

**20 PT STEM EXTENSION KIT A  
FOR HANDLES: 503 & 505**

**NOTE: CAN BE USED ON ALL SHUT OFFS, 2-WAY & 3-WAY VALVES**

**EXPLODED VIEW**

**ASSEMBLED VIEW**

LONG 1-1/2"  
STEM EXTENSION (A)  
PART # 77.01.307

THREADED SHORT 1-1/8"  
STEM EXTENSION (B)  
PART # 77.03.609

ALL THREAD  
EXTENSION 1-1/2"  
PART # 88.30.042

LOCKING JOINT NUT  
PART # 88.30.043

9/16" X 3"  
ALL THREAD TUBE  
PART # 88.30.047

LOCKING WASHER  
PART # 88.30.033

METAL WASHER  
PART # 88.30.165

STANDARD 20 PT  
IN WALL STEM EXTENSION  
PART # 88.30.048.20



← **LOCTITE 680**

**NOTE: EXTENSION  
KIT USES EITHER THE  
LONG (A)  
OR SHORT (B)  
STEM EXTENSION  
NOT BOTH**



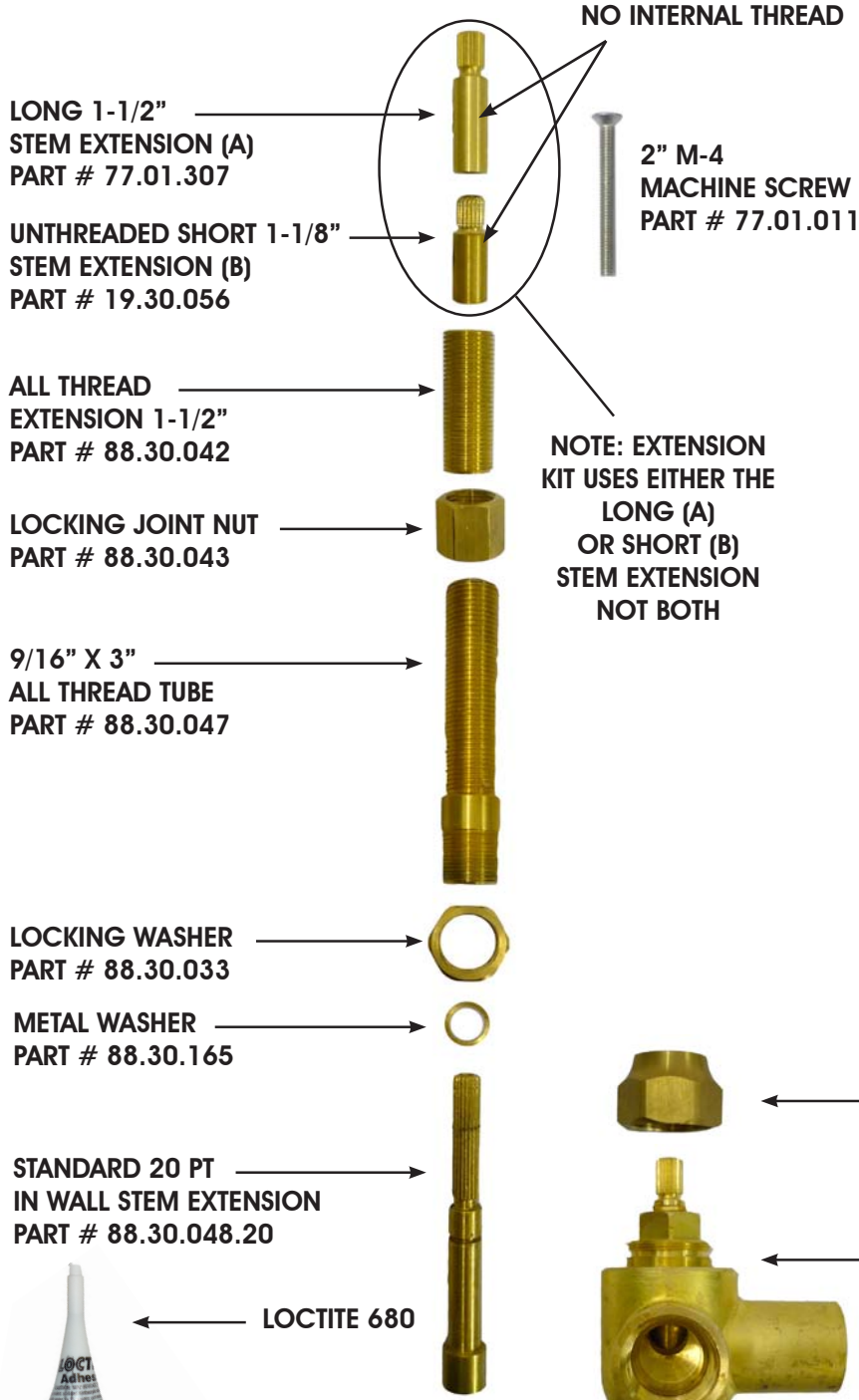
← **M-24 CAP NUT  
PART # 88.30.053**



← **VALVE BODY**

**20 PT STEM EXTENSION KIT B**  
**PART # 88.30.049T.20**  
**FOR HANDLES: 500, 501, 503, 504, 508, 509, 510, 511, 512, & 516**  
**NOTE: CAN BE USED ON ALL SHUT OFFS, 2-WAY & 3-WAY VALVES**

**EXPLODED VIEW**



**ASSEMBLED VIEW**



**20 PT STEM EXTENSION KIT C**  
**PART # 88.30.049.20**  
**FOR HANDLES: 502, 505, 515**  
**NOTE: CAN BE USED ON ALL SHUT OFFS, 2-WAY & 3-WAY VALVES**

