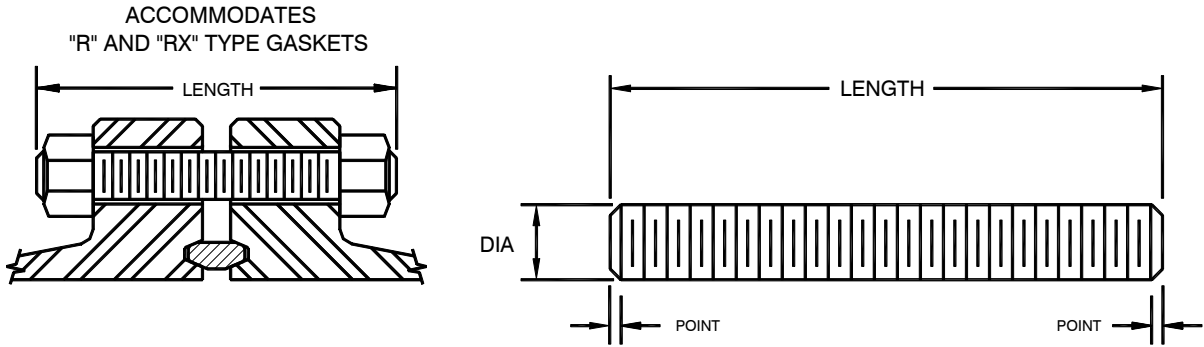


SPECIFICATION FOR STUD BOLTS AND TAP END STUDS

2.1 STUD BOLT LENGTH TABLE FOR 6B FLANGE CONNECTIONS WITH "R" AND "RX" GASKETS



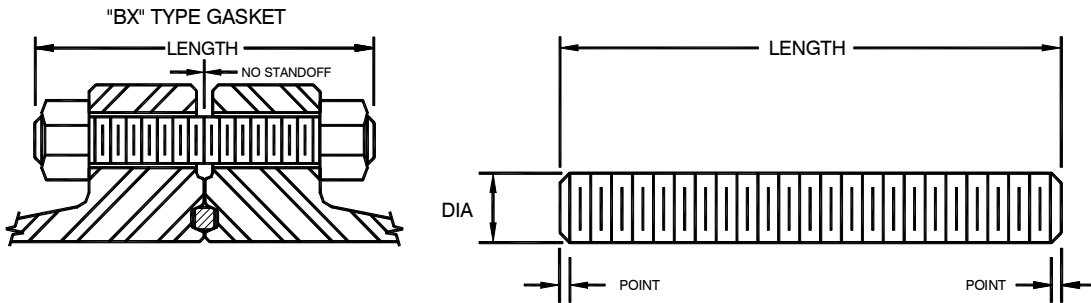
$$\text{LENGTH} = 2(T + t + d) + S + 2(P)$$

- T Total flange thickness.
- t Plus tolerance for flange thickness.
- d Heavy hex nut thickness.
- S Flange face standoff. (with "RX" gasket)
- P Point Max. (1.5 X Pitch)

FLANGE SIZE	BOLT DIA.	LENGTH *	FLANGE SIZE	BOLT DIA.	LENGTH *		
2-1/16	2M	0.625	5.000	7-1/16	2M	1.000	7.500
2-1/16	3M	0.875	6.500	7-1/16	3M	1.125	8.500
2-1/16	5M	0.875	6.500	7-1/16	5M	1.375	11.250
2-9/16	2M	0.750	5.500	9	2M	1.125	8.500
2-9/16	3M	1.000	7.000	9	3M	1.375	9.500
2-9/16	5M	1.000	7.000	9	5M	1.625	12.500
3-1/8	2M	0.750	5.750	11	2M	1.250	9.250
3-1/8	3M	0.875	6.500	11	3M	1.375	10.000
3-1/8	5M	1.125	7.750	11	5M	1.875	14.250
4-1/16	2M	0.875	6.500	13-5/8	2M	1.250	9.500
4-1/16	3M	1.125	7.500	13-5/8	3M	1.375	10.750
4-1/16	5M	1.250	8.500	16-3/4	2M	1.500	10.750
5-1/8	2M	1.000	7.250	16-3/4	3M	1.625	12.250
5-1/8	3M	1.250	8.250	21-1/4	2M	1.625	12.250
5-1/8	5M	1.500	10.500	20-3/4	3M	2.000	15.000

- * tolerance on bolt length:
 + 1/8 , - 0 inch for lengths up to 12 inches.
 + 1/4 , - 0 inch for lengths over 12 inches.

