

ITT
STANDARD
PRODUCTS.

*Pre-engineered
shell-and-tube heat
exchangers for general
heating and cooling.*



Efficiency.

DESIGNED
TO MEET
VIRTUALLY
EVERY HEAT
TRANSFER
APPLICATION
REQUIREMENT.



*Engineered/customized
heat exchangers for process
and other heating/cooling
applications.*

*Plateseal® compact,
vacuum-brazed,
general purpose
heat exchangers.*



*FanEx® air/oil,
air/air, or air/water
heat exchangers.*



*Air and gas
aftercoolers.*

Expertise.

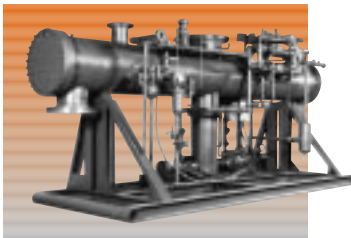
*Plateflow®
plate-and-frame
exchangers.*



*Heat
transfer
coils.*



*Packaged
steam
condensers.*



ITT Standard
ITT FLUID TECHNOLOGY CORPORATION

Represented by:



Lit #104-38

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CPK Series Heat Exchangers



High thermal efficiency.

Rugged construction.

Flexible design.

Standard dependability.

ITT Standard
ITT FLUID TECHNOLOGY CORPORATION

CPK Flexibility

Packing rings
Molded neoprene

Lantern gland
Molded nylon or cast iron

Shell
Carbon steel with a wide variety of nozzle orientations

Cradles
Cast or fabricated steel

Baffles
Carbon steel or brass. Closely fitted to shell and around tubes

Tubes
Materials: Admiralty, copper, Cu Ni, aluminum brass, carbon steel, stainless steel

Diameter: 3/8", 5/8", 3/4", 1"
Tube pitch: Triangular, square or rectangular. Tubes can be bare or low-fin

Channels
Wide variety of channel connection orientations available in both single- and two-pass units. Channels can be cast iron (steel cover), cast bronze (bronze cover or liner), fabricated stainless steel or fabricated carbon steel.

Gaskets
Compressed fiber

Bolting
Alloy steel

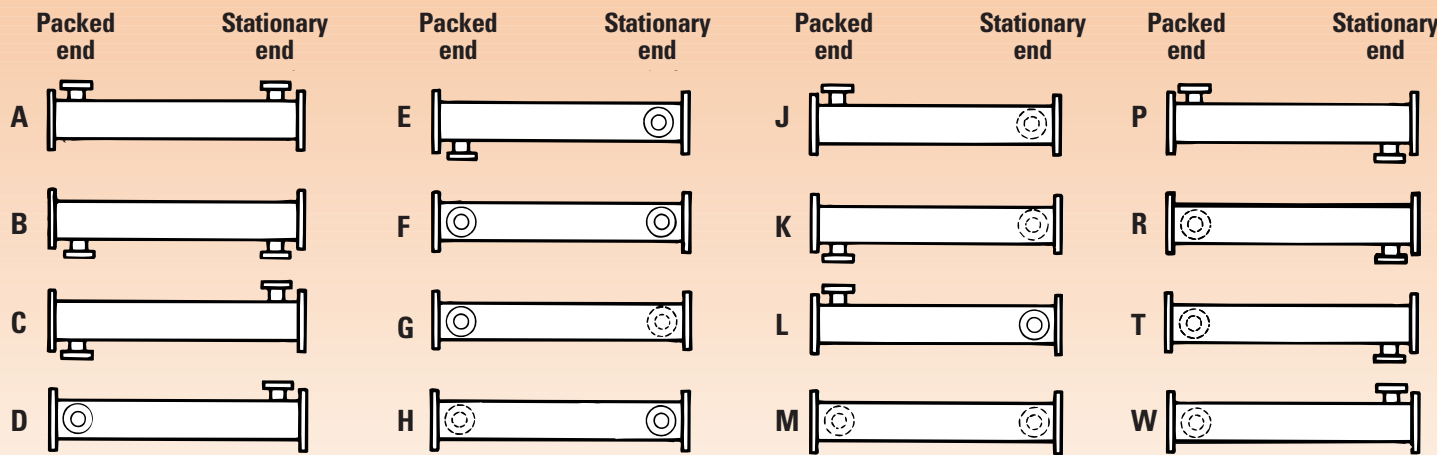
Channel cover
Compatible with channel material

Tubesheet
Carbon steel, Muntz metal, cupro-nickel, naval brass, stainless steel

Note: To obtain optional channel nozzle orientation, pattern availability must be verified for specific cast materials.

