

SERVICE MANUAL	
Applies to: Hyundai Coupe/Tiburon 1998-2000	
GROUP	
Clutch System	General

Return to Main Menu(s): [Mechanical Manual](#) [Electrical Manual](#)

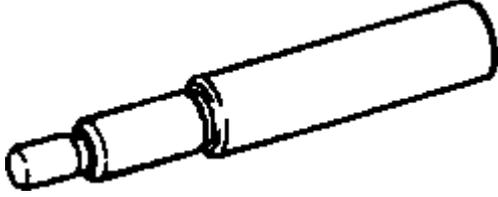
LUBRICANTS

Items	Specified lubricants	Quantity
Contact surface of release bearing and fulcrum of clutch release fork	MOLYWHITE TA NO.2	As required
Inner surface of clutch release bearing	MOLYWHITE TA NO.2	As required
Inner surface of clutch release cylinder and outer circumference of piston and cup	Brake fluid DOT3	As required
Inner surface of clutch disc spline	MOLYWHITE TA NO.2	0.2 gram
Inner surface of clutch master cylinder and outer circumference of piston assembly	Brake fluid DOT3	As required
Clutch master cylinder push rod, clevis pin and washer	Wheel bearing grease SAE J310a, NLGI No.2	As required
Clutch pedal shaft and bushings	SAE J310a, Chassis grease , NLGI - No.1	As required
Contact portion of release lever to release cylinder push rod	MOLYWHITE TA NO.2	As required
Input shaft spline	MOLYWHITE TA NO.2	As required

SERVICE MANUAL	
Applies to: Hyundai Coupe/Tiburon 1998-2001	
GROUP	
Clutch System	General

Return to Main Menu(s): [Mechanical Manual](#) [Electrical Manual](#)

SPECIAL TOOLS

Tool (Number and name)	Illustration	Use
09411-11000 Clutch disc guide		Installation of clutch disc

SERVICE MANUAL	
Applies to: Hyundai Coupe/Tiburon 1998-2001	
GROUP	
Clutch System	General

Return to Main Menu(s): [Mechanical Manual](#) [Electrical Manual](#)

TROUBLESHOOTING

Symptom	Probable cause	Remedy
Clutch slipping <ul style="list-style-type: none"> Car will not respond to engine speed during acceleration. Insufficient car speed Lack of power during uphill driving 	Insufficient pedal free play	Adjust
	Clogged hydraulic system	Correct or replace parts
	Excessive wear of clutch disc facing	Correct or replace parts
	Hardened clutch disc facing, or oil on surface	Replace
	Damaged pressure plate or flywheel	Replace
	Weak or broken pressure spring	Replace
Difficult gear shifting (gear noise during shifting)	Excessive pedal free play	Adjust
	Hydraulic system fluid leaks, air trapping or restriction	Repair or replace parts
	Unusual wear or corrosion of clutch disc spline	Replace
	Excessive vibration (distortion) of clutch disc	Replace

Clutch noisy

Symptom	Probable cause	Remedy
When clutch is not used	Insufficient free play of clutch pedal	Adjust
	Excessive wear of clutch disc facing	Replace
A noise is heard after clutch is disengaged	Unusual wear and/or damage of release bearing	Replace
A noise is heard when clutch is disengaged	Insufficient grease on the sliding surface of bearing sleeve	Repair
	Improperly installed clutch	Repair

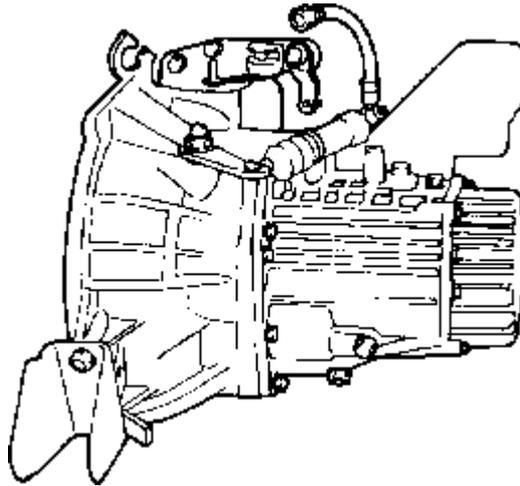
	assembly or bearing	
A noise is heard when the car is suddenly rolled of with clutch partially engaged	Damaged pilot bushing	Replace
Symptom	Probable cause	Remedy
Hard pedal effort	Insufficient lubrication of clutch pedal shaft	Repair
When clutch is not used	Insufficient lubrication of spline part of clutch disc	Repair
	Insufficient lubrication of clutch release lever shaft	Repair
	Insufficient lubrication of front bearing retainer	Repair
Hard to shift or will not shift	Excessive clutch pedal free play	Adjust pedal free play
	Faulty clutch release cylinder	Repair release cylinder
	Clutch disc out of true, runout is excessive or lining broken	Inspect clutch disc
	Spline on input shaft or clutch disc dirty or burred	Repair or replace as necessary
	Faulty clutch pressure plate	Replace clutch cover
Clutch slips	Clutch pedal free play insufficient	Adjust pedal free play
	Clogged hydraulic system	Repair or replace parts
	Clutch disc lining oily or worn out	Inspect clutch disc
	Pressure plate faulty	Replace clutch cover
	Loose engine mounts Release fork binding	Inspect release fork
Clutch grabs/chatters	Clutch disc lining oily or worn out	Replace
	Faulty pressure plate	Replace clutch cover
	Clutch diaphragm spring bent	Replace clutch cover
	Worn or broken torsion spring.	Replace clutch disc
	Loose engine mounts	Repair as necessary
Clutch noisy	Damaged clutch pedal bushing	Replace clutch pedal bushing
	Loose part inside housing	Repair as necessary
	Worn or dirty release bearing	Replace release bearing
	Release fork or linkage ticks	Repair as necessary

SERVICE MANUAL	
Applies to: Hyundai Coupe/Tiburon 1998-2001	
GROUP	
Clutch System	General

Return to Main Menu(s): [Mechanical Manual](#) [Electrical Manual](#)

BLEEDING

Whenever the clutch tube, the clutch hose, and/or the clutch master cylinder have been removed, or if the clutch pedal is spongy, bleed the system.



CAUTION

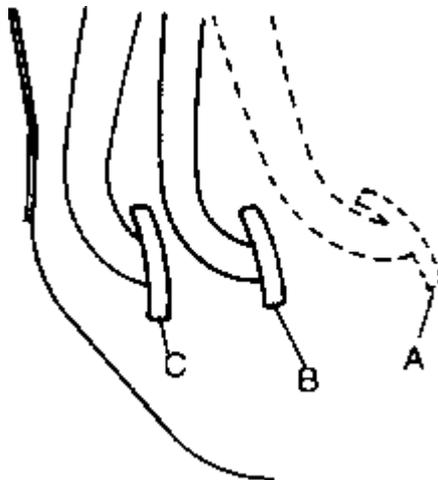
**Use the specified fluid. Avoid mixing different brands of fluids.
Specified fluid: SAE J1703 (DOT 3)**

Loosen the bleeder screw at the clutch release cylinder.

Push the clutch pedal down slowly until all air is expelled.

Hold the clutch pedal down until the bleeder is retightened.

Refill the clutch master cylinder with the specified fluid.



CAUTION

The rapidly-repeated operation of the clutch pedal in B-C range may cause the release cylinder's position to be forced out from the release cylinder body during the air bleeding, repress the clutch pedal after it returns to the "A" point completely

SERVICE MANUAL	
Applies to: Hyundai Coupe/Tiburon 1998-2001	
GROUP	
Clutch System	General

Return to Main Menu(s): [Mechanical Manual](#) [Electrical Manual](#)

SPECIFICATIONS

Clutch operating method	Hydraulic type
Clutch disc type	Single dry with diaphragm
Facing diameter (Outside x Inside) mm (in.)	215 x 145 (8.5 x 5.7)
Clutch cover assembly Type	Pull type (1.8L, 2.0L) Diaphragm spring strap
Setting load N (lb)	4263 (958.2)
Clutch release cylinder  I.D. mm (in.)	20.64 (0.81)
Clutch master cylinder  I.D. mm (in)	15.87 (0.62)

FOOT1.

