Cause of Failure – 250 HP WEG Motor

Prepared for _____

Dreisilker Electric Motors, Inc.

352 Roosevelt Road

Glen Ellyn, IL 60137

Motor Nameplate Information

Make:	WEG	AC/DC/Other:	AC
Model:	25018ET3GKD447-	Hertz:	60
Serial No.:	28JUNE2016 1032	Phase:	3
Motor Type:	--		
Phys Type:	T.E.F.C.	Serv. Factor:	1.15
Mounting:	BASE-SOLID	Insul. Class:	F
Frame Size:	447/9T	Ambient:	40C
		Code:	J
Power Value:	250	Design:	--
Power Rating:	HP		
Voltage:	460		
AMPS:	292		
RPM:	1785		

Motor Findings

- Motor had contamination on the cooling fins
- Mechanical dimensions of bearing and shaft fits were in tolerance
- Motor failed Megger/Insulation Test, DC HiPot, and Surge Test
- Winding ties were broken
- White bubbling of insulation material was coming out of slot ends
- Winding shorted to ground at edge of laminations on one coil

Motor Failure Pictures

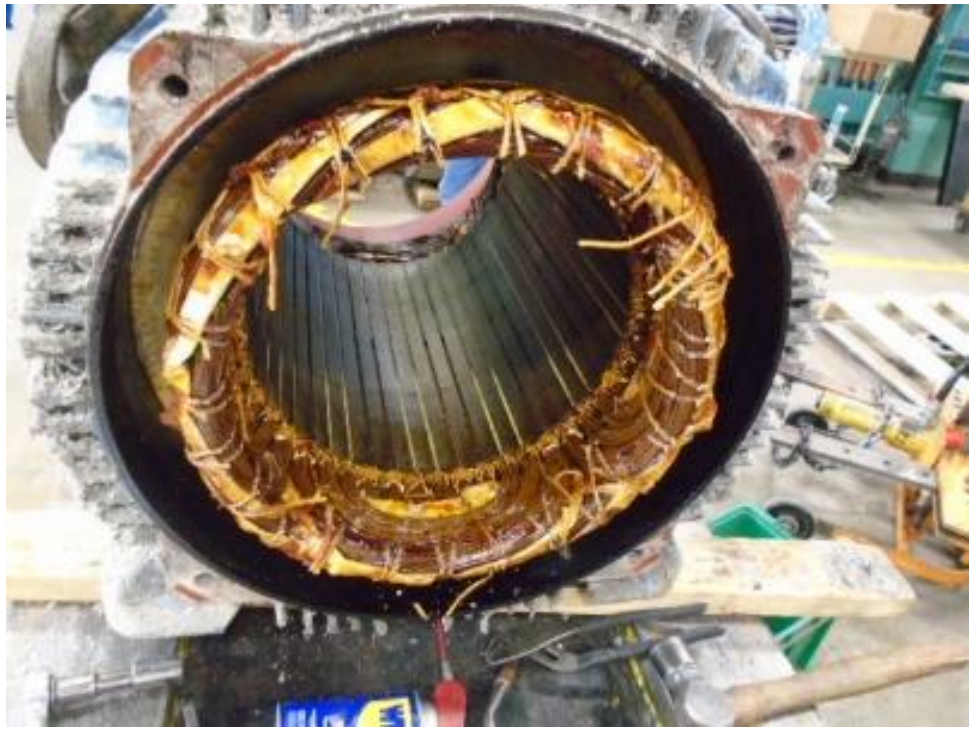
Incoming Picture

Incoming Picture

Motor Failure Pictures

No contamination on inside, but winding ties broken

Winding ties broken



Motor Failure Pictures

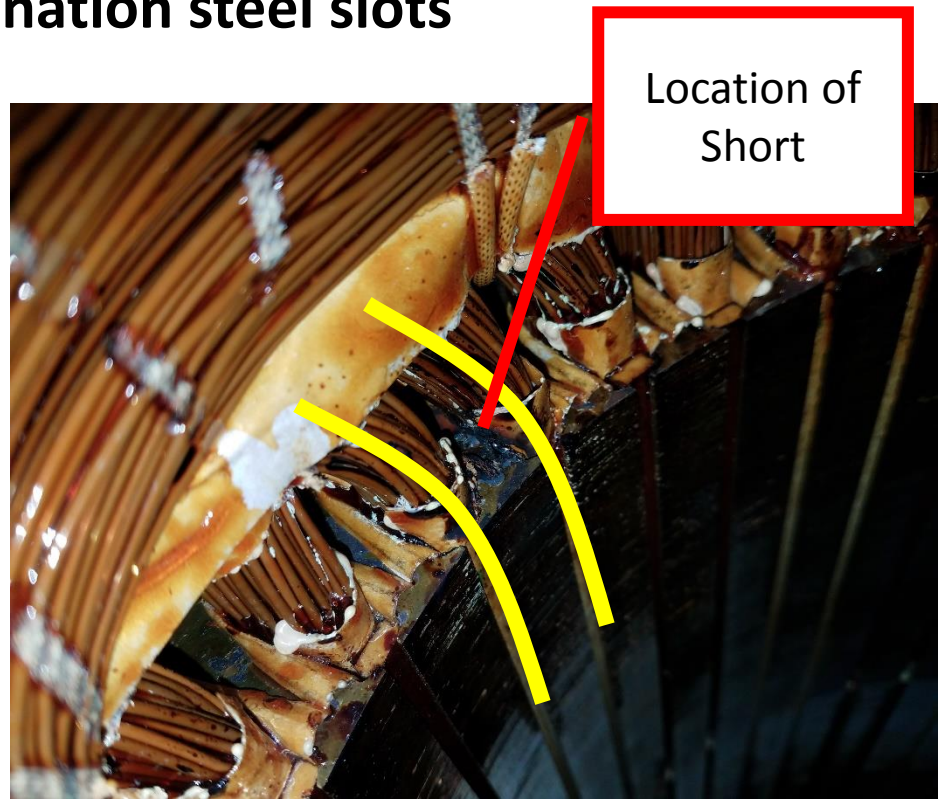
Winding ties broken and white bubbling of insulation material out of slots

White bubbling of insulation materials and ties broken away

Motor Failure Pictures

Coil that shorted to ground at edge of laminations

Coils bend at an angle coming out of lamination steel slots



Cause/Causes of Failure

- One motor coil shorted to ground where it came out of the slot at an angle
- The winding overheated causing ties to break and white bubbling of insulation material to come out of slot
- It is unknown if coil shorted to ground first or if winding overheated first

Methods for Prevention of Failure

- Manufactured and rewound motors coils should come straight out of the laminations slots before bending. Bending a coil on the edge of the slot will cause abrasion of insulating materials.
- Check the motor controls to make sure it did not cause an overloaded condition causing winding to overheat (however, no other evidence in other parts of this motor indicated an overload)