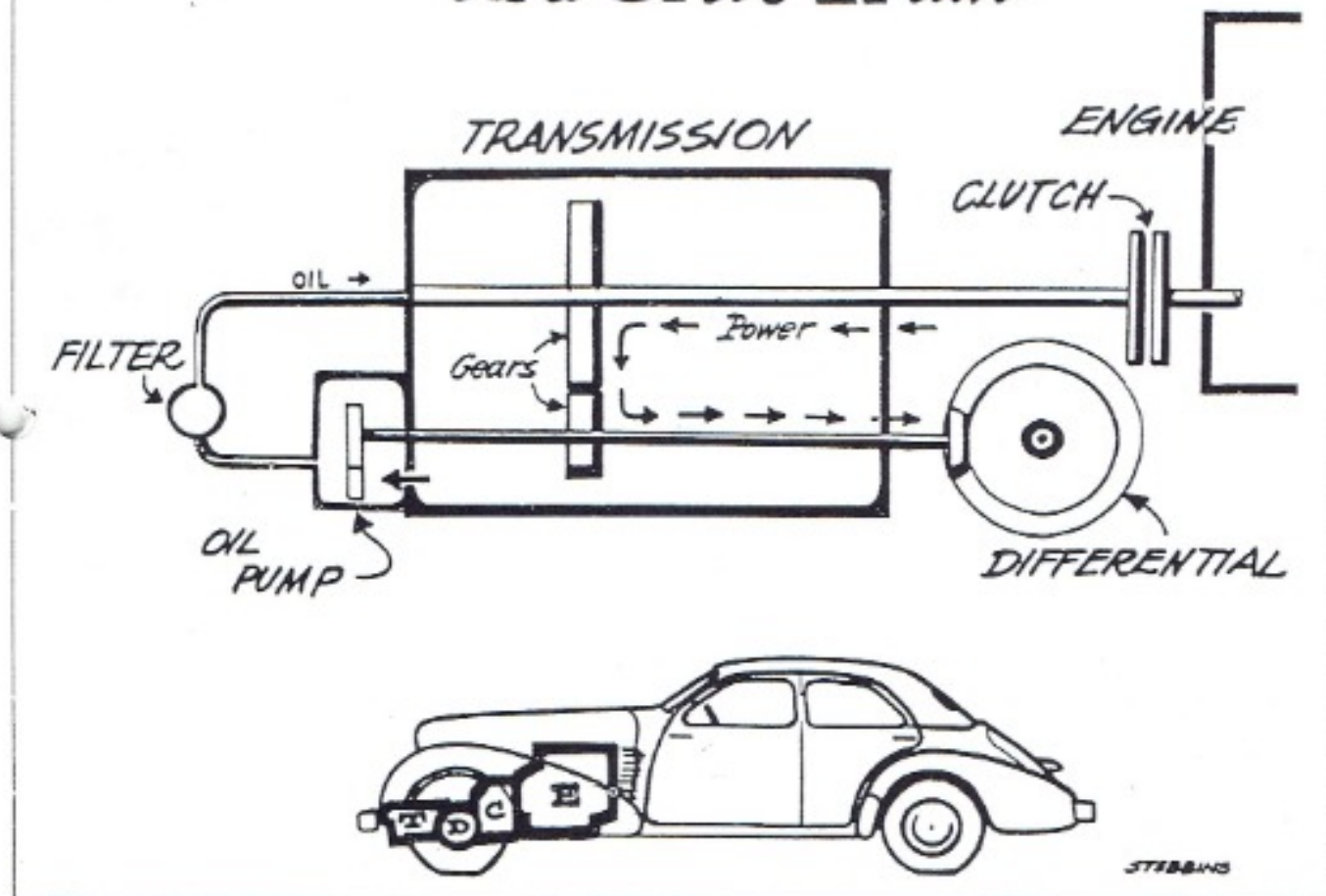


SCHEMATIC DIAGRAM Cord Drive Train



CORD GEARING — TYPE OF GEARS

The gears in the Cord transmission are high pitch helical gears in order to obtain quiet operation, except for the low and reverse gears which are straight spur gears; the low and reverse gears are therefore somewhat noisy in operation.

