

### TYPE "SU" HEATER

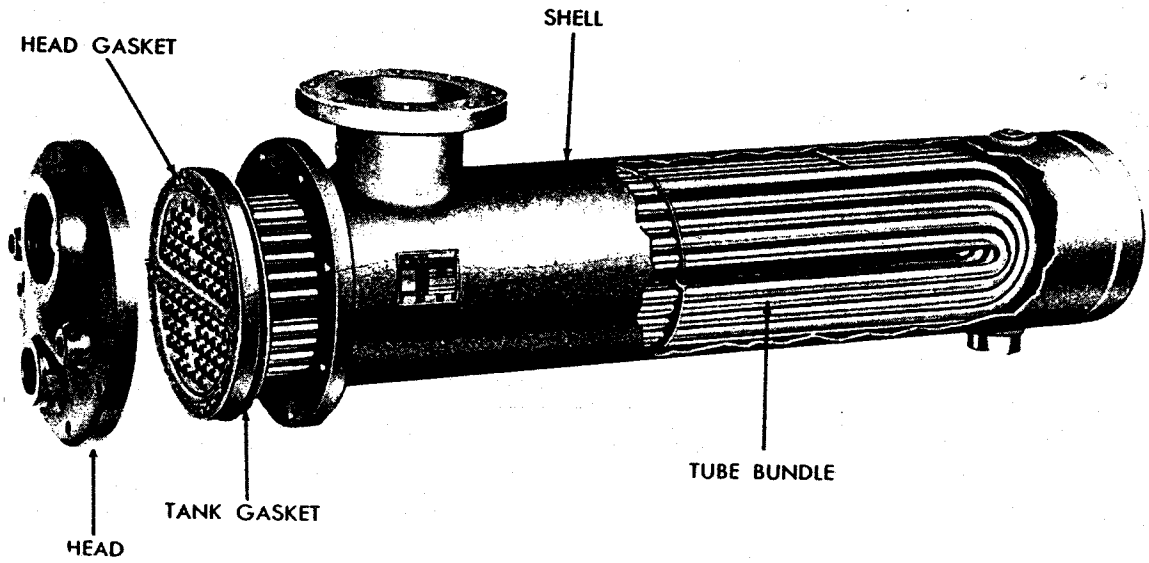


Figure 97

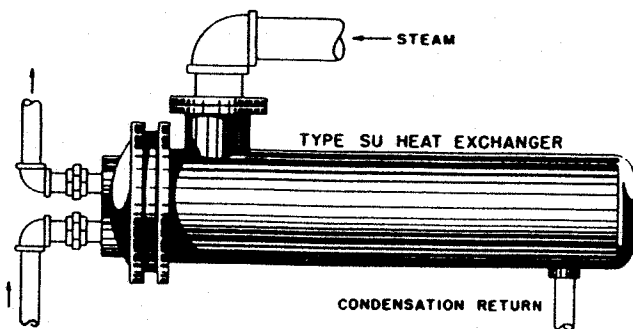


Figure 98

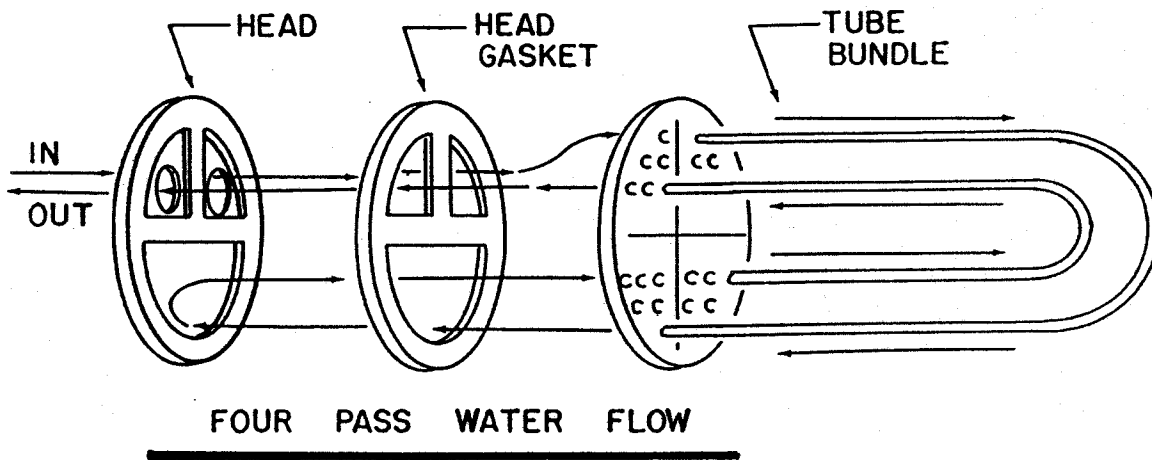
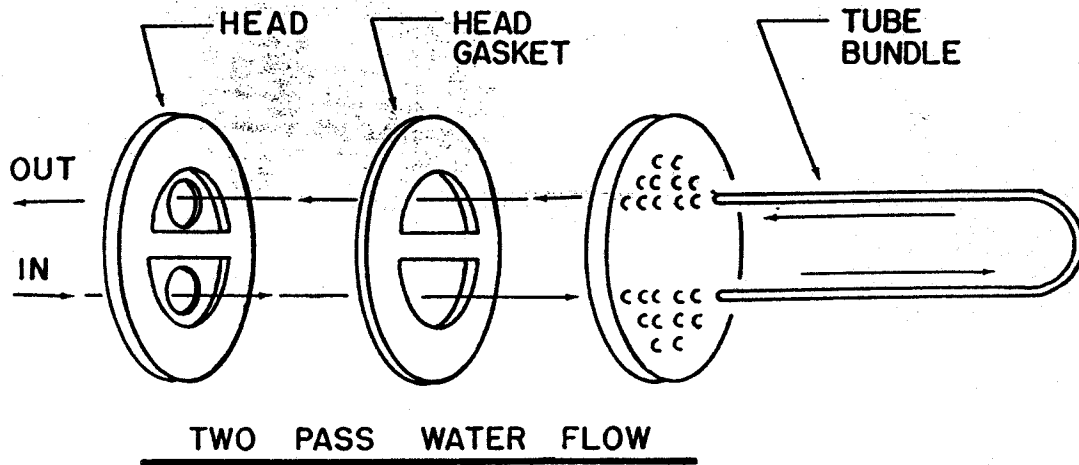


