

A Premier Farnell Company

An ISO 9001 Registered Company



Style 3578 StreamMaster Monitor Repair



3578 StreamMaster Complete Disassembly and Repair



Tools and Materials

- 1 - 7/64" allen wrench
- 1 - 5/32" allen wrench
- 1- 1/4" allen wrench
- O-ring removal tool
- Screwdriver set
- Pliers
- Gasket scraper
- Grease gun
- C-Clamps
- Clean Workbench and Vice
- Loctite 277, or Permabond HH120, or equivalent permanent thread locker
- Parker O-Lube Part # 92010001
4 oz tube **Use on all O-Rings**
- Low Temp Lubriplate Grease
Part # 92020001 - 10 oz Tube
Part # 92030001 - 14.5 oz Cartridge
- Loctite 222, Permabond LM 113 (or equivalent)
- Sikaflex 1A or equivalent black RTV gasket former

General Repair - Parts List

- 2 pieces, 757041 O-RING 5/8"X 1/2"2-014 BUNA N70
- 2 pieces, 757056 O-RING 1 5/8"X 1 1/2"2-029 BUNA N70
- 2 pieces, 757068 O-RING 4 1/2"X 4 1/4"2-244 BUNA N70
- 2 pieces, 757076 O-RING 4 3/4"X 4 1/2"2-246 BUNA N70
- 1 piece, 757077 O-RING 5"X 4 3/4"2-248 BUNA N70
- 1 piece, 757080 O-RING 4 7/16"X 4 1/4"2-156 BUNA N70
- 1 piece, 757446 O-RING 3/16 X 4 1/4 ID 2-347 BUNA N 70
- 2 pieces, 757312 O-RING 2-036 BUNA N
- 2 pieces, 757313 O-RING 2-112 BUNA N70 DURO
- 2 pieces, 769494 SHIM ST STL .010 THK 3578
- 2 pieces, 727025 KEY WOODRUFF 1/8 X 1/2 #404 ST STL
- 2 pieces, 122420 FITTING GREASE S/A "MONITOR"
- 2 pieces, 742123 PLUG SWV CELCON/DELRIN 1/2-20X1/4 W/HOLE

Other parts that may be needed

- 2 pieces, 718273 GEAR WORM HARDENED BOSTON GEAR#HL1056
- 8 pieces, 769276 SPRING BELLEVILLE STSTL AS# B1000-050S
- 3 pieces, 704437 BEARING THRUST ROLLER 3/8ID NTN #NTC613
- 3 pieces, 784113 WASHER BEARING .094 NTN #TRC613 TORRING
- 3 pieces, 784114 WASHER BEARING .063 NTN #TRB613 3578
- 2 pieces, 729092 LINK MASTER #35 ST STL,MORSE SPRING CLIP
- 4 pieces, 109342 Package, Ball BEARINGS L 3/8"BRONZE QTY 50#

**For complete parts list,
refer to Technical Service Sheet**

<http://www.akronbrass.com/technical-service-sheets.aspx>

Helpful Documentation

- **Technical Service Sheet**

<http://www.akronbrass.com/technical-service-sheets.aspx>

- **Product Instructions**

<http://www.akronbrass.com/product-instructions.aspx>

- **Elevation Stops**

3578_Stops_Rotation-Elevation.pdf

- **High Current Trouble Shooting**

3578-3579_High-Elev-Motor-Current_Trouble-Shooting.pdf

- **6-Wire Stow – How to program**

3578_Stow-Learn_6-Wire.pdf

Updates to Elevation Outlet Elbow Starting July, 2011

Pictures in this presentation are from original style monitors.

Elevation and Rotation motors on the StreamMaster used to both be the same part number.

The Elevation motor (monitor outlet) and gear reducer have now been changed (7:1 gear reduction ratio on the first carrier plate) to provide a little more torque.

This will improve operation in applications using the 1577 SaberMaster and in applications where voltage drop is a concern.

This change took effect in July, 2010 starting about Serial Number T30135100.

Other parts that have also been upgraded on the Elevation (monitor OUTLET) drive:

Inlet Elbow

Original part number: 117797

New part number: 121570 (machined to accept larger screws for new elevation cover)

Outlet Elbow

Part number: 35780098 (painted), 35780200 (not painted)

Note: Now has 3 set screws on outlet elbow to inner swivel)

Also, now uses 3 different size O-Rings: 757080, 757446, and 757068 on outer swivel area.

Cover for elevation chain drive

Original part number: 104649

New part number: 121571

Note: Not interchangeable. Must use original cover with older monitors due to screw sizes.

Screws for elevation cover

Original part numbers: 765100, 763035

New part numbers: 763041, 767083, 763077

3578 StreamMaster

Complete Disassembly and Repair



- Disconnect and remove nozzle.
- Disconnect and remove wiring harness.

Elevation – Outlet Elbow



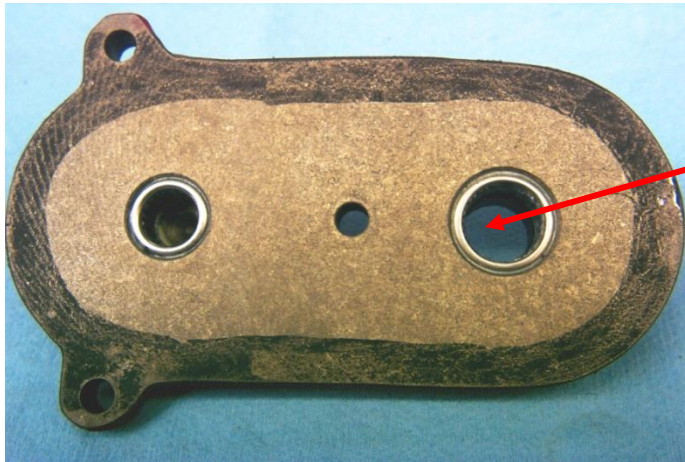
- Remove screws from elevation drive cover
- Carefully open elevation drive cover



Elevation – Outlet Elbow



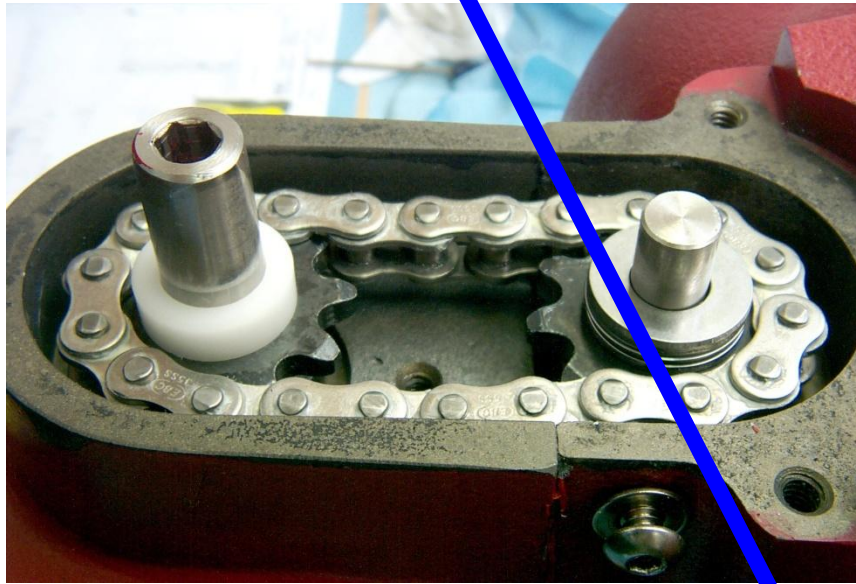
- Clean gasket material from elevation drive cover
- Inspect needle bearings
- Replace O-Ring 757313



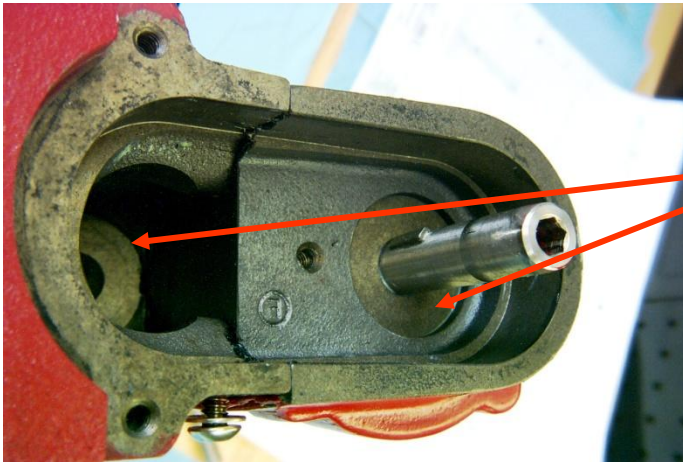
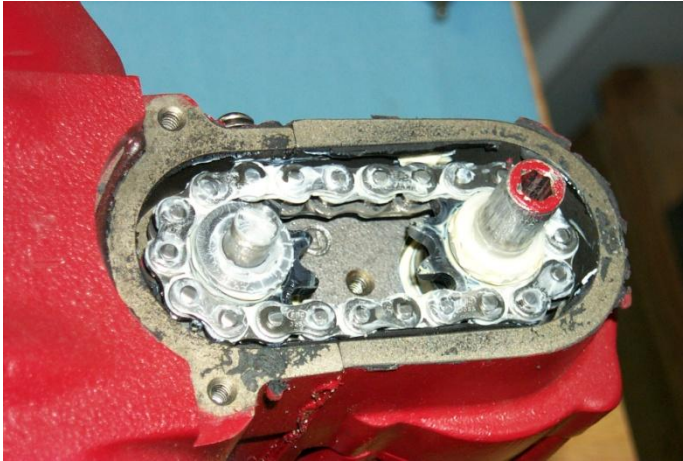
Elevation – Outlet Elbow

- Check end play on worm gear assembly.
Can be done by positioning a straight edge across gear housing on casting to see if there is clearance between the straight edge and the top of the thrust bearing. Use shims (part # 769494) like a feeler gage to determine number of shims required, if any.

Take note
for use
during
assembly.

