DT PLANETARIES INC.

Parts & Service Manual

for use with the DT Hub.

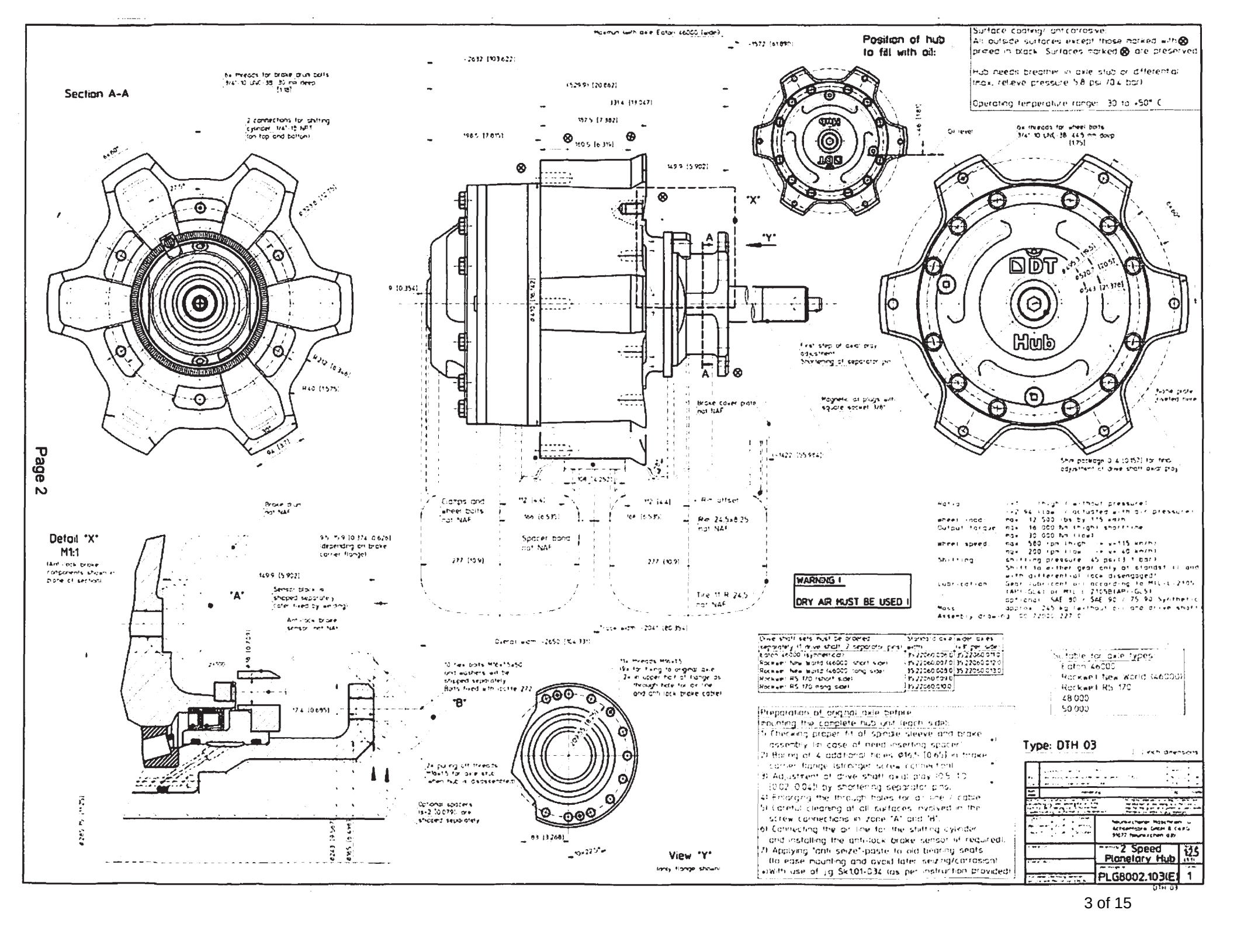
Published January 2009.

DT PLANETARIES INC.

