FOREWORD

This service manual has been prepared to provide SUBARU service personnel with the necessary information and data for the correct maintenance and repair of SUBARU XT.

The manual includes the procedures for maintenance, disassembling, reassembling, inspection and adjustment of components and trouble-shooting for guidance of both the fully qualified and the less-experiencedmechanics.

Please peruse and utilize this manual fully to ensure complete repair work for satisfying our customers by keeping their vehicles in optimum condition. When replacement of parts during repair work is needed, be sure to use SUBARU genuine parts.

All information, illustrations and specifications contained in this manual are based on the latest product information available at the time of publication approval.

We reserve the right to make changes at any time without prior notice.

FUJI HEAVY INDUSTRIES LTD.

How to use this manual

This service manual is divided into four volumes. Each volume consists of Section 1, Section 2, 3, Section 4, 5 and Section 6 respectively.

Each chapter, beginning with the Engine section, is basically made up of the following five areas.

1. Mechanism and function
2. Specifications and service data
3. Component parts
4. Service procedure
5. Trouble-shooting

"ABBREVIATION LIST" is provided at the back page of quick reference index in each volume.

"ALPHABETICAL INDEX" is also provided at the last page in each volume.

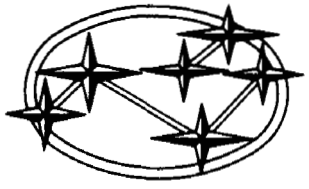
This service manual applies to SUBARU XT, and explains all equipments including factory options. Therefore, you may find some explanations for equipments not installed on the vehicle.

TABLE OF CONTENTS

SUBARU

1988

SERVICE MANUAL



4 MECHANICAL COMPONENTS SECTION

5 BODY SECTION

ABBREVIATION LIST

A/C	Air Conditioner
ALR	Automatic Locking Retractor
approx	approximately
ASSY	Assembly
AT	Automatic Transmission
BI-LEV	Bi-level
BJ	Bell Joint
BP	British Petroleum
B power	Battery power
Carb	Carburetor
CGR	Constant Gear Ratio
CIRC	Circulation
CP	Complete
CTR F LH	Center Front Left-hand
CTR R	Center Rear
CVJ	Constant Velocity Joint
DEF	Defroster
dia	Diameter
DOJ	Double Offset Joint
E/A	Energy Absorbing
E/G	Engine
EGI	Electronic Controlled Gasoline Injection
ELR	Emergency Locking Retractor
ERB	Emergency Release Buckle
Ex	Example
F/C	Fresh/Circulation
FFV	Fast Fill Valve
FICD	Fast Idle Control Device
FL	Front left
F LH	Front Left-hand
FMVSS	Federal Motor Vehicle Safety Standard
FR	Front right
F RH	Front Right-hand
F sus	Front suspension
GND	Ground
hex	hexagon
ID	Inside Diameter
IG	Ignition
IMACA	International Mobile Air Conditioning Association Inc.
ISC	Idle Speed Control
K/D	Kickdown
LH	Left-hand
LWR	Lower
MPFI	Multi Point Fuel Injection
MT	Manual Transmission
PCD	Pitch Circle Diameter
Pd	Discharge pressure
PHV	Pressure Hold Valve
P/N	Parts Number
Ps	Suction pressure
R-12	Refrigerant-12
R DPV	Rear Dual Proportioning Valve
RH	Right-hand
RL	Rear left
R LH	Rear Left-hand
RQ	Rear Quarter
RR	Rear right
SD	Side
S/R	Single Range
SV plate	Suction Valve plate
TDC	Top Dead Center
UPR	Upper
VGR	Variable Gear Ratio
4WD D/R	4-Wheel Drive Dual Range
4WD S/R	4-Wheel Drive Single Range

SUBARU

1988

*1 Canada models are equipped with a height control function. Also refer to the 87MY manual.

*2 In this topic are described the different points of the air (pneumatic) suspension from the explanations described in the above topic. Accordingly, use this topic together with the above topic.

MECHANISM AND FUNCTION

Front Suspension

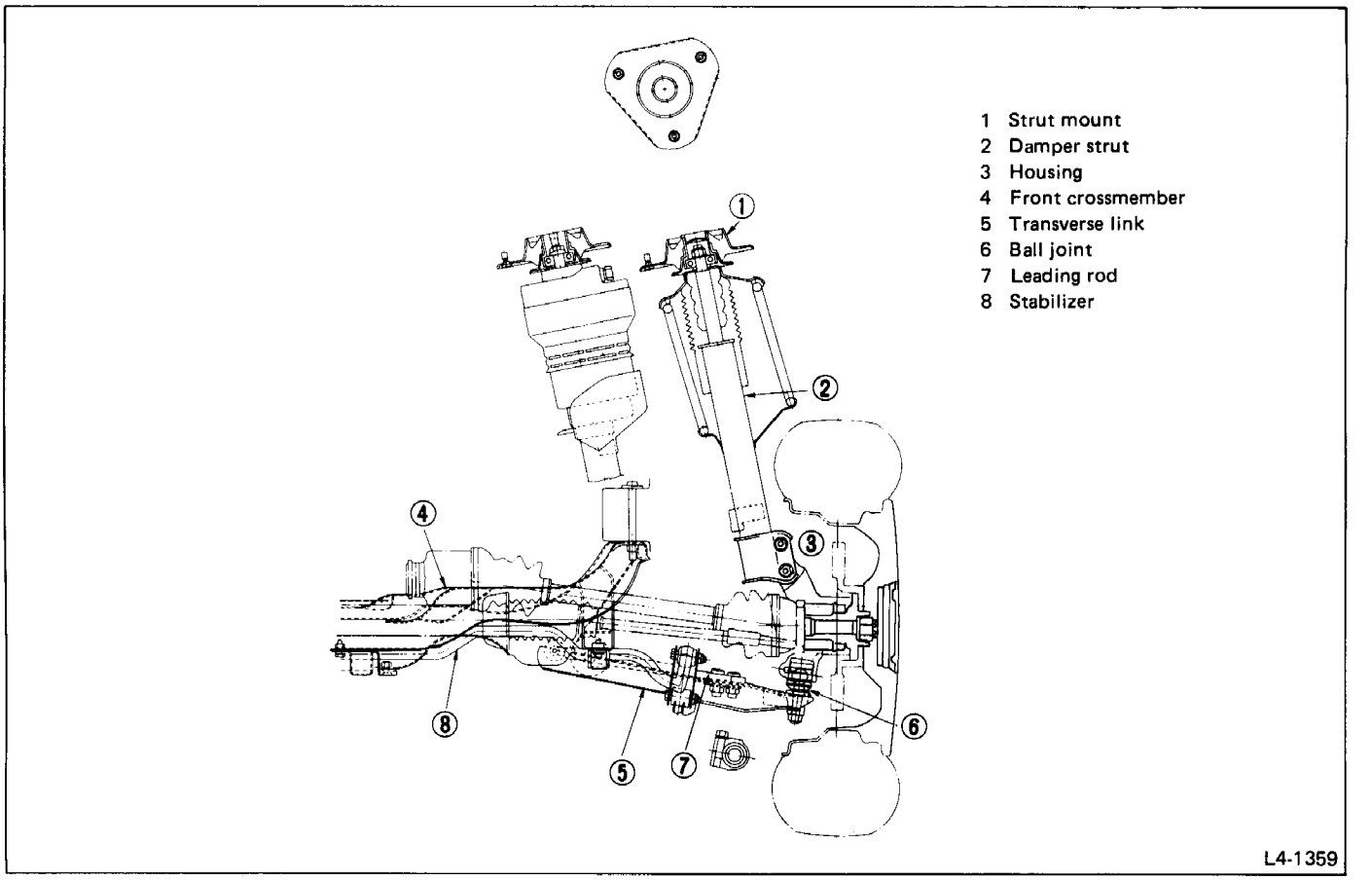


Fig. 1

The front suspension is a strut-type independent suspension, with cylindrical double-action oil damper and coil spring [or air spring for air (pneumatic) suspension].

The top of oil damper is mounted to the body through the cushion rubber, which has resulted in elimination of any vibration and improved passenger comfort cooperating with other rubbers.

This type also maintains a wide distance between the upper and lower supporting points and makes adjustment of the camber or caster unnecessary.

The transverse link has a maintenance free ball joint installed by nut at the outer end, and inner end is fitted to the front crossmember through the cushion rubber.

The leading rod is bolted at the outer end to the transverse link and the inner end of leading rod is connected to the leading rod bracket through the cushion rubber. Both front crossmember and leading rod bracket are bolted to the vehicle body.

The stabilizer is attached to the front crossmember through the cushion rubbers and its ends are connected to the transverse links through the rubber bushings.

Rear Suspension

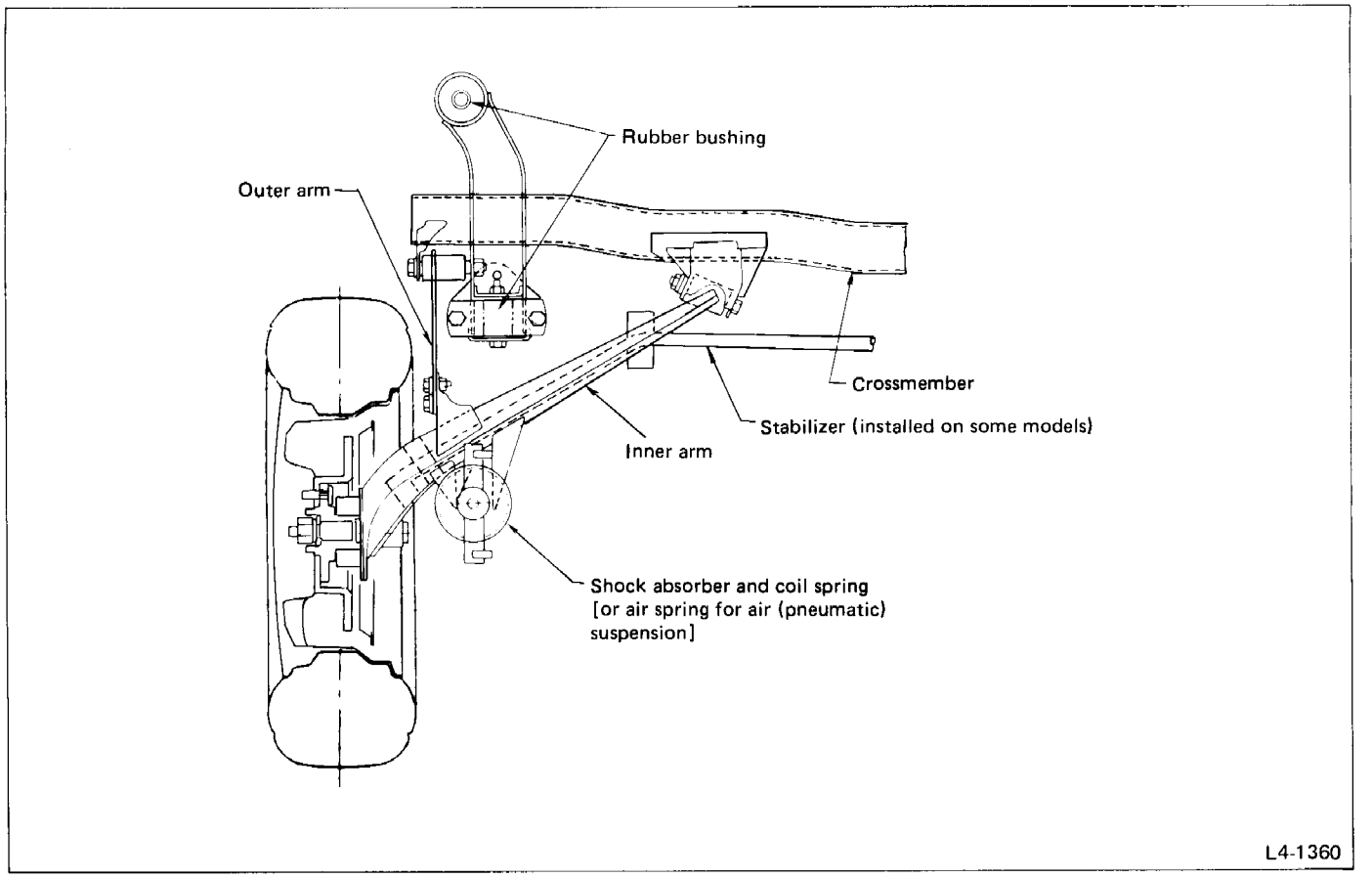


Fig. 2

The rear suspension is of semi-trailing arm type independent suspension, with cylindrical double-action oil damper and coil spring [or air spring for air (pneumatic) suspension].
Crossmember is installed to body frame with brackets at both ends via bushings.

One end of inner arm is bolted to crossmember through bushing, and another end bolted with outer arm is mounted to body through shock absorber ASSY.
The certain models have a stabilizer installed to inner arm via bushings.

Air (Pneumatic) Suspension

This system maintains constant ground clearance regardless of vehicle load. For this purpose air volume in each air spring is adjusted according to a signal from a vehicle height sensor which is installed in each air spring.

Features

The air spring (ground clearance maintaining) adopted on the 4WD vehicle provides good riding comfort and stabilized driving even on rough roads.

1) The air spring is adopted in place of the conventional metal spring to improve riding comfort.
2) A constant wheel stroke is available irrespective of the load, and this results in reduced bumping shock on irregular surfaces of the road.
3) The variable damping force mechanism built into the air spring keeps the damping force low to assure good riding comfort while the wheel stroke is small. When the wheel stroke increases, the damping force is made larger to improve driveability on rough surfaces. This increase in damping force also improves stability during high speeds.
4) The vehicle posture can always be maintained constant, so that the light axis of the headlight will be maintained constant.

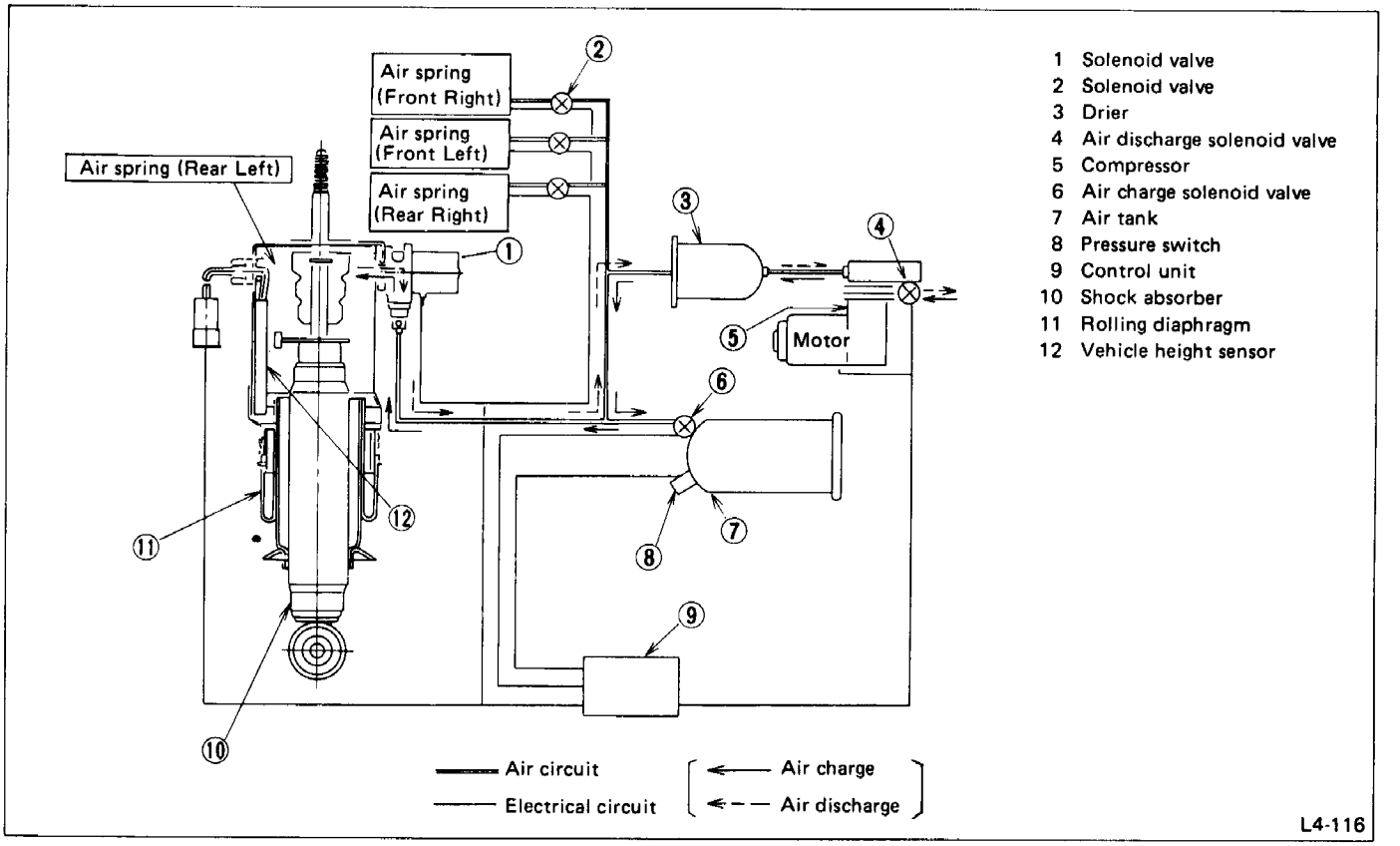
Operation

Ground clearance "constant"

When the ground clearance becomes smaller than the preset level due to an increase in load, the vehicle height sensor built into each rolling diaphragm type air spring issues a "low" signal. If this condition lasts for a certain period of time, the control unit judges that the ground clearance is low, and opens the solenoid valve to send compressed air to the air spring from the air tank (←—— arrow mark). As the ground clearance increases, the "low" signal from the sensor disappears, and the control unit closes the solenoid valve. The ground clearance is thus always held at a constant level.

If the pressure in the air tank drops, the tank pressure switch operates the compressor until the pressure returns to the specified level.

If the ground clearance becomes larger than the preset level due to a load reduction, the sensor issues a "high" signal, and opens the solenoid valve of the respective air spring to allow air to be released from the air spring (←---arrow mark). As the ground clearance lowers, the "high" signal from the sensor disappears, and the control unit closes the solenoid valve.



1 Solenoid valve
2 Solenoid valve
3 Drier
4 Air discharge solenoid valve
5 Compressor
6 Air charge solenoid valve
7 Air tank
8 Pressure switch
9 Control unit
10 Shock absorber
11 Rolling diaphragm
12 Vehicle height sensor

Fig. 3

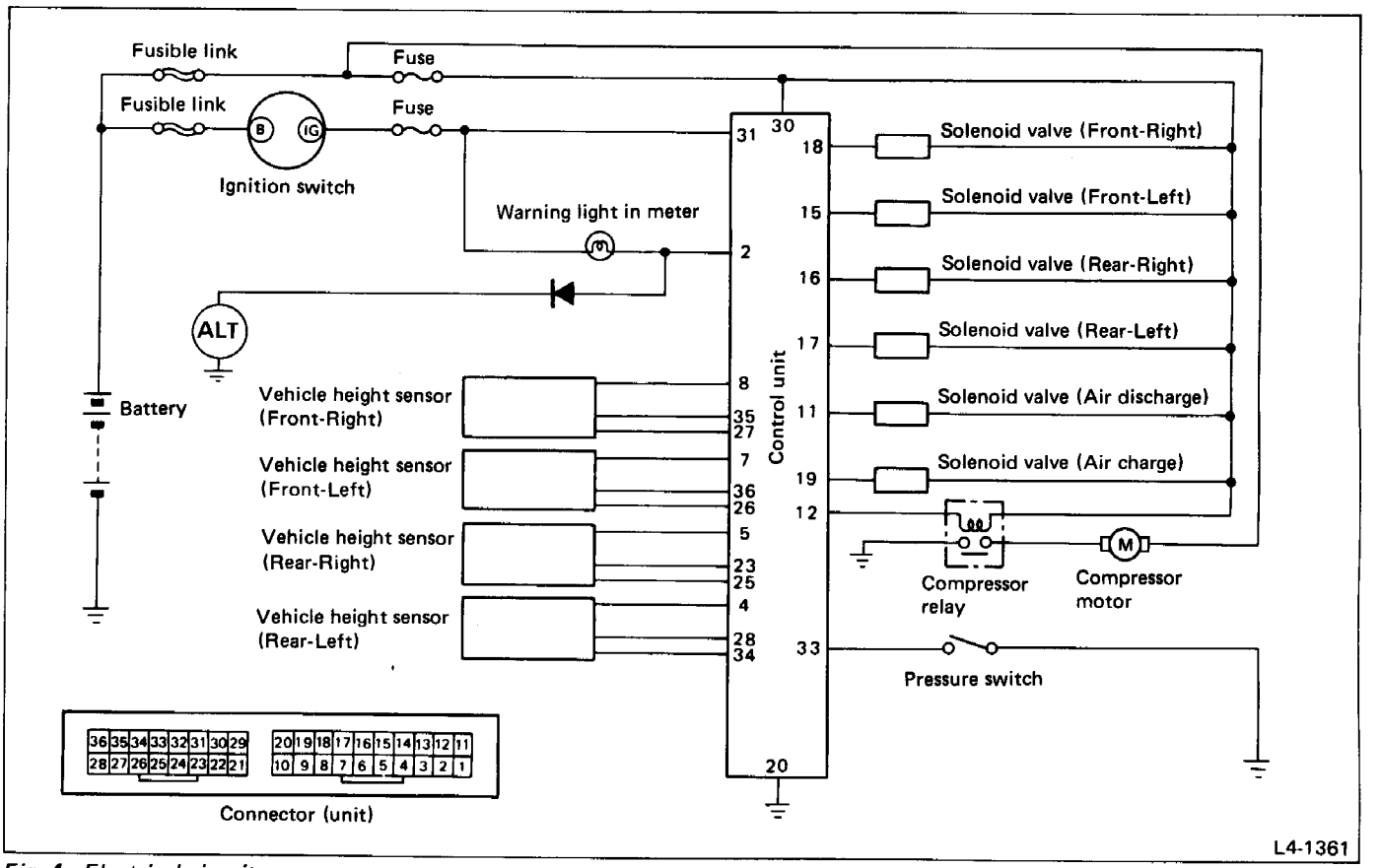


Fig. 4 Electrical circuit

Construction

The air suspension system consists of the following.

- A warning light which illuminates in case of trouble.
- Four vehicle height sensors (each built into its respective air spring) which detect proper vehicle height for each wheel.
- Six solenoid valves.
- A control unit which opens and closes the solenoid valves in proper order and procedure by judging the signals from the vehicle height sensors.
- An air tank and an electric compressor which is operated by the pressure switch.
- A drier and air piping.

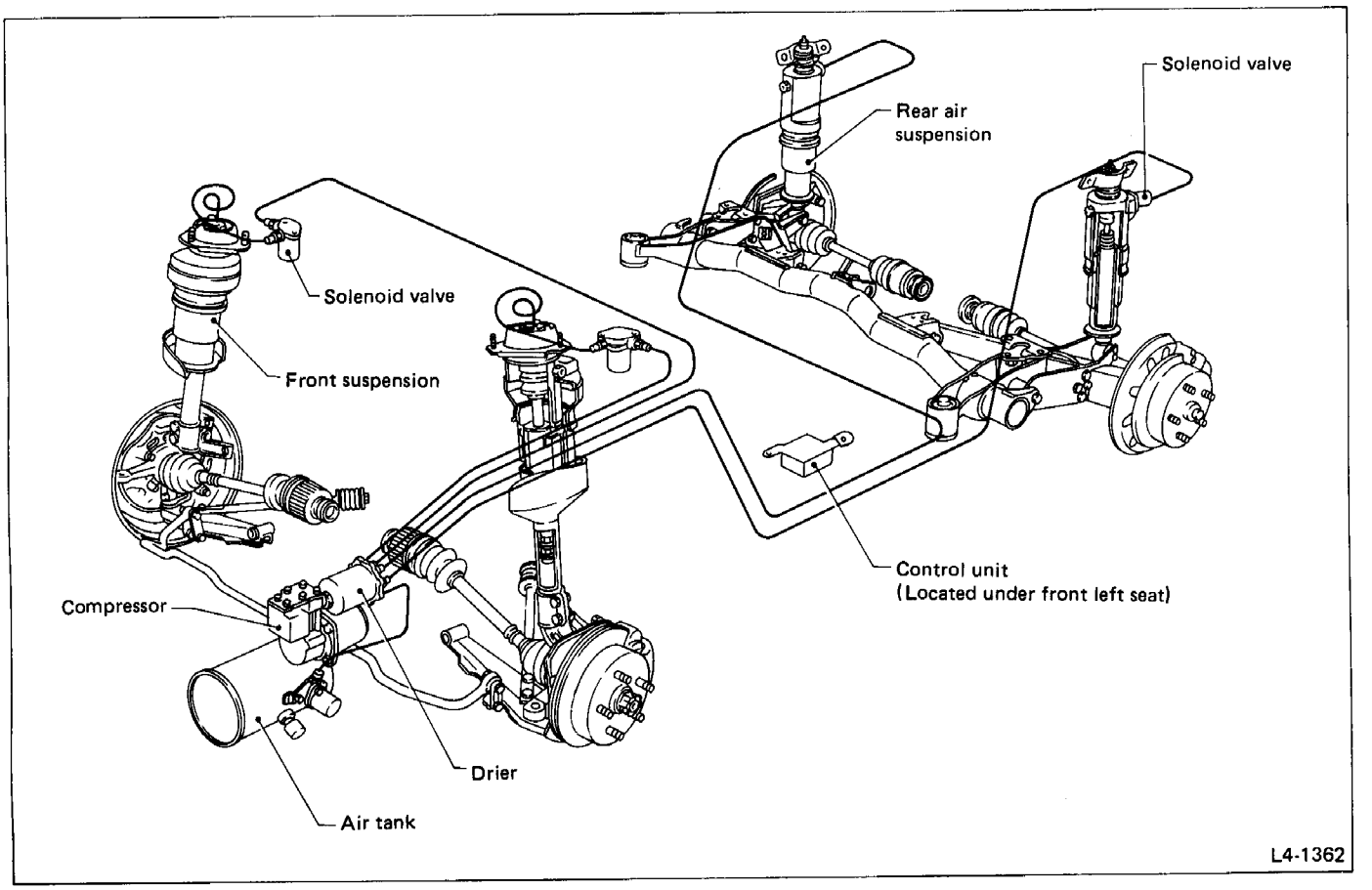


Fig. 5 Air suspension layout

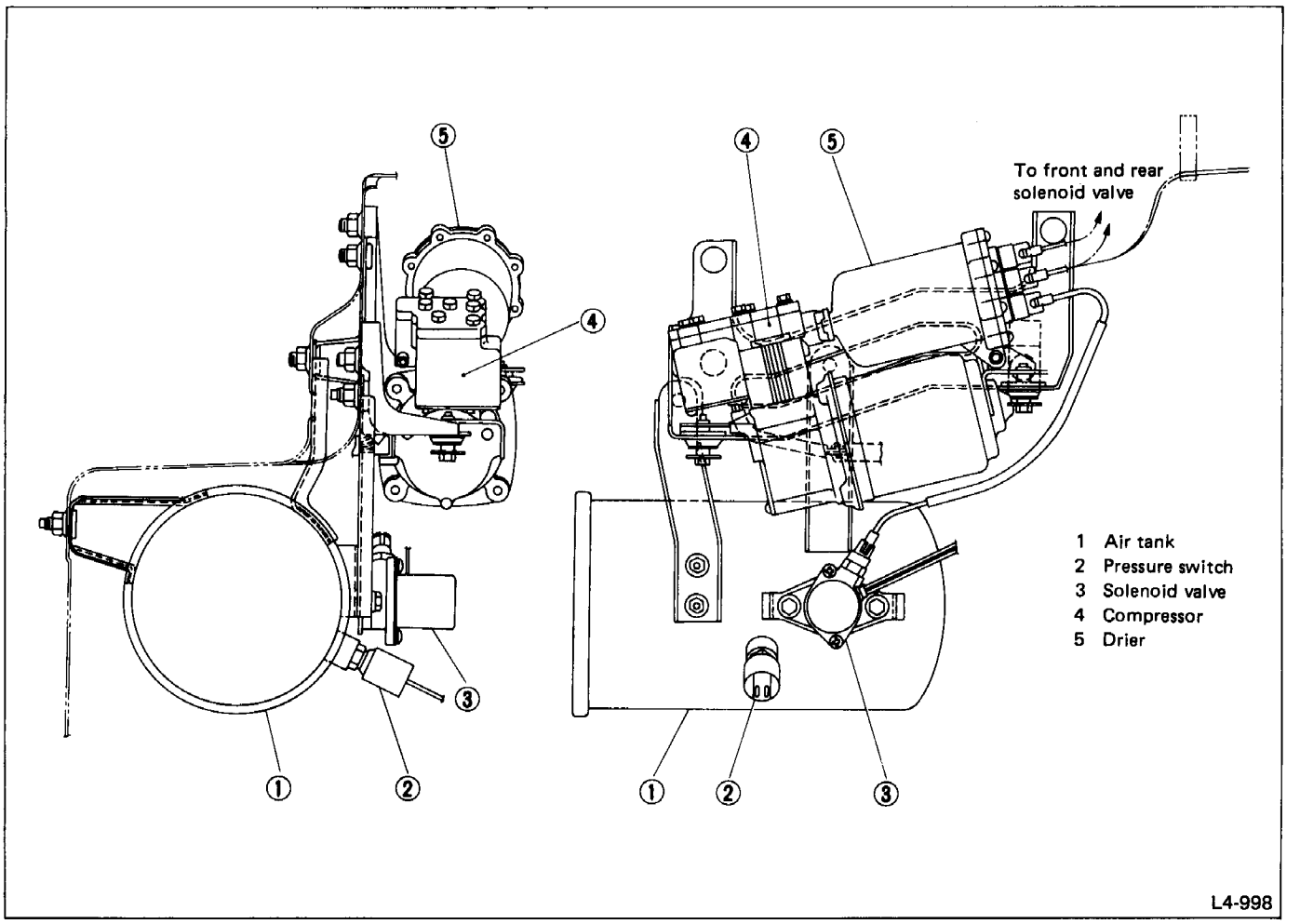


Fig. 6 Air tank, compressor and drier

WARNING Light

The control unit registers a system malfunction when either of the following conditions occurs. The warning light will blink and subsequent control operations will stop.

a) When both HIGH and LOW signals are simultaneously transmitted by one height-control sensor.
b) When control unit continuously sends a signal to the same solenoid valve and compressor relay for 10 minutes due to air leakage or other problem.

