ACECR

Academic Center for Education, Culture and Research

Drill Bits Manufacturing And Services

PTRI Roller Cone Drill bits:

PTRI was founded in 1998 as a branch of ACECR and twenty three years later, the tradition of pioneering technology and forward-thinking design continues with PTRI.

Production Technology Research Institute of ACECR located in heart of I.R.IRAN oil industry is honored to be the first manufacturer of multiple types of Roller cone drill bits in country.

We will deliver ever-increasing value to our customers by exceeding industry standards for performance, service and innovation.



PTRI

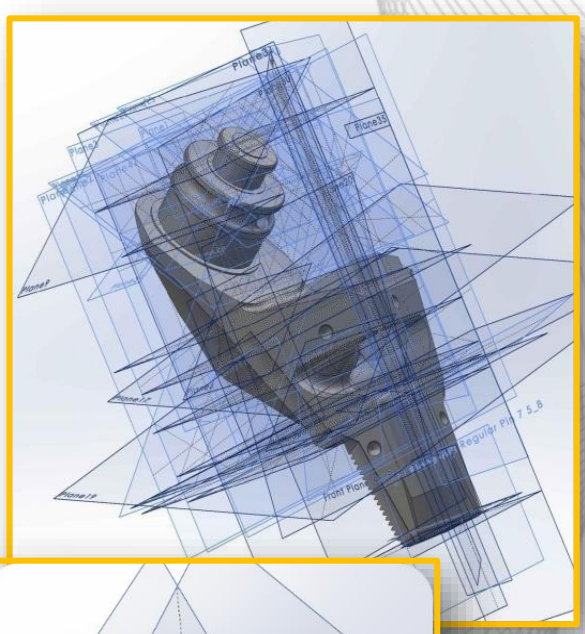
Production Technology Research Institute

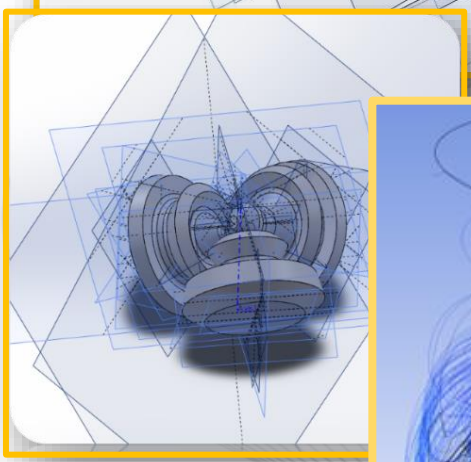
Computer Aided Design (CAD), And Finite Element Analysis (FEA)

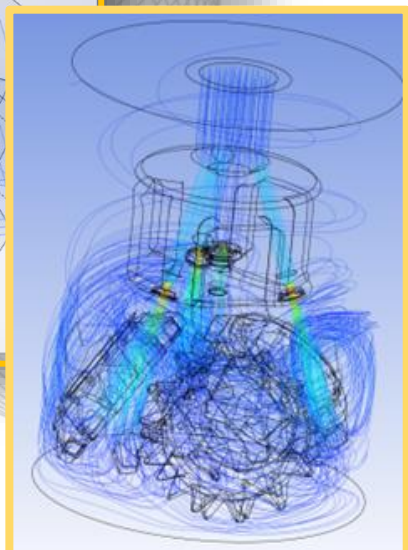
With our in house Engineering and Drafting team we are able to design and manufacture custom products and parts to our customers' exact specifications and formation needs.

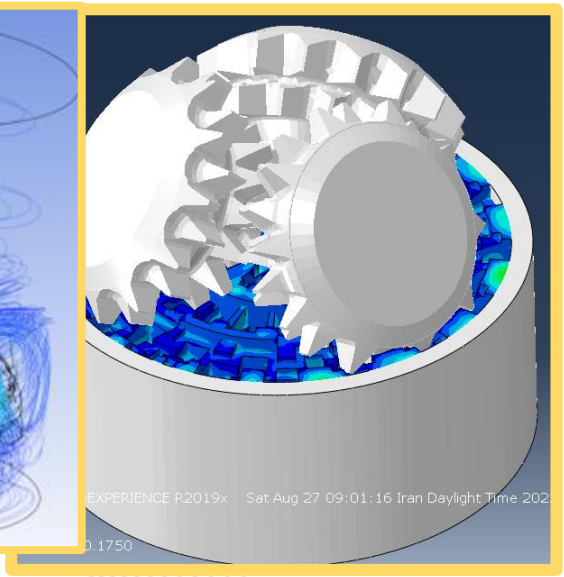
- ✓ Study and analysis of various designs in functionality and durability of drill bits and tools.
- ✓ CAD modeling of leg and cone and other parts.
- ✓ Finite Element Modeling of Leg and cone in various field conditions.











