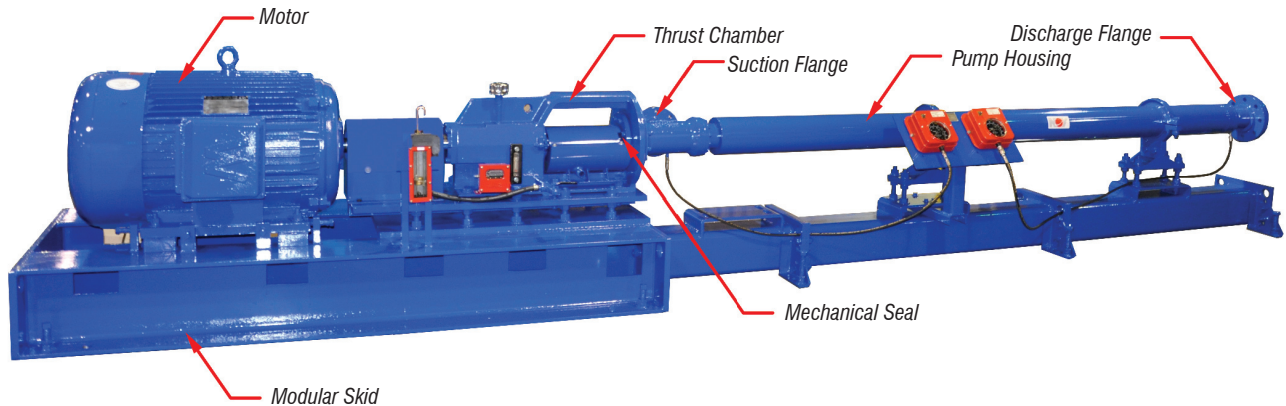


# Mission® Multistage Surface Pump (MSP)

## DESIGNED FOR HIGH VOLUME, HIGH PRESSURE PERFORMANCE

The National Oilwell Varco® Mission Multistage Surface Pump (MSP) is a cost effective, low maintenance solution for high volume, high pressure fluid movement.



### Thrust Chamber

The thrust chamber of the Mission MSP is field repairable and does not require pump or motor removal for maintenance. It is designed with proven bearing arrangements used in the established Magnum I centrifugal pump line. The dual bearing systems provide a minimum L10 life rating of 25,000 hours at all thrust loads up to 20,000 lbf. The standard Mission thrust chamber configuration includes oil level sight glass with an oil temperature gauge. The thrust chamber is specifically designed to handle maximum thrust loads in surface pump operations.

### Seal System

The NOV® patent pending seal system uses standard Type 1, balanced Type 1, or cartridge mechanical seals. The seal face materials are chosen to optimize the seal life according to specific applications. The mechanical seal (located in the fluid end) is completely separated from the thrust chamber, which prevents any cross contamination should seal leakage develop. The mechanical seal is field replaceable and can be changed in one hour without disturbing any piping or motor connections.

### Skid

The modular skid is a universal design that offers significant cost savings and shorter lead times while maintaining motor torque to stabilization requirements. The MSP modular skid was designed using the latest 3D modeling software and finite element analysis tools to ensure a rigid foundation and effective vibration control for extended pump life at the lowest possible cost. The non-modular heavy duty skid is also available.

### Performance Control and Monitoring

Standard packages include pressure, oil level, and vibration sensors as specified by the customer to meet critical application requirements.

### Specifications

- **Standard material for impeller and diffuser:** ASTM A436 Type 1 or 2205 Duplex Stainless Steel  
*Additional materials and coating options are available. Contact your NOV® sales representative for more information.*
- **Shaft:** Inconel or Monel K500
- **Maximum suction pressure:** 1500 PSI
- **Maximum discharge pressure:** 3600 PSI

### Features and Benefits

- **Field repairable thrust chamber**  
No pump or motor removal for maintenance
- **Field replaceable mechanical seal**  
Can be completed in one hour without disturbing any piping or motor connections
- **Mechanical seal separated from thrust chamber**  
No cross contamination in case of seal leakage
- **Reduced maintenance**  
Minimal site preparation and reduced downtime
- **Minimal lead time**  
Short construction phase

