Section 7
REAR END MAINTENANCE AND REPAIR

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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 instruction contained in this manual have been based on 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.

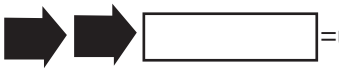
IMPORTANT: In order to facilitate work and protect both working surfaces and operators, it is advisable to use proper equipment such as: trestles or supporting benches, plastic or copper hammers, appropriate levers, extractor and specific spanners or wrenches.

Before going on to disassembled 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 (0-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 the other one. During assembly, the prescribed pre-loading, backlash and torque of parts must be maintained.

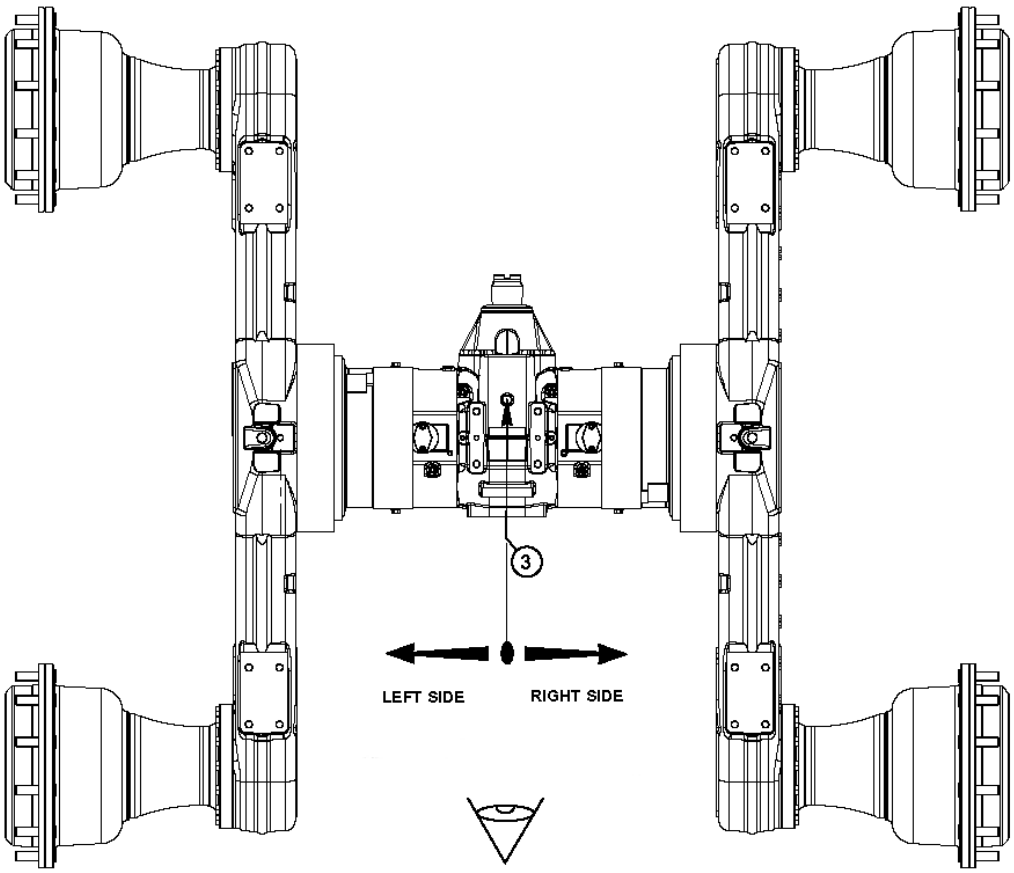
CLASSIFICATION: This manual classifies units according to part numbers. For a correct interpretation, classification is indicated as follows:


=up to the part number

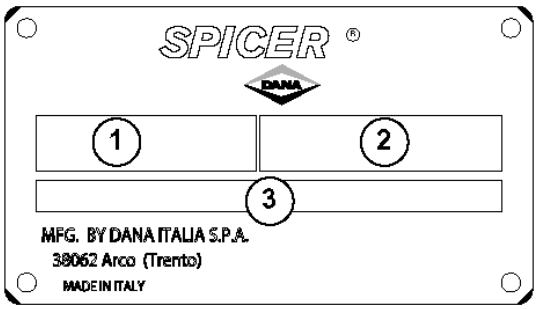

=from the part number on

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

DEFINITION OF VIEWPOINTS

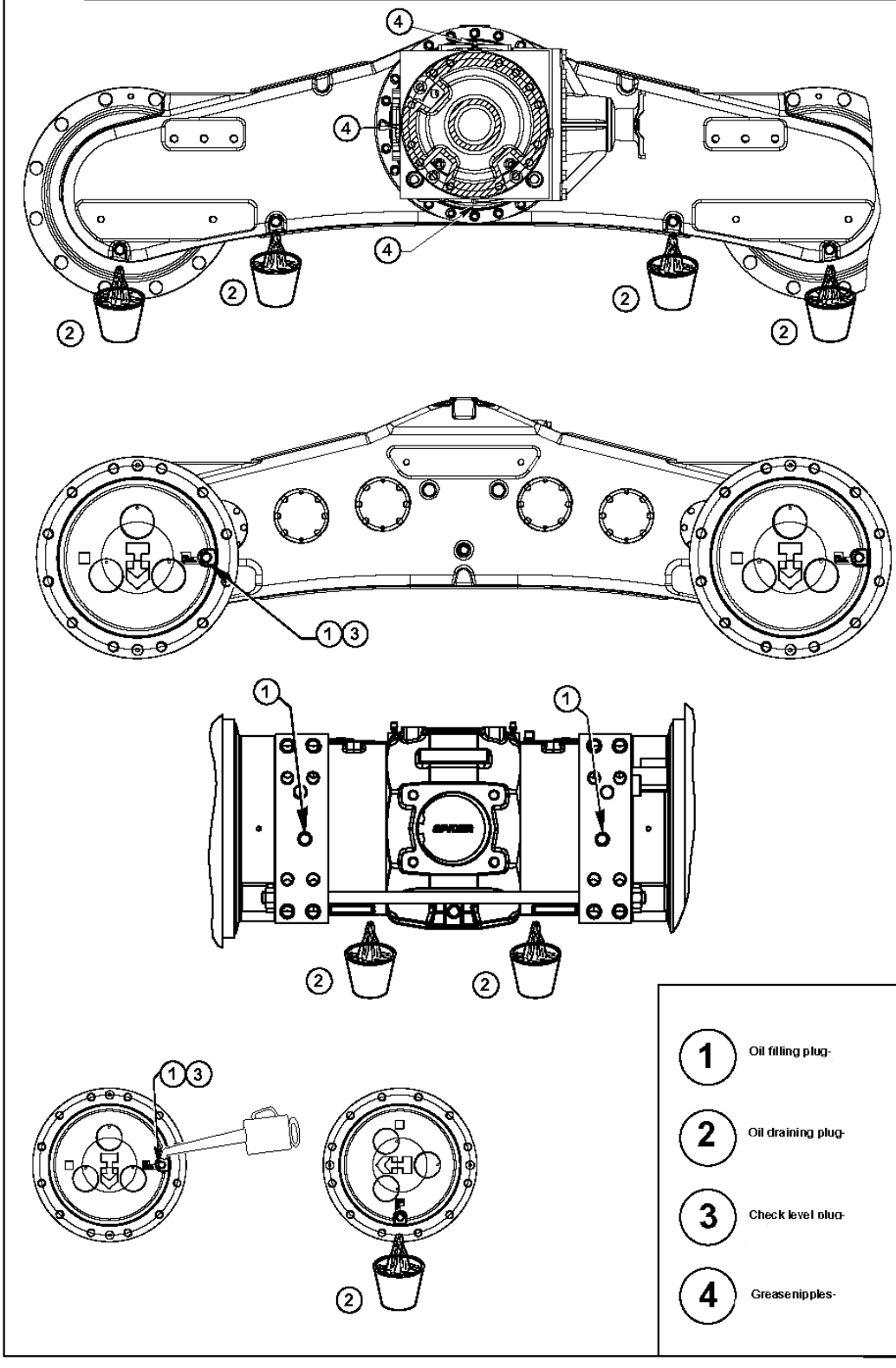


DATA PLATE



1. Type and model unit-modification index
2. Serial number
3. Lubricant

MAINTENANCE POINTS



MAINTENANCE INTERVALS			
Operations		**Frequency**	**Lubricants**
Check levels	Differential	Monthly	With additives for oil-bath brakes With additives for oil-bath brakes, for units presenting hypoid crown wheel and pinion and /or self-locking differential gear.
	Planetary reduction	every 200 hrs.	
Oil Change	Differential	every 800 hrs.*	
	Planetary reduction	every 1000 hrs.*	
	Self-locking differential gear	every 700 hrs.*❑	
* Initially after 100 working hours ❑ When it starts sounding noisy			

Operations	Member	Conditions	Frequency	Lubricants
Greasing	Articulations	Normal Work	Monthly	MOLIKOTE
		Awkward Work	Weekly	

ADJUSTMENT AND CHECKS			
Unit	**Operations**	**Frequency**	**Service Brake Circuit**
Negative brake	Adjustment	every 1000 hrs.*	Only for mineral oil use e.g. ATF Dexron II. Make sure that master cylinder seals are suitable for mineral oil.
Service brake	Adjustment	every 500 hrs.	
Wheel nuts	Tightening	every 200 hrs.	
* Initially after 100 working hours			

SCREW-LOCKING, SEALING AND LUBRICATING MATERIALS

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.

DENOMINATION	APPLICATION
Loctite 242	● Anaerobic product apt to prevent the loosening of screws, nuts and plugs. Used for medium-strength loc-king. Before using it, completely remove any lubricant by using the specific activator.
Loctite 243	● The oleo compatible alternative to 242. Does not require the activation of lubricated surfaces.
Loctite 270	● Anaerobic product for every- 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 approx
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 m ax. 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 polymerization, 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. Polymerizes 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.

CONVERSION TABLES

Units of pressure

$1\ Atm \cong 1\ bar \cong 10^5\ Pa \cong 14.4\ Psi$

Units 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

	Nm	daNm	kNm	kgm	lb-in
1Nm	1	0,1	0,001	0,102	8,854
1daNm	10	1	0,01	1,02	88,54
1kNm	1000	100	1	102	8854
1kgm	9,81	0,981	0,00981	1	86,8
1lb-in	0,1129	0,01129	0,0001129	0,01152	1

TIGHTENING TORQUES

Unit

SIZE OF BOLT		TYPE OF BOLT 8.8		10.9		12.9	
		Normali + Loctite 242	Loctite 270	Normali + Loctite 242	Loctite 270	Normali + Loctite 242	Loctite 270
COARSE PITCH	M6x	1 9,5-10,5	10,5-11,5	14,3-15,7	15,2-16,8	16,2-17,8	18,1-20,0
	M8x1,25	23,8-26,2	25,6-28,4	34,2-37,8	36,7-40,5	39,0-43,0	43,7-48,3
	M10 x 1,5	48-53	52-58	68-75	73-81	80-88	88-97
	M12 x 1,75	82-91	90-100	116-128	126-139	139-153	152-168
	M14 x 2	129-143	143-158	182-202	200-221	221-244	238-263
	M16 x 2	200-221	219-242	283-312	309-341	337-373	371-410
	M18 x 2,5	276-305	299-331	390-431	428-473	466-515	509-562
	M20 x 2,5	390-431	428-473	553-611	603-667	660-730	722-798
	M22 x 2,5	523-578	575-635	746-824	817-903	893-987	974-1076
	M24 x 3	675-746	732-809	950-1050	1040-1150	1140-1260	1240-1370
	M27 x 3	998-1103	1088-1202	1411-1559	1539-1701	1710-1890	1838-2032
	M30 x 3,5	1378-1523	1473-1628	1914-2115	2085-2305	2280-2520	2494-2757
FINE PITCH - PASSO FINE - KLEINER SCHRITT PASO FINO - PAS FIN	M8x 1	25,7-28,3	27,5-30,5	36,2-39,8	40,0-44,0	42,8-47,2	47,5-52,5
	M10 x 1,25	49,4-54,6	55,2-61,0	71,5-78,5	78,0-86,0	86,0-94,0	93,0-103,0
	M12 x 1,25	90-100	98-109	128-142	139-154	152-168	166-184
	M12 x 1,5	86-95	94-104	120-132	133-147	143-158	159-175
	M14 x 1,5	143-158	157-173	200-222	219-242	238-263	261-289
	M16 x 1,5	214-236	233-257	302-334	333-368	361-399	394-436
	M18 x 1,5	312-345	342-378	442-489	485-536	527-583	580-641
	M20 x 1,5	437-483	475-525	613-677	674-745	736-814	808-893
	M22 x 1,5	581-642	637-704	822-908	903-998	998-1103	1078-1191
	M24 x 2	741-819	808-893	1045-1155	1140-1260	1235-1365	1363-1507
	M27 x 2	1083-1197	1178-1302	1520-1680	1672-1848	1834-2027	2000-2210
	M30 x 2	1511-1670	1648-1822	2138-2363	2332-2577	2565-2835	2788-3082

NOTES ON 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, low-quality or improvised wrenches and tools. Ensure that all dynamometric 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-, xylol-based 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 -The terms RIGHT and LEFT in this manual refer to the position of the operator facing the axle from the side opposite the drive.

12 -After repair work has been completed, accurately touch up any coated part that may have been damaged.