CUSTOM PRODUCT DESIGN SERVICE

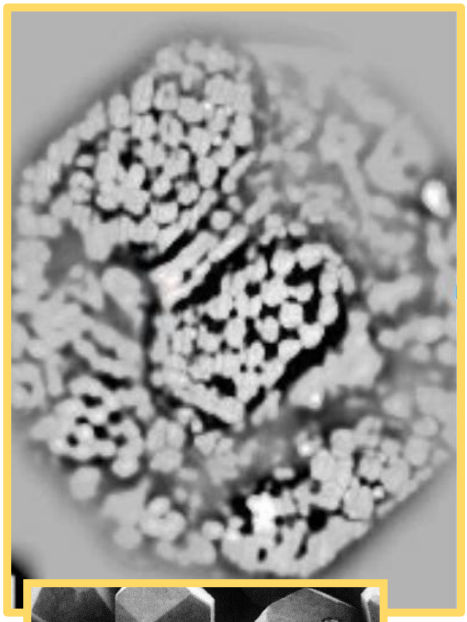
Our custom design service is available in order to guarantee that we supply products that maximize our customer's ROI. This includes in-house Engineering and Drafting departments to ensure a fast turnaround from design to production.

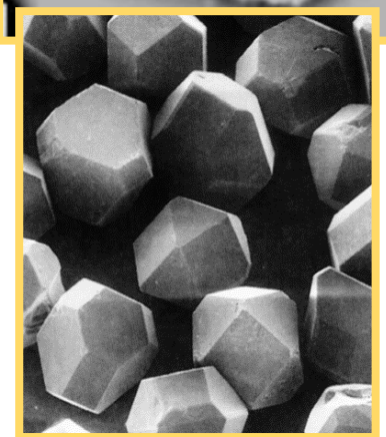
Materials Research And Laboratory Analysis



We continuously improve the durability and overall performance of roller cone and fixed cutter drill bits. From the industry's most durable hardfacing to improved tungsten carbide matrix and diamond components, our materials research activities have resulted in record-setting performances worldwide







The highly complex system of moving parts within a roller cone bit requires our materials researchers to follow a synergistic approach in which each component is evaluated in the context of its relationship to other system's components. This methodology enhances the probability that performance-limiting deficiencies are correctly identified and addressed. This work has enabled us to introduce improved greases, bearings and seals and to develop improved diamond and carbide components that make our steel tooth and TCI product lines achieve consistent, unparalleled results.

Manufacturing, Heat Treatment And Final Assembling

Manufacturing of a Roller Cone bit is consisted of the following steps:

- ✓ Forging of leg and cone
- ✓ Turning and Milling of leg and cone
- ✓ Heat Treatment
- ✓ Teeth Hardfacing
- ✓ Assembling
- ✓ Welding of assembled legs and cones
- ✓ API Threading
- ✓ Painting and Packaging





With our extended knowledge and R&D Center and our well-equipped Q.C unit, we deliver the highest quality solutions and support to meet the needs of our customers.



Guaranteed Quality and Reliability



Tricones are manufactured with API-7-1 certification and supported with a full quality management system .In order to assure high quality of manufactured products at ACECR Drill bit factory the quality management system has been implemented to comply with API Spec.Q1 and ISO 9001:2015 standards through IPICB institute .

