



Service Manual

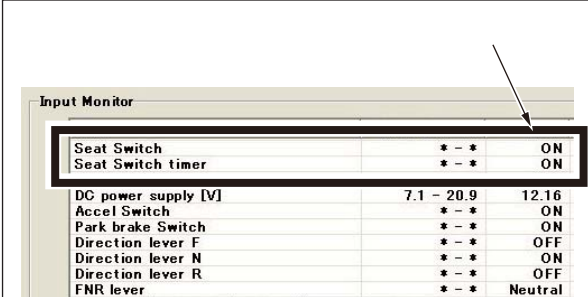
Chassis & Mast

MC/FC

FG10N	F25C-05001-up	FGE15N	F34-00001/19001-up
FG15N	F25C-55001-up	FGE18N	F34-40001/49001-up
FG15ZN	F34-52001-up	FGE20CN	F34-30001/39001-up
FG18N	F25C-75001-up	FGE20N	F17D-20001/38001-up
FG18ZN	F34-72001-up	FGE20ZN	F35-20001/38001-up
FG20CN	F34-22001-up	FGE25N	F17D-70001/88001-up
FG20N	F17D-10001-up	FGE25ZN	F35-70001/88001-up
FG20ZN	F35-10001-up	FGE30N	F13F-10001/20001-up
FG25N	F17D-60001-up	FGE35AN	F13F-80001/90001-up
FG25ZN	F35-60001-up		
FG30N	F13F-40001-up		
FG35AN	F13F-60001-up		
FD10N	F16D-04001-up		
FD15N	F16D-54001/64001-up		
FD18N	F16D-74001/84001-up		
FD20CN	F16D-24001/28001-up		
FD20N	F18C-20001/40001-up		
FD25N	F18C-70001/90001-up		
FD30N	F14E-10001/20001-up		
FD35AN	F14E-80001/90001-up		

7.2 Parking Brake Warning Buzzer/Lamp Checking Procedure

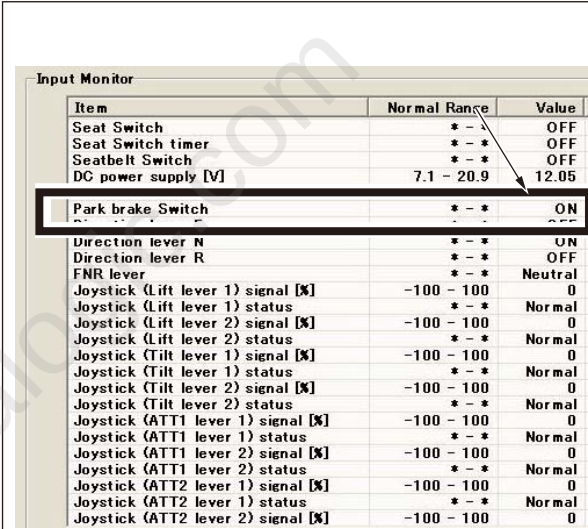
- (1) Connect the service tool to the VCM1-M controller.
- (2) Turn the key switch to the ON position and start the engine. (Leave the parking brake engaged.)
- (3) Display the input monitor screen of the service tool.
- (4) Sit on the operator seat and make sure that the seat switch and the seat switch timer are ON on the input monitor screen. (Fig. 4-1)



Input Monitor			
Seat Switch	* - *		ON
Seat Switch timer	* - *		ON
DC power supply [V]	7.1 - 20.9		12.16
Accel Switch	* - *		ON
Park brake Switch	* - *		ON
Direction lever F	* - *		OFF
Direction lever N	* - *		ON
Direction lever R	* - *		OFF
FNR lever	* - *		Neutral

Fig. 4-1 Input monitor screen

- (5) Make sure the parking brake switch turns ON, on the input monitor screen. (Fig. 4-2) Also check that the parking brake warning lamp glows on the instrument panel. (Fig. 4-3)
- (6) Release the parking brake and leave the operator seat.



