



ALLIED MACHINE & ENGINEERING

Holemaking Solutions for Today's Manufacturing



Boring



Reaming



Burnishing



Threading



Specials



Structural Steel Solutions

► DRILLING

Replaceable Insert Drills

North America

Allied Machine
120 Deeds Drive
Dover, OH 44622
United States

Allied Machine
485 West 3rd Street
Dover, OH 44622
United States

ThreadMills USA™
4185 Crosstowne Ct #B
Evans, GA 30809
United States

Superion®
1285 S Patton St.
Xenia, OH 45385
United States

Europe

Allied Machine Europe
93 Vantage Point
Pensnett Estate
Kingswinford
West Midlands
DY6 7FR, United Kingdom

Wohlhaupter™ GmbH
Maybachstrasse 4
Postfach 1264
72636 Frickenhausen
Germany

Asia

Wohlhaupter™ India
B-23, 2nd Floor
B Block Community Centre
Janakpuri, New Delhi - 110058
India



Allied Machine & Engineering is a worldwide leader in holmaking and finishing solutions. We are committed to providing practical and dependable solutions to our customers through innovative designs and superior customer and technical support.

We continue to expand our product offering in order to provide new and different solutions. With Field Sales Engineers located around the world, we position ourselves to provide technical support on site, right at your spindle.



**ALLIED MACHINE
& ENGINEERING**

www.alliedmachine.com

Structural Steel Solutions

The Foundation

Since 1941, Allied Machine & Engineering has provided dependable and practical holemaking solutions to the world. What was once a small job shop in Ohio is now a worldwide leader in cutting tool technology. With three manufacturing facilities in Ohio, one in Georgia, another in Germany, and headquarters in both the United States and Europe, Allied Machine is positioned to bring innovative solutions and technical expertise directly to the customers' hands.



The Beginning

Harold E. Stokey founded Allied Machine & Engineering to aid the war effort, manufacturing taper bearing lock nuts for the production of M1 tanks. Years later, after a sales meeting gone wrong, Stokey possessed a warehouse stocked with spade drill inserts. He set forth into the industry that would become Allied Machine's thriving identity: holemaking.



The T-A®

When Harold's son, William H. Stokey, became the president and CEO, he developed the Throw Away, or T-A, spade drill insert system. The T-A revolutionized the holemaking industry, launching Allied Machine ahead of the competition. Since then, numerous innovations and advancements have been created from the T-A's inspiration.



The Innovation

Since the development of the T-A, Allied Machine has expanded its product offering to support a vast range of customer applications, including large diameter and deep hole drilling, boring, reaming, burnishing, porting, and threading.

The People

Allied Machine understands that high quality products are only one facet of success. Our customer support is crucial to what we do, and that's why we make sure the best engineers and customer service associates are in place to assist our customers around the world.

The Future

With over 75 years of experience, Allied Machine has encountered the challenges of growth and success. By investing in cutting edge technology and the brightest and sharpest minds, our knowledge and capabilities continue to expand and grow every day.



Steve Stokey
Executive Vice President

William H. Stokey
President and CEO

Mike Stokey
Executive Vice President



Replaceable Insert Drills

- Reduce costs by decreasing setup time and utilizing a single holder for the lives of multiple inserts
- Provide flexibility to quickly switch between inserts with different geometries
- Products:
 - GEN3SYS® XT | GEN3SYS® XT Pro
 - T-A® | T-A® GEN2 | T-A Pro™
 - High Performance | Universal



Indexable Insert Drills

- Protect your investment and reduce your inventory with replaceable cartridges that allow the same holder to be used repeatedly
- Indexable inserts increase productivity and tool life while reducing costs
- Products:
 - 4TEX® Drill
 - Revolution Drill®
 - Opening Drill®



Replaceable / Indexable Insert Drills

- Drill large diameter holes and maximize penetration rates even on low horsepower machines
- Delivers strength and versatility needed for any deep hole drilling application
- Holders cover a range of sizes with the replaceable heads determining the cutting diameter
- Products:
 - APX™ Drill



Solid Carbide Drills

- Offer greater strength and stability when drilling tougher materials
- Available in diameters from 3mm - 20mm
- Can be made-to-order specifically for your application (Superion® quoted specials)
 - ASC 320®
 - Superion®



Structural Steel Solutions

- Deliver outstanding performance and durability in structural steel applications
- Designed to produce optimal results in difficult-to-machine materials
- Available in multiple lengths and diameters
- T-A® style drills have different insert geometry options to improve performance, depending on material
- Products:
 - T-A® | T-A® GEN2
 - GEN3SYS® XT Pro



BTA (STS) Machining Solutions

- The internal ejection system flushes chips and debris from the hole with no interference to the cutting process
- Utilizes the advantages of the T-A® drill insert
- Designed to significantly increase penetration rates over brazed heads and traditional gun drills
- Products:
 - BT-A Drill



Hydraulic Port Contour Cutters

- Save significant time and money by performing four processes in one step
- Replaceable insert design reduces costs, inventory, and setup times
- Available in four industry specifications:
 - Imperial: SAE J-1926
 - Metric: ISO 6149-1:2006
 - Military: SAE AS5202
 - John Deere: JDS-G173.1
- Products:
 - AccuPort 432®



Enhanced Special Drilling Capabilities

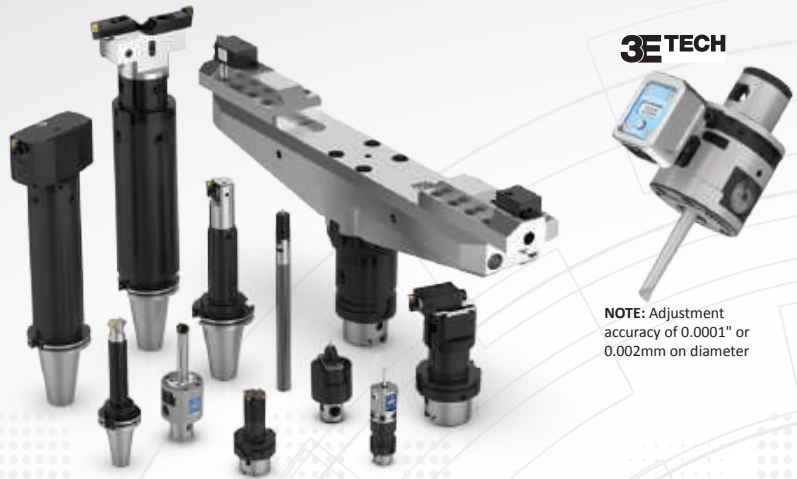
- Allied Machine engineers are available to meet with you to evaluate your application and recommend the best solution for you
- Special drilling solutions can incorporate advanced features such as adjustable diameter locations, multiple steps, additional coolant designs, special lengths and diameters, and more
- Special drills can drastically reduce your cost per hole and increase your overall productivity by eliminating multiple processes and increasing tool life



WOHLHAUPTER®

High Precision Boring Systems

- Designs available for high volume applications that increase rigidity to improve performance
- Versatile boring heads that are flexible with changing applications while maintaining excellent performance
- Provides high precision with absolute repeatability to ensure every part is held to tolerance
- Offers an industry leading modular shank connection that maintains rigidity and reduces inventory on your boring system
- Available with both digital and analog settings
- Products:
 - Wohlhaupter™ Boring Tools



NOTE: Adjustment accuracy of 0.0001" or 0.002mm on diameter



CRITERION®

Modular Boring Systems

- The modular capabilities are ideal for use across multiple different projects
- Offers versatile boring heads suitable for job shops and tooling rooms
- Provides an economical solution for low volume and/or short-term production applications
- Offers finish boring solutions
- Products:
 - Criterion® Boring Tools

S.C.A.M.I.®

Expandable Reaming Solutions

- Expandable cutting diameters accommodate for wear, which extends tool life
- Replaceable cutting heads and rings reduce waste and improve production time versus solid high speed steel and carbide reamers
- Holds tight tolerances to ensure processes are performed to accurate specifications
- Reduces tooling costs because many items are available for reconditioning
- Products:
 - ALVAN® Reamers



S.C.A.M.I.®

Roller Burnishing Solutions

- Produce excellent surface finishes
- Provide accurate size control
- Increase surface hardness
- Solutions for both through hole and blind hole applications
- Products:
 - S.C.A.M.I.® Roller Burnishing Tools





Solid Carbide Thread Mills

- Available with coolant through options
- Covers a wide range of thread forms
- Provides optimal solutions for both high production projects and short-run applications
- Products
 - AccuThread™ 856
 - AccuThread™ T3
 - ThreadMills USA™



Replaceable Insert Thread Mills

- Three insert lengths are available that cover a wide range of thread forms
- Holders can utilize inserts with different pitches and thread forms
- Repeatability is achieved by both the bolt-in style and the pin style locking systems
- Increases tool life by 25 - 50% with Allied Machine's AM210® coating
- Products
 - AccuThread™ 856: Bolt-in Style
 - AccuThread™ 856: Pin Style



SPECIAL CAPABILITIES

When it comes to designing and developing special solutions for customers, Allied Machine is the top choice. If your application requires special tooling, give us a call. Our engineered specials are developed by the brightest engineers in the industry. Most of our standard tooling can be altered as specials, or we can create entirely new concepts for particularly unique applications.

One special tooling solution is Insta-Quote®, the online system that allows you to design your own special tooling 24/7. Receive a quote and drawings within minutes just by following the steps.

And with the addition of Superior® technology and capabilities, we can customize made-to-order solid carbide tools to achieve optimal results for your applications.

Whatever your application, Allied Machine has the answer.



Insta-Quote® 



 **SUPERIOR**



ToolMD™

Increase the production and success of your applications today.

- Direct access to 2D drawings and 3D models
- Assemble and view tool images in your browser
- Download drawings for use in most machining software programs
- Browse products, search item numbers, and save assemblies for future use

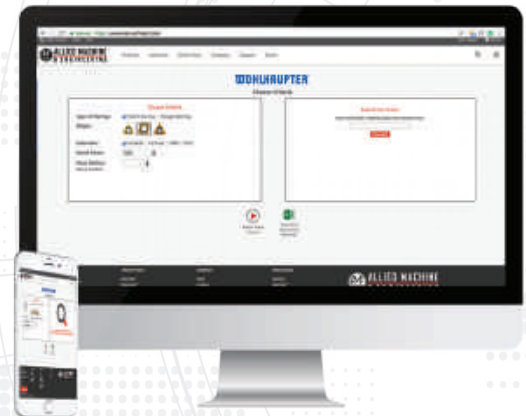
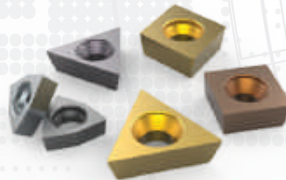


toolmd.com

WOHLHAUPTER® Boring Insert Selector

Find the best insert for your application.

- Generate the correct boring insert for your job in just six easy steps
- Choose type, shape, substrate, insert form, nose radius, and material
- Order easily by adding the item to your cart



alliedmachine.com/bis

Product Selector

Use the product selector to find the right tool for your application.

- Follow guided steps to generate the right tool for your application
- Learn about your recommended tool and how to maximize its performance



alliedmachine.com/productselector

Insta-Code®



Eliminate the wait. Get your program now.

- Choose the best thread mill for your application
- Create program code for your machine
- Available as a PC download app (that can be used offline)
- Website app available 24/7



Insta-Code also has a
Cycle Time Calculator

alliedmachine.com/InstaCode



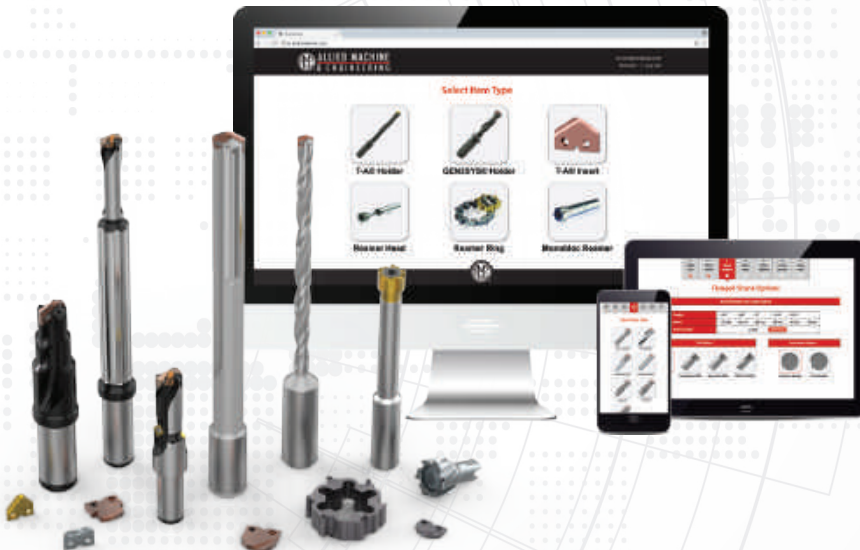
Insta-Quote®



Design your custom tooling and receive a drawing and quote...all within minutes.

- Design and quote your own tooling
- Generate the solution you need in just a few steps
- Features the following products

- T-A® Inserts
- T-A® Holders
- GEN3SYS® XT Holders
- ALVAN® Reamers



iq.alliedmachine.com

Solution Hub App

All Allied all the time.

- Quickly look up product information
- Links to our free online tools
- Locate distributors
- Stay up to date on news and events



Machinist Tool App

Quickly convert cutting tool parameters for the machine inputs you need.

- Input data to calculate the RPM and speed and feed rates
- Also features the Boring Insert Selector
- Access product literature right at your fingertips



Customer Support

Support You Can Count On

Allied Machine has many lines of support to ensure we're available to assist you at all times. It's important to establish relationships with new customers, but we also know it's equally important to strengthen and support relationships with existing customers. Whether you need help with an order or you need someone to come assist you at the spindle, we have the right people to get you what you need.



1

Inside Sales Support

Our inside sales team is trained to handle your account information and general inquiries. We are happy to assist you and find the answers to your questions.

