COOPER Tools

Parts Manual • Ersatzteil–Liste

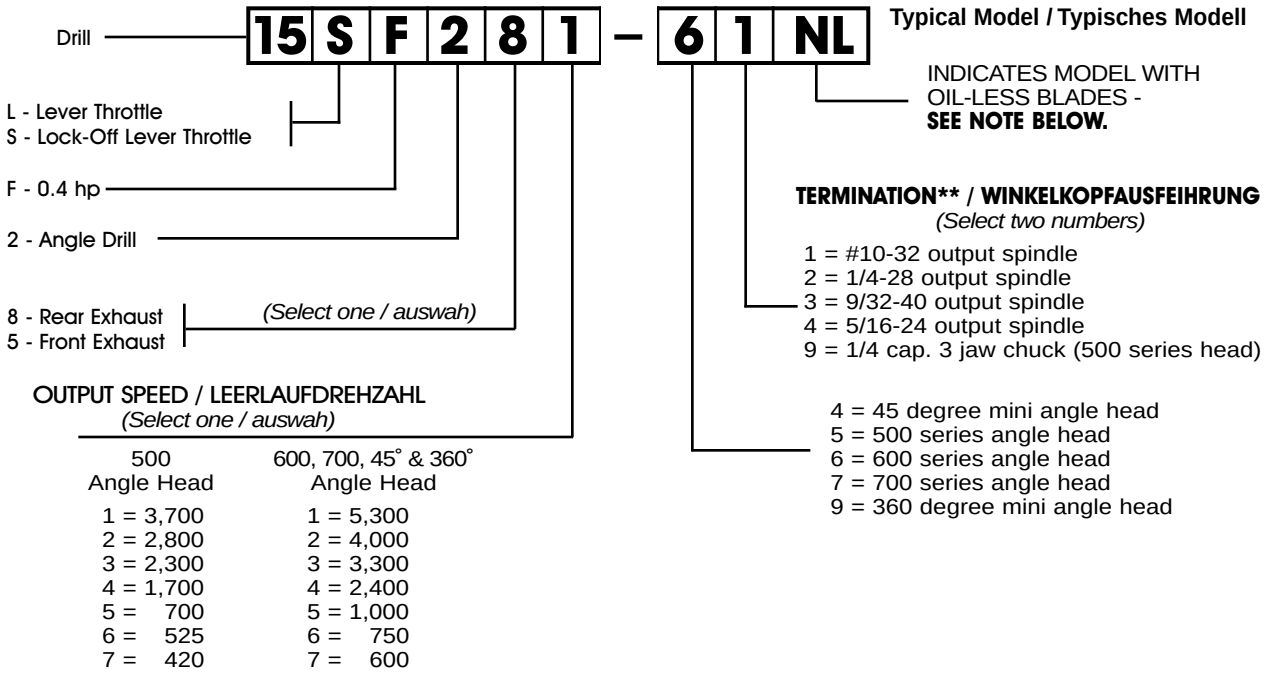
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DOTCO®

45-8422

Model: **15LF2.. & 15SF2..**

0.4 hp ERGO Angle Drills



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CooperTools
P.O. BOX 1410
Lexington, South Carolina 29071-1410

ANGLE HEAD GEARING

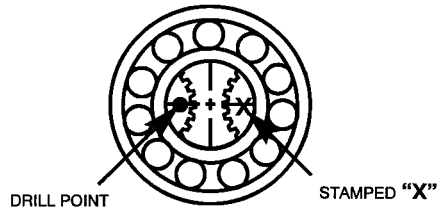
When angle head gearing is replaced, wipe on a thin coat of Molykote, grade G; only a small amount is necessary. An 8 ounce tube is available under part number 540394.

CAUTION *Do not use substitutes for oil and grease. This could result in damage to the tool.*

SPEED CODE "4" ONLY: Timing of the Step Reduction Gear Assembly:

Assemble the planet gears into the planet cage, making sure the notched planet pins fit over the planet cage washer. Rotate each gear until the aligning hole — on the end of one gear — is diametrically opposite the **"X"** mark of the other gear. Hold the gears in this position and slip the planet cage into the internal gear. It's important to avoid "wiping out" the gear teeth.

This is the only position where the gear teeth are lined up.



MOTOR REASSEMBLY

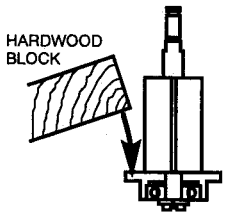
1. Install ball bearings into both the front and rear plates.
2. Assemble rotor to rear plate/bearing assembly with the rotor's retaining screw. **Position and set the rotor as close as possible to the rear plate, without dragging or rubbing.**

a. A good practice is to stone the blade slots and polish the ends with a medium grit emery cloth.
b. Assemble components making sure the bearing is firmly seated in the rear plate

