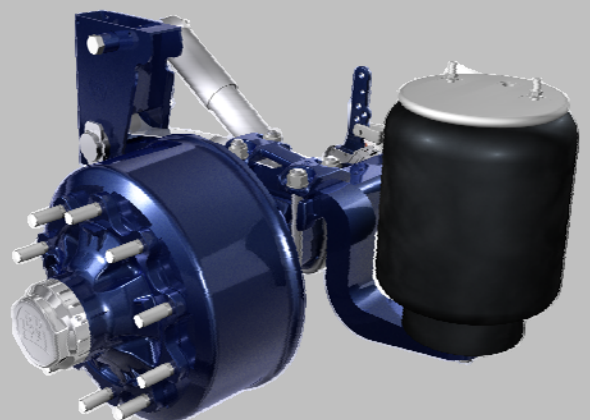




BPW TRANSPORT EFFICIENCY LTD

DRUM BRAKE

9 tonne to 12 tonne range
SPARE PARTS CATALOGUE



BPW Transport Efficiency



YOUR BUSINESS HAS TO KEEP ROLLING



BPW axles are the foundation to build your business on.

Be it single, tandem, tri or quad axle combinations, for off road, on highway or agricultural use, BPW is the Best Possible Way.



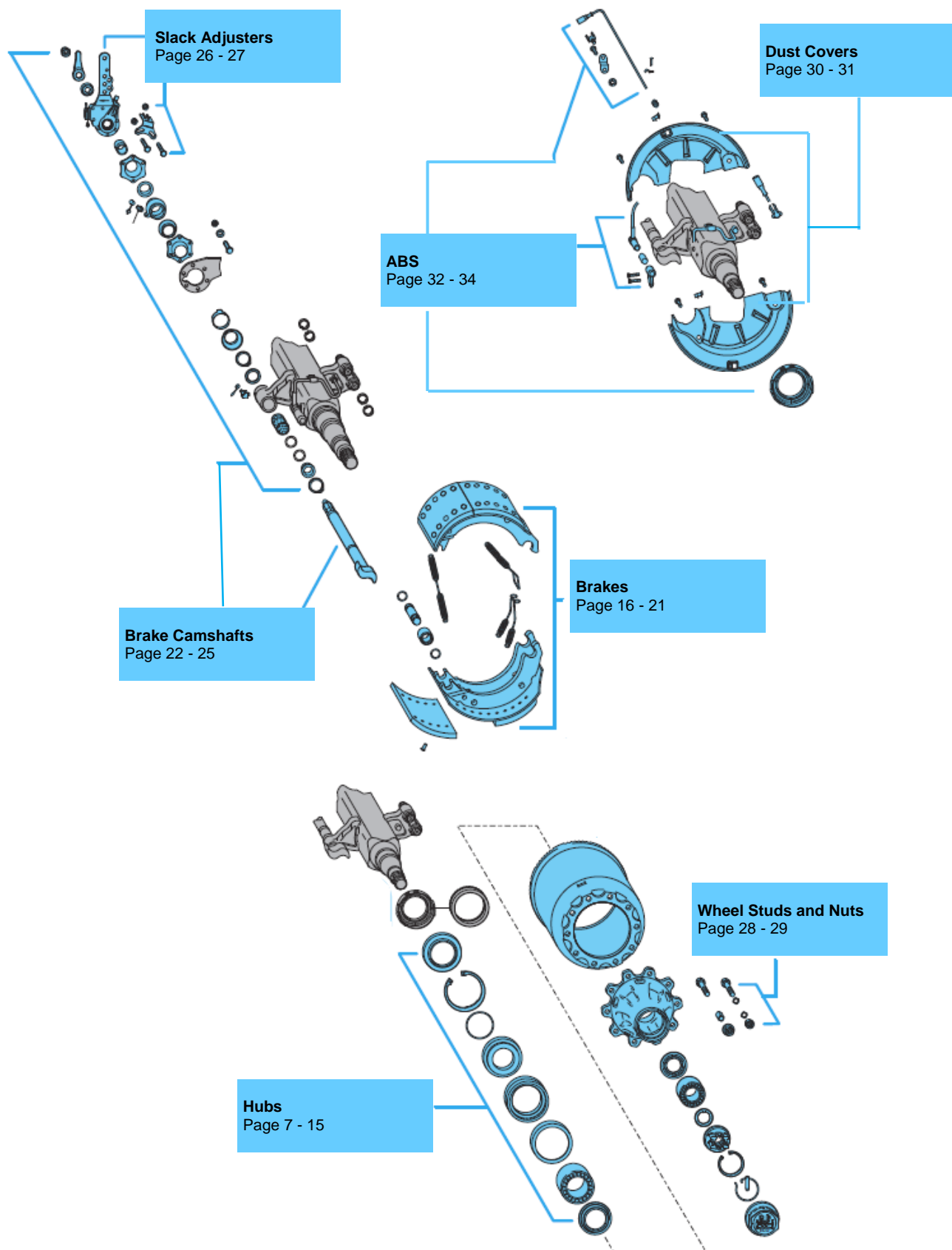
"Running Well for You"

0800 427 956



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EXPLODED VIEW - BPW Rigid Drum Brake Axle



Important!

This book is intended to assist with the identification of spare parts for New Zealand supplied drum brake axles. It could be helpful to also note that for most BPW parts the BPW part number can be found stamped into the part itself. This book is not intended to give detailed technical service and/or maintenance information. For technical service and/or maintenance information please refer to the BPW Operator's Manual or contact your nearest BPW Parts Distributor listed on the back cover of this book.

AXLE PART NUMBER LEGEND



At time of assembly an identification **Type Label** is affixed to every BPW axle, usually along the axle centre line on the rear face of the axle beam. The characters that make up the axle type and code number gives important information about that axle which can assist in the correct identification of spare parts.

Riveted type plate up 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 kg STAT. 9000 v max. km/h
 perm. axle capacity TECH. 9450 max. speed 105
 charge adm. TYP S 90 TDB 00 0X

Labels: Axle type, BPW Code number, Date and serial number, Brake type, Certificate type, Test report no., Max. static axle load on ground "Permissible techn. axle load" = Test load of wheel brakes

Adhesive type plate from year of manufacture 2000

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
 zul. Achslast perm. axle capacity charge adm. stat. 9000 kg 105 km/h

Type plate from year of manufacture 2006 (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 zul. Achslast perm. axle capacity charge adm. stat. 9000 kg 105 km/h

Example				BPW Code number designations	
30.	38.	743.	391		
Axle Configuration					
24.				Single axle without suspension parts ECO MAXX (since 1997)	
25.				Single axle without suspension parts (ECO ^{PLUS})	
26.				Steering axle (since 1997)	
27.				Single axle without suspension parts (ECO ^{PLUS})	
30.				Single axle without suspension parts	
34.				Swivel Axles without suspension	
36.				Steering axle	
Axle load per axle					
10.				10000 – 12000 kg Conventional	
36.				6500 kg ECO	
38.				8000 – 9000 kg ECO	
40.				10000 – 12000 kg ECO	
48.				8000 – 9000 kg ECO ^{PLUS}	
50.				10000 – 12000 kg ECO ^{PLUS}	
58.				8000 – 9000 kg H../ KH../SKH../NH.. ECO ^{PLUS} 2	
59.				8000 – 9000 kg H../ KH../SKH../NH.. ECO ^{PLUS} 2	
Brakes					
502.				SN 3020 HWG 300 x 200 mm Brake 95	
552.				SN 3620 HWG 360 x 200 mm Brake 95	
585.				SN 3020 KWG 300 x 200 mm Shoes with closed eye 1978 - 1989	
610.				SB3745 Ø 370 mm Disc brake 1998 - Axial	
612.				SB3745 Ø 370 mm Disc brake 2003 - Tangential	
613.				SB4309 Ø 430 mm Disc brake 2003 - Tangential	
616.				TSB3709 (ECO Disc) Ø 370 mm	
617.				TSB4709 (ECO Disc) Ø 470 mm	
743.				SN 4218 HWG 420 x 180 mm Brake 95 Eco Drum	
744.				SN 4220 420 x 180 mm Brake 95 Eco Drum	
		000 to 999		Consecutive numbers which refer to track, ABS, wheel connection	

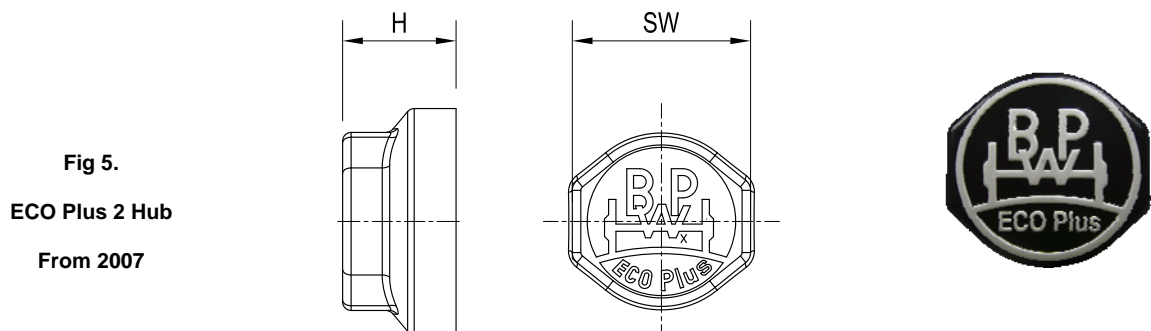
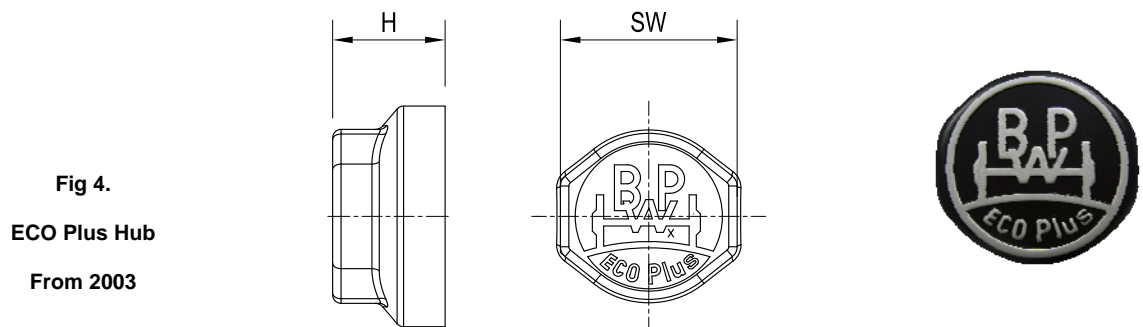
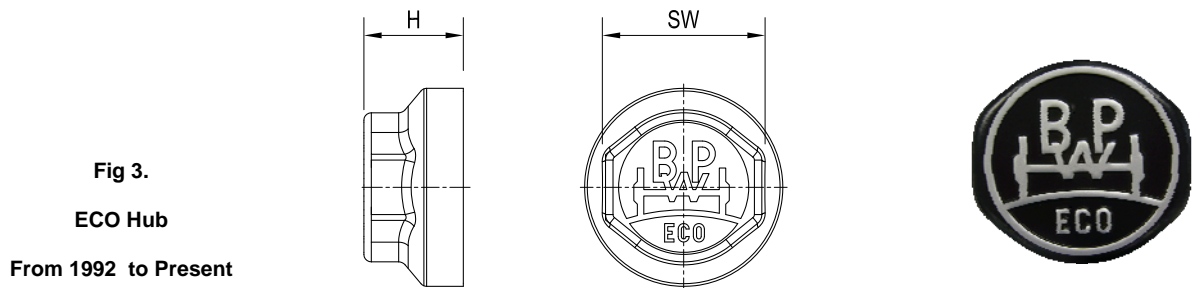
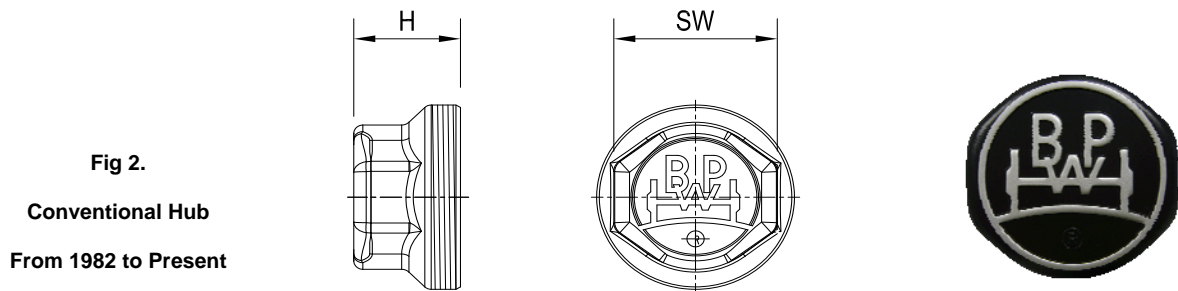
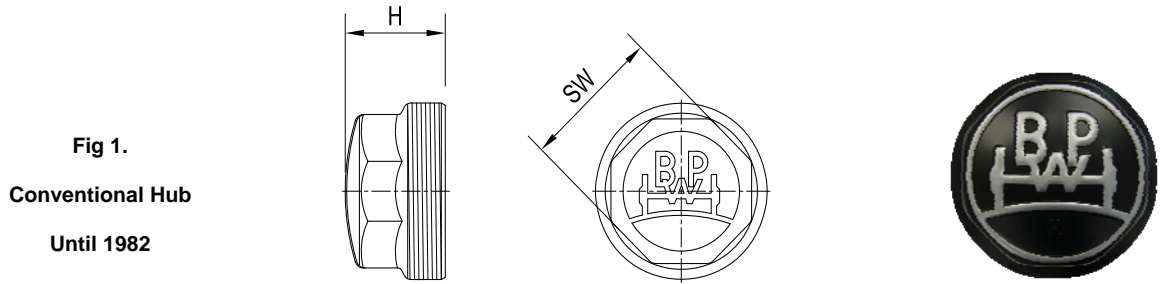


