

# Flowserve and Chemours Joint Product Specification for Durco® Mark 3™ ASME Pump

#MA-00259-17



## Joint Product Specification overview

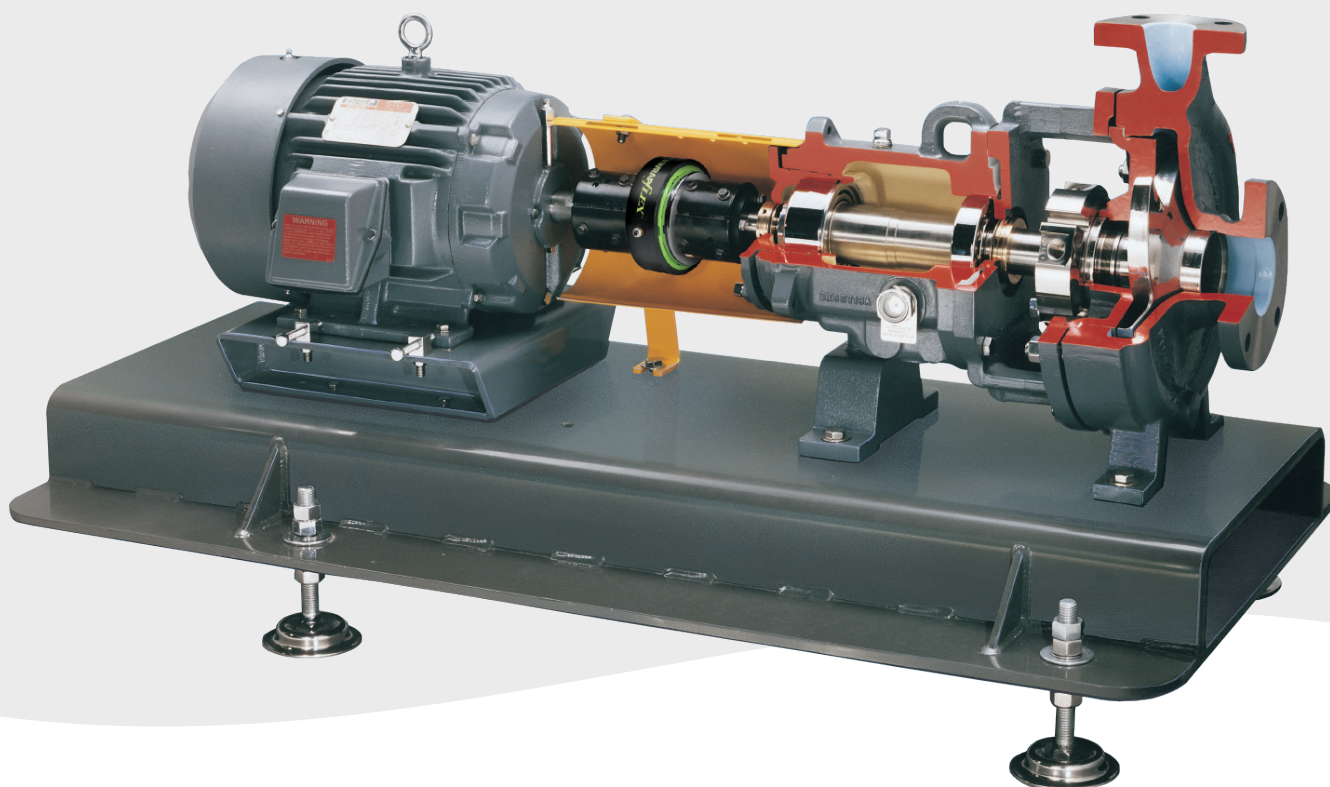
This Joint Product Specification (JPS) is the specification used by Chemours for ASME (ANSI) pumps. It was created by Chemours and Flowserve to provide pumps with the most cost-effective designs and features, while also providing the highest reliability. It ensures that the entire pump assembly is compliant with Chemours Engineering Practice 6-1-2 and eliminates the need to develop or write other specifications for ASME (ANSI) pumps.

## Durco Mark 3: The premier name in ASME chemical process pumps

The Durco Mark 3 chemical process pump provides outstanding hydraulic performance, unrivaled reliability and low total cost of ownership (TCO). Conforming to ASME (ANSI) B73.1, it incorporates many proven reliability- and performance-enhancing benefits:

- Renewable, high-efficiency performance over the life of the pump with the reverse vane impeller
- Optimal, predictable seal chamber pressures that are re-established after every impeller setting
- Maximal mechanical seal life due to an ideal seal environment created by the SealSentry™ seal chamber
- Robust shaft and bearing designs that minimize shaft deflection and extend mechanical seal and bearing life
- Fast and accurate impeller setting with the industry's most innovative external impeller adjustment mechanism

The Durco Mark 3 pump is available in multiple configurations, including low flow, recessed impeller and self-priming models.



## Specification details\*

### Power end

- ANSI 3A power end
- Solid shaft (no removable shaft sleeve), where possible
- Inpro/Seal® VBXX bearing isolators
- NTN or SKF bearings
- Viton® O-rings
- Oil bath lubrication
- Sight glass hole drilled and tapped on both sides of housing; glass installed on one side, other side plugged
- Tag installed indicating proper oil level

### Wet end

- Standard FML rear cover with large taper bore seal chamber and flow modifiers; others as required by application
- Mechanical seals to comply with Chemours alliance agreements
- ASTM A193 Grade B8 Class 1 gland fasteners
- Casing flanges must have flat face finish complying with ASME B16.5. Surface must have serrated finish having 0.46 to 1.0 grooves per mm (groove spacing: 24 to 40 per in.), and 3.2 to 12.8 µm (125 to 500 µin.) roughness.
- Casing fasteners must be ASTM A193 Grade B7 with PTFE coating per Chemours Engineering Practice 10-3-19.
- Reverse vane impeller preferred for most applications
- Alloy parts not painted

