

# SC32 HYDRAULIC HOSE CRIMPER OPERATORS MANUAL

# WARNING!

An incorrect hose assembly can rupture or blow apart in use, resulting in serious injury, death, or property damage.

**REMEMBER:** Others depend on you to make the correct assemblies.

## FOR SAFETY'S SAKE

### USE THIS MACHINE ONLY IF YOU:

1. Receive hands-on **TRAINING** with this gates crimper and assemblies.
2. Follow the current **GATES OPERATING MANUAL** and **CRIMP DATA** for the Gates SC-32 Crimper,
3. Use only **NEW (UNUSED GATES)** hose and fittings.
4. Wear **SAFETY GLASSES**.
5. Keep hands clear of moving parts.

### NOTE

Gates recommends only those hose and coupling combinations specified in the Gates Hydraulic Products catalogs. Gates disclaims any liability for any hose assemblies which have not been produced in conformance with the Gates assembly recommendations



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Serial No \_\_\_\_\_

(Located on the machine base at the rear of the base)

Date of Purchase \_\_\_\_\_

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## Start up Kit

QTY	UOM	P/N or Form #	DESCRIPTION
1	EA	73690322	78241 DIGITAL CALIPER 6 IN
1	EA	74820291	78746 MAGNET PC707
1	EA	98-1696	OP MANUAL
1	EA	98-1698	SPACER INSTRUCTIONS
1	EA	74823011	MOLYCOTE 3 OZ
1	EA	74821702	SPACER
1	EA	74821738	DIE CONE
1	EA	74821739	BASE PLATE

# SC32 CRIMPER SPECIFICATIONS

Die Series-----	PC 707 & SC 32 DA (DOUBLE ANGLE)
Maximum Cylinder Force-----	80 Ton
Maximum Hose Diameter (6 Wire)-----	2”
Crimper Depth-----	32”
Crimper Width-----	16.5”
Crimper Height-----	28.5”
Weight-----	420 Lb
Pump-----	Electric
Maximum Pump Pressure-----	10,000psi
Pump HP (SC32 )-----	2 HP (220V-1 ph)
Pump HP (SC32)-----	1 HP (110V)
Reservoir Capacity-----	1 Gal
Oil Type-----	ISO Viscosity Grade 46