Spare Parts List

Type:	DTH 03/2
Description:	Planetary hub
Serial no.	202
Date:	12 / 12 / 2006

Contents:


Section A-A
Position of hub to fill with oil:
Surface coating: anti-corrosive
All outside surfaces except those marked with ⊗ painted in black. Surfaces marked ⊗ are preserved
Hub needs breather in axle stub or differential (max. relieve pressure 5.8 psi /0.4 bar)
Operating temperature range: -30 to +50° C
Detail "X"
M1:1
(Anti-lock brake components shown in brake oil section)
"A"
"B"
"X"
"Y"
View "Y"
Hub
DDT
WARNING !
DRY AIR MUST BE USED !
Type: DTH 03
2 Speed Planetary Hub
PLG8002.103(E)
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DT PLANETARIES INC.

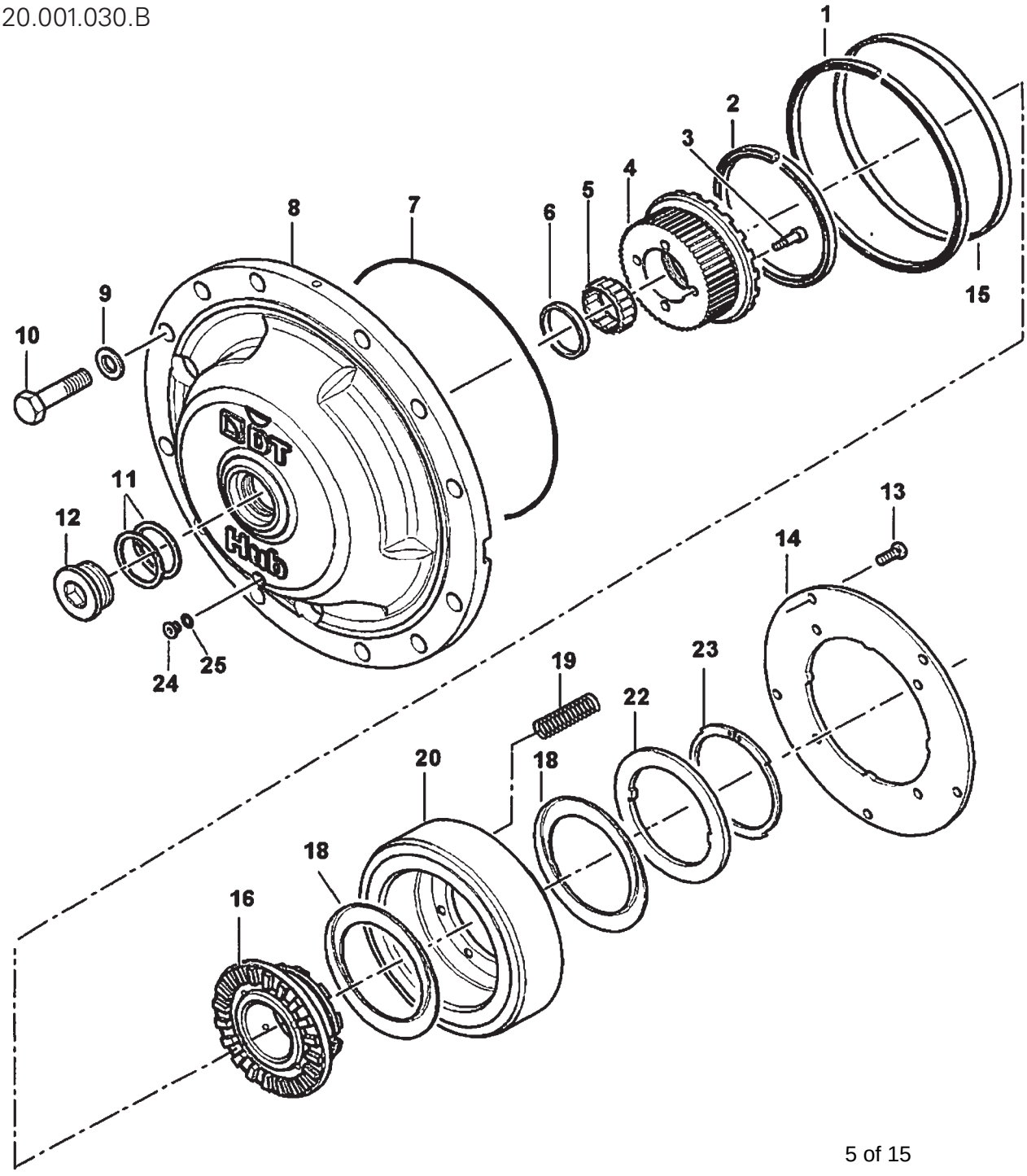
Description: Group of cover plate
Drawing: 20.001.030.8
List no. 20.001.029.02
Date: 12 / 12 / 2006