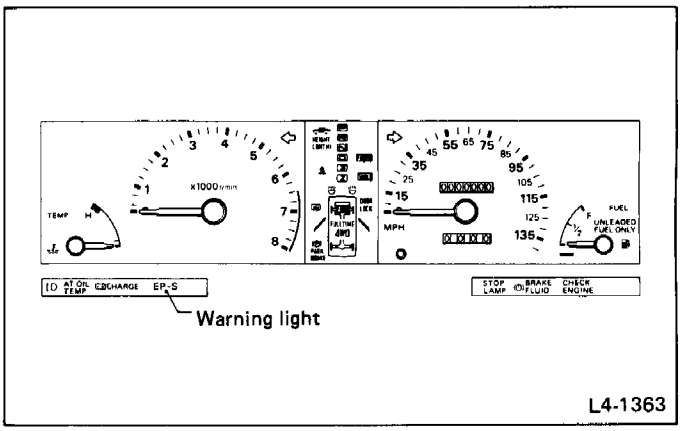


Fig. 7 Indicator

Vehicle height sensor

Vehicle height sensor consists of reed switch and magnet. The reed switch is fixed on a body side part of air suspension ASSY and magnet is fixed on a wheel side part of it. Height signal is generated according to the relation between the positions of reed switch and magnet.

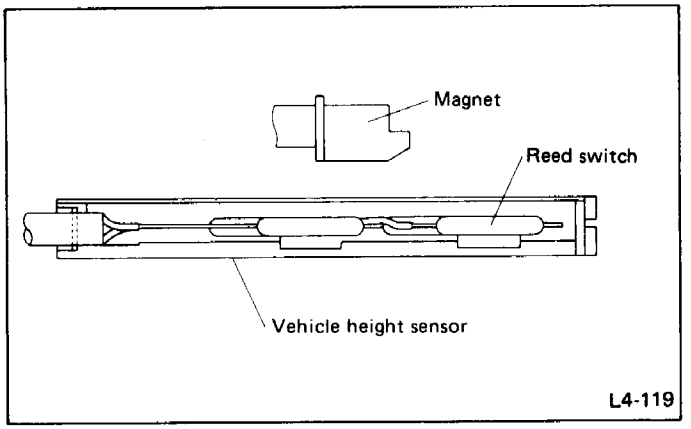


Fig. 8

Control unit

The control unit receives signals from the vehicle height sensors and others, and controls the solenoid valve of each air suspension as well as the compressor. The microcomputer adopted in this control unit permits each wheel to be controlled independently so as to obtain the optimum performance according to the loaded condition of the vehicle.

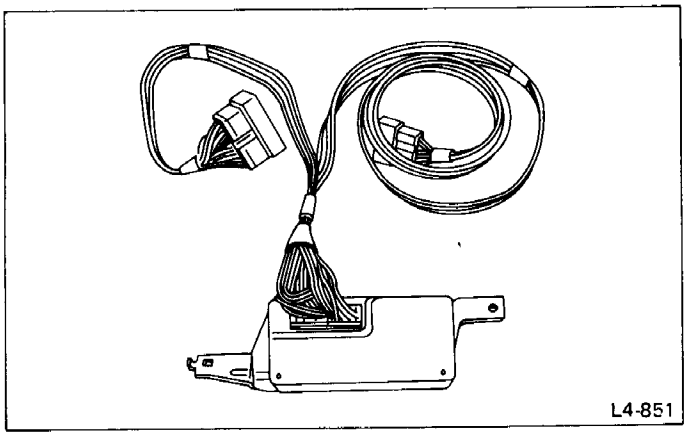


Fig. 9

Solenoid valve (control valve)

This valve is operated according to a signal from control unit when air is charged or discharged for air suspension.

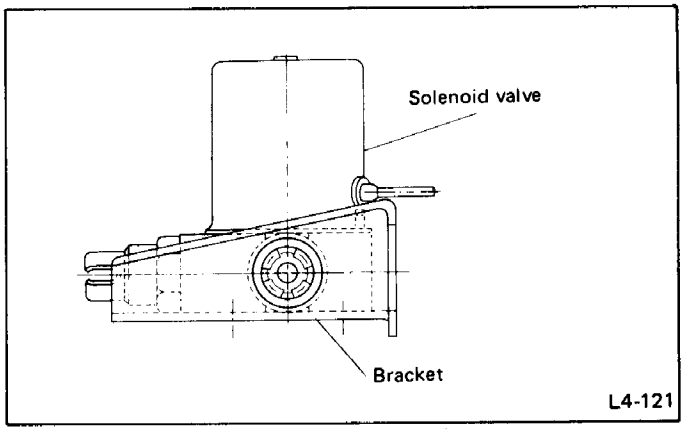


Fig. 10

The shape of bracket differs according to the installing position.

Drier

Drier dries air which flows through the drier to air tank or each air spring with silica gel in order to prevent freeze of water in air pipe. Silica gel is refreshed by dry air when discharging.

A residual pressure valve is provided so that the diaphragm can always be held in the expanded state, hence a residual pressure of 98 kPa (1 kg/cm^2, 14 psi) remains in the air chamber even after air discharge operation is completed.

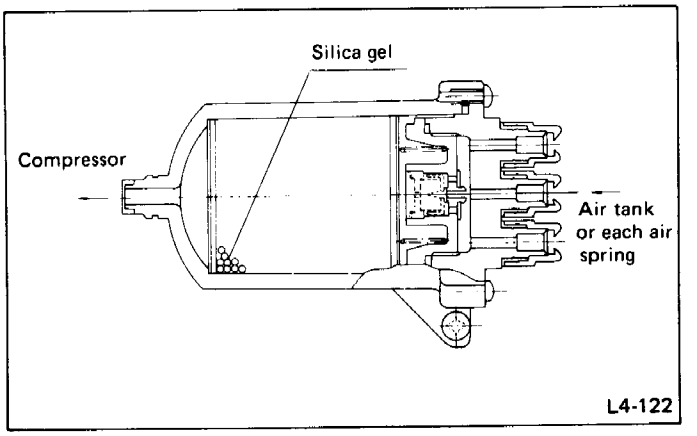


Fig. 11

Air tank

Pressure switch and solenoid valve for air charge are incorporated in air tank. The air tank is filled with compressed air of 755 to 941 kPa (7.7 to 9.6 kg/cm^2, 109 to 137 psi).

Pressure switch

If the pressure in the air tank rises, the pressure sensitive disc pushes the guide pin up to open the moving contact, and the switch is opened. When the pressure drops, the switch is closed.

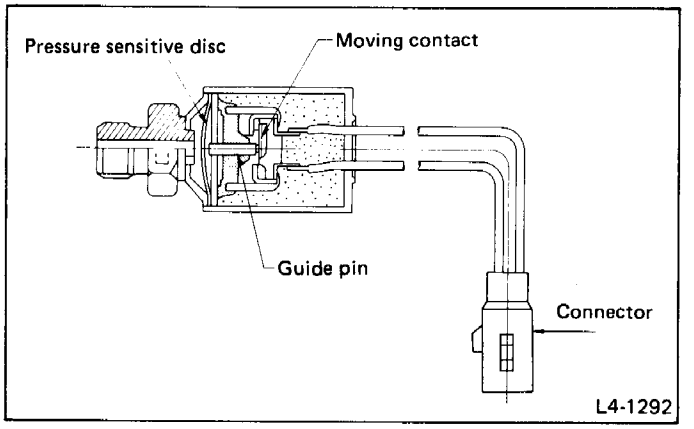


Fig. 12

Front and rear air suspension assemblies

Both air suspension ASSYs adopt air springs in place of the conventional metal springs. A housing is provided on the outside of the shock absorber, which can be stroked through the function of the rolling diaphragm.

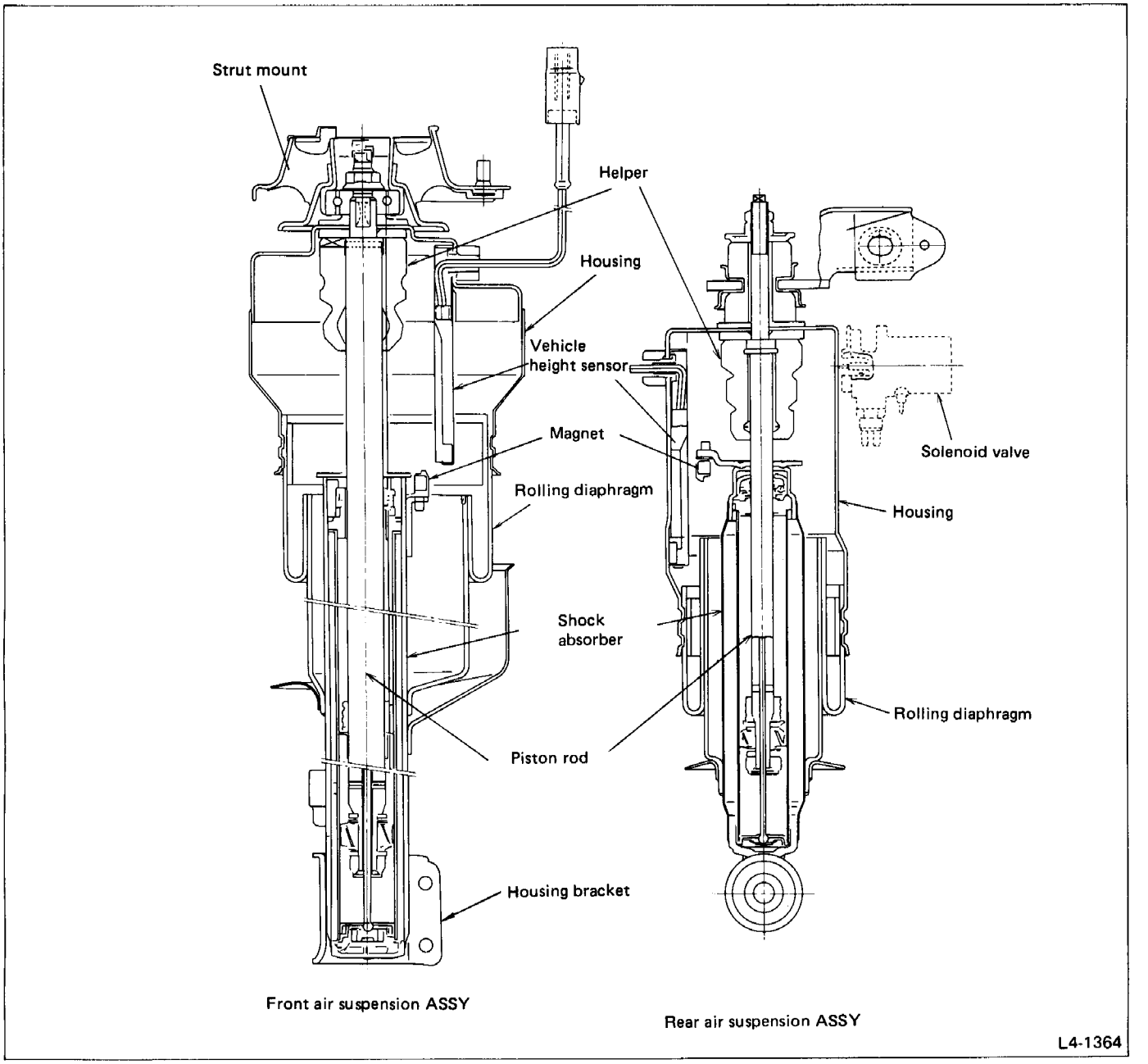


Fig. 13

Air Pipe

The air pipe is made of nylon, and the joint at the front strut is composed of a cap, air bushing, and O-ring. The air pipe is secured by tightening the cap to the specified torque to crush the end of the air bushing.

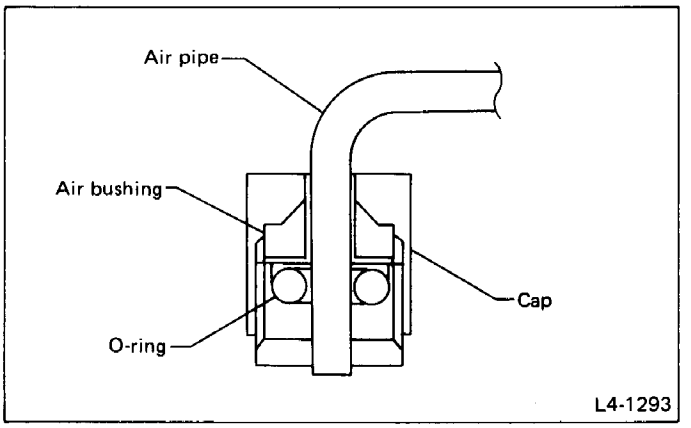


Fig. 14

All other joints adopt a quick joint whose construction is shown below.

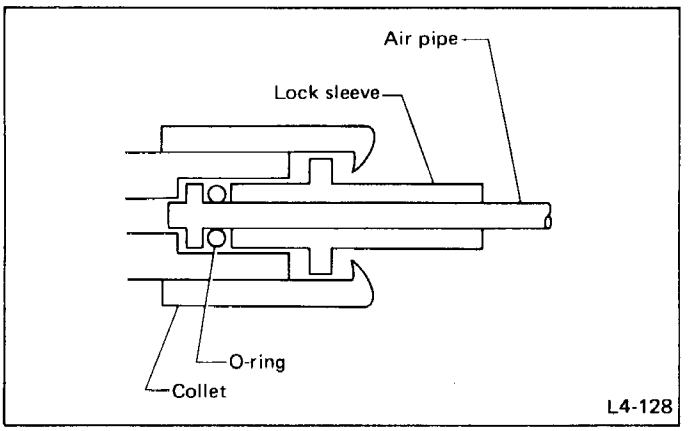


Fig. 15

VARIABLE DAMPING FORCE MECHANISM

This mechanism senses the wheel stroke position and generates an optimum damping force in accordance with the road and driving conditions.

Features

- Excellent riding comfort is assured when driving on general paved surface, since the damping force is kept low when the wheel stroke change is small.
- Both higher maneuverability on rough surfaces and increased stability at high speeds are assured, since the damping force increases as the wheel stroke becomes large.

Construction and operation

A metering pin is set up at the bottom center in the damper, which slides in a bore drilled in the axis of the piston rod.
A in the Figure indicates the condition where a hard damping force is being generated. Based on the same principle as the conventional gas-charged damper, the damping force is generated by the orifice in the piston and the disc valves provided over and under the piston.
B in the Figure shows the condition where a soft damping force is being generated. During this condition, the clearance produced between the thin diameter portion of the metering pin and the rod also serves as an oil passage (flow route marked with *), hence damping force is smaller than that generated in condition A.

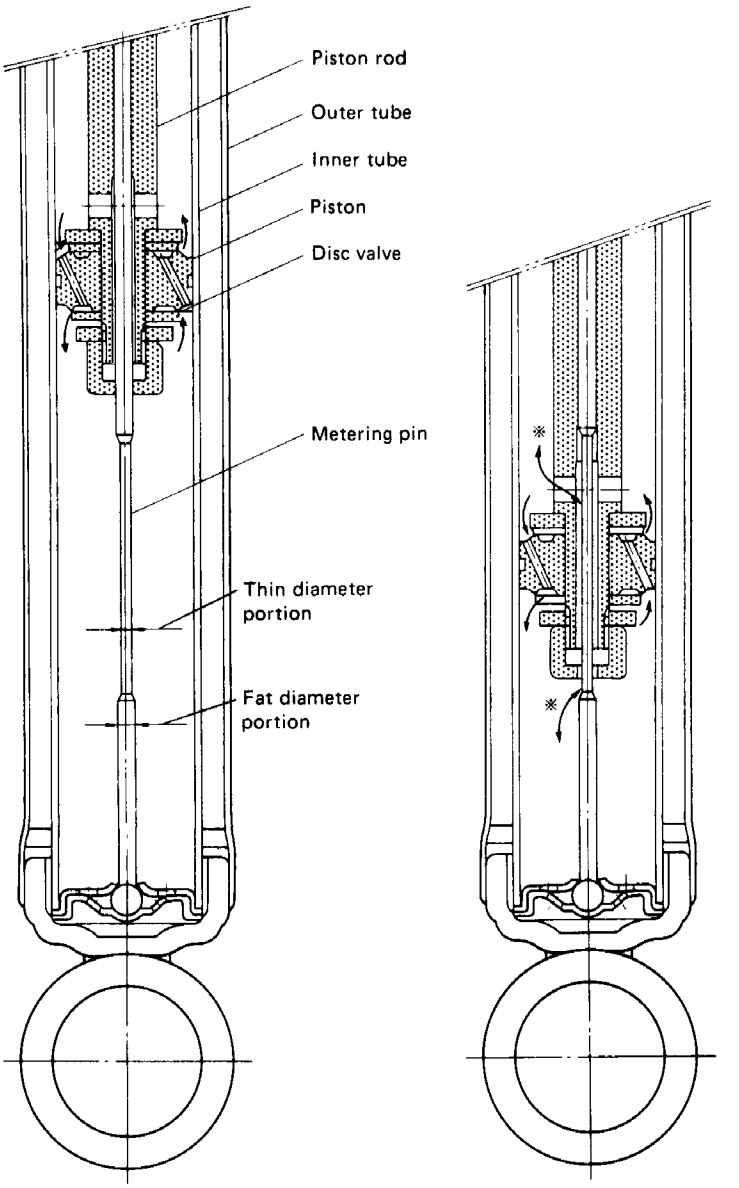

Piston rod
Outer tube
Inner tube
Piston
Disc valve
Metering pin
Thin diameter portion
Fat diameter portion
※
※
A. Oil flow for hard damping force
B. Oil flow for soft damping force
L4-126

Fig. 16

SPECIFICATIONS AND SERVICE DATA

SPECIFICATIONS

CONVENTIONAL SUSPENSION

				1800 cc FWD	2700 cc FWD
Front suspension	Stabilizer	Bar diameter mm (in)		19 (0.75)	20 (0.79)
	Coil spring	Coil diameter mm (in)		130 (5.12)	
		Coefficient of spring N/mm (kg/mm, lb/in)		25.5 (2.6, 146)	30.4 (3.1, 174)
	Damper strut	Outer cylinder length mm (in)		322.5 (12.70)	319 (12.56)
		Piston rod diameter mm (in)		20 (0.79)	22 (0.87)
		Damping force [at the piston speed] N (kg, lb)	Expansion	981 (100, 221)	
			Compression	490 (50, 110)	
Rear suspension	Stabilizer	Bar diameter mm (in)		16 (0.63)	
	Coil spring	Coil diameter mm (in)		78 (3.07)	
		Coefficient of spring N/mm (kg/mm, lb/in)		31.4 (3.2, 179)	
	Shock absorber	Outer cylinder length mm (in)		279 (10.98)	
		Piston rod diameter mm (in)		12.5 (0.492)	
		Damping force [at the piston speed 0.3 m (1.0 ft)/sec] N (kg, lb)	Expansion	981 (100, 221)	
			Compression	490 (50, 110)	

AIR (PNEUMATIC) SUSPENSION

				Front		Rear	
				1800 cc	2700 cc	1800 cc	2700 cc
Stabilizer	Bar diameter mm (in)			19 (0.75)	20 (0.79)	20 (0.79)	
Air suspension CP	Piston rod diameter mm (in)			20 (0.79)	22 (0.87)	12.5 (0.492)	
	Damping force [at the piston speed 0.3 m (1.0 ft)/sec] N (kg, lb)	Hard	Expansion	1,177 (120, 265)		1,372 (140, 309)	1,177 (120, 265)
			Compression	588 (60, 132)		588 (60, 132)	
		Soft	Expansion	686 (70, 154)	981 (100, 221)	981 (100, 221)	
			Compression	490 (50, 110)		490 (50, 110)	

WHEEL ALIGNMENT

					FWD			4WD		
					1800	2700		1800	2700	
Front	Camber (common difference: ±0°45')				0°			0°40'	0°50'	
	Caster (common difference: ±0°45')				4°05'			3°25'	3°30'	
	Toe				Normal	Minimum	Maximum	Normal	Minimum	Maximum
		Service limit	mm (in)		0 (0)	3 (0.12) IN	3 (0.12) OUT	5 (0.20) OUT	8 (0.31) OUT	2 (0.08) OUT
			Degrees: per wheel		0°	0°09' IN	0°09' OUT	0°15' OUT	0°24' OUT	0°06' OUT
		Service standard *3	mm (in)		0 (0)	1 (0.04) IN	1 (0.04) OUT	5 (0.20) OUT	6 (0.24) OUT	4 (0.16) OUT
			Degrees: per wheel		0°	0°03' IN	0°03' OUT	0°15' OUT	0°18' OUT	0°12' OUT
	Side slip with one occupant	Service limit	m/km (ft/mile)		IN 5 – OUT 5 (IN 26 – OUT 26)					
		Service standard *3	m/km (ft/mile)		IN 3 – OUT 3 (IN 16 – OUT 16)					
	Ground clearance *1		mm (in)		226^{+12}_{-22} ($8.90^{+0.47}_{-0.87}$)	216^{+12}_{-22} ($8.50^{+0.47}_{-0.87}$)		248^{+12}_{-22} ($9.76^{+0.47}_{-0.87}$)	253^{+12}_{-22} ($9.96^{+0.47}_{-0.87}$)	
Rear	Camber (common difference: ±0°45')				0°			–0°10'		
	Toe				Normal		Minimum		Maximum	
		Service limit	mm (in)		0 (0)		3 (0.12) IN		3 (0.12) OUT	
			Degrees: per wheel		0°		0°09' IN		0°09' OUT	
		Service standard *3	mm (in)		0 (0)		2 (0.08) IN		2 (0.08) OUT	
			Degrees: per wheel		0°		0°06' IN		0°06' OUT	
	Side slip with one occupant		m/km (ft/mile)		IN 5 – OUT 5 (IN 26 – OUT 26)					
	Ground clearance *2		mm (in)		203^{+10}_{-20} ($7.99^{+0.39}_{-0.79}$)	200^{+10}_{-20} ($7.87^{+0.39}_{-0.79}$)		250^{+10}_{-20} ($9.84^{+0.39}_{-0.79}$)	248^{+10}_{-20} ($9.76^{+0.39}_{-0.79}$)	

***1 Measure the ground clearance at center of front end face of the transverse link attaching bolt.**
***2 Measure the ground clearance at lower face of the crossmember.**
***3 If the inspection data is out of "SERVICE LIMIT", readjust within "SERVICE STANDARD".**

