

Demonstrate Selecting and Using Caterpillar Service Literature

Skill Number CO-OP15GN109

Full Name: Meryana D

No ID: _____

Validation Date: 19/11/2022

School: SMKN 01 Singorari?

PERFORMANCE TASK:

Given an Engine / Machine and service literatures. The Student must be able to perform task selecting and using Caterpillar service literature.

The student must be able to complete the following tasks:

- Select the correct service manual related to the job
- Find out some information about specification related to the job
- Find out some information about system operation related to the job
- Find out some information about disassembly & assembly related to the job
- Find out some information about testing & adjusting related to the job
- Select the correct part manual related to the job
- Find out correct part number using the component name index page
- Find out correct component name using the part number index page
- Explain some notification on the illustration page
- Order the part using Service Part Request form
- Return the part using Service Part Return form
- Perform close the job by ensuring all systems or conditions are in the standard condition
- Perform communication & etiquette manner

Safety and Contamination Control must be applied to this process. All literatures will be available.

Prerequisite	Yes	No	N/A	Hints
The Student must complete the knowledge assessment. Minimum passing grade 80%.	✓			Score Caterpillar Literature Course or subject.

Tasks	Completed			Observation / Hints
	Yes	No	N/A	
Preparation				
Prepare related literature	✓			Service Manual & Parts Manual related to an actual job Service Parts Request Form Service Parts Return Form
Prepare required equipment	✓			Engine or Machine
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.	✓			• 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	
Selecting and using correct service manual & part manual related to the job				
Select Service Manual & Part book	✓			Select the correct Service Manual & Parts Book for a given Machine according the : - Sales model - Serial number - Arrangement number
Find information from service manual & parts book	✓			This should be demonstrated by looking up various service information and components as instructed.
Demonstrate understanding of explanation in the service manual and illustration in the Parts Book by answering assessor questions	✓			Such as (for sample only) : - Service Manual "What should we do to remove water pump" or

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CO-OP15GN109 – Candidate Performance Guide

Demonstrate Selecting and Using Caterpillar Service Literature

Skill Number CO-OP15GN109

Full Name: Merryono

No ID:

Validation Date: 19/11/2012

School: SMKN 01 SINGOSOR 1

PERFORMANCE TASK:

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- Perform close the job by ensuring all systems or conditions are in the standard condition
- Perform communication & etiquette manner

Safety and Contamination Control must be applied to this process. All literatures will be available.

Prerequisite	Completed			Hints
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The Student must complete the knowledge assessment. Minimum passing grade 80%.	✓			



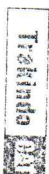
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Tasks	Completed			Observation / Hints
	Yes	No	N/A	
Preparation				
Prepare related literature	✓			
Prepare required equipment	✓			
Prepare related tools	✓			
Prepare Safety & Contamination Control equipment	✓			

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	
Selecting and using correct service manual & part manual related to the job				
Select Service Manual & Part book	✓			
Find information from service manual & parts book	✓			
Demonstrate understanding of explanation in the service manual and illustration in the Parts Book by answering assessor questions	✓			
Documentation:				
Take picture if needed				



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Tasks	Completed			Observation / Hints
	Yes	No	N/A	
Demonstrate ordering and returning the part using correct form				
Ordering part by requesting assessor	✓			
Returning part by requesting assessor	✓			
Documentation:				
Take picture if needed				

Tasks	Completed			Observation / Hints
	Yes	No	N/A	
Perform final inspection				
Ensuring all systems or conditions are in the 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 (tag out, safety equipment)	✓		
State and follow safety precautions	✓		
Service technician completes job without accident due to incorrect procedure using hand tools.	✓		
Tasks completed without damage equipment and tools	✓		



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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 (N))

Student: Merryana Date: 18/11/2022

Name: _____ Signature: 

Assessor: Selvauswati Date: 18/11/2022

Name: _____ Signature: 

