Demonstrate Inspecting and Servicing Various Bearing, Seal and Gasket Used in Heavy Equipment

Skill Number CO-OP15GN106

Full Name: M. Arkan Azka LH. **No ID:**

Validation Date: 30/10/2025 **School:** SMKN 1 Singosari

PERFORMANCE TASK:

Given assorted bearings, seals and gaskets, the student is requested to perform the following tasks on the components:

- Removing
- Inspection
- Installing

The student must be able to perform the following task:

- Demonstrate removing, inspection and installing Bearing, Seals and Gasket.

It is recommended that assessor put questions to student regarding the findings of their inspections and subsequent report. Literature and measuring tools will be made available but will not be provided directly to the student.

Safety and Contamination Control must be always applied to this process.

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

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

Tasks	Completed			Observation / Hints
	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	Completed			Observation / Hints
	Yes	No	N/A	
Remove, Inspect and Install Bearings, Seals and Gaskets				
1. Accessing Information	✓			
2. Bearing, Seals & Gasket Removal	✓			
3. Determine bearing reusability of bearings, seals, and gasket	✓			
4. Bearing, Seals & Gasket Installation	✓			
5. Equipment and tooling are used in the correct way	✓			
6. Equipment and tooling are cleaned and returned to its correct location	✓			
Documentation:				
Take picture if needed				

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 APD 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:	M. Arkan Azka I.U.	30/10/2025	
Assessor:	[illegible]	11/11/2025	
Supervisor:			
Data Recorded:			

Demonstrate Inspecting and Servicing Various Bearing, Seal and Gasket Used in Heavy Equipment

Skill Number CO-OP15GN106

Full Name: M. Arbar Acba. **No ID:** _____

Validation Date: 30/10/2024 **School:** _____

PERFORMANCE TASK:

Given assorted bearings, seals and gaskets, the student is requested to perform the following tasks on the components:

- Removing
- Inspection
- Installing

The student must be able to perform the following task:

- Demonstrate removing, inspection and installing Bearing, Seals and Gasket.

It is recommended that assessor put questions to student regarding the findings of their inspections and subsequent report. Literature and measuring tools will be made available but will not be provided directly to the student.

Safety and Contamination Control must be always applied to this process.

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

Tasks	Completed			Observation / Hints
	Yes	No	N/A	
Preparation				
Prepare related literature	✓			Observe if the candidate is referring to the Manufacturer's Literature
Prepare required equipment	✓			Observe if the candidate is preparing bearings, seals, and gaskets
Prepare related tools	✓			Observe if the candidate is preparing related tools (e.g.: Hand tools, bearing puller, Bearing heater, Infrared Thermometer, etc.)
Prepare Safety & Contamination Control equipment	✓			Observe if the candidate is preparing related Safety & CC Equipment (e.g.: PPE, Blue Towel, Plastic Wrap, etc.)

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

Tasks	Completed			Observation / Hints
	Yes	No	N/A	
Remove, Inspect and Install Bearings, Seals and Gaskets				
1. Accessing Information	✓			Observe if the candidate is accessing information relating task from manufacturer's literature
2. Bearing, Seals & Gasket Removal	✓			Observe if the candidate is removing bearings, seals and gasket following instruction on manufacturer's literature
3. Determine bearing reusability of bearings, seals, and gasket	✓			Observe if the candidate is inspecting bearings, seals and gasket following instruction on manufacturer's literature
4. Bearing, Seals & Gasket Installation	✓			Observe if the candidate is installing bearings, seals and gasket following instruction on manufacturer's literature
5. Equipment and tooling are used in the correct way	✓			
6. Equipment and tooling are cleaned and returned to its correct location	✓			
Documentation:				
Take picture if needed				

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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 the 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 Form/Related Check Sheet, if required • Create Service Report (SIMS), if required • Create SPR, if required • Documenting the failed or damaged parts, if required • Provide Technical Analysis Report/Failure Analysis Report, if required.

Tasks	Completed		Observation / Hints
	Yes	No	
Safety			
Using APD 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		Observation / Hints
	Yes	No	
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 are removed following workplace procedures 5. 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				
Perform etiquette/manner when closing the communication.				• Perform smile & greetings. • Ask permission to leave or end the interaction.