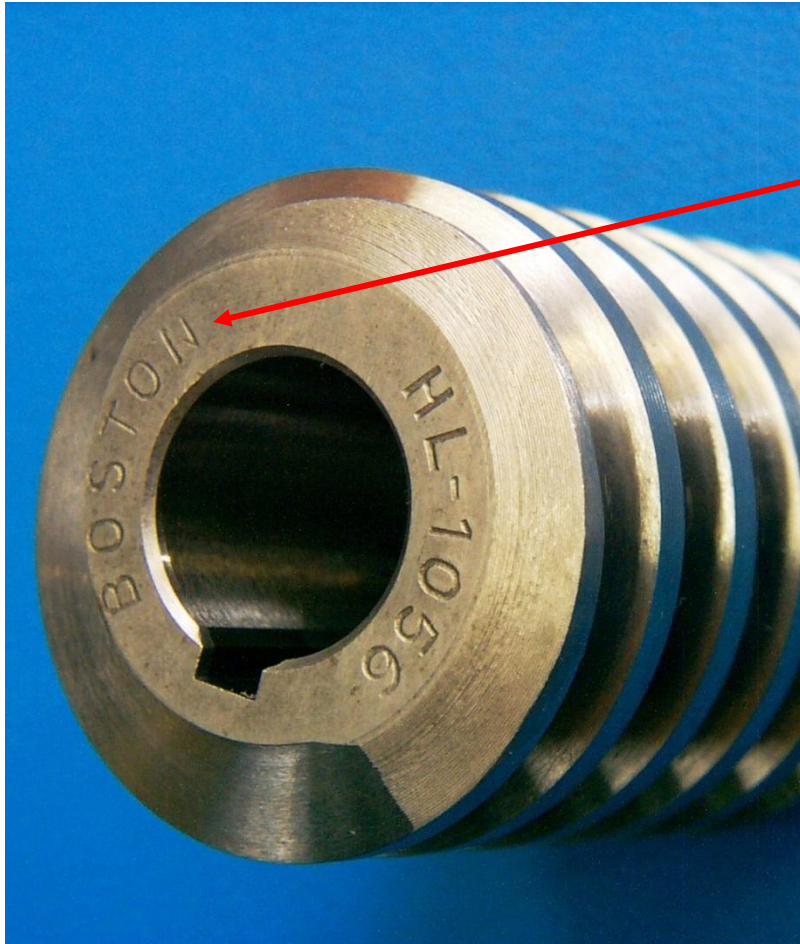


Elevation – Outlet Elbow



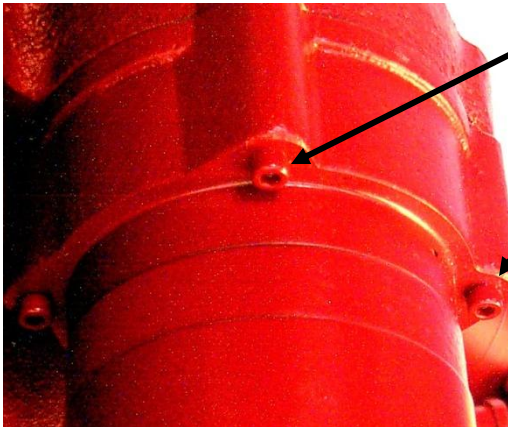
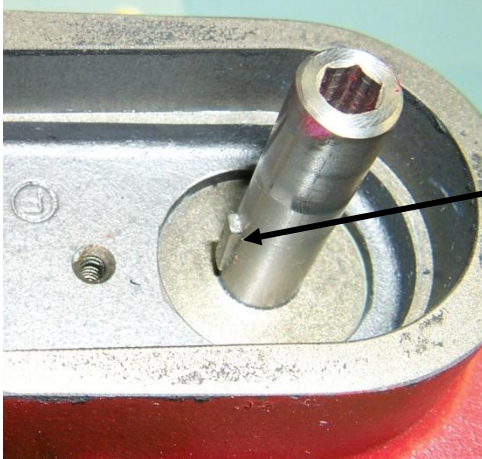
- Slide chain and sprockets up off the shafts.
- Remove worm gear and associated parts.
- Lay parts out in the order they came out.
- Clean and inspect – make sure all parts are out and accounted for.

Elevation – Outlet Elbow



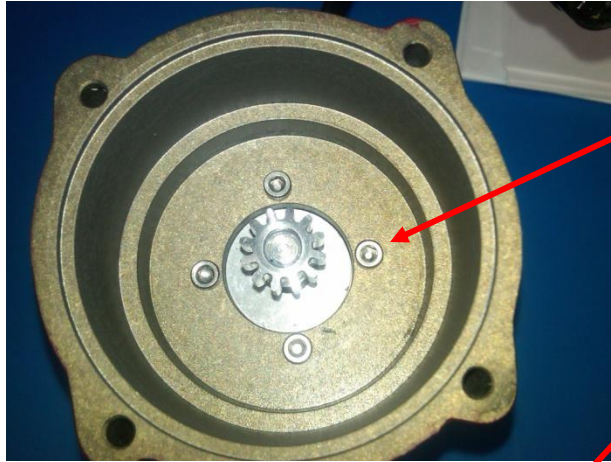
- Worm gear should have “BOSTON” stamped on one end.
- **If not, replace with new worm gear, part number 718273**

Elevation – Outlet Elbow



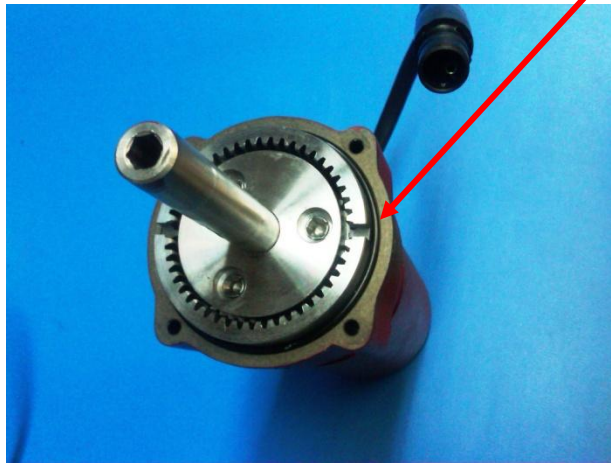
- Remove Woodruff Key from drive shaft
- Remove 4 motor mounting screws
- Clean and inspect gear reducer components

Elevation – Outlet Elbow

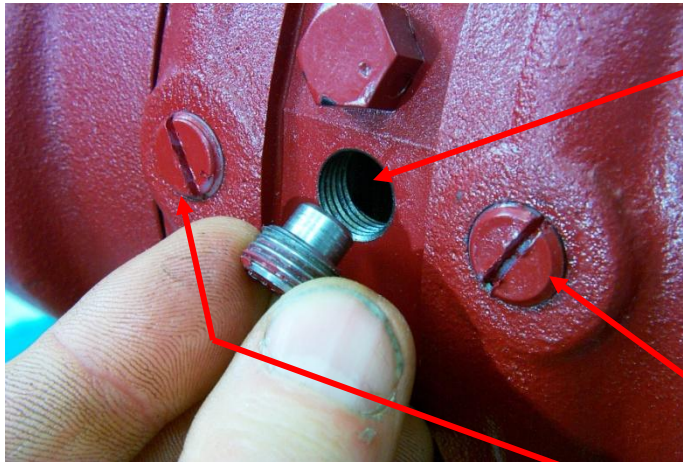


- Remove these 4 screws only when replacing motor

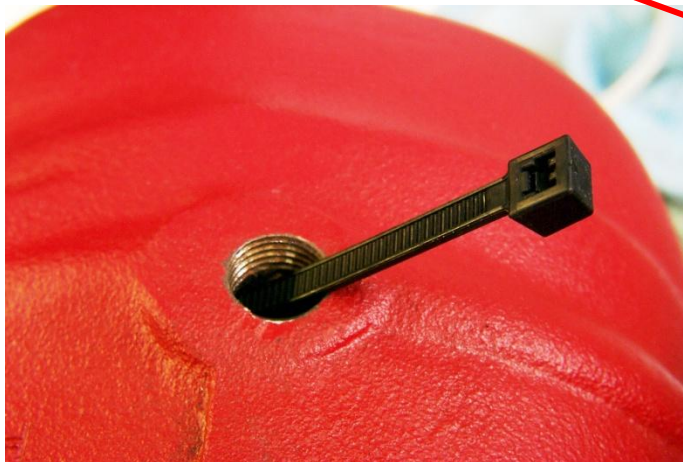
- Replace O-Ring Part # 757312



Elevation – Outlet Elbow

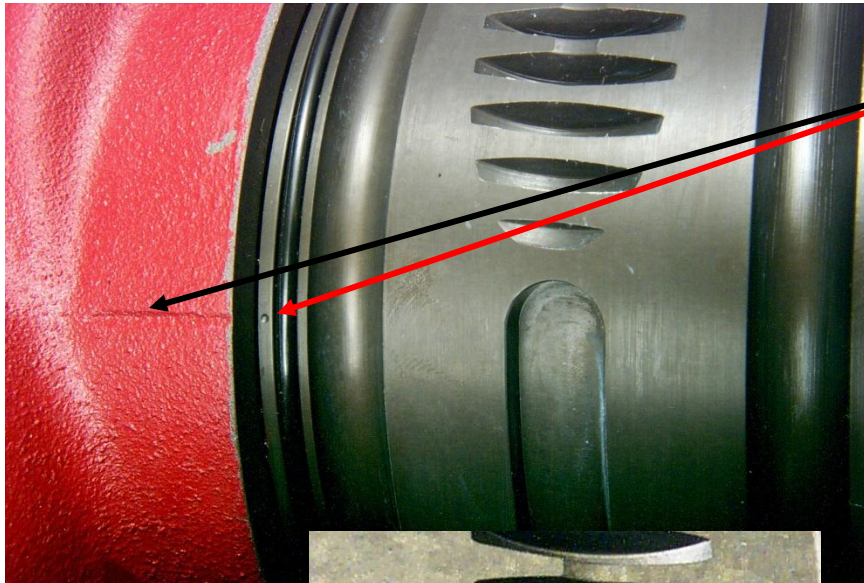


- Remove metal stop plug(s).
- Remove plastic caps for one row of ball bearings at a time.
- This cap and opposite side
- Then this cap and opposite side
- Use a wire tie to help push balls out as joint is rotated



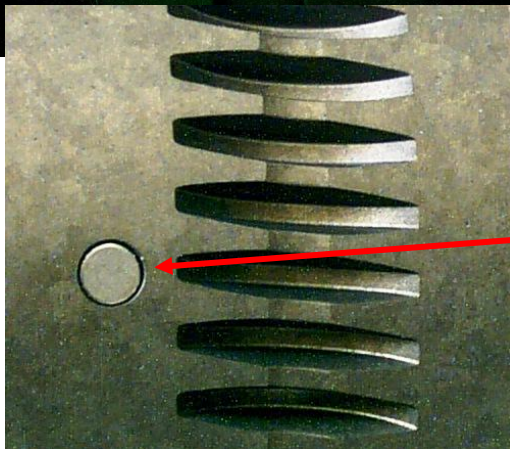
[illegible]

Elevation – Outlet Elbow



- Check timing marks.
Make sure outlet inner swivel is still “In Time” with casting.

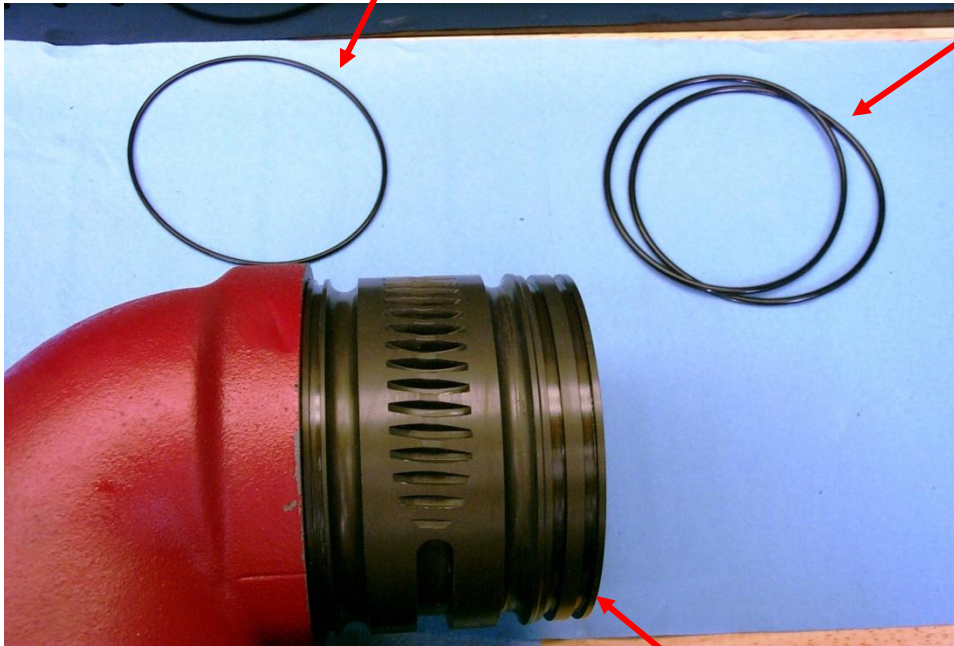
If not, outlet elbow must be replaced as a complete assembly,
part number 35780098



- Check for damage and wear.
- Locate and inspect magnet.

