Job Information

Job #:	96285			Date:	December 2, 2019
Priority:	—	Authorized OT:	No	Authorized by:	

Customer Information

Name:	Future fuel			Reason:	
Contact:		Motor#:		PO#:	
Application:	—	Special notes:			

Name Plate Information

Manufacturer:	Marathon	Enclosure :	Explosion-proof enclosures (EXPL/	Enclosure Type image
Serial#:	WAA 1181689	Model#:	TM 445TSTGN16505A	
Service Factor:	1.15	Frame:	445TS	
Horsepower/kW:	150	Rated RPM:	3575	
Rated Amps:	168	Rated Voltage:	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?:	Yes	Contaminant(s):	None
Shaft rotation:	Bi-directional	Contaminant(s) Amt:	None
Shaft grounding device present?:	No	Contaminant Image:	
Type of grounding device:	None		
Shaft runout(TIR-Inbound):			

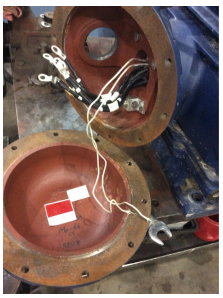
Bearings DE:	Worn	Bearings DE make:	NTN
Insulated:	No	Bearing DE Size:	6313 Z
Bearings ODE:	Worn	Bearings ODE make:	NTN
Bearing Type:	Ball	Bearing ODE Size:	6313 Z
Bearings Retainer:	Yes	Thermal Protection:	Yes
Retainer condition:	Good	Thermal Protection Type:	Thermocouple

Bearing Type Image

Bearing Make Image

Bearing Retainer Image

Thermal Protection

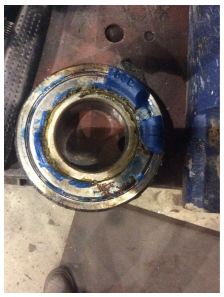


Mechanical Inspection (Continued)

Lubrication Type:	Grease	Thermal Protection device DE:	—
Lubrication brand inbound:	Mobile Polyrex EM	Thermal Protection device ODE:	Thermistors
Lubrication brand outbound:	Mobile Polyrex EM		
Grease Amt DE:	Full	Grease Cond. DE:	Gritty
Grease Amt ODE:	Full	Grease Cond. ODE:	Watery
Seals DE type:	Slinger		
Seals DE size:			
Seals DE (inbound) condition :			
Seals ODE type:	Slinger		
Seals ODE size:			
Seals ODE (inbound) condition :			
Shaft damage cause:	None	Shaft Image:	

Mechanical Inspection (Continued)

Brg. Image:



Bushings/sleeves image:

Water jacket: N/A

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 Meaurements (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

Length of leads: 12”

Size of leads:

Lead condition: Good

Lug type:

Lug Condition: Good

Lug size:

Lug Attachment: Replace

Terminal Markings:

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

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

Connections As Received:

Terminal

Lugs

AC Electrical Inspection (Continued)

Rotor Type: Cast Aluminum

Rotor Condition: Ok

Num rotor bars:

Num broken bars:

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:

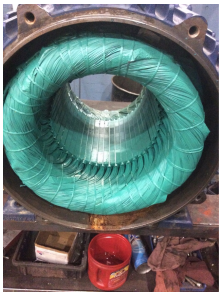
Stator Image:

Failure Image:

AC Electrical Inspection (Continued)

Winding color: Like new

Winding image



Winding Thermal Protection: Yes

Winding condition : Solid

Winding Thermal Protection DE: —

Winding Thermal Protection ODE: —

Stator test results: Salvageable

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				

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: 6313 2Z

Shaft runout(TIR-Inbound):

Bearing ODE Size: 6313 2Z

Retainer condition: Good

Mechanical Inspection (Continued)

Seals DE condition :	Worn	Brg. Seats DE:	Good
Seals DE type:	N/A	If DE undersized, amt.:	
Seals DE size:		Brg. Seats ODE:	Good
Seals DE (inbound) condition :		If ODE undersized, amt.:	
Seals ODE condition :	Worn	Shaft damage:	OK
Seals ODE type:	N/A		
Seals ODE size:		Bushings/sleeves DE:	Ok
Seals ODE (inbound) condition :		Bushings/sleeves ODE:	Ok
Endbell fits/damage:	Good	Foot/Flange condition:	Ok
Endbell DE size:	5.5128	Foot flatness:	Pass
Endbell DE insulated?:	No		
Endbell ODE size:	5.5126	Does Air Gap Meet Customer or EASA spec(<10% variation)?	
Endbell ODE insulated?:	No	—	

Conclusion

Component Failure

Bearings/ #2 lead missing a lug.

Cause of Failure

#2 lead missing lug. Excessive amounts of rust inside end bell housing from condensation contaminated the bearing grease in both bearings caused damage in both bearings.

Comments

Service Tech name: Terrence Holland

Service Tech signature: