

## CHAPTER 36

## SPECIAL TOOLS

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**CHAPTER 36****SPECIAL TOOLS****36-10 Special Tools**

The following is a list of Robinson R22-series special tools.

R22-series special tools are to be used in conjunction with the applicable instructions for continued airworthiness, for their designated maintenance task.

### 36-20 Illustrations and Tasks

Refer to Figure 36-1.

Item	Part Number	Description
1	MT016-1	Engine Hoist
2	MT050-1	Main Rotor Rigging Fixture
3	MT050-2	Tail Rotor Rigging Fixture
4	MT053-1	Main Gearbox Drain Assembly – Thread Type Chip Detector
5	MT054-1	Main Gearbox Drain Assembly – Quick Disconnect Chip Detector
6	MT068-1	Horizontal Stabilizer Rigging Tool
7	MT091-1	Holder – Engine Ring Gear (includes MT091-3 decal)
8	MT091-3	Decal (torquing instructions)

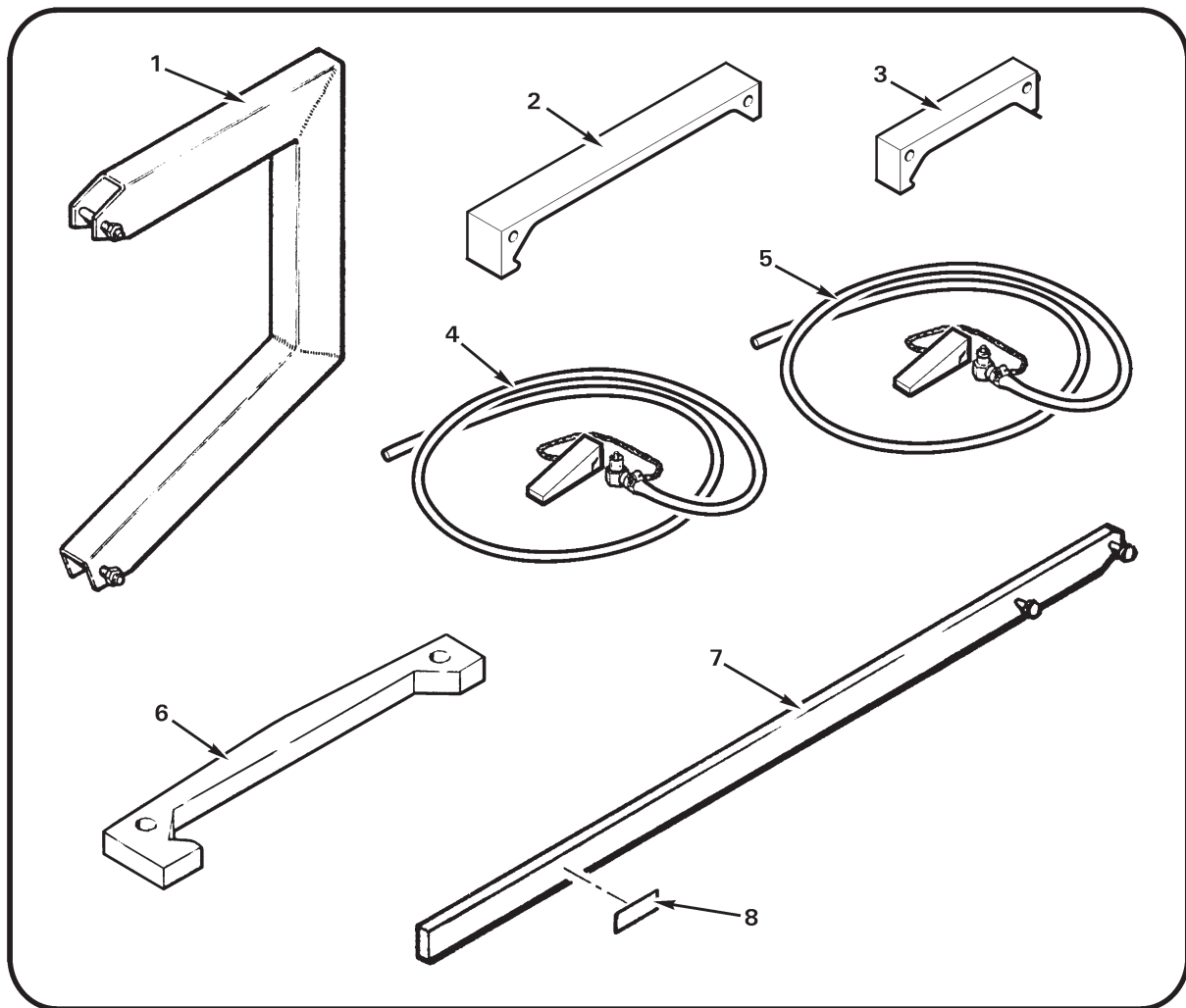


FIGURE 36-1 SPECIAL TOOLS

### 36-20 Illustrations and Tasks (continued)

Refer to Figure 36-2.

