A Global Leader

Founded in 1933 with a furnace, belt-drive machines and a Cadillac motor to turn the lathes, Harbison-Fischer has grown into a global leader committed to serving the sub-surface oilfield rod-pump market. Our technically trained, professional staff specializes in

– solving our customers’ downhole rod-pump problems;
– providing the highest quality products in a timely manner;
– creating value by providing service and expertise that lowers overall lifting costs;
– evaluating each well to recommend the appropriate pump configuration, pump metallurgy and operating parameters.

Located in thirty-five U.S. warehouses, three Canadian warehouses and throughout the oil-producing world, Harbison-Fischer maintains the largest on-hand inventory of rod-pump parts in the industry.

The ever-recognizable orange color of Harbison-Fischer products is a registered trademark of the company.
Insert and Tubing Pumps

API sucker-rod pumps – the industry standard

Bottom Hold-Down Insert Pumps, Thin Wall (RWB) and Heavy Wall (RHB)

- Ruggedness and simplicity make this configuration the most popular
- Pressure is balanced across the barrel wall to combat the effects of fluid or gas pound

The Harbison-Fischer Bottom Hold-Down Insert Pump is the most popular of the four basic API pumps. Rugged and relatively simple, the hold-down is located at the bottom of the pump ensuring that the pressure on the outside of the pump is equal to the hydrostatic pressure from the column of fluid in the tubing above the pump. This characteristic balances pressure spikes on the inside of the pump caused by fluid or gas pound. The discharge of fluid from this pump is at a stationary point at the top of the pump.

Top Hold-Down Insert Pumps, Thin Wall (RWA) and Heavy Wall (RHA)

- Stuck pumps in the tubing are minimized with this design due to fluid and particulates being discharged inches away from the hold-down seal assembly
- Greater fluid submergence of the top hold-down pump can lead to more production and better gas separation than with a bottom hold-down pump

The Top Hold-Down Pump is popular in areas that produce sand or other particulates that tend to accumulate over the hold-down of a Bottom Hold-Down. The fluid-discharge point of the Top Hold-Down Pump is only inches away from the location of the hold-down, making it difficult to stick in the tubing. Other advantages are that the Top Hold-Down Pump has greater fluid submergence than the Bottom Hold-Down Pump, and there is not a stagnant fluid area between the hold-down and the fluid-discharge point. The Top Hold-Down Pump is not as rugged as the Bottom Hold-Down since the outside of the pump is only subjected to formation pressure.
PROBLEM SOLVING

Traveling Barrel Insert Pumps

API Tubing Pumps
Traveling-Barrel Insert Pumps, Thin Wall (RWT) and Heavy Wall (RHT)

- Heavy-particulate production problems can be overcome with this traveling-barrel design since it keeps the fluid in motion above the hold-down.
- Top traveling valve automatically closes when the pump is idle, preventing particulates from settling inside the pump.

The Harbison-Fischer Traveling-Barrel Pump is useful in pumping conditions that are characterized by relatively heavy-particulate production. The traveling barrel helps to keep sand or other particulates in movement above the hold-down, located at the bottom of the pump, reducing the possibility of a stuck pump. The traveling valve is located on the top of the pump so that it automatically closes in times of pump inactivity, preventing particulates from settling inside the pump.

API Tubing Pumps (TH)

- The highest fluid production is achieved with a tubing pump.
- Available in several oversize configurations for even more production capacity.

The Harbison-Fischer Tubing Pump is the most rugged of the four API pumps due to its heavy-wall construction. It is recommended when greater production is needed than can be delivered by an insert pump. The extensions on each end of the barrel provide a stroke-through arrangement. The stroke length and pump spacing can be adjusted so that the plunger strokes out of the barrel into the extensions at the top of the upstroke and bottom of the downstroke. This spacing allows the plunger to be washed clean in the extensions on the upstroke and downstroke.
Sucker-Rod Pump Barrels

Harbison-Fischer Barrels have the most consistent hardness, inside diameter and thread size in the industry due to Harbison-Fischer’s state-of-the-art manufacturing equipment and unrelenting attention to quality.

