



Bit

K

## HEX KEYS & BITS, LONG AND SHORT ARM

ASME B18.3-1998

Nominal Key or Bit and Socket Size	W		Y		B		C				R	K
	Hex Width Across the Flats		Hex Width Across the Corners		Length of Short Arm		Length of Long Arm				Radius of Bend	Chamfer
	Max	Min	Max	Min	Max	Min	Short Series		Long Series			
							Max	Min	Max	Min	Min	Max
- 0.028	0.0280	0.0275	0.0314	0.0300	0.312	0.125	1.312	1.125	2.688	2.500	0.062	0.003
- 0.035	0.0350	0.0345	0.0393	0.0378	0.438	0.250	1.312	1.125	2.766	2.578	0.062	0.004
- 0.050	0.0500	0.0490	0.0560	0.0540	0.625	0.438	1.750	1.562	2.938	2.750	0.062	0.006
1/16 0.062	0.0625	0.0615	0.0701	0.0680	0.656	0.469	1.844	1.656	3.094	2.906	0.062	0.008
5/64 0.078	0.0781	0.0771	0.0880	0.0859	0.703	0.516	1.969	1.781	3.281	3.094	0.078	0.008
3/32 0.094	0.0937	0.0927	0.1058	0.1035	0.750	0.562	2.094	1.906	3.469	3.281	0.094	0.009
7/64 0.109	0.1094	0.1079	0.1238	0.1210	0.797	0.609	2.219	2.031	3.656	3.469	0.109	0.014
1/8 0.125	0.1250	0.1235	0.1418	0.1390	0.844	0.656	2.344	2.156	3.844	3.656	0.125	0.015
9/64 0.141	0.1406	0.1391	0.1593	0.1566	0.891	0.703	2.469	2.281	4.031	3.844	0.141	0.016
5/32 0.156	0.1562	0.1547	0.1774	0.1745	0.938	0.750	2.594	2.406	4.219	4.031	0.156	0.016
3/16 0.188	0.1875	0.1860	0.2135	0.2105	1.031	0.844	2.844	2.656	4.594	4.406	0.188	0.022
7/32 0.219	0.2187	0.2172	0.2490	0.2460	1.125	0.938	3.094	2.906	4.969	4.781	0.219	0.024
1/4 0.250	0.2500	0.2485	0.2845	0.2815	1.219	1.031	3.344	3.156	5.344	5.156	0.250	0.030
5/16 0.312	0.3125	0.3110	0.3570	0.3531	1.344	1.156	3.844	3.656	6.094	5.906	0.312	0.032
3/8 0.375	0.3750	0.3735	0.4285	0.4238	1.469	1.281	4.344	4.156	6.844	6.656	0.375	0.044
7/16 0.438	0.4375	0.4355	0.5005	0.4944	1.594	1.406	4.844	4.656	7.594	7.406	0.438	0.047
1/2 0.500	0.5000	0.4975	0.5715	0.5650	1.719	1.531	5.344	5.156	8.344	8.156	0.500	0.050
9/16 0.562	0.5625	0.5600	0.6420	0.6356	1.844	1.656	5.844	5.656	9.094	8.906	0.562	0.053
5/8 0.625	0.6250	0.6225	0.7146	0.7080	1.969	1.781	6.344	6.156	9.844	9.656	0.625	0.055
3/4 0.750	0.7500	0.7470	0.8580	0.8512	2.219	2.031	7.344	7.156	11.344	11.156	0.750	0.070
7/8 0.875	0.8750	0.8720	1.0020	0.9931	2.469	2.281	8.344	8.156	12.844	12.656	0.875	0.076
1 1.000	1.0000	0.9970	1.1470	1.1350	2.719	2.531	9.344	9.156	14.344	14.156	1.000	0.081
Tolerance on Length of Key Bits							±0.062					

HEX KEYS AND BITS			Blue Devil®
Nominal Size	Torsional Shear Average (Inch-Pounds)	Torque Rating (Inch-Pounds)	
.028	1.1	.86	
.035	2.3	1.80	
.050	6.5	5.00	
1/16	11.9	9.50	
5/64	25.0	19.40	
3/32	43.0	33.50	
7/64	68.0	52.90	
1/8	98.0	77.90	
9/64	146.0	117.00	
5/32	195.0	156.00	
3/16	342.0	273.00	
7/32	535.0	428.00	
1/4	770.0	615.00	
5/16	1,600.0	1,315.00	
3/8	2,500.0	2,150.00	
7/16	4,500.0	3,665.00	
1/2	6,300.0	5,130.00	
9/16	8,750.0	7,010.00	
5/8	12,000.0	9,810.00	
3/4	19,500.0	15,570.00	
7/8	29,000.0	23,400.00	
1	43,500.0	35,100.00	

Description	A hex key is a six-sided shaped bar bent at a 90° angle at one end. A hex bit is an unbent piece of such a bar.
Applications/ Advantages	Designed to be inserted into a like-sized, hollow recess of a socket screw to manually tighten or loosen the fastener.
Material	Alloy steel containing at least two of the following elements: chromium, nickel, molybdenum or vanadium, in sufficient quantity to assure that the minimum surface hardness meets the standards listed below.
Heat Treatment	Hex keys are hardened by quenching from the austenitizing temperature and tempered.
Surface Hardness	Sizes through 3/8": Rockwell C 48 minimum Sizes over 3/8": Rockwell C 45 minimum
Torsional Shear Strength	The average torsional shear strength as listed above is the average maximum torque which standard keys and bits will transmit when tested to destruction. When tested this way, failure will occur by a clean, square shear fracture.
Torque Rating	Keys cut into bits for use in torque wrenches will transmit the above torques. These values are 90% of average torque required to develop a permanent visible twist in bits which have one inch of hexagon exposed between the torque wrench and the socket. These are also the torque values which keys transmit when the short arm is inserted in a socket and the long arm is deflected or bent through an angle of 25-30° by the application of force near the end of the long arm.