

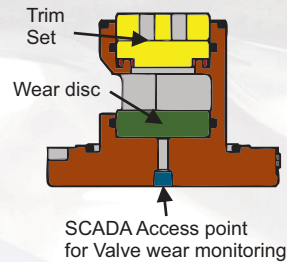
PLUNGER ASSISTED GAS LIFT

Plunger lift offers an economical and established technique for removing liquids from aging gas wells while minimizing gas losses and methane emissions. Plunger lift systems remove liquids from the wellbore so that the well can be produced at low bottomhole pressures. Plunger lift is the simplest form of artificial lift because it uses the well's own energy to remove accumulated liquids and sustain gas production.

HYDROPLEX CSX

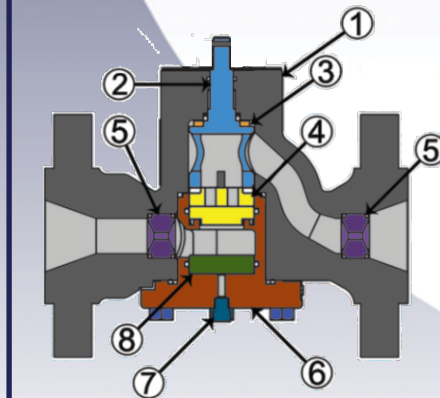


Cartridge Assembly

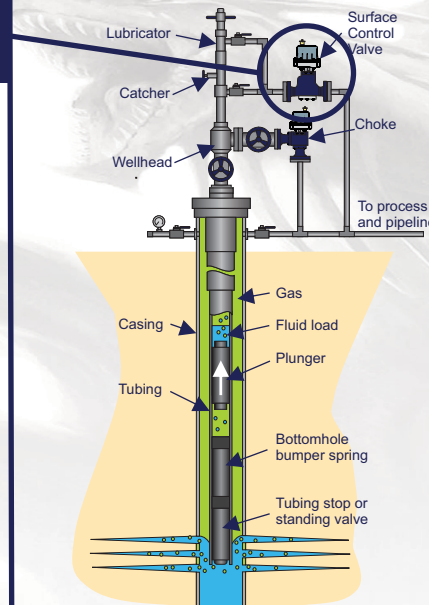


Major Components

1. Carbon Steel Body
2. Stem
3. Thrust Bearing
4. Tungsten Control Disc
5. Positive Bean (Optional)
6. Carbon Steel Cartridge
7. 1/4" Threaded Port for Pressure Sensor or Gauge
8. Wear Disc



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How Gas Assisted Plunger Lift Works

Plunger lift operation is a cyclical process of shut-in and flow periods. The cycle starts in the shut-in mode with the plunger on the bottom hole bumper. The Hydroplex surface control valve is closed, allowing the well pressure to increase as gas accumulates in the annulus between casing and tubing. When the well pressure reaches set pressure level, the controller signals the surface valve to open. Tubing pressure drops to line pressure, the pressurized gas in the annulus enters the tubing below the plunger. The pressure pushes the plunger and the fluid column above it to the surface. The fluid above the plunger flows through the upper and lower outlets on the wellhead and into the production line. The plunger is captured in a spring-loaded receiver in the lubricator. When the plunger is no longer in the flow path, the higher pressure gas in the reservoir continues to flow through the lower outlet into the production line. When the formation pressure is depleted the controller signals the surface valve to close, the plunger is released and the cycle begins again.

Benefits of installing a Hydroplex Valve

- **Precise Control** with "Direct Mount" Actuation, no brackets or adapters
- Superior **Resolution and Accuracy** with 90 Degree Rotary Twin Disc trim
- **High Repeatability Rate** maintains unparalleled control in applications
- **Twin Disc Design** separates control and sealing surfaces for longer trim life
- **Robust Stem and Seal** design integration provides for hundreds of thousands of cycles
- Solid **Tungsten Carbide Trim** minimizes seal and control surface wear
- **Longest Mean Time Between Service** with Stainless Steel internals
- **Chemical Injection Port** in the body prevent freezing
- Ease of maintenance with the **Internal Cartridge Assembly**