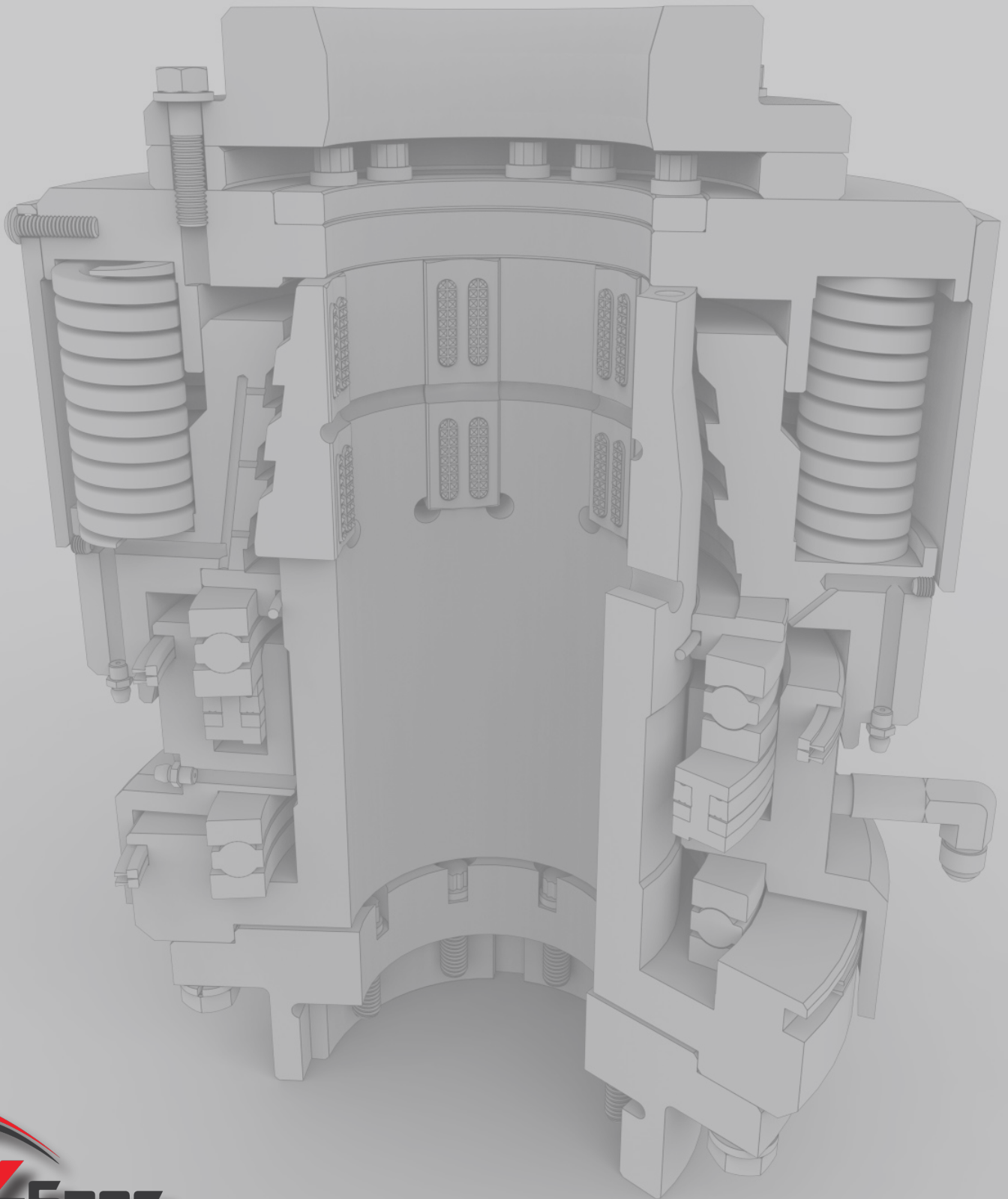


XH Chuck Assembly

58-1000

Technical Manual





58-1000

XH Chuck

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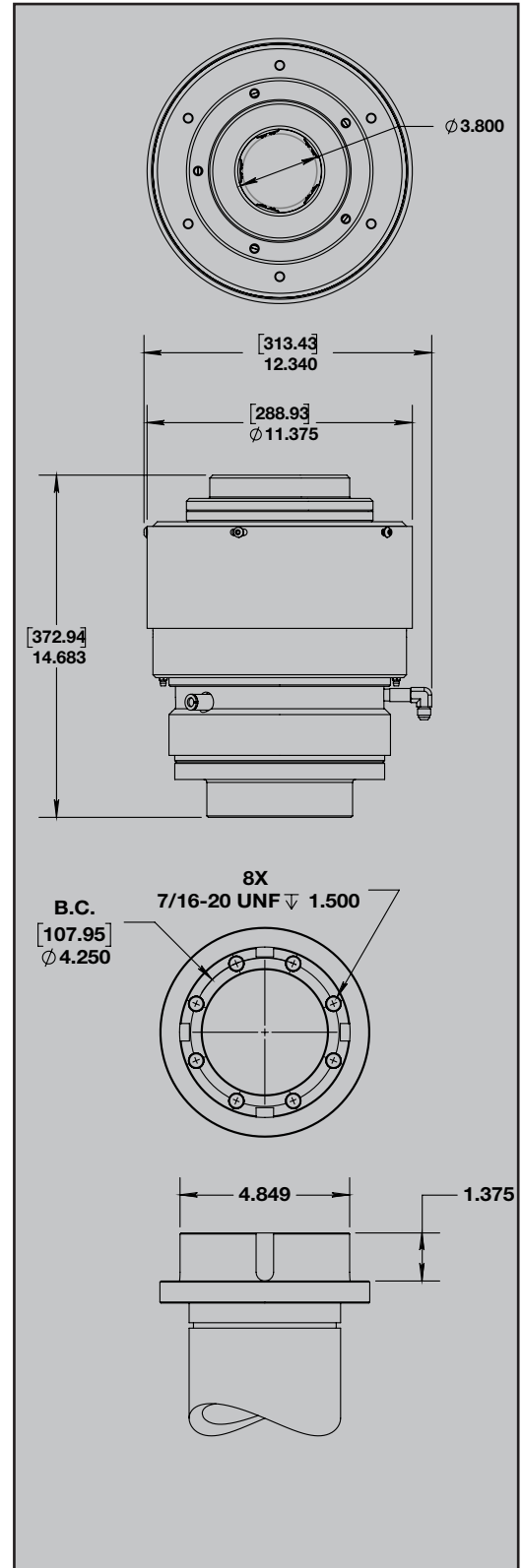
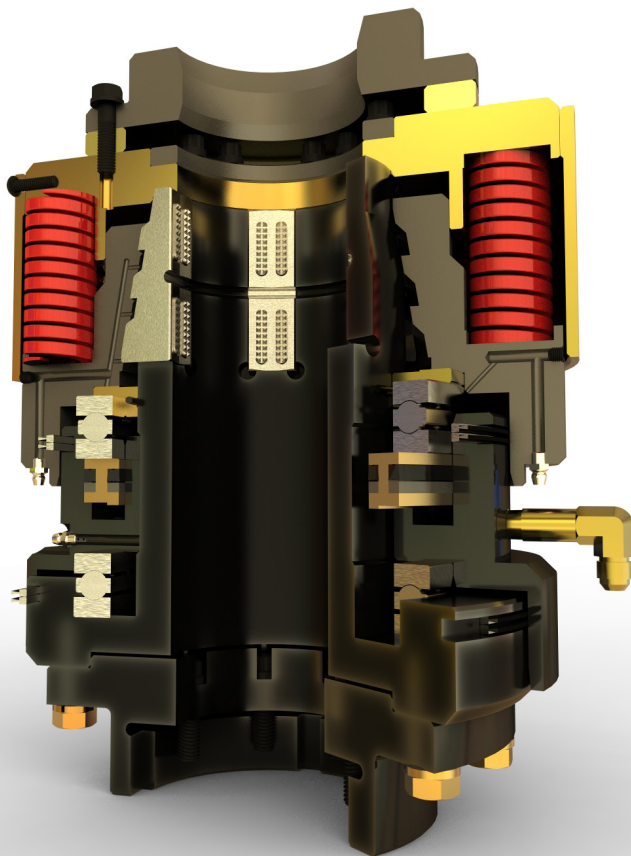
Specifications

