CHARACTERISTICS

ENGINE

Type — ***MT 523*** *Série A* **+** *MONO-ULTRA*
MLT 523 Turbo *Série A* **+** *MONO-ULTRA*

PERKINS 903-27A
PERKINS 903-27B

	903-27A	**903-27B**
- Number of cylinders	3 in line	3 in line
- Number of strokes	4	4
- Suction	Natural	Compressed turbo
- Injection system	Direct	Direct
- Ignition sequence	1.2.3.	1.2.3.
- Clearance of rocker valve (Cold)		
. Inlet	0,20 mm	0,20 mm
. Exhaust	0,45 mm	0,45 mm
- Capacity	2700 cm3	2700 cm3
- Bore	95 mm	95 mm
- Stroke	127 mm	127 mm
- Compression ratio	17.5 / 1	17.5 / 1
- Nominal rating loaded	2100 rpm	2250 rpm
- Rating slow unladen	930 rpm $^{+20}_{-0}$	930 rpm $^{+20}_{-0}$
- Max. rating unladen	2310 rpm	2420 rpm
- Power ISO/TR 14396	52 cv / 38,5 kw	64 cv / 48 kw
- Maximum torque ISO/TR 14396	192 Nm à 1200 rpm	242,5 Nm à 1400 rpm
- Air cleaner	Dry 3 microns	Dry 3 microns

COOLING CIRCUIT

- Type	By water
- Fan	Puller
. Number of blades	10
. Diameter	430 mm
- Thermostat	
. Start opening	80 °C to 84 °C
. Full opening	92 °C to 98 °C

HYDROSTATIC TRANSMISSION

HYDROSTATIC PUMP — **MANNESMANN REXROTH**

- Type	A4VG56DA1D7/32R with variable cubic capacity and with automatic power governor
- Gear reverser	Electromagnetic 12V
. Number of forward gears	1
. Number of reverse gears	1
- Main pump	
. Max. / Mini displacement	cm^3/r
. Max. flow rate	L/min
. Working pressure	Bar
- Boost pump	
. Displacement	cm^3
. Max. flow rate	L/min
. Boost pressure Max. R.P.M.	28 ±2 Bar (Transmission in neutral)

HYDROSTATIC MOTOR — **MANNESMANN REXROTH**

- Type	A6VM80DA1/63W with variable cubic capacity
. Max. / Mini displacement	cm^3/r

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MT 523 Série A + MONO-ULTRA

FRONT AND REAR TYRES

	DIMENSIONS	PRESSURE	TYRE LOAD		PRESSURE ON THE CONTACT SURFACE HARD GROUND	PRESSURE ON THE CONTACT SURFACE LIGHT GROUND	AREA OF THE CONTACT SURFACE HARD GROUND	AREA OF THE CONTACT SURFACE LIGHT GROUND
STANDARD	**12,0-18 12PR T86 DUNLOP**	**4,2 Bar**	Front unladen	1200 kg	7,8 kg/cm2	2,5 kg/cm2	154 cm2	480 cm2
			Front laden	3200 kg	11 kg/cm2	3,8 kg/cm2	291 cm2	842 cm2
			Rear unladen	1300 kg	8,1 kg/cm2	2,6 kg/cm2	160 cm2	500 cm2
			Rear laden	450 kg	5,7 kg/cm2	1,9 kg/cm2	78 cm2	229 cm2
OPTION	**10,5x18 10PR MPT TG42 TL DUNLOP**	**4,3 Bar**	Front unladen	1200 kg	7,8 kg/cm2	2,1 kg/cm2	154 cm2	569 cm2
			Front laden	3200 kg	12,7 kg/cm2	3,8 kg/cm2	252 cm2	834 cm2
			Rear unladen	1300 kg	8,3 kg/cm2	2,2 kg/cm2	157 cm2	581 cm2
			Rear laden	450 kg	3,5 kg/cm2	0,9 kg/cm2	127 cm2	470 cm2
OPTION	**12,5/80x18 10PR SGI GOODYEAR**	**3,2 Bar**	Front unladen	1200 kg	5,8 kg/cm2	1,6 kg/cm2	206 cm2	762 cm2
			Front laden	3200 kg	10,6 kg/cm2	2,9 kg/cm2	301 cm2	1114 cm2
			Rear unladen	1300 kg	6,2 kg/cm2	1,7 kg/cm2	210 cm2	778 cm2
			Rear laden	450 kg	2,6 kg/cm2	0,7 kg/cm2	170 cm2	630 cm2
	12,5/80x18 10PR SGL TL GOODYEAR	**3,2 Bar**	Front unladen	1200 kg	3,1 kg/cm2	1,6 kg/cm2	381 cm2	762 cm2
			Front laden	3200 kg	5,7 kg/cm2	2,9 kg/cm2	557 cm2	1114 cm2
			Rear unladen	1300 kg	3,3 kg/cm2	1,7 kg/cm2	390 cm2	778 cm2
			Rear laden	450 kg	1,4 kg/cm2	0,7 kg/cm2	315 cm2	630 cm2

HYDRAULIC CIRCUIT

- Type of pump	Gear pump with flow divider
. Capacity	37 cm^3
- Lifting, tilting, telescoping, attachment circuit	
. Max. rating capacity unladen	85 L/min
. Pressure	230 Bar
- Steering circuit	
. Max. rating capacity unladen	85 L/min
. Pressure	140 Bar
- Filtration	
. Return	10 Microns
. Suction	100 Microns

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Rocker cover

To remove and to fit 12A-01

Early engines are supplied with an aluminium rocker cover. The latest engines have a plastic rocker cover. Both of these covers have a seal (B1) fitted in the flange.

To remove

1 Disconnect the breather pipe.

2 Remove the two cap nuts (A1). Each cap nut has a steel washer (A2), a shim washer (A3) and a rubber seal (A4).

Note: The shim washers are not used with the plastic rocker covers.

3 Lift off the rocker cover.

To fit

1 Check the condition of the rubber seals (A4), the steel washers (A2) and the shim washers (A3) for the cap nuts (A1). If necessary, the seals for the cap nuts can be renewed.

Note: The shim washers are not used with the plastic rocker covers.

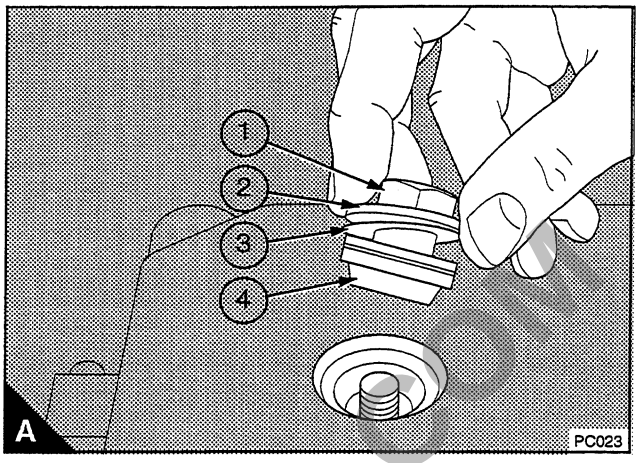
2 Check the condition of the rocker cover seal (B1). If necessary, the seal can be renewed.