It can be seen from the diagram, since the power enters the transmission on the top shaft and leaves on the bottom shaft, that the car is always driving through gears, rather than having a direct drive in the top gear like most conventional transmissions. Because of the high tooth loads resulting from the high pitch gears, small metal particles from the gears gradually accumulate in the oil. This necessitates frequent oil changes in the transmission, at least every 5000 miles, and is also the reason why an oil filter is necessary on this unit.

GEAR RATIOS

This transmission has 4 speeds forward and 1 reverse with no direct drive as mentioned previously. The number of teeth on each gear and the resulting ratios are shown in the diagram. It can be seen from the table that 3rd and 4th gears are overdrive ratios, or less than 1 to 1. Two ring gears were available; one with 43 teeth, giving a 2.75 overall ratio, and generally found on the 1936 models; and the other with 47 teeth, a 3.00 overall ratio, and generally on the 1937 models.

Cord advertising at the time emphasized the fact that the engine "loafed" at highway speeds. This was literally true; the

Cord's Lycoming V-8 turned only 1980 rpm at a true 60 mph with the 4.3 axle ratio (2160 rpm with the 4.7 ratio). As a comparison, the Cadillac V-16 for 1934 through 1937 turned 2860 rpm at 60 mph with its standard ratio.

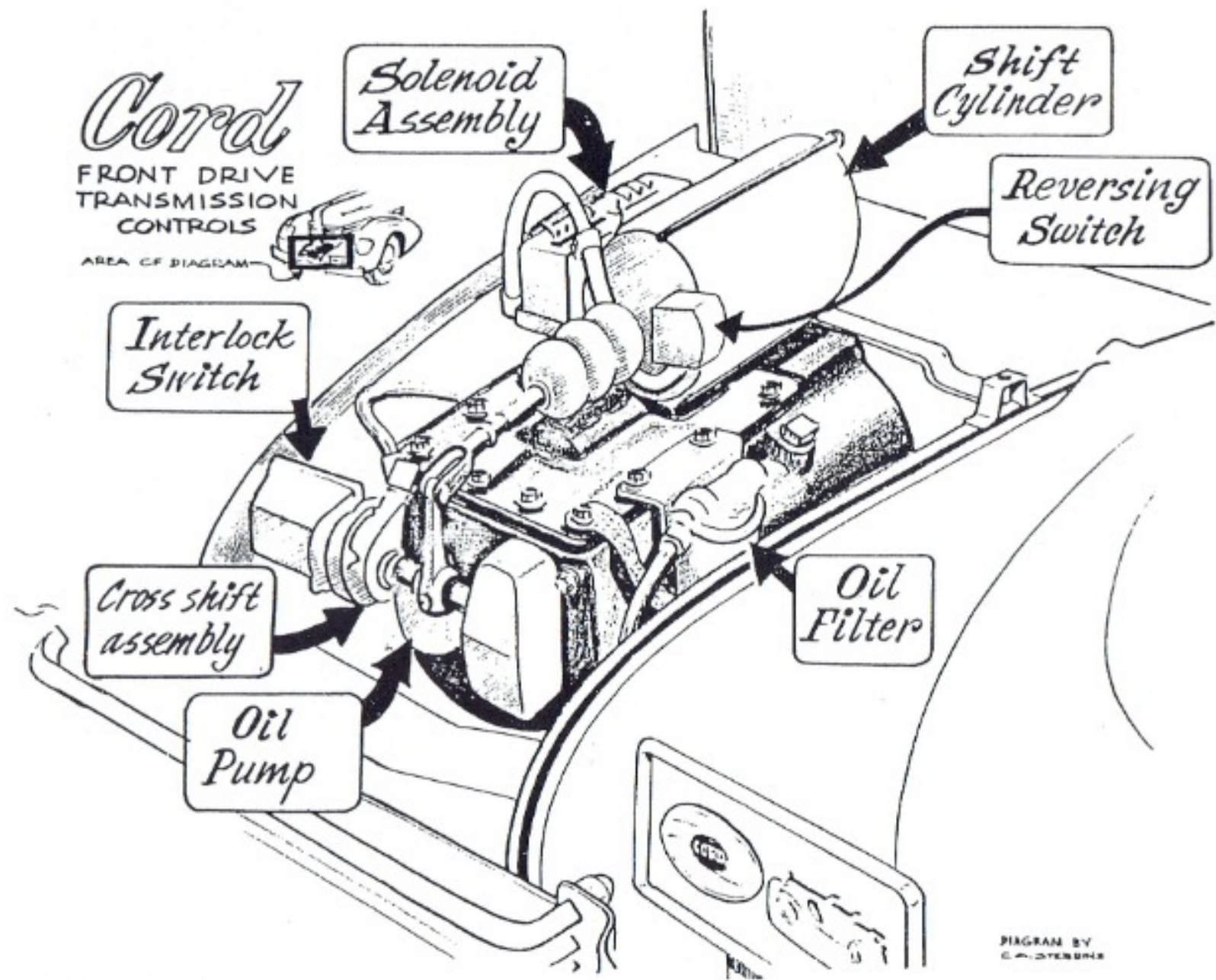
METHOD OF SHIFTING

The shifting is accomplished by moving sliding rods which, through forks, activate either a sliding gear or a synchronizer unit. Low is obtained by moving the sliding gear at the front (left in the diagram) of the lower shaft. When this gear is moved rearward, it engages the first gear on the top shaft and allows the power to be transmitted from the top shaft to the bottom shaft. If this sliding gear is moved toward the front of the transmission, it engages an idler gear that is connected to the reverse gear on the top shaft, thus causing the bottom shaft to reverse direction to that obtained with the other gears.

Second, third and fourth gears are synchronized and are shifted by means of synchronizers rather than a sliding gear. These three pairs of gears on the top and bottom shafts are known as constant mesh gears. This means that they do not shift or slide relative to one another, but are always meshed. The gears on the top shaft are not splined to this shaft, but are free to rotate relative to the shaft. The power is transmitted by connecting the top shaft and can slide along this shaft. One rod, through a fork, moves the second-third synchronomesh unit, while another rod moves the fourth speed unit. As the synchronomesh unit moves

