



INTRA RANGE SUSPENSION

INSTALLATION INSTRUCTIONS

Lubrication

No lubrication to threads when being torqued

Torque Setting

To be applied only when axles are at ride height

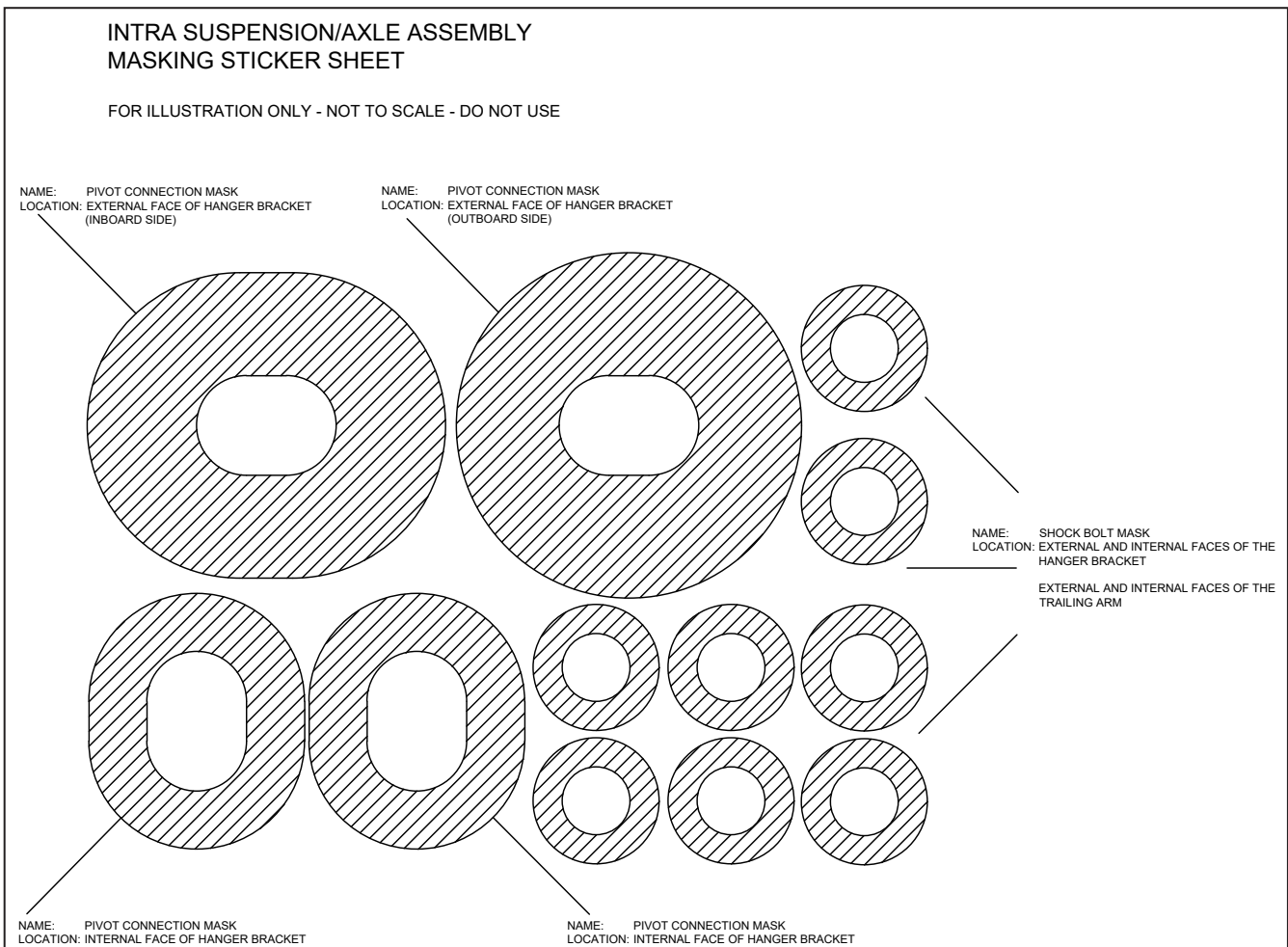
Painting

No paint on the bolt and nut faces (or other torque components). Any paint applied to the surfaces of bolted connections can compress over time, potentially causing a loss of torque at the bolted connection, which may lead to damage to components. Accordingly, failure to comply with this restriction may affect SAF-HOLLAND warranty.



To aid compliance with this restriction, SAF-HOLLAND has provided a **masking sticker** sheet (PN: EX0822) pre-cut to the correct size for application prior to any painting or coating.

Please note: one sticker per hanger.



INFORMATION ON SURFACE COATING OF SAF COMPONENTS

Corrosion protection of SAF products

- Axle beams, trailing arms and front hanger brackets with cathodic hot-dip coating
- All bolts and fittings with Dacromet coating, colour grey metallic.
- Wheel contact surface: Thin cathodic hot-dip coating, coat thickness max. 30 µm, colour black RAL 9005.

Cathodic dip coating (KTL)

The coat thickness is max. 45 µm.

Features:

- Complete corrosion protection in all areas of the component.
- High surface hardness with uniform coat thickness.
- Can be painted over with all single-component or 2-component top coats.
- Top coat not necessary if gloss is not of paramount importance.

2-component priming

Primer coat for additional top coat.

Coat thickness is max. 45 µm

Dacromet coating

Corrosion protection with sliding properties.

Protection min. 480 hours in salt spray test to DIN 50021.

Treatment during axle and suspension installation

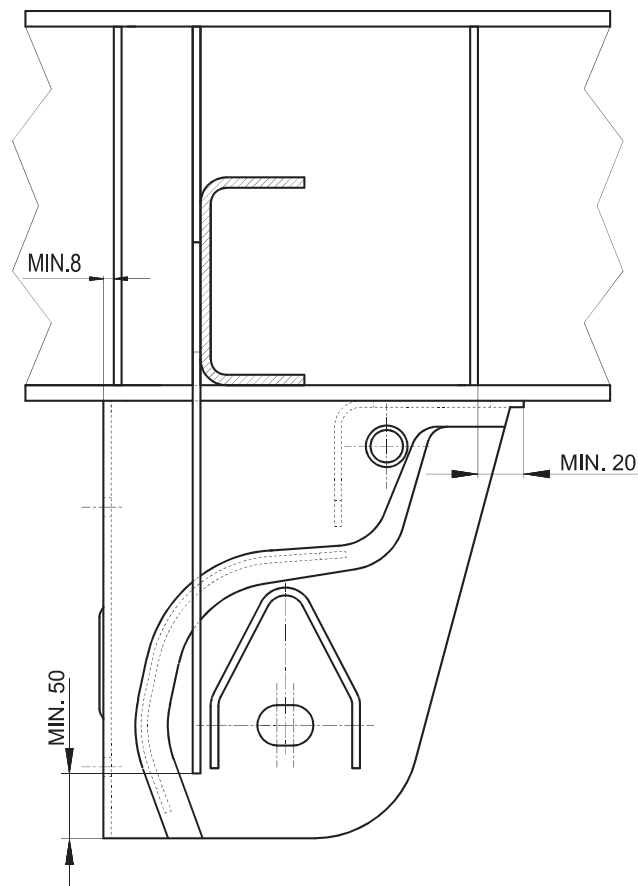
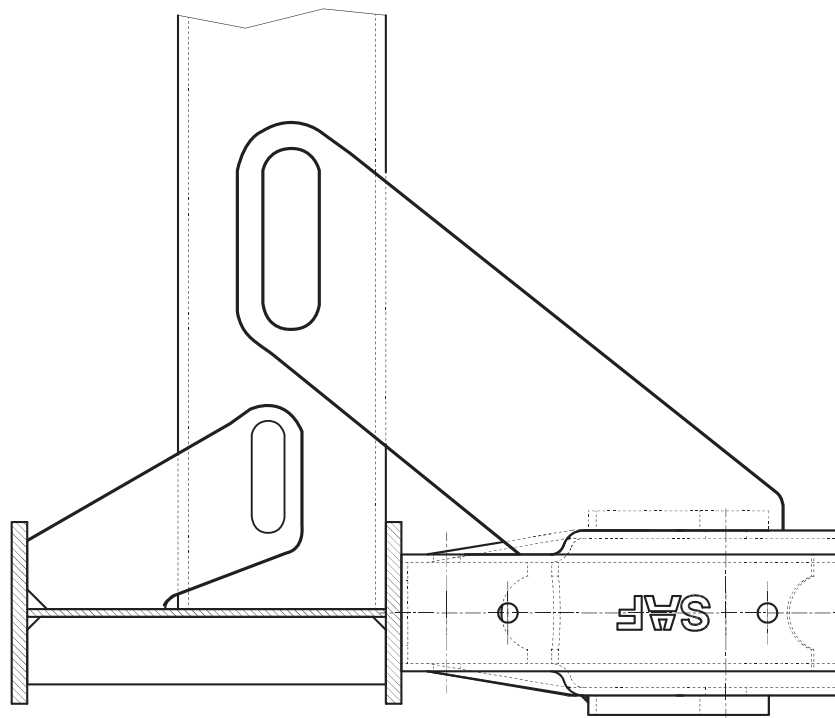
- In principle, dip coating and 2-component primers can be welded.
- SAF-HOLLAND recommends, however, that these coats be removed in the area of weld seams.
- All contact surfaces of the pivot bolts and shock absorber bolts must not have additional primer or paint coatings.
- Wheel contact surfaces must not be painted.

SAF-INTRA Range Suspensions - Installation Instructions

1. Hanger Brackets	6
1.1 Recommendation for steel hanger bracket reinforcement	6
1.2 Technical information of steel bracket – Series IU/IO	8
1.3 Welding instructions for steel hanger bracket – Series IU/IO	9
1.4 Technical information of ALU hanger bracket – Series IU/IO	10
2. Adjustable Pivot Bolt	11
2.1 Adjustable pivot bolt – Steel hanger bracket	11
2.2 Adjustable pivot bolt – ALU hanger bracket	12
2.3 Tightening instructions adjustable pivot bush	13
3. Shock Absorber	14
3.1 Shock absorber data	14
3.2 Ride height / shock absorber allocation	15
3.3 Installation instructions for shock absorbers – Steel hangers	16
3.4 Installation instructions for shock absorbers – ALU hangers	17
3.5 Installation instructions for shock absorbers – Steer axle	18
4. Air Bag	19
4.1 Welding recommendation – Air bag bracket (airbag offset V)	19
4.2 Air bag fixing / trailing arm – Air suspension series IO	20
4.3 Air bag fixing / trailing arm – Air suspension series IU	21
4.4 Air bag 300mm OD (Code 33) fixing – Offset 30mm	22
4.5 Air bag 350mm OD (Code 27) fixing – Offset 30 & 60mm	23
4.6 Calculation of the air bag pressure	24
5. Torque Settings & Procedures	25
5.1 Steel hanger brackets	25
5.2 ALU hanger brackets	26
6. Braking System	27
6.1 Installation instructions for Integral ABS sensor	27
6.2 Installation instructions for ABS cable INTRADRUM	29
6.3 Checking and adjustment	30
6.4 Adjustment of HALDEX automatic slack adjuster	31
6.5 Installation & adjustment of S-ABA automatic slack adjusters	32
7. Australian Market Specifications	33
7.1 INTRADISC Integral standard specifications	33
7.2 INTRADRUM standard specifications	33
8. One Side Lift	34
8.1 Installation instructions	34
8.2 SAF-INTRA suspensions one-side lift	35
8.3 SAF-INTRA suspensions two-side lift	36
9. Warranty	39
9.1 INTRADISC warranty	39
9.2 INTRADRUM warranty	40

1.1 Recommendation for steel hanger bracket lateral reinforcement

Hanger Part Numbers
2 183 0825 02
2 183 0826 02
2 183 0827 02
2 183 0828 02

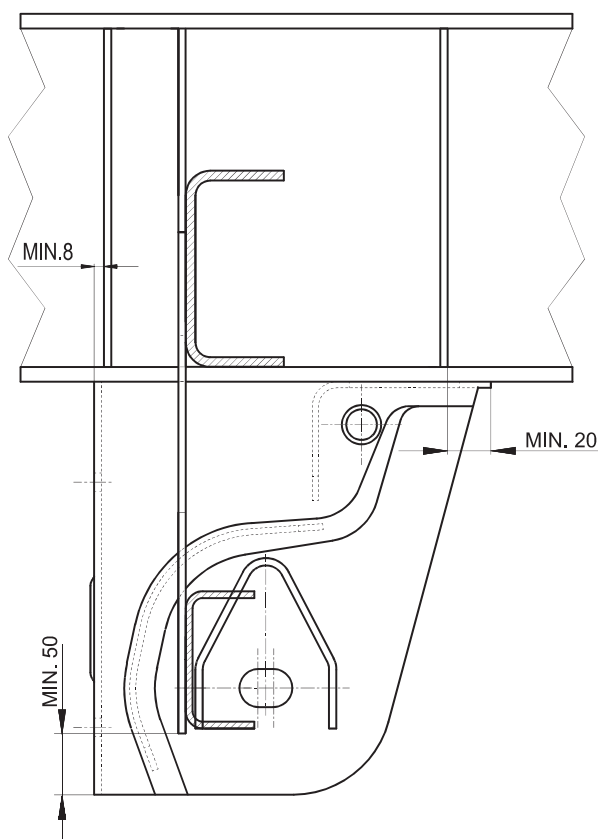
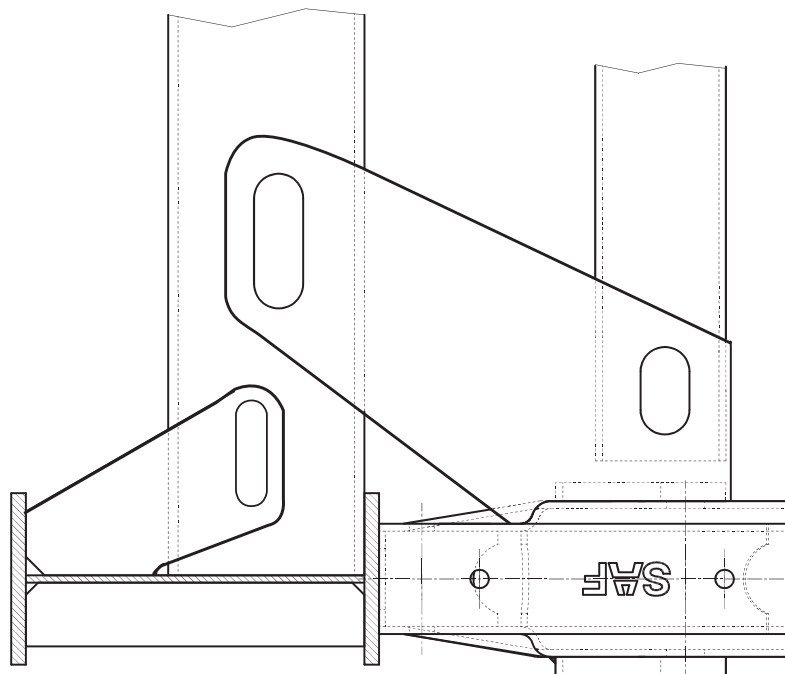


For torsionally flexible chassis

For welding information, see hanger welding instructions page.
The design and dimensioning of the hanger bracket reinforcement is the responsibility of the vehicle manufacturer, allowing for the type and operating conditions of the vehicle.