Item	Normal Range	Value
Seat Switch	* - *	OFF
Seat Switch timer	* - *	OFF
Seatbelt Switch	* - *	OFF
DC power supply [V]	7.1 - 20.9	12.05
Park brake Switch	* - *	ON
Direction lever N	* - *	ON
Direction lever R	* - *	OFF
FNR lever	* - *	Neutral
Joystick (Lift lever 1) signal [%]	-100 - 100	0
Joystick (Lift lever 1) status	* - *	Normal
Joystick (Lift lever 2) signal [%]	-100 - 100	0
Joystick (Lift lever 2) status	* - *	Normal
Joystick (Tilt lever 1) signal [%]	-100 - 100	0
Joystick (Tilt lever 1) status	* - *	Normal
Joystick (Tilt lever 2) signal [%]	-100 - 100	0
Joystick (Tilt lever 2) status	* - *	Normal
Joystick (ATT1 lever 1) signal [%]	-100 - 100	0
Joystick (ATT1 lever 1) status	* - *	Normal
Joystick (ATT1 lever 2) signal [%]	-100 - 100	0
Joystick (ATT1 lever 2) status	* - *	Normal
Joystick (ATT2 lever 1) signal [%]	-100 - 100	0
Joystick (ATT2 lever 1) status	* - *	Normal
Joystick (ATT2 lever 2) signal [%]	-100 - 100	0

Fig. 4-2 Input monitor screen

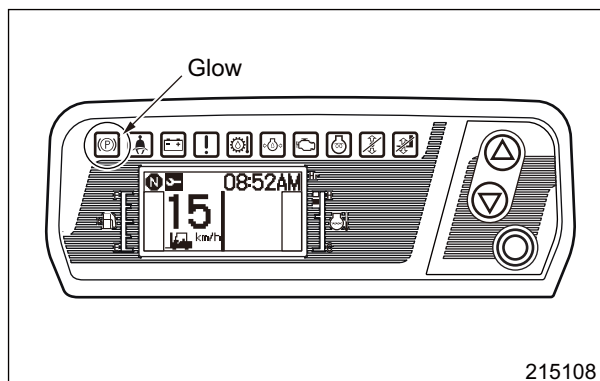


Fig. 4-3 Instrument panel screen

3.1.2 Reassembly

To reassemble, follow the disassembly sequence in reverse, paying attention to the following points:

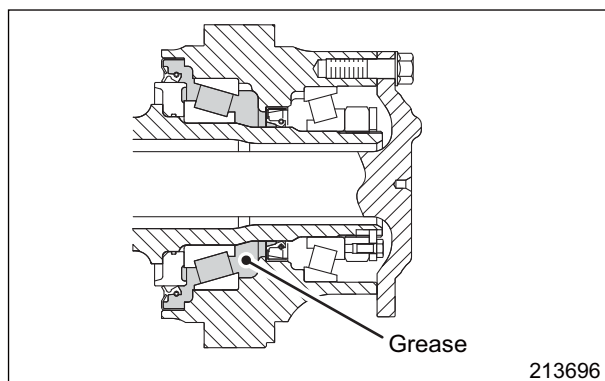
(1) Front wheel hub

- (a) Fill grease (AUTOLEX A or equivalent) in the front wheel hub as shown. (See the illustration right.) Stuff grease in the roller holder of the tapered roller bearing (inner). Use palm to squeeze the grease into the holder. Apply grease to the lip groove of oil seal.



CAUTION

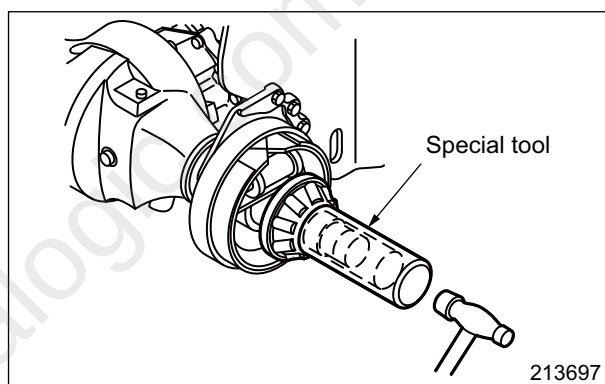
Use care not to get grease in the brake drum.



- (b) Using the installer (special tool), install the inner race and oil seal retainer of the tapered roller bearing.

