Verdelet ATN is a French company, created in 1976, which designs, manufactures and markets high performance butterfly valves for the thermal and nuclear energy production, desalination of sea water, petrochemical, chemical and Oil and Gas sectors.

The success and growth of the company are based on continuous technical innovation offered to its customers.

Thanks to its French and international customers and to a highly qualified staff, Verdelet developed, in the course of the last 10 years, a range of high performance metal/metal butterfly valve, On/off and control, which now gives to Verdelet a leading position on the international market.

As a result of its worldwide commercial network, Verdelet exports more than 80% of its production in Europe, Russia, Asia and the Middle East.

With its customer services mindset combined with competitive commercial solutions, Verdelet Company is oriented towards continuous improvement in technology, quality and cost reduction.

Serge Bonnefoi
President
CUSTOMER'S REFERENCES

Final users or Engineerings recommending and using VERDELET high performance butterfly valves.

Nuclear Energy:
› EDF – AREVA (France)
› CNPEC (China)
› KHNP (Korea)
› ALSTOM (France)
› DONG FANG (China)
› …

Conventional Energy:
› ALSTOM (France)
› ESKOM (South Africa)
› TOSHIBA (Japan)
› DONG FANG (China)
› …

Oil & Gas:
› SAUDI ARAMCO (Kingdom of Saudi Arabia)
› EXXON MOBIL (USA)
› SHELL (Netherlands)
› BP (Great Britain)
› …

Petrochemical / Chemical:
› TOTAL (France)
› SPC – TASNEE (Kingdom of Saudi Arabia)
› TECHNIP
› RHODIA CHEMICALS
› YARA
› …

Desalination:
› DOOSAN (Korea)
› SIDEM – VEOLIA (France)
› HITACHI ZOSEN (Japan)
› …

Iron & Steel industry:
› FIVES STEIN (Stein Heurtey)
› DREVER (Belgium)
› CMI GROUP
› …

Agri-food Industry:
› COSUMAR (Morocco)
› NESTLÉ
› AJINOMOTO (Japan)
› …
Verdelet has a dedicated policy focused on staff training and improvement. Our engineers work on the latest software technology:

- **3D Design:**
  - Solidworks version 2009

- **2D Design:**
  - Xmold 5.0

- **Completed Elements Analysis:**
  - Simulation 2009

- **Motion simulation:**
  - Motion 2009

- **Simulation of fluid flow:**
  - Flow simulation 2009
A French High Performance Butterfly Valves Designer

Focused on high quality, VERDELET offers industrial facilities with high technologic capacity of development, manufacturing, and assembly. VERDELET also works in partnership with a network of qualified and experienced subcontractors.

A COMPETITIVE INDUSTRIAL TOOL

OUR VALUES:
HIGH TECHNOLOGY,
SERVICE,
QUALITY,
INNOVATION,
TEAM SPIRIT.
EXTRACTION, PRODUCTION AND REFINING OF OIL AND GAS

- According to PED-EN12516 (Europe),
- According to ANSI/ASME B16.34 (USA),
- Fire safe based on API6FA and API607,
- ATEX 94-9-CE Conformity,
- High pressure construction,
- Live Loading System, low fugitive emission,
- Optional:
  - Neutral gas injection system for shaft protection and isolation
  - Full Vacuum Service

DESALINATION (MSF-MED-RO)

- According to PED-EN12516 (Europe),
- According to ANSI/ASME B16.34 (USA),
- High resistance to corrosion,
- Isolation from vibrations and separated execution control panels
- Noise reduction equipments,
- High pressure valve for reverse osmosis applications,
- Offshore external protection or according to customer specification,
- Optional:
  - integrated anti-cavitation system

FOSSIL OR NUCLEAR ENERGY

- According to RCCM (France)
- According to PED-EN12516 (Europe)
- Operability during and after seism
- Irradiated environment applications
- Mechanical vibration proof
- High and low steam pressure
- Safe quick closing
- Low pressure drop design

