Demonstrate Selecting the Correct Fasteners and Locking Application for Maintenance and Repair of Heavy Equipment

Skill Number CO-OP15GN107

Full Name: Yuda Adi Pratama **No ID:** _____

Validation Date: _____ **School:** SMKN 1 Singosari

PERFORMANCE TASK:

Given several fasteners and the necessary tools, as listed:

- Castellated nut
- Circlips
- Clevis Pin
- Flat Washer
- Spring Washer
- Star Washers
- Self-tapping screw
- Stud
- Wing nut
- Woodruff key
- Lockwire
- Bolt
- Nut
- Thread Lubricant and other Adhesives

The student must identify and explain their function. Student will be required to answer questions on their findings. The student will also be required to complete relevant workplace documentation and is to always observe the correct safety procedures.

Students are required to fill out this form, in the appropriate place, indicating that an inspection of components has occurred and their decision, after inspection is recorded

The student must be able to perform the following task:

- Demonstrate identify and explain the function of provided fasteners and necessary tools.
- Perform communication & etiquette manner

Safety and Contamination Control must be always applied to this process. Literature and measuring tools will be made available but will not be provided directly to the student.

Prerequisite	Yes	No	N/A	Hints
The student must complete the knowledge assessment. Minimum passing grade 80%.	✓			Score fastener course or subject.

Tasks	Completed Yes	No	N/A	Observation
Preparation				
Prepare related literature	✓			Observe if the cand preparing Manufac literature related to
Prepare required equipment	✓			
Prepare related tools	✓			Observe if the cand preparing related to Thread Identificatio
Prepare Safety & Contamination Control equipment	✓			Observe if the cand preparing related S Equipment (e.g.: Pl Towel, Plastic Wra

Tasks	Completed Yes	No	N/A	Observation
Perform etiquette/manner when starting the job				
Meet the customer / assessor	✓			
Perform etiquette/manner when opening the interaction.	✓			• Perform smile & g • Introduce Studen
Explain the purpose of Student's activity.	✓			
Ask permission to perform the job.	✓			

Tasks	Check			Observation / Hints
	Yes	No	N/A	
Identification				
1. Accessing Information	✓			Observe if the candidate is accessing information relating task from manufacturer's literature
2. Castellated Nut	✓			Identify Name, Application and Part Number
3. Circlip	✓			Identify Name, Application and Part Number
4. Clevis Pin			✓	Identify Name, Application and Part Number
5. Flat washer	✓			Identify Name, Application and Part Number
6. Spring washer	✓			Identify Name, Application and Part Number
7. Star washer	✓			Identify Name, Application and Part Number
8. Self-tapping screw	✓			Identify Name, Application and Part Number
9. Stud	✓			Identify Name, Application and Part Number
10. Wing nut	✓			Identify Name, Application and Part Number
11. Woodruff key			✓	Identify Name, Application and Part Number
12. Lockwire	✓			Identify Name, Application and Part Number
13. Thread Lubricant & other Adhesives	✓			Explain the function, when and where it used.

Tasks	Complete			Observation
	Yes	No	N/A	
Thread Identification				
UNC	✓			Determine thread s
UNF	✓			Determine thread s
Whitworth	✓			Determine thread s
Metric	✓			Determine thread s
AF	✓			Determine thread s
BSW	✓			Determine thread s

Tasks	Completed			Observation / Hints
	Yes	No	N/A	
Perform close the job by ensuring all systems or conditions is in the standard condition				
Ensure all systems or conditions are in standard condition.	✓			• Find the improper condition. • Communicate the finding to t customer/assessor.

Tasks	Completed			Observation / Hints
	Yes	No	N/A	
Reporting				
All relevant documentation completed correctly and approved by customer (if required).	✓			• Completing the Task List • Completing Measurement Fo Check Sheet, if required • Create Service Report (SIMS required • Create SPR, if required • Documenting the failed or da parts, if required • Provide Technical Analysis Report/Failure Analysis Repo required.

Tasks	Completed Yes	Completed No	Observation / Hints
Safety			
Using PPE related to the job	✓		
Follows relevant Workplace Safety Guidelines (LOTO, Safety Equipment)	✓		• Comply with safety regulation that applied on the workplace
State and follow Safety Precautions	✓		• Create Job Safety Analysis • Student must follow safety procedure refer to service manual or SIS related to job
Serviceman completes job without accident due to incorrect procedure using hand tools.	✓		• Correct working position • Correct hand tool related to the job
Tasks completed without damage equipment and tools	✓		

Tasks	Completed Yes	Completed No	Observation / Hints
Contamination Control			
Environmental Practices & Housekeeping	✓		1. Waste is minimized, waste material, including sludge; solids and other wastes are sorted and stored in bins for recycling or disposal 2. Packaging of goods received is sorted and reused or disposed of by recycling 3. Materials that can be reused are cleaned and stored 4. Waste and scrap is removed following workplace procedures 5. All fluids are disposed of in accordance with enterprise policies and procedures

Tasks	Completed Yes	Completed No	Completed N/A	Observation / Hints
Perform etiquette/manner after completing the job				
Perform etiquette/manner when closing the communication.	✓			• Perform smile & greetings. • Ask permission to leave or end the interaction.

General Comments

perhatikan cc untuk. validasi dilampirkan

RESULT: **COMPETENT** ☐ **NOT YET COMPETENT** ☐ (pleas

	Name	Date	Signature
Student:	Yuda Adi P.	11 Desember 2023	
Assessor:	Set. awan T.B	11/12/23	
Supervisor:			
Data Recorded:			

Demonstrate Selecting the Correct Fasteners and Locking Application for Maintenance and Repair of Heavy Equipment

Skill Number CO-OP15GN107

Full Name: Tuda Adi Pratama **No ID:** _____

Validation Date: _____ **School:** SMKN 1 Singosari

PERFORMANCE TASK:

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The student must be able to perform the following task:

- Demonstrate identify and explain the function of provided fasteners and necessary tools.
- Perform communication & etiquette manner

Safety and Contamination Control must be always applied to this process. Literature and measuring tools will be made available but will not be provided directly to the student.

