

WORKFORCE TRIPLEX PUMP  
**WORKFORCE™ WF2200 Triplex Pump**  
WORKFORCE TRIPLEX PUMP

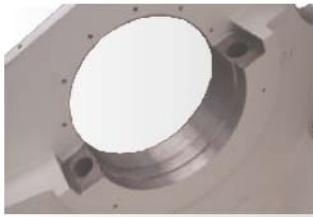


**GLOBAL SOLUTIONS**

DESIGNING, MANUFACTURING AND PACKAGING FOR THE OFFSHORE INDUSTRY

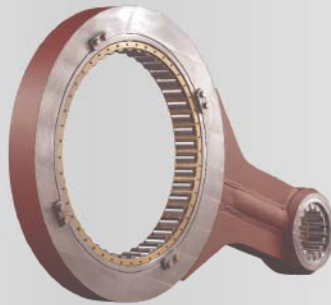
**Beyond Integration  
Seamless Solutions™**

# WORKFORCE™ WF2200



Double-reinforced, 50 Kip high strength, stress relieved, alloy-steel **Pump Frame** provides rigidity where its needed and longevity where its wanted. Heat treatment after fabrication removes residual stress and prevents distortion after final machining.

Forged, welded and heat treated low alloy steel **Connecting Rods** provide optimal operation integrity under continuous load. Fewer welds allow for enhanced durability.



**Super Bolt & Nut** on Main Bearing cap provide significantly higher yield and tensile strength than the standard hex nut and eliminate the need for special tools not commonly available on drilling rigs.

Premium SKF, Timken or equivalent **Bearings** with minimum L10 life of 30,000 hours at rated load.



Ultra compact, lightweight, harmonically balanced and aligned ground up innovative **Design** results in quiet, low vibration performance, lower operating and transport costs, and industry leading power to weight ratio.



Forged and heat treated, high strength alloy steel ANSI 4340, double helix **Gear** machined to **AGMA 10** & provide longer service life and stronger resistance against chipping under continuous load.



Forged **Pinion** shaft with machined gear made from high strength **ANSI 4340** steel forging for enhanced rigidity and service life.

One piece forged, balanced, and heat treated alloy Steel **Crankshaft** delivers maximum service life. Bolted components allow for easy repairs and optimal sustainability.



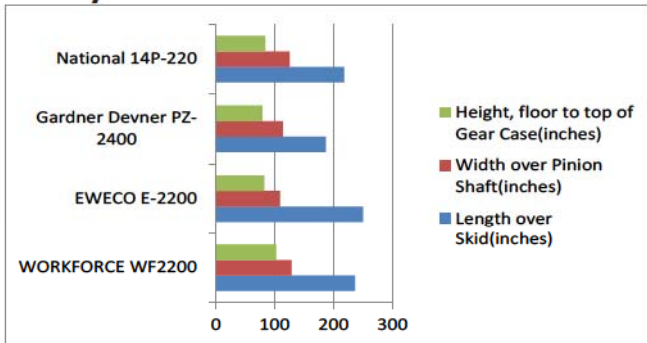
Interchangeable with **Multiple OEM** fluid end modules & components for savings in stocking inventory.



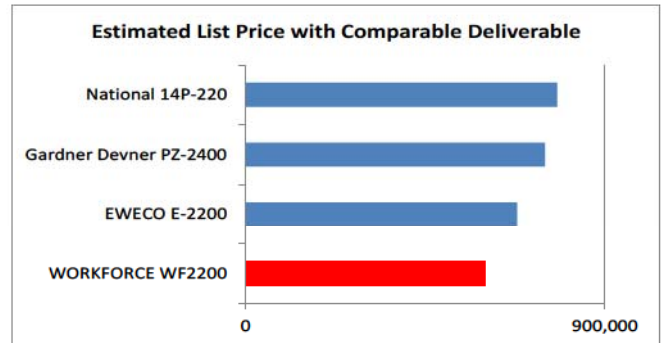
TSC Manufacturing and Supply LLC, 13788 West Road, Suite 100, Houston, TX 77041, USA  
Tel: +1 832 456 3900 Fax: +1 832 456 3901 Email: sales@t-s-c.com  
Visit our Website at [www.t-s-c.com](http://www.t-s-c.com)

