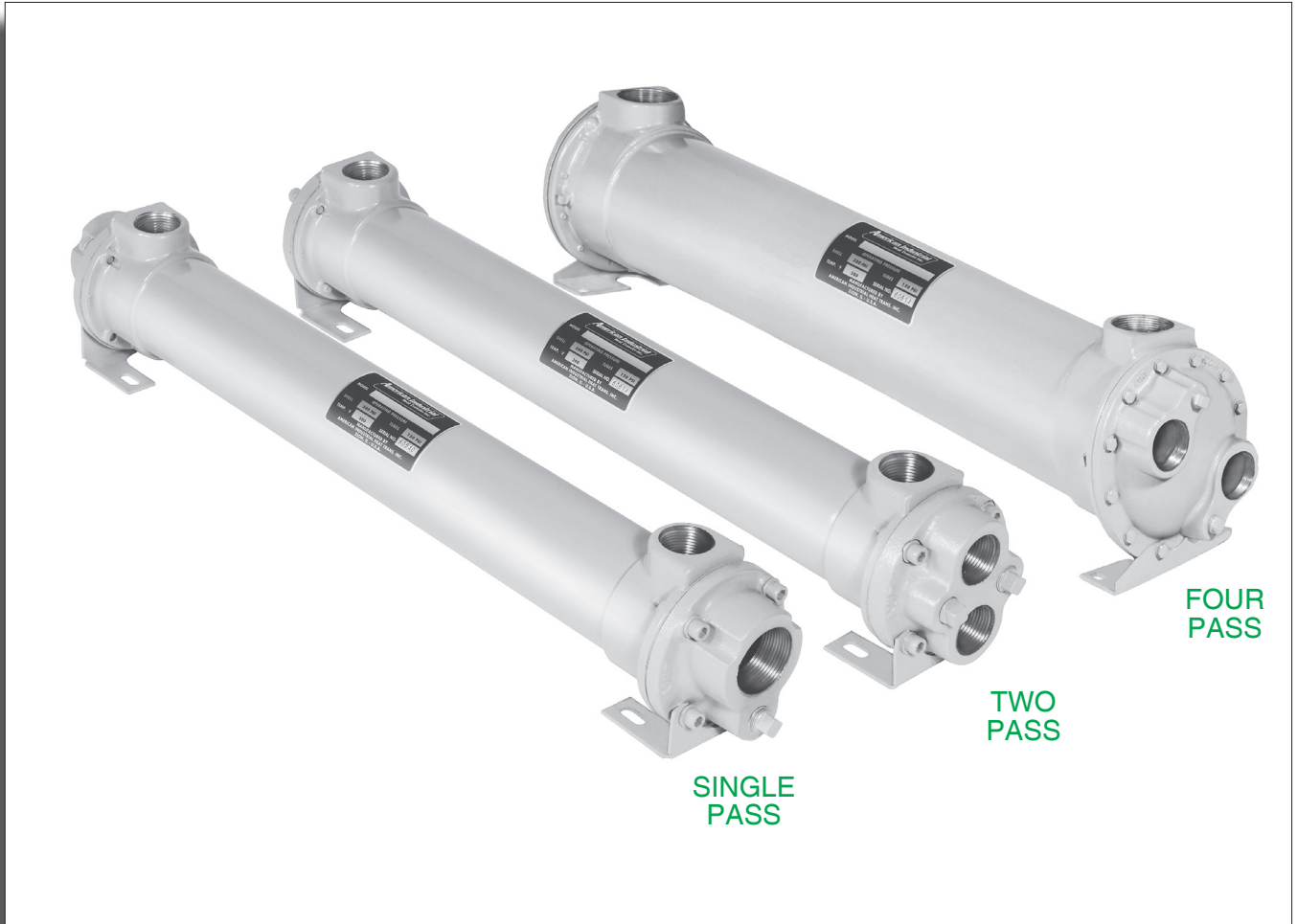


**AA - STA SERIES**



**Fixed Tube Bundle Liquid Cooled**

# HEAT EXCHANGERS

- Computer generated data sheet available for any application
- Operating pressure for tubes 150 PSI.
- Operating pressure for shell 300 PSI.
- Operating temperature 300 °F.
- Can be customized to fit any applications.
- Cools: Fluid power systems, rock crushers, presses, shears, lubrication equipment for paper machinery, gear drives, marine transmissions, etc.