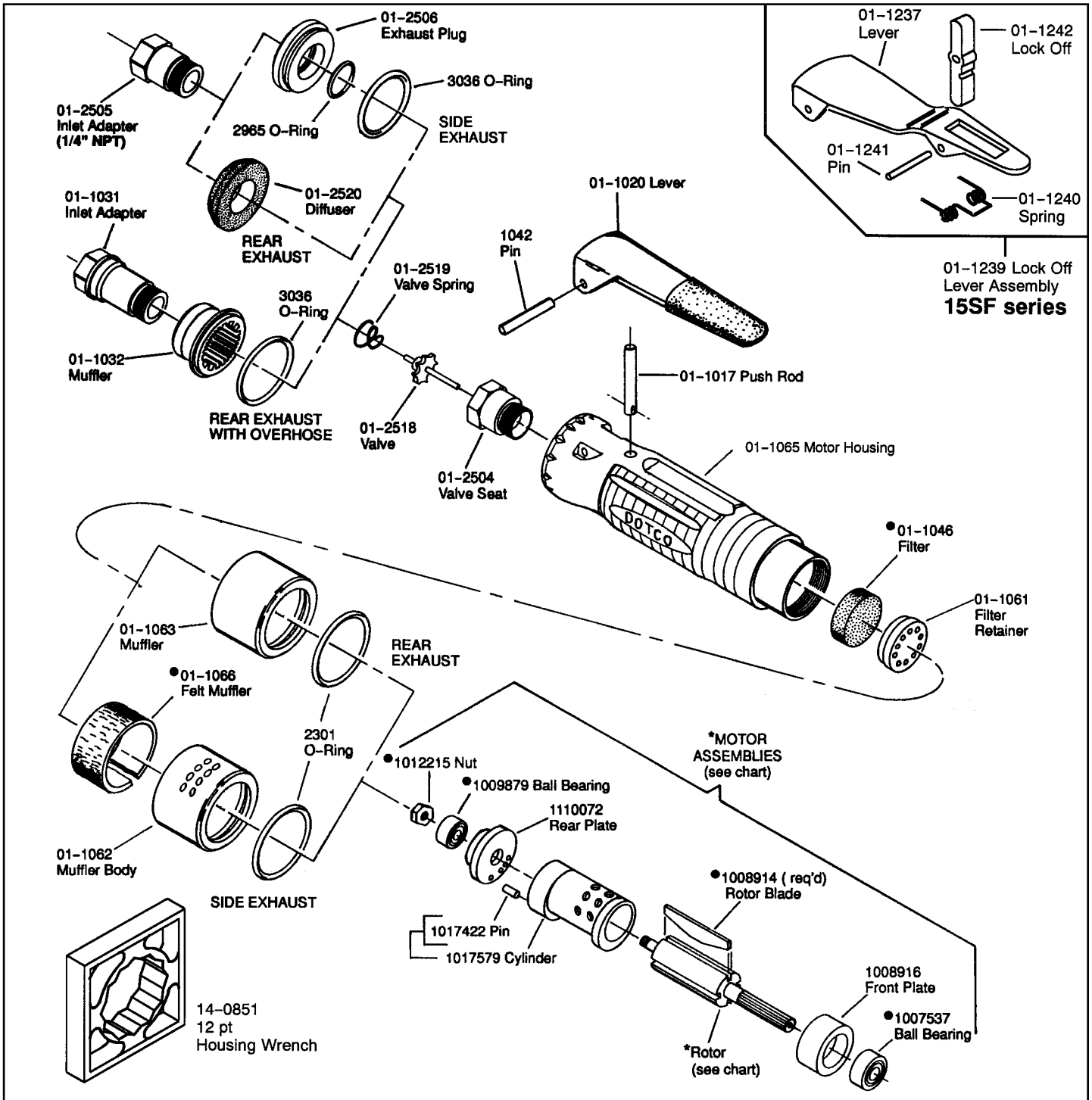
3. Begin tightening rotor screw without over-tightening to avoid damaging the ball bearing. Alternately spin the rotor while tightening until clearance is judged to be proper—**about 0.001" clearance.**
One method, shown below, is to hold the rotor/rear plate assembly verticaly (plate downward) and strike the edge of the plate with a wood block.

Begin tightening rotor nut without over-tightening to avoid damaging the ball bearing. Alternately spin the rotor while tightening until clearance is judged to be proper—**about 0.001" clearance.**

Hold the rotor/rear plate assembly vertically (plate downward) and strike the edge of the plate with a wood block.



