

CUP OH PUMPS

MODELS OH2, OH3 & OH4

CLYDEUNION®
PUMP



CLYDEUNION PUMPS – AN INTRODUCTION

ClydeUnion Pumps is the culmination of a long and eventful 140-year engineering legacy. We play an instrumental role in securing the vital energy and water resources that a sustainable society will rely on in the future. In fact, many nuclear power plants currently in operation around the world employ our reactor feed pumps.

Not only servicing the Nuclear market we are also a valued flow control engineering partner to the Oil & Gas industry – supporting upstream,

downstream, transportation and offshore exploration activities. Other key areas we address include seawater desalination, wastewater treatment, mining and steel production.

Combining a wealth of pump and system design knowledge, latest design, analytical and pump testing equipment, we are confident we can boost efficiency and ensure prolonged operation of our products.



COST-EFFECTIVE, PROVEN RELIABILITY IN DEMANDING APPLICATIONS

Celeros Flow Technology is synonymous with quality and reliability. Celeros FT OH pumps were manufactured in a plant whose Quality Management System was certified as being in conformity with ISO 9001:2015 by a certification body. Celeros FT has a worldwide reputation for providing optimized reliability in the most severe duty applications.

The latest CUP-OH pumps are designed to the most recent edition of API 610 and based upon decades of experience in supply to Oil & Gas, Chemical, Petrochemical, Power Generation and Desalination applications. Celeros FT has used its expert engineering capability and process knowledge to enhance this range of pumps for high performance and reliable operation at competitive prices.

- Without compromise on quality, the CUP-OH has been reengineered to ensure it is a highly competitive solution
- Thousands in operation worldwide across diverse applications

- One of the most robust pumps of its type in the industry, featuring minimal shaft deflection to exceed API 610 requirements
- Simple construction designed for easy maintenance with back pull-out assembly
- Decades of proven engineering excellence with heritage from Union Pump, David Brown, Guinard Pumps and Clyde Pumps brands
- Complete solutions: Proven capability in providing even the most complex of bespoke pumpsets including electric motors, gearboxes, steam turbines, diesel engines, control panels and instrumentation

PUMP OVERVIEW

Pump types:

- **CUP OH2:** Single stage, API 610 end suction horizontal overhung pump
- **CUP-OH2-LL:** Low flow, API 610, radially split overhung pump
- **CUP OH3:** Single stage, API 610, vertical in-line pump with separate bearing bracket
- **CUP OH4:** Single stage, API 610, vertical in-line overhung pump



CUP OH2 PUMP

- Rigid shaft design with minimized deflection at the seal faces to below API 610 criteria, provides a longer mechanical seal life
- High rigidity baseplate designs are among the stiffest in the industry
- Bearing housing cooling fins provide optimum heat transfer
- Long bearing life: minimum 25,000 hour (L10) Oil flinger disks used as standard, reducing issues associated with over-lubrication
- Machined brass cages bearings

CUP-OH2-LL

All of the pumps in the CUP-OH2-LL range comply with API 610 and are designed for exceptional performance and long life in the most demanding of process conditions.

- Multiple hydraulics in just a few frames sizes
- Centerline mounting meets stringent API noise and vibration limits
- Self-venting with end suction, top centerline discharge
- Oil flingers used as standard, reducing issues associated with over-lubrication
- Bearing isolators throughout
- Bearing frame cooling fins provide optimum heat dissipation
- Designed to accommodate high temperature and suction pressure services



CUP OH3/OH4 PUMPS

The ClydeUnion Pumps' CUP-OH3 and CUP-OH4 models are advanced design single stage vertical in-line bearing centrifugal pumps with exceptional flexibility and versatility to meet the requirements of a wide variety of pumping applications. The units are ruggedly designed and manufactured to the latest API 610 and API 682 standards for minimum maintenance and heavy-duty requirements for general industry, power, desalination, oil and gas applications.

The CUP-OH3/OH4 are a back pull-out design allowing the complete rotating assembly to be removed without disturbing the suction or discharge pipework.