Item	Part Number	Description
1	MT092-1	Fan Puller (includes MT092-3 spacer)
2	MT092-3	Spacer – Fan Puller
3	MT122-1	Main Rotor Hub, Bolt Elongation (teeter hinges & A154-1 hub coning hinges)
4	MT122-15	Main Rotor Hub, Bolt Elongation (B370-1 hub coning hinges)
5	MT146-1	Blocks – Swashplate Rigging (set of 2)
6	MT147-1	Bleed Tool – Main Rotor Blade Spindle
7	MT173-4	Socket – 1-11/16 (3/4-inch drive, 12-point)
8	MT173-5	Torque Wrench Extension – Tool Set (no longer available)
9	MT173-6	Tube Weldment (no longer available)
10	MT173-7	Socket – 1-1/2-inch (3/4-inch drive, 12-point)
11	MT173-8	Socket – 2-inch (3/4-inch drive, 12-point)

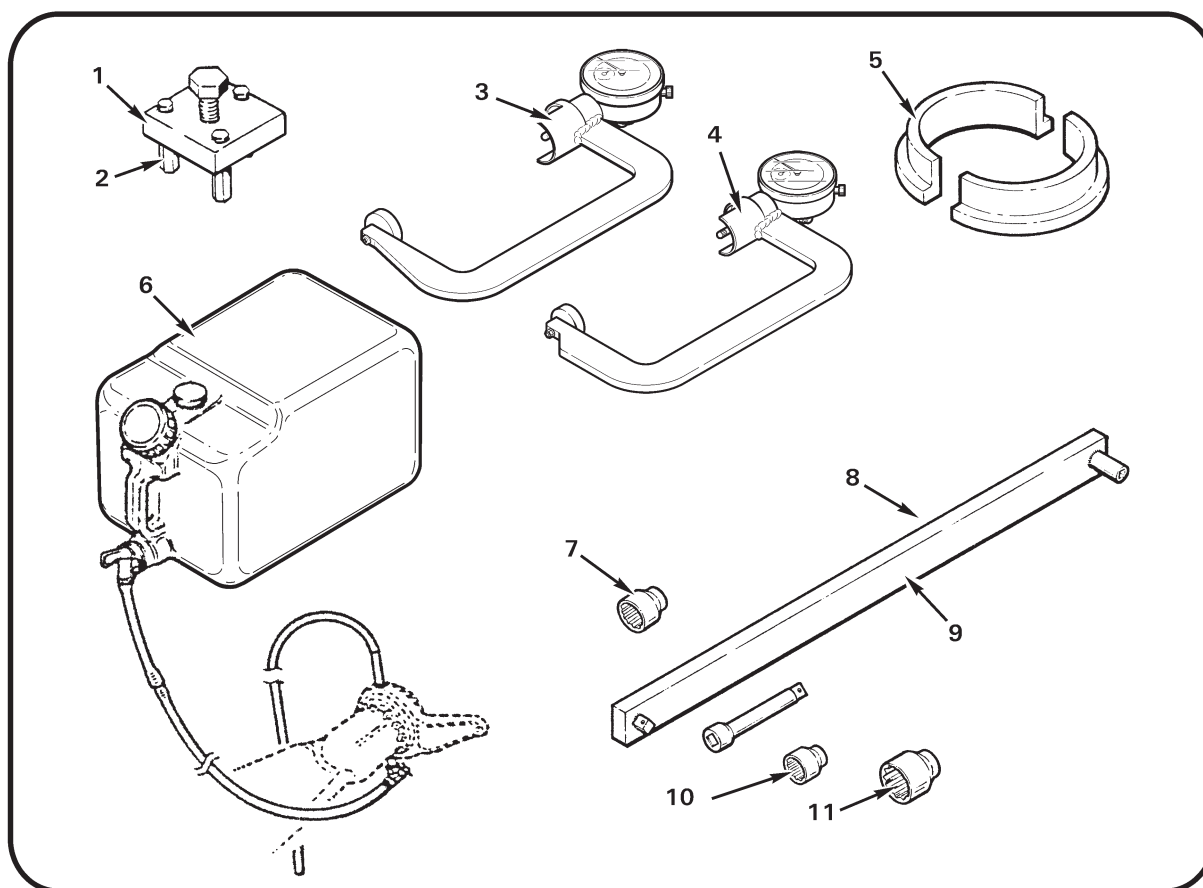
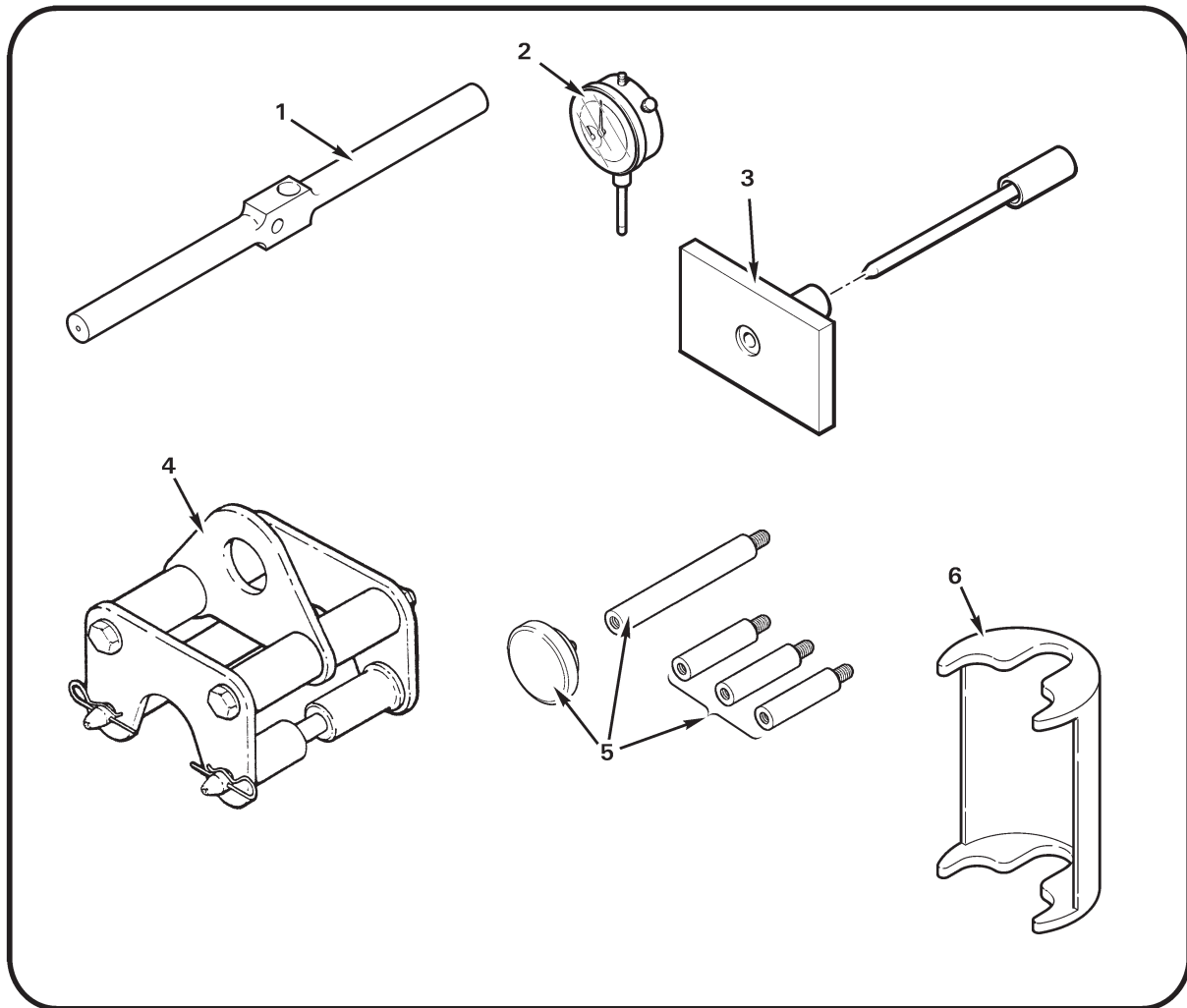