**EXPLODED VIEW**

**ASSEMBLED VIEW**

UNTHREADED SHORT 1-1/8"  
STEM EXTENSION (B)  
PART # 19.30.056

← COMES WITH  
M-4 INTERNAL THREAD

ALL THREAD  
EXTENSION 1-1/2"  
PART # 88.30.042

LOCKING JOINT NUT  
PART # 88.30.043

9/16" X 3"  
ALL THREAD TUBE  
PART # 88.30.047

LOCKING WASHER  
PART # 88.30.033

METAL WASHER  
PART # 88.30.165

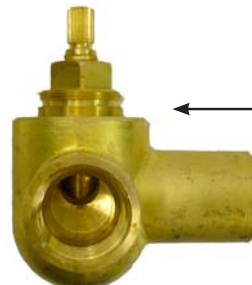
STANDARD 20 PT  
IN WALL STEM EXTENSION  
PART # 88.30.048.20



← LOCTITE 680



← M-24 CAP NUT  
PART # 88.30.053



← VALVE BODY

## TYPE 1 HANDLE SECURING: SET SCREW FROM THE SIDE

(See accompanied figures on drawing no. ST02i-015)

### SCENARIO 1:

STEM-EXTENSION MOUNTED TOO HIGH (figure 2)

1. Find out the correct installed height for the stem extension.
2. Mark a line on all-thread  $\frac{1}{2}$ " below specified installed height and remove all-thread. Cut off at this line (figure 3).
3. Cut stem extension to specified installed height (figure 4).
4. Replace all-thread (figure 5).
5. Mount escutcheon and handle.
6. Secure handle with #8-32 set screw on the side (figure 6).

### SCENARIO 2:

STEM-EXTENSION MOUNTED TOO LOW (figure 8)

1. Determine the extra length of stem extension needed to meet the specified installed height.
2. Calculate the number of short stem extensions needed to glue on the stem extension to achieve the correct install height.
  - a) If this needed length happens to be  $\frac{1}{2}$ " increments, then stack and glue the short stem extensions (each will increase the height by  $\frac{1}{2}$ " ), as many as needed, onto the stem extension to obtain the specified installed height.

**For example:** If the extra height needed is 1", then stack two stem extension adapters to make up for this height deficit (figure 9).
  - b) If the make-up length is somewhere between  $\frac{1}{2}$ " increments, then round this length up to the next  $\frac{1}{2}$ ", and cut the difference in length (between the rounded up number and the measured number) off from the stem extension.

**For example:** The measured extra height needed is  $\frac{5}{8}$ " (figure 10). Round this number up to the nearest  $\frac{1}{2}$ "

Stack and glue 2 stem extension adapters to make up for the 1" needed.

3. If the valve is installed too deep in the wall that the escutcheon is unable to screw onto the all-thread, then use the 2" long all-thread extender to increase the all-thread length (figure 13). Cut off, if necessary, either the all-thread and/or the all-thread extender so that when combined, the height is about 1/2" below the specified installed height (figure 14).
4. Mount escutcheon and handle.
5. Secure handle with M4 X 0.7mm screw(figure 15).