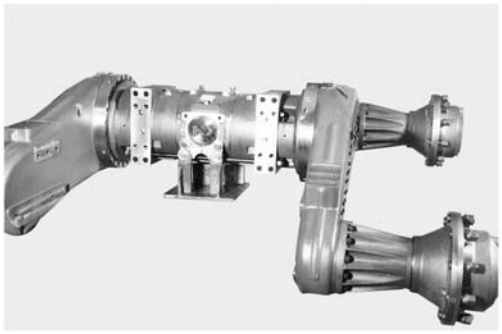
SYMBOLS

	Disassembly of assembly groups
	Reassemble to from assembly groups
	Remove obstruction parts
	Reinstall-remount parts which had obstructed disassembly
	Attention ! Important notice
	Check - adjust e.g. torque, dimensions, pressures, etc.
	T=Special tool P=page
	Note direction of installation
	Visual inspection
	Possibly still serviceable, renew if necessary
	Renew at each reassembly
	Unlock - lock e.g. split pin, locking plate, etc.
	Lock-adhere (liquid sealant)
	Guard against material damage, damage to parts
	Mark before disassembly, observe marks when reassembly
	Filling - topping up - refilling e.g. oil, cooling water, etc.
	Drain off oil, lubricant
	Tighten
	Apply pressure into hydraulic circuit
	To clean
	Lubricate - grease

DISASSEMBLING GROUP

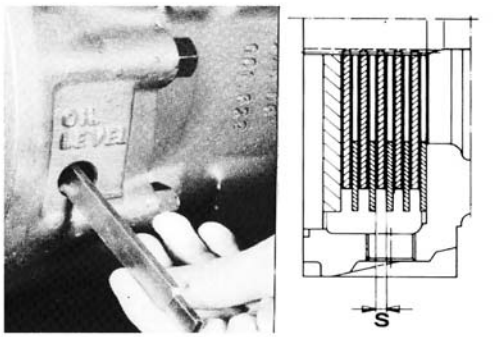
a

Viev of input motion axle.



b

Backside view of axle shaft.

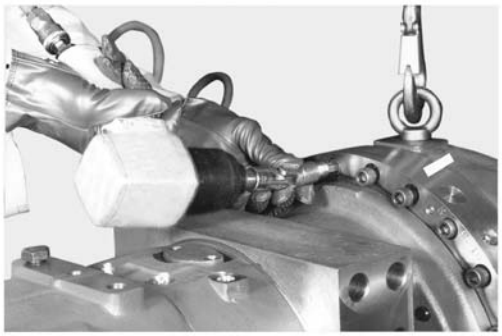


c

Wear check and replacement of brake discs: use till minimun thickness of S=4.5 mm.

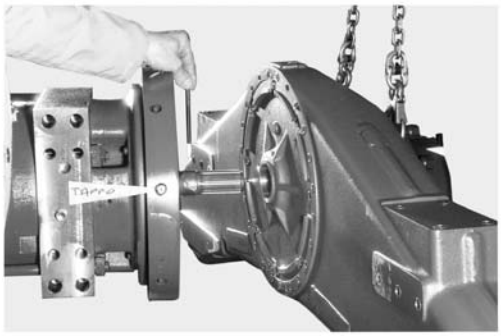
d

Position dip stick oil.



e

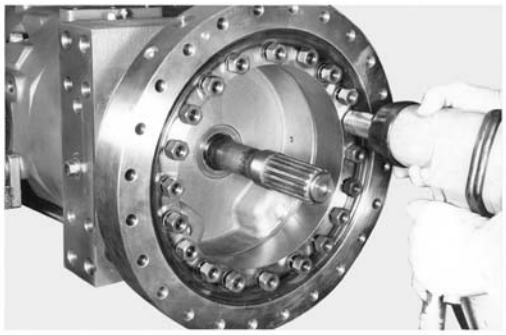
Remove fix screws of reduction gear, mark the position and remove the reduction gear.



f

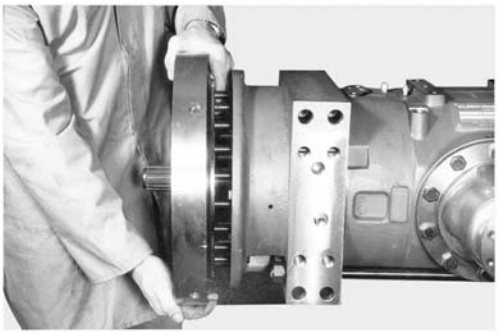
Fix the boogie, and remove it from central body.

DISASSEMBLING GROUP



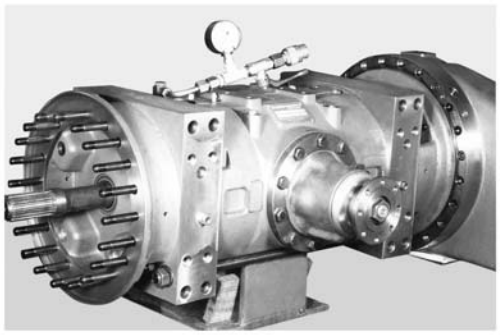
a

Remove the nuts of looking self aligning bearing.



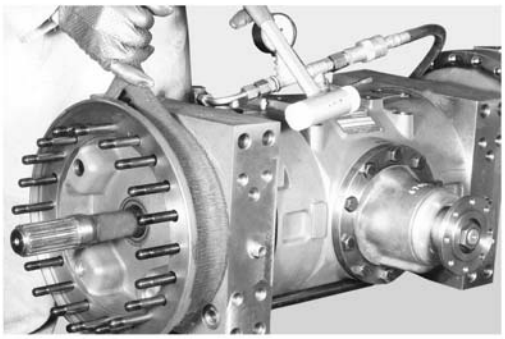
b

Mark before remove the bearing.



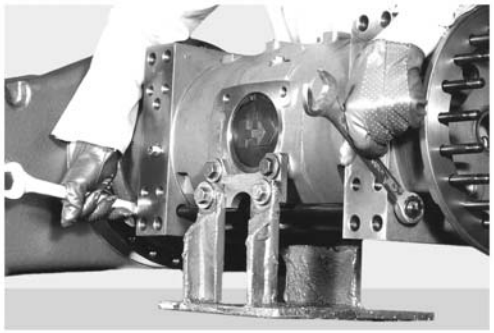
c

Insert pressure in to the braking circuit.



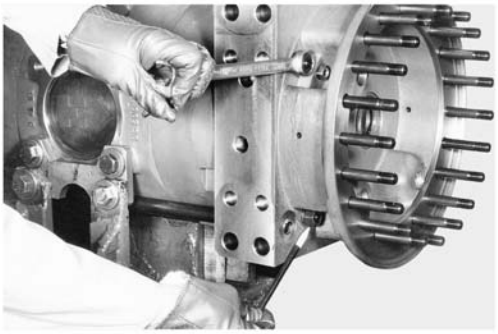
d

Lock the cover, using a plastic hammer remove the cover.



e

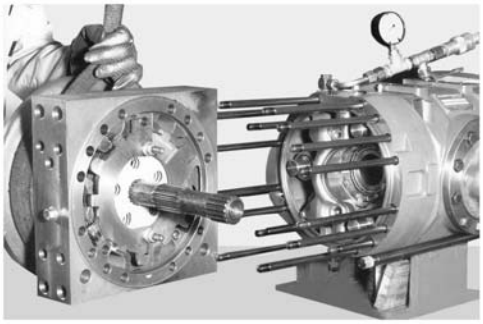
Remove the nuts of tie rod.



f

Remove the nuts cover.

DISASSEMBLING BRAKING UNIT

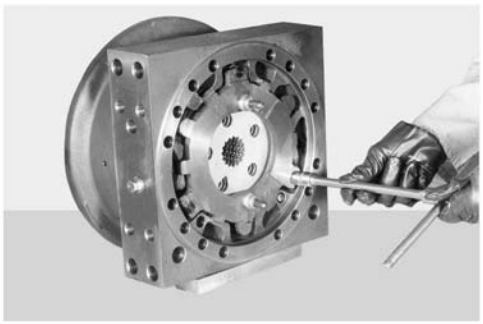


a

Remove the cover and keep in position the axle shaft.

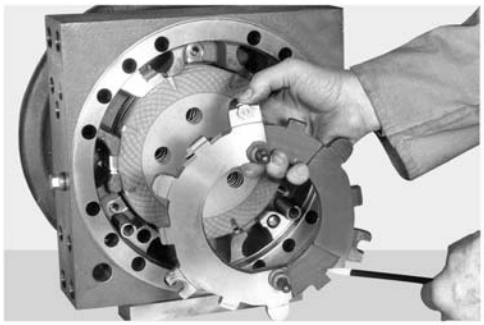
b

Place it on the bench and remove the axle shaft.



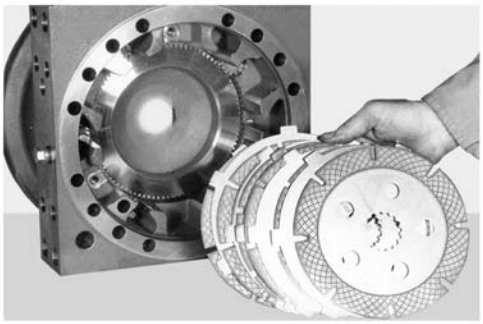
c

Remove the screws of the intermediate disc.



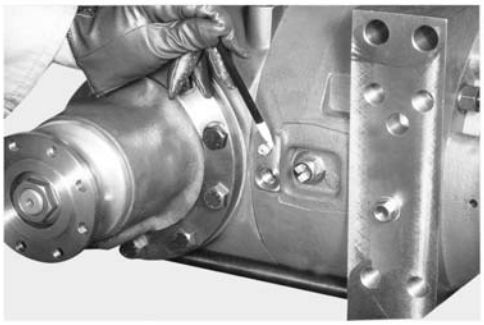
d

Pay attention to the position of right and left disc, and springs position.



e

Remove the braking discs, for reassembling follow the correct sequence; orient them so that the ovals oil circulation holes. NOTE: if it is not necessary to replace the discs, remove the brake disc, without changing their position.



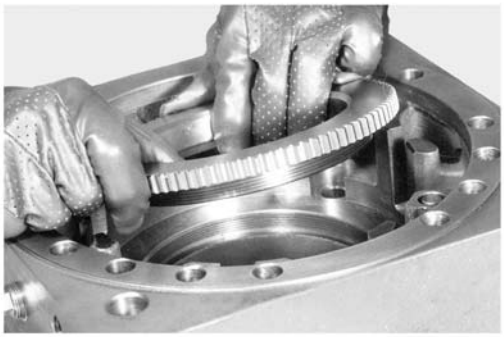
f

Position oil plug.

DISASSEMBLING BRAKING UNIT

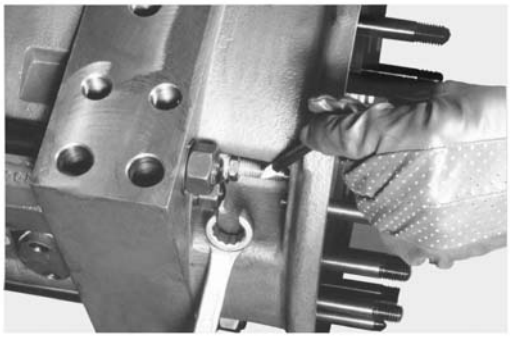
a

Remove the pinion.



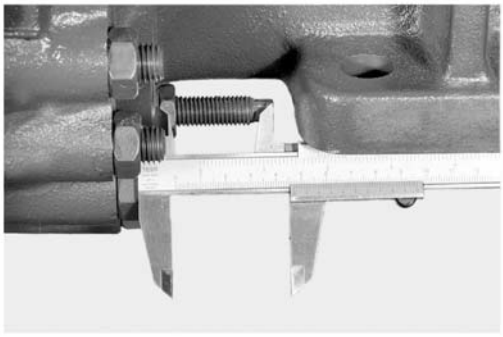
b

Remove threadcrown.



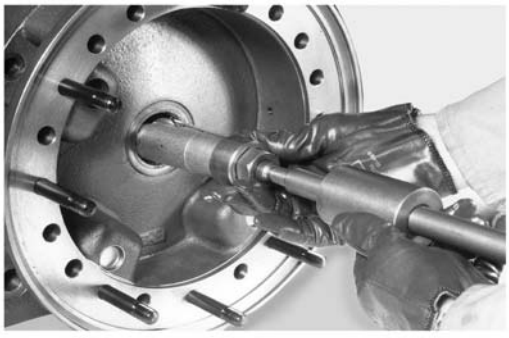
c

Install the screw provided for the mechanical and manual release of the braking units.



d

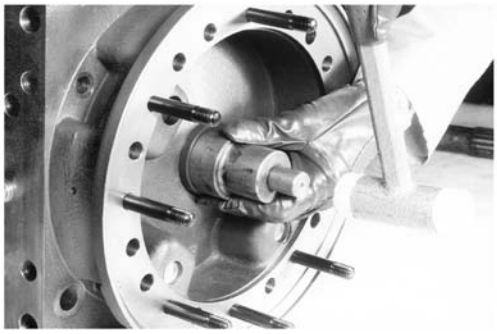
Adjust the bolts to unlock the safety brake at 47 mm and lock the counter nut.



e

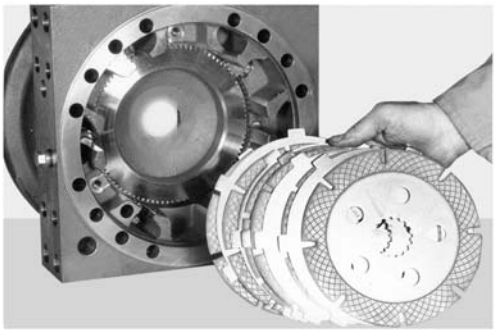
Remove the sealing ring.

ASSEMBLING THE BRAKING UNIT



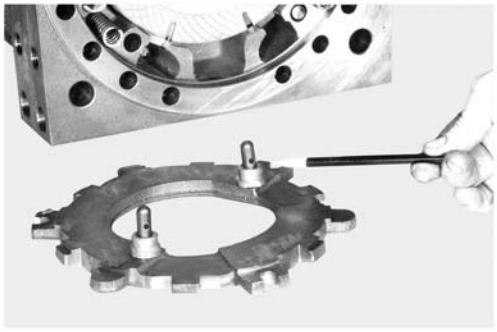
a

Lubricate and fit the OR ring with a normal tool, install the rings in to the arms.



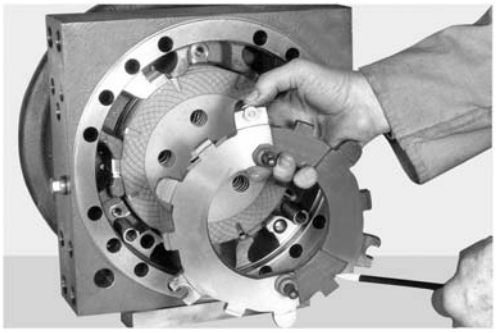
b

For assembling align lubrication oval holes of brake disc.



c

Respect the wise of the colors on the pins.

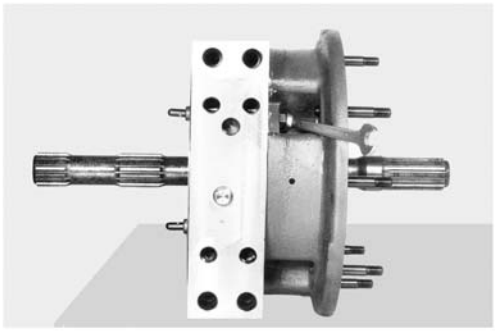


d

Reinstall the intermediate disc, paying attention to right and left position, and to the position of the springs.

e

Tightening the screws whit a dynamometric wrench set to a torque of 30-35 Nm.



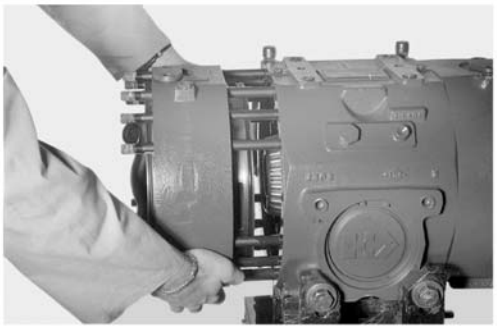
f

Insert the axle shaft. While adjusting the counterclockwise brake, lock temporary the brake disc.

DISASSEMBLING THE NEGATIVE BRAKE

a

Remove the two studs. Fix intermediate cover.

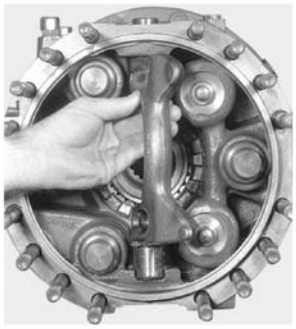


b

Disassemble the intermediate cover.

c

Remove the two covers, lever support and shimwashers.



d

Remove the lever.

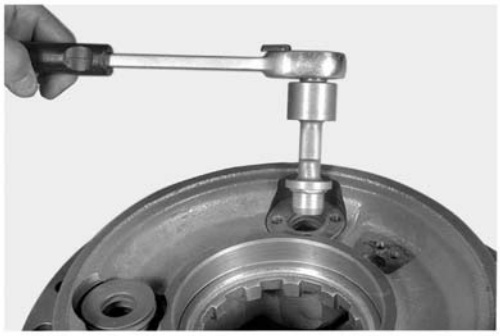
e

Remove the cylinder.

f

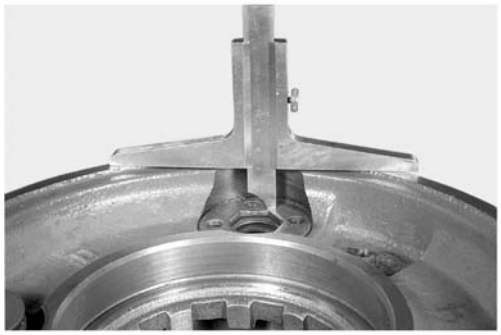
Disassemble negative brake pistons and belleville washers. Reassemble the components in opposite sense.

ASSEMBLING THE NEGATIVE BRAKE



a

Reassemble cylinder and belleville washers.

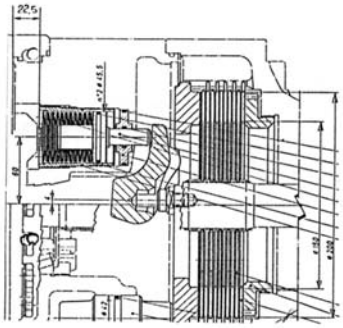


b

Check quote between cover and cylinder plane mm 22,5.

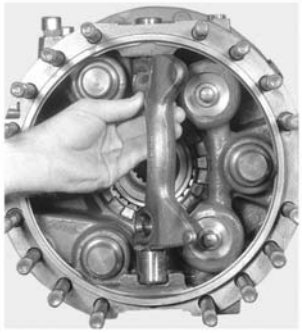
c

Fit the stop and tightin the screw M8 to 25-26 Nm.



d

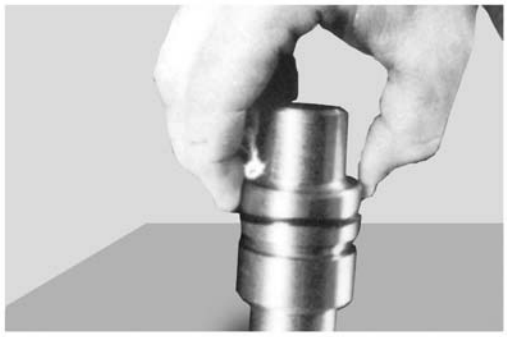
Version 21 springs, chromium plated cylinder.
Piston 45,5 mm R=4 on 60 type.



e

Reassemble lever with shimwashers and covers; tighten screws M8 to 20 Nm.

ASSEMBLING THE BRAKE UNIT

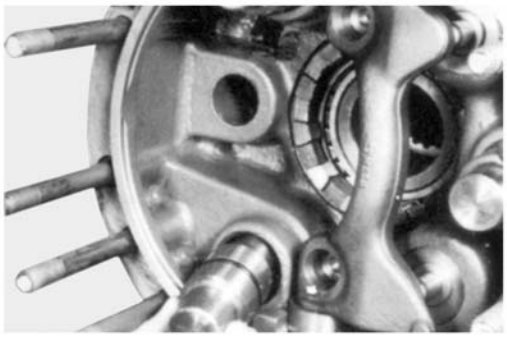


a

Disassemble OR-rings and the anti-extrusion rings.

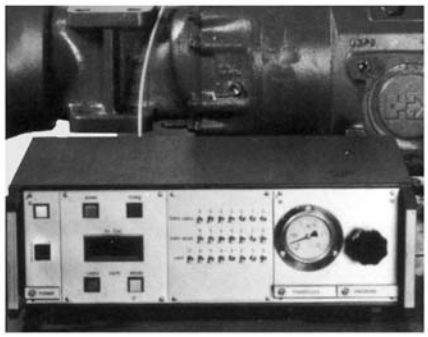
b

Install anti-extrusion rings followed by OR-ring.



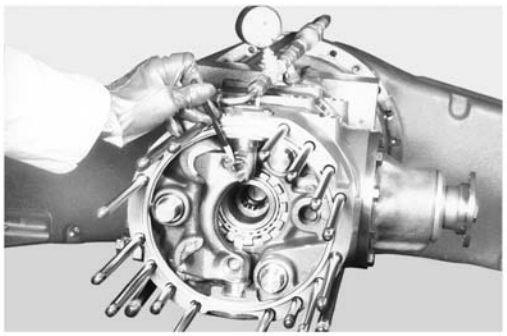
c

Insert the brake pistons.
CAUTION: Hold the pistons position.



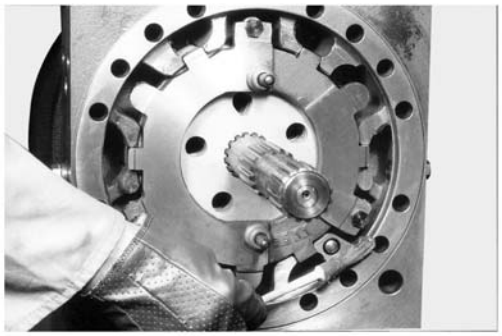
d

Introduce in the negative hydraulic circuit 25-35 Bar.



e

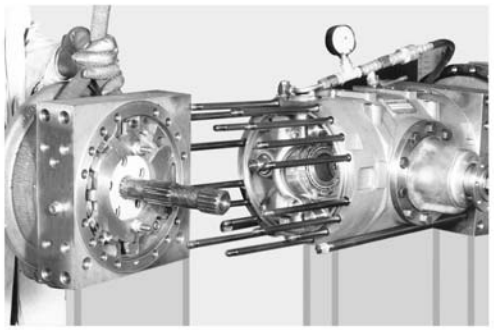
Grease the fulcrum (look the picture) check the OR ring.



f

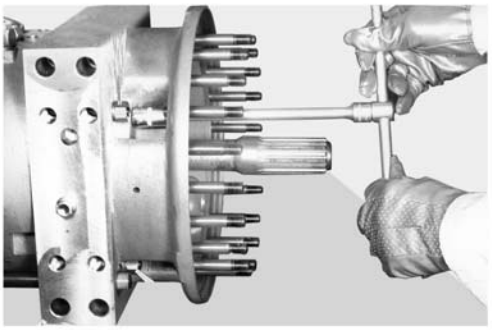
Spread with grease the OR-ring seat.

ASSEMBLING THE BRAKE UNIT



a

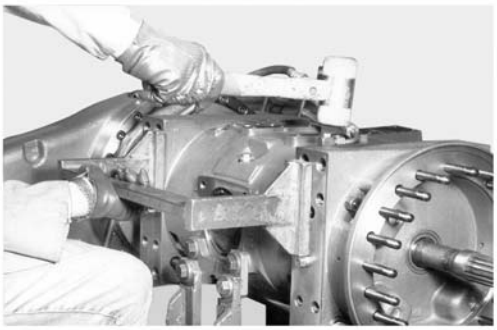
Install the complete brake discs arm.



b

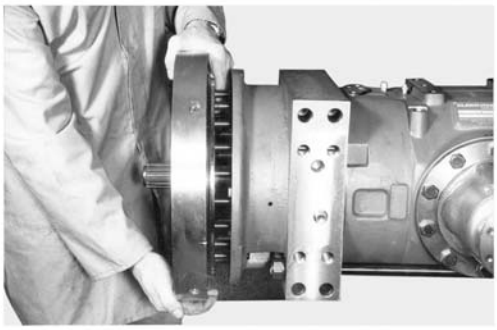
Unclamp brake discs turning clockwise till it stops. Tighten the armnuts with 60 Nm torque temporary.

ASSEMBLING GROUP



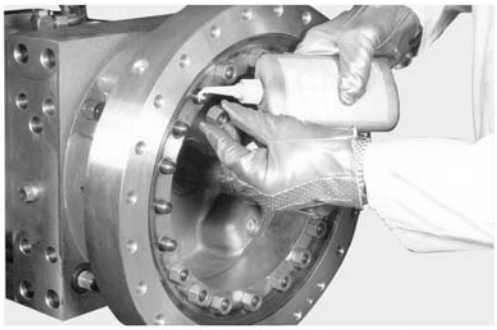
a

Adjust the parallelism.(Look the picture.)



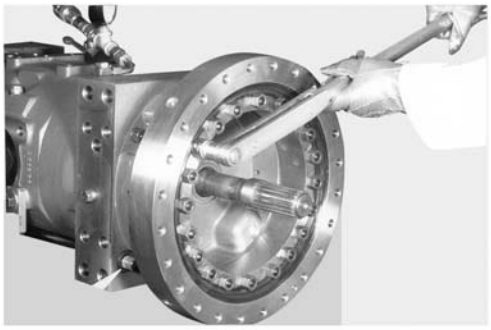
b

Assembly the bearing into mark position.



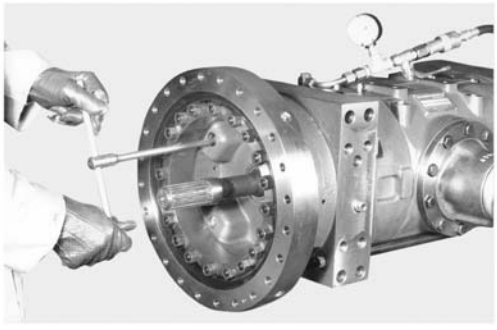
c

Spread with LOCTITE 242 the nuts, and install them.



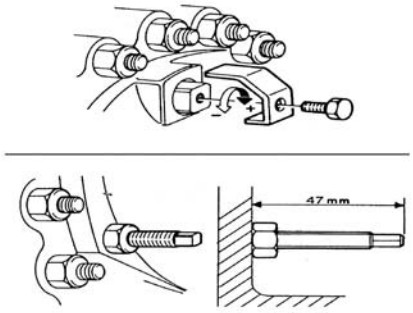
d

Tighten all the nuts with a torque wrench 190-193 Nm.
Tight the down tie rod at 640-645 Nm.



e

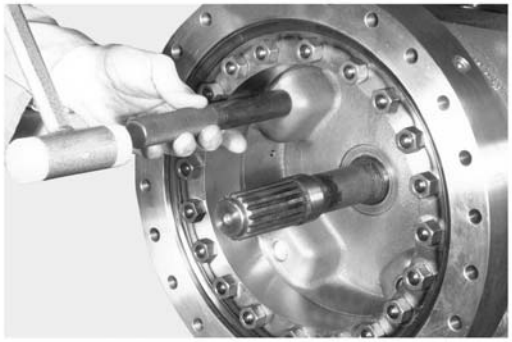
Insert pressure with 25-35 bar in the negative brake circuit.Turn the adjustment nut with 8 Nm torque counterclockwise til it stop. Adjust the gap between the brake discs by turning 3 complete revolutions clockwise.Decrease pressure from brake circuit.



f

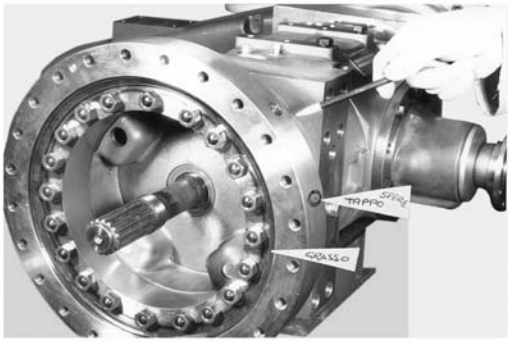
Insert pressure with 25-35 bar in the negative brake circuit.Turn the adjustment nut with 8 Nm torque counterclockwise til it stop. Adjust the gap between the brake discs by turning 3 complete revolutions clockwise.Decrease pressure from brake circuit.

ASSEMBLING GROUP



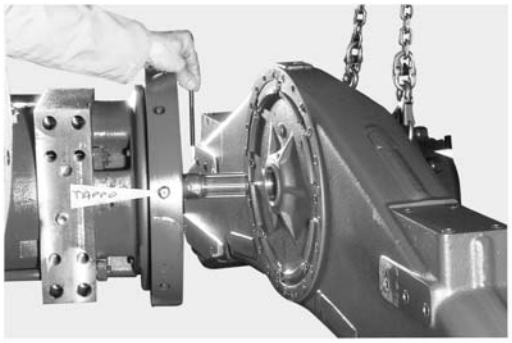
a

Insert plugs.



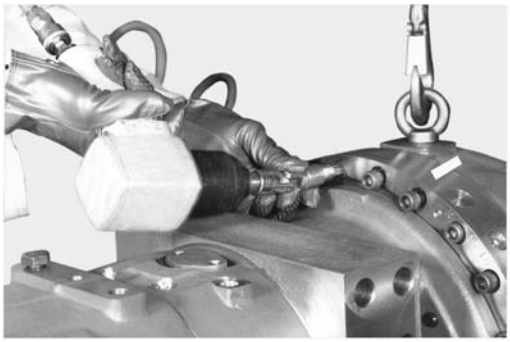
b

Grease the bearing before inserting reduction gear. Lubricate and turn the bearing till the grease spreads homogeneasly.



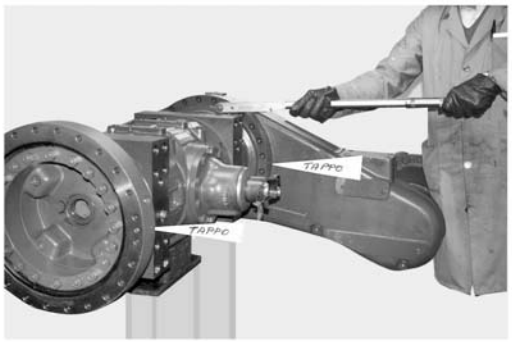
c

Fit the bearing outer ring with inserting balls plugs on zero (horizontal) line. Insert reduction gear, paying attention to the sealing ring. Lubricate the seat.



d

Insert the screws and screw them.



e

Tighten screws with 145-148 Nm torque.

DISASSEMBLING AND ASSEMBLING UNIT HUB 151 TYPE 5 SCREWS AND 5 DOWEL CAT3

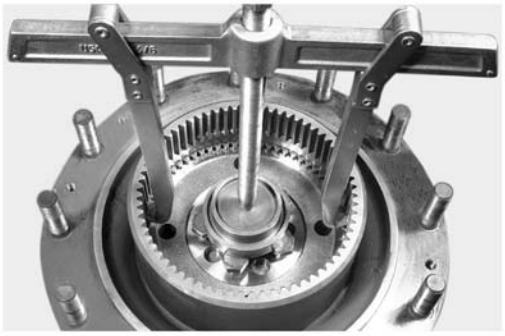
DISASSEMBLY

a

Remove the screws of the crown.

b

Use thread screws and a plug as support for the extractor. Mark the crown if not substitute.



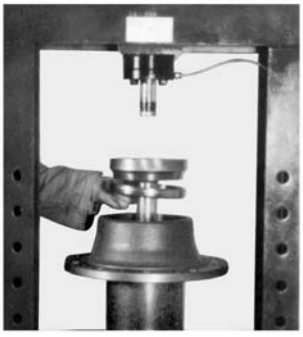
c

Remove the crown.

d

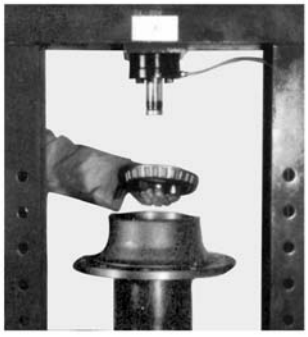
Remove the hub screwing up, with a takle and hammer with a plastic hammer.

ASSEMBLY



e

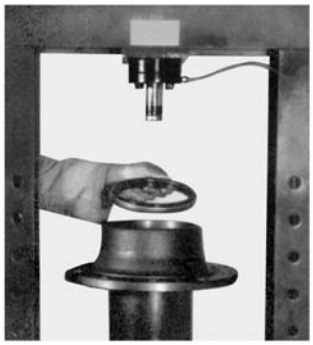
Installation of outward discs of taper roller bearings.



f

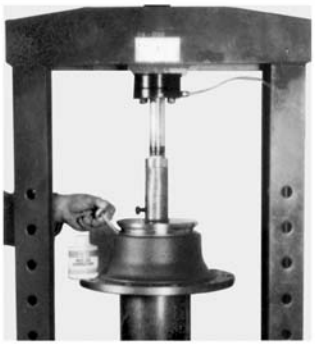
Insert the bearing.

DISASSEMBLING AND ASSEMBLING UNIT HUB 151 TYPE 5 SCREWS AND 5 DOWEL CAT3



a

Apply sealant AREXONS to the surface of the outer sealing ring before inserting ring.



b

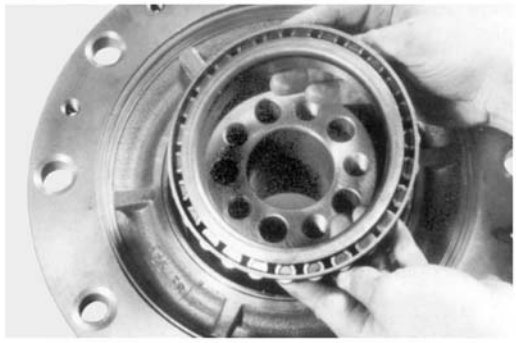
Insert the seal ring.

c

Assembling the wheel studs bolt.

d

Assembling of wheel hub.



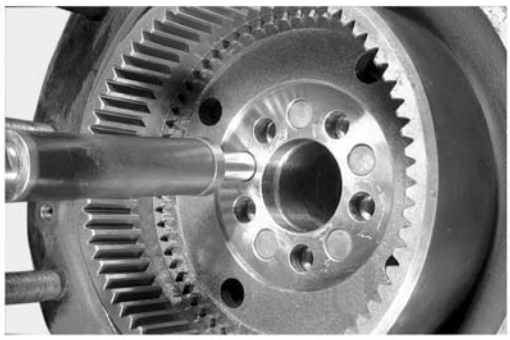
e

Insert the bearing.

f

Insert the bearing with normal tool.

DISASSEMBLING AND ASSEMBLING UNIT HUB 151 TYPE 5 SCREWS AND 5 DOWEL CAT3



a

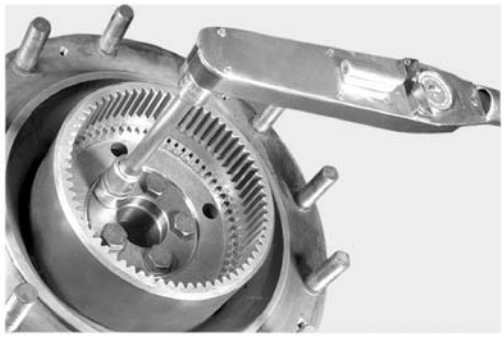
Fitting the crown gear on the hub.
Insert the dowels.

b

Insert locking plate.

c

Insert the screws by using the LOCTITE 270.



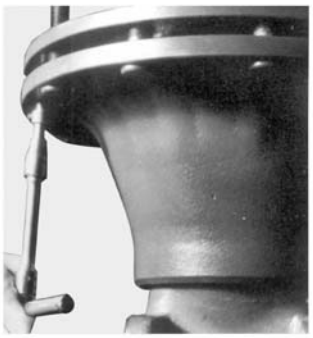
d

Tighten the screws with a torque wrench 460-465 Nm.

e

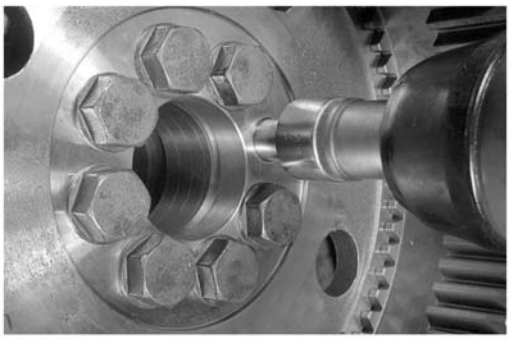
Check the continuous rolling toque on the hub assemble with new bearing and seal ring. Rolling torque from 30 to 40 Nm.

DISASSEMBLING AND ASSEMBLING UNIT HUB 151 TYPE 8 PILOT SCREWS CAT3



a

Disassemble planetary carrier cover.



b

Remove the pilot bolts and mark the crown before disassembly.

c

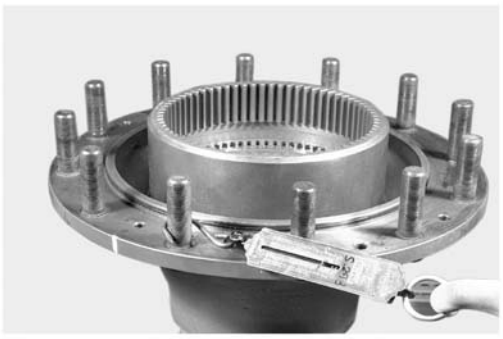
Insert the pilot bolts by using LOCTITE 270 only on the thread.

d

Grease the not thraded part of pilot bolt.

e

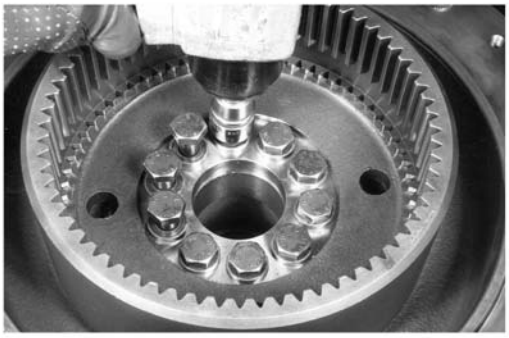
Tighten the pilot bolts with a torque wrench 460-465 Nm.



f

Check the continuous rolling toque on the hub assemble with new bearing and seal ring. Rolling torque from 30 to 40 Nm.

DISASSEMBLING AND ASSEMBLING UNIT HUB 151 TYPE 10 SCREWS AND 10 BUSH CAT3



a

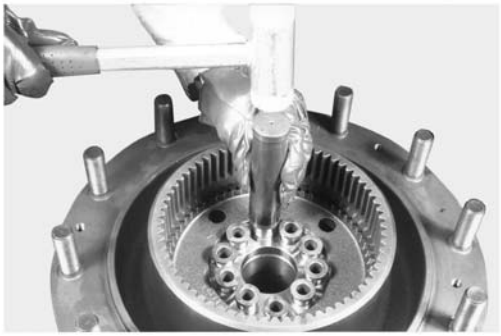
Remove the screws and mark the crown if not replaced.

b

Partially insert the original screws in the hub,with a plate and extractor remove the crown.

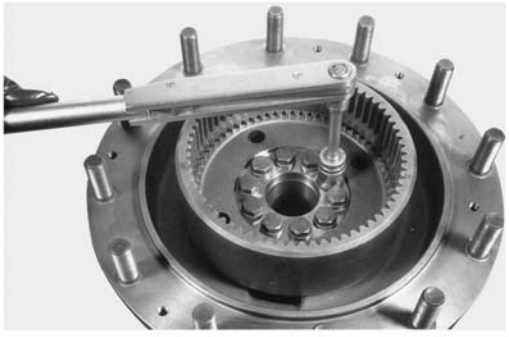
c

Partially insert busher again and assembly the crown.



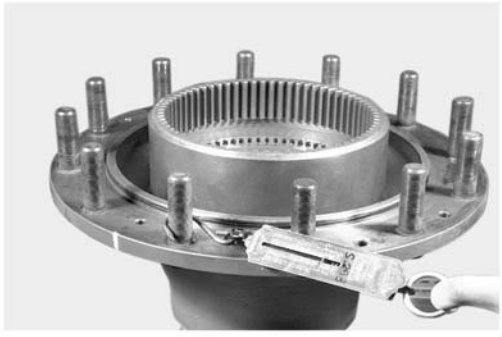
d

Insert the bushes with a normal tool.



e

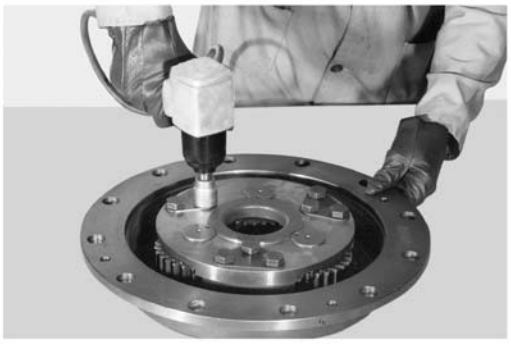
Spread the screws with LOCTITE 270.
Tightening the screws with a torque 220-230Nm.



f

Check the continuous rolling torque on the hub, torque 30-40Nm. Only with new bearing and new seal ring.

DISASSEMBLING AND ASSEMBLING PLANETARY REDUCTION 6, 23

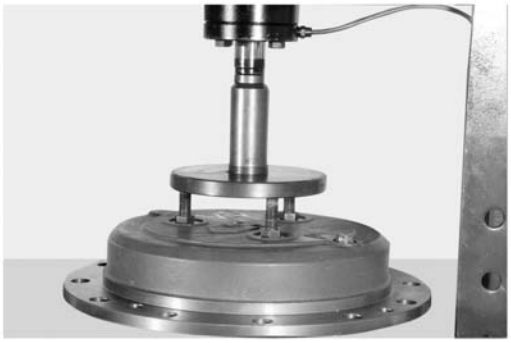


a

Remove the screws.

b

Mark before to remove.



c

Remove the pins by using the same screws.

d

Remove the OR-rings, snap rings, friction washers, roller bearings and planetary gears.

e

Remove the pins from the seat.

f

Insert the pins in to the cover, checking the OR-rings.