## AA & STA Series overview

---



### AA SERIES

Fixed tube construction heat exchangers with NPT connections. Made of brass with copper cooling tubes and cast iron end bonnets. Standard sizes from 2" through 8" diameters, and from 1.3 to 200 sq.ft. Standard one, two, and four pass models are available. Options include 90/10 copper nickel and 316 stainless steel cooling tubes, bronze end bonnets and zinc anodes. Can be customized to fit your requirements.

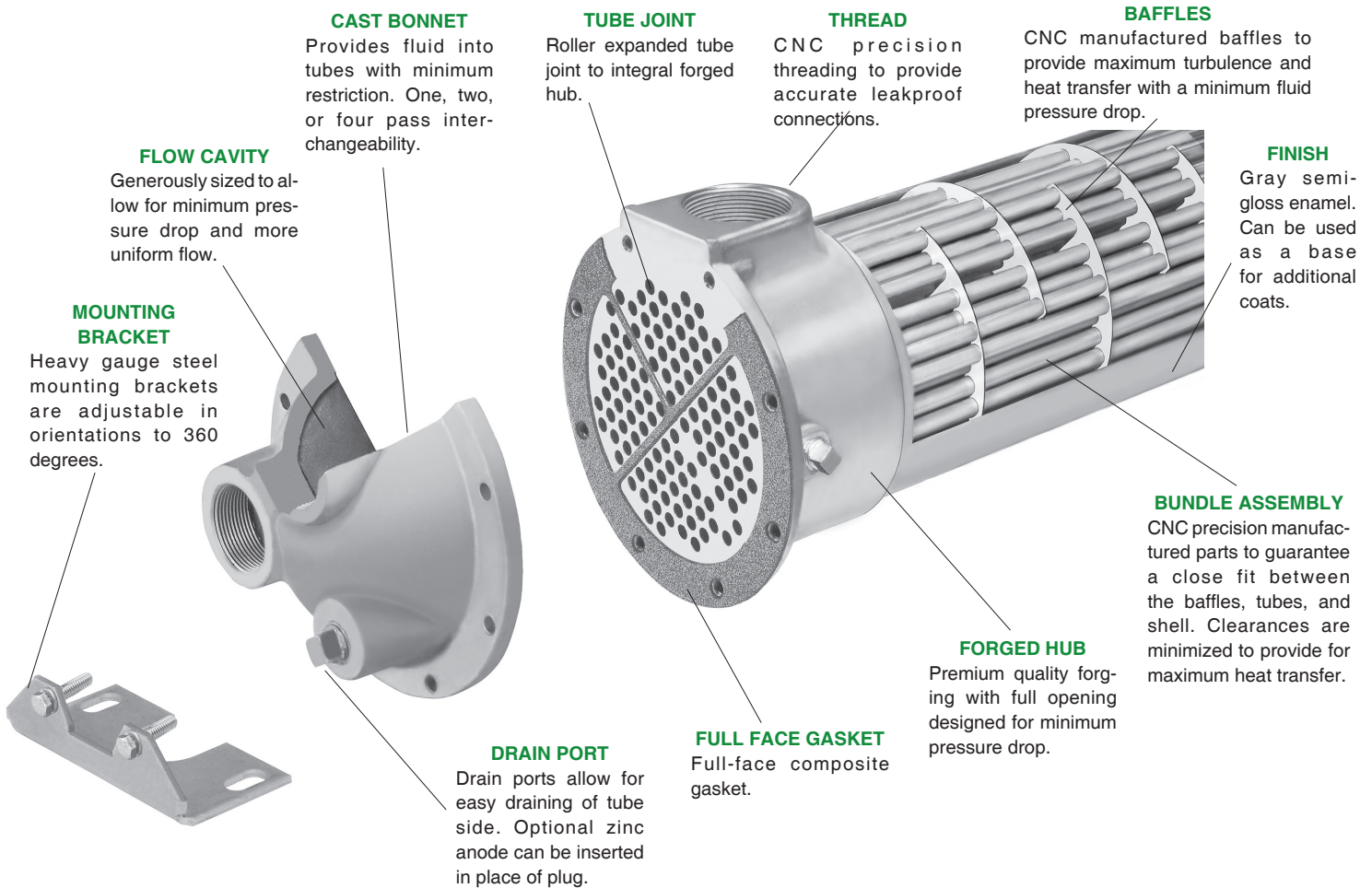
Optional 10" diameter units in brass are available upon request.