AXLE TYPES		
HUB TYPE	AXLE LOAD	DATE RANGE
Conventional	9 tonne (Lightweight) 10/12 tonne (New Gen)	1987 - 1996
ECO	9 & 10/12 tonne	Late 1996 - Late 2008
ECO ^{Plus}	9 & 10/12 tonne	Late 2005 - Present
ECO ^{Plus2}	9 tonne	Late 2011- Present

BPW DRUM BRAKE AXLE RANGE						
MODEL RANGE	AXLE BEAM PROFILE	BEAM OPTIONS	TO SUIT TYRE SIZE	BRAKE TYPE	BRAKE SIZE	HUB OPTIONS
H/R Series	H - Square beam R - Round beam	120mm square 150mm square 127mm round	20"/22.5"	SN4218 SN4220	∅420 x 180mm ∅420 x 200mm	Spider 10 Stud 335 PCD 10 Stud 285 PCD
KH Series	KH - Square beam	120mm square	19.5"	SN3620	∅360 x 200mm	8 Stud 275 PCD 10 Stud 225 PCD
NH/NR Series	NR - Round beam NH—Square beam	127mm round 120mm square	15"/17.5"	SN3020	∅300 x 200mm	Spider 10 Stud 225 PCD

THE BPW HUB TYPE CAN BE IDENTIFIED BY THE APPEARANCE AND SIZE OF THE HUB CAP AS FOLLOWS:

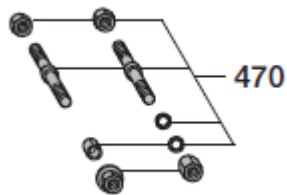
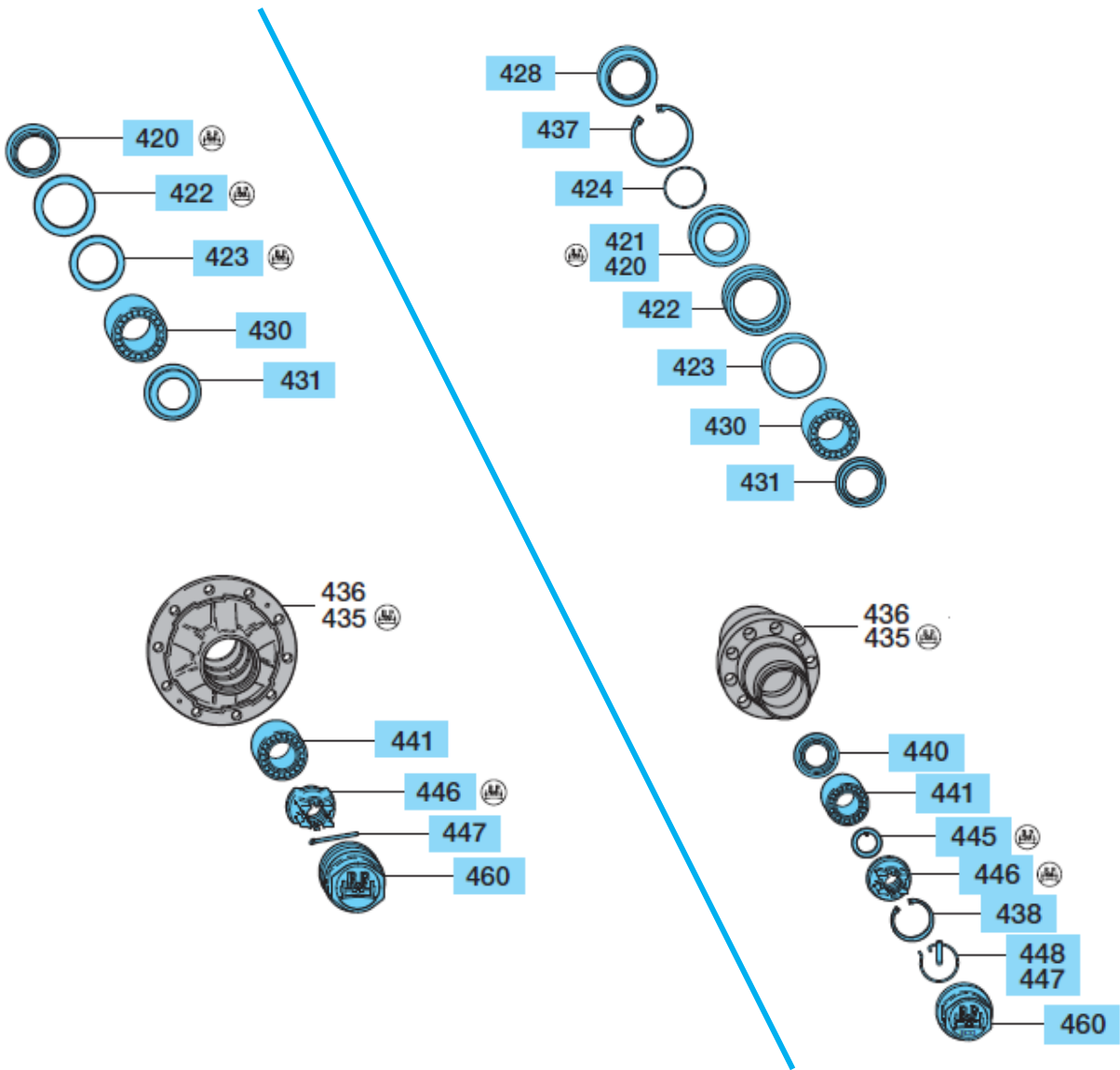
Fig. See page 7	Description	H	SW	Thread	E=External I=Internal B= Bayonet	From - to
1	EH 8	71	95	M115 x 3	E	Until 1982
	EH10	82	110	M125 x 3	E	Until 1982
2	Conventional 9 tonne	62	95	M115 x 2	E	1982 - present
	Conventional 10/12 tonne	62	110	M125 x 2	E	1982 - present
3	Eco 9 tonne	61	110	M125 x 2	I	1992- present
	Eco 10/12 tonne	70	110	M135 x 2	I	1992 - present
4	ECOPlus Standard	70	110	M136 x 2.5	I	2003
5	ECOPlus 2 Standard	56.3	120		B	2007





CONVENTIONAL

ECO ECO MAXX



For Wheel studs refer to
pages 28 - 29



Fig	Description	ECO ECO MAX 9T	ECO ECO MAX 10T	Conventional 9T	Conventional 10T	Qty Per Axle
419	Kit BSC 10T/12T EP Conversion		0980107082TS		0980107082CONVTS	2
	Repair Kit (1 Side Only) Includes 420-424,428,430,431, 440, 441,445,447,448	0980102720TSSC	0980106890TSSC	0980102170TSSC	0980102180TSSC	2
420	Thrust Washer - H / R; KH / KR			0537006480	0537007430	2
	Thrust Washer - NR / NH			0337007450		
421	Thrust Washer	0337007600TS	0337007620TS			2
422	Hub Seal - H / R; KH / KR (Nylon)			0331097310	0331098210	2
	Lip Seal - NR / NH			0256642657		
	Lip Seal	0256645700	0256645800			
423	Hub Seal - H / R; KH / KR (Nylon)			0331097320	0331097300	
424	O'Ring	0256779040	0256780000			2
428	Dirt Seal	0256819800	0312048130			2
430	Roller Bearing - Inner	0264102400	0264089200	0264102400	0264089200	2
431	Grease Shield	0301093330	0301093340	0301004150	0301005220	2
437	Circlip - Inner	0256064090	0256066090			2
438	Circlip - Outer	0256061290	0256062290			2
440	Thrust Washer - Outer	0337025160	0337026240			2
441	Roller Bearing - Outer	0264065000	0264076700	0264065000	0264076700	2
445	Washer - Axle Nut ECO Beam	0332073130	0332064010	0332073130	0332064010	2
446	Axle Nut - Non ECO Beam			0326216080	0326217120	2
	Axle Nut - ECO Beam	0326646020	0326647030	0326216150	0326217180	
447	Split Pin			0262018201	0262018401	2
	Locking Bolt (Piece)	0308471170	0327700070			
448	Locking Ring	0318803060	0318804080	0262018201	0262018401	2
460	Hub Cap	0321224250	0321225330	0321223090	0321224070	2
	Hub Cap - Chrome	0321224260				

HUBS

Fig 435	Description	Tyre size	ECO ECO MAX 9T	ECO ECO MAX 10T	Conventional 9T	Conventional 10T	Qty Per Axle
Hub Assembly							2
	8 Stud 275PCD D.A.	19.5"	0980106650				
	10 Stud 225PCD D.S. Drum	17.5"	0980106540				
		19.5"					
Hub only							2
	8 Stud 275PCD Dual Alloy wheels	19.5"	0327228710	0327246190			
	8 Stud 275PCD Dual Alloy wheels B/Nut		0327228670		0327228510		
	10 Stud 225PCD Dual Steel wheels			0327244400			
	10 Stud 225PCD Dual Alloy wheels B/Nut		0327227410				
	10 Stud 225PCD Dual Steel wheels B/Nut				0327227240		
	10 Stud 225PCD Dual.Alloy WheelsDrum		0327227480				
	10 Stud 225PCD Dual Alloy Wheels Drum	17.5"	0327227410				
	10 Stud 225PCD B/Nut				0327227200		
	10 Stud 285PCD Dual Alloy Wheels Drum B/Nut	22.5"		0327247390*		0327247390*	
	10 Stud 335PCD Dual Steel Wheels Disc		0327232030				
	10 Stud 335PCD Dual Steel Wheels Drum			0327243120			
	10 Stud 335PCD Dual Alloy Wheels Disc		0327232060				
	10 Stud 335PCD Dual Steel Wheels		0327230970				
	10 Stud 335PCD Dual Steel Wheels Drum B/Nut				0327230410		
	10 Stud 335PCD Dual Alloy Wheels Drum B/Nut			0327248880		0327248520	
	6 Stud 335PCD Spider Single				0832870130		
	6 Stud 335PCD Spider Dual Steel Wheels			0332876500*	0832870140	0332876500*	

REPLACEMENT HUBS

10t/12t Conventional Spider, Conventional 10/285 and ECO 10/285

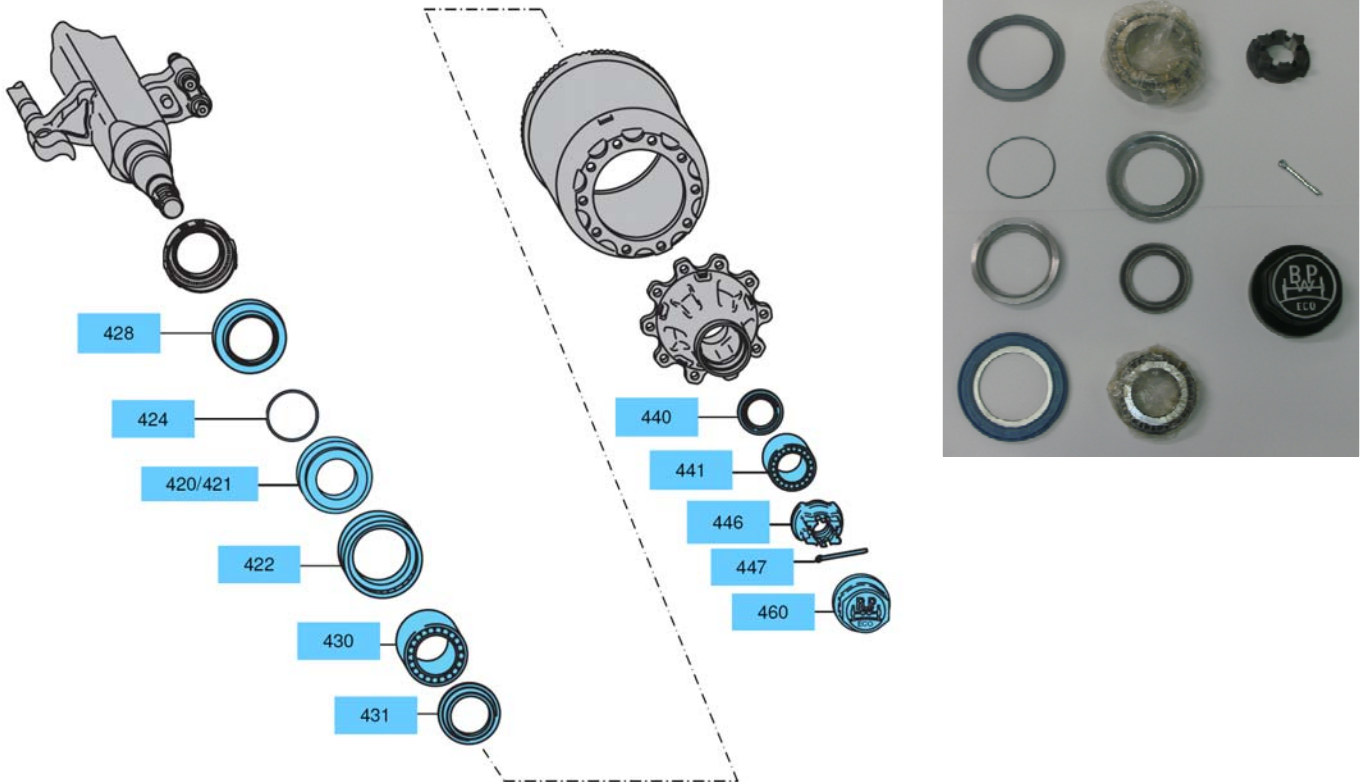


RETROFIT KIT ITEM NUMBER 0980107082CONVTS

This kit includes some ECO^{Plus} hub components except for the circlips, hub sleeve, axle nut and the locking ring and pin. The kit includes the axle nut and split pin to suit the Conventional axle stub that does not have the ECO keyway.

