DANA SPICER®
Off-Highway Products

Service Manual

Gear Box
401

GSM-0019E
June 2014

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INTRODUCTION

The efficiency and continued operation of mechanical units depend on constant, correct maintenance and also on efficient repair work, should there be a break-down or malfunction. The instructions contained in this manual have been based on a complete overhaul of the unit. However, it is up to the mechanic to decide whether or not it is necessary to assemble only individual components, when partial repair work is needed. The manual provides a quick and sure guide which, with the use of photographs and diagrams illustrating the various phases of the operations, allows accurate work to be performed.All the information needed for correct disassembly, checks and assembly of each individual component is set out below. In order to remove the differential unit from the vehicle, the manuals provided by the vehicle manufacturer should be consulted. In describing the following operations it is presumed that the unit has already been removed from the vehicle.

IMPORTANT: In order to facilitate work and protect both working surfaces and operators, it is advisable to use proper equipment such as: trestles or supporting benches, plastic or copper hammers, appropriate levers, pullers and specific spanners or wrenches. Before going on to disassemble the parts and drain the oil, it is best to thoroughly clean the unit, removing any encrusted or accumulated grease.

INTRODUCTORY REMARKS: All the disassembled mechanical units should be thoroughly cleaned with appropriate products and restored or replaced if damage, wear, cracking or seizing have occurred. In particular, thoroughly check the condition of all moving parts (bearings, gears, crown wheel and pinion, shafts) and sealing parts (O-rings, oil shields) which are subject to major stress and wear. In any case, it is advisable to replace the seals every time a component is overhauled or repaired. During assembly, the sealing rings must be lubricated on the sealing edge. In the case of the crown wheel and pinion, replacement of one component requires the replacement of the other one. During assembly, the prescribed pre-loading, backlash and torque of parts must be maintained.

CLASSIFICATION: This manual classifies units according to part numbers. For a correct interpretation, classification is indicated as follows:

▶▶ □ = up to the part number

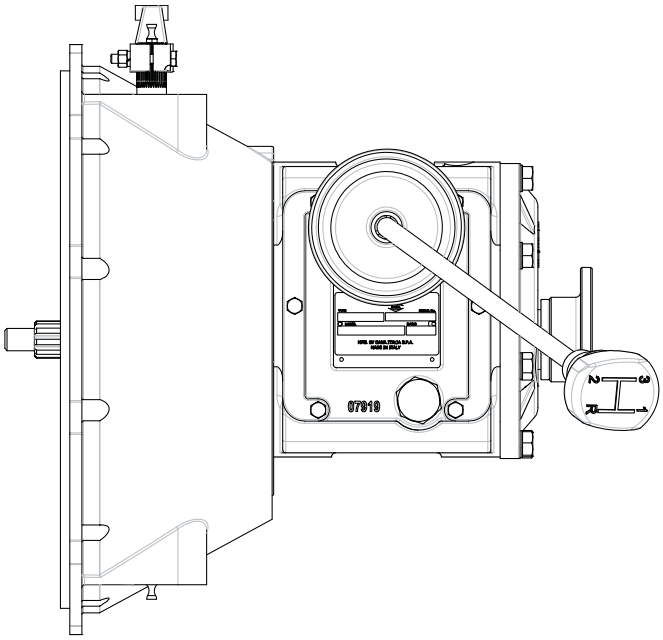
□ ▶▶ = from the part number on

When no classification is given, disassembly and assembly operations are the same for all versions.

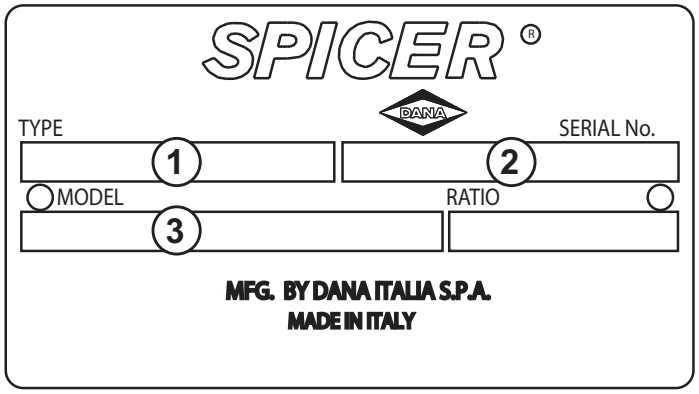
SPECIFIC EQUIPMENT AND SPARE PARTS: The drawings of all specific tools required for maintenance and repair work can be found at the end of this manual ; spare parts may be ordered either from the vehicle manufacturer or directly from the Service Centers or Authorized Distributors of Dana Holding.

SPECIFICATIONS

DEFINITION OF VIEWPOINTS



DATA PLATE



1 - Unit type

2 - Serial number

3 - Model number

CONVERSION TABLES

UNITS OF PRESSURE

	Atm	Bar	MPa	Pa	PSI
Atm	1	1	0,1	10^5	14,4
Bar	1	1	0,1	10^5	14,4
MPa	10	10	1	10^6	144
Pa	0,00001	0,00001	10^{-6}	1	-
PSI	-	-	-	-	1

UNIT OF WEIGHT

	N	daN	kN	kg	lbs
1N	1	0,1	0,001	0,102	0,225
1daN	10	1	0,01	1,02	2,25
1kN	1000	100	1	102	225
1kg	9,81	0,981	0,00981	1	2,205

UNITS OF TORQUE

	N·m	daN·m	kN·m	kg·m	lb·in
1N·m	1	0,1	0,001	0,102	8,854
1daN·m	10	1	0,01	1,02	88,54
1kN·m	1000	100	1	102	8854
1kg·m	9,81	0,981	0,00981	1	86,8
1 lb·in	0,1129	0,01129	0,0001129	0,01152	1

TORQUE SPECIFICATIONS

COARSE PITCH

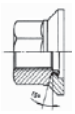
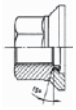
SIZE OF BOLT	TYPE OF BOLT					
	8.8	8.8 + Loctite 270	10.9	10.9 + Loctite 270	12.9	12.9 + Loctite 270
M6 x 1 mm	9,5 – 10,5 N·m	10,5 – 11,5 N·m	14,3 – 15,7 N·m	15,2 – 16,8 N·m	16,2 – 17,8 N·m	18,1 – 20 N·m
M8 x 1,25 mm	23,8 – 26,2 N·m	25,6 – 28,4 N·m	34,2 – 37,8 N·m	36,7 – 40,5 N·m	39 – 43 N·m	43,7 – 48,3 N·m
M10 x 1,5 mm	48 – 53 N·m	52 – 58 N·m	68 – 75 N·m	73 – 81 N·m	80 – 88 N·m	88 – 97 N·m
M12 x 1,75 mm	82 – 91 N·m	90 – 100 N·m	116 – 128 N·m	126 – 139 N·m	139 – 153 N·m	152 – 168 N·m
M14 x 2 mm	129 – 143 N·m	143 – 158 N·m	182 – 202 N·m	200 – 221 N·m	221 – 244 N·m	238 – 263 N·m
M16 x 2 mm	200 – 221 N·m	219 – 242 N·m	283 – 312 N·m	309 – 341 N·m	337 – 373 N·m	371 – 410 N·m
M18 x 2,5 mm	276 – 305 N·m	299 – 331 N·m	390 – 431 N·m	428 – 473 N·m	466 – 515 N·m	509 – 562 N·m
M20 x 2,5 mm	390 – 431 N·m	428 – 473 N·m	553 – 611 N·m	603 – 667 N·m	660 – 730 N·m	722 – 798 N·m
M22 x 2,5 mm	523 – 578 N·m	575 – 635 N·m	746 – 824 N·m	817 – 903 N·m	893 – 987 N·m	974 – 1076 N·m
M24 x 3 mm	675 – 746 N·m	732 – 809 N·m	950 – 1050 N·m	1040 – 1150 N·m	1140 – 1260 N·m	1240 – 1370 N·m
M27 x 3 mm	998 – 1103 N·m	1088 – 1202 N·m	1411 – 1559 N·m	1539 – 1701 N·m	1710 – 1890 N·m	1838 – 2032 N·m
M30 x 3,5 mm	1378 – 1523 N·m	1473 – 1628 N·m	1914 – 2115 N·m	2085 – 2305 N·m	2280 – 2520 N·m	2494 – 2757 N·m

FINE PITCH

SIZE OF BOLT	TYPE OF BOLT					
	8.8	8.8 + Loctite 270	10.9	10.9 + Loctite 270	12.9	12.9 + Loctite 270
M8 x 1 mm	25,7 – 28,3 N·m	27,5 – 30,5 N·m	36,2 – 39,8 N·m	40 – 44 N·m	42,8 – 47,2 N·m	47,5 – 52,5 N·m
M10 x 1,25 mm	49,4 – 54,6 N·m	55,2 – 61 N·m	71,5 – 78,5 N·m	78 – 86 N·m	86 – 94 N·m	93 – 103 N·m
M12 x 1,25 mm	90 – 100 N·m	98 – 109 N·m	128 – 142 N·m	139 – 154 N·m	152 – 168 N·m	166 – 184 N·m
M12 x 1,5 mm	86 – 95 N·m	94 – 104 N·m	120 – 132 N·m	133 – 147 N·m	143 – 158 N·m	159 – 175 N·m
M14 x 1,5 mm	143 – 158 N·m	157 – 173 N·m	200 – 222 N·m	219 – 242 N·m	238 – 263 N·m	261 – 289 N·m
M16 x 1,5 mm	214 – 236 N·m	233 – 257 N·m	302 – 334 N·m	333 – 368 N·m	361 – 399 N·m	394 – 436 N·m
M18 x 1,5 mm	312 – 345 N·m	342 – 378 N·m	442 – 489 N·m	485 – 536 N·m	527 – 583 N·m	580 – 641 N·m
M20 x 1,5 mm	437 – 483 N·m	475 – 525 N·m	613 – 677 N·m	674 – 745 N·m	736 – 814 N·m	808 – 893 N·m
M22 x 1,5 mm	581 – 642 N·m	637 – 704 N·m	822 – 908 N·m	903 – 998 N·m	998 – 1103 N·m	1078 – 1191 N·m
M24 x 2 mm	741 – 819 N·m	808 – 893 N·m	1045 – 1155 N·m	1140 – 1260 N·m	1235 – 1365 N·m	1363 – 1507 N·m
M27 x 2 mm	1083 – 1197 N·m	1178 – 1302 N·m	1520 – 1680 N·m	1672 – 1848 N·m	1834 – 2027 N·m	2000 – 2210 N·m
M30 x 2 mm	1511 – 1670 N·m	1648 – 1822 N·m	2138 – 2363 N·m	2332 – 2577 N·m	2565 – 2835 N·m	2788 – 3082 N·m

WHEEL NUT TIGHTENING TORQUES

Wheel nut tightening torques recommended from rim's O.E.M. with reference to the quality of the rim's material.

WHEEL NUT TIGHTENING TORQUES				
CHARACTERISTICS	**ILLUSTRATION**	**WHEEL STUD THREAD**	**RECOMMENDED WHEEL NUTS TORQUE**	
			RIM MATERIAL QUALITY	
			ST 37	****ST 52**
WHEEL NUTS WITH INTEGRATE SPHERICAL COLLAR		M18 x 1,5 mm	330 N·m	460 N·m
		M20 x 1,5 mm	490 N·m	630 N·m
		M22 x 1,5 mm	630 N·m	740 N·m
FLAT COLLAR WHEEL NUTS WITH SEPARATE SPHERICAL LOCK WASHER		M18 x 1,5 mm	270 N·m	360 N·m
		M20 x 1,5 mm	360 N·m	450 N·m
		M22 x 1,5 mm	460 N·m	550 N·m
WHEEL NUTS WITH INTEGRATE SEAT CAPTIVE WASHER		M18 x 1,5 mm	260 N·m	360 N·m
		M20 x 1,5 mm	350 N·m	500 N·m
		M22 x 1,5 mm	450 N·m	650 N·m

****RIM MATERIAL ST 52 IS RECOMMENDED BY DANA ON AXLE APPLICATIONS. IT IS THE OPTIMUM MATERIAL FOR TIGHTENING THE RIM TO THE HUB.**

NOTE:

The wheel nut tightening torque is related only on nut thread and stud thread dry (without oil or any lubricant).

NOTE:

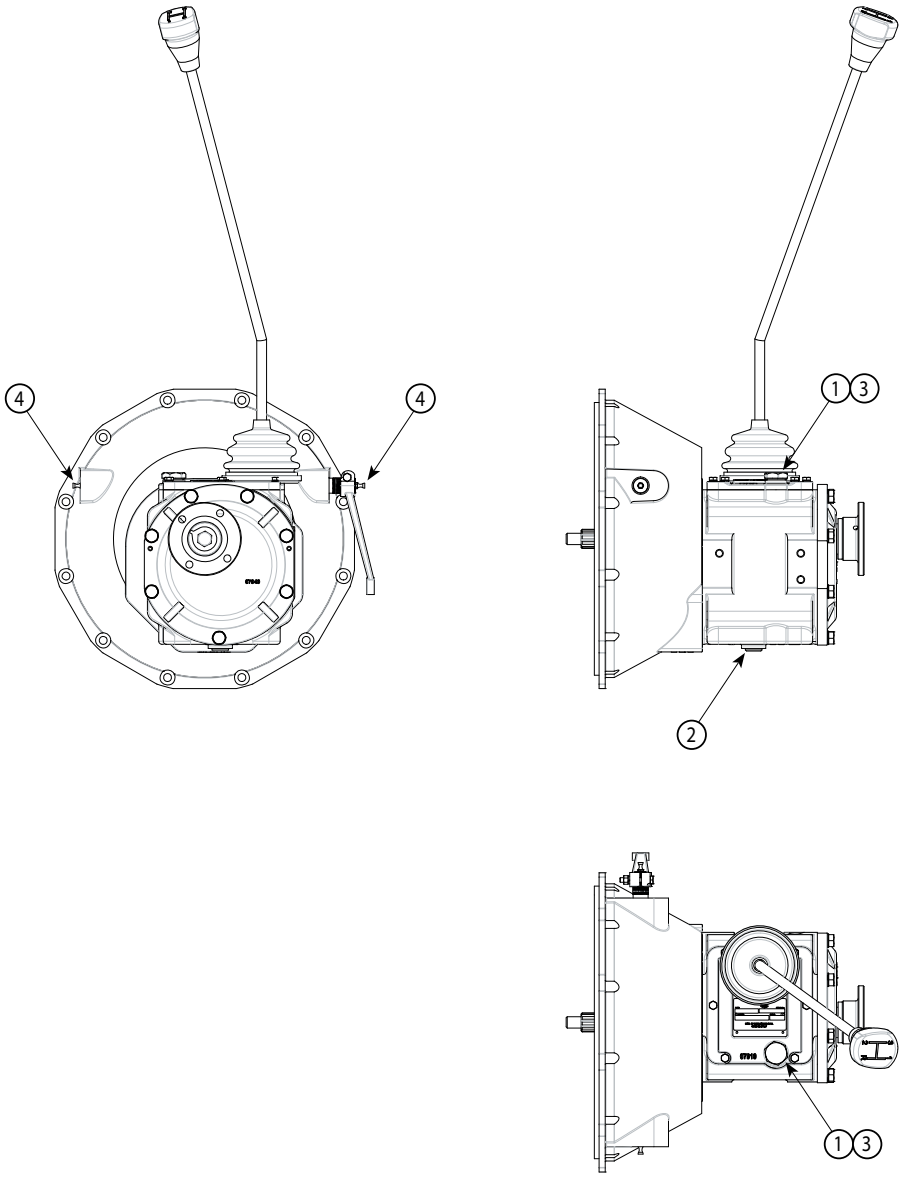
The wheel nut tightening torque takes into consideration not only the nut + stud characteristics, but also the quality of the rim material.

THE DANA OFFICIAL TIGHTENING TORQUE TABLE, INCLUDED IN EACH SERVICE MANUAL, SHOWS THE TORQUE FIGURE RELATED TO THE BOLT CHARACTERISTIC ONLY .		
DANA OFFICIAL TIGHTENING TORQUE TABLE		
NUT MATERIAL QUALITY 8.8 & 10.9	STUD MATERIAL QUALITY 10.9	*TORQUE RANGE
M18 x 1,5 mm	M18 x 1,5 N·m	442 - 489 N·m
M20 x 1,5 mm	M20 x 1,5 N·m	613 - 677 N·m
M22 x 1,5 mm	M22 x 1,5 N·m	822 - 908 N·m

***THE TORQUE FIGURE ON NUT AND STUD COUPLING MUST BE RELATED ON STUD MATERIAL QUALITY (DANA AXLES ARE 10.9 ONLY).**

MAINTENANCE

MAINTENANCE POINTS



1 - Oil fill plug
2 - Oil drain plug
3 - Check level plug
4 - Grease zerk

MAINTENANCE INTERVALS

OPERATION	MEMBER	FREQUENCY	LUBRICANTS
Check levels	Gearbox	Monthly	ATF DEXRON® III
Oil change		Every 1000 hrs*	
Greasing	Clutch fork retainer pin	Monthly	NLGI 2 EP or NLGI 3 EP** w/Moly Additive

If working in severe duty conditions half intervals should be used

***** Initially after 100 working hours

** According to DIN 51825 level KP2K-30 (NLGI #2) or KP3K-20 (NLGI #3); ASTM D4950 NLGI #2 GC-LB

LUBRICANT & SEALANT SPECIFICATIONS

1 - Locking, sealing and lubricating materials referred to in this manual are the same used in the shop-floor.

2 - The table below gives an account of the typical applications of each single material, in order to facilitate replacement with similar products marketed by different brand names with different trade marks.

LOCTITE 242

Anaerobic product apt to prevent the loosening of screws, nuts and plugs. Used for medium-strength locking. Before using it, completely remove any lubricant by using the specific activator.

LOCTITE 243

The oleocompatible alternative to 242. Does not require the activation of lubricated surfaces.

LOCTITE 270

Anaerobic product for very-high strength locking of screws and nuts. Before using it, completely remove any lubricant by using the specific activator.

To remove parts, it may be necessary to heat them at 80° C approximately.

LOCTITE 275

Anaerobic product suitable for high-strength locking and sealing of large threaded parts, bolts and stud bolts, for pipe sealing and for protecting parts against tampering; suitable for sealing coupling surfaces with a maximum diametrical clearance of 0.25 mm.

LOCTITE 510

Anaerobic product for the hermetic sealing of flanged units and screw holes communicating with fluids. Can seal clearances between flanges up to 0.2 mm.

LOCTITE 577

Quick anaerobic sealant for sealing threaded portions of conical or cylindrical unions up to M80. Before using it, remove any lubricant with the specific activator. After polymerisation, disassembly may result rather difficult, so heating may be necessary for larger diameters.

LOCTITE 638

Anaerobic adhesive for fast and high-strength gluing of cylindrical metal joints (hub on shaft). Can glue together parts with clearance ranging between 0.1 and 0.25 mm.

LOCTITE 648

Anaerobic adhesive for fast and medium-strength gluing of cylindrical metal joints (hub on shaft). Can glue together parts with radial clearance below 0.1 mm.

AREXONS (REPOSITIONABLE JOINTING COMPOUND FOR SEALS)

Solvent-based sealing compound for elastic seals, drying through evaporation. Used for sealing the outer diameter of sealing rings for rotating shafts with outer metal reinforcement.

SILICONE

Semi-fluid adhesive material used for sealing and filling and to protect components from environmental and physical elements. Polymerises with non-corrosive dampness.

TECNO LUBE/101 (SILICONE-BASED GREASE)

Highly adhesive synthetic grease, with silicone compounds added.

Applied to adjustment screws with hole communicating with oil-type fluids.

Used when frequent adjusting is required.

MOLIKOTE (DOW CORNING)

Lubricating compound containing molybdenum disulphide, used to lubricate articulation pins and to prevent sticking and oxidation of parts that are not lubricated on a regular basis.

(LITHIUM-BASED) GREASE

Applied to bearings, sliding parts and used to lubricate seals or parts during assembly.

SAFETY PRECAUTIONS

1. During all operations described in this manual, the axle should be fastened onto a trestle, while the other parts mentioned should rest on supporting benches.
2. When removing one of the arms, an anti-tilting safety trestle should be placed under the other arm.
3. When working on an arm that is fitted on the machine, make sure that the supporting trestles are correctly positioned and that the machine is locked lengthways.
4. Do not admit any other person inside the work area; mark off the area, hang warning signs and remove the ignition key from the machine.
5. Use only clean, quality tools; discard all worn, damaged, lowquality or improvised wrenches and tools. Ensure that all torque wrenches have been checked and calibrated.
6. Always wear gloves and non-slip rubber shoes when performing repair work.
7. Should you stain a surface with oil, remove marks straight away.
8. Dispose of all lubricants, seals, rags and solvents once work has been completed. Treat them as special waste and dispose of them according to the relative law provisions obtaining in the country where the axles are being overhauled.
9. Make sure that only weak solvents are used for cleaning purposes; avoid using turpentine, dilutants and toluol, xylolbased or similar solvents; use light solvents such as Kerosene, mineral spirits or water-based, environment friendly solvents.
10. For the sake of clarity, the parts that do not normally need to be removed have not been reproduced in some of the diagrams.
11. After repair work has been completed, accurately touch up any coated part that may have been damaged.
12. Follow all safety instructions in the Original Equipment Manufacturer (OEM) manual that came with the vehicle.

