Hi-Speed Industrial Service
7030 Ryburn Dr
Millington, Tn 38053
901-873-5300

AC Inspection as Found

MOTOR - KTG USA
400 Mahannah
Memphis, TN 38107

FolderID: 154705
FormID: 23298401

AC Inspection - Rev. 2

Location:	MLMR
Serial Number:	2168 001 28 DZ
Description:	75 HP AC

Hi-Speed Job Number:	154705
Manufacturer:	Other
Product Number:	PE405T 75 6
Serial Number:	2168 001 28 DZ
HP/kW:	75 (HP)
RPM:	1180 (RPM)
Frame:	405T
Voltage:	460
Current:	85 (Amps)
Phase:	Three
Hz:	60 (Hz)
Service Factor:	1.15
Enclosure:	TEFC
# of Leads:	12
J-box Included:	Complete
Coupling/Sheave:	None
Date Received:	01/29/2025
Bearing RTDs:	No
Stator RTDs:	No
Repair Stage:	Teardown Inspection
Rewind:	No
Shaft Machined Fit Repairs Required:	Yes
Bearing Housing Machined Fit Repairs Required:	Yes
Heaters:	No
Winding Type :	Random Wound
Bearing Type:	Rolling Element

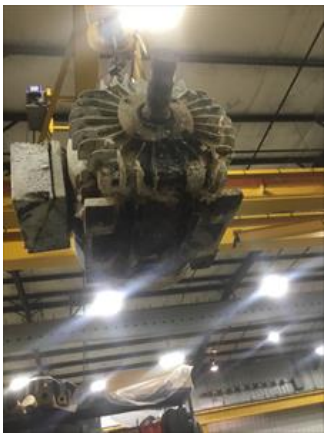
Priorities Found: **8 - High** **3 - Good**

Overall Condition

1.	Report Date	**02/05/2025**

2. Nameplate Picture P2

3. Photos of all six sides of the machine. P3



	4.	Describe the Overall Condition of the Equipment as Received ***Passed all electrical tests. Requires machine work to all 4 bearing fits.***	

Initial Mechanical/Electrical

🔴	5.	Does Shaft Turn Freely?	**(N) No**	
🔴	6.	Does the shaft require T.I.R in Lathe to identify additional repairs?	**(Yes) Yes**	
	7.	Does Shaft Have Visible Damage?	**(Yes) Yes**	
	8.	Assembled Shaft Runout	**Inches**	
	9.	Assembled Shaft End Play	**inches**	
	10.	Air Gap Variation <10%	**No Provisions for measurement**	
🟢	11.	Lead Condition	**(P) Pass**	
	12.	Lead Length	**12 Inches**	
🔴	13.	Does it have Lugs?, If so what is the Stud Size?	**(Yes) Yes**	
	14.	Lead Numbers	**1-12**	
	15.	Frame Condition	**Pass**	
🔴	16.	Fan Condition	**(F) Fail**	P16

Fan saw excessive heat from bearing failure and cracked.

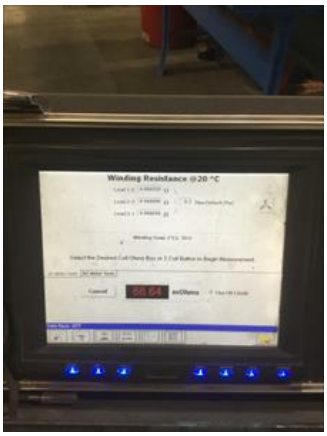
🟢	17.	Does motor have internal fan?	**(No) No**	
	18.	Broken or Missing Components	**None**	

Initial Electrical Inspection

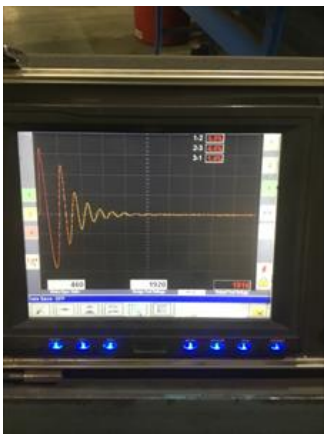
19. Insulation Resistance/Megger **92000 Megohms** P19