Refer to Figure A and the photo below to see kit contents:

Figure A



Kit item number 0980107082CONVTS Includes items: 420 - 422, 424, 428, 430, 431, 440, 441, 446, 447 & 460

Item	Part Number	Description	Qty	Remarks
421	0337007620TS	Thrust washer	1	ECO ^{Plus}
422	0256647400	Lip Seal	1	ECO ^{Plus}
424	0256678000	O-ring	1	ECO ^{Plus}
428	0312048150	Dirt Seal	1	ECO ^{Plus}
430	0264089200	Roller Bearing - Inner	1	
431	0301093340	Grease Shield	1	
440	0337026240	Thrust Washer - Outer	1	
441	0264076700	Roller Bearing - Outer	1	
446	0326217160	Axle Nut - Non ECO Beam	1	Beam with No Keyway
447	0326217180	Split Pin	1	
460	0321225310	Hub Cap	1	ECO ^{Plus}

Please note that both retrofit kits include a special M136 x 2.5 hub cap with the ECO logo.

This special hub cap is specifically for these retrofit kits and will not fit on an ECO hub.

REPLACEMENT HUBS

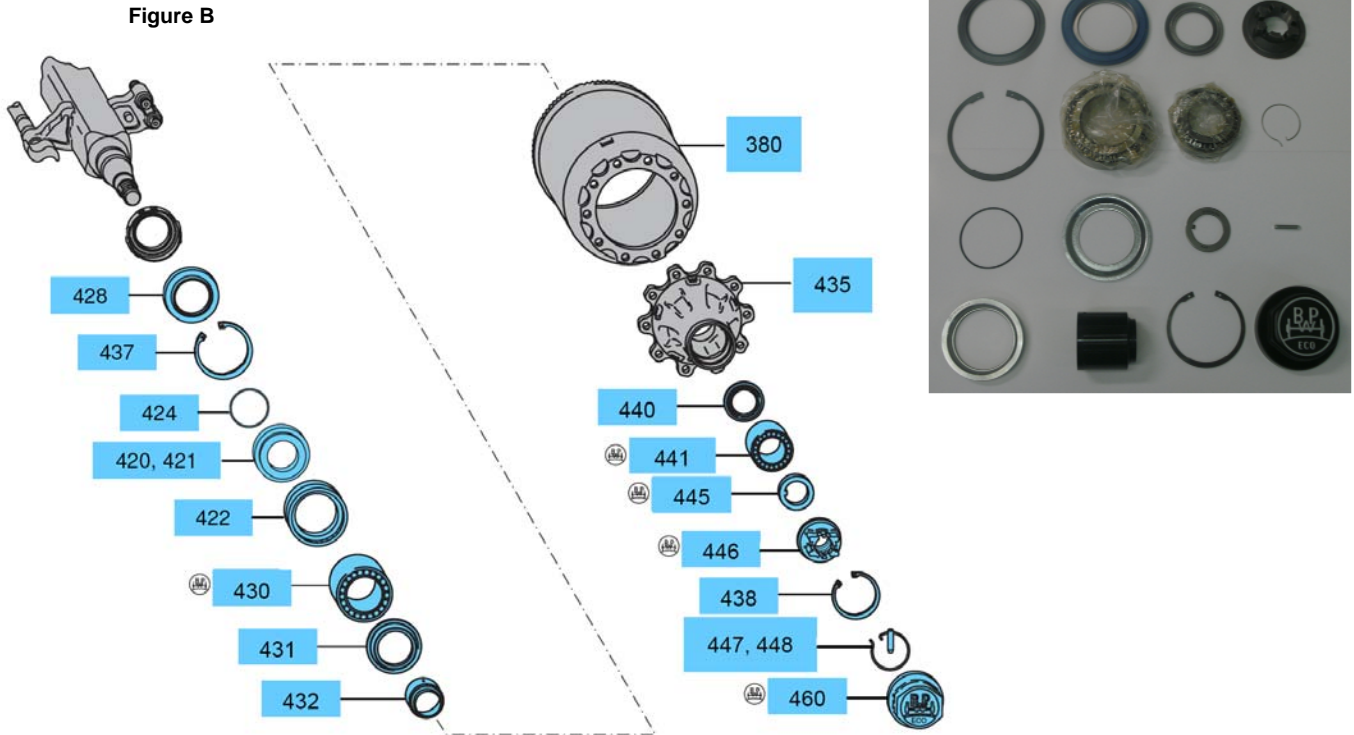
10t/12t Conventional Spider, Conventional 10/285 and ECO 10/285



RETROFIT KIT ITEM NUMBER 0980107082TS

This kit includes ECO^{Plus} hub components except for the axle nut, locking ring and locking pin which are ECO hub components to suit ECO axle stub with the keyway through the axle nut thread.

Refer to Figure B and the photo below to see kit contents:



Kit item number 0980107082TS includes items: 420 - 422, 424, 428, 430 - 432, 437, 438, 440, 441, & 445 - 448

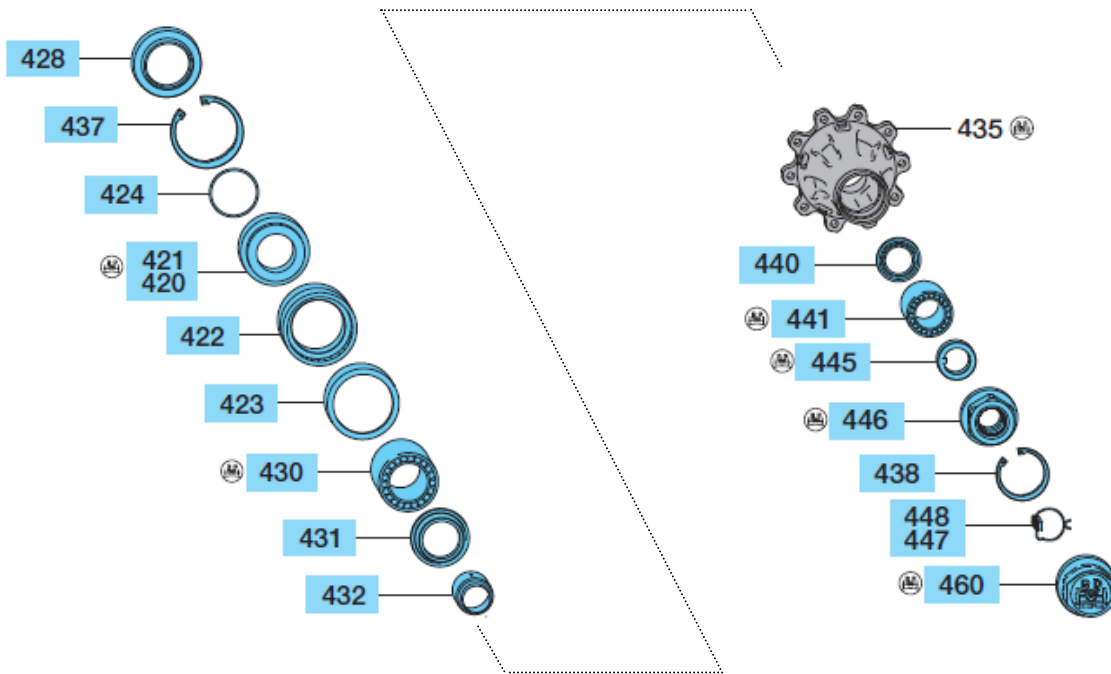
Item	Part Number	Description	Qty	Remarks
421	0337007620TS	Thrust washer only	1	ECO ^{Plus}
422	0256647400	Lip Seal	1	ECO ^{Plus}
424	0256678000	O-ring	1	ECO ^{Plus}
428	0312048150	Dirt Seal	1	ECO ^{Plus}
430	0264089200	Roller Bearing - Inner	1	
431	0301093340	Grease Shield	1	
432	0312045160	Seal / Grease Cartridge	1	ECO ^{Plus}
437	0256066090	Circlip - Inner	1	
438	0256062290	Circlip - Outer	1	
440	0337026240	Thrust Washer - Outer	1	
441	0264076700	Roller Bearing - Outer	1	
445	0332604010	Washer - Axle Nut	1	
446	0326217160	Axle Nut	1	
447	0327700070	Locking Bolt (Piece)	1	
448	0318804080	Locking Ring	1	
460	0321225310	Hub Cap	1	ECO ^{Plus}

Please note that both retrofit kits include a special M136 x 2.5 hub cap with the ECO logo.

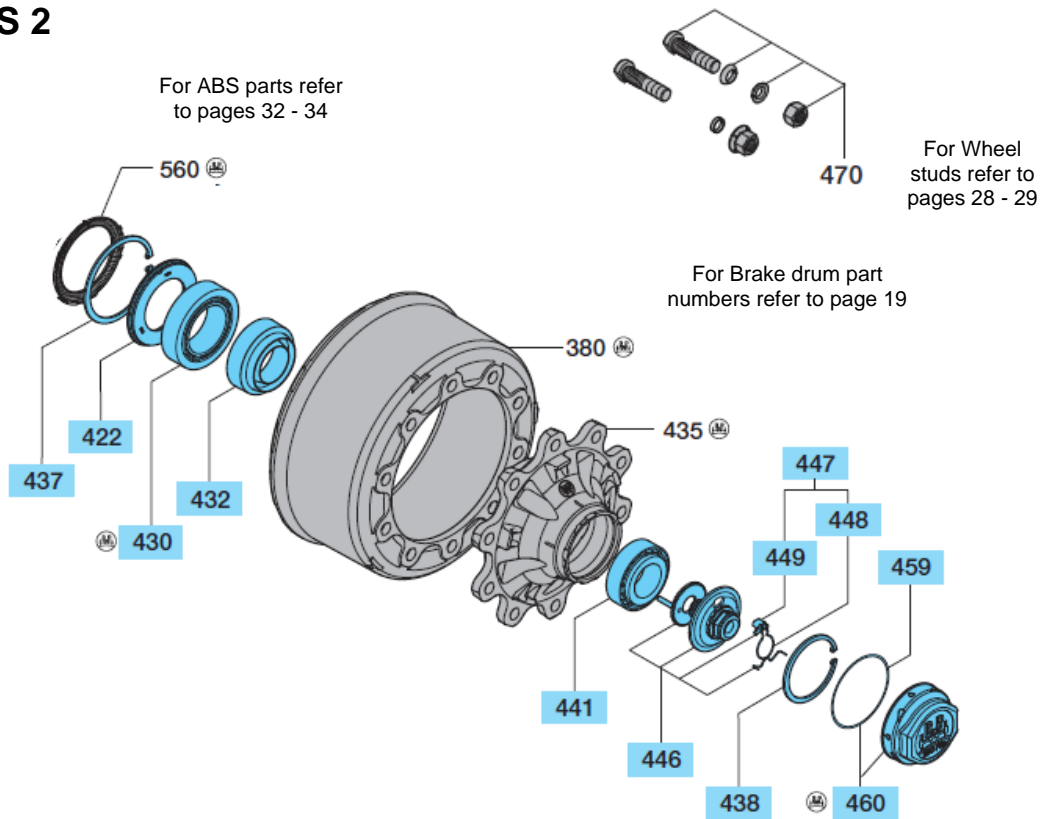
This special hub cap is specifically for these retrofit kits and will not fit on an ECO hub.