# TYPE 1 - SCENARIO 1

Figure 1

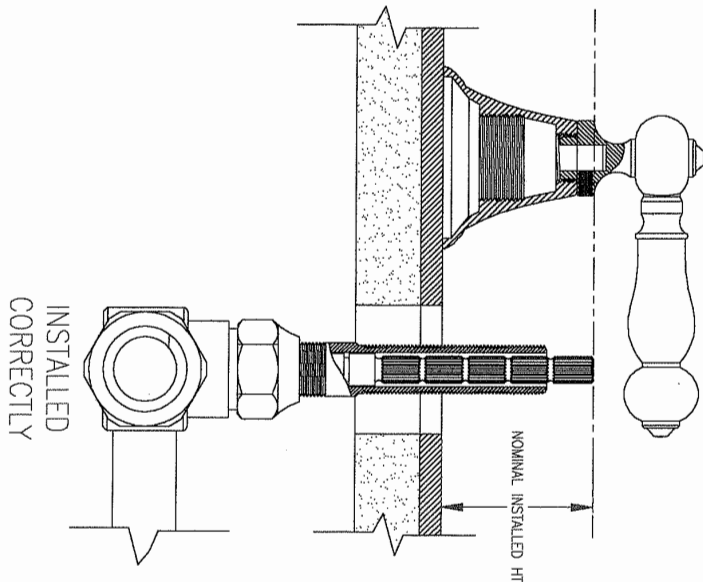


Figure 2

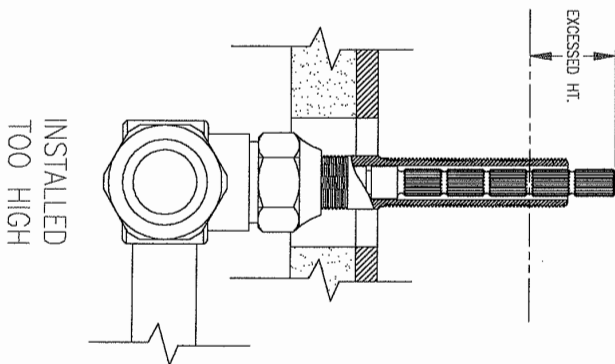
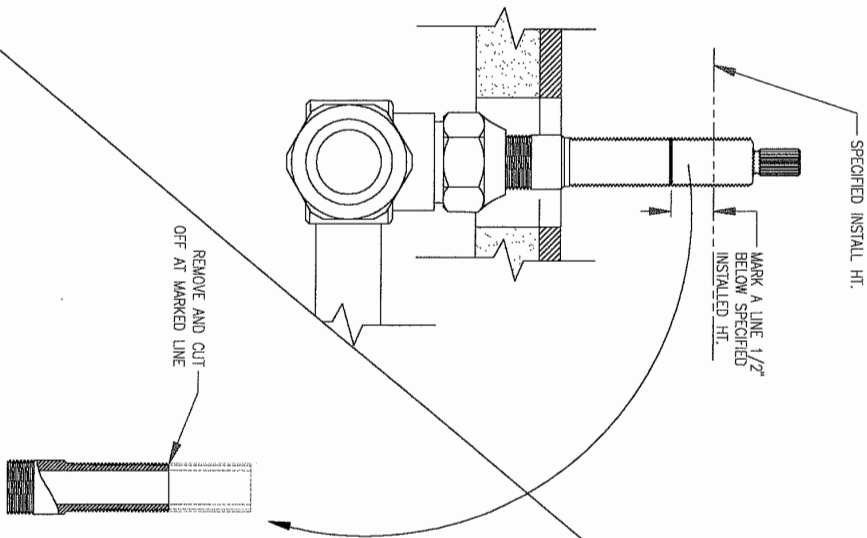


Figure 3



SCENARIO 1: STEM EXTENSION INSTALLED TOO HIGH

TYPE 1 HANDLE: SECURING HANDLE BY SET SCREW FROM SIDE

DWG NO.  
ST02i-015

DRAWN DATE:  
02/07/97

SHEET:  
1 OF 5



# TYPE 1 - SCENARIO 1

Figure 4

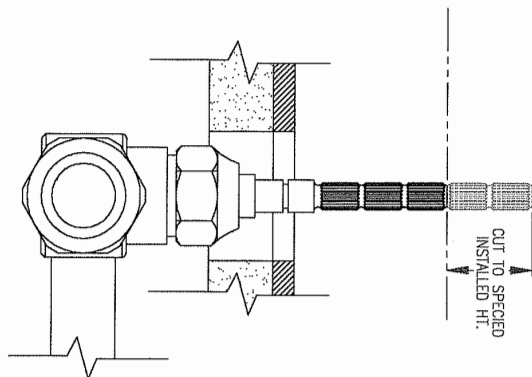


Figure 5

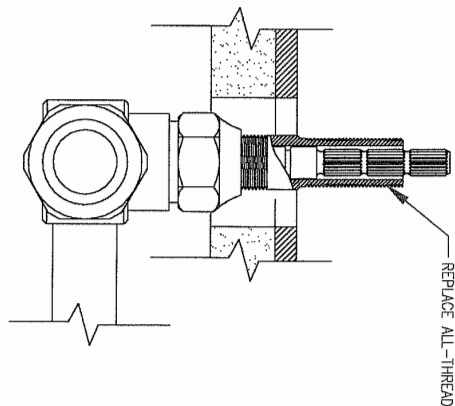
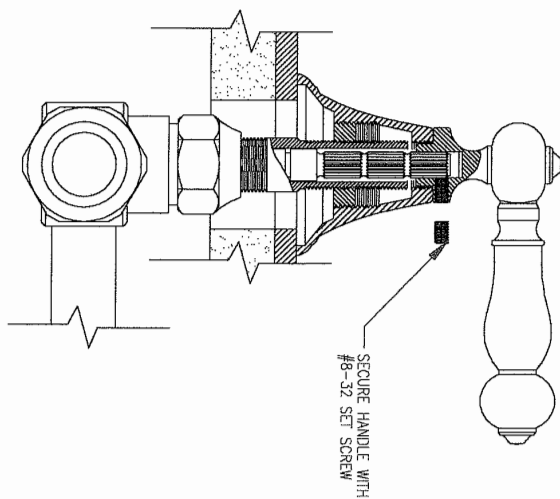


