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HEATEX[®]

TECHNICAL GUIDE

WELDED PLATE HEAT EXCHANGERS



THE HEART OF THE HEATEX[®] WELDED PLATE HEAT EXCHANGER **IS COMPRISED OF** THE PLATES, AVAILABLE IN **THREE DIFFERENT PROFILES** (CORRUGATED, STUDDED, DIMPLED) WELDED TOGETHER TO FORM A CUBIC PLATE PACK. THE FRAME IS COMPOSED OF FOUR COLUMNS AND TWO END-PLATES INTO WHICH THE PLATE PACK IS MOUNTED.

FOUR DOORS ARE BOLTED ONTO 4 FACES OF THE UNIT. THE DIFFERENT PLATE PROFILES OFFER THE OPTIMUM SOLUTION BETWEEN **THERMAL EFFICIENCY AND MAINTENANCE.**

3 DIFFERENT PROFILES TO MEET YOUR PROCESS REQUIREMENTS

- HXC CORRUGATED PLATES, DESIGNED FOR TWO CLEAN FLUIDS
- HXE DIMPLED PLATES, DESIGNED FOR PROCESS WITH ONE FOULING FLUID AND ONE SLIGHTLY FOULING FLUID
- HXS STUDDED PLATES, DESIGNED FOR TWO FOULING FLUIDS

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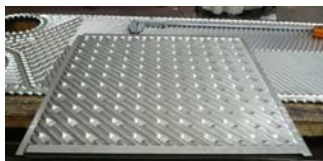
HXC, SUITABLE FOR 2 CLEAN FLUIDS

BEST SOLUTIONS FOR PETROCHEMICALS, CHEMICALS, COKE OVEN GAS TREATMENT, PHARMACEUTICAL APPLICATIONS.

- CORRUGATED PLATE TYPE ENSURES HIGH EFFICIENCY
- AREA FROM 2 M² TO 280 M²
- REGULAR PROFILE: 5 MM PLATE GAP
- PRESSURE UP TO 36 BARS
- TEMPERATURE: 350°C
- MATERIALS: STAINLESS STEEL, NICKEL ALLOYS, TITANIUM, TANTALUM

HXC DESIGN

**HIGH EFFICIENCY
DESIGN OF PLATES**
Innovative design.



**WELL-KNOWN
CORRUGATED PROFILE IMPROVED BY SPOT WELDING**
Eliminates plate pack pulsating, makes it stronger and less sensitive to fatigue.

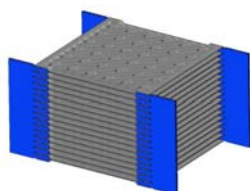
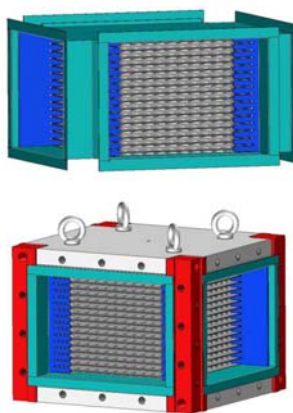


PLATE PACK ASSEMBLY
Each plate pack channel is welded at the edge into a stress resistant comb that fits into the frame assembly.

FRAME ASSEMBLY
Columns slide into liners and are bolted to the end plates to form the frame. Doors are bolted to the frame. **The plate pack can be dismantled from frame.**



High efficiency
Compactness
Competitive solution

*Wash oil heat recovery on BTX
desorber column – Coke oven
gas plant – Germany*



FOCUS ON A PATENTED INNOVATION: HXC FREE-FLOW, THE BEST SOLUTION FOR PROCESS WITH 1 FOULING FLUID AND 1 CLEAN FLUID

HXC free flow - the corrugated welded plate heat exchanger - has a special design that allows a gap up to 25 mm between plates, with working pressures of up to 14 bar and temperatures of 250°C. The special design of the plates creates turbulence and a high heat transfer coefficient. The HXC free-flow is designed for applications with one fouling fluid and one clean fluid.

High thermal efficiency
Cleanable on one side
No risk of plugging



HEATEX® HXC STANDARD RANGE

Exchange surface area (m²) depends on dimension and number of plates

NUMBER OF PLATES

		40	60	80	100	120	140	150 to 160	200	250 to 260	300	400	440 to 450
Dimension of plates (cm)	HXC 25	2,80	4,20	5,60	7,00	8,40	9,80						
	HXC 33		7,32	9,76	12,20	14,64	17,08	19,51	24,39				
	HXC 50			22,4	28,00	33,60	39,20	44,80	56,00	67,20	84,00		
	HXC 75				63,00	75,60	88,20	100,80	126,00	163,80	189,00	250,00	277,20



HXE, DESIGNED FOR PROCESS WITH 1 FOULING FLUID

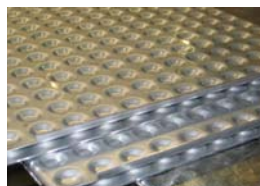
BEST SOLUTION FOR PULP AND PAPER, SUGAR, COKE OVER GAS TREATMENT, PHARMACEUTICAL APPLICATIONS.

