

Section 3 Maintenance on car

I .Maintenance

(1) The Clutch Pedal Height

According to the following regulations, use pedal bracket adjusting bolt to adjust the clutch pedal height. It is normal if the height of clutch pedal is higher 8mm(0.3in)than the height of brake pedal..

(2) The free play of the clutch pedal.

Step on the clutch pedal till you feel the resistance, stop stepping and mensurate the distance clutch pedal free play. The free play must be within the following stated ranges.

If the free play is wrong, please adjust the clutch cable free play according to the diagram below.

While checking clutch pedal free play, be sure to check if the working state of the clutch is normal under the circumstance that the engine is running.

(3) Clutch Switch

Attention:

This switch is applicable to the vehicles with catalyst.

Adjust:

1. Pull the parking brake handle, push the shift lever to the neutral positon.
- 2.Take apart the connect beside the pedal Bracket.
- 3.Loosen the lock nut.
4. Adjust the installation position of the gearing position of clutch pedal, the clearance between switch connect and clutch bracket is the size A, then tighten the lock nut.
5. Connect.

The clutch switch lock nut adjustment torque	N.m	Kg-m	lb-ft
	10-15	1.0-1.5	7.5-10.5

(4) Clutch Cable

Unload:

Dismantle the clutch cable connect nut , and move off connection lock on the inner cable.

Take apart two bolts from the front wainscot, cable top from the table, at last take out the cable.

Check:

Check the clutch cable, if appears one of the following status, replace the cable.

The cable is abraded badly.

The cable is abraded

The cable is bended or knotted.

The boot is broken.

The top is frayed.

Fixing the clutch cable.

Fixing:

Before fixing cable, lubricants must be laid on the cable top and the connector.

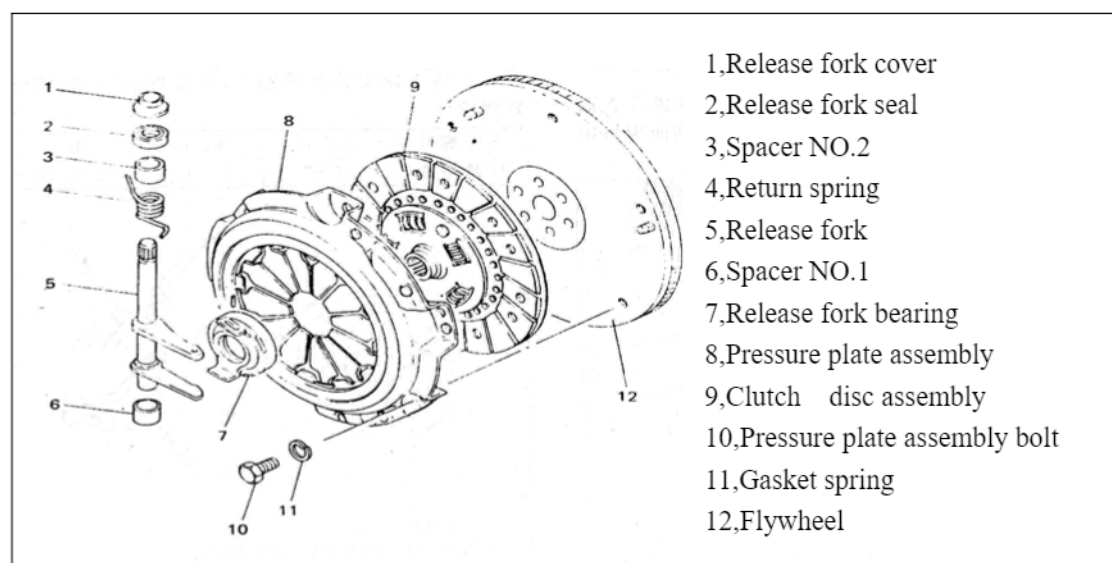
In the cab, use screwdriver or a pair of pliers to pull the cable and hang it on the pedal, then connection inner cable and release shaft..

Spray waterproof sealed adhesive on the fixing surface of cable and fix the cable on the front wainscot with two bolts. Switch lock nut Torque	N.m	Kg-m	lb-ft
	4-7	0.4-0.7	3.0-5.0

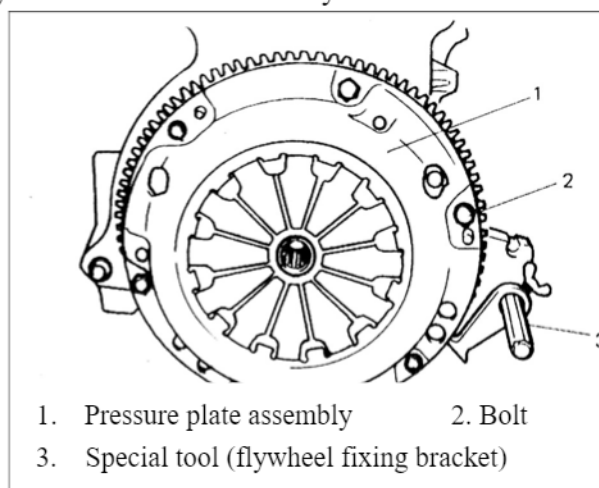
Tighten connect nut, turn the connect nut to adjust free play specification of the cable.
Check if the working state of clutch is normal while the engine is running.

Section 4 Disassembling Repair

Disassembling the pressure plate assembly, clutch disc assembly and flywheel.



1. Fix the flywheel with special tool, take apart the bolt of the pressure plate assembly, Pressure plate assembly and clutch disc assembly.



Disassembling Pressure plate assembly.

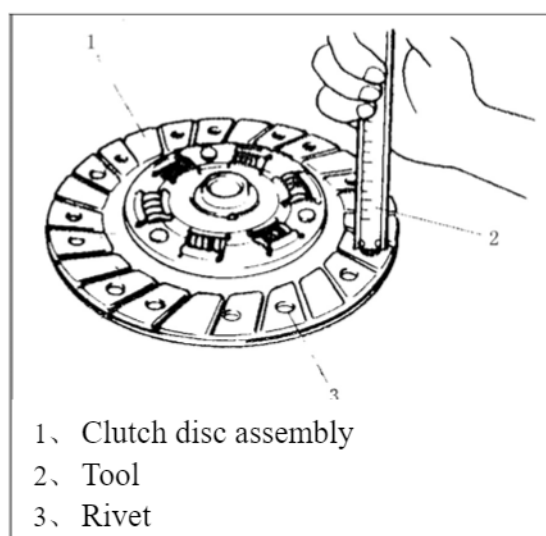
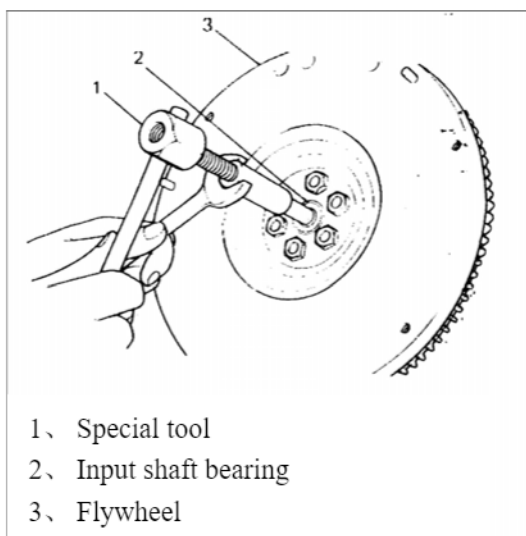
2. Pull up the input shaft input shaft bearing with special tools.

Check the input shaft bearing.

Check if the input shaft bearing runs smoothly. If appears abnormity, please replace the bearing.

Clutch disc assembly.

Measure the depressed depth (it is the distance between rivet and the surface of disc of rivet. In any hole, if the depth reaches the usage limit, please replace the clutch disc assembly.





input shaft bearing Disassemble the input shaft	The Standard Value	Maintenance
Measure depressed depth of rivet	1. 5mm 0.06in	0.5mm 0.02in

Pressure plate assembly:

1. Check if the diaphragm spring has been frayed abnormally or damaged.
2. Check if the Pressure plate has been frayed or if there is overheat point on it.
3. If appears abnormal status, please replace the Pressure plate assembly.

The Pressure plate assembly is not allowed to be disassembled into diaphragm spring

Pressure plate.

Flywheel:

Check if the flywheel surface has been frayed or if there is overheat point on it, if necessary please repair or replace.

Installation

Attention: Before assembling, check the flywheel surface and platens.

1. Whether surface is clean and dry
2. Install the flywheel on the crankshaft, fix the input shaft bearing on the flywheel.

Tighten the torque bolt Install the flywheel Flywheel bolt Tighten torque	N.m	Kg-m	lb-ft
	57-65	5.7-6.5	41.5-47.0

Install the input shaft bearing.

3. Aim the clutch disc assembly at the center of flywheel, fix the pressure plate assembly and bolt, tighten the bolt.

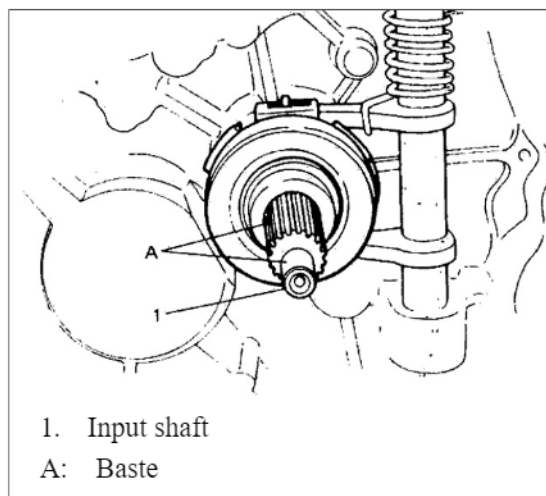
Attention:

Use hand and special tool to press the clutch disc assembly. Tighten the clutch pressure palte assembly bolt, according to diagonal ingravescence tighten clutch pressure plate assembly bolt.

Clutch pressure palte assembly bolt torque	N.m	Kg-m	lb-ft
	18-28	1.8-2.8	13.5-20.0

4. Apply a thin layer of lubricant on the input shaft, install the transaxle with engine.

Attention:



When installing the transmission input shaft in the clutch disc assembly, turn the crankshaft via flywheel till the Splined hub joggles.

Clutch Release shaft assembly

Disassembly:

Loosen the release shaft bolt, take apart the release shaft, turn the release fork, pull out release bearing, use pliers move of return spring, strike the spacer with professional tools, meanwhile push the release fork seal out.

1. Take apart the release fork spacer.
2. Take apart the release fork.
3. Screw M16 X tap into spacer NO.1 and leave the tap in spacer NO.1
4. Screw a connection hose with tap, and then connect the hose with the oil seal puller, strike the spacer NO.1.

Check:

1. Check if the clutch release bearing turns smoothly.
2. Check if the clutch release bearing is smooth. If necessary, please repair or replace the Clutch housing.

Attention: The release bearing cannot be cleaned, otherwise slide will be caused.

Installation:

1. Spread some grease on the inner sides of the new NO.1 Spacer.
- After finishing installation of the return spring on the release fork, spread lubricant on the inner sides of the spacer NO.2, install the release fork.
2. Use the special tools to install the spacer NO.2.
 3. Spread grease on the release fork seal, use special tools to install and keep the edges of the seal downwards.
 4. Use rivet tool and Hammer, rivet the seal tightly on the position A.



5. Hang the return spring, spread lubricant on the side and the arm of the release fork, install the bearing. Spread lubricant on the splined hub, install the spacer NO.2 and seal .

Fix the release fork cover.

6. Fix the release shaft on the release fork, aim at the riveted mark and tighten the bolt .

7. Used 2 bolts fix up cable bracket, disassembly clutch cable bracket.

Pack the clutch separation arm

Lubricate the release fork assembly and the input shaft. Screw the torque tightly.	N.m	Kg-m	lb-ft
Release shaft bolt	10-16	10-1.6	7.5-11.5
Cable bracket bolt	18-28	1.8-2.8	13.5-20.0

Section 5 Recommended Torque.