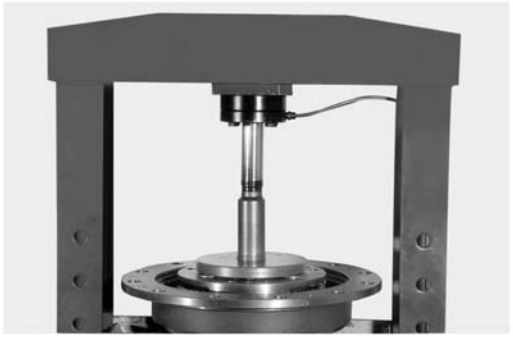
DISASSEMBLING AND ASSEMBLING PLANETARY REDUCTION 6, 23

a

Insert the friction washers, roller bearings, planetary gear, upper friction washer snap rings, and OR-rings.

b

Adjust the cover in its position. Mark the coupling connection position.



c

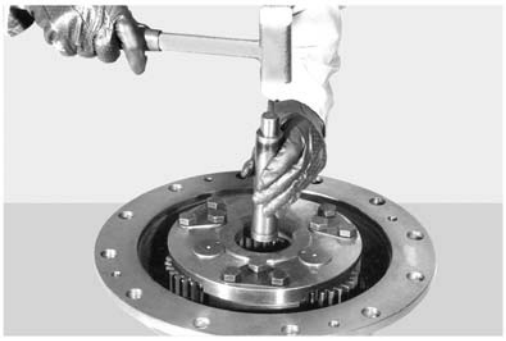
Insert with a press the dowel if removed.

d

Assembly the screws with LOCTITE 270.

e

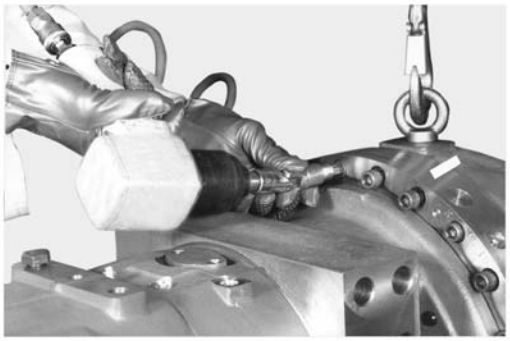
Tighten the screws with a torque wrench 315-320 Nm using loctite 270.



f

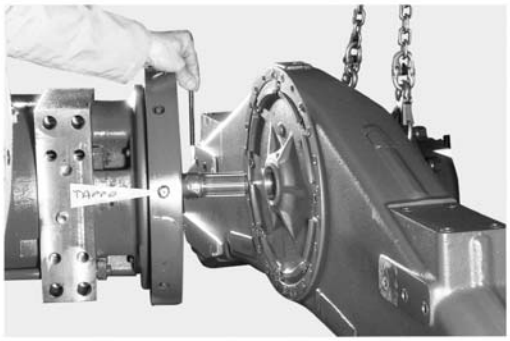
Mounting the shimming plug-end of working stroke axle shaft. Apply sealant AREXONS.

DISASSEMBLING UNIT HUB



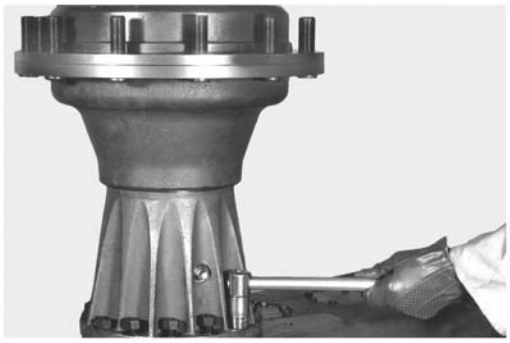
a

Remove the screws and mark the position of the bearing.



b

Remove the reduction gear and place it on the bench.



c

Remove screws nuts and lock washer of flange carrier hub. Mark before removing.

d

By using normal lever and tackle remove flange carrier hub.

e

Adjust flange carrier hub. Extract bearings crown gears.

f

Remove the bearing and the crown gear.

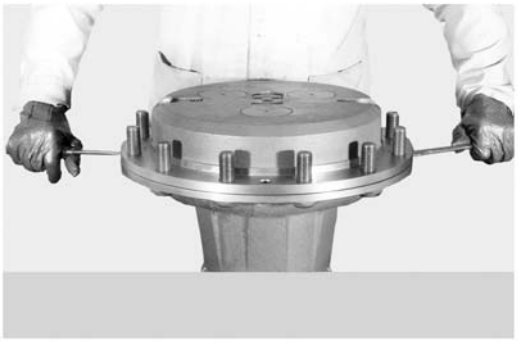
DISASSEMBLING UNIT HUB

a

Remove the seal ring and distance piece.

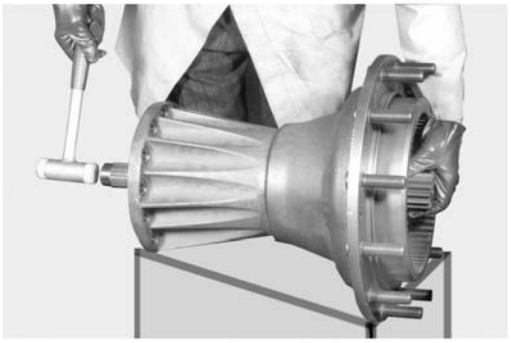
b

Overturn and position the arm vertically.
Remove the screws.



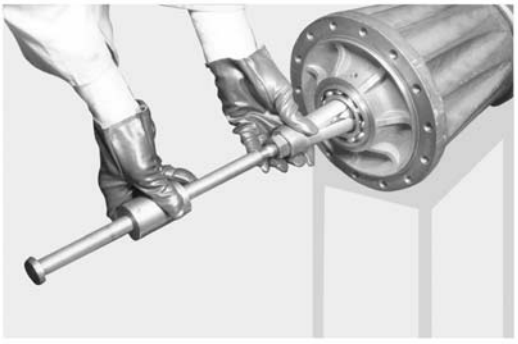
c

Using two screwdrivers remove the planetary reduction



d

Position the arm horizontal. With a plastic hammer extract the axle shaft.



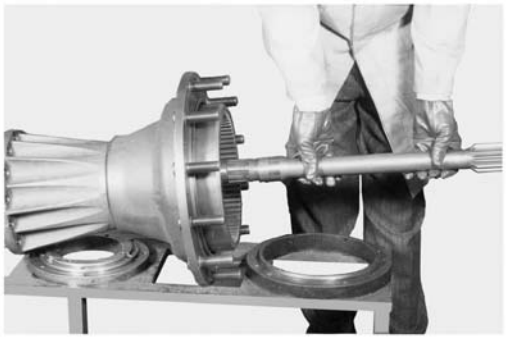
e

Extract the bearing.

f

Extract the seal ring.

ASSEMBLING REDUCTION GEAR



a

Insert the axle shaft.

b

Position vertically. Assemble the planetary reduction into right position and tighten the screws with a torque 50-55 Nm.

c

Position the hub group vertically and assembly the sealing ring.

d

Assembly the bearing.

e

Insert the seal ring and distance piece.

f

Insert the gear and bearing with normal tool.

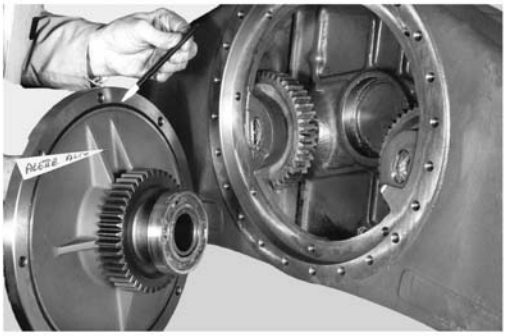
ASSEMBLING REDUCTION GEAR

a

Insert the unit into right position. Look the mark.

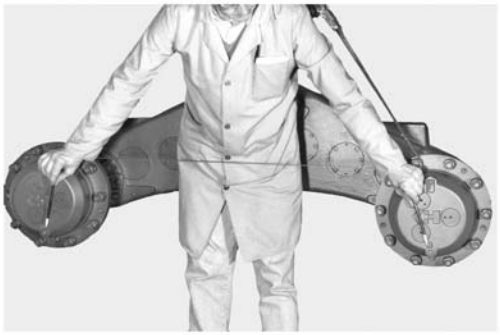
b

Insert the nuts by using LOCTITE 242.



c

Insert the cover with stiffening rib upper side. Greased bearings and OR ring in the same position.

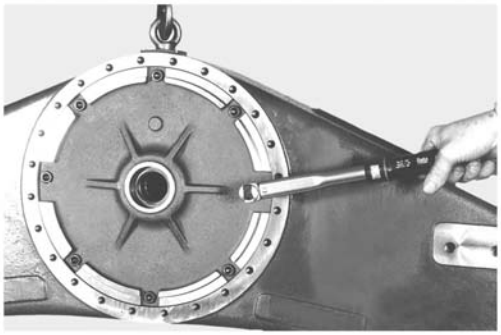


d

Fit wheel hubs plugs in the same position.

e

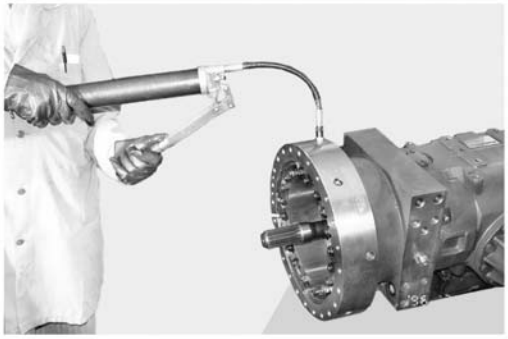
Tighten the nuts with a torque wrench 190-193 Nm.



f

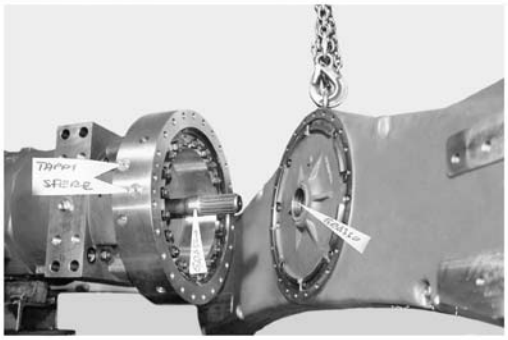
Tighten the screws with a torque wrench 86-89 Nm.

ASSEMBLING REDUCTION GEAR



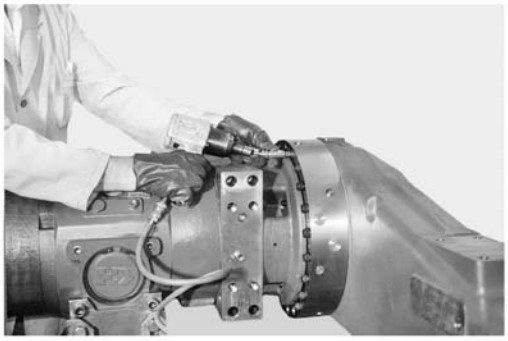
a

Grease the bearing before inserting the reduction gear. Turn till grease spreads out.



b

Fit the bearing outer race with ball inserting plugs an zero (horizontal) line. Insert the reductor. Lubricate seal position.

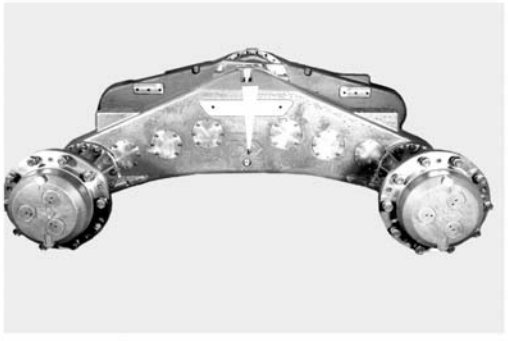


c

Insert the screws and screw them.

d

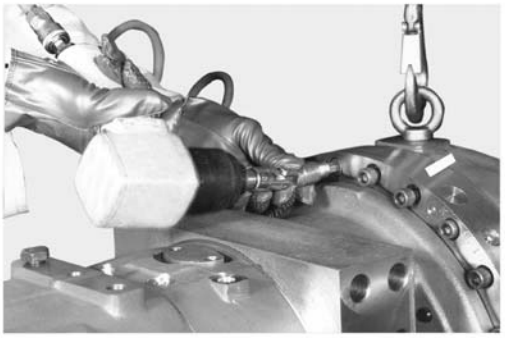
Tighten the screws with a torque wrench 145-148 Nm.



e

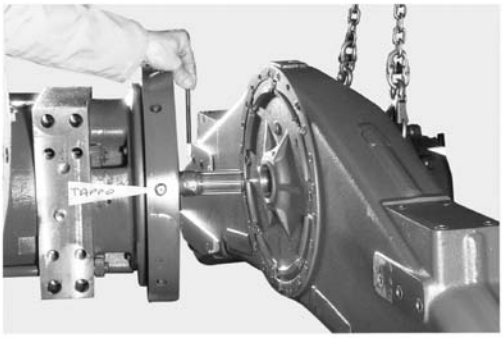
Assemble the reductor gear and lubricate its seats.

DISASSEMBLING REDUCTION GEAR



a

Remove the locking screws of reduction gear and mark the bearing position.

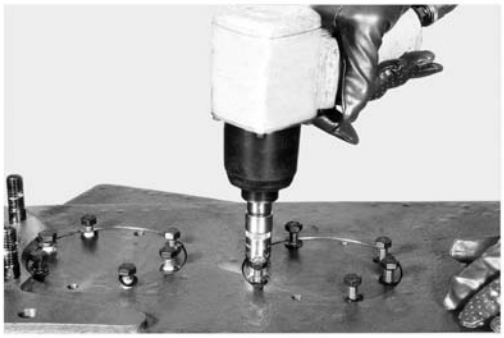


b

Remove the full reduction gear and position it's on the bench.

c

Remove the hub from the reduction gear.

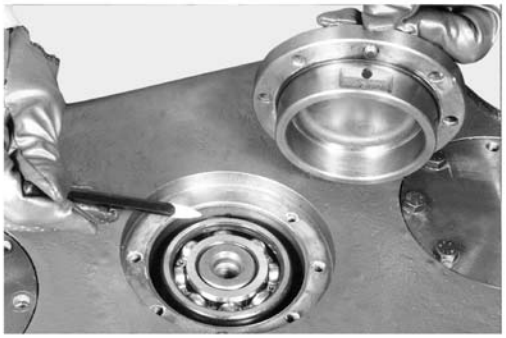


d

Remove the screws from the cover.

e

Remove the cover by using the same screws.



f

Pay attention to hole circulation oil.