## SAFETY PRECAUTIONS



READ INSTRUCTIONS AND IDENTIFY ALL CRIMPER COMPONENTS BEFORE USING CRIMPER

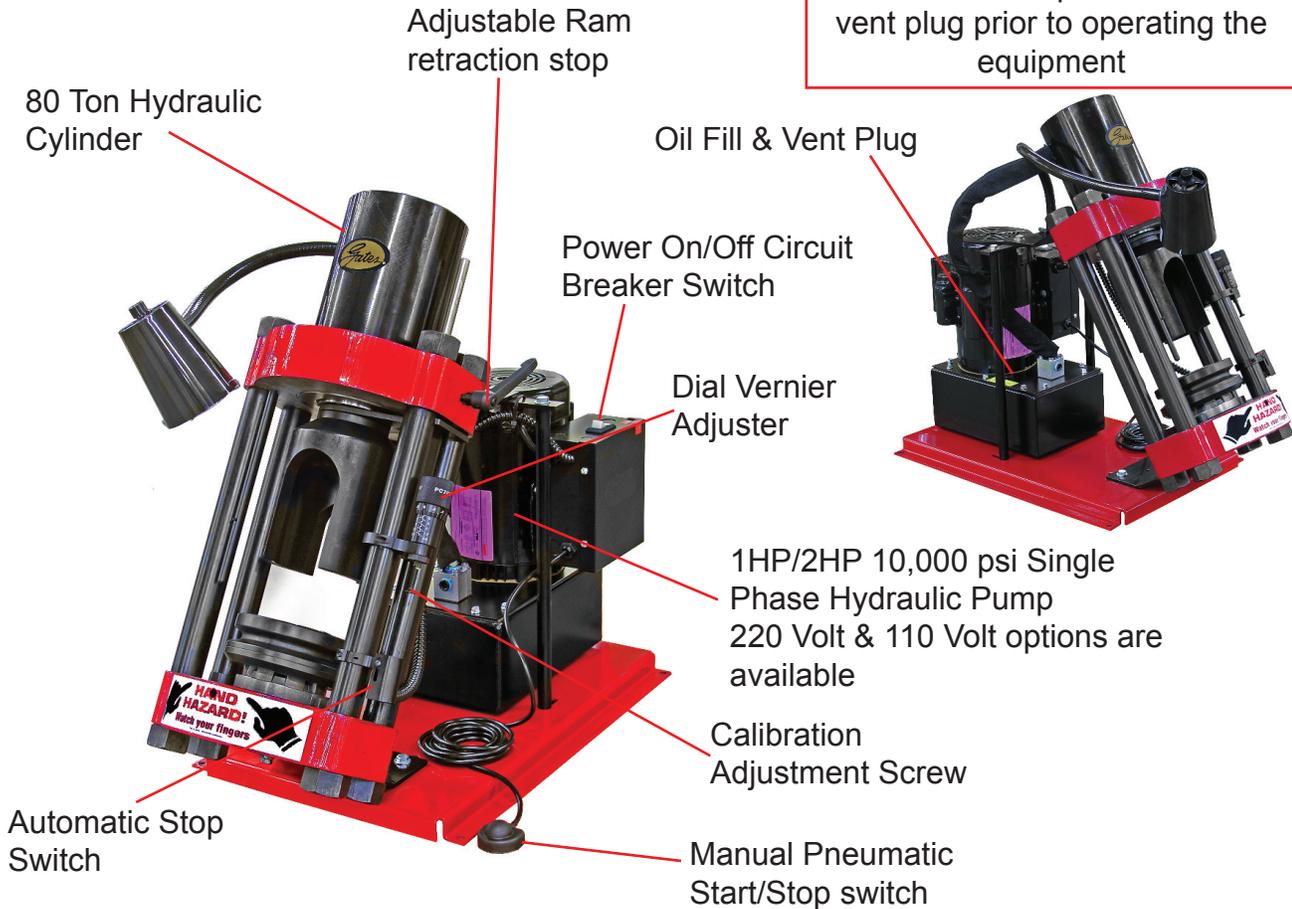
CRIMPER CAN PRODUCE 80 TONS OF FORCE!  
KEEP BOTH HANDS AWAY FROM PINCH POINTS

CONSULT GATES SPECIFICATIONS FOR CORRECT MACHINE SETTINGS AND CRIMP MEASUREMENTS

ALWAYS WEAR EYE PROTECTION

# SC32 CRIMPER COMPONENT IDENTIFICATION

**Caution**  
The Shipping plug must be removed and replaced with the vent plug prior to operating the equipment



PC707  
Compression Ring

PC707 Die Set

PC707 Pressure  
Plate

**Dies Not Included**



Double Angle Top  
Compression Ring

Double Angle Die Set

Double Angle  
Base Ring

**Dies Not Included**

# HOSE PREPARATION

## CAUTION:

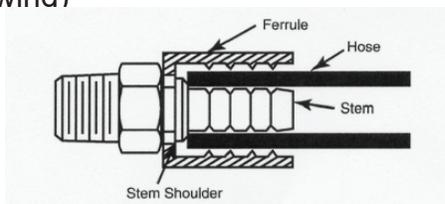
A new hose and end fittings (stem/ferrule) must be used when building a hose assembly. Re-using any component will seriously affect performance and could result in serious injury or property damage

## Two-Piece Couplings

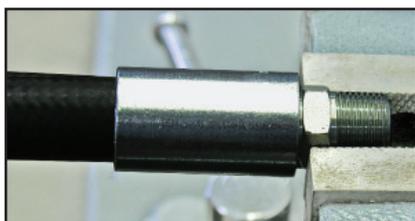
1. Cut Hose to desired length.
2. Using Gates Crimp Data Manual #35019 (Ind), 428-7365(Auto) select the correct stem and ferrule. Or, log onto [www.gates.com/ecrimp](http://www.gates.com/ecrimp) for the latest crimp information on line
3. Place the ferrule over end of hose. If skiving is required, see instructions in Gates Hand Skiver manual # 35019-W



4. Lubricate the first two or three serrations on the stem with lightweight oil (SAE 10W)
5. Clamp the stem in vise on hex portion, and push hose onto stem. Hose should be flush against stem shoulder (See cutaway drawing)



6. Push ferrule so it rests against hex of stem. Hose and coupling are now ready for crimping



## MegaCrimp® Pre-Assembled Couplings

1. Cut hose to desired length
2. Using Gates Crimp Data Manual #35019(Ind), 428-7365 (Auto) select the correct MegaCrimp® coupling. Or, log onto [www.gates.com/ecrimp](http://www.gates.com/ecrimp) for the latest crimp information on-line.



