

Special Heat Exchanger for Green Energy-Fuel Cell

Thanks to Kaori's innovative technology and adherence quality assurance principles, special brazed plate heat exchanger has been developed for your specific needs in Fuel Cell thermal management applications. Kaori's exceptional R&D team has provided resource saving, cost-effectiveness, exceptional durability, and a high efficiency heat transfer solution for renewable and new energy industries.

In Fuel Cell applications Kaori's special heat exchanger can be used in :

- SOFC
- PEMFC
- MCFC
- Fuel Processor

Heat Exchanger for SOFC application:

- Thermal management
- Heat recovery and burner air preheating

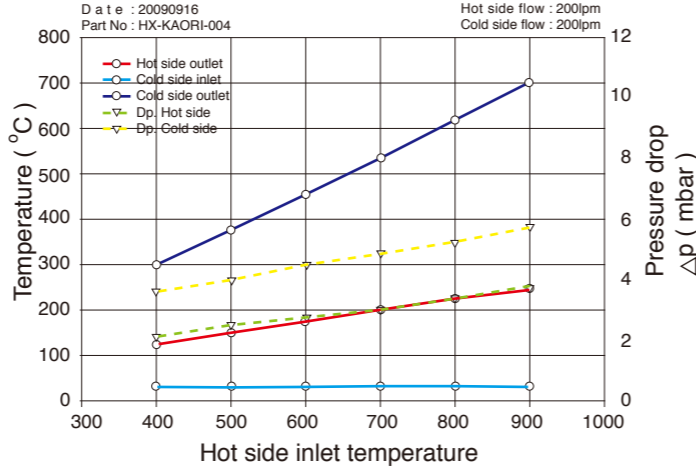
Heat Exchanger for PEMFC application:

- Fuel cell test station
- Hydrogen generation system
- Fuel reformation in the reformer
- Cell stack heat recovery produces hot water
- Combined heat & power (CHP) system

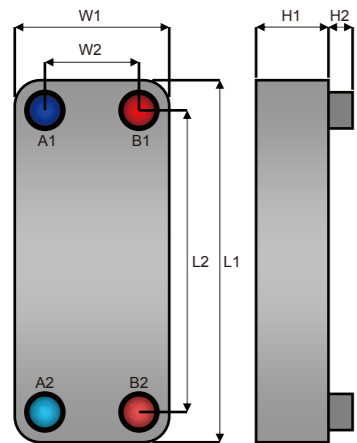
Advantages:

- Material : flexible
- Brazing : special nickel and/or copper
- Circuits : variable
- Wide range temperature: 60°C to 900°C

Thermal Performance of Special Kaori Heat Exchanger
Temperature and pressure drop



New higher resistance corrosion Brazed Plate Heat Exchanger series



Kaori valued on clients' demand. Thanks to Kaori persistent innovation on Brazed Plate Heat Exchanger technology, high resistance corrosion Brazed Plate Heat Exchangers are ready for dedicate to fluids with higher corrosion. With high end austenitic material, the heat exchanger is effectively resistance to chloride stress corrosion cracking. The greater force alloy is a more cost effective alternative compared to titanium.

Specification

Model	K050	K095	K205	K050	K095	K205
Brazing Material	Copper			Nickel		
Max. Working Pressure (Bar)(psi)	30/435	30/435	30/435	10/145	10/145	10/145
Max. Testing Pressure (Bar)(psi)	45/650	45/650	45/650	15/210	15/210	15/210