DANGER	Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.
WARNING	Indicates an imminently hazardous situation which, if not avoided, could result in death or serious injury.
CAUTION	Indicates a situation which, if not avoided, may result in damage to components.
NOTICE	Indicates information which may make product service easier to perform.

DISASSEMBLY

FIGURE 1: Remove the oil drain plug and drain oil.

FIGURE 2: Remove the dipstick.

FIGURE 3: Only if necessary, remove the grease zerk.

FIGURE 4: Mark the positions of levers in relation to the thrust lever.

FIGURE 5: Loosen and remove nut, screw, and washer.

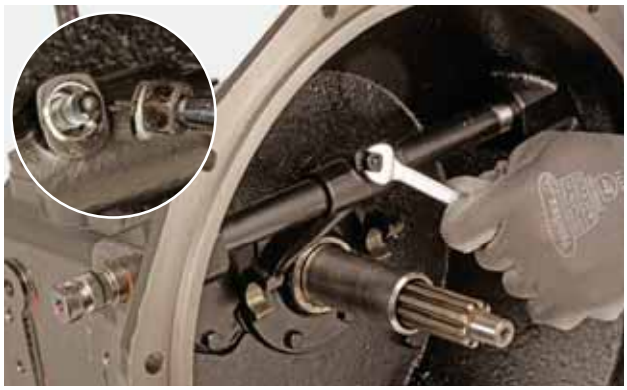


FIGURE 6: Loosen and remove the nut.

FIGURE 7: Using a copper hammer, gently tap and remove the conical pin of the yoke.

FIGURE 8: Remove the snap ring.

⚠ WARNING

Removal of the snap rings can cause personal injuries. You must wear appropriate safety equipment. To avoid injury to eyes, wear eye protection equipment.

FIGURE 9: Remove the pressure plate fork and stud.

FIGURE 10: Using an extractor for inner parts remove the bushings.

FIGURE 11: Remove the shift rail cover.

FIGURE 12: Measure and write down shim quantity and position. Do not switch shim locations.

NOTE:

Carefully remove all Loctite residue from surfaces.

FIGURE 13: Remove the paper gasket.

FIGURE 14: Remove the capscrews and washers.

FIGURE 15: Remove the sleeve.

FIGURE 16: Using an extractor, remove the seal ring.

FIGURE 17: Loosen and remove the clutch housing screws.

FIGURE 18: Remove the clutch housing.

FIGURE 19: Cut the retainer clip and remove the protective boot and o-ring.

FIGURE 20: Remove the screws securing the control lever cover, together with washers.

NOTE:

Note the position of the control lever before removal.

FIGURE 21: Remove the gear selector cover.

FIGURE 22: Remove the lever adjustment pins.

FIGURE 23: Remove the gear selector yoke.

NOTE:

Carefully remove all Loctite residue from surfaces.

FIGURE 24: Using a magnet remove spring, spacer, and ball.

FIGURE 25: Lift the caulk from the safety flange, then loosen and remove the capscrew and washer.

FIGURE 26: Remove the stop.

FIGURE 27: Remove the flange.

FIGURE 28: Loosen and remove the cover screws and washers.

FIGURE 29: Remove the cover.

FIGURE 30: Remove the spacer.

FIGURE 31: Use a driver to remove the seal ring.

FIGURE 32: Remove the yoke capscrew.

FIGURE 33: Partially extract the control rod and remove the spacer. Then completely remove the control rod.

FIGURE 34: Note the position of the fork and remove.

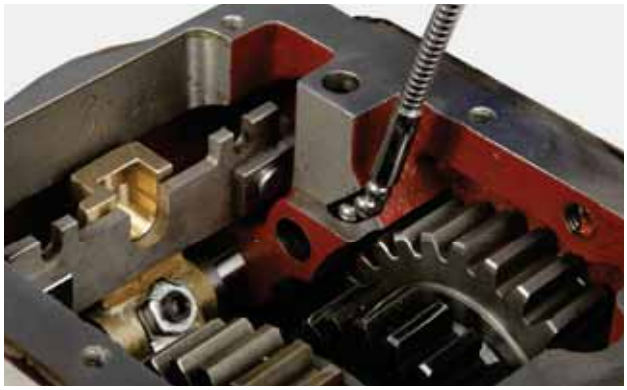


FIGURE 35: Remove the gear detent balls.

FIGURE 36: Remove the input shaft.

FIGURE 37: Remove the roller cage bearing.

FIGURE 38: Remove the snap ring.

FIGURE 39: Position the input shaft under a press, and using a suitable drift, remove the ball bearing.

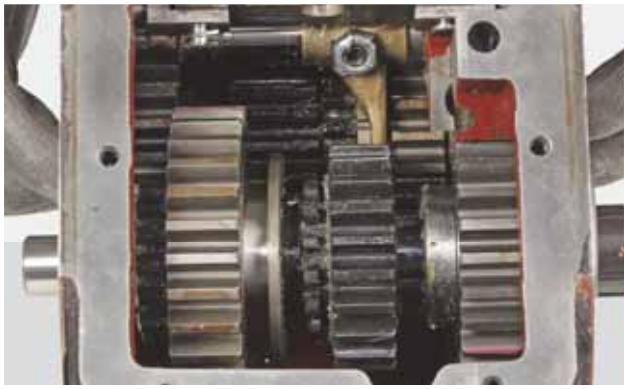


FIGURE 40: Make a note of component position.

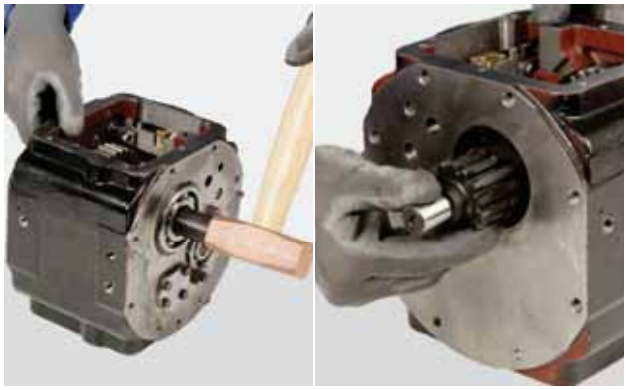


FIGURE 41: Gently tap to remove the input shaft.

FIGURE 42: Remove 2nd and 3rd gear and sliding sleeve.

FIGURE 43: Remove the bearing.