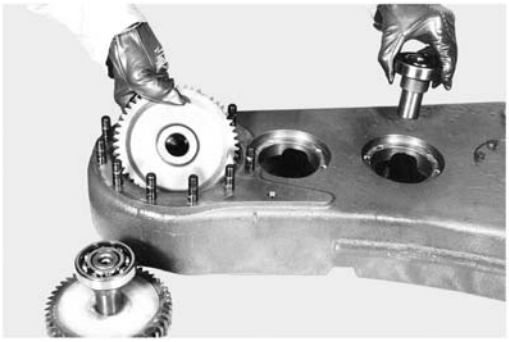
DISASSEMBLING REDUCTION GEAR

a

Remove the pins by using normal tool or bar M16.

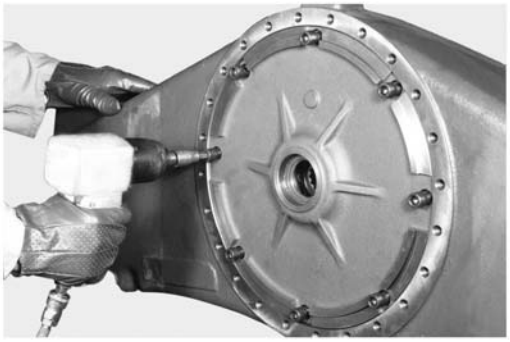
b

Remove hub pins by using idraulic tool or bar M16.



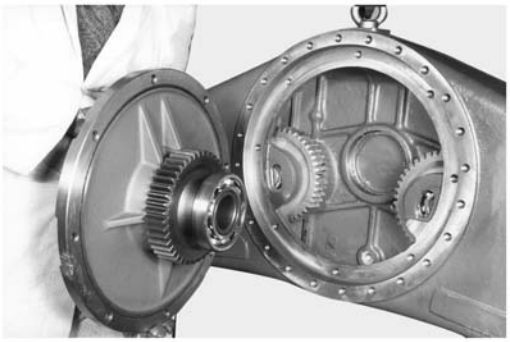
c

Remove the 2 first pins and the gears.



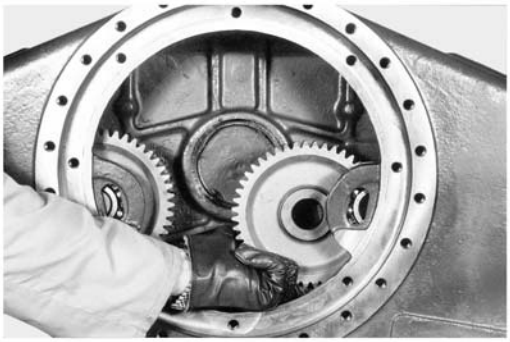
d

Remove the cover screws.



e

Remove the cover.



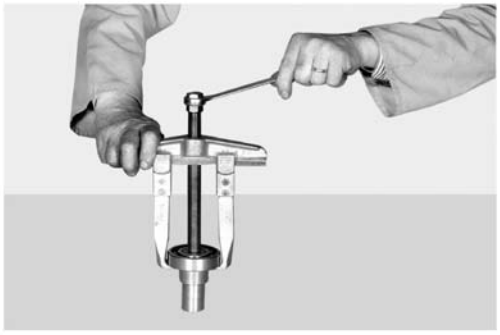
f

Remove the pin and the gear.

DISASSEMBLING REDUCTION GEAR

a

Extract the bearings from the reduction gear seat.



b

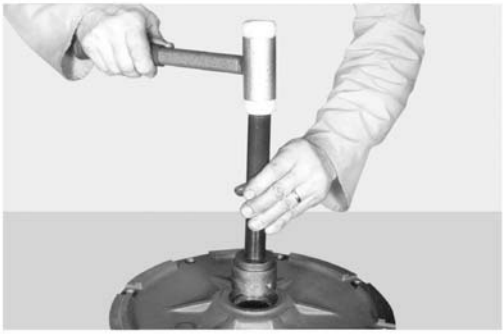
Extract the bearings from the pins.

c

Extract from the cover the full crown gear.

d

Using an extractor, remove the bearings.



e

Extract the seal ring from the cover.

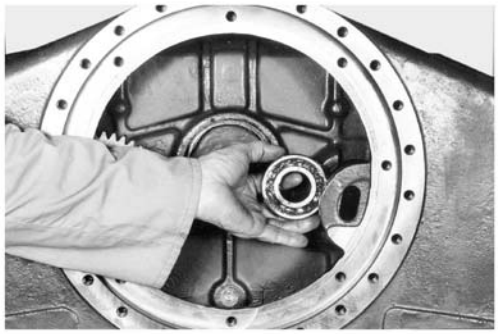
ASSEMBLING REDUCTION GEAR

a

Assembly the new seal ring.

b

Sequencing of the pieces.Pay attention to OR-ring.



c

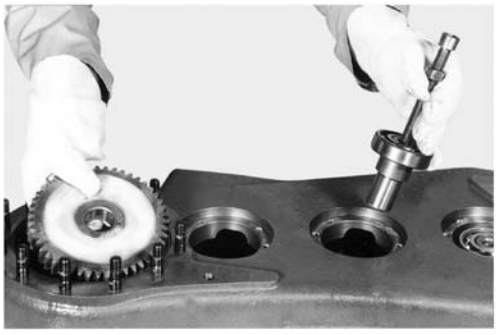
Grease and assemble all hub bearings in reduction gear. Lubricate and insert the bearings in the pins.

d

Heat before the assembly. Difference of temperature 160°.

e

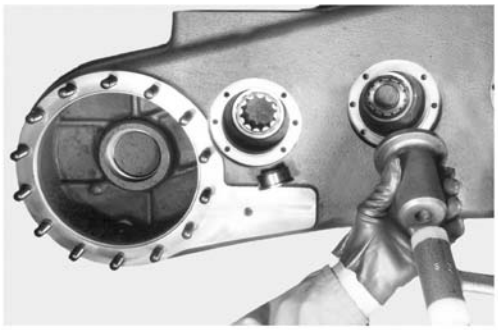
Insert gear and pin before hub gear cools down.



f

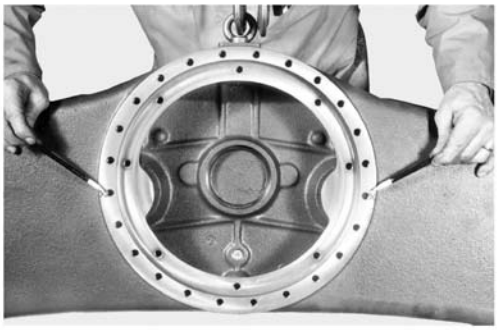
Insert gears and pins before they cool down. Start from the inner gear. Check hub pins are working stroke.

REMOVAL OPTION UNITS 150-151



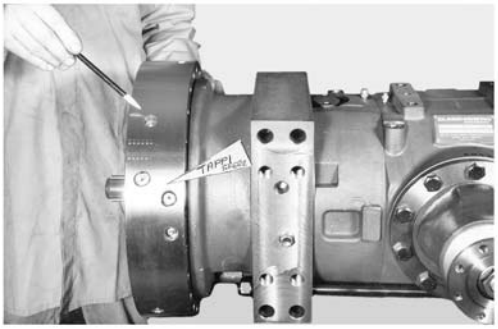
a

Nj ball bearings in the reduction gear.



b

NOTE: Insert in the 2 passing holes 2 grub screw with AREXON.



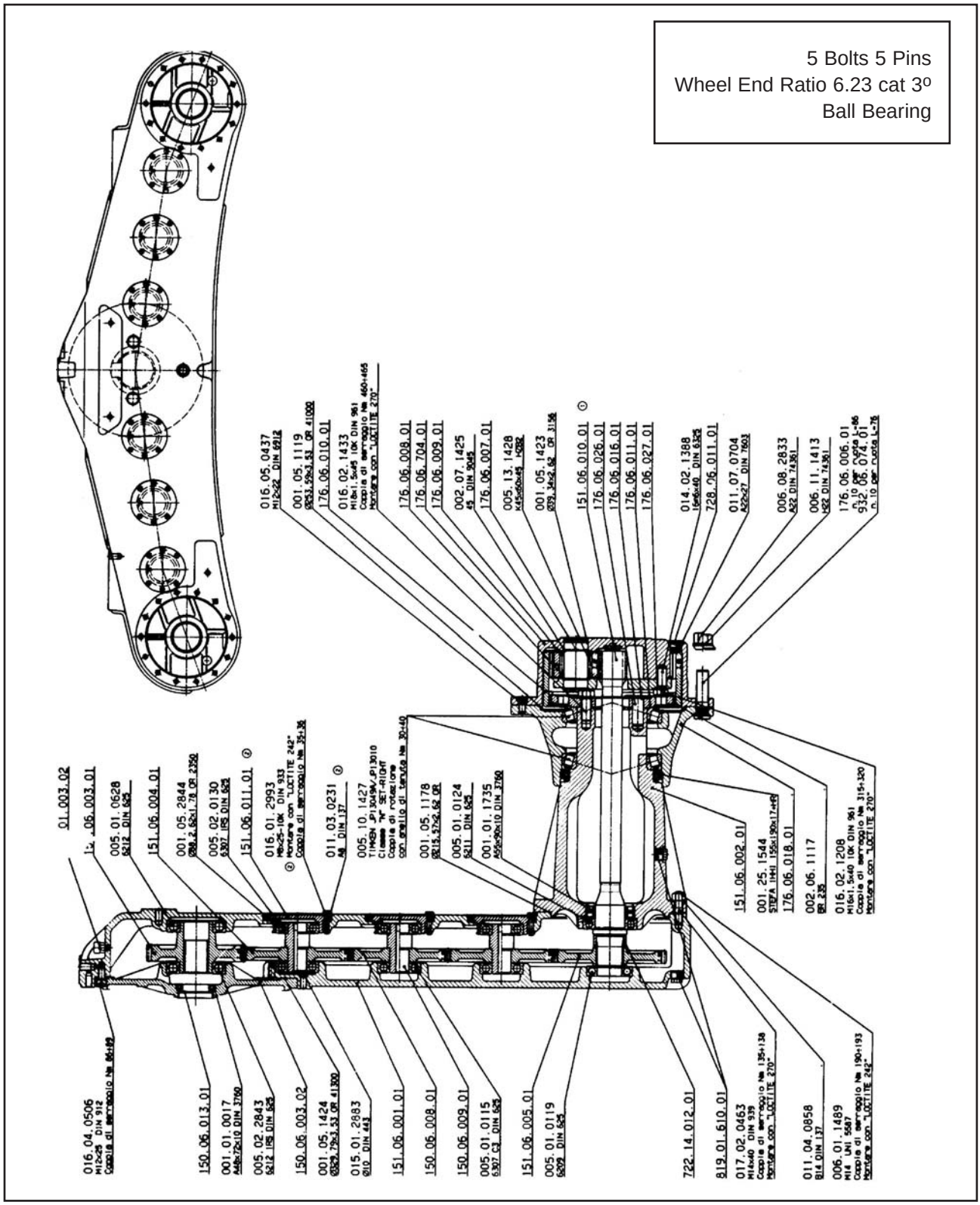
c

Before inserting the reductor, grease double-row ball bearing and 8 grease boxes. Before inserting the reducton gear, lubricate and turn the bearing till the grease spreads out around. Positon the ball inserting plugs on zero (horizontal) line.

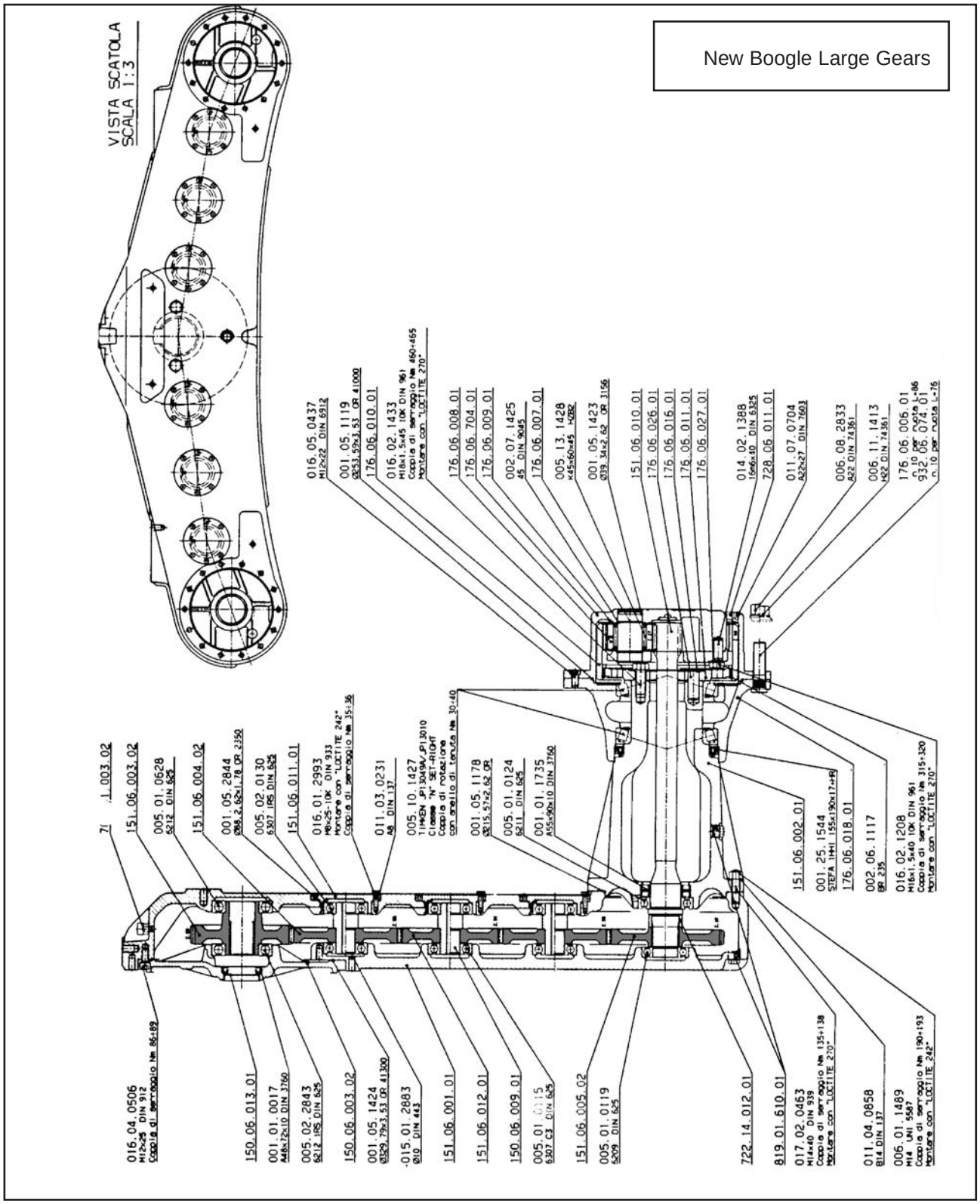
TECHNICAL DOCUMENTATION

MODIFICATION	SOLUTION	DRAWING	DATE	NOTE
PLANETARY HUB FIXING CHANGE	5 bolts 5 pins	151 06 000 01	07/93	with standard 6.23 hub reduction
	10 pilot bolts	151 06 000 03	03/96	with HD 6.23 hub reduction version 1°
	10 pilot studs	151 06 000 05	10/96	with HD 6.23 hub reduction version 2°
	10 bolts 10 bushmg an plate	151 06 000 07	05/97	with HD 6.23 hub reduction version 2°
BOOGIE ARM BEARING CHANGE	ball bearing	151 06 000 01	07/93	only on ilde shaft
	roller bearing	151 06 000 03	03/96	
	idle shaft bearing	151 06 000 04	03/96	
	tapper roller bearing	800 98 205 017	02/98	
LARGE GEAR ON BOOGIE ARM	small gear	151 06 000 01	07/93	
	large gear	151 06 000 02	08/93	
HALF SHAFT	single shaft	151 06 000 02	08/93	
		151 00 000 02	09/94	
	triple shaft	151 06 000 06	10/96	
		151 00 000 03	11/96	
WALKING BEAM BEARING	old design	151 00 000 02	09/94	
	new design	151 00 000 03	11/96	

