

GC16XD MINI CRIMPER & PUMP

SAFETY AND OPERATING MANUAL



DRIVEN BY POSSIBILITY™

Product Number 7480-7006

CRIMPER DETAILS



YOUR CRIMPER DETAILS

Serial No. _____

Date of Purchase _____

CRIMPER SPECIFICATIONS

DYNAMIC:	Nom. Size (Hydraulic Hose Size)	1 " 2 and 3/4" 4 wire
	Die Set Type	GC16XD Series Dies
	Crimping Range (Inch with Std. Die Set)	
	Radial Swaging Force	1000kN
	Cycle Speed (Full stroke - Complete Cycle Sec)	23.5 seconds
PHYSICAL:	Dimensions (Plan inch x inch x height inch)	250 x 200 x 250mm
	Weight (Without Dies & Oil)	22kg
	Shipping Space	0.036m ³
	Shipping Weight	30kg
	Crate Size	0.4 x 0.3 x 0.3
HYDRAULIC:	Rated Pressure	700 BAR
	Reservoir Capacity	0.8 Liters
	Filtration	100um

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**WARNING**

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

REMEMBER: Other depend on you to make correct assemblies.

Hose Assembly Fabrication.

- **Component inspection:** Before creating an assembly be sure to inspect all components to be sure they are the correct product, cut correctly, and do not have any visually identifiable defects.
- **Couplings (compatibility):** Hose fitting components from one manufacturer are not usually compatible with fitting components supplied by another manufacturer. Never mix and match hose couplings from different manufacturers unless approved by both parties.
- **Hose assembly equipment (crimpers):** Hoses and fittings from one manufacturer should not generally be assembled with the equipment of another manufacturer.

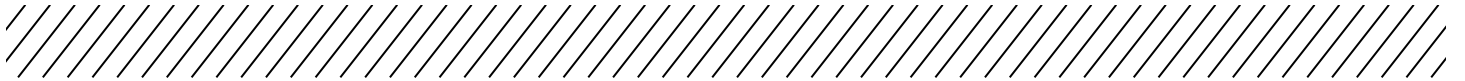
NOTE: Gates recommends only those hose and coupling combinations specified in the Gates Hydraulic Product catalogs. Gates disclaims any liability for any hose assemblies which have not been produced in conformance with Gates assembly recommendations.

**WARNING**

Carefully read and understand the following warnings before operating this crimper.

FOR SAFETY'S SAKE USE THIS MACHINE ONLY IF YOU:

1. Receive hands-on **TRAINING** with this Gates crimper and assemblies.
2. Follow current **GATES OPERATING MANUAL** and **CRIMP DATA** for the GC16XD crimper.
3. Use only **NEW (UNUSED GATES)** hose and fittings.
4. Wear **SAFETY GLASSES**.
5. Keep hands clear of moving parts.



WARNING

This **Safety & Operation Manual** has been provided for your and others safety. **Every operator MUST** have completed training and have an understanding of the crimper and the requirements of hose assemblies before using this machine.

It is the responsibility of the owner of this crimper to ensure that **ONLY** persons who hve an understanding of the local regulations for work safety and accident prevention in addition to undertaken training on using this crimper be allowed to operate this crimper.

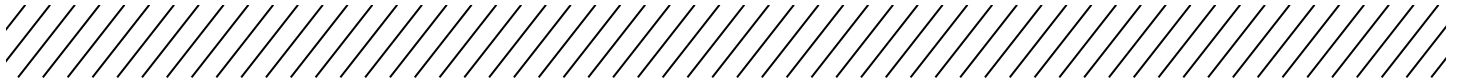
It is the responsibility of the operator of this crimper to observe the rules and guidelines set out in this manual and those provided by the owner of this machine.

This Safety & Operational Manual **MUST** be located near the crimper at all times and be used as a reference when required. Regulations for Work Safety and Prevention of accidents **MUST** also be available to the operator of this crimper.



WARNING

Every Crimper has been engineered to the hightest possible standard and thoroughly tested prior to release. Regardless of this, dangerous situations can arise if the safety rules and regulations are not respected or be part of the work process when using this crimper.