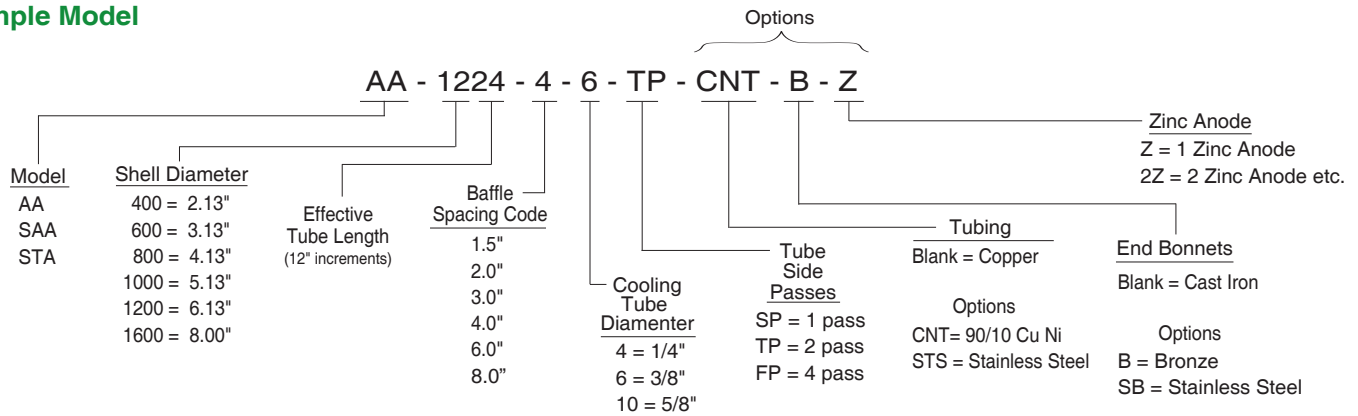
### STA SERIES

Similar in design to AA series with fixed tube construction and NPT connections made of all 316 stainless steel. Standard sizes from 2" through 8" diameters. From 1.3 to 200 sq. ft. Standard one, two and four pass models are available. Larger diameters available upon request. Can be customized to fit your requirements.

# AA & STA Series construction



## Example Model



## STANDARD CONSTRUCTION MATERIALS & RATINGS

Standard Model	AA Series	SAA Series*	STA Series	Standard Unit Ratings
Shell	Brass	Steel	316 Stainless Steel	Operating Pressure Tubes 150 psig
Tubes	Copper	Copper	316 Stainless Steel	
Baffle	Aluminum / Brass	Aluminum / Brass	316 Stainless Steel	
Integral End Hub	Forged Brass	Forged Brass	316 Stainless Steel	Operating Pressure Shell 300 psig
End Bonnets	Cast Iron	Cast Iron	316 Stainless Steel	Operating Temperature 300 °F
Mounting Brackets	Steel	Steel	Steel	
Gasket	Hypalon Composite	Hypalon Composite	Hypalon Composite	

\*Offered in 5" through 8" shell diameter.

# AA & STA Series performance

## Instructions

The selection chart provided contains an array of popular sizes for quick sizing. It does not provide curves for all models available. Refer to page 24 & 25 for detailed calculation information.

Computer selection data sheets for standard or special models are available through the engineering department of American Industrial. To use the followings graphs correctly, refer to the instruction notes "1-5".

