

# **Remanufacturing & Repairs** of Hydraulic Components



### REMANUFACTURING

ALL MAJOR BRANDS 100% TESTED ONE YEAR WARRANTY Most Quotes in 48 hours or less

- Cylinders
- Pumps & Motors
- Valves
- Accumulators
- High-Pressure Hydraulics
- Field Service

### **Repair or Remanufacture?**

### **TRADITIONAL REPAIR**

Fix, mend or restore to working condition. Normally includes little or no warranty.

### **MFCP REMANUFACTURE**

Remanufacture products to a condition which meets or exceeds specification of the original manufactured product.

### **Includes a 1 Year Warranty. 100% Tested.**





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## **Cylinder Remanufacturing Standard**

### MFCP Centers of Excellence specializes in "Cylinder Remanufacturing"

There are a number of companies who "repair" cylinders, but typically a repair will only consist of replacing original seals and most likely will not even include testing of the repair. Often with No Warranty.

### The MFCP "reman" consistently includes the following as the minimum standard: <u>1 Year Warranty</u>

Disassemble cylinder, clean, inspect, and document components condition. This includes:

- Measuring clearances between piston and barrel.
- Measuring clearances between piston rod and gland.
- Documenting the actual bore size and rod straightness.

Once the cylinder is inspected dimensionally, providing proper standards are met:

- The seals and internal bearing areas are inspected, reviewed and documented.
- Upgrades are then made where possible or applicable.

### Upgrading can include, but is not limited to:

- New rod with higher strength and corrosion resistant material.
- Machining new pistons or glands to ensure proper clearance is maintained ductile iron is preferred.
- Modifying pistons or glands to enhance seal groove / seal arrangement and add bearing area with wear bands.
- Replace cylinder barrel with heavier wall or higher strength material.
- Replace worn tie-rods, bolts, nuts, bearings or bushings, restoring eyes and mounts to factory specs.
- Inspect and repair mounting connections (including magnetic particle or UT inspections, when required); welding performed "in house" by certified welders.

### Once these critical areas of the cylinder have been verified accurate and correct, the following steps are taken in the course of a MFCP cylinder "reman":

- Hone cylinder barrel with Sunnen hone system (until imperfections are removed , document bore size), clean barrel in a solvent tank.
- Polish piston rod.
- Modify gland and/or piston.
- Install new upgraded seals.
- Assemble cylinder.
- Hydraulically test cylinder (at or above operating pressure for 4 cycles minimum while checking for internal and external seal bypass).
- Clean outside of cylinder, install S/N Tag, and paint.

### **Pump/Motor Remanufacturing Standard**

### MFCP Centers of Excellence specializes in "Pump / Motor Remanufacturing"

The pump is the heart of your hydraulic system. Every hydraulic pump / motor you send in for remanufacture goes through our rigorous inspection process. MFCP performs a detailed cleaning and inspection before rebuilding your unit with precision machined, OEM parts. Upon completion of the rebuild, we dynamically test your unit thoroughly to ensure its level of OEM efficiency has been met or exceeded. All remanufactured hydraulic pumps / motors pass tough quality checks before leaving our remanufacturing facility.

Your hydraulic pump / motor is:

- Remanufactured using Precision Machined Parts which meet or exceed OEM Specifications.
- Performance Tested for a Minimum of 1 Hour.
- All parts and testing are documented for future reference.

### **Piston Products**

Piston pumps are by far the most difficult pumps to repair because they require extremely high tolerances and advanced assembly techniques. MFCP remanufactured pumps are put through several levels of quality control before the pump even makes it to the test stand. Once it passes these quality checks and initial dynamic testing, it is then further tested until the oil temperature exceeds 110 °F so the oil viscosity is low. This ensures that the pump is being tested to its maximum potential.

#### **Remanufacture Procedures:**

- Every piston pump is assembled from cylinder blocks, valve plates, and piston shoe subassemblies that have been inspected and remanufactured to exact OE tolerance.
- Every cylinder block bore diameter inspected including its concentricity to ensure efficiency.
- Every cylinder block face is inspected and replaced if it does not meet OE specifications.
- Every valve plate is inspected and replaced if it does not meet OE specifications.
- Every piston shoe subassembly diameter is matched with cylinder bore diameters to ensure efficiency within manufacturer's tolerances.
- Piston shoe height is checked on each shoe using a micrometer to ensure the component is within 0.0005" tolerance. Pistons are replaced if any aspect does not meet OE specifications.