Prerequisite	Yes	No	N/A	Hints
The student must complete the knowledge assessment. Minimum passing grade 80%.	✓			

Tasks	Completed Yes	No	N/A	Observation / Hints
Preparation				
Prepare related literature	✓			
Prepare required equipment	✓			
Prepare related tools	✓			
Prepare Safety & Contamination Control equipment	✓			

Tasks	Completed Yes	No	N/A	Observation / Hints
Perform etiquette/manner when starting the job				
Meet the customer / assessor	✓			
Perform etiquette/manner when opening the interaction.	✓			
Explain the purpose of Student's activity.	✓			
Ask permission to perform the job.	✓			

Tasks	Check			Observation / Hints
	Yes	No	N/A	
Identification				
1. Accessing Information	✓			
2. Castellated Nut	✓			
3. Circlip	✓			
4. Clevis Pin			✓	
5. Flat washer	✓			
6. Spring washer	✓			
7. Star washer	✓			
8. Self-tapping screw	✓			
9. Stud	✓			
10. Wing nut	✓			
11. Woodruff key			✓	
12. Lockwire	✓			
13. Thread Lubricant & other Adhesives	✓			

Tasks	Complete			Observation / Hints
	Yes	No	N/A	
Thread Identification				
UNC	✓			
UNF	✓			
Whitworth	✓			
Metric	✓			
AF	✓			
BSW	✓			

Tasks	Completed			Observation / Hints
	Yes	No	N/A	
Perform close the job by ensuring all systems or conditions is in the standard condition				
Ensure all systems or conditions are in standard condition.	✓			

Tasks	Completed			Observation / Hints
	Yes	No	N/A	
Reporting				
All relevant documentation completed correctly and approved by customer (if required).	✓			

Tasks	Completed		Observation / Hints
	Yes	No	
Safety			
Using PPE related to the job	✓		
Follows relevant Workplace Safety Guidelines (LOTO, Safety Equipment)	✓		
State and follow Safety Precautions	✓		
Serviceman completes job without accident due to incorrect procedure using hand tools.	✓		
Tasks completed without damage equipment and tools	✓		

Tasks	Completed		Observation / Hints
	Yes	No	
Contamination Control			
Environmental Practices & Housekeeping	✓		

Tasks	Completed			Observation / Hints
	Yes	No	N/A	
Perform etiquette/manner after completing the job				
Perform etiquette/manner when closing the communication.	✓			

General Comments

RESULT: COMPETENT ☑ NOT YET COMPETENT ☐ (please check (√))

	Name	Date	Signature
Student:	Yuda Adi P.	11 Desember 2025	
Assessor:	Setiawan Ib	11/12/2025	
Supervisor:			
Data Recorded:			

Trakindo CAT

Nomor Formulir / Form Number	SHE.SHE.FRM.005.R04

ANALISIS LINGKUNGAN KESELAMATAN KERJA / *JOB SAFETY ENVIRONMENT ANALYSIS*

Pekerjaan / *Task*	Inspect Fastener	Nomor JSEA / *JSEA Number*		Halaman / *Page*	1	Dari / *Of*	2

Tanggal Pembuatan JSEA / *Date of JSEA*	10 Desember 2025	Departemen / *Dept*	Service	Tempat Kerja / *Work Location*	Workshop TAB

Disusun Oleh / *Compiled By*	Tuda Adi P.	TTD / Sign		Review Oleh / *Reviewed By*	SHE	TTD / *Sign*		Atasan / *Superior*		TTD / *Sign*	

Apakah Anda sudah terlatih untuk melakukan pekerjaan ini ? / *Are you properly trained to complete these task ?* ☑ Ya / Yes ☐ Tidak / *No*

Apa yang Anda perlukan untuk memastikan bahwa pekerjaan selesai tanpa adanya kecelakaan kerja ? / *What do you need to ensure this job is completed incident free ?*

Tools yang digunakan sudah sesuai dengan Manual

Siapa yang bertanggung jawab untuk menghentikan pekerjaan jika terjadi perubahan pekerjaan atau gangguan kondisi lingkungan kerja ? / *Who is responsible for Stop Work Authority if change job or workplace distraction could ?*

ABCD-1 (Technician Leader) / Mr. X (Customer)

Apakah Anda memerlukan peralatan LOTO ? / *Are you need LOTO Equipments ?* ☐ Ya / *Yes* ☑ Tidak / *No*

Apakah Anda mengetahui ERP/MERP dari pekerjaan yang sedang dilakukan? ☑ Ya / *Yes* ☐ Tidak / *Nc* ***Jika tidak, silahkan tambahkan dalam urutan langkah tugas diawal***

Kondisi Lingkungan / *Environmental Conditions*	Normal	Cuaca / *Weather*	Hujan	Medan / *Terrain*	Rata

Pengendalian Sumber Bahaya / *Hazardous Energy Control*					
	☐ Listrik / *Electrical*	☑ Gravitasi (Benda jatuh,tertimpa) / *Gravitation (Falling objects, struck down)*	☐ Pneumatik / *Pneumatic*		
	☐ Hidraulik / *Hydraulic*	☐ Mekanis / *Mechanical*	☐ Panas / *Thermal*		

APD yang diperlukan / *Required PPE*					
	☑ Helm / *Safety Helm*	☐ Pelindung Muka / *Face shield*	☑ Kacamata / *Safety Glass*		
	☑ Sarung Tangan / *Hand Gloves*	☐ Pelindung Pernafasan / *Respiratory Protection*	☐ Perlindungan Kejatuhan / *Fall Protection*		
	☑ Sepatu / *Safety Shoes*	☐ Pelindung Telinga / *Hearing Protection*	☐ Lain-Lain / *Other .....*		

Hal yang perlu dipertimbangan dalam mengidentifikasi bahaya / *These to consider in identify hazards* :

1. **Bahaya Keselamatan** : Kondisi tidak aman yang dapat menyebabkan injury atau kematian seperti terjepit, terpeleset/terjatuh, tertimpa dll.
   Safety Hazard : unsafe conditions that can cause injury or even death, such as spill/falls, pinch point, struck by, etc.
2. **Bahaya Fisik** : Listrik, Api/ledakan, Kebisingan, Radiasi, Panas, Tekanan, Terjepit, Tersandung/Terjatuh, Tertimpa, Getaran.
   Physical Hazards : Electrical, Fire/Explosion, Noise, Radiations, Thermal, Pressure, Pinch Point, Slips/Falls, Struck by, Vibration.
3. **Bahaya Kimia** : Terhirup, terkena kulit, injeksi, tertelan, terserap.
   Chemical Hazards : Inhalation, skin contact, injection, ingestion, absorption.
4. **Bahaya Biologi** : Patogen yang ditularkan melalui darah, jamur, tanaman/serangga/hewan.
   Biological Hazards : bloodbone pathogens, mold, Plant/Insect/Animals
5. **Bahaya Ergonomi** : Gerakan berulang-ulang, beban yang berlebihan, Postur Janggal, Durasi kerja, Desain area kerja.
   Ergonomic Hazards : Repetitions, Forcefull extention, Awkward Posture, Duration , Work area desain.
6. **Bahaya Organisasi** : stres atau bahaya terkait dengan masalah tempat kerja yang menyebabkan efek jangka panjang atau pendek, beban kerja yang berat dan kekerasan ditempat kerja.
   Organizational hazards: stressors or hazards associated with workplace issues that cause long or short term effects heavy workloads, stressful interactions and workplaces violence.

