1926
HUDSON-ESSEX
Service Manual

1927 Supplement
(Cars numbered 500,001 and upward)
### E S S E X

(Cars numbered 500,001 and up)

#### Front Axle Group
(See 1926 Service Manual, page 89)

#### Rear Axle Group
(See 1926 Service Manual, page 95)

#### Spring Group
(See 1926 Service Manual, page 104)

#### Steering Gear Group

<table>
<thead>
<tr>
<th>Operation</th>
<th>Article</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Case Bushings - Renew</td>
<td>1-B</td>
<td>76</td>
</tr>
<tr>
<td>Column-Adjust for End Play</td>
<td>E</td>
<td>77</td>
</tr>
<tr>
<td>Columns - Renew</td>
<td>1-B</td>
<td>76</td>
</tr>
<tr>
<td>Jacket Tube Bushings - Renew</td>
<td>1-C</td>
<td>76</td>
</tr>
<tr>
<td>Steering Gear Complete Renew</td>
<td>1-A</td>
<td>75</td>
</tr>
<tr>
<td>Steering Gear Lever - Renew</td>
<td>D</td>
<td>77</td>
</tr>
<tr>
<td>Thrust Bearings - Renew</td>
<td>1-B</td>
<td>76</td>
</tr>
<tr>
<td>Worm Wheel - Renew</td>
<td>1-B</td>
<td>76</td>
</tr>
<tr>
<td>Worm Wheel Bushing - Renew</td>
<td>1-B</td>
<td>76</td>
</tr>
<tr>
<td>Worm Wheel Thrust Washers - Renew</td>
<td>1-B</td>
<td>76</td>
</tr>
<tr>
<td>Worm - Renew</td>
<td>1-B</td>
<td>76</td>
</tr>
<tr>
<td>Worm Wheel and Shaft - Adjust for End Play</td>
<td>F</td>
<td>77</td>
</tr>
<tr>
<td>Worm Wheel and Shaft - Adjust for Back Lash.</td>
<td>G</td>
<td>77</td>
</tr>
</tbody>
</table>

#### Drag Link Group
(See 1926 Service Manual, page 110)

#### Clutch Group
(See 1926 Service Manual, page 91)

<table>
<thead>
<tr>
<th>Operation</th>
<th>Article</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bearing Retainer - Renew</td>
<td>1-A</td>
<td>91</td>
</tr>
<tr>
<td>Clutch Assembly - Renew</td>
<td>1-A</td>
<td>81</td>
</tr>
<tr>
<td>Cover - Renew</td>
<td>1-A</td>
<td>81</td>
</tr>
<tr>
<td>Cover Gasket - Renew</td>
<td>1-A</td>
<td>81</td>
</tr>
<tr>
<td>Driving Plate - Renew</td>
<td>1-A</td>
<td>81</td>
</tr>
<tr>
<td>Pilot Bearing - Renew</td>
<td>1-A</td>
<td>81</td>
</tr>
<tr>
<td>Pre3sure Plate - Renew</td>
<td>1-A</td>
<td>81</td>
</tr>
<tr>
<td>Shifter Fingers - Renew</td>
<td>1-A</td>
<td>81</td>
</tr>
<tr>
<td>Shifter Finger Brackets - Renew</td>
<td>1-A</td>
<td>81</td>
</tr>
<tr>
<td>Shifter Finger Pins - Renew</td>
<td>1-A</td>
<td>81</td>
</tr>
<tr>
<td>Shifter Finger Lock Plates - Renew</td>
<td>1-A</td>
<td>81</td>
</tr>
<tr>
<td>Shifting Sleeve - Renew</td>
<td>1-A</td>
<td>81</td>
</tr>
<tr>
<td>Springs - Renew</td>
<td>1-A</td>
<td>81</td>
</tr>
<tr>
<td>Thrust Bearing - Renew</td>
<td>1-A</td>
<td>81</td>
</tr>
<tr>
<td>Thrust Bearing Retainer - Renew</td>
<td>1-A</td>
<td>81</td>
</tr>
</tbody>
</table>

#### Transmission Group

<table>
<thead>
<tr>
<th>Operation</th>
<th>Article</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clutch Throwout Yoke Renew</td>
<td>1-G</td>
<td>90</td>
</tr>
<tr>
<td>Countershaft - Renew</td>
<td>1-D</td>
<td>87</td>
</tr>
</tbody>
</table>

#### Pedal Control Group
(See 1926 Service Manual, page 127)

#### Hand Control Group

#### Universal joints and Propeller Shaft Group
(See 1926 Service Manual, page 135)

#### Carburetor Group
(See 1926 Service Manual, page 139)

#### Motor Group
(See 1926 Service Manual, page 147)
Essex Super Six
Steering Gear

(Cars numbered 500,001 and upward)
Essex Super Six Steering Gear
(Cars numbered 500,001 and upward)

