CUSTOM CRIMP

D105 SERIES HYDRAULIC HOSE CRIMPER OPERATORS MANUAL

MODELS COVERED

This manual is applicable to different variations of the D_105_ 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 35 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

COMPONENT IDENTIFICATION

WORK LIGHT (OPTIONAL)

35 TON HYDRAULIC CYLINDER

OIL FILL AND VENT PLUG

REMOVABLE PUSHER

110 VOLT VALPOWER HYDRAULIC PUMP

POWER SWITCH

ADJUSTABLE RAM RETRACTION STOP

MICRO-CRIMP ADJUSTER

CALIBRATION ADJUSTMENT SCREW

AUTOMATIC STOP SWITCH

PNEUMATIC START/STOP SWITCH

DIE STORAGE SHELF (OPTIONAL WITH SOME CRIMPERS DIES NOT INCLUDED)

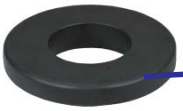
DOUBLE ANGLE TOP COMPRESSION RING

STANDARD COMPRESSION RING

DOUBLE ANGLE DIE SET

STANDARD DIE SET

DOUBLE ANGLE BASE RING



STANDARD PRESSURE PLATE

FOLLOW THESE STEPS BEFORE YOU USE YOUR CRIMPER FOR THE FIRST TIME

CALIBRATION CHECK PROCEDURE

- PLUG THE 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 PUMP SHOULD BE 1-1/2 TO 2 INCHES BELOW THE FILL PLUG.

- PLACE THE PRESSURE PLATE, ANY DIE SET AND THE COMPRESSION RING IN THE CRIMPER BOTTOM FLANGE IN THE ORDER SHOWN. *DO NOT USE DOUBLE ANGLE COMPONENTS.*

- SLIDE THE PUSHER ONTO THE HYDRAULIC CYLINDER STUD.

- SET THE MICRO-CRIMP MICROMETER AT
  - "100" FOR THE STANDARD MICROMETER
  - "0" FOR THE METRIC MICROMETER
  - "95" FOR THE DC MICROMETER

- DEPRESS AND HOLD THE START/STOP SWITCH.

- IF THE RAM EXTENDS AND SHUTS OFF THE MOTOR APPROXIMATELY 1 SECOND AFTER THE PUMP STARTS TO BUILD PRESSURE (THE SOUND OF THE PUMP WILL CHANGE), THE CRIMPER IS CORRECTLY CALIBRATED.

- IF THE TIME IS NOT APPROXIMATELY 1 SECOND, THE UNIT MUST BE RECALIBRATED. SEE INSTRUCTIONS IN THE MANUAL.

METRIC DC

STANDARD

■ **Insert the Pressure Plate in the bottom flange making sure that the pressure plate is seated squarely in the bottom flange.**

■ **Select the correct die set for the combination of hose and fitting being crimped. This information is available from the hose and fitting manufacturer.**

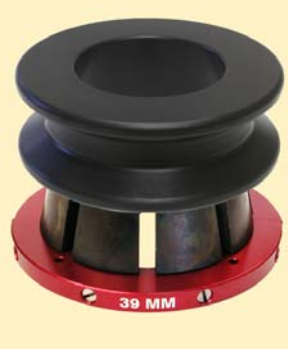
The number etched on the die ring represents the fully closed diameter of the die set in either inches or millimeters depending upon the die set.

■ **Lubricate the contact surfaces of the die fingers, the Compression Ring and the Pressure Plate with the die lubricant furnished with the crimper and place the Compression Ring loosely over the Die Set.**

Failure to lubricate the contact surfaces with the correct lubricant will cause the dies to seize in the compression ring.

■ **Insert the hose and fitting and align the fitting with the die set according to the hose and fitting manufacturer's recommendations. Manually depress the Compression Ring closing the die set until the hose and fitting is held loosely in the die set.**

CAUTION: The notches on the die set must be completely covered by the Compression Ring prior to starting the crimp. If the notches are showing, you must go to a larger die set. Crimping with an incorrect die size could result in personal injury



■ **Slide the Pusher in place above the hose assembly.**

■ **Set the Micro-Crimp Adjuster to the setting recommended by the hose and fitting manufacturer for the combination of hose and fitting being crimped. The Standard Micro-Crimp Adjuster is shown set at "100" or die set fully closed, in the illustration.**

STANDARD METRIC DC

Note: Each die set has a limited range of diameters for which a satisfactory crimp can be obtained. As a "rule of thumb" a standard die set can crimp 3mm (.120 inches) above the closed diameter etched on the die ring. Always consult the hose and fitting manufacturer's recommendations for the correct die set to use.