Description

- Spring applied, hydraulic release
- H W/L rod capacity , 3-11/16" inside diameter (93mm)
- Each set uses 5 jaws with 4 carbides each

Specifications

Maximum Inside Diameter	3.800" (96.5 mm)
Holding Capacity	34,000 Lbs (15,500 Kg)
Weight (Without jaws and bushing)	188 Lbs (125 Kg)



Specifications



58-1000

XH Chuck

Security & Warnings



This operating and maintenance manual is a guide to reduce the risk of accidents as well as ensure a long service life of the mechanical parts. This guide is based on the experience of the manufacturer with operations on the field and the technical knowledge of the drilling equipment. However, supervisors, operators or present trainers on site are often the best judges to assess the level of risk associated with the operations. The vigilance of the operator and his immediate superior is highly recommended and, at all times.

CAUTION !

Occupational accidents are almost always unpredictable. It is therefore important to be very vigilant and anticipate possible situations where a work-related accident may occur.

- The operator must be conscientious and trustworthy at work.
- The operator should always have security in mind and be informed of security regulations on the work site.
- The operator should have all the skills and knowledge necessary to safely operate the equipment.
- The operator should always wear the appropriate safety equipment such as safety goggles, earplugs/muffs, security hat, security boots and proper attire.
- He/she should always follow the instructions in the service and operation manuals.
- In addition, before starting the equipment, the operator should always ensure that there is no risk to physical injury or possible material damage.
- The operator should always recognize the limits of the equipment and never use it for any other purpose than for its intended use.
- It is strictly forbidden to operate this equipment under the influence of alcohol and/or drugs.



Security & Warnings

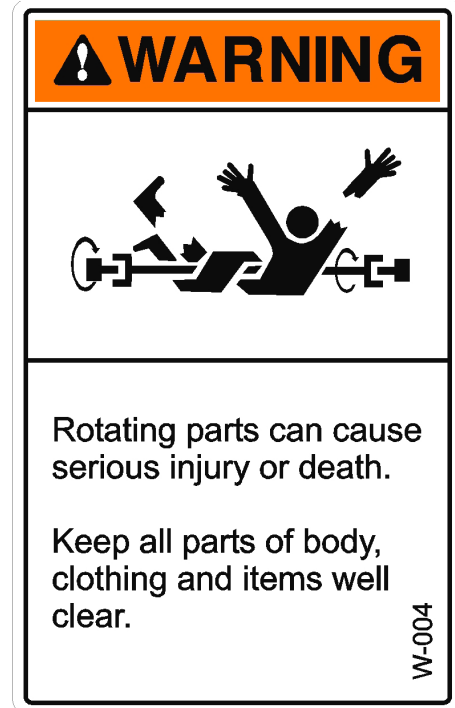
Occupational safety

Before starting work :

- Familiarize yourself with the service and operation manuals and follow their instructions.
- Plan ahead the work to be done to avoid potential accidents.
- If an accident or fire occurs, act rapidly and use all the necessary tools available. Inform yourself on first aid techniques and how to extinguish a fire. Ensure that you can reach help at any time.
- Before starting your work shift, always check the state of the equipment and test the different functions.
- For safe operation, clothes should not be baggy, sleeves should not be hanging. Hair should be tied back and bracelets and rings should be removed. A common-sense approach of the proper attire will prevent potential physical injury from the mechanisms.
- Always wear all the appropriate security wear (hat, boots, goggles, earplugs/muffs and overalls).

