

Diamond Technology Innovations

Member IMC Group

2026

WATERJET PRODUCT GUIDE



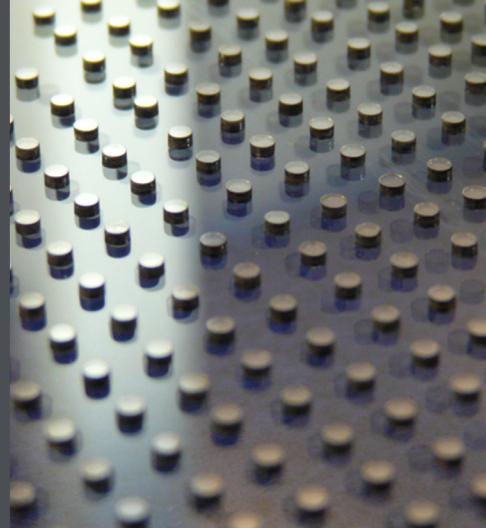
THE DIAMOND INSIDE

A superior waterjet system begins with selecting the finest orifice available. Whether opting for Ruby, Sapphire, dtiCORE™ Diamond, or tetraCORE™, a dti™ waterjet orifice is meticulously designed and rigorously tested to ensure consistent and optimal performance. This commitment to quality is the reason dti™ waterjet orifices are the gold standard.

ABOUT US

For 30+ years, Diamond Technology Innovations (dti™) has set the global standard in waterjet orifice technology for ultra-high-pressure cutting and cleaning. Our commitment to innovation, precision, and continuous improvement fuels everything we do—from enhancing product performance to advancing industry capabilities. As a trusted partner to OEMs and distributors worldwide, dti™ delivers American-made excellence backed by elite engineering and reliability you can count on.

Located in Olympia, WA, USA, dti™ boasts more than 30,000 square feet of manufacturing space, outfitted with cutting-edge equipment designed to surpass our customer's expectations.



CORE™

PREMIUM GRADE DIAMOND

- THE MOST RELIABLE WATERJET ORIFICE ON THE MARKET
- REPEATABLE 1,000+ HOURS OF UNINTERRUPTED CUTTING
- ZERO DEGRADATION OF INTERNAL GEOMETRY OVER USE
- PROPRIETARY PRECISION JETSTREAM ALIGNMENT
- THE ONLY ORIFICE DESIGNED TO ENDURE 90,000 PSI

tetraCORE™

PERFORMANCE GRADE DIAMOND

- PROPRIETARY PCD DIAMOND
- EXCELLENT RELIABILITY UP TO 60,000 PSI
- CONSISTENTLY DELIVERS 500+ HOURS OF CUTTING
- AFFORDABLE MID-GRADE ALTERNATIVE ORIFICE

UTILITY™

RUBY & SAPPHIRE

- UTILITY-GRADE CORUNDUM ORIFICE
- HIGH-QUALITY RAW MATERIALS
- SUITABLE FOR APPLICATIONS UP TO 60,000 PSI
- PROVEN PERFORMANCE AT A LOW COST

ORIFICE LIFETIME COMPARISON

WHAT DOES YOUR DOWNTIME REALLY COST?



SPOT THE DTI™ DIFFERENCE

AEROSPACE-GRADE TITANIUM MOUNTING MATERIALS DESIGNED FOR EXCEPTIONAL DURABILITY AND LONGEVITY

HIGHEST-QUALITY RAW MATERIALS

ELIMINATION OF STRESS POINTS FOR INCREASED LIFE & ORIFICE VERSATILITY

HIGH-PRECISION FEATURES DESIGNED TO ENHANCE FATIGUE STRENGTH AND ENSURE CONSISTENT FLOW RATES.



LASER MARKED DTI LOGO ON ALL DIAMOND ORIFICES

CUSTOMIZE YOUR ORDER

CHOOSE YOUR ORIFICE, STYLE, & SIZE

PART NUMBER CONFIGURATION

ORIFICE TYPE - NOZZLE STYLE - SIZE

XX - XX - XX

ORIFICE TYPE

DA - PREMIUM DIAMOND

XX

TA - TETRACORE

SA - SAPPHIRE

RA - RUBY

XX

NOZZLE STYLES

SAPPHIRE AND RUBY RETAINER CUSTOMIZATION

ADD ONE OF THE FOLLOWING LETTERS TO THE PART STYLE, BASED ON YOUR RETAINER PREFERENCE.

