

773 OF HIGHWAY TRUCK

KYD - UP



Bengkulu, 12 July 2025



TRAINING CENTER

PT. CAKRAWALA DINAMIKA ENERGI

## PROTOKOL KESELAMATAN & KESEHATAN



Pastikan Anda mengetahui nomor telepon darurat, jalur evakuasi, dan First Aider/ Floor Warden di lokasi Anda.

Perhatikan ergonomi posisi kerja dan bahaya sekitar tempat kerja Anda.

Jangan melakukan virtual meeting sambil menyetir kendaraan.

Laksanakan 5M: Mencuci tangan, Memakai masker, Menjaga jarak, Menghindari kerumunan, dan Membatasi mobilitas dan interaksi.

## TATA LAKSANA VIRTUAL MEETING



Matikan mikrofon Anda saat tidak dalam giliran berbicara.



Gunakan raise hand bila ingin bertanya atau menginterupsi.



Jaga kerahasiaan informasi Perusahaan.



Tidak diperkenankan untuk mengambil gambar (foto, screen capture, screen recording).

# SAFETY

1. **SAFETY**
2. FITUR FITUR 773 OFF HIGHWAY TRUCK
3. OPERATOR STATION
4. MONITORING SYSTEM
5. ENGINE & SUPPORT SYSTEM
6. POWERTRAIN SYSTEM
7. STEERING SYSTEM
8. HOIST SYSTEM
9. BRAKE SYSTEM

# Pendahuluan

- Safety

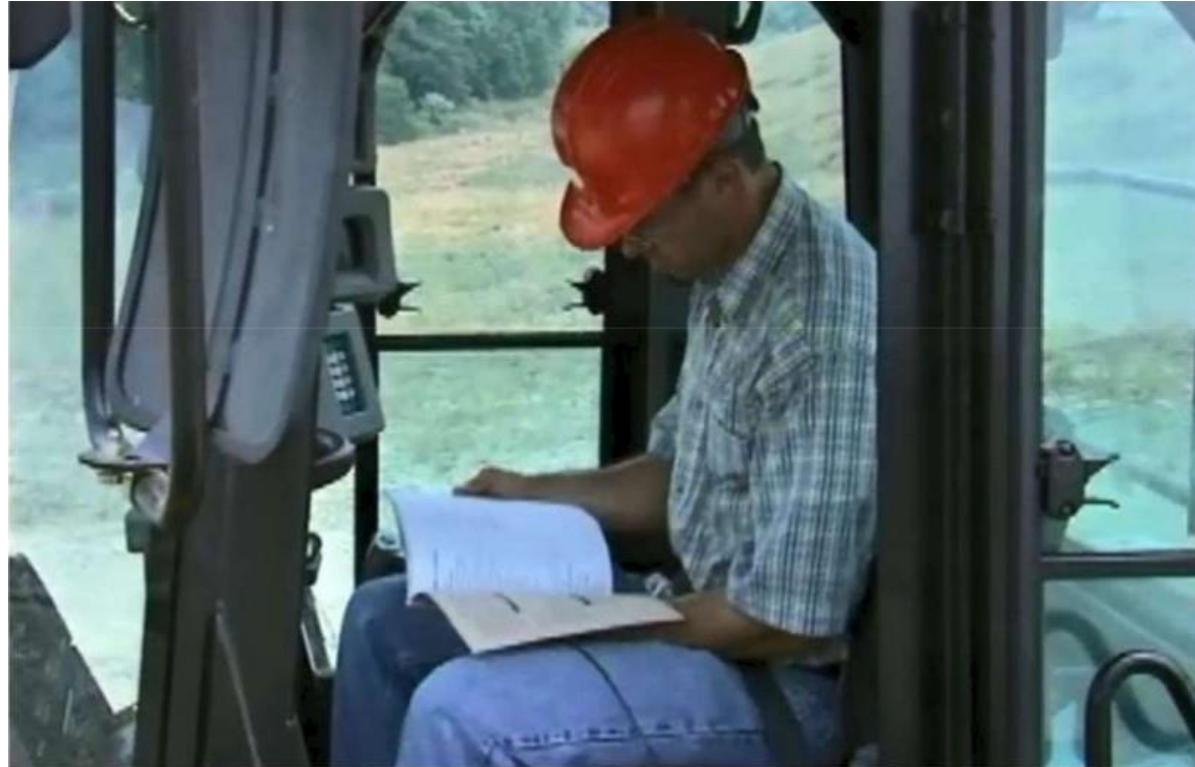


# Basic safety

- Mempelajari Operation and Maintenance Manual
- Naik dan turun machine dengan aman
- Walk around inspection
- Memasang safety device
- Memasang LOTTO

# Mempelajari Operation and Maintenance Manual

- OMM



# Naik dan Turun Machine Dengan Aman

- Three Body Contact



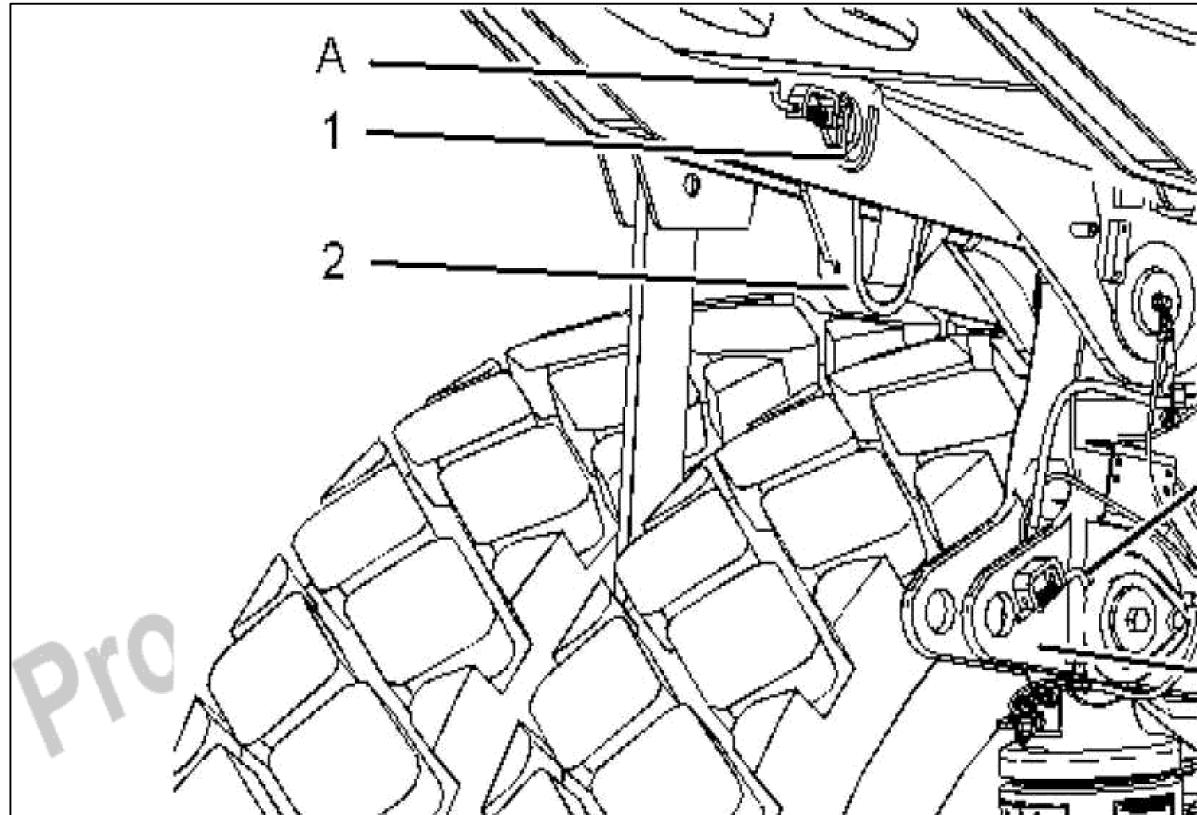
# Walk Around Inspection

- Inspection



# Memasang Safety Device

- safety belt
- safety pin
- bracket,
- cylinder brace
- lock linkage
- dan lain-lain



# MEMASANG LOTO

- Pad Lock

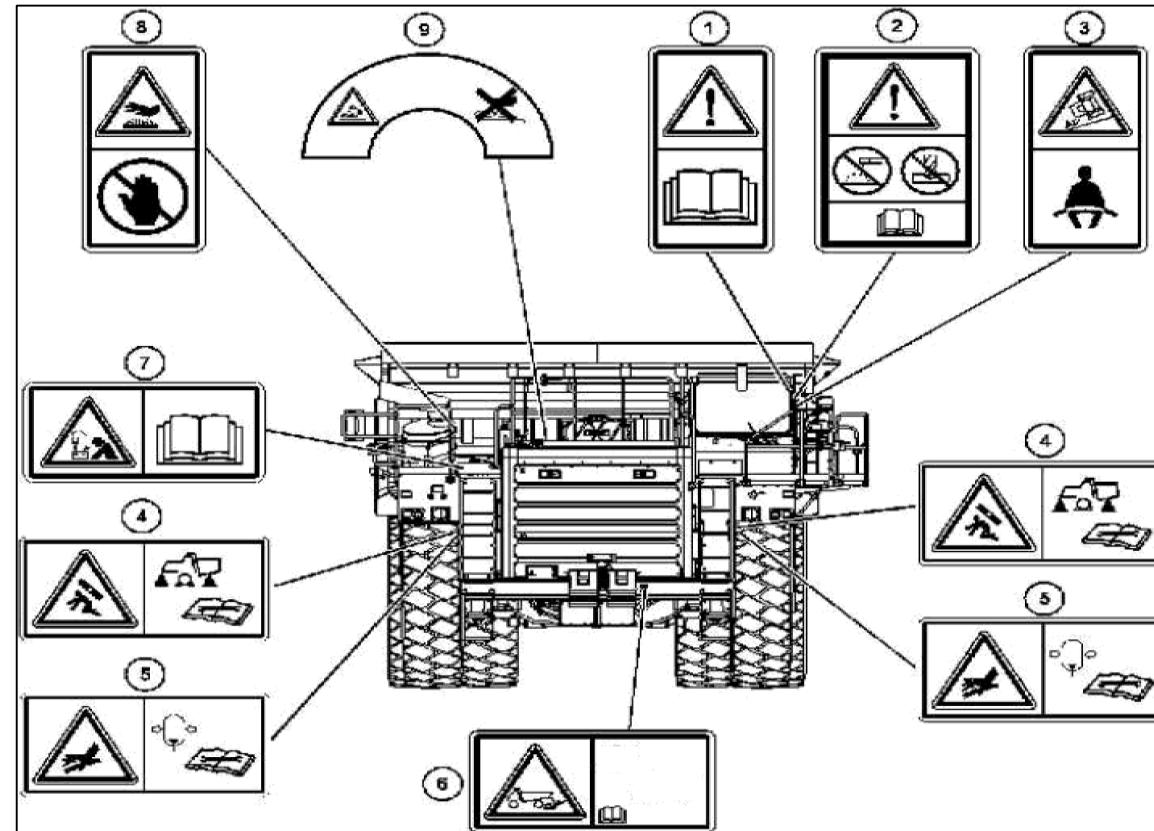


# MEMASANG LOTO

- Parkirlah Machine dengan kondisi parkir yang benar
- Pasangkan Wheel chock dan aktifkan Parking Brake.
- Pasanglah LOTO di tempat yang benar sebelum memulai semua pekerjaan.
- Gunakan three point contact saat naik atau turun dari machine.
- Buatlah Job safety analis sebelum bekerja.
- Hindari kontak dengan permukaan atau cairan yang panas
- Jauhkan bahan-bahan yang mudah terbakar dengan permukaan yang panas
- Pasanglah safety device yang terpasang di machine.

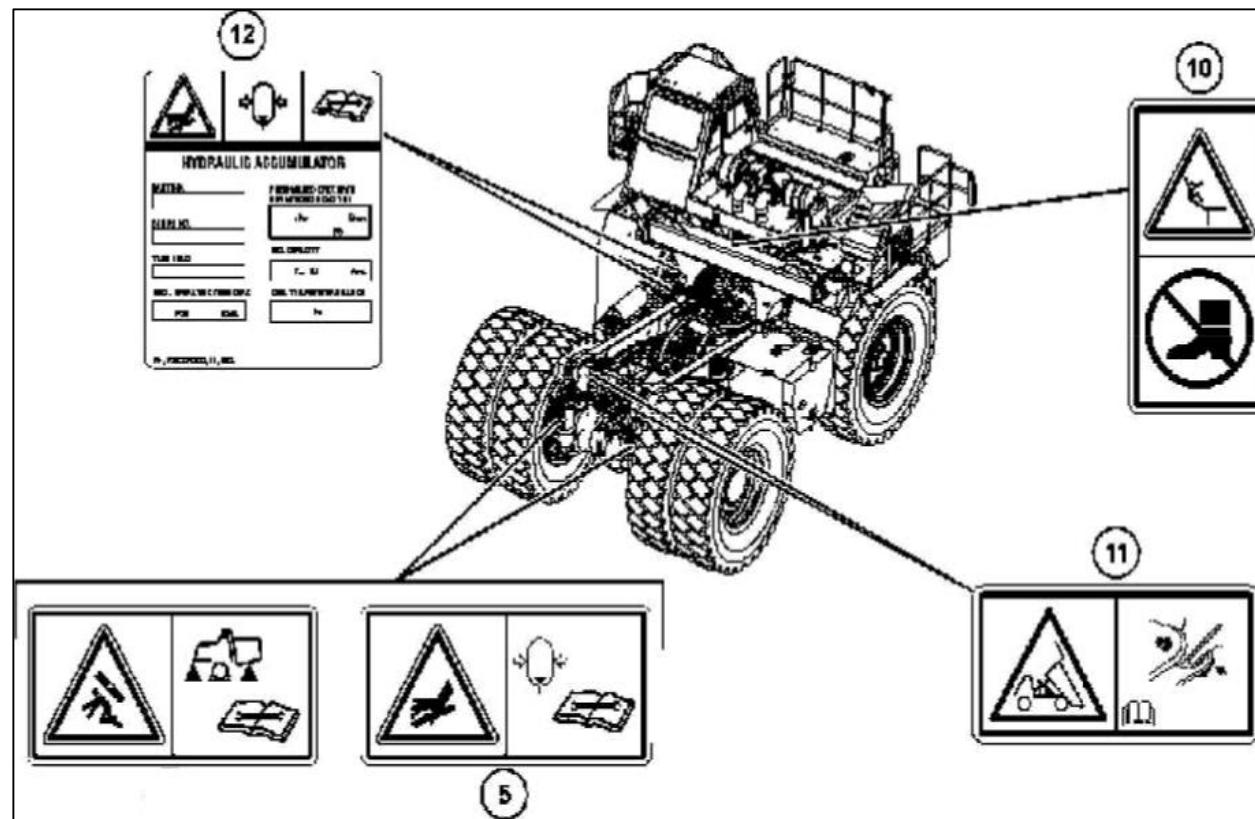
# Safety message

- Decal



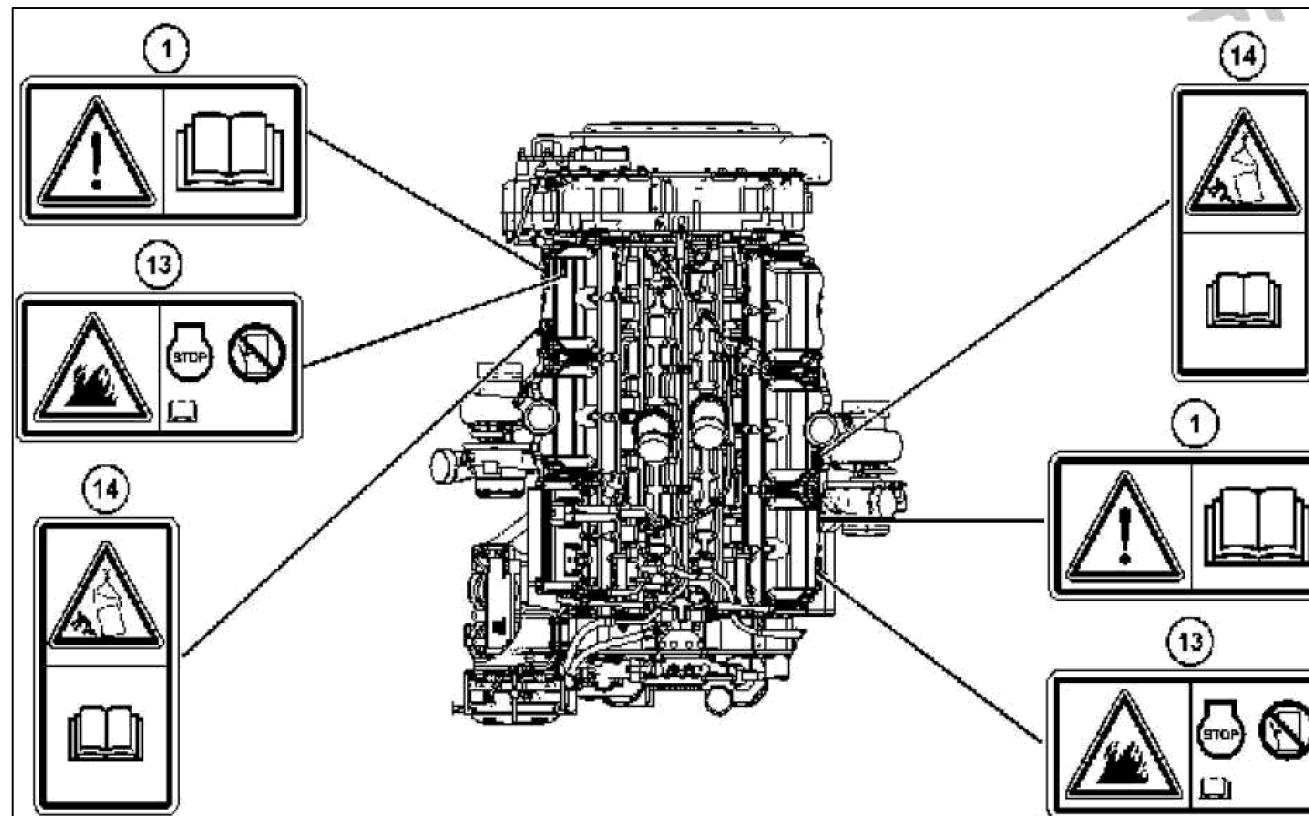
## Safety Message

- Decal



# Safety Message

- Decal



# FITUR FITUR 772 OFF HIGHWAY TRUCK

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# Pendahuluan



773 (KYD)

# FITUR-FITUR

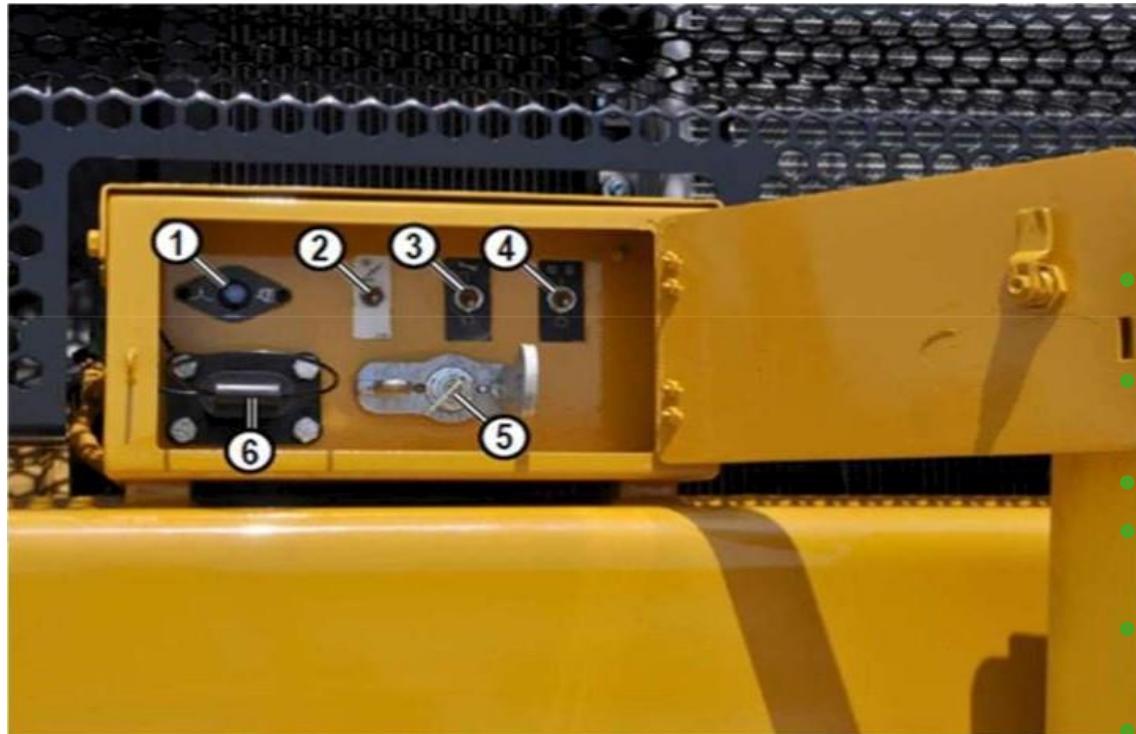
- Tampak depan



- WAVS camera (1)
- Air to Air AlerCooler (ATAAC) cooling cores (2)
- Ground level engine shutdown switch (3)
- Optional WorkSight@ PreView@ object detection sensor (4)
- Remote switch panel (5)
- Engine lockout lamp (6)
- machine lockout lamp (7)
- VIMS service lamp biru (8)

# Fitur-Fitur

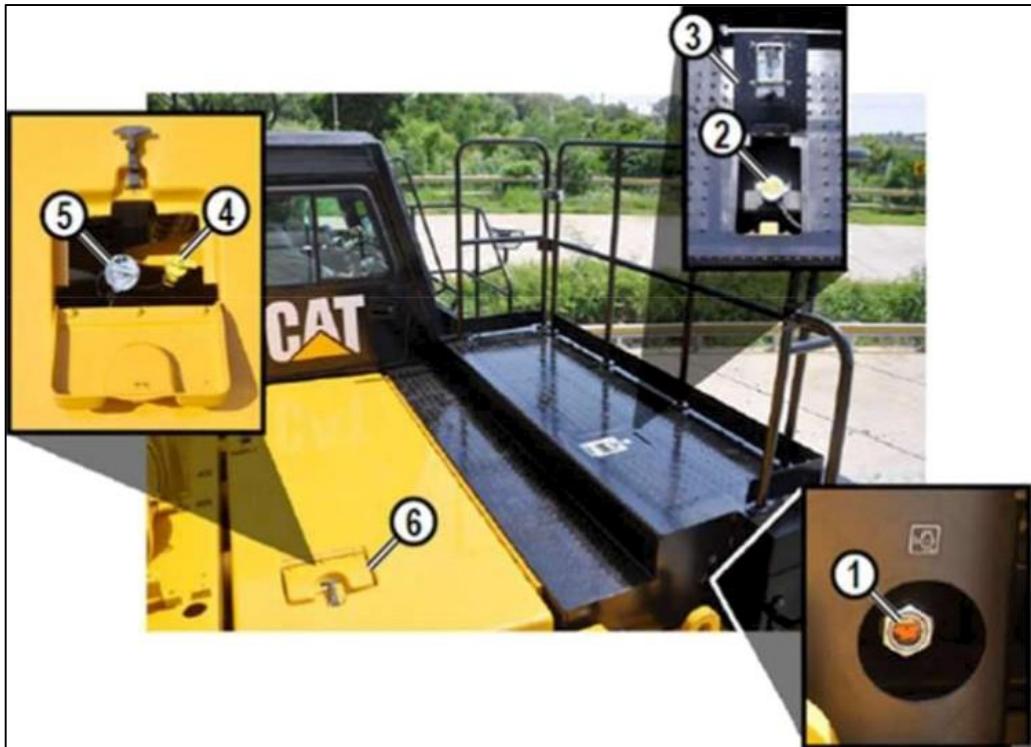
- Switch panel compartment



- 80 Amp main circuit breaker (1)
- Stairway access light switch (2)
- Engine lockout switch (3)
- Machine lockout switch (4)
- Battery disconnect switch (5)
- Auxiliary start receptacle (6)

# FITUR-FITUR

- Platform kanan



- (1) Coolant level sight gauge
- (2) Engine coolant fill cap
- (3) Pintu (door)
- (4) Engine oil dipstick
- (5) Fill tube

# Fitur -Fitur

- Air filter dan steering tank



Steering oil tank (1)

Fill tube (2)

Oil level sight gauge (3)

Steering case drain oil filter (4)

Steering oil S-O-S tap (5)

Air filter housing (6)

Engine air pre cleaner (7)

Engine air filter service indicator(8)

# Fitur -Fitur

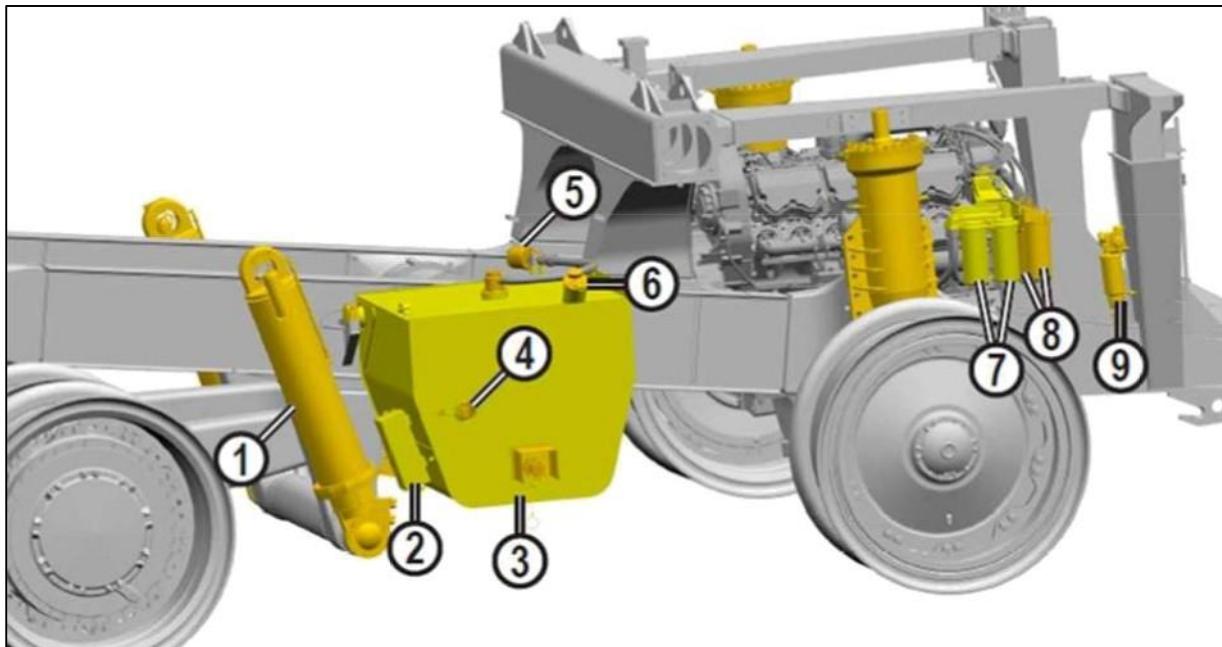
- Engine access dan batteries



- Cover (1)
- Engine oil dipstick (2)
- Engine oil fill tube (3)
- Windshield washer reservoir (4)

# Fitur -Fitur

- Sisi kanan truck



- Right hoist cylinder (1)
- Fast fill service center (2) (dilengkapi)
- Fuel tank (3)
- Fuel level sender (4)
- Fuel tank breather (5)
- Fuel tank fill cap (6)
- Engine oil filter (7)
- Secondary and tertiary fuel filter (8)
- Primary fuel filter (9)

# Fitur -Fitur

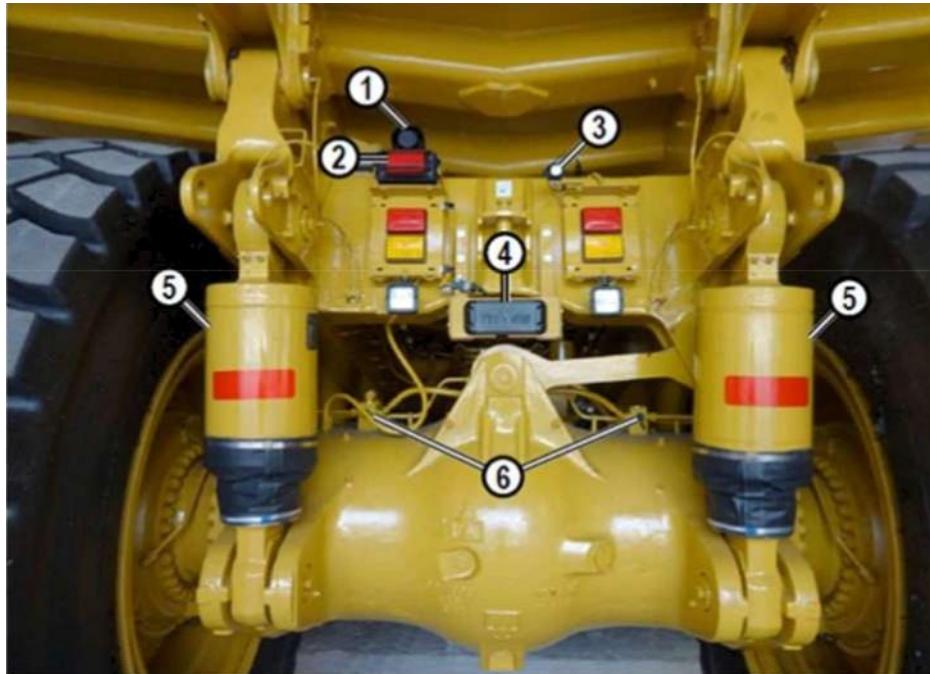
- Sisi kanan engine



- Engine oil filter (1)
- Engine oil S•O•S tap (2)
- Engine coolant S•O•S tap (3)
- Secondary fuel filter (4)
- Tertiary fuel filter (5)

# Fitur -Fitur

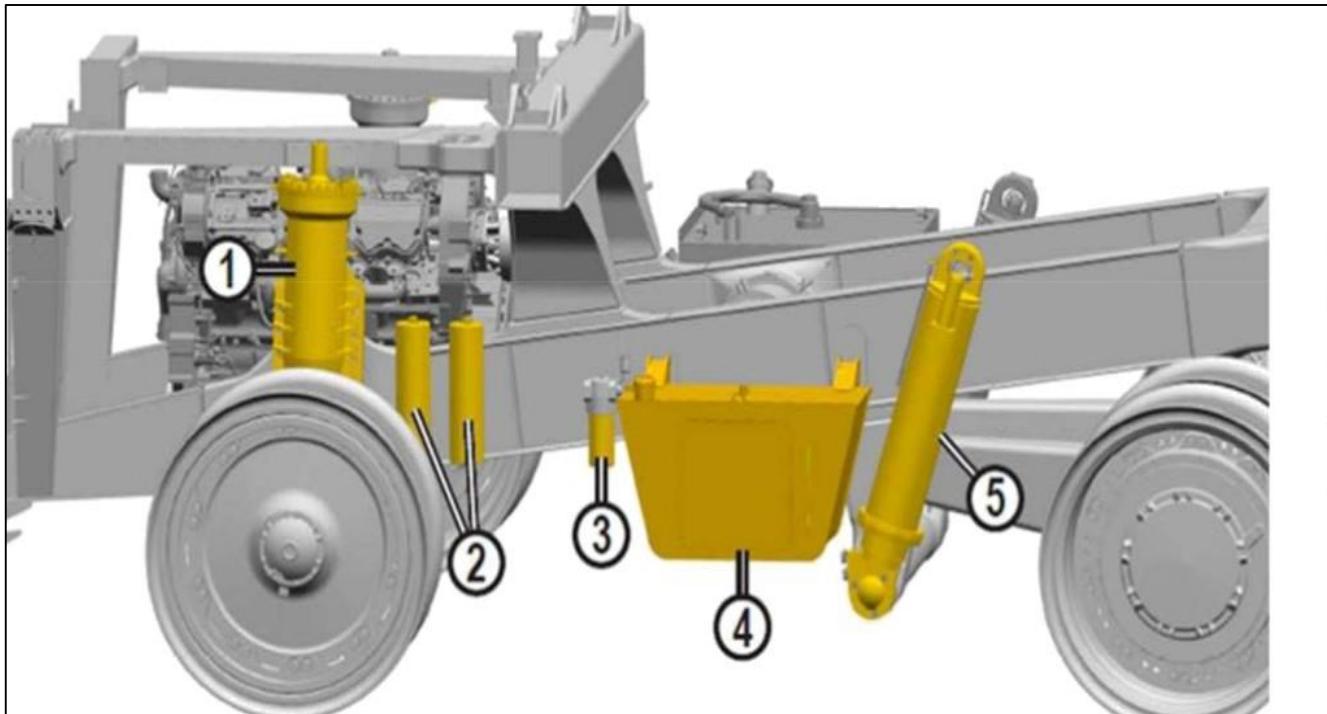
- Belakang truck



- Backup alarm (1)
- Backup lamp (2)
- WAVS camera (3)
- Optional WorkSight PreView object detection sensor (4)
- Struts belakang (5)
- Brake pressure tap belakang (6)

# Fitur -Fitur

- Sisi kiri truck



- Front suspension cylinder (1)
- Brake accumulators (2)
- Brake charger oil filter (3)
- HoisVbrake oil tank (4)
- Hoist Cylinder(5)