ECO PLUS



ECO PLUS 2



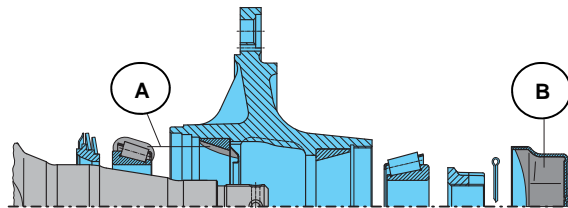


HUB						
435	Description	Tyre size	ECO PLUS 2 8-9t	ECO ^{Plus} 8 - 9T	ECO ^{Plus} 10-12T	Qty Per Axle
Hub Assembly - includes from item: 421 to 460						2
	8 Stud 275PCD Dual Alloy Wheels	19.5"	0980107360	0980106690		
	10 Stud 335PCD Dual Alloy Wheels	22.5"	0980107440			
	10 Stud 335PCD Dual Steel Wheels	22.5"	0980107350	0980106070	0980106082	
	10 Stud 225PCD Dual Alloy Wheels	17.5 - 19.5"	0980108030			
	10 Stud 225PCD Dual Steel Wheels Drum				0980106600	
Hub only						2
	8 Stud 275PCD Dual Alloy Wheels	19.5"	0327246330	0327246282		
	10 Stud 225PCD Dual Alloy Wheels Drum	15-17.5"	0327244460			
	10 Stud 335PCD Dual Steel Wheels	22.5"	0327243290	0327243102		
	10 Stud 335PCD Dual Alloy Wheels				0327243232	
	10 Stud 285PCD Dual Alloy Wheels Drum B/Nut				0327247390	
	6 Stud 335PCD Spider Dual Steel Rims				0332876500	

Fig	Description	ECO PLUS 2 8-9t	ECO ^{Plus} 8 - 9T	ECO ^{Plus} 10-12T	Qty Per Axle
	Repair Kit (1 Side Only) Includes 422,430,432,441,446 (includes 447,448,449) 459	0980107340TE			2
	Repair Kit (1 Side Only) Includes 421*,422,423*,424* ,428,430,431,440, 441,445,447,448		0980106360TS	0980107040TSSC	2
421	Thrust Washer			0337007720	2
422	Lip Seal		0256647400		2
424	O'Ring			0256780000	2
428	Dirt Seal		0312048150		2
430	Roller Bearing - Inner		0264089200		2
431	Grease Shield		0301093340		2
432	Seal / Grease Cartridge	0312047080	0312045150	0312045160	2
435	Hub - REFER TABLE ABOVE				2
437	Circlip - Inner		0256065890	0256066090	2
438	Circlip - Outer		0256062290		2
440	Thrust Washer - Outer		0337026240		2
441	Roller Bearing - Outer		0264076700		2
445	Washer - Axle Nut ECO Beam		0332064010		2
446	Axle Nut - ECO Beam	0900137030	0526647060		2
447	Locking Bolt (Piece)		0327700070		2
	Locking Ring (Includes item 448 + 449)	0518803100			
448	Locking Ring	0318803090	0318804100		2
449	Locking Piece	0327710010			2
459	O-ring	0256786500			2
460	Hub Cap	0521225780	0321225310		2
	Hub Cap - Chrome	0521225810	0321225570		
	Hub Cap - Hubodometer	0521225790	0321225560		
	Hub Cap - Hubodometer Chrome	0521225790C	0321225560C		

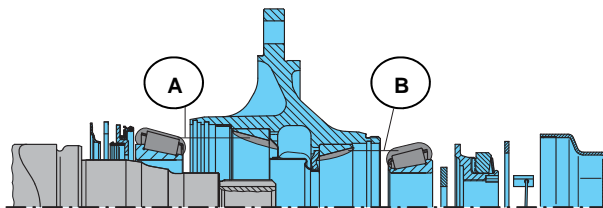
For grease filling quantities and details on BPW ECO-LI^{Plus} grease refer pages 14 - 15 and for information regarding BPW grease shower tools refer to page 15

CONVENTIONAL HUB BEARING SYSTEM



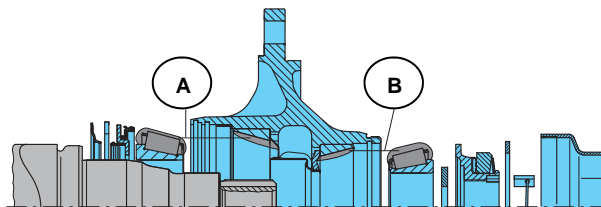
BPW special long life grease ECO-Li ^{Plus} - Grease quantity per taper roller bearing		
Axle Load	A = Inner Bearing	B = Outer Bearing (cap filling)
6000 - 9000 kg	170 g	290 g
10000 - 12000kg	180 g	320 g

ECO HUB BEARING SYSTEM



BPW special long life grease ECO-Li ^{Plus} Grease quantity per taper roller bearing		
Axle Load	A = Inner Bearing	B = Outer Bearing
6000 - 9000 kg	120 g	120 g
10000 - 12000 kg	170 g	120 g

ECO^{Plus} HUB BEARING SYSTEM



BPW special long life grease ECO-Li ^{Plus} Grease quantity per taper roller bearing		
Axle Load	A = Inner Bearing	B = Outer Bearing
8000 - 12000 kg - Manual greasing	170 g	120 g
8000 - 12000 kg - Greasing with grease applicator	130 g	90 g

Important!
For further information on Hub Lubrication and Bearing Adjustment please refer to the BPW Operator's Manual.



BPW ECO-Li^{Plus} is:

- usable at temperature between -30°C and + 150°C
- resistant to aging
- protecting against corrosion, even in aggressive surroundings
- wear reducing
- generally plastics compatible
- suitable for extremely long re-lubrication periods



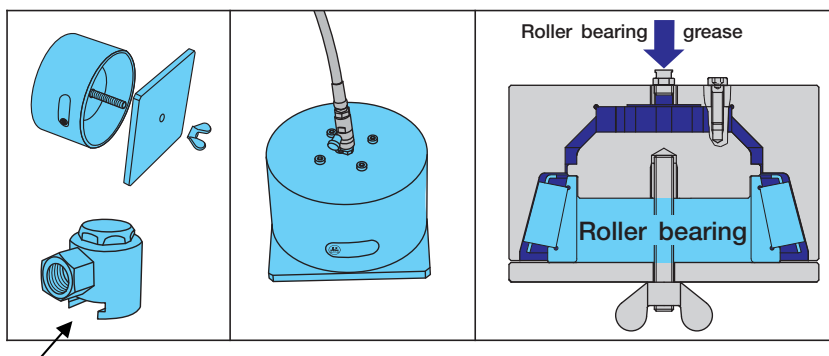
ECO-Li^{Plus} is suitable for the lubrication of high temperature roller and friction bearings of commercial vehicles. It has been especially developed for highly loaded taper roller bearings and hub units with very long re-lubrication periods.

BPW ECO-Li^{Plus} GREASE
Is available in the following container sizes

Part Number	Container Size
0210404500	400 gm cartridge
0210404700	5 kg container
0210404900-20	20 kg container

BPW GREASE SHOWER TOOLS
Used to quickly, accurately and cleanly fill the bearing with the required amount of BPW ECO-Li^{Plus} Grease

Grease Shower Part Number	To Suit Bearing Size	
	ISO	BPW Bearing Part Numbers
9900000954	33116 / 32310	0264102400 / 0264102500
9900000955	33118 / 33213	0264102300 / 0264102200



A flat grease nipple adapter is also available
Part number **1506922935**

BRAKE COMPONENTS

General Information and Identification of Brake Generations

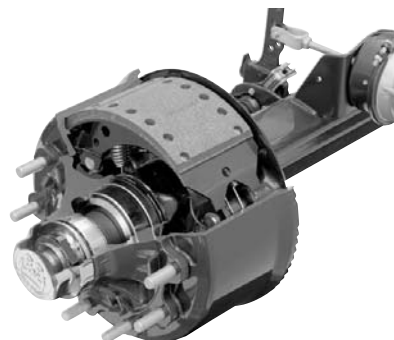
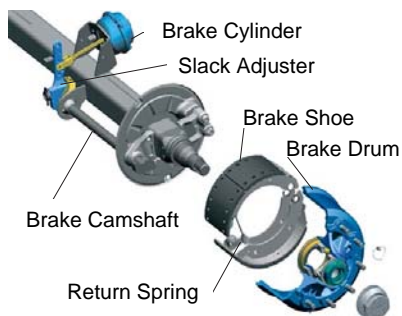


GENERAL INFORMATION

BPW Drum Brakes

The proven technology and robust construction of BPW drum brakes makes them suitable for every application.

They shrug off dirt and are extremely hard wearing, even under the harshest of conditions.



Function

The force from the brake cylinders is transmitted by the slack adjuster to the brake camshaft causing it to rotate.

The S-cam forces the brake shoes apart, pressing them against the inside of the brake drum.

When the brake is released, the brake camshaft rotates the S-cam back to its neutral position. The brake shoes are returned to their initial position by the return springs.

IDENTIFICATION OF BRAKE GENERATIONS

The Pre BPW Brake 95 drum brakes can be identified by:

- Single piece cam rollers
- Two return springs
- Removable anchor pins
- Four retention springs
- Wedge plates to locate the anchor pins and to serve as spring mounts



In 1995 BPW introduced a new Foundation Brake for drum brake axles. BPW Transpec introduced this new Foundation Brake in Australia in 1996.

The new BPW Brake 95 drum brakes have been designed to achieve a high level of safety with less weight and fewer wearing parts. BPW Brake 95 allows for fast and easy brake shoe replacement.

BPW Brake 95 drum brakes can be retrofitted to all BPW drum brakes from 1974 onwards.

See the information on **pages 20 - 21** for the part numbers required for conversion from pre BPW Brake 95 to BPW Brake 95.



BPW Brake 95 drum brakes can be identified by:

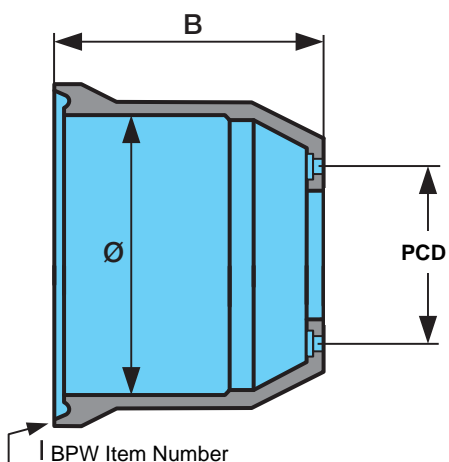
- Two piece cam rollers
- Single return spring
- Non removable anchor pins
- Brake shoes snap onto anchor pins using sacrificial C'clip locking rings.
- Retention springs that hook together to secure the brake shoes



BRAKE DRUMS									
Item	Part No	Axle Model	Brake Type	To Suit Tyre Size	B Dimension	Stud Holes	PCD	Bearings	Stud Type
380 Refer Page 12	0310967170	H/R	SN4218	20"/22.5"	226 mm	Spider		9t	Back nut
	0310967810				252 mm			10t/12t	
	0610967089				252 mm	10	285	9t & 10t/12t	
	0310666100				229 mm	10	285	9t *	
	0610967749				252 mm	10	335	9t & 10t/12t	
	0610967139				226 mm	10	335	9t *	
	0610967789				252 mm	10	335	10t/12t	
	0610967299				221 mm	10	335	8t/9t	
	0610967319				249.5 mm	10	335	9t/12t	
	0610977179				259.5 mm	10	335	10t/12t	
	0610977429				254 mm	10	355	10t/12t	
	0310990220				KH/KR	SN3620	19.5"	263 mm	
	0610990249	263 mm	10	225				9t	
	0310990040	263 mm	10	225				9t	
	0610990039	263 mm	8	275				9 & 10t/12t	
0310946490	NH/NR	SN 3020	15"/17.5"	260 mm	10	225	9t	Back nut	
0610946409				295 mm	10	225	9t		
0610946069				260 mm	10	225	9t	Push in	

- For 9 tonne axles with track width 2010 mm - 2040 mm for single tyres.

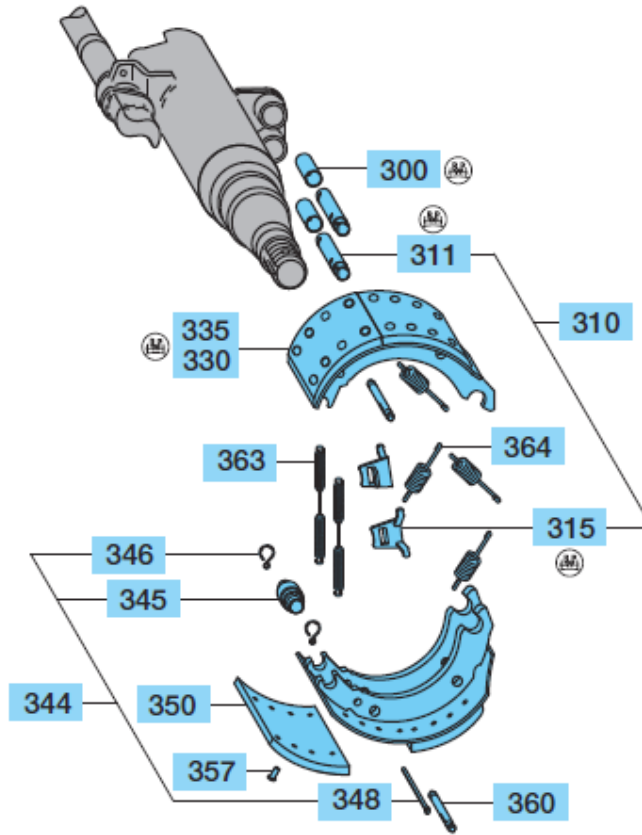
BRAKE DRUM DIMENSIONS



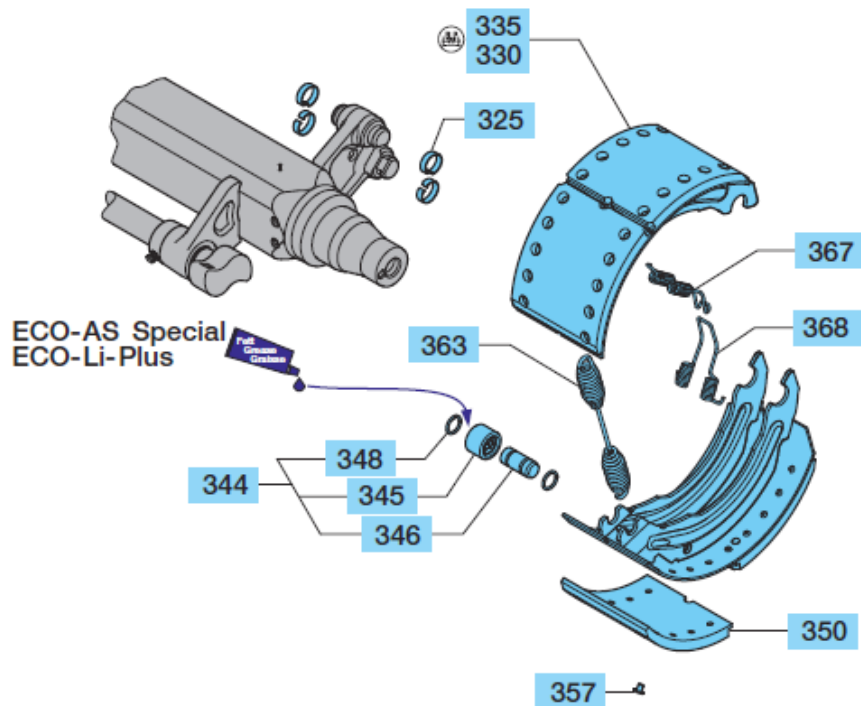
B = overall width

PCD = Pitch circle diameter
i.e. The diameter measured through the centre of the holes for the wheel studs.