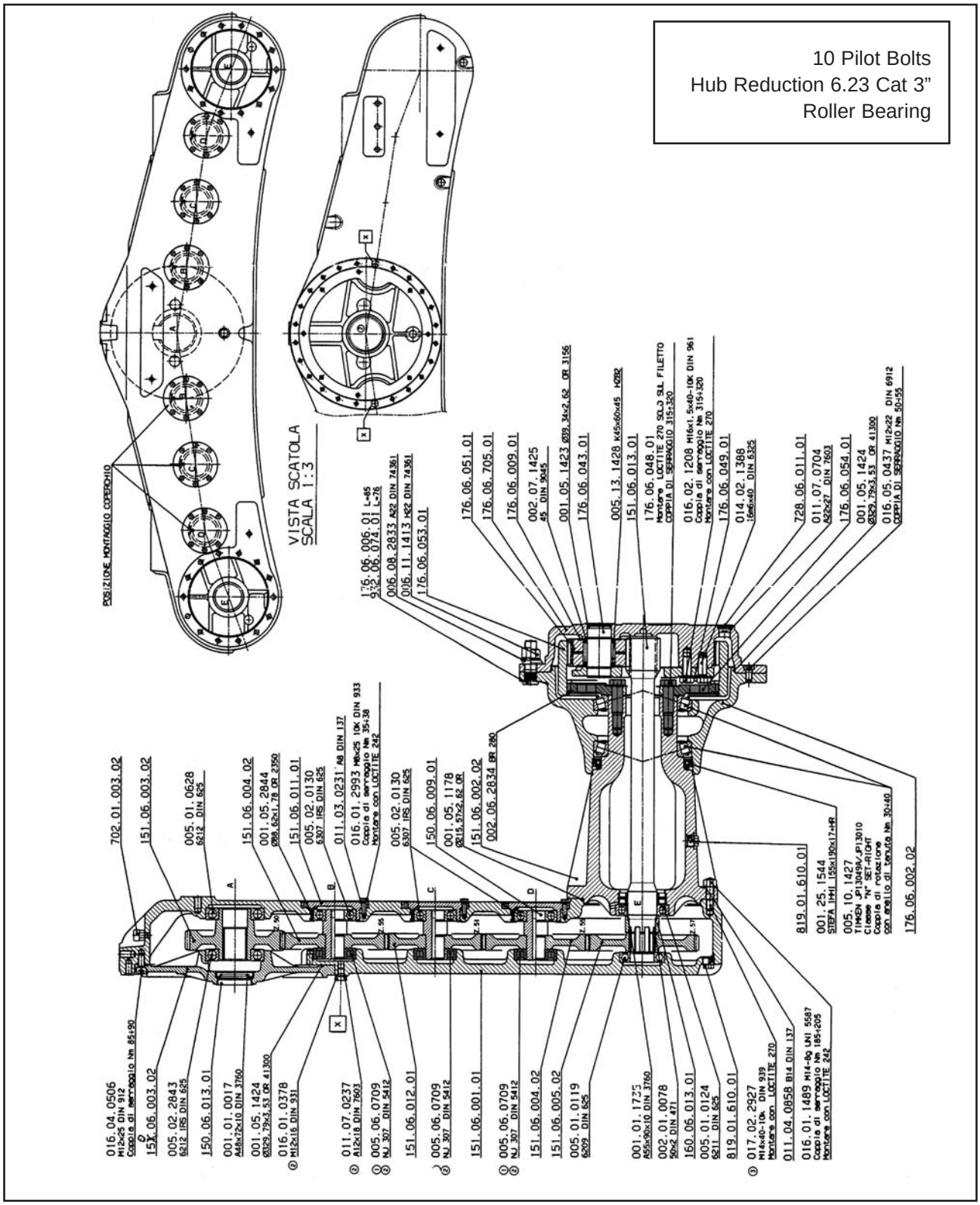
151.06.000.01. 07/93



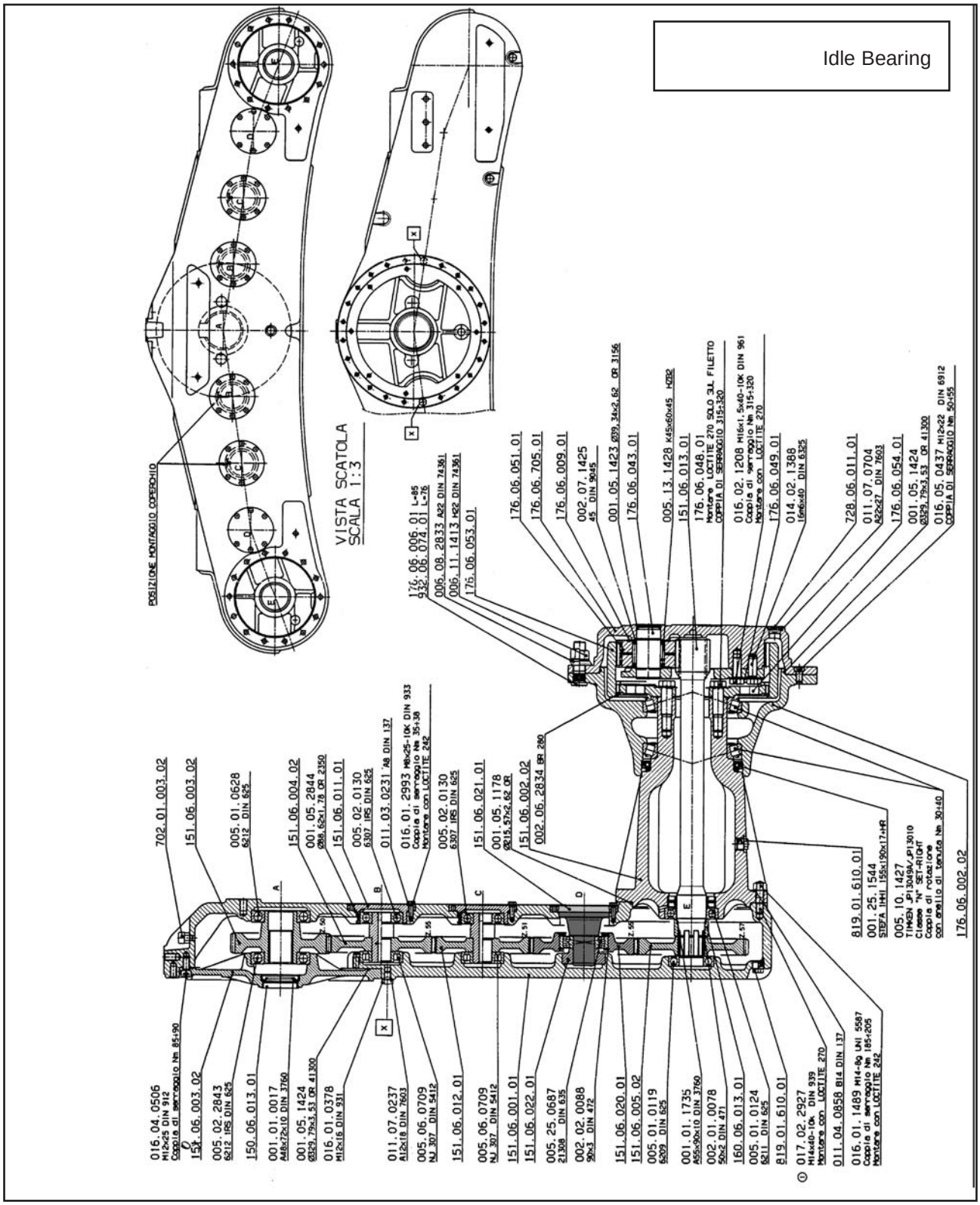
151.06.000.02. 08/93



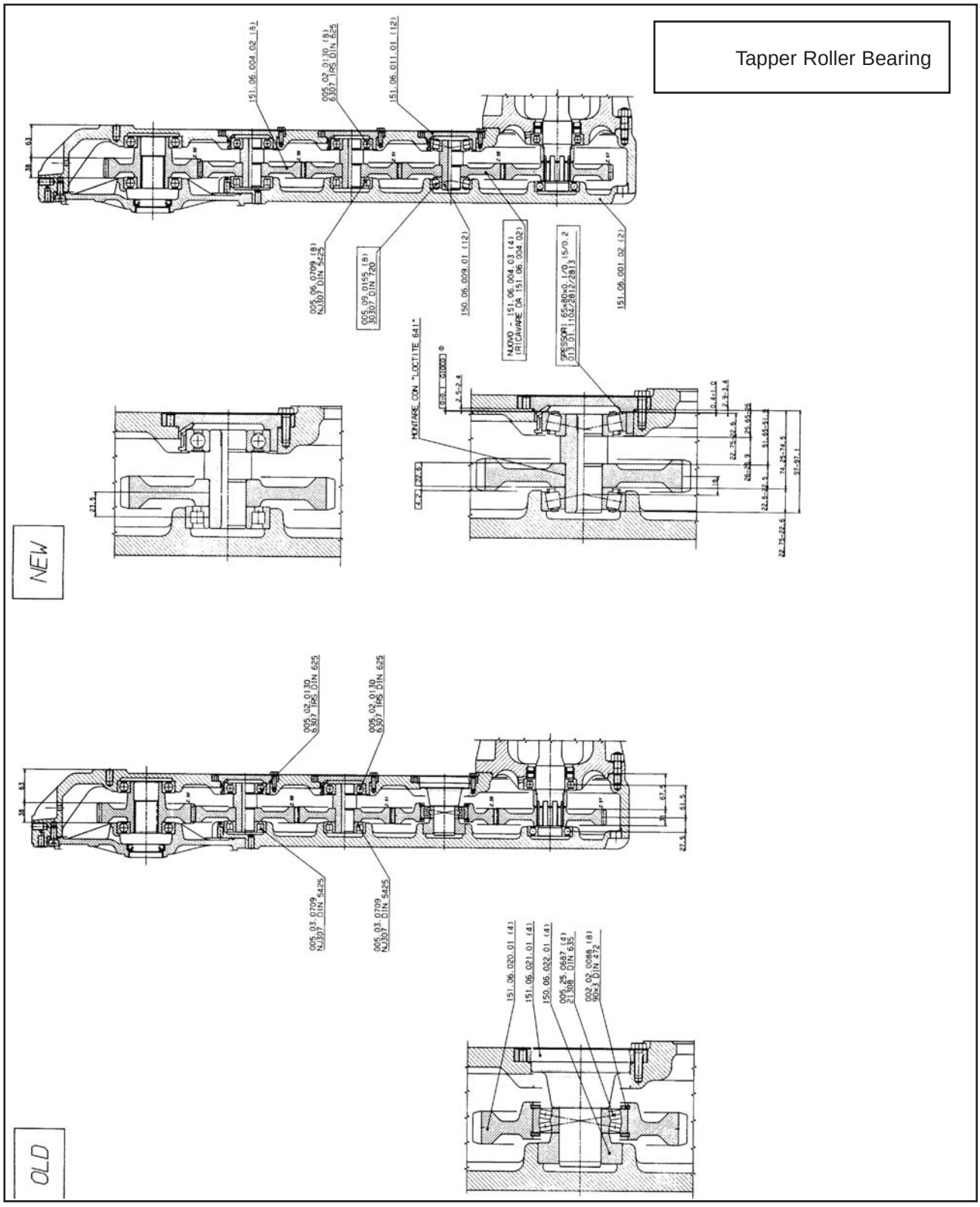
151.06.000.03. 03/96



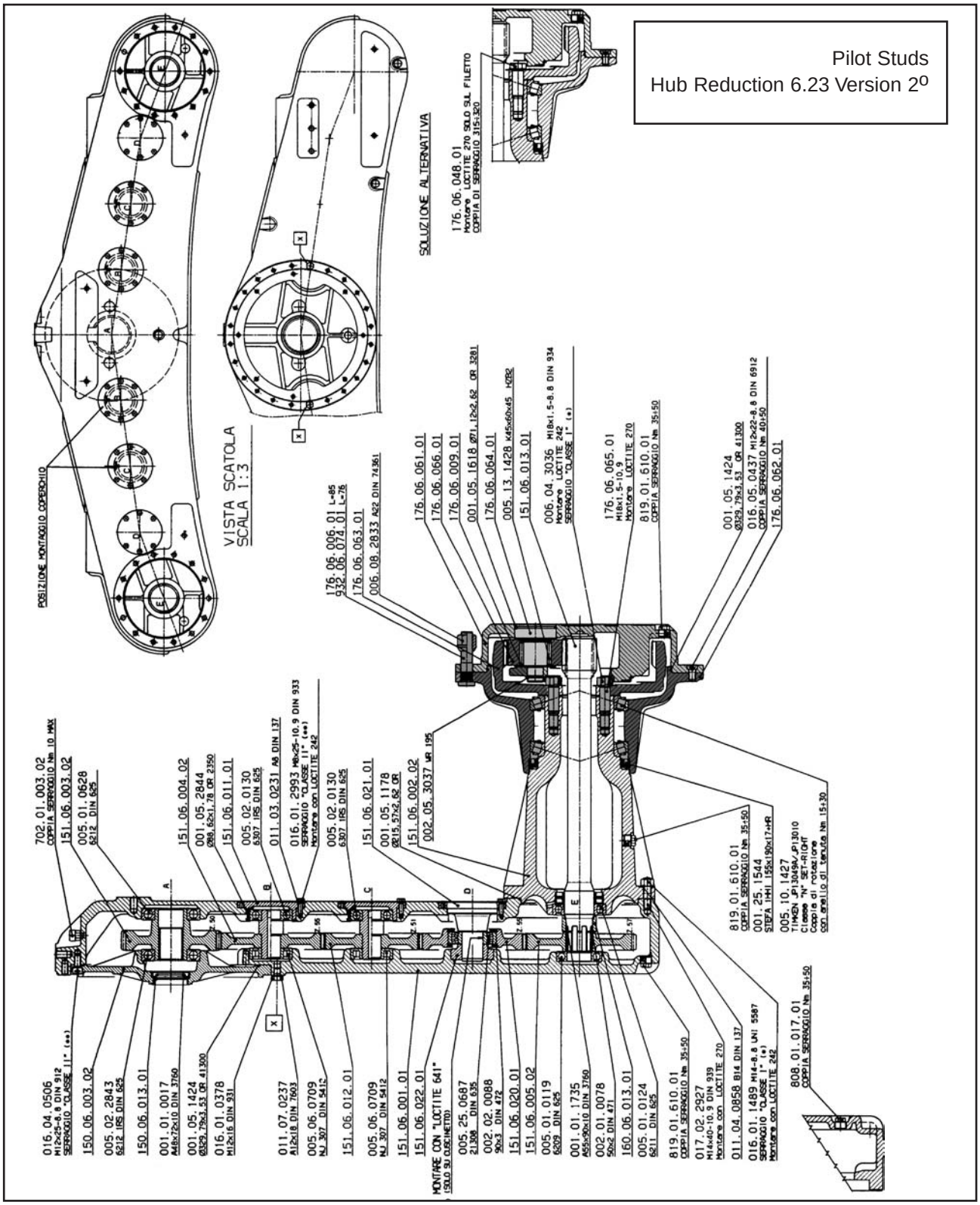
151.06.000.04. 03/96



800.98.205.017. 03/98