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## **Pump & Motors**

#### Vane Products

MFCP hydraulic technicians are certified and professionally trained to use only OEM specifications, or better. Our extreme stress testing of these units to 100% rated load and pressures exposes all but the best performing pumps. Only then can a pump leave our facility as a Remanufactured MFCP Pump.

### **Remanufacture Procedures:**

- Each vane slot is inspected to ensure vanes will be stable and free moving in the slot.
- Every vane set is checked with a micrometer for proper thickness.
- Vane sets which do not meet OE specifications are replaced.
- Every cam ring inside contour is inspected per OE specifications and replaced if necessary.
- Every valve plate is inspected per OE specifications and replaced if necessary. All units are 100% load tested on specific test stands up to 5000 PSI.



#### Gear Products

MFCP hydraulic technicians are certified and professionally trained to use only OEM specifications, or better. Our extreme stress testing of these units to 100% rated load and pressures exposes all but the best performing pumps. Only then can a pump leave our facility as a Remanufactured MFCP Pump.

#### **Remanufacture Procedures:**

- Gear Pumps / Motors are completely disassembled, cleaned and inspected.
- All wear components are replaced with OEM specific parts.
- At a minimum, the Gear Housing and Gears, Thrust Plates, Bearings and Seals are replaced in the MFCP remanufacturing process.



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## **Valves, Accumulators & High Pressure**



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# Testing



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### BRANDS / TYPES OF COMPONENTS WE REMANUFACTURE & SERVICE

Parker, Denison, Bosch, Char-Lynn, Commercial Intertech, Continental Hydraulics, Custom Hoist, Danfoss, Dynex-Rivett, Eaton Hydraulics, Enerpac, Hydroline, Hyco, Kawasaki, KYB, Linde, Moog, Power Team, Racine, Rexroth, Stauffa, Sunstrand, Vickers, Oilgear and many others

Gear Pumps – Vane Pumps – Piston Pumps – Hydrostatic Transmissions Sectional Valves – NFPA / ISO Valves – DIN Cartridges – Servo / Proportional - Manifold Systems Gear Motors – Gerotor Motors – Geroler Motors – Vane Motors – Piston Motors Tie-Rod Cylinders – Custom / Welded Cylinders – Telescopic Cylinders – Construction Cylinders Hydraulic Power Units / Systems

### Multiple Test Stands verify:

- RPM
- Flow
- Pressure
- Temperature
- ISO / NAS Cleanliness
- Case Drain Flow

250 hp and 150 hp Test Stands with flows up to 150 gpm and pressure up to 6000 psi

Test Report generated for remanufactured components for documentation, when required.

# **Field Services**

## **MFCP** Centers of Excellence offer on-site services to include, but not limited to the following areas:

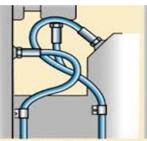
- Installation & Start-up of Hydraulic Power Units and Systems
- Plumbing Installations
- System troubleshooting & diagnosis / Component removal, in-shop remanufacture and re-installation
- On-site Hydraulic and Diesel System & Plumbing Flushing verified to ISO 4406 Cleanliness standards
- Water Removal from Hydraulic Fluids via vacuum dehydration
- On-site Oil & Diesel Condition monitoring for Moisture Content and Contamination Analysis
- Equipment Surveys for Component and Filter upgrade
- Preventative Maintenance / Service Contracts
- Hydraulic Training Classes











Poor routing

Better routing





# **Centers of Excellence**

### **Repair or Remanufacture?**

### **MFCP** has the answer

#### TRADITIONAL REPAIR

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#### **MFCP REMANUFACTURE**

Remanufacture products to a condition which meets or exceeds specification of the original manufactured product. **Includes a 1 Year Warranty. 100% Tested.** 

#### MFCP REMANUFACTURED COMPONENT LIMITED WARRANTY

Limited One Year Warranty: MFCP warrants all remanufactured components it sells to be free from defects in workmanship during Purchaser's normal and customary use for a period of one year following the date of shipment or delivery by MFCP to Purchaser. Purchaser must give written notice of any defect or breach of this warranty within one year following the date of shipment or delivery. Purchaser must retain possession of any product it claims is defective and subject to this warranty until MFCP has completed its inspection either at Purchaser's place of business or at an MFCP business location as MFCP designates, freight prepaid. MFCP will replace or repair any defectively remanufactured component it sells within one year following the date of shipment or delivery of the defective product to Purchaser without charge, F.O.B. MFCP's business location. MFCP will not be responsible for any costs or charges for labor or goods to repair, service, or replace any product, including allegedly defective products subject to MFCP's limited warranty, made by any person or entity other than MFCP without MFCP's prior written consent expressly authorizing Purchaser to incur such expenses at MFCP's expense.

