



EKİN ENDÜSTRİYEL

**BRAZED HEAT
EXCHANGERS
PRODUCT CATALOGUE**

Contents

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Brazed Heat Exchanger





MIT BRAZED HEAT EXCHANGERS

MIT brazed heat exchangers are used in refrigeration units as evaporators, condensers, heating applications and instantaneous heaters and in their specific applications. MIT offers the most suitable solutions with a wide range of heat exchangers produced with high quality components.

Capacity and connections for specific applications can be produced as desired. MIT brazed heat exchangers save space thanks to their compact design.

CAPACITY CHART							
PHE Information	MIT MB-01	MIT MB-02	MIT MB-03	MIT MB-04	MIT MB-05	MIT MB-06	MIT MB-07
Cooling Capacity / Heat Capacity (kW)	0.5-4	0.5-4	2-10	2-10	5-15	3-30	30-80
Heat Transfer Area (m ²)	(n-2)x0.012	(n-2)x0.012	(n-2)x0.014	(n-2)x0.022	(n-2)x0.028	(n-2)x0.030	(n-2)x0.120
Design Temperature (°C)	-196-200	-196-200	-196-200	-196-200	-196-200	-196-200	-196-200
Standard Design Pressure (bar)	30	10	30	30	30	30	30
Height Design Pressure (bar)	30	40	45	45	45	45	40
Test Pressure (bar)	15/45	15/60	45/65	45/65	45/65	45/65	45/65
Distribution						Q	Q
Double Cycle	D	D	D	D	D	D	D
Channel Patterns	H	H,L,M	H	H,L,M	H,L,M	H	H
Max. Number of Plates	50	60	60	60	150	150	250
(Height/Width) (mm)	192/73	203/73	230/89	316/73	311/111	325/95	530/250
Empty Weight (n=Number of Plates) (kg)	0.4+0.044xn	0.5+0.05xn	1.1+0.055xn	0.7+0.07xn	1.2+0.1xn	1+0.09xn	7+0.4xn
Max. Brazed Connection Dimensions	7/8"	7/8"	1"	7/8"	1 3/8"	1 3/8"	1 5/8"
Max. Threaded Connection Dimensions	3/4"	3/4"	1"	3/4"	1 1/4"	1 1/4"	2"
Standard Plate Material	AISI316L	AISI316L	AISI316L	AISI316L	AISI316L	AISI316L	AISI316L
Braze Material	Copper or Stainless	Copper or Stainless	Copper or Stainless	Copper or Stainless	Copper or Stainless	Copper or Stainless	Copper or Stainless

CAPACITY CHART					
PHE Information	MIT MB-08	MIT MB-09	MIT MB-10	MIT MB-11	MIT MB-12
Cooling Capacity / Heat Capacity (kW)	10-60	30-200	60-200	150-450	150-500
Heat Transfer Area (m ²)	(n-2)x0.052	(n-2)x0.095	(n-2)x0.113	(n-2)x0.21	(n-2)x0.26
Design Temperature (°C)	-196-200	-196-200	-196-200	-196-200	-196-200
Standard Design Pressure (bar)	30	30	30	30	25
Height Design Pressure (bar)	45	45	40	40	
Test Pressure (bar)	45/67.5	45/67.5	45/60	45/60	45/60
Distribution	Q	Q	Q	Q	
Double Cycle	D	D	D	D	D
Channel Patterns	H,L,M	H,L,M	H	H	H
Max. Number of Plates	150	250	250	500	280
(Height/Width) (mm)	527/111	617/190	490/250	739/322	798/363
Empty Weight (n=Number of Plates) (kg)	1.8+0.23xn	4.6+0.44xn	6.5+0.42xn	13+0.82xn	13.5+0.97xn
Max. Brazed Connection Dimensions	15/8"	21/8"	25/8"	31/8"	4"
Max. Threaded Connection Dimensions	11/4"	2"	21/2"	31/8" Clamp	4" Clamp
Standard Plate Material	AISI316L	AISI316L	AISI316L	AISI316L	AISI316L
Braze Material	Copper or Stainless	Copper or Stainless	Copper or Stainless	Copper or Stainless	Copper or Stainless



MIT brazed plate heat exchangers have been designed for cooling, ventilation and heating processes and have been used safely in these systems for years.

Information

- Minimum temperature: -196 °C
- Maximum temperature: +200 °C
- Design pressure: 30-70 bar
- Suitable for standard and high pressures
- Cooling capacity
- Connection type: Threaded, brazed
- Copper, nickel and stainless

Certificates

- CE Sertifikası (PED) 97/23/EC
- UL
- ISO 9001: 2000



MIT BRAZED HEAT EXCHANGERS

Model	MIT MB-01	MIT MB-02	MIT MB-03	MIT MB-04	MIT MB-05	MIT MB-06
Width (mm)	73	73	89	73	111	95
Height (mm)	192	203	230	316	311	325
Depth (mm)	9+2.3n	9+2.3n	9+2.3n	9+2.3n	9+2.3n	9+1.5n
Horizontal Axis Range (mm)	40	42	43	42	50	39
Vertical Axis Range (mm)	154	172	182	278	250	269
Max Operating Pressure (bar)	30	30	30	30	30	30
Test Pressure (bar)	45	45	45	45	45	45
Weight (kg)	0.4+0.044n	0.5+0.05n	1.1+0.055n	0.7+0.07n	1.2+0.1n	1+0.09n