3. Place a visible mark on the hose cover at the insertion length shown in the crimp data manual.



4. Insert coupling into the hose until the mark lines up with the end of the coupling ferrule.
5. Hose and coupling are now ready for crimping.

## NOTE:

See Hose Assembly Guide of the Gates Crimp Data Manual #35019(Ind) and 428-7365(Auto) or log onto [www.gates.com/ecrimp](http://www.gates.com/ecrimp) for more details

# SC32 CRIMPER CALIBRATION PROCEDURE

**1.** Install the “.733” die set to calibrate the machine using an 8G Megacrimp® coupling.

**2.** Set the Dial Vernier setting to 5.20. Rotating the dial clockwise will increase the number and rotating it counterclockwise will decrease the number. When changing the setting, always move to a higher number then down to the desired setting

- Example: To change from 5.00 to 5.20, move the Dial Vernier up to 6.00 then down to 5.20.

**3.** Insert the coupling into the die set approximately 1/8 inch below the top of the die. (See Photo 1)



Photo 1

**4.** Push and hold the start/stop switch until the pump stops.

**5.** Remove the coupling and measure the crimp diameter which should measure 1.000 +/- .003 inches. See page 8 for measuring crimp diameter.

**6.** If ferrule crimp diameter is not acceptable adjust the Dial Vernier (See Photo 2)



Photo 2

- To increase the crimp diameter, hold the Dial Vernier barrel with a 5/16 inch open end wrench and rotate the stem out of the barrel with a 5/32 inch hex key wrench.
- To decrease the crimp diameter, hold the Dial Vernier barrel with a 5/16 inch open end wrench and rotate the stem into the barrel with a 5/32 inch hex key wrench.

**7.** Repeat steps 2 through 5 to verify the correct crimp setting.

# OPERATING INSTRUCTIONS WITH PC707 DIES



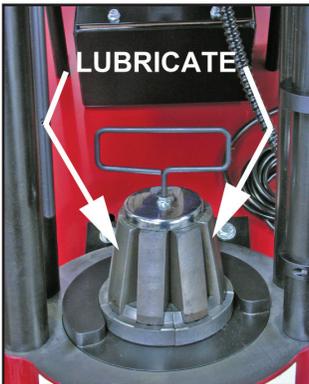
**1** Note the tag attached to the pump motor and make certain that the power source matches the requirements specified on the tag.



**2** Make certain that the base is clean. Insert the standard Pressure Plate and tighten the set screw through the hole in the hand hazard decal with a 1/8 inch hex key wrench.



**3** Orient the Pressure Plate as shown and tighten the set screw to hold it securely in place. Lubricate the Pressure Plate with a high quality moly-disulfide grease. Molykote "G" is recommended.



**4** Select the correct die set from the Gates Crimp Manual #35019 (Ind) and 428-7635 (Auto) or log onto [www.gates.com/ecrimp](http://www.gates.com/ecrimp). Lubricate the outer surfaces of the dies with Molykote "G"



**5** Position the Compression Ring loosely over the die set and insert the hose and fitting from the bottom of the crimper.



**6** Position the ferrule or MegaCrimp® approximately 1/8 inch below the top of the die fingers.  
**Important:** *Be sure the hex of a straight stem or round portion of a bent ferrule rests against the ferrule.*



**7** Adjust the Dial Vernier to the setting obtained from the Gates Manual for the combination of hose and fitting being crimped.