I.D.: Inside Diameter

SERVICE MANUAL	
Applies to: Hyundai Coupe/Tiburon 1998-2001	
GROUP	
Clutch System	General

Return to Main Menu(s): [Mechanical Manual](#) [Electrical Manual](#)

SERVICE STANDARD

Standard value

Clutch disc thickness [When free]	8.7 ± 0.3 mm (0.34 ± 0.01 in)
Clutch pedal free play	6-13 mm (0.24-0.52 in)
Clutch pedal to floor board clearance (When the clutch is disengaged)	90 mm (3.6 in)
Clutch pedal stroke Limit	145 mm (5.7 in)

Limit

Clutch disc rivet sink	0.3 mm (0.012 in)
Diaphragm spring end height difference	0.5 mm (0.02 in)
Clutch release cylinder clearance to piston	0.15 mm (0.006 in)
Clutch master cylinder clearance to piston	0.15 mm (0.006 in)

SERVICE MANUAL	
Applies to: Hyundai Coupe/Tiburon 1998-2001	
GROUP	
Clutch System	General

Return to Main Menu(s): [Mechanical Manual](#) [Electrical Manual](#)

TIGHTENING TORQUE

Item	Nm	kg.cm	lb.ft
Clutch pedal to pedal support member (clutch pedal bracket)	19-28	190-280	14-20
Clutch pedal support member	17-21	170-210	12-15
Clutch master cylinder to firewall	9-14	90-140	7-10
Clutch tube flare nut	13-17	130-170	9-13
Reservoir band	5-7	50-70	4-5
Clutch release cylinder	15-22	150-220	11-16
Clutch release cylinder union bolt	20-25	200-250	11-18
Clutch cover assembly	15-22	150-220	11-16

SERVICE MANUAL	
Applies to: Hyundai Coupe/Tiburon 1998-2001	
GROUP	
Clutch System	General

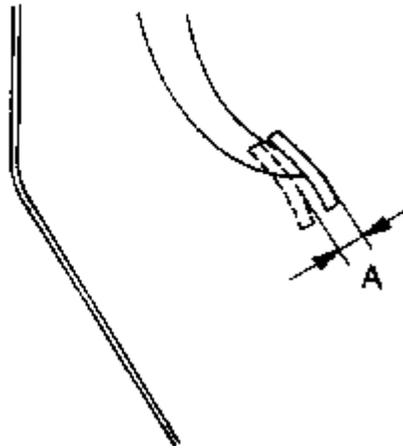
Return to Main Menu(s): [Mechanical Manual](#) [Electrical Manual](#)

SERVICE ADJUSTMENT PROCEDURES

CLUTCH PEDAL INSPECTION AND ADJUSTMENT

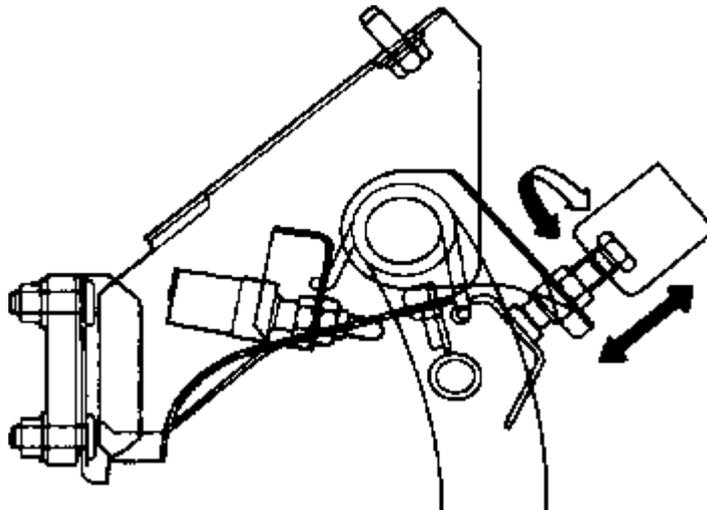
Measure the clutch pedal height (from the face of the pedal pad to the floorboard) and the the clutch pedal clevis pin play (measured at the face of the pedal pad.)

Clutch pedal clevis pin play



MEASUREMENT SPECIFICATION	
Clutch pedal clevis pin play	(A) 1-3 mm (0.04-0.11 in)

If the clutch pedal clevis pin free-play is not within the standard value range, adjust as follows:



Turn and adjust the bolt, then secure by tightening the lock nut.

NOTE

After the adjustment, tighten the bolt until it reaches the pedal stopper, and then tighten the lock nut.

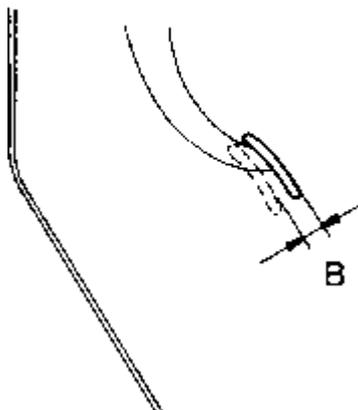
Turn the push rod to agree with the standard value and then secure the push rod with the lock nut.

CAUTION

When adjusting the clutch pedal height or the the clutch pedal clevis pin play, be careful not to push the push rod toward the master cylinder.

After completing the adjustments, check that the clutch pedal free play (measured at the face of the pedal pad) and the distance between the clutch pedal (the face of the pedal pad) and the floor board when the clutch is disengaged, are within the standard value ranges.

Clutch pedal free play



MEASUREMENT SPECIFICATION	
Clutch pedal free play	(B) 6-13 mm (0.24-0.52 in)
Clutch pedal free play	(C) 90 mm (2.8 in)

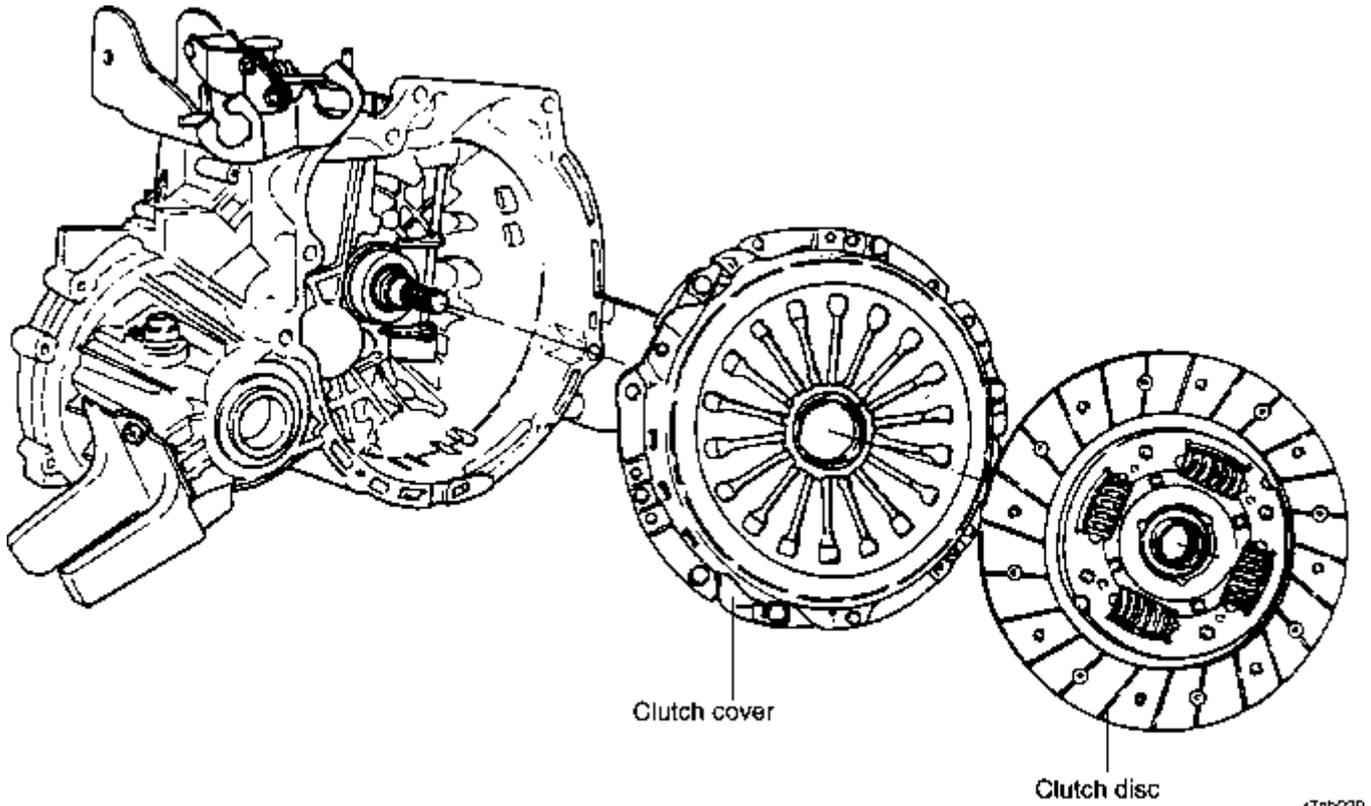
If the clutch pedal free play and the distance between the clutch pedal and the floor board when the clutch is disengaged do not meet with the standard values, it may be the result of either air in the hydraulic system or a faulty master cylinder of clutch. Bleed the air, or disassemble and inspect the master cylinder of clutch.

