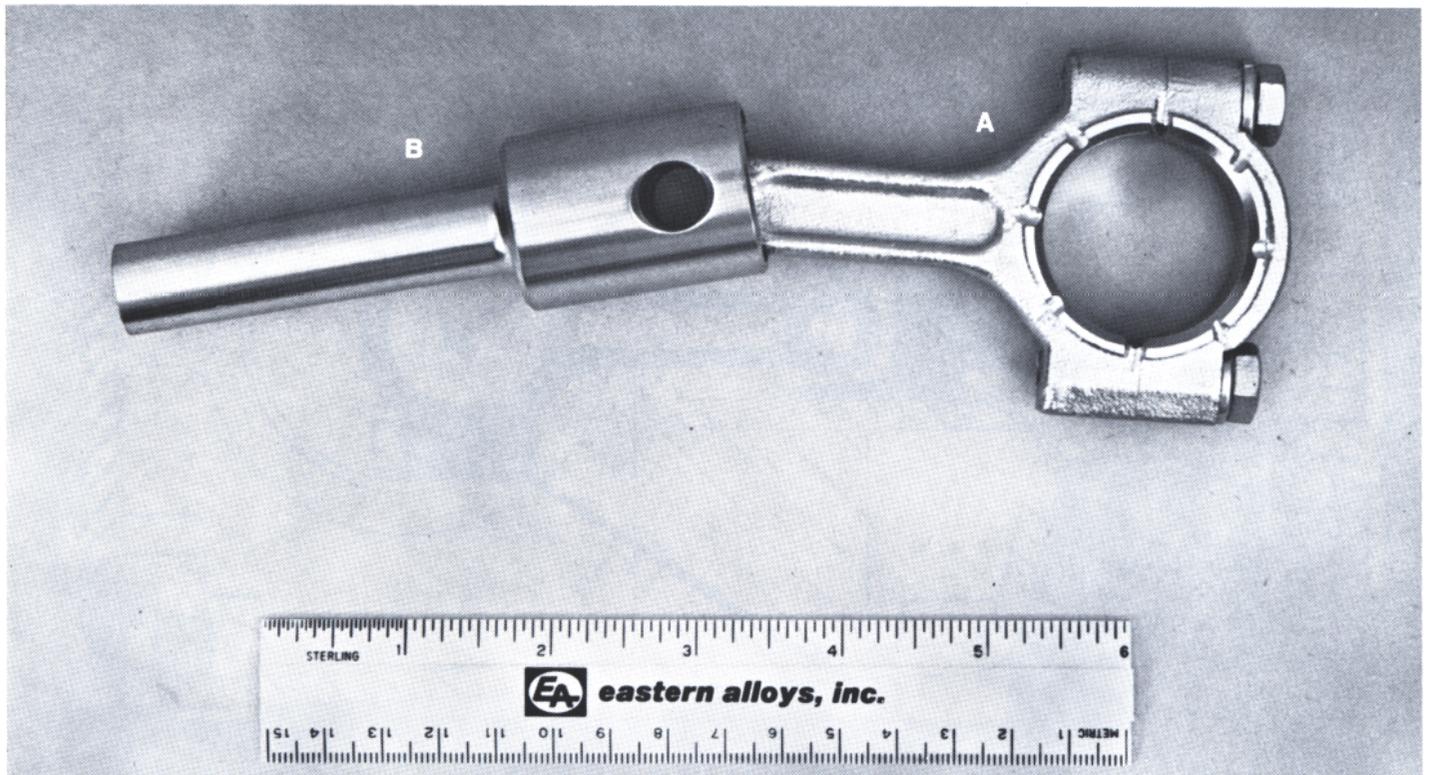


# ZA-12 PUMP PARTS ELIMINATE BEARINGS AND CHROMED STEEL PISTON COMPONENTS

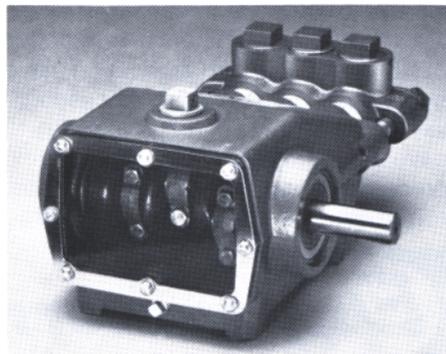
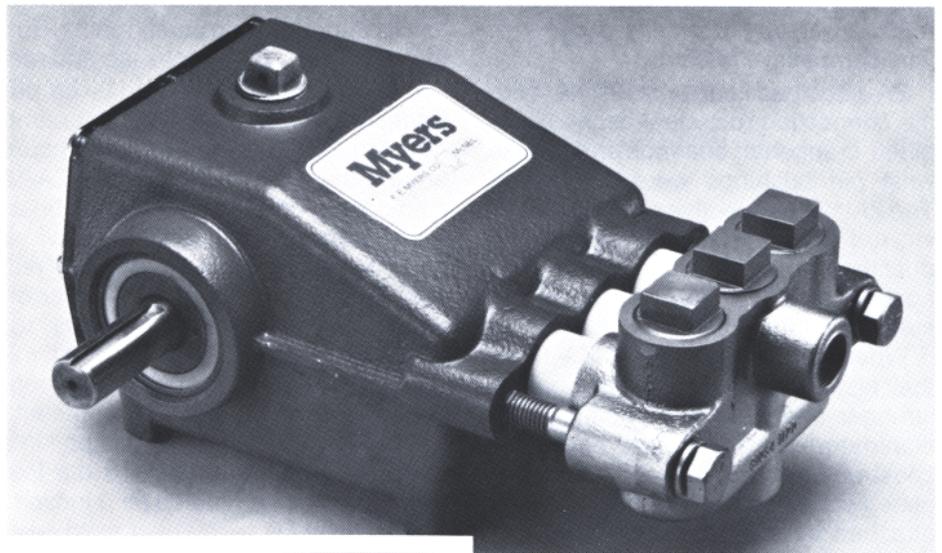


The ZA-connecting rod (A) and piston crosshead (B) shown above are used by F.E. Myers in their new BX-6 piston pump (775 RPM)

F. E. Myers Company, Ashland, Ohio, tested their new BX-6 reciprocating piston pump two dozen different ways for more than 60,000 hours before finalizing