

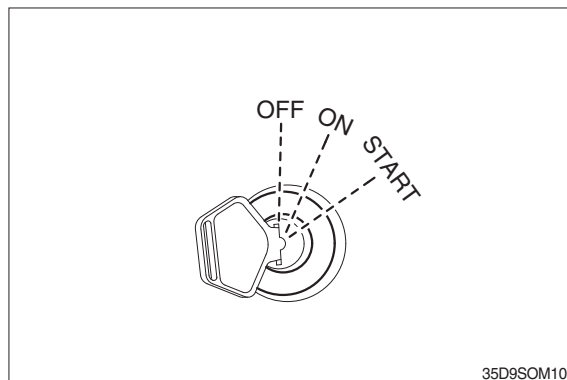
## 10. TESTING AND ADJUSTING

### 1. ENGINE SYSTEM

#### 1) EASE OF STARTING, NOISE

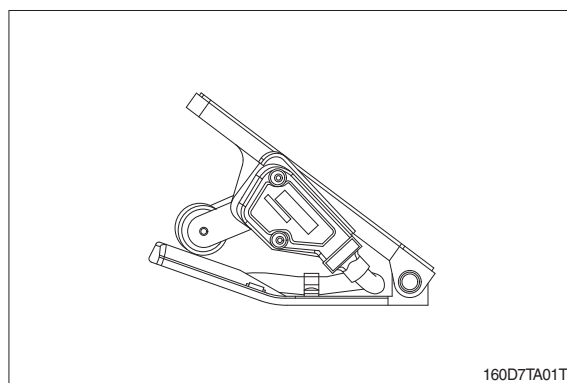
- (1) Set gear shift lever at N, and pull parking brake.
- (2) Turn start switch ON.
- (3) When heater signal lamp goes out, turn key to START, and start engine.
- (4) When engine starts, check if it starts smoothly, and if it makes any abnormal noise.

※ Refer to page 3-38.



#### 2) IDLING

- (1) After warming up engine, run at idling.
- (2) Check that engine maintains steady, smooth rotation without gasping, abnormal noise, abnormal explosions, or irregular vibration.
- (3) Check that idling speed is within specified range.
- (4) Idle rpm : SEE 8. SPECIFICATION

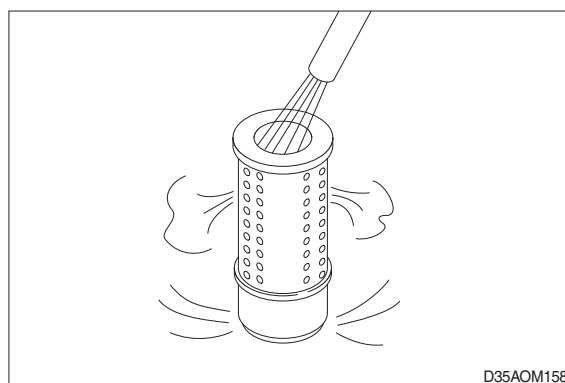


### 3) WHEN ACCELERATOR PEDAL IS DEPRESSED

- (1) Check that accelerator pedal does not catch when depressed.
- (2) Check that engine speed increases in accordance with amount pedal is depressed.
- (3) When doing this, check that engine speed changes without gasping, abnormal noise, abnormal explosions, or irregular vibration.
- (4) Check that exhaust gas is colorless when the engine is idling, and a thin black color when accelerator pedal is depressed.
- (5) Set height of stopper bolt according to following table, then adjust with accelerator rod on trucks and stopper bolt so that engine speed is within specified range when accelerator pedal is fully depressed.
- (6) Max speed : SEE 8. SPECIFICATION

### 4) AIR CLEANER ELEMENT



- (1) Blow dry compressed air (max 7 kgf/cm<sup>2</sup>, 7 bar, 100 psi) from inside along pleats. Next blow air from outside along pleats, then blow from inside again.
  - (2) Replace element if it is dirty, clogged or damaged.
- ※ **Always keep clean condition for the air cleaner element so that it can avoid from increasing in harmful contents of the exhaust emission and black smoke.**