P - PLASTIC

B - BRONZE

THIS CUSTOMIZATION IS ONLY AVAILABLE ON SAPPHIRE AND RUBY ASSEMBLIES

STANDARD ORIFICE SIZES

XX

.006" - .035"

ADDITIONAL SIZES:

.002" - .005" | .036" - .085"

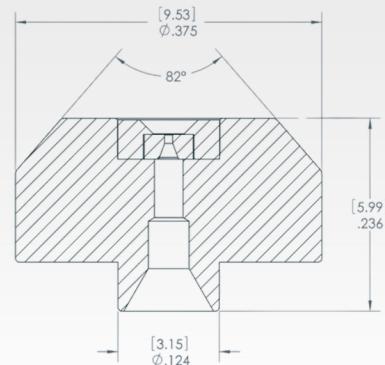
PARTNER WITH **dti**

DEVELOP YOUR DESIGNS AND PRODUCTS WITH DTI ENGINEERS.

CONTACT US ABOUT CUSTOM NOZZLE SOLUTIONS AND INNOVATIVE PRODUCT DEVELOPMENT, INCLUDING:

- ORIFICE SIZES, AND DIMENSIONS
- SPECIALIZED MOUNT, RETAINER, AND/OR ORIFICE MATERIALS
- ADDITIONAL TESTING OPTIONS
- CUSTOM PACKAGING, LABELING AND/OR LASER MARKING

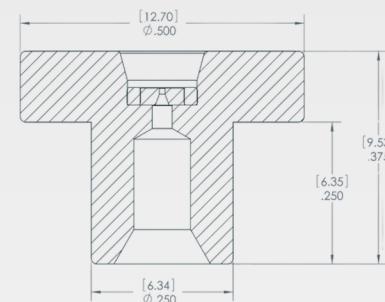
DTI-05



Similar to: Standard , Type 18

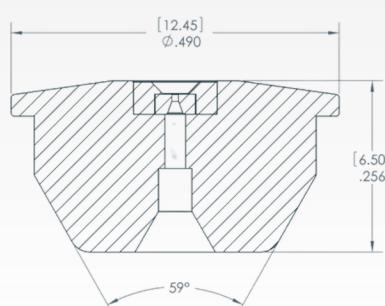
For Water-Only applications, use part number #**DTI-05W**

DTI-06



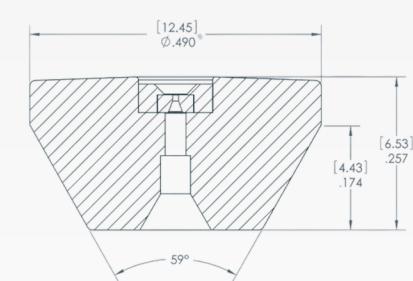
Similar to: PL-2 , Type 30

DTI-14



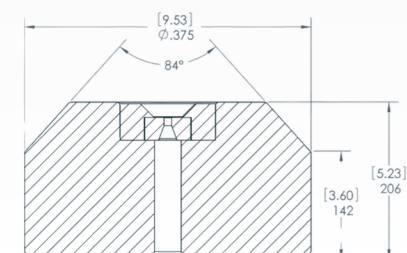
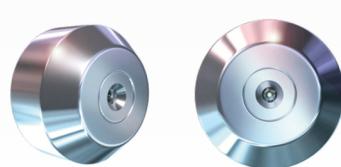
Similar to: Paser 5, Type 26

DTI-16



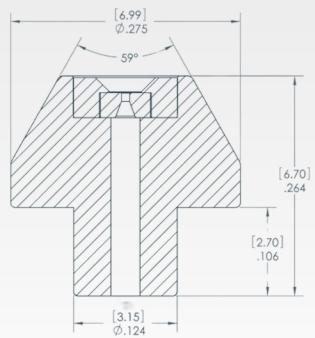
Similar to: Paser 3, Type 23

DTI-20



Similar to: Paser 4

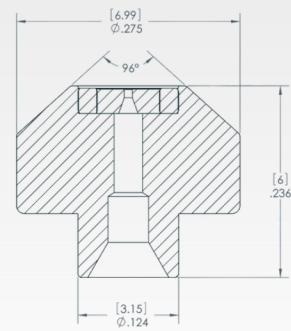
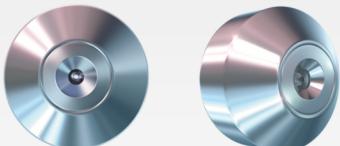
DTI-28



