

# Bolts

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# Valve mounting bolts (hex socket bolts)

Model Code	Metric		Unified		Quantity	Tightening Torque N·m
	Screw size × Length beneath the head (mm)	Part no.	Screw size × Length beneath the head (mm)	Part no.		
*1 4C2M	M6		1/4-20UNC		4	8~10
4CG-03	M10 × 70	001910701	3/8-16UNC × 69. 8	002030701	4	54~66
4CG-06	M10 × 85	001910851	3/8-16UNC × 82. 5	002030831	4	54~66
4CG-10	M10 × 110	VA31190	3/8-16UNC × 107. 9	VP1079	6	54~66
BLG-02	M8 × 30	001980301	—	—	4	27~33
BLG-3	M5 × 50	001950501	—	—	4	7~8
*1 C1M	M6		1/4-20UNC		4	8~10
C2G-805	M8 × 40	001980401	5/16-18UNC × 38. 1	002025381	4	27~33
*1 C2M	M6		1/4-20UNC		4	8~10
C2PG-805	M8 × 40	001980401	5/16-18UNC × 38. 1	002025381	4	27~33
C5G-815	M16 × 45	001916451	5/8-11UNC × 44. 5	002050441	4	90~110
C5G-825	—	—	3/4-10UNC × 88. 9	002060891	4	180~220
C5G-825-M	M20 × 90	VA22795	—	—	4	180~220
C5PG-815	M16 × 60	001916601	5/8-11UNC × 57. 1	002050571	4	90~110
C5PG-825	M20 × 100	VA23228	3/4-10UNC × 101. 6	VP298191	4	180~220
CG-03	M12 × 55	001912551	1/2-13UNC × 57. 1	002040571	4	72~88
CGL-03	M12 × 90	001912901	—	—	4	72~88
CGL-06	M16 × 115	40012290	—	—	4	90~110
CGR-02	M10 × 30	001910301	3/8-16UNC × 31. 8	002030321	4	54~66
COM-3	M5 × 50	001950501	—	—	4	7~8
COM-5	M6 × 40	001960401	—	—	4	9~14
COM-7	M10 × 60	001910601	—	—	4	50~60
	M6 × 55	001960551	—	—	2	9~14
COM-8	M12 × 80	001912801	—	—	6	75~81
CVC-16	M8 × 40	001980401	—	—	4	31. 5~38. 5
CVC-25	M12 × 40	001912401	—	—	4	99~121
CVC-32	M16 × 55	001916551	—	—	4	153~187
CVC-40	M20 × 60	VP473843	—	—	4	450~550
CVC-50	M20 × 80	VP763681	—	—	4	522~638
CVC-63	M30 × 90	VP763717	—	—	4	1080~1320
CVSH-01	M6 × 60	001960601	—	—	4	12~15
CVSH-3	M5 × 50	001950501	—	—	4	7~8
D-CG-02	M5 × 45	001950451	—	—	4	7~8
D-CG-03	M12 × 80	001912801	1/2-13UNC × 82. 5	002040831	4	72~88
D-CG-06	M16 × 85	001916851	5/8-11UNC × 82. 5	002050831	4	90~110
D-CG-10	M20 × 100	VA23228	3/4-10UNC × 101. 6	VP298191	4	180~220
D-DFG-01	M5 × 50	001950501	—	—	4	7~8
D-DF (R) G-03	M6 × 40	001960401	1/4-20UNC × 38. 1	002020381	4	12~15
D-DF (R) G-04	M10 × 50	001910501	3/8-16UNC × 50. 8	002030511	4	50~60
	M6 × 45	001960451	1/4-20UNC × 44. 5	002020441	2	9~14
D-DFG-06	M12 × 55	001912551	1/2-13UNC × 57. 1	002040571	6	75~81
D-DFG-10	M20 × 65	48473844	—	—	6	230~290
D-FG-01	M5 × 100	VP417414	—	—	4	7~8
D-F (R) G-02	M10 × 70	001910701	—	—	4	50~60
D-F (R) G-03	M12 × 110	VA28608	—	—	2	75~81
	M12 × 90	001912901	—	—	2	75~81
D-F (R) G-06	M20 × 110	VA27044	—	—	2	230~290
	M20 × 150	VA23229	—	—	2	230~290
D-F (R) G-10	M20 × 130	48473853	—	—	2	230~290
	M20 × 190	40012291	—	—	2	230~290
DG17V-7	M10 × 60	001910601	—	—	4	50~60
	M6 × 55	001960551	—	—	2	9~14
DG1M2	M6 × 35	001960351	1/4-20UNC × 38. 1	002020381	4	8~10

