

SMCS - 1361

102301490

Removal Procedure

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

NOTICE

Care must be taken to ensure that fluids are contained during performance of inspection, maintenance, testing, adjusting, and repair of the product. Be prepared to collect the fluid with suitable containers before opening any compartment or disassembling any component containing fluids.

Refer to Special Publication, PERJ1017, "Dealer Service Tool Catalog" for tools and supplies suitable to collect and contain fluids on Cat® products.

Dispose of all fluids according to local regulations and mandates.

1. Remove the drive belt from the engine.
2. Drain the coolant from the cooling system into a suitable container for storage or disposal. Refer to Operation and Maintenance Manual, "Cooling System Coolant - Change".

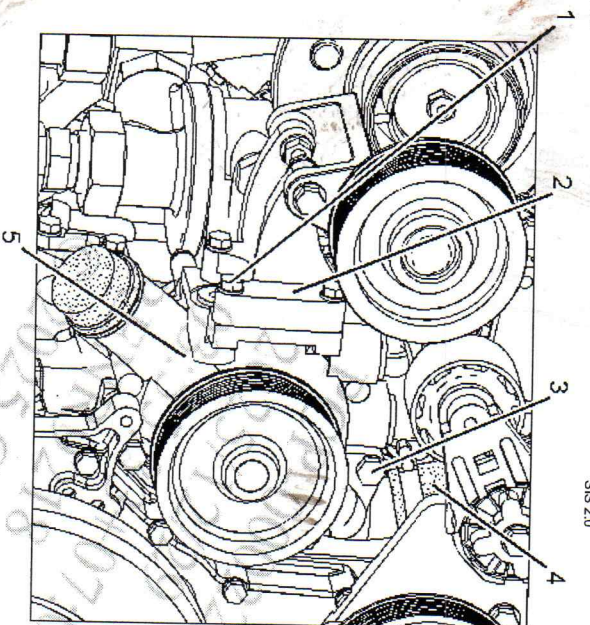



Illustration 1

3. Remove bolts (1) and support bracket (2).
4. Disconnect hose (4).
5. Remove bolts (3) and water pump (5).

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ANALISIS LINGKUNGAN KESELAMATAN KERJA / JOB SAFETY ENVIRONMENT ANALYSIS

Pekerjaan / Task	R1 Water pump	Nomor JSEA / JSEA Number		Halaman / Page	1	Dari / Of	
Tanggal Pembuatan JSEA / Date of JSEA	29 Des 2025	Departemen / Dept		Tempat Kerja / Work Location	Workshop TAB		
Disusun Oleh / Compiled By	Nashti	TTD / Sign		Review Oleh / Reviewed By		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	Cerah	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, 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 Tersandung komponen lain	1.1.1 tempatkan komponen ditempat aman 1.1.2 perhatikan area 1.1.3 Memakai safety shoes
2.	Prepare area and tools	2.1 Kaki terjepit Hand jack 2.2 Tertimpa tools	2.1.1 Hindari titik jepit 2.1.2 Gunakan safety glove and shoes 2.2.1 Tetap berhati-hati. 2.2.2 Periksa tools / equipment. 2.2.3 pakai safety gloves.
3.	Doing Remove water pump	3.1 Tangan tergores 3.2 Kaki tertimpa	3.1.1 Hindari titik tajam. 3.1.2 Tidak bergurau saat bekerja 3.1.3 Gunakan safety gloves 3.2.1 3.2.2 Gunakan safety shoes
4.	Doing install water pump	4.1 Tangan terjepit 4.2 Tangan tergores	4.1.1 Hindari titik jepit. 4.1.2 Selalu memakai safety gloves 4.1.3 Tetap fokus 4.2. memakai safety gloves