DESIGN AND MANUFACTURING FOR ALL THE INDUSTRIAL SECTORS IN SEARCH OF HIGH PERFORMANCE

VALREG Valve DN 250 PN 20
Double flanged
Crude oil
COMPET Refinery - Romania

VALSTAR Valve DN1200 PN25
Double flanged
Bidirectional Class V

VALREG Valve DN100 PN10-Nuclear Island
According to RCCM class III – seism class A1
AN INTEGRATED INDUSTRIAL PROCESS

- Foundry - forge
- Quality control
- Traceability
- Raw machining - CNC vertical lathes
- Drilling - CNC boring machine
- Overlaying by semi-automatic welding
- Finishing bodies and butterflies - CNC machining centre
- Internal machining - CNC lathes
- Hydraulic test of the bodies - 3 trial benches
- Marking
- Painting
- Assembly
- Leakage test
- Functional tests and final checking
- Packing
- Commissioning and maintenance
OUR TOTAL QUALITY CONTROL AND OUR MEANS OF PRODUCTION AT THE SERVICE OF OUR CUSTOMERS

A COMPETITIVE INDUSTRIAL TOOL

Focused on high quality, VERDELET offers industrial facilities with high technologic capacity of development, manufacturing, and assembly. VERDELET also works in partnership with a network of qualified and experienced subcontractors.

VERDELET’S INDUSTRIAL FACILITIES INCLUDE:

- 2 CNC vertical lathes Fanuc and Num with automated tool changers - turning till 2000mm of diameter
- 1 conventional vertical lathe – X=1600 – Z=1300
- 1 Siemens CNC operated boring machine – X=2000 – Y=1600 – Z=1600
- 1 Fanuc CNC machining center with 4 axes – 2 pallets 800*800
- 2 CNC horizontal lathes
- 2 radial drills – drilling till 50mm of diameter
- 2 semi-automatic welding robots and welding equipments – TIG / MIG / MAG
- 3 semi-automatic hydraulic test benches

MAIN CERTIFICATIONS

- ISO 9001 - 2008
- ISO 14001
- PED 97/23/CE (Module H), ATEX Directive 94/9/CE n°18015/05,
- Fire Safe as per API6FA & API607,
- GOST-R & ROSTEKHnadzor - Russia

Standards

- CODAP 2005,
- NF EN12516,
- ANSI B16.34,
- NF EN 13445,
- NACE MR 0175-2003
CONSTRUCTION - CERTIFICATIONS

- RCC-M (France-Europe) relating to nuclear or irradiated environment and seism resistance.
- PED 97/23/CE module H – Pressure Equipment Directive
- EDF Qualification (Electricity of France)
- Operability during and after seism

APPLICATIONS IN NUCLEAR ISLAND

CIRCUIT OF INTERMEDIATE COOLING (RRI):
- Cooling of organs and equipments intended for the cooling of primary circuit and for the preservation of the reactor

CIRCUIT OF SPRINKLING (EAS):
- Cooling of confinement zone in case of incident by sprinkling of the reactor heart

CONTROL VALVE ON CLOSED COOLING RRI LOOP
- 1 / 2 RRI 155VN
- VALREG Valve DN100mm PN10
- Water 10 bar - 60°C
- Metal seated
- Carbon Steel construction RCCM class 3
- Seismic class 1A
- Single acting spring/diaphragm pneumatic actuator

ON / OFF VALVES OF THE ADMISSION OF THE CIRCUITS OF COOLING
- Circuit EAS 61&62 VN
- EDF Qualification in 2009
- VALROC Valve DN500 PN20 – double flanged
- Stainless steel construction RCCM class 3 – Soft seated
- 13 bar Water - 60°C – flow 2000m3/h
- Seismic class A1
- Single acting spring/cylinder pneumatic actuator
The VERDELET ATN Type II nuclear series Microflow valve is an instrumentation equipment, especially designed for the pressure drop and control of high pressure water (from 200 to 2 bars without cavitation risks).