Micrometer setting Example: With a 39mm die and the metric micrometer set at 3.0, the finished crimp diameter would be 42mm. (39.0mm + 3.0mm)

■ **Recheck the fitting for correct alignment in the die set and depress the Start/Stop switch. Hold the Start/Stop switch depressed until the Automatic Stop Switch shuts the pump off. Release the Start/Stop switch and allow the pusher to return to the retracted position. Powerful magnets in the Pusher will retract the Compression Ring with the Pusher.**

■ **Check the diameter of the finished assembly to be certain that it is within the manufacturer's specifications.**

CRIMPING WITH DOUBLE ANGLE DIES

Double Angle Dies doubles the radial crimping force allowing heavier fittings to be crimped. Due to the doubling of the radial crimping force, the dies are effective for a smaller range of diameters than a standard die set. Also, the fitting must be approximately centered axially along the crimping face to avoid taper in the final crimp.

■ **Remove the flat Standard Pressure Plate from the bottom Cone Base and insert the tapered Double Angle Base Ring with the tapered surface up.**

Note: The angles are not the same on standard dies and Double Angle Dies and the Double Angle Top Compression Ring and the Standard Compression Rings are NOT interchangeable.

■ **Insert the appropriate Double Angle Die in the Double Angle Base Ring as shown.**

■ **Place the Double Angle Top Compression Ring on Top of the Double Angle Die Set.**

■ **Insert the hose assembly to be crimped and manually depress the Double Top Compression ring to snug the fitting in Place.**

■ **Slide the Pusher on the stud of the hydraulic cylinder.**

■ **Set the Micro-Crimp Adjuster to the appropriate setting as recommended by the hose and fitting manufacturer.**

■ **Bring the Pusher into light contact with the Double Angle Top and check for correct position of the fitting.**

■ **Press the Start/Stop switch and proceed with standard crimping procedure.**

ADDED FEATURES

The Crimper comes with standard features which increase accuracy and improve productivity for jobs which require repeat crimps of similar or identical assemblies

■ **The easily removable Coupling Stop provides an automatic stop for straight fittings without the need to sight the alignment of the fitting on every crimp.**

■ **The adjustable Retraction Stop allows the operator to limit the retraction of the hydraulic ram at the point where the die set is open only enough to remove the hose and fitting. This feature can greatly speed up crimping on production jobs since the ram does not have to fully advance and retract on every cycle.**

■ **Powerful magnets in the Pusher retract the Compression Ring with the ram on each cycle. This permits the operator to operate the crimper essentially "hands free".**

■ **Note: An optional work light is available.**

■ **When the crimper is correctly calibrated, the hydraulic pump will be at approximately 10,000 psi, and the die set will be fully closed at the diameter etched on the O.D. of the die ring.**

Many problems associated with incorrect crimp diameters are caused by incorrect calibration.

■ **Insert the Pressure Plate, any die set, and the compression ring in the order illustrated. Set the Micro-Crimp Adjuster at:**

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

Follow the instructions in the Quick Start Guide at the front of this manual.

■ **If the crimper requires re-calibration, 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 will decrease the time required for the pump to shut off after the stem contacts the automatic stop switch. Rotating the stem knob into the barrel will increase the time for the pump to shut off.**

■ **Recheck calibration.**

PROBLEM: CRIMPER WILL NOT RUN AT ALL

- **The power switch (white rocker switch) is also a circuit breaker. Make certain that this circuit breaker has not tripped.**

- **Check the wall outlet. The crimper comes from the factory wired for a 110 volt circuit. Use of extension cords or outlets with inadequate power can damage the motor or crimper controls. 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 it must close to complete the circuit and allow the crimper to 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 bulb on the end of the hose going into the box**

