



# A&I Products



**D165-D160 SERIES HYDRAULIC HOSE  
CRIMPER OPERATORS MANUAL**

## MODELS COVERED

This manual is applicable to different variations of the D160 Series and D165 Series Crimpers.

A "Standard", "Metric" and "DC" micrometer is available on different models.

Crimping, calibration and repair procedures are similar for all models. See specific instructions and parts breakdown for the model in question.



## SAFETY PRECAUTIONS



- READ INSTRUCTIONS AND IDENTIFY ALL COMPONENT PARTS BEFORE USING CRIMPER
- CRIMPER CAN PRODUCE 60 TONS OF FORCE. KEEP BOTH HANDS AWAY FROM PINCH POINTS
- CONSULT HOSE AND FITTING MANUFACTURER FOR CORRECT MACHINE SETTINGS AND CRIMP MEASUREMENTS
- ALWAYS WEAR EYE PROTECTION

For Parts and Service, Contact:  
Custom Machining Services, Inc.  
Valparaiso, In 46383  
(219) 462-6128

Die Series-----	D100 Series
Maximum Cylinder Force-----	60 Ton
Maximum Hose Diameter (2 Wire)-----	1 1/4 Inch
Maximum Hose Diameter (4 Wire)-----	1 1/4 Inch
Maximum Hose Diameter (6 Wire)-----	1 Inch
Crimper Depth - D165-----	22 Inches
- D160 Series-----	14 Inches
Crimper Width - D165-----	12.5 Inches
- D160 Series -----	11 Inches
Crimper Height - D165-----	22.25 Inches
- D160 Series-----	23.5 Inches
Weight - D165-----	140 Lb
- D160 Series-----	50 Lb
Pump - D165-----	Electric
- D160 Series-----	Pump Not included - Manual, Pneumatic or Electric Available)
Pump HP- D165-----	1 HP(110V)
Reservoir Capacity - D165-----	1 Gal
Oil Type-----	ISO Viscosity Grade 46
Electric Power Requirement - D165-----	110V