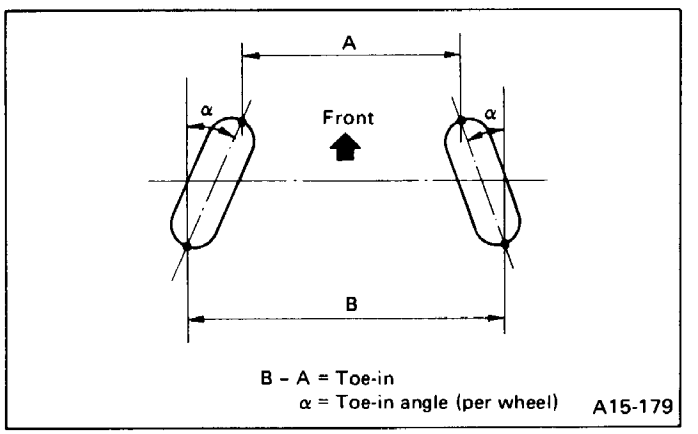


Fig. 17 Toe-in

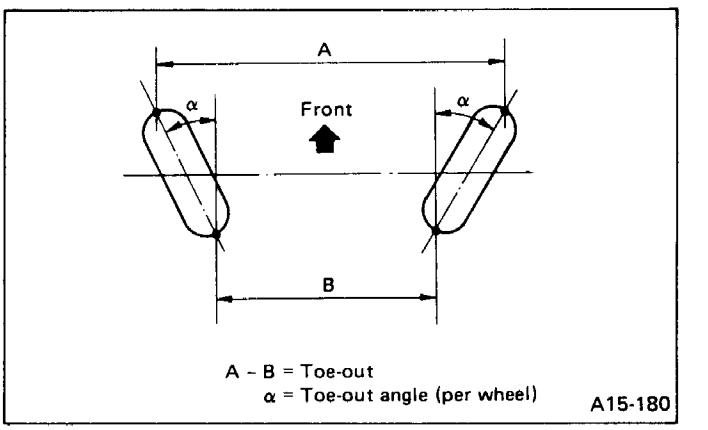


Fig. 18 Toe-out

SERVICE DATA

CONVENTIONAL SUSPENSION

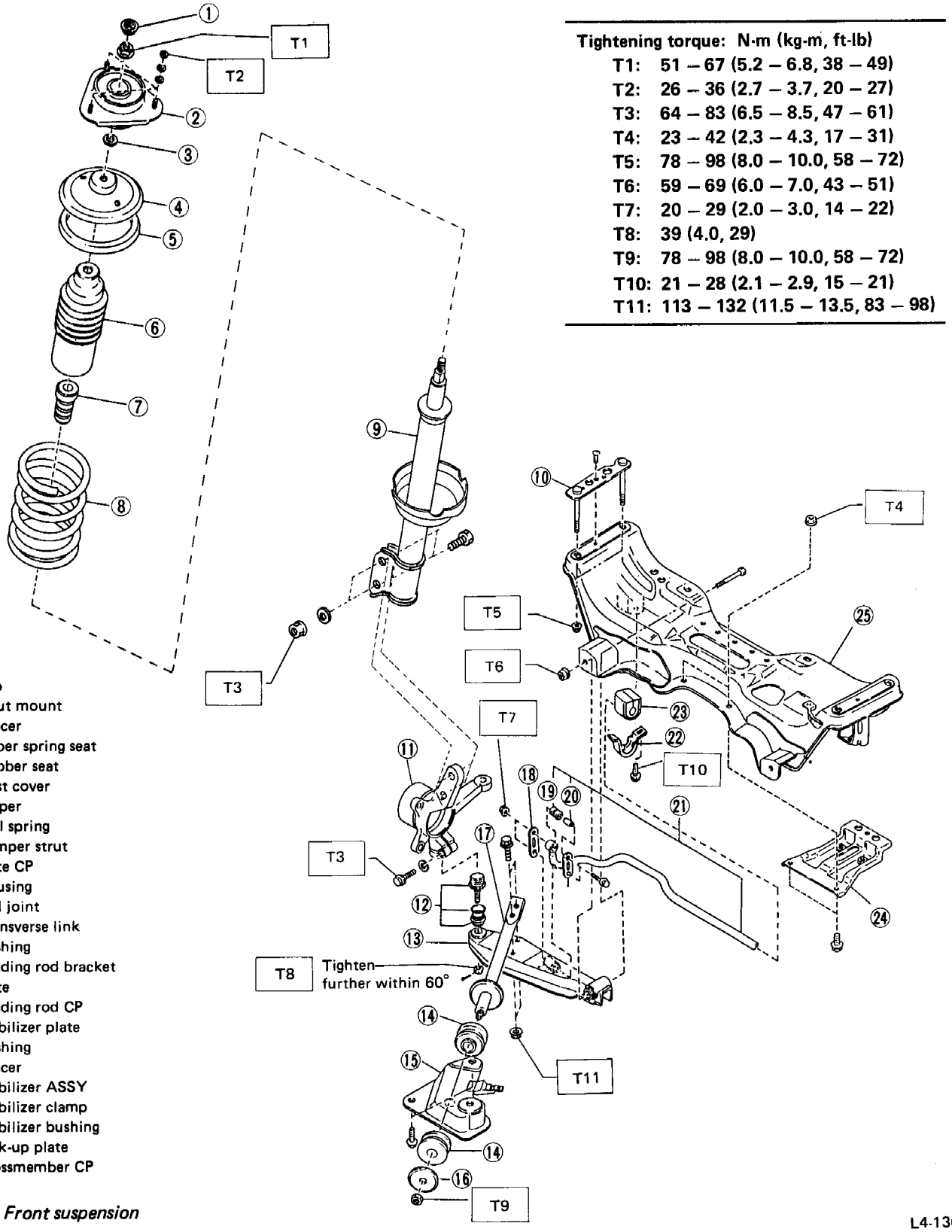
Front strut	Piston rod deflection	Limit	0.8 mm (0.031 in)/20 N (2 kg, 4 lb)

AIR (PNEUMATIC) SUSPENSION

Recommended grease	NOK SEALUB S-4
Recommended O-ring	NOK material; A980

COMPONENT PARTS

Conventional Suspension



Tightening torque: N·m (kg-m, ft-lb)

T1:	51 – 67 (5.2 – 6.8, 38 – 49)
T2:	26 – 36 (2.7 – 3.7, 20 – 27)
T3:	64 – 83 (6.5 – 8.5, 47 – 61)
T4:	23 – 42 (2.3 – 4.3, 17 – 31)
T5:	78 – 98 (8.0 – 10.0, 58 – 72)
T6:	59 – 69 (6.0 – 7.0, 43 – 51)
T7:	20 – 29 (2.0 – 3.0, 14 – 22)
T8:	39 (4.0, 29)
T9:	78 – 98 (8.0 – 10.0, 58 – 72)
T10:	21 – 28 (2.1 – 2.9, 15 – 21)
T11:	113 – 132 (11.5 – 13.5, 83 – 98)

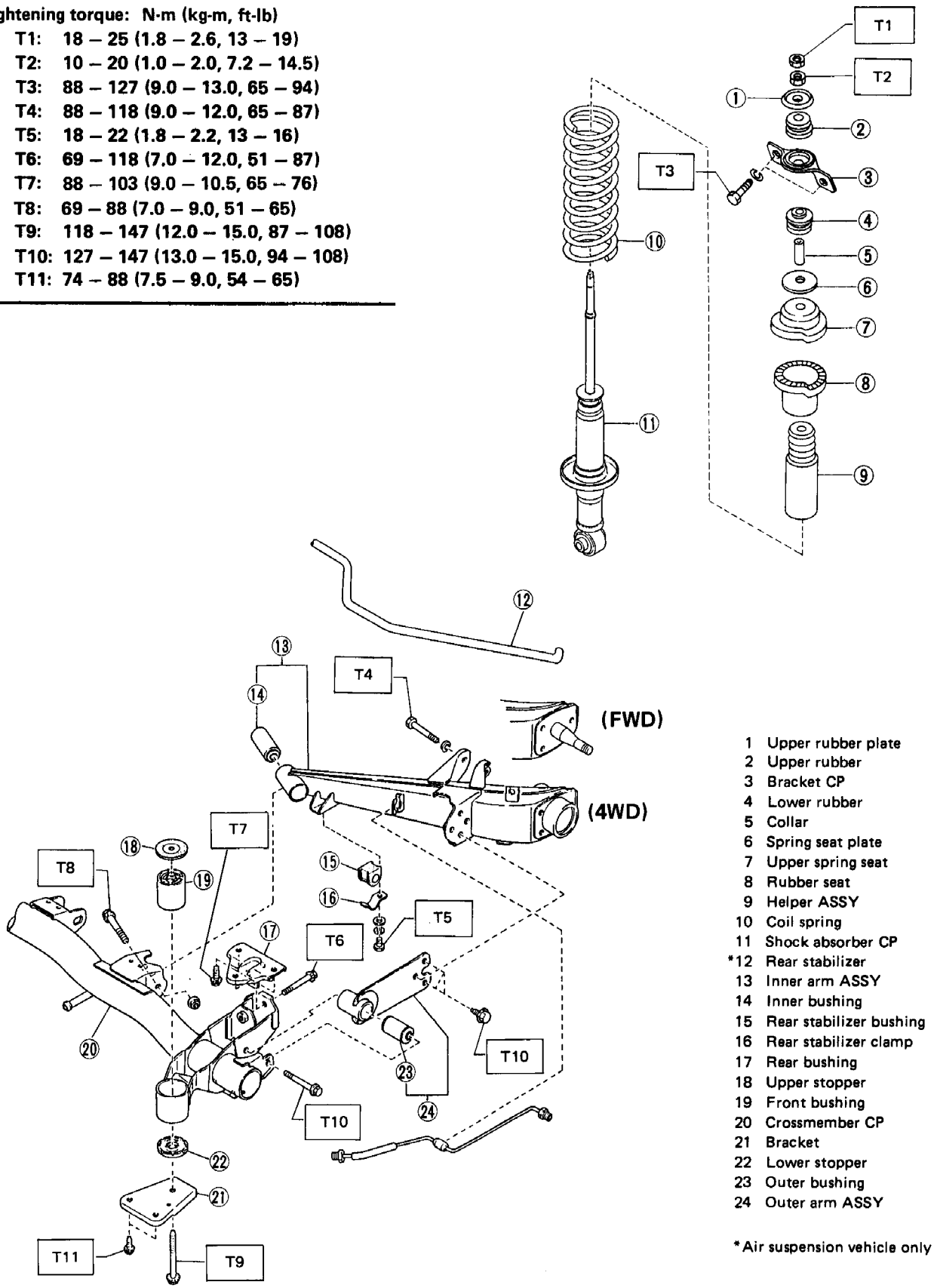
1 Cap
2 Strut mount
3 Spacer
4 Upper spring seat
5 Rubber seat
6 Dust cover
7 Helper
8 Coil spring
9 Damper strut
10 Plate CP
11 Housing
12 Ball joint
13 Transverse link
14 Bushing
15 Leading rod bracket
16 Plate
17 Leading rod CP
18 Stabilizer plate
19 Bushing
20 Spacer
21 Stabilizer ASSY
22 Stabilizer clamp
23 Stabilizer bushing
24 Jack-up plate
25 Crossmember CP

Fig. 19 Front suspension

L4-1365

Tightening torque: N·m (kg-m, ft-lb)

- **T1: 18 – 25 (1.8 – 2.6, 13 – 19)**
- **T2: 10 – 20 (1.0 – 2.0, 7.2 – 14.5)**
- **T3: 88 – 127 (9.0 – 13.0, 65 – 94)**
- **T4: 88 – 118 (9.0 – 12.0, 65 – 87)**
- **T5: 18 – 22 (1.8 – 2.2, 13 – 16)**
- **T6: 69 – 118 (7.0 – 12.0, 51 – 87)**
- **T7: 88 – 103 (9.0 – 10.5, 65 – 76)**
- **T8: 69 – 88 (7.0 – 9.0, 51 – 65)**
- **T9: 118 – 147 (12.0 – 15.0, 87 – 108)**
- **T10: 127 – 147 (13.0 – 15.0, 94 – 108)**
- **T11: 74 – 88 (7.5 – 9.0, 54 – 65)**



1 Upper rubber plate
2 Upper rubber
3 Bracket CP
4 Lower rubber
5 Collar
6 Spring seat plate
7 Upper spring seat
8 Rubber seat
9 Helper ASSY
10 Coil spring
11 Shock absorber CP
*12 Rear stabilizer
13 Inner arm ASSY
14 Inner bushing
15 Rear stabilizer bushing
16 Rear stabilizer clamp
17 Rear bushing
18 Upper stopper
19 Front bushing
20 Crossmember CP
21 Bracket
22 Lower stopper
23 Outer bushing
24 Outer arm ASSY

*Air suspension vehicle only

Fig. 20 Rear suspension

L4-1294

Air (Pneumatic) Suspension

Tightening torque: N·m (kg-m, ft-lb)
T1: 5 – 15 (0.5 – 1.5, 3.6 – 11)
T2: 51 – 67 (5.2 – 6.8, 38 – 49)
T3: 26 – 36 (2.7 – 3.7, 20 – 27)
T4: 18 – 25 (1.8 – 2.6, 13 – 19)
T5: 10 – 20 (1.0 – 2.0, 7 – 14)
T6: 5.4 – 9.3 (0.55 – 0.95, 4.0 – 6.9)

1 Front air suspension
2 Strut mount
3 Flange nut
4 O-ring
5 Bushing
6 Cap
7 Rear air suspension
8 Solenoid valve
9 Plate (upper rubber)
10 Upper rubber
11 Bracket
12 Lower rubber
13 Collar
14 Plate (upper)

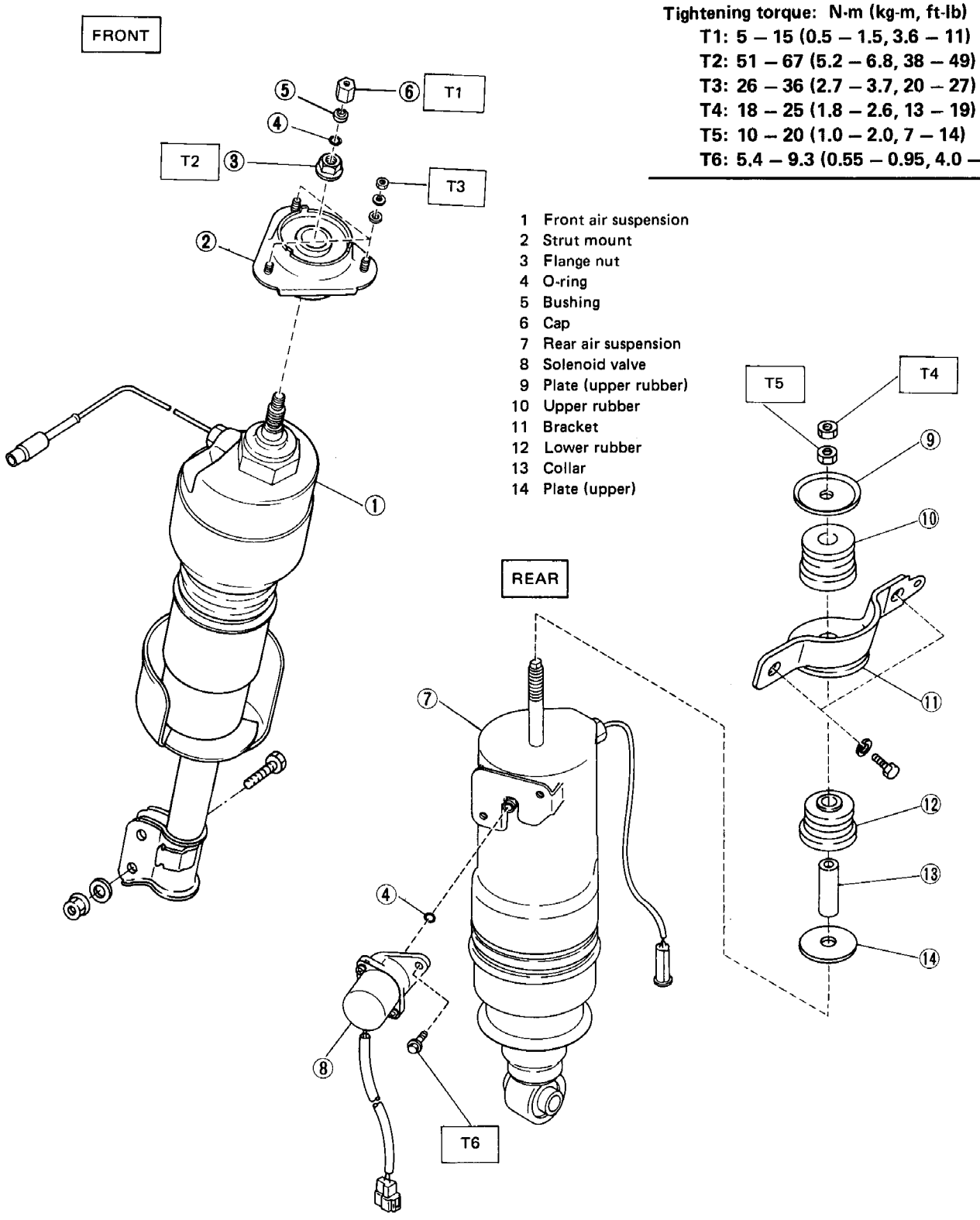
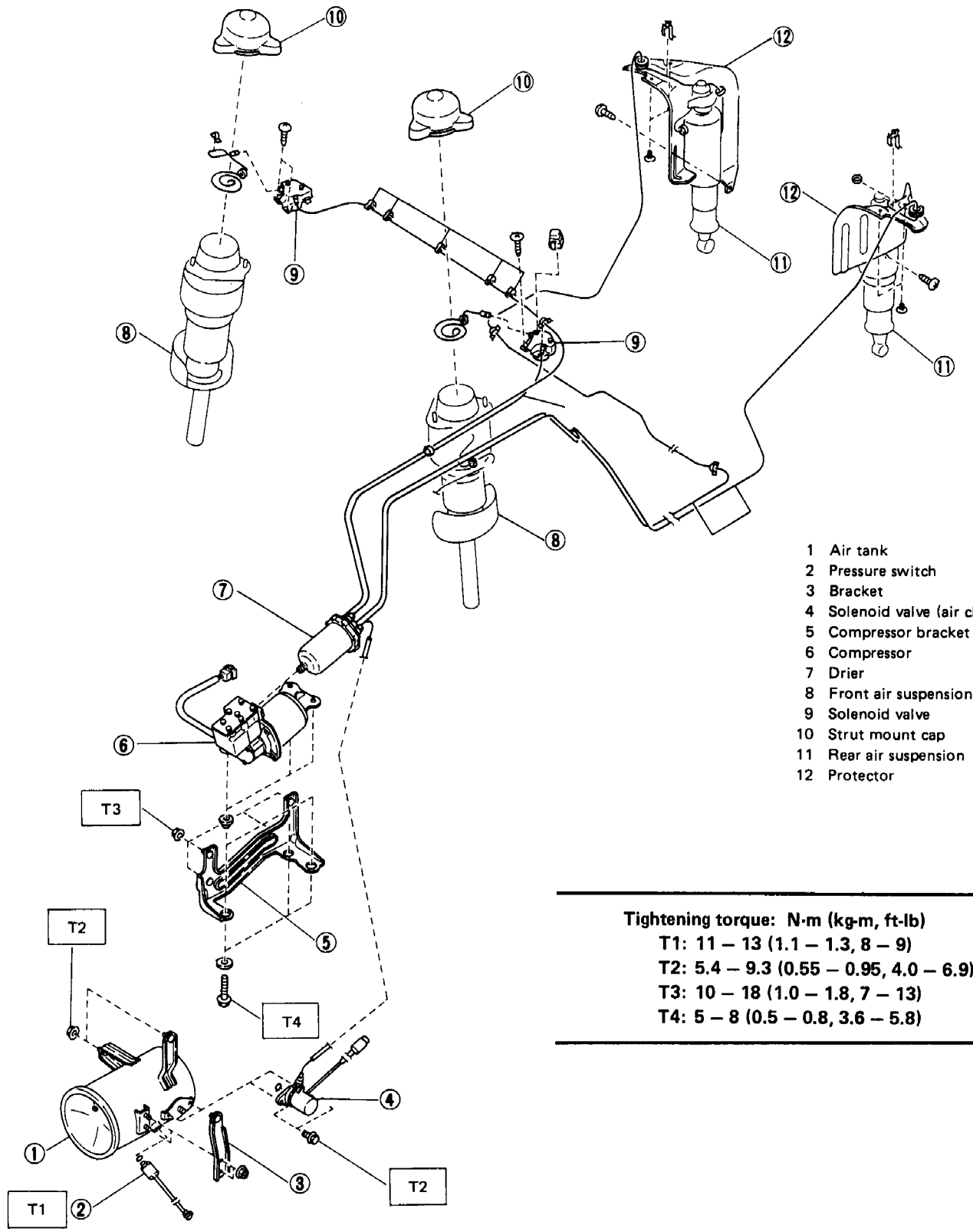


Fig. 21 Front and rear air suspension

L4-1366



1 Air tank
2 Pressure switch
3 Bracket
4 Solenoid valve (air charge)
5 Compressor bracket
6 Compressor
7 Drier
8 Front air suspension
9 Solenoid valve
10 Strut mount cap
11 Rear air suspension
12 Protector

Tightening torque: N·m (kg-m, ft-lb)
T1: 11 – 13 (1.1 – 1.3, 8 – 9)
T2: 5.4 – 9.3 (0.55 – 0.95, 4.0 – 6.9)
T3: 10 – 18 (1.0 – 1.8, 7 – 13)
T4: 5 – 8 (0.5 – 0.8, 3.6 – 5.8)

Fig. 22

L4-1010

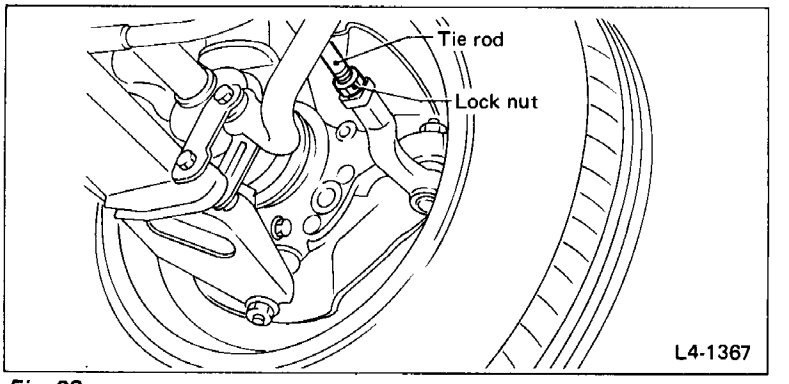
SERVICE PROCEDURE FOR CONVENTIONAL SUSPENSION

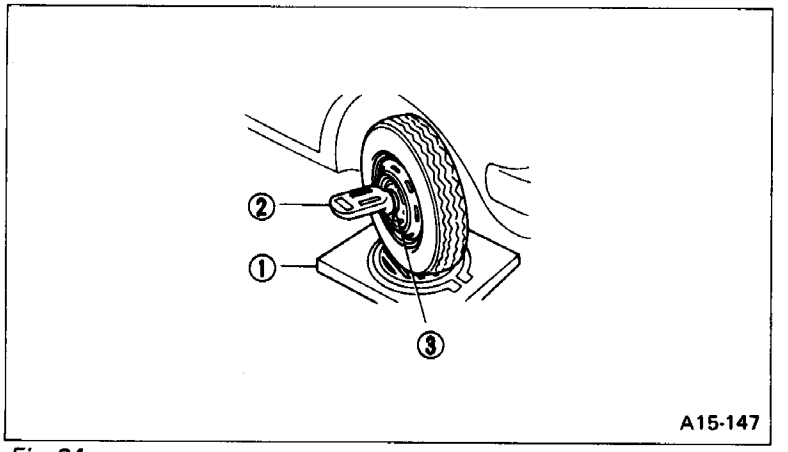
Inspection and Adjustment

The following chart outlines the basic inspection and adjustment procedures for the entire front suspension system. Regarding specific procedures for individual parts, refer to the applicable instructions set forth in this manual.

● Front Suspension

Item to be checked	Description	Remarks
Coil spring	Vehicle posture Park the vehicle on a level, solid surface, and check for lateral inclination of the vehicle. **a. Make sure that all tires are inflated to the specified pressure.** **b. If any noticeable lateral vehicle inclination is detected visually, determine whether it is due to permanent deformation of coil spring(s), improper body alignment, or other factors.** **c. If vehicle inclination (to either side) is due to permanent deformation of coil spring, remove the coil spring and replace it.** **d. Replace the coil spring if it is cracked, broken or damaged.**	Visual inspection
Damper strut	Damping Force/Noise Rock the left side of the vehicle up and down, and then rock the right side, to check for noise or variances in vehicle posture. **If the up-and-down movement (when hands have been released) continues longer than usual or if any abnormal noise is detected, check the condition of the strut itself.** **Refer to instructions for inspection procedures.** Oil leakage Check for oil leaks at or around the lower portion of the strut and oil seal ASSY. **It is normal for a trace of oil to be oozing at the oil seal ASSY.** Cracks, Damage or Deformation Check the outer shell for any cracks, damage or deformation. Replace the dust cover if it is damaged.	Visual and tactile inspection

Item to be checked	Description	Remarks
Wheel alignment	Preliminary Inspection Before checking/adjusting front wheel alignment, be sure to make a prior inspection of the following points and repair/replace the damaged portions/parts as necessary. • Tire pressure • Wear or damage of tires • Wheel balance • Looseness on suspension • Looseness and smooth operation on axle linkage and connection • Looseness and smooth operation on steering linkage and connection • Shock absorber operation and oil leakage • Damage, deformation etc. on body attaching portion of suspension, axle and steering linkage and connection • Vehicle height [It is recommended that the difference of vehicle height between the front and rear ends, or the left and right sides is less than 10 mm (0.39 in) in the unloaded condition.] • Stain, rust, grease leakage etc. on front end parts Toe Adjustment Inflate all tires to the specified pressure, and park the vehicle (unloaded) on a level, solid surface. Loosen both the left and right lock nuts ①. If the toe is not within the specified value when measured with a toe gauge, turn the left and right tie rods ② equal amounts until the toe is within the specified range.  *Fig. 23* **Torque (lock nut):** **78 – 88 N·m (8 – 9 kg-m, 58 – 65 ft-lb)** **a. If the tie-rod and the tie-rod end have been disassembled, assemble these parts in advance so that the toe is near the specified range.** **b. Both the left and right tie-rods are right-hand threaded. To increase toe-in, turn both tie-rods counterclockwise equal amounts (as viewed from the outside of the vehicle).** **c. Always adjust the toe after steering angle adjustment.** **d. Refer to the "Specifications" for the specified toe.**	Toe gauge

Item to be checked	Description	Remarks
Wheel alignment (continued)	Camber and Caster Neither camber nor caster can be adjusted. To measure camber and caster, place the wheel to be measured on the turning radius gauge ①, and make sure the vehicle is level. Set ADAPTER ③ (926500000) into the center of the wheel, and then install the alignment gauge ②.  *Fig. 24* **a. Refer to the "Specifications" for the camber and caster values.** **b. If the camber or caster measurement is not within the specified range, check for body alignment, deformed transverse link or faulty parts. Repair or replace the parts, if necessary.**	Turning radius gauge Alignment gauge ADAPTER (926500000)
Entire front suspension	Looseness Check each mounting portion of the following for looseness and inspect the castle nuts for missing cotter pins. (1) Strut mount to vehicle body (2) Damper strut piston rod to strut mount (3) Damper strut to housing (4) Housing to ball joint (5) Ball joint to transverse link (6) Transverse link to leading rod (7) Leading rod to leading rod bracket (8) Transverse link to front crossmember (9) Crossmember to body (10) Stabilizer to front crossmember (11) Stabilizer to transverse link (12) Leading rod bracket to body Cracks, Damage or Deformation Check the following parts for cracks, damage or deformation. (1) Crossmember (front) (2) Damper strut (3) Housing (4) Ball joint (5) Transverse link (6) Leading rod (7) Stabilizer (8) Leading rod bracket Rubber Parts Check the following parts for deterioration, cracks or damage. (1) Strut mount (2) Damper strut dust cover (3) Ball joint boot (4) Transverse link bushing (5) Leading rod bushing (6) Stabilizer bushing	Visual inspection Visual inspection

● Rear Suspension

Item to be checked	Description	Remarks
Coil spring	Vehicle posture Park the vehicle on a level, solid surface, and check for lateral inclination of the vehicle. **a. Make sure that all tires are inflated to the specified pressure.** **b. If any noticeable lateral vehicle inclination is detected visually, determine whether it is due to permanent deformation of coil spring(s), improper body alignment, or other factors.** **c. If vehicle inclination (to either side) is due to permanent deformation of coil spring, remove the coil spring and replace it.** **d. Replace the coil spring if it is cracked, broken or damaged.**	Visual inspection
Shock absorber	Damping Force/Noise Rock the left side of the vehicle up and down, and then rock the right side, to check for noise or variances in vehicle posture. **If the up-and-down movement (when hands have been released) continues longer than usual or if any abnormal noise is detected, check the condition of shock absorber itself.** **Refer to instructions for inspection procedures.** Oil leakage Check for oil leaks at or around the lower portion of shock absorber and oil seal. **It is normal for a trace of oil to be oozing at the oil seal.** Cracks, Damage or Deformation Check the outer shell for any cracks, damage or deformation. Replace dust cover or bushings if damaged.	Visual and tactile inspection

ADJUSTING PROCEDURE OF REAR SUSPENSION ALIGNMENT

Toe

1) Jack up rear of vehicle as shown in "Pre-Delivery Inspection", and remove rear wheels.
2) Loosen outer arm mounting bolts.

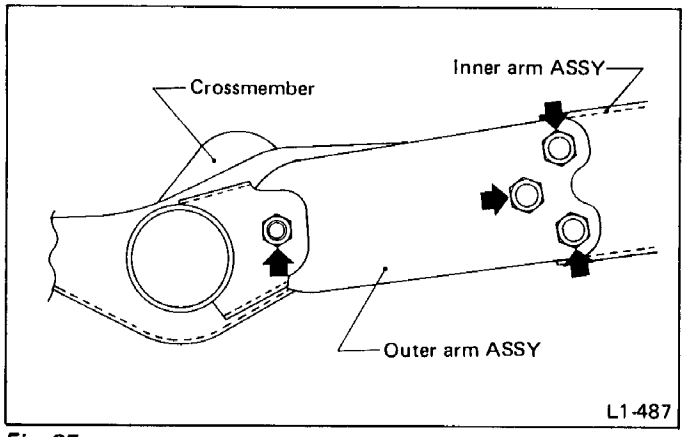


Fig. 25

3) When toe-in is excessive, tighten outer arm mounting bolts shown in Fig. 25 while pushing end of spindle towards rear of vehicle (in direction of arrow in Fig. 26). When toe-out is excessive, tighten outer arm mounting bolts while pulling end of spindle toward front of vehicle (in opposite direction of arrow in Fig. 26).

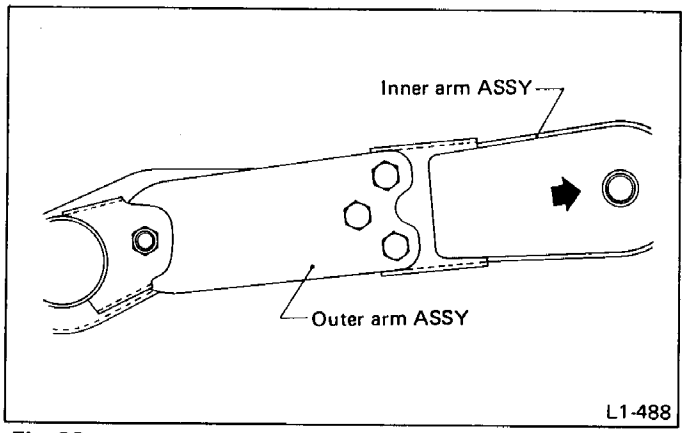


Fig. 26

4) Adjust toe within service standard by repeating steps in 2) and 3) above for both right and left wheels.

Camber

1) Jack up rear of vehicle as shown in "Pre-Delivery Inspection", and remove wheel whose camber angle is out of standard.
2) Remove bolt linking lower end of shock absorber to inner arm.
3) Then, loosen outer arm mounting bolts shown in Fig. 25.
4) If camber angle is excessive in ⊕ direction, use a piece of wood as a lever and change relative angle between inner arm and outer arm so that angle θ formed by inner arm and outer arm centerlines (Fig. 27) increases. Then, tighten outer arm mounting bolts.

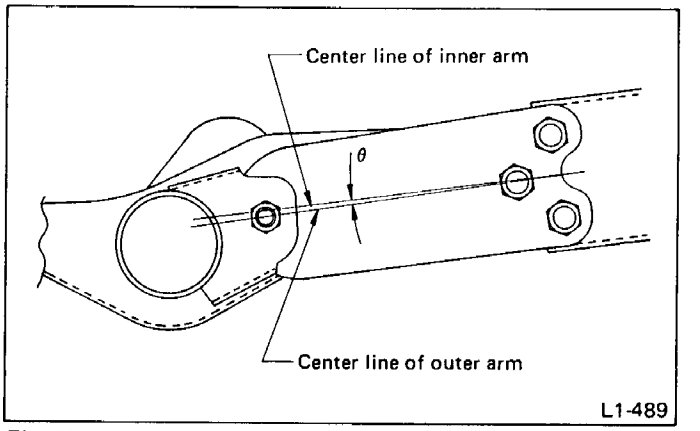


Fig. 27

5) If camber angle is excessive in ⊖ direction, use a piece of wood as a lever and change relative angle between inner and outer arms so that angle θ formed by inner arm and outer arm centerlines decreases. Then, tighten outer arm mounting bolts.
6) Adjust camber angle to conform to service standard by repeating steps 4) and 5) above.

a. Adjusting toe results in a change in camber angle, while adjusting camber angle causes a change of toe. Therefore, when either is adjusted, always check that the other remains within service standard.
b. After both toe and camber angle have been adjusted within service standard, be sure to tighten bolts to the specified torque.

Ground Clearance Measuring (4WD Models Only)

Ground clearances of front and rear suspensions of 4WD vehicles can be measured according to the following procedure.

a. Before measuring the ground clearance, check air pressure of the all tires and adjust to the specified pressure if necessary.
b. Place the vehicle under unloaded condition on the flat ground.

Front Ground Clearance

Vehicle	Specified ground clearance
1800 4WD	255^{+12}_{-22} mm ($10.04^{+0.47}_{-0.87}$ in)
2700 4WD	253^{+12}_{-22} mm ($9.96^{+0.47}_{-0.87}$ in)

Check the ground clearance by measuring between front end of transverse link attaching bolt and ground.

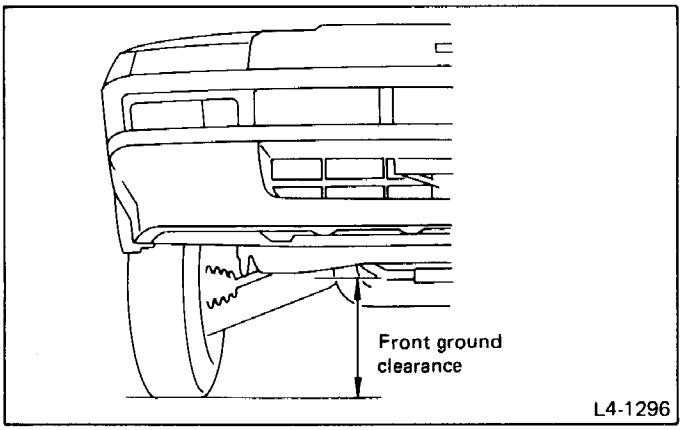


Fig. 28

If ground clearance is out of the specified range in the above table, replace the coil spring.

Rear Ground Clearance

Vehicle	Specified ground clearance
1800 4WD	250^{+10}_{-20} mm ($9.84^{+0.39}_{-0.79}$ in)
2700 4WD	248^{+10}_{-20} mm ($9.76^{+0.39}_{-0.79}$ in)

Measure the ground clearance (from lowest point of cross-member pipe to the ground).

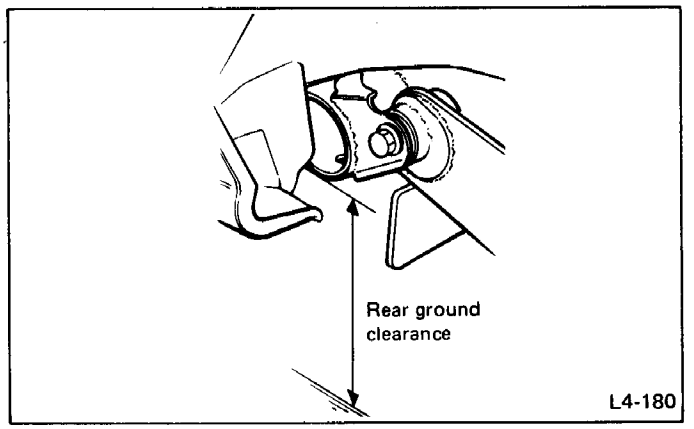


Fig. 29

Front Suspension Assembly

REMOVAL

1) Disconnect ground cable from battery.
2) Apply parking brake.
3) Loosen front wheel nuts.
4) Jack up vehicle, support it with safety stands (rigid racks) and remove front wheels.
5) Release parking brake.
6) Remove parking brake cable bracket from transverse link.

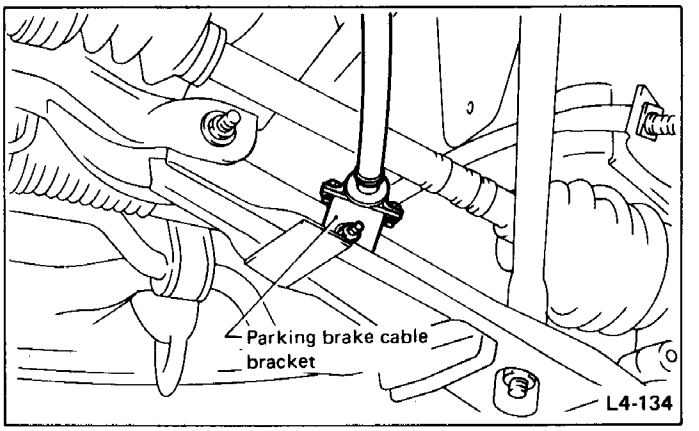


Fig. 30

7) Disconnect parking brake cable end.
   (1) Remove outer cable clip.
   (2) Disconnect the cable end from the caliper lever.

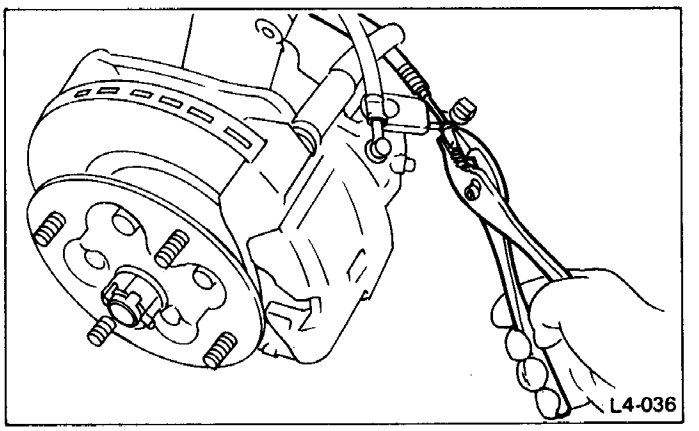


Fig. 31

8) Disconnect brake hose from brake pipe at apron bracket.

a. Fit air bleeder cap onto brake pipe to prevent brake fluid from pouring.
b. When removing or installing flare nut, use flare nut wrench without fail.

9) Drive out spring pin of D.O.J. at inner end by using a steel rod of 6 mm (0.24 in) diameter.

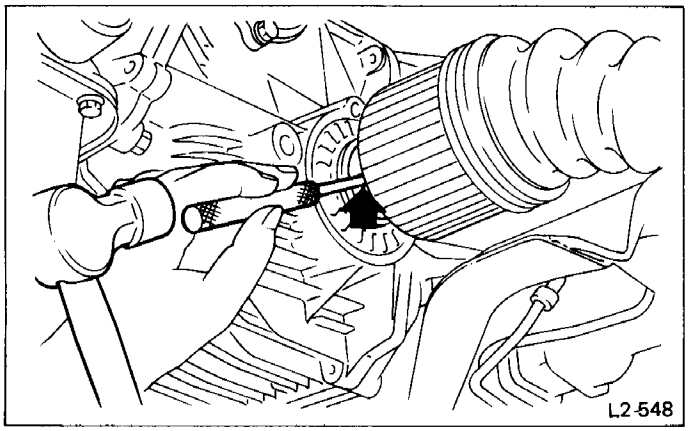


Fig. 32

10) Disconnect the end of stabilizer from transverse link.

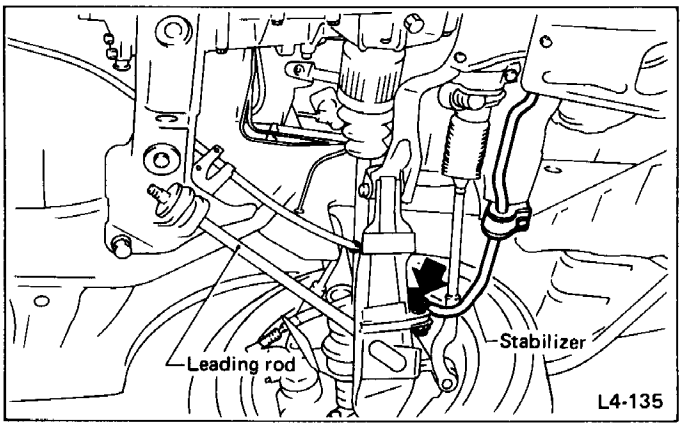


Fig. 33

11) Remove leading rod from leading rod bracket.
12) Disconnect transverse link bush from front crossmember.

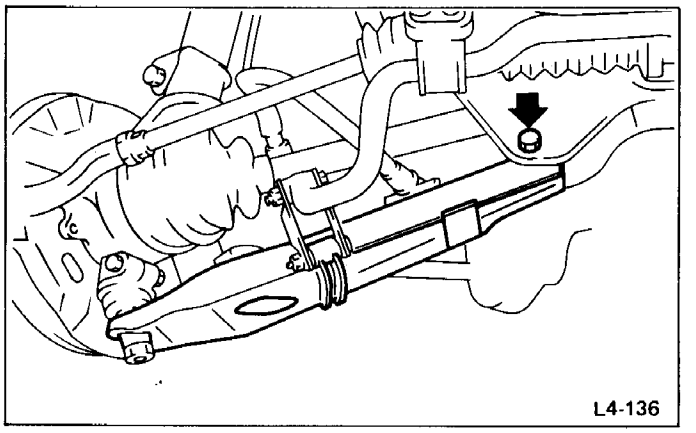


Fig. 34

13) Take out transverse link along with leading rod.

14) Pull out cotter pin and remove castle nut. Then disconnect the ball stud of tie-rod end ball joint from housing.

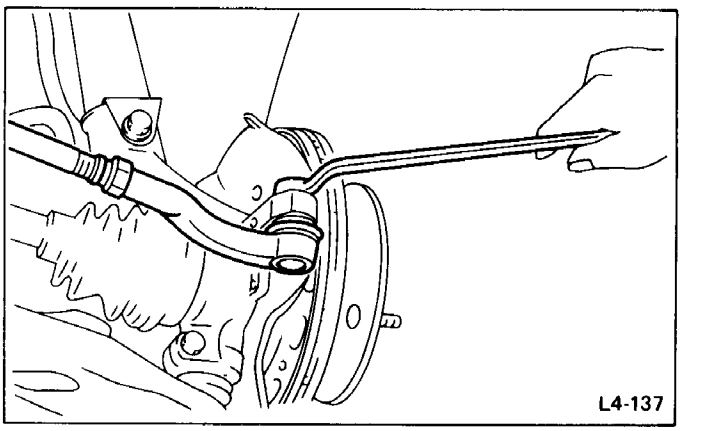


Fig. 35 Installing tie-rod end

15) Loosen nuts connecting strut mount to body, then pull D.O.J. out of differential spindle, and remove front suspension ASSY from body.

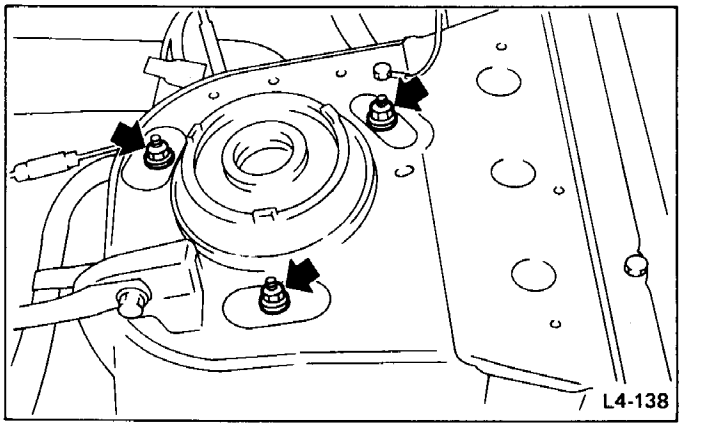


Fig. 36

INSPECTION

Check the removed parts for any wear, damage and cracks, and correct or replace if defective.

INSTALLATION

a. Carry out the specified adjustments for control system.
b. Be sure to measure wheel alignment after installing suspension.
c. Replace cotter pins and axle shaft spring pins with new ones when installing.

1) Install strut mount to body.

Torque:
26 – 36 N·m (2.7 – 3.7 kg-m, 20 – 27 ft-lb)

2) Align the spring pin holes of D.O.J. and differential spindle, and insert D.O.J. to differential spindle.

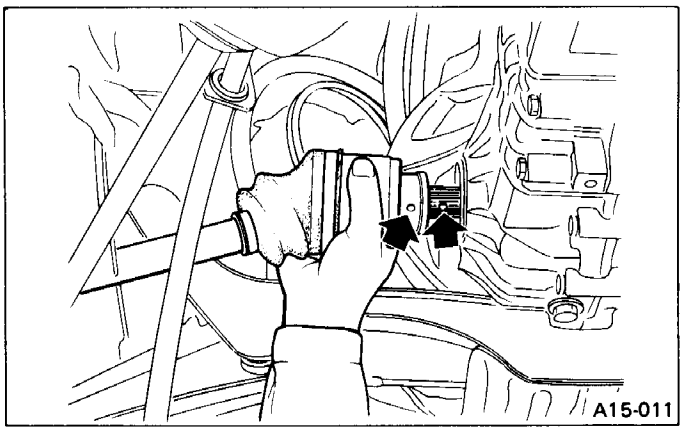


Fig. 37

3) Install leading rod to leading rod bracket according to the following procedure.
(1) Install a bush to leading rod.
(2) Install leading rod to leading rod bracket, besides install a bush, a plate and a self-lock nut.
(3) Tighten self-lock nut.

Torque:
78 – 98 N·m (8.0 – 10.0 kg-m, 58 – 72 ft-lb)

Self-lock nut should be replaced with new one whenever it is removed.

4) Connect D.O.J. and differential spindle by driving spring pin in.

a. Make sure that the holes are aligned before driving the spring pin in.
b. When driving the spring pin in, always use new one.

5) Install transverse link temporarily to crossmember by using bolt and self-lock nut.
6) Install tie-rod end ball joint to the housing knuckle arm.

Torque (Castle nut):
25 – 29 N·m (2.5 – 3.0 kg-m, 18 – 22 ft-lb)

After tightening the nut to the specified torque, adjust groove on the nut and hole on the ball joint by retightening the nut from 0 to 60 degrees.

7) Then install new cotter pin into the hole, and bend it firmly.

8) Connect stabilizer end bracket to transverse link.

Torque:
20 – 29 N·m (2.0 – 3.0 kg-m, 14 – 22 ft-lb)

9) Attach brake hose to apron bracket by using clip, and then connect brake hose to brake pipe.

Torque:
13 – 18 N·m (1.3 – 1.8 kg-m, 9 – 13 ft-lb)

10) Install parking brake cable bracket to transverse link.

Torque (Bolt):
10 – 16 N·m (1.0 – 1.6 kg-m, 7 – 12 ft-lb)

11) Install parking brake outer cable by attaching outer cable clip to brake caliper.
Install the parking brake cable end to the caliper lever.
12) Bleed air from brake system.
13) Install wheels.

Torque (wheel nut):
78 – 98 N·m (8 – 10 kg-m, 58 – 72 ft-lb)

14) Lower vehicle and tighten self-lock nut which installs transverse link to crossmember.

Torque (self-lock nut):
59 – 69 N·m (6.0 – 7.0 kg-m, 43 – 51 ft-lb)

Front Strut Assembly

REMOVAL

1) Disconnect ground cable from battery.
2) Apply parking brake.
3) Loosen front wheel nuts.
4) Jack up vehicle, support it with safety stands (rigid racks) and remove front wheels.
5) Release parking brake.
6) Disconnect brake hose from caliper body.

Use brake hose cap to prevent brake fluid from pouring.

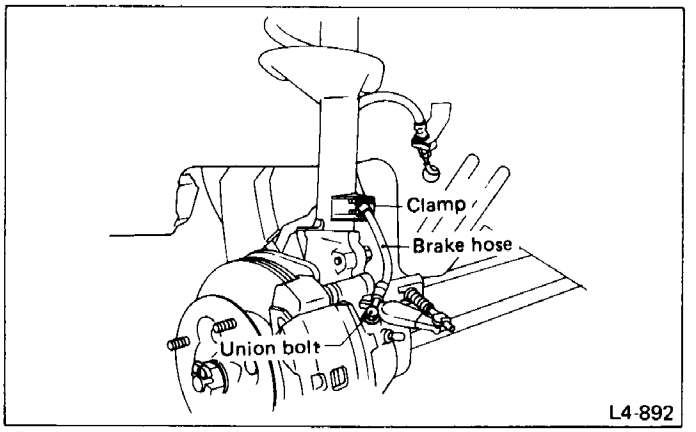


Fig. 38

7) Pull out brake hose securing clip and detach brake hose from damper strut bracket.
8) Remove bolt which connects damper strut to housing.
9) Remove bolt which connects damper strut bracket to housing.
10) Pull strut out of housing gradually and carefully with housing ASSY placed downward.

If strut is rusted, apply sufficient "CRC" on housing and strut before pulling strut out.

11) Remove nuts clamping strut mount to body.
12) Remove strut ASSY from body.

DISASSEMBLY

1) Mount COIL SPRING COMPRESSOR (926110000) to a vice.

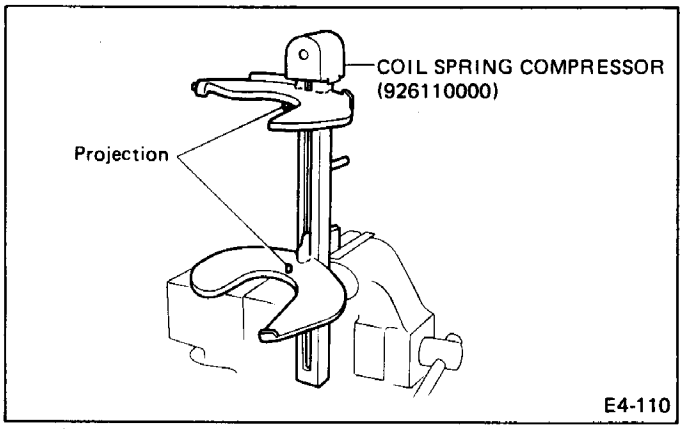


Fig. 39

2) Set the strut ASSY to COIL SPRING COMPRESSOR.

a. Be sure to use the special tool in order to avoid an accident.
b. Set the projections of COIL SPRING COMPRESSOR to the inner diameter side of coil spring.

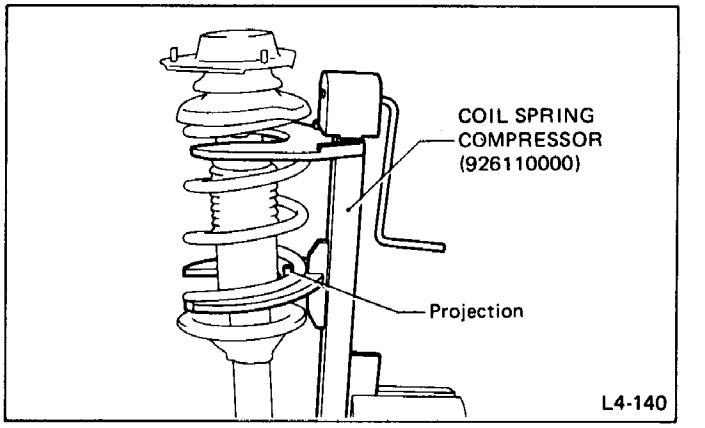


Fig. 40

3) Compress the coil spring by carefully turning the coil spring compressor handle.
(Compress the spring until it comes off the strut upper seat surface.)
4) Loosen the nut that connects the strut mount and the rod.

Fit SPANNER (926510000) into the holes of spring seat, and loosen the nut using a 17 mm box wrench.

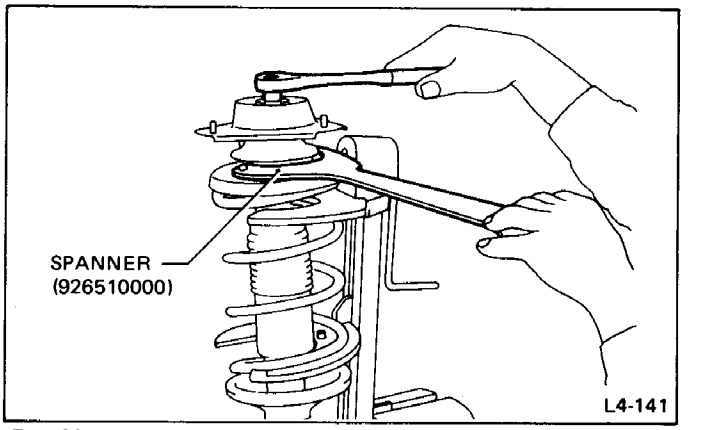


Fig. 41

5) Remove the strut mount and other minor parts.

Use care not to drop spacer.

6) Return carefully the coil spring compressor handle to the original position, and take out the coil spring and strut after making sure that the spring has been stretched fully.

Take out the coil spring, using care not to cause the spring to contact the strut rod.

INSPECTION

Check the disassembled parts for cracks, damage and wear, and replace with new parts if defective.

Damper strut

1) Check for oil leakage.
2) Move the piston rod up and down to check its smooth operation without any binding.
3) Deflection of piston rod

Measure the deflection as follows:
Fix the outer shell and fully extend the rod. Set a dial gauge at the end of the rod, and apply a weight of ±20 N (±2 kg, ±4 lb) to the threaded portion. Read the dial gauge indication. The amplitude of the gauge needle pointer is the deflection of the rod.

Limit of deflection:
Less than 0.8 mm (0.031 in)

If the deflection is greater, replace the strut.

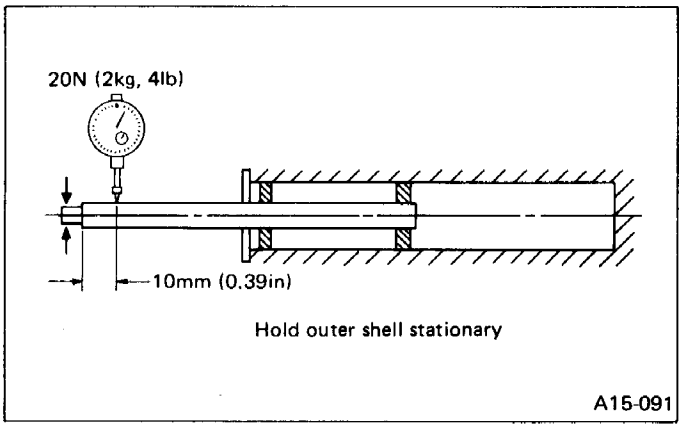


Fig. 42

Strut mount

1) Check rubber part for creep, cracks and deterioration, and replace it with new one if defective.
2) If distortion is found on its connecting surface to body, replace it with a new one.

Dust cover

If any cracks or damage are found, replace it with a new one.

Coil spring

One having permanent strain should be replaced with a new one. When vehicle posture is uneven, although there are no considerable reasons like tire puncture, uneven loading, etc., check coil spring for its free length, cracks, etc., referring to specifications, and replace it with a new one if defective.

Helper

Replace it with new one if cracked or damaged.

ASSEMBLY

1) Compress the coil spring with COIL SPRING COMPRESSOR (926110000).

Make sure that the vertical installing direction of coil spring is as shown below.