Figure 6



SCENARIO 1: STEM EXTENSION INSTALLED TOO HIGH

DWG. NO.  
ST02i-015

DRAWN DATE:  
02/07/97

TYPE 1 HANDLE: SECURING HANDLE BY SET SCREW FROM SIDE

SHEET:  
2 OF 5

# TYPE 1 - SCENARIO 2

Figure 7

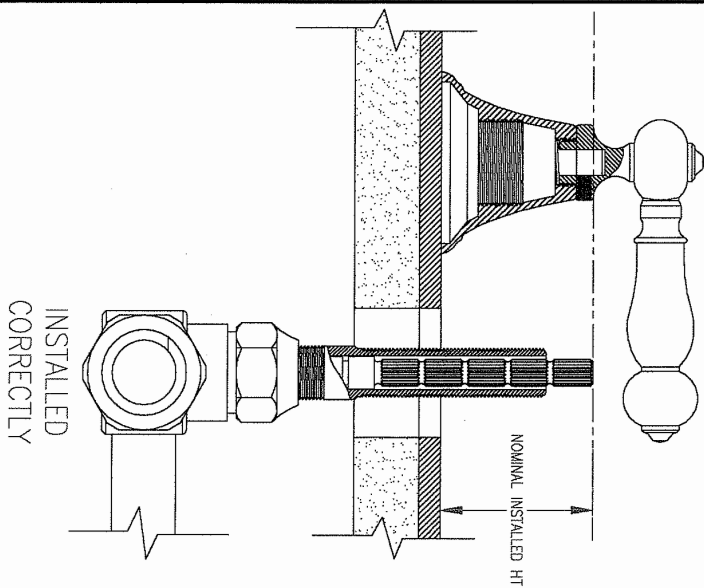


Figure 8

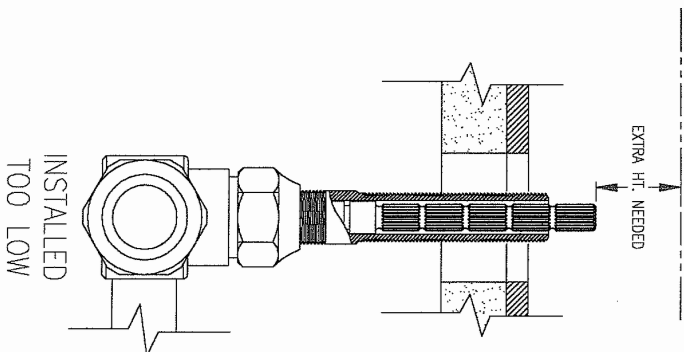
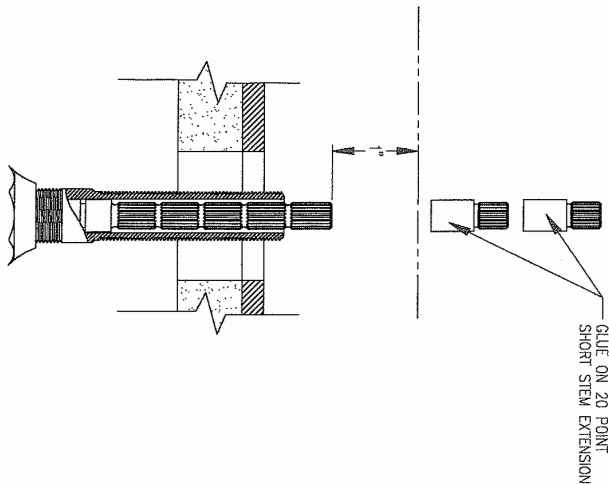


Figure 9 (See note 2a)



SCENARIO 2: STEM EXTENSION INSTALLED TOO LOW

DWG. NO.  
ST02i-015

DRAWN DATE:  
02/06/97

TYPE 1 HANDLE: SECURING HANDLE BY SET SCREW FROM SIDE

SHEET:  
3 OF 5



**TYPE 1 - SCENARIO 2**

Figure 10 (See note 2b)

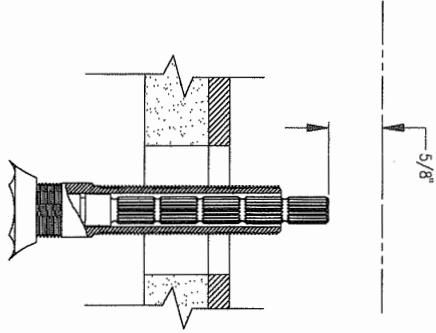


Figure 11 (See note 2b)

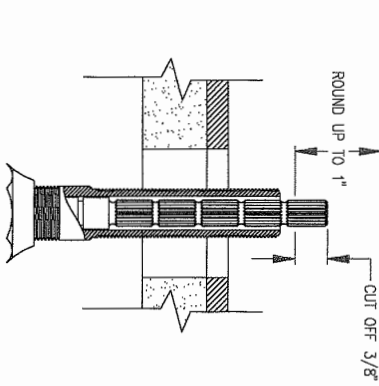
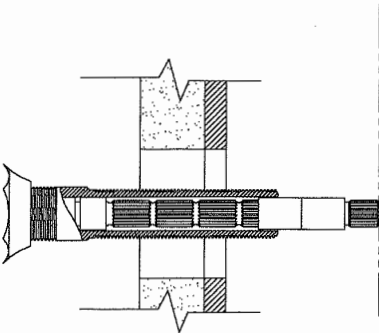