# Fitur -Fitur

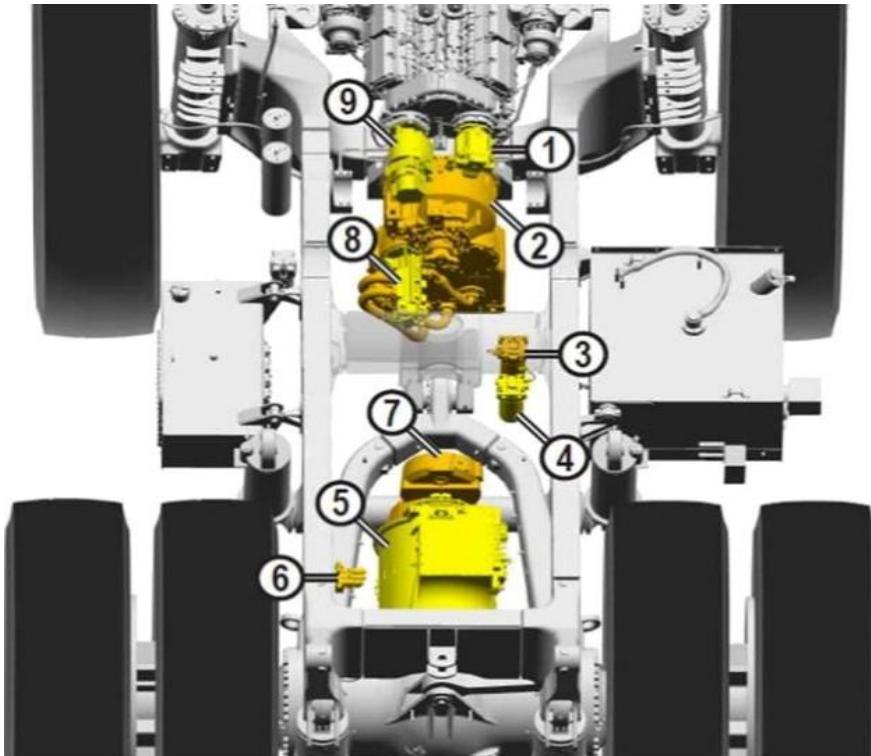
- Hydraulic tank



- gauge (1) bagian atas
- Sight gauge (2) bagian bawah
- HoisLbrake oil fill cup (3)
- transmission oil fill cap (4)

# Fitur -Fitur

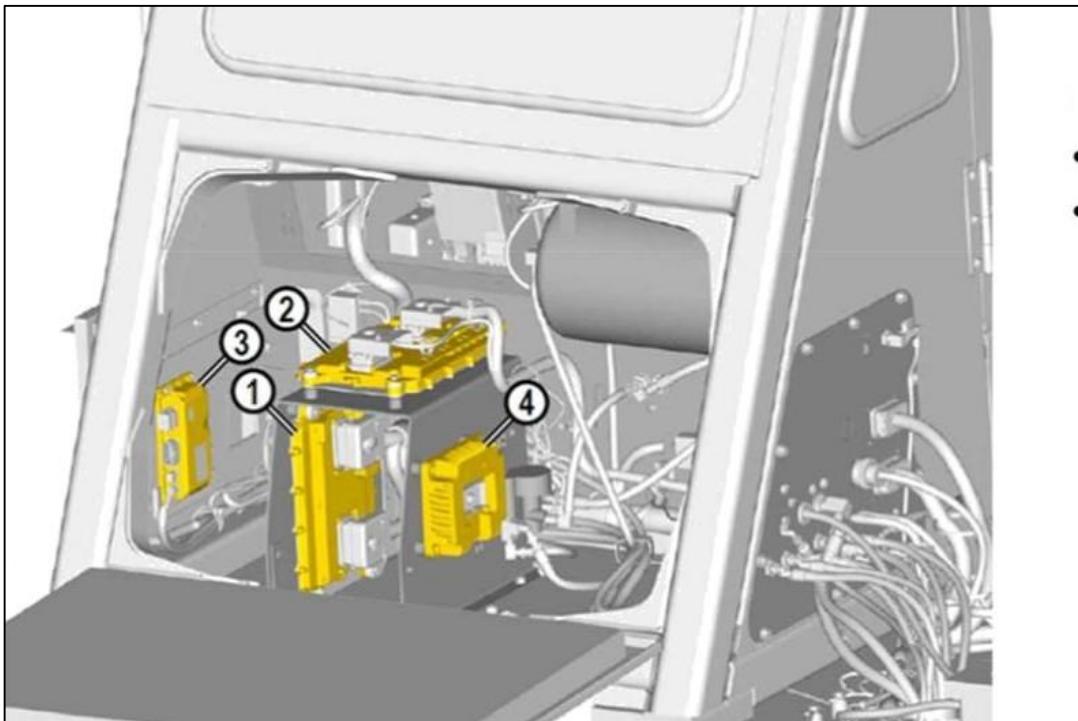
- Bawah dasar truck



- Steering pump (1)
- Torque converter (2)
- Torque converter oil filter (3)
- Transmission oil filter (4)
- Transmission (5)
- ARC/TCR valve (6)
- Output Yansfer gear (7)
- Empat-bagian pump group (8)
- Tiga-bagian pump group (9)

# Fitur -Fitur

- Belakang Kabin



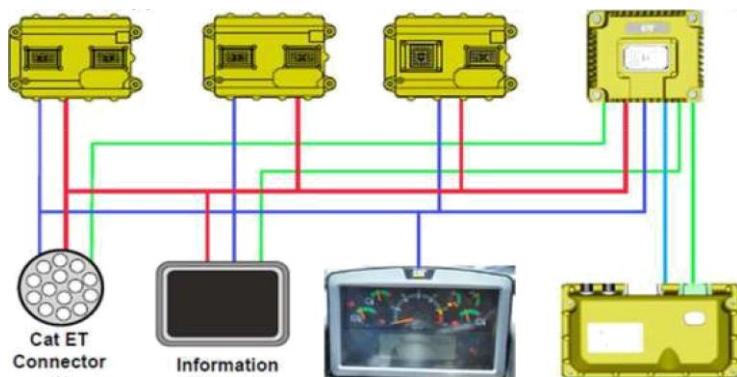
- 
- 

- mission/Chassis ECM (1)
- Brake ECM (2)
- Product Link radio (3)
- Product Link ECM (Network Manager) (4)

# Fitur -Fitur

- Jalur Komunikasi Antara ECM

Chaaade ECM (z1)   Brake ECM (2)   Engine ECM t3)   Product Mnk ECM f/etn'ork MaMgar (l)



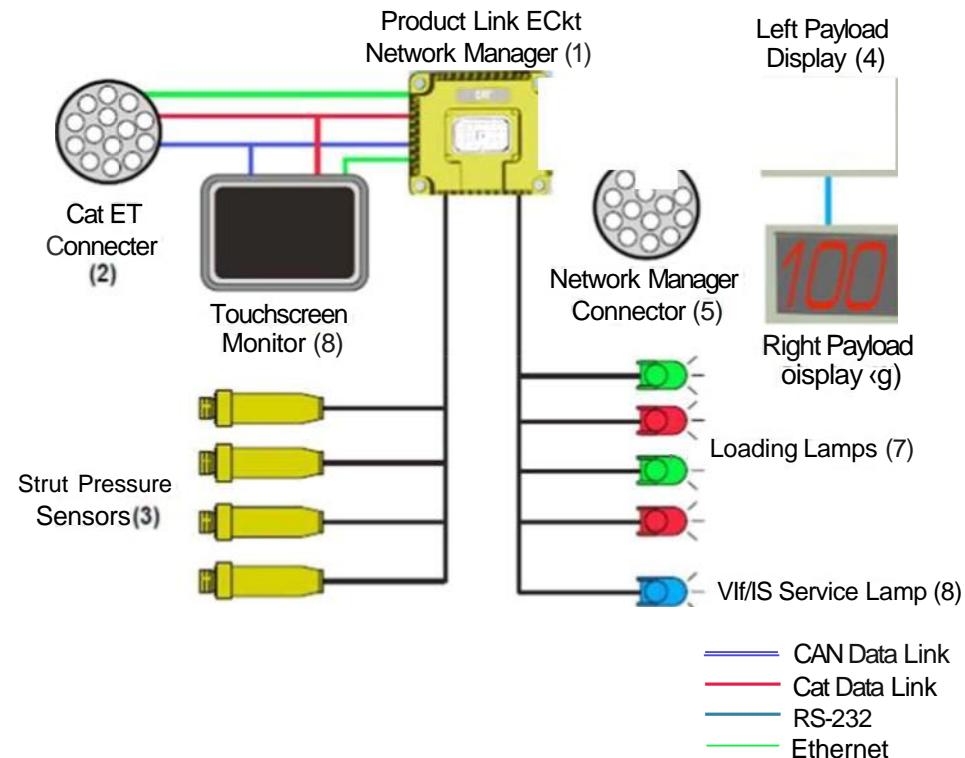
Indication Dbplcy t6)

Produd Link  
Radio (5)

- CAN Data Mnk (0)
- CAN Data Mnk (1)
- R&2S2 t11
- Ethernet (12)

# Fitur -Fitur

## TRUCK PAYLOAD MEASUREMENT SYSTEM (TPMS)



# OPERATOR STATION

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# Operator Station

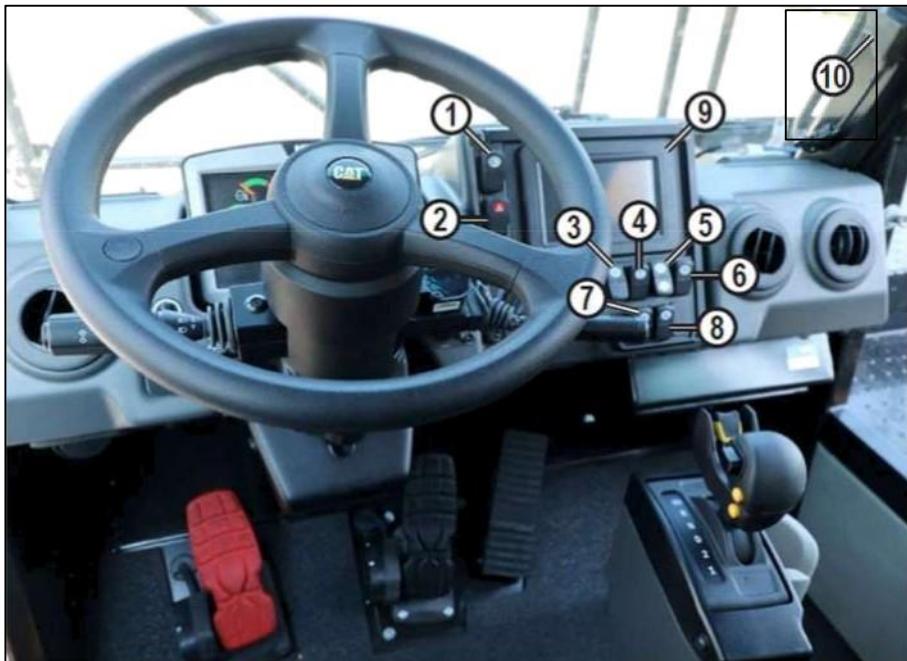
- Pendahuluan



- Hoist dan transmission shift lever (1)
- Retarder lever (2)
- Accelerator pedal (3)
- Service brake pedal (4)
- Secondary brake pedal (5)
- Multifunction lever (6)
- 12 V power port (7)
- Indication display (8)
- Information (touch screen) display (9)
- Console switch (10)

# Operator Station

- Dash switch panel



- Headlight/parking light/taillight switch (1)
- Hazard light switch (2)
- Air conditioning switch (3)
- Throttle lock switch (4)
- Front brake switch (5)
- Optional fog lamp switch (6)
- Optional Automatic Retarder Control (ARC) switch (7)
- Secondary steering switch (8)
- Information display (9)
- Auto dipper sensor (10)

# Operator Station

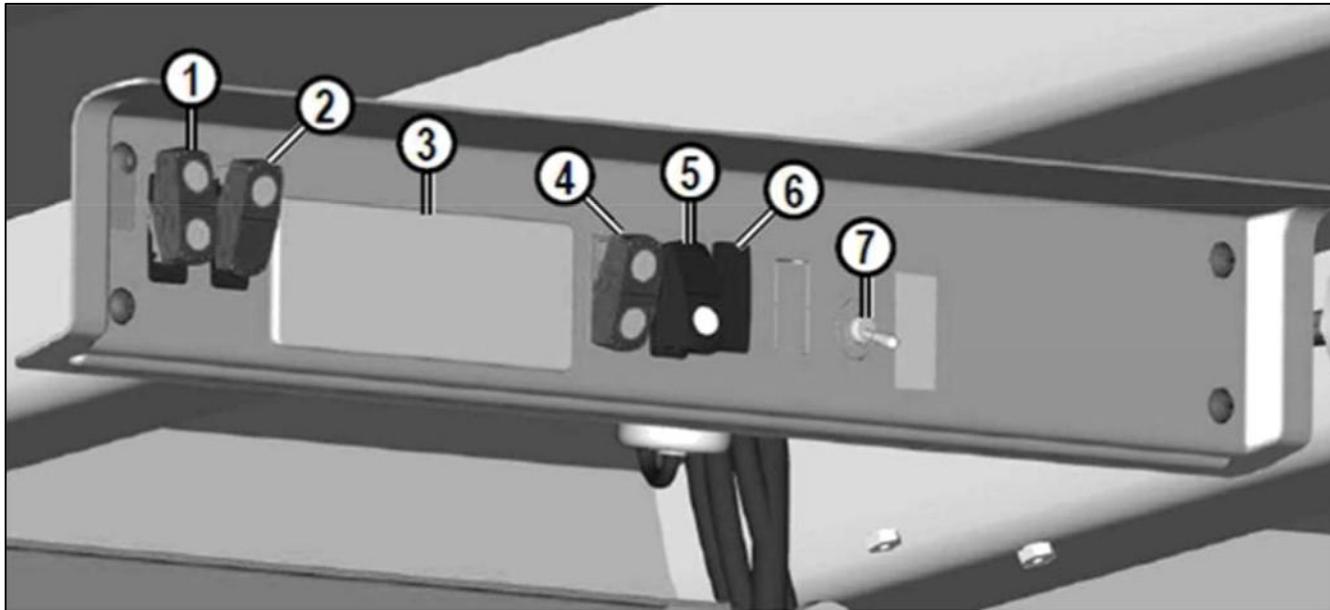
- Key stat switch



Delayed Engine  
Shutdown Engine Idle  
Shutdown

# Operator Station

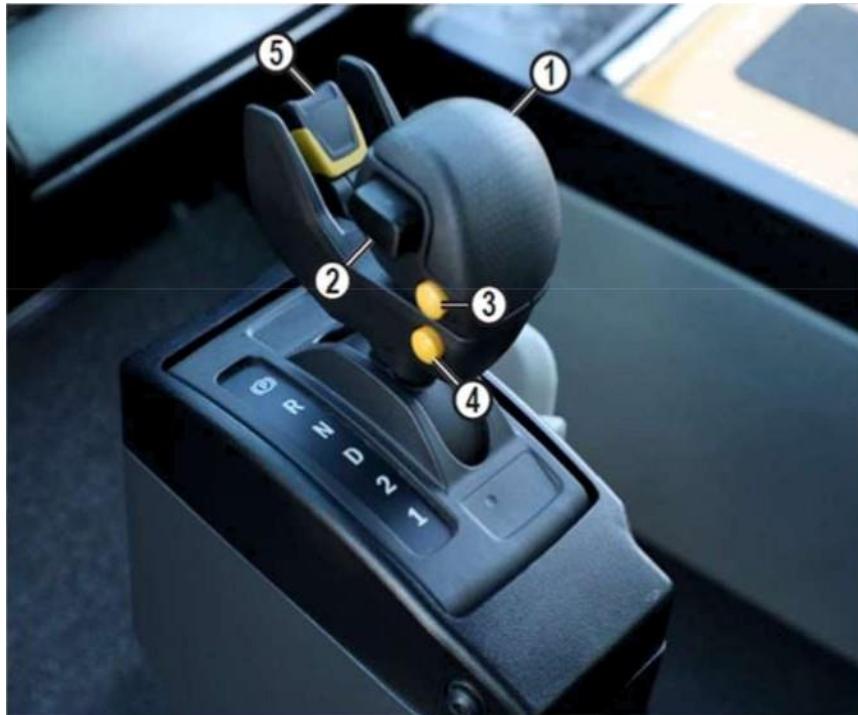
- Overhead switch panel



- Auto dipper switch (1)
- Traction Control System (TCS) test switch (2)
- Radio (3)
- Heated mirror switch (4)
- Access lamp switch (5)
- Product link switch (7)

# Operator Station

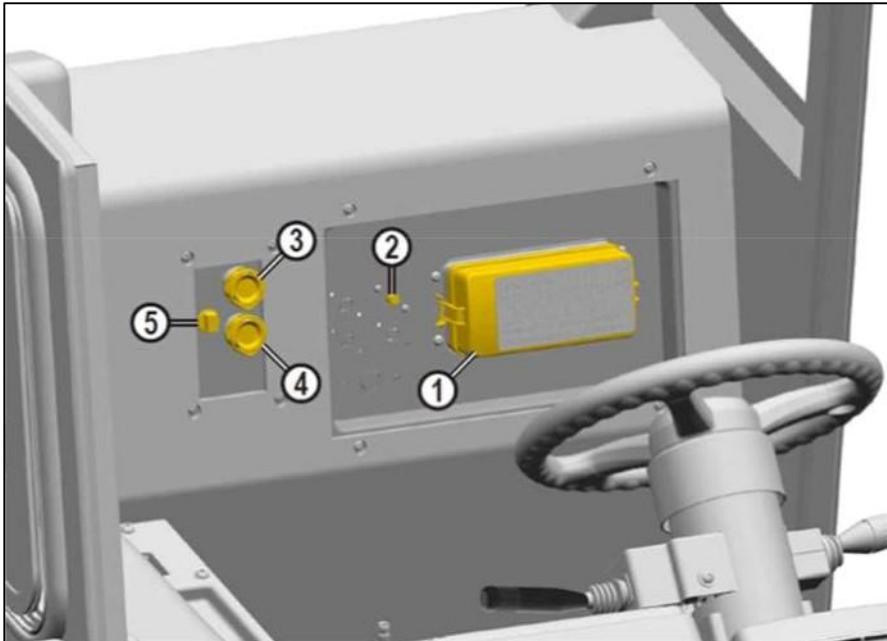
- Transmission shiX lever



- Transmission control (1)
- Tombol Unlocks transmission (2)
- Tombol kuning (3) Up gear
- Tombol kuning bawah (4) Down gear
- Hoist control (5)

# Operator Station

- Fuse panel dan service connector



- Fuse panel (1)
- Primary electrical circuit breaker (2)
- Cat ET service port (3)
- Cat Dete4 service port (4)
- 12 V power receptacle (5)

# MONITORING SYSTEM

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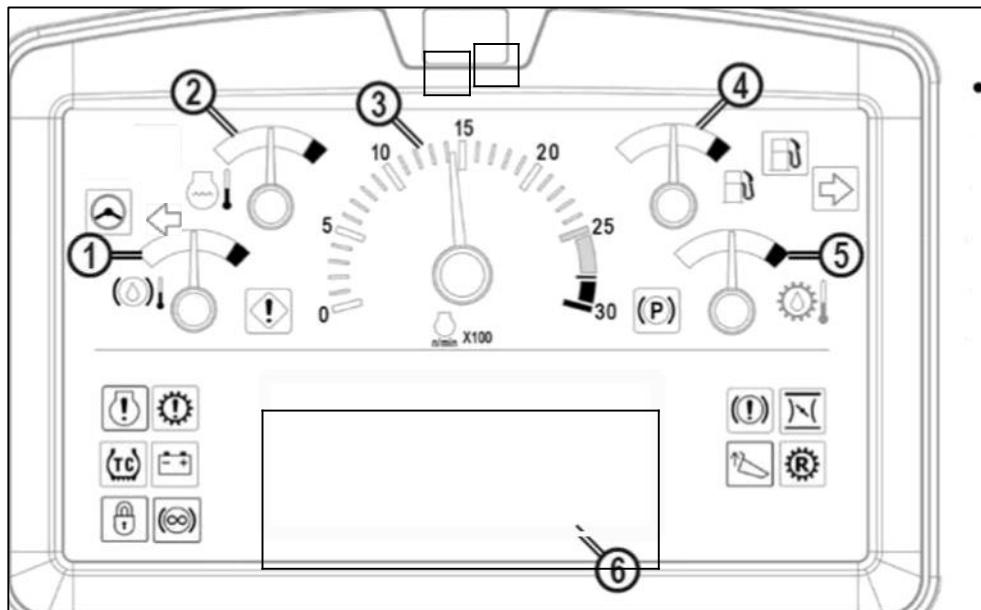
# Monitoring System

- Pendahuluan



# Monitoring System

- Indication display

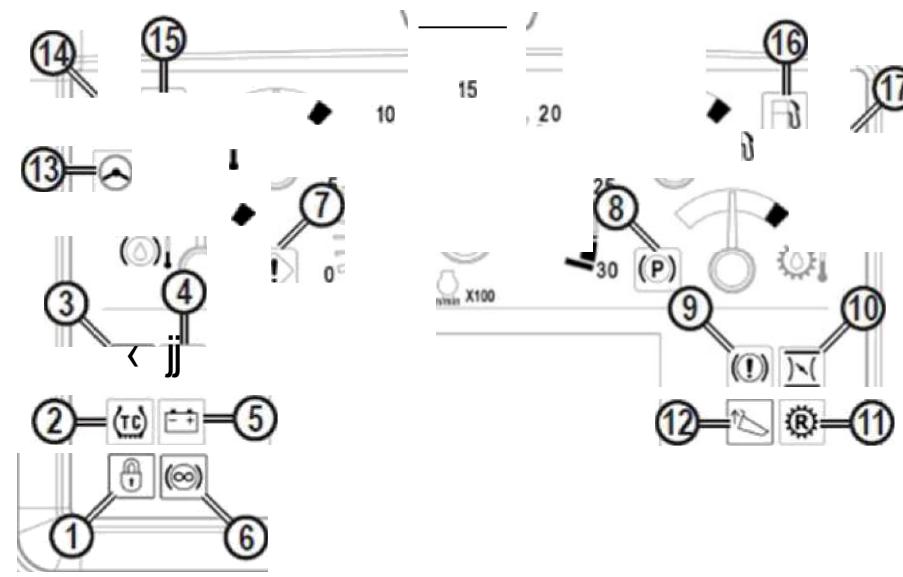


Bake oil temperature gauge (1)

- Coolant temperature gauge (2)
- Tachometer (3)
- Fuel level (4)
- Torque converter oil temperature (5)
- LCD display (6)

# Monitoring System

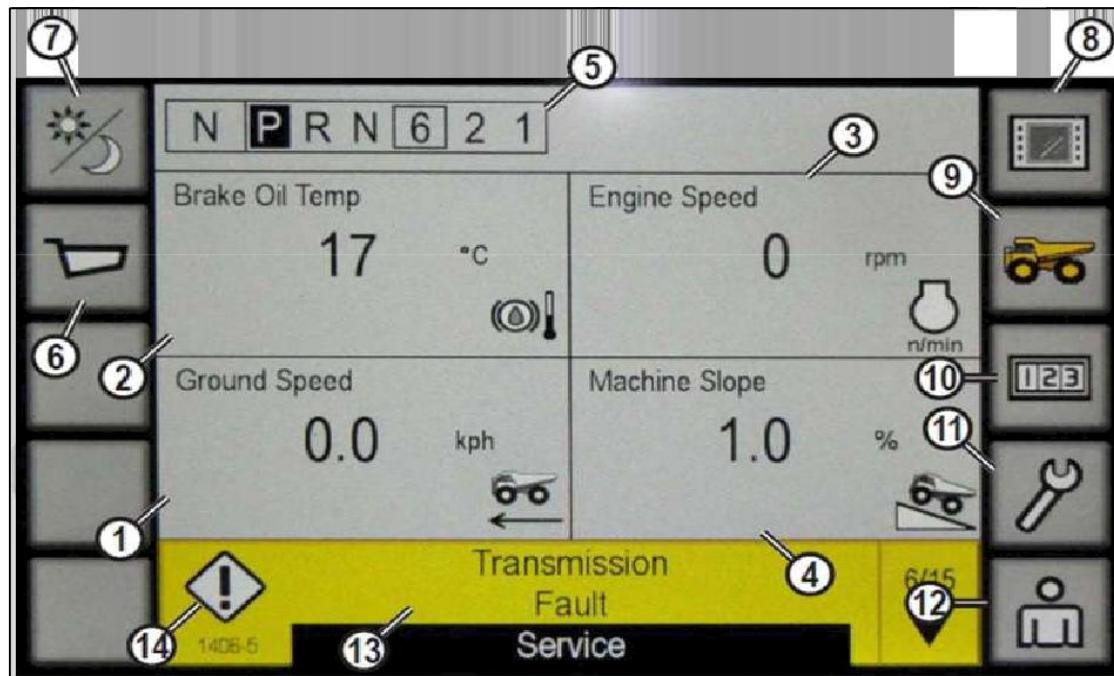
- Alert indicator



- Lockout mode (1)
- Traction control system (TCS)
- (2) Check engine lamp (3)
- Transmission (4)
- Charging System (S)
- Retarder (6)
- Action light (7)
- Parking brake (8)
- Brake system (9)
- Engine throttle lock (10)
- Transmission reverse (11)
- Body up (12)
- Primary steering system (13)
- Left turn signal (14)
- High beam (15)
- Low fuel level (16)
- Right turn signal (17)

# Monitoring System

- information display



- Ground speed (1)
- Brake oil temperature (2)
- Engine speed (3)
- Machine slope (4)
- Gear yang dipilih (5)
- Payload (6)
- Day/night (7)
- Display (8)
- Machine (9)
- Total (10)
- Service (11)
- Operator (12)
- Banner area (13)
- Warning level indicator (14)

# Monitoring System

- Navigation buttons dan display menu
  - Display buXon (1)
  - Scroll up/down buton (2)
  - 0K button (3)
  - Back buton (4)
  - Home menu buton (5)
  - Screen Brightness (6)
  - Language (7)
  - Units (8)
  - Clock(9)



# Monitoring System

- Machine status parameter



- Machine status parameter (1)
- ECM (2)
- By Type (3)

# Monitoring System

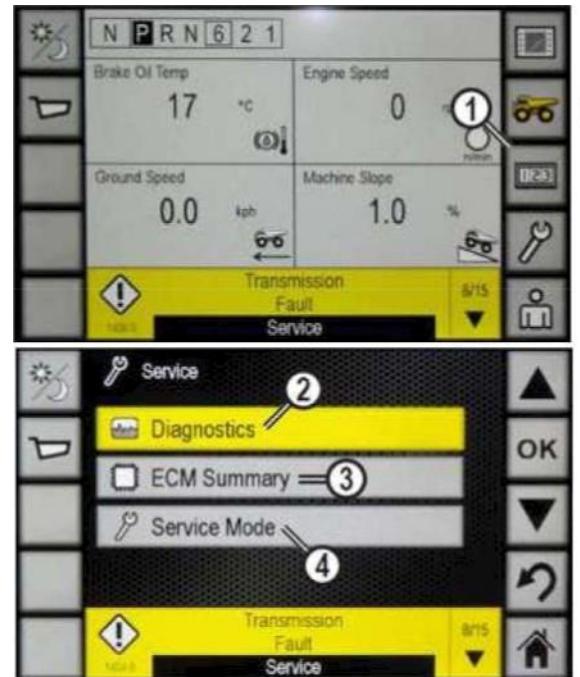
- Total menu



- Total icon (1)
- Lifetime toBls (2)
- Trip totals (3)

# Monitoring System

- Service menu



- Service icon (1)
- Diagnostic (2)
- ECM summary(3)
- Service Mode (4)

# Monitoring System

- Service menu — diagnostic



- Events List (1)
- Chronological List (2)
- Data Logger (3)
- Conditional Logging (4)
- Manual Snapshot (5)
- Event Snapshot (6)
- Halt Event Message (7)

# Monitoring System

- Service menu — diagnostics- events



- Event List (1)
- Chronological List (2)

# Monitoring System

- Service menu — diagnostics — data logger



- Data logger (1)
- Diagnostic Menu (2)
- Recording (3)
- Reset (4)
- Conditional Logging (5)

# Monitoring System

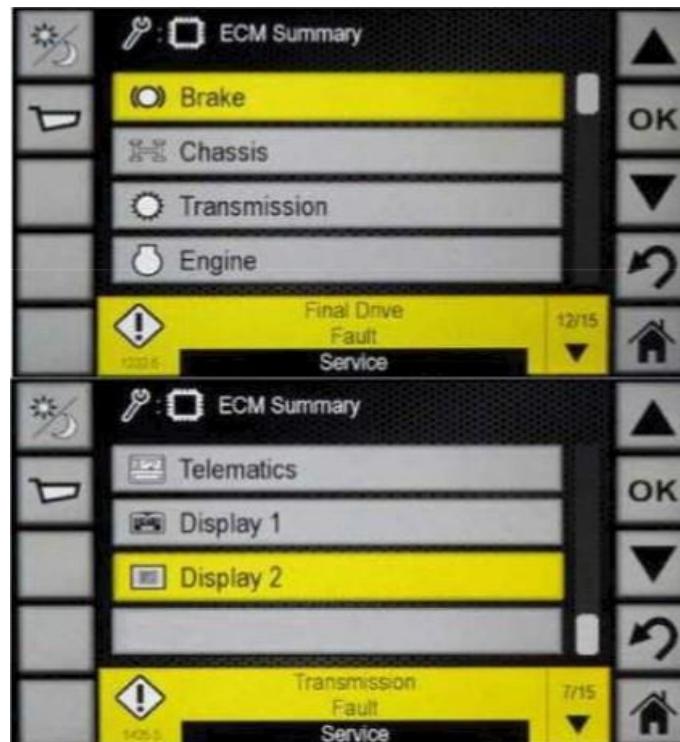
- Service menu — diagnostics — snapshot



- Manual Snapshot
- (1) Memory
- (2) Location
- (3) Location Status
- (4) Record
- (5) OK
- (6) Event Snapshot
- (7) Service

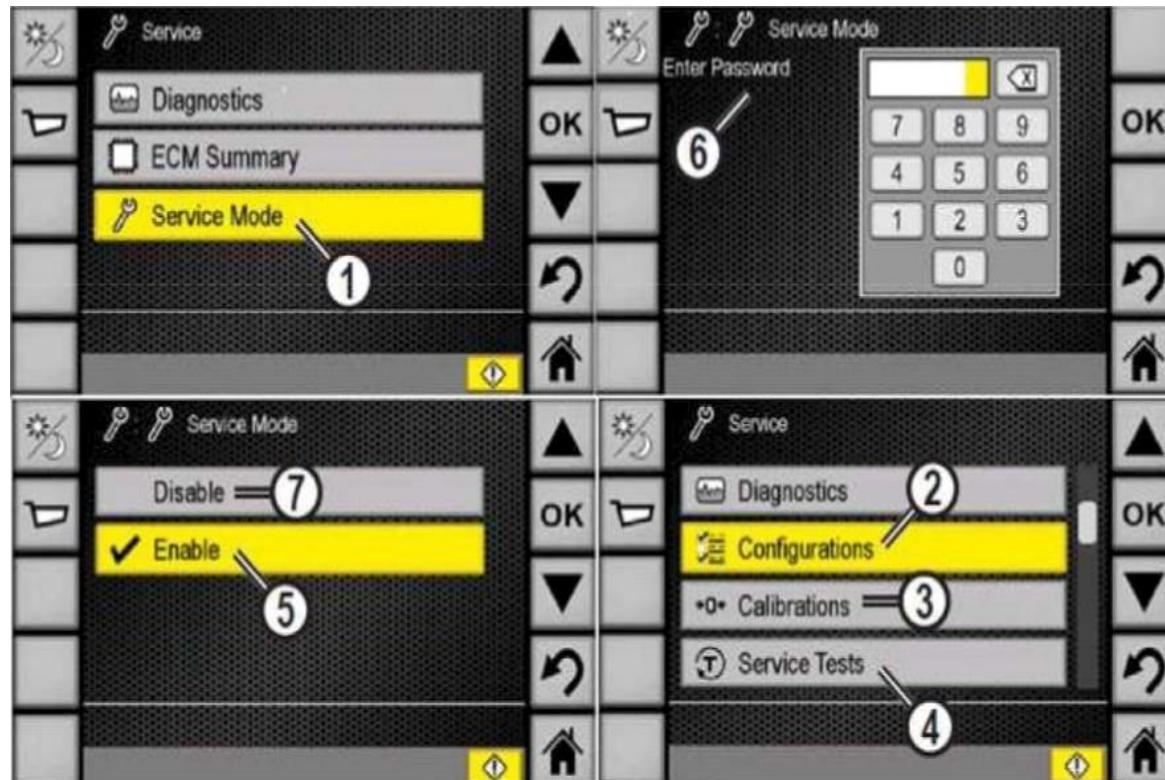
# Monitoring System

- Service menu — ECM summary



# Monitoring System

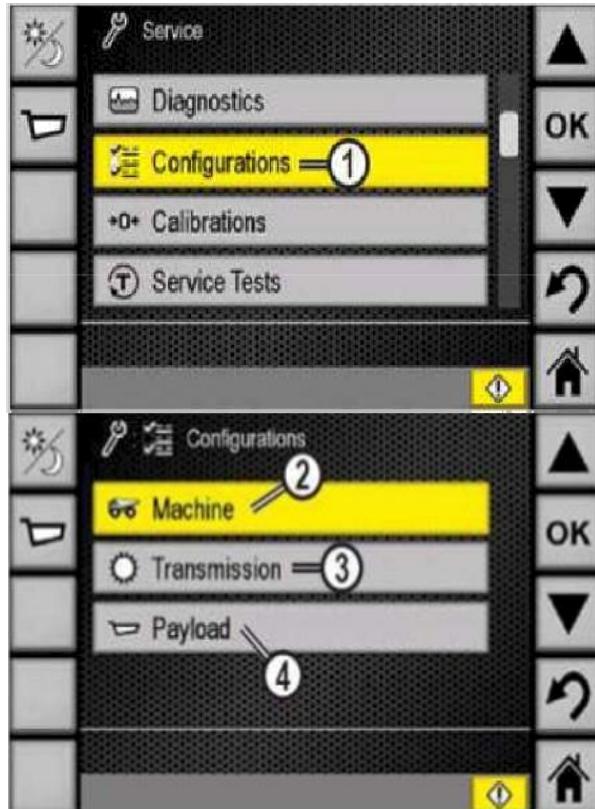
- Service menu —service mode



- Service Menu (1)
- Configuration (2)
- Calibration (3)
- Service Tests (4)
- Service Mode enable (5)
- Service Mode disable (7)

