



UPSTREAM
TECHNOLOGY



INFO SHEET
V1.0

DIAMOND MINING TECHNOLOGY PRODUCTS

*Combining technical precision with practical experience to **help clients maximise recovery efficiency, reduce downtime, and operate with confidence.***

We have specialist expertise and deep understanding of the unique challenges and technical demands of the diamond recovery industry.

Diamond recovery is a complex process that requires specialised techniques to maximise efficiency and quality. **Employing recovery methods tailored to the unique characteristics of the diamond deposit can significantly improve the overall efficiency and profitability of your mining operations.**

With over 50 years of experience and over 384 recovery machines deployed globally, **the Products Division of Upstream Technology delivers customised, high-performance diamond recovery technologies backed by end-to-end service and deep technical expertise as part of a complete diamond recovery solution.**

This includes bespoke configuration of recovery machines tailored to the unique operational environments and recovery requirements of every client to ensure optimal performance in various size ranges, including:

- ♦ Wet and dry applications
- ♦ Left-hand AND right-hand configurations
- ♦ A variety of communication standards
- ♦ Customisable security options
- ♦ Double pass configuration in a single package

1 000+ *diamond-related technologies deployed worldwide, and counting...*

Machine Learning & AI

Machine Learning has been integrated into our technology since early 2000's. **AI models have been developed to enable rapid detection of diamonds in a robust and reliable manner, bespoke to specific technologies, for optimal sorting performance.**



Maximised Diamond Recovery & Efficiency

Achieve higher efficiency with specialist diamond recovery methods and technology.

Product Reliability with Reduced Downtime

Ensure continuous operations with reliable technology and dedicated technical support.

Reduced Technology Footprint

Optimise your operations with space-saving solutions on land and vessels.

Robust Safety & Security

Protect people and assets with comprehensive safety features and measures.

Knowledge Sharing

Benefit from our extensive experience and diamond and technical insights.

ALL DIAMOND RECOVERY EQUIPMENT IS ISO CERTIFIED



ISO 9001
CERTIFIED



ISO 45001
CERTIFIED



ISO 14001
CERTIFIED

+27 21 658 3229

DIAMOND & SECURITY TECHNOLOGY PRODUCTS

Upstream Technology is able to engineer, build and support bespoke recovery technologies that enhance your operational efficiency throughout the product's lifecycle.

Machine learning has been deployed throughout various technologies in our product portfolio for over 25 years.

This applies to diamond detection, diamond mass estimation and predictive maintenance applications on the XRT machines.

AI Models enable precision sorting for optimised diamond concentrate according to specific classifiers as required by clients.

SINGLE LASER PARTICLE SORTER TECHNOLOGY

Offers precise particle-by-particle sorting, enhancing the accuracy and consistency of ore upgrades (DBW). It is particularly beneficial for operations requiring high availability and low maintenance.



X-RAY LUMINESCENCE RECOVERY TECHNOLOGY

Maximises diamond recovery rates by detecting diamonds based on luminescence, ensuring high recovery efficiency.



X-RAY TRANSMISSION RECOVERY TECHNOLOGY

Excels in recovering diamonds by identifying materials based on their atomic density. It allows for early recovery of large diamonds, safeguarding their value and reducing potential damage during downstream processing.



MAGROLL | MAGNETIC SEPARATION

Uses high-strength magnetic rolls to separate minerals, processing both wet and dry feeds. This technology is versatile and efficient for various applications, including diamond and iron ore separation.



ALL DIAMOND RECOVERY EQUIPMENT IS ISO CERTIFIED



PROVIDENCE | 3D TRACKER

Diamond scanning technology enables seamless registration and traceability of every scanned diamond throughout the diamond value chain, from country of origin.



RHOVOL | DENSIMETRIC EVALUATION TECHNOLOGY

Offers real-time, on-site density measurement of ore samples, optimising metallurgical processes without the need for toxic heavy liquids. It provides high measurement repeatability and quick optimisation.



SCANNEX (SECURITY BODY SCANNERS)

Provides high-resolution, low-dose X-ray imaging for detecting contraband in high-security environments. It ensures quick and accurate scans while maintaining privacy and safety.



TRACERS & DIAMOND SIMULANTS

Essential for calibrating and optimising diamond sorting machines, helping to identify and mitigate points where diamonds may be trapped or damaged during processing.



NON-NUCLEAR DENSIMETRIC INLINE UNITS

Offers a safe and environmentally friendly alternative to nuclear density gauges, providing accurate, real-time density measurements for various applications without hazardous materials.