Similar to: Autoline , Type 27

For Water-Only applications, use part number #**DTI-28W**

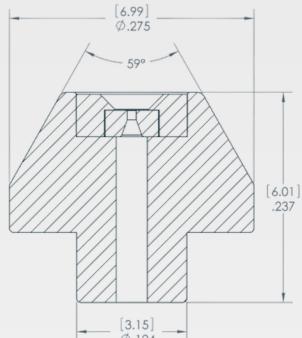
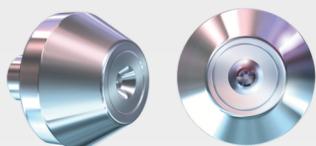
DTI-65



Similar to: Low Mass

For Water-Only applications, use part number #**DTI-65W**

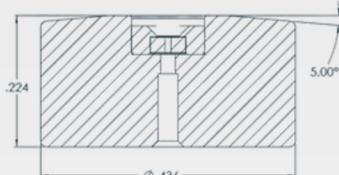
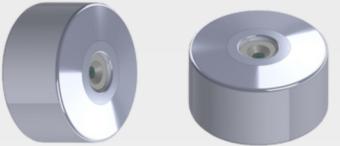
DTI-30



Similar to: Type 25

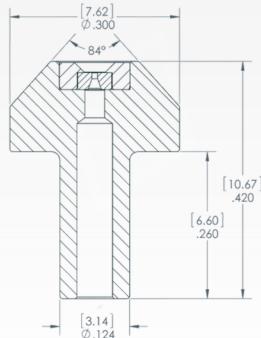
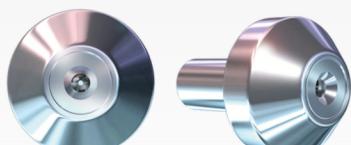
For Water-Only applications, use part number #**DTI-30W**

DTI-123



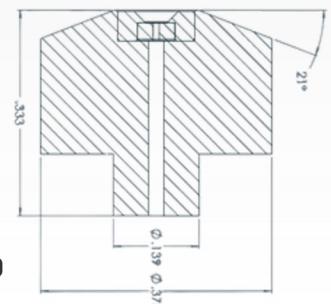
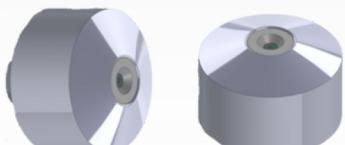
Similar to: Type HT

DTI-57W



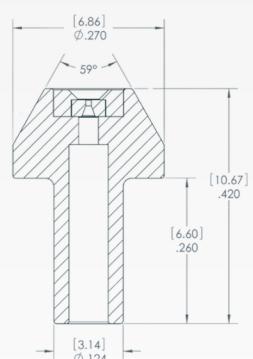
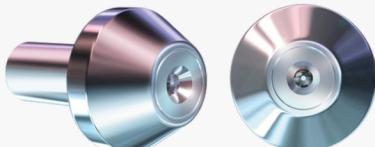
Similar: LM-2

DTI-149W



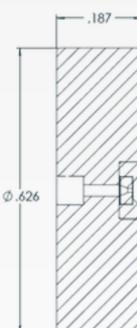
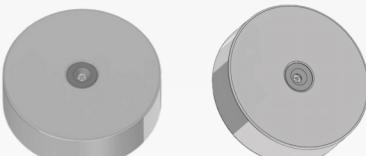
Similar to: 90K, Autoline PRO

DTI-58W



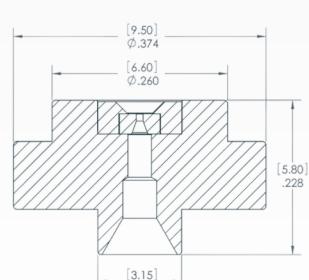
Similar to: Long Stem, Type 10

DTI-152



Similar to: Type 42, Maxjet

DTI-62



Similar to: P2 Step, Type 14

For Water-Only applications, use part number #**DTI-62W**

DON'T SEE YOUR ORIFICE?

