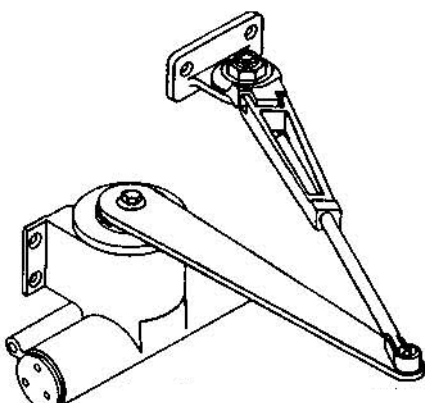
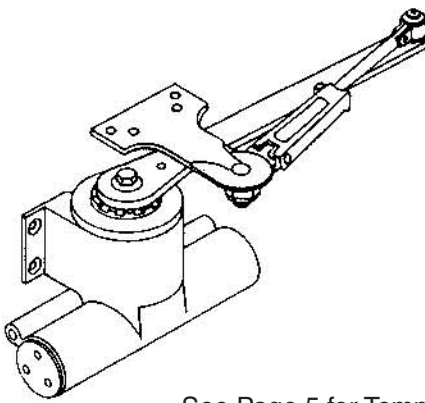
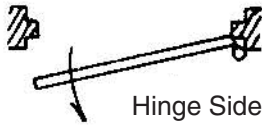


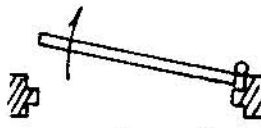
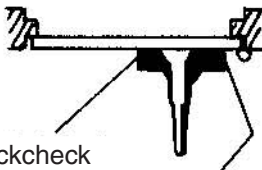
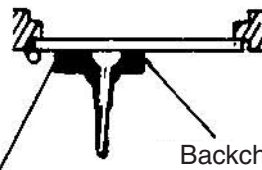


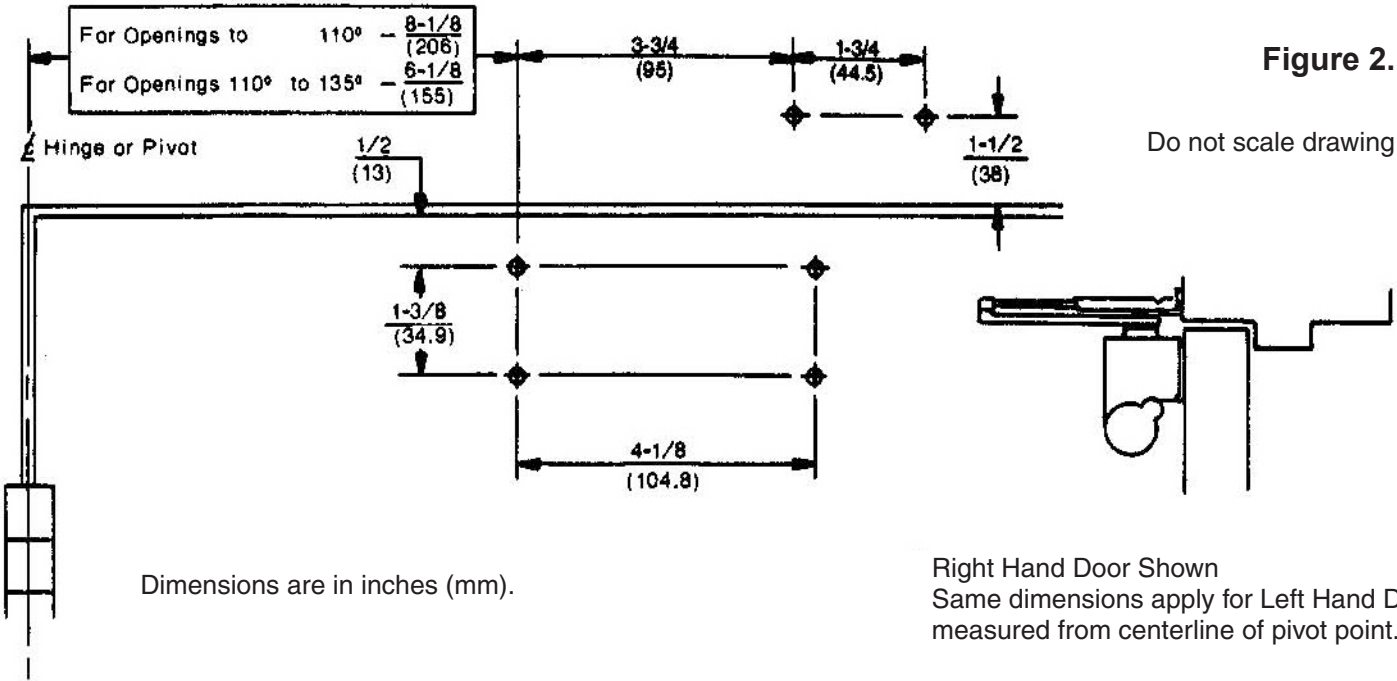
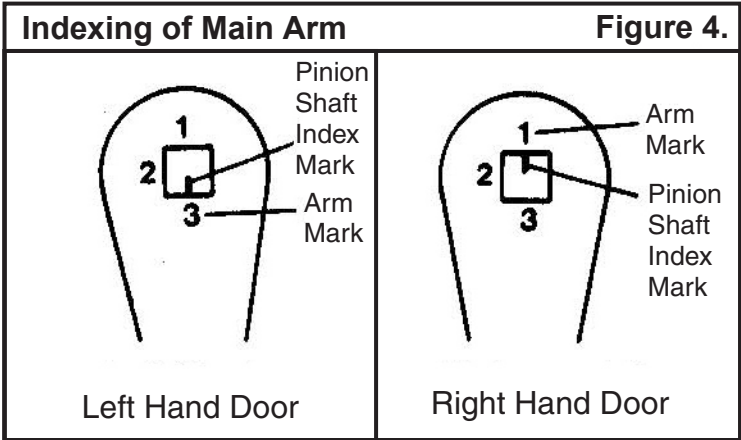


