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TEMPORARY STORAGE CONVEYOR

4.3 – MANAGEMENT OF THE MACHINE: PERIODIC OPERATIONS

The instructions for conducting the machine, must ensure to the hopper belt conveyor, the best operating conditions and therefore the maximum degree of reliability and durability.

The operations of normal conducting and maintenance, are easy to perform, even if they require a capacity on the part of personnel.

All operations are carried out, they must still be entered in the appropriate bulletins control.

Listed below are the periodic operations provided in the normal run of the machine:

GENERAL STATE OF THE UNLOAD AREA



It must be checked that the discharge zone of the hopper belt conveyor is free, in order to avoid anomalous stresses of the machine and its damage, due to the backflow of the material in the lower branch.

Frequency: continuous

GENERAL STATE OF THE MACHINE



It should check periodically the general state of functionality of the hopper belt conveyor, identifying small abnormalities or deficiencies of functionality, which with time may affect the functioning of the system, both from the point of view of reliability and the safety. Therefore it is necessary to check.



- Correct behavior
- Absence of abnormal noise
- Occlusions in the discharge hopper
- Absence of residues of material outside the machine
- Correct torque of the screws and mechanical parts
- Absence of excessive vibration generated by the machine

Frequency: 6 hours

CLEANING



The cleaning of the machine must be carried out with minimum illumination of 40 lux, with device of protection and equipment up to standard, ensuring that the service area are always clear of waste materials, the outdoor facilities are always clean (use a dry cloth), which plates and safety signs are clean and clearly visible.

If necessary, use compressed air jets to clean the area of the operator.

Remember that waste oils must be disposed of in special containers and sent to landfill in the manner prescribed by the current regulations.

The cleaning operations must still be carried out periodically even not necessarily in conjunction with the maintenance operations.

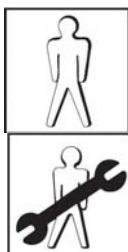
You will need to make sure there are taking the following check and cleaning cycles:

- Removal of material left on the ground transport and on moving parts (motor, gearbox, drive shaft) with particular reference to ties, straps, tape cassettes and video tapes, plastic film and so on.
- Removal of the materials entangled in correspondence of the structure of the hopper belt conveyor or on the discharge hopper.

Frequency: 24 hours

INTEGRITY OF SAFETY DEVICES

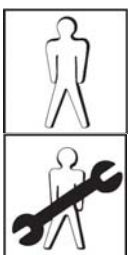
It is necessary to check the status of the safety devices, as set out below:



- Check the proper functioning of the electrical and mechanical safety.
- Check the inspection doors, lids, grids and guards.
- Check the presence of security signs (prohibition, obligation, danger) on the machine.
- Check the presence and the readability of CE marking on the machine. In case of lack or damage, must be replaced or repaired immediately.

Frequency: 24 hours

ABSENCE BARRIERS / OBSTRUCTIONS



Verify the absence of obstacles and obstructions that could interfere with the transport of the material or that may affect the operation of auxiliary systems (fire protection).

The inspection is to verify that:

- There is no material stuck on the discharge hopper. Otherwise, proceed with the removal.

Frequency: 24 hours

TENSION BELT



Check for proper tensioning of the belt, to avoid skidding.

To verify the correct tension, make sure the belt completely envelop the front of the drive and idle rollers.

To proceed to the tension, you must take action, using the key, simultaneously on the

two rods placed on the return wheel, making sure to check the correct alignment of the shaft.

Frequency: 14 days

LUBRICATION BEARING



It is necessary to ensure proper bearing lubrication, through periodic checks and topping up by a hand pump greasing.

Frequency: 150 hours

CONTROL FUNCTIONALITY BELT ROLLERS



The dusty environment can cause a blockage of the normal bearing of the rollers. It is therefore necessary to periodically check the functional status of rollers, and then proceed, eventually, to replace it.

Frequency: 6 months

CHECKING WEAR BELT



Periodically check the wear of the belt.

Frequency: 6 months

ELECTRICAL SYSTEM CHECK



Check the state of wear of the electrical wiring on the machine, as well as the clamping of any connection terminals. In case of wear, proceed with the immediate replacement of the damaged part, to avoid the danger of contact with parts under voltage.

Frequency: 3 months



BEFORE YOU BEGIN PRODUCTION MAKE SURE THAT THERE ARE NO PEOPLE IN WORKING AREA.



DO NOT LEAVE THE MACHINE UNATTENDED WHEN IS RUNNING.



DO NOT USE THE MACHINE IF NOT PROPERLY REASSEMBLED THE PROTECTIVE PARTS (CARTER, DOORS, COVERS, PANELS ETC ETC.)

