

# SHIELD

PLATE & SHELL  
HEAT EXCHANGERS




# SHIELD PLATE & SHELL HEAT EXCHANGER

## APPLICATIONS

 REFRIGERATION  
INDUSTRY  
AS EVAPORATORS  
AND CONDENSERS

 INDUSTRIAL  
COOLING  
AND HEATING  
SYSTEMS


 SYSTEMS  
WITH AGGRESSIVE  
MEDIA

 VAPOUR  
CONDENSATION

 SUITABLE  
FOR CHEMICAL  
PROCESSES

 CIP  
SYSTEMS

 OIL COOLERS  
AND HEATERS

 GAS HEATERS  
AND COOLERS

 FUEL OIL  
HEATERS

Driven by a passion for innovation, Hexonic has provided effective heat transfer solutions for most applications. Working closely with our customers, our team of experienced engineers focuses on inventing new products and solutions in search of the most efficient ways of heat transfer. Our team of experienced engineers driven by passion for innovation gained knowledge across diverse market segments.


From that passion a new product has been born – SHIELD Plate & Shell Heat Exchanger with inventive jagged pattern of a heating plate.

Breaking new ground solution brings not only enhanced flow turbulence but also increased heat exchange area. Together it gives more compact, lighter but most of all more efficient device which can be customized to your individual requirements. Highly efficient SHIELD Plate & Shell Heat Exchanger will become a long-life dependable solution for your applications.

