BPW-PW 53021701e

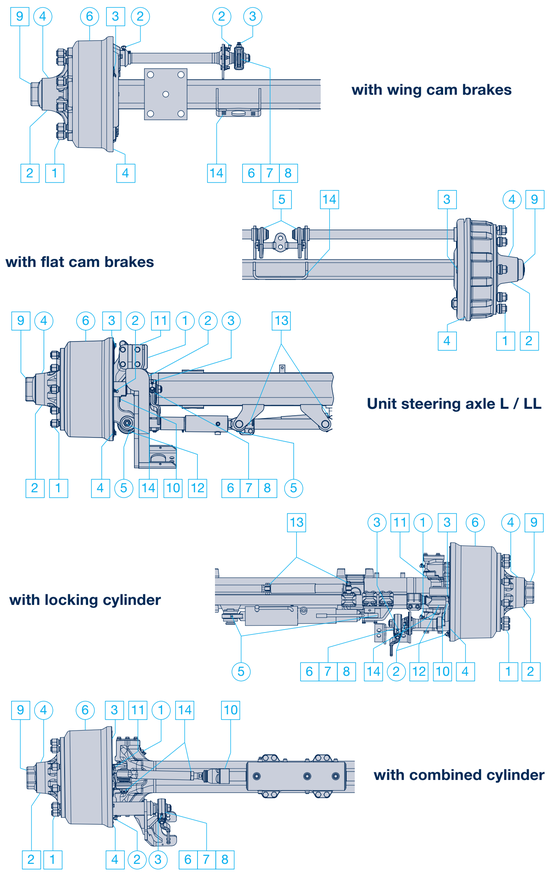
BPW Maintenance Intervals

03 September 2017

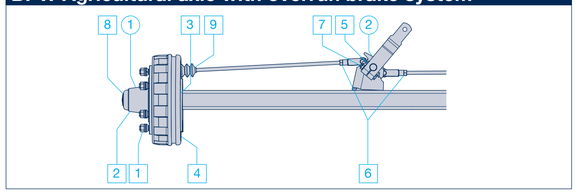
we think transport

BPW agricultural axles and suspensions

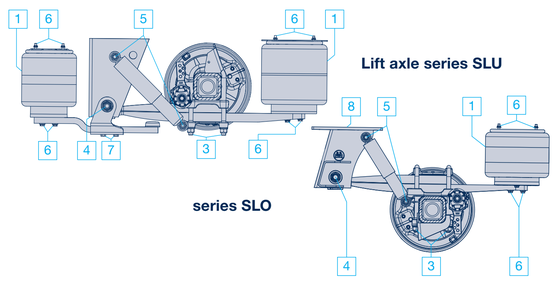
BPW Agricultural axles



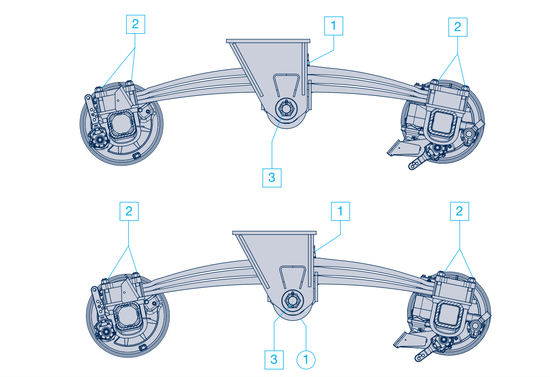
BPW Agricultural axle with overrun brake system