# Monitoring System

- Service Menu — Service Mode — Configuration



- Configuration (1)
- Machine (2):
- Transmission (3):
- Payload (4):

# Monitoring System

- Service menu — service mode — calibrations



Calibration (1)  
Tock Payload (2)

# Monitoring System

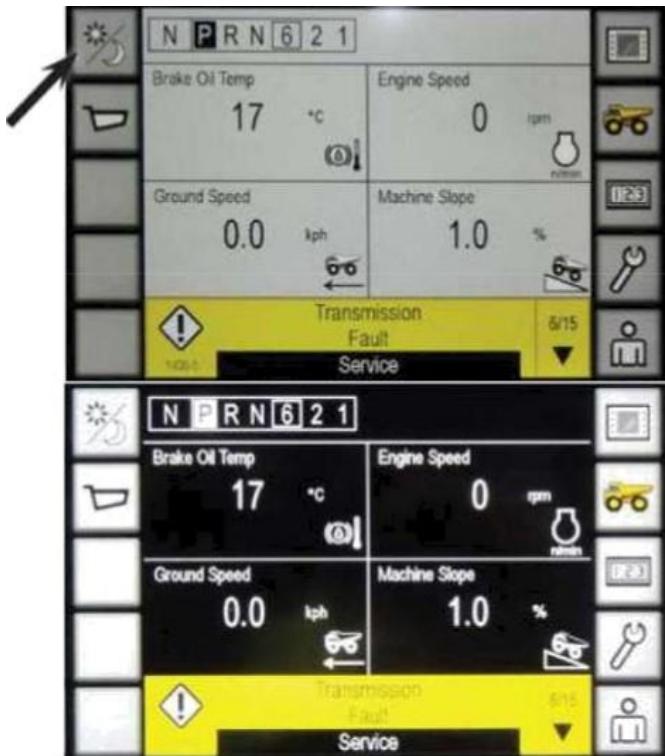
- Service menu — service mode — service test



Service Test (1)  
Manual Mode (2)

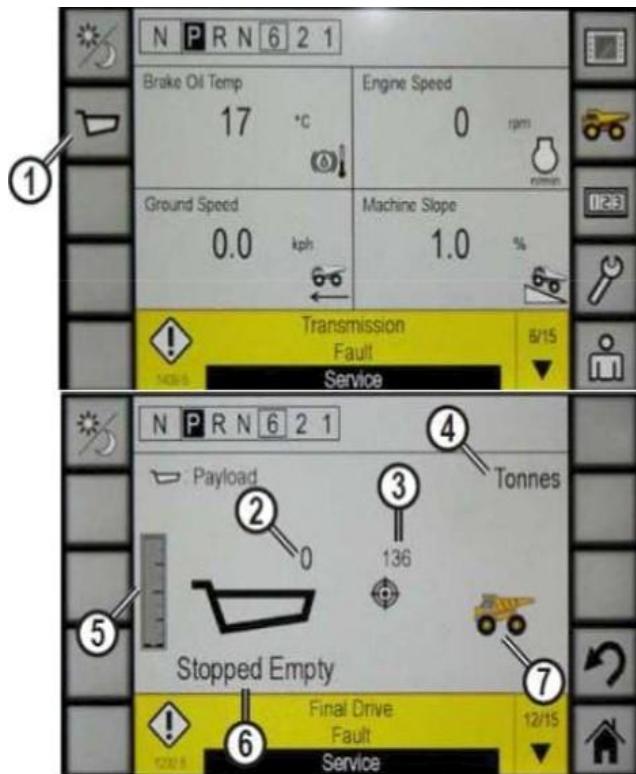
# Monitoring System

- Day dan night mode



# Monitoring System

- Payload display



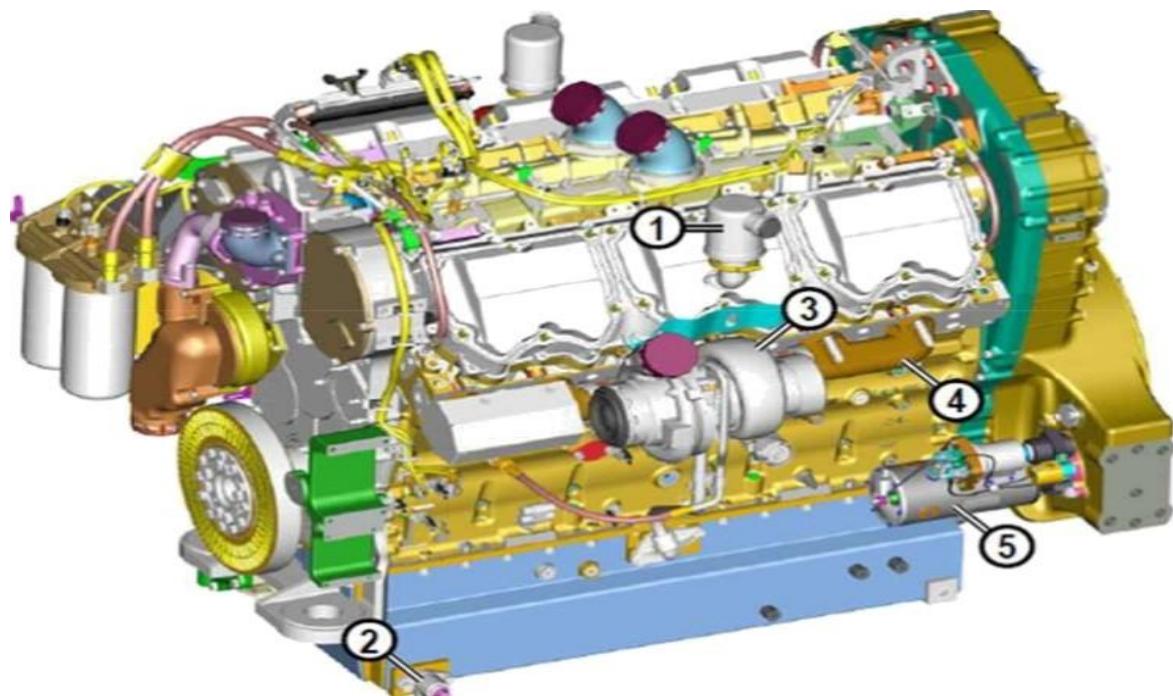
- Payload (1)
- Berat Payload (2)
- Berat target Payload (3)
- Units/satuan (4)
- Vertical fil gauge (5)
- Status Payload machine (text) (6)
- Status Payload machine (truck icon) (7)

# ENGINE & SUPPORT SYSTEM

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# ENGINE & SUPPORT SYSTEM

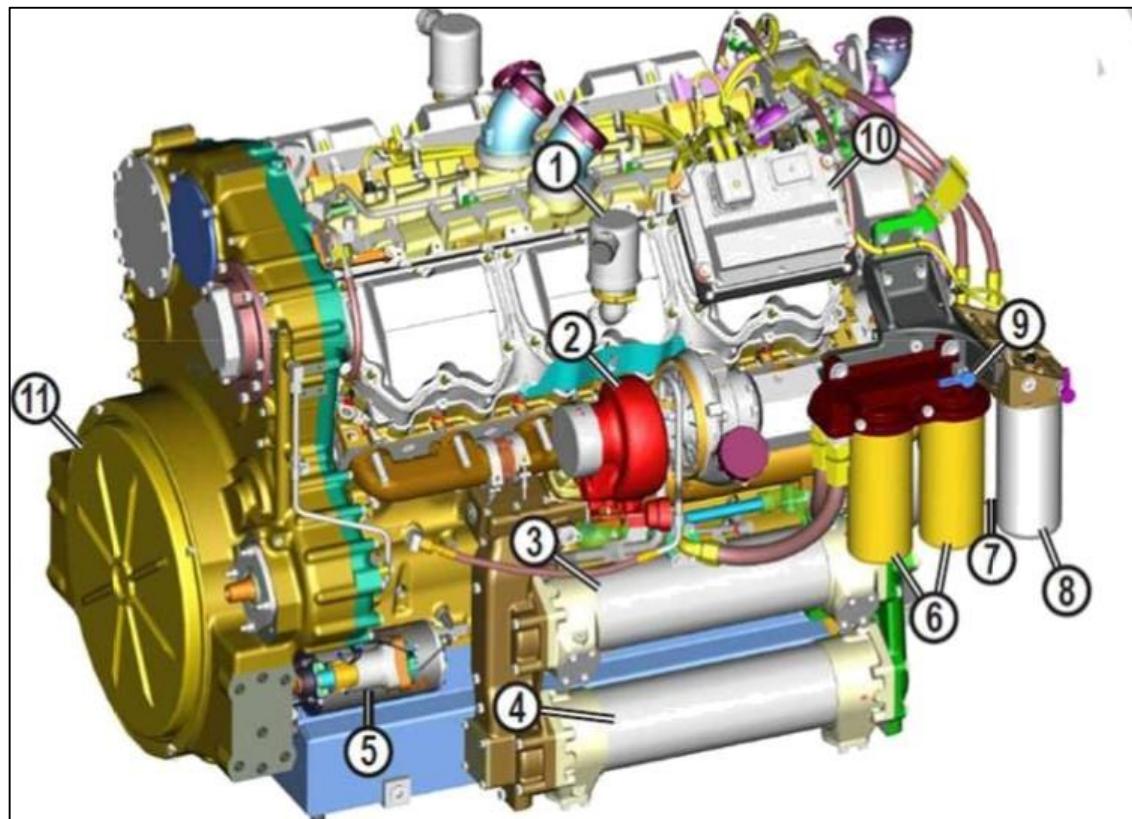
- Pendahuluan



- Crankcase breather (1)
- Engine oil drain plug (2)
- Turbocharger (3)
- Exhaust manifold (4)
- Sater motor (5)

## ENGINE & SUPPORT SYSTEM

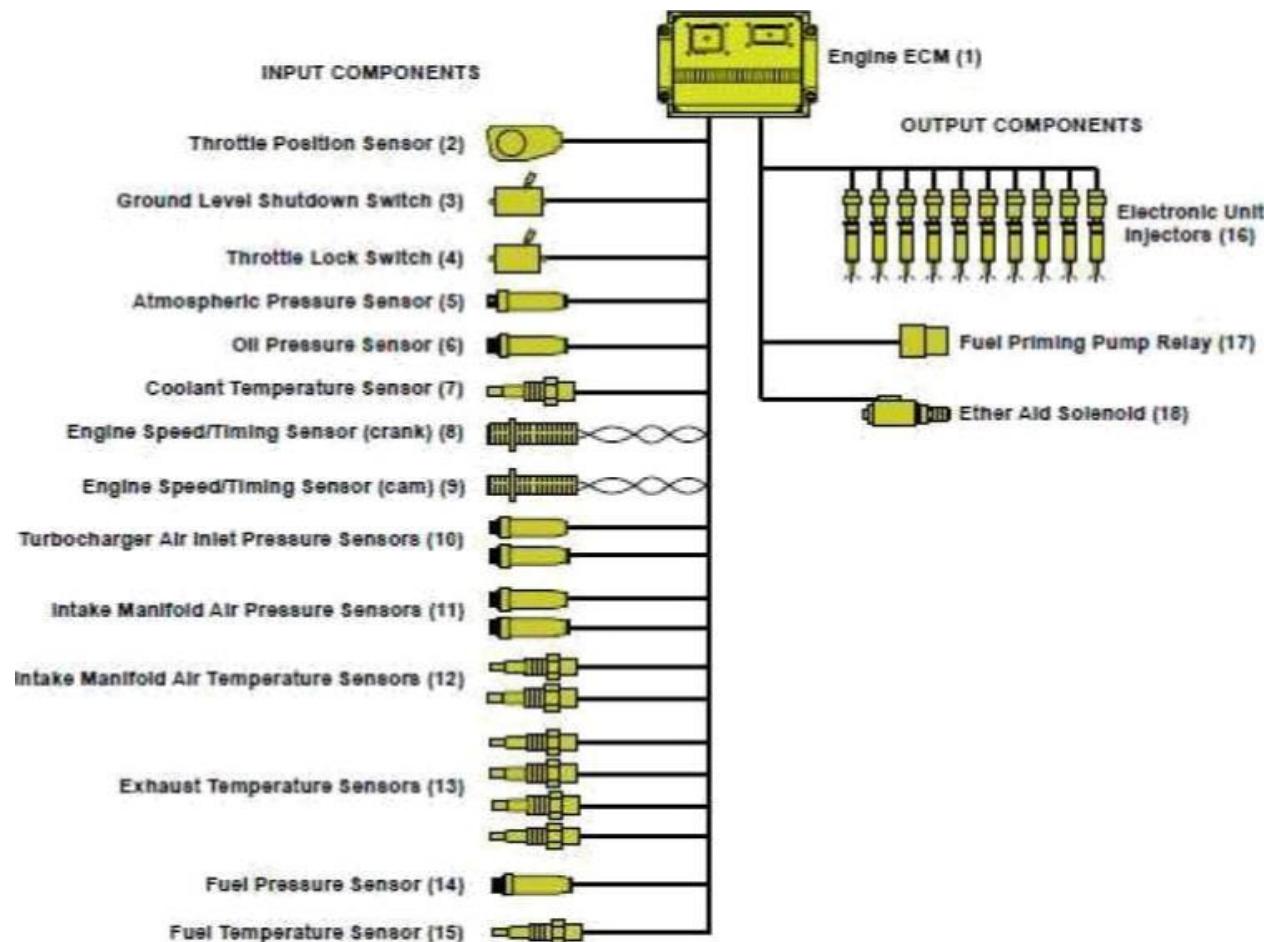
- Sisi kanan engine C32



- Crankcase breather (1)
- Turbocharger (2)
- Transmission oil cooler (3)
- Brake oil cooler (4)
- Starter motor (5)
- Engine oil filter (6)
- Tertiary fuel filter (7)
- Secondary fuel filter (8)
- Engine oil S-0-S port (9)
- Engine ECM (10)
- Cover (11)

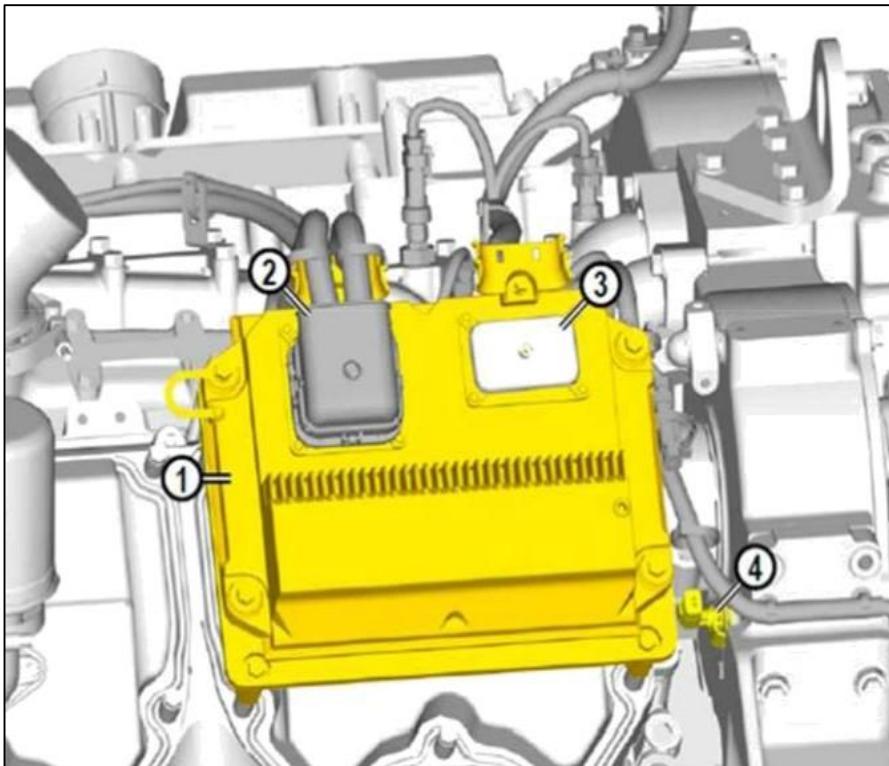
# Engine Electrical

- Engine electronic control system



# Engine Electrical

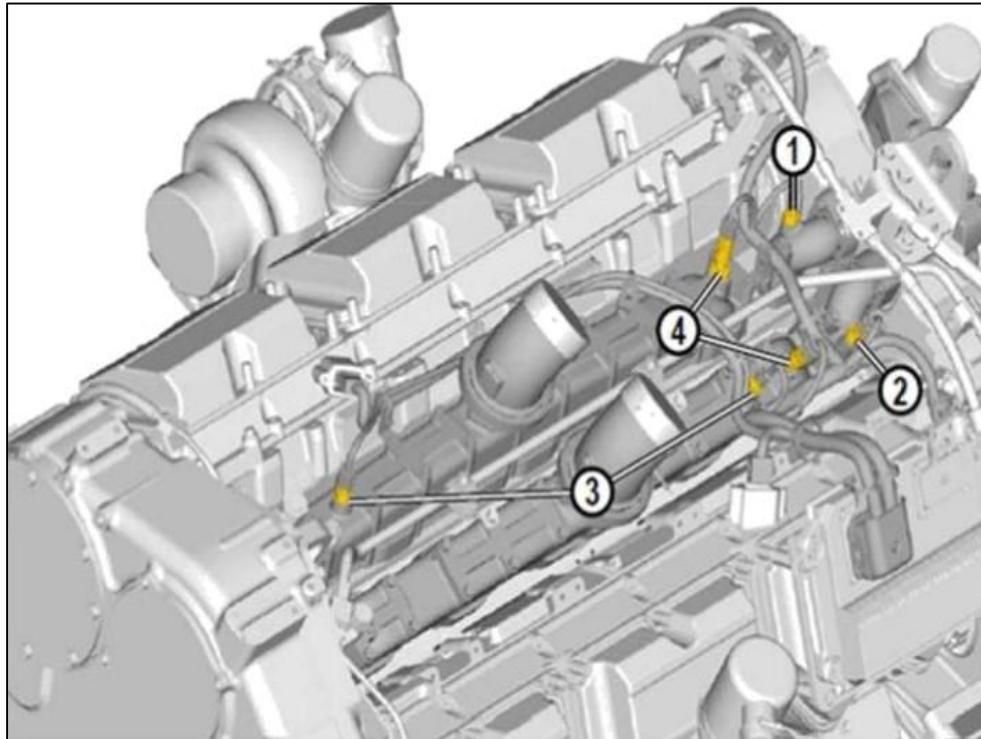
- Engine ECM



- A4:E4 Engine ECM (1)
- J2 Engine harness connector (2)
- J1 machine harness connector (3)
- Cam speed/timing sensor (4)

# Engine Electrical

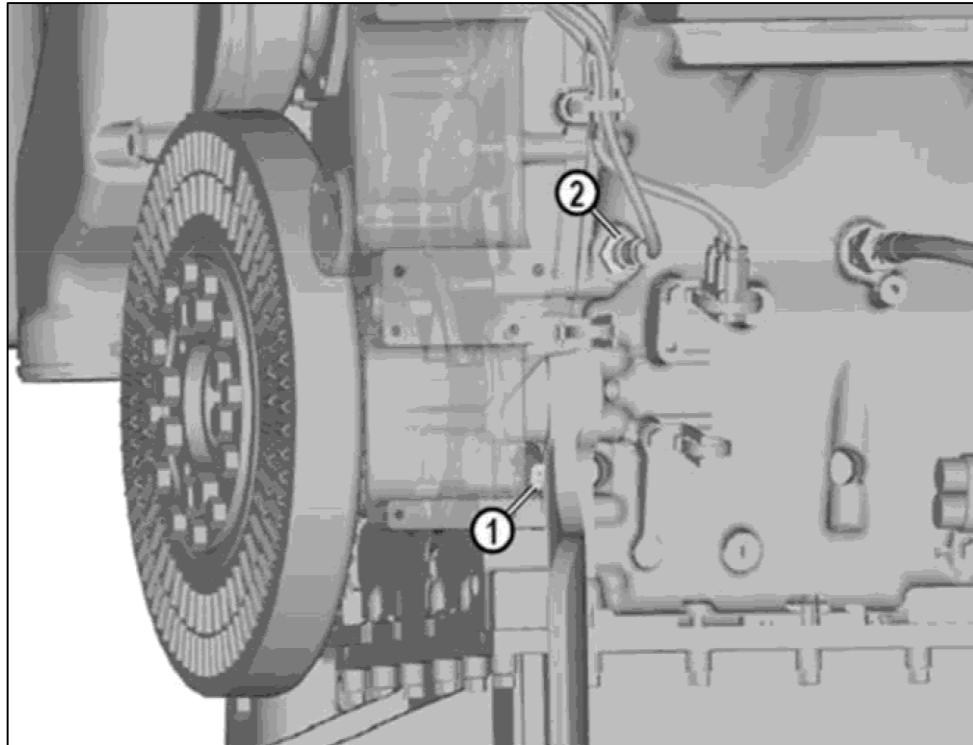
- Sensor di bagian atas engine



- Atmospheric sensor (2)
- Intake air temperature sensor (3)
- Intake manifold pressure sensor (4)
- Coolant temperature sensor (1)

# Engine Electrical

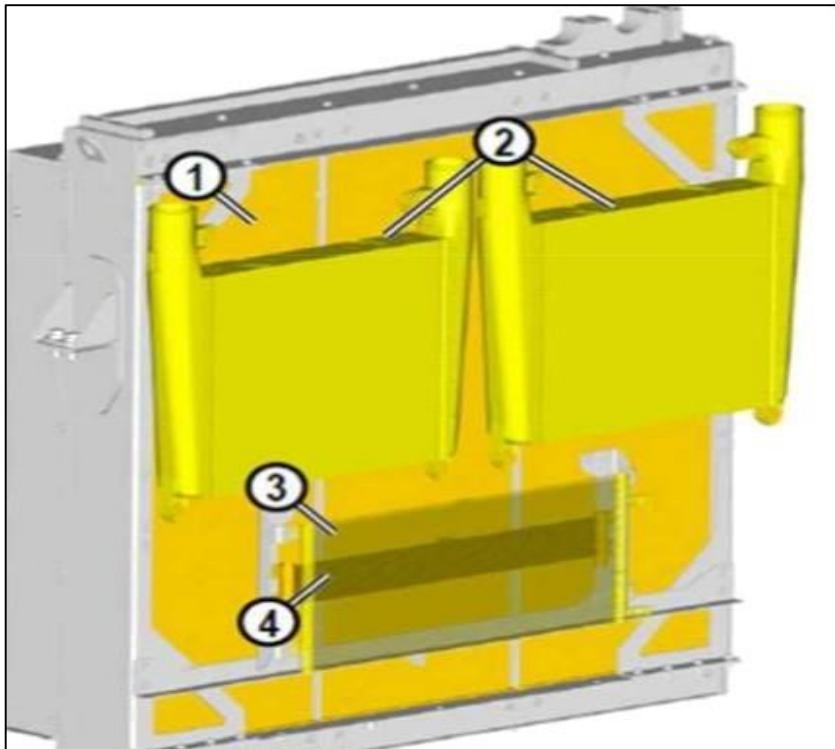
- Crankshaft speed/timing dan oil pressure sensor



- Crankshaft speed/timing sensor (1)
- Oil pressure sensor (2)

# Engine Cooling System

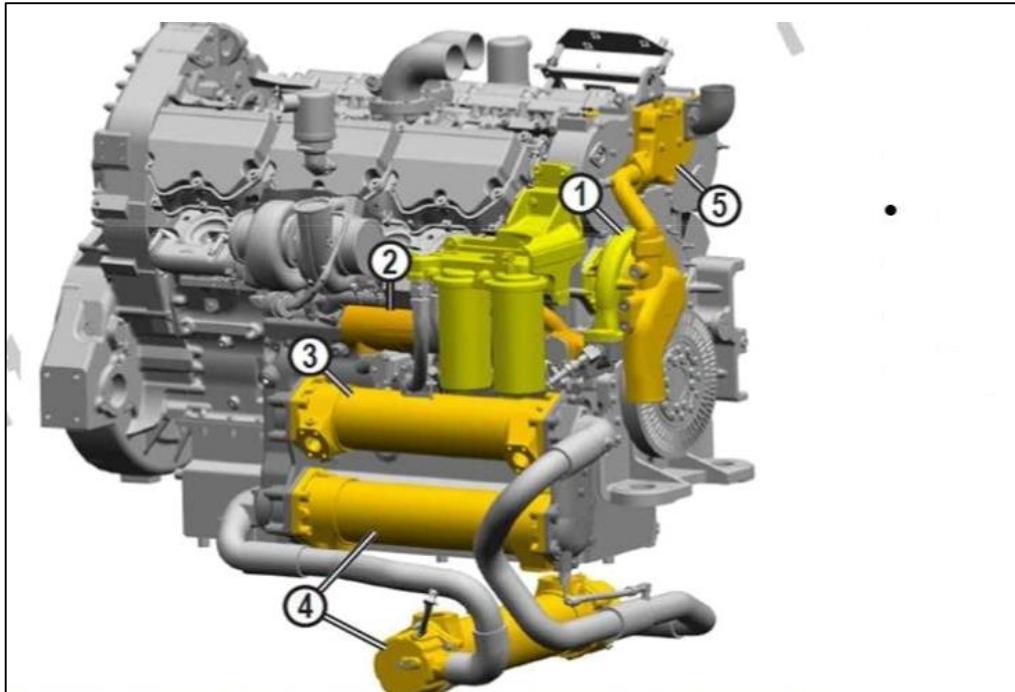
- Radiator, ATAAC, condenser & fuel cooler



- Aluminum Radiator (1)
- ATAAC Core (2)
- Air Conditioning Condenser (3)
- New fuel cooler (4).

# Engine Cooling System

- Komponen-komponen cooling system

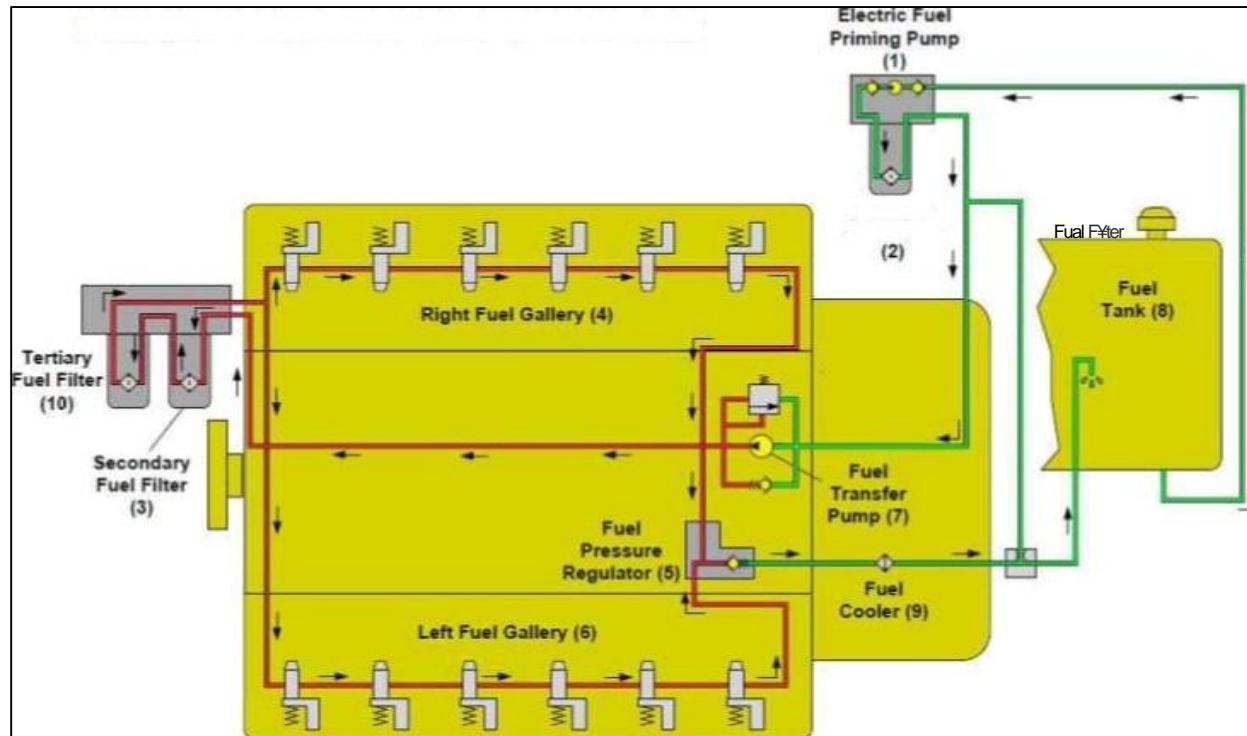


- Water pump (1)
- Engine oil cooler (2)
- Transmission oil cooler (3)
- Brake oil cooler (4)
- Regulator housing (5)

# Engine Fuel System

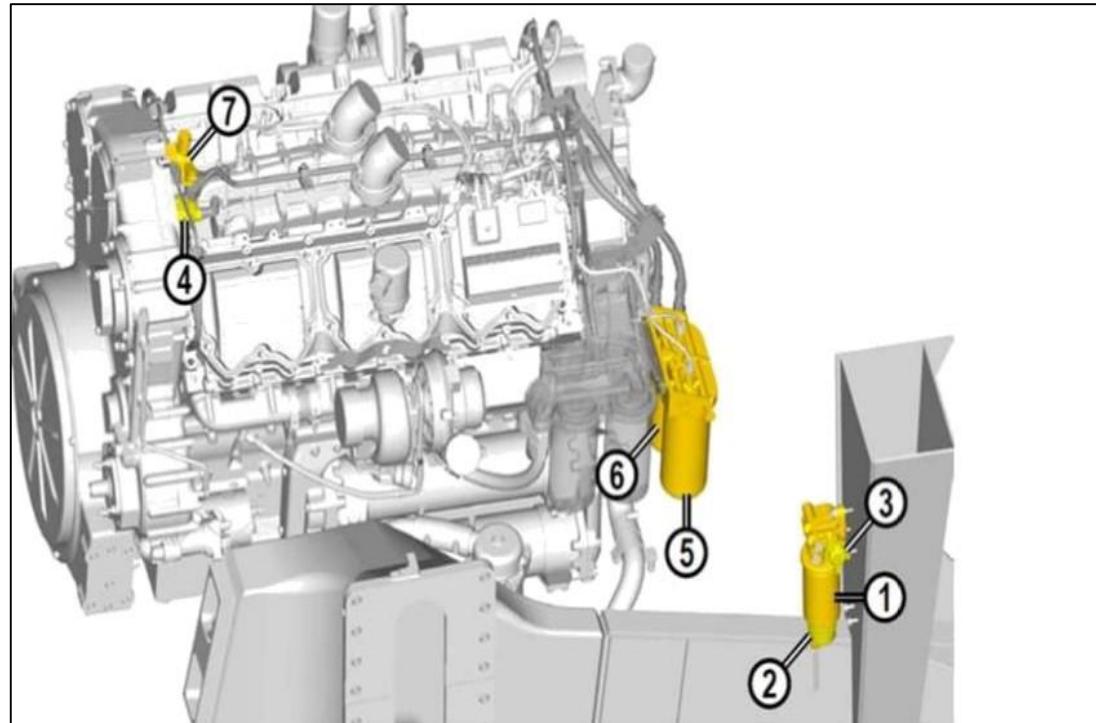
- Pengiriman fuel system

ENGINE FUEL DELIVERY SYSTEM



# Engine Fuel System

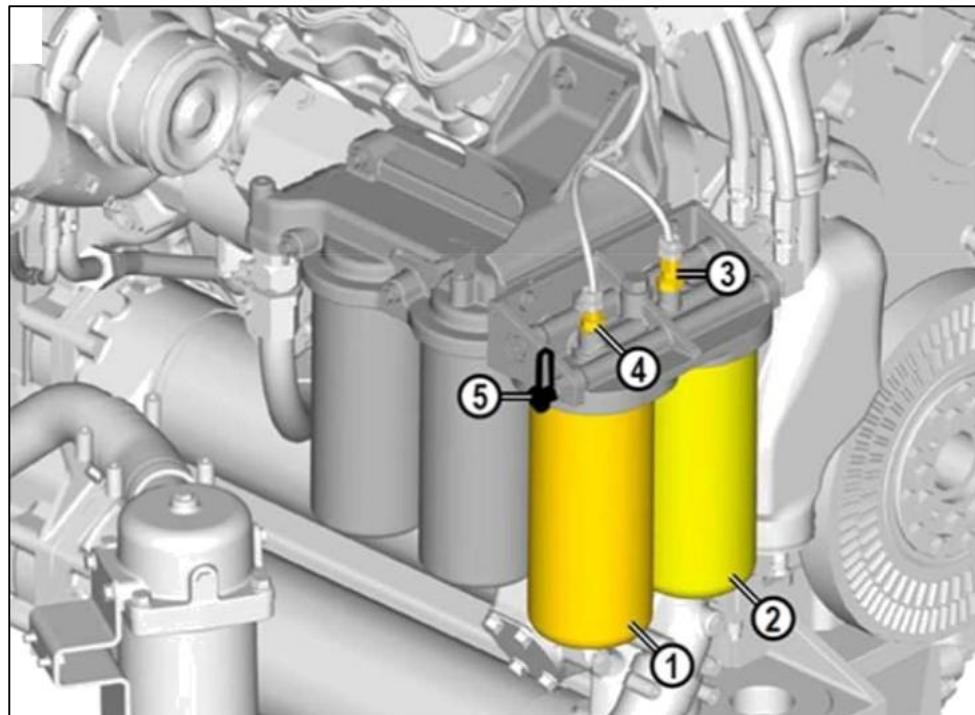
- Komponen-komponen fuel system



- Primary fuel filter (1)
- water separator (2)
- Fuel priming pump (3)
- Fuel transfer pump (4)
- Secondary fuel filter (5)
- Tertiary fuel filter (6)
- Fuel pressure regulator (7)