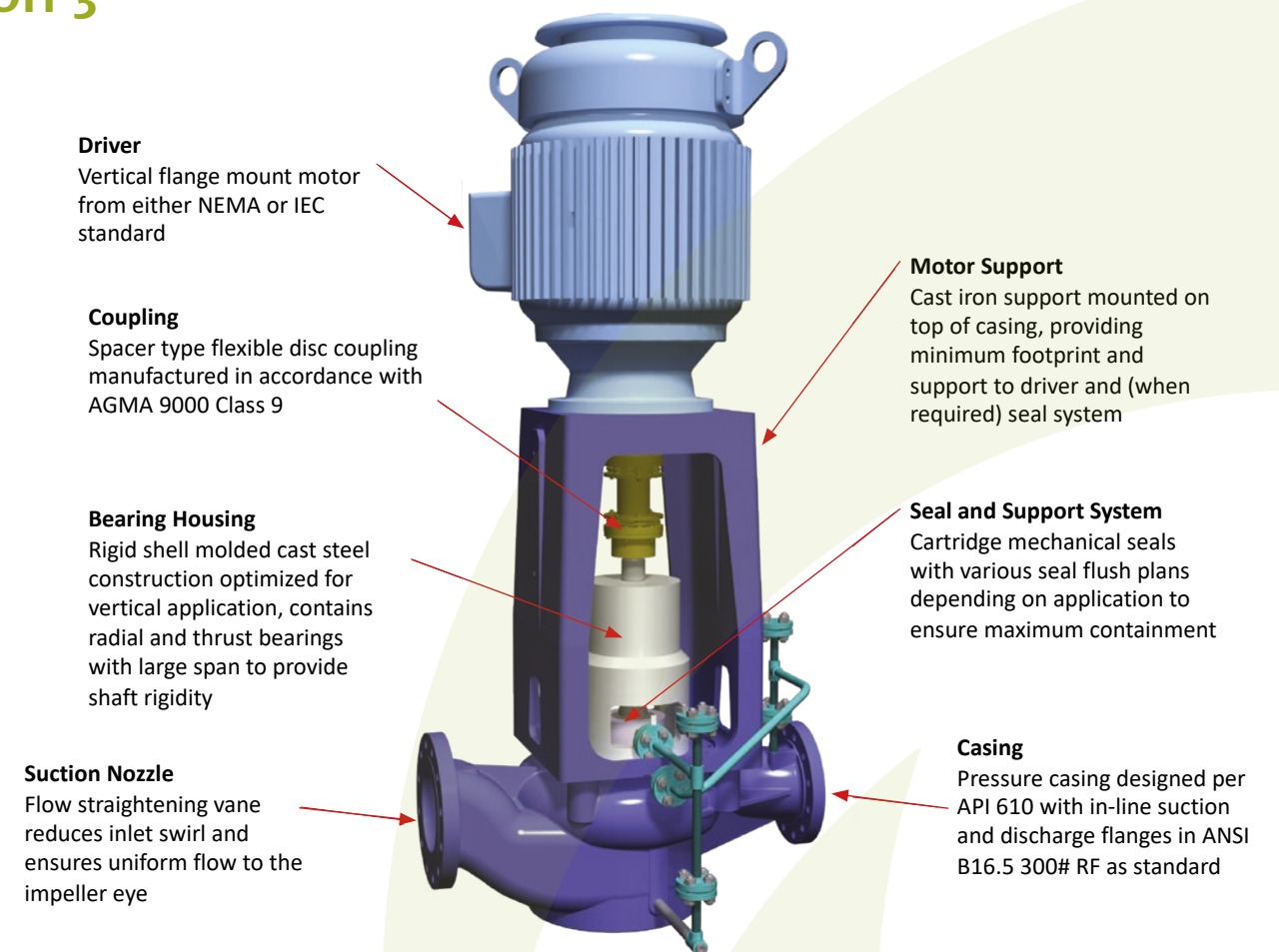
There are thousands of ClydeUnion CUP-OH Pumps operating worldwide on services as diverse as handling heat transfer fluids and other products at 426°C (800°F) service temperatures to light hydrocarbon refinery services with specific gravities of 0.45 and less. A wide variety of fluids are pumped as standard with custom built models also available for extreme applications including S9 construction for use with HF acid.

ClydeUnion Pumps legacy brands including HHS, DB10, SMK H-OP, VLK, VHK, VTK, and DB64 provide the industry with a comprehensive hydraulic coverage.