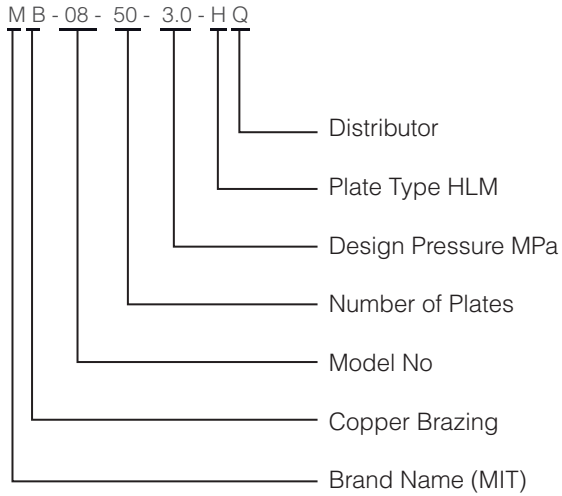
Model	MIT MB-07	MIT MB-08	MIT MB-09	MIT MB-10	MIT MB-11	MIT MB-12
Width (mm)	250	111	190	250	322	363
Height (mm)	530	527	617	490	739	798
Depth (mm)	13+2.3n	9+2.34n	10+2.4n	7.6+2.3n	13+2.8n	13+2.8n
Horizontal Axis Range (mm)	174	50	98	138	188	188
Vertical Axis Range (mm)	456	456	515	378	603	608
Max Operating Pressure (bar)	30	30	30	30	30	30
Test Pressure (bar)	45	45	45	45	45	45
Weight (kg)	7+0.4n	1.8+0.23n	4.6+0.44n	6.5+0.42n	13+0.82n	13.5+0.97n

Model	Standard Connections	Optional Connections	Max. Threaded Connection Diameter	Max. Brazed Connection Diameter
MIT MB-01	Threaded	Brazed	3/4"	7/8"
MIT MB-02	Threaded	Brazed	3/4"	7/8"
MIT MB-03	Threaded	Brazed	3/4"	7/8"
MIT MB-04	Threaded	Brazed	3/4"	7/8"
MIT MB-05	Threaded	Brazed	1 1/4"	13/8"
MIT MB-06	Threaded	Brazed	1 1/4"	13/8"
MIT MB-07	Threaded	Brazed	2"	15/8"
MIT MB-08	Threaded	Brazed	1 1/2"	15/8"
MIT MB-09	Threaded	Brazed	2"	21/8"
MIT MB-10	Threaded	Brazed	2 1/2"	21/8"
MIT MB-11	Clamp	Brazed	3 1/8"	31/8"
MIT MB-12	Clamp	Brazed	4"	4"

Materials

Plate Material	AISI 316
Connection Material	AISI 304
Braze Material	Copper (Standard) or Stainless

Display of Brazed Heat Exchangers



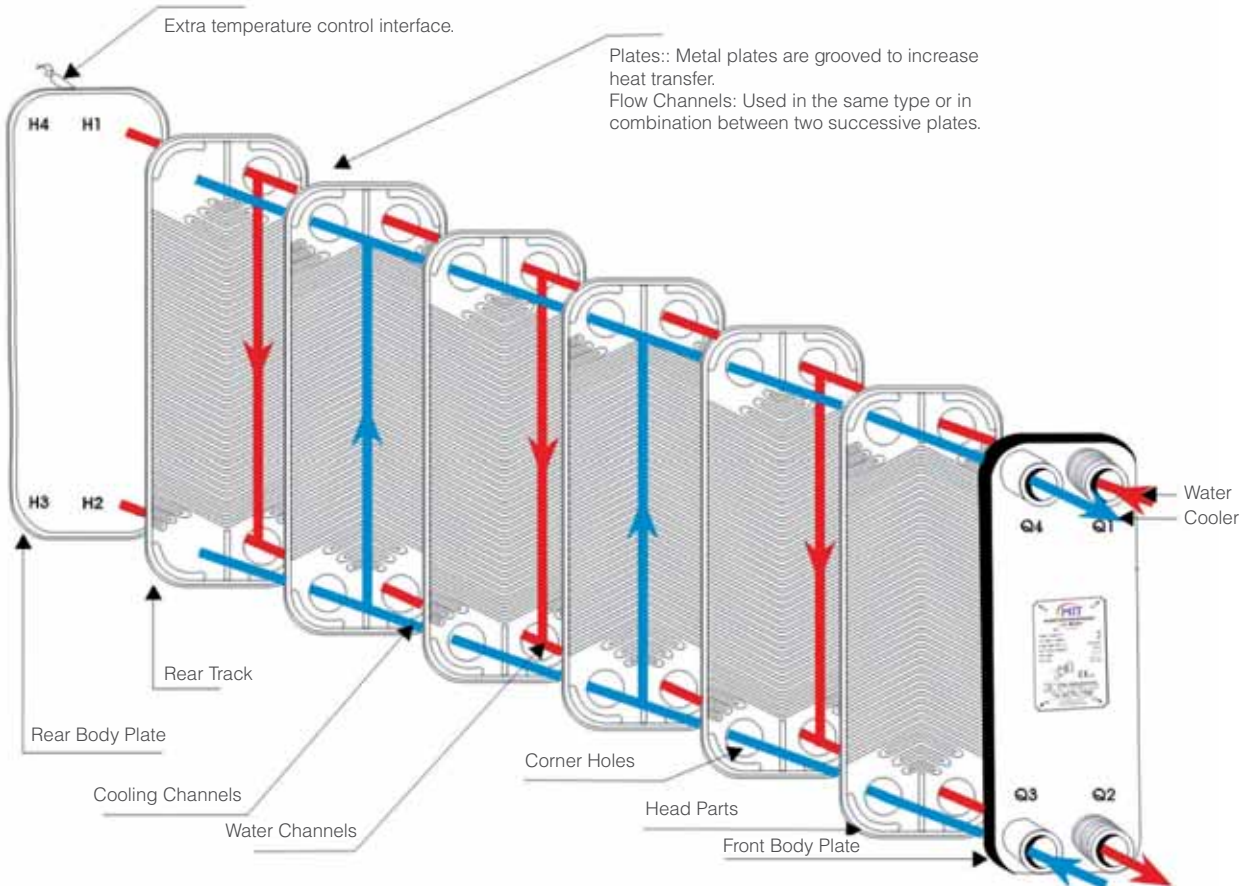
MIT brazed plate heat exchangers can be designed with channel plates with different heat transfer characteristics.

H-Type: The plate has wide-angle channels to make the heat transfer to turbulence the fluid's flow characteristic.

L-Type: Has narrow angles. This reduces the loss of pressure, but the reduction in turbulence reduces heat transfer.

M-Type: A combination of L and H type plates. These plates are particularly preferred when the heat exchange on one side of the plate heat exchanger is much larger than the other side.