PROBLEM: CRIMP DIAMETER TOO LARGE

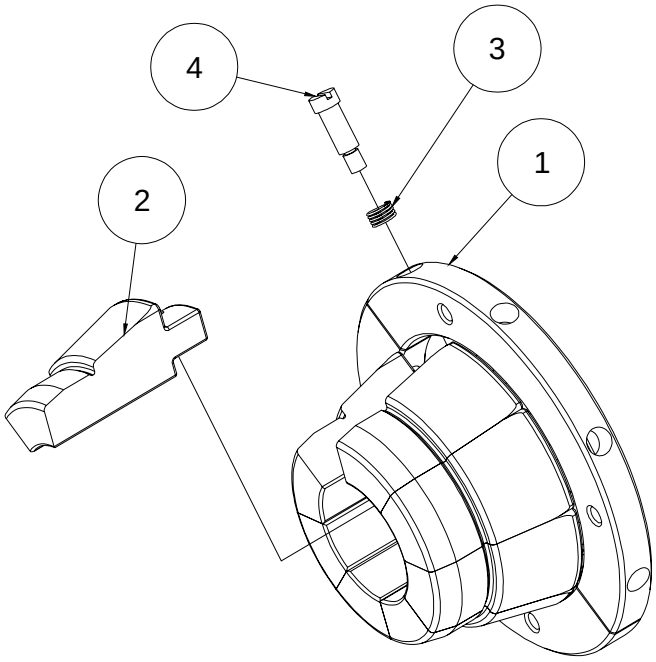
- **Check crimper calibration and recalibrate if required.**
- **Incorrect die being used. Each die has a range of approximately 3mm (.120 in) above the closed diameter of the die. The closed diameter is the die size stamped on the die ring.**
- **Incorrect setting of the Micro-Crimp Adjuster. Check hose manufacturer's specifications.**
- **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.**
- **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

- **Check crimp diameter and recalibrate if necessary**
- **Incorrect die being used (See die range under Crimp Diameter too Large)**
- **Incorrect setting of the Micro-Crimp Adjuster. Check hose manufacturer's specifications.**

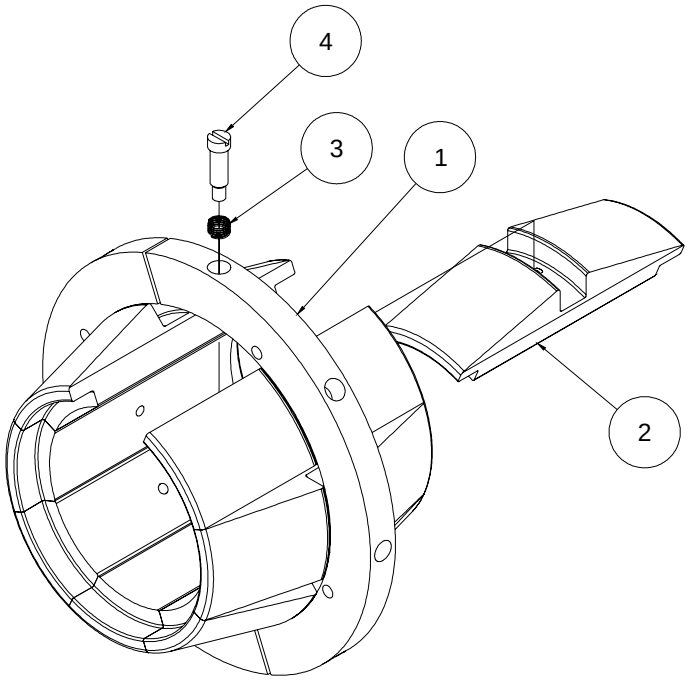
PROBLEM: DIES STICKING IN COMPRESSION RING

- **Inadequate lubrication of the compression ring and die surfaces.**



D100 Standard Series Dies

1)	Die Ring	101065-COLOR
2)	Die Finger	Varies with die set
3)	Die Spring	LC 022D 01 M NF
4)	Die Screw	EN84-115



D100 DA (Double Angle Dies

1)	Die Ring	101072-COLOR
2)	Die Finger	Varies with Die Set
3)	Die Spring	LC 022D 05 M MD
4)	Die Screw	EN84-115

