



HWI GROUP



WE PROTECT YOUR
TURBOMACHINERY
EQUIPMENT



TM FILTERS

MEMBER OF HWI GROUP

HWI Group Timeline

Established 1991

Expansion 1997

HWI Group expanded the production area

Move to New Facility

Magazijnweg 4
Alphen aan den Rijn

Today 2018

Over 60 professionals,
Partners in AP & EMEA



HWI Group Location



1500 m2 office area

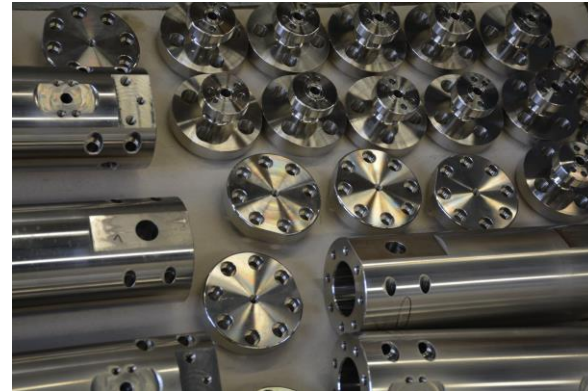
2500 m2 workshop

Business Unit: HWI Machining



HWI Machining

Lathe Machine
Milling Machine
Drilling Machine
Cutting Machine
Boring Machine
CNC Lathe
Discharge Machining



HWI Machining Products

Customer made products:
Pressure Vessels
Pile Breakers
API Drilling Equipment's
Actuators
Pump Parts
Gearbox Parts
Bow Thruster Parts
Rudder Propellers Parts
Winch Parts



Area: 2500 m²

Business Unit: TM Filters

TM Products

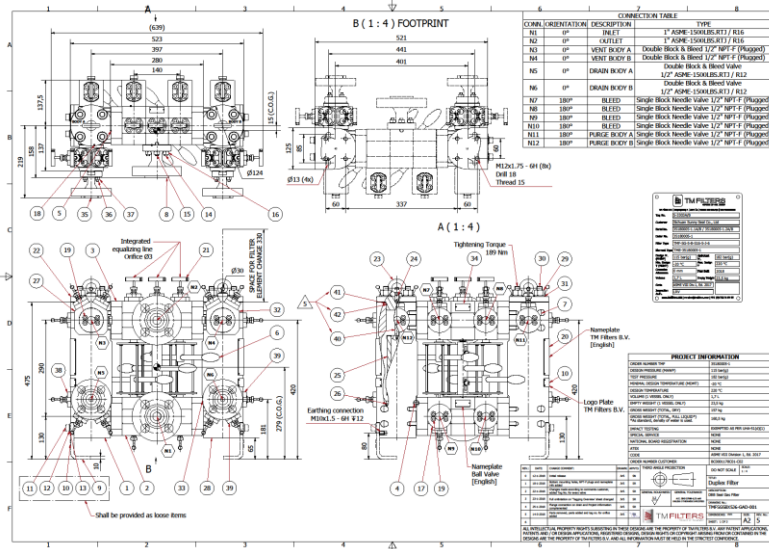
- Seal Gas Filters
- Knock Out Filters
- Lube Oil Filters
- Liquid Fuel Filters
- Fuel Gas Filters
- Adsorption Filters
- Custom Made Filters
- Filter Elements
- Transfer Valves



Business Unit: TM Filters

Design

- ASME VIII Div.1 Edition 2017
- ASME VIII Div.2 Edition 2017
- PED 2014/68/EU
- EN 13445
- API 614 5th Edition
- API 692 ready



PRESSURE VESSEL CALCULATIONS

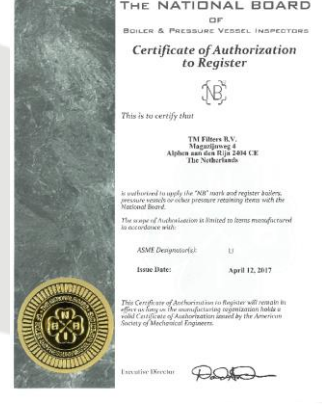
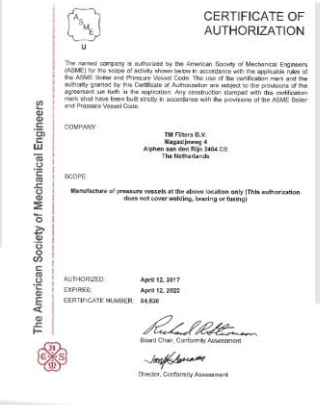
ACCORDING TO
ASME BPV Code: Section VIII, Division 1 - Design and Fabrication of Pressure Vessels, Edition 2017