FIGURE 36-2 SPECIAL TOOLS

### 36-20 Illustrations and Tasks (continued)

Refer to Figure 36-3.

Item	Part Number	Description
1	MT179-4	Balancing Bar – Tail Rotor Assembly Static Balance
2	MT200-1	Dial Indicator
3	MT201-1	Pressing Fixture – Tail Rotor Hub Bearing
4	MT234-1	Helicopter Lifting Fixture
5	MT260-6	Tail Rotor Drive Shaft Runout Attachments Kit
6	MT294-1	Collective Spring Retainer



**FIGURE 36-3 SPECIAL TOOLS**

### 36-20 Illustrations and Tasks (continued)

Refer to Figure 36-4.

Item	Part Number	Description
1	MT295-1	Tail Rotor Gearbox Output Shaft Seal Replacement Tools (includes items 2, 3, 4, and Figure 36-9 item 5)
2	MT295-3	Punch
3	MT295-6	Screw
4	MT295-10	Mandrel
5	MT303-1	Clutch Bearing (A184) Removal and Installation Tools
6	MT303-3	Clutch Bearing (A184) Removal and Installation Tools (use with MT303-1 tools when hydraulic press is unavailable)

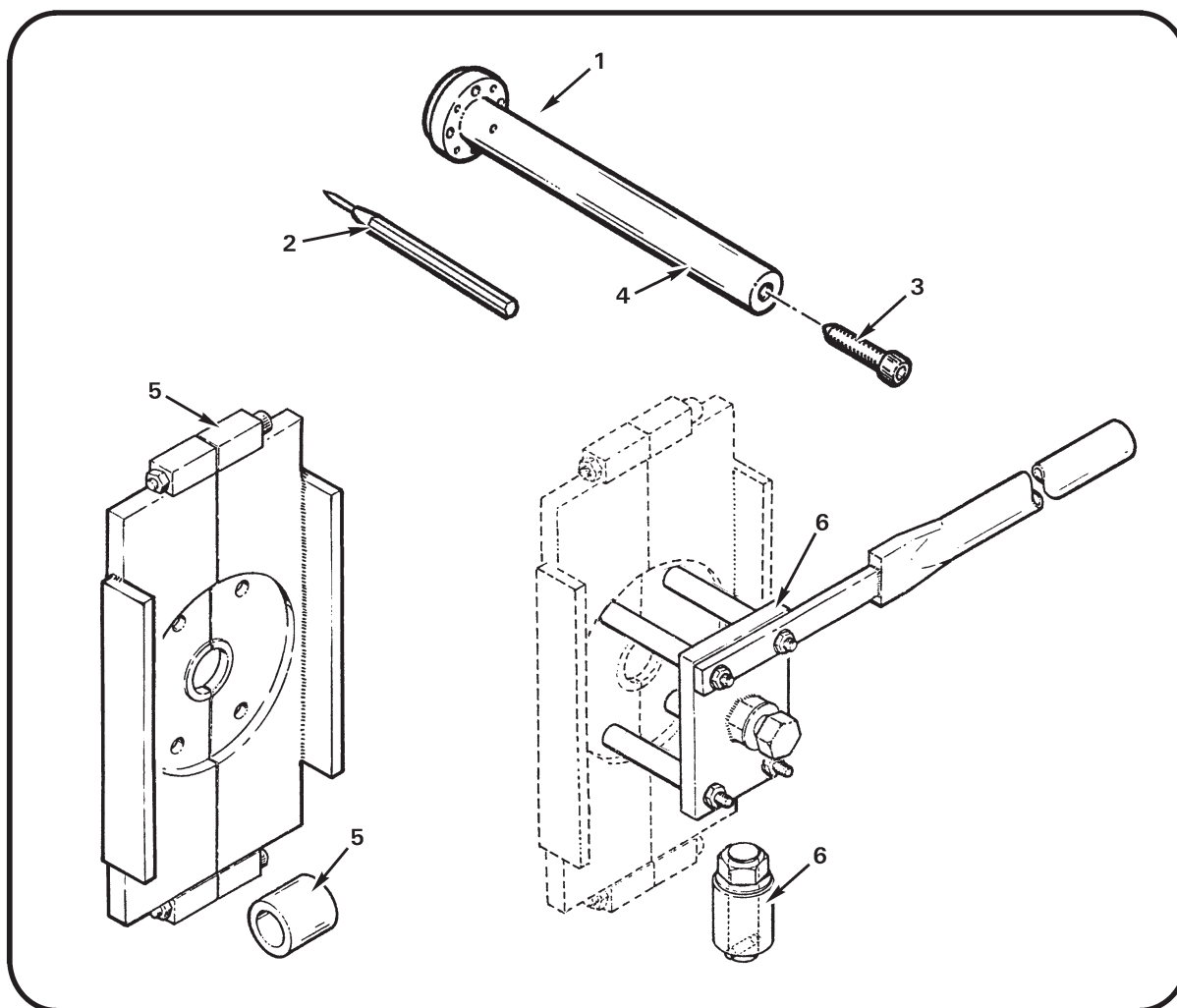


FIGURE 36-4 SPECIAL TOOLS

### 36-20 Illustrations and Tasks (continued)

Refer to Figure 36-5.

Item	Part Number	Description
1	MT329-1	Plug Assembly (A648-1 or A648-3 Bearings)
2	MT329-2	Support Weldment (A154-1 Hub)
3	MT329-8	Plug – Main Rotor Hub Bearing Installation
4	MT329-10	Tube
5	MT329-11	Plug Assembly (A648-2 Bearings)
6	MT329-13	Support Weldment
7	MT331-4	Sheave Alignment Bar
8	MT352-1	Main Rotor Blade Trim Tab Gage (includes MT200-1 dial indicator)
9	MT354-1	Teeter Moment Tool (no longer available; replaced by MT354-7)
10	MT354-7	Teeter Moment Tool (R22, R44, R66)

