



Havarikommissionen for Civil Luftfart og Jernbane

Bilag B til undersøgelsesrapport af 18.12.2019:



Lyntog L 210 kollideret med sættevognstrailer fra godstog G 9233 på Storebæltsbroen (Vestbroen) 02.01.2019

### FW6170 Railcar Trailer Hitch

Vertical Load: 15 tonnes

Coupling Height (adjustable):

880, 980 and 1130 mm

Weight: 353 kg

Suitable for trailers with 2" Kingpin



### **WARNING**

Failure to read, understand and follow the important information contained herein may result in a hazardous condition, or cause a hazardous condition to develop.

Relative to piggyback operations, there are other checks, inspections and procedures not listed here which are necessary, prudent and /or required by law. The following is in

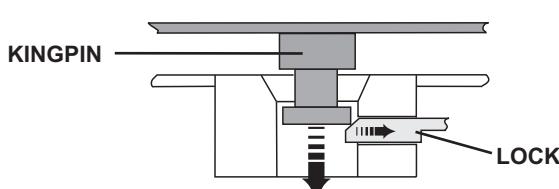
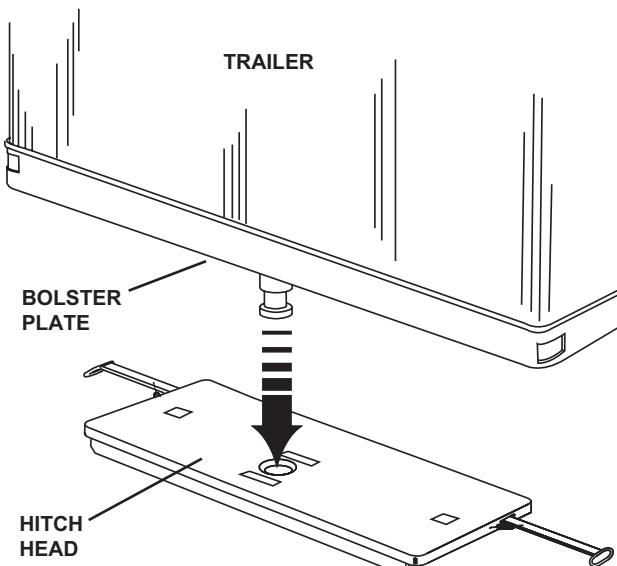
addition to these and pertain to the hitch only.

Perform these procedures with the area clear of obstacles and other personnel.

This product is designed and intended for use only with a "reach stacker" or crane type trailer loading and unloading.

## OPERATING INSTRUCTIONS:

### COUPLING PROCEDURES (Loading):



Kingpin automatically retracts lock upon entering "lock opening"

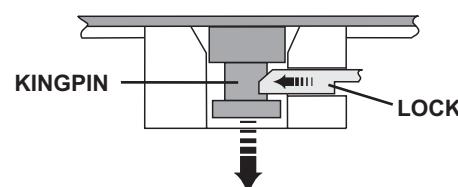
#### 1. Check out the hitch plate before coupling.

- A. Inspect the hitch plate for visible damage prior to each loading operation.
- B. The hitch plate must be properly lubricated.
- C. Check that the correct hitch plate height has been selected.
- D. The hitch plate is locked prior to loading and must not be opened.

#### 2. Coupling operation.

- A. The trailer must be positioned over the hitch plate, so that the kingpin is directly above the guide ring.
- B. The trailer should be lowered until the rubbing plate is in contact with the hitch plate surface and the kingpin is correctly located in the guide ring.

