

## Job Information

Job #: 97188

Date: August 18, 2020

Priority: —

Authorized OT: No

Authorized by:

## Customer Information

Name: Arkansas Industrial Machinery

Reason:

Contact:

Motor#:

PO#:

Application: —

Special notes:

## Name Plate Information

Manufacturer: Siemens

Enclosure : Totally Enclosed  
Fan Cooled

Enclosure Type image

Serial#:

Model#:

Service Factor: 1.5

Frame: 160L

Horsepower/kW: 18.5

Rated RPM: 3560

Rated Amps: 29.5/28.5

Rated Voltage: 440/460

Phase: 3

Cycles: 60

Special design: No



Nameplate

DE

ODE

F1

F2

Top



## Mechanical Inspection

Inspect bolt holes and fasteners. Validate correct fasteners.

Does the shaft turn freely?: No Contaminant(s): Carbon

Shaft rotation: Bi-directional Contaminant(s) Amt: Other

Shaft grounding device present?: No Contaminant Image:



Type of grounding device:

Shaft runout(TIR-Inbound):

Bearings DE: Worn Bearings DE make: FAG

Insulated: No Bearing DE Size: 6309

Bearings ODE: Fell Apart Bearings ODE make: FAG

Bearing Type: Ball Bearing ODE Size: 6209

Bearings Retainer: Yes Thermal Protection: No

Retainer condition: Good Thermal Protection Type: —

Bearing Type Image



Bearing Make Image



Bearing Retainer Image



Thermal Protection

## Mechanical Inspection (Continued)

Lubrication Type: Grease

Thermal Protection device DE: —

Lubrication brand inbound: Unknown

Thermal Protection device ODE: —

Lubrication brand outbound: Unknown

Grease Amt DE: Full

Grease Cond. DE: New

Grease Amt ODE: Full

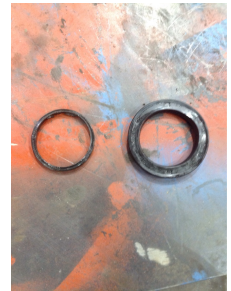
Grease Cond. ODE: New

Seals DE type: Labyrinth

Seals Image:

Seals DE size: 45-65-8

Seals DE (inbound) condition : Bad



Seals ODE type: Labyrinth

Seals ODE size: 45-52-5

Seals ODE (inbound) condition :  
Bad

Shaft damage cause: None

Shaft Image:



## Mechanical Inspection (Continued)

Brg. Image:



Water jacket: N/A

Fan: Broken

Frame cond.: Good



Motor Mount Position: Horizontal/Foot mount

Endbell type: Single piece

Missing parts?

☐ J-Box cover ☐ O-rings ☐ J-Box☐ HH cover ☐ Glands ☒ None

Endbell Image:



Other missing parts



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## Mechanical Inspection (Continued)

### Air Gap Measurements (N/A on Single Piece Endbell)

Does Air Gap Meet Customer or EASA spec(<10% variation)?

DE @ 0

ODE @ 0

—

DE @ 90

ODE @ 90

DE @ 180

ODE @ 180

DE @ 270

ODE @ 270

## AC Electrical Inspection

Number of leads: 12

Terminal Markings:

Length of leads: 37 in

REF: NEMA Stds. MG 1-2009, Rev. 1-2010, 2.41-Terminal Markings Identified By Color:

Size of leads:

1-Blue  
2-White  
3-Orange  
4-Yellow

5-Black  
6-No color assigned  
7-No color assigned  
8-Red

P1-No color assigned  
P2-Brown

Lead condition: Good

Lug type: NA

Connections As Received:

Lug Condition: —

Terminal

Lugs

Lug size:

Lug Attachment: —

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6812 Lindsey Rd.  
Little Rock, AR 72206  
Phone 501-375-9178  
Fax 501-375-4254



## AC Electrical Inspection (Continued)

Rotor Type: Cast Aluminum

Rotor

Rotor Condition: Ok

Num rotor bars: 42

Num broken bars: 0



### Rotor Test Results

Visual: Pass

Growler: Pass

Single phase: Pass

Stator type: Factory

If other, stator type:

Stator condition: Poled

If other, stator condition:

Failure location: In slot

If other, stator failure:

Stator Image:



Failure Image:



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## AC Electrical Inspection (Continued)

Winding color: Still has color

Winding image

Winding Thermal Protection: No

Winding condition : Solid

Winding Thermal Protection DE: —

Winding Thermal Protection ODE: —



Stator test results: Rewind

Megs incoming: Good

Surge incoming: Good

Hi-pot incoming: Good

### Winding Resistance Incoming

	Phases A to B	Phases B to C	Phases C to A	Resistive imbalance
Incoming	0.00	0.00	0.00	

Leads/jumpers: Ok

Lead jumper Image. :



If other, leads/jumpers:

## Mechanical Inspection

Inspect bolt holes and fasteners. Validate correct fasteners.

Shaft Condition: Good

Bearings Retainer: Yes

Type of grounding device:

Bearing DE Size: 6309

Shaft runout(TIR-Inbound):

Bearing ODE Size: 6209

Retainer condition: Good



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## Mechanical Inspection (Continued)

Seals DE condition : Worn

Brg. Seats DE: Good

Seals DE type: Labyrinth

If DE undersized, amt.:

Seals DE size: 45-65-8

Brg. Seats ODE: Good

Seals DE (inbound) condition : Bad

If ODE undersized, amt.:

Seals ODE condition : Brittle

Shaft damage: OK

Seals ODE type: Labyrinth

Seals ODE size: 45-52-5

Bushings/sleeves DE: Ok

Seals ODE (inbound) condition : Bad

Bushings/sleeves ODE: Ok

Endbell fits/damage: Good

Foot/Flange condition: Ok

Endbell DE size: 3.9379

Foot flatness: Pass

Endbell DE insulated?: —

Does Air Gap Meet Customer or EASA spec(&lt;10% variation)?

Endbell ODE size: 3.3467

—

Endbell ODE insulated?: —

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## Conclusion

### Component Failure

Bearings, seals, windings, fan, bearing cap

### Cause of Failure

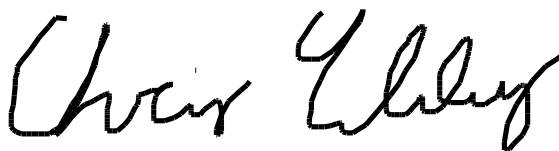
ODE bearing fail apart causing rotor to drag iron causing windings to short and shaft drag in bearing cap causing it to heat up melting the fan

### Comments

Recommend new seals, new bearings, new fan, rewind, and machine work on bearing cap

Service Tech name: Chris Wiley

Service Tech signature:

A handwritten signature in black ink that reads 'Chris Wiley'.**WEST TENNESSEE**

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