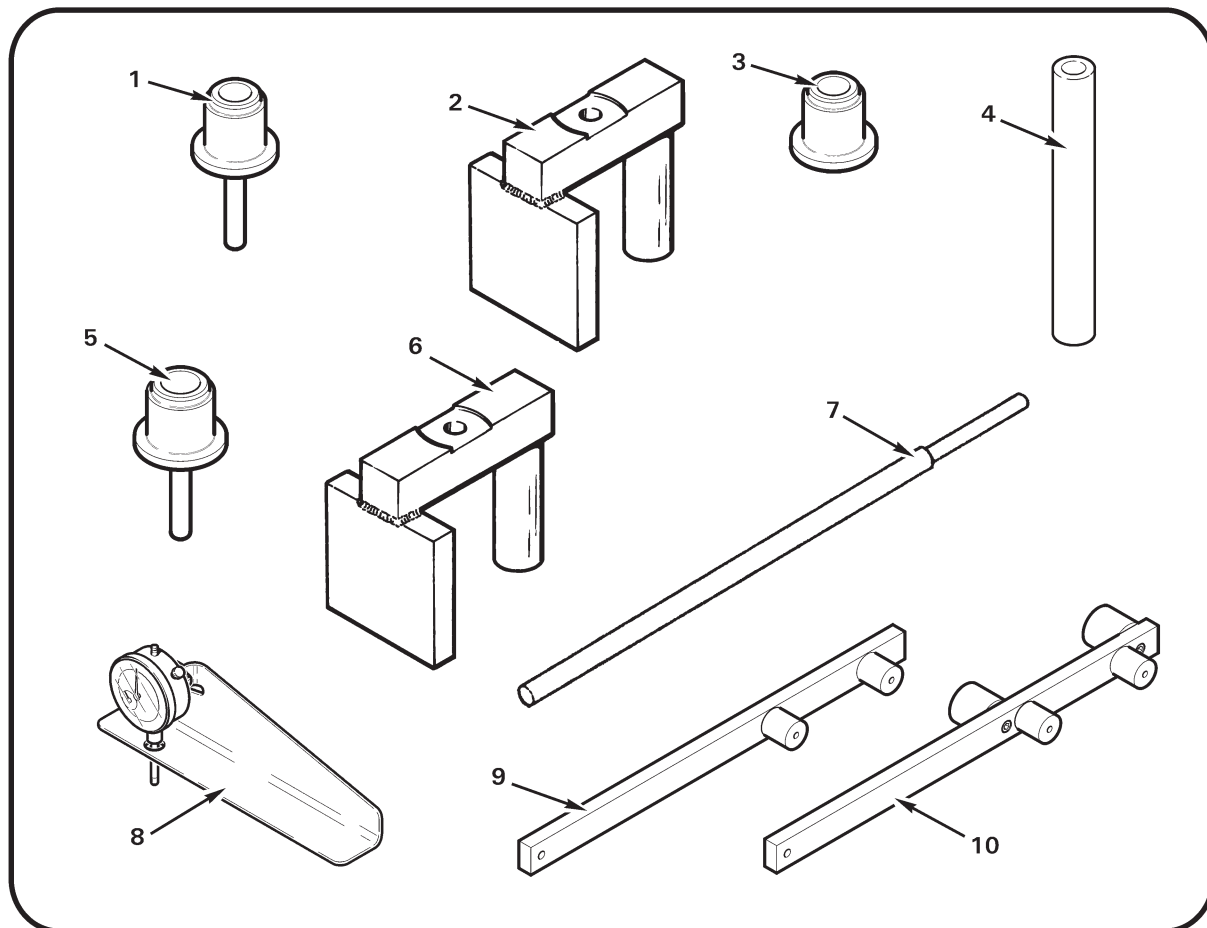


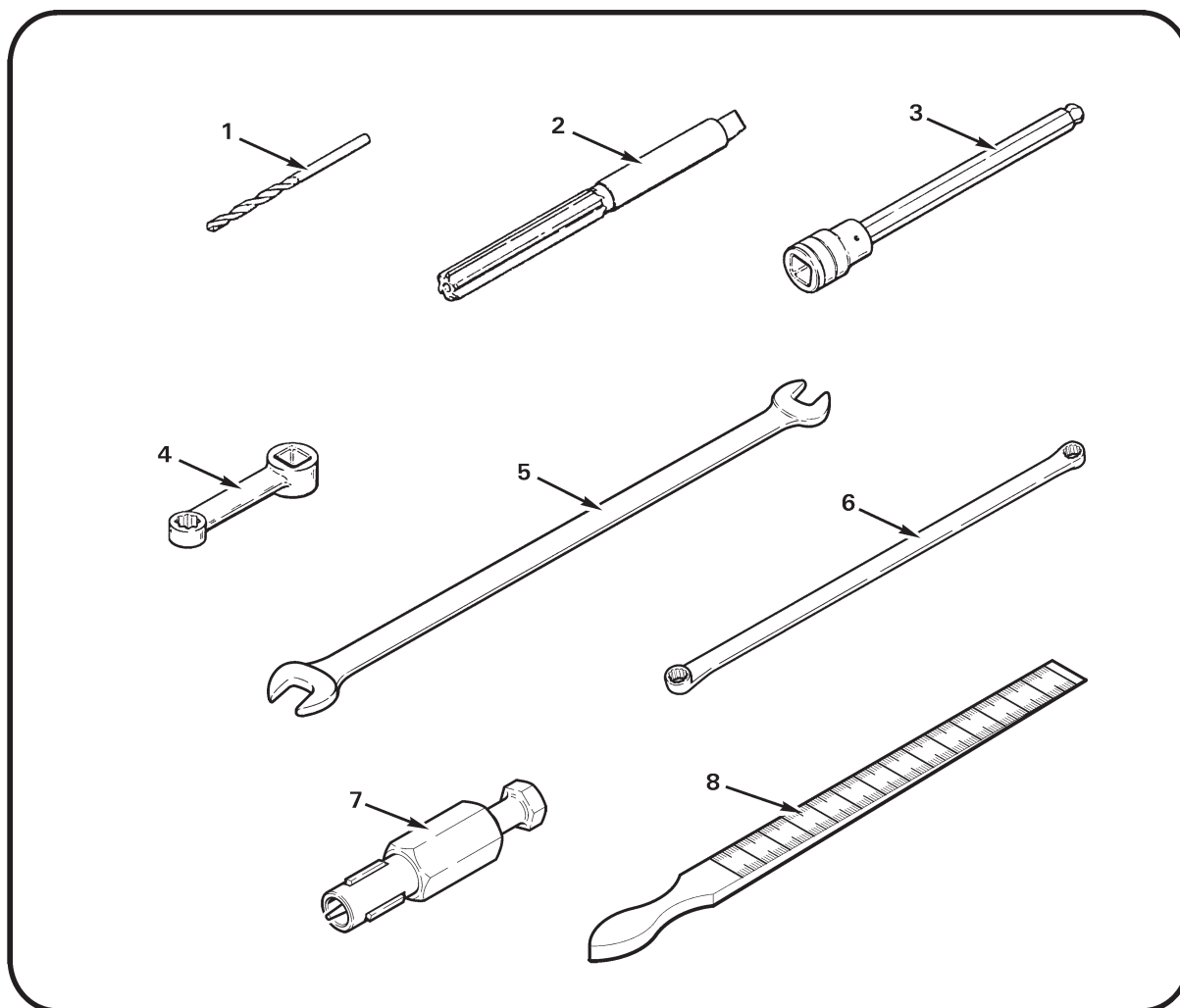
FIGURE 36-5 SPECIAL TOOLS



### 36-20 Illustrations and Tasks (continued)

Refer to Figure 36-6.

Item	Part Number	Description
1	MT357-1	0.125-inch dia. Cobalt Drill Bit
2	MT357-2	0.375-inch diameter Reamer
3	MT357-4	Hex Driver (Snap-On Part No. FABL8)