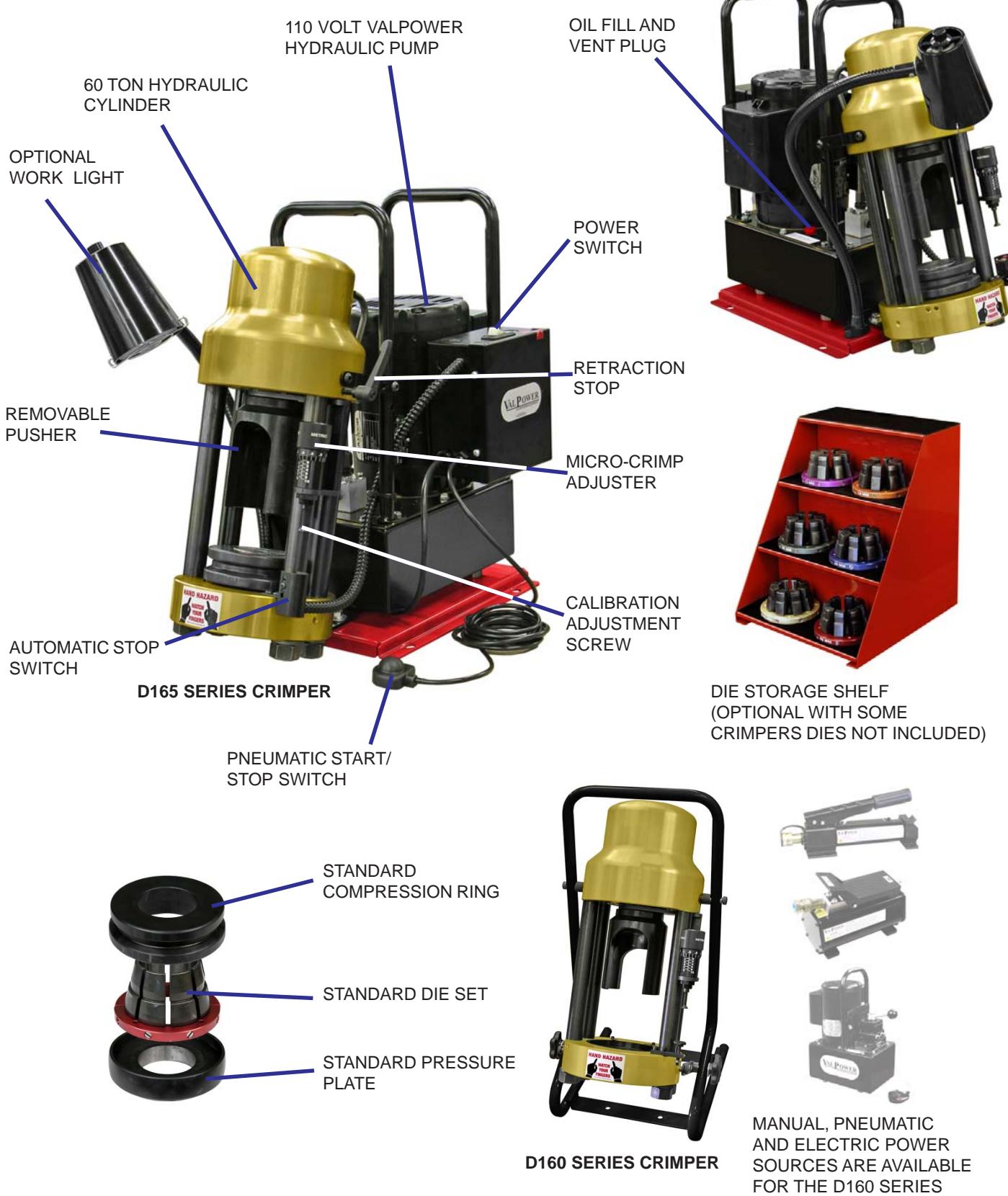
D165 Crimper



D160 Series Crimper

# COMPONENT IDENTIFICATION

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## CALIBRATION CHECK PROCEDURE

## **FOLLOW THESE STEPS BEFORE USING THE CRIMPER FOR THE FIRST TIME**

- Plug the D165 crimper directly into a 110 volt wall outlet.

**CAUTION: DO NOT RUN THE CRIMPER ON AN EXTENSION CORD AS LOW VOLTAGE CAN DAMAGE THE MOTOR.**

- Oil level in the D165 pump should be 1-1/2 to 2 inches below the fill plug.
- Check to be certain that the shipping plug in the pump reservoir has been replaced with the Oil Fill and Vent Plug shipped with the crimpers.

- Place the **Pressure Plate**, any **Die Set** and the **Compression Ring** in the crimper bottom flange in the order shown. (A hose and fitting are not required for a calibration check)

- Lubricate the die set as shown in Crimping Instructions on P 6.

**NOTE: FAILURE TO LUBRICATE THE DIE SET AND COMPRESSION CONE COULD RESULT IN THE DIE SET SEIZING IN THE COMPRESSION CONE.**

- Slide the **Pusher** onto the stud on the hydraulic cylinder.

- Set the Micrometer at:
  - “100” for the Standard Micrometer
  - “0” for the Metric Micrometer
  - “95” for the DC Micrometer

- Depress and hold the **Start/Stop** switch on the D165 Series or continue to apply pressure to the D160 Series until the Die set is completely closed oil pressure has built up in the hydraulic cylinder.

- **For the D165 Series:** If the ram extends and shuts off the motor approximately 1 second after the die fingers are completely closed and the pump builds pressure (The sound of the pump will change) the crimper is correctly calibrated.

- **For the D160 Series:** If the white line is just visible as shown in the illustration after the dies are completely closed and pressure has built up in the hydraulic cylinder the crimper is correctly calibrated.

- If the above conditions are not met, the crimper must be recalibrated. See calibration instructions on P 7.



The image displays three precision micrometer heads side-by-side. The leftmost head is labeled 'METRIC' and features a scale with markings for 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10. The middle head is labeled 'DC' and features a scale with markings for 6, 5, 4, 3, 2, 1, 0, 9, and 8. The rightmost head is labeled 'STANDARD' and features a scale with markings for 90, 80, 70, 60, 50, 40, 30, 20, 10, and 0.