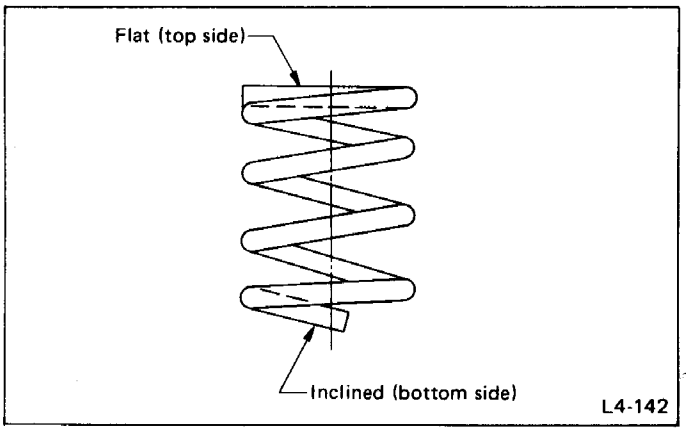


Fig. 43

2) Set the coil spring correctly so that its end face fits well into the spring seat as shown.

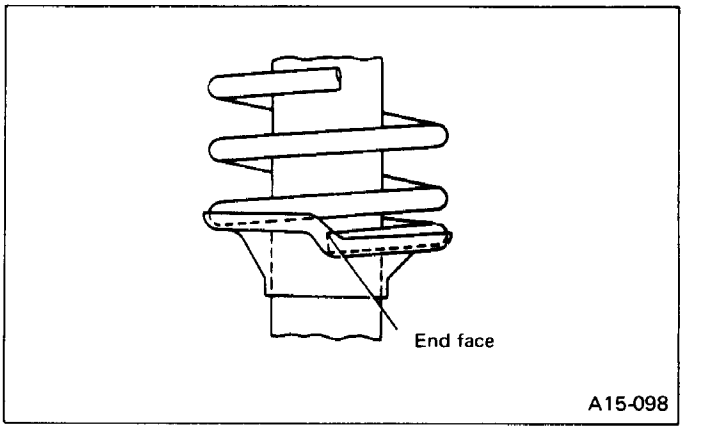


Fig. 44

3) Install helper and dust cover to the piston rod.
4) Pull the piston rod fully upward, and install rubber seat and spring seat.
5) Install sleeve to the piston rod.
6) Install strut mount to the piston rod, and tighten the self-lock nut temporarily.

Be sure to use a new self-lock nut.

7) Loosen COIL SPRING COMPRESSOR carefully.
8) While fixing the spring seat with SPANNER (926510000) tighten the self-lock nut with a box wrench.

Tightening torque:
51 – 67 N·m (5.2 – 6.8 kg-m, 38 – 49 ft-lb)

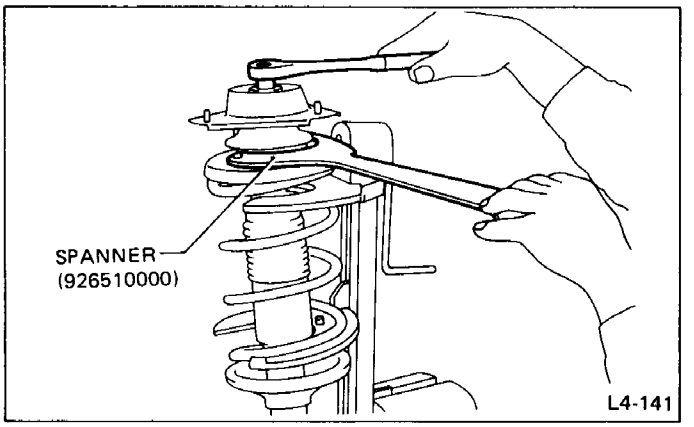


Fig. 45

INSTALLATION

Install the strut ASSY in the reverse sequence of the removal procedure.

Be sure to bleed air from brake system.

Tightening torque:
Nut (Strut mount to body)
26 – 36 N·m (2.7 – 3.7 kg-m, 20 – 27 ft-lb)
Bolt (Damper strut bracket to housing)
and
Bolt (Damper strut to housing)
38 – 50 N·m (3.9 – 5.1 kg-m, 28 – 37 ft-lb)
Disc brake union bolt
15 – 21 N·m (1.5 – 2.1 kg-m, 11 – 15 ft-lb)
Wheel nut:
78 – 98 N·m (8.0 – 10.0 kg-m, 58 – 72 ft-lb)

Front Stabilizer

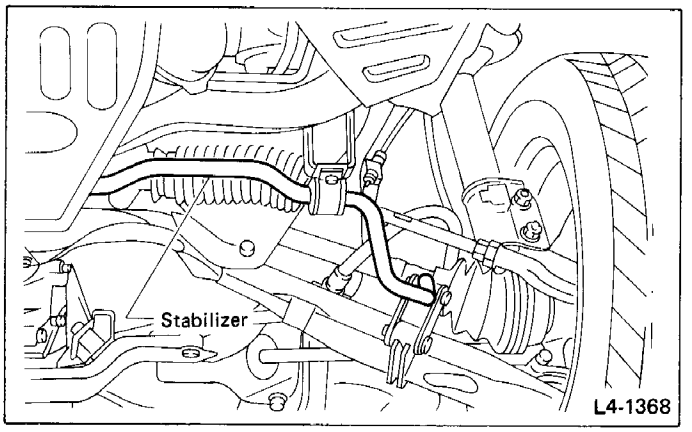


Fig. 46

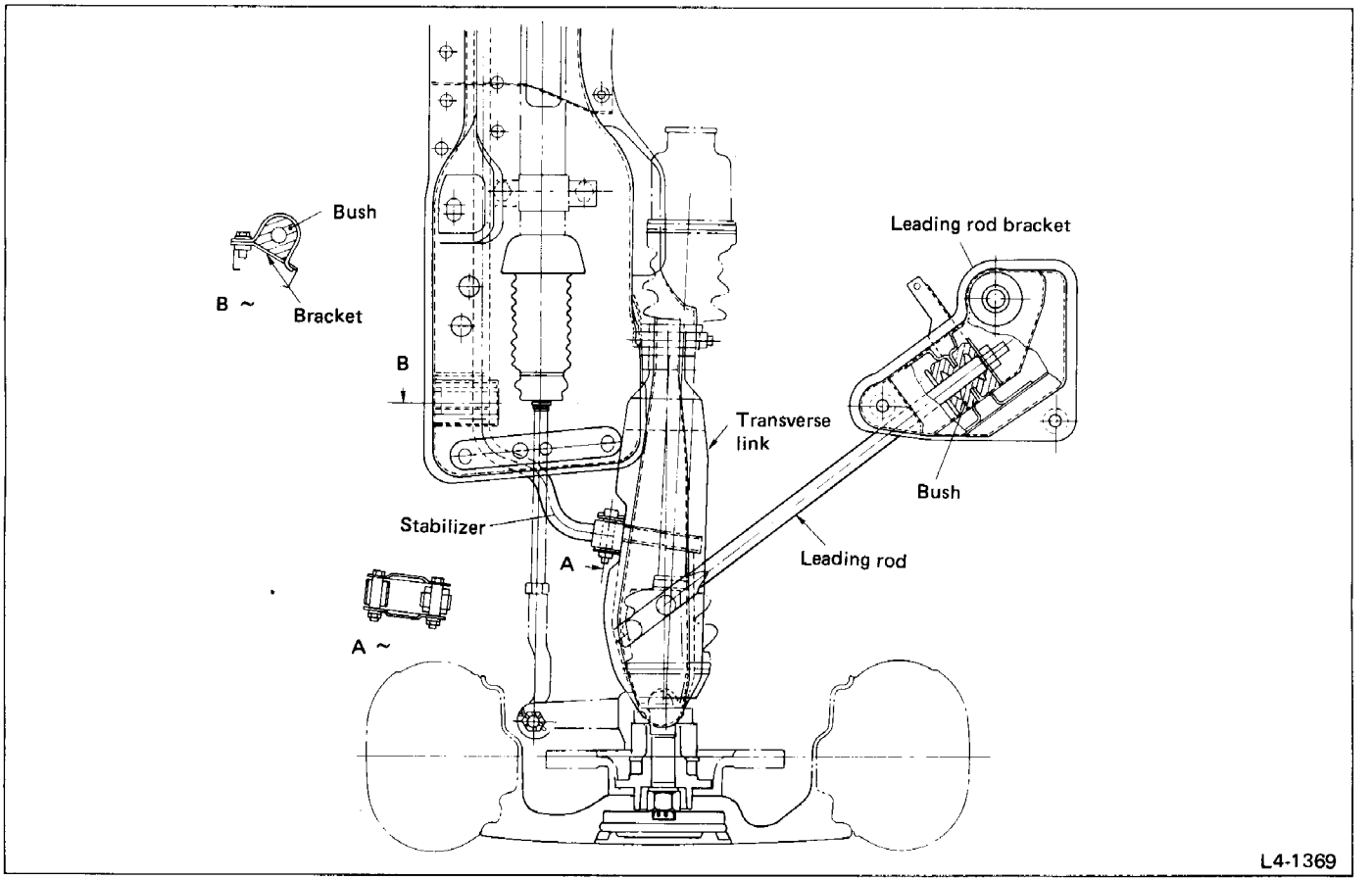


Fig. 47

REMOVAL

1) Jack up the front part of the vehicle.
2) Remove the plate bolt securing the stabilizer to the transverse link at the end of the stabilizer.
3) Remove the plate from the transverse link.
4) Remove the bolt securing the clamp (stabilizer bush) to the crossmember (front).
5) Remove the clamp and bush from the stabilizer.
6) Remove jack-up plate of crossmember (front), and remove the stabilizer.

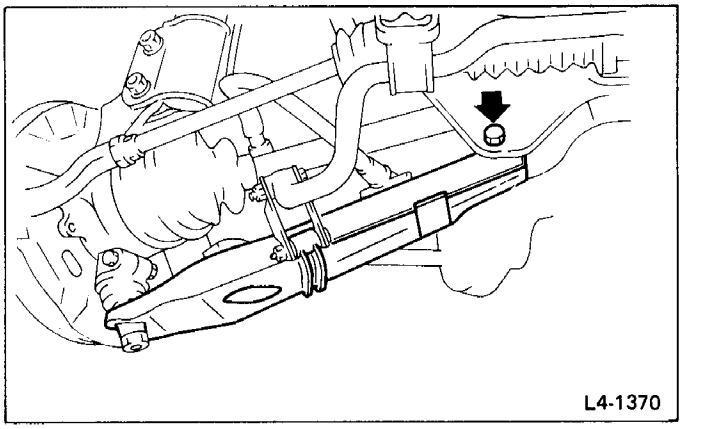


Fig. 48

INSTALLATION

To install, reverse the removal procedure.

a. Be sure the crossmember (front) side bush is brought up fully to the bent portion of the stabilizer.
b. Fit each bush securely, and tighten bolts with the tires placed on the ground when the vehicle is not loaded.
c. Tightening torque

Stabilizer to transverse link:
20 – 29 N·m (2.0 – 3.0 kg-m, 14 – 22 ft-lb)
Stabilizer clamp to crossmember (front):
21 – 28 N·m (2.1 – 2.9 kg-m, 15 – 21 ft-lb)

Front Crossmember

REMOVAL

1) Disconnect ground cable from battery.
2) Apply parking brake, and remove spare tire and wheel.
3) Loosen front wheel nuts.
4) Jack up vehicle, support it with safety stands (rigid racks), and remove front tires and wheels.
5) Release parking brake.
6) Remove air cleaner ASSY and pitching stopper rod.

Fit a cap onto carburetor to prevent inside of bore from becoming dusty.

7) Remove parking brake cable bracket from transverse link.
8) Remove cotter pin and castle nut on tie-rod end, and detach the ball stud from knuckle arm.
9) Remove front exhaust pipe.
10) Remove transverse link from front crossmember.
11) Remove nuts attaching engine mount cushion rubber to crossmember.
12) Remove self-lock nuts connecting steering torque rod and pinion shaft.
13) Lift engine ASSY by approx. 10 mm by using chain block.
14) Remove crossmember installing nuts with crossmember supported by jack, and remove crossmember downward gradually along with steering gearbox.

INSTALLATION

Installation is in the reverse order of removal procedures.

a. The clamping nuts for crossmember and transverse link bushing should be tightened with tires on the ground.
b. When removing crossmember downward, be careful that steering torque rod does not interfere with DOJ boot.
c. Tightening torque

Transverse link bushing to crossmember:
59 – 69 N·m (6.0 – 7.0 kg-m, 43 – 51 ft-lb)
Stabilizer to bush:
21 – 28 N·m (2.1 – 2.9 kg-m, 15 – 21 ft-lb)
Tie-rod end to housing:
25 – 29 N·m (2.5 – 3.0 kg-m, 18 – 22 ft-lb)
Front cushion rubber to crossmember:
20 – 32 N·m (2.0 – 3.3 kg-m, 14 – 24 ft-lb)
Torque rod ASSY to pinion shaft:
21 – 26 N·m (2.1 – 2.7 kg-m, 15 – 20 ft-lb)
Crossmember to body:
78 – 98 N·m (8.0 – 10.0 kg-m, 58 – 72 ft-lb)

Front Ball Joint

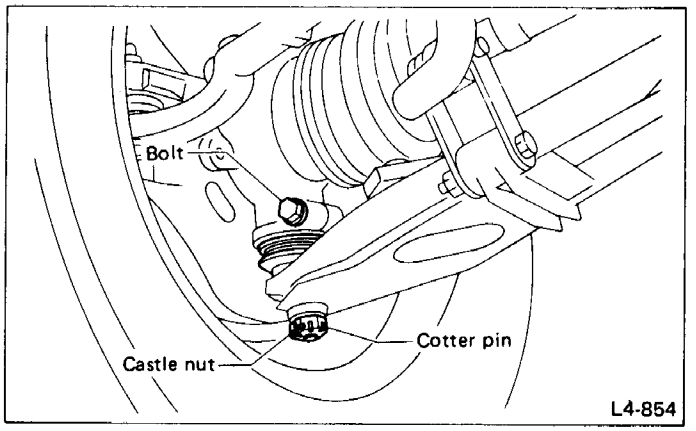


Fig. 49

REMOVAL

1) Jack up the front part of the vehicle, and remove the wheels.
2) Pull out the cotter pin from the ball stud, remove the castle nut, and remove the ball stud from the transverse link.
3) Remove the bolt securing the ball joint to the housing.
4) Remove the ball joint from the housing.

INSPECTION

1) Measure play δ of ball joint by the following procedures. Replace with a new one when the play exceeds the specified value.
   (1) With 686 N (70 kg, 154 lb) loaded in the direction shown in the figure, measure dimension ℓ_1.

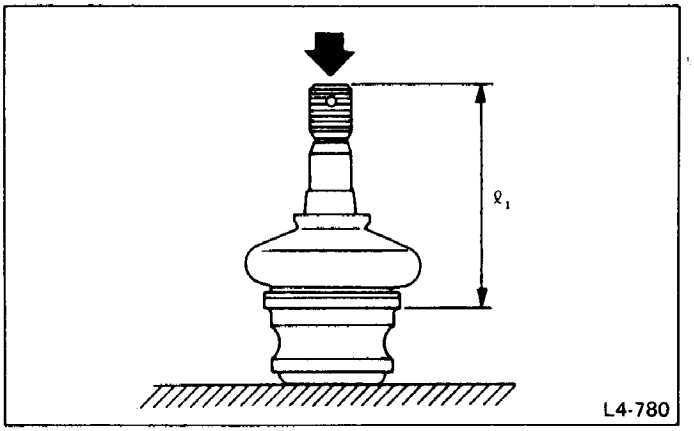


Fig. 50

   (2) With 686 N (70 kg, 154 lb) loaded in the direction shown in the figure, measure dimension ℓ_2.

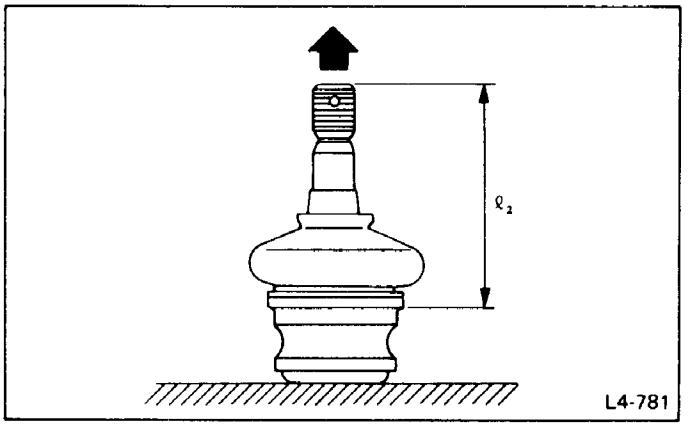


Fig. 51

   (3) Calculate play δ from the following formula.
   $$\delta = \ell_2 - \ell_1$$
   (4) When play δ is larger than the following figure, replace with a new one.

FRONT BALL JOINT
Specified play for replacement: δ
More than 0.3 mm (0.012 in)

2) When play δ is smaller than the specified value, visually inspect the dust seal.
3) If the dust seal is damaged, remove it and wipe off any deteriorated grease with a clean cloth.
4) Next, replace with an appropriate quantity of specified grease (SUNLIGHT 2; P/N 003602010), about 3 g (0.11 oz), then mount a new dust seal.

INSTALLATION

1) Install ball joint onto housing.

Torque (Bolt):
38 – 50 N·m (3.9 – 5.1 kg-m, 28 – 37 ft-lb)

a. The ball joint and boot that have been removed must be checked for wear, damage or cracks, and any defective part must be replaced.
b. Do not apply grease to tapered portion of ball stud.

2) Connect ball joint to transverse link.

Torque (Castle nut):
39 N·m (4.0 kg-m, 29 ft-lb)

3) Retighten castle nut further within 60° until a slot in castle nut is aligned with the hole in ball stud end, then insert new cotter pin and bend it around castle nut.
4) Install front wheels, and lower vehicle.

Rear Suspension Assembly

REMOVAL

1) Remove the two bolts attaching shock absorber upper end to body.

At this time, vehicle should be in the unloaded condition.

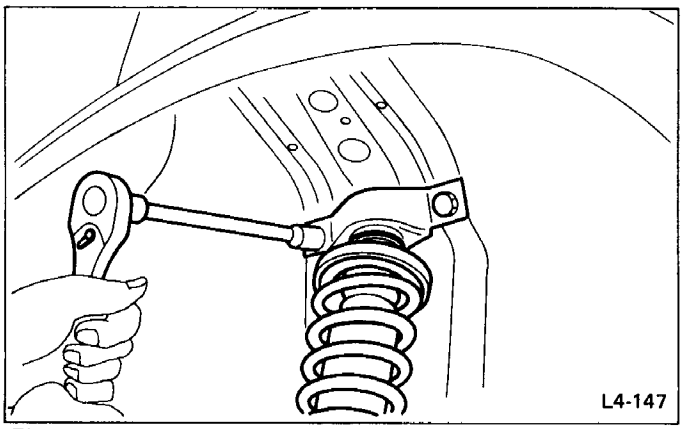


Fig. 52

2) Apply parking brake.
3) Loosen rear wheel nuts.
4) Jack up vehicle, support it with safety stands (rigid racks) and remove rear wheels.
5) (4WD only) Remove following parts and detach rear drive system.
   (1) Spring pins at both ends of drive shaft.

Using a steel bar of 6 mm (0.24 in) diameter, gradually drive out spring pins.

   (2) Rear axle shafts on both sides — Remove outer D.O.J. of drive shaft from spindle (inner arm side) by pushing inner D.O.J. of drive shaft fully toward rear differential and pushing inner arm downward. Then remove inner D.O.J. from differential spindle.
   (3) Proper shaft
   (Refer to chapter 3-4, "4WD System").
   (4) Support rear differential with jack.
   (5) Self-lock nuts connecting rear differential mounting member to body.
   (6) Rear differential — Remove 4 nuts installing rear differential at its front end to rear crossmember, and carefully dismount rear differential.
6) Remove a part of exhaust system parts so as not to interrupt the dismounting of the rear suspension ASSY. (Refer to chapter 2-9 "Exhaust System".)
7) Remove brake hose from brake pipe at inner arm side bracket (on both sides).

a. Insert air bleeder cap to brake hose end to prevent brake fluid from pouring.
b. Whenever removing or installing flare nut, use suitable flare nut wrench only.

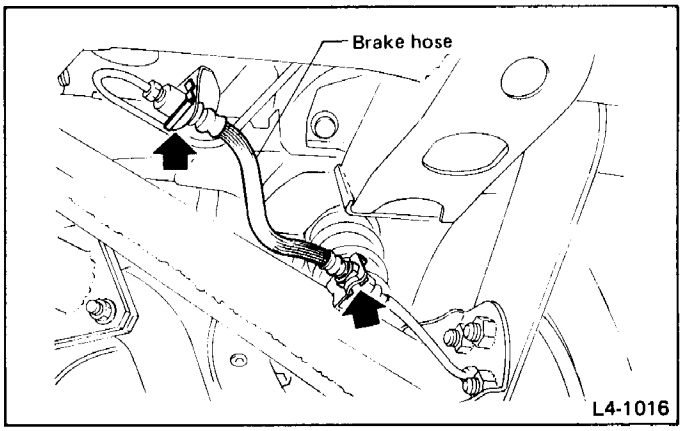


Fig. 53

8) Support rear crossmember at its center with a jack.

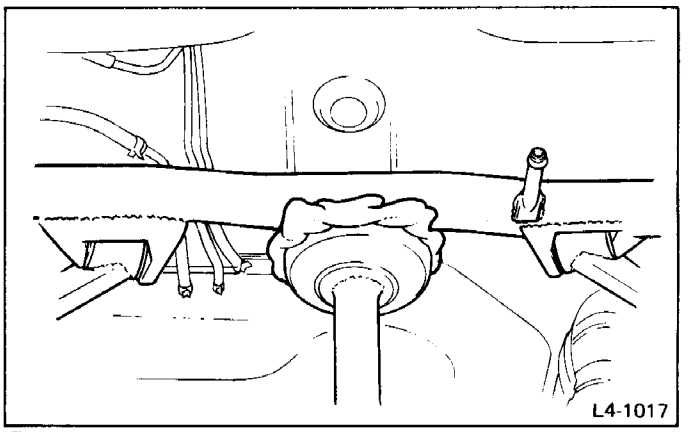


Fig. 54

9) Remove bolts holding rear crossmember at both ends.

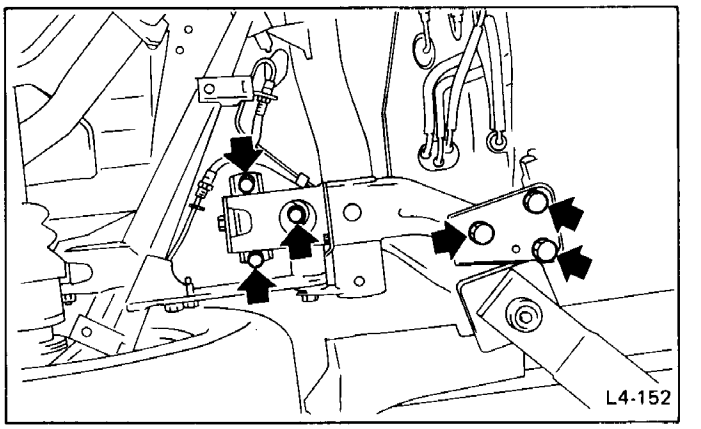


Fig. 55

10) Lower jack gradually and draw out from beneath vehicle body with rear suspension ASSY on it.

Put dismounted rear suspension ASSY on soft material (rag, corrugated paper, tire, etc.) to prevent brake backplate and/or brake drum from being damaged.

DISASSEMBLY

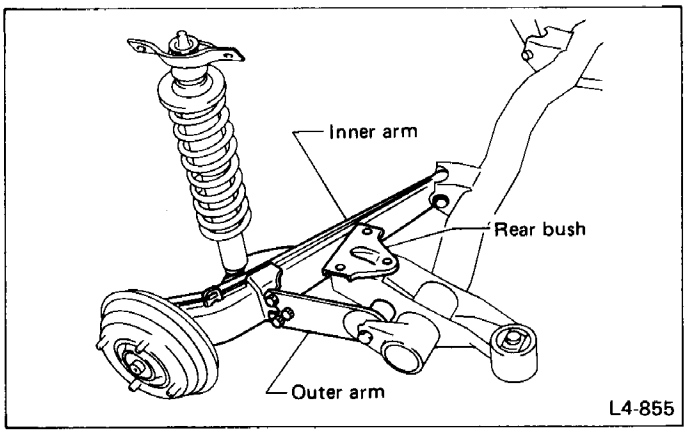


Fig. 56 FWD as example

1) Remove rear floating bush at both ends of rear crossmember.
2) Remove shock absorber from inner arm at lower end of shock absorber.
3) Stabilizer equipped vehicle only:
Remove stabilizer clamp bolts.
Remove stabilizer from inner arm.

Bushes on the removed stabilizer should be left as they are, in order to readily mate them with clamps in re-fitting the stabilizer.

4) Remove bolt connecting outer arm to crossmember, and also bolts connecting outer arm to inner arm.
5) Remove inner arm from crossmember.
   (1) Remove nut.
   (2) Pull out bolt from the crossmember bracket.

INSPECTION

Check the removed parts as follows, and if a fault is detected on any part, replace with a new one.
1) Check for wear, damage, deformation, or cracks.
2) Check the threads of bolts, nuts, and mating parts for deformation or damage.
3) Check the bottom part or oil seal portion of the shock absorber for oil leakage.
4) Be sure to replace the spring pin for the drive shaft with a new one when reassembling.

- How to check for damage and cracks
  If damage or cracks cannot be confirmed visually, check the following areas using the dye check method.
  (1) The areas where paint has been peeled off.
  (2) The areas where rust has formed.

ASSEMBLY

1) Install temporarily outer arm to crossmember.
2) Fit inner arm to crossmember and insert the connecting bolt, then tighten new nut temporarily.
3) Tighten bolts connecting the inner and outer arms temporarily.
4) Stabilizer equipped vehicle only:
Fit stabilizer to inner arm, and tighten stabilizer brackets with bolts.

Torque:
18 – 22 N·m (1.8 – 2.2 kg-m, 13 – 16 ft-lb)

5) Install shock absorber to inner arm at lower end of shock absorber temporarily.

INSTALLATION

To install, reverse the removal procedure.

a. Bolts for bush portions should be tightened with arms held in unloaded vehicle condition.
b. After installation, check and adjust the following:
(1) Air bleeding of brake system
(2) Rear wheel alignment
c. Tighten bolts and nuts to the specified torque.

Inner arm to outer arm:
127 – 147 N·m (13.0 – 15.0 kg-m, 94 – 108 ft-lb)
Inner arm to crossmember:
69 – 88 N·m (7.0 – 9.0 kg-m, 51 – 65 ft-lb)
Shock absorber to inner arm:
88 – 118 N·m (9.0 – 12.0 kg-m, 65 – 87 ft-lb)

Flare nut (Brake hose to brake pipe):
13 – 18 N·m (1.3 – 1.8 kg-m, 9 – 13 ft-lb)
Wheel nut:
78 – 98 N·m (8.0 – 10.0 kg-m, 58 – 72 ft-lb)
See "COMPONENT PARTS" for the tightening torque of the suspension parts.
Other parts except the above must be tightened with the torque value described in the associated chapter.

Rear Coil Spring

REMOVAL

1) Remove coil spring as a part of shock absorber ASSY coupled with shock absorber.
2) Mount COIL SPRING COMPRESSOR (926110000) to a vice.