1.1 Recommendation for steel hanger bracket lateral reinforcement

Hanger Part Numbers
2 183 0825 02
2 183 0826 02
2 183 0827 02
2 183 0828 02

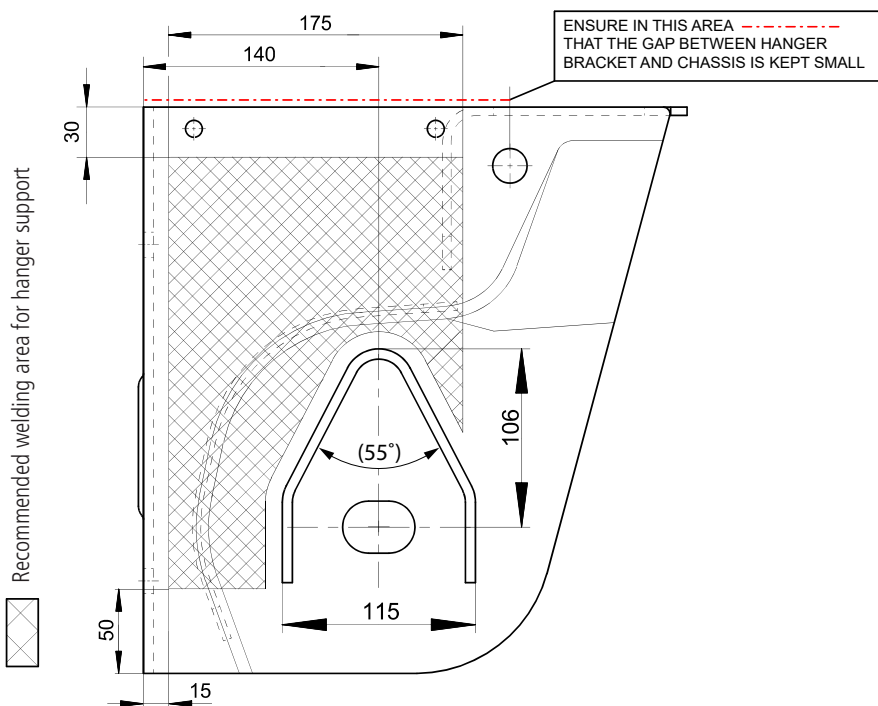
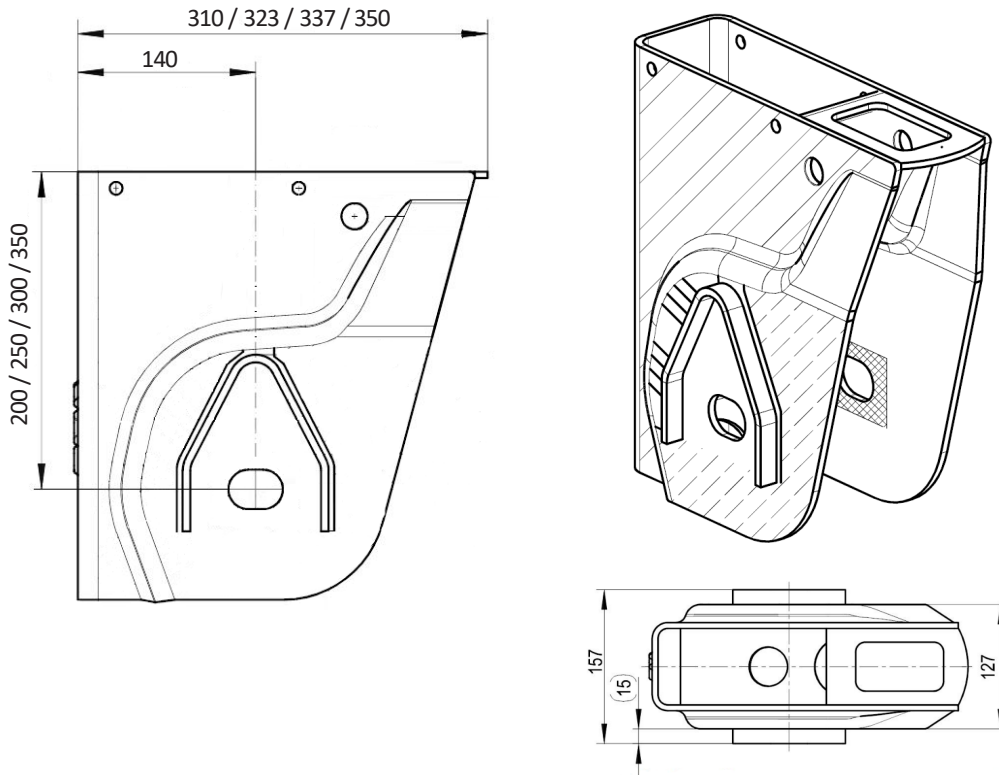


For torsionally stiff chassis

For welding information, see hanger welding instructions page.
The design and dimensioning of the hanger bracket reinforcement is the responsibility of the vehicle manufacturer, allowing for the type and operating conditions of the vehicle.

1.2 Technical information of steel hanger bracket – series IU/IO

- 90mm hanger bracket width (frame connection width)
- Symmetrical hanger brackets (no left and right version)
- Shock absorber position in hanger bracket (shock absorber centre = spring centre)



Hanger Part Numbers
2 183 0825 02
2 183 0826 02
2 183 0827 02
2 183 0828 02

1.3 Welding instructions for steel hanger bracket – series IU/IO

Welding recommendation

The high-tensile steel used for the hanger brackets with a carbon content C of max. 0.2 % can be easily welded. Special welding electrodes are therefore not required.

Cover the trailing arm to protect it from flying sparks. In order to avoid bearing damage, **the welding equipment ground cable must not be connected either to the wheel or to the wheel hub with brake drum.**

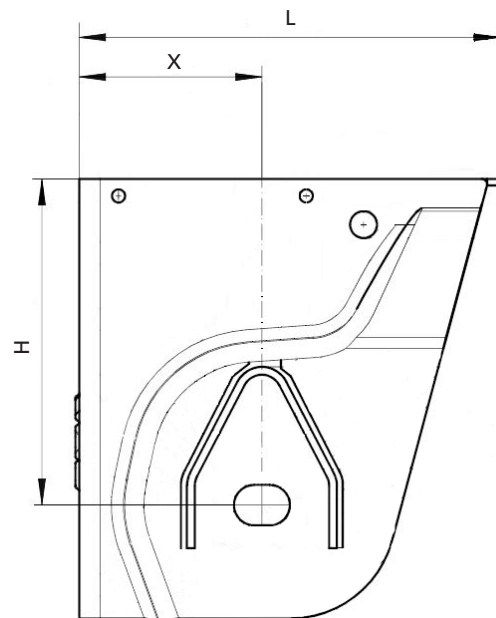
Design information

The vehicle frame must be reinforced so that it can absorb the forces to which it is exposed.

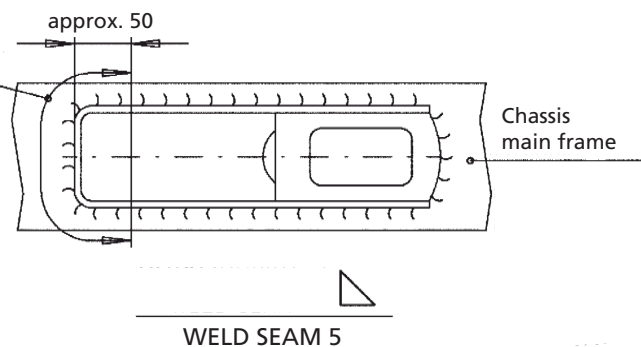
Important note

Ensure that the gap between the hanger bracket and chassis in the area "X" is kept small!

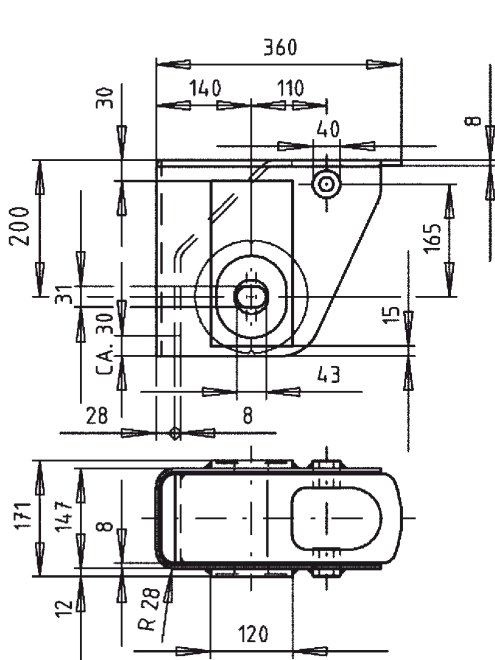
Dimension (H)	Dimension (L)	Part Number
200	310	2 183 0825 02
250	323	2 183 0826 02
300	337	2 183 0827 02
350	350	2 183 0828 02



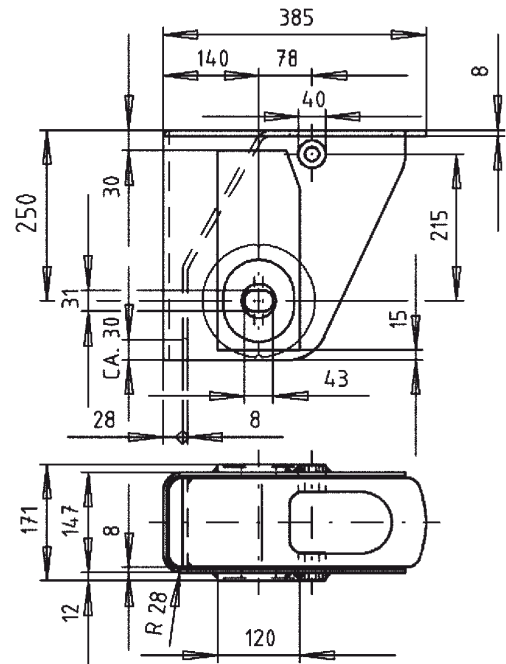
In this section, tack welding, welding start, end and undercut not permissible



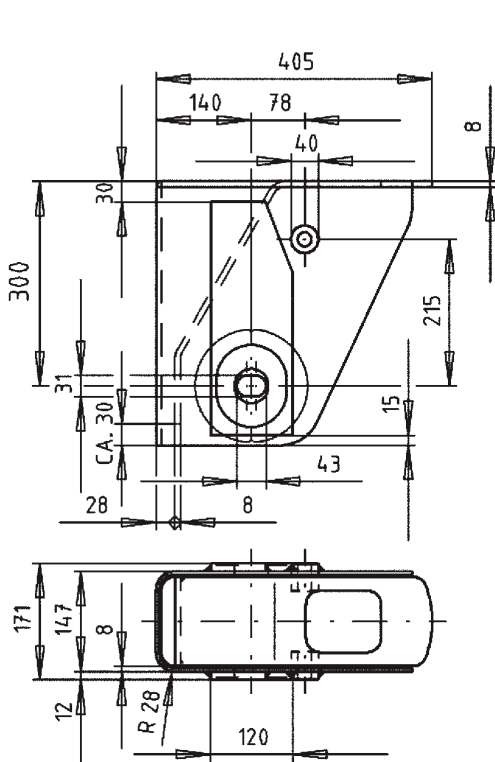
1.4 Technical information of ALU hanger bracket – series IU/IO



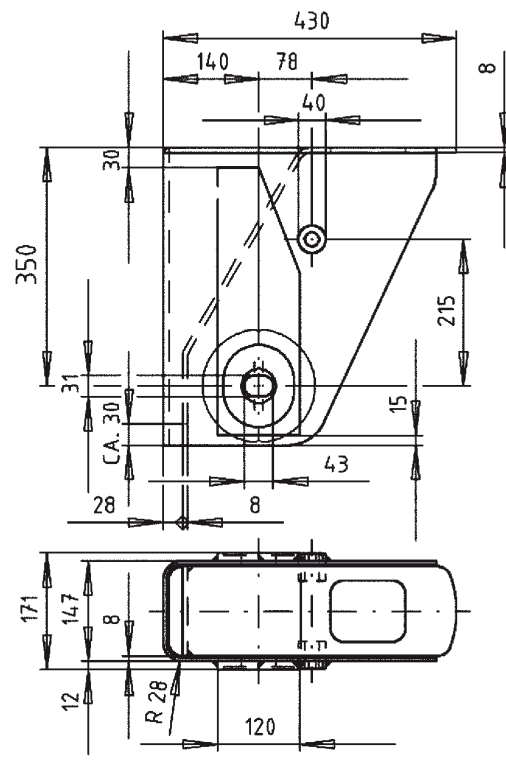
Part No. 2 183 0829 00



Part No. 2 183 0830 00



Part No. 2 183 0831 00

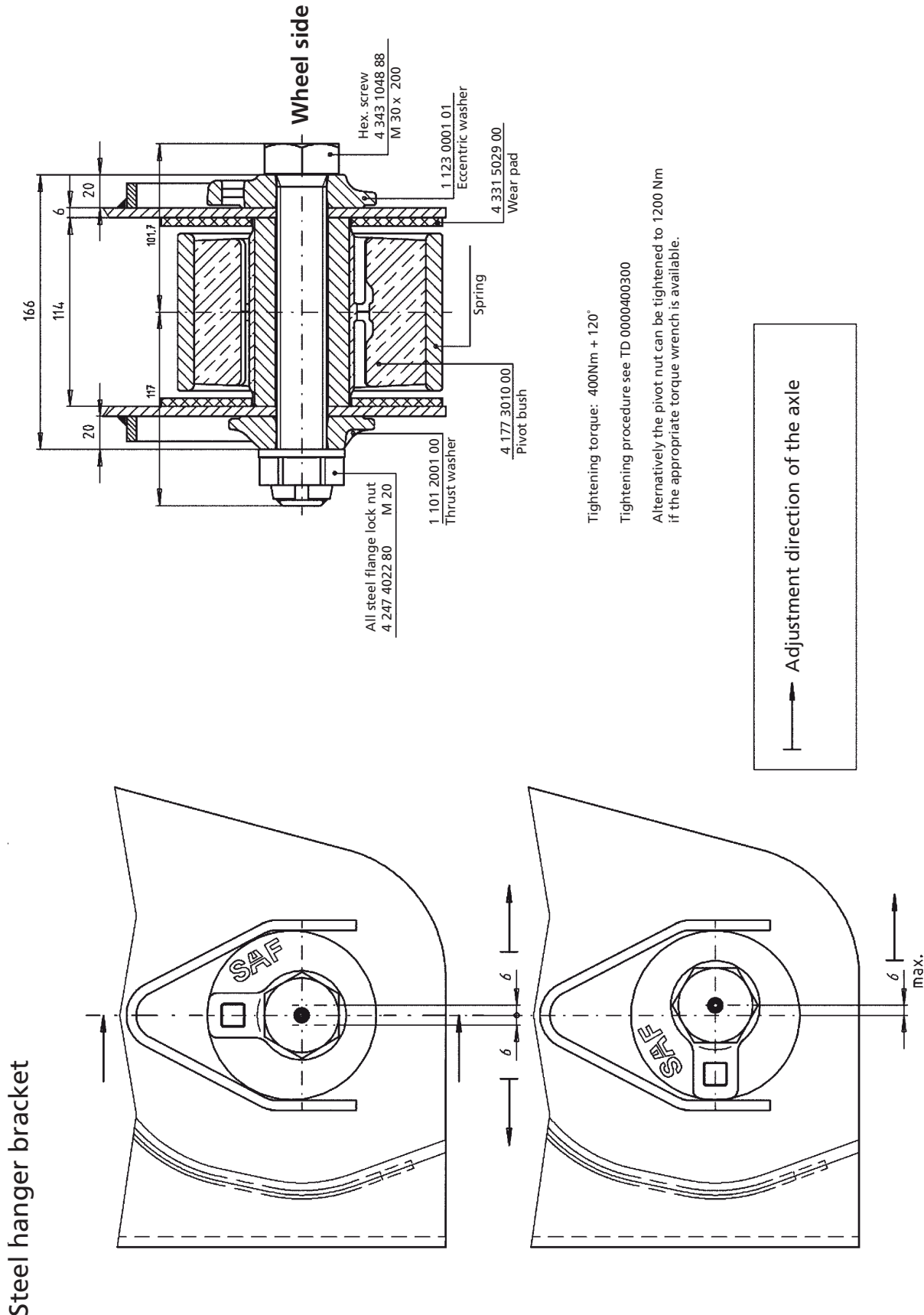


Part No. 2 183 0832 00

2.1 Adjustable pivot bolt – steel hanger bracket

Important note

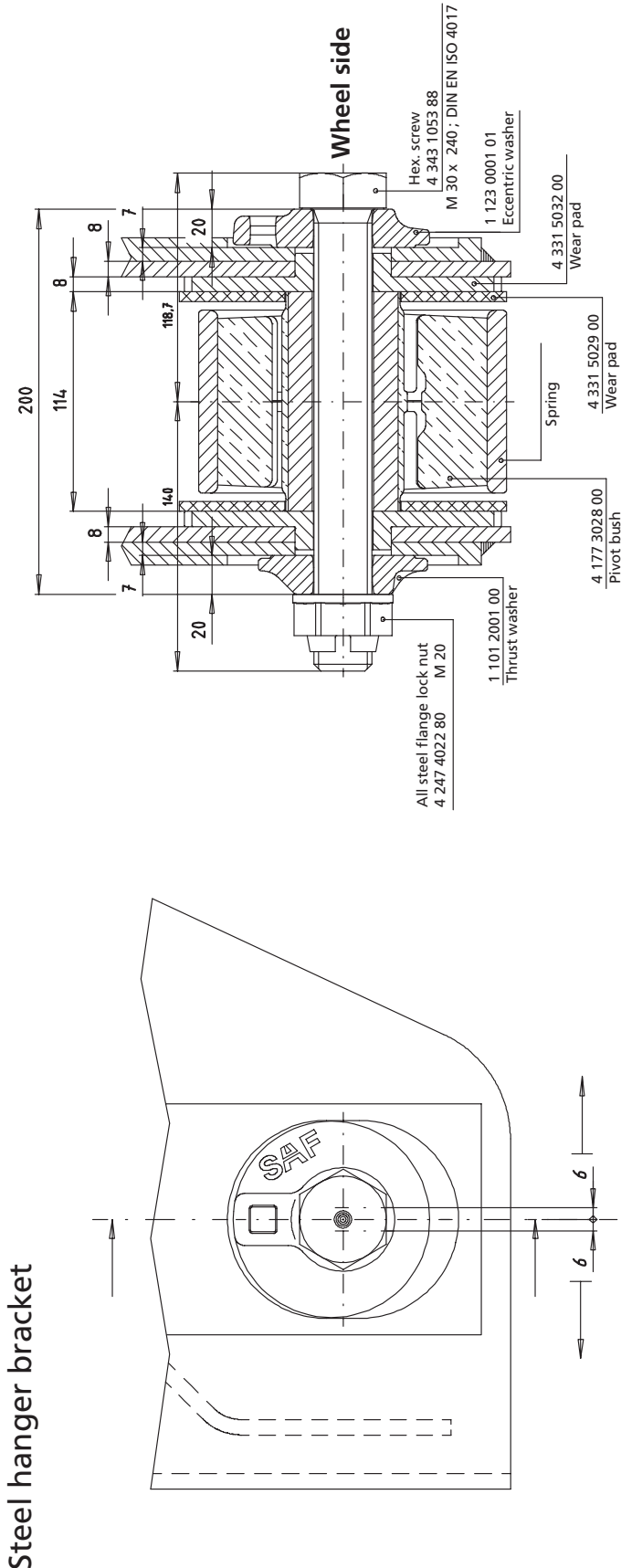
All torque must be done on the nut side



2.2 Adjustable pivot bolt – ALU hanger bracket

Important note

All torque must be done on the nut side



NOT MAINTENANCE-FREE

Tightening torque: 400Nm + 120°

Tightening procedure see TD 0000400400

Alternatively the pivot nut can be tightened to 1200 Nm if the appropriate torque wrench is available.

