BPW Maintenance intervals

01.07.2016 we think transport

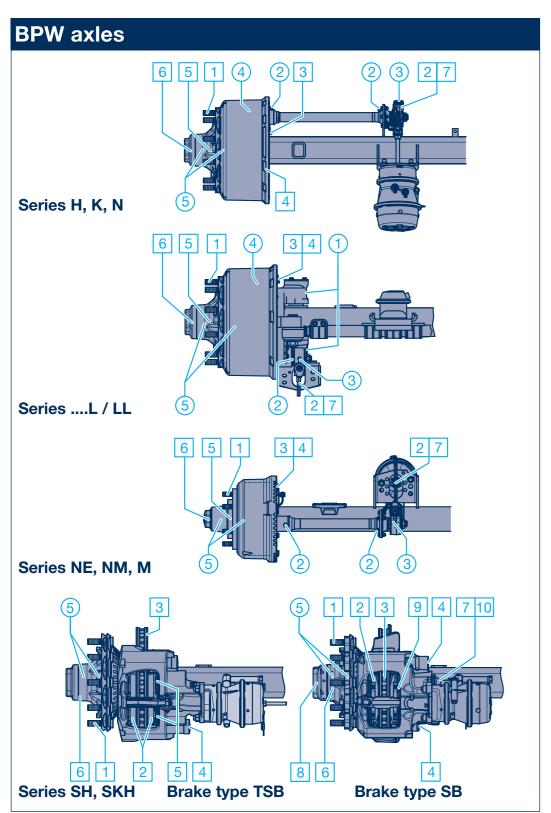
BPW air suspensions O / SL / AL / EAC

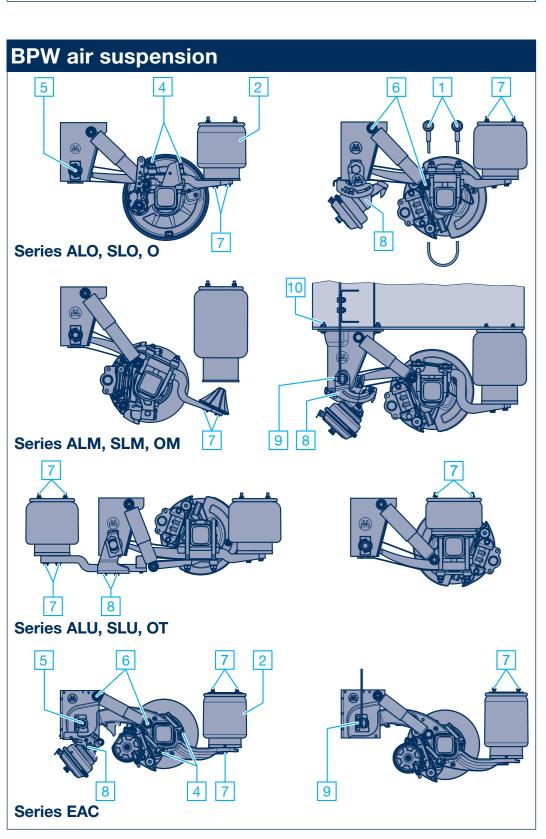
Grease axle support bearing series W, BW.

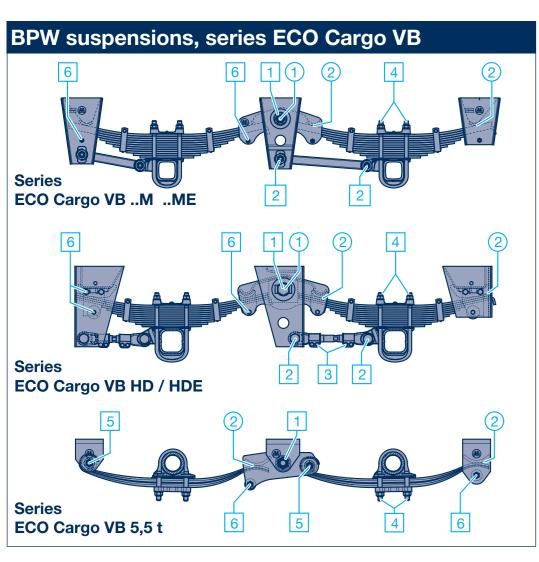
Grease spring tension casing series W.