Ref. No. Name of Part
1. Steering wheel
2. Horn button spring
3. Horn wire ground washer
4. Horn wire terminal insulator
5. Horn wire
6. Steering wheel key
7. Jacket tube bushing
8. Steering wheel nut
9. Contact washer
10. Steering wheel nut cover
11. Horn button
12. Drag link oiler
13. Drag link ball seat
14. Drag link plug
15. Drag link spring
16. Steering gear frame bracket
17. Worm wheel eccentric bushing
18. Worm wheel and shaft
19. Eccentric bushing lock plate
20. Lock plate screw
21. Jacket tube bracket
22. Cowl bracket
23. Cowl bracket bolt
24. Jacket tube bracket bolt
25. Jacket tube
26. Steering column
27. Jacket tube bushing
28. Worm wheel shaft nut
29. Worm wheel eccentric bushing
30. Steering gear frame bracket
31. Case cover stud nut
32. Case cover stud-
33. Worm wheel thrust washer-large
34. Steering gear case
35. Worm wheel thrust washer-small
36. Worm wheel adjusting screw
37. Worm wheel adjusting screw lock nut
38. Thrust bearing
39. Steering worm
40. Steering worm key
41. Upper cap bushing
42. Upper cap shims
43. Upper cap
44. Upper cap bolt
45. Worm wheel adjusting screw
46. Worm wheel adjusting screw lock nut
47. Drag link plug
48. Drag link spring
49. Drag link ball seat
50. Drag link
51. Steering gear arm
52. Worm wheel shaft nut lock
53. Worm wheel and shaft
54. Steering gear case gasket
55. Steering worm key
56. Steering worm
57. Steering gear case plug
58. Lower cap gasket
59. Column felt washer plate gasket
60. Column felt washer plate
61. Felt washer retainer
62. Felt washer
63. Horn wire
64. Lower cap bushing
65. Lower cap
66. Lower cap screw

(1-A) Renew Complete Steering Gear
(Cars numbered 500,001 and upward)

1. Disconnect at horn terminal, wire (63) leading from steering gear horn button to horn.
2. Un螺丝 cover (10).
3. Remove steering wheel nut (8) from top of steering column and pull off steering wheel, using wheel puller shown on Page 18, Service Tool section.
4. Remove cowl bracket bolt (23); disconnect jacket tube bracket (21) and slide jacket tube assembly off steering column.
5. Remove 2 bolts securing steering gear frame bracket (30) to frame side member. This will release steering gear assembly.
6. Bend back ears on worm wheel shaft nut lock (52); remove nut (28) and nut lock and pull steering gear arm (51) off shaft using steering gear arm puller shown on Page 18, Service Tool section.
7. Remove steering gear assembly from car and install new part, reversing above operations.
(1-B) Renew Case Bushings, Thrust Washers, Column, Worm, Worm Wheel or Thrust Bearings

(Cars numbered 500,001 and upward)

1. Disconnect at horn terminal, wire (63) leading from steering gear horn button to horn.
2. Unscrew cover (10).
3. Remove steering wheel nut (8) from top of steering column and pull off steering wheel, using wheel puller shown on Page 18, Service Tool section.
4. Remove cowl bracket bolt (23); disconnect jacket tube bracket (21) and slide jacket tube assembly off steering column.
5. Remove 2 bolts holding steering gear frame bracket (30) to frame side member. This will allow steering gear assembly to be removed from the car.
6. Bend back ears on worm wheel shaft nut lock (52); remove nut (28) and nut lock and pull steering gear arm (51) off shaft, using steering gear arm puller shown on Page 18, Service Tool section.
7. Remove screws (44) holding upper cap (43) in position; take out cap and shims (42).
8. Remove screws (66) holding lower cap (65) to case; take off lower cap, column, worm, and thrust bearings.
9. The bushings (41, 64) in the upper and lower caps may now be pressed out in an arbor press, or by means of the bushing press shown on Page 13, Service Tool section, and replaced with new parts.
10. Remove 4 nuts (31) holding frame bracket to steering gear case; take off frame bracket, worm wheel and thrust washer.
11. Remove worm wheel bushing (29) and replace with new part.
12. Where replacement is necessary, renew column, worm, thrust bearings, worm wheel or any other parts contained in the case assembly. Reassemble steering gear, reversing above operations, making sure that adjustments are properly made as covered in articles (E), (F) and (G).

(1-C) Renew Jacket Tube Bushings

(Cars numbered 500,001 and upward)

1. Disconnect at horn terminal, wire (63) leading from steering gear horn button to horn.
2. Unscrew cover (10).
3. Remove nut (8) from top of steering column.
4. Pull steering wheel off taper on steering column, using steering wheel puller shown on Page 18, Service Tool section.
5. Remove cowl bracket bolt (23) holding jacket tube bracket (21) to cowl.
6. Slide jacket tube and bracket off column, press out or drive out old bushings (7, 27) and replace with new parts.
7. Reassemble parts, reversing above operations.
(D) Renew Steering Gear Lever
(See 1926 Service Manual, Page 108)

(E) Adjust Column for End Play
(See 1926 Service Manual, Page 108)

(F) Adjust Worm Wheel and Shaft for End Play
(See 1926 Service Manual, Page 108)

