

CLUTCH

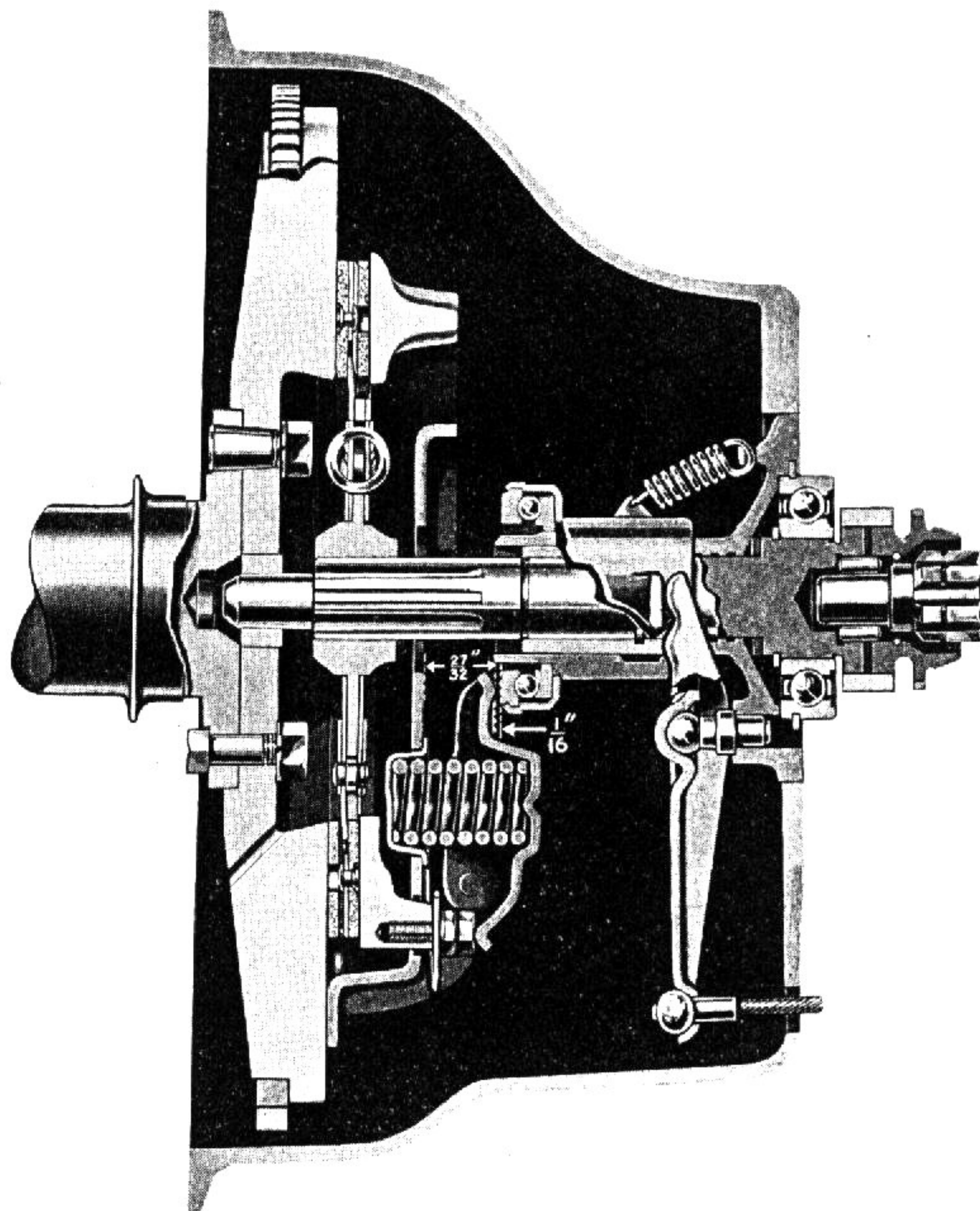


FIG. 1—CLUTCH SECTIONAL VIEW

The clutch is a single plate 8" dry disc type. The driven plate has a spring center vibration neutralizer, two facings $\frac{1}{8}$ " thick, outside diameter $7\frac{7}{8}$ ", inside diameter $5\frac{1}{8}$ ".