Spare Parts List

Pos.	Part Number	Part Description	Qty.	Remark	DIN
- -	PLG 8002.103	Planetary hub compl.	1	ohne Pos.84 und 85	
1	1180.879	Shift Piston Outer Seal	1	D200xD212x7.5 HNBR	
2	1180.878	Shift Piston Inner Seal	1	140x130x7.5 HNBR	
3	1010.821	Clutch Coupler Anchor Screw	4	M6/D8 f7x25 12.9	7379
4	9813.194	Clutch Coupler	1		
5	1130.224	Axle Support Bearing	1	K45x53x20	
6	7307.160	Axle Support Bearing Spacer Bushing	1		
7	1170.716	Cover Plate O-Ring	1	OR 265x4. 72NBR872	
8	2421.125	Cover Plate	1		
9	7316.045	Cover Plate Hex Bolt Washer	12	16.1x30x4. C45 GEHAERTET	
10	1010.508	Cover Plate Hex Bolt	12	M16x65, 10.9	931
11	2108.064	Floating Axle Adjusting Washer	1	s=1.0/3.0	
11	1210.218		n.B.	PS 45x55x1.0	
11	1210.110		n.B.	SS 45x55x3.0	
12	7323.041	Floating Axle Adjusting Plug	1	M45x1.5,5.8	
13	1010.168	Shift Spring Retaining Plate Screw	5	M8x20. 10.9 VP n.TI-58	933
14	7315.203	Shift Spring Retaining Plate	1		
15	1180.880	Shift Piston Wear Strip	1	200x205x9,7 T51	
16	9813.183	Shift Clutch	1		
17	- -				
18	7316.197	Shift Clutch Thrust Washer	2		
19	7331.066	Direct Drive Shift Spring	8		
20	5252.142	Shift Piston	1		
21	- -				
22	7316.186	Clutch Assembly Retaining Washer	1		
23	1220.202	Retaining Washer Snap Ring	1	A 100x3	471
24	1040.115	Air Chamber Drain Plug	1	M10x1 5.8 Innensechskant	908k
25	1180.505	Air Chamber Drain Plug Gasket	1	A10x13x1 CU	7603
26					
27					

DT PLANETARIES INC.

Description: Group of cover plate
Drawing: 20.001.030.B



DT PLANETARIES INC.

Description: Group of planetary cage
Drawing: 20.001.031.8
List no. 20.001.030.02
Date: 12 / 12 / 2006

Spare Parts List

Pos.	Part Number	Part Description	Qty.	Remark	DIN
30	7316.010	Planetary Gear Wear Plate	10		
31	1210.103	Planetary Gear Bearing Spacer	10	SS 35x45x2.5	988
32	1130.230	Planetary Gear Bearing	10	K35x45x20	
33	7806.081	Planetary Gear	5	Z=15	
34	7807.061	Planetary Gear Pin	5		
35	1170.101	Air Sleeve O-Ring	2	OR 8x3, 85-90 SHORE NBR	
36	7312.093	Air Sleeve	1		
37	1010.536	Planetary Cage Hex Bolt	5	M16x90. 10.9 VP n.TI-58	931
38	7316.045	Planetary Cage Hex Bolt Washer	5	16.1x30x4, C45 GEHAERTET	
39	7821.234	Inner Planetary Cage	1		
40	7316.123	Sun Gear Wear Rings	2		
41	7817.051	Sun Gear	1	Z=34	
42	1170.764	Planetary Plate O-Ring	1	OR 340x3, 72NBR872	
43	7313.018	Planetary Cage Shear Bushing	5		
44	8721.233	Outer Plantary Cage	1		
45	1180.541	Oil Plug Gasket	2	A 27x32x2 CU	7603
46	1040.151	Oil Plug	2	G 3/4" 5.8 Innensechskant	908K
47	- -				
48	- -				
49	- -				
45	1170.097	O·RinglOld Style			
46	7323.036	Oil Plug/Old Style			

