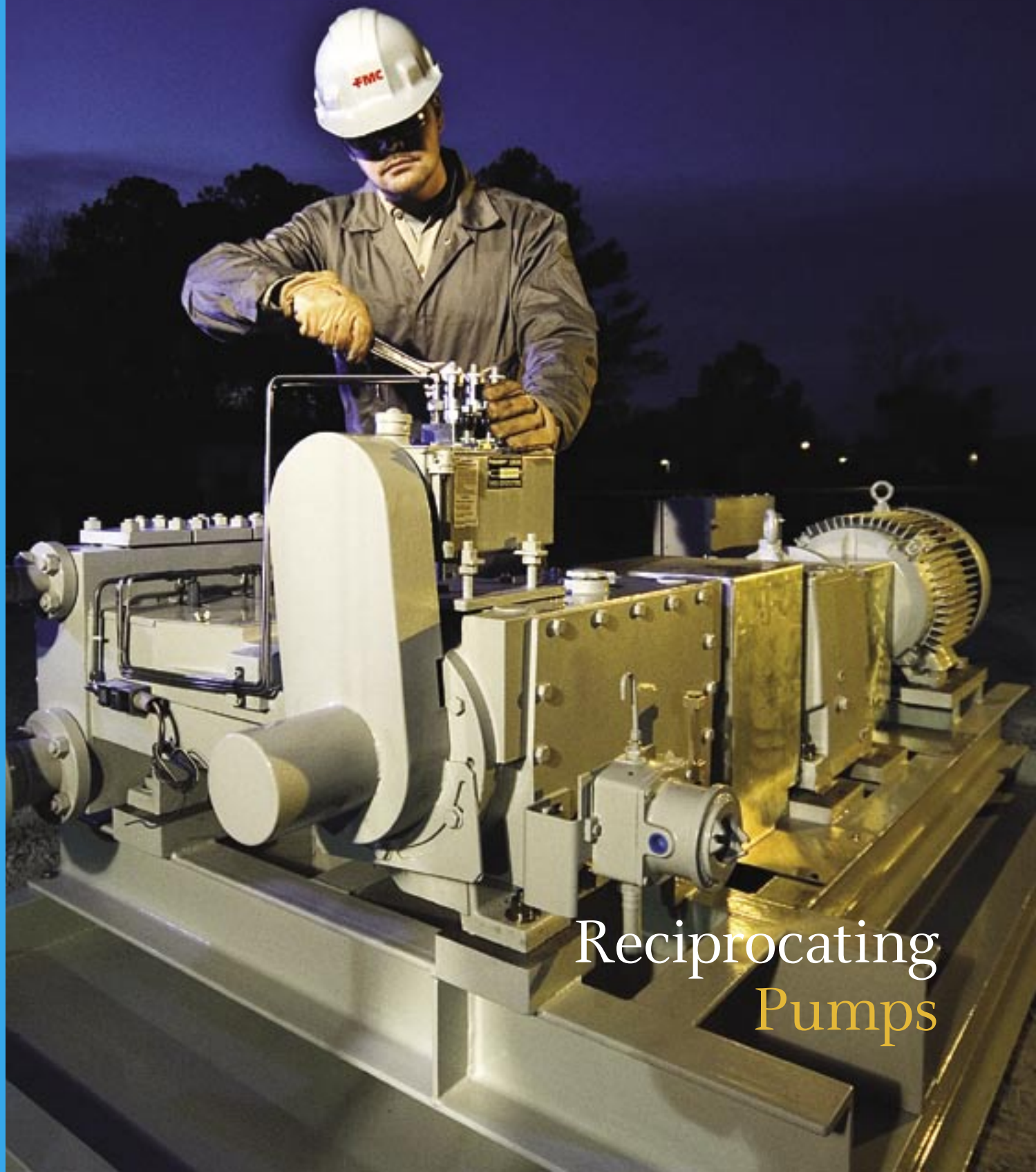


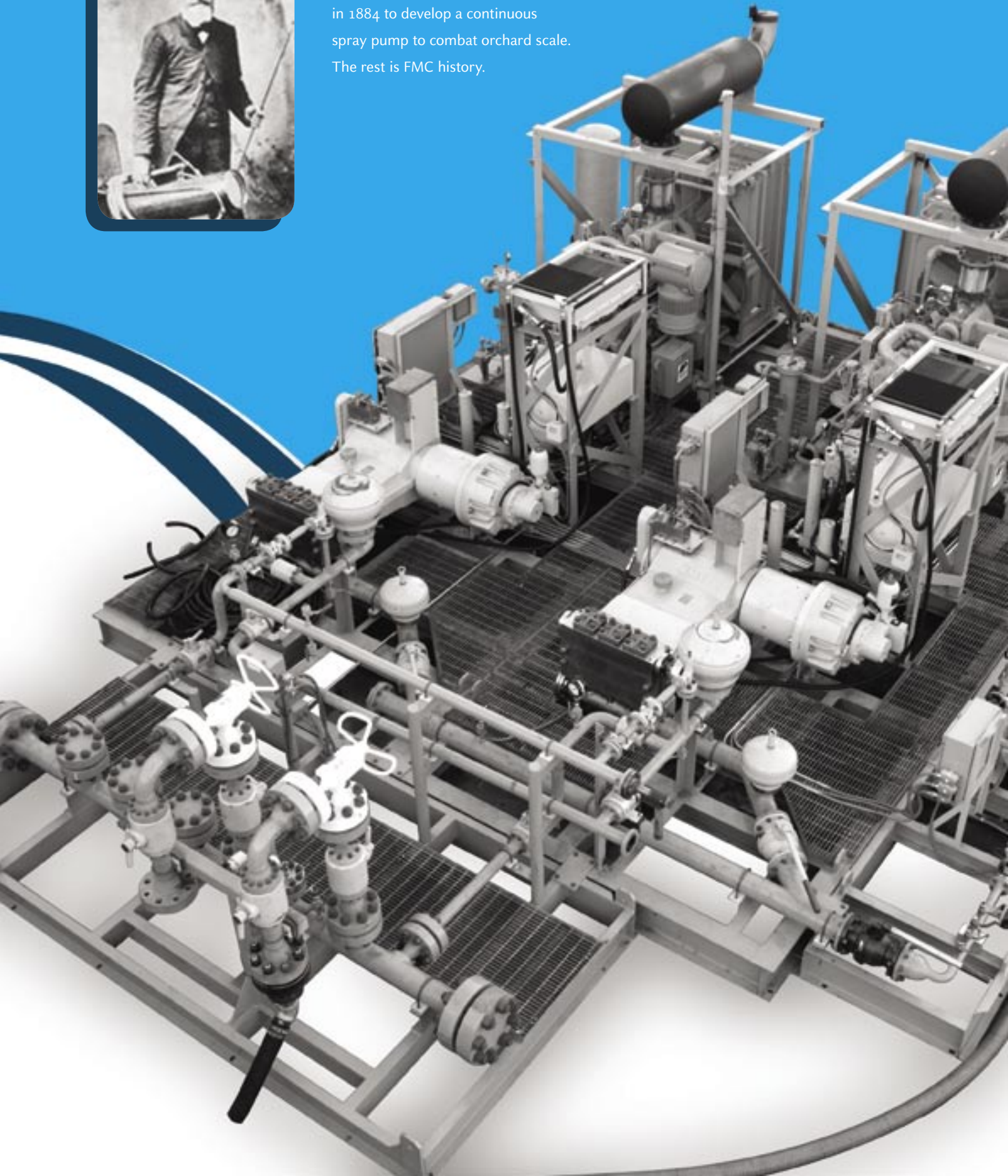
FMC Technologies



Reciprocating
Pumps



A prolific inventor, John Bean interrupted his California retirement in 1884 to develop a continuous spray pump to combat orchard scale. The rest is FMC history.



FMC Technologies pumps have provided exceptional performance and value since their introduction in 1884. Backed by over a century of experience on thousands of projects worldwide, FMC Technologies produces a complete range of piston and plunger pumps for many varied markets, including the general industrial market.