SERVICE MANUAL	
Applies to: Hyundai Coupe/Tiburon 1998-2001	
GROUP	
Clutch System	Clutch Components

Return to Main Menu(s): [Mechanical Manual](#) [Electrical Manual](#)

COMPONENTS

[1.8L, 2.0L Pull type]

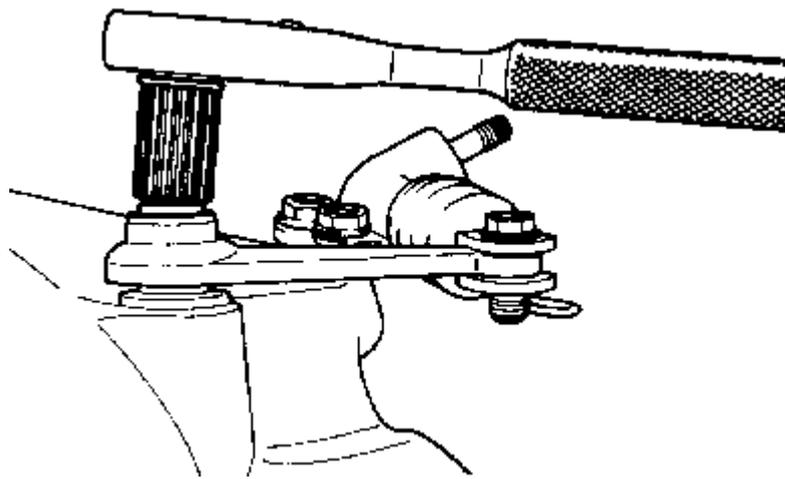


Return to Main Menu(s): [Mechanical Manual](#) [Electrical Manual](#)

REMOVAL

To remove the transaxle assembly first remove the air cleaner, joint, mounting bracket, and wiring etc.

Remove the release lever.



Loosen the release lever nut and washer.
Remove the clevis pin and snap ring from the release cylinder.
Remove the release lever.

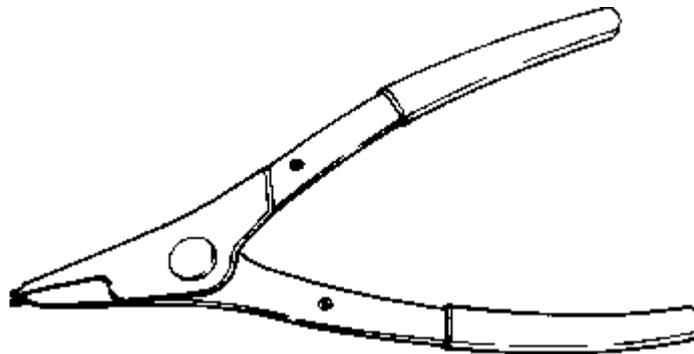
NOTE

It is impossible to remove transaxle assembly without doing this step. Because clutch cover, release bearing and release fork are combined together.

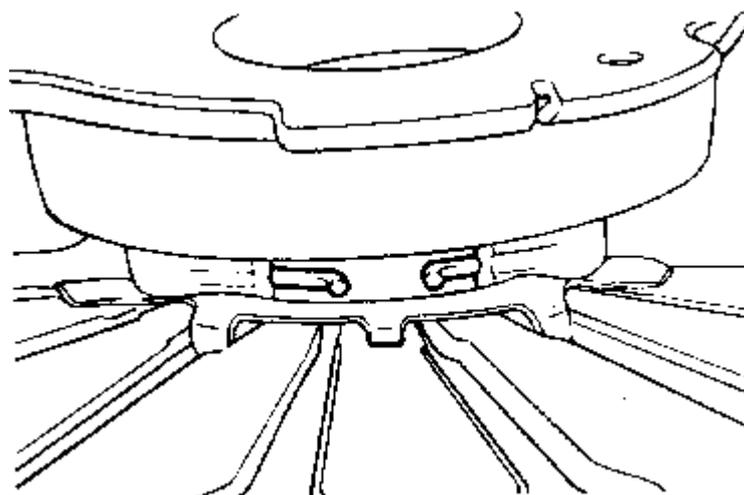
Loosen the bolts attached to the release cylinder and remove the release cylinder.

Remove the transaxle assembly, after removing each bolt which connect the transaxle assembly and engine.

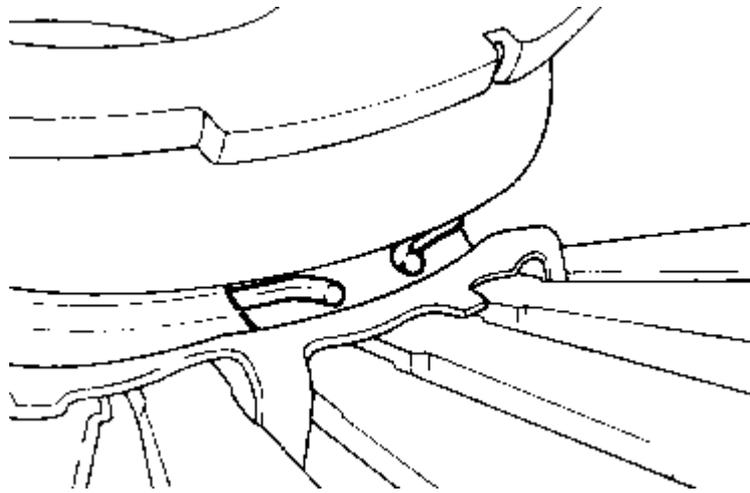
In the state that the clutch cover is attached to the flywheel remove the release bearing using appropriate tool as shown.



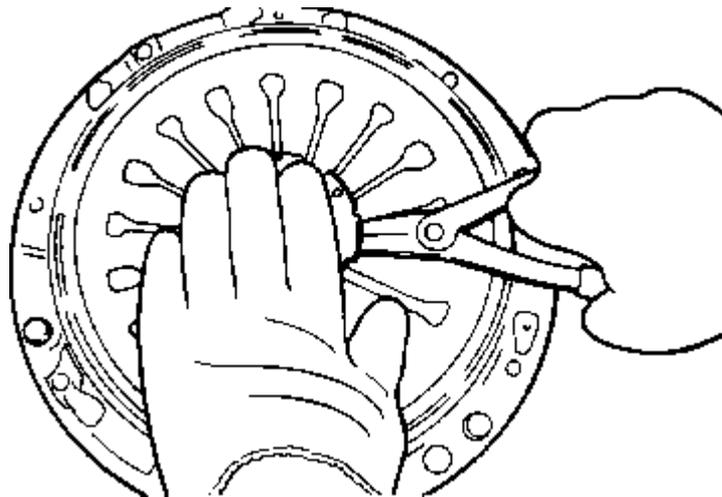
Rotate the release bearing in the easy direction in order to examine the snap ring.



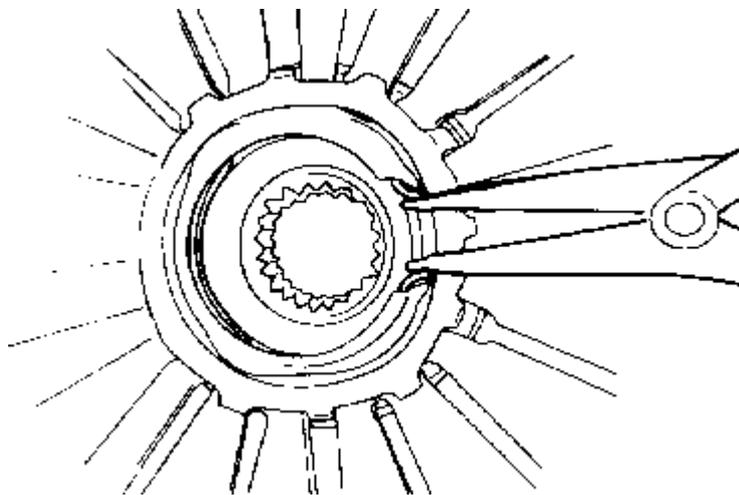
Insert the tool under the wave washer as shown in the illustration and locate in the center of snap ring.



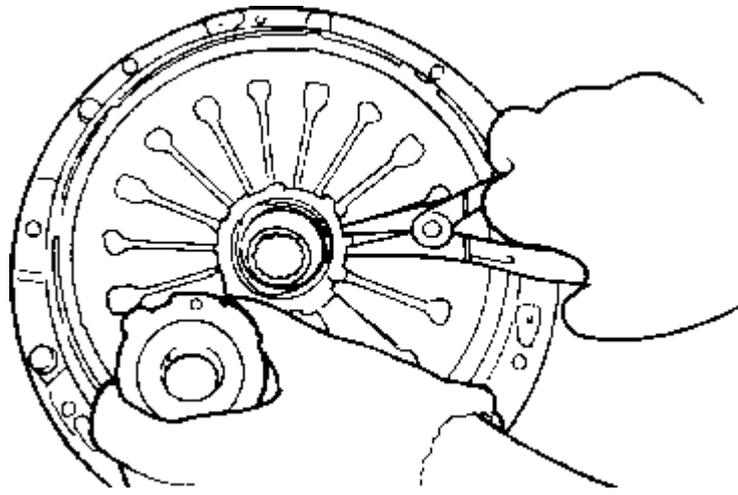
Widen the space of snap ring by pushing the bearing as shown in the illustration.



The snap ring-widen state is like as shown the figure.



In the snap ring-widen state pull out the release bearing and remove it.



