



Well Service Pump

Superior Performance and Durability for Rugged Applications

FMC Technologies' complete family of Well Service Pumps includes the 2400 HP Triplex and the 3000 HP Quintuplex models which are designed for fracturing, acidizing and matrix stimulation applications. These high pressure plunger pumps are capable of delivering flow rates up to 36 barrels per minute and pressures up to 20,000 psi. Each model is designed with 250,000 lbs. rod load rating.

The bottom line value of the FMC Technologies' well service pumps is an overall reduction in total life cycle cost.

Key Features

- **Improved Suction Valve Retainer Design** (*patent pending*) – significantly extends the fatigue life of the fluid end and reduces operating costs.
- **10" Stroke and Higher Rod Load Capacity** – provides increased fluid pumping capacity at slower speeds, thereby extending the life of all major components.
- **Connecting Rod/Crosshead Knuckle Joint** (*patent pending*) - the unique design maximizes the bearing area resulting in extreme durability especially in high rod load and sand-out situations.
- **Improved Lubrication** – special attention was given to lubrication of all moving parts. The crosshead/connecting rod is lubricated from two paths.
- **Independent Stuffing Boxes** – extends fluid end life and lowers life cycle operating costs.
- **Thru Fluid End Tie-bolts** – eliminate the problems of conventional stay rods and reduce power end structural failures.
- **Innovative Supply Chain** – prevents the bottlenecks at critical suppliers, providing reliable deliveries.
- **Every well service pump is factory tested** to the full horse power prior to shipment to the customer site to ensure product quality.
- **Services support** is provided by FMC Technologies' Global Integrated Services Team.

Design Ratings

Quintuplex Stimulation Pump (WQ3000)

- Weight: 18,500 lbs.
- Power: 3000 HP
- Stroke Length: 10 in.
- Rod Load: 250,000 lbs.
- Maximum Flow Rate: 36.7 BPM
- Maximum Pressure: 20,000 psi

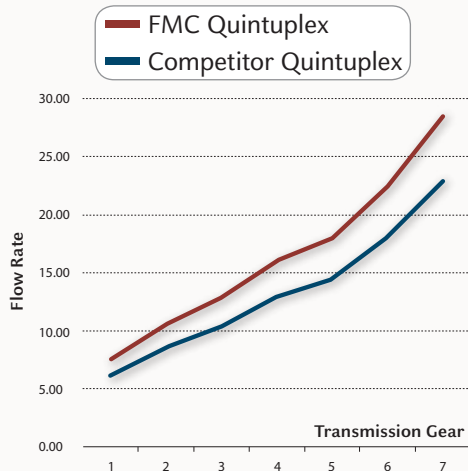
Triplex Stimulation Pump (WT2400)

- Weight: 12,300 lbs.
- Power: 2400 HP
- Stroke Length: 10 in.
- Rod Load: 250,000 lbs.
- Maximum Flow Rate: 21.8 BPM
- Maximum Pressure: 20,000 psi

FMC WQ3000 Quintuplex with 5" plungers in 4th gear at 6,000 psi versus Competitor's Quintuplex with 5" plungers in 4th gear

Typical Job	Parameters		Units	FMC	Competitor
	Rated Horsepower		BHP	3,000	2,500
	Max Rod Load		lbs	250,000	193,325
	Stroke		in	10	8
	Pump Max Flow Rate		BPM	14.8	13.0
Engine	1800		Engine RPM		
	Allison		Transmission		

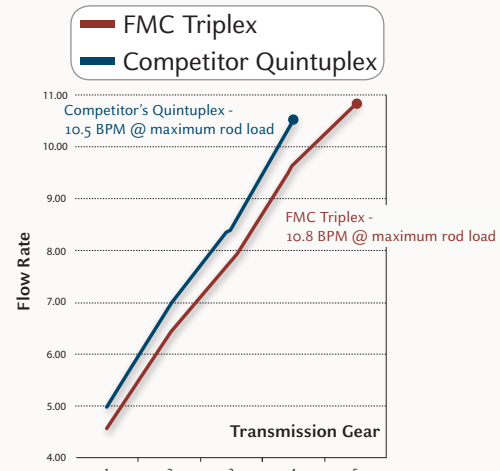
Flow rate (BPM) in each gear



FMC WT2400 Triplex with 5" plungers in 5th gear at 12,100 psi versus Competitor's Quintuplex with 4 1/2" plungers in 4th gear

Typical Job	Parameters		Units	FMC	Competitor
	Rated Horsepower		BHP	2,400	2,500
	Max Rod Load		lbs	250,000	192,325
	Stroke		in	10	8
	Pump Max Flow Rate		BPM	10.8	10.5
Engine	1800		Engine RPM		
	Allison		Transmission		

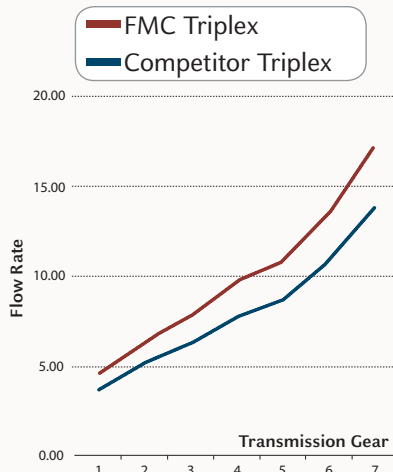
Flow rate (BPM) in each gear



FMC WT2400 Triplex with 5" plungers in 4th gear at 6,000 psi versus Competitor's Triplex with 5" plungers in 4th gear

Typical Job	Parameters		Units	FMC	Competitor
	Rated Horsepower		BHP	2,400	2,250
	Max Rod Load		lbs	250,000	225,000
	Stroke		in	10	8
	Pump Max Flow Rate		BPM	9.7	7.8
Engine	1800		Engine RPM		
	Allison		Transmission		

Flow rate (BPM) in each gear



The value provided by the long stroke and high rod load of the FMC Well Service Pumps is volume pumped. At a given pressure, these pumps' output is significantly higher than that of other pumps in the market. For example,

1. For a typical fracturing treatment at 6,000 psi, the FMC WT2400 Triplex with 5-1/2 inch plungers is equivalent in working pressure and rate to a competitive quintuplex with 5 inch plungers. The FMC triplex can do the same job as the quintuplex at much less weight, enabling the employment of DOT road legal units in areas not serviceable with quintuplex pumping units
2. For the same fracturing treatment, three FMC WQ3000 pumping units are able to perform the same job where four competitive quintuplex pumps were required previously. That translates into less equipment, fewer personnel and lower operating costs.

The value of the FMC Well Service Pumps is greater flexibility, lower operating costs and more dollars to the bottom line.