Structure of MIT Brazed Heat Exchangers

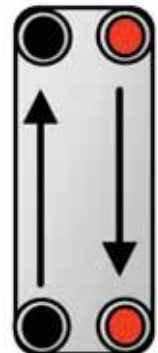
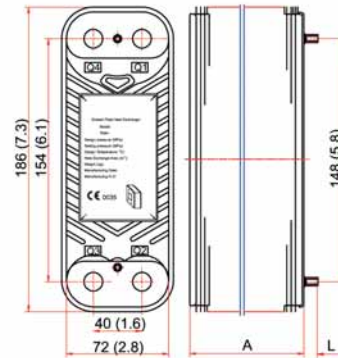
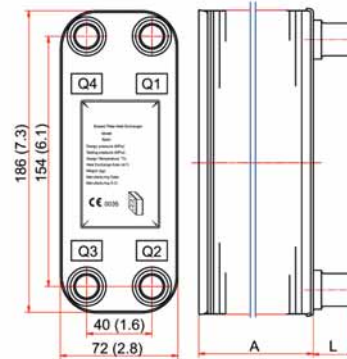


MIT MB-01



MIT MB-01 can be copper or nickel brazed heat exchanger. Plate material 316L.

Front and Rear Bodies



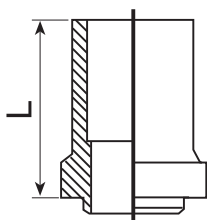
Parallel Flow

Brazed Plate Heat Exchanger / MIT MB-01

Number of Plates	A (mm)	Weight (kg)	Volume Q1 Q2 Side / Q3 Q4 Side	Heat Exchanger Area (m ²)
n	7+2.3n	0.6+0.044n	0.018x1/2n / 0.018x1/2 (n-2)	(n-2) 0.012

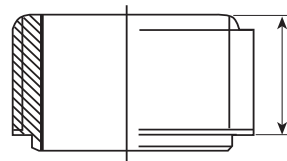
Parameters

Design Pressure	30 bar
Test Pressure	45 bar
Design Temperature	-196 ~ +200 °C
Plate Type	H
Heat Capacity	30 kW
Maximum Number of Plates	100



Brazed Connection

Maximum Connection 7/8"



Screwed Connection

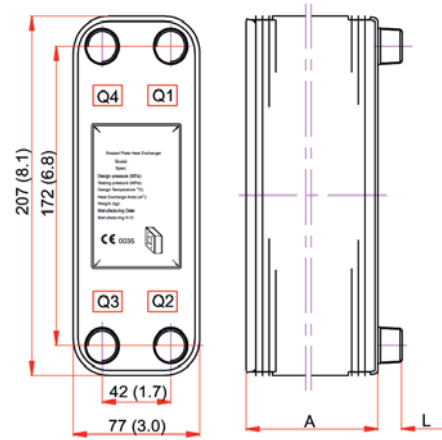
Maximum Connection 3/4"

Ekin offers various types of brazed and screwed connections to its customers.

MIT MB-02



MIT MB-02 can be copper or nickel brazed heat exchanger. Plate material 316L.



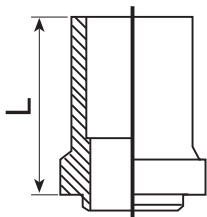
Parallel Flow

Brazed Plate Heat Exchanger / MIT MB-02

Number of Plates	A (mm)	Weight (kg)	Volume Q1 Q2 Side / Q3 Q4 Side	Heat Exchanger Area (m ²)
n	7+2.3n	0.7+0.06n	0.02x1/2n / 0.02x1/2 (n-2)	(n-2) 0.012

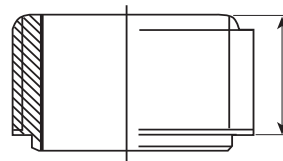
Parameters

Design Pressure	30 bar
Test Pressure	45 bar
Design Temperature	-196 ~ +200 °C
Plate Type	H. L. M.
Heat Capacity	35 kW
Maximum Number of Plates	110



Brazed Connection

Maximum Connection 7/8"



Screwed Connection

Maximum Connection 3/4"

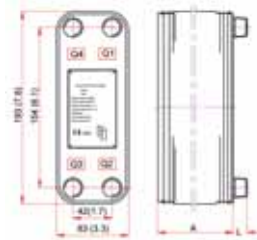
Ekin offers various types of brazed and screwed connections to its customers.

MIT MB-03

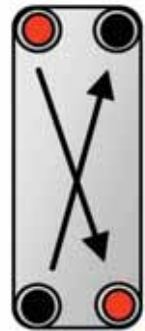
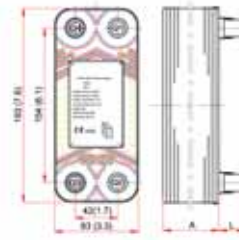
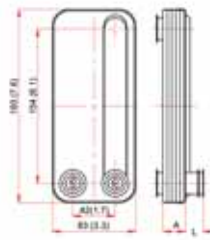


MIT MB-03 can be copper or nickel brazed heat exchanger. Plate material 316L.

Customized



Channels of Front Plate



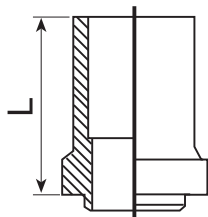
Cross Flow

Brazed Plate Heat Exchanger / MIT MB-03

Number of Plates	A (mm)	Weight (kg)	Volume Q1 Q2 Side / Q3 Q4 Side	Heat Exchanger Area (m ²)
n	7+2.3n	0.6+0.06n	0.022x1/2n / 0.022x1/2 (n-2)	(n-2) 0.014

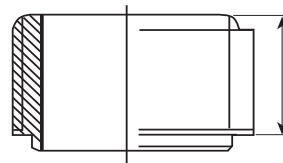
Parameters

Design Pressure	30 bar
Test Pressure	45 bar
Design Temperature	-196 ~ +200 °C
Plate Type	H
Heat Capacity	40 kW
Maximum Number of Plates	100



Brazed Connection

Maximum Connection 7/8"



Screwed Connection

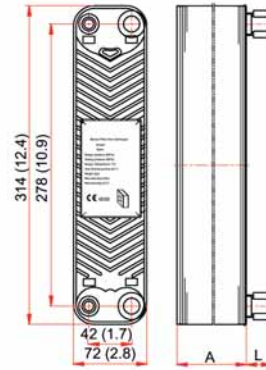
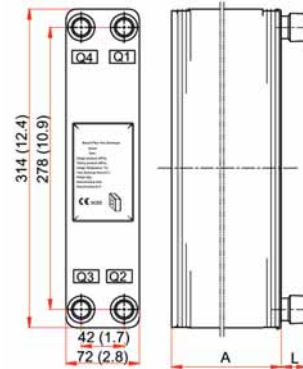
Maximum Connection 3/4"

Ekin offers various types of brazed and screwed connections to its customers.

