



***API Between Bearing Process Pump***

# ***Upgrades for Pre-8th Edition Pumps***



Your local PRO Services™ Center offers solutions to lowering **Total Cost of Ownership** of your pumping systems. This can be achieved by *upgrading your older style API process pumps to today's high performance standard of API 8th edition.*

The question of whether to Replace or Upgrade your existing equipment is a challenge faced by most end users today. When casing, piping, and foundation are in good shape, upgrading your existing pump to comply with 8th edition performance usually is economically attractive compared to new pump installation. By exploring all options available, a better decision can be made in this area.

Upgrades may involve hydraulic modifications and/or bearing bracket and rotor conversions. PRO Services™ Centers are experienced with all manufacturers including IDP (Pacific, Worthington, IR), Flowserve (Byron Jackson, United Centrifugal, Wilson Snyder), Sulzer (Bingham), and ITT (Goulds).

Experienced engineering and production staffs are equipped with the latest technology and training for upgrades and performance enhancements, performed quickly and professionally.

PRO Services™ Centers provide a thorough AS FOUND report of components and a complete work-scope for repairs with a firm price. Also provided is a complete owner's manual at shipment that includes cross sectional drawings of the upgrade, a spare parts stock sheet, and a standard owner's manual. Additional documentation can be provided as required.

***We welcome your inspection of our facility and processes.***

PRO Services



**ITT Industries**  
*Engineered for life*

## Features

### Hydraulic Re-Rate

- Pump hydraulics match process requirements

### Bearing Bracket and Rotor Conversion

- Upgrade pre-8th Edition API pumps to meet API 8th Edition design requirements

## Benefits

- Reduced energy consumption
- Reduced vibration
- Increased reliability
- Improved bearing arrangement (back to back duplex with no bearing carriers)
- Improved seal chamber design allows for 682 cartridge or lesser seals to be utilized
- Larger shaft with current design on thread locations
- Lower  $L^3/D^4$  ratios
- Improved reliability



Experienced engineering staff

## Typical Between Bearing Process Pump Upgrade Procedure

1. The pump is received. The casing, head and impeller are disassembled, cleaned and inspected.
2. Digital photography can be used to capture specific conditions or damage for customer inspection.
3. Seal chambers are excavated and recovered with new 682 dimensions.
4. Bearing saddles on the casing and head are modified to accommodate new standard 8th edition bearing brackets.
5. Basic bearing bracket assemblies are utilized from stock.
6. A new shaft and sleeves are engineered and manufactured.
7. If a hydraulic re-rate is required, impeller and wear rings are replaced. Impellers are always dynamically balanced to API 8th edition standards.
8. Casing volute will have area modified to match hydraulics of new impeller selection by welding in volute tongue extensions or chipping as required if hydraulic re-rate is chosen.
9. Casing wear rings will be replaced as required.
10. Casing will be machined on feet, face, register fit, gasket fit, and flanges to reclaim and guarantee squareness and perpendicularity. Grooved flanges will have grooves reclaimed.
11. Pump will be completely assembled and all run outs checked to insure unit meets requirements. All bolting will be replaced with B-7 bolting.
12. Pump will be pressure tested to ensure mechanical seal integrity and then it will be painted.
13. Pump will be secured horizontally on a skid for shipment.
14. Documentation is completed for disassembly, parts replacement, modifications, reassembly and compiled in a REPAIR REPORT.
15. Complete maintenance records are maintained in our totally integrated PRO-APP System for future reference and tracking Mean Time Between Events.

## PRO Advantages

- One (1) full year warranty on material and workmanship.
- Full engineering support.

- Field services available to assure proper installation and start-up.
- Experience with all manufacturers' equipment provides best available practices and designs in all upgrades.
- We recognize problems and address *root causes* of failure, not just mechanical symptoms.



## Typical Options available:

- Non-standard metallurgy
- Oil mist lubrication provision
- Bearing Isolators
- Fan cooled bearing bracket
- Water cooled bearing bracket

For more information, call your nearest PRO Services™ Center, or visit our website at [www.ittproservices.com](http://www.ittproservices.com).

## PRO Services



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