Note: Refer to torque settings and procedures for alloy hangers instructions (EX0289).

2.3 Tightening instructions for adjustable pivot bolt

Tightening instructions for adjustable pivot bolt

ATTENTION:
Pivot bolt tightening must always be performed at the specified ride height range!
No paint residues between eccentric / thrust washer and hanger!
*All torque must be done on the nut side

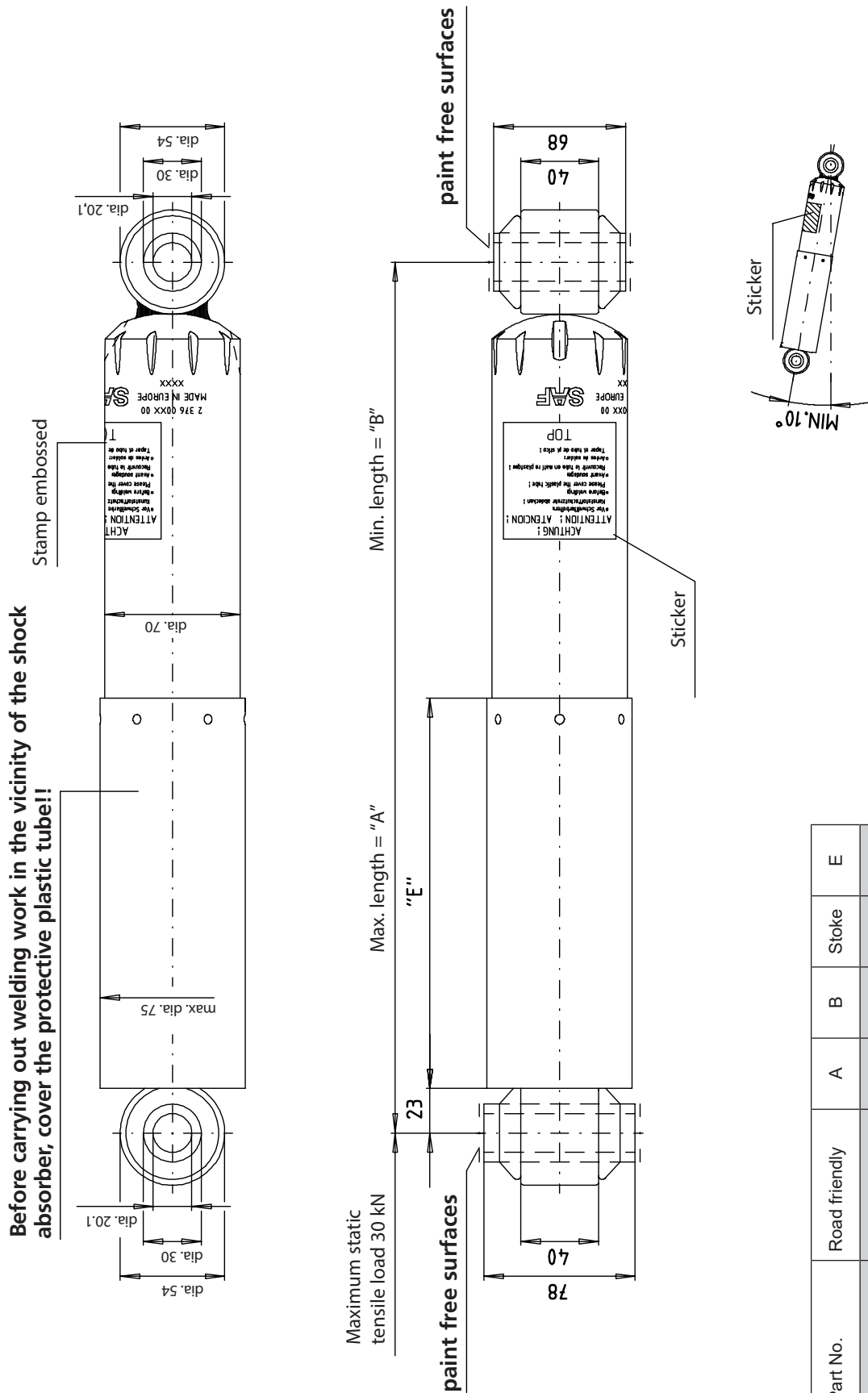


Bolt head always on the eccentric washer side.

<p>Pretightening: 400 Nm Use torque wrench</p>	<p>Marking for angle tightening</p>	<p>Angle tightening: 120° Use impact wrench or extend lever to 2.5 m</p>	<p>Visual inspection</p>
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Alternatively the pivot nut can be tightened to 1200 Nm if the appropriate torque wrench is available.

3.1 Shock absorber data



Part No.	Road friendly	A	B	Stoke	E
2 376 0079 00	2 376 5070 00	413	278	135	202
2 376 0080 00	2 376 5071 00	491	315	176	202
2 376 0072 01	2 376 5072 00	532	335	197	220

3.2 Ride height / shock absorber allocation

Series/ Standard	Ride Height (mm)	Hanger bracket (mm)	Air bag bracket (mm)	Lift/ Lower (mm)	Length of shock absorber (mm)		Type of shock absorber (Standard)	Type of shock absorber (Road Friendly)
					min.	Ride height max.		
IU 25/2000 33/ 27	250	200	0	90/90	306	340	2 376 0079 00	2 376 5070 00
IU 28/2005 33/ 27	280	200	50	90/90	316	351	2 376 0079 00	2 376 5070 00
IU 30/ 2505 33/ 27	300	250	50	90/90	350	391	2 376 0080 00	2 376 5071 00
IU 33/2510 33/ 27	330	250	100	90/90	363	404	2 376 0080 00	2 376 5071 00
IU 35/3010 33/27	350	300	100	90/90	350	391	2 376 0080 00	2 376 5071 00

IO 35/ 2000 33/ 27	355	200	0	90/90	343	381	2 376 0080 00	2 376 5071 00
IO 37/ 2500 33/27	375	250	0	90/90	382	424	2 376 0080 00	2 376 5071 00
IO 40/2505 33/ 27	405	250	50	90/90	395	437	2 376 0072 01	2 376 5072 00
IO 42/ 3005 33/ 27	425	300	50	90/90	382	424	2 376 0080 00	2 376 5071 00
IO 45/3010 33/ 27	455	300	100	90/90	395	437	2 376 0072 01	2 376 5072 00
IO 47/3510 33/ 27	475	350	100	90/90	382	424	2 376 0080 00	2 376 5071 00
IO 50/3515 33/ 27	505	350	150	90/90	395	437	2 376 0072 01	2 376 5072 00

IU 29/2000 31/ 41	290	200	0	95/ 105	316	355	2 376 0079 00	2 376 5070 00
IU 31/2500 31/ 41	310	250	0	95/ 105	349	395	2 376 0080 00	2 376 5071 00
IU 34/2505 31/ 41	340	250	50	95/ 105	362	408	2 376 0080 00	2 376 5071 00
IU 36/3005 31/41	360	300	50	95/ 105	349	395	2 376 0080 00	2 376 5071 00
IU 39/3010 31/ 41	390	300	100	95/ 105	362	408	2 376 0080 00	2 376 5071 00
IU 42/ 3015 31/41	420	300	150	95/ 105	375	422	2 376 0072 01	2 376 5072 00

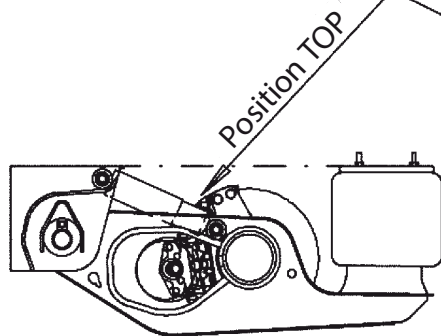
IO 44/3000 31/ 41	440	300	0	85/ 115	380	430	2 376 0072 01	2 376 5072 00
IO 49/ 3505 31/ 41	490	350	50	85/ 115	380	430	2 376 0072 01	2 376 5072 00

3.3 Installation instructions for shock absorbers – Steel hangers

Steel hanger bracket / cross member and trailing arm

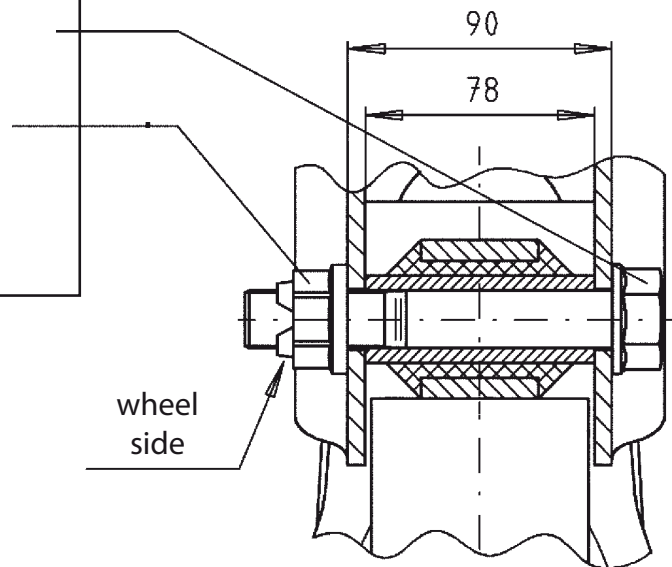
Bolt kit 3 341 2803 10
 Collared bolt M20 x 1.5 x 125 – 10.9
 4 343 2803 10 - dacromet coated -
 Collared nut M20 x 1.5 – 10
 4 247 4044 10 - dacromet coated -
 Tightening torque:
 Contact surfaces dry: 600 Nm

ATTENTION:
 TOP mark facing
 upwards in working
 position

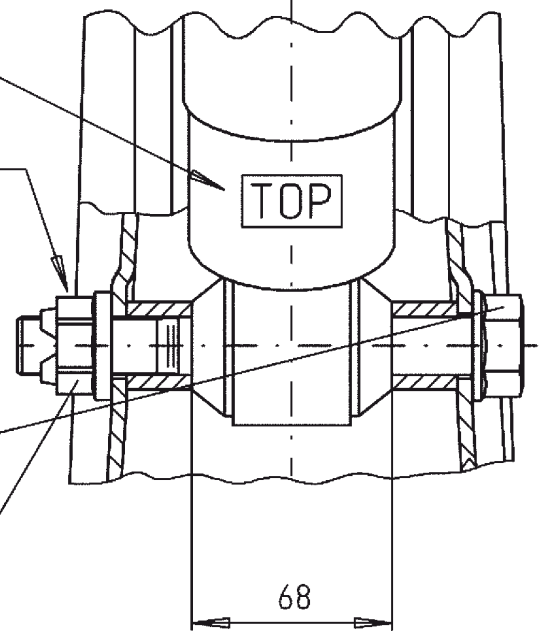


Bolt kit 3 341 2802 10
 Collared bolt M20 x 1.5 x 155 – 10.9
 4 343 2802 10 - dacromet coated -
 Collared nut M20 x 1.5 – 10
 4 247 4044 10 - dacromet coated -
 Tightening torque:
 Contact surfaces dry: 600 Nm

Hanger bracket,
cross member



wheel
side



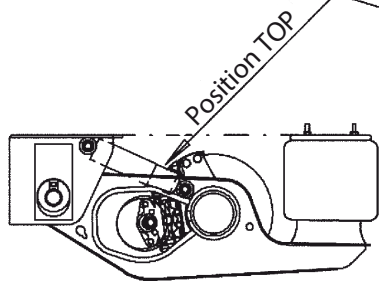
Trailing arm

3.4 Installation instructions for shock absorbers – ALU hangers

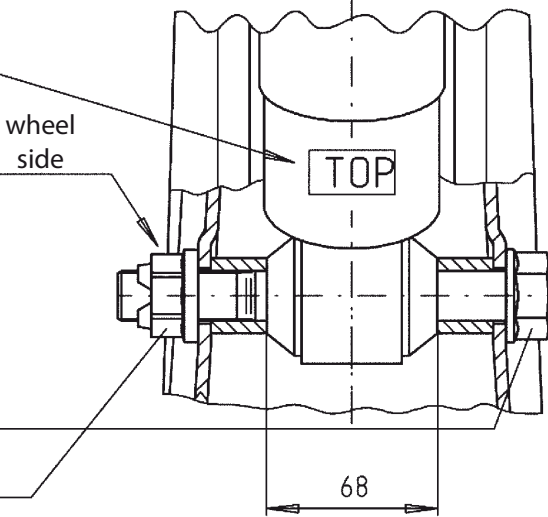
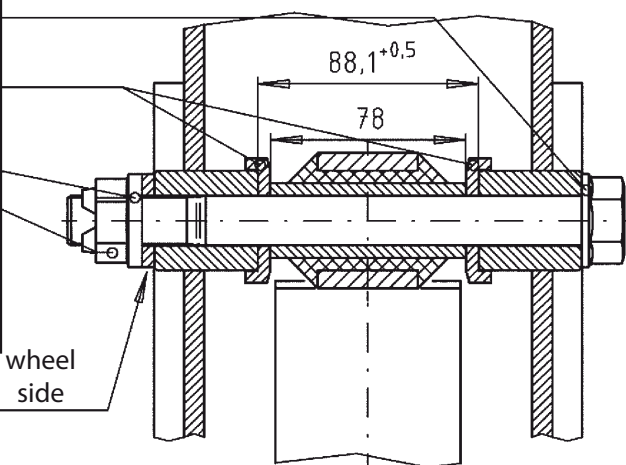
ALU hanger bracket and trailing arm

Mounting parts kit
3 044 1054 00
 Collared bolt M20 x 1.5 x 205 – 10.9
 4 343 2804 10 - dacromet coated -
 Spacer washer (2x) 1 097 0008 00
 Washer 1 331 0136 00
 Collared nut M20 x 1.5 – 10
 4 247 4044 10 - dacromet coated -
 Tightening torque:
 Contact surfaces dry: 400 Nm
 Caution: Mounting bolt not maintenance-free!
 See SAF maintenance and operating manuals
 for the service schedules.