Elevation – Outlet Elbow

Replace O-Ring
Part # 757080



Replace O-Rings
Part # 757068
and Part # 757446

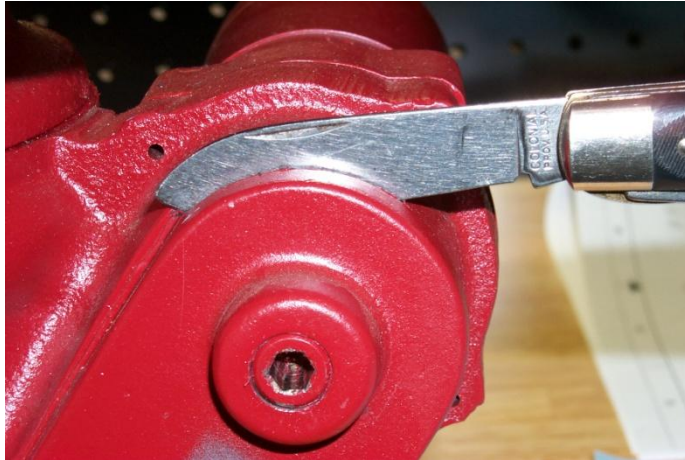
**Note: Older monitors, both were
757068.**

NOTE:

**Use Parker O-Ring Lube on all
O-Rings during assembly**

**Newer Monitors use O-Ring
Part # 757446 in outer groove.**

Rotation – Monitor Inlet



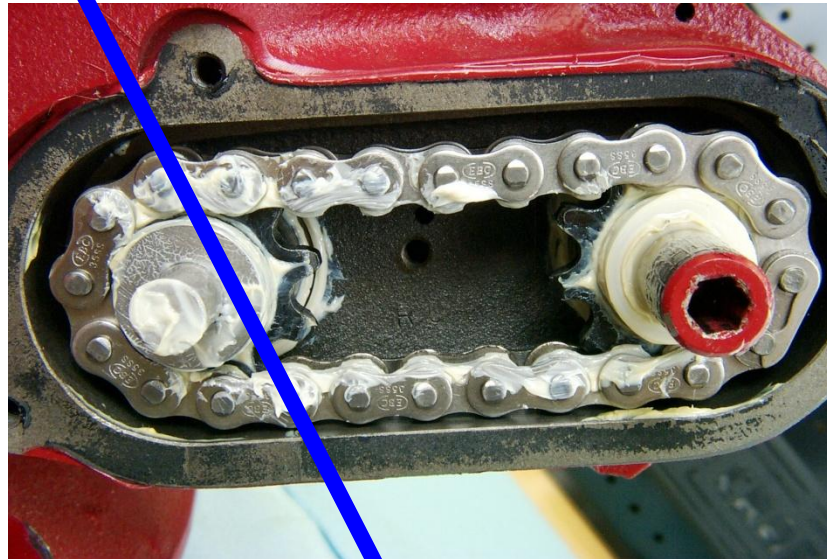
- Remove screws from rotation drive cover
- Carefully open rotation drive cover



Rotation – Monitor Inlet

- Check end play on worm gear assembly.
Can be done by positioning a straight edge across gear housing on casting to see if there is clearance between the straight edge and the top of the thrust bearing. Use shims (part # 769494) like a feeler gage to determine number of shims required, if any.

Take note
for use
during
assembly.



Rotation – Monitor Inlet



- Clean gasket material from rotation drive cover
- Inspect needle bearings
- Replace O-Ring 757313

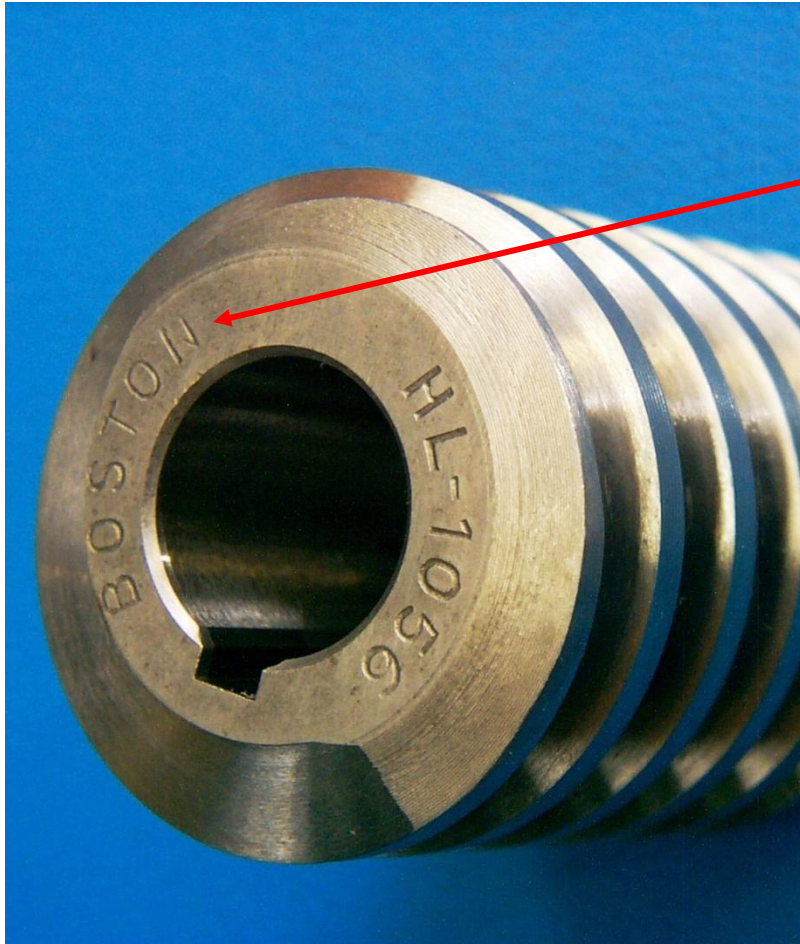


Rotation – Monitor Inlet



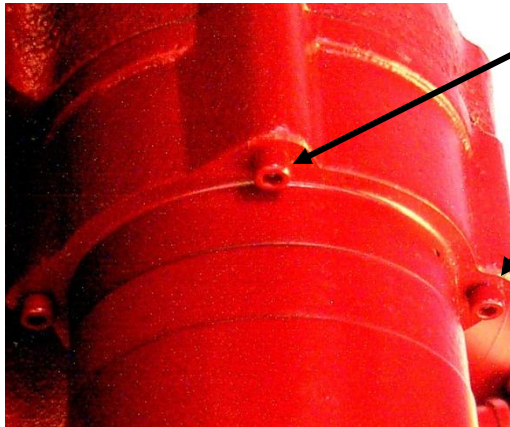
- Slide chain and sprockets up off the shafts.
- Remove worm gear and associated parts.
- Lay parts out in the order they came out.
- Clean and inspect – make sure all parts are out and accounted for.

Rotation – Monitor Inlet



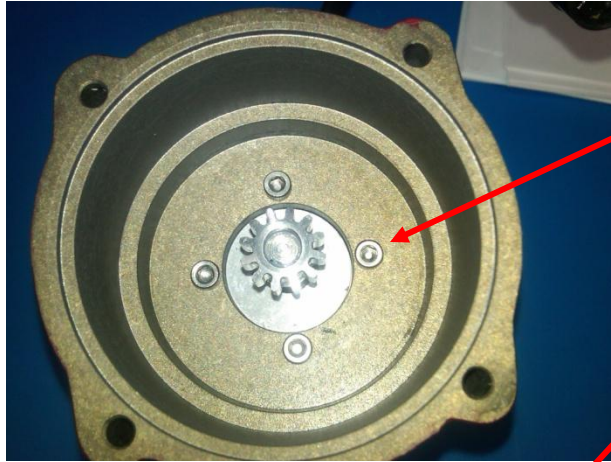
- Worm gear should have “BOSTON” stamped on one end.
- **If not, replace with new worm gear, part number 718273**

Rotation – Monitor Inlet



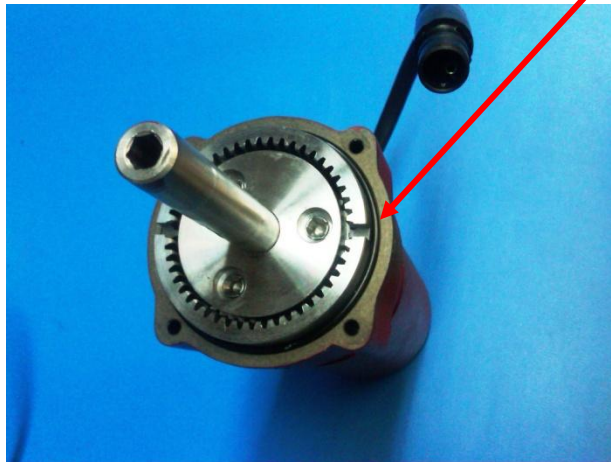
- Remove Woodruff Key from drive shaft
- Remove 4 motor mounting screws
- Clean and inspect gear reducer components