Note:

\*1: See pages G0-9, 0-10, under Stack valves (Flui-trol series) for mounting bolt lengths and part numbers.

# Valve mounting bolts (hex socket bolts)

Model Code	Metric		Unified		Quantity	Tightening Torque N·m
	Screw size × Length beneath the head (mm)	Part no.	Screw size × Length beneath the head (mm)	Part no.		
DG20S-3	M5 × 50	001950501	—	—	4	7~8
DG2M2	M6 × 35	001960351	1/4-20UNC × 38.1	002020381	4	8~10
DG2S*-01	M6 × 40	001960401	1/4-20UNC × 38.1	002020381	4	12~15
DG3S-10	M20 × 65	48473844	—	—	6	230~290
DG3V-7	M10 × 60	001910601	—	—	4	50~60
	M6 × 55	001960551	—	—	2	9~14
DG3V-H8	M12 × 80	001912801	—	—	6	75~81
DG4M4	M6 × 45	001960451	1/4-20UNC × 44.5	002020441	4	8~10
DG4SM-3	M5 × 50	001950501	—	—	4	7~8
DG4V-3	M5 × 50	001950501	—	—	4	7~8
DG4V-5	M6 × 40	001960401	—	—	4	12~15
DG4VC-3	M5 × 50	001950501	—	—	4	7~8
DG4VC-5	M6 × 40	001960401	—	—	4	12~15
DG4VL-3	M5 × 50	001950501	—	—	4	7~8
DG4VL-5	M6 × 40	001960401	—	—	4	12~15
DG4VS-3	M5 × 50	001950501	—	—	4	7~8
DG4VS-5	M6 × 40	001960401	—	—	4	12~15
DG4V-3-SW	M5 × 50	001950501	—	—	4	7~8
DG4V-5-SW	M6 × 40	001960401	—	—	4	12~15
DG5S-10	M20 × 65	48473844	—	—	6	230~290
DG5V-7	M10 × 60	001910601	—	—	4	50~60
	M6 × 55	001960551	—	—	2	9~14
DG5V-H8	M12 × 80	001912801	—	—	6	75~81
*1 DGB	M6		1/4-20UNC		4	8~10
*1 DGC	M6		1/4-20UNC		4	8~10
*1 DM8M	M6		1/4-20UNC		4	8~10
EPCG2-01	M5 × 50	001950501	—	—	4	7~8
EPCG2-03	M12 × 80	001912801	1/2-13UNC × 82.5	002040831	4	72~88
EPCG2-06	M16 × 85	001916851	5/8-11UNC × 82.5	002050831	4	90~110
EPCG2-10	M20 × 100	VA23228	3/4-10UNC × 101.6	VP298191	4	180~220
EPDG1-3	M5 × 50	001950501	—	—	4	7~8
EPFG-01	M5 × 100	VP417414	—	—	4	7~8
EPFG-03	M10 × 60	001910601	3/8-16UNC × 63.5	002030641	4	50~60
EPFG-06	M16 × 105	VA23224	5/8-11UNC × 101.6	VP298173	4	90~110
EPFG-10	M20 × 145	VA25902	3/4-10UNC × 146.1	VA18924	4	230~290
EPFRG-02	M10 × 70	001910701	3/8-16UNC × 69.8	002030701	4	50~60
EPFRG-03	M12 × 110	VA28608	1/2-13UNC × 114.3	VP10958	2	75~81
	M12 × 90	001912901	1/2-13UNC × 95.2	40012287	2	75~81
EPFRG-06	M20 × 110	VA27044	—	—	2	230~290
	M20 × 150	VA23229	—	—	2	230~290
EPFRG-10	M20 × 130	48473853	—	—	2	230~290
	M20 × 190	40012291	—	—	2	230~290
*2 EPMX2-3	M5		—	—	4	7~8
*3 EPMX2-5	M6		—	—	4	12~15
FCG-02	M8 × 65	001980651	5/16-18UNC × 63.5	002025641	4	27~33
F (C) G-03	M10 × 90	001910901	3/8-16UNC × 88.9	002030891	4	54~66
*1 FM	M6		1/4-20UNC		4	8~10
FN (1) G	M6 × 35	001960351	1/4-20UNC × 38.1	002020381	4	8~10
*1 FN (1) M	M6		1/4-20UNC		4	8~10
*1 FP	M6		1/4-20UNC		4	8~10
LFCG-02	M8 × 55	001980551	5/16-18UNC × 50.8	002025511	4	27~33
RCG-03	M10 × 70	001910701	3/8-16UNC × 69.8	002030701	4	54~66
RCG-06	M10 × 85	001910851	3/8-16UNC × 82.5	002030831	4	54~66
RCG-10	M10 × 110	VA31190	3/8-16UNC × 107.9	VP1079	6	54~66
RG-03	M10 × 70	001910701	3/8-16UNC × 69.8	002030701	4	54~66
RG-06	M10 × 85	001910851	3/8-16UNC × 82.5	002030831	4	54~66
RG-10	M10 × 110	VA31190	3/8-16UNC × 107.9	VP1079	6	54~66