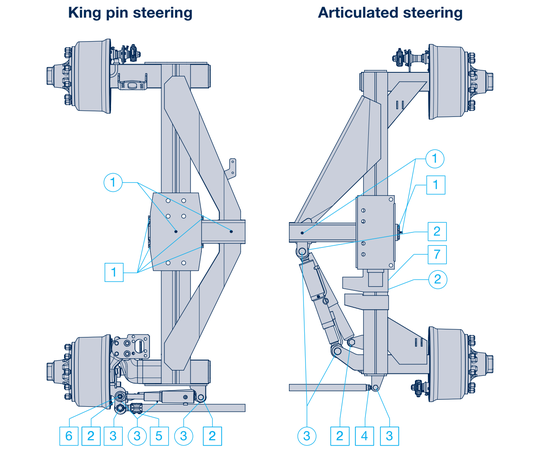
BPW Air suspension series SLO / SLU



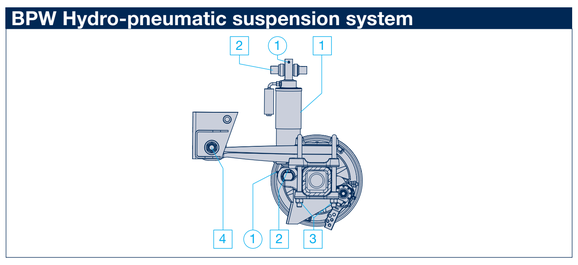
BPW Axle suspension assembly series GW / BW



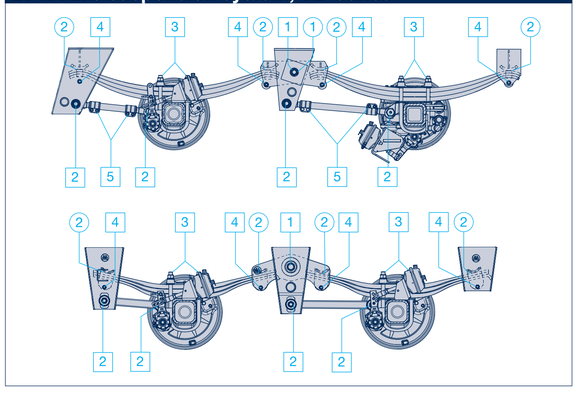
BPW Walking beam suspension



BPW Hydro-pneumatic suspension system



BPW Axle suspension system, VB-series



Lubrication

All lubrication positions must be lubricated with BPW special long life grease (ECO-Li 91).

[1] After a longer idle period, prior to use, actuate the brake lever and lubricate the brake camshaft bearings as well as steering knuckle bushings top and bottom.

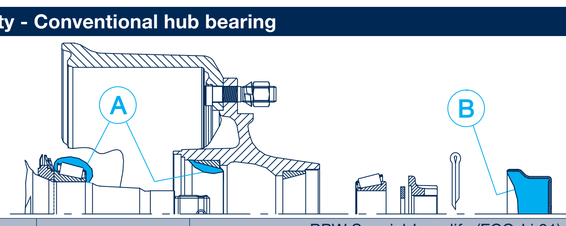
[2] During heavy use (e.g. Wagework Company) the given lubrication and maintenance intervals must be abridged.

	after the first run under load	after 40 operating hours [1] [2]	every 200 operating hours [1] [2]	every 500 operating hours, latest annually [2]	every 1000 operating hours, latest annually
BPW Agricultural axles					
① Steering knuckle bushings top and bottom.	●	●			
AGRO Turn	●		●		
② Brake camshaft bearing outer and inner.			●		
③ Manual slack adjuster			●		
Automatic slack adjuster				●	
④ Change wheel hub bearing grease, check taper roller bearings and shaft seal for wear.					●
With CTIS (Central Tire Inflation System)				●	
⑤ Steering cylinder mounting eye.			●		
⑥ Brake shoe bearings.					●
BPW Agricultural axle with overrun brake system					
① Change wheel hub bearing grease, check taper roller bearings and shaft seal for wear.					●
② Lubricate the lever shaft.				●	
○ Lubricate all greasing points on the overrun brake system.				●	
BPW Air suspension series SLO / SLU					
No require lubrication.					
BPW Axle suspension assembly series GW / BW					
① Grease axle support bearing for series BW. (Not needed with rubber / steel bushes of the GW series.)	●		●		
BPW Walking beam suspension					
① Lubricate the trunnion beam bearings.			●		
② King pin bushing.			●		
③ Locking cylinder mounting eye.			●		
BPW Hydro-pneumatic suspension system					
① Lubricate the bearings of the damping cylinders, top and bottom.	●		●		
BPW Axle suspension system, VB-series					
① Lubricate the equalising beam bearings.	●		●		
② Slightly grease the sliders of the springs.	●		●		

