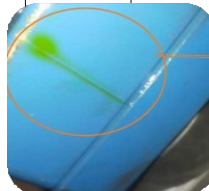
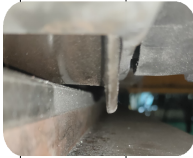
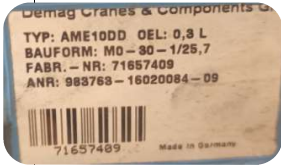
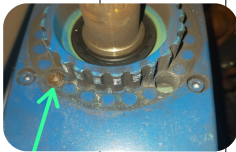
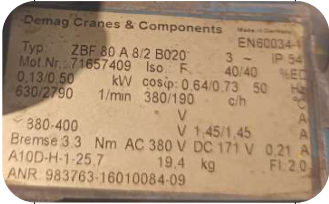
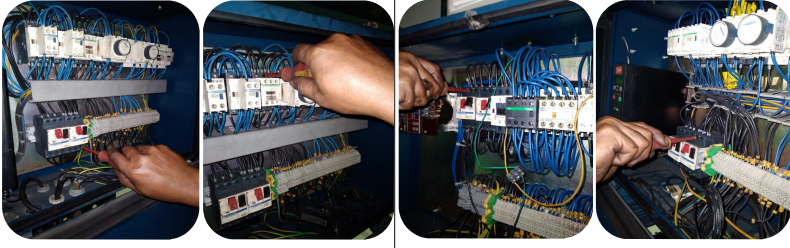


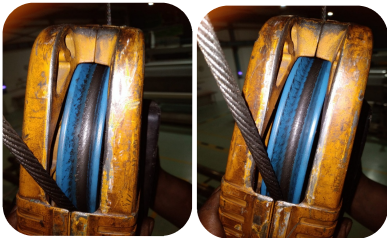
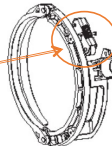
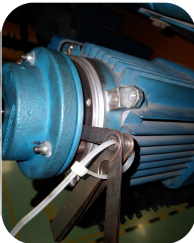
		LAPORAN PEKERJAAN		No. Formulir	HI-F-11-01	
				Revisi	R 1	
				Tanggal Revisi	01/02/2024	
Customer	PT. MULTI SPUNINDO JAYA				Preventive Maintenance	
	Address	Ds. Jabaran RT.008 RW.003 Jabaran, Balongbendo			Pengecekan	
	User	Pak Gembong			Pemasangan/Pembongkaran	
Technician	Electrical	Choirul			Perbaikan	
	Mechanical	RIZA, Udin				
Waktu	Tanggal	23/01/2026 & 27/01/2026		No. Report	LP-MSJ-2601013-PM-OC-	
	Jam	08.00 - 16.00 wib		Surat Perintah Kerja		
				No. Form Maintenance		
Info Pekerjaan	Preventif Maintenance Hoist dan On Call Perbaikan Gearbox motor long travel			No PO	5100032325	
	Area :	Line 2		Tanggal Laporan	30/01/2026	
Note Unit :	Type Unit	Over Head Crane	Wire rope / Chain	wire rope	Note Unit : Nr. H1 96751521 Nr. H1 96751522	
	Merk Hoist	DEMAG	Cross Travel	ZBA71B4DRB003		
	Type Hoist	EKDR3	Long Travel			
	SWL	2 X 1,6 Ton	Garansi Info	-		
DETAIL SURVEY / PENGECEKAN / PERBAIKAN					COMMENT AND INSPECTION RESULT	
No.	URAIAN HASIL PEKERJAAN				(Mention any trouble, repair, replace, substandard or danger)	
A	Diskripsi					
	A.1. Informasi / Permintaan dari User atau Customer / Info Trouble :					
	1.	Preventif Maintenance Hoist dan On Call Perbaikan Gearbox motor long travel				
B	Hasil Pekerjaan		Waktu Pekerjaan			
	1. Progress Pekerjaan		MULAI	FINISH		
	A	Persiapan (23 Januari 2026)				
	1.1.	Proses pengurusan work permit / koordinasi terkait rencana pekerjaan	15.00	15.45		
	1.2.	Proses persiapan, mobilisasi Alat kerja	15.45	16.05		
	B	Proses Preventif Maintenance (23 Januari 2026)	16.05	20.00		
	1.1.	» Detail Deskripsi : - cek kondisi unit - cek wire rope hoist selatan terdapat rantas 1 helai - cek wire rope hoist utara terdapat rantas 5 helai. - lubrikasi wire rope hoist 1 dan hoist 2 - lubrikasi rail rope guide hoist 1 dan hoist 2 - cek function limit up down h1 dan h2 ok - cek function limit long travel ok - rope guide h1 ok - rope guide h2 tidak ada roller - gap brake long A 0,4 mm - gap brake long B 0,4 mm - gap brake h1 0,4 mm - gap brake h2 0,4 mm - gap brake cross 1 0,4 mm - gap brake cross 2 0,4 mm				
	1.2.	- cek roda long aus. - roda cross ok - ditemukan rail sisi utara dan selatan tergerus 1 mm - cek pulley bottom block h2 ok - cek pulley bottom block h1 ok - pengecekan baut2 komponen electrical panel h1. - pengecekan baut2 komponen electrical h2 - ditemukan rembesan oli pada gearbox motong long sisi selatan. - Trial - cek ampere				

