

# Fluid Cooling Shell & Tube UC / UCV Series

**STEEL & STAINLESS STEEL CONSTRUCTION**

## Performance Notes

- Steam & large temperature differentials
- "U" tube
- Removable tube bundle for servicing
- Reduces thermal expansion stresses
- 3/8" Tubes
- Built-in expansion chamber
- Threaded or flanged connections
- Mounting brackets included
- Steel shell assembly



**Options**  
 Wide variety of materials available  
 Custom sizes/designs  
 Stainless steel hardware and mounting

## Ratings

### UC Series

**Maximum Operating Pressure - Shell Side**  
 250 PSI

**Maximum Operating Pressure - Tube Side**  
 150 PSI

**Maximum Operating Temperature**  
 400°F

### UCV Series

**Maximum Operating Pressure - Shell Side**  
**600, 800, 1000** 250 psi  
**1200, 1700** 150 psi

**Maximum Operating Pressure - Tube Side**  
 150 PSI

**Maximum Operating Temperature**  
 400°F

## Materials

### UC/UCV Series

**Tubes** Copper

**Tube Sheets** Steel

**Shell** Steel/316L stainless steel (UCV)

**Shell Connections** Steel

**Baffles** Stainless steel

**End Bonnets** Cast iron

**Mounting Brackets** Steel

**Gaskets** Non-asbestos fiber/nitrile rubber

**Nameplate** Aluminum foil

## Materials

### USSC/USSCV Series

**Tubes** 316L stainless steel

**Tube Sheets** 316L stainless steel

**Shell** 316L stainless steel

**Shell Connections** 316L stainless steel

**Baffles** 316L stainless steel

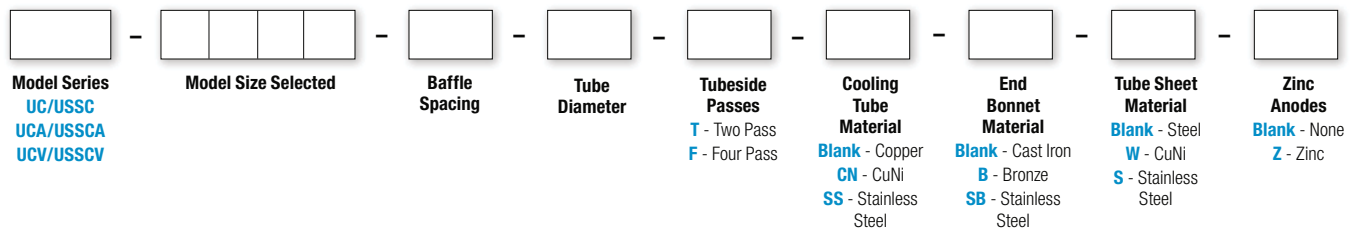
**End Bonnets** 316L stainless steel

**Mounting Brackets** Steel

**Gaskets** Non-asbestos fiber/nitrile rubber



## How to Order



UC/USSC = NPT Shell Connections; NPT Tube Connections

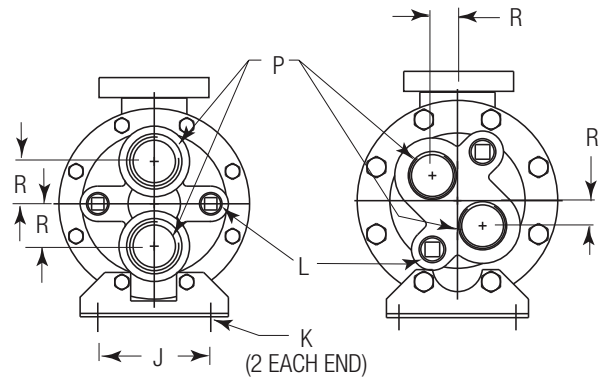
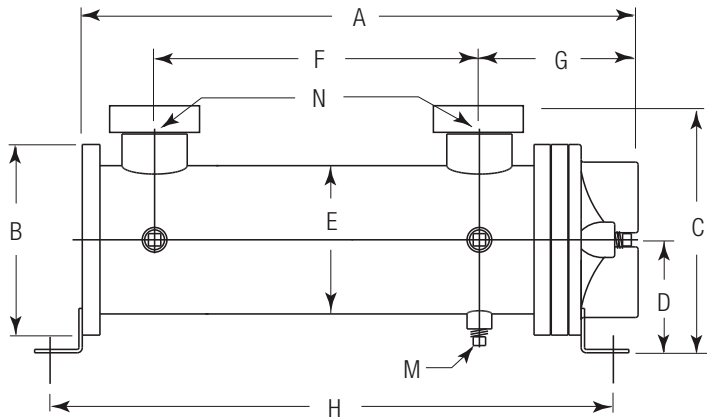
UCA/USSCA = ASME/ANSI Flange Shell Connections, NPT Tube Connections

