Inspection and Maintenance Plan

Legend of maintenance intervals: a - Daily; b - Weekly; c - Monthly; d - Every 3 months; e - Every six months; f - Yearly; S - Special intervals; Bh - Service hours									
Item No.	**Equipment / Sub-assembly Description of scope of performances**	**Actions / Notes**	**a**	**b**	**c**	**d**	**e**	**f**	**S**
A	**General maintenance**								
	<> General visual inspection of all plant components	daily	x						
	<> Visual inspection for bulk material accumulations and dirt	weekly (remove bulk material accumulations and dirt if necessary)		x					
	<> Cleaning the surfaces of equipment items and electric components	monthly			x				
B	**Steel structures and fasteners (bolts, nuts. pins etc.)**								
	<> Check for corrosion	every 6 months; Defects in the paint coating must be repaired under consideration of coating specification					x		
	<> Check for: -- Deformation -- Loose joints of bolted, screwed and other connections -- Visual damage to welded connections	every 6 months					x		
	<> Check all fasteners like bolts, nuts, pins etc. for firm seating	every 2 years							x
C	**Local electrical appliances**								
	<> Check for dirt	monthly			x				
	<> Check electrical connections for safe fixing / damage	monthly			x				
	<> Check for correct function	monthly			x				
D	**Wear parts**								
	<> Control of all rubber seals	Seals are wear parts and must be controlled at regular intervals. Depending on the operating and ambient conditions, we recommend a monthly visual control. Worn			x				
	<> Control of gearbox seals	Seals are wear parts and must be controlled at regular intervals. Depending on the operating and ambient conditions, we recommend a monthly visual control. Worn							

Inspection and Maintenance Plan

Item No.	Equipment / Sub-assembly Description of scope of performances	Actions / Notes	a	b	c	d	e	f	S
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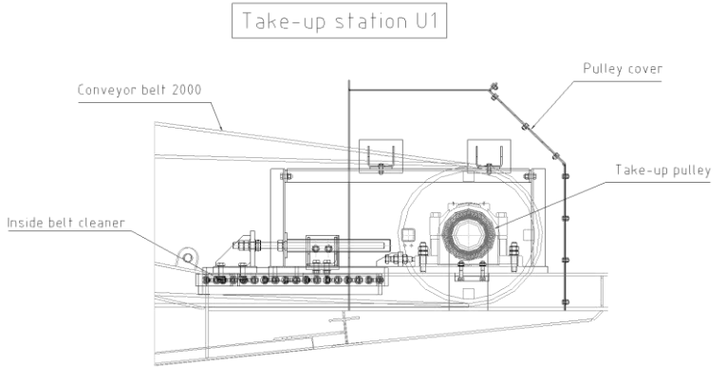
	Intermediate belt conveyor U1								
	Feeding box								
1	**Wear parts**								
	<> Check visually the wear plates for wear	If necessary, re-tighten the fastening bolts or replace the wear plates			x				
	<> Check the rubber sealings for wear	Re-adjust or replace if necessary			x				
	<> Subject the rubber curtain on conveying-belt outlet to visual examination	Replace if necessary			x				
	Take-up station								
2	**Take-up pulley cover (1 pc)**								
	<> Check visually the rubber plates for wear	monthly visual inspection; - Replace if necessary			x				
3	**Take-up pulley (1 pc.)**	**see Manual 7 Register 7.5**							
	<> Lubrication	see lubrication plan							x
	<> Check the belt pulley for detection of visible damage, abnormal noise and vibrations		x						
	<> Check the bearing housings for detection of excessive temperatures (smoke formation) or excessive grease loss		x						
	<> Check the tensioning sets for technically perfect condition and firm seating of bolts						x		
	<> Inspection of pulley coating	Every two months; replace coating in case thickness of smooth coating falls below 3 mm, or below 2 mm in case of chequered coating							x
4	**Inside belt cleaner (1 pc)**								
	<> Check rubber plate for wear and adjustment 	if the rubber plate is no longer in contact with the belt, readjust the cleaner or change the rubber After replacing the rubber plate it must be ensured that the steel structure of the inside belt cleaner is prevented at any time from bumping against the belt (check setting of the adjusting screw)			x				
5	**Tensioning spindles (8 pcs)**								
	<> Coat tensioning spindles with grease	see lubrication plan							x