Dimensions

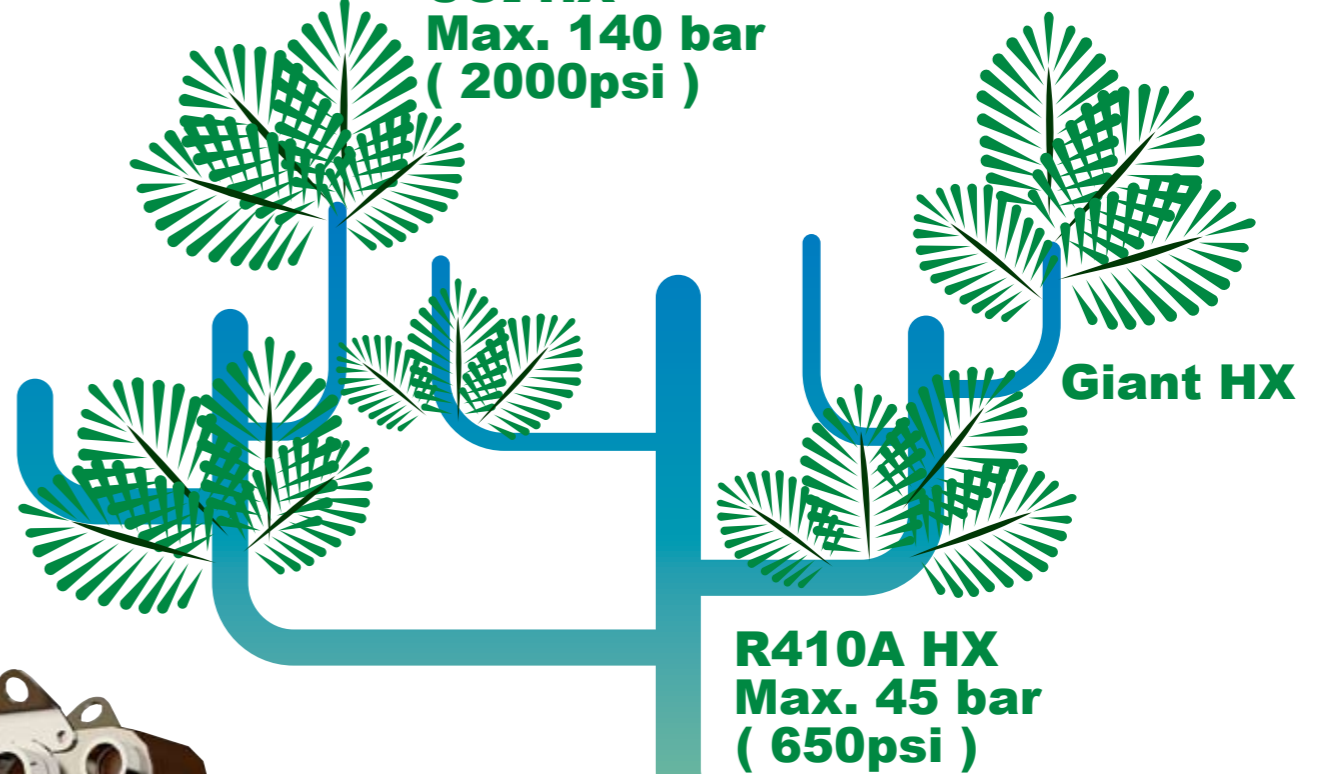
	L1 (mm)	L2 (mm)	W1 (mm)	W2 (mm)	Weight (kg)	H1 Thickness (mm)	Heat Transfer Area (m²)	Total Heat Transfer Area (m²)	Volume/channel (liter)	Total Volume (liter)
K050	306	250	106	50	1.5+0.135N	10+2.4N	0.0255	(N-2)*0.0255	0.055	(N-1)*0.055
K095	522	466	106	50	3.1+0.22N	10+2.4*N	0.0475	(N-2)*0.0475	0.095	(N-1)*0.095
K205	528	456	246	174	7.2+0.52N	11.5+2.4N	0.1099	(N-2)*0.1099	0.232	(N-1)*0.232
	L1 (inch)	L2 (inch)	W1 (inch)	W2 (inch)	Weight (lb)	H1 Thickness (inch)	Heat Transfer Area (ft²)	Total Heat Transfer Area (ft²)	Volume/channel (gal)	Total Volume (gal)
K050	12.05	9.84	4.17	1.97	3.306+0.298*N	0.394+0.945*N	0.27448	(N-2)*0.27448	0.015	(N-1)*0.015
K095	20.55	18.35	4.17	1.97	6.834+0.485*N	0.394+0.945*N	0.51129	(N-2)*0.51129	0.025	(N-1)*0.025
K205	20.79	17.95	9.69	6.85	15.873+1.146*N	0.453+0.945*N	1.18295	(N-2)*1.18295	0.061	(N-1)*0.061

