



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 2021

Over 60 professionals,
Partners in AP & EMEA



HWI Group Location



40 KM from
Amsterdam

Alphen aan den Rijn



1500 m2 office area



2500 m2 workshop

Business Unit: TM Filters

TM Products

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



Lloyd's
Register



ATEX



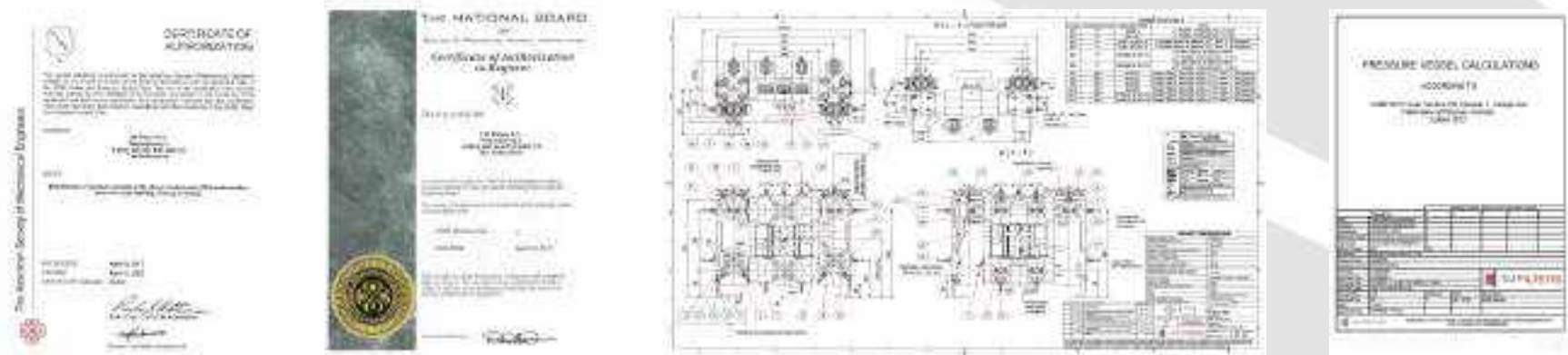
energy



Business Unit: TM Filters

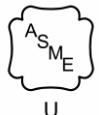
Design

ASME VIII Div.1 Edition 2019
 ASME VIII Div.2 Edition 2019
 PED 2014/68/EU
 EN 13445
 API 614 5th Edition
 API 692 1st Edition
 API 598 10th Edition
 IECEx certified



Quality

ISO 9001:2015
 ASME U-Stamp
 National Board
 API 607 Fire Safe
 SupplHi Technical Passport
 (by Lloyd's Register)