Insert the special tool (09411-11000) in the clutch disc to prevent the disc from falling.

Loosen the bolts which attach the clutch cover to the flywheel in a star pattern. Loosen the bolts in succession, one or two turns at a time, to avoid bending the cover flange.

NOTE

Do not clean the clutch disc or release bearing with cleaning solvent.

Remove the release fork shaft and bushing.

Return to Main Menu(s): [Mechanical Manual](#) [Electrical Manual](#)

INSPECTION

CLUTCH COVER ASSEMBLY

Clean the dust on the clutch housing using the vacuum brush or dry floor cloth and ought not to use the compressed air absolutely.

Check the oil leakage in engine rear bearing oil seal and transaxle front oil seal. If leaky, repair them.

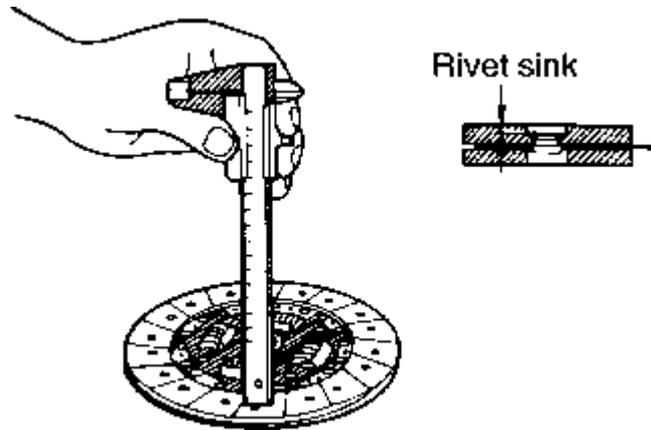
The friction surface of pressure plate must be equalized to entire disc surface.

If any part is excessive wear at the point of contact, the pressure plate is installed badly.

Check the friction surface of flywheel for color change, partial damage, small crack and wear.

Don't touch the clutch disc with the contaminated hands or gloves.

Replace the clutch disc, if the facing is stained with oil or grease. Measure the rivet sink and replace the clutch disc, if it is less than 3mm.



MEASUREMENT SPECIFICATION

Clutch disc	0.3 mm (0.012 in)
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Check the hub spline and torsion spring of clutch disc for excessive wear.

Clean the friction surface of pressure plate with cleaning solvent.

Measure the flat of pressure plate with a square. If it exceeds 0.5mm, replace it.

Check the pressure plate surface for wear, cracks and color change.

Check that the three-dowel on the flywheel is installed completely.

CLUTCH RELEASE BEARING

CAUTION

The release bearing is packed with grease. Do not use cleaning solvent or oil.

Check the bearing for seizure, damage or abnormal noise. Also check the diaphragm spring contacting points for wear.

Replace the bearing if the release fork contacting points are worn abnormally.

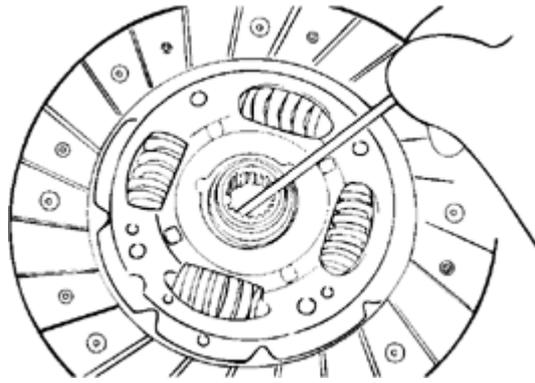
CLUTCH RELEASE FORK

If there is abnormal wear at the point of contact with the bearing, replace the release fork.

Return to Main Menu(s): [Mechanical Manual](#) [Electrical Manual](#)

INSTALLATION

Apply multipurpose grease to the spline of disc.



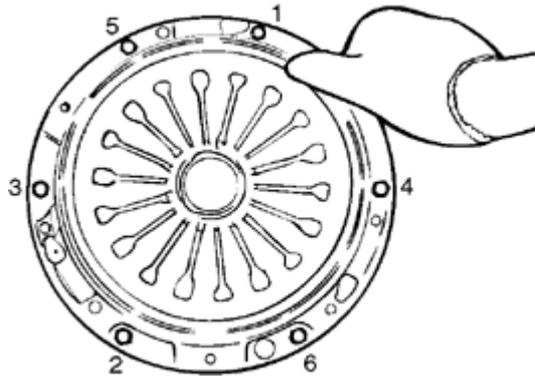
Grease: MOLYWHITE TA No.2

CAUTION

When installing the clutch, apply grease to each part, but be careful not to apply excessive grease; it can cause clutch slippage and judder.

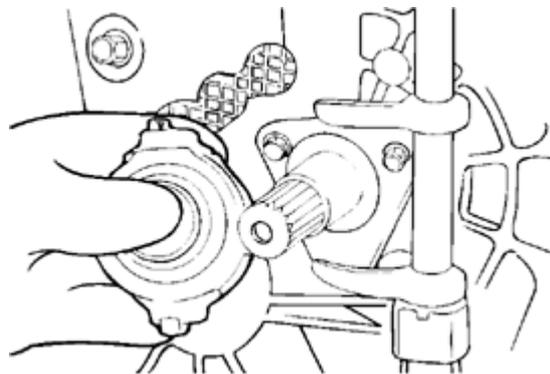
Install the clutch disc assembly to the flywheel using special tool (09411-11000).

Install the clutch cover assembly to the flywheel and temporarily tighten the bolts one or two steps at a time in a star pattern.



TORQUE SPECIFICATION	
Clutch cover bolt	15-22 Nm (150-220 kg·cm, 11-16 lb·ft)

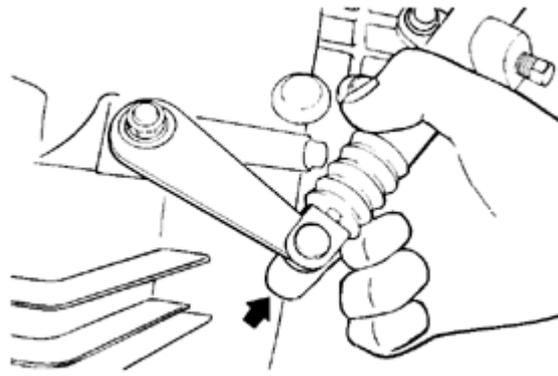
Align the bearing to the release fork and then install it to the sleeve of housing.



CAUTION

Apply multipurpose grease (MOLYWHITE TA No.2) to the grease groove of bearing sleeve and contact point of release fork.

Install the release lever to the release fork.

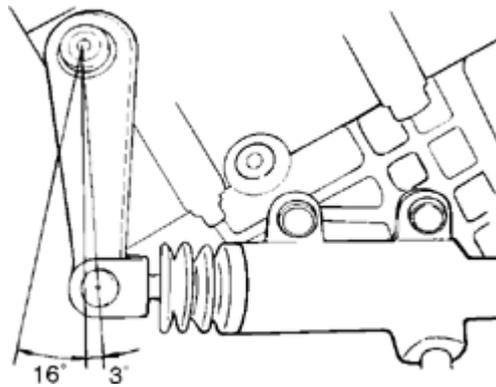


CAUTION

If transaxle assembly is installed to engine without doing this step, release bearing can be separated according as the release fork rotates free.

Install the transaxle assembly to the engine.

After finishing step 6, pushing the release lever to the arrow mark it is sounded click that the release bearing and clutch cover are aligned correctly.



Release lever operating range: 3° or less

If the range is over 3° it is a symptom that the release bearing and clutch cover are not aligned correctly. So, push the release lever to the arrow mark one more time.

SERVICE MANUAL	
Applies to: Hyundai Coupe/Tiburon 1998-2001	
GROUP	
Clutch System	Clutch Components

Return to Main Menu(s): [Mechanical Manual](#) [Electrical Manual](#)

DISASSEMBLY

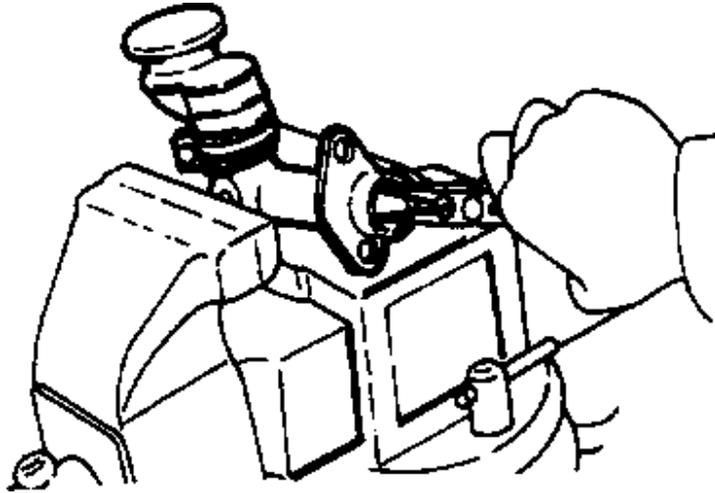
Remove the piston stop ring.

