PLATE & FRAME HEAT EXCHANGERS

chester-Jensen Co.

Inc.

Catalog Section K

Chester-Jensen Co., Inc.

Chester-Jensen Co., Inc. PLATE & FRAME HEAT EXCHANGERS

Chester-Jensen Co. has been solving fluid heat exchange problems since its inception in 1914.

In this time, the company has gained a reputation as a world leader in the development and manufacture of heat transfer systems for a wide variety of both sanitary and industrial applications.

For decades, Chester-Jensen Plate and Frame Heat Exchangers have been manufactured completely in the U.S.A. To our clients, this means assured availability, quicker delivery, and more immediate response to their questions and concerns.

Whether you need a single unit or an entire plant processing system, Chester-Jensen can provide the most efficient equipment for your application, at an extremely competitive price.

The following pages will introduce you to the innovative technology that makes it possible.

Engineered for Exceptional Performance in your Application

Our engineering staff applies its extensive experience and comprehensive computer technology to each heat exchanger application.

Our complete engineering services begin with a study of your specifications and proposed duties. This is followed by an in-depth review of all system parameters relating to temperature, hydraulics, pressures, and materials.

Chester-Jensen engineers then provide equipment recommendations, pertinent drawings, and details of support requirements, each developed to ensure optimum performance in your application.

Chester-Jensen Plate Heat Exchangers are manufactured in the U.S.A. and shipped for use throughout the world.

Supported with Expert Service and Consultation

Every Chester-Jensen Heat Exchanger is supported by the services of a nationwide network of trained, company-employed representatives. These fully trained personnel are available to assist



you in the planning, installation, and operation of your system, and provide troubleshooting assistance, if needed, both during and after start-up.

At Chester-Jensen, we take pride in our record of expert, thorough, and timely service, and we work to uphold this reputation with every new and existing customer.

Manufactured & Tested to the Highest Quality Standards

Chester-Jensen's two manufacturing facilities are characterized by skilled craftsmen, extensive production capabilities, and a general atmosphere of innovation and progress.

Every heat exchanger component is tested to meet precise performance and construction standards at every phase of its fabrication from engineering to shipment.

After assembly and inspection, each individual plate is hydrostatically tested on each side. Then, all flow streams are tested again, simultaneously, at full test pressure.

The unit is then skidded and packaged together with its tightening wrench(s), gasket roller, spare gaskets and adhesive, plate arrangement drawings, service manuals, and other information needed to ensure trouble-free performance and start-up.



Versatile Design Allows Simple Field Modification

The modular design of Chester Exchangers allows easy expansion.

With simple adjustments, capacities may be increased and duties altered in the field. Longer top & bottom bars and tightening bolts may be added for even greater expansion in holding capacity.

Through the use of blank plates or connector plates with additional nozzles, each Chester-Jensen Plate Heat Exchanger can be designed to heat, cool, or regenerate multiple fluids simultaneously.



No Cross-Contamination

The possibility of intermingling hot and cold liquids is virtually eliminated by special gasket designs that direct any leaking fluid to the outside of the unit.

Constructed for Reliability and Long Life

Heavy-duty, precisely designed frames are available in either carbon or stainless steel, with optional spindle or hydraulic closures. All Chester-Jensen tightening bolts are stainless steel, for strength and corrosion resistance.

Top support and bottom guide bars, and all wetted surfaces are stainless steel. A variety of nozzle types and sizes is available with each frame. Protective stainless steel shrouds are available for all models.

Plate gaskets are single-piece molded elastomers of specially formulated material selected for optimum service in specific applications. Gaskets are securely bonded to the plate surface with special adhesives. Complete lateral support is provided by the unique deep gasket groove plate design. All gaskets are easily replaced in the field, for user convenience and economy.

EXCLUSIVE PLATE DESIGNS PROVIDE MAXIMUM HEAT TRANSFER CAPABILITIES

H SERIES

Chester-Jensen's H Series plates are fabricated from the heaviest gauge stainless materials used in the industry.

The H Series design was engineered to create continuous



acceleration and deceleration of fluids on both sides of the plate. This controlled turbulence ensures high thermal effectiveness and uniform distribution.

Inherently strong and long-lasting, H Series plates feature a wide gap clearance, which makes them the ideal choice for processing viscous materials.





M SERIES

Model M466 is the first in a new series of advanced Plate Heat Exchangers incorporating an innovative plate design developed by Chester-Jensen.

The M Series unique, modified herringbone design of relatively shallow troughs affords the ultimate in heat transfer efficiency while providing an internal metal-tometal support system that permits operation at higher pressures and increased volumes.





This unit is the most recent addition to Chester-Jensen's line of plate heat exchangers. The M466, designed through computer assisted technology, provides the ultimate in heat transfer efficiency by aligning lighter gauge materials in strategic patterns to ensure maximum structural support for the plate stack.

With the higher pressure capabilities inherent in the M466, our engineers can design systems with increased fluid velocities and greater induced turbulence to make certain that your custom engineered unit is as thermally dynamic and cost effective as possible.

STANDARD SPECIFICATIONS

- A. FRAME CONSTRUCTION: Fixed and follower head are heavy carbon steel plate fitted with stainless steel inserts so that all wetted surfaces are stainless. Top guide bar is stainless and shaped to receive top eye of plate and connector plate rollers. Stainless lower bar ensures proper plate alignment and prevents lateral movement. End and base supports are formed carbon steel fabrications. Standard hi-profile design furnished with adjustable stainless steel ball feel at the fixed head. Stainless steel, adjustable feet provided on end support for M466-76 and larger units. Smaller units provided with a fixed single point end support.
- **B. FINISH:** All carbon steel surfaces are primed then painted with a special anti-rust coating of stainless steel pigment in a polyurethane vehicle.
- C. CLOSURE: Plate stack is compressed by (6) heavy-duty stainless steel tightening rods that pass through slots in fixed and follower heads. Brass nuts prevent galling.
- D. CONNECTIONS: Fixed and follower heads are furnished with MPT, sanitary clamp, or IAMD bevel seat connections as required (4"standard).
- E. CONNECTOR PLATES: Stainless steel. solid boss type, suspended from roller. Furnished with MPT, sanitary clamp or IAMD bevel seal connections (3" standard).
- F. PLATES: Gasketed, one-piece, single thickness 22 gauge Type 304 stainless steel die stamping, bright finish. 4.66 sq. ft. heat transfer surface per plate.
- **G. GASKETS:** One-piece elastomers molded from FDA approved materials selected on an application basis. Cemented in place and readily replaceable in the field.
- H. INTERNAL PRESSURE: Maximum differential operating pressure 150 PSIG.
- I. SHIPMENT: Unit usually shipped assembled and crated. Larger units require that plates be boxed separately.
- J. WRENCH: Heavy duty, malleable cast iron construction, ratchet type with reversing lever.



AVAILABLE OPTIONS

 FRAME CONSTRUCTION: Fixed and follower heads fabricated from solid Type 304 stainless steel plate. End and base supports are formed stainless steel fabrications. Blast finish (Model Suffix 'S').

Standard hi-profile base supports may be furnished with adjustable stainless steel flanged feet in place of ball feel.

Frames are available in lo-profile configuration with either adjustable stainless steel ball or flanged feet. Industrial units may be furnished with painted steel flanged feet at reduced prices.

Single-thickness, sectional, stainless steel protective shrouds, snap-on design for easy removal. Custom fitted.

- 2. FINISH: Carbon steel frames are available with Epoxy enamel paint finish. Choice of colors.
- 3. CLOSURE: Dual threaded lightening spindles to assist in proximity closing. Spindles and distance bars are Type 304 stainless steel. End supports are heavy-wall, mild steel fabrications with chrome-plated bronze spindle bushing inserts. Mild steel units have a standard finish. 'S' Series units are clad with Type 304 stainless steel. Ratchet type spindle wrench included (Model-I Suffix "T").

Dual hydraulically powered tightening shafts to assist in proximity closing. Manually operated power source is housed in stainless steel enclosure pre-piped and integrally mounted to end support. Full-opening, hinged doors provide access for cleaning and storage facility for extension tubes and accessories. End supports are heavy wall, mild steel fabrications with standard finish. 'S' Series units are clad with Type 304 stainless, blast finish (Model Suffix 'H') Note: Information on units with remote, electric power sources, Series 'HR', are available upon request.