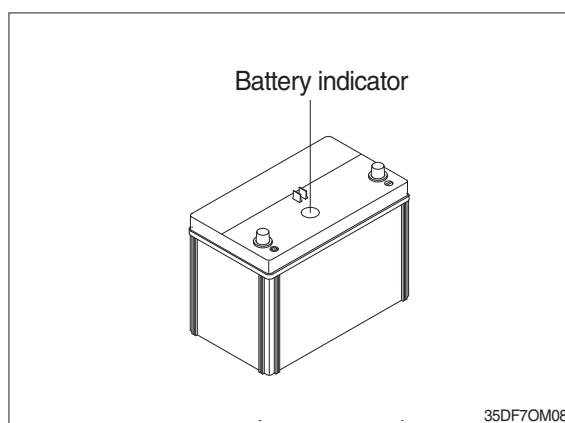


### 5) BATTERY

Check electrolyte color.

Adding and charging distilled water of battery shall be performed by the following table of battery indicator.

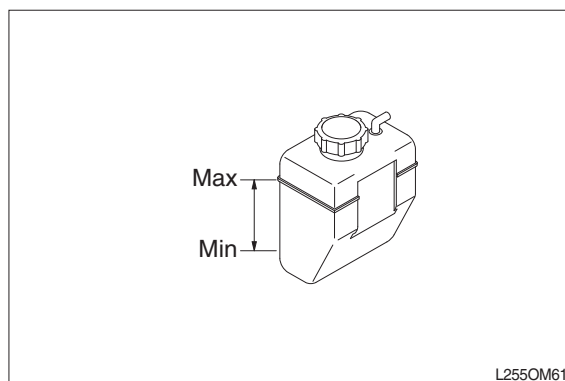
Battery condition	Mark	Color
Normal		Green
Insufficient distilled water		White



### 6) COOLANT

Check coolant level. If the cooling water in the radiator sub-tank is not within the normal range, add water to the MAX line.

- ※ **If antifreeze is being used, pay careful attention to the ratio of antifreeze and water when adding coolant.**
- ※ **Check the coolant level all the times prior to daily initial operating of the engine.**

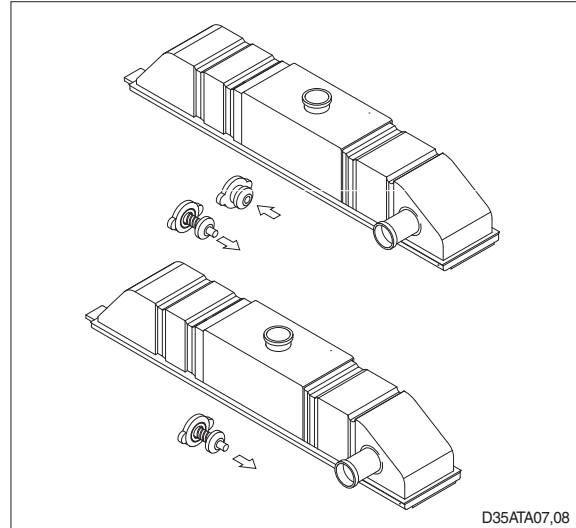


## 7) RADIATOR CAP

- (1) Push pressure regulator spring with finger and check that tension is correct.
- (2) Pull negative pressure valve, and check that it is closed when released.
- (3) If packing is damaged, replace whole radiator cap assembly.

**⚠ While the coolant in the radiator is retained hot temperature, do not open the radiator cap.**

**It will gush out the hot water and someone might get scalded or severe injured.**



## 8) FUEL FILTER

- (1) The fuel filter element cannot be inspected from the outside, so replace it periodically.  
(Refer to 7.PLANNED MAINTENANCE AND LUBRICATION)
- (2) Always use HYUNDAI Forklift genuine parts when replacing the element.
- (3) After replacing the element, run the engine and check for oil leakage from the filter mount.