MIT MB-04



MIT MB-04 can be copper or nickel brazed heat exchanger. Plate material 316L.



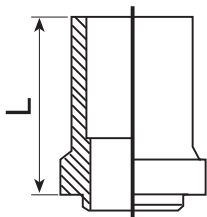
Parallel Flow

Brazed Plate Heat Exchanger / MIT MB-04

Number of Plates	A (mm)	Weight (kg)	Volume Q1 Q2 Side / Q3 Q4 Side	Heat Exchanger Area (m ²)
n	7+2.3n	1.1+0.09n	0.04x1/2n / 0.04x1/2 (n-2)	(n-2) 0.022

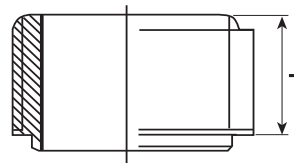
Parameters

Design Pressure	30 bar
Test Pressure	45 bar
Design Temperature	-196 ~ +200 °C
Plate Type	H. L. M.
Heat Capacity	150 kW
Maximum Number of Plates	100



Brazed Connection

Maximum Connection 7/8"



Screwed Connection

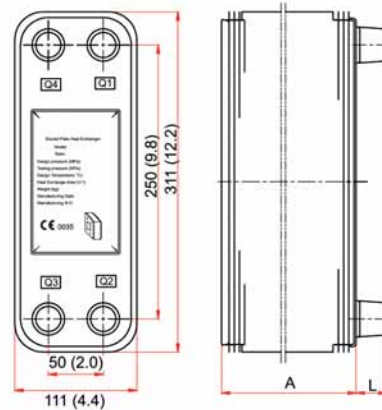
Maximum Connection 3/4"

Ekin offers various types of brazed and screwed connections to its customers.

MIT MB-05



MIT MB-05 can be copper or nickel brazed heat exchanger. Plate material 316L.



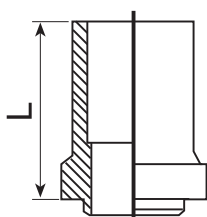
Parallel Flow

Brazed Plate Heat Exchanger / MIT MB-05

Number of Plates	A (mm)	Weight (kg)	Volume Q1 Q2 Side / Q3 Q4 Side	Heat Exchanger Area (m ²)
n	9+2.5n	1.2+0.13n	0.05x1/2n / 0.05x1/2 (n-2)	(n-2) 0.028

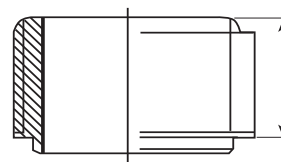
Parameters

Design Pressure	30 bar (A type) 45 bar (B type)
Test Pressure	45 bar (A type) 67,5 bar (B type)
Design Temperature	-196 ~ +200 °C
Plate Type	H. L. M.
Heat Capacity	4-25 kW (in Air Heat Exchangers)
Maximum Number of Plates	150



Brazed Connection

Maximum Connection 1"3/8



Screwed Connection

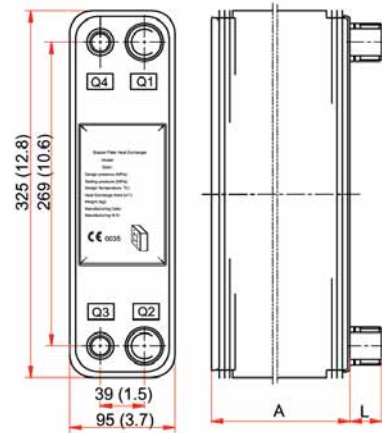
Maximum Connection 1"1/4

Ekin offers various types of brazed and screwed connections to its customers.

MIT MB-06



MIT MB-06 can be copper or nickel brazed heat exchanger. Plate material 316L.



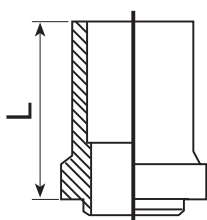
Parallel Flow

Brazed Plate Heat Exchanger / MIT MB-06

Number of Plates	A (mm)	Weight (kg)	Volume Q1 Q2 Side / Q3 Q4 Side	Heat Exchanger Area (m ²)
n	9+1.5n	1.0+0.09n	0.28x1/2n / 0.28x1/2 (n-2)	(n-2) 0.030

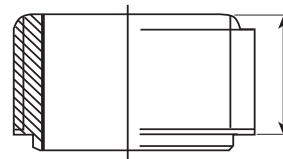
Parameters

Design Pressure	30 bar (A type) 45 bar (B type)
Test Pressure	45 bar (A type) 67,5 bar (B type)
Design Temperature	-196 ~ +200 °C
Plate Type	H
Heat Capacity	30-50 kW (in Air Heat Exchangers)
Maximum Number of Plates	150



Brazed Connection

Maximum Connection 1"3/4



Screwed Connection

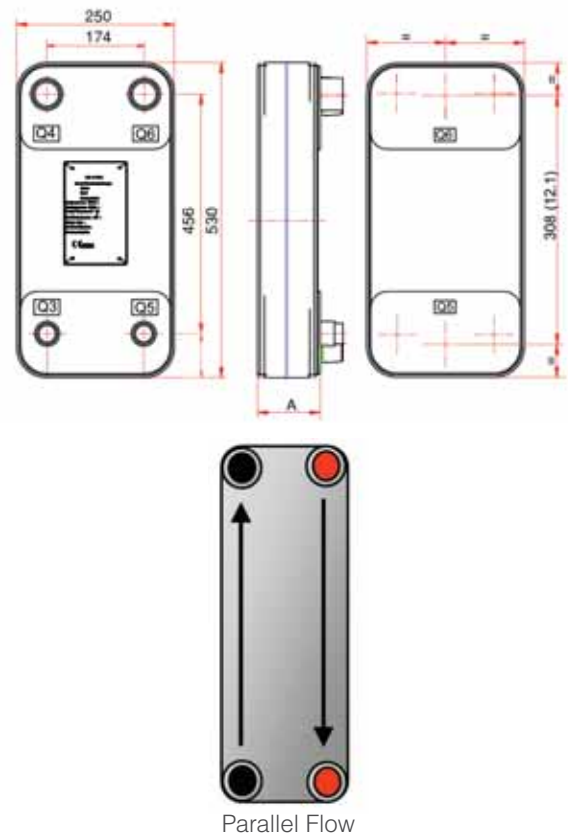
Maximum Connection 1"1/4

Ekin offers various types of brazed and screwed connections to its customers.