**8** Press and hold the pneumatic start/stop switch until the motor shuts off and the ram retracts.



**9** Always measure the finished crimp diameter to be certain that it is within the Gates specification.

# OPERATING INSTRUCTIONS DOUBLE ANGLE DIES

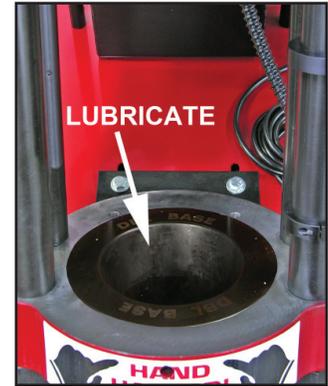
## SC32 DA Double Angle Dies

Double Angle dies effectively double the force of the crimper thus larger fittings can be crimped than would be possible with conventional dies. The trade off is that the diameter range that can be crimped with a given die is more limited than with a conventional die.

Use only the dies specified in the Gates Crimp Specifications for a given combination of hose and fitting.



**1** Remove the standard Pressure Plate by loosening the set screw holding it in place. The set screw is located through the hole in the Hand Hazard Decal. A 1/8 inch hex key wrench is required.



**2** Install the Double Angle Base Ring making certain that the bottom flange is clean and free of debris and that the base ring seats firmly and squarely in the bottom flange.



**3** Select the correct Double Angle Die for the hose and fitting combination being crimped. Lubricate the ID of the Bottom Base Ring and the top Compression Ring with a high quality moly-disulfide grease. Molykote "G" is recommended.



**4** Place the top Compression Ring squarely on top of the Double Angle Die set.



**5** Insert the Hose and fitting from the bottom of the crimper.

*Note: In order to avoid taper in the final crimp, the fitting should be centered vertically in the die set.*



**6** Adjust the Dial Vernier to the setting obtained from the Gates Manual. *Note that for Double Angle Dies settings greater than 16 are above the zero due to the special calibration factors for Double Angle Dies.*



**7** Install the Pusher on the ram if it has been removed and press and hold the pneumatic start/stop switch until the motor shuts off and the ram retracts.



**8** Always measure the finished crimp diameter to be certain that it is within the Gates specification.

# MEASURING CRIMP DIAMETER

To properly measure a crimp diameter:

## NOTE:

DO NOT measure on top of part number stamps

When using 21 and 22 Dies

1. Using Gates “21/22” dial calipers (Product No 739-1320, Part No 78217) measure halfway between ridges (Fig 1). to be sure crimp diameter is being properly measured, mark a crimp flat. Beginning with that flat, count 9 flats to get the diameter. Be sure caliper blades DO NOT touch ridges (See Photo 3.)

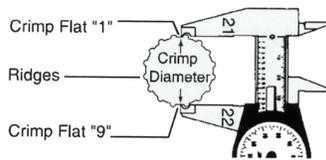


FIG. 1

2. Measure halfway between the ends of crimped portion of the ferrule (Fig 2).



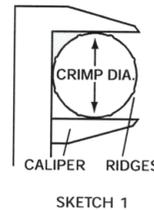
FIG. 2



Photo 3

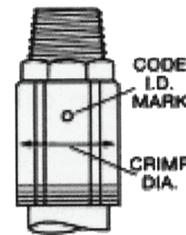
When NOT using 21 and 22 Dies

1. Using Gates Dial Calipers (Product No 7369-0320, Part No 78215) which are notched to clear ridges, measure halfway between ridges (Sketch 1). Be sure caliper fingers DO NOT touch ridges or part number stamps (See Photo 3)



SKETCH 1

2. Measure halfway down the crimped portion of the ferrule (Sketch 2).



SKETCH 2

3. Should actual crimp diameter not be within recommended crimp tolerance, check calibration of the machine and recalibrate. If machine is properly calibrated, you may need to make a slight adjustment to the Dial Vernier Adjuster,

4. To obtain a smaller crimp diameter, change the Vernier Adjuster to a smaller number. To get a larger crimp diameter, change the Vernier Adjuster to a larger number. Changing the adjuster readout by .05 will change the crimp diameter .001". Record the new setting on your crimp chart for future reference.

# TROUBLESHOOTING

## 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 either 115V AC or 220V AC single phase circuit. **Make certain that correct voltage and amperage is available.** 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 Dial Vernier. 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 bulb on the end of the hose going into the box.