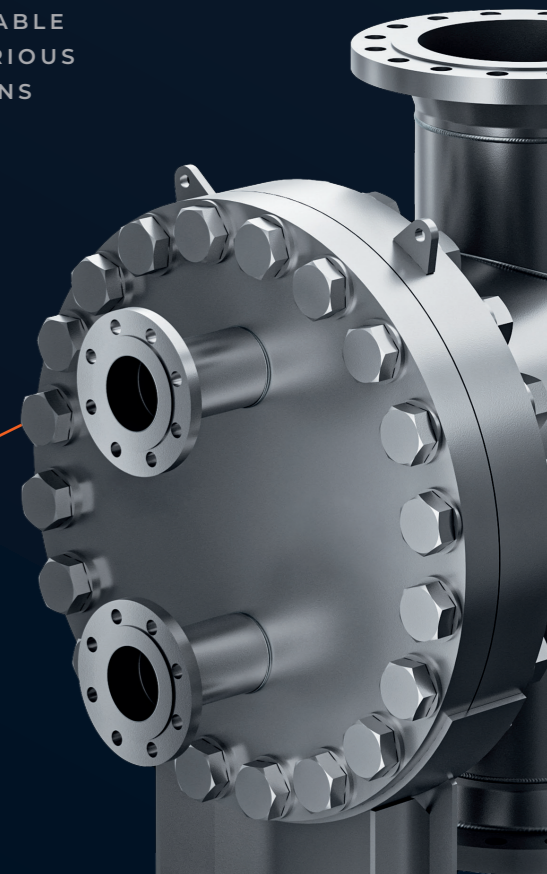
## ADVANTAGES

 HIGH HEAT  
EXCHANGE  
SURFACE

 DURABLE  
CONSTRUCTION

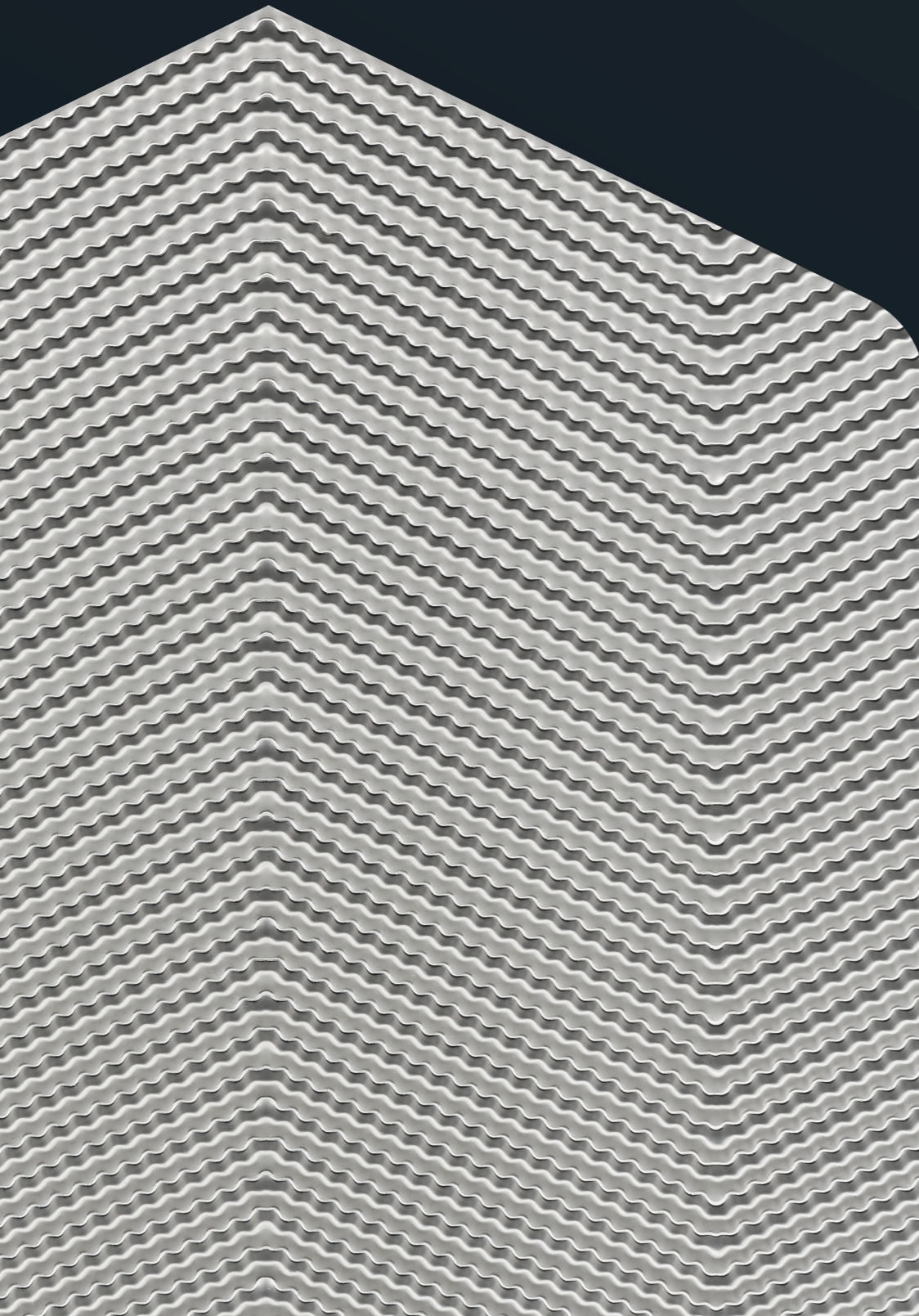
 RESISTENCE TO  
HIGH TEMPERATURES  
AND PRESSURES

 AVAILABLE  
IN VARIOUS  
OPTIONS





# INGENIOUS PATTERN



JAGGED  
/ˈdʒɑːɡɪd/  
WITH ROUGH, SHARP POINTS PROTRUDING

## THE INNOVATIVE JAG DESIGN IS THE RESULT OF OVER SIX YEARS OF RESEARCH AND DEVELOPMENT.

In search of optimal strength and thermal characteristics of the JAG geometry, a series of computational fluid dynamic analyses were performed. Together with other calculations and tests of prototypes they allowed to determine the precise channel performance in a plate and shell heat exchanger.

Final tests confirmed that designed by Hexonic innovative corrugation JAG pattern delivers up to 10% higher efficiency than the standard one. It is designed to substantially increase heat exchange as the "jagged" channels boost flow turbulence which enhances heat transfer and reduces fouling. Furthermore, the design brings a bigger exchange area, and general pressure drop levels are reduced.

