

Oil Drain

Remove drain plugs 1 and 2 and drain oil.

Oil Filling

Provide drain plugs (M24x1.5) with new O-ring and install them.

Tightening torque $M_A = 7.14 \text{ kg}\cdot\text{m}$ (52 ft lb).

Fill oil to overflow on fill/level plug 3.

Filling quantity approximately 30 liters (8 U.S. gal.).

Check

Check oil level after a few minutes and fill up to specified level, until level remains constant.

Provide fill/level plug (M36x1.5) with new O-ring and install it.

Tightening torque $M_A = 13.26 \text{ kg}\cdot\text{m}$ (96 ft lb).

Oil Change Intervals

1st oil change after 500 operating hours, further oil changes every 1,000 operating hours, however, at least once a year.

Oil Level Check

Oil level check once a month, but especially before starting a vehicle with new or repaired axles and axle components respectively.

Bleeders

At initial operation and during the oil change intervals, clean Bleeder 3 and 5 and make a functional check.

Brake

For the pneumatic-hydraulic or via an accumulator system operated brake actuation the following oils are permissible:

1. Motor oils SAE 10W according to specification MIL-L 2104 C, MIL-L 46152, API-CC, CD, SC, SD, SE
2. ATF-Oils Type A, Suffix A, Dexron of II D

Brake Bleeding at Vehicle

1. Open bleeder (4).
2. Slowly depress the brake pedal until oil flows from bleeder.
3. Close bleeder again.
4. Slowly pressurize the brake and hold pressure for some seconds.

NOTE: *The brake piston extends and the cylinder chamber fills p with oil. The air accumulates in upper section of cylinder chamber.*

5. Release the brake pedal and loosen the brake.

NOTE: *The reversing piston presses the air from upper section of cylinder into brake line.*

6. Open bleeder (4) again.

7. Slowly depress the brake pedal until oil flows from bleeder.

NOTE: *Repeat procedure - Item 3 - 7 - until - at Item 7 - from beginning of actuation no more air exits from bleeder.*

Make Wear Measurement on Multidisk Brake

NOTE: *A wear measurement on multidisk brake has to be made at least once a year, especially in case of a changed braking behavior like, e.g.*

- *Braking noise*
- *Braking power reduced*
- *Deceleration changed*
- *Brake fluid level changed*
- *Braking pressure changed*

Wear Measurement of Multidisk Brake

A wear measurement has to be made on both output sides.

Remove plug, actuate brake and determine Dimension X according to Figure 6 and Figure 7 using a feeler gauge. Dimension X corresponds with thickness of inner clutch disk on piston side.

NOTE: *If Dim. X \leq 4.0 mm, the lined disks on both output sides have to be replaced.*

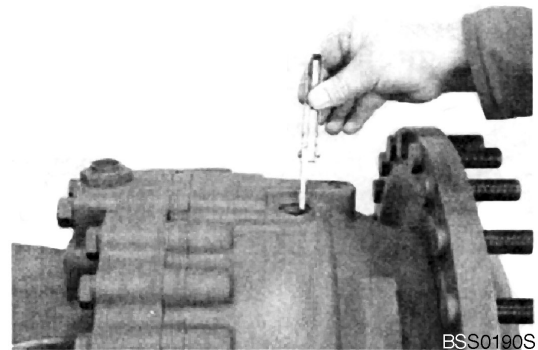
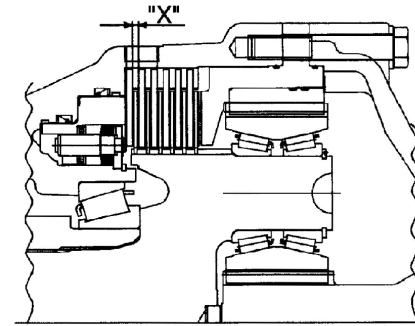


Figure 6

Following to this provide level plug with a new O-ring and install it.

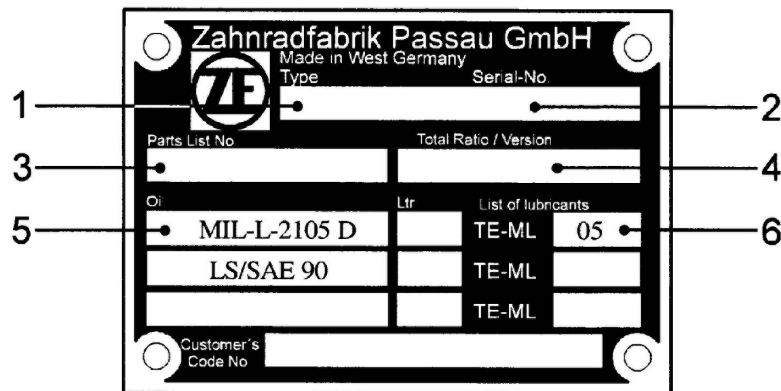
Tightening torque $M_A = 7.14 \text{ kg}\cdot\text{m}$ (52 ft lb)