- CAD based product development
- CAD – CAM manufacturing
- Permanent quality checks High resolution 3-D scanning
- Non-destructive testing

Trough IPICB institute



Product Certificate

IPI

Iranian Petroleum Institute Certification Body confirms that the activities of:

PTRI of ACECR of Khuzestan

This Certificate Complies With:

Design and Ongoing Production of **Drilling Bit**

(For details see scope of certificate)

The IPICB conducted an initial assessment and performs continuous monitoring and conformity assessment of the mentioned product. (Product Certification Scheme: CB-SC-01, Type 5)

Certificate No.: 960976

Certificate Issue Date: 2020.07.05 Renewal Date: 2023.10.25

Modification Date: 2023.10.25 Expiry Date: 2026.07.04

Approved Site Address (es):

Khuzestan ACECR production line, Ebtekar 2 St., Industrial Town No.3, Ahwaz, Iran.

This certification remains valid until the above-mentioned expiry date and subject to the organization's continued compliance with the certification standard, and IPICB terms and conditions.

Mojtaba Babaei
Director of IPICB

Lack of fulfilment of conditions as set out in the Certification Agreement may render this Certificate invalid. Any changes in the product shall immediately be reported to IPICB in order to verify whether this Certificate remains valid.
Address: Iranian Petroleum Institute, No. 307, Ebadi alley, Motahari Ave, Tehran, Iran. Tel. +9821-88709322
Website: www.ipicb.ir
Visit www.ipicb.ir to validate certificate authenticity. If you would like to feedback comments on the IPICB or the Assessment process directly to IPICB, please contact info@ipicb.ir

Golden IPICB Certificate to Design, Manufacturing and after sale services

PRODUCTS

ACECR

17 ½" to 26" Open Roller Steel tooth bits
JD1 and JD2 Series



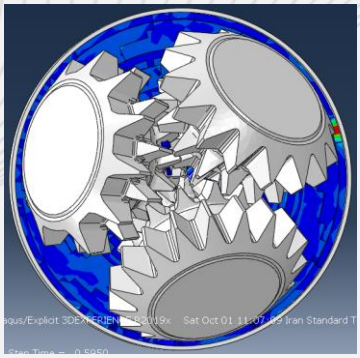
ACECR Roller Cone Drill bits steel-tooth roller cone bits address the primary issues associated with steel-tooth applications—the need or enhanced durability and speed. The JD1 bit design gives operators the fastest drilling achievable in a range of soft formations , while the JD2 design with long and fully hardfaced teeth allow drilling in deeper ranges with perfect ROP and bit life.

Available JD1 IADC codes	**As Requested**
Available JD2 IADC codes	As Requested

JD1 Features

- ✓ Superior tooth arrangements with advanced cutting structure efficiency and durability.
- ✓ Enhances versatility, enabling tougher, more wear-resistant compacts with aggressive tooth shapes to tackle specific drilling applications.
- ✓ Identifies optimal anti-tracking pitches to provide roller cone bits with maximum drilling effectiveness.

Dynamic Drilling Simulation



17 ½" to 26" Sealed Roller Steel tooth bits JD3 and JD9 Series

The ACECR JD3 and JD9 sealed bit design offers unprecedented durability against more demanding applications in soft formations. An optimized high-count row minimizes bit tracking and improves drilling efficiency, allowing higher rates of penetration (ROP) over longer distances. Superior reliability in a wide range of applications is achieved with high-aspect-ratio and seal technologies, while premium hardfacing protects the bit body, increases wear resistance, and extends bearing and grease-compensator seal life.



Available JD3 IADC codes	As Requested
Available JD3 IADC codes	As Requested

JD3 Features

- ✓ Self-sharpening hardfacing to ensure obtaining maximum ROP.
- ✓ Protective bit body armor with hardfacing pattern on outer diameter.

JD9 Features

- ✓ Durable steel tooth bit designed for high rotary speeds in soft medium formations.
- ✓ Very durable full protection hardfacing is applied to the entire cutting surface of every tooth.
- ✓ Gauge trimmers increase bit life, while maintaining penetration rates and full gauge wellbore.

