BI016624
March 2013

Operation and Maintenance Manual

BEAM STAGELOADER PF-6/1342

2 Your safety

- the outer sheath of the hose is not damaged.
- the connectors are securely inserted into the sockets.
- the connections are leak-tight.

Ensure that no dirt enters the hydraulic system during repair work. Dirt in the hydraulic system can cause serious damage in the whole system! Flush out the hydraulic lines thoroughly before connecting.

If hydraulic hose couplers are difficult to disconnect or cannot be disconnected, the hydraulic line may still be pressurized. Be sure to depressurize the line before disconnecting couplers.

Secure the connectors of the hydraulic elements only with the proper coupling clamps. Always fasten the clamps completely. Never use nails, wire or similar materials for securing.

After finishing repair work, check all connectors and connections for leaks before pressuring the system again.

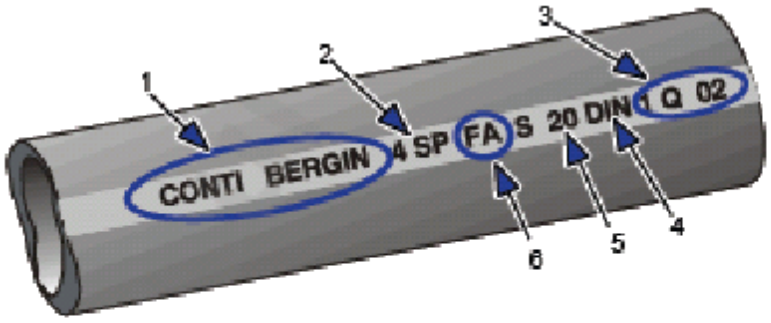
permissible hoses

Use only hydraulic hoses approved for the prevailing pressures.

Do not use any hydraulic hoses with damaged connectors or worn O-rings.

Replace hydraulic hoses only with hoses of the same or a higher quality.

Observe the date of manufacture stamped on the hydraulic hoses. Never use hydraulic hoses which are more than 2 years old, even if they have no visible signs of damage.



1. manufacturer
2. hose type
3. date of manufacture
4. standard
5. nominal diameter
6. flame resistant

3 Storage and transport

intended use

The BSL transfers the coal between the AFC and crusher. The capacity of the BSL is rated at 4,000 tons per hour, however this is dependent on the crusher setting which can vary from 3,000 tons per hour.

IMPORTANT

IT IS IMPORTANT TO SET THE CRUSHER HEIGHT TO MATCH THE BSL CAPACITY OR STALLING MAY OCCUR ON THE AFC DUE TO EXCESSIVE LOAD.

The BSL has some special sections along its length. The basic modules are:

- *return assembly and sprocket*
- *inbye adapter or grade pan*
- *mini-pans*
- *crusher*
- *concave pan*
- *slope module pans*
- *adapter pan*
- *tensioning section and drive unit*

The BSL has 1542mm pans and runs at a higher speed to ensure the product is removed from the face faster than the face production rate, to reduce the likelihood of blockages. The BSL runs at 465 FPM, approximately **23%** faster than the AFC.

The BSL is approximately 107 ft. long and constructed as a beam that allows the coal to be raised to a height to deliver conveniently onto the gate conveyor, via the **B**elt **T**ail **P**iece (BSL).

The BSL as a unit, is advanced by the hydraulic rams in the shields on the face, advancing over the BSL on an overlap system. The overlap allows approximately three (3) pushes of the AFC before the BSL must be advanced.

The BSL is fully enclosed from outbye the crusher to the delivery end, with dust suppression sprays installed along the BSL, in the crusher and at the delivery to minimize dust exposure.

The side plates are supporting units and are used to attach brackets for cable and hose installation.

Instructions on replacement of wear parts

It is essential that wear parts are replaced before they reach the ultimate wear limit, as otherwise damage can be caused to other parts of the machine. Inspect the wear parts at regular intervals.