Operational warnings

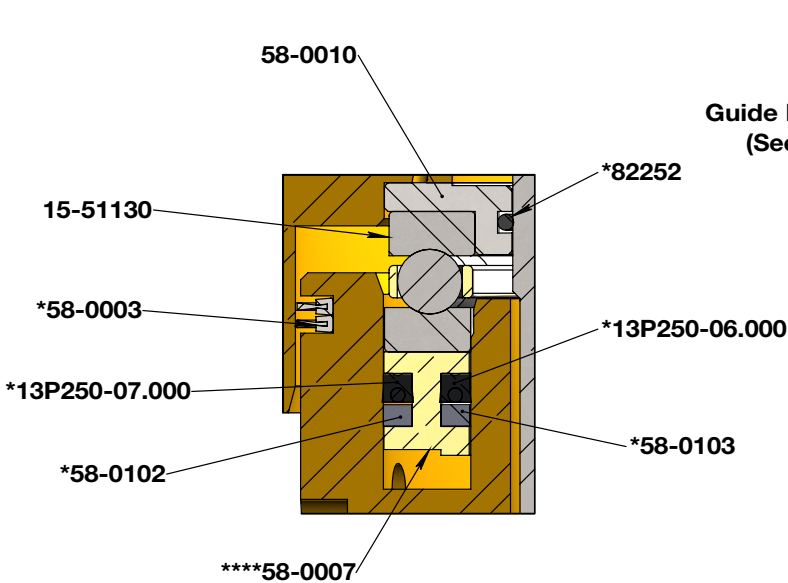
- Never put the chuck in high speed rotation while the hydraulic pressure is off (jaws opened) and then close the the jaws rapidly on the rod. This will cause the springs to compress and release rapidly, allowing the 3 parts of the thrust bearing to become separated and then shocked back together, **causing immediate failure of the thrust bearing.**
- Always grease the chuck as per instructions supplied on the Maintenance page (p.16)



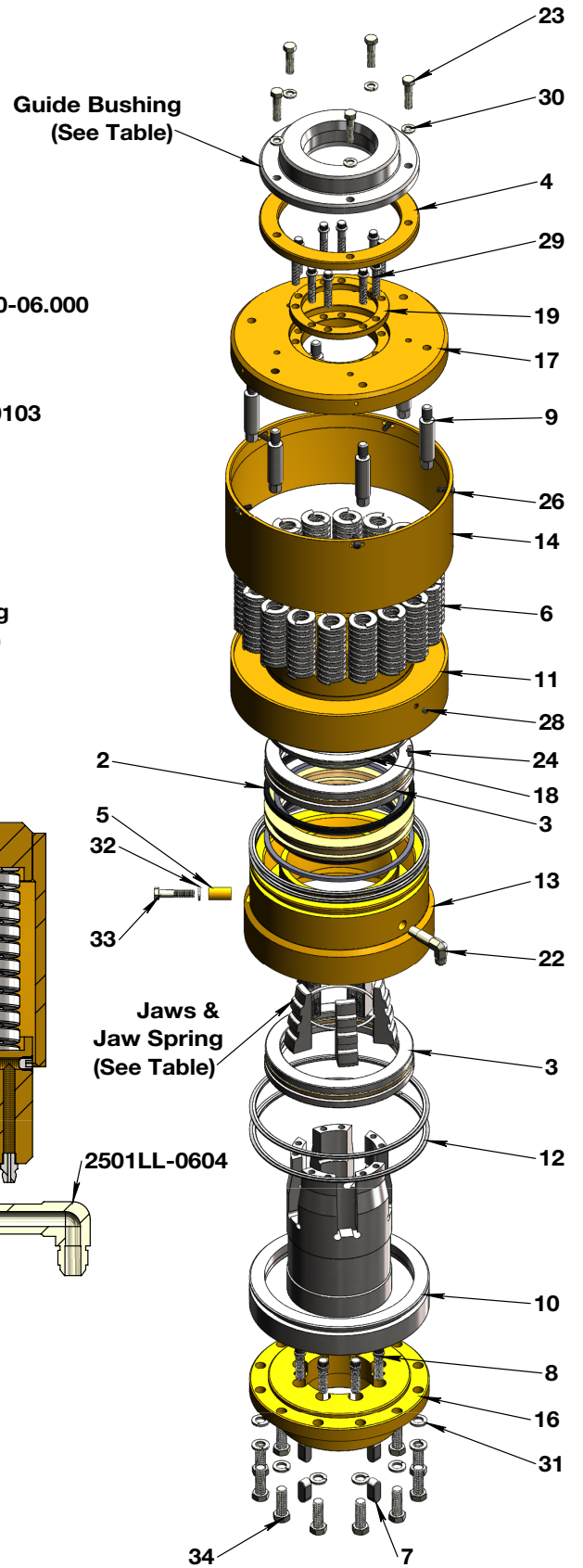
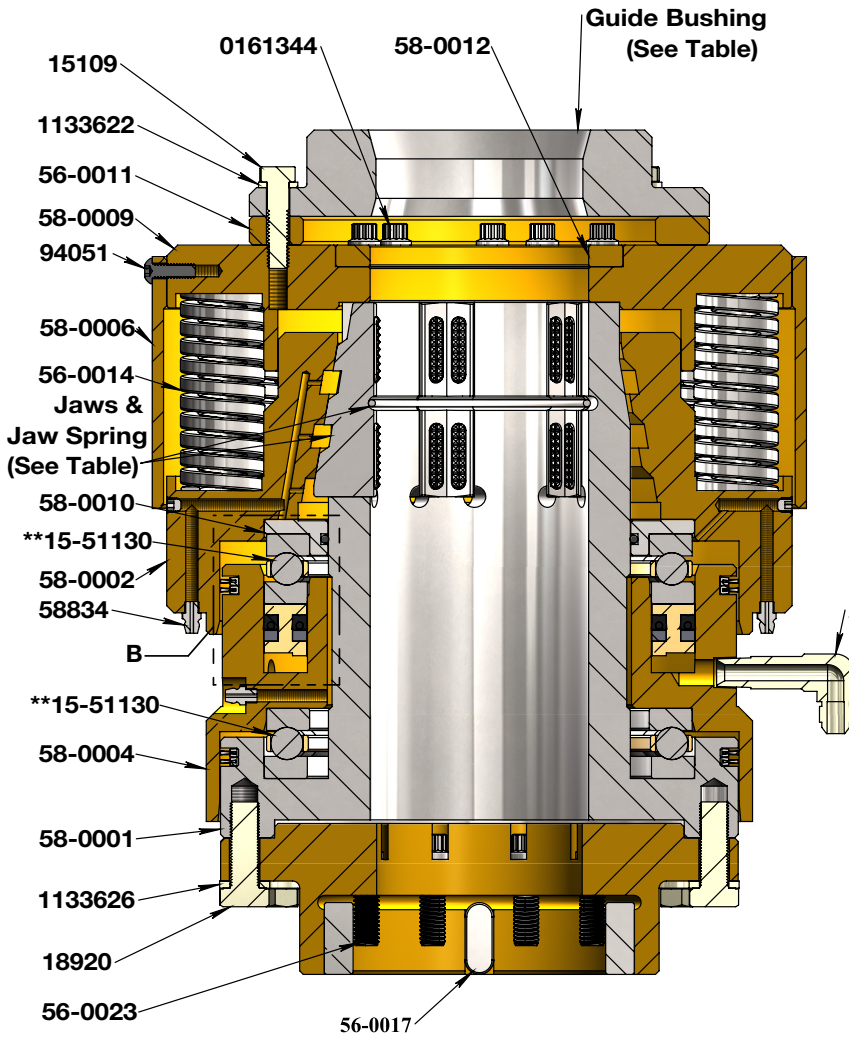