## PROBLEM: CRIMP DIAMETER TOO LARGE

- Check crimper calibration and re-calibrate if required.
- Incorrect die being used.
- Incorrect setting of the Dial Vernier Adjuster. Check hose crimp 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 die cone 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 re-calibrate if necessary.
- Incorrect die being used (See die range under Crimp Diameter Too Large).
- Incorrect setting of the Dial Vernier. Check hose crimp specifications.

## PROBLEM: DIES STICKING IN COMPRESSION RING

- Inadequate lubrication of the die cone and die surfaces.

# MAINTENANCE

This crimper requires minimal maintenance. However, the following practices are recommended to ensure maximum reliability and service

## 1. Lubricate

Using a small brush and Molykote “G” grease, apply a light coat to the inside surface of the die cone whenever it becomes shiny.

## 2. Check Oil

- Check the hydraulic oil level in the pump reservoir after each 10 hours of operation.
- If the oil in the hydraulic reservoir is more than 1 1/2 to 2 inches below the fill plug add ISO Viscosity Grade 46 hydraulic oil

## 3. Change the oil

(Note) Frequency depends on the pump’s general working conditions, severity of use and overall cleanliness.

- For general shop conditions change the oil every 300 hours.
- Drain the oil through the plug in the bottom of the reservoir and refill with ISO Viscosity 46 hydraulic oil to between 1 1/2 and 2 inches below the fill plug