Additionally, the assistance of software technology in the design of this valve (C.A.O.) in the determination of the flow characteristic or in the sizing of the main parts (multi effects stem, actuators spring…) assures to this valve a high level of reliability.

**NUCLEAR SITES IN THE WORLD EQUIPPED WITH VERDELET MICROFLOW VALVE**

- Ulchin
- Port Said
- Daya Bay
- Belleville
- Blayais
- Bugey
- Cattenom
- Chinon
- Chooz
- Civaux
- Cruas
- Dampierre
- Golfech
- Gravelines
- Fessenheim
- Flamanville
- Koeberg
- Nogent
- Paluel
- Penly
- S’ Alban
- S’ Laurent
- Tricastin

**TECHNOLOGY**

- Multi effect pressure drop
- Sampling on primary loop
- Flow from 0 to 400 L/hour
- Important pressure back: from 200 to 2 bars without cavitation
- Pneumatic or manual actuation
CONSTRUCTION - CERTIFICATIONS

➢ RCC-M (France-Europe) relating to nuclear or irradiated environment and seism resistance.
➢ PED 97/23/CE module H – Pressure Equipment Directive
➢ EDF Qualification (Electricity of France)

APPLICATIONS IN CONVENTIONAL ISLAND

INTERCEPT AND CONTROL VALVES FOR STEAM TURBINE REGULATION

➢ A unique combination (VERDELET pattern) of 2 VALREG valve
➢ One valve assures the regulation; the other assures on/off function
➢ Safe instant closing (0.3 second) by hydraulic actuation
➢ Profiled butterfly for low pressure drop
➢ Nuclear plant CPR 1000MW Ling Ao II unit 3 and unit 4 (China)
➢ Nuclear plant EPR 1600MW Flamanville (France)

BLEED STEAM CONTROL VALVES

➢ Water reheating line with steam extracted from the medium and low pressure turbines
➢ EPR Flamanville (France) – Valves ABP5220 & 4220 AP – RIN PCCVBM 0900&R1200 PAD
➢ Coal fired power plant Medupi and Kusile (South Africa) – 2x6 units of 800MW

TURBINE ISOLATION VALVES

➢ VALSTAR valve with hydraulic actuation for safe closing
➢ Natural Gas Combined Cycle power plant of West County – Florida (USA)
➢ Coal fired power plant of Tanjung Bin – Malaysia
➢ Geothermal power plant of Hellisheidi – Iceland

HIGH PRESSURE STEAM REGULATION CONTROL VALVES FOR STEAM REHEATING LOOP

➢ VALREG valve with hydraulic actuation
➢ “Green Field” power plant - crushed peat and biomass (200MW) – JYVÄSKYLÄ (Finland)

LOW PRESSURE STEAM CONTROL VALVES TO FEEDWATER TANK

➢ VALSTAR valve DN16" 150# carbon steel/stainless steel with diaphragm for noise level reduction
➢ Combined cycle power plant 750MW of El Kureimat – Egypt
APPLICATIONS AND REFERENCES

SAFE INSTANT CLOSING VALREG VALVE
- Carbon steel Construction –
- Butt Welded connection
- Shaped disc for low pressure drop
- Safe closing within 0.3 second
- Hydraulic actuation for high reliability
- Steam Control of low pressure turbines

- Year: 2008
- Jyväskylä <Green Field> Heat & Power Plant – Finland
- VALREG valve DN16” 1500# - butt welded (BW)
- High pressure steam service 50bar - 580°C
- Construction in alloy steel A217 WC9 harmonized
- Compliance DESP 97/23/CE module H

- Year: 2009
- Flamanville III Project – France
- Nuclear power plant EPR type
- Electricity of France (EDF)
- VALSTAR valve DN600 PN10 – double flanged
- Electrical actuation
- Control of heat exchangers flow
- Water service - 60°C – 10barg

- Year: 2008
- Project North West county III – Florida (USA)
- Gas fired combined cycle gas power plant
- Final user: West County Energy Center
- VALSTAR valve DN24” 300# LUG - tapped holes
- Medium pressure Steam Service - 390°C – 9barg