DOTCO
Motor & Motor Housing Assemblies

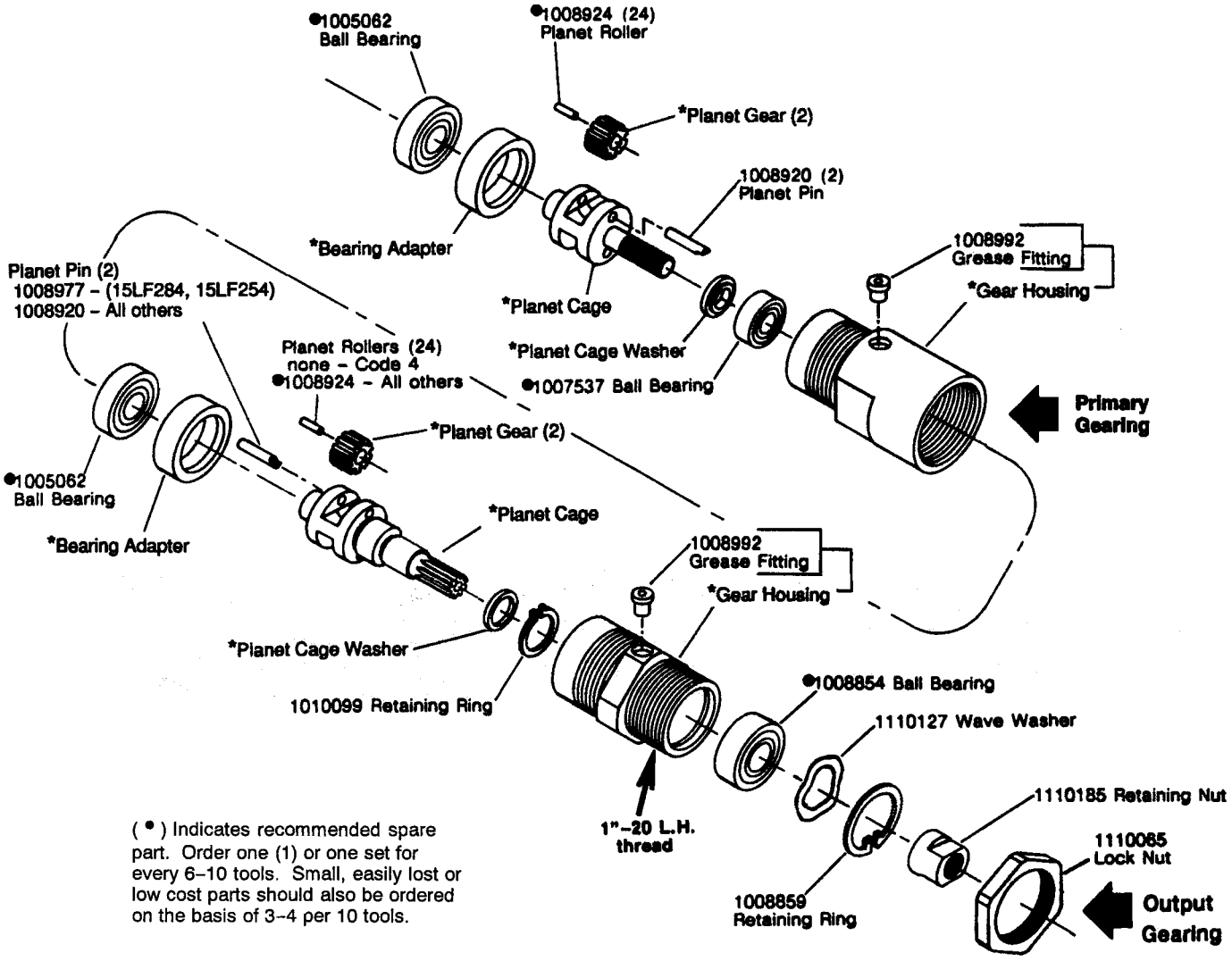


(*) Motor Chart

MODEL:	15LF251 15LF281	15LF252 15LF282	15LF253 15LF283	15LF254 15LF284	15LF255 15LF285	15LF256 15LF286	15LF257 15LF287
rpm – TERM. 50 series:	*3320*	*2450*	*1950*	*1475*	*630*	*450*	*350*
rpm – TERM. 40, 60, 70, 90 series:	*4750*	*3500*	*2800*	*2100*	*900*	*650*	*500*
PART NAME:							
Rotor *(Num. teeth)*	1015872 *(9T)*	1017518 *(7T)*	1017517 *(6T)*	1017516 *(5T)*	1015872 *(9T)*	1017518 *(7T)*	1017517 *(6T)*
Motor Assembly (complete)	1025550	1025554	1025552	1025556	1025550	1025554	1025552

(●) Indicates recommended spare part. Order one (1) or one set for every 6–10 tools. Small, easily lost or low cost parts should also be ordered on the basis of 3–4 per 10 tools.