No	Urutan Dasar Langkah Tugas / *Job Steps* (* Maksimum 15 Langkah / *Maximum 15 Steps*)	Bahaya Yang Terkait / *Potential Hazard(s)*	Tindakan Perbaikan / *Recommended Action*
A	**ERP/MERP**		
	1. Saat pekerjaan terjadi gempa	tertimpa reruntuhan	1.1 Segera evakuasi menuju master point baru ditetapkan/ tempat terbuka 1.2 Melaporkan kejadian kepada atasan
	2. Saat pekerjaan ada teknisi yang pingsan	Cidera kepala, tangan tergores	2.1 Lakukan protokol P3K 2.2 Segera evakuasi korban menuju fasilitas kesehatan terdekat 2.3 Melaporkan kejadian kepada atasan
B	**Langkah Pekerjaan**		
1.	Walk Around Inspection	Tersandung Komponen /Kabel	1.1. Rapikan komponen /kabel
			1.2 Perhatikan langkah kaki saat berjalan
			1.3 Fokus saat Bekerja
		Terpeleset Oli Berceceran	1.4 Lap oli dengan Absorbent Pad
2.	Prepare Tools /Fastener	Fastener Jatuh mengenai kaki	2.1 Pegang Fastener dengan benar
			2.2 Gunakan Safety Shoes
			2.3 Fokus saat Bekerja
3.	Doing Inspect Fastener	Fastener Rusak /Terkontaminasi	3.1 Bersihkan Fastener menggunakan Solar /WD
			3.2 Ganti Fastener bila rusak
		Tangan tergores thread tajam	3.3 Perhatikan kontak Pegang Fastener
			3.4 Gunakan Safty Glove
			3.5 Hati hati saat bekerja
4.	Housekeeping	Fastener berserakan	4.1 Kelompokkan & Rapikan Fastener
			4.2 Pastikan Fastener bersih saat dikembalikan

Bagian Dari / *Part Of*	SHE.SHE.SOP.003.R04

Trakindo CAT

Nomor Formulir / *Form Number*	SHE.SHE.FRM.005.R03

ANALISIS LINGKUNGAN KESELAMATAN KERJA / JOB SAFETY ENVIRONMENT ANALYSIS

Pekerjaan / *Task*	Inspect Fastener	Nomor JSEA / *JSEA Number*	1	Halaman / *Page*	2	Dari / *Of*	2

No	Urutan Dasar Langkah Tugas / *Job Steps*	Bahaya Yang Terkait / *Potential Hazard(s)*	Tindakan Perbaikan / *Recommended Action*
		Ergonomi Saat Bekerja	4.3 Perhatikan posisi yang aman & Nyaman
			4.4 Fokus saat bekerja / tidak bercanda
		Lantai kotor	4.5. Sapu & Pel / Bersihkan lantai

Bukti sosialisasi / *Evidence of socialization* :

No	Nama / *Name*	TTD / *Sign*
1	Fritski	
2	Ega	
3	Saka Alzena	
4		
5		

No	Nama / Name	TTD / Sign

No	Nama / Name	TTD / Sign

Bagian Dari / *Part Of*	SHE.SHE.SOP.003.R04

Bolts

Hex Head Bolts/Inch/UNF/Phosphate & Oil Coated (Cont'd.)

Thread Size (in - TPI)	A Bolt Length	B Head Height	C Head Width	D Grip Length	Part Number
7/16	Washer	–	–	–	5P-8244
Thread Size (in - TPI) 1/2 - 20					
1/2 - 20	7/8 in	0.39 in	0.75 in	0.13 in	0T-0598
1/2 - 20	1 1/4 in	0.39 in	0.75 in	0.13 in	0S-1593
1/2 - 20	1 3/8 in	0.39 in	0.75 in	0.13 in	4K-7502
1/2 - 20	1 1/2 in	0.39 in	0.75 in	0.25 in	0S-1603
1/2 - 20	1 3/4 in	0.39 in	0.75 in	0.50 in	0S-1584
1/2 - 20	2 in	0.39 in	0.75 in	0.75 in	0S-1579
1/2 - 20	2 1/4 in	0.39 in	0.75 in	1.00 in	0S-0484
1/2 - 20	2 1/2 in	0.39 in	0.75 in	1.25 in	0S-1604
1/2 - 20	2 3/4 in	0.39 in	0.75 in	1.50 in	0S-1599
1/2 - 20	3 in	0.39 in	0.75 in	1.75 in	0L-1732
1/2 - 20	3 1/4 in	0.39 in	0.75 in	2.00 in	0L-1558
1/2 - 20	3 1/2 in	0.39 in	0.75 in	2.25 in	0L-2315
1/2 - 20	3 3/4 in	0.39 in	0.75 in	2.50 in	1A-1952
1/2 - 20	4 in	0.39 in	0.75 in	2.75 in	0L-1559
1/2 - 20	4 1/4 in	0.39 in	0.75 in	3.00 in	6F-7033
1/2 - 20	4 1/2 in	0.39 in	0.75 in	3.25 in	1A-3046
1/2 - 20	4 3/4in	0.39 in	0.75 in	3.50 in	0L-0557
1/2 - 20	5 in	0.39 in	0.75 in	3.75 in	1B-1422
1/2 - 20	5 1/2 in	0.39 in	0.75 in	4.25 in	3H-1097
1/2 - 20	5 3/4 in	0.39 in	0.75 in	4.50 in	5M-9979
1/2 - 20	6 in	0.39 in	0.75 in	4.75 in	9F-1595
1/2 - 20	6 1/2 in	0.39 in	0.75 in	5.00 in	2H-3747
1/2 - 20	7 in	0.39 in	0.75 in	3.37 in	3H-1930
1/2 - 20	7 1/2 in	0.39 in	0.75 in	6.00 in	2H-3748
1/2 - 20	8 in	0.39 in	0.75 in	6.50 in	1A-3967
1/2 - 20	Nut	–	–	–	6B-6684
1/2	Washer	–	–	–	5P-8245
Thread Size (in - TPI) 9/16 - 18					
9/16 - 18	1 1/4 in	0.43 in	0.87 in	0.13 in	8S-4743
9/16 - 18	1 3/8 in	0.43 in	0.87 in	0.13 in	8S-4761
9/16 - 18	1 1/2 in	0.43 in	0.87 in	0.13 in	8S-4744
9/16 - 18	1 3/4 in	0.43 in	0.87 in	0.38 in	8S-4762
9/16 - 18	2 in	0.43 in	0.87 in	0.63 in	8S-4745
9/16 - 18	2 1/4 in	0.43 in	0.87 in	0.88 in	8S-4763
9/16 - 18	2 1/2 in	0.43 in	0.87 in	1.13 in	8S-4746
9/16 - 18	2 3/4 in	0.43 in	0.87 in	1.38 in	8S-4764
9/16 - 18	3 in	0.43 in	0.87 in	1.38 in	6S-0753
9/16 - 18	3 1/2 in	0.43 in	0.87 in	2.13 in	8S-4747
9/16 - 18	3 3/4 in	0.43 in	0.87 in	2.38 in	2S-1216
9/16 - 18	4 in	0.43 in	0.87 in	2.63 in	8S-4748
9/16 - 18	4 1/2 in	0.43 in	0.87 in	3.13 in	8S-4749
9/16 - 18	5 in	0.43 in	0.87 in	3.63 in	8S-4750
9/16 - 18	5 1/2 in	0.43 in	0.87 in	4.13 in	8S-4751
9/16 - 18	6 in	0.43 in	0.87 in	4.63 in	8S-4752