- Year: 2009
- Jyväskylä <Green Field> Heat & Power Plant – Finland
- VALREG valve DN16” 1500# - butt welded (BW)
- High pressure steam service 50bar - 580°C
- Construction in alloy steel A217 WC9 harmonized
- Compliance DESP 97/23/CE module H

SAFE INSTANT CLOSING VALREG VALVE
- Carbon steel Construction –
- Butt Welded connection
- Shaped disc for low pressure drop
- Safe closing within 0.3 second
- Hydraulic actuation for high reliability
- Steam Control of low pressure turbines

- Year: 2009
- Valiantville III Project – France
- Nuclear power plant EPR type
- Electricity of France (EDF)
- VALSTAR valve DN600 PN10 – double flanged
- Electrical actuation
- Control of heat exchangers flow
- Water service - 60°C – 10barg
CONSTRUCTION - CERTIFICATIONS

- On/off or control, unidirectional or bidirectional
- PED 97/23/CE module H – Pressure Equipment Directive
- ANSI / ASME B16.34 – pressure / temperature ratio and connection of valves
- Zero leakage tightness according to API598 up to 600#
- Isolation from vibrations and separated execution control panels
- Possibility of construction in specific materials: aluminium bronze, duplex, super duplex…
- Anti-cavitation system or low noise devices

APPLICATIONS

- MSF – MULTIPLE STAGE FLASH PROCESS
  - VALREG, VALSTAR and VALROC valves in carbon steel construction for steam lines or stainless materials for seawater, brine, condensate and distillate lines.
  - Supply of different equipments for noise reduction on steam service or anti-cavitation for seawater and other liquid services.
  - 2007 – SABIYA Ph.III – 227.000 m³/day – Ministry of Energy of Kuwait via Doosan (Korea)
  - 2006 – SHUAIBAH Life Extension Project – Ministry of Energy of Kuwait via Doosan (Korea)
  - 2004 – ARZEW (Algeria) – 90.000m³/day – Kharama via IHI (Japan) and Hitachi Zosen (Japan)

- MED – MULTIPLE EFFECT DISTILLATION PROCESS
  - VALSTAR valves in carbon steel construction for steam lines or stainless materials for seawater, brine, condensate and distillate lines.
  - 2010 – RAS LAFFAN C IWPP (Qatar) – 286.000m³/day – Ras Girtas Power Company via Veolia Water (Sidem - France)
  - 2009 – FUJAIARAH II IWPP – 590.000m³/day – Abu Dhabi Water and Electricity Authority (ADWEA) via Veolia Water (Sidem - France)
  - 2009 – MARAFIQ IWPP (Saudi Arabia) – 810.000m³/day – Marafiq via Veolia Water (Sidem - France)
  - 2009 – ZAWIA / DERNA / SOUSSA (Libya) Total 160.000m³/day – General People’s Committee of Electricity Water & Gas via Veolia Water (Sidem - France)
  - 2008 – AL HIDD (Bahrain) - 273.000m³/day – Electricity and Water Authority via Veolia Water (Sidem - France)

- RO – REVERSE OSMOSIS
  - VALREG or VALSTAR valves in stainless materials construction for the pre-treatment of seawater operation
  - VALSTAR valves in super duplex construction - high pressure service (100bars) for the on/off of membrane micro filtration loop.
  - 2008 – SHOAIBA IWPP EXPRO (Saudi Arabia) - 150.000m³/day – SWCC (Saline Water Conversion Company) via Doosan (Korea)

- SEAWATER SERVICE ON OTHER APPLICATIONS
  - VALREG, VALSTAR or VALROC valves in stainless materials construction for cooling circuit using seawater
  - 2006 – PHD-PP (Saudi Arabia) – seawater cooling circuit – Saudi Polyolefin Company (SPC-TASNEE) via Samsung Engineering Company (Korea)
Year: 2007
- Product: VALROC DN20" 150# double flanged
- Stainless steel with single acting pneumatic actuator
- Project: SABIYA Ph3 Desalination plant
- Client: Ministry of Energy and Water of Kuwait via Doosan Korea