UCV/USSCV = 1000 and Smaller: Inlet and Outlet NPT Shell Connections Rotated 180°, NPT Tube Side Connections

UCV/USSCV = 1200 and Larger: ASME/ANSI Flange Inlet and NPT Outlet Shell Connections Rotated 180°, NPT Tube Side Connections

# Dimensions

## UC Two Pass



All models except  
UC-800 & UC-1200 Series

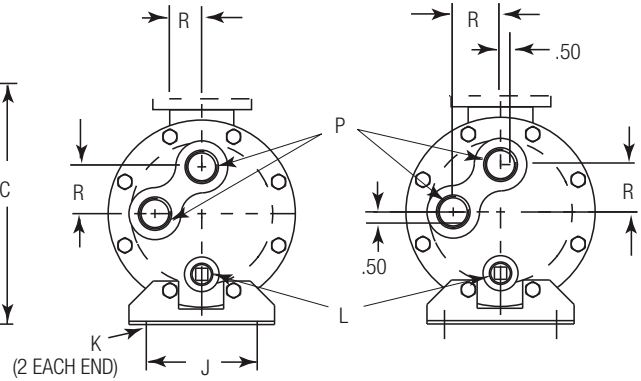
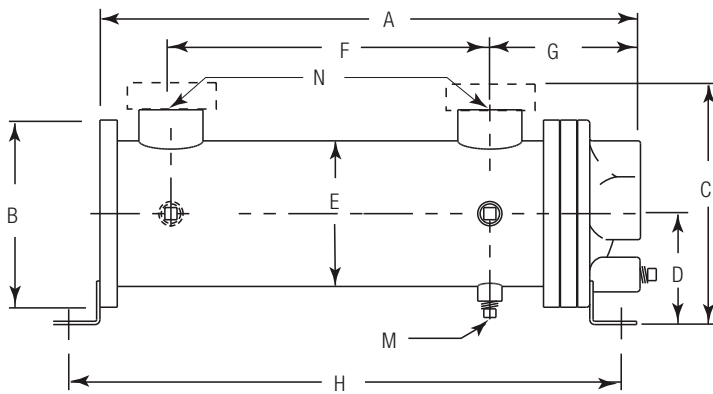
UC-800 &  
UC-1200 Series

