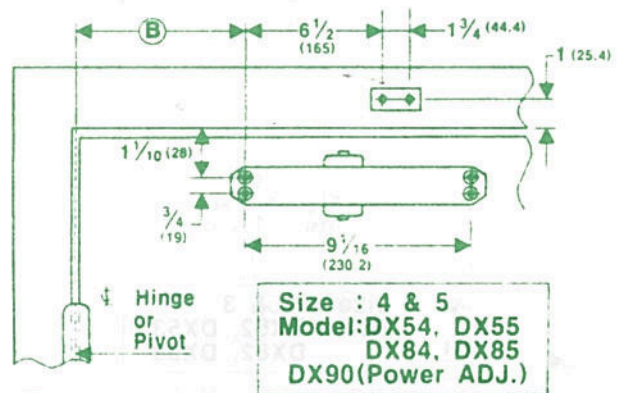
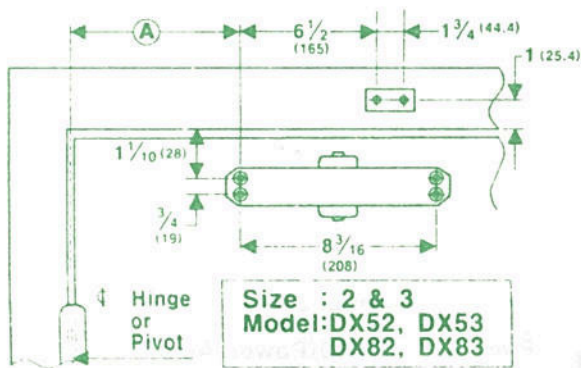
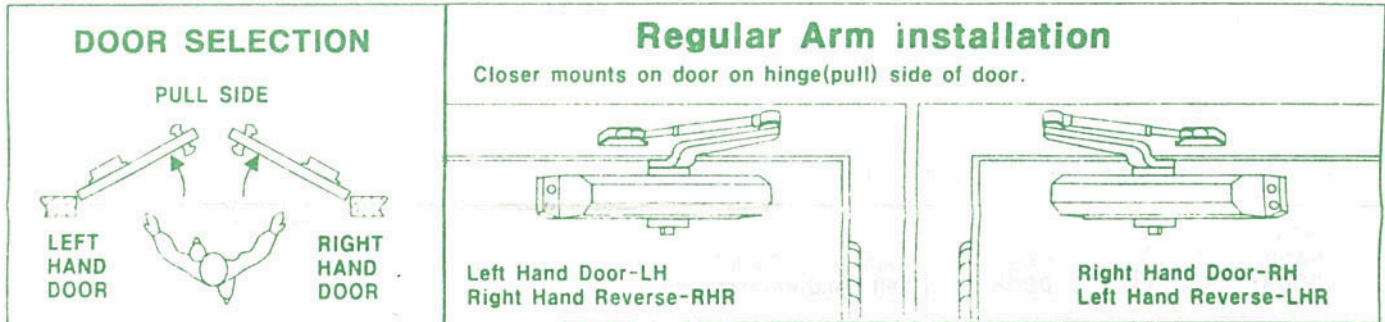


For models DX50, DX80 and DX90 series
DX50series without adjustable spring tension
DX80series without adjustable spring tension
DX90series with adjustable spring tension
Optional: Back Check or Delayed Action