2.2 STUD BOLT LENGTH TABLE FOR 6BX FLANGE CONNECTIONS



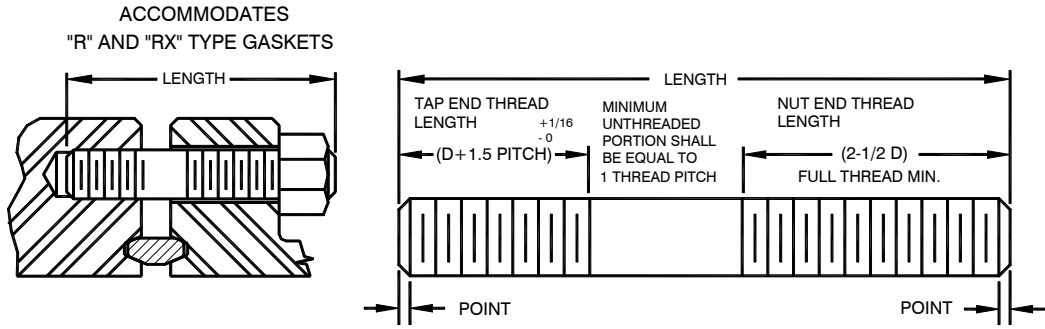
$$\text{LENGTH} = 2(T + t + d) + S + 2(P)$$

- T Total flange thickness.
- t Plus tolerance for flange thickness.
- d Heavy hex nut thickness.
- S Flange face standoff.
- P Point Max. (1.5 X Pitch)

FLANGE SIZE	BOLT DIA.	LENGTH *	FLANGE SIZE	BOLT DIA.	LENGTH *		
1-13/16	10M	0.750	5.500	11	10M	1.750	15.250
1-13/16	15M	0.875	6.000	11	15M	2.000	19.500
1-13/16	20M	1.000	7.750	11	20M	2.750	23.750
2-1/16	10M	0.750	5.500	13-5/8	5M	1.625	12.750
2-1/16	15M	0.875	6.500	13-5/8	10M	1.875	17.750
2-1/16	20M	1.125	8.500	13-5/8	15M	2.250	21.250
2-9/16	10M	0.875	6.500	13-5/8	20M	3.000	29.750
2-9/16	15M	1.000	7.250	16-3/4	5M	1.875	14.750
2-9/16	20M	1.250	9.500	16-3/4	10M	1.875	17.750
3-1/16	10M	1.000	7.250	18-3/4	5M	2.000	17.750
3-1/16	15M	1.125	8.000	18-3/4	10M	2.250	22.750
3-1/16	20M	1.375	10.250	18-3/4	15M	3.000	26.750
4-1/16	10M	1.125	8.500	21-1/4	5M	2.000	19.000
4-1/16	15M	1.375	9.750	21-1/4	10M	2.500	24.750
4-1/16	20M	1.750	12.500	26-3/4	2M	1.750	14.250
5-1/8	10M	1.125	9.250	26-3/4	3M	2.000	17.500
5-1/8	15M	1.500	11.500	30	2M	1.625	14.500
7-1/16	10M	1.500	11.750	30	3M	1.875	17.750
7-1/16	15M	1.500	13.000				
7-1/16	20M	2.000	17.750				
9	10M	1.500	13.500				
9	15M	1.875	16.000				
9	20M	2.500	21.750				

* tolerance on bolt length:
 + 1/8 , - 0 inch for lengths up to 12 inches.
 + 1/4 , - 0 inch for lengths over 12 inches.

3.1 TAP END STUD LENGTH TABLE FOR 6B STUDED FLANGE CONNECTIONS WITH "R" AND "RX GASKETS



$$\text{LENGTH} = T + t + d + S + P + \text{TL} + \text{RF}$$

- T Total flange thickness.
- t Plus tolerance for flange thickness.
- d Heavy hex nut thickness.
- S Flange face standoff. (with "RX" gasket)
- P Point, maximum (1.5 X Pitch)
- TL Tap end thread length, maximum .
[(one diameter + 1.5 Pitch) + 1/16 - 0]
- RF Add amount of raised face present on
studded flanges, if not omitted, to the
length of studs in table.

