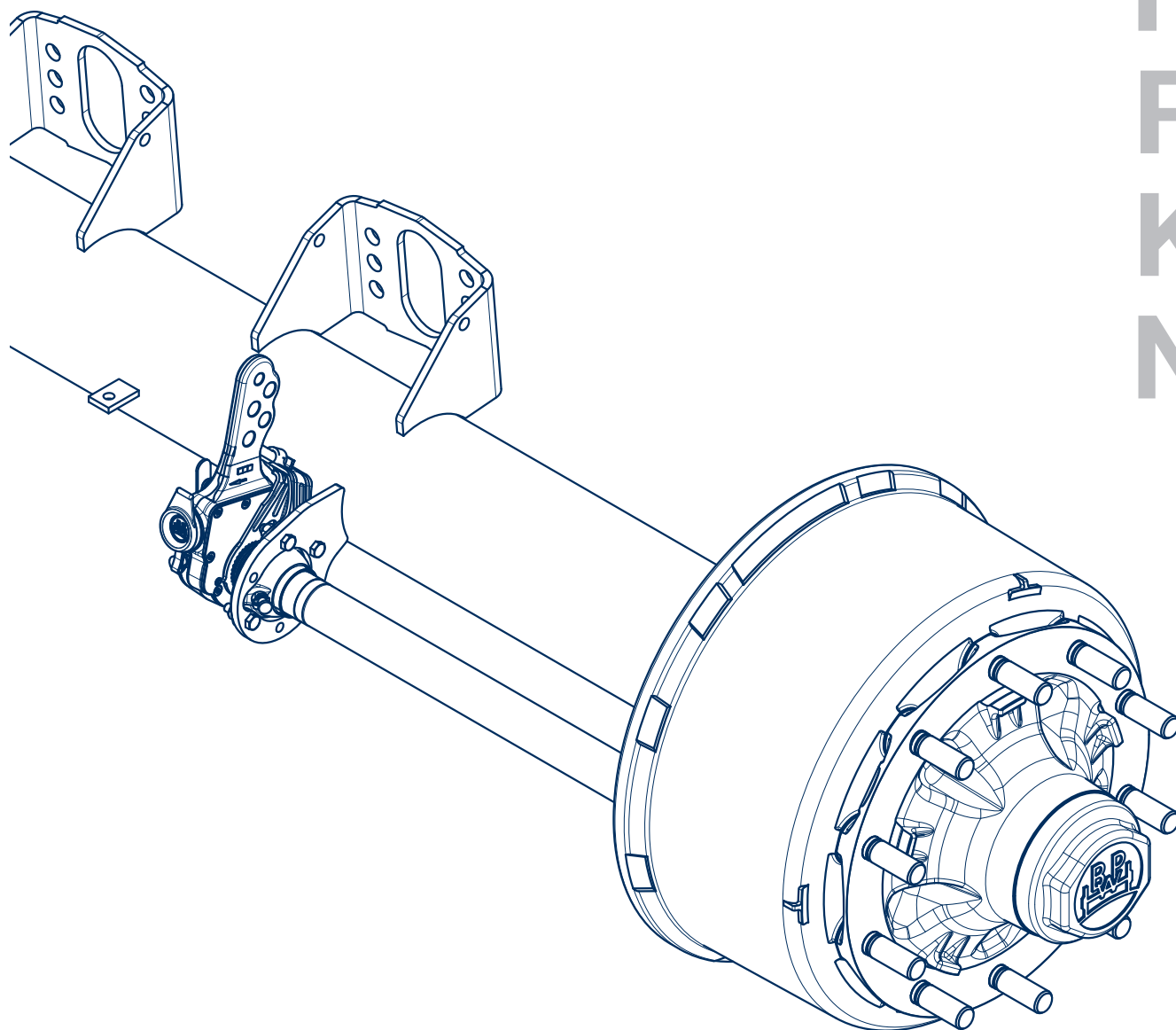


H
R
K
N



BPW Original spare parts

BPW trailer axles series H.. / R.. / K.. / N.. with drum brakes



BPW-EL-HKN 31022101e

we think transport



Table of content

		Page		
		Axle series		
		H.. / R.. Ø 420	K.. Ø 360	N.. Ø 300
	Explanation of BPW axle types	4		
	Explanation of BPW item numbers	5		
①	Axle beam	6 - 9		
1.1	Axle beams, booster brackets	8 / 9	8 / 9	8 / 9
②	Brake camshafts, brake camshaft bearings	10 - 19		
2.1	Brake camshafts	12	12	13
2.2	Brake camshaft bearings	14 - 17	14 - 17	14 - 17
③	Slack adjuster	18 - 27		
3.1	Manual slack adjusters type GSK, return springs	20	20	20
3.2	Automatic slack adjusters type ECO Master	21 / 22	21 / 23	21 / 24
3.3	Installation instructions ECO Master	25	25	25
3.4	Slack adjuster attachments	26 / 27	26 / 27	26 / 27
④	Brake parts	28 - 53		
4.1	Brake parts SN-2, retrofit kits	32 / 33	34 / 35	36 / 37
4.2	Brake parts for brake BPW 95 / ECO Drum	38 / 39	40 / 41	42 / 43
4.3	Brake drums	44	45	45
4.4	Brake drum attachments	46	46	47
4.5	Brake covers	48 / 49	50 / 51	50 / 51
4.6	Brake cylinder	52 / 53	52 / 53	52 / 53
⑤	Hubs, hub bearings	54 - 85		
5.1.1	Hub bearing, conventional hub bearing	60 - 63	60 - 63	64 / 65
5.1.2	Hub bearings, ECO / ECO MAXX	66 / 67	66 / 67	66 / 67
5.1.3	Hub bearing, ECO ^{Plus}	68 / 69	68 / 69	-
5.1.4	Hub bearing, ECO Plus 2	70 / 71	70 / 71	70 / 71
5.1.5	Hub bearing, ECO Plus 3	72 / 73	72 / 73	72 / 73
5.2.1	Hubs, conventional hub bearing	74	74	74
5.2.2	Hubs, ECO / ECO MAXX	75	75	76
5.2.3	Hubs, ECO ^{Plus}	77	77	-
5.2.4	Hubs, ECO Plus 2	78	78	78
5.2.5	Hubs, ECO Plus 3	79	79	79
5.3.1	Grease filling, bearing adjustment, conventional	80	80	80
5.3.2	Grease filling, bearing adjustment, ECO / ECO MAXX	81	81	81
5.3.3	Grease filling, bearing adjustment, ECO ^{Plus}	82	82	-
5.3.4	Grease filling, bearing adjustment, ECO Plus 2	83	83	83
5.3.5	Grease filling, bearing adjustment, ECO Plus 3	84	84	84
5.4	Grease sprays for greasing roller bearings	85	85	85
⑥	ABS	86 - 99		
6.1	ABS parts / ABS retrofit kits	88 - 91	92 - 95	96 - 99
⑦	TRILEX	100 / 101	-	-
⑧	Wheel stud	102 - 107		
8.1	Wheel studs, single wheels	104 / 105	104 / 105	104 / 105
8.2	Wheel studs, twin wheels	106 / 107	106 / 107	106 / 107
⑨	Accessories	108 - 111		
9.1	Hub caps with integrated odometer	108	109	110
9.2	Hub caps with digital odometer (ECOMETER)	111	111	111

Table of content (exploded view)

1 Axle beams
 ■■ 6 - 9, 22 - 25
 1.1 Axle beams
 Booster brackets
 ■■ 8 - 9, 22 - 25

2 Brake camshafts/bearings
 ■■ 10 - 17
 2.1 Brake camshafts
 ■■ 20
 2.2 Brake camshaft bearings
 ■■ 14 - 17

3 Slack adjusters
 ■■ 18 - 27
 3.1 GSK, return springs
 ■■ 20
 3.2 AGS
 ■■ 21 - 25
 3.3 Slack adjuster attachments
 ■■ 26 - 27

4 Brake parts
 ■■ 28 - 53
 4.1 Brake parts to year of manufacture 1995
 ■■ 32 - 37
 4.2 Brake parts from year of manufacture 1995
 ■■ 38 - 43
 4.3 Brake drums
 ■■ 44 - 45
 4.4 Brake drum attachments
 ■■ 46 - 47
 4.5 Brake covers
 ■■ 48 - 51
 4.6 Brake cylinders
 ■■ 52 - 53

5 Wheel hubs/hub bearings
 ■■ 54 - 79
 5.1 Hub bearings
 5.1.1 Conventional ■■ 60 - 65
 5.1.2 ECO ■■ 66 - 67
 5.1.3 ECO^{Plus} ■■ 68 - 69
 5.1.4 ECO Plus 2 ■■ 70 - 71
 5.1.5 ECO Plus 3 ■■ 72 - 73
 5.2 Wheel hubs
 5.2.1 Conventional ■■ 74
 5.2.2 ECO ■■ 75 - 76
 5.2.3 ECO^{Plus} ■■ 77
 5.2.4 ECO Plus 2 ■■ 78
 5.2.5 ECO Plus 3 ■■ 79
 5.3 Grease filling/bearing adjustment
 5.3.1 Conventional ■■ 80
 5.3.2 ECO ■■ 81
 5.3.3 ECO^{Plus} ■■ 82
 5.3.4 ECO Plus 2 ■■ 83
 5.3.5 ECO Plus 3 ■■ 84
 5.4 Grease sprays ■■ 85

8 Wheel studs
 ■■ 102 - 107
 8.1 Single wheels
 ■■ 104 - 105
 8.2 Twin wheels
 ■■ 106 - 107

6 ABS
 ■■ 86 - 99
 6.1 ABS parts / ABS retrofit kits
 ■■ 88 - 99

10 TRILEX
 ■■ 100 - 101

HS.. / HZ..

HI.. / HIZ..

HB..
 for wheels with offset

4.4

Explanation of BPW axle types

Extract

Certificate type
 Type designation: RSF 9010 ECO-P
 Brake type and test load: ID1-H102/ID2-SN4218/ID3-10006/ID4-36108212
 Test report no.: 20.68.31.0497
 Manufacturing date/manufacturing number of the axle: 190550771
 QR code
 Spare parts Documents
 Max. perm. speed: 105 km/h

Type plate from year of manufacture 2000 (adhesive type plate)
 BPW BERGISCHE ACHSEN KG D-51674 Wiehl Germany
 HSF 9010 ECO SN 4218
 30.38.743.000 Bj. 993110227
 TYP S 90 TDB 00 07
 stat. 9000 kg 105 km/h

Type plate from year of manufacture (adhesive type plate) with barcode
 BPW BERGISCHE ACHSEN KG Made in Germany
 HSF 9010 ECO-P SN 4218 | 073110227
 S90TDB0007 / S100-1TDB0014 / H102TDB0752
 27.58.743.000 stat. 9000 kg 105 km/h

Type plate to year of manufacture 1999
 BPW BERGISCHE ACHSEN KG D 51674 WIEHL GERMANY
 30 . 38 . 743 . 000 // 954951842
 HSF 9010 ECO SN 4218
 zul. Achslast perm. axle capacity charge adm. STAT. 9000 kg max. km/h max. speed vitesse maxi. 105
 TECH. 9450
 TYP S 90 TDB 00 07

Example: H S F A H 9010 -15 ECO

		AXLE SERIES	AXLE BEAM	BRAKE	TYRE
H		H..	□		
R		R..	○	SN 420	20 - 24"
KH		KH..	□		
KM		KM..	■	SN 360	19.5"
KR		KR..	○		
KRD		KRD..	●		
NH		NH..	□		
NR		NR..	○	SN 300	15 / 17.5"
NRD		NRD..	●		
B		For single wheels, wheels with offset (e.g. offset 120)			
S		For single wheels, wheels without offset (ET 0)			
Z		For twin wheels			
I		Wheel spiders for TRILEX wheel rims, single wheels			
IZ		Wheel spiders for TRILEX wheel rims, twin wheels			
	F	Wheel studs M 22 x 1.5, without wheel nuts, wheel nuts for stud or spigot alignment separate			
	M	For spigot alignment			
		A	With aluminium hub		
		(D)	(Retarder)		
		H	For hanging brake cylinders		
			6006 to 18010	Axle load (kg) + quantity of wheel studs per hub	
			-15	Axle beam - wall thickness, e.g. 15 mm	
			-1	Hub bearing version (e.g. 14 t)	
			/3	Wheel connection - 10 wheel studs, pitch circle 335 mm (only K..)	
			ECO	Trailer axle with ECO Unit	
			ECO MAXX	Weight optimised trailer axle with ECO Unit	
			ECO ^{Plus}	Weight-optimised trailer axle with ECO ^{Plus} Unit	
			ECO Plus 2	Weight-optimised trailer axle with ECO Plus 2 Unit	
			ECO Plus 3	Weight-optimised trailer axle with ECO Plus 3 Unit	
			MAXX	Trailer axle with conv. hub system	

Valid: 01/05/2021

This list shows original spare parts for BPW trailer axles **series R.. 9 t** from year of manufacture 2019 and **H.. / K.. / N.. 6.5 - 18 t** from year of manufacture (1982). For additional spare parts, see the BPW spare parts catalogues. Current versions and additional information can be found online at: www.bpw.de.

Subject to change without notice.
 Parts marked with a in the drawing are provided with a BPW item number.

Explanation of BPW item numbers

Extract

Example:					
30.	38.	743.	000		
20.				Trailer axle without suspension parts	
24.					
25.					
27.					
30.					
31.					
		Axle load	Roller bearings		
06.		6500 kg	33116 / 32310		Conventional hub bearing
08.		8000 - 9000 kg	33116 / 32310		
09.					
10.		10000 - 12000 kg	33118 / 33213		
14.		13000 - 14000 kg	32219 / 33215		
16.		16000 - 18000 kg	32222 / 32314		ECO / ECO MAXX Unit
36.		6500 kg	33116 / 32310		
38.		8000 - 9000 kg	33116 / 32310		
40.		10000 - 12000 kg	33118 / 33213		
41.					
44.		13000 - 14000 kg	32219 / 33215		ECO ^{Plus} Unit
48.		8000 - 9000 kg	33118 / 33213		
50.		10000 - 12000 kg	33118 / 33213		
51.					ECO Plus 2 Unit
56.		6500 / 7000 kg	33118 / 33213		
58.		8000 - 9000 kg	33118 / 33213		
59.					Conventional hub bearing
65.		6400 kg	33215 / 32310		
66.		6500 kg	33118 / 33213		
68.		9000 kg	33118 / 33213		ECO Plus 3 Unit
		Wheel brake	Dimension		Version
5th + 6th place (ECO Plus 3)					
00.		Without brake			Brake shoes with split roller (BPW 95 / ECO Drum)
10.		SN 3015	closed	Ø 300 x 150	
11.		SN 3020	closed	Ø 300 x 200	
20.		SN 3620	closed	Ø 360 x 200	
30.		SN 4212	closed	Ø 420 x 120	
31.		SN 4218	closed	Ø 420 x 180	
32.		SN 4220	closed	Ø 420 x 200	
5th - 7th place (item number range 2... / 3... / 6...)					
582.		SN 3015-1 HWG	closed	Ø 300 x 150	Brake shoes with closed eye to year of manufacture 1989
586.		SN 3020-1 HWG	closed	Ø 300 x 200	
592.		SN 3015 HWG	closed	Ø 300 x 150	Brake shoes with half-cup bearing from year of manufacture 1990
596.		SN 3020 HWG	closed	Ø 300 x 200	
501.		SN 3015 BPW 95	closed	Ø 300 x 150	Brake shoes with split roller (BPW 95)
502.		SN 3020 BPW 95	closed	Ø 300 x 200	
542.		SN 3616	closed	Ø 360 x 160	
546.		SN 3620	closed	Ø 360 x 200	
551.		SN 3616 BPW 95	closed	Ø 360 x 160	Brake shoes with split roller (BPW 95)
552.		SN 3620 BPW 95	closed	Ø 360 x 200	
790.		SN 4212-2 HWG	open	Ø 420 x 120	
794.		SN 4212-2 HWG	closed	Ø 420 x 120	
710.		SN 4218-2 HWG	open	Ø 420 x 180	
714.		SN 4218-2 HWG	closed	Ø 420 x 180	
718.		SN 4220-2 HWG	open	Ø 420 x 200	
723.		SN 4220-2 HWG	closed	Ø 420 x 200	
739.		SN 4222-2 HWG	closed	Ø 420 x 220	
741.		SN 4212	closed	Ø 420 x 120	
743.		SN 4218	closed	Ø 420 x 180	
744.		SN 4220	closed	Ø 420 x 200	
745.		SN 4222	closed	Ø 420 x 220	
000		Seq. number 000 - 999 (0000 - 9999 for ECO Plus 3)			

H

R

K

N

1 Axle beam

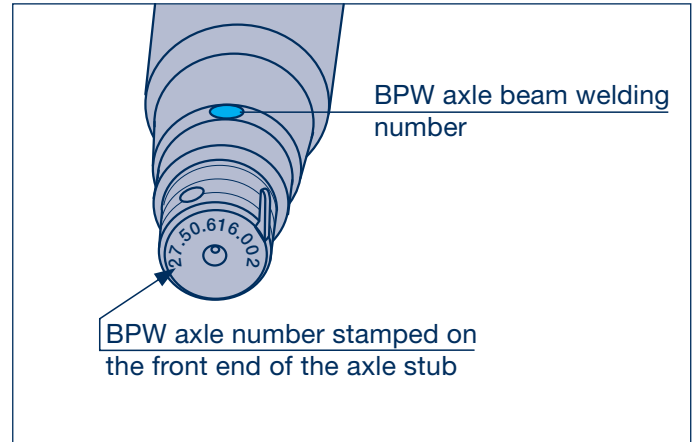
Determining replacement axle beams

Determining replacement axle beams

The BPW axle item number is shown on the type plate. If this is missing or no longer legible, the BPW axle number can be read off the front end of the axle stub in most cases.

When ordering a replacement, quote this BPW axle number with the reference to a replacement axle beam.

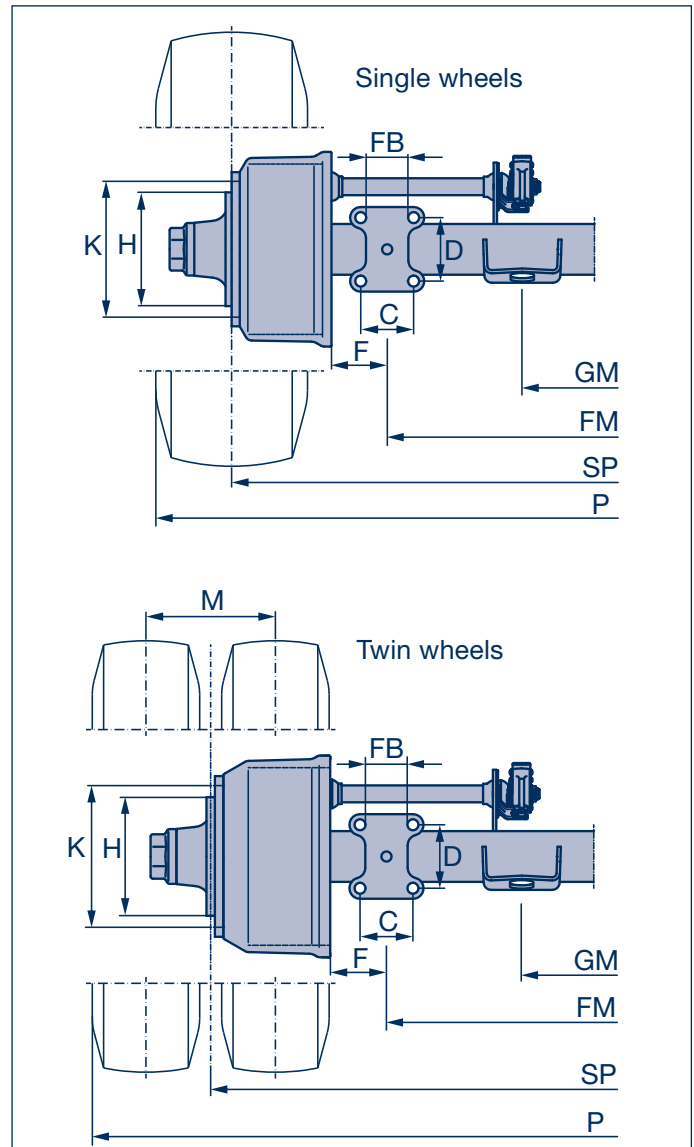
In ECO Plus 2 bearings, no item number is stamped on the front end of the stub.



If there is no BPW axle number or none is known, BPW can identify the axle based on the axle beam welding number (see also BPW Internet application for spare part lists for commercial vehicles) or the dimensions.

1. **Axle beam cross section** (□ 120/150, Ø 127, Ø 146)
2. **Axle beam wall thickness** (if known)
3. **Booster bracket centre** (GM)
4. **Spring centre** (FM)
5. **Track** (SP)
6. **Overall width** (P)
7. **Leaf spring width** (FB)
8. **Spring pad hole pattern** (C and D) (if present)
9. **Wheel seat** (H)
10. **Reference diameter and number of wheel studs** (K)

In addition, the **type of tyres**, the **wheel size** and the **brake size** should also be specified, as well as the approximate **year of manufacture** (date of registration).



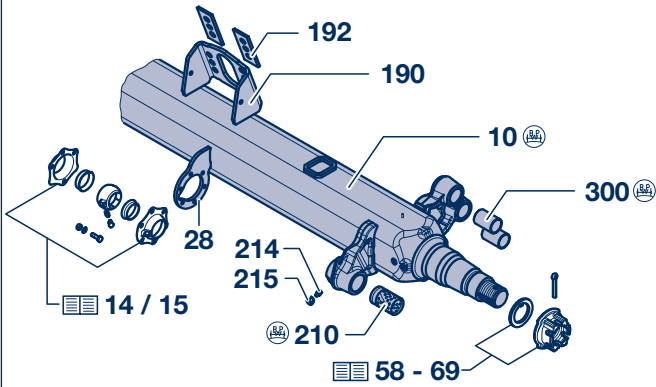
1 Axle beam

1.1 Axle beams, booster brackets

H
R
K
N

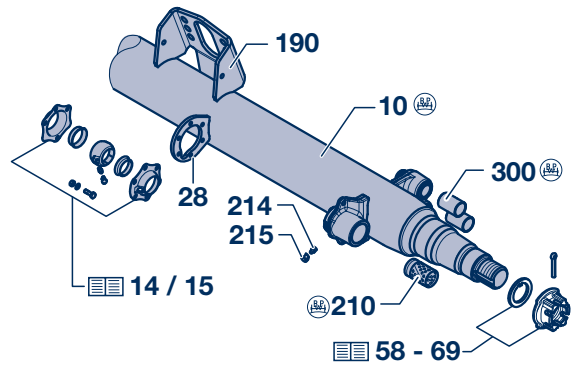
H.. / KH.. Conv. / ECO

Brake...-1/2



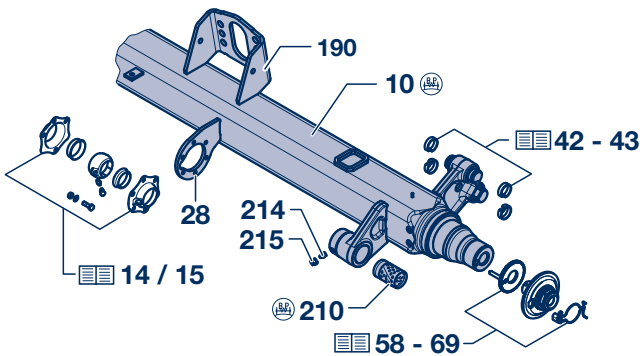
NR.. Conv. / ECO

Brake... -1 / 2



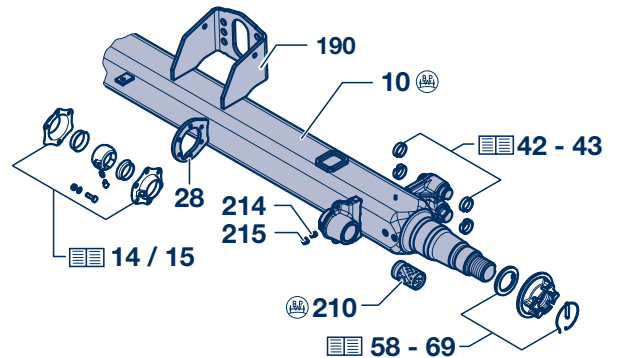
H.. / KH.. / N.. ECO / ECO^{Plus} / ECO Plus 2

Brake with split roller (BPW 95 / ECO Drum)



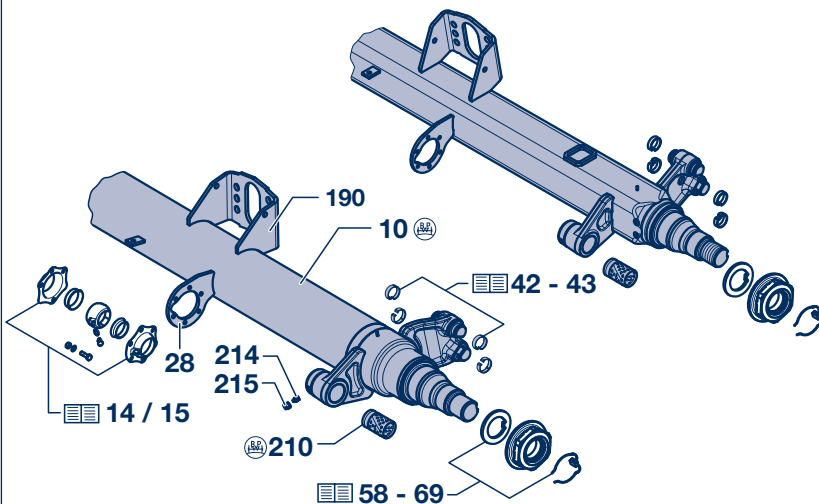
NH.. ECO

Brake with split roller (BPW 95)

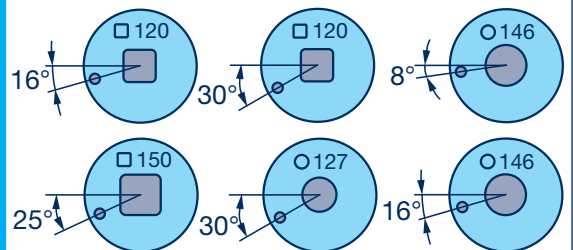


H.. / KH.. / R.. / N.. ECO Plus 3

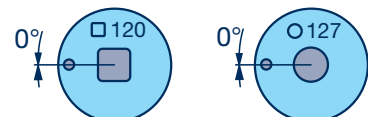
Brake with split roller (BPW 95 / ECO Drum)



Axle series H.. / R..



Axle series K.. / N..



Axle beam 1

Axle beams, booster brackets 1.1

Item	Designation	BPW item no.	Dimension	BPW item no.	Dimension	BPW item no.	Dimension
		H.. / R..		K..		N..	
10	Axle beam group, incl. Items 27, 28, 190-194, 210-215, 220-230, 300, 445-447	When ordering an axle beam assembly, state the axle type and BPW item number (type plate).					
28	Plate (support bearing plate)	03.285.55.71.0	□ 120 16°	03.285.54.12.0	□ 120	03.285.54.16.0	□ 120
		03.285.55.22.0	□ 120 30°	03.285.56.18.0	○ 127	03.285.55.19.0	○ 127
		03.285.55.21.0	□ 150 25°				
		03.285.55.23.0	○ 127 30°				
		03.285.51.14.0	○ 146 8°/16°				
190	Booster bracket (standard) ¹⁾	Booster bracket welded on					
		H.. / R..		K..		N..	
		03.182.35.78.0	□ 120 16° (N)	03.182.35.80.0	□ 120 (N)	03.182.35.80.0	□ 120
		03.182.35.84.0	□ 120 16° (R)	03.182.34.65.0	○ 127 (N)	03.182.34.65.0	○ 127
		03.182.34.77.0	□ 120 30° (N)				
		03.182.34.77.0	□ 150 25° (N)				
		03.182.34.58.0	○ 127 (N)				
		03.182.33.31.0	○ 146 8° (R)				
		05.182.33.32.0	○ 146 16° (S)				
05.182.33.35.0	○ 146 16° (U)						
192	Plate (reinforcement plate for TRISTOP cylinder)	03.281.54.10.0					
(N) = booster bracket rear (R) = booster bracket rear (U) = booster bracket, special version front (S) = booster bracket, special version front ¹⁾ For alternative versions, see pages 22 - 24. Adjustable booster brackets on request.							
		H.. / R..		K..		N..	
210	Bush	03.112.44.34.0	∅ 42 / 46 x 73	03.112.44.34.0	∅ 42 / 46 x 73	03.112.44.34.0	∅ 42 / 46 x 73
214	Grease nipple ww. SN 4222	02.6802.03.50	AM 10 x 1	02.6802.03.50	AM 10 x 1	02.6802.03.50	AM 10 x 1
		02.6802.06.50	BM 10 x 1	02.6802.06.50	BM 10 x 1		
		02.6850.12.50	BM 10 x 1/67°	-		-	
215	Cap	02.3505.20.00		02.3505.20.00		02.3505.20.00	
300	Bush (for brake ...-1 / -2)	03.112.33.08.0	∅ 36 / 40 x 60	03.112.33.08.0	∅ 36 / 40 x 60	03.112.33.08.0	∅ 36 / 40 x 60

H

R

K

N

3 Brake camshafts, brake camshaft bearings

General

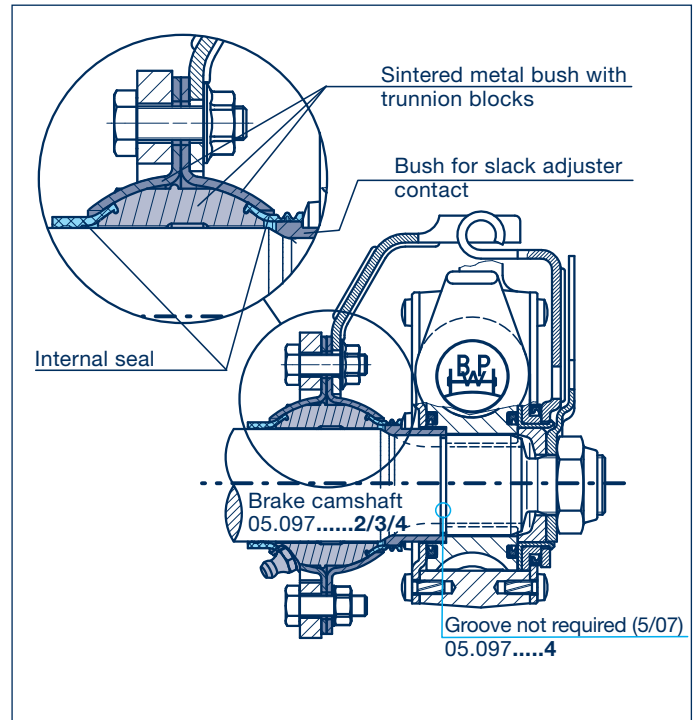
BPW brake camshafts and bearings

Optimized seal and improved brake camshaft bearing on BPW drum brake axles

In **October 2000**, the life expectancy of the bearing and the brake camshaft was doubled through the use of a newly developed sintered metal bush in connection with a new internal sealing system.

Advantages:

- ⊙ Life expectancy of brake camshaft and bearing doubled
- ⊙ High degree of operational reliability
- ⊙ Internal seal
- ⊙ Compact design
- ⊙ Simple and safe assembly
- ⊙ For all drum brake axles



Slack adjuster contact on brake camshaft - 4 / 91

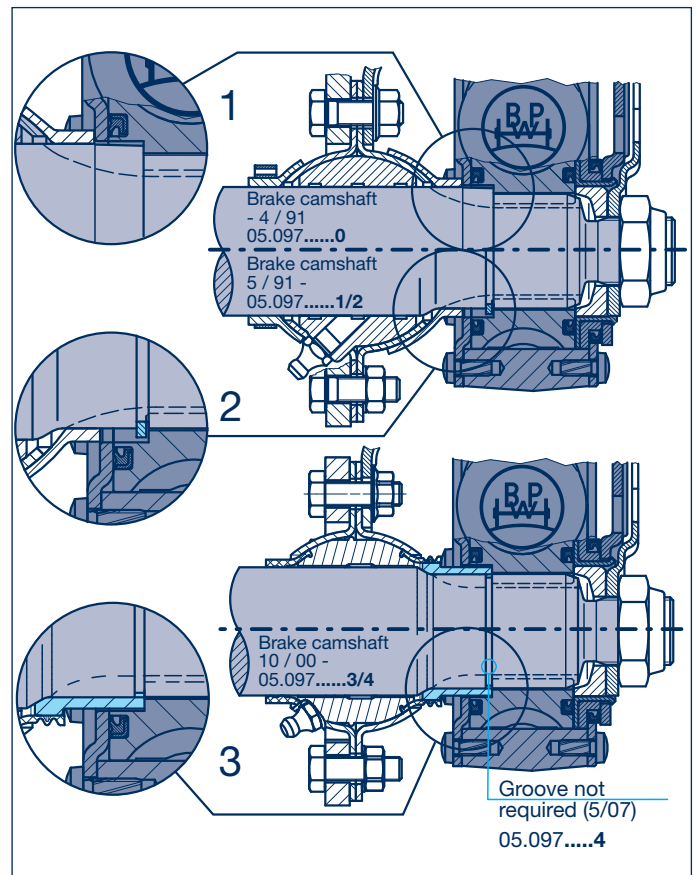
Contact on collar of the brake camshaft (1)

5 / 91 - 10 / 00

Contact on circlip (2)

10 / 00 -

Contact on the bush pushed onto the brake camshaft (3)



Brake camshafts, brake camshaft bearings 2

General

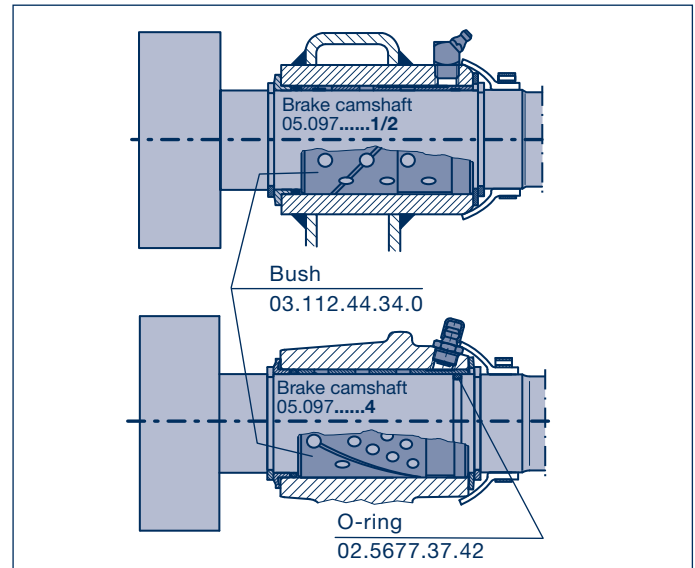
Optimized camshaft bush and additional O-ring

In **February 2002**, BPW drum brake axles with support bearings for brake sizes SN 300, SN 360, SN 420 were provided with an advanced brake camshaft bearing on the brake anchor side.

Features:

- ⊙ The grease groove profile inside brass bushing **03.112.44.34.0** has been optimized. On the outside, the bush has a mechanically machined annular groove. The current bush item number remains unchanged.
- ⊙ The brake camshaft is provided with an additional groove on the camshaft side bearing seat for receiving the O-ring **02.5677.37.42** (Ø 37 x 2.6 (black)).

The brake camshaft item number is changed. Version 4 ensues from the last digit of the current item numbers **1, 2 or 3**.



Changed support bearing screwed joint on drum brake axles

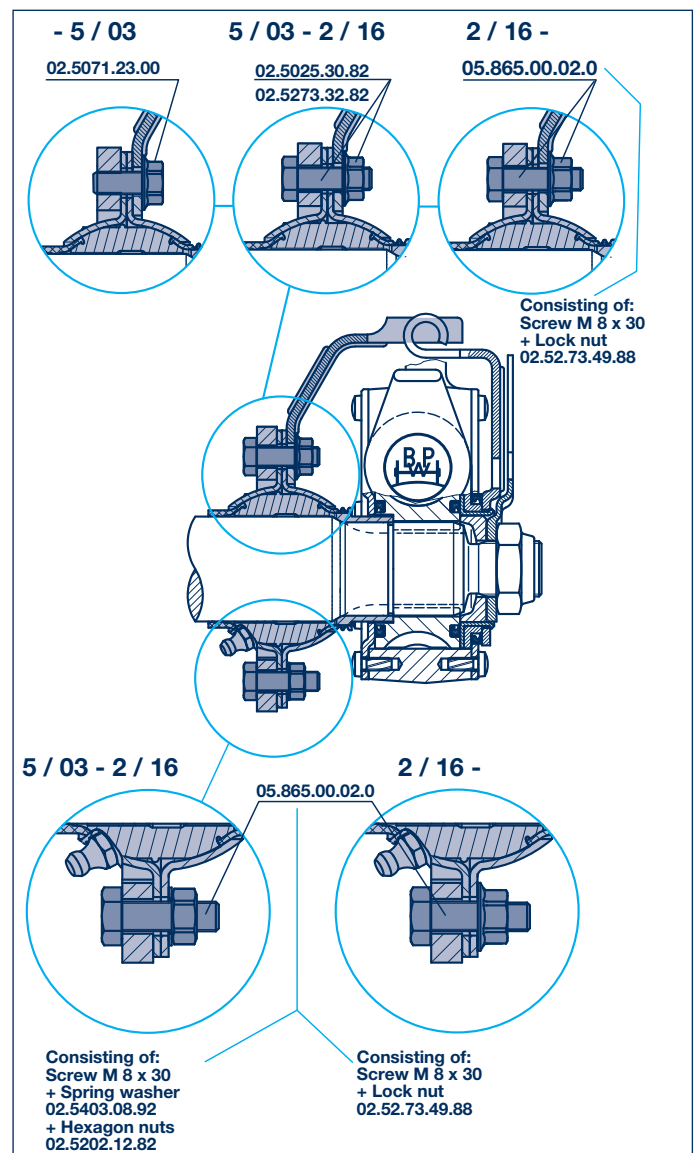
In **Week 23/2003**, the support bearing screwed joint on drum brake axles was changed from self-tapping screws to hexagon screws (M 8 x 25) with nuts.

With automatic slack adjusters (AGS), the shaped plate for the slack adjuster support is fastened using these screws in combination with Tensilock lock nuts (BPW no. **02.5273.49.88**).

The support bearing can also be assembled using the screws in combination with spring washers and standard hexagon nuts (BPW no. cpl. **05.865.00.02.0**).

From **2016**, only hexagon screws (M 8 x 30) with lock nuts (BPW no. **02.5273.49.88**) are used, the BPW no. for the screw kit does not change.

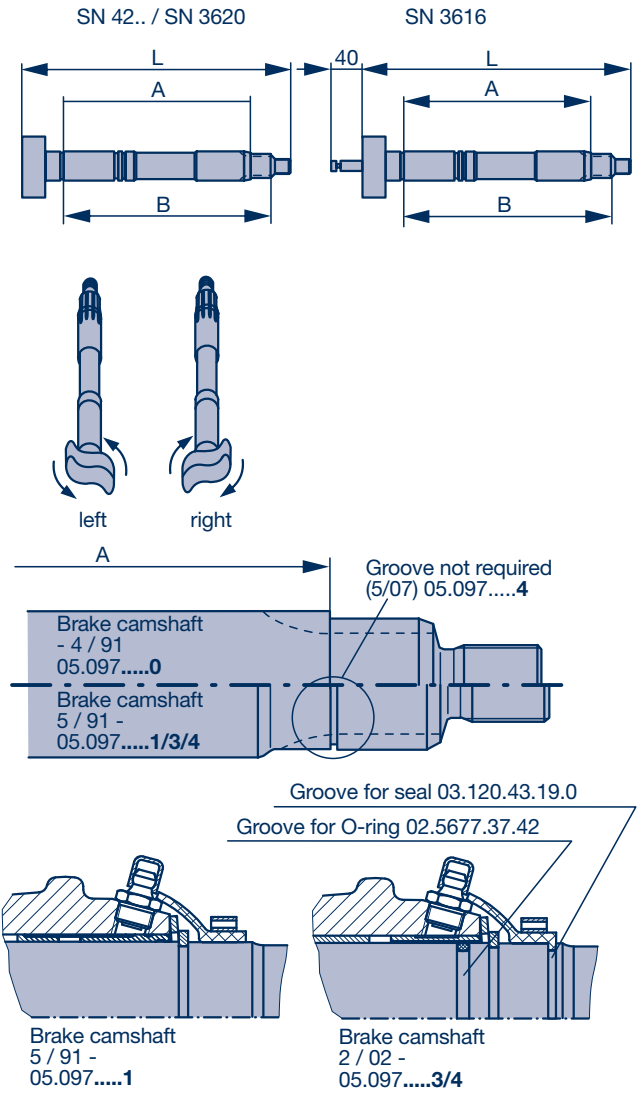
The screws are assembled towards the centre of the axle.



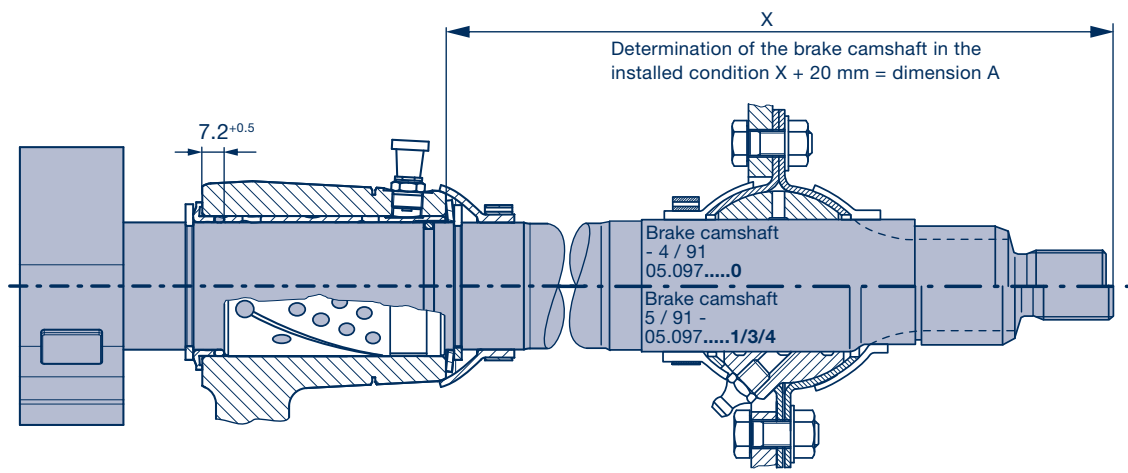
3 Brake camshafts, brake camshaft bearings

2.1 Brake camshafts for series H.. / R.. + K..

Item	Designation (remark)	BPW item no.																		
240	Brake camshaft, left	05.097.....4																		
241	Brake camshaft, right	05.097.....4																		
<table border="1"> <tr> <td colspan="2">H.. / R..</td> <td>SN 42..</td> <td>---.7xx---</td> <td>---.30/31/32----</td> </tr> <tr> <td colspan="2">K..</td> <td>SN 3620</td> <td>---.546. / 552---</td> <td>---.20----</td> </tr> </table>			H.. / R..		SN 42..	---.7xx---	---.30/31/32----	K..		SN 3620	---.546. / 552---	---.20----								
H.. / R..		SN 42..	---.7xx---	---.30/31/32----																
K..		SN 3620	---.546. / 552---	---.20----																
		A	L	B	left	right														
		255.5	376	286	05.097.05.67.4	05.097.05.68.4														
		285.5	406	316	01.4	02.4														
		299.5	420	330	03.4	04.4														
		311.5	432	342	05.4	06.4														
		322.5	443	353	07.4	08.4														
		337.5	458	368	35.4	36.4														
		361.5	482	392	09.4	10.4														
		397.5	518	428	11.4	12.4														
		422.5	543	453	13.4	14.4														
		431.5	552	462	15.4	16.4														
		457.5	578	488	45.4	46.4														
		469.5	590	500	17.4	18.4														
		484.5	605	515	47.4	48.4														
		499.5	620	530	19.4	20.4														
		509.5	630	540	21.4	22.4														
		522.5	643	563	23.4	24.4														
		547.5	668	578	25.4	26.4														
		557.5	678	588	39.4	40.4														
		567.8	688	598	63.4	64.4														
		577.5	698	608	27.4	28.4														
		615.5	736	646	29.4	30.4														
		634.5	755	665	37.4	38.4														
		649.5	770	680	57.4	58.4														
		699.5	820	730	49.4	50.4														
		741.5	862	772	31.4	32.4														
		751.5	872	782	55.4	56.4														
<table border="1"> <tr> <td colspan="2">K..</td> <td>SN 3616</td> <td>---.542. / 551---</td> </tr> <tr> <td colspan="2"></td> <td>A</td> <td>L</td> <td>B</td> <td>left</td> <td>right</td> </tr> <tr> <td colspan="2"></td> <td>172.5</td> <td>291</td> <td>203</td> <td>05.097.09.07.4</td> <td>05.097.09.08.4</td> </tr> </table>			K..		SN 3616	---.542. / 551---			A	L	B	left	right			172.5	291	203	05.097.09.07.4	05.097.09.08.4
K..		SN 3616	---.542. / 551---																	
		A	L	B	left	right														
		172.5	291	203	05.097.09.07.4	05.097.09.08.4														



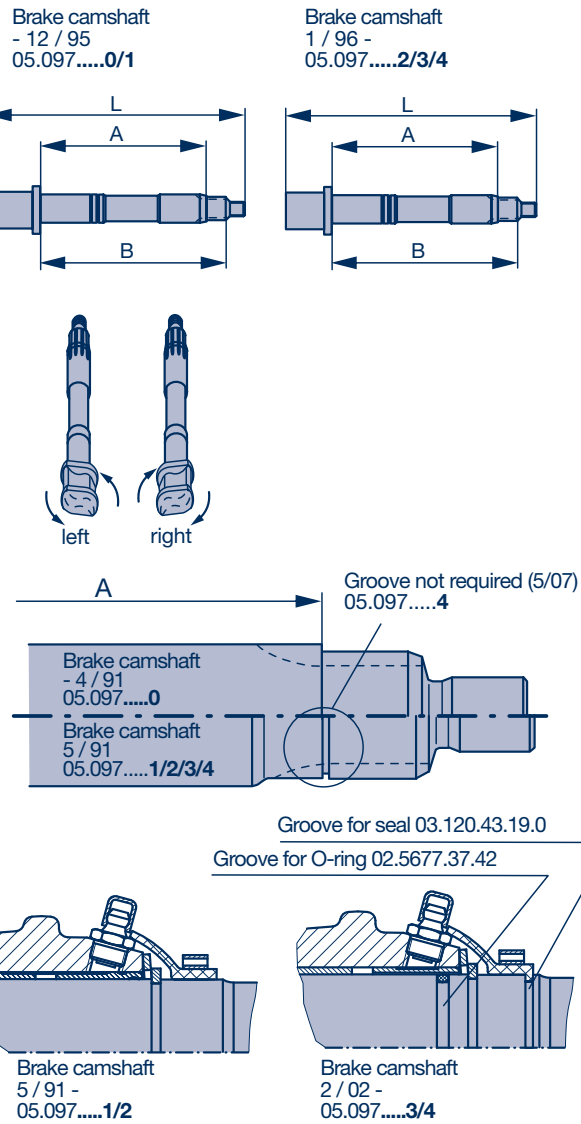
Brake camshafts with last digit of item number **0** (until 4/91), **1** (until 2/02) and **3** (until 5/07) will be replaced with brake camshafts with last digit **4** - **Note modified assembly parts.**



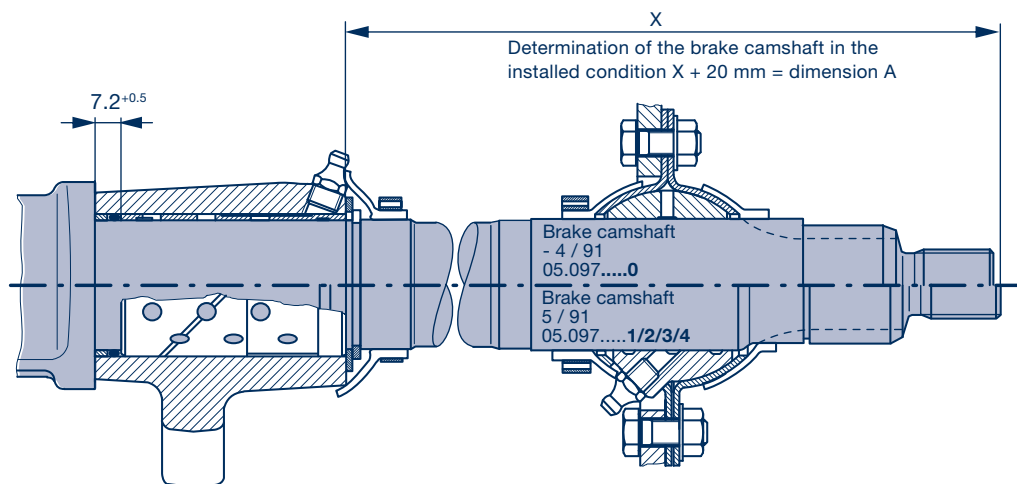
Brake camshafts, brake camshaft bearings 2

Brake camshafts for series N.. 2.1

Item	Designation (remark)	BPW item no.			
240	Brake camshaft, left	05.097.60....4			
241	Brake camshaft, right	05.097.60....4			
<p>N.. SN 30.. ---.50x.--- ---.58x.--- ---.59x.--- ---.10/11.----</p>					
	A	L	B	left	right
	182.5	307 (333)	213	05.097.60.27.4	05.097.60.28.4
	212.5	337 (363)	243	19.4	20.4
	311.5	436 (462)	342	39.4	40.4
	337.5	462 (488)	368	11.4	12.4
	380.5	505 (531)	411	43.4	44.4
	395.5	520 (546)	426	01.4	02.4
	422.5	547 (573)	453	15.4	16.4
	457.5	582 (608)	488	13.4	14.4
	469.5	594 (620)	500	03.4	04.4
	509.5	634 (660)	540	09.4	10.4
	522.5	647 (673)	553	07.4	08.4
	548.5	673 (699)	579	23.4	24.4
	557.5	682 (708)	588	05.4	06.4
	567.5	692 (718)	598	49.4	50.4
	582.5	707 (733)	613	45.4	46.4
	598.5	723 (749)	629	41.4	42.4
	607.5	732 (758)	638	65.4	66.4
	615.5	740 (766)	646	17.4	18.4
	638.5	763 (789)	669	47.4	48.4
	648.5	773 (799)	679	25.4	26.4
	675.5	800 (826)	706	21.4	22.4
	698.5	823 (849)	729	37.4	38.4
	723.5	848 (874)	754	31.4	32.4
	748.5	873 (899)	779	33.4	34.4
	798.5	923 (949)	829	35.4	36.4
	848.5	973 (999)	879	29.4	30.4



Brake camshafts with last digit of item number 0 (until 4/91), 1 (until 12/95), 2 (until 4/02) and 3 (until 5/07) will be replaced with brake camshafts with last digit 4 - **Note modified assembly parts.**