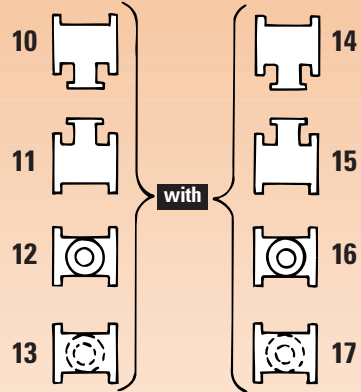
CPK Options

Shells



One-pass channels

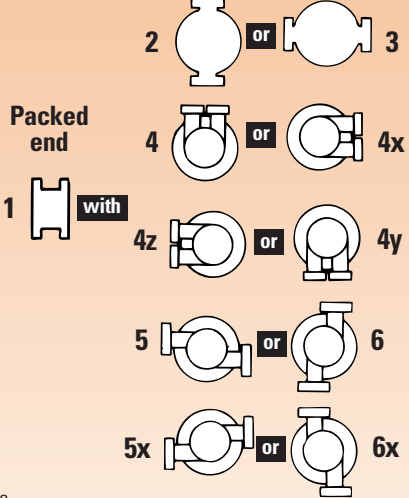
Packed end Stationary end



Pattern availability must be verified for specific cast materials to obtain optional channel orientation. Dimensions on fabricated channels vary slightly.

Two-pass channels

Stationary end



Design pressures and temperatures

	Design Pressure		Test Pressure		Design Temperature*	
	psi	kPa	psi	kPa	°F	°C
Shell Side	150	1034	225	1551	300	149
***	300	2068	450	3103	300	149
Tube Side	75	517	150	1034	300	149
	150	1034	225**	1551**	300	149
	300	2068	450	3103	300	149

* Standard tubesheets designed for mean metal temperature of 200° F/93° C for materials other than Muntz metal and carbon steel.

** When using cast iron channels in 6" thru 17" diameter units only, and specified as Commercial Standard for liquid-to-liquid, non-pulsating, nonshock service test pressure will be 160 psi-1104 kPa.

*** Alternate 600 psi shell side design pressure, and 900 psi test pressure, can be furnished for 5" thru 12" diameters only, with fabricated steel or cast ductile iron channels. Catalog dimensions do not apply for this 600# design.

CPK Design Flexibility
(3" to 31" shell diameters)

One-pass CPK

Dimensions

UNIT SIZE & TUBE LENGTH	A	B	BB	C	CC	D	E	F	G	H	J SLOTTED HOLES	K	L	
													NPT	FLG
03120	3.50	6.38	-	2.62	-	3.00	.88	1.50	1.50	3.00	(2) .50 x .75	.19	.75	-
04120	4.50	7.38	-	3.38	-	4.12	1.38	2.25	2.50	4.00	(2) .62 x .88	.31	1.00	-
05120	5.56	9.12	-	3.88	-	4.75	1.38	2.25	2.50	4.00	(2) .62 x .88	.31	1.00	-
06120	6.62	10.12	8.00	7.25	4.00	5.25	1.38	2.25	4.50	6.00	(2) .62 x .88	.31	-	2.00
08120	8.62	12.12	10.12	8.25	-	6.50	1.38	2.25	4.50	6.00	(2) .62 x .88	.31	-	4.00
10120	10.75	14.25	12.12	9.75	-	7.50	1.38	2.25	5.50	8.00	(2) .62 x .88	.38	-	6.00
12120	12.75	16.25	14.25	11.00	-	8.50	1.38	2.25	6.50	9.00	(2) .62 x .88	.38	-	4.00
13120	14.00	17.50	17.50	11.75	-	10.50	2.00	3.25	7.50	9.75	(2) .75 x 1.25	.38	-	6.00
15120	16.00	19.50	19.50	12.75	-	11.50	2.00	3.25	8.50	10.75	(2) .75 x 1.25	.38	-	6.00
17120	18.00	21.62	21.62	13.75	-	12.00	2.00	3.25	9.50	11.75	(2) .75 x 1.25	.38	-	6.00
19120	20.00	23.62	21.62	14.75	-	13.00	2.75	4.00	10.50	12.75	(2) .75 x 1.25	.50	-	8.00
21120	22.00	25.75	25.75	16.00	-	13.69	2.75	4.00	13.50	15.50	(2) .75 x 1.25	.50	-	8.00
23120	24.00	27.75	25.38	17.00	-	15.00	2.75	4.00	13.50	15.50	(2) .75 x 1.25	.50	-	8.00
27120	27.75	31.62	31.62	19.25	-	17.00	1.50	5.00	15.00	17.00	(4) .88 DIA.	.54	-	10.00
31120	31.75	35.62	35.62	21.25	-	19.00	1.50	5.00	17.00	19.00	(4) .88 DIA.	.54	-	10.00

Two-pass CPK

Dimensions

UNIT SIZE & TUBE LENGTH	A	B	BB	C	CC	D	E	F	G	H	J SLOTTED HOLES	K	L	
													NPT	FLG
03120	3.50	6.38	-	2.62	-	3.00	.88	1.50	1.50	3.00	(2) .50 x .75	.19	.75	-
04120	4.50	7.38	-	3.38	-	4.12	1.38	2.25	2.50	4.00	(2) .62 x .88	.31	1.00	-
05120	5.56	9.12	-	3.88	-	4.75	1.38	2.25	2.50	4.00	(2) .62 x .88	.31	1.00	-
06120	6.62	10.12	8.00	7.25	3.75	5.25	1.38	2.25	4.50	6.00	(2) .62 x .88	.31	-	2.00
08120	8.62	12.12	10.12	8.25	-	6.50	1.38	2.25	4.50	6.00	(2) .62 x .88	.31	-	4.00
10120	10.75	14.25	12.12	9.75	-	7.50	1.38	2.25	5.50	8.00	(2) .62 x .88	.38	-	6.00
12120	12.75	16.25	14.25	11.00	-	8.50	1.38	2.25	6.50	9.00	(2) .62 x .88	.38	-	6.00
13120	14.00	17.50	17.50	11.75	-	10.50	2.00	3.25	7.50	9.75	(2) .75 x 1.25	.38	-	6.00
15120	16.00	19.50	19.50	12.75	-	11.50	2.00	3.25	8.50	10.75	(2) .75 x 1.25	.38	-	6.00
17120	18.00	21.62	21.62	13.75	-	12.00	2.00	3.25	9.50	11.75	(2) .75 x 1.25	.38	-	6.00
19120	20.00	23.62	21.62	14.75	-	13.00	2.75	4.00	10.50	12.75	(2) .75 x 1.25	.50	-	8.00
21120	22.00	25.75	25.75	16.00	-	13.69	2.75	4.00	13.50	15.50	(2) .75 x 1.25	.50	-	8.00
23120	24.00	27.75	25.38	17.00	-	15.00	2.75	4.00	13.50	15.50	(2) .75 x 1.25	.50	-	8.00
27120	27.75	31.62	31.62	19.25	-	17.00	1.50	5.00	15.00	17.00	(4) .88 DIA.	.54	-	10.00
31120	31.75	35.62	35.62	21.25	-	19.00	1.50	5.00	17.00	19.00	(4) .88 DIA.	.54	-	10.00

Please note: Catalog dimensions are subject to variation. For construction purposes, use only certified drawings.

Use this catalog as a starting point; if you don't see what you need, please contact us. We've built heat exchangers for applications too numerous to mention. We'd be happy to build one for you.

Designed for flexibility

Standard CPK exchangers are available with shell diameters ranging from 3" to 31", and with single- or two-pass channels. To meet the most detailed and exacting requirements, you'll find a variety of options. These include variations in nozzle orientations, tube layouts, tube lengths, materials, and baffle spacings. They're all pre-engineered to meet the precise conditions of your application.

CPK exchangers can be constructed to comply with the standards of the ASME Pressure Vessel Code, Section VIII; TEMA; API; U.S. Coast Guard; and the American Bureau of Shipping Regulations.

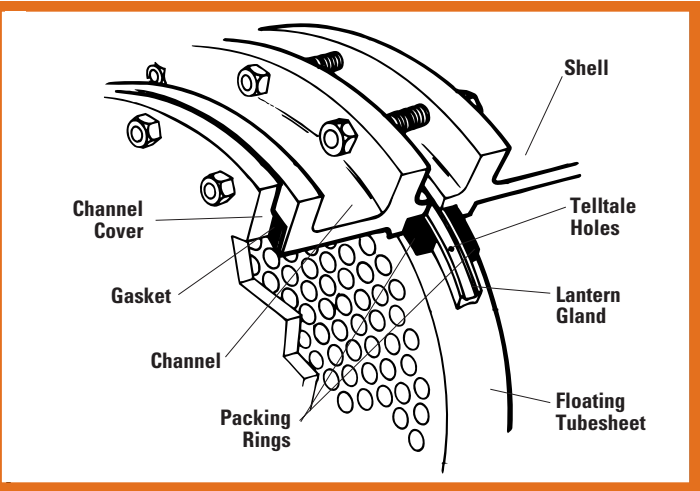


Figure 1: Construction detail of the packed end shows floating tubesheet, packing rings and lantern gland with telltale leak-off holes. Channel and cover construction permits quick access to tubes without disturbing packing.

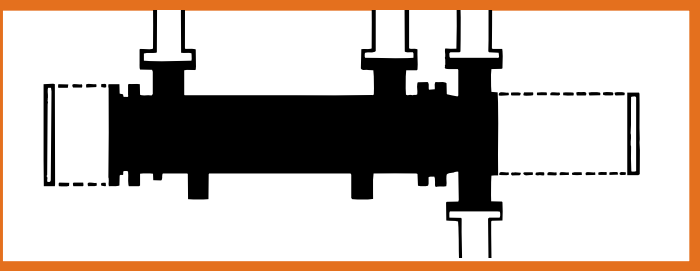


Figure 2: CPK exchangers are designed to allow easy access to the inside of the tubes without breaking piping connections. Just unbolt and remove the channel cover plate.

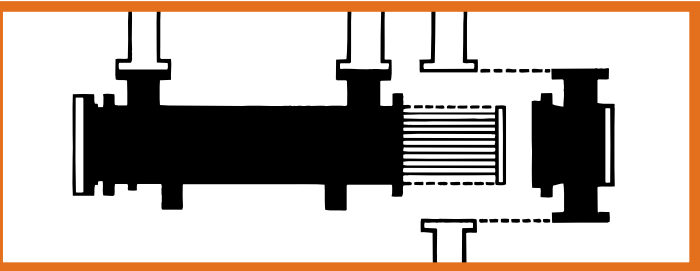


Figure 3: Removable tube bundle permits easy examination of tubes and shell interior.

CPK SERIES OPTIONS

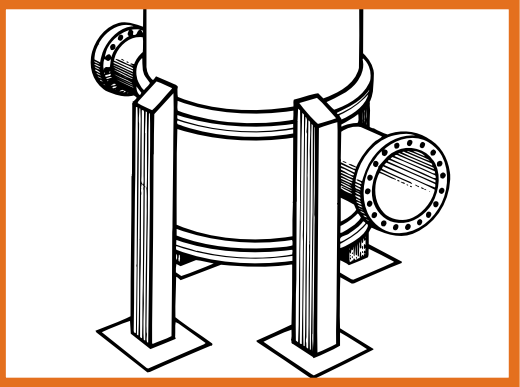


Figure 4: Vertical mounting legs.

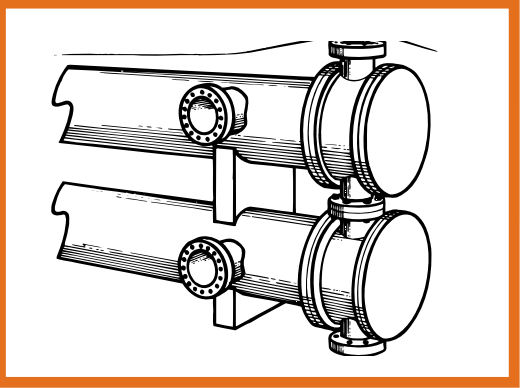


Figure 5: Spacer cradles for stacking arrangements.