Note:

\*1: See pages G0-9, 0-10, under Stack valves (Flui-trol series) for mounting bolt lengths and part numbers.

\*2: See pages G10-1, 10-2, under Stack valves (TGM-3, 50 series) for mounting bolt lengths and part numbers.

\*3: See pages G24-1, 24-3, under Stack valves (TGM-5, 50 series) for mounting bolt lengths and part numbers.

# Valve mounting bolts (hex socket bolts)

Model Code	Metric		Unified		Quantity	Tightening Torque N·m
	Screw size × Length beneath the head (mm)	Part no.	Screw size × Length beneath the head (mm)	Part no.		
RG-3F	M6 × 40	001960401	1/4-20UNC × 38.1	002020381	4	8~10
*1 RM	M6		1/4-20UNC		4	8~10
SG-3	M8 × 70	001980701	5/16-18UNC × 76.2	002025761	2	27~33
SG1-02	M6 × 50	001960501	1/4-20UNC × 50.8	002020511	2	12~15
*1 SM1	M6		1/4-20UNC		4	8~10
TCG20-03	M12 × 80	001912801	1/2-13UNC × 82.5	002040831	4	72~88
TCG20-06	M16 × 85	001916851	5/8-11UNC × 82.5	002050831	4	90~110
TCG20-10	M20 × 100	VA23228	3/4-10UNC × 101.6	VP298191	4	180~220
TCG50~80-03	M12 × 80	001912801	1/2-13UNC × 82.5	002040831	4	72~88
TCG50~80-06	M16 × 85	001916851	5/8-11UNC × 82.5	002050831	4	90~110
TCG50~80-10	M20 × 100	VA23228	3/4-10UNC × 101.6	VP298191	4	180~220
TFN (C) G-02	M6 × 40	001960401	—	—	4	12~15
TFN (C) G-04	M8 × 55	001980551	—	—	4	27~33
TFN (C) G-06	M10 × 60	001910601	—	—	6	54~66
*2 TGM*-3	M5		—	—	4	7~8
*3 TGM*-5	M6		—	—	4	12~15
*8 TGM*-7	M6		—	—	2	9~14
	M10		—	—	4	50~60
*9 TGM*-8	M12		—	—	6	75~81
*2 TGMA-3	M5		—	—	4	7~8
*3 TGMA-5	M6		—	—	4	12~15
*4 TGMCR-3	M5 × 90 (M5 × 100)	001950901 (VP417414)	—	—	4	7~8
*7 TGMHX-3	M5		—	—	4	7~8
*2 TGMRC-3	M5		—	—	4	7~8
*6 TGMSh-3	M5 × 135	40013034	—	—	4	7~8
*4 TGMsL-3	M5 × 90	001950901	—	—	4	7~8
THPCG-03	M8 × 40	001980401	—	—	4	27~33
THPCG-06	M10 × 45	001910451	—	—	4	54~66
URG1/2-06	M16 × 130	VA22796	5/8-11UNC × 133.4	VP10971	4	90~110
	M16 × 60	001916601	5/8-11UNC × 57.1	002050571	2	90~110
URG1/2-10-J	—	—	3/4-10UNC × 165.1	48298196	4	180~220
	—	—	3/4-10UNC × 76.2	002060761	2	180~220
URG1/2-10-M	M20 × 170	VA23230	—	—	4	180~220
