

# HYDRAULIC FITTED COUPLING BOLT



- **Reduce Outage Time**
- **Establish Concentricity**
- **Fast, Easy Installation**
- **Easy Removal**
- **Ideal for Retrofits**
- **Reusable**

The Riverhawk engineering team looked at coupling bolts and asked, "How can we improve this technology ever further?"

The result is the new Riverhawk Hydraulic Fitted Coupling Bolt or HFCB. We've engineered and designed new features to make installation and removal faster and safer than ever before. The HFCB reduces the time required for coupling assembly and disassembly resulting in more effective planning, shorter outage time, and trouble free installations. Cost effective turbine coupling services are now the norm rather than the exception.

### ***The Only Choice for Initial Installation or Retrofits***

Designed to replace standard coupling bolts the HFCB reduces installation and operational problems created by the use of old style coupling bolts.

During installation of traditional bolts the necessary tight fit insertion into the bolt hole will sometimes cause damage to both the bolt and the hole. This can cause galling of both parts hampering removal and creating further damage when the bolt is removed for scheduled service to the equipment.

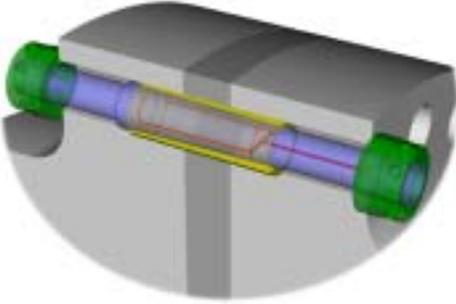
In addition, as a traditional bolt is stretched its diameter is decreased creating increased clearance between the bolt and the hole. When this occurs concentricity can be lost and the chances of slippage are increased creating excessive vibration, which leads to forced outages and lost income.



# OPERATION

## Operational Overview

The Hydraulic Fitted Coupling Bolt consists of a coupling bolt with a tapered shaft, a precision matching sleeve, and two nuts.



- 1) The coupling flange bolt hole is machined to the proper tolerances prior to fitting the HFCB.
- 2) The stud and sleeve assembly is then slip fit in the hole and the puller screw is threaded to the small end of the assembly. The installation foot is then positioned and the tensioner is threaded on the puller screw.
- 3) Hydraulic pressure is then added to pull the stud through the sleeve. This causes the sleeve to expand in the bolt hole and the pressure is increased until the desired level of interference is achieved. Pressure is then released.
- 4) At this point the nuts are threaded onto the bolt, installation feet and tensioner are refitted. Hydraulic pressure is then reestablished and the nuts are turned tight against the coupling flange. Pressure is released and pressurized again to check for proper tension.

## With the HFCB maintenance and operation issues are virtually eliminated

Because the HFCB is designed to fit precisely in the bolt hole, concentricity is established and maintained.

The HFCB completely fills and is expanded in the bolt hole. This eliminates slippage and pinching due to a poor fit.

Installation time is reduced due to the ease of assembly and precision machining.

Safer installation and removal than traditional bolts.

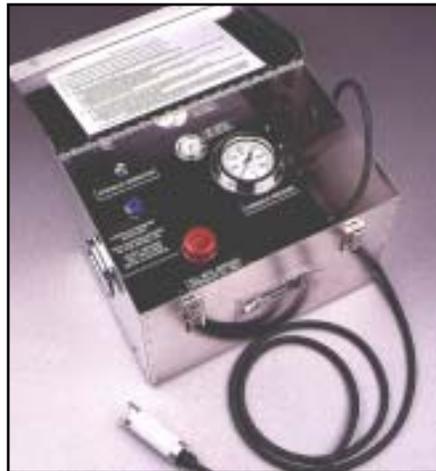
Couplings can be disassembled for service or inspection with the same ease as installation.

Retrofits eliminate seized bolts and problems normally associated with traditional bolts.

The HFCB is reusable. The outer sleeve may be the only part that needs replacing.

Planning for downtime is more accurate due to the predictable ease of removal and installation.

## Air Driven Hydraulic Pressure Kit



## Examine the Benefits

- Installation and set-up time reduced with our exclusive triple load thread on puller and tensioner.
- Reduced oil injection pressure during disassembly for safety, less tool stress, and longer tool life.
- Tool stress and seal failure eliminated by using Riverhawk's spring assisted retraction assembly.
- One dual acting pump for assembly and disassembly increases safety and improves dependability.
- Bolts can be tensioned and detensioned by one person reducing labor costs and increasing safety factors.

## Installation Accessories



- 1 - Load Cell
- 2 - Extraction Foot
- 3 - Installation Foot
- 4 - Puller Screw
- 5 - Tensioning Foot
- 6 - Oil Injection Adapter

Riverhawk Company, an engineering driven manufacturer, specializes in hydraulic shaft joining technologies. We meet the daily challenges of the rotating equipment industry by offering auxiliary equipment such as air driven and manual hydraulic pressure kits and pusher piston cylinders for the installation of coupling hubs, thrust discs, and compressor wheels. Riverhawk also designs and manufactures hydraulically tensioned studs and nuts, tensioning tools, hydraulic nuts, and plug and ring gages. We also provide source inspections and training seminars. Our equipment is proudly supplied to the top OEMs and end users of the turbomachinery industry. Riverhawk is a member of the American Petroleum Institute (API) and sits on the coupling committee of the American Gear Manufacturers Association (AGMA).

For more information about Riverhawk's Hydraulic Tensioner Nut or any of our other products and services call



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