- AREA FROM 1 M² TO 625 M²
- FREE GAP UP TO 40 MM ON ONE CHANNEL
- PRESSURE UP TO 32 BARS
- DIMPLED PLATES
- PLATES PACK CAN BE INDEPENDENT FROM FRAME
- TEMPERATURE: 350°C
- MATERIALS: CARBON STEEL, STAINLESS STEEL, NICKEL ALLOYS, TITANIUM, DUPLEX

HXE DESIGN

PLATE FORMING

Low amount of expansion (<10%) minimizes stress corrosion with visual control and destructive test (burst test).

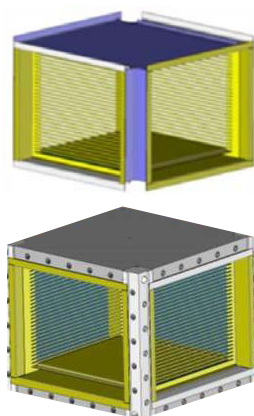


SPOT WELDING FOR BETTER PRESSURE RESISTANCE ALLOWS FOR ONE FREE GAP CHANNEL

Plate are individually assembled. Every single dimpled plate channel is inserted into a connecting plate (tube sheet) with a **free gap between plates**. Plates welded to the tube sheet form the plate pack. **Each plate is independant, free of expansion. Each channel can be repaired or replaced.**

FRAME ASSEMBLY

Columns slide into liners and are bolted to the end plates to form the frame. Doors are bolted to the frame. **The plate pack can be dismantled from frame.**



Independent paired plates design
Free gap: No retention / No plugging risk
Plate repair or replacement



Heatex® HXE100 -96m² - Industrial effluent treatment plant – France

KEY APPLICATIONS

- **API Pharma plants:** Reactor overhead condensers
- **Pulp and paper:** White and black liquor heating
- Lessivor pan vapour condenser - Effluent heater (treatment plant)
- **Water treatment plant:** Digester sludge heater/cooler
- Clarificater reject cooler - Collector effluent heater
- **Coke plants:** Ammonia water cooler - Wash oil cooler/heater
- **Sugar factory:** Raw juice and lime juice heaters
API Pharma plants : Reactors overhead condensers
- **Mining:** Bauxiste digestion cooler - ZNSO₄ suspension heater



3 HEATEX® HXE75 – 180m² – Wash oil cooler on coke oven gas BTX removal plant – Germany

HEATEX® HXE STANDARD RANGE

Exchange surface area (m²) depends on dimension and number of plates

NUMBER OF PLATES

		40	60	80	100	120	140	150	200	250	300	400
Dimension of plates (cm)	HXE 25	2,50	3,75	5,00	6,25	7,50	8,75	9,37				
	HXE 33		6,50	8,71	10,89	13,06	15,25	16,33	21,80			
	HXE 50			20,00	25,00	30,00	35,00	37,50	50,00	62,50		
	HXE 75				56,25	67,50	78,75	84,37	112,50	140,60	168,70	
	HXE 100					120,00	140,00	150,00	200,00	250,00	300,00	
	HXE 125						218,70	234,40	312,50	390,60	468,70	625,00

HXS, DESIGNED FOR 2 FOULING FLUIDS

BEST SOLUTION FOR SLUDGE/SOLIDS IN WASTEWATER TREATMENT PLANTS, SUGAR FACTORY, PVC STRIPPING PROCESS APPLICATIONS.

- AREA FROM 1 M² TO 300 M²
- PRESSURE UP TO 25 BARS
- TEMPERATURE: 250°C
- STUDDED PLATES
- MATERIALS: STAINLESS STEEL, NICKEL ALLOYS
- SPACING UP TO 25 MM ON BOTH SIDE

HXS DESIGN



STUDS WELDED ON EVERY PLATE

The channel is made with two studded plates. Studs maintain uniform spacing and withstand pressure.

FRAME CAN BE OPENED ON BOTH SIDES

All plate pairs are assembled together to form a plate pack inserted into a frame. Frame is then threaded and ready to receive bolted doors to offer view through the channels.

Most cleanable solution
Easy access on both sides
No stress rate on plate,
less corrosion sensitive

HEATEX® HXS100 – 220m² –
press water heater – France



KEY APPLICATIONS

- **Sugar factory:** Press water heat recovery
- **Chemical:** PVC slurry interchanger
- **Water treatment plant:** Digester sludge heater with collector effluent

HXS100 – 252m² – Digester
sludge heater- beet cleaning
effluent treatment plant –
sugar factory –Belgium



HXS100 – 160m² – Pellet
water inter heat exchanger –
PVC slurry heat recovery on
stripping column – France



HEATEX® HXS STANDARD RANGE

Exchange surface area (m²) depends on dimension and number of plates

NUMBER OF PLATES

	40	60	80	100	120	150	200	250	300
Dimension of plates (cm)									
HXS 25	2,50	3,75	5,00	6,25					
HXS 33		6,50	8,71	10,89	13,06	16,34			
HXS 50			20,00	25,00	30,00	37,50	50,00		
HXS 75				56,25	67,50	84,37	112,50	140,60	163,80
HXS 100					120,00	150,00	200,00	250,00	300,00