Figure 12



SCENARIO 2: STEM EXTENSION INSTALLED TOO LOW

DWG NO.  
ST02i-015

DRAWN DATE:  
02/06/97

TYPE 1 HANDLE: SECURING HANDLE BY SET SCREW FROM SIDE

SHEET:  
4 OF 5

# TYPE 1 - SCENARIO 2

Figure 13

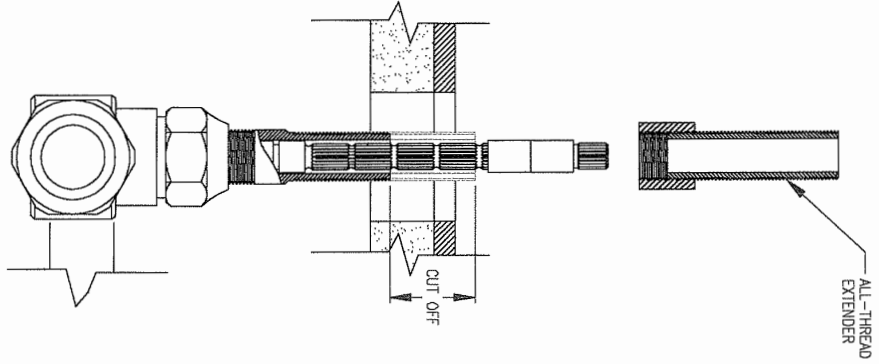


Figure 14

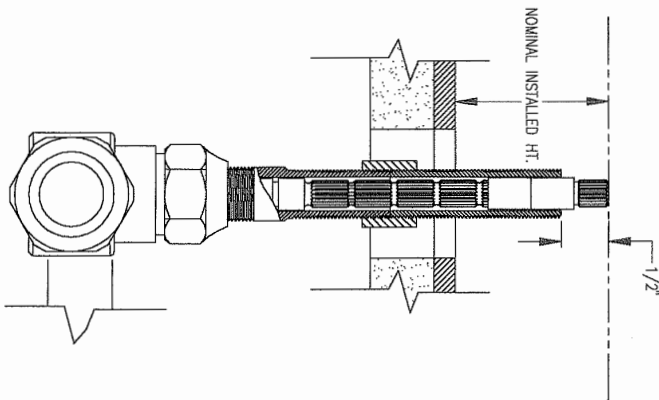
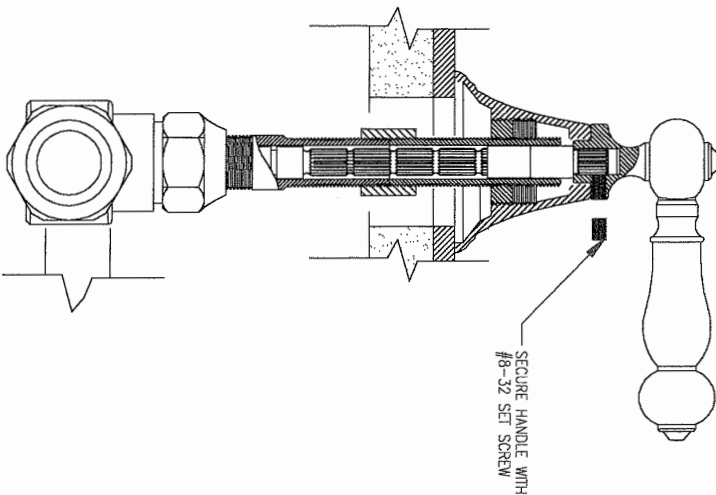


Figure 15



SCENARIO 2: STEM EXTENSION INSTALLED TOO LOW

TYPE 1 HANDLE: SECURING HANDLE BY SET SCREW FROM SIDE

DWG. NO.  
ST02i-015

DRAWN DATE:  
02/06/97

SHEET:  
5 OF 5

## TYPE 2 HANDLE: SECURING HANDLE BY SCREW FROM TOP

(See accompanied figures on drawing no. ST02i-016)

### SCENARIO 1:

STEM-EXTENSION MOUNTED TOO HIGH (figure 2)

1. Find out the correct installed height for the stem extension.
2. Cut both stem extension and all-thread  $\frac{1}{2}$ " lower than the specified installed height (figures 3 & 4).
3. Glue 20 point stem extension adapter to the stem extension of valve (figure 5).
4. Mount escutcheon and handle.
5. Secure handle with M4 X 0.7 mm screw (figure 6).

### SCENARIO 2:

STEM-EXTENSION MOUNTED TOO LOW (figure 8)

1. Determine the extra length of stem extension needed to meet the specified installed height.
2. Calculate the number of short stem extensions needed to glue on the stem extension to achieve the correct install height.
  - a) If this needed length happens to be  $\frac{1}{2}$ " increments, then stack and glue the short stem extensions (each will increase the height by  $\frac{1}{2}$ " ), as many as needed, onto the stem extension to obtain the specified installed height.

**For example:** If the extra height needed is 1", then stack two stem extension adapters to make up for this height deficit (figure 9).

- b) If the make-up length is somewhere between  $\frac{1}{2}$ " increments, then round this length up to the next  $\frac{1}{2}$ ", and cut the difference in length (between the rounded up number and the measured number) off from the stem extension.

**For example:** The measured extra height needed is  $\frac{5}{8}$ " (figure 10). Round this number up to the nearest  $\frac{1}{2}$ " becomes 1". Cut off  $\frac{3}{8}$ " of stem extension (figure 11).

Stack and glue 2 stem extension adapters to make up for the 1" needed.

3. If the valve is installed too deep in the wall that the escutcheon is unable to screw onto the all-thread, then use the 2" long all-thread extender to increase the all-thread length (figure 13). Cut off, if necessary, either the all-thread and/or the all-thread extender so that when combined, the height is about ½" below the specified installed height (figure 14).
4. Mount escutcheon and handle.
5. Secure handle with M4 X 0.7mm screw(figure 15).

