

GENERAL MOTORS DIAPHRAGM SPRING

Buick (1965-73)
Chevrolet (1965-73)
Oldsmobile (1965-73)
Pontiac (1965-73)
Jeep (1970-71)
Studebaker (1965-66)

NOTE – Some cars use other type clutches.

DESCRIPTION

Single plate dry disc type with a diaphragm spring replacing conventional clutch release springs and release levers. Diaphragm spring is shaped like a dished washer, with inner rim slotted to form many release fingers, and is pivoted on inner and outer pivot rings mounted in clutch cover. Most models have straight release fingers, however some models have 6 or all of the release fingers bent upward to provide centrifugal action for increased clutch pressure at higher speeds. Models having 6 fingers bent upwards also have weights on these 6 fingers.

NOTE – Manufacturer does not recommend overhaul of clutch assembly. If assembly shows wear, burned or cracked areas, or is not flat, replace assembly.

CLUTCH LINKAGE ADJUSTMENT

Buick (1965-73) – Free pedal travel should be 3/4-1" (1964); 5/8-7/8" (1965-72). To adjust, adjust release rod so clevis pin just fits into clutch fork, giving zero free travel, then back off release rod 3 full turns.

Chevy II (1965-67) – Pedal freeplay should be 3/4 – 1" (1965-66) or 1 – 1 1/2" (1967). To adjust, hold lower push rod and turn nut at swivel end, to shorten or lengthen rod.

Chevy Nova (1968-73) – Pedal freeplay should be 1 – 1 1/8" (1968-70) or 1 – 1 1/2" (1971-73). To adjust, disconnect return spring at clutch fork. With clutch pedal against stop, loosen lock nut to allow adjusting rod or swivel to be turned to obtain proper freeplay. Later models have a gauge hole (upper hole) in lever; remove rod or swivel and insert in gauge hole. Increase length until all lash is removed from system. Reinstall rod in lower hole, being careful not to change rod length. Pedal freeplay should be as specified.

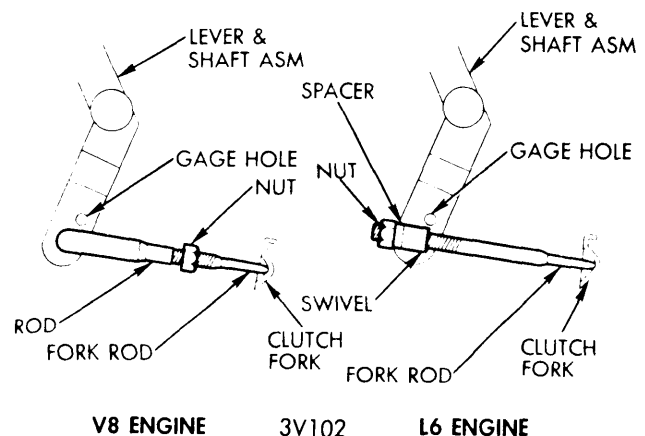
Chevelle (1966-73) – Pedal freeplay should be 3/4 – 1 1/8" (1966), 1 – 1 1/2" (1967), 1 1/8 – 1 3/4" (1968-72), or 3/4 – 1 5/16" (1973). To adjust, disconnect spring between cross shaft lever and clutch fork and loosen push rod lock nut approximately three turns (until free of clutch fork). Hold clutch fork rearward and adjust rod length until it touches its seat in fork. Adjust lock nut to obtain about 3/16" clearance between nut and rod sleeve end. Pedal freeplay should be as specified. On later models there is a gauge hole in lever (upper hole). Disconnect return spring at clutch fork. Install push rod or swivel in gauge hole and increase length until all lash is removed from system. Reinstall rod in lower hole, being careful not to change rod length. Pedal freeplay should be as specified.

Chevrolet (1965-66) & Chevelle (1965) – Freeplay should be 5/32-7/8". To adjust, remove pedal return spring and back off pedal pushrod lower locknut (at swivel end) about 1/2". Hold pushrod so pedal is against bumper stop, and hold cross shaft lever so throw-out bearing is against clutch fingers. Adjust pushrod upper locknut so there is 5/32" clearance between this locknut and upper edge of swivel. Release pushrod and cross shaft lever, tighten lower locknut to lock swivel against upper locknut, and install return spring.