- CONNECTIONS: Fixed and follower heads available with 3" MPT, sanitary clamp, or IAMD bevel seat connections.
- PLATES: Single thickness, die stamped plates are also available in Type 316 stainless steel.
- 6. GASKETS: Choice of gasket material, indicated by application. Buna (SBR), ethylene propylene rubber or (EPDM).
- INTERNAL PRESSURE: Individual units may be tested, inspected, and certified under Section 8, Division 1 of the ASME Code for 150 PSIG design pressure, 225 PSIG test pressure.



SIZE NO.	LENGTH - INCHES			¹ MAX NO.	² SHIP WT.
	А	B ³	C ⁴	PLATES	(LBS.)
M466-48	26.4	48	54.3	160	1705
M466-76	49.5	76	82.3	300	1798
M466-104	72.6	104	110.3	440	1892

- 1 DEDUCT (24) TWENTY-FOUR PLATES FOR EACH CONNECTOR PLATE
- 2 ADD PER PLATE 7 LBS.; PER CONNECTOR PLATE 350 LBS.
- 3 FOR MAX. OVERALL LENGTH ON HYDRAULIC & SPINDLE ASSIST UNITS, ADD 26.7 TO DIM. "C"
- 4 FOR DIM. "B" ON HYDRAULIC & SPINDLE ASSIST SUBTRACT 2.5 FROM "C" (ON CHART)

* REDUCE BOTH DIMENSIONS BY 8.3 FOR LOW PROFILE UNIT.

MODEL HEAT EXCHANGER

Model HGF is physically the largest unit in the Chester-Jensen line of heat exchangers. It was developed principally to meet a need in food and industrial plants for a heat exchanger of relatively low cost capable of being operated at much higher capacities than those previously available.

The HGF achieves its high performance characteristics through the use of a very strong (18 gauge) stainless steel plate with a unique "parallel flow" plate design that ensures uniform distribution over the entire plate surface.

This "controlled turbulence" approach makes the HGF especially well suited for applications involving high throughput capacities of more viscous products.

STANDARD SPECIFICATIONS

- A. FRAME CONSTRUCTION: Fixed and follower head are heavy carbon steel plate fitted with stainless steel inserts so that all wetted surfaces are stainless. Top guide bar is stainless and shaped to receive top eye of plate and connector plate rollers. Stainless lower bar ensures proper plate alignment and prevents lateral movement. End and base supports are formed carbon steel fabrications. Standard hi-profile design furnished with adjustable stainless steel ball feet at fixed head. Stainless steel, adjustable feet provided on and support for HGF-60 and larger units. Smaller units provided with fixed single point end support.
- B. FINISH: All carbon steel surfaces are primed then painted with a special anti-rust coating of stainless steel pigment in a polyurethane vehicle.
- C. CLOSURE: Plate stack is compressed by six (6) heavy-duty stainless steel tightening rods that pass through slots in fixed and follower heads. Brass nuts prevent galling.
- **D. CONNECTIONS:** Fixed and follower heads are furnished with MPT, sanitary clamp or IAMD bevel seat connections as required (4" standard).
- E. CONNECTOR PLATES: Stainless steel, solid boss type, suspended from roller. Furnished with MPT, sanitary clamp or IAMD bevel seal connections (3" standard).
- F. PLATES: Gasketed, one-piece, single thickness 18 gauge Type 304 stainless steel die stamping, bright finish. 6.36 sq. ft. heat transfer surface per plate.
- **G. GASKETS:** One-piece elastomers molded from FDA approved materials selected on an application basis. Cemented in place and readily replaceable in the field.
- H. INTERNAL PRESSURE: Maximum differential operating pressure 100 PSIG.



- I. SHIPMENT: Unit usually shipped assembled and crated. Larger units require plates to be boxed separately.
- J. WRENCH: Heavy-duty, malleable cast iron construction, ratchet type with reversing lever.