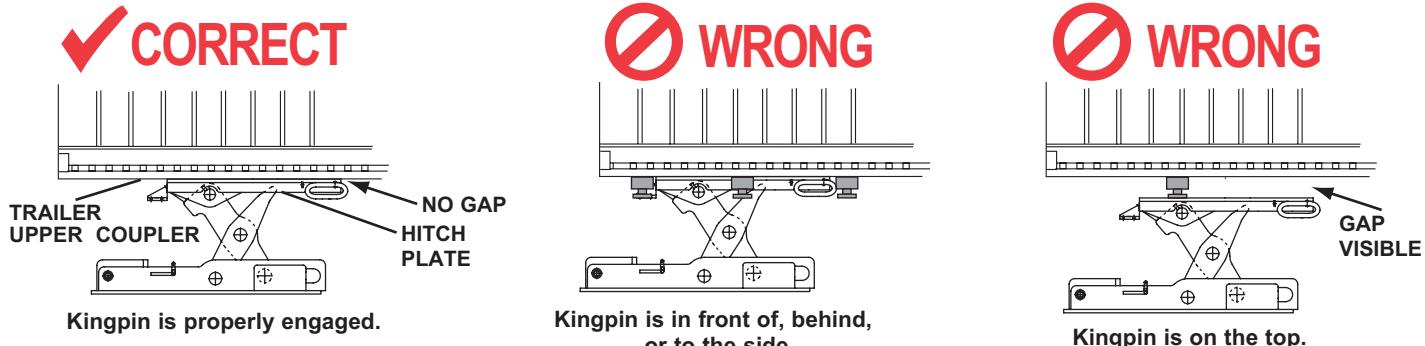
**NOTE:** The locking mechanism automatically opens when the kingpin is entered into the guide ring and subsequently locks automatically.



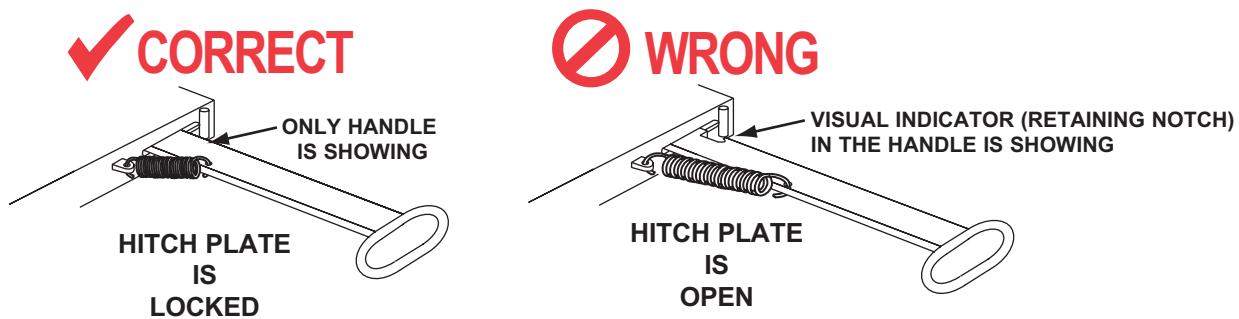
Lock automatically engages as kingpin is lowered into "lock opening"

## COUPLING PROCEDURE (continued):

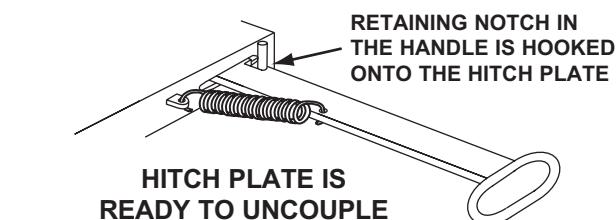
A. The kingpin must be fully inserted into the guide ring and there must be no gaps between the rubbing plate of the trailer and the surface of the hitch plate.



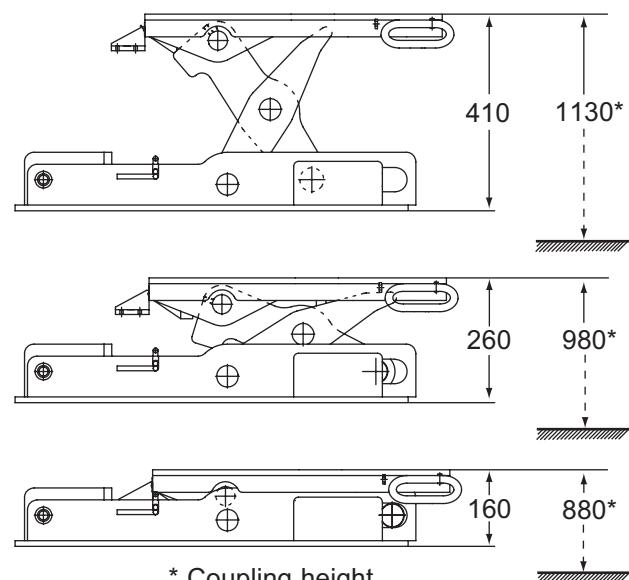
B. The operating handle is in the fully retracted position and the retaining notch no longer visible