Figure 88

## TYPE "WU" HEATER

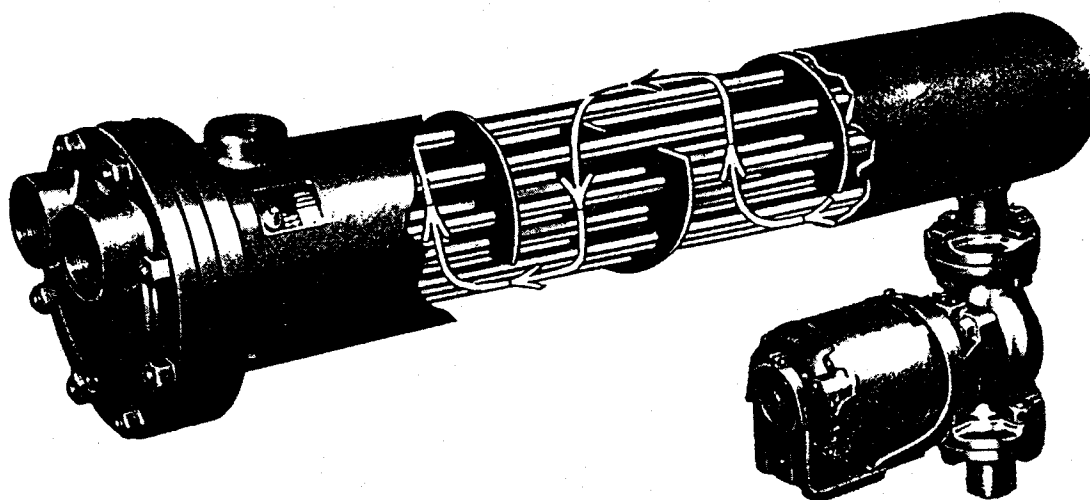


Figure 87

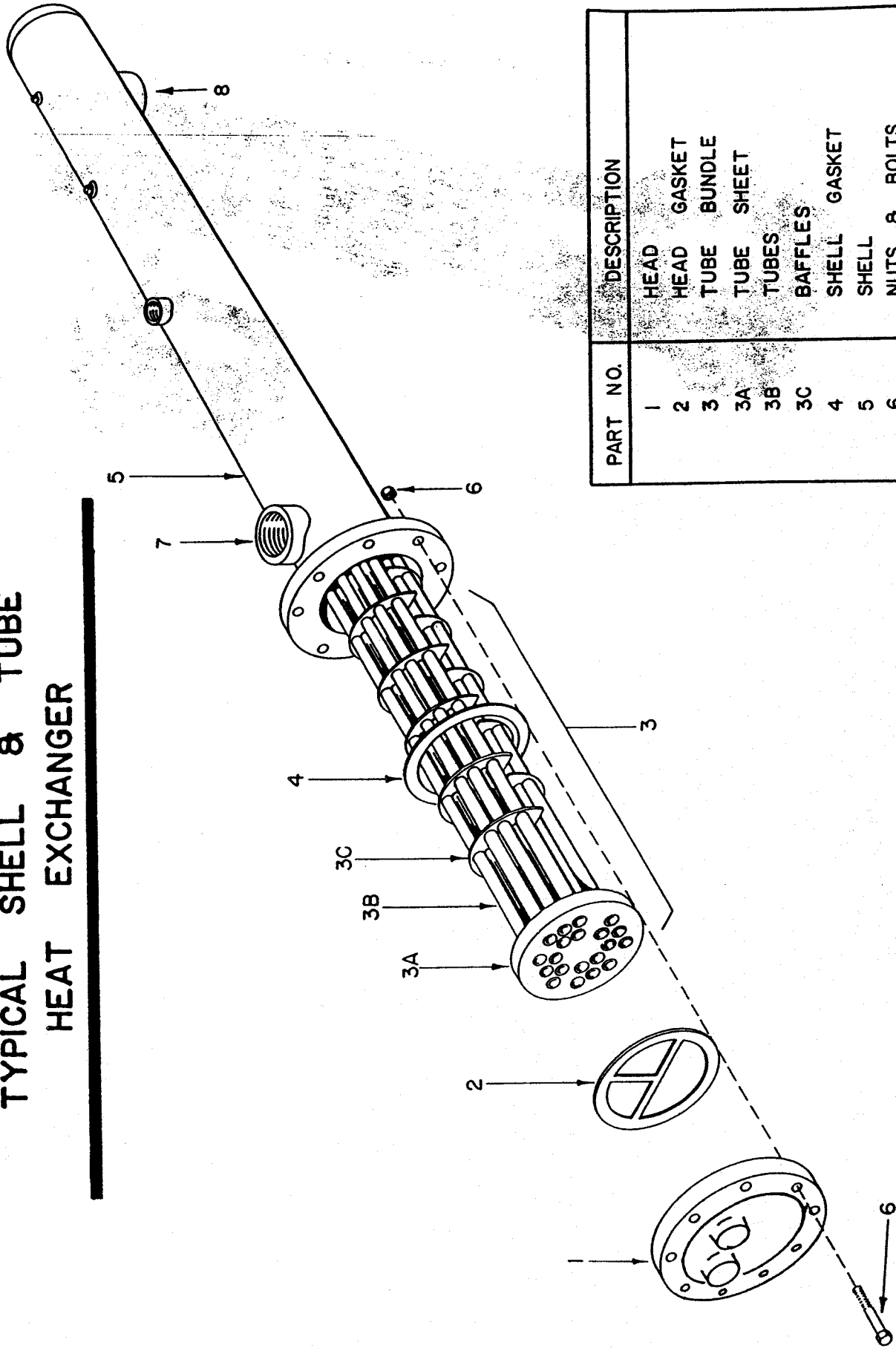
In the case of hot water boilers, the direction of water flow through the shell is primarily dependent on prevention of air binding. The recommended flow is, as previously stated, from the bottom of the boiler. However, if an Airtrol System is provided on the boiler and the heat exchanger shell is pitched up slightly at end with top opening for initial venting of air, flow may be in the other direction. Because of the "U" tube construction, heat transfer characteristics are, for all practical purposes, the same in either case.

