**IDEAL WEAR**

Even wear to the carbides with the diamonds evenly worn.

**DIAMONDS OVERLY EXPOSED**

Matrix wears before diamonds have worn out. Diamonds pop out prematurely, reducing bit life.

**Caused by:**
- Drilling pressure too high for the speed of rotation
- Water flow too low
- Matrix used is too soft

**Solutions:**
- Increase speed of rotation and reduce the drilling pressure
- Increase the water flow
- Change the bit for a lower series (harder matrix)

**CORE BIT POLISHED OR GLAZED**

Bit doesn’t cut and diamonds appear polished.

**Caused by:**
- Drilling pressure too low for the speed of rotation
- Water flow too high
- Matrix used is too hard

**Solutions:**
- Sharpen the bit
- Reduce the rotation speed and increase drilling pressure
- Reduce water flow
- Select a bit from a higher series (softer matrix)

**I.D. GAUGE LOSS**

Wear of inside diameter and inside ringing. Concave wear pattern.

**Caused by:**
- Drilling pressure too high
- Very broken ground
- Core left in the hole
- Water flow too low
- Matrix too soft

**Solutions:**
- Increase rotation speed
- Reduce drilling pressure
- Change for a lower series core bit (harder matrix)
- Increase water flow
- Check and adjust the length of inner tube

**O.D. GAUGE LOSS**

Wear of outside diameter and outside ringing. Convex wear pattern.

**Caused by:**
- Vibration
- Rotation speed too high
- Water flow too low
- Core-in, the hole was reamed

**Solutions:**
- Increase water flow
- Reduce rotation speed
- Check the diameter of reaming shell
- Add drilling fluids (to reduce vibration)
- Try new configurations (deep lateral discharge or deep water way)

**INSIDE WEAR PATTERN**

Inside of the bit has worn down before the outside, in a concave pattern.

**Caused by:**
- Drilling pressure too high for the rotation speed
- Core left in the hole had to be drilled
- Very broken ground
- Core blocked in the inner tube

**Solutions:**
- Decrease drilling pressure
- Increase rotation speed
- Check and adjust the length of inner tube
- Add drilling fluids (fractured ground)
- Don’t try to push through a core block

**OUTSIDE WEAR PATTERN**

Outside of the bit has worn down before the inside, in a convex pattern.

**Caused by:**
- Water flow too low
- Loss of water by the rods
- Hole “reamed”

**Solutions:**
- Increase the water flow
- Check for leaks
- Check the diameter of shell