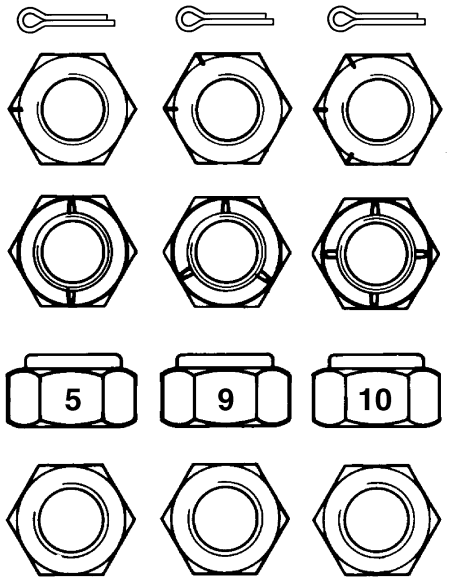
METRIC AND INCH (SAE) FASTENERS



HM210064

HYSTER

PART NO. 910442

8000 SRM 0231

SAFETY PRECAUTIONS
MAINTENANCE AND REPAIR

- The Service Manuals are updated on a regular basis, but may not reflect recent design changes to the product. Updated technical service information may be available from your local authorized Hyster® dealer. Service Manuals provide general guidelines for maintenance and service and are intended for use by trained and experienced technicians. Failure to properly maintain equipment or to follow instructions contained in the Service Manual could result in damage to the products, personal injury, property damage or death.
- When lifting parts or assemblies, make sure all slings, chains, or cables are correctly fastened, and that the load being lifted is balanced. Make sure the crane, cables, and chains have the capacity to support the weight of the load.
- Do not lift heavy parts by hand; always use a lifting mechanism.
- Wear safety glasses.
- DISCONNECT THE BATTERY before doing any maintenance or repair on electric lift trucks. Disconnect the battery ground cable on internal combustion lift trucks.After disconnecting the battery, honk the horn until it stops sounding. If the horn does not sound at all, wait 5 minutes before doing work on the truck.
- Always use correct blocks to prevent the unit from rolling or falling. See HOW TO PUT THE LIFT TRUCK ON BLOCKS in the **Operating Manual** or the **Periodic Maintenance** section of the service manual.
- Keep the unit clean and the working area clean and orderly.
- Use the correct tools for the job.
- Keep the tools clean and in good condition.
- Always use **HYSTER ® APPROVED** parts when making repairs. Replacement parts must meet or exceed the specifications of the original equipment manufacturer.
- Make sure all nuts, bolts, snap rings, and other fastening devices are removed before using force to remove parts.
- Always fasten a DO NOT OPERATE tag to the controls of the unit when making repairs, or if the unit needs repairs.
- Strictly follow all **WARNING** and **CAUTION** notes in the operating manual, safety labels, service manual, and other instructions.
- Gasoline, Liquid Propane Gas (LPG), Compressed Natural Gas (CNG), Hydrogen Gas (H2), and Diesel fuels are flammable and potentially explosive. Hydraulic, transmission, and other fluids and oils are also flammable. Be sure to follow the necessary safety precautions when handling these substances or working on systems containing these substances.
- Lead acid batteries generate flammable gas when they are being charged. Keep fire and sparks away from the area. Make sure the area is well ventilated.
- Lithium-ion batteries should only be used in working environments where the temperature is within the recommended operating range (typically between 0 - 40°C (32 - 104°F)). Extreme temperatures, moisture, improper charging or damage to the battery can cause a fire or explosion.
- Whenever Diagnostic tools are needed for engine, only licensed or certified persons can use Diagnostic tools.

NOTE: The following symbols and words indicate safety information in this manual:

WARNING

Indicates a hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION

Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury and property damage.

On the lift truck, the WARNING symbol (and word, if present) are on orange background. The CAUTION symbol (and word, if present) are on yellow background.

WARNING

Installing improper electrical accessories or installing an electrical accessory incorrectly can increase the risk of equipment damage, personal injury and fire. DO NOT install electrical accessories to the truck unless you have been trained and authorized to do so. Personnel installing the electrical accessories must document the changes made to the truck. DO NOT install accessories which affect the truck's compliance with standard ANSI/ITSDF B56.1, UL 558, or UL 583, or which otherwise affect the safe operation of the truck.

WARNING

Installing improper electrical accessories or installing an electrical accessory incorrectly can increase the risk of equipment damage, personal injury and fire. DO NOT install electrical accessories to the truck unless you have been trained and authorized to do so. Personnel installing the electrical accessories must document the changes made to the truck. DO NOT install accessories which affect the truck's compliance with standard EN 1175:2025.

WARNING

California Proposition 65 - Operating, servicing and maintaining a powered industrial truck can expose you to chemicals including engine exhaust, carbon monoxide, phthalates, and lead, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information, go to www.P65Warnings.ca.gov.

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"THE QUALITY KEEPERS"

HYSTER APPROVED PARTS

General

THREADED FASTENERS

Threaded fasteners, like bolts, nuts, cap screws, and studs, are made to specifications that describe the mechanical strength and hardness of the fastener. A fastener used in a design application is selected according to its specifications. Hyster® Company buys parts from many countries. Parts that are purchased must be to Hyster® Company standards. There are several standards used by these countries in the manufacture of threaded fasteners. Many of these fasteners are similar, but cannot be used as a direct replacement. To make sure that you have the correct fastener, order fasteners and parts through the Hyster® Parts Depot.