## **D160 SERIES MICRO CRIMP SIGHT BUTTON**



Make certain that the cone base is clean prior to inserting the pressure plate.



Seat the Pressure plate firmly in the cone base and lubricate the flat surface.



Lubricate the die fingers with the moly disulfide grease furnished with the crimper at the points shown.



Place the lubricated die set squarely on the pressure plate as shown.



Align the fitting in the die set according to the hose and fitting manufacturers recommendation.



Place the Compression Cone over the die set and compress the die set by hand to hold the hose and fitting in place. **See micrometer setting example.**



**Caution:** If the notches on the die set are visible prior to starting a crimp, you must go to a larger die set. Failure to do so could result in damage or personal injury.



Slide the Pusher onto the stud on the ram and press the start stop switch or apply pressure to the D160 Series. The crimper will shut off when the crimp cycle is complete. (The white indicator line will be visible on the D160 series)



Check the final crimp diameter to confirm that it is within manufacturers specifications.

*Micrometer Setting Example: With a 30mm die and the micrometer set at 3.0mm, the final crimp diameter will be 33mm (30mm + 3mm)*

## CALIBRATION INSTRUCTIONS

- Insert the Pressure Plate, any standard D100 Series die set and the Compression Cone in the crimper base in the order shown.

*Note: There should not be a fitting in the die set when checking calibration.*

- Set the Micro Crimp Adjuster as follows:

"100" for Standard Micrometer  
 "0" for Metric Micrometer  
 "95" for DC Micrometer

- Slide the Pusher onto the stud of the hydraulic ram.

- Press and hold the start/stop switch until the crimper shuts off for the D165 or apply pressure to the D160 Series until the die set is completely closed and the white indicator on the Micro Sight button is just visible..

- If the D165 motor shuts off in approximately 1 second after the die set is fully closed or the white line on the Micro Sight button is just visible, the crimper is correctly calibrated.

- If the crimper requires recalibration, hold the micrometer barrel with a 5/16 inch open end wrench and rotate the stem either in or out with a 5/32 inch hex key wrench.

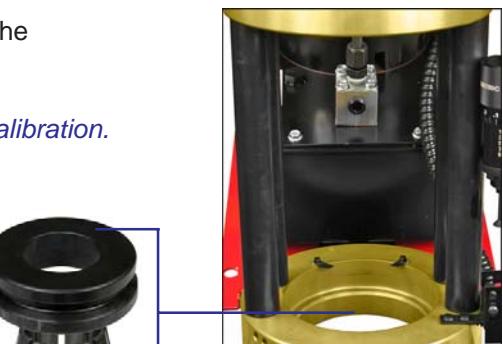
- Rotating the stem out of the barrel decrease the time required for the pump to shut off.

- Recheck calibration.

## SPECIAL FEATURES



An easily removable Coupling Stop makes repetitive crimps faster by not having to visually align the fitting before each crimp.



The adjustable Retraction Stop limits ram retraction to only the amount required to remove the hose and coupling saving time on multiple crimps.

## **PROBLEM: CRIMPER WILL NOT RUN AT ALL**

- The white rocker switch is also a circuit breaker. Check to see that the circuit breaker has not been tripped
- Check the wall outlet. The crimper comes from the factory wired for a 115 volt single phase circuit. Use of extension cords or outlets with inadequate power can damage the motor. Do not run the crimper from a portable power source.
- Check the stop switch mounted to the switch bracket under the Micro-Crimp Adjuster. This is a normally closed switch and if it does not close the crimper will not operate.

**CAUTION: Do not operate the crimper with this switch jumpered as the pump will not shut off and the brackets can be damaged.**

- Check the pneumatically actuated switch in the electrical box mounted on the motor. This switch controls power to the motor and is actuated with air pressure from the pendant switch bulb.

## **PROBLEM: CRIMP DIAMETER TOO LARGE**

- Incorrect setting of the Micro-Crimp Adjuster. Check crimp specifications.