# Engine Fuel System

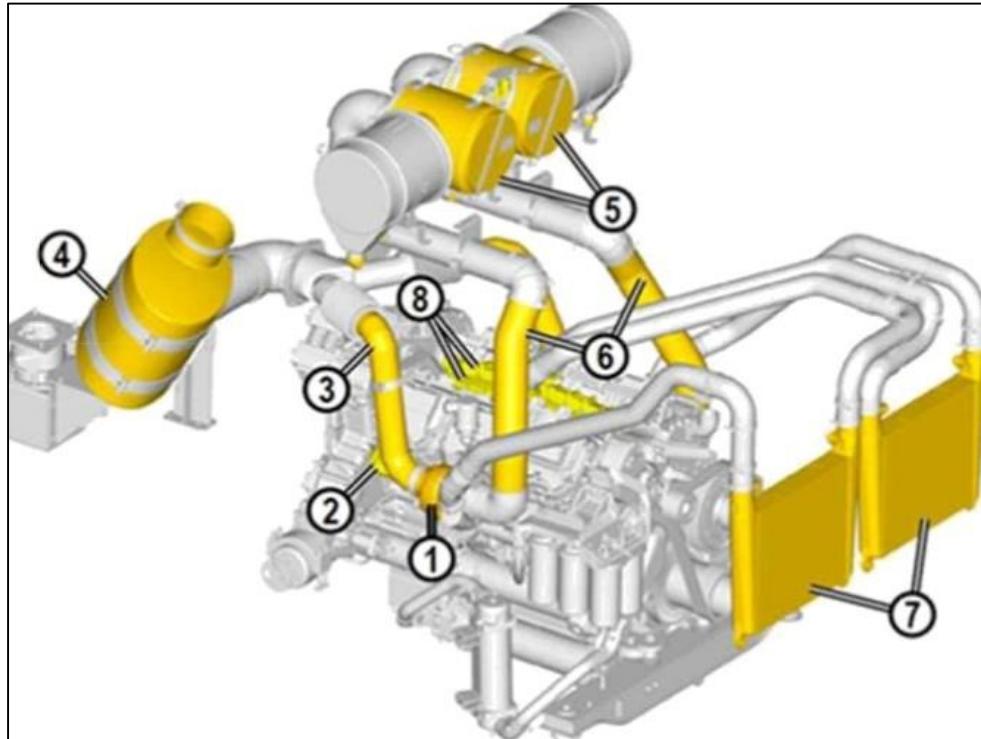
- Sisi depan kanan engine



- Secondary fuel filter(1)
- Tertiary fuel filter(2)
- Fuel pressure sensor (3)
- Fuel temperature sensor(4)
- Fuel pressure test port (5)

# Air Intake Dan Exhaust System

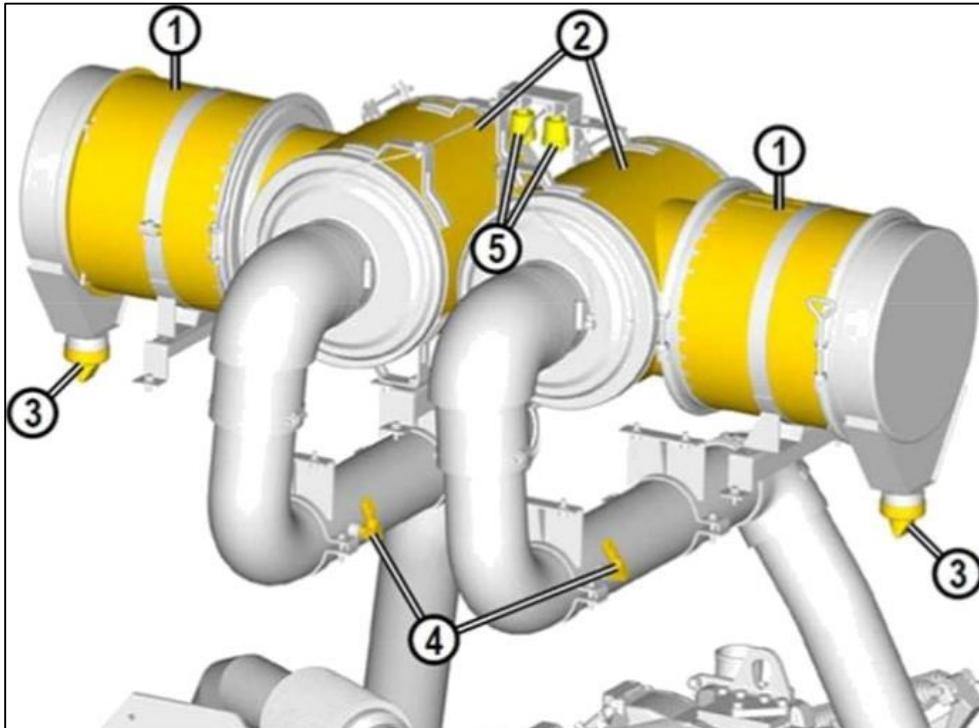
- Aliran udara



- Turbocharger (1)
- Exhaust manifold (2)
- Exhaust piping (3)
- Mu9er (4)
- Air filter (5)
- Intake piping (6)
- ATTAC core (7)
- Intake manifold (8)

# Air Intake Dan Exhaust System

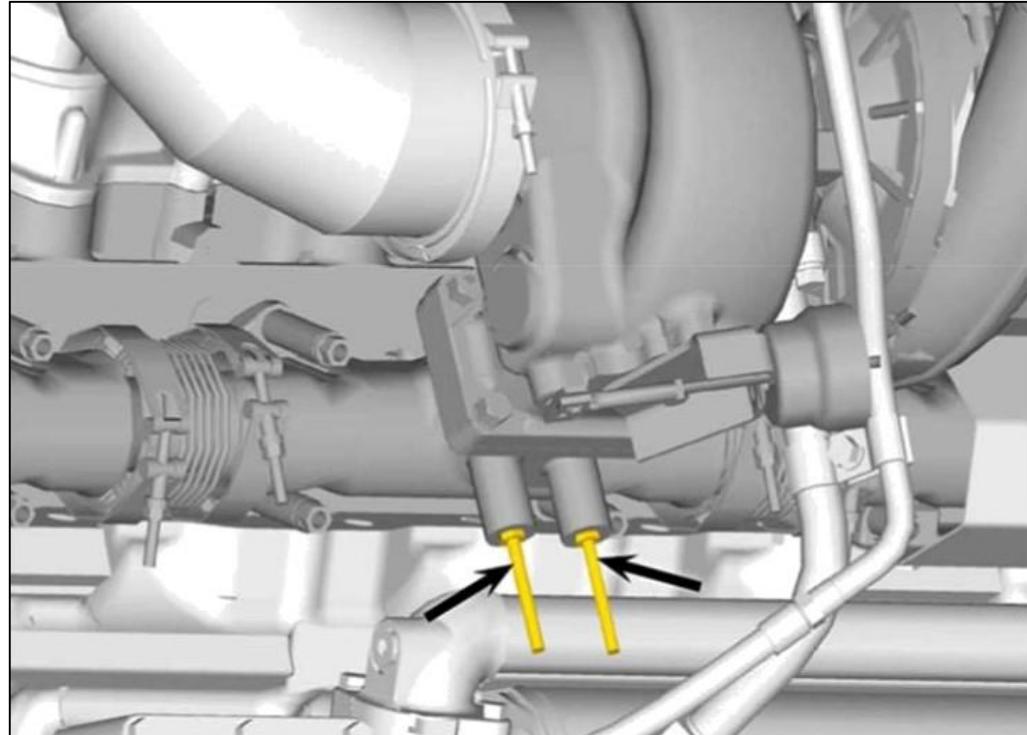
- Air filter



- "Pre cleaner (1)
- Air filter housing (2)
- Dust valve (3)
- Turbocharger air inlet pressure sensor (4)
- Air filter service indicaDr (5)

# Air Intake Dan Exhaust System

- Exhaust temperature sensor

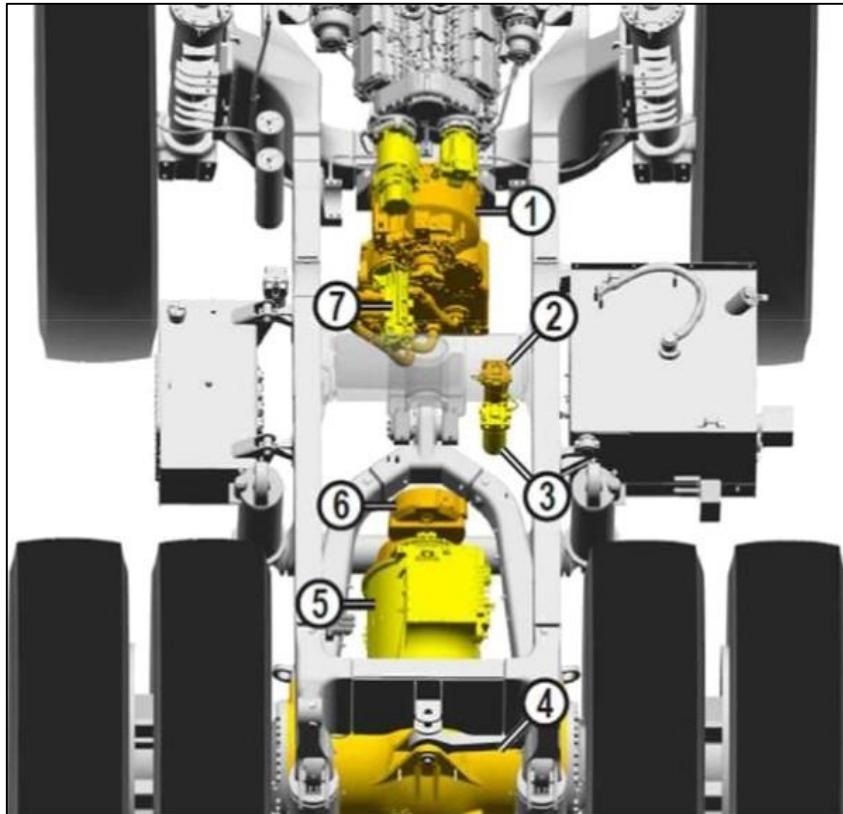


# POWERTRAIN SYSTEM

1. SAFETY
2. FITUR FITUR 773 OFF HIGHWAY TRUCK
3. OPERATOR STATION
4. MONITORING SYSTEM
5. ENGINE & SUPPORT SYSTEM
6. POWERTRAIN SYSTEM
7. STEERING SYSTEM
8. HOIST SYSTEM
9. BRAKE SYSTEM

# Powertrain System

- Pendahuluan

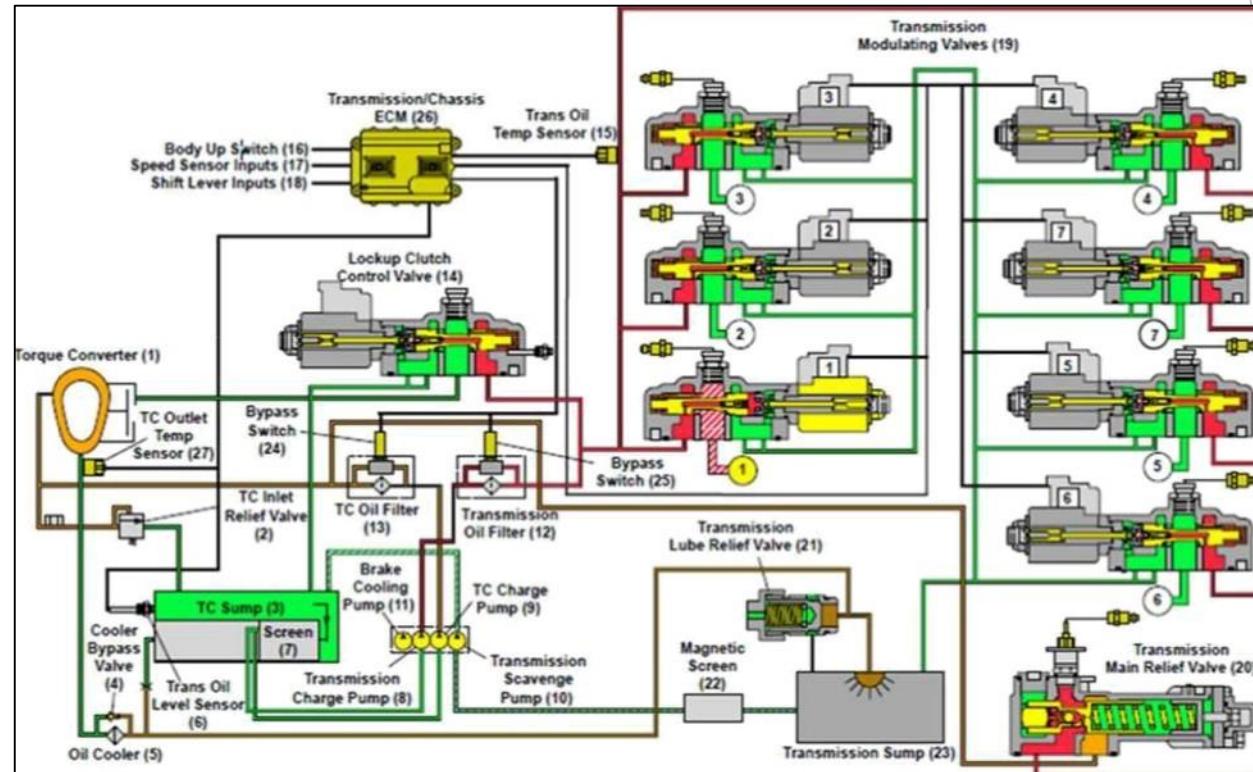


- Torque converter (1)
- Converter oil filter (2)
- Transmission oil filter (3)
- Differential (4)
- Transmission (5)
- Transfer gear (6)

# Powertrain System

- Aliran oil power train hydraulic system

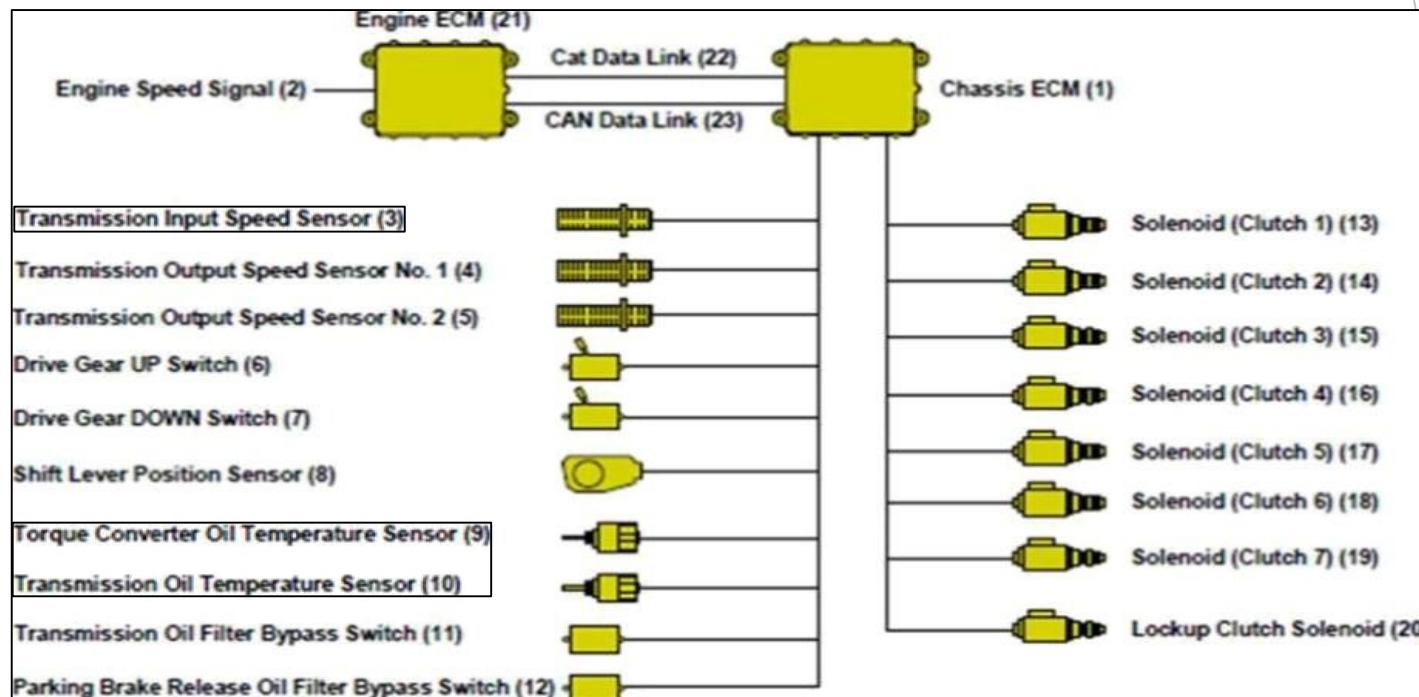
POWER TRAIN SCHEMATIC



# Powertrain System

- Komponen chassis ECM  
input dan output

CHASSIS ECM INPUT AND OUTPUT  
COMPONENTS



# Powertrain System

- Fitur ECM  
transmission-chassis

## TRANSMISSION

### FEATURES CONTROLLED BY CHASSIS ECM

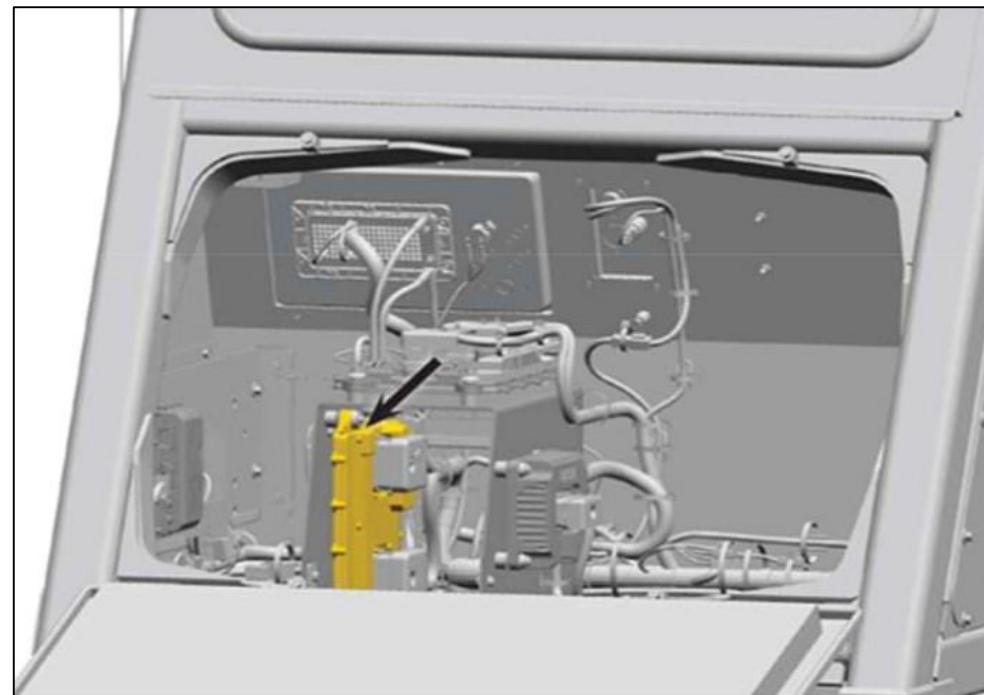
- Transmission shifting
- Engine Overspeed Protection
- Neutral Coast Inhibiting
- Fail In Gear Protection
- Control Throttle Shifting (CTS)
- Reverse Shift Inhibiting
- Cold Mode
- Anti-hunt
- Direction Shift Management
- Shift Counter
- Top Gear Limit
- Torque Converter Lockup



TRAINING CENTER  
PT.CAKRAWALA DINAMIKA ENERGI

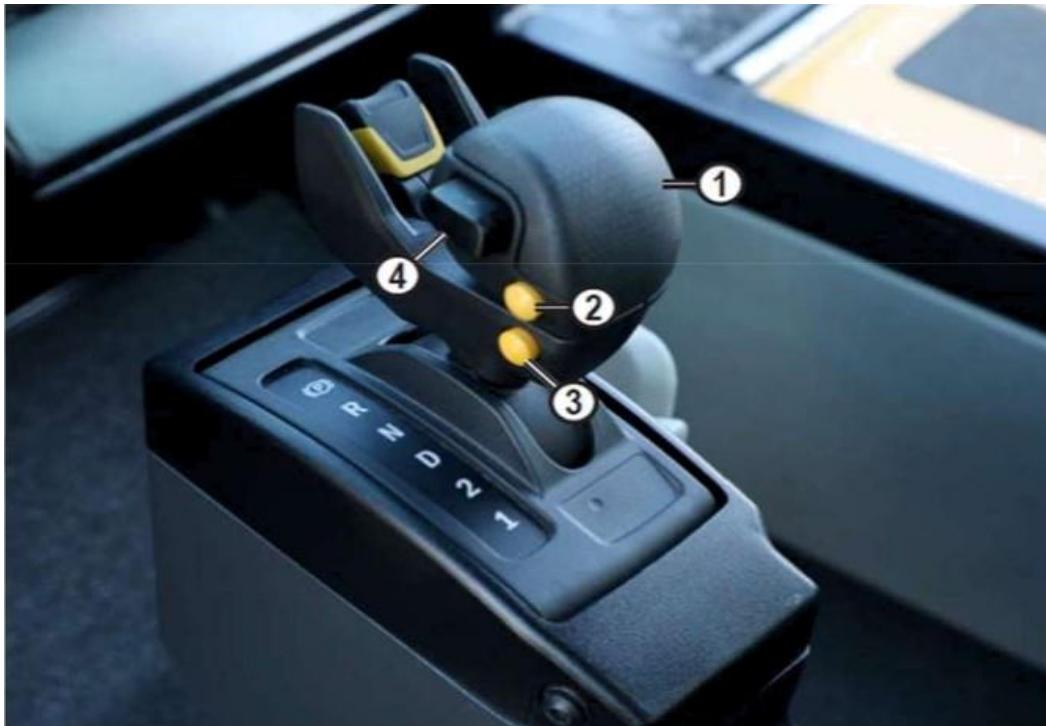
# Powertrain

- Transmission/Chassis ECM



# Powertrain

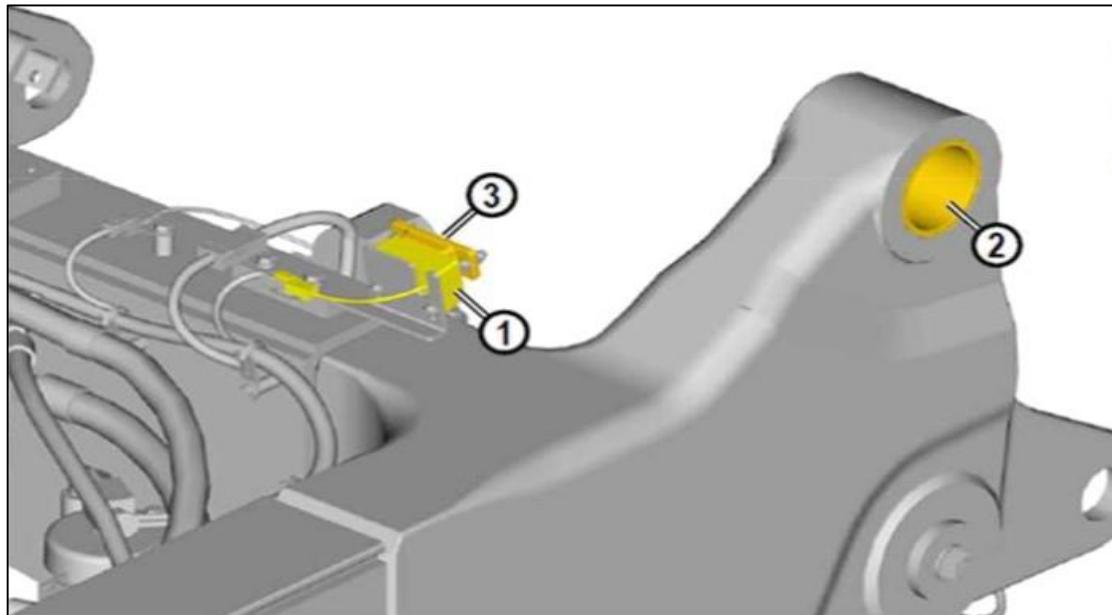
- Transmission Shift Lever



- Shift lever (1)
- Drive gear up switch (2)
- Gear DOWN switch (3)
- Transmission shift lever lock button (4)

# Powertrain

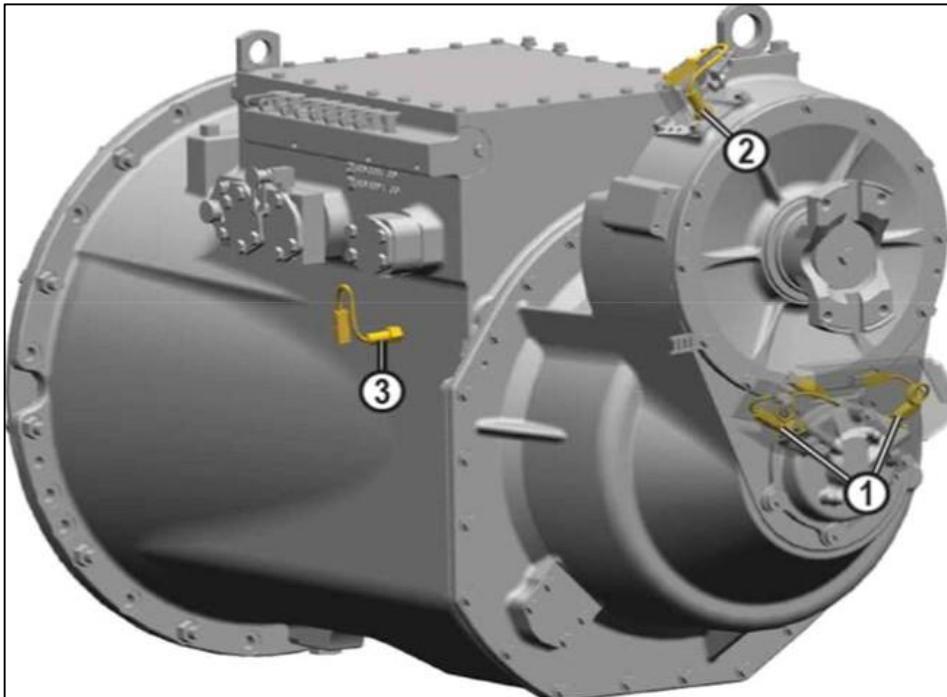
- Body up switch



- Body up switch (1)
- Support pin bushing (2)
- Magnet (3)

# Powertrain

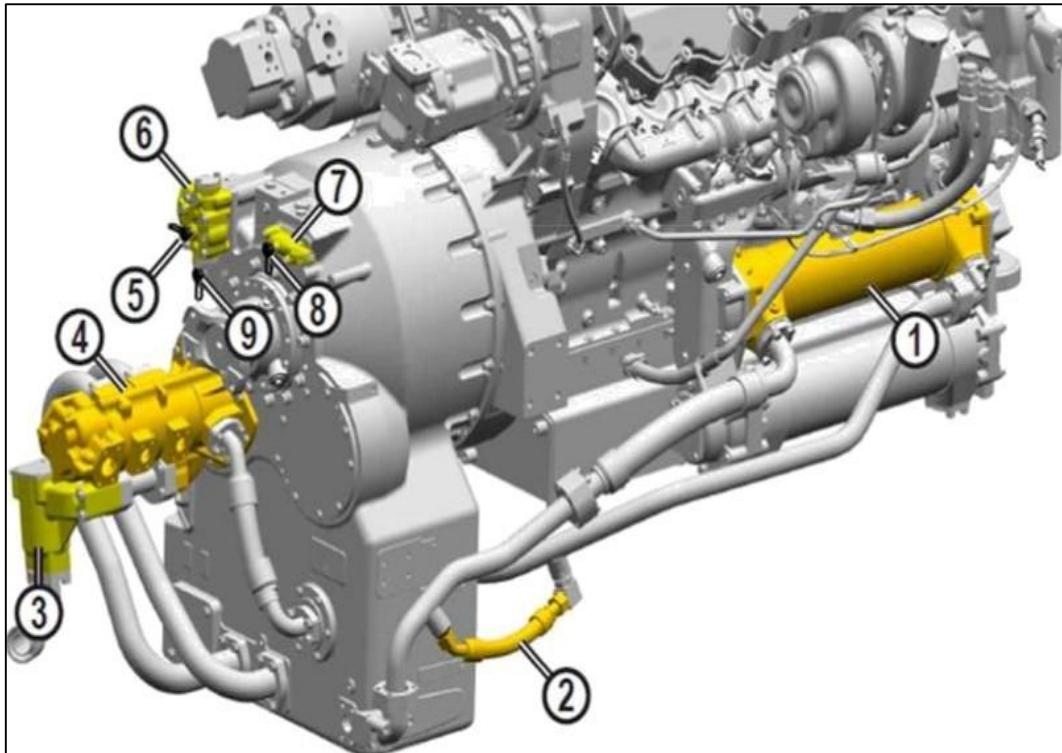
- Speed Sensor



- Transmission output speed sensor (1)
- Transmission input speed sensor (2)
- Transmission intermediate speed sensor (3)

# Powertrain

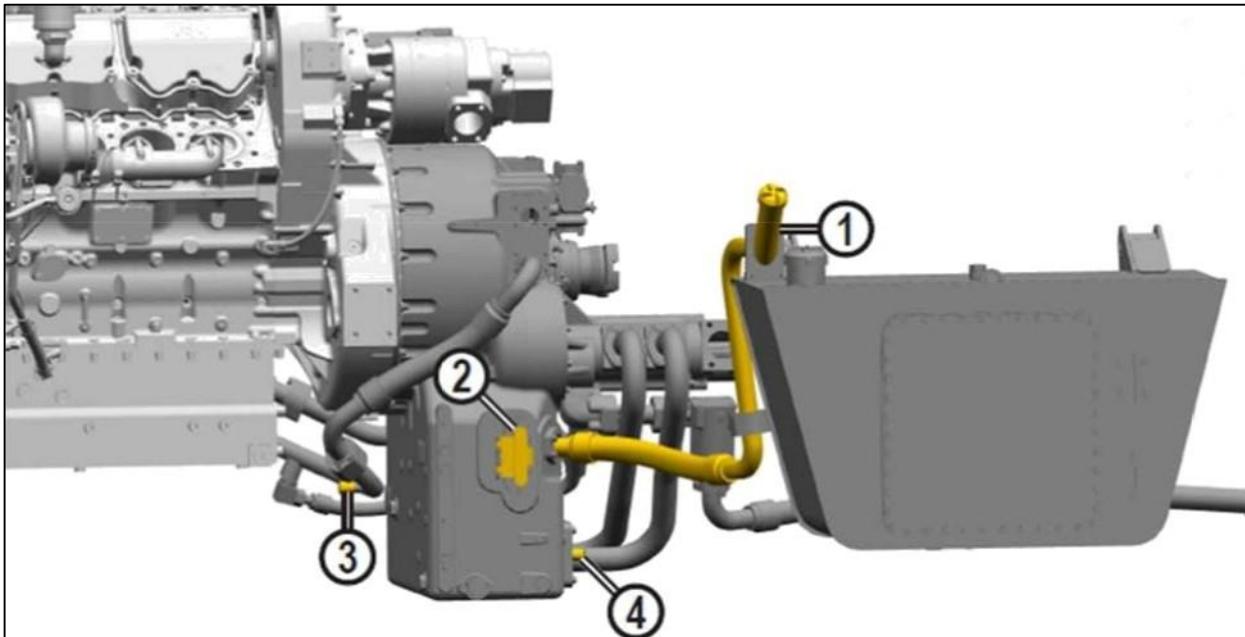
- Komponen-komponen torque converter hydraulic system



- Lockup clutch solenoid (7)
- Lockup clutch solenoid port (8)
- TC outlet pressure port (9)
- Four-section torque converter dan transmission pump (4)
  - Transmission scavenges
  - Torque converter charging
  - Transmission charging
  - Brake cooling
- Torque converter inlet relief valve (6)
- Inlet relief valve pressure port (5)
- Torque converter dan transmission oil cooler (1).
- Bypass hose (2)

