

Gear End Components

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Our supply stores stock a complete range of gear end components for triplex mud pumps. Our staff is there to assist you in the selecting the correct components for your pump.

Eccentric Shafts and Connecting Rods

We carry new OEM style Emsco eccentric shafts and connecting rods. We also have access to new Gardner Denver eccentric shafts and connecting rods. Our machine shop also has the capabilities to repair your damaged components.

Gardner Denver and Emsco Crossheads and Wrist Pins

We have new crossheads and wrist pins in stock for the Gardner Denver PZ style pumps from the PZ-7 all the way up to the PZ-11. We also carry new crossheads and wrist pins for the Emsco F-1000 & FB-1300/1600 pumps.

New Pinion Shafts and Bull Gears

We have in stock new Emsco style pinion shafts and bull gears for the F-1000 & FB-1300/1600 pumps. We are also a Gardner Denver distributor and can get new Gardner Denver pinion shafts and bull gears. Our machine shop also has the capabilities to repair damaged pinion shafts or build new ones to your specifications.

Emsco and Gardner Denver Crosshead Slides

Our supply store keeps crosshead slides in stock for the Gardner Denver PZ pumps from the PZ-7 up to the PZ-11. We also have new slides for the Emsco F-1000 and FB-1300/1600.

Summary Gear End Components Offered	
Description	Models/Sizes
Eccentric Shafts & Connecting Rods	Clutches from 12" back brake to the 32" engine clutch
Gardner Denver Crossheads and Wrist Pins	PZ pumps from the PZ-7 up to PZ-11
Emsco Crossheads and Wrist Pins	Emsco F-1000 & FB-1300/1600 pumps
New Pinion Shafts and Bull Gears	Emsco F-1000 & FB-1300/1600 pumps
Gardners Denver Crosshead Slides	PZ pumps from the PZ-7 up to PZ-11
Emsco Crosshead Slides	Emsco F-1000 & FB-1300/1600 pumps

See over for chart of pump component dimensions and recommended running clearances:

Gear Ends and Drives



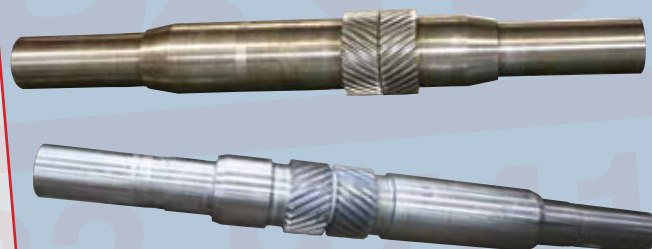
Eccentric Shafts and Connecting Rods



Gardner Denver and Emsco Crossheads



Pinion Shafts



Gear End Components

BRIDGES EQUIPMENT LTD

Bridges Equipment has been providing new and used equipment along with quality service to the oil and gas drilling industry since 1984. We are a company dedicated to supplying quality products, service and support, all at a fair price. Our slogan means what it says. We supply all that the drilling rig requires.....

**"From the Crown.....
.....to the Ground"**

Bridges Equipment product, service offerings and resources include:

- Located on over 80 acres, our main facility in Odessa, TX is equipped to provide our customers with all their equipment needs.
- New Equipment ranging from complete rigs and drawworks to triplex mud pumps and traveling equipment. We also offer new rotary tables, swivels and BOP's.
- Complete reconditioning facilities with the capability to return most drilling equipment to O.E.M. specifications.
- Full service machine shops to guarantee on time, accurate delivery and quality of supply.
- Expert unitization of new and reconditioned triplex mud pumps.
- Capabilities to fabricate custom skids to meet you needs, however unique the application.

Our supply stores specialize in supplying all the equipment the oil and gas drilling equipment industry requires to operate and support their activities.

In addition to our Odessa store, we have a facility in Cresson, TX, to serve customers in that region.

Bridges Equipment maintains a full range of triplex mud pump packages as part of an extensive rental fleet.