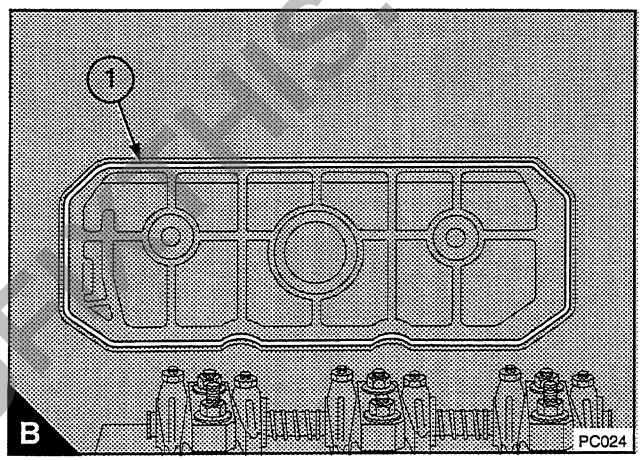
3 Clean the seal face of the cylinder head and fit the rocker cover.

4 Fit the steel washer, the shim and the seal to each cap nut and fit the cap nuts.

Caution: *Damage to the seals can occur if the cap nuts are not tightened centrally through the sealing washer and the rocker cover. If the seals are damaged they must be renewed.*

5 Tighten the cap nuts to 30 Nm (22 lbf ft) 3,1 kgf m for the aluminium rocker cover, or 20 Nm (15 lbf ft) 2,0 kgf m for the plastic rocker cover.





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Recommended torque tensions

The torque tensions below apply to components lubricated lightly with clean engine oil before they are fitted.

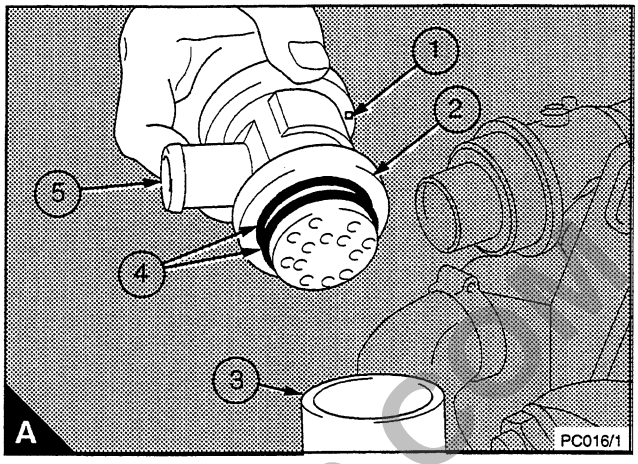
Description	Thread size	Torque		
		Nm	lbf ft	kgf m
Cylinder head assembly				
Setscrews, cylinder head	M12/M14	(see	section	12)
Fasteners, rocker shaft brackets:	M10	see	section	12)
Cap nuts, rocker cover - metal cover	M10	30	22	3,0
- plastic cover	M10	20	15	2,0
Setscrews, inlet manifold to cylinder head	M8	22	16	2,2
Nuts, exhaust manifold to cylinder head	M8	22	16	2,2
Setscrews, engine lift bracket	M10	44	33	4,5
Piston and connecting rod assembly				
Nuts, connecting rods	7/16 UNF	77	57	7,9
Crankshaft assembly				
Setscrews, main bearings	9/16 UNF	152	112	15,5
Setscrews, crankshaft pulley	7/8 UNF	325	240	33,2
Setscrews, rear oil seal housing	M8	22	16	2,2
Setscrew, balance weight to crankshaft	7/16 UNF	73	54	7,4
Timing case and drive assembly				
Setscrews, timing case to cylinder block	M8	22	16	2,2
Setscrews, bottom cover to timing case	M8	22	16	2,2
Setscrews, front cover to timing case	M8	22	16	2,2
Setscrews, front cover to timing case	M6	9	7	0,9
Setscrews, front cover to bridge piece, bottom cover	M8	22	16	2,2
Setscrew, camshaft gear	M8	27	20	2,8
Setscrew, idler gear	1/2 UNF	65	48	6,6
	M20	78	57	8,0

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Closed breather system

The engine breather assembly is fitted to the top left hand side of the timing case. It consists of two parts; the adaptor (A3) which is fitted to the timing case by two setscrews; and the breather valve (A2) which is fitted to the top of the adaptor. The breather is a sealed unit which contains a valve and a gauze filter. Crankcase gases pass through a flexible hose which is fitted between the connection (A5) and the pipe between the air filter and the induction manifold.



To renew the engine breather valve — 18A-01

Cautions:

- *It is important that the area around the vent hole (A1) is kept clean and the vent hole is not restricted.*
- *Ensure that the pipe, when fitted, does not contact other components as this may cause the failure of the pipe.*
- *Do not add lubricating oil to the engine through the engine breather adaptor.*

1 Release the clips which retain the engine breather pipe and remove the pipe from the connection (A5).

2 Pull the breather valve out from the adaptor.

3 Lubricate the 'O' rings (A4) on the new breather valve with clean engine oil and push the breather valve into the adaptor.

4 Fit the breather pipe and tighten the hose clips.

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SPECIFICATIONS

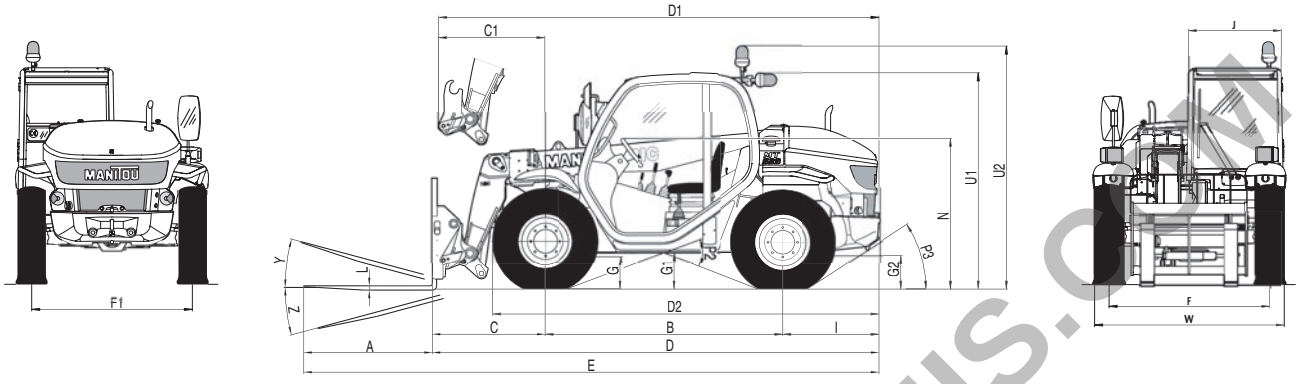
- Level of sound pressure in the driver's cab LpA *(According to standard prEN 12053 : 1995)*	dB	
- Level of sound power in the LwA environment *(According to directive 2000 / 14 CE guaranteed)*	104 dB	
- Travel speed of the lift truck		
. Forward	24 km/h	
. Reverse	24 km/h	
- Standard lift height	4920 mm	
- Rated capacity with standard attachment	2300 kg	
- Load center	500 mm	
- Weight of forks (Each)	62 kg	
- Lifting motions (Jib retracted)		
. Unladen lifting	6,3 s	32,6 m/min
. Laden lifting	7,1 s	28,9 m/min
. Unladen lowering	4,2 s	48,9 m/min
. Laden lowering	4,2 s	48,9 m/min
- Telescoping motions (Lifting jib)		
. Unladen extending	4,7 s	20,4 m/min
. Laden extending	4,8 s	20,0 m/min
. Unladen retracting	3,0 s	32,0 m/min
. Laden retracting	2,5 s	38,4 m/min
- Reverse tilt time unladen	2,8 s	47,2 °/s
- Forward tilt time unladen	2,4 s	55,1 °/s
- Lift truck weight with standard attachment		
. Unladen	5010 kg	
. Rated load	7310 kg	
- Axle weight with attached equipment (Transport position)		
. Front unladen	2370 kg	
Rated load	6410 kg	
. Rear unladen	2640 kg	
Rated load	900 kg	
- Tensible strain at coupling hook		
. Unladen	2950 daN	
. Rated load	3000 daN	
- Break out force with bucket *(According to standard ISO 8313)*	4320 daN	

