INNOVATIONS AND UPGRADES WITHIN THE SUBSEA VALVE MARKET

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COMPANY GENERAL INTRODUCTION

1956
PetrolValves is established

1964
PetrolValves leads the European and Middle East market for Oil and Gas industry

1968
First Top Entry Ball Valve is patented

1970
PetrolValves becomes leader in Subsea Market

1980
The first metal to metal sealing ball valve is developed

1993
The After Sales Department is created

2006
New business: Actuation Department

2016
TBG AG acquires PetrolValves

2017
New Plant in Piacenza for Toy production is established

2018
Completion of a 3-years investment plan on new machining and plant reconditioning
Open Innovation
Partner with externals on key themes

Agile and Test to Learn
Validate quickly assumptions.
Scrum based empowered teams

Idea fertilization
Collaboration
Question Status Quo

Cross-fertilise competencies
Leverage learnings and similar industries
TECHNOLOGIES IN THE WORKS

Materials & Manufacturing
- Additive Manufacturing
- New coatings
- Materials

New Architecture
- New Architectures
- Actuator Optimisation
- System integration

Renewable Platform
- Hydrogen
- CCS
- WTE

Continuous improvement
- Sealing mechanism
- Advanced sealing

Digital
- RM&D
- Digital Twin
- Test Integration
PetrolValves is able to design its products following the specific needs of the processes and the Clients.

The innovation spirit and expertise in design can be seen also in the PV BRAVA (Boltless Reliable Advanced VAlve).

BRAVA technology is based on a compression retaining ring, to reduce weight, dimensions, assembly time, maintenance, and total cost of ownership.
Cross Fertilize Well Proven and Reliable Technologies
Creating a Step Change
BRAVA: COMPONENTS BENCHMARK & RETAINER RING

**Bolted Execution**
- Many bolts
- Thick Body to allow bolts diameter
- Long Assembling duration

**PV BRAVA**
- No bolting needed
- Thin Body wall thickness
- Reduction in carbon footprint
- Easy and fast Assembling
FEA simulations have been carried out to optimize valve design and provide the maximum load-capacity during service conditions and heavy-duty operations.
SUBSEA APPLICATION:

(-29°C / +121°C - 2,000m water depth)

- 200 cycles PR2 Test (API 6A)
- 200 cycles Endurance (API 17D)
- 200 cycles Hyperbaric Test (API 17D)
- External Bending Moment Test (2/3 SMYS magnitude).
CARBON FOOTPRINT REDUCTION
- Reduced energy and materials consumption

FULLY EQUIVALENT
- Range of Products
- Features
- Applications

BRAVA VS BOLTED EXECUTION: MAIN BENEFITS

CAPEX BENEFITS
- Cost optimization
- Shorter delivery
- Weight & Dimensions

OPEX BENEFITS
- High valve reliability and service operations simplification
- Lower lifecycle cost of ownership

standard design

optimized design
VALVE NEW LIFE is a successfully business model that PetrolValves has developed to refurbish and upgrade Customer existing valve (supplied by PetrolValves or third party) that allow to reduce CAPEX investment up to 40%. Thanks to PetrolValves’ reverse engineering capabilities and its proven manufacturing experience, we have been able to regionalize VALVE NEW LIFE technology in key geographies.
• Challenges in the hydrogen and CCS primarily materials driven
• Critical question related to service fit on existing valves changing operating profile and process fluid
• Regulation changing rapidly, adapting to new requirements
• PV embraced the Northern Light CCS In Northern Europe and Hydrogen Liquefaction/Production platform
Challenge faced: thermoplastic materials qualification:

- Definition of materials
- Definition of testing setup
- Definition of acceptance criteria
QUESTIONS?
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