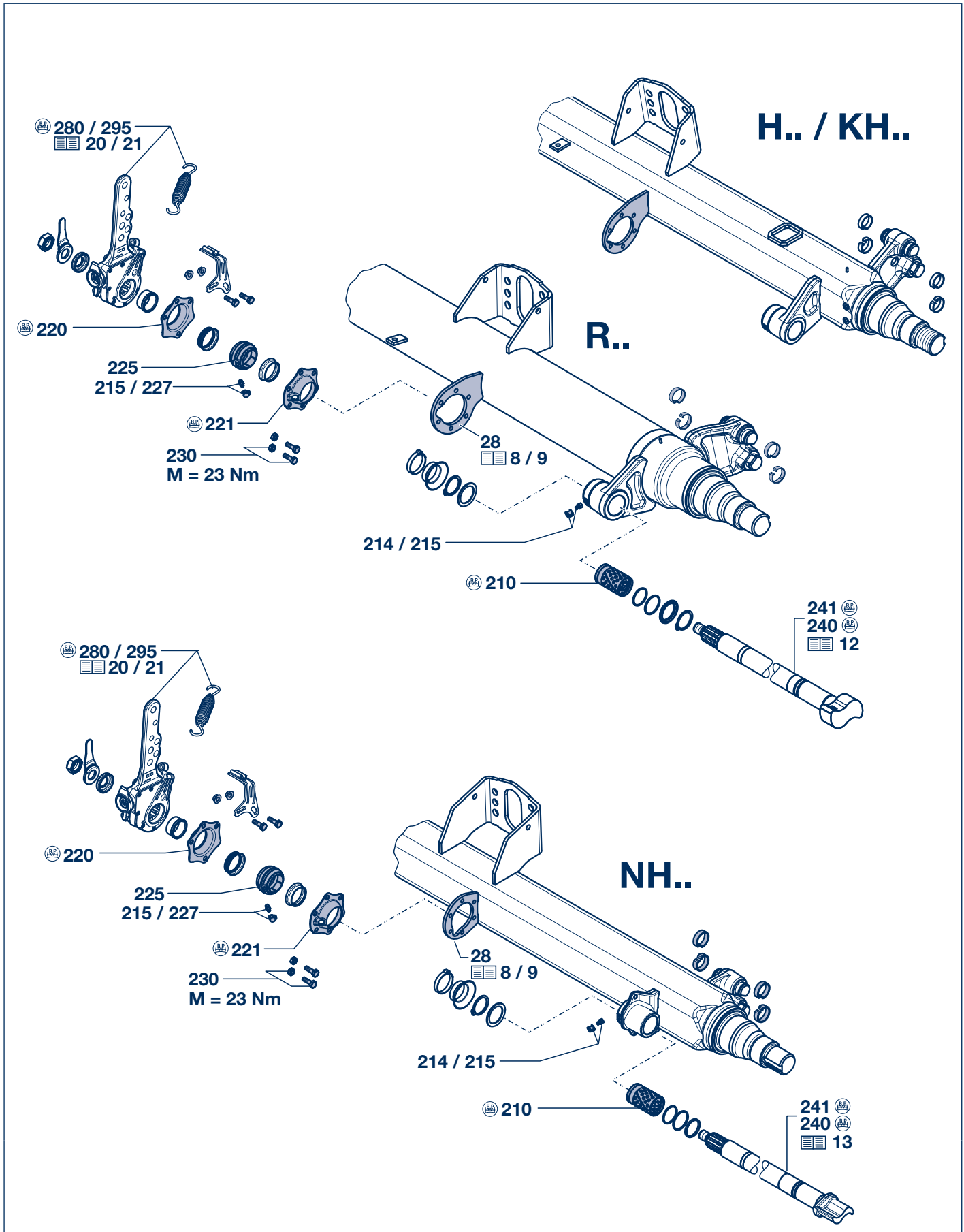


N

3 Brake camshafts, brake camshaft bearings

2.2 Brake camshaft bearings

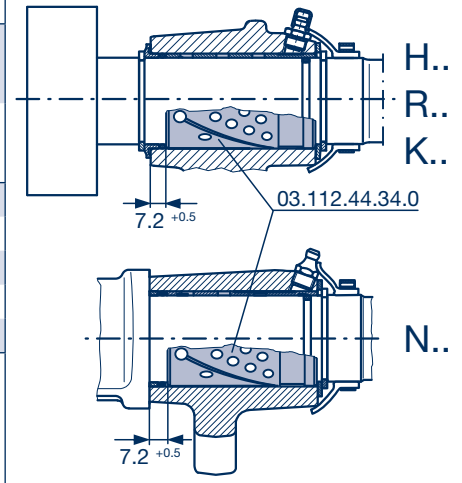
H
R
K
N



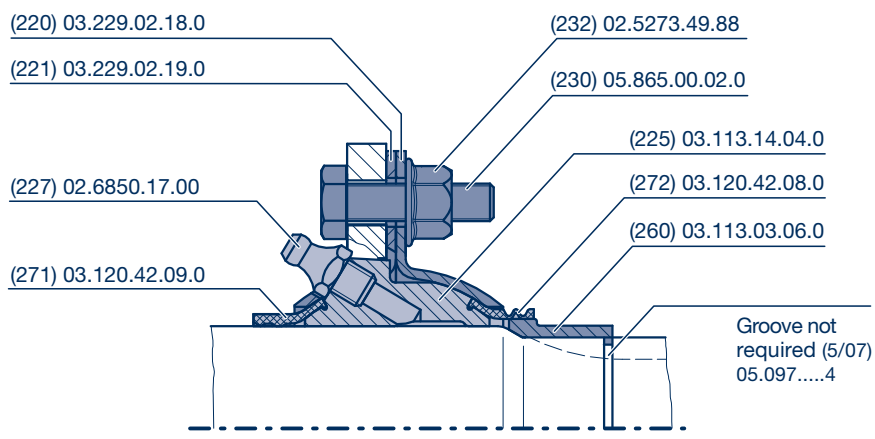
Brake camshafts, brake camshaft bearings 2

Brake camshaft bearings 2.2

Item	Designation (remark)	BPW item no.	Dimension		
			H.. / R..	K..	N..
28	Plate	see page 9			
208	Low-maintenance repair kit Brake camshaft bearing, Item 210 - 214, 220 - 230, 245, 270, 272, 274, 288, 289	09.801.09.04.0	for 1 axle side brake camshaft with 0 - 4 as last digit		
		09.801.06.09.1 ¹⁾ 09.801.06.09.2	for 1 axle brake camshaft with 0 - 4 as last digit		
210	Bush	03.112.44.34.0	Ø 42 / 46 x 73		
214	Grease nipple ww. SN 4222	02.6802.03.50	AM 10 x 1 / 0°		
		02.6802.06.50	BM 10 x 1 / 45°		
		02.6850.12.50	BM 10 x 1 / 67°		
215	Cap	02.3505.20.00			



		Low-maintenance brake camshaft bearing Trunnion block attachment with hexagon screws and washers with hexagon nuts	
219	Support bearing repair kit, Item 220 - 230, 260, 288, 289	09.801.02.15.1	for 1 axle side
220	Trunnion block	03.229.02.18.0	4 x Ø 10
221	Trunnion block (for grease nipple)	03.229.02.19.0	6 x Ø 10
225	Spherical bearing	03.113.14.04.0	Ø 42 / 60 x 38
227	Grease nipple	02.6850.17.00	BM 8 x 1 / 71412
230	Screw kit (- 2 / 16), incl. Item 231, 232	05.865.00.02.0	M 8 x 25
231	Spring washer	02.5403.08.92	B 8 / 137
232	Hexagon nut	02.5202.12.82	M 8 / 934
230	Screw kit (2 / 16 -), incl. Item 232	05.865.00.02.0	M 8 x 30
232	Lock nut	02.5273.49.88	M 8



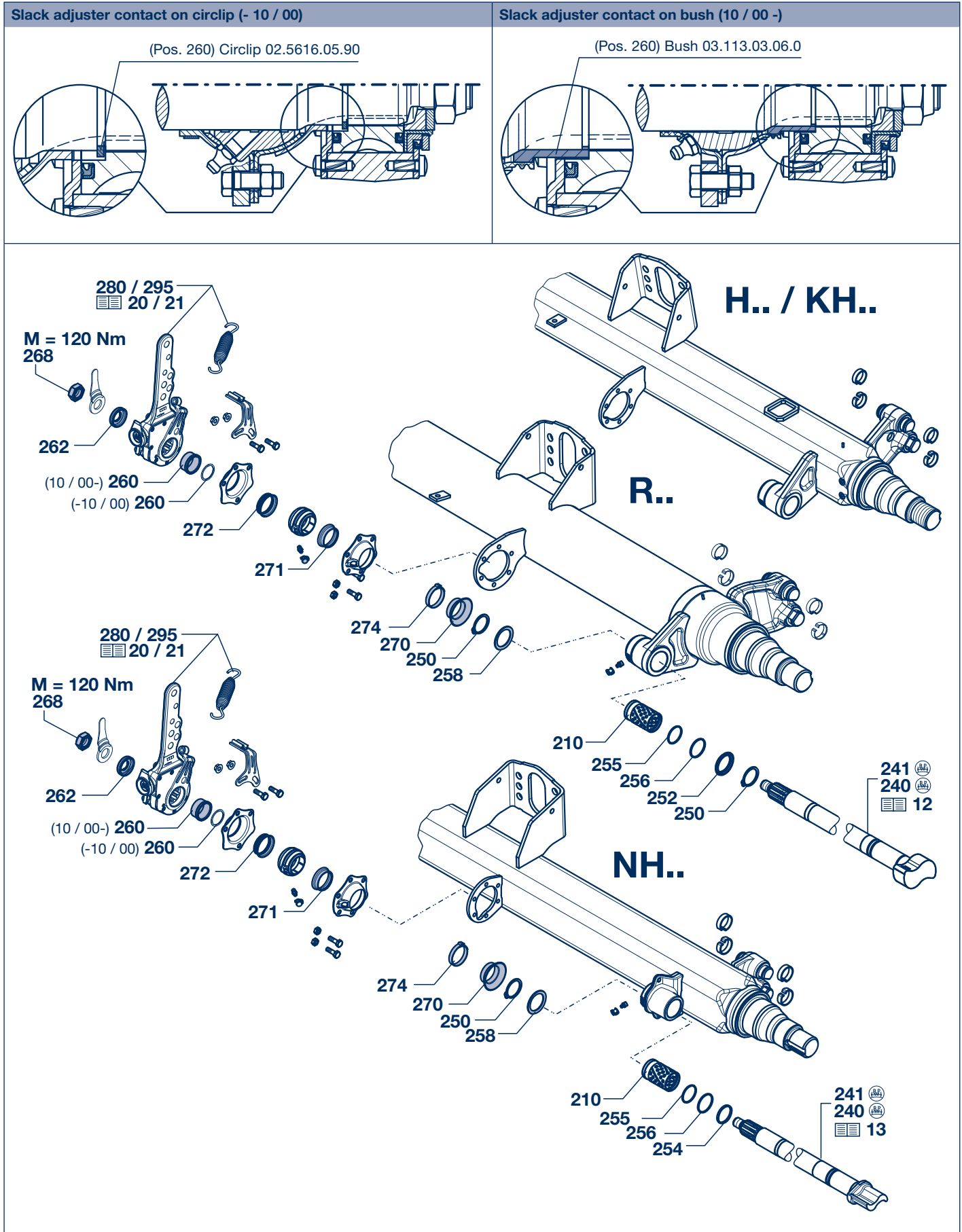
In case of converting to low-maintenance brake camshaft bearing, use only BPW special grease ECO-Li 91 and/or ECO-LiⁱPlus.

H
R
K
N

3 Brake camshafts, brake camshaft bearings

2.2 Brake camshaft bearings

H
R
K
N

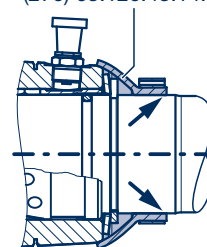
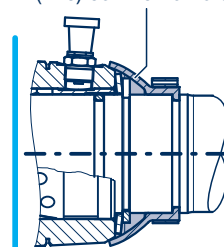


Brake camshafts, brake camshaft bearings 2

Brake camshaft bearings 2.2

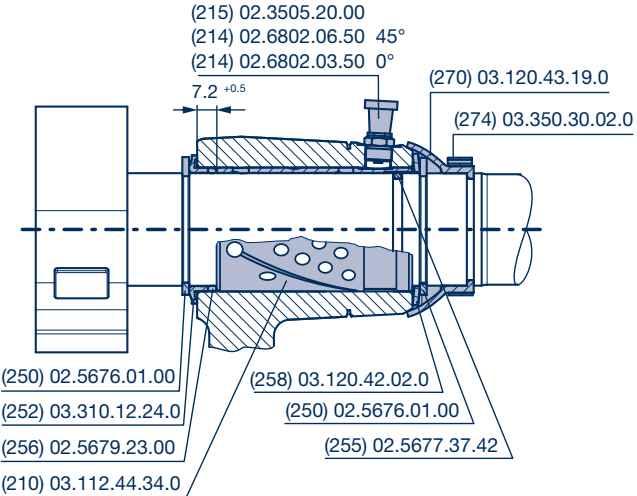
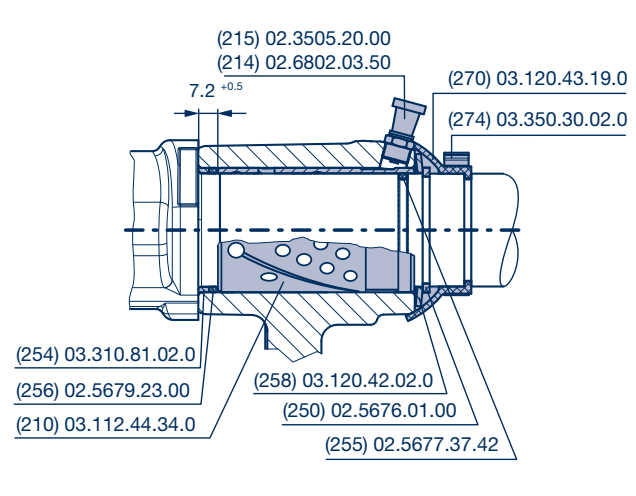
Item	Designation (remark)	BPW item no.		Dimension			
		H.. / R..	K..	N..	H.. / R..	K..	N..
		Brake camshaft with last digit 0 / 1 / 2			Brake camshaft with last digit 3 / 4		
245	Assembly kit Item 250 - 262, 268, 270, 274	09.801.08.85.0	for 1 axle side		09.801.08.86.0	for 1 axle side	
250	Locking ring	02.5676.01.00	A 42 x 2.5 (N.. 2x)		02.5676.01.00	A 42 x 2.5 (N.. 2x)	
252	Ring (combi-ring), only for H.. / R.. / K.. axles	03.310.12.24.0 ¹⁾	Ø 42 / 46 / 55 x 7		03.310.12.24.0 ¹⁾	Ø 42 / 46 / 55 x 7	
254	Ring, only for N.. axles	03.310.81.02.0	Ø 42 / 46 x 4		03.310.81.02.0	Ø 42 / 46 x 4	
255	O-ring	-	-		02.5677.37.42	Ø 37 x 2.6 (black)	
256	O-ring	02.5679.23.00	Ø 40 x 2.5 (green)		02.5679.23.00	Ø 40 x 2.5 (green)	
258	Sealing ring	03.120.42.02.0	Ø 42 / 56 x 2		03.120.42.02.0	Ø 42 / 56 x 2	
260	Circlip (- 10 / 00)	02.5616.05.90 ²⁾	Ø 37 / 41 x 2 (see page 16, fig. top left)		-	-	
260	Bush (10 / 00 -)				03.113.03.06.0	Ø 37.4 / 45 x 21.3 (see page 16, fig. top right)	
262	Washer	03.320.11.16.1	Ø 22.5 / 42 x 10.5		03.320.11.16.1	Ø 22.5 / 42 x 10.5	
268	Lock nut	03.260.14.08.0	M 22 x 1.5 / SW 32		03.260.14.08.0	M 22 x 1.5 / SW 32	

¹⁾ Replacement for rings 03.310.32.09.0 and 03.310.81.02.0
²⁾ On brake camshaft with last digit **1** and **2**

		Low-maintenance brake camshaft bearing			
		Brake camshaft with last digit 0 - 4			
270	Sealing ring	03.120.43.19.0 ³⁾	Ø 41/37 x 25 (08 / 14 -)		
		03.120.43.14.0	Ø 41 x 25 (- 08 / 14)		
271	Sealing ring	03.120.42.09.0	Ø 42 x 15		
272	Sealing ring	03.120.42.08.0	Ø 45 x 13.5		
274	Circlip	03.350.30.02.0	Ø 49 x 9		

³⁾ for old brake camshafts with **end number 0 - 4 up to year of manufacture 08.2014** (without additional groove, arrows) groove, arrows), the sealing ring 03.120.43.14.0 must be ordered separately as a replacement.

Brake camshaft **without** groove for sealing ring (Item 270) Brake camshaft **with** groove for sealing ring (Item 270)

H.. / R..	K..	N..
Low maintenance brake camshaft bearing Brake camshaft 05.097.05(09)....4		Low maintenance brake camshaft bearing Brake camshaft 05.097.60....4
		

 In case of converting to low-maintenance brake camshaft bearing, use only BPW special grease ECO-Li 91 and/or ECO-Li^{plus}.

H
R
K
N

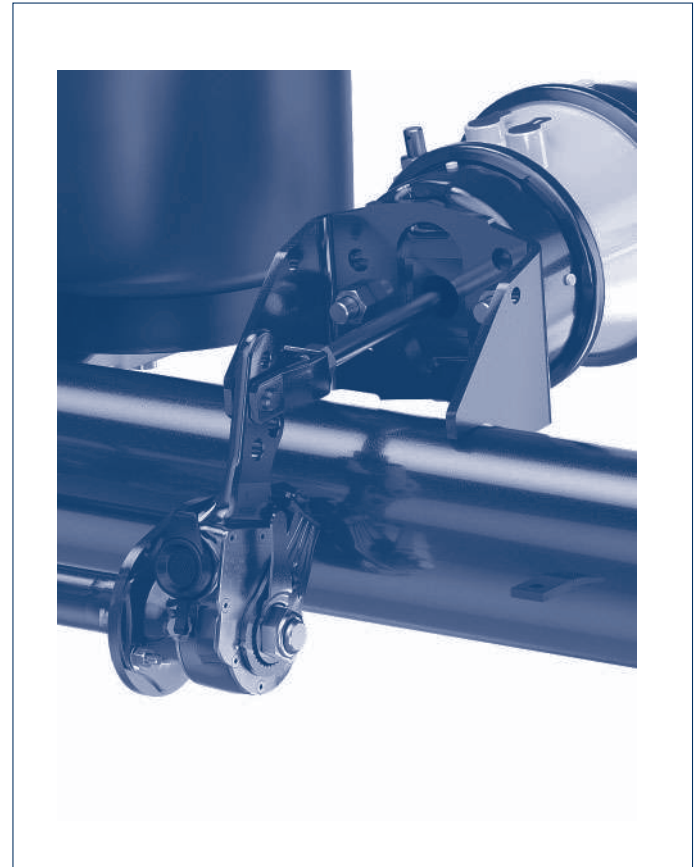
3 Slack adjusters

General

BPW slack adjuster

As the brake lining thickness decreases, the required brake cylinder stroke increases. A slack adjuster ensures appropriate compensation and always keeps the brake cylinder stroke in the optimal zone of action.

In most countries, automatic slack adjusters have to be installed by law.



The principle of automatic adjustment

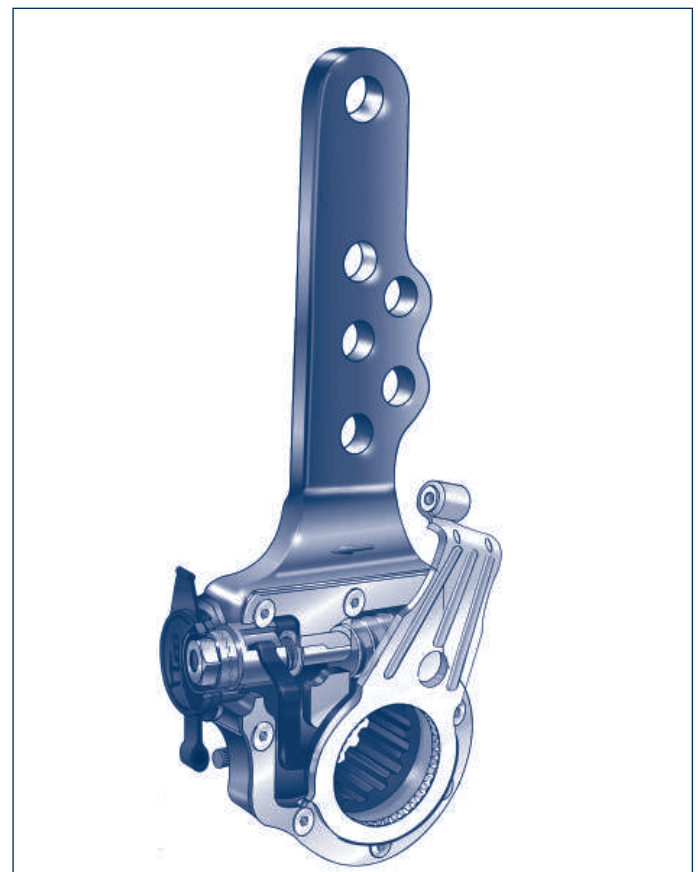
Brake linings and brake drums are wear parts. As the material thickness reduces, the brake cylinder stroke increases, meaning that the brake camshaft has to rotate further.

The adjustment mechanism of the automatic slack adjuster (AGS) makes the appropriate adjustment.

As a result, the brake cylinder stroke is always kept within the same, optimal zone of action.

The adjustment stroke is rated to ensure a sufficient air gap at all times, even at higher levels of elasticity and thermal expansion of the adjacent components (e.g. the brake drum).

Levers with different shapes and crank values are available depending on the particular installation conditions.



Slack adjusters 3

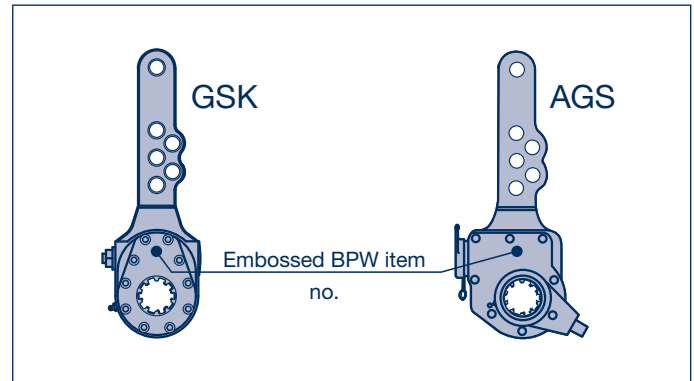
General

Determining replacement slack adjusters

The BPW item number is embossed on the cover plate of the slack adjuster.

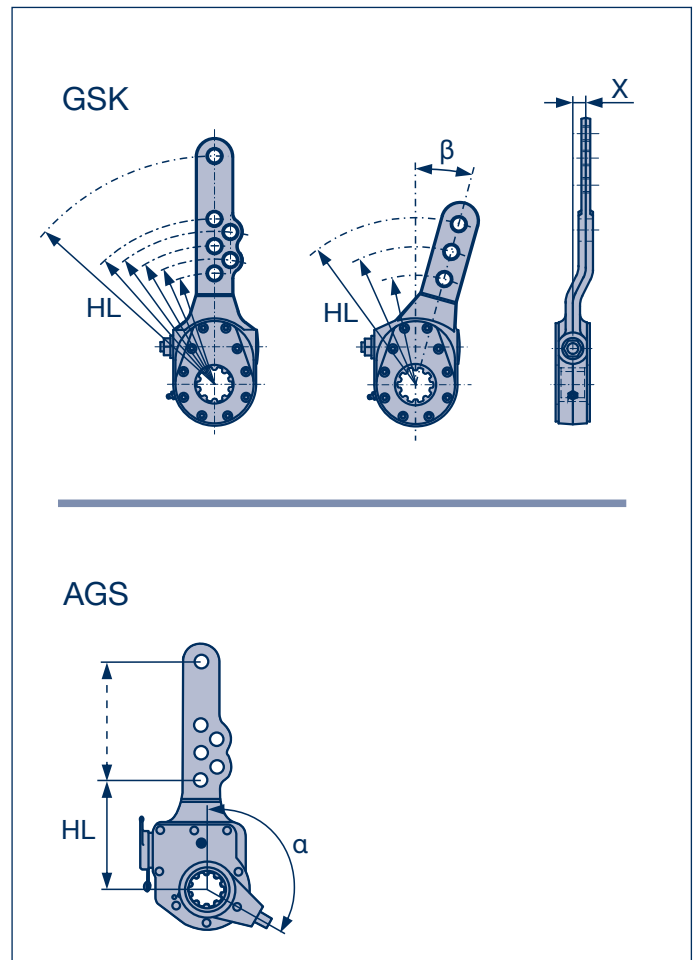
GSK: Manual slack adjuster

AGS: Automatic slack adjuster



If the BPW item number is absent or illegible, the slack adjuster can be identified from its shape and dimensions.

1. **Automatic slack adjuster (AGS) or manual slack adjuster (GSK)**
2. **Lever length (HL)**
3. **Crank (X)**
4. **Lever position (β)**
5. **Positioning of fixed point support on AGS (α)**



Return springs

The return spring does not need to be installed when assembling BPW brake cylinders with round-hole fork heads and a lever length of over 100 mm.

H

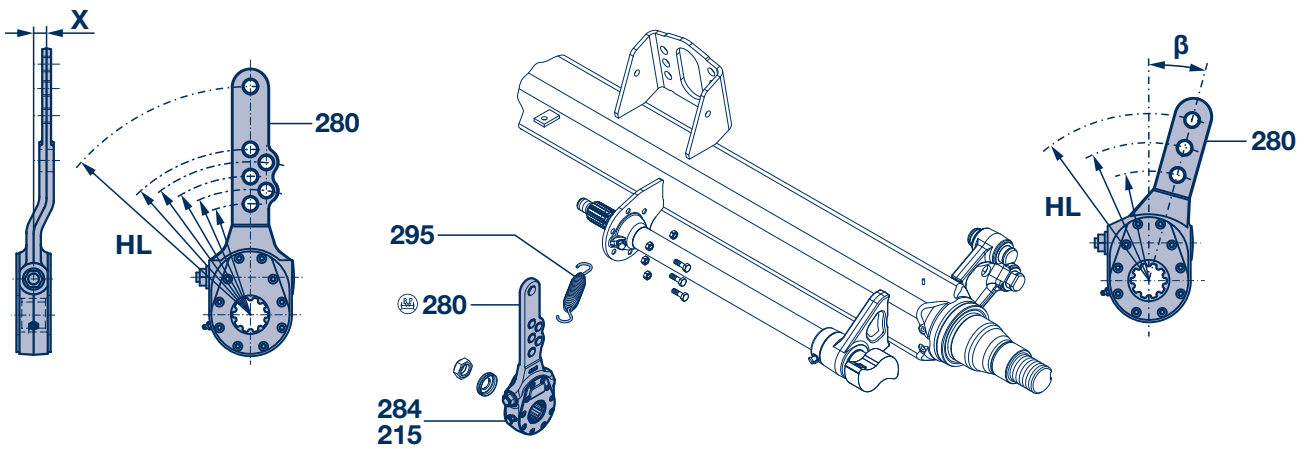
R

K

N

3 Slack adjusters

3.1 Slack adjusters, booster brackets (GSK), return springs

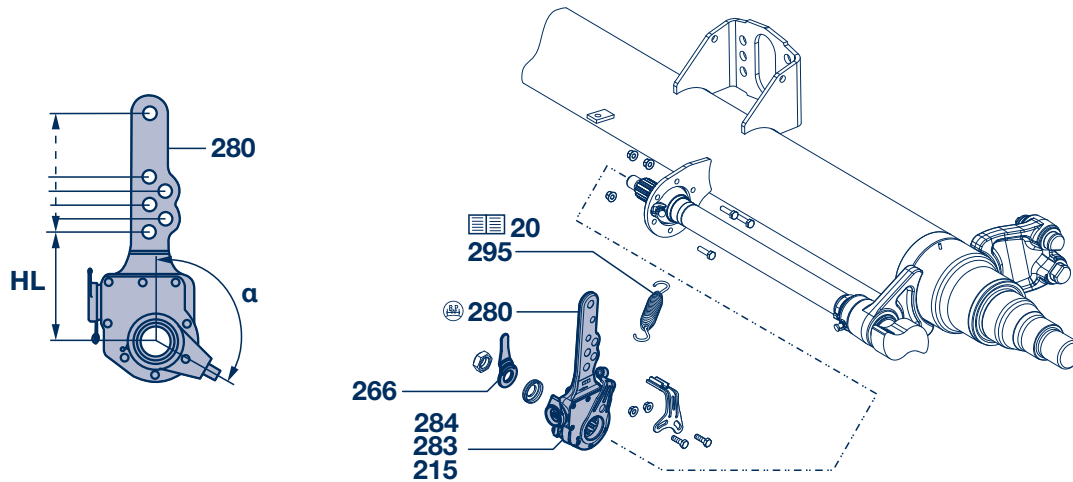


Item	Designation	BPW item no.		Dimension		
		H.. / R..	K..	N..		
280 / 281	Slack adjuster (GSK), incl. Item 215, 284	GSK (manual)				
	HL 120 / 150 / 180	05.174.52.34.0 ¹⁾ 3-hole	05.174.52.34.0 ¹⁾ 3-hole	05.174.52.34.0 ¹⁾ 3-hole		
			05.174.65.20.0 3-hole / β 15°	05.174.65.20.0 3-hole / β 15°		
	HL 150 / 150 / 180 / 250	05.174.52.61.0 4-hole	05.174.52.61.0 4-hole	05.174.52.43.0 4-hole / β 15°		
		-	05.174.52.43.0 4-hole / β 15°	-		
	HL 120 / 135 / 150 / 165 / 180 / 250	05.174.65.13.0 6-hole	05.174.65.13.0 6-hole	05.174.65.13.0 6-hole		
215	Cap	02.3505.20.00				
284	Grease nipple	02.6850.01.02 AS 8 x 1 / 0°				
¹⁾ Replaced by 05.174.65.20.0						

Item	Designation	BPW item no.		Dimension	
		H.. / R..	K..	N..	
295	Return spring	03.397.26.04.0 Ø 24/2.8x69	03.397.26.04.0 Ø 24/2.8x69	03.397.26.08.0 Ø 21/2.8x84	
		03.397.26.09.0 Ø 24/2.8x72	03.397.26.08.0 Ø 21/2.8x84	03.397.26.06.0 Ø 24/2.8x89	
		03.397.26.08.0 Ø 24/2.8x84	03.397.26.06.0 Ø 24/2.8x89	05.397.28.01.0 Ø 31/2.8x120	
		03.397.26.06.0 Ø 24/2.8x89	05.397.28.01.0 Ø 31/2.8x120	05.397.26.03.0 Ø 26/2.8x148	
		05.397.28.01.0 Ø 31/2.8x120	05.397.26.03.0 Ø 26/2.8x148	05.397.26.02.0 Ø 22.5/2.5x235	
		05.397.26.03.0 Ø 26/2.8x148	05.397.26.02.0 Ø 22.5/2.5x235		
		05.397.26.05.0 Ø 22.5/2.5x185			
		05.397.26.02.0 Ø 22.5/2.5x235			

Slack adjusters 3

Automatic slack adjusters (ECO Master (AGS)) 3.2



Item	Designation	BPW item no.	Dimension	
280 / 281	Slack adjuster (ECO Master), incl. Item 215, 283, 284	ECO Master (autom.) (5 / 91 -)		Set of slack adjusters (Item 280, 285 - 289)
		H.. / R..	K..	
HL 120 / 135 / 150 / 165		05.174.82.67.3	5-hole, $\alpha = 24^\circ$	05.574.83.01.3
		05.174.83.06.3	5-hole, $\alpha = 60^\circ$	05.574.82.68.3
		05.174.82.75.3	5-hole, $\alpha = 60^\circ$	05.574.83.08.3
		05.174.82.22.3	5-hole, $\alpha = 120^\circ$	-
		05.174.82.31.3	5-hole, $\alpha = 180^\circ$	05.574.82.67.3
		05.174.88.51.3	5-hole, $\alpha = 210^\circ$	05.574.88.22.3
		05.174.82.32.3	5-hole, $\alpha = 210^\circ$	05.574.82.66.3
HL 120 / 135 / 150 / 165 / 180		05.174.83.18.3	6-hole, $\alpha = 60^\circ$	05.574.83.12.3
HL 120 / 135 / 150 / 165 / 240		05.174.82.40.3 ¹⁾	6-hole, $\alpha = 210^\circ$	05.574.82.45.3 ¹⁾
HL 120 / 135 / 150 / 165 / 250		05.174.82.63.3	6-hole, $\alpha = 24^\circ$	05.574.82.87.3
		05.174.83.17.3 *	6-hole, $\alpha = 24^\circ$	05.574.83.11.3
		05.174.83.05.3	6-hole, $\alpha = 60^\circ$	05.574.83.07.3
		05.174.82.21.3	6-hole, $\alpha = 120^\circ$	05.574.82.43.3
		05.174.82.24.3	6-hole, $\alpha = 180^\circ$	05.574.82.44.3
		05.174.82.26.3	6-hole, $\alpha = 210^\circ$	05.574.82.65.3
		05.174.83.04.3	6-hole, $\alpha = 210^\circ$	05.574.82.88.3
		N..		
HL 150 / 165		05.174.89.05.3	3-hole, $\alpha = 180^\circ$	05.574.88.46.3
HL 120 / 135 / 150 / 165		05.174.82.67.3	5-hole, $\alpha = 24^\circ$	05.574.83.01.3
		05.174.82.31.3	5-hole, $\alpha = 180^\circ$	05.574.82.67.3
		05.174.82.32.3	5-hole, $\alpha = 210^\circ$	05.574.82.66.3
HL 120 / 135 / 150 / 165		05.174.88.51.3	5-hole, $\alpha = 210^\circ$	05.574.88.22.3
HL 120 / 135 / 150 / 165 / 250		05.174.82.63.3	6-hole, $\alpha = 24^\circ$	05.574.82.87.3
		05.174.82.24.3	6-hole, $\alpha = 180^\circ$	05.574.82.44.3
		05.174.83.04.3	6-hole, $\alpha = 210^\circ$	05.574.82.88.3
Alternative versions on request..				
* = reinforced				
¹⁾ = replaced by 05.174.83.04.3 and/or 05.574.82.88.3				
215	Cap	02.3505.20.00		
266	Lever (brake lining wear indicator)	03.190.14.07.1	85 mm	
		03.190.14.08.1	60 mm	
283	Cap	03.211.90.15.0		
284	Grease nipple	02.6850.01.02	AS 8 x 1 / 0°	

H

R

K

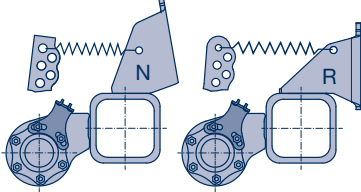
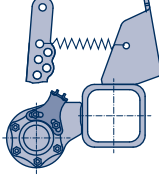
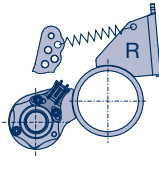
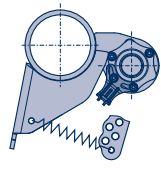
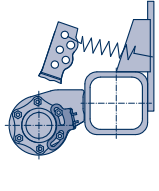
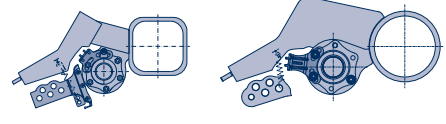
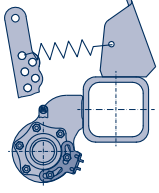
N

3 Slack adjusters

3.2 Automatic slack adjusters (ECO Master (AGS))

H.. / R..

Slack adjusters, booster brackets, return springs

<p>H..</p>  <p>ECO Master $\alpha=24^\circ$ 05.174.82.67.3 Return spring 05.397.26.03.0 Booster bracket (N) $25^\circ/30^\circ$ 03.182.34.77.0 (N) 16° 03.182.35.78.0 (R) 16° 03.182.35.84.0 Cylinder pushrod 227 mm</p>	<p>H..</p>  <p>ECO Master $\alpha=24^\circ$ 05.174.82.63.3 Return spring 05.397.26.03.0 Booster bracket (N) 30° 03.182.34.77.0 (N) 16° 03.182.35.78.0 Cylinder pushrod 227 mm</p>	<p>H..</p>  <p>ECO Master $\alpha=24^\circ$ 05.174.82.63.3 Return spring 05.397.26.05.0 Booster bracket (U) \square 150 05.182.07.26.0 Cylinder pushrod 227 mm</p>
<p>R..</p>  <p>ECO Master $\alpha=24^\circ$ 05.174.82.63.3 Return spring 05.397.26.03.0 Booster bracket (N) \varnothing 127 03.182.34.58.0 Cylinder pushrod 227 mm</p>	<p>R..</p>  <p>ECO Master $\alpha=24^\circ$ 05.174.82.67.3 Return spring 05.397.26.03.0 Booster bracket (R) \varnothing 146 05.182.33.31.0 Cylinder pushrod 227 mm</p>	<p>R..</p>  <p>ECO-Master $\alpha=24^\circ$ 05.174.82.67.3 Return spring 05.397.26.03.0 Booster bracket (U) \varnothing 146 03.182.33.35.0 Cylinder pushrod 210 mm</p>
<p>H..</p>  <p>ECO Master $\alpha=60^\circ$ 05.174.83.05.3 Return spring 05.397.26.03.0 Booster bracket (F) 03.182.17.46.0 Cylinder pushrod 113 mm</p>	<p>H..</p>  <p>ECO Master $\alpha=60^\circ$ 05.174.82.75.3 Return spring 05.397.26.03.0 Booster bracket (P) 05.182.16.57.0 Welding version 05.182.16.57.0 Bending version 03.182.33.36.0 Cylinder pushrod 180 mm</p>	<p>H.. / R..</p>  <p>ECO Master $\alpha=60^\circ$ 05.174.83.06.3 Return spring 03.397.26.09.0 Booster bracket (S) $25^\circ/30^\circ$ 05.182.33.15.0 (S) 16° L 05.182.45.03.0 (S) 16° R 05.182.45.04.0 (S) 16° (\varnothing 146) 05.182.33.32.0 Cylinder pushrod 80 mm</p>
<p>H..</p>  <p>ECO Master $\alpha=120^\circ$ 05.174.82.21.3 Return spring 05.397.26.03.0 Booster bracket (N) 30° 03.182.34.77.0 (N) 16° 03.182.35.78.0 Cylinder pushrod 227 mm</p>	<p>H..</p>  <p>ECO Master $\alpha=120^\circ$ 05.174.82.21.3 Return spring 05.397.26.05.0 Booster bracket (U) \square 120 30° 05.182.07.25.0 (U) \square 150 05.182.07.26.0 Cylinder pushrod 227 mm</p>	<p>H..</p>  <p>ECO Master $\alpha=180^\circ$ 05.174.82.31.3 Return spring 05.397.26.03.0 Booster bracket (U) \square 120 16° 03.182.35.98.0 Cylinder pushrod 190 / 210 mm</p>

Slack adjusters 3

K.. Automatic slack adjusters (ECO Master (AGS)) 3.2

Slack adjusters, booster brackets, return springs

<p>KH..</p>  <p>ECO-Master $\alpha=24^\circ$ 05.174.82.63.3 Return spring 05.397.26.03.0 Booster (N) bracket 03.182.35.80.0 Cylinder pushrod 227 mm</p>	<p>KH..</p>  <p>ECO-Master $\alpha=24^\circ$ 05.174.82.67.3 Return spring 05.397.26.03.0 Booster (U) bracket 03.182.33.10.0 Cylinder pushrod 180 mm</p>	<p>KH..</p>  <p>ECO-Master $\alpha=180^\circ$ 05.174.82.24.3 Return spring 05.397.26.03.0 Booster (N) bracket 03.182.35.80.0 Cylinder pushrod 227 mm</p>
<p>KH..</p>  <p>ECO-Master $\alpha=194^\circ$ 05.174.88.51.3 Return spring 05.397.28.01.0 Booster (K) bracket 05.182.27.03.0 Cylinder pushrod 155 mm</p>	<p>KH..</p>  <p>ECO-Master $\alpha=194^\circ$ 05.174.88.51.3 Return spring 05.397.28.01.0 Booster (H) bracket 05.182.27.03.0 Cylinder pushrod 155 mm</p>	<p>KH..</p>  <p>ECO-Master $\alpha=210^\circ$ 05.174.83.04.3 Return spring 03.397.26.06.0 Booster (F) bracket 03.182.17.45.0 Cylinder pushrod 82 mm</p>
<p>KH..</p>  <p>ECO-Master $\alpha=210^\circ$ 05.174.88.51.3 Return spring 05.397.26.03.0 Booster (R) bracket 03.182.35.83.0 Cylinder pushrod 227 mm</p>	<p>KH..</p>  <p>ECO-Master $\alpha=180^\circ$ 05.174.89.05.3 Return spring 05.397.26.03.0 Booster (Ö) bracket 05.182.16.95.0 Cylinder pushrod 190 mm</p>	

3 Slack adjusters

3.2 Automatic slack adjusters (ECO Master (AGS))

N..

Slack adjusters, booster brackets, return springs

<p>NR..</p>  <p>ECO Master $\alpha=180^\circ$ 05.174.82.24.3 Return spring 05.397.26.03.0 Booster bracket (N) 25°/30° 03.182.34.65.0 Cylinder pushrod 227 mm</p>	<p>NR..</p>  <p>ECO Master $\alpha=180^\circ$ 05.174.82.24.3 $\alpha=180$ PAL 05.174.82.31.3 Return spring 05.397.26.03.0 Booster bracket (L) 03.182.07.21.0 Cylinder pushrod 180 mm</p>	<p>NR..</p>  <p>ECO Master $\alpha=210^\circ$ 05.174.83.04.3 Return spring 05.397.26.03.0 Booster bracket (F) 05.182.17.14.0 Cylinder pushrod 82 mm</p>
<p>NR..</p>  <p>ECO Master $\alpha=180^\circ$ 05.174.82.31.3 Return spring 05.397.26.03.0 Booster bracket (H) 05.182.16.60.0 Cylinder pushrod 227 mm</p>	<p>NH..</p>  <p>ECO Master $\alpha=24^\circ$ 05.174.82.67.3 Return spring 05.397.26.03.0 Booster bracket (N) 03.182.35.80.0 Cylinder pushrod 227 mm</p>	<p>NH..</p>  <p>ECO Master $\alpha=24^\circ$ 05.174.82.63.3 Return spring 05.397.26.03.0 Booster bracket (N) 03.182.35.80.0 Cylinder pushrod 227 mm</p>
<p>NH..</p>  <p>ECO Master $\alpha=24^\circ$ 05.174.82.67.3 Return spring 05.397.28.01.0 Booster bracket (U) 03.182.33.10.0 Cylinder pushrod 170 mm</p>	<p>NH..</p>  <p>ECO Master $\alpha=180^\circ$ 05.174.89.05.3 Return spring 05.397.26.03.0 Booster bracket (Ö) 05.182.16.95.0 Cylinder pushrod 180 mm</p>	<p>NH..</p>  <p>ECO Master $\alpha=210^\circ$ 05.174.88.51.3 Return spring 05.397.28.01.0 Booster bracket (K) 05.182.27.03.0 Cylinder pushrod 155 mm</p>
<p>NH..</p>  <p>ECO Master $\alpha=210^\circ$ 05.174.88.51.3 Return spring 05.397.28.01.0 Booster bracket (H) 05.182.27.03.0 Cylinder pushrod 155 mm</p>	<p>NH..</p>  <p>ECO Master $\alpha=210^\circ$ 05.174.88.51.3 Return spring 05.397.26.03.0 Booster bracket (R) 03.182.35.83.0 Cylinder pushrod 227 mm</p>	<p>NH..</p>  <p>ECO Master $\alpha=210^\circ$ 05.174.83.04.3 Return spring 03.397.26.06.0 Booster bracket (F) 03.182.17.45.0 Cylinder pushrod 82 mm</p>

N

Slack adjusters 3

Automatic slack adjusters (ECO Master (AGS)) 3.3

Installation instructions

H
R
K
N

Trouble-free retrofit
 The BPW ECO Master fulfils the requirements of ECE Regulation No. 13.
 The inspections for BPW axles are carried out by the TÜV.

1 Clean

2 Grease

3 Install

4 Open cap

5 Install yoke

B	HL
120 mm	120
135 mm	135
150 mm	150
165 mm	165

6 Adjust

7 Tighten

8 Check

B	a
120 mm	12 - 18 mm
135 mm	14 - 20 mm
150 mm	15 - 22 mm
165 mm	17 - 25 mm

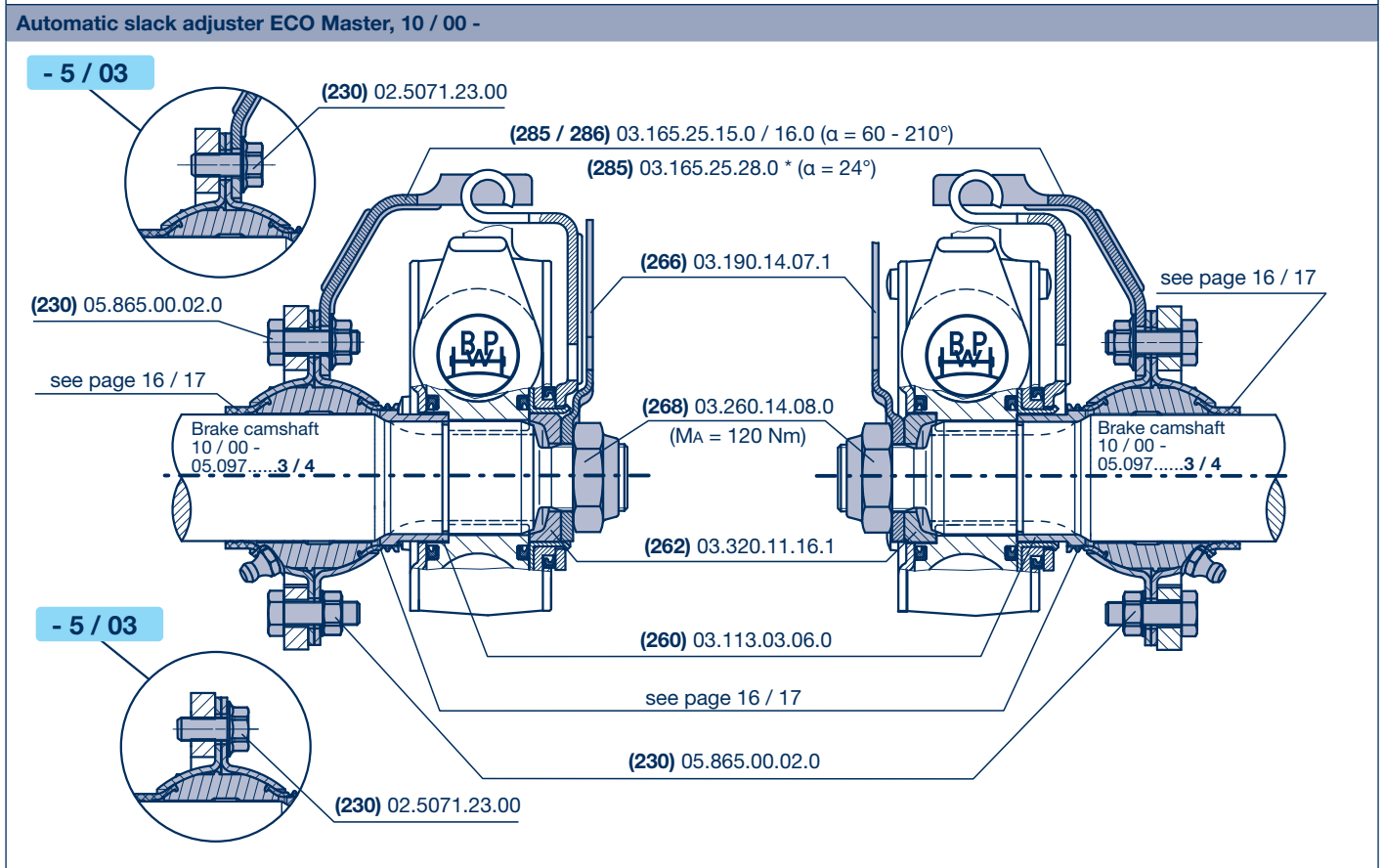
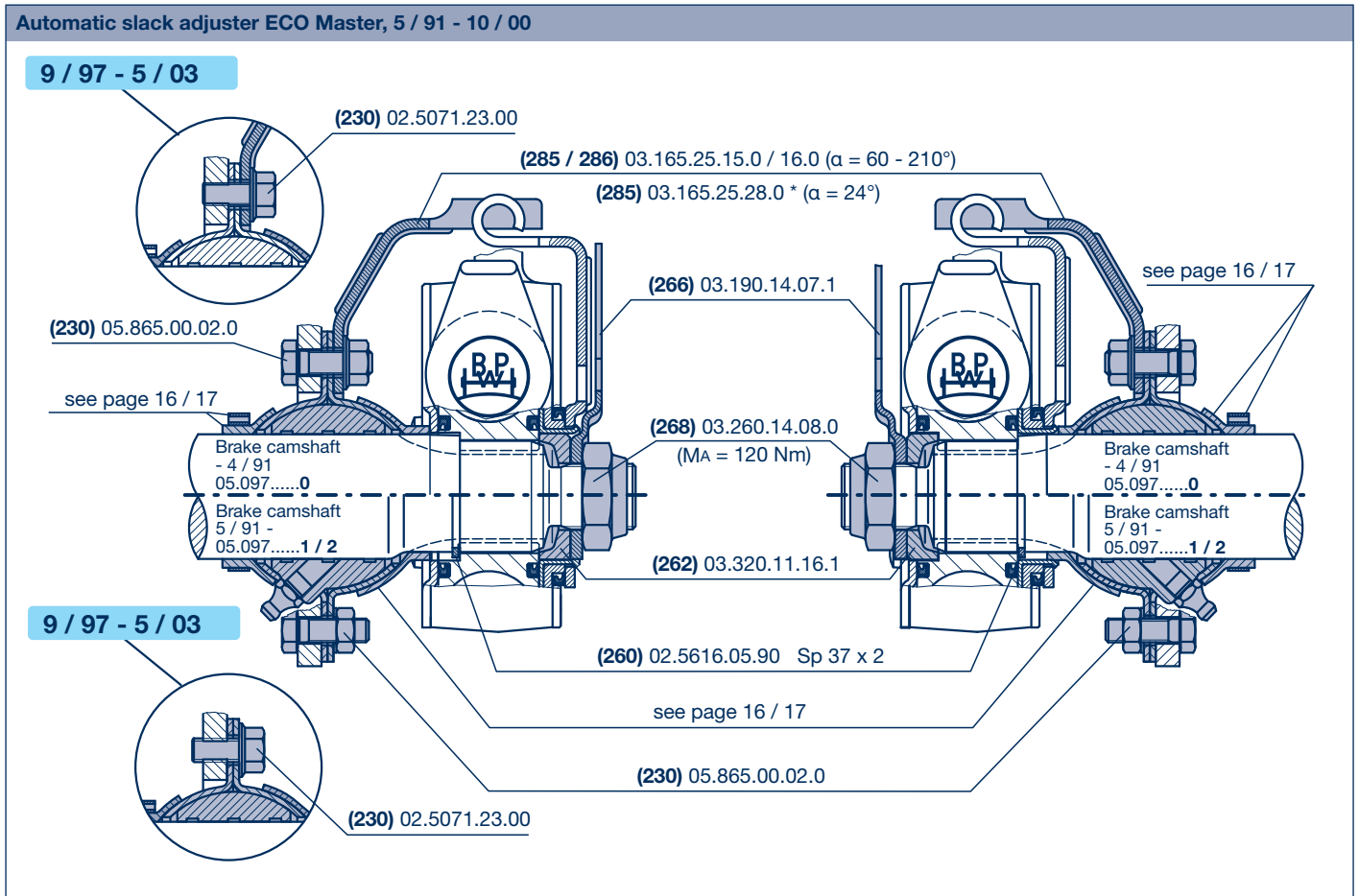
9 Grease

The ECO Master requires little maintenance.
 The outer return spring is no longer required on BPW brake cylinders with round-hole fork heads.
 Lubricate every year and with each brake lining change in on-road use, every 6 months in off-road use and in use outside Europe.
 Function check every 6 months, quarterly in use outside Europe (see Service and Maintenance Instructions).