Drawing No.	Revision	Date	Description
TM-FILTERS-000001	0		
TM-FILTERS-000001	1		
TM-FILTERS-000001	2		

Field	Value
Manufacturer	TM FILTERS B.V.
Product Name	Pressure Vessel
Design Code	ASME VIII Div. 1
Customer	Shimizu Seiki Co., Ltd.
Customer P.O. No.	20070107072
TM Code No.	01-000001-1
TM Serial No.	01-000001-1 (VALVE) 01-000001-1 (VALVE)
Prepared by	AND
Approved by	TM FILTERS
Page	1 of 8
Document No.	01-000001-1-CALC

Quality

- ISO 9001:2015
- ASME U-Stamp
- National Board
- SupplHi Technical Passport (by Lloyd's)



Industries

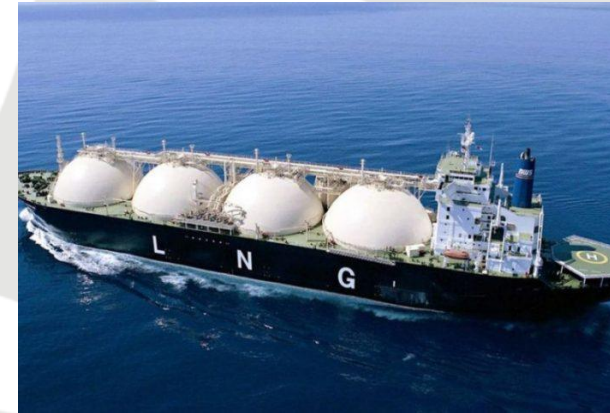
Oil & Gas



Petro-/ Chemicals



Maritime