Service persons must use replacement fasteners that have the same specifications. Fasteners made to each specification have identification marks for that specification. This specification is commonly called "Grade" for SAE standards and "property class" for metric standards. This section describes the identification of some common fasteners.

The metric system used by Hyster® Company is described as SI (Le Systeme d'Unites or the International System of units, also called SI in all languages). The SI System of measurement is described in ISO Standard 1000, 1973. A conversion table of common measurements is shown in Table 7.

NOMENCLATURE, THREADS

The thread design is specified by a series of numbers and letters for inch and metric fasteners. See Figure 1. The diameter of the shank of the fastener is shown first in the series [M12 = 12 mm, M20 = 20 mm (1/2 = 1/2 in., 3/4 = 3/4 in.)].

The number of threads per inch is normally not shown for inch nomenclature and only the UNC (Unified National Coarse) or UNF (Unified National Fine) is shown. This number of threads per inch is not shown because a UNC or UNF fastener has a standard number of threads per inch for a specific diameter. Metric fasteners show the number of threads per millimeter.

The length of the shank is often indicated as part of the description of a fastener. This length is shown in inches for inch fasteners and in millimeters for metric fasteners.

A cap screw will have the following description:

Metric	Inch
M12 × 1.75 × 50	1/2 × 13 UNC × 1-1/2
A B C	A B C D
A = Thread Size	A = Shank Diameter
B = Pitch	B = Number of Threads Per Unit of Length
C = Length	C = type of Thread
	D = Shank Length

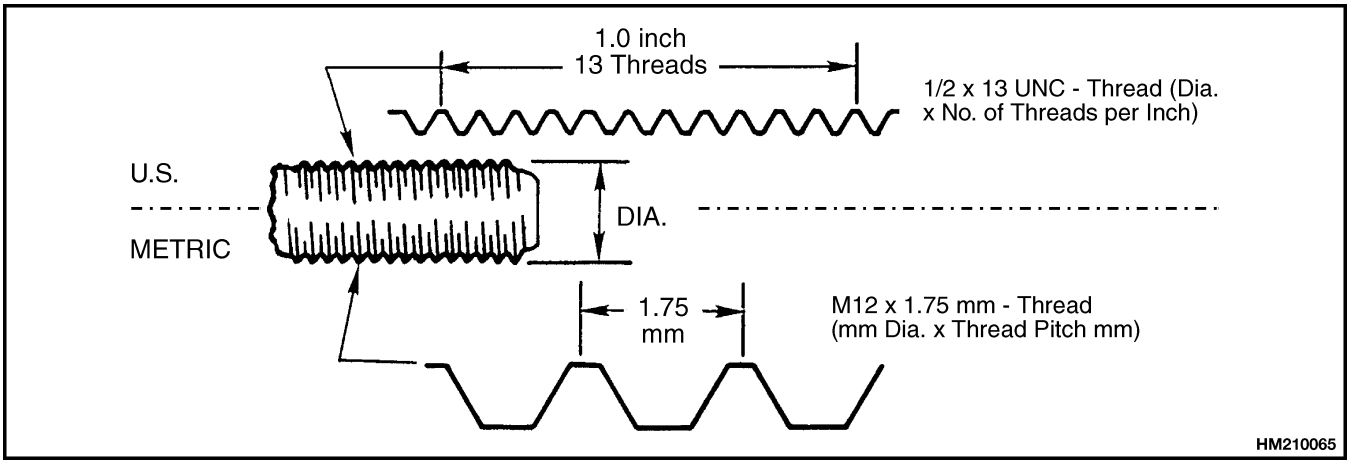


Figure 1. Thread Design

STRENGTH IDENTIFICATION

CAUTION

When fasteners must be replaced, the new fasteners must be of the same strength or greater than the original fasteners. The new fasteners must also be the correct size.

NOTE: Identification marks are according to bolt strength. The higher the number or the increase in the number of marks indicates increased bolt strength.

The most common property classes for metric fasteners are 8.8 and 10.9. The property class is marked with a number on the head of the cap screw or on a nut. Property classes less than 8.8 are often not marked. Grades for inch bolts go from 2 to 8. Grade 2 fasteners normally do not have any marks. The following tables show the marks that identify the grades and property classes for different fasteners.

COTTER (SPLIT) PINS

Cotter (split) pins are used in many applications on your forklift. They are typically used to retain parts such as pins and nuts. Cotter (split) pins are typically not used as load-bearing members. Service personnel must use new cotter (split) pins. Do not reuse a cotter (split) pin. Replacement cotter (split) pin must be of the correct size. See Table 8.

The legs of a cotter (split) pin are bent for the following reasons:

- To retain the cotter (split) pin in the part
- To provide clearance between the cotter pin legs and other parts or members. One or both cotter (split) pin legs must be bent to provide a minimum 90° angle between the legs. See Figure 2.