As the pioneer and world leader in piston and plunger pump technology, FMC Technologies delivers pumps in sizes, designs, and materials to meet customer and industry requirements. FMC Technologies pumps are setting new standards for low cost of ownership, long service life, and ease of maintenance.

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Pump information

Customer Commitment

Many factors contribute to the ability of FMC Technologies to satisfy customer needs - a broad, high-pressure pump line offering advanced technology and materials - integrated engineering, manufacturing, fabrication, and testing capabilities - worldwide technical assistance - and a proven track record of success in a complete range of applications. Most importantly, FMC Technologies possesses a company-wide commitment to performance and value.

All pumps and consumable parts are manufactured to precise specifications using advanced materials of construction, specialized machining processes, and rigid quality control measures. As part of its commitment to continuous improvement, FMC Technologies provides comprehensive technical assistance, custom pump designs, and global support.

Manufacturing

FMC Technologies manufactures its family of piston and plunger pumps at its state-of-the-art facility utilizing the latest in CNC machining centers, production planning systems, 3D CAD/CAM systems, and order and distribution systems. Like other FMC Technologies products, the pump line is manufactured to ISO-9001 quality standards. Every pump is tested prior to shipment to ensure that it meets rigorous industry and customer requirements. All tests can be witnessed and certified.

Research and Development

As the pump industry's performance and value leader, FMC Technologies is investing more capital and manpower in research and development than at any time in its history. Dedicated R&D personnel using state-of-the-art facilities are working to refine existing products and to create new pumps designed to satisfy specific customer requirements.





All FMC Technologies' pumps are tested at rated speeds and pressures prior to shipment. FMC Technologies provides a complete range of research and development testing using drilling mud, sea water, and other fluids.

Pump Systems

FMC Technologies and its distributors have the resources to deliver turnkey pump systems on a global basis. By combining systems design, engineering, manufacturing, and project management capabilities, FMC Technologies offers proven pump packages for a complete range of applications. From a simple pump package with motor and skid to a complete pumping system with multiple pumps, controls, valves, and piping, the FMC Technologies team delivers.

FMC Technologies pumps are manufactured to ISO-9001 standards at its state-of-the-art facility in Stephenville, Texas.

Markets

- » Agriculture
- » Chemical
- » Desalination
- » Drilling
- » General Industrial
- » Mining
- » Oil and gas
- » Pulp and paper
- » Sewer Cleaning
- » Steel

Pump applications

Oil & Gas

As one of the world's top suppliers of solutions for the global oil and gas industry, FMC Technologies delivers pumps for a complete range of process, transportation, and refining applications. These world-proven pumps are built to excel in the most demanding services while providing a safe, effective method of pumping hot, corrosive, and/or hazardous fluids at pressures up to 10,000 psi. Typical applications include:

- » Water disposal
- » Secondary recovery
- » Glycol dewatering
- » Amine sweetening
- » Chemical injection
- » Crude transfer



General Industrial

Reciprocating pumps from FMC Technologies are ideally suited for a wide variety of industrial services where durability, high efficiency, and versatility are paramount. FMC Technologies pumps are setting new standards for low cost of ownership, long service life, and ease of maintenance in the world's toughest industrial applications. Typical applications in this market include:

- » Machine tool coolant
- » Mine-dust suppression
- » Mine dewatering
- » Steam boiler feed
- » High-pressure washdown
- » Descaling
- » Fire protection
- » Hydrostatic testing
- » Water jet cutting
- » Slurries



Horizontal Directional Drilling

As the pioneer and global leader in the development of piston pump technology within the Horizontal Direction Drilling Industry (HDD), FMC Technologies product offering has been designed to meet the market's demanding requirements. FMC Technologies HDD product line offering enables the customer to design drill systems using onboard or stand-alone pumping solutions. FMC Technologies' piston pumps have fewer parts than plunger pumps, making them inherently easier and less costly to maintain. The pumps are manufactured to precise specifications using the most advanced materials, machining processes and rigid quality control measures. It's this commitment to design and quality which increases drilling productivity. FMC Technologies piston pumps maximize revenues by increasing asset efficiency while lowering overall pump ownership cost. Please contact your FMC Technologies sales representative for further information.

Accreditation's



ATEX



CONFORMITÉ
EUROPÉENNE

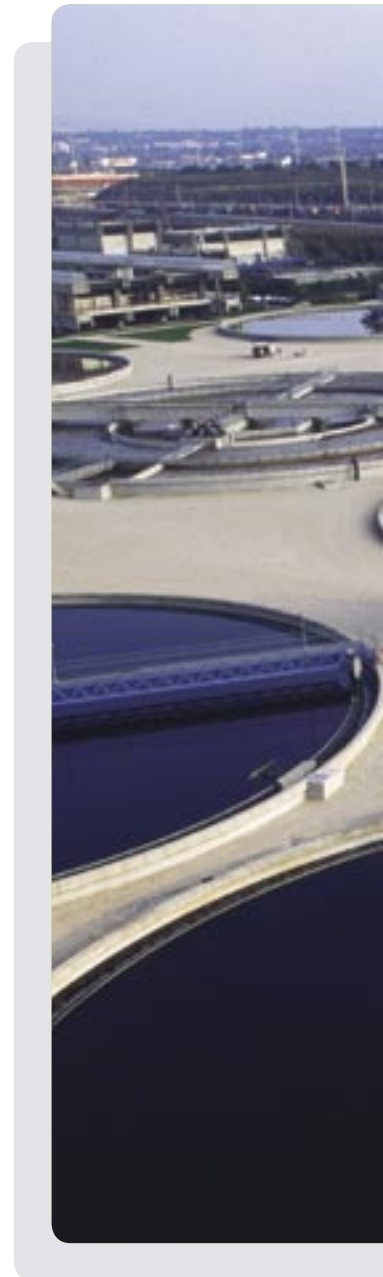


API

Reverse Osmosis Water Purification

The high mechanical efficiency of FMC Technologies pumps makes them the ideal choice for reverse osmosis systems. The world leader in both commercial and military RO pump technology, FMC Technologies delivers triplex and quintuplex pump solutions for smooth, reliable performance with minimal maintenance requirements. FMC Technologies provides aluminum bronze or stainless steel construction for most RO services, however duplex stainless or exotic materials such as Hastelloy are available for critical, high salinity or acidic liquid requirements.

The patented FMC Technologies Aqua Pump is the solution for critical RO services where minimal equipment weight and size are required. The pump features a unique composite material construction, oil-free drive end and produces minimal pulsations.



Sewer Cleaning Pumps

FMC Technologies continues to supply unsurpassed technology, service and responsiveness to the sewer cleaning industry. FMC Technologies' culture of being responsive and reacting to the needs of a market is directly related to providing this alternative pumping solution to the OEM's of the sewer cleaning industry.

FMC Technologies leads the market into the 21st century with its environmental friendly pump product. The custom design piston pump products operate at lower r.p.m.'s while incorporating state-of-the-art materials and wear components. The pumps are designed to pump the most abrasive fluids within the industry such as gray water and recycled sewer and storm waters. The FMC Technologies Sewer Cleaning Pumps continue the tradition of lowering component life cycle cost and total cost of ownership by incorporating longer lasting, increased wear characteristics and run dry capabilities. Please contact your FMC sales representative for further information.



Pump applications

Core Drilling and Mining

The durability of the FMC Technologies “Bean” piston pumps is unsurpassed within the vertical drilling markets. Designed for continuous duty applications, the FMC Technologies “Bean” piston line increases drilling productivity while lowering the overall cost of ownership. The pump’s simple design incorporates less wearable components and ease of service. FMC Technologies self-cleaning and erosion-resistant valve technology enables the pumps to handle the most abrasive and stringy fluids within the industry. Each drilling activity requires enhancing certain conditions and criteria to maximize drilling performance. This customization has led FMC Technologies pumps to become the leader within the surface and underground coring, water well, geotechnical and the environmental drilling markets with its “BEAN” piston pump product line.



