

Rev. No.: 0.00		Effective date: 24.08.22				
SOP/Checklist Description: GOLIATH CRANE ELECTRICAL & MECHANICAL MAINTENANCE REPORT						
Crane Name: Goliath Crane		Location: HEMM Care Centre				
Crane: Goliath Crane		Capacity: 20T+5T (MH+AH)				
Team Name:		Murat construction				
Department Representative		Name P. No. Signature				
SOP/Checklist no. KIM/Goliath Crane/Checklist-01						
Date of inspection:						
Last pending point Job done list:						
MECHANICAL ASPECTS						
Sl. No.	Eqpt. to be checked	Inspection Items	Method	Criteria	Action to be taken when out of standard	Status/ Remarks
1	Brake	Operation	Visual Checking	Smooth functioning	Examine the root cause	OK
2				No knocking operation during opening and closing	Adjust brake	OK
3				Check for any worn-out parts	OK	
4		Lining condition	Visual Checking	Lining should not be less than 2mm	Replace	OK
5				No breakage in the lining	Replace	OK
6		Disc / Drum	Visual	No damage	Plan for replacement	OK
7				by spanner	No loose fixing bolts	Re-tighten
8		Thruster	By screwdriver/spanner	No oil leakage	Plan for replacement	OK
9				No loose Electrical connection	Re-tighten	OK
10		Mounting bolts	by spanner	No loose mounting bolts	Re-tighten	OK
11		Overall cleanliness	Visual changing	No grease, oil, dust	Clean	OK
12	Power Collector	Collector shoe	Visual checking	Not worn out more than its limit (50%)	Replace	OK
13		By spanner	No loose fixing bolts	Re-tighten	OK	
14		Connection	by spanner	No loose connection	Re-tighten	OK

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Ram Prakash
04/02/23

15				No red spot or any Hot spot	Re-tighten / repair	OK
16				No damage cable	Repair	OK
17		Cables	Visual Checking	No loose cable clamp	Re-tighten	OK
18				No cracks	Replace	NO cracks.
19		Insulator	Visual Checking	No dust on the Insulator	Clean	Dust cleared

20			Visual Checking	No heating or dis-colorization of any cables	Check socket condition and if necessary re-socket and tighten	OK
21	Power Collector	Junction box	by spanner	No loose connection	Re-tighten	OK
22			Visual Checking	Door/cover shall be closed and locked	Closed	OK
23		Oil Level	Visual Inspection	Between high and low limits	Add oil if required (Take care not to stain oil gauge)	OK
24		Body Temperature	Touch Inspection	Max 50 Deg C	Add oil if required,	No need oil.
25		Bearing Temperature	By Hand touch / Thermal imaging / Temperature gun	As per design value	Add oil if required,	Normal Temp.
26		Oil leakage	Visual inspection	No oil leakage	Retighten loose parts, plan for replacement of seals and pickings	Tighteners done.
27		Casing bolts, foundation bolts,	By spanner	No loose bolts	Retighten loose bolts	OK
28		Shaft/bearing Revolving sound	Hearing inspection	No metallic sound, howling sound or impact sound	Check oil level; Retighten bolts, Plan for replacement	Normal DE & NDE.
29		coupling operation	Visual inspection	No movement in thrust direction; no backlash	Check key fixing condition and grease condition	OK.
30				There shall not be any loose bracket fixing bolts		Tightened
31			By spanner	There shall not be any loose roller fixing bolts	Re-tighten	Tightened.
32	Bows Trolley arrangement	Bows trolley		All rollers shall rotate freely		checked. Found ok.
33				No visible rubbing mark on the rollers		No rubbing mark.
34			Visual checking	All the bracket shall free from any damage	Replace	No damage.