There are two adjustments, the free pedal play which should be maintained at $\frac{3}{4}$ " and the other, the pressure plate finger adjustment. See Fig. 1.

As the clutch facings wear it diminishes the free pedal travel. When clutch pedal rests tightly against the toe board it is necessary to adjust the clutch cable.

Clutch Pedal Adjustment

Lengthening or shortening clutch control lever cable No. 11, Fig. 2 governs the clearance of the clutch release bearing to clutch fingers, Fig. 1, which should be maintained at $\frac{1}{16}$ ". This represents $\frac{3}{4}$ " free pedal travel. This also disengages the clutch release bearing and prevents unnecessary wear while the engine is running.

Loosen Clutch control lever cable adjusting yoke locknut, No. 24, Fig. 2. With a wrench unscrew cable No. 11, then tighten locknut.

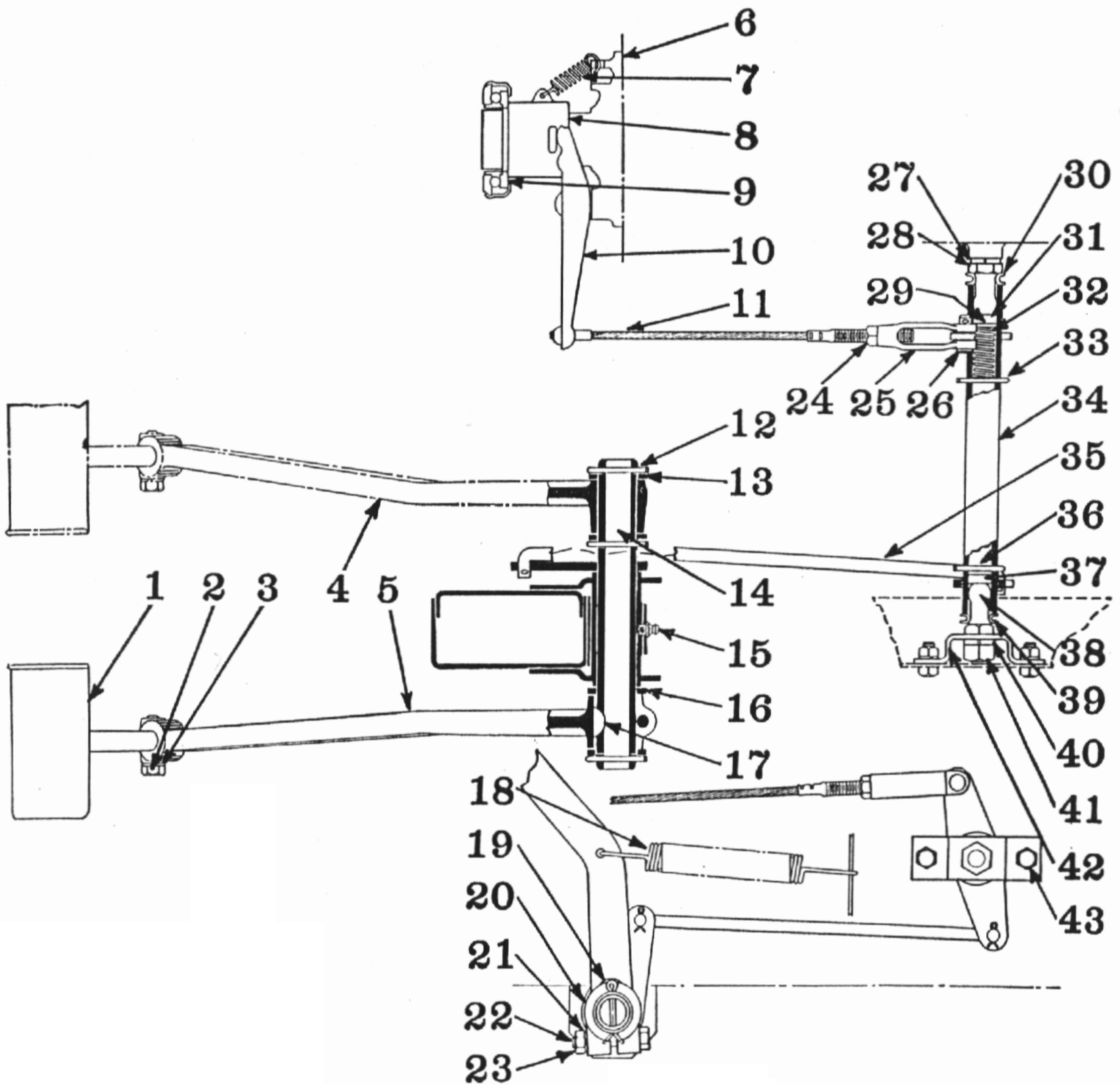


FIG. 2—CLUTCH CONTROL

No.	Willys Part No.	Ford Part No.	Name	No.	Willys Part No.	Ford Part No.	Name
1	A-1360	GPW-7525	Clutch Pedal Pad Assembly	23	5910	33798-S	Clutch Pedal Clamp Bolt Nut
2	6157	24426-S	Clutch Pedal Clamp Bolt	24	5910	33798-S	Clutch Control Lever Cable Yoke End Locknut
3	51833	34806-S	Clutch Pedal Clamp Bolt Lockwasher	25	632177	GPW-7532	Clutch Control Lever Cable Yoke End
4	A-1386	GPW-2452	Brake Pedal	26	339043	73880-S	Clutch Control Lever Cable Clevis Pin
5	A-405	GPW-7520	Clutch Pedal	27	5059	34808-S	Clutch Control Ball Stud Lockwasher
6	640017	GPW-7050	Transmission Main Drive Gear Bearing Retainer	28	A-181	GPW-7514	Clutch Control Ball Stud
7	630117	GPW-7562	Clutch Release Bearing Carrier Spring	29	A-177	GPW-7517	Clutch Control Tube Washer
8	639654	GPW-7561	Clutch Release Bearing Carrier	30	A-887	GPW-7512	Clutch Control Tube Dust Washer