Remove the push rod and piston assembly.

Remove the reservoir band, reservoir cap and reservoir.

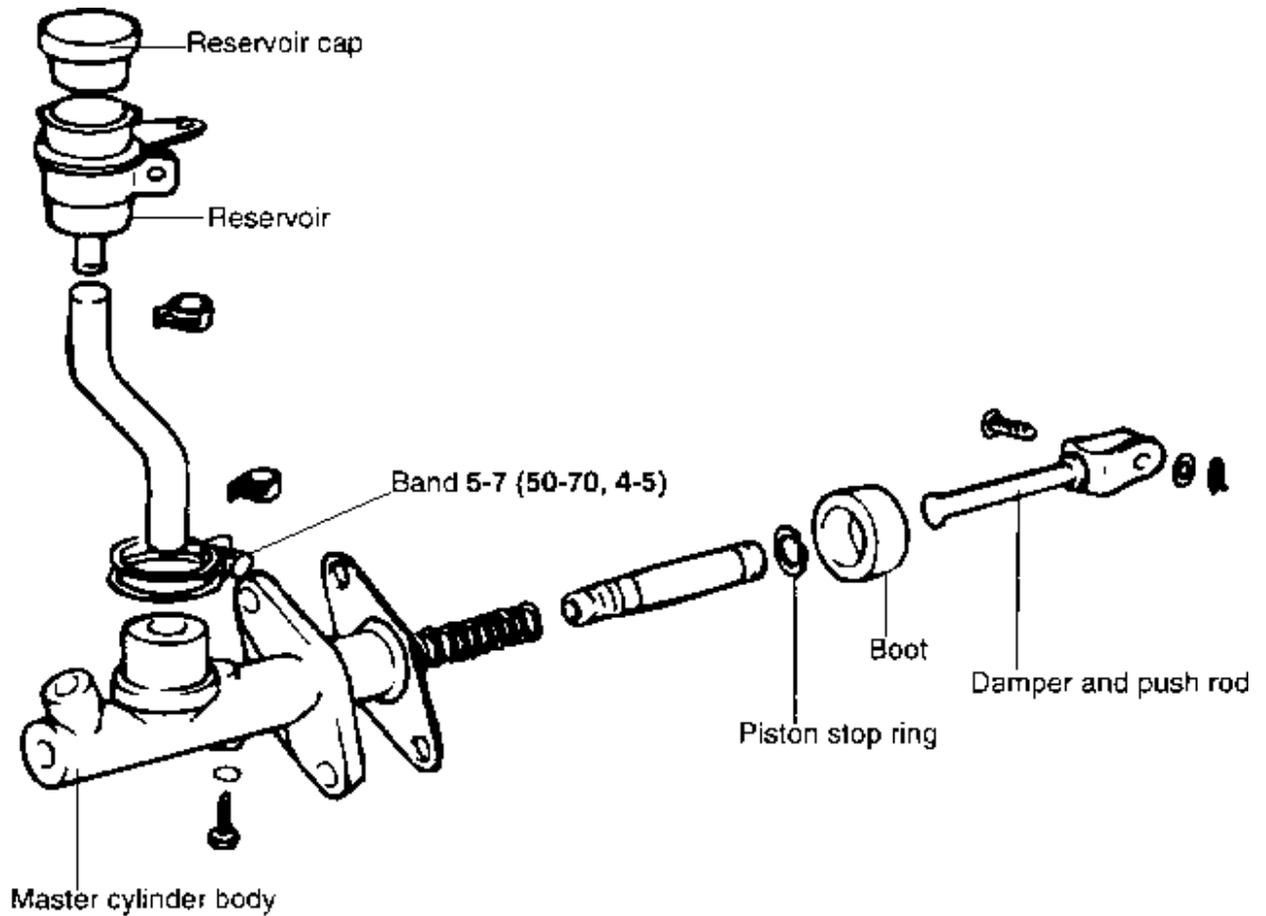
NOTE

1. Use care not to damage the master cylinder body and piston assembly.
1. Do not disassemble the piston assembly.



Return to Main Menu(s): [Mechanical Manual](#) [Electrical Manual](#)

COMPONENTS



TORQUE : Nm (kg.cm, lb.ft)

Return to Main Menu(s): [Mechanical Manual](#) [Electrical Manual](#)

INSPECTION

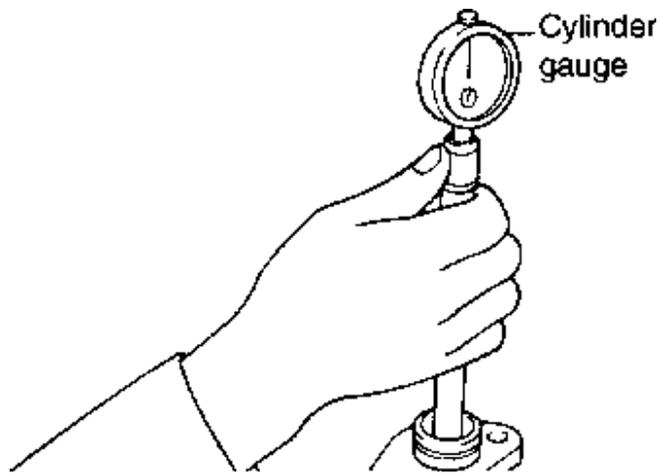
Check the inside of cylinder body for rust, pitting or scoring.

Check the piston cup for wear or distortion.

Check the piston for rust, pitting or scoring.

Check the clutch tube line for clogged.

Measure the master cylinder inside diameter with a cylinder gauge and the piston outside diameter with a micrometer.



NOTE

Measure the inside diameter of the master cylinder at three places (bottom, middle, and top), in perpendicular directions.

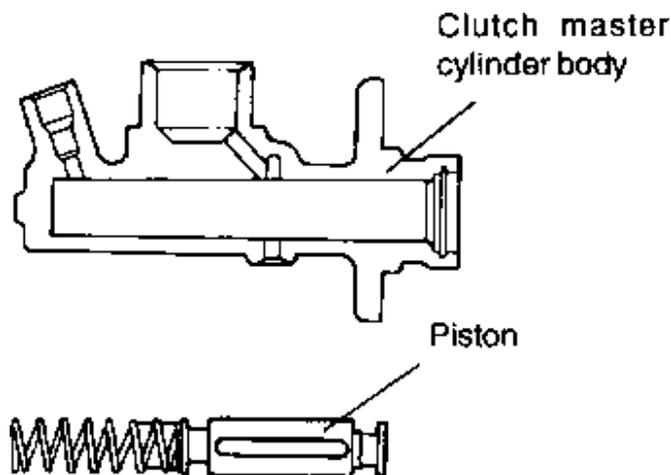
If the master cylinder-to-piston clearance exceeds the limit, replace the master cylinder and/or piston assembly.

MEASUREMENT SPECIFICATION	
Master cylinder-to-piston clearance	0.15 mm (0.006 in)

Return to Main Menu(s): [Mechanical Manual](#) [Electrical Manual](#)

REASSEMBLY

Apply the specified fluid to the inner surface of the master cylinder body and to the entire periphery of the piston assembly.



SPECIFICATION	
Specified fluid:	BRAKE FLUID DOT 3

Install the piston assembly.