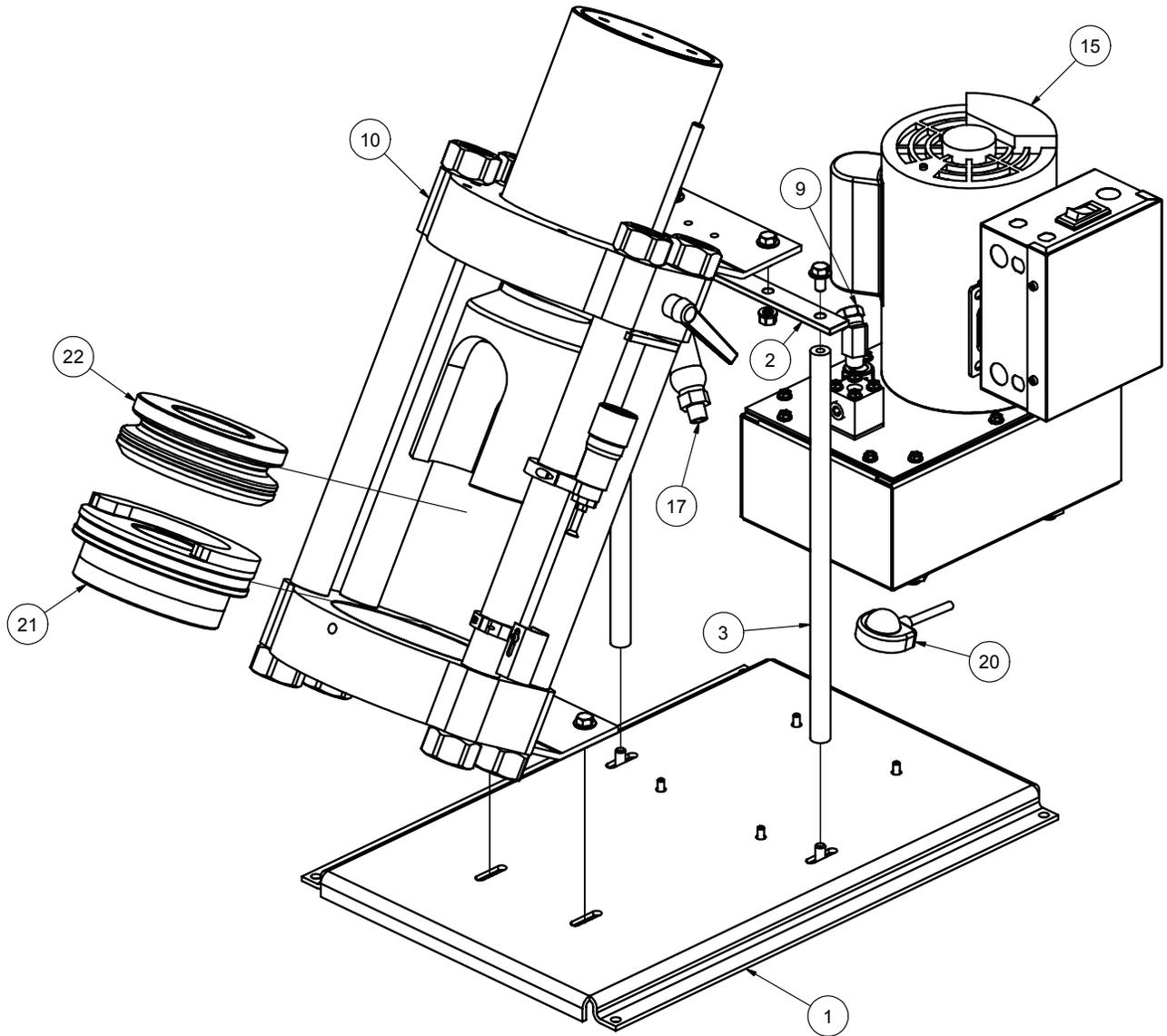
## 4. Inspect Die Sets

- Periodically inspect the surfaces of die sets for debris (metal chips, dirt, etc.) or damage.
- If debris is present, clean and lubricate with Molykote “G” grease.
- Check screws holding fingers to cage to make sure that they are tight. Tighten if necessary.

## 5. Inspect hose assembly

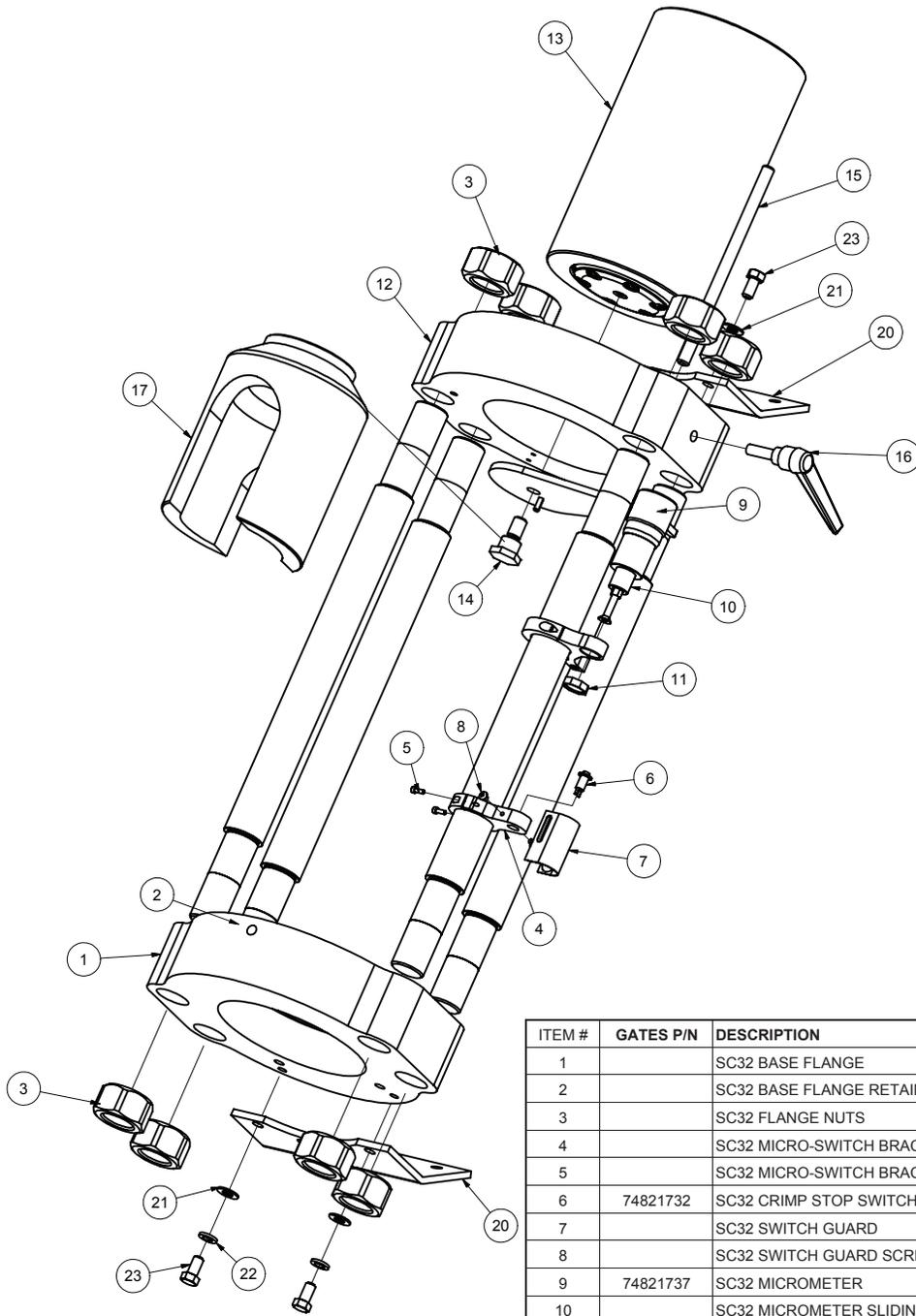
- Inspect hose assembly connecting the crimper and pump monthly (more often with severe use)
- If hose has any signs of damage, replace immediately. A damaged hose may rupture and cause serious injury.
- If hydraulic oil is present on the hose assembly, serious damage may exist. replace hose assembly immediately.