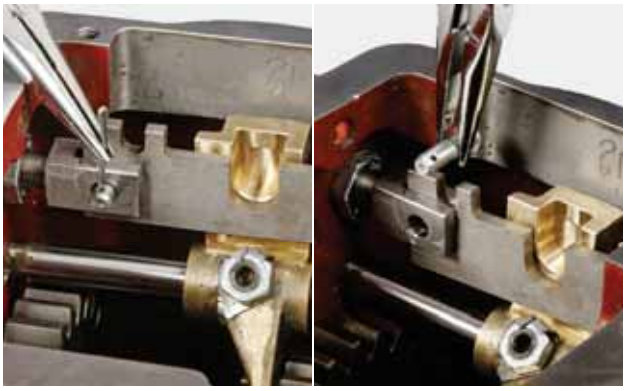


FIGURE 44: Remove the cotter pin and pin.

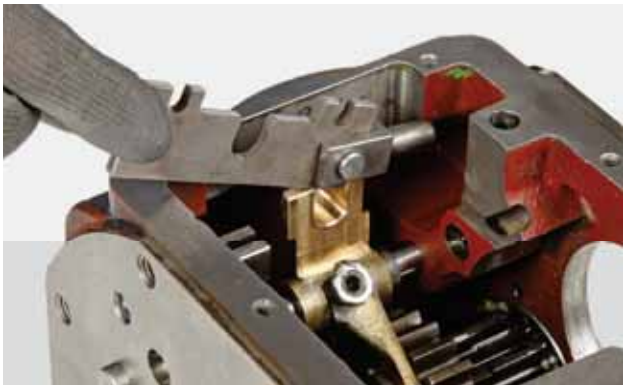


FIGURE 45: Remove the gear selector bar.

FIGURE 46: ONLY IF NEEDED
Before removing the support, check the installation measurement as shown in picture above.
Example: 30 mm.

FIGURE 47: Loosen and remove the plug. Using a magnet, remove the spring and the ball.

FIGURE 48: Remove the caulk from the position stop.

FIGURE 49: Loosen the counternut and remove the screw.

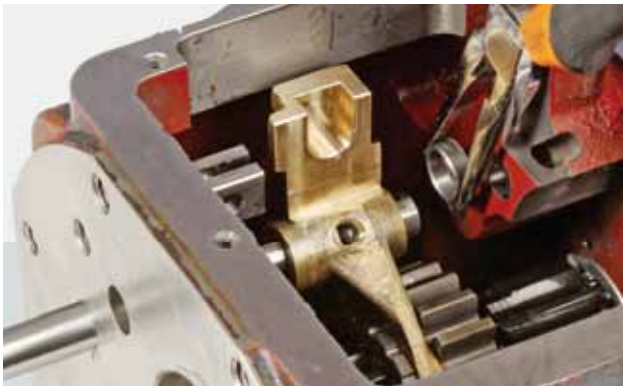


FIGURE 50: Partially extract the control rod and remove the spacer, then completely remove the control rod.

FIGURE 51: Write down the fork position and remove.

FIGURE 52: Remove screws and mechanical endstops.

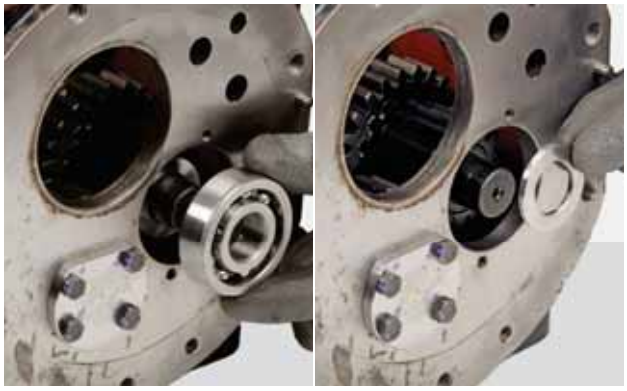


FIGURE 53: Remove bearing and spacer.

FIGURE 54: Remove the reverse gear as shown above.

FIGURE 55: Remove the secondary shaft.

FIGURE 56: Remove 1st gear and sleeve.

FIGURE 57: Remove the bearing.

FIGURE 58: Loosen and remove the counternut and lock nut.

FIGURE 59: Write down the baffle plate position and remove.

FIGURE 60: Remove the idler gear.

FIGURE 61: Remove the roller cage bearing and washer.

FIGURE 62: Remove the idler gear support capscrews.

FIGURE 63: Replace the complete support if the thrust block is damaged.

ASSEMBLY

FIGURE 64: Install the complete idler gear support.

FIGURE 65: Spread the screws with Loctite 270 and tighten to a torque of 15.2 - 16.8 N·m.

FIGURE 66: Install the spacer. Lubricate and fit the roller bearing.

FIGURE 67: Install the idler gear.

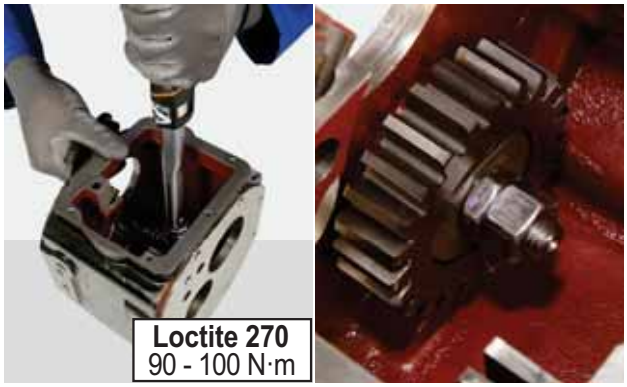


FIGURE 68: Tighten the lock nuts completely.

FIGURE 69: 2nd - 3rd gear shaft composition.

FIGURE 70: Install the secondary shaft.

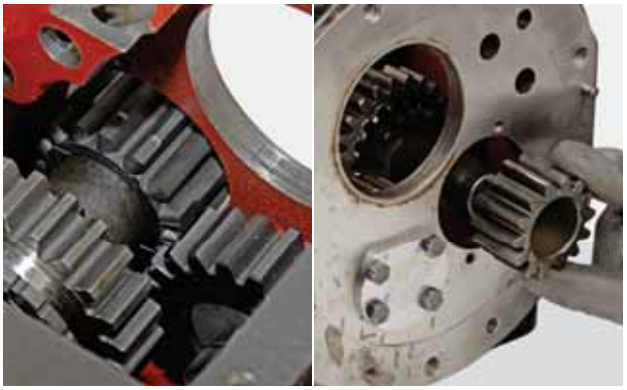


FIGURE 71: Install the reverse gear ratio gear.

FIGURE 72: Install the spacer and bearing.

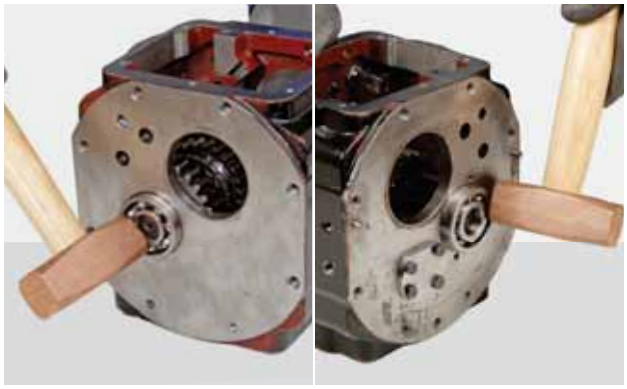


FIGURE 73: Using a copper hammer, gently tap the bearing to seat it in the case.