Year: 2008
- Fujairah II IWPP (MED) – Abu Dhabi
- Final user: Abu Dhabi Water and Electricity Authority (ADWEA) via Sidem
- VALSTAR valve DN900 PN6 Wafer type
- Steam service - 160°C – 5barg

Year: 2004
- ARZEW desalination plant (MSF) Project – Algeria
- Client: Kharama via IHI (Japan) and Hitachi Zosen (Japan)
- VALSTAR DN1000 PN25 double flanged
- Stainless steel – class V bidirectional

Year: 2007
- Product: VALROC DN20" 150# double flanged
- Stainless steel with single acting pneumatic actuator
- Project: SABIYA Ph3 Desalination plant
- Client: Ministry of Energy and Water of Kuwait via Doosan Korea

Year: 2008
- Fujairah II IWPP (MED) – Abu Dhabi
- Final user: Abu Dhabi Water and Electricity Authority (ADWEA) via Sidem
- VALSTAR valve DN900 PN6 Wafer type
- Steam service - 160°C – 5barg
**CONSTRUCTION - CERTIFICATIONS**

- PED 97/23/CE module H – Pressure Equipment Directive
- ANSI / ASME B16.34 – pressure / temperature ratio and connection of valves
- Fire safe design according to API6FA and API607
- ATEX 94-9-CE conformity
- High pressure construction (up to 2500#)
- Live loading system - Low fugitive emission packing
- Construction according to code NACE MR-0175 (Optional)

**APPLICATIONS**

**EXTRACTION / PRODUCTION - ONSHORE AND OFFSHORE PLATFORMS**

- VALSTAR or VALREG valves for control or on/off
- Reduced dimensions compared to other technologies and high performances in regulation or shut off
- Reduced weight compared with the conventional ball valves
- 2006 – North East Bab (NEB) Al-Dabbiya Onshore Project (Abu Dhabi) – ADCO (United Arab Emirates)
- 2008 – ADGAS – Offshore Associated Gas (OAG) (Das Island – Abu Dhabi) – Abu Dhabi Gas Liquefaction Company via GASCO
- 2008 – MOHD BILLONDO Offshore (Republic of Congo) – TOTAL E&P
- 2000 to 2009 – GIRASSOL Offshore (Angola) – TOTAL E&P
- 2009 – RASGAS Onshore Expansion project – Site of Ras Laffan (Qatar) – Qatar Petroleum via ExxonMobil RasGas - Technip

**REFINERIES**

- Gas, Crude oil, Steam applications…
- Standard construction or according to NACE code. VALSTAR or VALREG valves for control and on/off.
- 2006 – PHD-PP (Saudi Arabia) – Saudi Polyolefin company (SPC-Tasnee) via Samsung Engineering
- 2007 – Salam Gas Train 3&4 – Khulda (Egypt) – Khulda Petroleum Company via PETROFAC International LTD
- 2008 – F.P. Petrobras P56 (Brasil) – PETROBRAS via Nuovo Pignone
- 2010 – Elefsina Refinery (Greece) – HELLENIC PETROLEUM via Tecnicas Reunidas

**CHEMISTRY**

- 2000 – EDEN / RAPSODIE / SAMOURAI / CARMEN Project (France) – Rhone Poulenc Rhodia – VALSTAR valves up to DN1000mm in carbon steel or stainless steel
- 2007 – CANDICE Project – Zhenjiang (China) – Rhodia Chemical (France) – VALSTAR valve tightness class VI with Steam Jacket
- 2010 – TIFERT (Tunisian Indian Fertilizers) Project – Tunisia – via Technip Fracna. Control valves up DN2000mm
**APPLICATIONS AND REFERENCES**

