



**AID RAID**  
AIR™

THE  
EVOLUTION  
OF AIR  
DRILLING™



**ULTERRA®**

THINKING FORWARD. CHALLENGING LIMITS.™

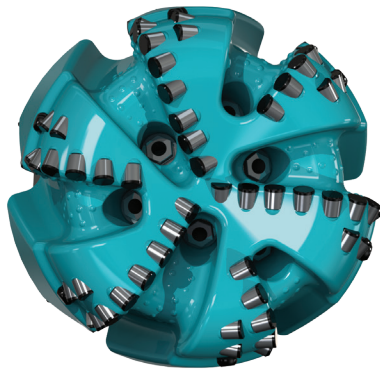
# AIR DRILLING MEETS SPEED & DURABILITY. THAT'S INNOVATION AT WORK.™

**AirRaid™ is the newest industry innovation bringing the performance and consistency of PDC bits to air drilling applications.** For the forward-thinking oilfield professionals drilling air intervals, AirRaid is the first and only PDC drill bit that offers the most in durability and toughness for air drilling applications. AirRaid makes AirPDC® possible, and this new class of bit is specially engineered to control air flow to maintain integrity throughout the interval. As a result, this revolutionary new bit drills faster than roller cones without the moving parts.

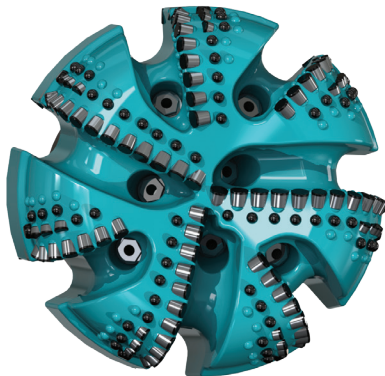
## MAXIMUM DURABILITY. LONGER BIT LIFE.

AirRaid by Ulterra provides value-added drilling performance and lower rig costs by solving the challenges of air drilling with PDC technology. The superior air flow control effectively cools the drill bit and lifts cuttings out of the wellbore, without the conventional use of liquids. The result for operators is faster drilling and improved ROP, while helping eliminate lost circulation problems.

For air drilling environments, AirRaid unleashes the cutting power of air bits with the performance power of PDC. Ulterra has engineered AirRaid to meet the demands of the toughest air drilling applications with minimal wear and tear. This innovative durability means operators can continue pushing the boundaries of performance without the limitations of standard roller cones.



8.75" AIR613



12.25" AIR713

## AIRRAID IS AVAILABLE IN 8.75" AND 12.25" DIAMETER SIZES.

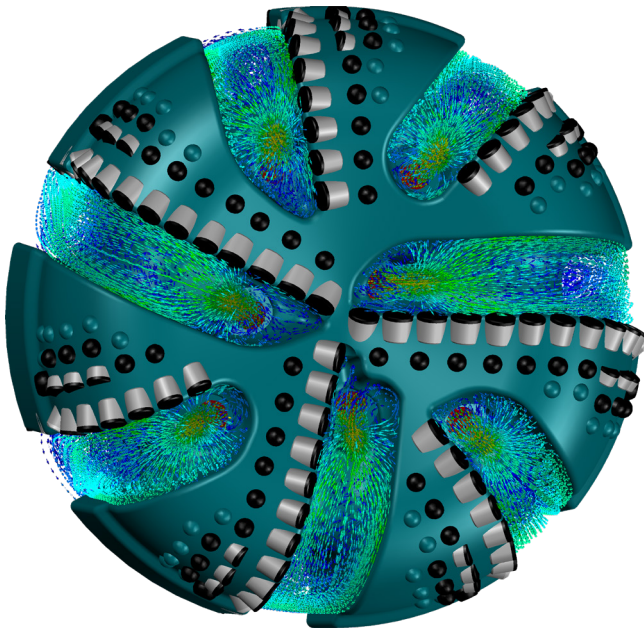
(Additional sizes upon request)

With AirRaid, operators can drill vertical, tangent, and curve sections without sustaining the damage of standard PDC bits for consistent results and less cost.

## REVOLUTIONIZING AIR TECHNOLOGY

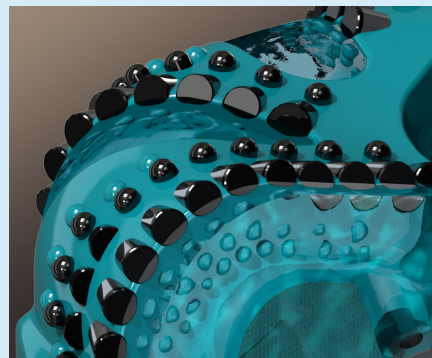
Ulterra is introducing the latest, leading-edge innovation in air drilling technology. AirRaid is engineered for maximum performance in environments with a significant decrease in hydrostatic pressure over common mud type systems for increased ROP, and the high air velocities used to drill wells provide for improved hole cleaning. There are no chemicals to absorb and no cuttings cleaning requirements on new formations, resulting in lower mud and cuttings handling costs. In addition to optimal hole cleaning, decreased costs, and maximum ROP, AirRaid maintains exceptional shale and clay control like never before.

Air drilling technology is widely considered the least expensive fluid for operators—requiring no cleanup or disposal of fluid on the surface—and drills up to 4X faster than conventional systems. With AirRaid, the minimal drilling time, reduced drilling fluid costs, and low cuttings handling expenses provide a smarter and longer-lasting PDC bit solution that revolutionizes air drilling operations.



## ALWAYS INNOVATING

*AirRaid can withstand the most challenging air drilling environments with minimal damage. The bit body geometry controls and harnesses the multiphase air-based fluid to reduce high-velocity vortices to drastically improve the overall life of the bit for longer-lasting operation and dependability. The purpose-built design has been developed using advanced Computational Fluid Dynamics (CFD) software to ensure optimal capabilities throughout various air drilling applications.*



## THE BENEFITS OF AIRRAID

### **Greater ROP Potential**

Revolutionary design provides for greater ROP potential compared to roller cone bits, so operators never risk downtime or performance limitations.

### **Improved Tool Face Control**

Successfully meets the challenges of drilling directionally at improved ROP—with enhanced PDC tool face control and speed.

### **High-Strength Quality**

Greater dull grade results in less damage to the bit body and cutter substrates, in addition to improving bore hole quality over roller cones.

## ADVANCING TECHNOLOGY

Ultrerra is constantly developing innovative bit technology to better adapt to changing operating conditions and specific application requirements.

### SPLITBLADE™

Technology that delivers Double Barrel Hydraulics to significantly improve cuttings evacuation and prevents recirculation for better cutter performance, tool face control, and ROP.

### COUNTERFORCE®

The unique cutter configuration minimizes bit-reactive torque and vibration, providing more lateral stability and improving drilling efficiency.

### FASTBACK™

A wide-open blade structure provides for optimal hydraulics so cutters can work deep into formation, while providing more depth and cut control.

**ULTERRA IS DEDICATED TO MAXIMIZING THE EFFICIENCY OF OIL AND GAS DRILLING OPERATIONS THROUGH THE USE OF GROUNDBREAKING DRILL BITS AND APPLICATION TECHNOLOGIES. THROUGHOUT THE WORLD'S DRILLING BASINS, WE ARE BUILDING OUR REPUTATION ON PERFORMANCE.**

**LET ULTERRA SHOW YOU HOW WE CAN IMPROVE YOUR DRILLING EFFICIENCIES AND LOWER YOUR COSTS. VISIT [ULTERRA.COM/AIRRAID](http://ULTERRA.COM/AIRRAID) OR CALL 1-844-ULTERRA.**



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