REGULAR ARM (PULL SIDE) Mounting

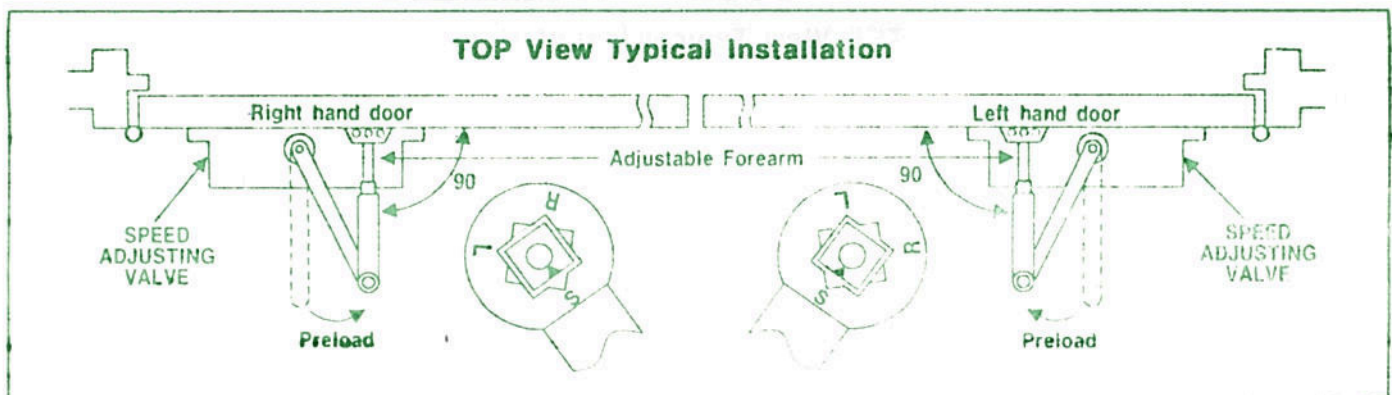


OPENING	DIM A	DIM B
	Model: DX52, DX53 DX82, DX83	Model: DX54, DX55 DX84, DX85, DX90
To 120	6 1/2 (165.1mm)	6 1/2 (165.1mm)
120 ~180	4 (101.6mm)	4 (101.6mm)

- RIGHT HAND DOOR SHOWN
- LEFT HAND DOOR OPPOSITE
- DIMENSIONS ARE IN INCHES(mm)

INSTALLATION SEQUENCE

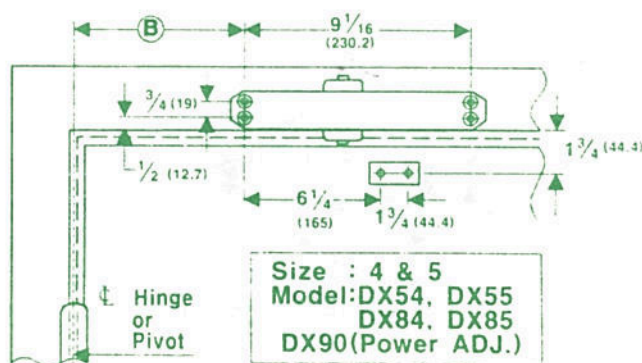
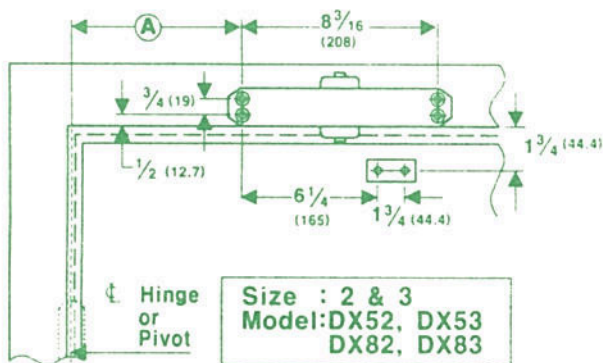
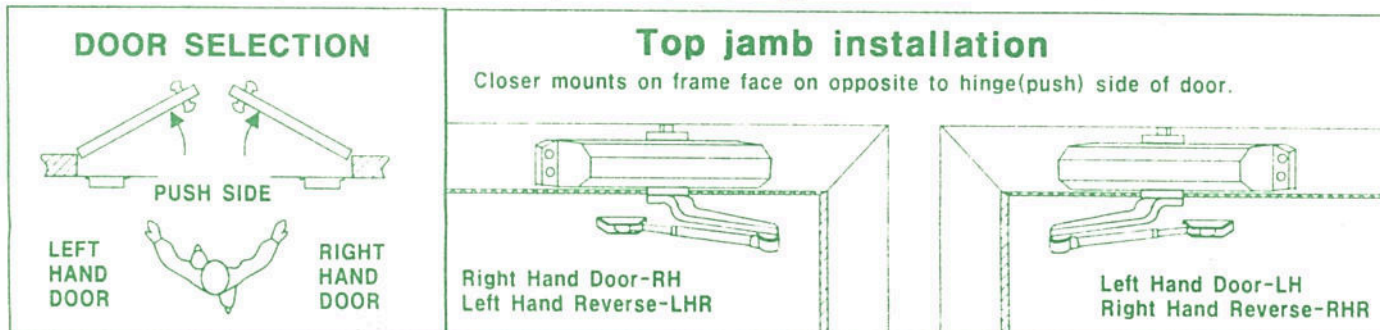
1. Select type of installation desired from above figure and degree of opening from table and use template dimensions shown in above. mark FOUR(4) HOLES ON DOOR for door closer and TWO(2) HOLES ON FRAME for arm shoe.
2. Drill pilot holes in door and frame for #14 all-purpose screws or drill and tap for 1/4-20 machine screws.
3. Install adjustable forearm/arm shoe assembly to frame using screws provided.
4. Install main arm to top pinion shaft using screw provided.
5. Mount closer on door using screws provided. SPEED ADJUSTING VALVE MUST BE POSITIONED TOWARD HINGE EDGE.
6. Adjust length of adjustable forearm so that adjustable forearm is perpendicular to frame when assembled to preloaded main arm(illustration below) Secure forearm to main arm with screw provided.
7. Snap pinion cap over shaft at bottom of closer.
8. Adjust closing speed of door, following instructions as shown page 4.