# EXPLODED PARTS VIEW



ITEM #	GATES P/N	DESCRIPTION	AUTOMOTIVE P/N
1		SC32 BASE PLATE	
2		SC32 SUPPORT BAR	
3		SC32 SUPPORT ROD	
9		SC32 PUMP ADAPTER	
10	74800070	SC32 CRIMPER/PUMP 220V	77500
10	74800071	SC32 CRIMPER/PUMP 110V	77501
15	74810051	SC32 REPLACEMENT PUMP 2HP/220	77505
15	74810052	SC32 REPLACEMENT PUMP 1HP/110	77506
17	74821077	SC32 HOSE ASSEMBLY	
20	74821730	SC32 PENDANT SWITCH	78982
21	74821739	SC32 BASE PLATE FOR 707 DIES	78991
22	74821738	SC32 DIE CONE FOR PC707 DIES	78990

# EXPLODED PARTS VIEW



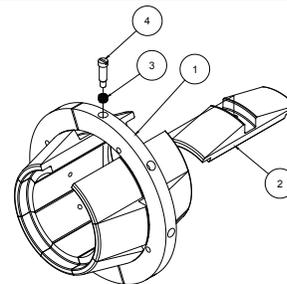
ITEM #	GATES P/N	DESCRIPTION	AUTOMOTIVE P/N
1		SC32 BASE FLANGE	
2		SC32 BASE FLANGE RETAINING SET SCREW	
3		SC32 FLANGE NUTS	
4		SC32 MICRO-SWITCH BRACKET	
5		SC32 MICRO-SWITCH BRACKET SCREWS	
6	74821732	SC32 CRIMP STOP SWITCH	78984
7		SC32 SWITCH GUARD	
8		SC32 SWITCH GUARD SCREWS	
9	74821737	SC32 MICROMETER	78989
10		SC32 MICROMETER SLIDING ASSEMBLY	
11		SC32 MICROMETER NUT	
12		SC32 TOP FLANGE	
13	74821733	SC32 80 TON CLYLINDER	78985
14		SC32 PUSHER RETAINING PIN	
15		SC32 RETRACTION STOP ROD	
16		SC32 RETRACTION STOP HANDLE	
17		SC32 PUSHER	
20		SC32 FLANGE SUPPORT BRACKET	
21		SC32 FLANGE SUPPORT BRACKET WASHER	
22		SC32 FLANGE SUPPORT BRACKET LOCK WASHER	
23		SC32 FLANGE SUPPORT BRACKET BOLT	