MIT MB-07



MIT MB-07 can be copper or nickel brazed heat exchanger. Plate material 316L.

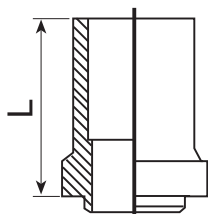


Brazed Plate Heat Exchanger MIT MB-07

Number of Plates	A (mm)	Weight (kg)	Volume Q1 Q2 Side / Q3 Q4 Side	Heat Exchanger Area (m ²)
n	13+2.3n	7+0.40n	0.094x1/2n / 0.094x1/4 (n-2)	(n-2) 0.120

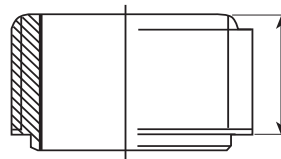
Parameters

Design Pressure	30 bar (A type) 45 bar (B type)
Test Pressure	45 bar (A type) 67,5 bar (B type)
Design Temperature	-196 ~ +200 °C
Plate Type	H. L. M.
Heat Capacity	30-300 kW
Maximum Number of Plates	250



Brazed Connection

Maximum Connection 2"

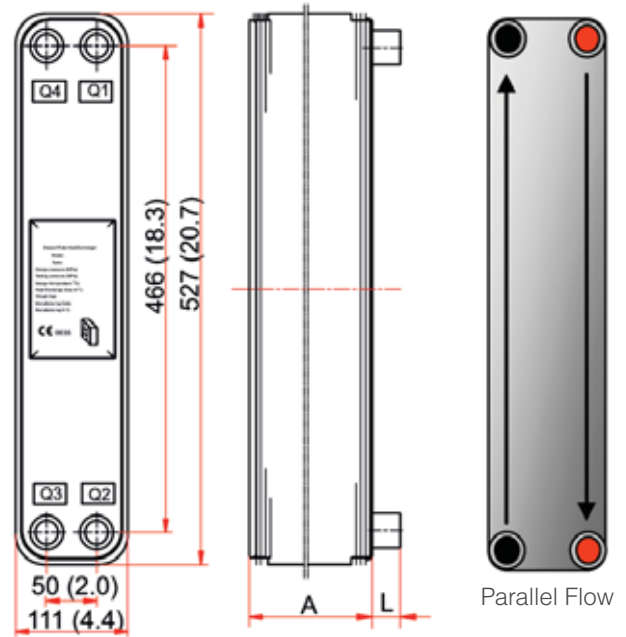


Screwed Connection

Maximum Connection 2"

Ekin offers various types of brazed and screwed connections to its customers.

MIT MB-08



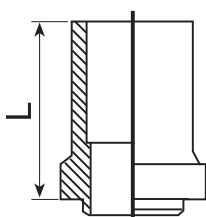
MIT MB-08 can be copper or nickel brazed heat exchanger. Plate material 316L.

Brazed Plate Heat Exchanger MIT MB-08

Number of Plates	A (mm)	Weight (kg)	Volume Q1 Q2 Side / Q3 Q4 Side	Heat Exchanger Area (m ²)
n	9+2.4n	1.8+0.23n	0.094x1/2n / 0.094x1/2 (n-2)	(n-2) 0.050

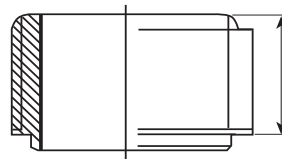
Parameters

Design Pressure	30 bar (A type) 45 bar (B type)
Test Pressure	45 bar (A type) 67,5 bar (B type)
Design Temperature	-196 ~ +200 °C
Plate Type	H. L. M.
Heat Capacity	10-60 kW
Maximum Number of Plates	150



Brazed Connection

Maximum Connection 1"5/8



Screwed Connection

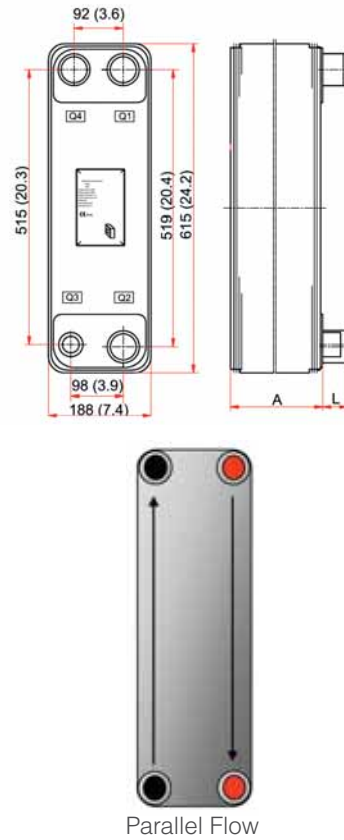
Maximum Connection 1"1/2

Ekin offers various types of brazed and screwed connections to its customers.

MIT MB-09



MIT MB-09 can be copper or nickel brazed heat exchanger. Plate material 316L.

