

# LR Motor Shop Repairs

## **Job Number 103789**

Prepared for Arauco-Malvern MDF (10298)

1275 Willamette Rd Malvern AR 72104

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#### **AC Inspection as Found** Arauco-Malvern MDF (10298)

1275 Willamette Rd Malvern, AR 72104

AC Inspection - Rev. 2

Location:

LR MOTORSHOP

Serial Number:

Description:LENZE SERVO MOTOR

Hi-Speed Job Number:	103789
Manufacturer:	LENZE
HP/kW:	75 (kW)
RPM:	3000 (RPM)
Frame:	160
Voltage:	Other
Current:	138 (Amps)
Phase:	Three
Hz:	101 (Hz)
Service Factor:	1.00
Enclosure:	TEFC
# of Leads:	6
J-box Included:	Complete
Coupling/Sheave:	None
Bearing RTDs:	No
Stator RTDs:	No
Repair Stage:	Final
Rewind:	Yes
Shaft Machined Fit Repairs Required:	Yes
Bearing Housing Machined Fit Repairs Required:	No
Heaters:	No
Winding Type :	Random Wound
Bearing Type:	Rolling Element

Priorities Found: **a** 2 - High

8 - Good

#### **Overall Condition**

1. Report Date 11/20/2024

#### 2. Nameplate Picture



3. Photos of all six sides of the machine.









4. Describe the Overall Condition of the Equipment as Received Serviceable

In	Initial Mechanical/Electrical			
	5.	Does Shaft Turn Freely?	(NA) Not Applicable	
	6.	Does the shaft require T.I.R in Lathe to identify additional repairs?	(No) No	
	7.	Does Shaft Have Visible Damage?	(No) No	
	8.	Assembled Shaft Runout	Inches	
	-	Na		
	9.	Assembled Shaft End Play	inches	
	-	Na		
	10.	Air Gap Variation <10%		
		Na		

11. Lead Condition (P) Pass



12. Lead Length 10 Inches

13. Does it have Lugs?, If so what is the Stud Size? (Yes) Yes

14. Lead Numbers U1V1W1-U2V2W2



15. Frame Condition pass

16. Fan Condition (P) Pass





17. Broken or Missing Components na

#### **Initial Electrical Inspection**

18. Insulation Resistance/Megger **0 Megohms** 

19.	Winding Resistance			
	1-2	1-3	2-3	
-	Na			
20.	Perform Surge Test		(	F) Fail
21.	Number of Stator Slots			48
22	Stator Condition		re	wind





23.	Stator Thermistors/Ohms	yes 379.4. ohms
24.	Stator Overloads/Ohms	na
Mech	anical Inspection	
25.	Drive End Bearing Brand	NACHI
26.	Drive End Lubrication Type	(Grease) Grease Lubricated
27.	Drive End Bearing Insulation or Grounding Device?	
28.	Drive End Wavy Washer/Snap-Ring Other Retention Dev	ice?
29.	Drive End Bearing Condition	bad



30. Opposite Drive End Bearing Brand  NACHI	
31. Opposite Drive End Lubrication Type	(Grease) Grease Lubricated
32. Opposite Drive End Bearing Insulation or Grounding Device?	
33. Opposite Drive End Wavy Washer/Snap-Ring Other Retention Device?	wavy washer

#### 34. Opposite Drive End Bearing Condition

Old grease balls skiding on inner race



35.	Drive End Seal	
-	Na	
36.	Opposite Drive End Seal	
-	Na	
37.	Drive End Bearing Number-	63132RS
38.	Drive End Bearing Qty.	1
39.	Drive End Bearing Type	(Ball) Ball Bearing
40.	Opposite Drive End Bearing Number-	6212 2RS



Rotor Inspection	(Ball) Ball Bearing
42. Opposite Drive End Bearing Type	(Ball) Ball Bearing
41. Opposite Drive End Bearing Qty.	1

#### •

#### 43. Rotor Type/Material



44. Growler Test	(Pass) Pass
45. Number of Rotor Bars	40
46. Rotor Condition	pass
47. List the Parts needed for the Repair Below	
1-6313 2RS 1-6212 2RS BEARING	
48. Signature of Technician that Disassembled Motor	RW
7	

MIN

#### **Mechanical Fits- Rotor**

0 Degrees

Bad

	orialisal rito itator				
49.	Shaft Runout		inches		
-	Na				
50.	Rotor Runout				
	Drive End Bearing Fit	Rotor Body	Opposite Drive End Bearing		
-	Na				
51.	Coupling Fit Closest to Bearing Housi	ng			
	0 Degrees	90 Degrees	120 Degrees		
-	Na				
52.	2. Coupling Fit Closest to the end of the Shaft				
	0 Degrees	60 Degrees	120 Degrees		
-	Na				
53.	Drive End Bearing Shaft Fit				

120 Degrees

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60 Degrees





56.	Opposite Drive End Bearing Shaft Fit	Condition		(P) Pass
	2.3625	2.3625	2.3625	
	0 Degrees	60 Degrees	120 Degrees	
55.	Opposite Drive End Bearing Shaft Fit			



Co sign:CRW

57.	Shaft Air Seal Fits			
	Drive End Air Seal	Opposite Drive End Air Seal		
-	Pass			
Mech	anical Fits- Bearing Housings			
58.	Drive End - Endbell Bearing Fit			
	0 Degrees	60 Degrees	120 Degrees	
	5.5127	5.5127	5.5127	
59.	List Machine Work Needed Below			
	De shaft bearing fit bad .Recommend n	ew shaft or weld fit		
60.	Technician			RW