## UNCOUPLING PROCEDURE (Unloading):



## SETTING OF THE HITCH PLATE HEIGHT:



A. Pull the operating handle fully outwards and hook it on to the retaining notch - The hitch plate is now open and the trailer can be lifted away

**NOTE:** Once the trailer has been lifted approx. 50mm the locking mechanism of the hitch plate automatically springs back into the locked position

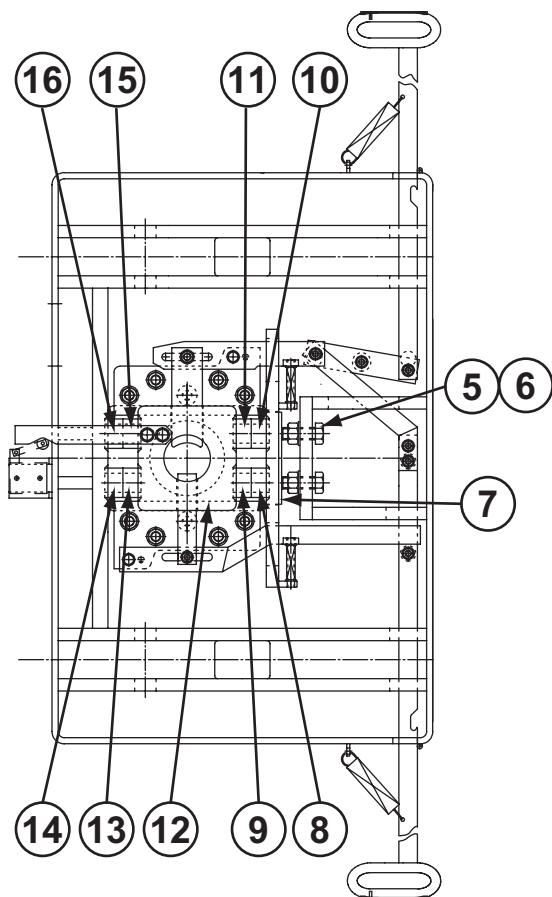
A. Pull the operating handle outwards and hook in position by moving upwards.

B. Locate the crank handle on the drive shaft and turn clockwise or anti-clockwise respectively to raise or lower the hitch plate.

C. As soon as the operating handle springs inwards, the next available height has been correctly reached and it is no longer possible to turn the crank handle (attached to the railcar in the vicinity of the hirch plate).

**NOTE:** The locking mechanism closes automatically when the next available height is reached. This procedure must be repeated should a further increase or decrease in height be necessary.

## REPLACEMENT OF THE SHOCK ABSORBER ELEMENTS:



- A. Loosen the bolt (Item 5) and the lock nut (6)
- B. Remove pressure plate (7)
- C. Remove shock absorber elements (8-11)
- D. Slide guide ring (12) to one side
- E. Remove shock absorber elements (13-16)
- F. Insert new shock absorber elements (13-16)
- G. Push guide ring (12) against shock absorber elements
- H. Insert new shock absorber elements (8-11)
- I. Replace the pressure plate (7)
- J. Tighten the bolt (5) and secure the lock nut (6)

## MAINTENANCE PROCEDURE:

The following is a description of the required lubrication and periodic inspection procedures for the railcar trailer hitch FW6170. These procedures are normally completed every four months, but this frequency may need to be adjusted depending upon its usage. Rebuilding should be considered after approximately 10.000 couplings and uncouplings. Individual components are referred to by item number and are illustrated in the exploded view drawing found on page 6 - 9.

### LUBRICATION

1. Be sure to thoroughly lubricate all moving parts (e.g. lock, etc.) with a water-resistant, lithium-based grease.
2. Clean the shaft guide before each lubrication.
3. Keep a water-resistant, lithium-based grease applied to all moving parts as well as the trailer contact surface of the hitch plate.