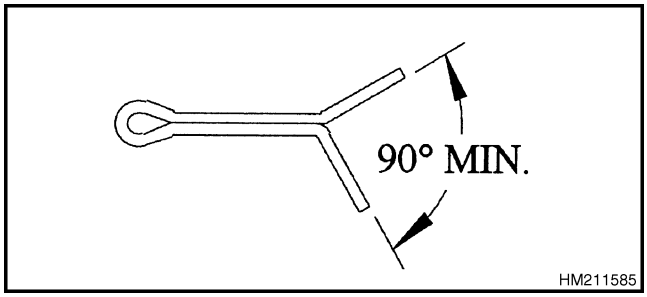
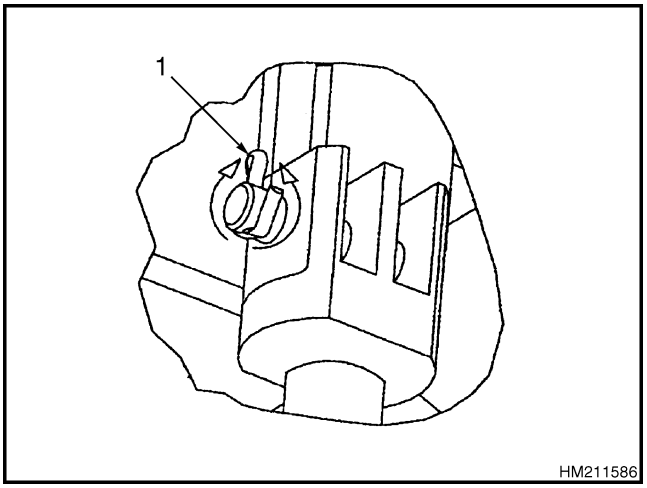


Figure 2. Minimum Angle Between Cotter Pin Legs

Unless otherwise specified, the legs of chain anchor cotter (split) pins are to be bent against the pin. See Figure 3.



1. COTTER PIN

Figure 3. Cotter (Split) Pins Used On Mast Chain Anchors

Table 1. Bolts and Screws

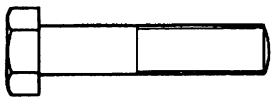
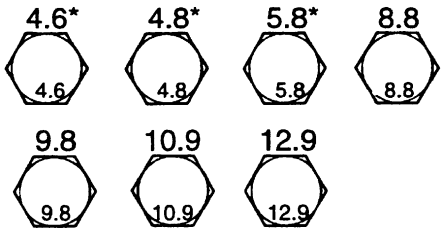
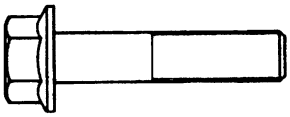
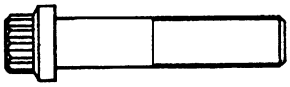
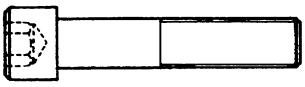
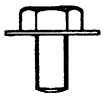
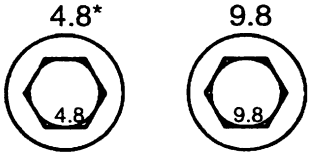
TYPE OF FASTENER	METRIC FASTENERS STRENGTH LEVELS: PROPERTY CLASS * MARKINGS NOT REQUIRED	INCH FASTENERS STRENGTH LEVELS: SAE GRADES * MARKINGS NOT REQUIRED
 HEX HEAD BOLTS AND CAPSCREWS	 MARKINGS FOR SIZE M5 AND LARGER	
 HEX HEAD FLANGE SCREWS	SAME AS ABOVE	
 12–POINT FLANGE SCREWS		
 HEX SOCKET HEAD CAPSCREWS		MARKINGS NOT REQUIRED
 SEMS		 HM210066

Table 2. Studs and Nuts

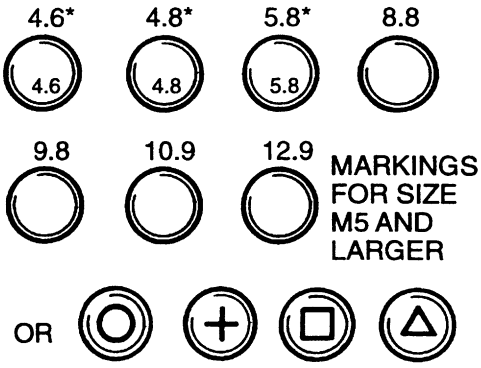
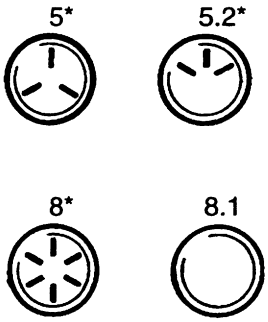
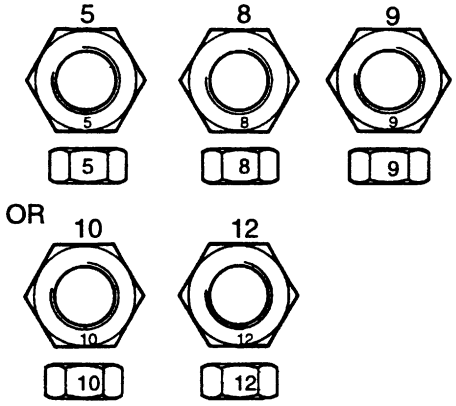
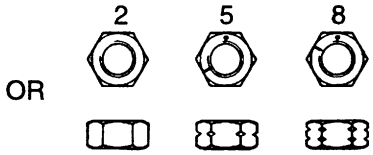
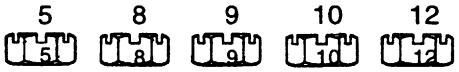
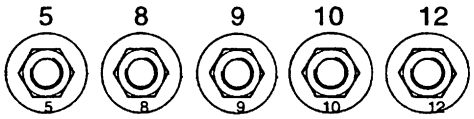
TYPE OF FASTENER	METRIC FASTENERS STRENGTH LEVELS: PROPERTY CLASS * MARKINGS NOT REQUIRED	INCH FASTENERS STRENGTH LEVELS: SAE GRADES * MARKINGS NOT REQUIRED
 STUDS		
 HEX NUTS		
 HEX SLOTTED NUTS		MARKINGS NOT REQUIRED
 HEX FLANGE NUTS		MARKINGS NOT REQUIRED HM210067