In addition to the services already listed, FMC Technologies is a leading provider of pumping solutions designed for mobile equipment. These pumps feature lightweight, high-performance construction and special designs to allow them to efficiently integrate into the overall equipment package.



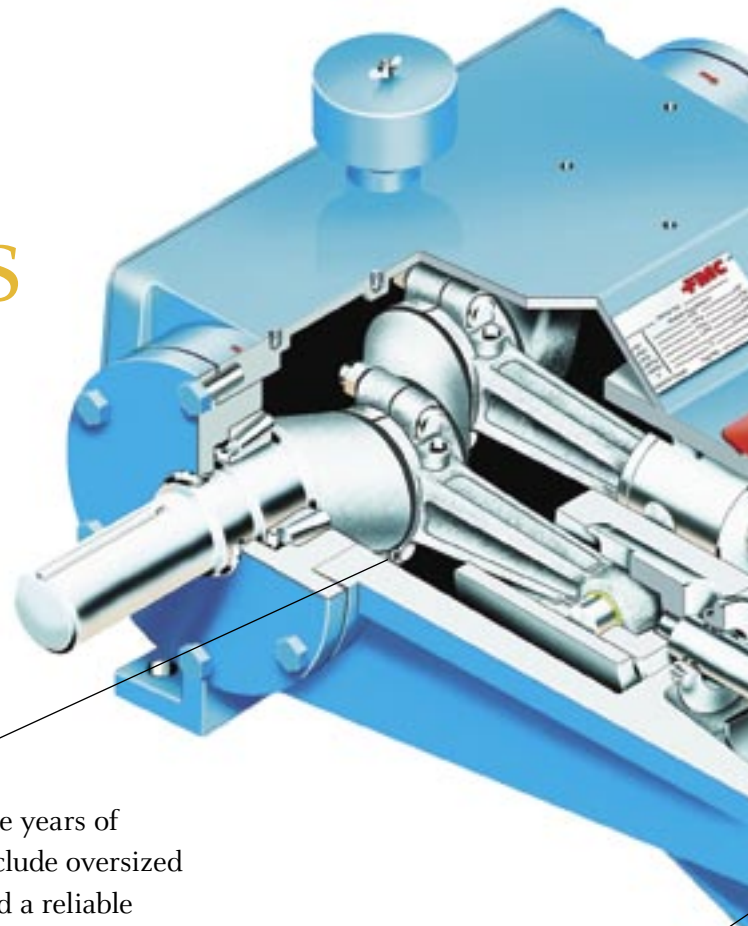
Agriculture

In addition to the markets and applications already listed, FMC Technologies is a leading provider of high pressure pumping solutions for the mobile equipment market. Since 1884, FMC Technologies has been creating economic value by developing a diverse line of custom pumps designed around the needs and criteria of our agricultural and sewer cleaning customers.

The “Bean Piston Pump Product Line” can be customized to handle the most abrasive and corrosive insecticides and pesticides. FMC Technologies engineer’s expertise in materials and chemical analysis enables FMC Technologies to manufacture and construct pumps that are ideally suited for the agricultural spraying applications of today. By understanding the “what and why” within the pumping specifics, FMC Technologies is able to provide the professional sprayer a broad line of pumps that increase revenue and lower overall operating cost. In addition to maximizing economic value, FMC Technologies continues its tradition of delivering a quality product at a competitive price.

Pump applications

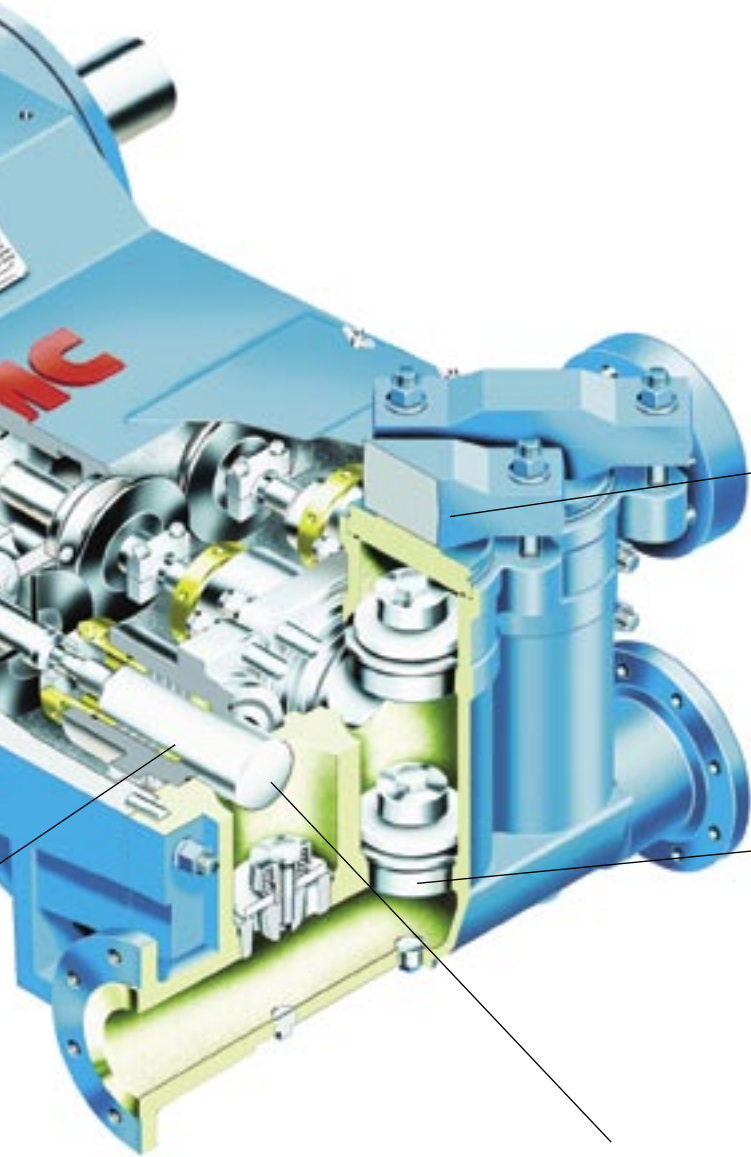
Plunger pumps



Durable Power Ends are designed to provide years of service life. Heavy-duty design features include oversized bearings, precision crafted components, and a reliable splash- lubrication system. Pressure oil lube, oil level monitoring, heating and cooling systems can be added as options.

Braided Compression Packing made from aramid and PTFE fibers provides excellent overall performance. External lubrication is not required but can be added as an option to extend packing life in many applications. Numerous additional packing styles or materials can be supplied to provide optimal performance in any service.

FMC Technologies plunger pumps are an excellent choice for the most demanding applications. Extremely versatile FMC Technologies plunger pumps can be readily adapted for optimum performance in a wide range of service conditions. Pumps are available in ductile iron, carbon steel, aluminum bronze, duplex stainless steel, Inconel®, and other materials as required.



Fluid End wetted parts can be supplied in a wide variety of cast or forged materials.

Standard Disc Valves provide quiet, efficient performance in most applications. Abrasion-resistant valves are available to suit high-performance applications.

Hard-Coated Plungers provide the best combination of value, performance, and corrosion resistance for most applications. Ceramic, tungsten carbide, or other styles are also available.

