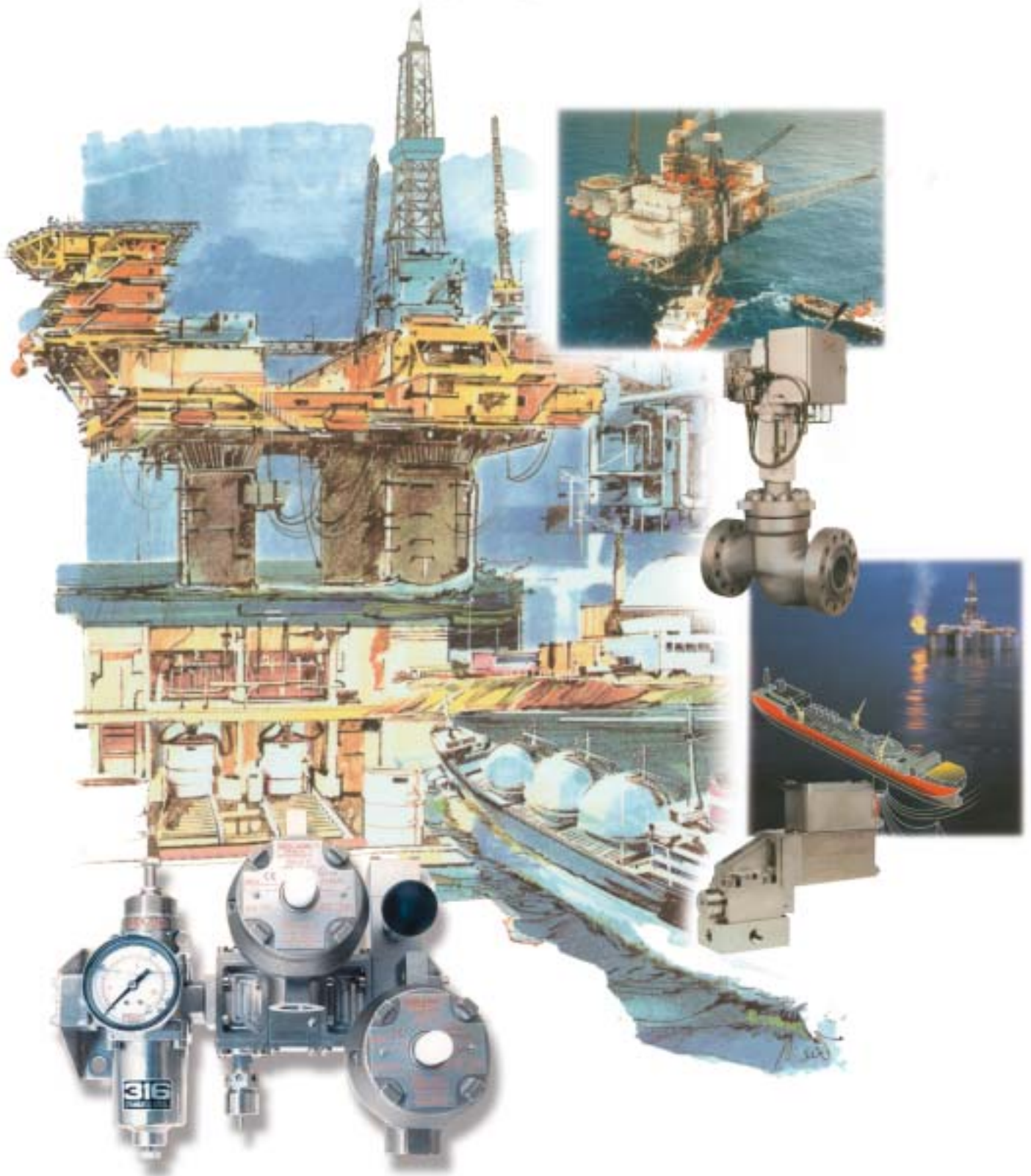


A Complete Range of Electro-Pneumatic and Electro-Hydraulic Valve Actuation Equipment