Special tool (Installer)

Items	Truck type	
	1 ton class	2 ton class 3 ton class
Oil seal 8	91A68-00500	
Oil seal 9	91B68-00900	91E68-00700
Tapered roller bearing 6	91B68-01100	91E68-00900
Tapered roller bearing 10		91E68-00800

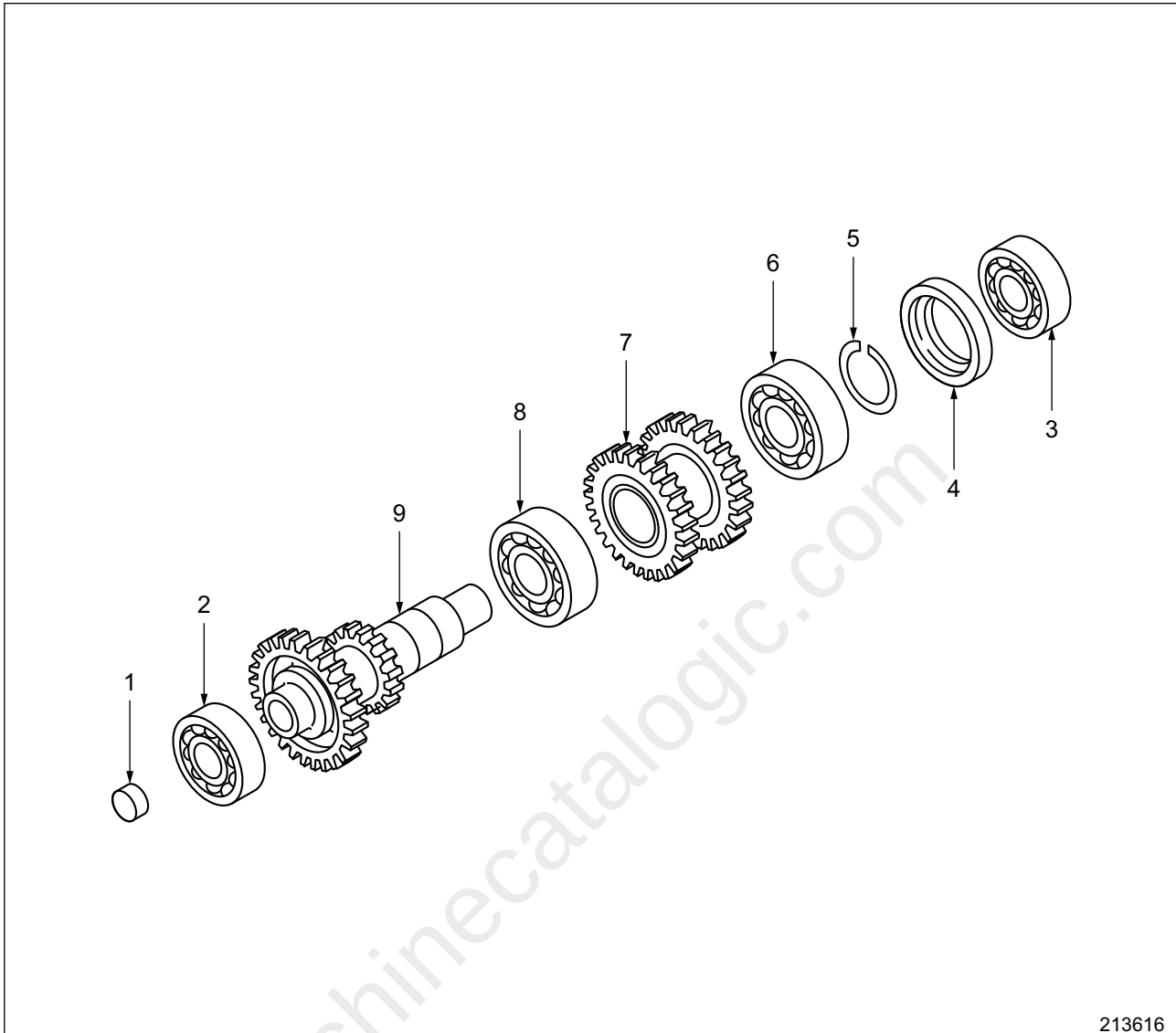


- (c) Apply sealant (ThreeBond #1194) to the flange surfaces of the axle shaft.

