# DRIVES
# 16-C AND D-78675
# REPLACEMENT PARTS AND PROCEDURES

## 1. GENERAL

1.01 This section covers the information necessary for ordering parts to be used in the maintenance of 16-C and D-78675 drives. It also covers approved procedures for replacing these parts.

1.02 Part 2 of this section covers the piece part numbers and corresponding names of the parts which it is practicable to replace in the field in the maintenance of these drives. No attempt should be made to replace parts not designated. Part 2 also contains explanatory figures showing the different parts. This information is called "Piece Part Data".

1.03 Part 3 of this section covers the approved procedures for the replacement of the parts covered in Part 2. This information is called "Replacement Procedures".

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## PIECE PART DATA

2.01 The figures included in this part show the various piece parts in their proper relation to the other parts of the drive and the piece part numbers of the various parts together with their corresponding names.

2.02 The notes underneath the figures should be read carefully as in some cases they contain information which is essential to correct ordering of parts.

2.03 When ordering piece parts for replacement purposes both the number and the name of the piece part should be given. For example: P-154197 - Hex. H. Cap Screw, or Gear Housing Cover per Detail 4 of A-142542.

2.04 The following figures show the variable piece parts as well as the parts which are common to both 16-C and D-78675 drives.

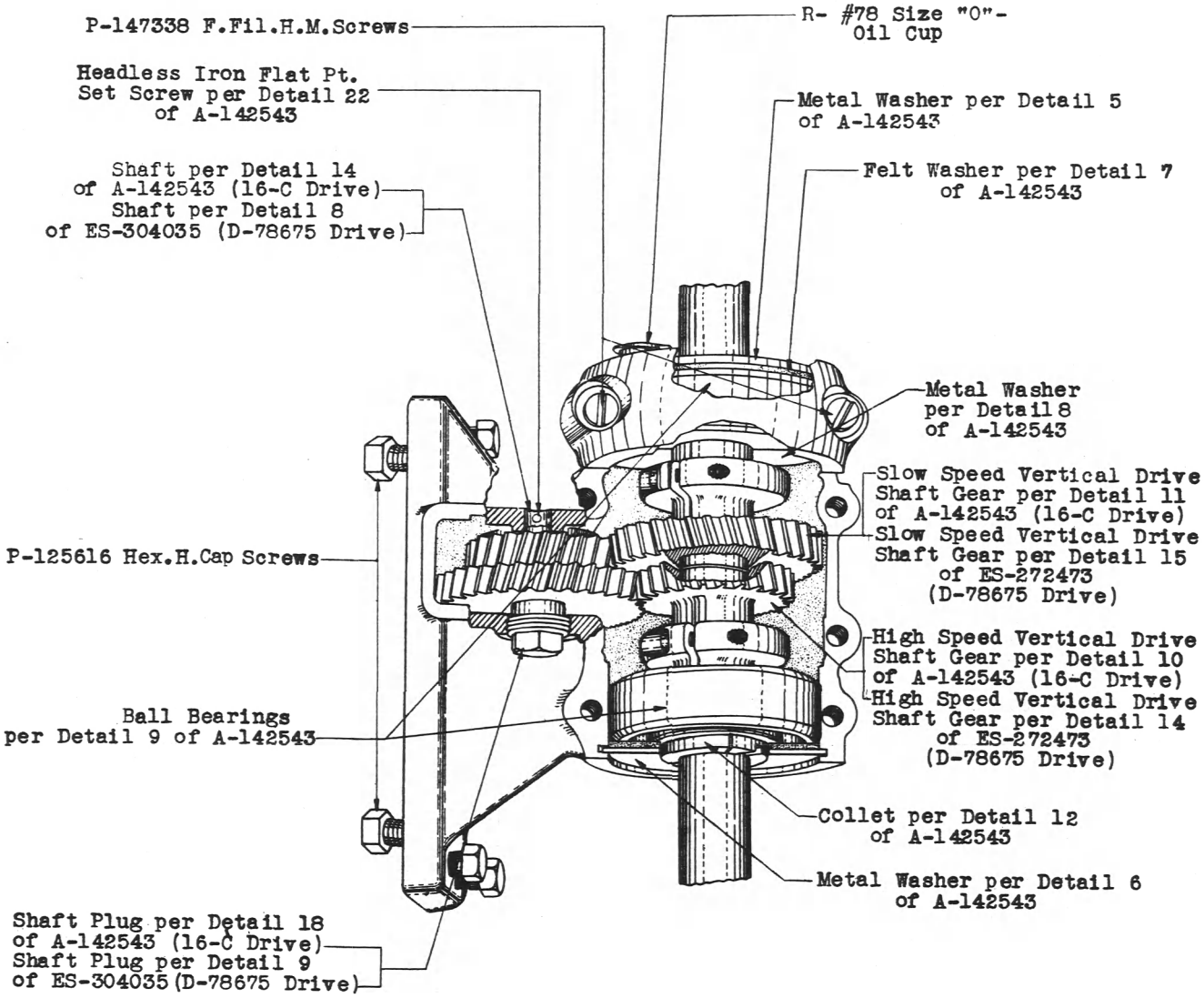


Fig. 1 - Assembly of 16-C and D-78675 Drives Without Gear Housing Cover

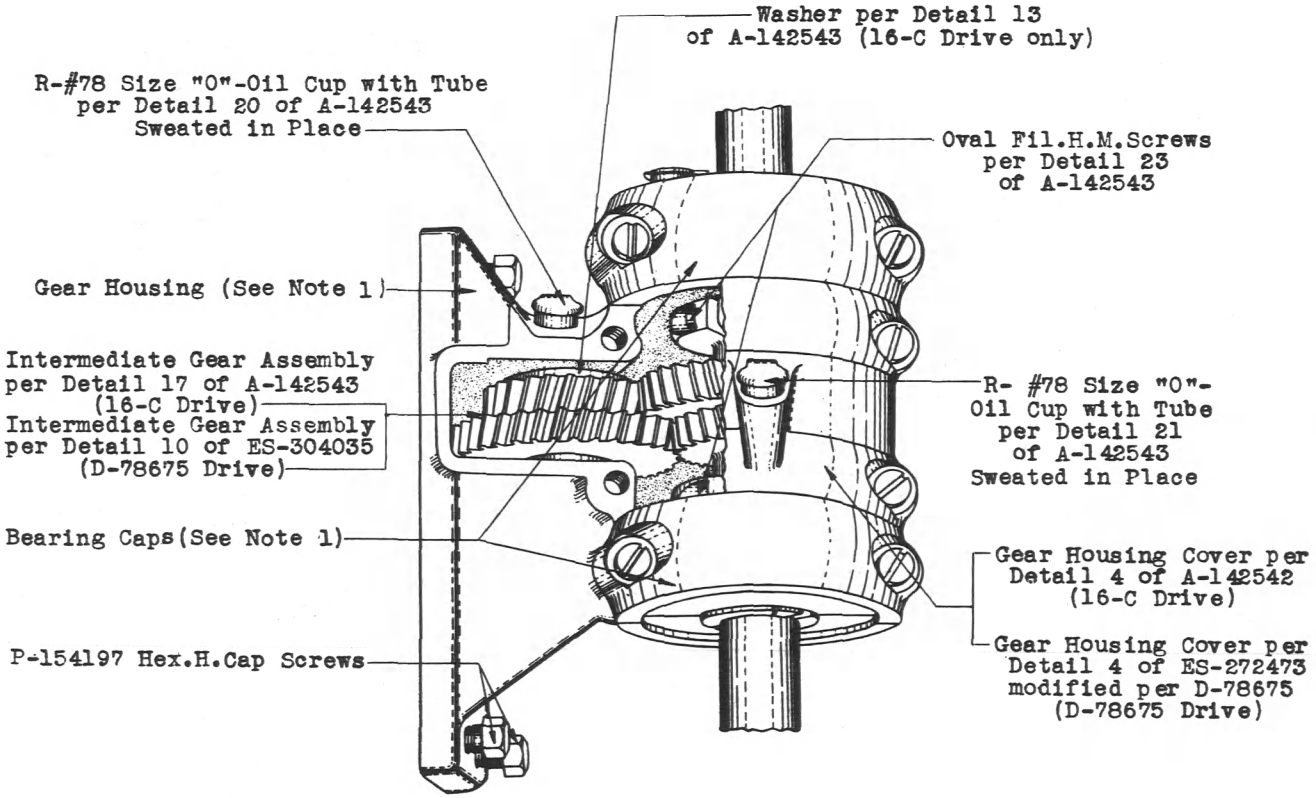


Fig. 2 - Assembly of 16-C and D-78675 Drives With Gear Housing Cover

Note 1

If the gear housing or either bearing cap is defective it will be necessary to order a new gear housing and both bearing caps assembled together. These parts are as follows:

16-C Drive - Gear Housing per Detail 1 of A-142542

D-78675 Drive - Gear Housing per Detail 1 of ES-272473 modified per D-78675

16-C and D-78675 Drives - Upper bearing cap per Detail 2 of A-142542

16-C and D-78675 Drives - Lower bearing cap per Detail 3 of A-142542

## 3. REPLACEMENT PROCEDURES

TOOLS

| Code No. | Description |
|---|---|
| 47 | Wrench - 1/2" Hex. Socket |
| 305 | Wrench - 7/16" Hex. Socket Offset |
| 346 | Wrench - Spanner |
| 347 | Wrench - Spanner |
| - | Bell System Regular Screwdriver - 4" per A.T.&T.Co. Drawing 46-X-34 |
| - | Bell System Cabinet Screwdriver - 3-1/2" per A.T.&T. Co. Drawing 46-X-40 |

3.001 Before stopping a drive to make any of the replacements specified herein, ascertain whether it is necessary to make any of the associated circuits busy. Circuits which are so affected should be made busy in the approved manner.