Cord

FRONT DRIVE
TRANSMISSION
CONTROLS
AREA OF DIAGRAM



Solenoid
Assembly

Shift
Cylinder

Reversing
Switch

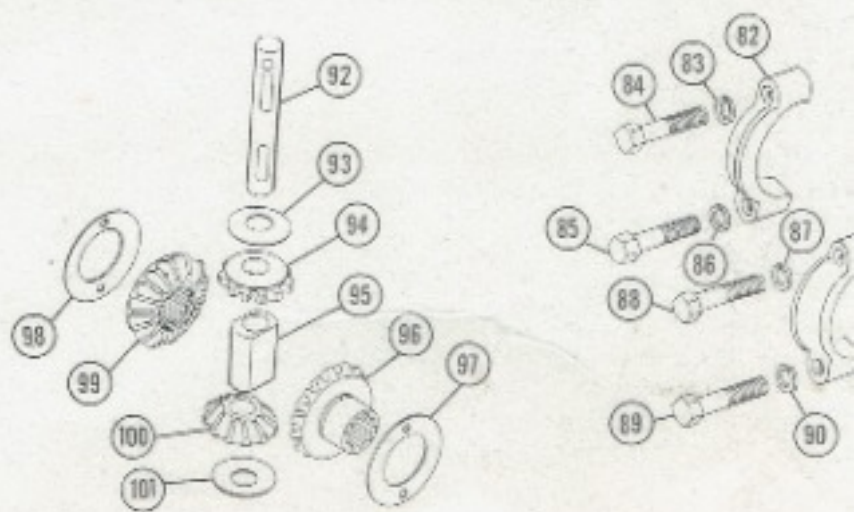
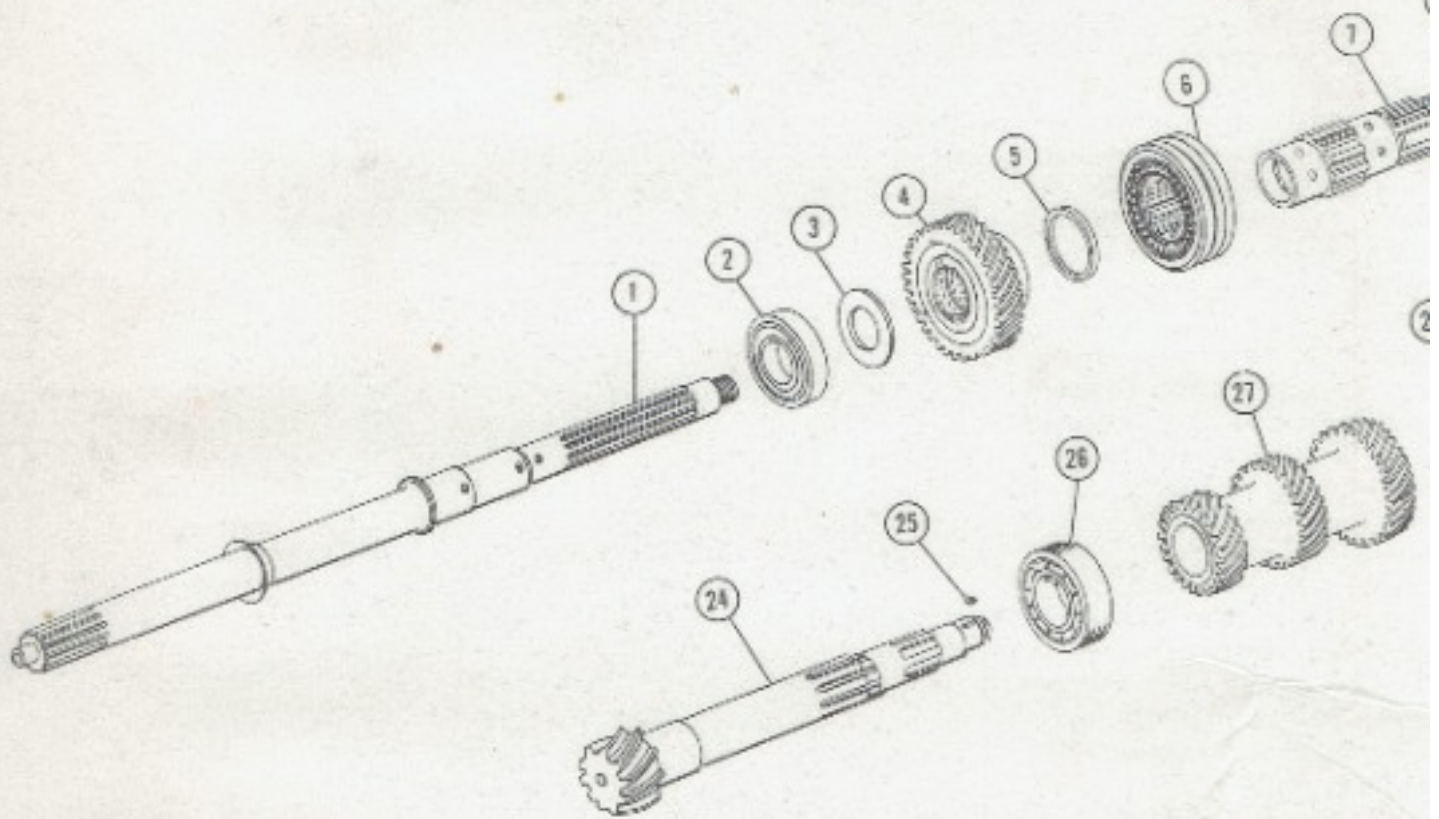
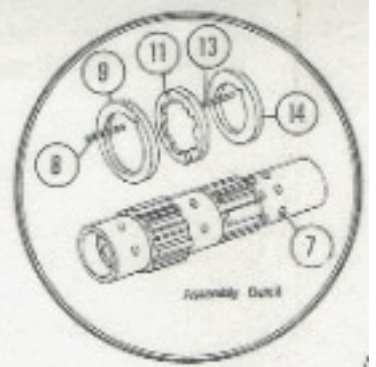
Interlock
Switch