4. Troubleshooting

Hydraulic tank	Hydraulic tank heats excessively	Not enough oil in hydraulic tank	Refill.
		Oil viscosity improper	Change upon referring to "Fuel and Lubricant Specifications" on Chapter 15 SERVICE DATA 5.2 Fuel and Lubricant Specifications.
		Overload	Check working conditions and, if overloaded, urge the operator to stay within the load limit.
		Local overheating of oil line due to a large restriction to flow	Clean oil line.
		Relief valve adjustment improper	Readjust pressure setting.
		Pressure drop due to fatigued or broken springs	Disassemble or replace and readjust pressure.
		Gear pump worn	Replace pump.
		Outlet pipe or tube flattened, or restriction to flow	Repair or replace.
	Cylinders move too slow	Shortage of oil due to a natural loss	Replenish oil upon referring to "Fuel and Lubricant Specifications" on Chapter 15 SERVICE DATA 5.2 Fuel and Lubricant Specifications.
		Oil leakage due to damaged oil line and seals	Repair or replace.
		Oil viscosity too high	Change upon referring to "Fuel and Lubricant Specifications" on Chapter 15 SERVICE DATA 5.2 Fuel and Lubricant Specifications.
Gear pump	Cylinders move too slow	Gear pump does not pump oil	Check pump and piping; repair or replace.
		Oil leakage from oil line	Check oil for level and condition; add or change oil.
		Gear pump internally leaking	Replace pump.
	Noisy	Poor pumping	Replenish oil upon referring to "Fuel and Lubricant Specifications" on Chapter 15 SERVICE DATA 5.2 Fuel and Lubricant Specifications.
		Cavitation	(1) Check suction pipe for any flat portion or loose connection; retighten or replace. (2) Check shaft oil seal for airtightness; replace pump. (3) Check pump body for any outside interference; repair.
	Pump case, drive gear or pump port flange damaged	Pressure too high	Replace pump. (Check to see if relief valve setting is correct.)
		Distortion or damage due to external strain or stress	Replace pump. (1) Check to see if return line is blocked or restricted. (2) Check to see if pipe connections have been externally strained or stressed.
	Oil leakage from pump	Oil oozes out through the oil seal	Replace shaft seal.
		Oil oozes out onto the drive shaft sliding surfaces	Replace whole pump assembly.
		Loose bolts that secure the pump	Retighten. Replace if needed.
		Degraded performance of sealing inside pump	Replace gasket.

3.4.2 Disassembling Input Gear Assembly



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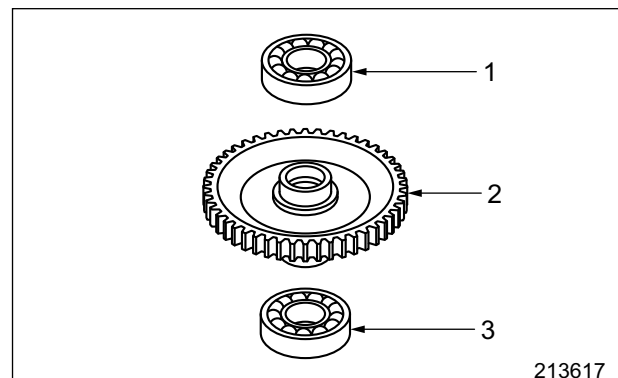
Disassembly sequence

- | | |
|----------------|----------------|
| 1 Sealing cap | 6 Ball bearing |
| 2 Ball bearing | 7 Idler gear |
| 3 Ball bearing | 8 Ball bearing |
| 4 Spacer | 9 Input gear |
| 5 Snap ring | |

3.4.3 Output gear, Disassembly

Disassembly sequence

- 1 Ball bearing
- 2 Output gear
- 3 Ball bearing



213617

Full Version Available

Mitsubishi FG20ZN Forklift Service Manual (99719-18110)

Mitsubishi FG20ZN forklift service manual PDF, covers engine, hydraulics, mast, drive train, and wiring for shop repairs. Instant PDF download.

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