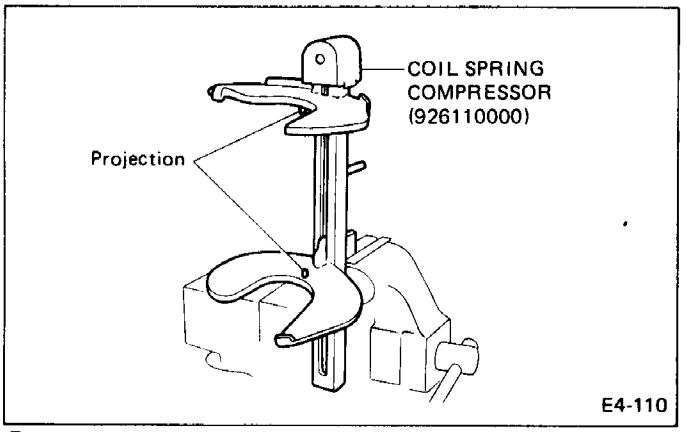


Fig. 57

3) Set shock absorber ASSY to COIL SPRING COMPRESSOR.

a. Be sure to use the special tool in order to avoid an accident.
b. Set the projections of COIL SPRING COMPRESSOR to the inner diameter side of coil spring.

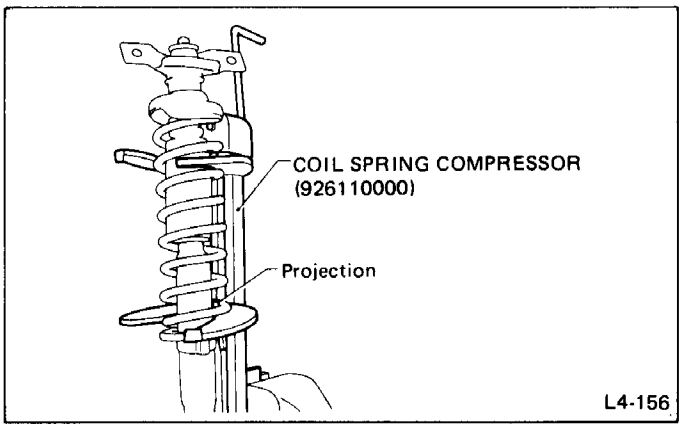


Fig. 58

4) Compress the coil spring by carefully turning the coil spring compressor handle.
(Compress the spring until it comes off the spring seat surface.)
5) Remove the rod connecting nuts (double nuts).
6) Extract the body fitting bracket, plate and upper spring seat as a whole from rod.
7) Return carefully the coil spring compressor handle to the original position, and take out the coil spring and shock absorber after making sure that the spring has been stretched fully.

Take out the coil spring, using care not to cause the spring to contact the shock absorber rod.

8) Extract helper ASSY from shock absorber CP.

INSPECTION

Shock absorber complete

1) Check for oil leakage from bottom of damper and oil seal. If oil leaks from damper bottom, replace. If oil leakage from oil seal reaches spring seat, replace. Oil stains around oil seal are permissible, therefore replacement is unnecessary.
2) Ascertain recovery of the shock absorber rod by pushing it into the base. If the recovery is unusually slow or has hitches, replace with a new one.
3) Check the lower bush for deformation or loss and replace if defective.
4) Check the shock absorber itself, spring seat portion and rod end bolt portion for damage or deformation.

Coil spring

Check for breakage or unusual rust.

Helper assembly

Check dust cover and helper for deformation or abnormal wear (holes).

Parts fitted to the upper portion

Check for deformation or damage.

INSTALLATION

To install, reverse the removal procedure.

a. Make sure that the coil spring is mounted with the flat end downward.

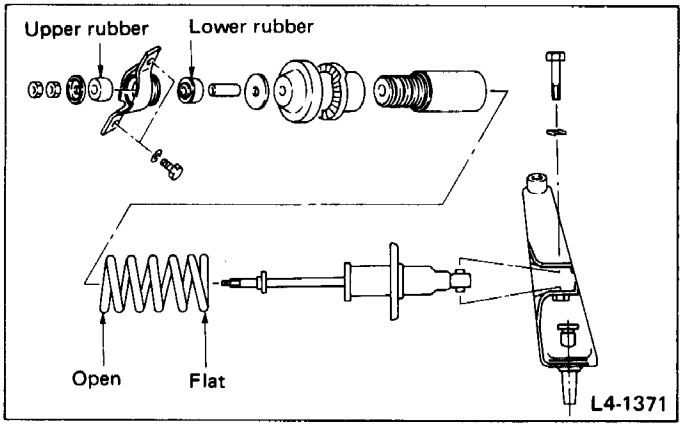


Fig. 59

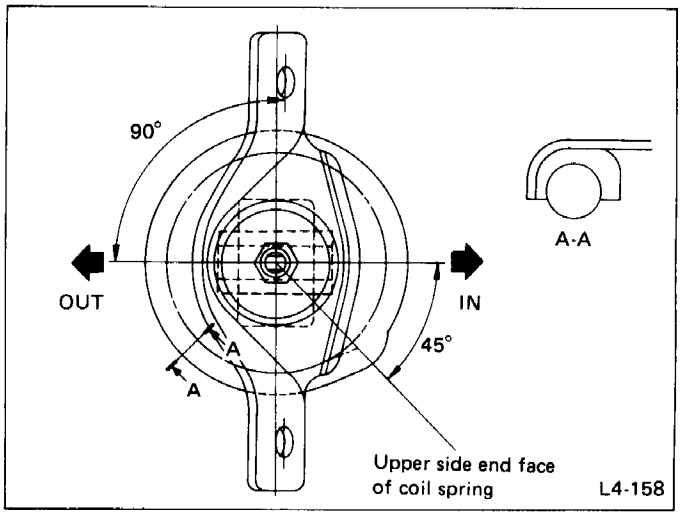


Fig. 60

b. Take care of the vertical installing direction of upper and lower rubbers.

c. Take care of the installing direction of bracket CP.

d. Be careful that rubber seat does not extrude from spring seat (above figure).

e. Set coil spring correctly so that its end face fits well into upper spring seat as shown in above figure.

Troubleshooting

1) Improper vehicle posture or improper ground clearance

Possible causes	Countermeasures
(1) Permanent distortion or breakage of coil spring	Replace.
(2) Unsmooth operation of shock absorber	Replace.
(3) Installation of wrong inner arm	Replace with proper parts.
(4) Deformation of inner arm	Replace.

2) Poor ride comfort

1) Large rebound shock.
2) Rocking of vehicle continues too long after running over bump and/or hump.
3) Large shock in bumping.

Possible causes	Countermeasures
(1) Breakage of coil spring	Replace.
(2) Overinflation pressure of tire	Adjust.
(3) Improper ground clearance	Adjust or replace coil springs with new ones.
(4) Fault in operation of shock absorber	Replace.
(5) Damage or deformation of shock absorber lower end bushing	Replace.
(6) Unsuitability of maximum and/or minimum length of shock absorber	Replace with proper parts.
(7) Deformation or loss of bushing	Replace.
(8) Deformation or damage of helper ASSY	Replace.

3) Noise

Possible causes	Countermeasures
(1) Wear or damage of shock absorber component parts	Replace.
(2) Damage or deformation of shock absorber lower end bushing	Replace.
(3) Loosening of outer arm installing bolt	Retighten to the specified torque.
(4) Deformation or loss of bushing	Replace.
(5) Loosening of inner arm installing bolt to crossmember bracket	Retighten to the specified torque.
(6) Unsuitability of maximum and/or minimum length of shock absorber	Replace with proper parts.
(7) Breakage of coil spring	Replace.
(8) Loosening of each bolt and/or nut	Retighten to the specified torque.

SERVICE PROCEDURE FOR AIR (PNEUMATIC) SUSPENSION

In this section are described the different points of the air (pneumatic) suspension from the explanations described in the section of conventional suspension. Accordingly, use this section together with the section of conventional suspension.

General Precautions

1) Be sure to support the vehicle with a jack before getting under it for servicing. To check any system, other than electrical, under the vehicle, disconnect cables from battery in advance. This prevents the auto leveler from being activated to take up increase or decrease in wheel reaction while the ignition switch is ON.
2) When reassembling, do not reuse O-rings. Also be sure not to damage O-ring and O-ring contact surfaces such as O-ring groove. Apply grease to O-rings when reassembling.

Recommended grease and O-ring:
Grease NOK SEALUB S-4
O-ring NOK Material A980

3) Do not apply an undercoating for local rust prevention to the air bags (rolling diaphragm surface and cylinder surface with which the diaphragm is in rolling contact) and the air compressor.
This is because, when the damper oil temperature increases due to running on rough roads, the generated heat melts the undercoating, which makes it easier to trap dust, dirt, and sand on the surface, resulting in damaged diaphragm. The undercoating on the air inlet of the compressor can also block the vent.
4) When welding vehicle body, be sure to cover air pipe and air spring diaphragm so that welding sputter will not attach to these parts.
5) When replenishing battery electrolyte, be careful not to have electrolyte come in contact with air pipe.
6) At transportation, retighten the ratchet another 2-3 notches with tie-down wire tightened up. (Retightening of one notch is recommended for the all models of conventional coil springs.)
The tighter tension is recommended because of its lower spring constant as compared with that of the coil spring.

Front Air Suspension Assembly

REMOVAL

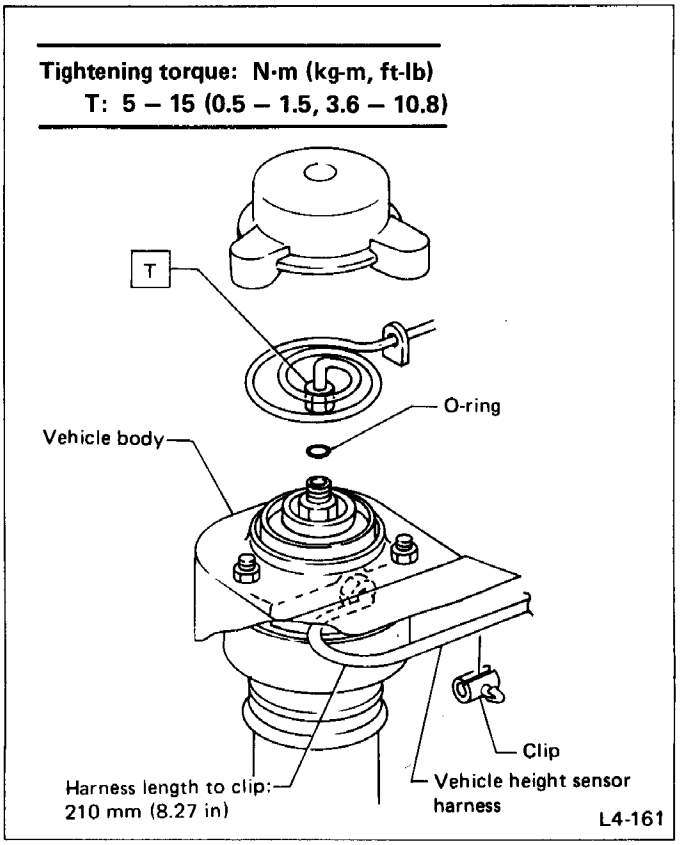


Fig. 61

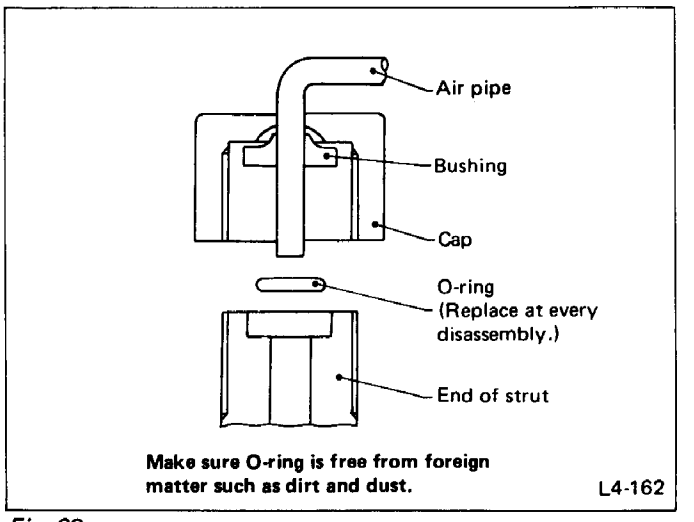


Fig. 62

1) Disconnect air pipe.
2) Remove mud guard.
3) Remove vehicle height sensor harness from clip.
4) Disconnect harness coupler.

Other procedures are the same as those used for removal of standard type strut ASSY.

DISASSEMBLY

Strut mount can be removed from air suspension CP, using SPANNER (926510000).

Disassembling air suspension CP is not allowed.

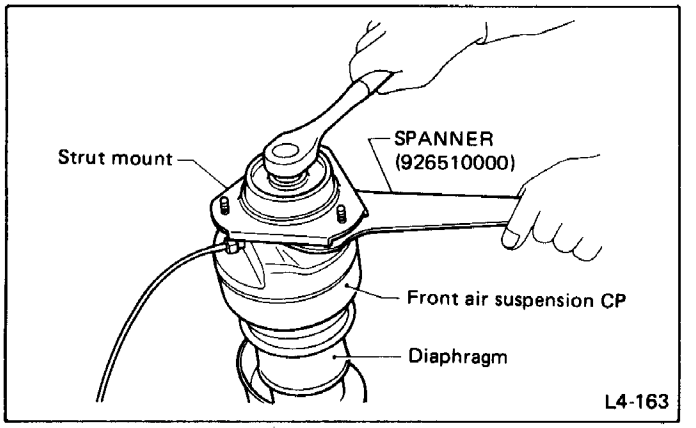


Fig. 63

a. Before removing strut mount, make sure that air has been discharged from air spring.
b. Be careful not to damage diaphragm.

ASSEMBLY AND INSTALLATION

1) Using SPANNER (926510000), install strut mount to front air suspension CP.

Tightening torque:
51 – 67 N·m (5.2 – 6.8 kg-m, 38 – 49 ft-lb)

2) Install front air suspension ASSY to vehicle body. Refer to reassembly procedure of a standard type strut ASSY.
3) Secure vehicle height sensor harness with clip.

Clip sensor harness 210 mm (8.27 in) from front air suspension ASSY to avoid twisting.

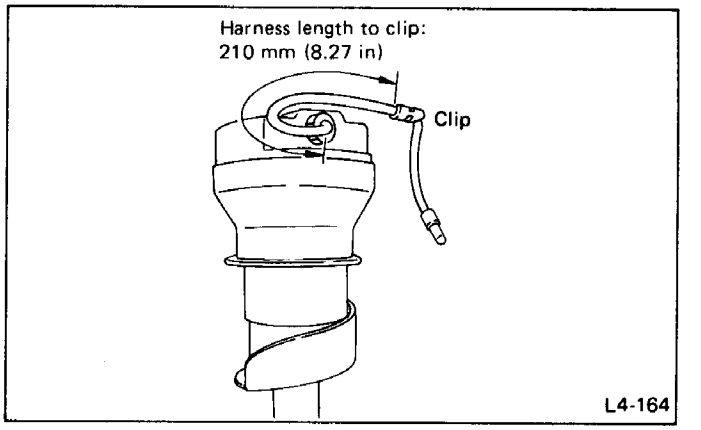


Fig. 64

4) Fit O-ring to the end of strut rod, then insert air pipe into O-ring for connection.

a. Insertion length of air pipe (L): 13 mm (0.51 in) or more.

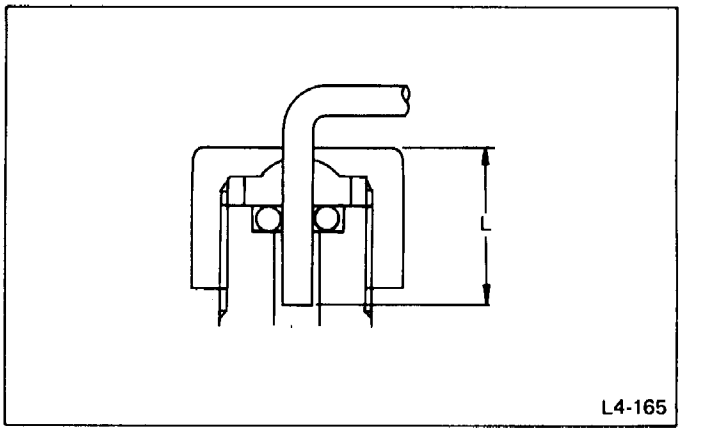


Fig. 65

b. Before inserting air pipe, make sure O-ring is free from any foreign matter such as dirt and dust, and apply a thin coat of grease to O-ring.
(Discard old O-ring when disassembling.)
c. Install air pipe in correct direction.
(Correct position in straight ahead position of vehicle is shown below.)

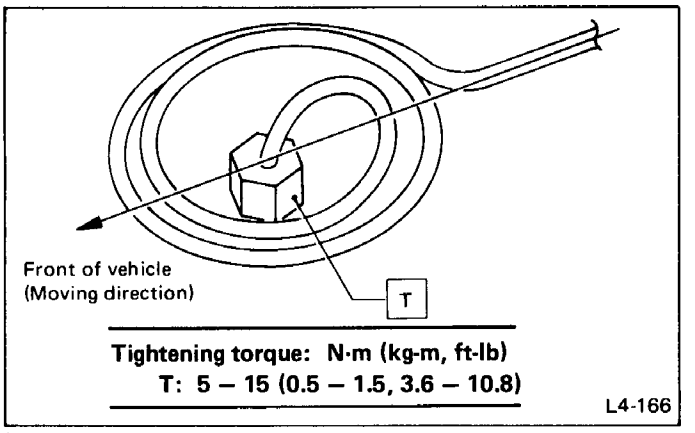


Fig. 66

To disconnect, pull off air pipe while opening claw of collet by using AIR PIPE REMOVER (926520000).

4) Pull out vehicle height sensor harness from access hole of body, and disconnect harness coupler.

Other procedures are the same as those used for removal of a standard type damper.

Be extremely careful not to damage diaphragm.

DISASSEMBLY

a. Before disassembling rear air suspension ASSY, be sure to discharge air from air spring.

b. Disassembling air suspension CP is not allowed.

Rear Air Suspension Assembly

REMOVAL

1) Remove rear apron protector.

2) Remove rear solenoid valve from rear air suspension ASSY.

3) When replacing solenoid valve, disconnect air pipe from solenoid valve.

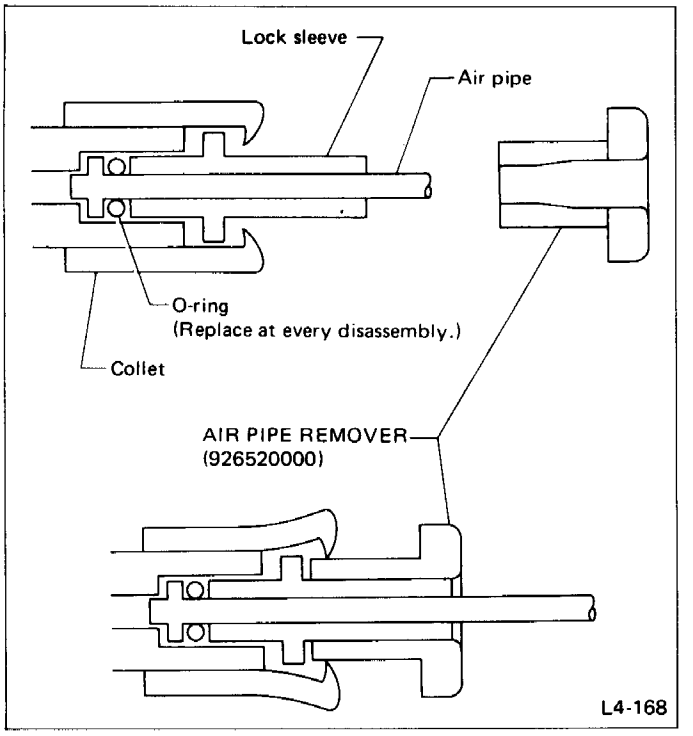


Fig. 67

ASSEMBLY AND INSTALLATION

Reverse the removing and disassembling procedures. Observe the following:

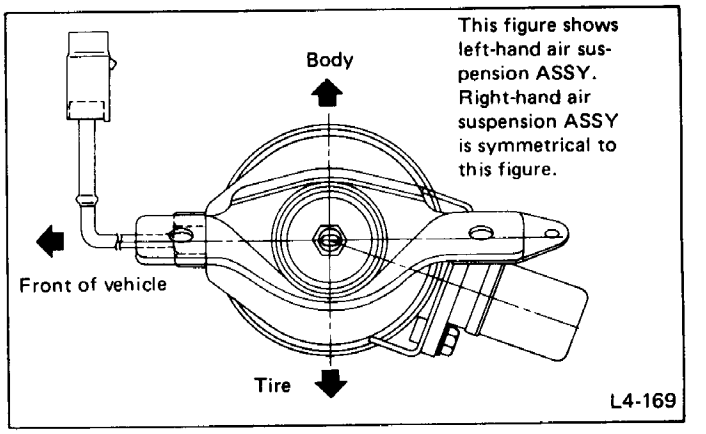


Fig. 68

a. Be sure to install upper rubber and lower rubber to their proper directions.

b. Be sure to install bracket CP in correct direction.

c. Be careful not to damage or scratch O-ring and O-ring contacting surface. Make sure O-ring is free from any foreign matter, and coat with grease when assembling.
(Discard old O-rings when disassembling.)

d. Arrange vehicle height sensor harness, solenoid valve lead wire, and air pipe as shown in the Figure.

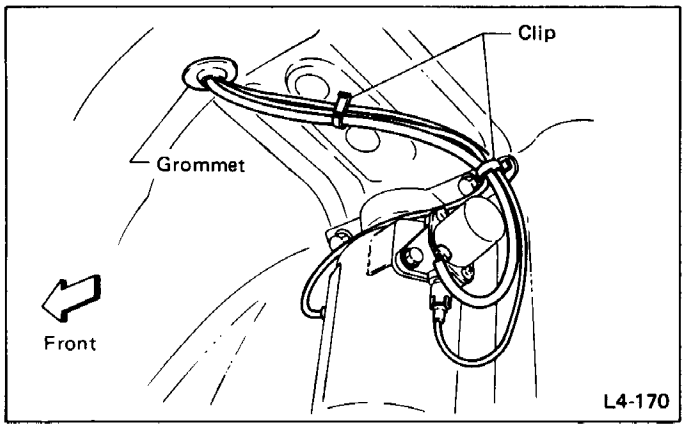


Fig. 69

Compressor & Drier Assembly

REMOVAL

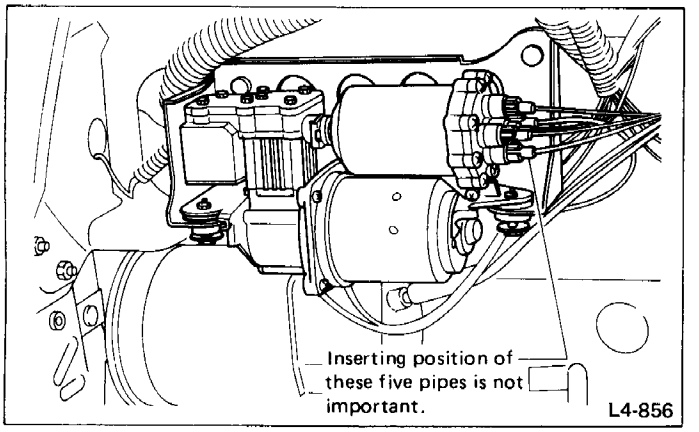


Fig. 70

1) Remove front left wheel.
2) Remove front half portion of mud guard.
3) Using AIR PIPE REMOVER (926520000), disconnect five air pipes from drier.
4) Remove coupler.
5) Remove compressor & drier ASSY from engine compartment by loosening four nuts.

DISASSEMBLY

Disassemble compressor & drier ASSY to compressor, drier, and bracket by removing bolts, etc.

a. Disassembly of both compressor and drier is not allowed. If trouble should occur, replace faulty unit as an ASSY.
b. Make sure that O-rings are free from foreign matter such as dirt and dust, and coat with grease before reassembling.

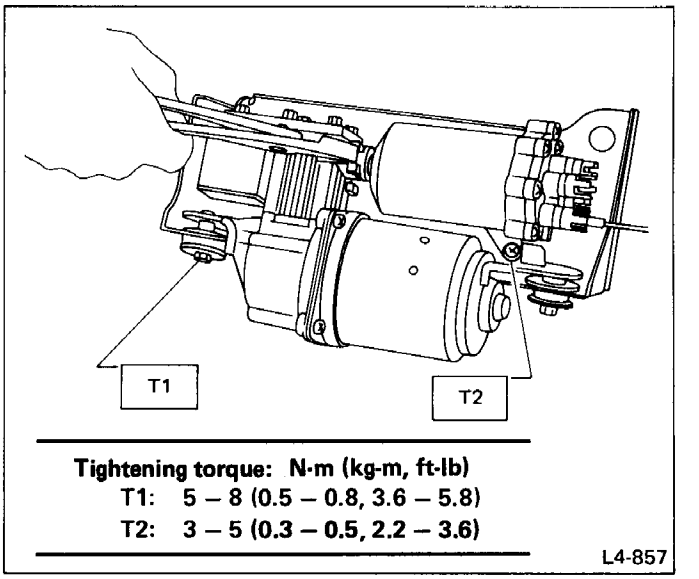


Fig. 71

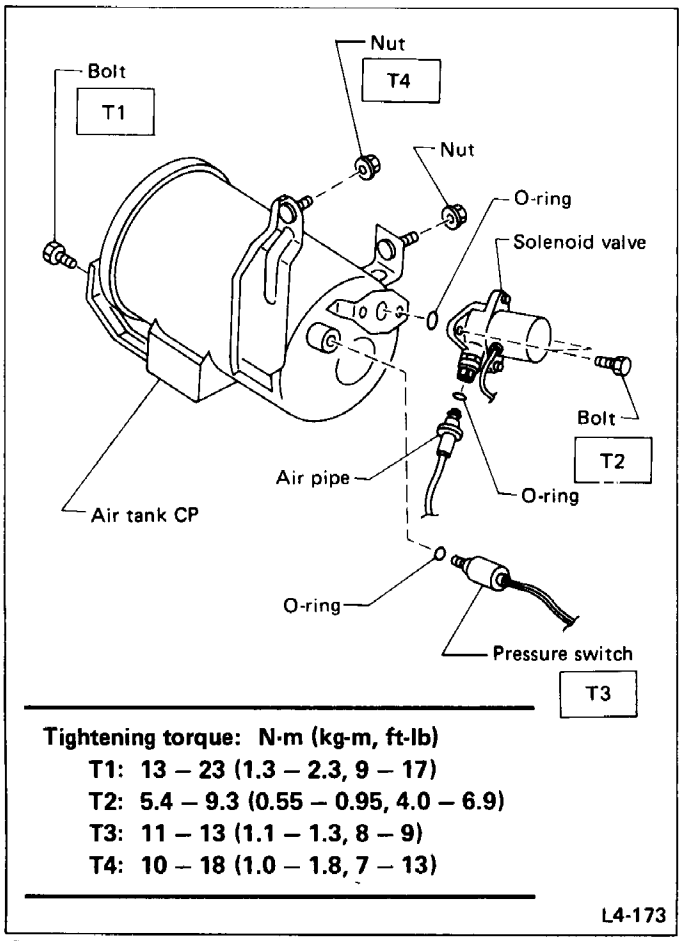
ASSEMBLY AND INSTALLATION

Reverse the sequence of removal and disassembly procedures. Observe the following:

Make sure that O-rings are free from foreign matter such as dirt and dust, and coat with grease before reassembling.