MIDLAND-ACS
An IMC Company

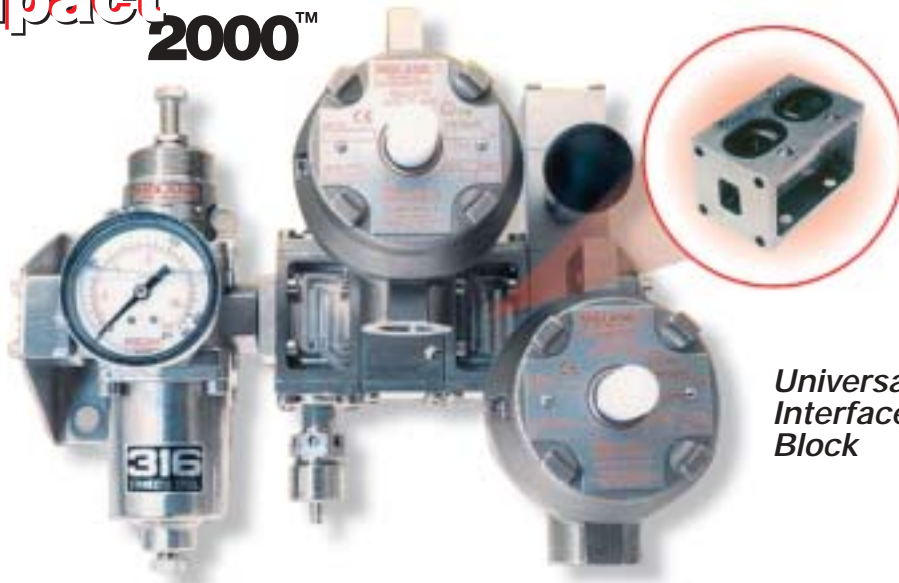
through innovative products and quality service

Engineered Solutions

Midland-ACS welcomes enquiries for special products to meet individual applications. Our broad capability ensures that single-piece or high-volume production can be manufactured cost effectively. **Midland-ACS** engineers have many years of experience in designing and manufacturing standard and special products. Their experience may have already solved your specific application problem.

Customer-Driven Solutions: **IMPACT 2000™**

impact
2000™



**Universal
Interface
Block**

In addition to our custom capabilities, **Midland-ACS** is renowned for customer-driven standard product development. This expertise is well-illustrated in our International Modular Pneumatic Actuator Control Technology, or **IMPACT 2000™**, a high-integrity assembly in 316 Stainless Steel that saves up to 30% on cost and 25% on weight, with improved overall system integrity.

Lighter, stronger and more compact than panel mounting, **IMPACT 2000™** offers a significant reduction in total installed cost in both CAPEX and OPEX over panel mounted assemblies. The modular system does away with complex arrangements using panels, pipes and additional fittings. Using a range of field-proven components; spool, poppet or direct-acting valves; and filter regulators, all are connected in series using a universally compatible interface block and mounted directly onto the valve actuator.

Each unit is supplied, assembled and tested, ready to fit and operate. No design work is required from the contractor and all components are kept in stock, resulting in very short lead times. **IMPACT 2000™** components are ideal for both hazardous area and industrial use, with ATEX, CENELEC, NEMA, UL and CSA approvals. The units will interface with all global pneumatic actuators.

IMPACT 2000™ was conceived and created in direct response to customer feedback for a lighter, more efficient system, incorporating components from the already comprehensive and field-proven **Midland-ACS** product range, to reduce costs and improve efficiencies.

As a result of **IMPACT 2000™** development, **Midland-ACS** can offer customers a proven, highly efficient individually tailored solution that exceeds expectations – with the added benefit of standard product lead times.

Registered with

1st
POINT
ASSESSMENT



Our Company

Midland-ACS has been a major supplier of 316 Stainless Steel control equipment to the oil, gas and petroleum industry for over 40 years. In that time, customers around the world have relied on our products to ensure that equipment and systems work safely, reliably and efficiently. The company has continually developed innovative products to meet increasing demands and expectations of our customers. With the added expertise of **Actuator Control Systems** into the **Midland** product family, **Midland-ACS** has expanded its capabilities to include both pneumatic and hydraulic valve solutions.

Global Representation

- 
- **Australia**
 - **Belgium**
 - **Brasil**
 - **Canada**
 - **Finland**
 - **France**
 - **India**
 - **Indonesia**
 - **Italy**
 - **Malaysia**
 - **Netherlands**
 - **Norway**
 - **Singapore**
 - **South Africa**
 - **South Korea**
 - **Spain**
 - **Sweden**
 - **United Arab Emirates**
 - **United Kingdom**
 - **United States**
 - **Venezuela**

Our Customers

Midland-ACS's growing list of customers includes many well-known multinational companies that reflect our international presence:

- **ABB Control Valves**
- **Bettis Actuator**
- **Biffi Actuator**
- **Brown and Root**
- **Cameron Willis**
- **Cooper Cameron**
- **Dresser Masonelian**
- **Emerson Process Management**
- **Flowserve**
- **Fluor Daniel**
- **Kvaerner**
- **Masterflow**
- **Mokveld**
- **N-Line Valves**
- **Neles-Controls**
- **Paladon Systems**
- **Rotork Fluid Systems**
- **Scana Industries**
- **Severn Glocon**
- **Shell Expro**
- **SPX Valves**
- **Statoil**
- **Varco Shafer**
- **Weir Valves & Controls**



