

Common fault analysis of Tricone bits

Common fault	Fault description	Method
Early wear of the shirrtail	Abrasive formations, bent drill rod, seriously worn stabilizer and insufficient air for drilling rate attained etc, are all the causes which result in premature shirrtail wear. In this case, the configuration of cones is good and the amount of inserts wear is small. Shairttail wear can also allow the big roller bearings to fall out resulting in bit failure.	The designer should strength the shirrtail with certain measures to increase the wear-resistance capacity of shirrtails.
Early wear and loose movement of the bearing	Excessive weight on bit, insufficient air to clean the hole and/or cool the bearing, leads to bearings overheating due to improper cooling and poor cuttings removal can shorten the service life of bit bearing.	Reduce bit pressure and increase air pressure
Cutting structure failure	Excessive WOB or Rotation speed; Wrong bit selection; Cuttings blowing in bad conditions caused repeating crushing.	Correctly select operating parameters and rotary types for specific working conditions

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