## 9) ENGINE OIL

- (1) Check oil level with dipstick and add oil if necessary.
- (2) Check oil for discoloration or deterioration. Change oil if discolored or deteriorated.
- (3) Engine oil quantity : SEE 8.SPECIFICATION

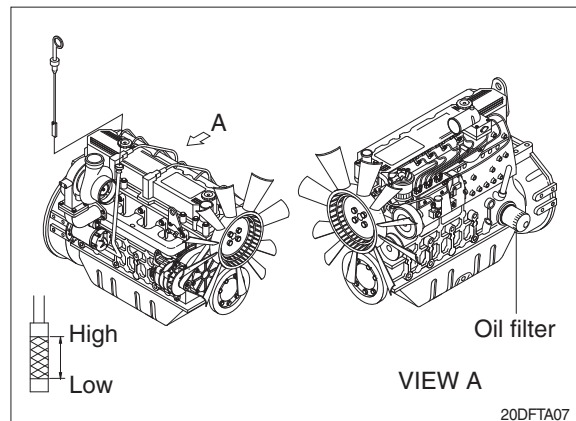
## 10)ENGINE OIL FILTER

The condition of the oil filter element cannot be inspected from the outside so replace the engine oil filter periodically. Refer to 7. PLANNED MAINTENANCE AND LUBRICATION.

Use a filter wrench and remove the whole cartridge assembly.

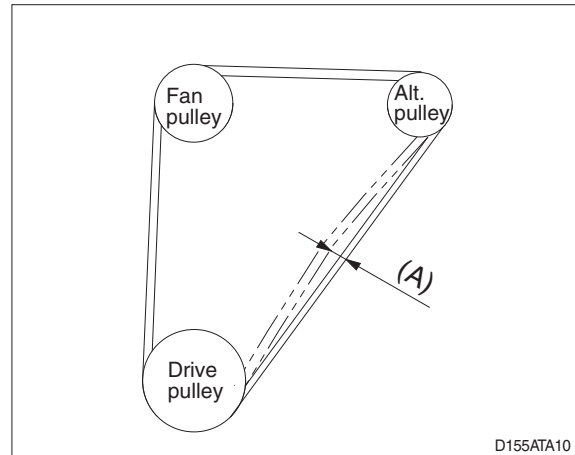
**⚠ If a spilt oil on the engine is left as it is after replacing the engine oil filter, there is dangerous material for a fire.**

**Make sure that the spilt oil is wiped thoroughly away.**



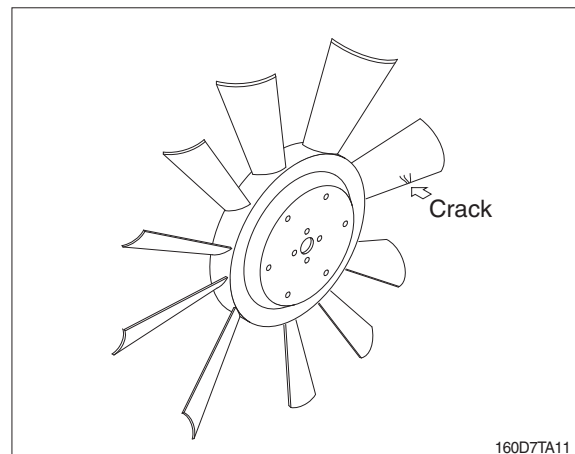
## 11) FAN BELT

- (1) Check that fan belt is not damaged.
  - (2) Check inside of belt also. If bottom of pulley groove is shining, belt will slip so replace.
  - (3) Check deflection when fan belt is pushed with a finger pressure at a point midway between fan pulley and alternator pulley.
  - (4) If fan belt tension is not correct, loosen alternator mounting nut and bolt of adjustment bar. Move alternator to adjust belt tension.
- Fan belt deflection : SEE 8.SPECIFICATION
  - ※ **Keep the fan belt free from oil and grease so that it can prevent the fan belt from slippage.**



## 12) FAN

Move fan backwards and forwards by hand to check for looseness.  
Tighten mounting bolt with a spanner.