Table 3. Torque Nuts

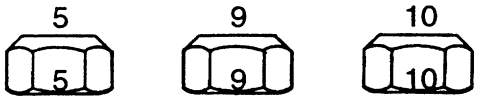
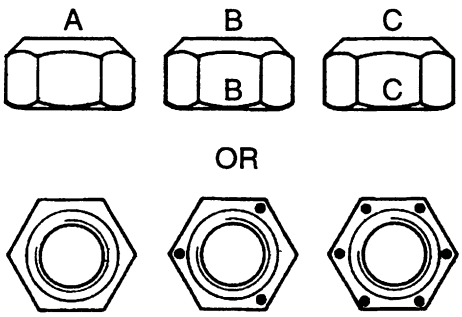
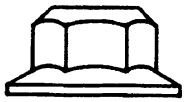
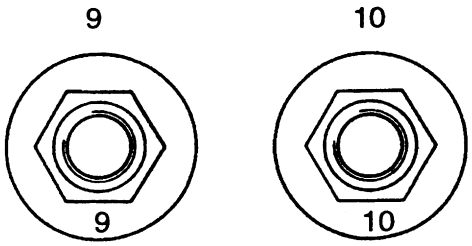
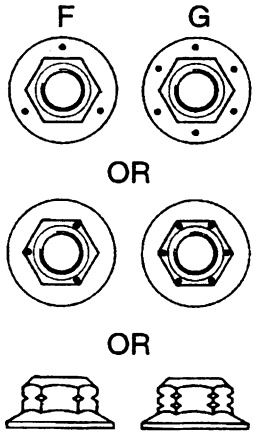
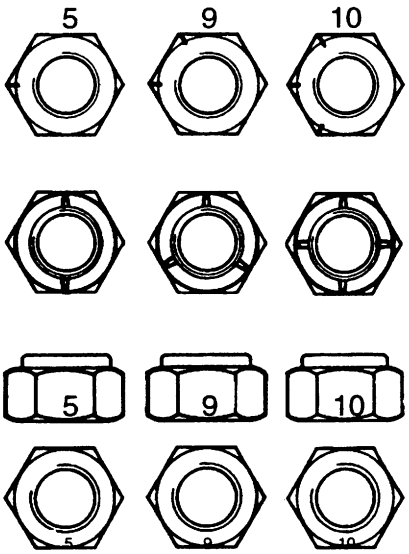
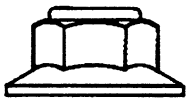
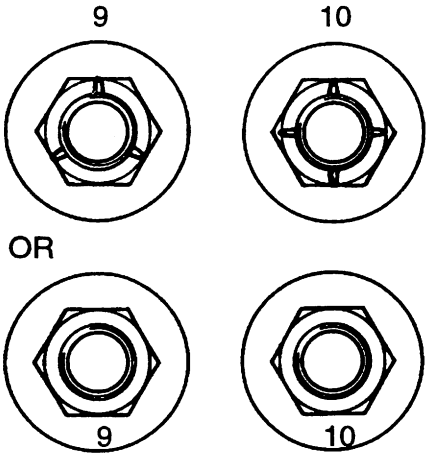
TYPE OF FASTENER	METRIC FASTENERS STRENGTH LEVELS: PROPERTY CLASS	INCH FASTENERS STRENGTH LEVELS: SAE GRADES
 ALL METAL PREVAILING TORQUE NUTS		
 ALL METAL PREVAILING TORQUE FLANGE NUTS		 HM210068

Table 4. Torque Nuts With Nylon Insert

TYPE OF FASTENER	METRIC FASTENERS STRENGTH LEVELS: PROPERTY CLASS	INCH FASTENERS STRENGTH LEVELS: SAE GRADES
 NYLON INSERT PREVAILING TORQUE NUTS		MARKINGS NOT REQUIRED
 NYLON INSERT PREVAILING TORQUE NUTS		MARKINGS NOT REQUIRED HM210069