Thread Size (in - TPI)	A Bolt Length	B Head Height	C Head Width	D Grip Length	Part Number
9/16 - 18	Nut	–	–	–	5P-0540
9/16	Washer	–	–	–	5P-8246
Thread Size (in - TPI) 5/8 - 18					
5/8 - 18	1 in	0.48 in	0.94 in	0.19 in	6F-7316
5/8 - 18	1 1/4 in	0.48 in	0.94 in	0.19 in	1A-4273
5/8 - 18	1 3/8 in	0.48 in	0.94 in	0.19 in	4H-4033
5/8 - 18	1 1/2 in	0.48 in	0.94 in	0.19 in	2L-1701
5/8 - 18	1 3/4 in	0.48 in	0.94 in	0.25 in	5B-0841
5/8 - 18	2 in	0.48 in	0.94 in	0.50 in	0S-1576
5/8 - 18	2 1/4 in	0.48 in	0.94 in	0.75 in	0S-1577
5/8 - 18	2 1/2 in	0.48 in	0.94 in	1.00 in	0S-1600
5/8 - 18	2 3/4 in	0.48 in	0.94 in	1.25 in	0S-1601
5/8 - 18	3 in	0.48 in	0.94 in	1.50 in	8B-5144
5/8 - 18	3 1/4 in	0.48 in	0.94 in	1.75 in	0S-2318
5/8 - 18	3 1/2 in	0.48 in	0.94 in	2.00 in	0S-1602
5/8 - 18	3 3/4 in	0.48 in	0.94 in	2.25 in	0S-2353
5/8 - 18	4 in	0.48 in	0.94 in	2.50 in	0V-0459
5/8 - 18	4 1/4 in	0.48 in	0.94 in	2.75 in	0V-0523
5/8 - 18	4 1/2 in	0.48 in	0.94 in	3.00 in	0T-0857
5/8 - 18	4 3/4 in	0.48 in	0.94 in	3.25 in	1A-3203
5/8 - 18	5 in	0.48 in	0.94 in	3.50 in	6F-7024
5/8 - 18	5 1/2 in	0.48 in	0.94 in	4.00 in	2A-2814
5/8 - 18	5 3/4 in	0.48 in	0.94 in	4.25 in	1B-7538
5/8 - 18	6 in	0.48 in	0.94 in	4.50 in	2B-6030
5/8 - 18	7 in	0.48 in	0.94 in	5.25 in	1B-3623
5/8 - 18	7 1/2 in	0.48 in	0.94 in	5.75 in	7H-5569
5/8 - 18	8 in	0.48 in	0.94 in	6.25 in	8S-4753
5/8 - 18	8 1/2 in	0.48 in	0.94 in	6.75 in	6V-1873
5/8 - 18	11 in	0.48 in	0.94 in	9.25 in	5K-7144
5/8 - 18	12 in	0.48 in	0.94 in	10.25 in	6K-0953
5/8 - 18	Nut	–	–	–	6B-6683
5/8	Washer	–	–	–	5P-8247
Thread Size (in - TPI) 3/4 - 16					
3/4 - 16	1 1/4 in	0.58 in	1.13 in	0.19 in	2H-3740
3/4 - 16	1 1/2 in	0.58 in	1.13 in	0.19 in	2H-3725
3/4 - 16	1 3/4 in	0.58 in	1.13 in	0.19 in	1A-0075
3/4 - 16	2 in	0.58 in	1.13 in	0.25 in	9S-1362
3/4 - 16	2 1/4 in	0.58 in	1.13 in	0.50 in	0S-1897
3/4 - 16	2 1/2 in	0.58 in	1.13 in	0.75 in	0T-0856
3/4 - 16	2 3/4 in	0.58 in	1.13 in	1.00 in	8F-3152
3/4 - 16	3 in	0.58 in	1.13 in	1.25 in	0S-1575
3/4 - 16	3 1/4 in	0.58 in	1.13 in	1.50 in	6B-5310
3/4 - 16	3 1/2 in	0.58 in	1.13 in	1.75 in	9S-1364
3/4 - 16	3 3/4 in	0.58 in	1.13 in	2.00 in	1A-3103
3/4 - 16	4 in	0.58 in	1.13 in	2.25 in	0L-1328
3/4 - 16	4 1/4 in	0.58 in	1.13 in	2.50 in	1D-3419

Bolts

Hex Head Bolts/Metric/Coarse Thread/Zinc Plated (Cont'd.)