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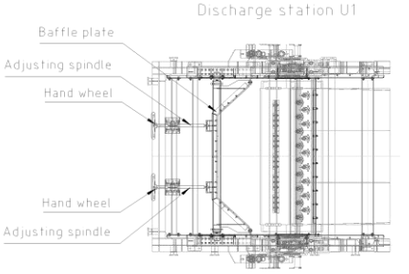
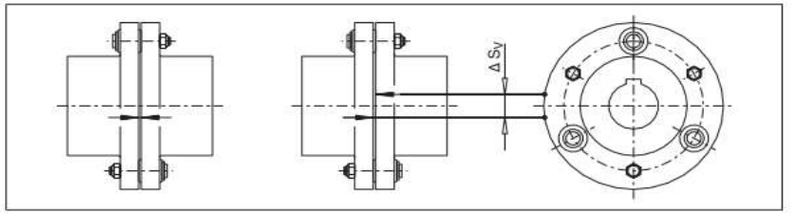
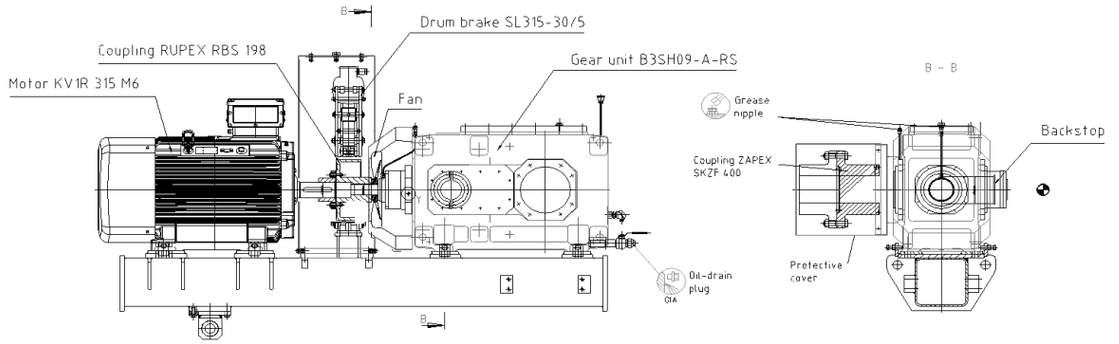
	Legend of maintenance intervals: a - Daily; b - Weekly; c - Monthly; d - Every 3 months; e - Every six months; f - Yearly; S - Special intervals; Bh - Service hours								
	Conveyor frame								
6	**Conveyor belt 2000.EP500/4-X-6:3**	**see Manual 7 Register 7.4**							
	<> Check for easy operation	daily visual inspection	x						
	<> Check if the running properties are correct	daily visual inspection	x						
	<> Check for damage	daily visual inspection; if necessary repair or replace the conveyor belt	x						
	<> Check if belt tension is correct	daily visual inspection; if necessary adjust belt tension	x						
7	**Garlands, carrying idlers and carrying idler stations**	**see Manual 7 Register 7.12**							
	<> Check idlers for early signs of failure	e.g. abnormally high noise or heavy vibrations			x				
	<> Check idlers for smooth running	if necessary, remove accumulation of conveyed material between carrying idler and carrying idler support or rather between carrying idler and conveying belt at the lower run			x				
	<> Check idler surface for contamination	remove adhering conveyed materials			x				
	<> Check carrying idlers for wear	Replace damaged carrying idlers Possible blockings or damages at the carrying idlers can occur because of: - blocking of the bearing due to penetration of dirt, conveying material or water or by means of oxidation - wear of the jacket pipe which could damage the belt due to holes and sharp edges at the idler jacket - wear of supporting rings and buffer rings - insufficient axial security device			x				
	<> Check fastenings of idler stations for tight fit	if necessary, re-tighten			x				
	<> Check the garland suspension				x				
	Discharge station								
8	**Discharge hood (1 pc)**								
	<> Check visually the rubber scrapers for wear and adjustment	monthly visual inspection; - Replace if necessary			x				
	<> Check the rubber seals for wear or damage	visual check, if necessary readjust or replace			x				
	<> Check the wear plates for tightness and wear	monthly visual inspection and, if necessary, tighten nuts or replace worn-out plates			x				