Ingenious JAG technology brings you cutting-edge solutions within one plate.



INNOVATIVE  
CORRUGATION  
DESIGN

10%  
↑

UP TO 10% HIGHER  
HEAT TRANSFER  
EFFICIENCY



ENHANCED FLOW  
TURBULENCE

10%  
↓

UP TO 10% LOWER  
PRESSURE DROP FOR  
HIGH FLOW PATTERN



DECREASED  
FOULING



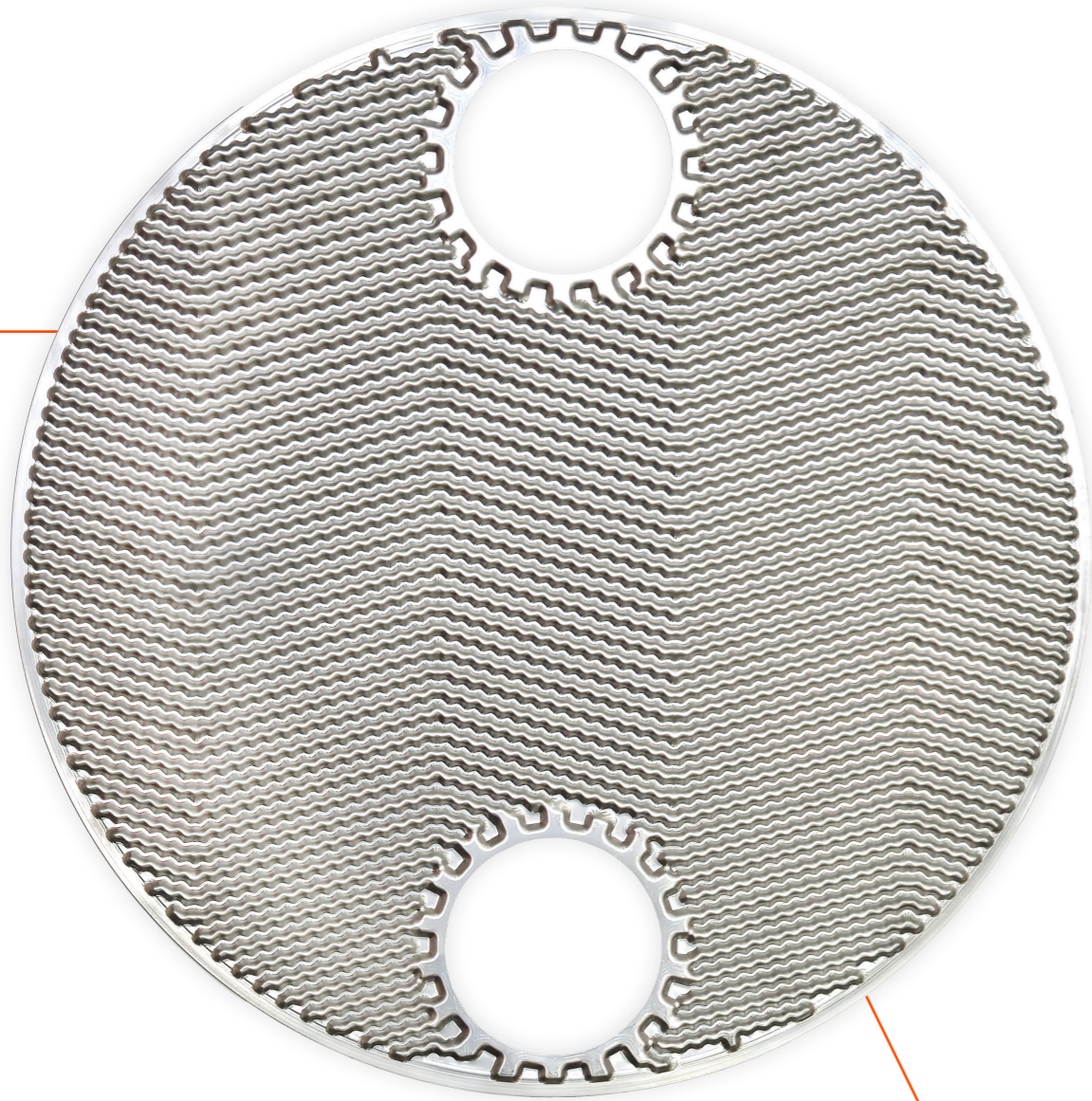
INCREASED HEAT  
EXCHANGE AREA



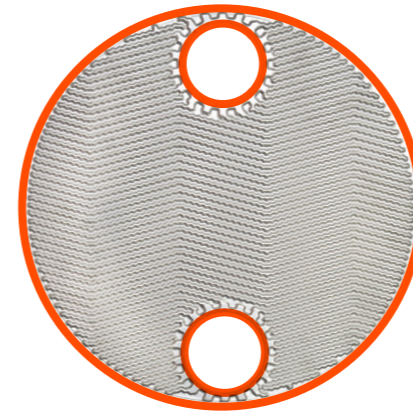
INCREASED PLATE  
ENDURANCE



# SHIELD PLATE

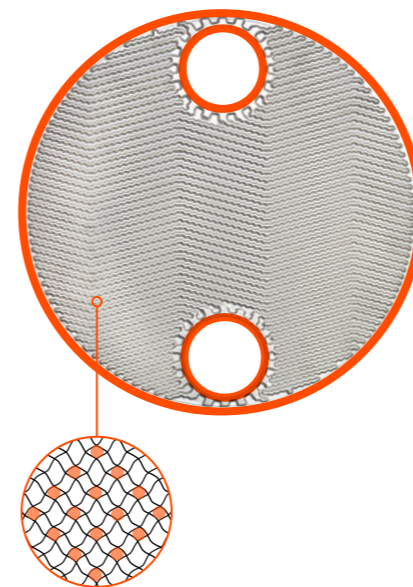


## PLATE FEATURES



### REINFORCED PLATE CONSTRUCTION

A plate pack is enclosed in a solid structure. The plates are joined in pairs using the TIG welding method, and the ports, welded with a laser, further strengthen the construction, making it resistant to variable loads and thermal stresses.