General Comments

pelajari kembali bearing
pre load

RESULT: **COMPETENT** [✓] **NOT YET COMPETENT** [ ] (please check (√))

	Name	Date	Signature
Student:			
Assessor:		11/11/2015	
Supervisor:			
Data Recorded:			

M. Arkan Azka I.H.
XI TAB 3

No.: Assembly procedure final drive D6R (Validasi SBG) Date: 11/11/2025

3. Jelaskan correct procedure "Duo-Cone floating seals - Install"
: prosedur install duo cone floating seal dimulai dengan pastikan semua komponen bersih & bebas dari kotoran, minyak, karat / kontaminasi. Floating ring seal harus selalu dipasang berpasangan, tdk boleh mencampur seal baru dengan yang bekas. juga toric sealing ring harus selalu baru. Bersihkan semua bagian menggunakan pelarut non-flammable, lalu keringkan. Sebelum pemasangan, toric ring dibasahi dengan "isopropyl alcohol" agar mudah masuk ke bawah lip retainer, namun hindari penggunaan dekat api karena mudah terbakar. saat memasang, pastikan toric ring tidak terpelintir & gunakan alat khusus, bukan obeng. Setelah seal terpasang, periksa tinggi pd 4 titik dgn toleransi max 1,0mm. Biarkan 2 menit agar alkohol menguap, bersihkan permukaan dgn kain bebas serat, lalu oleskan sedikit oli yg bersih pd permukaan seal tapi menyentuh toric ring sebelum ke-2 seal disatukan dgn hati-hati.
=> Gunakan finger pressure untuk install toric sealing ring, bukan screwdriver

2. Jelaskan tujuan correct bearing preload
: untuk memberikan gaya tekan awal pada bearing agar komponen didalamnya (ball / roll & raceway) selalu berada dalam posisi yg stabil / pas / rapat tanpa celah bebas

3. Jelaskan prosedur bearing preload yg benar
: semua komponen seperti bearing, shaft, & housing dibersihkan & diperiksa agar tdk rusak. kemudian bearing dipasang dgn alat khusus hingga pas / rata & tidak miring. setelah itu, dilakukan penyetelan awal dgn mengencangkan mur pengunci / locknut spacer sesuai torsi yg ditentukan utk memberikan tekanan awal. preload diperiksa dgn memutar poros & memastikan tdk terlalu seret / kencang & longgar, serta bisa uji menggunakan dial indicator / alat ukur torsi (torque tester) jika hasil blm sesuai, lakukan penyetelan ulang sampai bearing halus & stabil, lalu kunci posisi mur agar tdk bergeser

OKEY

No.:

Date:

OKEY

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

ANALISIS LINGKUNGAN KESELAMATAN KERJA / *JOB SAFETY ENVIRONMENT ANALYSIS*

Pekerjaan / *Task*	DA Final Drive D6R	Nomor JSEA / *JSEA Number*	1	Halaman / *Page*	1	Dari / *Of*	2

Tanggal Pembuatan JSEA / *Date of JSEA*	11 November 2025	Departemen / *Dept*	Service	Tempat Kerja / *Work Location*	Workshop TAB

Disusun Oleh / *Compiled By*	Arkan	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 / *No* ***Jika tidak, silahkan tambahkan dalam urutan langkah tugas diawal***

Kondisi Lingkungan / *Environmental Conditions*	Cuaca / *Weather*	Gerimis	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 Arround Inspection	Tersandung komponen	1.1 Pindahkan komponen ke tempatnya
			1.2 Perhatikan langkah kaki saat berjalan
		komponen terkontaminasi	1.3 Bungkus dengan plastic wrap
	2. prepare tools	Terbentur toolbox	2.1 perhatikan jalannya toolbox yang aman
			2.2 Fokus saat bekerja
		Tools terjatuh	2.3 Fokus saat memegang /inspect tools
			2.4 lap tools dengan majun
			2.5 pastikan tools layak digunakan
	3. Doing Disassemble Final Drive D6R	Terjepit komponen	3.1 Hindari titik jepit
			3.2 perhatikan posisi yang benar untuk memegang
			3.3 ikuti prosedur yang ada
			3.4 lap komponen dengan majun sebelum doing job
		Ergonomi saat doing job	3.5. Pakai posisi yang aman untuk doing job
			3.6 perhatikan beban yang akan diangkat

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

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

ANALISIS LINGKUNGAN KESELAMATAN KERJA / JOB SAFETY ENVIRONMENT ANALYSIS

Pekerjaan / Task	DA Final Drive DGR	Nomor JSEA / JSEA Number		Halaman / Page	2	Dari / Of	2

No	Urutan Dasar Langkah Tugas / Job Steps	Bahava Yang Terkait / Potential Hazard(s)	Tindakan Perbaikan / Recommended Action
	4. Doing Assemble Final Drive DGR	komponen terjatuh	4.1 lakukan prosedur pengencangan dengan benar
			4.2 Hindari pengerjaan di area yang berbahaya
			4.3 perhatikan alat pengencangan bersih & benar
			4.4 perhatikan titik pengangkatan
		Terjepit komponen	4.5 Hindari titik jepit
			4.6 ikuti prosedur yang benar saat menggang komponen
	5. House keeping	Terpeleset lantai	5.1 Pastikan lantai tidak licin
			5.2 Hati-hati saat berjalan
			5.3 lap cairan yg berceceran dgn majun

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