FASTENER TORQUE TABLES

*Table 5. Torque Values for Metric Fasteners**

Size and Pitch	Property Class 5.8[1]		Grade 8.8[2]		Grade 10.9[3]	
	N•m	lbf ft	N•m	lbf ft	N•m	lbf ft
M3 × 0.5 M3.5 × 0.6 M4 × 0.7 M5 × 0.8 M6 × 1	0.62 0.97 1.44 2.91 4.94	0.5 0.7 1.1 2.1 3.6	0.99 1.55 2.30 4.65 7.90	0.7 1.1 2.1 3.6 6	1.34 2.11 3.13 6.33 10.8	1.0 1.6 2.3 4.7 8
M8 × 1.25 M8 × 1 M10 × 1.5 M10 × 1.25	12.0 12.8 23.8 25.1	9 9 18 19	19.2 20.5 38.0 40.1	14 15 28 30	26.1 27.9 52 55	19 21 38 41
M12 × 1.75 M12 × 1.25 M14 × 2 M14 × 1.5	41.4 45.3 66 72	31 33 49 53	66 72 105 115	49 53 77 85	90 98 145 155	66 72 105 115
M16 × 2 M16 × 1.5 M20 × 2.5 M20 × 1.5	105 110 200 225	77 81 150 165	165 175 320 355	122 130 235 260	225 240 435 485	165 175 320 360
M24 × 3 M24 × 2 M27 × 3 M27 × 2	345 375 505 550	255 275 370 405	555 605 810 875	410 445 600 645	755 820 1,100 1,190	560 605 810 880
M30 × 3.5 M30 × 3 M30 × 2 M33 × 3.5 M33 × 2	690 715 765 940 1,030	510 530 565 695 760	1,100 1,140 1,220 1,500 1,640	810 840 900 1,100 1,210	1,500 1,550 1,660 2,040 2,240	1,100 1,140 1,230 1,510 1,660
M36 × 4 M36 × 3 M39 × 4 M39 × 3	1,200 1,280 1,560 1,640	885 945 1,150 1,210	1,930 2,040 2,490 2,630	1,430 1,510 1,840 1,940	2,620 2,780 3,390 3,570	1,940 2,050 2,500 2,640
M42 × 4.5 M42 × 3 M45 × 4.5 M45 × 3 M48 × 5 M48 × 3	1,930 2,070 2,410 2,580 2,900 3,160	1,430 1,530 1,780 1,910 2,140 2,330	3,080 3,320 3,850 4,120 4,630 5,040	2,280 2,450 2,840 3,040 3,420 3,720	4,200 4,510 5,240 5,610 6,300 6,860	3,100 3,330 3,870 4,140 4,650 5,060

* Unless otherwise specified [1] Approximately equal to Grade 2 [2] Approximately equal to Grade 5 [3] Approximately equal to Grade 8

*Table 6. Torque Values for Inch Fasteners**

Size and Pitch		Grade 2[1]		Grade 5[2]		Grade 8[3]	
		lbf ft	N•m	lbf ft	N•m	lbf ft	N•m
1/4 1/4	20 UNC 28 UNF	4 5	6 6	6 7	9 10	9 10	12 14
5/16 5/16	18 UNC 24 UNF	8 9	11 13	13 14	18 20	18 20	25 28
3/8 3/8	16 UNC 24 UNF	15 17	20 23	23 26	31 36	33 37	44 50
7/16 7/16	14 UNC 20 UNF	24 27	33 36	37 41	50 56	52 58	71 79

* Unless otherwise specified [1] Approximately equal to metric Property Class 5.8 [2] Approximately equal to metric Property Class 8.8 [3] Approximately equal to metric Property Class 10.9

Table 6. Torque Values for Inch Fasteners (Continued)*

Size and Pitch		Grade 2[1]		Grade 5[2]		Grade 8[3]	
		lbf ft	N•m	lbf ft	N•m	lbf ft	N•m
1/2 1/2	13 UNC 20 UNF	37 41	50 56	57 85	77 115	80 90	110 120
9/16 9/16	12 UNC 18 UNF	53 59	72 80	82 91	110 125	115 130	155 175
5/8 5/8	11 UNC 18 UNF	73 83	99 110	115 130	155 175	160 180	215 245
3/4 3/4	10 UNC 16 UNF	130 145	175 195	200 225	270 300	280 315	380 425
7/8 7/8	9 UNC 14 UNF	125 140	170 185	320 355	435 480	455 500	615 680
1 1	8 UNC 14 UNF	185 210	255 285	485 540	655 735	680 765	925 1,040
1-1/8 1-1/8	7 UNC 12 UNF	265 300	360 405	595 670	805 905	965 1,080	1,310 1,470
1-1/4 1-1/4	7 UNC 12 UNF	375 415	510 565	840 930	1,140 1,260	1,360 1,500	1,850 2,050
1-3/8 1-3/8	6 UNC 12 UNF	490 560	665 760	1,100 1,250	1,490 1,700	1,780 2,040	2,420 2,760
1-1/2 1-1/2	6 UNC 12 UNF	650 735	885 995	1,460 1,650	1,980 2,230	2,370 2,670	3,210 3,620

* Unless otherwise specified [1] Approximately equal to metric Property Class 5.8 [2] Approximately equal to metric Property Class 8.8 [3] Approximately equal to metric Property Class 10.9

CONVERSION TABLE

Table 7. Conversion Table for Metric and English units

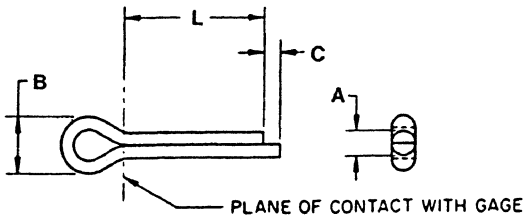
Multiply	By	To Get	Multiply	By	To Get
Area					
inches 2 (in. 2)	× 6.452	= centimeters 2 (cm 2)	centimeters 2 (cm 2)	× 0.155	= inches 2 (in. 2)
feet 2 (ft 2)	× 0.093	= meters 2 (m 2)	meters 2 (m 2)	× 10.764	= feet 2 (ft 2)
Linear					
inches (in.)	× 25.4	= millimeters (mm)	millimeter (mm)	× 0.039	= inches (in.)
feet (ft)	× 0.305	= meters (m)	meter (m)	× 3.281	= feet (ft)
yards (yd)	× 0.914	= meters (m)	meter (m)	× 1.094	= yards (yd)
miles (mi)	× 1.609	= kilometers (km)	kilometer (km)	× 0.621	= miles (mi)

Table 7. Conversion Table for Metric and English units (Continued)