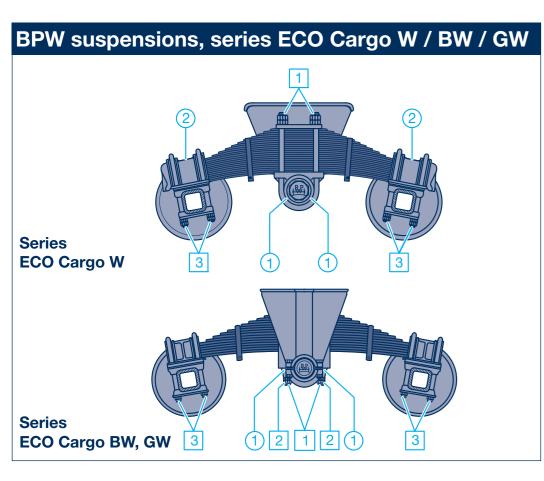


BPW axles and suspensions









	Lubrication						brake	very lining ement ²⁾		comme Does r	PW re- endation. not affect anty 4)		S. C.
	 After a long idle period, prior to initial and lubricate the brake camshaft bea With usage extreme conditions (e.g. e frequent lubrication with high pressur Within 2 weeks of first journey under ECO Plus warranty, see warranty doc 	extreme Off-Road use) more e grease is necessary. load, latest after 2000 km uments ECO Plus	initially after 2 weeks	every 6 weeks	every 12 weeks (quarterly)	every 26 weeks ¹⁾²⁾ (twice annually)	latest every year ¹⁾	latest every 2 years	annually	every 2 years	latest every 3 years or min. every 500,000 km ²	every 3 years	every 5 years,
	Axles with drum brakes a												
<u> </u>	Steering knuckle bearing, top and												
2	Brake camshaft bearing, outer ar	On-Road-Conditions Off-Road conditions Outside Europa				•	•						
(3)	Slack adjusters manual												
	Slack adjuster ECO-Master	On-Road conditions Off-Road conditions Outside Europe				•							
4	Brake shoes with closed anchor	eye											
5	ECO Plus 3, ECO Plus 2 and ECO for use inside Europe	O ^{Plus} Unit On-Road conditions Off-Road conditions										•	
	ECO Plus 3, ECO Plus 2 and ECO for use outside Europe	O ^{Plus} Unit On-Road conditions Off-Road conditions							•	•			
	ECO Unit for use	Inside Europe Outside Europe											
	Conventional hub bearing												

	BPW suspensions, series ECO Cargo VB / VB H	ID / V	B 5.5	t				
1	Grease bearings (suspension type E). (Not applicable in the case of rubber / steel bushes).	2)	2)					
2	Slightly grease the slide elements / slide ends of springs.							

	1) / 2) [3) [4) [3	After the first run under load conditions, likewise after each wheel change Under extrem conditions, increase frequency (e.g. construction sites and poor roads) For use outside Europe ECO Plus Units with ECO Air COMPACT, Airlight II and Airlight Direct air suspension are maintenance-free in On-Road applications and do not need to be retightened see warranty documents ECO Plus).	initially	every 1 to 3 weeks	Within 2 weeks of first journey under load, latest after 2000 km	every 12 weeks ²⁾ (quarterly)	every 26 weeks ²⁾ (twice annually)	annually and at every brake lining replacement 2)	Visual checks during the warranty period for chassis fitted with ECO Plus air suspension after 12, 86, 60 and 72 month,
	Ax	les with drum brake							
1	Che	eck wheel nuts for tightness.	1)						
2	of t	h manual slack adjusters, check brake play, adjust if necessary to 10 - 12% he connected brake lever length and activate by hand or with 0.5 - 0.8 bar. t applicable in the case of automatic slack adjusters.)		•					
3	Che	eck brake lining thickness.							
4	Che	eck the brake drum for cracks and check the internal diameter.							
-	Che	eck the tyres for uneven wear.							
0	Visi	ual inspection of all component parts and for damage and wear.				3)			
5	Che	eck wheel hub bearing play, adjust if necessary. ECO Plus 3, ECO Plus 2 and ECO ^{Plus} Unit ECO Unit / conventional bearing						•	
6	Che	eck caps for firm seating (not necessary with ECO Plus axles).							
7	Che	eck operation of automatic slack adjusters.				3)			
	Ax	les with disc brakes							
1		Check wheel nuts for tightness.	1)						
2	TSB	Check brake pad thickness.							
0	and	Visual inspection of all component parts for damage and wear.							
3	SB	Check brake disc thickness and visually check for cracks.				3)			
4	bes	Check caliper guide system and check play.				3)			
5	Brake types	Check coarse dirt seals and the pressure plates.					3)		
6	Brak	Check wheel hub bearing play, adjust if necessary. ECO Plus 3, ECO Plus 2 and ECO ^{Plus} Unit ECO Unit / conventional bearing						•	
-		Check the tyres for uneven wear.							
7	SB	Check brake adjustment.				3)			
8		Check caps for tightness (not necessary with ECO Plus axles).							
9	Brake type	Check bellows on the guide pins. ECO Plus 2 and ECOPlus axles ECO axles and axles with conventional hub bearing					3)	•	
10		Check caliper unit. ECO Plus 2 and ECO ^{Plus} axles ECO axles and axles with conventional hub bearing					3)	•	

