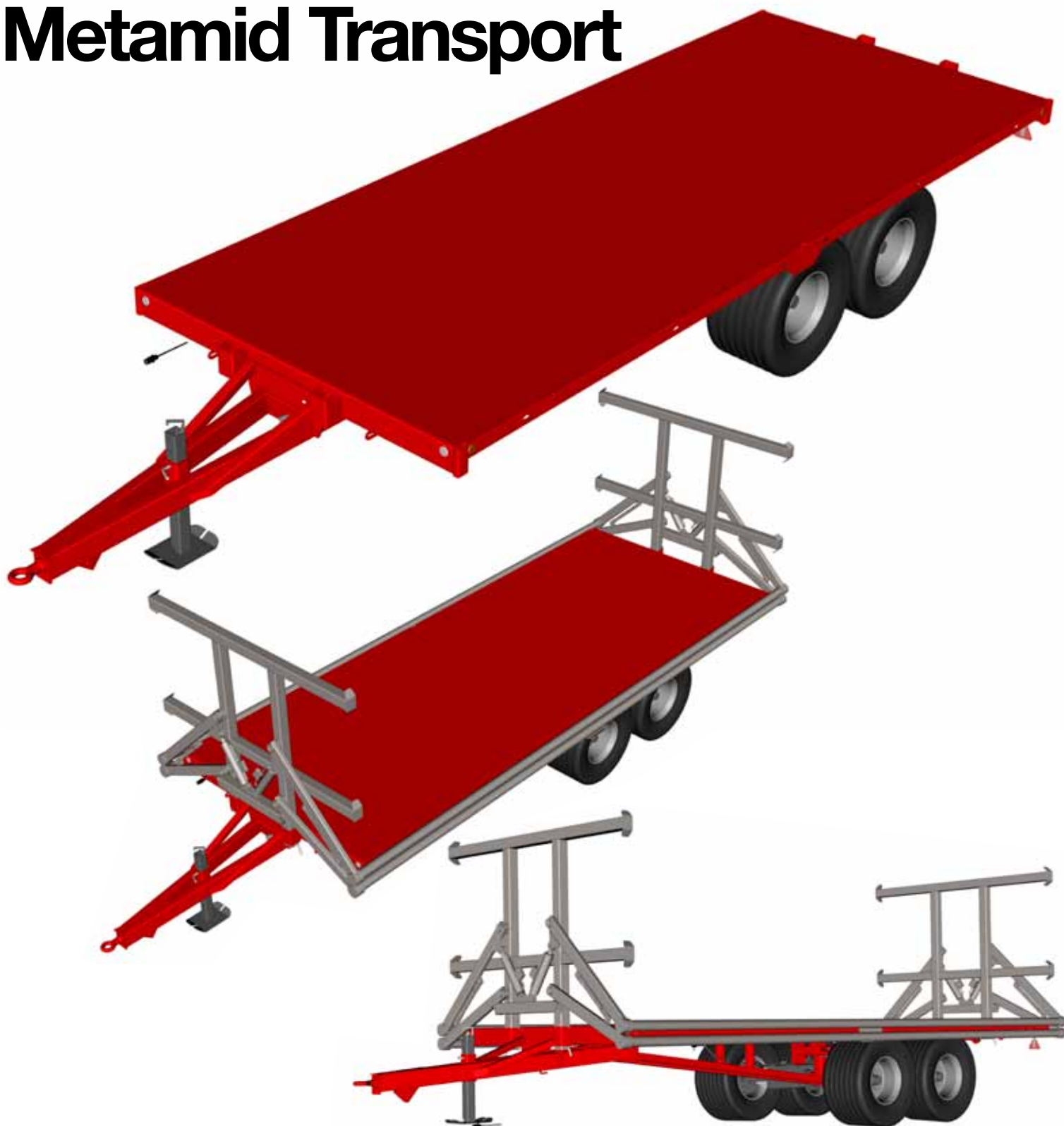




Metamid Transport



Directions and maintenance

Directions and maintenance

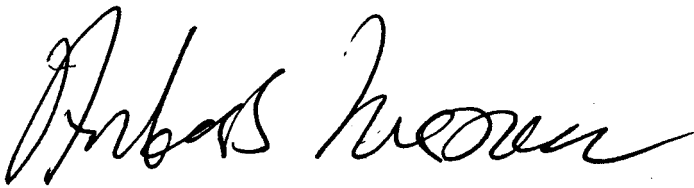
The MetaFlex is built by Ivarssons i Metsjö AB.

Before you take the trailer in use, be sure to make you well-acquainted with its functioning and management

To do this, preferably by carefully read through the manual and at the same time, step by step, practically see where the various settings, adjustments should be carried out.

To make it easier for yourself and to avoid misunderstandings in connection with the service and spareparts you should note the machine's identification of the type of trailer, year of manufacture and serialnumber.

These data are collected on the machine PLATE which is located on the longitudinal part of the vehicle's left side



Anders Ivarsson



Serial number, type of trailer

year of manufacture.....

MetaMid Hydraulic mooring

Length 6250 mm 505/50x17R

Complete 110040

Pendulum bogie distance 1 010mm. Maximum load 5,5 tons per axle

Flange width 1 850mm, Coated according KTL-method, black

Rim connection 161x205x6, open nuts

Hydraulic brakes 2 pieces per axle, 50% according to VVFS 2003:6

Manually adjusted brakes, max hydraulic pressure 110 bar

Cover sheets stop dirt entering brake drum

Hydr.pressure 210bar, Electrical system 12 Volts

Rear drawbar type clevis, rear electrical socket 7 pol.

Transport platform Length 6 250 mm

Steel Brinell 355 Strength 5 mm

Weight 2 600 kg

109493, Hydraulic mooring Mid. Total width with sides up 2 550 mm

Grip power with 200 bars- 1300kg per pipe

Load securing: Side pressure 6,5 tons when the sides are closed

Requires 1 double-acting hydraulic outlet

Possibility to drive with only one side up (manual valve on the left hand side of the drawbar)

Wagons weight 3 385kg, Technical load 14 000 kg, Payload 10 650kg

Surface treatment: chemical degreasing, blasting SA 2,5

The body is puttied.

Painting: C2 in BSK 99 two component, rust preventing pigmented

Glossy polyurethane with good weather and wear resistance

The surface is easy to maintain clean

MetaMid transport trailer Complete

Length 6250mm 505/50x17R

Complete 105365

Pendulum bogie distance 1 010mm. Maximum load 5,5 tons per axle

Flange width 1 850mm, Coated according KTL-method, black

Rim connection 161x205x6, open nuts

Hydraulic brakes 2 pieces per axle, 50% according to VVFS 2003:6

Manually adjusted brakes, max hydraulic pressure 110 bar

Cover sheets stop dirt entering brake drum

Hydr.pressure 210bar, Electrical system 12 Volts

Rear drawbar type clevis, rear electrical socket 7 pol.

Transport platform Length 6 250 mm

Steel Brinell 355 Thickness 5 mm

Total weight 2 500 kg, Technical load 14 000 kg, Payload 12 100 kg

Surface treatment: chemical degreasing, blasting SA 2,5

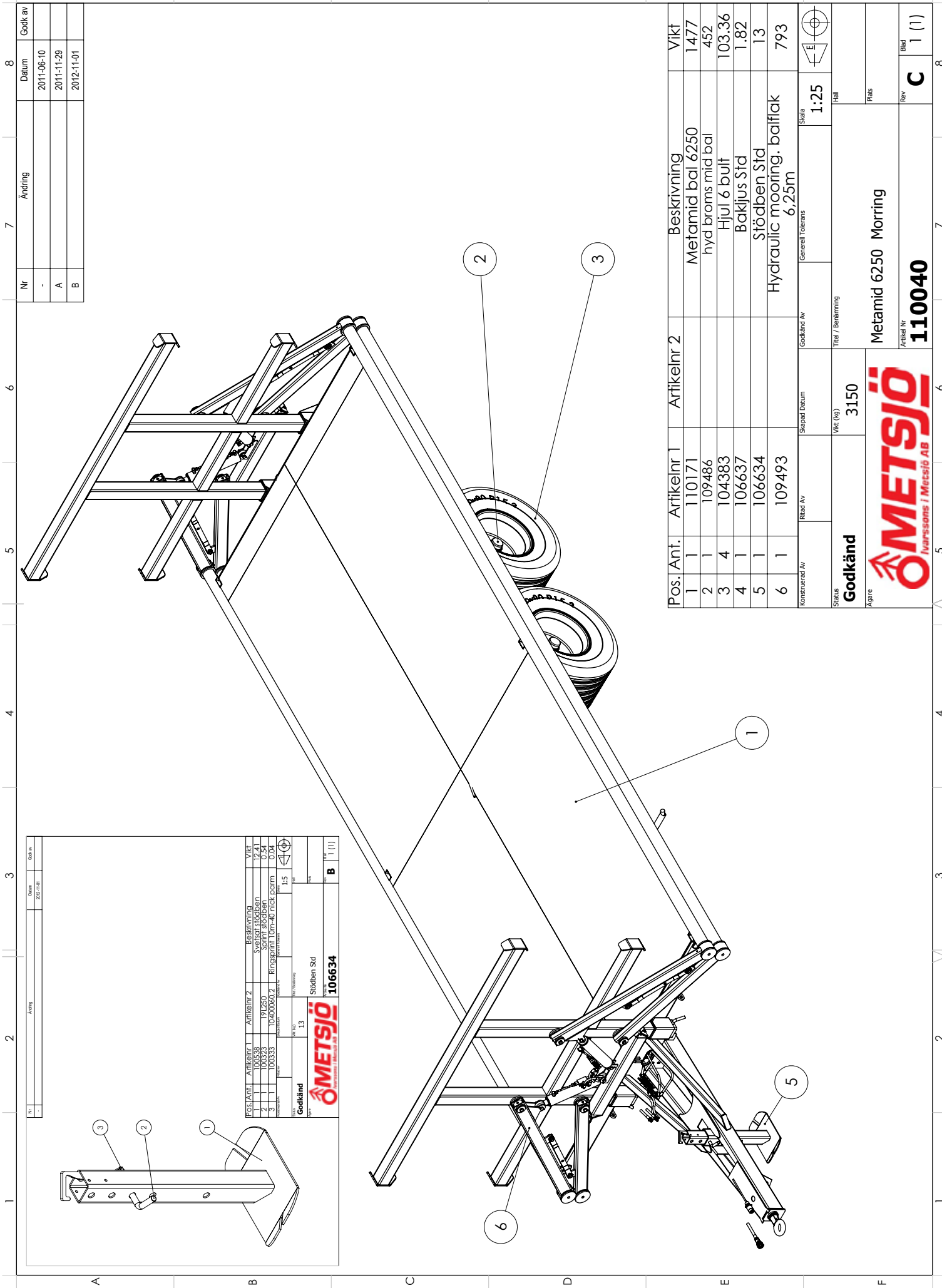
The body is puttied.