	M20 × 80	VP763681	—	—	2	180~220
*5 URMCO-03	M12 × 130	VA28623	1/2-13UNC × 127	VP10960	4	72~88
	M12 × 55	001912551	1/2-13UNC × 57.1	002040571	2	72~88
*5 URMCO-06	M16 × 140	48473837	5/8-11UNC × 139.7	48298176	4	90~110
	M16 × 60	001916601	5/8-11UNC × 63.5	002050641	2	90~110
*5 URMCO-10	M16 × 75	001916751	5/8-11UNC × 76.2	002050761	2	90~110
	M20 × 170	VA23230	3/4-10UNC × 165.1	48298196	4	180~220
*1 XAM	M6		1/4-20UNC		4	8~10
XCG-03	M10 × 70	001910701	3/8-16UNC × 69.8	002030701	4	54~66
XCG-06	M10 × 85	001910851	3/8-16UNC × 82.5	002030831	4	54~66
XCG-10	M10 × 110	VA31190	3/8-16UNC × 107.9	VP1079	6	54~66
XG-03	M10 × 70	001910701	3/8-16UNC × 69.8	002030701	4	54~66
XG-06	M10 × 85	001910851	3/8-16UNC × 82.5	002030831	4	54~66
XG-10	M10 × 110	VA31190	3/8-16UNC × 107.9	VP1079	6	54~66
XG1	M6 × 40	001960401	1/4-20UNC × 38.1	002020381	4	8~10
XGL-03	M8 × 75	001980751	5/16-18UNC × 76.2	002025761	4	27~33
*1 XM1	M6		1/4-20UNC		4	8~10

Note:

- \*1: See pages G0-9, 0-10, under Stackvalves (Flui-trol series) for mounting bolt lengths and part numbers.
- \*2: See pages G10-1, 10-2, under Stack valves (TGM-3, 50 series) for mounting bolt lengths and part numbers.
- \*3: See pages G24-1, 24-3, under Stack valves (TGM-5, 50 series) for mounting bolt lengths and part numbers.
- \*4: Mounting bolts indicated are for stacking TGMCR-3 (or TGMsL-3) with DG4V-3 solenoid valve. Mounting bolt in ( ) refer to stacking of TGMCR30 with DG4V-3.
- \*5: Mounting bolts indicated are for stacking TCG-20 or TCG50 - 80 with URMCO.
- \*6: Mounting bolts indicated are for stacking D-DFG-01 with TGMSh-3 and TMHR-3 or TMHX-3.
- \*7: These valves are used in stacking with TGMSh-3. For mounting bolts, see \* 6 (TGMSh-3).
- \*8: See page G34-1, under Stack valves (TGM-7, 50 series) and page R9-5, Hex socket bolts, Part no. list for mounting bolt lengths and part numbers.
- \*9: See page G42-1, under Stack valves (TGM-8, 50 series) and page R9-5, Hex socket bolts, Part no. list for mounting bolt lengths and part numbers.