Air Tank Assembly

REMOVAL



Tightening torque: N·m (kg-m, ft-lb)
T1: 13 – 23 (1.3 – 2.3, 9 – 17)
T2: 5.4 – 9.3 (0.55 – 0.95, 4.0 – 6.9)
T3: 11 – 13 (1.1 – 1.3, 8 – 9)
T4: 10 – 18 (1.0 – 1.8, 7 – 13)

Fig. 72

1) Using AIR PIPE REMOVER (926520000), remove air pipe from solenoid valve, then remove solenoid valve coupler.
2) Remove left-hand turn signal light from front bumper.
3) Remove air tank ASSY by loosening one bolt and two nuts.

DISASSEMBLY

a. When removing pressure switch or solenoid valve from air tank, discharge air from the tank gradually. Be extremely careful because air tank contains highly pressurized air.
b. When replacing pressure switch or solenoid valve, removal of air tank from vehicle body is unnecessary.

ASSEMBLY AND INSTALLATION

Reverse the sequence of removal and disassembly procedures. Observe the following:

a. When installing O-ring, make sure it is free from any foreign matter such as dirt and dust, and then coat with grease. Be careful not to damage O-ring.
b. When installing pressure switch, be sure to apply grease to its thread portion and tighten it to the specified tightening torque.

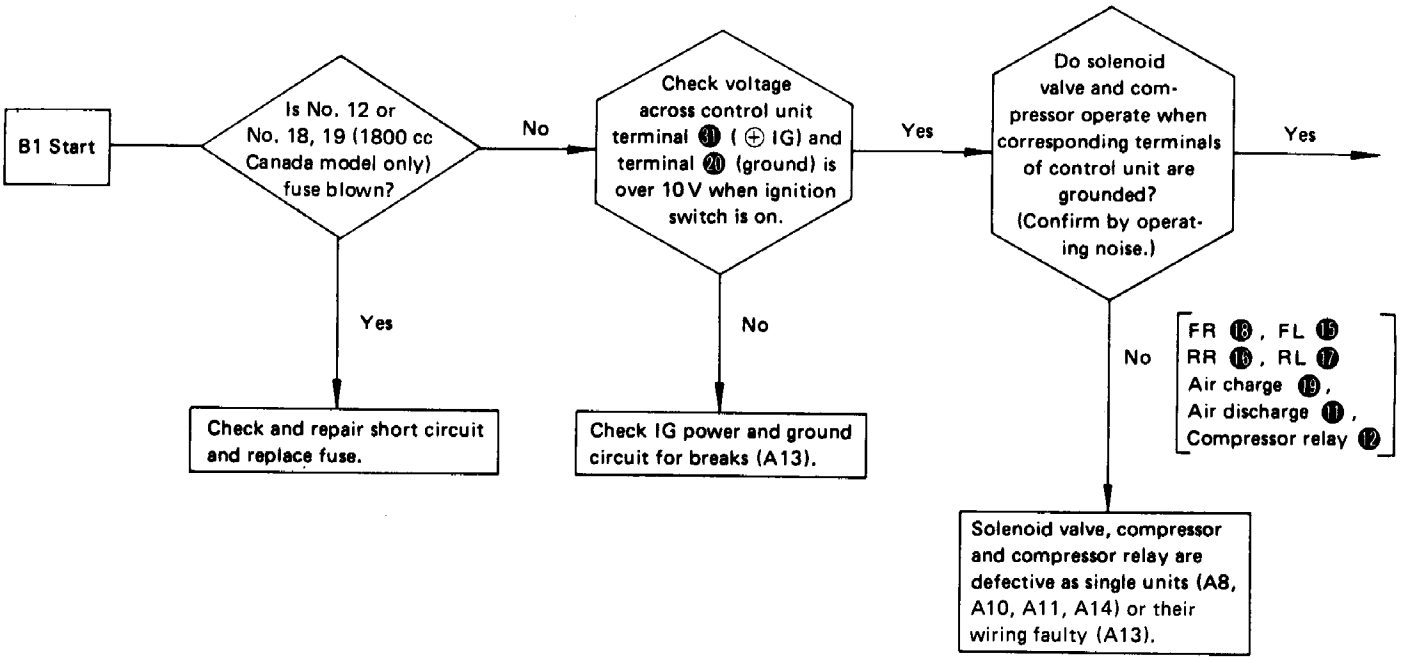
TROUBLESHOOTING

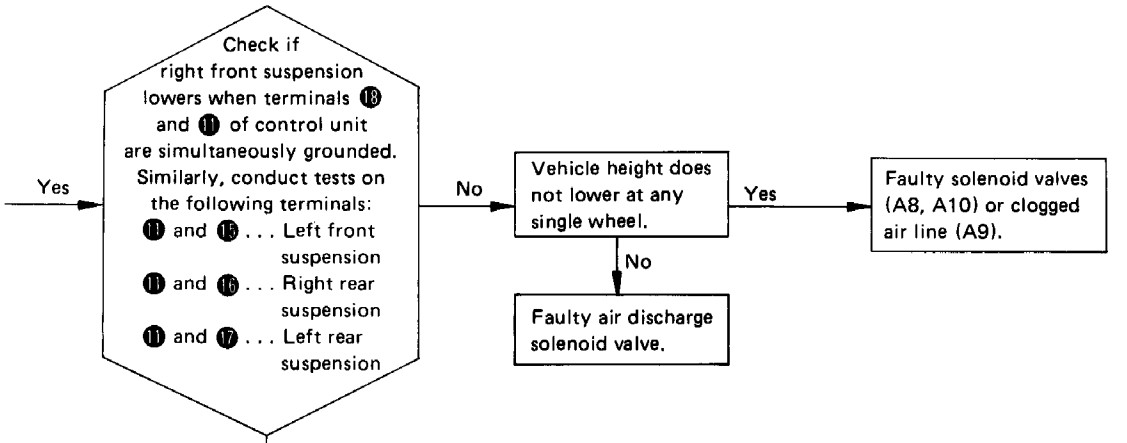
Symptom		Trouble		Cause		Ref.
Car height increases.	Ignition switch OFF	Front or rear of car rises if car is left as it is.		Improper sealing of affected air suspension solenoid valve or tank solenoid valve		A7
	Ignition switch ON	Front or rear of car rises abnormally.		Faulty vehicle height sensor		B1
				Faulty control unit		
				Broken solenoid valve coil/air discharge solenoid valve coil of affected air suspension		
				Faulty electrical circuit		
				Sticking solenoid valve/air discharge solenoid valve of affected air suspension		A10, A14
				Clogged air line		A9
Car height decreases.	Ignition switch OFF	Front of car height decreases when car is left as it is.		Air leakage from air pipe or joint on top of strut mount		A1
				Air leakage from front solenoid valve		A7
				Air leakage from front air suspension ASSY		A4
		Rear of car height decreases when car is left as it is.		Air leakage from rear solenoid valve or faulty seal		A7
				Air leakage from rear air suspension ASSY		A4
	Ignition switch ON	Front or rear of car is abnormally low.	Compressor does not operate.			B3
			Compressor operates.	Car returns to the NORMAL position when left unattended with ignition switch ON for 5 minutes.	Air leakage from tank ASSY	A5
					Air leakage from air line	A2
				Car returns to the NORMAL position when left unattended with ignition switch ON for 5 minutes.	Faulty vehicle height sensor	B1
					Faulty control unit	
					Broken solenoid valve coil	
					Faulty electrical circuit	
					Sticking solenoid valve	A10
					Clogged air line	A9
					Air leakage from air line	A2

Symptom	Trouble	Cause		Ref.
Compressor malfunctions.	Compressor keeps on running. (When engine is in operation, compressor keeps running over 8 minutes if left alone without getting in and out of vehicle.)	Vehicle height lowers if left alone with ignition switch off for over 15 minutes.		See "Car height decreases."
		Vehicle height does not lower even if left alone with ignition switch off for over 15 minutes.	Faulty pressure switch	B2
			Faulty control unit	
			Defective compressor relay	
			Defective electric circuit	
			Faulty compressor	
			Tank solenoid valve broken or sticking	A10
			Air leaks from tank ASSY	A5
			Air line leaks air or clogs	A2, A9
	Compressor operates frequently. (When engine is in operation, compressor operates frequently if left alone without getting in and out of vehicle for over 5 minutes.)	When ignition switch is off, vehicle height lowers if left alone for over 15 minutes.		See "Car height decreases."
		When ignition switch is off, vehicle height does not lower even if left alone for over 15 minutes.	Faulty pressure switch	B2
			Faulty control unit	
			Defective electric circuit	
			Air leakage from tank ASSY	A5
	Compressor will not operate. (If compressor operates frequently and its temperature rises, circuit breaker will operate to stop compressor; if left as it is for some time and its temperature drops, it will restart.)	Compressor malfunctioning		B3
		Faulty pressure switch		
		Faulty control unit		
		Defective electric circuit		

Symptom	Trouble	Cause	Ref.
WARNING light blinks. (Warning of system failure.)	WARNING light blinks when ignition switch is turned on.	Vehicle height sensor malfunctioning	B4
		Faulty control unit	
		Defective vehicle height sensor	
	WARNING light blinks after more than 10 minutes passed with ignition switch turned on.	Compressor malfunctioning	B5
		Faulty solenoid valve	
		Faulty control unit	
		Air leaks from tank ASSY	A5
		Air line leaks air or clogs	A2, A9

B1)


B1 Start
Is No. 12 or No. 18, 19 (1800 cc Canada model only) fuse blown?
No
Yes
Check and repair short circuit and replace fuse.
Check voltage across control unit terminal ㉑ (⊕ IG) and terminal ⑳ (ground) is over 10 V when ignition switch is on.
No
Check IG power and ground circuit for breaks (A13).
Yes
Do solenoid valve and compressor operate when corresponding terminals of control unit are grounded? (Confirm by operating noise.)
Yes
No
FR ⑱, FL ⑮
RR ⑯, RL ⑰
Air charge ⑲,
Air discharge ⑪,
Compressor relay ⑫
Solenoid valve, compressor and compressor relay are defective as single units (A8, A10, A11, A14) or their wiring faulty (A13).



Yes

Remove No. 18, 19 (1800 cc Canada model only) fuse and turn ignition switch ON.

Measure voltage across control unit terminals (in combination) corresponding to the suspension to be tested while raising the car with a jack.

- Measurement method (for the right front suspension)
  (1) Check that voltage across terminals ㉗ and ⑳ –GND is approximately 5 volts.
  (2) Check that voltage across terminals ㉟ and ⑳ is approximately 0 volts.
  (3) Slowly raise the car with a jack until voltage across terminals ㉟ and ⑳ changes from 0 to 5 volts.
  (4) Check that voltage across terminals ㉗ and ⑳ is approximately 5 volts.
  (5) Slowly raise the car with a jack until voltage across terminals ㉗ and ⑳ changes from 5 to 0 volts.
  (6) Check that voltage across terminals ㉟ and ⑳ is approximately 5 volts.
  Each strut must also be checked in a similar manner.

(Unit: Approx. volts)

Terminal combination	Right front suspension		Left front suspension		Right rear suspension		Left rear suspension	
	㉟↔⑳	㉗↔⑳	㊱↔⑳	㉖↔⑳	㉓↔⑳	㉕↔⑳	㉘↔⑳	㉞↔⑳
L (LOW)	0	5	0	5	0	5	0	5
Set height	5	5	5	5	5	5	5	5
H (HIGH)	5	0	5	0	5	0	5	0

Check that all test results are satisfactory as indicated in Table at right.

No

Check vehicle height sensor.

No

Replace affected strut.

Stroke the appropriate front or rear air suspension ASSY and check continuity between terminals of coupler at end of height control sensor harness protruding from the air suspension ASSY. If test results are as shown below, there are no problems.

O.K.

Replace control unit.

Yes
(Electrical system is O.K.)

Check air lines (A2, A10), pressure switch (A3) and air tank ASSY (A5).

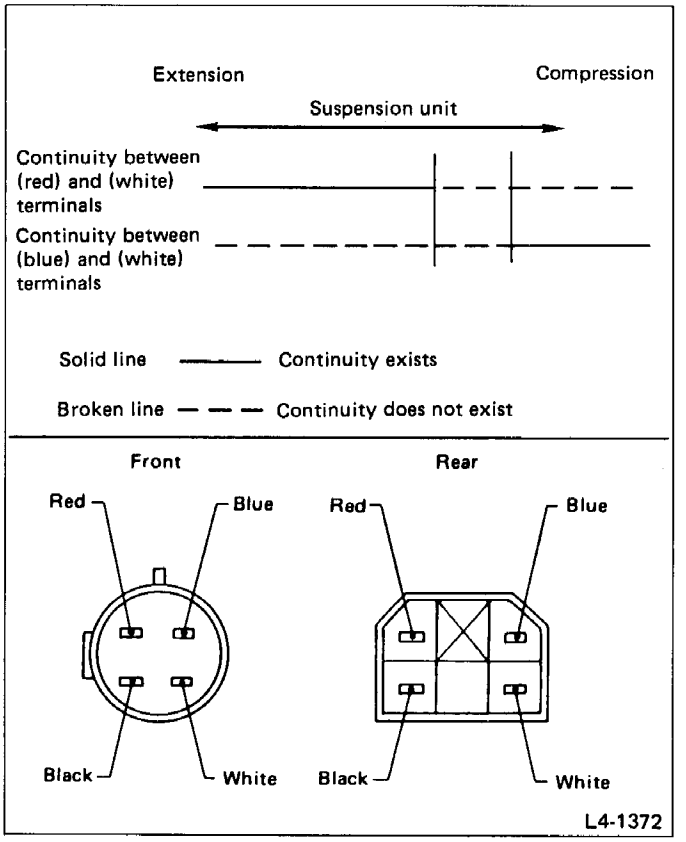
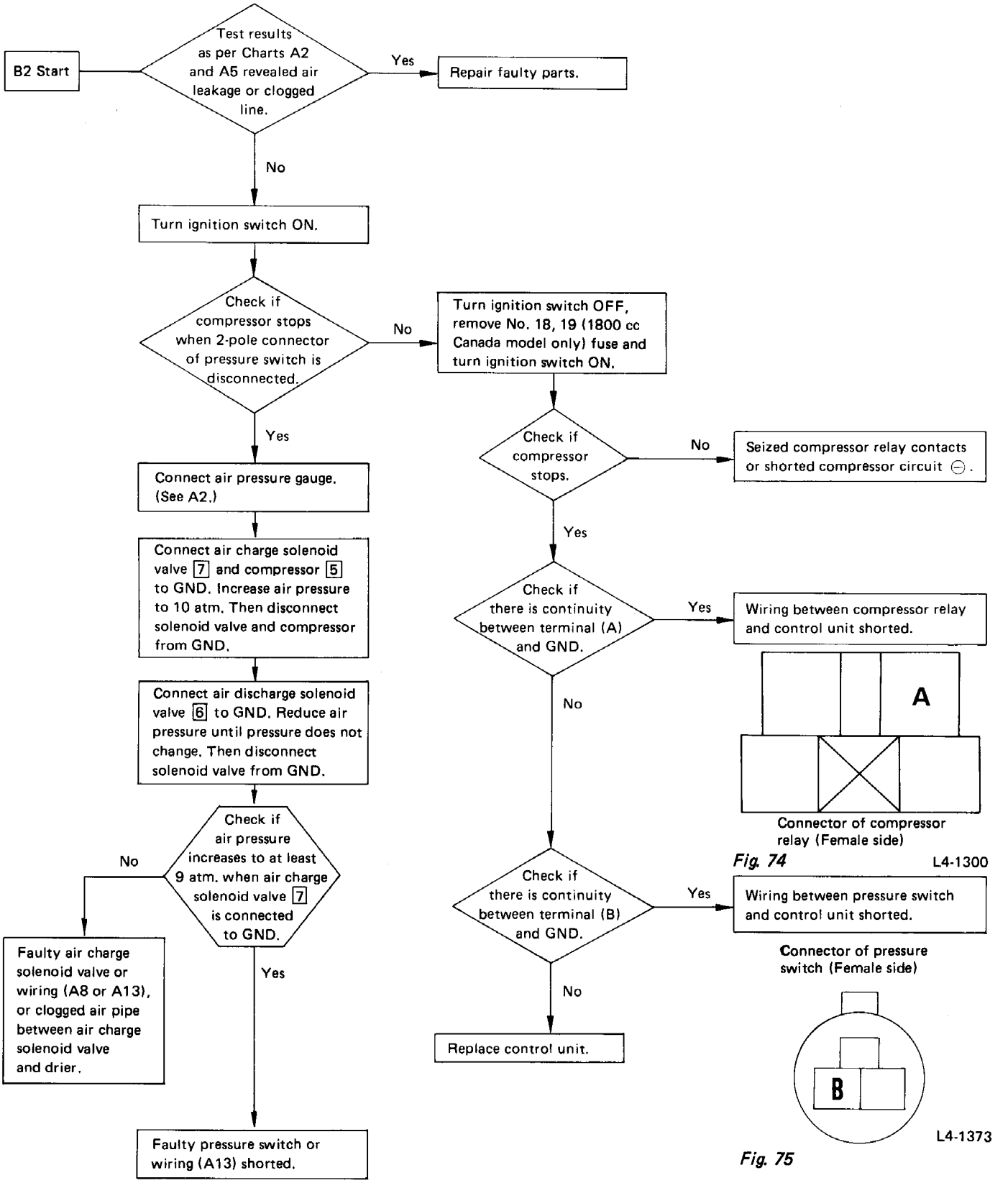

Extension
Compression
Suspension unit
Continuity between (red) and (white) terminals
Continuity between (blue) and (white) terminals
Solid line ——— Continuity exists
Broken line — — — Continuity does not exist
Front
Rear
Red
Blue
Black
White
Red
Blue
Black
White
L4-1372

Fig. 73

B2)



Connector of compressor relay (Female side)

Fig. 74 L4-1300

Connector of pressure switch (Female side)

L4-1373

Fig. 75

B3)

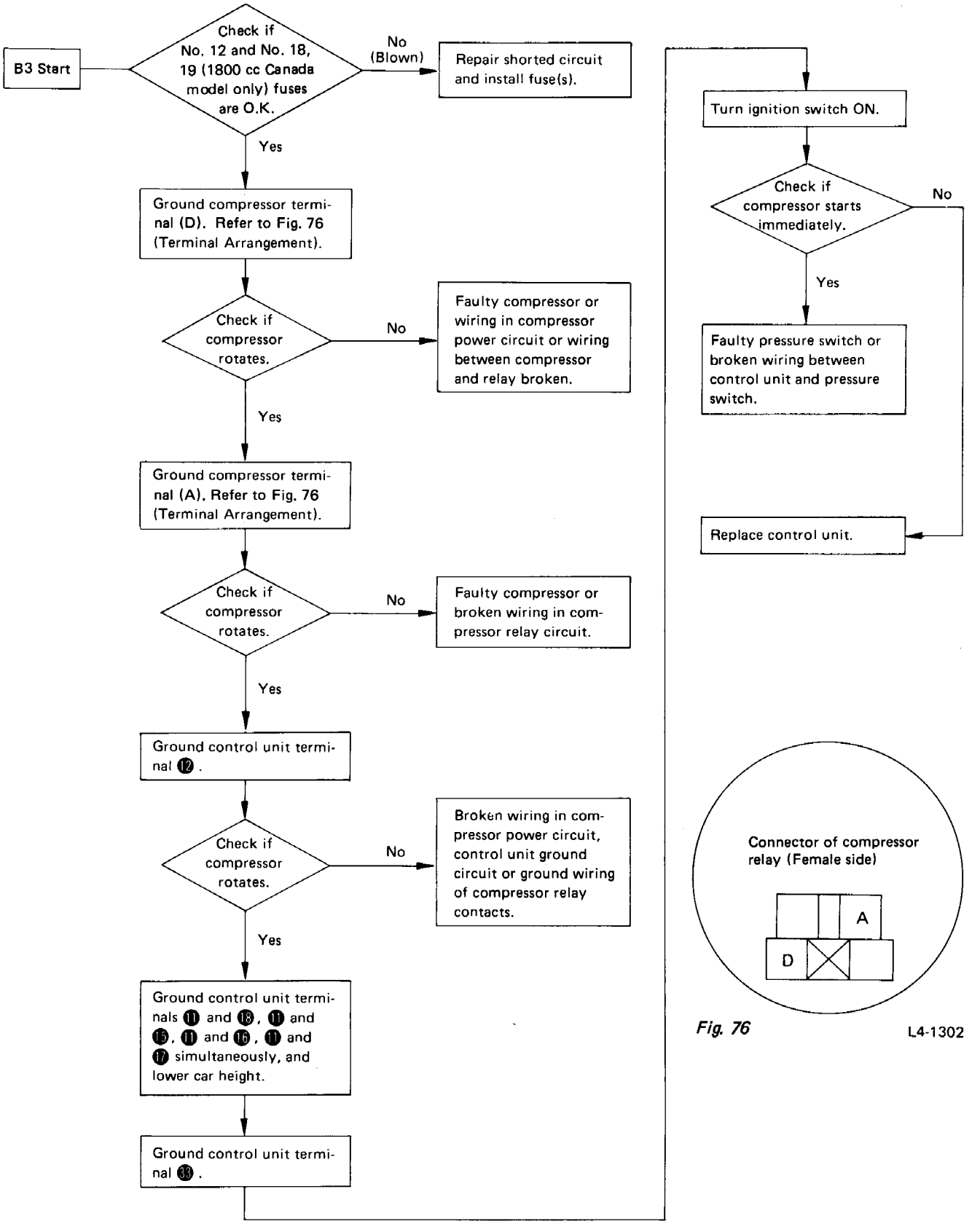
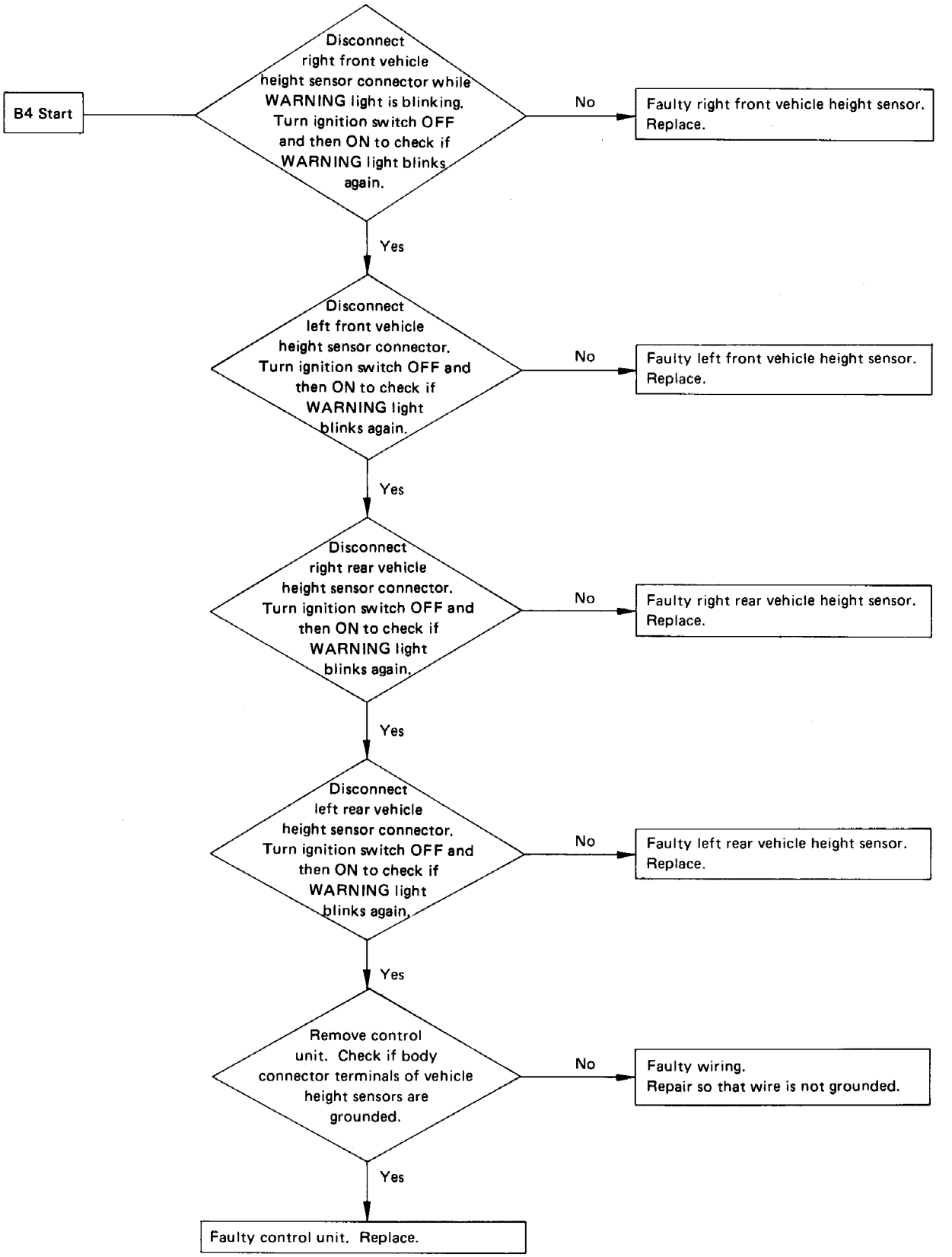
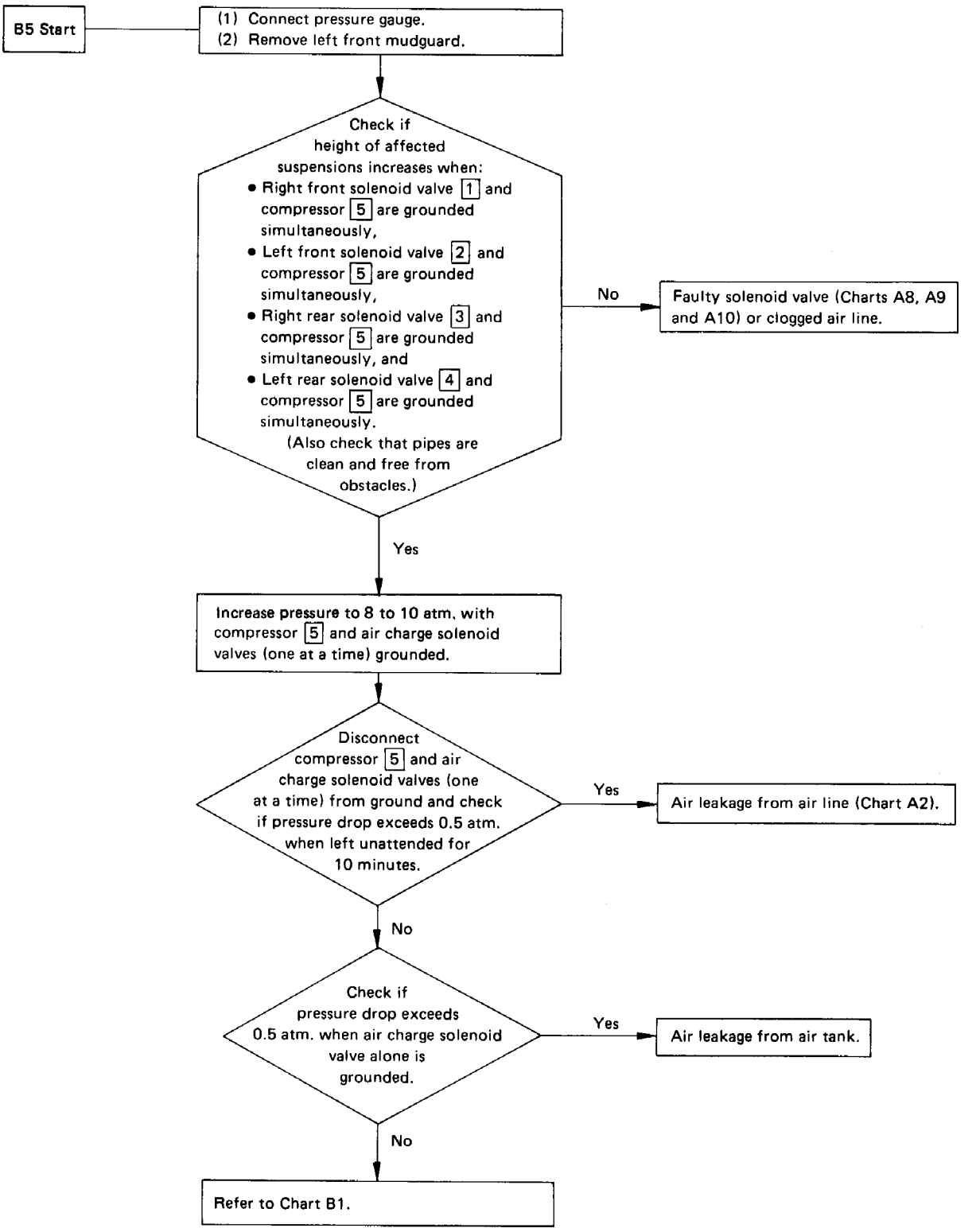


Fig. 76 L4-1302

B4)


B4 Start
Disconnect right front vehicle height sensor connector while WARNING light is blinking. Turn ignition switch OFF and then ON to check if WARNING light blinks again.
No
Faulty right front vehicle height sensor. Replace.
Yes
Disconnect left front vehicle height sensor connector. Turn ignition switch OFF and then ON to check if WARNING light blinks again.
No
Faulty left front vehicle height sensor. Replace.
Yes
Disconnect right rear vehicle height sensor connector. Turn ignition switch OFF and then ON to check if WARNING light blinks again.
No
Faulty right rear vehicle height sensor. Replace.
Yes
Disconnect left rear vehicle height sensor connector. Turn ignition switch OFF and then ON to check if WARNING light blinks again.
No
Faulty left rear vehicle height sensor. Replace.
Yes
Remove control unit. Check if body connector terminals of vehicle height sensors are grounded.
No
Faulty wiring. Repair so that wire is not grounded.
Yes
Faulty control unit. Replace.

