

Job Information

Job #: 94780

Date: October 4, 2018

Priority: —

Authorized OT: No

Authorized by:

Customer Information

Name: A.I.M

Reason:

Contact:

Motor#:

PO#:

Application: —

Special notes:

Name Plate Information

Manufacturer: ABB

Enclosure : Totally Enclosed
Fan Cooled

Enclosure Type image

Serial#: M3AA250SMA-2

Model#: 3GV12109360520
01

Service Factor: 1.15

Frame: 250S

Horsepower/kW: 55

Rated RPM: 3580/3582

Rated Amps: 86/83.5

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): Other

Shaft rotation: Bi-directional

Contaminant(s) Amt: Cup

Shaft grounding device present?: No

Contaminant Image:



Type of grounding device: None

Shaft runout(TIR-Inbound):

Bearings DE: Worn

Bearings DE make: Other

Insulated: No

Bearing DE Size: NU213 ECP

Bearings ODE: Worn

Bearings ODE make: Other

Bearing Type: Cylindrical roller

Bearing ODE Size: 6215 2Z/C4

Bearings Retainer: Yes

Thermal Protection: Yes

Retainer condition: Good

Thermal Protection Type: —

Bearing Type Image



Bearing Make Image



Bearing Retainer Image



Thermal Protection



Mechanical Inspection (Continued)

Lubrication Type: Oil

Thermal Protection device DE: —

Lubrication brand inbound: Unknown

Thermal Protection device ODE: —

Lubrication brand outbound: Unknown

Grease Amt DE: N/A

Grease Cond. DE: Other

Grease Amt ODE: 1/2

Grease Cond. ODE: Charred

Seals DE type: Isolators

Seals Image:



Seals DE size:

Seals DE (inbound) condition : Worn

Seals Image 2:



Seals ODE type: N/A

Not Available

Seals ODE size:

Seals ODE (inbound) condition :
:

Shaft damage cause: None

Shaft Image:



Mechanical Inspection (Continued)

Brg. Image:



Bushings/sleeves image:



Water jacket: Ok

Not
Available

Fan: Ok



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

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: 6

Terminal Markings:

Length of leads: 7'9"

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:

Connections As Received:

Lug Condition: Good

Lug size:

Lug Attachment: Acceptable

Terminal



Lugs



AC Electrical Inspection (Continued)

Rotor Type: Cast Aluminum

Rotor Condition: Ok

Num rotor bars: 40

Num broken bars: 0

Rotor



Rotor Test Results

Visual: Pass

Growler: Pass

Single phase: Pass

Stator type: Factory

If other, stator type:

Stator condition: Ok

If other, stator condition:

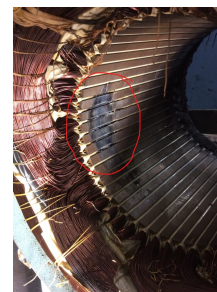
Failure location: In slot

If other, stator failure:

Stator Image:



Failure Image:



WEST TENNESSEE

7030 Ryburn Drive
Millington, TN 38053
Phone 901-873-5300
Fax 901-873-5301

CENTRAL ARKANSAS

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

AC Electrical Inspection (Continued)

Winding color: Dull black

Winding image

Winding Thermal Protection: No

Winding condition : Charred

Winding Thermal Protection DE: —

Winding Thermal Protection ODE: —

Stator test results: Rewind



Not Available

Megs incoming: Bad

Surge incoming: Bad

Hi-pot incoming: Bad

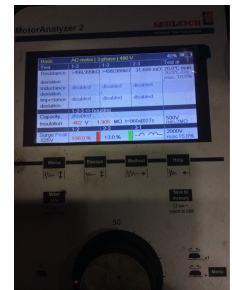
Winding Resistance Incoming

	Phases A to B	Phases B to C	Phases C to A	Resistive imbalance
Incoming	499.99	499.99	31.6	

Leads/jumpers: Ok

Lead jumper Image. :

If other, leads/jumpers:



Mechanical Inspection

Inspect bolt holes and fasteners. Validate correct fasteners.

Shaft Condition: Damaged

Bearings Retainer: Yes

Type of grounding device: None

Bearing DE Size: NU 213 ECP

Shaft runout(TIR-Inbound):

Bearing ODE Size: 6215/2Z C4

Retainer condition: Good



MILLINGTON, TN

LITTLE ROCK, AR

Mechanical Inspection (Continued)

Seals DE condition : Worn

Brg. Seats DE: Good

Seals DE type: Slinger

If DE undersized, amt.: Worn

Seals DE size:

Brg. Seats ODE: Good

Seals DE (inbound) condition : Worn

If ODE undersized, amt.: Excessive wear

Seals ODE condition : None

Shaft damage: OK

Seals ODE type: N/A

Seals ODE size:

Bushings/sleeves DE: Gauged

Seals ODE (inbound) condition :

Bushings/sleeves ODE: Other

Endbell fits/damage: Bad

Foot/Flange condition: Ok

Endbell DE size: Excessive wear

Foot flatness: Pass

Endbell DE insulated?: No

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

Endbell ODE size: Excessive wear

—

Endbell ODE insulated?: No

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Conclusion

Component Failure

Multiple: D.E bearing and O.D.E bearings show catastrophic failure. Fan blade completely broken off.

Cause of Failure

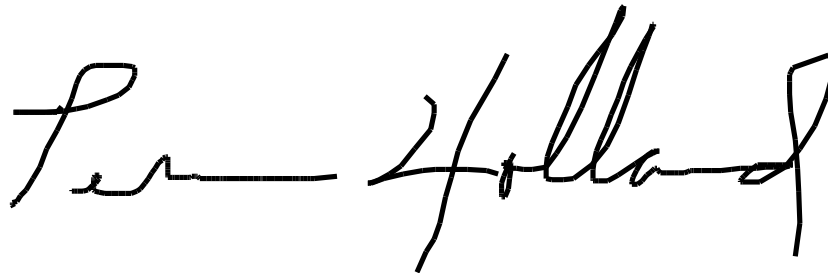
Bearings from what appears to be lack of lubrication. This caused other components to fail as well.

Comments

Initial disassembly showed both bearings completely destroyed. The drive end bearing showed no signs of lubricant on them. The opposite drive end bearing and shaft bearing journal were excessively worn and the end bell housing has multiple cracked areas and needs to be replaced. The motor windings showed an excessive amount of heat stress in the form of broken winding strings. Also the stator iron is damaged from rotor drag and a core check is necessary to check its integrity.

Service Tech name: Terrence Holland

Service Tech signature:

A handwritten signature in black ink, reading 'Terrence Holland'.

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