Multiply	By	To Get	Multiply	By	To Get
Mass					
ounces (oz)	× 28.35	= grams (g)	grams (g)	× 0.035	= ounces (oz)
pounds (lb)	× 0.454	= kilograms (kg)	kilograms (kg)	× 2.205	= pounds (lb)
tons (2,000 lb)	× 907.18	= kilograms (kg)	kilograms (kg)	× 0.001	= tons (2,000 lb)
tons (2,000 lb)	× 0.907	= metric ton (t)	metric ton (t)	× 1.102	= tons (2,000 lb)
Power					
horsepower (hp)	× 0.746	= kilowatts (kW)	kilowatts (kW)	× 1.34	= horsepower (hp)
Pressure					
pounds/in. 2 (psi)	× 6.895	= kilopascal (kPa)	kilopascals (kPa)	× 0.145	= pounds/in. 2 (psi)
pounds/in. 2 (psi)	× 0.007	= megapascal (MPa)	megapascals (MPa)	× 145.04	= pounds/in. 2 (psi)
Temperature					
(°Fahrenheit−32)	× 0.56	= °Celsius (C)	(°Celsius × 1.8) +32		= °Fahrenheit
Torque					
pound inches (lbf in.)	× 0.113	= Newton meter (N • m)	Newton meter (N • m)	× 8.851	= pound inches (lb f in.)
pound feet (lbf ft)	× 1.356	= Newton meter (N • m)	Newton meter (N • m)	× 0.738	= pound feet (lb f ft)
Velocity					
miles/hour (mph)	× 1.609	= kilometer/hour (km/h)	kilometer/hr (km/h)	× 0.621	= miles/hour (mph)
Volume					
inches 3 (in. 3)	× 16.387	= centimeters 3 (cm 3)	centimeters 3 (cm 3)	× 0.061	= inches 3 (in. 3)
inches 3 (in. 3)	× 0.016	= liters (l)	liters (l)	× 61.024	= inches 3 (in. 3)
quarts, U.S. (qt)	× 0.946	= liters (l)	liters (l)	× 1.057	= quarts, U.S. (qt)
quarts, U.S. (qt)	× 0.83	= quarts, Imp. (qt)	quarts, Imp. (qt)	× 1.205	= quarts, U.S. (qt)
gallons, U.S. (gal)	× 3.785	= liters (l)	liters (l)	× 0.264	= gallons, U.S. (gal)
gallons, U.S. (gal)	× 0.83	= gallons, Imp. (gal)	gallons, Imp. (gal)	× 1.205	= gallons, U.S. (gal)
ounces (oz)	× 29.57	= milliliters (ml)	milliliters (ml)	× 0.034	= ounces (oz)

Table 8. Cotter Pin Dimensional Data

Nominal Size A	Shank Diameter A		Head Dia. B	Length of Extended Prong C		Recommended Hole Size	
	max	min	min	max	min	min	max
1.00 mm (0.031 in.)	0.90 mm (0.035 in.)	0.70 mm (0.028 in.)	1.50 mm (0.060 in.)	1.52 mm (0.060 in.)	0.25 mm (0.01 in.)	0.91 mm (0.036 in.)	1.37 mm (0.054 in.)
1.60 mm (0.047 in.)	1.20 mm (0.048 in.)	0.90 mm (0.035 in.)	1.50 mm (0.060 in.)	2.54 mm (0.10 in.)	0.51 mm (0.02 in.)	1.50 mm (0.059 in.)	1.78 mm (0.070 in.)
2.00 mm (0.062 in.)	1.50 mm (0.060 in.)	1.30 mm (0.051 in.)	2.40 mm (0.094 in.)	2.54 mm (0.10 in.)	0.76 mm (0.03 in.)	1.90 mm (0.075 in.)	2.18 mm (0.086 in.)
2.50 mm (0.094 in.)	2.30 mm (0.091 in.)	2.10 mm (0.083 in.)	4.00 mm (0.158 in.)	2.54 mm (0.10 in.)	1.00 mm (0.04 in.)	2.41 mm (0.095 in.)	2.95 mm (0.116 in.)
3.20 mm (0.125 in.)	3.00 mm (0.120 in.)	2.70 mm (0.106 in.)	5.10 mm (0.201 in.)	3.30 mm (0.13 in.)	1.52 mm (0.06 in.)	3.12 mm (0.123 in.)	3.76 mm (0.148 in.)
4.00 mm (0.156 in.)	3.80 mm (0.150 in.)	3.50 mm (0.138 in.)	6.50 mm (0.256 in.)	4.06 mm (0.16 in.)	1.78 mm (0.07 in.)	3.94 mm (0.155 in.)	4.55 mm (0.179 in.)
5.00 mm (0.188 in.)	4.60 mm (0.181 in.)	4.40 mm (0.172 in.)	8.00 mm (0.315 in.)	4.06 mm (0.16 in.)	2.03 mm (0.08 in.)	4.93 mm (0.194 in.)	5.33 mm (0.210 in.)
6.30 mm (0.250 in.)	5.90 mm (0.232 in.)	5.60 mm (0.220 in.)	10.3 mm (0.406 in.)	4.06 mm (0.16 in.)	2.03 mm (0.08 in.)	6.22 mm (0.245 in.)	6.96 mm (0.274 in.)
8.00 mm (0.312 in.)	7.50 mm (0.295 in.)	7.00 mm (0.275 in.)	13.1 mm (0.516 in.)	4.06 mm (0.16 in.)	2.03 mm (0.08 in.)	7.85 mm (0.309 in.)	8.28 mm (0.326 in.)
9.50 mm (0.375 in.)	9.50 mm (0.374 in.)	8.40 mm (0.329 in.)	16.6 mm (0.654 in.)	6.35 mm (0.25 in.)	4.06 mm (0.16 in.)	9.45 mm (0.372 in.)	9.73 mm (0.383 in.)
13.0 mm (0.500 in.)	12.4 mm (0.488 in.)	11.9 mm (0.467 in.)	21.7 mm (0.854 in.)	6.35 mm (0.25 in.)	3.05 mm (0.12 in.)	12.62 mm (0.497 in.)	13.21 mm (0.520 in.)
16.0 mm (0.625 in.)	15.4 mm (0.606 in.)	15.0 mm (0.590 in.)	27.0 mm (1.063 in.)	8.89 mm (0.35 in.)	3.05 mm (0.12 in.)	15.80 mm (0.622 in.)	16.28 mm (0.641 in.)



