Black Diamond Drilling Services Australia Pty Ltd.

BD Drill

IADC Codes - Rotary Rock Bits

International Association of Drilling Contractors

IADC Codes make it easier for drillers to describe what kind of rock bit they are looking for to the supplier. Bit Brokers International follows the IADC bit classification system in which the first three digits classify the bit according to the formation it is designed to drill and the bearing/seal design used.

Example 5-4-5-R :

First Digit:

a. 1, 2, and 3 designate STEEL TOOTH BITS with 1 for soft, 2 for medium and 3 for hard formations.

b. 4, 5, 6, 7 and 8 designate TUNGSTEN CARBIDE INSERT BITS for varying formation hardness with 4 being the softest and 8 the hardest.

Second Digit:

1, 2, 3 and 4 are further breakdown of formation with 1 being the softest and 4 the hardest.

Third Digit:

This digit will classify the bit according to bearing/seal type - see information on different bearing types - and special guage wear protection as follows:

1.Standard open bearing roller bit/2.Standard open bearing roller bit, air-cooled

3.Standard open bearing roller bit with gauge protection which is defined as carbide inserts in the heel of the cone

4.Sealed roller bearing bit/5.Sealed roller bearing bit with gauge protection

6.Journal sealed bearing bit/7.Journal sealed bearing bit with gauge protection

Fourth Digit:

The following letter codes are used in the fourth digit position to indicate additional features:

A. Air Application/R. Reinforced Welds/C. Center Jet/S. Standard Steel Tooth/D. Deviation Control/X. Chisel Insert/E. Extended Jet/Y. Conical Insert/G. Extra Gage Protection/Z. Other Insert Shape/J. Jet Deflection

Bearing Types:

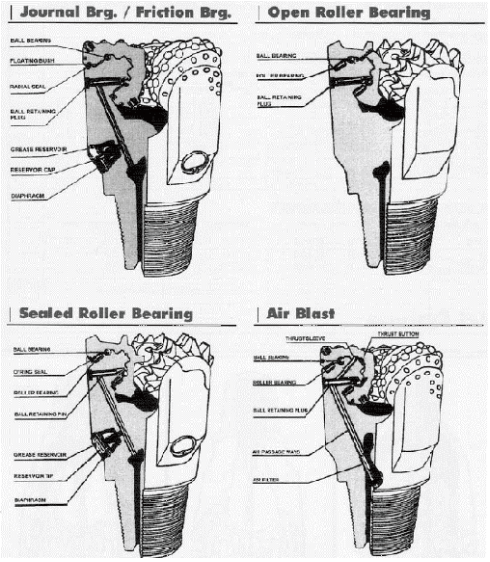
There are primarily four (4) types of bearing designs used in tricone drilling bits:

1.) STANDARD OPEN BEARING ROLLER BIT: On these bits the cones will spin freely. This type of bit has a front row of ball bearings and a back row of roller bearings.

2.) STANDARD OPEN BEARING ROLLER BIT FOR AIR DRILLING: Cones are similar to #1, but have air injection directly to the cones to cool the bearings. Air flows into the cone through the passage ways inside the pin. (Not for mud applications)

3.) SEALED BEARING ROLLERS BITS These bits have an O-Ring seal with a grease reservoir for bearing cooling. The seals acts as a barrier against mud and cuttings to protect the bearings

4.) JOURNAL BEARING ROLLER BITS These bits are strictly oil/grease cooled with nose bearings, O-Ring seal and a race for maximum performance.



Please check http://www.iadc.org/drillbits/ for more information.

Add:52 Distinction Road, Wangara, WA 6065 Tel:+61 08 6365 5660 www.bddrill.com.au

IADC635 Bit Description

Bit Size (mm)	IADC Code	Pin Connection	Weight (Kg)
200/216/229/251/270/311	635	4 1/2” & 6 5/8” API REG	34/38/50/65/74/104

IADC: 635 – TCI sealed roller bearing bit with gauge protection for medium hard formations with high compressive strength.

Compressive Strength:

- 85 - 100 MPA
- 12,000 – 14,500 PSI

Ground Description:

Hard, well compacted rocks such as: hard silica limestones, quartzite streaks, pyrite ores, hematite ores, magnetite ores, chromium ores, phosphorite ores and granites

Product Specification	Technical
Bearing Type	**Operating Suggestions**
Roller-Ball-Roller-Thrust Button/Sealed Bearing	Weight on Bit: 19,750 – 49,380
Circulation Type	Rotary Speed: 80 – 110 RPM
Jet Air	Air Back Pressure: 0.2 – 0.4
Cutting Structure	
Inner and Nose Rows: Conical	Gage Row: Chisel
Gage Level Protection: Round	Hardmetal on lug; Wear resistant carbide on shirttail lip and lug

Based on the IADC Bit Classification System located in the IADC Drilling Manual, 11th Ed. – Redesigned, 2007

GUIDE FOR BEST PERFORMANCE

- When a new bit is installed, drill bit at reduced weight for a short break-in period. Use the 1/3 – 2/3 rule: 1/3rd of normal weight and RPM for 1/3 first hole, 2/3rd of normal weight and RPM for the next 1/3rd of the hole. Use normal drilling parameters to finish the hole.
- Provide adequate air to the bit to ensure trouble free bearing performance and reduced abrasion wear on cones and shirttails.
- Turn the air on before lowering the bit to collar the hole. Keep the air on until the bit is finished drilling and is out of the hole. Always rotate the bit when moving in or out of the hole.
- Always rotate when coming out of the hole.
- Blasthole bits drill most effectively when sufficient weight is applied to cause spalling of the formation. Selecting correct rotary speed is usually a matter of trial-and-error, depending upon the formation being drilled or use the factory recommended weight and rotation speeds.
- Never use the hydraulic down pressure on the bit to aid in levelling the machine.
- When adding extra drill steel in wet holes, always make three or four cleaning passes to get the bottom of the hole as clean as possible.
- After the bit is discarded it is necessary to make a comparative analysis of each bit type dulling and causes.

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