Legend of maintenance intervals: a - Daily; b - Weekly; c - Monthly; d - Every 3 months; e - Every six months; f - Yearly; S - Special intervals; Bh - Service hours									
Item No.	**Equipment / Sub-assembly Description of scope of performances**	**Actions / Notes**	**a**	**b**	**c**	**d**	**e**	**f**	**S**
9	**Baffle plate (1 pc)**								
	<> Check wear plates for tightness and wear	monthly visual inspection and, if necessary, tighten nuts or replace worn-out plates			x				
	<> Check the rubber seals for wear or damage	visual check, if necessary readjust or replace			x				
	<> Check visually if the bulk material hits the baffle plate at discharge point	monthly -- Re-adjust the baffle plate if necessary 			x				
	<> Lubricate the adjusting spindles	see lubrication plan							x
10	**Drive unit (1 pc)**	**see Manual 7 Register 7.1.1**							
10.1	**Gear unit B3SH09-A-RS (1 pc)**	**see Assembly and operating instructions BA 5010 for Gear units, chapter 10**							
	<> Check oil temperatur	daily	x						
	<> Check for unusual gearunit noise	daily	x						
	<> Check oil level	monthly			x				
	<> Check gear unit for leaks	monthly			x				
	<> Test the water content of the oil	approx. 400 operating hours, at least once per year, see chapter 10.2.1						x	
	<> Perform the first oil change	approx. 400 operating hours after start-up; see chapter 10.2.2 see also lubrication plan							x
	<> Perform subsequent oil changes	every 24 months or 10 000 operating hours; see chapter 10.2.2 see also lubrication plan							x
	<> Clean air filter	every 3 months; see chapter 10.2.3				x			
	<> Clean fan and gear unit	Depending on requirements, at least every 2 years; see chapter 10.2.4							x
	<> Refill Taconite seals with grease	Every 3000 operating hours or at least every 6 months; see chapter 10.2.5 see also lubrication plan							x
	<> Check hose lines	yearly; see chapter 10.2.10						x	
	<> Change the hose lines	6 years from the manufacturing date impressed; see chapter 10.2.10							x
	<> Check cooling coil	every 2 years; see chapter 10.2.7							x
	<> Check friction linings of torquelimiting backstop	once per year at least; see chapter 5.9						x	
	<> Check auxiliary drive	see chapter 5.16							x
	<> Check tightness of fastening bolts	after first oil change, then every 2 years; see chapter 10.2.14							x
	<> Check shrink disk	every 12 months; see chapter 6.7.5						x	
	<> Inspection of the gear unit	approx. every 2 years; see chapter 10.4							x

Legend of maintenance intervals: a - Daily; b - Weekly; c - Monthly; d - Every 3 months; e - Every six months; f - Yearly; S - Special intervals; Bh - Service hours