Model	A	B Dia.	C		D	E Dia.	F	G	H	J	K	L NPT	M NPT	N NPT	P NPT	R	FT <sup>2</sup> Surface Area
			NPT	ASME* Flange													
612	17.22	4.50	5.38	6.75	2.75	3.25	11.25	4.03	17.66	3.25	.44 Dia	(2) .38	(3) .25	1.00	1.00	—	2.4
624	29.22	4.50	5.38	6.75	2.75	3.25	23.25	4.03	29.66	3.25	.44 Dia	(2) .38	(3) .25	1.00	1.00	—	4.7
812	19.47	6.00	6.75	8.25	3.50	4.25	12.00	4.97	19.65	3.50	.44 Dia	(2) .38	(3) .25	1.50	1.25	0.75	4.0
824	31.47	6.00	6.75	8.25	3.50	4.25	24.00	4.97	31.65	3.50	.44 Dia	(2) .38	(3) .25	1.50	1.25	0.75	7.9
836	43.47	6.00	6.75	8.25	3.50	4.25	36.00	4.97	43.65	3.50	.44 Dia	(2) .38	(3) .25	1.50	1.25	0.75	11.9
1012	19.68	6.75	7.75	9.25	4.00	5.25	11.50	5.62	19.94	4.00	.50 x .75 Slot	(2) .38	(3) .38	1.50	1.50	1.50	7.4
1024	31.68	6.75	7.75	9.25	4.00	5.25	23.50	5.62	31.94	4.00	.50 x .75 Slot	(2) .38	(3) .38	1.50	1.50	1.50	14.5
1036	43.68	6.75	7.75	9.25	4.00	5.25	35.50	5.62	43.94	4.00	.50 x .75 Slot	(2) .38	(3) .38	1.50	1.50	1.50	21.5
1218	26.22	7.75	8.75	10.38	4.50	6.25	17.38	5.89	26.12	5.00	.50 x .75 Slot	(2) .50	(3) .38	2.00	2.00	1.10	15.3
1224	32.22	7.75	8.75	10.38	4.50	6.25	23.38	5.89	32.12	5.00	.50 x .75 Slot	(2) .50	(3) .38	2.00	2.00	1.10	21.1
1236	44.22	7.75	8.75	10.38	4.50	6.25	35.38	5.89	44.12	5.00	.50 x .75 Slot	(2) .50	(3) .38	2.00	2.00	1.10	31.3
1248	56.22	7.75	8.75	10.38	4.50	6.25	47.38	5.89	56.12	5.00	.50 x .75 Slot	(2) .50	(3) .38	2.00	2.00	1.10	41.6
1724	34.69	10.50	11.58	13.00	5.75	8.62	23.50	7.81	34.27	7.00	.62 x .88 Slot	(2) .50	(3) .38	3.00	2.50	2.25	47.7
1736	46.69	10.50	11.58	13.00	5.75	8.62	35.50	7.81	46.27	7.00	.62 x .88 Slot	(2) .50	(3) .38	3.00	2.50	2.25	70.1
1748	58.69	10.50	11.58	13.00	5.75	8.62	47.50	7.81	58.27	7.00	.62 x .88 Slot	(2) .50	(3) .38	3.00	2.50	2.25	92.5
1760	70.69	10.50	11.58	13.00	5.75	8.62	59.50	7.81	70.27	7.00	.62 x .88 Slot	(2) .50	(3) .38	3.00	2.50	2.25	114.8

\*150# ASME/ANSI Flange (Optional). NOTE: We reserve the right to make reasonable design changes without notice. Consult factory. All dimensions are inches.