Rotation – Monitor Inlet

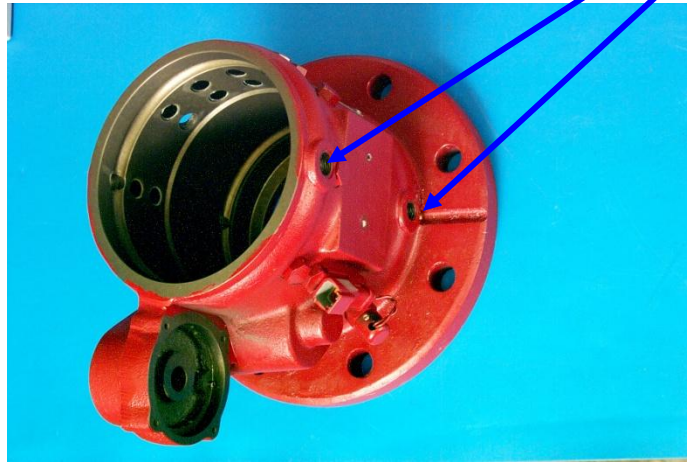


- Remove these 4 screws only when replacing motor

- Replace O-Ring Part # 757312

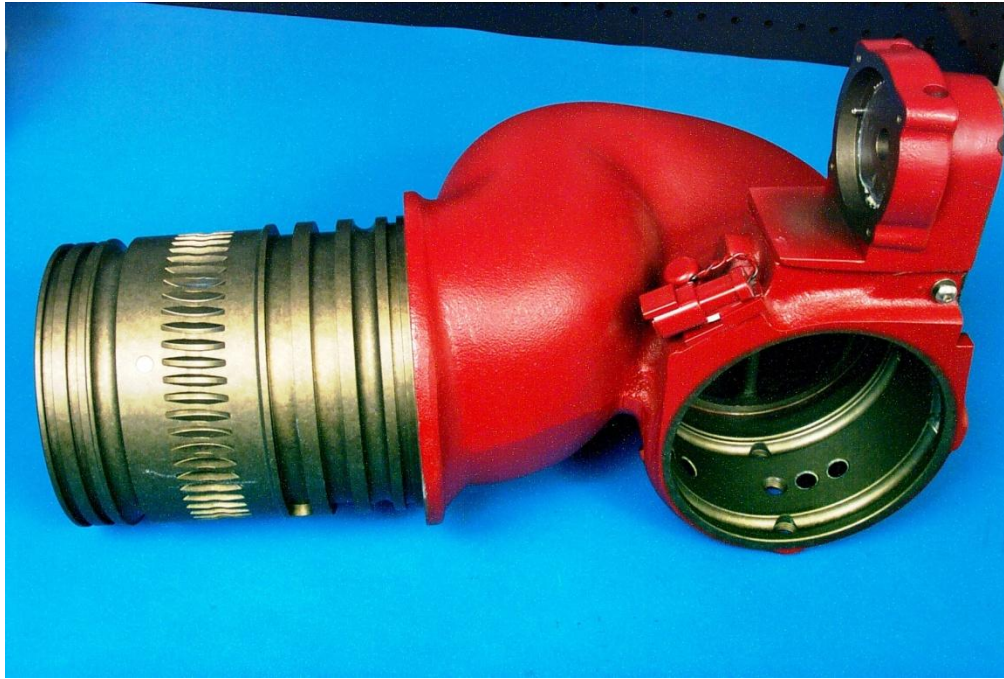


Rotation – Monitor Inlet

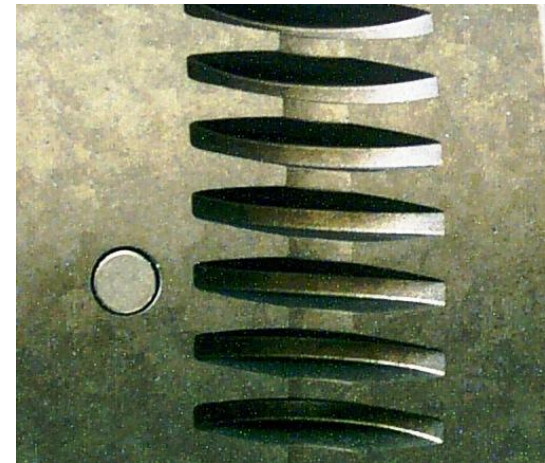


- Remove metal stop plugs.
- Remove plastic caps for one row of ball bearings at a time.
- Use a wire tie to help push balls out as joint is rotated

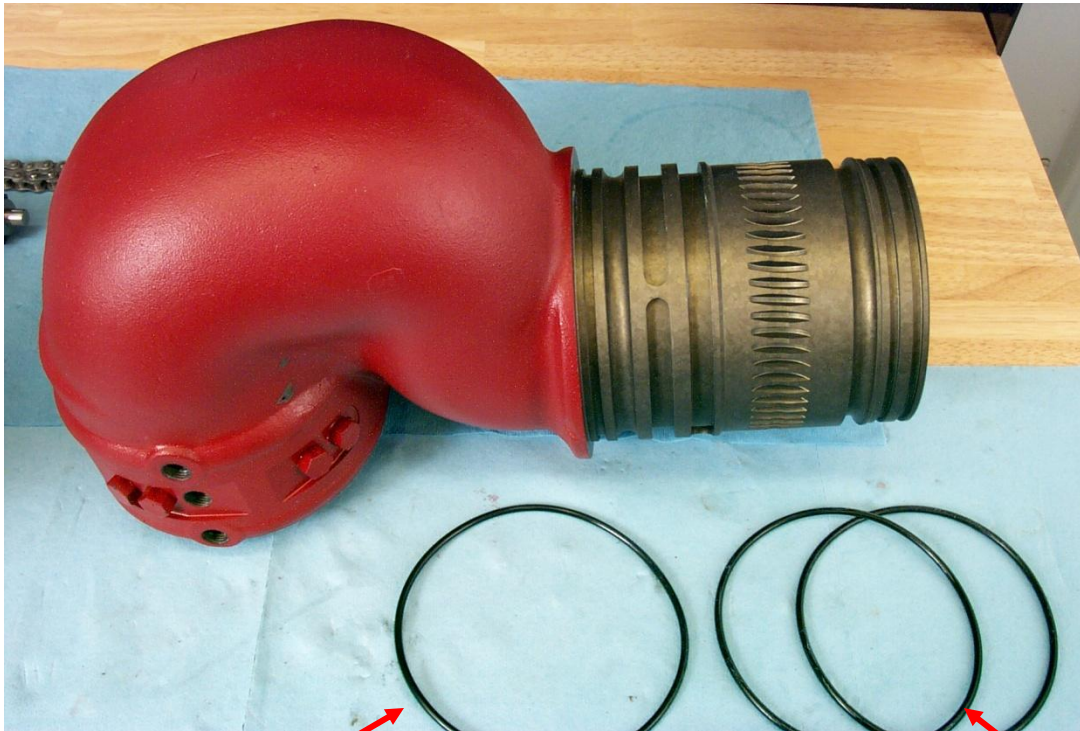
Rotation – Monitor Inlet



- Clean and Inspect
- Locate and inspect magnet



Rotation – Monitor Inlet



NOTE:
Use Parker O-Ring
Lube on all O-Rings
during assembly

Replace O-Ring
Part # 757077

Replace O-Rings
Part # 757076

Assembly Notes

- Use Parker O-Ring Lube on all O-Rings and associated surfaces during assembly.
Part # 92010001 or equivalent
- Lubricate all other parts with Low Temperature Lubriplate
Part # 92020001 or equivalent
- Use thread locker on all screws.
- Start with the Rotation – Monitor Inlet / Base
- Install Inlet Elbow with new O-Rings into the flange base



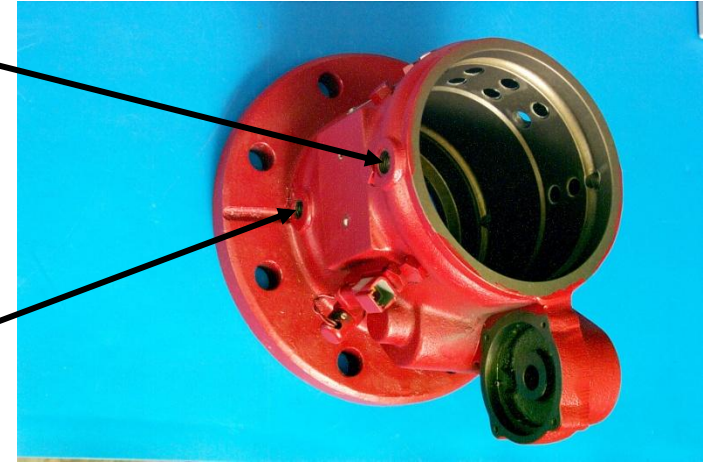
Assembly – Monitor Inlet

- Install two Celcon swivel plugs in the base, top and bottom threaded holes on the side next to the cast-in “AKRON”
- Use Loctite 222, or Permabond LM 113 on the threads of the Celcon plugs. Thread plugs in as shown in picture.



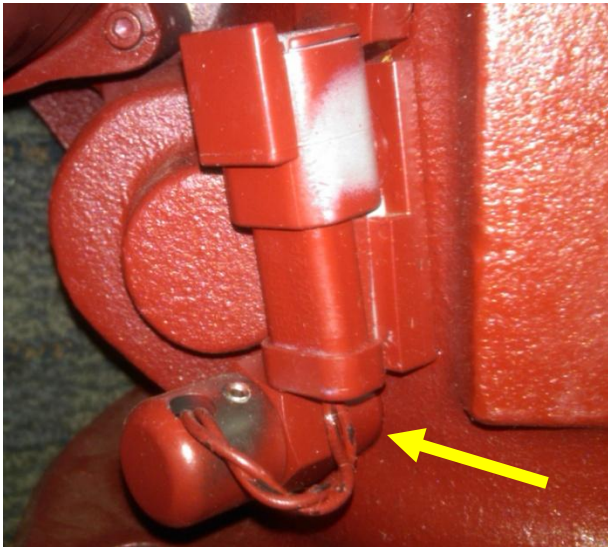
Assembly – Monitor Inlet

- Use 41 balls in the top row.
- Use 40 balls in bottom row.
- Use Loctite 222, or Permabond LM 113 on the threads of the Celcon plugs. Thread plugs in until contact with ball, then back out ½ turn.
- Make sure unit rotates freely.



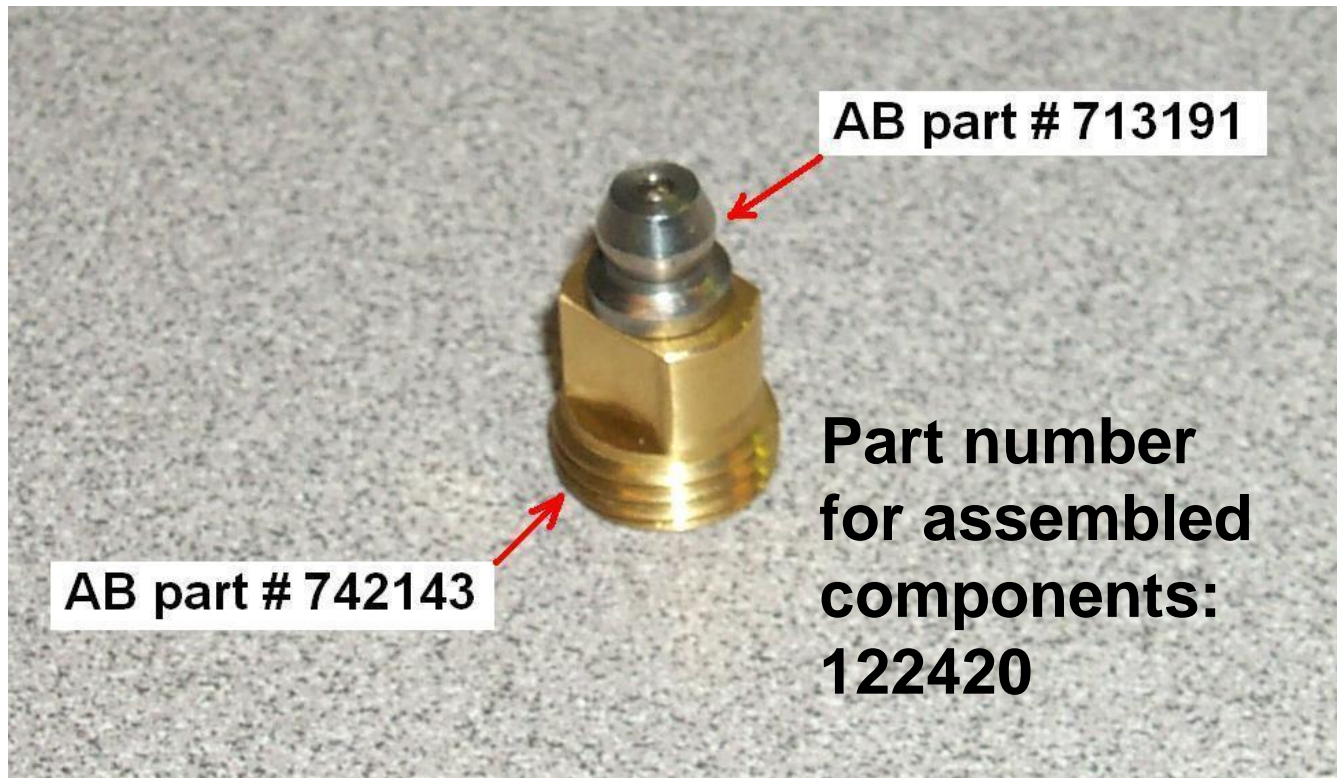
Assembly – Monitor Inlet

- Position Inlet Elbow at center of travel.
Note: Magnet will be lined up with reed switch.
- Reinstall metal stop plugs. Use Loctite 277 permanent type thread locker.



Assembly – Monitor Inlet

- Use grease fitting adapter, part # **122420** to grease the ball grooves.