DOTCO
Planetary Gearing



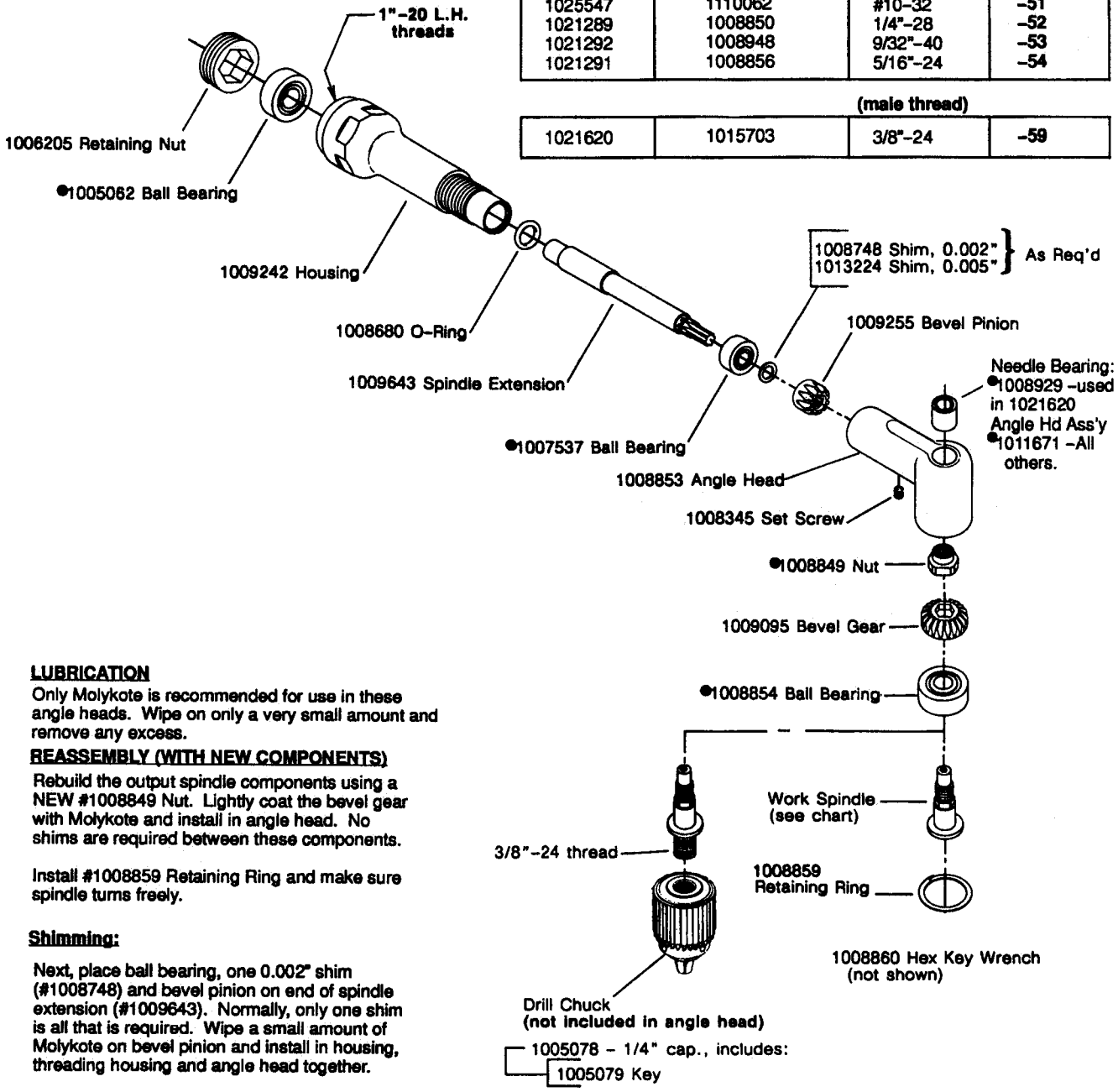
(•) Indicates recommended spare part. Order one (1) or one set for every 6–10 tools. Small, easily lost or low cost parts should also be ordered on the basis of 3–4 per 10 tools.

(*)

MODEL:	15LF281 15LF251	15LF282 15LF252	15LF283 15LF253	15LF284 15LF254	15LF285 15LF255	15LF286 15LF256	15LF287 15LF257
Part Name	Single Reduction				Double Reduction		
	OUTPUT PLANETARY				*OUTPUT PLANETARY*		
Planet Cage Washer (inside diameter)	1110054 (0.486")	1110055 (0.534")	1110056 (0.511")	1110055 (0.534")	1110054 (0.486")	1110054 (0.486")	1110054 (0.486")
Gear Housing (num. teeth)	1110046 (39T)	1110047 (43T)	1110048 (46T)	1110049 (37T)	1110046 (39T)	1110046 (39T)	1110046 (39T)
Planet Cage	1110223	1110225	1110224	1110233	1110233	1110233	1110233
Planet Gears (2 each)	1008973 (14T)	1008968 (17T)	1008919 (19T)	1008973 (13T/19T)	1008973 (14T)	1008973 (14T)	1008973 (14T)
Bearing Adapter	—	—	1008921	1008921	—	—	—
					PRIMARY PLANETARY		
Gear Housing (num. teeth)	—	—	—	—	1019146 (39T)	1019147 (43T)	1019148 (46T)
Planet Cage Washer	—	—	—	—	1008986	1009680	1009682
Planet Cage	—	—	—	—	1008985	1009679	1009681
Planet Gears (2 each)	—	—	—	—	1008973 (14T)	1008968 (17T)	1008919 (19T)
Bearing Adapter	—	—	—	—	—	—	1008921

DOTCO
90° Heavy Duty Angle Heads

Angle Head Assembly Part Number	Assembly Includes Output Spindle Part Number	Spindle Thread Size (internal)	Termination Code
1025547	1110062	#10-32	-51
1021289	1008850	1/4"-28	-52
1021292	1008948	9/32"-40	-53
1021291	1008856	5/16"-24	-54
		(male thread)	
1021620	1015703	3/8"-24	-59



LUBRICATION

Only Molykote is recommended for use in these angle heads. Wipe on only a very small amount and remove any excess.