## 2. DRIVE SYSTEM

### 1) GEAR SHIFT LEVER

#### (1) Neutral starting

Engine can be started only when the shifting lever is in neutral position.

#### (2) Shifting FWD/REV lever

##### ① Forward

Push the lever forward then forward solenoid valve operates and oil comes to forward clutch thus the truck will run forward.

##### ② Reverse

Pull the lever backward then reverse solenoid valve operates and oil comes to reverse clutch thus the truck will run backward.

### 2) OIL LEAKAGE

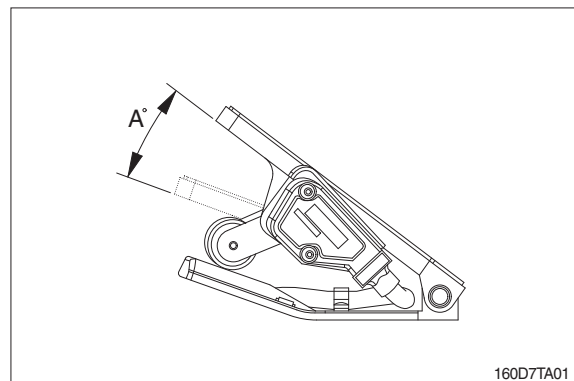
Check that there is no oil leakage from torque converter, transmission or control valve. If oil oozes out and forms drops, replace packing.

### 3) ADJUSTMENT OF PEDAL

#### (1) Electric accelerator pedal

Pedal operation range is "A°".

· Operation range (A°) :  $17.5 \pm 2$



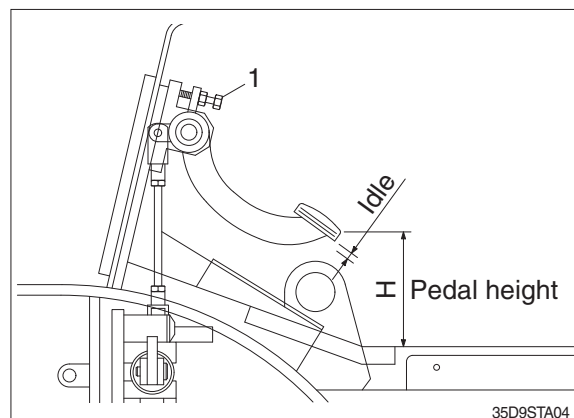
#### (2) Brake pedal

· Adjust stopper bolt (1) so that pedal height is "H".

· Adjust push rod of brake valve so that pedal play is idle stroke.

Unit : mm

Model	H	IDLE
35/40/45D-9S, 50D-9SA	$135 \pm 4$	2~4

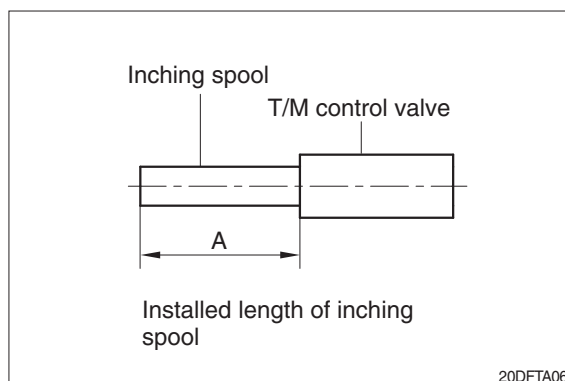
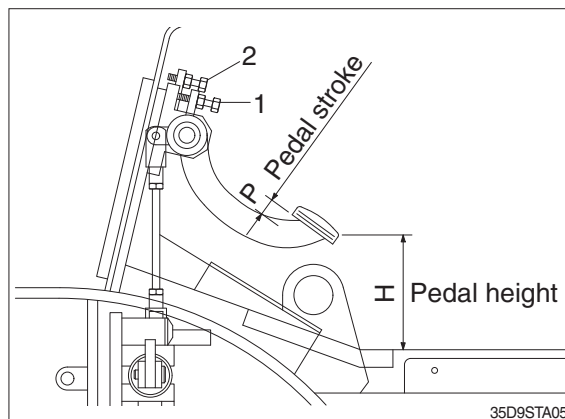


#### (4) Inching pedal

- Adjust stopper bolt (1) so that pedal height is "H".
- Adjust rod of inching cable so that length of inching spool is "A" when pedal height is "H".
- Adjust bolt (2) so that brake pedal interconnects with inching pedal at inching pedal stroke "P".

