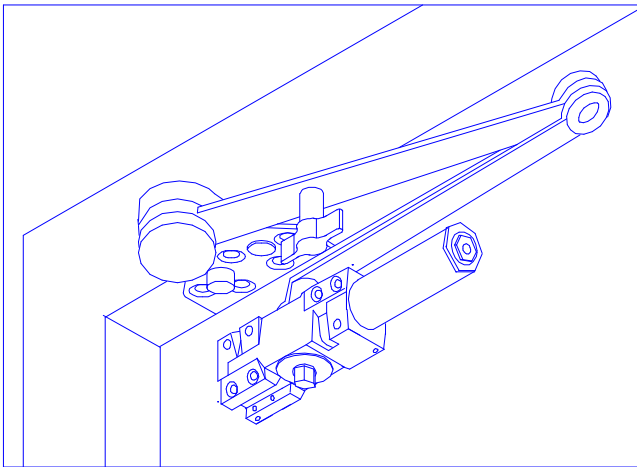


# MODEL 416

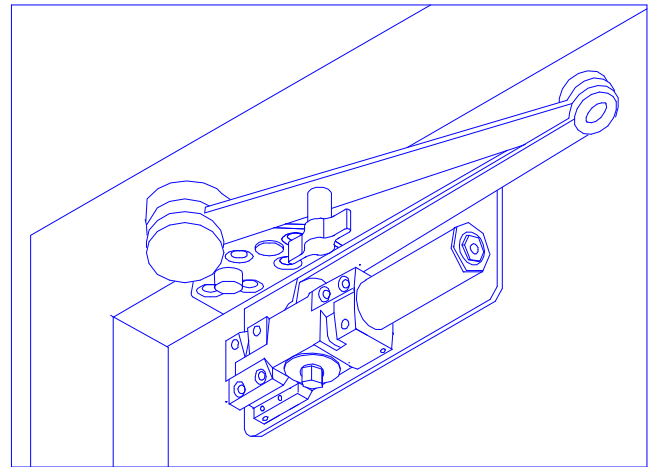
## ADJUSTABLE POWER DOOR CLOSER

### INSTALLATION & INSTRUCTION SHEET

#### PUSH SIDE MOUNTED (PARALLEL ARM) DSHO



standard installation



install on drop plate:  
For narrow rail installation

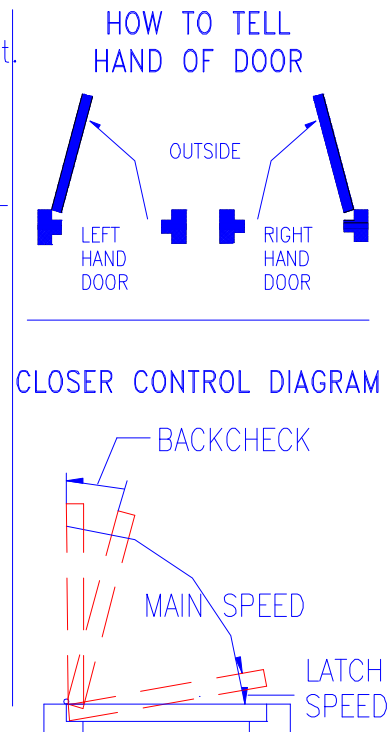
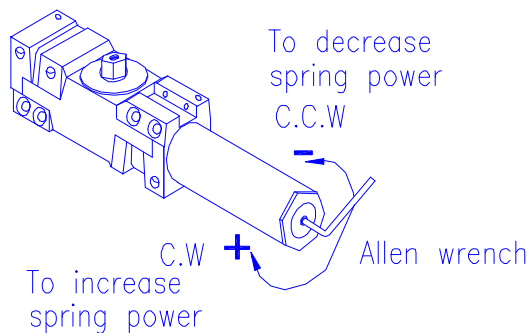
#### GENERAL NOTES

The 416 SERIES closer is non-handed and designed to meet entrance accessibility requirements. Before installation, determine hand of door first. Refer to the drawing (right), then the proper installation template.

The 416 SERIES closer can be adjusted to handle all exterior doors up to 4'0" and interior doors up to 5'0" wide. Adjust the spring power as shown **before installing the closer**. Turn the spring adjustment nut clockwise or counter-clockwise the required number of turns to match door width as indicated in chart below.