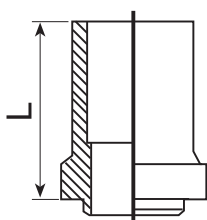


Brazed Plate Heat Exchanger / MIT MB-09

Number of Plates	A (mm)	Weight (kg)	Volume Q1 Q2 Side / Q3 Q4 Side	Heat Exchanger Area (m ²)
n	10+2.4n	4.6+0.41n	0.25x1/2n / 0.25x1/4 (n-2)	(n-2) 0.095

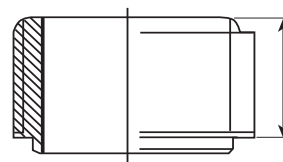
Parameters

Design Pressure	30 bar (A type) 45 bar (B type)
Test Pressure	45 bar (A type) 67,5 bar (B type)
Design Temperature	-196 ~ +200 °C
Plate Type	H. L. M.
Heat Capacity	30-200 kW
Maximum Number of Plates	200



Brazed Connection

Maximum Connection 2"1/8



Screwed Connection

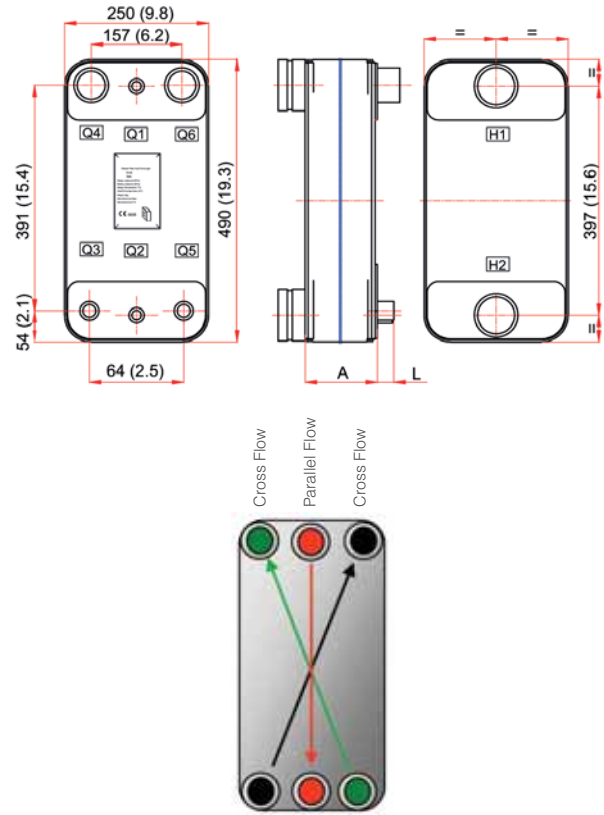
Maximum Connection 2"

Ekin offers various types of brazed and screwed connections to its customers.

MIT MB-10



MIT MB-10 can be copper or nickel brazed heat exchanger. Plate material 316L.

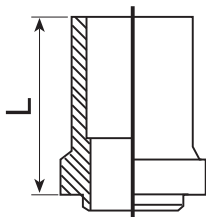


Brazed Plate Heat Exchanger / MIT MB-10

Number of Plates	A (mm)	Weight (kg)	Volume Q1 Q2 Side / Q3 Q4 Side	Heat Exchanger Area (m ²)
n	7.6+2.3n	6.5+0.386n	0.16x1/2n / 0.16x1/4 (n-2)	(n-2) 0.113

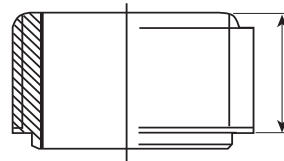
Parameters

Design Pressure	30 bar
Test Pressure	45 bar
Design Temperature	-198 ~ +200 °C
Plate Type	H
Heat Capacity	60-200 kW
Maximum Number of Plates	198



Brazed Connection

Maximum Connection 2"5/8



Screwed Connection

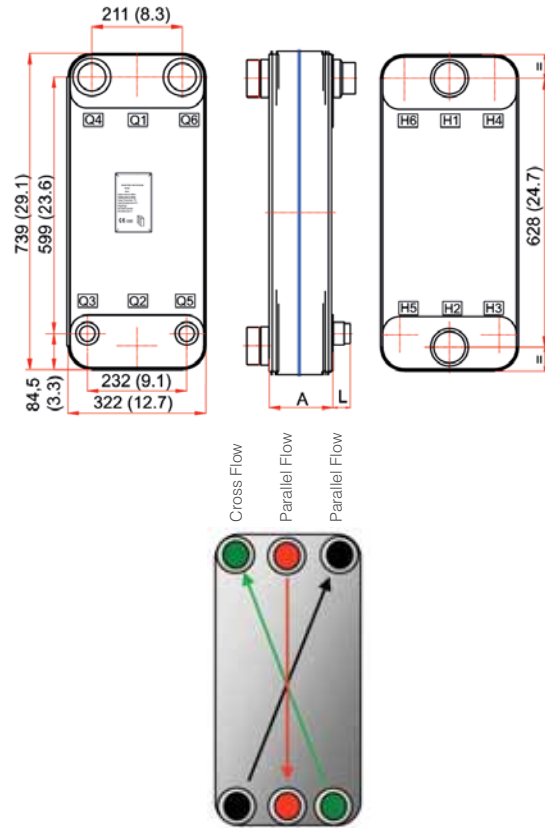
Maximum Connection 2"1/2

Ekin offers various types of brazed and screwed connections to its customers.

MIT MB-11



MIT MB-11 can be copper or nickel brazed heat exchanger. Plate material 316L.

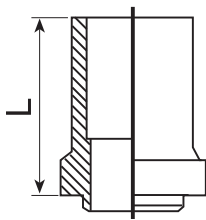


Brazed Plate Heat Exchanger / MIT MB-11

Number of Plates	A (mm)	Weight (kg)	Volume Q1 Q2 Side / Q3 Q4 Side	Heat Exchanger Area (m ²)
n	13+2.8n	13+0.8n	0.4x1/2n / 0.4x1/4 (n-2)	(n-2) 0.210

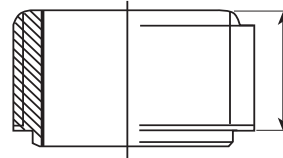
Parameters

Design Pressure	30 bar
Test Pressure	45 bar
Design Temperature	-198 ~ +200 °C
Plate Type	H
Heat Capacity	150-450 kW
Maximum Number of Plates	250



Brazed Connection

Maximum Connection 3"1/8



Screwed Connection

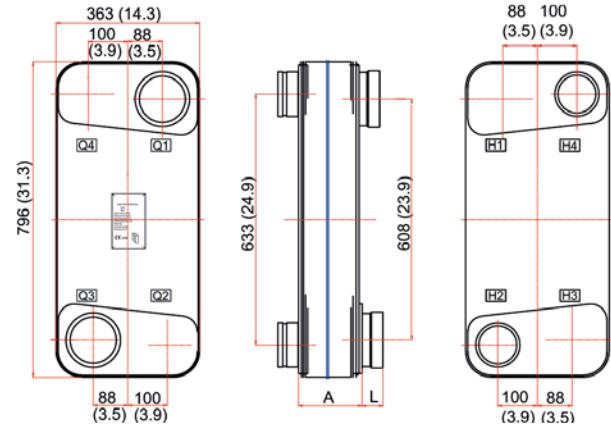
Maximum Connection 3"1/8

Ekin offers various types of brazed and screwed connections to its customers.