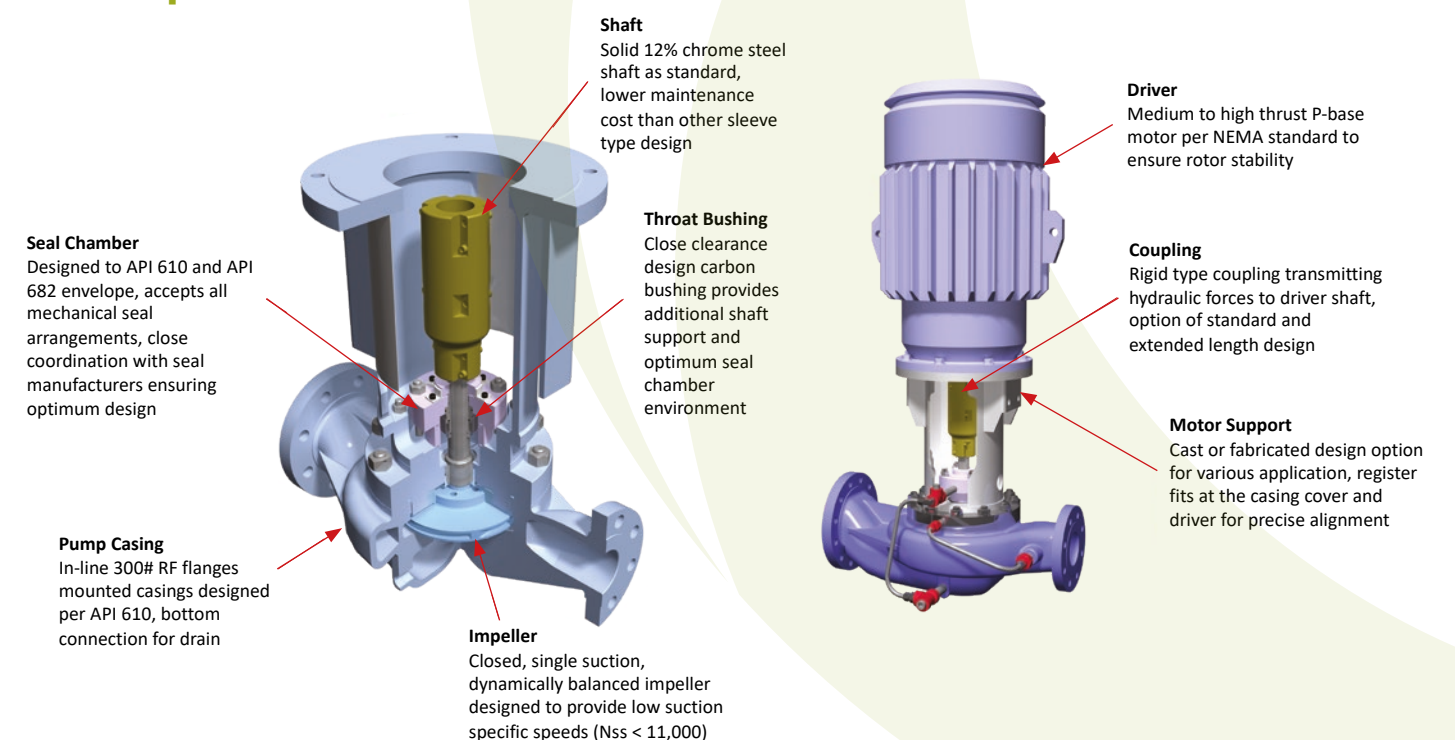
TYPICAL APPLICATIONS

- Refinery processes
- Petrochemical process and transfer
- Offshore applications
- Produced water treatment
- Flare knock-out drum
- Sour water
- Amine sump
- Gas processing
- Petrochemical process and transfer
- Desalination
- Nuclear / conventional power
- Jet fuelling systems