ATTENTION:
 TOP mark facing
 upwards in working
 position



Aluminium hanger bracket



Bolt kit **3 341 2802 10**
 Collared bolt M20 x 1.5 x 155 – 10.9
 4 343 2802 10 - dacromet coated -
 Collared nut M20 x 1.5 – 10
 4 247 4044 10 - dacromet coated -
 Tightening torque:
 Contact surfaces dry: 600 Nm

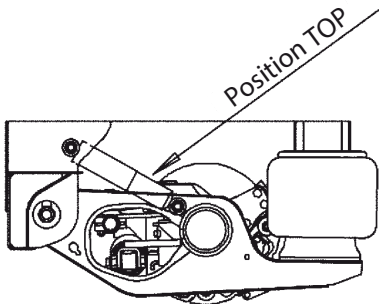
Trailing arm

3.5 Installation instructions for shock absorbers – Steering axle

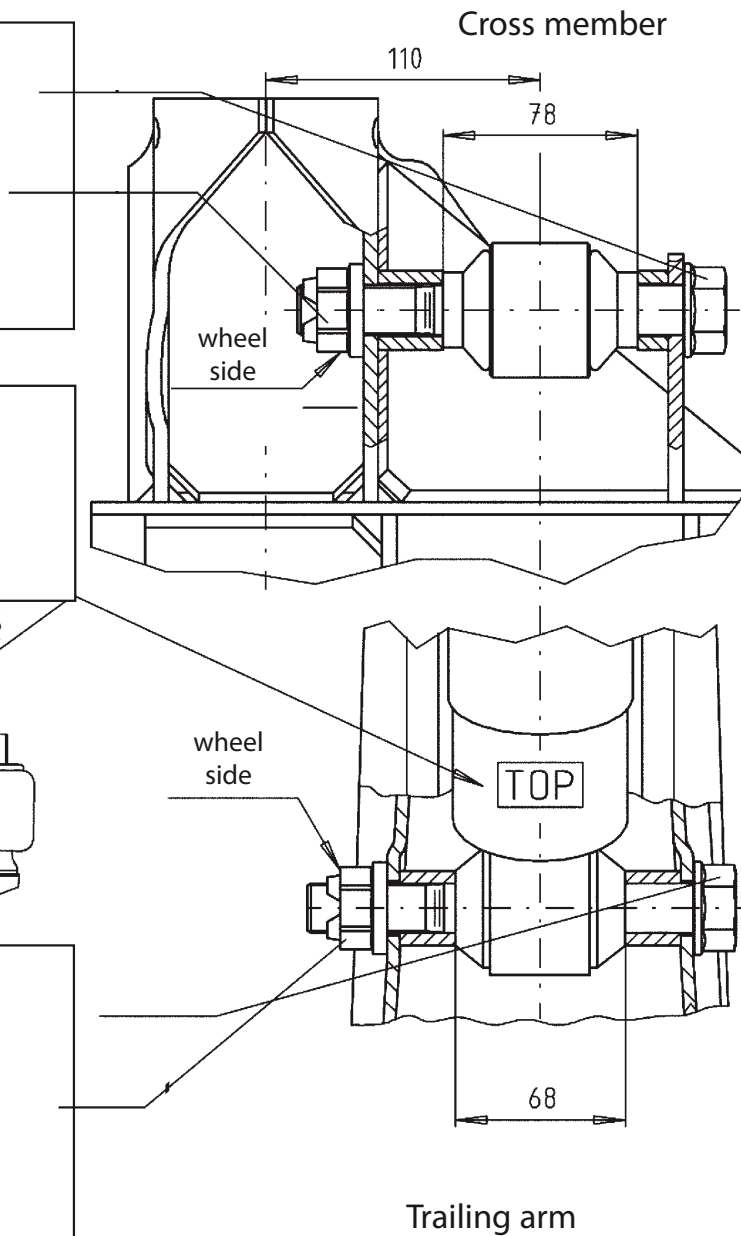
Trailing arm and cross member for steering axles

Bolt kit 3 341 2802 10
 Collared bolt M20 x 1.5 x 155 – 10.9
 4 343 2802 10 - dacromet coated -
 Collared nut M20 x 1.5 – 10
 4 247 4044 10 - dacromet coated -
 Tightening torque:
 Contact surfaces dry: 600 Nm

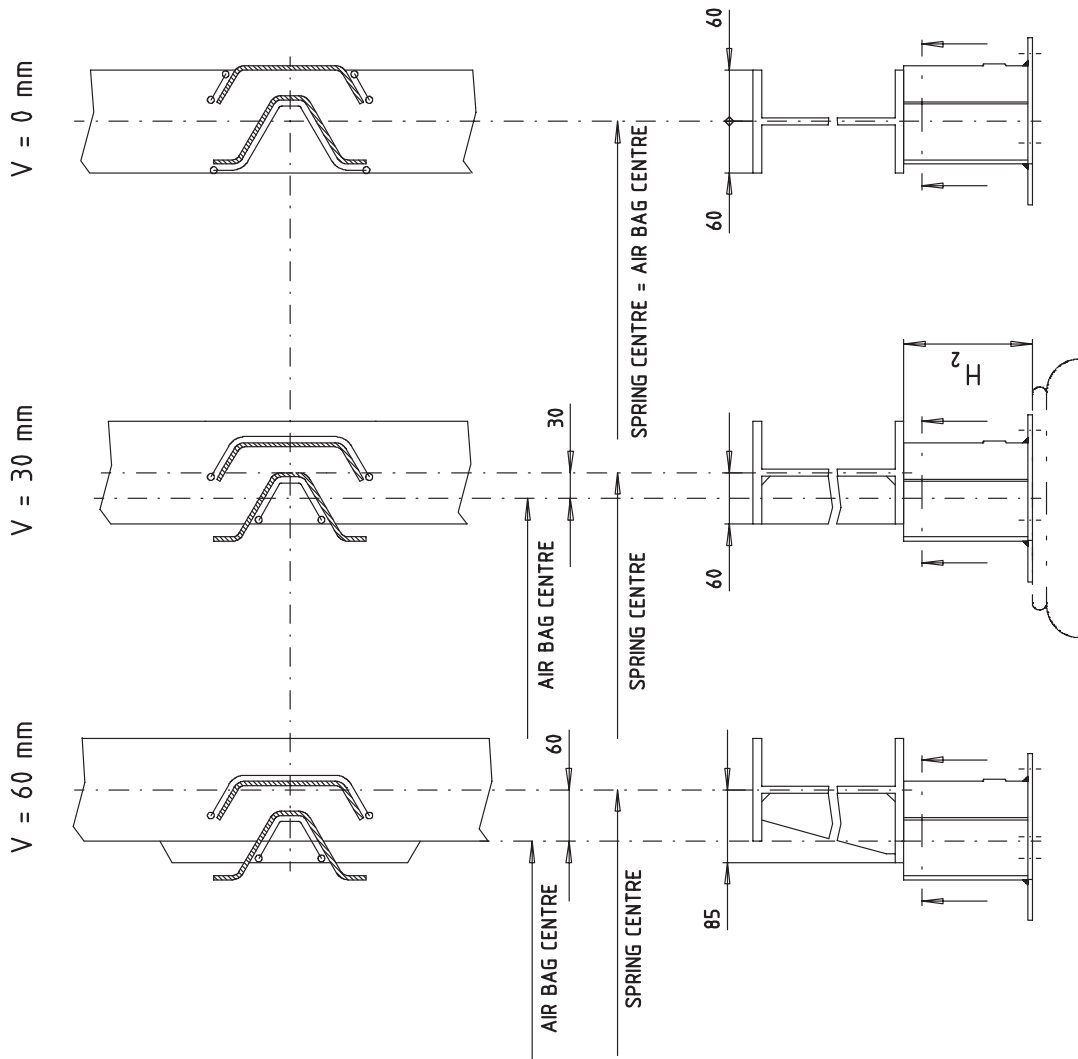
ATTENTION:
 TOP mark facing
 upwards in working
 position



Bolt kit 3 341 2802 10
 Collared bolt M20 x 1.5 x 155 – 10.9
 4 343 2802 10 - dacromet coated -
 Collared nut M20 x 1.5 – 10
 4 247 4044 10 - dacromet coated -
 Tightening torque:
 Contact surfaces dry: 600 Nm



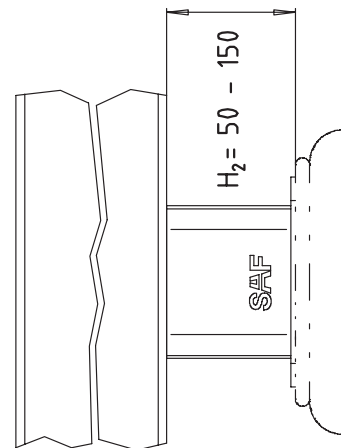
4.1 Welding recommendation – Air bag bracket (Air bag offset V)



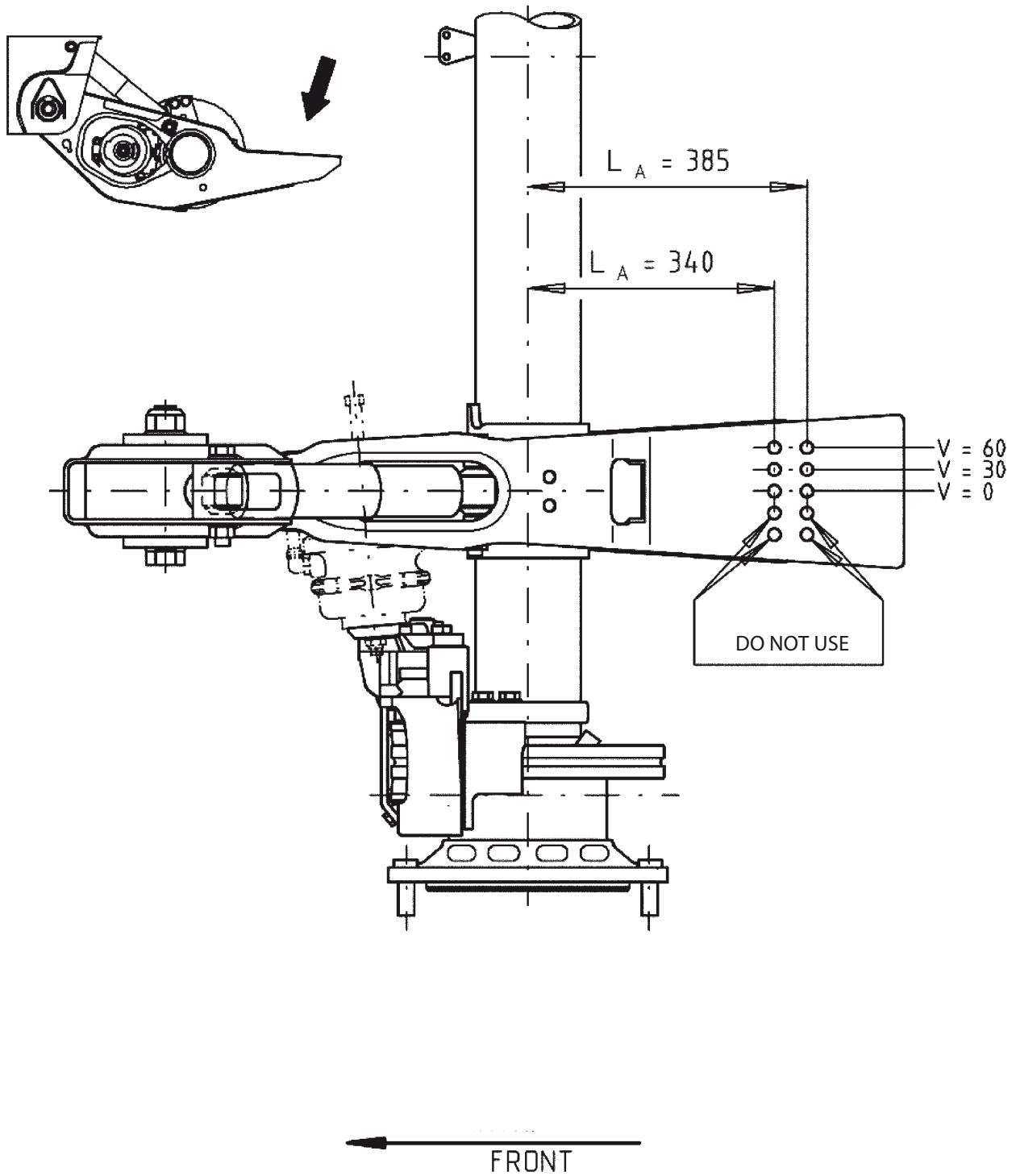
Weld seam course and bracing are SAF recommendation.

Dimension, design and implementation are under the responsibility of the vehicle manufacturer.

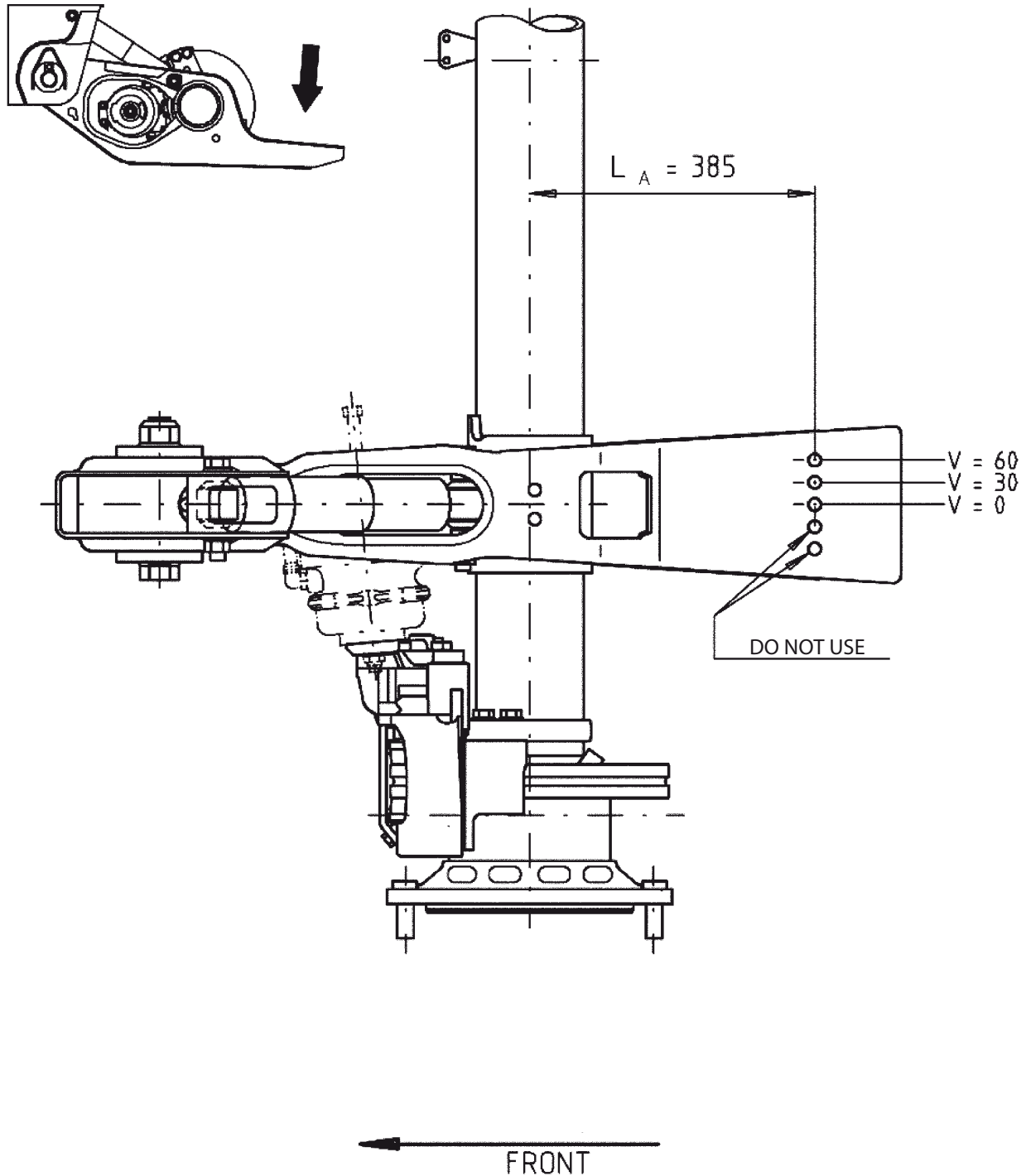
WELD SEAM COURSE



4.2 Air bag fixing / trailing arm – Air suspension series IO



4.3 Air bag fixing / trailing arm – Air suspension series IU



4.4 Air bag 300mm OD (Code 33) fixing – Offset 30mm

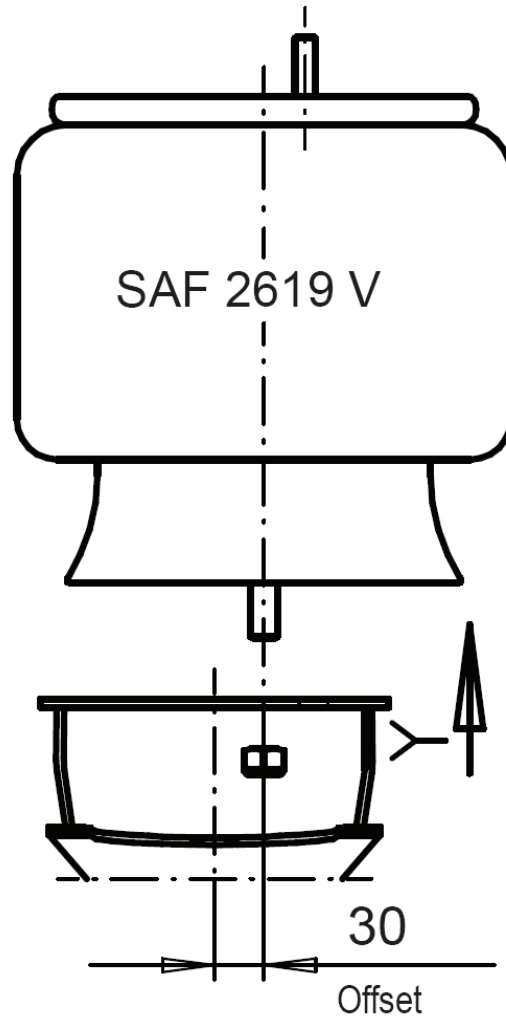
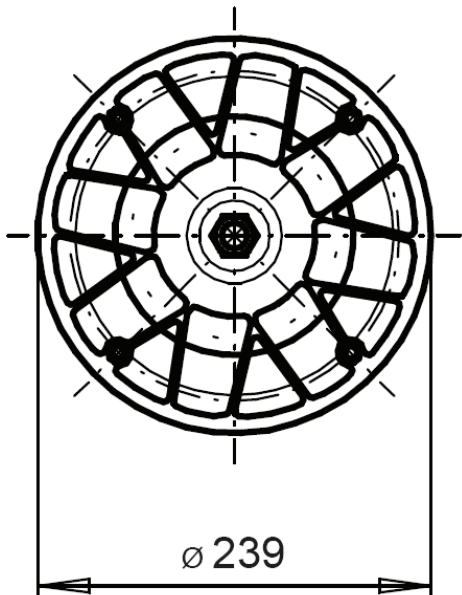
Note:

It is a responsibility of the OEM to check the tyres - air bags clearance and make a decision about required air bag offset.