Tightening torques

BPW Agricultural axles				
Wheel nut				
Stud alignment	M 18 x 1,5	WAF 24	Dacromet	M = **270 Nm**
			Galvanised	M = **320 Nm**
			Black	M = **290 Nm**
	M 20 x 1,5	WAF 27	Dacromet	M = **380 Nm**
			Galvanised	M = **420 Nm**
			Black	M = **380 Nm**
	M 22 x 1,5	WAF 32	Dacromet	M = **510 Nm**
			Galvanised	M = **560 Nm**
			Black	M = **510 Nm**
	M 22 x 2	WAF 32	Galvanised	M = **505 Nm**
			Black	M = **460 Nm**
Spigot alignment	M 22 x 1,5	WAF 32	Dacromet	M = **630 Nm**
Hub cap (Pitch 2 mm)				
Hub cap with BPW shape (oval)	8 - 12 t	WAF 95 / 110		M = **500 Nm**
	14 t	WAF 120		M = **800 Nm**
Axle nut / wheel bearings				
			30206	M = **20 Nm**
			32207	M = **45 Nm**
			30210	M = **90 Nm**
			32213	M = **150 Nm**
			32310	M = **150 Nm**
			33213	M = **150 Nm**
KM axle nut				M = **150 Nm**
Locking nut for manual slack adjuster	M 22 x 1,5	WAF 32		M = **90 Nm**
Locking screw for brake camshaft bearings	M 8	WAF 13		M = **25 Nm**
Locking screw for dust cover	M 10	WAF 13		M = **38 Nm**
(Self-tapping screw)	M 10	WAF 13		M = **43 Nm**
Locking nut of the clamp	M 12 x 1,5	WAF 19		M = **86 Nm**
Fixing screw of the shock absorber	M 12	WAF 19		M = **66 Nm**
Fastening the steering elements of combined cylinder				
Fixing screw of the combined cylinder	M 16	WAF 24		M = **230 Nm**
Locking nut of the tie rod	M 28 x 1,5	WAF 41		M = **410 Nm**
Axial ball joint	M 30 x 1,5	WAF 55		M = **500 Nm**
Jam nut of steering angle stop screw	M 20	WAF 30		M = **185 Nm**
	M 24	WAF 36		M = **200 Nm**
BPW Agricultural axle with overrun brake system				
Locknut of the pull rod	M 10	WAF 16		M = **38 Nm**
Locking nut for brake lever	M 12	WAF 19		M = **66 Nm**
BPW Air suspension series SLO / SLU				
Locking nut of spring mounting kit	M 24	WAF 36		M = **650 Nm**
Spring pivot bolt	M 30	WAF 46		M = **900 Nm**
Shock absorber fastening	M 24	WAF 36		M = **420 Nm**
Air bellows fastening	M 12	WAF 19		M = **66 Nm**
	M 16	WAF 24		M = **230 Nm**
Axle lift device	M 16	WAF 24		M = **230 Nm**
BPW Axle suspension assembly series GW / BW				
Spring U-bolt on the support shaft	M 20 - 10.9	WAF 30		M = **450 Nm**
	M 30 x 2 - 8.8	WAF 46		M = **980 Nm**
Screw on support shaft	M 30	WAF 46		M = **1095 Nm**
Axle linkage on the support shaft				
Bolt	M 20 - 8.8	WAF 30		M = **320 Nm**
Spring U-bolt	M 24 - 10.9	WAF 36		M = **700 Nm**
Bearing bolts of the trunnion block				
Series BW	M 52 x 2	WAF 80		M = **400 Nm**
Series GW	M 36 x 1,5	WAF 55		M = **300 Nm**
	M 52 x 2	WAF 80		M = **400 Nm**
BPW Walking beam suspension				
Locking bolts on the trunnion beam	M 16	WAF 24		M = **102 Nm**
	M 14	WAF 22		M = **69 Nm**
	M 12	WAF 19		M = **40 Nm**
King pin	M 45 x 3	WAF 70		M = **350 Nm**
Safety nut fastening at the trunnion beam	M 16	WAF 24		M = **164 Nm**
Retaining nut of locking cylinder	M 20	WAF 30		M = **320 Nm**
	M 24	WAF 36		M = **550 Nm**
Lock nut of the tie rod	M 20	WAF 30		M = **320 Nm**
Castle nut of the tie rod	M 30 x 1,5	WAF 46		M = **500 Nm**
Counter-nut of the tie rod	M 20 x 1,5	WAF 30		M = **200 Nm**
Clamping screws of the tie rod	M 12 x 1,5	WAF 19		M = **86 Nm**
Shock absorber fastening	M 12 x 1,5	WAF 19		M = **66 Nm**
	M 24	WAF 36		M = **550 Nm**
BPW Hydro-pneumatic suspension system				
Cylinder fastening	M 16	WAF 24		M = **230 Nm**
	M 18 x 1,5	WAF 27		M = **230 Nm**
Spring mounting kit	M 24	WAF 36		M = **650 Nm**
Spring pivot bolt	M 30	WAF 46		M = **900 Nm**
BPW Axle suspension system, VB-series				
Threaded bolts	M 42 x 3	WAF 65		M = **1300 Nm**
	M 30	WAF 46		M = **800 Nm**
Axle guide linkage	M 24 x 2	WAF 36		M = **650 Nm**
	M 30	WAF 46		M = **720 Nm**
Axle connection				
Spring U-bolt	M 20	WAF 30		M = **375 Nm**
	M 24	WAF 36		M = **650 Nm**
Bolts	M 16	WAF 24		M = **160 Nm**
	M 20	WAF 30		M = **320 Nm**
	M 24	WAF 36		M = **550 Nm**
Clamping screws on the torque arm	M 12	WAF 19		M = **86 Nm**
Mounting bolts of rubber rollers and sliders	M 12 - 8.8	WAF 19		M = **20 Nm**
	M 14	WAF 22		M = **140 Nm**
	M 16 - 8.8	WAF 24		M = **50 Nm**