OH 3



OH 4



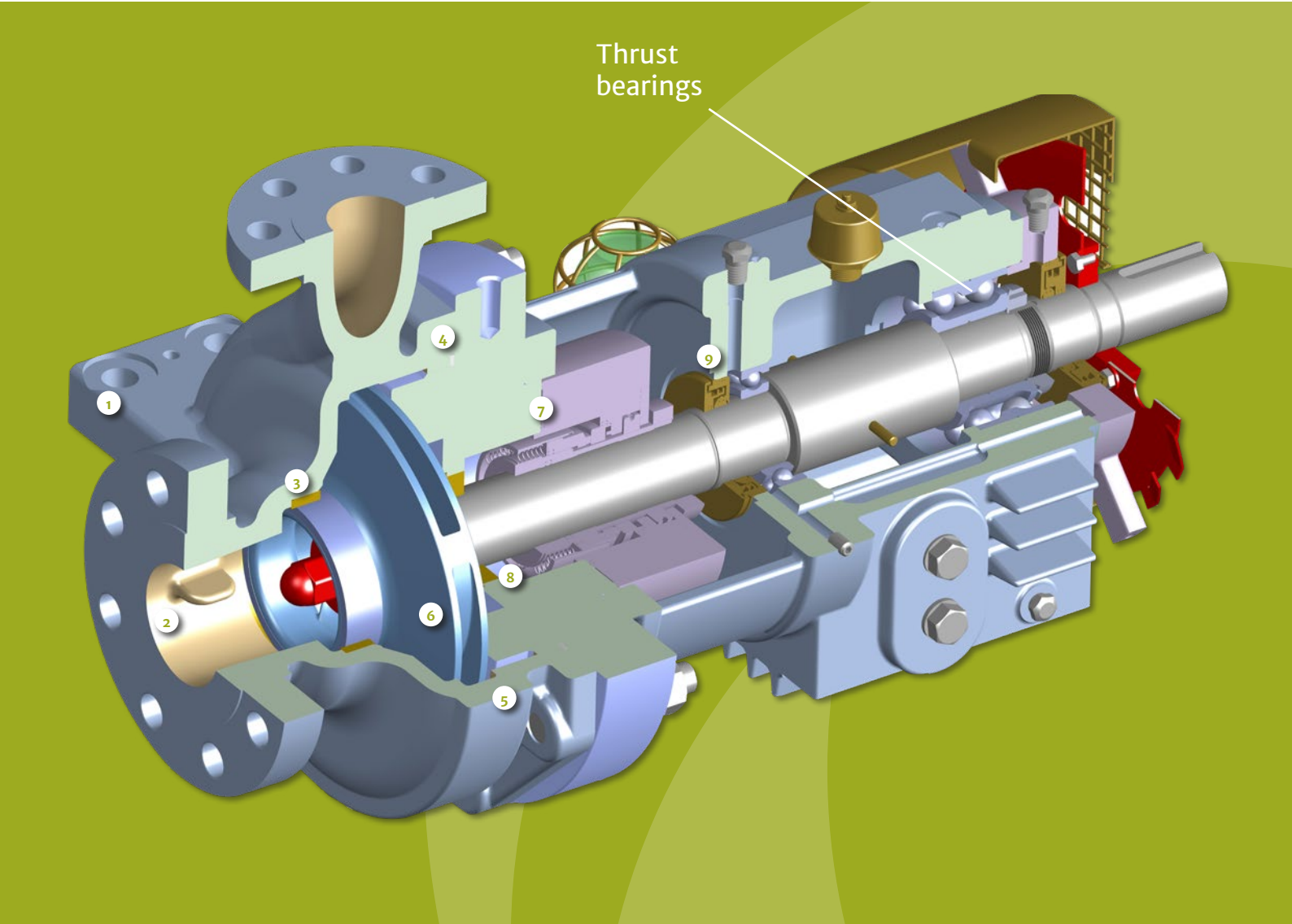
TECHNICAL DATA

	CUP-OH2	CUP-OH3	CUP-OH4
Capacity	up to 7,500 USgpm / 1,700 m³/hr	up to 6,000 USgpm / 1,365 m³/hr	up to 6,000 USgpm / 1,365 m³/hr
Delivery head	up to 1,148 ft / 350 m	up to 1,000 ft / 305 m	up to 1,310 ft / 335m
Temperature	up to 800 °F / 426 °C	up to 700 °F / 370 °C	up to 700 °F / 370 °C
Speeds	up to 4,000 rpm	up to 3,600 rpm	up to 3,600 rpm
Flange drilling	ANSI or BS	ANSI or BS	ANSI or BS

FEATURES AND BENEFITS

All of the pumps in the CUP-OH2 range comply with API 610 and are designed for exceptional performance and long life in the most demanding of process conditions.