### Baseplate, coupling and motor

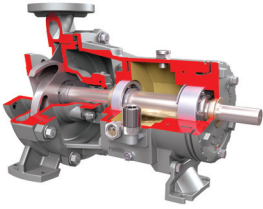
- Free-standing baseplate per Chemours Engineering Practice 6-1-11 (Durco Type C)
- Falk™ Wrapflex® coupling with wrought solid steel hubs; motor side hub with interference fit, keyway per AGMA 9002 and no setscrews; wrought solid steel QD bushing on pump shaft hub; hubs with electroless nickel plating and pulling holes on motor side; 60D green polyurethane flex element per Chemours Engineering Practice 6-12-2
- Flowserve Durco coupling guard compliant with ASME B15.1
- NEMA frame motors specified to Chemours Engineering Practice 13-3-1 for 50 or 60 Hz applications
- Motor alignment jackbolts
- Stainless steel shims
- Stainless steel pump and motor hold-down bolts

Some motor and pump combinations may require a different motor pedestal design to accommodate the relative centerline heights of the shafts.

\* This overview lists some of the “highlights” of the JPS, as applied to the Mark 3 pump. To fully understand all available options and their advantages, it is essential that the complete JPS document be reviewed in detail.

## Other chemical process pumps from Flowserve

### Durco Mark 3 ISO chemical process pump

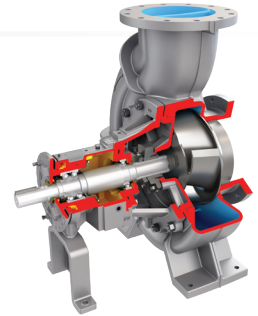


With many of the same advanced features of the Durco Mark 3 ASME pump, the Durco Mark 3 ISO pump provides significant operational- and maintenance-enhancing benefits to help users minimize the total cost of pump ownership. It is available in numerous sealed and sealless configurations — with a high degree of parts interchangeability — to meet the varied needs of global process industries.

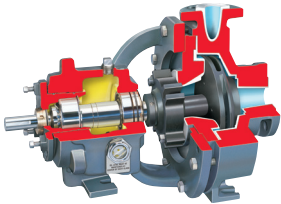
The Durco Mark 3 ISO pump conforms to ISO 2858, ISO 5199 and ISO 15783 design criteria and is capable of handling temperatures up to 400°C (752°F).

### Durco Mark 3 Group 4 high-capacity pump

The Durco Mark 3 Group 4 pump offers increased capacity with proven Durco performance and reliability along with ASME B73.1 design features. With flow rates to 3,861 m<sup>3</sup>/h (17,000 US gpm)— well beyond ASME size limits — the Durco Mark 3 Group 4 pump is ideal for high-flow, high-head applications in the chemical processing and general industries.



### PolyChem™ PFA-lined S-Series pump



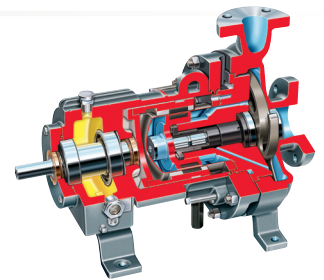
The Durco PolyChem S-Series PFA-lined, sealed pump offers outstanding performance and significant economy in highly corrosive applications. Incorporating the proven Mark 3 power end, it is engineered to maximize performance and reliability.

The PolyChem S-Series pump is able to withstand temperatures up to 150°C (300°F) and meets the following dimensional standards: ASME B73.1, ISO 2858/5199, and JIS drilling

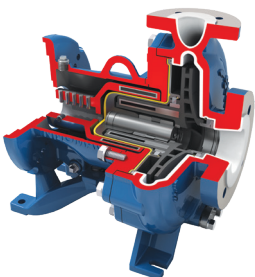
### Durco Guardian magnetic drive pump

Durco Guardian sealless pump technology offers superior, leak- and emission-free performance. It is compliant with ASME B73.1 dimensional standards, ASME B73.3 sealless pump standards and HI 5.1-5.6 standards.

The Guardian pump uses the same casing and reverse vane impeller as the Durco Mark 3 ASME standard pump and meets ASME Pressure Class 150 and 300 operating criteria to 290°C (550°F).



### INNOMAG® TB-MAG™ ETFE-lined, magnetic drive pump



The INNOMAG TB-MAG pump is engineered to provide low TCO along with exceptional leakage and emissions protection in extremely corrosive and environmentally critical applications. In addition to being sealless, the TB-MAG pump does not have conventional bearings, thanks to its revolutionary dynamic thrust balancing system. This design results in highly efficient and reliable operation — even in applications containing solids.

The INNOMAG TB-MAG pump is compliant with ASME B73.3 or ISO 2858/15783 standards and capable of handling temperatures up to 121°C (250°F).



## Alliance services

### Global customer service and support

- Joint product specification
- Project support
- Application engineering
- Materials consulting
- Technical services
- Site services
- Procurement cycle reduction
- Training
- Parts inventory analysis
- Repair service
- Joint product development



## RedRaven ready

Many Flowserve pumps, including Durco Mark 3 chemical pumps, are compatible with advanced internet of things (IoT) solutions such as RedRaven condition monitoring from Flowserve. Flowserve RedRaven IoT solutions give you the insights and tools you need to monitor, analyze and predict equipment performance — so you can respond to problems quickly and minimize disruptions and downtime.



Ask your Flowserve representative about optional RedRaven IoT monitoring packages or visit [flowserve.com/iot](https://flowserve.com/iot) to learn more.

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