(G) Adjust Worm Wheel and Shaft for Backlash
(See 1926 Service Manual, Page 108)
Essex Super Six
Clutch

(Cars numbered 500,001 and upward)
Clutch Group

(Cars numbered 500,001 and upward)
### Essex Super Six Clutch

**(Cars numbered 500,001 and upward)**

<table>
<thead>
<tr>
<th>Ref. No.</th>
<th>Name of Part</th>
<th>Ref. No.</th>
<th>Name of Part</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Clutch cover gasket</td>
<td>19</td>
<td>Throwout cross</td>
</tr>
<tr>
<td>2</td>
<td>Clutch cover cap screw</td>
<td>20</td>
<td>Clutch thrust bearing oil ring</td>
</tr>
<tr>
<td>3</td>
<td>Shifter finger lock plate</td>
<td>21</td>
<td>Clutch thrust bearing</td>
</tr>
<tr>
<td>4</td>
<td>Shifter finger pin</td>
<td>22</td>
<td>Transmission front bearing cap</td>
</tr>
<tr>
<td>5</td>
<td>Flywheel</td>
<td>23</td>
<td>Transmission mainshaft drive gear</td>
</tr>
<tr>
<td>6</td>
<td>Shifter finger</td>
<td>24</td>
<td>Transmission front cap bearing oil seal</td>
</tr>
<tr>
<td>7</td>
<td>Flywheel bolt</td>
<td>25</td>
<td>Transmission mainshaft drive gear bearing</td>
</tr>
<tr>
<td>8</td>
<td>Clutch pilot bearing</td>
<td>26</td>
<td>Pressure plate cap screw</td>
</tr>
<tr>
<td>9</td>
<td>Crankshaft</td>
<td>27</td>
<td>Pressure plate screw lock</td>
</tr>
<tr>
<td>10</td>
<td>Clutch driving plate</td>
<td>28</td>
<td>Pressure plate</td>
</tr>
<tr>
<td>11</td>
<td>Driving plate rivet</td>
<td>29</td>
<td>Flywheel</td>
</tr>
<tr>
<td>12</td>
<td>Driving plate cork insert</td>
<td>30</td>
<td>Clutch thrust bearing retainer</td>
</tr>
<tr>
<td>13</td>
<td>Pressure plate</td>
<td>31</td>
<td>Clutch shifting sleeve</td>
</tr>
<tr>
<td>14</td>
<td>Clutch spring</td>
<td>32</td>
<td>Clutch cover pipe plug</td>
</tr>
<tr>
<td>15</td>
<td>Shifter finger bracket gasket</td>
<td>33</td>
<td>Clutch cover cap screw</td>
</tr>
<tr>
<td>16</td>
<td>Shifter finger bracket</td>
<td>34</td>
<td>Shifter finger bracket</td>
</tr>
<tr>
<td>17</td>
<td>Clutch cover</td>
<td>35</td>
<td>Clutch cover pipe plug</td>
</tr>
<tr>
<td>18</td>
<td>Shifter finger bracket nut</td>
<td>36</td>
<td>Clutch cover</td>
</tr>
</tbody>
</table>

**(1-A) Renew Clutch Assembly, Driving Plate, Pressure Plate, Thrust Bearing, Bearing Retainer, Pilot Fearing, Shifter Fingers, Springs or Shifter Finger Brackets**

**(Cars numbered 500,001 and upward)**

1. Remove front compartment rubber and felt mats and take out front toe and floor boards.
2. Remove clevis pin at bottom of brake pedal and disconnect brake pull rod.
3. Remove clevis pin from clutch adjustable link and disconnect clutch throwout yoke.
4. Unscrew sleeve at rear end of speedometer shaft and disconnect shaft.
5. Remove bolts from front universal joint flange and disconnect propeller shaft.
6. Remove cap screws holding transmission cover and control lever to transmission and take off control assembly.
7. Remove bolts holding pedal control bracket to transmission and take off pedal control assembly.
8. Unscrew exhaust manifold packing nut at rear end of exhaust manifold.
9. Remove two bolts holding front end of muffler to muffler bracket.
10. Loosen bolt clamping front of muffler to exhaust pipe; slide exhaust pipe out of exhaust manifold and turn out of way of transmission.
11. Remove bolts holding flywheel guard to rear motor plate, also remove screw holding rear end of guard to transmission case; take off flywheel guard.
12. Remove two bolts holding lower part of transmission case to rear motor plate.
13. Remove nuts from rear ends of three starter motor studs.
14. Remove nuts from two studs holding transmission to motor; this will allow the transmission to be withdrawn from the clutch and lowered to the floor. The thrust bearing (21), bearing retainer (30), and sleeve (31) can now be removed from the clutch cover hub and renewed if necessary.
15. Remove cap screws (2) holding clutch cover to flywheel, releasing the clutch assembly and driving plate assembly (10), which parts as well as the pilot bearing (8) may be renewed as required.