- Centerline mounting meets stringent API 610 latest edition noise and vibration limits
- Exceptionally high rigidity baseplate designs
- Long bearing life: minimum 25,000 hour (L10)
- Oil flinger used as standard, reducing issues associated with over-lubrication
- Bearing frame cooling fins provide optimum heat dissipation



1. Casing

- Centreline mounted casings, API 610 nozzle loads

2. Suction nozzle

- Flow straightening vane reduces inlet swirl to ensure uniform flow into the impeller eye
- Top suction nozzles available on selected sizes

3. Wear rings

- Renewable case and impeller wear rings
- Rings are secured by tack welds as standard

4. Casing to cover

- Metal to metal fit with controlled compression gasket
- Series 300 stainless steel flexible graphite gasket used as standard

5. Casing drain

- Casing can be fully drained, socket weld flange drains as standard

6. Impeller

- Designed to provide low suction specific speeds
- Streamlined impeller locknut used for improved suction performance
- Balance holes are optimised to ensure long bearing and seal life

7. Seal chamber

- API 610 and API 682 compliant
- Space for dual seals, easy access for maintenance

8. Throat bushing

- Close clearance design helps provide optimum seal chamber environment
- Pressured in from high pressure side

9. Radial bearings

- Single row, deep groove bearings
- Machined brass cages on thrust bearings

WIDE RANGE OF OPTIONS AVAILABLE

Metallurgy options

- Specialized coatings for use with abrasive fluids to extend service life
- Non-metallic wear parts
- Specialized metallurgy such as Monel, Hastelloy B&C, Alloy 20, and Super Duplex for aggressive services
- API material options from S5 to D2 –NACE
- Low temperature materials