### INSPECTION

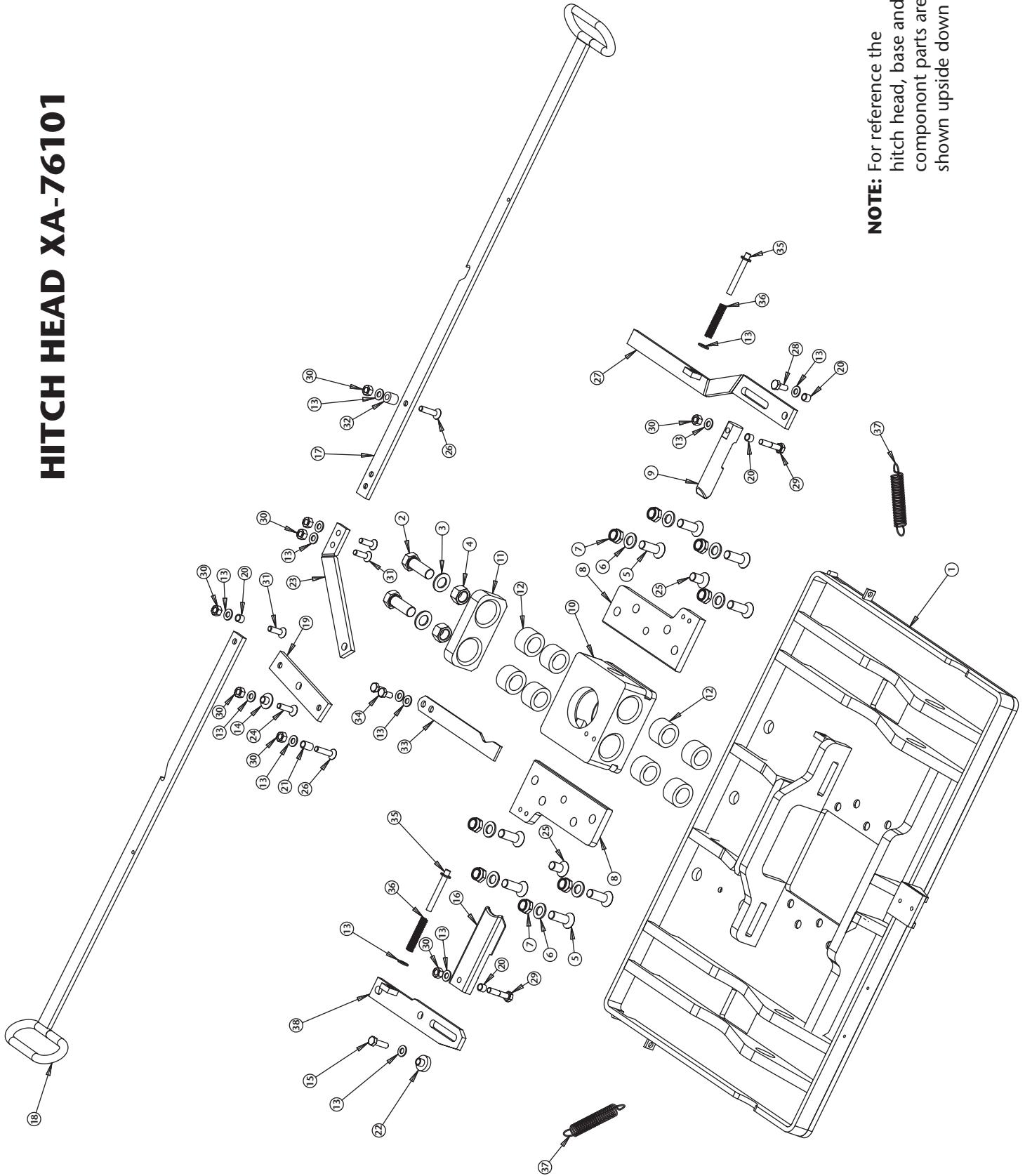
1. Closely inspect the hitch plate and vertical adjusting mounting base. Replace any missing or damaged bolts and nuts.
2. Visually inspect the hitch plate lock for damage or excessive corrosion. Replace if necessary.
3. Inspect the release handles for damage. Make sure handles are not bent and that the handles function.
4. Check the release handle springs. Missing or damage springs must be replaced.