3 Slack adjusters

3.4 Automatic slack adjusters (ECO Master)

Slack adjuster attachments



Slack adjusters 3

Automatic slack adjusters (ECO Master) 3.4

Slack adjuster attachments

Item	Designation	BPW item no.	Dimension	
				for ECO Master (autom.) 5 / 91 -
285	Shaped plate	03.165.25.28.0 *	$\alpha = 24^\circ$	
285	Shaped plate	03.165.25.15.0	$\alpha = 60 - 210^\circ$	
286	Shaped plate	03.165.25.16.0	$\alpha = 60 - 210^\circ$	
288	Hexagon screw	02.5025.30.82	M 8 x 25 / 933	
289	Lock nut	02.5273.49.88	M 8	
* Replacement for shaped plate 03.165.25.19.0				
				for ECO Master (autom.) 9 / 97 - 5 / 03
285	Shaped plate	03.165.25.....	see above	
230	Locking screw	02.5071.23.00	M 8 x 20	
No longer available. Conversion to hexagon screw with lock nut, see above, drill holes in the support bearing plate if necessary (Ø 9 mm).				
				for ECO Master (autom.) 2 / 16 -
285	Shaped plate	03.165.25.....	see above	
230	Screw kit, incl. Item 232	05.865.00.02.0	M 8 x 30	
232	Lock nut	02.5273.49.88	M 8	

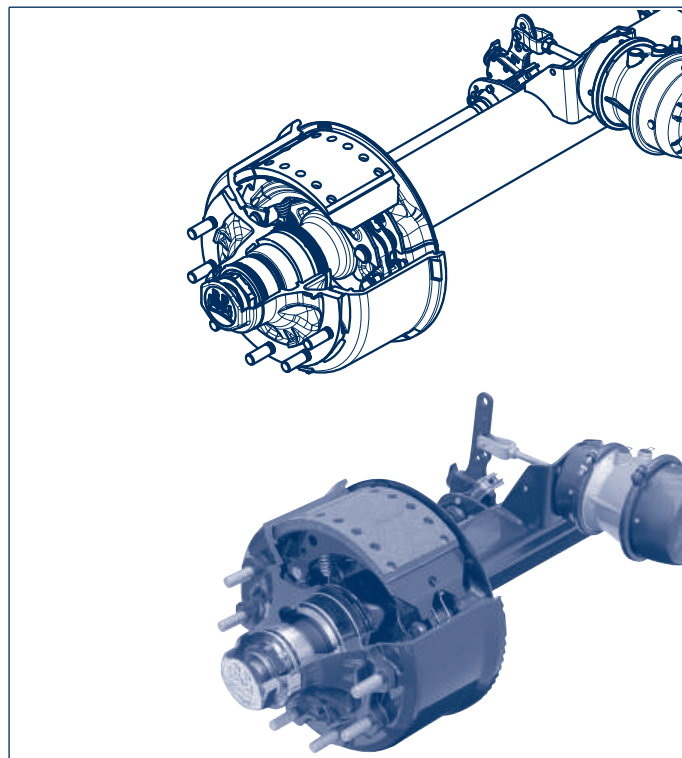
H
R
K
N

4 Brake parts

General

BPW drum brakes

The BPW drum brake is suitable for any purpose due to proven technology and its robust construction. It is insensitive to dirt loads and extremely resilient, even in heavy-duty applications.



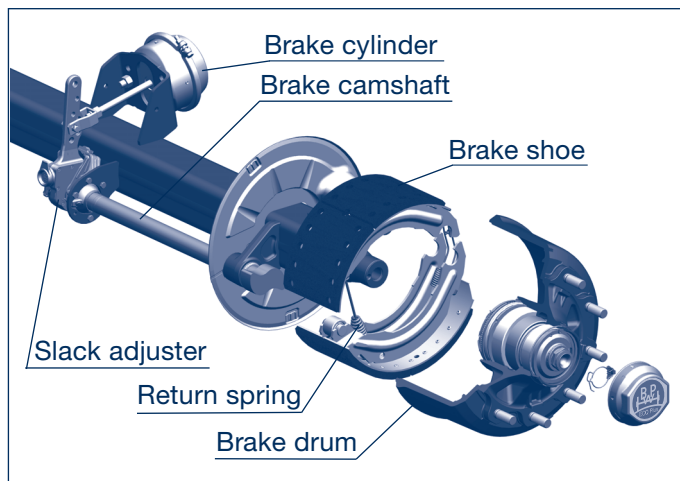
How it works

The force applied by the brake cylinder causes, via the slack adjuster, the brake camshaft to rotate.

The S-cam spreads the brake shoes and presses them against the inside of the brake drum.

When the brake is released, the brake camshaft rotates the S-cam back into the neutral position.

The brake shoes are returned to their original position by means of brake return springs.



Brake parts 4

General

Conversion to brake with split roller (BPW ECO Drum / BPW 95)

Brakes of the former version should be converted to new brake technology.

Higher degree of safety

Short response time and a consistent braking effect throughout the entire life of the lining thanks to the permanently lubricated brake rollers.

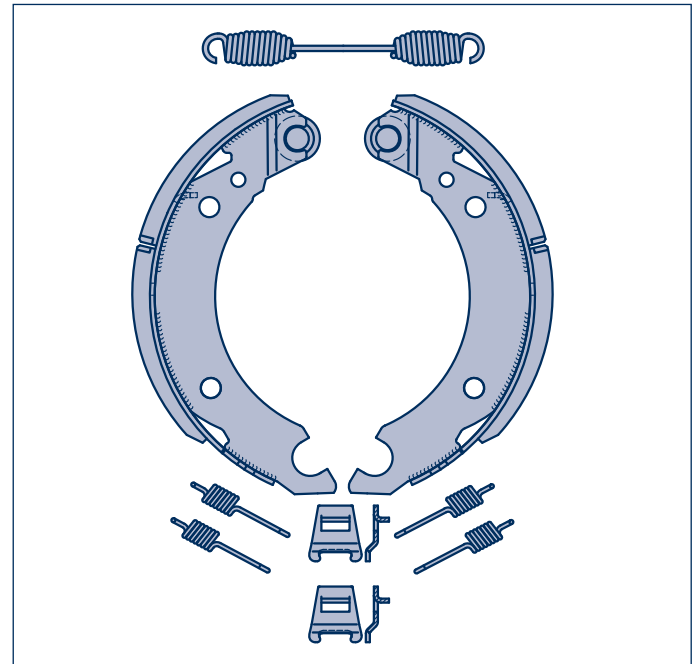
Reduced unladen weight

Weight-optimized new design with fewer wear parts.

Simple brake lining replacement

Fast and easy brake shoe replacement.

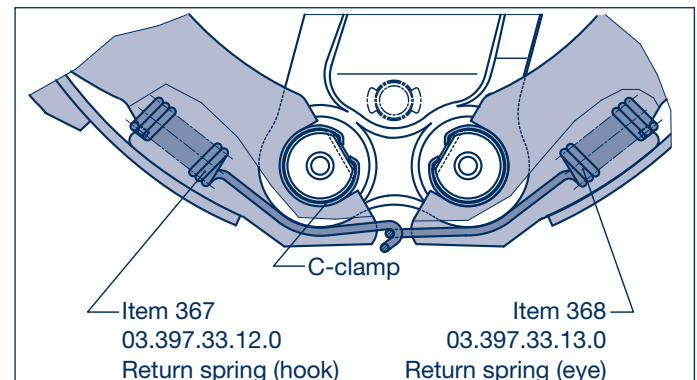
Same brake components on all axles of the corresponding series



The technical specifications of the brake remain unchanged. Consequently, existing EC test certificates remain valid.

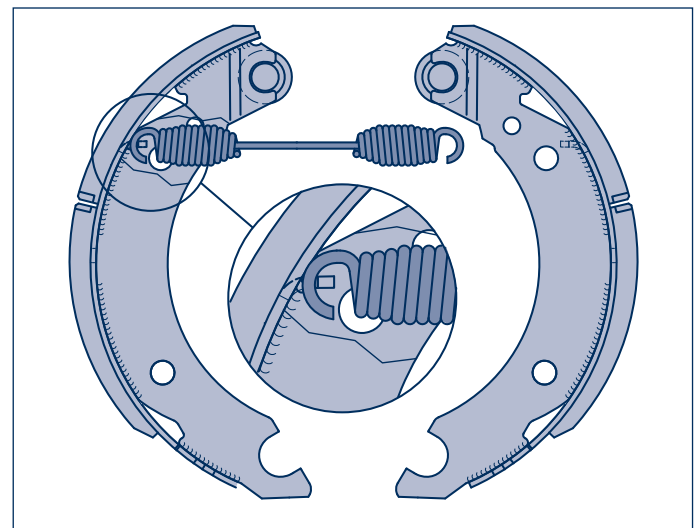
Positioning springs

The positioning springs ensure the brake shoes are firmly and securely seated on the C-clamps (Fig. SN 42..).



Brake return springs

The brake return springs are hooked into the shaped shackles on the brake shoes.



H

R

K

N

4 Brake parts

General

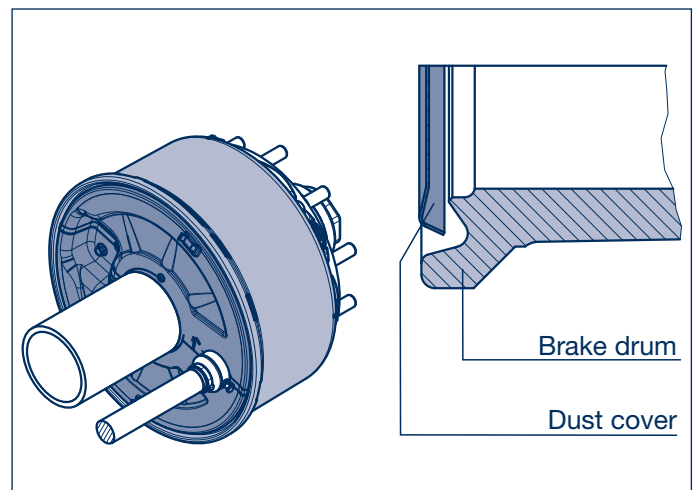
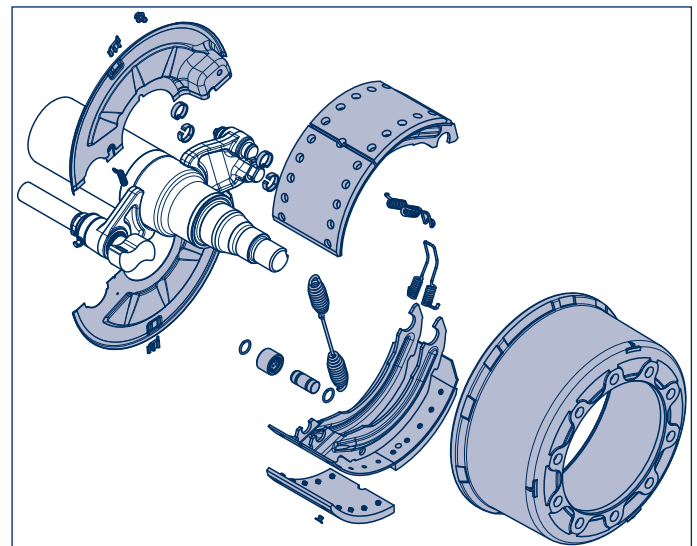
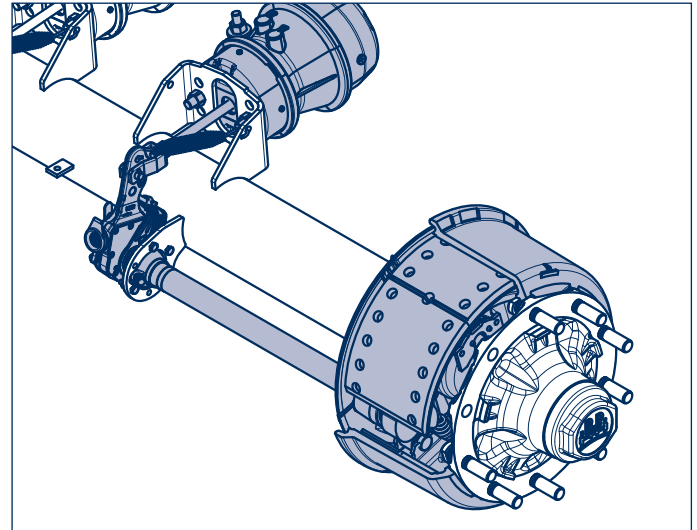
BPW ECO Drum

BPW Bergische Achsen KG has been a pioneer in the drum brake technology sector for many years, and has significantly expanded its position as market leader. The customers of over 11 million drum brake axles from BPW value the tried and tested technology, the robust design and the simple maintenance of BPW drum brakes.

In another development step, the tried and tested SN 4218 and SN 4220 brakes were improved in terms of their weight, wear behaviour and service simplicity.

The result of this development is called **ECO Drum**.

BPW axles with ECO Drum brakes feature the tried and tested BPW drum brake technology, and are also weight-optimized.



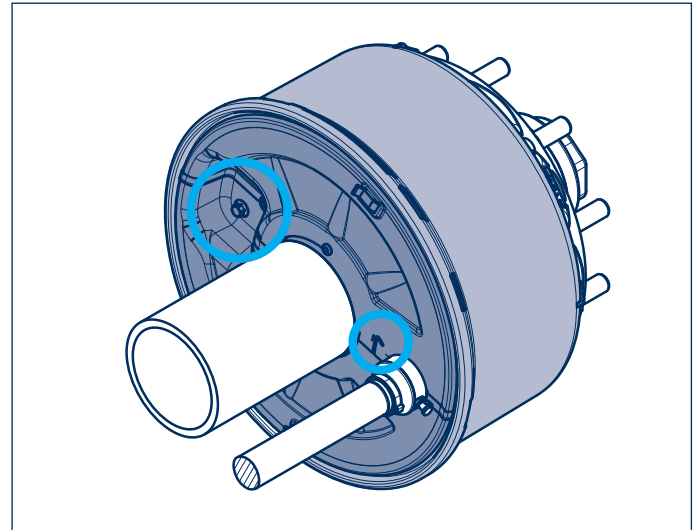
Brake parts 4

General

BPW ECO Drum

The dust cover attachment has been upgraded through the use of threaded bolts. They guarantee trouble-free detachment of the dust cover even after years of the toughest applications.

On the camshaft side, the dust cover is simply and quickly inserted and held in place by a spring.



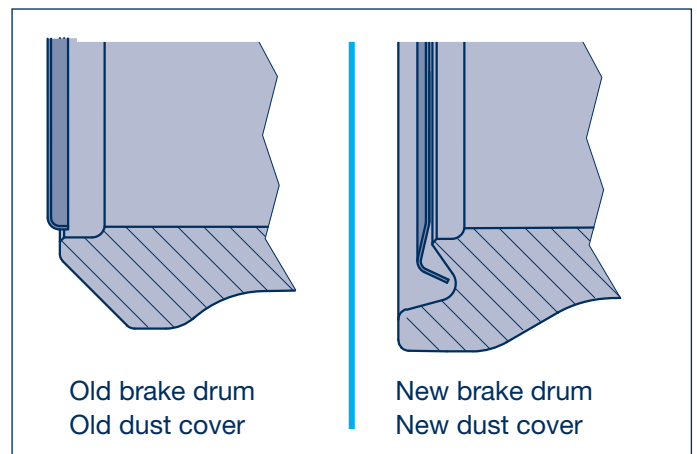
Spare parts - compatibility

Only the new ECO Drum brake and brake shoes will be provided as replacement parts in the future.

The new brake drums and brake shoes can be used on the previous drum brake axles without the dust cover needing to be changed.

It is also possible to obtain dust covers with new outer contour and old brake anchor connection.

Consequently, the customer can benefit from the improved seal between new dust cover and brake drum design, even with the old drum brake axles.



Brake report

No new homologations are required for the ECO Drum. The updated brake report for the ECO Drum SN 42.. can be found under the known TDB numbers in the Download Center on the BPW Homepage at www.bpw.de.

The BPW axle with ECO Drum brake can be installed in a vehicle together with the previous drum brake.

H

R

K

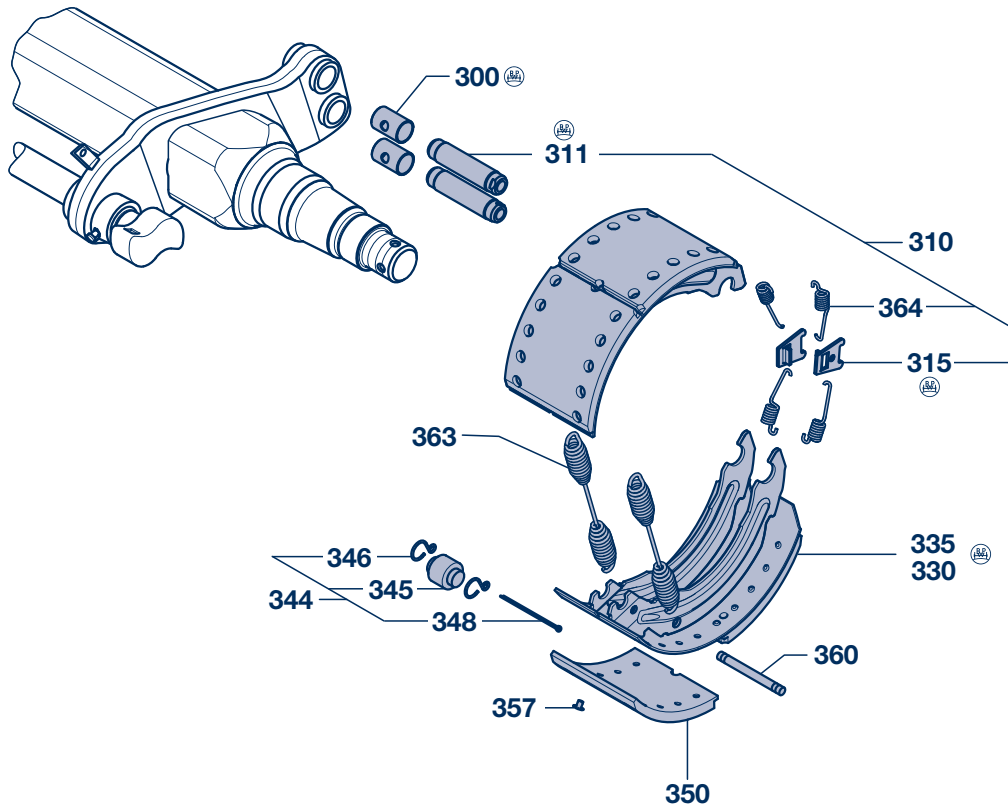
N

4 Brake parts

4.1 Conventional brake (year of manufacture 1983 - 1995) SN 4212-2 / 4218-2 / 4220-2 / 4222-2

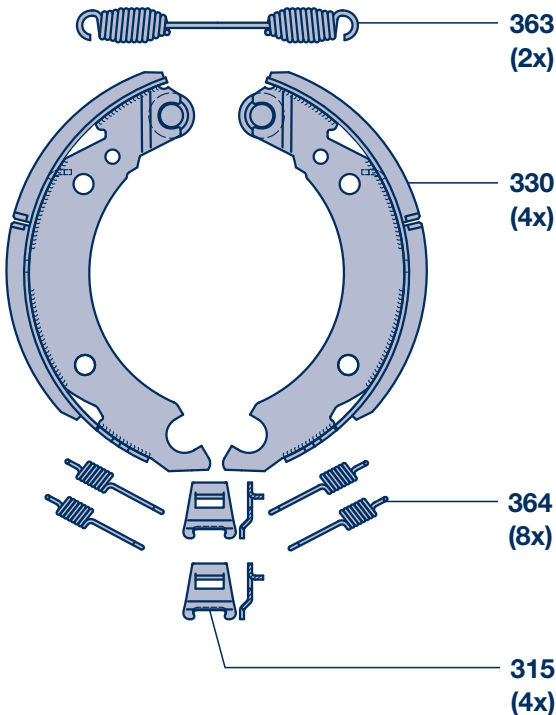
H.. / R..

H



Conversion to brake with split roller (BPW 95 / ECO Drum)

H.. / R..



Conversion to brake with split roller (BPW 95 / ECO Drum)

Higher degree of safety

Short response time and a consistent braking effect throughout the entire life of the lining thanks to the permanently lubricated brake rollers.

Reduced unladen weight

Weight-optimized new design with fewer wear parts.

Simple brake lining replacement

Fast and easy brake shoe replacement.

Same brake components on all axles of the corresponding series

The technical specifications of the brake remain unchanged. Consequently, existing EC test certificates remain valid.

Brake parts 4

H.. / R..

Conventional brake (year of manufacture 1983 - 1995)

4.1

SN 4212-2 / 4218-2 / 4220-2 / 4222-2

Item	Designation	Dimension	BPW item no.			
			SN 4212-2	SN 4218-2	SN 4220-2	SN 4222-2
			SN 4212-2 SN 4218-2 SN 4220-2	---,790. / 794.--- ---,710. / 714.--- ---,718. / 723.---	SN 4222-2	---,739.---
300	Bush	Ø 36 / 40 x 60	03.112.33.08.0		03.112.33.08.0	
310	Brake bolt cpl., Item 311, 315		09.084.46.36.0		09.084.46.35.0	
311	Brake bolt	Ø 36 x 135	03.084.46.22.0		-	
		Ø 36 x 145	-		03.084.46.23.0	
315	Shaped plate		03.167.23.02.0		03.167.23.02.0	
			SN 4212-2	SN 4218-2	SN 4220-2	SN 4222-2
330	Brake shoe assembly, with lining, incl. Item 345 - 357		No longer available. Conversion to brake with split roller (BPW 95 / ECO Drum) (see below).			
335	Brake shoe assembly, without lining, incl. Item 345 - 348					
344	Brake shoe roller repair kit, Item 345 - 348		-		09.801.02.10.0 (for 1 axle)	
345	Roller	Ø 26 / 42 x 52	03.331.34.06.0		-	
		Ø 26 / 42 x 78	-		03.331.34.05.0	
346	Circlip		03.350.00.13.0		03.350.00.13.0	
348	Split pin	6.3 x 71 / 1234	02.6201.64.01		-	
		6.3 x 90 / 1234	-		02.6201.66.03	
349	Brake lining repair kit Item 350 (8x)	18 mm	-	09.801.07.41.0	09.801.07.45.0	
		19 mm	-	09.801.07.42.0	09.801.07.46.0	
		20 mm	-	09.801.07.43.0	09.801.07.47.0	
350	Brake lining (Textar T090)	18 mm	03.092.29.53.0	03.092. *	03.092. *	03.092.28.32.0
		20 mm	-	03.092. *	03.092. *	-
357	Rivet (steel) ²⁾	B 8 x 15 / 7338	02.5805.80.35		02.5805.80.35	
	Repair kit rivet	(for 1 axle)	09.801.09.25.0		09.801.09.25.0	
360	Splined pin	Ø 12 x 70	03.001.08.04.0		-	
		Ø 12 x 90	-		03.001.08.05.0	
363	Return spring	Ø 25 / 5 x 269	05.397.56.07.0 (1x) ¹⁾		-	
		Ø 25 / 4 x 262	-		05.397.46.07.0	
364	Return spring	Ø 21 / 4 x 105	03.397.44.06.0		03.397.44.06.0	

* Not available as individual items - see brake lining repair kit (Item 349)

¹⁾ No longer available²⁾ from 06.2021 not available loose - replaced by repair kit rivet 09.801.09.25.0

Conversion to brake with split roller (BPW 95 / ECO Drum)						H.. / R..
Item	Designation	Dimension	BPW item no.			
			SN 4212-2	SN 4218-2	SN 4220-2	SN 4222-2
315	Shaped plate		03.167.23.09.0			
330	Brake shoe assembly, with lining, incl. Item 345 - 357		05.091.29.92.1	05.091.46.32.1	05.091.47.04.1	05.091.28.28.1
345	Roller	Ø 26 / 45 x 33.5	05.331.44.02.0			
346	Bolt	Ø 26 x 58.5	03.084.75.24.0			
348	Ring	Ø 31 / 24 / 3.5	03.310.70.15.0			
350	Brake lining (Textar T090)	18 mm	03.092.29.53.0	see above	see above	03.092.28.32.0
357	Rivet (steel) ²⁾	B 8 x 15 / 7338	02.5805.80.35			
	Repair kit rivet	(for 1 axle)	09.801.09.25.0			
363	Return spring	Ø 34 / 5 x 274	05.397.58.03.0			
364	Return spring	Ø 21 / 4 x 105	03.397.44.06.0			

²⁾ from 06.2021 not available loose - replaced by repair kit rivet 09.801.09.25.0

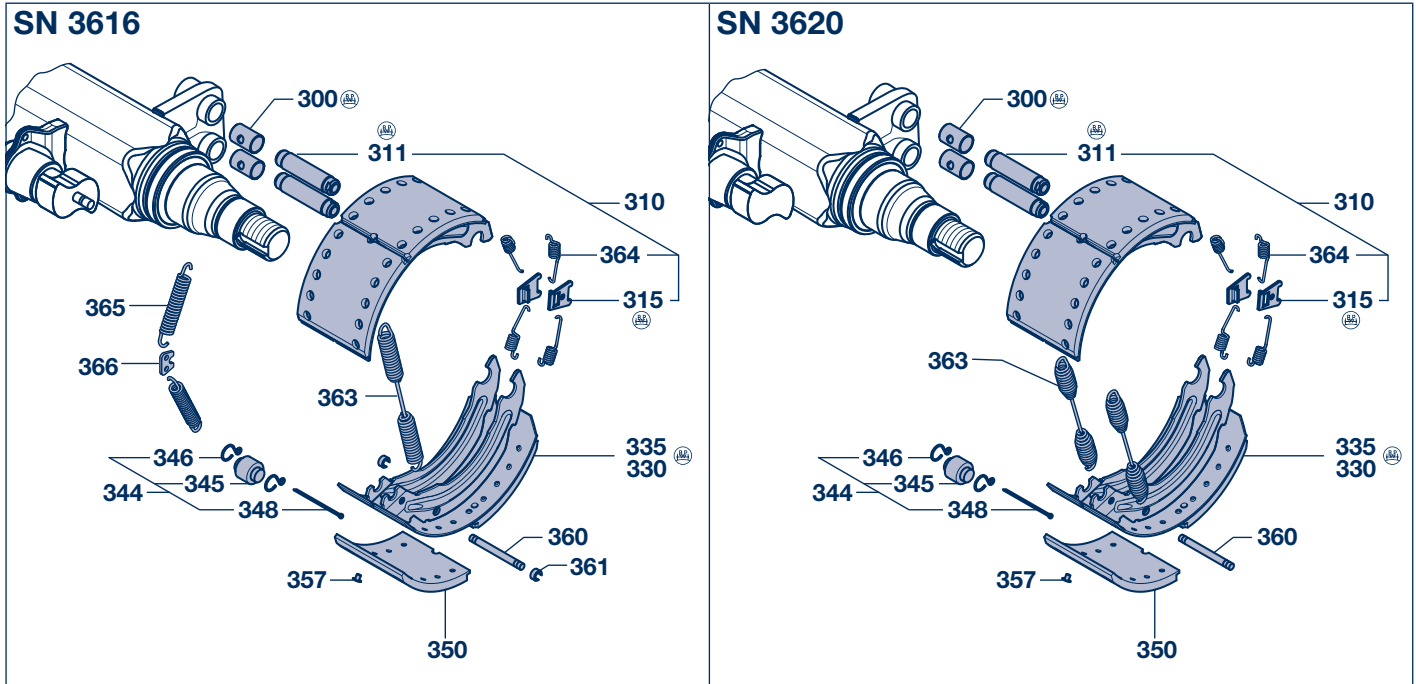
4 Brake parts

4.1 Conventional brake (year of manufacture 1983 - 1995)

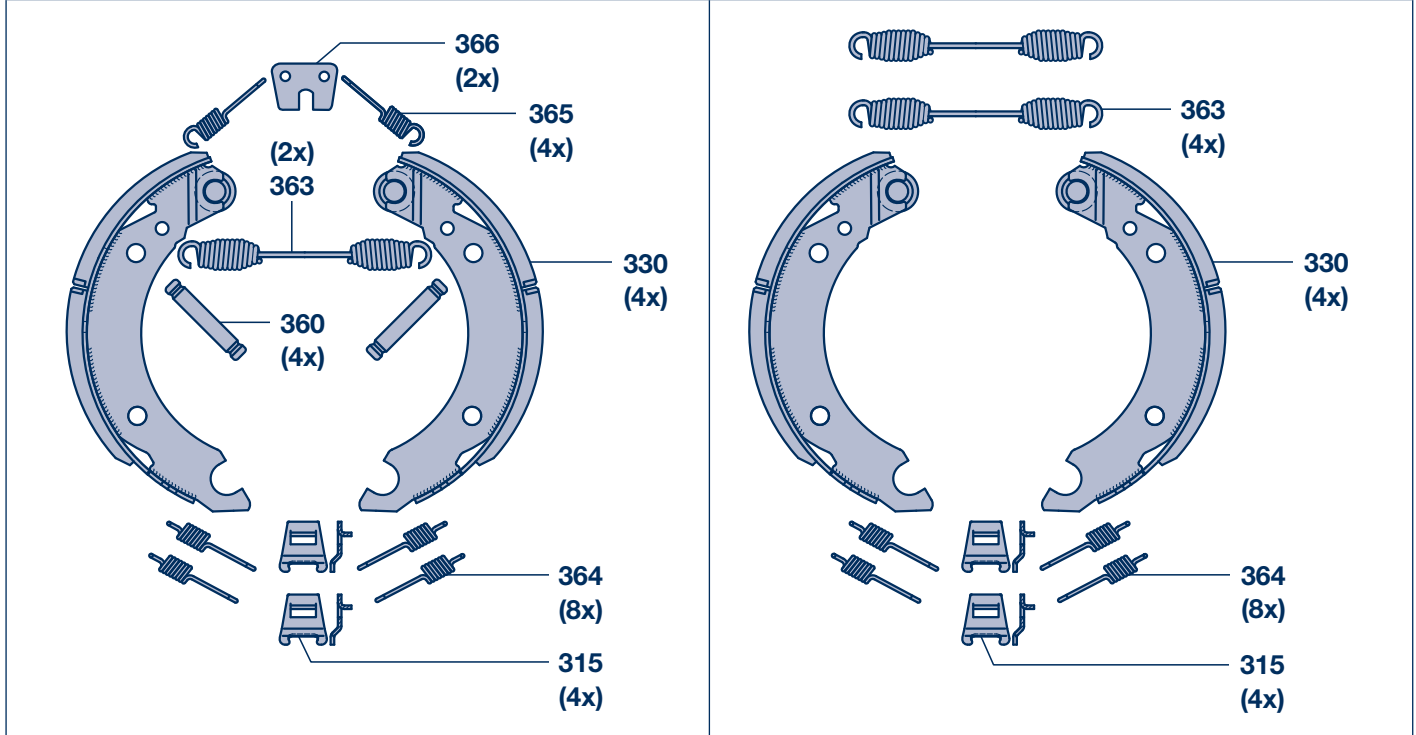
K..

SN 3616 / 3620

K



Conversion to brake with split roller (BPW 95 / ECO Drum) K..



Brake parts 4

K.. Conventional brake (year of manufacture 1983 - 1995) 4.1

SN 3616 / 3620

Item	Designation	Dimension	BPW item no.			
			SN 3616 ---.542.---			
			SN 3620 ---.546.---			
300	Bush	Ø 36 / 40 x 60	03.112.33.08.0			
310	Brake bolt cpl., Item 311, 315		09.084.46.36.0			
311	Brake bolt	Ø 36 x 135	03.084.46.22.0			
315	Shaped plate		03.167.23.02.0			
			SN 3616 ---.542.---		SN 3620 ---.546.---	
330	Brake shoe assembly, with lining, incl. Item 345 - 357		No longer available. Conversion to brake with split roller (BPW 95) (see below).			
335	Brake shoe assembly, without lining, incl. Item 345 - 348					
344	Brake shoe roller repair kit, Item 345 - 348		09.801.02.91.0 (for 1 axle)			
345	Roller	Ø 26 / 42 x 78	03.331.34.05.0			
346	Circlip		03.350.00.13.0			
348	Split pin	6.3 x 90 / 1234	02.6201.66.03			
			Brake bolt side 10 rivets, Item 350	Camshaft side 8 rivets, Item 351	Brake bolt side 10 rivets, Item 350	Camshaft side 8 rivets, Item 351
350 / 351	Brake lining (Textar T090)	18 mm	03.092.19.61.0	03.092.19.60.0	03.092.19.54.0	03.092.19.55.0
		Repair kit	09.801.08.04.0			
		19 mm	-	-	03.092.16.02.0	03.092.16.01.0
		19.5 mm	-	-	03.092.16.04.0	03.092.16.03.0
357	Rivet (steel) ¹⁾	B 8 x 15 / 7338	02.5805.80.35			
	Repair kit rivet	(for 1 axle)	09.801.09.25.0			
360	Bolt	Ø 12 x 120	03.084.42.03.0	03.084.42.02.0		
361	Lock	12 SxN 09	02.3301.17.00	-		
363	Return spring	Ø 24 / 4 x 218	05.397.45.14.0			
364	Return spring	Ø 21 / 4 x 105	03.397.44.06.0			
365	Return spring	Ø 22 / 4 x 108	03.397.45.10.0	-		
366	Plate		-			

Conversion to brake with split roller (BPW 95 / ECO Drum) K..						
Item	Designation	Dimension	BPW item no.			
			SN 3616		SN 3620	
328	Conversion kit cpl. per axle, with brake shoes, Item 329 + 330		09.801.02.41.0 (for 1 axle)		09.801.02.40.0 (for 1 axle)	
329	Conversion kit cpl. per axle, without brake shoes, Item 315, 360 - 366		09.801.02.46.0 (for 1 axle)		09.801.02.45.0 (for 1 axle)	
315	Shaped plate		03.167.23.09.0			
330	Brake shoe assembly, with lining, incl. Item 345 - 357		05.091.19.24.1		05.091.19.22.1	
345	Roller	Ø 26 / 45 x 33.5	05.331.44.02.0			
346	Bolt	Ø 26 x 58.5	03.084.75.24.0			
348	Ring	Ø 31 / 24 / 3.5	03.310.70.15.0			
			Brake bolt side 10 rivets, Item 350	Camshaft side 8 rivets, Item 351	Brake bolt side 10 rivets, Item 350	Camshaft side 8 rivets, Item 351
350	Brake lining (Textar T090)	18 mm	03.092.19.61.0	03.092.19.60.0	03.092.19.54.0	03.092.19.55.0
357	Rivet (steel) ¹⁾	B 8 x 15 / 7338	02.5805.80.35			
	Repair kit rivet	(for 1 axle)	09.801.09.25.0			
360	Bolt	Ø 12 x 125	03.084.42.05.0 (no longer available)		-	
363	Return spring	Ø 24.5 / 4 x 236	05.397.46.13.0			
364	Return spring	Ø 21 / 4 x 105	03.397.44.06.0			
365	Return spring	Ø 22 / 4 x 108	03.397.45.10.0	-		
366	Plate		-			

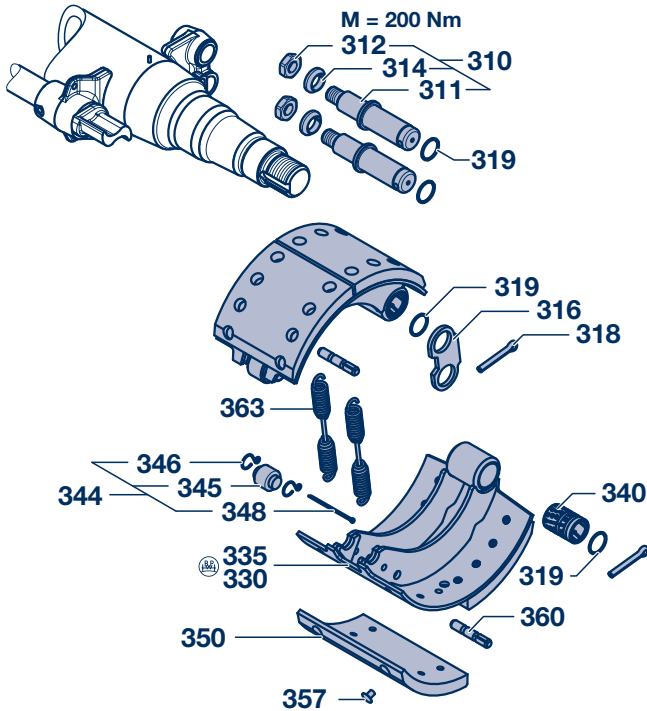
¹⁾ from 06.2021 not available loose - replaced by repair kit rivet 09.801.09.25.0

4 Brake parts

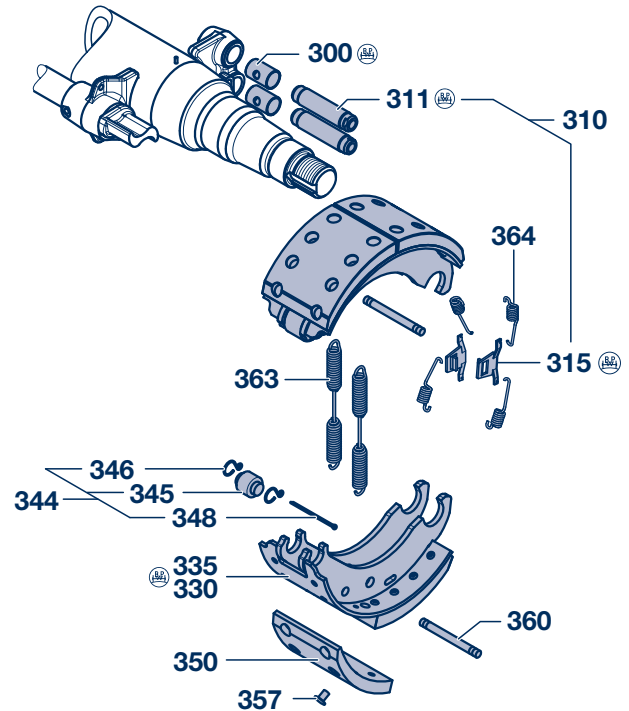
4.1 Conventional brake (year of manufacture 1982 - 1995) SN 3015 / 3020

N..

SN 3015-1 / 3020-1
closed eye (1982 - 1989)

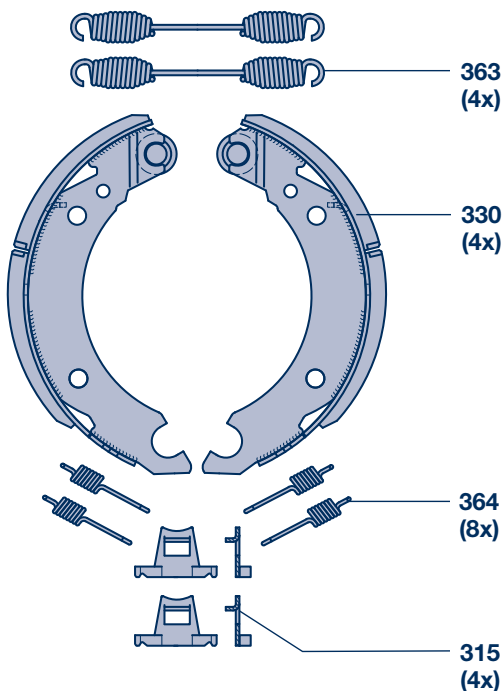


SN 3015 / 3020
Half-cup bearing (1990 - 1995)



Conversion to brake with split roller (BPW 95 / ECO Drum)

N..



Item	Designation	Dimension	BPW item no.	
			SN 3015	SN 3020
328	Conversion kit cpl. per axle, with brake shoes, Item 329 + 330		09.801.02.43.0	09.801.02.42.0
329	Conversion kit cpl. per axle, without brake shoes, Item 315, 363, 364		09.801.02.47.0	
315	Shaped plate		03.167.24.01.0	
330	Brake shoe assembly, with lining, incl. Item 345 - 357		05.091.15.05.1	05.091.14.77.1
345	Roller	Ø 26 / 45 x 33.5	05.331.44.02.0	
346	Bolt	Ø 26 x 58.5	03.084.75.24.0	
348	Ring	Ø 31 / 24 / 3.5	03.310.70.15.0	
350	Brake lining (Textar T090)	18 mm	03.092.13.44.0	03.092.14.45.0
357	Rivet (steel) ¹⁾	B 8 x 15 / 7338	02.5805.80.35	
	Repair kit rivet	(per axle)	09.801.09.25.0	
363	Return spring	Ø 20 / 3.5 x 180	05.397.34.17.0	
364	Return spring	Ø 21 / 4 x 105	03.397.44.06.0	

¹⁾ from 06.2021 not available loose - replaced by repair kit rivet 09.801.09.25.0

Brake parts 4

N.. Conventional brake (year of manufacture 1982 - 1995) 4.1

SN 3015 / 3020

Item	Designation	BPW item no.	Dimension				
		SN 3015-1 * SN 3020-1 * closed eye 1982 - 1989	---.582.--- ---.586.---	SN 3015-1 * SN 3020-1 * Half-cup bearing 1990 - 1995	---.592.--- ---.596.---		
300	Bush	-		03.112.33.08.0	Ø 36 / 40 x 60		
310	Threaded bolt cpl., Item 311, 312, 314	09.177.23.09.0		-			
310	Brake bolt cpl., Item 311, 315	-		09.084.46.39.0			
311	Brake bolt	-		03.084.46.30.0	Ø 36 x 145 (135)		
311	Threaded bolt	03.177.23.10.1	Ø 32 / 38 x 153	-			
312	Hexagon nut	02.5201.76.06	BM 20 x 1.5 / 439	-			
314	Spring washer	03.143.00.02.0	Ø 22.5 / 34 / 80°	-			
315	Shaped plate	-		03.167.24.01.0			
316	Shackle (standard) (for ABS, drum width to 260 mm)	03.232.44.02.0 03.232.44.04.0		-			
318	Split pin	02.6201.80.01	8 x 45 / 1234	-			
319	O-ring	02.5677.86.40	Ø 28 x 2.5	-			
		SN 3015-1 *	SN 3020-1 *	SN 3015		SN 3020	
		NR.. O 127 ---.582.---	NR.. O 127 ---.586.---	NR.. O 127 ---.592.---	NH.. □ 120 ---.592.---	NR.. O 127 ---.596.---	NH.. □ 120 ---.596.---
330	Brake shoe assembly, with lining, incl. Item 340, 345 - 357	05.091.13.85.0	05.091.14.70.0	No longer available. Conversion to brake with split roller (BPW 95) (see page 36, Item 328).			
335	Brake shoe assembly, without lining, incl. Item 340, 345 - 348	05.091.13.20.0	05.091.14.19.0				
340	Bush	03.112.22.30.0	Ø 32 / 36 x 54	-			
344	Brake shoe roller repair kit, Item 345 - 348	09.801.02.11.0	(for 1 axle)	09.801.02.12.0	(for 1 axle)		
345	Roller	03.331.34.01.0	Ø 22 / 42 x 59	03.331.34.01.0	Ø 22 / 42 x 59		
346	Shackle	03.232.13.01.0		-			
346	Circlip			03.350.00.14.0			
348	Split pin	02.6201.83.03	Ø 8 x 71/1234	02.6201.66.03	Ø 6.3 x 90 / 1234		
350 / 351	Brake lining 18 mm (Textar T090) 19 mm	03.092.13.44.0 03.092.13.45.0	03.092.14.45.0 -	03.092.13.44.0 03.092.13.45.0	03.092.14.45.0 -		
357	Rivet (steel) ¹⁾ Repair kit rivet	02.5805.80.35 09.801.09.25.0	B 8 x 15 / 7338 (for 1 axle)				
360	Splined pin	03.001.08.03.0	Ø 12 x 70	03.001.08.05.0	Ø 12 x 90		
363	Return spring	05.397.35.03.0	Ø 22 / 3.6x163	-			
	Ø 24 / 4 x 167	-		05.397.46.12.0	-	05.397.46.12.0	-
	Ø 20 / 3.6 x 166	-		-	05.397.34.16.0	-	05.397.34.16.0
364	Return spring	-		03.397.44.06.0 Ø 21 / 4 x 105			

* Brakes with closed eyes (version-1) cannot be converted to brakes with split roller (BPW 95).

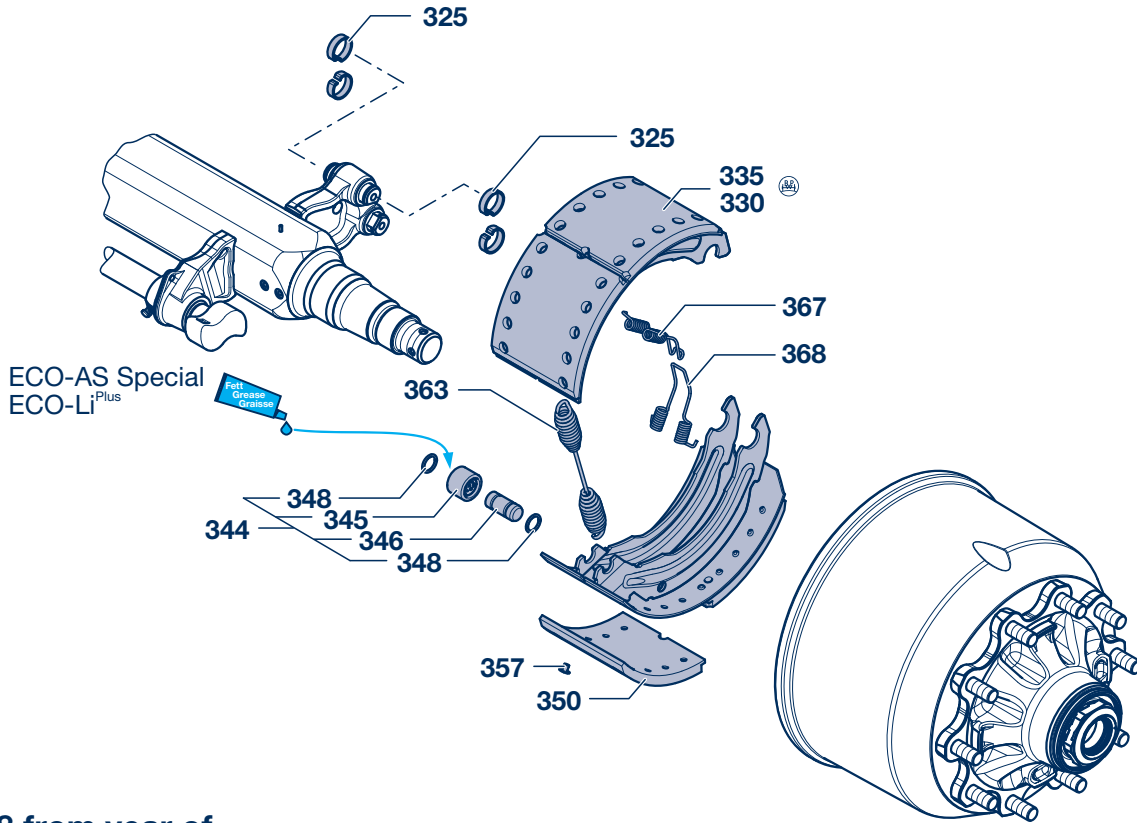
¹⁾ from 06.2021 not available loose - replaced by repair kit rivet 09.801.09.25.0

4 Brake parts

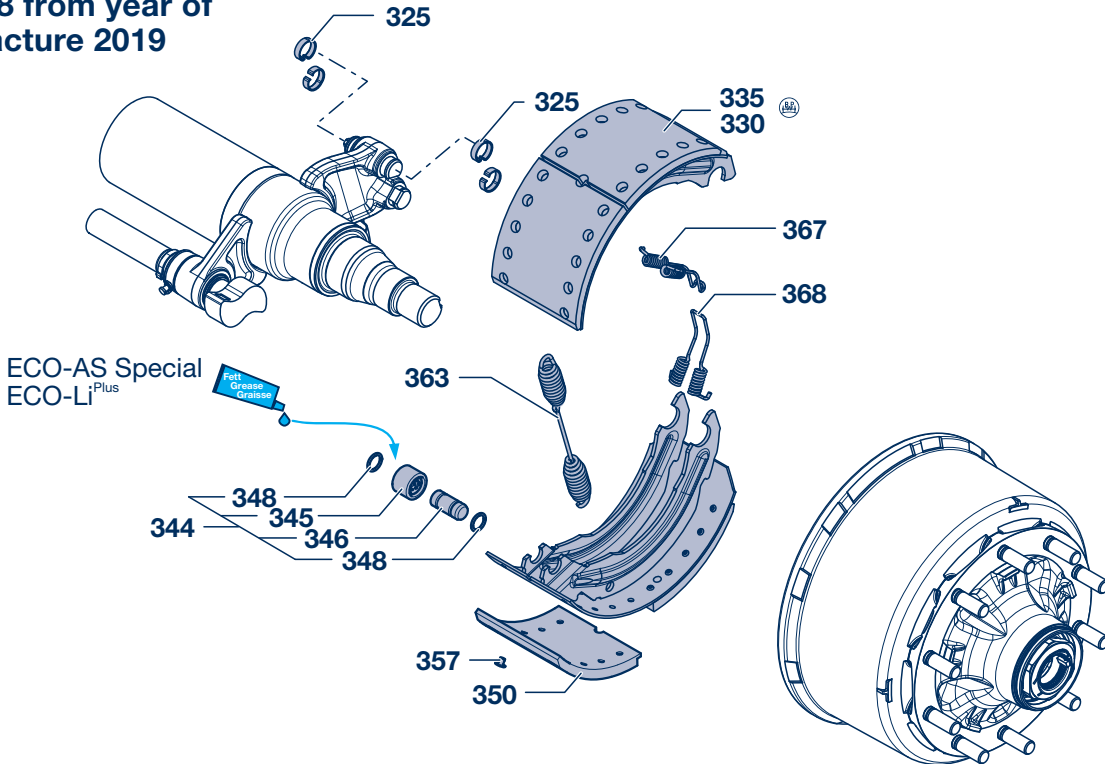
4.2 Brake with split roller (from year of manufacture 1995)

H.. / R..