(NOTE: All published machine settings are approximate. To correct for slight variances, the gauge settings may need to be adjusted for the specific hose, fitting and size combination.)

- Incorrect die being used. Each die has a useable range of approximately 3mm (.120 in) above the closed diameter of the die. The closed diameter is the die size stamped on the die ring.
- Check crimper calibration and re-calibrate if required.
- Inadequate pump pressure. Check oil level in the pump. It should be 1-1/2 to 2 inches below the fill plug. Replenish with ISO Viscosity Grade 46 hydraulic oil.
- Inadequate lubrication of the dies and compression ring causing the pump to work harder than normal to reach the required diameter. Use only the grease shipped with the machine or equivalent.
- Inadequate pressure being generated by the pump. This is most likely if the crimper can crimp the smaller size hoses and not the larger hoses. When correctly adjusted, the pump should generate approximately 10,000 psi.

***Do Not adjust pump to produce in excess of 10,000 psi as damage to components or personal injury may result.***

- No pressure being generated by the pump. There should be a definite change in pitch of the pump as it cycles into high pressure mode and begins to "work" harder.

## **PROBLEM: CRIMP DIAMETER TOO SMALL**

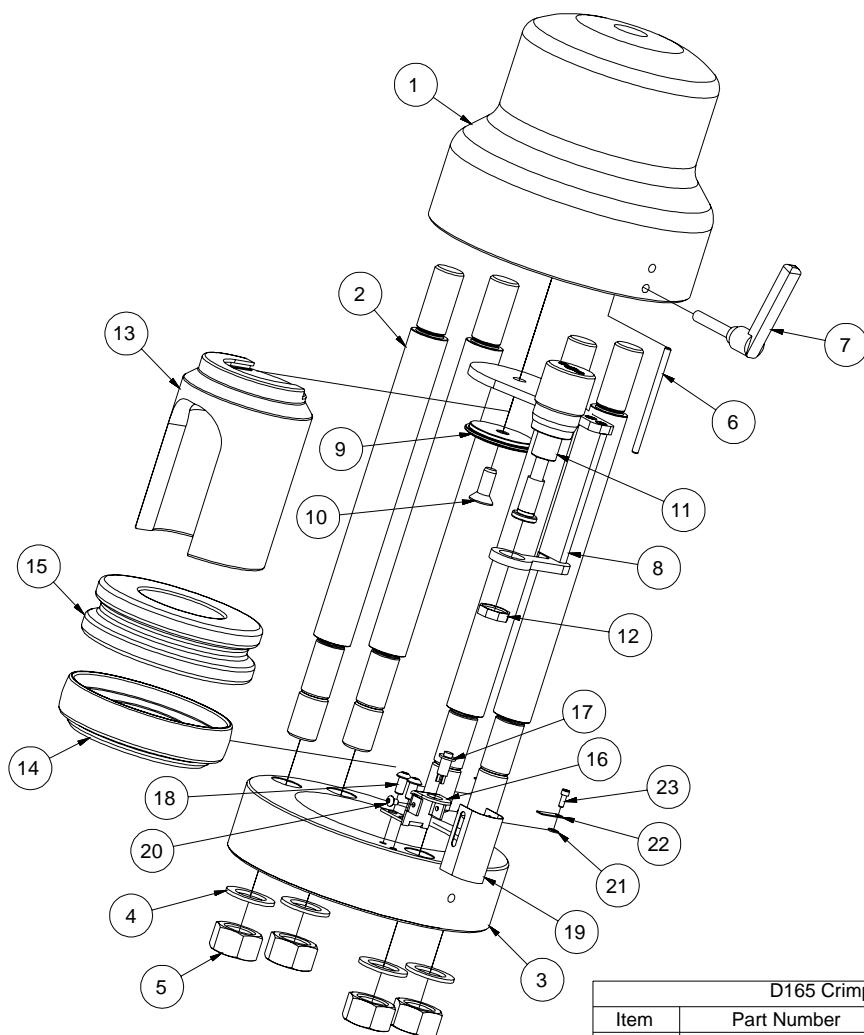
- Incorrect setting of the Micro-Crimp Adjuster. Check crimp specifications.