**WARNING**

This Gates Crimper has been engineered and qualified for Gates Product ONLY and as such crimping NON-Gates product will not only VOID Warranty but also breach the intended use and purpose condition and basic regulations of work safety and accident prevention.

Intended use and purpose outlined in this manual also includes regular maintenance. Failure to use the specified Grease will also VOID Warranty.

Warranty and Liability

The terms and conditions of sale and delivery shall apply. A copy of these terms and condition can be provided on request, but generally include conditions for intended use and purpose, improper observation concerning transport, storage & maintenance, unauthorized use, constructional changes or repairs and failure to detect wear.

Only authorized / qualified electricians are to work on the electrical system of Gates Crimpers.

It is the responsibility of the operator to ensure that no oil from this crimper is allowed to seep into the ground, in accordance to pollution rules of the Water Resource Management Laws.

1. Avoid contact with oil for prolonged periods.
2. Keep work place clear of objects and trip hazards.
3. Wear safety equipment at all times when operating the machine.
4. Keep body parts away from the machine when in use, do not put hands in crimper when operational.

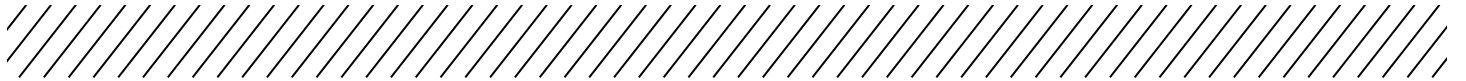


WARNING

Personal Safety

Regardless of local accident prevention regulations, the following should be observed in maintaining personal health and safety of operators.

1. Always wear protective clothing and apparatus as outlined in the local accident prevention regulations.
2. Ensure the safety and danger notifications have been observed.
3. Make sure the work area is clear of obstruction and be a suitable work environment.
4. Never start the machine unless intending to make a hose assembly and the head is free of objects and persons.
5. ONLY operate this machine if the ambient temperature is between 50°F ~ 95°F (10°C and 35°C)
6. Never reach into the crimper while head is moving.
7. Never change die sets unless the head is completely open.
8. The power MUST be disconnected for crimper maintenance.
9. Observe machine balance point when moving the crimper.
10. Never try and lift this crimper when there is a possibility of oil on the handle.



WARNING

DO NOT USE HANDLE AS A SLING POINT

The handle is designed **for manual lifting only**. Do not use as a lifting point for slings. Doing so may result in the crimper falling and injuring personnel.



DO NOT SLING

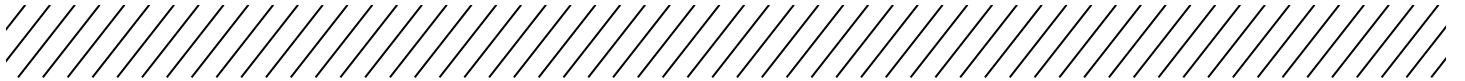




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BOX CONTENTS

GC16XD MINI CRIMPER & PUMP SAFETY & OPERATION MANUAL



- **GC16 Crimper**
- **Start Up Kit Includes**
 - die lube, calipers
 - hose assembly
 - quick disconnects
 - crimp charts

Start-up Kit (Ordered Separately)

Part Number: 78733 Product
Number: 7482-7313

- 1 - Digital Caliper 6" (#78241, 7369-0322)
- 1 - Hose Assembly (#78467, 7482-1017)
- 1 - G95311-0606 6MQFFVH-6FP, quick disconnect
- 1 - G95321-0606 6FQFFVH-6FP, quick disconnect
- 2 - GC16XD Mini Crimper Crimp Data Card (#428-3467, 81000)



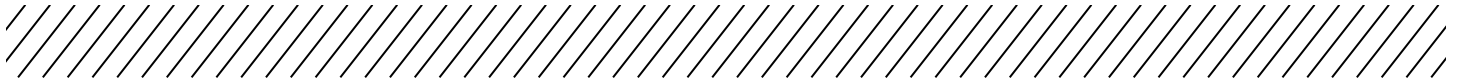
CALIPERS



**TUNGSTEN
DISULPHIDE
GREASE**

CRIMPER





The GC16 has been provided with a Visual Indicator to alert the user when the crimp is complete. STOP position. The user will notice that the head does not stop immediately after releasing the power switch and as such will cause an over crimped assembly. The user may need to cycle the machine several times so that the power switch can be released at the proper time and indicator stop at the correct position.