4.4 – CONDUCTING THE MACHINE: MAINTENANCE

In this paragraph, are listed all the operations of ordinary and extraordinary maintenance, planned to ensure the optimal functioning of the hopper belt conveyor.



BEFORE CARRYING OUT ANY ELECTRICAL OR MECHANICAL MAINTENANCE, MAKE SURE THE MACHINE HAS BEEN DISCONNECTED FROM THE POWER SUPPLY AND DEVICES FOR STARTING AND SHUT DOWN HAS BEEN BLOCKED.



WAIT UNTIL THE MACHINE IS COMPLETELY STOPPED BEFORE WORKING ON IT.

It is a good rule to follow the following list before carrying out maintenance:

- Disconnect from electrical tension.
- Block starters.
- Make sure there is no voltage in the circuits, including the auxiliaries and supplementary services.

REVOKE THE MEASURES ONLY AFTER HAVING COMPLETED THE MAINTENANCE AND PUT IN PLACE AND LOCKED ELECTRICAL AND MECHANICAL PROTECTIVE DEVICES.



The list above should be considered indicative and not mandatory for the purposes of security.

Additional safety measures can be taken, also in connection with the specific installation or with the specific rules adopted by the user.

In case of important and complex maintenance it must refer to the drawings, wiring diagrams and recommendations contained in this manual.



NOTE



IF IN DOUBT, CONTACT THE MANUFACTURER TO ENSURE SAFETY IN ANY CASE.

CHECK THAT THE TOOLS AVAILABLE ARE SUITABLE FOR USE, DO NOT USE IMPROPER TOOLS.

It is very important to prevent malfunctions that could directly or indirectly create serious injuries or damage to persons and property, observe all instructions given on the machine and in this document.

4.4.1 – REPLACEMENT OF RUBBER BELT

In case of worn or damage of the belt, it is necessary to replace it.

Remove all cover in correspondence of the idle roller. Remove the brackets with rubber strip along the hopper belt conveyor. Release the nuts of the tension rods in order to move the idle roller forward and release the rubber belt. Remove the old belt and install the new belt.

After placed the new rubber belt, tighten the nuts of the tension rods and check with a running test that the belt goes parallel without any skidding to the right or left.

Install all cover and the brackets with rubber strip.



Figure 6

4.4.2 – MAINTENANCE ON THE GEARMOTOR

Carefully observe the instructions in the manual of use and maintenance of the manufacturer of the gearmotor.

In any case:



IT MAY ABSOLUTELY TO AVOID THE USE OF SPARE PARTS NOT ORIGINAL.



MAINTENANCE PERSONNEL MUST PERFORM ALL WORK, WITH MACHINE IN A SAFETY CONDITION USING THE NECESSARY INDIVIDUAL PROTECTION DEVICES AND THE NECESSARY EQUIPMENT, ALWAYS KEPT IN EXCELLENT CONDITION.

4.5 – IDENTIFICATION PLATES ON THE MACHINE

The machine has labels that identify the manufacturer and the conformity with EC regulations product.

The labels must be legible in all the elements they contain.

Using the identification data indicated for relations with the manufacturer, such as: request spare parts, information and assistance.

If the plate deteriorates with use and is no longer readable, even in one of its elements, it is advisable to request a new one from the manufacturer quoting the data contained in this manual or in the original plate.

MANUFACTURER

SIDERCAMMA SERVICE s.r.l.

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Figure 7

4.6 – SPARE PARTS

The machine is marked with a serial number and a model shown on the nameplate.



IN ORDER TO HAVE AN URGE DELIVERY OF THE SPARE PARTS IT IS NECESSARY TO COMMUNICATE THE FOLLOWING DATA:

- **MODEL OF THE MACHINE**
- **IDENTIFICATION NUMBER**
- **DESCRIPTION OF THE COMPONENT**

Annex 1

Instructions for proper maintenance and regular checks

TABLE 1: BULLETIN CHECKING FOR NORMAL CONDUCTING HOPPER BELT CONVEYOR

BULLETIN OF REGULAR CHECK					
Conveyor type	Identificati on number	Description			
Year		Week			
CHECKLIST					
Control Description	scheduled frequency	check	Date of check	Signature of the operator	Note:
absence of material in the hopper	Continuous				
General status of the conveyor	6 hours				
Cleanliness	24 hours				
Status safety devices	24 hours				
Absence of occlusions	24 hours				
fire alarm system	7 days				
Lubrication gear	7 days				
Belt tension	14 days				
Bearing lubrication	14 days				
Wear	3 months				