#### 61. Drive End - Endbell Bearing Fit Condition





62.	Opposite	Drive	End -	Endbell	Bearing Fit
-----	----------	-------	-------	---------	-------------

0 Degrees 120 Degrees 60 Degrees 4.3307 4.3307 4.3307

63. Opposite Drive End - Endbell Bearing Fit Condition

(P) Pass



64. Bearing Cap Condition

Drive End Bearing Cap Opposite Drive End Bearing Cap pass

pass



65. End Bell Air Seal Fits		
Drive End Air Seal	Opposite Drive End Air Seal	

Pass

#### **Root Cause of Failure**

66. Failure locations

De bearing

67. Root cause of failure

Carriage came apart letting rotor drop and drag the iron of winding and shortening to ground

#### **Dynamic Balance Report**

68. Rotor Weight and Balance Grade

Rotor Weight Balance Grade



69.	Initial Balance Readings		
	Drive End	Opposite Drive End	
	.80	1.85	
70.	Final Balance Readings		
	Drive End	Opposite Drive End	
	.08	.19	
71	Technician		DW.

Technician

#### Rewind

72. Core Test Results - Watts loss per Pound

Pre-Burnout Post Burnout

Na

73. Core Hot Spot Test

Pre-Burnout Post-Burnout

Na

74. Post Rewind Electrical Test-Insulation Resistance

Megohms

Ná

75.	Post Rewind Polarization Index		Polarization Index
-	Na		
76.	Post Rewind Winding Resistance		
	1-2	1-3	2-3
7	Na		
77.	<u> </u>		(Pass) Pass
	Post Rewind Hi-Pot		
79.	Technician Na		
	anical Fits- Rotor - Post Repair		
	Shaft Runout Post Repair		inches
•	Na		mones
81.	Rotor Runout Post Repair		
	Drive End Bearing Fit	Rotor Body	Opposite Drive End Bearing
	3	,	,,
7	Na		
82.	Coupling Fit Closest to Bearing House		
	0 Degrees	90 Degrees	120 Degrees
	Na		
	Coupling Fit Closest to the end of the	Shaft Post Renair	
05.	0 Degrees	60 Degrees	120 Degrees
	0 Degrees	00 Degrees	120 Degrees
-	Na		
84.	Drive End Bearing Shaft Fit Post Rep	pair	
	0 Degrees	60 Degrees	120 Degrees
-	Na		
85.	11 5		100 B
	0 Degrees	60 Degrees	120 Degrees
-	Na		
86.	Shaft Air Seal Fits Post Repair		
	Drive End Air Seal	Opposite Drive End Air Seal	
-	Na		
	Shaft Repair Sign-off		
7	Na		
Asser	•		
88.	QC Check All Parts for Cleanliness F	rior to Assembly	RW
89.	Photograph All Major Components p	rior to assembly	(Complete) Complete



















90.	Final Insulation Resistance Test  Pass the High Pot		Megohms
91.	Assembled Shaft Endplay		0 inches
92.	Assembled Shaft Runout		0.0002 inches
93.	Test Run Voltage		
	Volts	Volts	Volts
	229	228	229



#### Co sign TRH

#### 94. Test Run Amperage





95.	Drive End Vibration Readings - Inches Per Second			
	Horizontal	Vertical	Axial	
	0.06	0.02	0.05	
96.	Opposite Drive End Vibration Readings - Inches Per Second			
	Horizontal	Vertical	Axial	
	0.05	0.02	0.06	
97.	Ambient Temperature - Fahrenheit			
-	Na			
98.	3. Drive End Bearing Temps - Fahrenheit			
	5 Minutes	10 Minutes	15 Minutes	
-	Na			
99.	Opposite Drive End Bearing Temps - Fahrenheit			
	5 Minutes	10 Minutes	15 Minutes	
-	Na			
100.	Document Final Condition with Picture	s after paint		









101. Final Pics and QC Review

RW

Co signTRH



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### **AC Random Coil Rewind Report**

**Arauco-Malvern MDF (10298)** 1275 Willamette Rd

Malvern, AR 72104

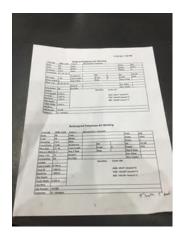
LR MOTORSHOP

Winding

Priorities Found: 4 - Good

	4 - <b>3000</b>	
Gene	ral	
1.	Job Number	103789
2.	Report Date	11/20/2024
3.	Customer	Arauco
Stato	r Winding	
4.	Core Length	9.75 "
-	3.375 con head 3.5 with connection 3.5 opp connection head	
5.	Core ID	7.625 "
6.	Back Iron Depth	1 "
7.	Slot Depth	1.25 "
8.	Tooth Width	0.25 "
9.	Number of Vents	0
10.	Vent Width	0 "
11.	Before Burnout Core loss	(P) Pass
12.	Flux Before Burnout	
13.	Watts before burnout	
14.	Watts loss per lb. before burnout	2.419 W/lbs.
15.	After Burnout Core Loss	
16.	Flux After burnout	
17.	Watts After Burnout	
18.	Watts loss per lb After Burnout	
19.	Core Iron Condition	
20.	RTD's	
21.	RTD's Reading	
22.	Motor Heaters	
23.	Heater Qty.	
24.	Heater Voltage	
25.	Heater Wattage	
26.	Thermistors	(Y) Yes
27.	Number of Poles	4
	Slots	48
29.	Number of Coils	48
30.	Coil Weight	
31.	Lead Markings	
	1-6	

60 Lbs2#17&3#18 6# 6EPDM 600 Volt Lead Wire 4 Thermisters





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