Energy & Power

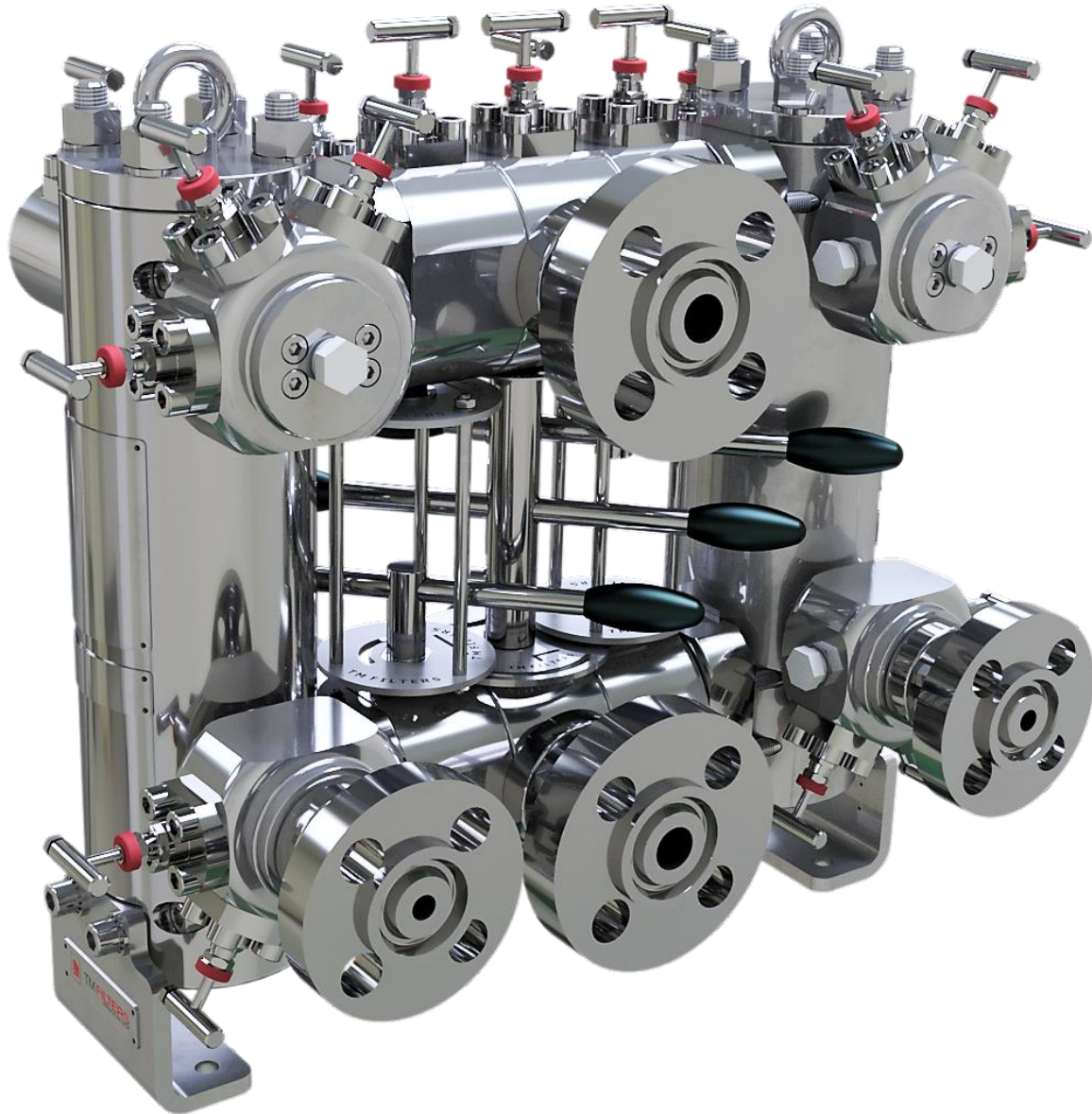


Industrial Gases



Mining





Seal Gas Filters Special Gas Filters

- Non Welded Design
- API 614 5th edition / API 692
- ASME VIII div.1
- Single, Duplex & Double Block & Bleed configuration
- All exotic material available
- Zero Leak Transfer Valve
- All connections are available
- Integrated Equalizing Line
- Available from 1/2" full bore

TM Duplex Seal Gas Filters Filters

Project WEPP III

End User: Petrochina

Year Supplied: 2017

Category: Pipeline

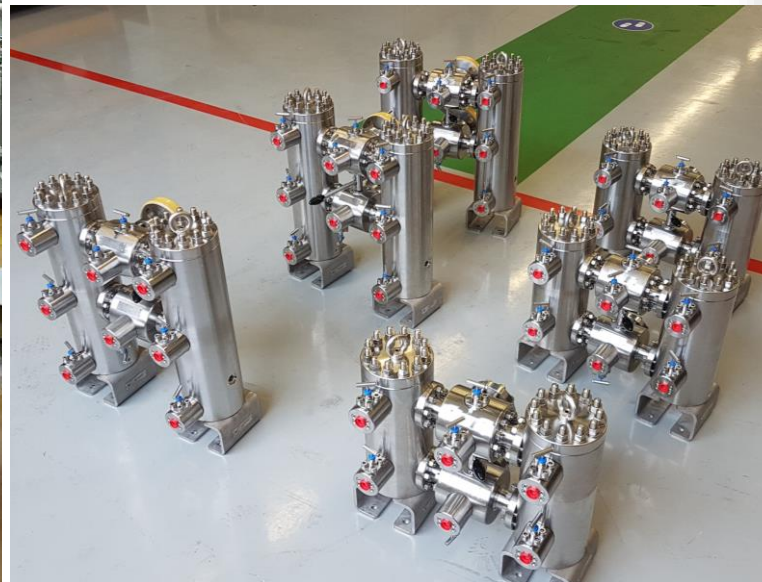
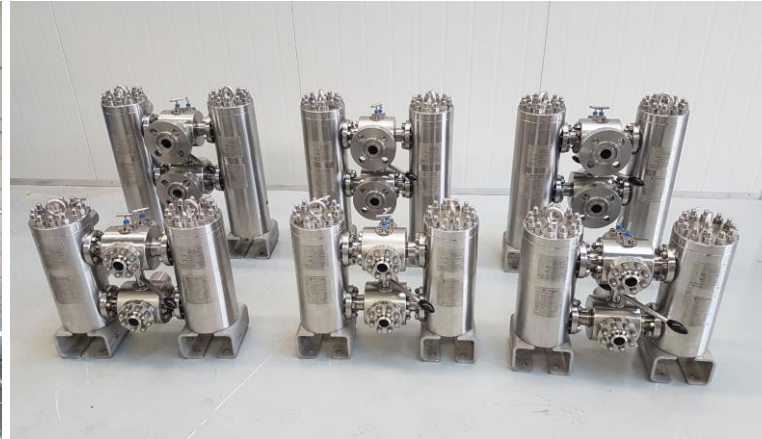
Type: 6x HP Duplex Seal Gas Filters