B5)


B5 Start
(1) Connect pressure gauge.
(2) Remove left front mudguard.
Check if height of affected suspensions increases when:
• Right front solenoid valve [1] and compressor [5] are grounded simultaneously,
• Left front solenoid valve [2] and compressor [5] are grounded simultaneously,
• Right rear solenoid valve [3] and compressor [5] are grounded simultaneously, and
• Left rear solenoid valve [4] and compressor [5] are grounded simultaneously.
(Also check that pipes are clean and free from obstacles.)
No
Faulty solenoid valve (Charts A8, A9 and A10) or clogged air line.
Yes
Increase pressure to 8 to 10 atm. with compressor [5] and air charge solenoid valves (one at a time) grounded.
Disconnect compressor [5] and air charge solenoid valves (one at a time) from ground and check if pressure drop exceeds 0.5 atm. when left unattended for 10 minutes.
Yes
Air leakage from air line (Chart A2).
No
Check if pressure drop exceeds 0.5 atm. when air charge solenoid valve alone is grounded.
Yes
Air leakage from air tank.
No
Refer to Chart B1.

INSPECTION

A1) Air leaks from air pipe above strut mount

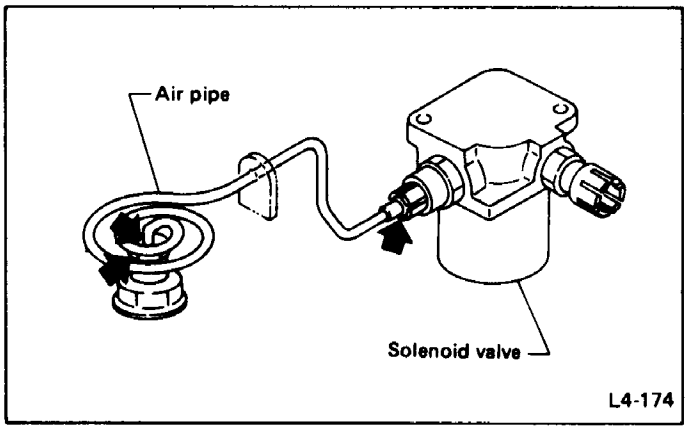


Fig. 77

Check air pipe and joints (shown by arrow) for air leaks. Soap water or SUBARU CRC (004301003) may be used, but no soap water must be applied to ball bearing inside the strut mount.

A2) Air leakage from air line

The following special service tools are available:

- 3-WAY JOINT ASSY (926940000) consists of:
  (1) 3-WAY JOINT 1
  (2) AIR PIPE . . . . . 2 (3 sets)

Use a commercial gauge manifold.

1) Connect a pressure gauge to the right front solenoid valve (for example). See Fig. 79.
2) Remove the left front mudguard.
3) Ground the air charge solenoid valve and increase solenoid valve pressure to 5 to 6 atm.
4) Leave the solenoid valve unattended for 10 minutes. Then check for a pressure drop. If the pressure drop does not exceed 0.5 atm., the solenoid valve is functioning properly.
5) Method of connecting pressure gauge (ex. 1)

- Using the REMOVER, disconnect the air pipe leading to the compressor at the right front solenoid valve.
- Connect the gauge manifold and the 3-WAY JOINT as a unit between the solenoid valve and the disconnected end of the air pipe.

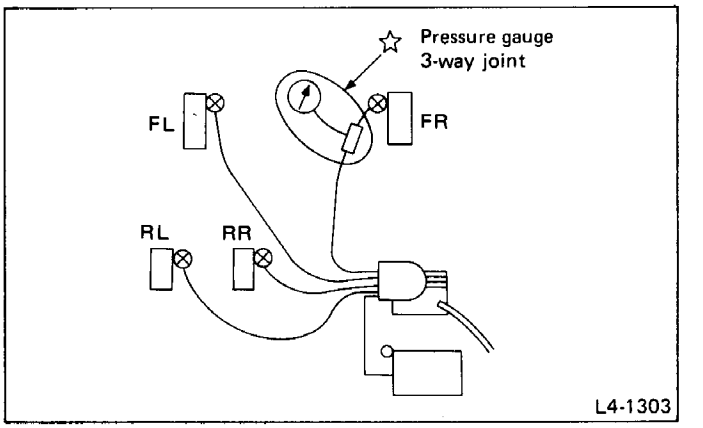


Fig. 78

6) If the pressure drop exceeded 0.5 atm. [in step 4) above], go to step 7) below.
7) Disconnect one of the air lines connected to the struts at the drier. In its place, connect a pressure gauge as shown in figure below.
8) Method of connecting pressure gauge (ex. 2)

- Using the REMOVER, disconnect the air line leading to the air suspension ASSY at the drier outlet.
- Connect the gauge manifold and the 3-WAY JOINT as a unit between the drier outlet and the disconnected end of the air pipe.

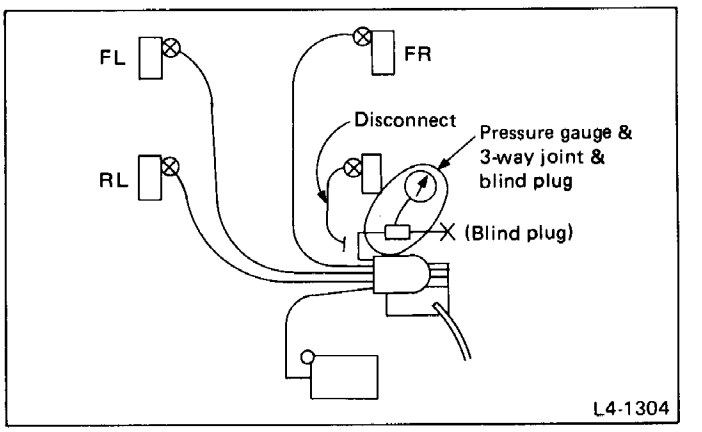


Fig. 79

9) Repeat steps 3) and 4) above.
10) If check results are O.K, repeat steps 7) and 8).
11) Repeat steps 7) through 10) to check the remaining struts.
If any particular strut does not show a pressure drop, the affected air line is leaking.

A3) Pressure switch

1) Connect a pressure gauge.
2) Ground the air charge solenoid valve and compressor [5].
3) Apply a pressure of 9 to 10 atm, to the solenoid valve to check that the pressure switch turns OFF. If it does not turn OFF, the pressure switch is faulty or its circuit is broken.
4) Ground the air charge solenoid valve and the discharge solenoid valve.
5) Check that the pressure switch turns ON when less than 8.5 atm. pressure is applied to the solenoid valve. (If the pressure switch does not turn ON, it is faulty or its circuit is broken.

A4) Air leaks from air suspension assembly

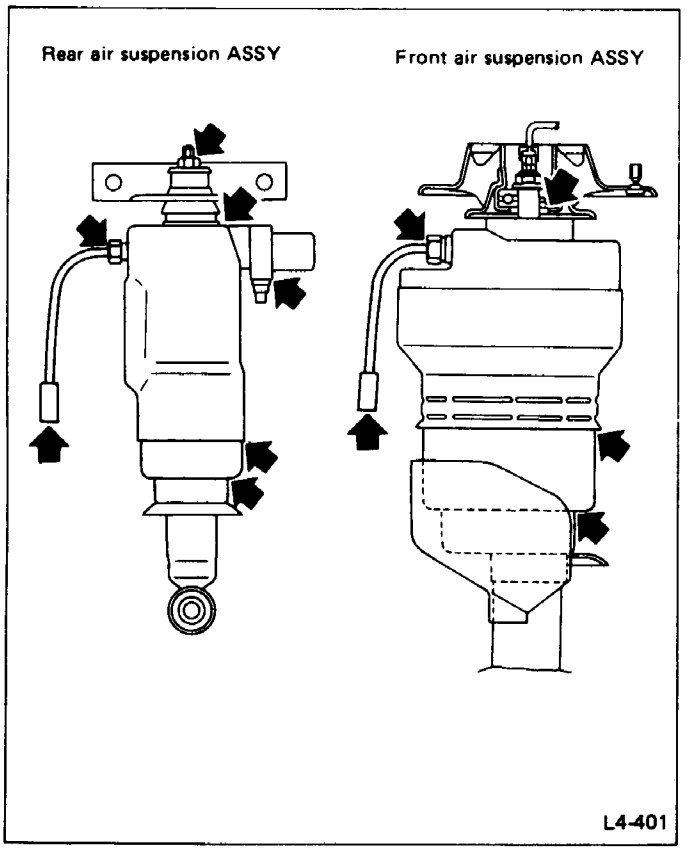


Fig. 80

Remove front or rear air suspension ASSY, and apply air into it. Put air suspension ASSY in water, and check for air leaks at places indicated by arrow.

a. Do not apply water to strut mount ball bearing. Apply SUBARU CRC (004301003) etc. to check for air leaks.
b. After checking, thoroughly remove water from each portion of air suspension ASSY by applying compressed air.

A5) Air leakage from air tank assembly

1) Connect a pressure gauge.
2) Ground the air charge solenoid valve. Read the pressure gauge 5 seconds after grounding the solenoid valve.
3) Wait about 10 minutes.
4) Repeat step 2) and check that the pressure drop is less than 0.5 atm.

A6) Vehicle height sensor

Compress and extend front or rear air suspension ASSY, and check with a tester if continuity exists between connector terminals of vehicle height sensor harness coming out of air suspension ASSY. Air suspension ASSY is in good condition if continuity exists as follows.

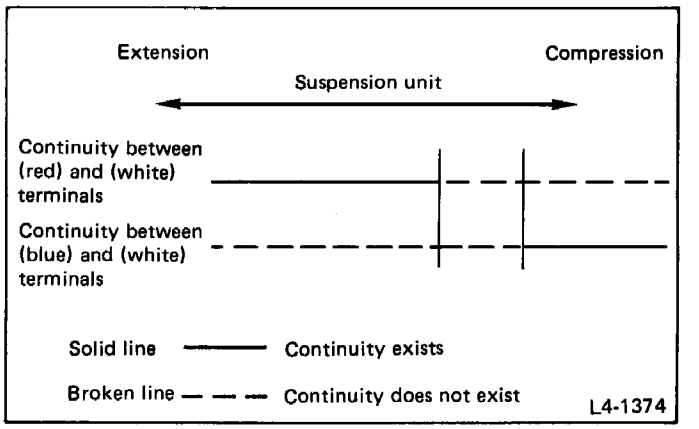


Fig. 81

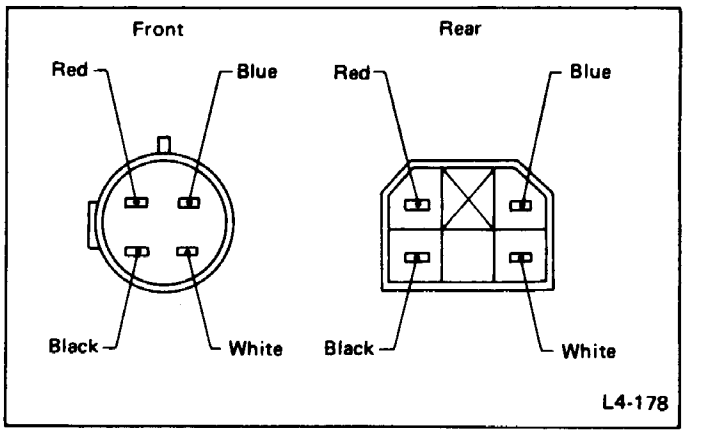


Fig. 82 Arrangement of connector terminals

When checking vehicle height sensor at body harness side connector to control unit, disconnect connector from control unit and check for continuity between terminals. The correspondence between terminals is as shown below.

Signal / Location	"NORMAL" position (White)	Low (Blue)	High (Red)
Front-Right	⑧	㉟	㉗
Front-Left	⑦	㉞	㉖
Rear-Right	⑤	㉓	㉕
Rear-Left	④	㉘	㉛

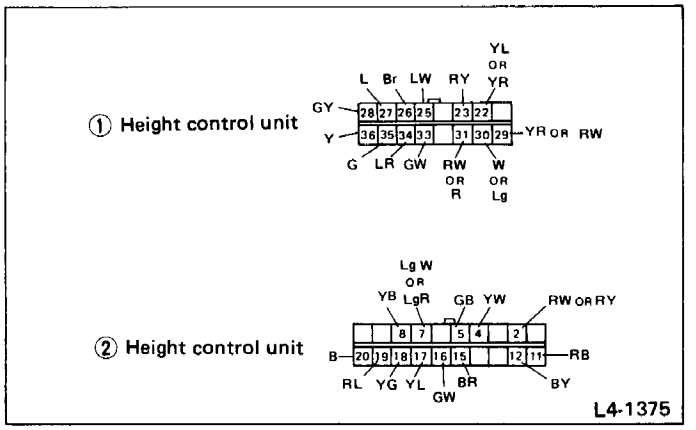


Fig. 83 Control unit connector and terminal

Vehicle height sensor consists of four self-holding reed switches, whose connections are made as shown in following figure.

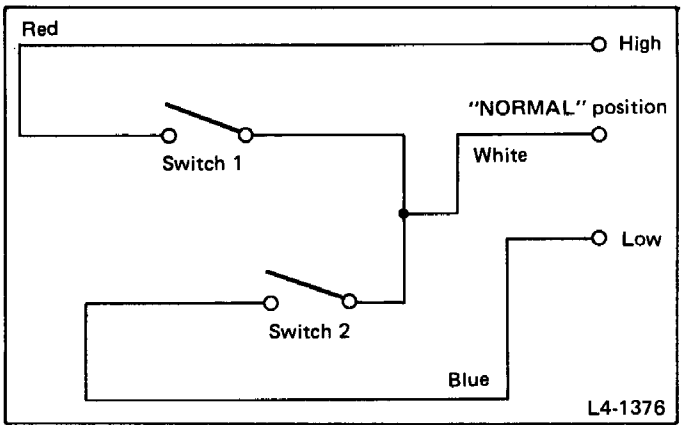


Fig. 84

A7) Poor sealing or air leak from solenoid valve

With compressed air applied to front or rear air suspension ASSY or air tank, disconnect air pipe from air joint, which is far from the above parts, by using AIR PIPE REMOVER (926520000), and check for air leaks.
Also check solenoid valve for air leaks.

A8) Break in solenoid valve

Apply 12 volts to coupler and check whether operating noise is heard. Or check whether there is continuity between terminals with a tester.

A9) Clogging in air line

Check each air line for clogging. Repair bent or twisted air pipe.

A10) Sticking of solenoid valve

Check that height of affected suspensions decreases when each set of the following parts are grounded.
1)
- Right front solenoid valve [1] and air discharge solenoid valve
- Left front solenoid valve [2] and air discharge solenoid valve
- Right rear solenoid valve [3] and air discharge solenoid valve
- Left rear solenoid valve [4] and air discharge solenoid valve

Also check that a sound (air-discharge) is heard when both the air discharge and the air charge valve are grounded.
2) If height of a particular suspension does not decrease, disconnect the air pipe from the air joint on the solenoid valve side of the affected strut. Use the PIPE REMOVER (926520000) to disconnect the air pipe.
Apply 12 volts across the connector terminals of the solenoid valve. (No polarity is established.)
3) When height decreases in step 2) above, the air pipe is faulty and must be replaced. When height does not decrease, the solenoid valve is malfunctioning and must be replaced.
If the front strut solenoid valve is faulty, also check the air pipe for clogging.

A11) Malfunction of compressor

Apply 12 volts to compressor to see if it operates.
Compressor motor contains a circuit breaker. So when motor temperature rises too high, the circuit breaker stops the motor to prevent it from burning up. If this happens, leave compressor alone, and it will return to normal condition when it cools down.

A12) Check on compressor relay

Compressor relay has terminal arrangement as shown in the figure.
A check on compressor relay should be made by applying ⊕ 12 volts to terminal B, grounding terminal A, and checking if continuity exists between terminals C and D. Also, check that continuity between terminals C and D does not exist without applying ⊕ 12 volts to terminal B.

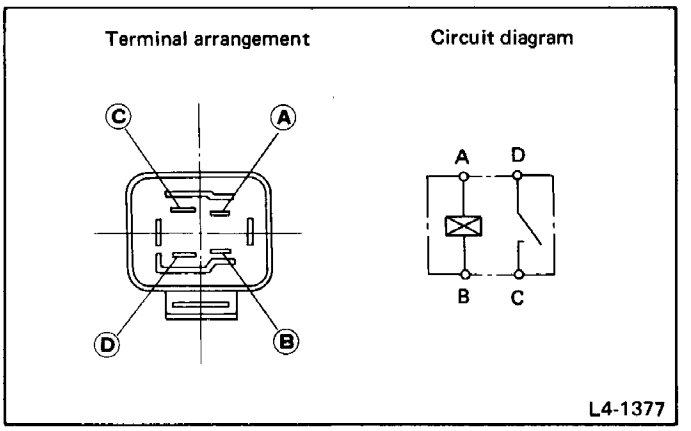


Fig. 85

A13) Check on electric circuit

Electric circuit should be checked with a load (such as solenoid valve and control unit) disconnected from the part in which continuity is to be examined.
As for signal wires other than power lines, check continuity and also check whether voltage is not applied to them and also whether they are not grounded.

A14) Air suspension check connector

1) Connector locations

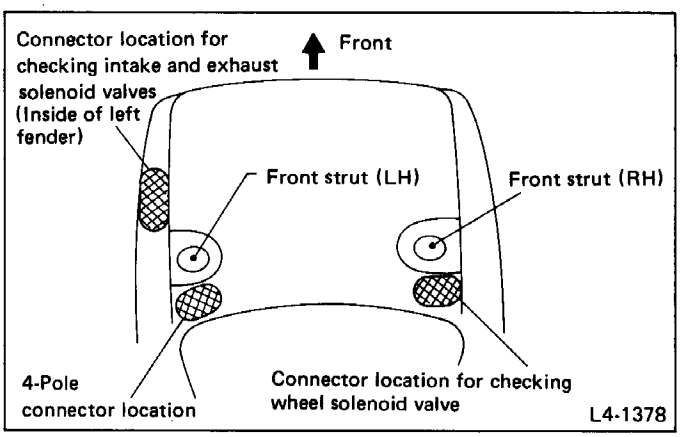


Fig. 86

2) Terminal arrangement
(1) For wheel solenoid valve checks
Ground the following terminals.

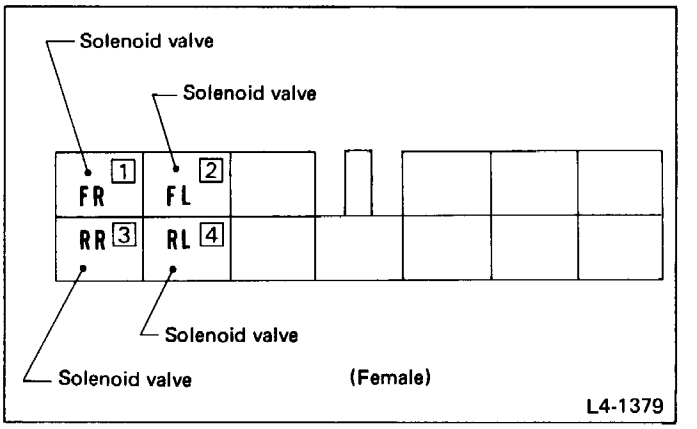


Fig. 87

3) 4-pole connector (for use with compressor relay)

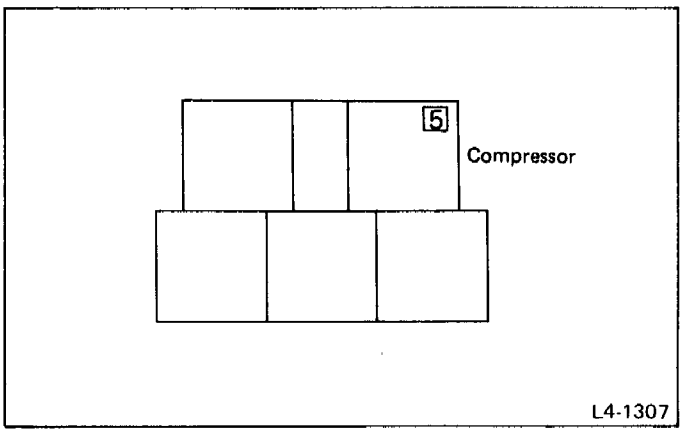


Fig. 88

4) Connector for air discharge or charge solenoid valve
Ground the following terminals after connecting female and male connectors.

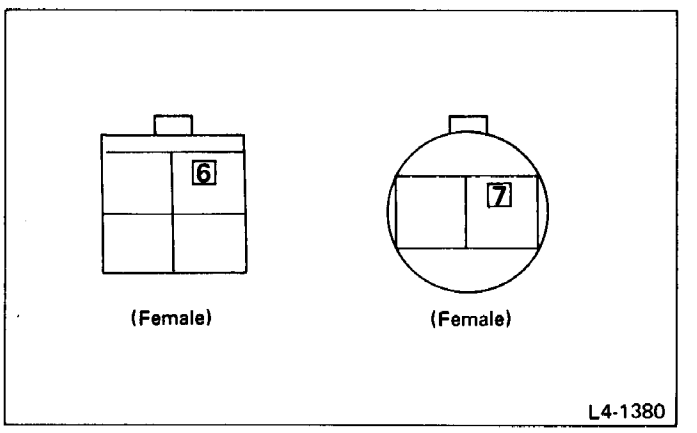


Fig. 89

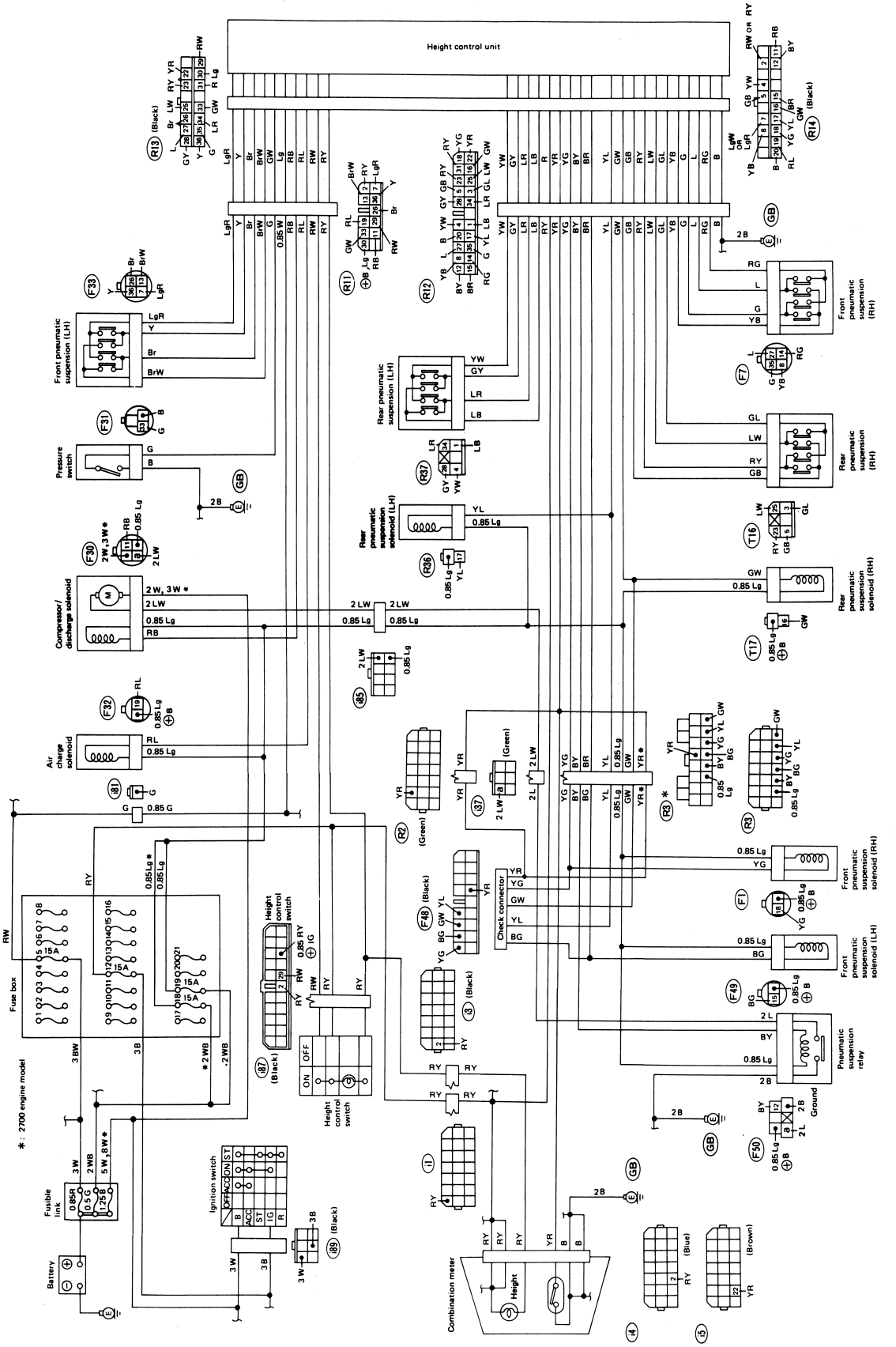


Fig. 90 Connector and terminal

L4-1381