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HITCH HEAD XA-76101



**NOTE:** For reference the hitch head, base and component parts are shown upside down

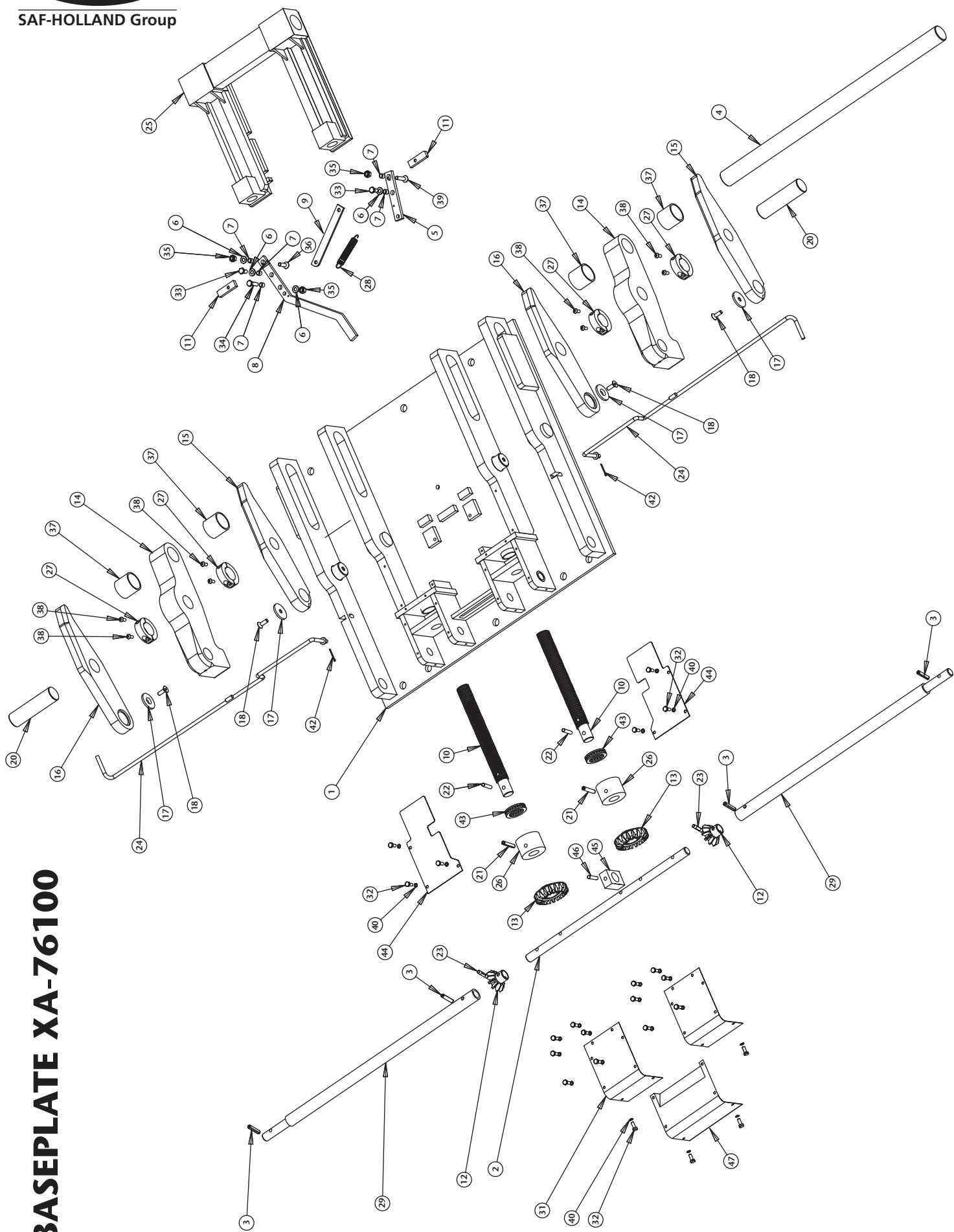


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## PARTS LIST FOR HITCH HEAD XA-76101