# Dimensions

## UC Four Pass



All models except  
UC-1700 Series

UC-1700 Series

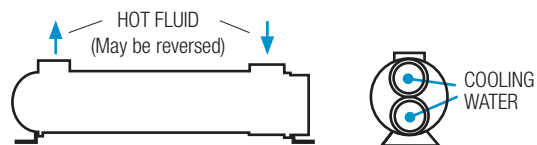
Model	A	B Dia.	C		D	E Dia.	F	G	H	J	K	L NPT	M NPT	N NPT	P NPT	R	FT <sup>2</sup> Surface Area
			NPT	ASME* Flange													
612	17.20	4.50	5.38	6.75	2.75	3.25	11.25	4.01	17.66	3.25	.44 Dia	—	(3) .25	1.00	.75	1.00	2.4
624	29.20	4.50	5.38	6.75	2.75	3.25	23.25	4.01	29.66	3.25	.44 Dia	—	(3) .25	1.00	.75	1.00	4.7
812	19.47	6.00	6.75	8.25	3.50	4.25	12.00	4.97	19.65	3.50	.44 Dia	(2) .38	(3) .25	1.50	.75	0.75	4.0
824	31.47	6.00	6.75	8.25	3.50	4.25	24.00	4.97	31.65	3.50	.44 Dia	(2) .38	(3) .25	1.50	.75	1.25	7.9
836	43.47	6.00	6.75	8.25	3.50	4.25	36.00	4.97	43.65	3.50	.44 Dia	(2) .38	(3) .25	1.50	.75	1.25	11.9
1012	19.50	6.75	7.75	9.25	4.00	5.25	11.50	5.43	19.95	4.00	.50 x .75 Slot	(2) .38	(3) .38	1.50	1.00	1.69	7.4
1024	31.50	6.75	7.75	9.25	4.00	5.25	23.50	5.43	31.95	4.00	.50 x .75 Slot	(2) .38	(3) .38	1.50	1.00	1.69	14.5
1036	43.50	6.75	7.75	9.25	4.00	5.25	35.50	5.43	43.95	4.00	.50 x .75 Slot	(2) .38	(3) .38	1.50	1.00	1.69	21.5
1218	26.22	7.75	8.75	10.38	4.50	6.25	17.38	5.89	26.12	5.00	.50 x .75 Slot	(2) .38	(3) .38	2.00	1.50	2.00	15.3
1224	32.22	7.75	8.75	10.38	4.50	6.25	23.38	5.89	32.12	5.00	.50 x .75 Slot	(2) .38	(3) .38	2.00	1.50	2.00	21.1
1236	44.22	7.75	8.75	10.38	4.50	6.25	35.38	5.89	44.12	5.00	.50 x .75 Slot	(2) .38	(3) .38	2.00	1.50	2.00	31.3
1248	56.22	7.75	8.75	10.38	4.50	6.25	47.38	5.89	56.12	5.00	.50 x .75 Slot	(2) .38	(3) .38	2.00	1.50	2.00	41.6
1724	34.69	10.50	11.58	13.00	5.75	8.62	23.50	7.81	34.27	7.00	.62 x .88 Slot	(2) .38	(3) .38	3.00	2.00	2.50	47.7
1736	46.69	10.50	11.58	13.00	5.75	8.62	35.50	7.81	46.27	7.00	.62 x .88 Slot	(2) .38	(3) .38	3.00	2.00	2.50	70.1
1748	58.69	10.50	11.58	13.00	5.75	8.62	47.50	7.81	58.27	7.00	.62 x .88 Slot	(2) .38	(3) .38	3.00	2.00	2.50	92.5
1760	70.69	10.50	11.58	13.00	5.75	8.62	59.50	7.81	70.27	7.00	.62 x .88 Slot	(2) .38	(3) .38	3.00	2.00	2.50	114.8

\*150# ASME/ANSI Flange (Optional). NOTE: We reserve the right to make reasonable design changes without notice. Consult factory. All dimensions are inches.

## UC Applications

U-Tube Heat Exchangers allow the shell and tube bundle to expand and contract independently with temperature fluctuation. This reduces temperature dependent stresses so they are ideal in applications with large temperature differentials. Some typical examples for **UC** units include quench oil coolers, liquid to liquid heaters, and barrel oil coolers for plastic extrusion machines. The removable bundle design allows for easier cleaning of the shell side cavity when the bundle is removed.

