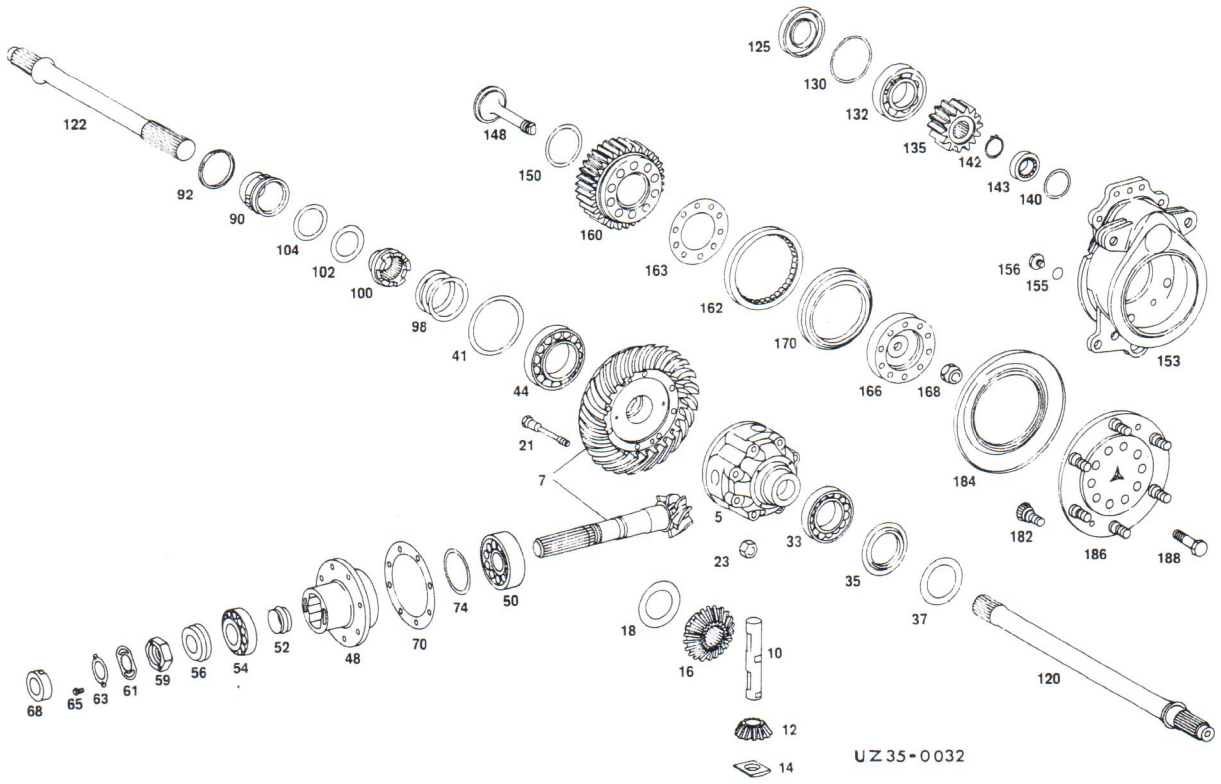
Exploded view

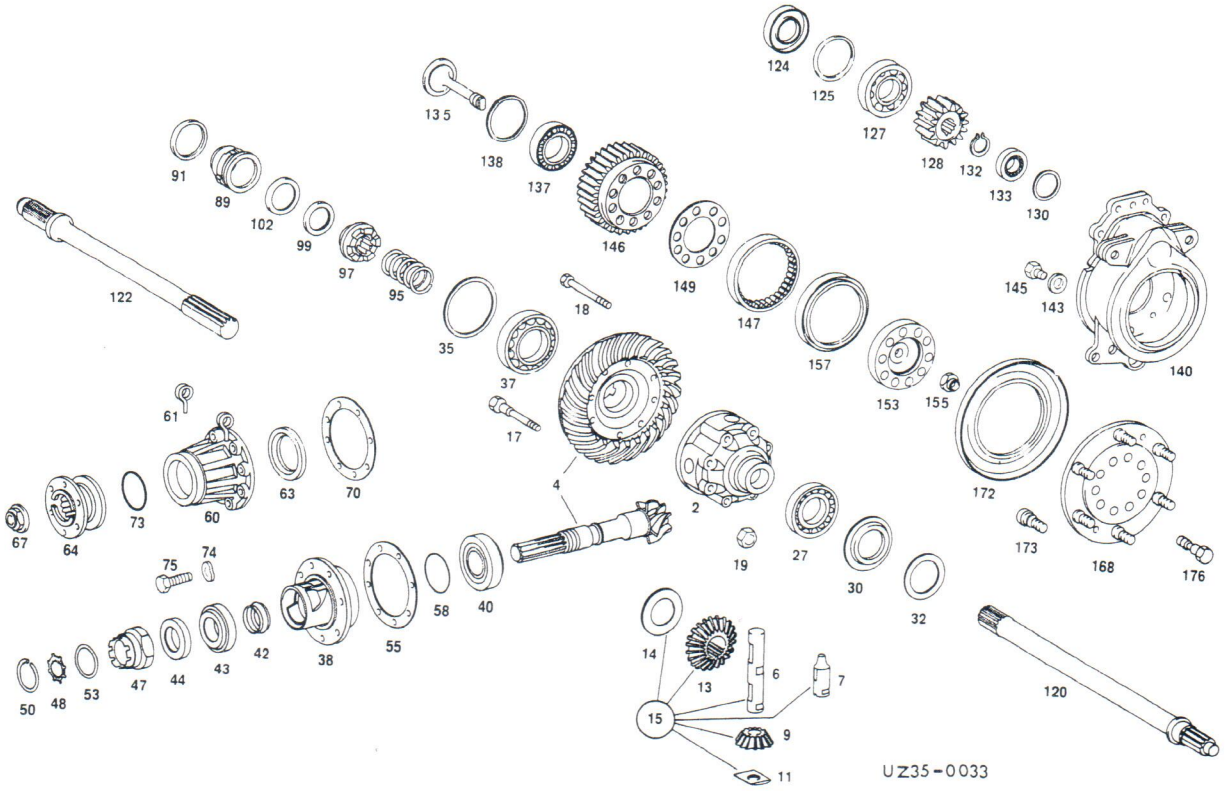


Differential and drive pinion bearing

5	Differential housing	59	Nut	140	Shim
7	Gear set	61	Retainer	142	Snap ring
10	Differential pinion shaft	63	Retainer	143	Cylindrical roller bearing
12	Bevel gear	65	Bolt	148	Bolt
14	Thrust washer	68	Sealing ring	150	Sealing ring
16	Side gear	70	Shim	153	Housing
18	Thrust washer	74	Shim	155	Sealing ring
21	Bolt	90	Plunger	156	Bolt
23	Nut	92	Sealing ring	160	Driven gear
33	Taper roller bearing	98	Spring	162	Cylindrical roller bearing
35[1]	Sealing ring	100	Driver	163	Shim
37	Shim	102	Thrust washer	166	Wear ring
41	Shim	104	Thrust washer	168	Nut
44	Taper roller bearing	120	Rear axle shaft	170	Shaft seal
48	Pinion flange	122	Rear axle shaft	180	Wheel hub
50	Taper roller bearing	125	Sealing ring	182	Wheel stud
52	Tubular spacer	130	Shim	184	Oil baffle
54	Taper roller bearing	132	Ball bearing	188	Bolt
56	Spacing ring	135	Drive gear		