Compressor OEM: Siemens – Rolls Royce

DGS OEM: EagleBurgmann China

Pressure Vessel Code: ASME VIII Div.1 Stamped

Code: API 614 5th edition



TM Lube Oil Filters



Lube Oil Filters Special Liquid Filters

- Non Welded Design
- API 614 5th edition
- API Plan 54
- Liquid to Liquid Coalescer
- ASME VIII div. 1
- Single, Duplex configuration
- All exotic material available
- Zero Leak Transfer Valve
- All connections are available
- Integrated Equalizing Line
- Available from 1/2" full bore

TM Duplex Lube Oil Filters



Project FPSO LIZA

End User: ExxonMobil

Year Supplied: 2017

Category: FPSO

Type: 5x Duplex Lube Oil Filters

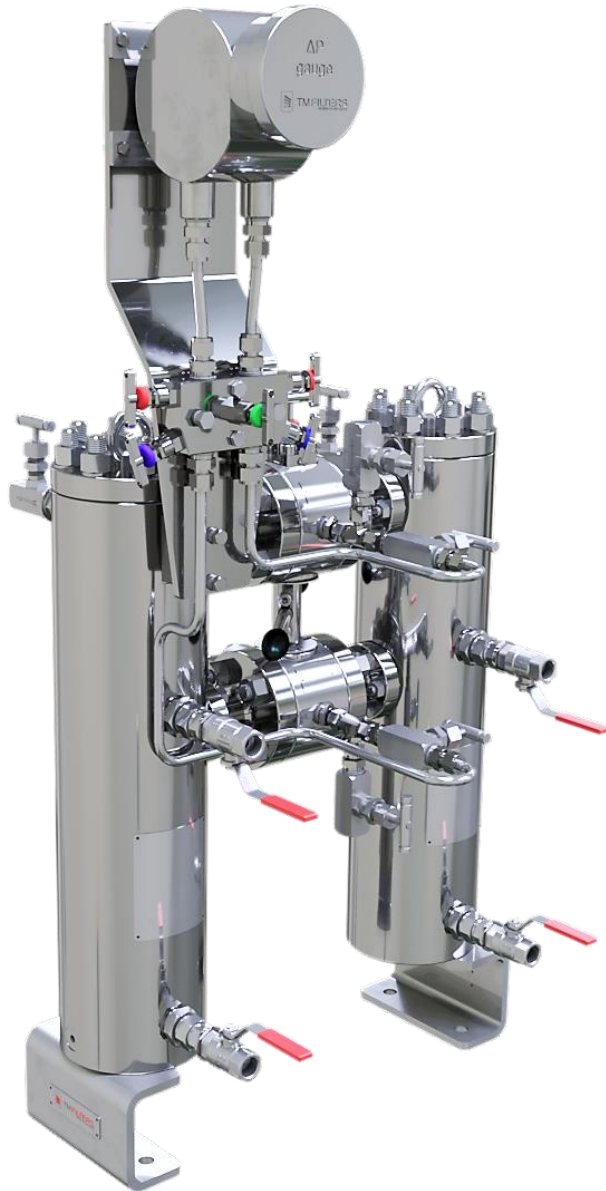
Pump OEM: Sulzer

Pressure Vessel Code: ASME VIII Div.1 Stamped

Code: API 614 5th edition

Skid Builder: WM Coulthard





Fuel gas Filters

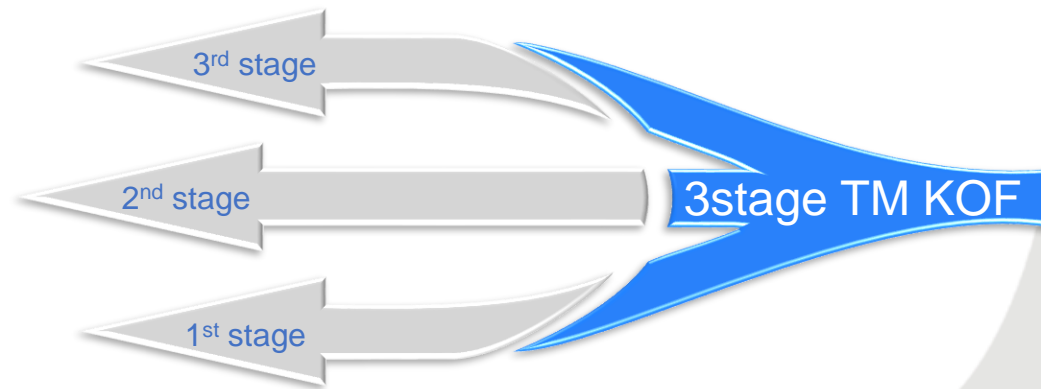