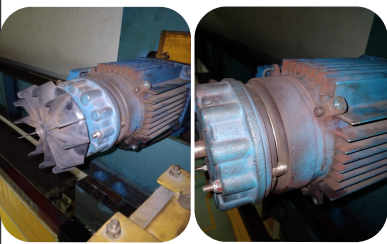
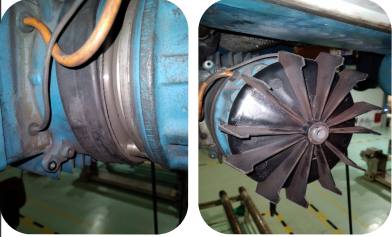
C	Proses Troubleshooting (27 Januari 2026)		11.30	13.00	
1.1.	A. Problem: - terdapat inpo dari pak gembong bahwa motor long sisi utara terdapat suara abnormal B. Analisa: - Setelah dilakukan pengecekan oleh tim pak gembong. Ditemukan bahwa baut salah 1 gearbox to cover torque support gearbox patah. C. Action: - Bongkar motor long travel sisi utara. - Bor baut yang patah untuk dilakukan pelepasan - install baut cover pangkon motor. - install motor long long - connect kabel motor - kondisi saat ini ada 1 lubang baut yang sudah Aus drat lepas sehingga hanya terpasang 3 dari 4 baut. D. Condition: - long travel dapat dioperasikan kembali				
F	Proses Finishing (27 Januari 2026)				
1.1.	Proses Perapian Alat Kerja & Area Kerja.		15.30	15.40	
1.2.	Test pengoperasian bersama user , Pembuatan laporan maintenance dan tandatangan PIC area		15.40	15.50	
1.3.	Pengembalian alat kerja		15.50	16.00	
1.4.	Selesai			16.00	
2. Penggantian Part yang Sudah Dilakukan					
NO	ITEM	SPESIFIKASI	QTY	SATUAN	Keterangan tambahan
1					
2					
3					
3. Kesimpulan					
3.1.	- Kondisi unit hoist secara fungsi normal				
3.2.	- Kondisi wire rope indikasi rantas 5 wire - rekomendasi dilakukan penggantian				
3.3.	- Perlu dilakukan penggantian beberapa part rekomendasi				
3.4.	- Rekomendasi penambahan aksesoris guide roller roda drs untuk meningkatkan life time roda				
3.5.	- Rekomendasi perbaikan gearbox longtravel				
4. Action Plan					
4.1.	Next PM berkala				
4.2.	Penggantian part rekomendasi pada list rekomendasi B.5.0				
4.3.					
5. Rekomendasi Part					
NO	ITEM	SPESIFIKASI	QTY	SATUAN	Keterangan tambahan
1.	Flange disk plate brake long (REK FEB 2025)	brake long travel	2	Pcs	VISUAL CEK DISK PLATE LONG AUS
					