Pre Brake 95



Brake 95 ECO





BRAKE COMPONENTS								
Item	Description	Brake Type and Tyre Size				Qty Per Axle		
		SN4218	SN4220	SN3620	SN3020			
		20"/22.5"	20"22.5"	19.5"	15"			
300	Bush—Anchor pin (Non95)	0311233080				4		
311	Anchor pin (Non95)	0308446220		0308446300		4		
315	Wedge lock (Non95)	0316723090		0316724010		8		
345	Roller assembly (Non95)	0333134050		0333134010		4		
346	Roller retainer (Non95)	0335000130		0335000140		8		
348	Split pin (Non95)	0262016603				4		
360	Splined Pin (Non95)	0300108050		0308442020	0300108050			
Kits	BPW Brake shoe and hardware kit (Includes items 325, 345, 346, 348, 330, 363, 367, 368)	0980102390	0980102380	0980102400	0980102420		1	
	Repair kit - Brake shoe roller (B95) (Includes items, 345, 346, 348)	0980102910				2		
	BPW Brake spring kit (B95) (Includes items 325, 363, 367, 368)	0980106790		0980106810			1	
	BPW Brake shoe - Unlined (Includes items 345, 346, 348)	0509026062 (Non 95) 0509026140 (B95)			0509019040 (B95)			4
	(BPW Brake shoe - Lined Includes items 345, 346, 348)	0509126950 (Non 95) 0509146140 (B95)			0509114720 (Non95- LL) 0509114770 (B95)		4	
	Brake lining sets (Includes items 350, 357)	T090	T090/4220	T090/19.5	T090/15-17.5		1	
325	Ring, anchor end C Clip	0318802020				8		
330	Lined brake shoe complete with roller	0509146320		0509119220	0509114770		4	
345	Camshaft roller complete with bush	0533144020				4		
346	Roller shaft	0308475240				4		
348	Ring, roller retainer	0331070150				8		
350	Brake lining segment	Not sold separately, refer Kits - Brake lining sets						
357	Rivet (steel)	0258058035				80		
363	Return spring Cam shaft (Non95)	0539746070		0539745140	0539746120		4	
	Return spring Cam shaft B95	0539758030 (2 per axle)		0539746130 (4 per axle)	0539734170 (4 per axle)		See left	
364	Return spring Anchor pin (Non95)	0339744060				8		
367	Retention spring (Hook) B95	0339733120		0339733080			2	
368	Retention spring (Eye) B95	0339733070		0339733090			2	

Ensure that the correct riveting pressure is used when relining genuine BPW brake shoes with genuine BPW lining segments and rivets. Correct riveting force = 25000 N

CONVERSION OF PRE BPW BRAKE 95 TO BPW BRAKE 95

Conversion to brake with split roller (BPW Brake 95)

Replacement shoes for Pre Brake 95 brakes are no longer available. When Pre Brake 95 replacement shoes are required they should be converted to BPW brake 95. See table on page 21 for the part numbers required for the conversion.

BPW Brake 95 features:

High degree of safety

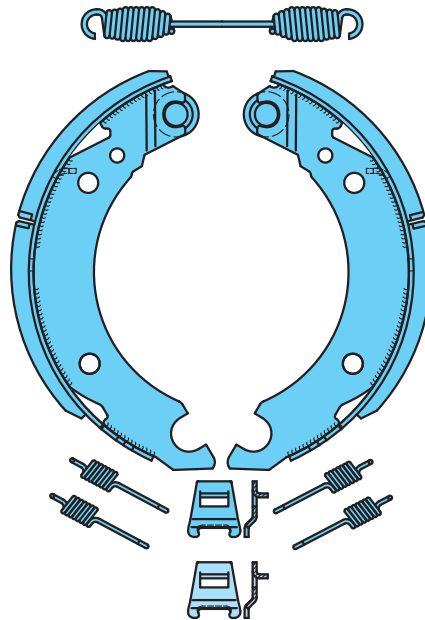
Short response time and a consistent braking effect throughout the entire life of the lining thanks to the permanently lubricated brake rollers.

Reduced tare weight

Weight optimized design with fewer wear parts.

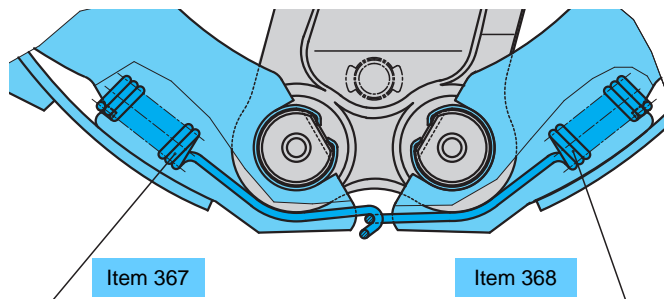
Easy to change brake linings

Fast and easy brake shoe replacement. Same brake components on all axles of the corresponding series.



Position springs

The position springs ensure the brake shoes are firmly and securely seated on the C-clamps. (The diagram right shows brake type SN4218)



Item 367

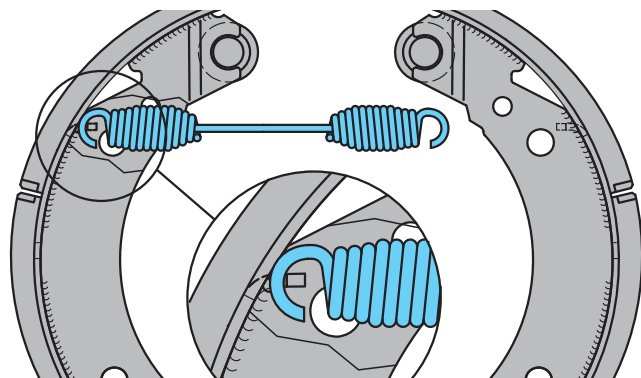
0339733120
Return spring (Hook)

Item 368

0339733130
Return spring (Eye)

Brake return springs

The brake return spring is hooked into lugs that are formed on the brake shoes.



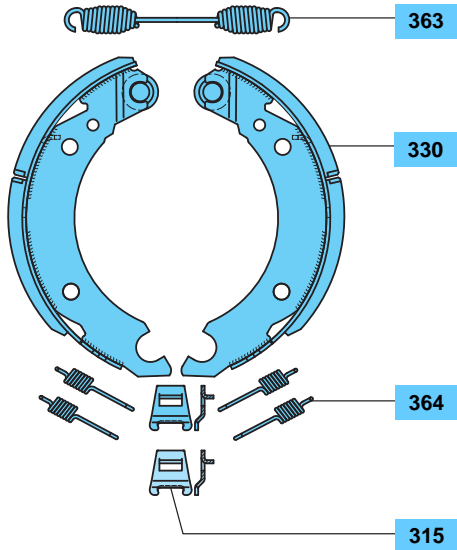
For general and identification information regarding BPW Brake 95 please refer to page 19.

BRAKE COMPONENTS

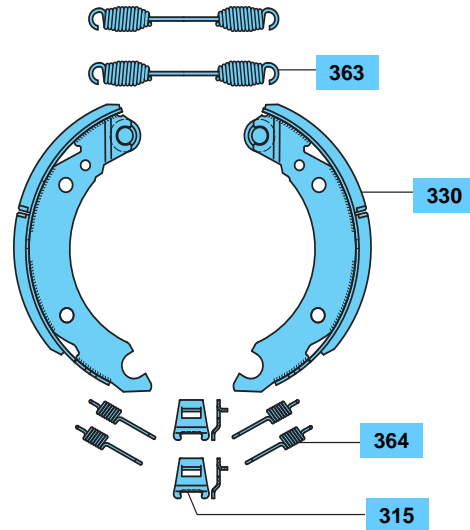
Pre BPW Brake 95 - Conversion to BPW Brake 95



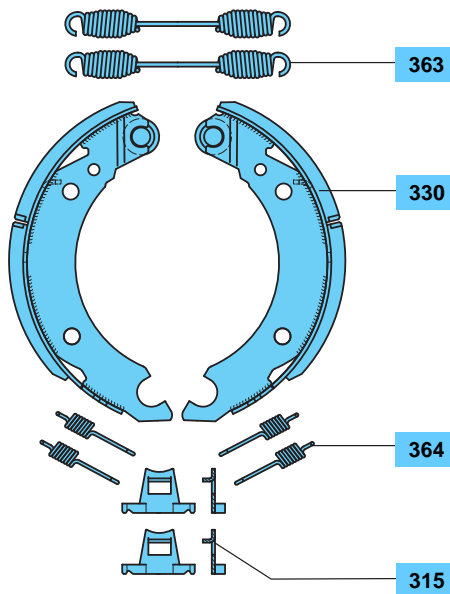
BRAKE TYPE SN4218 CONVERSION TO BRAKE 95



BRAKE TYPESN3620 CONVERSION TO BRAKE 95



BRAKE TYPE SN3020 CONVERSION TO BRAKE 95



CONVERSION TO BPW BRAKE 95

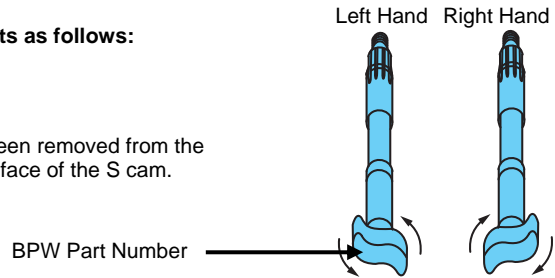
Item	Description	BRAKE TYPE AND TYRE SIZE			Qty per Axle
		SN4218	SN3620	SN3020	
		20"/22.5"	19.5"	15"/17.5"	
315	Wedge lock BPW Brake 95 conversion	0316723090		0316724010	4
330	Lined brake shoe c/w roller	0509146320	0509119220	0509114770	4
363	Return spring	0539758030 (Qty 2 per axle)	0539746130 (Qty 4 per axle)	0539746120 (Qty 4 per axle)	See left
364	Return spring	0339744060			8

IDENTIFYING REPLACEMENT CAMSHAFTS

There are two ways to correctly identify replacement camshafts as follows:

1. When the end of the camshaft is visible

When the camshaft is not fitted to the axle or when the hub has been removed from the axle, then the BPW part number can be seen stamped on the flat face of the S cam.



2. When the camshaft is fitted to an assembled axle

While the camshaft is still fitted to an assembled axle the correct part number can be identified by measuring the visible portion of the camshaft. This dimension is referred to as dimension X in the diagrams below. Add 20mm to this measurement.

The total measured dimension X plus 20mm will be approximately equivalent to dimension A as seen in the diagram on the facing page number 23 (Camshaft dimensions).

There are two tables on the facing page number 23. One table shows the dimensions and camshaft part numbers to suit brake type SN4218 and SN3620 which use the same cam profile. The other table shows the dimensions and part numbers for brake type SN3020 which uses a different cam profile.

Look in the first column of the relevant table to find the closest to your calculated dimension A. Look across to the last two columns to find the correct part number for the left and right hand replacement camshafts.

Example - finding correct replacement camshaft part number while camshaft is fitted to axle:

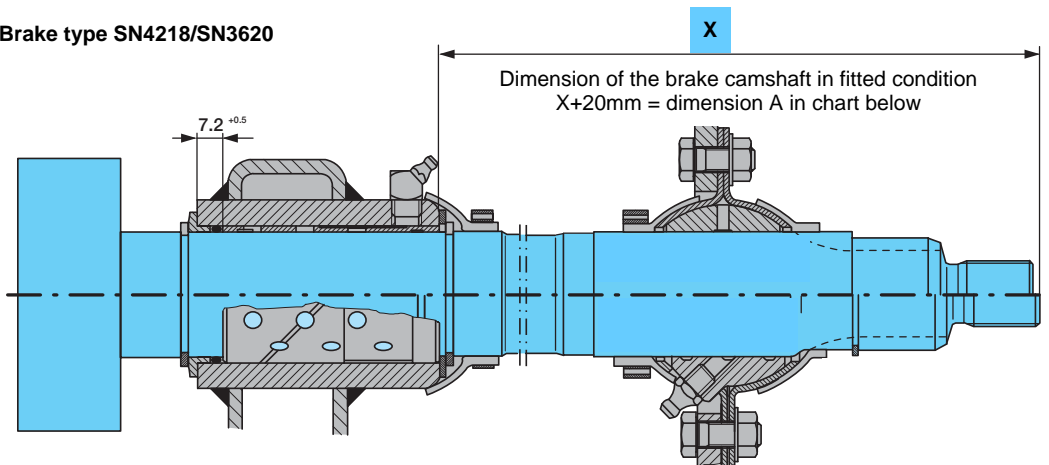
Brake type = SN4218

Dimension X is physically measured as 450mm, then add 20mm to get dimension A which therefore = 470mm

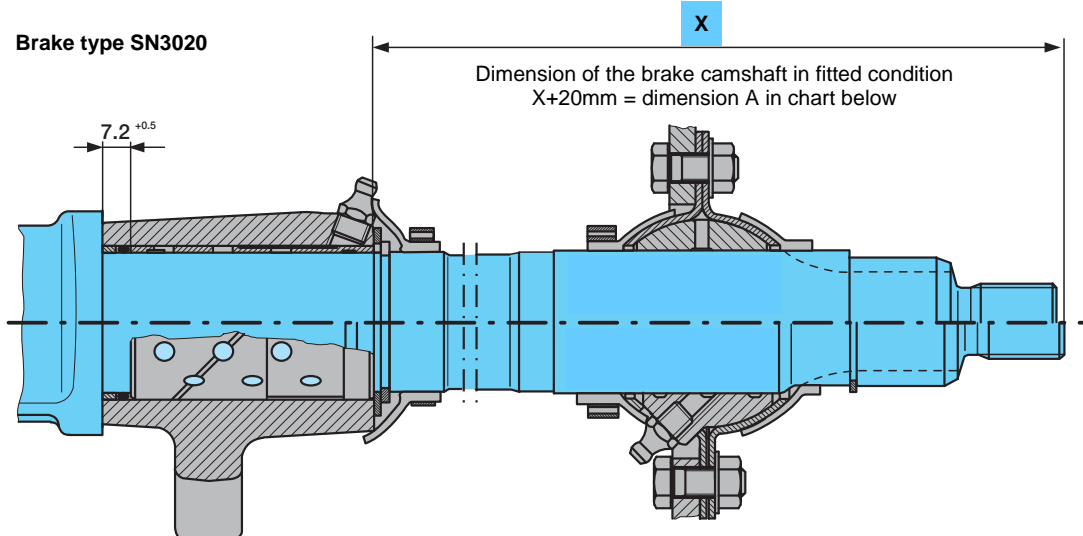
Closest Dimension A to 470mm in table to suit brake type SN4218/3620 = 469.5mm.