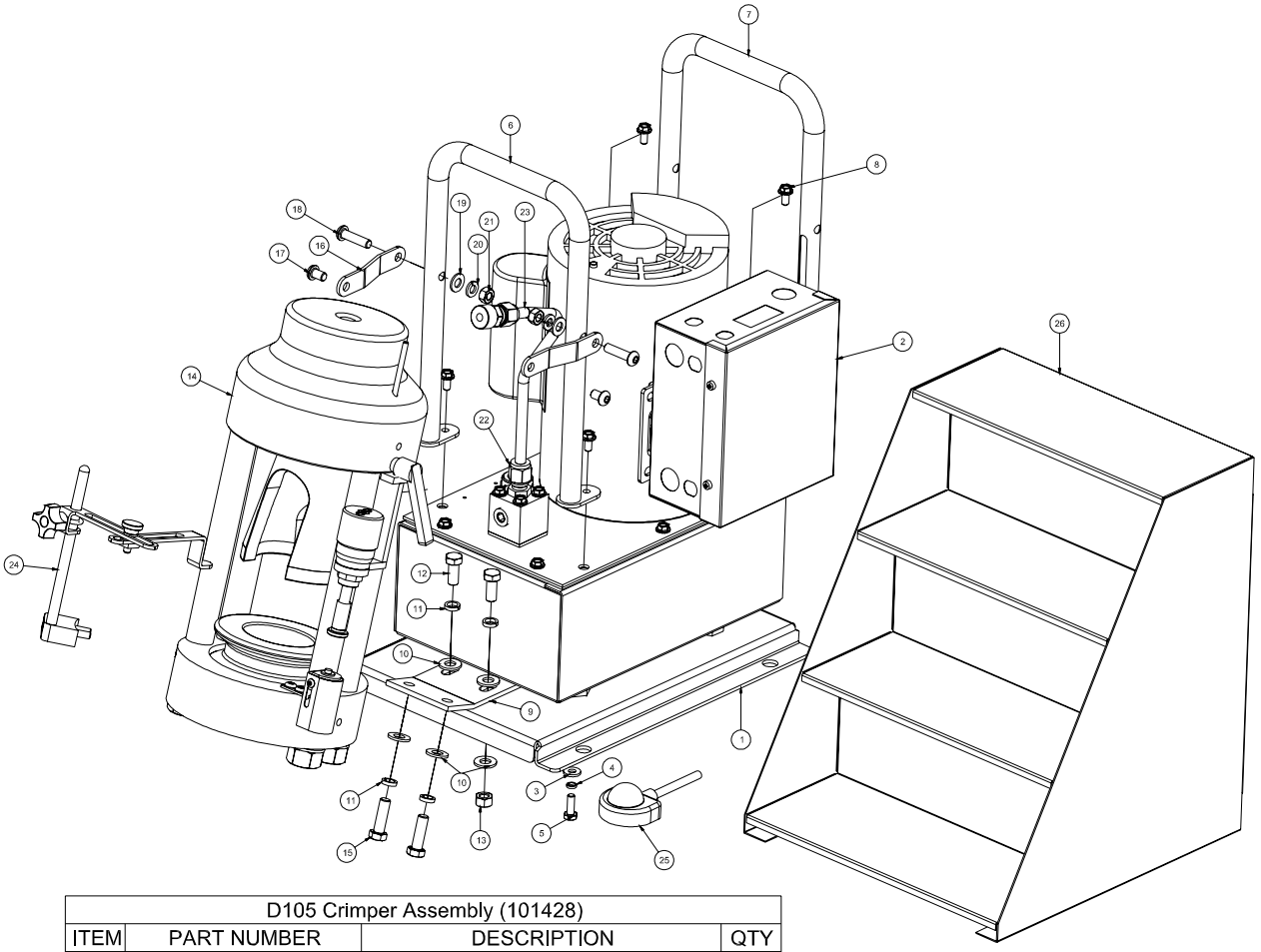
Not Shown:

DA Cone Insert	100880
DA Top Cone	100881

Color Options

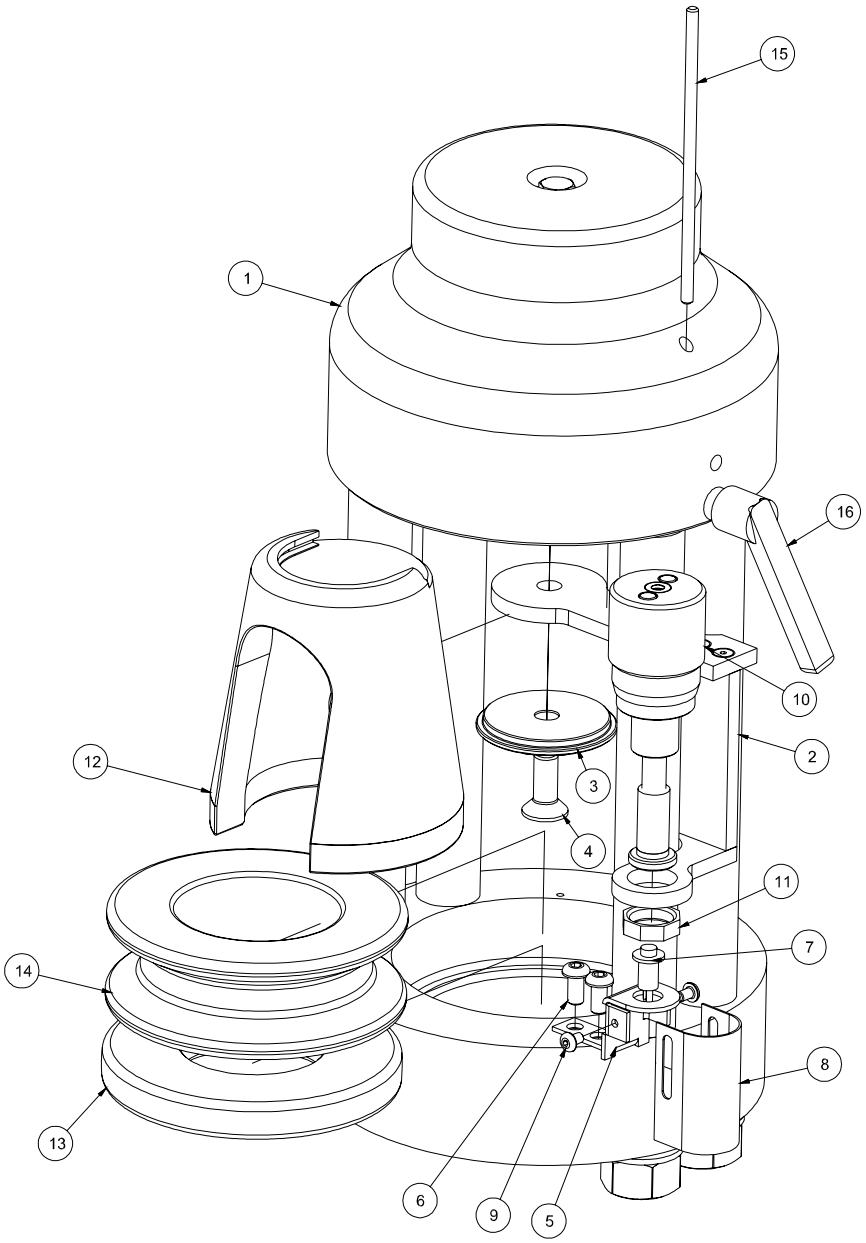
Red
Orange
Yellow
Purple
Green
Blue
Black
Silver
Brown