16. Should replacement of the cover (36), pressure plate (13), springs (14), shifter finger brackets (16), gasket (15), shifter finger (6), or throwout cross (19), be necessary, the clutch should be mounted in the clutch assembling fixture "HE-130" shown in the Service Tool section, and disassembled by removing the cotter pins and castle nuts (18) from the shifter finger brackets (16)

17. After all of the parts requiring renewal have been replaced, the clutch is reassembled by reversing the above operations, using clutch assembling fixture.
Essex Super Six
Transmission

(Cars numbered 500,001 and upward)
Transmission Group

(Cars numbered 500,001 and upward)
## Essex Super Six Transmission

*(Cars numbered 500,001 and upward)*

<table>
<thead>
<tr>
<th>Ref. No.</th>
<th>Name of Part</th>
<th>Ref. No.</th>
<th>Name of Part</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Transmission case</td>
<td>30</td>
<td>Mainshaft rear bearing retainer</td>
</tr>
<tr>
<td>2</td>
<td>Shifter shaft-second and high</td>
<td>31</td>
<td>Countershaft lock screw</td>
</tr>
<tr>
<td>3</td>
<td>Clutch throwout yoke</td>
<td>32</td>
<td>Shifter shaft lock spring cap</td>
</tr>
<tr>
<td>4</td>
<td>Clutch throwout yoke clevis pin</td>
<td>33</td>
<td>Shifter shaft lock spring</td>
</tr>
<tr>
<td>5</td>
<td>Clutch throwout yoke bushing</td>
<td>34</td>
<td>Shifter shaft lock ball</td>
</tr>
<tr>
<td>6</td>
<td>Second and high speed gear</td>
<td>35</td>
<td>Shifter shaft interlock plunger</td>
</tr>
<tr>
<td>7</td>
<td>Drive gear bearing oil seal</td>
<td>36</td>
<td>Reverse idler gear bushing</td>
</tr>
<tr>
<td>8</td>
<td>Mainshaft drive gear outer bearing</td>
<td>37</td>
<td>Reverse idler gear shaft</td>
</tr>
<tr>
<td>9</td>
<td>Front bearing cap bolt</td>
<td>38</td>
<td>Reverse idler gear</td>
</tr>
<tr>
<td>10</td>
<td>Mainshaft drive gear bushing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Mainshaft thrust ball</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Frofit bearing cap</td>
<td>39</td>
<td>Mainshaft</td>
</tr>
<tr>
<td>13</td>
<td>Front bearing cap gasket</td>
<td>40</td>
<td>Speedometer drive gear</td>
</tr>
<tr>
<td>14</td>
<td>Front bearing cap bolt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Clutch pilot bearing</td>
<td>41</td>
<td>Mainshaft rear bearing steel washer</td>
</tr>
<tr>
<td>16</td>
<td>Mainshaft drive gear</td>
<td>42</td>
<td>Mainshaft rear bearing bronze washer</td>
</tr>
<tr>
<td>17</td>
<td>Countershaft welch,plug</td>
<td>43</td>
<td>Mainshaft shim</td>
</tr>
<tr>
<td>18</td>
<td>Countershaft</td>
<td>44</td>
<td>Mainshaft nut</td>
</tr>
<tr>
<td>19</td>
<td>Countershaft drive and second speed gear</td>
<td></td>
<td>Mainshaft nut washer</td>
</tr>
<tr>
<td>20</td>
<td>Oil drain plug gasket</td>
<td>45</td>
<td>Mainshaft nut bolt-long</td>
</tr>
<tr>
<td>21</td>
<td>Rear bearing inner sleeve</td>
<td>46</td>
<td>Mainshaft rear bearing cap</td>
</tr>
<tr>
<td>22</td>
<td>Mainshaft low and reverse gear</td>
<td>47</td>
<td>Mainshaft rear bearing</td>
</tr>
<tr>
<td>23</td>
<td>Shifter fork lock screw</td>
<td>48</td>
<td>Mainshaft rear bearing</td>
</tr>
<tr>
<td>24</td>
<td>Shifter fork</td>
<td>49</td>
<td>Reverse idler gear shaft welch plug</td>
</tr>
<tr>
<td>25</td>
<td>Oil drain plug</td>
<td>50</td>
<td>Countershaft and idler shaft lock screws,</td>
</tr>
<tr>
<td>26</td>
<td>Countershaft low and reverse gear</td>
<td>51</td>
<td>Oil drain plug gasket</td>
</tr>
<tr>
<td>27</td>
<td>Countershaft gear bushing</td>
<td>52</td>
<td>Oil drain plug</td>
</tr>
<tr>
<td>28</td>
<td>Mainshaft rear bearing cap gasket</td>
<td>53</td>
<td>Transmission case</td>
</tr>
<tr>
<td>29</td>
<td>Countershaft welch plug</td>
<td>54</td>
<td>Speedometer driven gear sleeve</td>
</tr>
<tr>
<td></td>
<td></td>
<td>55</td>
<td>Speedometer driven gear sleeve shim</td>
</tr>
<tr>
<td></td>
<td></td>
<td>56</td>
<td>Speedometer driven gear</td>
</tr>
<tr>
<td></td>
<td></td>
<td>57</td>
<td>Oil level test plug</td>
</tr>
</tbody>
</table>

**NOTE:** In all operations where it is necessary to adjust the mainshaft for end play, it is important that from .003 to .006 end play be allowed. On cars previous to 500,001 a greater end play of .008 to .012 was necessary because the thrust was greater on the transmission thrust washers and it required this amount of end play to insure their proper lubrication. When referring back, therefore, to operations described in the 1926 Service Manual and applying these operations to cars 500,001 and upward, use the figure .003 to .006 for end play instead of the figure .008 to .012. Also note where reference is made to operations in the 1926 Service Manual to be used on cars 500,001 and upward it is not necessary to disconnect the brake pull rod at the bottom of the hand brake lever, as this has been removed from the transmission housing and is now attached to the frame of the car on the left hand side.