Gardner Denver and Emsco Wrist Pins



Gardner Denver and Emsco Crossheads



PUMP COMPONENT DIMENSIONS & RUNNING CLEARANCES

RECOMMENDED RUNNING CLEARANCES	PZG				PZH				PZJ				PZK & PZL			
	Inches		mm.		Inches		mm.		Inches		mm.		Inches		mm.	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
Cross Head to Slide	.020	.037	.508	.940	.020	.037	.508	.940	.020	.037	.508	.940	.025	.042	.635	1.067
Main Bearing	.001	.004	.025	.102	.003	.006	.076	.152	.005	.008	.127	.203	.003	.008	.076	.203
Jackshaft Bearing	.001	.006	.025	.152	.002	.006	.051	.152	.002	.004	.051	.102	.002	.008	.051	.203
Crosshead Pin Bearing	.001	.006	.025	.152	.001	.005	.025	.127	.002	.005	.051	.127	.001	.007	.025	.178
Connecting Rod to Eccentric Bearing	.001	.011	.025	.279	.002	.010	.051	.254	.002	.008	.051	.203	.002	.011	.051	.279
Oil Pump Pinion to Main Gear - Backlash	.010	.015	.254	.381	.010	.015	.254	.381	.010	.015	.254	.381	.010	.015	.254	.381
Jackshaft to Main Gear - Backlash	.010	.015	.254	.381	.010	.020	.254	.508	.010	.020	.254	.508	.010	.020	.254	.508

MANUFACTURING FITS

Jackshaft Bearing OD in Housing	.0013 Tight	.0017 Loose	.0330 Tight	.0432 Loose	.0007 Tight	.0031 Loose	.0178 Tight	.0787 Loose	.0007 Tight	.0031 Loose	.0178 Tight	.0787 Loose	.0014 Tight	.0025 Loose	.0356 Tight	.0635 Loose
Jackshaft Bearing on Shaft	.0017 Tight	.0037 Tight	.0432 Tight	.0940 Tight	.0020 Tight	.0043 Tight	.0508 Tight	.1092 Tight	.0020 Tight	.0043 Tight	.0508 Tight	.1092 Tight	.0020 Tight	.0044 Tight	.0508 Tight	.1118 Tight
Connecting Rod to Eccentric Bearing OD in Connecting Shaft	.004 Tight	.0000	.102 Tight	.0000	.0035 Tight	.0000	.0889 Tight	.0000	.004 Tight	.0000	.102 Tight	.0000	.004 Tight	.0000	.102 Tight	.0000
ID on Eccentric	.0072 Tight	.0110 Tight	.1829 Tight	.2794 Tight	.0080 Tight	.0115 Tight	.2032 Tight	.2921 Tight	.009 Tight	.013 Tight	.229 Tight	.330 Tight	.0110 Tight	.0150 Tight	.2794 Tight	.381 Tight
Crosshead Pin Bearing: OD in Connecting Rod	.0027 Tight	.0000	.086 Tight	.0000	.0022 Tight	.0000	.0559 Tight	.0000	.0027 Tight	.0000	.0686 Tight	.0000	.0018 Tight	.0040	.0457 Tight	.1016
ID in Crosshead Pin	.0005 Tight	.0025 Tight	.0127 Tight	.0635 Tight	.0005 Tight	.0025 Tight	.0127 Tight	.0635 Tight	.0005 Tight	.0025 Tight	.0127 Tight	.0635 Tight	.0010 Tight	.0032 Tight	.0254 Tight	.0813 Tight
Main Bearing OD in Cartridge	.0002 Loose	.0036 Loose	.0051 Loose	.0914 Loose	.0002 Loose	.0036 Loose	.0051 Loose	.0914 Loose	.0002 Loose	.0036 Loose	.0051 Loose	.0914 Loose	.0002 Loose	.0036 Loose	.0051 Loose	.1321 Loose
Main Bearing on Shaft Tapered Bore Axial Takeup (average)	.067 Average		.067 Average		.067 Average		1.702 Average		.074 Average		1.880 Average		.090 Average		2.286 Average	

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