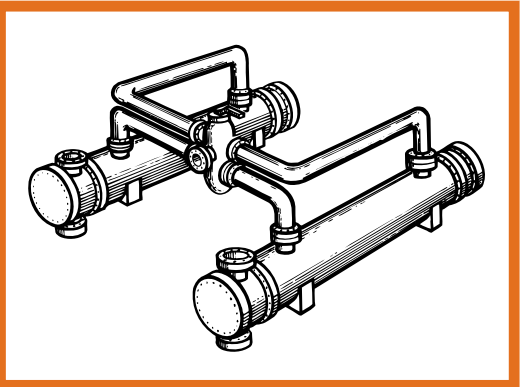


Figure 6: Twin cooler arrangements with interconnecting piping & transfer valve.

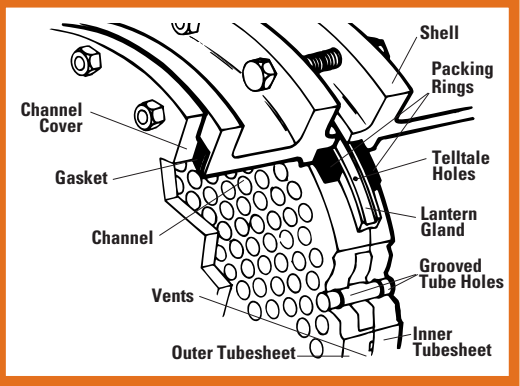


Figure 7: Detail of double tubesheet construction.

CPK Series heat exchangers are ideal for a wide variety of applications. They feature high thermal efficiency, rugged construction for tough day-to-day operations, and convenience of inspection and servicing. They are designed with standard pull-through, externally-packed floating head construction to prevent fluid intermixing and allow for tube expansion.

Some of the numerous applications for CPK heat exchangers:

- Heating and cooling electrolytes
- Boiler blowdown or contaminated condensate
- Intercoolers or aftercoolers for compressors

They’re also popular as coolers for:

- Brine
- Fresh water (jacket water)
- Engine and turbine lube oil
- Seal oil
- Hydraulic coupling fluid
- Hydraulic circuit oil

Easy product selection

ITT Standard keeps a complete inventory of pre-engineered components, ready for immediate use. We can provide special materials, mountings, or features. Whatever your needs, the CPK Series is versatile enough to meet them.

If desired, our engineers can work directly with your engineering staff. To help you select the right model, we’ll review your detailed specifications and operating requirements. Then, using our fully computerized selection process, we’ll recommend the best heat exchanger for your specific application.



ITT Standard is headquartered in one of the largest and best-supported heat exchanger centers in the world.



Our design staff and computerized selection process will help you choose the best heat exchanger for your application.

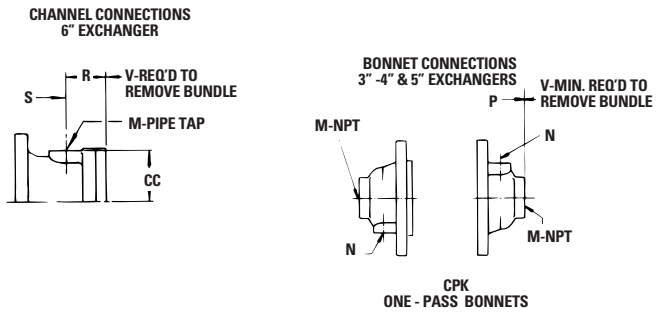


CPK Series heat exchangers are manufactured with rugged construction for tough day-to-day operations.

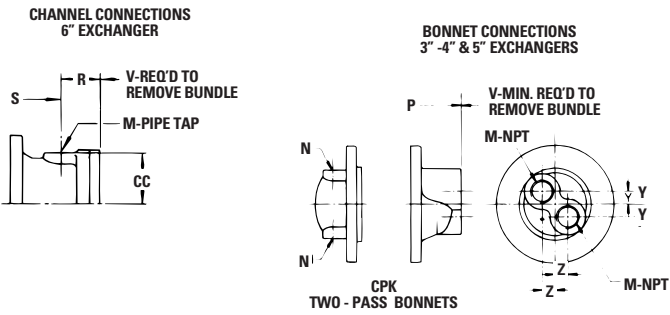
High standards of quality are found in every aspect of manufacturing, packaging and shipping.