- **Year: 2010**
  - Elefsina Refinery – Greece
  - Final user: HELLENIC Petroleum via Tecnicas Reunidas
  - VALSTAR valve DN24" 300# double flanged in stainless steel
  - Tail Gas Service - 350°C – 5barg

- **Year: 2003**
  - Project APPC – Jubail Industrial City (Saudi Arabia)
  - Client: Saudi Polyolefin Company via Samsung Engineering
  - VALSTAR valve DN72" 300# double flanged in stainless steel
  - Fuel/gas service - 704°C

- **TOTAL Refinery – Netherlands**
  - VALREG valve DN10" 2500lbs
  - Lug type in Stainless steel
  - 195b/410°C

- **Year: 2010**
  - La Rabida Huelva Refinery
  - CEPSA – Spain
  - VALSTAR valve DN10" 600#
  - Stainless steel
  - Process gas
  - 195b/410°C
DIMENSIONS OF VALVES

- Specialist in large diameters valves, VERDELET range of products covers dimensions from DN100mm (4") to DN2400mm (96") and larger dimensions on request.
- For control applications, it is imperative to consider the specific elements of the installation and the service conditions (fluid, pressure, temperature, flow…) for an optimal design and sizing of the valve.
- VERDELET uses internal software issued from the standard ANSI / ISA S75.01: Flow Equations of Control Valves

CONNECTIONS AND PRESSURE CLASSES

- According to ISO NFE29-209 PN10 to PN420
- According to ASME/ANSI B16.5 class 150 to 2500#
- Other standards on request (AWWA, DIN, JS, BS…)

VALVE BODY TYPES

- WAFER BODY TYPE
- LUG BODY TYPE
- DOUBLE FLANGED BODY TYPE
- BUTT WELDED BODY TYPE
- STEAM JACKET

DIFFERENT CONSTRUCTION MATERIALS

STANDARD CONSTRUCTION:
- Carbon Steel ASTM A216 Gr.WCB and stainless steel ASTM A351 Gr.CF8M or harmonized equivalents according to PED97/23/CE

OTHER MATERIALS ON REQUEST:
- Carbon and alloy steels, stainless steel or refractory iron (Bronze, Monel, Inconel, Duplex, Super Duplex, Titanium…)
- Chemical or electrolytic coating
The different types of VERDELET valves can cover a wide range of leakage classes defined by international standards.

<table>
<thead>
<tr>
<th>Class</th>
<th>VALREG valve</th>
<th>VALSTAR valve</th>
<th>VALROC valve</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classe II</td>
<td>according to standard FCI70.2 or ANSI B16.104</td>
<td>•</td>
<td></td>
</tr>
<tr>
<td>Classe III</td>
<td>according to standard FCI70.2 or ANSI B16.104</td>
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<td></td>
</tr>
<tr>
<td>Classe IV</td>
<td>according to standard FCI70.2 or ANSI B16.104</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Classe V</td>
<td>according to standard FCI70.2 or ANSI B16.104</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Classe VI</td>
<td>according to standard FCI70.2 or ANSI B16.104</td>
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<td>•</td>
</tr>
<tr>
<td>Taux A</td>
<td>according to standard ISO5208 or GOST-9544</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Seat tightness “Zero Leakage”</td>
<td>according to API598</td>
<td>•</td>
<td>•</td>
</tr>
</tbody>
</table>

Instead of the standard construction of shaft packing, VERDELET also proposes an optional Low fugitive emission shaft packing according to ISO 15848.

For the special services, VERDELET also proposes reinforced performance of shaft sealing under vaccum service with O-rings.

Provides a constant packing compression before re-packing or adjustment.