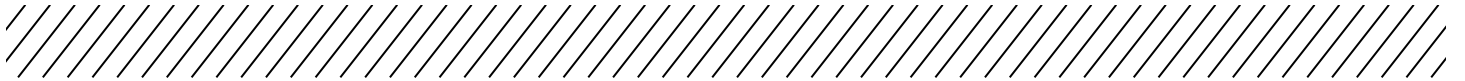


The operator **MUST** stop hydraulic flow to the machine before the indicator reaches the suggested STOP position.

As such the crimp accuracy is dependant on operator reaction and as such every completed hose assembly **MUST** be measured.



The optional hydraulic power device **MUST** be capable of 10,000 psi, these can range from a hand pump, through the pneumatic assisted, to battery operated.



The Machine setting can easily be entered from the product selection process associated with eCrimp.



The GC16 is fitted with a quick disconnect Coupling. There is always a small amount of oil purged from the assembly on disconnect. **Ensure these components are completely free of any contamination prior to connecting.**



Before operating the GC16 Crimper you MUST ensure there is ample grease distributed throughout the machines wearing parts and that the FOAM inserts are installed between the shoes. ONLY Tungsten Disulphide grease is to be used in this machine.

Warranty is VOID if alternative grease used.



Inserting Dies into the Crimper. Carefully study the images, the dies have a dove tail shape that is designed to mate with the die retainer plates.



Once the dies are located between the die retainer plates, firmly push until the notch locates with the roller ball.



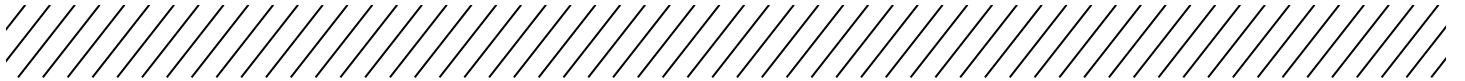
The front face of the die should look like this image.



Die sprung ball keeper.



Die Retainer Plate.



CAUTION:

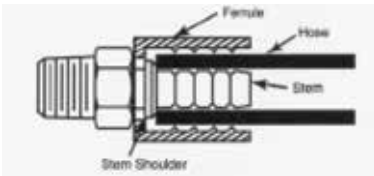
A new hose and end fittings (stem/ferrule) must be used when building a hose assembly. Re-using any component will seriously affect performance and could result in serious injury or property damage.

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 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 #3509 (Ind), 428-7365 (Auto)select the correct MegaCrimp® coupling. Or, log onto 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.

CAUTION:

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



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 the flat, count 9 flats to get the diameter. Be sure caliper blades DO NOT touch ridges (See Photo 3).

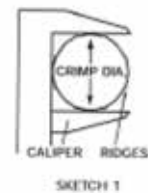


2. Measure halfway between the ends of crimped portion of the furrule (Fig 2).



WHEN NOT USING 21 AND 22 DIES.

1. Using Gates STAINLESS STEEL DIGITAL CALIPER (Product NO 7369-0322, Part NO 78241) which are notched to clear ridges, measure halfway between ridges (Sketch 1). Be sure caliper number stamps (See Photo 3).



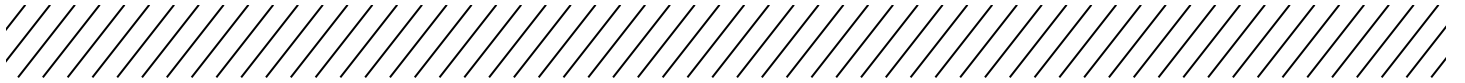
2. Measure halfway down the crimped portion of the furrule (Sketch 2).



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.