Assembly – Monitor Inlet

- Using Low Temperature Lubriplate with grease gun, apply grease to the lower ball groove until grease can be observed in the gear housing area. Rotate inlet elbow about 1/4 turn and add some more grease. Repeat until entire ball groove and gear cavity have enough grease.
- Remove grease fitting and install Celcon plug using Loctite 222 or Permabond LM 113.

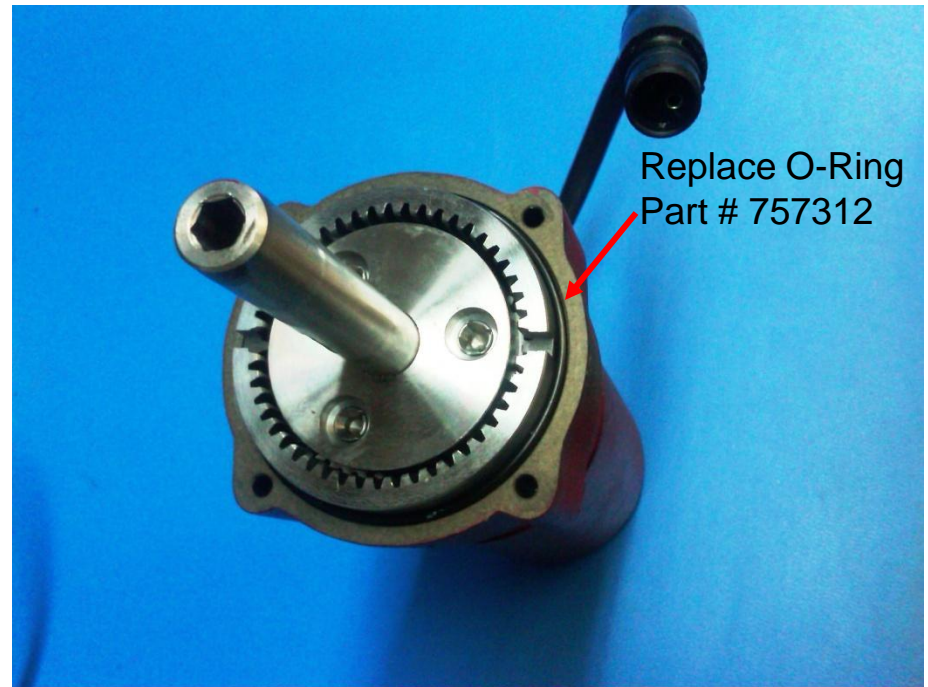
Assembly – Monitor Inlet

- Position grease fitting in upper ball groove, and put some more grease in, every $\frac{1}{4}$ turn of the inlet elbow.
- Remove grease fitting and install Celcon plug using Loctite 222 or Permabond LM 113.

Assembly – Monitor Inlet

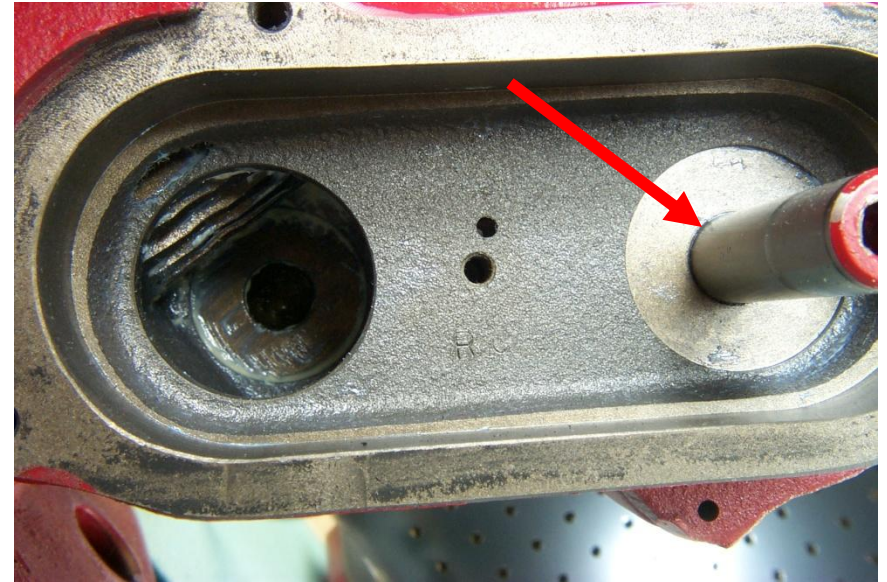
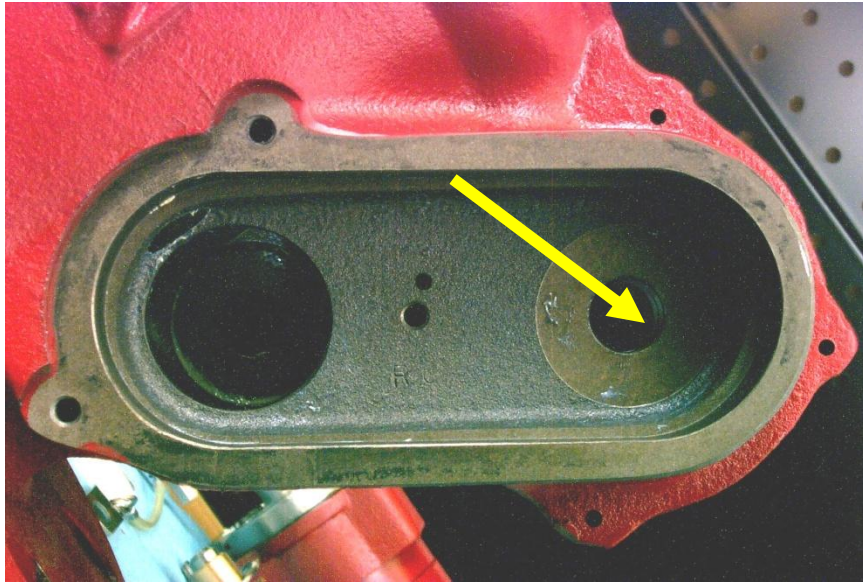
Grease and assemble motor planetary gear reducer.

Note: Shown without grease for clarity



Assembly – Monitor Inlet

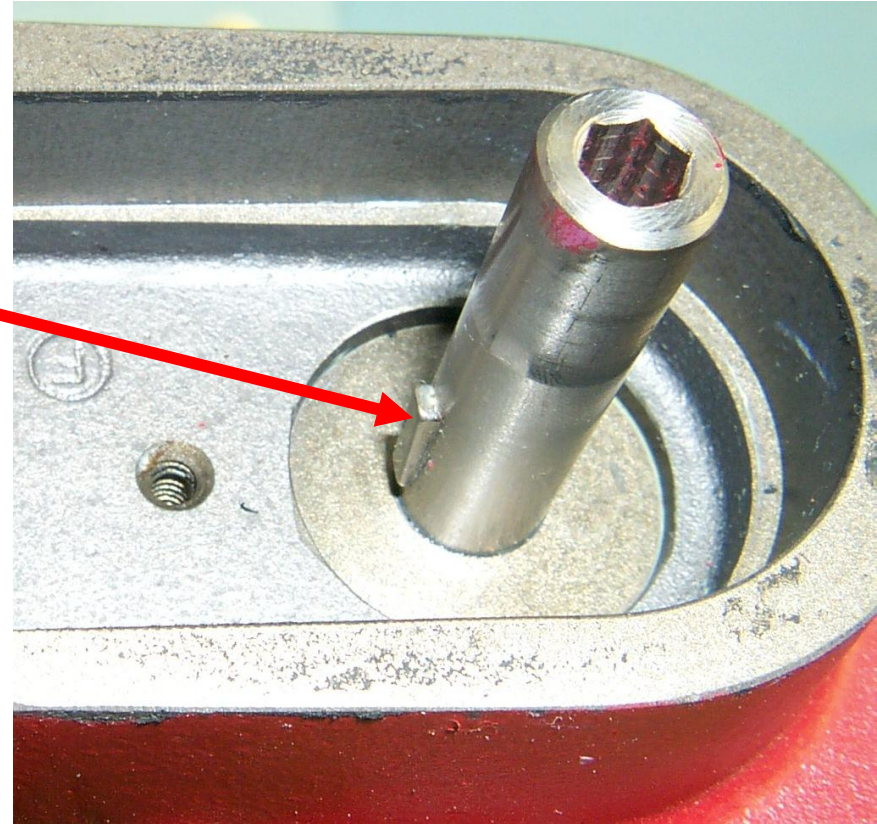
- Replace O-Ring Part # 757041
- Grease shaft and hole in casting



Assembly – Monitor Inlet

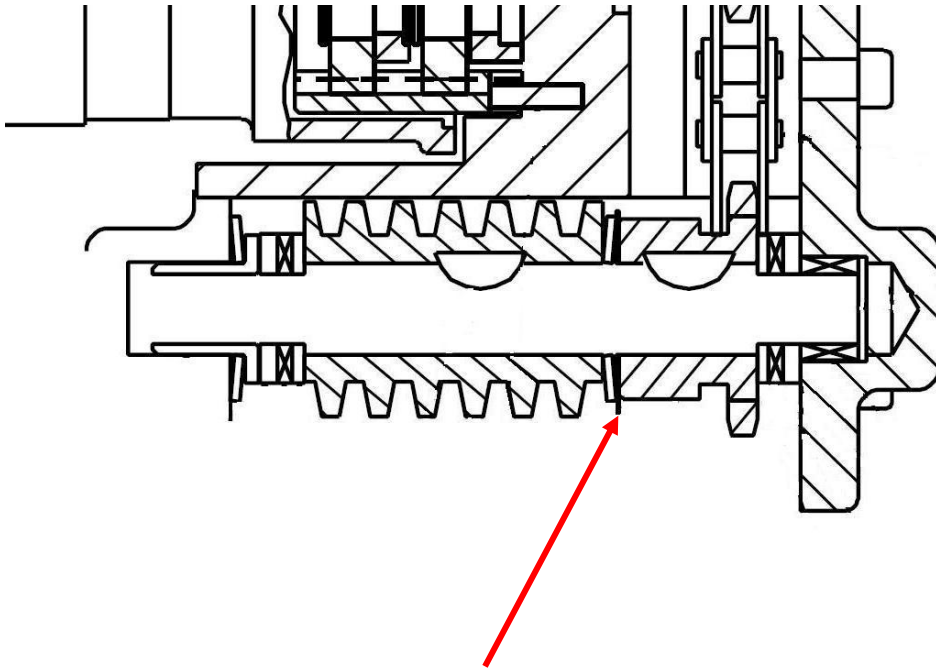
- Press Woodruff key in using Channel Lock pliers - make sure it is secure in slot. Use new key if necessary.