Over the years, VERDELET has developed strong partnerships with world leaders in actuations: Rotork, Servovalve, Bettis, L.Bernard, Auma, Masonellian, Flowserve…

Besides electrical, pneumatic or hydraulic motorizations, VERDELET offers different resolutions for the manual operation of its valves.
THE VALREG BUTTERFLY VALVE

TECHNOLOGY
- Concentric butterfly valve with profiled straight disc
- Bidirectional valve
- Metal/metal relative tightness

DIMENSIONS
- From DN80 (3”) to DN2400 (96”)

RATINGS
- ISO PN10 to PN420 (ANSI B16.5 150# to 2500#)

WORKING TEMPERATURES
- From -200°C to +1000°C

TIGHTNESS
- ANSI/FCI 70.2 class II or III
- The valve seat can be coated (stainless steel, stellite …)

THE VALSTAR BUTTERFLY VALVE

TECHNOLOGY
- Triple offset metal seated butterfly valve with metal gasket fitted on the disc.
- Bidirectional valve
- Metal seated by one piece or lamellar metal gasket

DIMENSIONS
- From DN80 (3”) to DN2400 (96”)

RATINGS
- ISO PN10 to PN420 (ANSI B16.5 150# to 2500#)

WORKING TEMPERATURES
- From -37°C to +650°C

TIGHTNESS
- ANSI/FCI 70.2 class IV with one piece metal gasket or expansible gasket fitted on the disc
- ANSI/FCI 70.2 class V-VI & API598-Zero leakage with lamellar seal gasket
THE VALROC BUTTERFLY VALVE

TECHNOLOGY
- Single offset butterfly valve
- For the continuity of tightness on all periphery of the disc
- Tightness by soft sealing
  - Plastomer or elastomer seal gasket adapted to temperatures and chemical aggressivity of fluid (EPDM, PTFE, VITON…)
- 2 parts shaft construction
  - Increase the flow capacity of the valves

DIMENSIONS
- From DN300mm (12”) to DN2000mm (80”)

RATINGS
- ISO PN10 to PN50 (ANSI B16.5 150# to 300#)

WORKING TEMPERATURES
- From -50°C to +180°C

TIGHTNESS
- ANSI/FCI 70.2 class IV-V-VI and API598 - Zero leakage

RESEARCH AND DEVELOPMENT

- Always offer more innovative solutions which respond to our customers’ problematic...

- Steam injection system for preventing the deterioration of the valves’ tightness performance

VALREG VALVE WITH EXTENSION FOR INSTALLATION OF THE VALVES ON A UNDERGROUND LINE AND OPERATION IN SURFACE
- DN600 PN100 Lug type with tapped holes
- Natural Gas
INTEGRATED ANTI-CAVITATION SYSTEM AND LOW-NOISE DEVICES: DIMENSIONAL SIZING BY SOFTWARE FLOW SIMULATION

VALROC VALVE ANTI-CAVITATION SERIES
- The anti-cavitation device allows the perfect control of the flow with high differential pressure
- Aluminium Bronze for seawater service
- Double flanged long pattern series – DN24” – AWWA C207D 150psi
- Project APPC-PDH PP – Saudi Polyolefins Company via Samsung Engineering Korea
- Site of Al Jubail Industrial City – Kingdom of Saudi Arabia

VALSTAR VALVE WITH ANTI-CAVITATION DEVICE FITTED ON THE DISC
- The butterfly regulates the flow and assures pressure drop of liquid while the device brought on the disc prevents the cavitation of fluid at different openings of the valve.
- VALSTAR DN400 PN20 – double flanged long pattern series – Stainless Steel
- Seawater desalination plant via SIDEM – Veolia WST
- Zawia / Derna / Soussa Projects – LIBYA

VALREG VALVE WITH LOW NOISE DEVICE
- DN20” 300# double flanged
- Steam circuit
- NUBARIA III Power Station - Egypt

VALSTAR VALVE WITH ONLINE DIFFUSER FOR STEAM SERVICE
- To reduce noise level on steam line
- Double flanged DN20” 150#
- Seawater desalination plant for Sonatrach via Hitachi Zosen
- Site of ARZEW – Algeria

The disc equipped with its equipment assures the control of fluid on a large range of openings, while avoiding phenomenon of cavitation on liquid and of incontrollable expansion on gas which are generator of noise, vibration and quick destruction of materials.