Redhead

PRODUCTION ENHANCEMENT

# MPP Series

## MULTIPHASE TRANSFER PUMP

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# MPP Series

## GEAR DRIVEN MULTIPHASE PUMP SYSTEM

**Redhead MPP provides the transfer of liquids, gas and solids from a wellsite, header or satellite to a battery or process facility without the need for separation.**

## POWERFUL MULTIPHASE SYSTEM

**The Redhead MPP multiphase system provides an effective alternative to the separation of production fluid reducing overall cost of equipment, maintenance and repairs.**

- Dramatically increase well performance.
- Pumps all well fluids at once - no separation required.
- Can effectively replace entire satellite facilities.
- Full GLR Capability.

## PROVEN GEAR DRIVEN TECHNOLOGY

**Redhead MPP features robust gear driven components used in the making of their industry leading conventional pumping units deployed throughout the United States and Canada.**

Operating Redhead MPP resembles that of a pumping unit on an oilwell with built in automation through a variable frequency drive (VFD) to operate and monitor the system. The resulting drop in wellhead and flowline pressure enables each well to produce more as the production fluid is pulled towards the inlet of Redhead's MPP double acting multiphase pump and pushed through the outlet downstream. MPP provides several benefits for increased efficiency, performance and reliability in multiphase pump service.

**MPP for Increased Production,**
**MPP for Higher Efficiencies,**
**MPP for Longer Run Life.**

## A NEW WAY OF THINKING

Redhead MPP includes a gear driven double acting piston pump capable of 9658m³/d of liquid and 100 e3m3/d of gas or more with higher inlet pressures.

1. **Processes H2S and other complex gaseous and fluid components with high efficiency.**
2. **Send production fluid with up to 100% gas content.**
3. **Variety of sizes available to suit a wide range of applications.**
4. **Automated with custom built VFD and software for alarms, safety and control.**

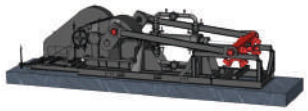
## SAVE CAPITAL, SAVE ENERGY

**Redhead MPP is specifically built for use at a header or satellite where production from multiple wells is transferred or collected.**

The system provides an abundance of time and cost savings compared to operating high power multiphase systems or even casing gas compressors on each individual well. The automatic gear driven multiphase system offers more production throughput, uses less power and combines lower maintenance and repair costs compared to others used in multiphase pump applications. Gas compressors, flares, separators and process control equipment can be eliminated with Redhead MPP. Replace declining and maintenance demanding infrastructure and reduce field operating costs. Experience the benefits of reduced lead times for equipment, parts and repairs along with the potential for less flaring of gas for a smaller carbon footprint.

# Redhead MPP Series

| SPECIFICATIONS | |
|---|---|
| Model | MPP2X1550-2560-740 (Dual Cylinder) |
| Torque Max (in.lbs.) | 2,560,000 |
| Stroke Length (in.) | 50 |
| MAWP (PSI) | 740 |
| Max DeltaP (PSI) | 320 |
| Pump Internal Diameter (in.) | 15 |
| Rod Diameter (in.) | 4.75 |
| Inlet/Outlet Flange | 6" DN150-Class300(PN50) RF |
| Check Valve | 6" Silent Wafer Style |
| Ball Valve | 1.5" NPT |
| Sheave size | 68"-8-8V |
| Volume per Stroke (L) | 559 |
| Liquid Volume @ 12 SPM | 9658m3/d |
| Gas Volume @ 12 SPM | 40e3m3/d @ 200psi discharge, 50psi suction |
| Dimension after Deployed (L x W x H) (in) | 425 x 106 x 139 |



| SPECIFICATIONS | |
|---|---|
| Model | MPP1550-1280-740 |
| Torque Max (in.lbs.) | 1,280,000 |
| Stroke Length (in.) | 50 |
| MAWP (PSI) | 740 |
| Max DeltaP (PSI) | 320 |
| Pump Internal Diameter (in.) | 15 |
| Rod Diameter (in.) | 4.75 |
| Inlet/Outlet Flange | 6" DN150-Class300(PN50) RF |
| Check Valve | 6" Silent Wafer Style |
| Ball Valve | 1.5" NPT |
| Sheave size | 60"7C |
| Volume per Stroke (L) | 279.5 |
| Liquid Volume @ 12 SPM | 4829m3/d |
| Gas Volume @ 12 SPM | 20e3m3/d @ 200psi discharge, 50psi suction |
| Dimension after Deployed (L x W x H) (in) | 421 x 106 x 107 |

## FEATURES

- Pump speed reduction capability 0-100%.
- No minimum liquid volume required.
- Compatible with majority of oil gravity and viscosities.
- Draws gas/liquid ratios from 0 – 100%.
- Fully automated with custom built VFD and software optimized for maximum efficiency.
- User-friendly alarms, control and safety shutdowns with on-screen data centre and events log.
- Rugged design is built for a wide variety of applications and conditions.