All dimensions are in inches.



M		N & O NPT	P	R	S	SS	T	U	V	W	X
NPT	FLG										
1.25	-	.38	6.25	-	-	-	112.12	125.00	122.0	108.0	6.25
2.00	-	.38	6.75	-	-	-	111.75	126.00	122.0	107.0	7.25
2.50	-	.38	7.50	-	-	-	111.62	127.00	121.0	107.0	8.00
3.00	-	.38	-	3.12	7.88	8.38	110.75	133.25	118.0	107.0	8.25
-	4.00	.38	-	4.50	11.50	11.88	108.25	140.62	115.0	106.0	10.75
-	6.00	.75	-	5.50	13.88	14.12	106.00	145.00	113.0	106.0	12.00
-	6.00	.75	-	5.50	12.62	12.88	108.25	144.75	113.0	106.0	11.75
-	8.00	.75	-	8.25	14.25	14.50	105.88	151.12	109.0	105.0	13.00
-	8.00	.75	-	8.50	14.50	14.62	105.62	151.75	108.0	105.0	13.25
-	8.00	.75	-	8.50	14.50	14.62	105.62	151.75	108.0	105.0	13.25
-	8.00	.75	-	6.75	14.12	14.00	102.50	144.12	113.0	103.0	12.25
-	8.00	.75	-	9.25	16.50	17.00	102.38	154.38	107.0	102.0	15.00
-	8.00	.75	-	6.75	14.50	14.62	102.25	144.88	112.0	102.0	13.00
-	12.00	.75	-	12.88	22.12	20.25	97.88	165.88	101.0	102.0	18.25
-	16.00	.75	-	14.88	24.38	22.38	97.25	173.75	97.0	101.0	20.50



M		N & O NPT	P	R	S	T	U	V	W	X
NPT	FLG									
1.00	-	.38	6.25	-	-	112.12	125.00	122.0	108.0	6.50
1.25	-	.38	7.25	-	-	111.75	126.00	121.0	107.0	7.50
2.00	-	.38	8.00	-	-	111.62	127.00	121.0	107.0	8.50
2.00	-	.38	-	2.62	7.00	110.75	127.88	119.0	107.0	7.25
-	2.00	.38	-	3.00	11.25	108.25	131.38	117.0	106.0	10.50
-	3.00	.75	-	3.75	11.88	106.00	132.38	116.0	106.0	10.00
-	3.00	.75	-	3.75	12.00	106.00	132.62	116.0	106.0	10.00
-	4.00	.75	-	6.25	12.25	105.88	137.38	113.0	105.0	11.00
-	4.00	.75	-	6.50	12.50	105.62	138.12	112.0	105.0	11.25
-	6.00	.75	-	7.50	13.50	105.62	140.12	110.0	105.0	12.25
-	6.00	.75	-	5.50	13.38	103.00	135.62	114.0	103.0	11.75
-	6.00	.75	-	8.25	15.50	102.38	141.25	109.0	102.0	14.00
-	6.00	.75	-	6.38	14.50	102.25	138.62	112.0	102.0	13.00
-	8.00	.75	-	10.75	20.00	97.88	150.38	105.0	102.0	16.25
-	8.00	.75	-	11.12	20.62	97.25	151.62	104.0	101.0	16.75

DETERMINING SIZE

While the charts show selected heat exchanger models with tube lengths of 120 inches, CPK heat exchangers are available with virtually any tube length.

For example, the number 08120 designates a heat exchanger with a unit size of 08 (A = 8-5/8” shell diameter) and tube length of 120”. If a tube length of 96” is needed, the designation would be 08096. You would also deduct 24” (120” - 96” = 24”) from dimensions U, T and W. If a tube length of 144” is required, the exchanger size would be 08144. In this case, you would add 24” to dimensions U, T and W.

Since product improvement is a continuing effort at ITT Standard, we reserve the right to make reasonable changes of any kind without notice.