SN 4212 / 4218 / 4220 / 4222 BPW 95 / ECO Drum



SN 4218 from year of manufacture 2019



Brake parts 4**H.. / R.. Brake with split roller (from year of manufacture 1995) 4.2****SN 4212 / 4218 / 4220 / 4222 BPW 95 / ECO Drum**

Item	Designation	Dimension	BPW item no.			
			SN 4212 ---.741.---	SN 4218 ---.743.---	SN 4220 ---.744.---	SN 4222 ---.745.---
			---.30.---	---.31.---	---.32.---	
325	Hooked spring ring (C-clamp)		03.188.02.02.0			
327	Brake repair kit, without brake shoes, item 325, 363 - 368	(for 1 axle)	09.801.06.79.0			
328	Brake repair kit, with brake shoes, item 327, 330	(for 1 axle)	09.801.07.93.0	09.801.07.39.0	09.801.07.49.0	09.801.02.53.0
330	Brake shoe assembly, with lining, incl. Item 345 - 357		05.091.29.92.1	05.091.46.32.1	05.091.47.04.1	05.091.28.28.1
335	Brake shoe assembly, without lining, incl. Item 345 - 348		05.091.29.93.0	05.091.46.36.0	05.091.47.09.0	05.091.28.29.0
344	Brake shoe roller repair kit, Item 345 - 348		09.801.02.91.0 (for 1 axle side)			
345	Roller	Ø 26 / 45 x 33.5	05.331.44.02.0			
346	Bolt	Ø 26 x 58.5	03.084.75.24.0			
348	Ring	Ø 24 / 31 / 3.5	03.310.70.15.0			
349	Brake lining repair kit, for 1 axle, Item 350 (8x)	18 mm	-	09.801.07.41.0	09.801.07.45.0	
		19 mm	-	09.801.07.42.0	09.801.07.46.0	
		20 mm	-	09.801.07.43.0	09.801.07.47.0	
350	Brake lining (Textar T090)	18 mm	03.092.29.53.0	03.092. *	03.092. *	03.092.28.32.0
357	Rivet (steel) ¹⁾	B 8 x 15 / 7338	02.5805.80.35			
	Repair kit rivet	(for 1 axle)	09.801.09.25.0			
363	Return spring	Ø 34 / 5 x 268	05.397.58.03.0			
367	Return spring (positioning spring)		03.397.33.12.0 (hook)			
368	Return spring (positioning spring)		03.397.33.13.0 (eye)			

* Not available as individual items - see brake lining repair kit (Item 349)

¹⁾ from 06.2021 not available loose - replaced by repair kit rivet 09.801.09.25.0

H

R

4 Brake parts

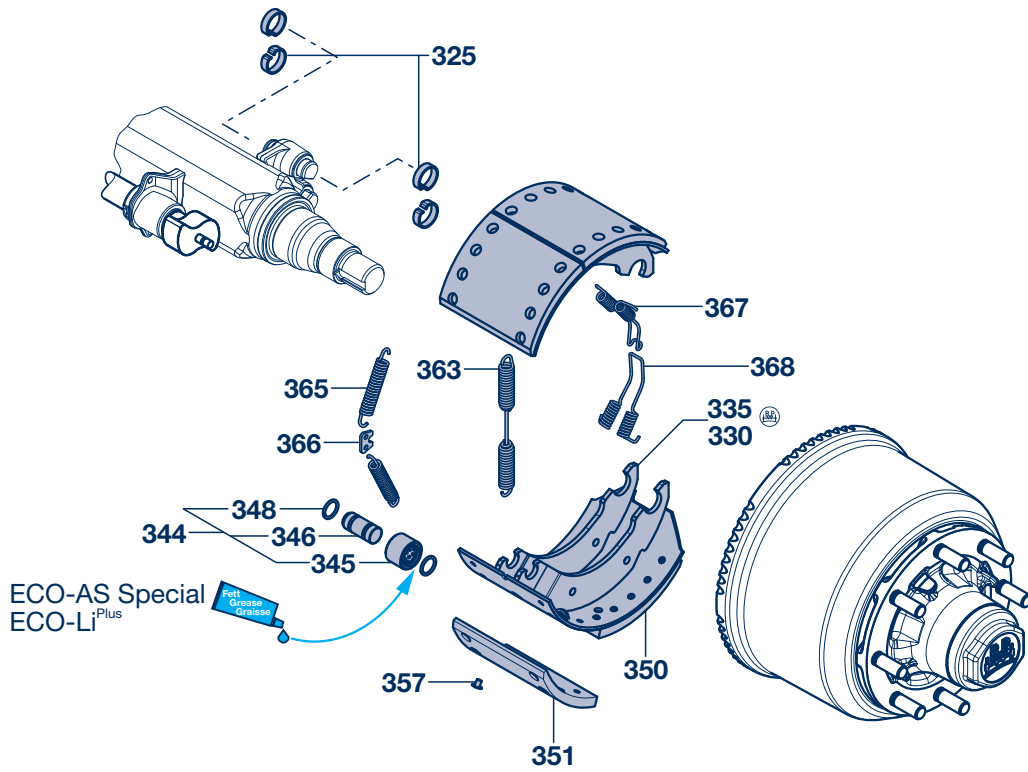
4.2 Brake with split roller (from year of manufacture 1995)

K..

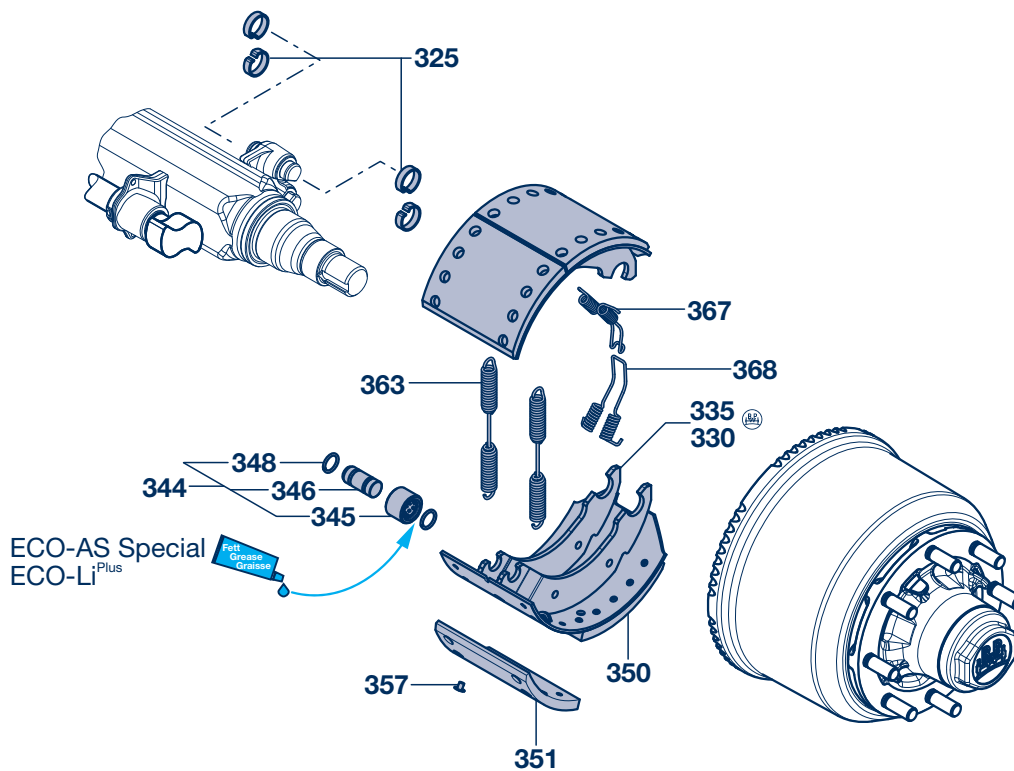
SN 3616 / 3620 BPW 95

K

SN 3616 BPW 95



SN 3620 BPW 95



Brake parts 4

K.. Brake with split roller (from year of manufacture 1995) 4.2

SN 3616 / 3620 BPW 95

Item	Designation	Dimension	BPW item no.			
			SN 3616 ---.551.---		SN 3620 ---.552.--- ---.20.---	
325	Hooked spring ring (C-clamp)		03.188.02.02.0			
327	Brake repair kit, without brake shoes, item 325, 363 - 368	(for 1 axle)	09.801.06.82.0		09.801.06.81.0	
328	Brake repair kit, with brake shoes, item 327, 330	(for 1 axle)	09.801.02.41.0		09.801.02.40.0	
330	Brake shoe assembly, with lining, incl. Item 345 - 357		05.091.19.24.1		05.091.19.22.1	
335	Brake shoe assembly, without lining, incl. Item 345 - 348		05.091.19.33.0		05.091.19.34.0	
344	Brake shoe roller repair kit, Item 345 - 348		09.801.02.91.0 (for 1 axle side)			
345	Roller	Ø 26 / 45 x 33.5	05.331.44.02.0			
346	Bolt	Ø 26 x 58.5	03.084.75.24.0			
348	Ring	Ø 24 / 31 / 3.5	03.310.70.15.0			
349	Brake lining repair kit for 1 axle, Item 350 (4x) + 351 (4x)	18 mm	-		09.801.08.04.0	
			Brake bolt side 10 rivets Item 350	Camshaft side 8 rivets Item 351	Brake bolt side 10 rivets Item 350	Camshaft side 8 rivets Item 351
350 / 351	Brake lining (Textar T090)	18 mm	03.092.19.61.0	03.092.19.60.0	03.092. *	03.092. *
		19 mm	-	-	03.092.16.02.0	03.092.16.01.0
		19.5 mm	-	-	03.092.16.04.0	03.092.16.03.0
357	Rivet (steel) ¹⁾	B 8 x 15 / 7338	02.5805.80.35			
	Repair kit rivet	(for 1 axle)	09.801.09.25.0			
363	Return spring	Ø 24.5 / 4 x 236	05.397.46.13.0			
365	Return spring	Ø 22 / 4 x 119	03.397.44.10.0		-	
366	Plate		03.285.22.05.0		-	
367	Return spring (positioning spring)		03.397.33.12.0 (hook)			
368	Return spring (positioning spring)		03.397.33.13.0 (eye)			

* Not available as individual items - see brake lining repair kit (Item 349)

¹⁾ from 06.2021 not available loose - replaced by repair kit rivet 09.801.09.25.0

K

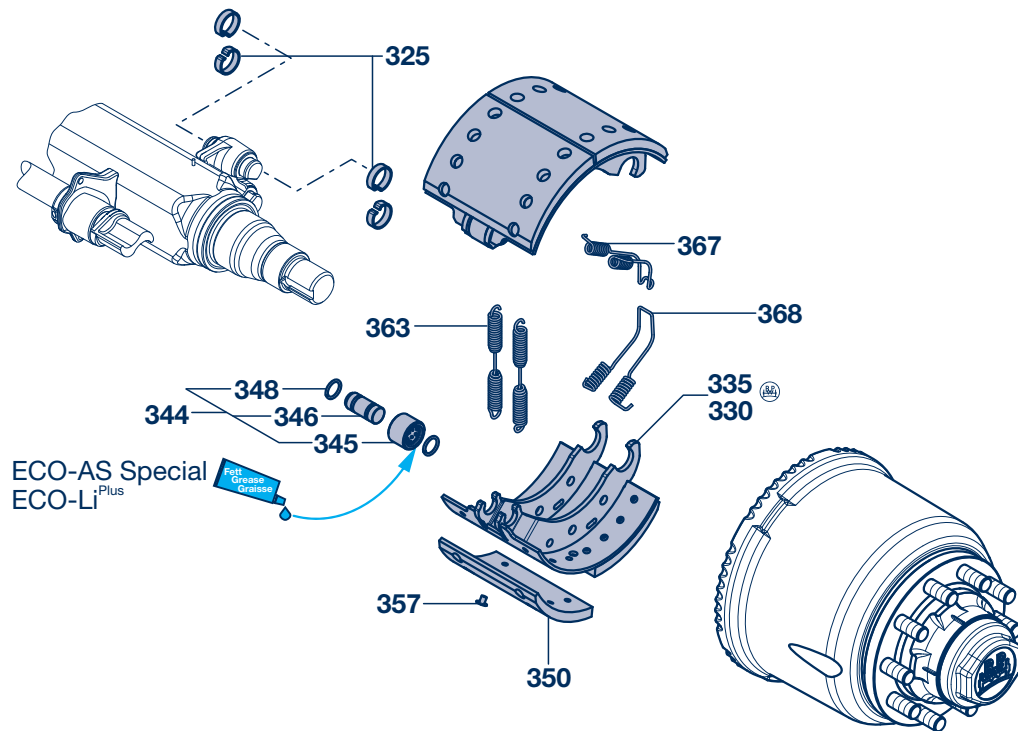
4 Brake parts

4.2 Brake with split roller (from year of manufacture 1995)

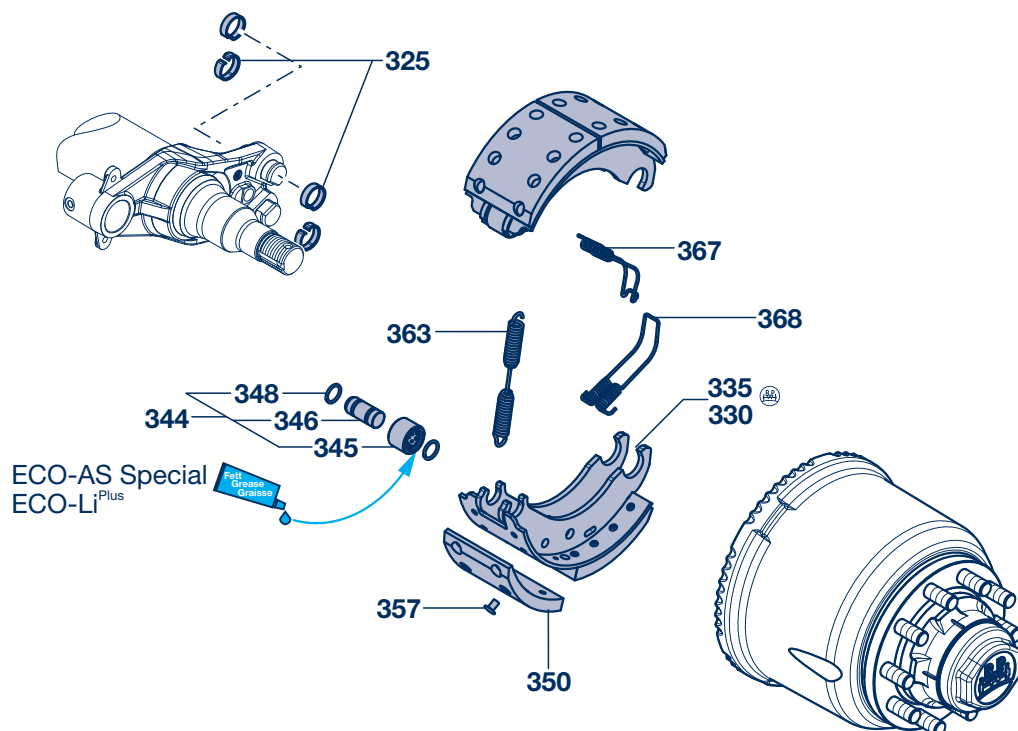
N..

SN 3015 / 3020 / 3012 BPW 95

SN 3015 / 3020 BPW 95



SN 3012 BPW 95



Brake parts 4**N.. Brake with split roller (from year of manufacture 1995) 4.2****SN 3015 / 3020 / 3012 BPW 95**

Item	Designation	Dimension	BPW item no.		
			SN 3015 ---.501.---	SN 3020 ---.502.---	SN 3012 ---.503.---
			---.10.---	---.11.---	
325	Hooked spring ring (C-clamp)		03.188.02.02.0		
327	Brake repair kit, without brake shoes, item 325, 363 - 368	(for 1 axle)	09.801.06.80.0		09.801.07.70.0
328	Brake repair kit, with brake shoes, item 327, 330	(for 1 axle)	09.801.08.01.0	09.801.08.02.0	09.801.07.71.0
330	Brake shoe assembly, with lining, incl. Item 345 - 357		05.091.15.05.1	05.091.14.77.1	05.091.12.11.1
335	Brake shoe assembly, without lining, incl. Item 345 - 348		05.091.15.13.0	05.091.14.80.0	-
344	Brake shoe roller repair kit, Item 345 - 348		09.801.02.91.0 (for 1 axle side)		
345	Roller	Ø 26 / 45 x 33.5	05.331.44.02.0		
346	Bolt	Ø 26 x 58.5	03.084.75.24.0		
348	Ring	Ø 24 / 31 / 3.5	03.310.70.15.0		
349	Brake lining repair kit, for 1 axle				09.801.07.72.1
350	Brake lining (Textar T090)	18 mm	03.092.13.44.0	03.092.14.45.0	03.092.12.08.0 *
		19 mm	03.092.13.45.0	-	-
357	Rivet (steel) ¹⁾	B 8 x 15 / 7338	02.5805.80.35		
	Repair kit rivet (for 1 axle)		09.801.09.25.0		
363	Return spring	Ø 20 / 3.6 x 180	05.397.34.17.0		-
		Ø 23 / 4.5 x 180	-		05.397.43.02.0
367	Return spring (positioning spring)		03.397.33.08.0 (hook)		03.397.33.14.0 (hook)
368	Return spring (positioning spring)		03.397.33.09.0 (eye)		03.397.33.15.0 (eye)

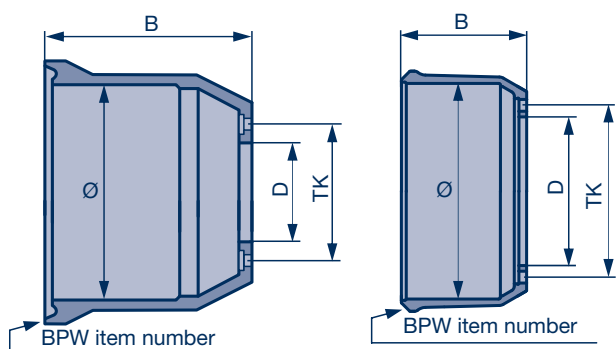
* Not available as individual items - see brake lining repair kit (Item 349)

¹⁾ from 06.2021 not available loose - replaced by repair kit rivet 09.801.09.25.0

4 Brake parts

4.3 Brake drums

SN 42..		H.. / R..			
Item	Designation (remark)	BPW item no.	Dimension		
380	Brake drum				
	Brake size	Ø 420 x 120 ---.741.---	Ø 420 x 180 ---.710.---	Ø 420 x 200 ---.718.---	Ø 420 x 220 ---.739.---
	Brake designation	---.790.---	---.714.---	---.723.---	---.745.---
		---.794.---	---.743.---	---.744.---	
		---.30.---	B	B	B
	D 290 / TK 335 / 6 x Ø 21				
	HB.. / HI.. / HX..	03.106.97.16.0 197	03.109.67.17.0 226	-	-
	D 230 / TK 275 / 8 x Ø 23				
	HS.. ECO / ECO MAXX	03.109.73.02.0 197	-	-	-
	D 240 / TK 285 / 8 x Ø 21				
	HZ.. Japan	-	-	03.106.79.06.0 287 *	-
	D 290 / TK 335 / 10 x Ø 23				
	HS..	-	03.109.67.13.0 226	03.109.77.16.0 260	-
	HS.. MAXX / ECO MAXX / ECO ^{Plus} / ECO Plus 2 / 3	03.109.73.01.0 197	03.109.67.79.0 ¹⁾ 226	03.109.77.42.0 ¹⁾ 259	-
		-	03.109.67.77.0 ¹⁾ 226 *	-	-
	RS.. ECO ^{Plus} / ECO Plus 3		03.109.67.79.0 ¹⁾ 226		
	HZ.. MAXX / ECO MAXX / ECO ^{Plus} / ECO Plus 2 / 3	-	03.109.67.78.0 ¹⁾ 249	03.109.77.43.0 ¹⁾ 284	-
	HS.. / HZ..	03.106.97.17.0 197	03.109.67.74.0 252	03.109.77.44.0 ¹⁾ 287	03.109.87.01.0 294
	HZ.. Japan	-	-	03.106.79.08.0 287	-
	HZ.. for rim 14.00-20	-	-	03.106.77.61.0 ⁴⁾ 287	-
	HZ.. MAXX for rim 14.00-20	-	-	03.109.77.23.0 ²⁾ 284	-
	HZ.. 14010-1	-	-	03.106.77.59.0 ⁵⁾ 297	-
		-	-	03.109.77.46.0 ¹⁾ 297 *	-
	HZ.. 14010-1 MAXX	-	-	03.109.77.21.0 ⁵⁾ 294	-
	HZ.. / HZD..	03.106.97.17.0 197	03.106.67.55.0 252 *	03.109.77.45.0 ¹⁾³⁾ 287 *	-
		-	-	03.109.77.47.0 ¹⁾ 287 *	-
	MVB..	03.109.73.04.0 200	-	-	-
	Max. diameter permissible after machining Ø mm	423	423	423	423
	Max. amount of use Ø mm	424	424	424	424



B = Drum width

* = grooved

¹⁾ = ECO Drum

²⁾ = Replaced by 03.109.77.43.0

³⁾ = Replaced by 03.109.77.47.0

⁴⁾ = Replaced by 03.109.77.47.0 after remaining stocks have been used up

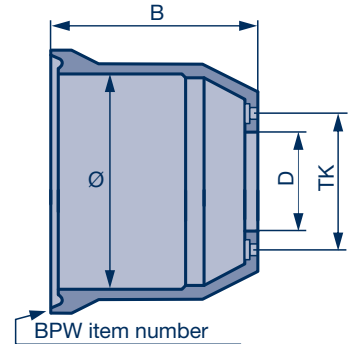
⁵⁾ = Replaced by 03.106.77.46.0 after remaining stocks have been used up

03.109.... = ECO brake drum with integrated wear indicator edge

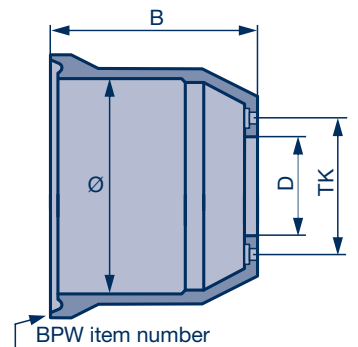
Brake parts 4

Brake drums 4.3

SN 36..				K..	
Item	Designation (remark)	BPW item no.	Dimension		
380	Brake drum				
	Brake size	Ø 360 x 160	Ø 360 x 200		
	Brake designation	B	B		
	D 230 / TK 275 / 8 x Ø 23 / 2 x Ø 11				
	KRBM.. 6408 30.65.542....	03.105.90.05.0	221	-	
	D 230 / TK 275 / 8 x Ø 23				
	K.. ECO MAXX / ECO^{Plus} / ECO Plus 2 / 3	-	03.109.90.03.0	260	
		-	03.109.90.22.0	263	
	D 190 / TK 225 / 10 x Ø 23				
	K.. ECO MAXX / ECO^{Plus} / ECO Plus 2 / 3	-	03.109.90.06.0	260	
	K.. (13 t)	-	03.109.90.24.0	263	
	D 290 / TK 335 / 10 x Ø 23				
	KHS.. 9010/3 / 11010/3	-	03.109.90.02.0	263	
	Max. diameter permissible after machining Ø mm	363	363		
	Max. amount of use Ø mm	364	364		



SN 30..				N..	
Item	Designation (remark)	BPW item no.	Dimension		
380	Brake drum				
	Brake size	Ø 300 x 150	Ø 300 x 200		
	Brake designation	B	B		
	D 165 / TK 205 / 6 x Ø 21				
	N..	03.105.34.08.0	210	-	
	D 165 / TK 205 / 6 x Ø 23 / 2 x Ø 11				
	N.. 12" tyre	03.105.34.09.0	345 ¹⁾	-	
	D 230 / TK 275 / 8 x Ø 23				
	N.. 8-hole	03.105.38.05.0	212	-	
	D 185 / TK 225 / 10 x Ø 23 / 2 x Ø 13				
	N.. 13 t 10-hole	-	03.105.46.25.0	265	
		-	03.105.46.27.0	315	
	D 190 / TK 225 / 10 x Ø 23				
	N.. Conv. / ECO	03.105.36.12.0	210	-	
		-	03.109.46.49.0	260	
		-	03.109.46.40.0	295	
	N.. 12 t ECO^{Plus}	03.109.44.08.0	200	-	
	N.. ECO MAXX / MAXX / ECO Plus 3	03.109.44.07.0	210	03.109.46.07.0	260
	Max. diameter permissible after machining Ø mm	303	303		
	Max. amount of use Ø mm	304	304		



¹⁾ + cylindrical pin for wheel stud securing
4 x 16 / 1472,
BPW no. 02.6004.06.01

4 Brake parts

4.4 Brake drum attachments

Item	Designation	BPW item no.	Dimension	
HB..				
390	Screw kit, incl. Item 391 + 392	05.865.03.12.0	M 20 x 55 - 8.8	
391	Spring washer	02.5601.20.90	A 20 / 128	
392	Hexagon nut	02.5202.24.10	M 20 / 934	
HI.. / HIZ..				
390	Screw kit, incl. Item 392	05.865.03.02.0	M 20 x 45 - 10.9	
392	Lock nut	03.260.03.12.0	M 20-10 / SW 30	
KRBM.. 6408				
390	Locking screw	02.5070.63.02	M 10 x 25	

Brake parts 4

Brake drum attachments 4.4

Item	Designation	BPW item no.	Dimension	
NR.. 6006 12" and NR.. 8-hole				
390	Locking screw	02.5070.63.02	M 10 x 25	<p>Diagram showing an exploded view of a brake drum attachment. The main component is a large cylindrical drum with a flange. A locking screw (390) is shown being inserted into the drum. A smaller component (380) is shown attached to the drum. A separate component (435) is shown with a locking screw (470) being inserted into it. A dimension of 102 - 107 is indicated for the distance between the locking screws.</p>
NR 13 t..				
390	Countersunk screw	02.5041.30.82	M 12 x 25 / 7991 - 4.8	<p>Diagram showing an exploded view of a brake drum attachment. A countersunk screw (390) is shown being inserted into the drum. A smaller component (380) is shown attached to the drum. A separate component (435) is shown with a countersunk screw (470) being inserted into it. A dimension of 102 - 107 is indicated for the distance between the countersunk screws.</p>

N

4 Brake parts

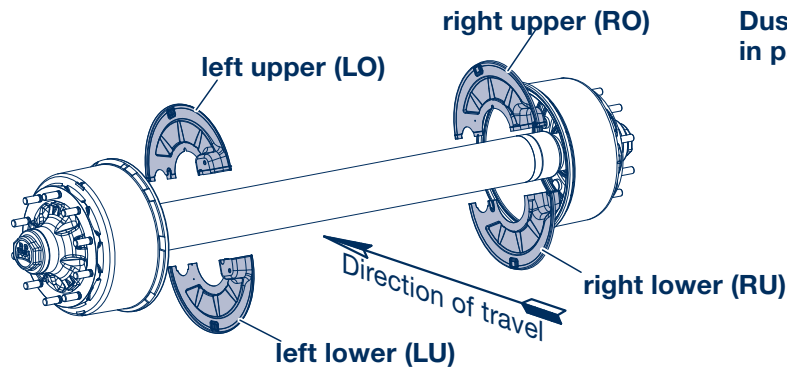
4.5 Brake covers

SN 42..

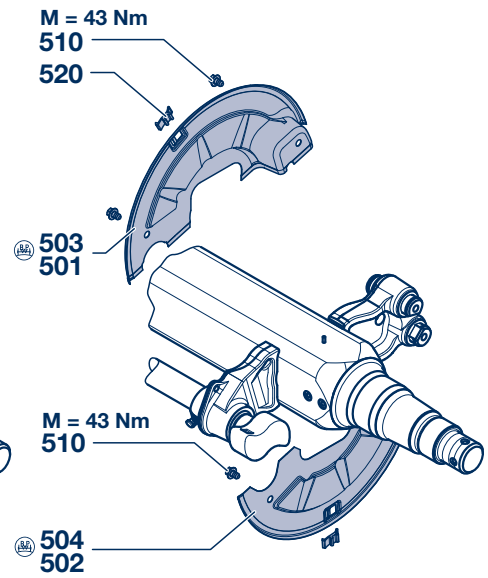
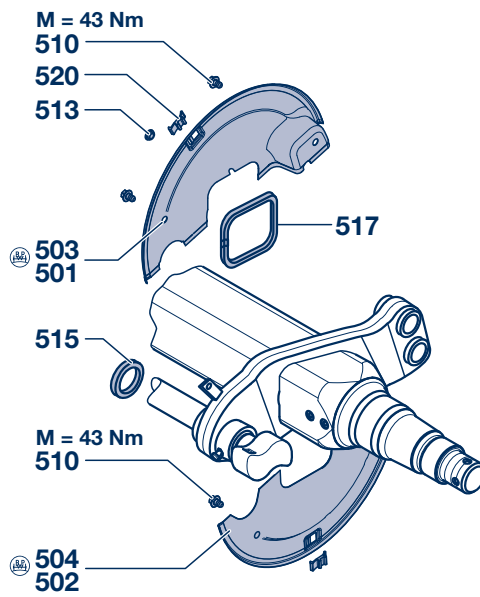
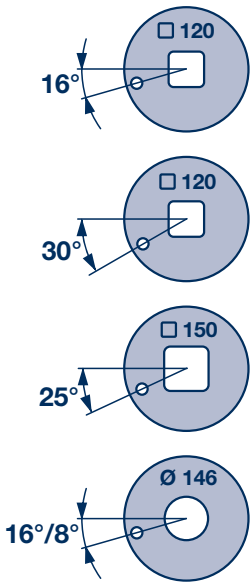
H.. / R..

SN 42.. H.. / R..

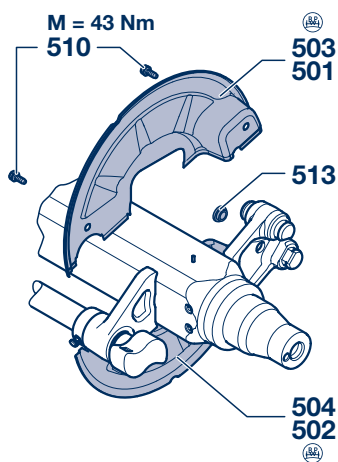
H
R



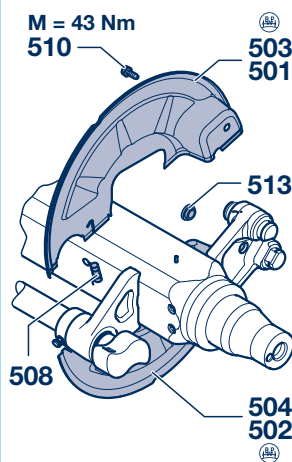
Dust covers available only in pairs (upper + lower)



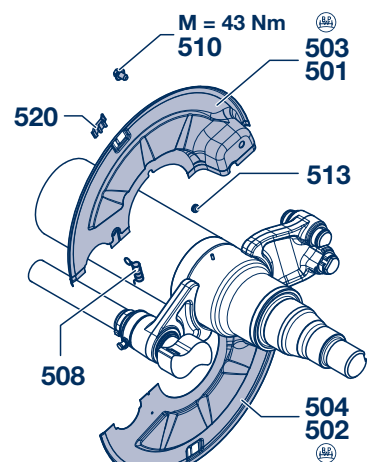
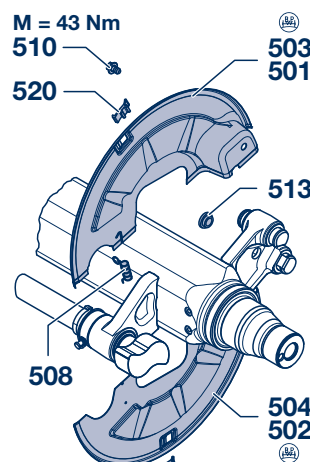
BPW 95 / ECO Drum



ECO Drum - dust covers/old axle beam (attachment with locking screws)



ECO Drum - dust covers / ECO Drum - axle beam (attachment with locking screws + return spring)



Brake parts 4

Brake covers 4.5

H.. / R..

SN 42..

SN 42..							H.. / R..
Item	Designation (remark)	BPW item no.					
500 - 504	Brake designation Axle type Axle beam Brake position	Item 500 Set of covers cpl. Item 501 - 520	Item 501 Dust cover left upper (LO)	Item 502 Dust cover left lower (LU)	Item 503 Dust cover right upper (RO)	Item 504 Dust cover right lower (RU)	
SN 4212-2 ---.790.--- / ---.794.---							
H..	□ 120 30°	99.00.000.0.70	03.010.98.53.0	03.010.98.24.0	03.010.98.54.0	03.010.98.25.0	
H..	□ 120 16°	99.00.000.0.87	03.010.99.38.0	03.010.99.37.0	03.010.99.40.0	03.010.99.39.0	
SN 4212 BPW 95 ---.741.--- / ---.30.---							
H..	□ 120 16°	-	03.010.91.32.0	03.010.91.31.0	03.010.91.34.0	03.010.91.33.0	
SN 4218-2 ---.710.--- / ---.714.---							
H..	□ 120 30°	99.00.000.0.71	03.010.98.45.1	03.010.98.08.0	03.010.98.46.1	03.010.98.09.0	
H..	□ 120 16°	99.00.000.0.88	03.010.99.34.0	03.010.99.33.0	03.010.99.36.0	03.010.99.35.0	
H..	□ 150 25°	99.00.000.0.80	03.010.98.91.0	03.010.98.12.0	03.010.98.92.0	03.010.98.13.0	
R..	○ 127 30°	99.00.000.0.72	03.010.98.69.0	03.010.98.06.0	03.010.98.70.0	03.010.98.05.0	
SN 4218 BPW 95 / ECO Drum ---.743.--- / ---.31.---							
H..	□ 120 16°	99.00.000.1.29 ¹⁾ 99.00.000.1.23 ²⁾	03.010.81.31.0 03.010.71.93.0	03.010.81.32.0 03.010.71.94.0	03.010.81.29.0 03.010.71.91.0	03.010.81.30.0 03.010.71.92.0	
H..	□ 120 30°	99.00.000.1.28 ¹⁾	03.010.81.03.0	03.010.81.04.0	03.010.81.01.0	03.010.81.02.0	
H..	□ 150 25°	99.00.000.1.30 ¹⁾ 99.00.000.1.24 ²⁾	03.010.81.35.0 03.010.71.97.0	03.010.81.36.0 03.010.71.98.0	03.010.81.33.0 03.010.71.95.0	03.010.81.34.0 03.010.71.96.0	
R..	○ 127 30°	99.00.000.1.21 ¹⁾	03.010.81.46.0	03.010.81.08.0	03.010.81.45.0	03.010.81.06.0	
R..	○ 146 30°	99.00.000.1.40 ²⁾	03.010.81.83.0	03.010.81.84.0	03.010.81.81.0	03.010.81.82.0	
SN 4220-2 ---.718.--- / ---.723.---							
H..	□ 120 30°	99.00.000.0.75	03.010.98.51.1	03.010.98.16.0	03.010.98.52.1	03.010.98.17.0	
H..	□ 120 16°	99.00.000.0.89	03.010.99.42.0	03.010.99.41.0	03.010.99.44.0	03.010.99.43.0	
H..	□ 150 25°	99.00.000.0.73	03.010.98.47.1	03.010.97.94.0	03.010.98.48.1	03.010.97.95.0	
R..	○ 127 30°	99.00.000.0.85	03.010.98.65.0	03.010.97.98.0	03.010.98.66.0	03.010.97.97.0	
SN 4220 BPW 95 / ECO Drum ---.744.--- / ---.32.---							
H..	□ 120 16°	99.00.000.1.31 ¹⁾ 99.00.000.1.25 ²⁾	03.010.81.39.0 03.010.81.15.0	03.010.81.40.0 03.010.81.16.0	03.010.81.37.0 03.010.81.13.0	03.010.81.38.0 03.010.81.14.0	
H..	□ 120 30°	99.00.000.1.27 ¹⁾	03.010.81.23.0	03.010.81.24.0	03.010.81.21.0	03.010.81.22.0	
H..	□ 150 25°	99.00.000.1.32 ¹⁾ 99.00.000.1.26 ²⁾	03.010.81.43.0 03.010.81.19.0	03.010.81.44.0 03.010.81.20.0	03.010.81.41.0 03.010.81.17.0	03.010.81.42.0 03.010.81.18.0	
R..	○ 127 30°	99.00.000.1.22 ¹⁾³⁾ 99.00.000.1.41	03.010.99.71.0 03.010.81.27.0	03.010.99.69.0 03.010.81.28.0	03.010.99.69.0 03.010.81.25.0	03.010.99.71.0 03.010.81.26.0	
SN 4222-1 / 4222-2 ---.839.--- / ---.739.---							
H..	□ 150 25°	99.00.000.0.76	05.010.98.49.1	05.010.98.20.0	05.010.98.50.1	05.010.98.21.0	
SN 4222 BPW 95 ---.745.---							
H..	□ 150 25°	99.00.000.1.34	03.010.81.43.0	03.010.81.44.0	03.010.81.41.0	03.010.81.42.0	

¹⁾ ECO Drum - dust covers / old axle beam (attachment with locking screws)

²⁾ ECO Drum - dust covers / ECO Drum - axle beam (attachment with locking screws + return spring)

³⁾ Replaced by 99.00.000.1.41 after remaining stocks have been used up

Item	Designation (remark)	BPW item no.	Dimension	
508	Return spring ⁵⁾	03.397.11.02.0		⁴⁾ Not required for brake position 16° ⁵⁾ for ECO Drum
510	Locking screw	02.5071.22.00	M 10 x 15	
		02.5070.83.00	M 10 x 20	
	Collar screw ⁵⁾	02.5071.55.80	M 10 x 1.5 x 15	
513	Plug (without ABS)	02.3704.33.00	Ø 10.7	
		02.3704.57.00	Ø 22	
	Seal (with ABS)	02.5681.78.00	Ø 6 / 10 / 13	
515	Sealing ring ⁴⁾	03.120.23.06.0	Ø 52 / 68 / 8	
517	Seal ⁴⁾	□ 120 / ○ 127	L = 340, □ 8	
		□ 150	L = 450, □ 8	
520	Plug	03.379.00.23.0		

4 Brake parts

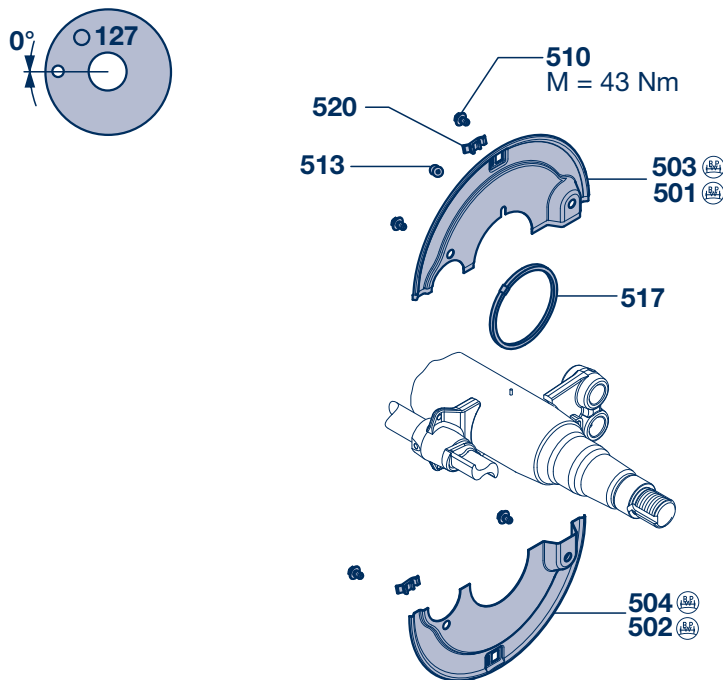
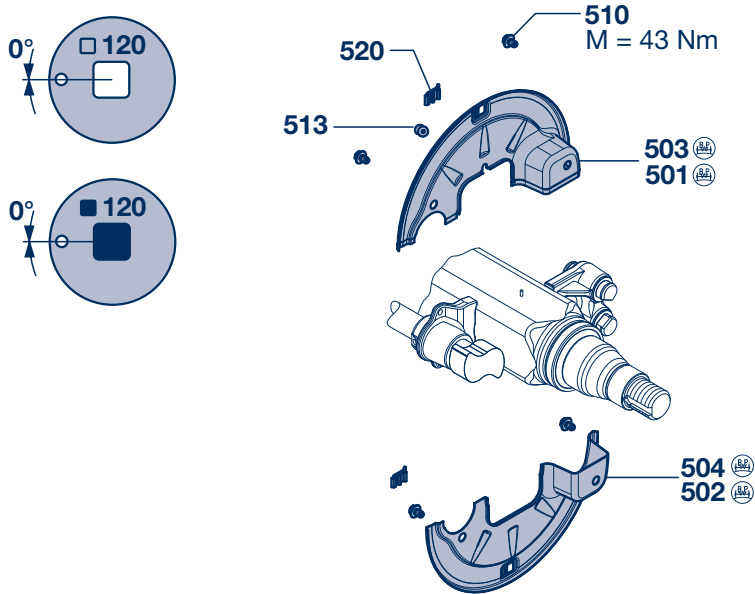
4.5 Brake covers

SN 3620 / 3020

K.. / N..

SN 36..	K..
SN 30..	N..

Dust covers available only in pairs (upper + lower)



K
N

Brake parts 4**Brake covers 4.5****SN 3620 / 3020****K.. / N..**

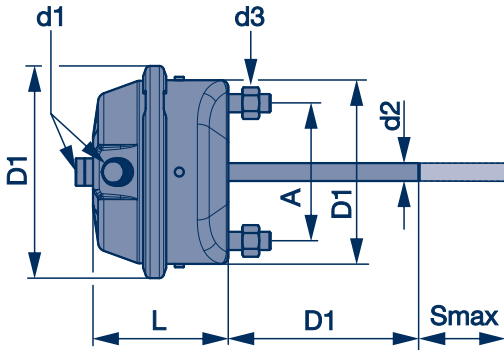
SN 36..							K..
Item	Designation (remark)	BPW item no.					
500 - 504	Brake designation Axle type Axle beam	Item 500 Set of covers cpl. Item 501 - 520	Item 501 Dust cover left upper (LO)	Item 502 Dust cover left lower (LU)	Item 503 Dust cover right upper (RO)	Item 504 Dust cover right lower (RU)	
SN 3616 ---.542.---							
	KR.. ○ 127	99.00.000.0.81	03.010.96.53.0	03.010.96.50.0	03.010.96.52.0	03.010.96.51.0	
	KM.. ■ 120	99.00.000.1.08	03.010.91.10.0	03.010.91.09.0	03.010.91.12.0	03.010.91.11.0	
SN 3616 BPW 95 ---.551.---							
	KH.. □ 120	99.00.000.1.06	03.010.99.79.0	03.010.99.80.0	03.010.99.77.0	03.010.99.78.0	
SN 3620 ---.546.---							
	KR.. ○ 127	99.00.000.0.81	03.010.96.53.0	03.010.96.50.0	03.010.96.52.0	03.010.96.51.0	
	KH.. / KM.. □ 120 / ■ 120	99.00.000.0.83	03.010.96.67.0	03.010.96.68.0	03.010.96.70.0	03.010.96.69.0	
SN 3620 BPW 95 ---.552.--- / ---.20.---							
	KR.. ○ 127	99.00.000.0.81	03.010.96.53.0	03.010.96.50.0	03.010.96.52.0	03.010.96.51.0	
	KH.. / KM.. □ 120 / ■ 120	99.00.000.1.06	03.010.99.79.0	03.010.99.80.0	03.010.99.77.0	03.010.99.78.0	
SN 30..							N..
Item	Designation (remark)	BPW item no.					
500 - 504	Brake designation Axle type Axle beam	Item 500 Set of covers cpl. Item 501 - 520	Item 501 Dust cover left upper (LO)	Item 502 Dust cover left lower (LU)	Item 503 Dust cover right upper (RO)	Item 504 Dust cover right lower (RU)	
SN 3015-1 ---.582.---							
	NR.. ○ 127	99.00.000.1.00	03.010.96.48.0	03.010.96.49.0	03.010.96.48.0	03.010.96.49.0	
SN 3015 ---.592.---							
	NR.. ○ 127	99.00.000.1.01 ¹⁾	03.010.96.84.0	03.010.96.86.0	03.010.96.86.0	03.010.96.84.0	
SN 3015 BPW 95 ---.501.--- / ---.10.---							
	NH.. □ 120	99.00.000.1.33	03.010.99.83.0	03.010.99.84.0	03.010.99.81.0	03.010.99.82.0	
SN 3020-1 ---.586.---							
	NR.. ○ 127	99.00.000.1.03	03.010.96.33.0	03.010.96.20.0	03.010.96.32.0	03.010.96.21.0	
SN 3020 ---.596.---							
	NR.. ○ 127	99.00.000.0.84	03.010.96.80.0	03.010.96.79.0	03.010.96.82.0	03.010.96.81.0	
	NH.. □ 120	99.00.000.1.05	03.010.91.02.0	03.010.91.01.0	03.010.91.03.0	03.010.91.04.0	
SN 3020 BPW 95 ---.502.--- / ---.11.---							
	NH.. □ 120	99.00.000.1.09	03.010.99.87.0	03.010.99.88.0	03.010.99.85.0	03.010.99.86.0	
¹⁾ adaptable to NH axles with □ 120							
Item	Designation (remark)	BPW item no.	Dimension				
510	Locking screw	02.5071.22.00 02.5070.83.00	M 10 x 15 M 10 x 20	²⁾ Not with BPW 95 / ECO Drum			
513	Plug (without ABS)	02.3704.33.00	Ø 10.7				
	Plug	02.3704.42.00	Ø 12.3				
	Seal (with ABS)	02.5681.78.00	Ø 6 / 10 / 13				
517	Seal ²⁾ □ 120 / ○ 127	05.121.30.06.0	L = 340, □ 8				
520	Plug	03.379.00.23.0					

4 Brake parts

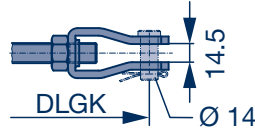
4.6 Brake cylinders

Diaphragm cylinder

H
R
K
N



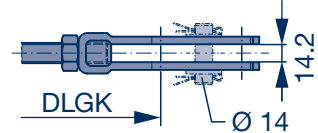
Brake cylinder kit incl. yoke with round hole
BPW item no.: 05.444.xx.xx.1



Spring-type cylinder assembled ready for installation

Yoke, loose:
BPW item no.:
M 16 x 1.5 05.171.03.34.0
5/8"-18 UNF 05.171.03.37.0

Brake cylinder kit incl. yoke with oblong hole
BPW item no.: 05.444.xx.xx.2



only for diaphragm cylinder design

Yoke, loose:
BPW item no.:
M 16 x 1.5 05.171.04.10.0

Cylinder size	BPW item no.	Air connection thread d1	Push rod thread d2	Fitting bolts thread d3	L (mm)	D1 (mm)	D2 (mm)	S _{max}	A (mm) Connection dimension	DL (mm) without yoke	DLGK (mm) with yoke
9"	02.0327.98.00		M 12 x 1.5		108	112	135	57	76.2	186	227
12"	02.0327.99.00		M 12 x 1.5		114	123	144	75	76.2	186	227
16"	05.444.13.01.0		M 16 x 1.5		115	145	165	80	120.7	185	227
20"	05.444.14.01.0		M 16 x 1.5		111.5	151	176	75	120.7	185	227
24"	05.444.15.01.0		M 16 x 1.5		118.5	161	186	75	120.7	185	227
30"	05.444.16.01.0		M 16 x 1.5		121.5	183	210	75	120.7	185	227
	05.444.16.02.0	3/8"-18 NPTF	5/8"-18 UNF								
36"	05.444.17.01.0		M 16 x 1.5		131	201	231	75	120.7	185	227

¹⁾ Air connection turned on 90°

Attachment nuts for brake cylinder

Thread	BPW item no.
M 16 x 1.5	02.5202.21.80
5/8"-18 UNF	02.5202.80.00

5 Hubs, hub bearings

General

BPW hub bearings

Conventional hub bearing

Until the ECO hub system was introduced, BPW supplied trailer axles with conventional hub bearings.

With this hub bearing, the 2 sealing rings sit on the stepped thrust washer (with axle series N., oil seals are used).

A pulling device must be used to pull off the complete hub unit. The roller bearing inner ring of the rear bearing, as well as the thrust washer with seal, then remain on the axle stub and have to be pulled off separately if required.

ECO hub bearing

Disassembly with the patented BPW ECO hub system (European Patent 0 407 719 B1) is extremely easy:

In a few simple steps, the wheel (complete with hub, roller bearings and brake drum) is pulled off using the central bolt – like changing a wheel in motorsport.

The stepped bearing eliminates the need for pulling devices or special tools.

The roller bearings remain in the hub effectively protected against soiling and moisture.

Assembly is likewise quick and simple: box spanners for hub caps and axle nuts suffice. During disassembly, the wheel can remain assembled on the wheel hub.

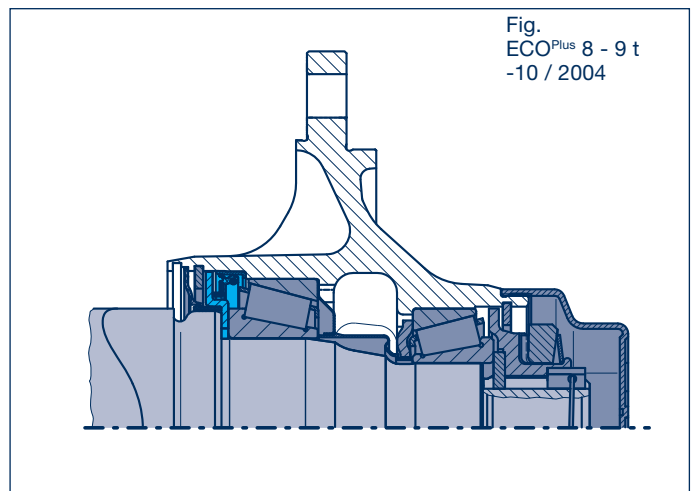
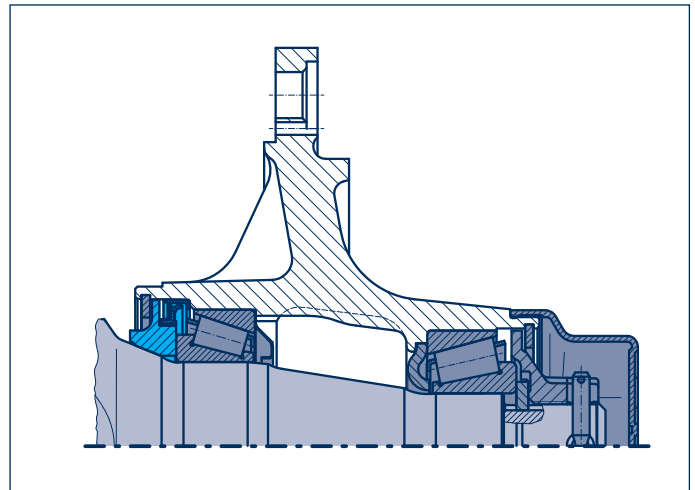
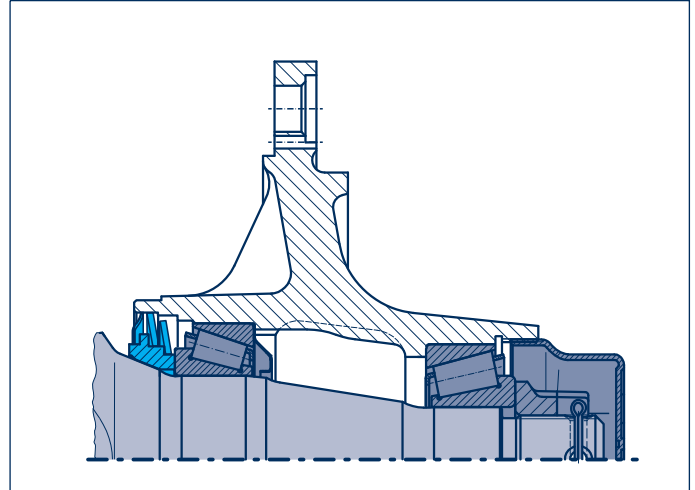
ECO^{Plus} hub bearing

If you require high performance, rapid maintenance and low maintenance costs from your axle, there is only one option for you: ECO^{Plus}.

