Type HS
Horizontal Plunger Pumps
Pressures to 10,000 psi.
Capacities to 540 g.p.m.
This Horizontal Plunger pump is designed with flexibility in mind.

**To Provide** — Fluid end design and materials compatible with:
- a wide variety of liquids and slurries
- a wide range of pressures

**To Meet** — Essentially every industrial application.

---

**POWER END**

**Features**
1. Independent crosshead extension rods are not integral with crossheads or plungers.
2. Three lip-type seals at the crosshead extensions are used to seal the crankcase. (2) seals are pointed toward crankcase to prevent oil leakage; one seal pointed outward to protect against contamination from the outside.
3. Fully cylindrical crossheads and guides utilize maximum possible bearing area.
4. Power frame is totally enclosed.
5. Splash type lubrication system (HS-3 models only) for all power end bearings is contained within sealed chamber.
6. Full Pressure Lubrication System using crankshaft driven gear pump providing lubrication under pressure to all bearing surfaces. (5HS-5 only)
7. Four Precision Type Main Bearings (5HS-5 Model)

**Provide**
- Easy access to crankcase oil seals for inspection or replacement without excessive pump disassembly.
- Effective sealing of oil and protection for moving parts against wear.
- Less wear thru greater dispersement of bearing loads.
- Dust and oil tight enclosure, eliminating contamination from the outside elements. Assured lubrication with oil flingers mounted on the crankshaft, instead of oil wheelscraper means of transporting lubricant. Insured positive pressure lubrication to all precision bearing surfaces.
- Theoretically infinite bearing life with proper lubrication, greater tolerance of oil contamination, and easy replacement.

**Benefits**
- Low inspection and maintenance costs.
- Assures greater reliability with low replacement costs.
- Reduced maintenance cost and increased reliability.
- Reduced installation, maintenance and operating costs.
- Reduced installation maintenance, and operating costs, as well as increased on-stream durability.
- Reduced maintenance and replacement costs with increased onstream durability.
TYPE HS...

OUTSTANDING FEATURE BENEFITS

FLUID END

**Features**

8. Sectionalized fluid end components—fluid cylinder, suction manifold, discharge manifold, stuffing boxes—with selected materials characteristics most compatible to the fluid, service, and installation requirements.

9. Plungers have a self-aligning connection for proper concentricity with stuffing box bushings and packing.

10. All valve assemblies are completely independent of and are clamped between manifolds and fluid cylinders.

11. The stuffing box assemblies are individually bolted to the fluid cylinder.

**Provide**

Ability to accurately control materials, machining, assembly, and replace each component versus unitized one piece fluid end design.

Increased packing and bushing life with minimal plunger run-out.

Easy valve inspection and replacement without any clean-up or remachining of mating components.

Easy accessibility for disassembly and assembly.

**Benefits**

Greatly reduced maintenance and replacement costs.

Greater reliability with reduced stuffing box maintenance and replacement part costs.

Reduced maintenance and replacement part costs.

Reduced maintenance costs and downtime.
FEATURE-BENEFIT
SECTIONALIZED FLUID END Components—Fluid Cylinder, Suction Manifold, Discharge Manifold, Stuffing Boxes—Greatly reduced maintenance and replacement costs.

Type HS
Selection Chart

ONE BY ONE—features developed through years of operating experience are continuously being added by our Design Engineers to make the HS line a glowing addition to the INGERSOLL-RAND line of plunger pumps.

COMPARE the design and reliability of this pump. TODAY, MORE THAN EVER BEFORE, THE "TOUGH PUMPING PROBLEMS GO TO INGERSOLL-RAND".

YOU can receive all the benefits of these features with the HS line of pumps.
FEATURE-BENEFIT
SELF ALIGNING PLUNGER CONNECTIONS for proper concentricity with Stuffing Box Bushings and Packing—increased availability with reduced maintenance and parts costs.

VARIOUS INSTALLATIONS

- Two 2 × 4HS-3 units on 85°F light hydrocarbon pipeline service near Bryan, Texas.
- Propane injection service utilizing 2-3/8 × 4HS-3 pumps near Crane, Texas.
- North Dakota 2-5/8 × 4HS-3 salt water disposal injection pumps near Williston.
- 1-1/4 × 3HS-3 units specifically designed for this CO₂ injection service near Houston, Texas.
- 1½ × 4HS-3 on CO₂ injection service east of Houston, Texas.