Unit : mm

Model	H	P	IDLE	A
35/40/45D-9S, 50D-9SA	135±4	16~24	2~4	33

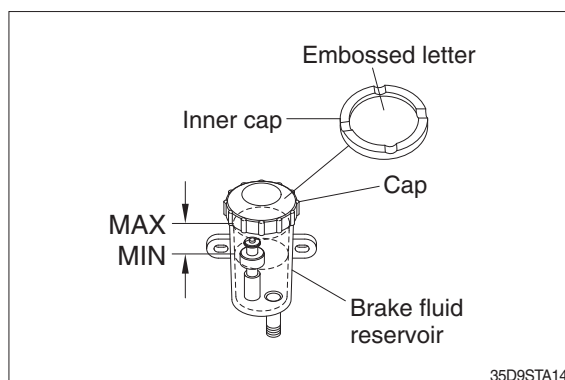


#### 4) CHECK OIL LEVEL

Stop the machine in a flat place and check the oil level with the dipstick.

##### (1) Brake reservoir

Check the brake reservoir, and add brake fluid, if necessary. The embossed letter facing up.



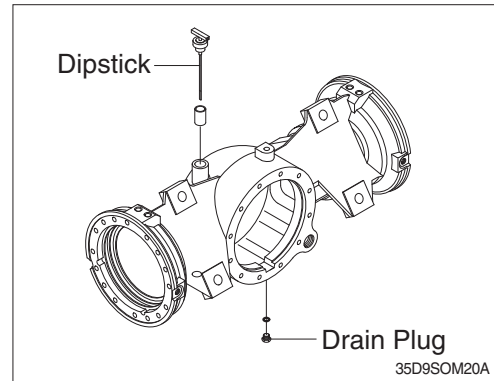
## (2) Differential case

Remove the dipstick at front face of the differential case. The oil should be leveled with the marking on the dipstick. If the oil level is too low, add oil through the dipstick hole at the top of the differential case.

**⚠ When filling the oil in the differential case, take to extreme care not to spill it on the floor.**

**It can cause to happen unexpected accidents such as personal injury due to slippage on the oil or fire.**

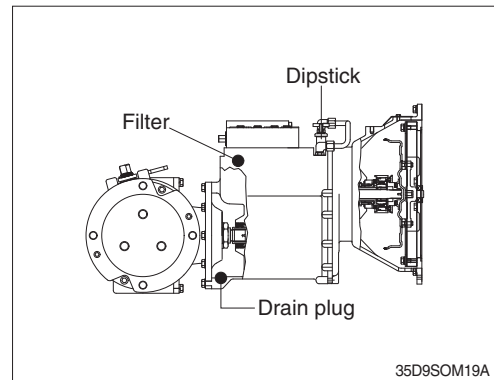
**If the oil is spilt on the floor, wipe it off immediately.**



## (3) TORQUE FLOW Transmission

Check the oil level with the oil gauge below the floor plate. If the oil level is too low, add oil through the oil gauge hole.