Screw the torque tightly	N.m	Kg-m	lb-ft
1, Switch Lock nut	10-15	1.0-1.5	7.5-10.5
2, Clutch cable bolt	4-7	0.4-0.7	3.0-5.0
3, Flywheel bolt	57-65	5.7-6.5	41.5-47.0
4, The clutch cover stud bolt	18-28	1.8-2.8	13.5-20.0
5, Release shaft bolt	10-16	1.0-1.6	7.5-11.5
6, Cable bracket bolt	18-28	1.8-2.8	13.5-20.0



Section 6 Necessary Maintenance Materials

Material	The SUZUKI product of the recommendation	Use the part
The lithium lubricates the fat	The SUZUKI high class lubricates the fat A (99000-25010)	Pulling cable catch connecting pin. Release fork spacer and seal. Release bearing and release shaft.
	The SUZUKI high class lubricates the fat I (99000-25210)	Input shaft splined hub and forepart
Waterproof sealant	The SUZUKI seals completely the 366 Es (99000-31090)	Clutch cable and front clap board.

Chapter 2 Transaxle

Section 1 DABS10-4 Transaxle

I. A gearbox technique brief introduction of section 1

Main Functions And Technical Data	DABS10-4, DABS10-8 Transaxle	
A type	Machine gear type	
Gearshift	Compare speed	The gear number compare
1st	3.416	41/12
2nd	1.894	36/19
3rd	1.28	32/25
4th	0.914	32/35
5th	0.757	25/33
Reverse	3.818	42/35/11
The main ratio	4.389	79/18
Speedometer	0.944	17/18
Max input torque	72 N ·m	
Contour size	409 × 392 × 342.7 (mm)	
Angle transaxle	5°	
Lubricant	18# hyperbolic gear oil (Q/SH006 · 1 · 27-89)	

II, Driven special

This transaxle, consist of three groups of synchronizer, input shaft and output shaft, is to realize the ahead shaft and reverse.

All the gear are gear, slip idler gear is for reverse.

The synchronizer is fixed on the output shaft, joggled with output shaft, the 1st gear and the 2nd gear; the synchronizer is fixed on the input shaft, joggled with the 3 rd, 4th gear.

The 5th synchronizer on the input shaft is joggled with the 5th gear fixed on the input shaft, thereby dive the transmission shaft and the wheels.