4	MT357-5	Torque Adapter (Snap-On Part No. FRDH101)
5	MT357-6	Wrench (Open end; Snap-On Part No. LTA1214)
6	MT357-7	Wrench (Box end; Snap-On Part No. XDH78A)
7	MT357-8	Nipple Chuck
8	MT357-9	Taper Gage

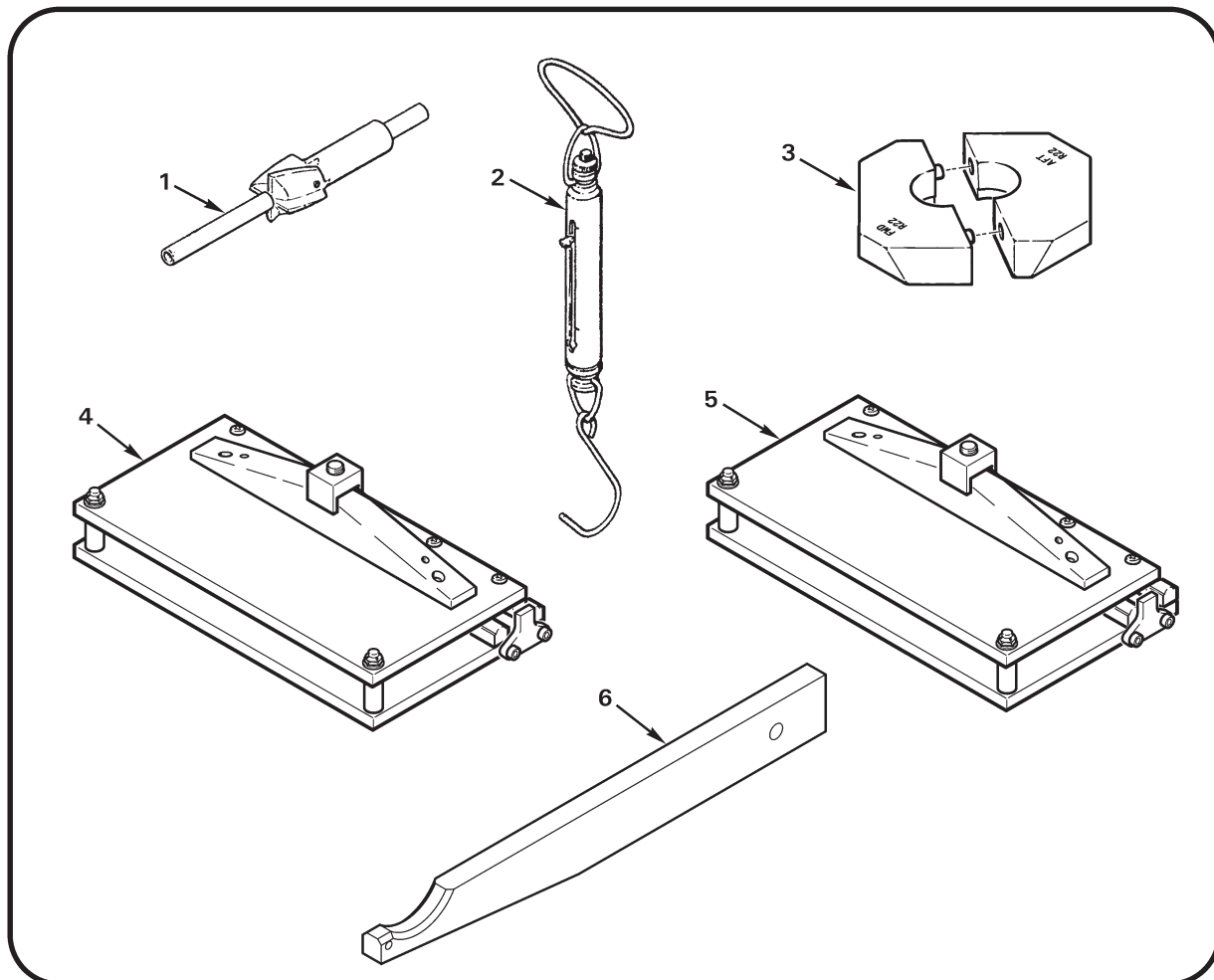


**FIGURE 36-6 SPECIAL TOOLS**

### 36-20 Illustrations and Tasks (continued)

Refer to Figure 36-7.