Item No.	Equipment / Sub-assembly Description of scope of performances	Actions / Notes	a	b	c	d	e	f	S
10.2	**Motor KV1R 315 M6 HB IL LL PT HW (1 pc)**	**see Installation, Operating and Maintenance Instructions for Three-phase Asynchronous Motors with Squirrel-cage Rotor for Low Voltage Applications**							
	<> First inspection	after about 500 operating hours, ½ year at the latest					x		
	<> Control of air circulation and surface of motor	depending on local environmental pollution							x
	<> Main inspection	after about 10,000 operating hours or once a year						x	
	<> Remove condensate water	depending on the local environmental conditions							x
	<> Relubrication	see lubrication plan							x
10.3	**Coupling RUPEX RBS 198 (1 pc)**	**see Operating instructions BA 3600, chapter 6**							
	<> Check of the torsional backlash between the two coupling parts  Wear mark Wear mark for the torsional backlash Size: 105 / 125 / 144 / 162 / 198 / 228 / 252 / 285 / 320 / 360 / 400 / 450 / 500 / 560 / 630 / 710 / 800 / 900 / 1000 / 1120 / 1250 / 1400 / 1600 / 1800 / 2000 Wear mark ΔSv in mm: 3.0 / 3.5 / 4.0 / 4.5 / 6.0 / 7.0 / 8.5 / 10.0 / 12.0 / 13.5 / 15.0 / 18.0 / 20.0	after 3 months, then at least once a year; The buffers must be replaced, when the torsional backlash exceeds the value stated in table. The buffers must be replaced in sets. Only identical buffers may be used.						x	
10.4	**Drum brake SL315-30/5 (1 pc)**	**see Mounting and Operating Instruction for Drum Brakes Type SL, chapter 4**							
	Perform following checks and/or maintenance works:	**after 100 operating hours, after an emergency stop event and in case of brake distance respectively brake time do increase considerably**							
	<> Check of the reserve stroke								x
	<> Check of the air gap (shoe clearance)	The air gap has to be checked regulary and, if it is necessary, to be readjusted in order to guarantee a constant shoe clearance on both friction linings, also in case of the brake equipped with an automatic wear adjustment.							x
	<> Check of the friction linings and, if necessary, replacement of the brake shoes	minimum thickness of 3 mm in case of bonded linings and 4 to 5 mm in case of riveted linings When achieving the minimum lining thickness, the worn-out friction linings must be replaced							x
	<> Control of adjustment and properly operation of the automatic wear adjustment	see Operating Instructions, item 2.4							x

Item No.	Equipment / Sub-assembly Description of scope of performances	Actions / Notes	a	b	c	d	e	f	S
	Legend of maintenance intervals: a - Daily; b - Weekly; c - Monthly; d - Every 3 months; e - Every six months; f - Yearly; S - Special intervals; Bh - Service hours								
	<> Check the value of the adjusted braking torque								x
	<> Check the solidity of all screwings								x
	<> Check the Arbeitsbereitschaft sämtlicher Schalter								x
	<> Check the cleanness and soft running of all bearings	the bearings including the pivoting pins must not be covered with paint in case of spray-painting							x
	<>Check for existense of all cotter pins in the pivoting pins								x
	<> Check the condition of the brake drum								x
	<> Check the condition of the piston rod and impermeability of the releasing device								x
	<> Check the correct seat of steel bushes in the brake shoes								
10.5	**Electrohydraulic thruster EB 300-50 (1 pc.)**	**see Users manual Electrohydraulic Thrusters**							
	<> refilling after repair								
									
11	**Flange coupling (1 pc)**								
	<> Check the bolt connections for tight seating	visual check					x		
	<> Check for any change in the noise level	at least every three months The coupling must run with little noise and without vibration in all operating phases				x			