MIT MB-12



MIT MB-12 can be copper or nickel brazed heat exchanger. Plate material 316L.



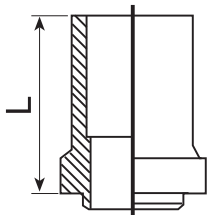
Cross Flow

Brazed Plate Heat Exchanger / MIT MB-12

Number of Plates	A (mm)	Weight (kg)	Volume Q1 Q2 Side / Q3 Q4 Side	Heat Exchanger Area (m ²)
n	13+2.8n	13.5+0.97n	0.6x1/2n / 0.6x1/4 (n-2)	(n-2) 0.260

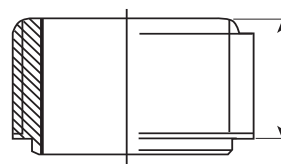
Parameters

Design Pressure	30 bar
Test Pressure	45 bar
Design Temperature	-196 ~ +200 °C
Plate Type	H
Heat Capacity	150-450 kW
Maximum Number of Plates	250



Brazed Connection

Maximum Connection 4"



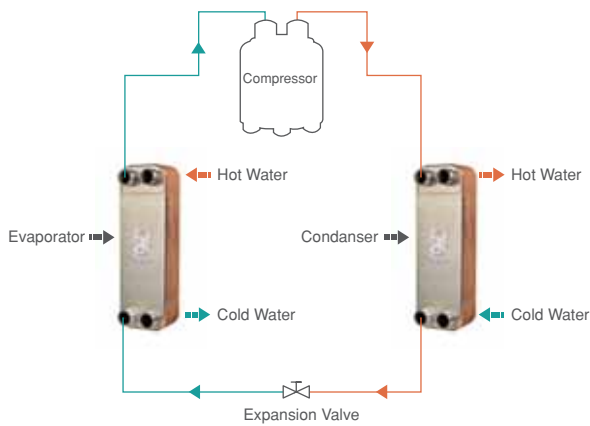
Screwed Connection

Maximum Connection 2"

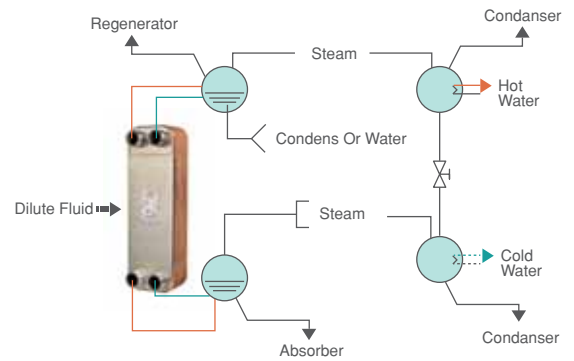
Ekin offers various types of brazed and screwed connections to its customers.

COOLING APPLICATIONS

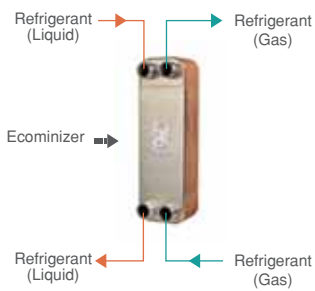
Refrigeration (Water Source)



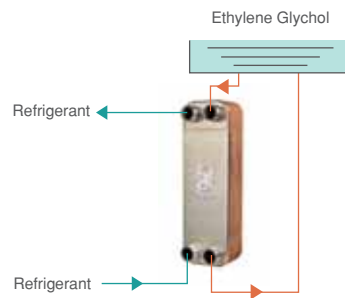
Absorbed Refrigeration



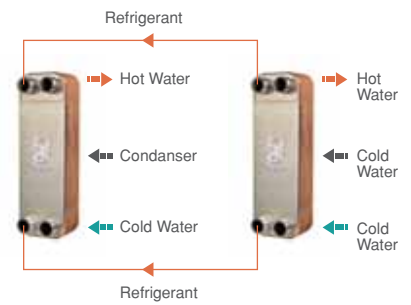
Economizer



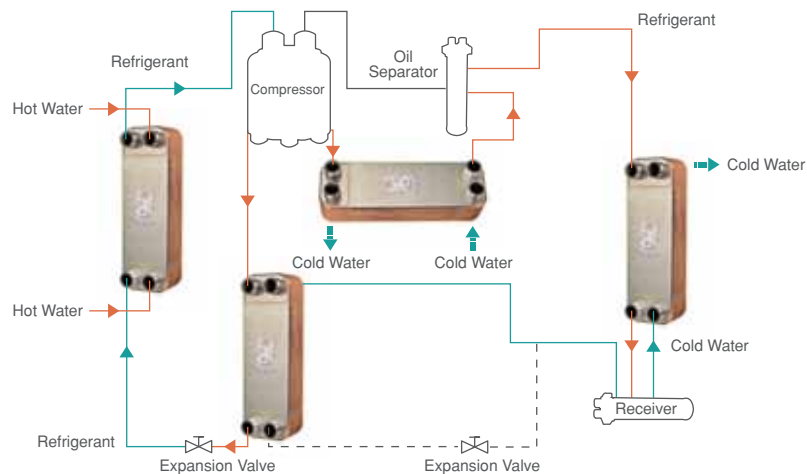
Ethylene Glycol Cooler



Pre Cooler

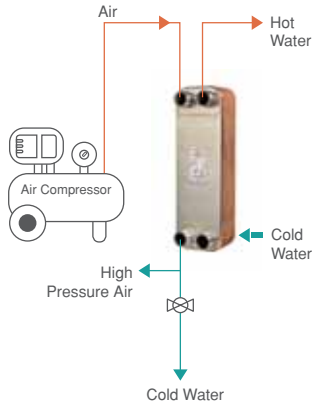


Cooling System Circuit (Refrigerant)