Lloyd's
Register



ATEX



energy



Industries

Oil & Gas



Petro-/ Chemicals



Maritime



Energy & Power

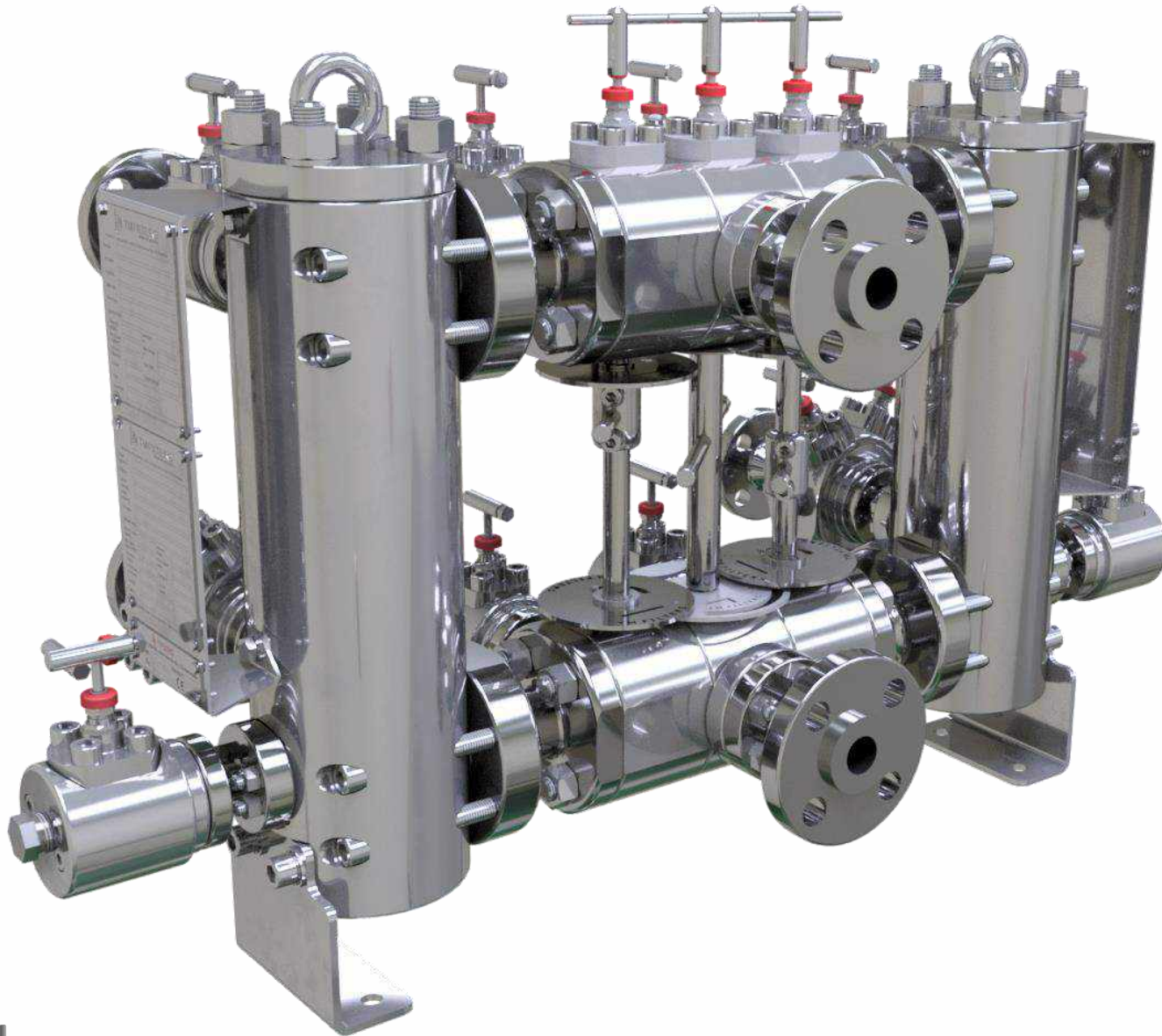


Industrial Gases



Mining





Seal Gas Filters Special Gas Filters

- Non Welded Design
- API 614 5th edition
- API 692 1st edition
- 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 ½" full bore