- Read these instructions before proceeding with the installation.
- Make sure that the door opens the full angle desired and latches without any binding action or interference.
- Select the type of installation from figure 1 below.
Note: For special applications, a separate door and frame preparation template is packed with these instructions. use this instruction sheet for installation sequence and closer adjustments only.
- Check hand of door, see figure 1 below. Hand of door closer must be the same as hand of door.
Door closer is handed but can be easily reversed.
SEE PAGE 4 FOR INSTRUCTIONS FOR REVERSING HAND OF CLOSER.

Type of Installation and Handing of Door				Figure 1.
Regular Arm Installation		Parallel Arm Installation		
 <p>For installation on PULL SIDE of Door ONLY</p> <p>See Page 2 for Template and Installation</p>		 <p>For installation on PUSH SIDE of Door ONLY</p> <p>See Page 5 for Template and Installation</p>		
Left Hand Door	Right Hand Door	Left Hand Door	Right Hand Door	
 <p>Hinge Side</p>	 <p>Hinge Side</p>	 <p>Opposite from Hinge Side</p>	 <p>Opposite from Hinge Side</p>	
 <p>Backcheck Valve</p> <p>Sweep and Latch Valve</p>	 <p>Sweep and Latch Valve</p> <p>Backcheck Valve</p>	 <p>Backcheck Valve</p> <p>Sweep and Latch Valve</p>	 <p>Sweep and Latch Valve</p> <p>Backcheck Valve</p>	



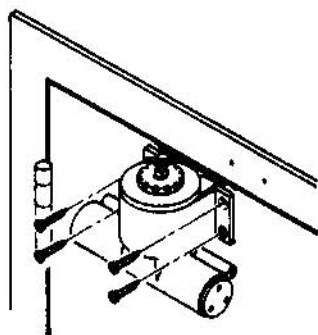
Preparation for Fasteners			Figure 3.
	Fasteners	Door or Frame Material	Fastener Preparation
Standard	#14 type "A" S.M. screw	Wood	3/16" (4.30mm.)
		Aluminum	7/32" (5.50mm.)
	1/4"-20 machine screw	Metal	drill: #7 (.201"), tap: 1/4"-20
Optional	Sex nuts and bolts	Hollowmetal	9/32" (7.00mm.) through; 3/8" (9.50mm.) door face opposite to closer
		Aluminum or Wood	3/8" (9.50mm.) through
	Through bolts and grommet nuts	All	9/32" (7.00mm.) through; 3/8" (9.50mm.) dia. x 3/8" (10mm.) deep door face opposite to closer



1. Using the template at the top of page 2, see figure 2, select the angle of opening desired. Locate and mark for 4 holes on the door for the closer body and 2 holes on the frame for the arm shoe.

2. Prepare the door and frame for fasteners using the information from the "Preparation for Fasteners" chart, figure 3 on page 2.