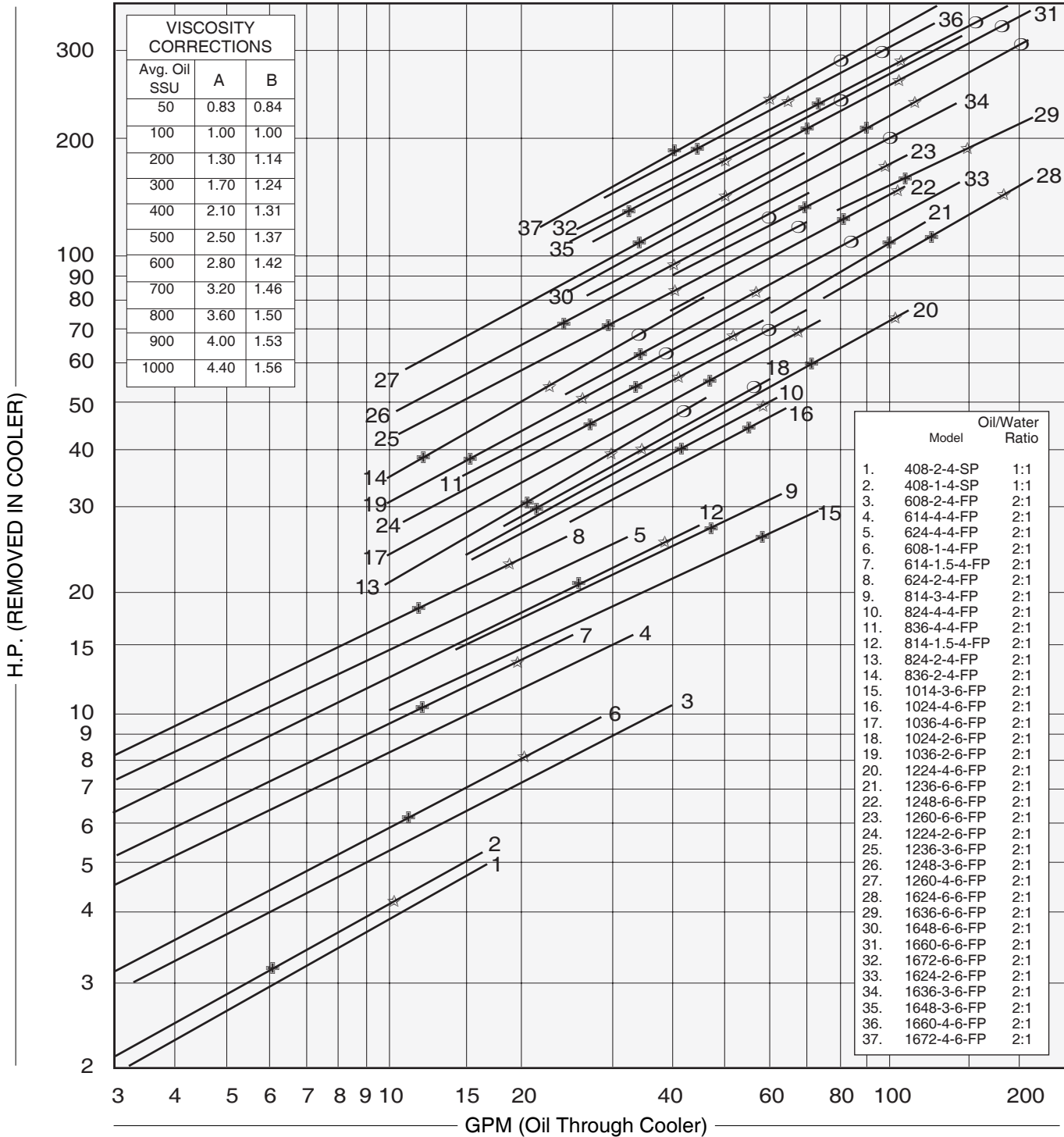
- 1) HP Curves are based upon a 40°F approach temperature; for example: oil leaving a cooler at 125°F, using 85°F cooling water (125°F - 85°F = 40°F).
- 2) The oil to water ratio of 1:1 or 2:1 means that for every 1 gallon of oil circulated, a minimum of 1 or 1/2 gallon (respectively) of 85°F water

must be circulated to match the curve results.