Grease quantity - Conventional hub bearing



Type of bearing	Wheel hub	BPW Special-Longlife (ECO-Li 91) Grease quantity per tapered roller bearing	
		Ⓐ inner	Ⓑ outer
30206-30209	GS 3006	30 g	60 g
32207-30210	GS 4006	30 g	60 g
32207-32211	GS 5506	40 g	60 g
32207-32013	GS 5506 GS 5508	40 g	60 g
32310-32215	GS 8010	90 g	290 g
30210-32014	GS 7006 GS 7008	50 g	180 g
32213-32215	GS 8008 GS 8010	90 g	250 g
32213-32215	GS 9008 GS 9010	90 g	250g
32310-33116	GS 11008-1 GS 11010-1	100 g	290 g
32310-33116 With KM axle nut	GS 11008-1 GS 11010-1	100 g	350 g
33213-33118	GS 12008 GS 12010	130 g	320 g
33213-33118 With KM axle nut	GS 12008 GS 12010	130 g	370 g
33215-32219	GS 14010	190 g	500 g
		Smear any residual grease into the bearing outer ring of the hub. Fill up the free spaces between tapered roller bearings with grease and work them together.	The grease for the outside tapered roller bearings is injected when the hub cap filled with grease is screwed into the bearing.

Maintenance work

[1] After the first run under load, as well as after every wheel change.

[2] During heavy use (e.g. Wagework Company,frequent heavy braking) correspondingly more frequently.