Painting: C2 in BSK 99 two component, rust preventing pigmented

Glossy polyurethane with good weather and wear resistance

The surface is easy to maintain clean

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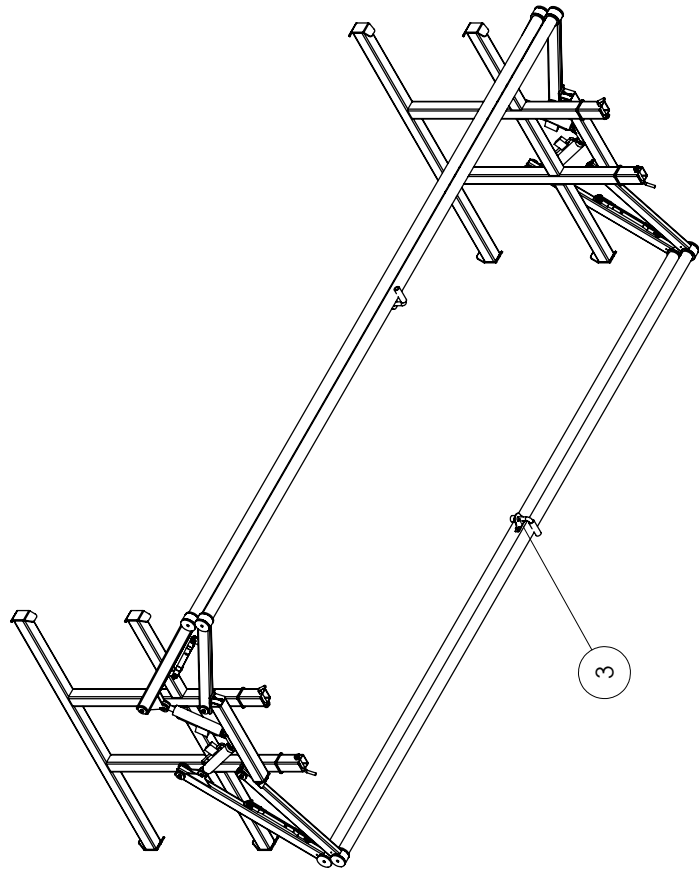
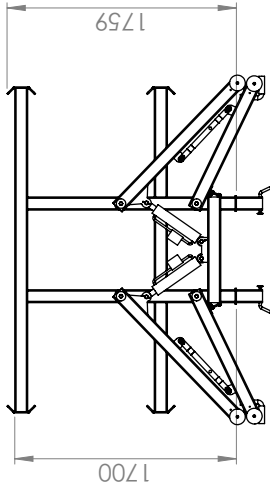
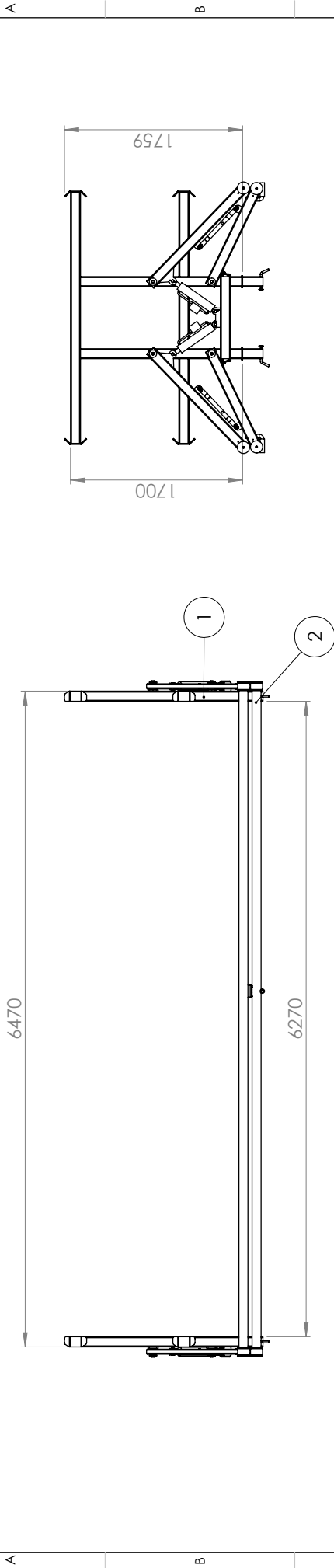
Nr	Ändring	Datum	Godk av
-	-	2012-11-01	
A		2011-11-29	
B		2012-11-01	

Pos. Ant.	Artikelnr 1	Artikelnr 2	Beskrivning	Vikt
1	100638	100638	Svekselstödben	12,41
2	100623	100623	Stöben	0,54
3	100633	100633	Ringspindel	0,10
4	100634	100634	Stöben	0,10
5	100635	100635	Stöben	0,10
6	100636	100636	Stöben	0,10
7	100637	100637	Stöben	0,10
8	100638	100638	Stöben	0,10

Godkänd	13	Stöben Std	106634	1 (1)
METSJÖ Ivarssons i Metsjö AB				

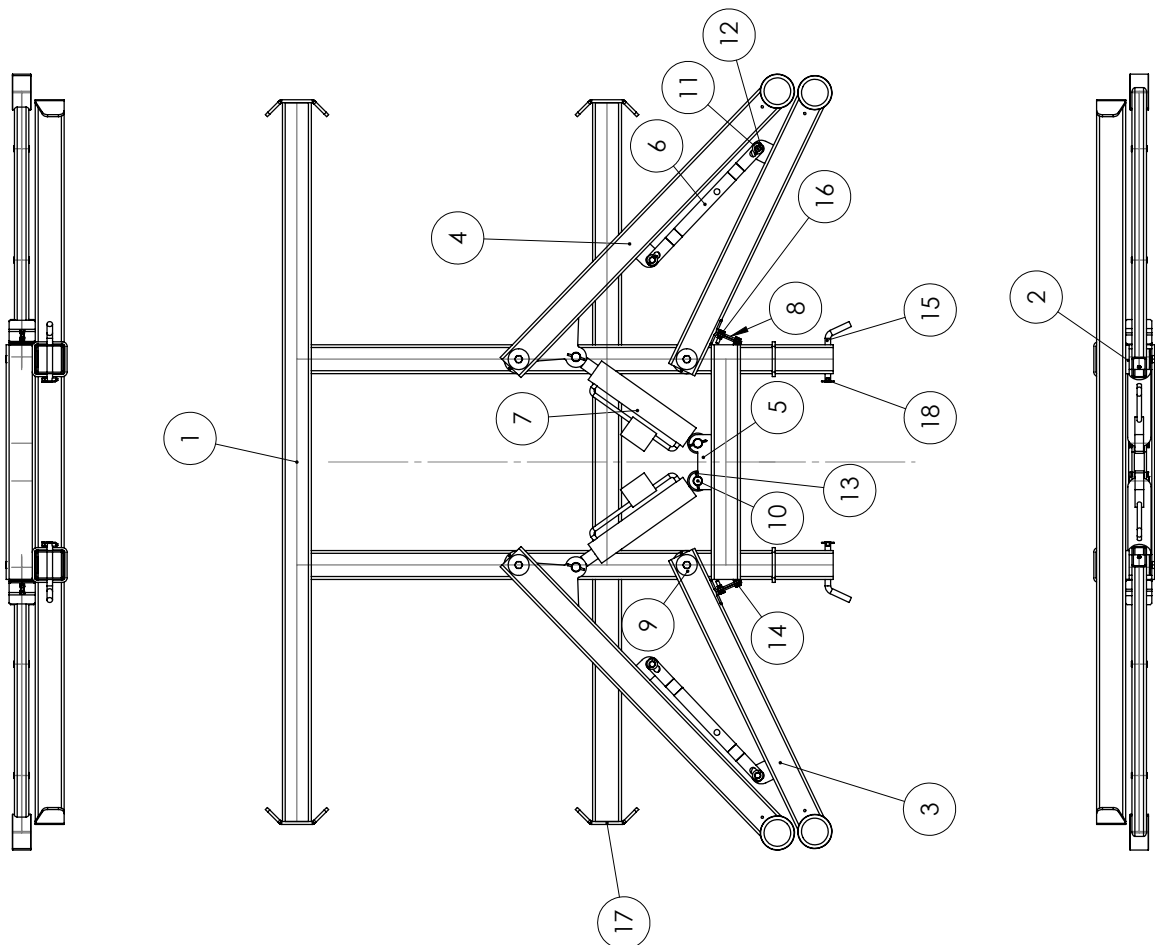
Pos. Ant.	Artikelnr 1	Artikelnr 2	Beskrivning	Vikt
1	110171		Metamid bal 6250	1477
2	109486		nyd broms mid bal	452
3	104383		Hjul 6 bult	103,36
4	106637		Bakljus Std	1,82
5	106634		Stöben Std	13
6	109493		Hydraulic mooring. ballflak 6,25m	793


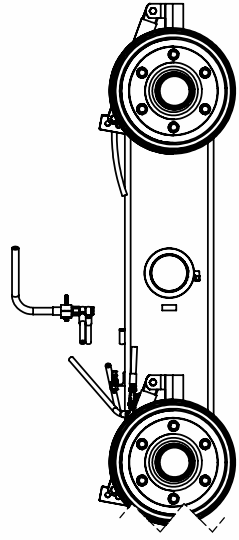
Konstruerad Av	Ritad Av	Skapad Datum	Godkänd Av	Skala
				1:25
Status				Häll
Godkänd				Vikt (kg)
				3150
Titel / Beskrivning				Plats
Metamid 6250 Mörning				
Agare				Rev
Artikel Nr				Blad
110040				C
				1 (1)



Pos. öppen/QTY.	Artikelnr	Artikelnr 2	Beskrivning	Vikt
1	2	107361	Hyd. h grind hög o sänkb.sida balvagn	242
2	4	109436	kompl. sidrör hyd.balgrind 6,25 balv.	73
3	2	111368	rörfälla hyd.mooring kompl.	3
Konstruerad Av	RB	Skapad Datum	Godkänd Av	Skala
		2011-05-09	AI	1:40
Status	Godkänd	Vikt (kg)	Titel / Benämning	
		781	Hydraulic mooring, balflak 6,25m	
				
Artikel nr 109493				
Rev A				
Blad 1 (1)				

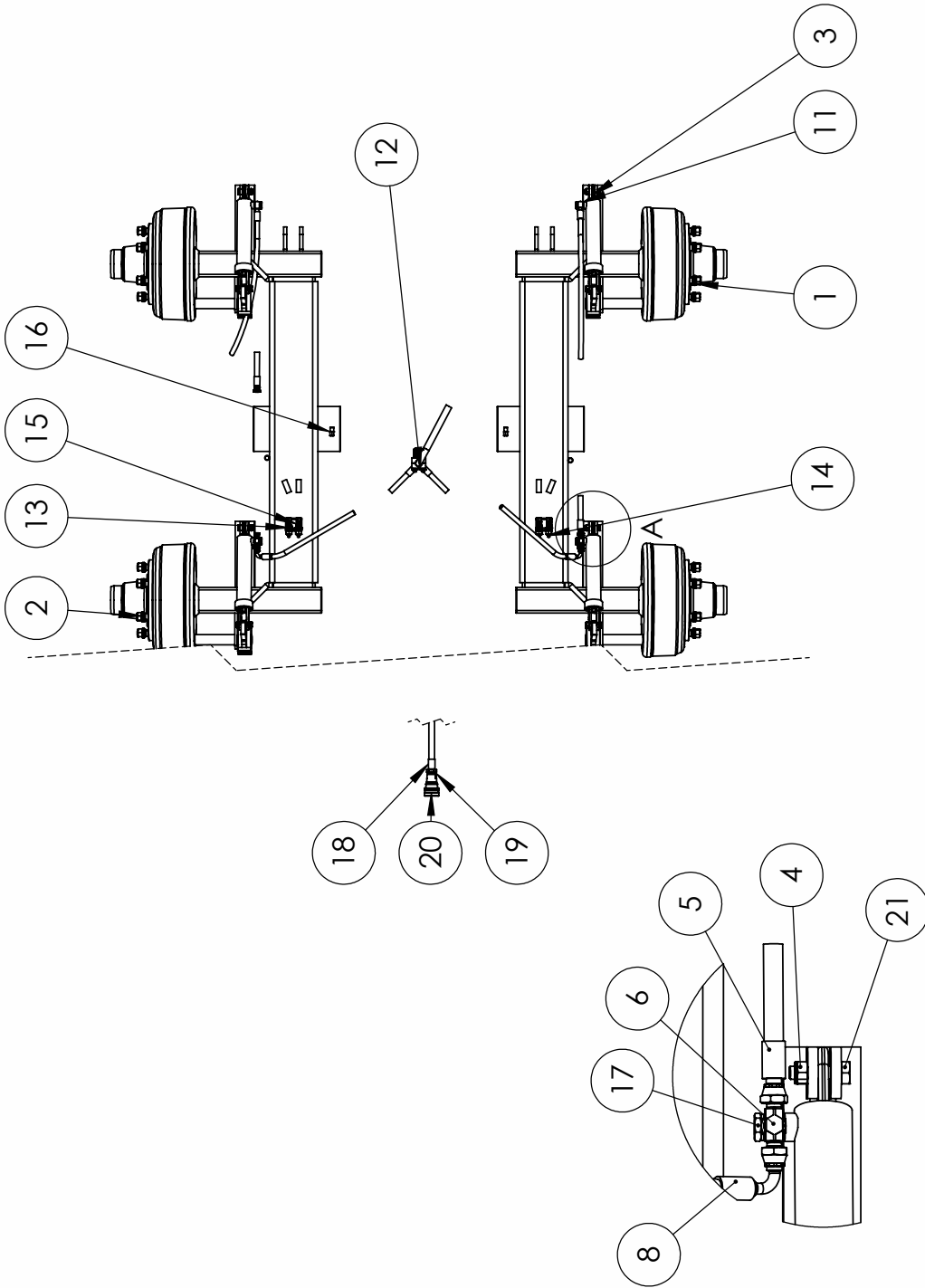
Pos.	Öppen/QTY.	Artikelnr	Beställingsnr	Beskrivning	Vikt
1	1	107334		H-grind H 1700 kottlad	132.02
2	4	101947		autoled 55 med krage	2.21
3	2	107363		nedre hyd.arm balgrind	14
4	2	107335		övre hyd.arm balgrind	18
5	2	107381		kolvinf. botten h. grind	3
6	2	107389		parallell arm h. grind	10.12
7	2	102530		Cylinder L510 SL300 80x40 stödben	
8	4	107390		armstopp h. grind	
9	4	1598	1598	Bricka Autoled	0.18
10	4	107611		koivsprint till hyd.h.grind	
11	4	107613		parallelsprint hyd.balgrind	
12	8	Bricka	21x36x3FZB	Washer ISO 7091 - 20	
13	16	spring pin slottad_hd_i so -metsjo	6X60Spänn	Spring Pin ISO 8752 - 6 x 60 - St	
14	8	Bult	M10x40FZB	ISO 4017 - M10 x 40-N	0.54
15	2	100323	19L250	Sprint stödben	
16	4	Mutter	M10FZBTensi	Hexagon Flange Nut ISO - 4161 - M10 - N	
17	4	107615		styrning hyd.h.grind	
18	2	100333	10400060,2	Ringsprint 10m-40 nick parrn	0.04
Konstruerad Av		RB	Skapad Datum	Godkänd Av	Skala
RB				Godkänd Av	1:18
Status		Godkänd		Hyll	
Agare		Vikt (kg) 244		Titel / Benämning	
				Hyd. h grind höj o sänkb.sida balvaagn	
				Artikelnr 107361	
				Rev - 1 (3)	