Bearing housing sealing & cooling options

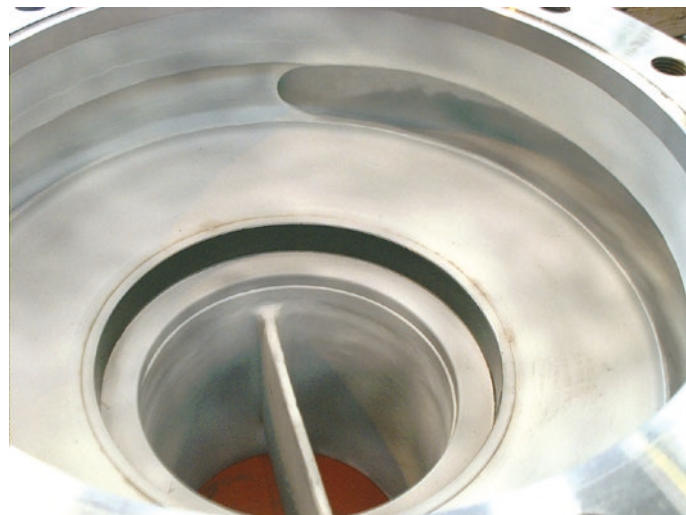
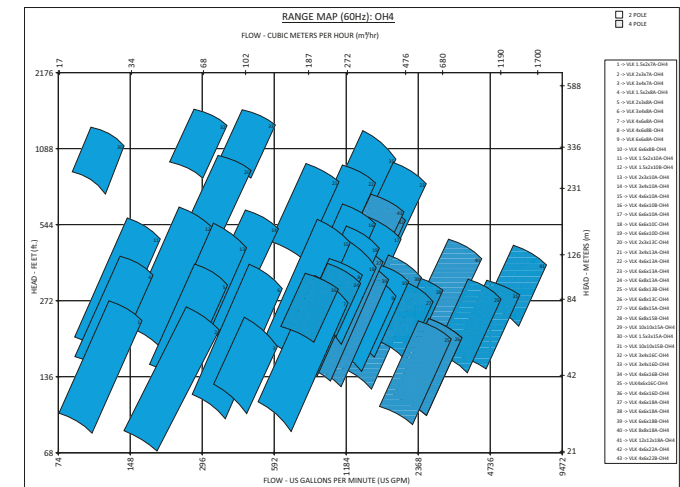
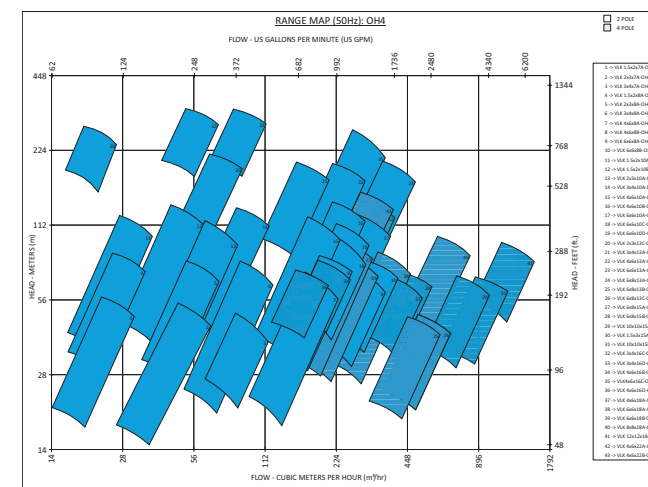
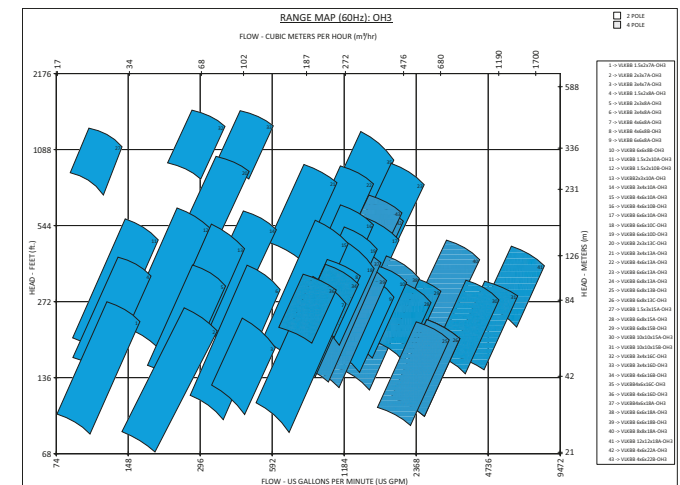
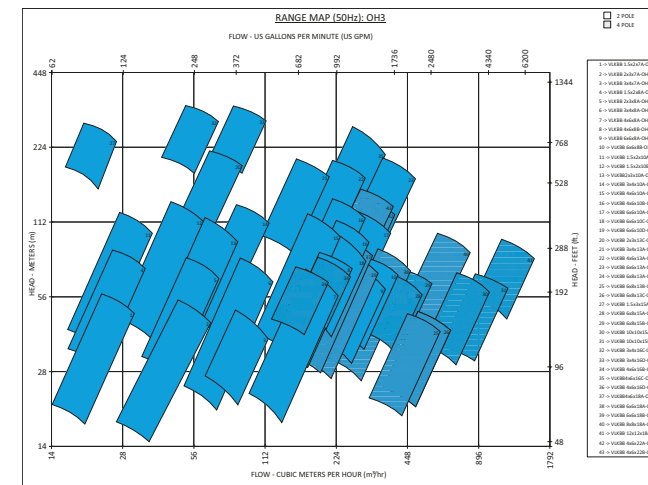
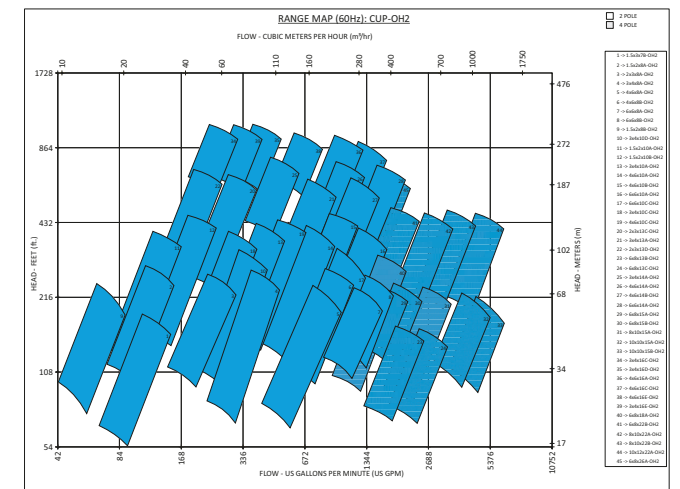
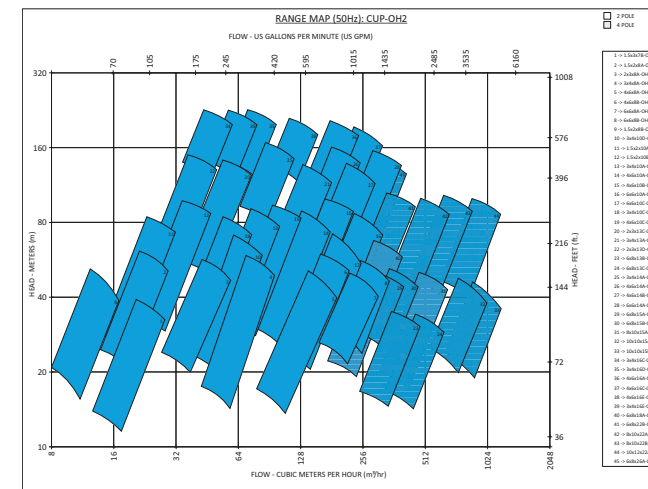
- High thrust configurations available
- Fan or water cooling available