EXPLODED PARTS VIEW



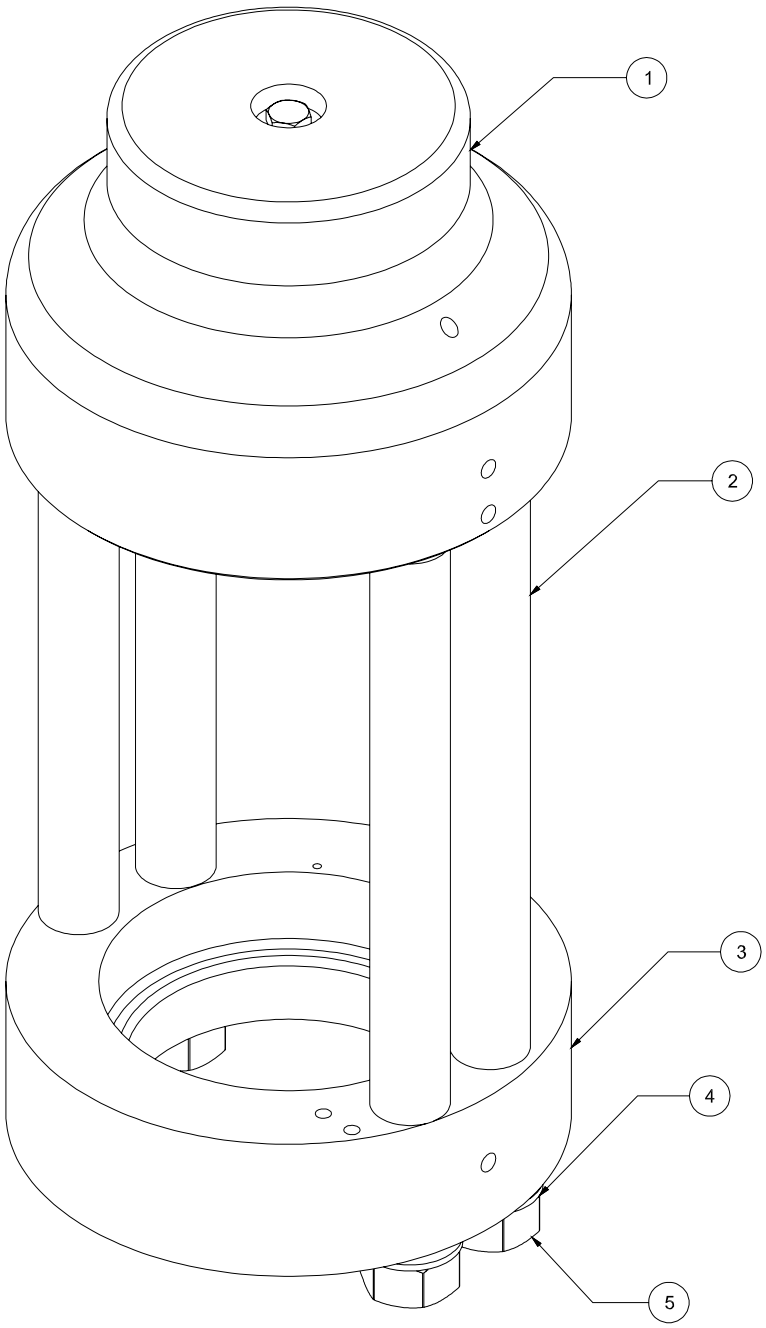
D105 Crimper Assembly (101428)			
ITEM	PART NUMBER	DESCRIPTION	QTY
1	101430	D-105 Base Plate	1
2	101633	Pump Assembly	1
3	90126A029	1/4 Flat Washer	4
4	91102A029	1/4 Lock Washer	4
5	92865A540	1/4-20 x 3/4 Hex Bolt	4
6	101433	D105 Handle	1
7	101433-Slotted	D105 Slotted Handle	1
8	92323A516	1/4-20 x 3/4 SHFCS	4
9	101429	Mounting Bracket	1
10	90126A031	3/8 Flat Washer	6
11	91102A031	3/8 Lock Washer	4
12	92865A623	3/8-16 x 7/8 Hex Bolt	2
13	95462A031	3/8-16 Hex Nut	2
14	101480	D105 Head Assembly	1
15	92865A626	3/8-16 x 1 1/4 Hex Holt	2
16	101434	Handle Brace	2
17	91255A578	5/16-18 x 1/2 BHCS	2
18	91255A585	5/16-18 x 1 1/4 BHCS	2
19	90126A030	5/16 USS Flat Washer	2
20	91102A030	5/16 Lock Washer	2
21	95462A030	5/16-18 Hex Nut	2
22	3/8 NPT Comp. Ftg	3/8 NPT Straight Compression Ftg.	2
23	101436-01	D105 Hydraulic Tube	1
24	100954	Coupling Stop Assembly	1
25	101349	Pneumatic Pendant Switch	1
26	101431	D105 Shelf Unit (Optional)	1