Part # 727025



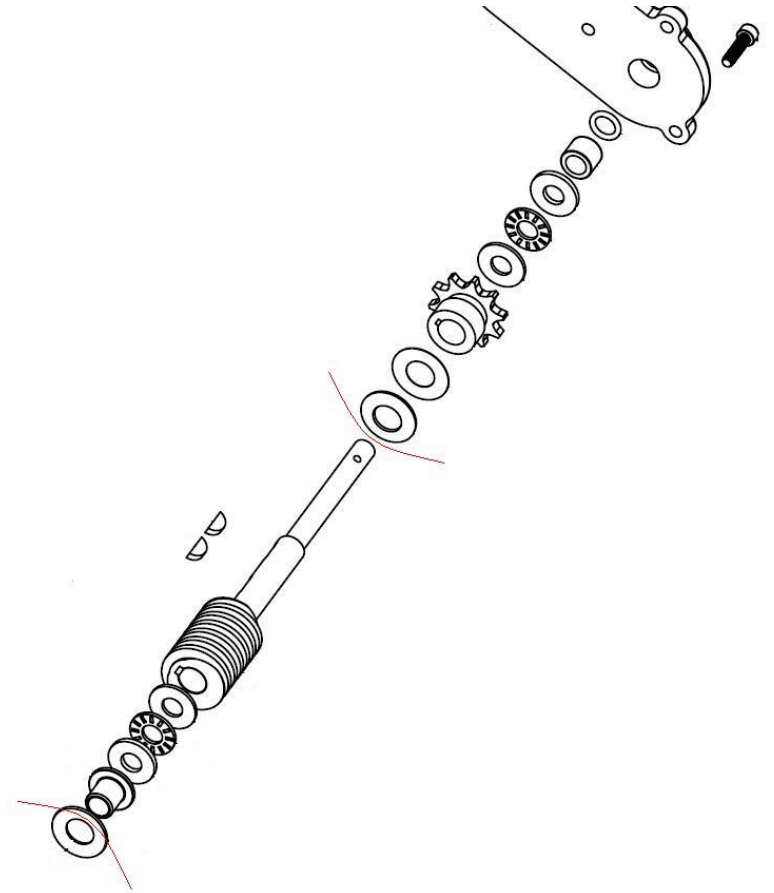
Assembly – Monitor Inlet

Grease and assemble worm gear drive shaft assembly.



May have one or more shims.

Refer to notes taken during disassembly.



Chain Drive Assembly

Vertical Rotation Chain

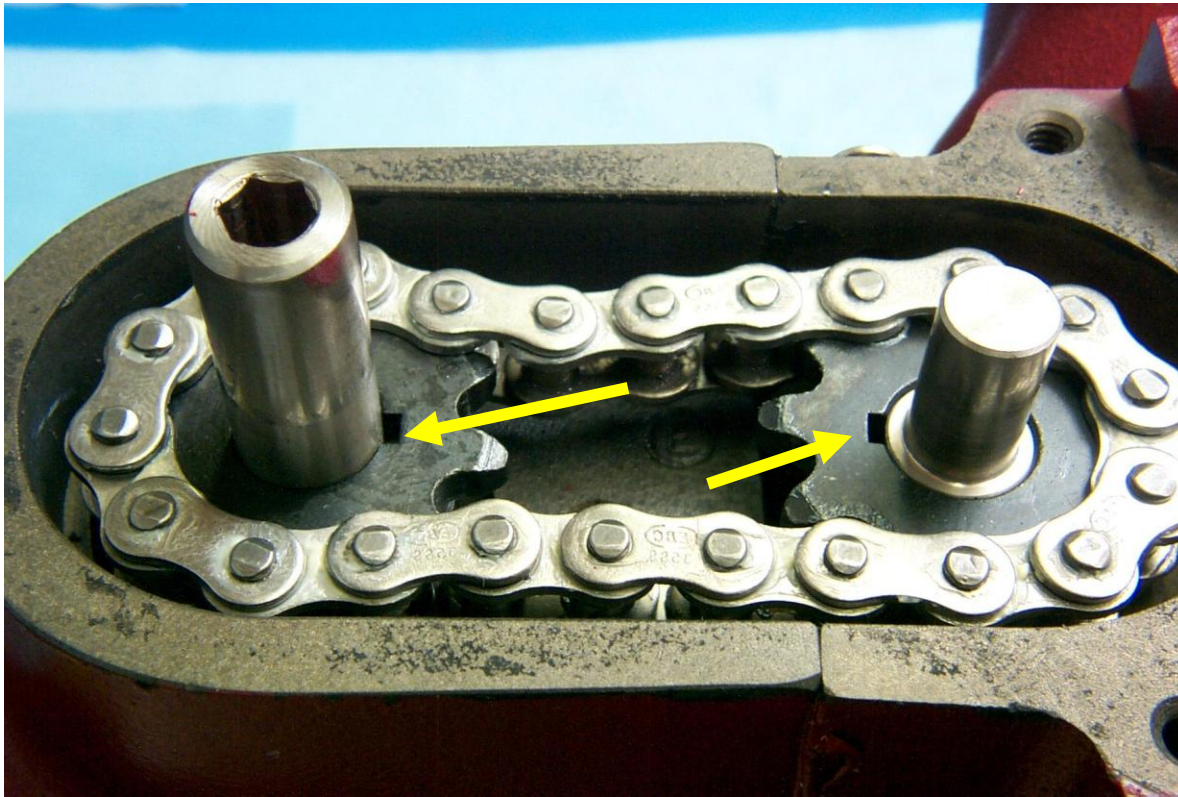


Horizontal Rotation Chain

Chain Drive Assembly

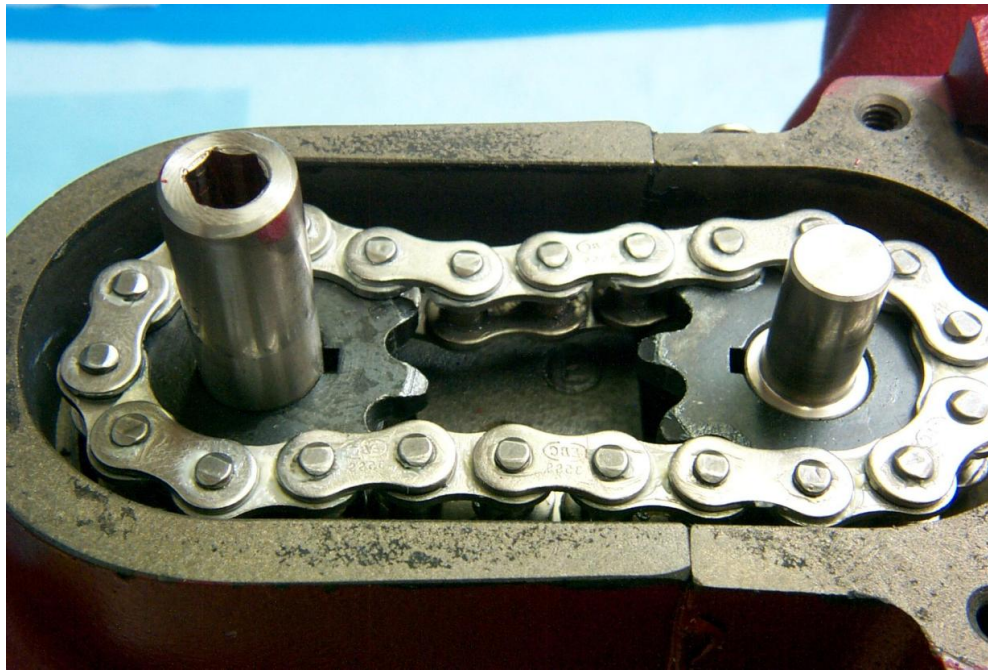
- Line up Woodruff keys so that they face each other.

Note: Shown without grease for clarity



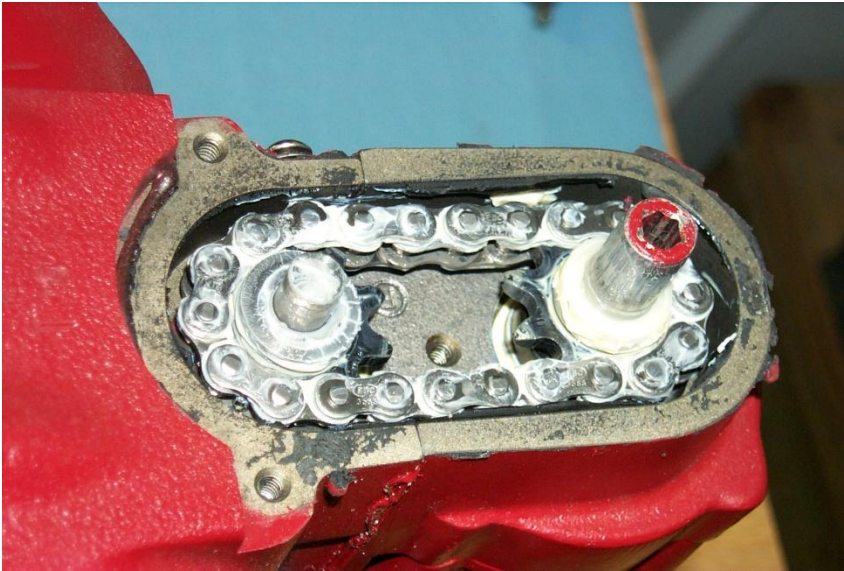
Chain Drive Assembly

- Make sure master link clip faces out toward the cover.
- Grease, then slide the chain and sprocket assembly down over the shafts. Note: Shown without grease for clarity



Chain Drive Assembly

- Grease, and install bearing assembly and spacer.



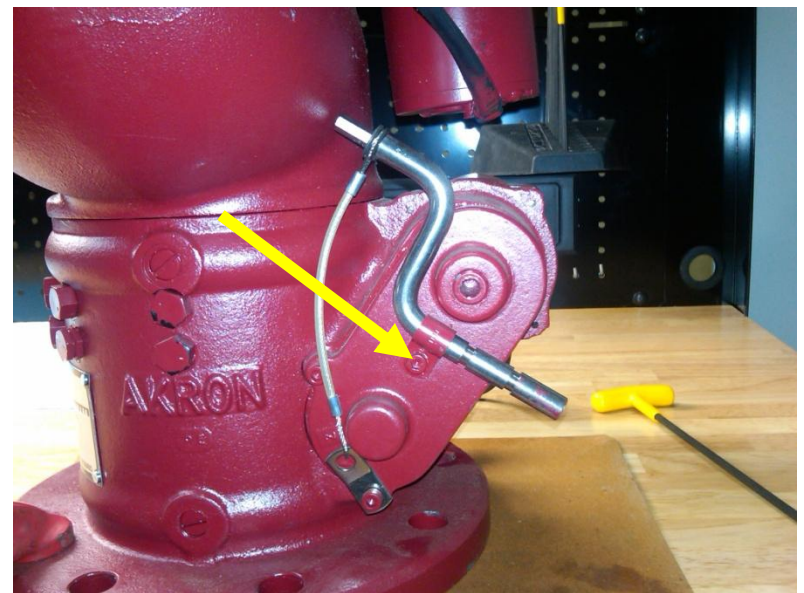
Outlet Drive



Inlet Drive

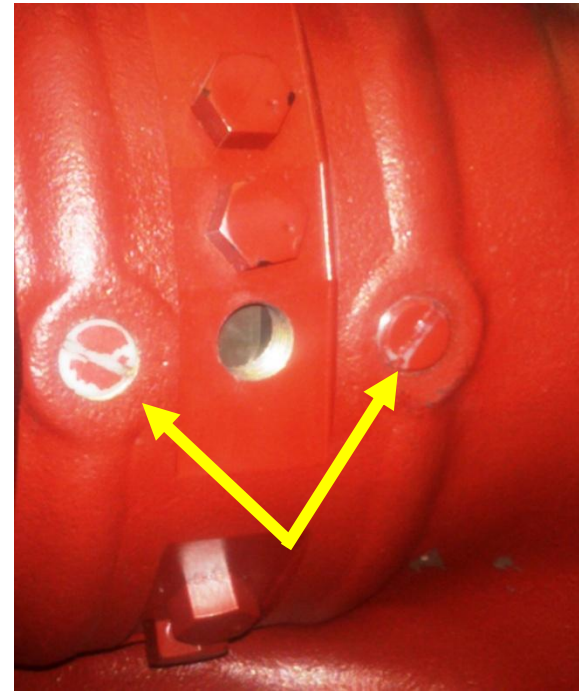
Assembly – Monitor Inlet

- Apply a thin bead of Sikaflex 1A or black RTV gasket former to cover and around center bolt shoulder.