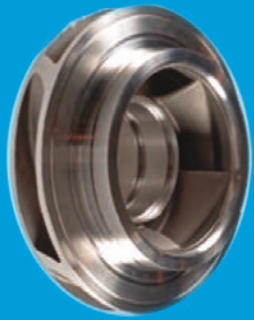
Bearing house lubrication

- Provision for purge or pure oil mist
- Optional oil ring lubrication available

Advanced sealing with unique CP System (equivalent to API Plan 53C)

Celeros FT's patented CP system provides a supply of cooled barrier fluid to a dual pressurized seal. It has been proven to improve seal life, particularly under varying suction pressures, and assures robust mechanical sealing even in the most demanding process conditions. All CUP-OH2 pumps can be used with the CP System if required.





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.

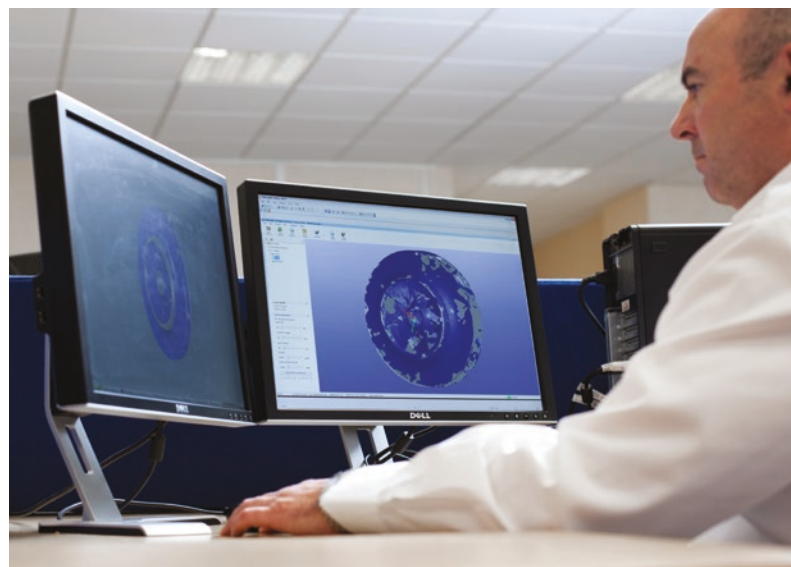
GENUINE HIGH QUALITY

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 Celeros FT offers local service facilities globally.

SERVICE SOLUTIONS

Celeros FT 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
- Re-engineering
- Service & overhaul
- Installation & commissioning
- Technical support
- Inventory management
- 3rd party equipment



| **SPEED**
| **EXCELLENCE**
| **PARTNERSHIP**

CLYDE UNION®
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Celeros Flow Technology reserves the right to incorporate our latest design and material changes without notice or obligation. Design features, materials of construction, and dimensional data, as described in this bulletin, are provided for your information only and should not be relied upon unless confirmed in writing. Please contact your local sales representative for product availability in your region. For more information, visit www.celerosft.com.