☎ 1.330.343.4283 ext. 8610

☎ 1.800.321.5537 (toll free United States and Canada)

✉ insidesales@alliedmachine.com



2

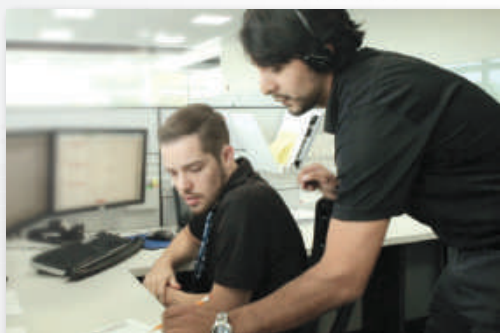
Engineering Support

Our highly trained and skilled Application Engineers are here to assist you. If you are experiencing technical difficulties, our engineers will recommend the best solutions to the problem. Speeds and feeds, coolant pressure, and other machining components all affect the performance of our tooling. Our AEs are experienced in working with difficult materials in many different environments. Give us a call and put our knowledge to the test.

☎ 1.330.343.4283 ext. 7611

☎ 1.800.321.5537 (toll free United States and Canada)

✉ appeng@alliedmachine.com



3

Field Support

Allied Machine provides local engineering support all over the world. Our Field Sales Engineers (FSEs) spend months training in-house before going to the field. This support line allows us to provide assistance to our customers right at the spindle. They are available to visit your facility, run demos and tests, and work hand-in-hand with machine operators and engineers to find the best possible tooling solutions.

NOTE: If you do not know your local FSE, please contact us

☎ 1.330.343.4283

☎ 1.800.321.5537 (toll free United States and Canada)

✉ info@alliedmachine.com





Allied Tool Academy

Online | On-site Technical Education Seminar (TES) | LIVE (Broadcasting)

Online Training

Get **all** the tooling training of our 3-day in-person Technical Education Seminar (TES) through the online **Allied Tool Academy** training platform. Level up your tooling IQ through a series of product overviews, demos, and short quizzes.

- Online TES Certification as well as other training modules
- On demand
- On YOUR schedule



Register online today:
www.alliedtoolacademy.com



Register online today:
www.alliedmachine.com/live

Allied LIVE (Broadcasting)

Join us for **LIVE broadcast** training events where you will have the ability to learn about our tooling, watch live demos, and ask our trainers questions.

- Online
- Quick brief presentation provides basic knowledge of our products
- Watch live demos of tools at the spindle at different speeds and feeds

On-site Technical Education Seminar (TES)

Allied Machine's **Technical Education Seminar (TES)** puts the attendees in front of the machines. When you attend our three day TES program, you'll gain first-hand experience in **real-life** application situations. Test and experiment with different speeds and feeds, observe the results, and discover the best solution.

- Training Lab: In-depth training at the spindle allows you to choose speeds and feeds
- Learning Lab: Quick, brief sessions provide basic knowledge of our products
- Facility Tours: Take guided tours of our two manufacturing facilities located in Dover, Ohio



Register online today:
www.alliedmachine.com/TES



**Allied Machine
Training Facility**
485 West 3rd Street
Dover, OH 44622



Find what you need. Now.

Flipbooks give you the ability to search for specific item numbers, download PDFs, print pages, and share with others. Save time searching the catalog by hand by using the easy search function. View our flipbooks now at alliedmachine.com/support/literature.

The diagram illustrates the features and navigation of the Allied Machine Engineering flipbook interface. The main interface is shown on a tablet, displaying a table of contents and a detailed technical drawing of a drill bit. A search bar is located in the top right corner, and a search results window is shown on the right, displaying the search results for the item number D2031200M-075F.

Key features and navigation options are highlighted:

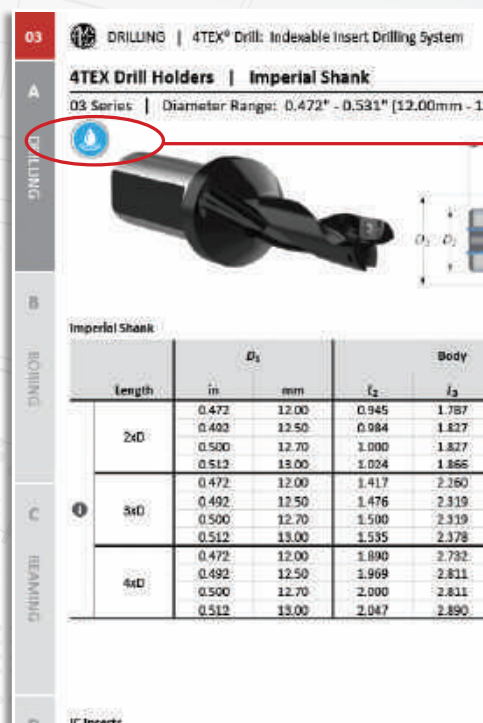
- Search:** A search bar in the top right corner allows users to find specific item numbers. The search results window shows the item number, the number of pages found (1 page found), and a list of page numbers and item numbers.
- Table of Contents:** A sidebar on the left contains a table of contents with links to various sections: Product Overview, Drill Series, Accurite Sleeves, Technical Information, Recommended Cutting Data, Troubleshooting, Guaranteed Test / Demo Application, and Remanufacture.
- Navigation:** A bottom navigation bar contains icons for: View the table of contents, Add notes, Scroll through the pages in thumbnail view, Mute the sound, Zoom in for a closer look, and View in full screen mode.
- Share and Download:** A bottom bar contains icons for: Share the Flipbook with others, Print the full catalog or specific pages, and Download the catalog PDF.

Additional details shown in the diagram include:

- A QR code for sharing the flipbook.
- A link to the flipbook: <https://alliedmachine.cld.bz/ATEX-Drill>.
- A print dialog box showing the option to print the current left page (0.21 MB).

Share the link to each Flipbook via email and social media.

Icon Reference Guide



Navigate with ease.

The following icons will appear throughout the catalog to help you navigate between products and find the best solution quickly.

Coating Options

AM200

AM200 Coating

AM300

AM300 Coating

AM210

AM210 Coating

AM420

AM420 Coating

TiCN

TiCN Coating

TiN

TiN Coating

TiAlN

TiAlN Coating

Tool Options

Straight
Shank

Straight Shank

Morse
Taper

Morse Taper Shank



Coolant Through

Structural Steel Drilling Solutions

Replaceable Insert Drilling System | GEN3SYS® XT Pro | Original T-A® and GEN2 T-A®

- ▶ **GEN3SYS XT Pro Diameter Range:** 0.4331" - 1.3780" (11.00mm - 35.00mm)
- ▶ **T-A Diameter Range:** 0.511" - 1.882" (12.98mm - 47.80mm)



Take on Tough Drilling

Allied Machine's Structural Steel Drilling System is designed for maximum performance in structural steel materials and applications. These solutions utilize the GEN3SYS XT Pro, Original T-A, and GEN2 T-A designs and capabilities.

With multiple geometries and coatings, you're sure to find the solution that is right for you. Tough drilling is tough no more.

Excellent chip control	Improves hole quality and surface finish	Provides maximum durability and stability
------------------------	--	---

Your safety and the safety of others is very important. This catalog contains important safety messages. Always read and follow all safety precautions.



This triangle is a safety hazard symbol. It alerts you to potential safety hazards that can cause tool failure and serious injury.

When you see this symbol in the catalog, look for a related safety message that may be near this triangle or referred to in the nearby text.

There are safety signal words also used in the catalog. Safety messages follow these words.

WARNING

WARNING (shown above) means that failure to follow the precautions in this message could result in tool failure and serious injury.

NOTICE means that failure to follow the precautions in this message could result in damage to the tool or machine but not result in personal injury.

NOTE and **IMPORTANT** are also used. These are important that you read and follow but are not safety-related.

Visit www.alliedmachine.com for the most up-to-date information and procedures.

Applicable Industries

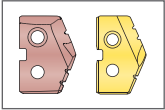


Structural Steel

Structural Steel Drilling Solutions Contents

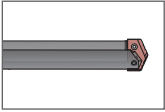
Reference Icons

The following icons will appear throughout the catalog to help you navigate between products.



Corresponding T-A Inserts

Refers to the corresponding T-A insert items that connect with each specific holder series



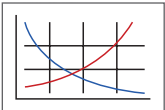
Corresponding T-A Holders

Refers to the corresponding T-A holder items that connect with each specific insert series



Setup / Assembly Information

Detailed instructions and information regarding the corresponding part(s)



Recommended Cutting Data

Speed and feed recommendations for optimum and safe drilling

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GEN3SYS® XT Pro System

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T-A® Drilling System

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Recommended Cutting Data

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Series	GEN3SYS XT Pro Diameter Range	
	Imperial (inch)	Metric (mm)
12	0.4724 - 0.5117	12.00 - 12.99
13	0.5118 - 0.5511	13.00 - 13.99
14	0.5512 - 0.5905	14.00 - 14.99
15	0.5906 - 0.6298	15.00 - 15.99
16	0.6299 - 0.6692	16.00 - 16.99
17	0.6693 - 0.7086	17.00 - 17.99
18	0.7087 - 0.7873	18.00 - 19.99
20	0.7874 - 0.8660	20.00 - 21.99
22	0.8661 - 0.9448	22.00 - 23.99
24	0.9449 - 1.0235	24.00 - 25.99
26	1.0236 - 1.1416	26.00 - 28.99
29	1.1417 - 1.2597	29.00 - 31.99
32	1.2598 - 1.3780	32.00 - 35.00

Series	T-A Diameter Range	
	Imperial (inch)	Metric (mm)
0	0.511 - 0.695	12.98 - 17.65
1	0.690 - 0.960	17.53 - 24.38
2	0.961 - 1.380	24.41 - 35.05
3	1.353 - 1.882	34.36 - 47.80



Structural Steel Drilling

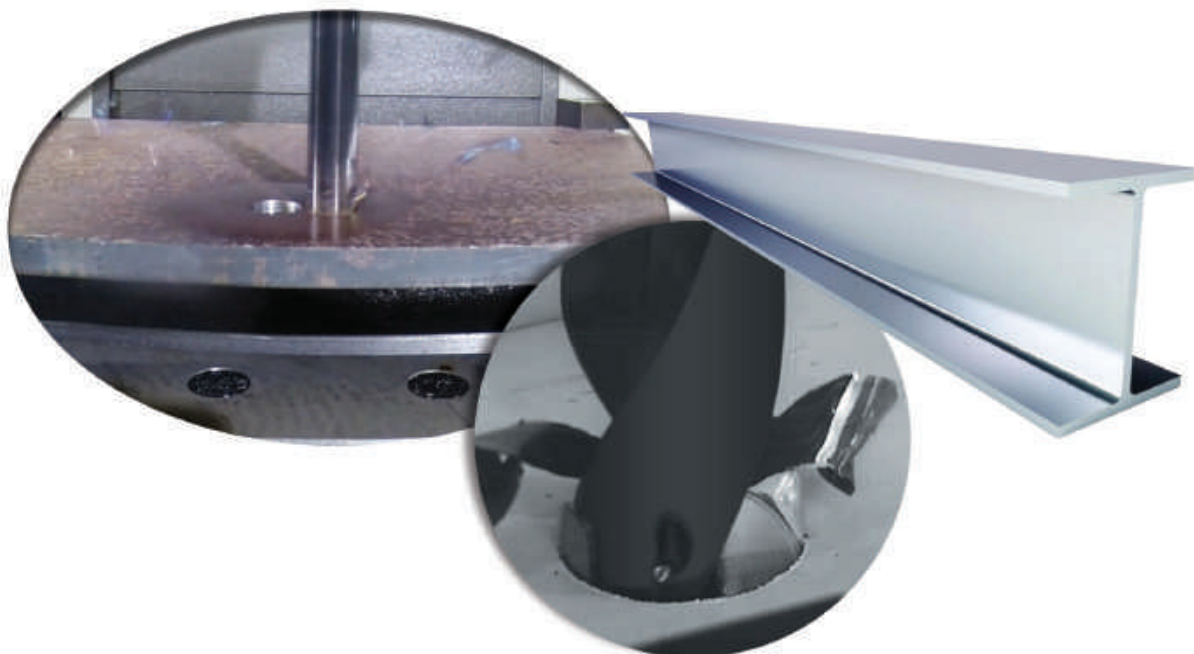
Achieving Optimal Results in Structural Steel

Drilling in structural steel materials can be a difficult process, and achieving optimal results becomes a major issue. Allied Machine's structural steel drilling solutions have been specifically designed to produce the best results in the toughest materials. With solutions in both the T-A® and GEN3SYS® XT Pro product lines, you have multiple options to solve your application problems.



Insert Style Comparison

	 GEN3SYS® XT Pro Structural Steel	 Original T-A® Thin Wall	 Original T-A® Notch Point®	 Original T-A® 150° Structural Steel	 GEN2 T-A® High Efficiency
High penetration	☒				
Material less than 7/16" thick		☒			
Material over 7/16" thick	☒		☒	☒	☒
Reduced exit burr			☒	☒	
Includes Notch Point® geometry			☒	☒	☒
Available from carbide	☒				☒
Stocked in common sizes for the Structural Steel industry	☒	☒	☒	☒	☒



Case Study Example

CASE STUDY

Project Profile: Structural Steel I-Beam Construction

Tooling Solution: T-A® Structural Steel Drilling System

The Problem:

Previously, the customer was using a competitor spade drill running at the following parameters:

- 650 RPM
- 0.010 IPR (0.25 mm/rev)
- 6.5 IPM (165.1 mm/min)

The tool drilled a 0.875" (22.23mm) diameter hole to a 0.4375" (11.11mm) depth. The drill had a tool life of **only 20 holes**.

The poor tool performance was brought to the attention of the technician, who was familiar with Allied Machine products. The following day, Allied Machine tooling was brought in for testing. The customer needed improvement in the tool life of the inserts.

The Solution:

Allied Machine recommended the T-A Structural Steel Drilling System.

- **Insert** = 151A-0028-TW (#1 series T-A insert with TiAlN coating and Thin Wall geometry)
- **Holder** = 25010H-004IS052 (#1 series T-A holder with #4 Morse Taper shank and helical flute)

The tool ran at the following parameters:

- 440 RPM
- 0.010 IPR (0.25 mm/rev)
- 4.4 IPM (111.7 mm/min)

The tool achieved the desired diameter and depth. But most of all, the tool produced **1,500 holes**.

Summary:

The customer was able to take advantage of Allied Machine's vast experience in the structural steel drilling niche. Allied's wide variety of stocked solutions for specific customer problems allows for a remarkable increase in tool life.

The T-A Structural Steel Drilling System defeated the competition, decreasing the total cost-per-hole from \$2.02 to just \$0.22. This reduction resulted in a **savings of 89%** for the customer.