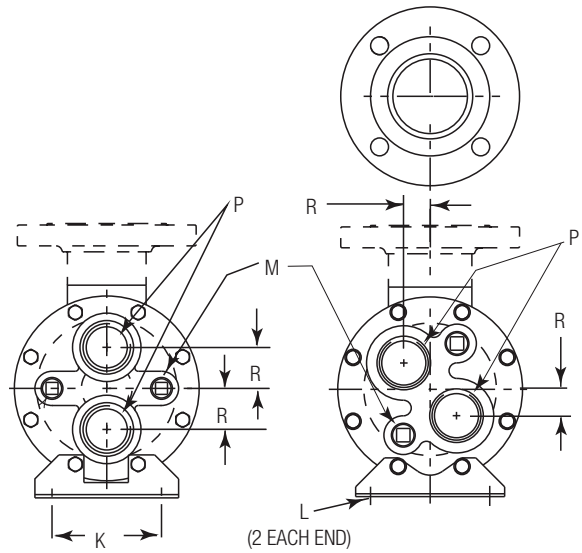
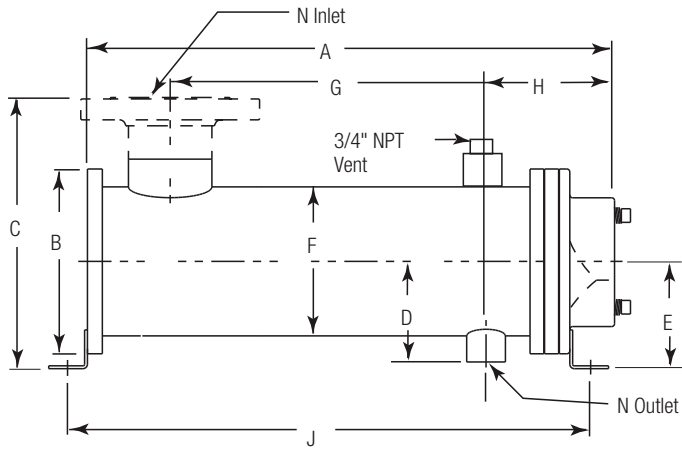
## Piping Diagram



Specific applications may have different piping arrangements. Contact factory for assistance.

# Dimensions

## UCV Two Pass



All models except  
UCV-800 &  
UCV-1200 Series

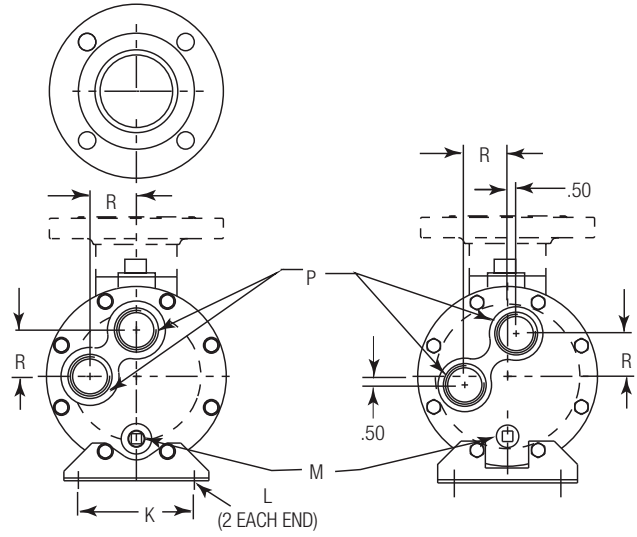
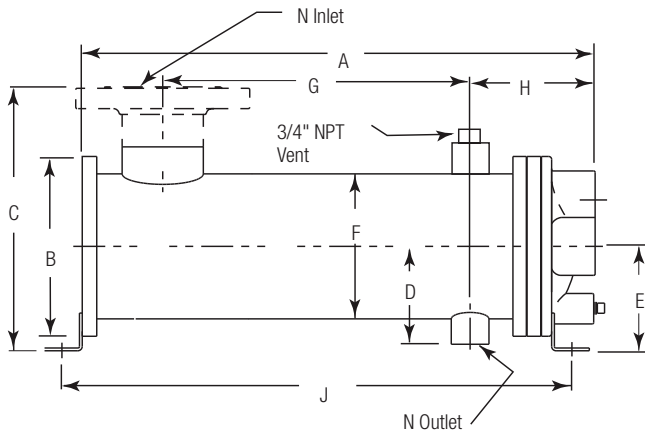
UCV-800 &  
UC-1200 Series