( NOTE: All published machine settings are approximate. To correct for slight variances, the gauge settings may be adjusted for the specific hose, fitting and size combination.)

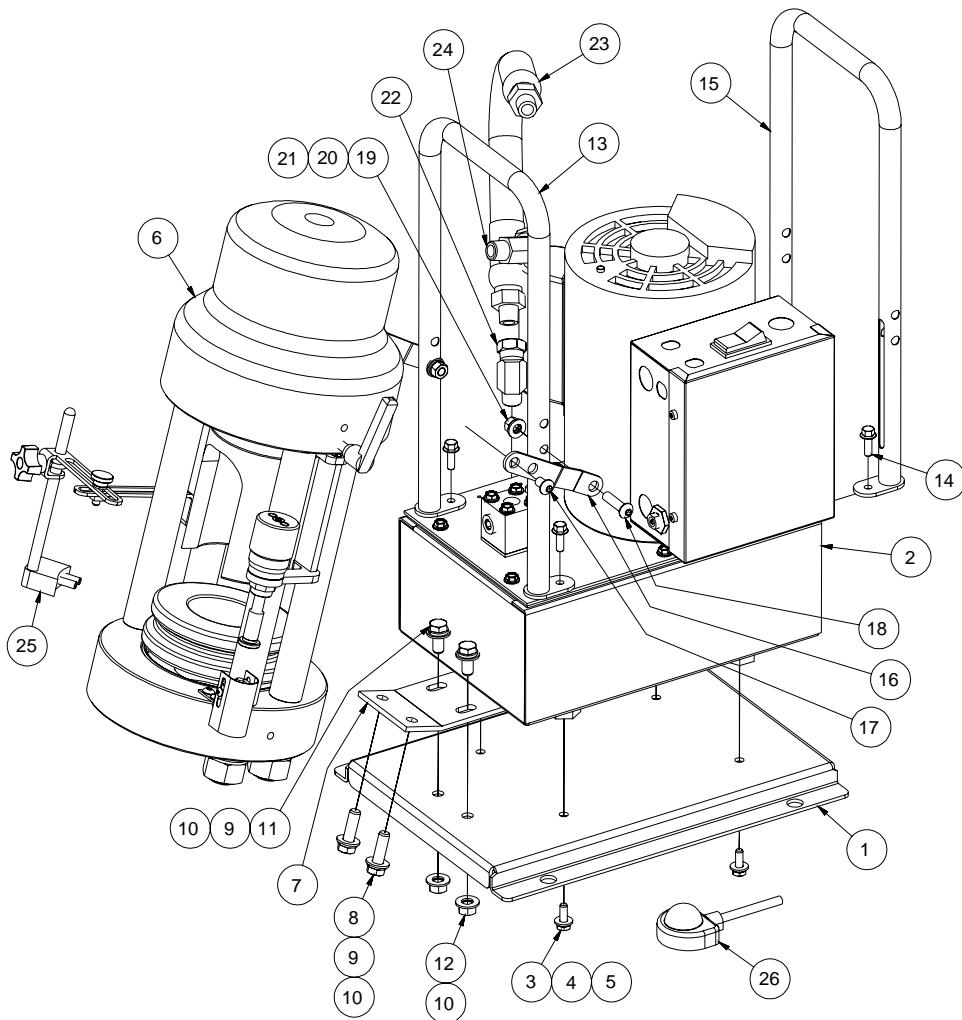
- Incorrect die being used (See die range under Crimp Diameter too Large)
- Check crimp diameter and re-calibrate if necessary

## **PROBLEM: DIES STICKING IN COMPRESSION CONE**

- Inadequate lubrication of the compression cone and die surfaces. Use only the grease shipped with the machine or equivalent.