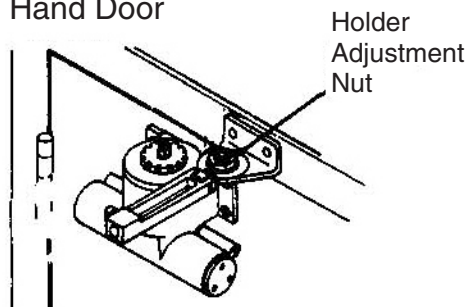
3. Install closer body to door as shown.



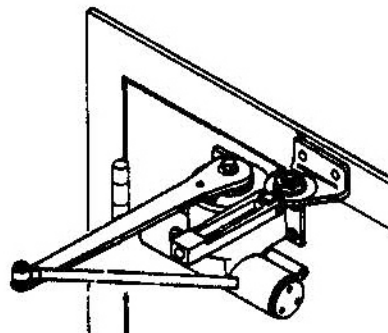
4. Disassemble holder loop assembly from the main arm assembly by loosening set screw.

5. Fasten holder loop assembly to frame face as shown.

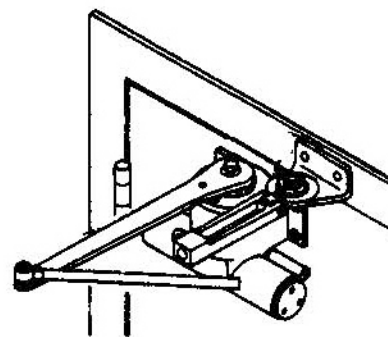
NOTE: Holder Adjustment Nut must be UP for Right Hand Door
DOWN for Left Hand Door



6. Following the main arm indexing illustrations in figure 4, place main arm onto the closer pinion shaft. Install and tighten main arm screw with a 1/2" wrench.

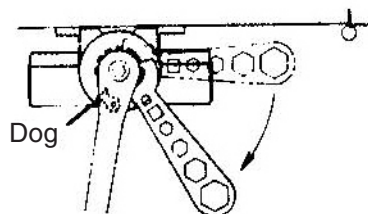


7. Open door slightly and assemble connecting rod into holder loop. Close and latch door. Adjust secondary arm assembly so that the main arm is perpendicular to face of door. Tighten set screw securely.



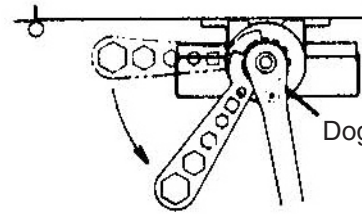
8. **Hold Open Adjustment -**
Open door to angle of hold open desired and tighten holder adjustment nut with wrench supplied.

9. **Closing Tension -** Place wrench (packed with door closer) on ratchet as shown. Swing wrench away from hinge to wind spring between 3 to 10 notches, engage arm dog in ratchet, increase or decrease spring power to suit conditions.



Left Hand Door

Caution - Underwound spring (less than 3 notches) or overwound spring (more than 10 notches) will cause spring breakage.



Right Hand Door

Regular Arm Closer Adjustment -

Closing Speed ... Controlled by the regulating valve on the end of the closer **closest** to the hinge.

Sweep Speed ... Controls the door's speed in the sweep speed range, see illustration. Full 360° **clockwise** turns **decrease** the sweep speed. Full 360° **counter-clockwise** turns **increase** the sweep speed.

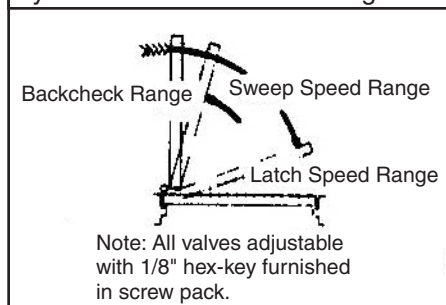
Latch Speed ... Controls the door's speed in the latch speed range, see illustration. A partial turn, up to a maximum of 1/2 turn (180°) in either direction determines the latch speed.

Backcheck ... Controlled by the regulating valve on the end of the closer **farthest** from the hinge. Backcheck cushions or slows the door opening speed near the end of the opening cycle. Full 360° **clockwise** turns **increases** resistance to opening. Full 360° **counter-clockwise** turns **decreases** resistance to opening.