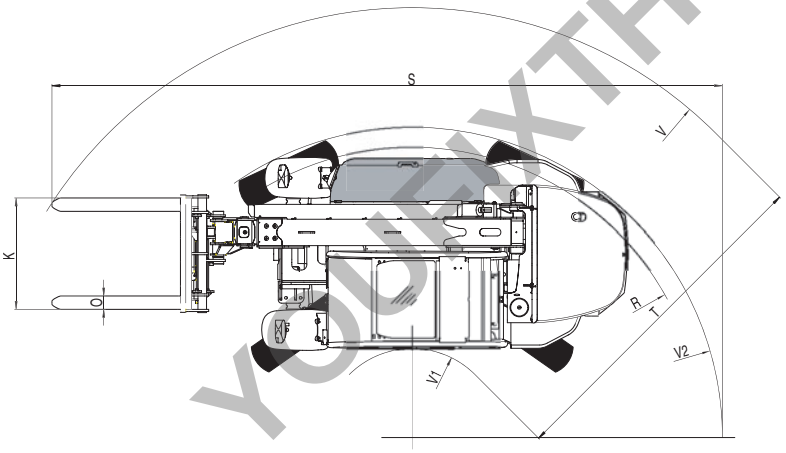
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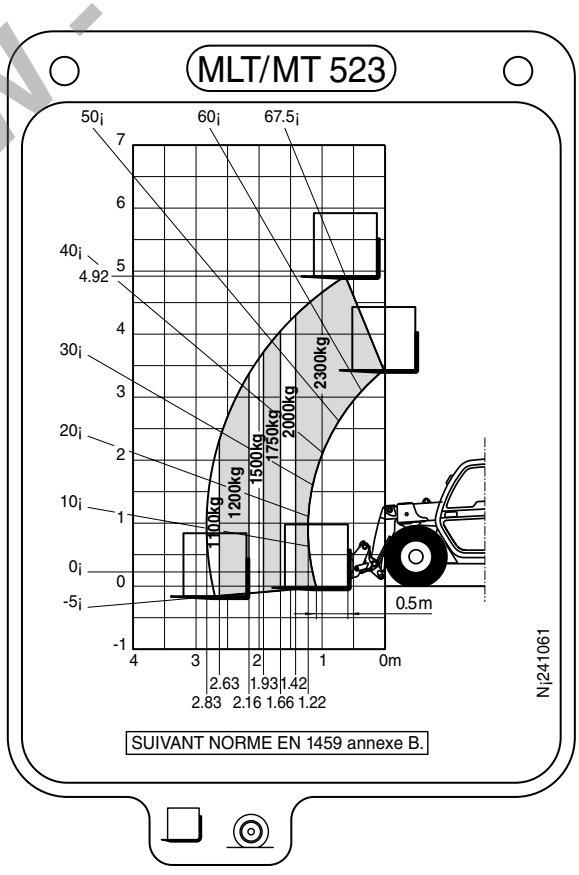
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DIMENSIONS AND LOAD CHART

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Safety

Viton seals

Some seals used in engines and in components fitted to engines are made of Viton.

Viton is used by many manufacturers and is a safe material under normal conditions of operation.

If Viton is burned, a product of this burnt material is an acid which is extremely dangerous. Never allow this burnt material to come into contact with the skin or with the eyes.

If it is necessary to come into contact with components which have been burnt, ensure that the precautions which follow are used:

- Ensure that the components have cooled.
- Use Neoprene gloves and discard the gloves safely after use.
- Wash the area with calcium hydroxide solution and then with clean water.
- Disposal of components and gloves which are contaminated must be in accordance with local regulations.

If there is contamination of the skin or eyes, wash the affected area with a continuous supply of clean water or with calcium hydroxide solution for 15-60 minutes. Obtain immediate medical attention.

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To remove and to fit 12A-11

Special tools:

Remover/replacer for valve guides (main tool), PD.1D

Adaptor, PD.1D-1A

Distance piece, part number used with PD.1D and PD.1D-1A, PD.1D-12

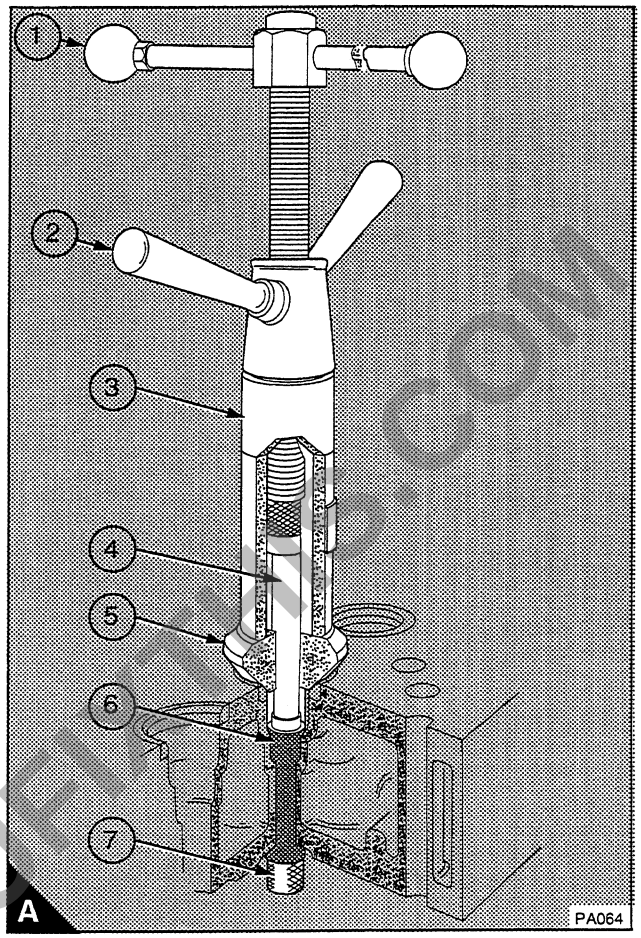
To remove

1 Fit the adaptor (A4) into the remover/replacer tool (A3).

2 With the adaptor fitted to the tool, put the spacer (A5) in position on the tool. Pass the adaptor through the valve guide (A6) and put the spacer and tool in position on the valve seat.