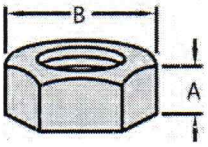
Thread Size (dia x pitch)	A Bolt Length	B Head Height	C Head Width	D Grip Length	Part Number
M8 x 1.25	20 mm	6 mm	13 mm	3 mm	8T-4189
M8 x 1.25	25 mm	6 mm	13 mm	3 mm	8T-4908
M8 x 1.25	35 mm	6 mm	13 mm	13 mm	7X-2537
M8 x 1.25	40 mm	6 mm	13 mm	3 mm	8T-4197
M8	Washer	–	–	–	8T-4224
Thread Size (dia x pitch) M10 x 1.50					
M10 x 1.50	12 mm	7 mm	16 mm	5 mm	7X-2621
M10 x 1.50	16 mm	7 mm	16 mm	5 mm	8T-4191
M10 x 1.50	20 mm	7 mm	16 mm	5 mm	8T-4137
M10 x 1.50	25 mm	7 mm	16 mm	5 mm	8T-4136
M10 x 1.50	30 mm	7 mm	16 mm	5 mm	8T-4195
M10 x 1.50	35 mm	7 mm	16 mm	5 mm	8T-4196
M10 x 1.50	40 mm	7 mm	16 mm	14 mm	8T-4186
M10 x 1.50	45 mm	7 mm	16 mm	19 mm	8T-4182
M10 x 1.50	50 mm	7 mm	16 mm	24 mm	8T-4185
M10 x 1.50	60 mm	7 mm	16 mm	34 mm	8T-6466
M10 x 1.50	70 mm	7 mm	16 mm	44 mm	8T-5005
M10 x 1.50	80 mm	7 mm	16 mm	54 mm	8T-4172
M10 x 1.50	90 mm	7 mm	16 mm	64 mm	8T-4178
M10 x 1.50	100 mm	7 mm	16 mm	74 mm	8T-4198
M10 x 1.50	110 mm	7 mm	16 mm	84 mm	8T-6685
M10 x 1.50	120 mm	7 mm	16 mm	94 mm	7X-2543
M10 x 1.50	130 mm	7 mm	16 mm	98 mm	8T-5436
M10 x 1.50	140 mm	7 mm	16 mm	108 mm	7X-2544
M10 x 1.50	150 mm	7 mm	16 mm	118 mm	7X-2545
M10 x 1.50	160 mm	7 mm	16 mm	128 mm	8T-6408
M10 x 1.50	180 mm	7 mm	16 mm	148 mm	7X-2546
M10 x 1.50	200 mm	7 mm	16 mm	168 mm	7X-2547
M10 x 1.50	Nut	–	–	–	8T-4133
M10	Washer	–	–	–	8T-4121
Thread Size (dia x pitch) M12 x 1.75					
M12 x 1.75	16 mm	8 mm	18 mm	5 mm	7X-2548
M12 x 1.75	20 mm	8 mm	18 mm	5 mm	8T-4179
M12 x 1.75	25 mm	8 mm	18 mm	5 mm	8T-4192
M12 x 1.75	30 mm	8 mm	18 mm	5 mm	8T-4139
M12 x 1.75	35 mm	8 mm	18 mm	5 mm	8T-4956
M12 x 1.75	40 mm	8 mm	18 mm	5 mm	8T-4183
M12 x 1.75	45 mm	8 mm	18 mm	15 mm	8T-4184
M12 x 1.75	50 mm	8 mm	18 mm	20 mm	8T-4194
M12 x 1.75	60 mm	8 mm	18 mm	30 mm	8T-4910
M12 x 1.75	70 mm	8 mm	18 mm	40 mm	8T-4648
M12 x 1.75	80 mm	8 mm	18 mm	50 mm	8T-6868
M12 x 1.75	90 mm	8 mm	18 mm	60 mm	8T-4176
M12 x 1.75	100 mm	8 mm	18 mm	70 mm	7X-2549
M12 x 1.75	110 mm	8 mm	18 mm	80 mm	7X-2550
M12 x 1.75	120 mm	8 mm	18 mm	90 mm	8T-5041
M12 x 1.75	130 mm	8 mm	18 mm	94 mm	8T-5001
M12 x 1.75	140 mm	8 mm	18 mm	104 mm	8T-5412

Thread Size (dia x pitch)	A Bolt Length	B Head Height	C Head Width	D Grip Length	Part Number
M12 x 1.75	150 mm	8 mm	18 mm	114 mm	8T-5092
M12 x 1.75	160 mm	8 mm	18 mm	124 mm	8T-7930
M12 x 1.75	180 mm	8 mm	18 mm	144 mm	8T-7929
M12 x 1.75	200 mm	8 mm	18 mm	147 mm	7X-2551
M12 x 1.75	Nut	–	–	–	8T-4244
M12	Washer	–	–	–	8T-4223
Thread Size (dia x pitch) M16 x 2.00					
M16 x 2.00	25 mm	10 mm	24 mm	4 mm	8T-4190
M16 x 2.00	30 mm	10 mm	24 mm	3 mm	7X-2552
M16 x 2.00	35 mm	10 mm	24 mm	4 mm	8T-4779
M16 x 2.00	40 mm	10 mm	24 mm	5 mm	7X-2553
M16 x 2.00	45 mm	10 mm	24 mm	5 mm	8T-7338
M16 x 2.00	50 mm	10 mm	24 mm	12 mm	8T-4193
M16 x 2.00	60 mm	10 mm	24 mm	22 mm	8T-4140
M16 x 2.00	70 mm	10 mm	24 mm	32 mm	7X-2554
M16 x 2.00	80 mm	10 mm	24 mm	42 mm	7X-2555
M16 x 2.00	90 mm	10 mm	24 mm	52 mm	8T-4175
M16 x 2.00	100 mm	10 mm	24 mm	56 mm	7X-2556
M16 x 2.00	110 mm	10 mm	24 mm	72 mm	8T-4173
M16 x 2.00	120 mm	10 mm	24 mm	82 mm	8T-4174
M16 x 2.00	130 mm	10 mm	24 mm	86 mm	7X-2475
M16 x 2.00	140 mm	10 mm	24 mm	96 mm	7X-2557
M16 x 2.00	150 mm	10 mm	24 mm	106 mm	7X-2558
M16 x 2.00	160 mm	10 mm	24 mm	116 mm	7X-2559
M16 x 2.00	180 mm	10 mm	24 mm	136 mm	8T-6385
M16 x 2.00	200 mm	10 mm	24 mm	156 mm	8T-6383
M16 x 2.00	Nut	–	–	–	8T-4132
M16	Washer	–	–	–	8T-4122
Thread Size (dia x pitch) M20 x 2.50					
M20 x 2.50	30 mm	13 mm	30 mm	4 mm	8T-4780
M20 x 2.50	35 mm	13 mm	30 mm	4 mm	7X-2561
M20 x 2.50	40 mm	13 mm	30 mm	5 mm	8T-5460
M20 x 2.50	45 mm	13 mm	30 mm	6 mm	7X-2562
M20 x 2.50	50 mm	13 mm	30 mm	4 mm	8T-6430
M20 x 2.50	60 mm	13 mm	30 mm	14 mm	7X-2563
M20 x 2.50	70 mm	13 mm	30 mm	24 mm	8T-4141
M20 x 2.50	80 mm	13 mm	30 mm	34 mm	8T-4187
M20 x 2.50	90 mm	13 mm	30 mm	44 mm	7X-2564
M20 x 2.50	100 mm	13 mm	30 mm	54 mm	7X-2565
M20 x 2.50	110 mm	13 mm	30 mm	64 mm	7X-2566
M20 x 2.50	120 mm	13 mm	30 mm	74 mm	8T-6381
M20 x 2.50	130 mm	13 mm	30 mm	78 mm	7X-2532
M20 x 2.50	140 mm	13 mm	30 mm	88 mm	8C-8478
M20 x 2.50	150 mm	13 mm	30 mm	98 mm	8T-4170
M20 x 2.50	160 mm	13 mm	30 mm	108 mm	7X-2488
M20 x 2.50	180 mm	13 mm	30 mm	128 mm	7X-2568
M20 x 2.50	200 mm	13 mm	30 mm	148 mm	7X-2569
M20 x 2.50	Nut	–	–	–	8T-4131