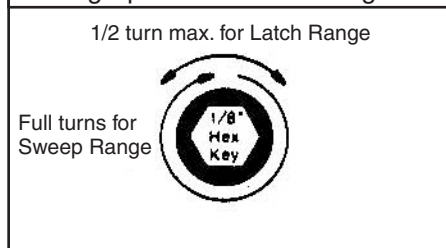
Note: If backcheck is encountered extremely early in the opening cycle, rotate the valve 1/2 turn (180°) to eliminate early opening resistance.

Caution ... To avoid damage to closer, never fully close the backcheck regulating valve.

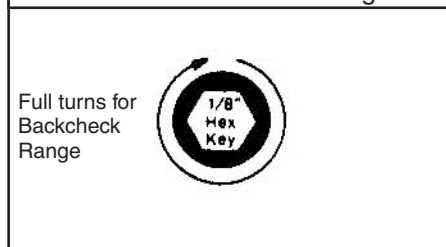
Hydraulic Control Figure 5.



Closing Speed Control Figure 6.



Backcheck Control Figure 7.



Parallel Arm Closer Adjustment -

Closing Speed ... Controlled by the regulating valve on the end of the closer **farthest** from the hinge.

Sweep Speed ... Controls the door's speed in the sweep speed range, see illustration. Full 360° **clockwise** turns **decrease** the sweep speed. Full 360° **counter-clockwise** turns **increase** the sweep speed.

Latch Speed ... Controls the door's speed in the latch speed range, see illustration. A partial turn, up to a maximum of 1/2 turn (180°) in either direction determines the latch speed.

Backcheck ... Controlled by the regulating valve on the end of the closer **closest** to the hinge. Backcheck cushions or slows the door opening speed near the end of the opening cycle. Full 360° **clockwise** turns **increases** resistance to opening. Full 360° **counter-clockwise** turns **decreases** resistance to opening.

Note: If backcheck is encountered extremely early in the opening cycle, rotate the valve 1/2 turn (180°) to eliminate early opening resistance.

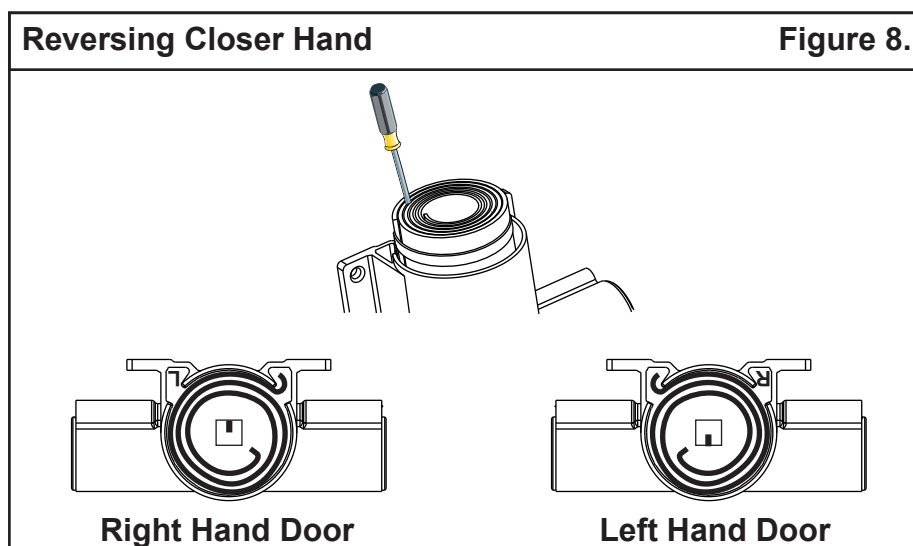
Caution ... To avoid damage to closer, never fully close the backcheck regulating valve.

To Reverse Closer Hand

1. Remove main arm screw, arm assembly, ratchet, and top cover.
2. Lift out spring using screwdriver wedged between coils. (See figure 8)
3. Reverse spring and re-assemble to required hand. (See figure 8)
4. Rotate shaft to required hand. (See figure 8)
5. Replace cover and insert ratchet, lining up slot with inner hook on spring.

Reversing Closer Hand

Figure 8.