9	635529	GPW-7580	Clutch Release Bearing	31	A-176	GPW-7539	Clutch Control Tube Felt Washer
10	630112	GPW-7515	Clutch Control Lever	32	A-178	GPW-7545	Clutch Control Spring
11	A-5102	GPW-7530	Clutch Control Lever Cable	33	5108	72053-S	Clutch Control Tube Spring Cotter Pin
12	52944	72063-S	Pedal Shaft Cotter Pin	34	A-1355	GPW-7503	Clutch Control Lever & Tube Assembly
13	A-1354	GPW-2138	Master Cylinder Tie Bar	35	A-499	GPW-7521	Clutch Control Pedal Rod
14	A-495	GPW-2473	Pedal Shaft Assembly	36	5108	72053-S	Clutch Control Tube Cotter Pin
15	638792	353043-S7	Pedal Shaft Hydraulic Grease Fitting	37	A-176	GPW-7539	Clutch Control Tube Felt Washer
16	A-498	356561-S	Pedal Shaft Washer	38	A-181	GPW-7514	Clutch Control Ball Stud
17	5036	74178-S	Clutch Pedal to Shaft Woodruff Key	39	A-887	GPW-7512	Clutch Control Tube Dust Washer
18	630593	GPW-7523	Clutch Pedal Retracting Spring	40	5059	34808-S	Clutch Control Ball Stud Lockwasher
19	52944	72063-S	Pedal Shaft Cotter Pin	41	5336	33801-S	Clutch Control Ball Stud Nut
20	A-498	356561-S	Pedal Shaft Washer	42	A-180	GPW-7509	Clutch Control Frame Bracket
21	51833	34806-S	Clutch Pedal Clamp Bolt Lockwasher	43	52132	24327-S	Clutch Control Frame Bracket Screw
22	50992	24505-S	Clutch Pedal Clamp Bolt				

Reconditioning

When it is necessary to recondition the clutch, follow the procedure outlined under "Transmission" for the removal of transmission and transfer case from Engine. Remove the bell housing, then the following procedure is suggested in disassembling the clutch.

Prick punch both the pressure plate and the flywheel so that the assembly can be installed in the same position after the repairs are performed.