IMPACT 2000™ MANIFOLD

SPECIFICATIONS

FEATURES/BENEFITS



- **Body Material:** 316 Stainless Steel
- **Valve Types:** Direct Acting, Spool or Poppet
- **Port Sizes:** 1/4" (Cv 1.00) and 1/2" (Cv 3.50)
- **Larger Valve Circuits:** Can be integrated into 3/4" (Cv 10) + 1" (Cv 14)
- **Approvals:** ATEX, CENELEC, NEMA, UL and CSA
- **Lubrication:** All Units Non Lube
- **Maximum Pressure:** 12 bar

- Allows any Combination of Components
- Saves up to 30% on Cost; 25% on weight
- Compact and High-Strength
- High Integrity from Static O-ring Seals
- No Pipes or Fittings
- Simple Auxiliary Take-off: Tanks, Gauges, etc.
- Units will interface with all global pneumatic actuators

PNEUMATIC & HYDRAULIC CYLINDERS

SPECIFICATIONS

FEATURES/BENEFITS



- **Body Material:** Round Body and Tie Rod
- **Valve Types:**
 - ISO 6431 - Tie Rod w/ all 316 SS
 - ISO 6431 - Tie Rod w/ all 316 SS Barrel and Acetal Head & Cap
 - NFPA - Tie Rod
- **Port Sizes:** BSP and NPT
- **Rod End Styles:** Single or Double
- **Action:** Single Acting/Spring Return & Double Acting
- **Mounting Styles:** All Popular Styles
- **Pressure Rating:** Metric - 10 bar; NFPA - 17 bar Hydraulic Cylinders up to 69 bar.

- Worldwide interchangeability through ISO and NFPA styles
- Adjustable cushions for end-of-stroke energy absorption
- Long life, non-lube construction for harsh conditions
- Environmentally friendly
- Available in any length
- Manufacture special products to your specifications

FILTERS/REGULATORS*

SPECIFICATIONS

FEATURES/BENEFITS



- **Units:** Filters, Regulators, Filter/Regulators & Lubricators
- **Port Sizes:** 1/4", 3/8", 1/2", 3/4" & 1" BSP & NPT
- **Fluids:** Air and Other Gases
- **Max Inlet Pressure:** Filter/Regulators, 20 bar
- **Drain Types:** Automatic or Manual

- 316 SS construction throughout
- Large flow path minimizes pressure drop
- Standard Viton seals
- Meets NACE requirements
- Built-in secure labeling and tagging facility
- Integral mounting holes eliminate need for mounting brackets and are threaded for panelmount capabilities
- Five different pressure ranges
- Low bleed rate and high relief flow

PNEUMATIC VALVES*

SPECIFICATIONS

FEATURES/BENEFITS



- **Valve Types:** Spool, Poppet and Slide
- **Ports & Configurations:** 3/2, 4/2, 4/3, 5/2, & 5/3
- **Port Sizes:** 1/8" thru 1-1/2" BSP or NPT
- **Porting Styles:** Body Ported, Flange, NAMUR & Subbase
- **Solenoid Operators:** Air, Manual, Mechanical Solenoid & Combinations
- **Media:** Air, Inert Gases and Some Liquids
- **Maximum Pressure:** 12 bar

- Rugged construction for harsh environments
- Modular construction for flexibility and multiple configurations
- Can be modified to handle aggressive liquids
- Large flow paths for high flow rates
- Custom solutions available

ANCILLARIES

SPECIFICATIONS

FEATURES/BENEFITS



- **Types:**
 - Pressure Switches
 - Flow Regulators – inline
 - Breathers/Mufflers
 - Exhaust Flow Regulators
 - Eyeball Indicators
 - Thermal Fuses
 - Check (Non-Return) Valves
 - Quick Exhaust and Shuttle Valves
 - Air Reservoirs

- Wide variety to meet all of your application requirements
- Most are Available in Stainless Steel or Brass
- Rugged construction for harsh conditions and offshore or other severe environments
- Can be modified to handle some aggressive liquids
- Custom solutions available

* denotes Low Temperature (-50°C) option available.

Notes: -20°C to +80°C temperature range standard. High Temperature (+180°C) option also available (please consult factory).

MIDLAND-ACS ELECTRO-HYDRAULIC VALVE ACTUATION PRODUCTS

HYDRAULIC CONTROL VALVES*



*see accompanying selection chart, facing page, for details.