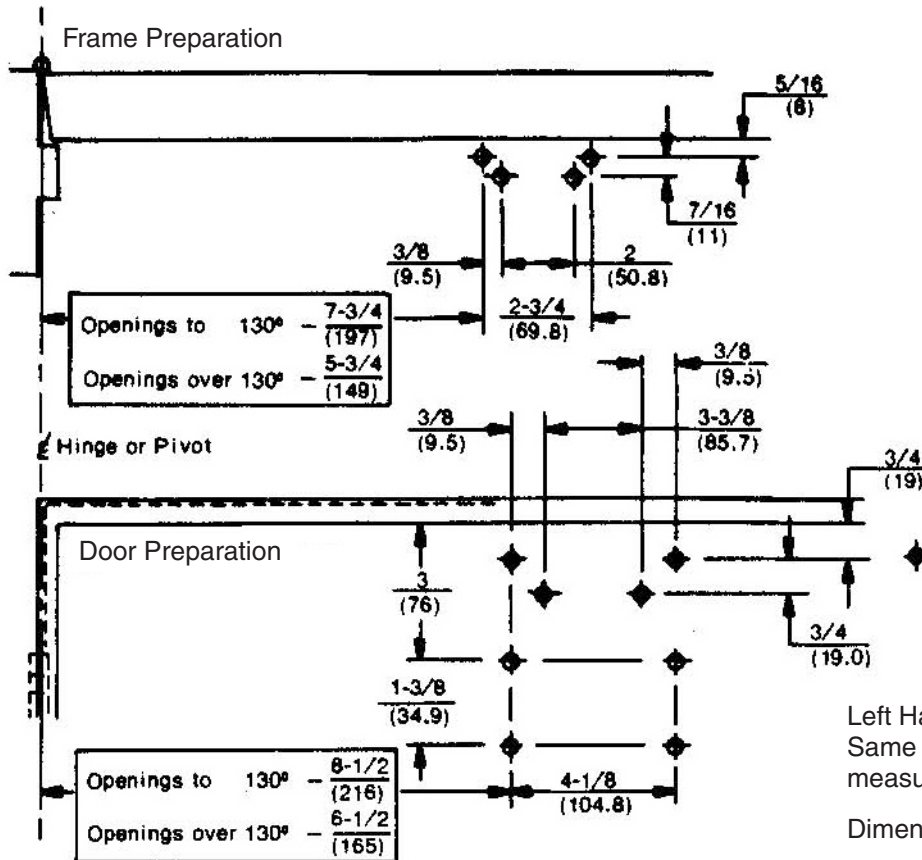
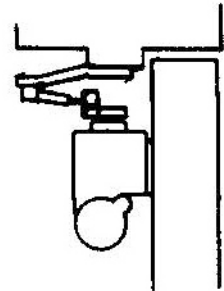


Figure 9.

Do not scale drawing



Preparation for Fasteners			Figure 10.
	Fasteners	Door or Frame Material	Fastener Preparation
Standard	#14 type "A" S.M. screw	Aluminum	7/32" (5.50mm.)
		Wood	3/16" (4.30mm.)
	1/4"-20 machine screw	Metal	drill: #7 (.201"), tap: 1/4"-20
Optional	Sex nuts and bolts	Hollowmetal	9/32" (7.00mm.) through; 3/8" (9.50mm.) door face opposite to closer
		Aluminum or Wood	3/8" (9.50mm.) through
	Through bolts and grommet nuts	All	9/32" (7.00mm.) through; 3/8" (9.50mm.) dia. x 3/8" (10mm.) deep door face opposite to closer

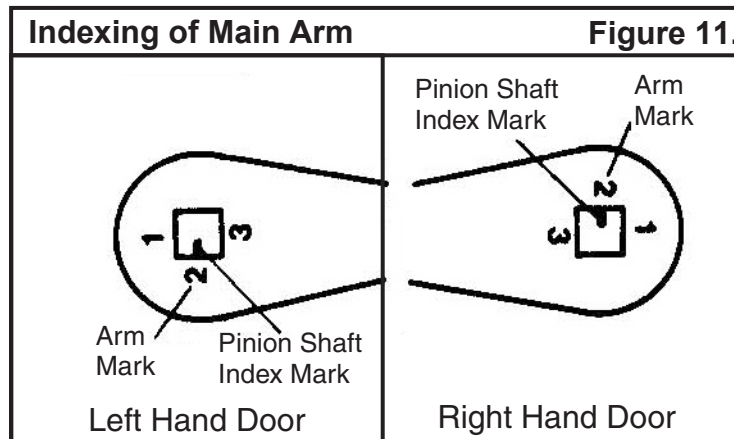


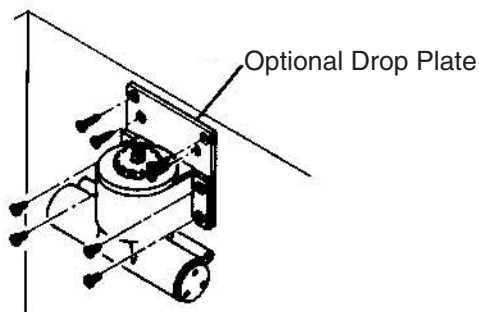
Figure 11.