Therefore correct replacement camshafts = 0509705171 (left hand) and 0509705181 (right hand)

Brake type SN4218/SN3620



Brake type SN3020



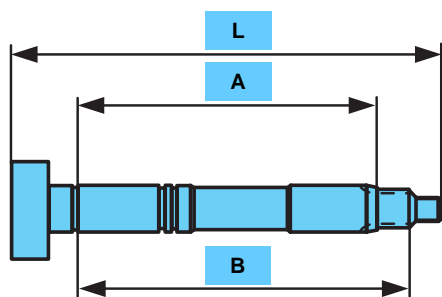
Refer to previous page for details regarding the ways to identify replacement camshafts

Items with Dimension B = NA Camshafts suit Rows of 8 & Steer Axles

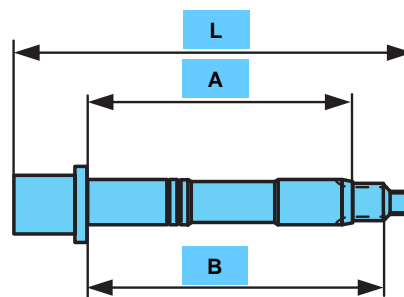
SN3020 (15" - 17.5") Camshafts L dimension in ()'s for Axles before 1/1996.

CAMSHAFT DIMENSIONS

To suit brake types SN4218/SN3620



To suit brake type SN3020



CAMSHAFTS TO SUIT BRAKE SIZE SN4218/SN3620 (19.5" - 22.5")

Dimensions (in mm's)			Part Numbers	
Dimension A	Dimension L	Dimension B	Left Hand	Right Hand
124.5	240	NA	0509702610	0509702620
163	278	NA	0509702830	0509702840
141	256	NA	0509703710	0509703720
361.5	480	392	0509705093	0509705103
469.5	585	500	0509705174	0509705184
522.5	641	563	0509705231	0509705243
547.5	666	578	0509705254	0509705264
615.5	734	646	0509705294	0509705304
557.5	676	588	0509705394	0509705404
699.5	818	730	0509705493	0509705503

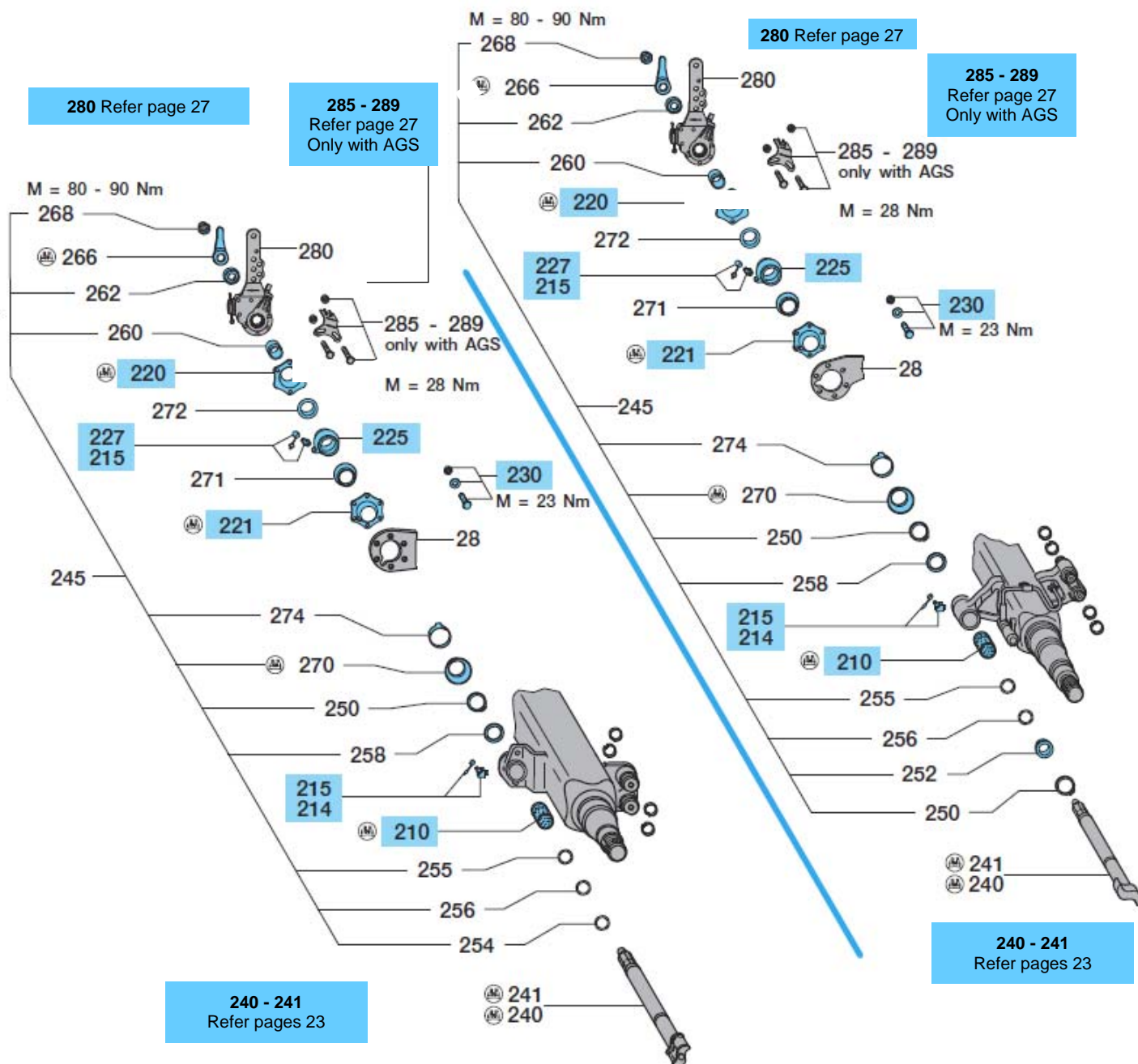
CAMSHAFTS TO SUIT BRAKE SIZE SN3020 (15" - 17.5")

Dimensions (in mm's)			Part Numbers	
Dimension A	Dimension L	Dimension B	Left Hand	Right Hand
100	211	NA	0509762452	0509762462
116.5	237	NA	0509762472	0509762482
140	261	NA	0509762512	0509762522
81	206 (188.5)	NA	0509762652	0509762662
457.5	582 (608)	488	0509760134	0509760144
422.5	547 (573)	453	0509760154	0509760164
638.5	763 (789)	669	0509760474	0509760484
522.5	673	553	0509760072	(0509760082) 0509760084
557.5	682	588	0509760053	(0509760063) 0509460064



BRAKE TYPE SN3020

BRAKE TYPE SN4218/SN3620





BRAKE CAMSHAFT BEARINGS			
Item	Description	Part Number	Qty Per Axle
Kit	BPW Camshaft repair kit (Items 210 - 227, 245, 260, 271, 272)	0509700KIT	1
210	Bush Outer Camshaft Bronze	0311244340	2
214	Grease Nipple (M10 x 1/4)	0268020650	2
	Grease Nipple Inner Camshaft Bush	0268021450	2
215	Cap Grease Nipple	0235052000	4
220	Bearing Box Outer	0322902180	2
221	Bearing Box Inner	0322902190	2
225	Bush Inner Camshaft	0311314040	2
227	Grease Nipple	0268021450	2
230	Bolt Assembly	0586500020	2
231	Spring Washer	0254030892	2
232	Nut	0252021282	2
245	BPW Camshaft Small Parts Kit (Items 250 - 262,268,270,274)	0980100142	2
250	Circlip	0256760100	2
252	Camshaft washer	0331012240	2
254	Ring	0331081020	2
255	O Ring (Ø37 x 2.6 Black)	0256773742	2
256	O Ring (Ø40 x 2.5 Green)	0256792300	2
258	Dust Seal Outer Cam	0312042020	2
260	Circlip Camshaft Spline	0256160590	2
	Bush Adaptor Sleeve	0311303060	2
262	Disc	0332011161	2
266	Lever (Brake Wear Indicator) suit ECO-Master Slack Adjuster	0319014070	2
268	Lock Nut Camshaft	0326014080	2
270	Dust Seal Camshaft Large Grey	0312043140	2
271	Dust Seal Outer - Inner Camshaft	0312042090	2
272	Dust Seal Inner - Inner Camshaft	0312042080	2
274	Clamp	0335030020	2

GENERAL INFORMATION



BPW Slack Adjusters:

The required brake cylinder stroke increases as the brake lining thickness reduces.

The slack adjuster makes up for this change and keeps the brake cylinder stroke in the optimum range at all times.

The principle of automatic adjustment

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

In this case, the automatic function of the ECO-Master automatic slack adjuster provides the necessary adjustment. As a result, the brake cylinder stroke is always kept within the same, optimum range.

The adjustment stroke is designed so that there is always sufficient air gap even at higher levels of elasticity and given thermal expansion of the adjacent components (eg the brake drum).



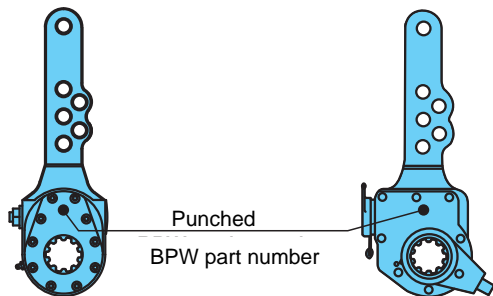
DETERMINING REPLACEMENT SLACK ADJUSTERS

The BPW part number is punched into the cover plate

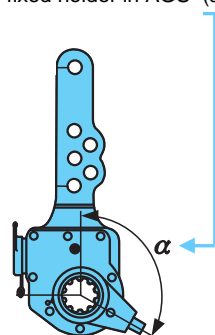
If there is no BPW part number or it is not legible, the slack adjuster can be identified on the basis of shape and dimensions:

GSK (Manual)

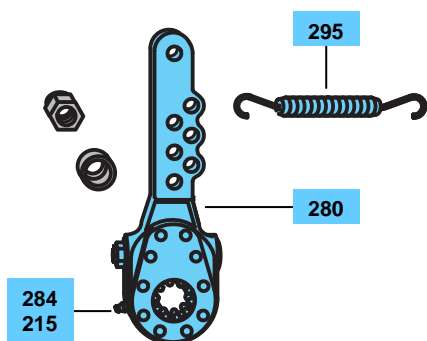
AGS (Automatic)



1. Automatic (AGS) or Manual (GSK) slack adjuster.
2. The number of holes.
3. Position of fixed holder in AGS (a)



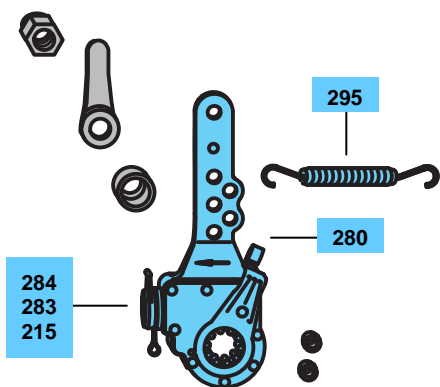
MANUAL (GSK) SLACK ADJUSTERS



MANUAL SLACK ADJUSTERS (GSK)

Item No	Description	Brake Size			Qty Per Axle
		SN4218	SN3620	SN3020	
280	Slack Adjuster 4 Holes	0517452610		0517452430	2
	Slack Adjuster 6 Hole (Multihole)	0517465130			2
	Slack Adjuster 3 Hole Underslung boosters	0517465200			2
284	Grease Nipple	0268500102			2
215	Cap	0235052000			2
295	Return Spring	0539726030			2

AUTOMATIC SLACK ADJUSTERS (AGS) ECO-Master



AUTOMATIC SLACK ADJUSTERS (AGS) ECO-Master

Item No	Description	Part Number	Qty Per Axle
Kits includes item 280 283 284 215	Kit Auto Slack Adjuster 6 Holes, a = 24°	0557482873	1
	Kit Auto Slack Adjuster 6 Holes, a = 120° Suits H/R Series Axles	0557482433*	1
	Kit Auto Slack Adjuster 6 Holes, a = 180° Suits KH/NH Series Axles	0557482443	1
	Kit Auto Slack Adjuster 6 Holes, a = 120° Suits KH/NH Series Axles	0557488223	1
280	Auto Slack Adjuster 6 Holes, a = 24°	0517482633	2
	Auto Slack Adjuster 6 Holes, a = 120°	0517482212	2
	Auto Slack Adjuster 6 Holes, a = 180°	0517482243	2
283	Cap	0321190150	2
284	Grease Nipple	0268500102	2
215	Cap	0235052000	2
295	Return Spring	0539726030	2