Assembly – Outlet Elbow

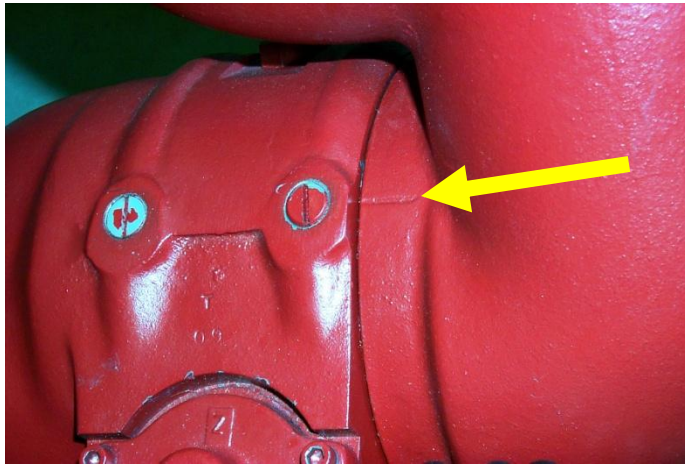
- Install two Celcon swivel plugs in the inlet elbow, threaded holes on opposite side from gear cavity.
- Use Loctite 222, or Permabond LM 113 on the threads of the Celcon plugs. Thread plugs in as shown in picture.



Assembly – Outlet Elbow

- Grease Outlet Elbow components, then assemble.
- Install Outlet Elbow with new O-Rings into the inlet elbow / flange base.
- Use 39 balls in each row.
- Use Loctite 222, or Permabond LM 113 on the threads of the Celcon plugs. Thread plugs in until contact with ball, then back out ½ turn.

Assembly – Outlet Elbow



- Position Outlet Elbow at center of travel. Timing mark lined up as shown. Note: Magnet will be lined up with reed switch in this position also.

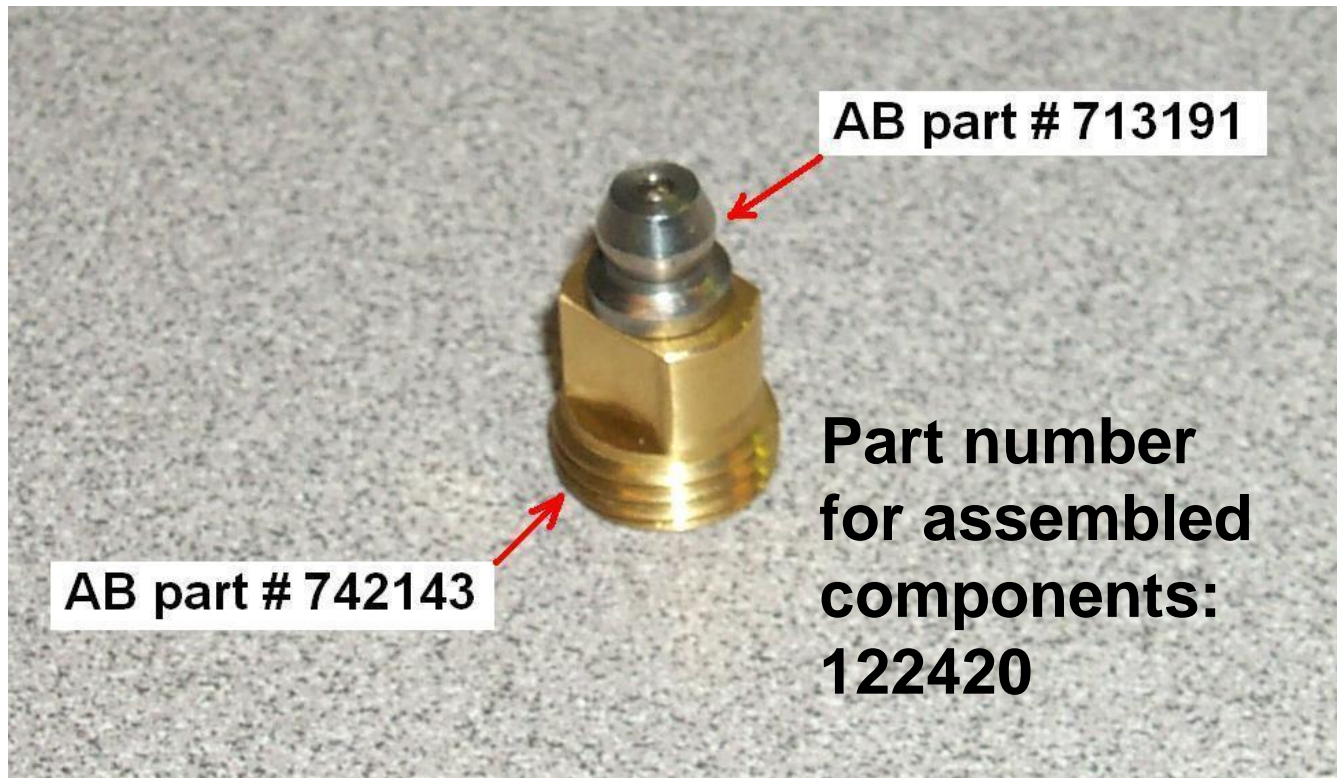


- Reinstall metal stop plug(s). Use Loctite 277 permanent type thread locker.



Assembly – Outlet Elbow

- Use grease fitting adapter, part # **122420** to grease the ball grooves



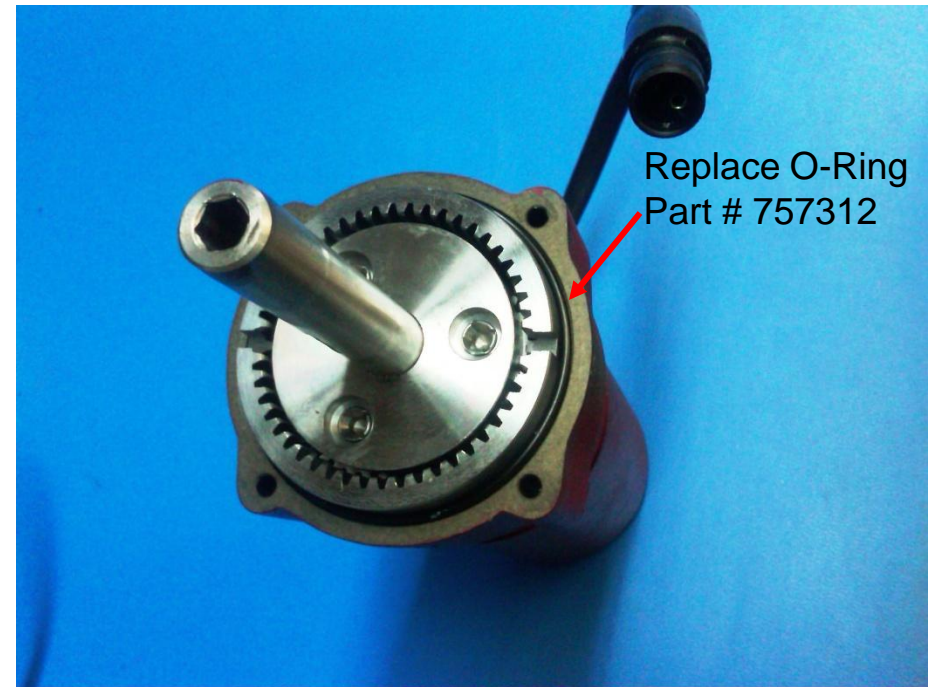
Assembly – Outlet Elbow

- Fill either groove first with about 10 pumps of Low Temperature Lubriplate from the grease gun.
- Remove grease fitting and install Celcon plug using Loctite 222 or Permabond LM 113.
- Fill the second groove with about 6 pumps from the grease gun.
- Also use the grease gun to apply one pump of grease to the gear cavity pocket for the gear shaft.
- Remove grease fitting and install Celcon plug using Loctite 222 or Permabond LM 113.

Assembly – Outlet Elbow

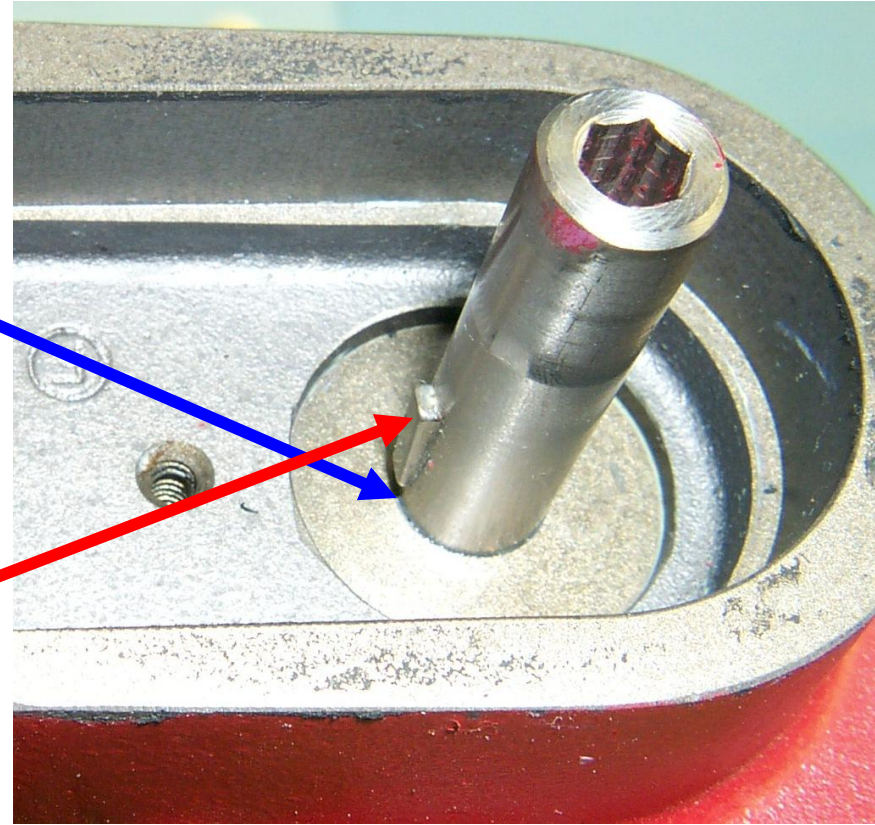
Grease and assemble motor planetary gear reducer.

Note: Shown without grease for clarity



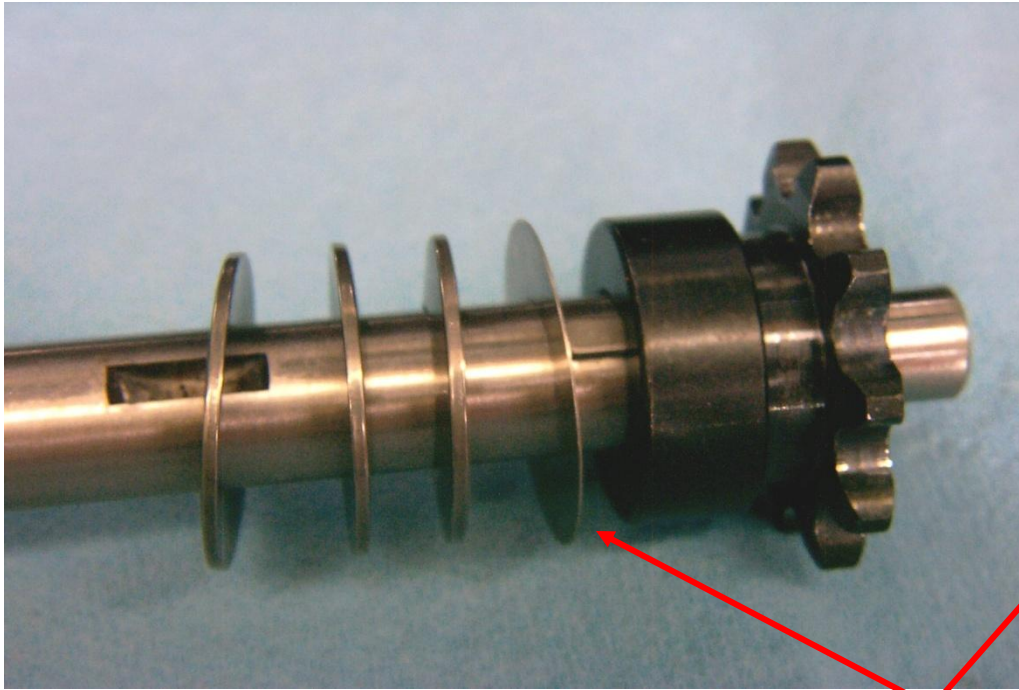
Assembly – Outlet Elbow

- Replace O-Ring
Part # 757041
- Grease shaft and hole in casting
- Press Woodruff key in using Channel Lock pliers - make sure it is secure in slot. Use new key if necessary.