3 Fit the attachment (A7) to secure the adaptor to the valve guide.

4 Hold the top handle (A1) and turn the bottom handle (A2) clockwise to pull the valve guide out of the cylinder head.



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Main bearings

To remove and to fit (with the crankshaft in position) **14A-06**

To remove

1 Drain the lubricating oil and remove the sump, operation 19A-03.

2 If the front main bearing cap is to be removed, proceed as follows:

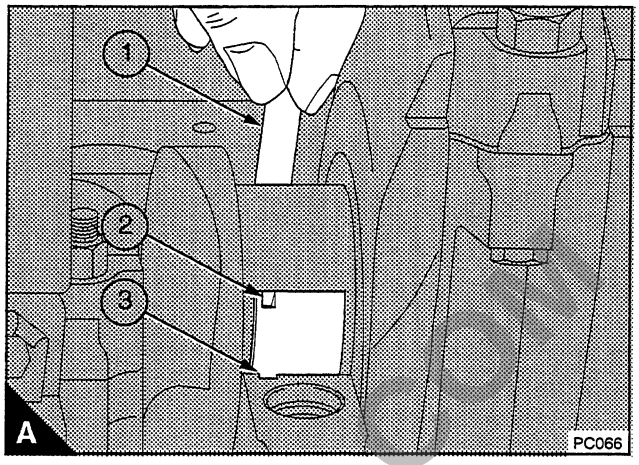
- Remove the cover of the timing case, see section 15.
- Remove the front bridge piece, see section 15.
- Remove the suction and delivery pipes from the lubricating oil pump, see section 19.
- Remove the lubricating oil pump, see section 19.
- Release the setscrews of the bearing cap and remove the bearing cap. Remove the lower half of the shell bearing from the cap.

3 If the rear main bearing cap is to be removed, proceed as follows:

- Remove the flywheel and the flywheel housing, see section 22.
- Remove the rear oil seal assembly, see operation 14-02.
- Release the setscrews of the bearing cap and remove the bearing cap. Remove the lower half of the shell bearing from the cap.
- Remove the lower thrust washers from each side of the bearing cap, see operation 14-05.

4 To remove the second or third bearing caps, remove the suction pipe from the lubricating oil pump, if necessary. Release the setscrews of the bearing cap and remove the bearing cap. Remove the lower half of the shell bearing from the cap.

5 With a suitable tool (A1), push the upper half of the shell bearing from the side opposite to the location tag (A2) to remove the bearing tag (A3) from its recess in the bearing housing. Carefully rotate the crankshaft to release the bearing from its housing. Keep the bearing halves in their relevant positions.



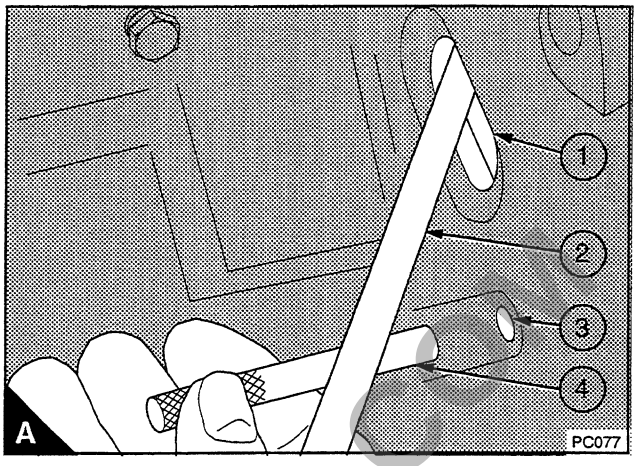
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To set the engine to top dead centre (TDC) on the compression stroke 17A-01

Special tools:

Locking pin for the crankshaft, PD.241



TDC on number 1 cylinder can be found by the alignment of a hole in the flywheel with a hole in the backplate.

1 Remove the rocker cover, see operation 12A-01.

2 Rotate the crankshaft clockwise, when seen from the front, until the inlet valve, the first valve, has just closed. There is a slot (A1) in the left side of the backplate, seen from the rear, to give access to the starter ring. A suitable lever (A2) can be used through the slot to rotate the flywheel.

3 Insert the locking pin (A4) into the hole (A3) below the slot in the backplate. Continue to rotate the crankshaft clockwise slowly until the pin enters a hole in the flywheel. The engine is now set at TDC number 1 cylinder, compression stroke.

4 Remove the pin from the flywheel and the backplate.

5 Fit the rocker cover, see section 12A-01.

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Data and dimensions

Introduction

Note: This information is given as a guide for personnel engaged on engine overhauls. The dimensions which are shown are those which are mainly used in the factory.

Fuel System

Fuel injection pump

Make	Lucas DP200 Series
Direction of rotation	Clockwise from drive end
Fuel pump code letters **(1)**	AN, BN
Fuel pump lock angle	AN-89°, BN-88°
No. 1 outlet	Letter "U"

(1) Fuel pump lock angle - static timing

An example of the pump code is 2644A000AN/2/2270. The fuel pump code begins with the pump part number, followed by two letters, then a number for the governor spring position and lastly the maximum no-load speed. For identification purposes, only the two code letters are used. This information can be found on the data plate of the fuel pump. The mark on the flange of the pump can be checked with timing tool MS.67B. The lock angle is set with timing tool MS.67B.

The fuel injection pump is timed to the engine with the engine set at TDC No.1 cylinder on the compression stroke.

Fuel lift pump

Type	Diaphragm
Method of drive	Eccentric on camshaft
Static pressure - no delivery	41/69 kPa (6/10 lbf/in^2) 0,4/0,7 kgf/cm^2
Test pressure at 1000 rev/min	42/70 kPa (6/10 lbf/in^2) 0,4/0,7 kgf/cm^2

Atomisers

Code letters	KB
Set and reset pressure	300 atm (4410 lbf/in^2) 30,4 MPa

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Starting aid 23C

General description 23C.02

Starting aid

23C-01 To remove to fit and to check a fuelled starting aid 23C.02

Technical data 23C.04

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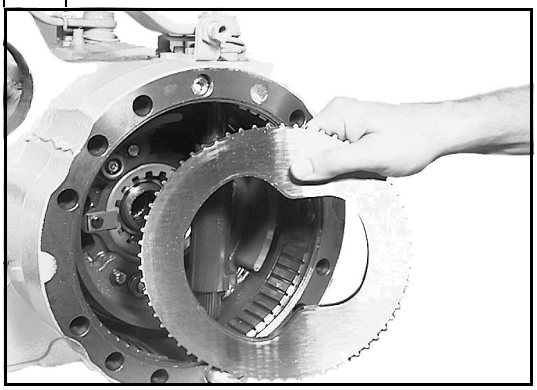
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DESCRIZIONE	**VALORI** ***VALUES***	***DESCRIPTION***
Specifica olio IN PRESENZA DI DIFFERENZIALE LIMITED SLIP, USARE I TIPI DI OLIO INDICATI OPPORTUNAMENTE ADDITIVATI NOTA: NON USARE OLIO DI SINTESI O VEGETALE SENZA IL CONSENSO DEL COSTRUTTORE	SAE 80W - 90 EP to comply API GL4 - GL5 respectively MIL-L-2105/and MIL - L - 2105 D	*Oil Specification* *IN PRESENCE OF DIFFERENTIAL LIMITED SLIP, USE RECOMMENDED OIL ENRICHED IN ADDITIVES* *NOTE:* *DO NOT USE SYNTHETIC OR VEGETABLE OIL WITHOUT CONSENT OF THE MANIFACTURER*
Quantità olio differenziale	7,0 litri/*liter*	*Differential oil capacity*
Quantità olio riduttore epicicloidale	0,8 + 0,8 litri/*liter*	*Epicyclic reduction oil capacity*
Quantità olio trasmissione	0,7 litri/*liter*	*Transmission oil capacity*
Grasso	POLYMER 400/L DIN = KHER1R ISO-I-XMR-XM2	*Grease*
Gioco di accoppiamento coppia conica	0.18÷0.25 mm	*Bevel gear set backlash*
Precarico cuscinetti pignone conico "P" (misurato sul D=34,70 ÷34,80 mm senza anello di tenuta)	P= 9.2÷13.8 daN	*Pinion bearings preload “P” (measured D=34,70÷34,80 mm without seal)*
Precarico totale cuscinetti corona-pignone "T" (misurato sul D=34,70 ÷34,80 mm senza anello di tenuta)	T= (P+3.85)÷(P+5.8) daN	*Pinion-ring gear bearings total preload “T” (measured D=34,70÷34,80 mm without seal)*
Tipo freno	A dischi in bagno d’olio *Wet discs brake*	*Type of brake*
N° dischi freno (per lato)	4	*Number of brake discs (each side)*
N° controdischi freno (per lato)	5	*Number of brake counterdiscs (each side)*
Spessore nominale disco freno	4.8 mm	*Nominal brake disc thickness*
Spessore nominale controdisco freno	3.7/5 mm	*Nominal brake counterdisc thickness*
Usura max disco freno (per lato)	0.39 mm	*Maximum brake disc wearing (each side)*
Usura max controdisco freno	---	*Maximum brake counterdisc wearing*
Specifica olio per attuazione freno	mineral oil	*Oil specification for brake activation*
Volume olio per azionamento freni	12 + 12 cc	*Oil displacement for brakes actuation*
Pressione max di esercizio	44 bar	*Maximum operating pressure*
Tipo flangia pignone	END YOKE 1410	*Pinion flange type*