* Standard automatic slack adjusters for H/R axles

BPW WHEEL STUDS AND NUTS

To suit dual and single wheels



Fig 1
Wheel stud, back nut type

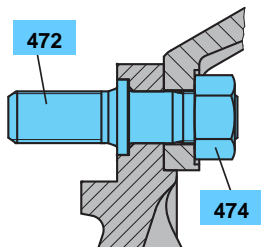


Fig 2
Wheel stud, push in type

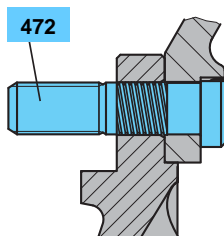


Fig D
Steel wheels - spigot aligned

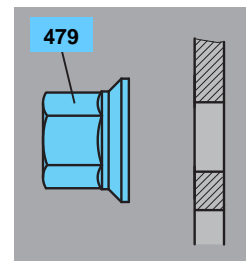
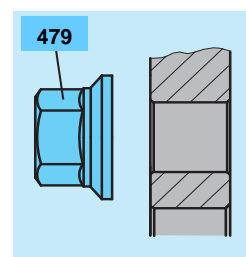
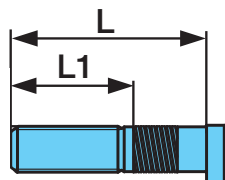
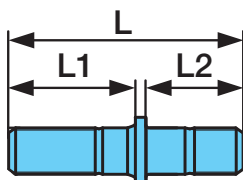


Fig E
Aluminium wheels



Dimensions

Dimensions



DETERMINING REPLACEMENT WHEEL STUDS

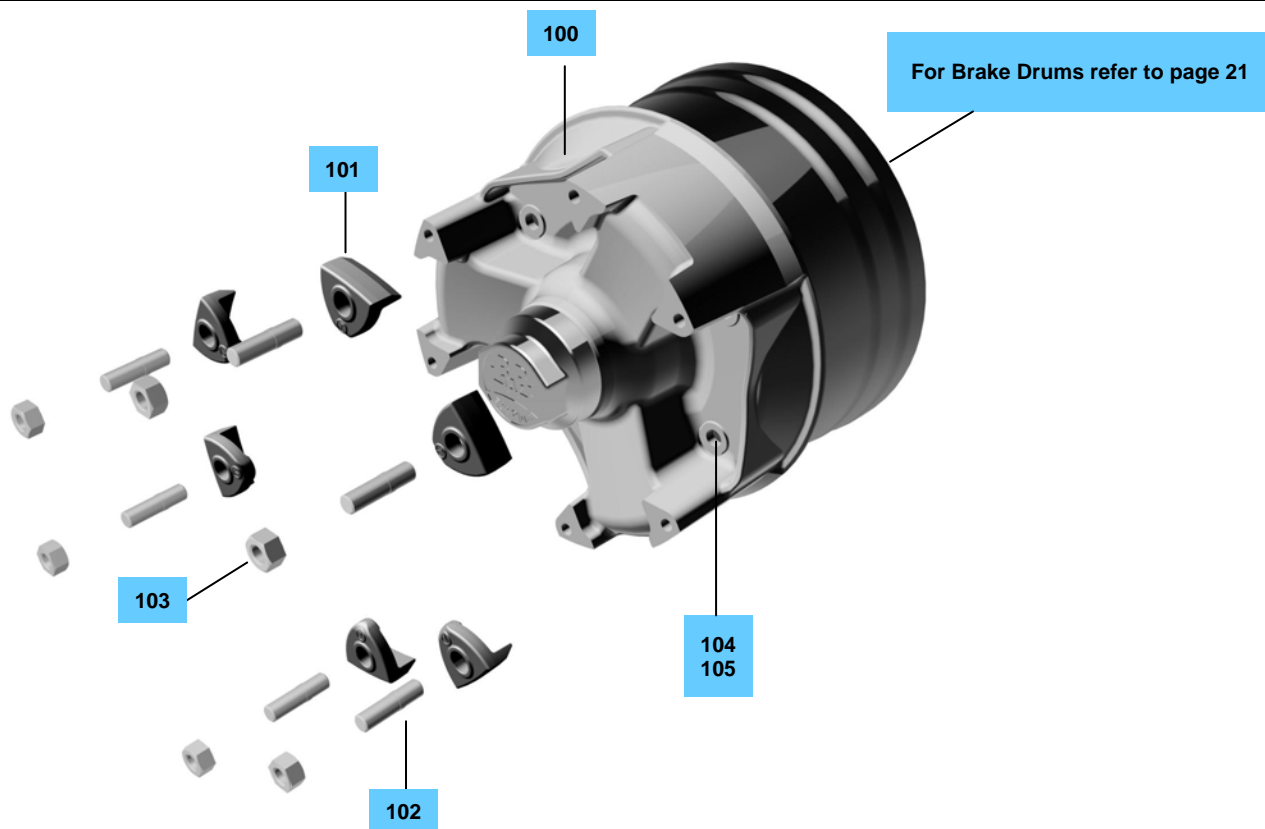
Select wheel stud or bolt type from figures 1 or 2 (above top) and determine steel or alloy wheels from figures D and E. Select the appropriate combination using the table below. E.g. Fig 1D in table below represents back nut type wheel stud for spigot aligned steel wheels. Check other dimensions to be sure of accurate selection.

WHEEL STUDS AND NUTS TO SUIT SINGLE WHEELS									
Wheel Nut Thread	Hub Type	Wheel Type	Fig	Dimensions			Stud Item 472	Rear Nut Item 474	Wheel Nut Item 479
				L	L1	L2			
M 22 x 1.5	Steel	Steel	1D	114	60	49	0329623170	0326004060	0526054100
	Steel	Aluminium	1E						
	Steel	Steel	2D	97	62	0329633121			
	Steel	Aluminium	2E						

WHEEL STUDS AND NUTS TO SUIT DUAL WHEELS									
Wheel Nut Thread	Hub Type	Wheel Type	Fig	Dimension			Stud Item 472	Rear Nut Item 474	Wheel Nut Item 479
				L	L1	L2			
M 22 x 1.5	Steel	Steel	1D	114	60	49	0329623170	0326004060	0326004120
	Steel	Aluminium	1E	139	85	49	0329623240		
	Steel	Steel	2D	97	62		0329633121		0526054100
	Steel	Aluminium	2E				117		

BPW WHEEL CLAMPS STUDS AND NUTS

To suit Spider hubs



WHEEL CLAMPS, STUDS AND NUTS TO SUIT SPIDER HUBS									
Item	Description	Tyre Size	Conventional 9t		Conventional 10t		ECO ^{Plus} 10/12t	Qty Per Axle	
			Oil Hub	Grease Hub	Oil Hub	Grease Hub	Grease Hub		
100	Spider Hub - dual wheels	20"/22.5"	0832870150 (Inc's 101 - 103) 6 spoke	0832870140 (Inc's 101 - 103) 6 spoke	0580149430 * ECO ^{Plus} (Inc's 101 - 103) 3 spoke			2	
		15"		0239103118 (Hub only) 3 spoke					
	Spider Hub - single wheels	20"/22.5"	0832870160 (Inc's 101 - 103) 6 spoke	0832870130 (Inc's 101 - 103) 6 spoke	0832876360 (Inc's 101 - 103) 6 spoke	0832876300 (Inc's 101 - 103) 6 spoke			
101	Wheel Clamp - dual wheels	20"/22.5"	0337203020						12
	Wheel Clamp - single wheels		0218162000						12
	Wheel Clamp - dual wheels	15"		0337206200				6	
102	Wheel Stud	20"/22.5"	0334073071						12
		15"		0334073100				12	
103	Wheel Nut		0326003040						12
104	Bolt - spider hub drum assy	20"/22.5" & 15"	0250266110						12
105	Nut - spider hub drum assy		0326003120						12

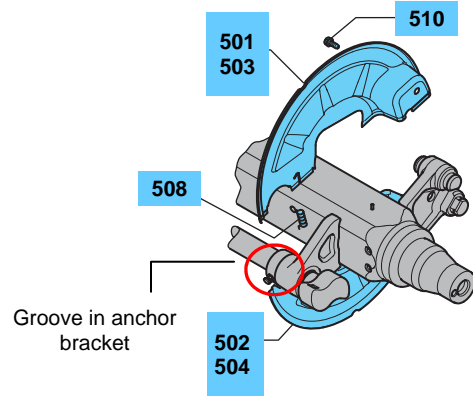
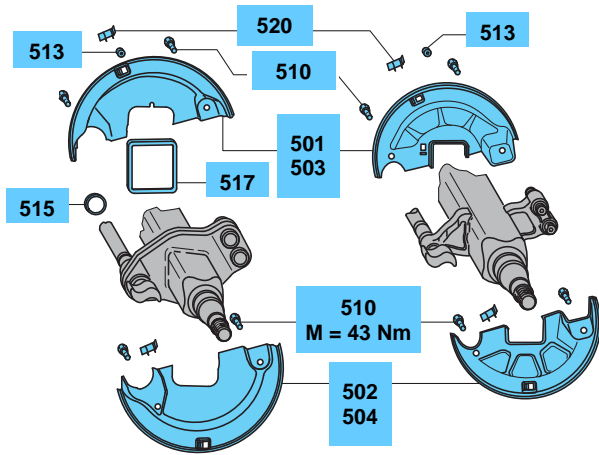
* Refer to pages 10 - 11 regarding replacement hubs for 10t/12t Conventional Spider

Dust Covers to suit Brake Type SN4218

Pre BPW Brake 95

BPW Brake 95

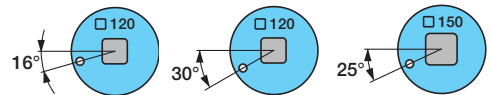
BPW ECO Drum



The diagrams directly to the right show the axle beam brake positions available for brake type SN4218. This represents the angle between the S Cam and the centre line of the axle.

Different dust covers are required for the different brake positions as shown in the table below.

For Ø127mm round beam axles the same set of dustcovers are used for all cam positions.

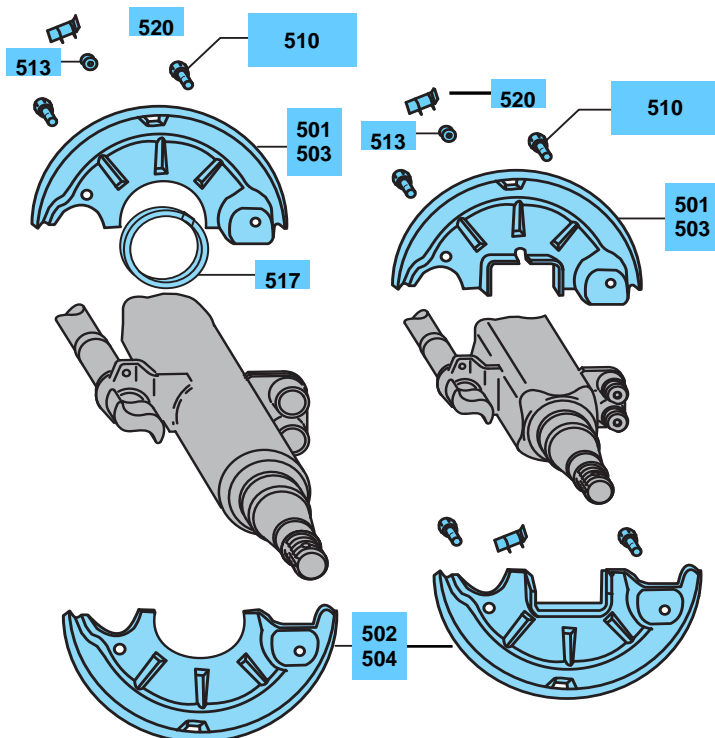


PLEASE NOTE:

Non ECO Drum dust covers **CANNOT** be used on ECO Drum axles.

ECO Drum dust cover **CANNOT** be used on non ECO Drum axles.

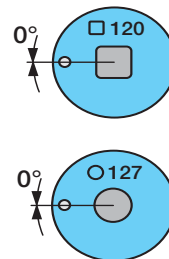
Dust Covers to suit Brake Type SN3620/SN3020



The diagrams directly below show the axle beam brake positions available for brake type SN3620 and SN3020.

This represents the angle between the S Cam and the centre line of the axle.

Different dust covers are required for the different brake positions as shown in the table below.