REASSEMBLY (WITH NEW COMPONENTS)

Rebuild the output spindle components using a NEW #1008849 Nut. Lightly coat the bevel gear with Molykote and install in angle head. No shims are required between these components.

Install #1008859 Retaining Ring and make sure spindle turns freely.

Shimming:

Next, place ball bearing, one 0.002" shim (#1008748) and bevel pinion on end of spindle extension (#1009643). Normally, only one shim is all that is required. Wipe a small amount of Molykote on bevel pinion and install in housing, threading housing and angle head together.

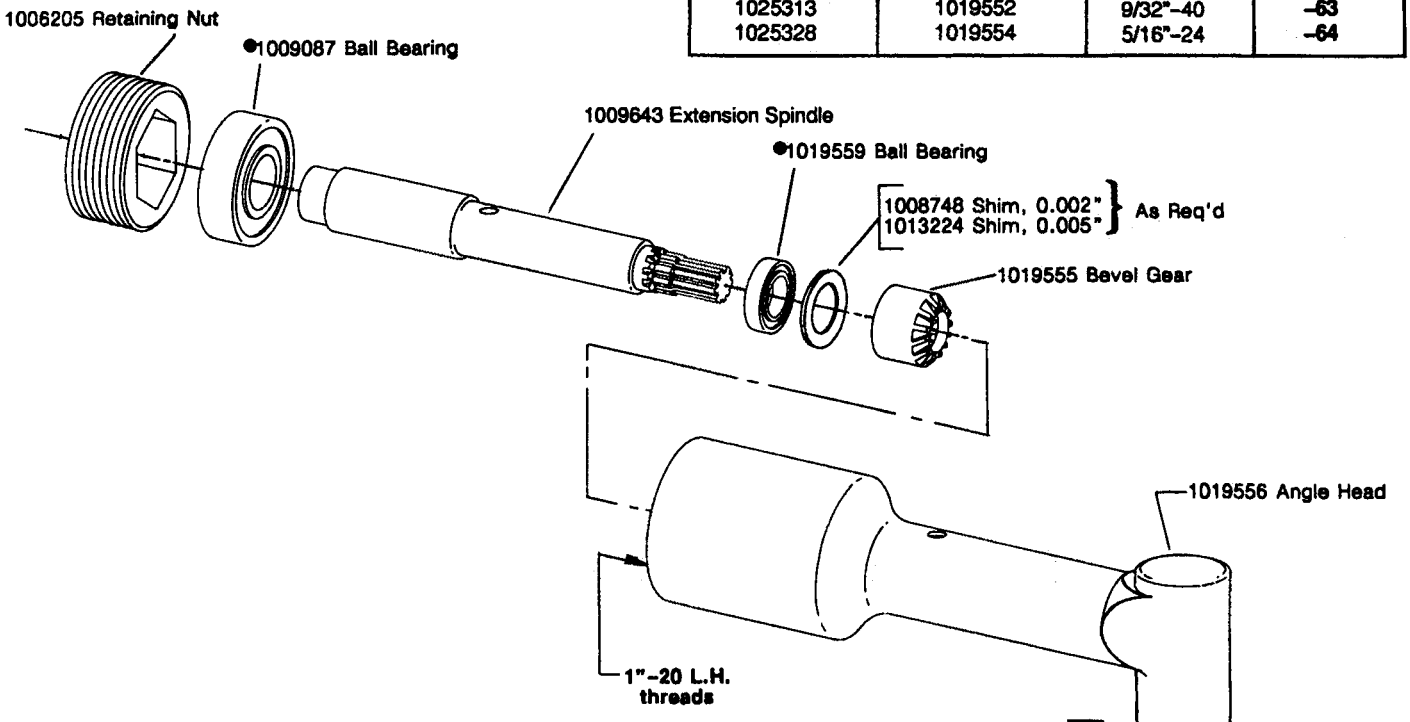
Checking gear mesh:

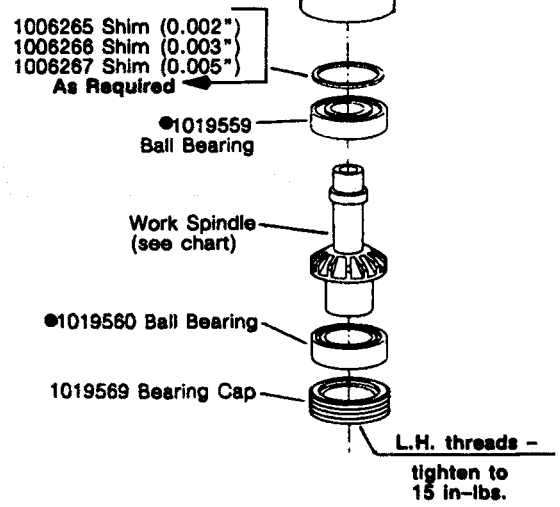
Hold end of spindle extension with fingers and turn output spindle back-and-forth. Acceptable play is **0.005", or less.** Add only one shim at a time (or take out one shim) until play is correct.