Nr	Ändring		Datum	Godk av
-			2011-05-11	
Pos. Ant.	Artikelnr 1	Artikelnr 2	Beskrivning	Vikt
1	100507	410120069VÄ	Pendelboggi MetaMid Vänster	219.88
2	100499	410120069HÖ	Pendelboggi MetaMid höger	219.88
3	101301	10180027,6	Bromscylinder 4525-90 tryckande Corr-I-Dur P INV fjäder	2.43
4	8	9851001	Mutter M10 FZB nylock	
5	2	102316	Mid bromssläng mellan cyl	0.16
6	2	102295	T-koppling ut/ut/inv R 1/4"	
7	2	102314	Banjo 1/4" - 1/4" UTV	
8	2	102326	Mid Broms slang Mitten - cyl	0.14
9	1	104392	Banjobult 1/4" dubbel	
10	1	108248	Adapter 1/4" INV-3/8" UTV	
11	11	101087	Tredo-bricka 1/4"	
12	1	102732	klamma enkel 15 rör	0.09
13	4	101099	M14 Skottgenomgång-mutter smörj	0.04
14	4	100491	Smörjnippel M10x1 rak	
15	4	101100	Rak LL6M	0.02
16	4	101094	Vinkel 1/8 R LL6R	
17	4	101559	Banjobult 1/4" Enkel	
18	1	109568	Broms slang tryck mid bal	0
19	1	101007	Tredo-bricka 1/2"	
20	1	101048	Snabbkopplingshona Broms 1/2"	0.46
21	8	109838	Bult M10x40 FZB Helgånga	
Konstruerad Av	Ritad Av	Skapad Datum	Godkänd Av	Skala
LH	LH	2011-05-10	AI	1:20
Status	Titel / Benämning			Hall
Godkänd	hyd broms mid bal			Plats
Ägare	Vikt (kg)			Rev
	452			1 (2)
 METSJÖ <small>Ivarssonssons i Metsjö AB</small>				
				

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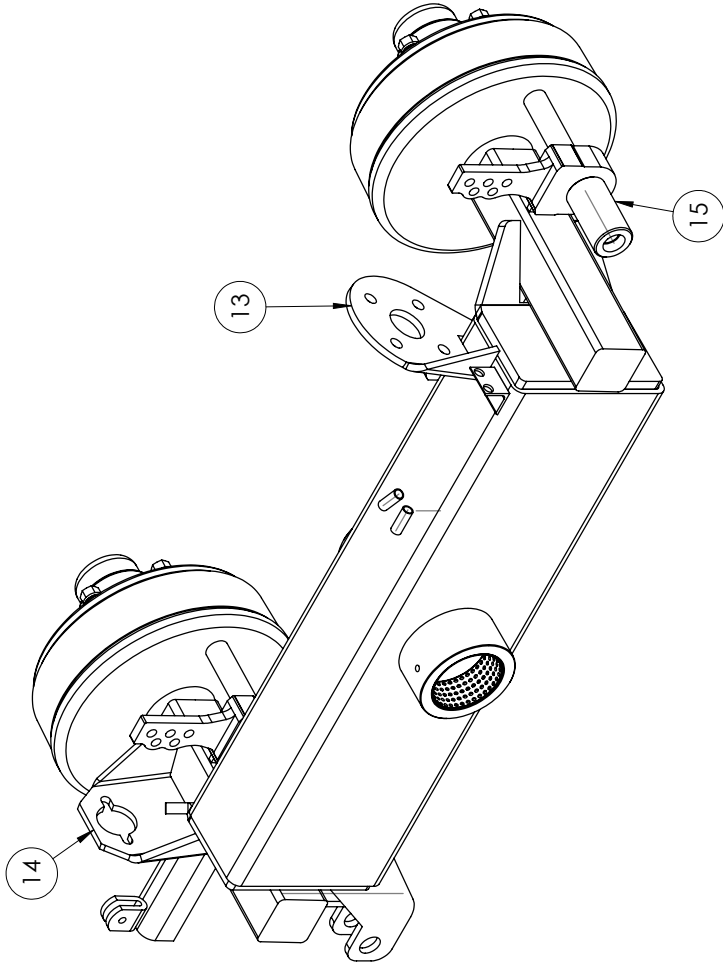
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A (1 / 5)

Konstruerad Av LH	Ritad Av LH	Skapad Datum 2011-05-10	Godkänd Av AI	Generell Tolerans	Skala 1:20	
Status Godkänd		Vikt (kg) 452	Titel / Benämning hyd broms mid bal		Hall	
Ägare						Plats
			Artikel Nr 109486	Rev -	Blad 2 (2)	

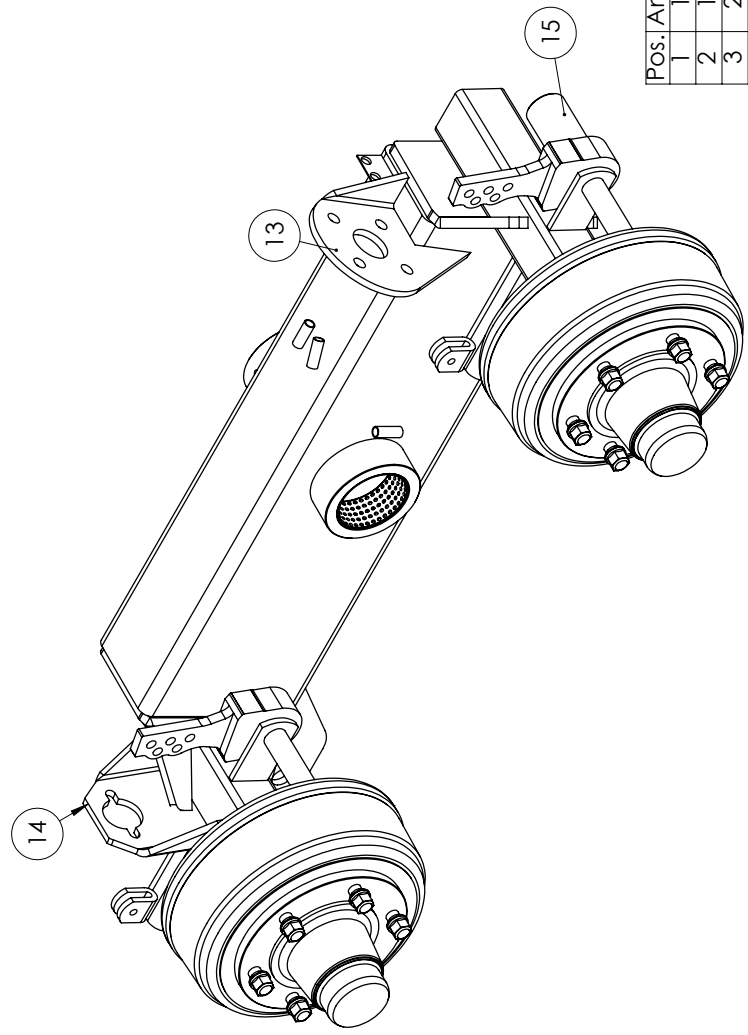
Nr	Ändring	Datum	Godk av
-		2012-03-01	
A		2012-03-02	



Pos.	Ant.	Artikelnr 1	Artikelnr 2	Beskrivning	Vikt
1	1	100493		Balk MetaMid boggiåda	41.95
2	1	100274	410120067BH	Boggihylsa	14.85
3	4	0010	0010	Förstärkningsplåt Boggiåda	0.81
4	2	0011	0011	Förstärkningplåt Boggiåda	2.34
5	1	0564	0564	Boggielock MetaMid	5.42
6	1	0564	0564	Boggielock MetaMid	5.42
7	2	107656	410120070VÄ	Komplett axeltapp MetaMid	71
8	2	100301	10400110	Wb 702 Bussning	0.27
9	1	101095	V40x40x4L50	Hållare smörjslang pendelboggi	0.11
10	3	101092	15x1,5L40	Rör till slang boggiåda	0.02
11	2	0263		Boggielyft MF11	1.4
12	1	104899	40x10L200	Förstärkning boggiåda FI!	
13	1	0656	0656	Lufthromsfäste MF11	2.33
14	1	113471		Fäste lufthroms FI1	
15	1	113472		Nockaxel förlängning 70mm	
Konstruerad Av		Skapad Datum	Godkänd Av	General Tolerans	Skala
AI		2012-03-01			1:7
Ritad Av		Vikt (kg)	Titel / Benämning		Hål
Ola		227.53			15
Status		Godkänd		Pendlboggi F11 Vä Luft	
Ägare		Årets		Ute	
		Årets Nr		Rev	
		113469		A	
				Blad	
				1 (2)	

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Nr	Ändring	Datum	Godk av
-		2012-03-02	



Pos.	Ant.	ArtikeInr 1	ArtikeInr 2	Beskrivning	Vikt
1	1	100493		Balk MetaMid bogglåda	41.95
2	1	100274	410120067BH	Boggiehylsa	14.85
3	2	100301	10400110	Wb 702 Bussning	0.27
4	1	0564	0564	BoggieLock MetaMid	5.42
5	1	0564	0564	BoggieLock MetaMid	5.42
6	4	0010	0010	Förstärkningsplåt Bogglåda	0.81
7	2	0011	0011	Förstärkningsplåt Bogglåda	2.34
8	1	101095	V40x40x4L50	Hållare smörjslang pendelboggi	0.11
9	3	101092	15x1.5L40	Rör fill slang bogglåda	0.02
10	2	107657	410120070H0	Komp axeltapp 80 broms BPW	71
11	2	0263		Boggielyft MF11	1.4
12	1	104899	40x10L200	Förstärkning bogglåda FI!	
13	1	0656	0656	Lufbromsfäste MF11	2.33
14	1	113471		Fäste lufbroms F11	
15	1	113472		Nockaxel förlängning 70mm	
		Konstruktör Av	Godkänd Av	General Tolerans	Skala
AI		Ola	2012-03-02		1:7
Status		Godkänd			15
Agare			227.53		Ute
					Rev
					1 (2)