their design. That's not so unusual. But what is unusual, they specified ZA-12 zinc castings for two of their most critical components...the connecting rod (A) and piston crosshead (B). ZA-12 parts surpassed all strength and wear performance tests and provided handsome cost savings.

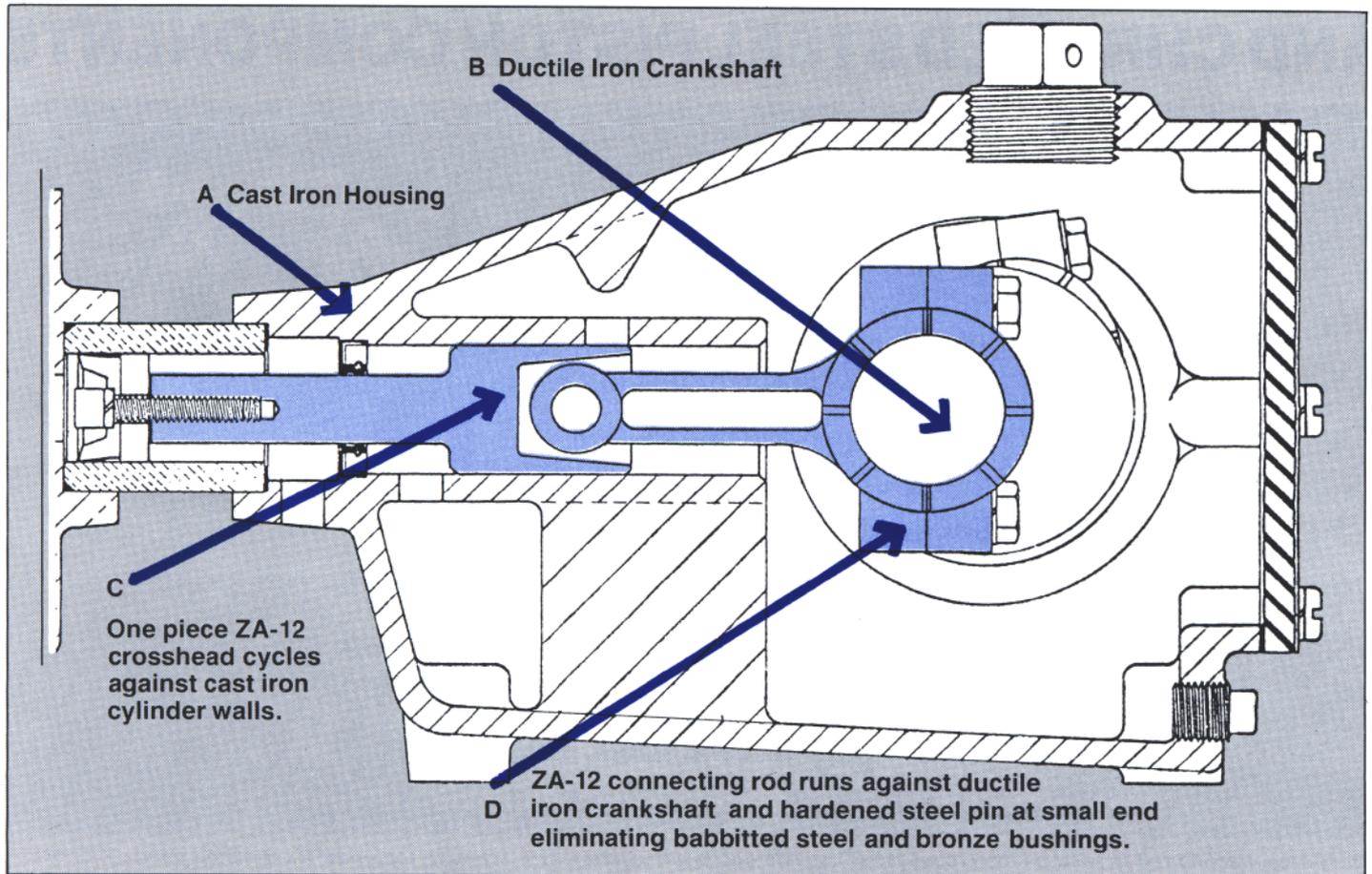
ZA-12 is one of three new zinc-aluminum alloys available from Eastern Alloys, Inc. for high strength structural castings and plain bearing applications.