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04/02/23

36				All rubber buffer shall be free from damage		OK
			By spanner	All the cable guide fixing bolts shall not loose	Re-tighten	OK
37		Bewa Chain	Visual Checking	Length of the Bewa Chain shall be smaller in length than Bewa cable	Adjust properly	OK
38	Bewa Trolley arrangement	I-Beam	Visual Checking	I-beam should be straight and no physical damage	Plan for rectification	No damage
39			By spanner	All the fixing bolts of I-Beam support post shall not loose	Re-tighten	OK
40				No physical damage	Repair / replace	No damage
41				Not stretched	Adjust length	OK
42	Bewa Trolley arrangement	Cables	Visual checking	Wooden clamps are properly fix up	Re-tighten	OK
43				All the cable loops are of equal length		OK
44				Cable shall not touch or rub any fix platform or object	Adjust length and provide guard	OK
45	End Buffer	Mounting		safety chain provided	Repair / Replace	connections is OK
46			By spanners	No loose mounting bolts	Retighten	OK
47			Hearing	No abnormal sound	Investigate and take counter measure	N/A
48				shall be free from any crack	Replace	OK
49		Wheel	Visual	No rubbing mark on the tread		OK
50				Collar thickness with in limit (not less than 66%)	Plan for replacement	
51	Bogie		By spanner	No loose axle bolts		OK
52			By spanner	No loose bolts	Re-tighten	OK
53		Bogie Pin		No broken bolts	Replace	OK
54			Visual	Rotation locking stopper in position	Plan for greasing and repositioning	OK
55	Hoist Mech.	Rope	Visual checking	There should not be any visible damage	Replace	OK

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04/02/23
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56			Shall be free from kinks, cuts, breaks, corrosion, bird cage, or any other defects. Max allowable reduction in rope dia is 7% Broken strands -14 in 6d length and 29 in 30d length (d=rope dia).		
57		Drum	Visual checking	Smooth play out of wire rope to and from the drum	Investigate and take counter measure OK
58			By spanner	Rope clamp on drum shall not loose	Re-tighten OK
59				Clamp bolt shall be locked by wire	Locked by GI wire OK
60		Drum	Visual checking	No abnormal vibration	Investigate and take counter measure OK
61			Hearing	No abnormal noise	OK.
62			Visual checking	SHEAVES shall rotate freely WITHOUT JERKING AS ROPE PASSES OVER THEM	Plan for replacement OK
63		Top Sheave	By spanner	Mounting bolts shall not be loose	RE-tighten OK
64			Visual checking	No rubbing mark on the pulley	Investigate and take counter measure OK
65	Hoist Mech.		By torque wrench	No loose or broken flange bolts	Replace and re-tighten as per the designed torque OK
66		Barrel coupling	By Allen key fitted in torque wrench	No loose or broken Allen screw	OK
67				Center line of the indicator should be middle of the wear notches	Keep the trend. If the distance is increasing plan for replacement OK
68			Visual checking	No axial play	Check alignment OK.
69		Plummer block	By touch	No abnormal temperature	Check after greasing/ plan for replacement of bearing OK
70	Hoist Mech.		By spanner	No loose fixing bolts	Re-tighten OK
71		Pedestal	By spanner	No loose mounting bolts	Re-tighten OK
72			Visual Checking	No damage Hook	Repair / Replace OK
73		Hook	By spanner	No loose Hook nut locking	Retighten OK.
74	Hook Block			C-hook should rotate freely. Safety latch spring should be of proper tension	Lubricate OK.
75				No loose Sheaver cover/ side cover bolts	Repair OK
76		Sheave	Visual Checking	No loose or damage Sheave pin locking	Retighten OK.

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04/02/23

77		No damage of Striker for counterweight limit switch	Repair / Replace	OK
78		No damage Rope guard	Repair / Replace	OK
79		Free movement of all pulley	Plan for replacement	OK
80		No loose Trunnion locking	Retighten	OK.

ELECTRICAL ASPECT						
Sl No.	Eqpt. to be checked	Inspection Items	Method	Criteria	Action to be taken when out of standard	Status
1	Motor	Vibration	By hand / hearing rod	Make judgment based on experience	A) check for any loose foundation bolts	Normal sound DEGRADE
2					B) take measurement if difficult to determine	
3		Temperature	By hand touch / thermal imaging / temperature gun	Generally desirable 70 deg c or below. The frame shall be capable of being touched with a hand for more than 5 seconds.	Examine the loading condition and current correlation	
4					Check the brake operation	
5					Check for any abnormal loading / jamming	
6		Noise	Hearing	Find the source of noise, mechanical, electromagnetic, ventilation	Remove the source of mechanical noise. Analyze the electromagnetic noise and take counter measure	Normal
7		Crack in the frame	Visual checking	No crack	Make a repair plan	OK.
8		Abnormal smell	Smell	There shall be no smell of burning	Make an investigation at once in case of any abnormal smell.	
9		Mounting bolts	By spanner	No loose bolts	Re-tighten	OK
10		Bearing sound	Hearing	Make judgment based on experience		
11		Bearing temperature	By hand touch / thermal imaging / temperature gun	75 deg or below	A) take trend control	
12					B) add grease and check the temperature	
13					C) check the alignment of coupling	
14					D) plan for changing the motor	