Chevrolet, Camaro (1967-73) – Pedal freeplay should be 1 – 1 1/2" (1967-69) or 1 1/8 – 1 3/4" (1970-73). To adjust, disconnect spring between clutch push rod and cross shaft. With clutch pedal against stop, loosen jam nuts and move adjusting rod against clutch fork until throw-out bearing lightly contacts pressure plate fingers. Tighten adjusting nuts; free travel should be as specified. On later models there is a gauge hole in lever (upper hole). Disconnect return spring at clutch fork. Install push rod or swivel in gauge hole and increase length of rod until all lash is removed. Reinstall rod in lower hole, being careful not to change rod length. Pedal freeplay should be as specified.

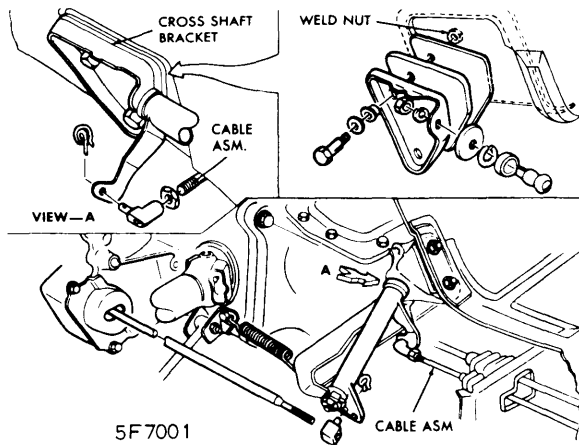
Corvaire (1965-66) – To adjust, disconnect return spring and fork pull-rod at cross shaft lever, loosen the locknut and disconnect swivel at cross shaft. Locate the cross shaft lever 3/4-1" (4-speed) and 1 7/8-2 1/8" (3-speed) transmissions from crossmember, pull rearward on clutch cable. Adjust cable swivel to enter hole on cross shaft lever. Connect swivel to lever, tighten locknut and connect return spring. Pull fork pull-rod until release bearing is against clutch fingers, adjust pull-rod swivel to enter hole in outboard cross shaft lever. Turn swivel 3 turns to lengthen pull-rod, connect swivel and test pedal feel.

Corvaire (1967-69) – Move adjusting rod nut up rod to within 1/8" of end of threads, and apply 15 lb. load on clutch cable rod assembly and thread swivel to line up with hole in shaft assembly inboard lever with centerline of hole in lever located 3/8" from nearest point of transmission crossmember. Assemble swivel to lever and tighten nut. Install spring and pull clutch pull rod forward to take up all slack at clutch fork, then align swivel with hole in outboard shaft assembly lever. Back off pull rod swivel 2 full turns, then assemble to lever.



1971-73 CHEVROLET CLUTCH LINKAGE ADJUSTMENT

GENERAL MOTORS DIAPHRAGM SPRING (Cont.)



CORVAIRE CLUTCH CROSS SHAFT DETAILS

Corvette (1963-66) – Free pedal travel should be 3/4-1" for normal pedal action, 5/8-3/4" for fast pedal action (1963); 1/2-3/4" (1964); 1-1 1/2" for regular use, 1/2-2" for extremely heavy use (1965-66).

Corvette (1967) – Free pedal travel should be 1 1/4-2" for normal operation, 2-2 1/2" for heavy duty operation. To adjust, loosen adjusting rod nuts and move rod to eliminate clearance between throwout bearing and clutch fingers, then run upper nut towards swivel until there is 3/8-7/16" clearance between nut and swivel. Tighten lower nut to lock swivel against upper nut.

Corvette (1970-73) – Disconnect spring between clutch push rod and cross shaft lever. With clutch pedal against stop, loosen jam nuts to allow adjusting rod to move against clutch fork until release bearing controls pressure plate fingers lightly. Tighten upper nut against swivel and back off 4 1/2 turns. Tighten lower nut to lock swivel against upper nut. Install return spring and check that clutch pedal free travel (should be 1 1/4 – 1 3/4" standard or 2 – 2 1/2" heavy duty).