(•) Indicates recommended spare part. Order one (1) or one set for every 6-10 tools. Small, easily lost or low cost parts should also be ordered on the basis of 3-4 per 10 tools.

DOTCO
90° Miniature Angle Heads

Angle Head Assembly Part Number	Assemblies Include Output Spindle Part Number	Spindle Thread Size (internal)	Termination Code
1025314	1019553	#10–32	–61
1025409	1019551	1/4"–28	–62
1025313	1019552	9/32"–40	–63
1025328	1019554	5/16"–24	–64





LUBRICATION

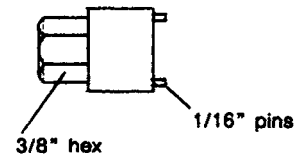
Only Molykote is recommended for use in these angle heads. Wipe on only a very small amount and remove any excess.

REASSEMBLY (WITH NEW COMPONENTS)

1. Start with one only 0.002" shim (part #1006265) above work spindle in bearing pocket. Assemble all output spindle components, applying Molykote, then tighten bearing cap to 15 inch–pounds torque.

   This is for **END PLAY** only. With too much play, take out the 0.003" shim. A slight back–and–forth amount of play is acceptable and necessary.
2. Assemble all remaining components and check gear "shake". This is for **GEAR MESH** which should be no more than 0.005".
3. Be sure to apply Molykote before assembly.

EXTRA EQUIPMENT:

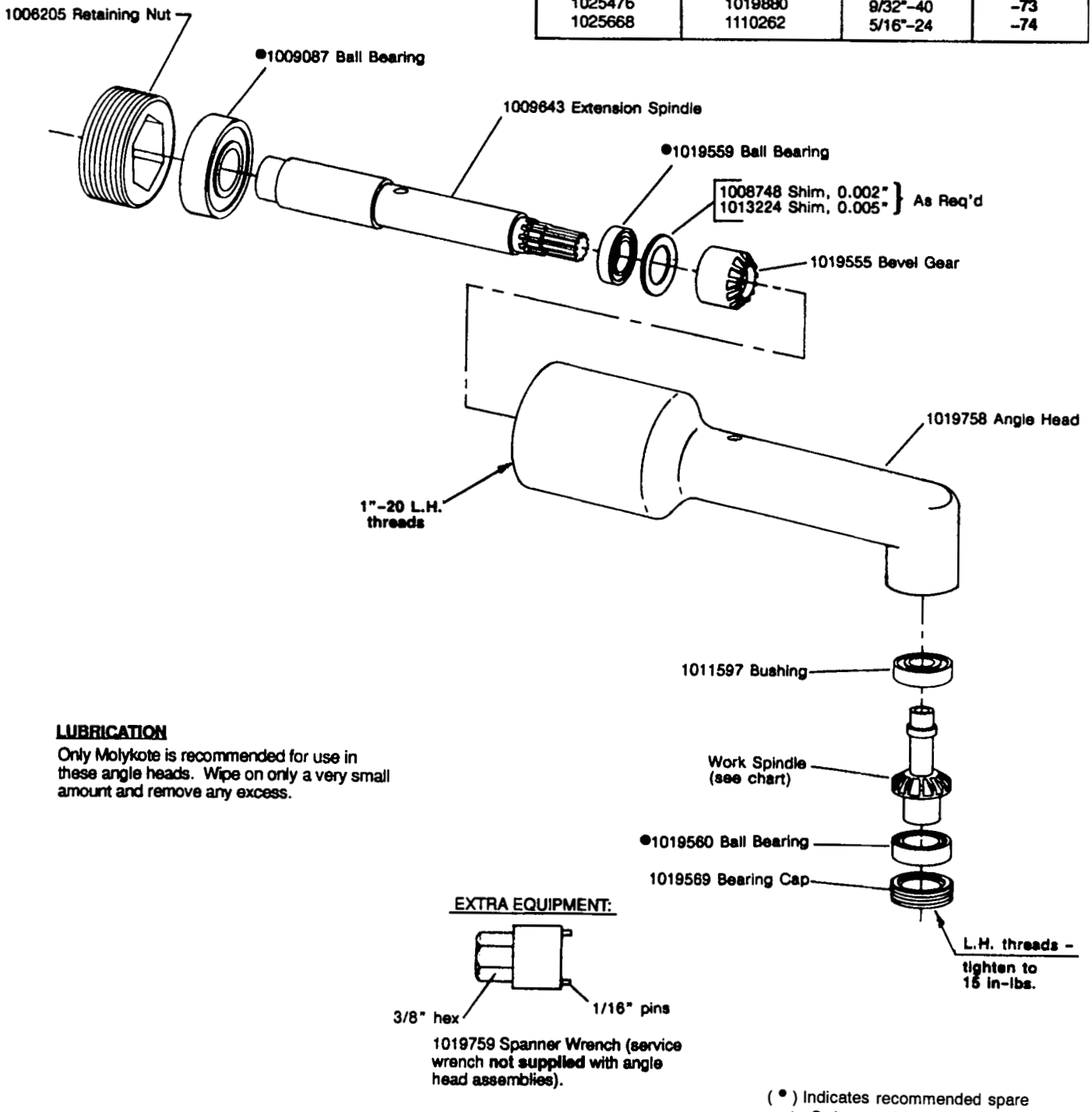


1019759 Spanner Wrench (service wrench **not supplied** with angle head assemblies).

(•) Indicates recommended spare part. Order one (1) or one set for every 6–10 tools. Small, easily lost or low cost parts should also be ordered on the basis of 3–4 per 10 tools.

DOTCO
90º Compact Angle Heads

Angle Head Assembly Part Number	Assemblies Include Output Spindle Part Number	Spindle Thread Size (Internal)	Termination Code
1025667	1110261	#10–32	–71
1025477	1019879	1/4"–28	–72
1025476	1019880	9/32"–40	–73
1025668	1110262	5/16"–24	–74



LUBRICATION

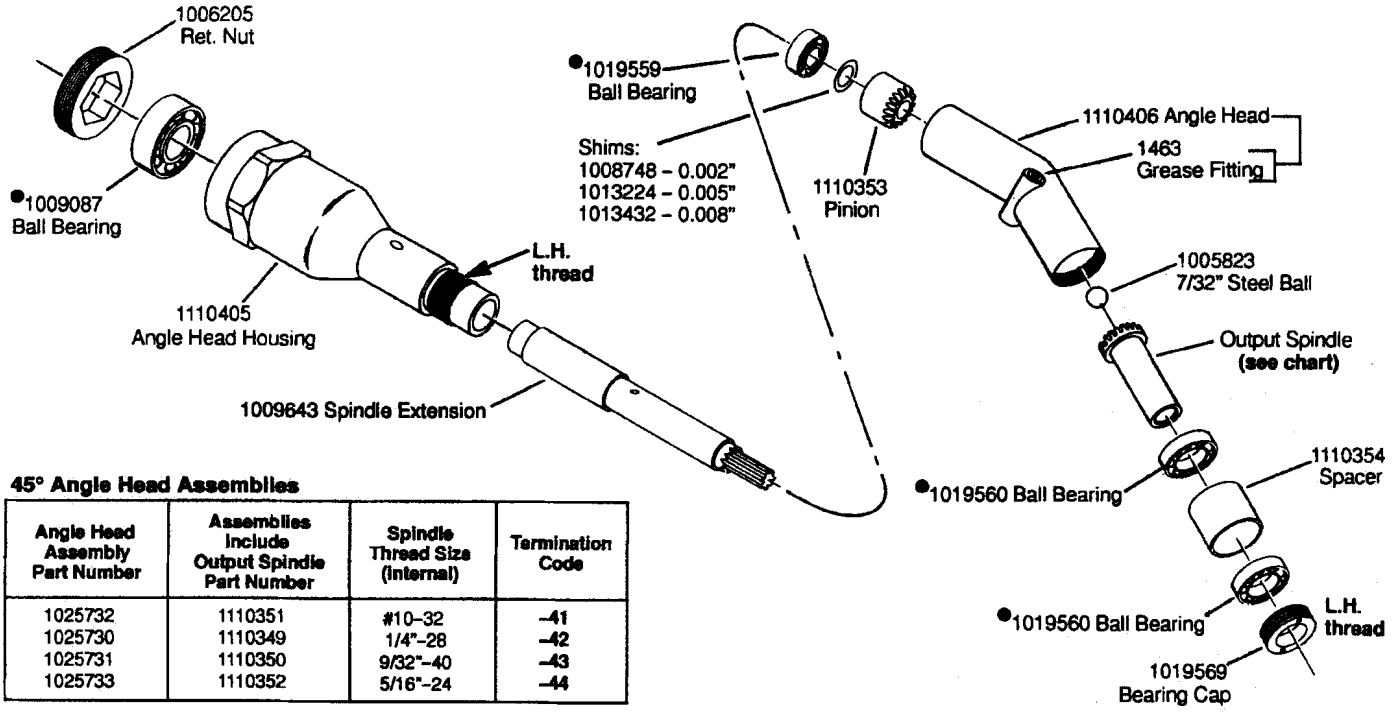
Only Molykote is recommended for use in these angle heads. Wipe on only a very small amount and remove any excess.