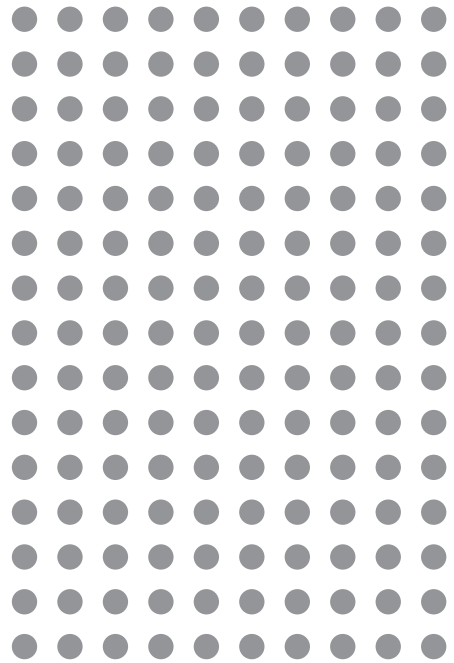


The **PROOF** is in the
NUMBERS

Competitor Insert Tool Life
(number of holes = 20)



T-A Structural Steel Insert Tool Life
(number of holes = 1,500)



Overall **SAVINGS** of
89%



PREMIUM SOLUTION

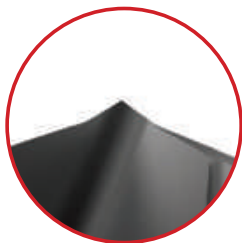
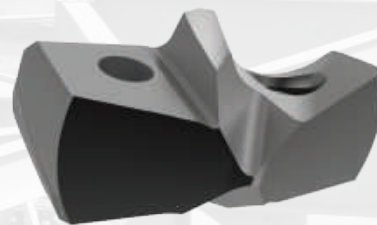




GEN3SYS® XT Pro Structural Steel Drilling System

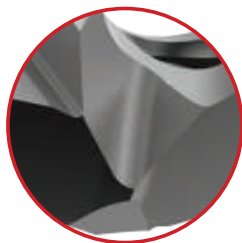
GEN3SYS® XT Pro *ST*

STRUCTURAL STEEL ENHANCEMENTS



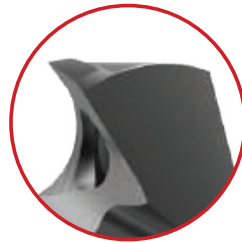
New Point Design

Increases stability without hindering penetration



Redesigned Insert

Provides consistent performance and adds durability



Improved Geometry

Extends tool life and increases insert strength without increasing horsepower consumption



AM420

AM420 Coating

Increases heat threshold and extends tool life

Get the Consistency You Need

The challenge of drilling structural steel materials is about to get a whole lot easier. Developed through a rigorous and thorough testing process, the modified and improved XTST insert is a product of innovation.

Achieve the **consistent performance** you need while matching or even exceeding your current parameters.

Tough Drilling is Tough No More

Structural steel applications can prove to be difficult to machine, so you need a drill that's been put through the fire to ensure it can conquer those challenging applications.

Rigorous testing and countless hours of design and programming make the XT Pro structural steel insert the optimal drill for structural steel applications.

- Diameter range: 12mm - 35mm
- Holders available in 3xD, 5xD, and 7xD lengths
- Flanged shank with flat



3xD

5xD

7xD

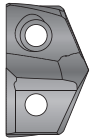


NOTICE: Structural Steel GEN3SYS holders are specifically designed to be used only with XTST geometry inserts. Using other GEN3SYS XT or XT Pro insert geometries in these holders could lead to chip packing and tool failure. Contact Application Engineering for questions regarding proper use of tools.

GEN3SYS® XT Pro Drill Nomenclature

GEN3SYS XT Pro Drill Inserts

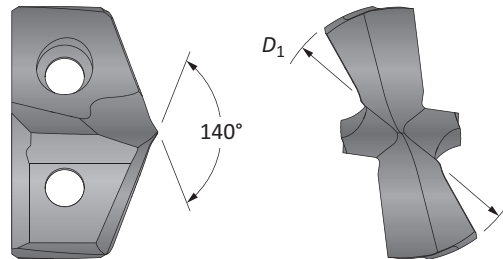
XT	ST	20	–	20.00
1	2	3		4



1. XT Pro Drill Insert	2. Geometry	3. Series	4. Diameter (mm)
XT = XT Pro insert	ST = Structural Steel	12 = 12 series 13 = 13 series 14 = 14 series 15 = 15 series 16 = 16 series 17 = 17 series 18 = 18 series 20 = 20 series 22 = 22 series 24 = 24 series 26 = 26 series 29 = 29 series 32 = 32 series	For complete list of diameter ranges by series, see contents page.

Reference Key

Symbol	Attribute
D_1	Insert diameter

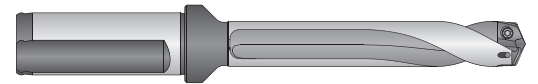


Sizes not shown are available upon request.
When ordering, please follow the example below:

Imperial:	0.7913", 20 series = use Part No. XTST20-20.10
Metric:	20.10mm, 20 series = use Part No. XTST20-20.10

GEN3SYS Structural Steel Drill Holders

ST	03	12	0	–	20	FM
1	2	3	4		5	6

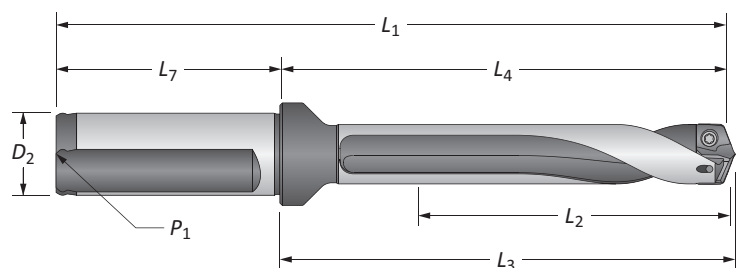


1. Holder	2. Length	3. Series	4. Body Diameter
ST = Structural steel holder	03 = 3x Diameter 05 = 5x Diameter 07 = 7x Diameter	12 = 12 series 13 = 13 series 14 = 14 series 15 = 15 series 16 = 16 series 17 = 17 series 18 = 18 series 20 = 20 series 22 = 22 series 24 = 24 series 26 = 26 series 29 = 29 series 32 = 32 series	0 = Standard 5 = Oversized

5. Shank Diameter	6. Shank Style
Imperial (in) 063 = 5/8" 125 = 1-1/4" 075 = 3/4" 150 = 1-1/2" 100 = 1" Metric (mm) 16 = 16mm 32 = 32mm 20 = 20mm 40 = 40mm 25 = 25mm	F = Flanged with flat FM = Flanged metric with flat C = Cylindrical (no flat) CM = Cylindrical metric (no flat)

Reference Key

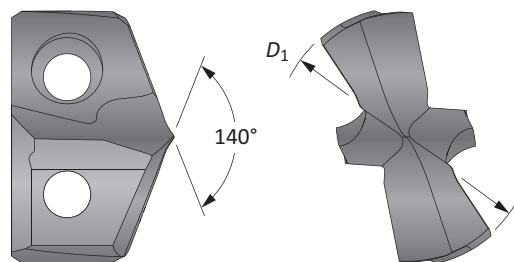
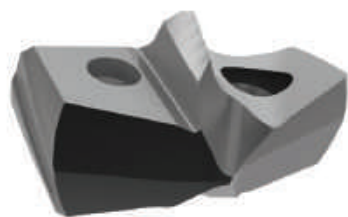
Symbol	Attribute
D_2	Shank diameter
L_1	Overall length
L_2	Drill depth
L_3	Holder reference length
L_4	Holder body length
L_7	Shank length
P_1	Rear pipe tap





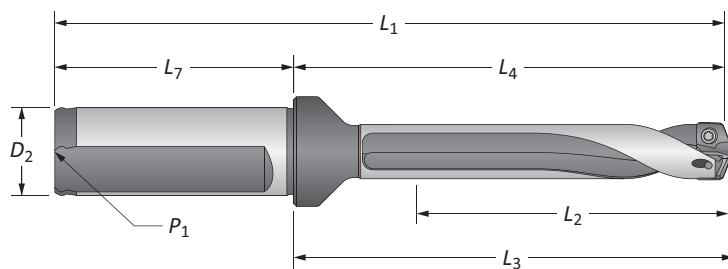
GEN3SYS® XT Pro Structural Steel Drilling System

12 Series | Diameter Range: 0.4724" - 0.5117" (12.00mm - 12.99mm)



Inserts

Fractional Equivalent	Insert		 XTST Part No.
	D_1 inch	D_1 mm	
—	0.4724	12.00	XTST12-12.00



Holders

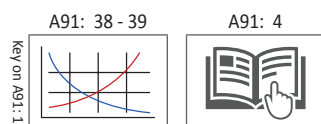
	Length	Body				Shank				Part No.
		L_2	L_4	L_3	L_1	L_7	D_2	P_1	Flat	
i	3xD	1-17/32	2-5/8	2-45/64	4-21/32	2-1/32	3/4	1/8	YES	ST03120-075F
	5xD	2-9/16	3-41/64	3-47/64	5-43/64	2-1/32	3/4	1/8	YES	ST05120-075F
	7xD	3-37/64	4-43/64	4-3/4	6-45/64	2-1/32	3/4	1/8	YES	ST07120-075F
m	3xD	39.0	68.8	68.8	118.8	50	20	1/8*	YES	ST03120-20FM
	5xD	65.0	94.8	94.8	144.8	50	20	1/8*	YES	ST05120-20FM
	7xD	90.9	120.8	120.8	170.8	50	20	1/8*	YES	ST07120-20FM

*Thread to BSP and ISO 7-1

Connection Accessories

 Insert Screws	 Nylon Locking Screws	 Insert Driver	 Preset Torque Hand Driver	 Replacement Tips	Admissible Tightening Torque*
7247-IP7-1	7247N-IP7-1	8IP-7	8IP-7TL	8IP-7B	7.4 in-lbs (84 N-cm)

*Tightening torques are calculated with a friction coefficient of $\mu = 0.14$ and develop 90% of ultimate yield strength



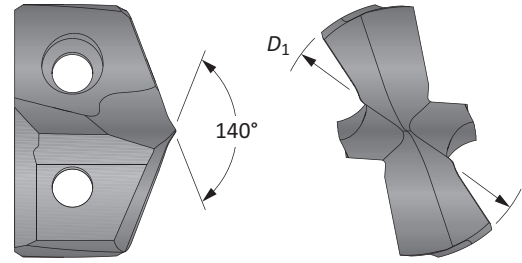
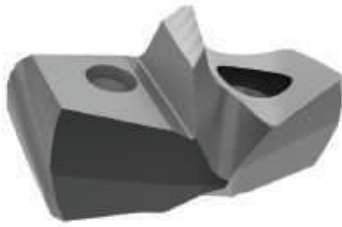
i = Imperial (in)
m = Metric (mm)

Inserts sold in multiples of 1 | Screws sold in multiples of 10

NOTICE: Structural Steel GEN3SYS holders are specifically designed to be used only with XTST geometry inserts. Using other GEN3SYS XT or XT Pro insert geometries in these holders could lead to chip packing and tool failure. Contact Application Engineering for questions regarding proper use of tools.

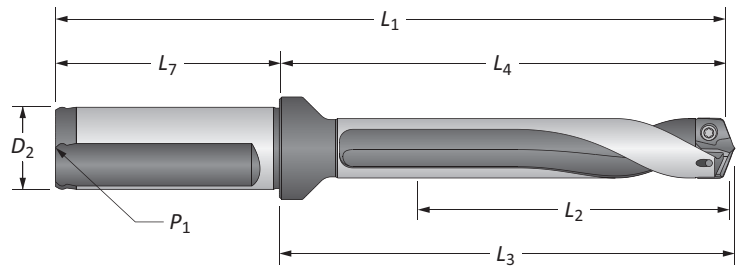
GEN3SYS® XT Pro Structural Steel Drilling System

13 Series | Diameter Range: 0.5118" - 0.5511" (13.00mm - 13.99mm)



Inserts

Insert			 XTST Part No.
Fractional Equivalent	D ₁ inch	D ₁ mm	
–	0.5118	13.00	XTST13-13.00



Holders

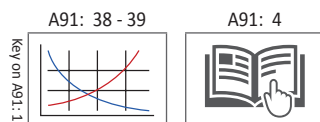
		Body				Shank				Part No.
	Length	L ₂	L ₄	L ₃	L ₁	L ₇	D ₂	P ₁	Flat	
i	3xD	1-21/32	2-23/32	2-13/16	4-3/4	2-1/32	3/4	1/8	YES	ST03130-075F
	5xD	2-3/4	3-53/64	3-29/32	5-55/64	2-1/32	3/4	1/8	YES	ST05130-075F
	7xD	3-55/64	4-15/16	5-1/32	6-31/32	2-1/32	3/4	1/8	YES	ST07130-075F
m	3xD	42.1	69.1	71.3	120.7	50	20	1/8*	YES	ST03130-20FM
	5xD	69.9	97.2	99.4	148.8	50	20	1/8*	YES	ST05130-20FM
	7xD	97.9	125.4	127.6	177.0	50	20	1/8*	YES	ST07130-20FM

*Thread to BSP and ISO 7-1

Connection Accessories

 Insert Screws	 Nylon Locking Screws	 Insert Driver	 Preset Torque Hand Driver	 Replacement Tips	Admissible Tightening Torque*
7247-IP7-1	7247N-IP7-1	8IP-7	8IP-7TL	8IP-7B	7.4 in-lbs (84 N-cm)

*Tightening torques are calculated with a friction coefficient of $\mu = 0.14$ and develop 90% of ultimate yield strength



i = Imperial (in)
m = Metric (mm)

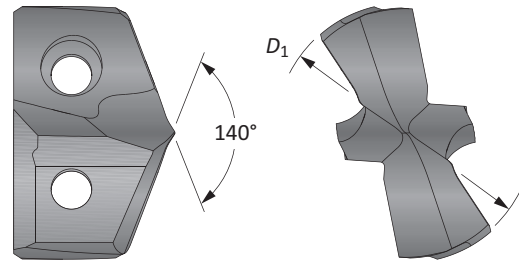
Inserts sold in multiples of 1 | Screws sold in multiples of 10

NOTICE: Structural Steel GEN3SYS holders are specifically designed to be used only with XTST geometry inserts. Using other GEN3SYS XT or XT Pro insert geometries in these holders could lead to chip packing and tool failure. Contact Application Engineering for questions regarding proper use of tools.