MAXIMUM DOOR WIDTH		FULL TURNS REQUIRED
EXTERIOR DOORS	INTERIOR DOORS	
	5lb-f *	5 TURNS C.C.W
8.5lb-f *	34"	2 TURNS C.C.W
30"	38"	0 TURNS
36"	48"	5 TURNS C.W
42"	54"	10 TURNS C.W
48"	60"	15 TURNS C.W

\* Opening Force on 36" Door

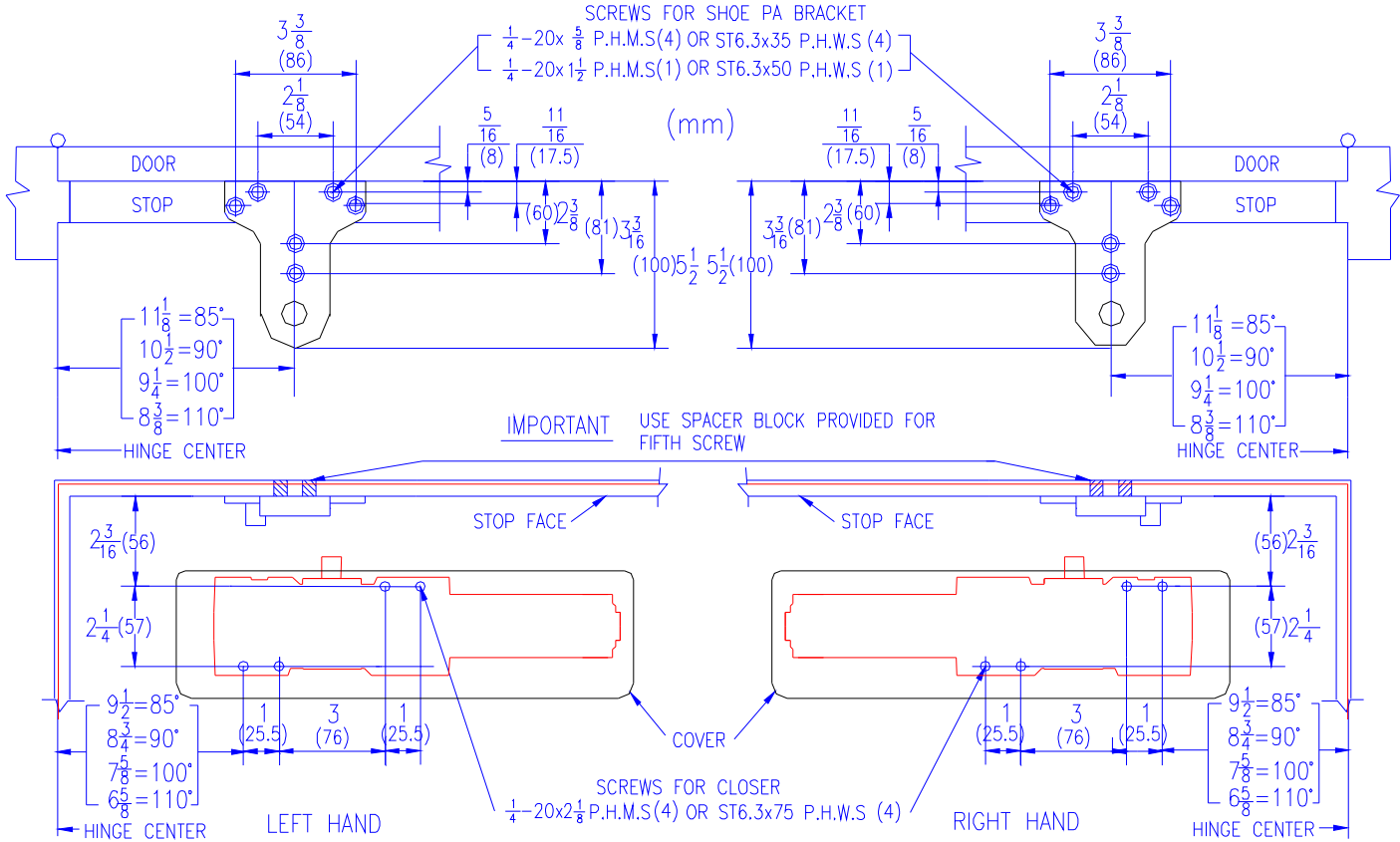


**IMPORTANT**—When adjusting spring power **DO NOT** exceed the maximum number of turns in either direction! Beyond either maximum number of turns may damage closer.