Model	A	B Dia.	C	D	E	F Dia.	G	H	J	K	L	M NPT	N		P NPT	R	FT <sup>2</sup> Surface Area
													Inlet	Outlet			
612	17.22	4.50	5.25	2.62	2.75	3.25	11.00	4.00	17.66	3.25	.44 Dia	(2) .38	1.25	.75	1.00	—	2.4
624	29.22	4.50	5.25	2.62	2.75	3.25	23.00	4.00	29.66	3.25	.44 Dia	(2) .38	1.25	.75	1.00	—	4.7
812	19.47	6.00	6.75	3.15	3.50	4.25	12.38	4.60	19.65	3.50	.44 Dia	(2) .38	1.50	.75	1.25	.75	4.0
824	31.47	6.00	6.75	3.15	3.50	4.25	24.38	4.60	31.65	3.50	.44 Dia	(2) .38	1.50	.75	1.25	.75	7.9
836	43.47	6.00	6.75	3.15	3.50	4.25	36.38	4.60	43.65	3.50	.44 Dia	(2) .38	1.50	.75	1.25	.75	11.9
1012	19.68	6.75	7.77	3.70	4.00	5.25	11.50	5.37	19.94	4.00	.50 x .75 Slot	(2) .38	2.00	1.00	1.50	1.50	7.4
1024	31.68	6.75	7.77	3.70	4.00	5.25	23.50	5.37	31.94	4.00	.50 x .75 Slot	(2) .38	2.00	1.00	1.50	1.50	14.5
1036	43.68	6.75	7.77	3.70	4.00	5.25	35.50	5.37	43.94	4.00	.50 x .75 Slot	(2) .38	2.00	1.00	1.50	1.50	21.5
1218	26.22	7.75	11.38	4.22	4.50	6.25	17.38	5.38	26.12	5.00	.50 x .75 Slot	(2) .50	3.00*	1.00	2.00	1.10	15.3
1224	32.22	7.75	11.38	4.22	4.50	6.25	23.38	5.38	32.12	5.00	.50 x .75 Slot	(2) .50	3.00*	1.00	2.00	1.10	21.1
1236	44.22	7.75	11.38	4.22	4.50	6.25	35.38	5.38	44.12	5.00	.50 x .75 Slot	(2) .50	3.00*	1.00	2.00	1.10	31.3
1248	56.22	7.75	11.38	4.22	4.50	6.25	47.38	5.38	56.12	5.00	.50 x .75 Slot	(2) .50	3.00*	1.00	2.00	1.10	41.6
1724	34.69	10.50	14.00	5.58	5.75	8.62	23.00	7.31	34.27	7.00	.62 x .88 Slot	(2) .50	4.00*	1.50	2.50	2.25	47.7
1736	46.69	10.50	14.00	5.58	5.75	8.62	35.00	7.31	46.27	7.00	.62 x .88 Slot	(2) .50	4.00*	1.50	2.50	2.25	70.1
1748	58.69	10.50	14.00	5.58	5.75	8.62	47.00	7.31	58.27	7.00	.62 x .88 Slot	(2) .50	4.00*	1.50	2.50	2.25	92.5
1760	70.69	10.50	14.00	5.58	5.75	8.62	59.00	7.31	70.27	7.00	.62 x .88 Slot	(2) .50	4.00*	1.50	2.50	2.25	114.8

\*150# ASME/ANSI Flange. NOTE: We reserve the right to make reasonable design changes without notice. Consult factory. All dimensions are inches.