9 7/8" to 13 3/4" Steel Tooth bits

JD7 Series

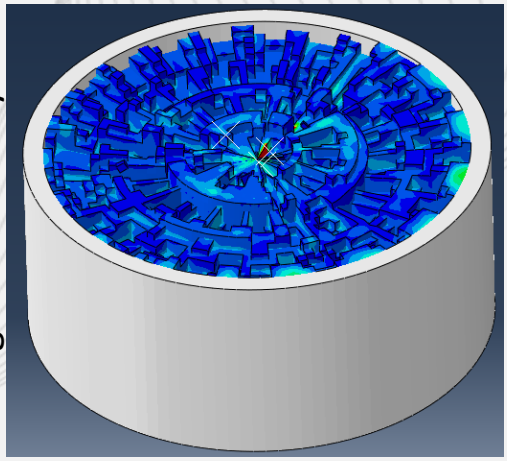


ACECR JD7 roller cone bits combine standard bit features with tougher innovative tooth shapes and advanced cutting structures and hydraulics designed specifically to reliably drill formations. ACECR bits are designed using computer algorithms, which calculate the optimum tooth spacing to minimize bit tracking for improved drilling efficiency over longer distances. Superior reliability in a wide range of applications is achieved with high-aspect-ratio and seal technologies. Added protection from hardfacing improves wear resistance and extends bearing and grease-compensator seal life.

Available IADC codes	As Requested

Features

- ✓ High-quality materials and manufacturing processes to improve durability to stay in the hole longer.
- ✓ Computational fluid dynamics modeling to maximize hydraulic efficiency to improve cuttings removal and reduce bit balling.



Drilling Pattern Study

7 7/8" to 8 3/4" Steel Tooth bits
JD4 and JD5 Series

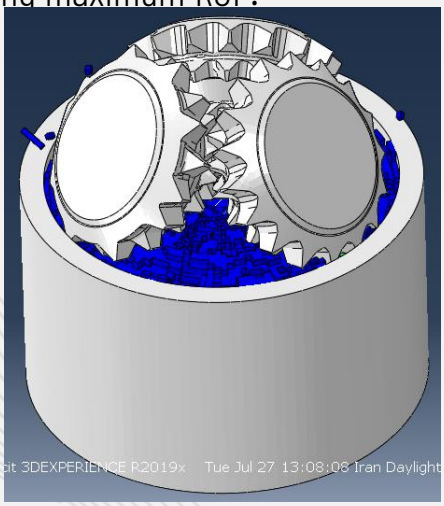
ACECR JD4 and JD5 steel-tooth roller cone bits are a dependable solution designed for simple, highly drillable formations without adding extra cost. Computational fluid dynamics modeling improves cuttings removal and reduces bit balling tendencies to improve penetration rates. High-quality materials and manufacturing processes help ensure durability to maintain an accurate borehole diameter.



Available IADC codes	As Requested

Features

- ✓ Sealed Ball and Roller bearings.
- ✓ Durable steel tooth bit designed for high rotary speeds in medium formations.
- ✓ Protective bit body armor with hardfacing pattern on outer diameter.
- ✓ Best materials on seal packages to improve reliability for longer drilling hours downhole.
- ✓ Self-sharpening hardfacing to ensure obtaining maximum ROP.



Dynamic Drilling Simulation

5 1/2 " to 6 3/4" Steel Tooth bits

JD8 Series

ACECR JD8 drill bits are a premium line of roller cone bits designed specifically for slim hole wells. ACECR bits employ many of the features found in ACECR JD8 bits series. In addition, improvements in bearing geometry/metallurgy, compensator design and shirttail protection have combined to make these the most reliable, high performance slim hole roller cone bits available.

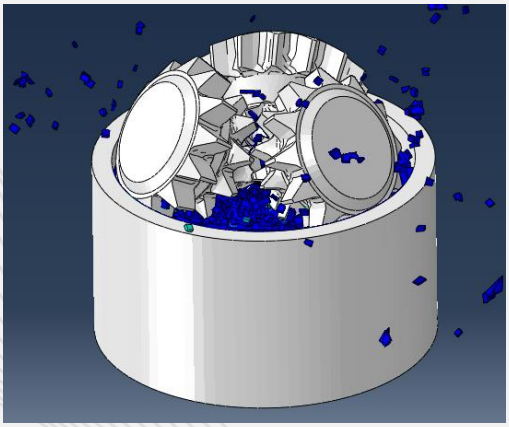


Available IADC codes	As Requested

Features

- ✓ Two hardfacing alloys are applied to the gauge surface to reduce gauge wear and rounding.
- ✓ Computational fluid dynamics modeling to Maximize hydraulic efficiency to improve cuttings removal and reduce bit balling.