BPW air suspension, series O / SLO / AL / AL II / EA	ıc			
Visual inspection, check all component parts for damage and weather the second se	ar.			
1 Check strap: Check condition and fastening.				
2 Check condition of air bags				
3 Check air suspension level valves for condition, seal-tightness and tig	ghtness.			
Check spring mounting kit for tightness.		4)	-	
Check spring pivot bolts for tightness with a torque wrench.		4)	-	
Check shock absorber fastening for tightness with a torque wrence	ch.	4)	-	
Check air bag fastening for tightness.		4)		
Check axle lift for tightness.		4)		
Tighten the spring bolt to gusset plate connection bolt.		4)		
Check the bolt connection between the air suspension hanger bra longitudinal member for tightness.	acket and the	4)		
1 Check stabilizer fastenings.		4)		

٥	Visual inspection, check all component parts for wear and damage.		_	
1	Check threaded bolts on equaliser arm bearings for tightness.			
2	Check axle connecting rod bolts for tightness.			
3	Check connecting rod clamping screws for tightness.			
4	Check spring U-bolts for tightness using a torque wrench.			
5	Check spring pivot bolts for tightness. (Serie up to 5.5 t)			
6	Check slide elements for tightness.			

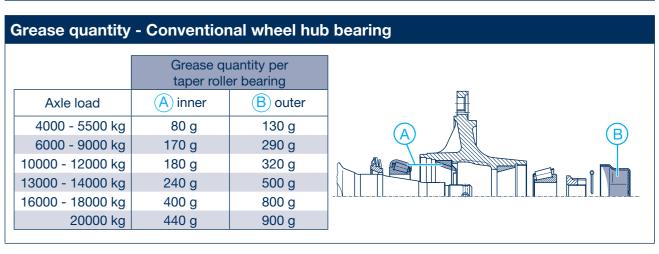
BPW suspensions, series ECO Cargo W / BW / GW				
Visual inspection, check all component parts for wear and damage.				
1 Check spring U-bolt of support axle for tightness.				
2 Check fastening screws on the bearing covers for tightness.				
3 Check spring U-bolts on the spring housing for tightness.				

Lubricants

Grease quantity	- ECO Plus 3	and ECOPlus	Unit
		uantity per er bearing	
Axle load	(A) inner	B outer	A) B)
8000 - 12000 kg	170 g	120 g	
6000 - 12000 kg	130 g*	90 g*	
* Greasing with a grease	e applicator		

Grease quantity	- ECO Plus 2	2 Unit	
		uantity per er bearing	
Axle load	(A) inner	Bouter	A B
8000 - 9000 kg	170 g	120 g	
8000 - 9000 kg	130 g*	90 g*	
* Greasing with a greas	e applicator. Apply a	ring-shaped bead of	grease to the running surfaces of the bearing outer races (arrows).