Installation Instructions

For models DX50, DX80 and DX90 series
 DX50series without adjustable spring tension
 DX80series without adjustable spring tension
 DX90series with adjustable spring tension
 Optional: Back Check or Delayed Action

TOP JAMB (PUSH SIDE) Mounting

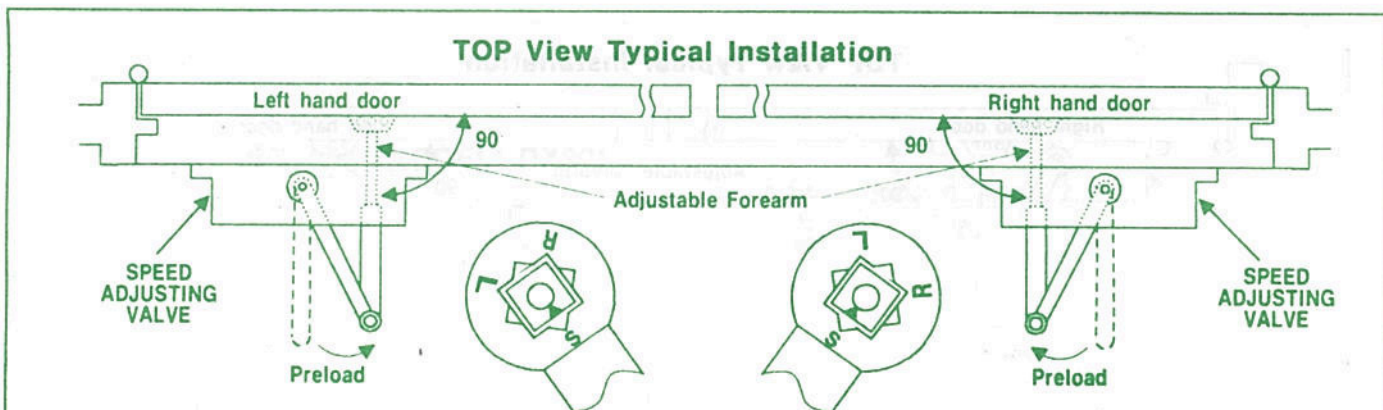


OPENING	DIM (A) Model:DX52, DX53 DX82, DX83	DIM (B) Model:DX54, DX55 DX84, DX85, DX90
To 120"	6 1/2 (165.1mm)	6 1/2 (165.1mm)
120 ~ 180	4 (101.6mm)	4 (101.6mm)

- LEFT HAND DOOR SHOWN
- RIGHT HAND DOOR OPPOSITE
- DIMENSIONS ARE IN INCHES(mm)