AVAILABLE OPTIONS

1. FRAME CONSTRUCTION: Fixed and follower heads fabricated from solid Type 304 stainless steel plate. End and base supports are formed stainless steel fabrications. Blast finish (Model Suffix 'S').

Standard hi-profile base supports may be furnished with adjustable stainless steel flanged feet in place of ball feet.

Frames are available in lo-profile configuration with either adjustable stainless steel ball or flanged feet. Industrial units may be furnished with painted steel flanged feet at reduced prices.

Single-thickness, sectional, stainless steel protective shrouds, snap-on design for easy removal. Custom fitted.

- 2. FINISH: Carbon Steel frames are available with Epoxy enamel paint finish. Choice of colors.
- 3. CLOSURE: Dual threaded tightening spindles to assist in proximity closing. Spindles and distance bars are Type 304 stainless steel. End supports are heavy-wall, mild steel fabrications with chrome plated bronze spindle bushing inserts. Mild steel units have standard finish. 'S' Series units are clad with Type 304 stainless steel. Ratchet-type spindle wrench included (Model Suffix 'T').

Dual hydraulically powered tightening shafts to assist in proximity closing. Manually operated power source is housed in stainless steel enclosure, pre-piped and integrally mounted to end support. Full-opening, hinged doors provide access for cleaning and storage facility for extension tubes and accessories. End supports are heavy-wall, mild steel fabrications with standard finish. 'S' Series units are clad with Type 304 stainless steel, blast finish (Model Suffix 'H'). Note: Information on units with remote, electric power sources, Series 'HR' available upon request.

- CONNECTIONS: Fixed and follower heads available with 3" MPT, sanitary clamp, or IAMD bevel seat connections.
- 5. PLATES: Single thickness, die stamped plates are also available in Type 316 in stainless steel.

6. GASKETS: Choice of gasket material indicated by application. Buna (SBR) or ethylene propylene rubber (EPDM) and other FDAapproved materials.



SIZE NO.	LENGTH - INCHES			¹ MAX NO.	² SHIP WT.
	А	B ³	C ⁴	PLATES	(LBS.)
HGF-48	21	48	54.3	93	1957
HGF-60	33	60	66.3	131	2007
HGF-72	45	72	78.3	168	2054
HGF-84	57	84	90.3	205	2103
HGF-96	69	96	102.3	243	2144
HGF-108	81	108	114.3	281	2201
HGF-120	93	120	126.3	318	2250
HGF-132	105	132	138.3	355	2297

- 1 DEDUCT (17) SEVENTEEN PLATES FOR EACH CONNECTOR PLATE
- 2 ADD PER PLATE 17.3 LBS.; PER CONNECTOR PLATE 350 LBS.
- 3 FOR MAX. OVERALL LENGTH ON HYDRAULIC & SPINDLE ASSIST UNITS, ADD 26.7 TO DIM. "C"
- 4 FOR DIM. "B" ON HYDRAULIC & SPINDLE ASSIST SUBTRACT 2.5 FROM "C" (ON CHART)

* REDUCE BOTH DIMENSIONS BY 10.7 FOR LOW PROFILE UNIT.

MODEL HINTER PLATE HEAT EXCHANGER

The Model HMF is the field-proven workhorse of the Chester-Jensen line. Countless installations worldwide offer testimony to the long-term efficiency and reliability of this fine unit.

The HMF is compact, yet able to accommodate an extremely wide range of throughput capacities. Like its counterparts in this unique family of heat exchangers, the HMF owes its high performance characteristics to its "parallel flow" plate design.

The heavy-gauge stainless steel used in the HMF plate, together with its inherent wide gap clearance design, make this versatile unit an obvious first choice in a myriad of applications including those involving viscous products.