Harbison-Fischer Plain Steel
- Economical choice for non-abrasive wells with little corrosion

Harbison-Fischer Stainless Steel (11-)
- Made from 304 austentic stainless steel for the worst corrosion conditions and up to mildly abrasive fluid conditions

Harbison-Fischer Brass (1-)
- Withstands severe corrosion and mildly abrasive production fluid
- Special brass, arsenical admiralty, is used to manufacture this tough barrel

Harbison-Fischer Carbonitrided Corrosion-Resistant Steel (9-)
- The more corrosion-resistant barrel with the same hardness and abrasion resistance as the 16- Barrel
- Corrosion resistance is provided by the special 5% chrome steel

Harbison-Fischer Carbonitrided (16-)
- Long-wear life in abrasive conditions is provided for by a hard HRC 60 minimum hardness inside surface
- Toughness is assured by the relatively soft, ductile inner core and outside surface of the barrel
Harbison-Fischer Tuff-Temper® (5-)

- Identical to the Harbison-Fischer 16-Barrel but is tempered back to a lower hardness of HRC 50 minimum on the inside surface
- Economical choice for moderate abrasion

Harbison-Fisher Nickel Carbide Plated Barrels

- Withstands the worst abrasive and corrosive conditions
- All barrel surfaces are plated to seal out corrosive elements
- Base materials of steel, brass or 501 corrosion-resistant steel

Harbison-Fischer Chrome Plated Barrels

- Abrasion-resistant coating of hard, HRC 67, minimum chrome plating
- Mild corrosion can be handled but acid must be avoided
- Available in steel, brass or 501 corrosion-resistant steel
Rugged

Two Stage Hollow Valve Rod Pump

Harbison-Fischer™

Metal Plungers

Long-Wearing
Harbison-Fischer™

**Sucker-Rod Pump Plungers**

Harbison-Fischer Plungers are sprayed-metal coated to provide a hard, long-wearing and corrosion-resistant surface, or chrome-plated to HRC 65 minimum to provide a hard-wearing surface.

**Harbison-Fischer Spraymetal Plunger**

- Economical yet tough plunger for up to moderate abrasion with an HRC 48 minimum sprayed-metal hardness

**Harbison-Fischer Tuffr® Plunger**

- For tough abrasive conditions choose the Tuffr® Plunger with its harder, HRC 58-62, sprayed-metal coating

**Harbison-Fischer Tuffr-Plus® Plunger**

- Tuffr-Plus® Plunger has the same coating as the Tuffr® Plunger but with the addition of finely dispersed carbide particles for greater wear resistance in the toughest-abrasive wells.

**Harbison-Fischer Monel Pin Plunger**

- Solves corrosion problems with standard pin-end plungers
- Monel special alloy material is used for the plunger pin ends to achieve our recommendation for severe corrosion
- Abrasive wear is handled by the Tuffr® hard sprayed-metal coating

**Harbison-Fischer Grooved Plunger**

- Run times are extended by the simple addition of shallow grooves about a foot apart along the length of the plunger
- Particulates are trapped in the grooves rather than continuing along the side of the plunger causing wear
- Available for a wide variety of plungers

**Harbison-Fischer Box-End Plunger**

- The lowest fluid friction for any plunger is achieved by a larger inside diameter
- Hard, HRC 58-62, Tuffr® hard-sprayed metal coating is applied to the outside diameter
VERSITILE

Harbison-Fischer Soft-Packed Plungers
Harbison-Fischer Soft-Packed Plungers

- Available in a variety of configurations for differing production of particulate-laden fluids

Harbison-Fischer Flexite® Ring Plunger

- High-water cuts and low-lubricity fluids can be pumped without plunger galling or sticking
- Flexite® rings are made from a long-wearing, special, hard-plastic composition material that is self-lubricating

Harbison-Fischer Composition Ring Plunger

- The most aggressive sands or fluids with large percentages of particulates can be pumped with the Harbison-Fischer Composition Ring Plunger when other plungers stick or fail
- These self-adjusting rings swell to the size of the barrel during pumping

Harbison-Fischer Pressure-Actuated Plunger

- This sprayed-metal plunger has 20, 40 or 60 grooves to accept special split rings for abrasive conditions
- A size of .005" below the base plunger size gives room for particulates to pass between the barrel and plunger
- Special rings help keep the barrel free of particulates by a wiping action and are available in several materials for a variety of conditions