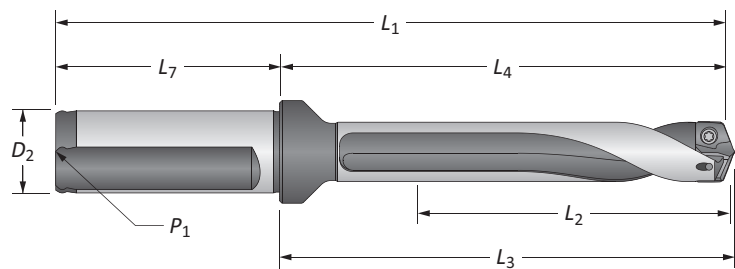
GEN3SYS® XT Pro Structural Steel Drilling System

14 Series | Diameter Range: 0.5512" - 0.5905" (14.00mm - 14.99mm)



Inserts

Fractional Equivalent	Insert		 XTST Part No.
	D_1 inch	D_1 mm	
—	0.5512	14.00	XTST14-14.00
9/16	0.5625	14.29	XTST14-14.29



Holders

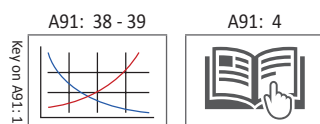
		Body				Shank				
Length		L_2	L_4	L_3	L_1	L_7	D_2	P_1	Flat	Part No.
i	3xD	1-25/32	2-27/32	2-61/64	4-7/8	2-1/32	3/4	1/8	YES	ST03140-075F
	5xD	2-61/64	4-1/32	4-1/8	6-1/16	2-1/32	3/4	1/8	YES	ST05140-075F
	7xD	4-9/64	5-13/64	5-5/16	7-15/64	2-1/32	3/4	1/8	YES	ST07140-075F
m	3xD	45.0	72.4	75.0	122.4	50	20	1/8*	YES	ST03140-20FM
	5xD	75.0	102.4	104.9	152.4	50	20	1/8*	YES	ST05140-20FM
	7xD	104.9	132.3	134.9	182.3	50	20	1/8*	YES	ST07140-20FM

*Thread to BSP and ISO 7-1

Connection Accessories

Insert Screws	Nylon Locking Screws	Insert Driver	Preset Torque Hand Driver	Replacement Tips	Admissible Tightening Torque*
7247-IP7-1	7247N-IP7-1	8IP-7	8IP-7TL	8IP-7B	7.4 in-lbs (84 N-cm)

*Tightening torques are calculated with a friction coefficient of $\mu = 0.14$ and develop 90% of ultimate yield strength



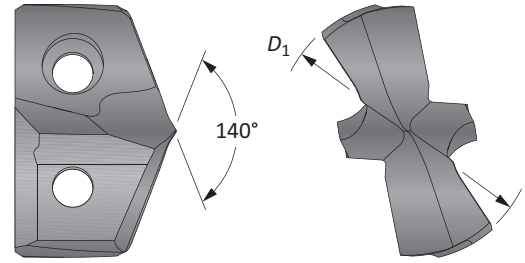
i = Imperial (in)
m = Metric (mm)

Inserts sold in multiples of 1 | Screws sold in multiples of 10

NOTICE: Structural Steel GEN3SYS holders are specifically designed to be used only with XTST geometry inserts. Using other GEN3SYS XT or XT Pro insert geometries in these holders could lead to chip packing and tool failure. Contact Application Engineering for questions regarding proper use of tools.

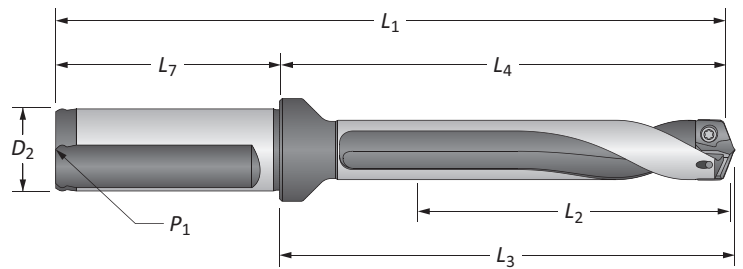
GEN3SYS® XT Pro Structural Steel Drilling System

15 Series | Diameter Range: 0.5906" - 0.6298" (15.00mm - 15.99mm)



Inserts

Fractional Equivalent	Insert		
	D_1 inch	D_1 mm	XTST Part No.
	0.5906	15.00	XTST15-15.00
5/8	0.6250	15.88	XTST15-15.88



Holders

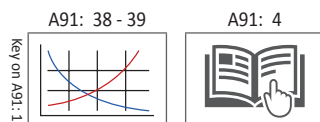
	Length	Body				Shank				Part No.
		L_2	L_4	L_3	L_1	L_7	D_2	P_1	Flat	
i	3xD	1-57/64	2-61/64	3-3/64	4-63/64	2-1/32	3/4	1/8	YES	ST03150-075F
	5xD	3-5/32	4-7/32	4-5/16	6-1/4	2-1/32	3/4	1/8	YES	ST05150-075F
	7xD	4-27/64	5-15/32	5-37/64	7-1/2	2-1/32	3/4	1/8	YES	ST07150-075F
m	3xD	48.0	75.1	77.6	125.1	50	20	1/8*	YES	ST03150-20FM
	5xD	80.0	107.0	109.6	157.0	50	20	1/8*	YES	ST05150-20FM
	7xD	111.9	139.0	141.6	189.0	50	20	1/8*	YES	ST07150-20FM

*Thread to BSP and ISO 7-1

Connection Accessories

Insert Screws	Nylon Locking Screws	Insert Driver	Preset Torque Hand Driver	Replacement Tips	Admissible Tightening Torque*
7247-IP7-1	7247N-IP7-1	8IP-7	8IP-7TL	8IP-7B	7.4 in-lbs (84 N-cm)

*Tightening torques are calculated with a friction coefficient of $\mu = 0.14$ and develop 90% of ultimate yield strength



i = Imperial (in)
m = Metric (mm)

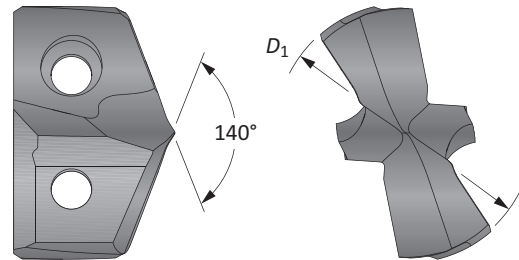
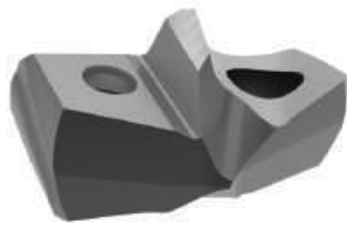
Inserts sold in multiples of 1 | Screws sold in multiples of 10

NOTICE: Structural Steel GEN3SYS holders are specifically designed to be used only with XTST geometry inserts. Using other GEN3SYS XT or XT Pro insert geometries in these holders could lead to chip packing and tool failure. Contact Application Engineering for questions regarding proper use of tools.



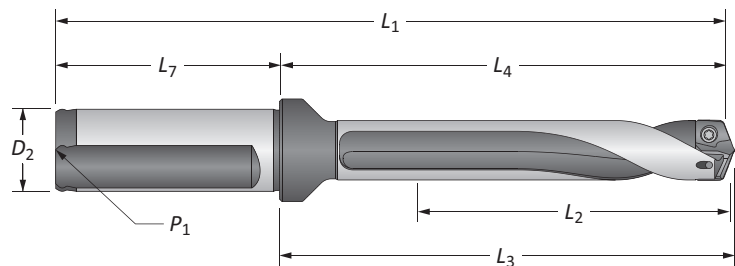
GEN3SYS® XT Pro Structural Steel Drilling System

16 Series | Diameter Range: 0.6299" - 0.6692" (16.00mm - 16.99mm)



Inserts

Fractional Equivalent	Insert		 XTST Part No.
	D_1 inch	D_1 mm	
—	0.6299	16.00	XTST16-16.00

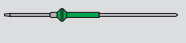


Holders

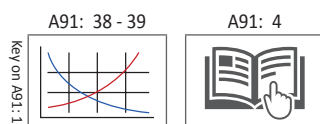
	Length	Body				Shank				Part No.
		L_2	L_4	L_3	L_1	L_7	D_2	P_1	Flat	
i	3xD	2-1/64	3-13/64	3-5/16	5-15/64	2-1/32	3/4	1/8	YES	ST03160-075F
	5xD	3-23/64	4-17/32	4-21/32	6-9/16	2-1/32	3/4	1/8	YES	ST05160-075F
	7xD	4-11/16	5-7/8	5-63/64	7-29/32	2-1/32	3/4	1/8	YES	ST07160-075F
m	3xD	51.0	81.3	84.2	131.3	50	20	1/8*	YES	ST03160-20FM
	5xD	84.9	115.3	118.2	165.3	50	20	1/8*	YES	ST05160-20FM
	7xD	118.9	149.3	152.2	199.3	50	20	1/8*	YES	ST07160-20FM

*Thread to BSP and ISO 7-1

Connection Accessories

 Insert Screws	 Nylon Locking Screws	 Insert Driver	 Preset Torque Hand Driver	 Replacement Tips	Admissible Tightening Torque*
72556-IP8-1	72556N-IP8-1	8IP-8	8IP-8TL	8IP-8B	15.5 in-lbs (175 N-cm)

*Tightening torques are calculated with a friction coefficient of $\mu = 0.14$ and develop 90% of ultimate yield strength



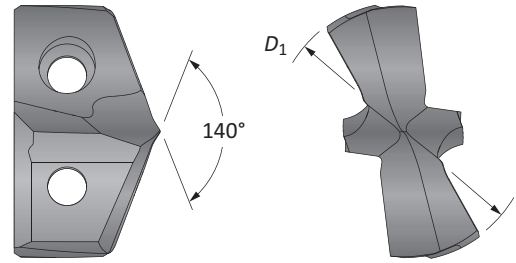
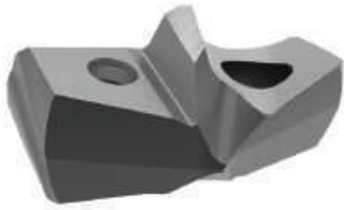
i = Imperial (in)
m = Metric (mm)

Inserts sold in multiples of 1 | Screws sold in multiples of 10

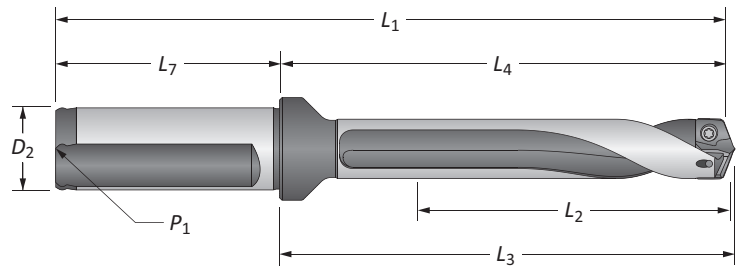
NOTICE: Structural Steel GEN3SYS holders are specifically designed to be used only with XTST geometry inserts. Using other GEN3SYS XT or XT Pro insert geometries in these holders could lead to chip packing and tool failure. Contact Application Engineering for questions regarding proper use of tools.

GEN3SYS® XT Pro Structural Steel Drilling System

17 Series | Diameter Range: 0.6693" - 0.7086" (17.00mm - 17.99mm)

**Inserts**

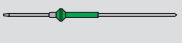
Fractional Equivalent	Insert		 XTST Part No.
	D_1 inch	D_1 mm	
—	0.6693	17.00	XTST17-17.00
11/16	0.6875	17.46	XTST17-17.46

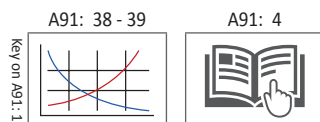
**Holders**

Length		Body				Shank				Part No.
		L_2	L_4	L_3	L_1	L_7	D_2	P_1	Flat	
i	3xD	2-1/8	3-5/16	3-27/64	5-11/32	2-1/32	3/4	1/8	YES	ST03170-075F
	5xD	3-35/64	4-23/32	4-27/32	6-3/4	2-1/32	3/4	1/8	YES	ST05170-075F
	7xD	4-31/32	6-9/64	6-1/4	8-11/64	2-1/32	3/4	1/8	YES	ST07170-075F
m	3xD	54.0	84.1	87.0	134.1	50	20	1/8*	YES	ST03170-20FM
	5xD	89.9	120.0	122.9	170.0	50	20	1/8*	YES	ST05170-20FM
	7xD	125.9	156.0	158.9	206.0	50	20	1/8*	YES	ST07170-20FM

*Thread to BSP and ISO 7-1

Connection Accessories

 Insert Screws	 Nylon Locking Screws	 Insert Driver	 Preset Torque Hand Driver	 Replacement Tips	Admissible Tightening Torque*
72567-IP8-1	72567N-IP8-1	8IP-8	8IP-8TL	8IP-8B	15.5 in-lbs (175 N-cm)

*Tightening torques are calculated with a friction coefficient of $\mu = 0.14$ and develop 90% of ultimate yield strength**i** = Imperial (in)
m = Metric (mm)

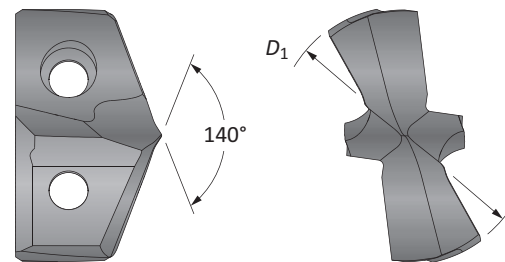
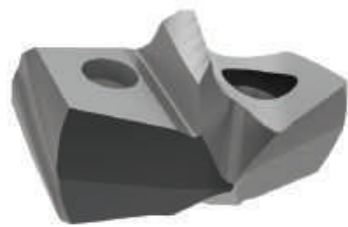
Inserts sold in multiples of 1 | Screws sold in multiples of 10

NOTICE: Structural Steel GEN3SYS holders are specifically designed to be used only with XTST geometry inserts. Using other GEN3SYS XT or XT Pro insert geometries in these holders could lead to chip packing and tool failure. Contact Application Engineering for questions regarding proper use of tools.