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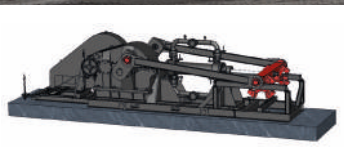
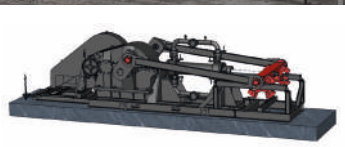


| SPECIFICATIONS | |
|---|---|
| Model | MPP1250-912-740 |
| Torque Max (in.lbs.) | 912.000 |
| Stroke Length (in.) | 50 |
| MAWP (PSI) | 740 |
| Max DeltaP (PSI) | 320 |
| Pump Internal Diameter (in.) | 12 |
| Rod Diameter (in.) | 4 |
| Inlet/Outlet Flange | 4" DN100-Class300(PN50) RF |
| Check Valve | 4" Silent Wafer Style |
| Ball Valve | 1-1/2" NPT |
| Sheave size | 50" 8C |
| Volume per Stroke (L) | 173 |
| Liquid Volume @ 12 SPM | 2989m3 per day |
| Gas Volume @ 12 SPM | 12e3m3/d @ 200psi discharge, 50psi suction |
| Dimension after Deployed (L x W x H) (in) | 356 x 97 x 77 |



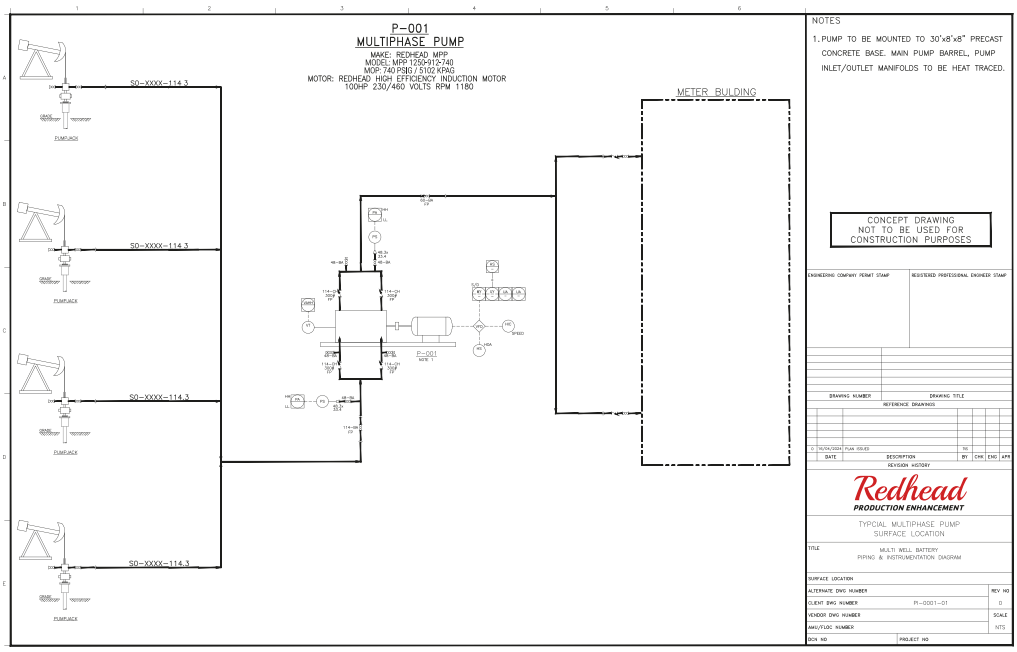
| SPECIFICATIONS | |
|---|---|
| Model | MPP850-456-740 |
| Torque Max (in.lbs.) | 456,000 |
| Stroke Length (in.) | 50 |
| MAWP (PSI) | 740 |
| Max DeltaP (PSI) | 350 |
| Pump Internal Diameter (in.) | 8 |
| Rod Diameter (in.) | 4 |
| Inlet/Outlet Flange | 4" DN100-Class300(PN50) RF |
| Check Valve | 4" Silent Wafer Style |
| Ball Valve | 1-1/2" NPT |
| Sheave size | 44" 6C |
| Volume per Stroke (L) | 72.4 |
| Liquid Volume @ 12 SPM | 1251m3 per day |
| Gas Volume @ 12 SPM | 5e3m3/d @ 200psi discharge, 50psi suction |
| Dimension after Deployed (L x W x H) (in) | 285 x 85 x 74 |

## BENEFITS

- Pumps oil, water, gas emulsions and slugs including solids from multiple wells directly to the battery without the need for additional equipment.
- Lowers wellhead and flowline pressures for incremental gains and greater capacity.
- Increases downhole equipment run time by relieving pressure on the entire system.
- Designed for 100% flow through during shutdown or loss of operation.
- Eliminates the need for separators, compressors and flares at the satellite.
- Less maintenance with longer intervals and ease of repair.
- Proven gear driven technology for increased uptime.

# Redhead MPP

## APPLICATION DIAGRAM




## APPLICATION QUESTIONS

**1** **Reduce well, casing and field pressures for incremental oil. The pump can be tied into flowlines for individual wells or multi-well pads to lower casing pressures and increase oil production.**

- What type of experiences are you having with lower production rates due to high casing pressures in gassy wells?
- Do you currently use gas compression to lower casing pressures or have you considering reducing casing pressures in the future?

**2** **Reduce flowline pressure to increase overall line capacity and extend the overall life of the flowline.**

- Do you experience problems with aging or volatile flowlines that are near maximum operating pressure (MOP)?
- Do you currently have wells shut in due to the flowline nearing MOP?

**3** **Replace, bypass or omit satellite facilities and significantly lower new facility construction, upgrades and operating costs.**

- What type of factors determine a new satellite build or header construction and what are the challenges with cost and approval?
- How often do you maintain, expand or upgrade existing satellites and what type of issues and costs are associated with this type of work?

**4** **Save on overall cost of repairs and maintenance with increased run life and longer periods between maintenance intervals.**

- What types of casing gas compressors or transfer pumps have you used and what are your experiences with them?
- Has equipment cost and downtime associated with design and overall life span of major components ever been an issue?
- What challenges are you having with field service, product support and parts availability?