

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

Skill Number CO-OP15GN107

Full Name: Akbar Pratama Lembu No ID: 01

Validation Date: 28-02-2028

School: SMKN 01 SILIWESARI

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			Observation
	Yes	No	N/A	
Preparation				
Prepare related literature	✓			Observe if the can preparing Manufa literature related to
Prepare required equipment	✓			
Prepare related tools	✓			Observe if the can preparing related Thread Identificati
Prepare Safety & Contamination Control equipment	✓			Observe if the can preparing related Equipment (e.g.: F Towel, Plastic Wra

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



Identification	Tasks	Check			Observation / Hints
		Yes	No	N/A	
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.

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

Tasks	Completed			Observation / Hint
	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.	✓			<ul style="list-style-type: none"> Find the improper condition. Communicate the finding to customer/assessor.

Tasks	Completed			Observation / Hint
	Yes	No	N/A	
Reporting				
All relevant documentation completed correctly and approved by customer (if required).	✓			<ul style="list-style-type: none"> Completing the Task List Completing Measurement Form Check Sheet, if required Create Service Report (SIM) required Create SPR, if required Documenting the failed or defective parts, if required Provide Technical Analysis Report/Failure Analysis Report required.



Tasks	Completed		Observation / Hints
	Yes	No	
Safety	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Using PPE related to the job	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Follows relevant Workplace Safety Guidelines (LOTO, Safety Equipment)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> Comply with safety regulation that applied on the workplace
State and follow Safety Precautions	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> Create Job Safety Analysis Student must follow safety procedure refer to service manual or SIS related to job
Service man completes job without accident due to incorrect procedure using hand tools.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> Correct working position Correct hand tool related to the job
Tasks completed without damage equipment and tools	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

Tasks	Completed		Observation / Hints
	Yes	No	
Contamination Control	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Environmental Practices & Housekeeping	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<ol style="list-style-type: none"> Waste is minimized, waste material, including sludge, solids and other wastes are sorted and stored in bins for recycling or disposal Packaging of goods received is sorted and reused or disposed of by recycling Materials that can be reused are cleaned and stored Waste and scrap is removed following workplace procedures All fluids are disposed of in accordance with enterprise policies and procedures

Tasks	Completed			Observation / Hints
	Yes	No	N/A	
Perform etiquette/manner after completing the job	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Perform etiquette/manner when closing the communication.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> Perform smile & greetings. Ask permission to leave or end the interaction.

General Comments

RESULT: **COMPETENT** NOT YET COMPETENT

Student: **Nobar Pratomo Lumbu 28-03-2026**

Assessor: **Shawar IB** 28/3/2026

Supervisor: _____ Date _____ Signature _____

Data Recorded: Name _____ Date _____ Signature _____



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

Skill Number CO-OP15GN107

Full Name: Akbar Pratma Lambu

No ID: 01

Validation Date: 28-02-2026

School: SMKN 01 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
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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

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

Tasks	Completed			Observation
	Yes	No	N/A	
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	
1. Accessing Information	✓			
2. Castellated Nut	✓			
3. Clip	✓			
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	N/A	
Safety				
Using PPE related to the job	✓			
Follows relevant Workplace Safety Guidelines (LOTO, Safety Equipment)	✓			
State and follow Safety Precautions	✓			
Service man completes job without accident due to incorrect procedure using hand tools.	✓			
Tasks completed without damage equipment and tools	✓			

Tasks	Completed			Observation / Hints
	Yes	No	N/A	
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 (N))

Student: Ardor Pratama Lumbu 28-02-2026
Name Date Signature

Assessor: Selirauna TB 28-02-2026
Name Date Signature

Supervisor: _____
Name Date Signature

Data Recorded: _____
Name Date Signature

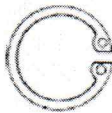


KEGIATAN 2: IDENTIFIKASI DAN PENGECANGAN BAJU

2.1 Tuliskan nama setiap fastener di tempat yang disediakan untuk setiap gambar.



Castellated nut



Lock washer



Split pin



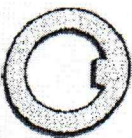
Flat Washer



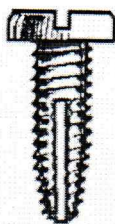
Lock Washer (Spring washer)



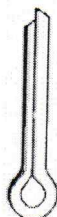
Star Washer (Starlock washer)



Internal lock washer (torque washer)



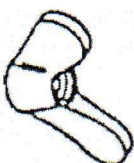
Thread Forming screw (Self tapping screw)



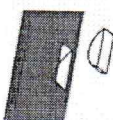
Cotter pin (split pin)



Stud



Wing nut



Woodruff key

Tabel 2






Tugas	Diperiksa			Layak pakai/ Tidak layak pakai
	Ya	Tidak	N/A	
Penggunaan Perkakas dan Alat				
Tugas diselesaikan tanpa kerusakan pada alat dan perkakas				
Alat dan perkakas dibersihkan dan dikembalikan ke tempatnya yang benar				
Area kerja ditinggalkan dalam keadaan bersih dan rapi				
Keselamatan				
Tugas dilaksanakan tanpa melanggar keselamatan				
Alat Pelindung Diri yang Sesuai dipakai (overall, sepatu safety, kaca mata safety, pe- lindung pendengaran)				
Pengendalian Pencemaran				
Seluruh fluida dibuang sesuai dengan peraturan dan persyaratan setempat				

2.2. Dengan menggunakan daftar fastener pada Pertanyaan 1, isi tabel berikut dengan menuliskan huruf dan nama fastener di samping keterangan penggunaan yang sesuai.
Pilihan

Jika diinginkan, fasilitator dapat menambahkan sampai lima (5) rincian penggunaan fastener tambahan yang harus Anda identifikasi dengan nama fastener yang sesuai.