The future-facing ECO^{Plus} bearing system was developed from the special BPW ECO hub system.

The hub requires no maintenance and has an integrated multi-seal system to protect the roller bearings against dust and dirt.

A central bolt with integrated torque limiting function ensures the bearing preload is always optimal.



Hubs, hub bearings 5

General

Uniform axle stubs for all BPW trailer axles

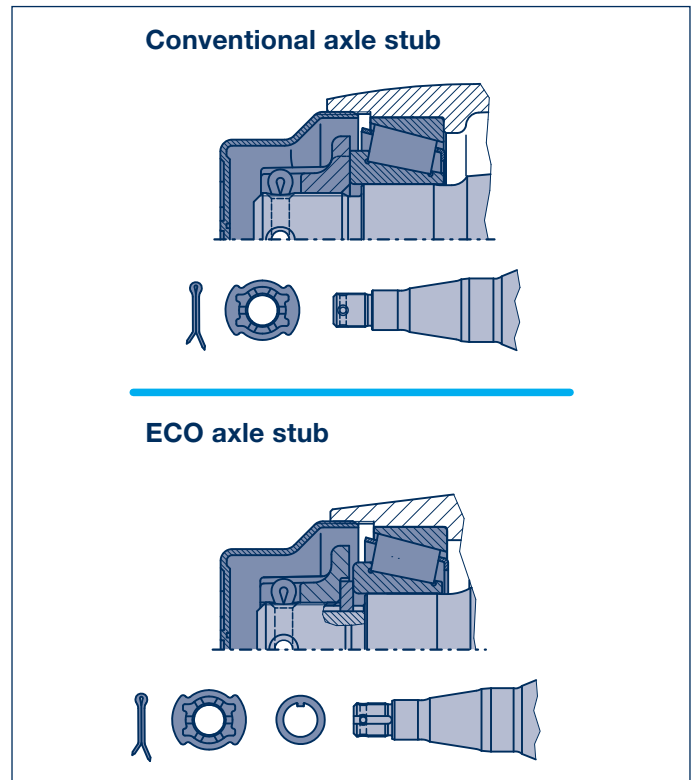
In January 1995, BPW axle beams and steering spindle groups were converted to ECO axle stubs.

These differ from the conventional axle stubs by a keyway in the thread area.

A new axle nut and in addition a washer is used to fit the conventional bearing to ECO axle stubs.

Any spare axle beams and steering pivot assemblies supplied are fitted with these modified axle nuts and washers.

If the ECO hub system is assembled, these parts are not required.



Hub seal for ECO^{Plus} bearings

The BPW ECO^{Plus} wheel bearing was converted to the new ECO^{Seal} sealing system in October 2004.

The proven concept of the ECO^{Plus} seal, with dirt seal and upstream dust sealing lip, was significantly improved in a number of areas.

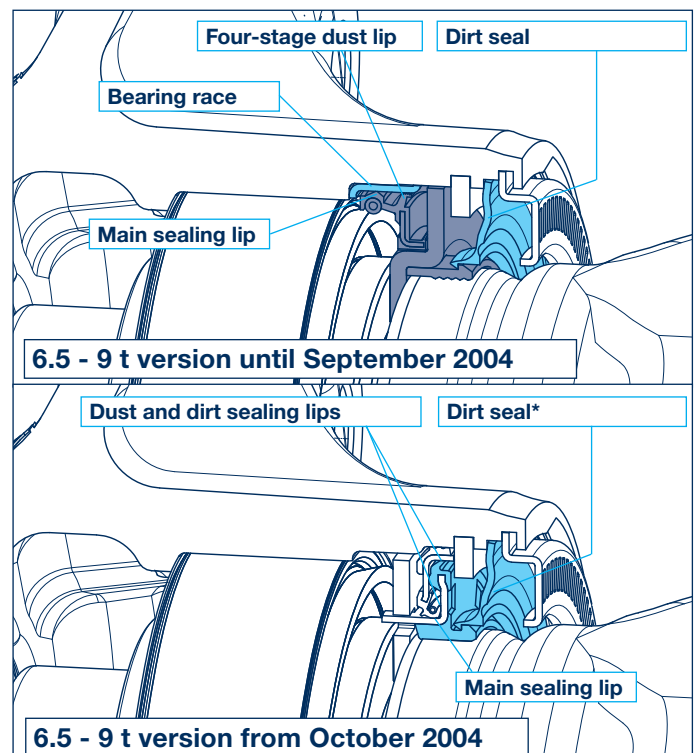
For example, the primary seal lip (ECO^{Seal}) no longer seals directly against the sealing partner (bearing race of the hub) but instead against a bearing race which is integrated into the seal itself.

This new design has made it possible to significantly reduce the circumferential speed of the seal and thus wear. In addition, the wheel bearing is provided with even better protection against dirt penetration by means of the covering dust and dirt sealing lips.

On conversion to the new seal, the bearing race remains in the hub.

New ECO^{Plus} bearings are supplied without a race.

* The dirt seal was eliminated from the ECO^{Seal} on 07 / 07.



5 Hubs, hub bearings

General

BPW hub bearings ECO Plus 2 bearing

The BPW ECO Unit, tried and proven a million times over in its ECO^{Plus} design, was replaced in September 2007 by the further improved **ECO Plus 2** version.

A rigorous upgrade of the components resulted in a significant weight reduction compared to the current ECO^{Plus} unit.

With the **ECO Plus 2**, the hub cap has a bayonet lock, enabling comfortable assembly and disassembly of the hub cap.

Grease is supplied to the wheel bearings by means of a grease cartridge located between the bearing points.

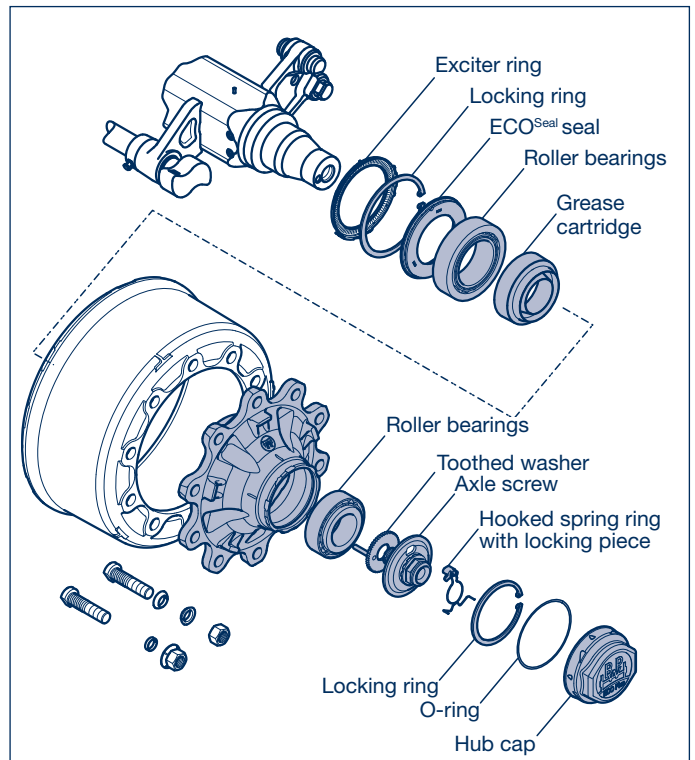
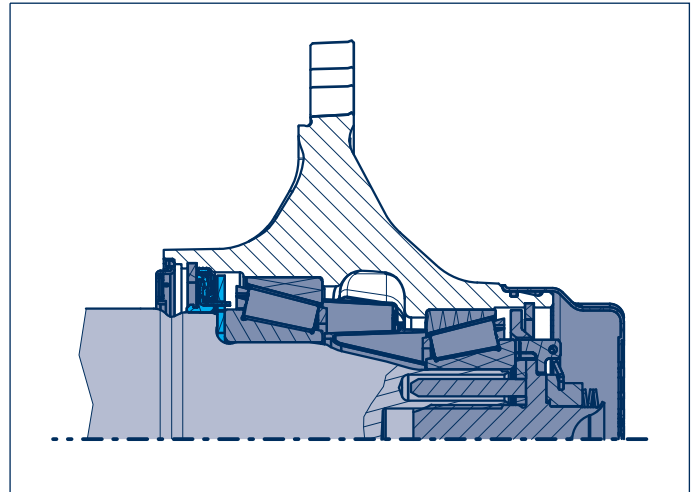
The axle nut previously used is being replaced by an axle screw with integrated torque limiter.

This product introduction affects all **H, KH** and **NH** ECO-^{Plus} versions up to 9 t axle load (drum-braked rigid and steering axles).

ECO Plus 2 bearing – Features and benefits

Advantages of ECO Plus 2:

- ⊙ Axle screw with torque limiter for optimum bearing adjustment
- ⊙ Simple lubrication of the bearing by means of a grease cartridge
- ⊙ Existing approvals and homologations remain in force
- ⊙ Encapsulated ECO bearing unit
- ⊙ 5+3 years ECO Plus warranty (on-road)
- ⊙ ECO system: Bearing removal according to the Formula 1 principle
- ⊙ Globally available DIN ISO taper roller bearings, which can be replaced individually, just like the seal elements.



Hubs, hub bearings 5

General

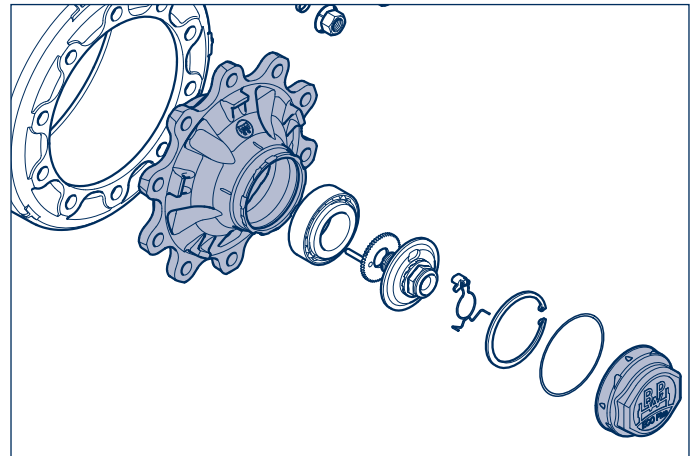
Hub cap / ECOMETER

BPW trailer axles with the ECO Plus 2 Unit have hub caps (and ECOMETERS) with a bayonet lock.

The bayonet lock replaces the previously usual threaded connection.

An installation spanner with SW 120 (BPW item number 03.339.05.02.0, see also BPW tool catalogue) is needed for assembly or disassembly of the new hub caps with the bayonet lock.

 **An impact driver must not be used for assembly/disassembly of hub caps or ECOMETERS with a bayonet lock!**



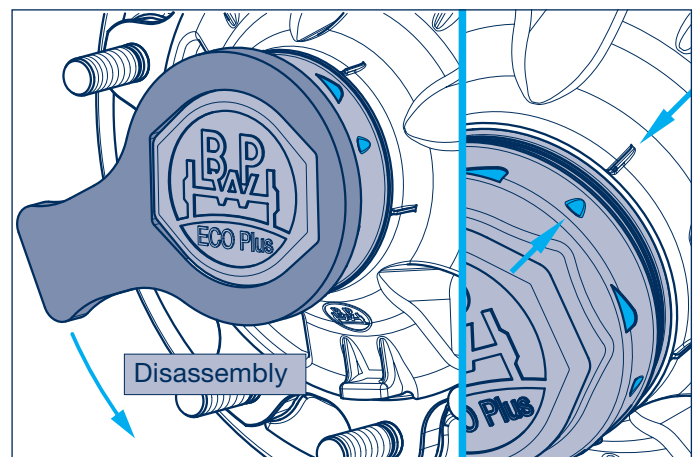
Disassembly

For disassembly, the hub cap is turned counterclockwise approx. 30° with the installation spanner (Fig.).

When turned further, the hub cap lifts clearly away from the hub seat.

The released position is also indicated by markings on the hub cap and on the wheel hub (Fig. / arrows).

In the released position, the hub cap can be removed axially from the wheel hub.

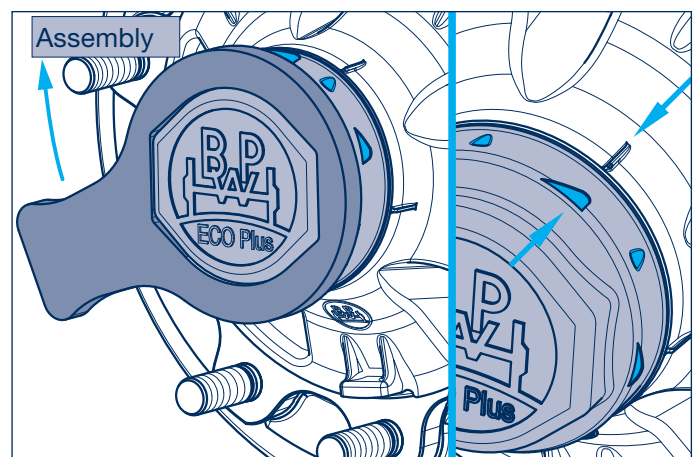


Assembly

The seal between the hub cap and the wheel hub takes the form of an O-ring in the case of the ECO Plus 2 Unit.

The O-ring is inserted in the groove on the neck of the wheel hub and is to be replaced at every assembly. The hub cap itself is to be given a thin coating of ECO-Li^{Plus} BPW special longlife grease inside in the area of the bayonet lock, before assembly.

Corresponding markings in the hub cap and on the hub make it easier to assemble the hub cap. The figure shows the hub cap in the correct position for fitting, with the spanner engaged. After being placed in position, the hub cap is axially pressed onto the hub and at the same time turned in clockwise direction. The hub cap is tightly seated when the position shown in Fig. (arrows) has been reached.



H

K

N

5 Hubs, hub bearings

General

BPW hub bearings ECO Plus 3 bearing

Starting from the special BPW ECO Plus 2 hub system, the ECO Unit was further developed and resulted in the ECO Plus 3 bearing.

The hub requires no maintenance and has an integrated multi-seal system to protect the roller bearings against dust and dirt.

With the ECO Plus 3, the hub cap has a screw connection (M 135 x 2 / SW 110), which allows comfortable assembly and disassembly of the hub cap.

The tightening torque of the hub cap is 350 Nm.

An O-ring inserted between wheel hub and hub cap guarantees sealing against moisture and dirt.

Grease is supplied to the wheel bearings by means of a grease cartridge located between the bearing points.

A central bolt with integrated torque limiting function ensures the bearing preload is always optimal.

ECO Plus 3 bearing – Features and benefits

- ⊙ The encapsulated bearing unit (ECO Unit) requires no maintenance and has an integrated multi-seal system to protect the roller bearings from dust and dirt
- ⊙ Integrated torque limiting function of the axle nuts (ECO Plus 3) prevents wrong usage during tightening
- ⊙ Bearings are precisely re-adjusted after every disc replacement
- ⊙ 5+3 years ECO Plus warranty (on-road) without mileage limit
- ⊙ Compact bearing system with DIN-ISO roller bearings available worldwide for excellent availability and rapid service
- ⊙ Removal of the complete hub unit - thanks to central bolt - with simple tools
- ⊙ Simple lubrication of the bearing by means of a grease cartridge
- ⊙ Excellent bearing service life with minimal life cycle costs
- ⊙ Existing approvals and homologations remain in force

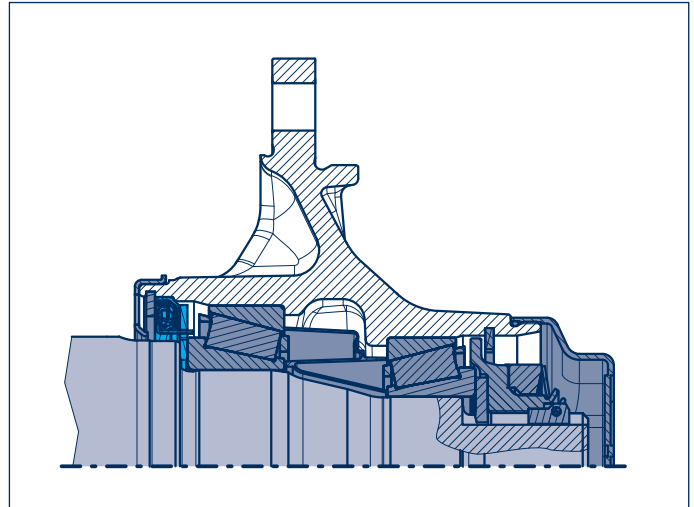
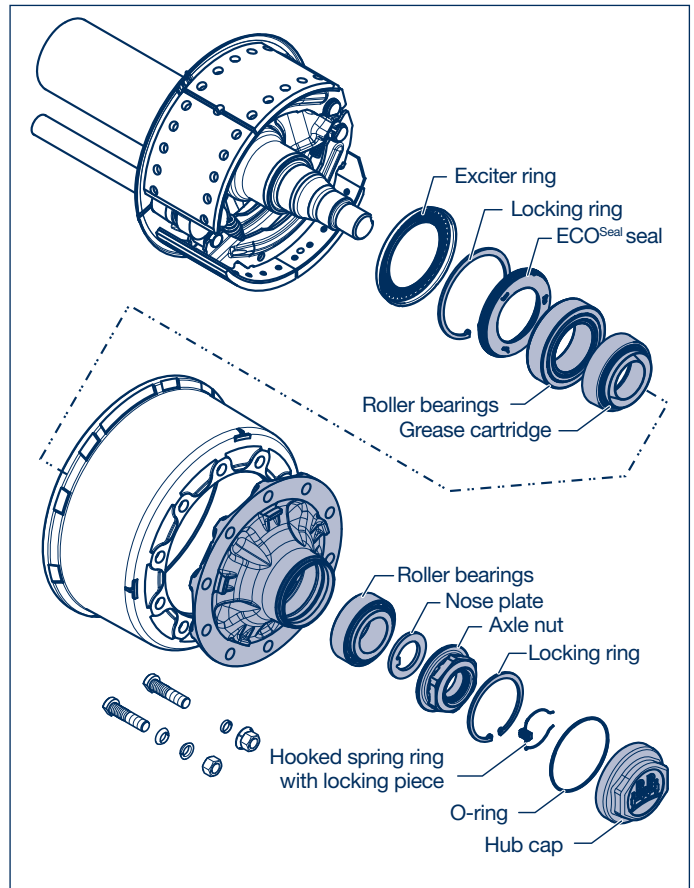


Fig. ECO Plus 3 8 - 9 t



5 Hubs, hub bearings

5.1 Hub bearings

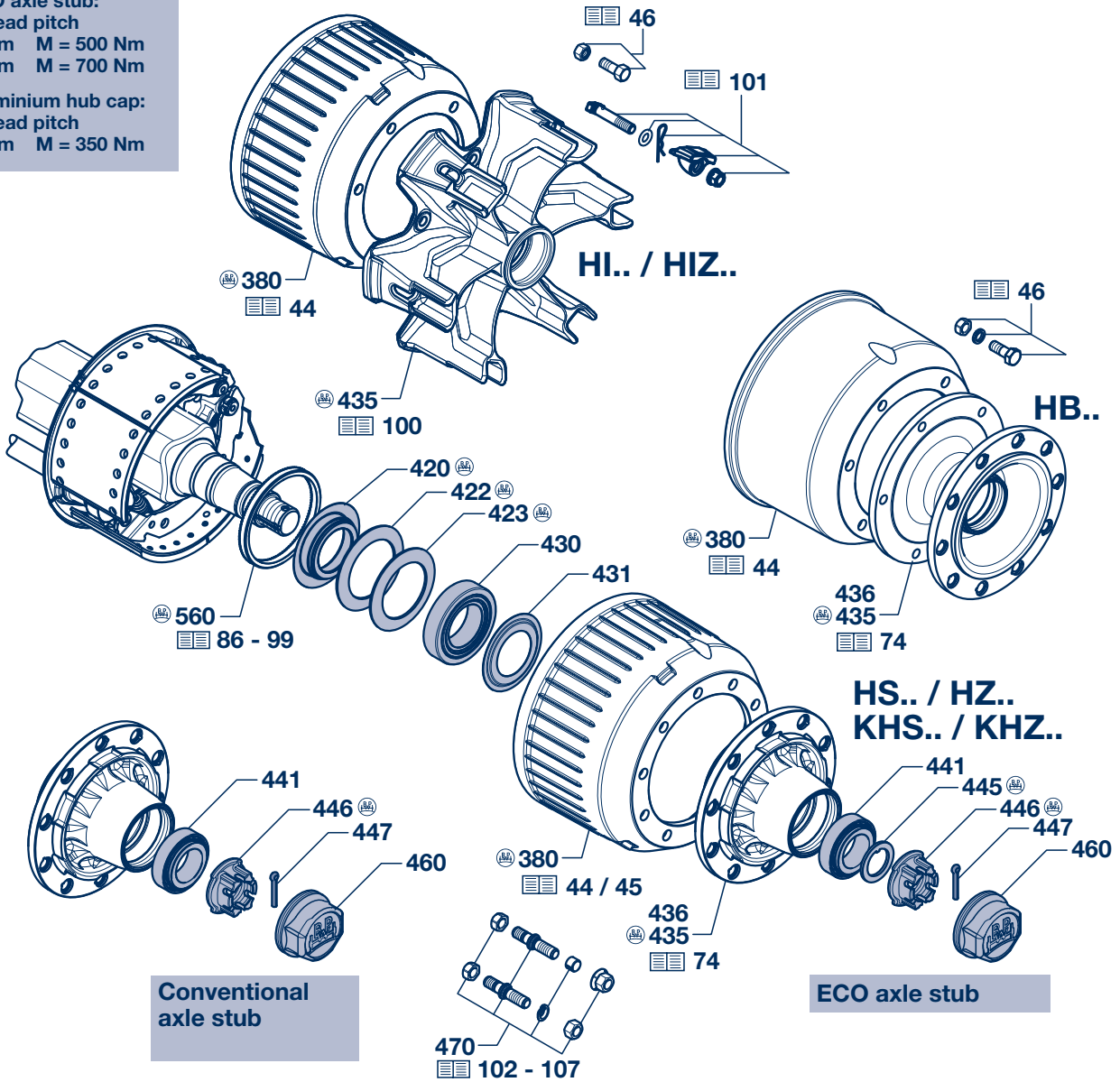
5.1.1 Conventional hub bearing

H.. / K..

H
R
K

ECO axle stub:
Thread pitch
2 mm M = 500 Nm
3 mm M = 700 Nm

Aluminium hub cap:
Thread pitch
2 mm M = 350 Nm



Grease change, quantities of grease and bearing adjustment, see page 80

Hub caps with integrated odometer see page 108 - 111

Uniform axle stubs for all BPW trailer axles

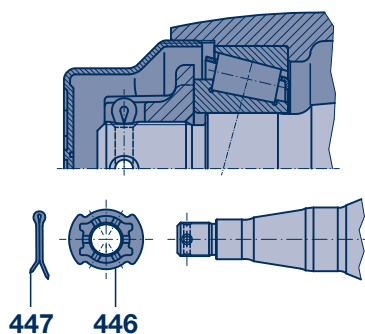
In January 1995, BPW axle beams and steering spindle groups were converted to ECO axle stubs. These differ from the conventional axle stubs by a keyway in the thread area.

A modified axle nut (Item 446) and additionally a washer (Item 445) are used to fit the conventional bearing to ECO axle stubs.

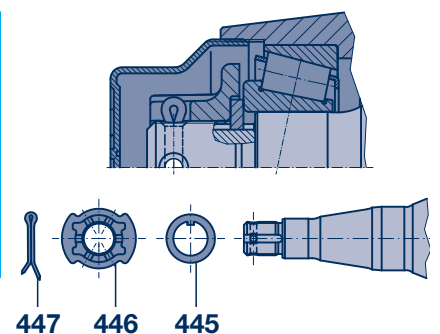
Any spare axle beams and steering pivot assemblies supplied are fitted with these modified axle nuts and washers.

If the ECO hub system is assembled, these parts are not required.

Conventional axle stub



ECO axle stub



Hubs, hub bearings 5

Hub bearing 5.1

Conventional hub bearing 5.1.1

H.. / K..

Item	Designation	BPW item no.	Dimension	BPW item no.	Dimension	BPW item no.	Dimension
		KRBM 6408 --.65.---.---		H.. / R..; K.. 6.5 - 9 t -.06. / 08. / 09.---.---		H.. / R..; K.. 10 - 12 t --.10.---.---	
380	Brake drum	see page 45		see page 44 / 45		see page 44 / 45	
418	Roller bearing repair kit, with thrust washer and hub cap, Item 420 - 431, 441, 447, 460	-		09.801.02.17.0 for 1 axle side		09.801.02.18.0 for 1 axle side	
420	Thrust washer	05.370.06.11.0		05.370.06.48.0		05.370.07.43.0	
422	Ring (Nylon)	03.310.97.14.0	Ø 105 / 141 x 2.5	03.310.97.31.0	Ø 110 / 141 x 2.5	03.310.98.21.0	Ø 128 / 165 x 2.5
423	Ring (Nylon)	03.310.97.13.0	Ø 100 / 134 x 2.5	03.310.97.32.0	Ø 104 / 136 x 2.5	03.310.97.30.0	Ø 120 / 157 x 2.5
430	Roller bearings	02.6410.29.00	33215	02.6410.24.00	33116	02.6410.23.00	33118
431	Dust cover (oil catcher)	03.010.04.09.0	Ø 79 / 129 x 8.5	03.010.04.15.0	Ø 84 / 129 x 8.5	03.010.05.22.0	Ø 94 / 149 x 8.5
435	Hub	see page 74		see page 74		see page 74	
441	Roller bearings	02.6410.25.00	32310	02.6410.25.00	32310	02.6410.22.00	33213
Conventional axle stub (see page 60)							
446	Castle nut	03.262.16.10.0	M 42 x 2 / SW 65 / H 36	03.262.16.08.0	M 42 x 2 / SW 65	03.262.17.12.0	M 52 x 2 / SW 80
447	Split pin	02.6201.82.01	8 x 50 / 1234	02.6201.82.01	8 x 50 / 1234	02.6201.84.01	8 x 63 / 1234
ECO axle stub (see page 60)							
445	Washer	03.320.73.13.0	Ø 43 / 61 x 5.8	03.320.73.13.0	Ø 43 / 61 x 5.8	03.320.64.01.0	Ø 53 / 76 x 5.8
446	Castle nut	03.262.16.15.0	M 42 x 2 / SW65	03.262.16.15.0	M 42 x 2 / SW 65	03.262.17.18.0	M 52 x 2 / SW 80
447	Split pin	02.6201.82.01	8 x 50 / 1234	02.6201.82.01	8 x 50 / 1234	02.6201.84.01	8 x 63 / 1234
460	Hub cap (standard)	03.212.23.32.0	M 115 x 2 / SW 95 / H 49	03.212.23.09.0	M 115 x 2 / SW 95	03.212.24.07.0	M 125 x 2 / SW 110
	Hub cap (chromate) ¹⁾	-		03.212.23.21.0	M 115 x 2 / SW 95	-	

¹⁾ Not corrosion-resistant acc. to DIN 50021

H

R

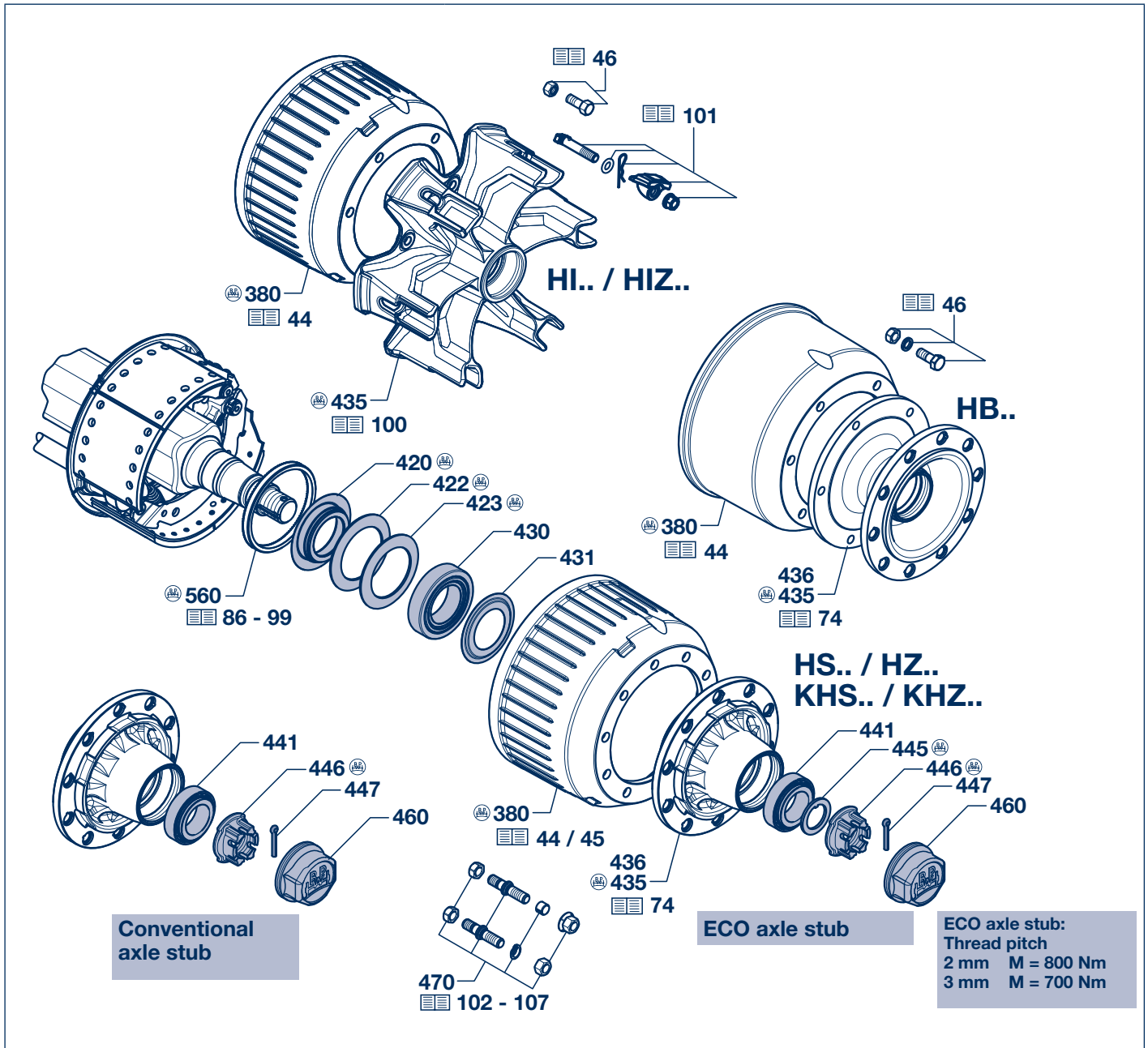
K

5 Hubs, hub bearings

5.1 Hub bearings

5.1.1 Conventional hub bearing

H.. / K..



Conventional axle stub

ECO axle stub

ECO axle stub:	
Thread pitch	
2 mm	M = 800 Nm
3 mm	M = 700 Nm

Grease change, quantities of grease and bearing adjustment, see page 80

Hub caps with integrated odometer, see page 108 - 111

Uniform axle stubs for all BPW trailer axles

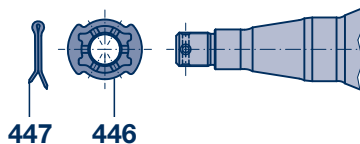
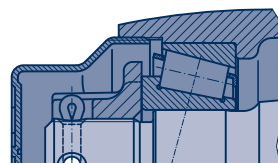
In January 1995, BPW axle beams and steering spindle groups were converted to ECO axle stubs. These differ from the conventional axle stubs by a keyway in the thread area.

A modified axle nut (Item 446) and additionally a washer (Item 445) are used to fit the conventional bearing to ECO axle stubs.

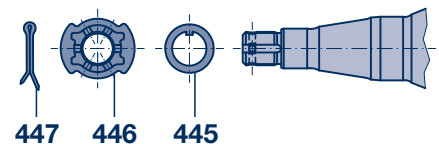
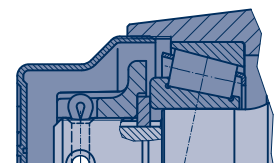
Any spare axle beams and steering pivot assemblies supplied are fitted with these modified axle nuts and washers.

If the ECO hub system is assembled, these parts are not required.

Conventional axle stub



ECO axle stub



Hubs, hub bearings 5

Hub bearing 5.1

Conventional hub bearing 5.1.1

H.. / K..

Item	Designation	BPW item no.	Dimension	BPW item no.	Dimension
		H.. / K..		H..	
		13 - 14 t (14000-1)		16 - 18 t	
		--.14.---.---		--.16.---.---	
380	Brake drum	see page 44 / 45		see page 44 / 45	
418	Roller bearing repair kit, with thrust washer and hub cap, Item 420 - 431, 441, 447	09.801.07.12.0	for 1 axle side	-	
420	Thrust washer	05.370.07.20.0		05.370.07.04.0	
422	Ring (Nylon)	03.310.38.21.0	Ø 130 / 186 x 4	03.310.99.01.0	Ø 149 / 212 x 3.5
423	Ring (Nylon)	03.310.38.20.0	Ø 124 / 181 x 4	03.310.99.02.0	Ø 144 / 205 x 3.5
430	Roller bearings	02.6410.28.00	32219	02.6410.26.00	32222
431	Dust cover (oil catcher)	03.010.05.21.0	Ø 99 / 169 x 8.5	03.010.06.12.0	Ø 114 / 199 x 8.5
435	Hub	see page 74		see page 74	
441	Roller bearings	02.6410.29.00	33215	02.6410.27.00	32314
Conventional axle stub (see page 62)					
446	Castle nut	03.262.17.11.0	M 60 x 2 / SW 85	03.262.17.20.0	M 60 x 2 / SW 85
447	Split pin	02.6202.03.01	10 x 71 / 1234	02.6202.03.01	10 x 71 / 1234
ECO axle stub (see page 62)					
445	Ring	03.310.75.12.0	Ø 61 / 88 x 5.8	03.310.75.12.0	Ø 61 / 88 x 5.8
446	Castle nut	03.262.17.19.0	M 60 x 2 / SW 85	03.262.17.21.0	M 60 x 2 / SW85
447	Split pin	02.6202.03.01	10 x 71 / 1234	02.6202.03.01	10 x 71 / 1234
459	O-ring	-		02.5678.73.00	Ø 159 x 3.53
460	Hub cap (External thread)	03.212.25.02.0	M 135 x 3 / SW 120	03.212.26.01.0	M 155 x 3 / SW 120
	Hub cap (Internal thread)	03.212.26.20.0	M 150 x 2 / SW 120	03.212.26.25.0	M 170 x 2 / SW 140

Hubs and hub caps with hub cap thread M 135 x 3 / M 155 x 3 are being replaced by hubs and hub caps with thread M 150 x 2 / M 170 x 2. Note the modified components.

14 t until 11/2004

Hub with internal thread M 135 x 3

Hub cap with external thread M 135 x 3

16 t until 11/2016

Hub with internal thread M 155 x 3

Hub cap with external thread M 155 x 3

14 t up to 11/2004

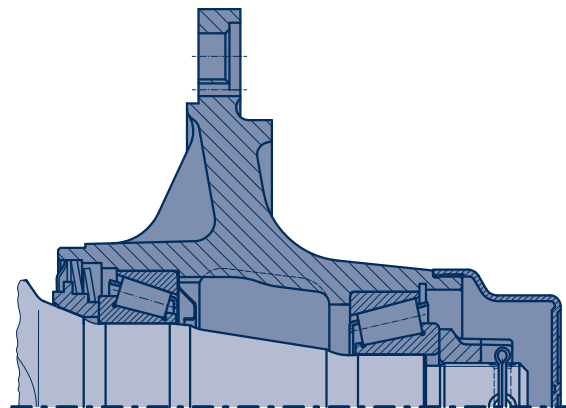
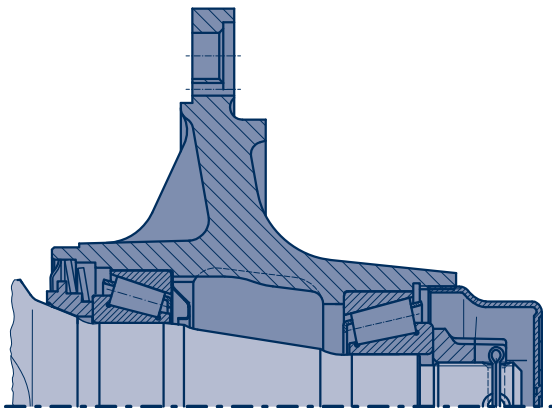
Hub with external thread M 150 x 2

Hub cap with internal thread M 150 x 2

16 t up to 11/2016

Hub with external thread M 170 x 2

Hub cap with internal thread M 170 x 2

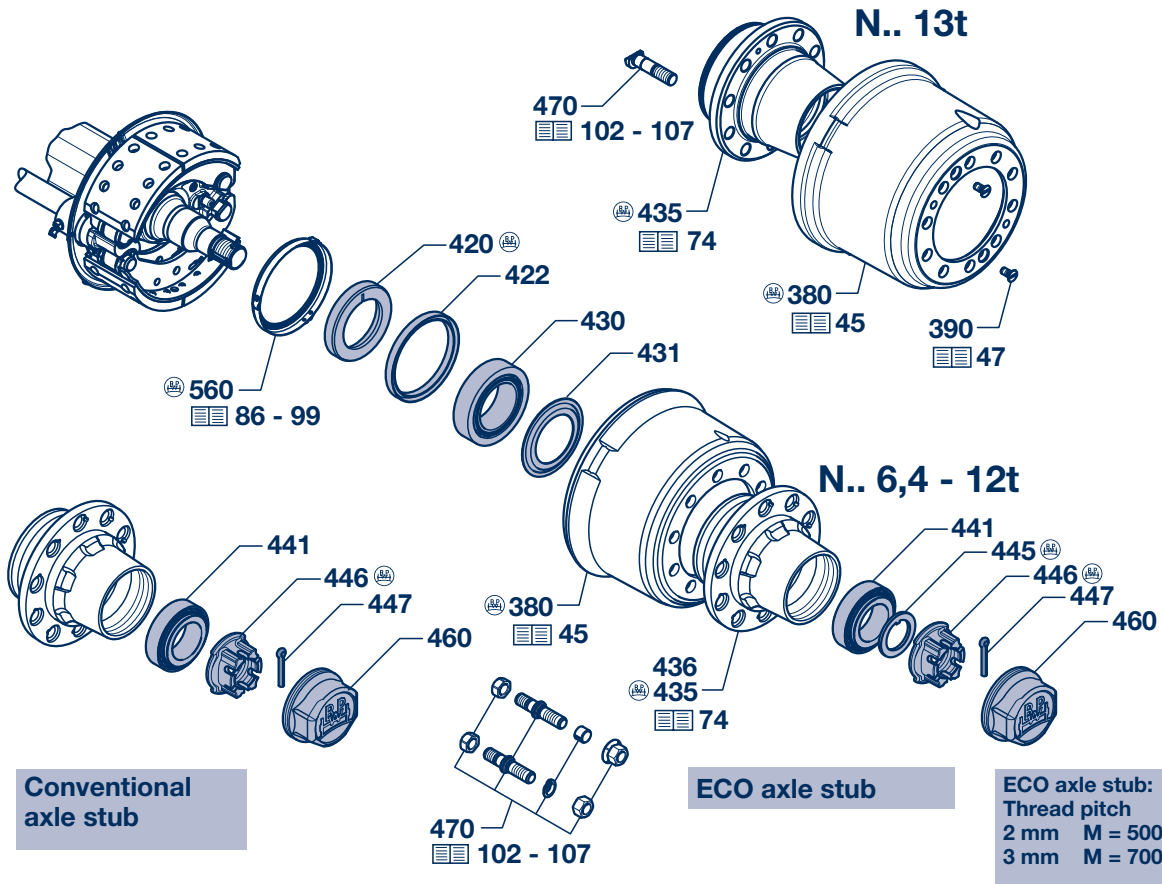


5 Hubs, hub bearings

5.1 Hub bearings

5.1.1 Conventional hub bearing

N..



☞ Grease change, quantities of grease and bearing adjustment, see page 80

☞ Hub caps with integrated odometer, see page 108 - 111

Uniform axle stubs for all BPW trailer axles

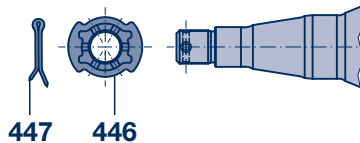
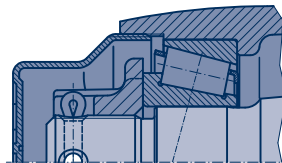
In January 1995, BPW axle beams and steering spindle groups were converted to ECO axle stubs. These differ from the conventional axle stubs by a keyway in the thread area.

A modified axle nut (Item 446) and additionally a washer (Item 445) are used to fit the conventional bearing to ECO axle stubs.

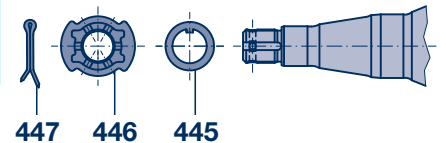
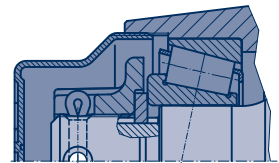
Any spare axle beams and steering pivot assemblies supplied are fitted with these modified axle nuts and washers.

If the ECO hub system is assembled, these parts are not required.

Conventional axle stub



ECO axle stub



Hubs, hub bearings 5

Hub bearing 5.1

N..

Conventional hub bearing 5.1.1

Item	Designation	BPW item no.	Dimension	BPW item no.	Dimension	BPW item no.	Dimension
		N.. 6.4 - 9 t --.06 / 08 / 09.----,---		N.. 10 - 12 t --.10.----,---		N.. 13 - 14 t --.14.----,---	
380	Brake drum	see page 45		see page 45		see page 45	
418	Roller bearing repair kit, with thrust washer and hub cap, Item 420 - 431, 441, 447, 460	09.801.02.19.0	for 1 axle side	09.801.02.20.0	for 1 axle side	-	
420	Thrust washer	03.370.07.45.0	Ø 86 / 125 x 22	03.370.07.44.0	Ø 96 / 145x22	03.370.08.06.0	Ø 97 / 160 x 32
422	Oil seal	02.5664.26.57	Ø 125 / 143 x 13	02.5664.46.57	Ø 145 / 167 x 13	02.5664.64.57	Ø 160 / 188 x 14
430	Roller bearings	02.6410.24.00	33116	02.6410.23.00	33118	02.6410.28.00	32219
431	Dust cover (oil catcher)	03.010.04.15.0	Ø 84 / 129 x 8.5	03.010.05.22.0	Ø 94 / 149 x 8.5	03.010.05.21.0	Ø 99 / 169 x 8.5
435	Hub	see page 74		see page 74		see page 74	
441	Roller bearings	02.6410.25.00	32310	02.6410.22.00	33213	02.6410.29.00	33215
Conventional axle stub (see page 64)							
446	Castle nut	03.262.16.08.0	M 42 x 2 / SW65	03.262.17.12.0	M 52 x 2 / SW80	03.262.17.11.0	M 60 x 2 / SW85
447	Split pin	02.6201.82.01	8 x 50 / 1234	02.6201.84.01	8 x 63 / 1234	02.6202.03.01	10 x 71/1234
ECO axle stub (see page 64)							
445	Washer	03.320.73.13.0	Ø 43/61x5.8	03.320.64.01.0	Ø 53/76x5.8	-	
	Ring	-		-		03.310.75.12.0	Ø 61 / 88 x 5.8
446	Castle nut	03.262.16.15.0	M 42 x 2 / SW65	03.262.17.18.0	M 52 x 2 / SW80	03.262.17.19.0	M 60 x 2 / SW85
447	Split pin	02.6201.82.01	8 x 50 / 1234	02.6201.84.01	8 x 63 / 1234	02.6202.03.01	10 x 71/1234
460	Hub cap (standard)	03.212.23.09.0	M 115 x 2 / SW 95	03.212.24.07.0	M 125 x 2 / SW 110	03.212.25.02.0	M 135 x 3 / SW 120
	Hub cap (chromate) ¹⁾	03.212.23.21.0	M 115 x 2 / SW 95	-		-	

¹⁾ Not corrosion-resistant acc. to DIN 50021

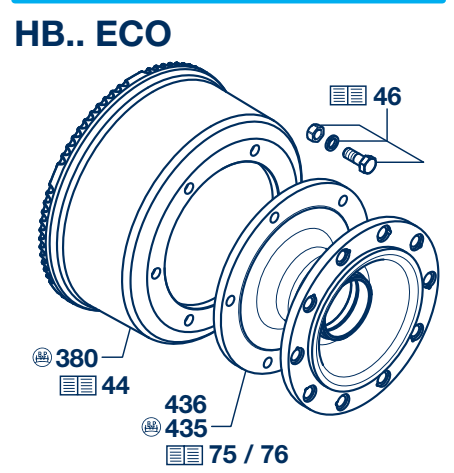
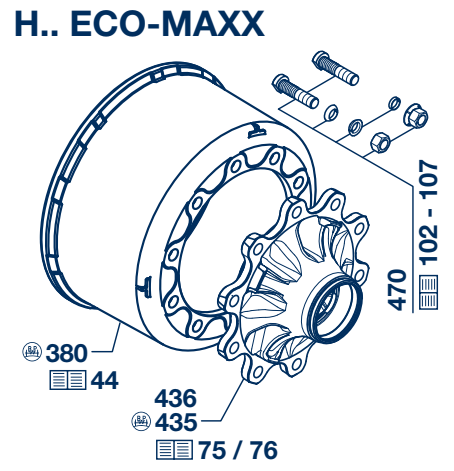
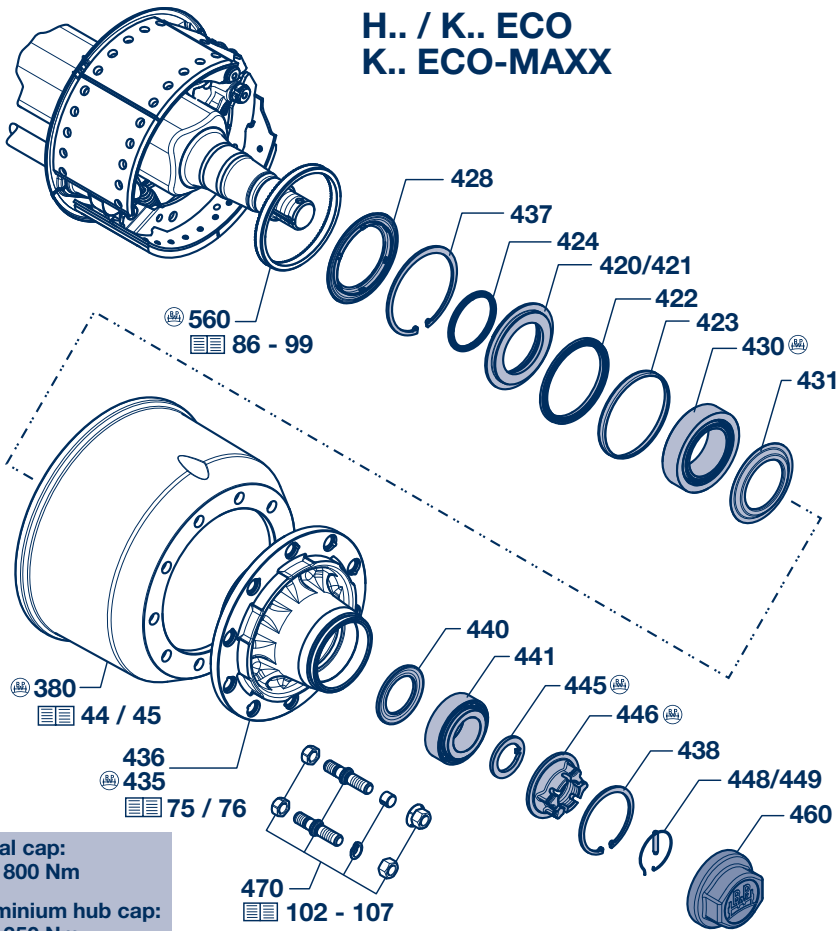
5 Hubs, hub bearings

5.1 Hub bearings

5.1.2 ECO / ECO MAXX hub system (ECO Unit)

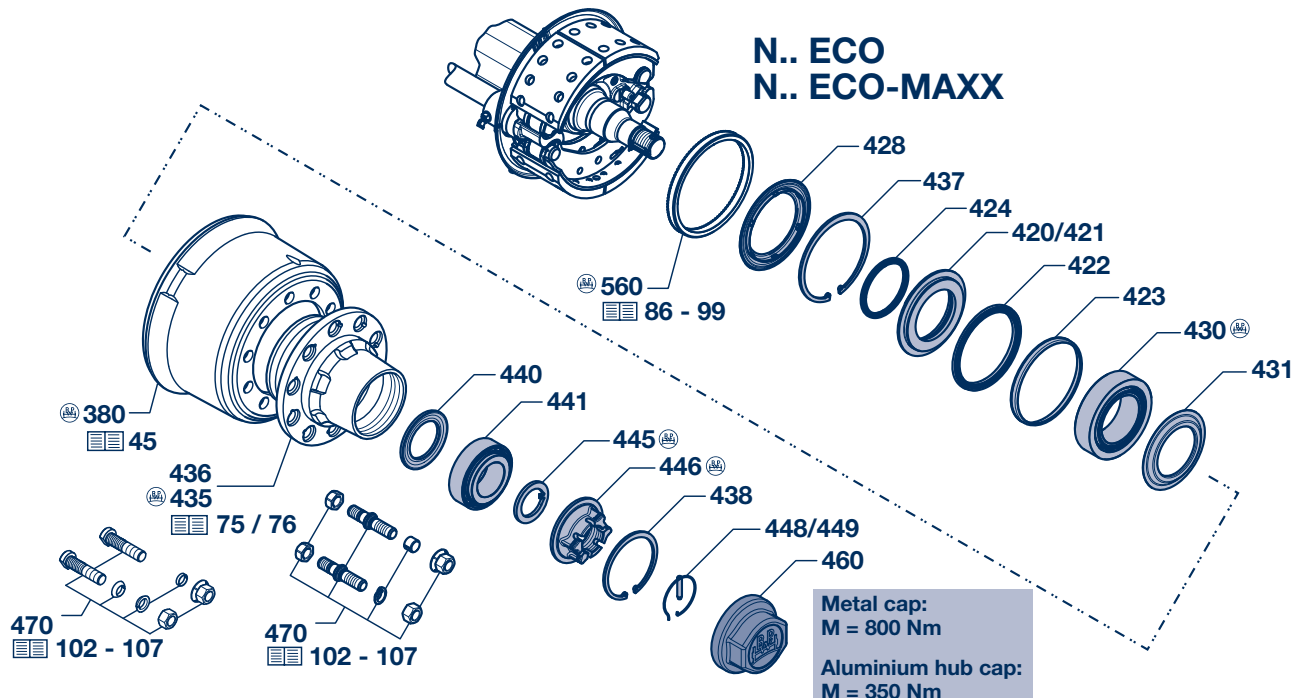
H.. / K.. / N..