SEND US AN EMAIL AT
ORDERS@DTIINSIDE.COM
 OR CALL US AT (360)866-1337

SLICE2 CUTTING HEAD

1 DTI CORE™ DIAMOND

- Every SLICE2 is equipped with the #1 diamond orifice in the world, as chosen by the leading original equipment manufacturers, top distributors and their customers throughout the waterjet cutting industry.
- The dtiCORE™ Diamond ensures perfect alignment every time and boasts an impressive average life of over 1,000 hours.

2 SLIM LINE DESIGN

- Sleek, compact external geometry and lightweight design, built for closer head placement and easy adaptability to a variety of motion systems.
- Slim line design and incredibly tight tolerances make SLICE2 the best choice for multi-axis, steep angle cutting.

3 HIGH PRESSURE OPTIONS

Optional Roctec 500 mixing chamber upgrade boosts maximum protection and wear resistance in extreme high pressure applications as well as typical cutting applications.

4 INCREASED ADAPTABILITY

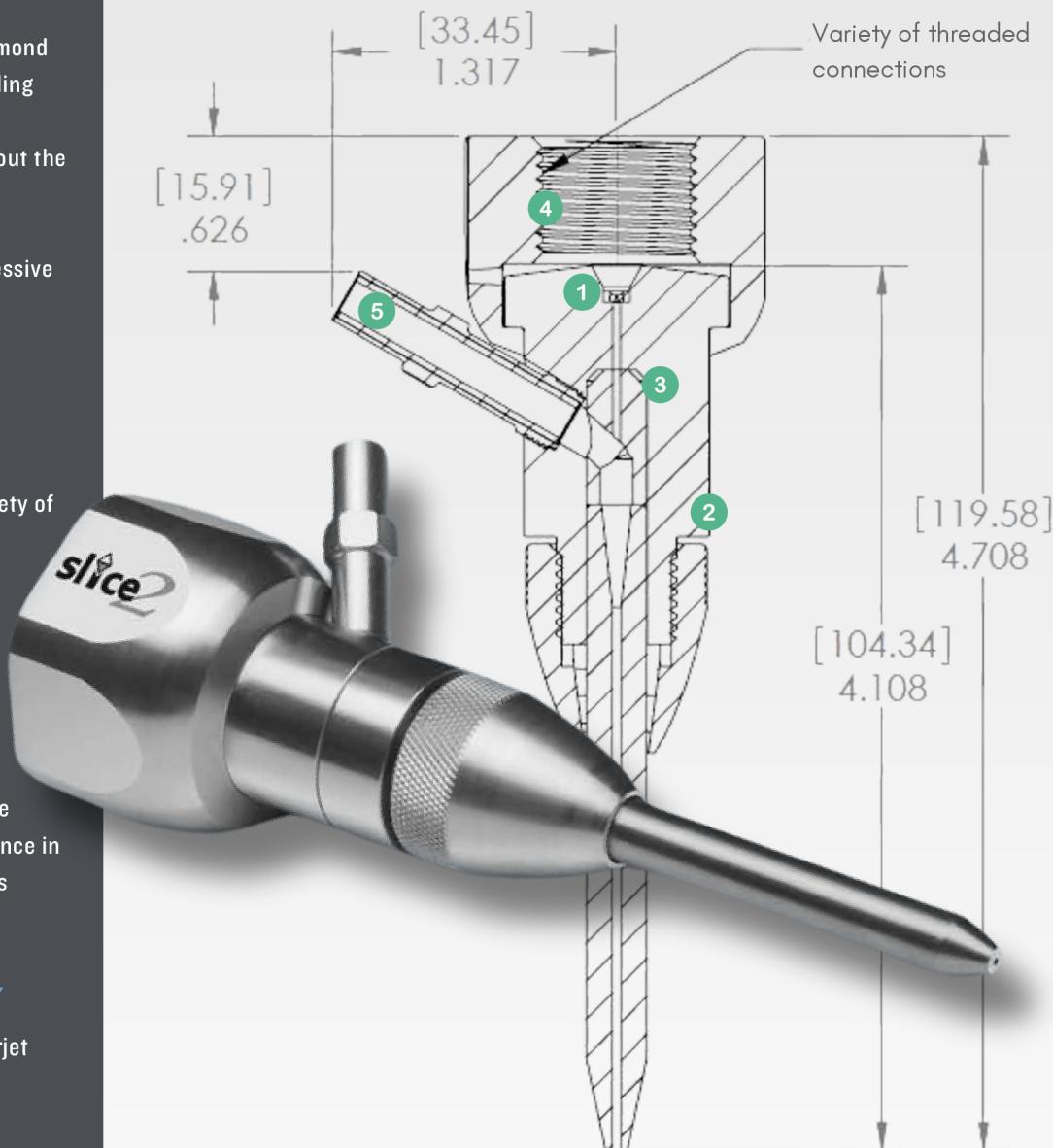
SLICE2 is adaptable to a wide range of waterjet systems worldwide.