- Non Welded Design
- Custom Options
- ASME VIII div.1
- Single, Duplex configuration
- All exotic material available
- Multiple stages
 - TM cyclone
 - TM Demister pad
 - TM High efficiency element
- All connections are available
- Available from 1/2" full bore

TM 3 Stage Filter System -TM Knock Out Filter



Custom made options

- ✓ Connections types
- ✓ xx Liter Reservoir
- ✓ Stages
- ✓ Material of construction
- ✓ Instruments



3rd Stage: High Efficiency TM Filter Element

- ✓ Very fine particle and droplet removal
- ✓ Liquid loading up to 50 ppmw
- ✓ Laboratory grade separation efficiency >99.9% for particles >1 micron and liquid droplets
- ✓ High dirt holding capacity and low pressure drop due to pleated micro- and nanofiber technology

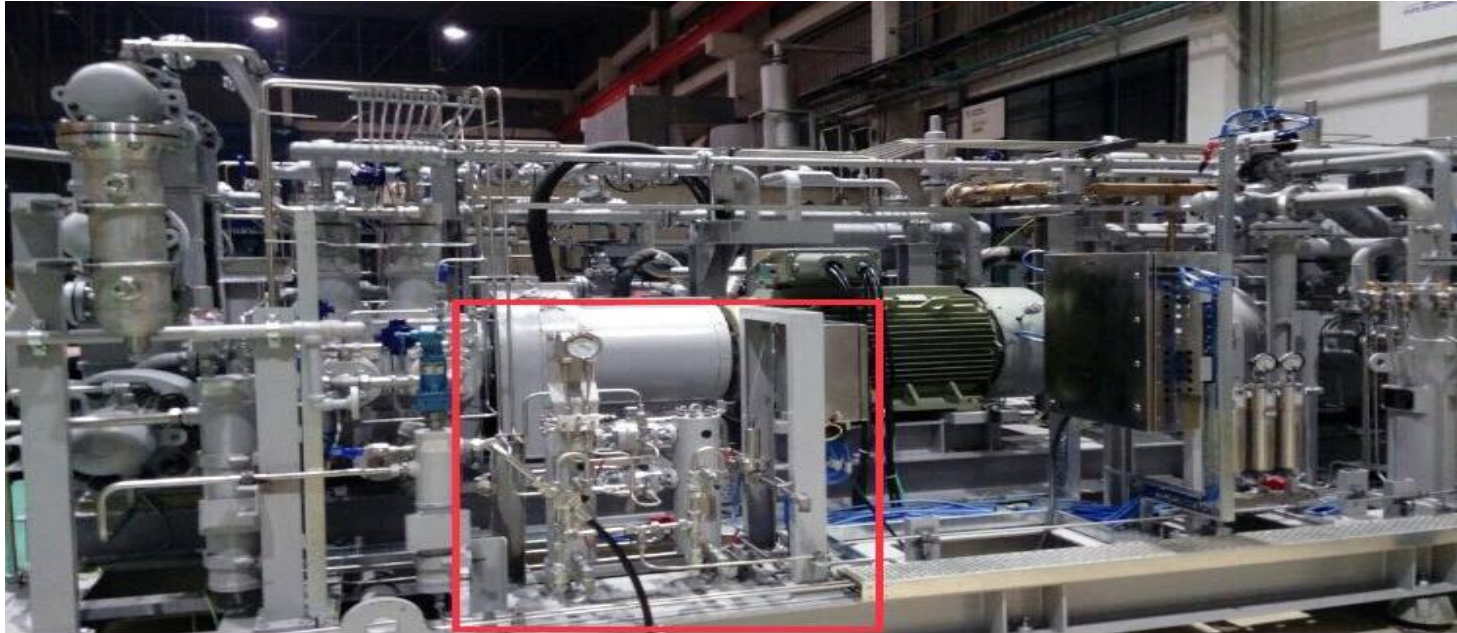
2nd Stage: Stainless Steel Demisting Pad