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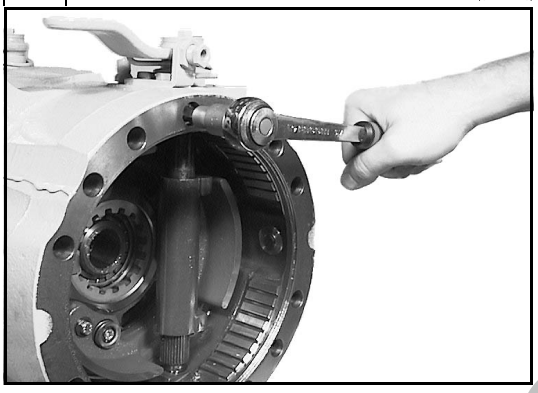
12



Rimuovere l'ultimo controdisco.
Controllare le condizioni dei dischi e controdischi.

Remove the last counter disk.
Check the conditions of the disks and counter disks.

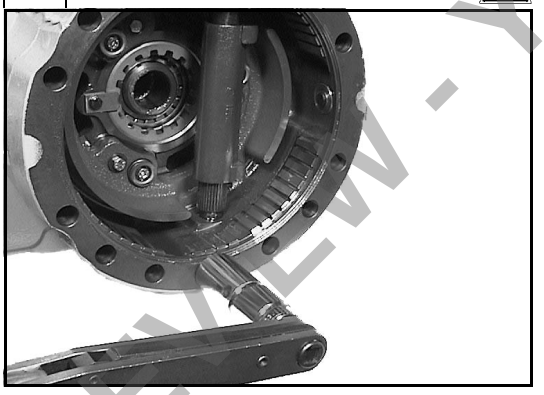
13



Assicurare la flangia freno ad un paranco con funi o cinghie di sicurezza.
Svitare la vite di fissaggio superiore per rimuovere la flangia supporto differenziale dal corpo centrale.

Secure the brake flange to a hoist with ropes or safety belts.
Unscrew the upper fastening screw to remove the differential supporting flange from the central body.

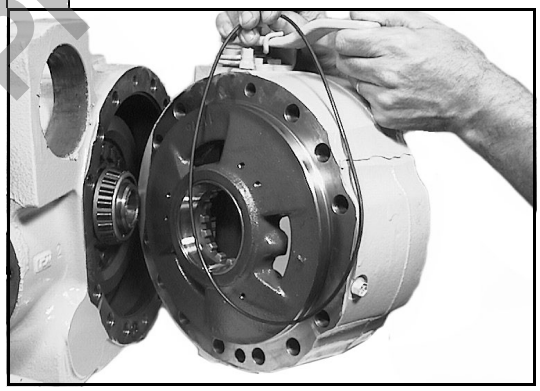
14



Svitare la vite prigioniera inferiore. Rimuovere la flangia supporto differenziale dal corpo centrale, completa di ghiera di registro gioco coppia conica e di gruppo comando freno.
Pericolo: questa operazione libera la scatola differenziale, tenerla per evitarne la caduta.

Unscrew the lower stud bolt. Remove the differential supporting flange from the central body, together with the bevel gear backlash-adjusting ring nut and the brake control unit.
Danger: *this operation frees the differential box, that must be kept to avoid its fall.*

15



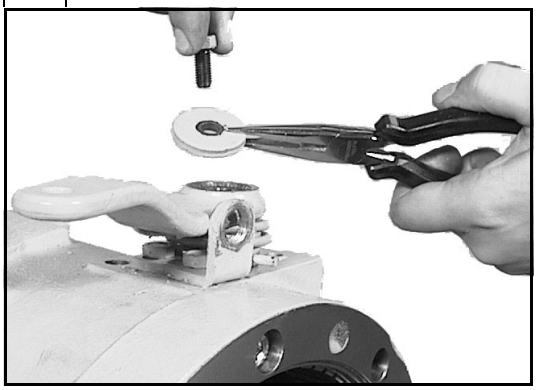
Rimuovere l'anello OR dalla sua sede e controllarne le condizioni.

Remove the O-Ring from its housing and check its conditions.

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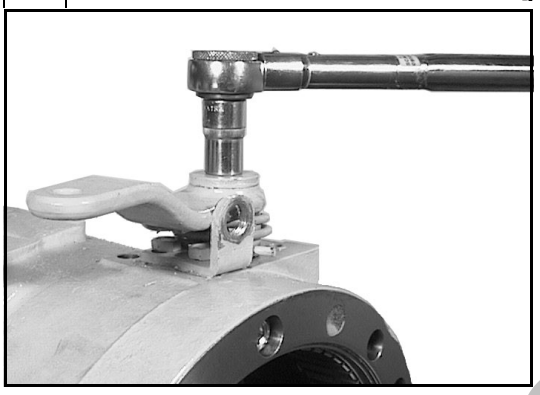
8



Rilasciate le leve di comando freno, avvitare le viti di fissaggio con relative rondelle.

Release the brake control levers, screw in the fastening screws and the relative washers.

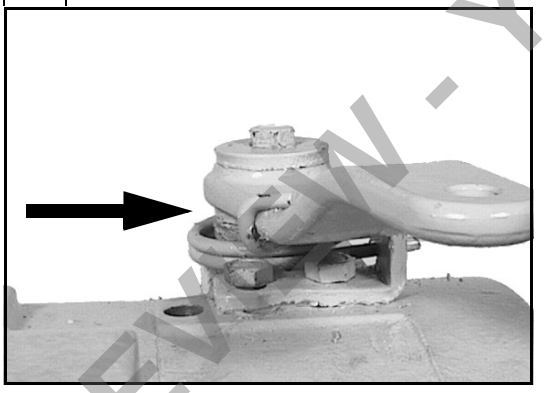
9



Serrare la vite di fissaggio della leva di comando con chiave dinamometrica alla coppia prevista (Sez. B.8).

Tighten the fastening screw of the control lever with dynamometric wrench to the requested torque (Sec. B.8).