EXTENDED PRONG

HM211587

Table 9. Cotter Pin Dimensional Data

Nominal Length L	Length Range		Nominal Size - Part Numbers				
	max	min	1.00 mm (0.031 in.)	1.60 mm (0.047 in.)	2.00 mm (0.062 in.)	2.50 mm (0.094 in.)	3.20 mm (0.125 in.)
6.35 mm (0.250 in.)	7.10 mm (0.280 in.)	5.50 mm (0.217 in.)	0221870	0221875			
9.525 mm (0.375 in.)	10.5 mm (0.413 in.)	8.80 mm (0.345 in.)	0221871	0221876			
12.7 mm (0.500 in.)	13.5 mm (0.530 in.)	11.5 mm (0.453 in.)	0221872	0221877	0015200	0015211	0015221
19.05 mm (0.750 in.)	20.5 mm (0.807 in.)	18.3 mm (0.720 in.)	0221873	0221878	0015201	0015212	0015222
25.4 mm (1.000 in.)	26.9 mm (1.060 in.)	23.9 mm (0.940 in.)	0221874	0221879	0015202	0015213	0015223
31.75 mm (1.250 in.)	33.3 mm (1.310 in.)	29.2 mm (1.150 in.)			0015203	0015216	0015224
38.1 mm (1.500 in.)	40.9 mm (1.610 in.)	36.6 mm (1.440 in.)			0015204	0015217	0015225
44.45 mm (1.750 in.)	46.0 mm (1.810 in.)	42.9 mm (1.690 in.)			0015205	0015218	0015226
50.8 mm (2.000 in.)	52.3 mm (2.060 in.)	49.3 mm (1.940 in.)			0015206	0015219	0015227
57.15 mm (2.250 in.)	58.7 mm (2.310 in.)	55.1 mm (2.170 in.)				0015220	0056997
63.5 mm (2.500 in.)	65.0 mm (2.560 in.)	62.0 mm (2.440 in.)				0221894	0015229
69.85 mm (2.750 in.)	72.1 mm (2.840 in.)	68.3 mm (2.690 in.)					0015230
76.2 mm (3.000 in.)	81.3 mm (3.200 in.)	74.7 mm (2.940 in.)					0015279
88.9 mm (3.500 in.)	91.4 mm (3.600 in.)	87.4 mm (3.440 in.)					

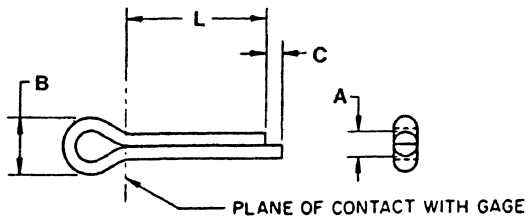


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Table 9. Cotter Pin Dimensional Data (Continued)

Nominal Length L	Length Range		Nominal Size - Part Numbers				
	max	min	1.00 mm (0.031 in.)	1.60 mm (0.047 in.)	2.00 mm (0.062 in.)	2.50 mm (0.094 in.)	3.20 mm (0.125 in.)
101.6 mm (4.000 in.)	113.3 mm (4.460 in.)	98.8 mm (3.890 in.)					
127.0 mm (5.000 in.)	128.5 mm (5.060 in.)	123.7 mm (4.870 in.)					
152.4 mm (6.000 in.)	153.9 mm (3.060 in.)	5.460 mm (138.7 in.)					

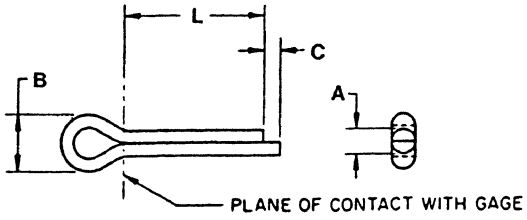

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Table 10. Cotter Pin Dimensional Data

Nominal Length L	Length Range		Nominal Size - Part Numbers				
	max	min	4.00 mm (0.156 in.)	5.00 mm (0.188 in.)	6.30 mm (0.250 in.)	8.00 mm (0.312 in.)	9.52 mm (0.375 in.)
6.35 mm (0.250 in.)	7.10 mm (0.280 in.)	5.50 mm (0.217 in.)					
9.525 mm (0.375 in.)	10.5 mm (0.413 in.)	8.80 mm (0.345 in.)					
12.7 mm (0.500 in.)	13.5 mm (0.530 in.)	11.5 mm (0.453 in.)					
19.05 mm (0.750 in.)	20.5 mm (0.807 in.)	18.3 mm (0.720 in.)	0015232	0015241			