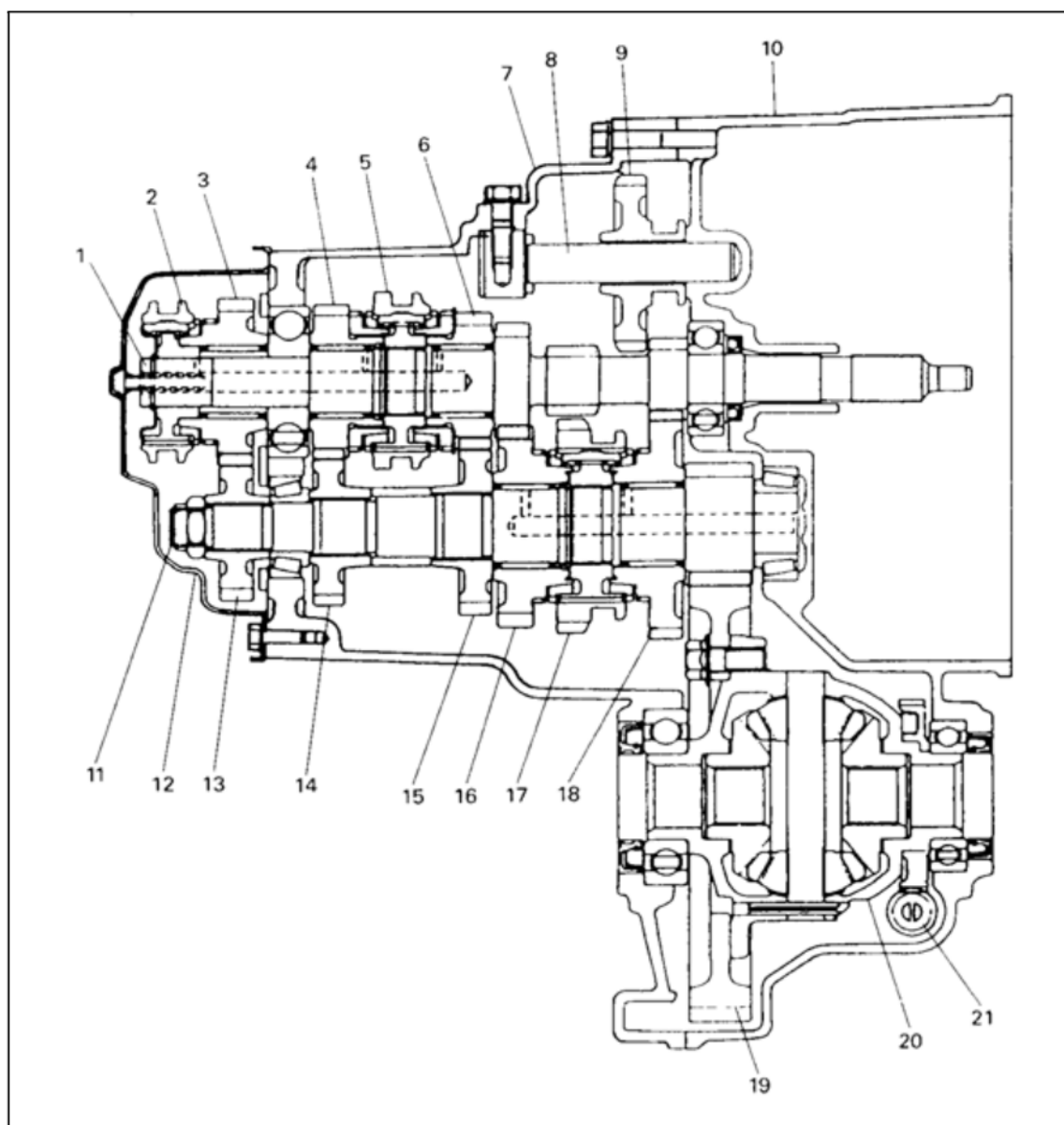


Fig.1-1 Transaxle

- | | | | |
|---------------------------|------------------------------|----------------------------|---------------------------|
| 1- Input shaft | 2- 5th Synchronizer assembly | 3- 5th gear | 4- 4th gear |
| 5- Synchronizer assembly | 6- 3rd gear | 7- Transaxle case | 8- Reverse gear shaft |
| 9- Reverse gear | 10- Clutch case | 11- Output shaft | 12- Transaxle behind case |
| 13- 5th driven gear | 14- 4th driven gear | 15- 3rd driven gear | 16- 2nd driven gear |
| 17- Synchronizer assembly | 18- 1st driven gear | 19- Differential ring gear | |
| 20- Differential case | 21- Speedometer driven gear | | |

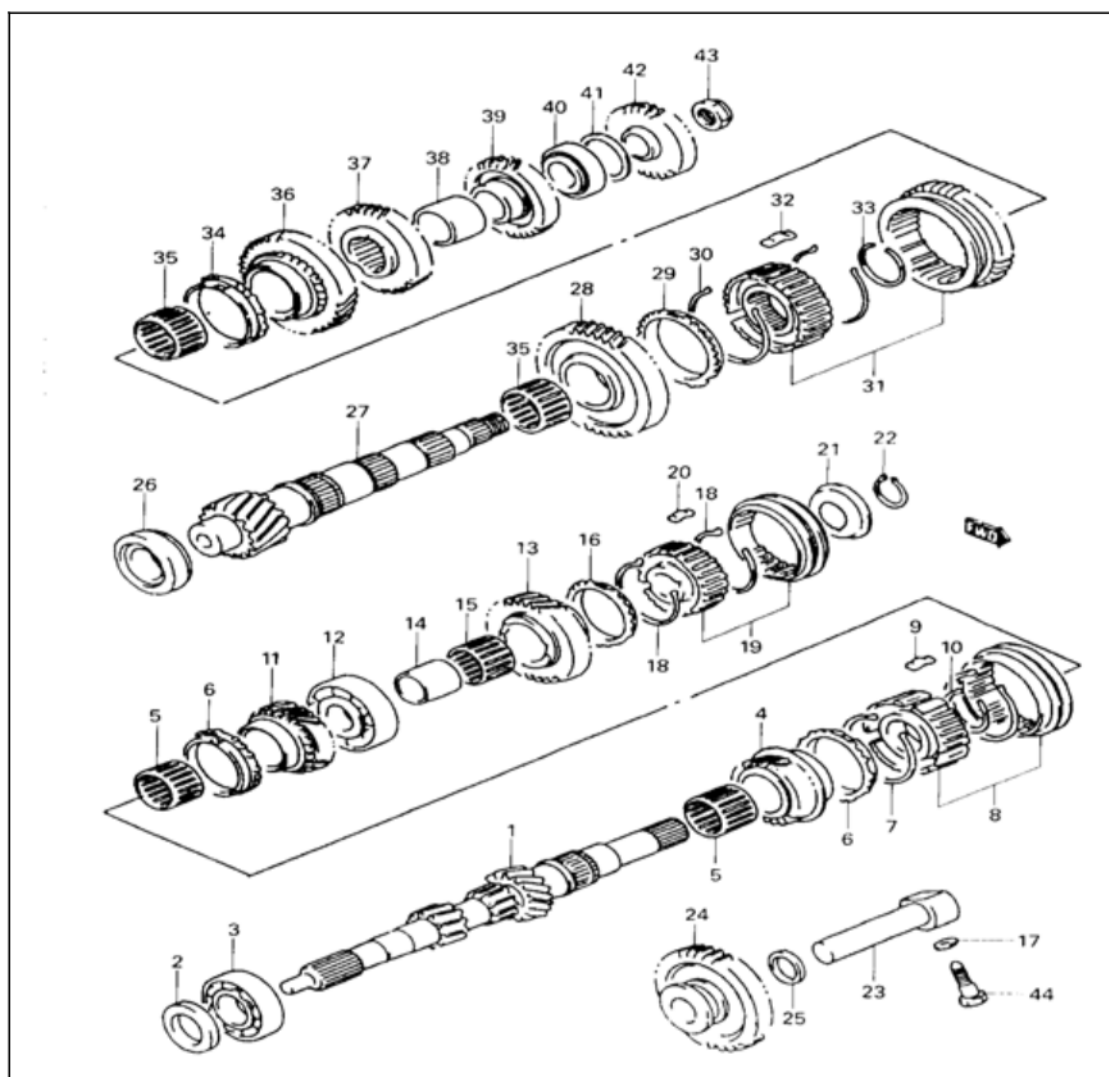


Fig.1-2 Transaxle drive system

- | | | | | |
|---------------------------|-------------------------------|-----------------------------|-----------------|------------|
| 1-Input shaft | 2- Oil seal | 3- Input shaft bearing | 4- 3 rd gear | 5-3rd, 4th |
| needle roller bearing | 6- Synchronizer ring | 7- Snap ring | 8- Synchronizer | |
| assembly | 9- Synchronizer insert | 10- Snap ring | 11- 4th gear | |
| 12- Input shaft bearing | 13- 5th gear | 14- 5th Spacer | 15- 5th | |
| needle roller bearing | 16- 5th synchronizer ring | 17-Gasket | 18- 5th | |
| snap ring | 19- 5th synchronizer assembly | 20- 5th Synchronizer insert | | |
| 21-Thrust washer | 22-Snap ring | | | |
| 23- Reverse gear shaft | 24- Reverse gear | 25-gasket | | |
| 26-Output shaft bearing | 27- Output shaft | 28- 1st driven gear | 29- 1st | |
| synchronizer ring | 30- Snap ring | 31- Synchronizer assembly | 32- | |
| Synchronizer insert | 33- Snap ring | 34- 2nd Synchronizer ring | 35-1st, | |
| 2nd needle roller bearing | 36- 2nd driven gear | 37- 3 rd | | |
| driven gear | 38-3rd, 4th spacer | 39- 4th driven gear | | |
| 40-Output shaft bearing | 41-Bearing adjust gasket | 42- 5th driven gear | 43- | |
| 5th gear Lock nut | 44- Reverse output shaft bolt | | | |