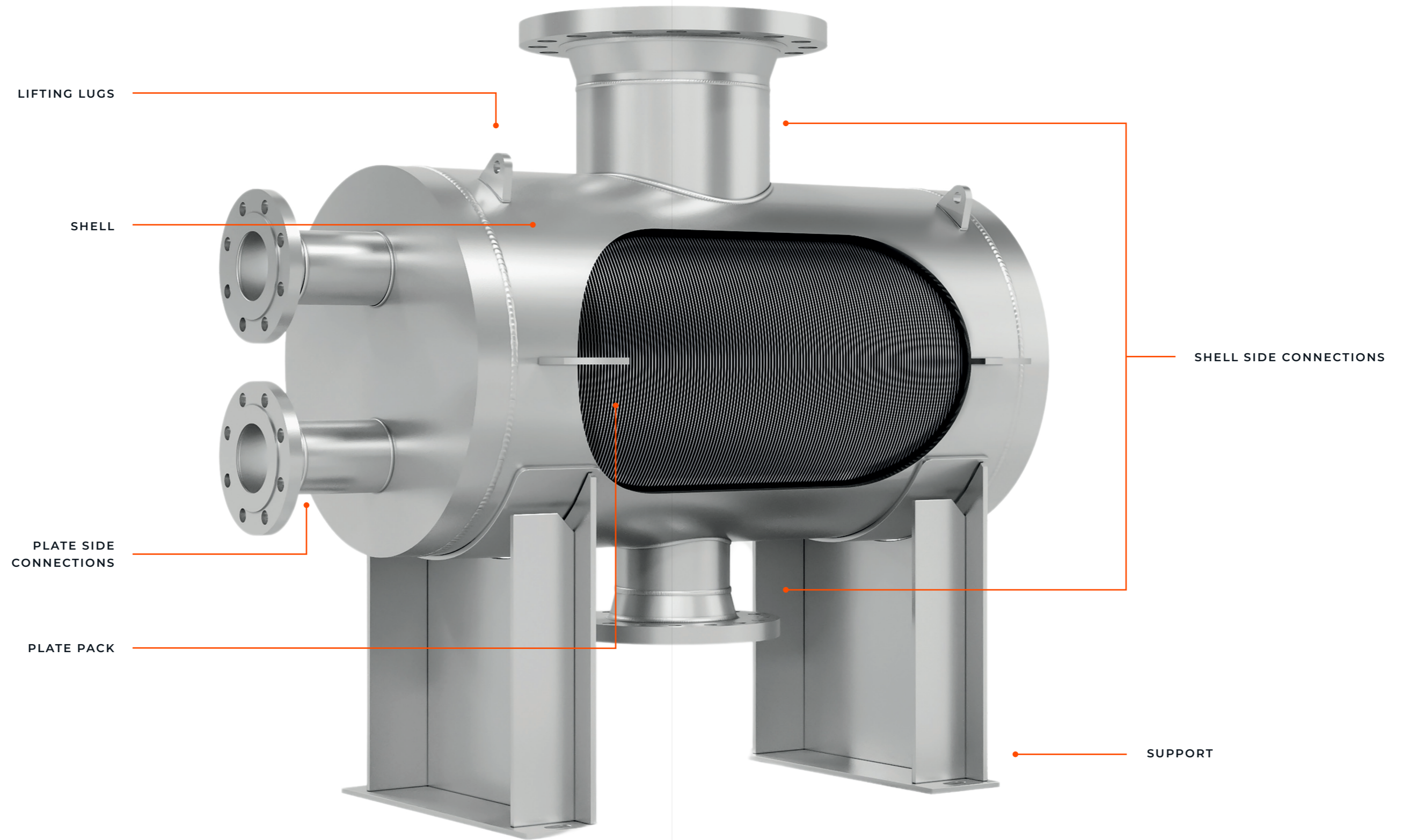


### VACUUM BRAZING

Vacuum brazing, used as an option for joining and reinforcing plates, creates a much larger contact surface, thereby increasing the strength of the device. The pair of plates is joined along the entire outer surface, at the ports, and additionally at several optimally selected points in the heat exchange area.