58-1000

XH Chuck



DETAIL B





Assembly Kit Order

Item #	Part #	Description	Weight (lbs)
1-34	58-1000	XH Chuck Assembly	203

Parts List

Item #	Part #	Description	Qty	Weight (lbs)
1	13P250-06.000	U-Cup Seal	1	0.049
2	13P250-07.000	U-Cup Seal	1	0.057
3	15-51130	Thrust Bearing	2	5.229
4	56-0011	Spacer Ring	1	2.811
5	58-0013	Spacer Tube	1	0.049
6	56-0014	Compression Spring	18	0.877
7	56-0017	Key	4	0.08
8	56-0023	Special Bolt, Short	8	0.08
9	56-0064	Spring Guide	6	0.376
10	58-0001	Base, XH Chuck	1	34.009
11	58-0002	Chuck Bowl, XH Chuck	1	38.993
12	58-0003	Brush Seal, XH Chuck	4	0.212
13	58-0004	Cylinder	1	24.888
14	58-0006	Spring Guard, XH Chuck	1	8.854
15	58-0007	Piston, XH Chuck	1	2.837
16	58-0008	Adapter Plate, XH Chuck	1	17.573
17	58-0009	Top Plate, XH Chuck	1	22.225
18	58-0010	Seal Retainer, XH Chuck	1	1.983
19	58-0012	Spacer, XH Chuck	1	0.749
20	58-0102	Outside Guide	1	0.044
21	58-0103	Inside Guide	1	0.038
22	2501LL-0604	90° Extra Long M-JIC #6 / M-NPT #4	1	0.153
23	15109	3/8-16 x 1-1/2" Grade 8 Yellow Zinc Finish Hex Cap Screw	5	0.0626
24	58834	1/4-28 Straight Steel Zinc Self-Tapping Grease fitting	3	0.01
25	82252	O Ring	1	0.012
26	94051	1/4-20 x 3/4" Hex Drive Steel Button Socket Cap Screw	5	0.012
27	94133	1/4" NPTF Steel Socket Head Pipe Plug 3/4" Taper Dryseal	1	0.019
28	141571	1/4-28 x 1/4" Hex Drive Cup Point Steel Socket Set Screw	2	0.002
29	161344	3/8-24 x 1-3/4" 12 Point Flanged Steel Ferry Cap Screw	10	0.066
30	1133622	3/8 Zinc Finish Medium Split Lock Washer	5	0.006
31	1133626	1/2 Zinc Finish Medium Split Lock Washer	12	0.013
32	1133622	3/8 Zinc Finish Medium Split Lock Washer	1	0.006
33	18839	3/8-24 x 1-3/4" Grade 8 Yellow Zinc Finish Hex Cap Screw	1	0.0701
34	18920	1/2-20 x 1-1/2" Grade 8 Yellow Zinc Finish Hex Cap Screw	12	0.12

* Seal Kit #58-0105 includes items marked *

** Pack with grease before installing in chuck assembly

*** Seal Kit #58-0110 includes piston 58-0007 and Seal Kit 58-0105



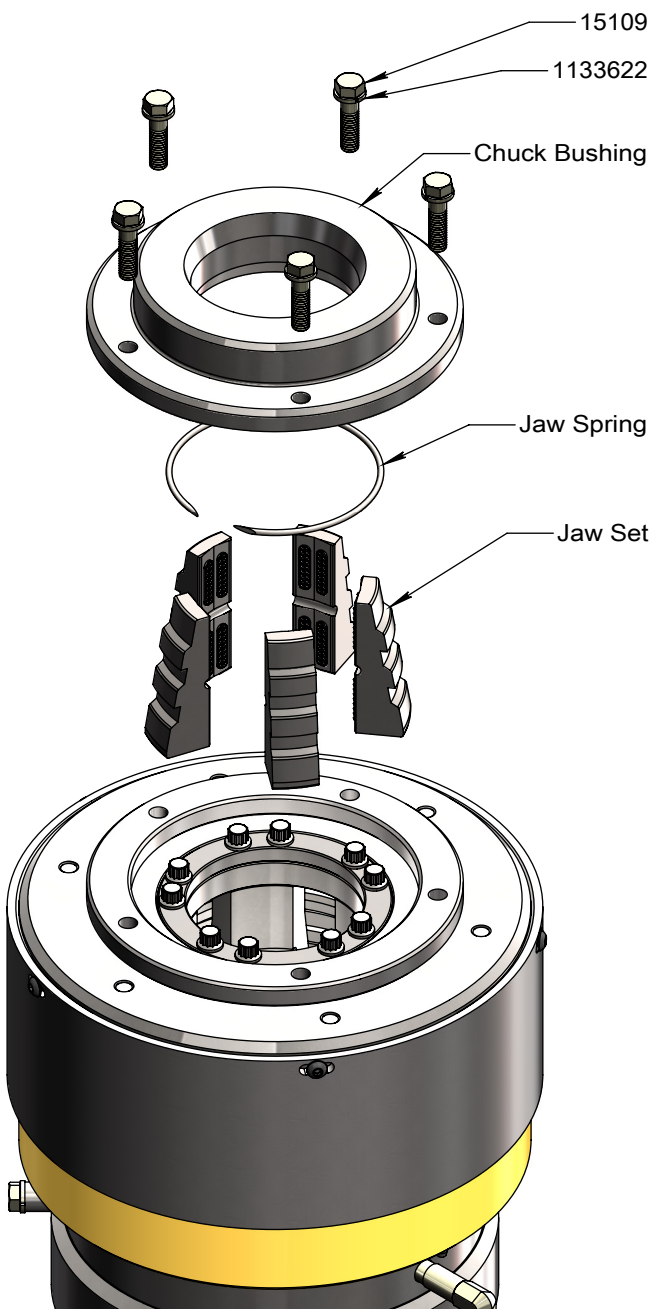
58-1000

XH Chuck

Options & Accessories

Jaws & Jaw Springs

SIZE	Jaw Set	Chuck Bushing	Jaw Spring
BW/BWL/BQ ROD AW CSG	30-22-01	56-0020	56-0040
NWL/NQ ROD	30-22-02	56-0021	56-0041
HW/HWL/HQ ROD NW CSG	30-22-03	56-0022	56-0042