3.002 After making any replacement of parts, the drive shall be checked and, where necessary, readjusted to meet the requirements specified in Section 159-735-701 covering "Vertical Drive Shafts and Associated Apparatus" and Section 159-706-701 covering "16-C and D-78675 Drives".

### 3.01 GEAR HOUSING COVER

M-1 To replace a gear housing cover, remove the cover holding screws with the 4" regular screw-driver and remove the cover. Set the new cover in place and securely fasten the cover holding screws.

### 3.02 SPLIT METAL WASHERS FELT WASHERS

M-1 Split Metal or Felt Washer If a split metal or felt washer is defective, remove the bearing cap screws with the 4" regular screw-driver. Remove the bearing cap and the defective part and make the necessary replacements.

M-2 If the oil cup that is mounted on the upper metal washer of the upper bearing is defective, replace the washer as outlined above.

### 3.03 VERTICAL DRIVE SHAFT GEARS BEARINGS

M-1 Vertical Drive Shaft Gears To replace a vertical drive shaft gear proceed as follows: Remove the gear housing cover with the 4" regular screw-driver as outlined in procedure 3.01 and loosen the clamping collar screws with the 3-1/2" cabinet screwdriver. Place the No. 346 spanner wrench in the collar as shown in Fig. 3 and loosen the spring collet with the No. 347 spanner wrench until the collet clears the clamping collar.