# TYPE 2 - SCENARIO 1

Figure 1

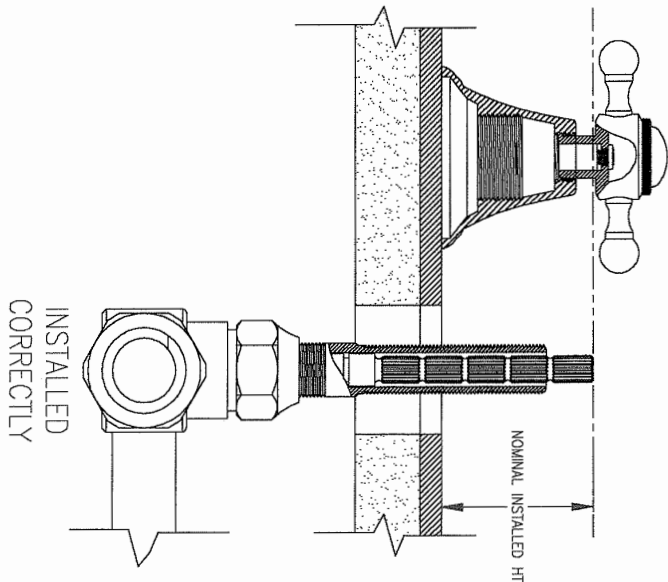


Figure 2

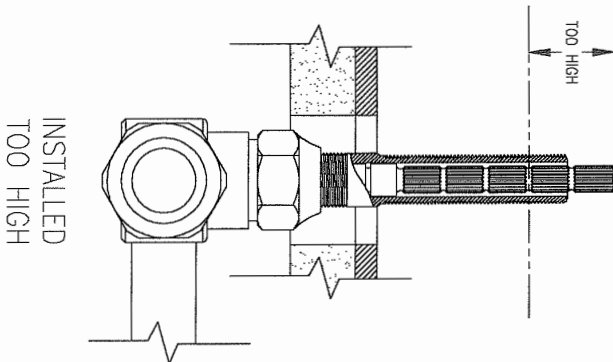
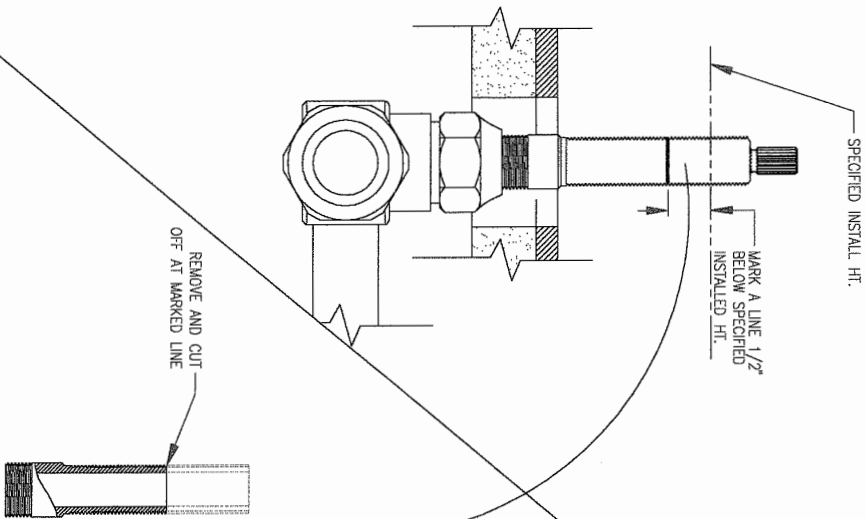


Figure 3



SCENARIO 1: STEM EXTENSION INSTALLED TOO HIGH

DWG NO.  
ST02i-016

DRAWN DATE:  
02/07/97

TYPE 2 HANDLE: SECURING HANDLE BY SET SCREW FROM TOP

SHEET:  
1 OF 5

**TYPE 2 - SCENARIO 1**

Figure 4

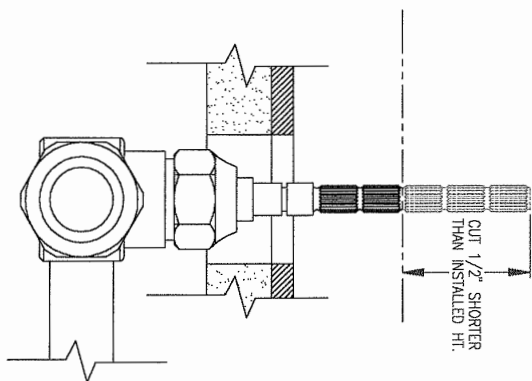


Figure 5

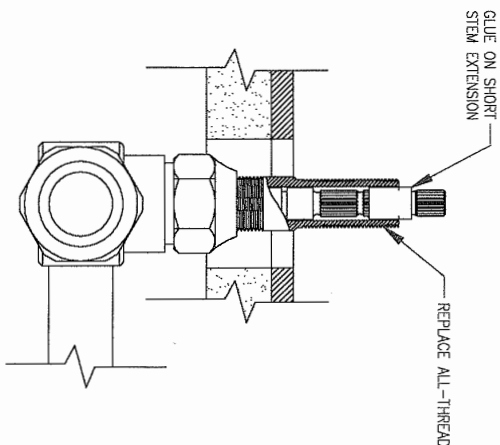
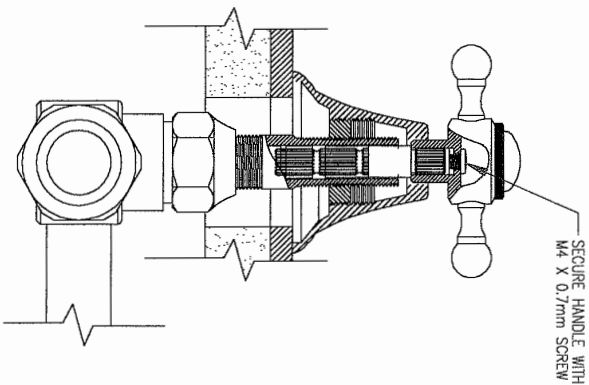


