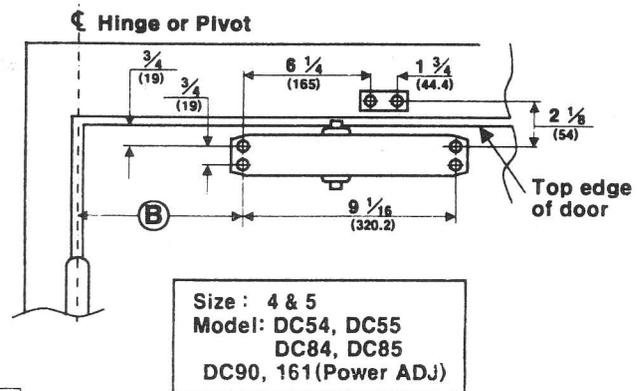
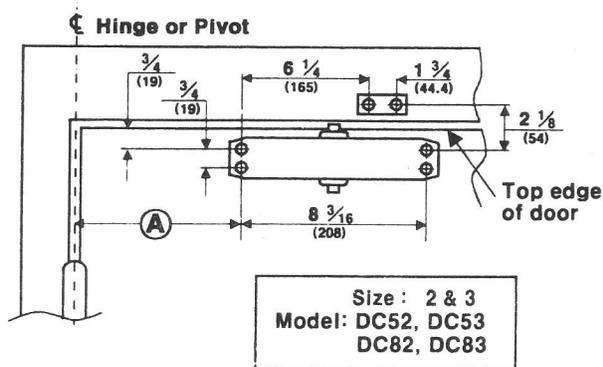
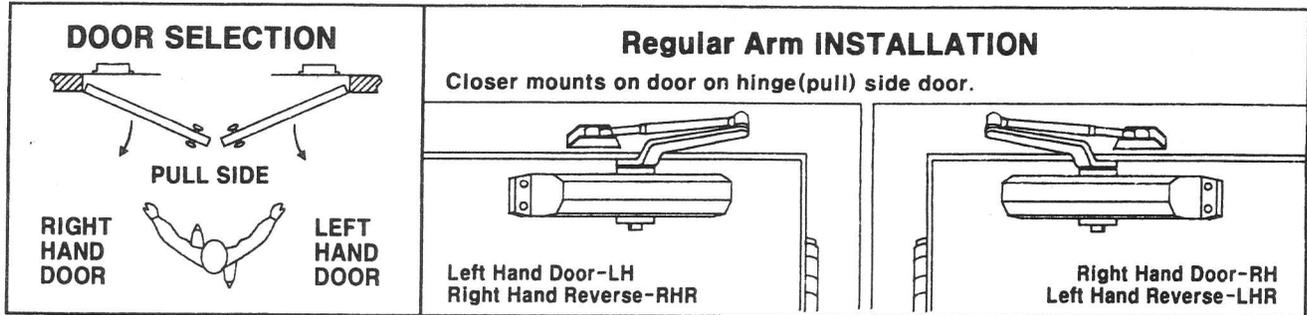


Installation Instructions

For models DC50, DC80, DC90 and DC161 series
 DC50series without adjustable spring tension
 DC80series without adjustable spring tension
 DC90series with adjustable spring tension
 DC161series with adjustable spring tension
 Optional: Back Check or Delayed Action