There is no need for the auxiliary plate, between the trailing arm and the air bag, for the 30 mm air bag offset (see the drawing below).

VIEW Y

Underside of
plastic piston

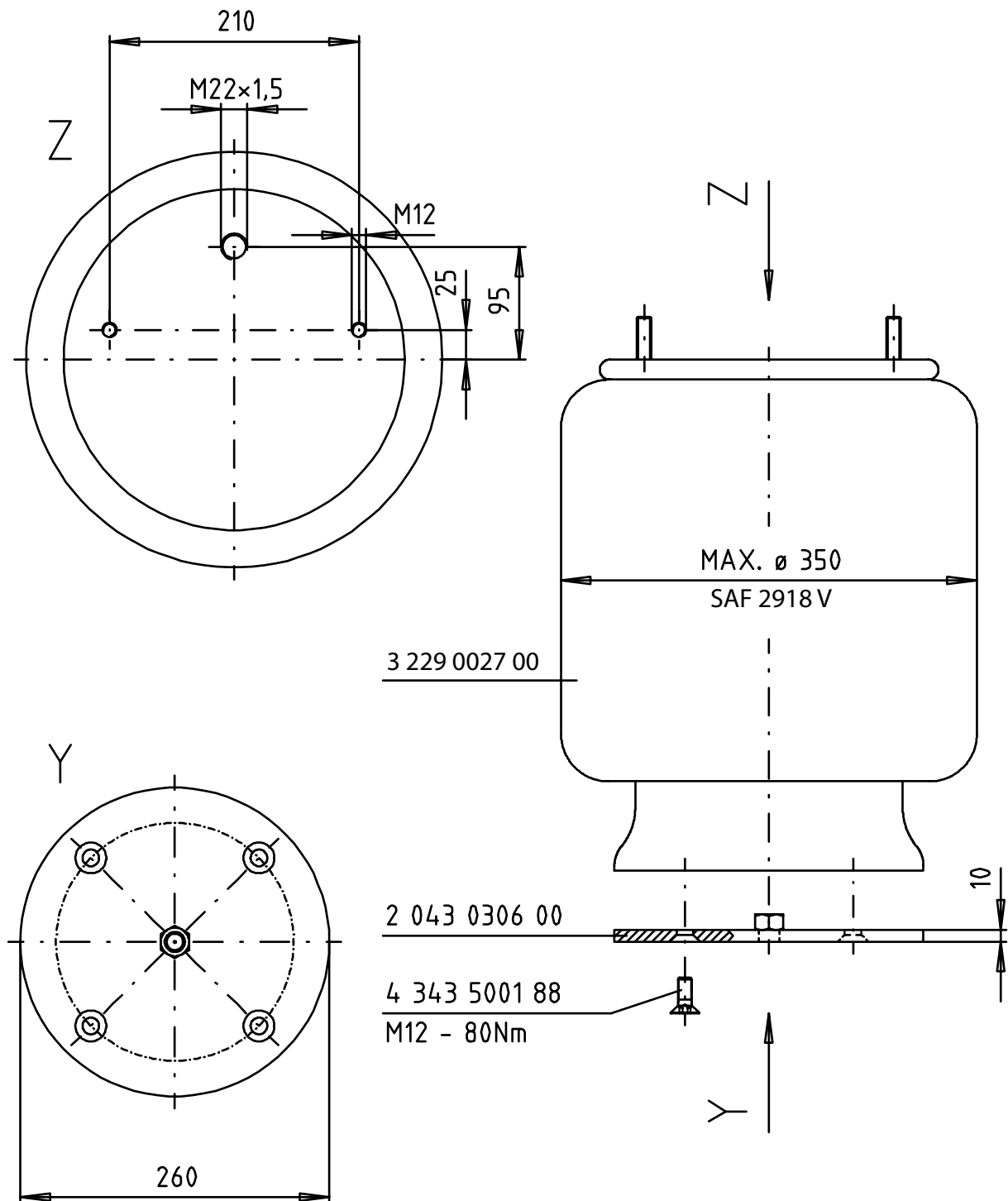


4.5 Air bag 350mm OD (Code 27) fixing – Offset 30 & 60mm

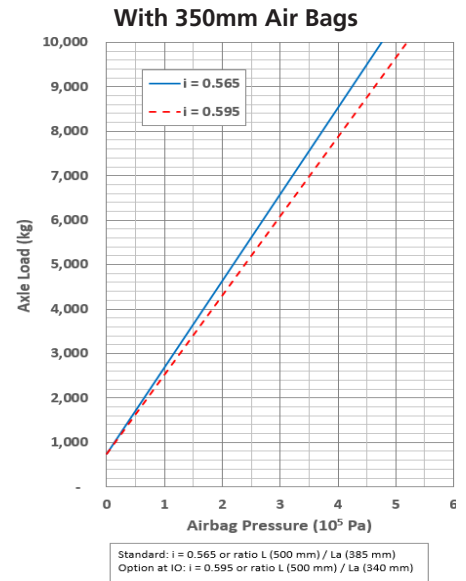
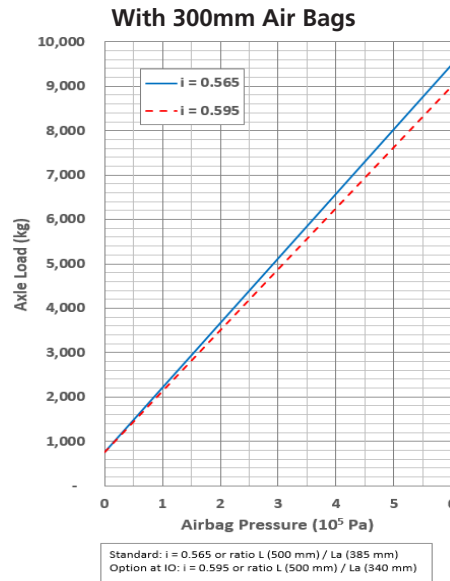
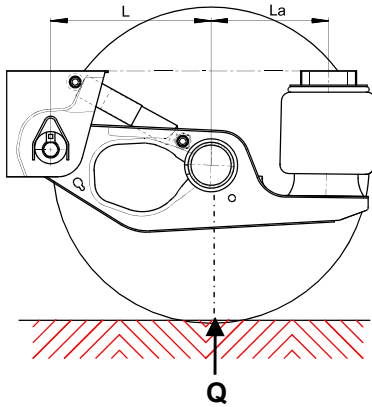
This air bag is manufactured with a steel plate on the bottom surface (see the drawing below) so there is no need for any auxiliary plate, between the trailing arm and the air bag, regardless of the offset (30 or 60mm).

Note:

It is a responsibility of the OEM to check the tyres - air bags clearance and make a decision about required air bag offset.



4.6 Calculation of the air bag pressure



Formula to calculate the air pressure when fully loaded: $P \text{ (bar)} = \frac{(Q - A) \times i \times p}{2}$

P = air pressure in the air bags (bar)

Q = permissible axle load on the ground (kg)

A = unsprung mass (kg) / mean value for $A = Q \times 0.1$

i = ratio
$$i = \frac{L1}{L1 + L2}$$

p = air pressure in the air bags per kg load
 air bag \varnothing 300 mm (SAF 2618 V / 2619 V) $p = 0.00227 \text{ bar/kg}$
 air bag \varnothing 350 mm (SAF 2918 V / 2923 V / 2926 V) $p = 0.0018 \text{ bar/kg}$

Example:

Air suspension IU 30/2505 33 (with air bag SAF 2619 V)
 $Q = 9000 \text{ kg}$ $A = Q \times 0.1 = 900 \text{ kg}$

$L1 = 500 \text{ mm}$ $i = \frac{500}{500 + 385} = 0.565$

$L2 = 385 \text{ mm}$

$p = 0.00227 \text{ bar/kg}$ $P \text{ (bar)} = \frac{(9000 - 900) \times 0.565 \times 0.00227}{2}$ $P = 5.2 \text{ bar}$

Formula to calculate the air pressure when partially loaded $P_t \text{ (bar)} = \frac{(Q_t - A) \times i \times p}{2}$

Q_t = axle load on the ground partially loaded

Example:

Air suspension IU 30/2505 33 (with air bag SAF 2619 V)
 $Q = 9000 \text{ kg}$ $A = Q \times 0.1 = 900 \text{ kg}$
 $Q_t = 2100 \text{ kg}$

$L1 = 500 \text{ mm}$ $i = \frac{500}{500 + 385} = 0.565$

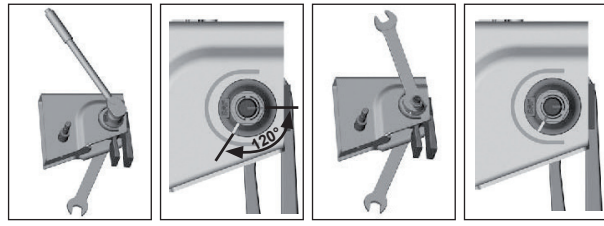
$L2 = 385 \text{ mm}$

$p = 0.00227 \text{ bar/kg}$ $P_t \text{ (bar)} = \frac{(2100 - 900) \times 0.565 \times 0.00227}{2}$ $P_t = 0.77 \text{ bar}$

5.1 Steel hanger brackets

INTRADISC / INTRADRUM SUSPENSION MAINTENANCE

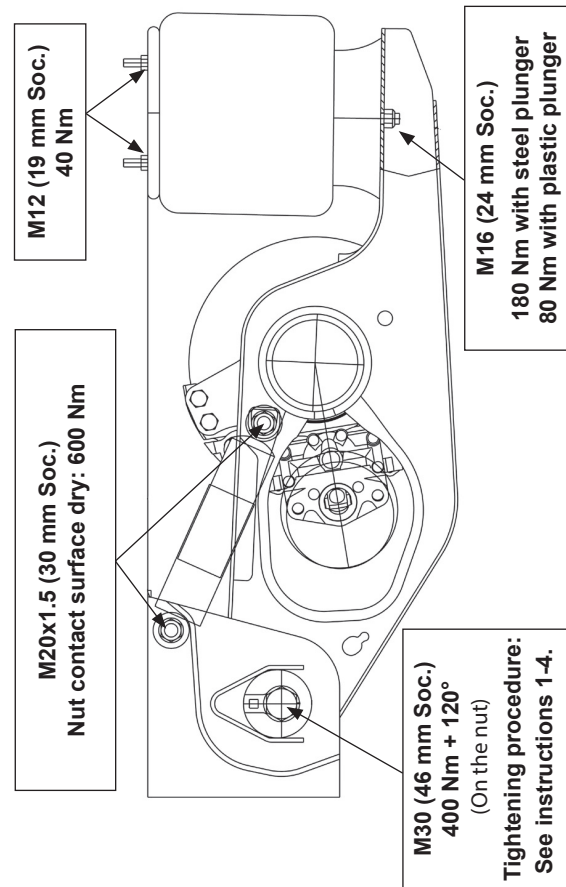
TORQUE SETTINGS AND PROCEDURES - STEEL HANGERS



- 1*. Pre-tighten to : 400 Nm.**
Use torque wrench with socket size of 46mm.
*Torque must be applied to the nut.
- 2*. Mark the angle of 120° (two flats) for the final tightening.**
- 3*. Perform the final tightening of 120° (two flats)**
Use impact wrench or extend lever to 2.5 m. Hold hexagon bolt head to prevent it from turning during the final tightening.
- 4. Clearly mark with counterpunch and line marker relative position of the bolt, nut and hanger after the final tightening for the future visual inspections (to be easily visible)!**

***Note 1:** As an alternative to points 1-3, the pivot nut can be tightened to **1200Nm** if the appropriate torque wrench is available.

***Note 2:** The pivot connection **MUST** be marked by the **OEM**, otherwise there will be no warranty.

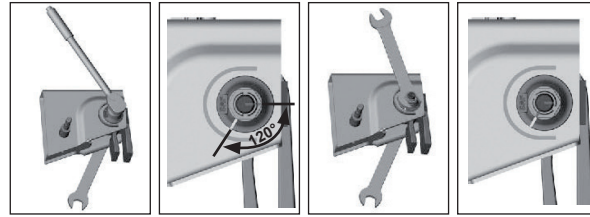
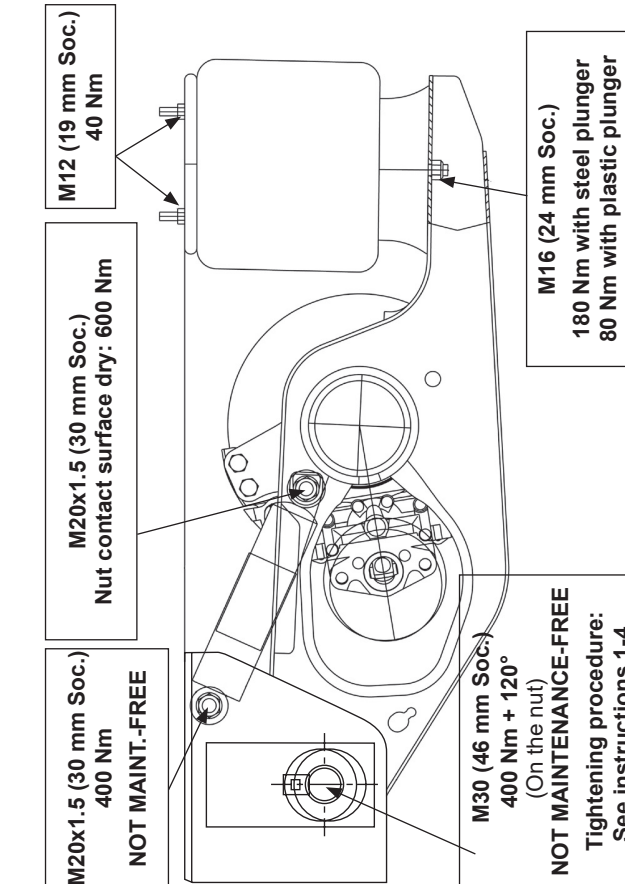


The First Service Provider is responsible for the shock absorber bolts and axle spindle nuts re-torque/marking for the regular visual inspection as required in the "Repair and Maintenance Manual".

Warranty on SAF Intradisc/Intradrum suspension would be void if the prescribed maintenance procedures were not performed as per "Repair and Maintenance Manual". If the Manual has not been delivered with the trailer, please call **SAF-HOLLAND - Customer Service on 03 9971 7900**.