# MOUNTED STOP FACE (PUSH SIDE) PARALLEL ARM

TOP RAIL LESS THAN 5-1/2"; DROP PLATE WILL BE REQUIRED.  
(AVAILABLE FROM DEALER) MAXIMUM OPENING 110°

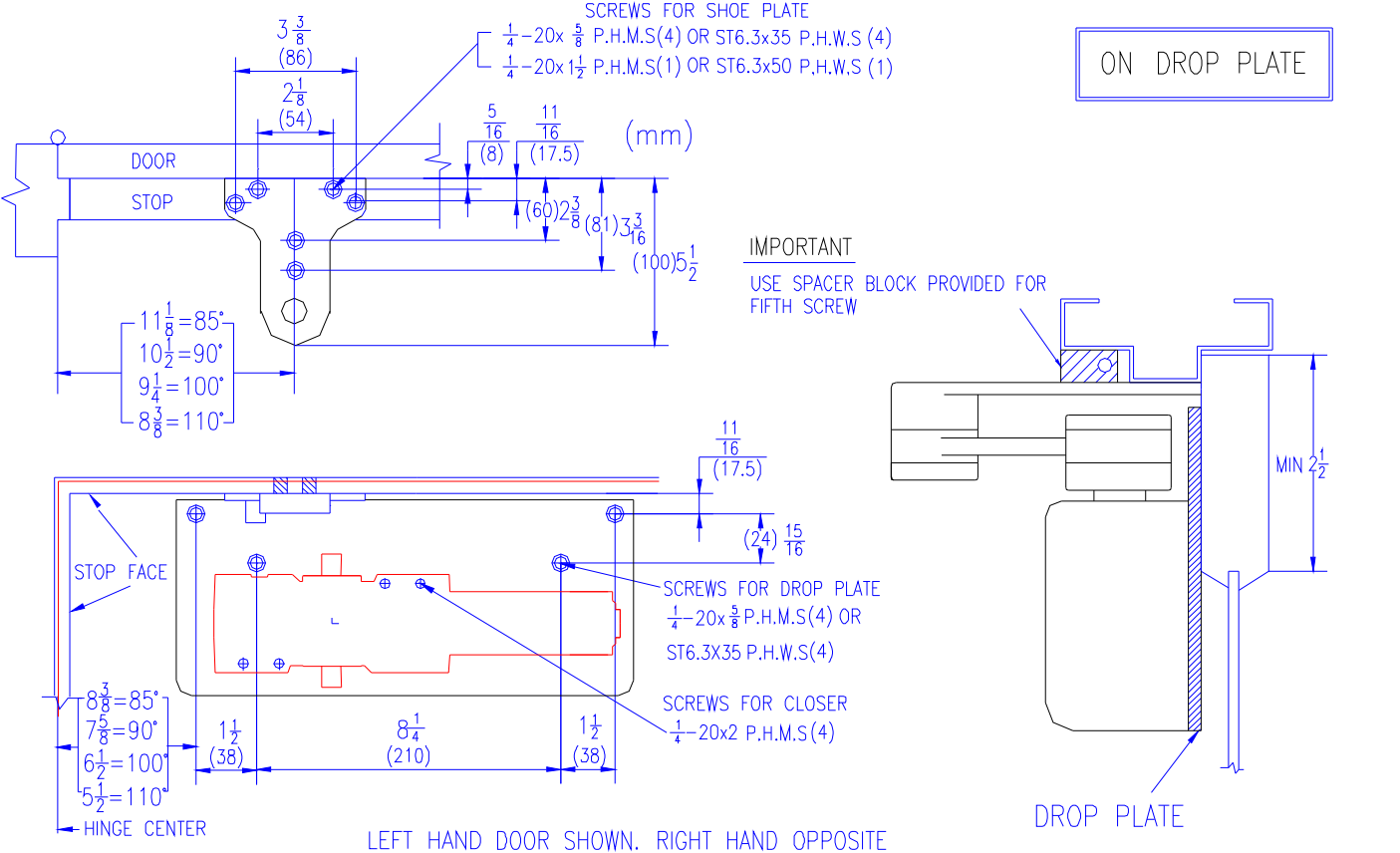
PUSH SIDE MOUNTING



IMPORTANT USE SPACER BLOCK PROVIDED FOR FIFTH SCREW

BEFORE INSTALLING MOUNTED STOP FACE (PARALLEL ARM) TURN BACKCHECK SELECTOR VALVE (FOUND ON OPPOSITE SIDE OF CLOSER FROM REGULATING SCREW SIDE) ALL THE WAY IN (CLOCKWISE)!