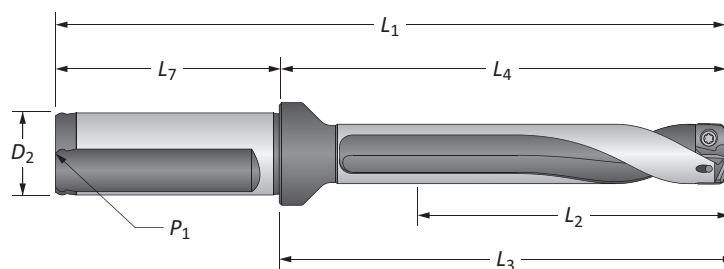
GEN3SYS® XT Pro Structural Steel Drilling System

18 Series | Diameter Range: 0.7087" - 0.7873" (18.00mm - 19.99mm)



Inserts

Fractional Equivalent	Insert		 XTST Part No.
	D_1 inch	D_1 mm	
–	0.7087	18.00	XTST18-18.00
–	0.7480	19.00	XTST18-19.00



Holders

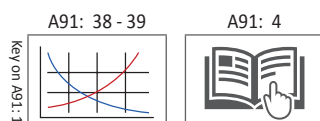
		Body				Shank				Part No.
		L_2	L_4	L_3	L_1	L_7	D_2	P_1	Flat	
i	3xD	2-3/8	3-45/64	3-53/64	5-63/64	2-9/32	1	1/8	YES	ST03180-100F
	5xD	3-15/16	5-9/32	5-25/64	7-9/16	2-9/32	1	1/8	YES	ST05180-100F
	7xD	5-33/64	6-27/32	6-31/32	9-1/8	2-9/32	1	1/8	YES	ST07180-100F
m	3xD	60.0	94.0	97.1	144.0	50	20	1/8*	YES	ST03180-20FM
	5xD	99.9	134.0	137.1	184.0	50	20	1/8*	YES	ST05180-20FM
	7xD	139.9	174.0	177.1	224.0	50	20	1/8*	YES	ST07180-20FM

*Thread to BSP and ISO 7-1

Connection Accessories

Insert Screws	Nylon Locking Screws	Insert Driver	Preset Torque Hand Driver	Replacement Tips	Admissible Tightening Torque*
7375-IP9-1	7375N-IP9-1	8IP-9	8IP-9TL	8IP-9B	27.0 in-lbs (305 N-cm)

*Tightening torques are calculated with a friction coefficient of $\mu = 0.14$ and develop 90% of ultimate yield strength



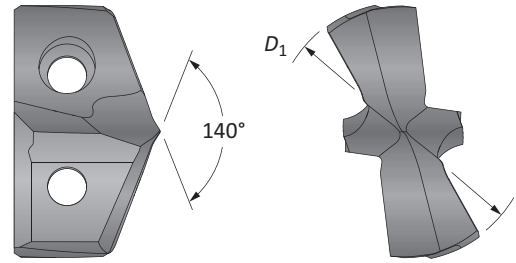
i = Imperial (in)
m = Metric (mm)

Inserts sold in multiples of 1 | Screws sold in multiples of 10

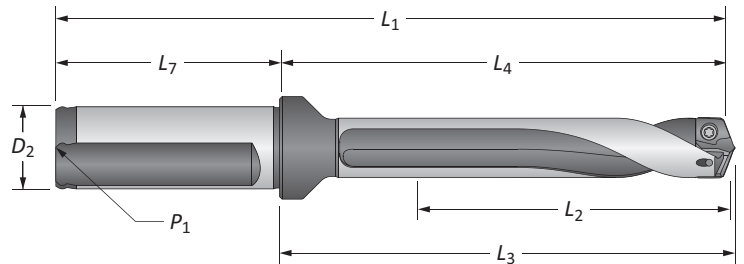
NOTICE: Structural Steel GEN3SYS holders are specifically designed to be used only with XTST geometry inserts. Using other GEN3SYS XT or XT Pro insert geometries in these holders could lead to chip packing and tool failure. Contact Application Engineering for questions regarding proper use of tools.

GEN3SYS® XT Pro Structural Steel Drilling System

20 Series | Diameter Range: 0.7874" - 0.8660" (20.00mm - 21.99mm)

**Inserts**

Fractional Equivalent	Insert			XTST Part No.
	D_1 inch	D_1 mm		
–	0.7874	20.00		XTST20-20.00
13/16	0.8125	20.64		XTST20-20.64
–	0.8268	21.00		XTST20-21.00
–	0.8594	21.82		XTST20-21.82

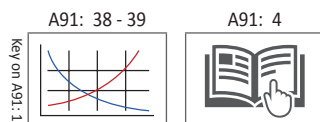
**Holders**

	Length	Body				Shank				Part No.
		L_2	L_4	L_3	L_1	L_7	D_2	P_1	Flat	
i	3xD	2-17/32	3-15/16	4-1/16	6-7/32	2-9/32	1	1/8	YES	ST03200-100F
	5xD	4-11/32	5-43/64	5-51/64	7-61/64	2-9/32	1	1/8	YES	ST05200-100F
	7xD	6-1/16	7-13/32	7-17/32	9-11/16	2-9/32	1	1/8	YES	ST07200-100F
m	3xD	66.0	100.1	103.3	156.1	56	25	1/8*	YES	ST03200-25FM
	5xD	110.0	144.1	147.2	200.1	56	25	1/8*	YES	ST05200-25FM
	7xD	153.9	188.1	191.2	244.1	56	25	1/8*	YES	ST07200-25FM

*Thread to BSP and ISO 7-1

Connection Accessories

					Admissible Tightening Torque*
Insert Screws	Nylon Locking Screws	Insert Driver	Preset Torque Hand Driver	Replacement Tips	
7375-IP9-1	7375N-IP9-1	8IP-9	8IP-9TL	8IP-9B	27.0 in-lbs (305 N-cm)

*Tightening torques are calculated with a friction coefficient of $\mu = 0.14$ and develop 90% of ultimate yield strength

i = Imperial (in)
m = Metric (mm)

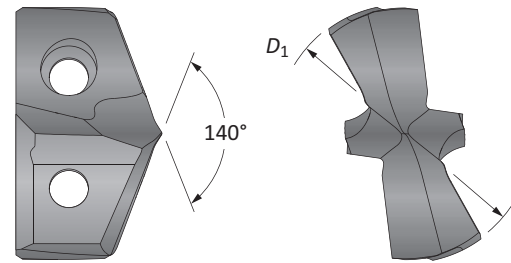
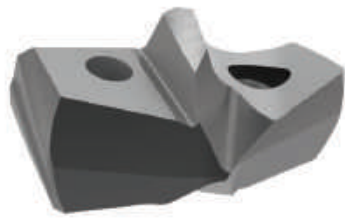
Inserts sold in multiples of 1 | Screws sold in multiples of 10

NOTICE: Structural Steel GEN3SYS holders are specifically designed to be used only with XTST geometry inserts. Using other GEN3SYS XT or XT Pro insert geometries in these holders could lead to chip packing and tool failure. Contact Application Engineering for questions regarding proper use of tools.



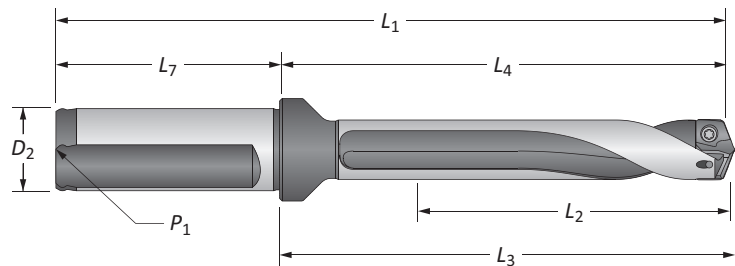
GEN3SYS® XT Pro Structural Steel Drilling System

22 Series | Diameter Range: 0.8661" - 0.9448" (22.00mm - 23.99mm)



Inserts

Insert			 XTST Part No.
Fractional Equivalent	D ₁ inch	D ₁ mm	
–	0.8661	22.00	XTST22-22.00
7/8	0.8750	22.23	XTST22-22.23
–	0.9055	23.00	XTST22-23.00
15/16	0.9375	23.81	XTST22-23.81



Holders

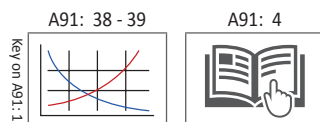
		Body				Shank				Part No.
Length		L ₂	L ₄	L ₃	L ₁	L ₇	D ₂	P ₁	Flat	
i	3xD	2-53/64	4-9/64	4-9/32	6-27/64	2-9/32	1	1/8	YES	ST03220-100F
	3xD	2-53/64	4-9/64	4-9/32	6-27/64	2-9/32	1	1/8	YES	ST03225-100F**
	5xD	4-23/32	6-1/32	6-11/64	8-5/16	2-9/32	1	1/8	YES	ST05220-100F
	5xD	4-23/32	6-1/32	6-11/64	8-5/16	2-9/32	1	1/8	YES	ST05225-100F**
	7xD	6-39/64	7-59/64	8-1/16	10-13/64	2-9/32	1	1/8	YES	ST07220-100F
	7xD	6-39/64	7-59/64	8-1/16	10-13/64	2-9/32	1	1/8	YES	ST07225-100F**
m	3xD	72.0	105.3	108.7	161.3	56	25	1/8*	YES	ST03220-25FM
	3xD	72.0	105.3	108.7	161.3	56	25	1/8*	YES	ST03225-25FM**
	5xD	119.9	153.3	156.7	209.3	56	25	1/8*	YES	ST05220-25FM
	5xD	119.9	153.3	156.7	209.3	56	25	1/8*	YES	ST05225-25FM**
	7xD	167.9	201.3	204.7	257.3	56	25	1/8*	YES	ST07220-25FM
	7xD	167.9	201.3	204.7	257.3	56	25	1/8*	YES	ST07225-25FM**

*Thread to BSP and ISO 7-1 | **Oversized body holder (minimum drill diameter = 23mm)

Connection Accessories

Insert Screws	Nylon Locking Screws	Insert Driver	Preset Torque Hand Driver	Replacement Tips	Admissible Tightening Torque*
739-IP9-1	739N-IP9-1	8IP-9	8IP-9TL	8IP-9B	27.0 in-lbs (305 N-cm)

*Tightening torques are calculated with a friction coefficient of $\mu = 0.14$ and develop 90% of ultimate yield strength



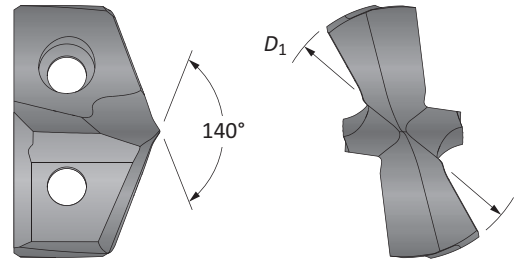
i = Imperial (in)
m = Metric (mm)

Inserts sold in multiples of 1 | Screws sold in multiples of 10

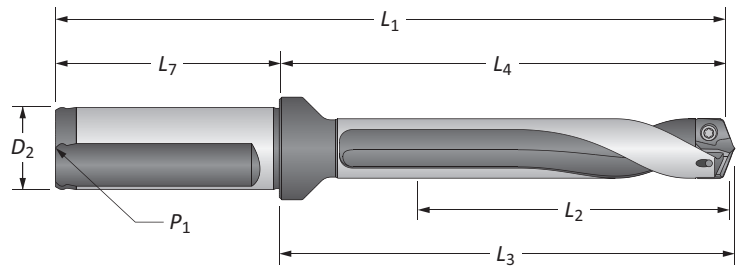
NOTICE: Structural Steel GEN3SYS holders are specifically designed to be used only with XTST geometry inserts. Using other GEN3SYS XT or XT Pro insert geometries in these holders could lead to chip packing and tool failure. Contact Application Engineering for questions regarding proper use of tools.

GEN3SYS® XT Pro Structural Steel Drilling System

24 Series | Diameter Range: 0.9449" - 1.0235" (24.00mm - 25.99mm)

**Inserts**

Fractional Equivalent	Insert			XTST Part No.
	D_1 inch	D_1 mm		
–	0.9449	24.00		XTST24-24.00
–	0.9685	24.60		XTST24-24.60
1	1.0000	25.40		XTST24-25.40
–	1.0150	25.78		XTST24-25.78

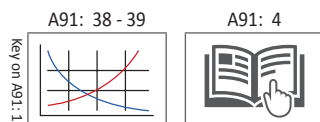
**Holders**

	Length	Body				Shank				Part No.
		L_2	L_4	L_3	L_1	L_7	D_2	P_1	Flat	
i	3xD	3-5/64	4-31/64	4-5/8	6-49/64	2-9/32	1	1/8	YES	ST03240-100F
	5xD	5-1/8	6-17/32	6-21/32	8-13/16	2-9/32	1	1/8	YES	ST05240-100F
	7xD	7-11/64	8-37/64	8-45/64	10-55/64	2-9/32	1	1/8	YES	ST07240-100F
m	3xD	78.0	113.8	117.3	169.8	56	25	1/8*	YES	ST03240-25FM
	5xD	129.9	165.8	169.2	221.8	56	25	1/8*	YES	ST05240-25FM
	7xD	181.9	217.8	221.2	273.8	56	25	1/8*	YES	ST07240-25FM

*Thread to BSP and ISO 7-1

Connection Accessories

					Admissible Tightening Torque*
Insert Screws	Nylon Locking Screws	Insert Driver	Preset Torque Hand Driver	Replacement Tips	
739-IP9-1	739N-IP9-1	8IP-9	8IP-9TL	8IP-9B	27.0 in-lbs (305 N-cm)

*Tightening torques are calculated with a friction coefficient of $\mu = 0.14$ and develop 90% of ultimate yield strength

i = Imperial (in)
m = Metric (mm)

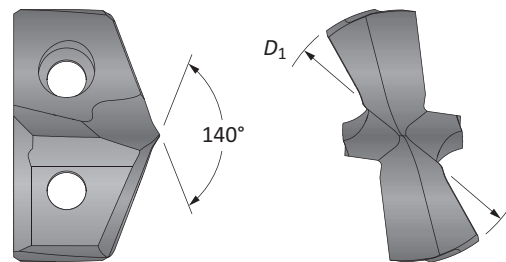
Inserts sold in multiples of 1 | Screws sold in multiples of 10

NOTICE: Structural Steel GEN3SYS holders are specifically designed to be used only with XTST geometry inserts. Using other GEN3SYS XT or XT Pro insert geometries in these holders could lead to chip packing and tool failure. Contact Application Engineering for questions regarding proper use of tools.