### (1-A) Renew Transmission

*(Cars numbered 500,001 and upward)*

1. Remove front compartment rubber and felt mats and take out floor boards.
2. Remove clevis pin at bottom of brake pedal and disconnect brake pull rod.
3. Remove clevis pin from clutch adjustable link and disconnect clutch throwout yoke.
4. Unscrew sleeve at rear end of speedometer shaft and disconnect shaft. Remove bolts from front universal joint flange and disconnect propeller shaft.
5. Remove cap screws holding transmission cover and control lever to transmission and take off control assembly.
6. Remove bolts holding pedal control bracket to transmission and take off pedal control assembly.

[ 85 ]
8. Unscrew exhaust manifold packing nut at rear end of exhaust manifold.
9. Remove two bolts holding front end of muffler to muffler bracket.
10. Loosen bolt clamping front of muffler to exhaust pipe; slide exhaust pipe out of exhaust manifold and turn out of way of transmission.
11. Remove bolts holding flywheel guard to rear motor plate, also remove screw holding rear end of guard to transmission case; take off flywheel guard.
12. Remove two bolts holding lower part of transmission case to rear motor plate.
13. Remove nuts from rear ends of three starting motor studs.
14. Remove nuts from two studs holding transmission to motor; this will allow the transmission to be withdrawn from the clutch and lowered to floor.
15. Replace with new transmission assembly, reversing operations described above.

(I-B) Renew Mainshaft, Mainshaft Thrust Ball, Sliding Gears, Mainshaft Rear Bearing, Mainshaft Rear Bearing Thrust Washers, Speedometer Drive Gear, Shifter Forks, Shifter Shaft or Inter-Lock Plunger

(Cars numbered 500,001 and upward)

1. Remove floor boards.
2. Remove cap screws holding transmission case cover to transmission and take off hand control lever assembly.
3. Unscrew sleeve at rear end of speedometer shaft and disconnect speedometer shaft from transmission.
4. Remove bolts from flange of front universal joint and disconnect propeller shaft.
5. Remove cotter pin, nut (44) and washer from rear end of mainshaft and pull off front universal joint flange, using universal joint flange puller shown on Page 22, Service Tool section.
6. Remove speedometer driven gear sleeve (54), takeout gear (56) and shims (55).
7. Remove screws (46) holding mainshaft rear bearing cap (47) to transmission and take off cap.
8. Remove gear shifter shaft lock spring caps (32), take out springs (33) and lock balls (34).
9. Remove gear shifter fork lock screws (23), slide shifter shaft (2) out of shifter forks (24) and rear end of transmission case.
10. Remove shifter shaft interlock plunger (35).
11. The mainshaft may now be removed and any of the above parts which require renewal replaced. The transmission may be reassembled by reversing the above operations. In reassembling it is very important that the correct number of shims (43) be placed on mainshaft to allow an end play of from .003 to .006 when rear bearing cap is tightly bolted in place.

(I-C) Renew Mainshaft Drive Gear, Mainshaft Outer Bearing, Mainshaft Drive Gear Bushing or Front Bearing Cap

(Cars numbered 500,001 and upward)