D165 Crimper Head Assembly (102161)			
Item	Part Number	Description	Qty
1	102219	60 Ton Cylinder / Top Flange	1
2	102212	Strain Rod	4
3	102159	Bottom Flange	1
4	7/8 Special	7/8 Narrow Rim Washer	4
5	90499A845	7/8 - 14 Hex Nut	4
6	102224	Retraction Stop Rod	1
7	KHA-126	Stop Rod Locking Handle	1
8	102220	Micrometer Mount Assembly	1
9	100812	Pusher Retaining Disc	1
10	91253A624	3/8-16 x 1 HSFHCS	1
11	100628	Standard Micrometer Assembly	1
11	101489	DC Micrometer Assembly	1
11	101587	Metric Micrometer Assembly	1
12	100727	Micrometer Nut	1
13	100825	Pusher With Magnets	1
14	102211	Pressure Plate	1
15	102213	Compression Cone	1
16	101092	Limit Switch Bracket	1
17	903 Switch	Limit Switch	1
18	91255A537	1/4-20 x 1/2 BHCS	2
19	100692	Limit Switch Guard	1
20	91255A190	8-32 x 1/4 BHCS	2
21	95630A237	#6 Teflon Washer	2
22	102218	Die Retaining Clip	2
23	91251A146	6-32 x 3/8 SHCS	2

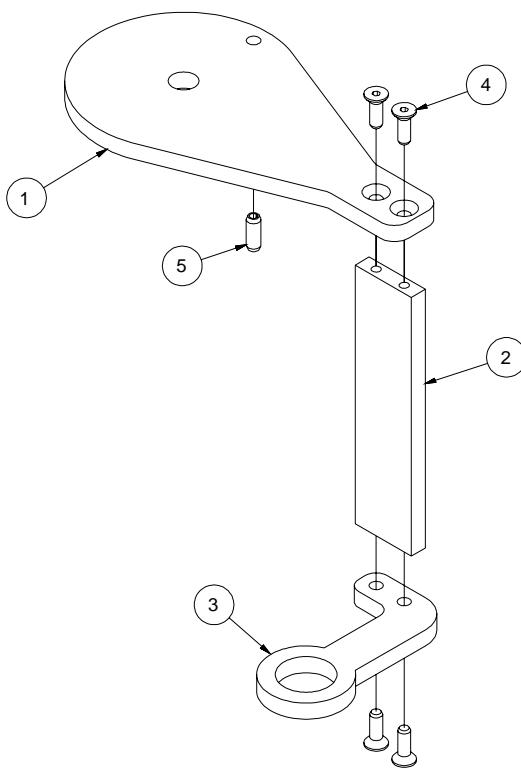
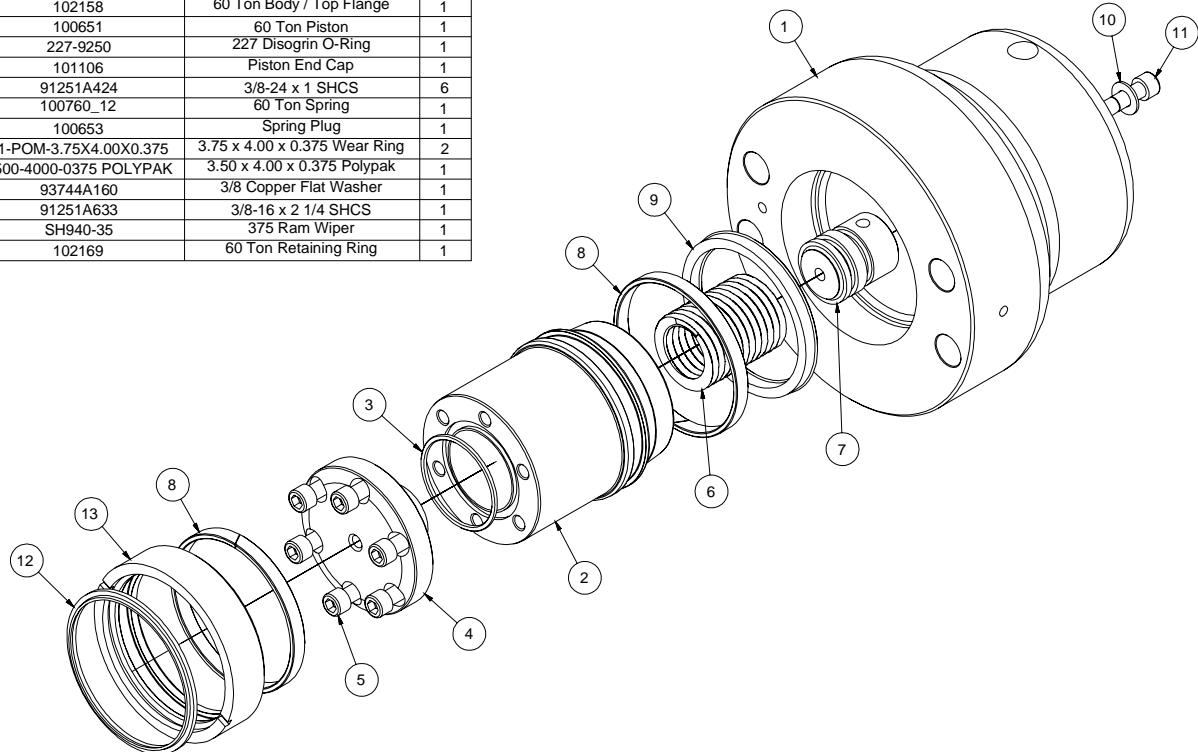