Supervisor: _____ Date: _____ Signature: _____

Name: _____ Date: _____ Signature: _____

Data Recorded: _____ Date: _____ Signature: _____

Name: _____ Date: _____ Signature: _____

ANALISIS KESELAMATAN KERJA / JOB SAFETY ANALYSIS

Pekerjaan / Task	PM 250 D6R	Nomor JSA / JSA Number	1	Halaman / Page	1	dari / of	2
Tgl Pembuatan JSA / Date of JSA	11 - november - 2025	Departemen / Department		Tempat Kerja / Work Location			
Disusun oleh / Compiled By	Merryana	TTD / Sign		Review oleh / Reviewed by		TTD / Sign	
		Atasan / Superior		TTD / Sign			

Apakah anda terlatih untuk melakukan pekerjaan ini? / Are you properly trained to complete this task Ya Tidak/ No

Apakah anda memerlukan peralatan LOTO? / Are you need LOTO equipments? Ya Tidak/ No

Kondisi Lingkungan / Environmental Condition	normal	Cuaca / Weather	terang	Medan / Terrain	
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Pengendalian Sumber Bahaya / Hazardous Energy Control	<input type="checkbox"/> Listrik/ Electric	<input checked="" type="checkbox"/> Gravitasi (panda jatuh tertimpa)	<input type="checkbox"/> Pneumatik/ Pneumatic
	<input type="checkbox"/> Hidrolik/ Hydraulic	<input type="checkbox"/> Mekanis/ Mechanical	<input type="checkbox"/> Panas/ Thermal

APD yang diperlukan / Required PPE	<input checked="" type="checkbox"/> Helm/ Safety Helmet	<input checked="" type="checkbox"/> Sarung Tangan/ Hand Gloves	<input checked="" type="checkbox"/> Pelindung Muka/ Face Shield
	<input checked="" type="checkbox"/> Sepatu/ Safety Shoes	<input checked="" type="checkbox"/> Pelindung Telinga/ Hearing Protection	<input checked="" type="checkbox"/> Pelindung Jatuh/ Fall Protection
	<input checked="" type="checkbox"/> Kacamata/ Safety Glasses	<input type="checkbox"/> Pelindung Pernafasan/ Respiratory Protection	<input type="checkbox"/> Lain-Lain/ Others

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

1. Bahaya Kimia : Tertelan, terkena kulit, terhirup, terserap
 Chemical Hazard : Ingestion, skin contact, inhalation, absorption

2. Bahaya Biologi : Patogen yang ditularkan melalui darah, lalat, tanaman, serangga, hewan

3. Bahaya Fisik : Listrik, Api, Ledakan, Kebisingan, Radiasi, Panas, Stress, Terjepit, Tersandung, Terjatuh, Tertimpa, Getaran
 Physical Hazard : Electric, Fire, Explosion, Noise, Radiation, Thermal, Stress, Pinch, Slip, Falls, Struck by, Vibration

4. Bahaya Ergonomi : Gerakan berulang, Beban berlebih, Postur Janggal, Durasi Kerja, Desain area kerja
 Ergonomic Hazard : Repetition, Forcefull extention, awkward posture, duration, work area design

NO	Urutan Dasar Langkah Tugas / Job Step (Maksimum 15 Langkah / Maximum 15 Steps)	Bahaya Yang Terkait / Potential Hazard	Tindakan Pengendalian/ Recommended Action
1.	WALK AROUND INSPECTION	1.1. tersandung komponen	1.1
		2.1. terpeleset oli yang tumpah	2.1.1 membersihkan dengan maulin 2.1.2 tetap waspada saat walk around
2.	Prepare TOOLS	2.1 Tool box menabrak benda	2.1.1 menghindari area yang sempit 2.1.2 berhati-hati ketika membawa TOOL BOX
		2.2. Tersepat roda FOOTBOX tutup tool box	2.2.1 hindari titik jepit 2.2.2 menggunakan APD lengkap.
3.	doing every 10 service Hours or daily	3.1 sabuk pengaman belum terpasang dengan aman	3.1.1 memastikan sabuk pengaman sudah terpasang dengan benar
		3.2 tertabrak adanya personil atau objek	3.2.1 Memastikan area sekitar bersih dari personil, penghalang lain.
		3.3 tertera attachment yang rusak tiba-tiba	3.3.1 fokus saat bekerja 3.3.2 memastikan attachment terangkat dengan aman saat pengisian rem.