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 **NATIONAL OILWELL VARCO**

# Mission® Multistage Surface Pump (MSP)



Impeller and Diffuser

## Oil and Gas Applications

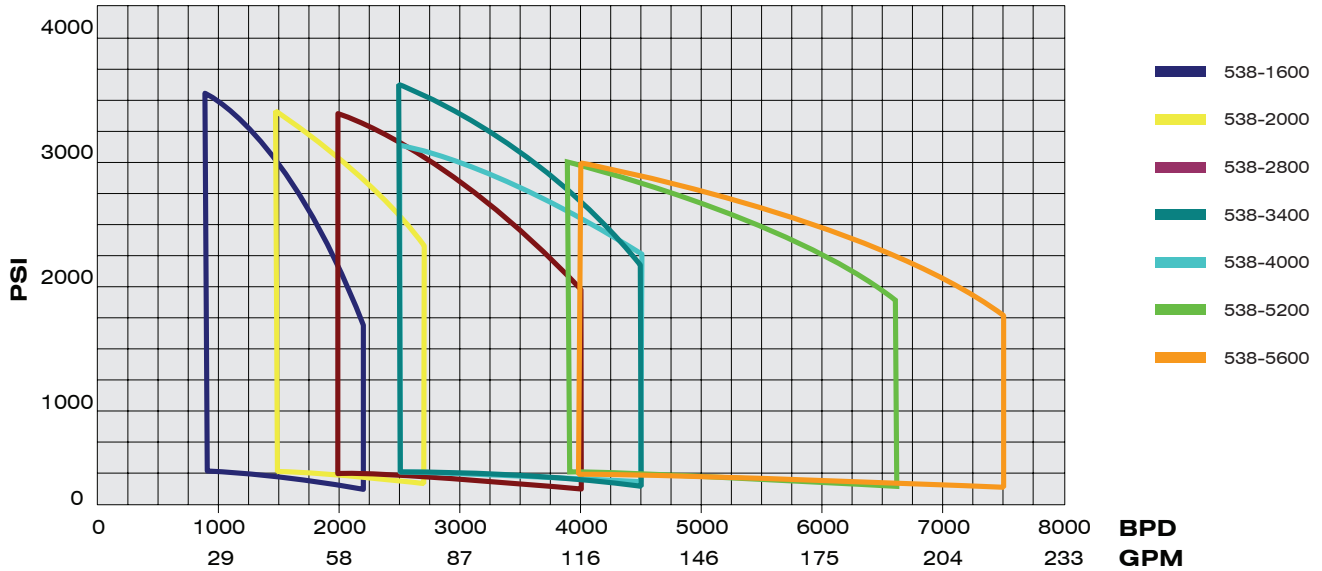
- Waterflood
- Salt water disposal
- Surface unit for hydraulic jet pump
- Amine/glycol treating
- Pipeline
- Crude oil transfer
- NGL/LPG
- CO<sub>2</sub> injection

## Other Applications

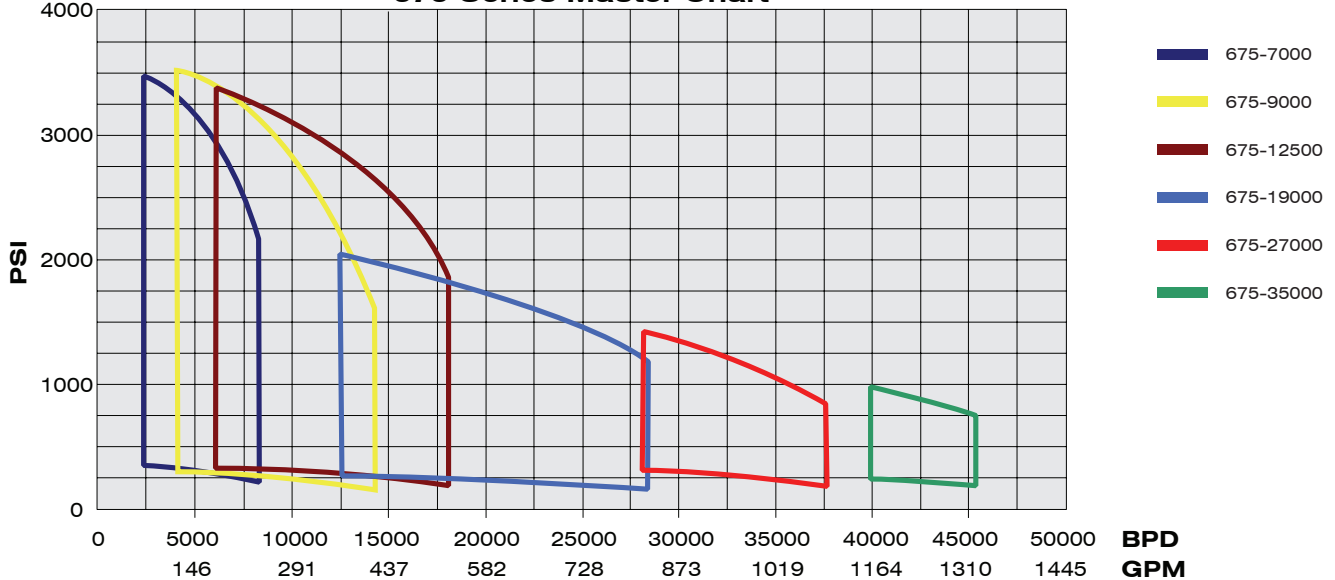
- De-scaling
- High pressure transfer
- Reverse osmosis
- Wash-down
- Industrial process fluids
- Effluent disposal
- Geothermal injection

- Alternative to "API610" process pumps
- De-watering
- Dust suppression

### 538 Series Master Chart



### 675 Series Master Chart



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