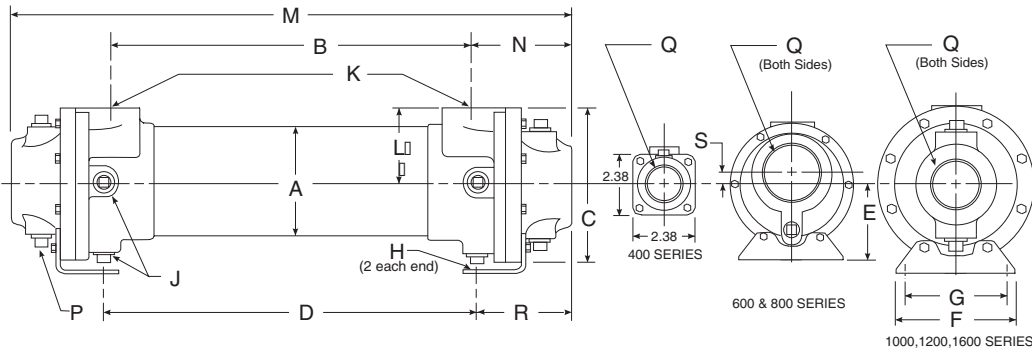
- 3) OIL PRESSURE DROP CODING: ♣ = 5 psi; ☆ = 10 psi; ○ = 20 psi; △ = 50psi. Curves that have no pressure drop code symbols indicate that the oil pressure drop is less than 5 psi for the flow rate shown.
- 4) Pressure Drop is based upon oil with an average viscosity of 100 SSU. If the average oil viscosity is other than 100 SSU, then multiply the indicated Pressure Drop by the corresponding value from corrections table A.
- 5) Corrections for approach temperature and oil viscosity are as follows:

$$\text{H.P.}_{(\text{In Cooler})}^{\text{(Removed)}} = \text{H.P.}_{(\text{Heat Load})}^{\text{(Actual)}} \times \left( \frac{40}{\text{Actual Approach}} \right) \times B.$$

## HEAT ENERGY DISSIPATION RATES (Basic Stock Model)

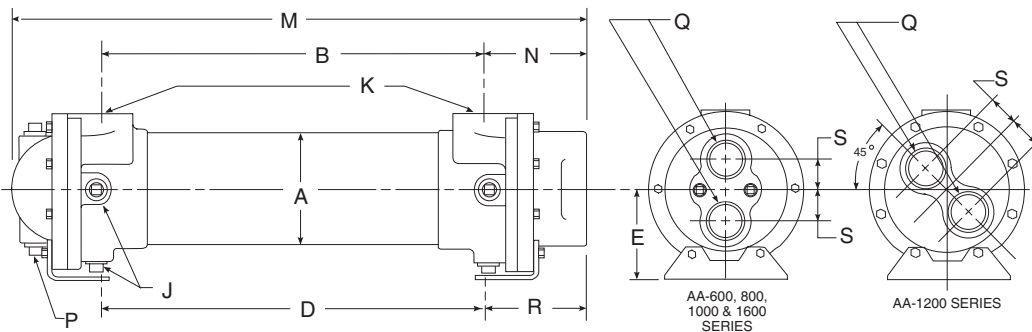


# AA & STA Series dimensions



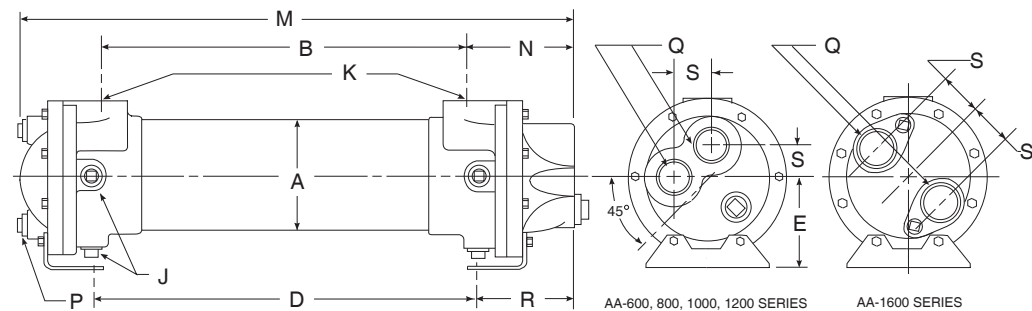
Model	M	N	P NPT	Q NPT	R	S
AA-408	11.00	2.38	-	1.00	-	-
AA-608	11.25					
AA-614	17.25	2.56	(2)	1.50	3.06	0.38
AA-624	27.25		.38			
AA-814	18.00					
AA-824	28.00	3.44	(2)	2.00	2.56	0.50
AA-836	40.00		.38			
AA-1014	18.50					
AA-1024	28.50	3.69	(4)	2.50	3.38	-
AA-1036	40.50		.38			
AA-1224	29.25					
AA-1236	41.25					
AA-1248	53.25	4.25	(4)	3.00	3.75	-
AA-1260	65.25		.38			
AA-1272	77.25					
AA-1624	31.25					
AA-1636	43.25					
AA-1648	55.25	6.52	(4)	4.00	5.25	-
AA-1660	67.25		.50			
AA-1672	79.25					
AA-1684	91.25					