KAORI reserves the right to change specifications without prior notification

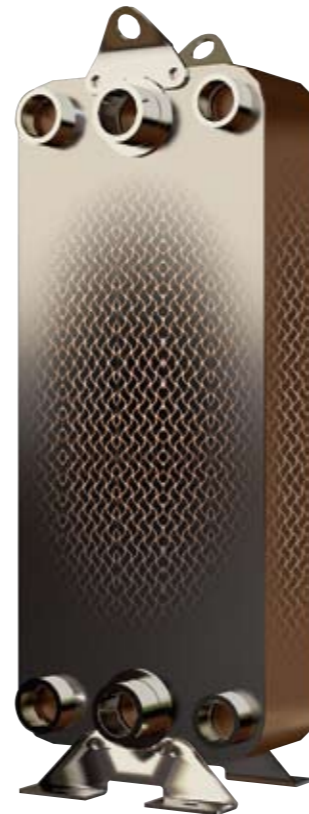
Kaori Brazed Plate Heat Exchanger



CO₂ HX
Max. 140 bar
(2000psi)



R410A HX
Max. 45 bar
(650psi)



Complete Solution in
Brazed Plate Technology

ISO 9001:2008



Kaori Care Quality & Customer Satisfaction

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Innovation · Quality
Responsibility · Honor

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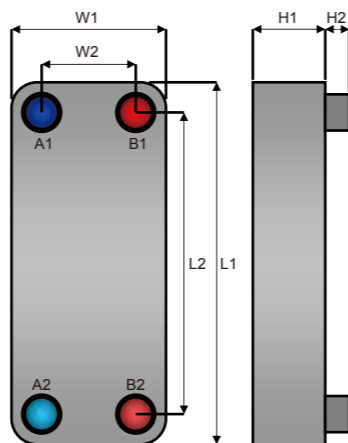
New K051R/K096R~The Next Generation Kaori Heat Exchanger

New Kaori K051R & K096R heat exchangers provide an excellent design for R410A heat pumps, chillers, and economizers. Thinner stainless steel plates with copper brazed contact points can withstand pressure up to 45 bar (650psi) for R410A application. The optimum flow design eliminates freezing.

Kaori new generation K051R & K096R series heat exchangers are more cost effective and have a higher thermal efficiency with fewer plates while reducing material consumption.

K051R/K096R is special designs for R410A & other high pressure applications:

- Higher Strength ~ Max. working pressure up to 45 bar(650psi)
- Higher Thermal Efficiency ~ Energy costs savings
- Fewer Plates ~ Cost effective
- Compact ~ Weight and space reduction
- Higher Reliability



Specification

Model	K051R	K096R
Max. Working Pressure (Bar)(psi)	45/650	45/650
Max. Testing Pressure (Bar)(psi)	65/950	65/950

Dimensions

	L1 (mm)	L2 (mm)	W1 (mm)	W2 (mm)	Weight (kg)	H1 Thickness (mm)	Heat Transfer Area (m ²)	Total Heat Transfer Area (m ²)	Volume/channel (liter)	Total Volume (liter)
K051R	306	250	106	50	2.06+0.09*N	12+1.8*N	0.02550	(N-2)*0.02550	0.040	(N-1)*0.040
K096R	522	466	106	50	3.1+0.18*N	14+1.85*N	0.04750	(N-2)*0.04750	0.076	(N-1)*0.076
	L1 (inch)	L2 (inch)	W1 (inch)	W2 (inch)	Weight (lb)	H1 Thickness (inch)	Heat Transfer Area (ft ²)	Total Heat Transfer Area (ft ²)	Volume/channel (gal)	Total Volume (gal)
K051R	12	9.84	4.17	1.97	4.532+0.198*N	0.472+0.07*N	0.27400	(N-2)*0.274	0.011	(N-1)*0.0105
K096R	20.4	18.3	4	1.97	6.82+0.396*N	0.551+0.073*N	0.51100	(N-2)*0.511	0.020	(N-1)*0.02

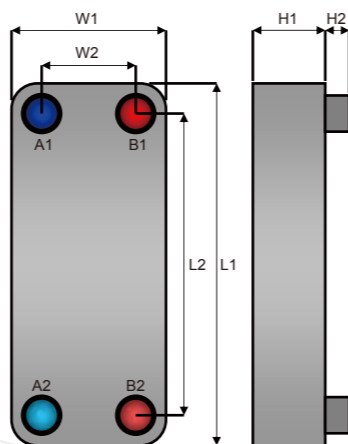
N= numbers of plates

Go Green by using the new portfolio innovative Kaori K200C to reduce CO₂ emissions of your system

Spectacularly designed Kaori CO₂ Series are superb green solution for CO₂ heat pumps and supermarket refrigeration systems. K200C is a part of Kaori's CO₂ heat exchangers for larger CO₂ systems. K200C is a state of the art innovative solution which provides higher quality and reliability.