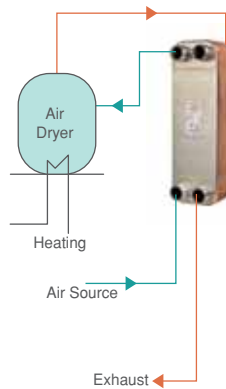


COOLING APPLICATIONS

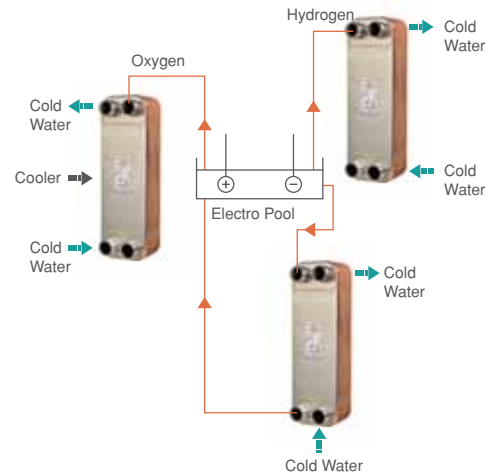
Air-Drying Cooler



Hot Loop Dried Circuit

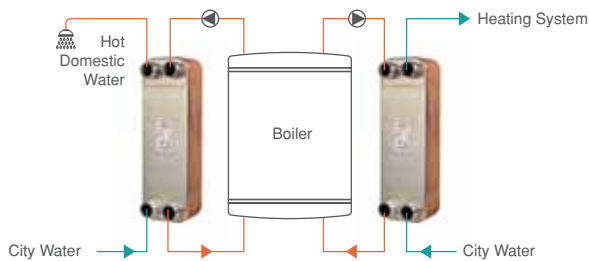


Electrolysis Process Circuit

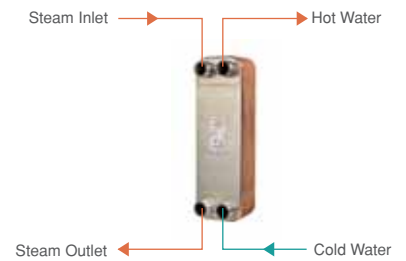


HEATING APPLICATIONS

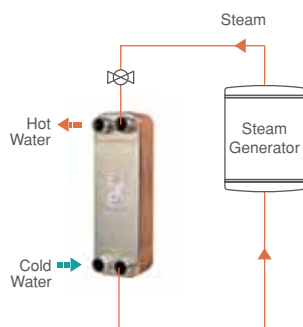
Domestic Hot Water or Heating System



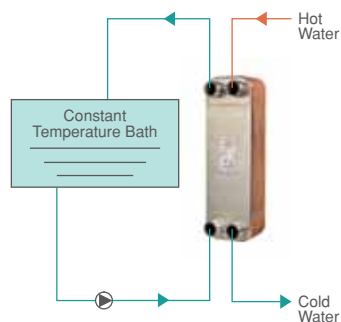
Domestic Hot Water System With Steam



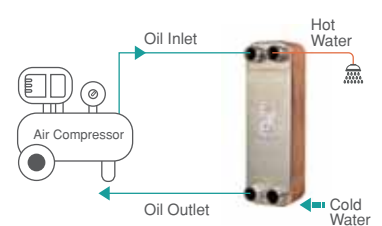
Domestic Hot Water System With Steam



Immobilization



Heat Recovery (Compressor)



OIL COOLING APPLICATIONS

MIT MB Series Plate Heat Exchangers



Definition

The heat exchangers are installed between two fluids for heat exchange. Plate heat exchangers are high performance components with a light and compact structure combined with a high level of efficiency. Their efficiency reduces the amount of cooling water required for heat transfer, resulting in reduced operating costs.

Features

The plates and connections are made of stainless steel in accordance with AISI 316, vacuum welding with 1.4401 copper. Special design plates that provide turbulent flow required for effective heat transfer have high mechanical strength.

Operating Details

Media:

- Water Glycol (Coolant)
- Operation Fluid
- Water
- Oil

Contamination:

The number of solid particles should be less than 10 mg per liter. Particle size <0.6 mm. (spherical) Fiber-like particles can cause rapid pressure drop.

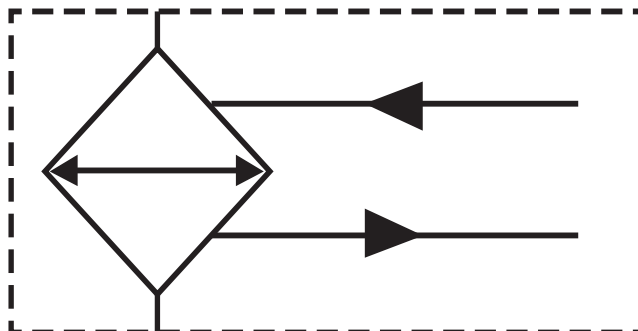
Temperature range:

- -196 °C - 200 °C
(Consider freezing point and boiling point.)

Pressure:

- Max. 257 °F (125 °C) with 49 psi (3 bar) (Static)
- Max. 435 °F (225 °C) with 435 psi (30 bar) (Static)
- Test Pressure: 650 psi

Hydraulic Symbol



Bypass option of AIB Cooling element for high viscosity applications.

Corrosion

At pH 7, refer to the following limits;

- chlorine-free, CL2 <0.5 ppm
- chlorine ion, CL
< 700 ppm (at 20 °C)
< 200 ppm (at 50 °C)

Other Limits

- pH 7 - 10
- Sulfate SO₄²⁻ < 100 ppm
- [H CO₃⁻] / [SO₄²⁻] > 1
- Ammonia, NH₃ < 10 ppm

The following ions are not corrosive under normal conditions; Phosphate, nitrate, nitrite, iron, manganese, sodium and potassium.

Applications



Agriculture



Automotive



Construction



Mechanical



Industry



Lift



Commercial



Energy



Pulp & Paper



Railway



Shipbuilding



Steel Heavy Industry