H
K
N



Metal cap:
M = 800 Nm
Aluminium hub cap:
M = 350 Nm

Metal cap:
M = 800 Nm
Aluminium hub cap:
M = 350 Nm



Hubs, hub bearings 5

Hub bearing 5.1

H.. / K.. / N..

ECO / ECO MAXX hub system (ECO Unit) 5.1.2

Item	Designation	BPW item no.	Dimension	BPW item no.	Dimension	BPW item no.	Dimension
		H.. / R.. / K.. / N.. ECO / ECO MAXX 6.5 - 9 t --.36 / 38.---,---		H.. / R.. / K.. / N.. ECO / ECO MAXX 10 - 12 t --.40.---,--- --.41.---,---		H.. ECO 13 t --.44.---,---	
380	Brake drum	see page 44 / 45		see page 44 / 45		see page 44	
418	Roller bearing repair kit, with axle nut and hub cap, Item 420, 423, 428 - 431, 437 - 460	09.801.02.33.0	for 1 axle side	09.801.02.34.0	M 135 x 2 for 1 axle side	-	
				09.801.07.21.0	M 136 x 2.5 for 1 axle side		
419	Roller bearing repair kit, without axle nut and hub cap, Item 420, 423, 428 - 431, 440 - 445	09.801.02.72.0	for 1 axle side	09.801.06.89.0	for 1 axle side	-	
420	Thrust washer cpl. Item 421, 422, 424	05.370.07.67.0		05.370.07.65.0		05.370.08.19.0	
421	Thrust washer	03.370.07.60.0	Ø 86 / 115 / 139 x 22	03.370.07.62.0	Ø 96 / 135 / 159 x 22	03.370.08.18.0	Ø 97 / 177 / 179 x 34
422	Oil seal	02.5664.57.00	137-115-10.5	02.5664.58.00	157-135-8	02.5664.59.00	177-155-8
423	Ring (bearing race)	02.5683.62.00	Ø 131 / 140x12	02.5683.63.00	Ø 151 / 160x12	02.5683.69.00	Ø 171 / 179x12
424	O-ring	02.5677.90.40	Ø 90 x 3	02.5678.00.00	Ø 100 x 3	-	
428	Dirt seal	02.5681.98.00	Ø 103 / 147x15	03.120.48.13.0	Ø 133 / 168x15	-	
430	Roller bearings	02.6410.24.00	33116	02.6410.23.00	33118	02.6410.28.00	32219
431	Dust cover (oil catcher)	03.010.93.33.0	Ø 84 / 129 x 8.5	03.010.93.34.0	Ø 94 / 149 x 8.5	03.010.23.03.0	Ø 103 / 169x8.5
435	Hub	see page 75 / 76		see page 75 / 76		see page 75 / 76	
437	Locking ring	02.5606.40.90	140 x 4 / 472	02.5606.60.90	160 x 4 / 472	02.5606.68.90	180 x 4 / 472
438	Locking ring	02.5606.12.90	112 x 4 / 472	02.5606.22.90	122 x 4 / 472	02.5606.32.90	132 x 4 / 472
440	Thrust washer	03.370.25.16.0	Ø 54 / 98 x 9	03.370.26.24.0	Ø 71 / 108 x 9.5	03.370.26.23.0	Ø 77 / 120x10
441	Roller bearings	02.6410.25.00	32310	02.6410.22.00	33213	02.6410.29.00	33215
445	Washer	03.320.73.13.0	Ø 43 / 61 x 5.8	03.320.64.01.0	Ø 53 / 76 x 5.8	-	
	Ring	-		-		03.310.75.12.0	Ø 61 / 88 x 5.8
446	Axle nut	03.266.46.02.0	M 42 x 2/ SW 65 / Ø 110	03.266.47.03.0	M 52 x 2 / SW 80 / Ø 120	03.262.17.17.0	M 60 x 2 / SW 85 / Ø 130
448	Hooked spring ring	03.188.03.06.0	Ø 54 x 2	03.188.04.08.0	Ø 66 x 2	03.188.04.09.0	Ø 76 x 2
449	Bolt	03.084.71.17.0	Ø 8 x 45	03.084.71.17.0	Ø 8 x 45	03.084.72.63.0	Ø 10 x 45
460	Hub cap (standard)	03.212.24.25.0	M 125 x 2 / SW 110	03.212.25.08.0*	M 135 x 2 / SW 110	03.212.26.14.0	M 150 x 2 / SW 120
		-		03.212.25.33.0*	M 136 x 2.5 SW 110	-	
	Hub cap (chromate) ¹⁾	-		03.212.25.23.0*	M 135 x 2 / SW 110	-	
	Hub cap (Aluminium, for aluminium hub)	03.212.29.13.0	M 135 x 2 / SW 110	-		-	

¹⁾ Not corrosion-resistant acc. to DIN 50021

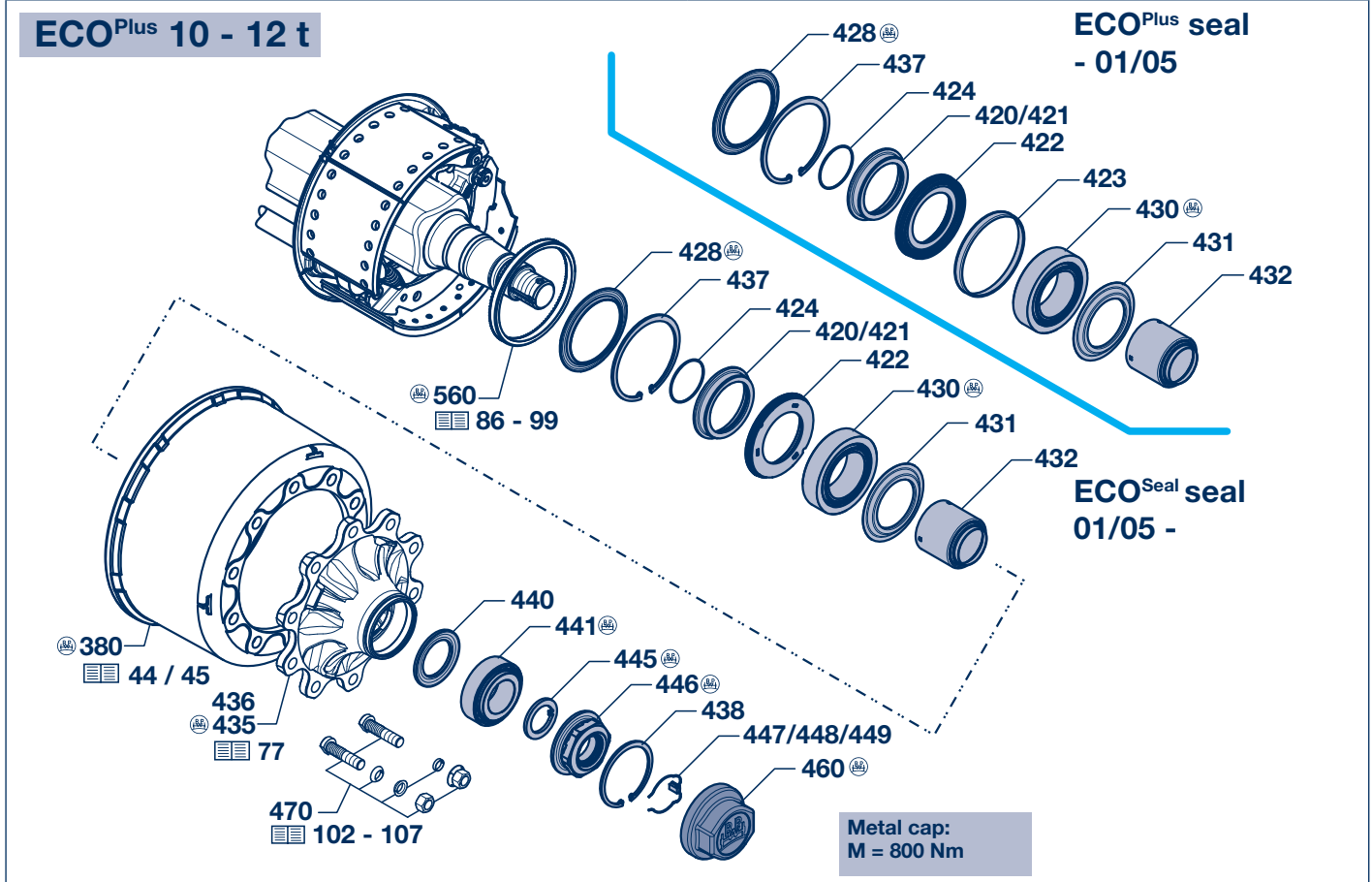
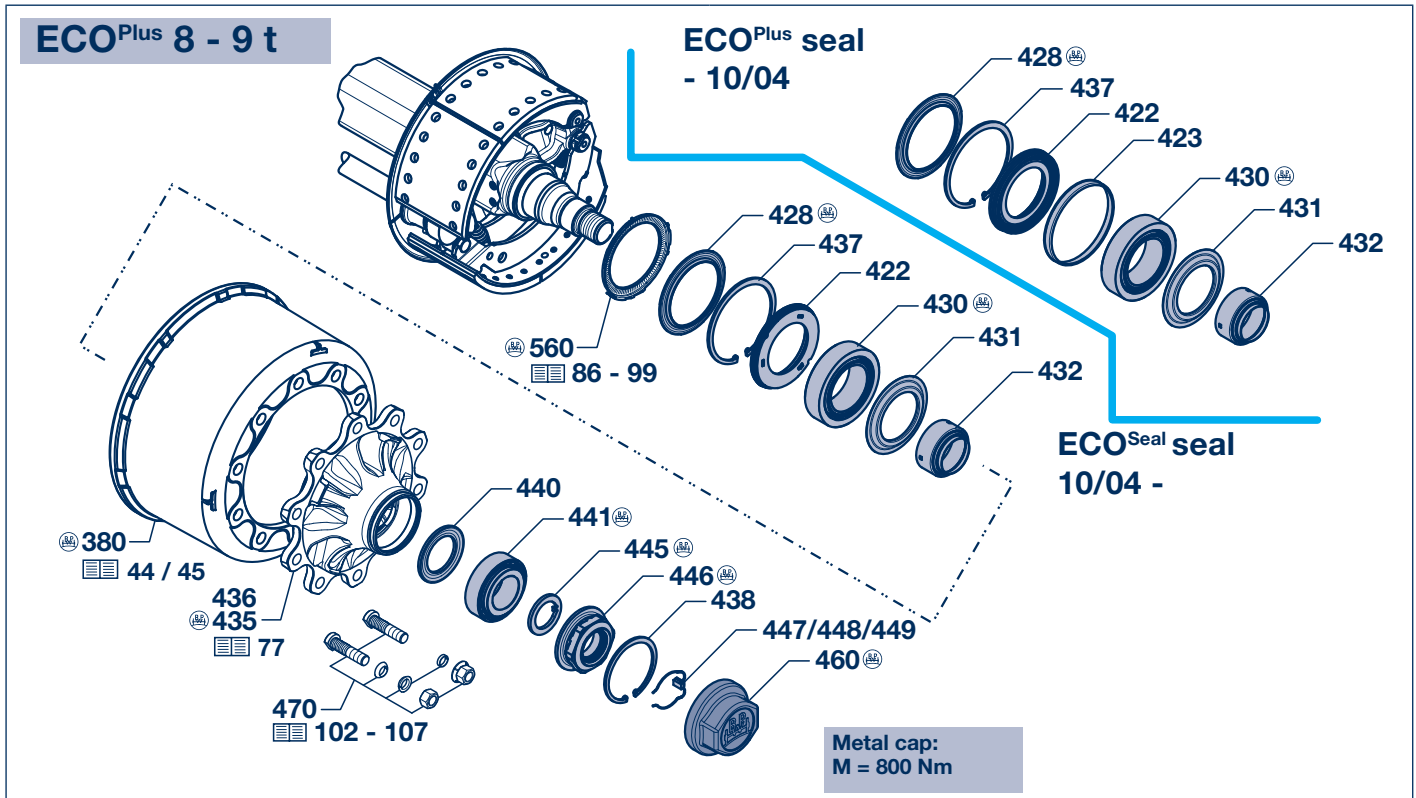
* **Changed hub cap thread from 09/00.
M 135 x 2 was changed to M 136 x 2.5.
Note thread size stamped on the cap!**

5 Hubs, hub bearings

5.1 Hub bearings

5.1.3 ECO^{Plus} hub system (ECO^{Plus} Unit)

H.. / K..



Grease change, quantities of grease and bearing adjustment, see page 82

Hub caps with integrated odometer, see page 108 - 111

Hubs, hub bearings 5

Hub bearing 5.1

ECO^{Plus} hub system (ECO^{Plus} Unit) 5.1.3

H.. / K..

Item	Designation	BPW item no.	Dimension		
		H.. / KH.. ECO^{Plus} 8 - 9 t --.48.---.---		H.. / KH.. ECO^{Plus} 10 - 12 t --.50.---.---	
380	Brake drum	see page 44 / 45		see page 44 / 45	
		ECO^{Plus} seal - 10 / 04		ECO^{Plus} seal - 01 / 05	
419	Roller bearing repair kit, without axle nut and hub cap, Item 420, 423, 428, 430, 431, 440 - 445	-		09.801.06.89.0	for 1 axle side
420	Thrust washer cpl. Item 421, 422, 424	-		05.370.07.65.0	
421	Thrust washer	-		03.370.07.62.0	Ø 96 / 135 / 159 x 22
422	Oil seal	02.5664.68.00	Ø 120 / 157.5 x 20	02.5664.58.00	157-135-8
423	Ring (bearing race)	02.5683.80.00	Ø 151 / 157.6 x 20	02.5683.63.00	Ø 151 / 160 x 12
424	O-ring	-		02.5678.00.00	Ø 100 x 3
428	Dirt seal	03.120.48.15.0	Ø 117.5 / 160 x 9.5	03.120.48.13.0	Ø 133 / 168 x 15
		ECO^{Seal} seal 10 / 04 -		ECO^{Seal} seal 01 / 05 -	
419	Roller bearing repair kit, without axle nut and hub cap, Item 420, 422, 430, 431, 432, 440, 441	09.801.06.26.1	for 1 axle side	09.801.07.04.1	for 1 axle side
420	Thrust washer cpl. item 421, 424	-		05.370.07.73.0	
421	Thrust washer	-		03.370.07.72.0	Ø 96 / 117.5 / 132 x 22
422	ECO ^{Seal} seal	02.5664.74.00	Ø 117.5 x 158 x 18.9	02.5664.74.00	Ø 117.5 x 158 x 18.9
424	O-ring	-		02.5678.00.00	Ø 100 x 3
428	Dirt seal ¹⁾	03.120.48.15.0	Ø 117.5 / 160 x 9.5	03.120.48.15.0	Ø 117.5 / 160 x 9.5
430	Roller bearings	02.6410.23.00	33118	02.6410.23.00	33118
431	Dust cover (oil catcher)	03.010.93.34.0	Ø 94 / 149 x 8.5	03.010.93.34.0	Ø 94 / 149 x 8.5
432	Seal	03.120.45.15.0	Ø 67 / 95 x 49.5	03.120.45.16.0	Ø 67 / 93 x 90.5
435	Hub	see page 77		see page 77	
437	Locking ring	02.5606.58.90	158 x 4 / 472	02.5606.60.90	140 x 4 / 472 (- 01 / 05)
				02.5606.58.90	158 x 4 / 472 (01 / 05 -)
438	Locking ring	02.5606.22.90	122 x 4 / 472	02.5606.22.90	122 x 4 / 472
440	Thrust washer	03.370.26.24.0	Ø 71 / 108 x 8	03.370.26.24.0	Ø 71 / 108 x 8
441	Roller bearings	02.6410.22.00	33213	02.6410.22.00	33213
445	Washer	03.320.64.01.0	Ø 53 / 76 x 5.8	03.320.64.01.0	Ø 53 / 76 x 5.8
		03.320.65.05.0	Ø 53 / 83 x 5.8	03.320.65.05.0	Ø 53 / 83 x 5.8
446	Axle nut	05.266.47.06.0 ³⁾	M 52 x 2 / SW 95	05.266.47.06.0 ³⁾	M 52 x 2 / SW 95
		05.266.47.11.0	M 52 x 2 / SW 95	05.266.47.11.0	M 52 x 2 / SW 95
447	Hooked spring ring cpl. item 448 + 449	05.188.04.15.0		05.188.04.15.0	
448	Hooked spring ring	03.188.04.10.0		03.188.04.10.0	
449	Locking piece	03.277.00.07.0		03.277.00.07.0	
460	Hub cap (standard)	03.212.25.30.0*	M 135 x 2 / SW 110	03.212.25.30.0*	M 135 x 2 / SW 110
		03.212.25.31.0*	M 136 x 2.5 / SW 110	03.212.25.31.0*	M 136 x 2.5 / SW 110
	Hub cap (chromate) ²⁾	03.212.25.57.0*	M 136 x 2.5 / SW 110	03.212.25.57.0*	M 136 x 2.5 / SW 110

¹⁾ Eliminated from 7 / 07 with ECO^{Seal}.

²⁾ Not corrosion-resistant acc. to DIN 50021

³⁾ Replaced by 05.266.47.11.0 + 03.320.65.05.0

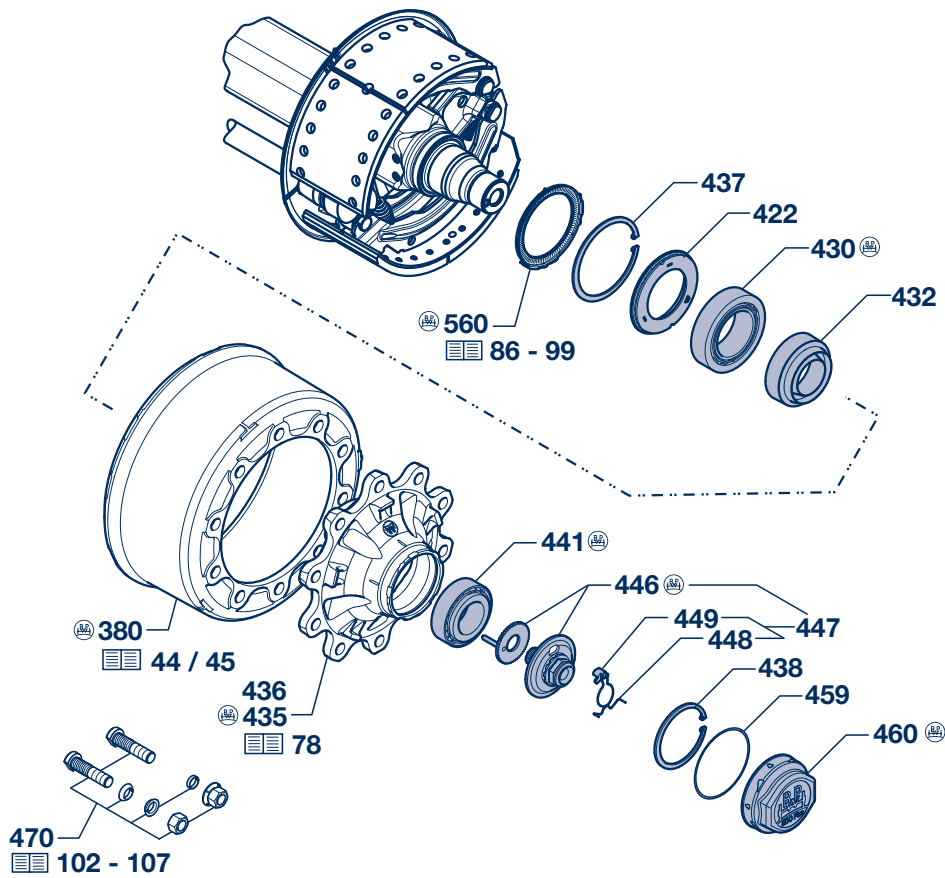
* **Changed hub cap thread from 09/00.**
M 135 x 2 was changed to M 136 x 2.5.
Note thread size stamped on the cap!

5 Hubs, hub bearings

5.1 Hub bearings

5.1.4 ECO Plus 2 hub system (ECO Plus 2 Unit)

H.. / K.. / N..



Grease change, quantities of grease and bearing adjustment, see page 83

Hub caps with integrated odometer, see page 108 - 111

Hubs, hub bearings 5

Hub bearing 5.1

H.. / K.. / N..

ECO Plus 2 hub system (ECO Plus 2 Unit) 5.1.4

Item	Designation	BPW item no.	Dimension
		H.. ECO Plus 2 KH.. ECO Plus 2 NH.. ECO Plus 2 6.5 t 8 - 9 t	--.56.---.--- --.58.---.--- / --.59.---.---
380	Brake drum	see page 44 / 45	
418	Roller bearing repair kit, with axle screw and hub cap, Item 422, 430, 432, 437 - 460	09.801.07.33.0	for 1 axle side
419	Roller bearing repair kit, without axle screw and hub cap, Item 422, 430, 437, 438, 441, 459	09.801.07.34.0	for 1 axle side
422	ECO ^{Seal} seal	02.5664.74.00	Ø 117.5 x 158 x 18.9
430	Roller bearings	02.6410.23.00	33118
432	Grease cartridge	03.120.47.08.0	Ø 101 / 130 x 50
435	Hub	see page 78	
437	Locking ring	02.5606.58.90	158 x 4 / 472
438	Locking ring	02.5606.22.90	122 x 4 / 472
441	Roller bearings	02.6410.22.00	33213
446	Axle screw with toothed washer, incl. Item 447	09.001.37.03.0	M 32 x 2 / SW 46
447	Hooked spring ring cpl. item 448 + 449	05.188.03.10.0	
448	Hooked spring ring	03.188.03.09.0 ¹⁾	
449	Locking piece	03.277.10.01.0 ¹⁾	
459	O-ring	02.5678.65.00	Ø 128 x 3
460	Hub cap (bayonet), (standard) incl. item 459	05.212.25.78.0	Ø 137 / 142.6 x 56.3 / SW 120

¹⁾ not available as individual items

H

K

N

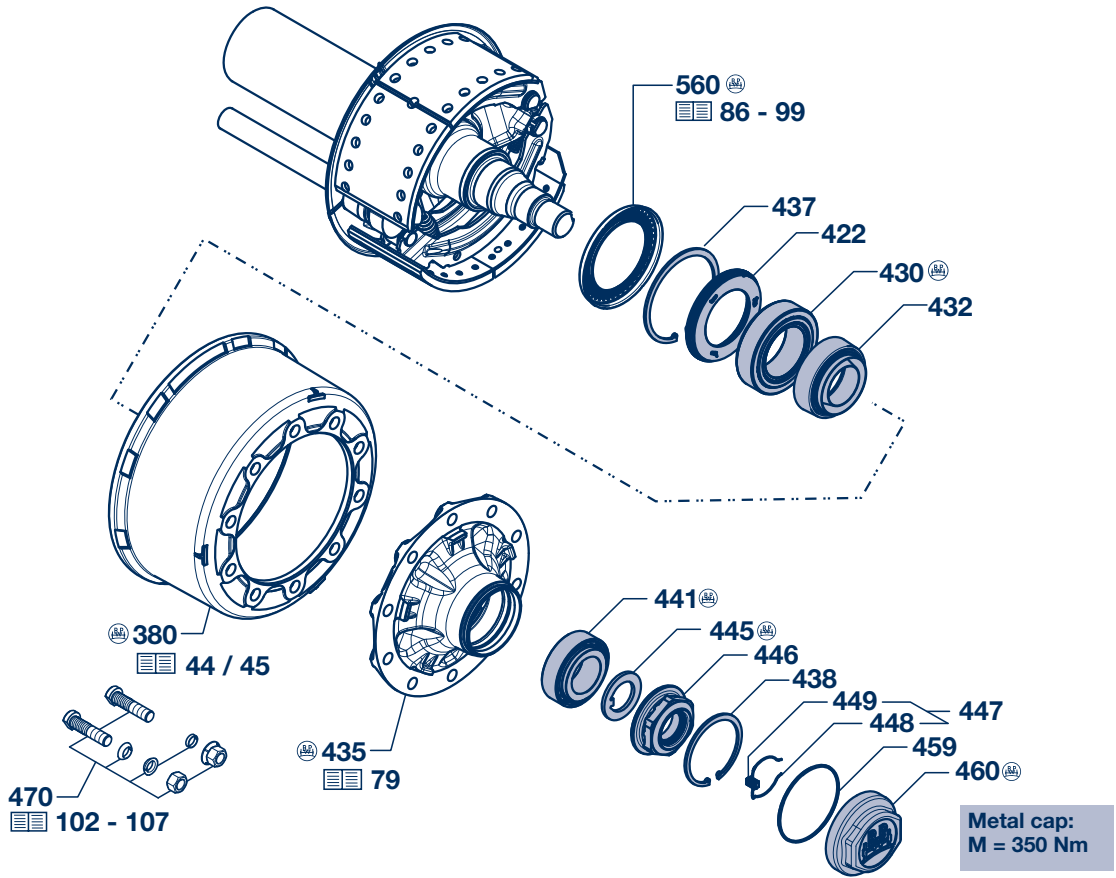
5 Hubs, hub bearings

5.1 Hub bearings

5.1.5 ECO Plus 3 hub system (ECO Plus 3 Unit)

H.. / R.. / K.. / N..

H
R
K
N



Grease change, quantities of grease and bearing adjustment, see page 84

Hub caps with integrated odometer, see page 108 - 111

Hubs, hub bearings 5

Hub bearing 5.1

H.. / R.. / K.. / N..

ECO Plus 3 hub system (ECO Plus 3 Unit) 5.1.5

Item	Designation	BPW item no.	Dimension
		H.. ECO Plus 3 KH.. ECO Plus 3 NH.. ECO Plus 3 6.5 - 9 t	--.66.--.---- / --.68.--.----
380	Brake drum	see page 45 / 46	
418	Roller bearing repair kit, with axle nut and hub cap, item 422 - 432, 437 - 460	09.801.08.40.0	for 1 axle side
419	Roller bearing repair kit, without axle nut and hub cap, item 422 - 432, 437 - 445	09.801.08.41.0	for 1 axle side
422	ECO ^{Seal} seal	02.5664.77.00	Ø 117 / 158 x 15
430	Roller bearings	02.6410.23.00	33118
432	Grease cartridge	03.120.47.08.0	Ø 101 / 130 x 50
435	Hub	see page 80	
437	Locking ring	02.5606.58.90	158 x 4 / 472
438	Locking ring	02.5606.22.90	122 x 4 / 472
441	Roller bearings	02.6410.22.00	33213
445	Washer	03.320.65.05.0	Ø 53 / 83 x 5.8
446	Axle nut	05.266.47.11.0	M 52 x 2 / SW 95
447	Hooked spring ring cpl. item 448 + 449	05.188.04.15.0	
448	Hooked spring ring	03.188.04.10.0	Ø 62 x 1.8
449	Locking piece	03.277.00.07.0	
459	O-ring	02.5678.72.00	Ø 126 x 3
460	Hub cap, (standard) incl. item 459	05.212.25.98.0	M 135 x 2 / H 48 / SW 110
	(chromate) ¹⁾	05.212.25.99.0	M 135 x 2 / H 48 / SW 110

¹⁾ Not corrosion-resistant acc. to DIN 50021

H

R

K

N

5 Hubs, hub bearings

5.2 Hubs

H.. / K.. / N..

5.2.1 Conventional hub bearing

Item	Designation (remark)	BPW item no.				
SN 42..		H.. / R..				
435	Hub, incl. Item 436, page 75					
		Hub cap thread	6 - 9 t --.06/08/09.---.---	10 - 12 t --.10.---.---	13 - 14 t --.14.---.---	16 - 18 t --.16.---.---
280.5 / 335 / 10 x Ø 22 / 6 x Ø 21						
	HB.. Steel and alu. wheels	M 115 x 2	03.275.66.23.0	-	-	-
280.8 / 335 / 10 x Ø 22						
	HS.. Steel and alu. wheels	M 115 x 2	03.272.30.41.0	-	-	-
	HZ.. Steel wheels	M 125 x 2	-	03.272.48.46.0	-	-
	HZ.. Aluminium wheels	M 125 x 2	-	03.272.48.52.0	-	-
	HS.. MAXX	M 135 x 3	-	-	03.272.62.32.0 *	-
	HZ.. MAXX	M 150 x 2	-	-	03.272.62.35.0	-
		M 155 x 3	-	-	-	03.272.80.22.0
	HS.. / HZ.. Steel wheels	M 135 x 3 *	-	-	03.272.62.27.0 *	-
		M 150 x 2	-	-	03.272.62.35.0	-
		M 155 x 3 *	-	-	-	03.272.80.19.0 *
		M 170 x 2	-	-	-	03.272.80.23.0
* Hub with internal thread is changed to hub with external thread (see also page 65).						

SN 36..		K..				
435	Hub, incl. Item 436, page 75					
		Hub cap thread	KRBM 6408 --.65.---.---	6.4 - 9 t --.06/08.---.---	10 - 12 t --.10.---.---	13 t --.14.---.---
220.8 / 275 / 8 x Ø 22						
	K..	M 115 x 2	-	03.272.28.46.0	-	-
		M 125 x 2	-	-	03.272.46.11.0	-
220.5 / 275 / 8 x Ø 22						
	K..	M 135 x 3	-	-	-	03.272.60.03.0
175.5 / 225 / 10 x Ø 22						
	K..	M 115 x 2	-	03.272.27.24.0	-	-
175.8 / 225 / 10 x Ø 22						
	K..	M 125 x 2	-	-	03.272.44.24.0	-

SN 30..		N..				
435	Hub, incl. Item 436, page 75					
		Hub cap thread	6 - 9 t --.06/08.---.---	10 - 12 t ---.10.---.---	13 t --.14.---.---	
175.5 / 225 / 10 x Ø 22						
	NRS.. / NRZ.. / NHS.. / NHZ..	M 115 x 2	03.272.27.20.0	-	-	
175.8 / 225 / 10 x Ø 22						
	NRS.. / NRZ.. / NHS.. / NHZ..	M 125 x 2	-	03.272.44.30.0	-	
175.5 / 225 / 10 x Ø 22 / 2 x M 12						
	NR.. 13 t without ABS	M 135 x 3	-	-	03.272.63.12.0	

Hubs, hub bearings 5

H.. / K..

Hubs 5.2

ECO / ECO MAXX hub system (ECO Unit) 5.2.2

Item	Designation (remark)	BPW item no.			
SN 42..		H.. / R.. ECO / ECO MAXX			
435	Hub, incl. Item 436				
		Hub cap thread	6.5 - 9 t --.36/38.---.---	10 - 12 t --.40/41.---.---	13 - 14 t --.44.---.---
	280.8 / 335 / 10 x Ø 22 / 6 x Ø 21				Complete hub BPW item no.
	HB.. ECO Steel and aluminium wheels	M 125 x 2	03.275.66.30.0	-	-
	220.8 / 275 / 8 x Ø 20				
	HS.. / HZ.. ECO MAXX	M 125 x 2	03.272.28.70.0	-	-
	220 / 285 / 8 x Ø 20				
	HZ.. ECO Japan	M 136 x 2.5*	-	03.272.47.33.0	-
	280.8 / 335 / 10 x Ø 22				
	HS.. ECO Steel and aluminium wheels	M 125 x 2	03.272.30.87.0	-	-
	HZ.. ECO Steel wheels	M 136 x 2.5*	-	03.272.43.20.0	-
		M 150 x 2	-	03.272.62.30.0	-
	HS.. ECO MAXX Steel and aluminium wheels	M 125 x 2	03.272.30.97.0	-	-
	HZ.. ECO MAXX Steel wheels	M 136 x 2.5*	-	03.272.43.12.0	-
		M 150 x 2	-	03.272.62.33.0 ¹⁾	-
	HZ.. ECO MAXX aluminium wheels	M 136 x 2.5*	-	03.272.43.15.0 ²⁾	-
		M 136 x 2.5	-	03.272.43.25.2	-
	280.5 / 335 / 10 x Ø 22				
	HZ.. ECO aluminium wheels	M 135 x 2	-	03.272.48.88.0	-
	280,8 / 335 / 10 x Ø 22				
	HZ.. ECO Japan	M 136 x 2.5*	-	03.272.43.33.0	-
	MVBF ST.. ECO Steel wheels	M 135 x 2	-	03.272.48.84.0	-

SN 36..		K.. ECO / ECO MAXX			
435	Hub, incl. Item 436				
		Hub cap thread	8 - 9 t --.36/38.---.---	10 - 12 t --.40.---.---	Complete hub BPW item no.
	220.8 / 275 / 8 x Ø 22				
	K.. ECO	M 125 x 2	03.272.28.56.0	-	09.801.06.51.0
		M 135 x 2	-	03.272.46.15.0	09.801.06.53.0
	KH.. ECO MAXX	M 125 x 2	03.272.28.70.0	-	09.801.06.55.0
		M 136 x 2.5 *	-	03.272.46.25.0	09.801.06.57.0
	KHZ.. ECO MAXX aluminium wheels	M 135 x 2	-	03.272.46.19.0 ³⁾	-
		M 136 x 2.5 *	-	03.272.46.25.0	-
	175.5 / 225 / 10 x Ø 22				
	K.. ECO	M 125 x 2	03.272.27.41.0	-	09.801.06.50.0
	K.. ECO MAXX	M 125 x 2	03.272.27.48.0	-	09.801.06.54.0
	175.8 / 225 / 10 x Ø 22				
	K.. ECO	M 135 x 2	-	03.272.44.34.0	09.801.06.52.0
	K.. ECO MAXX	M 136 x 2.5 *	-	03.272.44.40.0	09.801.06.56.0
	280.8 / 335 / 10 x Ø 22				
	KH.. 9010/3 ECO MAXX	M 125 x 2	03.272.30.91.0 ⁴⁾	-	09.801.07.23.0 ⁴⁾
			03.272.30.97.0	-	09.801.06.05.0
	280.5 / 335 / 10 x Ø 22				
	KH.. 10010/3 ECO / ECO MAXX	M 136 x 2.5 *	-	03.272.48.90.0	-

Item	Designation (remark)	Dimension	BPW item no.	
436	Splined pin	Ø 5 x 19.5	02.6010.25.60	for 6 / 8-hole hub Ø 20
		Ø 6 x 19.5	02.6010.35.60	for 10-hole hub Ø 22

* Changed hub cap thread from 09/00.
M 135 x 2 was changed to M 136 x 2.5.

Note thread size stamped on the cap!

03.212.25.31.0 = M 136 x 2.5 ECO^{Plus}

03.212.25.33.0 = M 136 x 2.5 ECO / ECO MAXX

¹⁾ Replaced by 03.272.62.30.0

²⁾ Replaced by 03.272.43.25.2 and/or 09.801.07.08.2

³⁾ Replaced by 03.272.46.25.0

⁴⁾ Replaced by 03.272.30.97.0 and/or 09.801.06.05.0

5 Hubs, hub bearings

5.2 Hubs

N..

5.2.2 ECO / ECO MAXX hub system (ECO Unit)

Item	Designation (remark)	BPW item no.		
SN 30..		N.. ECO / ECO MAXX		
435	Hub, incl. Item 436			
		Hub cap thread	6.4 - 9 t ---.36 / 38.---.---	10 - 12 t ---.40.---.---
				Complete hub BPW item no.
	220.8 / 275 / 8 x Ø 20 / 2 x M 10			
	NHZ.. 6008 ECO MAXX (lightweight construction)	M 125 x 2	03.272.28.70.0	-
				09.801.06.55.0
	175.5 / 225 / 10 x Ø 22			
	N.S.. / N.Z.. ECO	M 125 x 2	03.272.27.41.0	-
				09.801.06.50.0
	N.S.. / N.Z.. ECO MAXX (lightweight construction)	M 125 x 2	03.272.27.48.0	-
				09.801.06.54.0
	175.8 / 225 / 10 x Ø 22			
	N.Z.. ECO	M 135 x 2	-	03.272.44.34.0
				09.801.06.52.0
	N.Z.. ECO MAXX (lightweight construction)	M 136 x 2.5 *	-	03.272.44.40.0
				09.801.06.56.0
Item	Designation (remark)	Dimension	BPW item no.	
436	Splined pin	Ø 5 x 19.5	02.6010.25.60	for 8-hole hub Ø 20
		Ø 6 x 19.5	02.6010.35.60	for 10-hole hub Ø 22

* Changed hub cap thread from 09/00.
M 135 x 2 was changed to M 136 x 2.5.
Note thread size stamped on the cap!
03.212.25.33.0 = M 136 x 2.5 ECO MAXX

Hubs, hub bearings 5

H.. / K.. / N..

Hubs 5.2

ECO^{Plus} hub system (ECO^{Plus} Unit) 5.2.3

Item	Designation (remark)	BPW item no.			
SN 42..		H.. ECO^{Plus}			
435	Hub				
		Hub cap thread	8 - 9 t --.48.---,---	10 - 12 t --.50.---,---	
				Complete hub BPW item no.	
280.8 / 335 / 10 x Ø 22					
	HS.. ECO^{Plus} Steel and aluminium wheels HZ.. ECO^{Plus} Steel wheels	M 135 x 2 *	03.272.32.05.0 ¹⁾	-	
		M 136 x 2.5 *	03.272.43.10.0 ²⁾ 03.272.43.10.2 ³⁾	-	
		M 136 x 2.5 *	-	03.272.43.12.0 03.272.43.23.2 ³⁾	09.801.06.07.0 09.801.06.08.2
	HZ.. ECO^{Plus} Aluminium wheels	M 136 x 2.5 *	-	03.272.43.15.0 03.272.43.25.2 ³⁾	09.801.07.08.2
280.5 / 335 / 10 x Ø 22					
	MVBF ST.. ECO^{Plus} Steel wheels	M 136 x 2,5 *	-	03.272.43.40.0	-

SN 36..		K.. ECO^{Plus}			
435	Hub				
		Hub cap thread	8 - 9 t --.48.---,---	10 - 12 t --.50.---,---	
				Complete hub BPW item no.	
220.8 / 275 / 8 x Ø 22					
	KH.. ECO^{Plus}	M 136 x 2.5 *	03.272.46.28.0 ²⁾ 03.272.46.28.2 ³⁾	-	
		M 136 x 2.5 *	-	03.272.46.25.0 03.272.46.31.2 ³⁾	09.801.06.69.0 09.801.06.61.2
	KHZ.. ECO^{Plus} Aluminium wheels	M 136 x 2.5 *	-	03.272.46.26.0 ²⁾ 03.272.46.31.2 ³⁾	
175.8 / 225 / 10 x Ø 22					
	KH.. ECO^{Plus}	M 136 x 2.5 *	-	03.272.44.40.0 03.272.44.49.0 ³⁾	09.801.06.60.2
280.8 / 335 / 10 x Ø 22					
	KH.. 9010/3 ECO^{Plus}	M 135 x 2 *	03.272.32.05.0 ¹⁾	-	
		M 136 x 2.5 *	03.272.43.10.0 ²⁾ 03.272.43.10.2 ³⁾	-	09.801.06.07.0

SN 30..		N.. ECO^{Plus}			
435	Hub				
		Hub cap thread		10 - 12 t --.50.---,---	
				Complete hub BPW item no.	
175.8 / 225 / 10 x Ø 22					
	NH.. ECO^{Plus}	M 136 x 2.5 *	-	03.272.44.49.0 ³⁾	09.801.06.60.2

* Changed hub cap thread from 09/00.
M 135 x 2 was changed to M 136 x 2.5.
Note thread size stamped on the cap!
03.212.25.31.0 = M 136 x 2.5 ECO^{Plus}

¹⁾ Replaced by 03.272.43.10.2

²⁾ Replaced by 03.272.xx.xx.2

³⁾ New ECO^{Plus} hubs with end digit 2 can only be used in conjunction with the new ECO^{Seal} seal (02.5664.74.00).

Alternative versions on request..

5 Hubs, hub bearings

5.2 Hubs

H.. / K.. / N..

5.2.4 ECO Plus 2 hub system (ECO Plus 2 Unit)

Item	Designation (remark)	BPW item no.		
SN 42..		H.. ECO Plus 2		
435	Hub			
		Hub cap thread	6.5 t --.56.---,---	8 - 9 t --.58.---,---
	220.8 / 275 / 8 x Ø 22			Complete hub BPW item no.
	HS.. ECO Plus 2 Steel wheels	Bayonet lock	03.272.46.33.0	-
	280.8 / 335 / 10 x Ø 22			09.801.07.36.0
	HS.. ECO Plus 2 Steel and aluminium wheels HZ.. ECO Plus 2 Steel and aluminium wheels	Bayonet lock	03.272.43.29.0	09.801.07.35.0
SN 36..		KH.. ECO Plus 2		
435	Hub			
		Hub cap thread	8 - 9 t --.58.---,---	Complete hub BPW item no.
	220.8 / 275 / 8 x Ø 22			
	KH.. ECO Plus 2	Bayonet lock	03.272.46.33.0	09.801.07.36.0
	280.8 / 335 / 10 x Ø 22			
	KH.. 9010/3 ECO Plus 2	Bayonet lock	03.272.43.29.0	09.801.07.35.0
SN 30..		NH.. ECO Plus 2		
435	Hub			
		Hub cap thread	7 - 9 t --.56.---,---	Complete hub BPW item no.
	220.8 / 275 / 8 x Ø 22			
	N.. ECO Plus 2	Bayonet lock	03.272.46.33.0	09.801.07.36.0
	175.8 / 225 / 10 x Ø 22			
	N.. ECO Plus 2	Bayonet lock	03.272.44.46.0	09.801.08.03.0

Hubs, hub bearings 5

H.. / R.. / K.. / N..

Hubs 5.2

ECO Plus 3 hub system (ECO Plus 3 Unit) 5.2.5

Item	Designation (remark)	BPW item no.	
SN 42.. H.. / R.. ECO Plus 3			
435	Hub		
		6.5 - 9 t --.66.--,----- --.68.--,-----	Complete hub BPW item no.
	Hub cap thread		
	220.8 / 275 / 8 x Ø 22		
	HS.. ECO Plus 3 Steel wheels	M 135 x 2	03.272.46.37.0
	280.8 / 335 / 10 x Ø 22		
	HS.. ECO Plus 3 Steel and aluminium wheels HZ.. ECO Plus 3 Steel and aluminium wheels	M 135 x 2	03.272.43.42.0
			09.801.08.39.0

SN 36..		KH.. ECO Plus 3	
435	Hub		
		8 - 9 t --.68.--,-----	Complete hub BPW item no.
	Hub cap thread		
	220.8 / 275 / 8 x Ø 22		
	KH.. ECO Plus 3	M 135 x 2	03.272.46.37.0
	175.8 / 225 / 10 x Ø 22		
	KH.. ECO Plus 3	M 135 x 2	03.272.44.48.0
	280.8 / 335 / 10 x Ø 22		
	KH.. 9010/3 ECO Plus 3	M 135 x 2	03.272.43.42.0
			09.801.08.39.0

SN 30..		NH.. ECO Plus 3	
435	Hub		
		8 - 9 t --.68.--,-----	Complete hub BPW item no.
	Hub cap thread		
	220.8 / 275 / 8 x Ø 22		
	N.. ECO Plus 3	M 135 x 2	03.272.46.37.0
	175.8 / 225 / 10 x Ø 22		
	N.. ECO Plus 3	M 135 x 2	03.272.44.48.0
			-

H

R

K

N

5 Hubs, hub bearings

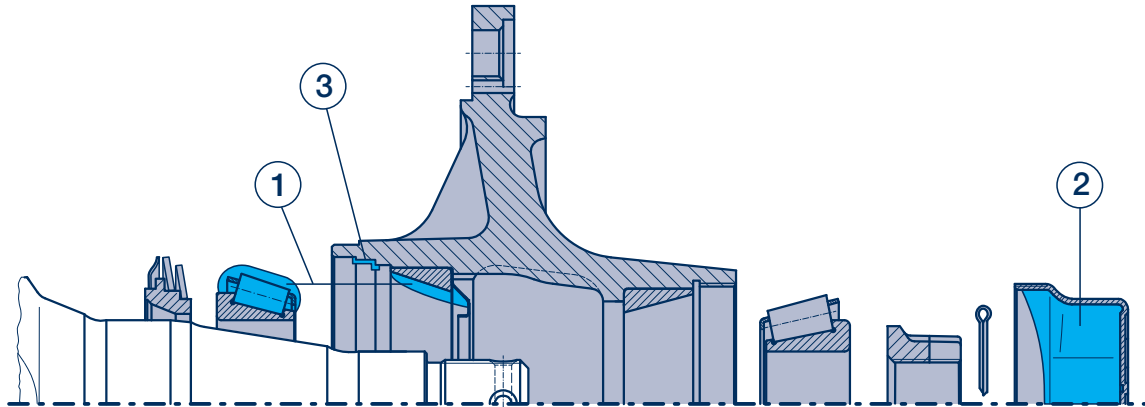
5.3 Grease filling/bearing adjustment

H.. / K.. / N..

5.3.1 Conventional hub bearing

Grease filling

Conventional hub bearing



Clean taper roller bearings (using diesel oil) thoroughly, dried, check for serviceability and re-grease.

BPW special longlife grease ECO-Li 91,
quantities of grease per tapered roller bearing

Axle load	Axle type	① inner		② outer	
		Roller bearings	Quantity of grease	Roller bearings	Quantity of grease
6400 kg	KRBM 6408	33215	170 g	32310	290 g
6000 - 9000 kg	H.. 6.5 - 9 t K.. 6.4 - 9 t N.. 6 - 9 t	33116	170 g	32310	290 g
10000 - 12000 kg	H.. 10 - 12 t K.. 10 - 12 t N.. 10 - 12 t	33118	180 g	33213	320 g
13000 - 14000 kg	H.. 13 - 14 t K.. 13 t N.. 13 t	32219	240 g	33215	500 g
16000 - 18000 kg	H.. 16 - 18 t	32222	400 g	32314	800 g

- ① Work **BPW special longlife grease ECO-Li 91** into the spaces between the tapered rollers and the races, smear the remaining quantity of grease into the bearing outer ring of the hub.
+
- ② The bearing grease for the outer tapered roller bearing is pressed into the bearing as the hub cap filled with grease is screwed on.
+
- ③ **Apply BPW special longlife grease ECO-Li 91** around the seal contact.
For lubrication with grease spray, see page 85.

Bearing adjustment

Conventional hub bearing

- Unscrew the hub cap.
- Remove the axle nut split pin.
- Tighten the axle nut using a torque wrench to 150 Nm (6 - 14 t) or 350 Nm (16 - 20 t) while turning the wheel hub at the same time. When using the standard axle nut wrench (tool kit), tighten the axle nut until the wheel hub race is slightly braked.
- Turn the axle nut back to the next possible pin hole. Should they be in line turn back to the next hole (30° at the maximum).
- Insert the split pin and bend slightly outwards.
- Refill the hub cap as required with **BPW special longlife grease ECO-Li 91**, grease thread of the hub cap all round with ECO-Li 91, screw in and tighten to the prescribed tightening torque.

Hubs, hub bearings 5

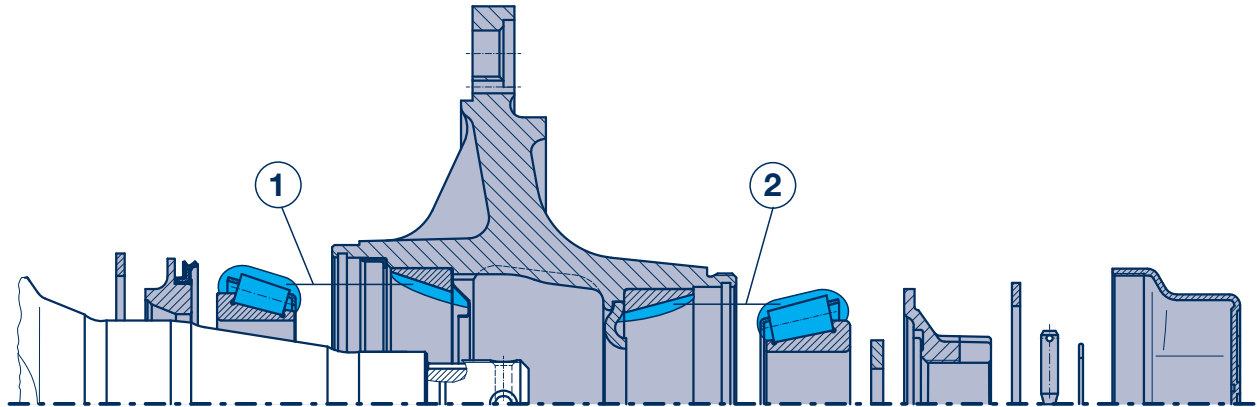
H.. / K.. / N..

Grease filling, bearing adjustment 5.3

ECO / ECO MAXX hub system (ECO Unit) 5.3.2

Grease filling

ECO / ECO MAXX hub system (ECO Unit)



The ECO hub system is designed for longlife lubrication (500,000 km or 3 years under normal conditions). Thereafter clean tapered roller bearings (using diesel oil) thoroughly, dried, check for serviceability and re-grease (observe the current BPW maintenance instructions).

		BPW special longlife grease ECO-Li 91, quantities of grease per tapered roller bearing			
		① inner		② outer	
Axle load	Axle type	Roller bearings	Quantity of grease	Roller bearings	Quantity of grease
6000 - 9000 kg	H.. / SH.. 6.5 - 9 t ECO K.. / SK.. 6.4 - 9 t ECO N.. 6 - 9 t ECO	33116	120 g	32310	120 g
10000 - 12000 kg	H.. / SH.. 10 - 12 t ECO K.. / SK.. 10 - 12 t ECO N.. 10 - 12 t ECO	33118	170 g	33213	120 g
13000 - 14000 kg	H.. 13 - 14 t	32219	230 g	33215	150 g

① Work **BPW special longlife grease ECO-Li 91** thoroughly into the spaces between the tapered rollers and the races, smear the remaining quantity of grease into the bearing outer ring of the hub.
+
② Smear the sealing lip all round with **BPW special longlife grease ECO-Li 91**.
+
③ **Apply BPW special longlife grease ECO-Li 91** around the seal contact.
For lubrication with grease spray, see page 85.