K040C/K095C/K200C offers unique design for CO₂ (R744) & other high pressure applications :

- High pressure fluid to high pressure fluid heat exchange (CO₂ to CO₂ as Economizer)
- Multiple maximum working pressures (70bar, 100bar, 140bar)
- Low Pressure Drop
- Resource saving
- Exceptional Durability
- A new, more compact CO₂ Heat Exchanger
- Cost-effectiveness



Specification

Model	K040C	K095C	K200C
Max. Working Pressure (Bar)(psi)	140/2030	140/2030	140/2030
Max. Testing Pressure (Bar)(psi)	200/2900	200/2900	200/2900

Dimensions

	L1 (mm)	L2 (mm)	W1 (mm)	W2 (mm)	Weight (kg)	H1 Thickness (mm)	Heat Transfer Area (m ²)	Total Heat Transfer Area (m ²)	Volume/channel (liter)	Total Volume (liter)
K200C	613	519	186	92	12+0.59*N	15+2.15*N	0.09446	(N-2)*0.09446	0.156	(N-1)*0.156
	L1 (inch)	L2 (inch)	W1 (inch)	W2 (inch)	Weight (lb)	H1 Thickness (inch)	Heat Transfer Area (ft ²)	Total Heat Transfer Area (ft ²)	Volume/channel (gal)	Total Volume (gal)
K200C	24.1	20.4	7.32	3.62	26.4+1.298*N	0.59+0.085*N	1.01600	(N-2)*1.016	0.041	(N-1)*0.0411

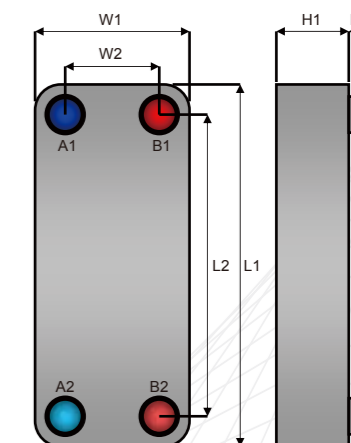
New High Capacity K400/K415 for Single & Dual Circuits

Users who search for large capacities, high efficiency and compactness, Kaori K400/K415 series are the solution for your heating/cooling system. The advantage of the new K400/K415 is that it replaces shell and tube or gasket type heat exchangers. K400/K415 can be used in both dual and single circuit versions.

K400/K415 for large systems has a special high turbulence flow design and is an excellent choice for refrigeration, process cooling systems, industrial heat pumps, chillers, economizers, sub-coolers and other high-pressure applications. K400/K415 offers total effectiveness at high capacities with minimal environmental impact.

K400/K415 Single & Dual circuits for refrigerants & other high pressure applications :

- High capacity range with high heat transfer coefficient
- Multiple maximum working pressures (30bar/435psi;45bar/625psi)
- Diagonal flow ~ high efficiency heat transfer solution
- Dual circuits version: K415
- Single circuit version: K400
- Reduces freezing significantly



Specification

Model	K400	K415
Max. Working Pressure (Bar)(psi)	30/435	30/435
Max. Testing Pressure (Bar)(psi)	45/650	45/650

Dimensions

	L1 (mm)	L2 (mm)	W1 (mm)	W2 (mm)	Weight (kg)	H1 Thickness (mm)	Heat Transfer Area (m ²)	Total Heat Transfer Area (m ²)	Volume/channel (liter)	Total Volume (liter)
K400	751	650	321	220	15.4+0.89N	14+2.4*N	0.20735	(N-2)*0.20735	0.423	(N-1)*0.423
K415	751	650	321	226	15.4+0.89N	14+2.4*N	0.20735	(N-2)*0.20735	0.414	(N-1)*0.414
	L1 (inch)	L2 (inch)	W1 (inch)	W2 (inch)	Weight (lb)	H1 Thickness (inch)	Heat Transfer Area (ft ²)	Total Heat Transfer Area (ft ²)	Volume/channel (gal)	Total Volume (gal)
K400	29.5	25.6	12.56	8.66	33.88+1.958*N	0.551+0.094*N	2.23000	(N-2)*2.23	0.112	(N-1)*0.1116
K415	29.5	25.6	12.56	8.9	33.88+1.958*N	0.551+0.094*N	2.23000	(N-2)*2.23	0.109	(N-1)*0.1093

Diversified Flow Design