### Tubeside Water Flow

Water passes through the tubes as directed by the front head construction. The "U" bend construction of the tube bundle makes it possible to have either two, four or six pass flow through the heat exchanger by providing the proper partitions in the front head.

For two pass flow, water enters the bottom head opening, passes through the bottom section of the tube bundle first and then through the top half, leaving by way of the top opening. For four pass operation, the head openings are side by side in the top half of the head with a vertical partition separating them. The water, therefore, makes two passes through each half of the tube bundle for a total of four passes. Figure 88 illustrates both two and four pass flow. For six pass flow, the head openings are diagonal to each other with the inlet on the bottom left side and the outlet on the top right side. Additional head partitions are used to provide a total of six water passes.

# TYPICAL SHELL & TUBE HEAT EXCHANGER

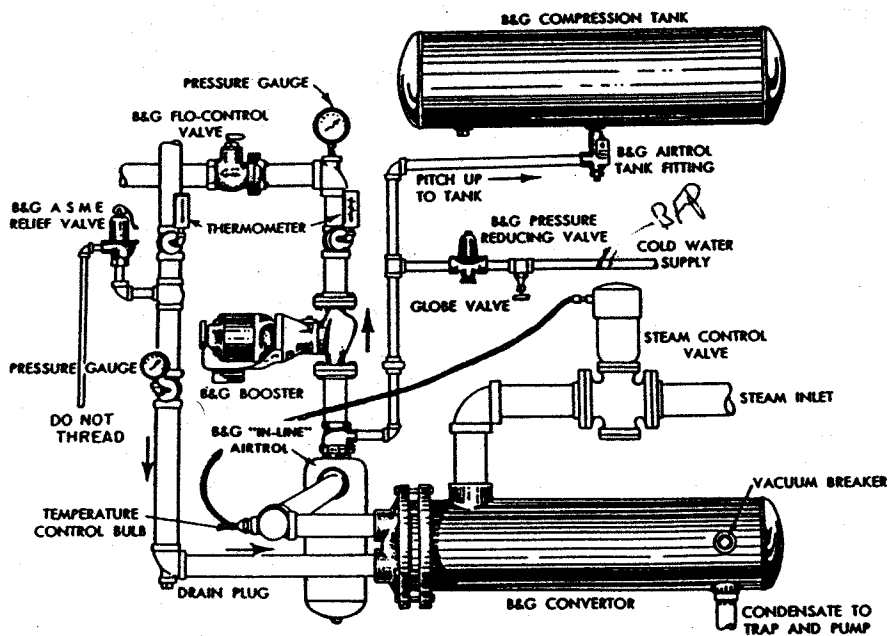


PART NO.	DESCRIPTION
1	HEAD
2	HEAD GASKET
3	TUBE BUNDLE
3A	TUBE SHEET
3B	TUBES
3C	BAFFLES
4	SHELL GASKET
5	SHELL
6	NUTS & BOLTS
7	TOP SHELL OPENING
8	BOTTOM SHELL OPENING

Figure 86

A vacuum breaker, which can be a swing check valve with its disc opening into the heat exchanger shell, will relieve the vacuum and permit the condensate to drain off under low load conditions. In vacuum systems, the inlet to the vacuum breaker or check valve must be connected to the condensate return main. However, in gravity return systems the return is vented to atmosphere and the vacuum breaker may be likewise vented. Figure 99 gives details on the discussion.

The installation principles discussed for radiation water heaters in the section on "WU" heat exchangers also apply to "SU" heat exchangers. Figure 100 illustrates how an "SU" heater is piped when used to heat water for radiation. Note that the only difference between this and the "WU" installation shown in Figure 92 is that the heated water temperature is regulated by a steam controller instead of a pump aquastat. The same installation practices illustrated in Figures 92, 94 and 96 may also be applied to "SU" heat exchangers.

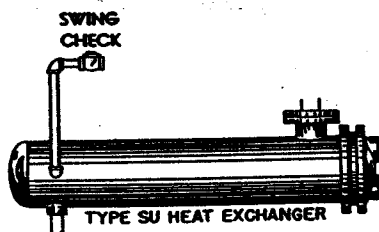


Typical installation of "SU" Heat Exchanger when used as a Converter.

Figure 100

"SU" heat exchangers are often used as Booster heaters, utilizing water from a medium temperature heat exchanger and bringing it up to the high temperatures required for dishwashers, sterilizers or laundries. Figure 101 shows such an installation.

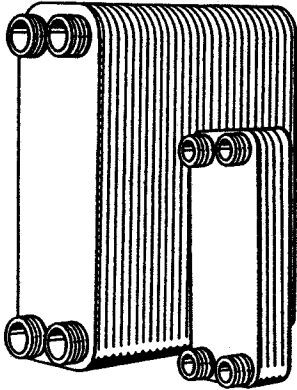
NOTE: DISC OF VALVE  
MUST SWING  
IN TOWARDS  
EXCHANGER.



TYPICAL VACUUM BREAKER INSTALLATION

Figure 105

JOB _____  UNIT TAG NO. _____ ENGINEER _____ CONTRACTOR _____	B & G REPRESENTATIVE _____  ORDER NO. _____ DATE _____ SUBMITTED BY _____ DATE _____ APPROVED BY _____ DATE _____
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## Type BP Honeycomb™ Brazed Plate Heat Exchanger

### DESCRIPTION

TYPE "BP" Honeycomb Heat Exchangers are of the brazed plate design. The heat transfer surface consists of 316 stainless steel corrugated plates (See Bulletin C-312). The channel plates are brazed together creating a sealed

system. Edges, ports and all channel plate contact points are also brazed for strength. The flow medians are directed through alternate flow channels between the plates in a counterflow direction.