	Grease quantity	- ECO Unit		
			uantity per er bearing	
	Axle load	(A) inner	B outer	(A) (B)
	8000 - 9000 kg	120 g	120 g	
	10000 - 12000 kg	170 g	120 g	
	13000 - 14000 kg	230 g	150 g	
L				



Tightening torques

VA/I - I - I - I I	1444	014/40	M 405 N
Wheel stud arrangement			M = 125 Nm
			M = 290 Nm
			M = 380 Nm
	-		M = 510 Nm
_			M = 460 Nm
Spigot arrangement			M = 350 Nm
			M = 480 Nm
	M 22 x 1.5		M = 630 Nm
	M 24 x 1.5		M = 860 Nm
			M = 630 Nm
Trilex-wheels	M 18 x 2	SW 27	M = 285 Nm
	M 20 x 2	SW 27	M = 335 Nm
Japan connection	M 20 x 1.5		M = 570 Nm
•	M 30 x 1.5		M = 570 Nm
ECO Plus 3 Unit		SW 110	M = 350 Nm
		SW 110	Bajonet lock
ECO ^{Plus} Unit	8 - 12 tonnes	SW 110	M = 800 Nm
ECO Unit	6 - 12 tonnes	SW 110	M = 800 Nm
	13 - 14 tonnes	SW 120	M = 800 Nm
for conventional bearing hub	5.5 tonnes	SW 70	M = 500 Nm
3	6.5 - 9 tonnes	SW 95	M = 500 Nm
			M = 500 Nm
	13 - 14 tonnes		M = 800 Nm
			M = 350 Nm
			M = 350 Nm
			M = 500 Nm
		<u> </u>	
(Hub cap with BPW oval shape)	< 5.5 tonnes		M = 70 Nm / 100 Nr
			M = 150 Nm
			M = 350 Nm
2 and ECOPlus Unit:	Axle bolt or axle	nut with torail	ie limiter
	ECO Plus 3 Unit ECO Plus 2 Unit ECO Plus 2 Unit ECO Unit for conventional bearing hub (Hub cap with BPW oval shape) (Hub cap with BPW oval shape)	M 18 x 1.5 M 20 x 1.5 M 22 x 1.5 M 22 x 2 Spigot arrangement M 18 x 1.5 M 20 x 1.5 M 20 x 1.5 M 20 x 1.5 M 20 x 1.5 M 22 x 1.5 M 24 x 1.5 Alloy wheels M 18 x 2 M 20 x 2 Japan connection M 18 x 2 M 20 x 2 Japan connection M 20 x 1.5 M 30 x 1.5 ECO Plus 3 Unit ECO Plus 2 Unit ECO Plus 2 Unit ECO Plus 2 Unit ECO Unit 8 - 12 tonnes 13 - 14 tonnes 16 - 12 tonnes 10 - 12 tonnes 10 - 12 tonnes 11 - 14 tonnes 12 - 14 tonnes 13 - 14 tonnes 13 - 14 tonnes 14 - 18 tonnes 15 - 12 tonnes 16 - 18 tonnes 16 - 12 tonnes 17 - 12 tonnes 18 - 12 tonnes 19 - 12 tonnes 10 - 12 tonnes 10 - 12 tonnes 11 - 12 tonnes 12 - 12 tonnes 13 - 20 tonnes (Hub cap with BPW oval shape) ≤ 5.5 tonnes	M 18 x 1.5 SW 24 / 27 M 20 x 1.5 SW 27 M 22 x 1.5 SW 32 M 22 x 2 SW 32 / 33 Spigot arrangement M 18 x 1.5 SW 27 M 20 x 1.5 SW 30 M 22 x 1.5 SW 30 M 22 x 1.5 SW 32 / 33 M 24 x 1.5 SW 36 Alloy wheels M 22 x 1.5 SW 32 / 33 Trilex-wheels M 18 x 2 SW 27 M 20 x 2 SW 27 M 20 x 2 SW 27 Japan connection M 20 x 1.5 M 30 x 1.5 ECO Plus 3 Unit SW 110 ECO Plus 2 Unit SW 110 ECO Unit 8 - 12 tonnes SW 110 ECO Unit 8 - 12 tonnes SW 110 ECO Unit 13 - 14 tonnes SW 120 for conventional bearing hub 5.5 tonnes SW 70 6.5 - 9 tonnes SW 95 10 - 12 tonnes SW 110 13 - 14 tonnes SW 120 16 - 18 tonnes SW 140 6 - 12 tonnes SW 140 6 - 12 tonnes SW 110 13 - 20 tonnes SW 120 (Hub cap with BPW oval shape) ≤ 5.5 tonnes (Hub cap with BPW oval shape) ≤ 5.5 tonnes (Hub cap with BPW oval shape) ≤ 5.5 tonnes