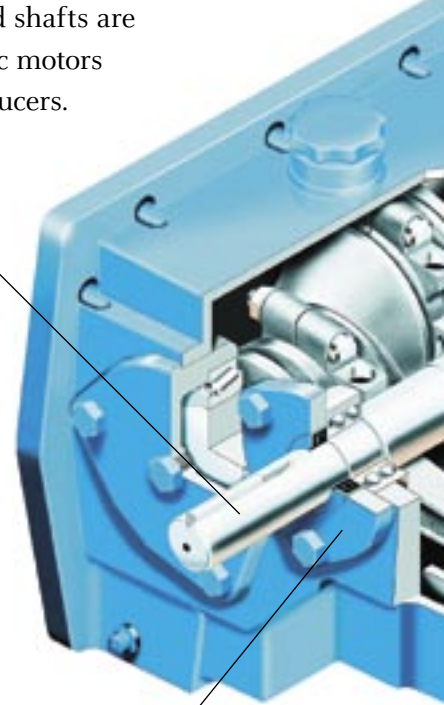
All pumps have been carefully designed to provide years of operational life. Heavy-duty designs with oversized bearings ensure these pumps will deliver value and performance in real world operating conditions. When maintenance is required, FMC Technologies pumps feature easy access to typical service areas.

FMC Technologies plunger pumps have an outstanding record of dependable service in thousands of installations around the world. This success stems from the ability to combine sound engineering, reliable craftsmanship, and years of pumping experience.

Piston pumps

FMC Technologies Piston Pumps are engineered and designed to meet the market needs and requirements. By working together with its customers, FMC Technologies customizes the designs and innovative component technology to optimize pump efficiency in the most extreme working conditions. The lower life cycle cost can be contributed to designing longer lasting parts with innovative wear characteristics into the pumping solution. Increased priming characteristics can be achieved with low clearance volume fluid chambers. The piston pumps are designed to enable service in the field, decrease any unnecessary downtime and increase production profit output.

Shaft configurations provide maximum flexibility. Straight-keyed shaft or splined shafts are available for hydraulic motors and external gear reducers.



Compact Power Frames (many with built-in gear reduction) simplify installation in mobile or space-constrained applications.

FMC Technologies Piston Pumps continue to create value that is unsurpassed in the industry. The versatility of a broad range of piston products combined with innovative design, component technology with lower life cycle cost and serviceability allows FMC Technologies to focus on Tomorrow's Engineered Solutions Today.

The Piston Pump Product line is available in up to 350 horsepower and designed for continuous duty industrial applications. The piston pump product is available in triplex, quintuplex or quadruplex configurations and operate up to 2,500 psi with flows up to 670 gpm. Pumps can incorporate ductile iron, aluminum bronze and other materials as required by the application.

Solid Ceramic Piston Liners provide the ultimate in wear and corrosion resistance.

Durable Fluid End designs enhance priming characteristics and component service life.

Removable Cylinder Covers allow for fast, easy maintenance of the packing without removal of the fluid end or piping.

Standard Disc Valves provide quiet, efficient performance in most applications. Abrasion-resistant and ball style valves are available to suit high-performance applications.

Piston Cups incorporate a unique geometry with composite rubber and fabric construction for reliable, leak-tight performance.

Overall, FMC Technologies broad product offering, serviceability, innovative designs and component technology increases productivity by decreasing downtime. FMC Technologies Piston Pumps continue to lower overall cost of ownership by providing Tomorrow's Market Solutions Today.

o – 34 HP Pump Specifications

(Pump Selection Formula PG. #25)

Pump Series	Model	Rated Pressure (psi)	Continuous Duty Capacity	Intermittent Duty Capacity	Gallons per Revolution	Seal Diameter (in)	Number of Cylinders	Stroke (in)
Ao4 2.6/3.2 HP	Ao410	850	4.2 GPM @ 400 RPM	5.3 GPM @ 500 RPM	0.0106	1.250	2	1.00
	Ao411	700	5.2 GPM @ 400 RPM	6.5 GPM @ 500 RPM	0.0129	1.375	2	1.00
	Ao413	550	7.2 GPM @ 400 RPM	9.0 GPM @ 500 RPM	0.0180	1.625	2	1.00
Io4 2.6/3.2 HP	Io410	850	4.2 GPM @ 400 RPM	5.3 GPM @ 500 RPM	0.0106	1.250	2	1.00
	Io411	700	5.2 GPM @ 400 RPM	6.5 GPM @ 500 RPM	0.0129	1.375	2	1.00
	Io413	550	7.2 GPM @ 400 RPM	9.0 GPM @ 500 RPM	0.0180	1.625	2	1.00
Mo4 2.8/4.2 HP	Mo405	1,750	2.4 GPM @ 600 RPM	3.6 GPM @ 900 RPM	0.0040	0.625	3	1.00
	Mo406	1,250	3.4 GPM @ 600 RPM	5.1 GPM @ 900 RPM	0.0057	0.750	3	1.00
Eo4 6.1/7.0 HP	Eo410	850	9.5 GPM @ 450 RPM	10.9 GPM @ 515 RPM	0.0212	1.250	4	1.00
	Eo411	700	11.6 GPM @ 450 RPM	13.2 GPM @ 515 RPM	0.0257	1.375	4	1.00
	Eo413	550	16.2 GPM @ 450 RPM	18.5 GPM @ 515 RPM	0.0359	1.625	4	1.00
Lo9 11.6/13.8 HP	Lo913	1,200	12.6 GPM @ 750 RPM	15.0 GPM @ 890 RPM	0.0168	1.625	3	2.25
	Lo914	1,000	14.6 GPM @ 750 RPM	17.4 GPM @ 890 RPM	0.0195	1.750	3	2.25
	Lo918	700	24.2 GPM @ 750 RPM	28.7 GPM @ 890 RPM	0.0323	2.250	3	2.25
Lo6 12.3/17.6 HP	Lo614	1,000	16.4 GPM @ 350 RPM	23.5 GPM @ 500 RPM	0.0469	1.750	3	1.50
	Lo618	700	27.1 GPM @ 350 RPM	38.8 GPM @ 500 RPM	0.0775	2.250	3	1.50
Lo6-HV 15.1/20.7 HP	Lo614-HV	1,200	18.8 GPM @ 400 RPM	25.8 GPM @ 550 RPM	0.0469	1.750	3	1.50
	Lo618-HV	750	31.0 GPM @ 400 RPM	42.6 GPM @ 550 RPM	0.0775	2.250	3	1.50
Mo6 16.6/20.9 HP	Mo604	10,000	1.8 GPM @ 475 RPM	2.3 GPM @ 600 RPM	0.0038	0.500	3	1.50
	Mo605	8,800	2.9 GPM @ 475 RPM	3.6 GPM @ 600 RPM	0.0060	0.625	3	1.50
	Mo606	6,100	4.1 GPM @ 475 RPM	5.2 GPM @ 600 RPM	0.0086	0.750	3	1.50
	Mo608	3,400	7.3 GPM @ 475 RPM	9.2 GPM @ 600 RPM	0.0153	1.000	3	1.50
	Mo610	2,200	11.4 GPM @ 475 RPM	14.3 GPM @ 600 RPM	0.0239	1.250	3	1.50
	Mo612	1,500	16.3 GPM @ 475 RPM	20.6 GPM @ 600 RPM	0.0344	1.500	3	1.50
	Mo614	1,120	22.3 GPM @ 475 RPM	28.1 GPM @ 600 RPM	0.0469	1.750	3	1.50
W11 17/35 HP	W1118	1,000	24.8 GPM @ 630 RPM	25.0 GPM @ 635 RPM	0.0394	2.250	3	2.75
	W1122	1,000	50.1 GPM @ 850 RPM	50.1 GPM @ 850 RPM	0.0589	2.750	3	2.75
Lo9-HV 22.6/27.1 HP	Lo913-HV	1,500	22.7 GPM @ 375 RPM	27.3 GPM @ 450 RPM	0.0606	1.625	3	2.25
	Lo914-HV	1,300	26.4 GPM @ 375 RPM	31.6 GPM @ 450 RPM	0.0703	1.750	3	2.25
	Lo918-HV	800	43.6 GPM @ 375 RPM	52.3 GPM @ 450 RPM	0.1162	2.250	3	2.25
Mo9 26/33 HP	Mo905	10,000	3.8 GPM @ 425 RPM	5.0 GPM @ 550 RPM	0.0090	0.625	3	2.25
	Mo906	6,900	5.5 GPM @ 425 RPM	7.1 GPM @ 550 RPM	0.0129	0.750	3	2.25
	Mo908	3,900	9.7 GPM @ 425 RPM	12.6 GPM @ 550 RPM	0.0229	1.000	3	2.25
	Mo910	2,500	15.3 GPM @ 425 RPM	19.7 GPM @ 550 RPM	0.0359	1.250	3	2.25
	Mo912	1,750	21.9 GPM @ 425 RPM	28.4 GPM @ 550 RPM	0.0516	1.500	3	2.25
Mo8 34/45 HP	Mo806	10,000	5.2 GPM @ 450 RPM	6.9 GPM @ 600 RPM	0.0115	0.750	3	2.00
	Mo807	7,400	7.0 GPM @ 450 RPM	9.4 GPM @ 600 RPM	0.0156	0.875	3	2.00
	Mo808	5,650	9.0 GPM @ 450 RPM	12.2 GPM @ 600 RPM	0.0204	1.000	3	2.00
	Mo810	3,620	14.4 GPM @ 450 RPM	19.1 GPM @ 600 RPM	0.0339	1.250	3	2.00
	Mo812	2,250	20.7 GPM @ 450 RPM	27.5 GPM @ 600 RPM	0.0459	1.500	3	2.00
	Mo814	1,850	28.1 GPM @ 450 RPM	37.5 GPM @ 600 RPM	0.0625	1.750	3	2.00
	Mo816	1,420	36.7 GPM @ 450 RPM	49.0 GPM @ 600 RPM	0.0816	2.000	3	2.00
	Mo818	1,120	46.5 GPM @ 450 RPM	62.0 GPM @ 600 RPM	0.1033	2.250	3	2.00
Mo820	915	57.4 GPM @ 450 RPM	76.5 GPM @ 600 RPM	0.1275	2.500	3	2.00	