[1]) See 3.1/3

Exploded view



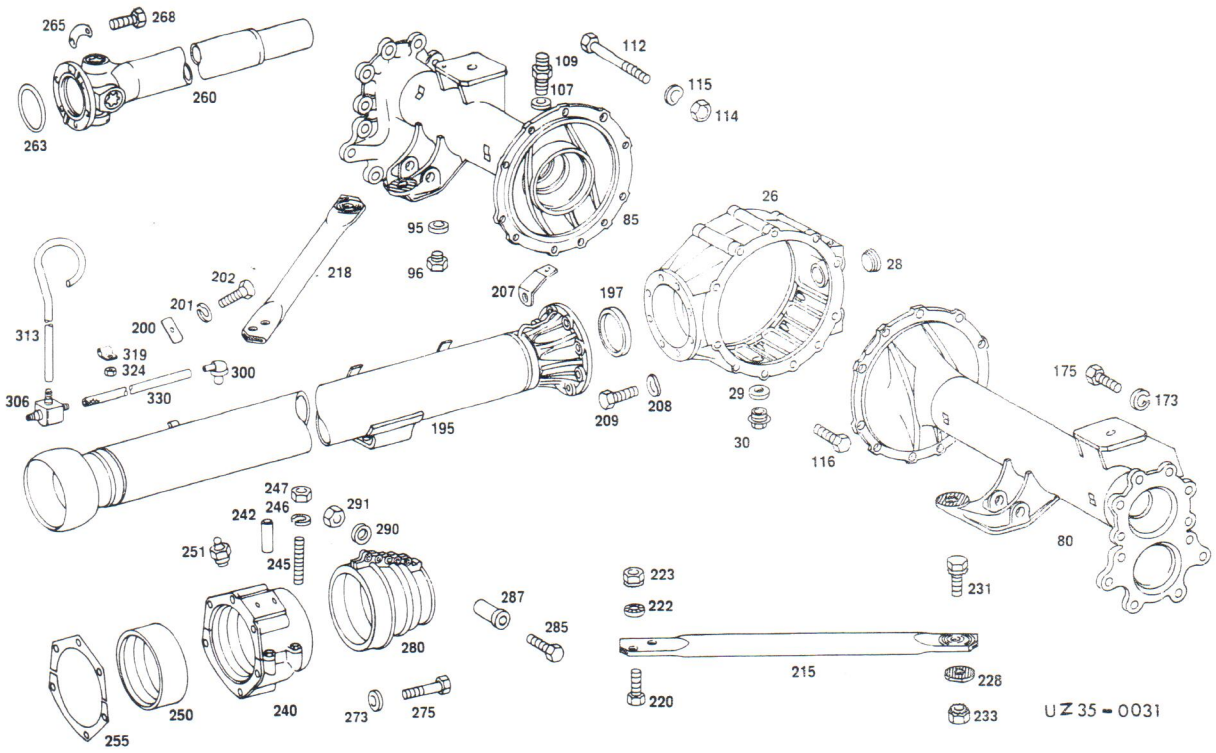
Differential and drive pinion bearing

2	Differential housing	47	Nut	132	Snap ring
4	Gear set	48	Retainer	133	Cylindrical roller bearing
6	Differential pinion shaft	50	Lock washer	135	Bolt
7	Differential pinion shaft half	53	Sealing ring	137	Ball bearing
9	Bevel gear	55	Shim	138	Sealing ring
11	Thrust washer	58	Sealing ring	140	Housing
13	Side gear	74	Spring washer	143	Sealing ring
14	Thrust washer	75	Bolt	145	Screw plug
17	Bolt	89	Plunger	146	Driven gear
18	Bolt	91	Sealing ring	147	Cylindrical roller bearing
19	Nut	95	Spring	149[2])	Shim
27	Taper roller bearing	97	Driver	153	Wear ring
30[1])	Sealing ring	99	Thrust washer	155	Nut
32	Shim	102	Thrust washer	157	Shaft seal
35	Shim	120	Rear axle shaft	168	Wheel hub
37	Taper roller bearing	122	Rear axle shaft	172	Oil baffle
38	Pinion flange	124	Sealing ring	173	Wheel stud
40	Taper roller bearing	125	Shim	176	Bolt
42	Tubular spacer	127	Ball bearing		
43	Taper roller bearing	128	Drive gear		
44	Spacing ring	130	Shim		

