SPX is a Fortune 500 multi-industry manufacturing leader, headquartered in Charlotte, North Carolina. SPX manufactures and markets products, components, services and technologies that are integral to meeting today’s challenges and tomorrow’s needs. We are a place where innovation is fostered, and the real needs of business are understood. We transform ideas into powerful solutions to help our customers meet their goals, overcome business challenges and thrive in a complex, always changing marketplace.

SPX’s Flow Technology segment designs, manufactures and markets engineering solutions and products used to process, blend, meter and transport fluids. We also offer equipment for air and gas filtration and dehydration. Our leading brands have global operations which service the food + beverage, power + energy, and industrial processes.

**ClydeUnion Pumps, an SPX Brand - Generations of Experience**

Whilst the name is relatively new, the ClydeUnion Pumps brand is known worldwide for supplying reliable and robust engineered pumping solutions stemming from over 140 years of industry expertise. Our experience spans across several complex industries including oil and gas, nuclear and conventional power generation, desalination and other key markets relevant to our product portfolio.

▷ ClydeUnion Pumps
High technology pumps for the most demanding services

ClydeUnion Pumps, an SPX Brand, specialises in the design and manufacture of API 610 centrifugal pumps and pumping packages. At ClydeUnion Pumps you will find a commitment to quality throughout the company. Our Quality Management System is fully approved to ISO 9001:2008 and independently verified to comply with the latest quality standards. ClydeUnion Pumps has a worldwide reputation for providing optimised reliability in the most severe duty applications.

PIPEDINES
ClydeUnion Pumps has worldwide experience of engineered pumping systems for pipeline applications. Transfer of crude and refined products, often in remote locations, demands a high level of pumping reliability. ClydeUnion Pumps has a reputation for supplying reliable pipeline pumps which can be found working throughout the world in the most hostile environments.

OIL + GAS PRODUCTION
Our pumps can be found operating wherever there are oilfields, both onshore and offshore. High efficiency and reliability are major benefits of ClydeUnion Pumps equipment – both of which are vital considerations in the oil and gas industry. Pumps have been supplied to satisfy a wide range of pumping services including high pressure seawater injection, crude oil transfer and pumps for handling all types of industry related fluids.

REFINERIES
Today’s complex refinery processes demand specialised pumping solutions. Extremes of temperature, high pressure and the ability to handle volatile fluids, calls for highly engineered pumps that can perform reliably in such arduous conditions. ClydeUnion Pumps has many years of worldwide experience in the supply of process pumps to the refinery industry and is committed in providing its customers with solutions for the most complex of pumping requirements.

REVERSE OSMOSIS
With high efficiency and reliability, our multi-stage pumps are ideally suited for seawater reverse osmosis. The ClydeUnion Pumps CUP-BB3, combined with energy recovery systems, provides a very efficient solution for your high pressure reverse osmosis pumping needs.

POWER
At ClydeUnion Pumps we have supplied boiler feed pumps for a wide range of power generation plants over many years. The experience gained in this field enables us to offer our customers engineered products, tailored to their specific requirements.

CUP-BB3 - Heavy duty, axially split, multi-stage pumps

The ClydeUnion Pumps CUP-BB3 is an axially split, multi-stage, double volute design for high pressure and high speed service. All units comply with API 610.

There are thousands of ClydeUnion Pumps CUP-BB3 pumps operating worldwide on services as diverse as:
- Seawater injection at 295 Bar (4,280 psi) discharge pressure and 6,200 rpm
- Pipeline applications
- Light hydrocarbon refinery services with a specific gravity of 0.45
- Sand laden crude oil where the CUP-BB3 running at 4 pole speeds has been used to replace traditional screw pumps

EASE OF MAINTENANCE
The simple construction of the CUP-BB3 pump offers ease of maintenance and reliability. A complete rotor changeout can be completed in under eight hours. On arduous seawater injection services the CUP-BB3 pump is only opened every four years for internal inspection and overhaul.

PUMPSETS + PACKAGES
ClydeUnion Pumps has extensive experience in providing complex pumpsets including electric motors, gearboxes, lube oil systems, steam turbines, diesel engines, control panels and instrumentation.
CUP-BB3 - Features

1. **BEARING ASSEMBLY**
   - 360° mounting gives class leading vibration levels
   - High capacity fan as standard
   - Flinger design improves lubrication and prevents ‘black oil’
   - Pure or purge mist options

2. **SEAL CHAMBER**
   - API 682 compliant
   - Space for dual seals
   - Easy access for maintenance
   - Locking collar arrangement as standard

3. **OPTIMUM NPSH PERFORMANCE**
   - Option for double suction impeller

4. **CASE WEAR RINGS + BUSHES**
   - Positive location
   - Pinned for anti-rotation at split line

5. **INTEGRALLY FLANGED AUXILIARY CONNECTIONS**
   - Eliminates weld connection
   - Eliminates need for bracing
   - Conventional options available