The cap screws holding the clutch pressure plate to the flywheel should be loosened in sequence a little at a time so as to prevent distortion of the clutch bracket No. 10, Fig. 3. It is advisable where the clutch facings have worn that a new driven plate assembly be used in preference to relining the old plate as in many cases it is found that the torque springs in the hub of the driven plate have somewhat weakened or the center plate No. 13

To assemble the clutch to the flywheel first put a small amount of light cup grease in the clutch shaft bushing; install driven plate, with short end of hub towards the flywheel then place pressure plate assembly in position. With clutch pilot arbor or a clutch shaft, align driven plate leaving arbor in place while tightening the pressure plate cap screws. Remove clutch pilot arbor and then adjust clutch fingers.

Adjustment of Clutch Fingers

Adjustment of the clutch fingers is accomplished by loosening the lock nut on adjusting screws, then turning screws clockwise or counter-clockwise until the measurement from the face of the fingers (release bearing contacts) to the face of the clutch bracket measures $2\frac{1}{32}$ ". Fig. 5. All fingers must be adjusted so that clutch release bearing will contact the three fingers simultaneously.

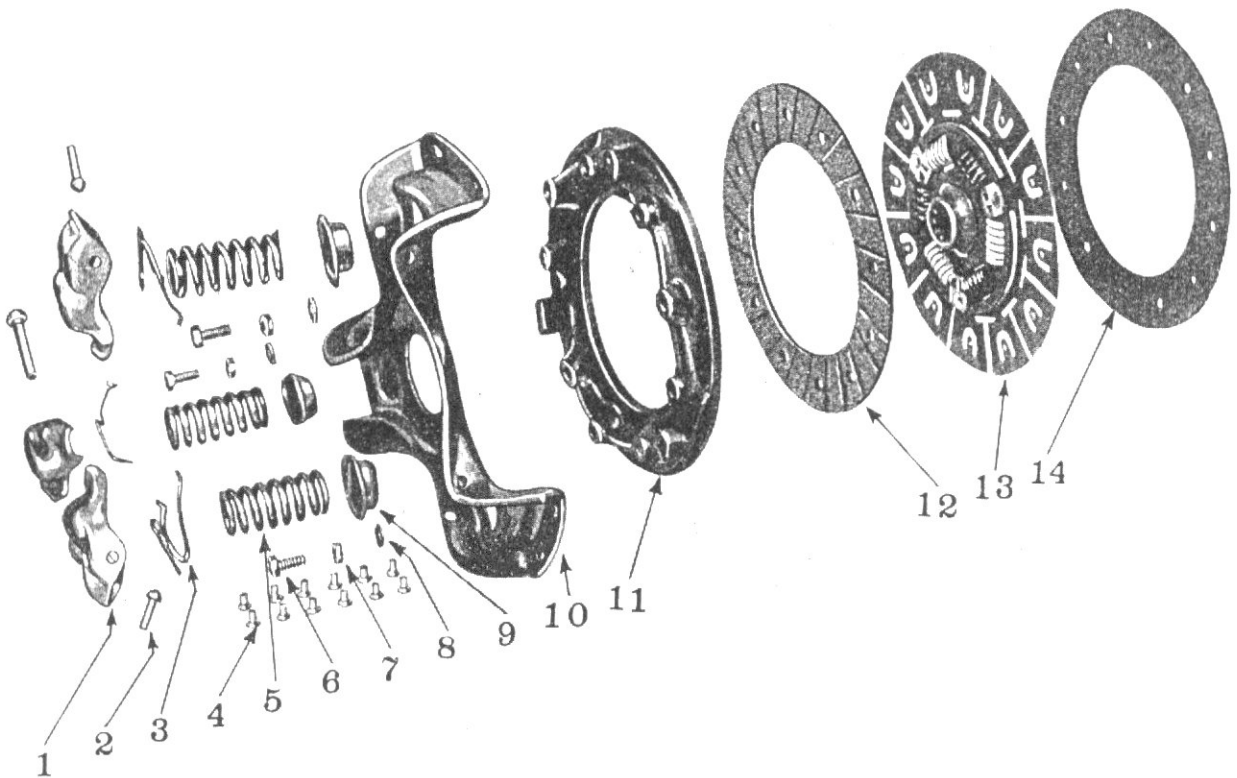


FIG. 3—CLUTCH

has become distorted and if relined would not give satisfactory performance.