D165 Crimper Assembly (102221)			
Item	Part Number	Description	Qty
1	101430	D165 Base Plate	1
2	101633	Pump Assembly	1
3	92865A540	1/4-20 x 3/4 HHCS	4
4	91102A029	1/4 Lock Washer	4
5	90126A029	1/4 Flat Washer	4
6	102161	D165 Crimper Head Assembly	1
7	101429	Crimper Head Mounting Bracket	1
8	92865A626	3/8-16 x 1 1/4 HHCS	2
9	91102A031	3/8 Lock Washer	4
10	90126A031	3/8 Flat Washer	6
11	92865A623	3/8-16 x 7/8 HHCS	2
12	95462A031	3/8-16 Hex Nut	2
13	102160	Front Handle Assembly	1
14	92323A516	1/4-20 x 3/4 HHFCS	4
15	102222	Rear Handle Assembly	1
16	102052	Crimper Head Brace	2
17	91255A578	5/16-18 x 1/2 BHCS	2
18	91255A585	5/16-18 x 1 1/4 BHCS	2
19	95462A030	5/16-18 Hex Nut	2
20	91102A030	5/16 Lock Washer	2
21	90126A030	5/16 Flat Washer	2
22	60TA-06X08	45 Deg Swivel Fitting	1
23	102225	D165 High Pressure 1/2" Hose	1
24	60TA-08X08	45 Deg Swivel Fitting	1
25	100954	Coupling Stop Assembly	1
26	101349	Pneumatic Pendant Switch	1

# COMPONENT IDENTIFICATION

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60 Ton Cylinder / Top Flange Assembly (102219)			
Item	Part Number	Description	Qty
1	102158	60 Ton Body / Top Flange	1
2	100651	60 Ton Piston	1
3	227-9250	227 Disogrin O-Ring	1
4	101106	Piston End Cap	1
5	91251A424	3/8-24 x 1 SHCS	6
6	100760_12	60 Ton Spring	1
7	100653	Spring Plug	1
8	F1-POM-3.75X4.00X0.375	3.75 x 4.00 x 0.375 Wear Ring	2
9	3500-4000-0375 POLYPAK	3.50 x 4.00 x 0.375 Polypak	1
10	93744A160	3/8 Copper Flat Washer	1
11	91251A633	3/8-16 x 2 1/4 SHCS	1
12	SH940-35	375 Ram Wiper	1
13	102169	60 Ton Retaining Ring	1



D165 Micrometer Mount Assembly (102220)			
Item	Part Number	Description	Qty
1	102214	Micrometer Suspension Flange	1
2	102217	Micrometer Brace	1
3	102215	Micrometer Base Bracket	1
4	91253A194	8-32 x 1/2 HSFHCS	4
5	98296A245	3/16 Dia. x 1/2 Spring Pin	1