TM Duplex Seal Gas Filters Filters

Project WEPP III

End User: Petrochina

Year Supplied: 2017

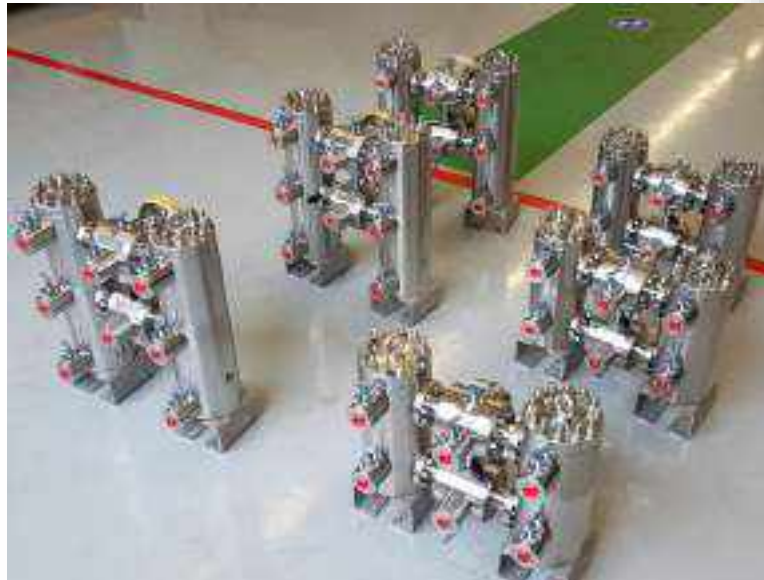
Category: Pipeline

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



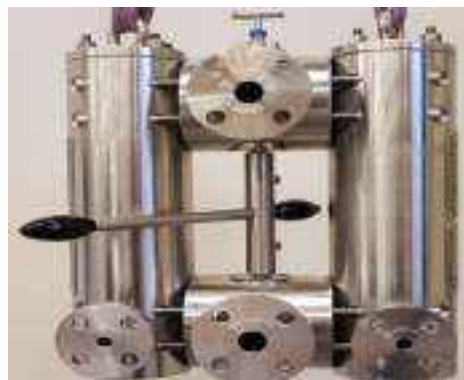
TM Lube Oil Filters



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

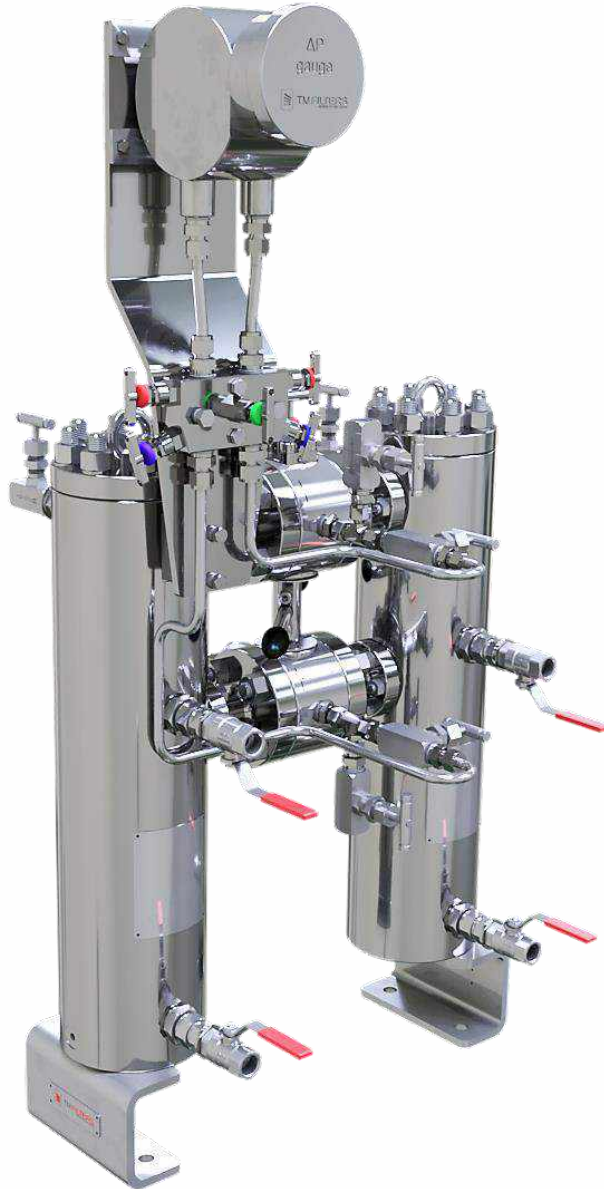
Pump OEM: Sulzer

Pressure Vessel Code: ASME VIII Div.1 Stamped

Code: API 614 5th edition

Skid Builder: WM Coulthard





Fuel gas Filters

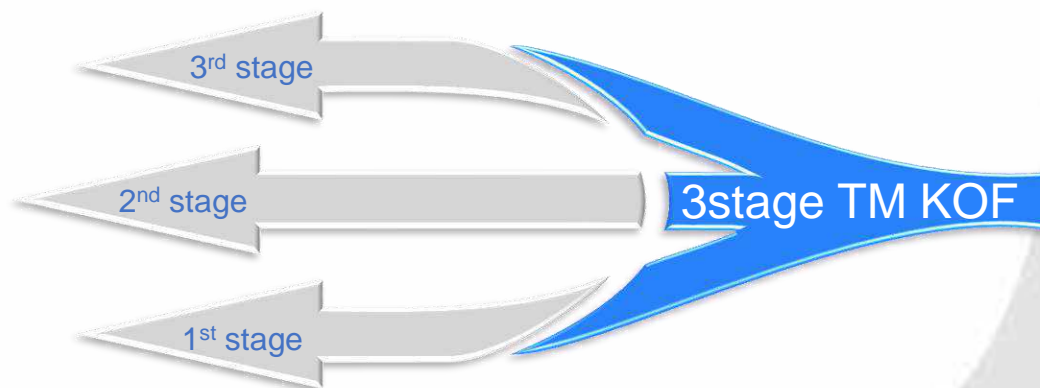
- Non Welded Design
- Custom Options
- ASME VIII div.1
- Single, Duplex configuration
- All exotic material available
- Multiple stages
 - TM Cyclone
 - TM Demister pad
 - TM High efficiency element
- All connections are available
- Available from ½" full bore