CALIBRATION

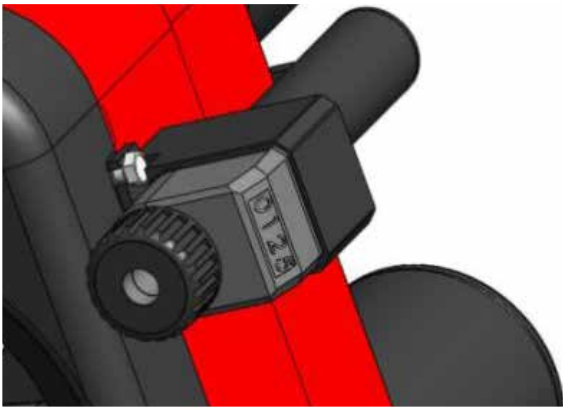


This crimp machine has a dial indicator to visually show when the operator needs to stop hydraulic flow to the head. It is advisable that you get use to the dial indicator before calibrating. This is usually done by crimping the same specification assembly many times and note the difference in COD with each assembly. The calibration process is trial and error, with the goal of being confident that you can repeatedly crimp to 1.000 +/- .003" using the dial indicator.



Insert 16-33 Dies Into Head

Unpack 33 Dies from Container insert each individual die into shoe, 8 dies total



Adjust Dial Indicator Knob

Adjust dial indicator knob to number 0123. This number is the factory calibration number for a 1" inch crimp.



Crimp 8G MegaCrimp®

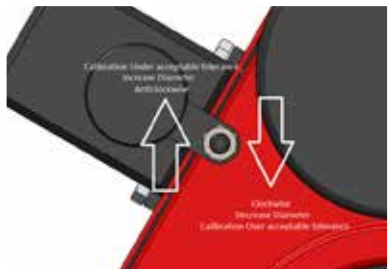
While holding the thread end of an 8G MegaCrimp® coupling, insert coupling into crimper so that ferrule is 1/8" from front edge of die shoe.



Press and hold the pump power switch. The crimper will close down to the position set while the center stem will rise on the dial vernier. Release the switch once the stem becomes flush with the front face of the dial vernier. Stopping the pump will allow the oil to return back to the tank and the head will open.



Remove the assembly from the machine and measure across the flats of the crimped area. This should read 1.000". If the measurement does not read 1.000" (+/- .003) then the micro adjuster needs to move until the COD is correct.



Micro Adjustment

Loosen lock nut on back of micro adjuster using 8mm wrench. (It does not need to be removed) Do this while holding a 2.5mm Allen key in micro adjuster to ensure it does not rotate.



Use a 2.5 mm allen key to rotate micro adjuster following instructions on last page to reach desired adjustment. When adjustment made tighten up lock nut with Allen key still in micro adjuster ensuring it does not rotate.

Crimp the same hose again to check calibration. If crimper still not accurate rotate micro adjuster as per chart until final diameter achieved.



Periodically Redistribute greats build up.

The crimper is designed to automatically redistribute some grease around the cone. Grease will also build up over time as some is pushed out. This can be redistributed with a brush periodically. At the rear of the crimper, use a grease brush to distribute grease inward that has been pushed out by crimping action. To properly care for your machine this should be done every 100 crimps, or whenever a significant amount of grease has been pushed out of circulation.



Warranty is VOID if alternative grease is used.