Single Pass (SP)



Model	M	N	P NPT	Q NPT	R	S
AA-608	10.75					
AA-614	16.75	2.44	(2)	1.00	2.94	1.00
AA-624	26.75		.38			
AA-814	17.62					
AA-824	27.62	3.44	(2)	1.25	2.56	1.19
AA-836	39.62		.38			
AA-1014	18.50					
AA-1024	28.50	3.69	(2)	1.50	3.50	1.50
AA-1036	40.50		.38			
AA-1224	28.75					
AA-1236	40.75					
AA-1248	52.75	4.25	(2)	2.00	3.75	1.56
AA-1260	64.75		.38			
AA-1272	76.75					
AA-1624	30.50					
AA-1636	42.50					
AA-1648	54.50	6.00	(2)	2.50	5.25	2.25
AA-1660	66.50		.50			
AA-1672	78.50					
AA-1684	90.50					

Two Pass (TP)



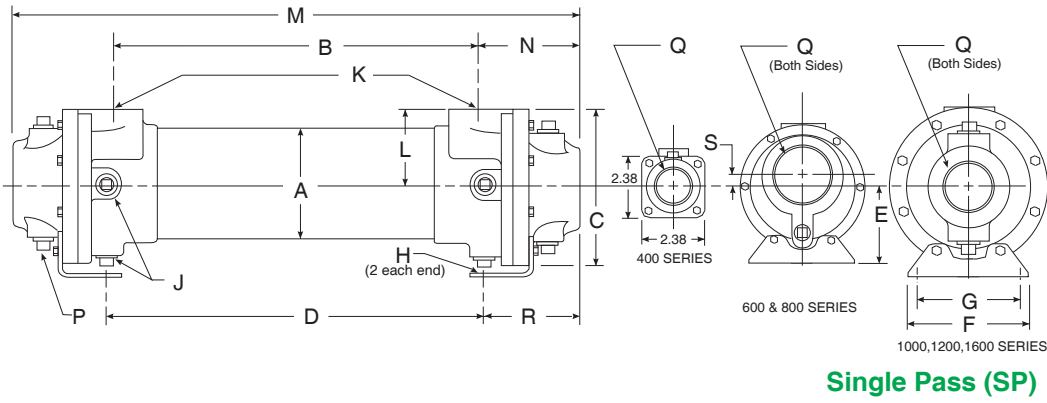
Model	M	N	P NPT	Q NPT	R	S
AA-608	10.88					
AA-614	16.88	2.44	(2)	.75	2.81	1.00
AA-624	26.88		.38			
AA-814	17.62					
AA-824	27.62	3.44	(2)	.75	2.56	1.06
AA-836	39.62		.38			
AA-1014	18.50					
AA-1024	28.50	3.80	(3)	1.00	3.25	1.69
AA-1036	40.50		.38			
AA-1224	29.50					
AA-1236	41.50					
AA-1248	53.50	4.56	(3)	1.50	3.75	2.00
AA-1260	65.50		.50			
AA-1272	77.50					
AA-1624	30.75					
AA-1636	42.75					
AA-1648	54.75	6.08	(4)	2.00	5.25	2.62
AA-1660	66.75		.50			
AA-1672	78.75					
AA-1684	90.75					

Four Pass (FP)