Our current offering includes, but is not limited to,

- 3/4-16 Right Handed
- 3/4-16 Left Handed
- M20 x 1.5
- M14 x 1.5
- M16 x 1.5

5 ABRASIVE INLET

- 360° abrasive inlet rotation, makes SLICE2 the first cutting head design in the industry engineered to align with any abrasive tube location. With the ability to pivot 360 degrees, cutting head replacements have never been easier.



INTERNAL GEOMETRY

- Enhanced internal design with wear-resistant, carbide insert maximizes particle entrainment into the jet stream to ensure optimized abrasive usage and long life.
- Mixing chamber, engineered to accelerate garnet particles to high velocity, for superior cut quality and the fastest cutting speeds.
- PACT™ Technology (Precision Aligned Cartridge Technology) is a revolutionary technology that ensures true alignment of the jet stream from the integral orifice through the entire cutting head assembly. This extends focusing tube life and maximizes energy on the material being cut, to reduce scrapped material and increase uptime.

ACCESSORIES

SLICE2

ADDED VERSATILITY

CUSTOMIZE your SLICE2 to align precisely with your operational requirements. Its adaptability to a wide range of waterjet systems worldwide significantly enhances versatility, ensuring that the cutting head is specifically tailored to meet your unique needs.



DA-ABR-01
Abrasive Inlet



D-NUT-18
Mixing Tube Clamp Nut



M-COL-02
Collet



D-GRD-02
Splash Guard

PROTECT YOUR INVESTMENT WITH A DIAMOND GUARD FILTER

More details on page 8



CUTTING HEAD CLAMP ADAPTER

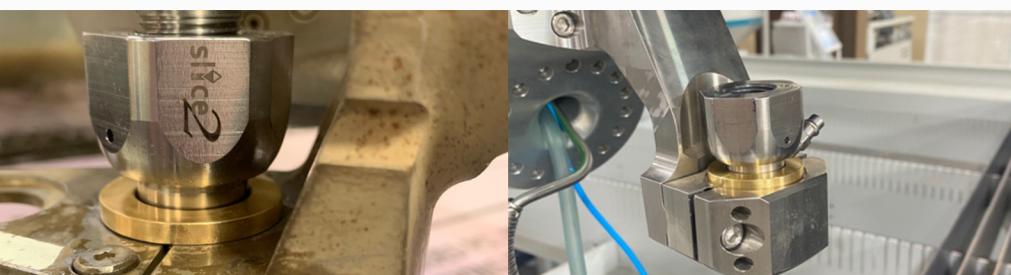
FEATURES

- Compatible Design for Common Waterjet Systems
- Simple Assembly of Adapter to Cutting Head
- Precise, Secure, and Repeatable Z-Axis Positioning
- Brass Alloy for Strength, Durability, and Corrosion Resistance
- Designed for Quick Changeover
- Cost Savings Option for High Quality Cutting Head

Part #: M-ADP-14



Designed for standard
.281" or 7.14mm nozzle
(nozzle not included)



DTI SOLUTIONS

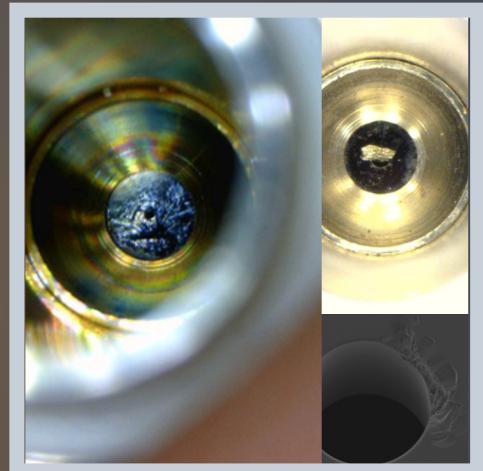
DIAMOND GUARD FILTER



*Showing part # M-FIL-01

THE PROBLEM

- Plugged or Chipped Orifices
- Premature Wear of Cutting Head Components
- Reduced Jet Stream Coherency
- Inefficient Cutting



Within the internal components of every waterjet system, errant particles become dislodged and travel through the high-pressure lines. These particles end up at the waterjet orifice, impacting and potentially damaging the orifice edge. When debris is larger than the hole in the orifice, the orifice assembly becomes plugged or partially blocked.