5.2 ALU hanger brackets

INTRADISC / INTRADRUM SUSPENSION MAINTENANCE
TORQUE SETTINGS AND PROCEDURES - ALLOY HANGERS



- 1*. Pre-tighten to : 400 Nm.**
Use torque wrench with socket size of 46mm.
*Torque must be applied to the nut.
- 2*. Mark the angle of 120° (two flats) for the final tightening.**
Alternatively pivot bolt can be tightened to 1200Nm if the appropriate torque wrench is available.
- 3*. Perform the final tightening of 120° (two flats)**
Use impact wrench or extend lever to 2.5 m. Hold hexagon bolt head to prevent it from turning during the final tightening.
- 4. Clearly mark with counterpunch and line marker relative position of the bolt, nut and hanger after the final tightening for the future visual inspections (to be easily visible)!**

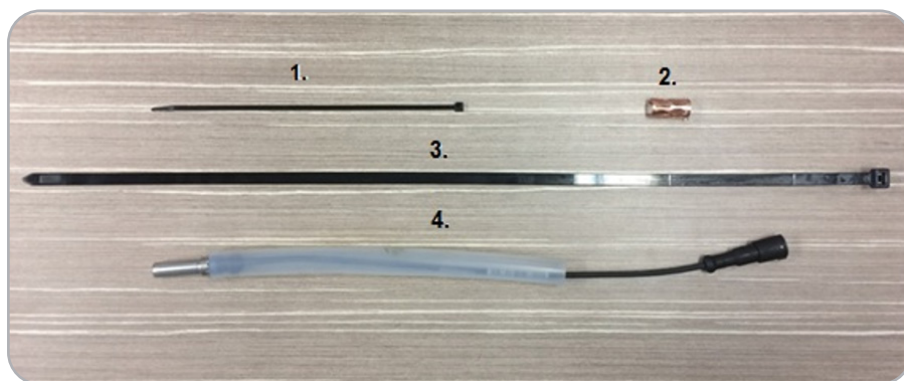
***Note 1:** As an alternative to points 1-3, the pivot nut can be tightened to **1200Nm** if the appropriate torque wrench is available.

***Note 2:** The pivot connection **MUST** be marked by the **OEM**, otherwise there will be no warranty.

The First Service Provider is responsible for the shock absorber bolts and axle spindle nuts re-torque/mark for the regular visual inspection as required in the "Repair and Maintenance Manual".

Warranty on SAF Intradisc/Intradrum suspension would be void if the prescribed maintenance procedures were not performed as per "Repair and Maintenance Manual". If the Manual has not been delivered with the trailer, please call **SAF-HOLLAND - Customer Service on (03) 9971 7900**

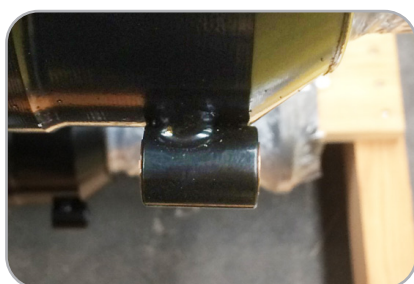
6.1 Installation instructions for Integral ABS Sensor



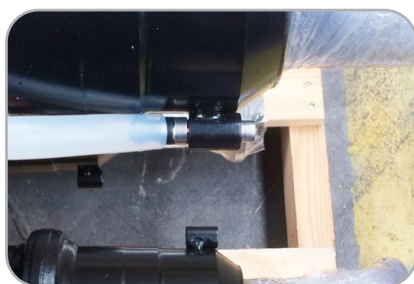
Item	Part Number	Description
1.	EX0145	Cable Tie, Black 200mm x 4.8mm
2.	8997598824	ABS Mini Clamping Sleeve
3.	AX9666	Cable Tie 550mm Long 9mm Wide Nylon Black
4.	4410350010	ABS Mini Sensor WABCO



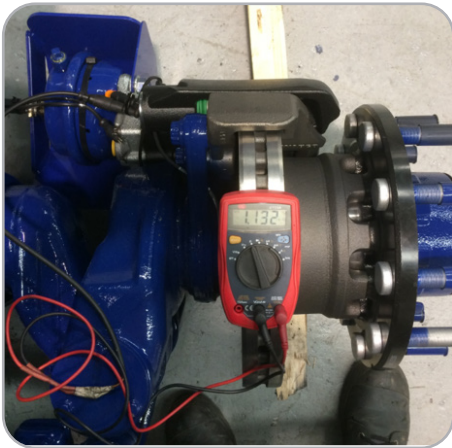
1. Install the ABS Mini Clamping Sleeve (item 2) into the ABS holder



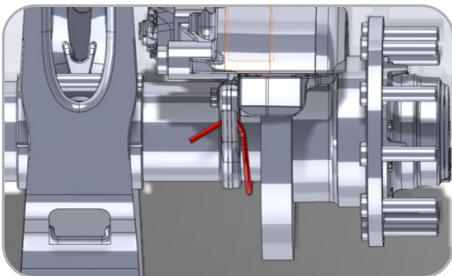
2. Ensure the ABS Mini Clamping sleeve is seated flush with the edge of the holder



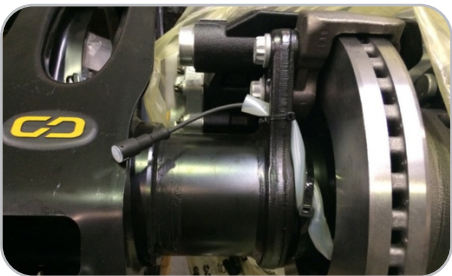
3. Push the ABS Mini Sensor (item 4) into the clamping sleeve until it contacts the pole wheel at the wheel end (image shown without hub and rotor installed)



- 4.** Perform resistance test sensor with multimeter (Ω)
- Turn on multimeter as per manufacturer's instructions and set it to Ohms setting (Ω)
 - Reading on multimeter will appear when sensor is connected
 - Spin hub and observe display for fluctuating reading
 - If no reading is observed or does not fluctuate, check sensor to ensure it is pushed all the way up to the pole ring.
 - Retest and check for fluctuating reading on multimeter.
 - If sensor still fails to display read replace with new sensor and repeat test

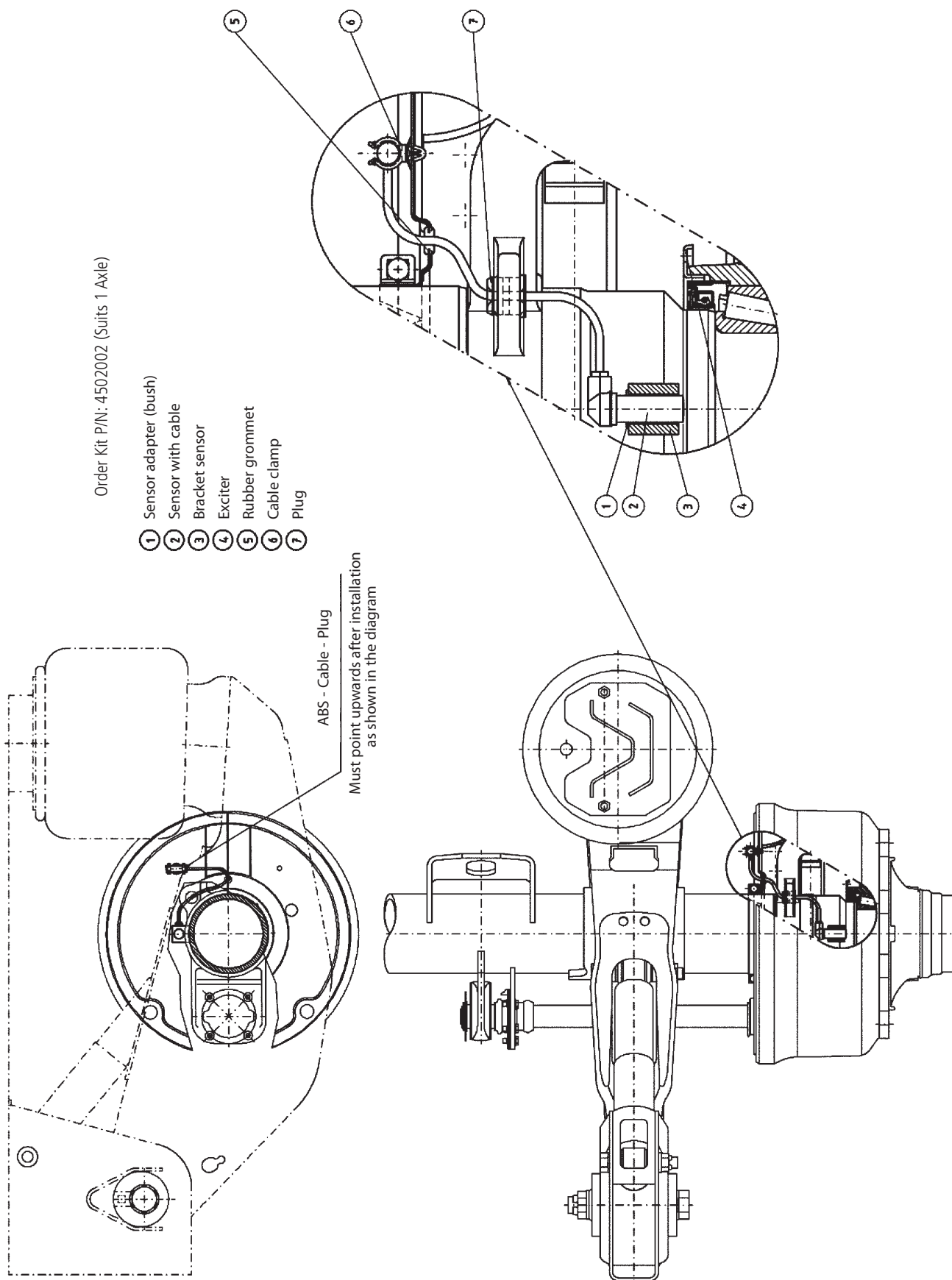


- 5.** Route cable and cover through hole in brake spider and secure
- Use cable tie (item 3) to secure sensor cable to axle as shown
 - Use cable tie (item 1) to secure sensor through hole in brake spider as per picture below
 - Trim cable tie ends



6.2 Installation instructions for ABS cable INTRADRUM

Series IU/IO



6.3 Checking and adjustment

S-cam brakes with manual slack adjusters

The natural wear of the brake drum and brake lining necessitate frequent adjustment of the wheel brakes in order to maintain the maximum stroke of the brake cylinders.

In order to achieve good braking, it is essential to minimise the clearance between the brake drum and brake lining. In order to check the clearance, the service brake is applied with full pressure and the stroke of the brake cylinder checked.

If the stroke at the yoke end is more than 2/3 of the maximum cylinder stroke, the brake must be urgently adjusted. If the brakes are correctly adjusted, it should not be possible to move the piston rod more than 15 mm by hand.


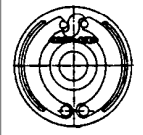

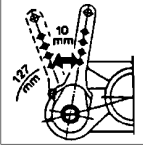
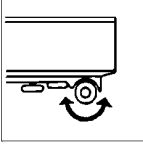
No clearance between piston and diaphragm permitted in the rest position.

Adjustment is performed at the adjustment screw (WAF 19)

A

B

L

- 1  Turn the adjusting screw to the right until the
- 2  brake shoes are firmly up against the brake drum.
- 3  Turn the adjusting screw to the left until
- 4  the free travel of the slack adjuster (at 127 mm) is approx. 10 - 15 mm.
- 5  It must be possible to turn the wheel freely without braking (without scraping noises).

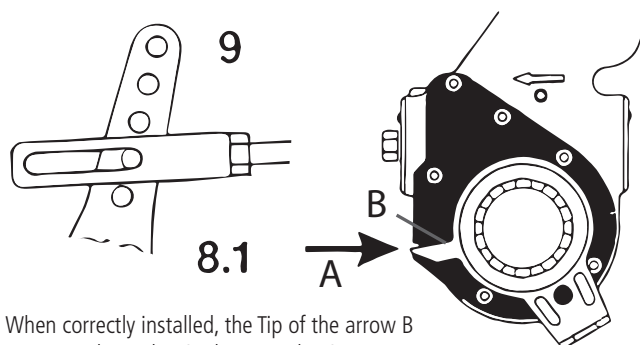
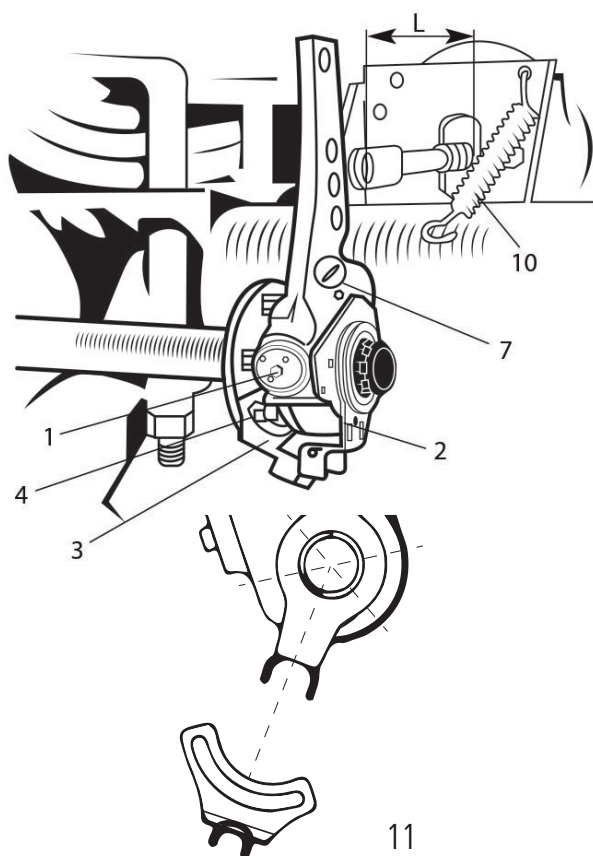
Special instructions apply for automatic slack adjusters (see adjustment procedure on the following pages).

A = Angle must not exceed 90° at 1/2 stroke.

B = No contact permissible between slack adjuster and axle beam during emergency braking.

L = Observe piston rod length as per the SAF-HOLLAND specifications.

6.4 Adjustment of HALDEX automatic slack adjusters



Cams and brake shoes are in the zero position.

Observe the correct piston rod length "L" as given in the SAF-HOLLAND specifications.

Brake chambers

1. Before installation, ensure that the brakes are fully released.
2. Spring brake chambers, on the other hand, must be under full working pressure (6 bar min).

IMPORTANT: If this is not observed, the basic setting will be wrong!

3. Grease the camshaft.
4. Install mounting point strap (3); be sure to use two mounting bolts (4).
5. Install the slack adjuster on the camshaft.
6. The arrow mark (7) points in the braking direction.
7. Turn adjusting screw (1) until the bore in the slack adjuster (8.1) is aligned with the bore in the yoke end (9) (see figure).
8. Grease cotter pin and secure.

9. Hook in return spring (10).
10. Turn the control arm in the direction of the arrow (working direction of the slack adjuster) into its end position without using force.
11. In this end position of control arm (2), tighten mounting bolts (4).
12. With the fixed mounting point (11), ensure that the 2 U-profiles engage correctly in one another.

NOTE FOR SELF-STEERING AXLES: Weld on mounting point strap (3) in this position.