# WORKFORCE™ WF2200

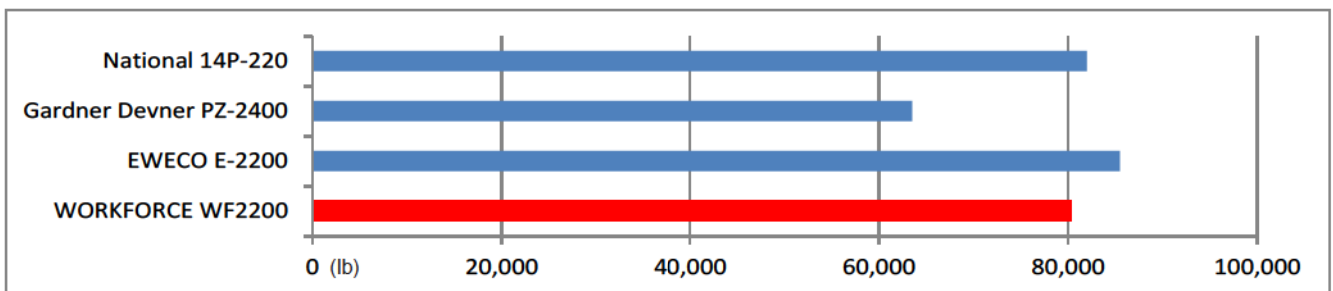
## Why Choose WORKFORCE™?



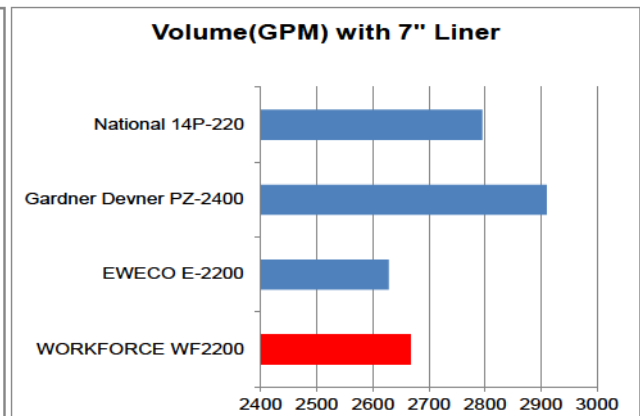
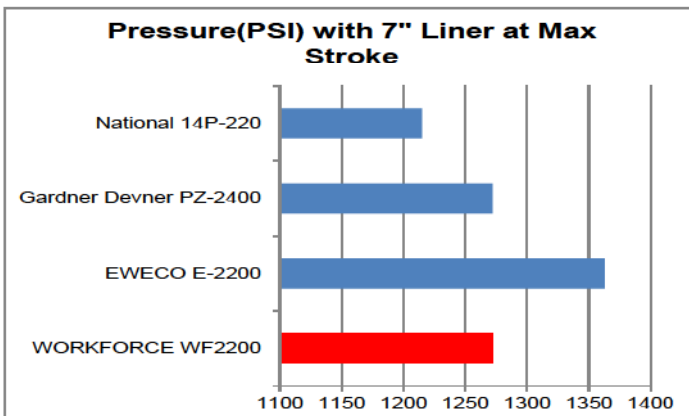
**Small Footprint, More Horsepower**



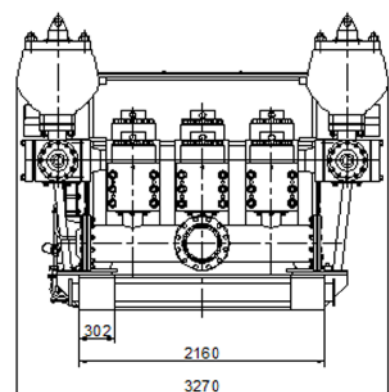
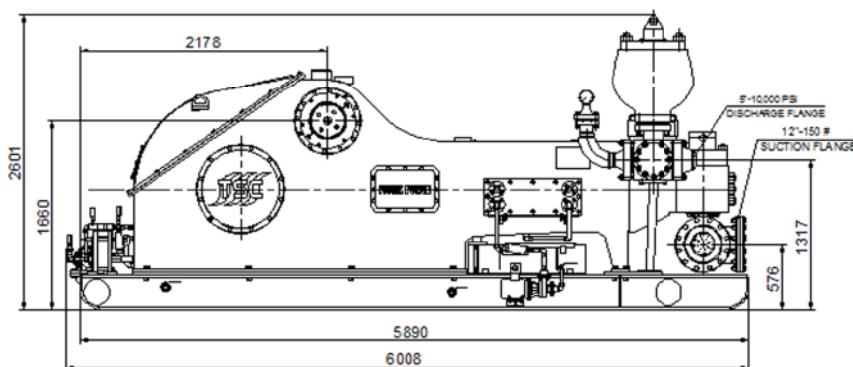
**Lower Cost, Better Value**