## COMMON DIMENSIONS & WEIGHTS

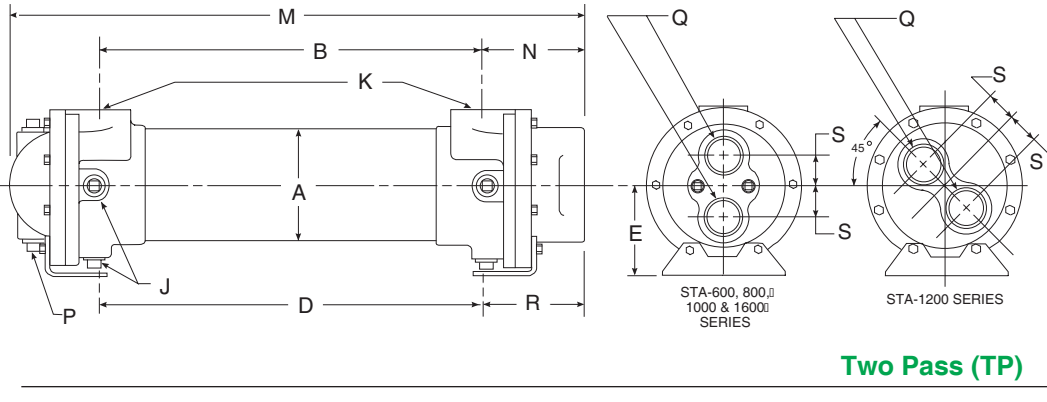
Model	A	B	C	D	E	F	G	H	J NPT	K NPT	L	Approx. Weight	Model
AA-408	2.125	6.25	-	-	-	-	-	-	-	.50	1.69	7	AA-408
AA-608		6.12		5.12								12	AA-608
AA-614	3.125	12.12	4.19	11.12	2.44	3.50	2.50	.38øx.88	(2) .25	1.00	2.44	16	AA-614
AA-624		22.12		21.12								20	AA-624
AA-814		11.12		12.88								37	AA-814
AA-824	4.125	21.12	5.88	22.88	3.50	4.75	3.50	.50øx1.62	(6) .38	1.50	3.12	47	AA-824
AA-836		33.12		34.88								67	AA-836
AA-1014		11.12		11.75								45	AA-1014
AA-1024	5.125	21.12	6.50	21.75	3.75	5.00	4.00	.50øx.88	(6) .38	1.50	3.62	60	AA-1024
AA-1036		33.12		33.75								82	AA-1036
AA-1224		20.50		21.50								90	AA-1224
AA-1236		32.50		33.50								110	AA-1236
AA-1248	6.125	44.50	7.50	45.50	4.12	6.00	5.00	.50øx.88	(6) .38	2.00	4.25	130	AA-1248
AA-1260		56.50		57.50								150	AA-1260
AA-1272		68.50		69.50								180	AA-1272
AA-1624		19.00		20.50								160	AA-1624
AA-1636		31.00		32.50								185	AA-1636
AA-1648		43.00		44.50								205	AA-1648
AA-1660	8.00	55.00	9.75	56.50	5.38	8.25	7.00	.62øx1.12	(6) .38	3.00	5.62	235	AA-1660
AA-1672		67.00		68.50								280	AA-1672
AA-1684		79.00		80.50								320	AA-1684

# STA Series



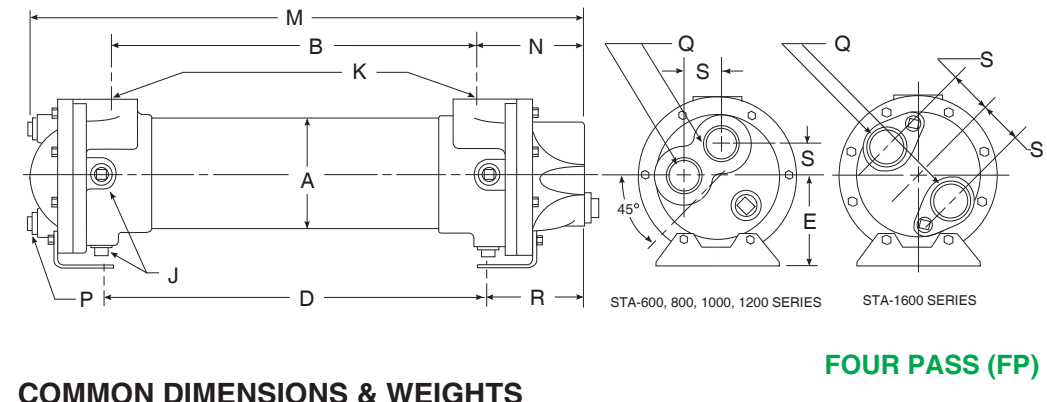
Single Pass (SP)