2.	Roller guide cross travel (REK FEB 2025)	EKDR 3	1	SET	VISUAL CHECK GUIDE ROLLER CROSS AUS
					
3.	Paking gearbox motor long sisi selatan	packing set	1	Pcs	Visual Cek : kondisi visual terlihat rembesan oli
					
5.	Rope guide (hoist 2)	EKDR 3	1	Pcs	Visual cek : Kondisi Rope guide cacat Guide spring hilang / tidak terpasang
					

6.	Roda drive long travel (REK NOV 2024)	drs 112 drive	2	set	VISUAL CEK kondisi roda long travel mulai terkikis hasil ukur tebal 7 - 10 mm
					
7.	Roda drive long travel (REK MEI 2025)	drs 112 NON drive	2	set	VISUAL CEK kondisi roda long travel mulai terkikis hasil ukur tebal 7 - 10 mm
					
8.	GUIDE ROLLER DRS112 (REK NOV 2024)	GUIDE ROLLER DRS 112	4	set	VISUAL CEK kondisi roda long travel mulai terkikis hasil ukur tebal 7 - 10 mm
9.	Wire Rope (REK JAN 2026)	EK DR 3 2/1 lifting 12 meter SWL 1,6 TON	2	Roll	Kondisi wire rope rantas 5 wire
					
10.	GEARBOX MOTOR LONG TRAVEL SISI UTARA (REK JAN 2026)	GEARBOX DEMAG AME10DD M0-30-1/25,7 NR=71657409 COMPLIT BAUT TORQUE BRACKET	1	Set	Kondisi baut mounting gearbox rusak , bautut hanya bisa terpasang 3 pcs dari 4 baut
					
11.	COVER TERMINAL MOTOR LONG TRAVEL SISI UTARA (REK JAN 2026)	COVER TERMINAL MOTOR ZBF 80 A8/2 B020	1	Set	cover motor indikasi pecah/ berlubang
					

C	Dokumentasi Hasil Pekerjaan Proses Preventif Maintenance (23 Januari 2026)	Keterangan tambahan
	1. Cek komponen electrical hoist 2. Cek komponen electrical hoist	
		kondisi baik
	3. Kondisi roda long sisi utara 4. Kondisi roda long sisi selatan	
		
data pengecekan dimensi roda long travel untuk keperluan rekomendasi		
	4.1. Cek Roda Long Travel Sisi Utara Drive WARNING (SISI LUAR -SISI DALAM) 4.2. Cek Roda long travel selatan Drive Baik WARNING (SISI DALAM -SISI LUAR)	
	t = 7,0 mm  t = 8,0 mm  t = 5,8 mm  t = 8,0 mm 	VISUAL CEK - WARNING kondisi roda long travel mulai terkikis hasil ukur tebal 6 - 8 mm (AUS >50% WARNING masih dalam batas toleransi minimal tebal 5mm)
	4.3. Cek Roda Long Travel Sisi Utara Non Drive Baik (SISI LUAR -SISI DALAM) 4.4. Cek Roda long travel selatan Non Drive Baik (SISI DALAM -SISI LUAR)	
	t = 7,5 mm  t = 9,7 mm  t = 8,4 mm  t = 9,5 mm 	kondisi roda long travel mulai terkikis hasil ukur tebal 7,5 - 9,7 mm (masih dalam batas toleransi minimal tebal 5mm)
		

4.5. Standart toleransi roda long travel												
<table><tr><td>Nominal travel wheel diameter</td><td>Minimum remaining flange width a</td></tr><tr><td>112 (4.41)</td><td>5.0 (0.20)</td></tr></table>	Nominal travel wheel diameter	Minimum remaining flange width a	112 (4.41)	5.0 (0.20)		(batas minimal tebal flange 5 mm)						
Nominal travel wheel diameter	Minimum remaining flange width a											
112 (4.41)	5.0 (0.20)											
5. Kondisi roda cross hoist utara	6. Kondisi roda cross hoist selatan											
 	 											