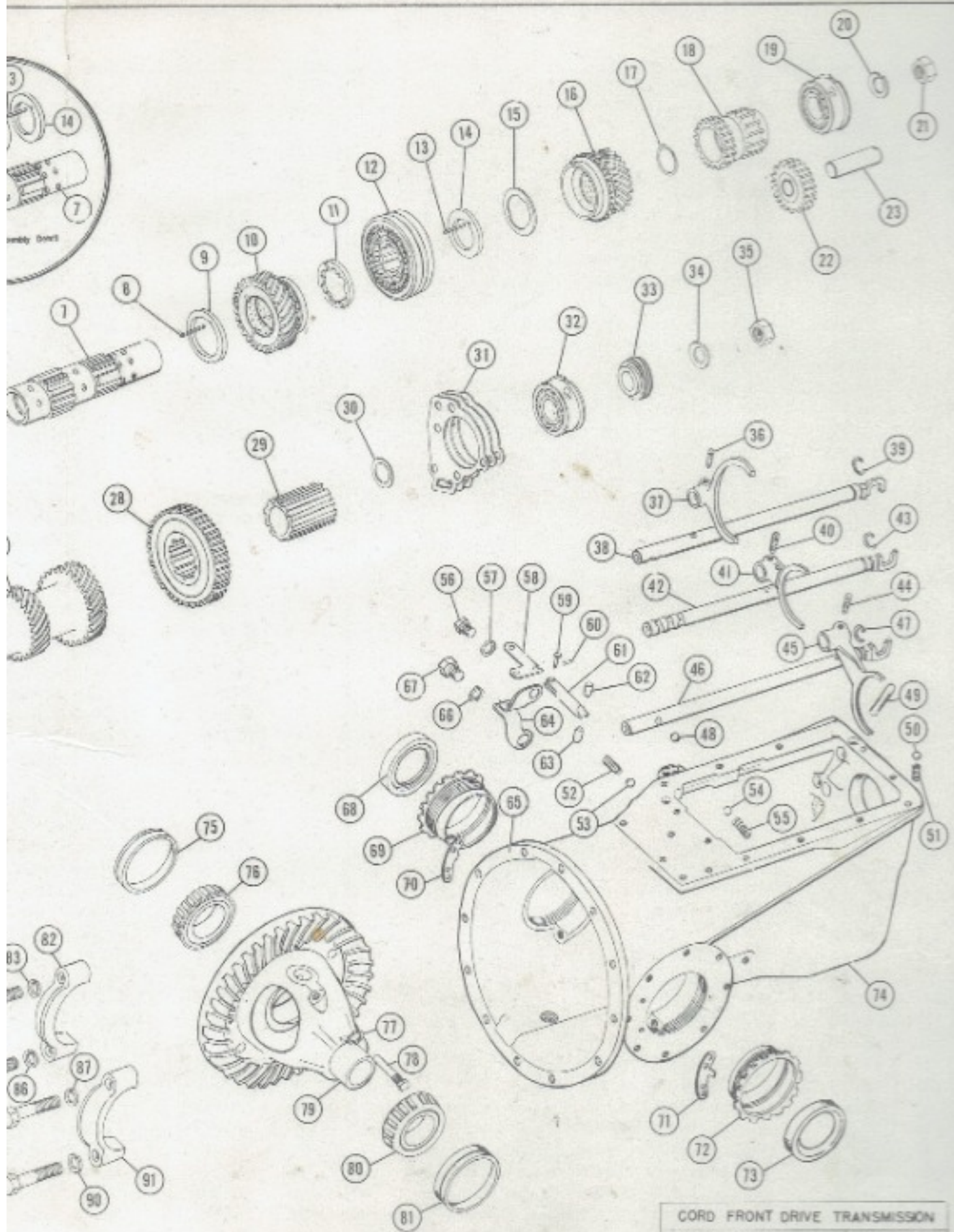
Cross shift
assembly

Oil
Filter

Oil
Pump

DIAGRAM BY
C. J. STERNER





CORD FRONT DRIVE TRANSMISSION

Drawn by	W. J. ...	Vertical Drafting
Approved by	...	May 1, 1938
Assembly Label Control	...	Side 1-2