III, Shift and select lever shaft control system

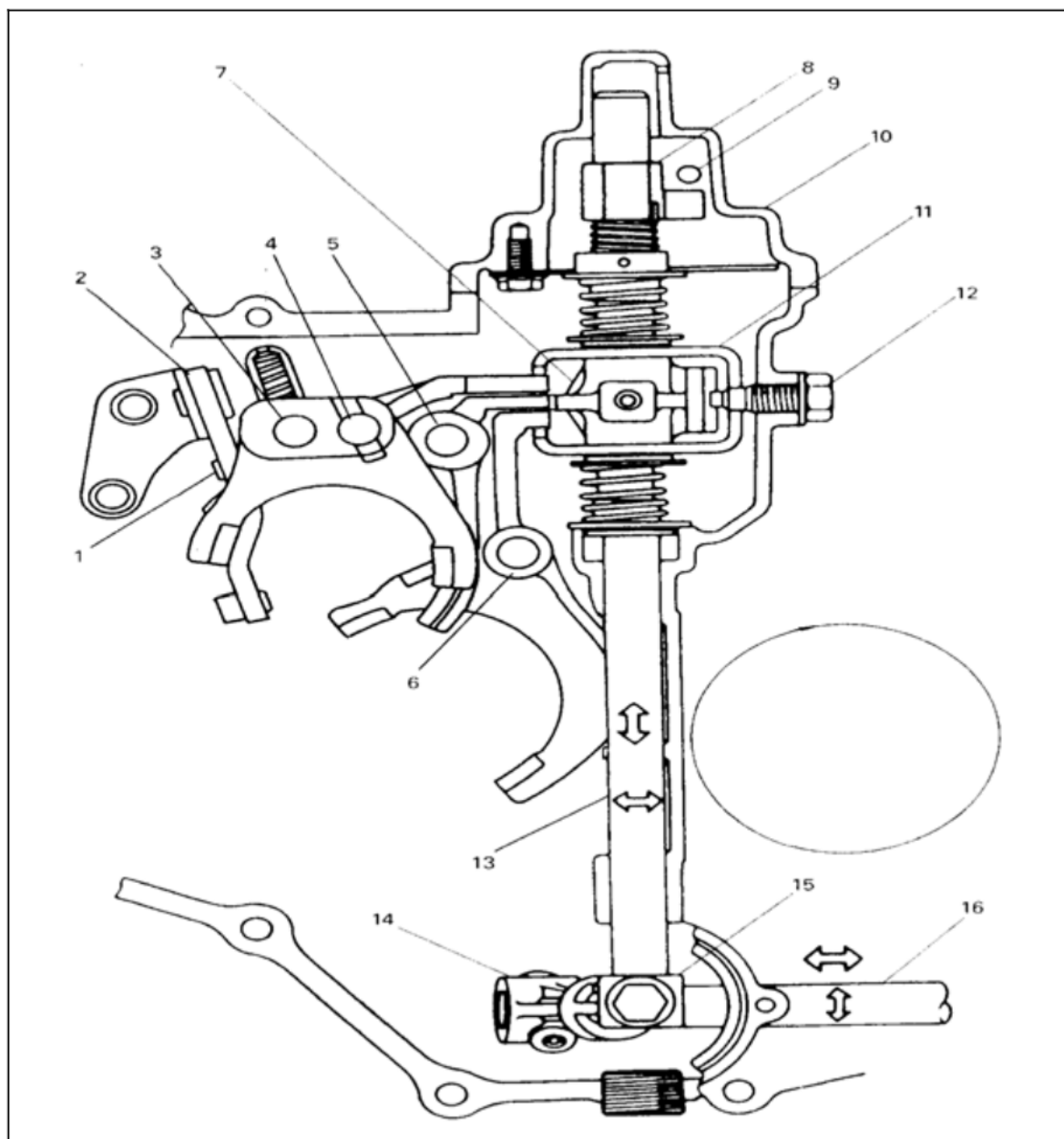


Fig.1-3

- | | | |
|----------------------------------|--------------------------------|----------------------------------|
| 1- Reverse shift fork | 2- Reverse shift fork assembly | 3-Reverse, 5th shaft |
| 4-Reverse, 5th shift fork shaft | 5- 3rd, 4th shift fork shaft | |
| 6-1st, 2nd shift fork shaft | 7- Select lever shaft | 8-Reverse, 5th shift cam |
| 9- Reverse, 5th Interlock roller | 10-Case | |
| 11- Interlock bolt | 12- Restrict bolt | 13- Shift and select lever shaft |
| 14- Shift lever | 15- Shift head | 16- Shift lever |

The turning of the shift lever drives the shift and select lever shaft move up and down, and the select lever shaft also moves up and down, this is for select shaft. The forward and backward movement of shift lever drives the shift and select lever shaft turning, and with the movement, the select lever shaft also turns, the select lever shaft push on the shift and select lever shaft drives the shift head, thereby the shift fork drives synchronizer ring and reach the expected joggled state.

Under the circumstance of the neutral, spring on the shift and select lever shaft keep the shift and select lever shaft stay on the neutral. The interlock in the state of release state prevents from gear when shift.

VI. Reverse 5th Shift Cam

The reverse, 5th shift cam, 5th Interlock bolt and 5th return spring are used to prevent that shift lever shifts from 5th to reverse directly.