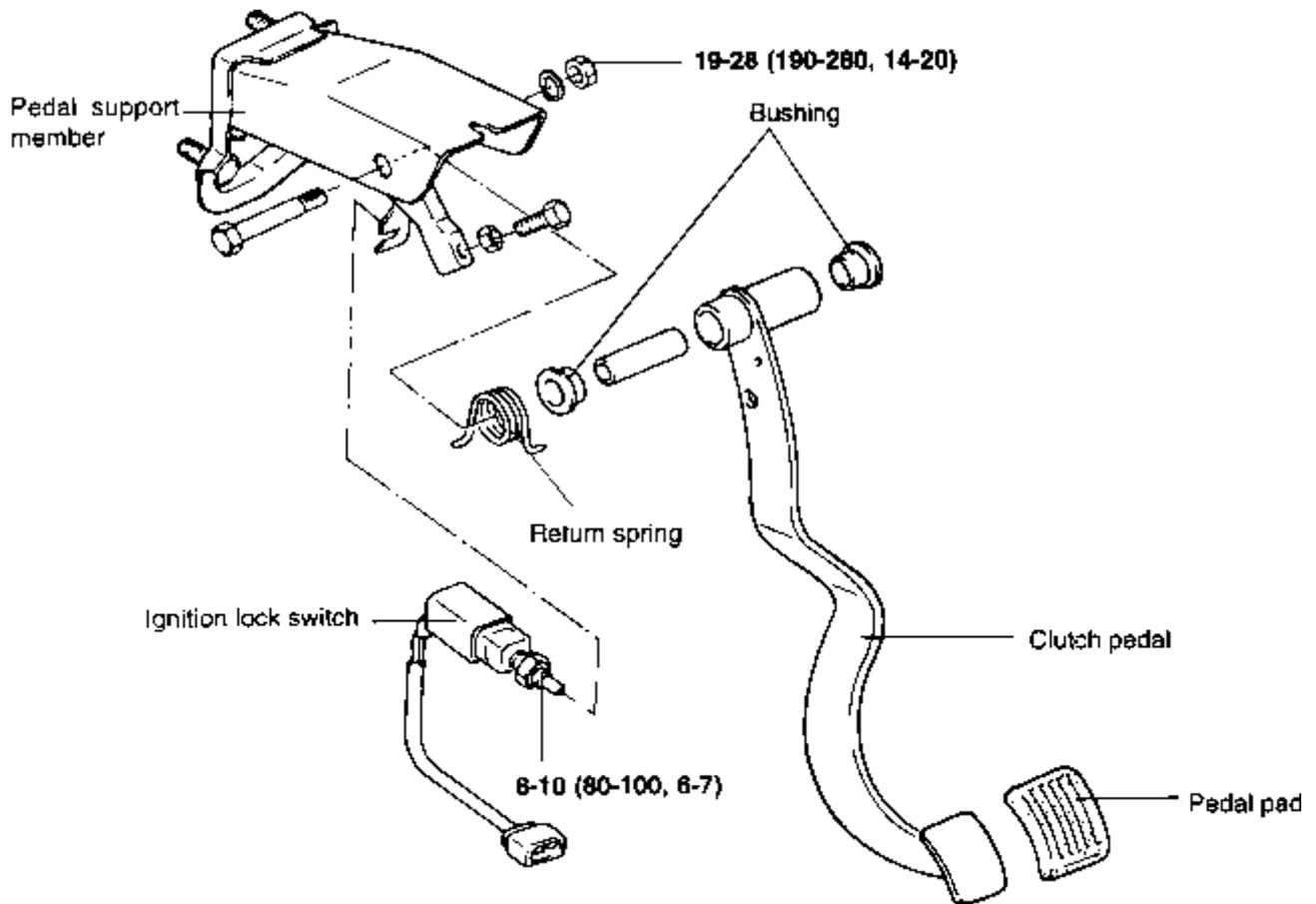
Install the push rod.

Install the reservoir to the master cylinder body.

SERVICE MANUAL	
Applies to: Hyundai Coupe/Tiburon 1998-2001	
GROUP	
Clutch System	Clutch Components

Return to Main Menu(s): [Mechanical Manual](#) [Electrical Manual](#)

COMPONENTS



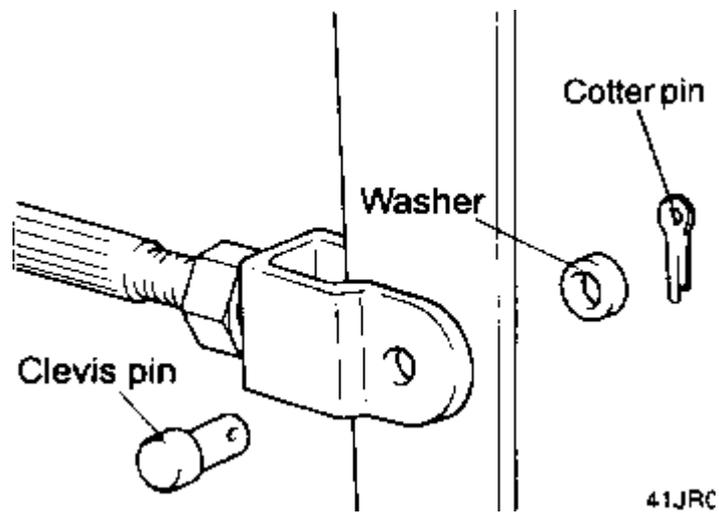
TORQUE : Nm (kg.cm, lb.ft)

Return to Main Menu(s): [Mechanical Manual](#) [Electrical Manual](#)

DISASSEMBLY

Disassemble the cotter pin, washer and clevis pin.

Disassemble the clutch pedal mounting bolt.

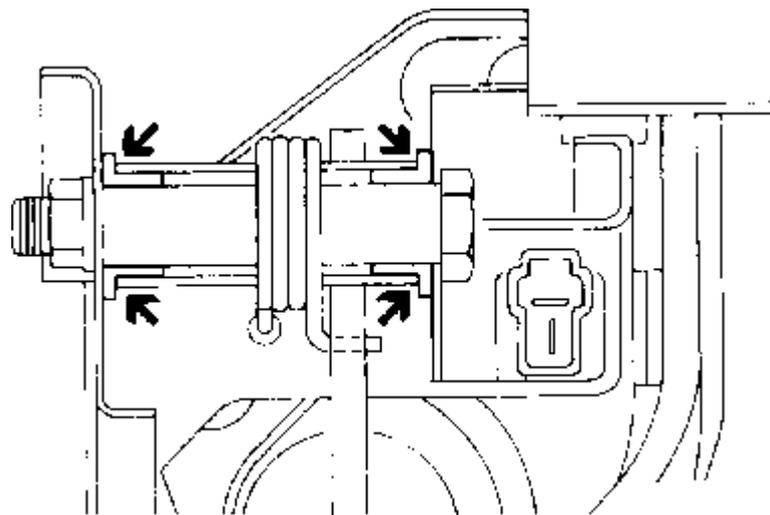


Return to Main Menu(s): [Mechanical Manual](#) [Electrical Manual](#)

INSTALLATION

Installation is reverse of removal.

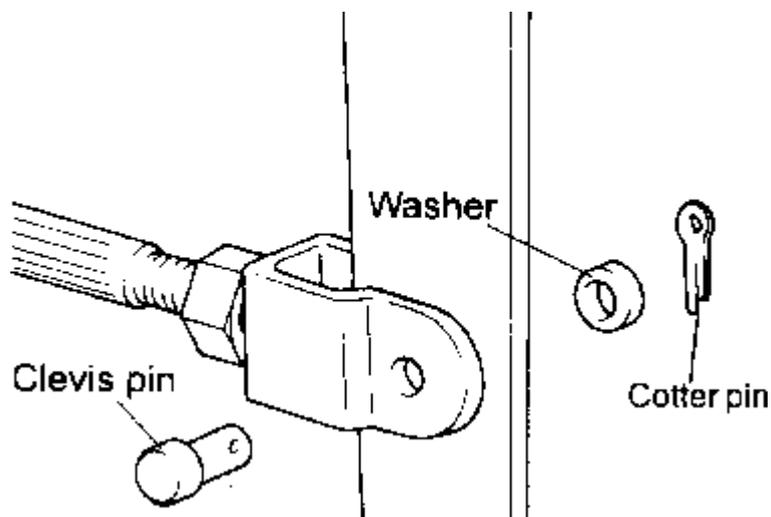
Apply multi-purpose grease to the bushings.



Apply the multi-purpose grease to the clevis pin and washer.

Install the push rod to the clutch pedal.

Adjust the clutch pedal clevis pin play.



INSPECTION

Check the pedal shaft and bushing for wear.

Check the clutch pedal for bending or torsion.

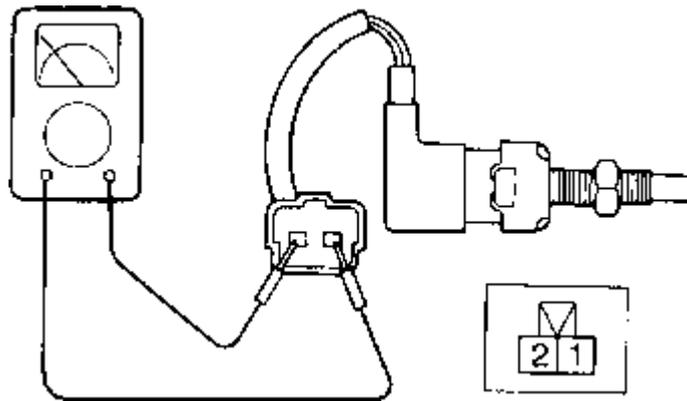
Check the return spring for damage or deterioration.

Check the pedal pad for damage or wear.

CHECK IGNITION LOCK SWITCH

Remove the ignition lock switch and check continuity between the terminals. If the continuity is not as specified, replace the switch.