Bearing adjustment

ECO / ECO MAXX hub system (ECO Unit)

- Unscrew the hub cap.
- Remove the bolt with hooked spring ring.
- Tighten the axle nut using a torque wrench to 150 Nm, while turning back the wheel hub to the next locking hole, max. 15°, at the same time. Because of the asymmetric crown of the axle nut, the next locking hole will be reached after max. 15°.
- Re-assemble locking bolt with spring ring.
- Grease thread of the hub cap all round with **BPW special longlife grease ECO-Li 91**, screw on hub cap and tighten to the prescribed tightening torque (steel hub cap 800 Nm, aluminium hub cap 350 Nm).

BPW special longlife grease ECO-Li 91	Container	BPW item no.
	0.4 kg cartridge	02.1040.34.00
	2.5 kg bucket	02.1040.30.00
	5 kg bucket	02.1040.31.00
	15 kg bucket	02.1040.52.00
	50 kg barrel	02.1040.33.00

5 Hubs, hub bearings

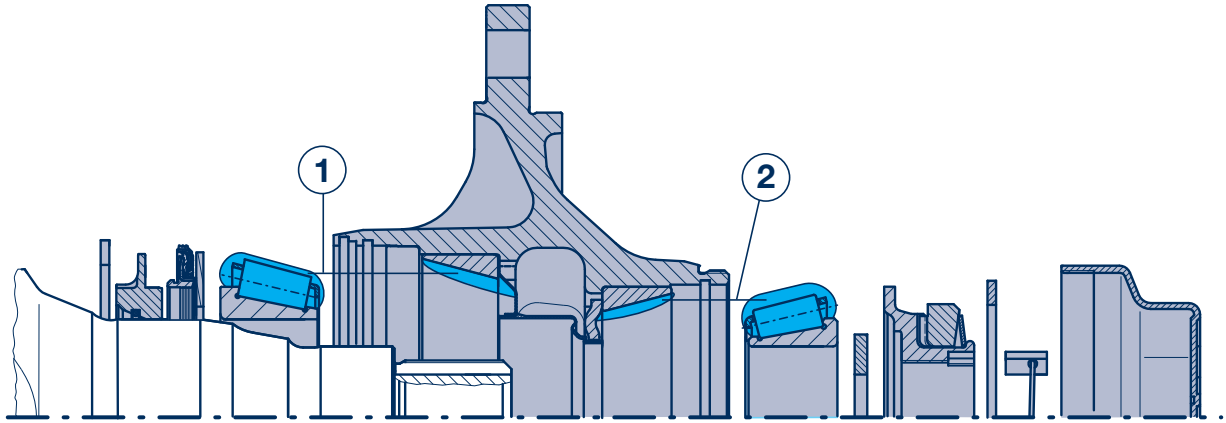
5.3 Grease filling/bearing adjustment

H.. / K.. / N..

5.3.3 ECO^{Plus} hub system (ECO^{Plus} Unit)

Grease filling

ECO^{Plus} hub system (ECO^{Plus} Unit)



The ECO^{Plus} hub system is designed for longlife lubrication. On expiry of the guarantee, the roller bearings, the inside of the hub and the seals must be thoroughly cleaned (with diesel oil), dried, checked to see if they can be re-used, and regreased every 3 years when used off-road, or every 5 years when used on the road within Europe (or every year when off-road and every 2 years when on the road outside of Europe) (observe the current BPW maintenance instructions).

Use a microfibre cloth to clean the bearing seats of the axle stub (metal must be bright, dry and free of grease) and apply **Castrol White T** thinly all around using a microfleece brush.

BPW special longlife grease ECO-Li^{Plus},
quantities of grease per roller bearing

Axle load	Axle type	① inner		② outer	
		Roller bearings	Quantity of grease	Roller bearings	Quantity of grease
8000 - 12000 kg	H.. 8 - 12 t ECO ^{Plus} K.. 8 - 12 t ECO ^{Plus}	33118	170 g 130 g *	33213	120 g 90 g *

- ① + ② Work **BPW special longlife grease ECO-Li^{Plus}** thoroughly into the spaces between the tapered rollers and the races, and smear the remaining amount in the bearing outer ring of the hub.

* Lubrication with grease spray see page 85.

Bearing adjustment

ECO^{Plus} hub system (ECO^{Plus} Unit)

1. Unscrew the hub cap.
2. Remove the hooked spring ring with a wedge from the axle nut.
3. Tighten the axle nut while turning the wheel hub at the same time with a hexagon spanner until the tothing of the axle nut clicks round.
Attention! Do not use an impact tool.
4. Fit the locking piece in the groove between the axle stub and the nut (do not reset the axle nut).
5. Insert the hooked spring ring behind the formed edge of the axle nut or into the thread on the axle stub, depending on the design.
6. Screw on the hub cap and tighten it to 800 Nm.

BPW special longlife grease ECO Li ^{Plus}	Container	BPW item no.
	0.4 kg cartridge	02.1040.45.00
	5 kg bucket	02.1040.47.00
	25 kg bucket	02.1040.49.00
	50 kg barrel	02.1040.50.00

Hubs, hub bearings 5

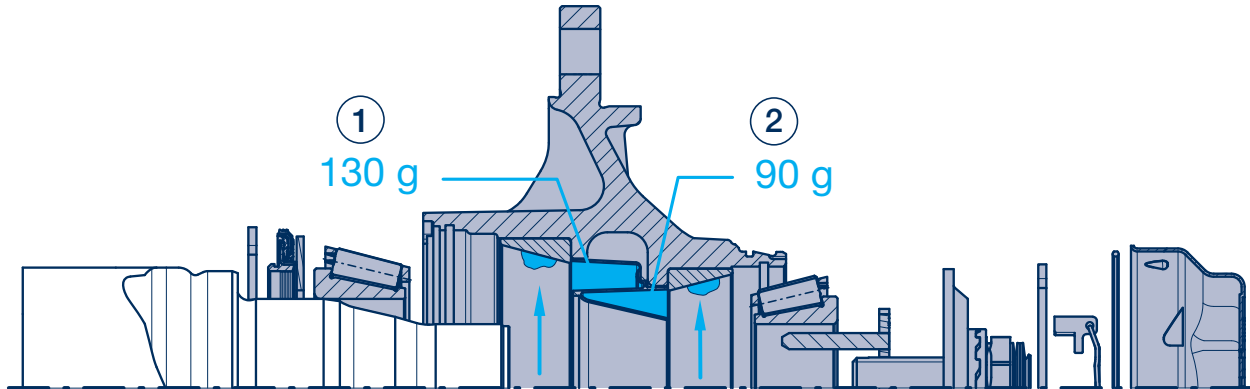
H.. / K.. / N..

Grease filling, bearing adjustment 5.3

ECO Plus 2 hub system (ECO Plus 2 Unit) 5.3.4

Grease filling

ECO Plus 2 hub system (ECO Plus 2 Unit)



The ECO Plus 2 Unit is designed for longlife lubrication. On expiry of the guarantee, the roller bearings, the inside of the hub and the seals must be thoroughly cleaned (with diesel oil), dried, checked to see if they can be re-used, and regreased every 3 years when used off-road, or every 5 years when used on the road within Europe (or every year when off-road and every 2 years when on the road outside of Europe) (observe the current BPW maintenance instructions).

Use a microfibre cloth to clean the bearing seats of the axle stub (metal must be bright, dry and free of grease) and apply **Castrol White T** thinly all around using a microfleece brush.

BPW special longlife grease ECO-LI^{Plus},
quantities of grease per roller bearing

Axle load	Axle type	① inner		② outer	
		Roller bearings	Quantity of grease	Roller bearings	Quantity of grease
6500 - 9000 kg	H.. / SH.. 6.5 - 9 t ECO Plus 2 K.. / SK.. 8 - 9 t ECO Plus 2 N.. 7 - 9 t ECO Plus 2	33118	130 g	33213	90 g

- ① Clean the grease cartridge and fill it up to the edge on both sides with **BPW special longlife grease ECO-LI^{Plus}**.
 ② Apply a ring-shaped bead of grease to the running surfaces of the bearing outer rings.

For other procedures see the current maintenance instructions (BPW-W-ECO Plus 3310...e).

When BPW grease sprays are used, there is no need to fill the grease cartridge or to apply the bead of grease.

For lubrication with grease spray, see page 85.

Bearing adjustment

ECO Plus 2 hub system (ECO Plus 2 Unit)

- Undo the hub cap by turning it approx. 30° in a counterclockwise direction (see page 59).
When turned slightly further the hub cap lifts clearly away from the ECO Unit and can be removed by pulling it away axially.
- Remove the hooked spring ring and locking piece from the axle screw.
- Tighten the axle bolt while at the same time turning the ECO Unit with a hexagon spanner (SW 46) until the tothing of the axle bolt clicks round.
Attention! Do not use an impact tool.
- Insert the locking piece into the recess of the axle bolt and into the tothing of the toothed washer (do not turn back the axle bolt).
- Insert the hooked spring ring into the groove at the end of the hexagon profile of the axle screw.
- Insert a new O-ring into the groove in the wheel hub.
- Apply a thin layer of **BPW ECO-LI^{Plus} special longlife grease** to the hub cap in the area of the O-ring contact surface and the bayonet fitting.
- Put the hub cap on (position 1, page 57). Use the SW 120 hub cap spanner to lock the hub cap in place by turning approx. 30° in a clockwise direction, while at the same time pressing on the hub cap axially.
Is firmly seated when it reaches position 2 (page 57).
Attention! Do not use an impact driver - bayonet lock.

5 Hubs, hub bearings

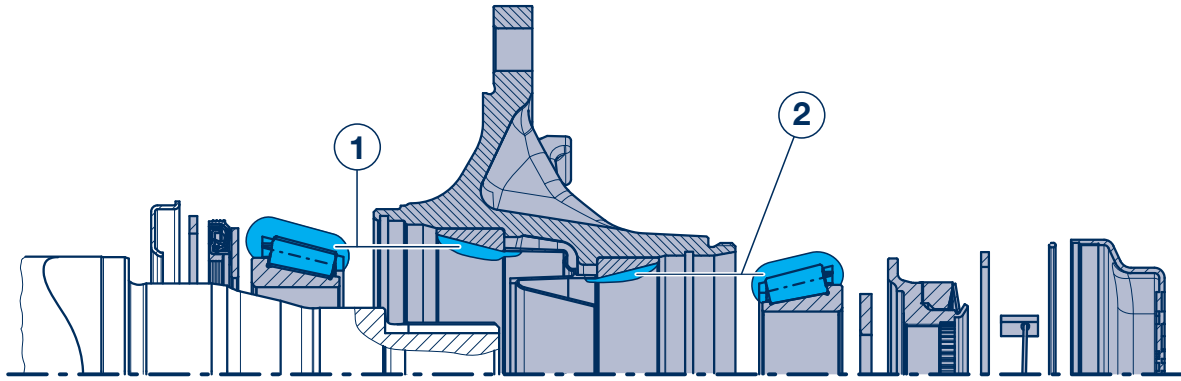
5.3 Grease filling/bearing adjustment

H.. / R.. / K.. / N..

5.3.5 ECO Plus 3 hub system (ECO Plus 3 Unit)

Grease filling

ECO Plus 3 hub system (ECO Plus 3 Unit)



The ECO Plus 3 hub system is designed for the use of longlife lubrication. On expiry of the guarantee, the roller bearings, the inside of the hub and the seals must be thoroughly cleaned (with diesel oil), dried, checked to see if they can be re-used, and regreased every 3 years when used off-road, or every 5 years when used on the road within Europe (or every year when off-road and every 2 years when on the road outside of Europe) (observe the current BPW maintenance instructions).

Use a microfibre cloth to clean the bearing seats of the axle stub (metal must be bright, dry and free of grease) and apply **Castrol White T** thinly all around using a microfleece brush.

BPW special longlife grease ECO-LI^{Plus},
quantities of grease per roller bearing

Axle load	Axle type	① inner		② outer	
		Roller bearings	Quantity of grease	Roller bearings	Quantity of grease
6500 - 9000 kg	R.. 9 t ECO Plus 3 H.. / SH.. 6.5 - 9 t ECO Plus 3 K.. / SK.. 8 - 9 t ECO Plus 3 N.. 7 - 9 t ECO Plus 3	33118	170 g 130 g *	33213	120 g 90 g *

① Work **BPW special longlife grease ECO-LI^{Plus}** thoroughly into the spaces between the tapered rollers and the races, and smear the remaining amount in the bearing outer ring of the hub.

② * Lubrication with grease spray see page 85.

For other procedures see the current maintenance instructions.

Bearing adjustment

ECO Plus 3 hub system (ECO Plus 3 Unit)

1. Unscrew the hub cap.
2. Remove the hooked spring ring with a wedge from the axle nut.
3. Tighten the axle nut while turning the wheel hub at the same time with a hexagon spanner until the tothing of the axle nut clicks round.
Attention! Do not use an impact tool.
4. Fit the locking piece in the groove between the axle stub and the nut (do not reset the axle nut).
5. Insert the hooked spring ring behind the formed edge of the axle nut or into the thread on the axle stub, depending on the design.
6. Insert a new O-ring into the groove in the wheel hub.
7. Screw on the hub cap and tighten it to 350 Nm.

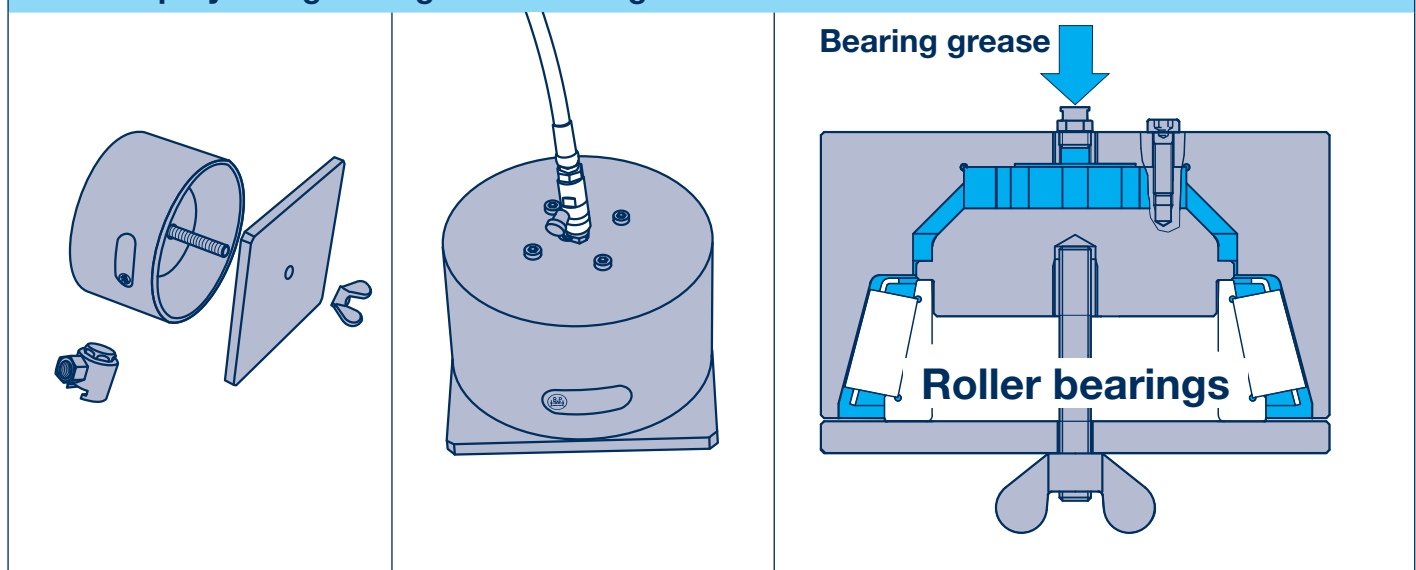
Hubs, hub bearings 5

H.. / R.. / K.. / N..

Grease filling, bearing adjustment 5.4

Grease sprays

Grease sprays for greasing roller bearings



Grease spray	for roller bearings	BPW item no. Grease spray, loose	BPW item no. Complete set
	33116	16.076.22935	99.00.000.9.54
	32310	16.072.22935	
	33118	16.062.22935	99.00.000.9.55
	33213	16.068.22935	
Complete set incl. adapter for flat-type grease nipple			
Adapter for flat-type grease nipple		BPW item no.	
		15.069.22935	

H

R

K

N

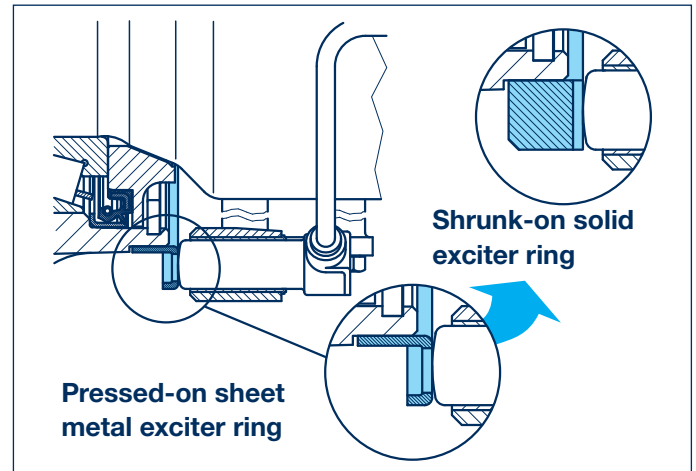
ABS parts 6

General

Pressed-on sheet metal exciter rings

For replacement purposes, pressed-on sheet metal exciter rings are replaced by solid exciter rings.

To achieve this, heat up new solid exciter ring to approx. 80° to 120° C and shrink on.



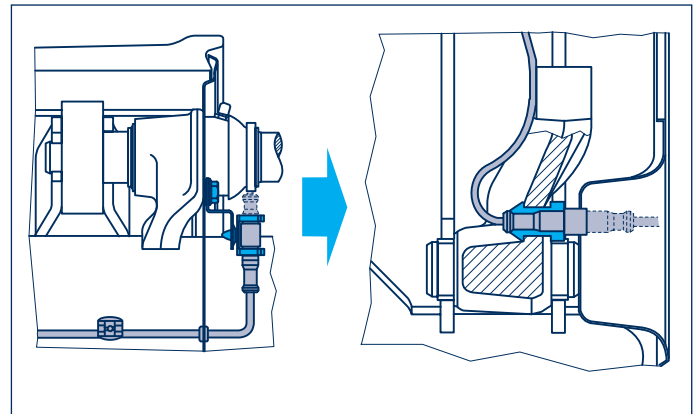
Protected ABS-sensor plug connection

Since 1997, **H** series BPW trailer axles have been supplied with an optimised ABS sensor plug connection.

With this version, the sensor plug sits in a recess in the brake dust covers optimally protected against transport damage.

The ABS cable connection (sensor connection cable to control unit) is made like on a standard socket simply by inserting the plug into the coupling located inside the brake anchor.

The absolutely firm attachment of the plug coupling on the brake anchor ensures that these ABS components cannot be damaged, even under the toughest operating conditions (assuming the sensor cable has been laid properly).



H

R

K

N

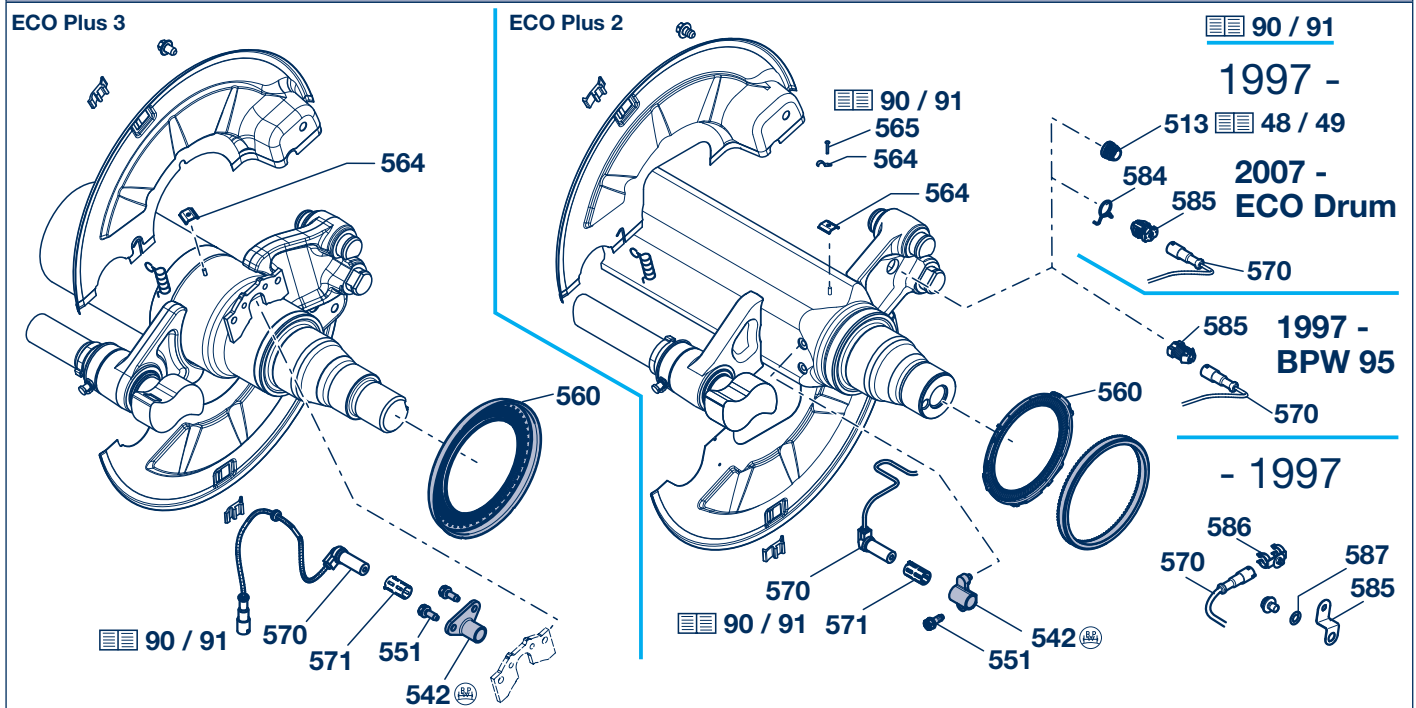
6 ABS

6.1 ABS parts

H.. / R..

SN 42..					H.. / R..
A	B	C	D	E	
<p>543 542 Fig. left</p>	<p>542</p>	<p>543 542 Fig. left</p>	<p>542 540</p>	<p>542</p>	
F	G	H	I	J	
K	L				

Supplementary installation kits cpl., see page 91



ABS 6**H.. / R..****ABS parts 6.1**

SN 42..		H.. / R..					
Item	Designation	BPW item no.	Dimension				
Sensor bracket for ABS Wabco / Bosch / Grau-Girling DGX / Grau-Girling MGX 100 / Knorr		H.. 6.5 - 9 t	□ 120 16° brake drum			H.. 10 t	□ 120 16° brake drum
		H.. 6.5 - 9 t	□ 120 30° brake drum			H.. ECO ^{Plus} 10 t	□ 120 16° brake drum
		H.. 10 - 14 t	□ 150				
542	Sensor bracket (right)	03.189.07.10.0	L 25, H 17	Fig. A	03.189.11.66.0	L 48, H 22	Fig. A
		03.189.07.58.0	L 37.5, H 14	Fig. A			
543	Sensor bracket (left)	03.189.07.09.0	L 25, H 17	Fig. A	03.189.11.67.0	L 48, H 22	Fig. A
		03.189.07.59.0	L 37.5, H 14	Fig. A			
551	Locking screw	02.5071.23.00	M 8 x 20 (4x)			02.5071.23.00	M 8 x 20 (4x)
		H.. ECO ^{Plus} 8 - 9 t	□ 120			R.. ECO Plus 3 8 - 9 t ○ 146	
		H.. ECO Plus 2 8 - 9 t	□ 120				
		H.. ECO Plus 3 8 - 9 t	□ 120				
542	Sensor bracket	03.189.14.61.0	Fig. B			03.189.16.55.0	Fig. E
551	Locking screw	02.5071.23.00	M 8 x 20 (2x)			02.5071.23.00	M 8 x 20 (4x)
		H.. 9 t □ 150					
542	Sensor bracket (right)	05.189.07.18.0	Fig. C (no longer available)				
543	Sensor bracket (left)	05.189.07.19.0	Fig. C (no longer available)				
		R.. 6.5 - 9 t ○ 127	R.. 10 - 12 t ○ 127		H.. 16 t □ 150		
540	Attachment plate	03.080.04.01.0	H 21, α = 10°	03.080.03.38.0	H 30, α 5°	-	
542	Sensor bracket			03.189.07.87.0	Fig. D		
551	Cylinder head screw			02.5015.00.80	M 6 x 16 - 8.8 (4x)		
553	Spring washer			02.5601.06.90	A 6 / 128 (4x)		
		Wabco / Bosch / Grau-Girling DGX / Grau-Girling MGX 100 / Knorr					
560	Exciter ring			Fig.	Axle version		
	100 teeth (Z) solid, shrunk-on, sheet metal ¹⁾ = 03.310.08.42.0	03.310.08.15.0	Ø 152 / 170 x 15	F	6.5 - 9 t □ 120 / ○ 127		
	100 teeth (Z) solid, shrunk-on	03.310.09.31.0	Ø 152 / 217 x 15	G	6.5 - 9 t □ 150		
	100 teeth (Z) solid, shrunk-on, sheet metal ¹⁾ = 03.310.09.35.0	03.310.08.14.0	Ø 176 / 194 x 15	H	10 - 12 t □ 120 / 150 / ○ 127		
	120 teeth (Z) solid, shrunk-on	03.310.08.54.0	Ø 176 / 194 x 15	H	10 - 12 t ECO^{Plus} □ 120		
	100 teeth (Z) solid, shrunk-on	03.310.08.25.0	Ø 194 / 216 x 17.5	I	13 - 14 t □ 150		
	100 teeth (Z) solid, shrunk-on	03.310.09.36.0	Ø 222 / 240 x 15	J	16 t □ 150		
	100 teeth (Z) Bayonet	03.310.08.51.0	Ø 125 / 156 x 8.5	K	8 - 9 t ECO^{Plus} □ 120 8 - 9 t ECO Plus 2 □ 120		
	90 teeth (Z) sheet metal, pressed-on	03.310.08.57.0	Ø 121.5 / 170 / 178 x 14.5	L	6.5 - 9 t ECO Plus 3 □ 120 / ○ 146		
	100 teeth (Z) sheet metal, pressed-on	03.310.08.58.0	Ø 121.5 / 170 / 178 x 14.5	L	6.5 - 9 t ECO Plus 3 □ 120 / ○ 146		

¹⁾ For replacement purposes, shrunk-on sheet metal exciter rings are replaced by solid exciter rings.

ABS 6**H.. / R..****ABS parts, ABS retrofit kits 6.1**

SN 42..				H.. / R..	
Item	Designation	BPW item no.	Dimension		
		Wabco / Bosch / Grau-Girling DGX / Grau-Girling MGX 100 / Knorr			
564	Attachment (for grooved pin)	02.0326.32.00	1 x 6 / 72571-St		
	Clamp (clip for welded bolt)	02.3507.32.00			
565	Drive pin	02.6005.25.40	Ø 4 x 10 / 1476-St		
570	Sensor	02.3317.05.00			
571	Bush	02.0316.59.00			
		Old Conventional plug connection - 1997		Optimised, protected ABS sensor plug connection 1997 -	
584	Hose clip	-		03.001.61.01.0	Ø 19 x 2 ECO Drum
585	Support for sensor plug	03.189.07.35.0		03.189.13.90.0	BPW 95
	Support for sensor plug (incl. Item 584)	-		05.189.15.59.0	ECO Drum
586	Support	02.1421.11.00		-	
587	Serrated lock washer	02.5414.11.90	A 10.5 / 6798	-	

ABS retrofit kits SN 42..				H.. / R..	
ABS retrofit kits for one axle, consisting of exciter rings, sensors, sensor brackets, attachment parts and assembly drawings.				For ABS Wabco / Bosch also for Grau-Girling DGX / Grau-Girling MGX 100 / Knorr	
Axle type	Comment	Brake	BPW item no.		
H.. 6500 - 9000	<input type="checkbox"/> 120 (from production week 32/87), sensor bracket screwed on	SN 42..-2 / SN 42.. BPW 95	05.801.72.01.0		
H.. 8000 - 9000 ^{ECOPlus}	<input type="checkbox"/> 120, sensor bracket screwed on	SN 42.. BPW 95	05.801.74.03.0		
H.. 8000 - 9000 ECO Plus 2	<input type="checkbox"/> 120, sensor bracket screwed on	SN 42.. ECO Drum	05.801.74.36.0		
R.. 8000 - 9000 ECO Plus 3	<input type="checkbox"/> 146, sensor bracket screwed on	SN 42.. ECO Drum	05.801.75.20.0		
H.. 6500 ECO Plus 3	<input type="checkbox"/> 120, sensor bracket screwed on	SN 42.. ECO Drum	05.801.75.03.0		
H.. 8000 - 9000 ECO Plus 3	<input type="checkbox"/> 120, sensor bracket screwed on	SN 42.. ECO Drum	05.801.74.95.0		
H.. 10000 - 12000 ^{ECOPlus}	<input type="checkbox"/> 120, sensor bracket screwed on	SN 42.. ECO Drum	05.801.74.38.0		
H.. 10000 - 12000	<input type="checkbox"/> 150 (to production week 12/88), <input type="checkbox"/> 150 x 16 (to production week 03/89), sensor bracket welded on	SN 4220 SN 42..-2	05.801.72.19.0		
H.. 10000 - 12000	<input type="checkbox"/> 150 (from production week 13/88), <input type="checkbox"/> 150 x 16 (from production week 04/89), sensor bracket screwed on	SN 42..-2 / SN 42.. BPW 95	05.801.72.07.0		
H.. 10000 - 12000	<input type="checkbox"/> 150, sensor bracket screwed on	SN 4220 ECO Drum	05.801.74.39.0		
H.. 13000 - 14000	<input type="checkbox"/> 150, sensor bracket screwed on	SN 42..-2 / SN 42.. BPW 95	05.801.73.25.0		
H.. 13000 - 14000	<input type="checkbox"/> 150, sensor bracket screwed on	SN 4220 ECO Drum	05.801.74.40.0		
H.. 16000 - 18000	<input type="checkbox"/> 150, sensor bracket screwed on	SN 42..-2 / SN 42.. BPW 95	05.801.73.63.0		
H.. 16000 - 18000	<input type="checkbox"/> 150, sensor bracket screwed on	SN 4220 ECO Drum	05.801.74.41.0		

Alternative versions on request..

6 ABS

6.1 ABS parts

K..

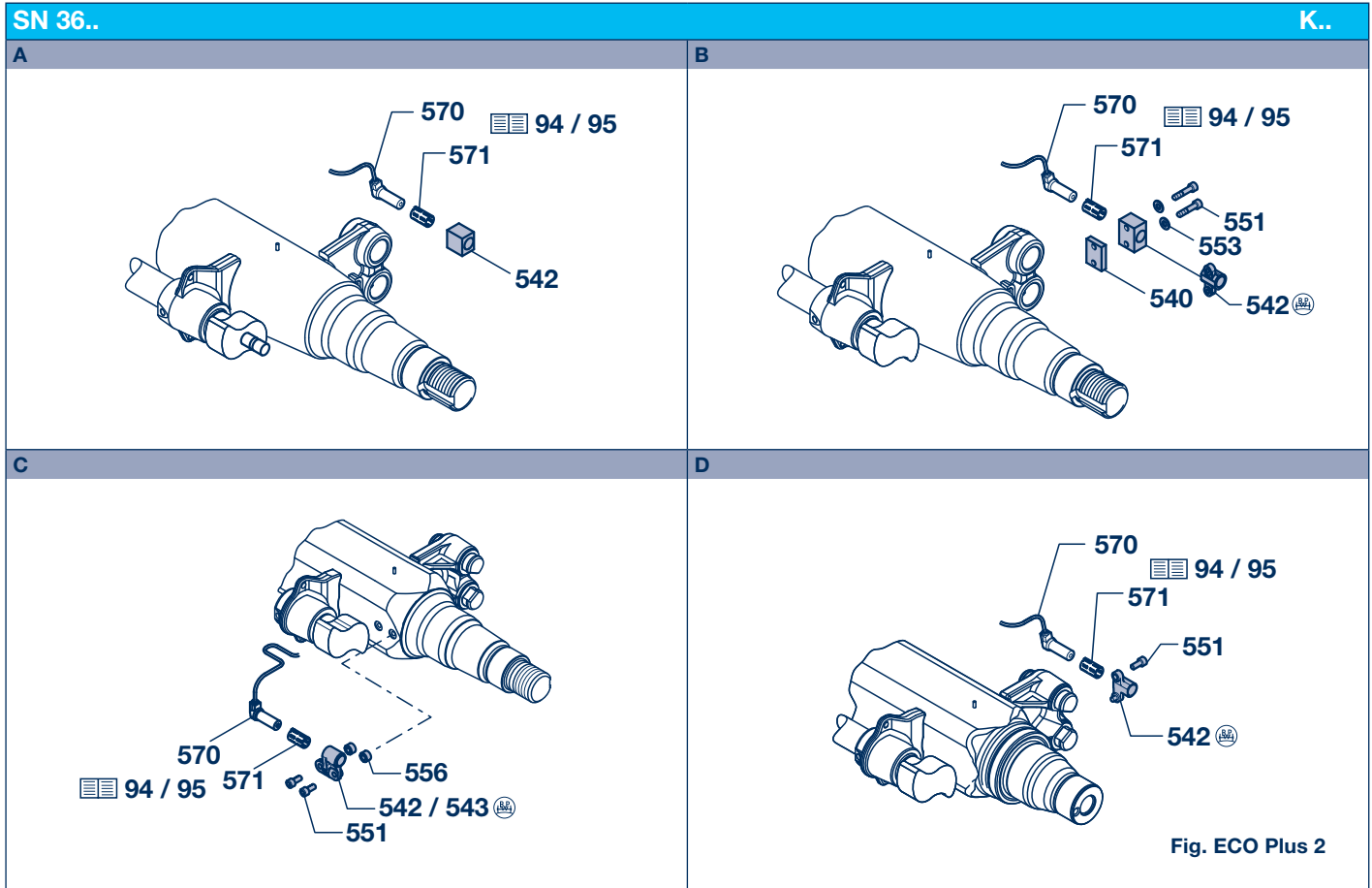


Fig. ECO Plus 2

Supplementary installation kits cpl., see page 97

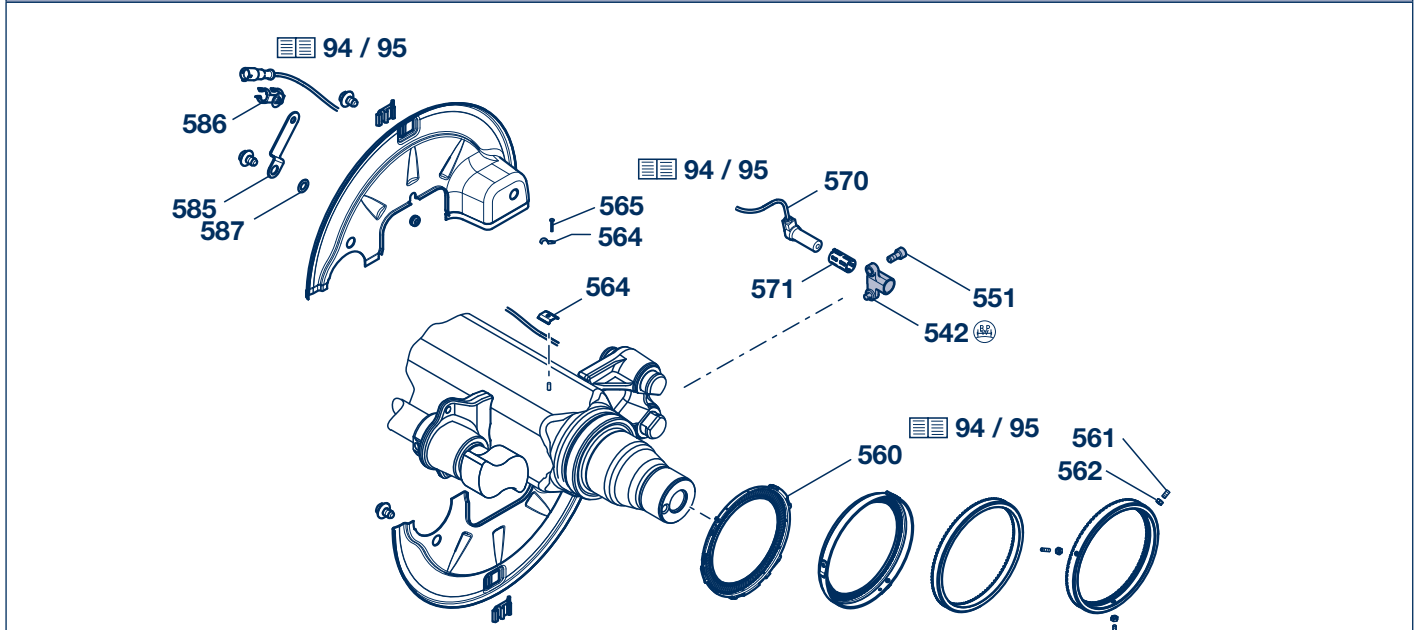


Fig. ECO Plus 2

for ABS Wabco / Bosch / Grau-Girling DGX / Grau-Girling MGX100 / Knorr

ABS 6

ABS parts 6.1

K..

SN 36..				K..
Item	Designation (remark)	BPW item no.	Dimension	Axle version
542	Fig. A			
	Block	03.221.56.16.0		KRBM 6408 30.65.542....
	Sensor bracket	05.189.05.19.0		KRB.. 6408 30.06.542....
540	Fig. B			
	Attachment plate	03.080.03.09.0	50 x 20 x 9.5 / 10° / M 6	KR.. 8 - 9 t
		03.080.03.05.0	50 x 20 x 15.5 / M 6	KH.. 10 t
		03.080.03.03.0	50 x 20 x 16.7 / 5° / M 6	KR.. 10 - 12 t
		03.080.03.20.0	U 60 x 5 x 15 x 16 / 6° / M 6	KR.. 10 - 12 t
		03.080.04.01.0	U 60 x 5 x 15 / 10° / M 6	KR.. 9 t
03.080.03.16.0		60 x 20 x 16 / R65 / M 6	KM.. 13 - 14 t	
542	Block	03.221.67.21.0		KR.. 8 - 12 t / KH.. 10 t
	Sensor bracket	05.189.06.15.0		KM.. 13 - 14 t
		03.189.07.87.0		KR.. 8 - 12 t/3 / KR.. 9 - 12 t
551	Hexagon screw	02.5021.10.80	M 6 x 35 / 931	KR.. 8 - 12 t / KH.. 10 t
	Cylinder head screw	02.5015.00.80	M 6 x 16 / 912	KR.. 8 - 12 t/3
		02.5015.06.80	M 6 x 20 / 912	KM.. 13 - 14 t
553	Spring washer	02.5601.06.90	A 6 / 127	
542	Fig. C			
	Sensor bracket (right)	03.189.07.58.0		KH.. 8 - 12 t
543	Sensor bracket (left)	03.189.07.59.0		KH.. 8 - 12 t ECO / ECO MAXX KH.. 10 - 12 t ECO^{Plus}
551	Locking screw	02.5071.23.00	M 8 x 20	KH.. 8 - 9 t / KH.. 10 - 12 t ECO^{Plus}
	Self tapping screw	02.5047.16.00	AM 8 x 30 / 7513	
556	Sleeve	03.200.71.06.0	Ø 8.5 / 15 x 20	KH.. 10 - 12 t
542	Fig. D			
	Sensor bracket	03.189.14.61.0		KH.. 8 - 9 t ECO^{Plus} /
551	Locking screw	02.5071.23.00	M 8 x 20 (2x)	KH.. 8 - 9 t ECO Plus 2 / 3

K

6 ABS

6.1 ABS parts, ABS retrofit kits

K..

SN 36..			K..
<p>A</p>	<p>B</p>	<p>C</p>	<p>D</p>
<p>E</p>	<p>F</p>	<p>G</p>	

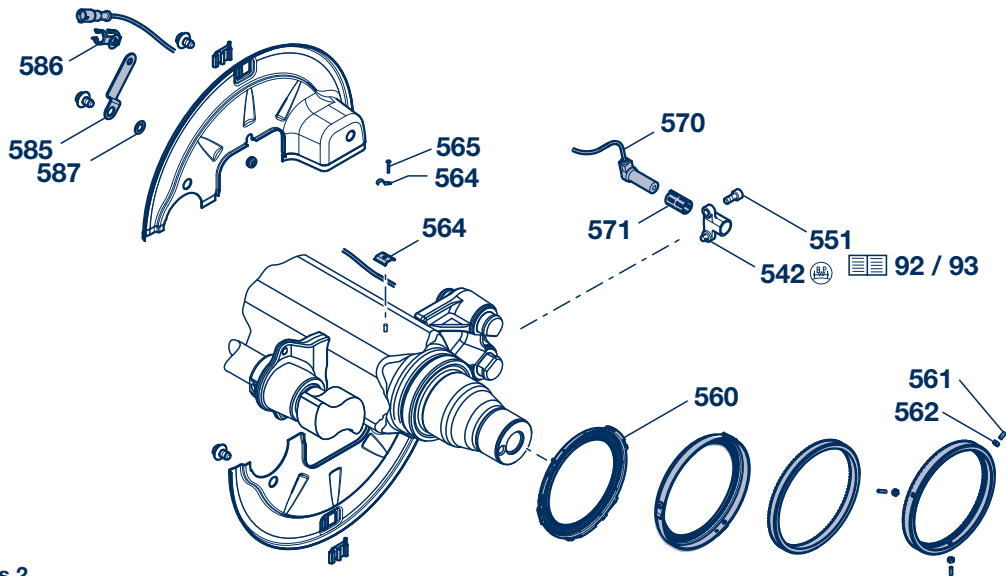


Fig. ECO Plus 2

for ABS Wabco / Bosch / Grau-Girling DGX / Grau-Girling MGX100 / Knorr

SN 36..				K..	
Item	Designation (remark)	BPW item no.	Dimension	Fig.	Axle version
560	Exciter ring				
	80 teeth (Z) solid, shrunk-on sheet metal ¹⁾ = 03.310.08.45.0	03.310.08.18.0	Ø 152 / 170 x 15	A	K.. 6.4 - 9 t K.. 8 - 12 t ECO / ECO MAXX
	100 teeth (Z) solid, shrunk-on, sheet metal ¹⁾ = 03.310.08.42.0	03.310.08.15.0	Ø 152 / 170 x 15	A	K.. 8 - 9 t/3 K.. 8 - 9 t/3 ECO / ECO MAXX
	80 teeth (Z) solid, shrunk-on	03.310.08.34.0	Ø 194 / 213 x 15	B	KM.. 13 - 14 t
	80 teeth (Z) Bayonet	03.310.08.53.0	Ø 125 / 156 x 8.5	D	K.. 8 - 9 t ECO ^{Plus} / K.. 8 - 9 t ECO Plus 2
	100 teeth (Z) Bayonet	03.310.08.51.0	Ø 125 / 156 x 8.5	D	K.. 8 - 9 t/3 ECO ^{Plus} / K.. 8 - 9 t/3 ECO Plus 2
	90 teeth (Z) sheet metal, pressed-on	03.310.08.57.0	Ø 121.5 / 170 / 178 x 14.5	G	K.. 8 - 9 t/3 ECO Plus 3
	80 teeth (Z) clipped-on	05.310.08.44.1	Ø 150 / 176 / 180 x 19.5	E	K.. 10 - 12 t ECO MAXX K.. 10 - 12 t ECO ^{Plus}
	100 teeth (Z) clipped-on	05.310.08.50.1	Ø 150 / 176 / 180 x 19.5	E	K.. 10010/3
	80 teeth (Z) bolted	03.310.08.24.1	Ø 170 / 176 / 194 x 17.5 / 3 x M 6	F	K.. 10010 - 12010 K.. 10010 - 12010 ECO
561	Grub screw	02.5018.09.08	M 6 x 15 / 914-45H		K.. 10010 - 12010
562	Hexagon nut	02.5202.10.82	M 6 / 934		K.. 10010 - 12010 ECO
¹⁾ For replacement purposes, shrunk-on sheet metal exciter rings are replaced by solid exciter rings					
564	Attachment (for grooved pin)	02.0326.32.00	1 x 6 / 72571-St		
	Clamp (clip for welded bolt)	02.3507.32.00			
565	Drive pin	02.6005.25.40	Ø 4 x 10 / 1476-St		
570	Sensor	02.3317.05.00			
571	Bush	02.0316.59.00			
585	Support	03.189.07.72.0			
586	Support	02.1421.11.00			
587	Serrated lock washer	02.5414.11.90	A 10.5 / 6798		

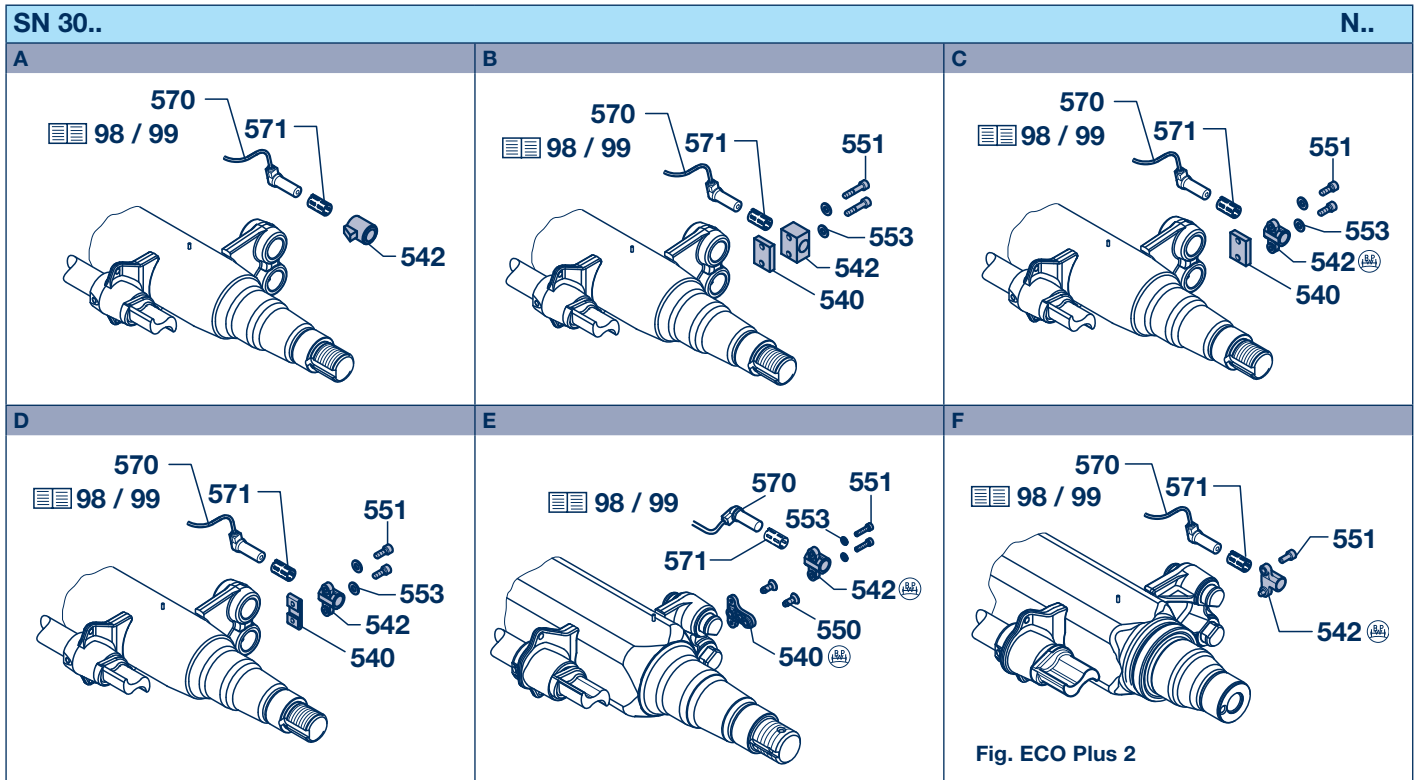
ABS retrofit kits SN 36..				K..	
Supplementary installation kit ABS for one axle, consisting of exciter rings, sensors, sensor brackets, attachment parts and assembly drawings.				For ABS Wabco / Bosch also for Grau-Girling DGX / Grau-Girling MGX 100 / Knorr	
Axle type	Comment	Brake	BPW item no.		
KH.. 6500 - 9000	<input type="checkbox"/> 120, sensor bracket screwed on	SN 36.. BPW 95	05.801.72.29.0		
KH.. 8000 - 9000 ECO ^{Plus} / ECO Plus 2	<input type="checkbox"/> 120, sensor bracket screwed on	SN 36.. BPW 95	05.801.74.13.0		
KH.. 8010/3 ECO ^{Plus} / ECO Plus 2	<input type="checkbox"/> 120, sensor bracket screwed on	SN 36.. BPW 95	05.801.74.12.0		
KH.. 9000 ECO Plus 3	<input type="checkbox"/> 120, sensor bracket screwed on	SN 36.. ECO Drum	05.801.74.92.0		
KH.. 10010 - 12010	<input type="checkbox"/> 120, sensor bracket screwed on	SN 36.. BPW 95	05.801.73.67.0		

Alternative versions on request.

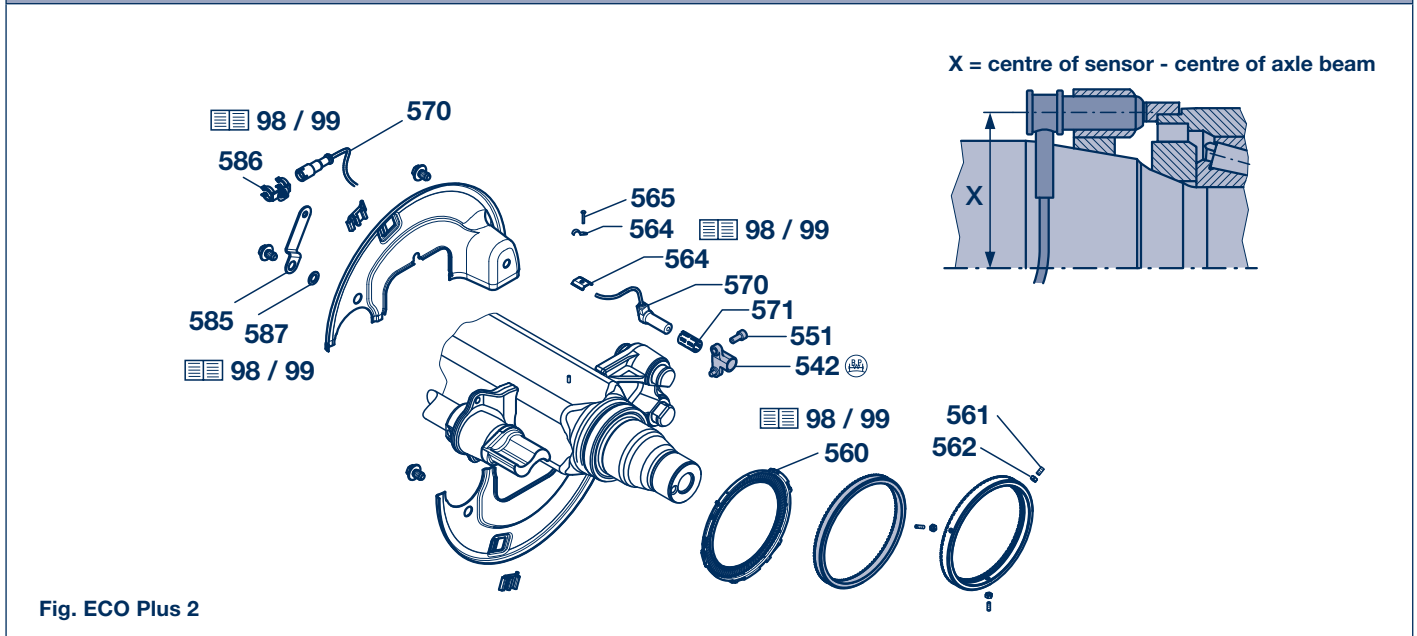
6 ABS

6.1 ABS parts

N..