THE SOLUTION

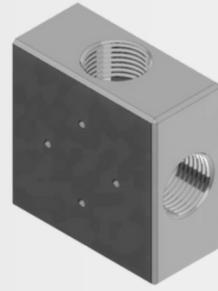
dti™ DIAMOND GUARD FILTER

The dti™ Diamond Guard Filter is designed to simply and effectively capture debris larger than .0055" (0,14mm) from impacting or blocking the orifice. Any particles small enough to pass through the DG Filter will also exit safely through the hole of the waterjet orifice.

DG Filters and Adapters allow for ease of installation in any waterjet system's 1/4" or 3/8" high-pressure lines. The DG Filter is installed as close to the waterjet orifice assembly as possible, with the most common location being in the HP fitting at the on/off valve assembly. When paired with any dti™ orifice assembly, the dti™ Diamond Guard Filter ensures precision cutting throughout every job.

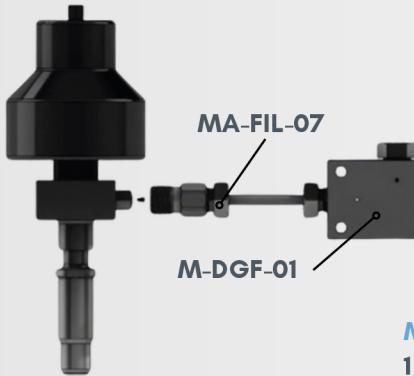


M-DGF-01
9/16" ELBOW, 90° (NO FILTER ELEMENT)



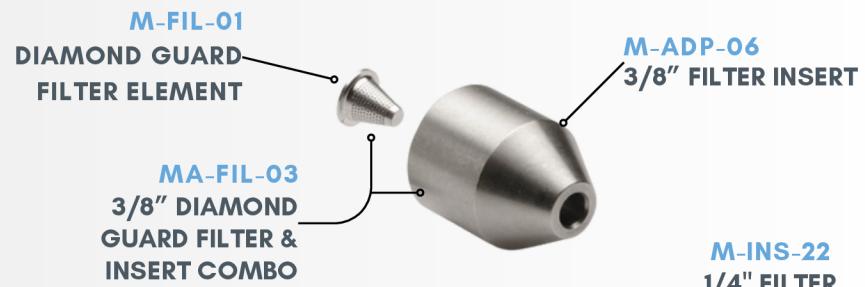
M-DGF-02
3/8" CROSS, (NO FILTER ELEMENT)

INSTALL EXAMPLE



M-HOU-06
1/4" F TO 1/4" F INLINE HOUSING (NO FILTER ELEMENT)

DIAMOND GUARD ADAPTERS



MA-FIL-07
1/4" F TO 3/8" M ASSEMBLY

MA-FIL-07-NF
1/4" F TO 3/8" M DGF BODY & INSERT (NO FILTER ELEMENT)



MA-FIL-08
1/4" F TO 1/4" M 90K PSI ASSEMBLY

MA-FIL-08NF
1/4" F TO 1/4" M 90K PSI DGF BODY & INSERT (NO FILTER ELEMENT)



MA-FIL-02
3/8" F TO 3/8" M ASSEMBLY

MA-FIL-02NF
3/8" F TO 3/8" M BODY (NO FILTER ELEMENT)



MA-FIL-09
M16 F TO M16 M DIAMOND GUARD FILTER

MA-FIL-09NF
M16 F TO M16 M DGF BODY & INSERT (NO FILTER ELEMENT)



M-HOU-02
3/8" F TO 3/8" F INLINE HOUSING (NO FILTER ELEMENT)



MA-FIL-06
1/4" F TO 1/4" M ASSEMBLY

MA-FIL-06NF
1/4" F TO 1/4" M DGF BODY & INSERT (NO FILTER ELEMENT)

WATERJET GUIDED LASER

dti™ is proud to introduce our state-of-the-art nozzles designed specifically for waterjet guided laser systems. Leveraging our advanced diamond processing equipment and technological expertise, we guarantee consistent, optimal performance of each nozzle.