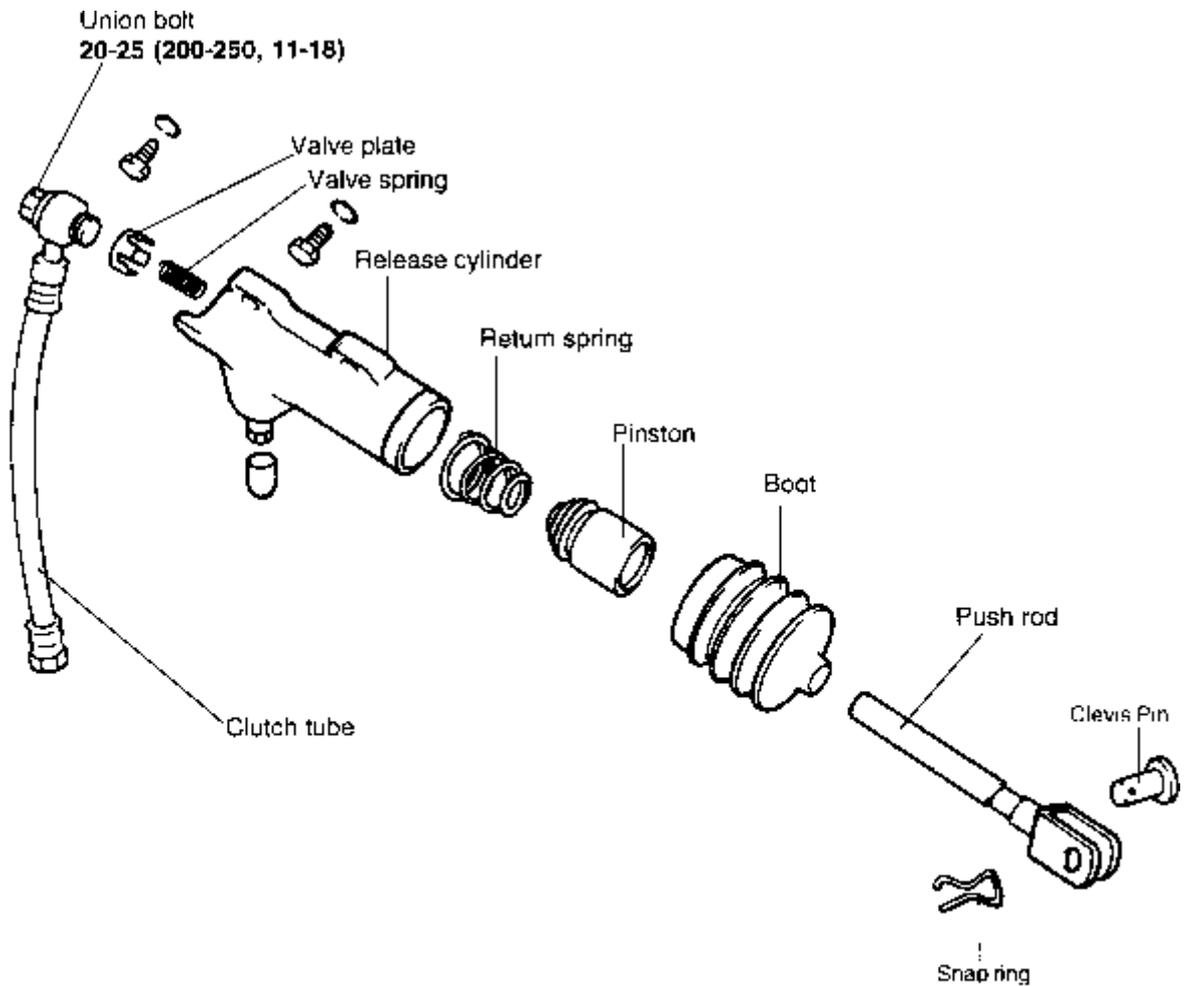
Condition \ Terminals	1	2
Pushed		
Free		



SERVICE MANUAL	
Applies to: Hyundai Coupe/Tiburon 1998-2001	
GROUP	
Clutch System	Clutch Components

Return to Main Menu(s): [Mechanical Manual](#) [Electrical Manual](#)

COMPONENTS



TORQUE : Nm (kg.cm, lb.ft)

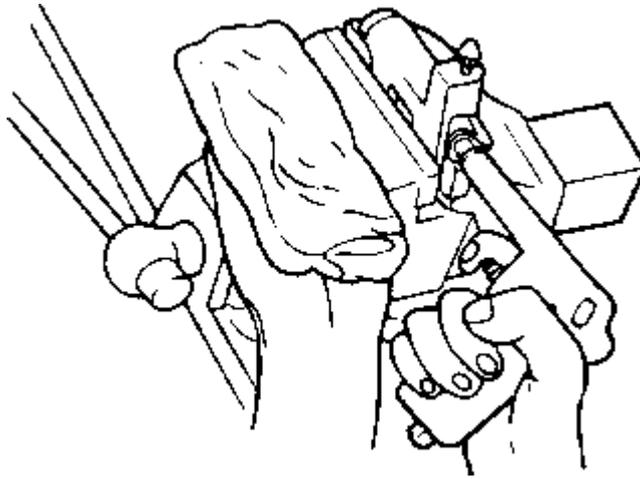
Return to Main Menu(s): [Mechanical Manual](#) [Electrical Manual](#)

REMOVAL

Remove the clutch hose, valve plate, spring, push rod and boot.

Remove any dirt from the piston bore opening of the release cylinder.

Remove the piston from the release cylinder using compressed air.



CAUTION

1. Cover with rags to prevent the piston from popping out and causing injury.
2. Apply compressed air slowly to prevent the fluid from splashing in your eyes or on your skin.

Return to Main Menu(s): [Mechanical Manual](#) [Electrical Manual](#)

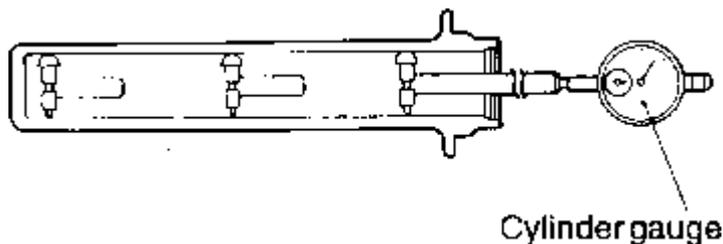
INSPECTION

Check the clutch release cylinder for fluid leakage.

Check the clutch release cylinder boots for damage.

Check the release cylinder bore for rust and damage.

Measure the release cylinder bore at three locations (bottom, middle and top) with a cylinder gauge and replace the release cylinder assembly if the bore-to-piston clearance exceeds the limit.



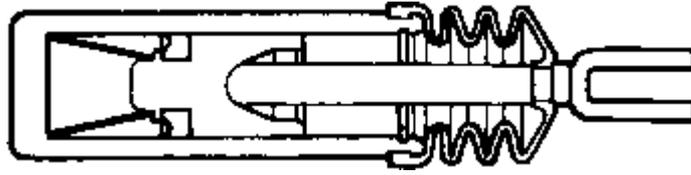
MEASUREMENT SPECIFICATION

Clearance to piston	0.15 mm (0.006 in)
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Return to Main Menu(s): [Mechanical Manual](#) [Electrical Manual](#)

REASSEMBLY

Apply specified brake fluid to the release cylinder bore and the outer surface of the piston and piston cup, and push the piston cup assembly into the cylinder.



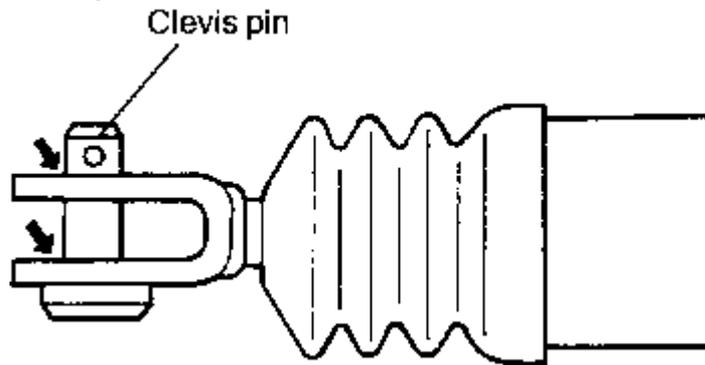
SPECIFICATION	
Use the specified fluid:	Brake fluid DOT 3

Install the clutch hose, valve plate, spring, push rod and boot.

Return to Main Menu(s): [Mechanical Manual](#) [Electrical Manual](#)

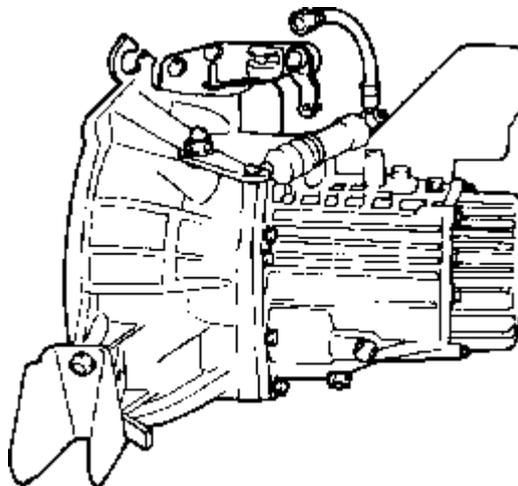
INSTALLATION

Coat the clevis pin with the specified grease. Align the hole in the end of the release cylinder push rod with that of the clutch release fork shaft and insert the clevis pin into the holes.



SPECIFICATION	
Specified grease:	MOLYWHITE TA No.2

Install the clutch release cylinder and the clutch tube.