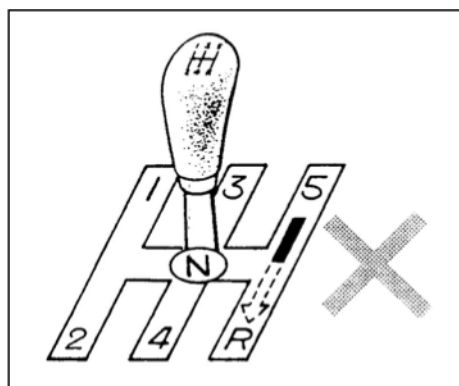


fig. 1-4 reverse,5th shift cam

Operation:

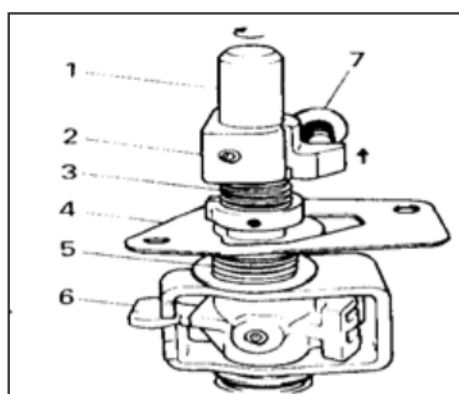


Fig.1-5

1, When gear shift 5th, the reverse, 5th shift cam turns clockwise with the shift and select lever shaft, under the effect of the shift cam return spring, the cam contacts reverse, 5th Interlock bolt and

prevent reverse.

- 1- Shift and select lever shaft
- 2-Reverse,5th shift cam
- 3- Shift cam Return spring
- 4-Bracket
- 5-Reverse,5th Return spring
- 6-Select lever shaft (5th)
- 7-Reverse,5th restrict bolt

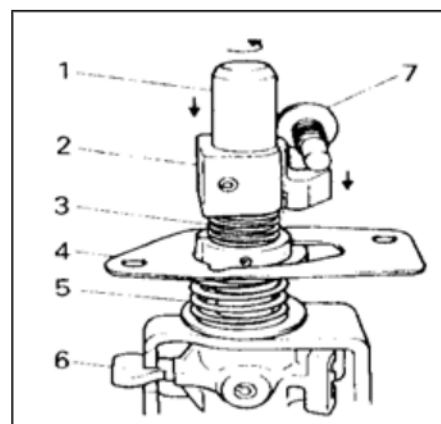


fig.1-6

2. It is allowed to shift from 5th to the middle position, but is not allowed to shift to reverse. However, when the shift and select lever shaft moves to neutral of 3rd, 4th, the shift restrict bolt cam cannot effect as the Figure 16.

3.shift select lever shaft to 5th or reverse, shift cam and bolt fixup.

- 1- Shift and select lever shaft
- 2-Reverse 5th shift cam
- 3- Shift cam Return spring
- 4-Reverse 5th return spring
- 5- Select lever shaft
- 6-Reverse 5th restrict bolt

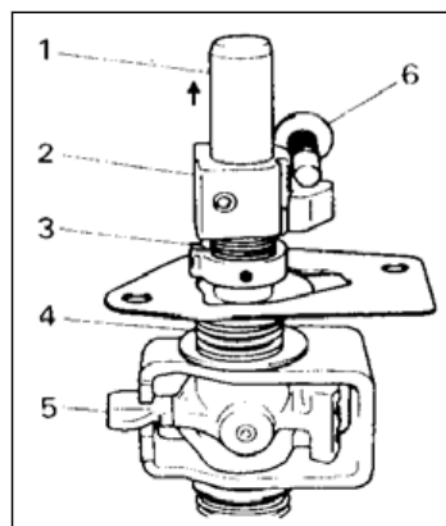


Fig.1-7

4.Shift to reverse do not connect shift cam.

- 1- Shift and select lever shaft
- 2-Reverse,5th shift cam
- 3-Shift cam Return spring
- 4-Reverse,5th Return spring
- 5- Select lever shaft
- 6-Reverse,5th restrict bolt

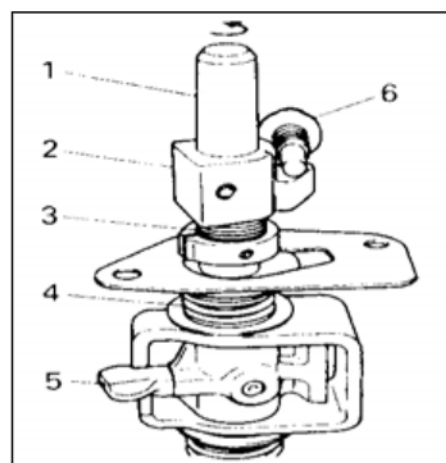


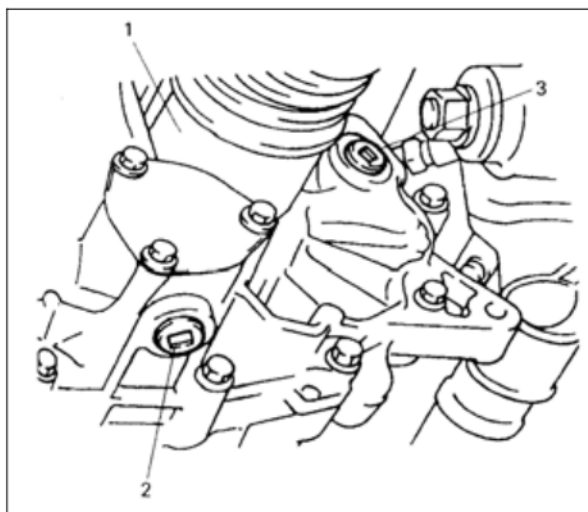
fig.1-8

5.Fault Diagnosis

Condition	Cause	Measure
Joggle is in version	● The shift fork shaft has been frayed. ● The shift fork and synchronizer ring have been frayed ● The spring has been destroyed. ● Input shaft/output shaft bearing have been frayed. ● The gear has been frayed.	Replace Replace Replace Replace Replace the gear
Difficult to shift	● Lubricant is not enough. ● The clutch pedal free play is not correct ● The clutch disc has been broken ● The clutch pressure plate has been broken. ● The synchronizer has been frayed. ● The gear has been frayed. ● The gearshift lever has been frayed. ● The shift lever has bee broken.	Refill Adjust Replace Replace clutch cover assembly Replace the gear Replace Replace
Noise	● Lubricant is not enough ● The bearing has been frayed or broken. ● The gear has been frayed or broken ● The synchronizer has been frayed or broken.	 Refill Replace Replace Replace

Section2 Transaxle Maintenance on Car

I. Exchange of Oil



- 1- Drive shaft
- 2- Drain plug
- 3- Filler plug

Fig.2-1

1. Before checking and changing the transaxle gear oil, be sure the engine has stopped and the vehicle stops on a plane surface.
2. Lift the vehicle, check the oil level and if there is any leakage.
3. Let out all the used transaxle oil, fill 2.1 L synthetic 18# gear oil (the oil level is equal with the foot of the filler plug).
4. Before installation, spread oil on the whorl of the filler plug and drain plug.