### OPERATING DATA

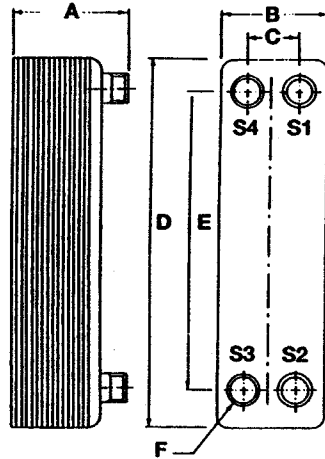
**DUTY**

1. Model Number \_\_\_\_\_  
 Service .....Cooler \_\_\_\_\_ Heater \_\_\_\_\_

	PRIMARY	SECONDARY
2. Fluid Circulated .....	_____	_____
3. Total Flow Expressed in GPM, GPH, lbs./min. ....	_____	_____
4. Specific Gravity.....	_____	_____
5. Specific Heat .....	_____	_____
6. Latent Heat .....	_____	_____
7. Viscosity Expressed in Proper Units and Temperature such as centipoises @ °F .....	_____	_____
8. Temperature In/Out .....	/	/
9. Heat Load BTU/hr. ....	_____	_____
10. Thermal Conductivity .....	_____	_____
11. Maximum Operating Temperature of Unit .....	_____	_____
12. Pressure Drop (Maximum) .....	_____	_____
13. Fouling Factor or Percentage of Additional Surface .....	_____	_____

**APPROVALS**

## Type BP Heat Exchanger Dimensions



**NOTE:** For all models except BP420, BP421, and BP422, add 1/16" to Dimension A for overall height of connections S1 and S2.

### DIMENSIONS (INCHES)

MODEL	A	B	C	D	E	F	WEIGHT (LBS)
BP400	*	3 <sup>3</sup> / <sub>32</sub>	1 <sup>21</sup> / <sub>32</sub>	8 <sup>3</sup> / <sub>16</sub>	6 <sup>3</sup> / <sub>4</sub>	3/4" NPT	†
BP405	*	3 <sup>3</sup> / <sub>32</sub>	1 <sup>21</sup> / <sub>32</sub>	12 <sup>13</sup> / <sub>32</sub>	11	3/4" NPT	††
BP410	**	4 <sup>3</sup> / <sub>8</sub>	2	12 <sup>1</sup> / <sub>4</sub>	9 <sup>27</sup> / <sub>32</sub>	1" NPT	†††
BP411	**	4 <sup>3</sup> / <sub>8</sub>	2	12 <sup>1</sup> / <sub>4</sub>	9 <sup>27</sup> / <sub>32</sub>	1" NPT	†††
BP412	**	4 <sup>3</sup> / <sub>8</sub>	2	12 <sup>1</sup> / <sub>4</sub>	9 <sup>27</sup> / <sub>32</sub>	1" NPT	†††
BP415	**	4 <sup>3</sup> / <sub>8</sub>	2	20 <sup>23</sup> / <sub>32</sub>	18 <sup>11</sup> / <sub>32</sub>	1" NPT	††††
BP420	***	7 <sup>17</sup> / <sub>32</sub>	3 <sup>5</sup> / <sub>8</sub>	24 <sup>11</sup> / <sub>32</sub>	20 <sup>7</sup> / <sub>16</sub>	2" NPT	†††††
BP421	***	7 <sup>17</sup> / <sub>32</sub>	3 <sup>5</sup> / <sub>8</sub>	24 <sup>11</sup> / <sub>32</sub>	20 <sup>7</sup> / <sub>16</sub>	2" NPT	†††††
BP422	***	7 <sup>17</sup> / <sub>32</sub>	3 <sup>5</sup> / <sub>8</sub>	24 <sup>11</sup> / <sub>32</sub>	20 <sup>7</sup> / <sub>16</sub>	2" NPT	†††††

Dimensions are subject to change. If exact dimensions are needed for layout, write for certified prints.

\*A = 1.137 + (N x .0925)      † Weight = 1.54 + (N x .132)      †††† Weight = 4.2 + (N x .507)  
 \*\*A = 1.102 + (N x .0925)      †† Weight = 2.2 + (N x .243)      ††††† Weight = 15.4 + (N x .97)  
 \*\*\*A = 2.3 + (N x .1004)      ††† Weight = 2.6 + (N x .287)      N = Number of Channel Plates

### Typical Connection Locations

#### Duty: Liquid-to-Liquid

	BP400, BP405, BP410, BP411, BP412(MH), BP415, BP420(AE), BP421, BP422	BP412(ML), BP420(AH)
Hot In	S4	S1
Hot Out	S3	S2
Cold In	S2	S3
Cold Out	S1	S4

\* When cold side flow rate is greater than hot side flow rate.

\*\* When hot side flow rate is greater than cold side flow rate.

#### Duty: Steam-to-Liquid

	BP400, BP405, BP410, BP411, BP412, BP415, BP420, BP421, BP422
Steam In	S4
Cond. Out	S3
Cold In	S2
Cold Out	S1

#### STANDARD MATERIALS

COVER PLATES: Stainless Steel AISI 316

CHANNEL PLATES: Stainless Steel AISI 316

CONNECTIONS: Stainless Steel AISI 316

BRAZING MATERIAL: Copper

**NOTE:** Model BP units cannot be opened nor can plates be added or removed.

#### TECHNICAL DATA (Standard Design)

DESIGN PRESSURE

DESIGN TEMP.

All models: 435 psig

All models: 435°F max.

- 256°F min.

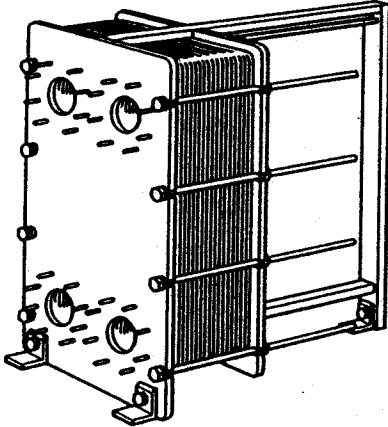
#### Duty: Refrigeration-to-Liquid

	BP400, BP405, BP410, BP411, BP412 BP415, BP420, BP421, BP422	
	Condenser	Evaporator
Refrig. In	S4	S3
Refrig. Out	S3	S4
Liq. In	S2	S1
Liq. Out	S1	S2

For further information, contact ITT, Bell & Gossett Heat Transfer Products, 175 Standard Parkway, Cheektowaga, NY 14227, Phone (716) 862-4171 — Facsimile: (716) 862-4176.