## Available Dies

GATES P/N	DESCRIPTION	AUTOMOTIVE P/N	
<b>SC32 DA DIE SETS</b>			
74821710	SC32 310 DBL ACTING DIE SET	78977	
74821711	SC32 311 DBL ACTING DIE SET	78978	
74821712	SC32 312 DBL ACTING DIE SET	78979	
74821713	SC32 313 DBL ACTING DIE SET	78980	
74821714	SC32 314 DBL ACTING DIE SET	78981	
<b>PC707 DIE SETS</b>			
<b>GATES P/N DESCRIPTION</b>			
7482-1217	Die Set 721	78943	
7482-1218	Die Set 722	78944	
7482-0931	Die Set 731	78931	
7482-0932	Die Set 732	78932	
7482-0933	Die Set 733	78933	
7482-0934	Die Set 734	78934	
7482-0935	Die Set 735	78935	
7482-0936	Die Set 736	78936	
7482-0937	Die Set 737	78937	
7482-0939	Die Set 739	78939	
7482-0947	Die Set 740	78950	For crimping 6ACA
7482-0941	Die Set 741	74951	For crimping 8ACA
7482-0942	Die Set 742	78952	For crimping 10ACA
7482-0943	Die Set 743	78953	For crimping 12ACA
7482-0944	Die Set 744	78954	For crimping power steering
7482-0945	Die Set 745	78955	For crimping grease fitting
7482-0946	Die Set 746	78956	For crimping miscellaneous (Replaces B die)
7482-1231	Die Set 781	78578	For GL Fittings
7482-1232	Die Set 782	78579	For GL Fittings
7482-1233	Die Set 783	78580	For GL Fittings
7482-1122	Die Set 7C3	78941	For crimping clamp collar (5/8")
7482-1123	Die Set 7C4	78942	For crimping clamp collar (3/4")

## Double Angle Dies



GATES P/N	DESCRIPTION	AUTOMOTIVE P/N
74821710	SC32 310 DBL ACTING DIE SET	78977
74821711	SC32 311 DBL ACTING DIE SET	78978
74821712	SC32 312 DBL ACTING DIE SET	78979
74821713	SC32 313 DBL ACTING DIE SET	78980
74821714	SC32 314 DBL ACTING DIE SET	78981
74821734	SC32 DIE RING HALF, DBL ACTING DIE	78986
74821735	SC32 DIE REPLACEMENT SCREW FOR DBL ACTING DIE	78987
74821736	SC32 DIE SPRING FOR DBL ACTING DIE	78988

## Two-Year Limited Warranty on Equipment

For two years from the date of shipment to the original user, The Gates Rubber Company will, at its option, replace or repair any unit which proves to be defective in material or workmanship, or both, at no cost to the original user of the equipment. Warranty claims require proof of purchase. This is the exclusive remedy. **THERE IS NO OTHER EXPRESS OR IMPLIED WARRANTY. ALL INCLUDING THOSE OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE LIMITED TO TWO YEARS FROM THE DATE OF SHIPMENT OF THE EQUIPMENT TO THE ORIGINAL USER. LIABILITY FOR CONSEQUENTIAL AND INCIDENTAL DAMAGES UNDER ANY AND ALL WARRANTIES IS EXCLUDED TO THE EXTENT EXCLUSION IS PERMITTED BY LAW.** Some states do not allow the exclusion of incidental or consequential damages, and some states do not allow limitation on how long an implied warranty lasts, so the above limitation and exclusion may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from state to state. For warranty service, contact Service Department, the Gates Corporation, 1551 Wewatta St., Denver, Colorado 80202.

### HOW TO ORDER REPAIR PARTS

All parts for the SC32 Crimper listed in the current replacement parts price sheets can be ordered directly from your local Gates Hydraulic Distributor.

When ordering include the following information:

- (1) Name of the unit shown on front cover.
- (2) Product or part number of parts needed.
- (3) Description of parts needed.
- (4) Serial number of the machine.

For selling prices on inventoried parts, refer to Hydraulic Power Crimp Equipment and Parts List Price Schedule. Selling prices for parts not shown in these list will be furnished upon request, or parts will be shipped at prevailing prices and you will be billed accordingly. For information regarding prices, contact your local Gates representative or The Gates Corporation, 1551 Wewatta St., Denver, Colorado 80202

When returning inoperable equipment, contact your local Gates representative for information on where to ship the unit(s).