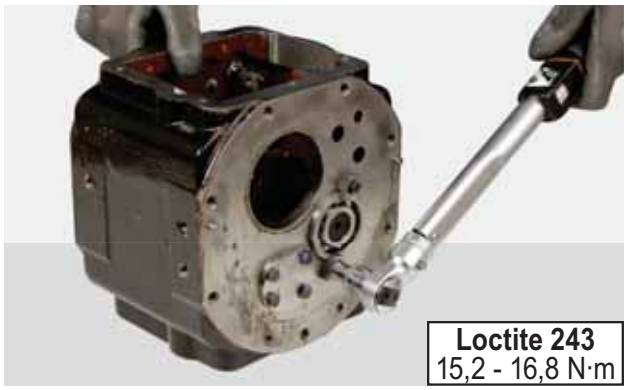


FIGURE 74: Install the mechanical endstops. Coat the screws with Loctite 243 and tighten to 15,2 - 16,8 N·m.

FIGURE 75: Engage the fork in the coupling.

FIGURE 76: Insert the control rod and the spacer.

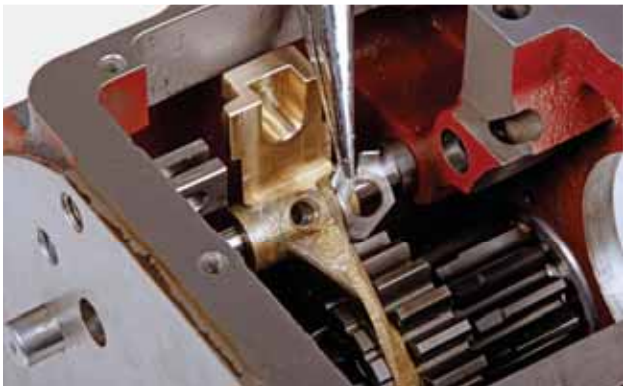


FIGURE 77: Install the position stop in its seat.

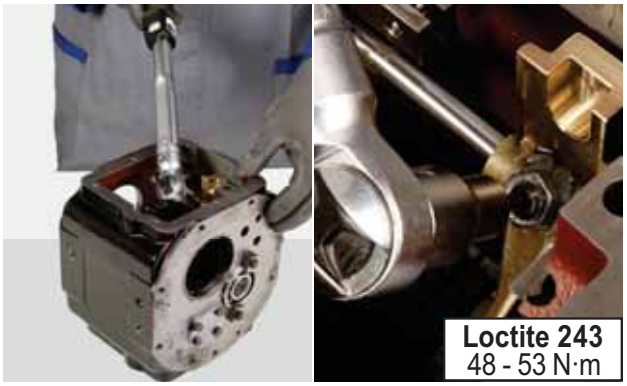


FIGURE 78: Install the fork lock nut and tighten to 48 - 53 N·m.

FIGURE 79: Bend the position stop.
Do not overlap the folded material.

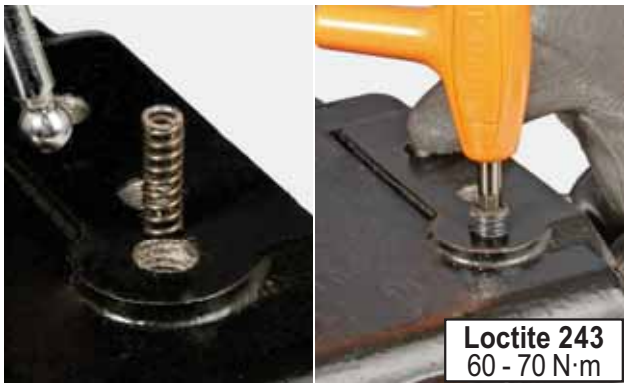


FIGURE 80: Install the gear selector ball and spring. Apply the gear selector cap and tightening to a torque of 60 - 70 N·m.

FIGURE 81: Only if removed, restore the position of the support according to the measurement previously taken. Coat threads with Loctite 243 and tighten the nut to a torque of 50 - 55 N·m.

FIGURE 82: Insert the gear selector bar in the housing.

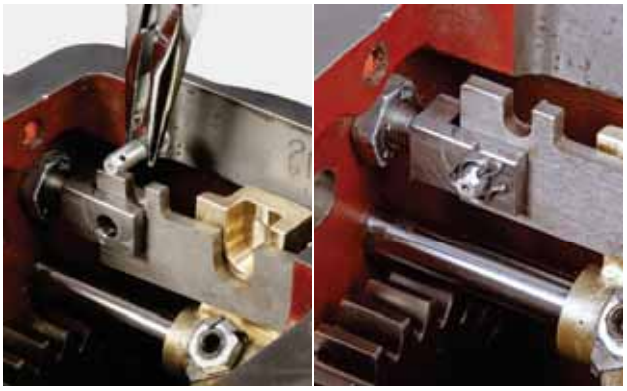


FIGURE 83: Insert the pin and secure with cotter pin.

FIGURE 84: 1st - reverse gear shaft composition.

FIGURE 85: Insert the input shaft in position.

FIGURE 86: Fit the spacer onto the input shaft.

FIGURE 87: Fit the 2nd gear onto the input shaft.

FIGURE 88: Using a copper hammer, insert the bearing in position.

FIGURE 89: Heat the bearing up to 212°F [100°C] and install it onto the input shaft.

FIGURE 90: Lubricate and install the roller bearing.

FIGURE 91: Using a copper hammer, insert the bearing in position.

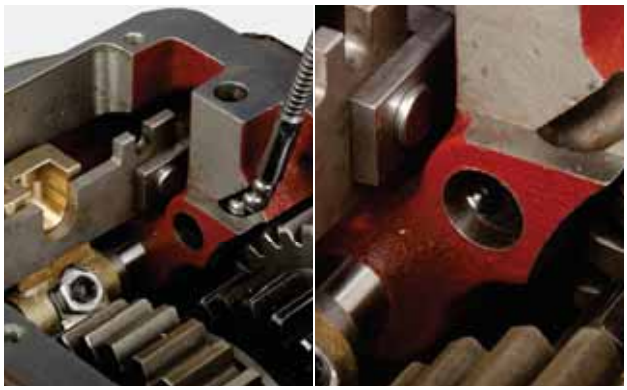


FIGURE 92: Install the three gear detent balls.

FIGURE 93: Engage the fork in the coupling.

FIGURE 94: Insert the control rod and install the spacer.

FIGURE 95: Install the fork lock nut and tighten to 48 - 53 N·m.

FIGURE 96: Use special tool T1 (see drawing T1 p. 37) to install the seal ring, seating completely.

⚠ CAUTION

Take care not to damage the seal ring.

NOTE:

Apply grease to the inner lip of the seal ring.