To Change Bushing:

- Remove the 5x 3/8-16 x 1-1/2" Grade 8 Yellow Zinc Finish Hex Cap Screw (15109)
- Remove Chuck Bushing

To Change Jaw Set:

- Remove the 5x 3/8-16 x 1-1/2" Grade 8 Yellow Zinc Finish Hex Cap Screw (15109)
- Remove Chuck Bushing
- Remove jaws Spring
- Remove Jaw Set

SIZE	Nominal Clamping Diameter	Maximum Clamping Diameter	Minimum Clamping Diameter
BW/BWL/ BQ ROD AW CSG	2.188" (55.6mm)	2.636" (67.0mm)	2.083" (52.9mm)
NWL/NQ ROD	2.750" (69.9mm)	3.198" (81.2mm)	2.644" (67.2mm)
HW/HWL/ HQ ROD NW CSG	3.500" (88.9mm)	3.800" * (96.5mm)	3.393" (86.2mm)

* Limited by Chuck Inside diameter

Jaws & Jaw Springs



Options & Accessories

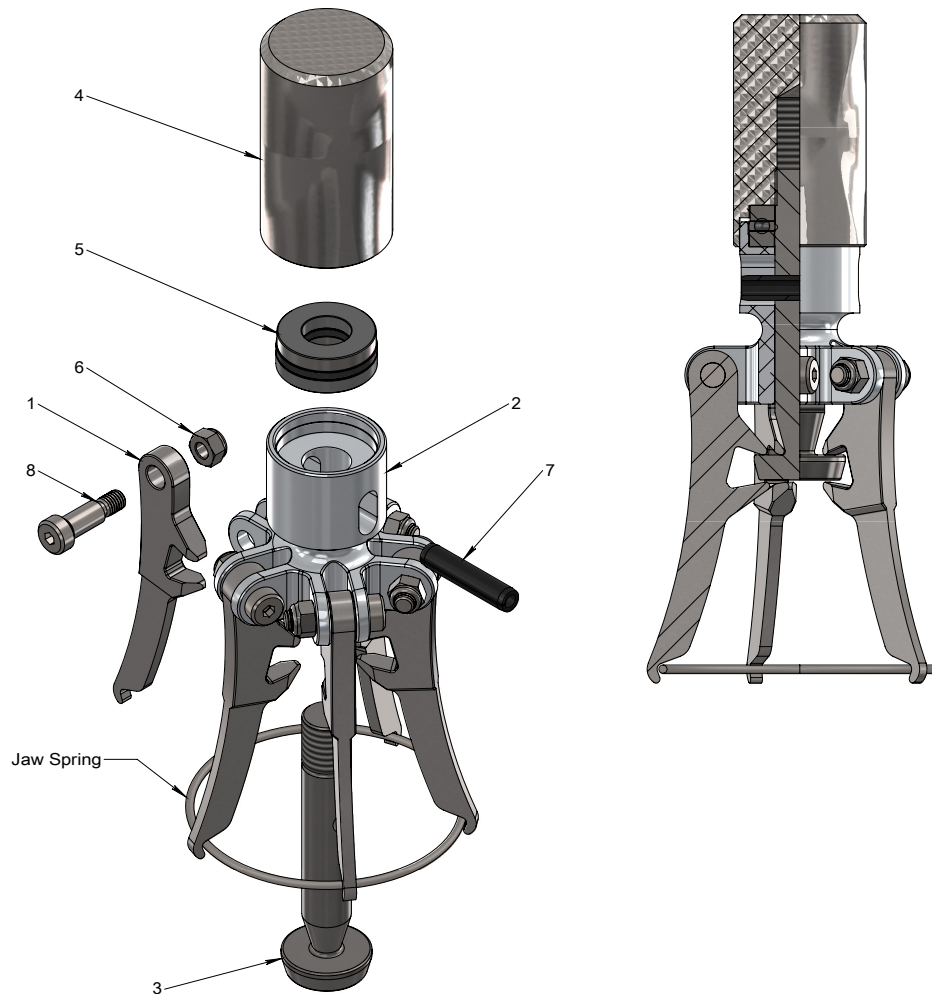
Jaw Spring Tool

Assembly Kit Order

Item #	Part #	Description	Weight (lbs)
1-8	56-0200	Jaw Spring Install Tool	3.813

Parts List

Item #	Part #	Description	Qty	Weight (lbs)
1	56-0201	Tool Leg	5	0.248
2	56-0202	Body	1	0.499
3	56-0203	Plunger	1	0.627
4	56-0204	Knob	1	0.861
5	18298	Thrust Bearing	1	0.2
6	37021	5/16-18 Grade 2 Zinc Finish NE Steel Nylon Insert Lock Nut	5	0.014
7	64313	3/8" x 1-3/4" Plain Finish Steel Slotted Spring Pin	1	0.0346
8	26329	3/8" Shoulder x 3/4" Shoulder Length Steel Socket Shoulder Bolt	5	0.047