[1]) See 3.1/3

[2]) Applies only to model designation 747.0

Exploded view



Axle tubes and torque tube

26 Center axle housing
28 Screw plug
29 Sealing ring
30 Screw plug
80 Axle tube
95 Axle tube
95 Sealing ring
96 Bolt
107 Sealing ring
109 Union
112 Bolt
114 Nut
115 Washer
116 Bolt
173 Spring washer
175 Bolt
195 Torque tube
197 Sealing ring
200 Gasket
201 Lock washer
202 Bolt
207 Bracket
208 Spring washer
209 Bolt
215 Axle strut
218 Axle strut
220 Bolt
222 Retainer
223 Nut
228 Adjusting washer
231 Bolt
233 Nut
240 Torque ball casing
242 Straight pin
245 Stud
246 Lock washer
247 Nut
250 Torque ball shell
251 Grease nipple
255 Shim
260 Drive shaft
263 Sealing ring
265 Retainer
268 Bolt
273 Sealing ring
275 Bolt
280 Rubber gaiter
285 Bolt
287 Rivet
290 Washer
291 Nut
300 Vent
306 Connector
313 Vent pipe
319 Clamp
324 Nut
330 Hose

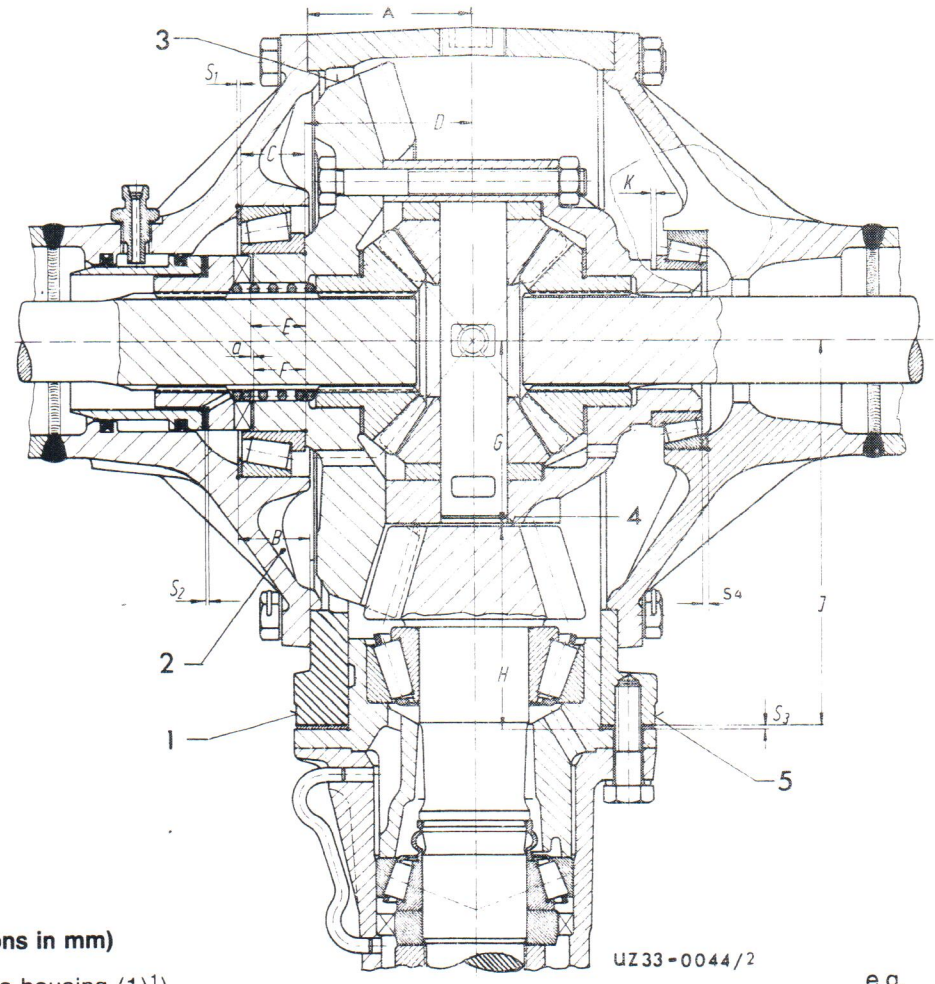
Work Sheet for Adjusting Axle Drive

Axle models 737.0–747.0/737.1–747.1

UNIMOG – MB trac

Mercedes-Benz service

			Date
Customer		Dealer	Order No.
Registration No.	Initial registration	Chassis No.	Axle No.
Service hours	Odometer reading	Last service	carried out by