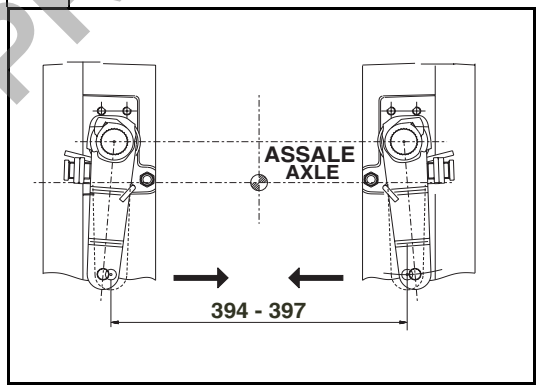
10



Agganciare la molla di richiamo alla leva di comando freno.
Ripetere tutte le operazioni descritte anche per l'altro gruppo comando freno.

Hitch the return spring to the brake control lever.
Repeat all the described operations also for the other brake group.

11



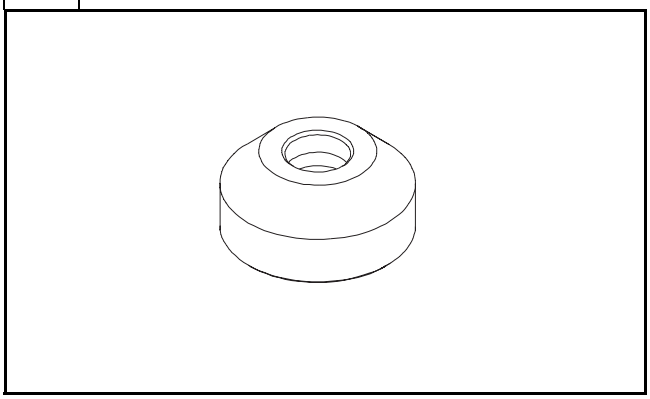
Verificare che in posizione di riposo la misura rilevata tra i centri dei fori di attacco alle estremità delle leve sia superiore al valore minimo **394 mm** del campo previsto (vedi sequenza 13).

*Check that, in rest position, the measure between the middle of the connection holes at the lever ends is higher than the minimum value **394 mm** of the requested range (see seq. 13).*

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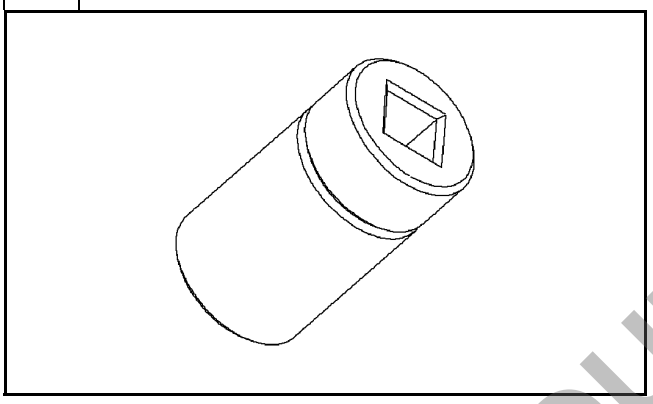
4



Battitoio per cuscinetto.
CA119230

Driver for bearing.
CA119230

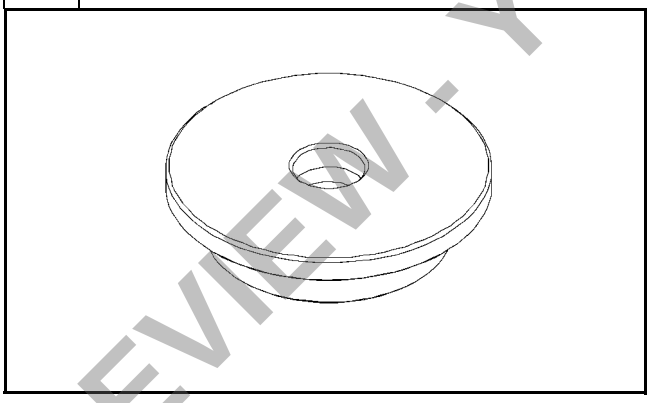
5



Chiave bloccaggio codolo pignone.
CA715022

Pinion shaft lock wrench.
CA715022

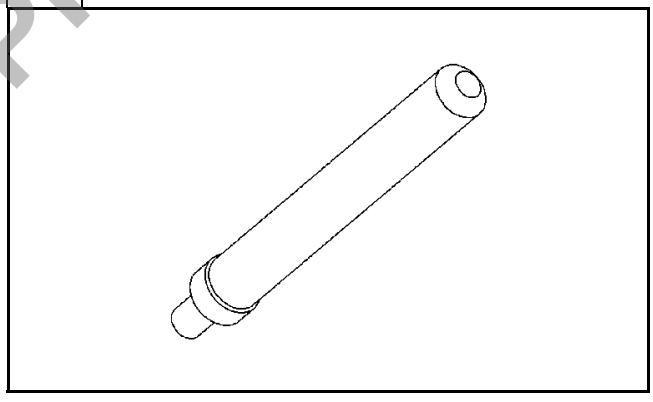
6



Battitoio per cuscinetto.
CA715026

Driver for bearing.
CA715026

7



Battitoio per boccola.
CA715027

Driver for bush.
CA715027

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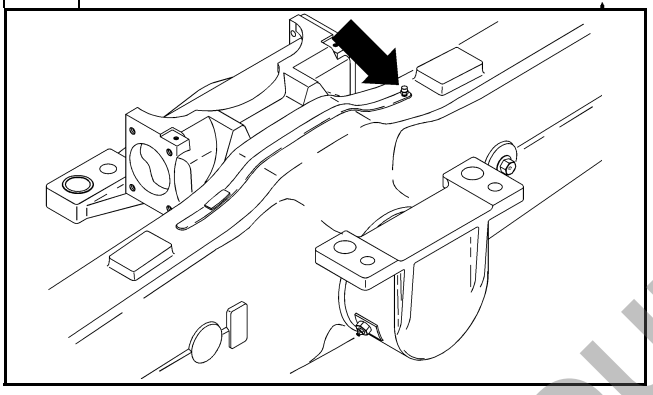
B.9 Controlli generali

Le descrizioni di smontaggio e montaggio presuppongono che il gruppo sia già stato rimosso dal veicolo e posizionato su un adatto banco di lavoro.

B.9 General checks

The disassembly/assembly instructions presume that the unit has been removed from the vehicle and positioned on a suitable workbench.

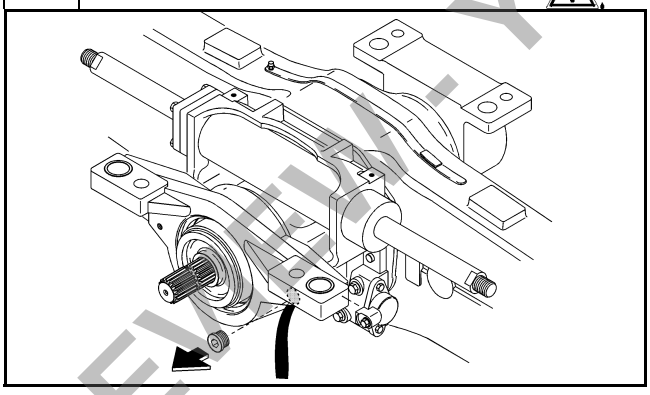
1



Prima di effettuare l'operazione di scarico dell'olio, svitare l'apposito sfiato per eliminare eventuale pressione interna.
Richiuderlo poi con una chiave dinamometrica serrandolo alla coppia prevista (Sez. B.8).

Before draining the oil, loosen the breather to release possible internal pressure, then tighten the plug with a torque wrench to the prescribed torque (Sec. B.8).