Jaw Spring Tool



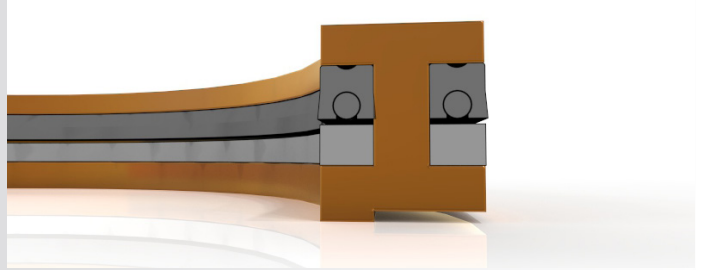
58-1000

XH Chuck

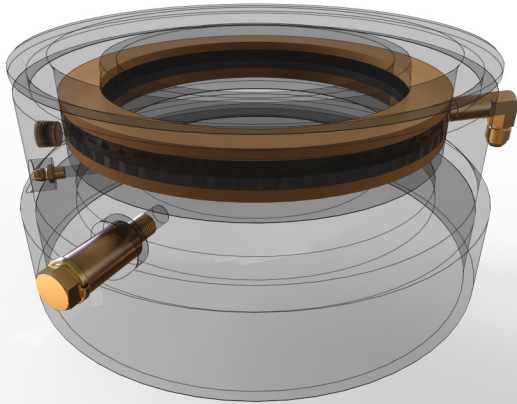
1



- Install **Nylon guides 56-0102** and **56-0103** into **Piston 58-0007** first
- Install seals **13P250-07.000** and **13P250-06.000** with the lip pointing towards the part of the piston with a recess

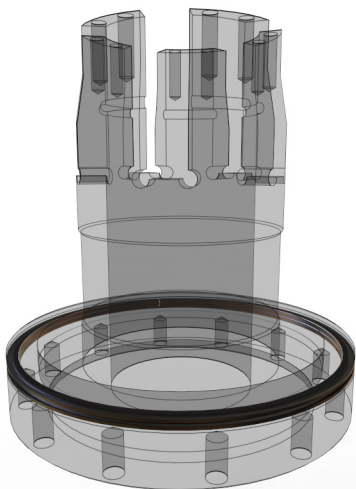


2

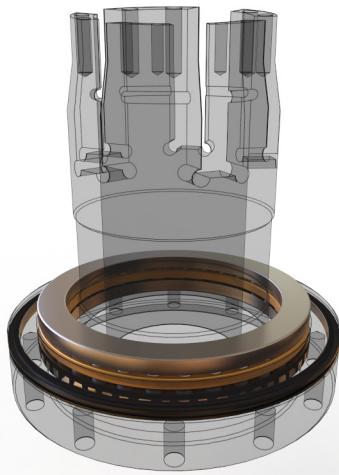


- When installing piston into **Cylinder 58-0004**, make sure the recessed face of the Piston is pointing towards the bottom of the cylinder
- Install **90° Extra Long M-JIC #6 / M-NPT #4 Fitting 2501LL-0604** and **1/4" NPTF Steel Socket Head Pipe Plug 94133**
- **Make sure to use thread sealant**
- Install **Spacer Tube 56-0013** with **3/8-24 x 1-3/4" Grade 8 Yellow Zinc Finish Hex Cap Screw 18839**

3

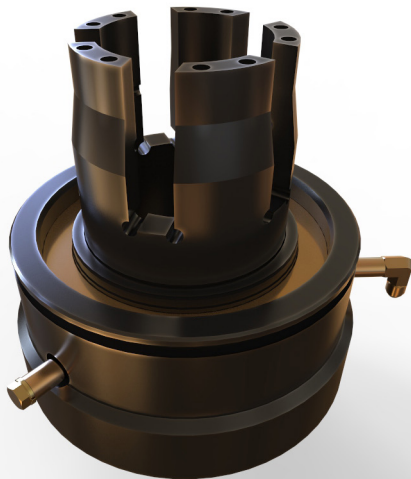


- Insert 2 **Brush Seals 58-0003** into the groove of **Chuck Base 58-0001**
- **Make sure both brush gaps are not aligned to improve sealing**



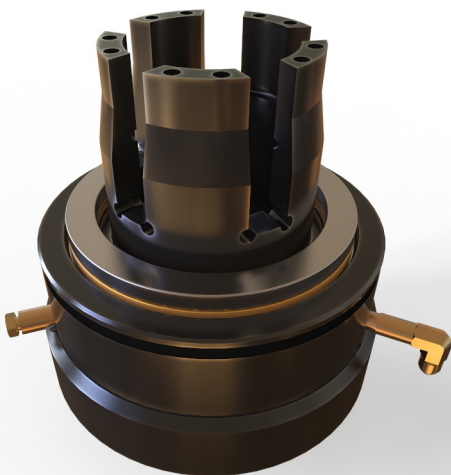
- Insert Thrust **Bearing 15-51130** into the **Chuck Base 58-0001** with the larger ring in the bottom
- Pack bearing with grease before installing

4



- Slide **Cylinder 58-0004** over **Base 58-0001**

5



- Insert Thrust **Bearing 15-51130** in the **Chuck Cylinder 58-0004** with the larger ring in the bottom
- Pack bearing with grease before installing

6



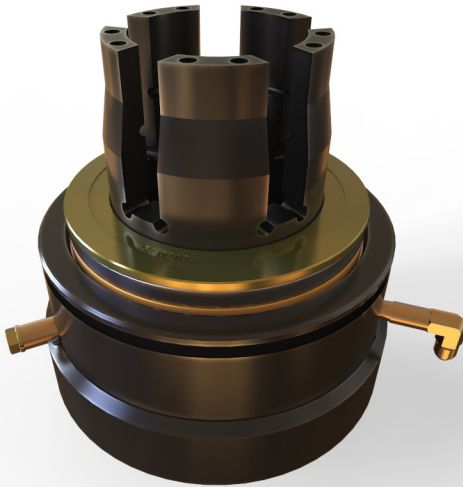
58-1000

XH Chuck



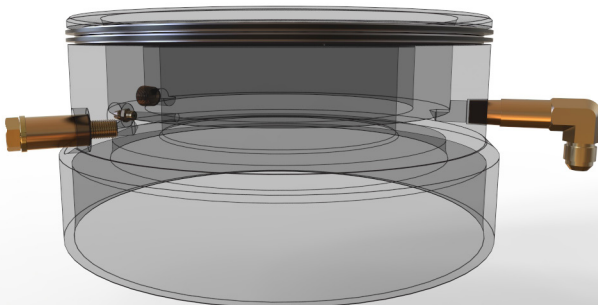
- Insert **O-Ring 82252** into the **Seal Retainer 58-0010**
- **Apply grease to the O-Ring**