FLANGE SIZE	STUD DIA.	TAP END * LENGTH	NUT END LENGTH	** LENGTH	FLANGE SIZE	STUD DIA.	TAP END * LENGTH	NUT END LENGTH	** LENGTH		
2-1/16	2M	0.625	0.761	1.563	3.625	7-1/16	2M	1.000	1.188	2.500	5.375
2-1/16	3M	0.875	1.042	2.188	4.625	7-1/16	3M	1.125	1.313	2.813	5.875
2-1/16	5M	0.875	1.042	2.188	4.625	7-1/16	5M	1.375	1.563	3.438	7.500
2-9/16	2M	0.750	0.900	1.875	4.000	9	2M	1.125	1.313	2.813	5.875
2-9/16	3M	1.000	1.188	2.500	5.125	9	3M	1.375	1.563	3.438	6.750
2-9/16	5M	1.000	1.188	2.500	5.125	9	5M	1.625	1.813	4.063	8.500
3-1/8	2M	0.750	0.900	1.875	4.125	11	2M	1.250	1.438	3.125	6.500
3-1/8	3M	0.875	1.042	2.188	4.625	11	3M	1.375	1.563	3.438	7.000
3-1/8	5M	1.125	1.313	2.813	5.625	11	5M	1.875	2.063	4.688	9.625
4-1/16	2M	0.875	1.042	2.188	4.625	13-5/8	2M	1.250	1.438	3.125	6.625
4-1/16	3M	1.125	1.313	2.813	5.500	13-5/8	3M	1.375	1.563	3.438	7.375
4-1/16	5M	1.250	1.438	3.125	6.125	16-3/4	2M	1.500	1.688	3.750	7.500
5-1/8	2M	1.000	1.188	2.500	5.250	16-3/4	3M	1.625	1.813	4.063	8.375
5-1/8	3M	1.250	1.438	3.125	6.000	21-1/4	2M	1.625	1.813	4.063	8.375
5-1/8	5M	1.500	1.688	3.750	7.375	20-3/4	3M	2.000	2.188	5.000	10.125

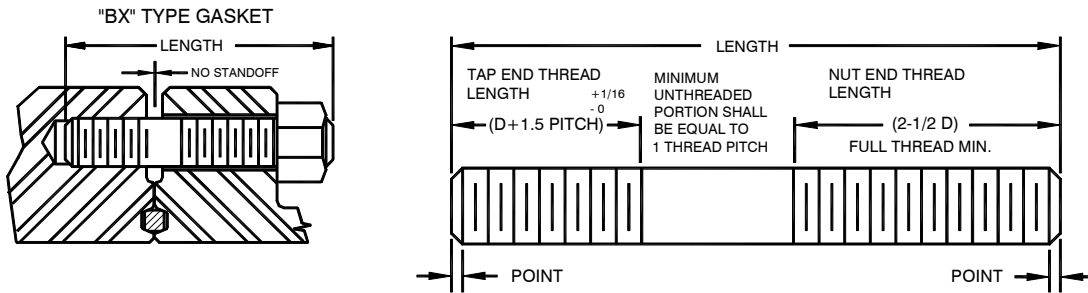
* tolerance on tap end thread length:

+ 1/16 , - 0 inch

** tolerance on tap end stud length

+ 1/8 , - 0 inch

3.2 TAP END STUD LENGTH TABLE FOR 6BX STUDDED FLANGE CONNECTIONS



$$\text{LENGTH} = T + t + d + S + P + TL + RF$$

- T Total flange thickness.
- t Plus tolerance for flange thickness.
- d Heavy hex nut thickness.
- S Flange face standoff.
- P Point, maximum (1.5 X Pitch)

- TL Tap end thread length, maximum [(one diameter + 1.5 Pitch) + 1/16 - 0]
- RF Add amount of raised face present on studded flanges, if not omitted, to the length of studs in table.