standar keausan roda cross travel												
Travel wheels must be checked for wear every year, permissible wear must not exceed 4% of the rated diameter. <table><tr><th colspan="2">Travel wheel dia. d</th></tr><tr><th>Rated diameter [mm]</th><th>Wear limit [mm]</th></tr><tr><td>100</td><td>96</td></tr><tr><td>125</td><td>120</td></tr><tr><td>160</td><td>153.6</td></tr></table> Tab. 57 Travel wheels must be replaced if their diameter is less than the wear limit.		Travel wheel dia. d		Rated diameter [mm]	Wear limit [mm]	100	96	125	120	160	153.6	Standar limit diameter roda cross travel ≤ 100 mm = 96 mm OK=$\geq 98\%$ Warning (prepare rekomds) =$\geq 97\%$ Urgent(segera diganti)=$\leq 97\%$
Travel wheel dia. d												
Rated diameter [mm]	Wear limit [mm]											
100	96											
125	120											
160	153.6											
7. Kondisi rope guide dan wire drum hoist	8. Lubrikasi rail rope guide hoist											
 	 											
9. Ditemukan wire rope hoist sisi utara rantas 5 helai	10. Ditemukan wire rope hoist sisi selatan rantas 1 helai											
 		Kondisi wire rope rantas 5 wire										

	standar limit pemakaian wire rope																																
	<table border="1"> <thead> <tr> <th colspan="2">Group of mechanisms to FEM/ISO</th><th colspan="2">1Am/M4</th></tr> <tr> <th colspan="2">Rope dia.</th><th colspan="2">Number of broken wires over a rope length of 6 x rope diameter</th></tr> <tr> <th colspan="2">[mm]</th><th>No. of broken wires</th><th>Rope length [mm]</th></tr> </thead> <tbody> <tr> <td>7</td><td rowspan="3">8)</td><td rowspan="3">6</td><td>42</td></tr> <tr> <td>9</td><td>54</td></tr> <tr> <td>13</td><td>78</td></tr> <tr> <td>7</td><td rowspan="2">10)</td><td rowspan="2">7</td><td>42</td></tr> <tr> <td>9</td><td>54</td></tr> <tr> <td>13</td><td>11)</td><td>10</td><td>78</td></tr> </tbody> </table>	Group of mechanisms to FEM/ISO		1Am/M4		Rope dia.		Number of broken wires over a rope length of 6 x rope diameter		[mm]		No. of broken wires	Rope length [mm]	7	8)	6	42	9	54	13	78	7	10)	7	42	9	54	13	11)	10	78		jumlah maksimal wire putus untuk wire rope 7 mm = 6 wire
Group of mechanisms to FEM/ISO		1Am/M4																															
Rope dia.		Number of broken wires over a rope length of 6 x rope diameter																															
[mm]		No. of broken wires	Rope length [mm]																														
7	8)	6	42																														
9			54																														
13			78																														
7	10)	7	42																														
9			54																														
13	11)	10	78																														
	11. Lubrikasi wire rope hoist	12. Kondisi pulley hook hoist selatan dan utara																															
			proses lubrikasi wirerope																														
	13. Nameplate hoist	14. Kondisi Rope Guide guide roller tidak terpasang																															
			Shaft dan wire rope sudah dilakukan lubrikasi berkala  C.8.1. Visual cek : Kondisi Rope guide cacat Guide spring hilang / tidak terpasang																														
	15. Gap brake hoist utara 0,40mm	16. Gap brake hoist selatan 0,40mm																															
			kondisi gap brake baik																														
																																	
	17. Kondisi brake hoist utara	18. Ditemukan kerusakan pada kipas brake hoist sisi utara																															
			kondisi gap brake baik																														
																																	

19. Kondisi brake hoist selatan	20. Kondisi brake hoist selatan	
		kondisi gap brake baik
21. Gap brake long sisi selatan 0,40mm	22. Kondisi brake long hoist selatan	
		kondisi gap brake baik
23. Gap brake long sisi utara 0,40mm	24. Kondisi brake long hoist utara	
		kondisi gap brake baik
25. Pengecekan Guide roller Cross Aus	26. Pengecekan Guide roller Cross Aus	
		C.43.1. VISUAL CHECK GUIDE ROLLER CROSS AUS
Proses Troubleshooting (27 Januari 2026)		
1. Ditemukan baut gearbox motor ke pangkon cover patah	2. Ditemukan baut gearbox motor ke pangkon cover patah	
		