STANDARD SPECIFICATIONS

- A. FRAME CONSTRUCTION: Fixed and follower head are heavy carbon steel plate fitted with stainless steel inserts so that all wetted surfaces are stainless. Top guide bar is stainless and shaped to receive top eye of plate and connector plate rollers. Stainless lower bar ensures proper plate alignment and prevents lateral movement. End and base supports are formed carbon steel fabrications. Standard hi-profile design furnished with adjustable stainless steel ball feet at fixed head. Stainless steel, adjustable feet provided on end support for HMF-63 and larger units. Smaller units provided with fixed single point end support.
- **B. FINISH:** All carbon steel surfaces are primed then painted with a special anti-rust coating of stainless steel pigment in a polyurethane vehicle.
- **C. CLOSURE:** Plate stack is compressed by six (6) heavy-duty stainless steel tightening rods that pass through slots in fixed and follower heads. Brass nuts prevent galling.
- **D. CONNECTIONS:** Fixed and follower heads are furnished with MPT, sanitary clamp, or IAMD bevel seat connections as required (2-1/2" standard).
- E. CONNECTOR PLATES: Stainless steel, solid boss type, suspended from roller. Furnished with MPT, sanitary clamp or IAMD bevel seat connections (2" standard).
- F. PLATES: Gasketed, one-piece, single thickness 20 gauge Type 304 stainless steel die stamping, bright finish. 3.73 sq. ft. heat transfer surface per plate.
- **G. GASKETS:** One-piece elastomers molded from FDA approved materials selected on an application basis. Cemented in place and readily replaceable in the field.



- H. INTERNAL PRESSURE: Maximum differential operating pressure 100 PSIG.
- I. SHIPMENT: Unit usually shipped assembled and crated. Larger units require that plates be boxed separately.
- J. WRENCH: Heavy-duty, malleable cast iron construction, ratchet type with reversing lever.

AVAILABLE OPTIONS

1. FRAME CONSTRUCTION: Fixed and follower heads fabricated from solid Type 304 stainless steel plate. End and base supports are formed stainless steel fabrications. Blast finish (Model Suffix 'S').

Standard hi-profile base supports may be furnished with adjustable stainless steel flanged feet in place of ball feet.

Frames are available in lo-profile configuration with either

adjustable stainless steel ball or flanged feet. Industrial units may be furnished with painted steel flanged feet at reduced prices.

Single-thickness, sectional, stainless steel protective shrouds, snap-on design for easy removal. Custom fitted.

- **2. FINISH:** Carbon steel frames are available with Epoxy enamel paint finish. Choice of colors.
- 3. CLOSURE: Dual threaded tightening spindles to assist in proximity closing. Spindles and distance bars are Type 304 stainless steel. End supports are heavy-wall, mild steel fabrications with chrome-plated bronze spindle bushing inserts. Mild steel units have standard finish. 'S' Series units are clad with Type 304 stainless steel. Ratchet type spindle wrench included (Model Suffix 'T').

Dual hydraulically powered tightening shafts to assist in proximity

closing. Manually operated power source is housed in stainless steel enclosure, pre-piped and integrally mounted to end support Full-opening, hinged doors provide access for cleaning and storage facility for extension tubes and accessories. End supports are heavy-wall, mild steel fabrications with standard finish. 'S' Series units are clad with Type 304 stainless steel, blast finish (Model Suffix 'H'). Note: Information on units with remote, electric power sources, Series 'HR', available upon request.

- CONNECTIONS: Connector plates are available with 2-1/2" sanitary clamp, or IAMD bevel seat connections.
- PLATES: Single thickness, die stamped plates are also available in Type 316 stainless steel.
- GASKETS: Choice of gasket material, indicated by application. Buna (SBR) or ethylene propylene rubber (EPDM) FDA approved materials.



SIZE NO.	LENGTH - INCHES			¹ MAX NO.	² SHIP WT.
	А	B ³	C ⁴	PLATES	(LBS.)
HMF-35	18	34.4	40.6	64	1101
HMF-45	28	44.4	50.6	100	1133
HMF-55	38	54.4	60.6	136	1165
HMF-63	46	62.4	68.6	165	1199
HMF-69	52	68.4	74.6	186	1218
HMF-76	59	75.4	81.6	210	1240
HMF-80	63	79.4	85.6	225	1343
HMF-85	68	84.4	90.6	245	1365
HMF-90	73	89.4	95.6	265	1386
HMF-100	83	99.4	105.6	305	1430

- 1 DEDUCT (8) EIGHT PLATES FOR EACH CONNECTOR PLATE
- 2 ADD PER PLATE 9 LBS.; PER CONNECTOR PLATE 150 LBS.
- 3 FOR MAX. OVERALL LENGTH ON HYDRAULIC & SPINDLE ASSIST UNITS, ADD 26.7 TO DIM. "C"
- 4 FOR DIM. "B" ON HYDRAULIC & SPINDLE ASSIST SUBTRACT 2.5 FROM "C" (ON CHART)
- * REDUCE BOTH DIMENSIONS BY 12.7 FOR LOW PROFILE UNIT.