Discover the difference with dti™ cutting-edge nozzles and achieve unparalleled accuracy and efficiency in your cutting operations.

Orifice Material

Assemblies come with one of the following options:

Diamond

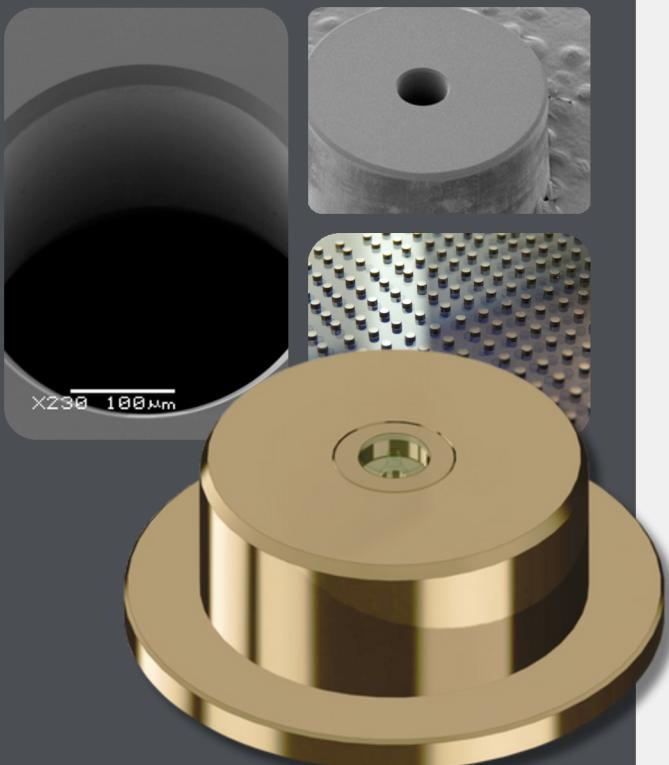
Sapphire

Orifice Sizing

Internal diameter

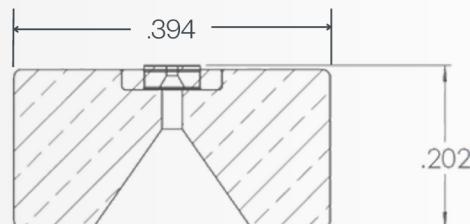
.003"-.010"

