



# TECHNICAL BULLETIN

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## FIELD INSPECTION AND CORROSION REPAIR – MAIN ROTOR DRIVE SHAFT, PN 369D25510

### 1. PLANNING INFORMATION:

#### A. Models Affected:

All 500D Model 369D Series Helicopters

#### B. Preface:

The information given in this Service Information Notice lists a procedure for field repair of the main rotor drive shaft, if evidence of corrosion pitting through the original phosphate coating on the drive shaft is noted.

#### C. Time of Compliance:

At owners and operators discretion; recommended whenever subject main rotor drive shaft is removed from helicopter

#### D. Weight and Balance:

Weight and balance not affected.

#### E. Reference Publications:

500D Basic HMI- Vol I, Issued 15 September 1976; Revision No. 1, 15 November 1977

MATERIAL	
Nomenclature	Source
1,1,1 Trichloroethane (O-T-620)	Commercial
Surface Cleaner (TT-C-490 or MIL-C-10578, Type II)	Turco Products Inc. Wilmington, CA
Crocus Cloth (P-C-458)	Commercial
Primer, Zinc Chromate (MIL-P-8585)	W.P. Fuller & Co. Los Angeles, CA
Oil Preservative (VV-L-800)	Commercial
Sealing Compound (MIL-S-7502) PR1221 or EP711	Product Research Burbank, CA or Coast ProSeal Compton, CA

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## 2. PROCEDURE

- (1). Remove main rotor drive shaft, per Basic HMI-Vol I.
- (2). Inspect all surfaces of drive shaft for dents, nicks, scratches and evidence of deformation. Inspect splines on end of drive shaft for excessive wear. (Refer to Basic HMI-Vol I. )
- (3). Inspect all external surfaces of shaft for corrosion. Remove corrosion as follows:
  - (a). Degrease corroded area of drive shaft with clean cloth saturated in trichloroethane.

### WARNING

**Surface cleaner irritates hands on repeated exposure. Rubber gloves should be worn.**

- (b). Swab shaft exterior with diluted solution of surface cleaner (mix one part Turco #1 with four parts water). Keep wet with solution for ten minutes, or until corrosion appears to be removed, Wipe, clean and inspect, and repeat as necessary until there is no further evidence of corrosion.
- (c). Rinse with water and dry thoroughly with compressed air.

### CAUTION

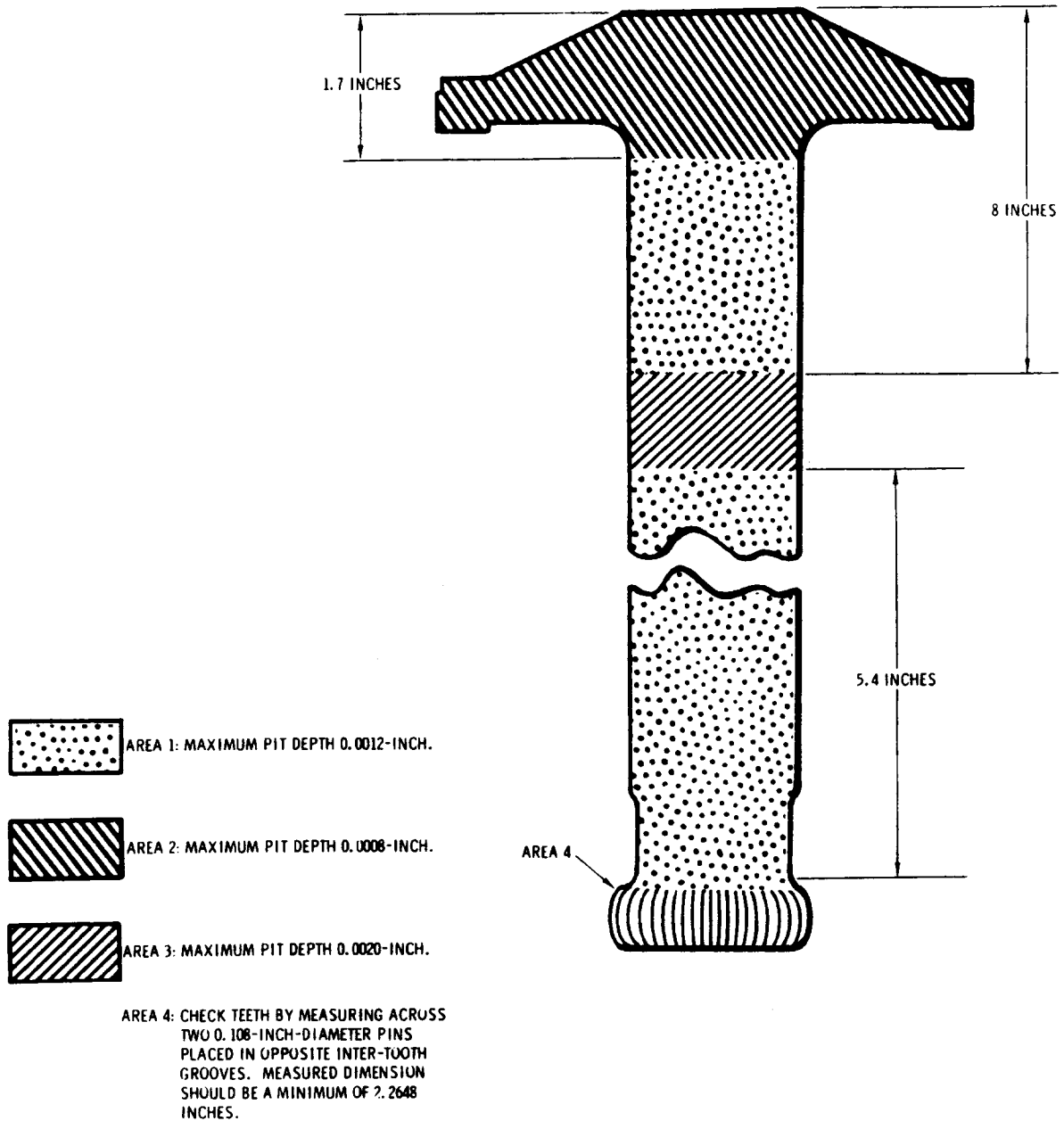
Exercise care when removing pits to ensure that shot peening is not completely penetrated. Also, remove only minimum material necessary to remove pits. Minimum wall thickness of 0.1775 inch must be maintained.

- (d). Lightly abrade corroded surface with crocus cloth to remove pits. If pit removal exceeds depth of 0.0012-inch in Area 1 or 0.0008-inch in Area 2 (See Figure 1), shaft is unserviceable and must be replaced.
  - (e). Repeat 1 through 3 above.
  - (f). Spray two coats of zinc chromate primer on shaft exterior. Do not prime spline teeth or mounting surface.
- (4). Apply preservative oil to spline teeth.
  - (5). Immediately reinstall main rotor drive shaft, per Basic HMI.
  - (6). Apply a 0.06-inch bead of sealing compound around interface of hub and drive shaft.

**NOTE:** Main rotor drive shafts on early Model 500D helicopters have a recessed area at the top of the drive shaft ID to accommodate phasing tool. This recess is no longer required and should be filled to prevent water accumulation and possible corrosion. Clean the recessed area (shaft ID and cork plug) of any dirt, debris, water, etc. and fill recess flush to top of shaft with sealing compound. On late Model 500D helicopters, the cork plug is installed flush with top of shaft to eliminate the recessed area.

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**Figure 1. Inspection and Repair - Main Rotor Drive Shaft**