1. Remove front compartment rubber and felt-mats, and take out front toe and floor boards.
Transmission Group

2. Remove clevis pin at bottom of brake pedal and disconnect brake pull rod.
3. Remove clevis pin from clutch adjustable link and disconnect clutch throwout yoke.
4. Unscrew sleeve at rear end of speedometer shaft and disconnect shaft.
5. Remove bolts from front universal joint flange and disconnect propeller shaft.
6. Remove cap screws holding transmission cover and control lever to transmission and take off control assembly.
7. Remove bolts holding pedal control bracket to transmission and take off pedal control assembly.
8. Unscrew exhaust manifold packing nut at rear end of exhaust manifold.
9. Remove two bolts holding front end of muffler to muffler bracket.
10. Loosen bolt clamping front of muffler to exhaust pipe; slide exhaust pipe out of exhaust manifold and turn out of way of transmission.
11. Remove bolts holding flywheel guard to rear motor plate, also remove screw holding rear end of guard to transmission case; take off flywheel guard.
12. Remove two bolts holding lower part of transmission case to rear motor plate.
13. Remove nuts from rear ends of three starting motor studs.
14. Remove nuts from two studs holding transmission to motor; this will allow the transmission to be withdrawn from the clutch and lowered to the floor.
15. Remove cotter pin, nut (44) and washer from rear end of mainshaft and pull off front universal joint flange, using universal joint flange puller shown on Page 22, Service Tool section.
16. Remove speedometer driven gear sleeve (54), take out gear (56) and shims (55).
17. Remove screws (46) holding mainshaft rear bearing cap (47) to transmission and take off cap.
18. Remove gear shifter shaft lock spring caps (32), take out springs (33) and lock balls (34).
19. Remove gear shifter fork lock screws (23), slide shifter shafts (2) out of shifter forks (24) and rear end of transmission case; this will allow the removal of the mainshaft and parts assembled to it.
20. Remove screws (9, 14) holding mainshaft front bearing cap (12) to transmission and take off cap, bearing (8) and drive gear assembly (16). These parts may now be renewed as necessary.
21. If drive gear is to be re-bushed, remove old bushing with bushing extractor, "HE-58," Service Tool section, and press new part in place. After this is done, the bushing should be reamed to the correct size and in perfect alignment by means of drive gear bushing reamer and fixture "E-253."
22. The transmission is re-assembled by reversing the above operations, making sure that there is from .005 to .010 end play in the mainshaft after the bearing caps have been bolted in position.

(1-D) Renew Countershaft, Countershaft Gears, or Countershaft Gear Bushings

(Cars numbered 500,001 and upward)

1. Remove front compartment rubber and felt mats and take out front toe and floor boards. yoke.
2. Remove clevis pin at bottom of brake pedal and disconnect brake pull rod.
3. Remove clevis pin from clutch adjustable link and disconnect clutch throwout yoke.
Transmission Group

4. Unscrew sleeve at rear end of speedometer shaft and disconnect shaft.
5. Remove bolts from front universal joint flange and disconnect propeller shaft.
6. Remove cap screws holding transmission cover and control lever to transmission and take off control assembly.
7. Remove bolts holding pedal control bracket to transmission and take off pedal control assembly.
8. Unscrew exhaust manifold packing nut at rear end of exhaust manifold.
9. Remove two bolts holding front end of muffler to muffler bracket.
10. Loosen bolt clamping front of muffler to exhaust pipe; slide exhaust pipe out of exhaust manifold and turn out of way of transmission.
11. Remove bolts holding flywheel guard to rear motor plate, also remove screw holding rear end of guard to transmission case; take off flywheel guard.
12. Remove two bolts holding lower part of transmission case to rear motor plate.
13. Remove nuts from rear ends of three starting motor studs.
14. Remove nuts from two studs holding transmission to motor; this will allow the transmission to be withdrawn from the clutch and lowered to the floor.
15. Remove cotter pin, nut (44) and washer from rear end of mainshaft and pull off front universal joint flange, using universal joint flange puller shown on Page 22, Service Tool section.
16. Remove speedometer driven gear sleeve (54), take out gear (56) and shims (55).
17. Remove screws (46) holding mainshaft rear bearing cap (47) to transmission and take off cap.
18. Remove gear shifter shaft lock spring caps (32), take out springs (33) and lock balls (34).
19. Remove gear shifter fork lock screws (23), slide shifter shafts (2) out of shifter forks (24) and rear end of transmission case; this will allow the removal of the mainshaft and parts assembled to it.
20. Remove screws (9, 14) holding mainshaft front bearing cap (12) to transmission and take off cap bearing (8) and drive gear assembly (16). These parts may now be renewed as necessary.
22. Insert hooked tool in opening and pull out plug.
23. Remove countershaft lock screw (50) from bottom of transmission case.
24. Insert hooked tool in lock screw hole at rear end of countershaft and pull out countershaft through rear of transmission case.
25. The countershaft gears may now be removed from transmission and renewed or rebushed as necessary, using busing press shown on Page 12, Service Tool section. The countershaft may also be renewed as required.
26. Reassemble transmission, reversing the above operations, making sure that from .003 to .006 end play exists in the mainshaft after the caps are securely bolted in place. The welch plug (29) at rear end of countershaft should be renewed when reassembling transmission. However, in an emergency, the old plug may be used if the hole is tapped out and plugged with a small machine screw to prevent loss of lubrication.

(E) Renew Reverse Idler Gear, Shaft or Idler Gear Bushing
(See 1926 Service Manual, Page 121)

(1-F) Renew Transmission Case
(Cars numbered 500,001 and upward)