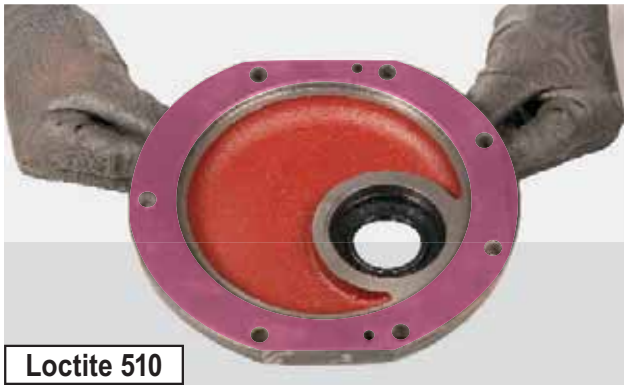


FIGURE 97: Apply LOCTITE 510 to the machined surfaces.

FIGURE 98: Install the spacer onto the output shaft.

FIGURE 99: Fit the cover onto the casing and align the pins.

FIGURE 100: Install the flange onto the output shaft.

FIGURE 101: Apply the T2 tool (see drawing T2 p. 37) onto the flange. Secure the wrench and tighten the screw using a torque wrench, up to a minimum required torque setting of 90 - 100 N·m.
Chamfer the stop. Do not repeat the chamfer on top of the first chamfer.

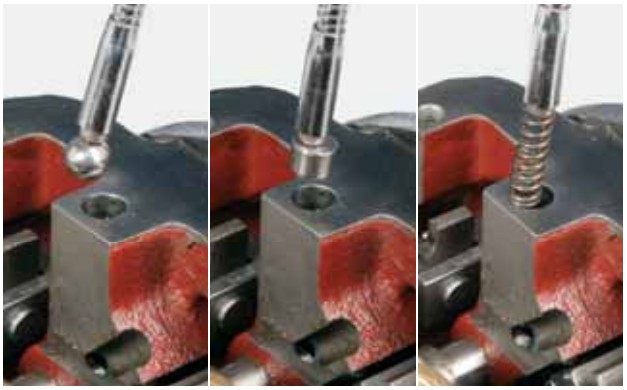


FIGURE 102: Insert the ball, piston, and the spring, in position.

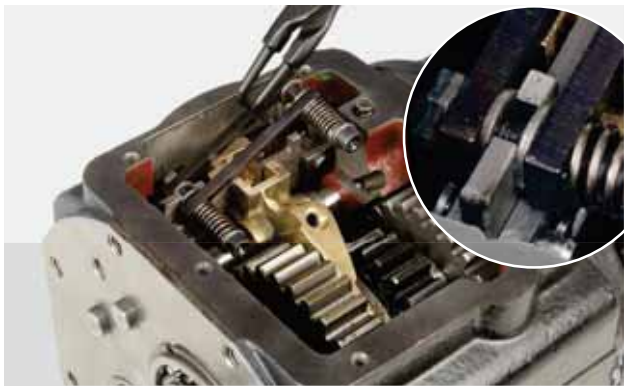


FIGURE 103: Fit the gear selector yoke in position.

FIGURE 104: Install the lever adjustment pins.

FIGURE 105: Apply LOCTITE 573 to the machined surfaces, and fit the gear selector cover on the housing.

FIGURE 106: Apply and tighten the screws securing the gear selector cover, with their respective washers.
Tighten to a torque of 15,2 - 16,8 N·m.

FIGURE 107: Adjust the lever adjustment pins and reset the gap to zero.

FIGURE 108: Install the protective boot and secure with clips.

FIGURE 109: Coat the surface of the main body with Loctite 510 and install the support.

NOTE:

Make sure a continuous layer of sealant runs around the locking holes.

FIGURE 110: Coat the screw threads with Loctite 510 and tighten to the following torque specifications:
M8: 35 - 40 N·m.
M10: 70 - 75 N·m.

FIGURE 111: Using the special tool T3 (see drawing T3 p. 38), install the seal ring into the sleeve.

FIGURE 112: Coat the screw threads with Loctite 510 and tighten to a torque of 15,2 - 16,8 N·m.

FIGURE 113: Restore the shims in the same position and quantity previously marked.

FIGURE 114: Install the paper gasket using the marking made previously as reference.

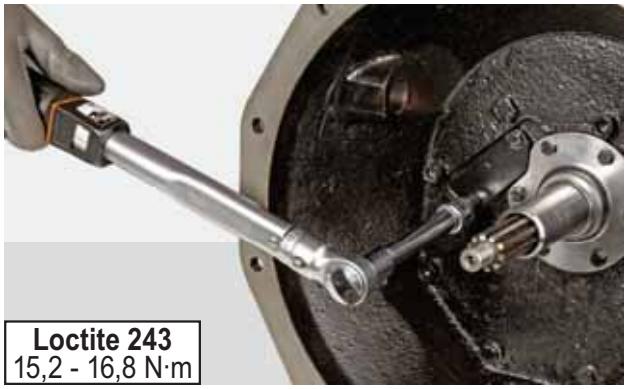


FIGURE 115: Coat the screw threads with Loctite 243 and tighten to a torque of 15,2 - 16,8 N·m.

FIGURE 116: Only if removed, use a driver to install the bushing in its seat.

FIGURE 117: Assembly the pin and pressure plate yoke as previosuly marked.

FIGURE 118: Install the snap ring.
Carefully check snap ring is completely inserted.

⚠ WARNING

Personal injury can result when installing snap ring.

The appropriate safety equipment must be worn.

To avoid injury to your eyes, wear protective glasses during this procedure.

FIGURE 119: Align the pressure plate yoke with the hole and assemble the conical pin.

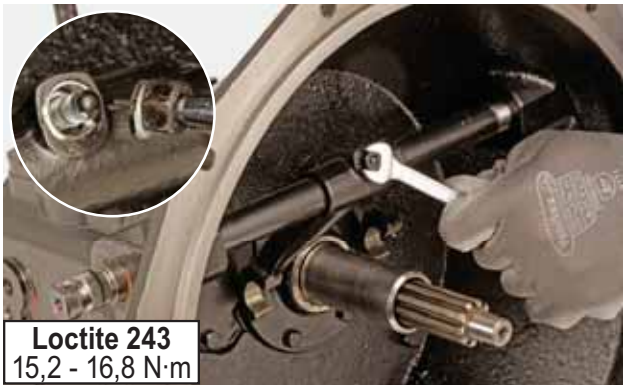


FIGURE 120: Assemble washer and nut and tighten.

FIGURE 121: Install the lever and block with screw, and tighten to 23.8 - 26.2 N·m.
Refer and keep to the positions marked during disassembly.

FIGURE 122: Install the grease zerk. Torque wrench setting: 5 - 8 N·m.

FIGURE 123: Install the plug and tighten to 90 N·m.