## Type GPX 678 Plate Heat Exchanger

JOB _____  UNIT TAG NO. _____ ENGINEER _____ CONTRACTOR _____	B & G REPRESENTATIVE _____ _____ ORDER NO. _____ DATE _____ SUBMITTED BY _____ DATE _____ APPROVED BY _____ DATE _____
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### DESCRIPTION

B&G Type "GPX" Heat Exchangers are of the gasketed plate design type with individually removeable channel plates. Epoxy coated steel frame and pressure plates at each end of the unit, aluminum/in stainless steel carrying bars, steel tightening bolts and nuts provide frame work for the channel flow plates. An aluminum splash guard is provided per OSHA requirements.

The B&G "GPX" Model is constructed according to ASME requirements for pressures and temperatures. A manufacturer's Data Report for Pressure Vessels, Form No. U-1 as required by the provisions of the ASME Code Rules is furnished, on request, with each unit. This form is signed by an authorized inspector, certifying that construction conforms to the latest ASME Code for pressure vessels. The ASME "U" symbol is stamped on each vessel. In addition, each unit is registered with the National Board of Boiler and Pressure Vessel Inspectors.

### OPERATING DATA

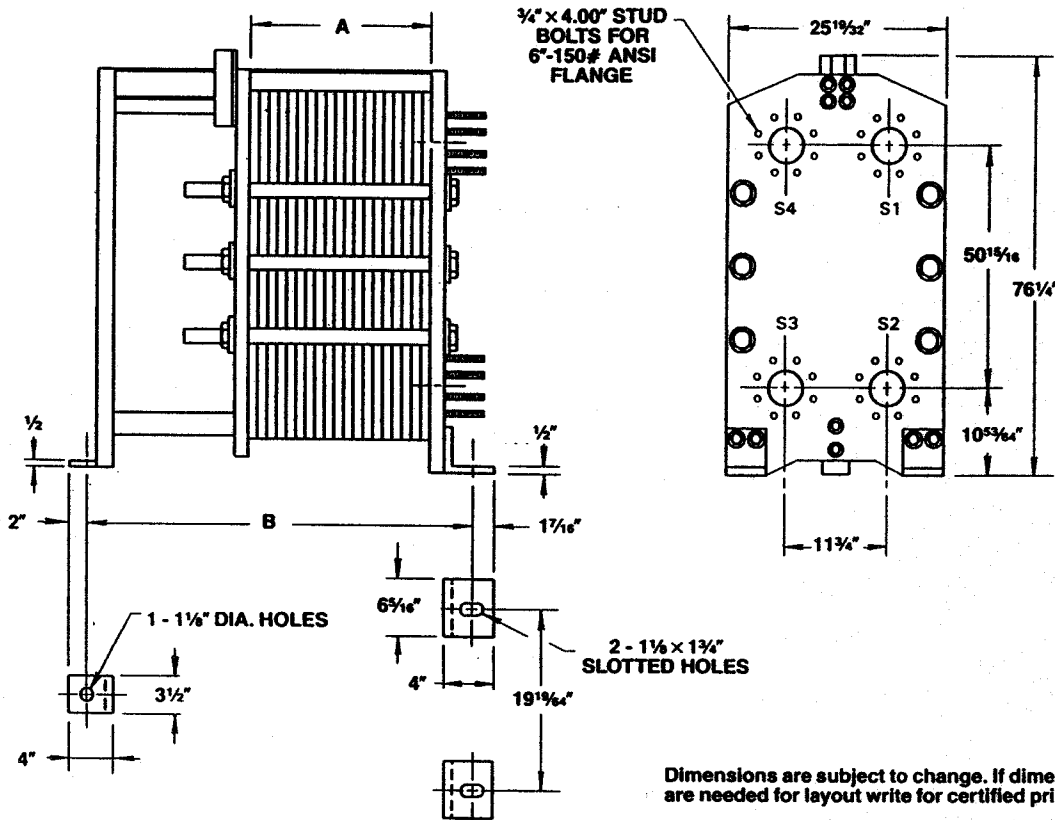
#### DUTY

1. Exchange Model Number \_\_\_\_\_  
 Service ..... Cooler ..... Heater .....

	HOT SIDE	COLD SIDE
2. Fluid Circulated .....	_____	_____
3. Total Flow Expressed in GPM, GPH, lbs./min. or lbs./hr. ....	_____	_____
4. Specific Gravity .....	_____	_____
5. Specific Heat .....	_____	_____
6. Latent Heat .....	_____	_____
7. Viscosity Expressed in Proper Units and Temperature such as centipoises @ °F .....	_____	_____
8. Temperature In/Out .....	_____	_____
9. Heat Load BTU/hr. ....	_____	_____
10. Thermal Conductivity .....	_____	_____
11. Maximum Operating Temperature of Unit .....	_____	_____
12. Pressure Drop (Maximum) .....	_____	_____
13. Fouling Factor or Percentage of Additional Surface .....	_____	_____

#### APPROVALS

## Type GPX678 Heat Exchanger Dimensions



Dimensions are subject to change. If dimensions are needed for layout write for certified prints.

### Connection Arrangement and Material

LOCATION	DESCRIPTION	MATERIAL
	Hot In	
	Cold In	
	Hot Out	
	Cold Out	

Design Press.	150 PSIG
Test Press.	225 PSIG
Design Temp.	230°F*

\*With Nitrile Gaskets

### MATERIALS OF CONSTRUCTION

FRAME & PRESSURE PLATE — Steel  
 CARRYING BAR — Aluminium/Stainless Steel  
 TIGHTENING BOLTS — Steel, (6) 1 1/2-6 UNC-2A  
 STD. CHANNEL PLATES — .4 mm 304 Stainless Steel  
 OPT. CHANNEL PLATES — .6 mm 316 Stainless Steel  
 STD. CONNECTIONS — Carbon Steel (unlined)  
 OPT. CONNECTIONS — 316 SS (lined)  
 STD. GASKETS — Nitrile

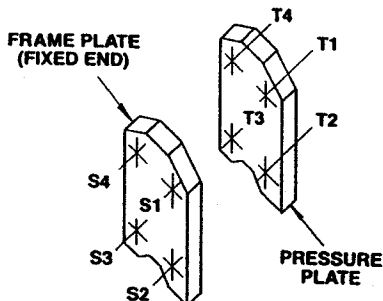
NOTE: Parallel flow pattern

PLATE MATERIAL: \_\_\_\_\_

GASKET MATERIAL: \_\_\_\_\_

PLATE ARRANGEMENT: \_\_\_\_\_

### CONNECTION LOCATIONS



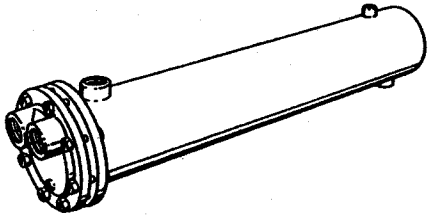
FRAME SIZE	A IN.	B IN.	MAX. NO. OF PLATES	
			.4 mm	.6 mm
900	**	42 1/2	104	100
1200	**	51 7/8	179	170
1800	**	75 1/2	327	311
2400	**	99	475	452
3000	**	122 3/4	623	594

\*\* a) Dimension A is equal to .1142 x # of .4 mm plates.