.002" Available in Diamond Only

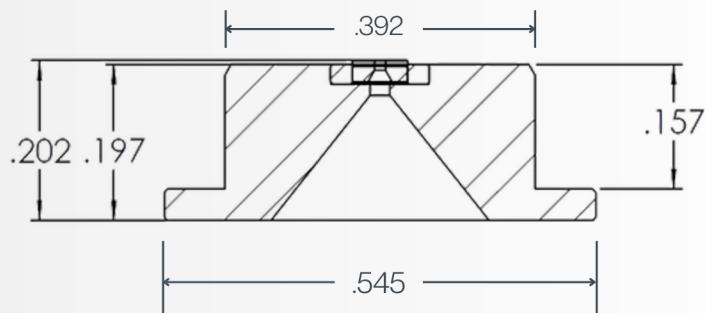


NOZZLES STYLES

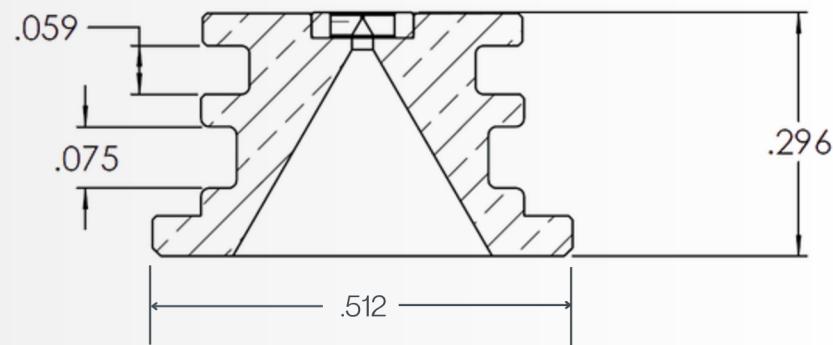
DTI-141

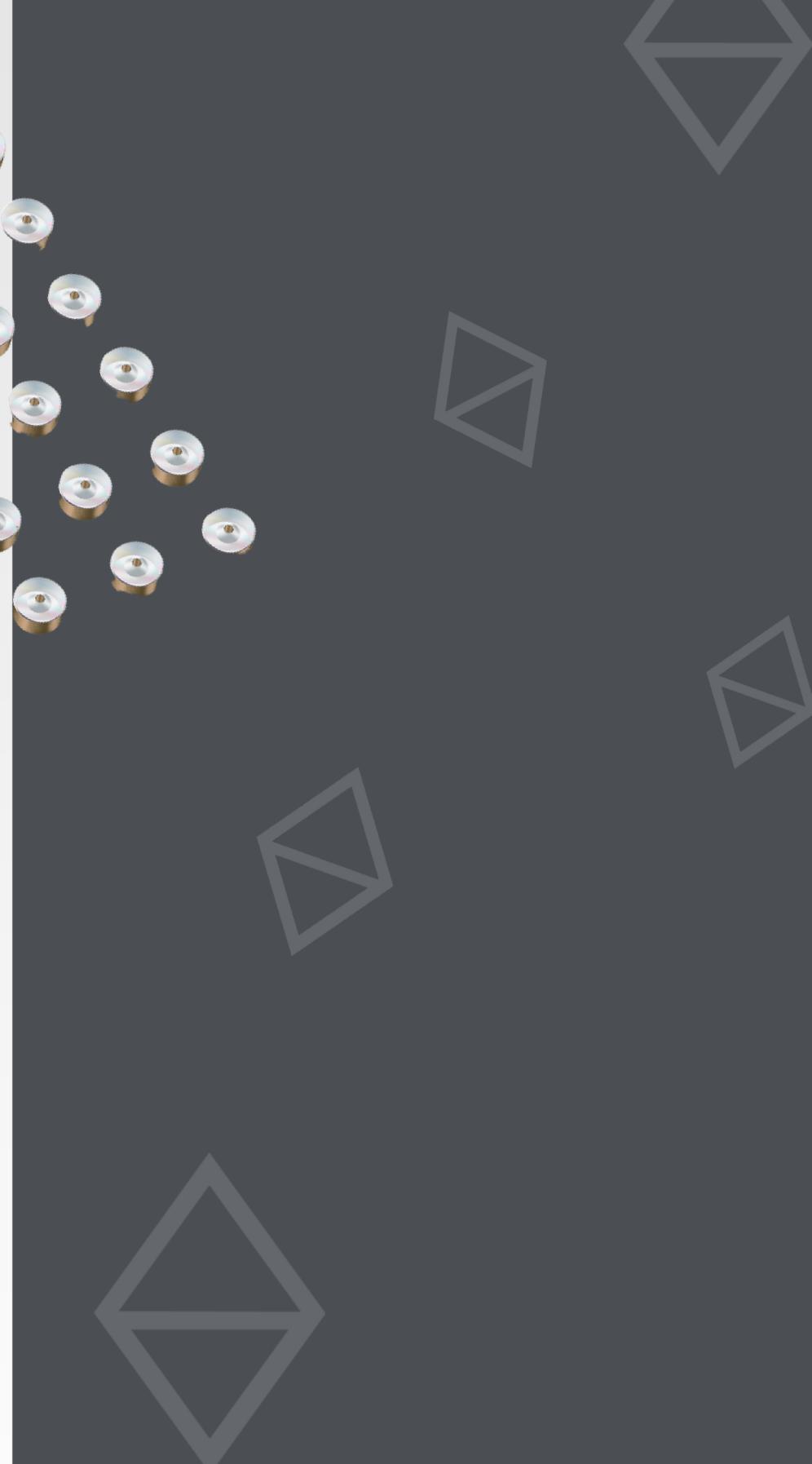


DTI-154



DTI-170





dti™ is a manufacturer of orifices and cutting heads for OEMs and distributors. To place an order, contact your waterjet supplier or contact us for your nearest authorized dealer.



DIAMOND TECHNOLOGY INNOVATIONS
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