INSTALLATION SEQUENCE

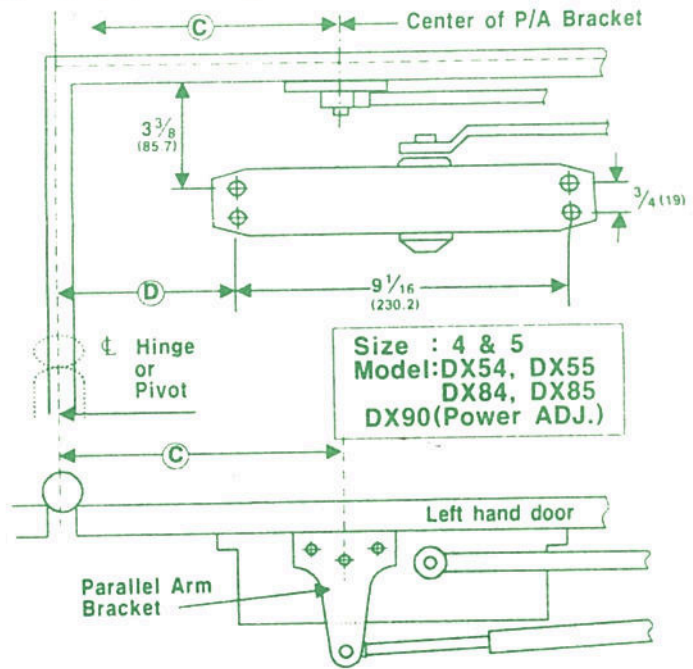
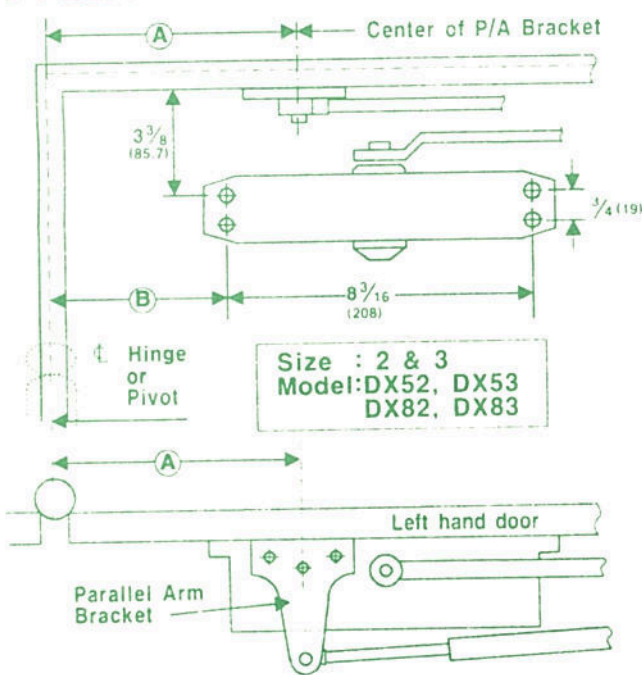
1. Select type of installation desired from above figure and degree of opening from table and use template dimensions shown in above, mark FOUR(4) HOLES ON FRAME for closer and TWO(2) HOLES CN DOOR for arm shoe.
2. Drill pilot holes in door and frame for #14 all-purpose screws or drill and tap for 1/4-20 machine screws.
3. Install adjustable forearm/arm shoe assembly to door using screws provided.
4. Install main arm to top pinion shaft using screw provided.
5. Mount closer body on frame using screws provided. SPEED ADJUSTING VALVE MUST BE POSITIONED TOWARD HINGE EDGE
6. Adjust length of adjustable forearm so that adjustable forearm is perpendicular to frame when assembled to preloaded main arm(illustration below). Secure forearm to main arm with screw provided.
7. Snap pinion cap over shaft at bottom of closer.
8. Adjust closing speed of door, following instructions as shown page 4.



Installation Instructions

For models DX50, DX80 and DX90 series
 DX50series without adjustable spring tension
 DX80series without adjustable spring tension
 DX90series with adjustable spring tension
 Optional: Back Check or Delayed Action

PARALLEL ARM (PUSH SIDE) Mounting

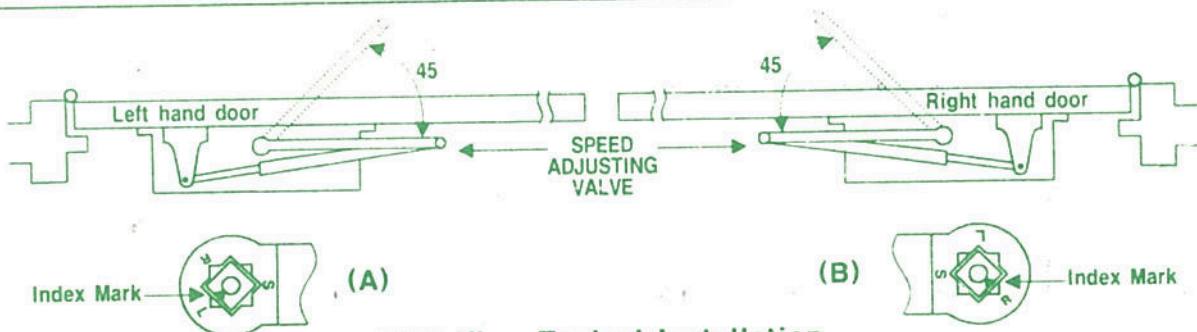


- LEFT HAND DOOR SHOWN
- RIGHT HAND DOOR OPPOSITE
- DIMENSIONS ARE IN INCHES(mm)