TM 3 Stage Filter System



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

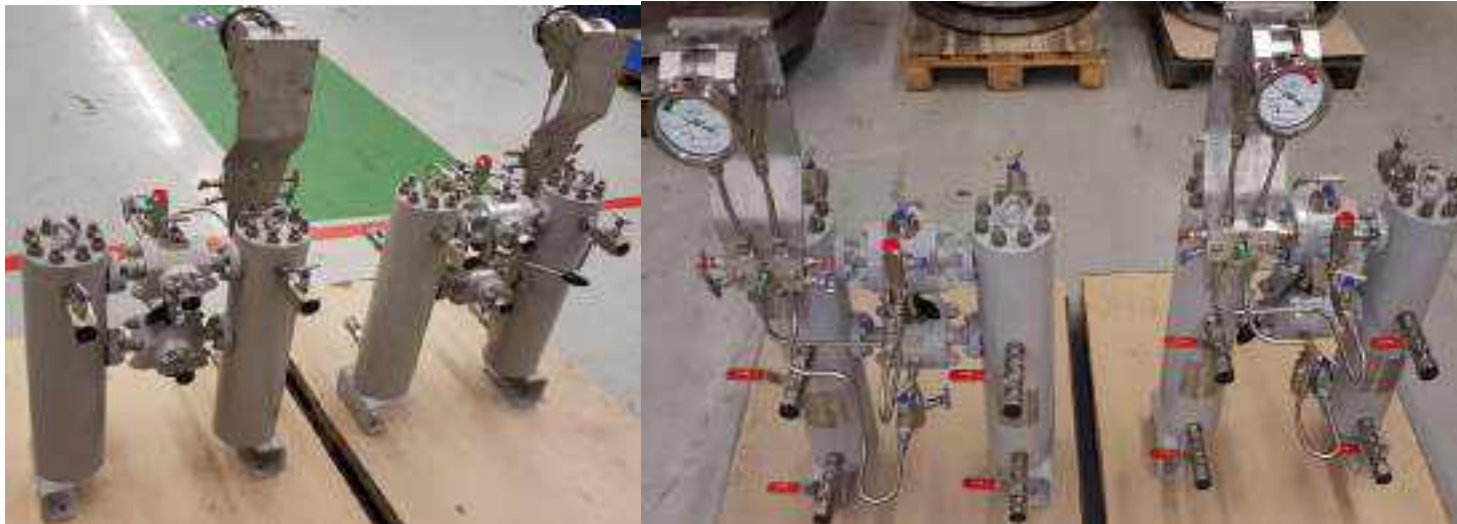
2nd Stage: Stainless Steel Demisting Pad