\*\* b) Dimension A is equal to .1220 x # of .6 mm plates.

For further information, contact ITT Bell & Gossett Heat Transfer Products, 175 Standard Parkway, Cheektowaga, NY 14227, Phone: (716) 862-4171 — Facsimile: (716) 862-4176.

JOB	B & G REPRESENTATIVE	
UNIT TAG NO.	ORDER NO.	DATE
ENGINEER	SUBMITTED BY	DATE
CONTRACTOR	APPROVED BY	DATE



## DIAMONDBACK Series Double-Wall Heat Exchangers Types "DSU", "DWU", & "DTC" "U" Tube Design

### DESCRIPTION

B&G DIAMONDBACK Series heat exchangers are of the shell and tube type. The tube bundle is of double-wall "U" bend construction with an air gap between each tube vented to atmosphere. Each inner and outer tube end is roller expanded into stationary tube sheets. This construction permits detection of a telltale leak to the exterior of the heat exchanger in the event of a failure in either the inner or outer tube wall.

In a Type "DWU" heat exchanger, a fluid entering the tubes is heated or cooled by a fluid circulating through a baffled shell. The unit is designed primarily for pumped circulation through the shell.

In a Type "DSU" heat exchanger, a fluid entering the tubes is heated by steam condensing in a shell. Tube spacers properly support and space each tube for maximum efficiency in steam condensing and drainage.

In a Type "DTC" tank heater, a fluid in the tank is heated by a fluid or steam circulated through the tubes. The unit is designed primarily for natural connection in the tank. Tank circulation or agitation will enhance heat transfer performance.

### RECOMMENDED DIAMONDBACK SERIES HEAT EXCHANGER

MODEL NO. \_\_\_\_\_

HEATING SURFACE (SQ. FT.) \_\_\_\_\_

#### OPERATING DATA

	TUBE SIDE	SHELL/TANK SIDE
1. Steam Pressure*	_____	_____
2. Fluid Circulated	_____	_____
3. Total Flow (Expressed in GPM, GPH, or lbs./hr.)	_____	_____
4. Temperature In/Out	_____ / _____	_____ / _____
5. Heat Load BTU/hr.	_____	_____
6. Pressure Drop (Maximum)	_____	_____
7. Fouling Factor or Percentage of Additional Surface	_____	_____
Note: Following applies only for fluids other than water.		
8. Specific Gravity	_____	_____
9. Specific Heat	_____	_____
10. Latent Heat	_____	_____
11. Viscosity**	_____	_____
12. Thermal Conductivity	_____	_____

### APPROVALS

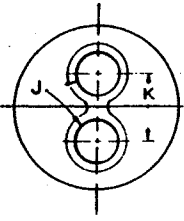
\* Applies only when steam is used as a heating medium.

\*\* Expressed in Proper Units and Temperature such as centipoises @ °F.

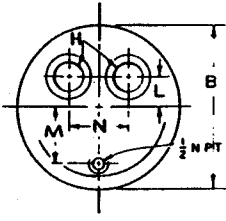
# TYPE "DSU" HEAT EXCHANGERS (Steam to Liquid Heat Transfer — Double-Wall "U" tube design)

## STANDARD CAST IRON HEADS

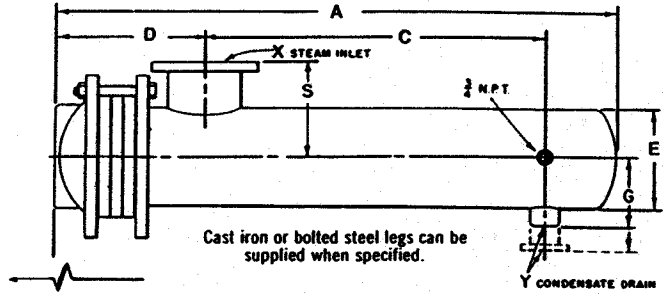
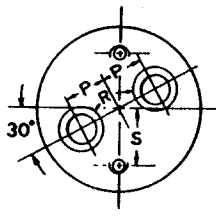
### 2 PASS HEAD



### 4 PASS HEAD



### 6 PASS HEAD



Shellside Flange connections for field piping are 150# RF ANSI Flanges.

Room for removal of tube bundle, equal to or greater than "A", should be provided.

"DSU" type "U" tube  
Shell Diameter in inches  
Tube length in feet  
Number of tube passes