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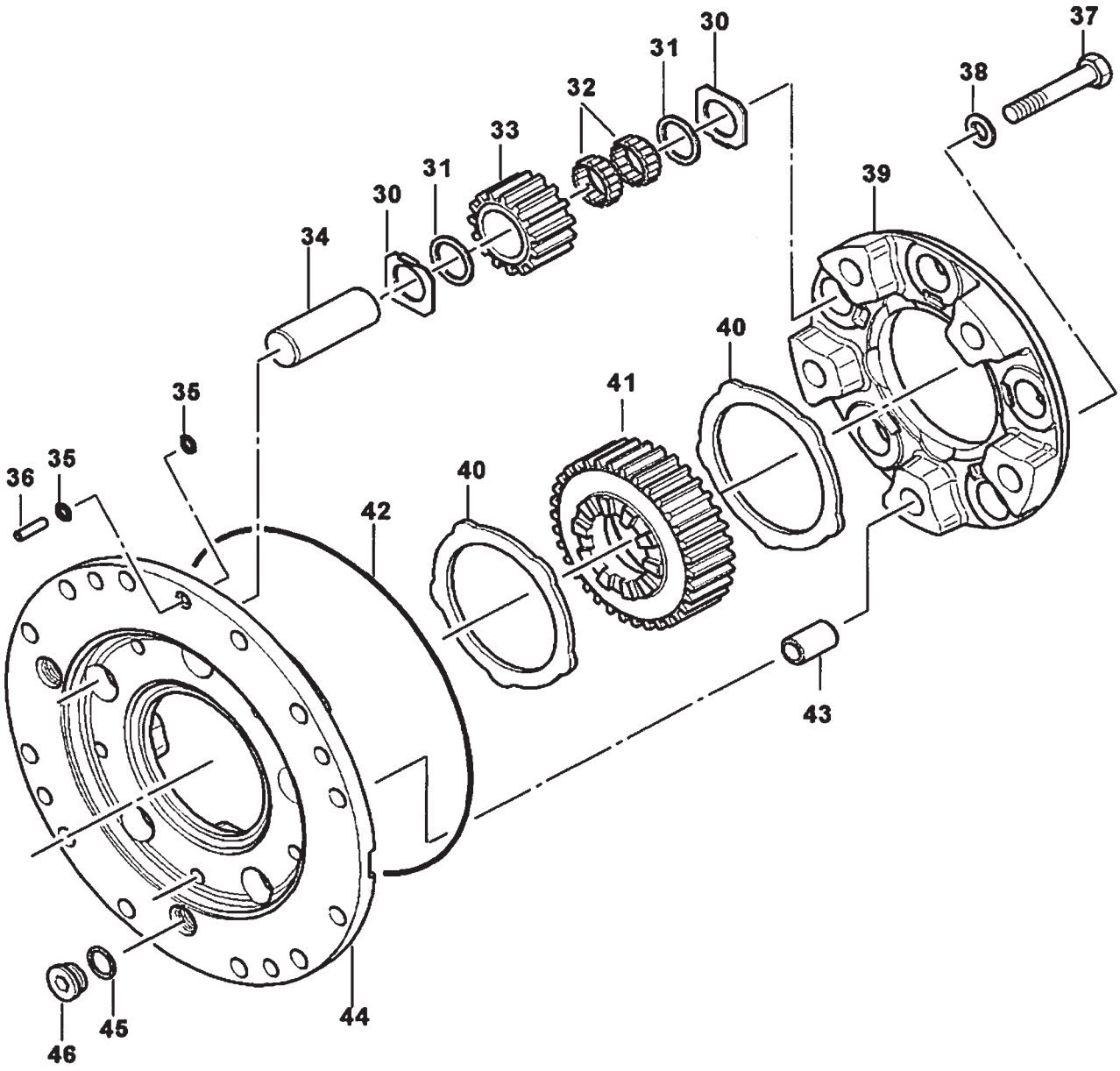
Description: Group of planetary cage
Drawing: 20.001.031.B



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Spare Parts List

Description: Group of wheel hub
Drawing: 20.001.032.A
List no. 20.001.031.02
Date: 12 / 12 / 2006