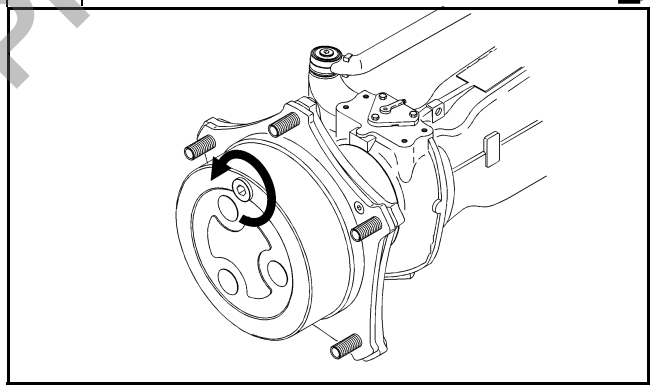
2



Per effettuare lo scarico dell'olio dal corpo centrale svitare il tappo del foro di scarico.
Richiuderlo poi con una chiave dinamometrica serrandolo alla coppia prevista (Sez. B.8).

Drain the oil from the appropriate plug, then tighten the plug with a torque wrench to the prescribed torque (Sec. B.8).

3



Prima di effettuare l'operazione di scarico o rabbocco dell'olio, posizionare il mozzo ruota con il tappo nel punto più alto e svitarlo di qualche giro in modo da eliminare l'eventuale pressione interna, quindi rimuoverlo completamente.

Before draining the oil, position the wheel hub so that the filer cap is in the highest point, then loosen the plug to release possible internal pressure.

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13



Ottenuto il prescritto valore di precarico, cianfrinare la ghiera utilizzando martello e scalpello.

Once you got the requested preloading value, caulk the ring nut, using a hammer and a chisel.

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F.1 Troubleshooting

This chapter is a descriptive and explanatory guide to common axle problems. This guide suggests the repair correct procedures to be followed.

Problem	*Cause*	*Remedy*
Ring gear tooth broken at the outer side	*1. Excessive gear load compared to the one foreseen* *2. Incorrect gear adjustment (excessive backlash)* *3. Pinion nut loosened*	*Replace bevel gear set* *Follow carefully the recommended operations for the adjustment of bevel gear set freebacklash*
Ring gear tooth broken side	*1. Load bump* *2. Incorrect gear adjustment (insufficient backlash)* *3. Pinion nut loosened*	*Replace bevel gear set* *Follow carefully the recommended operations for the adjustment of bevel gear set freebacklash.*
Pinion or ring gear teeth or worn	*1. Insufficient lubrication* *2. Contaminated oil* *3. Incorrect lubrication or depleted additives* *4. Worn out pinion bearings that cause an incorrect pinion axle play and wrong contact between pinion and ring.*	*Replace bevel gear set.* *Follow carefully the recommended operations for the adjustment of bevel gear set freebacklash.* *Use correct lubricants, fill up to the right levels and replace according to the recommended program.*
Overheated ring and pinion teeth. See if gear teeth have faded	*1. Prolong ed functioning at high temperatures* *2. Incorrect lubrication* *3. Low oil level* *4. Contamined oil*	*Replace bevel gear set.* *Use proper lubrication, fill up to right level and replace at recommended program.*
Pinion teeth pitting	*1. Excessive use* *2. Insufficient lubrication*	*Replace bevel gear set.* *Use correct lubrication, fill up to the right level and substitute at recommended intervals*
Axle beam body bent	*1. Vehicle over loaded* *2. Vehicle's accident* *3. Load bump*	*Replace axle beam body*
Worn out or pitted bearings	*1. Insufficient lubrication* *2. Contaminated oil* *3. Excessive use* *4. Normal wear out* *5. Pinion nut loosened*	*Replace bearings.* *Use correct lubrication fill up, to the right level and replace at recommended intervals*
Oil leakage form gaskets and seals	*1. Prolonged functioning at high temperature of the oil* *2. Oil gasket assembled incorrectly* *3. Seal lip damaged* *4. Contaminated oil*	*Replace the gasket or seal and matching surface if damaged.* *Use correct lubrication and replace at recommended intervals.*
Excessive wearing out of input flange spline	*1. Exhaustive use* *2. Pinion nut loosened* *3. Pinion axle backlash*	*Replace the flange.* *Check that the pinion spline is not excessively worn out.* *Replace bevel gear set if required.*
Fatigue failure of pinion teeth *See if the fracture line is well defined (wave lines, beach lines)*	*1. Exhaustive use* *2. Continuos overload*	*Replace bevel gear set*
Pinion and ring teeth breakage	*1. Crash load of differential components*	*Check and/or replace other differential components.*

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Monter løbeskiver og nåleleje som vist på tegningen nedenfor.

Fit bearing races and needle bearing as shown on below drawing.

Laufscheibe und Nadellager montieren, wie auf der untenstehenden Zeichnung gezeigt ist.

Monter les rondelles d'appui et le roulement à aiguilles comme indiqué dans le dessin en dessous.

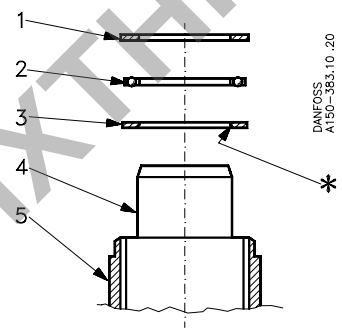
Assembly pattern for standard bearing

1 Ydre løbeskive
2 Nåleleje
3 Indre løbeskive
4 Indre glider
5 Ydre glider

1 Outer bearing race
2 Needlebearing
3 Inner bearing race
4 Spool
5 Sleeve

1 Äußere Laufscheibe
2 Nadellager
3 Innere Laufscheibe
4 Innerer Schieber
5 Äusserer Schieber

1 Rondelle d'appui extérieure
2 Roulement à aiguilles
3 Rondelle d'appui intérieure
4 Tambour de sélection
5 Manchon d'alimentation



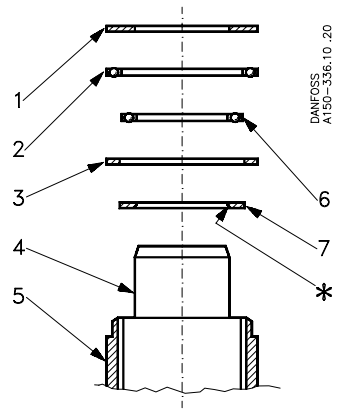
Assembly pattern for double bearing

1 Aksiallejeskive
2 Ydre nåleleje
3 Ydre løbeskive
4 Indre glider
5 Ydre glider
6 Indre nåleleje
7 Indre løbeskive

1 Washer for axial bearing
2 Outer needlebearing
3 Outer bearing race
4 Spool
5 Sleeve
6 Inner needlebearing
7 Inner bearing race

1 Axiallagerscheibe
2 Äußeres Nadellager
3 Äußere Laufscheibe
4 Innerer Schieber
5 Äußerer Schieber
6 Inneres Nadellager
7 Innere Laufscheibe

1 Rondelle de butée
2 Roulement à aiguilles extérieure
3 Rondelle d'appui extèrieure
4 Tambour de sélection
5 Manchon d'alimentation
6 Roulement à aiguilles intérieure