- DISCLAIMER OF ALL IMPLIED WARRANTIES: MFCP DISCLAIMS ALL WARRANTIES, EXPRESS AND IMPLIED, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR USE OR PURPOSE.
- LIMITATION ON CONSEQUENTIAL AND OTHER DAMAGES: IN NO EVENT WILL MFCP BE LIABLE FOR INCIDENTAL, PUNITIVE, SPECIAL OR CONSEQUENTIAL DAMAGES RESULTING DIRECTLY OR OR INDIRECTLY FROM THE USE OR OPERATION OF REMANUFACTURED COMPONENTS MFCP SELLS TO PURCHASER. SELLER'S LIABILITY TO PURCHASER, IF ANY, SHALL BE LIMITED TO THE NET SALES PRICE PURCHASER HAS PAID TO SELLER. PURCHASER'S SOLE AND EXCLUSIVE WARRANTY IS MFCP'S LIMITED ONE YEAR WARRANTY STATED ABOVE. IN NO EVENT WILL MFCP BE RESPONSIBLE FOR ANY COST OR EXPENSE PURCHASER INCURS TO REMOVE, TRANSPORT, OR OTHERWISE HANDLE ANY ALLEGEDLY DEFECTIVE PRODUCT NOR WILL MFCP BE LIABLE FOR ANY COST OR EXPENSE PURCHASER INCURS TO REPLACE OR INSTALL PRODUCTS OR IN ANY OTHER REMEDIAL ACTIVITY.

MFCP MAKES NO WARRANTY OF ANY KIND WITH RESPECT TO PRODUCTS OR COMPONENTS MANUFACTURED OR REMANUFACTURED BY ANY OTHER PERSON OR ENTITY.



MFCP PROMISE ANY BRAND 100% TESTED 100% WARRANTIED



Bakersfield, CA Custom Manifold Production Cartridge Valve Integration Hydraulic System Fabrication & Manufacturing Hi-Volume Tube Assembly Production Hydraulic Component Repair Sacramento, CA OEM Component Build Center Hydraulic Component Repair

West Sacramento, CA Hi-Volume Tube Assembly Production Hi-Volume Hose Assembly Production Eugene, OR Hydraulic Repairs & Remanufacturing Field Service

Aurora, CO Hydraulic Component Remanufacturing / Repair Small Hydraulic Systems Fabrication

















### Products

Actuators, Stages & Cylinders Automation Components Compressed Air Equipment Controls Drives & Motors Electrical Filtration Gauges & Measurement Hose, Tubing & Fittings Hydraulics Machine Safety Mobile & Truck Pneumatics O-Rings & Seals Sensors & Switches Tools & Assembly Vacuum Valves



### Services

Seal Kitting Services Hose Kitting Services Cylinder Interchanges Hydraulic Component Repair Tube Bending and Fabrication Rental Units/Equipment Vendor Managed Inventory



### Engineered Solutions

Control Systems & Enclosures Standard Hydraulic Power Units Custom Hydraulic Power Units Custom Hydraulic Manifolds Pneumatic Systems & Assemblies Seal Engineering System Installation System Design Schematics Custom Machine Guarding Workstations & Workcells



### Technologies

Automation Compressed Air & Pneumatics Controls/Control Panel Electromechanical Filtration Hose, Tubing & Fittings Hydraulics Mobile Controls & Hydraulics Machine Safety Seals & Engineered Materials Industrial Hose



### Locations

We support our customers in the Western United States with a growing number of locations. When you visit one of our ParkerStores, you can count on quick, friendly service from one of our store professionals.

All of our ParkerStores stock products provide hose assemblies while you wait, adapters, and many Parker fluid connector products. Individual stores offer additional products and services to support the industries in their specific locations.