Periodically check the foam fillers

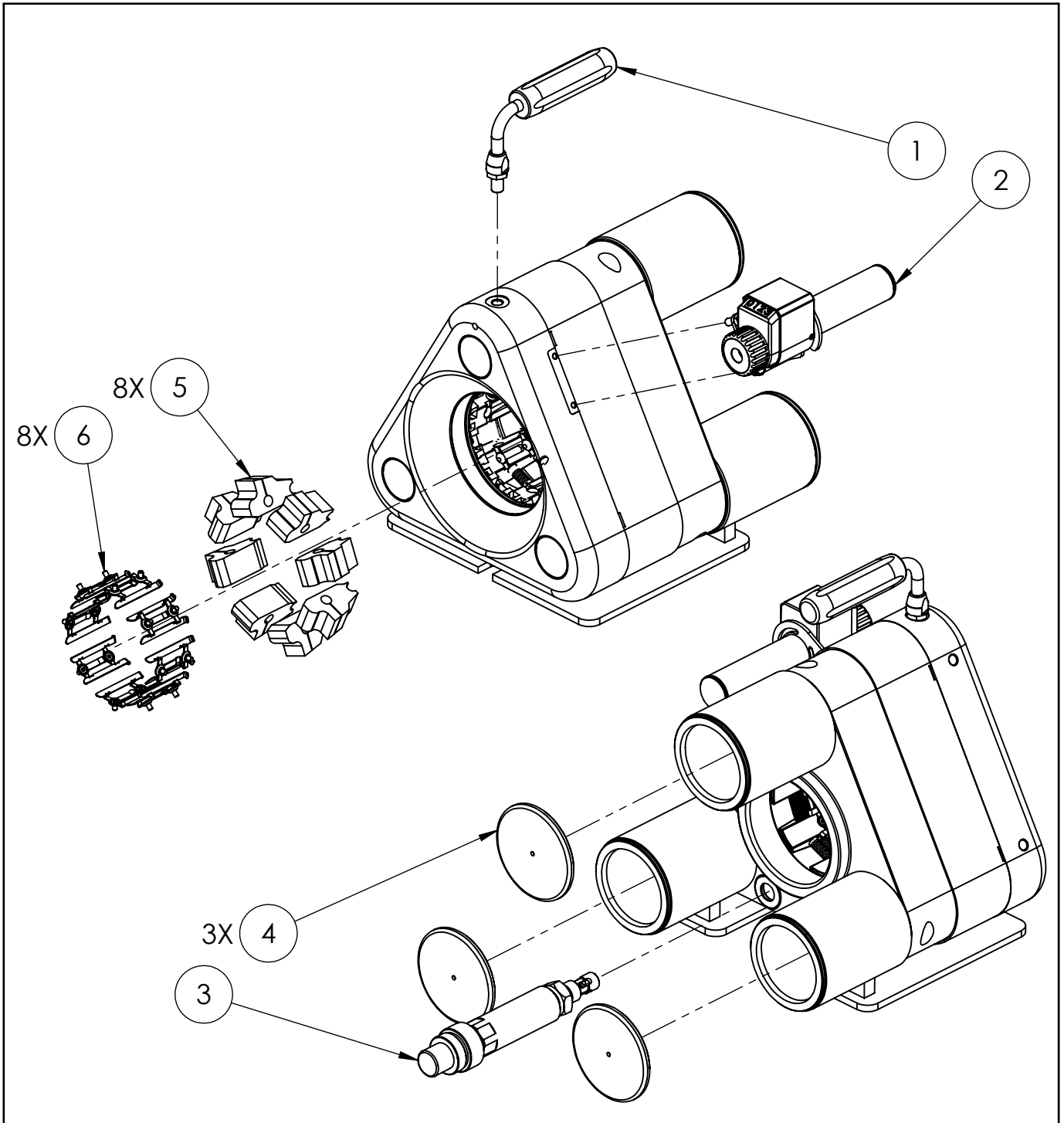
The foam fillers have been provided to prevent metal partials from entering the working area.



Always ensure the head is in the OPEN position when storing. If the shoe Cluster stays together when the head is opened, then to recover, close and open the head a number of times to re-distribute the grease and prevent binding.

Warranty is VOID if alternative grease is used.

TOOLING



PARTS LIST



ITEM NO.	DESCRIPTION	PART NO.	QTY
1	Handle Assembly		1
2	Dial Vernier Assembly		1
3	Standoff Assembly		1
4	End Caps		3
5	Foam Filler		8
6	Die Retainer Clip Assembly		8



NOTES





TWO-YEAR LIMITED WARRANTY ON EQUIPMENT

For two years from the date of shipment of the equipment to the original user, Gates 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 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 limitations 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, Gates Customer Solution Center, 330 Inverness Dr. S, Englewood, CO 80112.

FOR WARRANTY SERVICE, CONTACT

Service Department,
Gates Customer Solution Center,
330 Inverness Dr. S,
Englewood, CO 80112.
Attn: Marty Bauer
303.618.0043
marty.k.bauer@gates.com

For selling prices on inventoried parts, refer to Hydraulic Equipment and Parts List Price Schedule. Selling prices for parts not shown in these lists will be furnished on 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 your Customer service Representative.

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