TABLE 2: BULLETIN CHECKING FOR NORMAL CONDUCTION OF THE HOPPER BELT CONVEYOR

SCHEDULE OF CHECKS, MAINTENANCE AND REPLACEMENT PARTS				
COMPONENT	INTERVAL OF ASSISTANCE IN HOURS			
	Type control	Check	Maintenance	Replacement
Bearings	abnormal noise	500 hours		8.000 hours
Supports	abnormal noise	500 hours	150 hours	8.000 hours
Belt of transport	Visual	500 hours	when worn	when worn
Electric motor	abnormal noise	300 hours		30.000 hours
Gearbox (*)	abnormal noise/ visul	40 hours	300/3.000 hours	8.000 hours
Shafts coupling	Tightening (40 Nm)	500 hours		
Bolts fastening	Tightening	500 hours		
Gearbox oil (*)	Visual	300 hours		

TABLE 3: POINT OF GREASING AND LUBRICATION

POINT OF GREASING AND LUBRICATION				
MACHINE	GREASING POINTS	Nr	LUBRICATION POINTS	Nr
Hopper belt conveyor	Bearing of idle roller	2	Gearbox	1
	Bearing of drive roller	2		

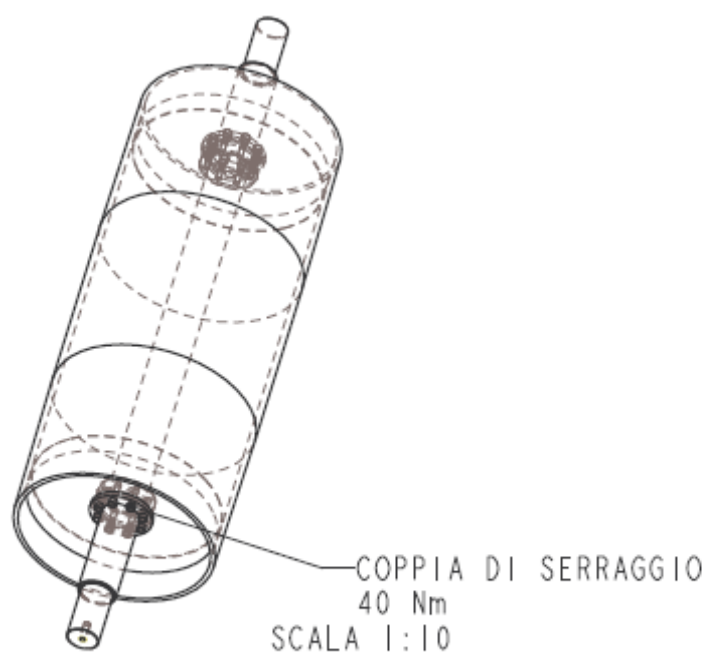


Figure 9 Tightening of shaft coupling



Figure 10 Gear motor.



Figure 11 - Bearing support of idle roller

LUBRICANTS TO BE USED

We recommend the following lubricants:

- Oil for gearboxes: Trivela Oil SC 220 SHELL (Shell Company) or equivalent.
- Grease for bearings: Marson EPL (Fina) or equivalent.

(*) FOR MAINTENANCE OF GEARBOXES, REFER TO THE REQUIREMENTS OF MANUFACTURER.

TABLE 4: TIGHTENING TORQUE

Tightening Torques - Electrically Zinc Plated - Friction Coefficient 0.125

PROPERTY CLASS	TORQUE Ma	NOMINAL DIAMETER - COARSE THREAD																		
		M3	M4	M5	M6	M7	M8	M10	M12	M14	M16	M18	M20	M22	M24	M27	M30	M33	M36	M39
5.6	Nm	0.58	1.28	2.50	4.3	7.1	10.5	21	36	58	88	121	171	230	295	435	590	800	1030	1340
	ft/lb	0.41	0.94	1.84	3.1	5.2	7.7	15	26	42	64	89	126	169	217	320	435	590	759	988
8.8	Nm	1.28	2.90	5.75	9.9	16.5	24	48	83	132	200	275	390	530	675	995	1350	1830	2380	3050
	ft/lb	0.94	2.14	4.24	7.3	12.1	17.7	35	61	97	147	202	287	390	497	733	995	1349	1740	2249
10.9	Nm	1.80	4.10	8.1	14	23	34	67	117	185	285	390	550	745	960	1400	1900	2580	3310	4290
	ft/lb	1.33	3.02	5.97	10.3	16.9	25	49	86.2	136	210	287	405	549	708	1032	1401	1902	2441	3163
12.9	Nm	2.15	4.95	9.70	16.5	27	40	81	140	220	340	470	660	890	1140	1680	2280	3090	3980	5150
	ft/lb	1.59	3.65	7.15	12.1	19.9	29	59	103	162	250	346	486	656	840	1239	1681	2278	2935	3798

Annex 2 – Hydraulic diagram open/close doors