Item	Part Number	Description
1	MT358-1	0.750-inch dia. Spot-Facing Tool
2	MT359-1	Spring Scale (0-30 lb)
3	MT376-1	Blocks – Main Rotor Rigging (set; holds cyclic in neutral position)
4	MT526-1	<b>OBSOLETE</b> , ref only, for A016-4 Main Rotor Blade only, Trim Tab Bender
5	MT526-8	A016-6 Main Rotor Blade Trim Tab Bender (aluminum skin)
6	MT548-8	Engine Hoist – Fitting



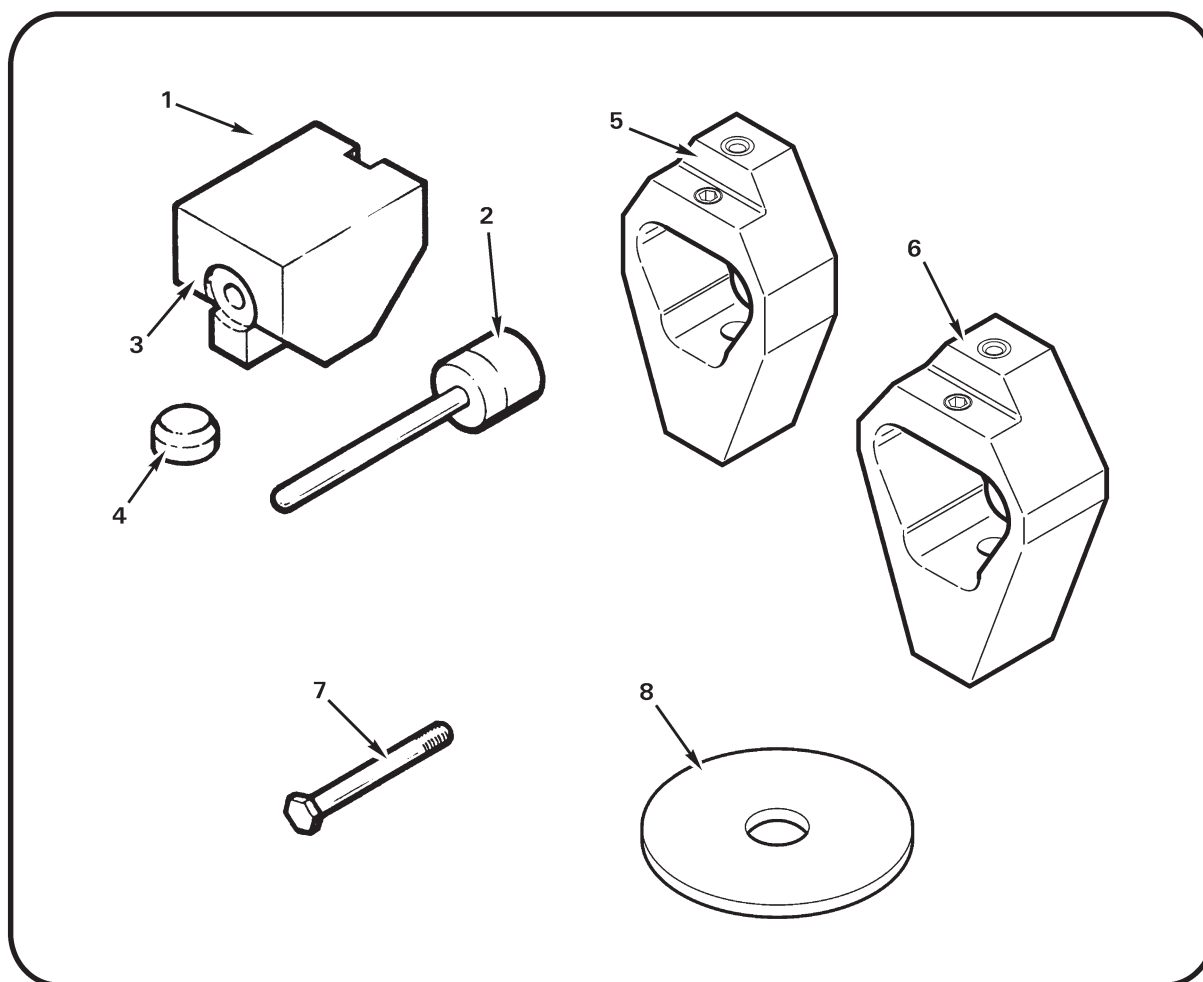
**FIGURE 36-7 SPECIAL TOOLS**

### 36-20 Illustrations and Tasks (continued)

Refer to Figure 36-8.