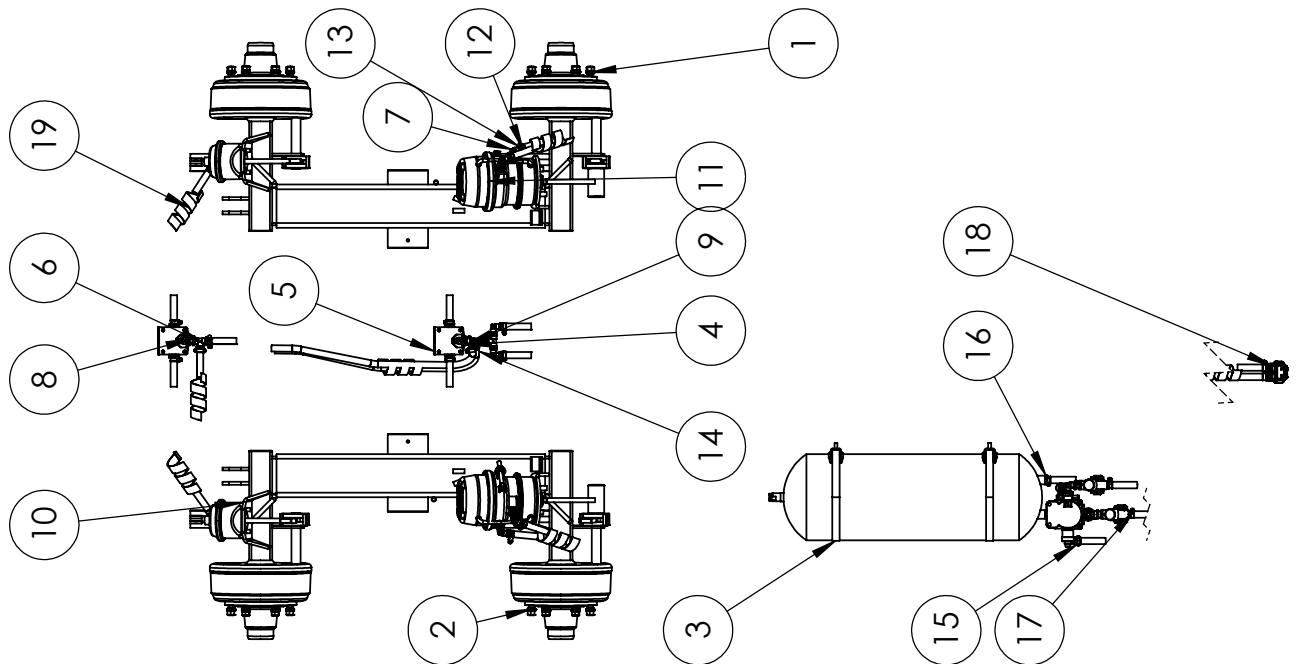


Pendelboggi F11 Hö Luft

Artikel Nr
113470

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Nr	Ändring	Datum	Godk av
-		2012-05-02	

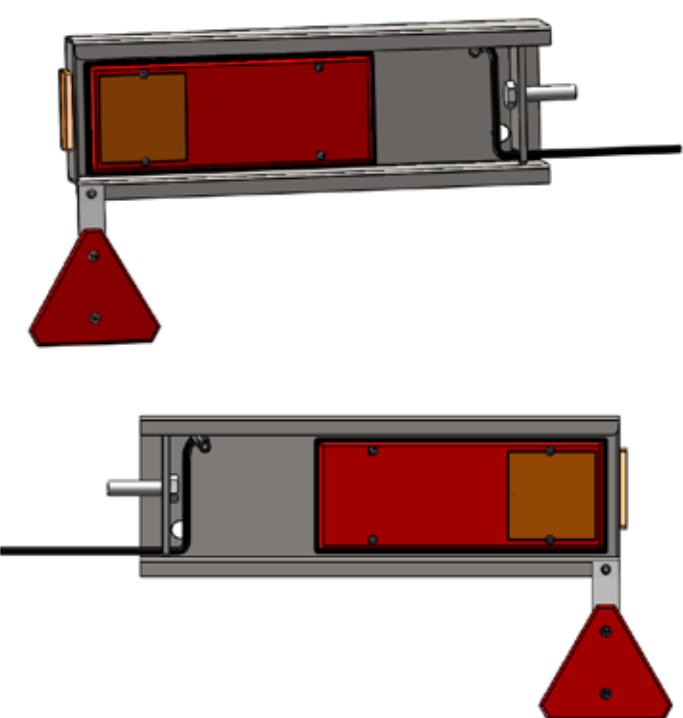


Pos.	Ant.	Artikelnr 1	Artikelnr 2	Beskrivning	Vikt	
1	1	113469		Pendelboggi F11 Vä Luft	227.53	
2	1	113470		Pendelboggi F11 Hö Luft	227.53	
3	1	109743		Lufttank 60 Kompl	26.96	
4	2	101742	9730110000	Reläventil Wabco	0.97	
5	2	0652	0652	Hällare reläventil	0.27	
6	4	109783		T-kors luft M16		
7	9	109764		90" SVIRVEL M16	0	
8	2	109952		skottgenomgång luftM16		
9	2	109780		skottgenomgång luftM22-M16		
10	2	104538		WABCO 12" 423 103 897 0		
11	2	104341		Wabco 20"/30" 925 375 100 0	48.28	
12	2	114259		Luftbroms slang parkbroms fram MF 11	0	
13	4	114260		Luftbroms slang färdbroms fram MF11	0	
14	2	114262		Luftslang matning mellan reläventil MF11	0	
15	1	114265		Luftslang styrtryck färd broms	0	
16	1	114264		Luftslang tryck parkbroms	0	
17	2	114266		Luftslang broms matning park , färd broms	0	
18	1	109732	452.804.012.0	Duo-Matic Släpvagnsdel		
19	7	109227	552450032	Skydds spiral 32-26 Gul	0.04	
LH		LH	AI	Generell Toleras	Skala 1:25	
Godkänd Av		Godkänd Av	AI		Häll	
LH		LH	AI		Plats	
Godkänd		luftbroms kit MF11			Rev	1 (1)
Ägare		113961			Blad	1 (1)



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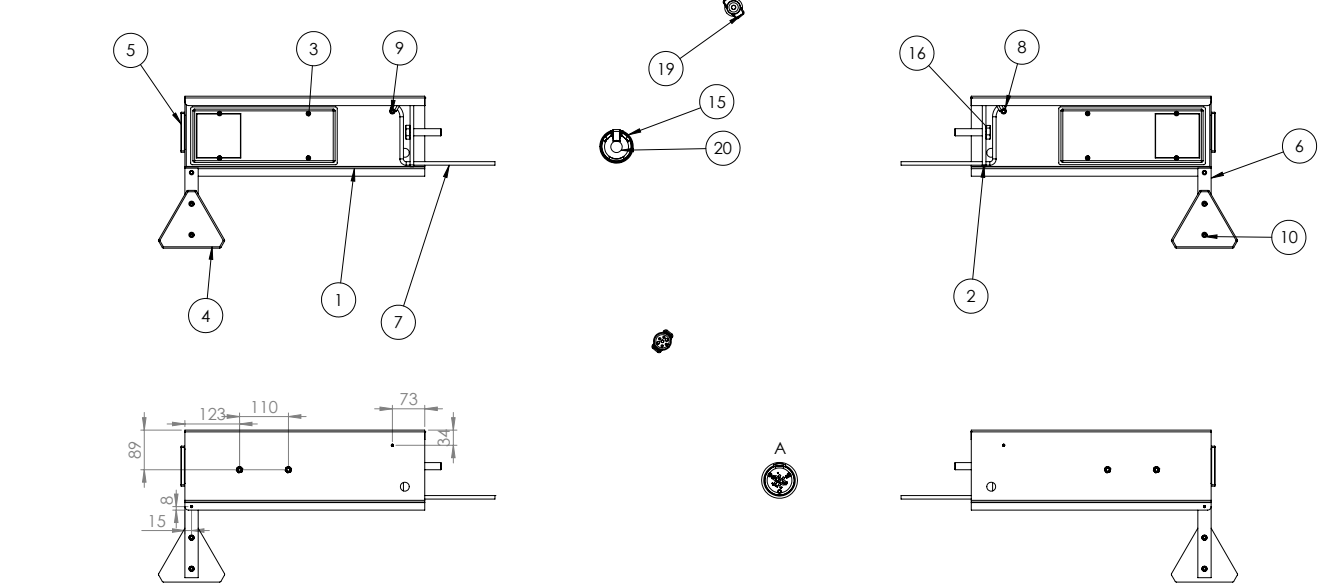
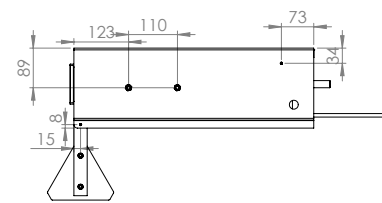
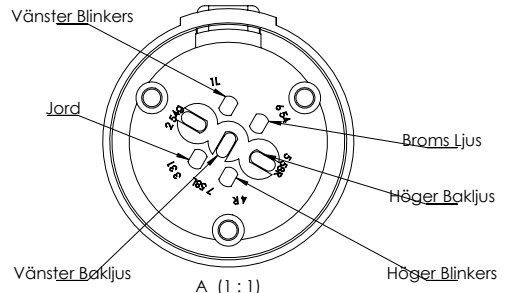
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Pos.	QTY.	Ritningsnr	Beställningsnr	Beskrivning	Vikt
1	1	100510	C2502516-1VA-GRA	Lykthållare	4.86
2	1	100512	C2502516-1HO-GRA	Lykthållare	4.86
3	2	100956	10250049	Baklykta 1217 falnu mått 320X120 inkl. armaturglas	0.87
4	2	100980	10250050	Reflex röd, trekantig, skruvas 128301-100	0.08
5	2	100982	1223214010	Reflex 40x90mm gul	0.03
6	2	100958	30x3L170	Plastbit hållare till triangelreflex	0.02
7	2	100959	10250055,2	kabel bakljus	0.03
8	2	100961	58102016	Gummiklapp 16 mm	
9	4	100962	B6FK FXB	Borrskruv 3,5x16	
10	4			ISO 1207 - M5 x 16 --- 16N	
11	4			Hexagon Nut ISO - 4032 - M8 - W - N	
12	4			Hexagon Flange Nut ISO - 4161 - M5 - N	
13	2	100954	10250047	Glödlampa baklyse 12V 10W	0.01
14	4	100954	10250046	Glödlampa bromsljus/blinkers 12V 21W	0.01
15	1	101082	20500003	Gummiskydd till 7, 13-pol	0.01
16	2			ISO 7411 - M16 x 70 --- 38-WN	
17	3			ISO 1207 - M5 x 35 --- 35N	
18	1	101127	10250055,2	7 led kabel	0.02
19	1	101112	10250060	Släpvnagskontakt 7 pol Svart plast Hane	0.06
20	1	102096	10250061	Släpvnagskontakt 7 pol Svart Hona	0.08

Konstruerad Av	Ritad Av	Skapad Datum	Godkänd Av	Generell Tolerans	Skala	
LH					1:4	
Status	Vikt (kg)	Titel / Benämning		Häll		
Godkänd	12.08	50045-Admin		Mont		
Ägare				Plats		
	komplett bakljus			Inne		
	Först Nr. 100960			Rev	Blad	
				C	1 (2)	

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Konstruerad Av	Ritad Av	Skapad Datum	Godkänd Av	Generell Tolerans	Skala	
LH					1:8	
Status	Vikt (kg)	Titel / Benämning		Häll		
Godkänd	12.08	50045-Admin		Mont		
Ägare				Plats		
	komplett bakljus			Inne		
	Först Nr. 100960			Rev	Blad	
				C	2 (2)	

För Leveranser f.r.o.m 10 2005

Broms N 3108-3 (310x80) med manuell justerbar bromshävarm GSK

Hjulbult M 18x1,5 med plan-mutter och fjäderbricka

Bildnummer 20.056

Pos	Benämning	Mått	Antal/tapp	Artikelnummer
1	Axeltapp m bromssköld		1	-
29	Stödring 10.03.370.05.14.0		1	410120215
31	Kronmutter 10.03.262.16.11.0	M 36x1,5	1	410120216
32	Saxpinne 10.02.6201.63.01	6,3x63	1	410120217
33	Tätningring 10.05.120.26.08.0	73/110x14,5	1	410120218
34	Ring 10.03.310.23.09.0	66/37x5	1	410120219
36	Ankarbult 10.03.177.14.35.0	M24x1,5x36	1	410120220
37	Bricka 10.02.5403.24.90	B24	1	410120221
38	Låsmutter 10.02.5220.75.82	VM 24x1,5	1	410120222
40B	Plugg 10.02.3704.56.00	D20,7	2	410120223
43	Bromssock 10.05.097.36.95.5	L=253	1	410120224
53	Bricka 10.03.311.50.13.0	42/34x4	1	410120225
54	Låsring 10.02.5603.29.90	29x1,5	1	410120226
59	Bromshävarm GSK 10.05.174.40.16.0		1	410120227
73	Bromsback kpl m belägg 10.05.091.15.21.0		2	410120228
79	Bromsbelägg 10.03.092.19.50.0		2	410120229
80	Nit 10.02.5805.61.01	B 6x13	32	410120230
82	Returfjäder 10.03.397.32.14.0	D17/3,8x144	1	410120231
82a	Returfjäder 10.03.397.44.08.0	D20/4x174	1	410120232
84	Nav 10.03.272.09.56.0		1	410120233
86	Bromstrumma 10.03.105.14.26.0	310x80	1	410120234
91	Hjulbult 10.03.296.01.20.1	M 18x1,5	6	410120235
93	Fjäderbricka 10.02.5615.18.94	C18,5	6	410120236
94	Hjulmutter 10.02.5213.12.83	M18x1,5	6	410120237
95	Rullager 09.02.6404.70.00	32014	1	410120238
96	Rullager 09.02.6401.50.00	30210	1	410120239
98	Navkapsel 10.03.211.07.03.0	D 90,1	1	410120240