Item	Torque
Filler plug	18~23N • m
Drain plug	18~23N • m

II. Differential oil seal

Replacement:

1. Lift the vehicle, let out all the used transaxle oil.
2. Remove the cotter pin and the lock cap at the end of tie rod.
3. Disjoin the steering and the end of tie rod.

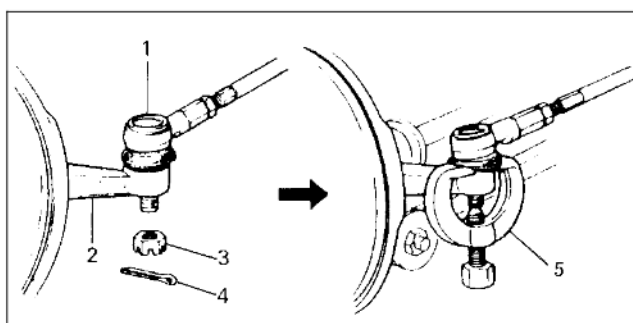


Fig.2-2

4.Remove the two brackets.

5.Remove Ball joint bolt and disjoin the Suspension arm from the steering.

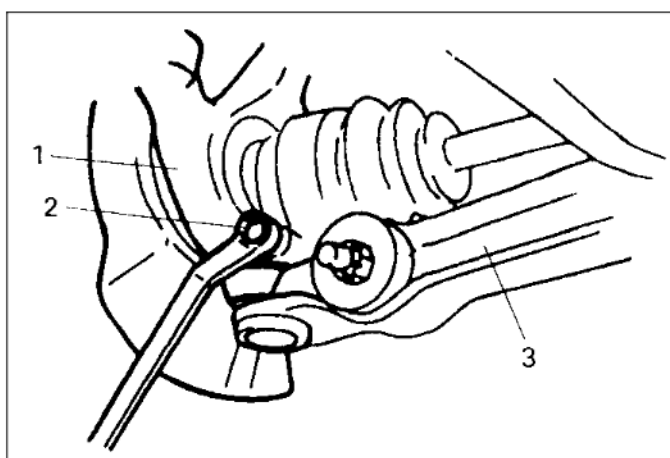


Fig.2-3

6. Insert a big screwdriver into the connection of the drive shaft to release the snap ring from the keyway of the differential.

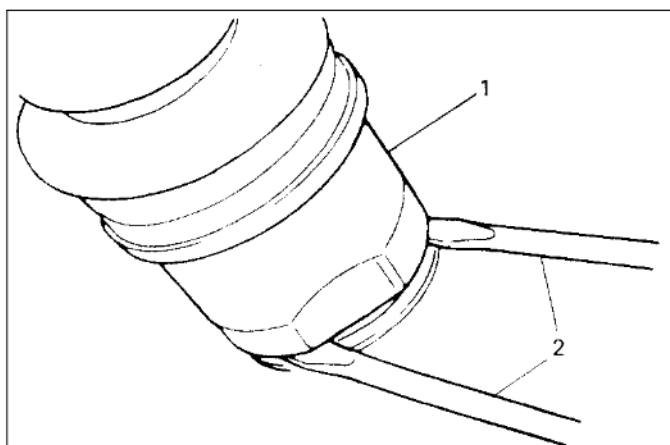
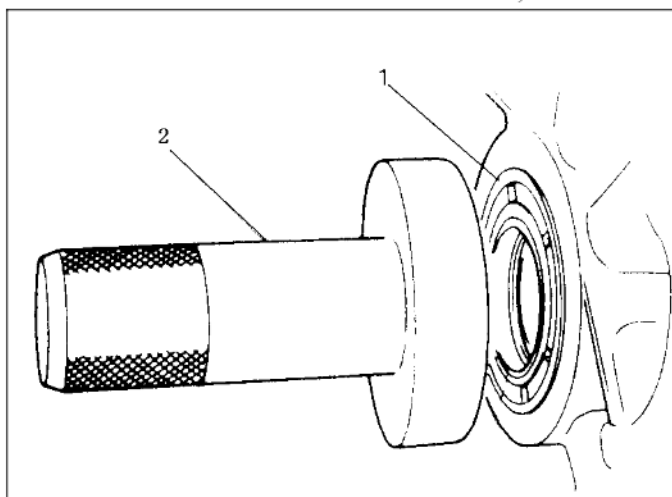


Fig.2-4

- 1- Drive shaft
- 2-Screw driver

7. Remove the used differential oil seal , fix the new oil seal.



- 1- Differential oil seal
- 2- Special tool

Fig.2-5

8.Check if the surface of the oil seal is smooth and spread some lubricant on it.

9.Insert the drive shaft into the differential.

CAUTION

- Do not scratch the labium of the oil seal when installing the drive shaft.
- Be sure the drive shaft has reached the right position and the snap ring has been put into the snap ring slot.
- Do not hammer the boot of the drive shaft.

