

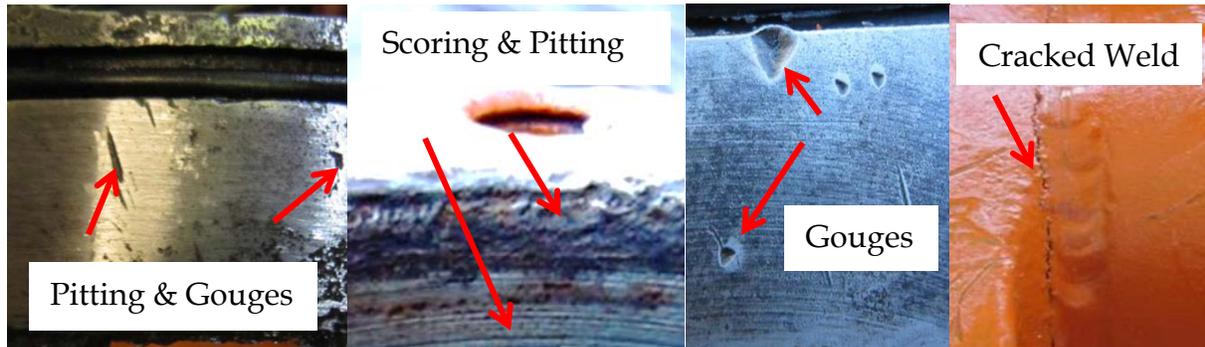


U.S. Department of Labor  
Mine Safety and Health Administration  
Protecting Miners' Safety and Health Since 1978

**REBUILT EXPLOSION-PROOF ENCLOSURES OF MOTOR ASSEMBLIES**

Discrepancies on rebuilt explosion-proof electric motors, which are MSHA approved and certified, have been identified during recent mine inspections. These motors must conform to the drawings and specifications on file at the Approval and Certification Center (A&CC) for the respective motors whenever they are taken into or used in areas that require permissible electric equipment (see 30 C.F.R. 75 Subpart F or 30 C.F.R. §§57.22302-22305). Failure to maintain such equipment in permissible condition can create ignition and explosion hazards.

The photographs below show examples of rebuilt motors that did not conform to the drawings and specifications on file at A&CC.



In the first three photographs, the pitting, gouges, and scoring on the flame-arresting path of the slip fit and the motor frame do not meet the requirements listed in 30 C.F.R. §7.304(g)(5) or §18.33 requiring all surfaces forming a flame-arresting path to have a finish of 250 microns or less. In the fourth photograph, the weld around the entrance sleeve is cracked. This weld does not meet the requirement of 30 C.F.R. §7.304(g)(2) or §18.31(a)(2), requiring all welded joints to have continuous, gas-tight welds and are made in accordance with American Welding Society standards.

**BEST PRACTICES**

1. Have motors rebuilt only by repair shops that rebuild explosion-proof motors in conformity with the drawings and specifications on file at A&CC.
2. Assure that qualified personnel conduct examinations on all rebuilt explosion-proof electric motors when the equipment is received on mine property.
3. Utilize surface finish testers or comparators to conduct proper examinations of the flame-arresting paths when the rebuilt equipment is received on mine property.
4. Coal mine operators should contact their local MSHA district office when they receive non-compliant equipment.