Penggunaan Fastener	Nama Fastener
Memasang dan seringkali digunakan untuk menahan pulley atau gear pada shaft.	Bar key (woodruff key).
Digunakan di belakang mur dan masuk dengan tepat ke dalam groove dalam baut atau shaft yang mencegahnya berputar.	Castellated nut (forgue washer).
Terdiri dari versi luar dan dalam dan digunakan untuk menciptakan tekanan di bawah mur untuk membentuk tahanan yang kencang.	Square seat conical washer (split lock washer).
Digunakan untuk menciptakan tekanan yang kuat pada mur dan baut untuk memastikan bahwa mur dan baut tetap kencang.	Lock Washer (spring washer).
Digunakan untuk menempatkan komponen pada shaft atau dalam recess dan pada saat yang sama membuat komponen berputar namun tidak bergerak secara aksial atau ke ujung	Snap ring (circlip).
Memotong ulir sendiri dalam logam dan plastik	Cutting screw (self tapping screw).
Dimasukkan melalui lubang dalam shaft atau baut untuk menahan dua bagian bersama-sama yang mungkin dapat menjadi longgar	Cotter pin (split pin).
Digunakan dimana mur harus dapat dikencangkan dan dilonggarkan dengan tangan tanpa menggunakan perkakas	Wing nut

2.3 Mengidentifikasi grade dan proof strength untuk setiap head bolt berikut:

Head bolt	Grade	Proof Strength (Mpa)
	8	828 ✓
	5.2	586 ✓
	5	556 ✓ 510
	8.2	828 ✓
	7	724 ✓

ANALISIS LINGKUNGAN KESELAMATAN KERJA / JOB SAFETY ENVIRONMENT ANALYSIS

Pekerjaan / Task	R1 Cylinder head C.18	Nomor JSEA / JSEA Number	Halaman / Page	Dari / Of
Tanggal Pembuatan JSEA / Date of JSEA	28-01-2026	Departemen / Dept	Tempat Kerja / Work Location	Workshop
Disusun Oleh / Compiled By	Lembu	TTD Sign	Review Oleh / Reviewed By	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

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 / No *Jika tidak, silahkan tambahkan dalam urutan langkah tugas diawal*

Kondisi Lingkungan / Environmental Conditions	Cuaca / Weather	hujan	Medan / Terrain	Rata
Pengendalian Sumber Bahaya / Hazardous Energy Control	<input type="checkbox"/> Listrik / Electrical	<input checked="" type="checkbox"/> Gravitasi (Benda jatuh, tertimpa) / Gravitation (Falling objects, struck down)	<input type="checkbox"/> Pneumatik / Pneumatic	
	<input type="checkbox"/> Hidraulik / Hydraulic	<input checked="" type="checkbox"/> Mekanis / Mechanical	<input type="checkbox"/> Panas / Thermal	
APD yang diperlukan / Required PPE	<input checked="" type="checkbox"/> Helm / Safety Helm	<input type="checkbox"/> Pelindung Muka / Face shield	<input checked="" type="checkbox"/> Kacamata / Safety Glass	
	<input checked="" type="checkbox"/> Sarung Tangan / Hand Gloves	<input type="checkbox"/> Pelindung Pernafasan / Respiratory Protection	<input type="checkbox"/> Perlindungan Kejatuhan / Fall Protection	
	<input checked="" type="checkbox"/> Sepatu / Safety Shoes	<input type="checkbox"/> Pelindung Telinga / Hearing Protection	<input type="checkbox"/> Lain-Lain / Other	

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

1 Bahaya Keselamatan : Kondisi tidak aman yang dapat menyebabkan injury atau kematian seperti terpeleceh, terpeleceh/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
1	Walk around inspection	1.1 komponen tumpah 1.2 oli tumpah	1.1.1 Bersihkan komponen 1.2.1 lap menggunakan absorbent pad
2	Prepare tools	2.1 Tertimpa pallet	2.1.1 Berhati-hati saat membawa pallet
3	Doing the job	3.1 Fastener terkontaminasi 3.2 Tools terdapat debu 3.3 Tangan bergores stud 3.4 Tertimpa exhaust	3.1.1 letakkan fastener pada kontainer 3.2.1 lap gunakan white towel 3.3.1 Tidak bergorau 3.3.2 berhati-hati saat melepas 3.3.3 gunakan safety gloves 3.4.1 gunakan safety shoes 3.4.2 angkat exhaust 2 orang
4	Housekeeping	4.1 Terpeleceh pallet	4.1.1 Bernhati nabi saat housekeeping