6. **TOP BOLTED CAP NUTS**
   - Easy access and removal

7. **DOUBLE VOLUTE DESIGN**
   - Minimises radial thrust loads for optimised bearing and seal life

8. **SINGLE PIECE THROTTLE BUSHING**
   - Designed for pressure breakdown
   - Sized to balance axial thrust

9. **HEAVY DUTY LUGS**
   - Rated for full pump weight

10. **ROBUST ROTOR DESIGN**
    - Stepped shaft for ease of assembly
    - Optimised rotor dynamics and power transmission capability

11. **INTEGRAL WEAR RINGS**
    - Reduced risk of failure due to wear part displacement
    - Retrofit with conventional rings when necessary
    - Conventional options available

12. **FLANGE FINISHES + RATING**
    - Heavy duty class 900 as standard
    - Higher pressure options available
    - Raised face and ring type joint options available

13. **NOZZLES INTEGRAL IN BOTTOM HALF CASE**
    - No need to remove pipework
    - Handles API 610 nozzle loads

14. **AXIALLY SPLIT CASING**
    - Hydraulic re-rates available within existing casing
    - Minimises rotor change-out time
    - Complete balancing and inspection without rotor disassembly
    - Near centreline mount

15. **SPLIT CENTRE BUSHING**
    - Facilitates inspection, removal and replacement
    - Maximises rotor support and dampening

16. **IMPELLERS**
    - Back-to-back design to minimise axial thrust
    - Individually secured
    - Precision cast

17. **INTEGRAL BALANCE LINE**
    - Equalises pressure in seal cavities

18. **API SHAFT TAPER**
    - For easy coupling removal

19. **MATERIAL OPTIONS**
    - All API 610 material options
    - Other material options available
    - NACE compatible
    - Non-metallic wear parts
Optional arrangements + features

**STANDARD BALL/BALL BEARING ASSEMBLY**
- Designed for minimum 40,000 hour L10 life
- Surpasses the API limits for oil sump temperature and bearing temperature rise
- Angular contact bearings with machined brass cages
- Rapid bearing stabilisation achieves operating temperatures well within API limits
- INPRO™ bearing isolators throughout, give reduced contamination for improved bearing life
- Proven reliability in a wide range of applications, speeds and environments

**OPTIONAL SLEEVE/BALL BEARING ASSEMBLY**
- Energy density applications beyond ball/ball bearing limits
- Available for applications up to and beyond API limits
- Hydrodynamic radial bearing and optimally sized angular contact thrust bearings designed for 100,000 hour L10 life, under stable operating conditions
- Proven reliability on unattended pipeline pumping stations

**CP SEAL SYSTEM**
- All CUP-BB3 pumps are designed for use with our patented CP System (Plan 53C)
- CP System technology offers a proven history in improving seal life, particularly under varying suction pressures
- The unique CP System design provides an excellent mechanical sealing environment in the most demanding process conditions

**CARTRIDGE BEARING DESIGN**
- “Maintenance friendly” design alternative, requiring a concession when used on an API pump
- Allows bearing removal and refit within an hour
- Cartridge can be pre-assembled in clean environment prior to transportation to the site
- Contains all the advanced features of our standard design

**SPLIT WEAR RINGS**
- Available for ease of maintenance

**NON METALLIC WEAR PARTS**
- Improved operation and performance efficiencies

**INTER-STAGE TAKE-OFF**
- Secondary fluid take-off line available for intermediate pressure and process flow requirements

**Cp Seal System**
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- Contains all the advanced features of our standard design

**Split Wear Rings**
- Available for ease of maintenance

**Non Metallic Wear Parts**
- Improved operation and performance efficiencies

**Inter-Stage Take-Off**
- Secondary fluid take-off line available for intermediate pressure and process flow requirements

These charts cover the CUP-BB3 standard pump range. Other engineering designs exist for extreme applications.
Global aftermarket capability best in service + response

Our customer focused aftermarket organisation is positioned to provide comprehensive care for our varied and diverse product lines. Heritage and obsolete products benefit from the same level of attention and expertise ensuring that reliability and availability is maximised irrespective of a pump’s length of service.

**GENUINE HIGH QUALITY**

Original or upgraded specification spare parts, coupled with full engineering design capability, enables longevity of reliable operation. Highly skilled and experienced service engineers ensure accuracy in build and optimised performance. The worldwide presence of ClydeUnion Pumps offers local service facilities in over 40 countries.

**SERVICE SOLUTIONS**

ClydeUnion Pumps is committed to supporting our installed base wherever it may be. Depending on your location we will provide either direct service support or support via our local authorised service partners. Whichever option is provided, you can be assured of the best attention from fully qualified and experienced engineers.

- Upgrades + re-rates
- Service + overhaul
- Installation + commissioning
- Technical support
- Inventory management
- 3rd party equipment