III. VEHICLE SPEED SENSOR

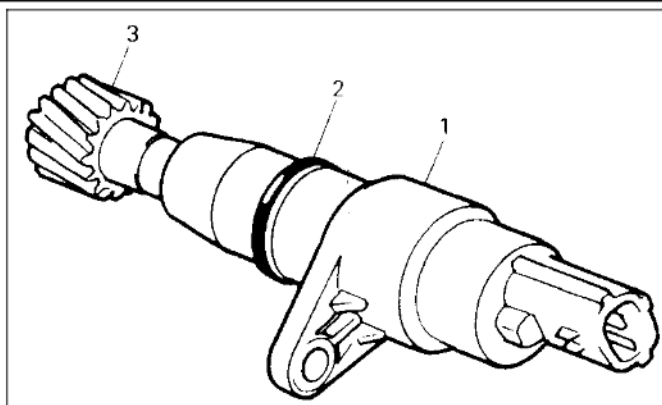
Dismantle:

1.Disconnect the cathode of the battery.

2.Draw back the speedometer cable Boot, pull out the Speedometer gear Snap ring, and then remove the speedometer cable from the gear, disconnect the sensor connector.

3. Remove the bolt, pull out the driven gear assembly with hands.

4.Use 2.8-3.0mm(0.11in) slotted spring pin disassembly tool to beat the slotted spring pin out, and then draw out the driven gear, remove the speed sensor.



- 1- Speedometer sensor
- 2- O-ring
- 3- Speed meter driven gear

Fig.2-7

5. Use the clamp to fix the plane part of the driven gear box, use professional tools bearing disassembly tool and puller slide hammer to remove the oil seal.

Installation:

1. Spread lubricant on the new oil seal, keep the spring downwards and put the oil seal into the box. Use valve guide bushing remover to install.

2. Check the driven gear has been abnormally frayed or distorted. After spreading lubricant on the driven gear put the fine driven gear into the driven gearbox.

3. Use wood to support driven gearbox, install the slotted spring pin, check if the gear turns smoothly.

4. Check if there are some lacuna on the O-seal and gearbox. Spread some oil on the O-seal, and then install the driven gearbox assembly in the transaxle.

5. Connect the speedometer cable, put the gearbox Snap ring and boot on the original position.

CAUTION:

- Do not press the oil seal excessively, otherwise the oil seal will be distorted.
- Do not collide the driven gear and the driven gear box.
- When installing the driven gear box assembly into the Transaxle, use small screwdriver to turn the driven gear till the driven gear joggle.
- When installing the driven gear box into the transaxle, the gear box is now allowed to be collided.

Screw the gear ox	N·m	kg·m	lb—ft
bolt tightly.	4-7	0.4-0.7	3.0-5.0

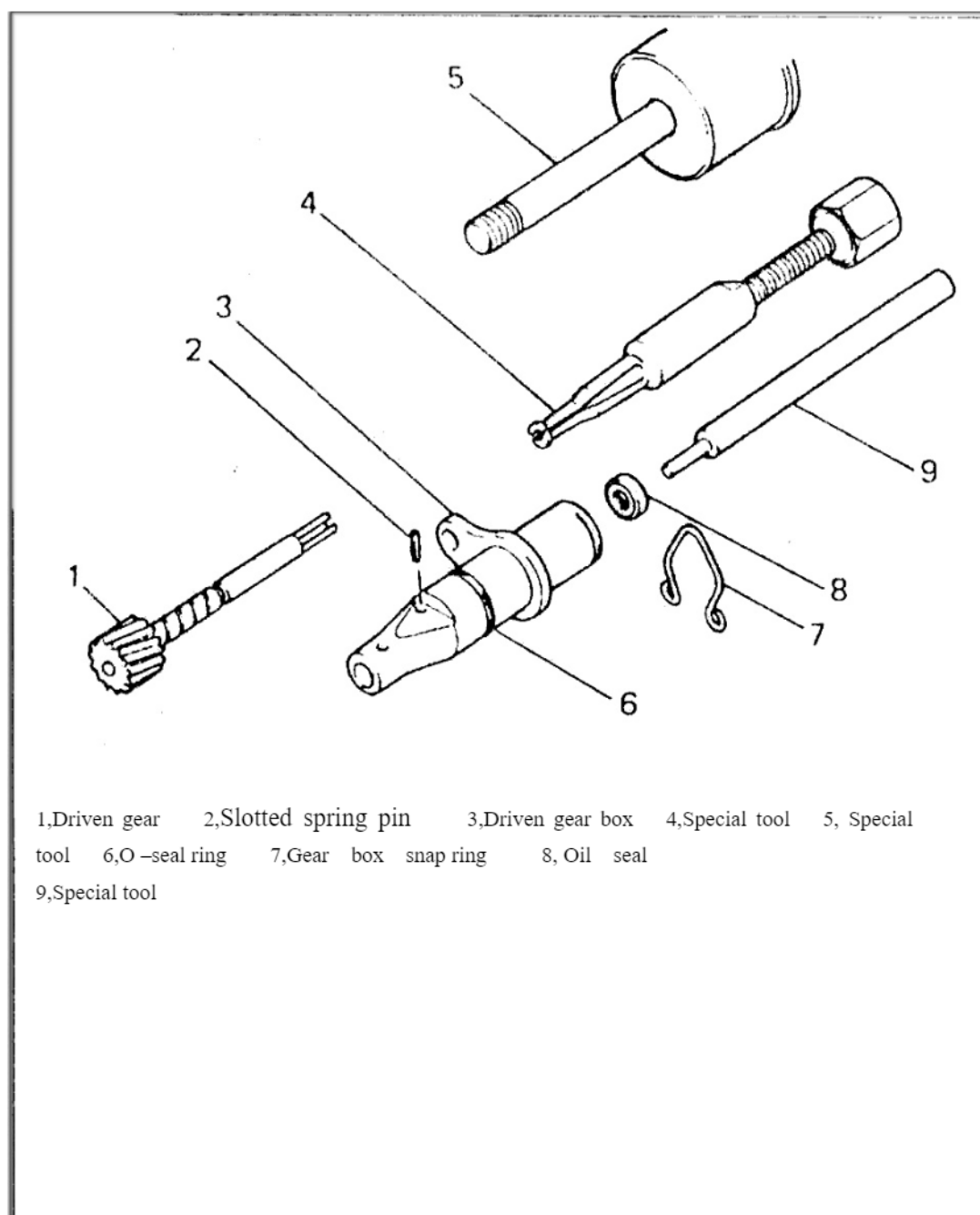


Fig.2-8