OPENING	DIM A		DIM B		DIM C		DIM D	
	Model: DX52, DX82	Model: DX53, DX83	Model: DX52, DX82	Model: DX53, DX83	Model: DX54, DX84, DX90	Model: DX55, DX85	Model: DX54, DX84, DX85, DX90	Model: DX55, DX85, DX90
To 120	10 3/4 (273mm)	7 13/16 (198.4mm)	10 3/4 (273mm)	6 15/16 (176.2mm)				
120 ~ 180	8 3/4 (222.2mm)	5 5/8 (142.9mm)	8 3/4 (222.2mm)	4 3/4 (120.6mm)				

INSTALLATION SEQUENCE

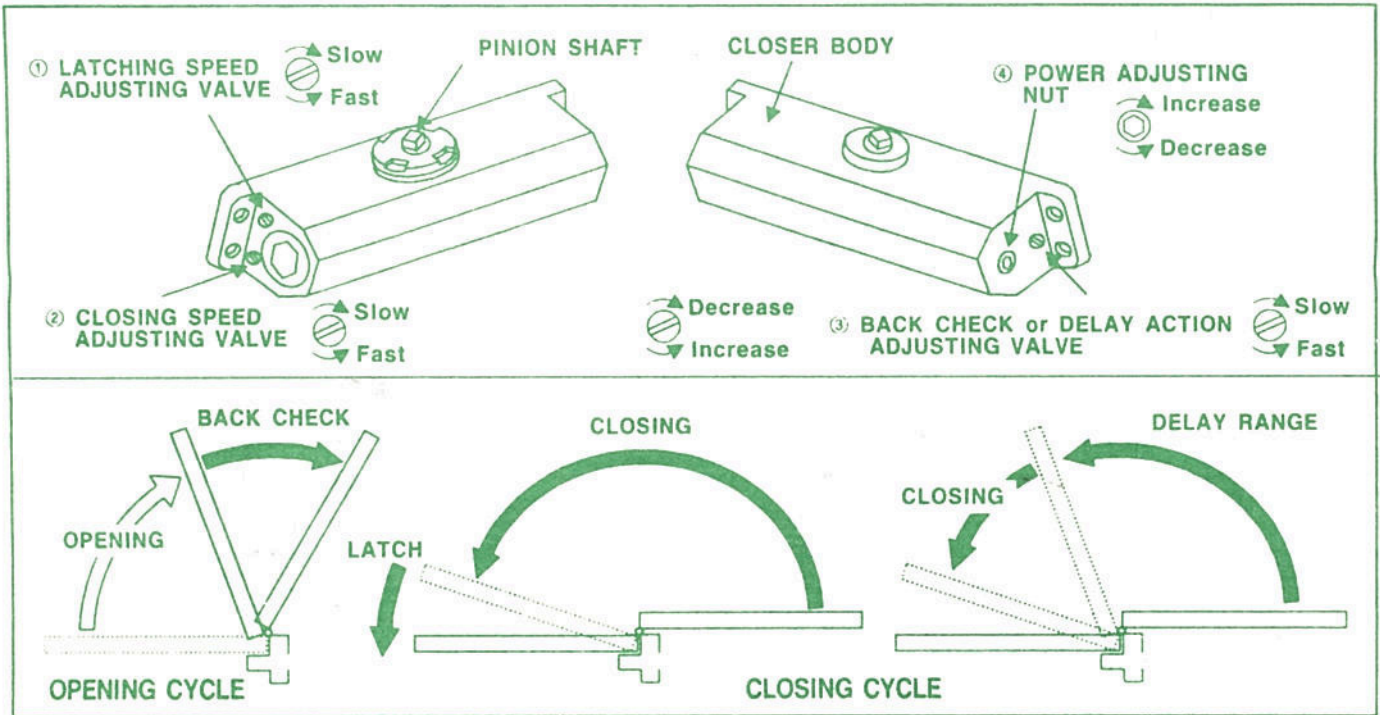
1. Select type of installation desired from above figure and degree of opening from table and use template dimensions shown in above. mark FOUR(4) HOLES ON DOOR for door closer and THREE(3) HOLES underside of frame for bracket.
2. Drill pilot holes in door and frame for #14 all-purpose screws or drill and tap for 1/4-20 machine screws.
3. Mount closer on door using screws provided. SPEED ADJUSTING VALVE MUST BE POSITIONED AWAY FROM HINGE EDGE.
4. Install Parallel Arm Bracket to frame using screws provided.
5. Using a wrench on the square shaft at bottom of closer, rotate shaft approximately 45° toward hinge edge of door. Hold and place main arm of shaft on top of closer at proper index mark as illustrated. FOR LEFT HAND DOOR "L" (illustration "A"). FOR RIGHT HAND DOOR "R" (illustration "B"). Tighten arm screw with lockwasher securely.
6. Remove arm shoe from the forearm and discard (arm shoe is not used for parallel installation) and tighten screw securely.
7. Adjust length of adjustable forearm so that adjustable forearm is parallel to frame.
8. Snap pinion cap over shaft at bottom of closer.
9. Adjust closing speed of door, following instructions as shown page 4.