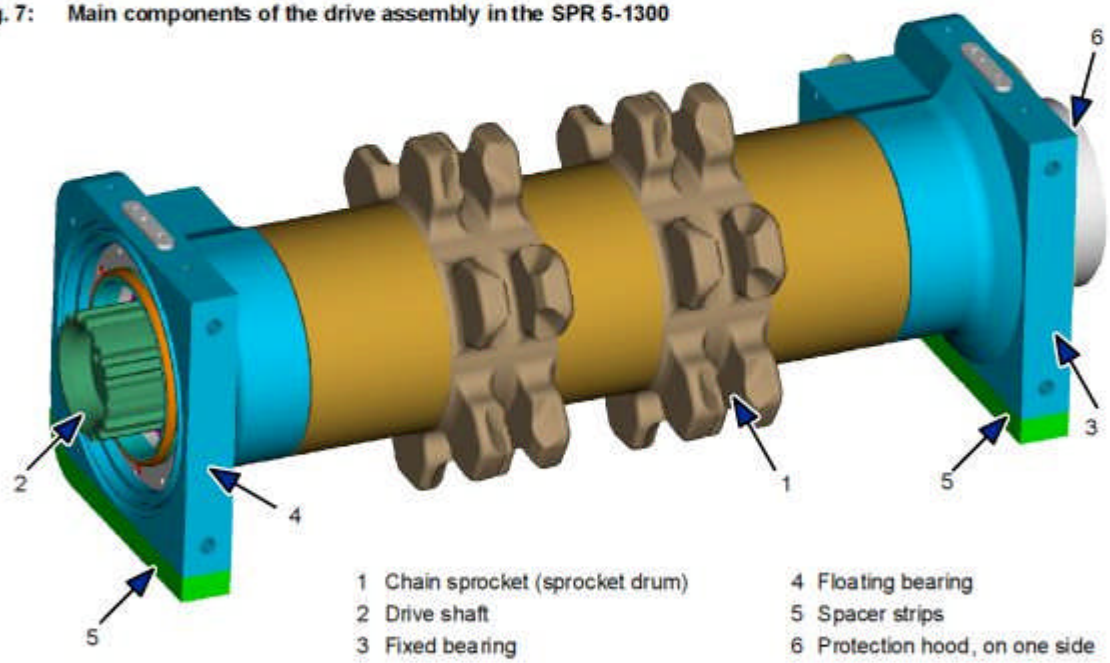
Solid sprocket unit

The chain sprocket transmits the torque of the gearboxes to the chain assembly. It is part of a complete sprocket assembly. As soon as the chain sprocket is worn the sprocket assembly must be replaced completely or turned once prior to replacement.

The solid sprocket assembly consists of the following main components:

- Chain sprocket
- Drive shaft
- Fixed and floating bearing, and
- Spacer strips

Fig. 7: Main components of the drive assembly in the SPR 5-1300



1 Chain sprocket (sprocket drum)
2 Drive shaft
3 Fixed bearing
4 Floating bearing
5 Spacer strips
6 Protection hood, on one side

Due to the high abrasion forces the chain sprocket is subject to a very high level of wear.