Snap Rings/Internal/Inch (Cont'd.)

Bore Diameter	A Free Diameter	B Thickness	Part Number
–	7.77 in	0.210 in	8X-0563
–	8.19 in	0.125 in	5P-6047
–	8.94 in	0.197 in	091-5224
–	10.63 in	0.157 in	144-4284
–	12.13 in	0.125 in	7G-1596
–	12.76 in	0.118 in	108-2736
–	13.78 in	0.125 in	3T-0007
–	14.87 in	0.125 in	1T-0896
–	15.51 in	0.156 in	115-0764
Spiral			
1.25 in	1.33 in	0.050 in	8H-1037
2.00 in	2.13 in	0.062 in	2D-0592
2.06 in	2.19 in	0.078 in	2K-6091
2.13 in	2.26 in	0.078 in	6H-9361
2.44 in	2.59 in	0.078 in	2D-1523
2.63 in	2.79 in	0.093 in	5S-7779
3.13 in	3.25 in	0.061 in	2J-7761
3.35 in	3.55 in	0.111 in	4M-8910
3.56 in	3.78 in	0.111 in	066-5816
3.94 in	4.18 in	0.111 in	8S-9104
4.13 in	4.28 in	0.061 in	9M-6166
4.33 in	4.59 in	0.111 in	5M-4480
4.50 in	4.77 in	0.111 in	3K-2556
4.75 in	5.03 in	0.111 in	3K-2559
5.00 in	5.30 in	0.111 in	1M-8649
5.12 in	5.31 in	0.153 in	340-2367
5.12 in	5.44 in	0.127 in	5J-9454
5.25 in	5.56 in	0.127 in	2S-0613
5.75 in	5.95 in	0.072 in	9H-3452
6.00 in	6.31 in	0.127 in	7S-3004
7.00 in	7.37 in	0.156 in	340-2375
7.37 in	7.76 in	0.187 in	340-2382
8.25 in	8.68 in	0.187 in	340-2377
9.05 in	9.47 in	0.187 in	340-2378
9.25 in	9.56 in	0.086 in	6V-7979
9.33 in	9.87 in	0.165 in	3W-2421
9.76 in	10.07 in	0.086 in	6P-8309
10.25 in	10.79 in	0.187 in	5P-9362
10.59 in	11.13 in	0.165 in	3W-2025
10.75 in	11.09 in	0.086 in	9M-1976
11.02 in	11.42 in	0.187 in	340-2381
13.52 in	14.07 in	0.187 in	5P-6651
14.29 in	14.76 in	0.111 in	9W-3301
14.96 in	15.52 in	0.111 in	8E-2827
15.43 in	15.92 in	0.111 in	7T-8004
17.09 in	17.65 in	0.111 in	7X-2627
18.61 in	19.30 in	0.187 in	5P-4041
19.53 in	20.15 in	0.111 in	7X-2628
–	12.76 in	0.187 in	5P-4256

Self Locking Nuts/Hex Head/Inch



- Made of fine grain steel.
- Resist loosening under vibration.
- Provides a tensile strength comparable with SAE Grade 8 bolts.
- Resist loosening under vibration.

Coarse Thread UNC/Hardened

Thread Size (in - TPI)	A Nut Height	B Nut Width	Part Number
1/4 - 20	0.23 in	7/16 in	2D-6235
5/16 - 18	0.27 in	1/2 in	031-4155
3/8 - 16	0.33 in	9/16 in	2K-4973
7/16 - 14	0.38 in	11/16 in	6V-5729
1/2 - 13	0.44 in	3/4 in	1K-6872
9/16 - 12	0.50 in	7/8 in	034-9954

Thread Size (in - TPI)	A Nut Height	B Nut Width	Part Number
5/8 - 11	0.55 in	15/16 in	3K-2889
3/4 - 10	0.64 in	1 1/8 in	1K-6870
7/8 - 9	0.75 in	1 5/16 in	6K-0545
1-8	0.86 in	1 1/2 in	6K-3632
1 1/4 - 7	1.06 in	1 7/8 in	2J-5997
1 7/8 - 7	0.97 in	1 11/16 in	8D-9513

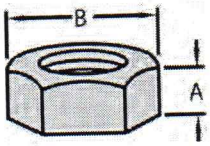
Fine Thread UNF/Hardened

Thread Size (in - TPI)	A Nut Height	B Nut Width	Part Number
1/4 - 28	0.23 in	7/16 in	2L-9038
5/16 - 24	0.27 in	1/2 in	3D-8752
1/2 - 20	0.44 in	3/4 in	2K-0564
9/16 - 18	0.50 in	7/8 in	054-5448
5/8 - 18	0.55 in	15/16 in	2K-4821
3/4 - 16	0.64 in	1 1/8 in	2K-0337

Thread Size (in - TPI)	A Nut Height	B Nut Width	Part Number
7/8 - 14	0.75 in	1 5/16 in	5D-1986
1 - 14	0.86 in	1 1/2 in	2K-7471
1 1/8 - 12	0.97 in	1 11/16 in	3D-4904
1 1/4 - 12	1.06 in	1 7/8 in	2K-7468
1 1/2 - 12	1.28 in	2 1/4 in	5M-6667

Nuts

Nuts/Hex/ Head/Inch



- Made of fine grain steel.
- Designed with a washer-faced surface.
- Provides a tensile strength comparable to SAE Grade 8 bolt.
- Hardened nuts marked with 6 lines, dashes, or dots for identification.