EXPLODED PARTS VIEW

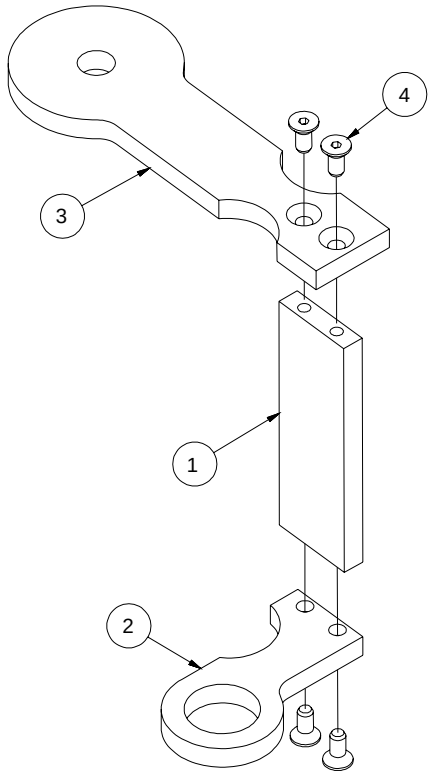


D105 Head Assembly (101480)			
ITEM	PART NUMBER	DESCRIPTION	QTY
1	101209	Head Sub-Assembly	1
2	101788	Micrometer Mount Assembly	1
3	100812	Pusher Retaining Pin	1
4	91253A624	3/8-16 x 1 HSFHS	1
5	101092	LImIt Switch Bracket	1
6	91255A537	1/4-20 x 1/2 BHCS	2
7	903 Switch	Limit Switch	1
8	100692	LImIt Switch Guard	1
9	91255A190	8-32 x 1/4 BHCS	2
10	100628	Standard Micrometer Assembly	1
10	101489	DC Micrometer Assembly	1
10	101587	Metric Micrometer Assembly	1
11	100727	Micrometer Nut	1
12	100813_01	Pusher w/ Magnets	1
13	100869	Pressure Plate	1
14	100849	Compression Cone	1
15	101499	D105 Stop Rod	1
16	KHA-122	Stop Rod Locking Lever	1