Figure 6



SCENARIO 1: STEM EXTENSION INSTALLED TOO HIGH

DWG NO.  
ST02i-016

DRAWN DATE:  
02/07/97

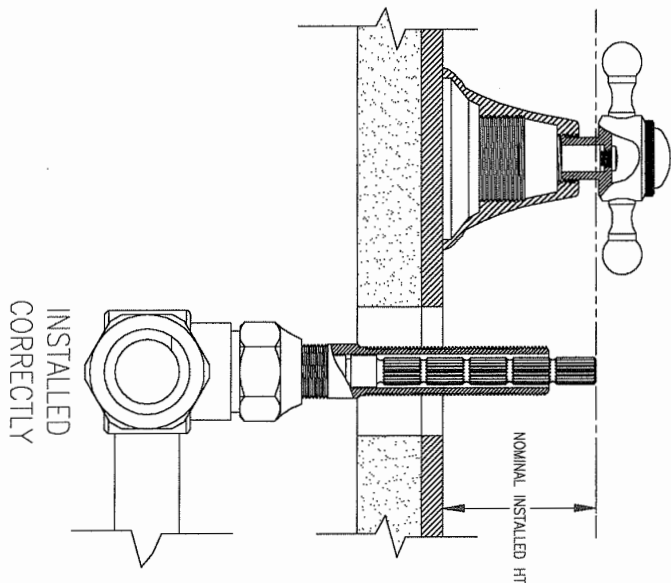
TYPE 2 HANDLE: SECURING HANDLE BY SET SCREW FROM TOP

SHEET:  
2 OF 5

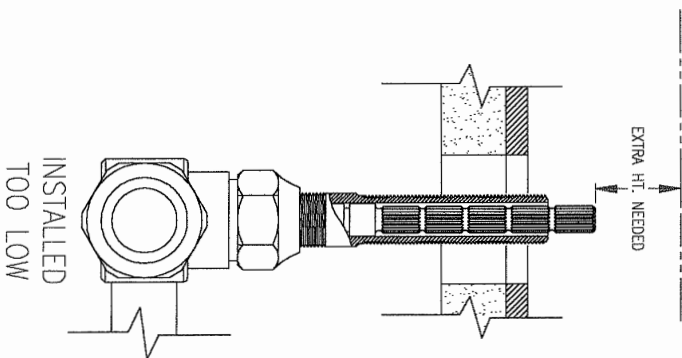


**TYPE 2 - SCENARIO 2**

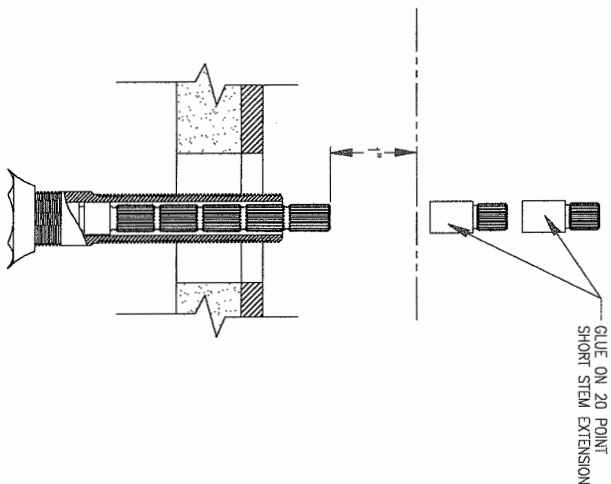
*Figure 7*



*Figure 8*



*Figure 9 (See note 2a)*



**SCENARIO 2: STEM EXTENSION INSTALLED TOO LOW**

DWG. NO.  
ST02i-016

DRAWN DATE:  
02/06/97

**TYPE 2 HANDLE: SECURING HANDLE BY SET SCREW FROM TOP**

SHEET:  
3 OF 5

**TYPE 2 - SCENARIO 2**

Figure 10 (See note 2b)

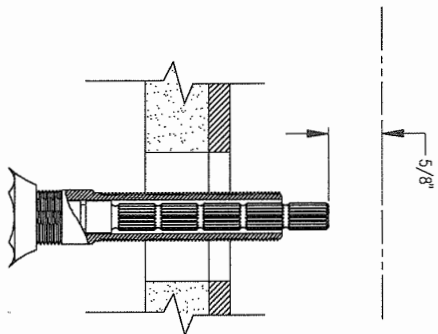


Figure 11 (See note 2b)

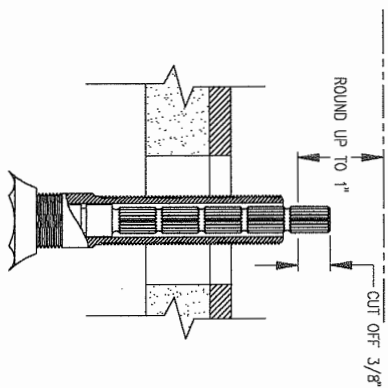
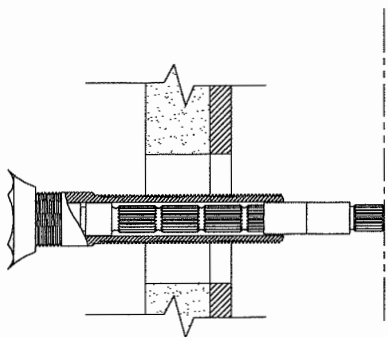