Supplementary installation kits cpl., see page 101



for ABS Wabco / Bosch / Grau-Girling DGX / Grau-Girling MGX100 / Knorr

ABS 6**N..****ABS parts 6.1**

SN 30..						N..	
Item	Designation (remark)	Year of manufacture	BPW item no.	Axle version / dimension	X	suitable for exciter ring	
542	Fig. A Support	1982 - 1989	05.189.05.19.0	NR.. 6010 / 6410	81	03.310.08.18.0	
			05.189.05.19.0	NR.. 8010 / 9010 TB 295	81	03.310.08.18.0	
540	Fig. B Attachment plate	1985 - 1989	03.080.03.03.0	NR.. 10010 - 12010 TB 295	93	03.310.08.24.1	
542	Block		03.221.67.21.0				
551	Hexagon screw		02.5021.10.80	M 6 x 35 / 931			
553	Spring washer		02.5601.06.90	A 6 / 127			
540	Fig. C Attachment plate	1990 - 1995	03.080.03.20.0	NR.. 6006 / 6408 / 6410	77	03.310.08.27.0	
		1982 - 1989	03.080.04.01.0	NR.. 8010 / 9010 TB 260	81	03.310.08.18.0	
		1990 - 1995	03.080.04.01.0	NR.. 8010 / 9010	81	03.310.08.18.0	
		1982 - 1989	03.080.03.20.0	NR.. 10010 - 12010 TB 260	81	05.310.08.44.1	
		1990 - 1995	03.080.03.20.0	NR.. 10010 - 12010	81	05.310.08.44.1	
542	Support		03.189.07.87.0				
551	Cylinder head screw		02.5015.00.80	M 6 x 16 / 912			
553	Spring washer		02.5601.06.90	A 6 / 127			
540	Fig. D Shaped plate		03.160.23.01.0 *	NH.. 6006 / 6408 / 6410	77	03.310.08.43.0	
		542	Support	03.189.12.02.0			
		551	Cylinder head screw	02.5015.94.80			M 6 x 12 / 912
		553	Spring washer	02.5601.06.90			A 6 / 127
540	Fig. E Support		03.189.11.77.0	NH.. 8010 / 9010 NH.. 10010 - 12010	81	03.310.08.18.0	
		542	Support	03.189.07.87.0	81	05.310.08.44.1	
		550	Tapping screw	03.341.00.07.0	M 8 x 20		
		551	Cylinder head screw	02.5015.00.80	M 6 x 16 / 912		
		553	Spring washer	02.5601.06.90	A 6 / 127		
542	Fig. F Sensor bracket		03.189.14.61.0	NH.. 8 - 9 t ECO Plus 2 / 3	81	03.310.08.53.0	
		551	Locking screw	02.5071.23.00		M 8 x 20 (2x)	03.310.08.57.0

* no longer available

6 ABS

6.1 ABS parts

N..

SN 30..			N..
<p>A</p>	<p>B</p>	<p>C</p>	<p>D</p>
<p>E</p>	<p>F</p>	<p>G</p>	

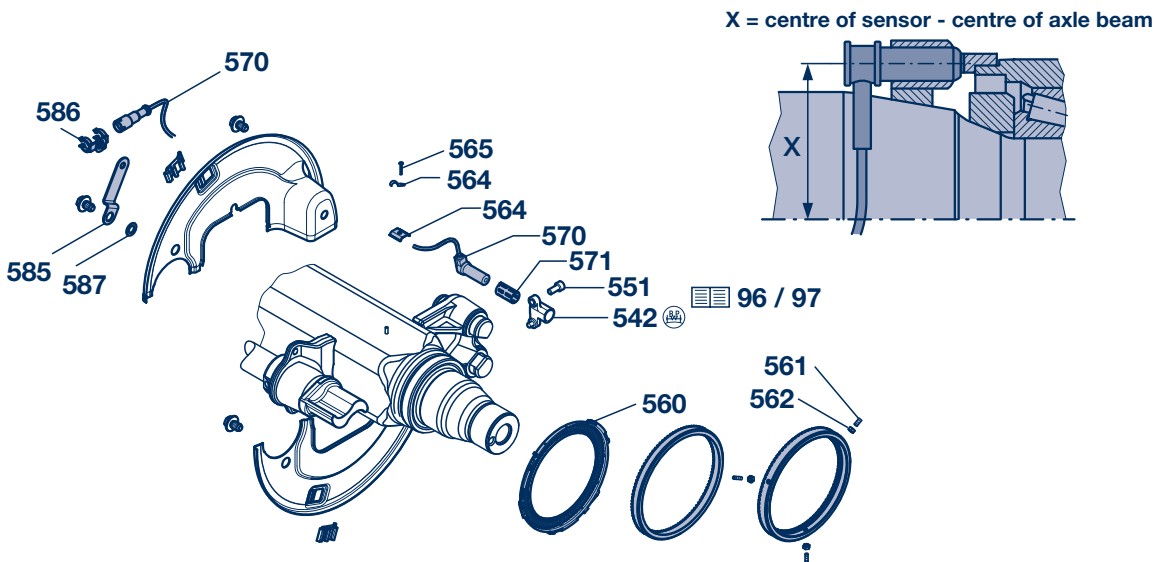


Fig. ECO Plus 2

for ABS Wabco / Bosch / Grau-Girling DGX / Grau-Girling MGX100 / Knorr

ABS 6**N.. ABS parts, ABS retrofit kits 6.1**

SN 30..						N..
Item	Designation (remark)	Year of manufacture	BPW item no.	Axle version / dimension	X	Fig.
560	Ring (exciter ring), for usage see page 99					
		80 teeth (Z) solid, shrunk-on	03.310.08.27.0	Ø 145 / 152 / 163 x 17	77	A
		80 teeth (Z) solid, shrunk-on	03.310.08.43.0	Ø 148 / 152 / 163 x 17	77	B
		80 teeth (Z) solid, shrunk-on	03.310.08.18.0	Ø 152 / 170 x 15	81	C
		80 teeth (Z) clipped-on	05.310.08.44.1	Ø 150 / 174 / 176 / 180 x 19.5	81	D
		80 teeth (Z) Bayonet	03.310.08.53.0	Ø 125 / 156 x 8.5	71	E
		80 teeth (Z) sheet metal, pressed-on	03.310.08.56.0	Ø 121.5 / 170 / 178 x 14.5	71	G
		90 teeth (Z) sheet metal, pressed-on	03.310.08.57.0	Ø 121.5 / 170 / 178 x 14.5	71	G
		80 teeth (Z) bolted	03.310.08.24.1 ¹⁾	Ø 170 / 176 / 194 x 17.5 / 3 x M 6	93	F
561	Grub screw		02.5018.09.08	M 6 x 15 / 914 - 45H		
562	Hexagon nut		02.5202.10.82	M 6 / 934		
564	Attachment (for grooved pin)		02.0326.32.00	1 x 6 / 72571-St	X = see fig.	
	Clamp (clip for welded bolt)		02.3507.32.00			
565	Drive pin		02.6005.25.40	Ø 4 x 10 / 1476-St		
570	Sensor		02.3317.05.00			
571	Bush		02.0316.59.00			
585	Support		03.189.07.72.0			
586	Support		02.1421.11.00			
587	Serrated lock washer		02.5414.11.90	A 10.5 / 6798		

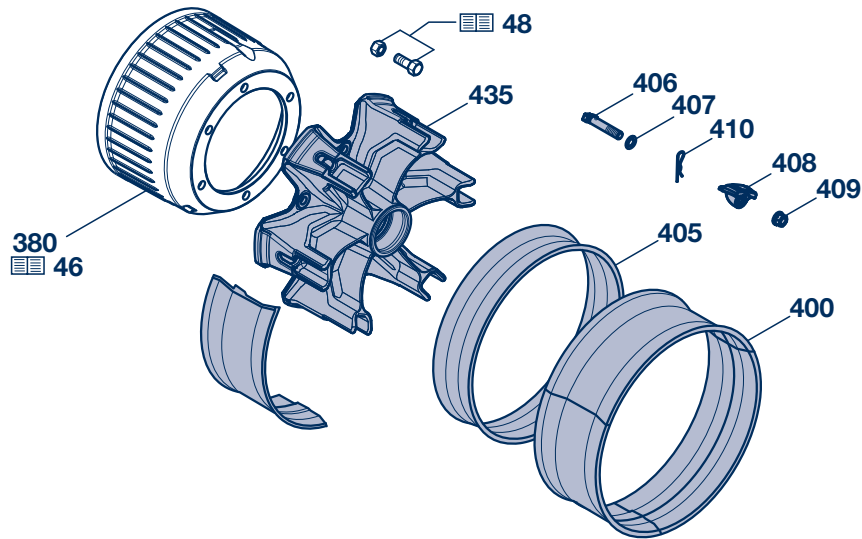
¹⁾ Exciter rings with mounting bore Ø 176 can also be bolted to hubs with exciter ring seat Ø 175 mm.

ABS retrofit kits SN 30..				N..
ABS retrofit kits for one axle, consisting of exciter rings, sensors, sensor brackets, attachment parts and assembly drawings.			For ABS Wabco / Bosch also for Grau-Girling DGX / Grau-Girling MGX 100 / Knorr	
Axle type	Comment	Brake	BPW item no.	
NH.. 6000 / 6400	<input type="checkbox"/> 120	SN 3015 BPW 95	05.801.73.51.0	
NH.. 7010	<input type="checkbox"/> 120, sensor bracket screwed on	SN 3015 BPW 95	05.801.74.67.0	
NH.. 7000 ECO Plus 3	<input type="checkbox"/> 120, sensor bracket screwed on	SN 3015	05.801.74.98.0	
NH.. 8010 / 9010	<input type="checkbox"/> 120, sensor bracket screwed on	SN 3020 BPW 95	05.801.73.53.0	
NH.. 8010 / 9010 ECO Plus 2	<input type="checkbox"/> 120, sensor bracket screwed on	SN 3020 BPW 95	05.801.74.66.0	
NH.. 9000 ECO Plus 3	<input type="checkbox"/> 120, sensor bracket screwed on	SN 3020	05.801.74.99.0	
NR.. 10010	<input type="checkbox"/> 127, brake drums 260 mm wide	SN 30..-1	05.801.72.72.0	
NR.. 10010	<input type="checkbox"/> 127	SN 30.. Half shell	05.801.72.98.0	
NH.. 10010 - 12010	<input type="checkbox"/> 120, sensor bracket screwed on	SN 30.. Half shell	05.801.73.55.0	
NH.. 10010 - 12010 ^{ECOPlus}	<input type="checkbox"/> 120, sensor bracket screwed on	SN 3020 BPW 95	05.801.74.83.0	

Alternative versions on request..

7 TRILEX

H..



Item	Designation	BPW item no.	Dimension	BPW item no.	Dimension
		6.5 - 9 t	-.06. / 08. / 09.----	10 - 12 t	-.10.----
435	TRILEX wheel				
	HI.. 20" / 22.5"	02.3910.31.16 ¹⁾	BSI / GF	-	
	HIZ.. 20" / 22.5"	02.3910.31.24 ²⁾	BSI / GF		
		13 - 14 t (14000-1)		16 - 18 t	
		-.14.----		-.16.----	
	HIZ.. 20" / 22.5"	03.328.83.04.0 ²⁾	BPW	-	
	HIZ.. 24"	03.328.83.06.0 ³⁾	BPW	03.328.86.05.0 ²⁾	BPW narrow spoke

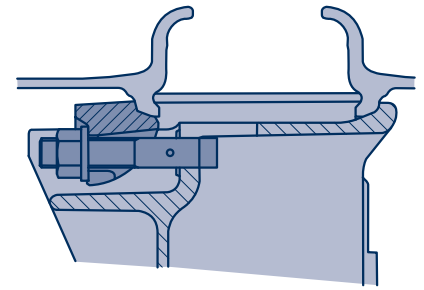
¹⁾ for TRILEX screws M 18 x 2

²⁾ for TRILEX screws M 20 x 2

³⁾ for rim 7.5 to 8.5 - 20" and Unilex/Tublex TRILEX screws M 20 x 2

H..

Item	Designation	BPW item no.	Dimension	BSI and/or GF number
400	Rim	02.1034.01.00	8.5 - 24	650 - 410 - 357
		02.1034.03.00	10.0 - 20	650 - 410 - 373
405	Spacer ring	02.5671.58.00	177 - 20	656 - 062 - 059
		02.5671.61.00	139 - 20	656 - 042 - 049
		02.5671.63.00	177 - 24	656 - 062 - 459
406	Screw	02.5070.22.00	M 18 x 2 x 125	659 - 112 - 456
		02.5070.89.00	M 20 x 2 x 57	659 - 112 - 616
		02.5070.86.00	M 20 x 2 x 100	659 - 112 - 611
		02.5070.32.00	M 20 x 2 x 115	659 - 112 - 612
		02.5070.87.00	M 20 x 2 x 130	659 - 112 - 613
		02.5070.88.00	M 20 x 2 x 145	659 - 112 - 614
407	Washer	02.5450.22.00	Ø 20.5 / 34 x 2.5	659 - 120 - 228
408	Clamping plate HIZ..	02.1816.14.00	Ø 21 20"/24"	659 - 002 - 171
409	Nut	02.5270.03.00	M 18 x 2 / SW 27	659 - 115 - 300
		02.5270.04.00	M 20 x 2 / SW 27	659 - 115 - 304
410	Clamp	02.1818.10.00		659 - 130 - 017

**H**

8 Wheel studs

General

BPW wheel studs

The wheel brace (or wheel disc) connects the rim with the wheel hub and must absorb the vertical, lateral and longitudinal forces that occur and transmit them to the wheel hub via the wheel studs (wheel screws).


BPW axles are suitable for wheels with either bolt or spigot alignment. BPW axles are supplied with either collar bolts or helical fit wheel bolts, depending on the axle type and axle load.

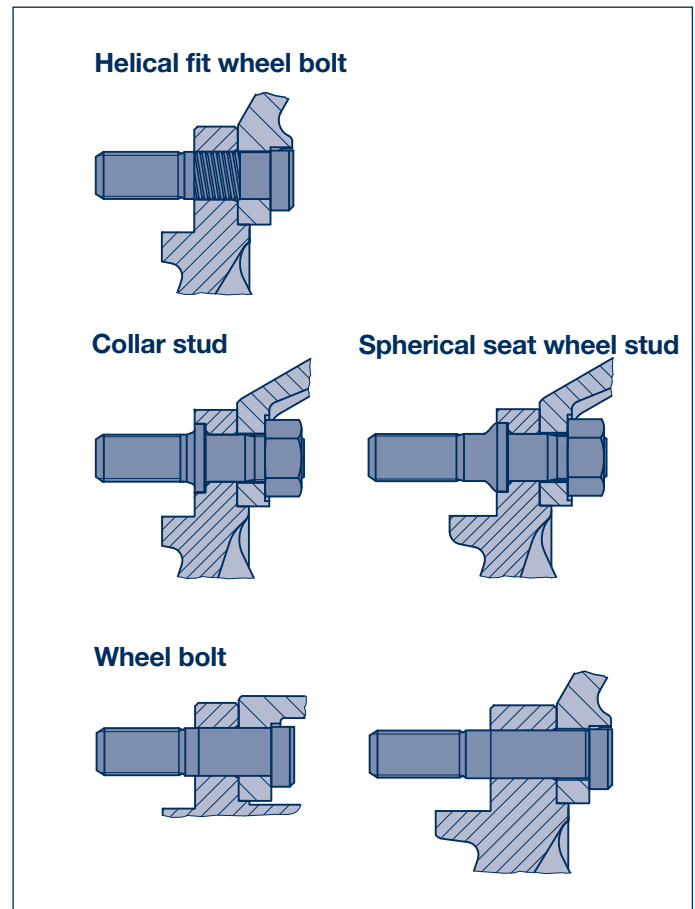
Spiral studs are easy to maintain and connect the brake drum to the hub using a pressfit. As a result, there is no need for internal nuts.

The hub bore is not damaged even after several removal/fitting operations (in contrast to splined bolts) and the clamping forces for the wheel studs remain constant.

A collar stud also allows repeated removal and installation, although it is secured using an internal nut.

The prescribed BPW tightening torques for wheel fastenings are listed in the current BPW maintenance instructions and must be observed.

 **The use of aggressive and acidic rim cleaners is prohibited. Such substances can severely impair the corrosion protection coating on wheel studs and wheel nuts.**



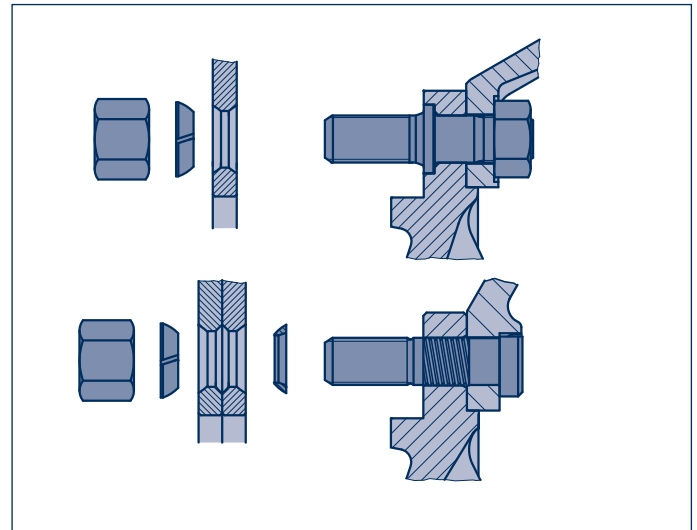
Wheel stud 8

General

Stud alignment:

In stud alignment, the wheel brace (with countersunk stud holes) is centred using wheel studs with (spring) centring rings.

In the case of spherical studs, the wheel nave is directly centred on the collar of the wheel studs.

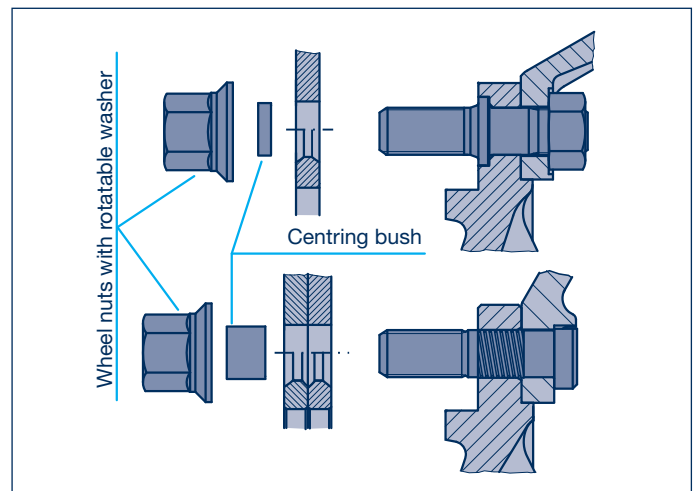


Spigot alignment

In spigot alignment, the wheel brace is centred using a centring spigot or ring surfaces on the wheel hub.

Centring bushes may be mounted on two opposing wheel studs of each hub in the case of wheels with spigot alignment. This is not necessary, however.

Centring bushes must be mounted on two opposing wheel studs of each hub in the case of wheels with mixed centring.



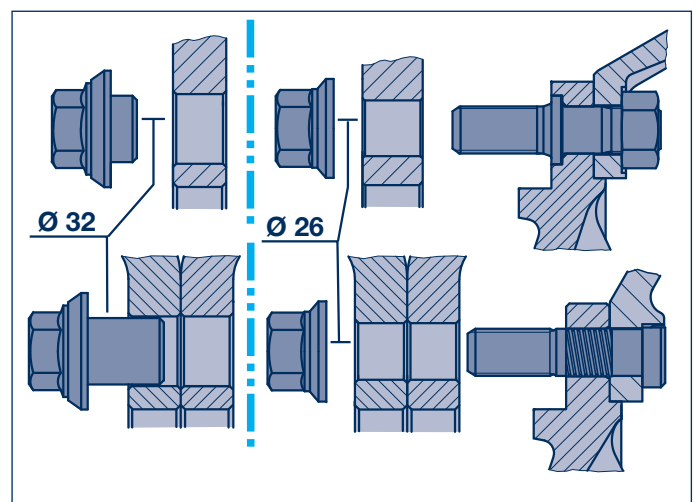
Aluminium wheels

In the case of aluminium wheels, the wheel brace is centred using a centring cam or ring surfaces on the wheel hub.

As the flange thickness of aluminium wheels is greater than that of steel wheels, it is necessary to check whether the vehicle is equipped for having aluminium wheels fitted (with stud hole $\text{Ø } 26$), (i.e. whether there is a sufficient hub shoulder and longer wheel studs).

If not, aluminium wheels with stud hole $\text{Ø } 32$ can be used in conjunction with shaft nuts without replacing the hub or the wheel studs.

(The wheel is not centred by the shaft nuts.)



H

R

K

N

8 Wheel studs

8.1 Single wheels

Thread (D)	Hub		Wheel type						Wheel nut				Fig.	Item 470	Item 472	Item 474		
	Steel hub	Aluminium hub	Steel wheel with offset	Steel wheel without offset	Aluminium wheel Ø 26 with offset	Aluminium wheel Ø 26 without offset	Aluminium wheel Ø 32 with offset	Aluminium wheel Ø 32 without offset	Stud alignment:	Spigot alignment	Standard SW 24	Standard SW 27					Standard SW 32	Cap nut SW 33
Wheel stud															Wheel stud assembly cpl. 09.806. (Item 472-474, 477-479)	Dimension Wheel stud L / L1 / L2	Wheel stud 03.296.	Rear nut 03.260.
M 20 x 1.5																		
Collar stud	•		•					•		•				2 B	22.05.0	94 / 43 / 47	22.04.1	03.05.0
	•		•					•		•				2 D	-	94 / 43 / 47	22.04.1	03.05.0
M 22 x 1.5																		
Collar stud	•	•						•		•				1 A	23.23.0	84 / 46 / 33	23.14.0	04.06.0
	•	•						•		•				1 C	23.17.0	84 / 46 / 33	23.14.0	04.06.0
	•	•						•		•		•		~1 C	23.36.0	84 / 46 / 33	23.14.0	04.06.0
	•	•						•		•				2 A	23.27.0	100 / 46 / 49	23.15.1	04.06.0
	•	•						•		•				2 C	23.18.0	100 / 46 / 49	23.15.1	04.06.0
	•	•						•		•		•		~2 C	23.37.0	100 / 46 / 49	23.15.1	04.06.0
	•			•						•				1 E	23.56.0	101 / 60 / 36	23.16.0	04.06.0
	•				•					•				2 E	23.22.0	114 / 60 / 49	23.17.0	04.06.0
	•				•					•		•		~2 E	23.29.0	114 / 60 / 49	23.17.0	04.06.0
	•					•							•	1 F	-	84 / 46 / 33	23.14.0	04.06.0
	•					•							•	2 F	-	100 / 46 / 49	23.15.1	04.06.0
Helical fit wheel bolt	•		•					•		•				3 A	33.57.0	89 / 54	33.14.1	-
	•		•					•		•				3 A	33.75.0	80 / 45	33.11.1	-
	•		•					•		•				3 A	33.80.0	93 / 58	33.21.1	-
	•		•					•		•				3 C	33.11.0	89 / 54	33.14.1	-
	•		•					•		•				3 C	33.76.0	80 / 45	33.11.1	-
	•		•					•		•				3 C	33.81.0	93 / 58	33.21.1	-
	•		•					•		•		•		~3 C	-	89 / 54	33.14.1	-
	•		•					•		•		•		~3 C	33.77.0	80 / 45	33.11.1	-
	•				•					•				3 E	33.68.0	97 / 62	33.12.1	-
	•				•					•				3 E	33.81.0	93 / 58	33.21.1	-
	•				•					•		•		~3 E	-	103 / 58	33.13.1	-
	•						•						•	3 F	-	89 / 54	33.14.1	-
	•						•						•	3 F	33.78.0	80 / 45	33.11.1	-
	•						•						•	3 F	33.83.0	93 / 58	33.21.1	-
	•	•						•		•				3 A	-	103 / 58	33.13.1	-
	•	•						•		•				3 C	33.59.0	103 / 58	33.13.1	-
	•	•						•		•		•		~3 C	-	103 / 58	33.13.1	-
	•				•					•				3 E	33.59.0	103 / 58	33.13.1	-
	•				•					•		•		~3 E	-	103 / 58	33.13.1	-
	•						•						•	3 F	-	103 / 58	33.13.1	-
M 22 x 2																		
Spherical seat wheel stud	•	•						•		•				1 A	23.01.0	84 / 46 / 33	23.02.0	04.06.0

1) Bush not included in wheel stud assembly 09.806.... (page 103).

SW = Spanner width

Wheel stud 8

Single wheels 8.1

Item 476	Item 478	Item 479
Bush ¹⁾ 03.112.	Spring washer 02.5615.	Wheel nut
-	20.90	02.5213.14.10
-	-	02.5219.20.10
-	22.90	03.260.04.12.0
00.43.0	-	05.260.54.10.0
00.43.0	-	05.260.54.19.0
-	22.90	03.260.04.12.0
00.43.0	-	05.260.54.10.0
00.43.0	-	05.260.54.19.0
-	-	05.260.54.10.0
-	-	05.260.54.10.0
-	-	05.260.54.19.0
-	-	05.260.54.21.1
-	-	05.260.54.21.1
-	22.90	03.260.04.12.0
-	22.90	03.260.04.12.0
-	22.90	03.260.04.12.0
00.43.0	-	05.260.54.10.0
00.43.0	-	05.260.54.10.0
00.43.0	-	05.260.54.10.0
00.43.0	-	05.260.54.19.0
00.43.0	-	05.260.54.19.0
-	-	05.260.54.10.0
-	-	05.260.54.10.0
-	-	05.260.54.19.0
-	-	05.260.54.21.1
-	22.90	03.260.04.12.0
00.43.0	-	05.260.54.10.0
00.43.0	-	05.260.54.19.0
-	-	05.260.54.10.0
-	-	05.260.54.19.0
-	-	05.260.54.21.1
-	22.90	03.260.04.01.0

Collar stud		Helical fit wheel bolt											
Collar stud Wheels with offset	1	Collar stud Wheels without offset	2	Helical fit wheel bolt	3								
				<p>Stahl-Nabe x = 20 Alu-Nabe x = 30</p>									
Steel wheels Stud alignment	A		B	Tightening torques for wheel nuts item 479 <table border="1"> <thead> <tr> <th>Thread</th> <th>Stud alignment:</th> </tr> </thead> <tbody> <tr> <td>M 20 x 1.5</td> <td>380 Nm (360 - 400)</td> </tr> <tr> <td>M 22 x 1.5</td> <td>510 Nm (485 - 535)</td> </tr> <tr> <td>M 22 x 2</td> <td>460 Nm (435 - 485)</td> </tr> </tbody> </table>		Thread	Stud alignment:	M 20 x 1.5	380 Nm (360 - 400)	M 22 x 1.5	510 Nm (485 - 535)	M 22 x 2	460 Nm (435 - 485)
Thread	Stud alignment:												
M 20 x 1.5	380 Nm (360 - 400)												
M 22 x 1.5	510 Nm (485 - 535)												
M 22 x 2	460 Nm (435 - 485)												
Steel wheels Spigot alignment	C		D	Tightening torques for wheel nuts item 479 <table border="1"> <thead> <tr> <th>Thread</th> <th>Spigot alignment</th> </tr> </thead> <tbody> <tr> <td>M 20 x 1.5</td> <td>480 Nm (455 - 505)</td> </tr> <tr> <td>M 22 x 1.5</td> <td>630 Nm (600 - 660)</td> </tr> </tbody> </table>		Thread	Spigot alignment	M 20 x 1.5	480 Nm (455 - 505)	M 22 x 1.5	630 Nm (600 - 660)		
Thread	Spigot alignment												
M 20 x 1.5	480 Nm (455 - 505)												
M 22 x 1.5	630 Nm (600 - 660)												
Aluminium wheels Ø 26	E	Aluminium wheels Ø 32	F	Tightening torques for wheel nuts item 479 <table border="1"> <thead> <tr> <th>Thread</th> <th>Spigot alignment</th> </tr> </thead> <tbody> <tr> <td>M 22 x 1.5</td> <td>630 Nm (600 - 660)</td> </tr> </tbody> </table>		Thread	Spigot alignment	M 22 x 1.5	630 Nm (600 - 660)				
Thread	Spigot alignment												
M 22 x 1.5	630 Nm (600 - 660)												
<p>03.260.03.05.0 = M 20 x 1.5 03.260.04.06.0 = M 22 x 2</p>				Tightening torques for rear nuts item 474 <table border="1"> <thead> <tr> <th>Thread</th> <th></th> </tr> </thead> <tbody> <tr> <td>M 20 x 1.5</td> <td>300 Nm (270 - 330)</td> </tr> <tr> <td>M 22 x 2</td> <td>400 Nm (360 - 440)</td> </tr> </tbody> </table>		Thread		M 20 x 1.5	300 Nm (270 - 330)	M 22 x 2	400 Nm (360 - 440)		
Thread													
M 20 x 1.5	300 Nm (270 - 330)												
M 22 x 2	400 Nm (360 - 440)												

H
R
K
N

8 Wheel studs

8.2 Twin wheels

Thread (D)	Hub		Wheel type				Wheel nut					Fig.	Item 470	Dimension Wheel stud L / L1 / L2	Item 472	Item 474	Item 476	
	Steel hub	Aluminium hub	Steel wheel	Aluminium wheel Ø 26	Aluminium wheel Ø 32	Stud alignment:	Spigot alignment	Standard SW 24	Standard SW 27	Standard SW 32	Cap nut SW 32							Cap nut SW 33
Wheel stud													Wheel stud assembly cpl. 09.806. (Item 472-474, 477-479)		Wheel stud 03.296.	Rear nut 03.260.	Bush ¹⁾ 03.112.	
M 18 x 1.5																		
Collar stud	●		●			●		●					1 C	-	102 / 51 / 47	-	03.05.0	-
Spherical seat wheel stud	●		●			●		●					2 B	11.11.0	97 / 46 / 47	11.10.0	03.05.0	-
Wheel bolt	●		●			●		●					4 A	31.08.0	81 / 50	31.03.0	-	-
	●		●			●		●					4 D	-	81 / 50	31.03.0	-	-
M 20 x 1.5																		
Collar stud	●		●			●		●					1 A	12.03.0 ³⁾	101 / 48 / 47	12.04.0 ³⁾	03.05.0	-
													1 A	12.05.0	106 / 53 / 47	12.05.0	03.05.0	-
Wheel bolt	●		●			●		●					4 A	-	89 / 56	-	-	-
	●		●			●		●					4 D	-	89 / 56	-	-	-
M 22 x 1.5																		
Collar stud	●		●			●		●					1 A	23.28.0	114 / 60 / 49	23.17.0	04.06.0	-
	●		●			●		●					1 C	23.22.0	114 / 60 / 49	23.17.0	04.06.0	00.42.0
	●		●			●		●			●		~1 C	23.29.0	114 / 60 / 49	23.17.0	04.06.0	00.42.0
	●		●			●		●					1 E	23.50.0	139 / 85 / 49	23.24.0	04.06.0	-
	●		●			●		●			●		~1 E	-	139 / 85 / 49	23.24.0	04.06.0	-
	●		●			●		●			●		1 F	-	139 / 85 / 49	23.24.0	04.06.0	-
Helical fit wheel bolt	●		●			●		●					3 A	33.67.0	97 / 62	33.12.1	-	-
	●		●			●		●					3 A	33.80.0	93 / 58	33.21.1	-	-
	●		●			●		●					3 C	33.68.0	97 / 62	33.12.1	-	00.42.0
	●		●			●		●					3 C	33.81.0	93 / 58	33.21.1	-	00.42.0
	●		●			●		●			●		~3 C	33.69.0	97 / 62	33.12.1	-	00.42.0
	●		●			●		●					3 E	-	117 / 82	33.17.1	-	-
	●		●			●		●			●		3 F	33.84.0	89 / 54	33.14.1	-	-
	●		●			●		●			●		3 F	33.85.0	97 / 62	33.12.1	-	-
Wheel bolt	●		●			●		●					5 A	33.06.0	92 / 70	33.08.1	-	-
	●		●			●		●					5 C	-	92 / 70	33.08.1	-	00.42.0
	●		●			●		●			●		~5 C	33.09.0	92 / 70	33.08.1	-	00.42.0
	●	●	●			●		●					6 A	-	128 / 84	33.09.0	-	-
	●	●	●			●		●					6 C	-	128 / 84	33.09.0	-	00.42.0
	●	●	●			●		●			●		~6 C	-	128 / 84	33.09.0	-	00.42.0
	●	●	●			●		●					6 D	-	128 / 84	33.09.0	-	-
	●	●	●			●		●			●		~6 D	-	128 / 84	33.09.0	-	-
	●		●			●		●			●		6 F	-	128 / 84	33.09.0	-	-
M 22 x 2																		
Spherical seat wheel stud	●		●			●		●					2 B	13.02.0	111 / 57 / 49	13.09.0	04.06.0	-
	●		●			●		●			●		~2 B	13.09.0	111 / 57 / 49	13.09.0	04.06.0	-
	●		●			●		●			●		~2 B	13.23.0	111 / 57 / 49	13.09.0	04.06.0	-

¹⁾ Bush not included in wheel stud assembly 09.806.... (page 103).

SW = Spanner width

²⁾ Centering ring with wheel stud and twin wheels

³⁾ replaced by 03.296.12.05.0 / 09.806.12.05.0 after remaining stocks have been used up

⁴⁾ replaced by 05.260.54.14.2 after remaining stocks have been used up

Wheel stud 8

Twin wheels 8.2

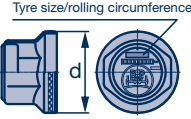
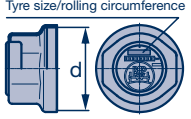
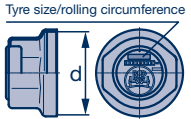
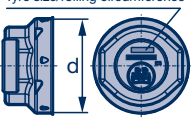
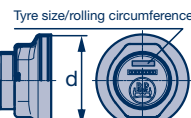
Item 477	Item 478	Item 479
Centering ring ²⁾ 03.310.	Spring washer 02.5615.	Wheel nut
-	-	05.260.53.07.0
-	18.94	02.5213.12.14
10.27.0	18.94	02.5213.12.14
-	-	05.260.53.07.0
-	20.90	02.5213.14.10
-	20.90	02.5213.14.10
10.02.0	20.90	02.5213.14.10
-	-	02.5219.20.10
10.13.0	22.90	03.260.04.12.0
-	-	05.260.54.10.0
-	-	05.260.54.19.0
-	-	05.260.54.10.0
-	-	05.260.54.19.0
-	-	05.260.54.14.1 ⁴⁾
10.13.0	22.90	03.260.04.12.0
10.13.0	22.90	03.260.04.12.0
-	-	05.260.54.10.0
-	-	05.260.54.19.0
-	-	05.260.54.10.0
-	-	05.260.54.19.0
10.13.0	22.90	03.260.04.12.0
-	-	05.260.54.10.0
-	-	05.260.54.19.0
-	-	05.260.54.19.0
-	-	05.260.54.14.1 ⁴⁾
-	22.90	03.260.04.01.0
-	22.90	05.260.14.03.0
-	22.90	05.260.14.05.0

Collar stud	Spherical seat wheel stud	Helical fit wheel bolt	Wheel bolt										
Collar stud 1	Collar stud 2	Helical fit wheel bolt 3											
Wheel bolt 4	Wheel bolt NR.. 5	Wheel bolt, aluminium hub 6											
Steel wheels Stud alignment A	Steel wheels Spigot alignment C	Tightening torques for wheel nuts item 479 <table border="1"> <thead> <tr> <th>Thread</th> <th>Stud alignment:</th> </tr> </thead> <tbody> <tr> <td>M 18 x 1.5</td> <td>290 Nm (275 - 305)</td> </tr> <tr> <td>M 20 x 1.5</td> <td>380 Nm (360 - 400)</td> </tr> <tr> <td>M 22 x 1.5</td> <td>510 Nm (485 - 535)</td> </tr> <tr> <td>M 22 x 2</td> <td>460 Nm (435 - 485)</td> </tr> </tbody> </table>		Thread	Stud alignment:	M 18 x 1.5	290 Nm (275 - 305)	M 20 x 1.5	380 Nm (360 - 400)	M 22 x 1.5	510 Nm (485 - 535)	M 22 x 2	460 Nm (435 - 485)
Thread	Stud alignment:												
M 18 x 1.5	290 Nm (275 - 305)												
M 20 x 1.5	380 Nm (360 - 400)												
M 22 x 1.5	510 Nm (485 - 535)												
M 22 x 2	460 Nm (435 - 485)												
Aluminium wheels Ø 26 E	Aluminium wheels Ø 32 F	Tightening torques for wheel nuts item 479 <table border="1"> <thead> <tr> <th>Thread</th> <th>Spigot alignment</th> </tr> </thead> <tbody> <tr> <td>M 22 x 1.5</td> <td>630 Nm (600 - 660)</td> </tr> </tbody> </table>		Thread	Spigot alignment	M 22 x 1.5	630 Nm (600 - 660)						
Thread	Spigot alignment												
M 22 x 1.5	630 Nm (600 - 660)												
		Tightening torques for rear nuts item 474 <table border="1"> <thead> <tr> <th>Thread</th> <th></th> </tr> </thead> <tbody> <tr> <td>M 20 x 1.5</td> <td>300 Nm (270 - 330)</td> </tr> <tr> <td>M 22 x 2</td> <td>400 Nm (360 - 440)</td> </tr> </tbody> </table>		Thread		M 20 x 1.5	300 Nm (270 - 330)	M 22 x 2	400 Nm (360 - 440)				
Thread													
M 20 x 1.5	300 Nm (270 - 330)												
M 22 x 2	400 Nm (360 - 440)												
03.260.03.05.0 = M 20 x 1.5 03.260.04.06.0 = M 22 x 2													

H
K
N

9 Accessories

9.1 Hub caps with integrated mechan. odometer

H.. / R..			Axle load 6.5 - 9 t		Axle load 10 - 12 t	
Axle type	Rolling circumference	for tyre e.g.	Hub cap thread (d)	Hub cap with integrated odometer BPW item no.	Hub cap thread (d)	Hub cap with integrated odometer BPW item no.
H.. / R.. Conv. 	3175 - 3220	10.00 R 20 11.00 R 22,5	M 115 x 2 SW 95	05.212.23.34.0 ¹⁾	M 125 x 2 SW 110	-
	3240 - 3260	385 / 65 R 22,5		05.212.23.35.0		05.212.24.43.0
	3280 - 3310	365 / 80 R 20 12.00 R 22,5		05.212.23.27.0		05.212.24.39.0
	3410 - 3470	425 / 65 R 22,5 13.00 R 22,5		-		05.212.24.32.0
	3505	445 / 65 R 22,5		-		05.212.24.37.0 ¹⁾
H.. ECO H.. ECO-MAXX 	2830 - 2860	255 / 70 R 22.5	M 125 x 2 SW 110	-	M 135 x 2 SW 110	05.212.25.24.0*
	3015 - 3134	315 / 70 R 22.5		-		05.212.25.25.0*
	3175 - 3220	10.00 R 20 11.00 R 22.5		05.212.24.49.0 ¹⁾		05.212.25.10.0* ¹⁾ 05.212.25.10.5 miles ¹⁾
	3240 - 3260	385 / 65 R 22.5		-		05.212.25.19.0*
	3280 - 3310	365 / 80 R 20 12.00 R 22.5		05.212.24.56.0		05.212.25.14.0*
	3410 - 3470	425 / 65 R 22.5 13.00 R 22.5		-		05.212.25.11.0* ¹⁾
	3505	445 / 65 R 22.5		-		05.212.25.12.0*
H.. ECO H.. ECO-MAXX H.. ECO^{Plus} 	2830 - 2860	255 / 70 R 22.5	M 136 x 2.5 SW 110	05.212.25.41.0	M 136 x 2.5 SW 110	05.212.25.41.0*
	2915	275 / 70 R 22.5		05.212.25.42.0		05.212.25.42.0*
	3015 - 3134	385 / 55 R 22.5 315 / 70 R 22.5		05.212.25.44.0		05.212.25.44.0*
	3175 - 3220	10.00 R 20 11.00 R 22.5		05.212.25.45.0		05.212.25.45.0*
	3240 - 3260	385 / 65 R 22.5		05.212.25.46.0		05.212.25.46.0*
	3280 - 3310	12.00 R 22.5		05.212.25.47.0		05.212.25.47.0*
	3410 - 3470	425 / 65 R 22.5 13.00 R 22.5		05.212.25.48.0		05.212.25.48.0*
H.. ECO Plus 2 	3015 - 3134	385 / 55 R 22.5 315 / 70 R 22.5	Bayonet lock SW 120	05.212.25.73.0	-	
	3175 - 3220	11.00 R 22.5		05.212.25.74.0		
	3240 - 3260	385 / 65 R 22.5		05.212.25.75.0		
H.. ECO Plus 3 	2830 - 2860	255 / 70 R 22.5	M 135 x 2 SW 110	05.212.75.17.0	-	
	2915	275 / 70 R 22.5		05.212.75.18.0		
	3015 - 3134	385 / 55 R 22.5 315 / 70 R 22.5		05.212.75.20.0		
	3175 - 3220	10.00 R 20 11.00 R 22.5		05.212.75.21.0		
	3240 - 3260	385 / 65 R 22.5		05.212.75.22.0		
	3280 - 3310	12.00 R 22.5		05.212.75.23.0		
	3410 - 3470	425 / 65 R 22.5 13.00 R 22.5		05.212.75.24.0		
	3505	445 / 65 R 22.5		05.212.75.25.0		

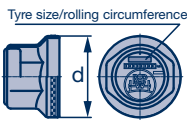
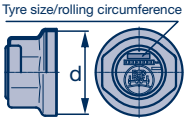
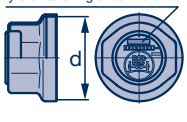
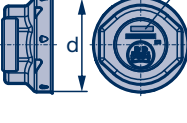
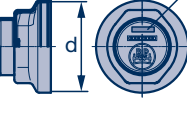
Hub caps for ECO axles have internal thread.

Alternative versions on request.

¹⁾ No longer available

Accessories 9

Hub caps with integrated mechan. odometer 9.1

KH.. / KR..						
			Axle load 6.4 - 9 t		Axle load 10 - 12 t	
Axle type	Rolling circumference	for tyre e.g.	Hub cap thread (d)	Hub cap with integrated odometer BPW item no.	Hub cap thread (d)	Hub cap with integrated odometer BPW item no.
K.. Conv. 	2620 - 2650	265 / 70 R 19.5	M 115 x 2 SW 95	05.212.23.29.0	M 125 x 2 SW 110	-
	2712 - 2750	285 / 70 R 19.5		-		05.212.24.40.0
K.. ECO K.. ECO MAXX 	2560	245 / 70 R 19.5	M 125 x 2 SW 110	05.212.24.44.0	M 135 x 2 SW 110	05.212.25.28.0* ¹⁾
	2620 - 2650	265 / 70 R 19.5		05.212.24.34.0		05.212.25.20.0*
	2712 - 2750	285 / 70 R 19.5		-		05.212.25.16.0* ¹⁾
	2730 - 2790	445 / 45 R 19.5		05.212.24.50.0		-
	3015 - 3134	385 / 65 R 19.5		05.212.24.33.0 ¹⁾		-
KH.. ECO H.. ECO MAXX H.. ECO ^{Plus} 	2620 - 2650	265 / 70 R 19.5	M 136 x 2.5 SW 110	05.212.25.38.0	M 136 x 2.5 SW 110	05.212.25.38.0*
	2712 - 2750	285 / 70 R 19.5		05.212.25.39.0		05.212.25.39.0*
	2730 - 2790	445 / 45 R 19.5		05.212.25.40.0		05.212.25.40.0*
	2960	425 / 55 R 19.5		05.212.25.43.0		05.212.25.43.0*
KH.. ECO Plus 2 	2730 - 2790	445 / 45 R 19.5	Bayonet lock SW 120	05.212.25.72.0		-
KH.. ECO Plus 3 	2560	245 / 70 R 19.5	M 135 x 2 SW 110	05.212.75.13.0		
	2620 - 2650	265 / 70 R 19.5		05.212.75.14.0		
	2712 - 2750	285 / 70 R 19.5		05.212.75.15.0		
	2730 - 2790	445 / 45 R 19.5		05.212.75.16.0		
	2960	425 / 55 R 19.5		05.212.75.19.0		
	3015 - 3134	385 / 65 R 19.5		05.212.75.20.0		

Hub caps for ECO axles have internal thread.

Alternative versions on request..

¹⁾ No longer available

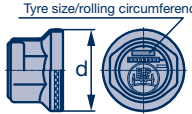
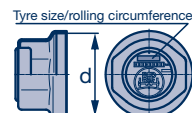
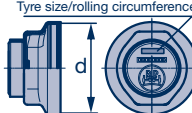
* Changed hub cap thread from 09/00.

Note thread size stamped on the cap!

K

9 Accessories

9.1 Hub caps with integrated mechan. odometer

NH.. / NR..						
			Axle load 6 - 9 t		Axle load 10 - 12 t	
Axle type	Rolling circumference	for tyre e.g.	Hub cap thread (d)	Hub cap with integrated odometer BPW item no.	Hub cap thread (d)	Hub cap with integrated odometer BPW item no.
N.. Conv. 	2425	245 / 70 R 17.5	M 115 x 2 SW 95	-	M 125 x 2 SW 110	05.212.24.41.0
	2560	9.50 R 17.5 8.25 R 15		-		05.212.24.42.0
N.. ECO N.. ECO MAXX 	2170	205 / 65 R 17.5	M 125 x 2 SW 110	05.212.24.48.0 ¹⁾	M 135 x 2 SW 110	-
	2350	215 / 75 R 17.5		05.212.24.35.0		-
	2425	245 / 70 R 17.5		05.212.24.36.0		-
	2464 - 2520	235 / 75 R 17.5		05.212.24.58.0		05.212.25.51.0*
	2560	9.50 R 17.5 8.25 R 17.5		-		05.212.25.28.0* ¹⁾
	2170	205 / 65 R 17.5	M 136 x 2.5 SW 110	-	-	
	2350	215 / 75 R 17.5			05.212.25.35.0*	
	2425	245 / 70 R 17.5 235 / 75 R 17.5			05.212.25.36.0*	
	2560	9.50 R 17.5 8.25 R 17.5			05.212.25.37.0* ¹⁾	
N.. ECO Plus 3 	2170	205 / 65 R 17.5	M 135 x 2 SW 110	05.212.75.10.0		-
	2350	215 / 75 R 17.5		05.212.75.11.0		
	2425	245 / 70 R 17.5		05.212.75.12.0		
				* Changed hub cap thread from 09/00. Note thread size stamped on the cap!		

Hub caps for ECO axles have internal thread.

Alternative versions on request..

¹⁾ No longer available

Accessories 9

Hub caps with digital odometer (ECOMETER) 9.2

The BPW hub cap with its integrated digital odometer is an important instrument for checking the mileage of your drawbar trailer or semi-trailer. This means you can always track the real trailer mileage, especially in case of alternating motor vehicles.

The digital ECOMETER can be used universally for all tyre sizes.

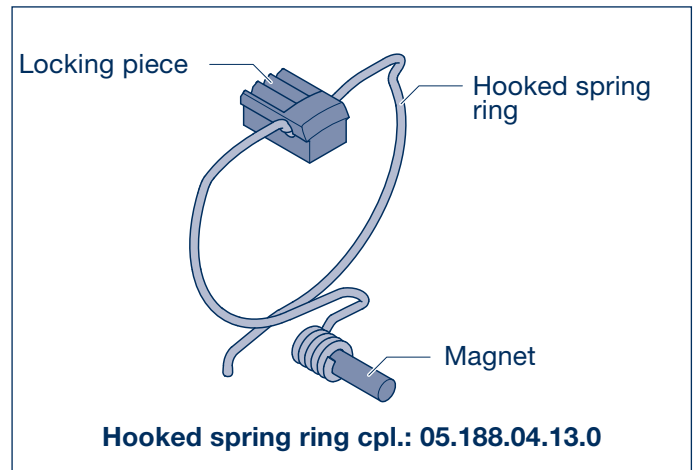
The adjustment of the wheel size is carried out by means of the display unit (basic setting 385/65 R 22.5).

A minicomputer that is protected from water and dirt counts the wheel revolutions using a magnet and a reed contact.

The digital ECOMETER with the special hooked spring ring and integrated magnet is available for all **BPW ECO^{Plus}** axles with an M 136 x 2.5 hub cap thread.

	BPW item no.:
Digital ECOMETER for thread M 136 x 2.5	05.212.75.06.0
Hooked spring ring loose	05.188.04.13.0
Replacement battery	02.0130.97.00

For further information, see service and installation instruction, Digital ECOMETER - BPW No.: 04.001.21.24.0.



H

R

K

N

Notes



Notes

H

R

K

N

BPW is a globally leading manufacturer of intelligent running gear systems for trailers and semi-trailers. As an international mobility and system partner, we offer a wide range of solutions for the transport industry from a single source, from axle to suspension and brake to user-friendly telematics applications.

We thereby ensure outstanding transparency in loading and transport processes and facilitate efficient fleet management. Today, the well-established brand represents an international corporation with a wide product and service portfolio for the commercial vehicle industry. Offering running gear systems, telematics, lighting systems, composite solutions and trailer superstructures, BPW is the right system partner for automotive manufacturers.

BPW, the owner-operated company, consistently pursues one target: To always give you exactly the solution which will pay off. To this end, we focus our attention on uncompromising quality for high reliability and service life, weight and time-saving concepts for low operating and maintenance costs as well as personal customer service and a close-knit service network for quick and direct support. You can be sure that with your international mobility partner BPW, you always use the most efficient method.

Your partner on the path to economic viability



BPW Bergische Achsen Kommanditgesellschaft

PO Box 12 80 · 51656 Wiehl, Germany · Phone +49 (0) 2262 78-0
info@bpw.de · www.bpw.de