**Light Weight and Robust**



**Balanced Performance, Longer Life**



# WORKFORCE™ WF2200

## Specifications

Nominal Input Power:	2200 HP (1641 kW)
Maximum Continuous Pinion Torque:	24,582 lb-ft
Maximum strokes per minute:	110
Stroke Length:	14 inches (355.6 mm)
Gear Ratio:	4.273 : 1
Maximum Piston Diameter & Pressure:	9 inches (228.6 mm) @ 2667 PSI
Minimum Piston Diameter & Pressure:	5 inches (127 mm) @ 5,000 PSI *
Suction Manifold:	12 inches (304.8 mm) with 150 PSI flanges
Discharge Manifold:	5 inches (127 mm) with 10,000 PSI flanges
Oil Capacity:	190 gallons (720 liters)
Pump Dry Weight (including skid):	80,400 pounds (36,500 kg)

\* Ratings are based on 90% mechanical efficiency and 100% volumetric efficiency.

## Performance Characteristics

WF2200 Performance Characteristics		Pinion HP	1000	1200	1400	1600	1800	2000	2200	
			Pinion lb-ft	24,582						
			Pinion RPM	214	256	299	342	385	427	470
Piston Dia	Pressure	Strokes/min	50	60	70	80	90	10	110	
5"	7500 psi	GPM	178	214	250	286	321	357	393	
5.5"	7142 psi		216	259	302	346	389	432	475	
6"	6001 psi		257	308	360	411	463	514	565	
6.5"	5114 psi		302	362	422	483	543	603	664	
7"	4409 psi		350	420	490	560	630	700	770	
7.5"	3841 psi		402	482	562	643	723	803	884	
8"	3376 psi		457	548	640	731	823	914	1005	
9"	2667 psi		578	694	810	925	1041	1157	1272	

### NOTES:

- All data subject to change without notice
- Data is based on 100% or continuous duty cycle
- Data is based on 90% mechanical and 100% volumetric efficiency
- Achievable pressure will be limited by input power and fluid end module limitations

## Standard Features

- Compact footprint with high horsepower to weight ratio
- Rigid, fabricated oilfield style frame and skid providing stable platform for pump operation
- Bearings designed for minimum L10 life of 30,000 hours
- Gears designed to AGMA 8 and 10 specs
- Cast cross heads and guides to maximize longevity
- Fabricated crank shaft with forged core to minimize vibration and ensure longevity
- High strength steel used in all drive components
- Two-piece, 7500 psi rated, alloy steel fluid end module (14P-220 style as standard)

## Options

- Electric Lubrication and Liner Wash Pump Assemblies
- Dual 7500 PSI Discharge Strainer Cross Assemblies
- Dual 7500 PSI (K-20 style) Pulsation Dampeners
- Reset type Pressure Relief Valve
- Discharge Pressure Gauge
- Centrifugal Charge Pump Assembly
- Hydraulic Seat Puller
- Custom Unitized Package with electric (AC or DC) drive system



## WORKFORCE™ MAKE THE DIFFERENCE

### WORK FORCE™

- ✓ **Innovative Design** - Compact, lightweight, harmonically balanced and aligned
- ✓ **Frame** - Robust, double reinforced 50 Kip high strength, heat treated, stress relieved low alloy steel, designed for discharge pressure up to 7500psi
- ✓ **Crankshaft** - Forged and heat-treated alloy steel, balanced, mounted to the power frame with double-row, self-aligning radial spherical roller bearings
- ✓ **Connecting Rod** - Low alloy steel, forge-welded and heat-treated
- ✓ **Bull Gear** - Forged and heat-treated, alloy steel ANSI 4340, double helix gear machined to AGMA grade 10
- ✓ **Pinion Shaft** - Forged and heat-treated, alloy steel ANSI 4340, double helix gear machined to AGMA grade 10, teeth surface hardened to BHN 360-400
- ✓ **Bearing** - Premium SKF, Timken or equivalent bearings typically with minimum L10 life of 30,000 hours at rated load
- ✓ **Crosshead** - Nodular ductile, cast iron with interchangeable slides
- ✓ **Super Nut** - on Main Bearing cap in lieu of Hex nuts
- ✓ **Lube System** - AC Electrical system standard
- ✓ **Fluid End Modules** - Interchangeable with Multiple OEM fluid end modules & components
- ✓ **Rubber Sealing Components** - American rubber components standard