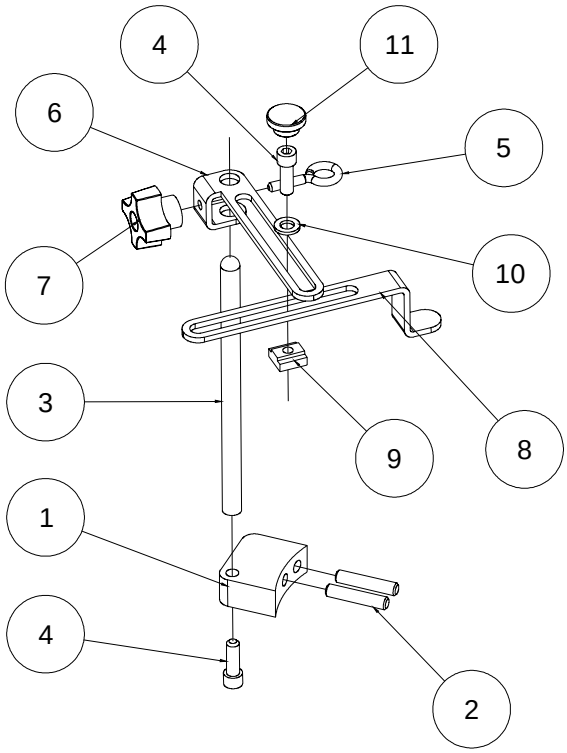
EXPLODED PARTS VIEW



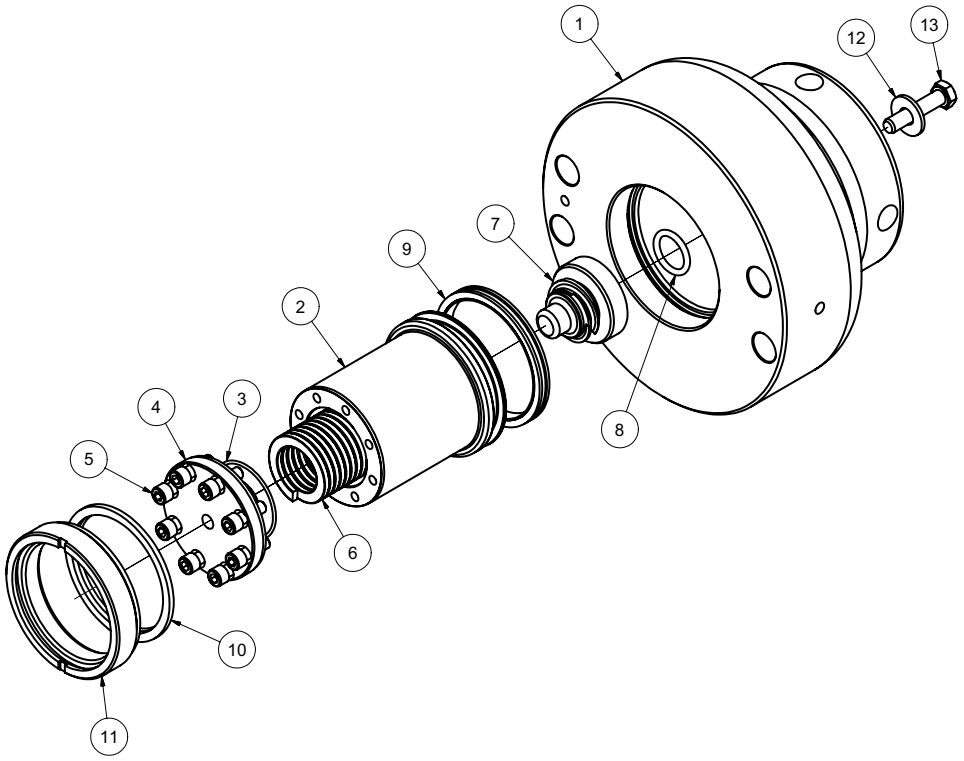
35-Ton Head Sub-Assembly (101209)			
ITEM	PART NUMBER	DESCRIPTION	QTY
1	100685	35-Ton Cylinder	1
2	100329	Strain Rod - 8 1/2"	4
3	100325	Bottom Flange	1
4	750SPCL	3/4 Flat Washer - Special	4
5	95462A538	3/4-10 Hex Nut	4



D105 Micrometer Mount Assembly (101788)			
Item	Part Number	Description	Qty
1	100898-01	Micrometer Arm	1
2	100898-02	Micrometer Base	1
3	100898-03	Micrometer Suspension Flange	1
4	91253A189	8-32 x 1/4 HSFHS	4



Coupling Stop Assy (100954)			
Item	Part No.	Description	Qty
1	100950	Coupling Stop Block	1
2	98381A544	Stop Block Pin	2
3	100951	Stop Block Rod	1
4	91251A540	1/4-20 X 3/4 SHCS	2
5	9489T47	Eye Bolt	1
6	100952	Adjustable Stop Arm	1
7	DK-655	Knob	1
8	100953	Fixed Stop Arm	1
9	94750A588	T-Nut (1/4-20)	1
10	90126A029	1/4 Flat Washer	1
11	94052A133	Push-On Cap	1



35 Ton Cylinder / Flange Assembly (100685)			
ITEM	PART NUMBER	DESCRIPTION	QTY
1	102511	Cylinder Body	1
2	101515	Cylinder Piston	1
3	030D90	030 Disogrin O-Ring	1
4	100689	Cylinder Piston Cap	1
5	91251A540	1/4-20 X 3/4 SHCS	8
6	101282	Cylinder Spring	1
7	101516	Spring Plug	1
8	210D90	210 Disogrin O-Ring	1
9	TP032	T-Seal	1
10	SH959-26	Ram Wiper	1
11	101514	Cylinder Retaining Ring	1
12	90108A415	5/16 Flat Washer	1
13	92865A587	5/16-18 x 1.50 HHCS	1