ALL DIAMOND RECOVERY EQUIPMENT IS ISO CERTIFIED



ISO 9001
CERTIFIED



ISO 45001
CERTIFIED



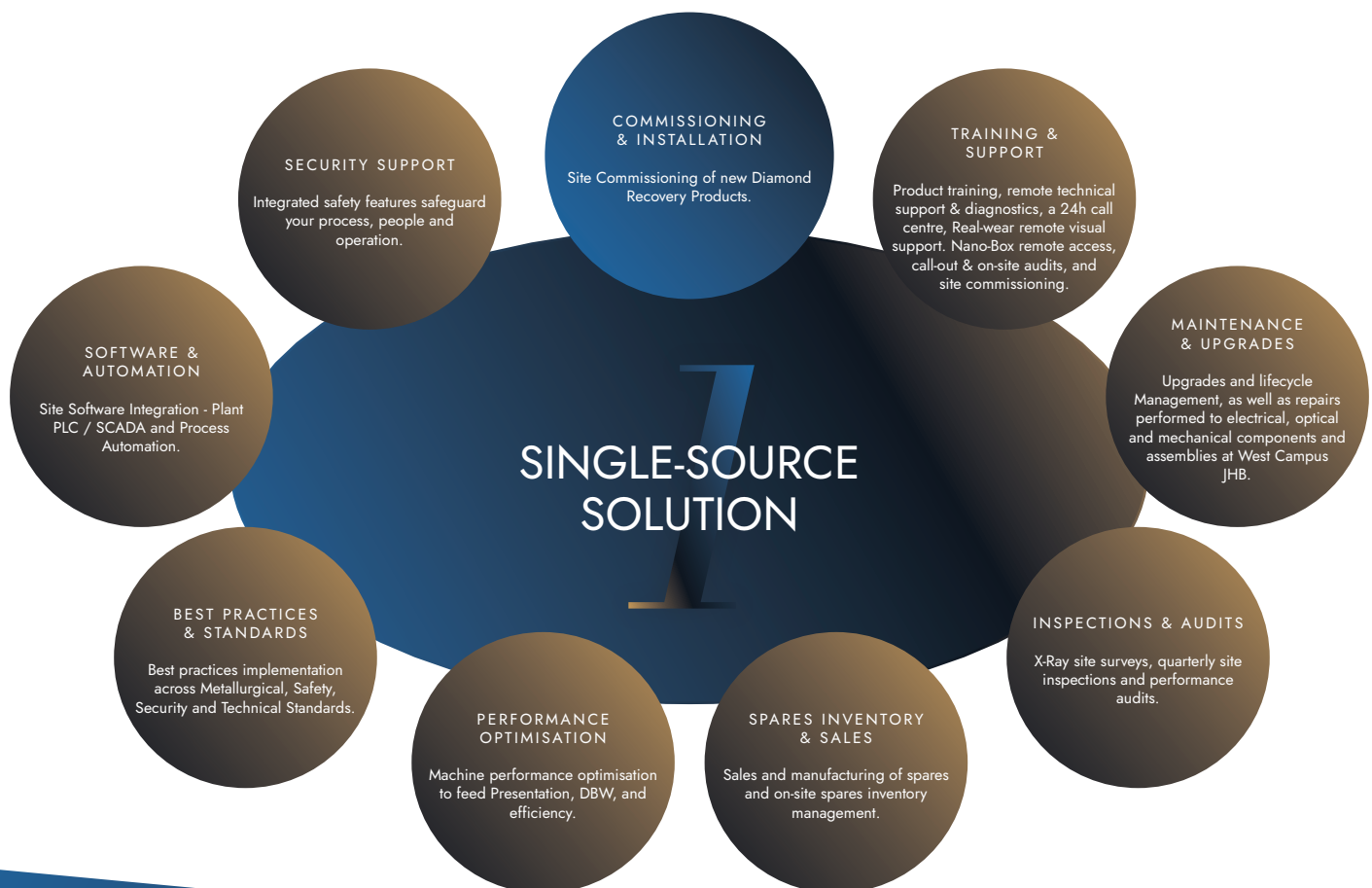
ISO 14001
CERTIFIED

AN INTEGRATED RECOVERY TECHNOLOGY SOLUTION

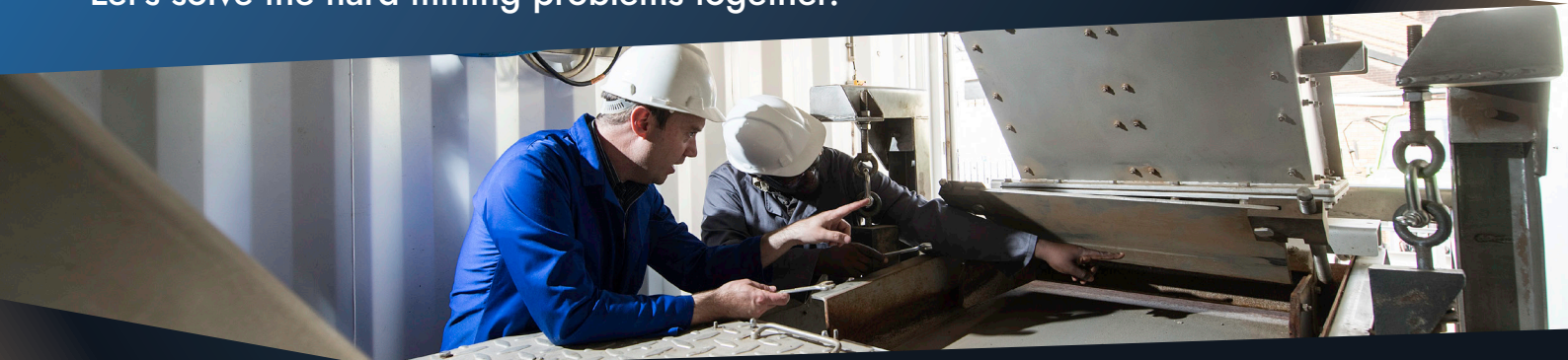
We provide an integrated recovery solution that provides a single source for designing, developing, manufacturing and maintaining state-of-the-art recovery technologies through their full lifecycle.

Providing a single-source solution: The division delivers a comprehensive diamond technology solution as a complete system — encompassing recovery machine manufacturing, site commissioning, software integration, spares, training, and technical support — eliminating the need for multiple vendors. This saves time, reduces complexity, lowers costs, and ensures consistency.

Full Lifecycle Support: From design, manufacturing and commissioning to maintenance and long-term technical support, the division offers technology support services spanning across the entire machine lifecycle.



**Partnering for our future.
Let's solve the hard mining problems together.**



ALL DIAMOND RECOVERY EQUIPMENT IS ISO CERTIFIED



ISO 9001
CERTIFIED



ISO 45001
CERTIFIED



ISO 14001
CERTIFIED

+27 21 658 3229

EACH PIECE OF TECHNOLOGY WE PRODUCE IS BACKED BY OVER 50 YEARS OF EXPERTISE WITH OVER 1,000 ACTIVE DIAMOND-RELATED PRODUCTS WORLDWIDE.



GLOBAL REACH WITH LOCAL SUPPORT

- ♦ **Global Support:** The division has a proven track record of supporting 374 machines worldwide, providing reliable technical assistance and spare parts wherever our clients are.
- ♦ **24/7 Availability:** The 24-hour call centre ensures quick responses and minimal downtime for client operations.