37 – 117 HP Pump Specifications

Pump Series	Model	Rated Pressure (psi)	Continuous Duty Capacity	Intermittent Duty Capacity	Gallons per Revolution	Seal Diameter (in)	Number of Cylinders	Stroke (in)
L11 37/52 HP	L1114	2,500	21.5 GPM @ 900 RPM	30.5 GPM @ 1275 RPM	0.0239	1.750	3	2.75
	L1118	1,500	35.5 GPM @ 900 RPM	50.2 GPM @ 1275 RPM	0.0394	2.250	3	2.75
	L1122	1,000	53.0 GPM @ 900 RPM	75.1 GPM @ 1275 RPM	0.0589	2.750	3	2.75
L12 49/61 HP	L1214	2,500	30.5 GPM @ 325 RPM	37.5 GPM @ 400 RPM	0.0937	1.750	3	3.00
	L1218	1,500	50.3 GPM @ 325 RPM	62.0 GPM @ 400 RPM	0.1549	2.250	3	3.00
	L1222	1,000	75.2 GPM @ 325 RPM	92.6 GPM @ 400 RPM	0.2314	2.750	3	3.00
M12 62/77 HP	M1207	10,000	9.4 GPM @ 400 RPM	11.7 GPM @ 500 RPM	0.0234	0.875	3	3.00
	M1208	7,600	12.2 GPM @ 400 RPM	15.3 GPM @ 500 RPM	0.0306	1.000	3	3.00
	M1210	4,900	19.1 GPM @ 400 RPM	23.9 GPM @ 500 RPM	0.0478	1.250	3	3.00
	M1212	3,400	27.5 GPM @ 400 RPM	34.4 GPM @ 500 RPM	0.0688	1.500	3	3.00
	M1214	2,500	37.5 GPM @ 400 RPM	46.9 GPM @ 500 RPM	0.0937	1.750	3	3.00
	M1216	1,900	49.0 GPM @ 400 RPM	61.2 GPM @ 500 RPM	0.1224	2.000	3	3.00
	M1218	1,500	62.0 GPM @ 400 RPM	77.5 GPM @ 500 RPM	0.1549	2.250	3	3.00
	M1220	1,250	76.5 GPM @ 400 RPM	95.6 GPM @ 500 RPM	0.1912	2.500	3	3.00
	M1222	1,000	92.6 GPM @ 400 RPM	115.7 GPM @ 500 RPM	0.2314	2.750	3	3.00
L16 66/87 HP	L1614	2,500	34.9 GPM @ 1100 RPM	46.0 GPM @ 1450 RPM	0.0317	1.750	3	4.00
	L1616	2,100	45.5 GPM @ 1100 RPM	60.0 GPM @ 1450 RPM	0.0414	2.000	3	4.00
	L1618	1,650	57.6 GPM @ 1100 RPM	76.0 GPM @ 1450 RPM	0.0524	2.250	3	4.00
	L1622	1,100	86.1 GPM @ 1100 RPM	113.5 GPM @ 1450 RPM	0.0783	2.750	3	4.00
M14 88/104 HP	M1408	10,000	13.4 GPM @ 375 RPM	15.5 GPM @ 425 RPM	0.0357	1.000	3	3.50
	M1410	6,500	20.9 GPM @ 375 RPM	23.7 GPM @ 425 RPM	0.0558	1.250	3	3.50
	M1412	4,500	30.1 GPM @ 375 RPM	34.1 GPM @ 425 RPM	0.0803	1.500	3	3.50
	M1414	3,300	41.0 GPM @ 375 RPM	46.5 GPM @ 425 RPM	0.1093	1.750	3	3.50
	M1416	2,500	53.6 GPM @ 375 RPM	60.7 GPM @ 425 RPM	0.1428	2.000	3	3.50
	M1418	2,000	67.8 GPM @ 375 RPM	76.8 GPM @ 425 RPM	0.1807	2.250	3	3.50
	M1420	1,600	83.7 GPM @ 375 RPM	94.8 GPM @ 425 RPM	0.2231	2.580	3	3.50
	M1422	1,350	101.3 GPM @ 375 RPM	114.8 GPM @ 425 RPM	0.2700	2.750	3	3.50
	M1424	1,150	120.5 GPM @ 375 RPM	136.6 GPM @ 425 RPM	0.3213	3.000	3	3.50
	M1426	1,000	141.4 GPM @ 375 RPM	160.3 GPM @ 425 RPM	0.3771	3.250	3	3.50
	M1428	825	164.0 GPM @ 375 RPM	185.9 GPM @ 425 RPM	0.4373	3.500	3	3.50
M16 117/142 HP	M1430	725	188.3 GPM @ 375 RPM	213.4 GPM @ 425 RPM	0.5020	3.750	3	3.50
	M1609	10,000	18.1 GPM @ 350 RPM	21.9 GPM @ 425 RPM	0.0516	1.125	3	4.00
	M1610	8,000	22.3 GPM @ 350 RPM	27.1 GPM @ 425 RPM	0.0637	1.250	3	4.00
	M1612	5,500	32.1 GPM @ 350 RPM	39.0 GPM @ 425 RPM	0.0918	1.500	3	4.00
	M1614	4,065	43.7 GPM @ 350 RPM	53.1 GPM @ 425 RPM	0.1249	1.750	3	4.00
	M1616	3,115	57.1 GPM @ 350 RPM	69.4 GPM @ 425 RPM	0.1632	2.000	3	4.00
	M1618	2,460	72.3 GPM @ 350 RPM	87.8 GPM @ 425 RPM	0.2065	2.250	3	4.00
	M1620	1,990	89.3 GPM @ 350 RPM	108.4 GPM @ 425 RPM	0.2550	2.500	3	4.00
	M1622	1,650	108.0 GPM @ 350 RPM	131.1 GPM @ 425 RPM	0.3085	2.750	3	4.00
	M1624	1,385	128.5 GPM @ 350 RPM	156.1 GPM @ 425 RPM	0.3672	3.000	3	4.00
	M1626	1,180	150.8 GPM @ 350 RPM	183.1 GPM @ 425 RPM	0.4309	3.250	3	4.00
	M1628	1,015	174.9 GPM @ 350 RPM	212.4 GPM @ 425 RPM	0.4998	3.500	3	4.00
	M1630	885	200.8 GPM @ 350 RPM	243.8 GPM @ 425 RPM	0.5737	3.750	3	4.00
	M1632	775	228.5 GPM @ 350 RPM	277.4 GPM @ 425 RPM	0.6528	4.000	3	4.00
M1634	650	257.9 GPM @ 350 RPM	313.2 GPM @ 425 RPM	0.7369	4.250	3	4.00	
M1636	570	289.2 GPM @ 350 RPM	351.1 GPM @ 425 RPM	0.8262	4.500	3	4.00	