Oldsmobile (1965-72) – Free pedal travel should be 3/4-1". To adjust, loosen locknut on adjusting rod, remove swivel retainer, and adjust swivel. *NOTE* – Install retainer in swivel before checking pedal free travel. Tighten swivel locknut and check adjustments.

Oldsmobile Cutlass, Omega (1973) – Pedal freeplay should be 3/4 – 1 3/4" on Cutlass or 7/8 – 1 1/2" on Omega. To adjust, loosen lower push rod swivel. Disconnect pedal return spring. With clutch pedal against stop, push clutch fork until throw-out bearing lightly contacts pressure plate fingers. Install push rod swivel in gauge hole (upper hole). Increase length of rod until all lash is removed from system. Reinstall rod in lower hole, being careful not to change rod length. Pedal freeplay should be as specified.

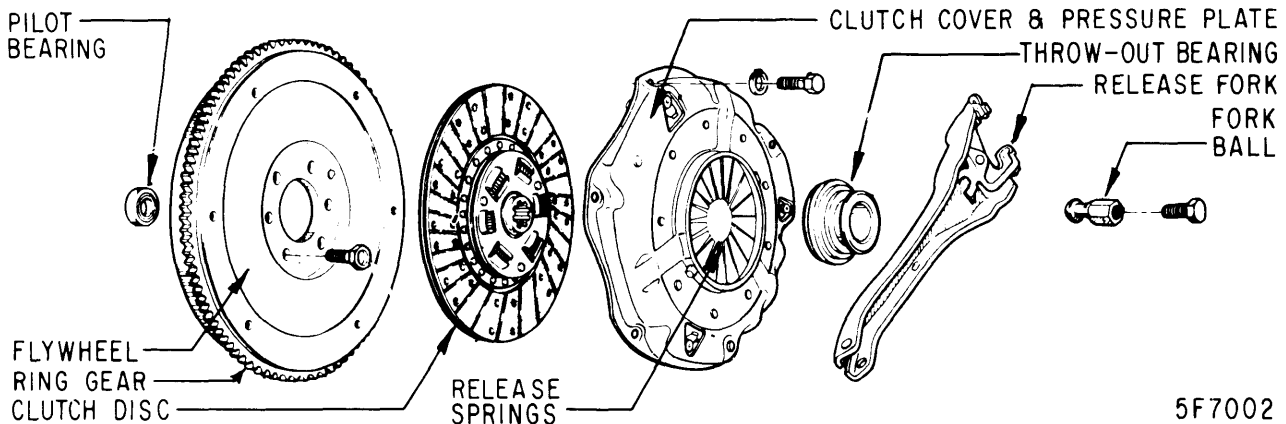
Pontiac & Tempest (1964-72) – Free pedal travel should be about 1". To adjust, disconnect return (or anti-rattle) spring. Loosen trunion locknuts and move pushrod and clutch fork rearward until release bearing lightly contacts release fingers. Turn rear nut up to the trunion. Shorten push rod 3 1/2" full turns.

Pontiac, Firebird, Ventura (1973) – Pedal freeplay should be 1 – 1 1/2". To adjust, disconnect return spring; with clutch pedal against stop, loosen jam nut and move clutch fork until throw-out bearing lightly contacts pressure plate. Rotate push rod by 3 1/2 turns and tighten jam nuts. Pedal freeplay should be as specified.

Studebaker (1965-66) – Free pedal travel should be 3/4-1 1/8". To adjust, disconnect spring, loosen pushrod locknut 3 turns, move clutch fork to move throwout bearing against release fingers, and adjust rod until rod touches seat in fork. Adjust locknut to obtain 3/16" clearance between nut and rod sleeve end, then turn rod until rod comes in contact with rod sleeve end, and tighten locknut.

CLUTCH OVERHAUL

- 1) Remove three drive strap-to-pressure plate bolts and retracting springs, then remove pressure plate from cover. *NOTE* - When disassembling, note position of grooves on edge of pressure plate and cover for reassembly to maintain balance.
- 2) Inspect spring, rings, and cover for excessive wear or damage. If any defect found, replace clutch assembly.



DIAPHRAGM SPRING CLUTCH ASSEMBLY

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