ITEM	PART NO.	PART	ITEM	PART NO.	PART
1.	B60735	Shaft-Transmission-Main	49.	B60477	Plug-4th Shift I
2.	5S270	Bearing-Main Shaft-Rear	50.	3S12	Ball-3/8" Steel
3.	B60763	Washer-Rear-4th Speed-Drive	51.	B60437	Spring-Shift R
4.	B10966	Gear Assy.-4th Speed-Drive	52.	B60437	Spring-Shift R
5.	B60764	Washer-Front-4th Speed-Drive Gear Thrust	53.	3S12	Ball-3/8" Steel
6.	B60765	Gear Assy.-4th Speed-Synchronizer	54.	3S12	Ball-3/8" Steel
7.	B60765R	Ring-Synchronizer-2nd & 3rd (also 4th)	55.	B60758	Spring-4th Shi
8.	B60759	Sleeve-Main Shaft	56.	Std.	Cap Screw-Int
9.	KZ6016	Key-Rear-Thrust Washer-3rd	57.	Std.	Lockwasher-tr
10.	B60772	Washer-Thrust-3rd Speed-Rear	58.		Lever-Interloc
11.	B10965	Gear Assy.-3rd Speed Drive	59.		Pin-Interlock
12.	B60773	Washer-Front-Spline 3rd Gear	60.	Std.	Cotter Key-Int
13.	B60787	Gear-2nd, 3rd-Synchronizer	61.		Shaft-Interlock
14.	B60787H	Hub Only	62.	B60743	Rail-Shift Inte
15.	KZ6017	Key-Rear Thrust Washer-2nd	63.	B60744	Rail-Shift Inte
16.	B60779	Washer-Rear-2nd Speed-Drive Gear Thrust	64.		Bracket-Interb
17.	B10927	Washer-Bronze-2nd Speed Gear Thrust	65.	B10722	Gasket-Trans
18.	B10964	Gear Assy.-2nd Speed Drive	66.	Std.	Lockwasher-Int
19.	Special	Shim-(not original, as required)	67.	Std.	Cap Screw-Int
20.	B60780	Gear-Low and Reverse Drive	68.	E10977	Seal-Different
21.	5S454	Bearing-Main Shaft-Front	69.	B63525	Adjuster-Diffe
22.	WC12	Lockwasher-3/4" S. A. E.	70.	B63523	Lock-Differen
23.	NZ6005	Nut-3/4" x 16-Special Hex	71.	B63523	Lock-Differen
24.	B10977	Gear-Idler-Low-Reverse	72.	B63525	Adjuster-Diffe
25.	B60741	Shaft-Idler Gear-Reverse	73.	E10977	Seal-Different
26.	E63533	Shaft-Pinion	74.	B60734	Case-Transmi
27.	KB5	Key-Woodruff-1/8" x 5/8"	75.		Cone-Dif. Brg
28.	5S262	Bearing-Rear-Pinion	76.	5S767-758	Bearing-Differ
29.	B60782	Gear Assy.-Countershaft (Cluster)	77.	WA6	Washer-Pinion
30.	B60784	Gear-Low and Reverse Sliding	78.	E60436	Screw-Differe
31.	B60783	Sleeve-Countershaft Gear	79.	E63526	Differential C
32.	Special	Shim-As Required (not original)	80.	5S767-758	Bearing-Diffe
33.	B10914	Shim-.002 Front Pinion Bearing Adjusting	81.		Cone-Differen
34.	B10915	Shim-.005 Front Pinion Bearing Adjusting	82.	E63524	Cap-Different
35.	B10916	Shim-.015 Front Pinion Bearing Adjusting	83.	WA8	Lockwasher-E
36.	5S454	Bearing-Front Pinion	84.	SZ6016	Capscrew-Dif
37.	B60736	Snap Ring-Front Pinion Bearing	85.	SZ6016	Capscrew-Dif
38.		Gear-Speedometer Drive	86.	WA8	Lockwasher-E
39.	WC12	Lockwasher-3/4" S. A. E.	87.	WA8	Lockwasher-E
40.	NZ6005	Nut-3/4 x 16-Special Hex	88.	SZ6016	Capscrew-Dif
41.	SZ6106	Lock Screw-Shift Fork	89.	SZ6016	Capscrew-Dif
42.	B60726	Shift Fork-4th Gear	90.	WA8	Lockwasher-E
43.	B60724	Shift Rail-4th Gear	91.	E63524	Cap-Different
44.	B60742	Snap Ring-Shift Rail-4th Gear	92.	E60393	Shaft-Differer
45.	SZ6106	Lock Screw-Shift Fork	93.	E61858	Washer-Diffe
46.	B60723	Shift Fork-2nd & 3rd Gear	94.	E61864	Pinion-Differe
47.	B60725	Shift Rail-2nd & 3rd Gear	95.	E63531	Block-Thrust
48.	B60742	Snap Ring-Shift Rail-2nd & 3rd Gear	96.	E63529	Gear-Differer
49.	SZ6106	Lock Screw-Shift Fork	97.	E61857	Washer-Diffe
50.	B60727	Shift Fork-Low and Reverse	98.	E61857	Washer-Diffe
51.	B60722	Shift Rail-Low and Reverse	99.	E63529	Gear-Differer
52.	B60742	Snap Ring-Shift Rail-Low and Reverse	100.	E61864	Pinion-Differe
53.	3S12	Ball-3/8" Steel (Interlock)	101.	E61858	Washer-Diffe