2. Prepare TOOLS

2.3 TOOLBOX tidak dikunci
 TOOLS tumpah

2.3.1 kunci toolbox saat membawa

3.

3.1 terpeleset saat naik ke kabin

3.1.1 pastikan memegang Three point kontak.

ANALISIS KESELAMATAN KERJA / JOB SAFETY ANALYSIS

Pekerjaan / Task	Nomor JSA / JSA Number	Halaman Page	dari of
NO	Urutan Dasar Langkah Tugas / Job Step (Maksimum 15 Langkah / Maximum 15 Steps)	Bahaya Yang Terkait / Potential Hazard	Tindakan Pengendalian/ Recommended Action
		3.4 machine bergerak terlalu cepat	3.4.1 meningkatkan kecepatan secara bertahap.
		3.5 cedera tangan terkena material tajam	3.5.1 menggunakan safety gloves
			3.5.2 menggunakan penerangan saat memperbaiki kerusakan.
		3.6 mata terkena partikel debu	3.6.1 gunakan safety glass
4.	PM 50 service hours or weekly	4.1 luka bakar saat komponen sangat panas	4.1.1 jangan menyentuh pin yang panas
			4.1.2 gunakan safety gloves.
		4.2 tertimpa komponen undercarriage	4.2.1 berhati-hati saat memeriksa track pins
			4.2.2 gunakan alat bantu jika digunakan
		4.3 terpapar debu	4.3.1 gunakan safety mask
5	every PM 250 service hours or monthly	5.1 terpapar cairan mata iritasi	5.1.1 pastikan machine sudah dingin
			5.1.2 gunakan APD lengkap
		5.2 panas, terpeleset karena tumpahan	5.2.1 ikuti prosedur pengambalian SOS yang aman.
6	Housekeeping	6.1 terjepit tools	6.1.1 hindari titik jepit
		6.2 post sarae terjepit	6.2.1 ambil posisi yang tepat.

Bukti Sosialisasi / Socialization evidence

No	Nama/Name	TTD/Sign
1		
2		
3		

No	Nama/Name	TTD/Sign
4		
5		
6		

No	Nama/Name	TTD/Sign
7		
8		
9		

- 3. 3.4 rem tidak berfungsi sebagai mestinya
 - 3.4.1 gunakan area yang layak untuk pengujian rem.
 - 3.4.2 - mengurangi kecepatan ke posisi rendah.
 - 3.4.3. matikan machine.
- 4. 4.1 terbentur dibagian undercarriage
 - 4.1.1. gunakan safety helmet.
- 5. 5.2 coolant panas menyembur karena retakan