BPW air suspension Series O / SL / AL / E	AC		
Tightening torques with a torque wrench			
Axle clampings / U-bolt			
ECO Air COMPACT	M 20	SW 30	M = 420 Nm
Airlight II when servicing	M 22	SW 32	M = 550 Nm
Airlight II when replacing	M 22	SW 32	M = 550 Nm + 90° rotation angle
O/SL/AL	M 24	SW 36	M = 650 Nm
Air suspension 3.5 - 5 tonnes, hexagon screws	M 20	SW 30	M = 340 Nm
Spring pivot bolts			
Hanger brackets and channel crossmember Airlight II from 09/2007	M 24	SW 36	M = 650 Nm
Hanger brackets from 08/2001	M 30	SW 46	M = 900 Nm
Hanger brackets up to 07/2001	M 30	SW 46	M = 750 Nm
Channel cross member	M 30	SW 46	M = 900 Nm
Chock absorber fastening			
ECO Air COMPACT	M 24	SW 36	M = 420 Nm
Steel hanger brackets	M 20	SW 30	M = 320 Nm
Steel hanger brackets	M 24	SW 36	M = 420 Nm
Alloy hanger brackets	M 24	SW 36	M = 320 Nm
Air bag fastenings			
	M 12	SW 17	M = 66 Nm
	M 16	SW 22	M = 260 Nm
Central screw	M 16	SW 22	M = 300 Nm
Axle lift			
Supporting arm (EAC)	M 20	SW 30	M = 350 Nm
Supporting arm (O / SL / AL)	M 16	SW 22	M = 230 Nm
Cylinder	M 20	SW 30	M = 360 Nm
Cylinder	M 16	SW 24	M = 190 Nm
Hexagon screw	M 12	SW 17	M = 75 Nm
Lock nut	M 10	SW 16	M = 38 Nm
Cylinder cap screw	M 10	SW 8	M = 50 Nm
Stabilizer fastenings			
	M 10-10.9	SW 17	M = 53 Nm
	M 30	SW 46	M = 750 Nm
Sundries			
Spring bolt screw connection on the gusset plate	M 18 x 1.5	SW 27	M = 420 Nm
Bolt connection between the air suspension hanger bracket and the longitudinal chassis beam	M 16		M = 260 Nm

BPW suspensions Series ECO Cargo VB / VB HD / VB 5.5 t									
Equalizer arm bearings									
up to an axle load of 5.5 tonnes (from 03/2016)	M 30	SW 46	M = 725 Nm						
up to an axle load of 12 tonnes (from 08/2013)	M 42 x 3	SW 65	M = 1300 Nm						
up to an axle load of 12 tonnes (up to 07/2013)	M 42 x 3	SW 65	M = 1100 Nm						
Series HD / HDE	M 48 x 3	SW 65	M = 1240 Nm						
Axle guide linkages									
	M 24 x 2	SW 36	M = 650 Nm						
	M 30	SW 46	M = 725 Nm						
	M 36	SW 55	M = 1425 Nm						
Connecting rod clamping screws									
	M 12	SW 19	M = 66 Nm						
	M 14	SW 22	M = 140 Nm						
U-bolts									
	M 20	SW 30	M = 340 Nm						
	M 24	SW 36	M = 620 Nm						
Spring pivot bolt									
	M 20	SW 30	M = 340 Nm						
Slide elements									
	M 14	SW 22	M = 140 Nm						
	M 16	SW 24	M = 163 Nm						
	M 20	SW 30	M = 320 Nm						

BPW suspensions Series ECO Cargo W / BW / GW			
Spring U-bolt of support axle			
	M 30 x 2	SW 46	M = 980 Nm
	M 36	SW 55	M = 1555 Nm
Fastening screws on the bearing covers			
	M 20	SW 30	M = 320 Nm
	M 24	SW 36	M = 570 Nm
Spring U-bolts on the spring housing			
	M 20	SW 30	M = 450 Nm
	M 24	SW 36	M = 700 Nm