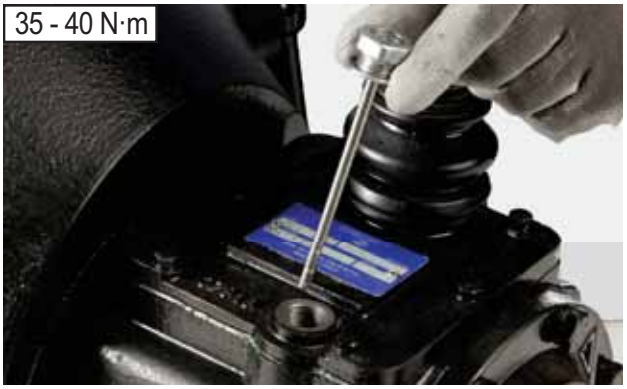


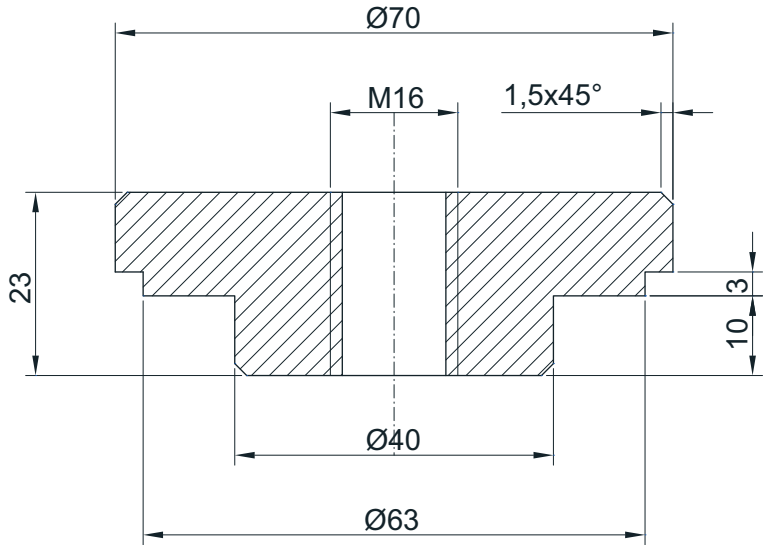
FIGURE 124: Add the specified oil through the dipstick threaded hole to bring the level up to the maximum mark on the dipstick.

⚠ CAUTION

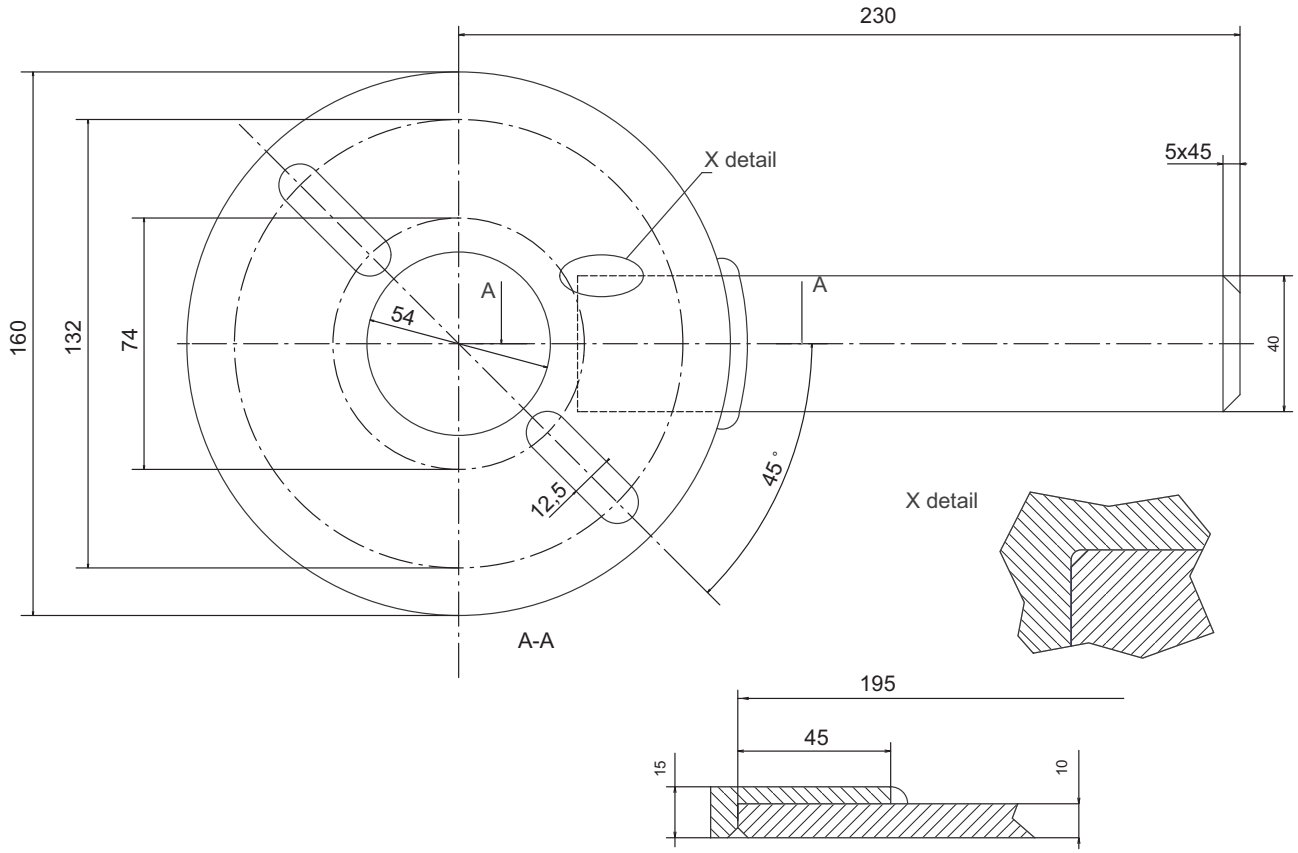
The oil level should be between the maximum and minimum marks on the dipstick.

SPECIAL TOOLS

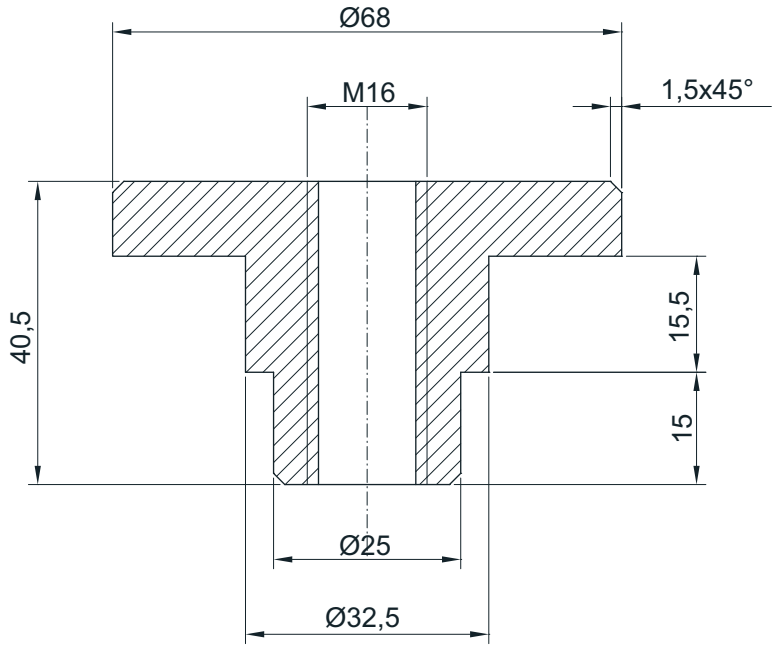
T1



T2



T3



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