

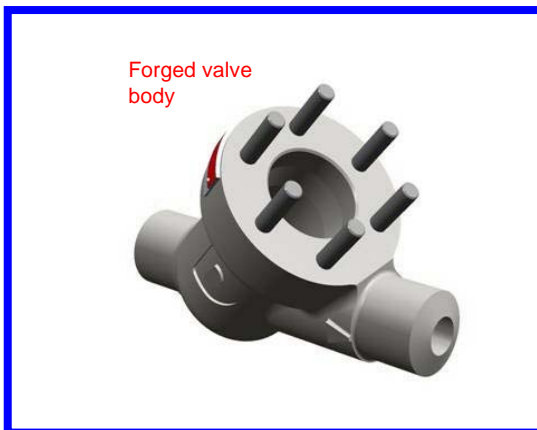
# ← CARTRIDGE VALVES →

SUBMARINE-AIRCRAFT CARRIER-ROCKET LAUNCH

## Advantages

### Reduce Construction & Life-cycle Costs

- ⊙ Body is integral part of platform for lifetime.
- ⊙ Cartridge can be replaced, in-line, within minutes,
- ⊙ Valve seat is part of *removable* cartridge
- ⊙ Twelve different cartridges (interchangeable) within each valve body size.
- ⊙ Reduction in spares/inventory...not necessary to inventory valve body's....



## Eight Sizes

### Valve Body Pipe Size


A2	NB15 – ½"
B3	NB20 – ¾"
C4	NB25 – 1"
D5	NB32 – 1 ¼"
E6	NB40 1 ½"
G7	NB50 – 2"
H8	NB65 – 2 ½"
J9	NB80 – 3"

## Specifications:


- ⊙ Housings (*forged*) in 70/30 CuNi & Stainless Steel
  - ⊙ Operating Pressures: 0 to 280 Bar  
0 to 4000PSI
  - ⊙ End Connections: Butt or Socket Weld
- } 0 to 400 Bar  
} 0 to 6000PSI

⊙ Twelve Different Valve Cartridges (Interchangeable within each Valve Body)


↓ 1
2
3
4
5
6
↓



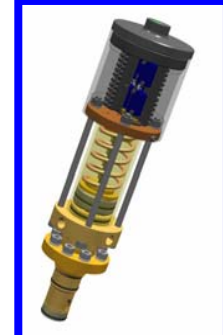
801 Stop Valve




802 Non-Return Valve (check)




803-SDNR Valve




806 Actuated Stop Valve Normally Closed




807 Actuated Stop Valve Normally Open




813 Relief Valve



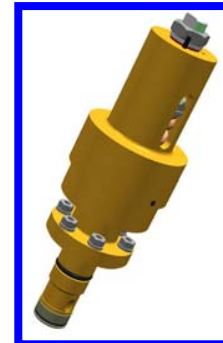
814 Filter




817 Dome Pressure Regulator



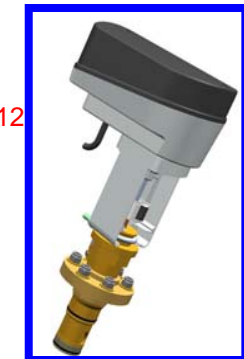
818 Pressure Reducer



828 Back Pressure Regulator (Spring Loaded)

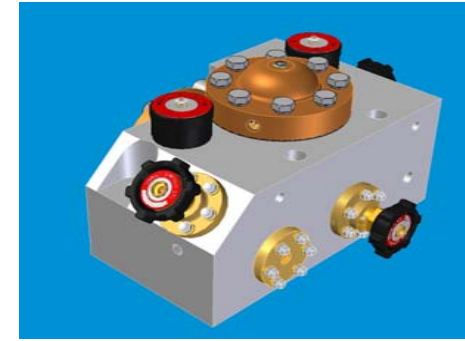
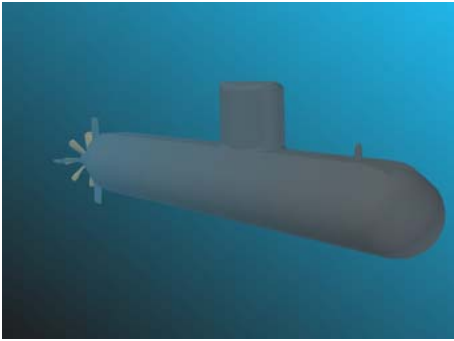