För Leveranser f.r.o.m 10 2005

Broms N 3108-3 (310x80) med manuell justerbar bromshävarm GSK

Hjulbult M 18x1,5 med plan-mutter och fjäderbricka

Bildnummer 20.056

Pos	Benämning	Mått	Antal/tapp	Artikelnummer
1	Axeltapp m bromssköld		1	-
29	Störring 10.03.370.05.14.0		1	410120215
31	Kronmutter 10.03.262.16.11.0	M 36x1,5	1	410120216
32	Saxpinne 10.02.6201.63.01	6,3x63	1	410120217
33	Tätningring 10.05.120.26.08.0	73/110x14,5	1	410120218
34	Ring 10.03.310.23.09.0	66/37x5	1	410120219
36	Ankarbult 10.03.177.14.35.0	M24x1,5x36	1	410120220
37	Bricka 10.02.5403.24.90	B24	1	410120221
38	Låsmutter 10.02.5220.75.82	VM 24x1,5	1	410120222
40B	Plugg 10.02.3704.56.00	D20,7	2	410120223
43	Bromssock 10.05.097.36.95.5	L=253	1	410120224
53	Bricka 10.03.311.50.13.0	42/34x4	1	410120225
54	Låsring 10.02.5603.29.90	29x1,5	1	410120226
59	Bromshävarm GSK 10.05.174.40.16.0		1	410120227
73	Bromsback kpl m belägg 10.05.091.15.21.0		2	410120228
79	Bromsbelägg 10.03.092.19.50.0		2	410120229
80	Nit 10.02.5805.61.01	B 6x13	32	410120230
82	Returfjäder 10.03.397.32.14.0	D17/3,8x144	1	410120231
82a	Returfjäder 10.03.397.44.08.0	D20/4x174	1	410120232
84	Nav 10.03.272.09.56.0		1	410120233
86	Bromstrumma 10.03.105.14.26.0	310x80	1	410120234
91	Hjulbult 10.03.296.01.20.1	M 18x1,5	6	410120235
93	Fjäderbricka 10.02.5615.18.94	C18,5	6	410120236
94	Hjulmutter 10.02.5213.12.83	M18x1,5	6	410120237
95	Rullager 09.02.6404.70.00	32014	1	410120238
96	Rullager 09.02.6401.50.00	30210	1	410120239
98	Navkapsel 10.03.211.07.03.0	D 90,1	1	410120240

BPW Bergische Achsen Kommanditgesellschaft
 D-51656 Wiehl, Postfach 1280

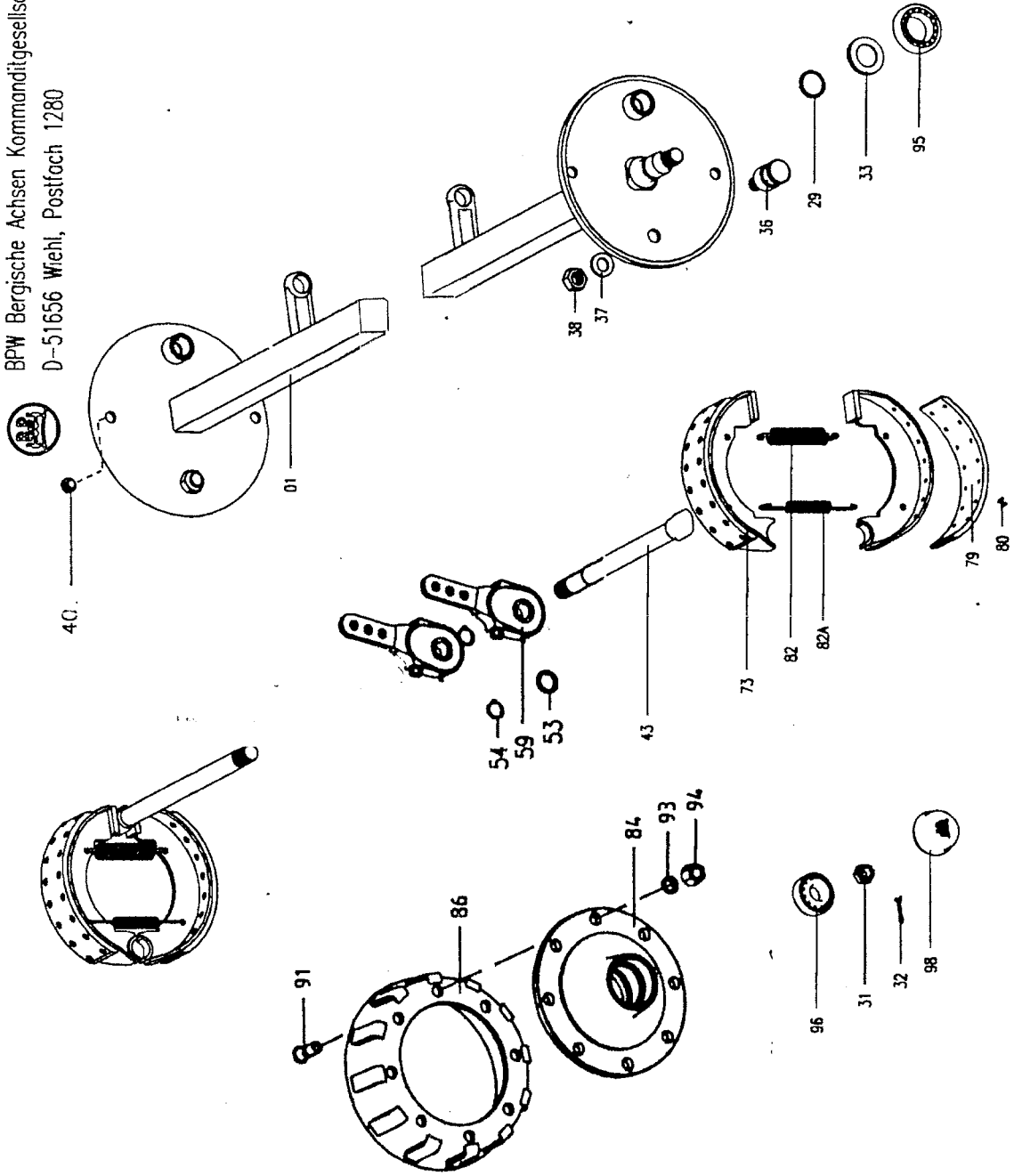


Bild Nr.: 20.056

Anhängerachse, Baureihe: GS

Bremse: N 3108-3

**Technical data:
Axles and
brakes:**

Obtaining spare parts:

When spare parts are needed, the model numbers and codes for the axles and chassis parts will greatly assist your BPW parts dealer or BPW service facility in quickly and accurately determining the appropriate spare part.

You are therefore recommended to fill in the following technical data from the details on the manufacturer's name plates, so that they will be available should you need them.

The manufacturer's name plate can be found on the axle beam, the drawbar or the overrun mechanism.

Enter the details below

Trailer Manufacturer	_____		
Type of trailer	_____		
Works number / chassis number	_____ / _____		
Maximum laden weight	_____		kg
Maximum speed	_____		km/h
Nose weight	_____		kg

Maximum axle load (for tandem axles, axle load front/rear)	front	_____	kg
	rear	_____	kg
Axle model numbers (for tandem axles, front/rear)	front	_____	
	rear	_____	
Axle codes (for tandem axles, front/rear)	front	_____	
	rear	_____	

Wheel brake type	_____		
Internal diameter of brake drum	_____		mm
Brake shoe width	_____		mm
<input type="checkbox"/> Wedge-type brake	<input type="checkbox"/> Wedge-type brake with RAZG / RASK reverser		
<input type="checkbox"/> Butterfly cam brake	<input type="checkbox"/> Backmat cam brake		

Type or make of the drawbar / overrun hitch	_____		
Model number / model code	_____		
Maximum load (the difference between unladen weight and maximum laden weight)	_____		kg

Fundamental rules

Never overload axles, brakes or chassis!

Consequently:

- Do not overload the vehicle in contravention of regulations, by exceeding the maximum laden weight.
- Do not exceed the maximum permitted braking loads.
- Avoid one-sided overload resulting from incorrect loading or driving over kerbs etc.
- Do not fit unauthorised wheels or tyres. The maximum distance between the track and the spring centre must be adhered to.
- Avoid excessive strain resulting from the use of offset wheels or unauthorised wheel offsets.
- Do not exceed the maximum top speed.
- Each time before using the vehicle, check to ensure that the brakes and brake systems are correctly adjusted and in good working order.
- Wear and tear and any unauthorised alterations are not covered by guarantee.

Maintenance work should be carried out at the prescribed intervals in order to maintain the safe operation of the vehicle. The relevant operating and servicing instructions of the vehicle manufacturer and of the manufacturers of the other vehicle components must be observed.

All repair and maintenance work should only be carried out by a BPW approved Service Station unless the vehicle owner has staff fully trained to BPW standards and a workshop suitably equipped to undertake such work.

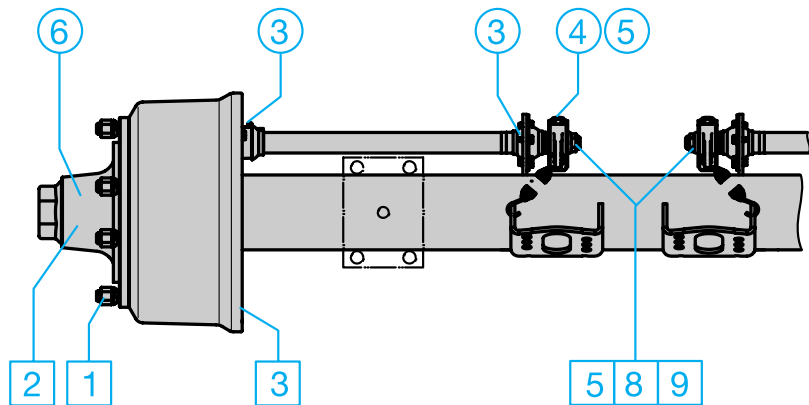
When fitting replacement parts you are strongly recommended to use only genuine BPW parts. BPW subjects all its components to regular testing to ensure they comply with safety and quality standards and in so doing guarantees their performance.

BPW cannot offer any guarantee regarding products produced by other companies. This applies even if an official testing organisation has approved the product.

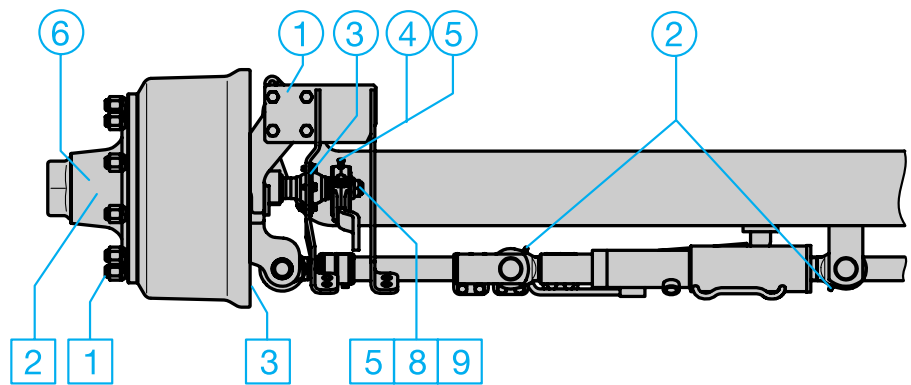
Our guarantee becomes invalid if spare parts other than genuine BPW parts are used.