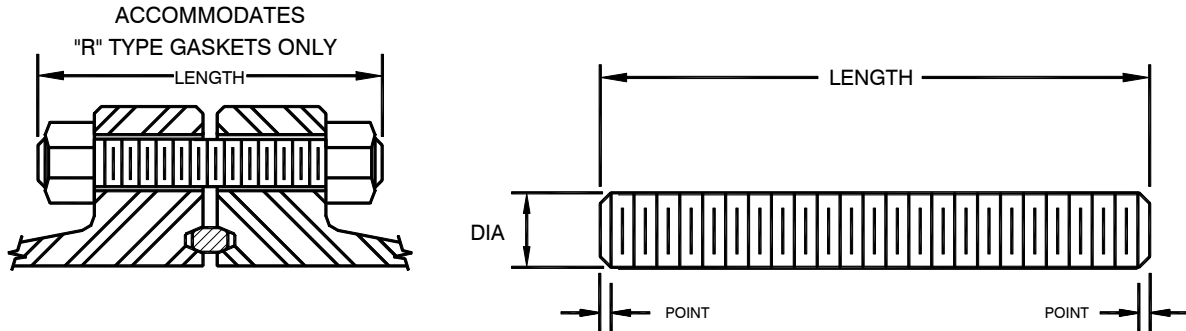
FLANGE SIZE	STUD DIA.	TAP END * LENGTH	NUT END LENGTH	** LENGTH	FLANGE SIZE	STUD DIA.	TAP END * LENGTH	NUT END LENGTH	** LENGTH		
1-13/16	10M	0.750	0.900	1.875	3.750	11	10M	1.750	1.938	4.375	9.750
1-13/16	15M	0.875	1.042	2.188	4.125	11	15M	2.000	2.188	5.000	12.000
1-13/16	20M	1.000	1.188	2.500	5.125	11	20M	2.750	2.938	6.875	15.000
2-1/16	10M	0.750	0.900	1.875	3.875	13-5/8	5M	1.625	1.813	4.063	8.375
2-1/16	15M	0.875	1.042	2.188	4.375	13-5/8	10M	1.875	2.063	4.688	11.000
2-1/16	20M	1.125	1.313	2.813	5.750	13-5/8	15M	2.250	2.438	5.625	13.250
2-9/16	10M	0.875	1.042	2.188	4.375	13-5/8	20M	3.000	3.188	7.500	18.125
2-9/16	15M	1.000	1.188	2.500	4.875	16-3/4	5M	1.875	2.063	4.688	9.500
2-9/16	20M	1.250	1.438	3.125	6.250	16-3/4	10M	1.875	2.063	4.688	11.000
3-1/16	10M	1.000	1.188	2.500	5.000	18-3/4	5M	2.000	2.188	5.000	11.250
3-1/16	15M	1.125	1.313	2.813	5.500	18-3/4	10M	2.250	2.438	5.625	14.000
3-1/16	20M	1.375	1.563	3.438	6.750	18-3/4	15M	3.000	3.188	7.500	16.750
4-1/16	10M	1.125	1.313	2.813	5.750	21-1/4	5M	2.000	2.188	5.000	11.750
4-1/16	15M	1.375	1.563	3.438	6.500	21-1/4	10M	2.500	2.688	6.250	15.125
4-1/16	20M	1.750	1.938	4.375	8.375	26-3/4	2M	1.750	1.938	4.375	9.125
5-1/8	10M	1.125	1.313	2.813	6.000	26-3/4	3M	2.000	2.188	5.000	11.000
5-1/8	15M	1.500	1.688	3.750	7.625	30	2M	1.625	1.813	4.063	9.250
7-1/16	10M	1.500	1.688	3.750	7.750	30	3M	1.875	2.063	4.688	11.000
7-1/16	15M	1.500	1.688	3.750	8.375						
7-1/16	20M	2.000	2.188	5.000	11.125						
9	10M	1.500	1.688	3.750	8.500						
9	15M	1.875	2.063	4.688	10.125						
9	20M	2.500	2.688	6.250	13.750						

* tolerance on tap end thread length:
+ 1/16 , - 0 inch

** tolerance on tap end stud length
+ 1/8 , - 0 inch

APPENDIX A

STUD BOLT LENGTH TABLE FOR 6B FLANGE CONNECTIONS WITH "R" GASKETS



$$\text{LENGTH} = 2(T + t + d) + S + 2(P)$$

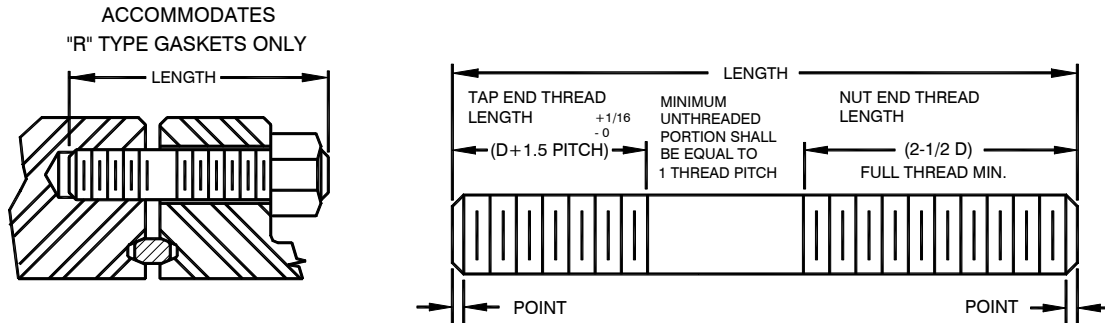
- T Total flange thickness.
- t Plus tolerance for flange thickness.
- d Heavy hex nut thickness.
- S Flange face standoff. (with "R" gasket)
- P Point Max. (1.5 X Pitch)