**※ Follow the same procedure as for the differential case when checking the oil level or adding oil to the clutch transmission case.**



### 3. TRAVEL SYSTEM

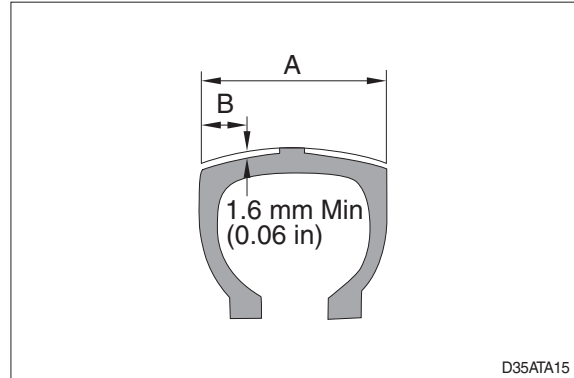
#### 1) TIRES

- (1) Check tire pressure using tire gauge : SEE 5-3 CHECK BEFORE STARTING ENGINE
- (2) Check visually for cracks and damage to tread and side wall. If crack or damage is serious, replace tire.

#### (3) Wear

Measure tread of pneumatic tires(tires with air). Depth of tread must be at least 1.6mm (0.06in) at point 1/4 across width of tread.  $A/B \div 4$ .

- (4) Check tire visually for uneven wear, stepped wear or any other abnormal wear. Check also for pieces stuck in tire.



#### 2) HUB NUTS

Use wrench to check for loose hub nuts.

Tighten any loose hub nuts to specified tightening torque : SEE 8.SPECIFICATION

#### 3) RIM SIDE RING

Check rim side ring for deformation or cracks. Check visually or use crack detection method.

- Rear rim connecting nut torque : SEE 8. SPECIFICATION

#### 4) STEERING AXLE

- (1) Push axle from one side or measure front to rear clearance with feeler gauge. Check that clearance is within 2 mm. If clearance is more than 2 mm, insert shim to reduce clearance to within 0.7 mm.
  - Mounting bolt torque : SEE 8.SPECIFICATION
- (2) Measure clearance between center pin and bushing. Check that clearance is within 0.5 mm (0.02 in). If clearance is more than 0.5 mm, replace the bushing.

#### 5) DRIVE AXLE

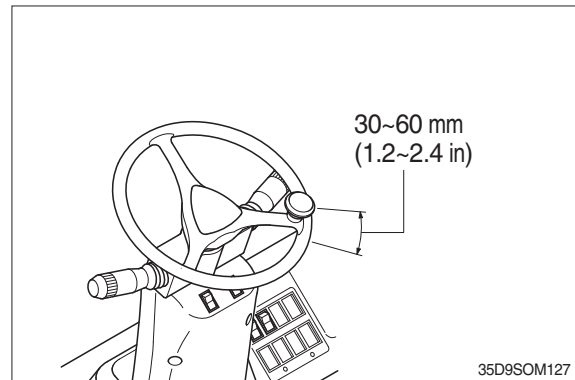
Check that there is no deformation or crack around mounting bolts of front axle and main frame and at welds. Check visually or use crack detection method.

Mounting bolt torque : SEE 8. SPECIFICATION

## 4. STEERING SYSTEM

### 1) STEERING WHEEL

Set rear wheels facing straight forward, then turn steering wheel to left and right. Measure range of steering wheel movement before rear wheel starts to move. Range should be 30~60 mm at rim of steering wheel. If play is too large, adjust at gearbox. Test steering wheel play with engine at idling.



### 2) KNUCKLE

Check knuckle visually or use crack detection method. If the knuckle is bent, the tire wear is uneven, so check tire wear.

### 3) STEERING AXLE

- (1) Put camber gauge in contact with hub and measure camber. If camber is not within  $1.5^{\circ}$ , rear axle is bent.
- (2) Ask assistant to drive machine at minimum turning radius.
- (3) Fit bar and a piece of chalk at outside edge of counterweight to mark line of turning radius.
- (4) If minimum turning radius is not within  $\pm 100$  mm ( $\pm 4$  in) of specified value, adjust turning angle stopper bolt.

## 5. ADJUSTMENT OF PARKING BRAKE LEVER

### 1. RATCHET TYPE PARKING LEVER

- 1) Put the lever to the brake released position.
- 2) Pull the parking lever up to the specified stroke which is respectively and the fix the adjust nut.
  - Operate range : 23°