# Hex socket bolts, part no. list

## ● JIS B 1176 Strength Class 12.9

Length Beneath the Head mm	Screw Size		M5	M6	M8	M10	M12	M16	M20
30			001950301	001960301	001980301	001910301	001912301		
35			001950351	001960351	001980351	001910351	001912351	001916351	
40			001950401	001960401	001980401	001910401	001912401	001916401	
45			001950451	001960451	001980451	001910451	001912451	001916451	
50			001950501	001960501	001980501	001910501	001912501	001916501	
55			001950551	001960551	001980551	001910551	001912551	001916551	
60			001950601	001960601	001980601	001910601	001912601	001916601	VP473843
65			001950651	001960651	001980651	001910651	001912651	001916651	48473844
70			001950701	001960701	001980701	001910701	001912701	001916701	VA15405
75			001950751	001960751	001980751	001910751	001912751	001916751	VA23226
80			001950801	001960801	001980801	001910801	001912801	001916801	VP763681
85			001950851	001960851	001980851	001910851	001912851	001916851	40011504
90			001950901	001960901	001980901	001910901	001912901	001916901	VA22795
95			001950951	001960951	001980951	001910951	001912951	001916951	VA15403
100			VP417414	48473755	40011317	VA30448	VA16390	VA23223	VA23228
105			40010013	VA23211		VA23221	VA16391	VA23224	VA25901
110			VP417415	VA23212		VA31190	VA28608	40015333	VA27044
115			VA27334	VA23213			VA16392	40012290	
120			VP417416	VA23214		VA26961	VA26569	VA27739	
130			VP417417	VA23215			VA28623	VA22796	48473853
135			40013034						
140			VP417418	VA23216			VA29558	48473837	
145						40012089			VA25902
150			VP417419	VA22340			VA31752	VA27749	VA23229
160			VP417420	40015599		40012091	VA29799	VA27743	VA13364
170			VP417421	VA23217			VA18048		VA23230
180			40012431				VA18050		
190				40015559		40015560		VA27753	40012291
200			VP429312				VA30882		
210			40012060	40015600			VA29840		
220				40015601					
240			40012061	40015602			VA30715		

## ● ANSI B 18.3 1960 Series

Screw Size		1/4-20UNC	5/16-18UNC	3/8-16UNC	1/2-13UNC	5/8-11UNC	3/4-10UNC
Length Beneath the Head							
in	mm						
1-1/4	31.8	002020321	002025321	002030321	002040321	002050321	002060321
1-1/2	38.1	002020381	002025381	002030381	002040381	002050381	002060381
1-3/4	44.5	002020441	002025441	002030441	002040441	002050441	002060441
2	50.8	002020511	002025511	002030511	002040511	002050511	002060511
2-1/4	57.1	002020571	002025571	002030571	002040571	002050571	002060571
2-1/2	63.5	002020641	002025641	002030641	002040641	002050641	002060641
2-3/4	69.8	002020701	002025701	002030701	002040701	002050701	002060701
3	76.2	002020761	002025761	002030761	002040761	002050761	002060761
3-1/4	82.5	VP10937	002025831	002030831	002040831	002050831	002060831
3-1/2	88.9	VP10938	002025891	002030891	002040891	002050891	002060891
3-3/4	95.2	VP10939			40012287		
4	101.6	VP10940	VA25894		VP1119	VP298173	VP298191
4-1/4	107.9	VP65779		VP1079	VP10957		
4-1/2	114.3	VP100026			VP10958	VP298174	
5	127	VP207904			VP10960	VP10970	
5-1/4	133.4	VP238715			VP10961	VP10971	
5-1/2	139.7					48298176	
5-3/4	146.1						VA18924
6	152.4	VP238151			VP10964		
6-1/2	165.1	VP238718			VP207928		48298196
7	177.8	VP238719			VP22391		
7-1/2	190.5	VP238720					