

# OPEX

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Optimum Plate EXchanger

- › Air Preheater
- › Gas Preheater
- › Recuperator
- › Gas Cooler



SHINHAN APEX CORPORATION

## OPEX Optimum Plate EXchanger

Shinhan Apex has manufactured and supplied plate type heat exchangers over the world widely since 1989 in the fields of oil refinery, petro-chemical, steel, environmental, cement, paper and so on.

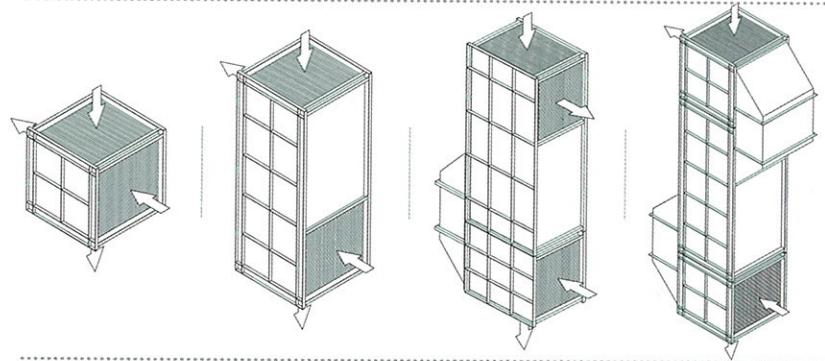


OPEX heat exchanger is optimum and advanced plate type made of smooth and flat plates with the design custom made for each specific application, to ensure;



- Virtually zero leakage
- Compact
- Design flexibility
- Reduced fouling tendency
- Less maintenance
- Easy cleaning with conventional methods

### Block Assembly



# OPEX

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## OPEX OPEX Technical Specification

Max. design temperature	1000(°C)
Max. design pressure	1 BAR
Duty range	Unlimited
Typical pressure drop	0-0.1 BAR
Plate material	Carbon Steel Corten Stainless Steel
Plate thickness	1.0-4.0 mm
Casing material	Carbon Steel Stainless Steel



### OPEX Selection and Type Designation

T - M - F - N

#### Number of Blocks

#### FLOW ARRANGEMENT

X : Cross Flow

C : Counter Flow

CC: Co-Counter Flow

#### MATERIAL

M : MildSteel

C : Corten

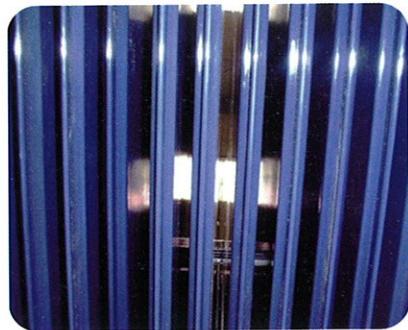
L : Low Alloys

S : Stainless Steel

#### TYPE

P : Plate

T : Tubular



**SHINHAN APEX** is specialized in designing and manufacturing OPEX - plate type and GLASTIL - glass coated type heat exchangers of maximum 4.5 meter long tubes.

Glass coating on the plates and Tubes is used to protect the cold ends from corrosion and made by ourselves in our shop to enhance the reliability of the glass coating quality for the industry.

Partial glass coating on the plates makes more safety margin for corrosion in the operation with variable ambient air inlet temperature and operation loads.

## Optimum Plate EXchanger

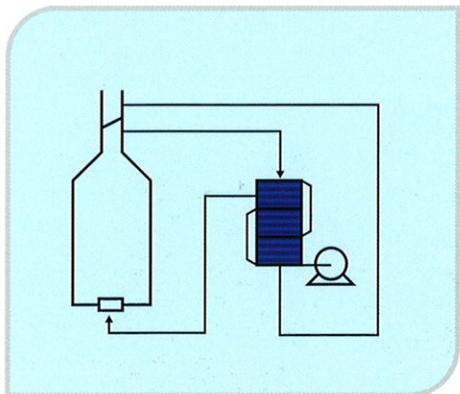
# OPEX Manufacturing



# OPEX Maintenance and Cleaning

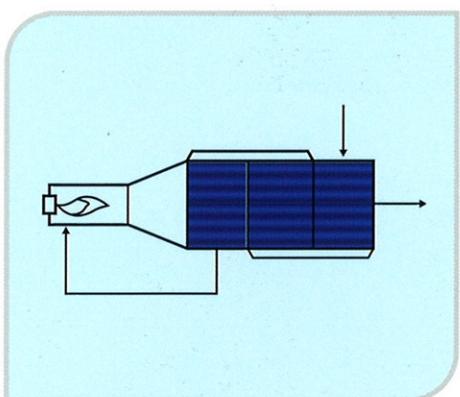
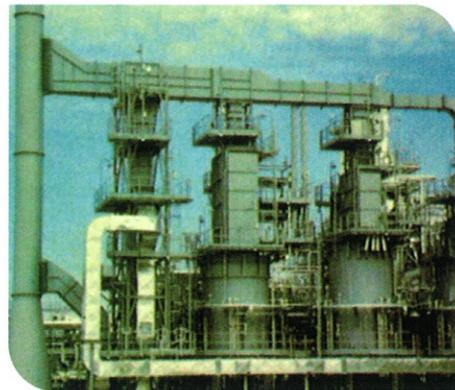
- Virtually maintenance-free operation
- For dirty applications no spacer are used in fluegas channel to ensure maximum effectiveness of the cleaning system.
- The cleaning jets can easily reach all corners of the flow passage.
- Cold block is made with smaller size to be replaced easily.

# OPEX Specific Application



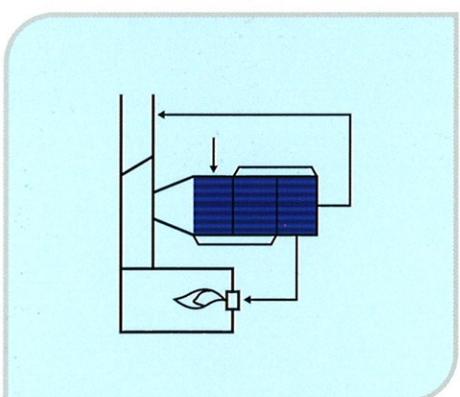
## AIR PREHEATERS

Fired heaters  
Gas turbine integration



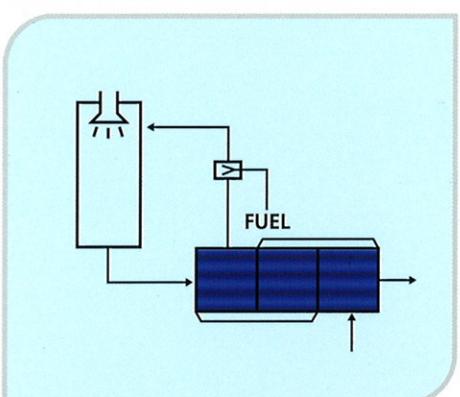
## HEAT RECOVERY UNITS

Incinerator/Oxidizer



## AIR HEATERS

Industrial boilers  
Power plant boilers



## GAS COOLER

Bag filter  
Chlorine by pass