<p>Lubrication and maintenance works</p> <p>Summary</p> <p>Detailed description on pages 8 - 18</p> <p><input type="radio"/> Lubrication</p> <p><input type="checkbox"/> Maintenance works</p>	After the first laden journey	Every 40 hours in operation	Every 200 hours in operation	Every 500 hours in operation (annually)	Every 1000 hours in operation (annually)
<p>Lubrication</p> <p>with BPW special longlife grease (ECO-Li 91)</p> <p>① Steering pivot bearings, top and bottom</p> <p>② Locking cylinder ends on steering axles</p> <p>③ Outer and inner brake camshaft bearings</p> <p>④ Slack adjuster</p> <p>⑤ ECO-Master automatic slack adjuster</p> <p>⑥ Change grease in wheel hub bearings, check taper roller bearings for wear</p> <p>Maintenance work</p> <p>① Check that wheel nuts are tight, retighten if necessary.</p> <p>② Check hubs for bearing play, adjust if necessary.</p> <p>③ Check brake linings.</p> <p>④ Check the brake adjustment on the brake lever, adjust if necessary.</p> <p>⑤ Check the brake adjustment on the slack adjuster, adjust if necessary.</p> <p>⑥ Check brake adjustment on wedge-type brakes, adjust if necessary.</p> <p>⑦ Check brake adjustment on Backmat cam brakes, adjust if necessary.</p> <p>⑧ Check brake adjustment on the automatic slack adjuster, adjust if necessary.</p> <p>⑨ Check the operation of the automatic slack adjuster.</p>		<p>○</p>	<p>○</p> <p>○</p> <p>○</p> <p>○</p> <p>○</p> <p>○</p> <p>○</p> <p>○</p> <p>○</p> <p>○</p>	<p>○</p> <p>○</p> <p>○</p> <p>○</p> <p>○</p> <p>○</p> <p>○</p> <p>○</p> <p>○</p>	<p>○</p>

BPW trailer axle
with butterfly cam brakes



BPW trailing steering axle

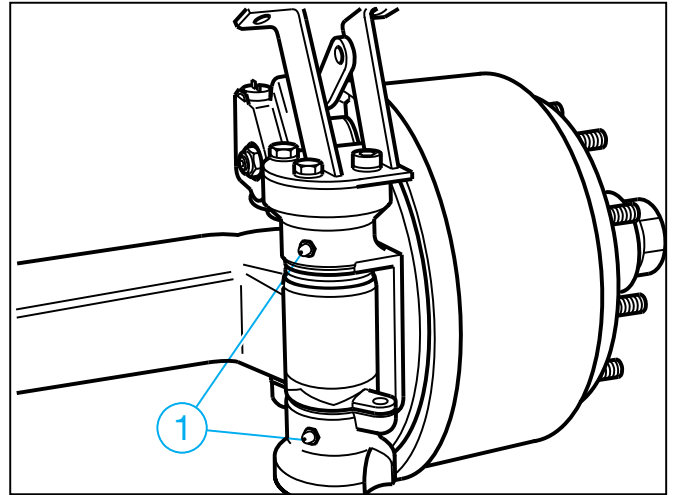


Note: All the lubrication points should be re-lubricated with grease after the vehicle has been cleaned with a high-pressure washer.

① Top and bottom steering pivot bearings

– every 40 hours in operation –

Lubricate via the grease nipples with BPW special longlife grease (ECO-Li 91), until clean grease emerges from the bearing/cam plate.

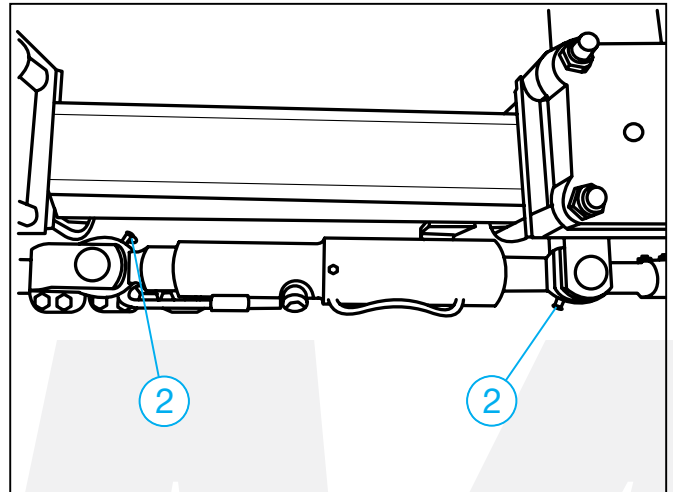


② Locking cylinder ends on steering axles

– every 200 hours in operation –

Lubricate via the grease nipples with BPW special longlife grease (ECO-Li 91), until clean grease emerges from the bearings.

While carrying out this lubrication, ensure that the locking cylinder and the pipe contain no air at any time.



③ Outer and inner brake camshaft bearings

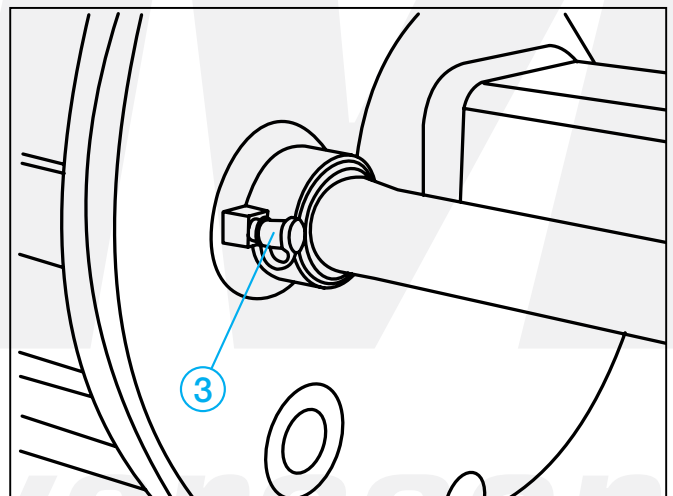
– every 200 hours in operation –

(and before use after a long period of inactivity)

Lubricate via the grease nipples with BPW special longlife grease (BPW ECO-Li 91), until clean grease emerges from the bearings.

Caution. Do not allow grease or oil to get into the brake. Depending on the series, the cam bearings to the brake may not be sealed.

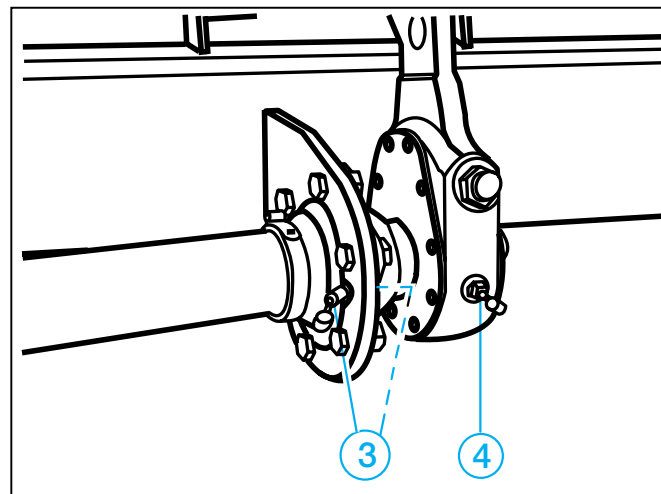
Use only lithium-based grease with a drop point above 190 °C.



④ Slack adjusters

- every 500 hours in operation, at least once a year –

Lubricate the grease nipples with BPW special longlife grease (ECO-Li 91), until fresh grease emerges.



⑤ Automatic slack adjuster ECO-Master

- each time the brake shoes are replaced –
- every 500 hours in operation, at least once a year –

Remove the rubber cap.

Lubricate with BPW special longlife grease (ECO-Li 91) (80 g) until sufficient clean grease emerges from the adjusting bolt.

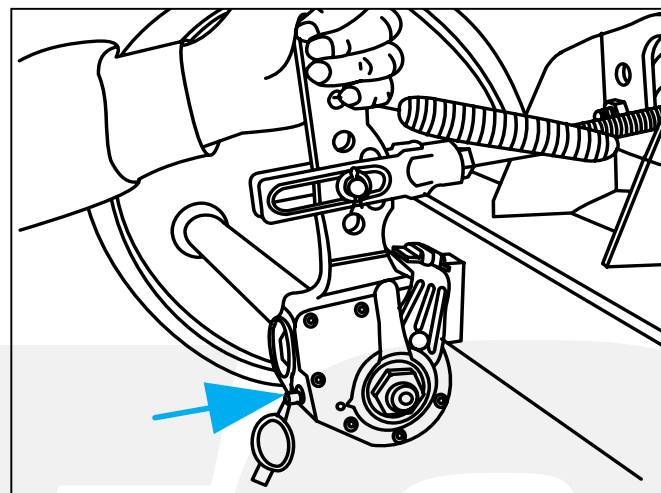
Undo the adjusting bolt by approximately one turn with a ring spanner. Operate the brake lever by hand several times.

In doing so, the automatic adjustment must operate smoothly.

Repeat several times, if necessary.

Refit the cap.

Regrease with BPW special longlife grease (ECO-Li 91).



⑥ Changing the grease in the wheel hub bearings

– every 1,000 hours in operation (latest annually) –

Jack up and secure the vehicle, and release the brakes.

Remove the wheels and bearing caps.

Remove the split pin and unscrew the axle nut.

Using a suitable retractor, withdraw the wheel hub with the brake drum, the roller bearings and the sealing elements from the axle stub.

Label or mark the wheel hubs and bearing cages so that they do not become mixed up during re-assembly.

Clean the brake, check for wear, make sure that it is intact and operates correctly, and replace any worn parts.

The inside of the brake must be kept free of grease and dirt.

Clean the wheel hubs thoroughly on the inside and the outside, removing every trace of old grease.

Clean the bearings and seals thoroughly (diesel oil) and check to ensure that they are suitable for re-use.

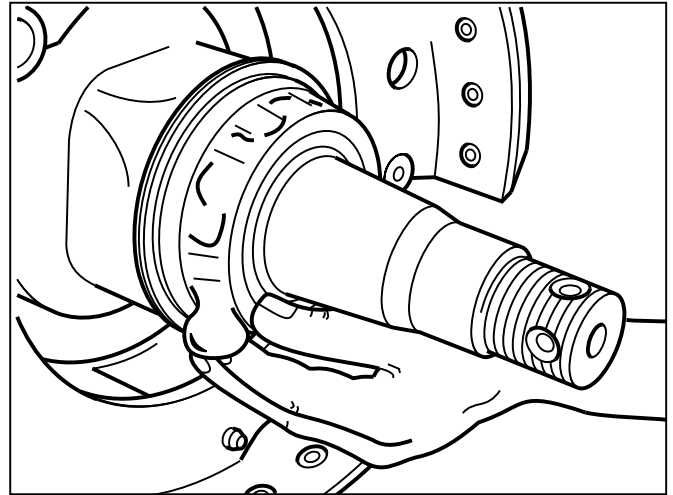
Lightly grease the bearing seats before fitting the bearings, and then assemble all the parts in the reverse order.

Carefully drive the parts into place on the bearing shells, without tilting or damaging them.

Coat the bearings, the wheel hub cavity between the bearings and the bearing cap with grease before re-assembly.

The quantity of grease should fill approximately a quarter to a third of the space in the assembled hub.