## DIMENSIONS 4" THRU 12" DIAMETER

Complete sales number consists of example: DSU-86-6

UNIT NUMBER			HEAD DIMENSIONS IN INCHES									DIMENSIONS IN INCHES										HEATING SURFACE SQ. FT.			Approx. Shpg. Wt. (Lbs.)
			2 Pass			4 Pass			6 Pass			2, 4 & 6 Pass										2 Pass	4 Pass	6 Pass	
2 Pass	4 Pass	6 Pass	J	K	L	M	N	H	P	S	R	A	B	C	D	E	G	T	X	Y	2 Pass	4 Pass	6 Pass	(Lbs.)	
DSU42-2	DSU42-4		1 1/2 NPT	2 1/2	1	2 1/4	1 1/4	1 NPT				29 1/2	7 1/4	16 1/4	7 1/4	4 1/2	3 1/4	3 1/4	1 1/2 NPT	1 NPT	4.5	4.5		65	
DSU43-2	DSU43-4		1 1/2 NPT	2 1/2	1	2 1/4	1 1/4	1 NPT				41 1/2	7 1/4	28 1/4	7 1/4	4 1/2	3 1/4	3 1/4	1 1/2 NPT	1 NPT	6.8	6.8		82	
DSU44-2	DSU44-4	Not	1 1/2 NPT	2 1/2	1	2 1/4	1 1/4	1 NPT				53 1/2	7 1/4	40 1/4	7 1/4	4 1/2	3 1/4	3 1/4	1 1/2 NPT	1 NPT	9.2	9.2		96	
DSU45-2	DSU45-4	Available	1 1/2 NPT	2 1/2	1	2 1/4	1 1/4	1 NPT				65 1/2	7 1/4	52 1/4	7 1/4	4 1/2	3 1/4	3 1/4	1 1/2 NPT	1 NPT	11.5	11.5		115	
DSU46-2	DSU46-4		1 1/2 NPT	2 1/2	1	2 1/4	1 1/4	1 NPT				77 1/2	7 1/4	64 1/4	7 1/4	4 1/2	3 1/4	3 1/4	1 1/2 NPT	1 NPT	13.9	13.9		131	
DSU47-2	DSU47-4		1 1/2 NPT	2 1/2	1	2 1/4	1 1/4	1 NPT				89 1/2	7 1/4	76 1/4	7 1/4	4 1/2	3 1/4	3 1/4	2 NPT	1 NPT	16.9	16.9		148	
DSU62-2	DSU62-4	DSU62-6	2 NPT	3 1/2	1 1/2	3 1/4	2 1/4	1 1/2 NPT	2 1/2	2 1/2	1 1/2 NPT	29	10 1/2	15 1/2	8 1/4	6 1/4	4 1/2	4 1/2	1 1/2 NPT	1 NPT	8.0	8.0	6.0	91	
DSU63-2	DSU63-4	DSU63-6	2 NPT	3 1/2	1 1/2	3 1/4	2 1/4	1 1/2 NPT	2 1/2	2 1/2	1 1/2 NPT	41	10 1/2	27 1/2	8 1/4	6 1/4	4 1/2	4 1/2	2 NPT	1 NPT	12.7	12.7	9.6	123	
DSU64-2	DSU64-4	DSU64-6	2 NPT	3 1/2	1 1/2	3 1/4	2 1/4	1 1/2 NPT	2 1/2	2 1/2	1 1/2 NPT	53	10 1/2	39 1/2	8 1/4	6 1/4	4 1/2	5 1/4	2 1/2 NPT	1 NPT	17.4	17.4	13.1	156	
DSU65-2	DSU65-4	DSU65-6	2 NPT	3 1/2	1 1/2	3 1/4	2 1/4	1 1/2 NPT	2 1/2	2 1/2	1 1/2 NPT	65	10 1/2	51 1/2	8 1/4	6 1/4	4 1/2	5 1/4	2 1/2 NPT	1 NPT	22.1	22.1	16.7	188	
DSU66-2	DSU66-4	DSU66-6	2 NPT	3 1/2	1 1/2	3 1/4	2 1/4	1 1/2 NPT	2 1/2	2 1/2	1 1/2 NPT	77	10 1/2	63 1/2	8 1/4	6 1/4	4 1/2	5 1/4	3 NPT	1 NPT	26.8	26.8	20.2	221	
DSU67-2	DSU67-4	DSU67-6	2 NPT	3 1/2	1 1/2	3 1/4	2 1/4	1 1/2 NPT	2 1/2	2 1/2	1 1/2 NPT	89	10 1/2	75 1/2	8 1/4	6 1/4	4 1/2	5 1/4	3 NPT	1 NPT	31.5	31.5	23.8	253	
DSU68-2	DSU68-4	DSU68-6	2 NPT	3 1/2	1 1/2	3 1/4	2 1/4	1 1/2 NPT	2 1/2	2 1/2	1 1/2 NPT	101	10 1/2	87 1/2	8 1/4	6 1/4	4 1/2	5 1/4	3 NPT	1 NPT	36.2	36.2	27.3	286	
DSU82-2	DSU82-4	DSU82-6	3 NPT	5	2	4	3 1/2	2 NPT	3	3	2 NPT	30	12 1/2	13	10 1/4	8 1/4	5 1/2	5 1/4	2 NPT	1 NPT	15	15	12	152	
DSU83-2	DSU83-4	DSU83-6	3 NPT	5	2	4	3 1/2	2 NPT	3	3	2 NPT	42	12 1/2	25	10 1/4	8 1/4	5 1/2	6 1/4	2 1/2 NPT	1 NPT	23	23	19	201	
DSU84-2	DSU84-4	DSU84-6	3 NPT	5	2	4	3 1/2	2 NPT	3	3	2 NPT	54	12 1/2	37	10 1/4	8 1/4	5 1/2	6 1/4	3 NPT	1 NPT	32	32	26	251	
DSU85-2	DSU85-4	DSU85-6	3 NPT	5	2	4	3 1/2	2 NPT	3	3	2 NPT	66	12 1/2	49	10 1/4	8 1/4	5 1/2	8 1/4	4 FLG	1 NPT	41	41	33	301	
DSU86-2	DSU86-4	DSU86-6	3 NPT	5	2	4	3 1/2	2 NPT	3	3	2 NPT	78	12 1/2	61	10 1/4	8 1/4	5 1/2	8 1/4	4 FLG	1 1/2 NPT	49	49	41	350	
DSU87-2	DSU87-4	DSU87-6	3 NPT	5	2	4	3 1/2	2 NPT	3	3	2 NPT	90	12 1/2	73	10 1/4	8 1/4	5 1/2	8 1/4	4 FLG	1 1/2 NPT	58	58	48	400	
DSU88-2	DSU88-4	DSU88-6	3 NPT	5	2	4	3 1/2	2 NPT	3	3	2 NPT	102	12 1/2	85	10 1/4	8 1/4	5 1/2	8 1/4	6 FLG	1 1/2 NPT	67	67	55	450	