Pos.	Part Number	Part Description	Qty.	Remark	DIN
50	7307.132	A.B.S. Tone Ring	1		
51	1160.408	Outer Grease Seal (Dirt Guard	1	180x210x15 BASL, NBR	
52	1160.405	Inner Grease Seal	1	180x210x10 BA, NBR	
53	2421.123	Wheel Hub	1		
54	1200231	Planetary and Cover Plate Align Pins	4	16m6x60. ST GEHAERTET	6325
55	1110.104	Outer Bearing	1	D110xD17Ox38. 320 22X	
56	1110.233	Inner Bearing	1	JP13049A JP13010	
57	7315.206	Outer Air Seal Spacer	1		
58	1160.409	Air Seal	2	130x160x12BA, NBR	
59	7307.129	Inner Air Seal Spacer	1		
60	- -				
61	- -				
62	- -				
63	- -				
64	- -				
65	- -				
66	- -				
67	- -				
68	- -				
69	- -				

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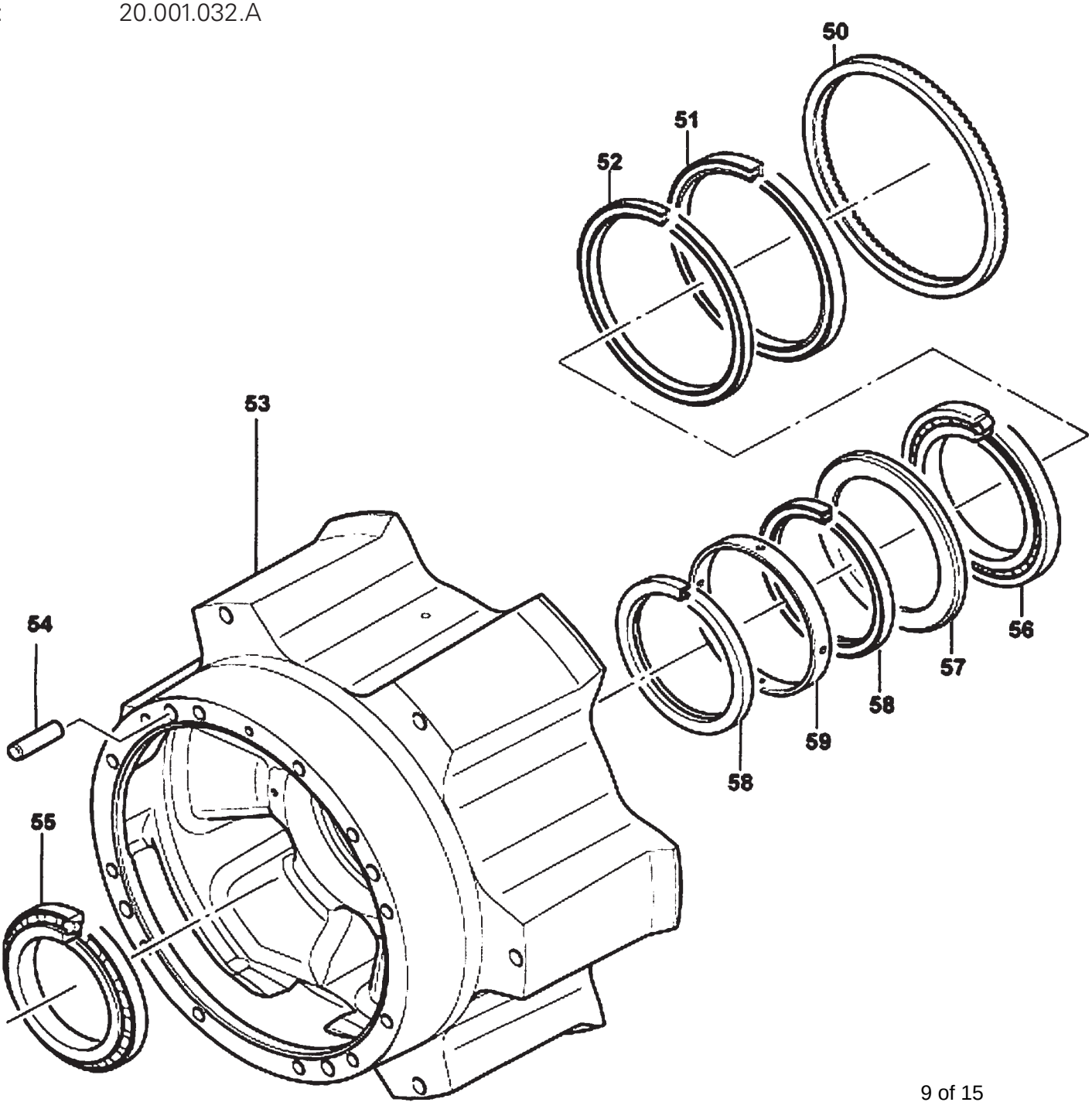
Description: Group of wheel hub
Drawing: 20.001.032.A



DT PLANETARIES INC.