Fit the axle nut, and adjust the bearings

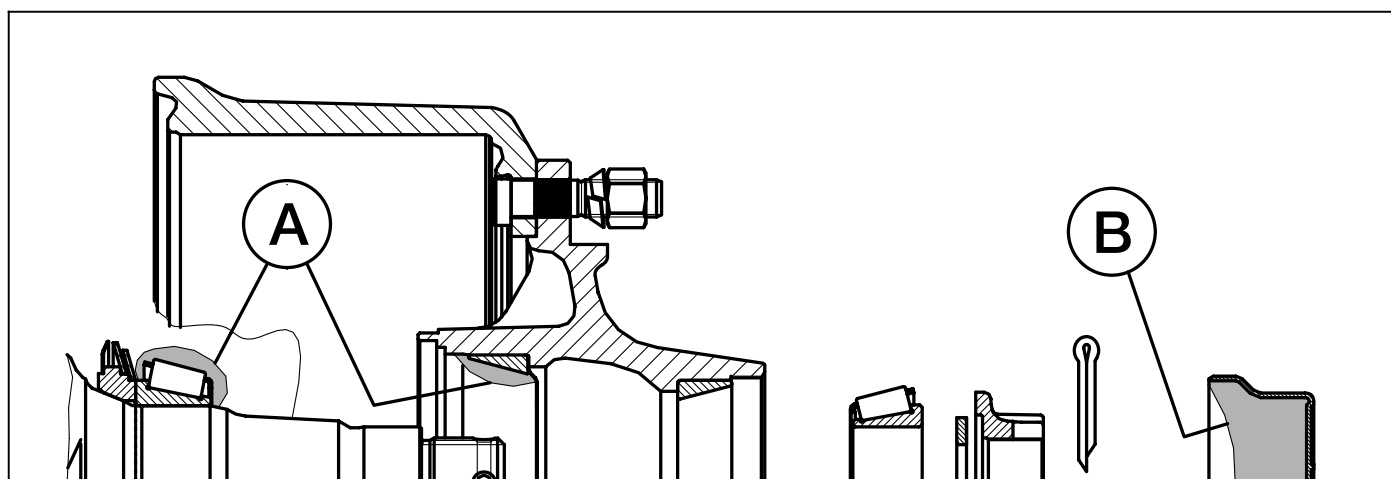


and the brake.

Finally, check that everything is in working order and carry out a suitable test drive, correcting any faults that you may discover.

The wheel hubs must only be lubricated with BPW special longlife grease (ECO Li 91) with a drop point above 190 °C.

Using the wrong grease or excessive quantities may lead to damage. Damage can be caused by the mixing of lithium-based grease with sodium-based grease, because of incompatibility.

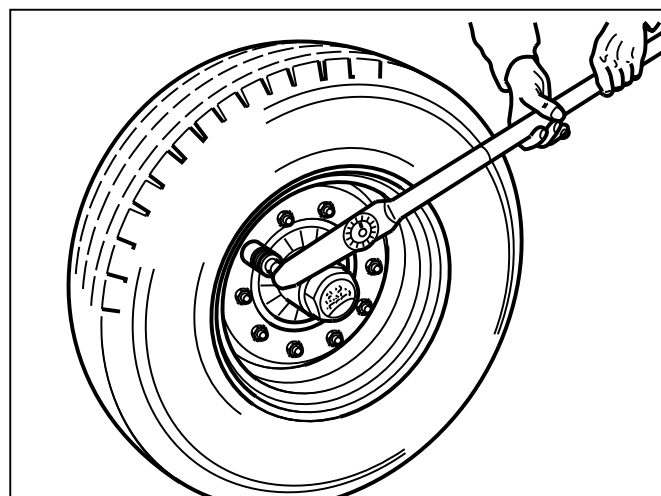


Wheel hub	BPW special longlife grease (ECO-Li 91), quantity per tapered roller bearing	
	Inner A	Outer B
GS 5506	40 g	80 g
GS 7006 GS 7008	50 g	210 g
GS 8008-1 GS 8010-1	90 g	230 g
GS 11008-1 GS 11010-1	170 g	290 g
GS 12008 GS 12010	180 g	320 g
	Work grease into the space between the tapered rollers and the races. Apply remainder to outer race of the hub.	The grease for the outer tapered roller bearing is pressed into the bearing as the hub cap filled with grease is screwed on.

1 Check that the wheel nuts are tight

- after the first laden journey, likewise after each wheel change and every 500 hours in operation or annually –

Use a torque wrench to tighten the wheel nuts to the correct torque setting, as shown in the table.



Torque settings for wheel nuts

Thread	Spanner size mm	Number of bolts per hub piece	Maximum torque setting		
			black	Dacromet	galvanised
M 12 x 1.5	19	4/5	95 Nm (90 - 100 Nm)	--	95 Nm (90 - 100 Nm)
M 14 x 1.5	22	5	125 Nm (120 - 130 Nm)	--	125 Nm (120 - 130 Nm)
M 18 x 1.5	24	6	290 Nm (275 - 305 Nm)	270 Nm (250 - 290 Nm)	320 Nm (300 - 340 Nm)
M 20 x 1.5	27	8	380 Nm (360 - 400 Nm)	380 Nm (360 - 400 Nm)	420 Nm (400 - 440 Nm)
M 22 x 1.5	32	8/10	510 Nm (485 - 535 Nm)	510 Nm (485 - 535 Nm)	560 Nm (535 - 585 Nm)
M 22 x 2	32	10	460 Nm (435 - 485 Nm)	--	505 Nm (480 - 530 Nm)

2 Check the bearing play in the wheel hub

- every 200 hours in operation –

To check the bearing play in the wheel hub, raise the axle until the tyres are clear of the ground.

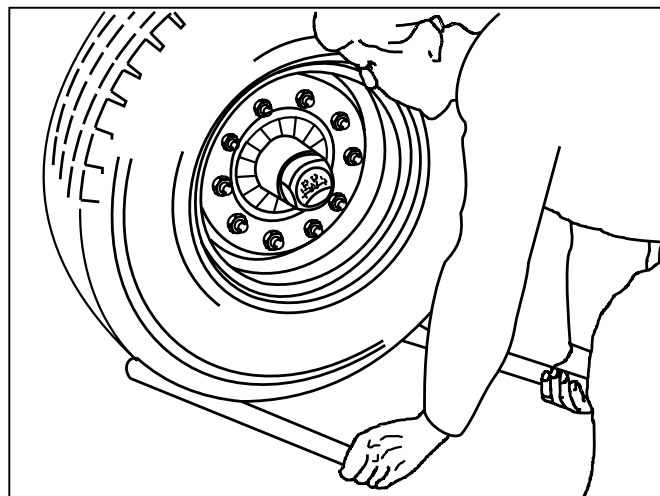
Release the brake, place a lever between the tyre and the ground, and check for play.

If you can feel play in the bearing:

Adjusting the bearing play

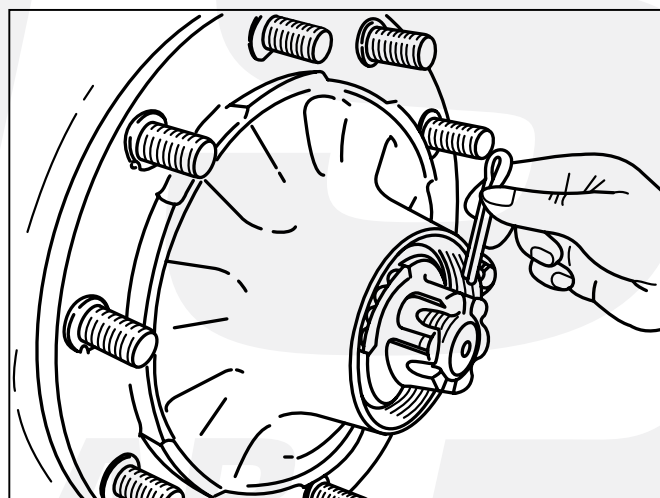
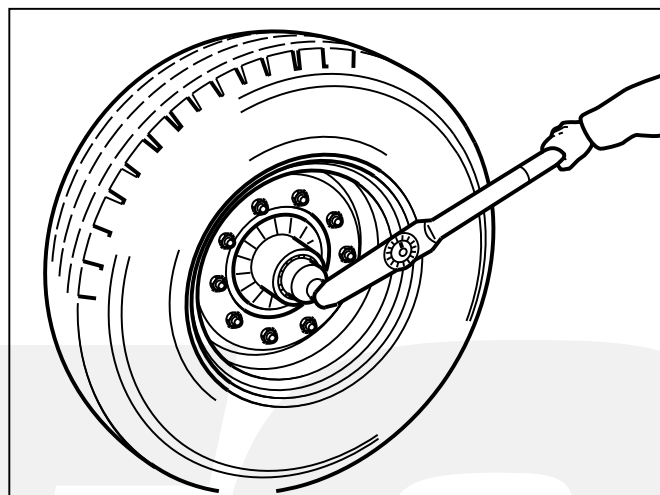
Standard hub bearing

1. Remove the bearing cap, or hub end-cap.
2. Remove the split pin from the wheel nut.
3. Tighten the wheel nut while turning the wheel, until the turning of the hub is slightly impeded.
4. Turn back the axle nut to the nearest possible split pin hole. If already in line, turn back to the next hole (maximum of 30°).
5. Insert the split pin and gently bend it over.
6. Refill the bearing cap with a little BPW special longlife grease (ECO-Li 91) and tap or screw it back into the wheel hub.



Wheel hub bearing on BPW axles type GS 11008-1, GS 11010-1, GS 12008, GS 12010

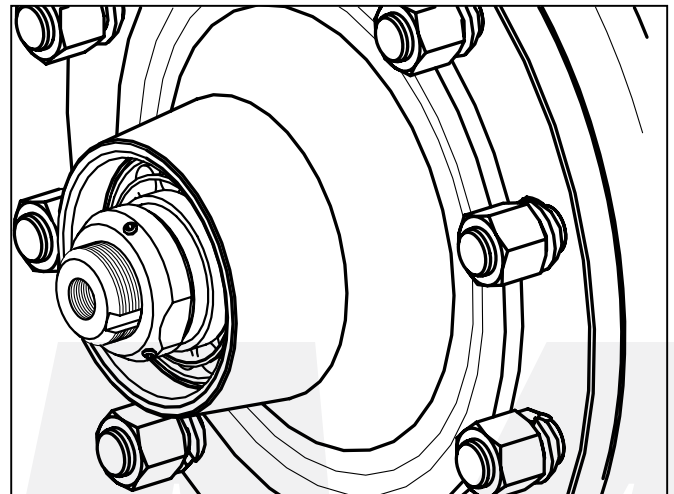
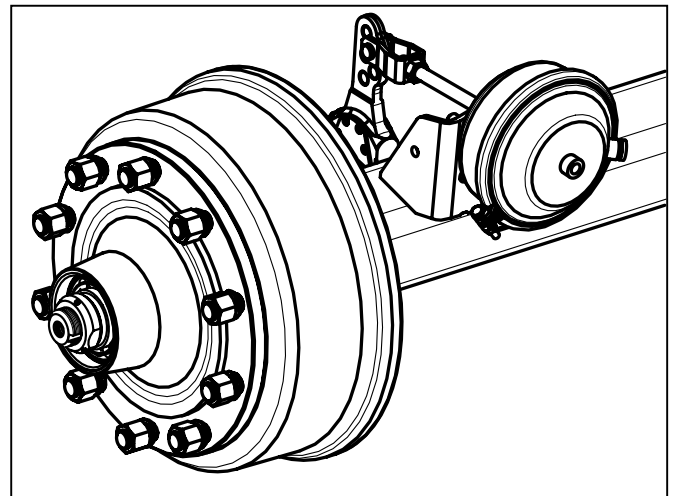
1. Unscrew the hub cap.
2. Remove the split pin from the castle nut.
3. Tighten the axle nut using a torque wrench to 150 Nm while simultaneously turning the wheel hub.
 - Using a normal castle nut spanner (vehicle tool kit), tighten the castle nut until the wheel hub race is slightly braked.
4. Turn back the castle nut to the next possible split pin hole. Should they be in line turn back to the next hole (30° at the maximum).
5. Insert the split pin and bend upwards slightly.
6. Refill the hub cap with BPW special longlife grease (ECO-Li 91).
7. Greased thread of hub cap all round with BPW special longlife grease (ECO-Li 91) and tighten to the specified torque of 500 Nm.



Adjusting the bearing play

Hub bearing on BPW axles with tyre pressure control system and KMT shaft nut:

1. Unscrew the air pressure connection from the hub cap or axle beam (refer to the operating instructions provided by the control system manufacturer).
2. Unscrew the hub cap.
3. Undo the grub screws in the KMT shaft nut.
4. Tighten the KMT shaft nut with a torque wrench at the same time as turning the wheel hub, tightening torque 150 Nm.
 - If using a normal hook spanner 80 - 90 (vehicle tool kit), tighten the shaft nut until the running of the wheel hub is slightly braked.
5. Turn the KMT shaft nut back by 15 - 30°.
6. Tighten 3 grub screws to a tightening torque of 18 Nm.
7. Fill the hub neck with BPW special longlife grease (ECO-Li 91).
The air connection must be free from grease.
8. Greased thread of hub cap all round with BPW special longlife grease (ECO-Li 91) and tighten to the specified torque of 500 Nm.
9. Fit the tyre pressure control system.