According to Gregg Mambourg, National Sales Manager, "The new BX-6 pump is a real honey." The pump was designed from scratch for heavy duty pressure spraying applications like car and truck washers and industrial equipment spray cleaning. Rated at eight gallons/minute, 775 RPM and 1200 psi at 140°F water temperature, the pump features easy maintenance and extremely quiet running. The pump is a rugged design and Mambourg is particularly pleased because "engineering did a great job in keeping costs down." F. E. Myers was able to hit the



New F.E. Myers BX-6 High-Pressure Pump uses three sets of ZA-12 connecting rods (A), and crossheads (B), and saved over 50% on their manufacturing costs. Pump is rated at 8 gallons/min., 775 RPM and 1200 psi at 140°F water temperature.

## SCHEMATIC OF NEW BX-6 PISTON PUMP



market with a top quality product at very competitive pricing.

ZA-12 helped keep costs in line. With the connecting rod, steel backed babbitted crankshaft bearings and bronze wrist pin bushings were eliminated. The ZA-12 "automotive style" connecting rod now runs directly against the ductile iron crankshaft journal and against a 7/16" diameter hardened steel pin on the small end.

When F. E. Myers went to ZA-12 for their piston crosshead, they designed a stronger one-piece component which eliminated an expensive two-piece construction consisting of a chrome-plated steel head with a mechanically attached polished stainless steel rod. The crosshead piston cycles directly against the lubricated cast iron cylinder walls.

Jim Hudson, Manager of Reciprocating Pump Design and Development, claims "We were skeptical that a zinc alloy could equal chromed steel, stainless, bronze, and babbitted bearings

for our internal pump components. But, after two years of rigorous lab and real life field testing, ZA-12 surpassed our wildest expectations." One test pump ran with ZA-12 parts for 12,000 hours around-the-clock and they found ZA-12 connecting rodsoffered excellent bearing performance and embeddability, as good as babbitted bearings. The real surprise was "undetactable" wear on the crosshead which normally calls for hard chrome plated steel. "If you think about it, 12,000 hours (500 days) continuous service at 775 RPM represents a severe wear test for these components and ZA-12 zinc alloy passed the test with flying colors," states Mr. Hudson.

F. E. Myers is permanent mold casting the ZA-12 parts to simplify production. "We've eliminated a number of costly machining and fabrication steps by going to permanent mold casting," explained Mr. Hudson; "in fact, ZA-12 gave us the option of several casting processes to suit our quantity and cost requirements. Faster, trouble-free

machining also helped control cost." (ZA alloys can be sand, permanent mold, graphite mold and die cast.)

Compared to previous designs, ZA-12 castings saved 59% on the connecting rod and 52% on the crosshead.

The F. E. Myers story dramatizes the unique capabilities of Eastern's new ZA casting alloys. ZA-12 provided strength, wear resistance, good bearing properties, casting fabrication benefits and good cost savings for F. E. Myers' pump components. The story is a good example of how Eastern has pioneered the introduction of our new ZA engineering alloys by working with designers and casting specifiers on new products and value analysis projects. We help review product ideas, supply complete technical data and recommend the right ZA alloy and casting method for maximum economic benefits. If you are interested in learning more about ZA alloys for bearings, die castings, and foundry applications, please give us a call. Just call or write Derek Cocks.



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