Harbison-Fischer Valve Cup Plunger

- Tough solids production as a stand-alone plunger or as a plunger extension characterize this historic plunger assembly
Sucker-Rod Pump-Valve Cages
Sucker-Rod Pump-Valve Cages

One-Piece, Three-Guide Cages
- Precision machined and inspected to insure that the customer gets the same performance time after time
- Cage life can be extended with the choice of corrosion-resistant base materials and/or a wear-resistant, hard, smooth inlay on the ball guides

One-Piece, Four-Guide Cages
- Handles the toughest pumping conditions with a thicker cage wall and addition of a fourth ball guide (a 33% increase in wear surface area)
- Operation in dirty wells can be enhanced by choosing a larger ball clearance of .045” or .060” (.030” is standard) to help keep balls from hanging up in the cage
- Cage life can be extended with the choice of corrosion-resistant base materials
- A wear-resistant, hard, smooth inlay on the ball guides is standard

Rubber-Lined Cages
- Absorbs impacts that can damage other cages
- Rubber guides are made from industry-proven Viton® rubber and use a snap-in design with corrosion-resistant epoxy cement for retention
- Generous ball clearance makes these cages a good choice in particulate-laden wells that can hang up a ball in the cage
- Cage life can be extended with the choice of corrosion-resistant base materials

Insert-Guided Cages
- Lengthens cage runs through the use of a hard, tough, corrosion-resistant ball-guide insert
- Cage shell and spacer materials can be chosen to resist corrosion

Viton® is a registered trademark of DuPont.
Rugged Two Stage Hollow Valve Rod Pump

Harbison-Fischer Balls and Seats

Optimal Choice
Harbison-Fischer is the industry pioneer of balls and seats for rod-drawn sub-surface pumps. Each ball and seat combination is vacuum tested on both sides of the seat and individually shrink-wrapped and packed in a clear plastic case.

**DuMore®**
- Optimum choice for ball and seat material
- Recommended for hard pumping conditions with abrasive and corrosive fluids

**Carbide**
- Tungsten carbide is the hardest and toughest ball and seat material
- Nickel carbide trades off some hardness for better corrosion resistance
- Titanium carbide balls have about the same hardness and toughness as Nickel carbide but lighter weight

**Standard Stainless**
- The popular and economical choice for abrasive applications with light corrosion

**Tuff-Temper® Stainless Seats**
- Tough combination of a hard sealing surface and a ductile, shock-resistant core due to a proprietary process developed by Harbison-Fischer
Hold-Down Seal Assemblies

UNIVERSAL
Hold-Down Seal Assemblies

Cup

- Most popular due to its ease of seating and unseating and standardization by API for top or bottom hold-down pumps
- Cups available for all conditions in either nylon, composition or high-temperature materials
- Corrosion-resistant materials are available for metal components

Mechanical

- Withstands high temperature and yields higher pulling forces
- H2S corrosive-resistant material available
- Top and bottom hold-down versions available
Harbison-Fischer boasts a corporate philosophy that delivers uncompromised customer service at all times. From our 130-person field staff to our highly knowledgeable engineering staff, we—support and problem-solve on a daily basis—offer a level of expertise unmatched in the industry—continually provide sales support—teach technical schools in the field; and—conduct regularly scheduled pump schools at our facility in Crowley, Texas

Quality Control

Our manufacturing equipment, already the most advanced in the industry, allows us to produce the highest-quality parts for our customers. Each product is backed by a quality system that has received both the ISO 9000:2000 and API Q1 certifications and the expertise of precision machine operators who have an average tenure of over 15 years with Harbison-Fischer.

Finally, to ensure that our customers receive the "BEST PUMPS IN THE OIL PATCH®", Harbison-Fischer has a fully-equipped metallurgical lab staffed by a degreed metallurgist. This department evaluates our products as raw material and work-in-process and, when needed, performs an analysis on any products sent back from the field. Additionally, the Research and Development department stays on the cutting edge of rod-pump technology by developing products in simulated downhole-operating environments.
HARBISON-FISCHER™

“BEST PUMPS IN THE OIL PATCH™”

901 NORTH CROWLEY ROAD
CROWLEY, TEXAS 76036-3798

P.O. BOX 2477
FORT WORTH, TEXAS
76113-2477

PHONE: 817-297-2211
FAX: 817-297-4248

www.hfpumps.com

HF-2-08-4