	after the first run under load [1]	for the first time after 50 operating hours	every 200 operating hours [1] [2]	every 500 operating hours, latest annually [2]	every 1000 operating hours, latest annually
BPW Agricultural axles					
1 Check wheel nuts for tightness, or re-tighten.	■			■	
2 Check wheel hub bearing play, adjust if necessary.	■			■	
3 Check brake lining thickness.			■		
4 Check brake drum, cracking and inside diameter.				■	
5 Check brake adjustment at brake lever, adjust if necessary.			■		
6 Check the brake play in manual slack adjuster, adjust to 10-12% of the connected brake lever length whilst actuating manually or with 0.5-0.8 bar pressure air. (Not applicable for automatic slack adjuster.)			■		
7 Check the brake function, brake adjustment on the automatic slack adjuster, adjust if necessary.				■	
8 Functional control at the automatic slack adjuster.				■	
9 Check the hub cap for tightness.			■		
10 Check steering angle, adjust if necessary.				■	
11 Check the clawed thrust washer or the pressure disc for damage and wear.					■
12 Check the steel-rubber-steel bushes on the tie rod ends for wear. Check the clamping screws with the torque wrench for the correct tightness and their proper seating.				■	
13 Check shock absorber for tightness.				■	
14 Check the fastenings of the steering elements and the brake elements with a torque wrench for the proper tightness.				■	
□ Check the tyres for uneven wear, adjust the inflation pressure if necessary according to the manufacturer's specification.			■		
○ Visual inspection of all component parts and welding seams for damage and wear.				■	
BPW Agricultural axle with overrun brake system					
1 Check wheel nuts for tightness, or re-tighten.	■			■	
2 Check wheel hub bearing play, adjust if necessary.	■			■	
3 Check brake lining thickness.			■		
4 Check the brake setting of the overrun brake device, adjust if necessary.		■	■		
5 Check the brake structure for function.		■	■		
6 Check the locknut of the transmission device, and check the pull rod for tightness with a torque wrench.		■	■		
7 Check the securing nut of the brake lever using a torque wrench for tightness.		■	■		
8 Check the hub cap for tightness.				■	
9 Check the rubber bellows.				■	
○ Visual inspection of all component parts and welding seams for damage and wear.			■		
BPW Air suspension series SLO / SLU					
1 Check the air bellows for condition.			■		
2 Check the height control valve for leak-free and correct condition.			■		
3 Check the spring connection using a torque wrench.	■		■		
4 Inspect the U-bolt using a torque wrench for tightness.	■			■	
5 Check shock absorber fastening using a torque wrench for tightness.	■			■	
6 Check air bellows fastening using a torque wrench for tightness.				■	
7 Check axle lift for tightness.				■	
8 Check the screw connection of the air spring hanger bracket with the longitudinal beam for tightness.				■	
○ Carry out a visual inspection of all components and welds for damage and wear. Check for corrosion.			■		
BPW Axle suspension assembly series GW / BW					
1 Check centre trunnion U-bolts for tightness.	■			■	
2 Check axle U-bolts for firm seating.				■	
3 Check bearing bolts on the trunnion block with a torque wrench for tightness.	■			■	
○ Carry out a visual inspection of all components and welds for damage and wear. Check for corrosion.				■	
BPW Walking beam suspension					
1 Check the bolt attachment at the trunnion beam using the torque wrench.				■	
2 Check the shock absorber mounting with the torque wrench.				■	
3 Check the locking nut of the tie rod with the torque wrench for firm seating.				■	
4 Check the counter-nut of the tie rod for tightness using a torque wrench.				■	
5 Check the steel-rubber-steel bushes of the tie rod for wear, and the clamps for firm seating with a torque wrench.				■	
6 Check the locking nut of the locking cylinder for tightness with a torque wrench.				■	
7 Check the castle nut of the king pin for tightness with a torque wrench.				■	
○ Carry out a visual inspection of all components and welds for damage and wear. Check for corrosion.				■	
□ Check the tyre for uneven wear. If necessary, adjust the air pressure according to the manufacturer's instructions.			■		
BPW Hydro-pneumatic suspension system					
1 Check damping cylinders for condition and tightness.				■	
2 Check the damping cylinder mounting with a torque wrench for tightness.				■	
3 Check spring mounting kit for tightness.	■		■		
4 Check U-bolt with torque wrench for firm seating.	■			■	
○ Carry out a visual inspection of all components and welds for damage and wear. Check for corrosion.			■		
BPW Axle suspension system, VB-series					
1 Check threaded bolts on equaliser beam bearings for firm seating.				■	
2 Check the securing nuts of the axle guide linkage with the torque wrench.	■			■	
3 Check axle connections with torque wrench for tightness.	■			■	
4 Check the mounting bolts of the rubber rollers and sliders for tightness.				■	
5 Check the clamps on the torque arms for wear.				■	
○ Carry out a visual inspection of all components and welds for damage and wear. Check for corrosion.				■	

Detailed descriptions of the lubrication and maintenance work can be found in the workshop manuals BPW-WH-Agrar 55081702e and 55021702e.
The respective valid workshop manuals must be referred to. Please note that these may be subject to change without prior notice.
Current versions and additional information can be found online at **www.bpwagrar.com**

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