BSS0200S

Figure 7

Inscriptions on Model Identification Plate



BSS0080S

Figure 8

Reference Number	Description
1	Axle Type
2	Axle Serial No.
3	ZF Parts - List No.
4	Total-ratio of Axle / Version With or Without ZF multidisk Self Locking Differential
5	Type of Lubricant
6	Lubricant Specifications

NOTE: ZF List of lubricants for ZF Axles from TE-ML 05.

Torque Limits for Screws

Torque Limits for Screws (In Nm) According to ZF Standards 148

Coefficient of friction: m total 0.12 for screws and nuts without after treatment and for phosphate nuts.

NOTE: *Tighten by hand.*

Torque limits, if not specifically shown, can be taken from following list:

Metric ISO-Standard Thread DIN 13				Metric ISO-Fine Thread DIN 13			
Size	8.8	10.9	12.9	Size	8.8	10.9	12.9
M 4	2.8	4.1	4.8	M 8 x 1	24	36	43
M 5	5.5	8.1	9.5	M 9 x 1	36	53	62
M 6	9.5	14.0	16.5	M 10 x 1	52	76	89
M 7	15	23.0	28.0	M 10 x 1, 25	49	72	84
M 8	23	34	40	M 12 x 1, 25	87	125	150
M 10	46	68	79	M 12 x 1, 5	83	120	145
M 12	79	115	135	M 14 x 1, 5	135	200	235
M 14	125	185	215	M 16 x 1, 5	205	300	360
M 16	195	280	330	M 18 x 1, 5	310	440	520
M 18	280	390	460	M 18 x 2	290	420	490
M 20	390	560	650	M 20 x 1, 5	430	620	720
M 22	530	750	880	M 22 x 1, 5	580	820	960
M 24	670	960	1,100	M 24 x 1, 5	760	1,100	1,250
M 27	1,000	1,400	1,650	M 24 x 2	730	1,050	1,200
M 30	1,350	1,900	2,250	M 27 x 1, 5	1,100	1,600	1,850
M 33	1,850	2,600	3,000	M 27 x 2	1,050	1,500	1,800
M 36	2,350	3,300	3,900	M 30 x 1, 5	1,550	2,200	2,550
M 39	3,000	4,300	5,100	M 30 x 2	1,500	2,100	2,500
				M 33 x 1, 5	2,050	2,900	3,400
				M 33 x 2	2,000	2,800	3,300
				M 36 x 1, 5	2,700	3,800	4,450
				M 36 x 3	2,500	3,500	4,100
				M 39 x 1, 5	3,450	4,900	5,700
				M 39 x 3	3,200	4,600	5,300

Examples of Gear Tooth Contact Patterns for the Gleason Gear-tooth System

Ideal Tooth-contact Pattern I. E. Pinion Distance Is Correct
Coast side (concave).

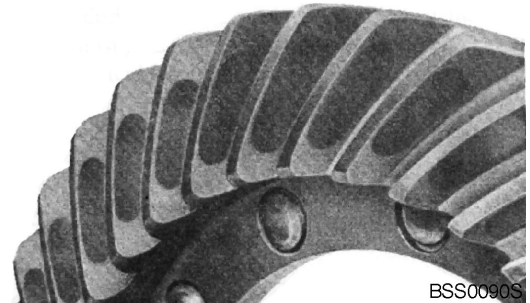


Figure 9

Drive side (convex).



Figure 10

Pinion distance must be increased.