FLANGE SIZE	BOLT DIA.	BOLT DIA.	LENGTH *	FLANGE SIZE	BOLT DIA.	BOLT DIA.	LENGTH *
2-1/16	2M	0.625	4.750	7-1/16	2M	1.000	7.250
2-1/16	3M	0.875	6.250	7-1/16	3M	1.125	8.250
2-1/16	5M	0.875	6.250	7-1/16	5M	1.375	11.000
2-9/16	2M	0.750	5.250	9	2M	1.125	8.250
2-9/16	3M	1.000	6.750	9	3M	1.375	9.250
2-9/16	5M	1.000	6.750	9	5M	1.625	12.250
3-1/8	2M	0.750	5.500	11	2M	1.250	9.000
3-1/8	3M	0.875	6.250	11	3M	1.375	9.750
3-1/8	5M	1.125	7.500	11	5M	1.875	14.000
4-1/16	2M	0.875	6.250	13-5/8	2M	1.250	9.250
4-1/16	3M	1.125	7.250	13-5/8	3M	1.375	10.500
4-1/16	5M	1.250	8.250	16-3/4	2M	1.500	10.500
5-1/8	2M	1.000	7.000	16-3/4	3M	1.625	12.000
5-1/8	3M	1.250	8.000	21-1/4	2M	1.625	11.750
5-1/8	5M	1.500	10.250	20-3/4	3M	2.000	14.500

- * tolerance on bolt length:
 - + 1/8 , - 0 inch for lengths up to 12 inches.
 - + 1/4 , - 0 inch for lengths over 12 inches.

APPENDIX B

TAP END STUD LENGTH TABLE FOR 6B STUDED FLANGE CONNECTIONS WITH "R" GASKETS



$$\text{LENGTH} = T + t + d + S + P + TL + RF$$

- T Total flange thickness.
- t Plus tolerance for flange thickness.
- d Heavy hex nut thickness.
- S Flange face standoff. (with "R" gasket)
- P Point, maximum (1.5 X Pitch)
- TL Tap end thread length, maximum .
[(one diameter + 1.5 Pitch) + 1/16 - 0]
- RF Add amount of raised face present on studded flanges, if not omitted, to the length of studs in table.

FLANGE SIZE	STUD DIA.	TAP END * LENGTH	NUT END LENGTH	** LENGTH	FLANGE SIZE	STUD DIA.	TAP END * LENGTH	NUT END LENGTH	** LENGTH		
2-1/16	2M	0.625	0.761	1.563	3.375	7-1/16	2M	1.000	1.188	2.500	5.000
2-1/16	3M	0.875	1.042	2.188	4.375	7-1/16	3M	1.125	1.313	2.813	5.625
2-1/16	5M	0.875	1.042	2.188	4.375	7-1/16	5M	1.375	1.563	3.438	7.250
2-9/16	2M	0.750	0.900	1.875	3.750	9	2M	1.125	1.313	2.813	5.625
2-9/16	3M	1.000	1.188	2.500	4.750	9	3M	1.375	1.563	3.438	6.375
2-9/16	5M	1.000	1.188	2.500	4.750	9	5M	1.625	1.813	4.063	8.125
3-1/8	2M	0.750	0.900	1.875	3.875	11	2M	1.250	1.438	3.125	6.125
3-1/8	3M	0.875	1.042	2.188	4.375	11	3M	1.375	1.563	3.438	6.625
3-1/8	5M	1.125	1.313	2.813	5.250	11	5M	1.875	2.063	4.688	9.250
4-1/16	2M	0.875	1.042	2.188	4.375	13-5/8	2M	1.250	1.438	3.125	6.250
4-1/16	3M	1.125	1.313	2.813	5.125	13-5/8	3M	1.375	1.563	3.438	7.000
4-1/16	5M	1.250	1.438	3.125	5.750	16-3/4	2M	1.500	1.688	3.750	7.125
5-1/8	2M	1.000	1.188	2.500	4.875	16-3/4	3M	1.625	1.813	4.063	8.000
5-1/8	3M	1.250	1.438	3.125	5.625	21-1/4	2M	1.625	1.813	4.063	8.000
5-1/8	5M	1.500	1.688	3.750	7.000	20-3/4	3M	2.000	2.188	5.000	9.625

* tolerance on tap end thread length:
+ 1/16 , - 0 inch

** tolerance on tap end stud length
+ 1/8 , - 0 inch