151.06.000.05. 10/96



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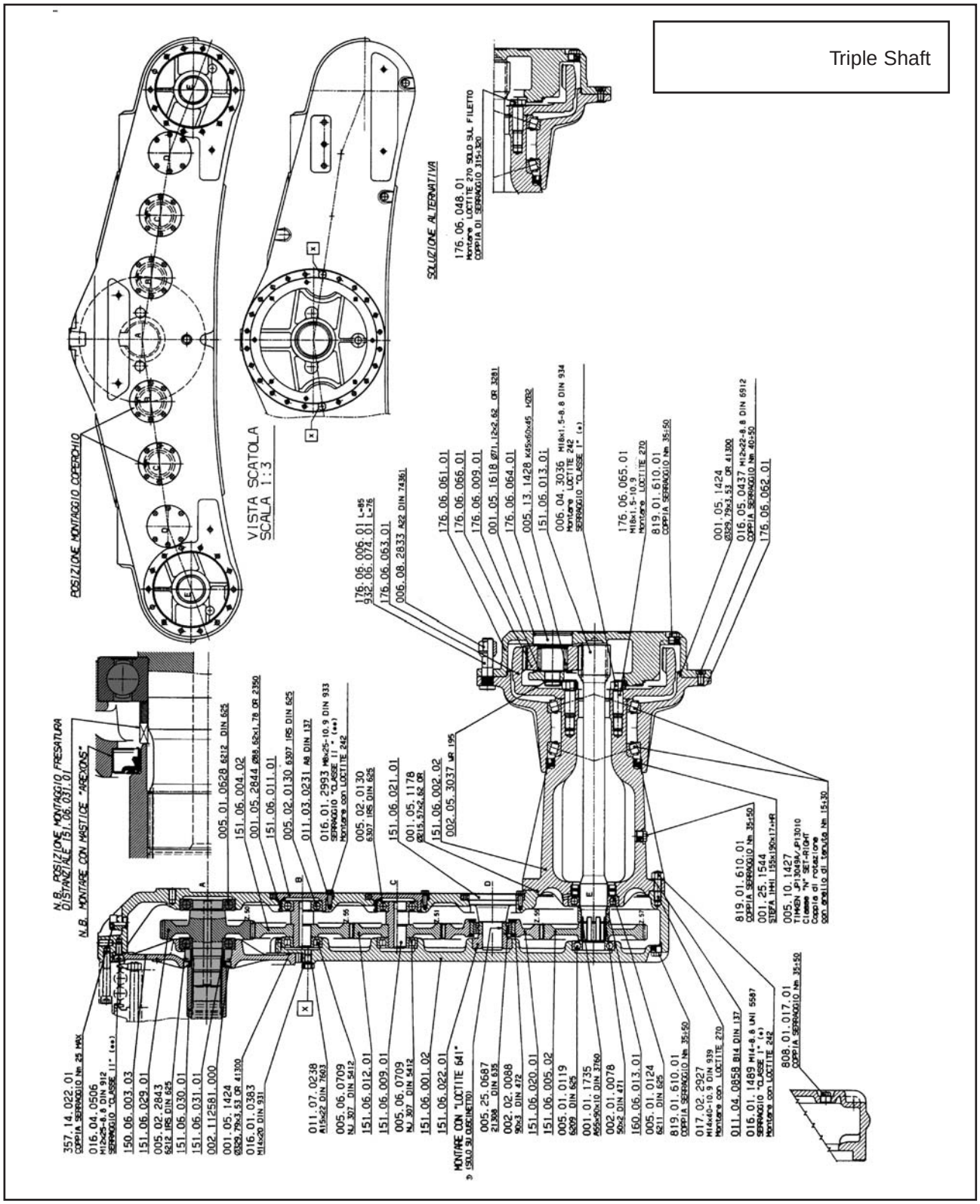
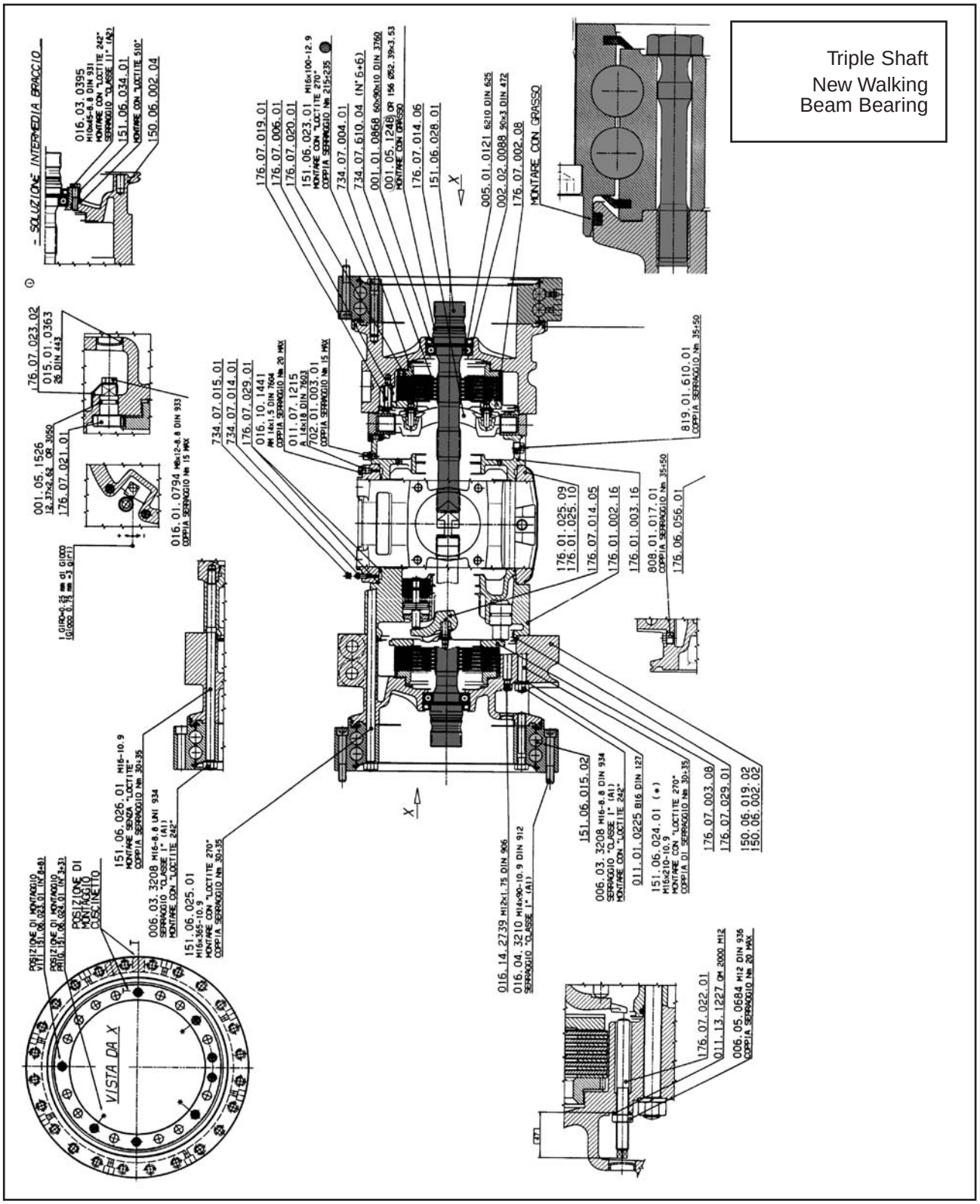


151.00.000.03. 11/96



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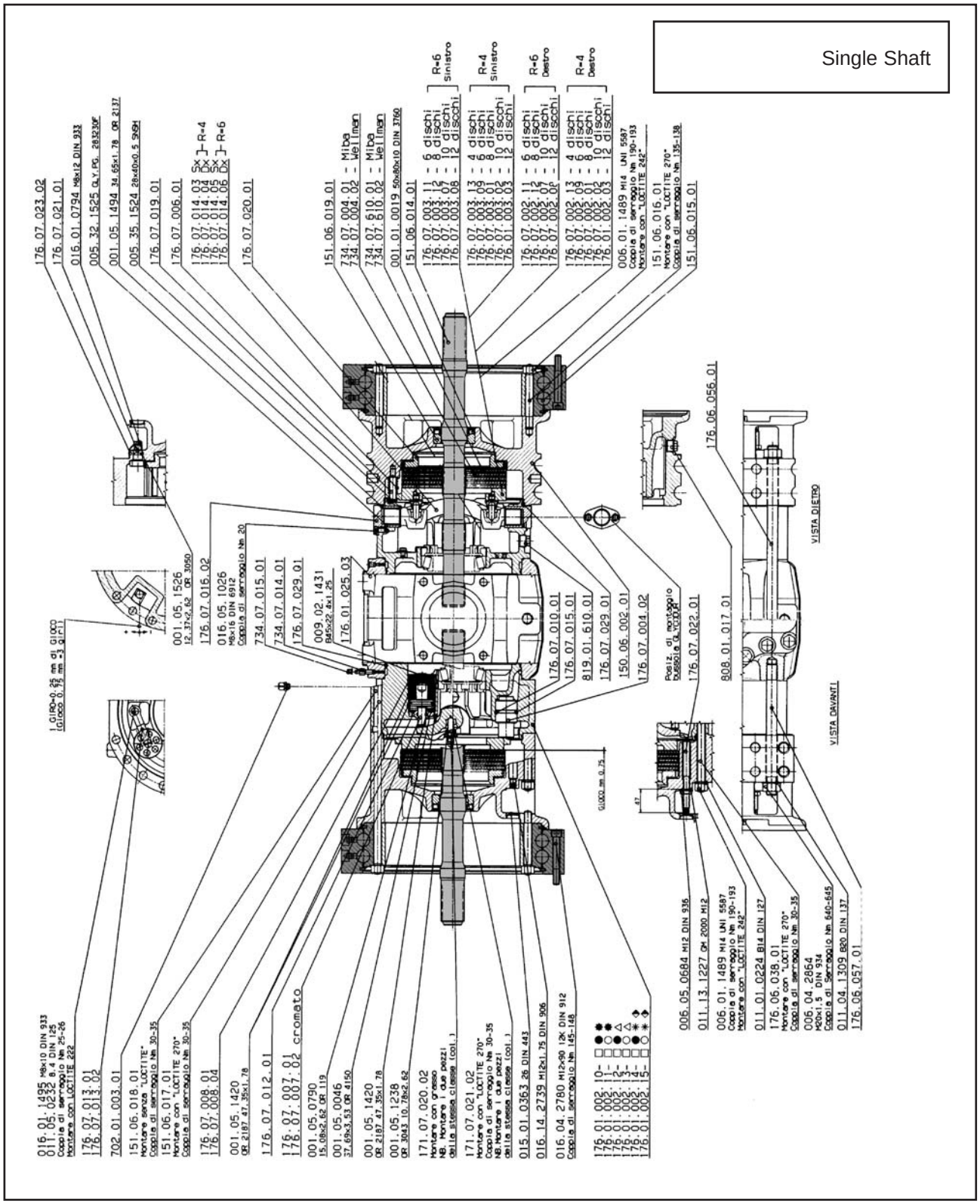

151.06.000.07. 05/97