Description: Group of axle stub
Drawing: 20.001.033.B
List no. 20.001.032.02
Date: 12 / 12 / 2006

Spare Parts List

Pos.	Part Number	Part Description	Qty.	Remark	DIN
70	1220.913	Ring Gear Carrier Snap Ring	1	SB 310	
71	7804.054	Ring Gear Carrier	1	Z=66	
72	7801.042	Ring Gear	1	Z=66	
73	2108.054	Spindle Bearing Pre Load Shim	1	s=1,625 bis 2,75 je 0,125	
73	7317.252		n.B.	s=1.625	
73	7317.253		n.B.	s=1.75	
73	7317.254		n.B.	s=1.875	
73	7317.255		n.B.	s=2.0	
73	7317.256		n.B.	s=2.125	
73	7317.257		n.B.	s=2.25	
73	7317.258		n.B.	s=2.375	
73	7317.259		n.B.	s=2.5	
73	7317.260		n.B.	s=2.625	
73	7317.261		n.B.	s=2.75	
74	7329.124	Spindle Nut	1	M95x1.5	
75	1020.028	Spindle Nut Lock Screw	1	M6x16, 10.9 VP n.TI·58	912
76	7814.226	Spindle	1		
77	1170.535	Air Receiver O·Ring	2	OR 160x4. 72NBR872	
78	7406.004	A.B.S. Sensor Block	1	1/4·18NPT keg. ", 5.8 Innenskt.	906
79	1040.182	Air Receiver Ring Fitting Plug	1		
80	7306.046	Air Receiver Ring	1	OR 94x3, 72NBR872	
81	1170.219	Spindle Inner O·Ring	1	M16x1.5x50.10.9	961
82	1010.559	Spindle Hex Screw	10	16.1x30x4, C45 GEHAERTET	
83	7316.045	Spindle Hex Screw Washer	10		
84	7333.059	Spindle Nut Locking Plate	1	57, 15x82,55x12,7 BA	
85	1160.266	Spindle Inner Oil Seal	1	4x10	1481
86	1200.414	Air Receiver Anchor Pin	1	s=5,O	
87	7315.272	Spindle mounting spacer	1	s=2,0	
88	7315.218	Spindle mounting spacer	1		
74	7329.100	Spindle Nut/Old Style			
75	1020.030	Allen Screw/Old Style			