REGULAR ARM (PULL SIDE) Mounting

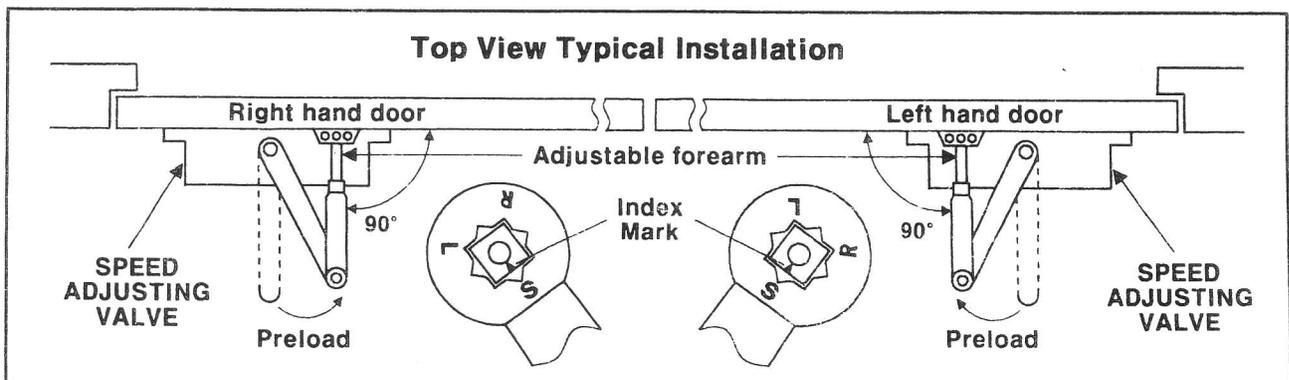


OPENING	DIM. A MODEL DC52, DC53 DC82, DC83	DIM. B MODEL DC54, DC55 DC84, DC85 DC90, DC161
To 120°	6 1/2 (165.1)	6 1/2 (165.1)
120° ~ 180°	4 (101.6)	4 (101.6)

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

INSTALLATION SEQUENCE

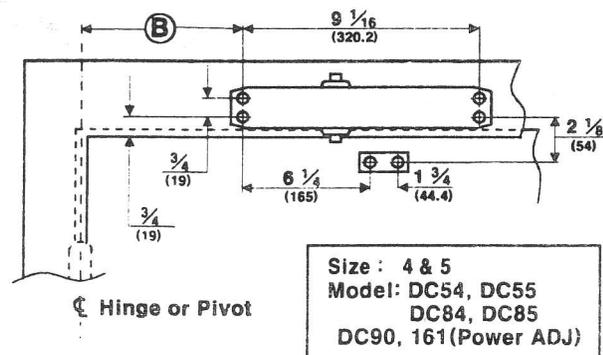
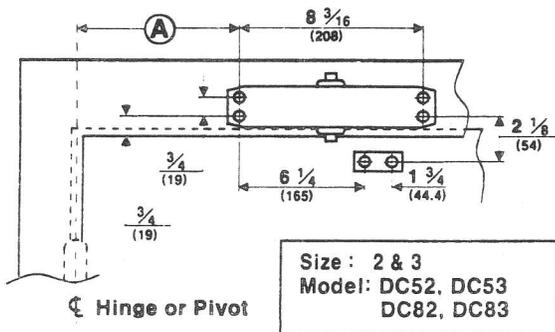
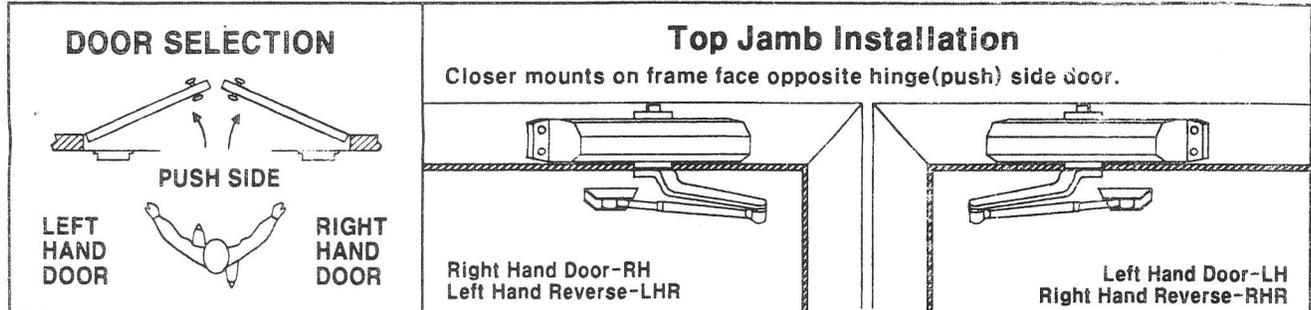
1. Select type of installation desired from above figure and degree of opening from table and use template dimensions shown in above, mark FORE(4) HOLES ON DOOR for door closer and TWO(2) HOLES ON FRAME for arm shoe.
2. Drill pilot holes in door and frame for #14 all-purpose screws or drill and tap for 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 DC50, DC80, DC90 and DC161 series
 DC50series without adjustable spring tension
 DC80series without adjustable spring tension
 DC90series with adjustable spring tension
 DC161series with adjustable spring tension
 Optional: Back Check or Delayed Action