Soal Literatur

1. Tuliskan identitas Lengkap dari Literatur yang dipakai.!
2. Tuliskan Media No dan tanggal penerbitan untuk spec pada literatur yang digunakan!
3. Pada unit D6R menggunakan Engine C9 dengan 3 model yang berbeda, Jelaskan Perbedaannya!
4. Jelaskan Fuel system yang digunakan pada Engine C9 ini!
5. Jelaskan fluida apa yang harus diaplikasikan pada thread filter base sebelum pemasangan fuel filter basa !
6. Jelaskan fluida yang harus diaplikasikan saat pemasangan Valve lifter assembly nomenclatur 4 pada valve mechanism
7. Jenis nut apa yang digunakan untuk memasang Turbo charge pada mountingnya, jelaskan juga jenis Fluida yang digunakan sebagai pelumas, serta berapakah torsi yang harus diaplikasikan!
8. Tuliskan prosedur pemasangan Oil Filter Engine C9 yang dijelaskan pada spec!
9. Tuliskan spect berapa derajat celcius awal membuka dan jarak minimum pembukaan pada temperatur pembukaan untuk 247-7133 water temperature regulator
10. Tuliskan berapa ketebalan dari oil control piston ring yang baru untuk C9 Engine, tuliskan prosedur installnya!
11. Berapakah berat C9 Engine?
12. Tuliskan 5 komponen yang dilewati Oli Engine yang telah di filter dan masuk ke Oil galery!
13. Jenis dari Engine oil pump pada engine C9 adalah.....!
14. Tuliskan fungsi dari wastegate pada engine C9!
15. Tuliskan : a. Jenis, b. arah putaran, c. Displacement, d. Stnby presure untuk Implement hydrolic Pump!
16. Tuliskan berat keseluruhan Unit D6R LGP dengan Dozer dan Ripper
17. Tuliskan jenis dari Oli yang digunakan untuk : a. Engine, b. Hidrolik, c. Transmisi, d. Final Drive Pada temperatur kerja di Indonesia (iklim tropis) +/- 27⁰ C pada unit D6R
18. Tuliskan kapasitas dari: a. Fuel Tank, b. Engine crankcase, c. powertrain oil, d. Final drie di tiap sisi, pada unit D6R
19. Jelaskan prosedur untuk Track Adjustment!
20. Jelaskan prosedur untuk Equalizer Bar End Pins Oil Level Check!

Jawaban validasi literature

5. Red Loctite 271

6. With the 50/50 mixture of clean engine and 8T-2998 lubricant.

7. Jenis nut: locknuts

Jenis Fluida: 4C-5599 anti-seize compound

torque = $54 \pm 5 \text{ N}\cdot\text{m}$ ($40 \pm 4 \text{ lb}\cdot\text{ft}$)
opening temperature is $81^\circ \text{ to } 84^\circ \text{C}$ ($178 \text{ to } 183^\circ \text{F}$), jarak minimum 10.0 cc (0.6 cubic inch)

9. at 207 kPa (30 PSI)

10. thickness of new oil control piston ring $3.980 \pm 0.010 \text{ mm}$ ($0.1567 \pm 0.0004 \text{ inch}$)

1. the oil control piston ring has a spring that is installed with timing. The gap in the spring should be a distance of 180 degrees from the ring end gap when the oil control piston ring is assembled. The colored portion can be to right or to the left of the ring and gap.

2. After the piston rings have been installed, rotate the piston 180 degrees so that the end gaps are 120 degrees from each other.

3. Lubricate the entire piston in zone (A) prior to assembly into the cylinder block. Use clean engine oil.

19. 1. Move the machine forward. Allow the machine to stop without the use of service brakes. Adjust the tracks while you are in the machine's typical operating conditions. In the workplace, adjust the tracks while you are in the machine's typical operating conditions. Do not use any lubricating material on the tracks.

2. Make sure that the sag in the track is between the sprocket and the front idler and shut off the engine. Mark the machine.

3. Establish a straight line from the grouser at the sprocket to the grouser at the front idler.

4. If a machine does not have track carrier rollers, the sag in the track between the sprocket and front idler. The correct adjustment of dimension is $115 \pm 5 \text{ mm}$ (measured between the sprocket and front idler).

5. If the machine is equipped with track carrier rollers, calculate the sag in the track. The correct average value is $55 \pm 5 \text{ mm}$ ($2.2 \pm 0.2 \text{ inch}$) of dimension (3).

20. 1. Clean the areas that are around the end pin with a high pressure spray of the seal. (1)

2. Check the area for oil leakage. Be sure that the seal is in a neutral condition.

3. Remove plug

4. Check the oil level. Oil level (1) should be at the top of the hex head on the dipstick.

1. Menggunakan D6E track type tractor - 56X1-UP - 56Y1-UP
- 56T1-UP

3. - bore = 112.0 mm (4.41 inch)