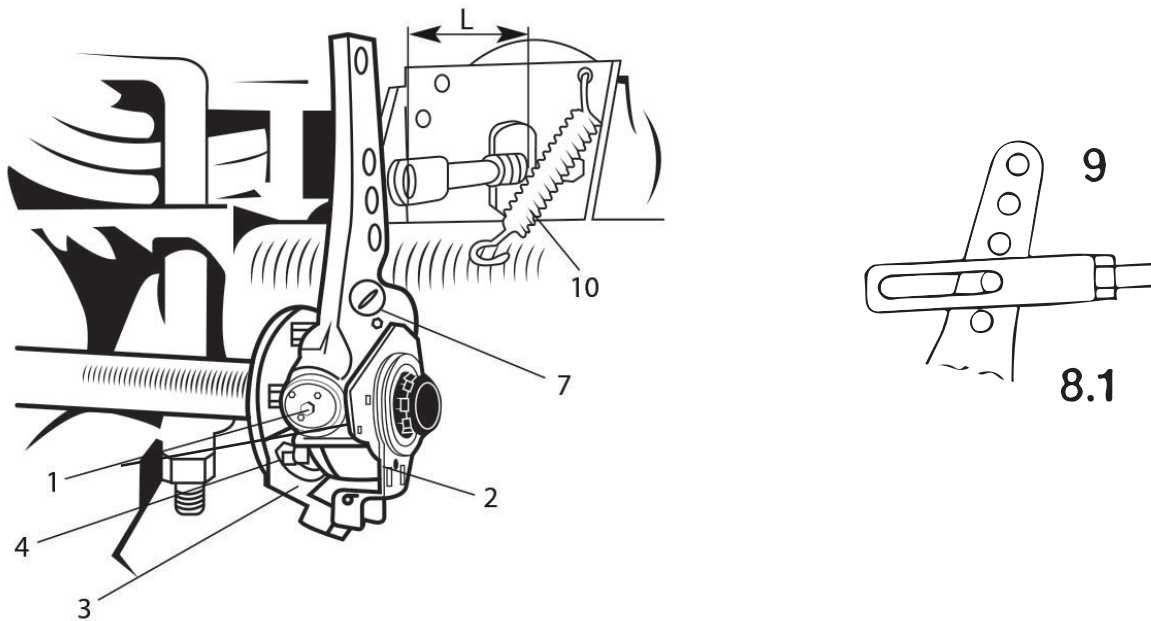
13. Fix the slack adjuster on the camshaft.
14. Axial clearance: Adjust the nominal value of 0.5 - 2 mm using shims.
15. Adjust the clearance of the brake lining by turning adjusting screw (1) in clock-wise direction until the brake lining is in contact with the brake drum. Then back off adjusting screw (1) by 3/4 turn.

Do not use an impact wrench!

FUNCTION CHECK

- If the adjustment coupling is functioning correctly, a torque of at least 18 Nm must be felt when backing off adjusting screw (1); a ratchet noise should also be clearly audible.
- Actuate the service brake several times, check the free running of the brake drum, check the clearance. If necessary, repeat the adjustment of the slack adjuster.

6.5 Installation and adjustment of S-ABA automatic slack adjusters



Cams and brake shoes are in the zero position.

Observe the correct piston rod length "L" as given in the SAF-HOLLAND specifications.

Brake chambers

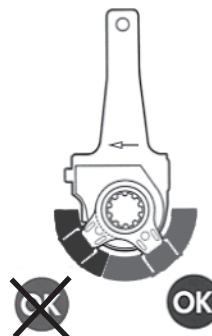
1. Before installation, ensure that the brakes are fully released.
2. Spring brake chambers, must be under full working pressure (6 bar min).

IMPORTANT: If this is not observed, the basic setting will be wrong!

3. Grease the camshaft.
4. Install mounting point strap (3); be sure to use two mounting bolts (4).
5. Install the slack adjuster on the camshaft.
6. The arrow mark (7) points in the braking direction.
7. Turn adjusting screw (1) until the bore in the slack adjuster (8.1) is aligned with the bore in the yoke end (9) (see figure).
8. With the fixed mounting point, ensure that the 2 U-profiles engage correctly in one another.
9. Grease cotter pin and secure.
10. Hook in return spring (10).
11. Fix the slack adjuster on the camshaft.
12. Axial clearance: Adjust the nominal value of 0.5 - 2 mm using shims.

13. Adjust the control arm.

14. Observe the possible setting range for the control lever position.



15. Adjust the clearance of the brake lining by turning adjusting screw (1) in clock-wise direction until the brake lining is in contact with the brake drum. Then back off adjusting screw (1) by 3/4 turn.

Do not use an impact wrench!

FUNCTION CHECK

- If the adjustment coupling is functioning correctly, a torque of at least 18 Nm must be felt when backing off adjusting screw (1); a ratchet noise should also be clearly audible.
- Actuate the service brake several times, check the free running of the brake drum, check the clearance. If necessary, repeat the adjustment of the slack adjuster.

7.1 INTRADISC Integral standard specifications

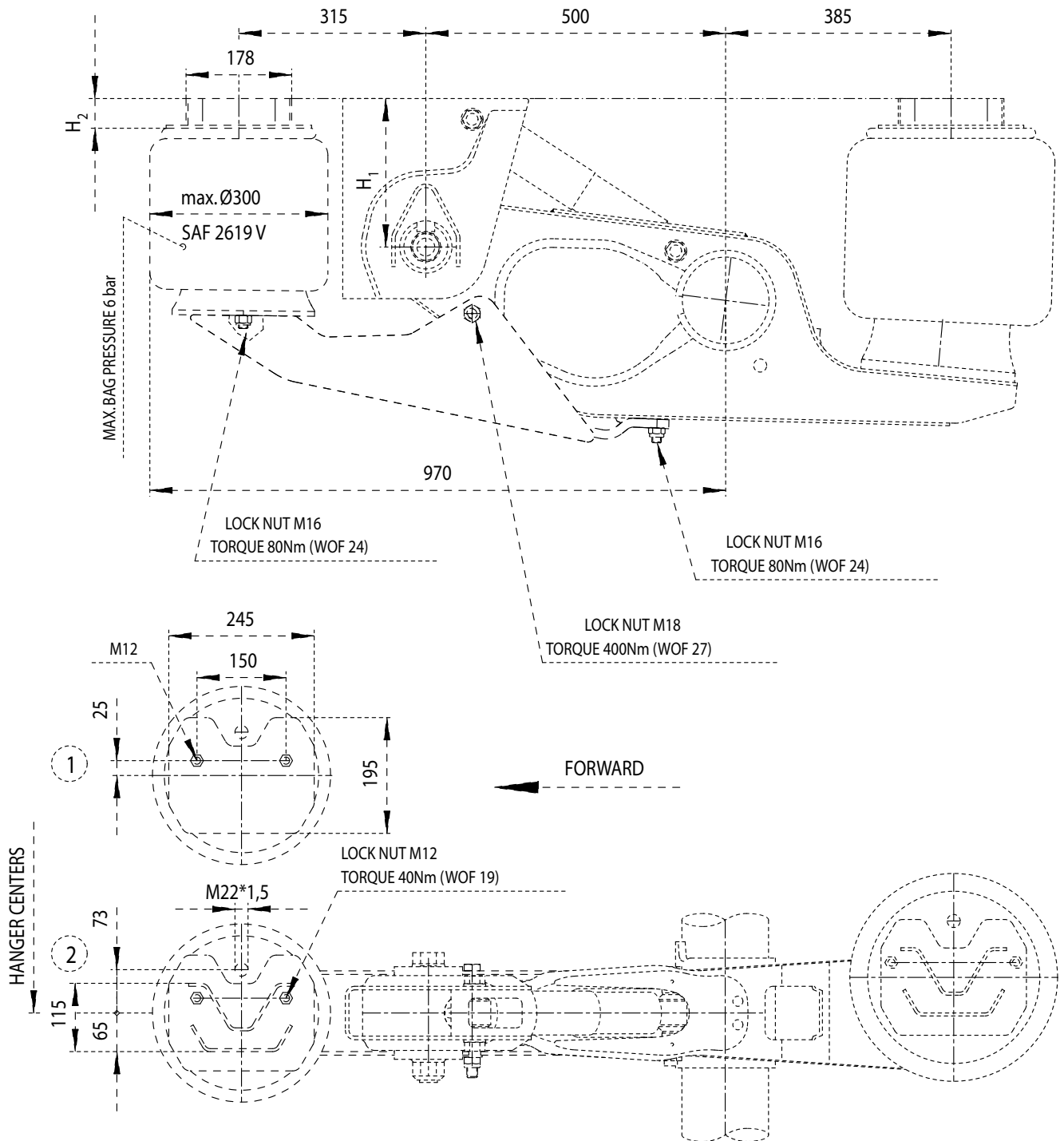
Model	Nominal Ride HT	Weight (Kg) (with 300mm air spring)	Weight (Kg) (with 350mm air spring)
IU 25/2000 XX	250mm	387	392
IU 28/2005 XX	280mm	383	394
IU 30/2505 XX	300mm	385	396
IO 35/2000 XX	355mm	390	401
IO 37/2500 XX	375mm	393	404
IO 42/3005 XX	425mm	399	410
IO 47/3510 XX	475mm	405	416

7.2 INTRADRUM standard specifications

Model	Nominal Ride HT	Weight (Kg) (with 300mm diameter air spring)	Weight (Kg) (with 350mm diameter air spring)
IU 25/2000 XX	250mm	427	438
IU 28/2005 XX	280mm	429	440
IU 30/2505 XX	300mm	431	442
IO 35/2000 XX	355mm	430	441
IO 37/2500 XX	375mm	433	444
IO 42/3005 XX	425mm	439	450
IO 47/3510 XX	475mm	445	456

Note: All weights include wheel nuts and auto slack adjusters.
 Brake chambers weights are not included.
 For manual slack adjusters take off 2 kg per axle.

8.1 SAF-INTRA suspensions one-side lift kit



SUSPENSION TYPE	VALUE H1	VALUE H2	KIT No	KIT WEIGHT
IUXX/20XX XX IOXX/20XX XX	200	5	① 3027 1257 00	30.5 Kg
IUXX/25XX XX IOXX/25XX XX	250	50	② 3027 1258 00	31.4 Kg
IUXX/30XX XX IOXX/30XX XX	300	100	② 3027 1259 00	32.3 Kg
IUXX/35XX XX IOXX/35XX XX	350	150	② 3027 1260 00	33.2 Kg

8.2 Installation instructions

Following kits are available:

Kit-No.:	Application:
3 027 1257 00	for hanger bracket / cross member height H1=200 mm
3 027 1258 00	for hanger bracket / cross member height H1=250 mm
3 027 1259 00	for hanger bracket / cross member height H1=300 mm
3 027 1260 00	for hanger bracket / cross member height H1=350 mm

Kit-Contents:	SAF Part No.
1 x lift arm	2 239 0042 00
1 x guide	1 148 0010 00
1 x air bag	3 229 0033 00
1 x hex bolt	4 343 0151 10
1 x ring	4 348 1021 00
1 x lock nut	4 247 4026 10
2 x lock nut	4 247 4007 80
1 x hex bolt	4 343 1010 88
1 x air spring plate	1 043 0261 01 (H1 = 200 mm)
1 x air spring support	2 237 0081 01 (H1 = 250 mm)
1 x air spring support	2 237 0080 01 (H1 = 300 mm)
1 x air spring support	2 237 0082 01 (H1 = 350 mm)
2 x rip nut	4 247 4047 10

Installation Instructions

Lift arm installation

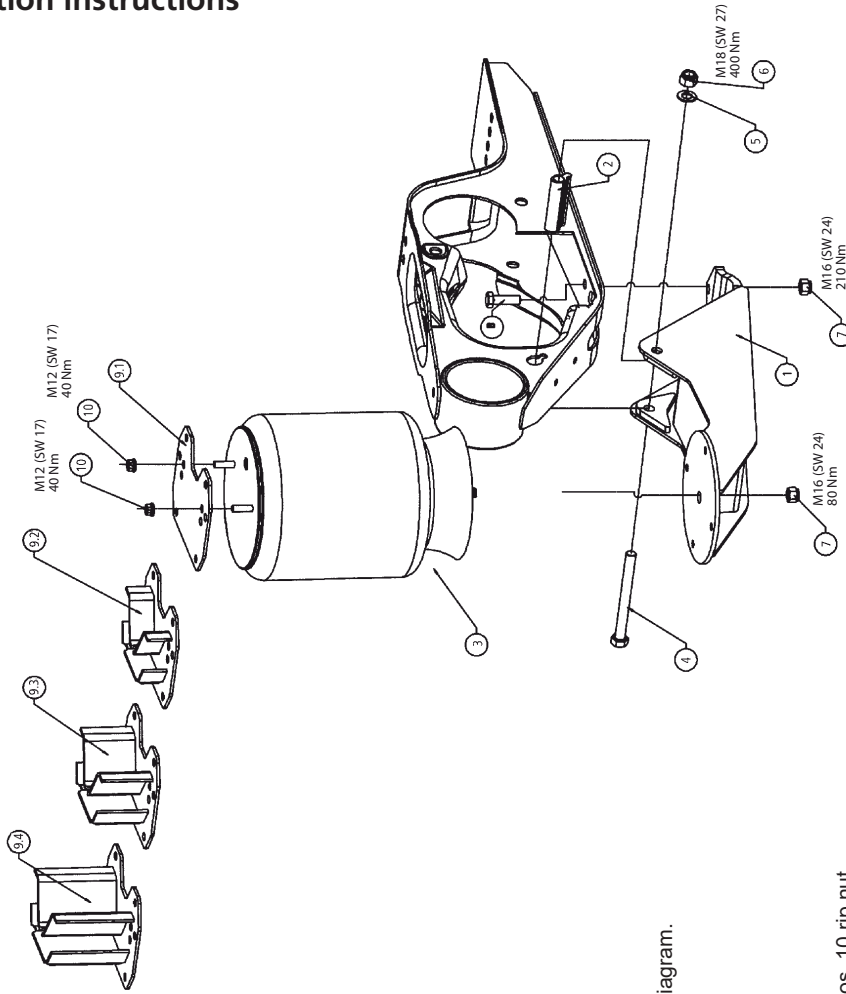
- Position pos. 2 guide in the gap in the suspension arm.
- Place pos. 1 lift arm in pos. 2 guide using pos. 4 bolt, pos. 5 ring and pos. 6 nut as per the diagram.
- Fix pos. 1 lift arm to the underside of the arm with pos. 8 bolt and pos. 7 nut.
- Tighten according to the torque in the diagram.

Lift bag installation:

- Fix pos. 9.1/9.4 air spring support/plate to the chassis as per diagram 6 027 1257 00.
- Screw pos. 3 air bag to pos. 1 lift arm with pos. 7 nut.
- Screw the dowel pins of the air bag plate to the pos. 9.1/9.4 air spring support/plate using pos. 10 rip nut.
- The pos. 3 air bag supply must lie in the cut-out of pos. 9.1/9.4 air spring support/plate as shown in the diagram.
- Tighten according to the torque in the diagram.

Please note:

- See separate information sheets for axle lift circuit diagrams



8.3 SAF-INTRA suspensions two-side lift kit

We recommend a minimum of 100 mm lift travel when setting the ride height.

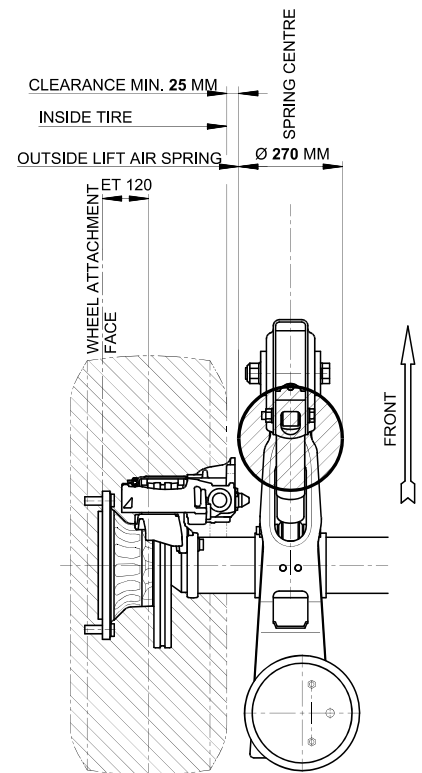
- Not suitable for 195" tires due to insufficient ground clearance.