ITEM	PART NO.	NO. REQ'D	PART NAME
1	XA-77144	1	Hitch Plate
2	XB-76030	2	HHCS, M20 x 2,5
3	XB-76032	2	Washer, Plain M20
4	XB-76031	2	Nut, Hex M20 x 2,5
5	XB-76023-1	8	HCSCS, M10 x 30
6	XB-76025	8	Washer Plain M16
7	XB-76026-1	8	Nut Lock M16 x 2,0
8	XA-76152	2	Control Plate
9	XA-76163	1	Lock Plunger
10	XA-76168	1	Guide Ring
11	XA-76157	1	Pressure Plate
12	XB-76033	8	Shock Absorber DEFORM plus
13	33023	14	Washer, Plain M10
14	XA-76162	1	Bushing
15	XB-76034	1	HHCS, M10 x 1,5
16	XA-76156	1	Lock
17	XA-76159	1	Release Handle
18	XA-76160	1	Release Handle
19	XA-76155	1	Handle Link
20	XA-76166	4	Bushing
21	XA-76166-1	1	Bushing
22	XA-76167	1	Bushing
23	XA-76158	1	Handle Guide
24	XB-76028	1	FHCS, M10 x 1,5
25	XB-76024-1	2	HCSCS, M16 x 2,0
26	XB-76038	2	FHSCS, M10 x 35
27	XA-76133	1	Release Arm
28	31008	1	Hex Head Screw, DIN 933 M10 x 25 Grade 8,8
29	31032	2	Hex Head Screw, DIN 933 M10 x 50 Grade 8,8
30	32008	8	Nut, Lock, DIN 980 M10
31	31038	3	FHSCS, M10 x 35
32	XA-76169	1	Plunger Bush
33	XA-76176	1	Plunger
34	XB-60137	2	HHCS, M10 x 1,5
35	XA-76134	2	Spring Guide
36	XB-76008	2	Spring, Compression
37	XB-D-05843-1	2	Spring, Extension
38	XA-76153	1	Release Arm

# BASEPLATE XA-76100





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## PARTS LIST FOR BASE PLATE XA-76100

ITEM	PART NO.	NO. REQ'D.	DESCRIPTION
1	XA-76109-A	1	Mounting Base
2	XA-76123	1	Drive Shaft
3	XB-E-61135	4	Spring Pin, 10 x 45
4	XA-76121	1	Guide Shaft
5	XA-76135	1	Handle Link
6	33023	4	Washer, Plain M10
7	XA-76141	5	Bushing
8	XA-76182	1	Handle Link
9	XA-76140	1	Pull Handle
10	XA-76125	2	Spindle
11	XA-76137-1	2	Lock
12	XA-76134	2	Gear, Bevel Pinion
13	XA-76232	2	Gear, Bevel
14	XA-76103	2	Lifting Arm, Inner
15	XA-76105-R	2	Outer Arm, Right
16	XA-76105-L	2	Outer Arm, Left
17	XA-76119	4	Washer
18	XB-76023	4	HCSCS, M10 x 25
19	XB-60129	4	Ring, Shim (40 x 50 x 0,5)
20	XA-76122	2	Centre Bolt
21	34011	2	Spring Pin, 10 x 70
22	XA-CRP-V-06635	2	Pin, 3/8" x 2"
23	XB-76705	2	Pin, Grooved 10 x 35
24	XA-76131	2	Release Handle
25	XA-76126	1	Sliding Frame
26	XA-76177	2	Spindle Nut
27	XA-76144	4	Clamping Ring
28	XA-76040	1	Spring, Extension
29	XA-76179	2	Extension Shaft
30	XA-76181	2	Bushing
31	XA-76173-A	2	Cover Plate
32	XB-76060	22	HHCS, M6 x 12
33	31008	2	HHCS, M10 x 25
34	XB-60137	1	HHCS, M10 x 30
35	32008	3	Nut, Lock, M10
36	XB-76038	1	FHSCS, M10 x 45
37	XA-76185	4	Spacer Bush
38	XB-76102	8	SBHCS, M8 x 20
39	XB-76038	1	FHSCS, M10 x 45
40	XB-76061	22	Washer
41	XB-76103	2	Ring, Shim (25 x 35 x 0,5)
42	XB-76044-1	2	Pin, Split, 3.2 x 32
43	XB-76041-1	2	Bearing
44	XA-76173-B	2	Cover Plate
45	XA-76139	1	Square Block
46	XB-76118	1	Roll Pin, 10 x 45
47	XA-76173-C	1	Cover Plate



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