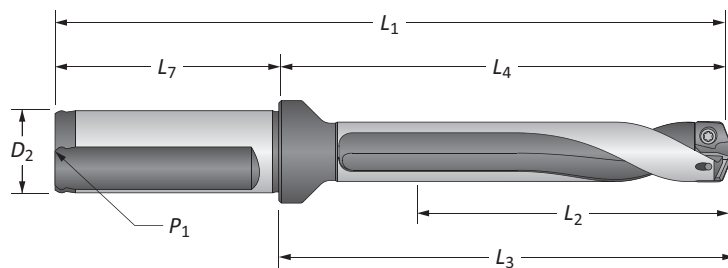
GEN3SYS® XT Pro Structural Steel Drilling System

26 Series | Diameter Range: 1.0236" - 1.1416" (26.00mm - 28.99mm)



Inserts

Insert			 XTST Part No.
Fractional Equivalent	D ₁ inch	D ₁ mm	
–	1.0236	26.00	XTST26-26.00
1-1/16	1.0625	26.99	XTST26-26.99
–	1.0630	27.00	XTST26-27.00
–	1.1024	28.00	XTST26-28.00
1-1/8	1.1250	28.58	XTST26-28.58



Holders

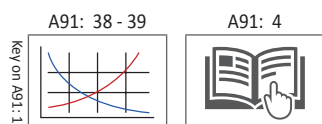
		Body				Shank				Part No.
	Length	L ₂	L ₄	L ₃	L ₁	L ₇	D ₂	P ₁	Flat	
i	3xD	3-27/64	5-1/16	5-3/16	7-11/32	2-9/32	1-1/4	1/4	YES	ST03260-125F
	5xD	5-23/32	7-11/32	7-31/64	9-5/8	2-9/32	1-1/4	1/4	YES	ST05260-125F
	7xD	7-63/64	9-5/8	9-49/64	11-29/32	2-9/32	1-1/4	1/4	YES	ST07260-125F
m	3xD	87.0	128.1	131.4	188.1	60	32	1/4*	YES	ST03260-32FM
	5xD	145.0	186.1	189.4	246.1	60	32	1/4*	YES	ST05260-32FM
	7xD	202.9	244.0	247.4	304.0	60	32	1/4*	YES	ST07260-32FM

*Thread to BSP and ISO 7-1

Connection Accessories

 Insert Screws	 Nylon Locking Screws	 Insert Driver	 Preset Torque Hand Driver	 Replacement Tips	Admissible Tightening Torque*
7495-IP15-1	7495N-IP15-1	8IP-15	8IP-15TL	8IP-15B	61.0 in-lbs (690 N-cm)

*Tightening torques are calculated with a friction coefficient of $\mu = 0.14$ and develop 90% of ultimate yield strength



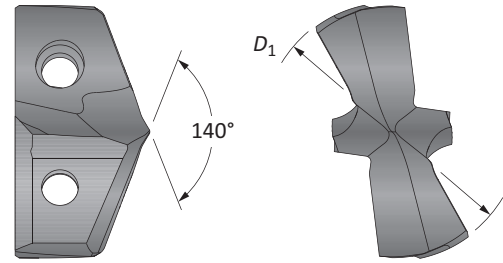
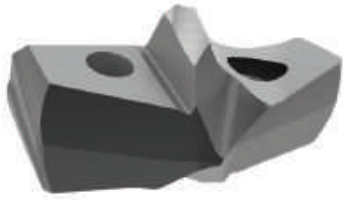
i = Imperial (in)
m = Metric (mm)

Inserts sold in multiples of 1 | Screws sold in multiples of 10

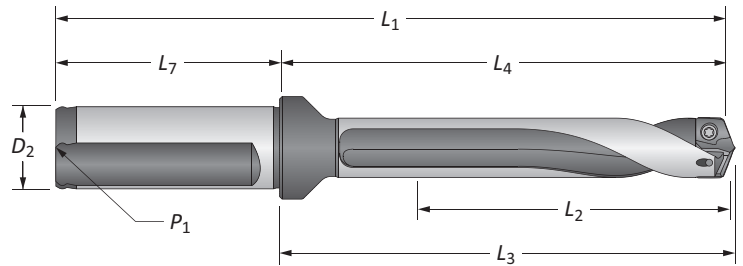
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GEN3SYS® XT Pro Structural Steel Drilling System

29 Series | Diameter Range: 1.1417" - 1.2597" (29.00mm - 31.99mm)

**Inserts**

Fractional Equivalent	Insert			XTST Part No.
	D_1 inch	D_1 mm		
–	1.1417	29.00		XTST29-29.00
–	1.1811	30.00		XTST29-30.00
1-3/16	1.1875	30.16		XTST29-30.16
–	1.2205	31.00		XTST29-31.00
1-1/4	1.2500	31.75		XTST29-31.75

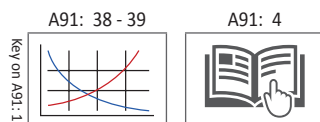
**Holders**

	Length	Body				Shank				Part No.
		L_2	L_4	L_3	L_1	L_7	D_2	P_1	Flat	
i	3xD	3-25/32	5-3/8	5-33/64	7-21/32	2-9/32	1-1/4	1/4	YES	ST03290-125F
	5xD	6-19/64	7-29/32	8-3/64	10-3/16	2-9/32	1-1/4	1/4	YES	ST05290-125F
	7xD	8-13/16	10-27/64	10-9/16	12-45/64	2-9/32	1-1/4	1/4	YES	ST07290-125F
m	3xD	96.0	136.2	139.7	196.2	60	32	1/4*	YES	ST03290-32FM
	5xD	159.9	200.1	203.7	260.1	60	32	1/4*	YES	ST05290-32FM
	7xD	223.9	264.1	267.7	324.1	60	32	1/4*	YES	ST07290-32FM

*Thread to BSP and ISO 7-1

Connection Accessories

					Admissible Tightening Torque*
Insert Screws	Nylon Locking Screws	Insert Driver	Preset Torque Hand Driver	Replacement Tips	
7495-IP15-1	7495N-IP15-1	8IP-15	8IP-15TL	8IP-15B	61.0 in-lbs (690 N-cm)

*Tightening torques are calculated with a friction coefficient of $\mu = 0.14$ and develop 90% of ultimate yield strength

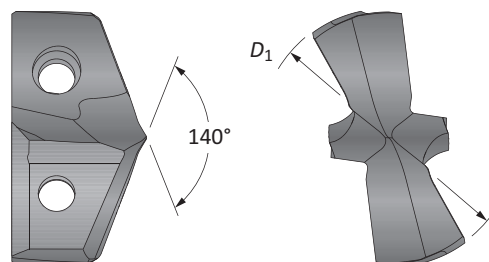
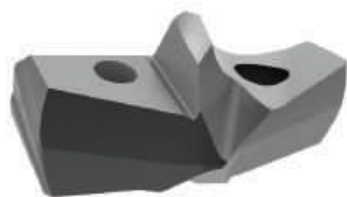
i = Imperial (in)
m = Metric (mm)

Inserts sold in multiples of 1 | Screws sold in multiples of 10

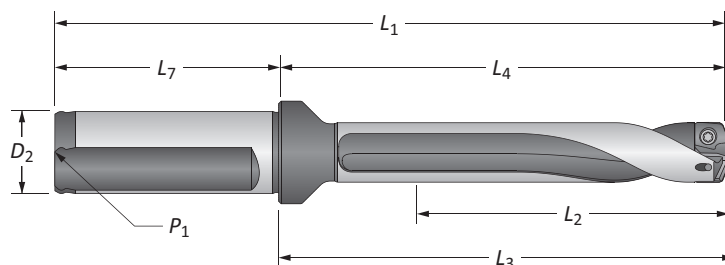
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**GEN3SYS® XT Pro Structural Steel Drilling System**

32 Series | Diameter Range: 1.2598" - 1.3780" (32.00mm - 35.00mm)

**Inserts**

Insert			
Fractional Equivalent	D ₁ inch	D ₁ mm	XTST Part No.
–	1.2598	32.00	XTST32-32.00
–	1.2992	33.00	XTST32-33.00
1-5/16	1.3125	33.34	XTST32-33.34
–	1.3386	34.00	XTST32-34.00
1-3/8	1.3750	34.93	XTST32-34.93

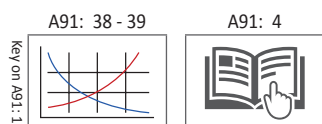
**Holders**

		Body				Shank				Part No.
Length		L ₂	L ₄	L ₃	L ₁	L ₇	D ₂	P ₁	Flat	
i	3xD	4-9/64	6-7/32	6-3/8	8-29/32	2-11/16	1-1/2	1/4	YES	ST03320-150F
	5xD	6-59/64	8-31/32	9-1/8	11-21/32	2-11/16	1-1/2	1/4	YES	ST05320-150F
	7xD	9-41/64	11-23/32	11-57/64	14-13/32	2-11/16	1-1/2	1/4	YES	ST07320-150F
m	3xD	105.0	157.7	162.0	217.7	60	32	1/4*	YES	ST03320-32FM
	3xD	105.0	157.7	162.0	227.7	70	40	1/4*	YES	ST03320-40FM
	5xD	175.0	227.7	232.0	287.7	60	32	1/4*	YES	ST05320-32FM
	5xD	175.0	227.7	232.0	297.7	70	40	1/4*	YES	ST05320-40FM
	7xD	244.9	297.7	302.2	357.7	60	32	1/4*	YES	ST07320-32FM
	7xD	244.9	297.7	302.2	367.7	70	40	1/4*	YES	ST07320-40FM

*Thread to BSP and ISO 7-1

Connection Accessories

					Admissible Tightening Torque*
Insert Screws	Nylon Locking Screws	Insert Driver	Preset Torque Hand Driver	Replacement Tips	
7495-IP15-1	7495N-IP15-1	8IP-15	8IP-15TL	8IP-15B	61.0 in-lbs (690 N-cm)

*Tightening torques are calculated with a friction coefficient of $\mu = 0.14$ and develop 90% of ultimate yield strength**i** = Imperial (in)**m** = Metric (mm)

Inserts sold in multiples of 1 | Screws sold in multiples of 10

NOTICE: Structural Steel GEN3SYS holders are specifically designed to be used only with XTST geometry inserts. Using other GEN3SYS XT or XT Pro insert geometries in these holders could lead to chip packing and tool failure. Contact Application Engineering for questions regarding proper use of tools.



T-A® Structural Steel Drilling System

STRUCTURAL STEEL ENHANCEMENTS

Original T-A & GEN2 T-A

GEN2 T-A Insert

Available in AM200® Coating



High Efficiency (-HE)

- Improves performance
- Improves tool life
- Improves chip formation in structural steel materials

Original T-A Inserts

Available in AM200® and TiAlN Coatings



Thin Wall (-TW)

- Designed for drilling 7/16" thick or less I-Beam or structural materials
- Increases hole diameter tolerance
- Improves hole roundness
- Decreases material deflection



Notch Point® (-NP)

- Provides excellent self-centering characteristics
- Reduces bell mouth and tool lead-off
- Reduces axial thrust requirements



Structural Steel (-SS)

- Designed for drilling 7/16" thick or thicker I-Beam or structural materials
- Reduces exit burrs
- Increases stability
- Lowers drilling forces
- Includes Notch Point® web geometry



Holder Anatomy

1. Morse Taper Shank
2. Coolant Inlet
3. Flute (straight or helical)
4. Built-up Body Diameter
5. Coolant Outlets



Straight Flute

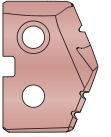


Helical Flute

T-A® Drill Nomenclature

T-A Drill Inserts

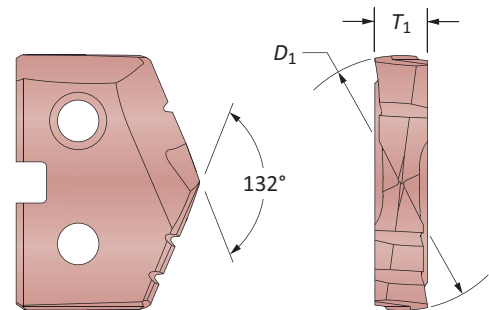
4	5	3	H	–	0115	–	HE
1	2	3	4		5		6



1. Insert	2. Material	3. Series	4. Coating	5. Diameter	6. Geometry
1 = Original T-A 4 = GEN2 T-A	5 = Super cobalt C1 = C1 (K35) carbide	0 = 0 series 1 = 1 series 2 = 2 series 3 = 3 series	H = AM200® A = TiAlN	0017 = Inch .515 = Decimal 13 = Metric	TW = Thin Wall NP = Notch Point® SS = Structural Steel HE = High Efficiency

Reference Key

Symbol	Attribute
D_1	Insert diameter
T_1	Insert thickness



T-A Drill Holders

2	40	20	S	–	004	IS	060
1	2	3	4		5	6	7

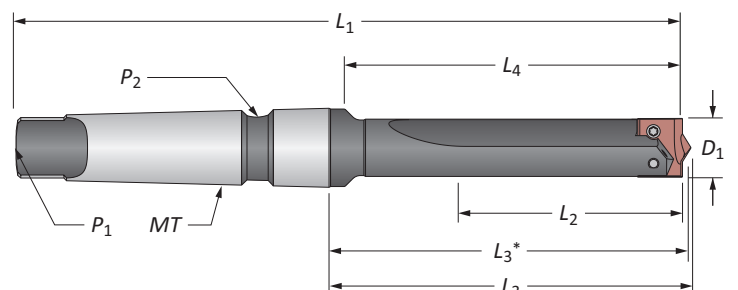


1. Holder	2. Length	3. Series	4. Flute
2 = T-A holder	20 = Short 40 = Standard 50 = Extended 60 = Long	00 = 0 series 05 = 0.5 series 10 = 1 series 15 = 1.5 series 20 = 2 series 25 = 2.5 series 30 = 3 series	S = Straight H = Helical
5. Shank Designator	6. Shank Code	7. Minimum Insert Diameter	
003 = 3MT 004 = 4MT	IS = Imperial Morse taper structural steel	In increments of 1/64 of an inch	