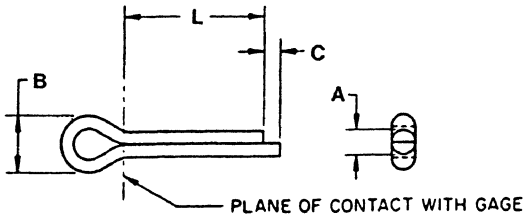

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Table 10. Cotter Pin Dimensional Data (Continued)

Nominal Length L	Length Range		Nominal Size - Part Numbers				
	max	min	4.00 mm (0.156 in.)	5.00 mm (0.188 in.)	6.30 mm (0.250 in.)	8.00 mm (0.312 in.)	9.52 mm (0.375 in.)
25.4 mm (1.000 in.)	26.9 mm (1.060 in.)	23.9 mm (0.940 in.)	0015233	0015242	0015251	0015261	
31.75 mm (1.250 in.)	33.3 mm (1.310 in.)	29.2 mm (1.150 in.)	0015234	0015243	0015252	0015262	0221884
38.1 mm (1.500 in.)	40.9 mm (1.610 in.)	36.6 mm (1.440 in.)	0015235	0015244	0015253	0015263	0221885
44.45 mm (1.750 in.)	46.0 mm (1.810 in.)	42.9 mm (1.690 in.)	0015236	0015245	0015254	0015264	0221886
50.8 mm (2.000 in.)	52.3 mm (2.060 in.)	49.3 mm (1.940 in.)	0015237	0015246	0015255	0015265	0015271
57.15 mm (2.250 in.)	58.7 mm (2.310 in.)	55.1 mm (2.170 in.)	0015238	0015247	0015256	0221880	0221887
63.5 mm (2.500 in.)	65.0 mm (2.560 in.)	62.0 mm (2.440 in.)	0015240	0015248	0015257	0221881	0015273
69.85 mm (2.750 in.)	72.1 mm (2.840 in.)	68.3 mm (2.690 in.)	0015280	0015249	0015258	0221882	0015286
76.2 mm (3.000 in.)	81.3 mm (3.200 in.)	74.7 mm (2.940 in.)	0015283	0015250	0015259	0015267	0015272
88.9 mm (3.500 in.)	91.4 mm (3.600 in.)	87.4 mm (3.440 in.)		0015239	0015284	0015266	0015274
101.6 mm (4.000 in.)	113.3 mm (4.460 in.)	98.8 mm (3.890 in.)		0015301	0015260	0128754	0015275
127.0 mm (5.000 in.)	128.5 mm (5.060 in.)	123.7 mm (4.870 in.)				0221883	0015277
152.4 mm (6.000 in.)	153.9 mm (3.060 in.)	5.460 mm (138.7 in.)					0221888

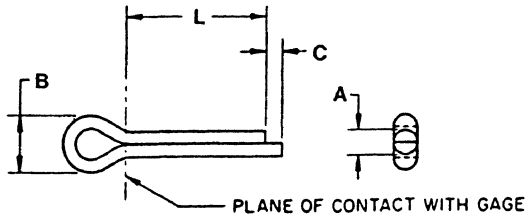

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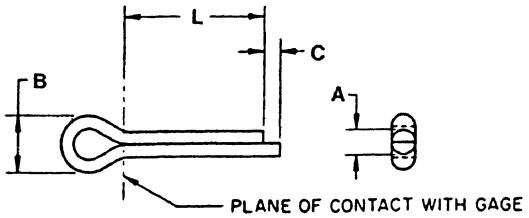
Table 11. Cotter Pin Dimensional Data

Nominal Length L	Length Range		Nominal Size - Part Numbers	
	max	min	13.0 mm (0.500 in.)	16.00 mm (0.625 in.)
19.05 mm (0.750 in.)	20.5 mm (0.807 in.)	18.3 mm (0.720 in.)		
25.4 mm (1.00 in.)	26.9 mm (1.060 in.)	23.9 mm (0.940 in.)		
31.75 mm (1.250 in.)	33.3 mm (1.310 in.)	29.2 mm (1.150 in.)		
38.1 mm (1.500 in.)	40.9 mm (1.610 in.)	36.6 mm (1.440 in.)		
44.45 mm (1.750 in.)	46.0 mm (1.810 in.)	42.9 mm (1.690 in.)	0221889	
50.8 mm (2.000 in.)	52.3 mm (2.060 in.)	49.3 mm (1.940 in.)	0221890	
57.15 mm (2.250 in.)	58.7 mm (2.310 in.)	55.1 mm (2.170 in.)	0221891	
63.5 mm (2.500 in.)	65.0 mm (2.560 in.)	62.0 mm (2.440 in.)	0221892	
69.85 mm (2.750 in.)	72.1 mm (2.840 in.)	68.3 mm (2.690 in.)	0221893	0221895
76.2 mm (3.000 in.)	81.3 mm (3.200 in.)	74.7 mm (2.940 in.)	0015291	0221896
88.9 mm (3.500 in.)	91.4 mm (3.600 in.)	87.4 mm (3.440 in.)	0015292	0221897
101.6 mm (4.000 in.)	113.3 mm (4.460 in.)	98.8 mm (3.890 in.)	0015293	0221898
127.0 mm (5.000 in.)	128.5 mm (5.060 in.)	123.7 mm (4.870 in.)	0015295	0221899
152.4 mm (6.000 in.)	153.9 mm (3.060 in.)	138.7 mm (5.460 in.)	0015297	0221900



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