# Dimensions

## UCV Four Pass



All models except UCV-1700 Series

UCV-1700 Series

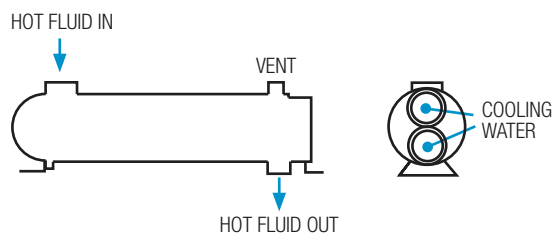
Model	A	B Dia.	C	D	E	F Dia.	G	H	J	K	L	M NPT	N		P NPT	R	FT <sup>2</sup> Surface Area
													Inlet	Outlet			
612	17.20	4.50	5.25	2.62	2.75	3.25	11.00	3.98	17.66	3.25	.44 Dia	(2) .38	1.25	.75	.75	1.00	2.4
624	29.20	4.50	5.25	2.62	2.75	3.25	23.00	3.98	29.66	3.25	.44 Dia	(2) .38	1.25	.75	.75	1.00	4.7
812	19.47	6.00	6.75	3.15	3.50	4.25	12.38	4.60	19.65	3.50	.44 Dia	(2) .38	1.50	.75	.75	1.25	4.0
824	31.47	6.00	6.75	3.15	3.50	4.25	24.38	4.60	31.65	3.50	.44 Dia	(2) .38	1.50	.75	.75	1.25	7.9
836	43.47	6.00	6.75	3.15	3.50	4.25	36.38	4.60	43.65	3.50	.44 Dia	(2) .38	1.50	.75	.75	1.25	11.9
1012	19.50	6.75	7.77	3.70	4.00	5.25	11.50	5.18	19.95	4.00	.50 x .75 Slot	(2) .38	2.00	1.00	1.00	1.69	7.4
1024	31.50	6.75	7.77	3.70	4.00	5.25	23.50	5.18	31.95	4.00	.50 x .75 Slot	(2) .38	2.00	1.00	1.00	1.69	14.5
1036	43.50	6.75	7.77	3.70	4.00	5.25	35.50	5.18	43.95	4.00	.50 x .75 Slot	(2) .38	2.00	1.00	1.00	1.69	21.5
1218	26.22	7.75	11.38	4.22	4.50	6.25	17.38	5.38	26.12	5.00	.50 x .75 Slot	(2) .38	3.00*	1.00	1.50	2.00	15.3
1224	32.22	7.75	11.38	4.22	4.50	6.25	23.38	5.38	32.12	5.00	.50 x .75 Slot	(2) .38	3.00*	1.00	1.50	2.00	21.1
1236	44.22	7.75	11.38	4.22	4.50	6.25	35.38	5.38	44.12	5.00	.50 x .75 Slot	(2) .38	3.00*	1.00	1.50	2.00	31.3
1248	56.22	7.75	11.38	4.22	4.50	6.25	47.38	5.38	56.12	5.00	.50 x .75 Slot	(2) .38	3.00*	1.00	1.50	2.00	41.6
1724	34.69	10.50	14.00	5.58	5.75	8.62	23.00	7.31	34.27	7.00	.62 x .88 Slot	(2) .38	4.00*	1.50	2.00	2.50	47.7
1736	46.69	10.50	14.00	5.58	5.75	8.62	35.00	7.31	46.27	7.00	.62 x .88 Slot	(2) .38	4.00*	1.50	2.00	2.50	70.1
1748	58.69	10.50	14.00	5.58	5.75	8.62	47.00	7.31	58.27	7.00	.62 x .88 Slot	(2) .38	4.00*	1.50	2.00	2.50	92.5
1760	70.69	10.50	14.00	5.58	5.75	8.62	59.00	7.31	70.27	7.00	.62 x .88 Slot	(2) .38	4.00*	1.50	2.00	2.50	114.8

\*150# ASME/ANSI Flange. NOTE: We reserve the right to make reasonable design changes without notice. Consult factory. All dimensions are inches.

## UCV Applications

U-Tube Heat Exchangers allow the shell and tube bundle to expand and contract independently with temperature fluctuation. This reduces temperature dependent stresses so they are ideal in applications with large temperature differentials. A typical example for **UCV** units is steam to liquid heaters. The removable bundle design allows for easier cleaning of the shell side cavity when the bundle is removed.

## Piping Diagram



Specific applications may have different piping arrangements. Contact factory for assistance.