150 – 265 HP Pump Specifications

Pump Series	Model	Rated Pressure (psi)	Continuous Duty Capacity	Intermittent Duty Capacity	Gallons per Revolution	Seal Diameter (in)	Number of Cylinders	Stroke (in)
M18 150/190 HP	M1810	9,800	23.7 GPM @ 330 RPM	28.7 GPM @ 400 RPM	0.0717	1.250	3	4.50
	M1812	6,800	34.1 GPM @ 330 RPM	41.3 GPM @ 400 RPM	0.1033	1.500	3	4.50
	M1814	5,000	46.4 GPM @ 330 RPM	56.2 GPM @ 400 RPM	0.1406	1.750	3	4.50
	M1816	3,800	60.6 GPM @ 330 RPM	73.4 GPM @ 400 RPM	0.1836	2.000	3	4.50
	M1818	3,000	76.7 GPM @ 330 RPM	93.0 GPM @ 400 RPM	0.2324	2.250	3	4.50
	M1820	2,400	94.7 GPM @ 330 RPM	114.8 GPM @ 400 RPM	0.2869	2.500	3	4.50
	M1822	2,000	114.5 GPM @ 330 RPM	138.8 GPM @ 400 RPM	0.3471	2.750	3	4.50
	M1824	1,700	136.3 GPM @ 330 RPM	165.2 GPM @ 400 RPM	0.4131	3.000	3	4.50
	M1826	1,400	160.0 GPM @ 330 RPM	193.9 GPM @ 400 RPM	0.4848	3.250	3	4.50
	M1828	1,200	185.6 GPM @ 330 RPM	224.9 GPM @ 400 RPM	0.5623	3.500	3	4.50
	M1830	1,100	213.0 GPM @ 330 RPM	258.2 GPM @ 400 RPM	0.6455	3.750	3	4.50
	M1832	1,000	242.4 GPM @ 330 RPM	293.8 GPM @ 400 RPM	0.7344	4.000	3	4.50
	M1834	800	273.6 GPM @ 330 RPM	331.6 GPM @ 400 RPM	0.8291	4.250	3	4.50
M1836	750	306.7 GPM @ 330 RPM	371.8 GPM @ 400 RPM	0.9295	4.500	3	4.50	
Q16 198/240 HP	Q1609	10,000	30.1 GPM @ 350 RPM	36.6 GPM @ 425 RPM	0.0861	1.125	5	4.00
	Q1610	8,150	37.2 GPM @ 350 RPM	45.1 GPM @ 425 RPM	0.1062	1.250	5	4.00
	Q1612	5,650	53.6 GPM @ 350 RPM	65.0 GPM @ 425 RPM	0.1530	1.500	5	4.00
	Q1614	4,160	72.9 GPM @ 350 RPM	88.5 GPM @ 425 RPM	0.2082	1.750	5	4.00
	Q1616	3,190	95.2 GPM @ 350 RPM	115.6 GPM @ 425 RPM	0.2720	2.000	5	4.00
	Q1618	2,520	120.5 GPM @ 350 RPM	146.3 GPM @ 425 RPM	0.3442	2.250	5	4.00
	Q1620	2,040	148.8 GPM @ 350 RPM	180.6 GPM @ 425 RPM	0.4250	2.500	5	4.00
	Q1622	1,690	180.0 GPM @ 350 RPM	281.5 GPM @ 425 RPM	0.5142	2.750	5	4.00
	Q1624	1,420	214.2 GPM @ 350 RPM	260.1 GPM @ 425 RPM	0.6120	3.000	5	4.00
	Q1626	1,210	251.4 GPM @ 350 RPM	260.1 GPM @ 425 RPM	0.6120	3.000	5	4.00
	Q1628	1,040	291.6 GPM @ 350 RPM	354.0 GPM @ 425 RPM	0.8330	3.500	5	4.00
	Q1630	910	334.7 GPM @ 350 RPM	406.4 GPM @ 425 RPM	0.9562	3.750	5	4.00
	Q1632	800	380.8 GPM @ 350 RPM	462.4 GPM @ 425 RPM	1.0880	4.000	5	4.00
Q1634	710	429.9 GPM @ 350 RPM	522.0 GPM @ 425 RPM	1.2282	4.250	5	4.00	
Q1636	630	482.0 GPM @ 350 RPM	585.2 GPM @ 425 RPM	1.3770	4.500	5	4.00	
Q18 265/325 HP	Q1811	8,400	47.7 GPM @ 330 RPM	57.8 GPM @ 400 RPM	0.1446	1.375	5	4.50
	Q1812	7,100	56.8 GPM @ 330 RPM	68.8 GPM @ 400 RPM	0.1721	1.500	5	4.50
	Q1814	5,200	77.3 GPM @ 330 RPM	93.7 GPM @ 400 RPM	0.2343	1.750	5	4.50
	Q1816	4,000	101.0 GPM @ 330 RPM	122.4 GPM @ 400 RPM	0.3060	2.000	5	4.50
	Q1818	3,100	127.8 GPM @ 330 RPM	154.9 GPM @ 400 RPM	0.3872	2.250	5	4.50
	Q1820	2,500	157.8 GPM @ 330 RPM	191.2 GPM @ 400 RPM	0.4781	2.500	5	4.50
	Q1822	2,100	190.9 GPM @ 330 RPM	231.4 GPM @ 400 RPM	0.5785	2.750	5	4.50
	Q1824	1,800	227.2 GPM @ 330 RPM	275.4 GPM @ 400 RPM	0.6885	3.000	5	4.50
	Q1826	1,500	266.6 GPM @ 330 RPM	323.2 GPM @ 400 RPM	0.8080	3.250	5	4.50
	Q1828	1,300	309.2 GPM @ 330 RPM	374.8 GPM @ 400 RPM	0.9371	3.500	5	4.50
	Q1830	1,100	355.0 GPM @ 330 RPM	430.3 GPM @ 400 RPM	1.0758	3.750	5	4.50
	Q1832	1,000	403.9 GPM @ 330 RPM	489.6 GPM @ 400 RPM	1.2240	4.000	5	4.50
Q1834	900	456.0 GPM @ 330 RPM	552.7 GPM @ 400 RPM	1.3818	4.250	5	4.50	
Q1836	800	511.2 GPM @ 330 RPM	619.6 GPM @ 400 RPM	1.5491	4.500	5	4.50	

