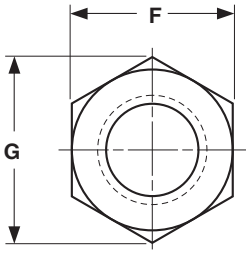
NUTS

ISO 4032 Hex Nuts Style 1 & Class 6

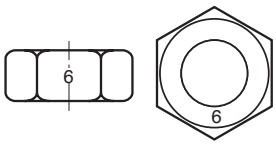




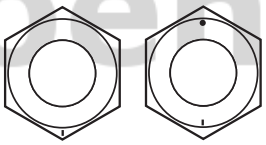
METRIC - Hex Nuts, Style 1

ISO 4032

Nominal Size	Thread Pitch	F Width Across Flats		G Width Across Corners	H Thickness	
		Max	Min	Min	Max	Min
M1.6	0.35	3.2	3.02	3.41	1.3	1.05
M2	0.4	4	3.82	4.32	1.6	1.35
M2.5	0.45	5	4.82	5.45	2	1.75
M3	0.5	5.5	5.32	6.01	2.4	2.15
M4	0.7	7	6.78	7.66	3.2	2.9
M5	0.8	8	7.78	8.79	4.7	4.4
M6	1	10	9.78	11.05	5.2	4.9
M8	1.25	13	12.73	14.38	6.8	6.44
M10	1.5	16	15.73	17.77	8.4	8.04
M12	1.75	18	17.73	20.03	10.8	10.37
M14	2	21	20.67	23.35	12.8	12.1
M16	2	24	23.67	26.75	14.8	14.1
M20	2.5	30	29.16	32.95	18	16.9
M24	3	36	35	39.55	21.5	20.2
M30	3.5	46	45	50.85	25.6	24.3
M36	4	55	53.8	60.79	31	29.4

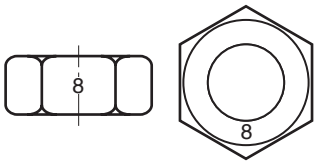


CLASS 6 HEX NUTS

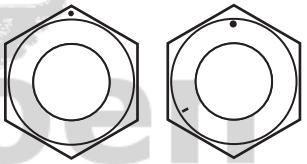


Description	A six-sided internally threaded, non-heat treated fastener with a metric thread pitch. Nuts M16 and smaller are chamfered on the top and the bearing surface. Nuts M18 and larger may be either double chamfered, or have a washer face on one side and a chamfered surface on the opposite side.
Applications/ Advantages	Class 6 nuts are intended for use with screws and bolts of property class 6.8 or lower. They are the most popular nut for use with metric machine screws.
Material	Class 6 nuts shall be made of a steel which conforms to the following chemical composition-- ***Carbon:*** 0.50% maximum; ***Phosphorus***: 0.060% maximum; ***Sulfur***: 0.150% maximum. Class 6 nuts may also be made from free-cutting steel which conforms to the following chemical composition-- ***Carbon***: 0.50% maximum; ***Sulfur***: 0.34% minimum; ***Phosphorus***: 0.11% minimum; ***Lead***: 0.35% minimum.
Hardness	***Diam. thru M16:*** Vickers HV 150 - 302 (Rockwell B78.7 - C30); ***Diam. M18 thru M39:*** Vickers HV 170 - 302 (Rockwell B85 - C30)
Proof Load	***Diameters M1.6 through M4:*** 600 N/mm^2 *Diameters M5 through M7:* 670 N/mm^2 *Diameters M8 through M10:* 680 N/mm^2 *Diameters M12 through M16:* 700 N/mm^2 *Diameters M18 through M36:* 720 N/mm^2
Plating	See Appendix-A for plating information

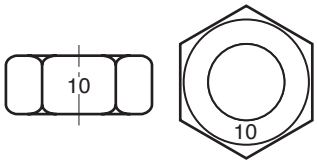
Classes 8 & 10 & A2-70 NUTS



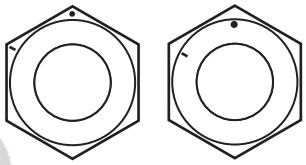
CLASS 8 HEX NUTS



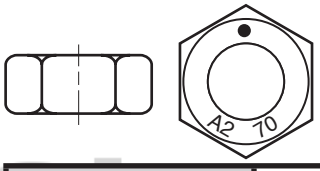
Description	A Style 1 hex nut with a metric thread pitch. Nuts M16 and smaller are chamfered top and bottom, and are not heat-treated. Nuts M18 and larger are (1) heat-treated and (2) may be double chamfered, or have a washer face on one side and a chamfered surface on the opposite side.
Applications/ Advantages	Class 8 nuts are intended for use with screws & bolts of property class 8.8 or lower. They are widely used in the automotive and electronics industries.
Material	Class 8 nuts shall be made of a steel which conforms to the following chemical composition-- ***Carbon***: 0.58% maximum; ***Manganese***: 0.25% minimum; ***Phosphorus***: 0.060% maximum; ***Sulfur***: 0.150% maximum.
Heat Treatment	Class 8 nuts of diameter 18mm or greater shall be heat treated by quenching in a liquid medium from a temperature above the transformation temperature and tempering at a temperature of at least 425°C.
Hardness	***Diameters M1.6 through M4:*** Vickers HV 180 - 302 (Rockwell B87.1 - C30) *Diameters M5 through M16:* Vickers HV 200 - 302 (Rockwell B91.5 - C30) *Diameters through M18 through M39:* Vickers HV 233 - 353 (Rockwell C18 - 36)
Proof Load	***Diameters M1.6 through M4:*** 800 N/mm^2 / Diameters M5 through M7: 855 N/mm^2 / Diameters M8 through M10: 870 N/mm^2 *Diameters M12 through M16:* 880 N/mm^2 / Diameters M18 through M36: 920 N/mm^2
Plating	See Appendix-A for plating information



CLASS 10 HEX NUTS



Description	A Style 1, heat treated fastener with a metric thread pitch. Nuts M16 and smaller are chamfered on the top and the bearing surface. Nuts M20 and larger may be either double chamfered, or have a washer face on one side and a chamfered surface on the opposite side.
Applications/ Advantages	Class 10 nuts are intended for use with screws and bolts of property classes 10.9 and lower. They are widely used in farm equipment.
Material	Class 10 nuts shall be made of a steel which conforms to the following chemical composition-- ***Carbon***: 0.58% maximum; ***Manganese***: 0.30% minimum; ***Phosphorus***: 0.048% maximum; ***Sulfur***: 0.058% maximum.
Heat Treatment	Class 10 nuts shall be heat treated by quenching in a liquid medium from a temperature above the transformation temperature and tempering at a temperature of at least 425°C.
Hardness	Rockwell C26 - 36 (Vickers HV 272 - 353)
Proof Load	***Diameters through M10:*** 1040 N/mm^2 / Diameters M12 through M16: 1050 N/mm^2 / Diameters M18 through M39: 1060 N/mm^2
Plating	See Appendix-A for plating information



CLASS A2-70 HEX NUTS

Description	A Style 1, fastener with a metric thread pitch. Nuts M16 and smaller are chamfered on the top and the bearing surface.
Applications/ Advantages	Class A2-70 nuts are intended for use with stainless screws and bolts. They are widely used in farm equipment.
Material	A2-70 Stainless Steel
Plating	Stainless nuts are usually supplied without supplemental platting.