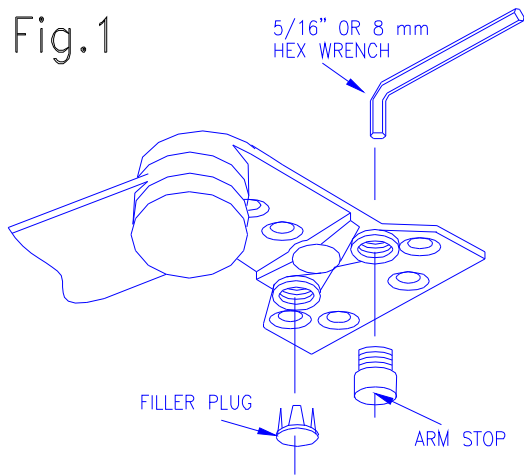
ON DROP PLATE



IMPORTANT USE SPACER BLOCK PROVIDED FOR FIFTH SCREW

# RIGHT HAND ASSEMBLY SHOWN HANDING & ASSEMBLY OF D.S./DSHO SHOE

Fig.1

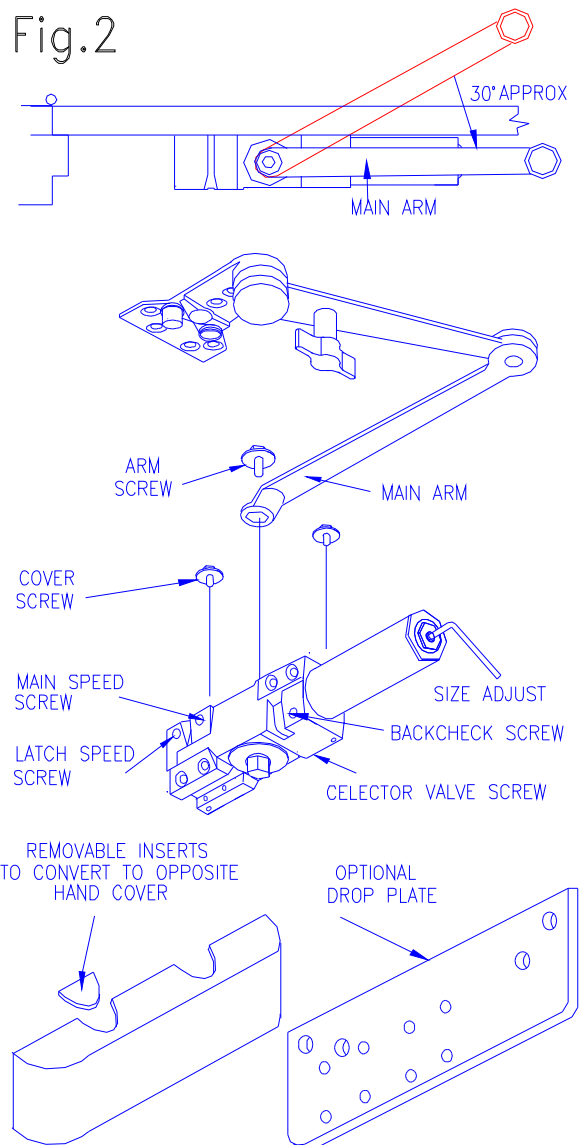


**CAUTION**

IMPROPER INSTALLATION OR REGULATION MAY RESULT IN PERSONAL INJURY OR PROPERTY DAMAGE.

FOLLOW ALL INSTRUCTIONS CAREFULLY. FOR QUESTIONS CONTACT DEALER

Fig.2



Both D.S./DSHO shoes must be "handed" to match door BEFORE mounting. See Fig.1

**For Left Hand doors:** All shoes are shipped assembled for left hand doors. Insert 5/16" (8mm) Hex wrench into arm stop and turn counter-clockwise to seat stop as tightly as possible.