3 Brake lining check

– every 200 hours in operation –

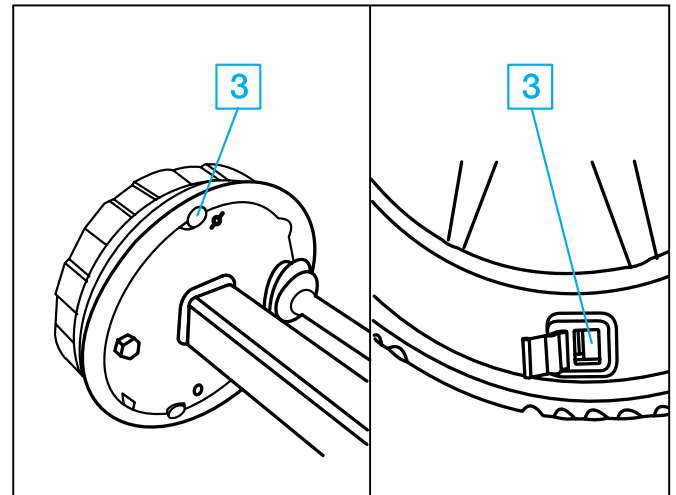
Open the inspection hole by removing the rubber bung (if present).

If the remaining thickness of the brake lining is

a: for riveted linings, 5 mm
(N 2504) 3 mm

b: for bonded linings 2 mm
the brake lining must be replaced.

Re-insert the rubber bung.



Brake adjustment

Depending on the nature and extent of operation, the brakes should be checked regularly and adjusted, if necessary.

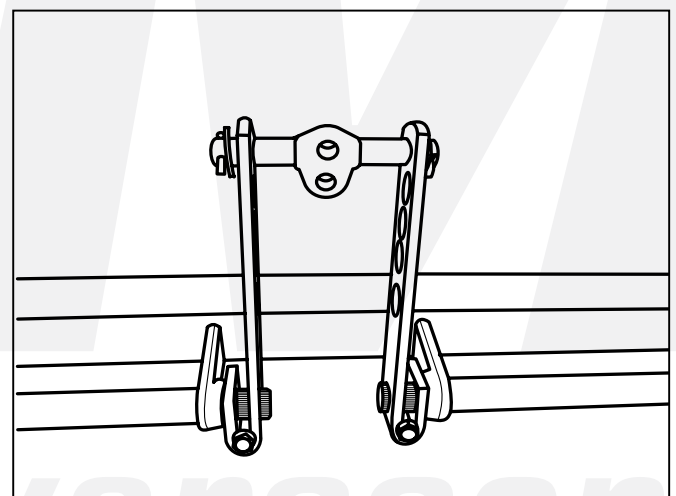
Adjustment is necessary when approx. 2/3 of the maximum cylinder stroke is used under heavy braking. For this purpose, jack up the axle and secure the vehicle against accidental movement.

4 Adjustment of the brake lever

– every 200 hours in operation –

Undo the hexagonal nuts, remove the bolts. Bend open the slot in the brake levers a little. The brake levers can now be withdrawn.

Turn the brake camshafts until the linings start to rub against the brake drums. Push the brake levers onto the brake camshafts in the correct position until they are fully home. Insert the bolts and fit the nuts.



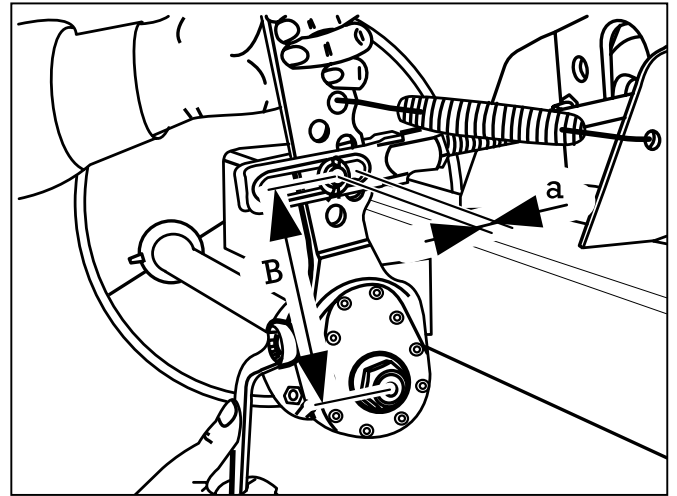
5 Adjustment of the slack adjuster

– every 200 hours in operation –

Move the slack adjuster by hand in the direction of brake application. If there is a maximum free play on the long-stroke diaphragm cylinder of 35 mm, the wheel brake must be adjusted.

Adjust the free play "a" to 10-12 % of the length (B) of the brake lever connected to it.

E.g. for a lever length of 150 mm, the free play is 15-18 mm.



6 Adjustment of wedge-type brakes

– every 200 hours in operation –

S 3006-7 RAZG:

Secure the trailer to prevent it moving and jack it up. Disconnect the pull rods from the overrun hitch and the handbrake lever.

Lock the swivel cam on the wheel brake with the help of special tool A (< 4 mm diameter pin) by inserting it through the positioning hole (at least 50 mm into the hole).

Tighten the adjusting nuts (item C) on the wheel brakes with a spanner, with the help of the adjusting bolt (item B), until the wheel will not turn in the direction of travel.

Turn back the adjusting bolt until no braking effect can be felt when the wheel is turned in a forward direction.

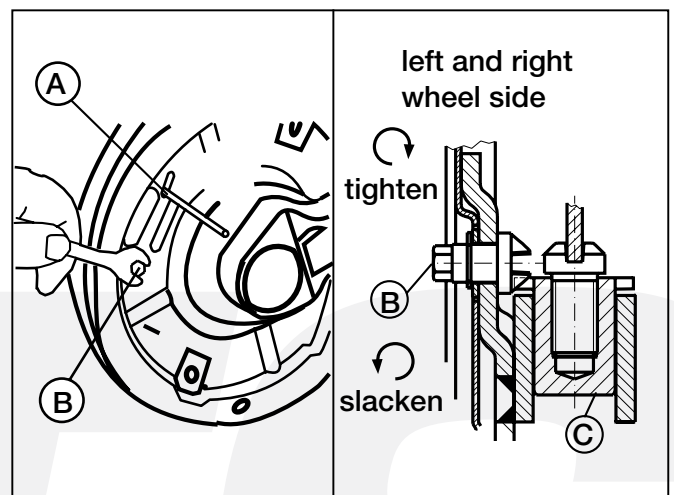
Caution:

The wheel brake must only be adjusted by means of the adjusting bolt.

Reconnect the pull rods to the overrun hitch and adjust so that there is no free play.

For this purpose, the drawbar of the overrun mechanism must be completely extended and the reversing must lever rest on the drawbar.

As a test, apply the parking brake slightly



and check that the braking effect (in the direction of travel) on the wheels is the same on both sides. Check that the individual brakes take effect at the same time.

Caution:

Remove the locking device (< 4 mm diameter pin) from the swivel cams.

S 3008 RAZG:

Secure the trailer to prevent it moving and jack it up.

Disconnect the pull rods from the overrun hitch and the handbrake.

Tighten up the adjusting screws on the wheel brakes with a screwdriver in the direction of the arrow, until the wheel will not turn in the direction of travel.

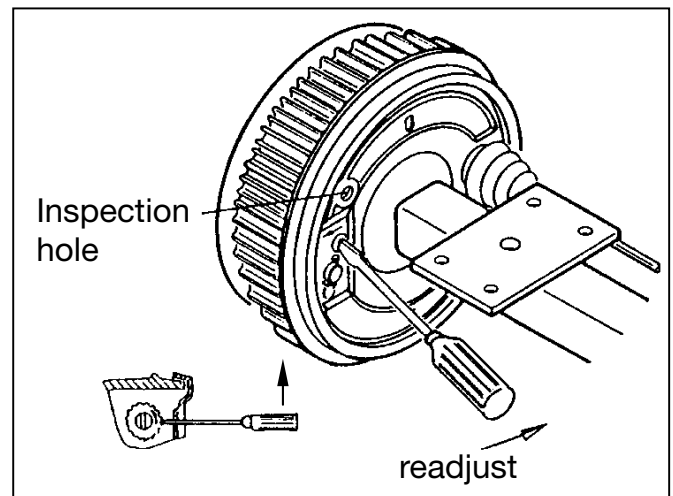
Turn back the adjusting screw until no braking effect can be felt when the wheel is turned in a forward direction.

Caution: The wheel brake should only be readjusted at the adjusting screw!

Reconnect the pull rods to the overrun hitch and adjust so that there is no free play.

For this purpose, the drawbar of the overrun mechanism must be completely extended and the reversing lever rest on the drawbar.

As a test, apply the parking brake slightly and check that the braking effect (in the direction of travel) on the wheels is the same on both sides.

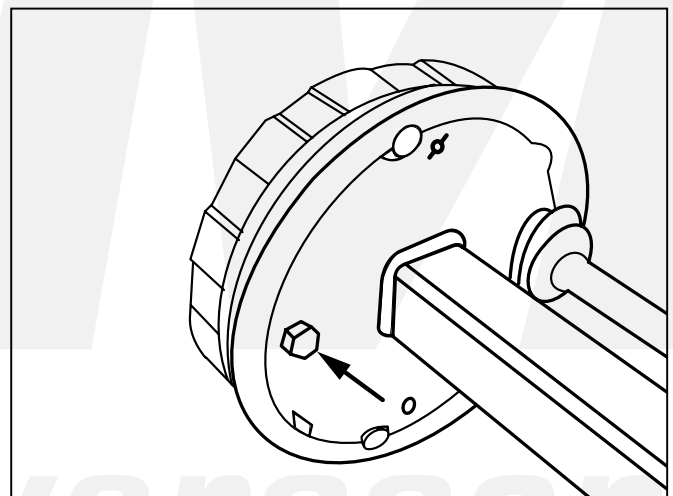


7 Adjustment of Backmat cam brakes

– every 200 hours in operation –

Adjustment is primarily by means of the adjusting screw (see wedge-type brakes) and then by means of the brake levers (see cam brakes).

Caution: Only turn the wheel in a forward direction when adjusting the wheel brake!



8 Adjustment of the automatic slack adjuster

- every 500 hours in operation, at least once a year –

Basic adjustment is carried out in the same way as for the standard slack adjuster. Adjustment is automatically carried out when the cam turns through 15°.

The ideal position of the lever (which cannot be altered because of the attachment of the cylinder) is 15° before the right angle to the direction of application.

9 Checking the operation of the automatic slack adjuster

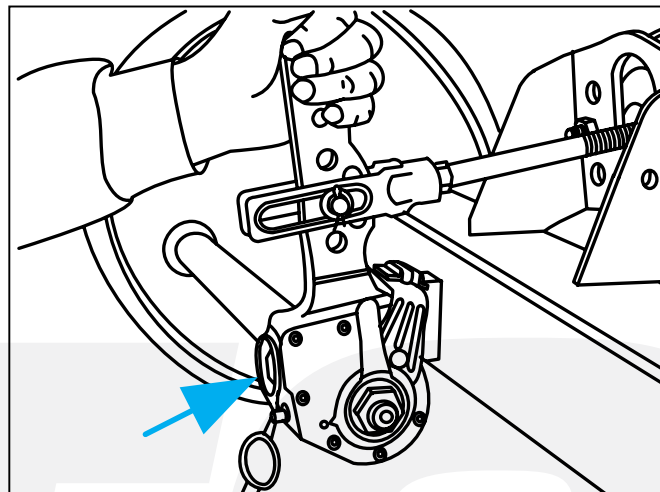
- each time the brake shoes are replaced –
- every 500 hours in operation, at least once a year –

Remove the rubber cap.

Undo the adjusting screw (arrowed) with a ring spanner by about $\frac{3}{4}$ of a turn in an anti-clockwise direction. With a lever length of 150 mm, there must be free play of at least 50 mm.

Operate the brake lever several times by hand. When this is done the automatic adjustment must take place smoothly, the locking of the toothed coupling should be audible, and on the return stroke the adjusting screw turns slightly in a clockwise direction.

Refit the cap. Lubricate with BPW special longlife ECO-Li 91grease. See also no. ⑤, page 9.





METSJÖ *Ivarssons i Metsjö AB*

Production takes place at Metsjö Norrgård which is located outside Linköping Sweden.

Except trailers we also produce machinery halls and mobile storages.

Ivarsson's i Metsjö AB reserve the right to change technical specifications.

Data and illustrations are to be considered approximate and also include special accessories that are not part of the scope of standard supply.

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