The clutch pressure plate fingers are properly adjusted before vehicle leaves the factory and should not require adjustment excepting where it is necessary to install new springs, fingers or pressure plate. When new parts are installed, it will be necessary to readjust the fingers, which adjustment can be made after the assembly is attached to the flywheel.

No.	Willys Part No.	Ford Part No.	Name
1	638158	GPW-7591	Clutch Lever
2	638159	GPW-7565	Clutch Lever Pivot Pin
3	638153	GPW-7590	Clutch Pressure Plate Return Spring
4	374681	351926-S	Clutch Facing Rivet—Tubular
5	638993	GPW-7572	Clutch Pressure Spring
6	638154	24325-S	Clutch Adjusting Screw
7	638155	33921-S	Clutch Adjusting Screw Lock Nut
8	638305	34745-S	Clutch Adjusting Screw Washer
9	638157	GPW-7567	Clutch Pressure Spring Cup
10	638151	GPW-7570	Clutch Bracket
11	638152	GPW-7566	Clutch Pressure Plate
12	636778		Clutch Facing—Rear
13	636755	GPW-7550	Clutch Driven Plate and Hub (with Facings)
14	371567	GPW-7549	Clutch Facing—Front

Next assemble the bell housing to the engine.

The clutch release bearing No. 9, Fig. 2 is pre-lubricated and the lubricant lasts the life of the bearing. If the bearing is rough, a new bearing should be installed.

Make sure that the clutch release bearing carrier return spring No. 7, Fig. 2 is hooked into place. For the balance of the assembly, reverse the operations that were used in the disassembly, referring to instructions given under "Transmission." Finally adjust the clutch release cable so there is $\frac{3}{4}$ " free pedal travel before release bearing contacts the fingers.