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04/02/23

15	Cleanliness	Visual checking	No accumulation grease or oil or dust on the fins of the motor	Clean	OK
16			No damage	Plan for replacement	
17				Plan for alignment	
18	Coupling	Visual checking	No noise	Plan for replacement	
19		By spanner	No loose bolts	Re-tighten	OK
20	Grounding connection	Visual checking	Connected and no breaks	Repair	
21		By spanner	No loose bolts	Re-tighten	OK
22			A) no loose connection	Re-tighten	
23			B) no loose bushings	Repair	
24	Cabling	Visual checking	C) no damage of cable sheath	Plan for repair	
25			D) no loose cable clamps	Re-tighten	
26			E) no missing cover bolts	Provide	
27	IR value	By 500v megger	Should be $>5m\Omega$	Plan for replacement	
28				A) check for any abnormal load	
29	Stator current	Tong tester	Balance in all phase and within full load value measured during load test	B) check for any connection burning	
30				C) plan for replacement of motor	

31		Cleanliness	Visual checking	Free of oil, Grease, dust	Clean	OK
32				No damaged cable	Replace / Repair	
33		Wiring		proper routing of cable	Dress the cable	
34	End Limit Switch	Striker mounting	Visual checking	Not loose and no change in the angle	Re-tighten in proper place	OK
35				No damage or deformation	Replace	
36		Striker condition		Proper Gap	adjust gap (as per limit switch type)	
37		Grider light				
38		Panel Lights		All the light shall glow all safety protection system shall in place	Repair / replace	OK
39	Lights	Operator's cabin Light	Visual Checking			
40		Pilot Lamp		Both lights shall work		
41				No humming sound	Plan for replacement	
42	Panels	Contactors, relays, timers etc.	Hearing and visual checking	No loosening of mounting bolts	Re-tighten	OK

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07/02/23

43			No burning smell	Inspect by opening the contactor and plan for replacement	ok
44			No heating or dis-colorization of any parts	Re-tighten and repair	ok
45			No missing arc chute	Provide Arc chute	
46			No stuck-up tips	Plan for replacement	
47	Cooling Fan filter	Visual checking	Free from dust	Clean	ok
48			a) No abnormal heating or deformation	Plan for replacement	
49	Resistance and capacitance	Visual and Touching	b) No capacitor should swell	Plan for replacement	
50			c) Liquid shall not leak from the capacitor	Plan for replacement	
51	Bus Bars and other main circuit	Visual checking	No heating or dis-colorization of any parts	Re-tighten and repair	ok
52		Touching	No heating	Investigate in detail	ok
53	Wiring	Visual checking	Properly routed	Dressed properly	ok
54		Screwdriver / spanners	No shall be no loose connection	Re-tighten	ok
55	Overall cleanliness	Visual checking	Panel should be free from dust	Clean	ok
56	Temperature	Touch / feel	The temperature shall be with between 25 to 35 Deg C	Check the Air conditioner for its functioning	
57		Safety switch	By operating	All the safety switch are in service	Rectify and give it in service
58	Safety item	Anti-collision	moving the crane towards another crane in the same aisle	crane should stop/Audio Visual system should work	Rectify
59		Emergency Stop	By pressing the Push Button	Main line contactor should drop.	Rectify
60		Hoist limit	Visual Inspection	Hoist shall stop in its desired position	adjust the cam (It should operate between 300 to 500mm from the counterweight)
61	Rotary Gear Limit switch	Lower limit	Visual Inspection	Hoist shall stop in its desired position	Adjust the cam (During adjustment operate the cam keeping the two-round rope in the drum)
62			By spanner	No loose flange bolts	retighten
63		Coupling	Visual Inspection	No damage of elongated tyre	replace the tyre
64				No axial play on the shaft	Check the key tightness
65		Connection	By spanners/screwdriver	No loose connection	Retighten

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No. 101/2023