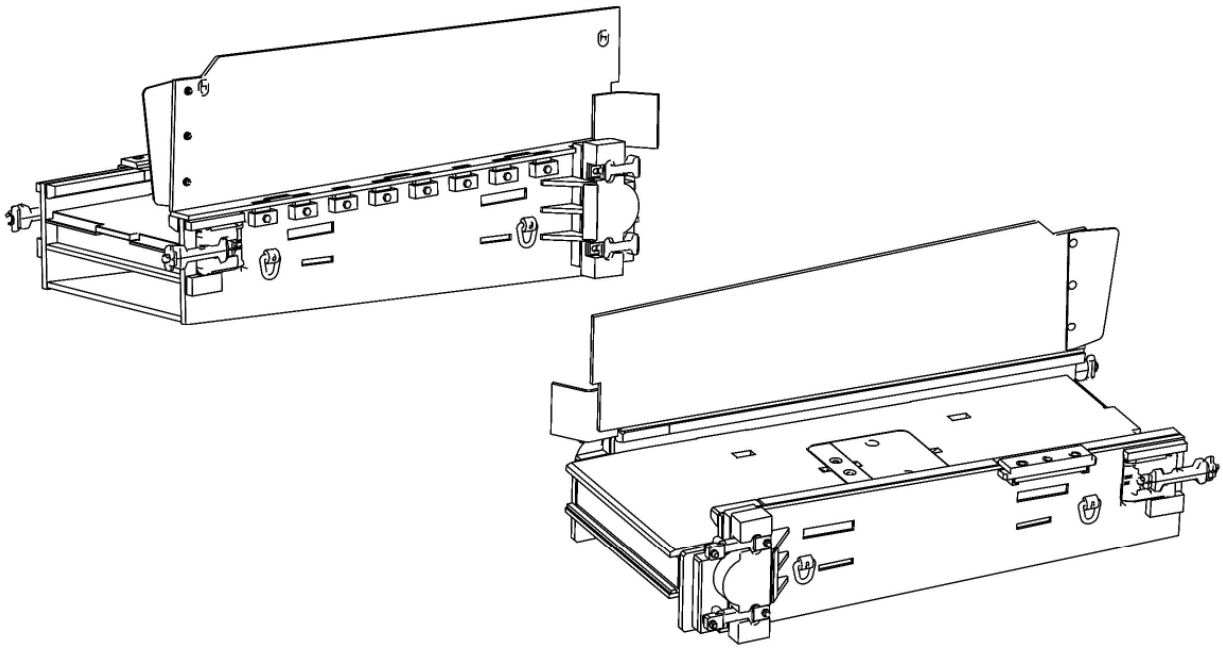
CAUTION!
Check on wear of the chain sprockets at least every four weeks! Please note that the life of the turned chain sprocket can be essentially shorter than the "initial period of use" of the chain sprocket. This is due to tolerances in the hardness penetration depth.
Therefore check on the wear of the turned sprocket at least every 2 weeks.