7



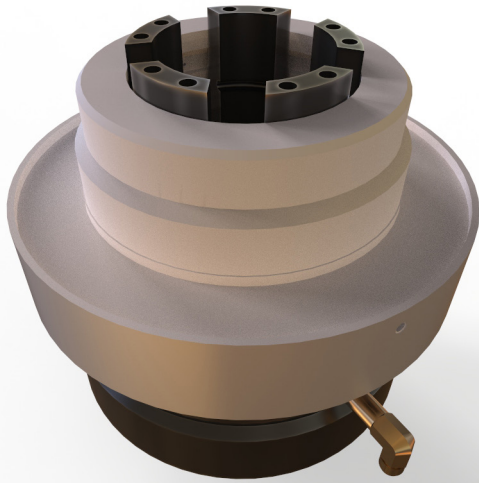
- Slide **Seal Retainer 58-0010** over **Base 58-0001** until it sits against the **Piston 58-0007**

8



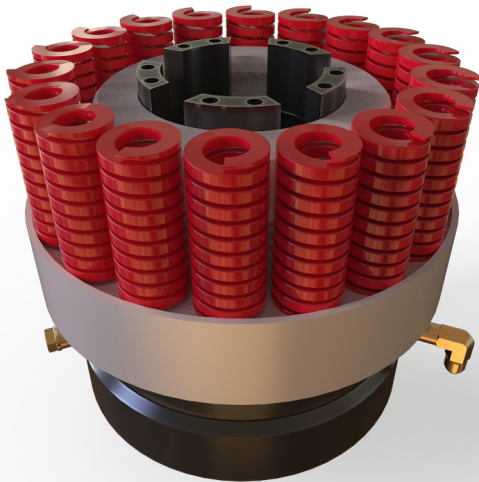
- Insert 2 **Brush Seals 58-0003** into the groove of **Chuck Cylinder 58-0004**
- **Make sure both brush gaps are not aligned to improve sealing**

9



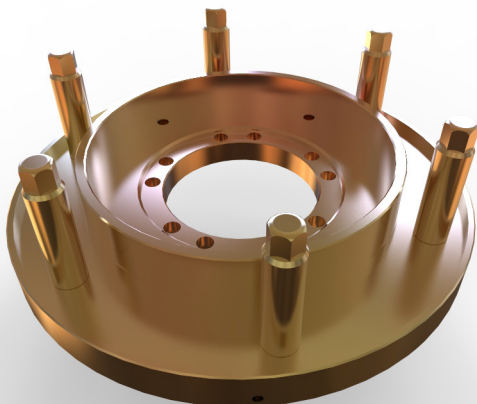
- Install **Chuck Bowl 58-0002** over the **Chuck Base 58-0001** until it sits against the thrust Bearing

10



- Place 18x **Compression Spring 56-0014** over **Chuck Bowl 58-0004**

11



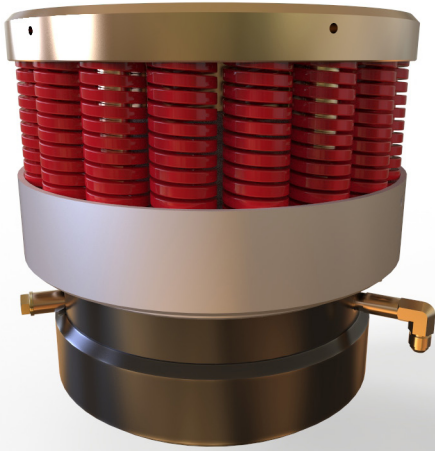
- Screw 6x **Spring Guide 56-0064** into the **Top Plate 58-0009**

12



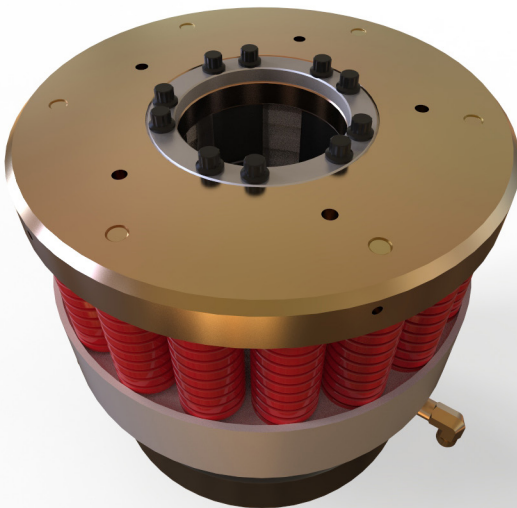
58-1000

XH Chuck



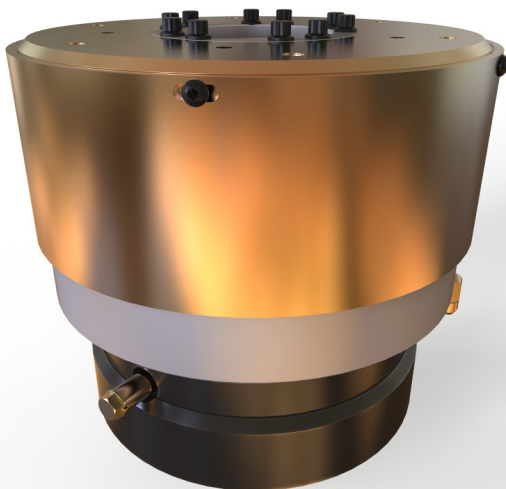
- Place **Top Plate 58-0009** over the **Compression Springs 56-0014**, making sure the spring guides are aligned within the the springs

13



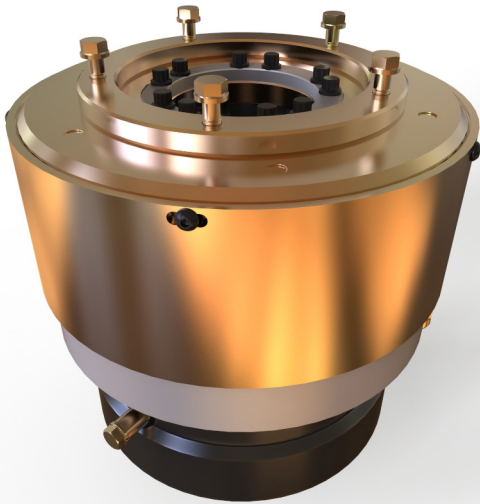
- Insert **Spacer Ring 58-0012** into **Top Plate 58-0009**, making sure holes are aligned
- Insert 10x **5/16-24 x 1-3/4" 12 Point Flanged Plain Finish Alloy Steel Ferry Cap Screw 0161344**
- Tighten screws by hand until flange is against **Spacer Ring 58-0012**
- Tighten the 10 screws **in alternance in a star pattern** until the **Top Plate 58-0009** sits against the top of the **Base 58-0001**. Torque @ 65 ft-lbs