- Topside and Subsea
- Stainless Steel Construction
- Zero Leakage
- High Pressure Solenoid and Pilot Operated ATEX, EExme, EExia, EExde and UL
- Designed for Severe Environments and Hazardous Zones 0 & 1
- Special Valves Available to Suit Customer Application Requirements

ELECTRO-HYDRAULIC RING MAIN VALVE ACTUATORS



- For Choke, Gate, Plug, Globe, Butterfly and Ball Valves
- Zones 0 & 1 Hazardous Area ATEX Approval Certifications
- Selected Materials and Ingress Protection for Severe Environments
- Low Power Consumption and Maintenance; Fast Stroking Speeds
- Leaktight Solenoid Valves Ensure Precise, Accurate Valve Positioning (+/- 1%); Modulating and Stepping Modes
- Fast Fail-safe Modes, Stayput, Open or Closed, Achievable on Loss of Electrical Power, 4-20 mA Command Signal and Hydraulic Pressure
- Retransmission of 4-20 mA Signal Confirms Valve Position
- Infrared Handheld Keypad for Local Manual Override and Recalibration

ELECTRO-HYDRAULIC SELF-CONTAINED VALVE ACTUATORS



- For Choke, Gate, Plug, Globe, Butterfly and Ball Valves
- Zones 0 & 1 Hazardous Area ATEX Approval Certifications
- EExd, ATEX Motorised Pump Units
- Accumulator Storage Capacity
- Temperature Fluid Level and Pressure Remote Indication Switches
- Low Powered for Solar Powered Installations
- Sunshades for Higher Temperature Environments

ELECTRO-HYDRAULIC TURBINE BYPASS CONTROL SYSTEMS



- Turbine Bypass, Control, Isolation and Spray Water-type Valves Require Positional, Modulating and Fast-acting, Fail-safe Modes
- Accumulator Storage Capacity
- Linear Actuator Types Available: Double Acting, Single Acting, and Fail-safe
- Integral Linear Variable Displacement Transducers and Valve Stem Mounted Limit Switches Provide Remote Position Feedback of Valve and Actuator
- Manual Override Facility via Hydraulic Hand Pump
- Designed to Meet Exact Customer Specifications
- Minimised Operating, Electric Power Consumption, Running and Maintenance Costs
- Centralised Electro-hydraulic Power Units
- Compatible with Wide Range of Mineral Oils, Fire-resistant, Eco-friendly High Water-based Operating Fluids



MIDLAND-ACS

Hydraulic Valve Selection Chart

VALVE SIZE			DN2	DN3	DN5	DN6	DN10	DN15	DN25
NOMINAL FLOWRATES	LITRES/MIN	FLUIDS	1	3	20	15	40	100	200
	M3/HR	GASES	-	1	-	4	-	-	-
		NPT	1/4"	1/4"	3/8"	1/2"	1/2"	3/4"	1"
AVAILABLE FUNCTIONS* (see below)			1,3,7	1-10	1-4 6-7	1-10	1-4 6-7,11	1-4 6-7	1-4 6-7
MAXIMUM WORKING PRESSURE (bar)		FLUIDS	690	1,140	690	425	710	400	400
		GASES	-	200	-	100	-	-	-
INTRINSICALLY SAFE EExia IIC T6 BASEEFA, UL, ATEX II 1 G ZONE 0			•	-	•	-	•	•	•
INCREASED SAFETY EExme II T4/T6 BASEEFA, UL, ATEX II 1 G ZONE 1			•	•	•	-	•	•	•
FLAMEPROOF EExde IIB T4/T6 BVS			-	•	•	•	•	•	•
HYDRAULIC PILOT OPERATED			•	•	•	•	•	•	•
AIR & GAS PILOT OPERATED			•	•	•	•	•	•	•
MANUALLY OPERATED			•	•	•	•	•	•	•
MANUAL OVERRIDE FACILITY			•	•	•	•	•	•	•
MANUAL RESET FACILITY			•	•	•	•	•	•	•
MANUAL DETENT FACILITY			•	•	•	•	•	•	•
PLUNGER/CAM OPERATED			-	•	-	•	-	-	-
WATER GLYCOL FLUIDS			•	•	•	•	•	•	•
LOW TEMPERATURE -50°C OPTION			•	•	•	•	•	•	•
SUBSEA SOLENOID OPERATED			•	-	-	-	•	-	-
SUBSEA HYDRAULIC PILOT OPERATED			-	-	•	•	•	•	•
			DN2	DN3	DN5	DN6	DN10	DN15	DN25