	3. Kondisi nut baut yang patah	4. Ditemukan cover terminal motor pecah		
				cover motor indikasi pecah/ berlubang
	5. Connect kabel motor	6. proses trial		
			PROSES TRIAL	
D	Keterangan			
	Hasil Pengecekan Hoist			
	Ampere HOIST 1	Ampere HOIST 2		
	R: 4,3/4,4 A	R: 4,5/4,3 A		
	S: 4,5/4,3 A	S: 4,4/4,0 A		
	T: 4,5/4,3 A	T: 4,5/4,2 A		
	Hasil Pengecekan Cross			
	Ampere cross hoist 1	Ampere cross hoist 2		
	R: 0,4/0,5 A	R: 0,5/0,6 A		
	S: 0,4/0,5 A	S: 0,6/0,5 A		
	T: 0,5/0,5 A	T: 0,6/0,6 A		
	Hasil Pengecekan Long			
	Ampere Speed 1 / speed 2			
	R: 3,6/3,2 A			
	S: 3,3/2,9 A			
	T: 3,2/2,9 A			
	Note :			
	Harap Operator berhati hati saat mengoperasikan Crane mengingat kondisi roda long Aus lebih dari 50% Saat Ini Kami Taging Warning (Kuning)			
	KONDISI WIRE ROPE RANTAS 5 WIRE BATAS MAKS 6 MM			
E	Lampiran			
	E.1. Form Maintenance			
	Mengetahui			
	Teknisi	SPV	USER	
	RIZA		Pak Gembong	

HELINDO tech Indonesia
 Head Office : Jl. Industri 1 Ragam Jemundo Blok B3/B, Desa Jemundo, Kec. Taman, Kab. Sidoarjo
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 Branch Office : Pergudangan BIZ Point 5 Cikupa, Jl. Queenstand No. 05, Desa. Sukamulya, Kec. Cikupa, Kab. Tangerang, Banten
 Phone Office : (021) 7870217-8
 Email : pthelindotech@gmail.com Website : www.helindotechindonesia.com

FORM MAINTENANCE

Customer : **PT. MULTI SPUNDA JAYA**
 Technician : **CHOIRUL**
 Problem info : **UDIN**
 (.....)

Service report number :
 Urgent / Monthly / Yearly / Commissioning
 Date : **23** / **01** / **2020**

Status Unit
☒ OK ☒ WARNING ☐ URGENT
 NOTE : **WIPE ROPE RANTAS**

Model : **Double Girder / Single Girder / Monorail**
 Serial No. : **9625121**
 SWL : **1.6 TON**
 Area : **LINE 2**
 Location : **PAODURI**
 Working Condition : **KE TANGGIAN**

Brand Unit : **DEMAG**
 Brand Hoist / Type : **EKPR 3**
 Brand Cross / Type : **2SF 21**
 Brand Long / Type : **R4 00 B003**
 Control Voltage : **42 VOLT**
 Brand Power Conductor / Type :

No.	ITEM	1	2	3	4	5	6	7
1	GIRDER							
1	1. Girder Construction							
2	2. Joint Plate Bolt							
3	3. Track Support Bolt							
4	4. Fastoon Support Bolt							
5	5. Profile C-track							
6	6. Cable Trolley							
7	7. End Cable Clamp							
8	8. Towing Trolley							
9	9. Pendant Trolley							
10	10. End Stop							
2	ENDCARRIAGE							
1	1. Wheel							
2	2. Buffer 1,2,3,4							
3	3. Travel Drive Motor							
4	4. Travel Drive Brake							
5	5. Travel Drive Gear							
3	CABLE PENDANT							
1	1. Emergency Stop							
2	2. Cover							
3	3. Battery							
4	4. Switch on/off							
5	5. Rubber Bottom							
6	6. Legend							
7	7. Element Switch							
8	8. Receiver/Transmitter							
4	POWER RAIL							
1	1. Power Rail							
2	2. Bracket							
3	3. Current Collector							
4	4. Joimmet							
5	5. Hanger							
6	6. Feed box							
7	7. Towing Long / Guide							