NO.	PART
7	Plug-4th Shift Rail Mesh (Interlock)
	Ball-3/8" Steel
7	Spring-Shift Rail Mesh Lock
7	Spring-Shift Rail Mesh Lock
	Ball-3/8" Steel
	Ball-3/8" Steel
3	Spring-4th Shift Rail Mesh Lock
	Cap Screw-Interlock Mounting
	Lockwasher-Interlock Mounting
	Lever-Interlock
	Pin-Interlock
	Cotter Key-Interlock Pin
	Shaft-Interlock
3	Rail-Shift Interlock-1st and Reverse to 4th
3	Rail-Shift Interlock-2nd and 3rd to 4th
	Bracket-Interlock Mounting
2	Gasket-Transmission to Clutch Housing
	Lockwasher-Interlock Mounting
	Cap Screw-Interlock Mounting
7	Seal-Differential Brg. Adjuster
5	Adjuster-Differential Bearing
3	Lock-Differential Brg. Adjuster
3	Lock-Differential Brg. Adjuster
5	Adjuster-Differential Bearing
7	Seal-Differential Bearing Adjuster
1	Case-Transmission-Differential
	Cone-Dif. Brg.-Side
-758	Bearing-Differential Side
	Washer-Pinion Shaft Lock Screw-3/8" S.A.E.
6	Screw-Differential Side Pinion Shaft Lock
5	Differential Case Assy. with Shaft & Gears
-758	Bearing-Differential Side
	Cone-Differential Bearing-Side
4	Cap-Differential Brg.
	Lockwasher-Differential Brg. Cap Screw
6	Capscrew-Differential Brg. Cap 1/2" x 13 x 2-3/8"
6	Capscrew-Differential Brg. Cap
	Lockwasher-Differential Brg.
	Lockwasher-Differential Brg. Cap 1/2"x 13-x 2-3/8"
6	Capscrew-Differential Brg. Cap
6	Capscrew-Differential Brg. Cap
	Lockwasher-Differential Brg. Cap 1/2" x 13 x 2-3/8"
4	Cap-Differential Brg.
3	Shaft-Differential Side Pinion
8	Washer-Differential Side Pinion Thrust
4	Pinion-Differential Side
1	Block-Thrust
9	Gear-Differential Side
7	Washer-Differential Side Gear Thrust
7	Washer-Differential Side Gear Thrust
9	Gear-Differential Side
4	Pinion-Differential Side
8	Washer-Differential Side Pinion Thrust