Coarse Thread UNC/Phosphate & Oil Coated/Hardened

Thread Size (in - TPI)	A Nut Height	B Nut Width	Part Number
1/4 - 20	0.22 in	7/16 in	9S-8750
5/16 - 18	0.27 in	1/2 in	5S-0003
3/8 - 16	0.33 in	9/16 in	9S-8752
7/16 - 14	0.38 in	11/16 in	3S-1546
1/2- 13	0.44 in	3/4 in	1F-7958
9/16 - 12	0.48 in	7/8 in	5P-0539
5/8 - 11	0.55 in	15/16 in	4K-0367

Thread Size (in - TPI)	A Nut Height	B Nut Width	Part Number
3/4 - 10	0.64 in	1 1/8 in	2J-3506
7/8 - 9	0.75 in	1 5/16 in	2J-3505
1 - 8	0.86 in	1 1/2 in	2J-3507
1 1/8 - 7	0.97 in	1 11/16 in	4J-5977
1 1/4 - 7	1.06 in	1 7/8 in	3K-9770
1 3/8 - 6	1.17 in	2 1/16 in	9M-3770
1 1/2 - 6	1.28 in	2 1/4 in	9S-8216

Coarse Thread UNC/Zinc Plated/Hardened

Thread Size (in - TPI)	A Nut Height	B Nut Width	Part Number
1/4 - 20	0.22 in	7/16 in	6V-8185
5/16 - 18	0.27 in	1/2 in	6V-8189
3/8 - 16	0.33 in	9/16 in	6V-8801
7/16 - 14	0.37 in	11/16 in	7X-0447
1/2 - 13	0.44 in	3/4 in	6V-8188
5/8 - 11	0.55 in	15/16 in	7X-0448

Thread Size (in - TPI)	A Nut Height	B Nut Width	Part Number
3/4 - 10	0.64 in	1 1/8 in	6V-8182
7/8 - 9	0.75 in	1 5/16 in	7X-0449
1-8	0.86 in	1 1/2 in	6V-8190
1 1/8 - 7	0.61	1 11/16	2H-3787
1 1/4 - 7	1.06 in	1 7/8 in	7X-0451
1 1/2 - 6	1.28 in	2 1/4 in	7X-0452

Fine Thread UNF/Phosphate & Oil Coated/Hardened

Thread Size (in - TPI)	A Nut Height	B Nut Width	Part Number
1/4 - 28	0.22 in	7/16 in	9S-8748
5/16 - 24	0.27 in	1/2 in	9S-8751
3/8 - 24	0.33 in	9/16 in	3S-2713
7/16 - 20	0.38 in	11/16 in	9S-8905
1/2 - 20	0.44 in	3/4 in	6B-6684
9/16 - 18	0.48 in	7/8 in	5P-0540
5/8 - 18	0.55 in	15/16 in	6B-6683

Thread Size (in - TPI)	A Nut Height	B Nut Width	Part Number
3/4 - 16	0.64 in	1 1/8 in	6B-6682
7/8 - 14	0.75 in	1 5/16 in	1A-5666
1 - 14	0.86 in	1 1/2 in	1A-1935
1 1/8 - 12	0.97 in	1 11/16 in	3S-1356
1 1/4 - 12	1.06 in	1 7/8 in	7H-7539
1 3/8 - 12	1.17 in	2 in	2M-0400
1 1/2 - 12	1.28 in	2 1/4 in	8H-3390

Screws

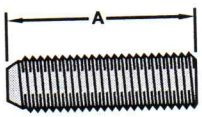
Taper Lock/Studs/Inch/Coarse Thread (Cont'd.)

Thread Size (in - TPI)	A Screw Length	Part Number
3/8 - 16	2 3/8 in	106-1793
3/8 - 16	2 5/8 in	3M-0496
3/8 - 16	2 5/8 in	9L-1658
3/8 - 16	2 3/4 in	6V-1426
3/8 - 16	2 13/16 in	7S-6719
3/8 - 16	2 15/16 in	9M-3296
3/8 - 16	3 1/16 in	9L-1657
3/8 - 16	3 1/8 in	2M-8411
3/8 - 16	3 3/16 in	4S-6137
3/8 - 16	3 11/32 in	9X-2840
3/8 - 16	3 35/64 in	6V-1427
3/8 - 16	3 9/16 in	2M-2488
3/8 - 16	3 15/16 in	106-1792
3/8 - 16	4 in	6L-4428
3/8 - 16	4 3/16 in	2P-1974
3/8 - 16	4 1/2 in	101-8917
1/2 - 13	1 9/16 in	8M-8778
1/2 - 13	1 3/4 in	2D-8153
1/2 - 13	2 in	3D-0490
1/2 - 13	2 3/16 in	5M-1932
1/2 - 13	2 3/8 in	2D-8154

Thread Size (in - TPI)	A Screw Length	Part Number
1/2 - 13	2 9/16 in	4J-6925
1/2 - 13	2 13/16 in	3D-0472
1/2 - 13	3 in	3D-6627
1/2 - 13	3 1/8 in	2D-8426
1/2 - 13	3 3/8 in	9H-1288
1/2 - 13	3 9/16 in	2D-8155
1/2 - 13	3 13/16 in	3D-0473
1/2 - 13	4 1/2 in	5P-7071
5/8 - 11	2 3/16 in	3D-4639
5/8 - 11	2 3/8 in	2D-8822
5/8 - 11	2 9/16 in	2D-5238
5/8 - 11	2 3/4 in	4D-4823
5/8 - 11	2 15/16 in	6L-7655
5/8 - 11	3 3/16 in	3J-8154
5/8 - 11	3 3/8 in	3D-8439
5/8 - 11	3 9/16 in	3D-5963
5/8 - 11	4 in	5P-3887
5/8 - 11	4 3/16 in	5D-4809
3/4 - 10	2 9/16 in	4D-6579
3/4 - 10	2 3/4 in	2D-8369
3/4 - 10	2 15/16 in	4D-6578