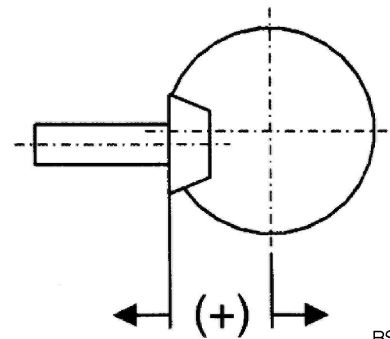


Figure 11

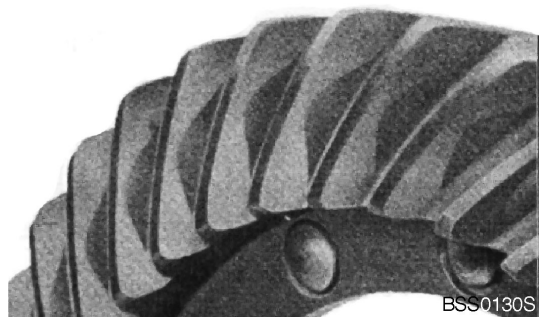


Figure 12

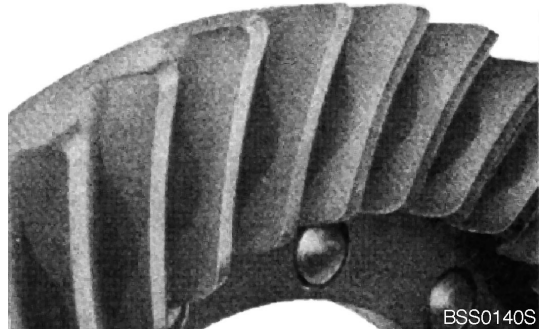


Figure 13

Pinion distance must be decreased.

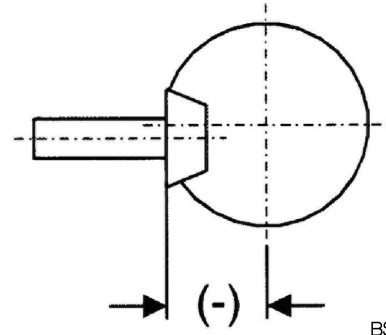


Figure 14

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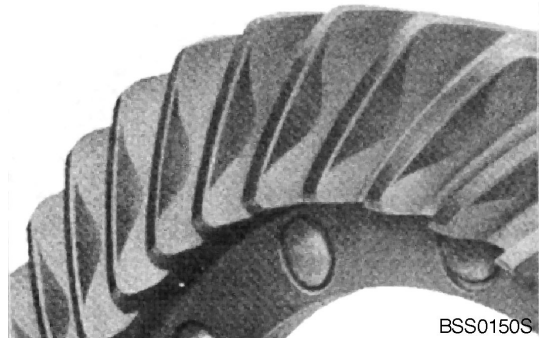


Figure 15

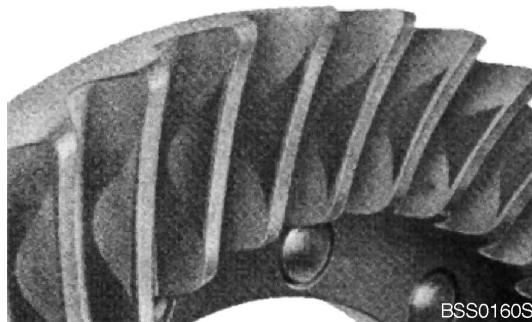


Figure 16

SPECIAL TOOL

List of Special Tools for Disassembly and Reassembly

ZF Multitrac MT-L 3085 / Output and Brake

4474 053 007

Disassembly	Reassembly	Subject No.	Designation / Application Special Tools (S)
Figure 24		5870 350 000	Assembly truck assembly with tilting device
		5870 350 077	Holding fixture (set of 2)
		5870 350 075	Clamps
Figure 27 Figure 57 Figure 59		5870 345 065	Pry bar (set of 2)
Figure 28		5870 650 001	Striker
Figure 29	Figure 100	5870 656 078	Socket Spanner #
		5870 912 028	Centering bracket #
Figure 30	Figure 98	5870 281 043	Lifting bracket
Figure 35		5870 300 019	Extractor
Figure 36	Figure 91	5870 900 015	Set of external pliers A1-A2-A3-A4
Figure 37		5870 971 002	Three-armed puller
Figure 38		5873 001 020	Gripping insert
		5873 001 000	Basic device
Figure 39 Figure 54		5870 970 007	Two-armed puller
		5870 654 034	Clamping bracket (set of 2)
		5870 506 140	Press bushing
Figure 44		5870 900 016	Set of external pliers A11-A21-A31-A41
Figure 48	Figure 77	5870 900 051	Assembly pliers #
Figure 51		5870 400 001	Adjusting device
Figure 55	Figure 67	5870 281 047	Lifting chain
		5870 204 071	Eyebolts (set of 2)
Figure 58		5873 014 013	Rapid grip #
		5873 004 001	Basic device #
	Figure 60	5870 610 010	Wheel bolt puller - Basic set
		5870 610 011	Insert 7/8" - 14UNF
	Figure 62	5870 506 141	Pressure ring # EBM = 16.8 - 0.2 mm
	Figure 64	5870 051 052	Driver # EBM = 6 + 0.2 mm
	Figure 73 Figure 74	5870 345 096	Assembly fixture #
	Figure 80	5870 705 011	Drive mandrel EBM = 4 mm
	Figure 87	5870 204 029	Adjusting screws (set of 2)
	Figure 92	5870 200 072	Digital Depth gauge # 200 mm
	Figure 95	5870 200 022	Straightedge # 580 mm