- ✓ Fine droplet removal
- ✓ Liquid loading capacity up to 3000 ppmw
- ✓ Self-cleaning by counter flow drainage of separated liquids
- ✓ High separation efficiency (>95%) for liquid droplets up to 5 micron
- ✓ Low pressure drop due to high porosity (up to 98% open volume)

1st Stage: Cyclone Pre-Separator

- ✓ Bulk particle and liquid removal
- ✓ High dirt and liquid loading capacity >5000 ppmw
- ✓ Low pressure drop and high efficiency for bulk particles and liquids (typical efficiency > 90%)

TM HP Fuel Gas Duplex Filters



Project LGEL Edinburgh 01

End User: Hyundai Mipo Dockyard Co. Ltd.

Year Supplied: 2017

Category: LNG Carrier

Type: 2x HP Duplex LNG Filters (245 Bar)

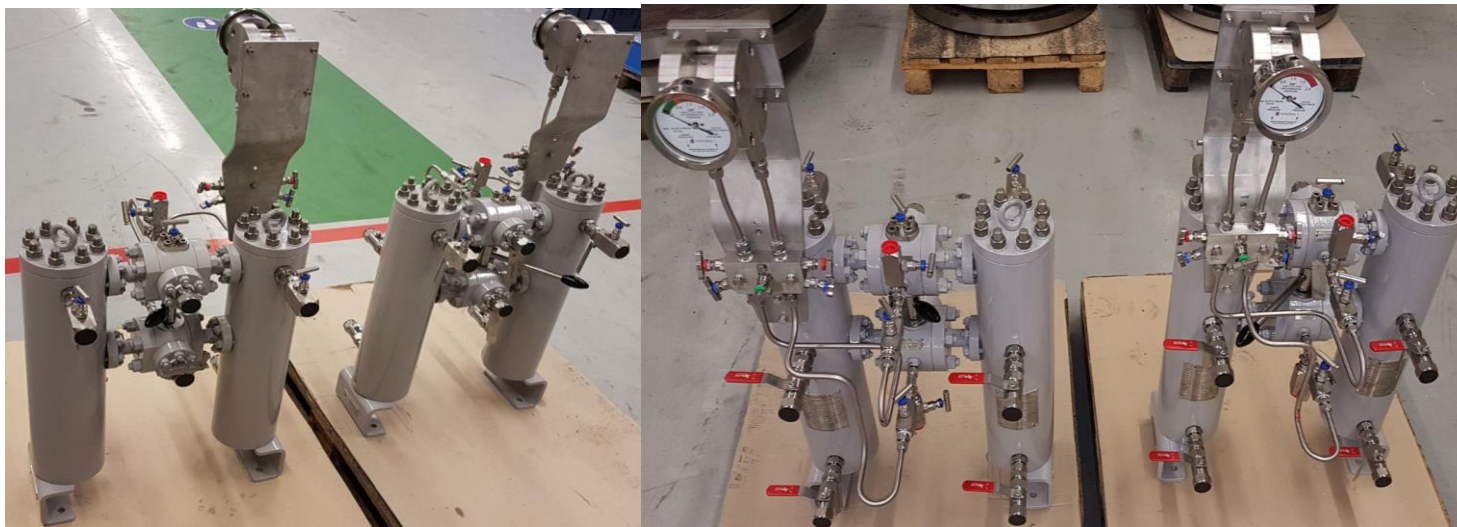