Installation Sequence

1. Using the template at the top of page 5, see figure 9, select the angle of opening desired. Locate and mark for 4 holes on the door for either the closer body or #88 drop plate and 4 holes on the frame for the soffit plate.

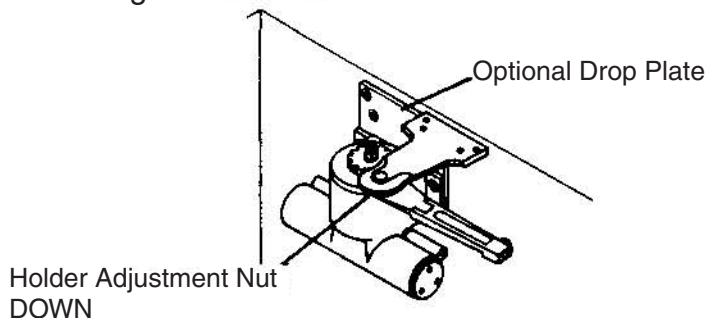
2. Prepare the door and frame for fasteners using the information from the "Preparation for Fasteners" chart, figure 10 on page 5.

3. Install closer body to door as shown. If a backplate is used, mount it first, then fasten the closer to the backplate.

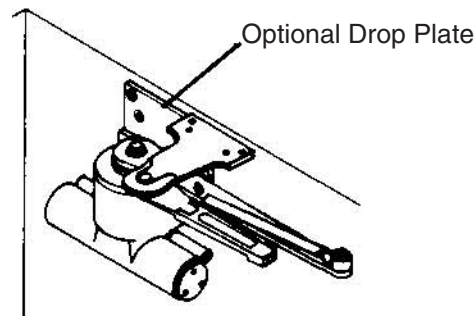


4. Disassemble holder loop assembly from the main arm assembly by loosening set screw.

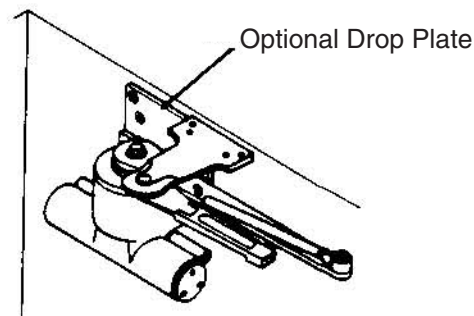
5. Fasten soffit plate to frame soffit with 4 mounting screws.



6. Following the main arm indexing illustrations in figure 11, place main arm onto the closer pinion shaft. Install and tighten main arm screw with a 1/2" wrench.



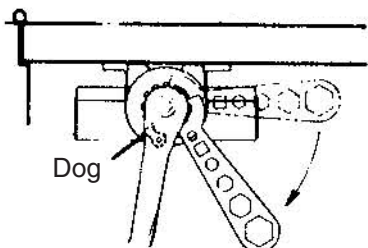
7. Open door slightly and assemble connecting rod into holder loop. Close and latch door. Adjust secondary arm assembly so that the main arm is approximately 2° from parallel with face of door. Tighten set screw securely.



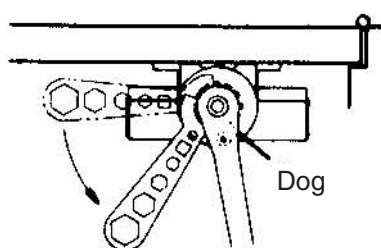
8. Hold Open Adjustment -

Open door to angle of hold open desired and tighten holder adjustment nut with wrench supplied.

9. Closing Tension - Place wrench (packed with door closer) on ratchet as shown. Swing wrench toward hinge to wind spring between 3 to 10 notches, engage arm dog in ratchet, increase or decrease spring power to suit conditions.



Left Hand Door



Right Hand Door

Caution - Underwound spring (less than 3 notches) or overwound spring (more than 10 notches) will cause spring breakage.

Norton

ASSA ABLOY

3000 Highway 74 East • Monroe, NC 28112
Tel: (877)-974-2255 • Fax: (800)-338-0965
www.nortondoortcontrols.com