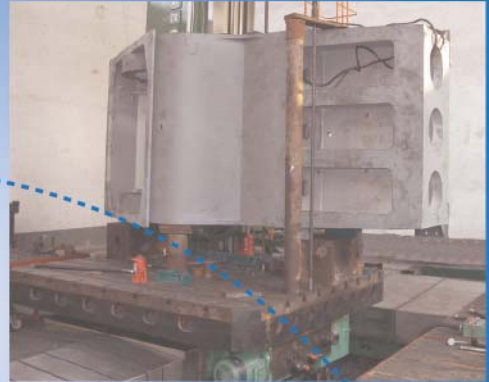
### Common Generic Brands

- **Design** - Generally copied from antiquated designs. Functional, but are generally characterized to be unbalanced, heavy, large and comparatively lower power to weight ratio
- **Frame** - Uses a 32 Kip welded steel plating capable of handling discharge pressure to 5000psi on the power frame
- **Crankshaft** - Cast Alloy steel single or multi piece core with welded components
- **Connecting Rod** - Cast, 3 piece welded steel Connecting Rods
- **Bull Gear** - Gear from ANSI 4140 steel, forged, machined to AGMA grade 8, teeth surface hardened to BHN 270-300
- **Pinion Shaft** - Forged Pinion shaft, gear machined to AGMA 8, teeth surface hardened to BHN 320-350
- **Bearing** - Chinese made bearings with L10 life of or less 15,000 hours under rated load
- **Crosshead** - slides are not interchangeable
- **Chinese made hex nut** with generally inconsistent yield strength
- **Generly used Lube system** - not offered as standard
- **Fluid End Modules** - Interchangeable with only single OEM counterpart
- **Rubber Sealing Components** - Chinese made rubber components standard



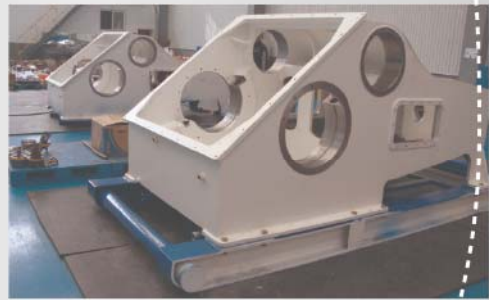
# WORKFORCE™ Triplex Pump

- Localized Service through a Global Network
- Maintenance/Repair Service
- Alignment, Clearance & Tolerance Adjustments
- Internal Repair/Replacement Service
- Closed Circuit Pressure Testing
- Unitized Pump Packages with Diesel or Electric Drive
- Complete Pump Refurbishment
- 24x7x365 Technical Support



- API 7K, Q1 & ISO 9001 Certified
- World Class R&D Team
- Fully Stocked Local Inventories
- Wholly-owned Manufacturing Facilities
- Global Quality System

- Worldwide Immediate Parts Support
- Mature Global Supply Network
- Available Maintenance Agreements
- Rental Services
- In House Financing Available on Volume Orders



TSC, Casper, WY

TSC, Midland, TX  
TSC, Kilgore, TX  
TSC, Houston, TX  
TSC, Alice, TX

TSC, Cd Del Carmen

TSC, Maracaibo  
TSC, Anaco  
TSC, Bogota  
TSC, Quito

TSC, Macae  
TSC, Rio de Janeiro

TSC, Aberdeen  
TSC, Shipley  
TSC, Birmingham

TSC, Moscow

TSC, Dubai

TSC, Beijing  
TSC, Qian  
TSC, Xi'an  
TSC, Qingdao  
TSC, Zhengzhou

TSC, Hongkong

TSC, Singapore



TSC Manufacturing and Supply LLC, 13788 West Road, Suite 100, Houston, Texas 77041, USA  
Tel: +1 832 456 3900 Fax: +1 832 456 3998 Email: [sales@t-s-c.com](mailto:sales@t-s-c.com)  
Visit our Website at [www.t-s-c.com](http://www.t-s-c.com)

04/2014