20. Winding Resistance P20

1-2	1-3	2-3
.06655	**.06669**	**.06664**



21. Perform Surge Test **(P) Pass** P21



22. Number of Stator Slots **72**

23. Stator Condition **Pass** P23

24.	Stator Thermistors/Ohms	**N/A**	
25.	Stator Overloads/Ohms	**N/A**	

Mechanical Inspection

26.	Drive End Bearing Brand	**C&U**	P26

27.	Drive End Bearing Number-	**NU318EM**	
28.	Drive End Bearing Qty.	**1**	
29.	Drive End Bearing Type	**(Roller) Roller Bearing**	
30.	Drive End Lubrication Type	**(Grease) Grease Lubricated**	
31.	Drive End Bearing Insulation or Grounding Device?	**Nine**	
32.	Drive End Wavy Washer/Snap-Ring Other Retention Device?	**Snap Ring**	

33.	Drive End Bearing Condition	**Destroyed**	P33

Locked up from heat and old grease

34.	Opposite Drive End Bearing Brand	**ZEZ**	P34

35.	Opposite Drive End Bearing Number-	**6317 C3**
36.	Opposite Drive End Bearing Qty.	**1**
37.	Opposite Drive End Bearing Type	**(Ball) Ball Bearing**
38.	Opposite Drive End Lubrication Type	**(Grease) Grease Lubricated**
39.	Opposite Drive End Bearing Insulation or Grounding Device?	**None**
40.	Opposite Drive End Wavy Washer/Snap-Ring Other Retention Device?	**Snap Ring**

41.	Opposite Drive End Bearing Condition	**destroyed**	P41

Locked up from heat and old grease. Spun on shaft

42.	Drive End Seal	**VA90**	
43.	Opposite Drive End Seal	**VA85**	

Rotor Inspection

44.	Rotor Type/Material	**(Squirrel Aluminum) Squirrel Cage Aluminum Die Cast**	
45.	Growler Test	**(Pass) Pass**	
46.	Number of Rotor Bars	**58**	P46

47.	Rotor Condition	**Pass**	
48.	List the Parts needed for the Repair Below ***NU318*** ***6317 C3*** ***VA85*** ***VA90***		
49.	Signature of Technician that Disassembled Motor	**Brandon Woodard**	

Mechanical Fits- Rotor

50.	Shaft Runout	**inches**	
51.	Rotor Runout		

Drive End Bearing Fit	Rotor Body	Opposite Drive End Bearing

52.	Coupling Fit Closest to Bearing Housing		P52
0 Degrees	90 Degrees	120 Degrees	
2.875	**2.875**	**2.875**	

53.	Coupling Fit Closest to the end of the Shaft	
0 Degrees	60 Degrees	120 Degrees
2.875	**2.875**	**2.875**

54.	Drive End Bearing Shaft Fit		P54
0 Degrees	60 Degrees	120 Degrees	
3.5402			

Tolerance is 3.5442-3.5451

55.	Drive End Bearing Shaft Fit Condition	**(F) Fail**

56.	Opposite Drive End Bearing Shaft Fit			P56
	0 Degrees	60 Degrees	120 Degrees	

Tolerance is 3.3466-3.3472

57.	Opposite Drive End Bearing Shaft Fit Condition		**(F) Fail**
58.	Shaft Air Seal Fits		
	Drive End Air Seal	Opposite Drive End Air Seal	
	Pass	**Pass**	

Mechanical Fits- Bearing Housings

59.	Drive End - Endbell Bearing Fit			P59
	0 Degrees	60 Degrees	120 Degrees	
	7.4825	**7.4823**	**7.5827**	

Tolerance is 7.4803-7.4814

60.	Drive End - Endbell Bearing Fit Condition		**(F) Fail**
61.	Opposite Drive End - Endbell Bearing Fit		
	0 Degrees	60 Degrees	120 Degrees
	7.0875	**7.0883**	**7.0889**

Tolerance is 7.0866-7.0876

62.	Opposite Drive End - Endbell Bearing Fit Condition		**(F) Fail**
63.	Bearing Cap Condition		
	Drive End Bearing Cap	Opposite Drive End Bearing Cap	
	Pass	**Pass**	

64. End Bell Air Seal Fits

Drive End Air Seal	Opposite Drive End Air Seal
Pass	**Pass**

65. List Machine Work Needed Below

Repair all 4 bearing fits.
Double check bearing shoulder depths due to bearings spinning on the shaft.

66. Technician **Brandon Woodard**

Root Cause of Failure

67. Failure locations

Bearings and bearing fits.

68. Root cause of failure

Old grease causing wear and heat.