**For Right Hand doors:** (see illustration) Push filler plug out of shoe. Using a 5/16" (8mm) Hex wrench, turn arm stop clockwise to remove from shoe. Thread arm stop in hole marked "R". Turn wrench counter-clockwise, seating stop as tightly as possible. Insert filler plug into other hole.

## INSTALLATION & ADJUSTMENT INSTRUCTIONS

(LEFT HAND SHOWN - RIGHT HAND OPPOSITE)

BEFORE INSTALLING THE ARM -TURN BACKCHECK SELECTOR VALVE(on back of closer)ALL THE WAY IN.

1. Adjust spring power to match door width as indicated by chart on front page.
2. Select proper templating on opposite page, based on degree of opening/dead stop. The closer and arm holes must be located for same degree of opening /dead stop. Drill and/ or tap mounting holes in door and head jamb.
3. Attach complete arm to closer, as shown at left . Arm will be at about a 30° angle to closer body. Fasten with arm shaft screw. The arm will appear to be in an incorrect position. This is to accommodate the pre-load required for parallel arm mounted door closers. See Fig.2 .
4. Mount closer on door, using fasteners provided. NOTE: arm will provide some resistance.
5. Swing door open about 45°. Mount shoe to frame stop per proper templating on opposite page. Be sure to install the "fifth" screw. if stop is not wide enough, use spacer block provided.

## REGULATION

**CAUTION** DO NOT BACK VALVES OUT OF CLOSER OR A LEAK WILL RESULT

The 416 series closer has been regulated prior to If adjustments are necessary,

**CLOSING SPEED:** See Closer Control Diagram on page 1. To adjust Main Speed, turn reg.screw clockwise to decrease or counter-clockwise to increase. To adjust Latch Speed, turn reg.screw clockwise to decrease or counter-clockwise to increase. Reg.screw locations are shown at left and on label.

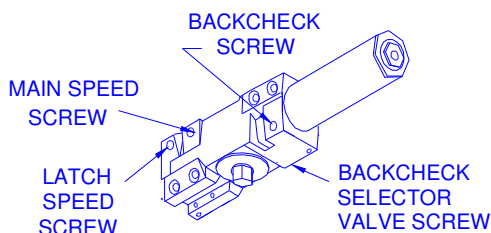
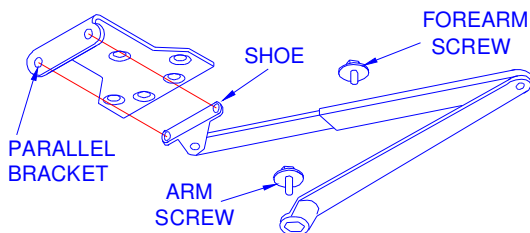
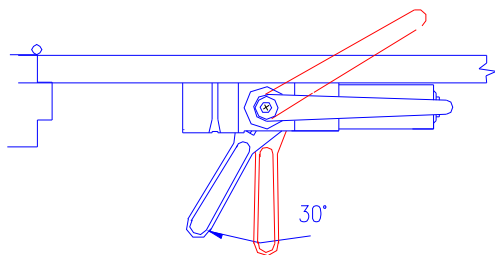
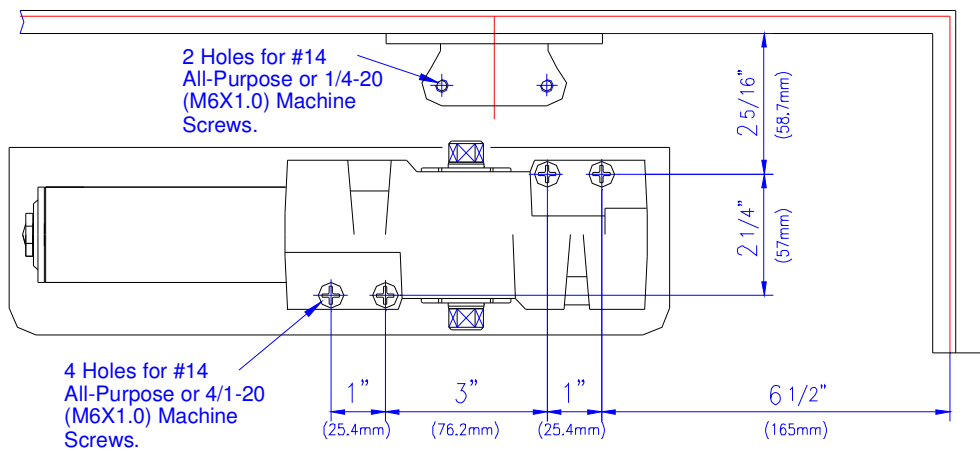
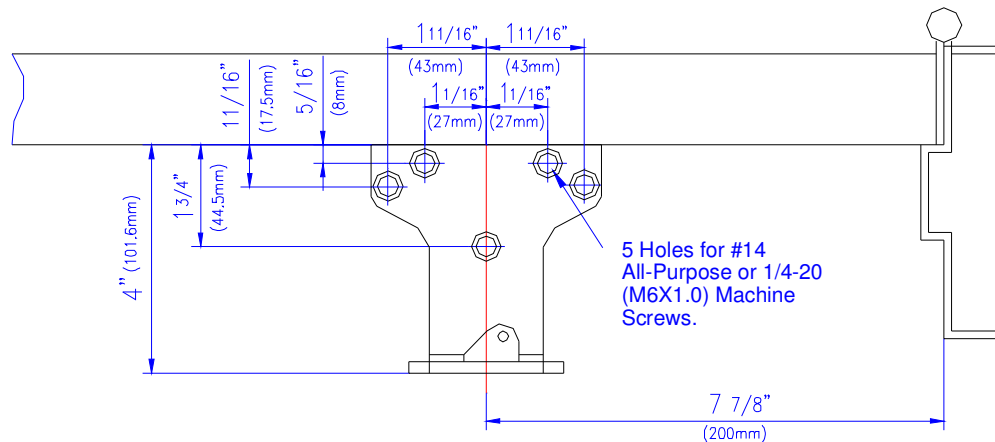
**BACKCHECK:** is essential for proper operation of Cush-Stop. Use enough backcheck to prevent arm from striking arm stop with impact. To increase resistance, turn reg.screw clockwise.