Thread Size (in - TPI)	A Screw Length	Part Number
3/4 - 10	3 1/8 in	4D-7246
3/4 - 10	3 3/8 in	7D-3504
3/4 - 10	3 9/16 in	5J-6796
3/4 - 10	3 13/16 in	6D-1915
3/4 - 10	4 3/16 in	2P-1303
7/8 - 9	3 1/8 in	7D-2838
7/8 - 9	3 9/16 in	4D-6589
7/8 - 9	3 3/4 in	139-4774
7/8 - 9	4 3/16 in	4D-7259
7/8 - 9	4 7/16 in	5P-2098
1 - 8	3 15/16 in	229-4975
1 - 8	3 15/16 in	139-4775
1 - 8	3 15/16 in	5D-3118
1 - 8	4 3/16 in	9M-5854
1 - 8	4 7/16 in	9M-3948
1 - 8	4 15/16 in	6D-0419
1 - 8	5 1/8 in	5D-0600
1 1/2 - 16	2 5/16 in	2W-8225
1 1/2 - 16	39 5/8 in	2P-4304

Taper Lock/Studs/Metric/Coarse Thread



- Heat treated with a direct-hardening process.
- Hardened to Rockwell C33-39
- Designed with a taper point for a plug tap.
- Meet SAE grade 8 strength requirements.

Thread Size (dia x pitch)	A Screw Length	Part Number
M8 x 1.25	30 mm	329-8793
M8 x 1.25	40 mm	191-6301
M8 x 1.25	45 mm	232-5849
M8 x 1.25	50 mm	295-4142
M8 x 1.25	55 mm	328-0826
M8 x 1.25	65 mm	9X-8496
M8 x 1.25	95 mm	192-7207
M10 x 1.50	35 mm	8T-7004
M10 x 1.50	35 mm	250-0485
M10 x 1.50	40 mm	8T-7044
M10 x 1.50	45 mm	133-7810
M10 x 1.50	45 mm	186-0870
M10 x 1.50	45 mm	351-9434
M10 x 1.50	45 mm	9X-8281
M10 x 1.50	50 mm	264-0168

Thread Size (dia x pitch)	A Screw Length	Part Number
M10 x 1.50	50 mm	245-9750
M10 x 1.50	50 mm	281-2592
M10 x 1.50	55 mm	309-1906
M10 x 1.50	60 mm	288-4402
M10 x 1.50	65 mm	109-3001
M10 x 1.50	70 mm	231-0336
M10 x 1.50	75 mm	224-5445
M10 x 1.50	80 mm	259-7140
M10 x 1.50	85 mm	116-3715
M10 x 1.50	85 mm	288-4403
M10 x 1.50	95 mm	268-4779
M10 x 1.50	100 mm	335-2395
M10 x 1.50	100 mm	309-1905
M10 x 1.50	100 mm	274-6085
M12 x 1.75	45 mm	141-9481

Thread Size (dia x pitch)	A Screw Length	Part Number
M12 x 1.75	50 mm	8T-5414
M12 x 1.75	55 mm	3E-4319
M12 x 1.75	55 mm	124-8101
M12 x 1.75	65 mm	246-5451
M12 x 1.75	70 mm	310-1945
M12 x 1.75	80 mm	272-1882
M16 x 2.00	70 mm	8C-0623
M16 x 2.00	85 mm	296-5175
M16 x 2.00	85 mm	151-6286
M16 x 2.00	90 mm	341-3770
M16 x 2.00	120 mm	342-9452
M16 x 2.00	130 mm	8C-6709
M20 x 2.50	75 mm	116-3719
M20 x 2.50	85 mm	286-2631
M20 x 2.50	85 mm	160-0011

~~IH~~ $\frac{61}{128}$ 1 $\frac{7}{16}$ x 8 No. $\frac{56}{128}$ + 5
Date:

Nut 1. Oil Coated 0,975

Thread ~~13G~~ ~~1,75~~ 14G 0,16

in 1 inch 0,99

A = 0,865 2R - 7471 0,850

B = 1 1/2 0,425 15

9 0,865

0 434

Nut 2 2inch

Thread ~~20~~ 13G 6V-8188

A = 0,434

B = 3/4

Stud ~~18~~

Thread ~~18~~ 16 in 3/8 106-1792

A = 3 15/16 in

SiDU MAX

55 7779

No.

Date:

Bolt Imperial 2.0 Thread PN = OL-0557

4 12/16 / 9 3/4 = A

0,39 = B

0,75 = C

3,50 = D

0,375 +
7 +
0,381
0,382

0,725
4

73 6

0,975
0,095
19
89

0,075
16 +
91

Bolt Metric ~~M10~~ M10 16G PN = 8T 6685

~~A=14~~ A = 110

B = 6,58

C = 15

d = 89

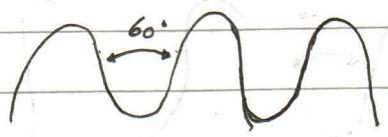
Snapring 2,63 = Bore Diameter PN = 55-7779

ACME

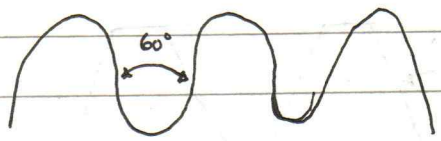
DATE

S M T W T F S

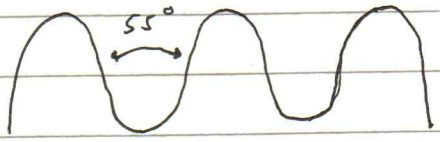
UNC (Unified Course)



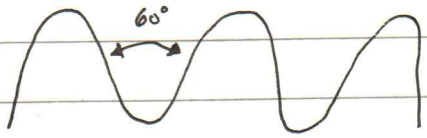
UNF (Unified Fine)



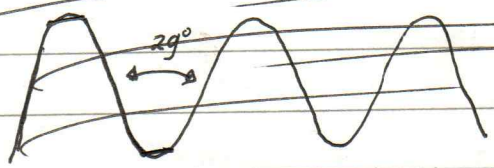
Whitworth



Metric



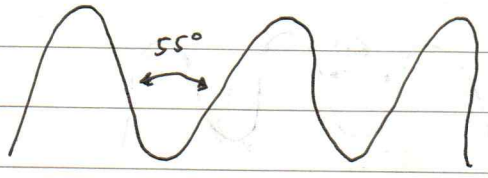
~~AF (Across Flats)~~ ACME Thread (American Trapezoidal Thread)



DATE

S M T W T F S

BSW (British Standard Whitworth)



ACME Thread (American Trapezoidal Thread)