350 – 650 HP Pump Specifications

Pump Series	Model	Rated Pressure (psi)	Continuous Duty Capacity	Intermittent Duty Capacity	Gallons per Revolution	Seal Diameter (in)	Number of Cylinders	Stroke (in)
M28 350/440 HP	M2812	10,000	38.5 GPM @ 240 RPM	48.2 GPM @ 300 RPM	0.1606	1.500	3	7.00
	M2814	10,000	52.5 GPM @ 240 RPM	65.6 GPM @ 300 RPM	0.2187	1.750	3	7.00
	M2816	7,960	68.5 GPM @ 240 RPM	85.7 GPM @ 300 RPM	0.2856	2.000	3	7.00
	M2818	6,300	86.8 GPM @ 240 RPM	108.5 GPM @ 300 RPM	0.3615	2.250	3	7.00
	M2820	5,100	107.1 GPM @ 240 RPM	133.9 GPM @ 300 RPM	0.4462	2.500	3	7.00
	M2822	4,200	129.6 GPM @ 240 RPM	162.0 GPM @ 300 RPM	0.5400	2.750	3	7.00
	M2824	3,540	154.2 GPM @ 240 RPM	192.8 GPM @ 300 RPM	0.6426	3.000	3	7.00
	M2826	3,015	181.0 GPM @ 240 RPM	226.3 GPM @ 300 RPM	0.7542	3.250	3	7.00
	M2828	2,600	209.9 GPM @ 240 RPM	262.4 GPM @ 300 RPM	0.8746	3.500	3	7.00
	M2830	2,260	241.0 GPM @ 240 RPM	301.2 GPM @ 300 RPM	1.0041	3.750	3	7.00
	M2832	1,990	274.2 GPM @ 240 RPM	342.7 GPM @ 300 RPM	1.1424	4.000	3	7.00
	M2834	1,760	309.5 GPM @ 240 RPM	386.9 GPM @ 300 RPM	1.2897	4.250	3	7.00
	M2836	1,570	347.0 GPM @ 240 RPM	433.7 GPM @ 300 RPM	1.4458	4.500	3	7.00
	M2838	1,400	386.6 GPM @ 240 RPM	483.3 GPM @ 300 RPM	1.6110	4.750	3	7.00
	M2840	1,275	428.4 GPM @ 240 RPM	535.5 GPM @ 300 RPM	1.7850	5.000	3	7.00
	M2842	1,155	472.3 GPM @ 240 RPM	590.4 GPM @ 300 RPM	1.9680	5.250	3	7.00
	M2844	1,050	518.4 GPM @ 240 RPM	647.9 GPM @ 300 RPM	2.1598	5.500	3	7.00
	M2846	960	566.6 GPM @ 240 RPM	708.2 GPM @ 300 RPM	2.3607	5.750	3	7.00
M2848	880	616.9 GPM @ 240 RPM	771.1 GPM @ 300 RPM	2.5704	6.000	3	7.00	
M2850	815	669.4 GPM @ 240 RPM	836.7 GPM @ 300 RPM	2.7891	6.250	3	7.00	
Q28 650/800 HP	Q2814	10,000	87.5 GPM @ 240 RPM	109.3 GPM @ 300 RPM	0.3644	1.750	5	7.00
	Q2816	8,750	114.2 GPM @ 240 RPM	142.8 GPM @ 300 RPM	0.4760	2.000	5	7.00
	Q2818	6,920	144.6 GPM @ 240 RPM	180.7 GPM @ 300 RPM	0.6024	2.250	5	7.00
	Q2820	5,600	178.5 GPM @ 240 RPM	223.1 GPM @ 300 RPM	0.7437	2.500	5	7.00
	Q2822	4,630	216.0 GPM @ 240 RPM	270.0 GPM @ 300 RPM	0.8999	2.750	5	7.00
	Q2824	3,890	257.0 GPM @ 240 RPM	321.3 GPM @ 300 RPM	1.0710	3.000	5	7.00
	Q2826	3,310	301.7 GPM @ 240 RPM	377.1 GPM @ 300 RPM	1.2569	3.250	5	7.00
	Q2828	2,860	349.8 GPM @ 240 RPM	437.3 GPM @ 300 RPM	1.4577	3.500	5	7.00
	Q2830	2,490	401.6 GPM @ 240 RPM	502.0 GPM @ 300 RPM	1.6734	1.750	5	7.00
	Q2832	2,190	457.0 GPM @ 240 RPM	571.2 GPM @ 300 RPM	1.9040	4.000	5	7.00
	Q2834	1,940	515.9 GPM @ 240 RPM	644.8 GPM @ 300 RPM	2.1494	4.250	5	7.00
	Q2836	1,730	578.3 GPM @ 240 RPM	722.9 GPM @ 300 RPM	2.4097	4.500	5	7.00
	Q2838	1,550	644.4 GPM @ 240 RPM	805.5 GPM @ 300 RPM	2.6849	4.750	5	7.00
	Q2840	1,400	714.0 GPM @ 240 RPM	892.5 GPM @ 300 RPM	2.9750	5.000	5	7.00
	Q2842	1,270	787.2 GPM @ 240 RPM	984.0 GPM @ 300 RPM	3.2799	5.250	5	7.00
	Q2844	1,160	863.9 GPM @ 240 RPM	1,079.9 GPM @ 300 RPM	3.5997	5.500	5	7.00
	Q2846	1,060	944.3 GPM @ 240 RPM	1,180.3 GPM @ 300 RPM	3.9344	5.750	5	7.00
	Q2848	970	1,028.2 GPM @ 240 RPM	1,285.2 GPM @ 300 RPM	4.2840	6.000	5	7.00
Q2850	900	1,115.6 GPM @ 240 RPM	1,394.5 GPM @ 300 RPM	4.6484	6.250	5	7.00	

	Weight (lbs)	Pump Type	Length (in)	Width (in)	Height (in)	Mechanical Efficiency	Cast Ductile Iron	Cast Aluminum Bronze	Cast Stainless Steel	HP-Forged Carbon Steel	HP-Forged Stainless Steel	API-Forged Carbon Steel	API-Forged Stainless Steel
	5,500	PLUNGER	75.0	40.0	36.0	90%			◆	◆	◆	◆	◆
	5,500	PLUNGER	75.0	40.0	36.0	90%			◆	◆	◆	◆	◆
	5,500	PLUNGER	75.0	40.0	36.0	90%			◆	◆	◆	◆	◆
	5,500	PLUNGER	75.0	40.0	36.0	90%			◆	◆	◆	◆	◆
	5,500	PLUNGER	75.0	40.0	36.0	90%			◆	◆	◆	◆	◆
	5,500	PLUNGER	75.0	40.0	36.0	90%			◆	◆	◆	◆	◆
	5,500	PLUNGER	75.0	40.0	36.0	90%			◆	◆	◆	◆	◆
	5,500	PLUNGER	75.0	40.0	36.0	90%			◆	◆	◆	◆	◆
	5,500	PLUNGER	75.0	40.0	36.0	90%			◆	◆	◆	◆	◆
	5,500	BOTH	75.0	40.0	36.0	90%			◆	◆	◆	◆	◆
	5,500	BOTH	75.0	40.0	36.0	90%			◆	◆	◆	◆	◆
	5,500	BOTH	75.0	40.0	36.0	90%			◆	◆	◆	◆	◆
	5,500	BOTH	75.0	40.0	36.0	90%			◆	◆	◆	◆	◆
	5,500	BOTH	75.0	40.0	36.0	90%			◆	◆	◆	◆	◆
	5,500	BOTH	75.0	40.0	36.0	90%			◆	◆	◆	◆	◆
	5,500	BOTH	75.0	40.0	36.0	90%			◆	◆	◆	◆	◆
	5,500	BOTH	75.0	40.0	36.0	90%			◆	◆	◆	◆	◆
	5,500	PLUNGER	75.0	40.0	36.0	90%			◆	◆	◆	◆	◆
	5,500	PLUNGER	75.0	40.0	36.0	90%			◆	◆	◆	◆	◆
	13,000	PLUNGER	75.0	86.0	38.0	90%			◆	◆	◆	◆	◆
	13,000	PLUNGER	75.0	86.0	38.0	90%			◆	◆	◆	◆	◆
	13,000	PLUNGER	75.0	86.0	38.0	90%			◆	◆	◆	◆	◆
	13,000	PLUNGER	75.0	86.0	38.0	90%			◆	◆	◆	◆	◆
	13,000	PLUNGER	75.0	86.0	38.0	90%			◆	◆	◆	◆	◆
	13,000	PLUNGER	75.0	86.0	38.0	90%			◆	◆	◆	◆	◆
	13,000	PLUNGER	75.0	86.0	38.0	90%			◆	◆	◆	◆	◆
	13,000	PLUNGER	75.0	86.0	38.0	90%			◆	◆	◆	◆	◆
	13,000	BOTH	75.0	86.0	38.0	90%		◆	◆	◆	◆	◆	◆
	13,000	BOTH	75.0	86.0	38.0	90%		◆	◆	◆	◆	◆	◆
	13,000	BOTH	75.0	86.0	38.0	90%		◆	◆	◆	◆	◆	◆
	13,000	BOTH	75.0	86.0	38.0	90%		◆	◆	◆	◆	◆	◆
	13,000	BOTH	75.0	86.0	38.0	90%		◆	◆	◆	◆	◆	◆
	13,000	BOTH	75.0	86.0	38.0	90%	◆	◆	◆	◆	◆	◆	◆
	13,000	BOTH	75.0	86.0	38.0	90%	◆	◆	◆	◆	◆	◆	◆
	13,000	BOTH	75.0	86.0	38.0	90%	◆	◆	◆	◆	◆	◆	◆
	13,000	BOTH	75.0	86.0	38.0	90%	◆	◆	◆	◆	◆	◆	◆
	13,000	PLUNGER	75.0	86.0	38.0	90%	◆	◆	◆	◆	◆	◆	◆
	13,000	PLUNGER	75.0	86.0	38.0	90%	◆	◆	◆	◆	◆	◆	◆