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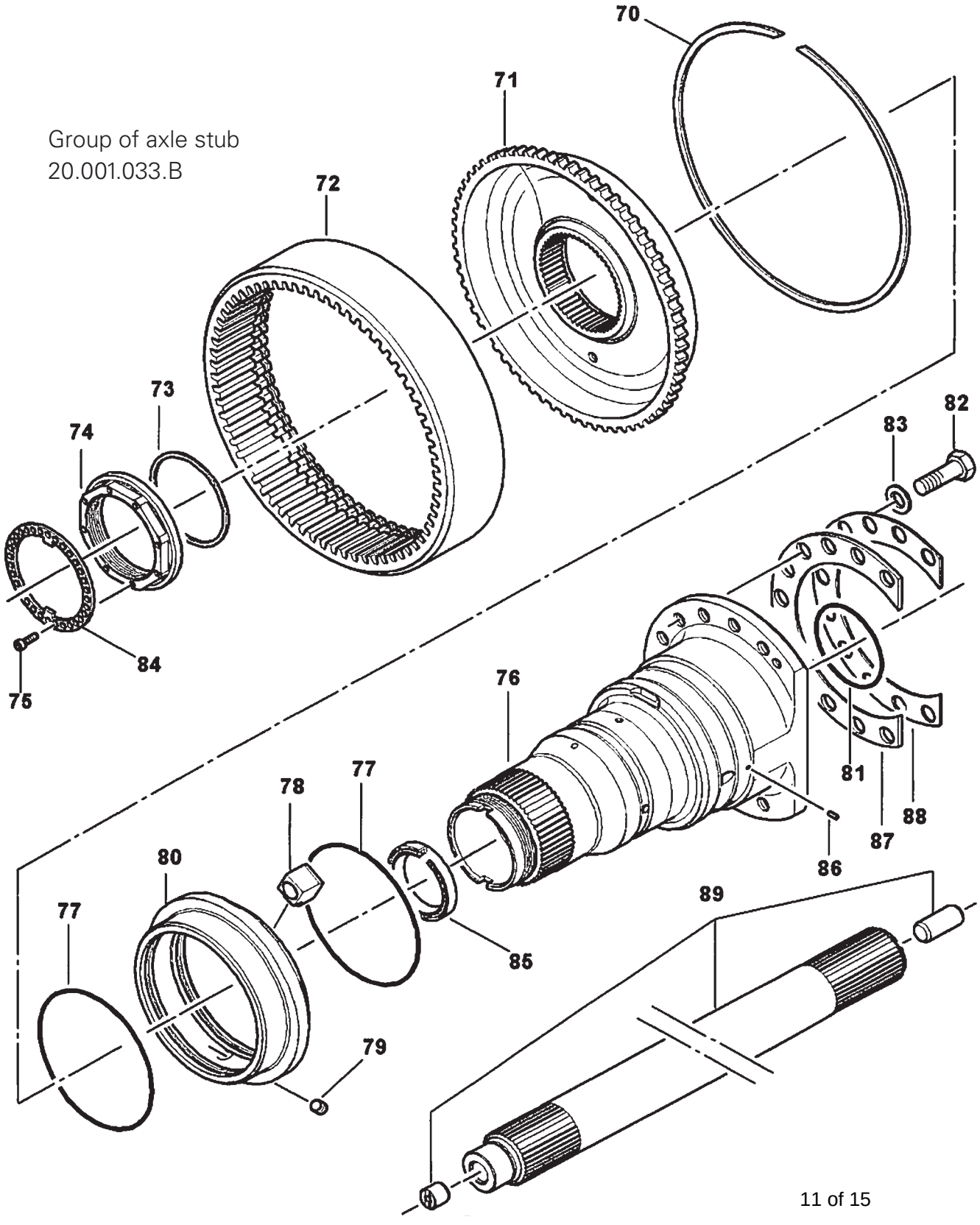
Description: Group of axle stub
Drawing: 20.001.033.B



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Spare Parts List

Description: Axle List

Part No.	Spline Length	Axle Length	No. of Splines
2206.006	S	47.0	36
2206.008	L	49.5	46
2206.011	L	50.1	36
2206.012	S	46.0	46
2206.018	L	46.5	36
2206.019	S	43.0	46
2206.020	L	54.5	46
2206.021	L	52.5	46
2206.022	L	53.5	46
2206.023	S	47.0	46
2206-024	L	50.5	46
2206.026	S	45.0	46

Modified Axle List

Part No.	Spline Length	Axle Length	No. of Splines
2206.1248R	S	45.0	46
2206.02148R	S	47.5	46
2206·00852R	L	48.5	46
2206.02052R	L	50.8	46
2206.02158R	L	51.5	46

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Service Manual

General

1. Re-torque Wheel nuts after first 500 km to 275 ft. lbs.

2. Wheel torque to be maintained at 275 ft. lbs.

3. Drain oil out of air chamber in cover plate every time truck has major service job 200 to 250 hours.

4. Change oil in planetary system twice a year, spring and fall. Use 75/90 100% synthetic gear oil.

5. Do not overfill hub with oil. Fill to 1/3 full only, between 3 and 4 o'clock.

6. If hub starts to run hot, check oil level. Drain down to 1/3 level to finish job and get to a service shop. Remove cover plate, planetary plate and axle. Replace axle seal inside spindle and reassemble. Fill to 1/3 with 75-90 synthetic oil. At this point you should top up rear end oil also.

Doing A Brake Job

1. Before dismantling hubs, check for air leaks. If you discover an air leak isolate which hub and where the leak is coming from. Air leaks out of housing breather indicate damaged air seals in hub. Air leaks out of the back end of spindle indicate air receiver o-rings or air supply line damage.