14



- Install the **Spring Guard 56-0006** and secure with 5x **1/4-20 x 3/4" ASTM F835 Hex Drive Zinc Finish Alloy Steel Button Socket Cap Screw 94051**

15



- Place **Spacer Ring 56-0011** over the **Top Plate 58-0009** and secure with 5x **3/8-16 x 1-1/2" Grade 8 Yellow Zinc Finish Hex Cap Screw 15109**

16



- After **Adapter Plate 58-0008** is bolted to the rotation unit using 8x **Special Bolt 56-0023**, secure chuck assembly to the Adapter Plate 58-0008 using 12x **1/2-20 x 1-1/2" Grade 8 Yellow Zinc Finish Hex Cap Screw 18920**
- Tighten the 12 screws **in alternance in a star pattern**

17



58-1000

XH Chuck

Spare Parts

List of recommended spare parts

Item #	Part #	Description	Assembly Qty	Recommended Qty
1	13P250-06.000	U-Cup Seal *	1	1
2	13P250-07.000	U-Cup Seal *	1	1
3	15-51130	Thrust Bearing	2	2
6	56-0014	Compression Spring	18	6
8	56-0023	Special Bolt, Short	8	16
12	58-0003	Brush Seal, XH Chuck *	4	4
13	58-0004	Cylinder	1	1
15	58-0007	Piston, XH Chuck **	1	1
20	58-0102	Outside Guide *	1	1
21	58-0103	Inside Guide *	1	1
25	82252	O Ring *	1	1
26	94051	1/4-20 x 3/4" Hex Drive Steel Button Socket Cap Screw	5	10
29	161344	3/8-24 x 1-3/4" 12 Point Flanged Steel Ferry Cap Screw	10	20

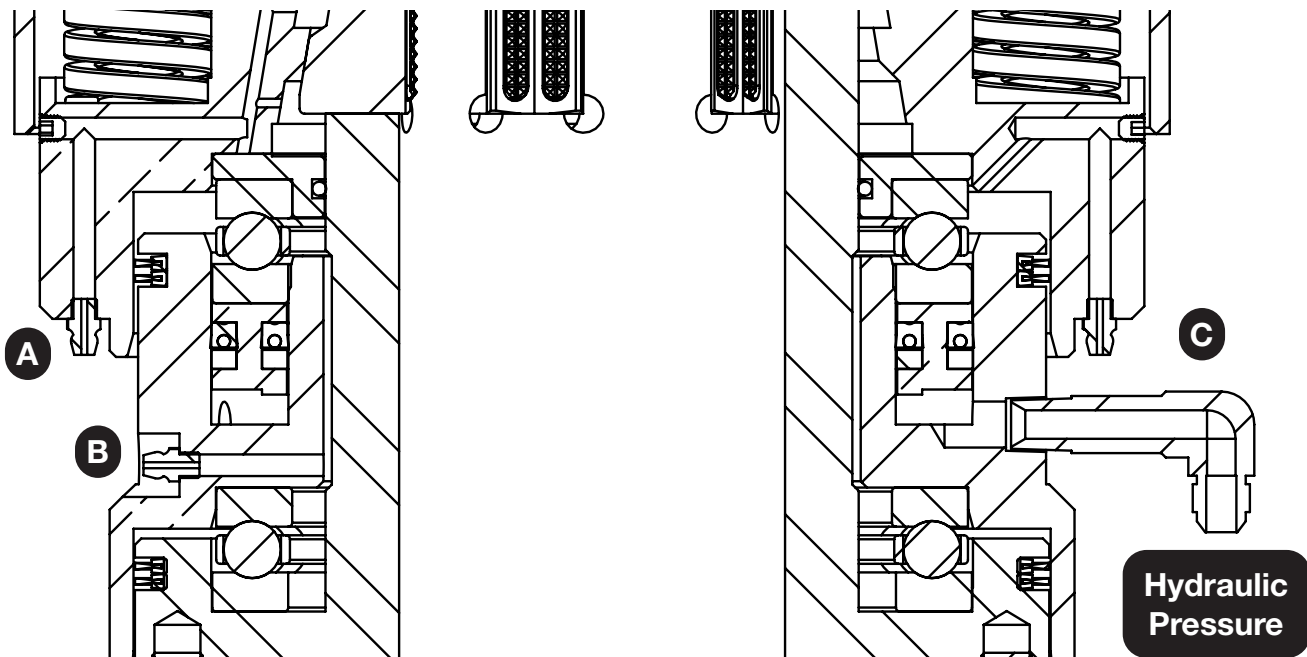
* Seal Kit 58-0105 includes items marked *

** Seal Kit c/w/Piston 58-0110 includes Seal kit 58-0105 and Piston 58-0007



Maintenance

- When removing the **Top Plate 58-0009**, it is very important to unscrew the 10 **3/8-24 x 1-3/4" 12 Point Flanged Plain Finish Alloy Steel Ferry Cap Screw 0161344** in alternance a **few turns at a time**. **Never remove the screws completely before pressure from the compression springs is released.**
- When the **Bowl 58-0002** becomes worn from the friction with the jaws, simply remove the **Top Plate 58-0009** and rotate the Bowl until the worn part does not align with the jaw slots in the **Base 58-0001**
- Grease points and frequency are as follows:



Grease Point	Frequency	Use
A	1x / Shift	Grease Jaws / Bowl Interface. Grease can also be applied directly to the back of the jaw upon insertion. It will also help the jaw stay in place
B	1x / Shift	Grease Interface between inside wall of Cylinder and Seal Retainer
C	1x / Shift	Grease Interface between outside wall of Cylinder and Seal Retainer

- **Hydraulic pressure should be set to 1800 psi.** Hydraulic pressure is only used to open the chuck. Therefore, insufficient pressure can prevent the jaws from fully opening. Higher pressure could not be required and could make the seals fail prematurely.