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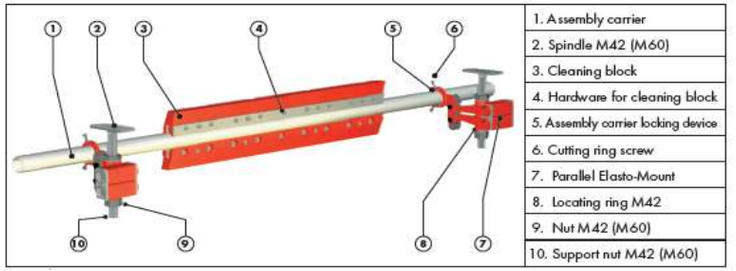
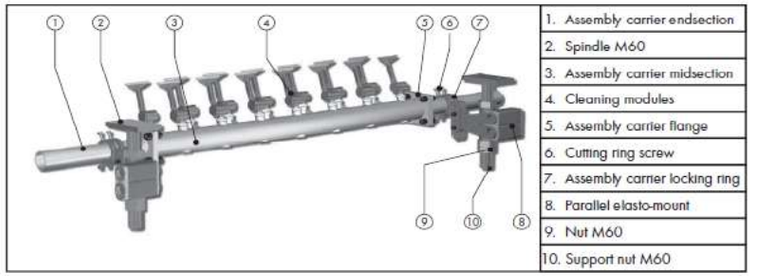
	Legend of maintenance intervals: a - Daily; b - Weekly; c - Monthly; d - Every 3 months; e - Every six months; f - Yearly; S - Special intervals; Bh - Service hours								
12	**Discharge pulley (1 pc)**	**see Manual 7 Register 7.5**							
	<> Lubrication	see lubrication plan							x
	<> Check the belt pulley for detection of visible damage, abnormal noise and vibrations		x						
	<> Check the bearing housings for detection of excessive temperatures (smoke formation) or excessive grease loss		x						
	<> Check the tensioning sets for technically perfect condition and firm seating of bolts						x		
	<> Inspection of pulley coating	Every two months; replace coating in case thickness of smooth coating falls below 3 mm, or below 2 mm in case of chequered coating							x
13	**Pre-scraper Type B9S + PEM (1 pc)**	**see Manual 7 Register 7.3 Installation and operating instructions for HOSCH Pre-scraper**							
	<> Visual inspection to check: - function of the device - cleaning efficiency - material discharge - working behavior - belt surface, belt junctions and patches	directly after the first full working day, afterwards monthly			x				
	<> Assessment of the wear degree  1. Assembly carrier 2. Spindle M42 (M60) 3. Cleaning block 4. Hardware for cleaning block 5. Assembly carrier locking device 6. Cutting ring screw 7. Parallel Elasto-Mount 8. Locating ring M42 9. Nut M42 (M60) 10. Support nut M42 (M60)	monthly, it is recommended to replace the parallel elasto-mounts (Pos. 7 in the figure) after approx. 8000 Bh			x				
	<> Cleaning of the scraper	Make sure not to damage the anti-corrosion coat or the scraping edges of the cleaning blocks (Pos. 3 in the figure)			x				
	<> Service inspection including: - cleaning of all scraper components - functional check of all components - assessment and, if necessary, repair of anti-corrosion coat of all components - assessment of the degree of wear of all components - replacement of worn-out or damaged parts by original parts - installation and re-adjustment of the scraper	at least every 4000 operating hours see Installation and operating instructions Install new securing elements during each service inspection							x

Item No.	Equipment / Sub-assembly Description of scope of performances	Actions / Notes	a	b	c	d	e	f	S
	Legend of maintenance intervals: a - Daily; b - Weekly; c - Monthly; d - Every 3 months; e - Every six months; f - Yearly; S - Special intervals; Bh - Service hours								
14	**Main scraper Type C3 (1 pc)**	**see Manual 7 Register 7.3 Installation and operation instructions for HOSCH Sprung Blade scrapers**							
	<> Visual inspection to check: - function of the device - cleaning efficiency - material discharge - working behavior - belt surface, belt junctions and patches	directly after the first full working day, afterwards monthly			x				
	<> Assessment of the wear degree of the modules (Pos. 4 in the figure) and other wear parts  1. Assembly carrier endsection 2. Spindle M60 3. Assembly carrier midsection 4. Cleaning modules 5. Assembly carrier flange 6. Cutting ring screw 7. Assembly carrier locking ring 8. Parallel elasto-mount 9. Nut M60 10. Support nut M60	monthly, The modules must be replaced if the height of the tungsten carbide tip is inferior or equal to **2 mm**. It is recommended to replace components equipped with torsion springs, such as parallel elasto-mounts (Pos. 8 in the figure), and modules with a low tungsten carbide wear after approx. 8.000 operating hours. If used modules are reinstalled, the scraping edges must be rounded.			x				
	<> Cleaning of the scraper	Make sure not to damage the anti-corrosion coat or the scraping edges of the modules (Pos. 4 in the figure)			x				
	<> Service inspection including: - cleaning of all scraper components - disassembly of the assembly carrier - functional check of all components - assessment and, if necessary, repair of anti-corrosion coat of all components - assessment of the degree of wear of all components - replacement of worn-out or damaged parts by original parts - installation and re-adjustment of the scraper	at least every 4000 operating hours see Installation and operating instructions Install new securing elements during each service inspection							x

Note the special information on maintenance in the add-on parts documentation!