1. Remove front compartment rubber and felt mats and take out front toe and floor boards.
2. Remove clevis pin at bottom of brake pedal and disconnect brake pull rod.
3. Remove clevis pin from clutch adjustable link and disconnect clutch throwout yoke.
4. Unscrew sleeve at rear end of speedometer shaft and disconnect shaft.
5. Remove bolts from front universal joint flange and disconnect propeller shaft.
6. Remove cap screws holding transmission cover and control lever to transmission and take off control assembly.
7. Remove bolts holding pedal control bracket to transmission and take off pedal control assembly.
8. Unscrew exhaust manifold packing nut at rear end of exhaust manifold.
9. Remove two bolts holding front end of muffler to muffler bracket.
10. Loosen bolt clamping front of muffler to exhaust pipe; slide exhaust pipe out of exhaust manifold and turn out of way of transmission.
11. Remove bolts holding flywheel guard to rear motor plate, also remove screw holding rear end of guard to transmission case; take off flywheel guard.
12. Remove two bolts holding lower part of transmission case to rear motor plate.
13. Remove nuts from rear ends of three starting motor studs.
14. Remove nuts from two studs holding transmission to motor; this will allow the transmission to be withdrawn from the clutch and lowered to the floor.
15. Remove cotter pin, nut (44) and washer from rear end of mainshaft and pull off front universal joint flange, using universal joint flange puller shown on Page 22, Service Tool section.
16. Remove speedometer driven gear sleeve (54), take out gear (56) and shims (55).
17. Remove screws (46) holding mainshaft rear bearing cap (47) to transmission and take off cap.
18. Remove gear shifter shaft lock spring caps (32), take out springs (33) and lock balls (34).
19. Remove gear shifter fork lock screws (23), slide shifter shafts (2) out of shifter forks (24) and rear end of transmission case; this will allow the removal of the mainshaft and parts assembled to it.
20. Remove shifter shaft interlock plunger (35).
21. Remove screws (9,14) holding mainshaft front bearing cap (12) to transmission. Take off cap and transmission drive gear assembly.
22. Drill 7/32" hole in center of rear countershaft welch plug (29).
23. Insert hooked tool in opening and pull out plug.
24. Remove countershaft lock screw (50) from bottom of transmission case.
25. Insert hooked tool in lock screw hole at rear end of countershaft (18) and pull out countershaft through rear of transmission case. Take out countershaft gears (19, 26).
26. Remove from lower part of transmission case lock screw (50) holding reverse idler gear shaft (37) in place.
27. Drill 7/32" hole in center of reverse idler shaft welch plug (49) located in rear of transmission case. Insert hooked tool in opening and pull out plug.
28. Push out reverse idler gear shaft through rear of transmission and remove idler gear.
29. Replace transmission case with new parts and reassemble, reversing above operations. See that sufficient shims (43) are placed on mainshaft to allow .003 to .006 end play after caps (12, 47) are securely bolted in place.
(1-G) Renew Clutch Throwout Yoke or Throwout Yoke Bushing
(Cars numbered 500,001 and upward)

1. Remove front compartment rubber and felt mats and take out front toe and floor boards.
2. Remove clevis pin at bottom of brake pedal and disconnect brake pull rod.
3. Remove clevis pin from clutch adjustable link and disconnect clutch throwout yoke.
4. Unscrew sleeve at rear end of speedometer shaft and disconnect shaft.
5. Remove bolts from front universal joint flange and disconnect propeller shaft.
6. Remove cap screws holding transmission cover and control lever to transmission and take off control assembly.
7. Remove bolts holding pedal control bracket to transmission and take off pedal control assembly.
8. Unscrew exhaust manifold packing nut at rear end of exhaust manifold.
9. Remove two bolts holding front end of muffler to muffler bracket.
10. Loosen bolt clamping front of muffler to exhaust pipe; slide exhaust pipe out of exhaust manifold and turn out of way of transmission.
11. Remove bolts holding flywheel guard to rear motor plate, also remove screw holding rear end of guard to transmission case; take off flywheel guard.
12. Remove two bolts holding lower part of transmission case to rear motor plate.
13. Remove nuts from rear ends of three starting motor studs.
14. Remove nuts from two studs holding transmission to motor; this will allow the transmission to be withdrawn from the clutch and lowered to the floor.
15. Remove cotter and clevis pin (4) holding throwout yoke (3) to transmission front bearing cap and take off yoke.
16. Renew or rebush yoke (3) and reassemble transmission, reversing the above operations.

(1-H) Remove End Play from Mainshaft
(Cars numbered 500,001 and upward)

NOTE: To insure proper lubrication of mainshaft thrust bearings, it is necessary that there be from .003 to .006 end play in the transmission mainshaft at all times. End play in excess of this amount which will develop after extensive service, should be removed by the addition of shims as detailed below, unless the amount is very great, in which case it will be necessary to renew washers (41,42) as described in article 1-B.

1. Remove bolts from Range of front universal joint and disconnect propeller shaft.
2. Unscrew sleeve at rear end of speedometer shaft and disconnect shaft.
3. Remove cotter pin, nut (44) and washer from rear end of transmission mainshaft and pull off front universal joint Range, using universal joint flange puller shown on Page 22, Service Tool section.
4. Remove rear bearing cap screws (46) and take off rear bearing cap (47).
5. Add the required number of shims (43) to mainshaft to allow .003 to .006 end play after cap is bolted in place and reassemble, reversing the foregoing operations.