# Powertrain

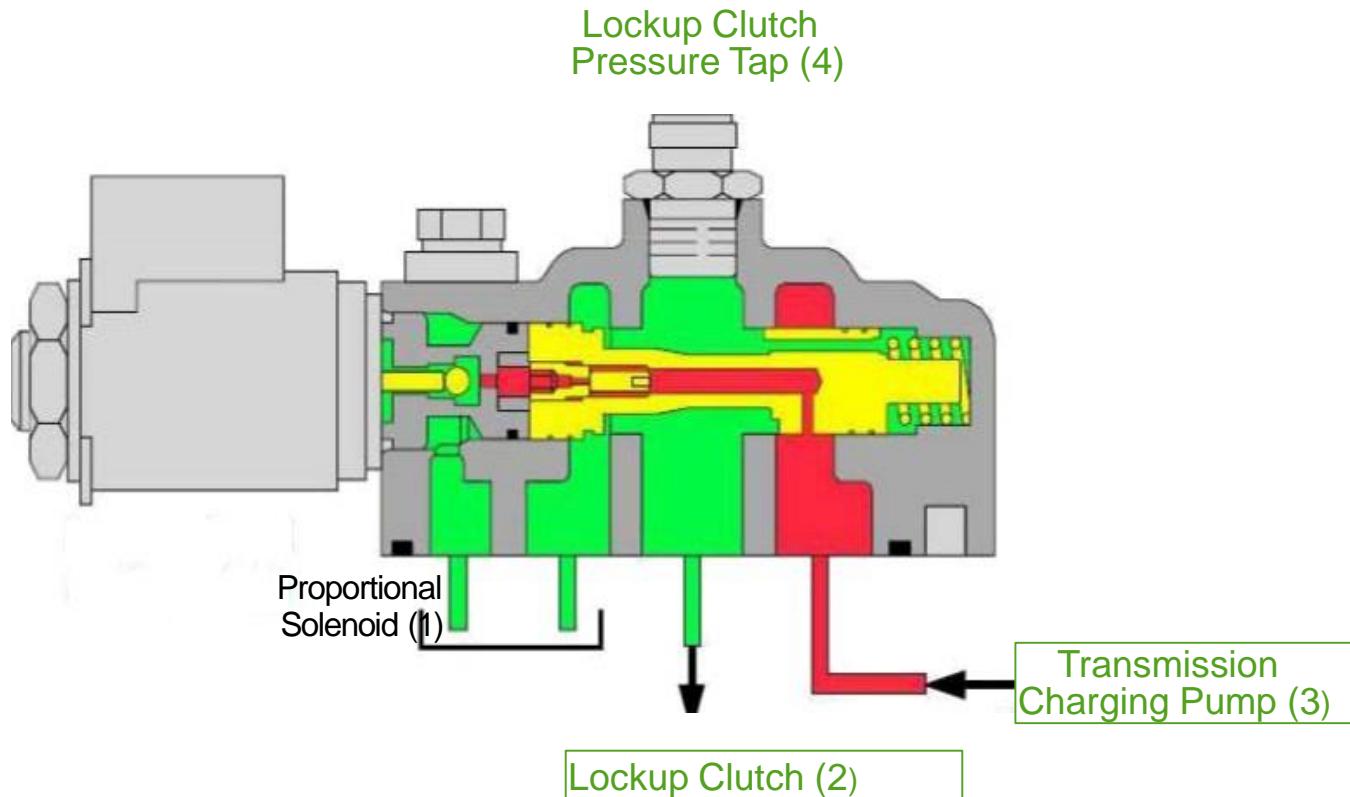
- Torque converter sebelah kiri



Torque converter fill tube (1)  
Sight gauge (2)  
Torque converter outlet temperature sensor (3)  
Transmission oil level sensor (4)

# Powertrain

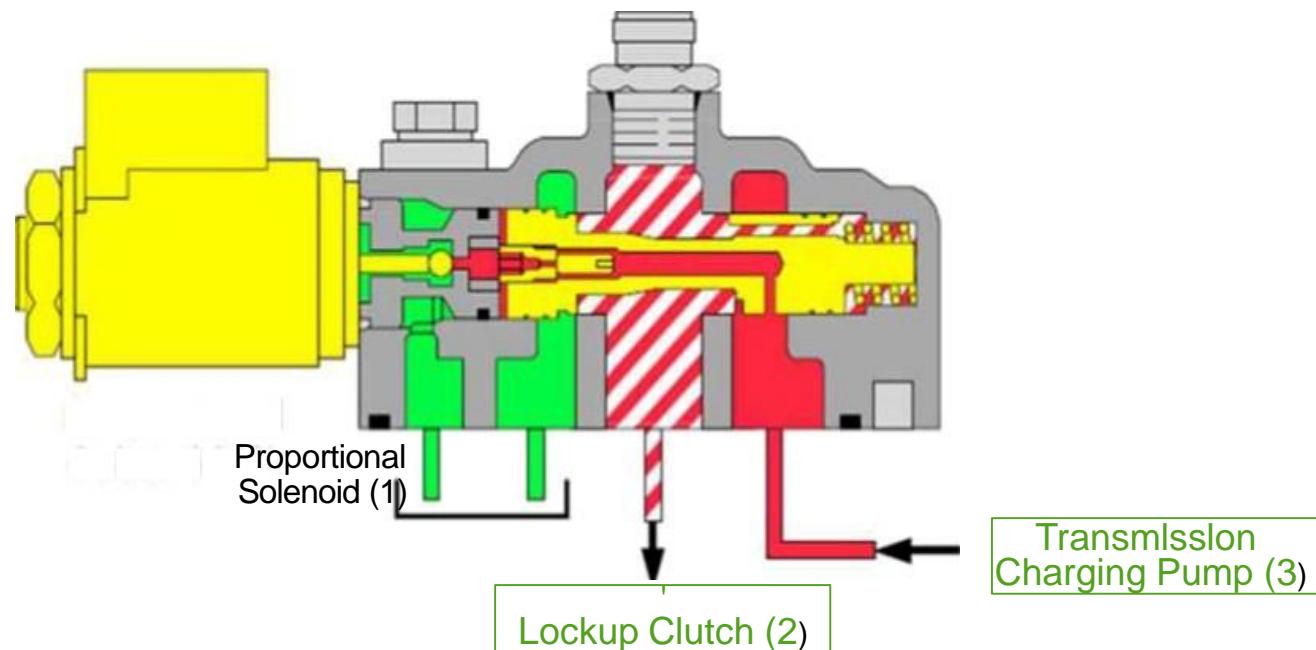
## LOCKUP CLUTCH MODULATING VALVE TORQUE CONVERTER DRIVE



# Powertrain

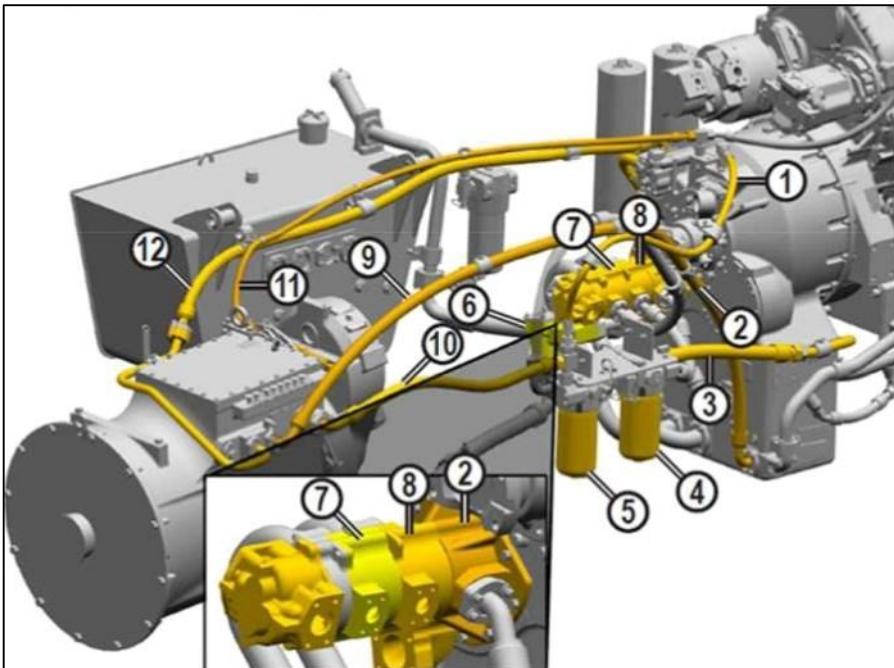
LOCKUP CLUTCH MODULATING VALVE  
DIRECT DRIVE

Lockup Clutch  
Pressure Tap (4)



# Powertrain

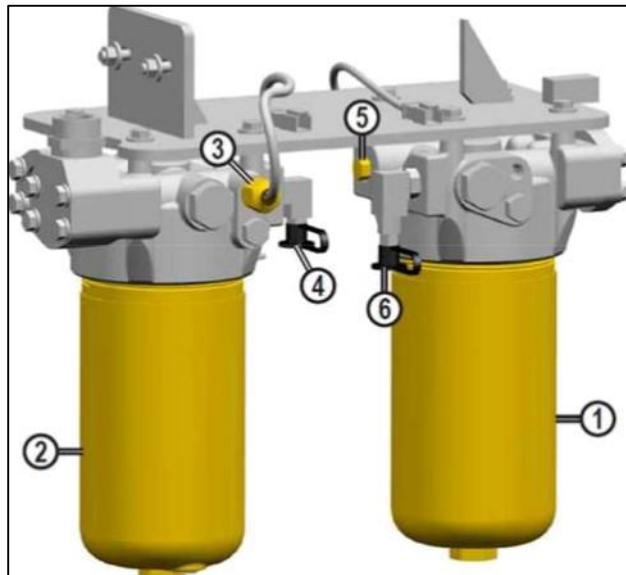
- Koneksi hydraulic torque converter/transmission



- Torque converter charging pump (8)
- Torque converter oil filter (4)
- Hose (3)
- Transmission charging pump (7)
- Transmission oil filter (5)
- Hose (10)
- Hose kecil (1)
- Lube hose (9)
- Hose (12)
- Vent hose (11)
- Transmission scavenge pump (2)
- Magnetic scavenge screen (6)

# Powertrain

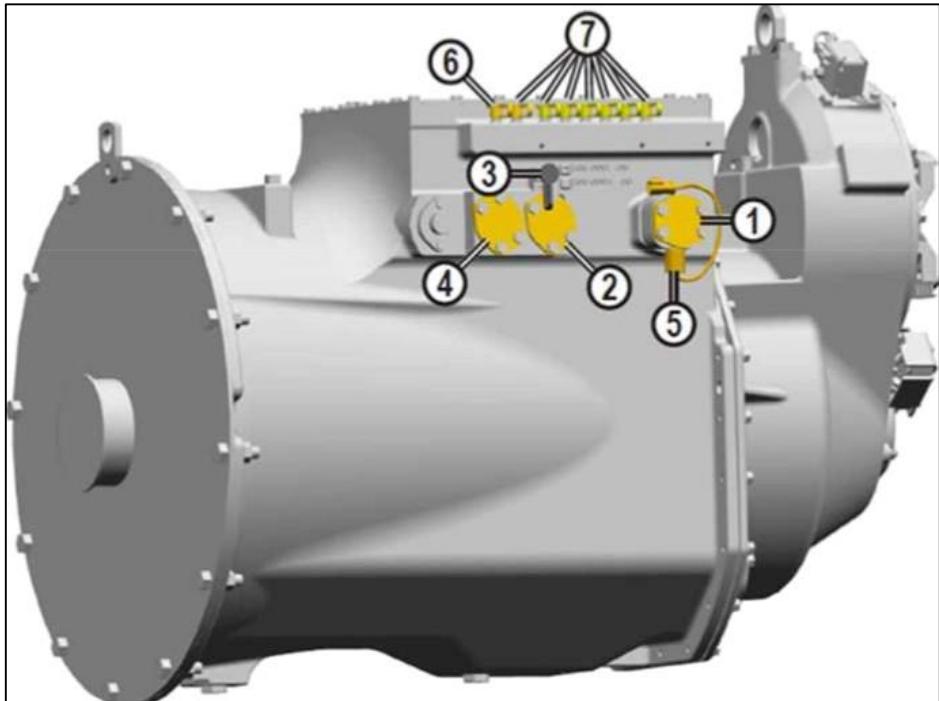
- Oli filter



- Torque converter oil filter (1)
- Transmission oil filter (2)
- Transmission oil filter bypass switch (3)
- Transmission supply pressure port (4)
- Torque converter oil supply pressure poR(5)
- S•0•S port (6)

# Powertrain

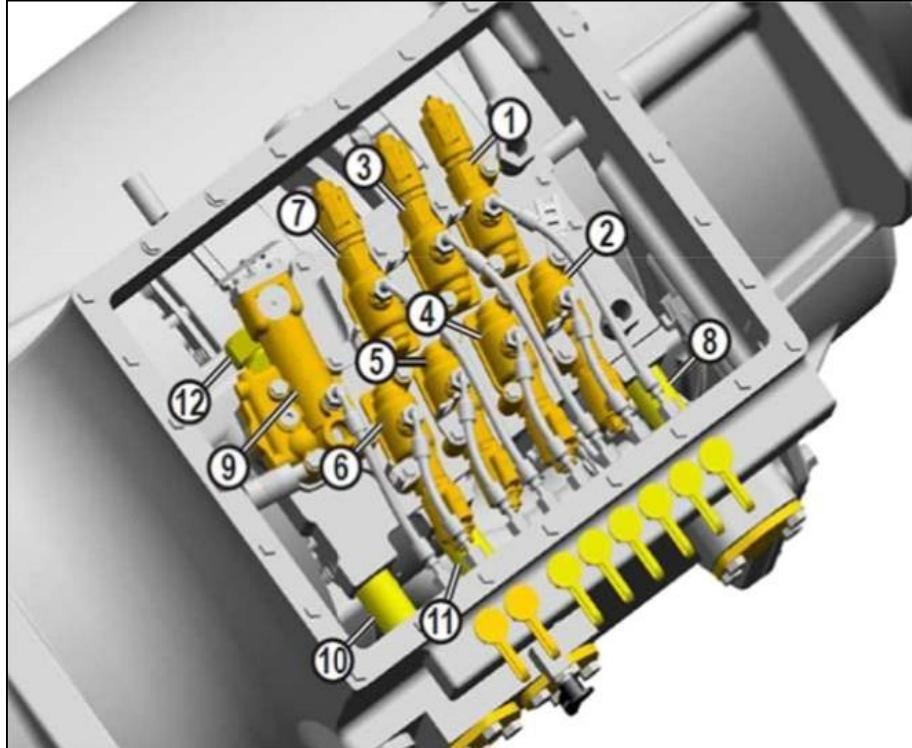
- Aliran oli transmission



- Supply port(1)
- Lube port (2)
- Lube oil test port (3)
- Rear port (4)
- Transmission oil temperature sensor (5)
- Transmission hydraulic system port (6)
- Tujuh clutch pressure port (7)

# Powertrain

- Transmission modulating valve



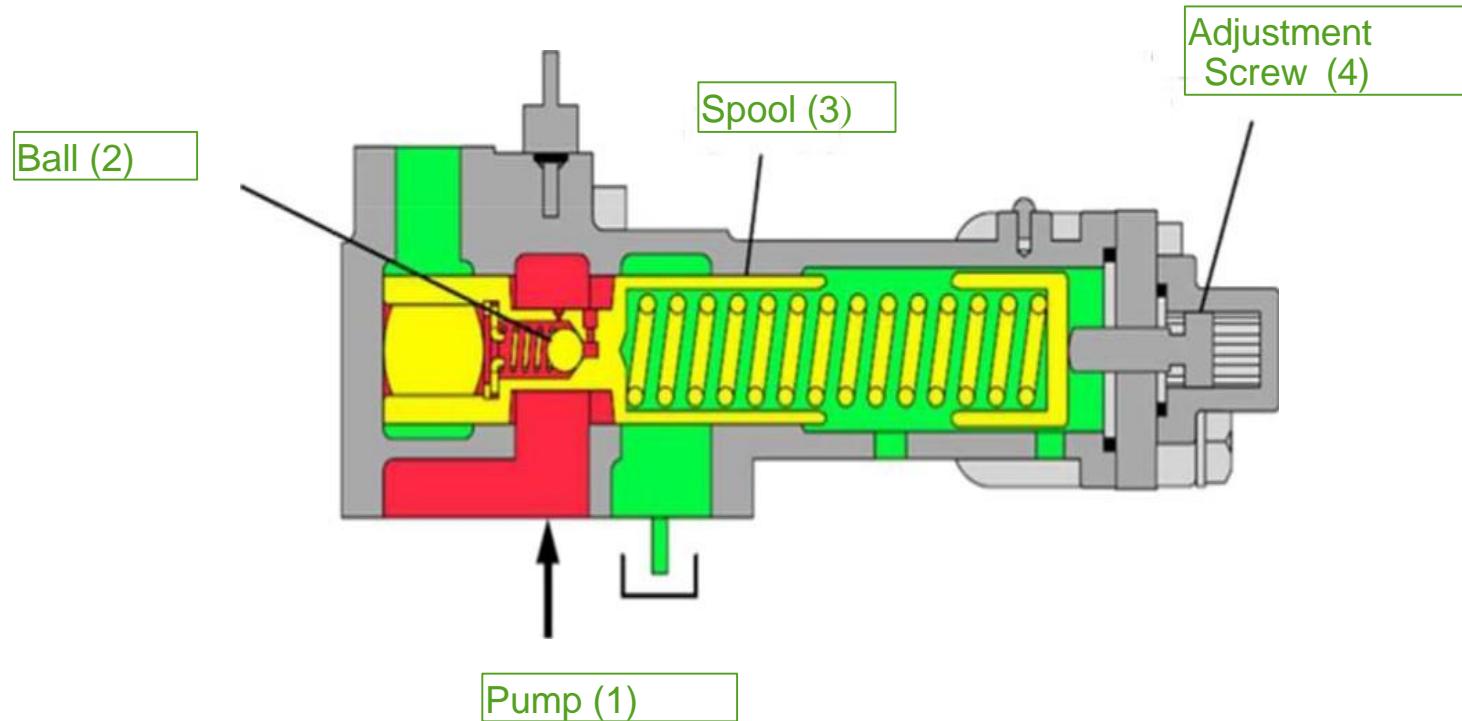
- Supply port(8)
- Main relief valve (9)
- Return port (10)
- Lube port (11)
- Lube relief valve (12)
- Clutch no.1 solenoid valve (1)
- Clutch no.2 solenoid valve (2)
- Clutch no.3 solenoid valve (3)
- Clutch no.4 solenoid valve (4)
- Clutch no.5 solenoid valve (5)
- Clutch no.6 solenoid valve (6)
- Clutch no.7 solenoid valve (7)

# Powertrain

ENGAGEMENT OF TRANSMISSION CLUTCHES	
Transmission Speed	Engaged Clutches in the Transmission
NEUTRAL	1
REVERSE	1 and 7
FIRST speed	2 and 6
SECOND speed	1 and 6
THIRD speed	3 and 6
FOURTH speed	4 and 5
FIFTH speed	3 and 5
SIXTH speed	1 and 4
SEVENTH speed	3 and 4

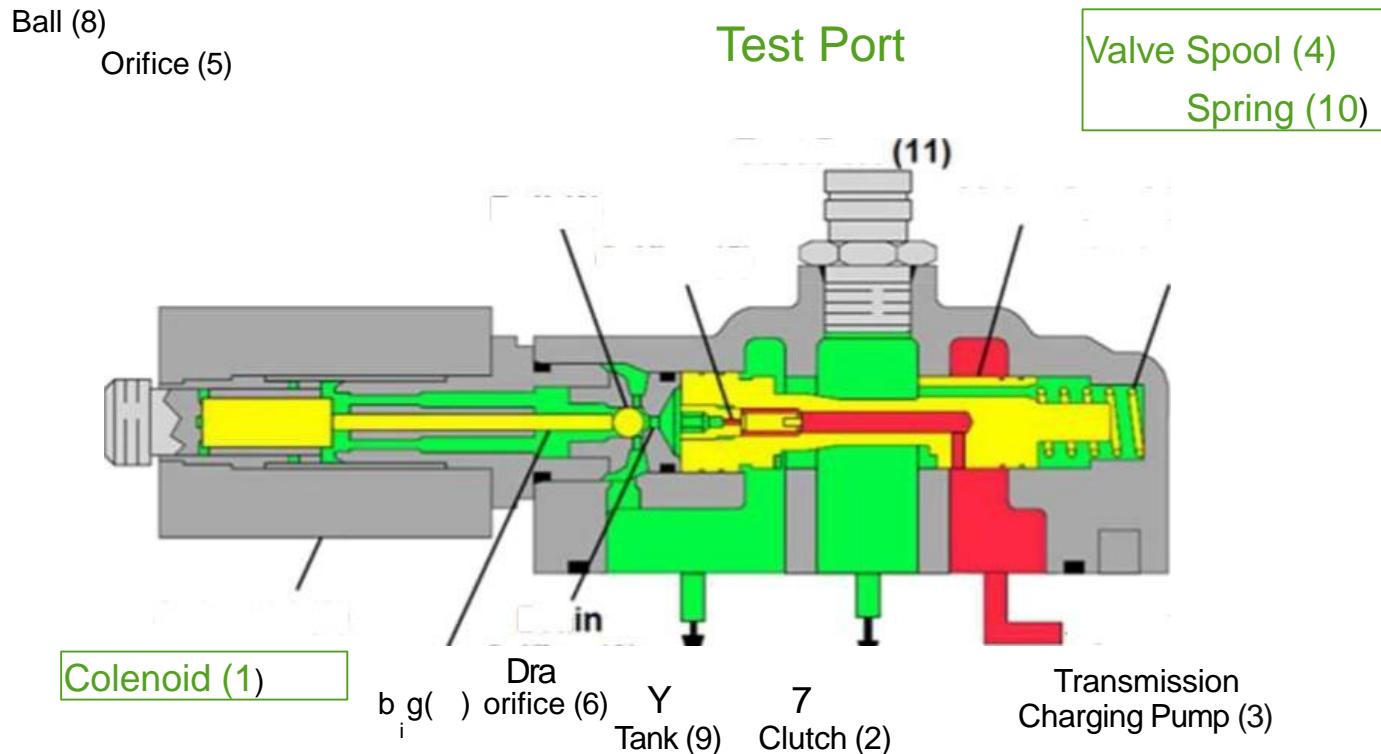
# Powertrain

## MAIN RELIEF VALVE



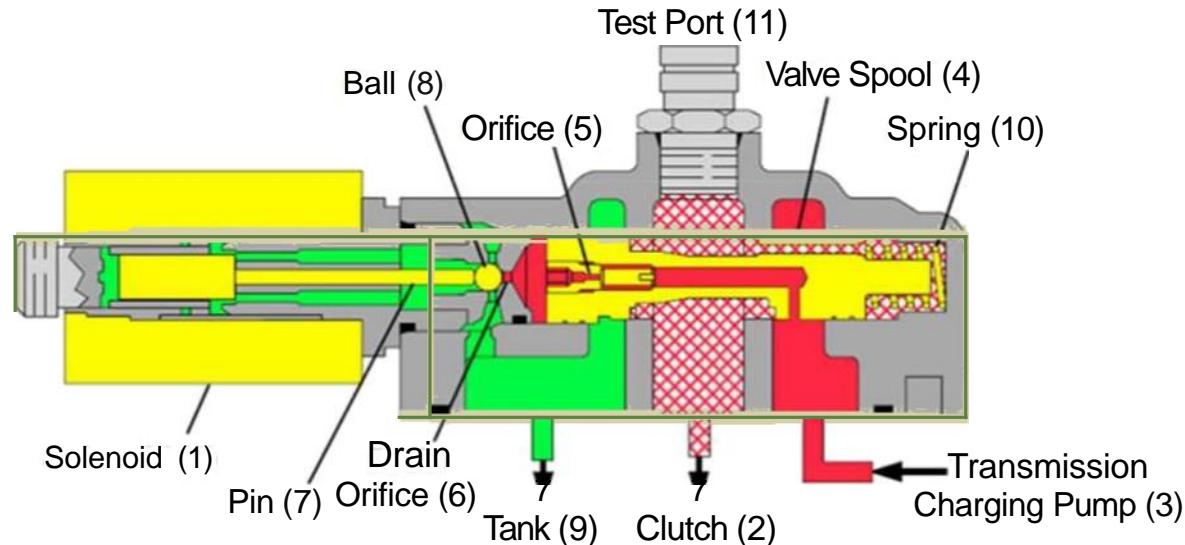
# Transmission Modulating Valve

# TRANSMISSION MODULATING VALVE NO COMMANDED SIGNAL



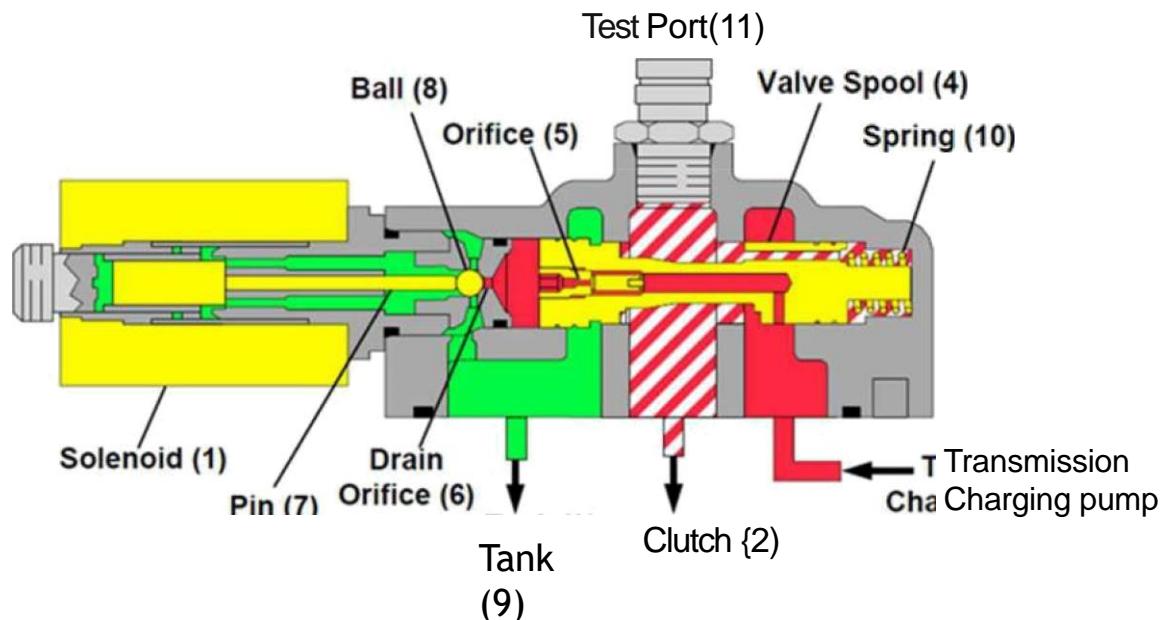
# Transmission Modulating Valve

## TRANSMISSION MODULATING VALVE COMMANDED SIGNAL BELOW MAXIMUM



# Transmission Modulating Valve

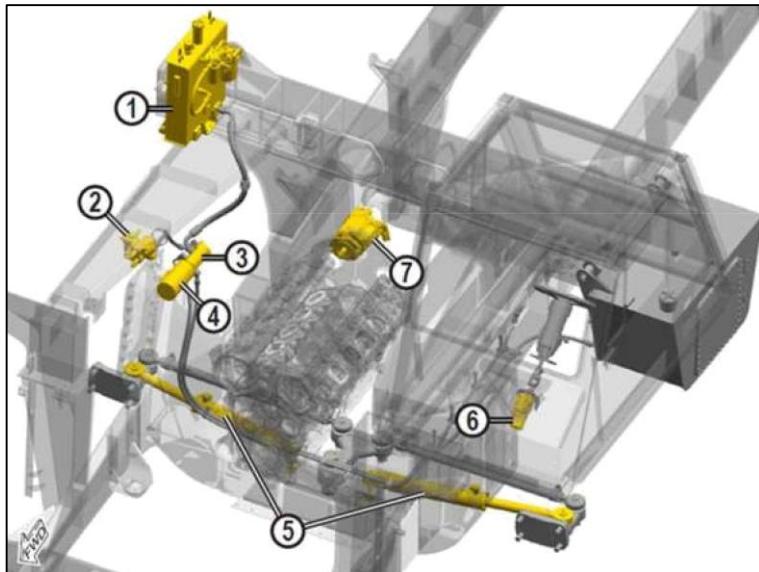
## TRANSMISSION MODULATING VALVE COMMIMANDED SIGNNAL AT MAXIMUM



- 
1. SAFETY
  2. FITUR FITUR 773 OFF HIGHWAY TRUCK
  3. OPERATOR STATION
  4. MONITORING SYSTEM
  5. ENGINE & SUPPORT SYSTEM
  6. POWERTRAIN SYSTEM
  7. STEERING SYSTEM
  8. HOIST SYSTEM
  9. BRAKE SYSTEM

# Pendahuluan

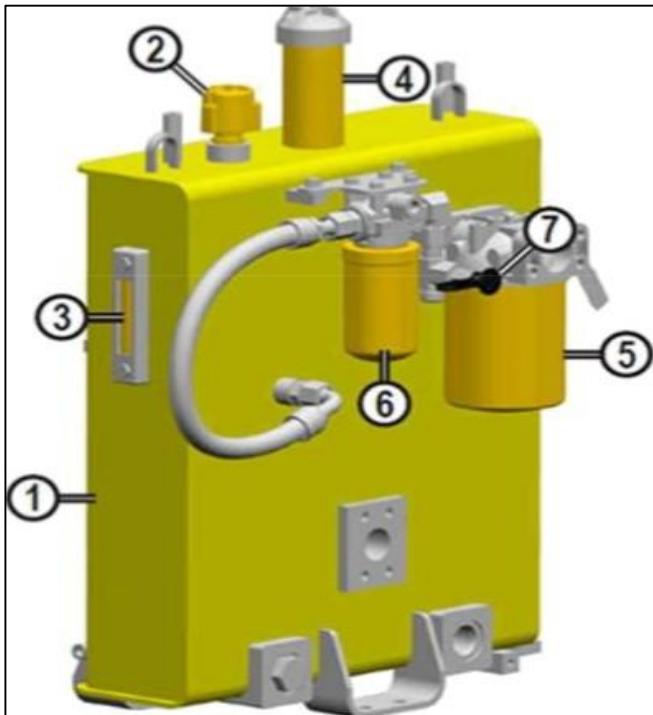
- Steering system



- Steering tank (1)
- Check and relief valve (2)
- Secondary steering pump (3)
- Secondary steering motor (4)
- Steering cylinders (5)
- HMU (6)
- Steering pump (7)

# Steering System

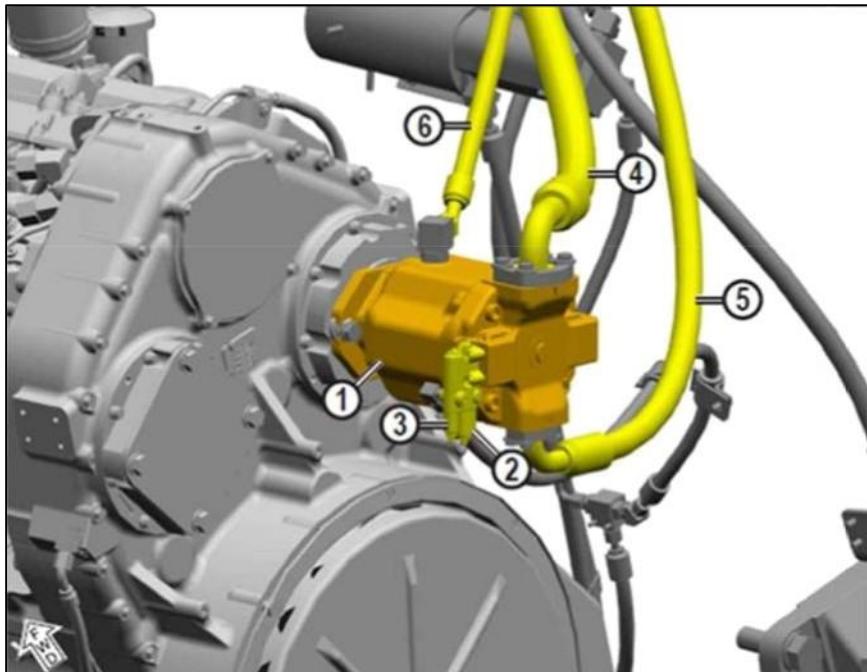
- **Steering tank**



- Steering oil tank (1)
- Breather (2)
- Sight gauge (3)
- Oil fill tube (4)
- Return oil filter (5)
- Case drain oil filter (6)
- Case drain pressure tap (7)

# Steering System

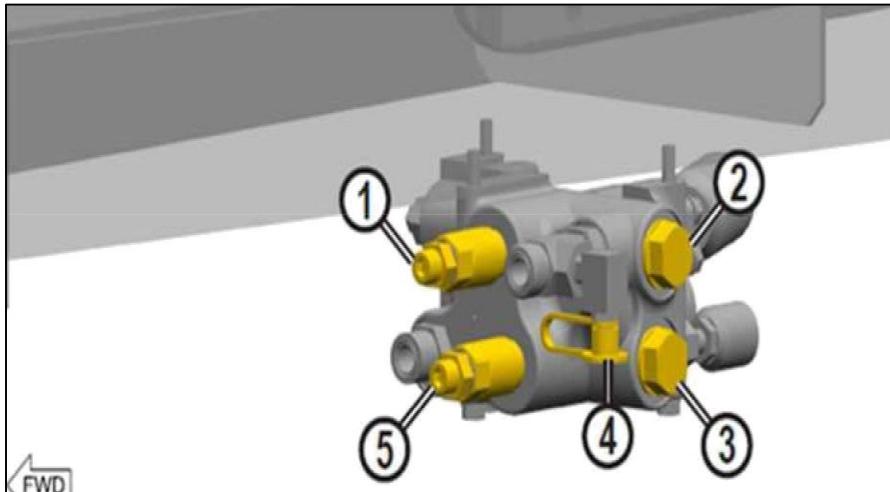
- Steering pump



- Piston type pump (1)
- High pressure cut-off valve (2)
- Flow compensator valve (3)
- Suction hose (4)
- Supply hose (5)
- Case drain hose (6)

# Steering System

- **Steering control valve**



- Steering pressure switch (6)
- Pressure reducing valve (7)
- Secondary backup relief valve (1)
- Primary backup relief valve (5)
- Primary check valve (2)
- Secondary check valve (3)
- Steering pressure tap (4)