(●) Indicates recommended spare part. Order one (1) or one set for every 6–10 tools. Small, easily lost or low cost parts should also be ordered on the basis of 3–4 per 10 tools.

DOTCO
Model 15LF series (0.4 hp) Angle Heads

45° Mini Angle Head

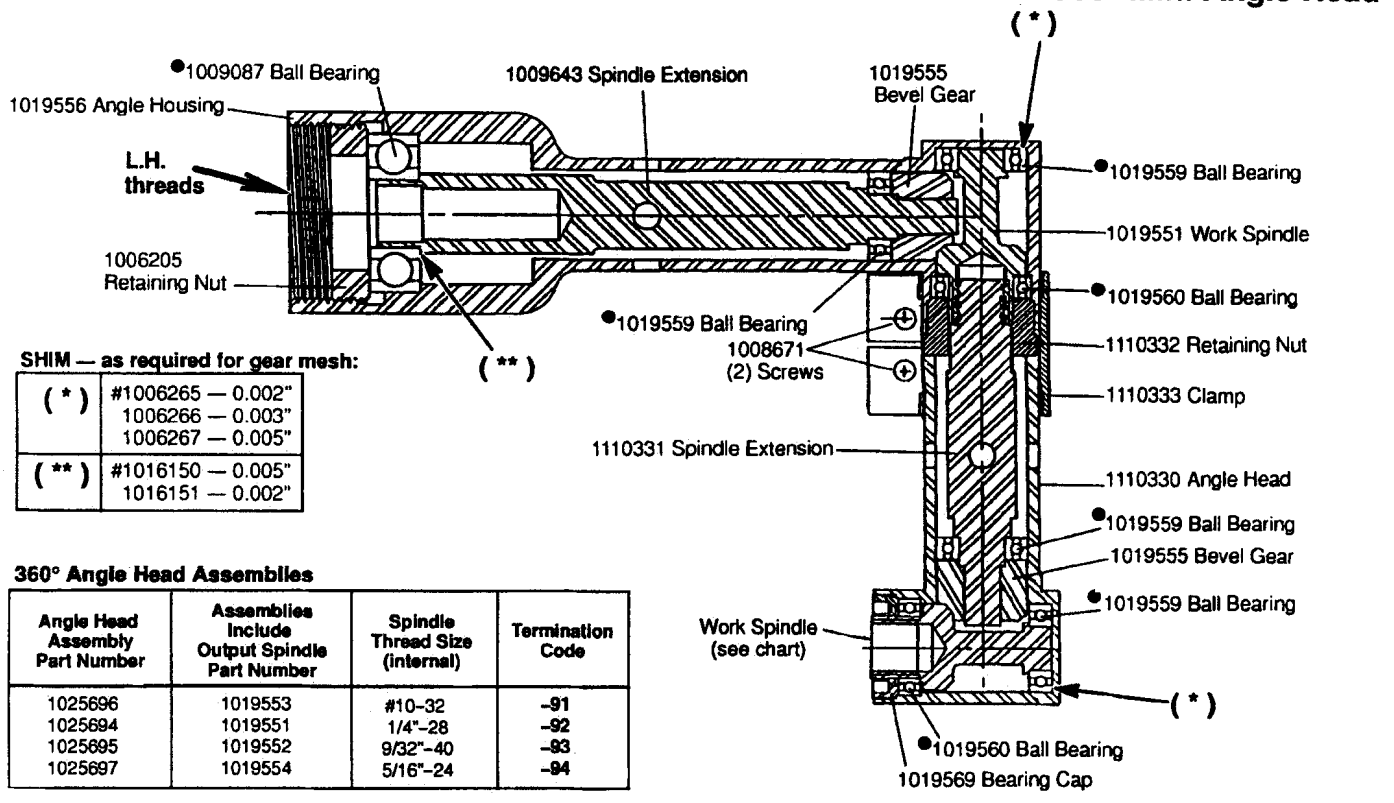
(•) Indicates recommended spare part. Order one (1) or one set for every 6–10 tools. Small, easily lost or low cost parts should also be ordered on the basis of 3–4 per 10 tools.



45° Angle Head Assemblies

Angle Head Assembly Part Number	Assemblies Include Output Spindle Part Number	Spindle Thread Size (internal)	Termination Code
1025732	1110351	#10–32	–41
1025730	1110349	1/4"–28	–42
1025731	1110350	9/32"–40	–43
1025733	1110352	5/16"–24	–44

360° Mini Angle Head



SHIM — as required for gear mesh:

(*)	#1006265 — 0.002" 1006266 — 0.003" 1006267 — 0.005"
(**)	#1016150 — 0.005" 1016151 — 0.002"

360° Angle Head Assemblies

Angle Head Assembly Part Number	Assemblies Include Output Spindle Part Number	Spindle Thread Size (internal)	Termination Code
1025696	1019553	#10–32	–91
1025694	1019551	1/4"–28	–92
1025695	1019552	9/32"–40	–93
1025697	1019554	5/16"–24	–94