MODEL HEAT EXCHANGER

Chester-Jensen's Model HTF is designed specifically to fulfill heat exchange requirements dealing with relatively small throughput capacities and where space and initial cost are of paramount importance. Although it is the smallest unit in the "H" Series, the HTF retains the same high performance characteristics found in larger units. This is due to the "controlled turbulence" effect of its "parallel flow" plate design.

With its heavy-gauge, wide clearance, Type 316 stainless steel plates, the HTF is ideally suited for most small volume applications including, but certainly not limited to, those products having heavier than normal viscosities.

STANDARD SPECIFICATIONS

- A. FRAME CONSTRUCTION: Fixed and follower head are heavy carbon steel plate fitted with stainless steel inserts so that all wetted surfaces are stainless. Top guide bar is stainless and shaped to receive top eye of plate and connector plate rollers. Stainless lower bar ensures proper plate alignment and prevents lateral movement. End and base supports are formed carbon steel fabrications. Standard design furnished with adjustable stainless steel ball feet at fixed head and fixed single point end support.
- **B. FINISH:** All carbon steel surfaces are primed then painted with a special anti-rust coating of stainless steel pigment in a polyurethane vehicle.
- C. CLOSURE: Plate stack is compressed by six (6) heavy-duty stainless steel tightening rods that pass through slots in fixed and follower heads. Brass nuts prevent galling.
- D. CONNECTIONS: Fixed and follower heads are furnished with either 1-½" sanitary clamp, IAMD bevel seat fittings or 1-½" MPT connections.
- E. CONNECTOR PLATES: Stainless steel, solid boss slide type. Furnished with 1-1/2" sanitary clamp or IAMD bevel seat connections.
- F. PLATES: Gasketed, one-piece, single thickness 20 gauge Type 316 stainless steel die stamping, bright finish, 1.53 sq. ft. heat transfer surface per plate.
- **G. GASKETS:** One-piece elastomers molded from FDA approved materials selected on an application basis. Cemented in place and readily replaceable in the field.
- H. INTERNAL PRESSURE: Maximum differential operating pressure 100 PSIG.
- I. SHIPMENT: All units shipped completely assembled.
- J. WRENCH: Heavy-duty, malleable cast iron construction, ratchet type with reversing lever.



AVAILABLE OPTIONS

1. FRAME CONSTRUCTION: Fixed and follower heads fabricated from solid Type 304 stainless steel plate. End and base supports are formed stainless steel fabrications. Blast finish (Model Suffix 'S').

Standard hi-profile base supports may be furnished with adjustable stainless steel flanged feet in place of ball feet. Single thickness, sectional, stainless steel protective shrouds, snap-on design for easy removal. Custom fitted.

Model HTF-12 or Model HTFS-12 units are available in a wall mounted configuration with two (2) wall brackets bolted at upper and lower sides of fixed head. Left or right hand arrangement. Brackets for mild steel units have standard finish. Brackets for 'S' units are solid stainless steel (Model Suffix 'W').

- **2. FINISH:** Carbon steel frames are available with Epoxy enamel paint finish. Choice of colors.
- GASKETS: Choice of gasket material, indicated by application. Buna (SBR) or ethylene propylene rubber (EPDM) FDA approved materials.







SIZE NO.	LENGTH	- INCHES	¹ MAX NO. PLATES	² SHIP WT. (LBS.)
	А	В		
HTF-12	12	26	45	328
HTF-24	24	42	86	366
HTF-34	34	52	121	402



1 - DEDUCT (6) SIX PLATES FOR EACH CONNECTOR PLATE

2 - ADD PER PLATE - 4 LBS.; PER CONNECTOR PLATE - 50 LBS.



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