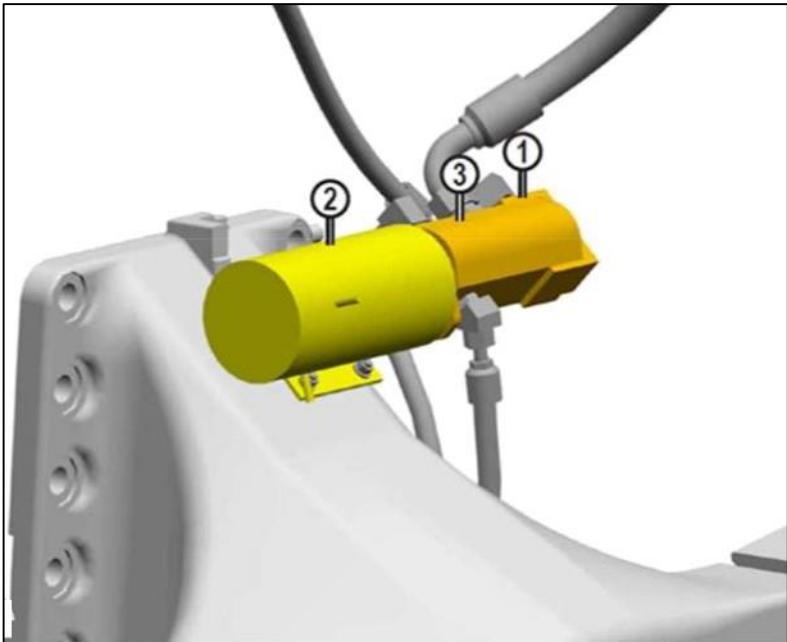
# Steering System

- HMU



# Steering System

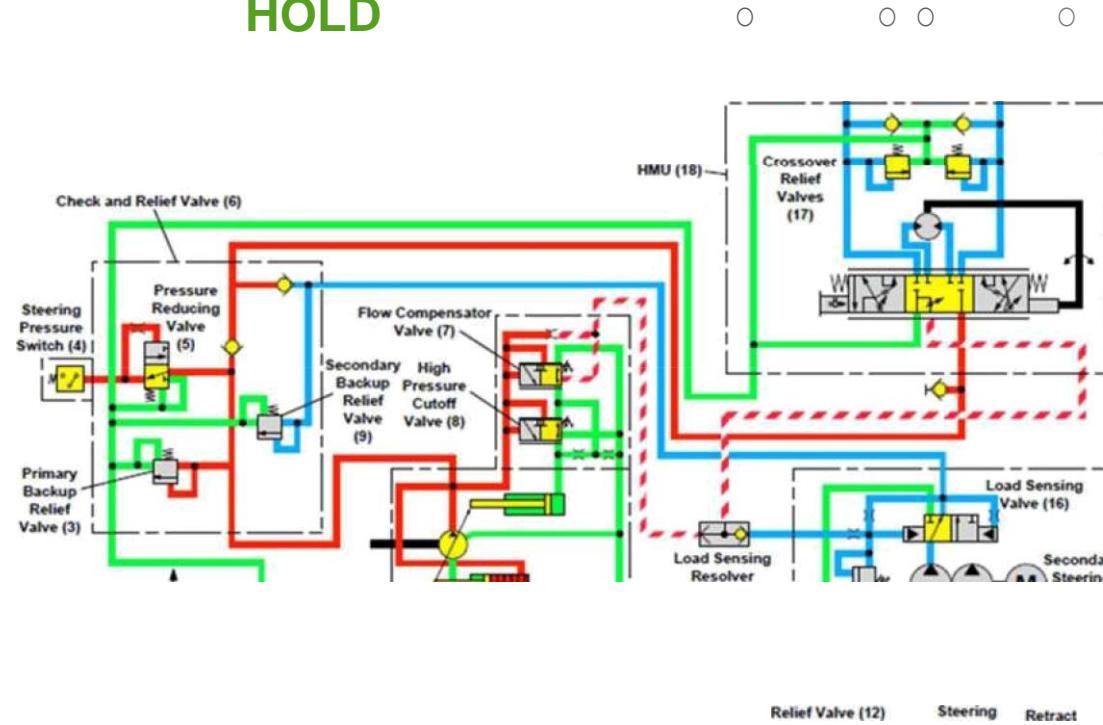
- Secondary pump dan motor



- Secondary steering pump (1)
- Motor (2)
- Retract pump section (3)

# Steering System

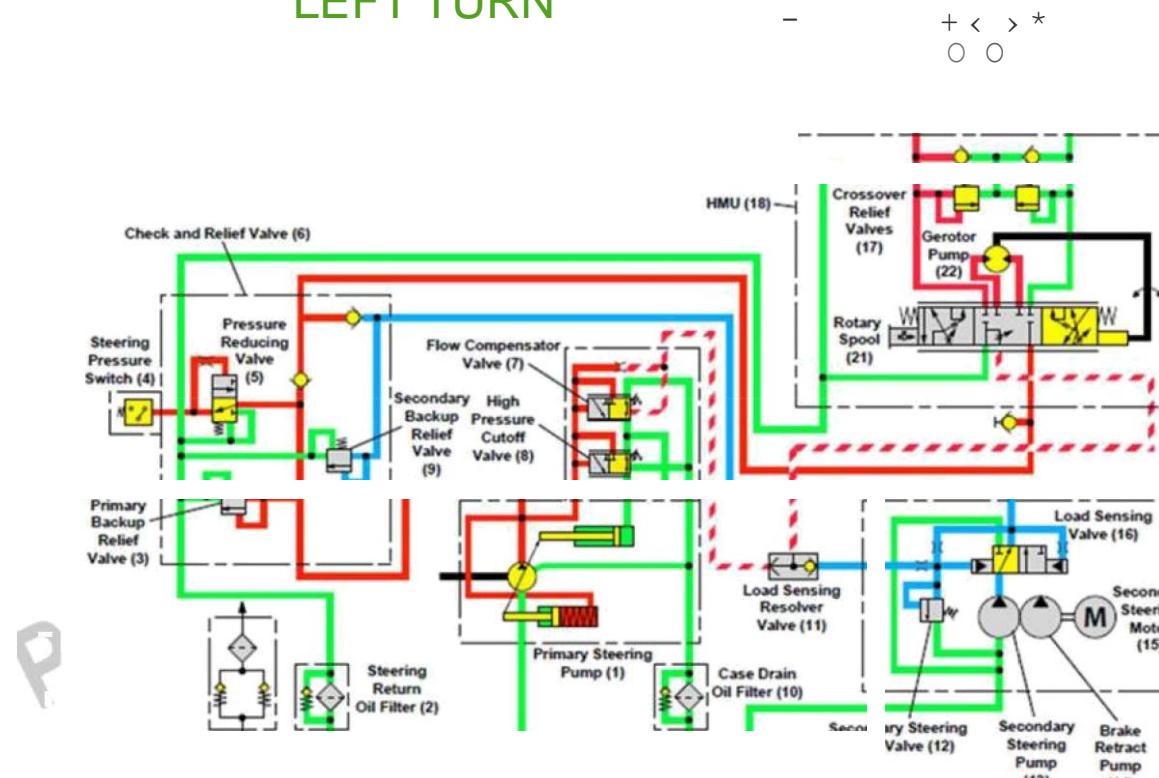
## STEERING HYDRAULIC SYSTEM HOLD



# Steering System

## STEERING HYDRAULIC SYSTEM

### LEFT TURN

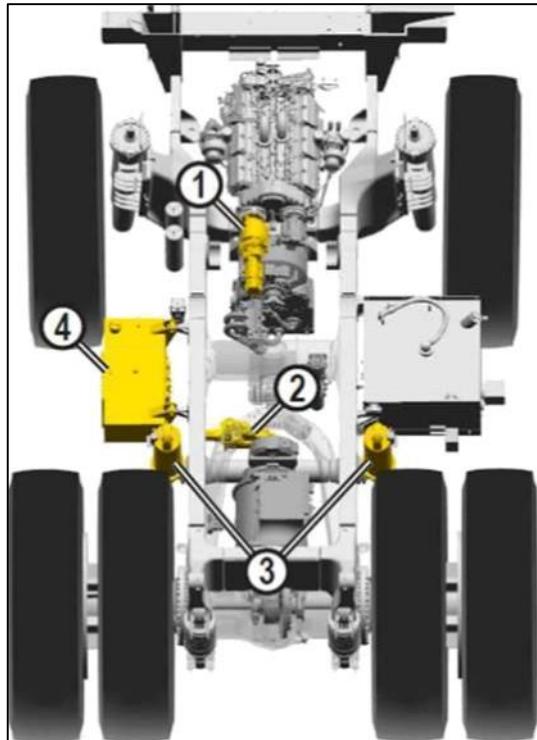


# 1. HOIST SYSTEM

1. SAFETY
2. FITUR FITUR 773 OFF HIGHWAY TRUCK
3. OPERATOR STATION
4. MONITORING SYSTEM
5. ENGINE & SUPPORT SYSTEM
6. POWERTRAIN SYSTEM
7. STEERING SYSTEM
8. HOIST SYSTEM
9. BRAKE SYSTEM

# Hoist System

- Pendahuluan



- Hoist pump (1)
- Hoist control valve (2)
- Hoist cylinder (3)
- Hoist Oil tank (4)

# Hoist System

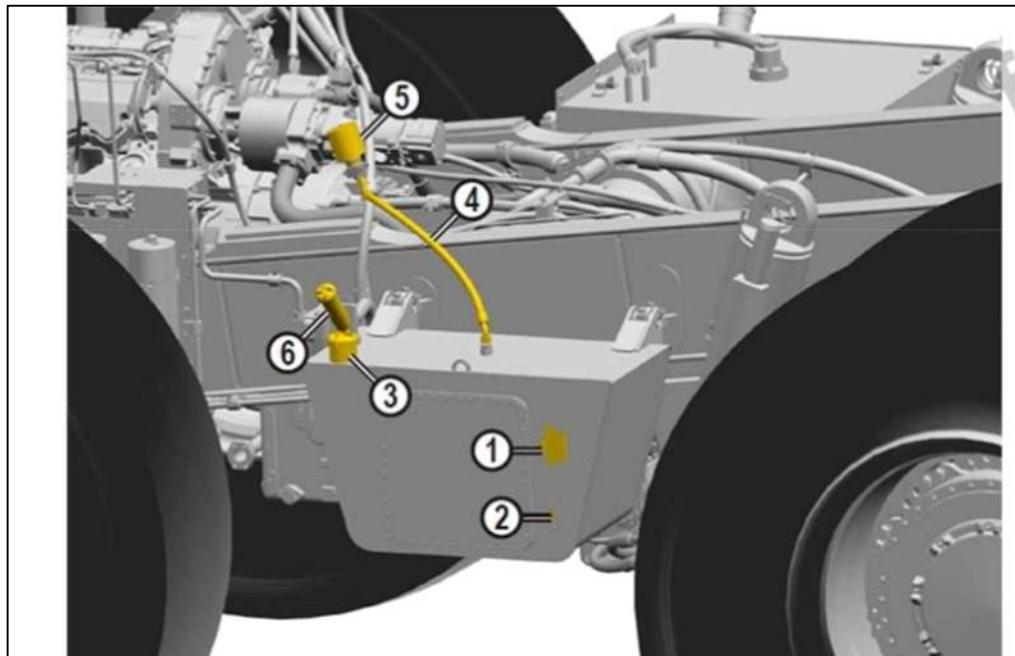
- Operasi hoist system



Control hoist lever

# Hoist System

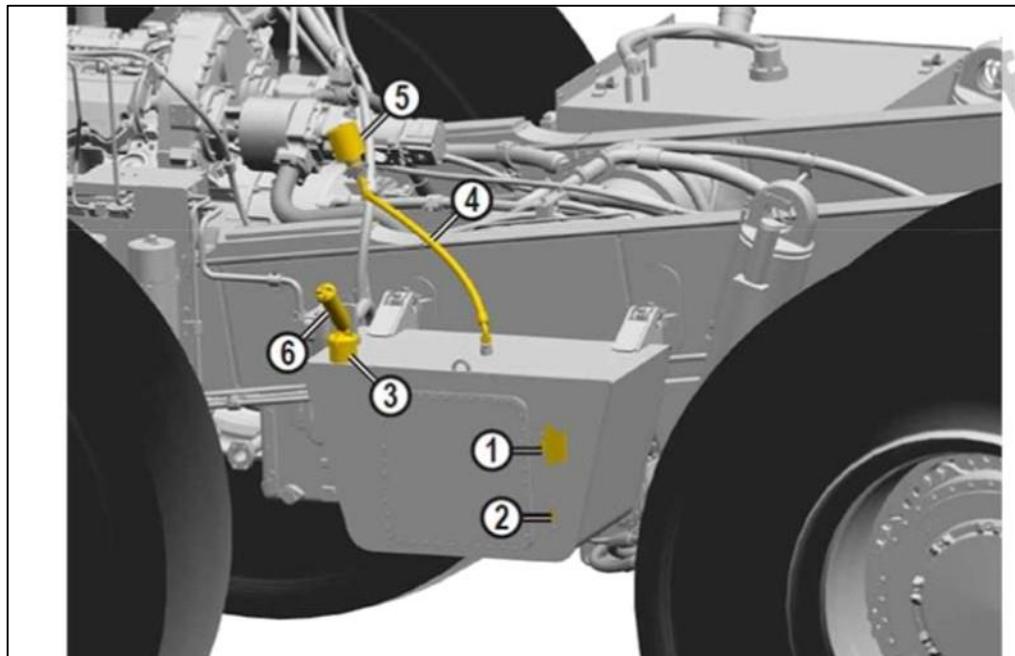
- Hoist dan brake hydraulic tank



- Sight gauge (1)
- Sight gauge (2)
- Hydraulic tank oil fill tube (3)
- Vent tube (4)
- Breather (5)
- Torque converter & transmission Oil fill tube (6)

# Hoist System

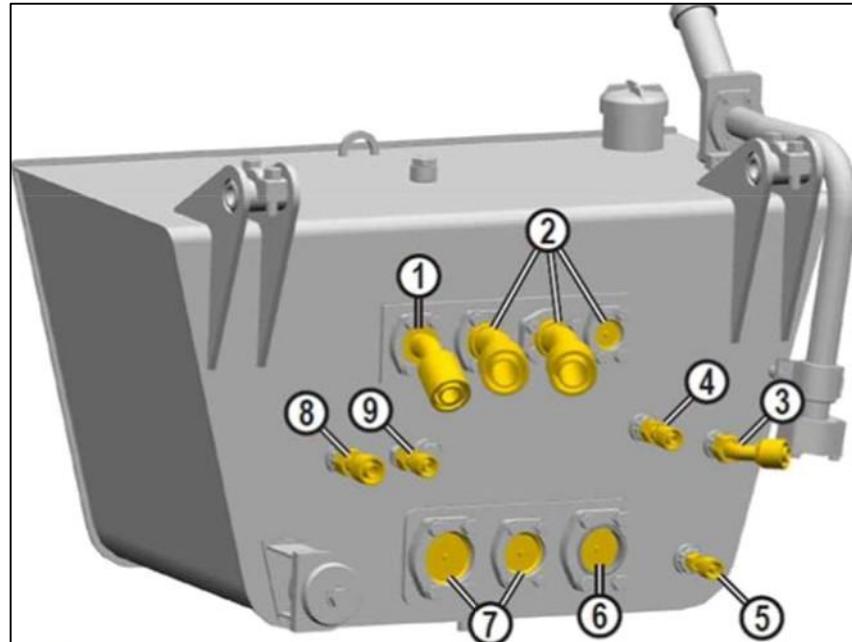
- Hoist dan brake hydraulic tank



- Sight gauge (1)
- Sight gauge (2)
- Hydraulic tank oil fill tube (3)
- Vent tube (4)
- Breather (5)
- Torque converter & transmission Oil fill tube (6)

# Hoist System

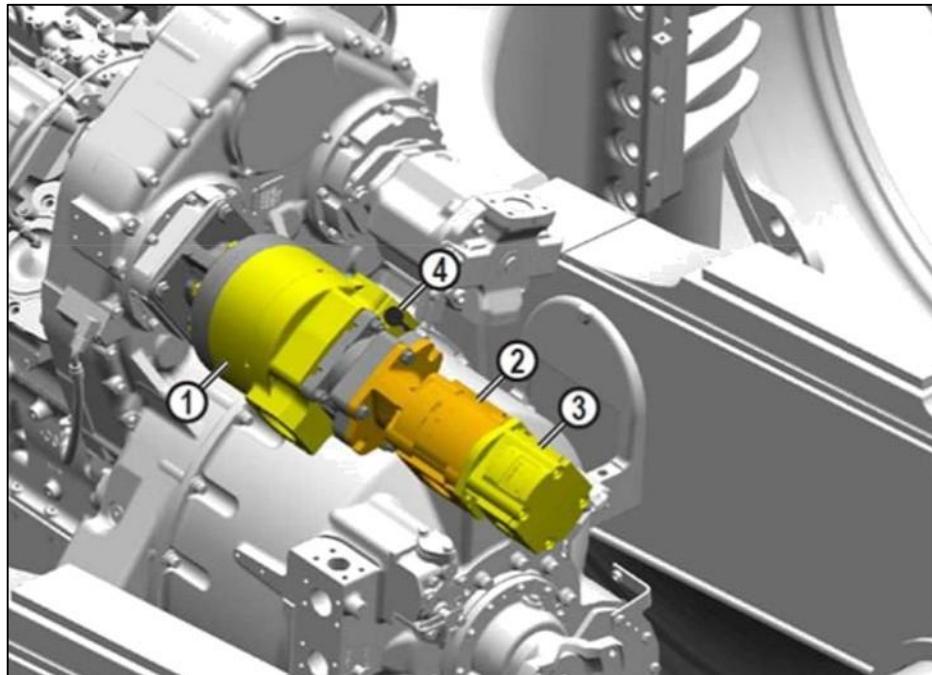
- Bagian Belakang Hoist & Brake Hydraulic Tank



- Hoist section port (6)
- Port (1)
- Brake cooling section port (7)
- Brake cooling port (2)
- Brake retract pump suction (4)
- Towing valve dan secondaiy brake valve return (5)
- Automatic retarding control (ARC)/ traction control system (TCS) return (8)
- Accumulator charging valve return (3 dan 9)

# Hoist System

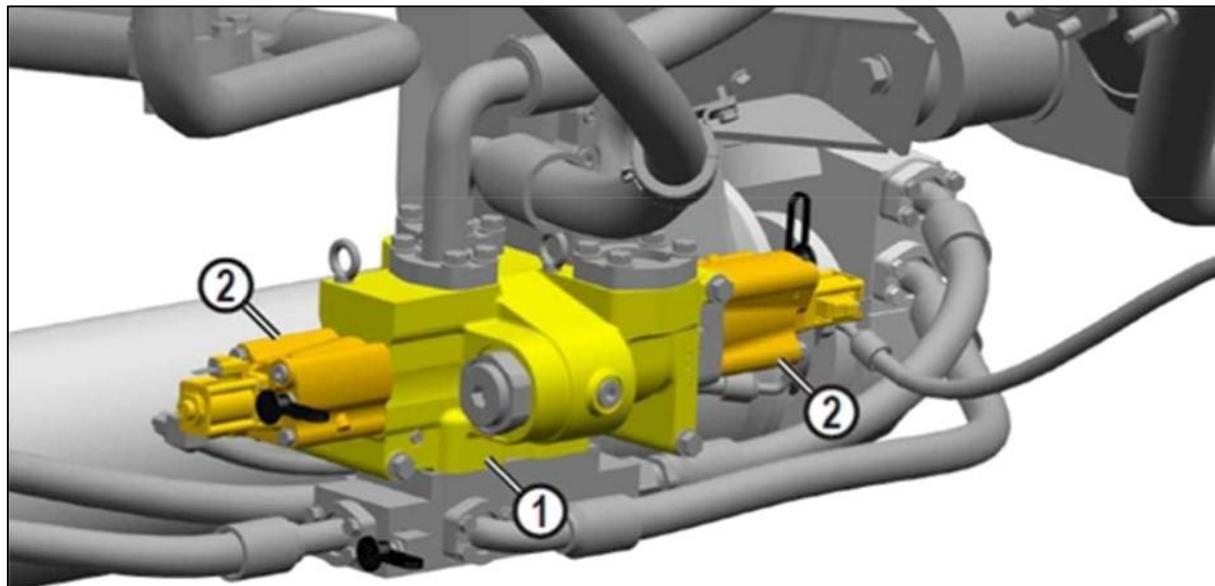
- Hoist pump



- Hoist pump (1)
- Brake cooling pump (2)
- Brake charging pump (3)
- Supply pressure port (4)

# Hoist System

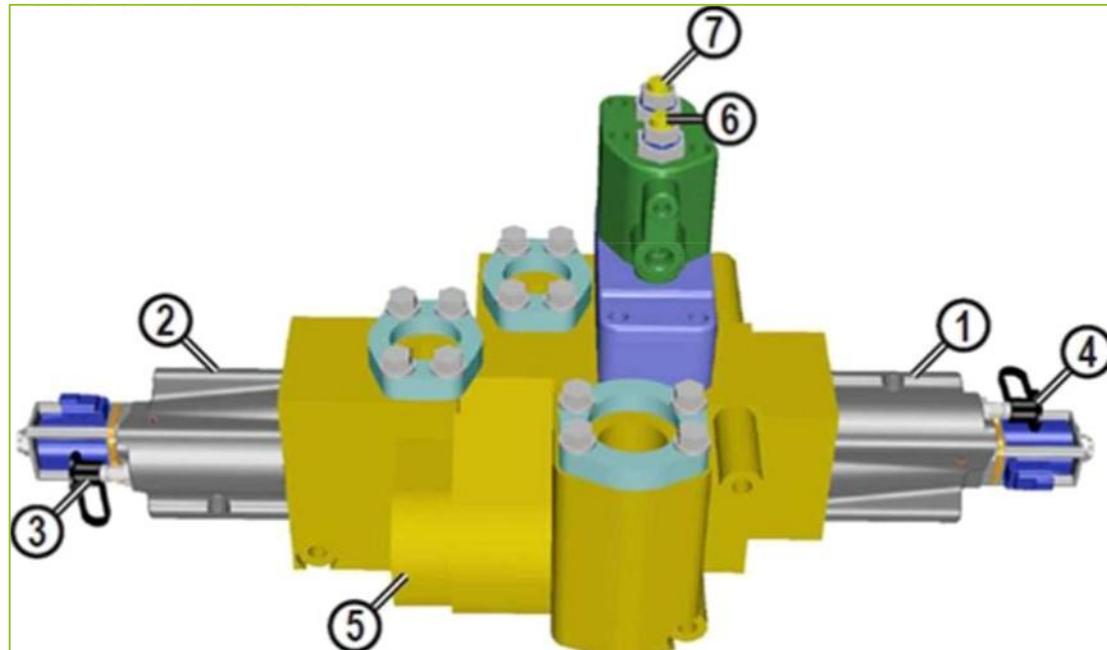
- Hoist control valve



- Hoist control valve (1)
- Hydraulic actuator (2)

# Hoist System

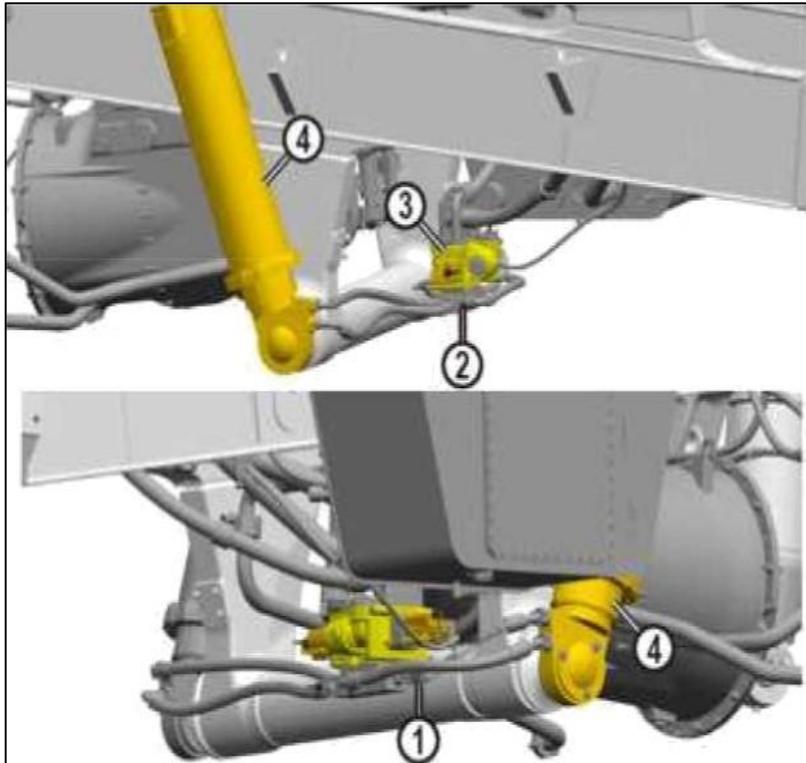
- Directional control valve



- RAISE solenoid valve (1)
- LOWER solenoid valve (2)
- Pressure port kiri (3)
- Pressure port kanan (4)
- Plug besar (5)
- Raise relief valve (6)
- Lower relief valve (7)

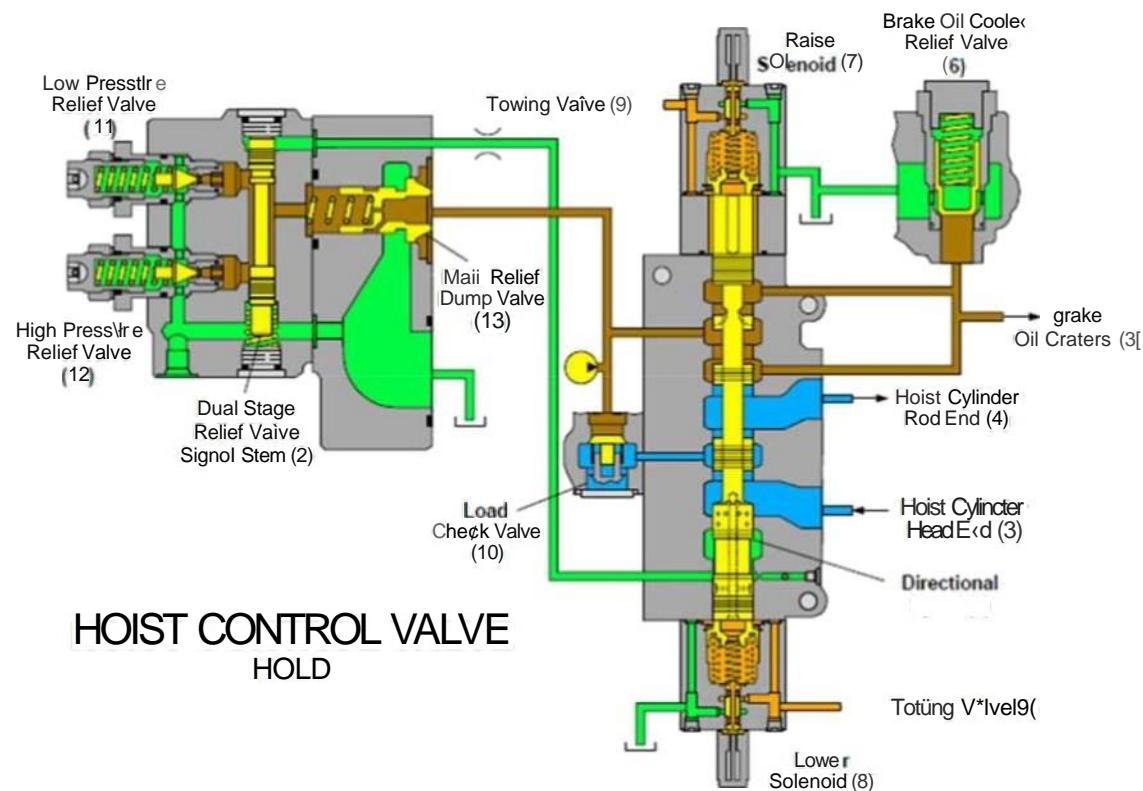
# Hoist System

- Hoist cylinder dan hoist control valve connection

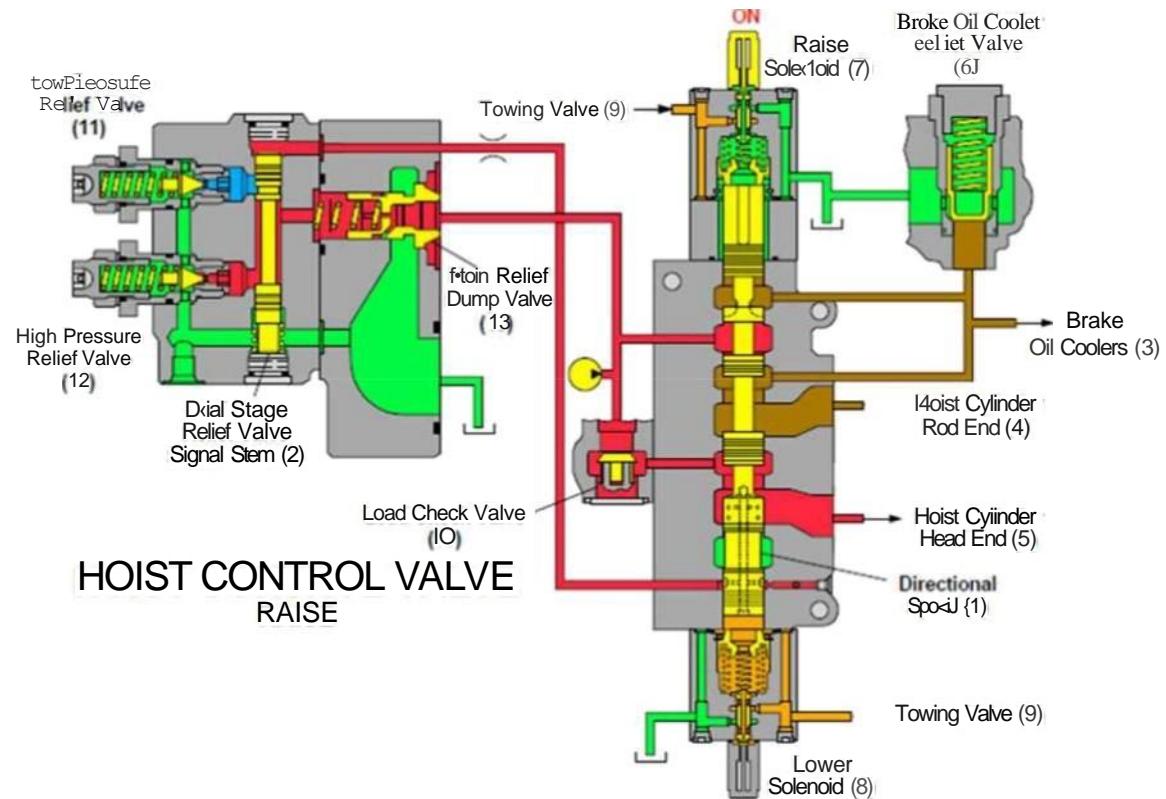


- Voist cylinder lower circuit pressure poX (1)
- Raise circuit pressure port(2)
- Hoist valve (3)
- Hoist cylinder (4)