Compressor OEM: Burckhardt Compression

Pressure Vessel Code: ASME VIII Div.2 & Lloyds

Marine Pressure Vessel Rules

Certified: Lloyds Marine

Material Certification: 3.2





Hydraulic Filters Chemical Injection Filters

- Non Welded Design
- High Pressure > 1000 bar
- High Temperature > 350°C
- All exotic material available
- Filtration Efficiencies ranging from: 500µm to 0,2µm
- Special seals for hazardous application

TM HP Chemical Injection Filters



Project Leviathan Production Platform

End User: Noble Energy Mediterranean Ltd.

EPC: Wood Group

Year Supplied: 2017

Category: Production Platform

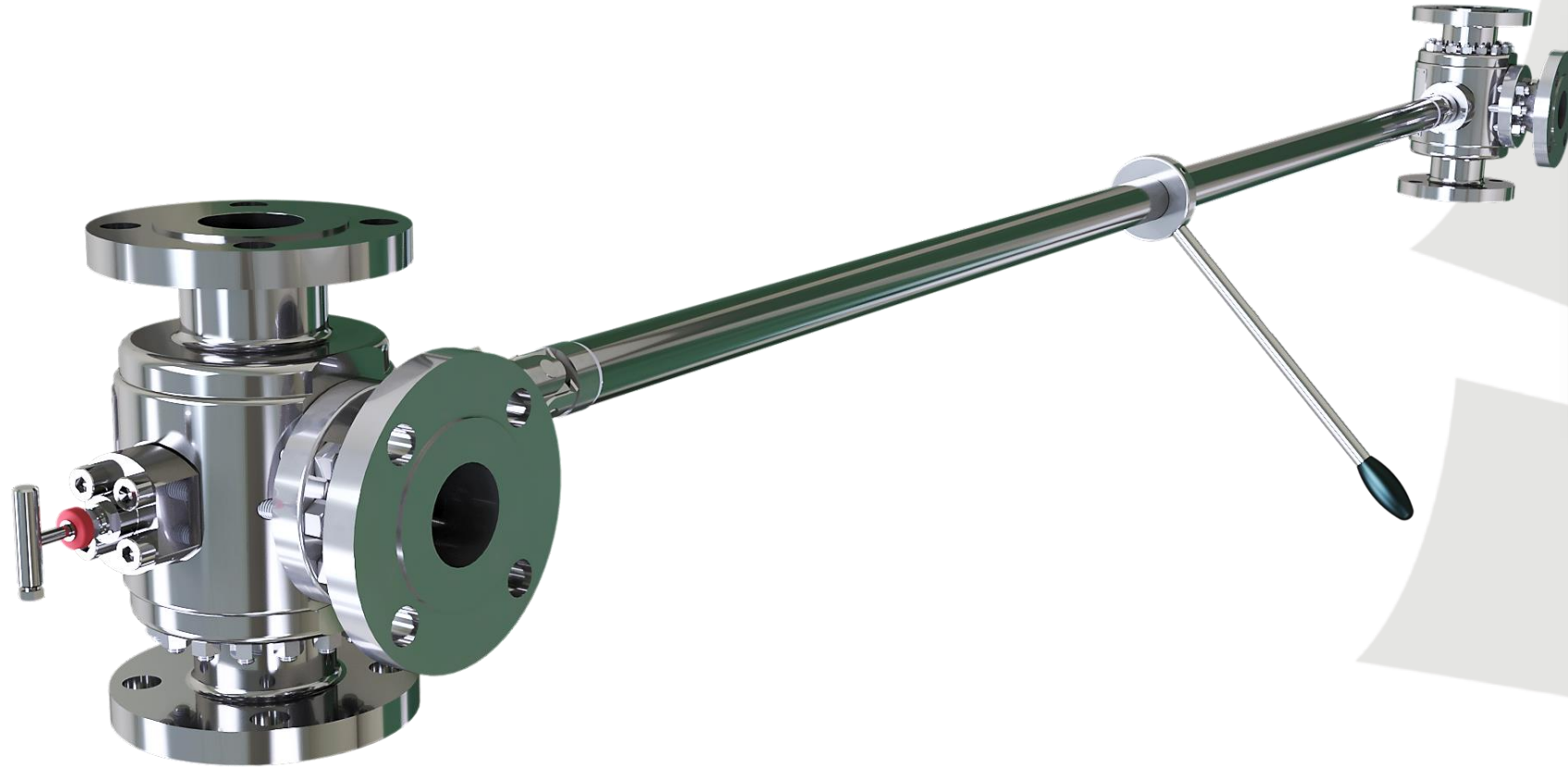
Type: 8x HP Single Gas Filters (800Bar)