adapter pan

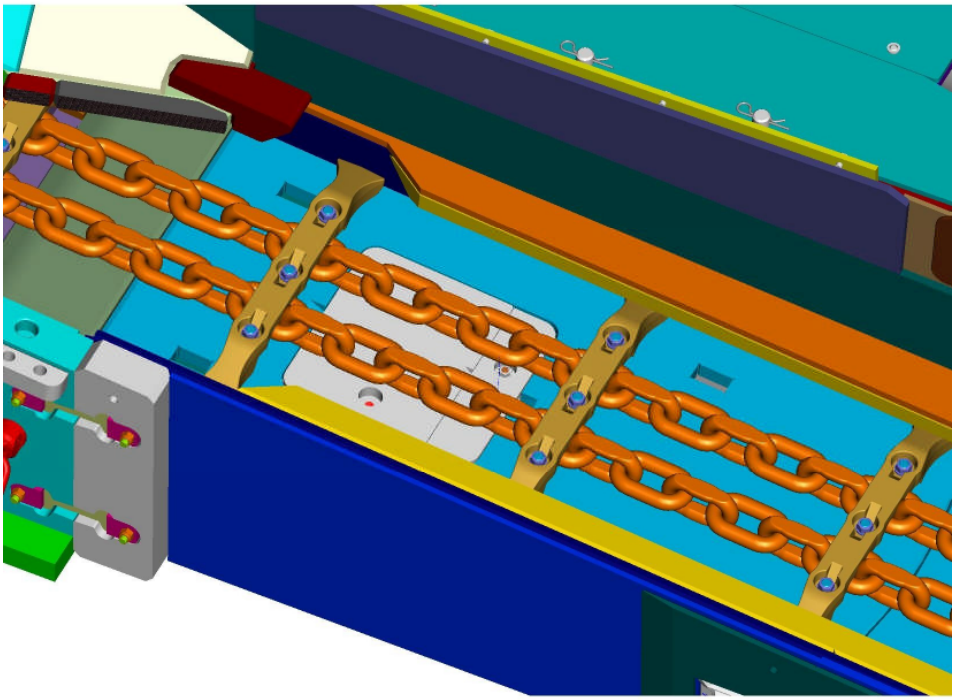
Adapter pan connecting to SPR 5

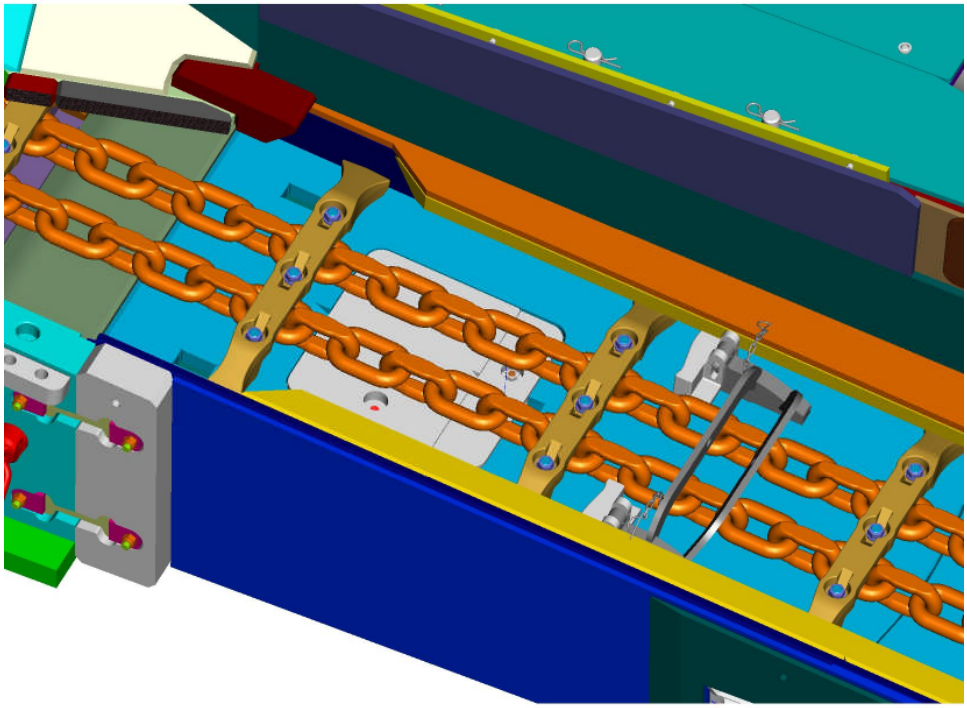
The adaptor pan connects the AFC Main Drive with the Flex Pans of the stageloader (BSL).

Adapter Pan—616484



chain locking device





DANGER

YOU COULD BE SERIOUSLY INJURED OR EVEN KILLED BY A JUMPING HYDRAULIC HOSE. SECURE THE CONNECTORS OF THE HYDRAULIC ELEMENTS ONLY WITH THE PROPER COUPLING CLAMPS. ALWAYS FASTEN THE CLAMPS COMPLETELY AND WITH BOTH SIDES. NEVER USE NAILS, WIRE OR SIMILAR MATERIALS FOR SECURING.

- Check the oil level and the cooling of the gearboxes.
- Check the cooling of the electric motors.
- Check the direction of rotation of the electric motors.
- Check the electrical connections.
- Test the sequencing control of the conveyor drives.
- Test the function of the signaling devices and the intercom system.

Test run of the conveyor

DANGER

MAKE SURE THAT NOBODY IS PRESENT IN THE DANGER AREA OF THE CONVEYOR SYSTEM DURING THE TEST RUN! IN THIS PHASE, A SAFE DISTANCE SHOULD BE KEPT WITH RESPECT TO THE CONVEYOR AS E.G. DUE TO INSTALLATION ERRORS HAZARDS MAY OCCUR WHICH WOULD NOT OCCUR DURING NORMAL OPERATION. THESE HAZARDS COULD CAUSE SEVERE INJURIES OR EVEN DEATH!

test run of the empty conveyor

When you have checked the conveyor and remedied any faults discovered, the proper interaction of the individual components of the complete system must be checked. For this purpose, carry out a test run with the empty conveyor for approx. ½ hour.

☞ As the conveyor runs empty, you have to lubricate the chain at the chain sprockets in order to avoid excessive wear of the sprockets.