Item	Part Number	Description
1	MT556-1	Tail Rotor Elastomeric Bearing Replacement Tools (includes items 2 thru 4, and 7)
2	MT556-2	Mandrel Assembly
3	MT556-5	Support
4	MT556-6	Cap
5	MT569-1	Main Rotor Bolt Drilling Fixture (teeter hinge & A154-1 hub coning hinge bolts)
6	MT569-6	Main Rotor Bolt Drilling Fixture (B370-1 hub coning hinge bolts)
7	AN4-25A	Bolt
8	AN970-4*	Washer – Tap Test Tool

\* Or 1965 or later U.S. quarter dollar coin in good condition.



**FIGURE 36-8 SPECIAL TOOLS**

### 36-20 Illustrations and Tasks (continued)

Refer to Figure 36-9.

Item	Part Number	Description
1	2020HR	ACES Probalancer Analyzer (or equivalent dynamic balancer)
2	60297-12	Engine Operator's Manual (O-360 engine; refer to Lycoming Service Letter No. L114)
3	60297-30	Engine Operator's Manual (O-320 engine; refer to Lycoming Service Letter No. L114)
4	9HT4441	Extension Bar (3/4 square drive x 8 inch)
5	92470A113	Screws (#4 x 0.75 inch)

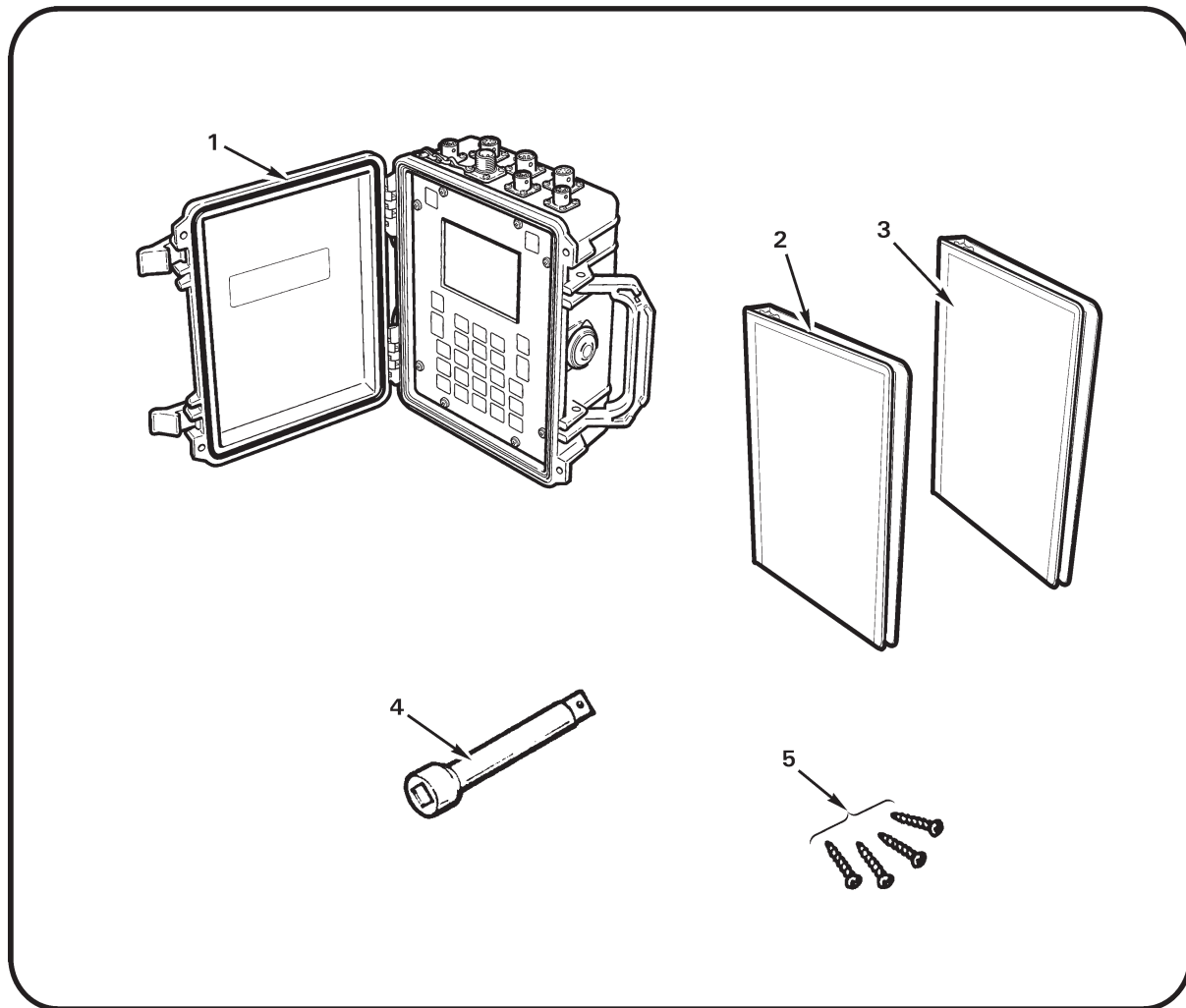


FIGURE 36-9 SPECIAL TOOLS