Kit Number:	Application	Weight [kg Per Axle]
3 027 127800	For Steel Hanger Bracket	21

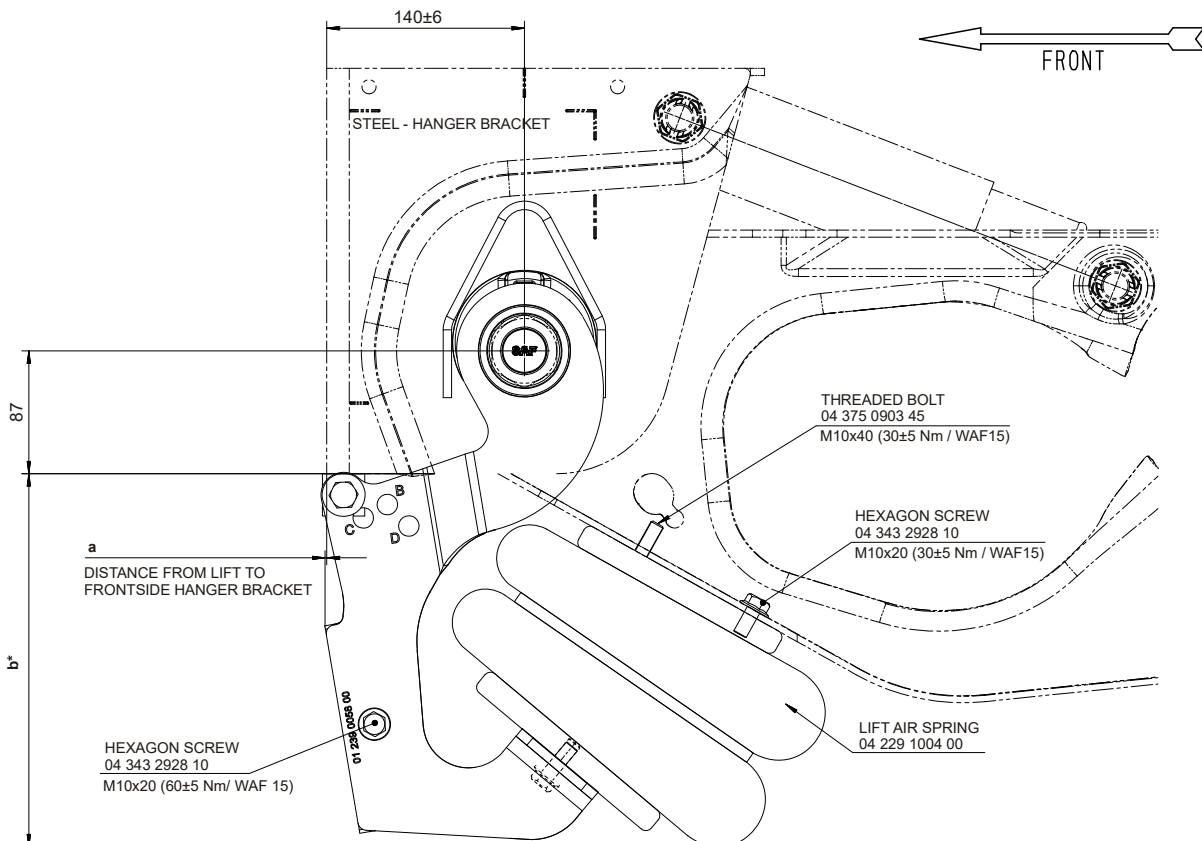
Use the same formula for calculating the clearance between the airbag and tyre, but subtract an additional 270 mm from the tyre width, as follows:

$$C = \frac{AX - LM - \text{Airbag Diameter} - \text{Tyre Width} - 270}{2} + V - ET$$

- where:
- AX = distance between wheel attachment faces (mm)
 - LM = distance between spring centres (mm)
 - V = airbag offset
 - ET = tyre offset " "(obtained via other technical sources,e.g.ETRTO)"



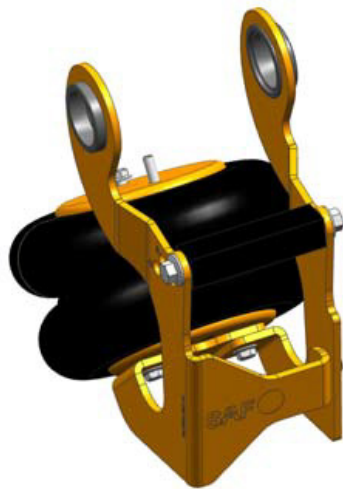
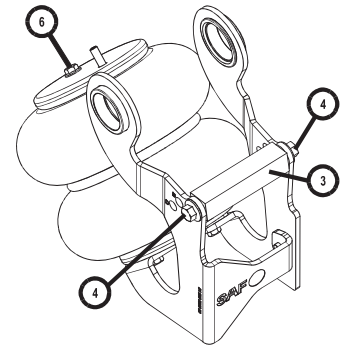
Measurement	From Position			
	A	B	C	D
a (±6 mm)	5	15	30	55
B	270	280	285	290



8.3 SAF-INTRA suspensions two-side lift kit

INSTALLATION OF THE LIFTING SPRING:

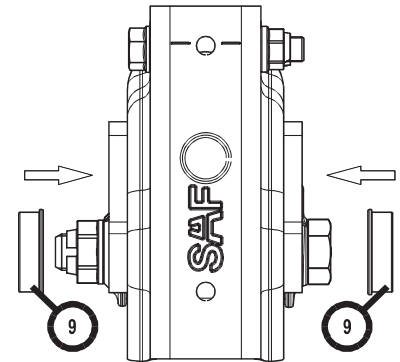
1. Demount support bar (3) with hexagon screws (4), and demount hexagon screw (6) on lift air



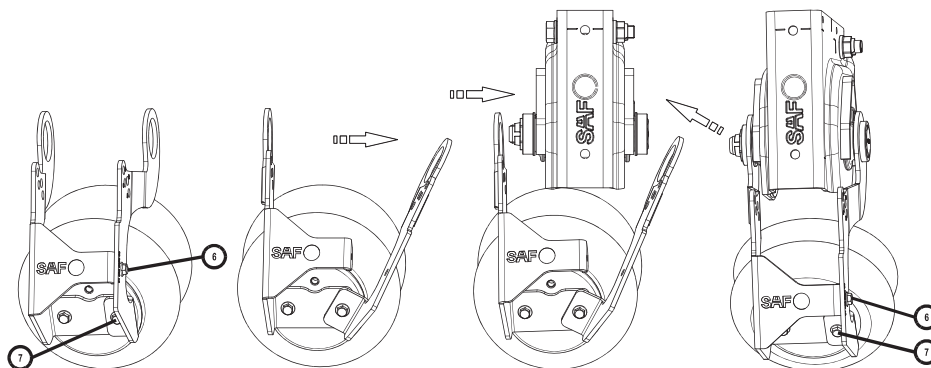
2. Remove cable straps. Slide one washer (9), over the nut against the thrust washer and one over the bolt head of the pivot bolt mounting against the eccentric washer.

Attention!

The shoulder of the washer is towards the sides of the hanger bracket.



3. Demount hexagon screws (6), loosen up the hexagon screw (7), push the lift arm outwards and slide them over the washers (9).



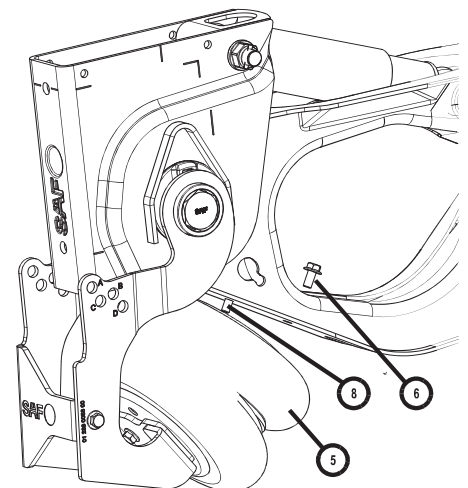
4. Tighten hexagon screw (6), **Tightening torque 60 Nm/ WAF15** and tighten hexagon screw (7), **Tightening torque 30 Nm/ WAF15**
5. Position the lift air bag (5) at the trailing arm by threaded bolt (8). And fixate by the hexagon screw (6) from the inside of the trailing arm. **Tightening torque 30 Nm/ WAF15**

Attention!

Because of the accessibility to the screw (6) please, consider the position of the brake chamber!

6. Take the required position (**Pos.**) as described from the Table. Mount the support bar (3) in a horizontal position against the bottom of the hanger bracket with the hexagon screws (4).

Tightening torque 120 Nm/ WAF18



Note: Max. lift air bag pressure 6,0 bar; residual pressure 0,5 bar!

8.3 SAF-INTRA suspensions two-side lift kit

INSTALLATION INSTRUCTION

1. Positioning

The lift needs to be adjusted to every air suspension type (combination of trailing arm, hanger bracket, air spring and air spring bracket). The adjustment is done by positioning the support bar between the lift arms. This position can be taken out of the table below.

2. Installation Required Space In Front Of The Hanger Bracket (A)

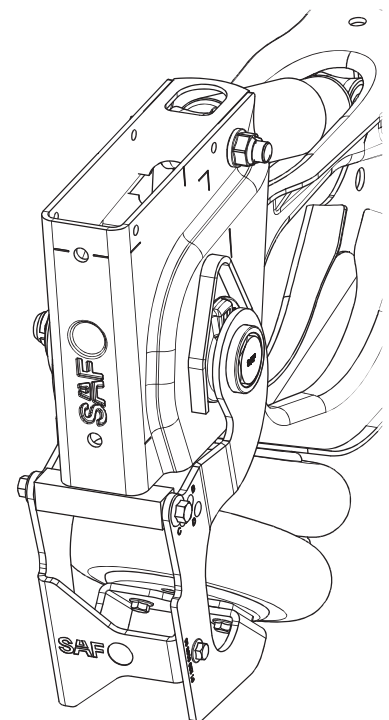
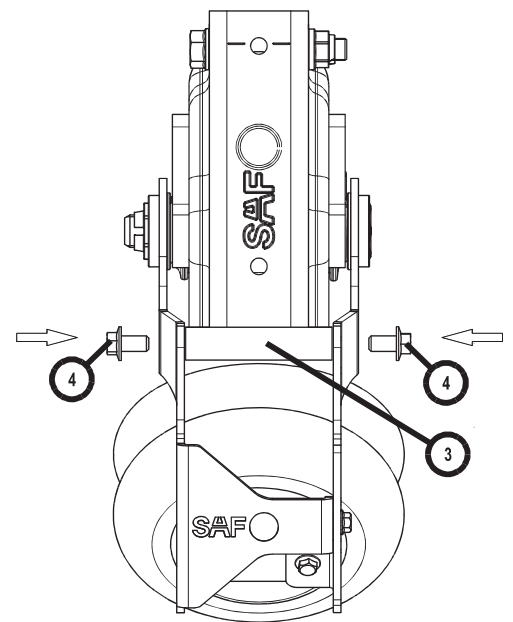
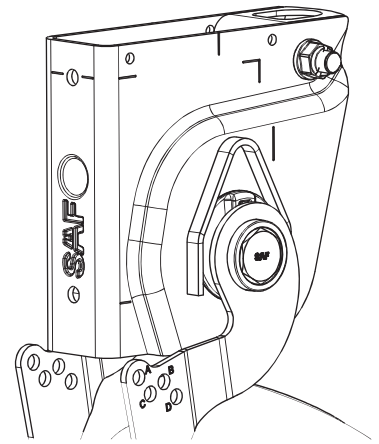
Depending on the position, you'll find different sizes for the required space in front of the hanger bracket. These can be taken from the Table below (a). The +/- 6 (mm) need to be taken in consideration because of the adjusting of the pivot bearing (axle alignment).

3. Ground Clearance (B)

Depending on the position, you'll find different sizes for the ground clearance. These values can be taken from the Table below (B).

Air Suspension Type		Pos.	A [mm]	B [mm]
IU25/2000 33	Total axle travel 180 mm	A	5 ±6	270
IU28/2005 33		B	15 ±6	270
IU30/2505 33		A	5 ±6	270
IU33/2510 33		B	15 ±6	270
IU35/3010 33		A	5 ±6	270
IO35/2000 33		D	55 ±6	285
IO37/2500 33		C	30 ±6	285
IO40/2505 33		D	55 ±6	285
IO42/3005 33		C	30 ±6	285
IO45/3010 33		D	55 ±6	285
IO47/3510 33		C	30 ±6	285
IO50/3515 33		D	55 ±6	285
IU29/2000 41	Total axle travel 200 mm	B	15 ±6	270
IU31/2500 41		A	5 ±6	270
IU34/2505 41		B	15 ±6	270
IU36/3005 41		A	5 ±6	270
IU39/3010 41		B	15 ±6	270
IU42/3015 41		C	30 ±6	270
IO44/3000 41		C	30 ±6	285
IO49/3505 41		C	30 ±6	285

Note: Max. lift air bag pressure 6,0 bar; residual pressure 0,5 bar!



9.2 SAF-INTRADISC

WARRANTY

SAF INTRADISC WARRANTY

SAF-HOLLAND (AUST.) PTY. LTD. warrants all SAF Intradisc axle suspension assemblies manufactured by it.

- Lifetime warranty is offered on Axle Connection for normal on-road operation.
- Shock Absorber, Wheel Bearings and Pivot Bush, when properly installed, to be free from defects in material and workmanship under normal use and service, is covered for a period of up to 1,000,000 km or six (6) years on sealed road application only and 500,000 km or three (3) years for off-road application.
- Brake Caliper has a two (2) year warranty against manufacturing fault.
- The Disc Rotor has two (2) year's unlimited mileage against manufacturing failure.
- Other Parts are covered for one (1) year against manufacturing fault only.

Excluded from the warranty are normal wear and tear parts, damaged due to extreme force, incorrect operation and subsequent damage. Brake balance between Truck and Trailer must be checked regularly and damage of wheel bearings and brake components will not be warrantable if balance is out side recommendation. Damage to brake components including premature Pad wear, Caliper or Rotor damage through brake code specification being used which differ from our specified data will not be covered under the terms of the warranty. Regular inspection and preventative maintenance procedures must be carried out in accordance to SAF maintenance manual. The warranty is void with respect to any product which has been altered in any way from its manufactured condition, such as intentional modification, accident, corrosion, misuse failure to provide necessary and reasonable maintenance and is exclusive of normal wear.

The sole responsibility of SAF-HOLLAND under this warranty is limited to repairing or replacing at the factory any part or parts which are returned, with transportation charges prepaid, and are found to be defective to the satisfaction of SAF-HOLLAND. Written authorization from SAF-HOLLAND must be obtained prior to returning any part or parts. No charges for transportation or for labour performed on SAF-HOLLAND products by unauthorized persons will be allowed under this warranty.

SAF-HOLLAND shall not be liable, in any event, for proximate, incidental, consequential or other damages, including but not limited to damages for loss of production or injury to persons or property arising out of any breach of this warranty.

Hubodometer must be fitted to each trailer to ensure warranty is valid. If not fitted the warranty is null and void. Records will be compared to inspection and preventative maintenance manual to ensure accuracy.

THERE ARE NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING THE WARRANTY OF MERCHANTABILITY OR A WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE EXTENDING BEYOND THAT SET FORTH ABOVE.

SAF-HOLLAND reserves the right, without prior notice, to change specifications and dimensions as designs are altered and/or improved.

Options and features other than those shown may be provided.

W-4



9.1 SAF-INTRADRUM

SAF INTRADRUM WARRANTY

SAF-HOLLAND (AUST.) PTY. LTD. warrants all SAF Intradrum axle suspension assemblies manufactured by it.

- Lifetime warranty is offered on Axle Connection for normal on-road operation.
- Shock Absorber, Hub Unit and Pivot Bush, when properly installed, to be free from defects in material and workmanship under normal use and service, are covered for a period of up to 1,000,000 km or six (6) years on sealed road application only and 500,000 km or three (3) years for off-road application.
- Automatic Slack Adjusters have 300,000 km warranty or two (2) years.
- Other Parts are covered for one (1) year against manufacturing fault only.

Excluded from the warranty are normal wear and tear parts, damaged due to extreme force, incorrect operation and subsequent damage.

Brake balance between Truck and Trailer must be checked regularly and damage of wheel bearings and brake components will not be warrantable if balance is out side recommendation. Regular inspection and preventative maintenance procedures must be carried out in accordance to SAF maintenance manual. The warranty is void with respect to any product which has been altered in any way from its manufactured condition, such as intentional modification, accident, corrosion, misuse failure to provide necessary and reasonable maintenance and is exclusive of normal wear. The sole responsibility of SAF-HOLLAND under this warranty is limited to repairing or replacing at the factory any part or parts which are returned, with transportation charges prepaid, and are found to be defective to the satisfaction of SAF-HOLLAND.

Written authorization from SAF-HOLLAND must be obtained prior to returning any part or parts. No charges for transportation or for labour performed on SAF-HOLLAND products by unauthorized persons will be allowed under this warranty.

SAF-HOLLAND shall not be liable, in any event, for proximate, incidental, consequential or other damages, including but not limited to damages for loss of production or injury to persons or property arising out of any breach of this warranty.

Hubodometer must be fitted to each trailer to ensure warranty is valid. If not fitted the warranty is null and void.

Records will be compared to inspection and preventative maintenance manual to ensure accuracy.

THERE ARE NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING THE WARRANTY OF MERCHANTABILITY OR A WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE EXTENDING BEYOND THAT SET FORTH ABOVE.

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Options and features other than those shown may be provided.



W-3



TRAILER AXLES AND
SUSPENSION SYSTEMS



COUPLING AND LIFTING
TECHNOLOGIES



SUSPENSIONS FOR
TRUCKS AND BUSES



SUSPENSIONS AND COMPONENTS
FOR COMMERCIAL VEHICLES



BUS AIR SUSPENSION
SYSTEMS



V. ORLANDI

COUPLING AND LIFTING
TECHNOLOGIES



TRAILER AXLES AND
SUSPENSION SYSTEMS