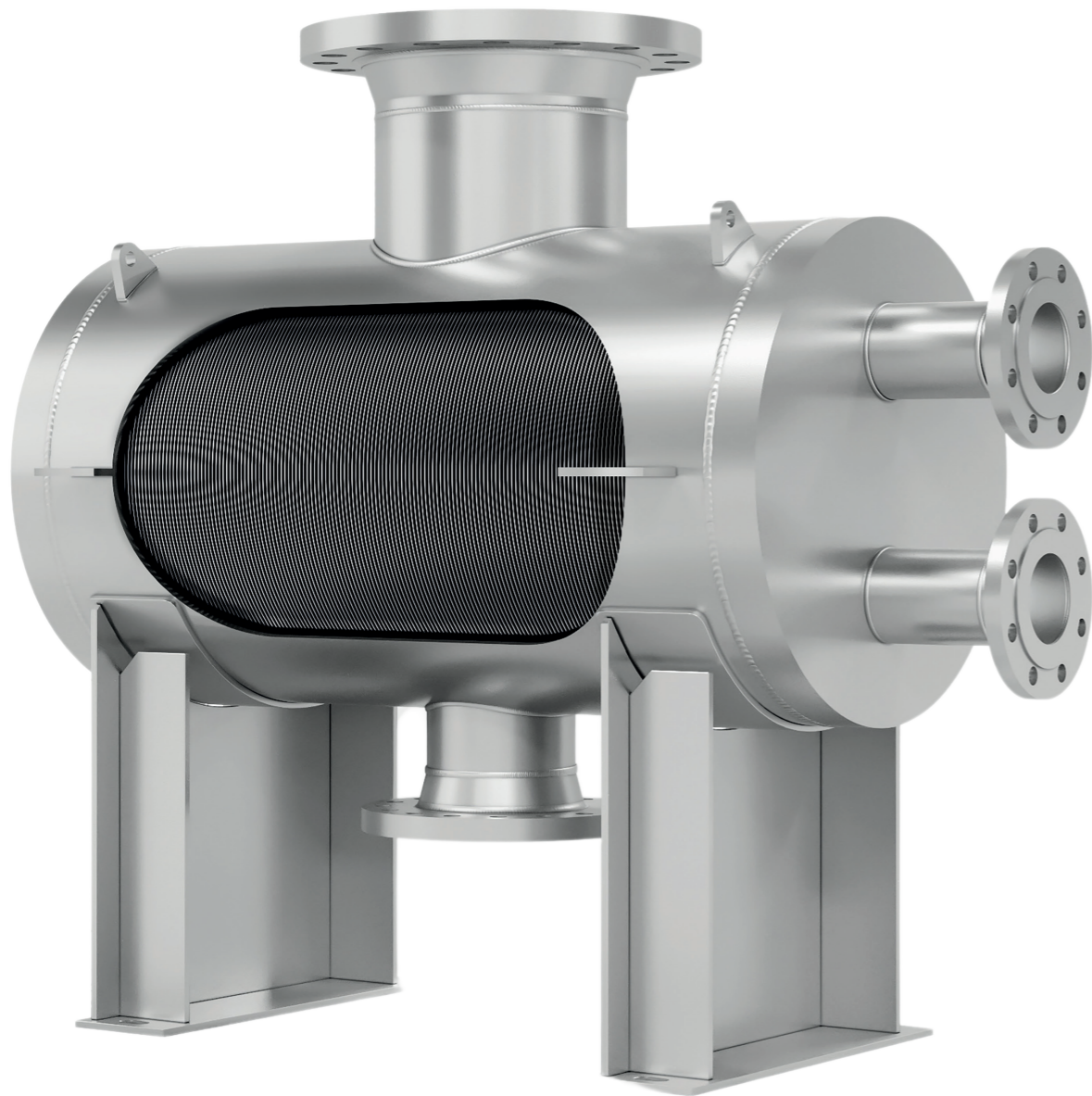
# CONSTRUCTION





## TECHNICAL DATA

Model	 Distance between ports	Max no of plates	Plate connections	Shell max. connections	Typical shell diameter
	in				
JR-03	5.20	100	5/4"	3"	10.75
JR-07	8.19	200	2"	10"	14.00
JR-13	12.20	300	3"	12"	20.00
JR-23	16.54	400	4"	14"	24.02



### HEATING PLATES MATERIAL

- STAINLESS STEEL 316L / 1.4404, 304L / 1.4307
- SB-265 GRADE 1
- INCOLOY
- HASTELLOY
- OTHER UPON REQUEST

### SHELL MATERIAL

- CARBON STEEL, VARIOUS COLOURS AVAILABLE UPON REQUEST, STANDARD CORROSION CLASS C3, HIGHER CLASSES UP TO C5 POSSIBLE
- STAINLESS STEEL 316L / 1.4404, 304L / 1.4307
- INCOLOY
- HASTELLOY
- OTHER UPON REQUEST

### PRODUCT VARIATIONS:

OPENABLE AND NON-OPENABLE

### ACCESSORIES

- INSULATION
- COUNTER FLANGES
- EXTENDED LEGS
- EARTHING LUGS

PLATE THICKNESS: 0,6–1,0 MM

### BRAZING MATERIAL

- COPPER
- LUNA™ STAINLESS BRAZING

SINGLE AND MULTI-PASS FLOWS

### TECHNICAL PARAMETERS

MIN. PRESSURE — 0 PSI  
 MAX. PRESSURE — 650 PSI  
 MAX. TEMPERATURE — 482°F  
 MIN. TEMPERATURE — -320°F

STANDARD – PED 2014/68/EU  
 OR ASME SEC VIII, DIV.1