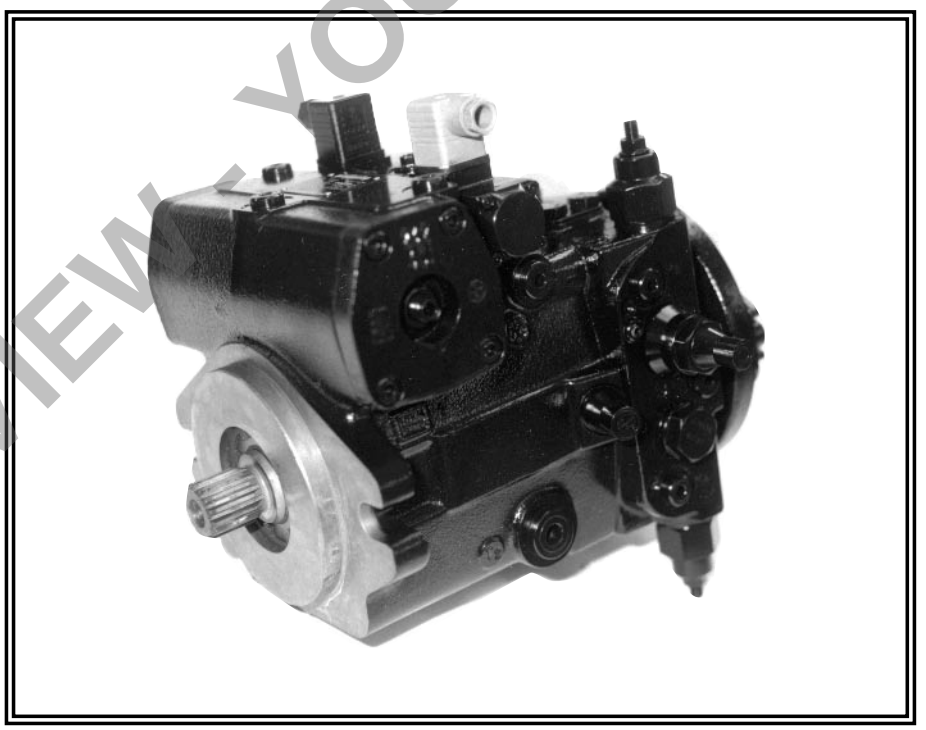
*** Den indvendige rejfning på indre løbeskive skal vende mod den indre glider**
*** The inside chamfer on the inner bearing race must face the inner spool.**
*** Die innere Abfasung der inneren Laufscheibe muß gegen den inneren Schieber gekehrt sein**
*** Le chanfrein intérieur de la rondelle d'appui doit être orienté vers le tambour de sélection**

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REPAIR

PUMP A 4 VG 40 - 56

Serie 3.2



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REPAIR
MOTOR A 6 VM
Serial 63



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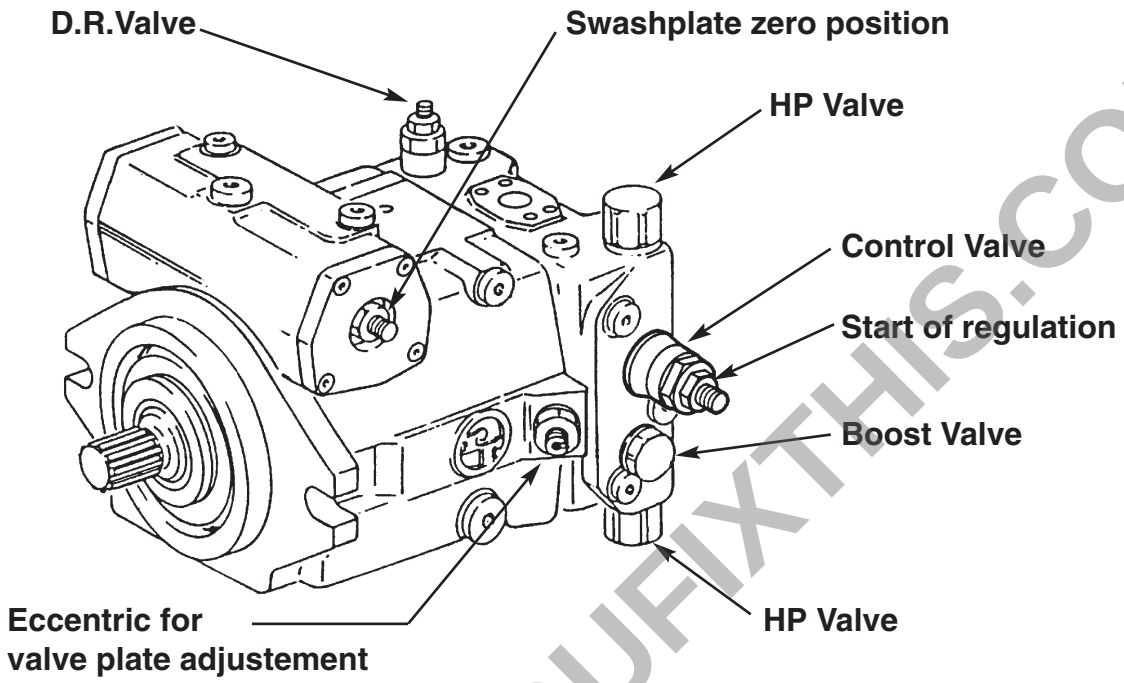
CONTENTS

- Hydrostatic Diagrams ..... 2 à 5
- Pump A4VG/DA 6
- Sectional view of Pump A4VG/DA 7
- Motor A6VM/DA Série 63 ..... 8 à 11
- Diagrams colour pump and motor .....
- Pump A4VG 40 - 56 16
- Operation A4VG..DA 18
- Pilot Circuit 19
- Control Cartridge Operation ..... 20 à 21
- DR Valve ..... 22 à 24
- HP valve, relief valve adjustment 25
- Pump Pressure Measuring Points A4VG 56 DA 26
- Motor Pressure Measuring Points A6VM 27
- Transmission Adjustment Points 28
- Transmission A4VG - A6VM (Inspection before Start-up) 30
- Transmission Inspection and Adjustments ..... 31 à 37
- Adjusting the TH 7 valve on braking 38
- Hydrostatic Transmission Adjustment Sheet 39
- Pressure test Kit ..... 40 à 41

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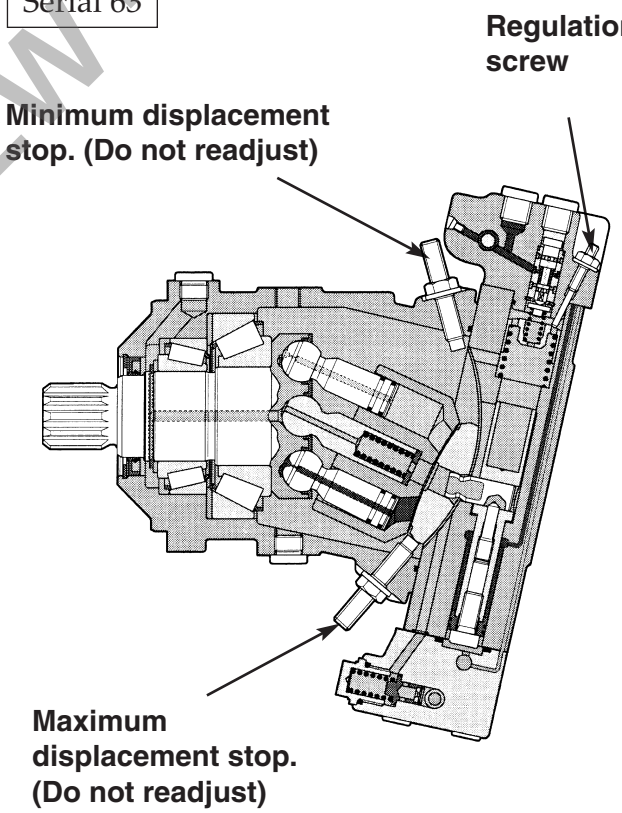
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