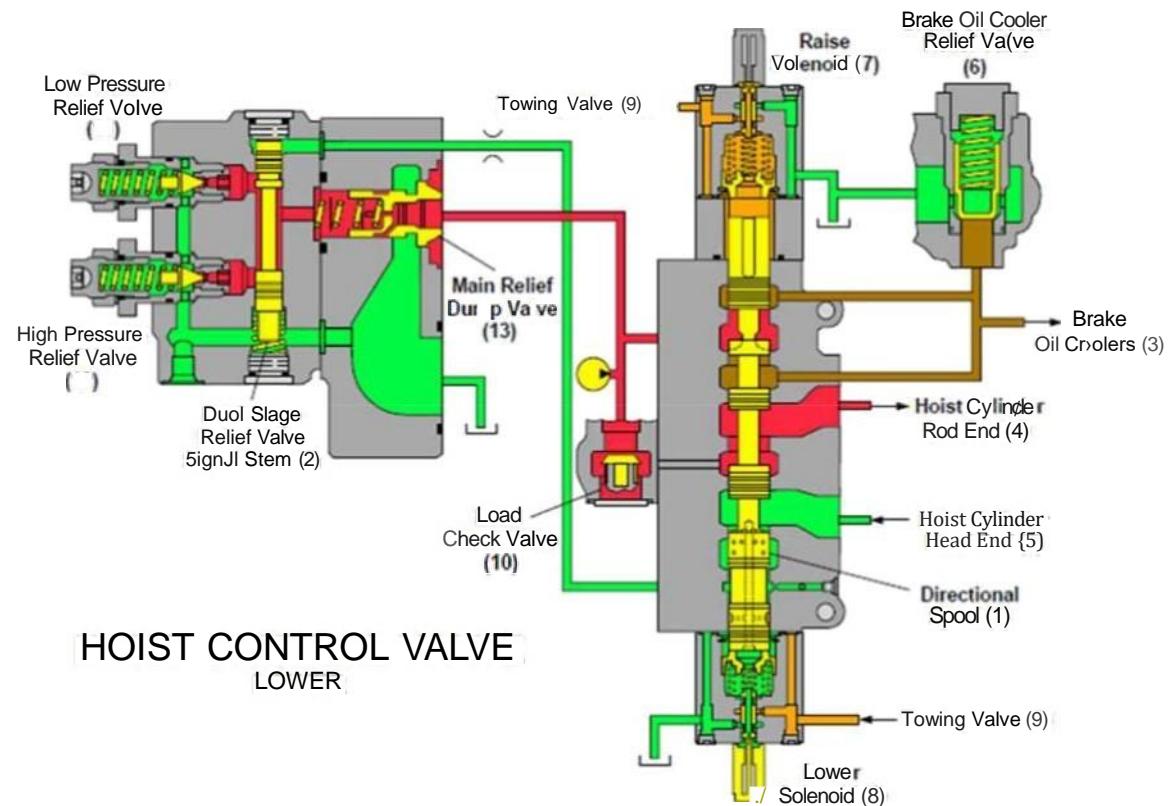
# Hoist System



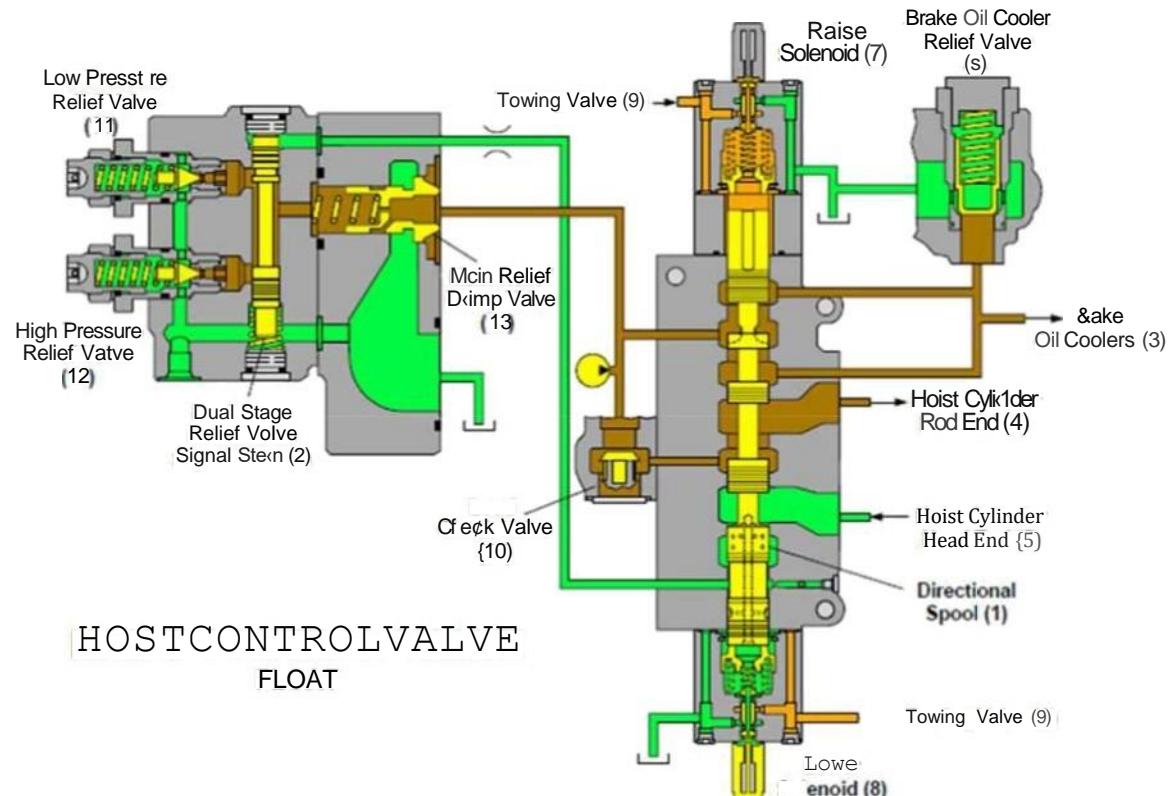
# Hoist System



# Hoist System



# Hoist System



# Hoist System

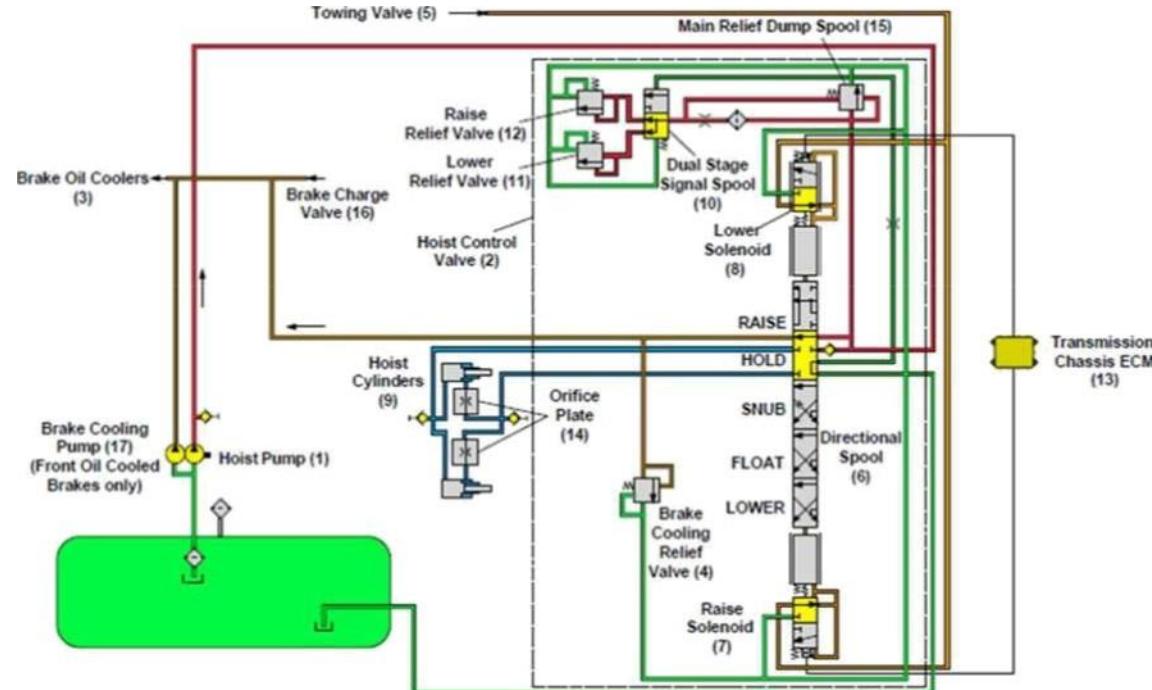
- Hoist cylinder



- Two-stage hoist cylinder (1)
- body pads (2)

# Hoist System

## HOIST HYDRAULIC SYSTEM SCHEMATIC



# BRAKE SYSTEM

1. SAFETY
2. FITUR FITUR 773 OFF HIGHWAY TRUCK
3. OPERATOR STATION
4. MONITORING SYSTEM
5. ENGINE & SUPPORT SYSTEM
6. POWERTRAIN SYSTEM
7. STEERING SYSTEM
8. HOIST SYSTEM
9. BRAKE SYSTEM

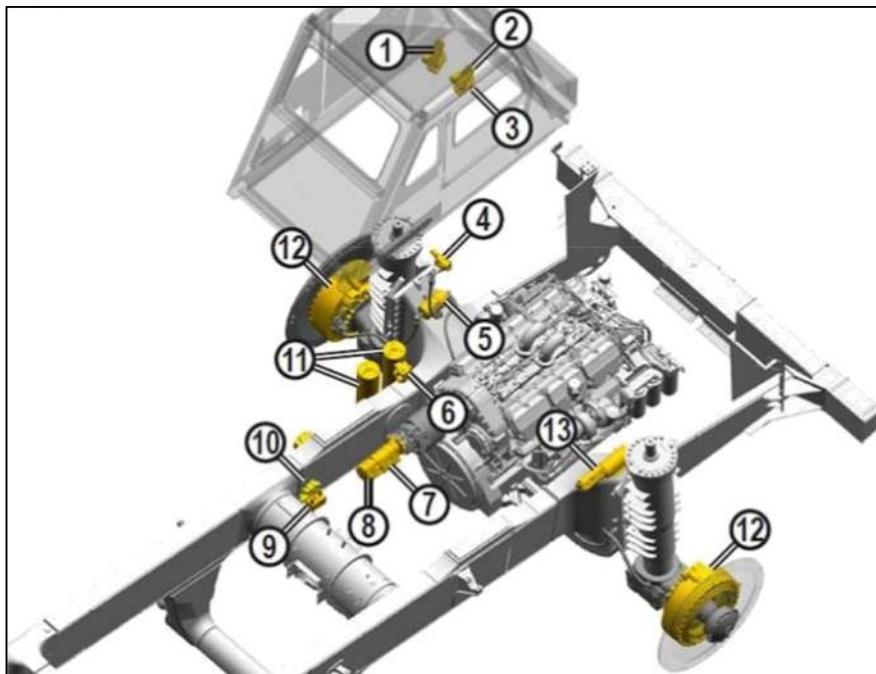


TRAINING CENTER  
PT.CAKRAWALA DINAMIKA ENERGI

# Brake System

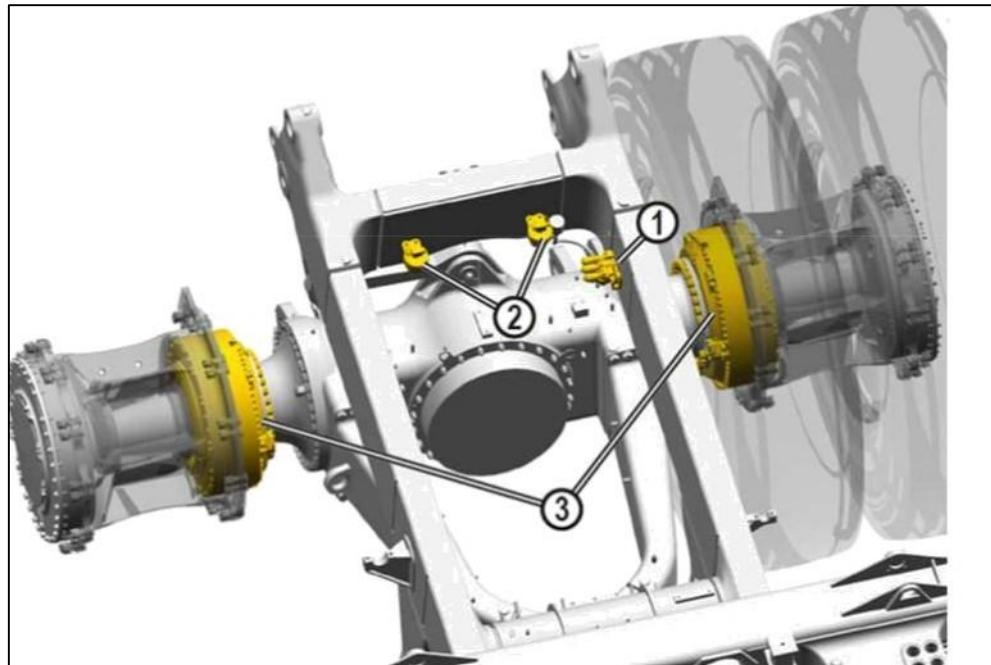
- Pendahuluan

- ▶ Secondary brake pedal (1)
- ▶ Service brake pedal (2)
- ▶ Service brake valve (3)
- ▶ Front brake solenoid (4)
- ▶ Front brake slack adjuster (5) (hanya oil cooled front brakE)
- ▶ Accumulator charging valve (6)
- ▶ Brake cooling pump (7) (hanya oil cooled front brake)
- ▶ Brake charge pump (8)
- ▶ Towing valve (9)
- ▶ Secondary brake/purge solenoid valve (10)
- ▶ Brake accumulator (11)
- ▶ Front brake (12)
- ▶ Brake retract pump (13)



# Brake System

- Komponen komponen brake svstem — rear brake

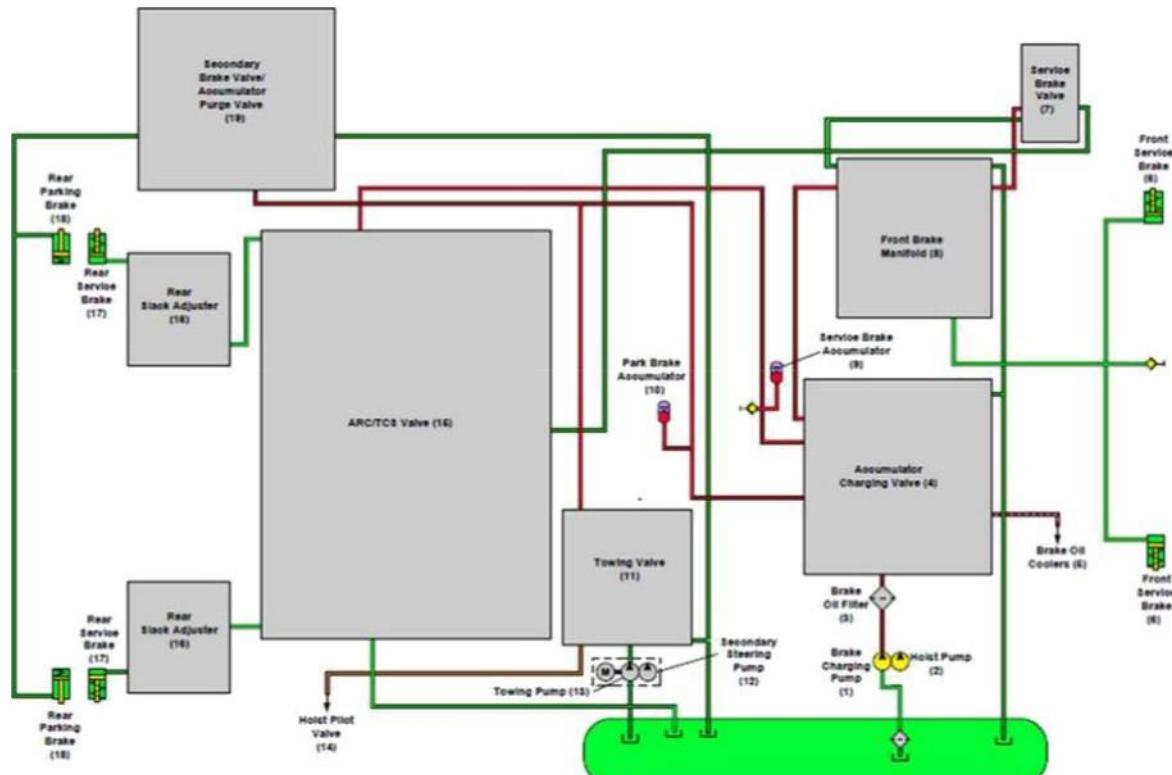


- ARC/TCS valve (1)
- Rear brake slack adjuster (2)
- Rear brake (3)

# Brake System

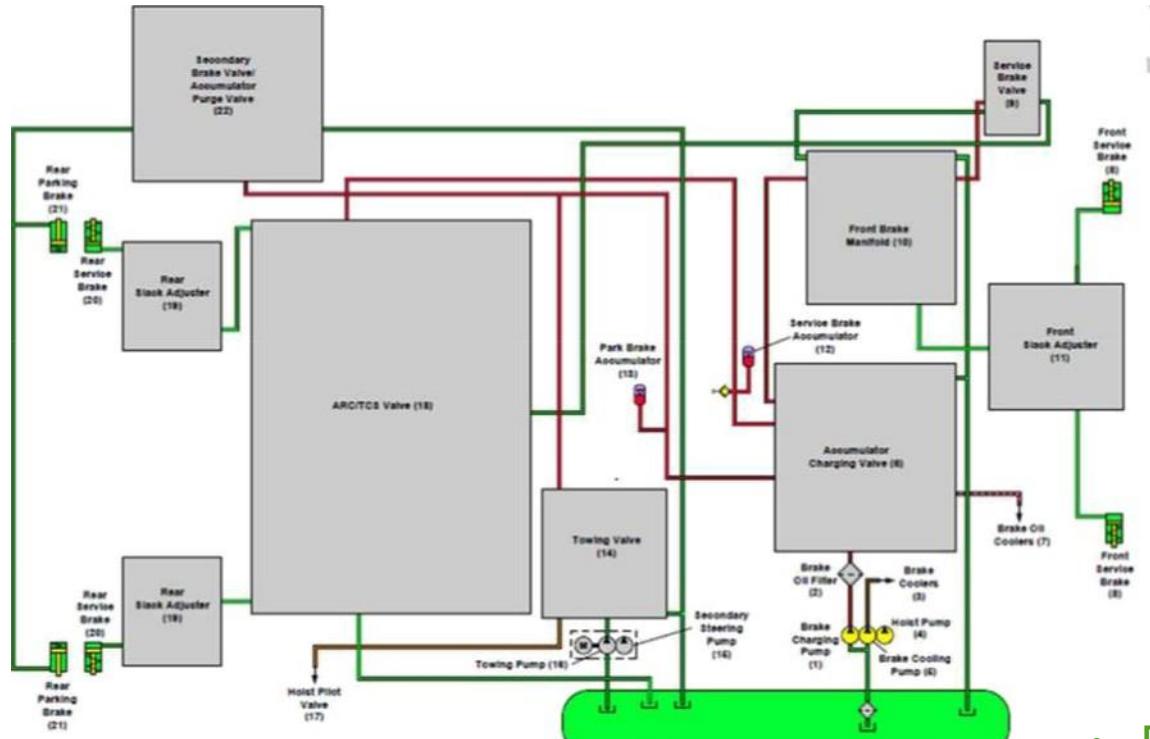
## BRAKE HYDRAULIC SYSTEM

FRONT PAVES - CALIPER AND DISC



- Brake charging pump (1)
- Brake oil filter (3)
- Accumulator charging valve (4)
- Service Brake accumulator (9)
- Parking brake accumulator (10)
- ARC/TCS valve (14)
- Front brake manifold (8)
- Secondary brake valve/accumulator purge valve (19)
- Towing valve (11)
- Service brake valve (7)
- Brake oil cooler (5)
- Rear service brake (17)
- Front service brake (6)
- Rear slack adjuster (16)
- Rear parking brake (18)
- Towing pump (13)
- Hoist pilot valve (14)

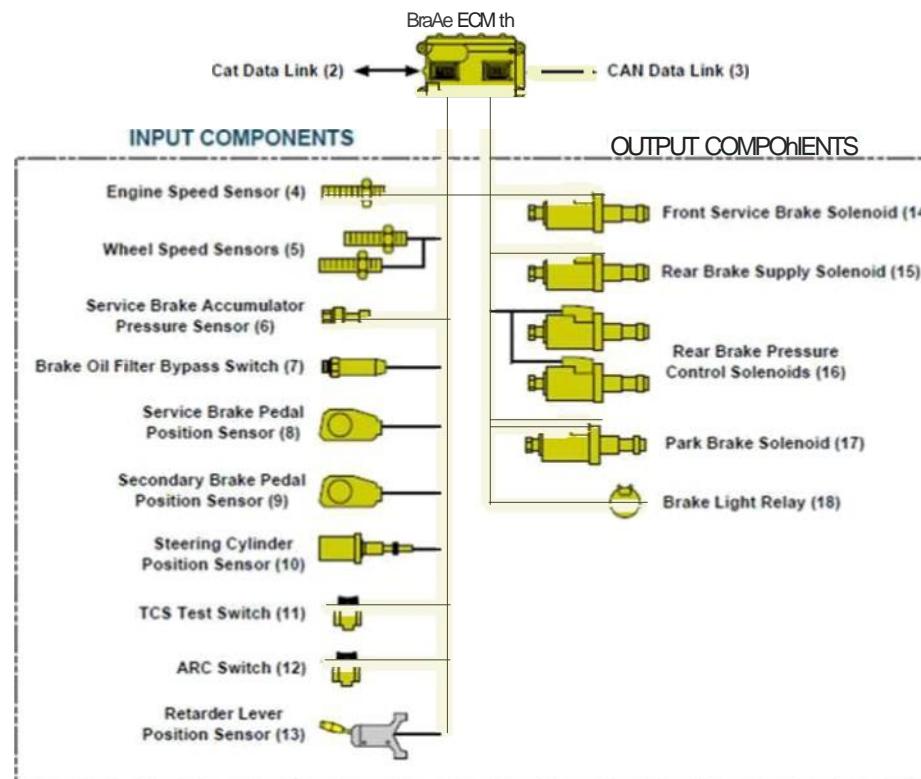
# Brake System



- Front slack adjuster (11)
- Brake cooling pump (5)

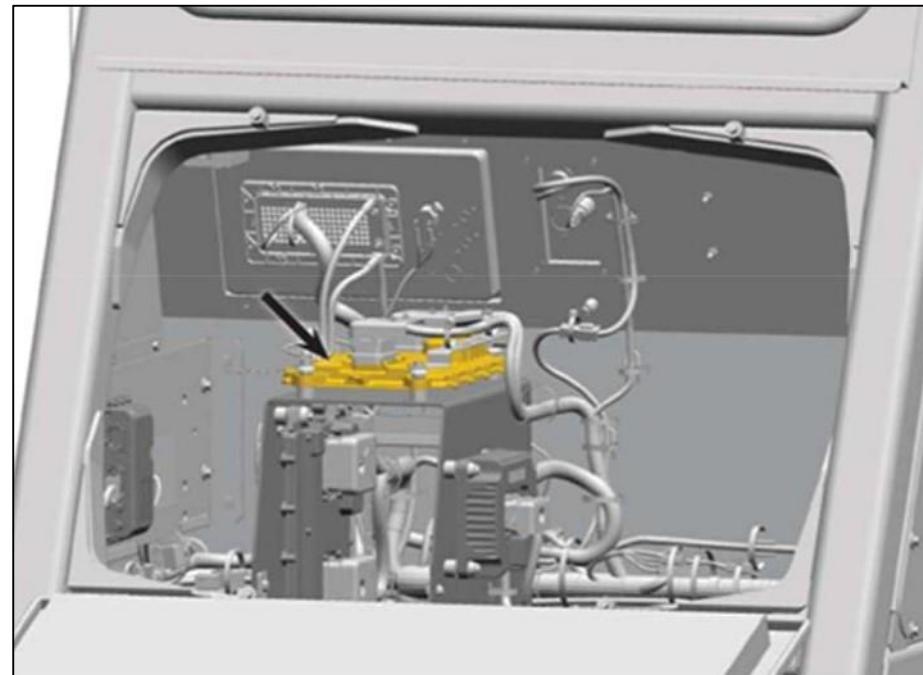
# Brake System

## 777E BRAKE ELECTRONIC CONTROL SYSTEM



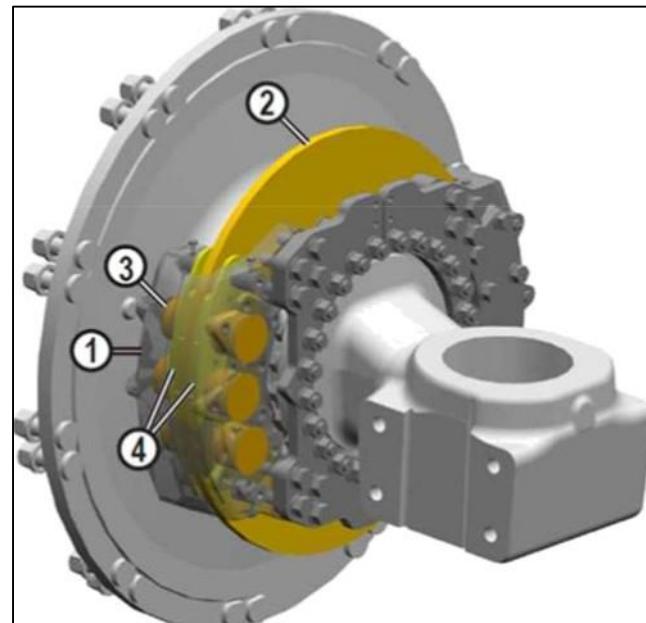
# Brake System

- Brake ECM



# Brake System

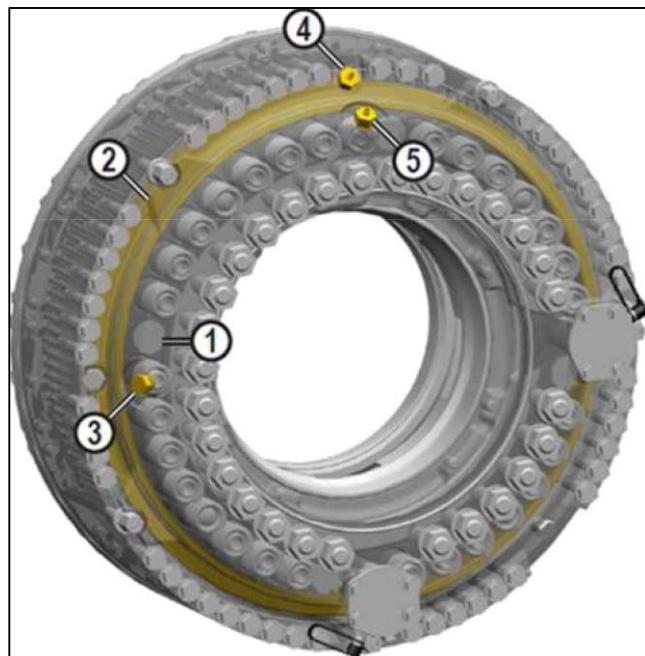
- Front brake — disc dan caliper design



- Brake caliper (1)
- Brake disc (2)
- Brake piston (3)
- Brake pads (4)

# Brake System

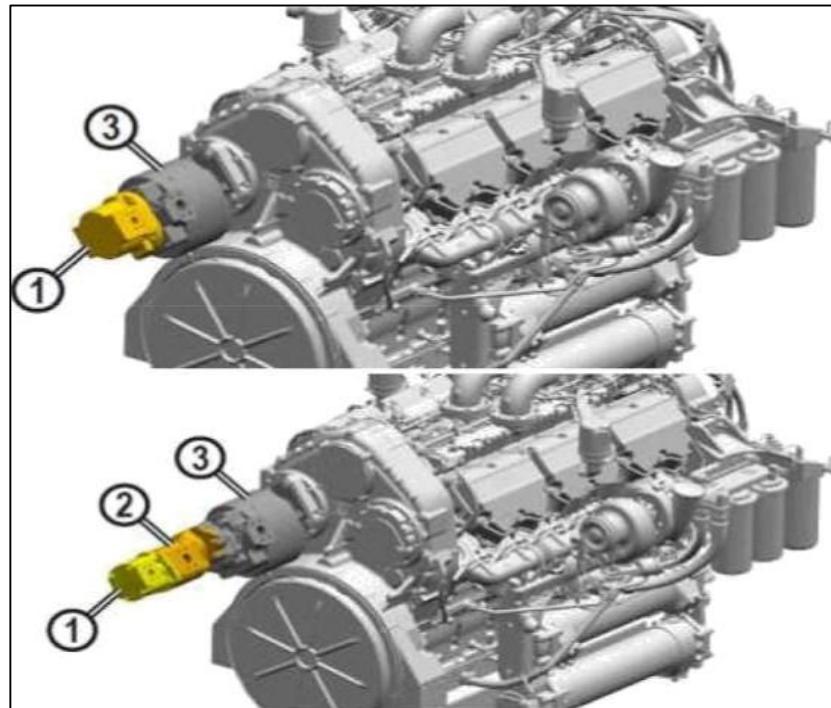
- Komponen-komponen oil cooled brake assembly



- Piston kecil (1)
- Piston Besar (2)
- brake indiator (3)
- service brake bleed pot (4)
- parking brake bleed port (5)

# Brake System

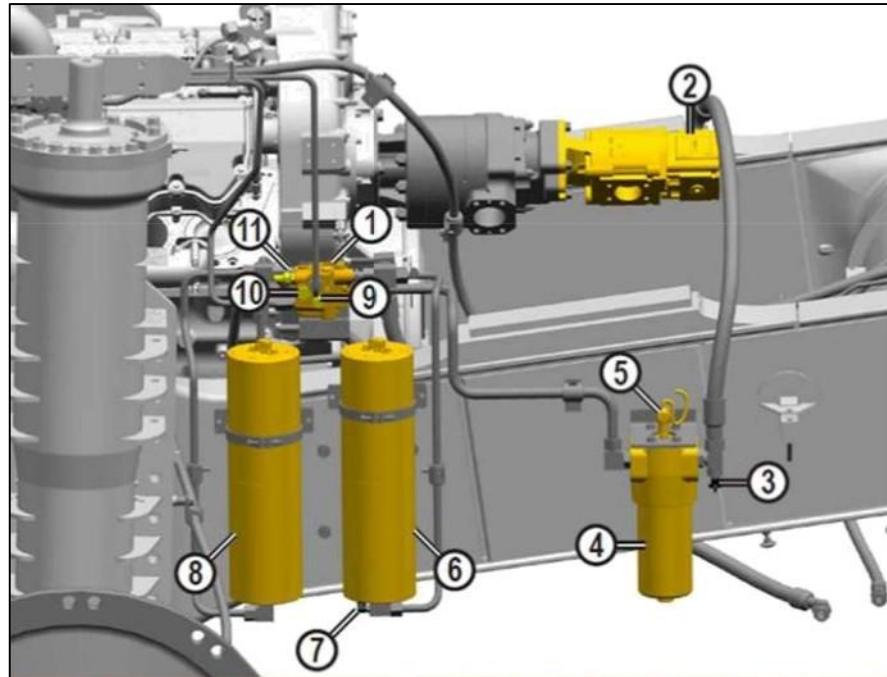
- Brake hoist pump



- Charger pump (1)
- Brake cooling pump (2)
- Hoist pump (3)

# Brake System

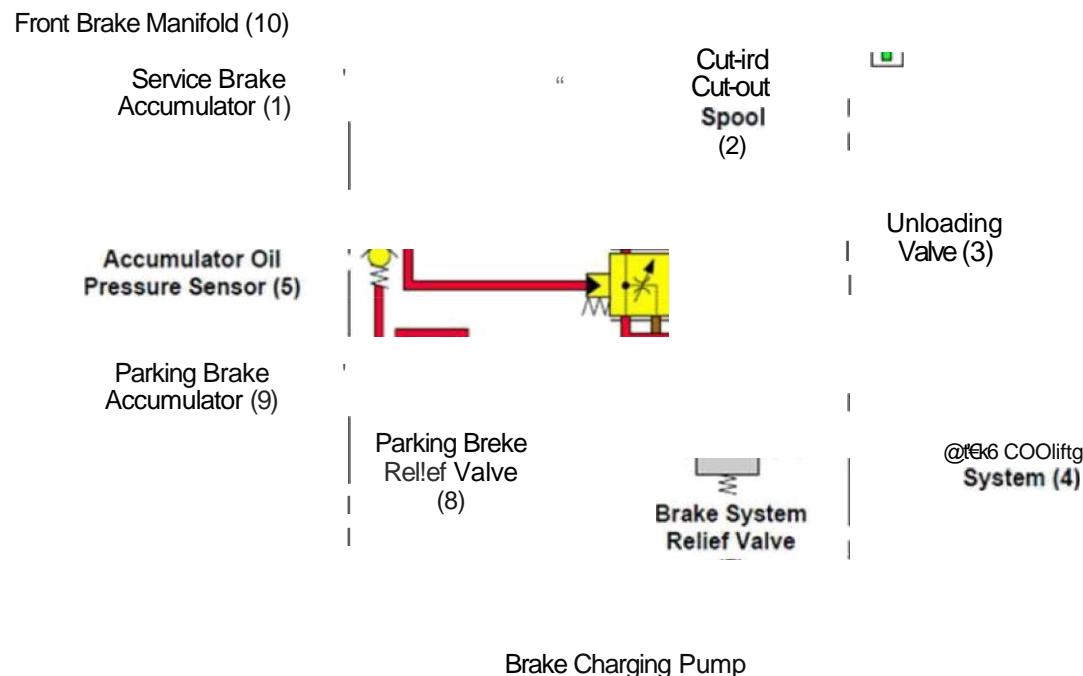
- Komponen-komponen brake system — sisi kiri frame



- Accumulator charging valve (1)
- Pressure sensor (11)
- Service brake relief valve (10)
- Secondary/parking brake relief valve (9)
- Brake system oil filter (4)
- Filter bypass switch (5)
- Port (3)
- Brake charging pump (2)
- Service brake accumulator (6)
- Parking brake accumulator (8)
- Pressure pot (7)