TOP JAMB (PUSH SIDE) Mounting

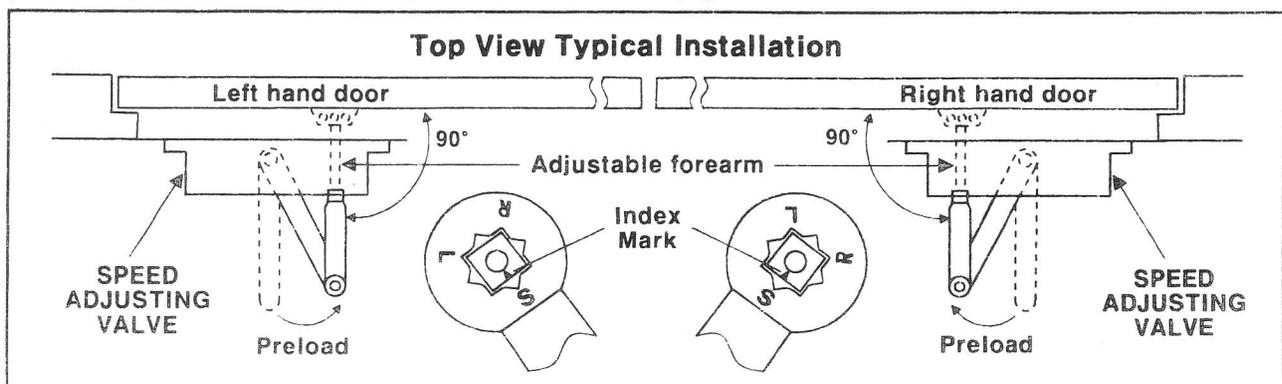


OPENING	DIM. A MODEL DC52, DC53 DC82, DC83	DIM. B MODEL DC54, DC55 DC84, DC85 DC90, DC161
To 120°	6 1/2 (165.1)	6 1/2 (165.1)
120° ~ 180°	4 (101.6)	4 (101.6)

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

INSTALLATION SEQUENCE

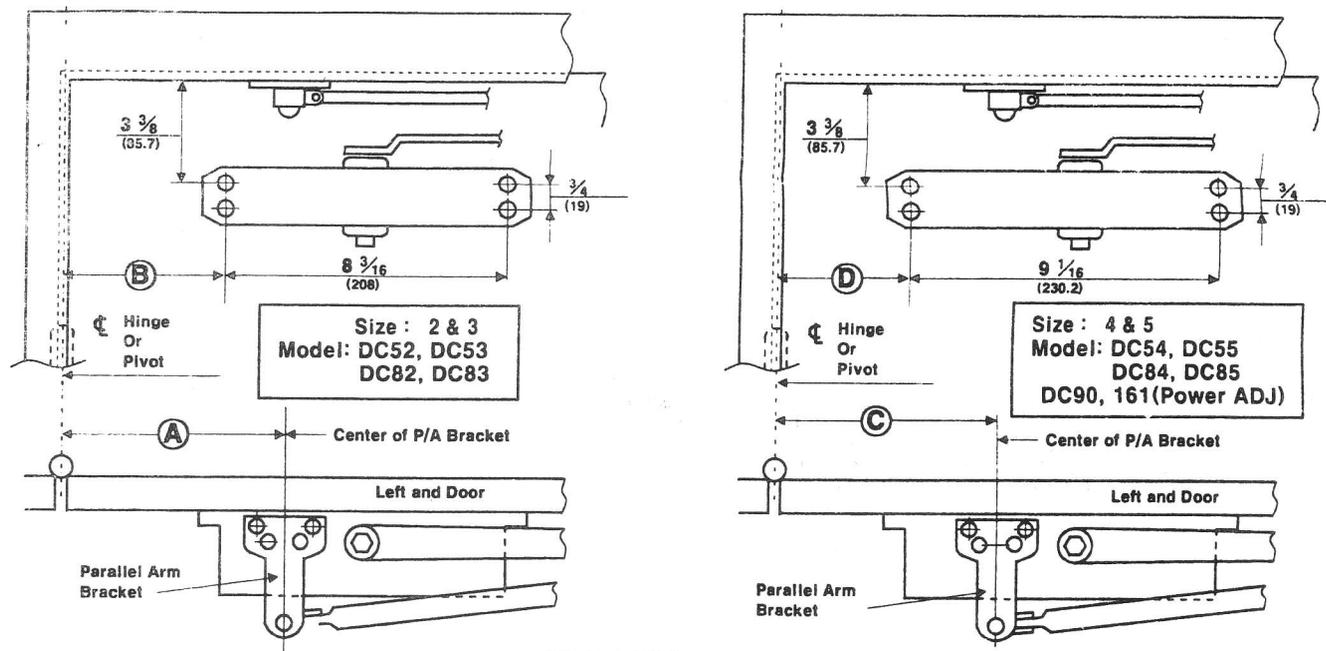
1. Select type of installation desired from above figure and degree of opening from table and use template dimensions shown in above, mark FORE(4) HOLES ON FRAME for door closer and TWO(2) HOLES ON DOOR for arm shoe.
2. Drill pilot holes in door and frame for #14 all-purpose screws or drill and tap for 1/4-20 machine screws.
3. Install adjustable forearm/arm shoe assembly to frame using screws provided.
4. Install main arm to top pinion shaft using screw provided.
5. Mount closer 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 door 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 DC50, DC80, DC90 and DC161 series
 DC50series without adjustable spring tension
 DC80series without adjustable spring tension
 DC90series with adjustable spring tension
 DC161series with adjustable spring tension
 Optional: Back Check or Delayed Action