TOP View Typical Installation

CLOSER ADJUSTMENT

For models DX50, DX80 and DX90 series
 DX50series without adjustable spring tension
 DX80series without adjustable spring tension
 DX90series with adjustable spring tension
 Optional: Back Check or Delayed Action



◆ CLOSING SPEED CONTROL (CLOSING CYCLE)

NOTE: Closing arcs ("CLOSE" and "LATCH") are controlled by two(2) separate speed adjusting valves. Adjust the CLOSING speed first, then adjust the LATCHING speed.

- (1) "CLOSE" speed adjustment is accomplished by full rotation of the speed adjusting valve.
 - Turn the speed adjusting valve CLOCKWISE for SLOWER CLOSE arc closing speed
 - Turn the speed adjusting valve COUNTER-CLOCKWISE for a FASTER CLOSE arc closing speed
- (2) "LATCH" speed adjustment is the same manner as "CLOSING" speed adjustment.

◆ BACK CHECK CONTROL (OPENING CYCLE)

NOTE: These instructions apply only to closers equipped with back check

- (3) - To increase back check intensity, turn back check control valve clockwise.
 - To decrease back check intensity, turn back check control valve counter-clockwise.
 - Never close this valve completely.

◆ DELAY ACTION CONTROL (CLOSING CYCLE)

NOTE: Adjust the CLOSING speed delay action

- (3) - Turn the speed adjusting valve CLOCKWISE for SLOWER CLOSE arc closing speed
 - Turn the speed adjusting valve COUNTER-CLOCKWISE for a FASTER CLOSE arc closing speed

CAUTION!!

Do not turn adjusting valve more than two(2) full turns counter-clockwise from its factory set position, as three adjusting valves could become dislodged from the door closer body, resulting in the loss of internal fluid and failure of the device.

◆ POWER CONTROL (MODEL: DX90)

NOTE: Maximum adjustment is approximately 16 turns

- (4) - To increase opening force and closing force, turn the spring adjusting nut clockwise.
 - To decrease opening force and closing force, turn the spring adjusting nut anti-clockwise.

CAUTION!! Do not adjust the power adjusting nut while door is open.

POWER ADJUSTMENT CHART

CLOSER SIZE	CLOCKWISE TURNS OF ADJUSTING NUT	
	DX90	DX90MF
1	-	0
2	0	3
3	4	8

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This is an excellent hydraulic door closer which will operate perfectly, if you carefully read and follow these mounting and adjustment instructions.

1. Determine the handing of the door from the side of the door where the door closer will be installed.
2. Determine the type of mounting most suitable.

Note that, with a regular or top jamb installation, the door closer will operate at full power.

When using a parallel arm installation, you are decreasing the door closer power by about 25 % to 33 %.

3. After you have determined the type of installation you prefer, consider the desired degree of door opening. There are two possibilities :
 - A. Doors opening to 120 degrees.
 - B. Doors opening to 180 degrees.

Do not mount the closer using the 180 degree door opening position unless the door requires an opening more than 120 degrees. The reason :

Mounting a door closer in the 180 degree door opening position reduces the door closer power by approximately 1/3.

4. When mounting the closer, do not deviate from the exact enclosed template on any of the different types of installation. By doing so, you will upset the perfect and efficient operation of the door closer.
5. After mounting the closer exactly in accordance with the template requirements of the enclosed installation instructions, now adjust the closer exactly in accordance with the installation instructions.

Here are more very important and helpful hints :

1. Be sure to match up the letters on the main arm with the letters on the door closer spindle. Otherwise, the closer will not operate properly.
2. Do not unscrew any of the regulating valves too much. Otherwise, you can cause oil leakage.

In Conclusion :

If you follow these instructions and carefully first read and then follow the complete installation and mounting instructions enclosed, this closer will operate perfectly and efficiently.

Do not try to install any door closer or any other machine operating product without first fully reading the mounting and installation instructions.