Drilling Pattern Study



5 1/2" to 17 1/2" insert bits

JD6 Series



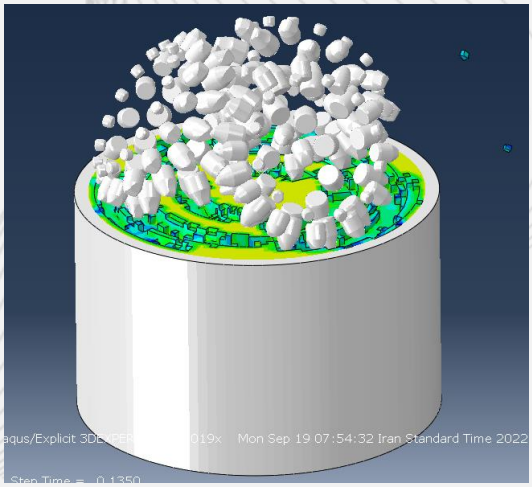
ACECR insert roller cone bits combine extra-hard, tungsten-carbide alloys with a customized insert layout to maximize penetration rates and downhole rock destruction in drilling applications. The ACECR roller cone insert bits features a modified cutting structure including custom shapes, carbide grades, and layouts for exceptional rates of penetration (ROP).

Available IADC codes	As Requested

Features

- ✓ Optimized cutting structures, including custom shapes, carbide grades, and layouts to improve ROP in air-drilling applications.
- ✓ Protective bit body armor with hardfacing and insert pattern on outer diameter to increase bit life in abrasive drilling environments.

Drilling Pattern Study



MATRIX BODY PDC BITS

JDM Series



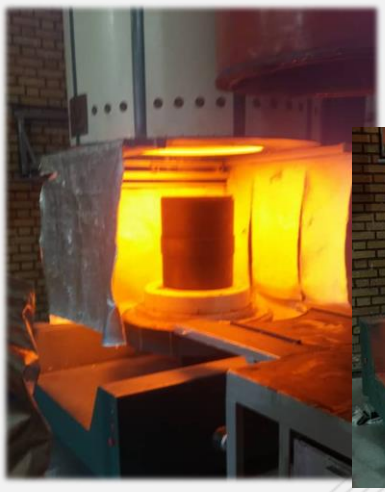
The primary reason for wanting to run PDC bits is increased production. When run to operating guidelines, a PDC bit can increase your penetration rate from anywhere between 50-250%. This translates to faster project completion, fuel savings and reduced labor costs per hole.

Product Features:

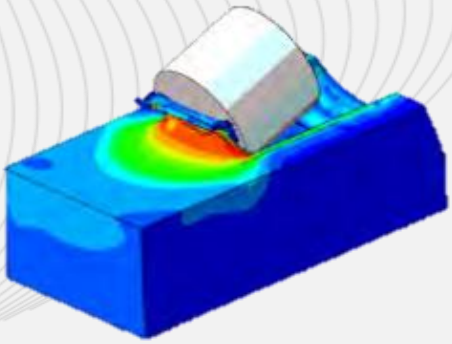
- Engineered Cutter Placement
- Balanced Flow Hydraulics
- Hydrodynamically Geometric Shapes of Blades, Junk slots and Gauge.
- Leached and Polished Cutters
- Carbide Supported Edges
- Superior Blank and Shank material

Available IADC codes	As Requested

codes and sizes are available upon request.







SERVICES

ACECR

PDC BITS REPAIR SERVICES

Cutters and Body



Rebuilding is a cost- effective solution that will prove far cheaper than replacement.
For the first time in Iran ACECR offer both body repairment and cutter replacement services for matrix and steel body PDC bits.
All repairs are undertaken by us in our ACECR facility in Ahvaz, and all replacement parts are Genuine and QC checked to ensure quality and durability.

- ✓ Bit inspection
- ✓ Matrix body bit repairs
- ✓ Steel body bit repair
- ✓ Gauge repair
- ✓ Cutter replacement
- ✓ Cutter rotation
- ✓ Hardfacing
- ✓ Grinding



Before



After

NO NEED TO REPLACE

REPAIR

A COST-EFFECTIVE SOLUTION



Before



After

ACECR

Academic Center for Education, Culture and Research











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