

***Pull-Out
Assemblies for
End-Suction
Municipal
Water and
Waste Water
Pumps***

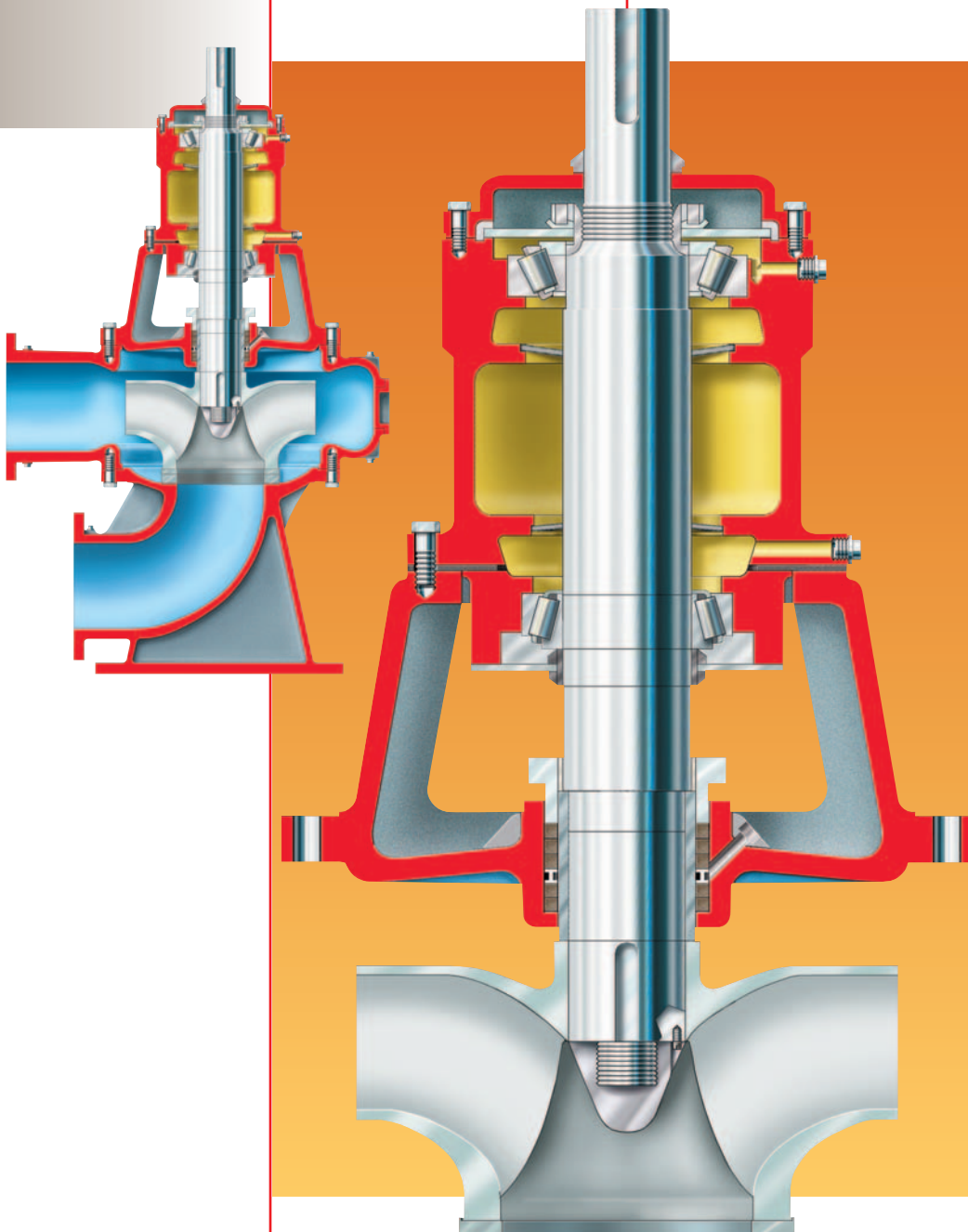
Fast and Convenient Upgrades

The Flowserve pull-out assembly for end-suction, side-discharge, mixed-flow solids-handling pumps enables quick and convenient upgrades of worn or obsolete pumps without shutting down station operations. This upgrade is available for Flowserve pumps

MN, MC, MS, NA and MF. Moreover, the Flowserve pull-out assembly can be used to upgrade any manufacturer's end-suction pump.

Consisting of a complete pump less casing, suction head, the Flowserve pull-out assembly provides a cost-effective way

to modernize obsolete shaft and bearing systems, upgrade materials, and renew seating fits without interrupting plant operations.



Oversized Carbon Steel Shaft is robust and rigid, significantly extending shaft and packing or seal life

Replaceable Stainless Steel Shaft Sleeve is keyed to the shaft and sealed to prevent leakage between the shaft and sleeve. Protects more expensive shaft from wear and corrosion

Opposed Tapered Roller Bearings firmly support the shaft and easily absorb axial and radial thrust loads. Bearings may be oil or grease lubricated and are designed for a minimum of 100 000 hours B10 life

Bearing Housing With Integral Jacking Bolts permits axial adjustment of wear rings by the use of a shim pack between bearing housing and back head

Seal Chamber accommodates packing or mechanical seals for application flexibility

Non-Clog Impeller is secured with a locking nut to prevent loosening by torque from forward or reverse rotation. Chrome steel wear ring is standard. Suction head wear ring is furnished for field installation

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Pull-Out Assembly Benefits

- Maintains production
- Modernizes obsolete bearing systems
- Renews seating fits
- Renews seal chamber bore
- Upgrades shaft system
- Upgrades materials
- Modernizes drives
- Upgrades to universal joints to correct alignment
- Provides for adjustable wear ring gap

Cost Savings

- Reduced maintenance costs because upgrades can be made quickly without shutting down operations
- Reduced operating costs due to increased performance and reliability
- Reduced maintenance and inventory through equipment standardization
- No piping changes
- No foundation changes
- Reduced project completion time

Performance

- Improved hydraulics
- Improved efficiency
- Expanded performance range



Reliability

- Minimal shaft deflection with oversized shaft and reduced overhang virtually eliminates shaft failure and increases packing or seal life
- Conservative bearing design mitigates radial and axial play
- Replaceable hardened chrome steel impeller wear ring extends pump life and maintains pump performance

Installations

- Elizabeth, NJ – two 42MC-1 units
- City of Peoria – one 36MS unit
- MWRD Chicago – one 24MN47 unit
- Clark County WWTP – sixteen 12MF21 units
- South Bayside Systems – five 24MN28 units
- Gilroy, CA – three 20MN24 units
- Bergen County Utilities Authority – one 30MC-1 unit



Pull-Out Assembly Performed at Bergen County Utilities Authority

took three days and was completed without shutting down the plant. The upgraded pump, the fifth in a series of six, could not otherwise be repaired without removing the first four pumps.

The inset picture above shows the obsolete bearing and shaft system that was upgraded.