(1-I) Remove Shifter Shaft Lock Ball, Lock Ball Spring or Cap
(Cars numbered 500,001 and upward)

1. Remove shifter shaft lock plunger spring cap (32), take out springs (33) and lock balls (34).
2. Replace parts where necessary and reassemble parts and tighten caps.
Essex Super-Six Hand Control

(Cars numbered 500,001 and upward)
# Essex Super Six Hand Control

*(Cars numbered 500,001 and upward)*

<table>
<thead>
<tr>
<th>Ref. No.</th>
<th>Name of Part</th>
<th>Ref. No.</th>
<th>Name of Part</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Brake hand lever latch grip</td>
<td>24</td>
<td>Brake pull rod</td>
</tr>
<tr>
<td>2</td>
<td>Brake hand lever latch screw</td>
<td>25</td>
<td>Foot brake cross shaft</td>
</tr>
<tr>
<td>3</td>
<td>Brake hand lever</td>
<td>26</td>
<td>Hand brake cross shaft</td>
</tr>
<tr>
<td>4</td>
<td>Brake hand lever bracket</td>
<td>27</td>
<td>Brake release springs</td>
</tr>
<tr>
<td>5</td>
<td>Brake hand lever pivot shaft</td>
<td>28</td>
<td>Control lock plunger washer</td>
</tr>
<tr>
<td>6</td>
<td>Brake hand lever bracket bolt</td>
<td>29</td>
<td>Plunger spring washer</td>
</tr>
<tr>
<td>7</td>
<td>Brake lever latch spring</td>
<td>30</td>
<td>Plunger spring</td>
</tr>
<tr>
<td>8</td>
<td>Brake lever latch spring hook</td>
<td>31</td>
<td>Cross shaft to idler rod-Hand brake</td>
</tr>
<tr>
<td>9</td>
<td>Brake lever latch-inside</td>
<td>32</td>
<td>Cross shaft to idler rod-Foot brake</td>
</tr>
<tr>
<td>10</td>
<td>Brake lever latch-outside</td>
<td>33</td>
<td>Play link clevis pins</td>
</tr>
<tr>
<td>11</td>
<td>Ratchet to frame spacer</td>
<td>34</td>
<td>Play link</td>
</tr>
<tr>
<td>12</td>
<td>Ratchet bolt</td>
<td>35</td>
<td>Oil hole cover gasket</td>
</tr>
<tr>
<td>13</td>
<td>Latch clevis pin</td>
<td>36</td>
<td>Oil hole cover screw</td>
</tr>
<tr>
<td>14</td>
<td>Latch clevis pin</td>
<td>37</td>
<td>Oil hole cover</td>
</tr>
<tr>
<td>15</td>
<td>Brake pull rod clevis pin</td>
<td>38</td>
<td>Control lock</td>
</tr>
<tr>
<td>16</td>
<td>Brake lever pivot shaft washer</td>
<td>39</td>
<td>Plunger felt washer</td>
</tr>
<tr>
<td>17</td>
<td>Latch rod</td>
<td>40</td>
<td>Control lock plunger</td>
</tr>
<tr>
<td>18</td>
<td>Brake ratchet</td>
<td>41</td>
<td>Gearshift lever cover</td>
</tr>
<tr>
<td>19</td>
<td>Brake pull rod nut</td>
<td>42</td>
<td>Gearshift lever cover screw</td>
</tr>
<tr>
<td>20</td>
<td>Brake pull rod yoke</td>
<td>43</td>
<td>Gearshift lever spring</td>
</tr>
<tr>
<td>21</td>
<td>Gearshift lever ball</td>
<td>44</td>
<td>Gearshift lever housing</td>
</tr>
<tr>
<td>22</td>
<td>Gearshift lever</td>
<td>45</td>
<td>Gearshift lever housing bolt</td>
</tr>
<tr>
<td>23</td>
<td>Brake pull rod clevis pin</td>
<td>46</td>
<td>Housing to transmission case gasket</td>
</tr>
</tbody>
</table>

## (1-A) Renew Gearshift Lever, Gearshift Lever Spring or Cover

*(Cars numbered 500,001 and upward)*

1. Remove gearshift lever ball (21).
2. Remove gearshift lever cover screws (42) and cover (41).
3. Take out lever (2 2) and springs (43), replace parts where necessary and reassemble, reversing operations 1 and 2.

## (1-B) Renew Control Lock, Plunger or Spring

*(Cars numbered 500,001 and upward)*

1. Remove control lock retaining screw, insert key in lock and turn key as far as possible; this will permit the removal of the lock (38), plunger (40), plunger spring (30) and plunger washer (28).
2. Renew parts where necessary and reassemble.

## (1-C) Renew Control Housing

*(Cars numbered 500,001 and upward)*

1. Remove floor boards.
2. Remove screws (45) holding control housing to transmission, and take off control hand lever assembly.
3. Remove screws (42) holding gearshift lever cover to control housing, take off cover (41), gearshift lever (22) and spring (43).
4. Remove pivot screw from control housing.
5. Remove oil filler cover screws (36), cover (37) and gasket (35).
6. Remove control lock retaining screw, insert key in lock and turn key as far as possible; take out lock (38), plunger (40), plunger spring (30) and plunger washer (28).
7. Replace control housing with new part and reassemble, reversing above operations.