PARALLEL ARM (PUSH SIDE) Mounting

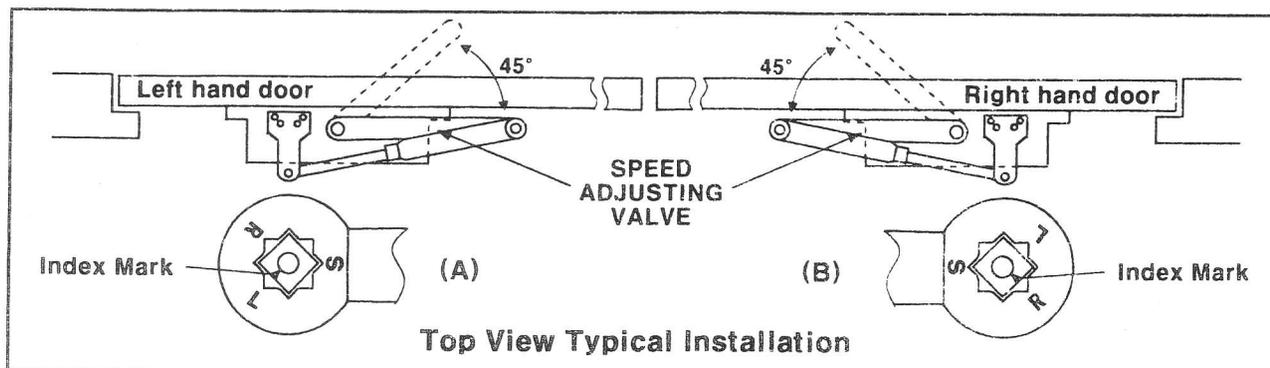


- RIGHT HAND DOOR SHOWN.
- LEFT HAND DOOR OPPOSITE.
- DIMENSIONS ARE IN INCHES (mm)

OPENING	DIM. A MODEL DC52, DC53 DC82, DC83	DIM. B MODEL DC52, DC53 DC82, DC83	DIM. C MODEL DC54, DC55 DC84, DC85 DC90, DC161	DIM. D MODEL DC54, DC55 DC84, DC85 DC90, DC161
To 120°	10 3/4 (273)	7 13/16 (198.4)	10 3/4 (273)	6 15/16 (176.2)
120° ~ 180°	8 3/4 (22.2)	5 5/8 (142.9)	8 3/4 (22.2)	4 3/4 (120.6)