* FUNCTION SCHEMATICS

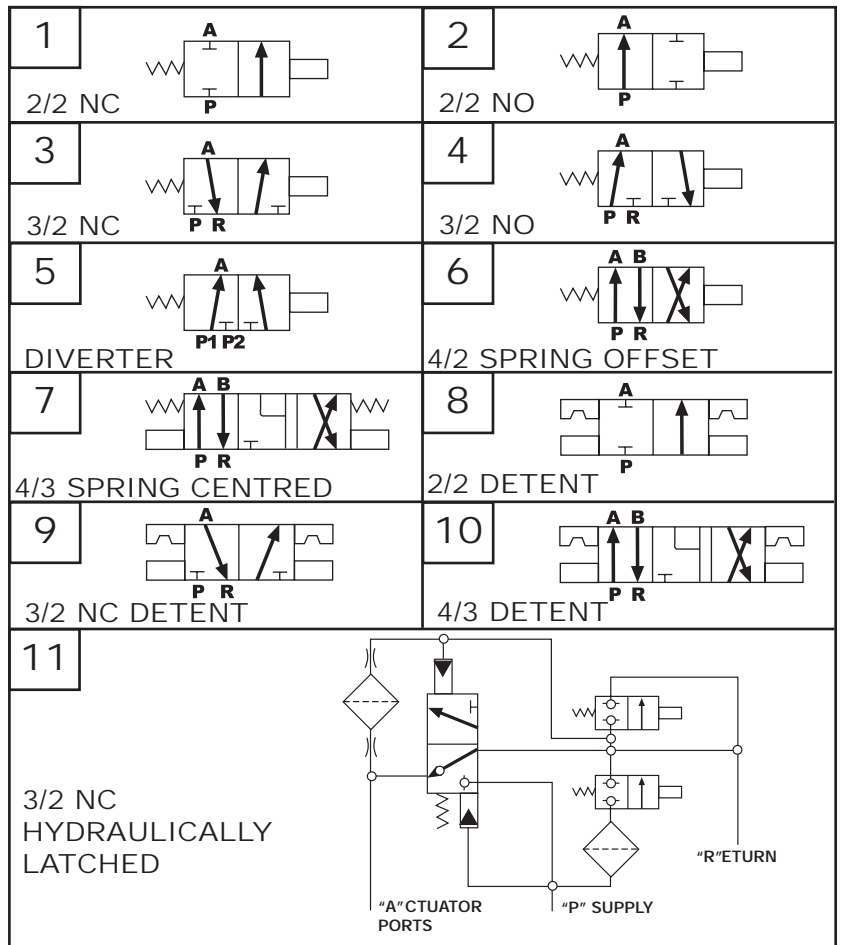
DN2



DN3



DN10



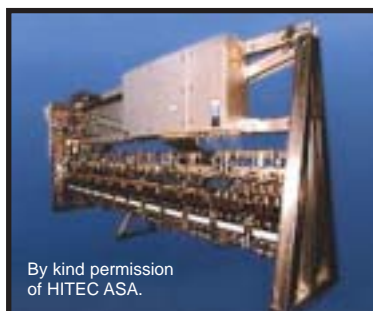
MIDLAND-ACS INDUSTRIES & APPLICATIONS

For more than 40 years, Midland-ACS has been involved in numerous industries and applications, including:

- **Marine and Offshore Facilities**
 - Emergency Shutdown Systems (ESD)
 - Fire Damper and Deluge System Controls
 - Water Desalinization
 - Automatic Door Controls
 - Local Wellhead Controls



- **Offshore Oil & Gas**
 - Installations, Topside & Subsea
 - Onshore Oil & Gas Pipelines
 - Mining



- **Chemical & Petroleum Plants**
 - Emergency Shutdown Systems (ESD)
 - Fire Damper & Valve Actuator Controls

- **Power Generation**
 - Combined Cycle Power Plants
 - Hydroelectric & Nuclear Plants

- **Instrumentation**

- **Food & Dairy Processing**
 - Food Preparation Machines
 - Cheese Making & Brewery Kegging



- **Medical & Pharmaceutical**

- **Electronics & Semi-Conductors**
 - Printed Circuit Board Production

- **Waste Disposal & Pollution Control**

- **Material Handling & Process Industries**

- **Research Labs & Testing Equipment**

- **Image Processing Equipment**

- **Transportation**

- **Pulp and Paper**

- **Water and Wastewater Treatment**
 - Penstock Actuation
 - Reverse Osmosis Systems



- **Fish Hatcheries & Ladders**

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