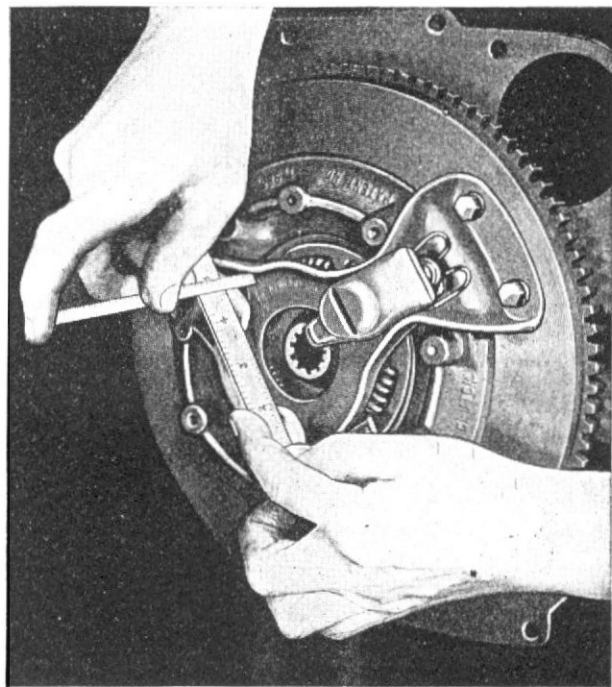


FIG. 5—CLUTCH FINGER ADJUSTMENT

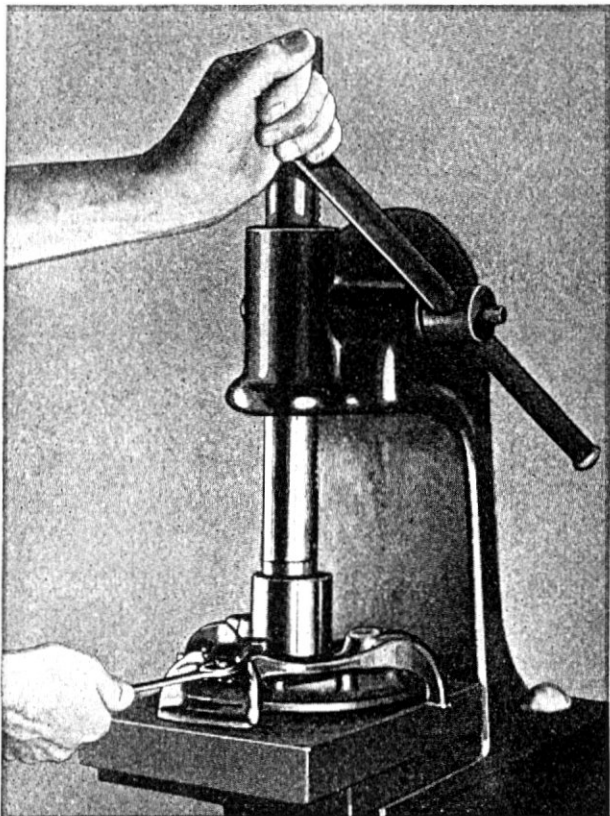


FIG. 4—CLUTCH PRESSURE PLATE REMOVAL

Clutch Pressure Plate

When it is found necessary to install a new clutch pressure plate or clutch spring dismantle the assembly as follows: See Fig. 4.

Select a board or a surface plate of sufficient length and width to support the pressure plate bracket at all points. Place board or surface plate on arbor press table. Place a piece of wood $2\frac{1}{2}$ " square on top of clutch fingers, then depress springs, holding down while the adjusting screws are removed from pressure plate.

After screws No. 6, Fig. 3 are removed, the clutch pressure plate return springs, No. 3, may be removed.

Release press arbor slowly to prevent clutch pressure springs, No. 5, flying out from under the clutch fingers No. 1.

In checking assembly make sure that the clutch pressure spring cups, No. 9 are assembled in bracket No. 10 with indentation in bottom towards the center.

The assembly of the pressure plate is the reverse of operations used in dismantling.

CLUTCH TROUBLES AND REMEDIES

SYMPTOMS	PROBABLE REMEDY
Slipping:	
Improper Adjustment.....	Adjust Pedal Free Travel $\frac{3}{4}$ "
Weak Pressure Springs.....	Replace
Lining Oil Soaked.....	Install New Driven Plate
Worn Linings or Torn Loose from Plate.....	Install New Driven Plate
Burned Clutch.....	Replace
Grabbing:	
Gummy or Worn Linings.....	Install New Driven Plate
Loose Engine Mountings.....	Tighten
Scored Pressure Plate.....	Install New Plate
Improper Clutch Lever (Finger) Adjustment...	Readjust
Clutch Plate Crimp or Cushion Flattened Out..	Replace Driven Plate
Dragging:	
Too much Pedal Play.....	Adjust
Improper Finger Adjustment.....	Readjust
Pressure Plate Binds in Bracket.....	Adjust
Warped Pressure or Driven Plate.....	Replace
Torn Clutch Facing.....	Replace
Rattling:	
Broken or Weak Return Springs in Driven Plate.	Replace
Worn Throw Out Bearing.....	Replace
Fingers Improperly Adjusted.....	Readjust
Worn Driven Plate Hub or Clutch Spline Shaft.	Replace
Pilot Bushing in Flywheel Worn.....	Replace

CLUTCH SPECIFICATIONS

Type.....Single, Dry Plate

Driven Plate:

Make.....Borg & Beck
 Size..... $7\frac{7}{8}$ "
 Facings.....1 Woven and 1 Molded Asbestos
 Diameter.....Inside $5\frac{1}{8}$ "-Outside $7\frac{7}{8}$ "
 Thickness..... $\frac{1}{8}$ "-(.125")
 Torque Capacity.....132 Lbs.-Ft.

Pressure Plate:

Make.....Atwood
 Number Springs.....3
 Spring Pressure at $1\frac{9}{16}$ ".....220-230 lbs.

Clutch Release Bearing:

Type.....Sealed Ball Bearing—Prelubricated

Clutch Shaft Bushing:

Location.....In Crankshaft
 Material. Bronze Bushing (Impregnated with
 graphite)
 Size.....(Inside) .628"

Clutch Pedal Adjustment:

Pedal Adjustment. $\frac{3}{4}$ " Free Pedal Travel Before Release Bearing Contacts Clutch Fingers.