DSU89-2	DSU89-4	DSU89-6	3 NPT	5	2	4	3 1/2	2 NPT	3	3	2 NPT	114	12 1/2	97	10 1/4	8 1/4	5 1/2	8 1/4	6 FLG	1 1/2 NPT	75	75	62	499	
DSU102-2	DSU102-4	DSU102-6	4 NPT	5 1/2	2 1/2	4 1/4	4 1/4	3 NPT	3 1/2	4 1/4	2 1/2 NPT	30 1/2	14 1/2	11 1/2	11 1/2	10 1/4	6 1/4	7 1/4	3 NPT	1 NPT	27	25	21	254	
DSU103-2	DSU103-4	DSU103-6	4 NPT	5 1/2	2 1/2	4 1/4	4 1/4	3 NPT	3 1/2	4 1/4	2 1/2 NPT	42 1/2	14 1/2	23 1/2	11 1/2	10 1/4	6 1/4	9 1/4	4 FLG	1 NPT	42	39	33	324	
DSU104-2	DSU104-4	DSU104-6	4 NPT	5 1/2	2 1/2	4 1/4	4 1/4	3 NPT	3 1/2	4 1/4	2 1/2 NPT	54 1/2	14 1/2	35 1/2	11 1/2	10 1/4	6 1/4	9 1/4	4 FLG	1 1/2 NPT	56	53	45	392	
DSU105-2	DSU105-4	DSU105-6	4 NPT	5 1/2	2 1/2	4 1/4	4 1/4	3 NPT	3 1/2	4 1/4	2 1/2 NPT	66 1/2	14 1/2	47 1/2	11 1/2	10 1/4	6 1/4	9 1/4	6 FLG	1 1/2 NPT	71	67	56	462	
DSU106-2	DSU106-4	DSU106-6	4 NPT	5 1/2	2 1/2	4 1/4	4 1/4	3 NPT	3 1/2	4 1/4	2 1/2 NPT	78 1/2	14 1/2	59 1/2	11 1/2	10 1/4	6 1/4	9 1/4	6 FLG	1 1/2 NPT	86	82	68	531	
DSU107-2	DSU107-4	DSU107-6	4 NPT	5 1/2	2 1/2	4 1/4	4 1/4	3 NPT	3 1/2	4 1/4	2 1/2 NPT	90 1/2	14 1/2	71 1/2	11 1/2	10 1/4	6 1/4	9 1/4	6 FLG	1 1/2 NPT	101	96	80	601	
DSU108-2	DSU108-4	DSU108-6	4 NPT	5 1/2	2 1/2	4 1/4	4 1/4	3 NPT	3 1/2	4 1/4	2 1/2 NPT	102 1/2	14 1/2	83 1/2	11 1/2	10 1/4	6 1/4	9 1/4	6 FLG	2 NPT	116	110	92	670	
DSU109-2	DSU109-4	DSU109-6	4 NPT	5 1/2	2 1/2	4 1/4	4 1/4	3 NPT	3 1/2	4 1/4	2 1/2 NPT	114 1/2	14 1/2	95 1/2	11 1/2	10 1/4	6 1/4	9 1/4	6 FLG	2 NPT	131	124	104	740	
DSU1010-2	DSU1010-4	DSU1010-6	4 NPT	5 1/2	2 1/2	4 1/4	4 1/4	3 NPT	3 1/2	4 1/4	2 1/2 NPT	126 1/2	14 1/2	107 1/2	11 1/2	10 1/4	6 1/4	9 1/4	6 FLG	2 NPT	146	138	116	810	
DSU123-2	DSU123-4	DSU123-6	4 NPT	7 1/2	2 1/2	5 1/4	5 1/4	4 NPT	4 1/2	5 1/4	3 NPT	42 1/2	16 1/2	21 1/2	13 1/2	12 1/2	7 1/4	10 1/4	4 FLG	1 1/2 NPT	61	58	50	433	
DSU124-2	DSU124-4	DSU124-6	4 NPT	7 1/2	2 1/2	5 1/4	5 1/4	4 NPT	4 1/2	5 1/4	3 NPT	54 1/2	16 1/2	33 1/2	13 1/2	12 1/2	7 1/4	10 1/4	6 FLG	1 1/2 NPT	83	78	68	536	
DSU125-2	DSU125-4	DSU125-6	4 NPT	7 1/2	2 1/2	5 1/4	5 1/4	4 NPT	4 1/2	5 1/4	3 NPT	66 1/2	16 1/2	45 1/2	13 1/2	12 1/2	7 1/4	10 1/4	6 FLG	1 1/2 NPT	104	98	86	639	
DSU126-2	DSU126-4	DSU126-6	4 NPT	7 1/2	2 1/2	5 1/4	5 1/4	4 NPT	4 1/2	5 1/4	3 NPT	78 1/2	16 1/2	57 1/2	13 1/2	12 1/2	7 1/4	10 1/4	6 FLG	2 NPT	126	119	103	742	
DSU127-2	DSU127-4	DSU127-6	4 NPT	7 1/2	2 1/2	5 1/4	5 1/4	4 NPT	4 1/2	5 1/4	3 NPT	90 1/2	16 1/2	69 1/2	13 1/2	12 1/2	7 1/4	10 1/4	8 FLG	2 NPT	147	139	121	845	
DSU128-2	DSU128-4	DSU128-6	4 NPT	7 1/2	2 1/2	5 1/4	5 1/4	4 NPT	4 1/2	5 1/4	3 NPT	102 1/2	16 1/2	81 1/2	13 1/2	12 1/2	7 1/4	10 1/4	8 FLG	2 NPT	169	160	139	948	
DSU129-2	DSU129-4	DSU129-6	4 NPT	7 1/2	2 1/2	5 1/4	5 1/4	4 NPT	4 1/2	5 1/4	3 NPT	114 1/2	16 1/2	93 1/2	13 1/2	12 1/2	8 1/4	10 1/4	8 FLG	2 1/2 NPT	191	180	157	1052	
DSU1210-2	DSU1210-4	DSU1210-6	4 NPT	7 1/2	2 1/2	5 1/4	5 1/4	4 NPT	4 1/2	5 1/4	3 NPT	126 1/2	16 1/2	105 1/2	13 1/2	12 1/2	8 1/4	10 1/4	8 FLG	2 1/2 NPT	212	200	174	1154	

Dimensions are subject to change. If exact dimensions are needed for layout, write for certified prints.

- 1) All 6 Pass are built to order.
- 2) For 14" thru 30" Diameter, consult factory for dimensions.