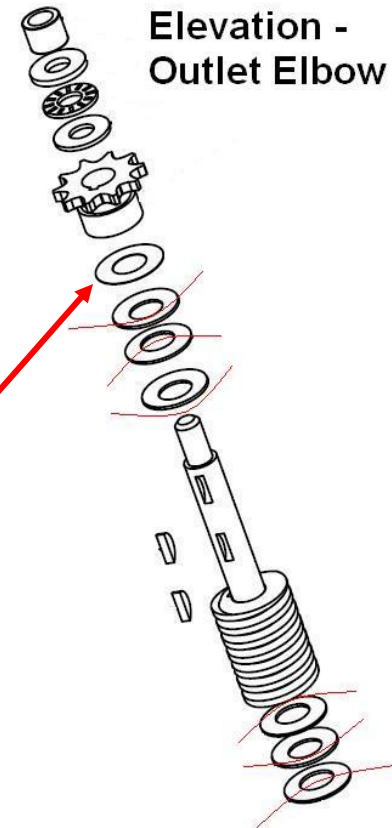
Assembly – Outlet Elbow

Grease and assemble worm gear drive shaft assembly.



May have one or more shims.

Refer to notes taken during disassembly.



Chain Drive Assembly

Vertical Rotation Chain

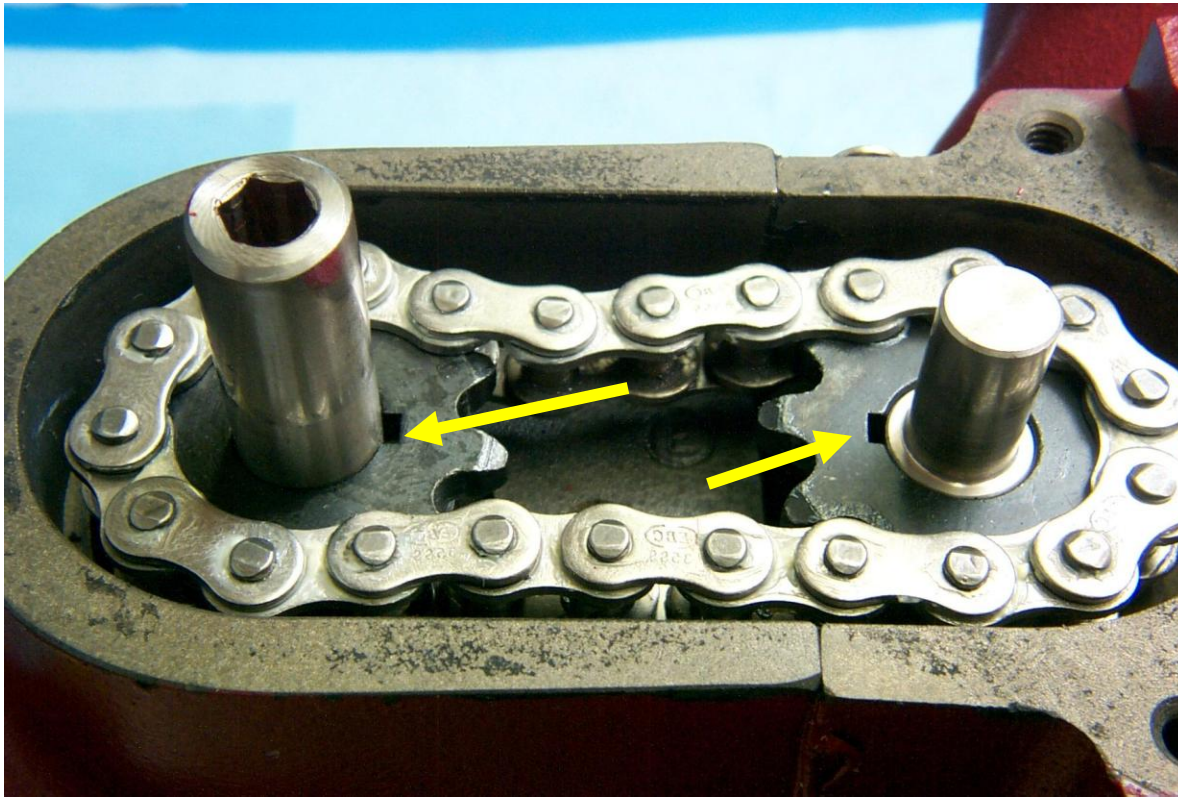


Horizontal Rotation Chain

Chain Drive Assembly

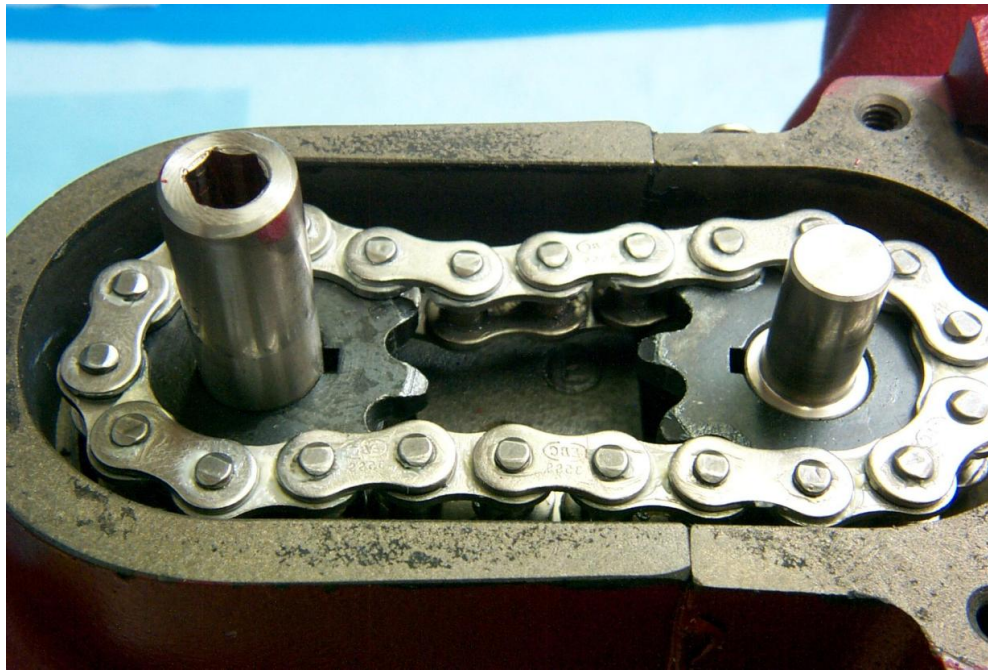
- Line up Woodruff keys so that they face each other.

Note: Shown without grease for clarity



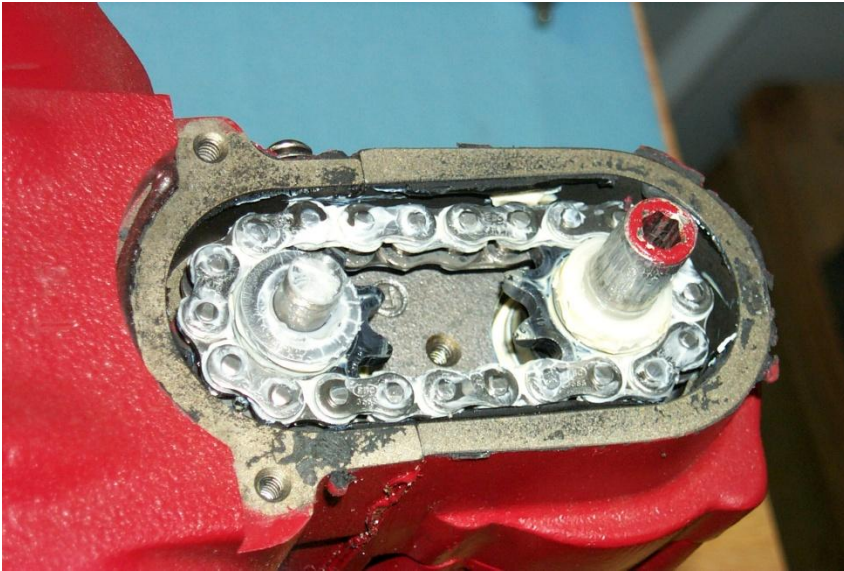
Chain Drive Assembly

- Make sure master link clip faces out toward the cover.
- Grease, then slide the chain and sprocket assembly down over the shafts. Note: Shown without grease for clarity



Chain Drive Assembly

- Grease, and install bearing assembly and spacer.



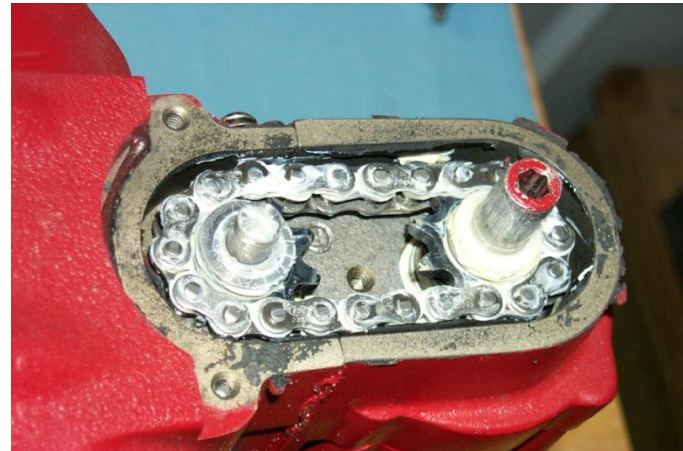
Outlet Drive



Inlet Drive

Assembly – Outlet Elbow

- Apply a thin bead of Sikaflex 1A or black RTV gasket former to cover and around center bolt shoulder.



Grease Fitting Option

- Grease fittings may be installed on monitor if so desired.
- Refer to document: [*Grease Zerk retrofit-2.pdf*](#)

3578 StreamMaster - Testing

- Make sure nothing is binding up. All joints should rotate freely.
- Normal current draw for 12 volt systems:
3 to 3.5 amps - no pressure
6 to 7 amps - 200 psi
- Refer to trouble shooting notes if current is too high.
- Test for leaks.
- This completes the maintenance of the Style 3578 Stream Master monitor.
- Please direct any further questions to your local Akron Brass District Sales Manager, or Akron Brass Technical Support at 800-228-1161 or visit our website:
www.akronbrass.com



AKRON[®]

BRASS COMPANY

U N I V E R S I T Y

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