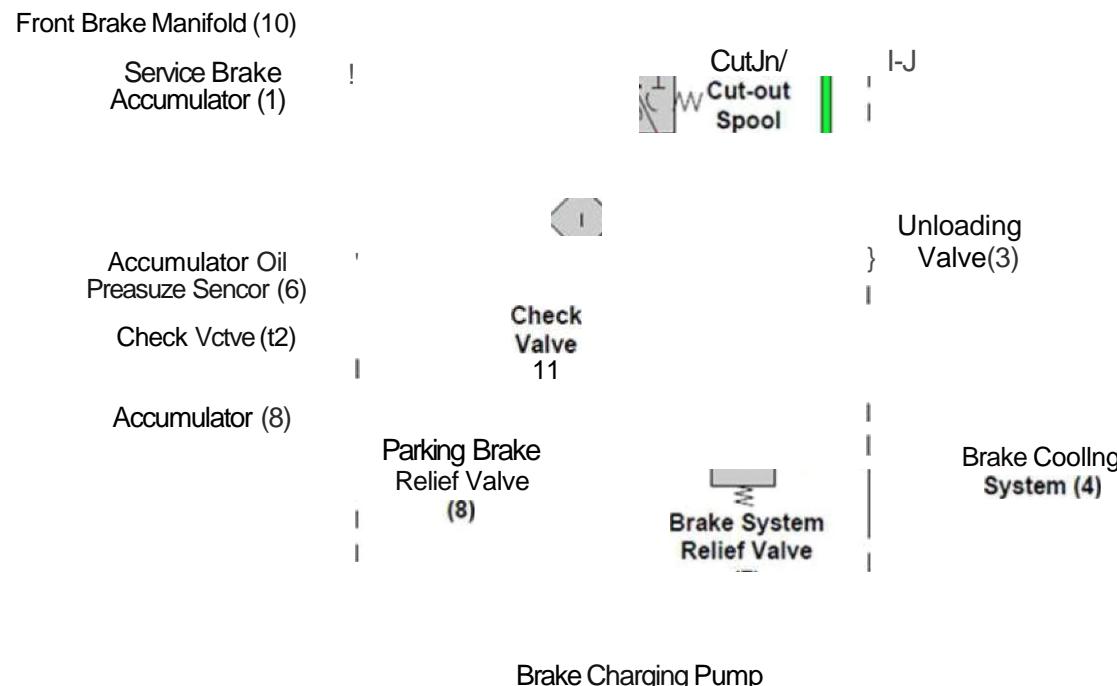
# Brake System

## ACCUMULATOR CHARGING VALVE CUT-IN



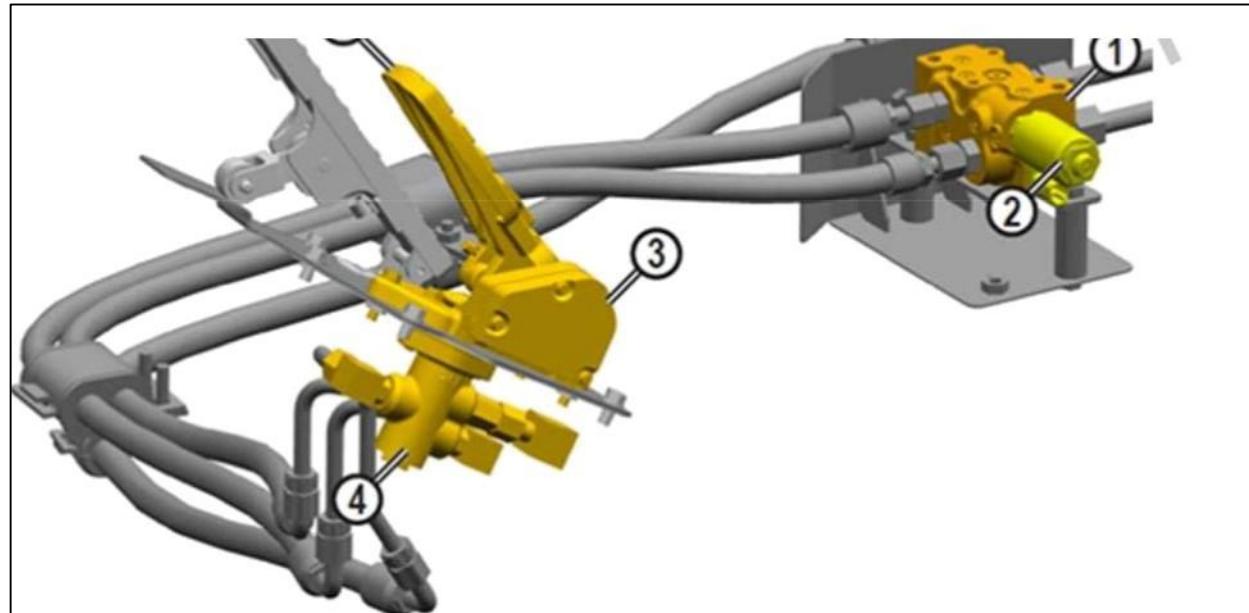
# Brake System

## ACCUMULATOR CHARGING VALVE CUT-OUT



# Brake System

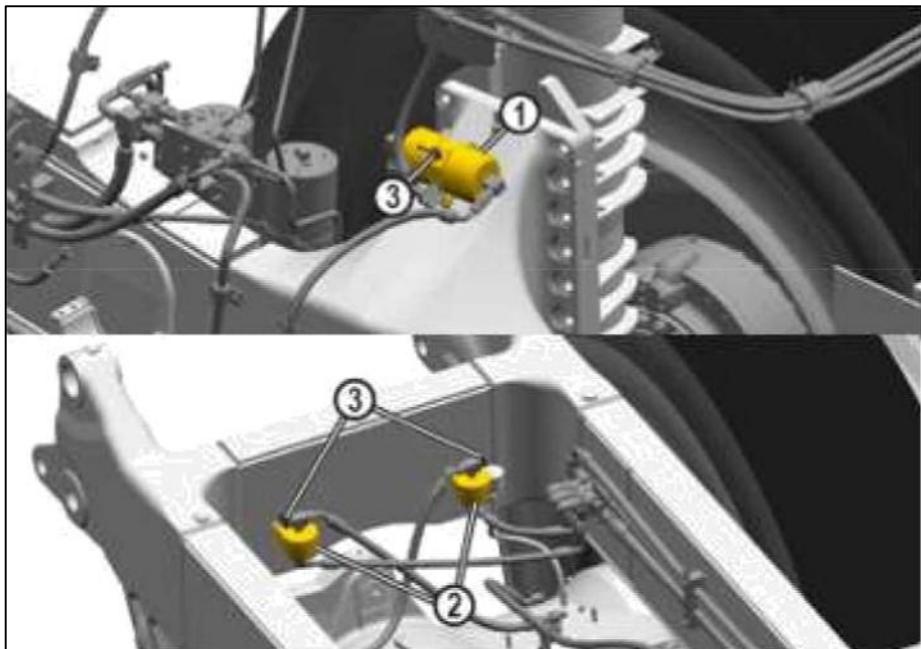
- Komponen-komponen brake system — cabin dan sisi kiri atas frame



- Fronbtrake manifold (1)
- Front brake service brake solenoid (2)
- service brake pedal position sensor(3)
- Service brake valve (4)
- Service brake pedal (5)

# Brake System

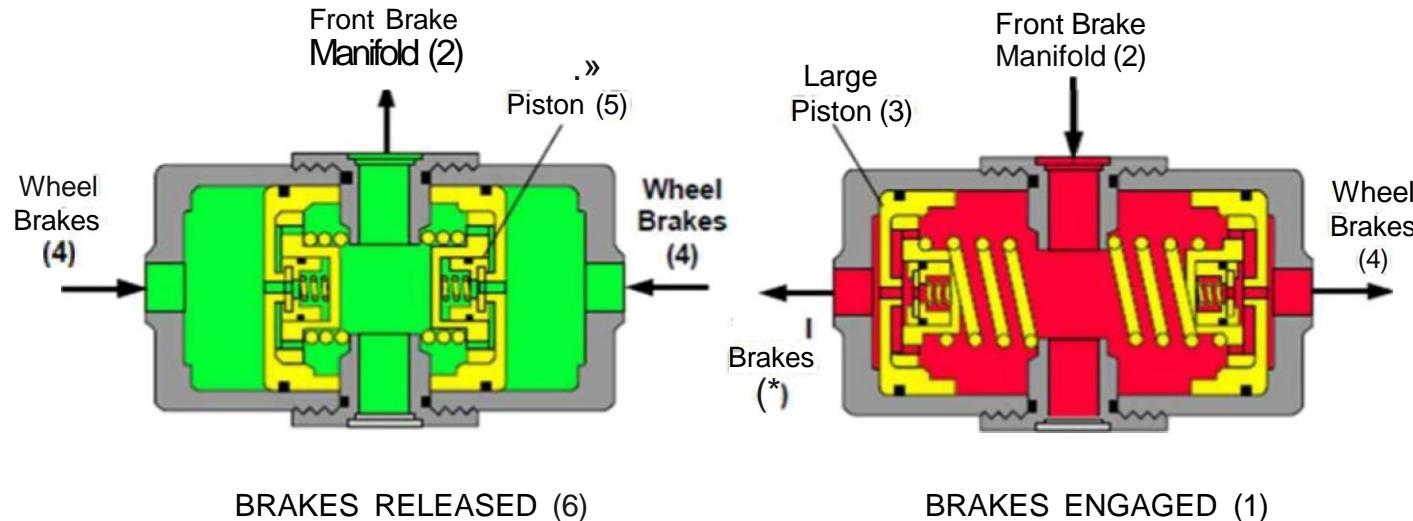
- Slack Adjuster



- rear brake slack adjuster (2)
- Pont brake slack adjuster (1)
- pressure port (3)

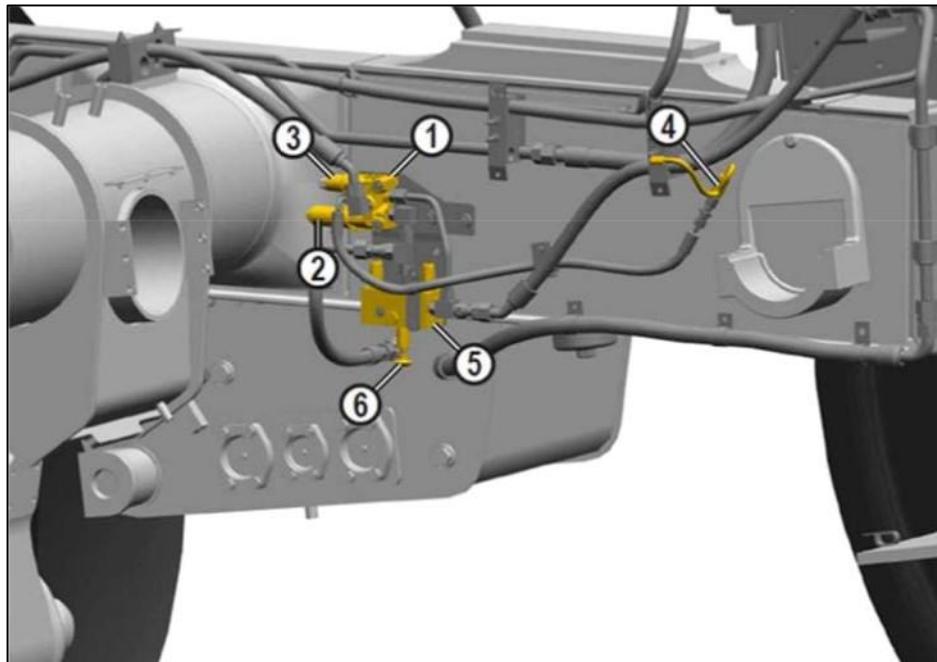
# Brake System

## FRONT BRAKE SLACK ADJUSTER



# Brake System

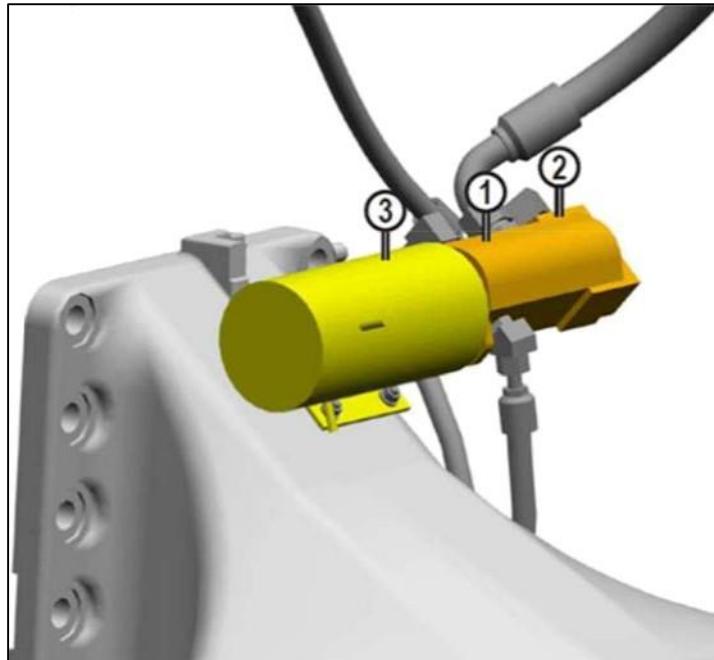
- Komponen-komponen brake system — disisi dalam frame rail kiri



- Secondary brake/purge solenoid valve (1)
- Parking brake solenoid valve (2)
- Purging solenoid valve (3)
- Secondary brake pressure switch (4)
- Towing valve (5)
- Knob (6)

# Brake System

- Komponen-komponen brake system — front frame crossmember



- Brake retract pump
- Secondary second pump
- Motor

# Brake System

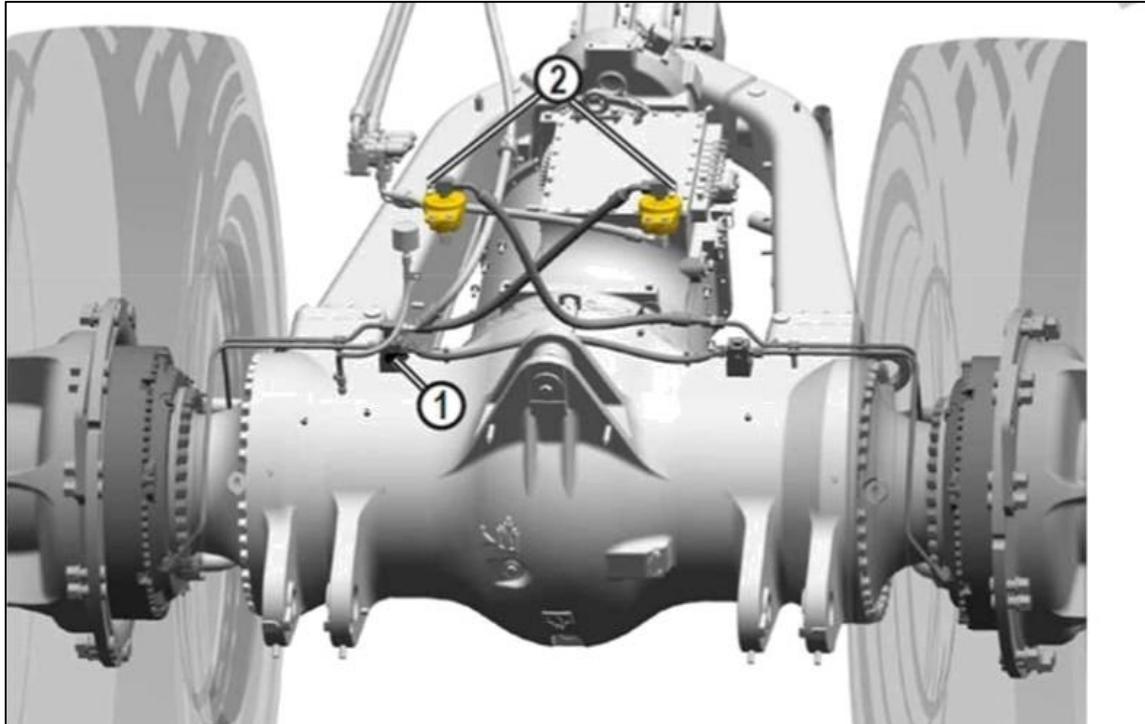
- Secondary brake pedal



- Secondary brake pedal positions sensor (1)
- Secondary brake pedal (2)

# Brake System

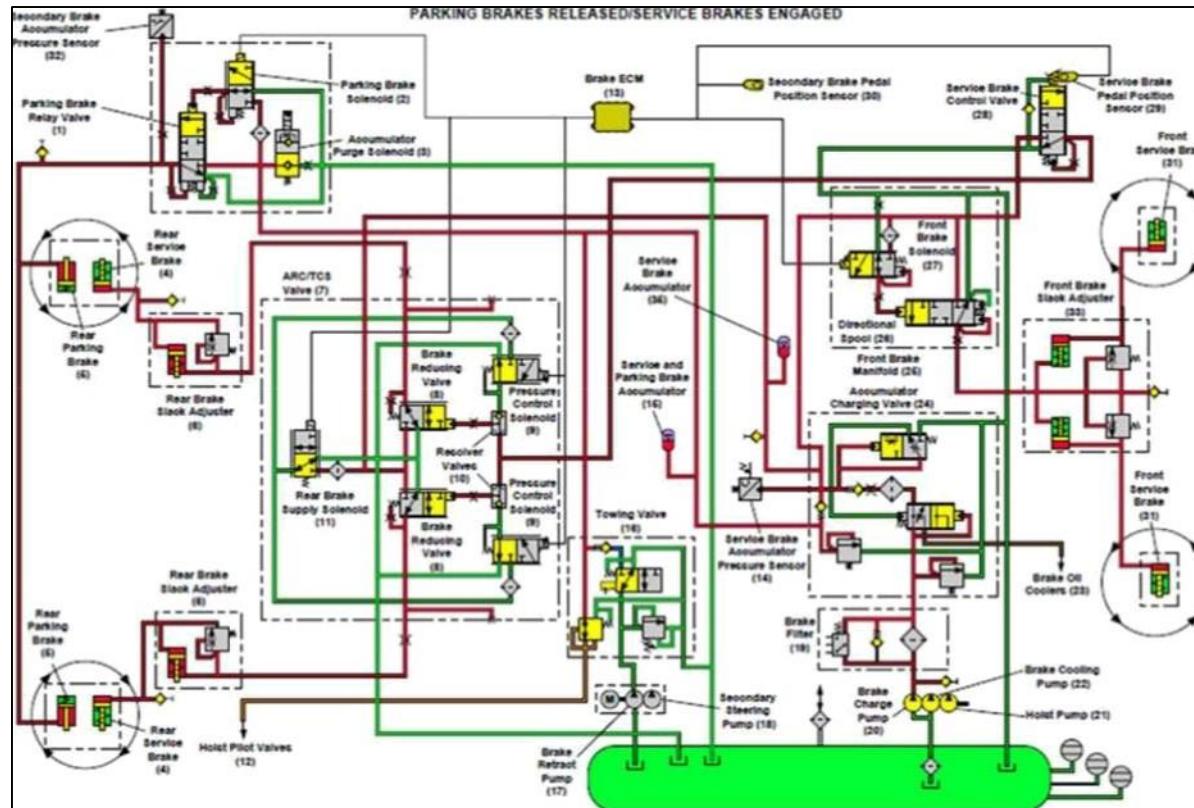
- Brake pressure pot



- Parking brake pressure port (1)
- Service brake pressure pot (2)

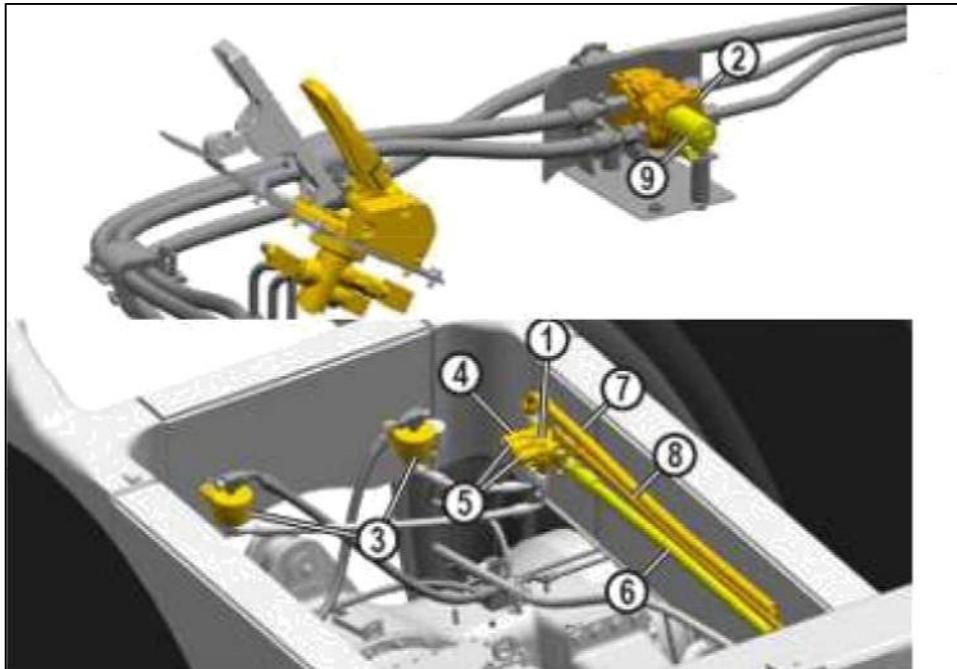
# Brake System

## BRAKE HYDRAULIC SYSTEM



# Retarding Dan Traction Control System

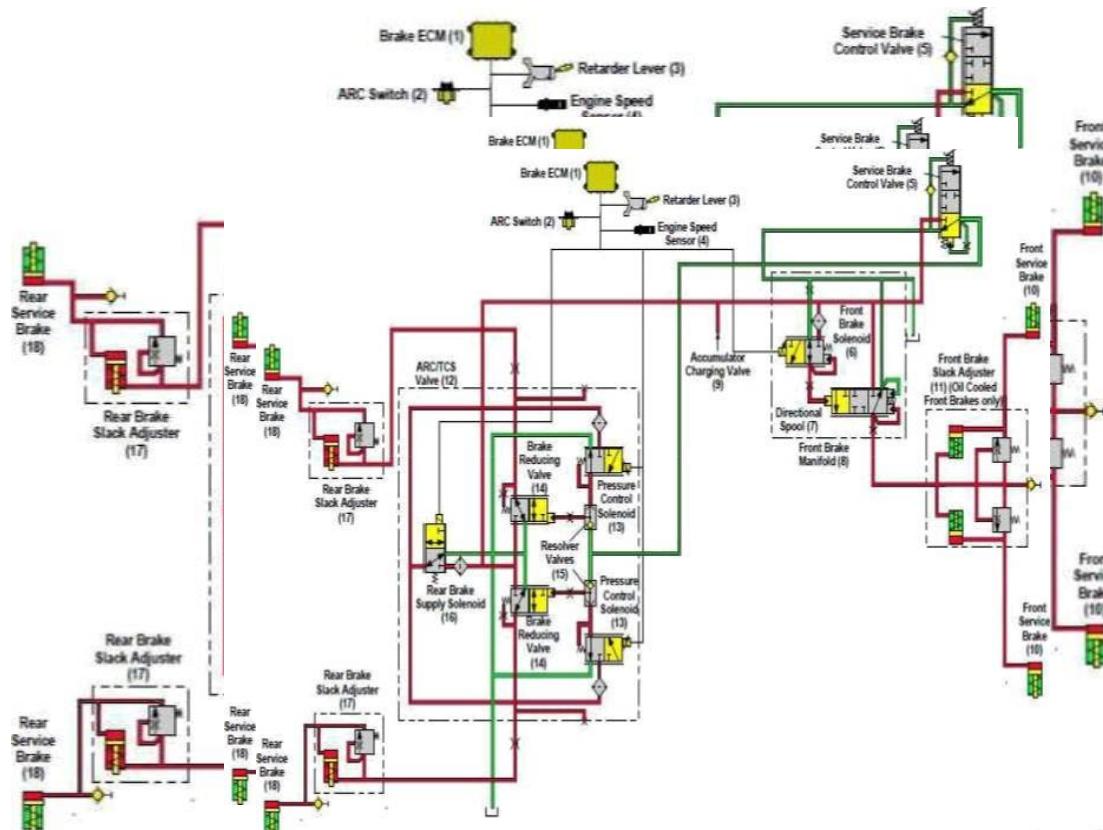
- Komponen Retarding dan TSC



- ARC /TCS valve (1)
- Front brake manifold (2)
- Rear brake adjuster (3)
- Rear brake supply solenoid (4)
- Pressure control solenoid (5)
- ARCPKS valve melalui hose (6)
- Return hose (7)
- Hose (8)
- Front brake solenoid (9)

# Retarding Dan Traction Control System

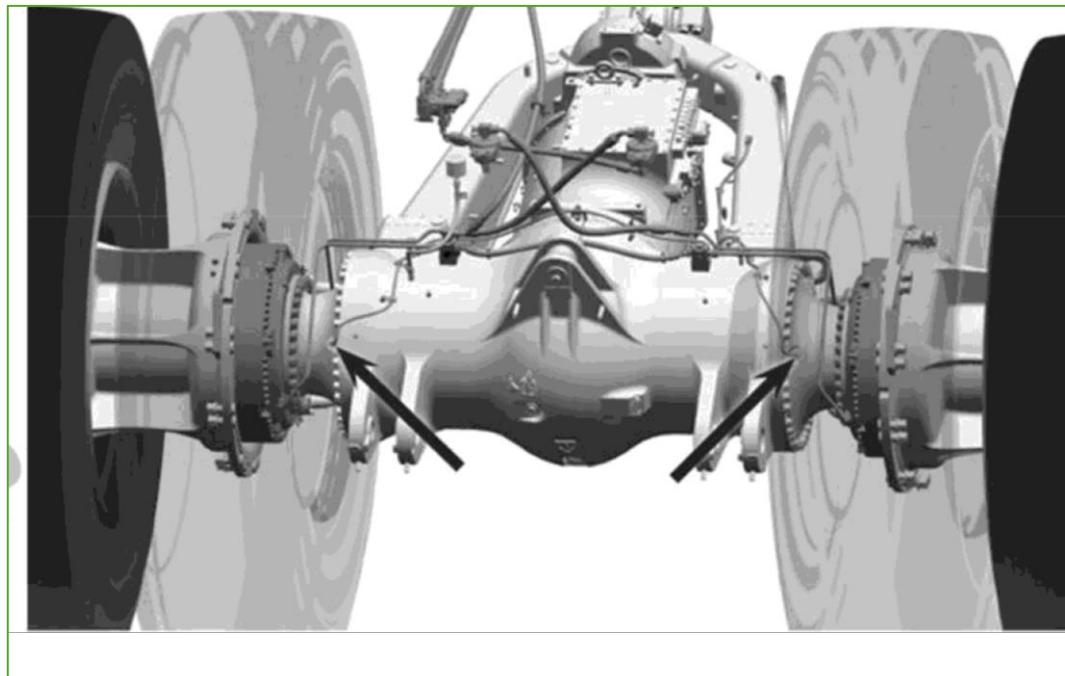
## BRAKE HYDRAULIC SYSTEM



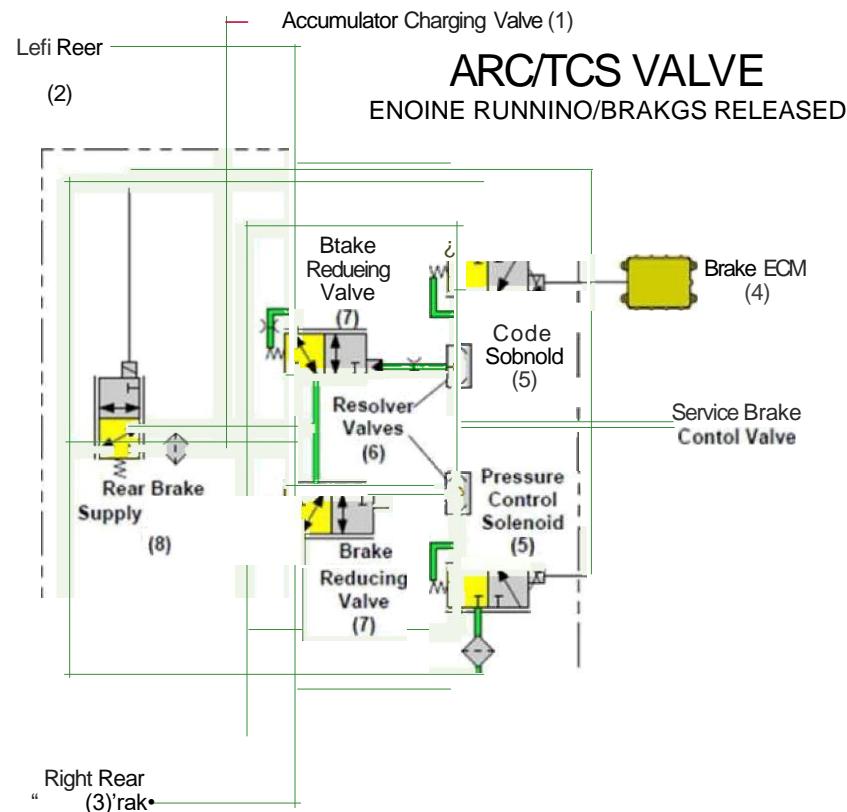
# Retarding Dan Traction Control System



- Wheel speed sensor

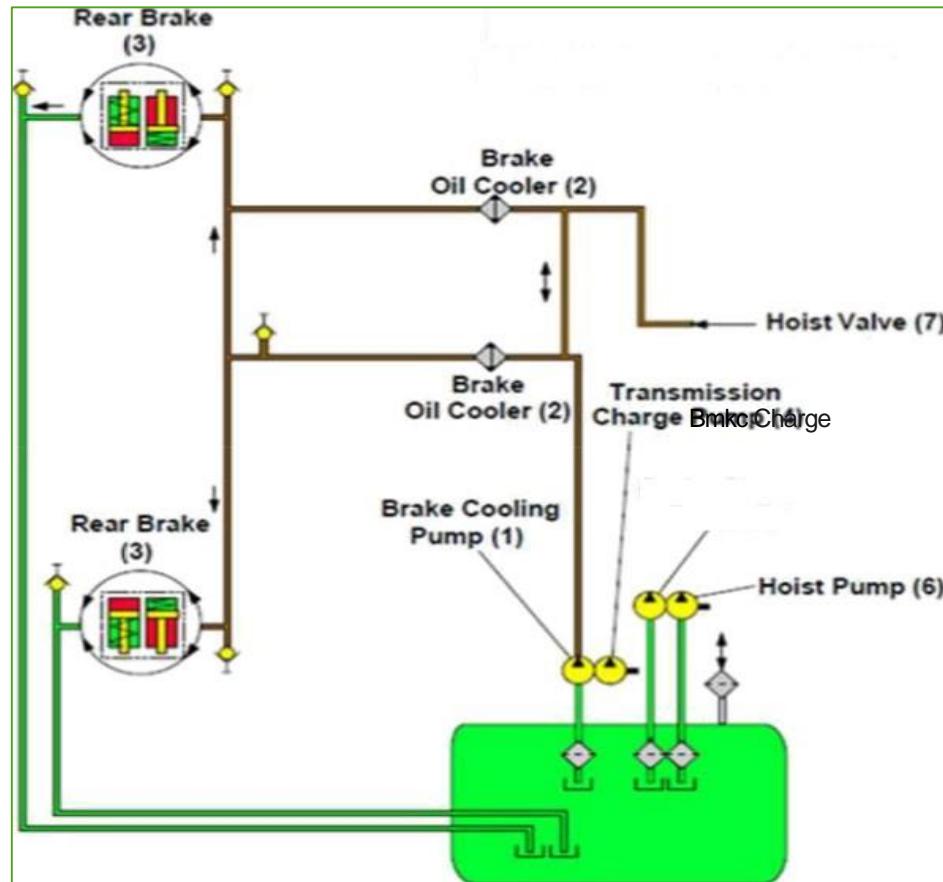


# Retarding Dan Traction Control System



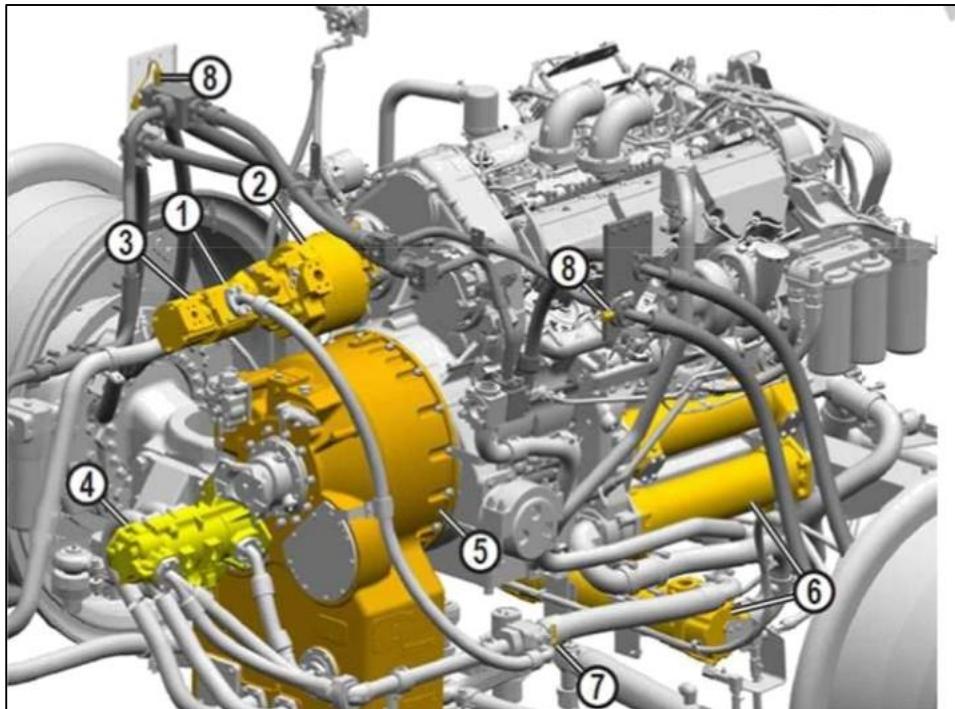
# Brake Cooling System

# **BRAKE COOLING SYSTEM DISC AND CALIPER FRONT BRAKES**



# Brake Cooling System

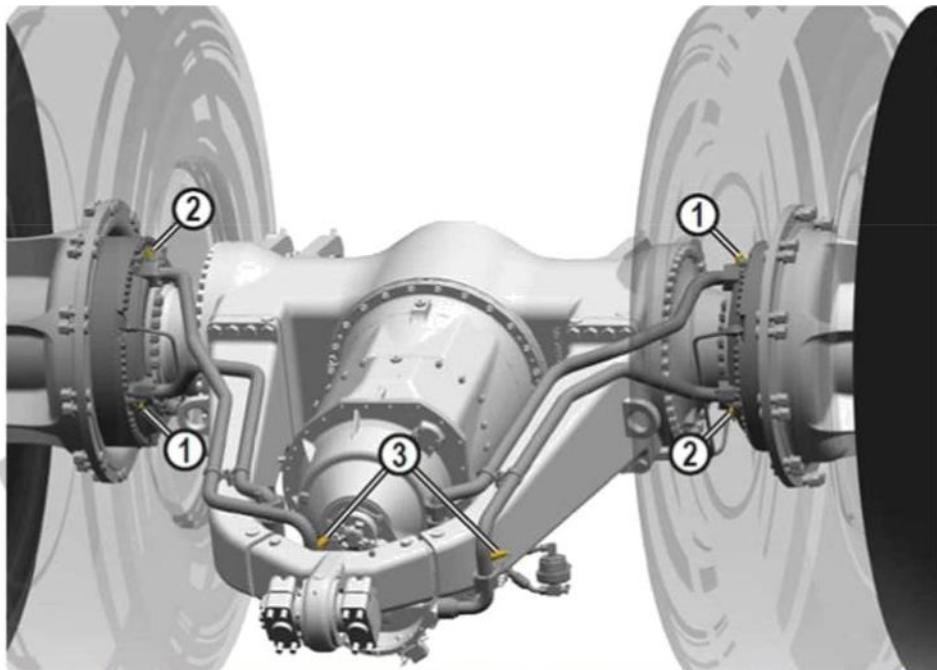
- Komponen-komponen brake cooling system



- Brake cooling pump (1)
- Hoist pump (2)
- Brake charging pump (3)
- standard brake cooling pump (4)
- Torque converter housing (5).
- Brake oil cooler (6).
- Test port (7)
- Font brake oil temperature sensor(8)

# Brake Cooling System

- Komponen-komponen brake cooling system



- Inlet line test tube (1)
- Outlet line test part (2)
- Rear brake oil temperature sensor (3)



TRIMO  
TRAINING CENTER  
+62 852-2771-1087  
[CDE.TRIMO@YAHOO.COM](mailto:CDE.TRIMO@YAHOO.COM)

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