SERVICE MANUAL	
Applies to: Hyundai Coupe/Tiburon 1998-2001	
GROUP	
Clutch System	Clutch Components

Return to Main Menu(s): [Mechanical Manual](#) [Electrical Manual](#)

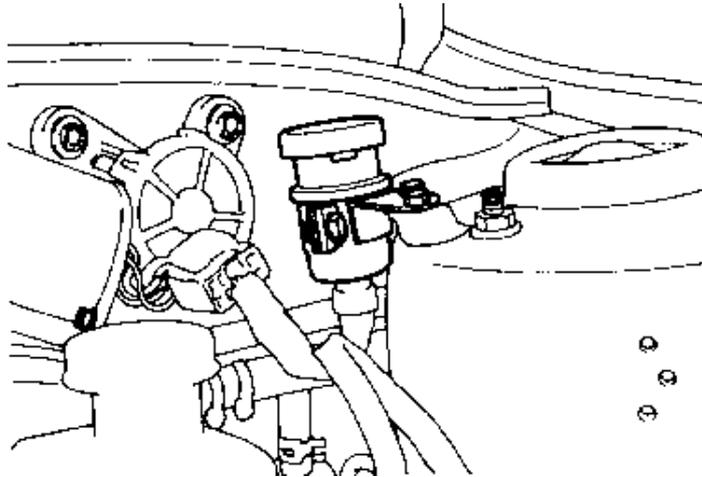
REMOVAL

Drain the clutch fluid through the bleed plug.

Remove the clevis pin, washer and cotter pin.

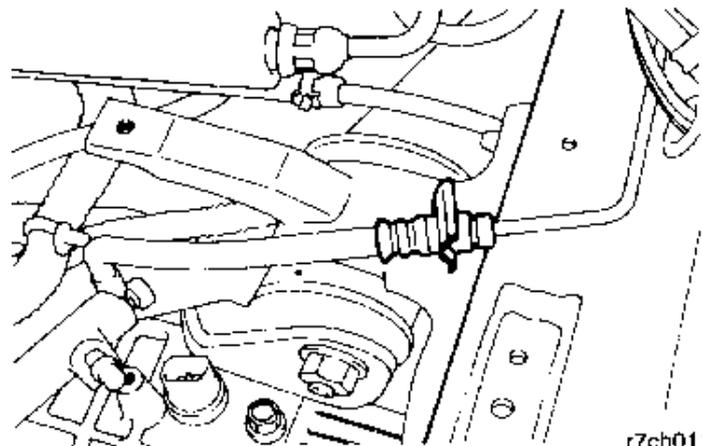
Disconnect the clutch line (master cylinder side).

Remove the master cylinder mounting bolt.



Remove the clutch line clips.

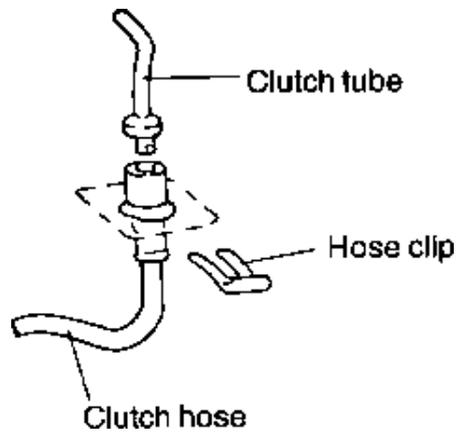
Hold the nut on the clutch hose and loosen the flare nut on the clutch line.



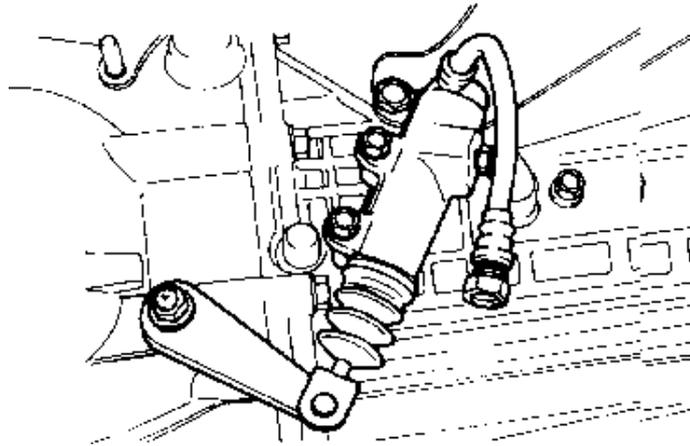
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Remove the clip from the clutch hose and remove clutch hose from bracket.

Remove the clutch line.



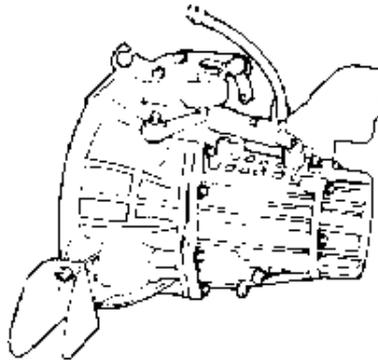
Disconnect the clutch tube (Clutch hose side).



Return to Main Menu(s): [Mechanical Manual](#) [Electrical Manual](#)

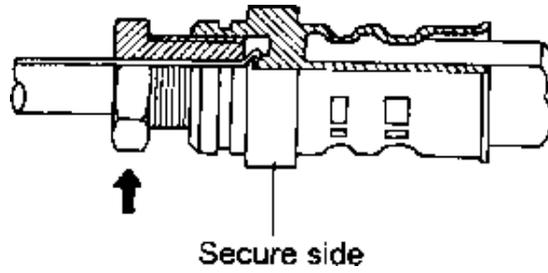
REASSEMBLY

Connect the clutch tube (Clutch hose side).

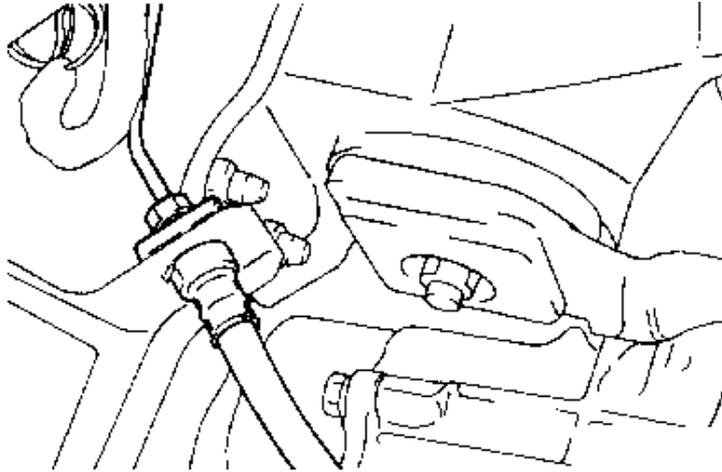


Temporarily tighten the flare nut by hand, and then tighten it to the specified torque, being careful that the clutch hose does not become twisted.

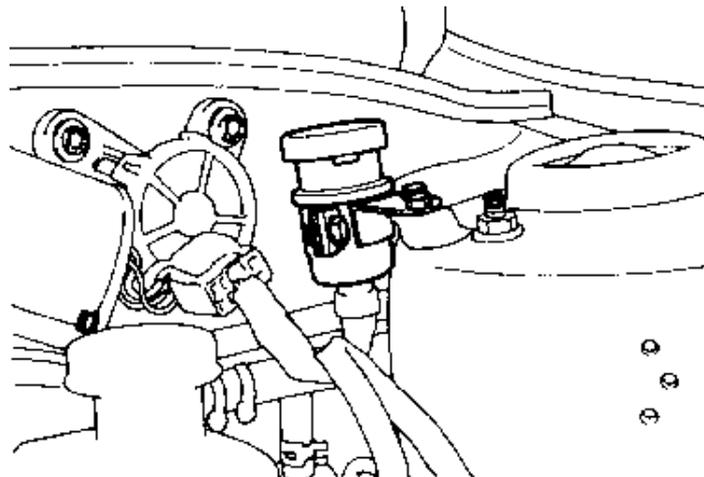
TORQUE SPECIFICATION	
Clutch tube flare nut	13-17 Nm (130-170 kg·cm, 9-13 lb·ft)



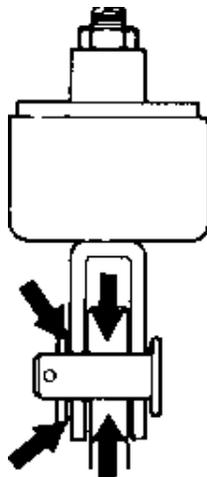
Install the clutch line and clips.



Install the master cylinder.



Apply the specified grease to the clevis pin and washer.



Specified grease: Wheel bearing grease SAE J310a, NLGI No.2

Install the push rod to the clutch pedal.

Refill the clutch master cylinder with fluid.

Bleed the system

Return to Main Menu(s): [Mechanical Manual](#) [Electrical Manual](#)

INSPECTION

Check the clutch hose or tube for cracks or clogging.

Return to Main Menu(s): [Mechanical Manual](#) [Electrical Manual](#)

COMPONENTS