Explanations (dimensions in mm)

A	etched in center axle housing (1)[1]	e.g. 90
B	stamped in axle tube at lock side (2)	e.g. 33.15
C	Overall height of large taper roller bearing, measured on a surface plate	e.g. 29.00
D	etched in ring gear (3)	e.g. 76.90
E	Measurement from collar of inner bearing race to upper edge of shift dog (washer(s) $S_1$1, taper roller bearing, piston, thrust washer and shift dog installed in axle tube); measure with depth gauge.	e.g. 34.80
F	Measurement from upper claw edge of ring gear to contact surface of bearing at ring gear	e.g. 33.40
G	Measurement from end face of drive pinion to center of differential etched in end face of drive pinion (4)	e.g. 86.15
H	Measurement from end face of drive pinion to pinion flange; measured with depth gauge	e.g. 92.15
J	Measurement from center of differential to flange is stamped in top side of axle at center of axle housing (5)[2]	e.g. 77
K	Measurement from inner bearing race to contact surface of bearing at differential housing	

Important: All reading differ from axle to axle.

[1] For housing width 130 mm, insert the constant 64 before the measurement (e.g. 90), and the constant 74 for housing width 140 mm.

[2] Insert the constant 176 before the measurement (e.g. 77); and constant 177 for dimension 00.

Break-away torque for adjustment of drive pinion with oiled taper roller bearings (SAE 90).

Taper roller bearing

003 981 92 05		
+ 004 981 28 05	Specified =	3.0 to 3.5 Nm[1])
001 981 46 05	Actual =	
+ 001 981 44 05		

Important: Rinse out taper roller bearing and insert with gear oil SAE 90.

Note readings and calculate shim thickness.

1. Shim thickness S_1 for large taper roller bearing at lock side determines backlash and contact pattern together with shim thickness S_3.

$S_1 = (A + B) - (C + D)$

A =	C =	(A + B) =
+ B =	+ D =	− (C + D) =
(A + B) =	(C + D) =	S_1 =

2. Shim thickness S_2 between piston and differential lock determines claw play (a) of differential lock at off position.

$S_2 = E - (F + a)$

E =	F =	
− (F + a) =	+ a =	(a = claw play 0,5 ± 0,2 mm)
S_2 =	F + a =	

3. Shim thickness S_2 at flange of drive pinion bearing determines amount by which drive pinion engages ring gear.

$S_3 = (G + H) - J$

G =	(G + H) =
+ H =	− J =
(G + H) =	S_3 =

4. Shim thickness S_4 at small taper roller bearing for front and rear axles $S_4 = K$.

Explanations to shim thickness S_4

The coil spring of the differential lock between the shift dog and ring gear is **not** to be fitted for measurement.

4.1 Force outer bearing race into axle tube without shims.
4.2 Force taper roller bearing with inner race onto bearing seat of differential housing by half the bearing thickness.
4.3 Introduce differential into center axle housing at lock side.
4.4 Position axle tube on center axle housing and torque **four opposite bolts** to 135 Nm[2]) while steadily turning ring gear.
4.5 After tightening bolts, continue to rotate ring gear while knocking (plastic-headed hammer) flange part of axle tube to eliminate stresses from bearing seat.
4.6 Remove axle tube and withdraw outer bearing race again.
4.7 Measure gap K with feeler gauge, insert shims S_4 of calculated thickness beneath outer race of taper roller bearing, and force race into position.
4.8 Take differential out.
4.9 Fully press inner race of taper roller bearing onto bearing seat of differential housing.

[1]) Taper roller bearing 001 981 44 05 + 001 981 37 05 Specified = 2,0 to 2,2 Nm
[2]) For axle model 737/747.111, torque to 200 Nm.