810 Flushing Adapter



821 Electrically Actuated Valve

## CARTRIDGE VALVES SUBMARINE-AIRCRAFT CARRIER-ROCKET LAUNCH



“Submarine Systems, Nuclear and Diesel Electric, where the full Range of Cartridge valves are fitted”

### “APPLICATIONS”

#### AIR

AVBS = Aux Vent & Blow System  
 BIB = Built in Breathing System & Hood Inflation System  
 DDS = Diesel Air Start System  
 EBA = Emergency Air Breathing System  
 FAS = Firing Air Systems  
 HPA = High Pressure Air System  
 HPB = High Pressure Blow System  
 MLO = Main Lub Oil System  
 WHA = Weapons Handling System  
 DQA = Divers Quality Breathing Air System

#### CO2

CDR = Carbon Dioxide Removal System

#### HYDROGEN

LPE = Electrolyser System

#### METHANOL

GM = Gas Mgmt Plant System

#### NITROGEN

HPDHR System  
 N = Nitrogen System  
 PC = Primary Circuit  
 OPG = Valve OP & Gas System  
 WM = Water Mist System

#### WATER

E = Emergency Core Cooling System  
 FT = Feed Transfer System  
 H&C = Hot & Cold Domestic System  
 PCD = Primary Coolant Discharge System  
 PCM = Primary Coolant Make-up System  
 PCS = Primary Coolant Sampling System  
 PSW = Primary Shield Water System  
 RCFW = RCFW Cooling System  
 EBS = Emergency Blow System

#### OIL

EHP = External Hydraulic Power Plant  
 EHS = External Hydraulics Systems  
 HTS = Hydraulic Oil Fill & Transfer System  
 HDS = Hydroplane & Steering Control System  
 HHP = Hydroplane & Steering Gear  
     Hydraulic Power Plant  
 MHP = Main Hydraulic Power Plant  
 HS = Main Hydraulic System  
 SP = Secondary Propulsion System  
 WH = Weapons Handling System  
 HFI = Hydraulic Fire Isolation



SUBMARINES (Nuclear & Diesel Electric) - AIRCRAFT CARRIER - ROCKET LAUNCH  
"APPLICATIONS"



II. Rocket Launch (3-Main Gases)

- Nitrogen
- Helium
- Air 400 bar (6000 psi)



. Submarines/Aircraft Carriers

- Air
- CO2
- Hydrogen
- Methanol
- Nitrogen
- Water (Fresh & Seawater)
- Oil
- Cryogenic (Oxygen)



Fittings – Submarines & Aircraft Carriers

All sizes and alloys – seamless and forged to mil-specifications –refer:  
<http://www.cunicocorp.com/proda.htm>

Submarines/Aircraft Carriers/Surface Ships

Cartridge Valves

H.P. Air Systems – 6000 psi

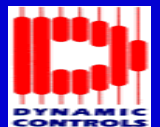
- Hydraulic Valves
- Nitrogen (N2) = 6000 psi
- Back pressure regulator for Air Flask (charged a 5500 psig)
- Installed Base – 45,000+

Plug Valves

- Sizes 1 1/2" thru 8" (2-way & 3-way), installed base over 25,000, long-life: 15-years+

Seawater Mixing Valve

- Size 10", with gear-operator and actuator, for condenser, flow rate of 3200gpm



REDUCING STATIONS - MANIFOLDS



Refer to:  
[www.dynamiccontrols.uk.com](http://www.dynamiccontrols.uk.com)  
[www.cunicocorp.com](http://www.cunicocorp.com)  
Pages 1-6



Refer to:  
[www.dynamiccontrols.uk.com](http://www.dynamiccontrols.uk.com)  
[www.cunicocorp.com](http://www.cunicocorp.com)  
Pages 1-6



Reducing Stations - Manifolds

- Reducing Manifold-High Pressure 6000 PSig, flow rate: 8000 scmf to 16,000 scfm
- Breathing Air reducing station, 6000 PSig, max flow 40 scfm
- Diving quality air for hyperbaric chamber 276 bar to 100 bar set-pressure, 22,000 litres/min. Single stage twin output.
- Single Stage reducing stations 200 bar to 30 bar (2900 PSig to 430 PSig).

Applications, Siren, Helicopter traversing arrangement, Gear box Control, air Emergency Generator start, Pneumatic Valves Dispensary, workshop tools, bottle filling. 120Nm<sup>2</sup>/Hr (Note: one reducing station per application).