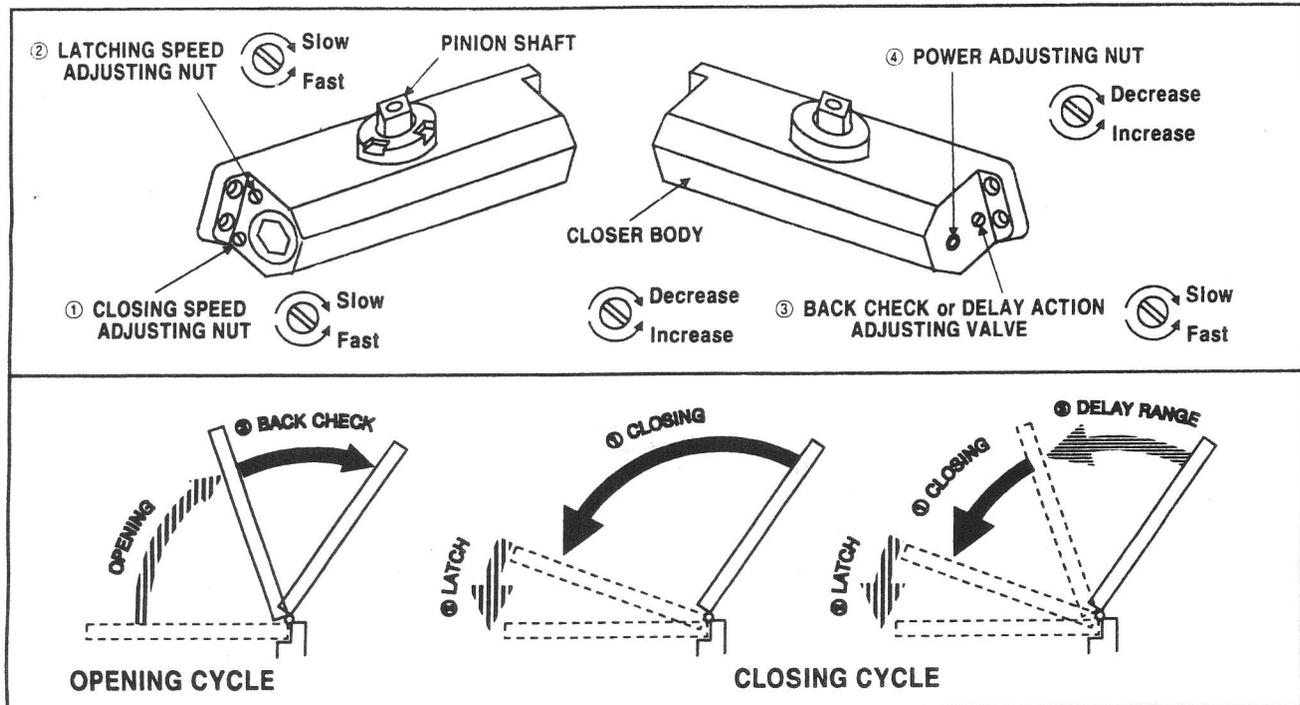
INSTALLATION SEQUENCE

1. Select type of installation desired from above figure and degree of opening from table and use template dimensions shown in above, mark FORE(4) HOLES ON door for door closer and FORE(4) HOLES ON 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.



CLOSER ADJUSTMENT

For models DC50, DC80, DC90 and DC161 series
 DC50series without adjustable spring tension
 DC80series without adjustable spring tension
 DC90series with adjustable spring tension
 DC161series with adjustable spring tension
 Optional: Back Check or Delayed Action



◆ CLOSING SPEED CONTROL (CLOSING CYCLE)

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

- ① "CLOSER" 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 positing.
 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: DC90, DC161)

NOTE: Maximum adjustment is approximately 16 turns

- ③ - 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 counter-clockwise.

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

POWER ADJUSTMENT CHART

CLOSER SIZE	CLOCKWISE TURNS OF ADJUSTING NUT	
	DC90,161	DC90BF,161BF
1	-	0
2	0	3
3	4	8
4	10	14
5	16	-