- ✓ 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



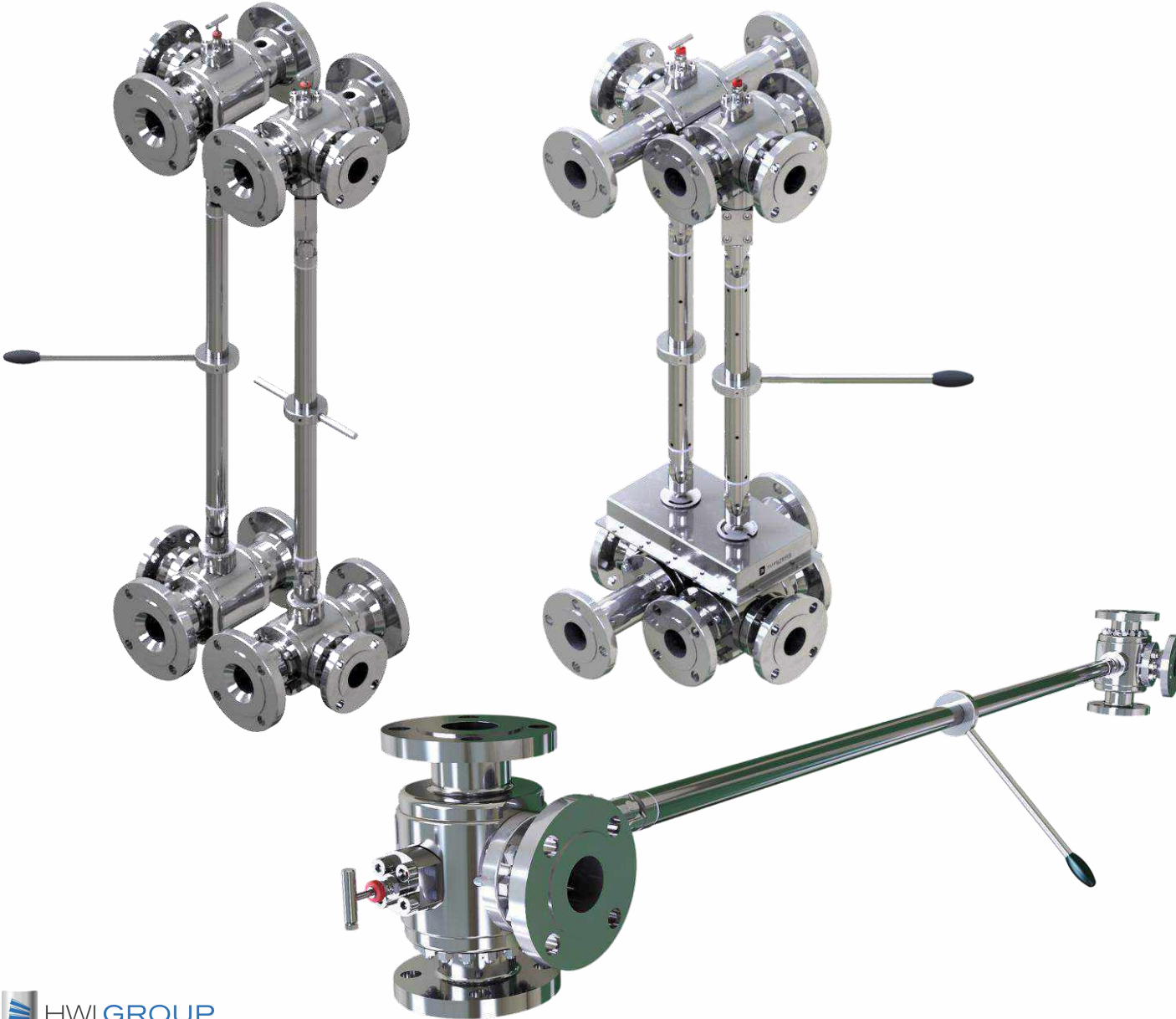
TM Double 3 & 6 Way Change Over Valve

TM Double 6-Way Valve

- Non Welded Design
- Zero Leak
- Custom Made
- Integrated equalizing line
- Exotic material available
- 1 Leaver switchover system
- Any connection available

TM Double 3-Way Valve

- Non Welded Design
- Zero Leak
- 1 Leaver 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