Model	M	N	P NPT	Q NPT	R	S
STA-408	11.00	2.38	-	1.00	-	-
STA-608	11.25					
STA-614	17.25	2.56	(2)	1.50	3.06	0.38
STA-624	27.25		.38			
STA-814	18.00					
STA-824	28.00	3.44	(2)	2.00	2.56	0.50
STA-836	40.00		.38			
STA-1014	18.50					
STA-1024	28.50	3.69	(4)	2.50	3.38	-
STA-1036	40.50		.38			
STA-1224	29.25					
STA-1236	41.25	4.25	(4)	3.00	3.75	-
STA-1248	53.25		.38			
STA-1260	65.25					
STA-1272	77.25					
STA-1624	31.25					
STA-1636	43.25					
STA-1648	55.25	6.52	(4)	4.00	5.25	-
STA-1660	67.25		.50			
STA-1672	79.25					
STA-1684	91.25					



Two Pass (TP)

Model	M	N	P NPT	Q NPT	R	S
STA-608	10.75					
STA-614	16.75	2.44	(2)	1.00	2.94	1.00
STA-624	26.75		.38			
STA-814	17.62					
STA-824	27.62	3.44	(2)	1.25	2.56	1.19
STA-836	39.62		.38			
STA-1014	18.50					
STA-1024	28.50	3.69	(2)	1.50	3.50	1.50
STA-1036	40.50		.38			
STA-1224	28.75					
STA-1236	40.75	4.25	(2)	2.00	3.75	1.56
STA-1248	52.75		.38			
STA-1260	64.75					
STA-1272	76.75					
STA-1624	30.50					
STA-1636	42.50					
STA-1648	54.50	6.00	(2)	2.50	5.25	2.25
STA-1660	66.50		.50			
STA-1672	78.50					
STA-1684	90.50					



FOUR PASS (FP)

Model	M	N	P NPT	Q NPT	R	S
STA-608	10.88					
STA-614	16.88	2.44	(2)	.75	2.81	1.00
STA-624	26.88		.38			
STA-814	17.62					
STA-824	27.62	3.44	(2)	.75	2.56	1.06
STA-836	39.62		.38			
STA-1014	18.50					
STA-1024	28.50	3.80	(3)	1.00	3.25	1.69
STA-1036	40.50		.38			
STA-1224	29.50					
STA-1236	41.50	4.56	(3)	1.50	3.75	2.00
STA-1248	53.50		.50			
STA-1260	65.50					
STA-1272	77.50					
STA-1624	30.75					
STA-1636	42.75					
STA-1648	54.75	6.08	(4)	2.00	5.25	2.62
STA-1660	66.75		.50			
STA-1672	78.75					
STA-1684	90.75					

## COMMON DIMENSIONS & WEIGHTS

Model	A	B	C	D	E	F	G	H	J NPT	K	L	Approx. Weight	Model
STA-408	2.125	6.25	-	-	-	-	-	-	-	.50	1.69	7	STA-408
STA-608		6.12		5.12								12	STA-608
STA-614	3.125	12.12	4.19	11.12	2.44	3.50	2.50	.38x.88	(2)	1.00	2.44	16	STA-614
STA-624		22.12		21.12					.25			20	STA-624
STA-814		11.12		12.88								37	STA-814
STA-824	4.125	21.12	5.88	22.88	3.50	4.75	3.50	.50x1.62	(6)	1.50	3.12	47	STA-824
STA-836		33.12		34.88					.38			67	STA-836
STA-1014		11.12		11.75								45	STA-1014
STA-1024	5.125	21.12	6.50	21.75	3.75	5.00	4.00	.50x.88	(6)	1.50	3.62	60	STA-1024
STA-1036		33.12		33.75					.38			82	STA-1036
STA-1224		20.50		21.50								90	STA-1224
STA-1236		32.50		33.50								110	STA-1236
STA-1248	6.125	44.50	7.50	45.50	4.12	6.00	5.00	.50x.88	(6)	2.00	4.25	130	STA-1248
STA-1260		56.50		57.50					.38			150	STA-1260
STA-1272		68.50		69.50								180	STA-1272
STA-1624		19.00		20.50								160	STA-1624
STA-1636		31.00		32.50								185	STA-1636
STA-1648		43.00		44.50								205	STA-1648
STA-1660	8.00	55.00	9.75	56.50	5.38	8.25	7.00	.62x1.12	(6)	3.00	5.62	235	STA-1660
STA-1672		67.00		68.50					.38			280	STA-1672
STA-1684		79.00		80.50								320	STA-1684