700 HP Pump Specifications

Pump Series	Model	Rated Pressure (psi)	Continuous Duty Capacity	Intermittent Duty Capacity	Gallons per Revolution	Seal Diameter (in)	Number of Cylinders	Stroke (in)
Q32 700/1,000 HP	Q3214	10,000	87.5 GPM @ 210 RPM	125.0 GPM @ 300 RPM	0.4165	1.750	5	8.00
	Q3216	9,550	114.2 GPM @ 210 RPM	163.2 GPM @ 300 RPM	0.5440	2.000	5	8.00
	Q3218	7,500	144.6 GPM @ 210 RPM	206.6 GPM @ 300 RPM	0.6885	2.250	5	8.00
	Q3220	6,125	178.5 GPM @ 210 RPM	255.0 GPM @ 300 RPM	0.8500	2.500	5	8.00
	Q3222	5,050	216.0 GPM @ 210 RPM	308.6 GPM @ 300 RPM	1.0285	2.750	5	8.00
	Q3224	4,250	257.0 GPM @ 210 RPM	367.2 GPM @ 300 RPM	1.2240	3.000	5	8.00
	Q3226	3,620	301.7 GPM @ 210 RPM	431.0 GPM @ 300 RPM	1.4365	3.250	5	8.00
	Q3228	3,125	349.9 GPM @ 210 RPM	499.8 GPM @ 300 RPM	1.6660	3.500	5	8.00
	Q3230	2,720	401.6 GPM @ 210 RPM	573.8 GPM @ 300 RPM	1.9125	3.750	5	8.00
	Q3232	2,390	457.0 GPM @ 210 RPM	652.8 GPM @ 300 RPM	2.1760	4.000	5	8.00
	Q3234	2,110	515.9 GPM @ 210 RPM	737.0 GPM @ 300 RPM	2.4565	4.250	5	8.00
	Q3236	1,890	578.3 GPM @ 210 RPM	826.2 GPM @ 300 RPM	2.7540	4.500	5	8.00
	Q3238	1,690	644.4 GPM @ 210 RPM	920.6 GPM @ 300 RPM	3.0685	4.750	5	8.00
	Q3240	1,530	714.0 GPM @ 210 RPM	1,020.0 GPM @ 300 RPM	3.4000	5.000	5	8.00
	Q3242	1,390	787.2 GPM @ 210 RPM	1,124.6 GPM @ 300 RPM	3.7485	5.250	5	8.00
	Q3244	1,260	863.9 GPM @ 210 RPM	1,234.2 GPM @ 300 RPM	4.1140	5.500	5	8.00
	Q3246	1,160	944.3 GPM @ 210 RPM	1,349.0 GPM @ 300 RPM	4.4965	5.750	5	8.00
Q3248	1,060	1,028.2 GPM @ 210 RPM	1,468.8 GPM @ 300 RPM	4.8960	6.000	5	8.00	
Q3250	980	1,115.5 GPM @ 210 RPM	1,593.8 GPM @ 300 RPM	5.3125	6.250	5	8.00	

	Weight (lbs)	Pump Type	Length (in)	Width (in)	Height (in)	Mechanical Efficiency	Cast Ductile Iron	Cast Aluminum Bronze	Cast Stainless Steel	HP-Forged Carbon Steel	HP-Forged Stainless Steel	API-Forged Carbon Steel	API-Forged Stainless Steel
13,000	PLUNGER	75.0	86.0	38.0	90%				♦	♦	♦	♦	
13,000	PLUNGER	75.0	86.0	38.0	90%				♦	♦	♦	♦	
13,000	PLUNGER	75.0	86.0	38.0	90%				♦	♦	♦	♦	
13,000	PLUNGER	75.0	86.0	38.0	90%				♦	♦	♦	♦	
13,000	PLUNGER	75.0	86.0	38.0	90%				♦	♦	♦	♦	
13,000	PLUNGER	75.0	86.0	38.0	90%				♦	♦	♦	♦	
13,000	PLUNGER	75.0	86.0	38.0	90%				♦	♦	♦	♦	
13,000	PLUNGER	75.0	86.0	38.0	90%				♦	♦	♦	♦	
13,000	PLUNGER	75.0	86.0	38.0	90%			♦	♦	♦	♦	♦	
13,000	BOTH	75.0	86.0	38.0	90%		♦	♦	♦	♦	♦	♦	
13,000	BOTH	75.0	86.0	38.0	90%		♦	♦	♦	♦	♦	♦	
13,000	BOTH	75.0	86.0	38.0	90%		♦	♦	♦	♦	♦	♦	
13,000	BOTH	75.0	86.0	38.0	90%		♦	♦	♦	♦	♦	♦	
13,000	BOTH	75.0	86.0	38.0	90%		♦	♦	♦	♦	♦	♦	
13,000	BOTH	75.0	86.0	38.0	90%		♦	♦	♦	♦	♦	♦	
13,000	BOTH	75.0	86.0	38.0	90%		♦	♦	♦	♦	♦	♦	
13,000	BOTH	75.0	86.0	38.0	90%		♦	♦	♦	♦	♦	♦	
13,000	PLUNGER	75.0	86.0	38.0	90%		♦	♦	♦	♦	♦	♦	
13,000	PLUNGER	75.0	86.0	38.0	90%		♦	♦	♦	♦	♦	♦	

Pump Selection Procedure

- Determine your HP requirement using the following equation:

$$\text{HP} = \frac{\text{GPM} \times \text{PSI}}{1714 \times \text{Mechanical Efficiency}}$$

For preliminary sizing, use 90% for the mechanical efficiency, then adjust based on actual efficiency of pump selected.

- Determine the duty cycle of your application. Continuous Duty is described as 8 hours or more operation per day, daily for extended periods of time.
- Find the Pump Series under the first column with a HP rating that meets or exceeds the conditions of your application. Continuous HP is listed first. Intermittent HP is listed second.
- Scan down the Rated Pressure column in the Pump Series selected until you find the last model whose maximum pressure rating exceeds the maximum pressure required by your application.
- Check the appropriate capacity column (Continuous Duty Capacity or Intermittent Duty Capacity) to determine if the pump you selected meets the flow requirements of your application. If not, go to the next larger pump series and repeat Steps 4 & 5.
- Determine the speed at which the pump will need to operate to produce the desired flow.

$$\text{RPM} = \frac{\text{Desired Flow (GPM)}}{\text{Displacement}}$$

Notes:

- Ratings are based on nominal speeds and pressures and may vary on FMC Technologies written approval.
- Capacities and speeds indicated are based on 100% volumetric efficiency.
- Continuous Duty is described as 8 hours or more operation per day, daily for extended periods of time.
- Dimensions are approximate and based on standard pump models with cast fluid cylinders. Width is measured parallel to the axis of the drive shaft and does not include the shaft extension.



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