Reference Key

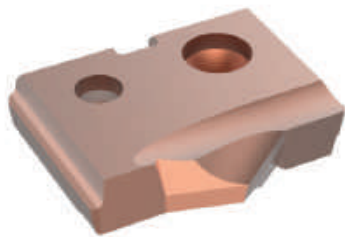
Symbol	Attribute	Symbol	Attribute
D_1	Drill insert range	L_4	Flute length
L_1	Overall length	P_1	Rear pipe tap
L_2	Drill depth	P_2	Side pipe tap
L_3	Holder reference length	MT	Morse taper size
L_3^*	Holder reference length		

*If using Structural Steel holder with Notch Point®, GEN2 T-A, or 150° Structural Steel T-A drill insert geometry

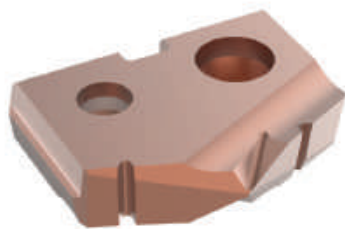
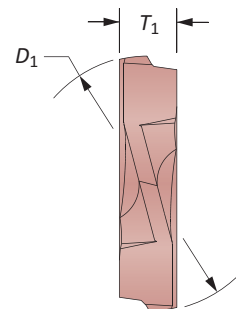
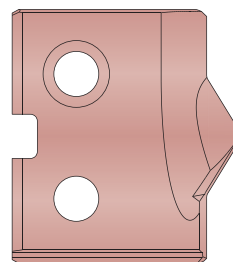


Original T-A® Structural Steel Drill Inserts

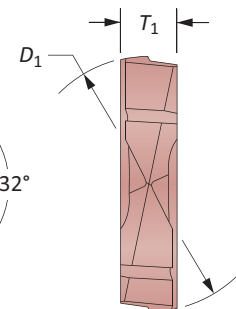
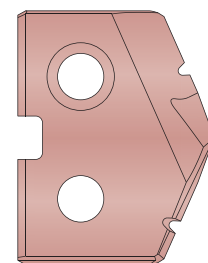
0 Series | Diameter Range: 0.5512" - 0.6875" (14.00mm - 17.46mm)



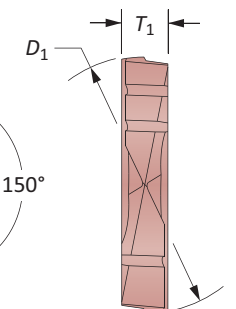
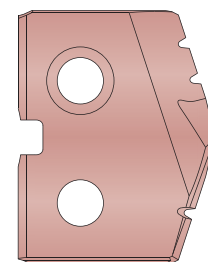
Thin Wall
For material up to 7/16" thick



Notch Point®
For material over 7/16" thick

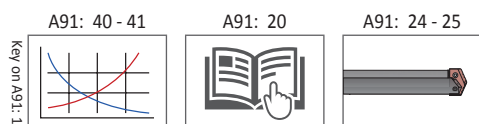


150° Structural Steel
For material over 7/16" thick
and for reduced exit burr



HSS Inserts – Super Cobalt

Series	Insert					Thin Wall		Notch Point		150° Structural Steel	
	Fractional Equivalent	D ₁ inch	D ₁ mm	T ₁							
0	–	0.5512	14.00	1/8							
	9/16	0.5625	14.29	1/8							
	5/8	0.6250	15.88	1/8							
0.5	–	0.6299	16.00	1/8							
	11/16	0.6875	17.46	1/8							

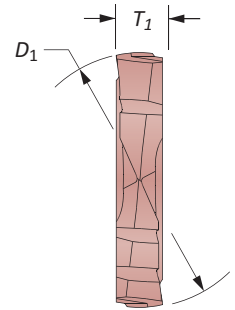
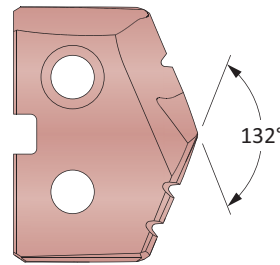


Inserts sold in multiples of 2



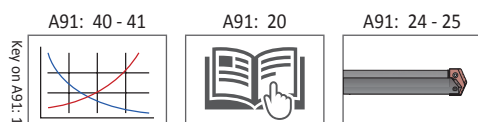
GEN2 T-A® Structural Steel Drill Inserts

0 Series | Diameter Range: 0.5512" - 0.6875" (14.00mm - 17.46mm)



HSS Inserts – Super Cobalt | Carbide Inserts – C1 (K35)

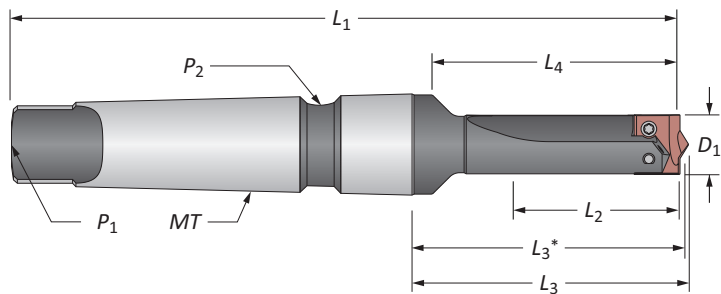
Series	Fractional Equivalent	Insert			Part No.	
		D_1 inch	D_1 mm	T_1	 Super Cobalt	 C1 (K35)
0	–	0.5512	14.00	1/8	450H-14-HE	4C10H-14-HE
	9/16	0.5625	14.29	1/8	450H-0018-HE	4C10H-0018-HE
0.5	5/8	0.6250	15.88	1/8	450H-0020-HE	4C10H-0020-HE
	–	0.6299	16.00	1/8	450H-16-HE	4C10H-16-HE
	11/16	0.6875	17.46	1/8	450H-0022-HE	4C10H-0022-HE



Inserts sold in multiples of 2

**T-A® Structural Steel Drill Insert Holders**

0 Series | Taper Shank

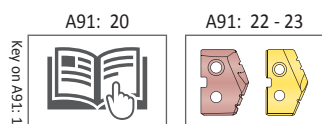
**Straight Flute #3 Morse Taper**

				Body					Shank			
Series		Length	D_1	L_2	L_4	L_3	L_3^*	L_1	MT	P_1	P_2	Part No.
i	0	Short	9/16	1-3/8	2-3/16	2-35/64	2-31/64	6-1/16	#3	TTC	TSC	22000S-003IS036
	0.5	Short	5/8	1-3/8	2-3/16	2-35/64	2-31/64	6-1/16	#3	TTC	TSC	22005S-003IS040
		Short	11/16	1-3/8	2-3/16	2-35/64	2-31/64	6-1/16	#3	TTC	TSC	22005S-003IS044
m	0	Short	14	35	56	64.7	63.1	154	#3	TTC	TSC	22000S-003IS036
	0.5	Short	16	35	56	64.7	63.1	154	#3	TTC	TSC	22005S-003IS040
		Short	17.5	35	56	64.7	63.1	154	#3	TTC	TSC	22005S-003IS044

*If using Structural Steel holder with Notch Point®, GEN2 T-A, or 150° Structural Steel T-A drill insert geometry

Connection Accessories

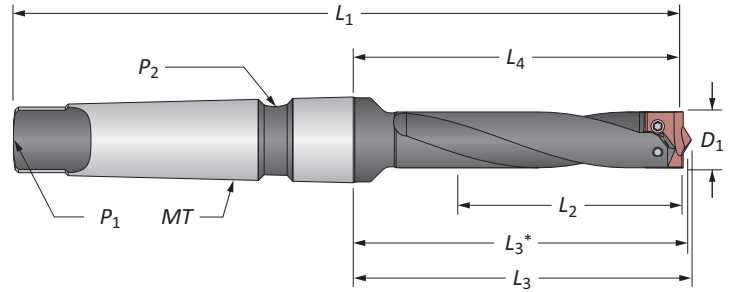
Series	Insert Screws	Nylon Locking Screws	Insert Driver	Preset Torque Hand Driver	Replacement Tips	Admissible Tightening Torque*
0	72556-IP8-1	72556N-IP8-1	8IP-8	8IP-8TL	8IP-8B	15.5 in-lbs (175 N-cm)
0.5	72567-IP8-1	72567N-IP8-1	8IP-8	8IP-8TL	8IP-8B	15.5 in-lbs (175 N-cm)

*Tightening torques are calculated with a friction coefficient of $\mu = 0.14$ and develop 90% of ultimate yield strengthi = Imperial (in)
m = Metric (mm)

Screws sold in multiples of 10

T-A® Structural Steel Drill Insert Holders

O Series | Taper Shank



Helical Flute #3 Morse Taper

		Length	D ₁	Body					Shank			Part No.
Series				L ₂	L ₄	L ₃	L ₃ *	L ₁	MT	P ₁	P ₂	
i	0	Standard	9/16	2-1/2	3-5/16	3-43/64	3-39/64	7-3/16	#3	TTC	TSC	24000H-003IS036
		Extended	9/16	6-1/2	9-7/16	9-51/64	9-19/32	13-5/64	#3	TTC	TSC	25000H-003IS036
	0.5	Standard	5/8	2-1/2	3-5/16	3-43/64	3-39/64	7-3/16	#3	TTC	TSC	24005H-003IS040
		Extended	11/16	6-1/2	9-7/16	9-51/64	9-19/32	13-5/64	#3	TTC	TSC	25005H-003IS044
m	0	Standard	14	64	84	93.3	91.7	183	#3	TTC	TSC	24000H-003IS036
		Extended	14	165	240	248.8	243.7	338	#3	TTC	TSC	25000H-003IS036
	0.5	Standard	16	64	84	93.3	91.7	183	#3	TTC	TSC	24005H-003IS040
		Extended	17.5	64	84	93.3	91.7	183	#3	TTC	TSC	24005H-003IS044
m	0	Standard	14	64	84	93.3	91.7	183	#3	TTC	TSC	24000H-003IS036
		Extended	14	165	240	248.8	243.7	338	#3	TTC	TSC	25000H-003IS036
	0.5	Standard	16	64	84	93.3	91.7	183	#3	TTC	TSC	24005H-003IS040
		Extended	17.5	64	84	93.3	91.7	183	#3	TTC	TSC	24005H-003IS044

*If using Structural Steel holder with Notch Point®, GEN2 T-A, or 150° Structural Steel T-A drill insert geometry

i = Imperial (in)

m = Metric (mm)

Screws sold in multiples of 10

WARNING Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page A91: 35 for deep hole drilling guidelines in this section of the catalog. Visit www.alliedmachine.com/DeepHoleGuidelines for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering Team.

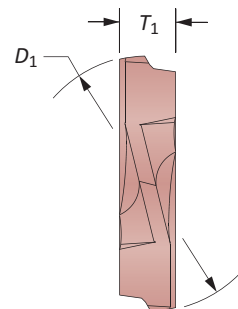
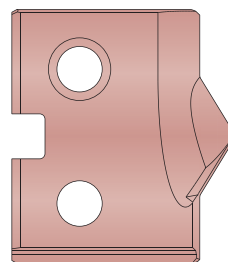


Original T-A® Structural Steel Drill Inserts

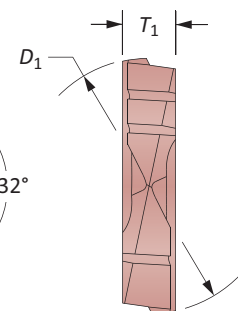
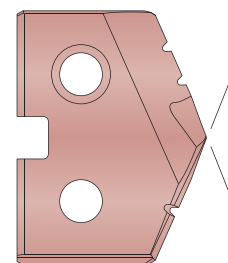
1 Series | Diameter Range: 0.7087" - 0.9449" (18.00mm - 24.00mm)



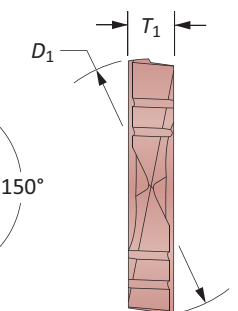
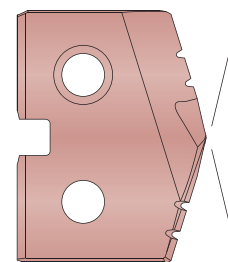
Thin Wall
For material up to 7/16" thick



Notch Point®
For material over 7/16" thick

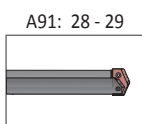
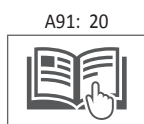
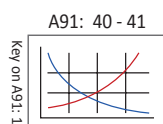


150° Structural Steel
For material over 7/16" thick
and for reduced exit burr



HSS Inserts – Super Cobalt

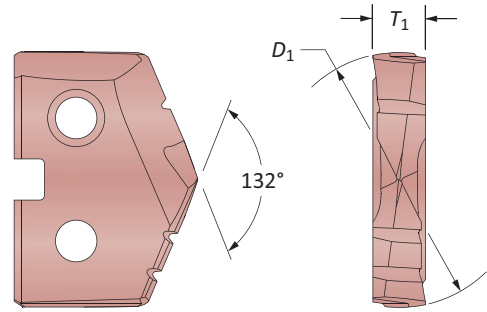
Series	Insert					Thin Wall		Notch Point		150° Structural Steel	
	Fractional Equivalent	D ₁ inch	D ₁ mm	T ₁							
1	–	0.7087	18.00	5/32							
	13/16	0.8125	20.64	5/32							
	–	0.8268	21.00	5/32							
	–	0.8661	22.00	5/32							
1.5	7/8	0.8750	22.23	5/32							
	15/16	0.9375	23.81	5/32							
	–	0.9449	24.00	5/32							



Inserts sold in multiples of 2

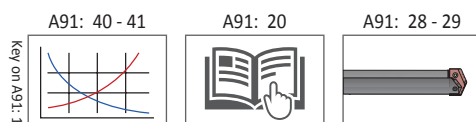
GEN2 T-A® Structural Steel Drill Inserts

1 Series | Diameter Range: 0.7087" - 0.9449" (18.00mm - 24.00mm)



HSS Inserts – Super Cobalt | Carbide Inserts – C1 (K35)