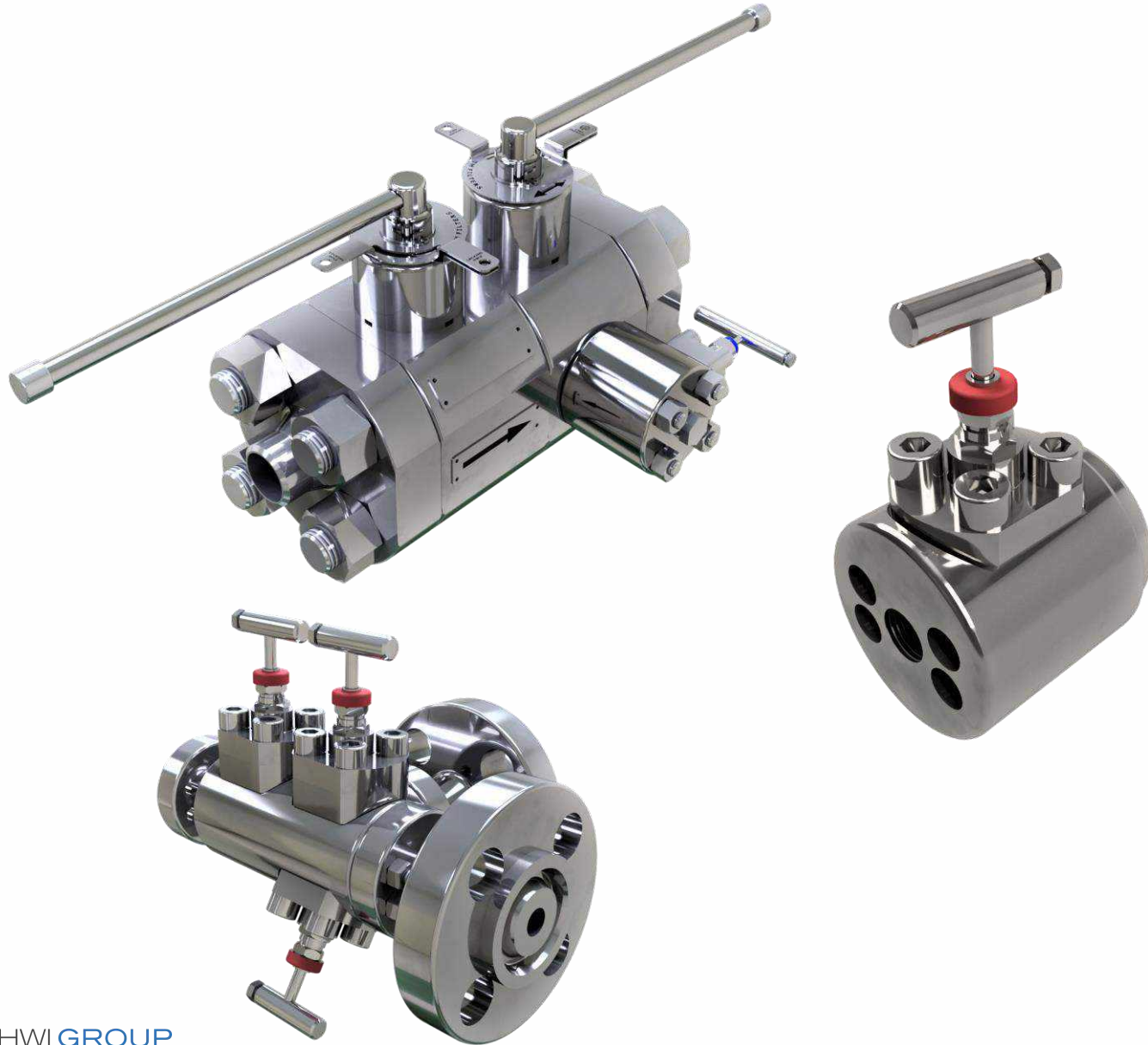
Pump OEM: MHI

Code: API 614 5th edition

Skid Builder: KOWA Japan



TM Special Custom Made Valves



TM Special Valves

- Custom Made Valves
- In House Manufacturing
- Exotic material available
- 2- Way Ball Valves
 - Single Block
 - Double Block & Bleed
- Needle Valves
 - Single Block
 - Double Block & Bleed
- All Connections available
- High Pressure Gas Application
- Non Welded Forged Design
- High Grade Alloys
- Exotic Materials
- API 607, API 6FA
- API 6D, API 598
- ISO 10497, ISO 5208,
- ISO 15848-1, ISO 15848-2
- ISO 7121, ISO 17292
- ISO 10423
- ASME B16.10, ASME B16.34, ASME B16.5
- ASME VIII Div.1 Appendix 2

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

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
- Replacement Filter Elements
- Low pressure drop
- High collapse pressure
- Welded or Glued
- High Efficiency up to 0,01 μ m



TM Filter Elements Tests

Element tests (Oil):

- Multi Pass Test according to ISO 16889
- Bubble Point Test according to ISO 2942

TM Filter Elements Tests

Element test (Gas):

- Solid Particle Removal Efficiency according to ISO 12500-3
- Coalescing Water Removal Efficiency according to ISO 12500-4

Special Painting



Special Painting

- According customer specifications
- NACE Level III / FROSIO Level III
- Paint Reports
- Custom Paint Tests & Inspections



TM Filters References



Summary

Designing, Machining and
Manufacturing under one
roof

Filtration, Pressure Vessel
and Valve Knowledge

Maximum Customer
Service

API 614 & 692 Specialist

Non Welded Design

Focus on Documentation

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

Custom Made Solutions
Fit & Function

Safety First

Exotic Materials, High
Pressure,