2. Drain oil.

3. Remove cover plate.

4. Remove axle.

5. Remove planetary plate.

6. Remove set screws from spindle nut.
   Clean off old Loctite from set screws. To remove the spindle nut will require a torque multiplier to achieve approximately 1200 to 1500 lbs-ft of torque to release the nut.

7. Remove spacer behind spindle nut. Do not inter change spacer with any other hub group as it is machined to set bearing pre load.

8. Remove ring gear.

9. Remover outer bearing.

10. Cover spline on spindle with electrical tape to protect air seals inside hub before pulling hub off or before installing hub with new seals. The spline will damage seals if they are not taped.

11. Remove complete hub.

12. Wash all grease oflinner bearing. Inspect bearing and replace ifneeded.

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Doing A Brake Job

13. Re - pack bearing - old one or new one with synthetic grease. To re-pack inner bearing, cover complete bearing with electrical lape all the way over to the air receiver ring. Then use a grease needle between each roller and fill until grease backs up and comes out on the open end. Do this procedure all the way around the bearing until it is all full of grease. Then remove the tape and smear some grease on the outside surface of bearing.

14. Clean grease cavity in hub and relill 2/3 full with new synthetic grease. Always leave 1/3 to 1/2 air space in hub cavity.

15. If needed install new grease seals and new air seals in hub. If no air leak found before dismantling, air seals should be good, providing not damaged during dismantle procedure.

16. Do your brake job.

17. Make sure spindle spline is covered with electrical tape before installing hub on truck housing.

18. When hub is on, remove tape off spindle spline, install bearing, ring gear and spacer ring.

19. Install spindle nut and torque to 1107lbs-ft or $1500^{\pm 100}$ Nm and lock with set (allen) screws. Use blue Loctite on the set (allen) screws. Install new axle seal in DT spindle. Push axle seal in tight against edge of original spindle. Be sure 10 install axle seal with breather hole to top position.

20. Install planetary plate, axle and cover plate.

21. Fill hub with 75/90 synthetic oil to 1/3 level

    DO NOT OVERFILL.

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Service Manual

Changing Axles

1. Axles are floating in housing. They require 1/8" to 3/16" free play.

2. This free play is achieved by cutting off some of the brass pin on the inside end of axle. To fine tune the free play we use steel shims on the inside shoulder of the center hex plug in the cover plate.

3. Loosen hex plug in center of cover plate before removing cover plate. If hex plug is seized tight, heat with torch and loosen. Then remove cover plate.

4. When replacing one used axle, remove axle and measure length of brass pin. Cut brass pin on new axle to the same length and install axle.

5. Install cover plate and secure with at least 2 opposing bolts tight. Use the end of a wooden hammer handle and push the axle to the opposite side of housing and measure from end of axle to inside shoulder that hex nut bottoms out to on centre of cover plate. Record this dimension. Then measure the hex plug from inner end to inner side of shoulder on plug. The plug should be 1/8" to 3/16" shorter than the dimension of the axle position. If need be at this point shims can be used to achieve this clearance.

6. When using shims try to have the same amount of shims on each side of housing to centre axles in axle gears.

7. After the clearance is achieved fill hex plug cavity with luberplate and install hex plug.

8. When installing 2 new axles on one housing. Remove hex plugs out of cover plates first. Then remove cover plates and axles. Install new axles with full length brass pins. Centre both axles evenly. Measure protruding portion of axle from edge original spindle. If axle seal is in place add ½" to measurement.

9. Axle should protrude 6 ½" out from edge of original spindle. Any amount that is more than 6 ½" must be cut off the center brass pin. This procedure should be the same on both sides.

10. Then reinstall axles and cover plates on both sides. Install hex plug on one side. Push axles over to the side that has hex plug installed.

11. Measure from end of axle to shoulder on cover plate that hex plug seats onto. Then measure inner end of hex plug to inner shoulder flange on hex plug. The difference between these 2 dimensions is the axle free play clearance. If the free play is not sufficient it can be adjusted by using shims on the inside face of flange on hex plug, or remove axle and cut some more off brass plug on inside end of axle. Then reinstall and go through the same procedure to measure for axle free play.

12. Before installing hex plug in cover plate after axle is properly sized, fill hex plug cavity with lubriplate grease. Then install hex plug and tighten.

    Installation should be complete.