No.	ITEM	1	2	3	4	5	6	7
5	HOIST							
1	1. Wire Rope							
2	2. Wire Drum							
3	3. Rope anchorage							
4	4. Rope Guide							
5	5. Rope Guide Spring							
6	6. Hoisting Motor							
7	7. Hoisting Brake							
8	8. Hoisting Gears							
9	9. Hoisting Lubrication							
10	10. Hoisting Frame							
11	11. Gear Box							
12	12. Bottom Block							
13	13. Safety Latch							
14	14. Hour Meter							
15	15. Roller Counter Weight							
16	16. Towing Cross / Guide							
6	SAFETY DEVICE							
1	1. Hoist Upper Limit Switch							
2	2. Hoist Lower Limit Switch							
3	3. Hoist Overload Protection							
4	4. Hoist Overhaul Protection							
5	5. Long Travel Limit Switch							
6	6. Cross Travel Limit Switch							
7	CABLES							
1	1. Hoist Power Cable							
2	2. Hoist Control Cable							
3	3. Mobile Pendant Control Cable							
4	4. Pendant Control Cable							
5	5. Travel Drives Power Cable							
8	CONTROL							
1	1. Hoist Control Panel							
2	2. Bridge Panel							

No.	ITEM	1	2	3	4	5	6	7
13	TROLLEY 1							
1	1. Trolley (crab) Motor							
2	2. Trolley (crab) Brake							
3	3. Trolley Gears							
4	4. Trolley Gears Lubrication							
5	5. Trolley (crab) Wheel							
6	6. Drive Shaft							
7	7. Trolley Buffer 1,2,3,4							
14	TROLLEY 2							
1	1. Trolley (crab) Motor							
2	2. Trolley (crab) Brake							
3	3. Trolley Gears							
4	4. Trolley Gears Lubrication							
5	5. Trolley (crab) Wheel							
6	6. Drive Shaft							
7	7. Trolley Buffer 1,2,3,4							
15	VOLTAGE TEST							
1	1. Voltage Control Bridge Panel							
2	2. Voltage Control Hoist							
16	RUN WAY							
1	1. Rail Dimension							
2	2. Rail Check							
3	3. Stopper Cross							
17	OTHER							
1	1. CH Wireless							
2	2. SN Wireless							
3	3. Type Wireless							
4	4. Junction Box							
OTHER INFORMATION								
REPORT								
1. OK	4. Repair	7. Adjust						
2. Warning	5. Replace							
3. Urgent	6. Lubricate							

Telah selesai dilakukan pengecekan :

1	KONDISI WIPE ROPE HOIST 1 RANTAS 5 HELAI	6	GEAR BOX MOTOR LONG SELATAN POMBAK.
2	KONDISI WIPE ROPE HOIST 2 RANTAS 1 HELAI	7	CEK RODA LONG.
3	LUBRIKASI PADA WIPE ROPE	8	CEK BRAKE HOIST
4	LUBRIKASI PADA RAIL ROPE GUIDE	9	CEK GAP BRAKE CROSS
5	RODA LONG MULAI AKE	10	

Kondisi saat ini : **MATI - MATI PENGERAKSIAN HOIST, WIPE ROPE RANTAS.**

NOTE : **AMPERE HOIST 2**

LONG	R	S	T	CROSS	R	S	T	CROSS
R = 4.5	4.4 A	R = 0.4	0.5 A	R = 4.5	4.3 A	R = 0.5	0.6	
S = 3.6	3.2 A	S = 0.4	0.5 A	S = 4.4	4.0 A	S = 0.6	0.5	
T = 3.3	2.9 A	T = 0.5	0.5 A	T = 4.5	4.2 A	T = 0.6	0.6	

Spare parts are replaced

No.	Description	Part No	QTY
1			
2			
3			
4			
5			
6			

The client was informed about the found detected and the danger resulting there form

WORKING HOURS

Service Technician : **CHOIRUL**

Customer : **SPR. GEMABONG**