-DO NOT USE ABRUPT BACKCHECK!-

6. Attach cover: place cover insert into proper slots for either R.H.or L.H.door. Place cover over closer and hold against door while tightening cover screws firmly.



# PARALLEL ARM INSTALLATION (ALSO APPLICABLE FOR EXTRA DUTY ARM) CLOSER MOUNTED ON DOOR ON PUSH SIDE



1. Before installation, (parallel arm), turn Back Check selector valve (found on the opposite side of closer) ALL THE WAY IN (CLOCKWISE).
2. Adjust spring power to match door width as indicated by chart on page 1.
3. Mount closer on door as dimensions shown. Tube end toward latch. If pivots are used, locate closer and parallel bracket from CENTERLINE OF PIVOT.
4. Place open end wrench on bottom shaft and turn toward hinge jamb about 30° and then place main arm on top shaft, insert arm screw into top of shaft and tighten.
5. Attach parallel bracket on frame as dimensions shown.
6. Attach rod and shoe to parallel bracket as shown.
7. Insert rod in forearm, and then insert main arm to closer parallel to door. Then insert forearm set screw and tighten.  
(IF HOLD OPEN ARM IS USED, THE NUT IS ON THE TOP FOR RH DOOR AND BOTTOM FOR LH DOOR)

## REGULATION:

A 'Normal' closing time from 90° open position to door stop position is 4-6 secs, evenly divided between main swing speed and latch swing speed. Use socket key (furnished) to adjust speed. To slow main speed of door, turn regulating screw nearest shaft clockwise. To slow latch speed, turn regulating screw nearest hinge clockwise.

## BACK CHECK

To increase back-check force, turn regulating screw nearest hinge clockwise. DO NOT USE ABRUPT BACKCHECK OR EXPECT DOOR CLOSER TO ACT AS A DOOR STOP.

## COVER

Place insert in proper cutout, then push cover against door frame. Tighten both cover screw securely.

## HOLD OPEN ADJUSTMENT

Loose adjusting nut, open door to desired hold open position and tighten nut. Do not permit door to swing while hold open is setting.