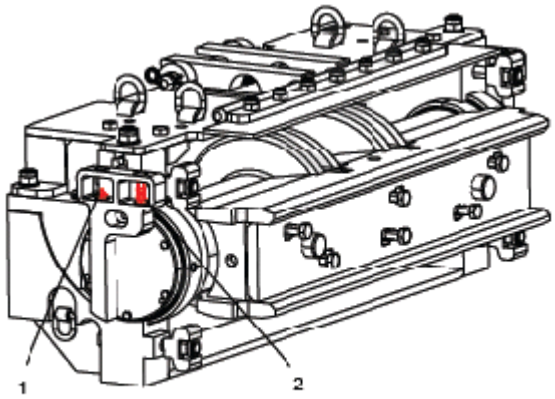
NOTICE

USE ONLY BIOLOGICALLY DEGRADABLE VEGETABLE OILS OF WATER HAZARD CLASS 0 FOR LUBRICATING THE SPROCKETS AS THE SPROCKET LUBRICATION SYSTEM IS A TOTAL LOSS SYSTEM. BE SURE TO OBSERVE THE RELEVANT ENVIRONMENTAL PROTECTION REGULATIONS.

Lubricating points – return unit
The return unit bearing covers are provided with a grease inlet (lubricating nipple) and a grease outlet (check valve) each.

☞ Press grease into the nipple at the respective side until fresh grease emerges at the respective check valve.

Lubricating points—return end (generic)



1 lubricating nipple (green inlet)
2 check valve (grease outlet)

Inspection of the system
J Inspect all the components of the system at least once per shift for visible signs of damage or faults. Damaged flights (deformation, cracks) could, for example, cause serious damage to the chain sprockets. For this reason, defective or missing parts must be replaced immediately.
- Inspect all the functions of the system at regular intervals.
- Pay particular attention to the tightness of all connecting elements.

Inspection of wear parts

weekly In order to be able to determine in good time when a repair shift has to be scheduled and to avoid damage to other components, it is essential to inspect all the following wear parts once per week as to their degree of wear. Inspect:
- the conveyor chain,
- the flights (scrapers),
- the conveyor chain guides.

monthly With some wear parts it is sufficient to inspect them once per month. These include:
- the chain sprockets and
- the chain strippers.

Tightening torques—screws with ISO metric thread

Recommended tightening torques at m_{ges} = 0,14

Thread 1)	Pitch	Pre-tensioning force F_v			Tightening torque		
(mm)	(mm)		(kN)			M_A(Nm)	
d	P	8.8	10.9	12.9	8.8	10.9	12.9
M8	1,25	16,5	23,2	28	23	32,5	39
M10	1,5	26,5	37	44,5	46	65	78
M12	1,75	38,5	54	65	80	113	135
(M14)	2	53	74	89	127	178	215
M16	2	73	102	123	195	275	330
(M18)	2,5	88	124	149	270	380	455
M20	2,5	113	160	192	380	535	640
(M22)	2,5	142	199	239	510	720	865
M24	3	164	230	275	655	920	1100
(M27)	3	215	300	365	965	1360	1630
M30	3,5	260	370	440	1310	1845	2215
(M33)	3,5	325	460	550	1780	2500	3000
M36	4	380	540	645	2290	3220	3860
(M39)	4	460	645	775	2970	4170	5000
M42	4,5	525	740	885	3670	5160	6190
(M45)	4,5	615	865	1040	4590	6450	7740
M48	5	690	975	1170	5540	7790	9350
DM24[2)]	3	134	-	-	535	-	-
DM27[2)]	3	129	-	-	580	-	-
M32x2[3)]	2	-	300	-	-	1450	-

1) Dimensions in brackets in exceptional cases only

2) According to works standard (EWN6110), February 1985 edition

3) Only for necked down bolts having a shaft diameter (reduced shaft diameter) of 24,2mm

4) The pre-tensioning forces and tightening torques comply with EWN 6003 works standard

Note: The tightening torques stated in the spare part lists have to be observed, as well, for installation and maintenance.