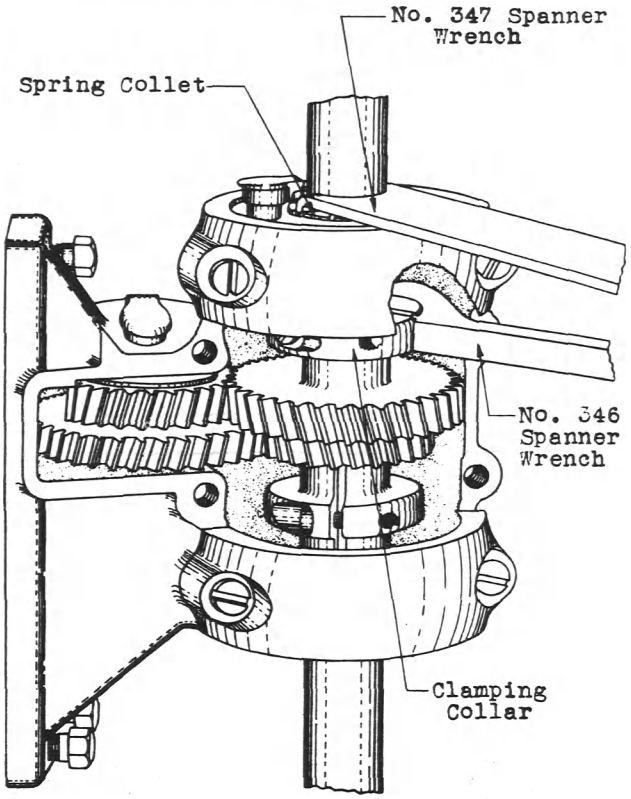


Fig. 3 - Method of Loosening Vertical Shaft Gears

M-2 In some cases where the slow speed vertical shaft gear is defective, it will be possible to raise the slow speed shaft enough to slip the gear off of it, in other cases and whenever the high speed vertical shaft gear

is defective, it will be necessary to remove the associated drive shaft from the frame before removing the gear. If it is necessary to remove the drive shaft from the frame, remove the cap of the bearing and the split metal and felt washers associated with the defective gear, then the vertical drive shaft bearings and then the drive shaft. Then remove the gear and bearing assembly of which the defective gear is a part from the housing and remove the gear from the shaft.

M-3 To mount the new gear in place proceed as follows: If the shaft was not removed from the frame, place the new gear in the housing and engage the spring collet with the clamping collar of the gear. Then lower the shaft so that it engages the gear as required and tighten the spring collet and spring collar with the No. 346 and No. 347 spanner wrenches as shown in Fig. 3, and then tighten the clamping screws. If the shaft was removed from the frame, slip the new gear in place over the end of the shaft and engage the collet with the clamping collar. Then mount the shaft assembly in place and fasten the vertical drive shaft bearings in place on the frame as required. Then tighten the spring collet as required and replace the washers, bearing cap and gear housing cover, securely fastening the mounting screws.

3.04 INTERMEDIATE GEAR ASSEMBLY

M-1 If either intermediate gear is defective, remove the gear housing from the shaft by removing the bracket mounting screws with the No. 305 wrench and raise or lower the vertical drive shafts as outlined in procedure 3.03. With the gear housing removed from the shaft, loosen and remove the shaft plug with the No. 47 hexagonal socket wrench. Loosen the shaft set screw with the 3-1/2" cabinet screw-driver and remove the shaft from the housing. The intermediate gears may now be removed and if either gear is defective, replace the entire gear assembly.

M-2 With the intermediate gear shaft removed from the housing, remove the defective gear assembly and replace it with a new one. Place the new gear assembly on the shaft and insert the shaft through the assembly. Replace and securely tighten the shaft plug and shaft set screw. Mount the housing on the shaft and secure the bracket mounting screws in place.

3.05 BEARING CAP GEAR HOUSING

M-1 If a gear housing or either bearing cap is defective, remove the gear housing cover as outlined in procedure 3.01 and proceed as follows: Remove the bearing cap screw with the 4" regular screw-driver and remove the bearing cap. Loosen the collars and collets and remove the drive from the frame as outlined in procedures 3.03 and 3.04.

M-2 With the drive removed from the frame, remove the collar and gear assemblies and intermediate gears as outlined above. Place these gears in the new housing and remount the drive on the frame.

M-4 Bearing To replace a bearing, it will in all cases, be necessary to remove the gear housing cover, loosen the spring collet as outlined above, and remove the bearing and associated gear from the drive shaft. In some cases it will be possible to remove the bearings without removing the shaft from the frame, but in other cases it will be necessary to remove the shaft as outlined above. Remove the gear and spring collet from the defective bearing and insert them in the new bearing, engaging the collet with the collar. Then slip the assembly over the shaft and realign the gear and drive shaft as outlined above.