Figure 12



SCENARIO 2: STEM EXTENSION INSTALLED TOO LOW

DWG NO.  
ST02i-016

DRAWN DATE:  
02/06/97

TYPE 2 HANDLE: SECURING HANDLE BY SET SCREW FROM TOP

SHEET:  
4 OF 5

## TYPE 2 - SCENARIO 2

Figure 13

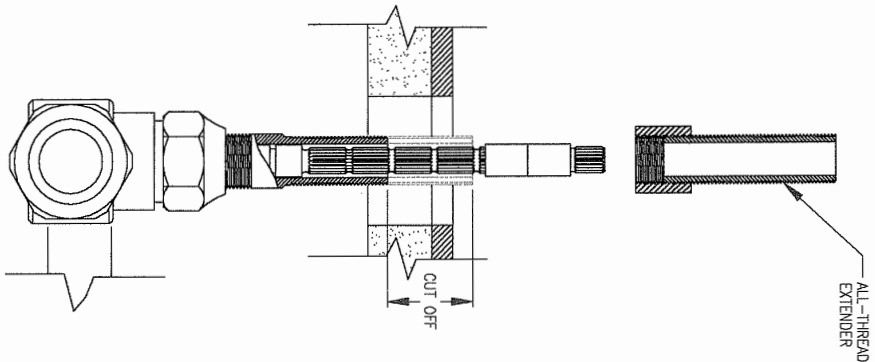


Figure 14

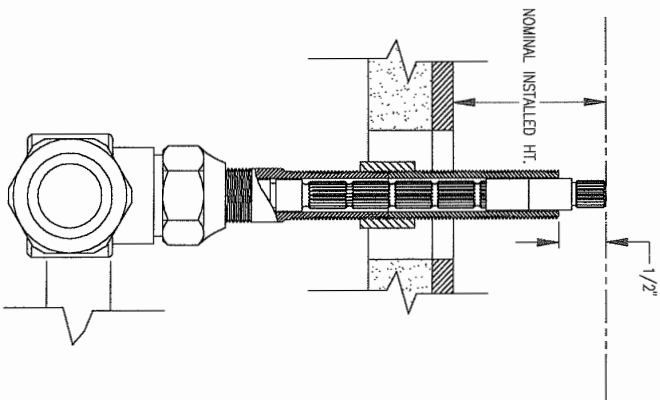
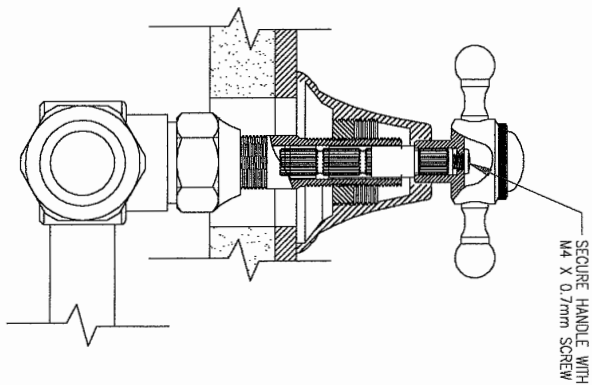


Figure 15



SCENARIO 2: STEM EXTENSION INSTALLED TOO LOW

TYPE 2 HANDLE: SECURING HANDLE BY SET SCREW FROM TOP

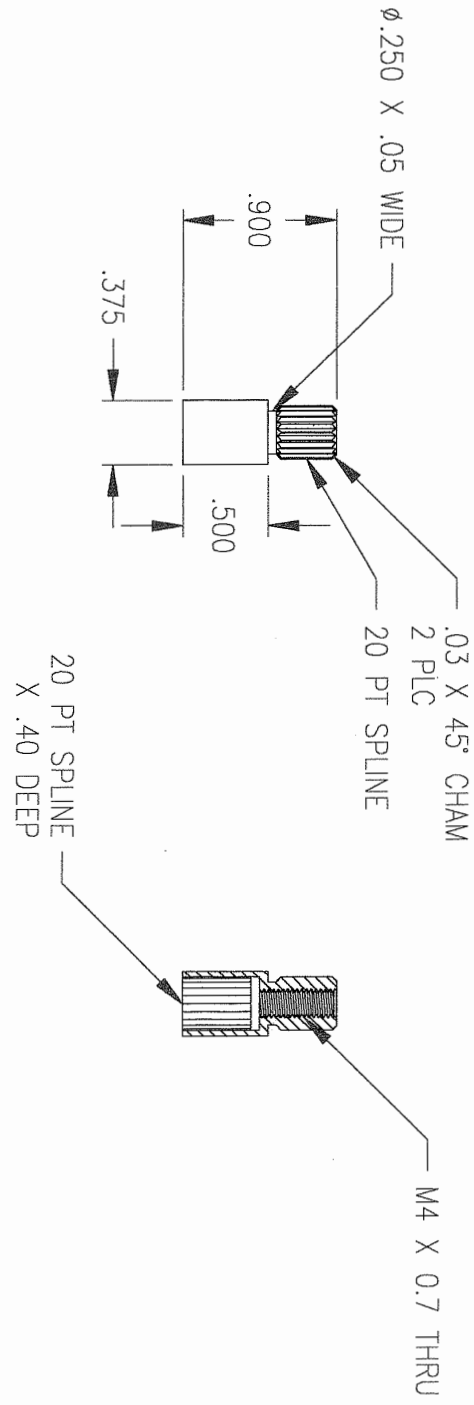
DWG NO.  
ST02i-016

DRAWN DATE:  
02/06/97

SHEET:  
5 OF 5

# 1/2" STEM EXTENSION

REVISIONS		
REV.	DESCRIPTION	DATE



ITEM NO.	PART NO.	APPROVALS	DESCRIPTION	QTY.
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE:				
FRACTIONS ± 1/64	DECIMALS .XX ± .01 .XXX ± .005	ANGLES ± 30°	DESIGN & DRAFTING SERVICES BY <b>D.U. Products, Inc.</b> Carlsbad, CA (619)930-4028 FAX(619)930-0140	
MATERIAL BRASS	APPROVALS	DATE	FOR	
FINISH 32 RMS (UNLESS OTHERWISE SPEC'D)	DRAWN MINH NGUYEN	02/11/97	1/2" STEM EXTENSION	
NEXT ASSY	CHECKED	2/13/97	SIZE A	PART NO. ST01-064
APPLICATION	ISSUED	2/13/97	SCALE 1 : 1	DWG. NO. ST10-005
USED ON	DO NOT SCALE DRAWING		SHEET 1	OF 1