OEM: Frames Group

Pressure Vessel Code: ASME VIII Div.2



TM Double 3 Way Change Over Valve



TM Double 3-Way Valve

- Non Welded Design
- Zero Leak
- 1 Lever switch over
- Custom Made
- Integrated equalizing line
- Exotic material available
- Any connection available

TM Double 3 way Change Over Valves



Project HENGAM Fertilizer

End User: Hengam Petrochemical

EPC: PIDEC

Year Supplied: 2017

Category: Petrochemical

Type: 8x Double Change Over Cooler Valves

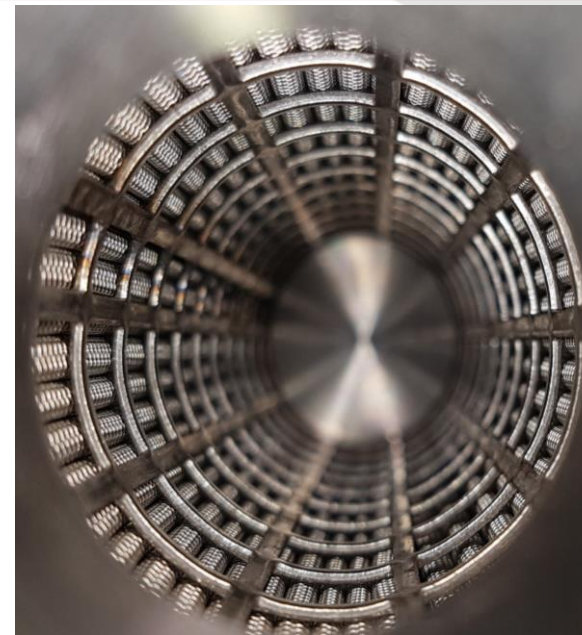
Pump OEM: MHI

Code: API 614 5th edition

Skid Builder: KOWA Japan



TM Filter Elements



TM Filter Elements

- Custom Made Elements
- High End Materials used
- In House Manufacturing
- According API 614 / 692
- Tested as per ISO
- Exotic material available
- Coalescing
- Particulate
- Low pressure drop
- High collapse pressure
- Welded or Glued
- High Efficiency up to 0,01 μ m

TM Adsorption Filters



TM Adsorption Filters

- Custom Made Adsorption Elements
- High End Materials
- In House Manufacturing
- Exotic material available
- Low pressure drop
- High Vapour Removal Efficiency
- Activated Carbon
- Molecular Sieve
- High Pressure Gas Application
- Glycol and Water Applicatons

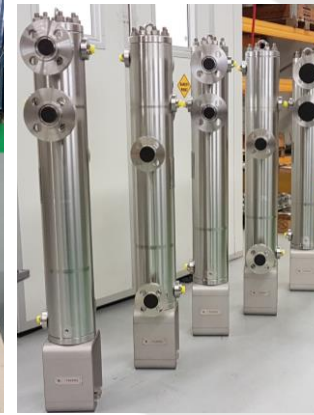
Special Painting



- ### Special Painting
- According customer specifications
 - NACE Level III
 - Paint Reports
 - Custom Paint Tests & Inspections



TM Filters References



Summary

Designing, Machining and
Manufacturing under one roof

Maximum Customer Service

Non Welded Design

Comply to all International Standards, OEM, EPC &
End User Specifications

Safety First

Filtration & Pressure Vessel Knowledge

API 614 Specialist

Focus on Documentation

Custom Made Solutions Fit & Function

Exotic Materials