- ♦ **Local Knowledge, Global Expertise:** With the ability to deliver global site support, while tailoring solutions to meet local needs, The team is able to provide clients with a unique up-time and performance advantage, particularly diamond mines and recovery plants in remote locations.



MAINTENANCE & SPARES

We minimise downtime by providing in-house assembly, repair, and bespoke spare parts, bolstered by proactive inventory management that anticipates client needs. By delivering critical spares lists, consumables, and comprehensive documentation—including user manuals, software integration specifications, interface control files, and flange-to-flange CAD designs—we ensure seamless integration, extended machine longevity, and uninterrupted operations.



CLIENT-CENTRIC APPROACH

Client relationship management ensures each client receives personalised support, offering agile and quick responses to challenges. This includes critical touchpoints, prioritisation of requirements and the availability of commissioning managers when required on site while technical and operational knowledge is transferred during engagements.



ENERGY EFFICIENCY BUILT IN

Our diamond recovery and detection equipment are more energy-efficient compared to traditional diamond recovery methods reducing the energy required to process material, lowering CO2 emissions.



Harness the power of specialised, client-centric solutions driven by proprietary technologies to achieve unparalleled performance, agility, and innovation in diamond recovery.

Our unwavering commitment to value and reliability is underpinned by bespoke system designs and a responsive service ethos, which always puts clients at the heart of every solution.

Contact Us

T +27 21 658 3229
W DEBEERSGROUP.COM

JOHANNESBURG, WEST CAMPUS | RECOVERY FACILITY
 Cnr Crownwood & Booysens Reserve Roads, Theta, Johannesburg, 2013

CAPE TOWN, GOLF PARK | HEAD OFFICE
 DBM Gardens, Golf Park 2, Raapenberg Road, Pinelands, 7405
 +27 21 658 3229