DUST COVERS SUIT BRAKE TYPE SN4218							
Brake Generation	Axle Beam Profile	Brake Position	Assembly Kit	Item 501 Left Upper	Item 502 Left Lower	Item 503 Right Upper	Item 504 Right Lower
Pre BPW B 95	Square beam 120mm	30°		0301098451	0301098080	0301098461	0301098090
		16°		0301099340	0301099330	0301099360	0301099350
	Square beam 150mm	25°		0301098910	0301098120	0301098920	0301098130
	Round beam 127mm	30°		0301098690	0301098060	0301098700	0301098050
BPW B 95	Square Beam 120mm	30°		(0301081030) 0301099930	(0301081040) 0301099940	0301081010	(0301081020) 0301099920
		16°		0301081320 (0301099590)	0301099600	0301081290	0301081300 (0301099580)
	Square Beam 150mm	25°		0301081350	0301081360	0301081330	0301081340
BPW ECO Drum	Square Beam 120mm	16°		0301099590 ⁽¹⁾	0301099600 ⁽¹⁾	0301081290 ⁽¹⁾	0301099580 ⁽¹⁾
			9900000123 ⁽²⁾		0301071940 ⁽²⁾		0301091940 ⁽²⁾
	Square Beam 150mm	25°	9900000130 ⁽²⁾	(0301071040) 0301071870 ⁽²⁾	(0301071030) 0301071860 ⁽²⁾	(0301071020) 0301071850 ⁽²⁾	(0301071010) 0301071840 ⁽²⁾

DUST COVERS SUIT BRAKE TYPE SN4220							
BPW B 95	Square beam 150mm	0°	9900000098	0301099630	0301099640	0301099610	0301099620
BPW ECO Drum	Square Beam150mm	25°	9900000126 ⁽²⁾				

DUST COVERS SUIT BRAKE TYPE SN3620							
Pre BPW B95	Square beam 120mm	0°		0301096670	0301096680	0301096700	0301096690
	Round beam 127mm	0°		0301096530	0301096500	0301096520	0301096510
BPW B 95	Square Beam 120mm	0°	9900000106	0301099790	0301099800	0301099770	0301099780

DUST COVERS SUIT BRAKE TYPE SN3020							
Pre BPW B 95	Square beam 120mm	0°					
	Round beam 127mm	0°	9900000103	0301096800	0301096790	0301096820	0301096810
BPW B 95	Square Beam 120mm	0°		0301099870	0301099880	0301099850	0301099860

DUST COVER ATTACHMENT PARTS				
Item	Description	Part No	Dimensions	Qty Per Axle
508	Dust Cover Retaining Spring - ECO Drum only	0339711020		2
510	Bolt Dust Cover Self Locking	0250712200	M10 x 18	4
	Bolt Dust Cover Self Locking - ECO Drum only	0250715580	M10 x 1.5 x 15	2
513	Plug, No ABS, Pre BPW Brake 95	0237043300	Ø 10.7	2
	Plug, No ABS, BPW Brake 95 and ECO Drum	0237045700	Ø 6/10/13	2
515	Seal	0312023060	Ø 52/68/8	2
517	Seal - Square axle beam 120mm/Round axle beam 127mm (Used with both Pre BPW Brake 95 and BPW Brake 95)	0512130060	L = 340, □ 8	2
	Seal - Square axle beam 150mm	0512130070	L = 450, □ 8	2
520	Plug Rubber Backing Plate	0337900230		4

- (1) ECO Drum dust covers for old axle beam, attached with two screws per dust cover.
 (2) ECO Drum dust covers for ECO Drum axle beam, attached with one screw per dust cover and a spring.

ABS/EBS

With the anti-lock brake system (ABS), the wheel movement is recorded using a proximity type arrangement with an exciter ring attached to the hub and a sensor (speed sensor) that generates pulses.

As a result, the wheel speed of each wheel is continuously sent to the central control ECU.

This runs a complex program for processing the received information about the movement of the wheel as well as for calculating and performing logical operations on the control signals.

Using the pressure control valves assigned to each wheel, it adjusts the air pressure and therefore the braking of each individual wheel (depending on the ABS system).

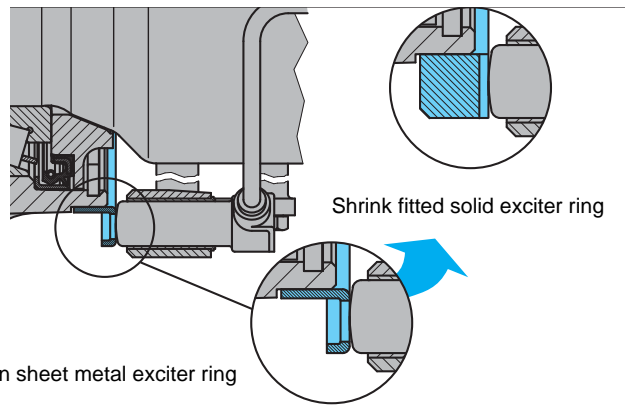
EBS (Electronic Braking System) is a development of ABS, and offers more safety features.



Exciter/Pole rings

Both press on sheet metal and solid exciter rings (or pole rings) are used.

To fit a solid exciter ring, heat the new solid exciter ring to approx 80 to 120 ° C and shrink fit.



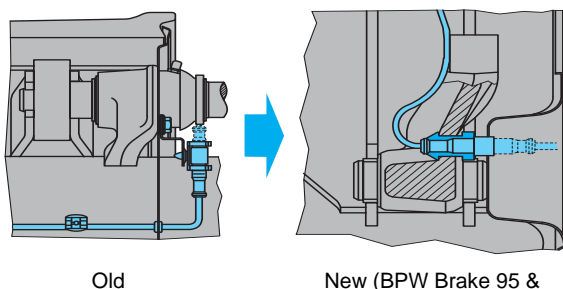
Protected ABS sensor plug connection

Since 1997 BPW trailer axles of the H Series are available with the new innovative ABS sensor plug connection.

With this design the sensor plug, which sits in a recess in the brake dust covers, is optimally protected against in transit damage.

The connection of the ABS cables (sensor cable/connection cable to control unit) is made in the same way as with a normal plug socket by simply inserting the plug into the bracket located in the brake anchor plate.

The firm attachment of the sensor bracket to the brake anchor plate ensures that no damage whatsoever can occur to these ABS components even under the most arduous deployment conditions (assuming the sensor cable is properly routed).

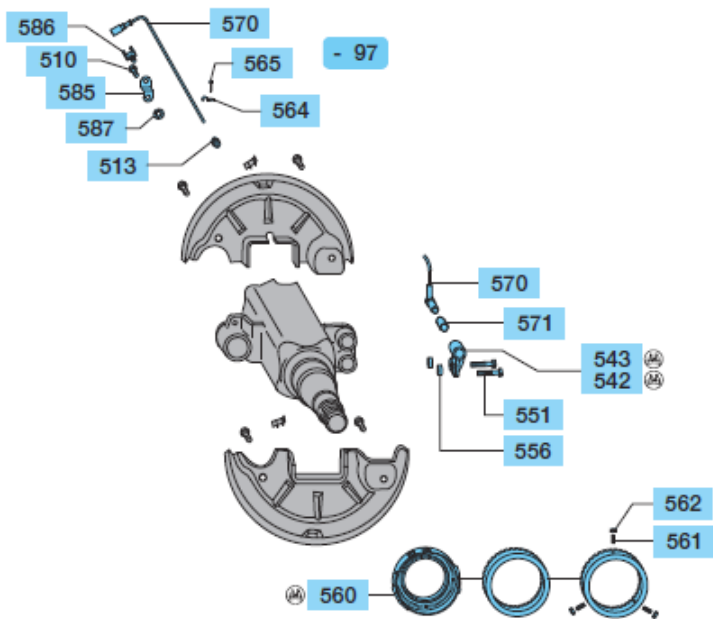


BPW ABS PARTS

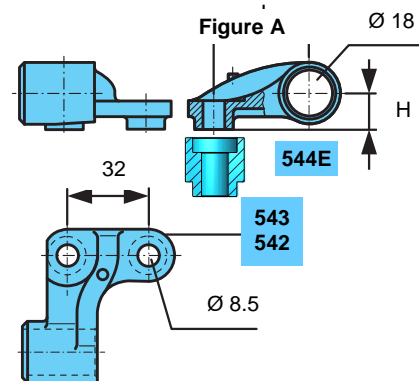
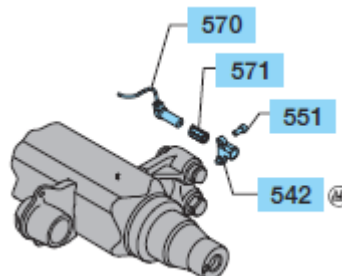
Brake size SN4218, SN3620 & SN3020



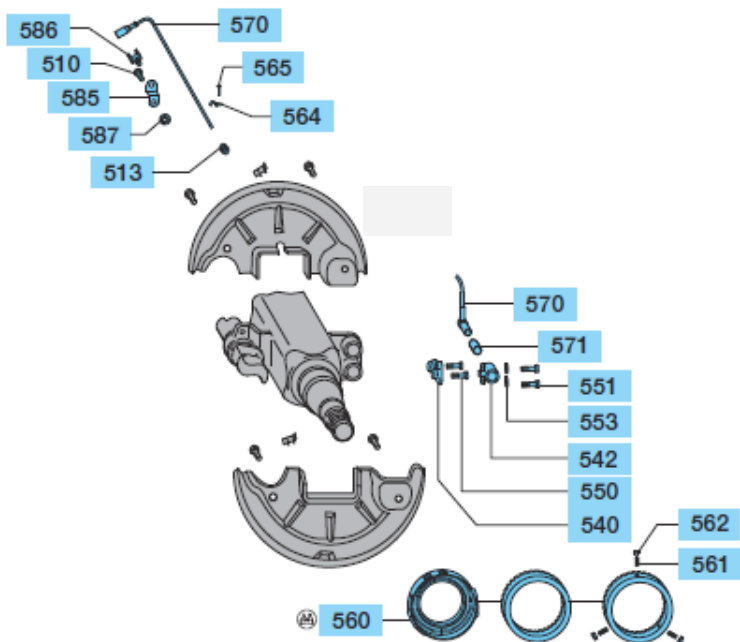
SN3620 19.5 ECO



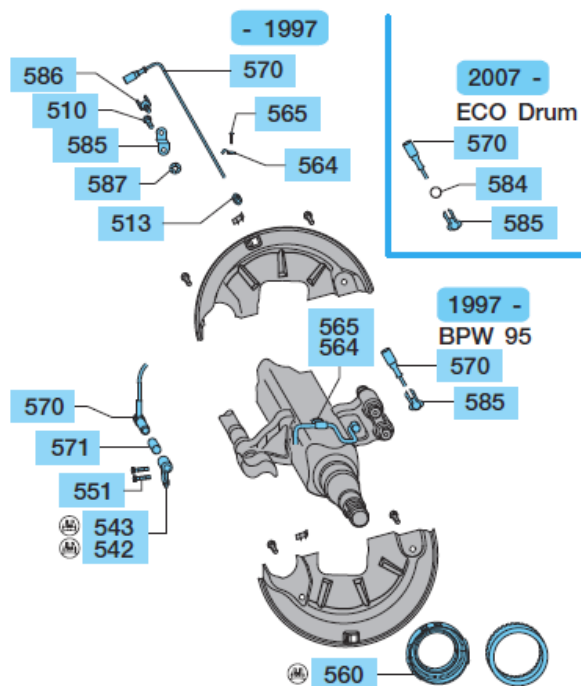
SN3620 19.5 ECOPlus



SN3020 17.5



SN4218 22.5





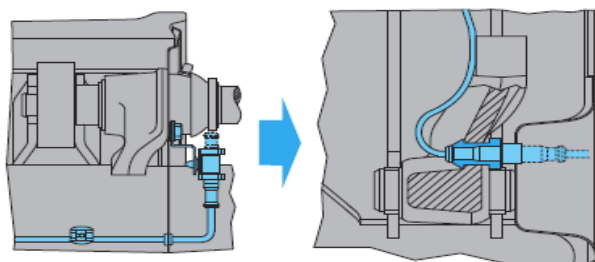
ABS PARTS

Item	Description	Fig	To Suit	SN4218	SN3620	SN3020	Qty Per Axle	
542	Sensor Bracket		9t ECO			0318907870	2	
	Sensor Bracket		9t ECO Plus		0318914610	0301099860	2	
542	Sensor Bracket RH		9t Conventional/ECO		0318907580		1	
543	Sensor Bracket LH				0318907590		1	
542	Sensor Bracket RH		9t/10t/12t Bearings H10,H91	0318907580			1	
543	Sensor Bracket LH			0318907590			1	
542	Sensor Bracket RH		9t Bearings H90	0318907100			1	
543	Sensor Bracket LH			0318907090			1	
544E	Spacer		9t/10t/12t Bearings H10,H91	7590/7580SPACE				4
551	Locking Bolt			0250471400TS				4
551	Hexagon bolt		ECO		0250712300	0250159480	4	
	Hexagon bolt		ECOPlus			0250715580	4	
553	Spring Washer					0256010690	4	
560	Exciter Ring 80 Teeth			9t Conventional and ECO hub		0331008180	2	
	Exciter Ring 80 Teeth	9t ECO ^{Plus}		0331008530		2		
	Exciter Ring 80 Teeth	10t ECO ^{Plus}		0531008441		2		
	Exciter Ring 100 Teeth			0331008140		2		
564	Clamp Lead ABS			0203263200		2		
565	Rivet, ABS, Lead Clamp			0260052540		2		
570	Sensor and Lead Angled			0233170500		2		
571	Bush Sensor ABS			0203165900		2		
584	O Ring ABS Bracket			See item 585				
585	Bracket ABS				0318907720	2		
585	Holder ABS Plug	B1	Old ABS Sensor Plug connection	0318907350*			2	
	ABS Grommet	B2	Sensor Plug connection BPW Brake 95	See item 585				
	ABS Grommet with item 584	B2	Sensor Plug connection ECO Drum	0518915590			2	
586	Clamp ABS Plug Bracket	B1	Old ABS Sensor Plug connection		0214211100 *		2	
587	Washer ABS Plug Bracket	B1	Old ABS Sensor Plug connection		0254141190 *		2	

* Not required with BPW Brake 95 and ECO Drum brakes (SN4218)

Fig. B1

Fig. B2



Old Style

New (BPW Brake 95 & ECO)





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