Series	Fractional Equivalent	Insert			Part No.	
		D_1 inch	D_1 mm	T_1	 Super Cobalt	 C1 (K35)
1	–	0.7087	18.00	5/32	451H-18-HE	4C11H-18-HE
	13/16	0.8125	20.64	5/32	451H-0026-HE	4C11H-0026-HE
	–	0.8268	21.00	5/32	451H-21-HE	4C11H-21-HE
	–	0.8661	22.00	5/32	451H-22-HE	4C11H-22-HE
1.5	7/8	0.8750	22.23	5/32	451H-0028-HE	4C11H-0028-HE
	15/16	0.9375	23.81	5/32	451H-0030-HE	4C11H-0030-HE
	–	0.9449	24.00	5/32	451H-24-HE	4C11H-24-HE

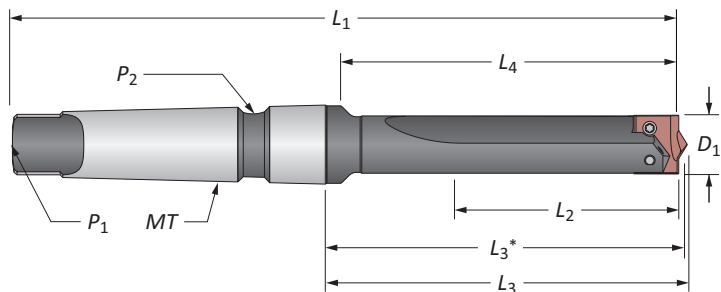


Inserts sold in multiples of 2



T-A® Structural Steel Drill Insert Holders

1 Series | Taper Shank



Straight Flute #3 Morse Taper

Series		Length	D_1	Body					Shank			Part No.
				L_2	L_4	L_3	L_3^*	L_1	MT	P_1	P_2	
i	1	Short	18mm	2-3/4	3-7/8	4-17/64	4-13/64	7-3/4	#3	TTC	TSC	22010S-003IS045
		Short	13/16	2-3/4	3-7/8	4-17/64	4-13/64	7-3/4	#3	TTC	TSC	22010S-003IS052
	1.5	Short	7/8	2-3/4	3-7/8	4-17/64	4-13/64	7-3/4	#3	TTC	TSC	22015S-003IS056
		Short	15/16	2-3/4	3-7/8	4-17/64	4-13/64	7-3/4	#3	TTC	TSC	22015S-003IS060
m	1	Short	18	70	98	108.4	106.8	197	#3	TTC	TSC	22010S-003IS045
		Short	21	70	98	108.4	106.8	197	#3	TTC	TSC	22010S-003IS052
	1.5	Short	22	70	98	108.4	106.8	197	#3	TTC	TSC	22015S-003IS056
		Short	24	70	98	108.4	106.8	197	#3	TTC	TSC	22015S-003IS060

*If using Structural Steel holder with Notch Point®, GEN2 T-A, or 150° Structural Steel T-A drill insert geometry

Straight Flute #4 Morse Taper

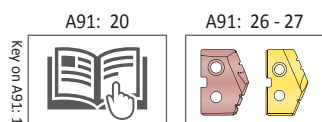
Series		Length	D_1	Body					Shank			Part No.
				L_2	L_4	L_3	L_3^*	L_1	MT	P_1	P_2	
i	1	Short	18mm	2-3/4	3-7/8	4-21/64	4-17/64	8-3/4	#4	TTC	TSC	22010S-004IS045
		Short	13/16	2-3/4	3-7/8	4-21/64	4-17/64	8-3/4	#4	TTC	TSC	22010S-004IS052
	1.5	Short	7/8	2-3/4	3-7/8	4-21/64	4-17/64	8-3/4	#4	TTC	TSC	22015S-004IS056
		Short	15/16	2-3/4	3-7/8	4-21/64	4-17/64	8-3/4	#4	TTC	TSC	22015S-004IS060
m	1	Short	18	70	98	109.9	108.3	222	#4	TTC	TSC	22010S-004IS045
		Short	21	70	98	109.9	108.3	222	#4	TTC	TSC	22010S-004IS052
	1.5	Short	22	70	98	109.9	108.3	222	#4	TTC	TSC	22015S-004IS056
		Short	24	70	98	109.9	108.3	222	#4	TTC	TSC	22015S-004IS060

*If using Structural Steel holder with Notch Point®, GEN2 T-A, or 150° Structural Steel T-A drill insert geometry

Connection Accessories

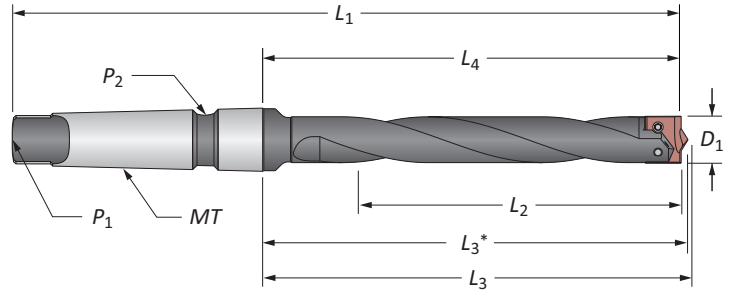
Series	Insert Screws	Nylon Locking Screws	Insert Driver	Preset Torque Hand Driver	Replacement Tips	Admissible Tightening Torque*
1	7375-IP9-1	7375N-IP9-1	8IP-9	8IP-9TL	8IP-9B	27.0 in-lbs (305 N-cm)
1.5	739-IP9-1	739N-IP9-1	8IP-9	8IP-9TL	8IP-9B	27.0 in-lbs (305 N-cm)

*Tightening torques are calculated with a friction coefficient of $\mu = 0.14$ and develop 90% of ultimate yield strength



T-A® Structural Steel Drill Insert Holders

1 Series | Taper Shank



Helical Flute #3 Morse Taper

Series		Length	D_1	Body					Shank			Part No.
				L_2	L_4	L_3	L_3^*	L_1	MT	P_1	P_2	
i	1	Standard	18mm	4-3/4	5-7/8	6-17/64	6-13/64	9-3/4	#3	TTC	TSC	24010H-003IS045
		Standard	13/16	4-3/4	5-7/8	6-17/64	6-13/64	9-3/4	#3	TTC	TSC	24010H-003IS052
		Extended	18mm	6-1/2	9-11/32	9-47/64	9-1/2	13-7/32	#3	TTC	TSC	⚠ 25010H-003IS045
		Extended	13/16	6-1/2	9-11/32	9-47/64	9-1/2	13-7/32	#3	TTC	TSC	⚠ 25010H-003IS052
	1.5	Standard	7/8	4-3/4	5-7/8	6-17/64	6-13/64	9-3/4	#3	TTC	TSC	24015H-003IS056
		Standard	15/16	4-3/4	5-7/8	6-17/64	6-13/64	9-3/4	#3	TTC	TSC	24015H-003IS060
		Extended	15/16	6-1/2	9-11/32	9-47/64	9-15/32	13-7/32	#3	TTC	TSC	⚠ 25015H-003IS060
m	1	Standard	18	121	149	159.2	157.6	248	#3	TTC	TSC	24010H-003IS045
		Standard	21	121	149	159.2	157.6	248	#3	TTC	TSC	24010H-003IS052
		Extended	18	165	237	247.3	241.3	336	#3	TTC	TSC	⚠ 25010H-003IS045
		Extended	22	165	237	247.3	241.3	336	#3	TTC	TSC	⚠ 25010H-003IS052
	1.5	Standard	22	121	149	159.2	157.6	248	#3	TTC	TSC	24015H-003IS056
		Standard	24	121	149	159.2	157.6	248	#3	TTC	TSC	24015H-003IS060
		Extended	24	165	237	247.3	234.5	336	#3	TTC	TSC	⚠ 25015H-003IS060

*If using Structural Steel holder with Notch Point®, GEN2 T-A, or 150° Structural Steel T-A drill insert geometry

Helical Flute #4 Morse Taper

Series		Length	D_1	Body					Shank			Part No.
				L_2	L_4	L_3	L_3^*	L_1	MT	P_1	P_2	
i	1	Standard	18mm	4-3/4	5-7/8	6-21/64	6-17/64	10-3/4	#4	TTC	TSC	24010H-004IS045
		Standard	13/16	4-3/4	5-7/8	6-21/64	6-17/64	10-3/4	#4	TTC	TSC	24010H-004IS052
		Extended	13/16	6-1/2	9-9/32	9-47/64	9-43/64	14-5/32	#4	TTC	TSC	⚠ 25010H-004IS052
		Long	13/16	6-1/2	15-25/32	16-15/64	16-11/64	20-21/32	#4	TTC	TSC	⚠ 26010H-004IS052
	1.5	Standard	7/8	4-3/4	5-7/8	6-21/64	6-17/64	10-3/4	#4	TTC	TSC	24015H-004IS056
		Standard	15/16	4-3/4	5-7/8	6-21/64	6-17/64	10-3/4	#4	TTC	TSC	24015H-004IS060
		Extended	15/16	6-1/2	9-9/32	9-47/64	9-43/64	14-5/32	#4	TTC	TSC	⚠ 25015H-004IS060
		Long	15/16	6-1/2	15-13/16	16-17/64	16-13/64	20-11/16	#4	TTC	TSC	⚠ 26015H-004IS060
m	1	Standard	18	121	149	159.2	157.6	248	#4	TTC	TSC	24010H-004IS045
		Standard	21	121	149	159.2	157.6	248	#4	TTC	TSC	24010H-004IS052
		Extended	22	165	237	247.3	241.3	336	#4	TTC	TSC	⚠ 25010H-004IS052
		Long	22	165	237	247.3	241.3	336	#4	TTC	TSC	⚠ 26010H-004IS052
	1.5	Standard	22	121	149	159.2	157.6	248	#4	TTC	TSC	24015H-004IS056
		Standard	24	121	149	159.2	157.6	248	#4	TTC	TSC	24015H-004IS060
		Extended	24	165	149	159.2	157.6	248	#4	TTC	TSC	⚠ 25015H-004IS060
		Long	24	165	237	247.3	234.5	336	#4	TTC	TSC	⚠ 26015H-004IS060

*If using Structural Steel holder with Notch Point®, GEN2 T-A, or 150° Structural Steel T-A drill insert geometry

i = Imperial (in)

m = Metric (mm)

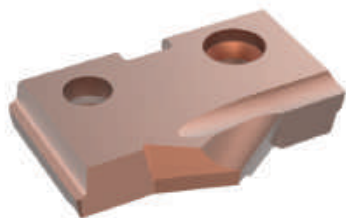
Screws sold in multiples of 10

⚠ WARNING Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page A91: 35 for deep hole drilling guidelines in this section of the catalog. Visit www.alliedmachine.com/DeepHoleGuidelines for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering Team.

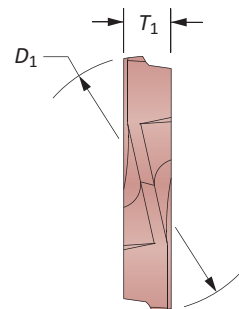
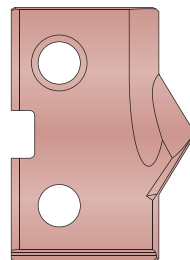


Original T-A® Structural Steel Drill Inserts

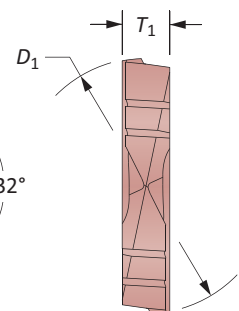
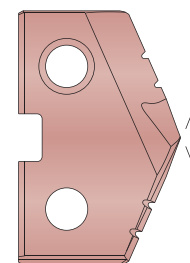
2 Series | Diameter Range: 1.0000" - 1.3750" (25.40mm - 34.93mm)



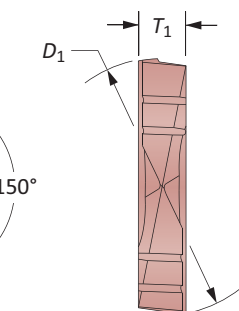
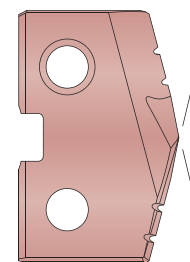
Thin Wall
For material up to 7/16" thick



Notch Point®
For material over 7/16" thick

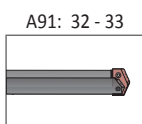
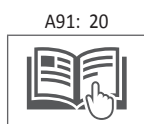
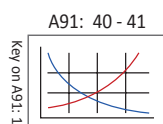


150° Structural Steel
For material over 7/16" thick
and for reduced exit burr



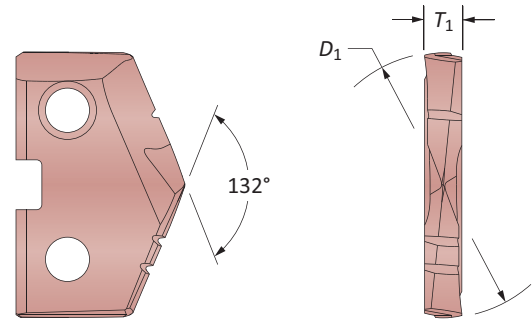
HSS Inserts – Super Cobalt

Series	Insert					Thin Wall		Notch Point		150° Structural Steel	
	Fractional Equivalent	D ₁ inch	D ₁ mm	T ₁							
2	1	1.0000	25.40	3/16							
	–	1.0236	26.00	3/16							
	1-1/16	1.0625	26.99	3/16							
	–	1.0630	27.00	3/16							
	1-1/8	1.1250	28.58	3/16							
2.5	1-3/16	1.1875	30.16	3/16							
	–	1.2205	31.00	3/16							
	1-1/4	1.2500	31.75	3/16							
	–	1.2992	33.00	3/16							
	1-5/16	1.3125	33.34	3/16							
	1-3/8	1.3750	34.93	3/16							
	–	1.3750	34.93	3/16							



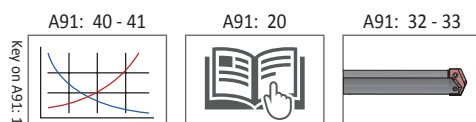
GEN2 T-A® Structural Steel Drill Inserts

2 Series | Diameter Range: 1.0000" - 1.3750" (25.40mm - 34.93mm)



HSS Inserts – Super Cobalt | Carbide Inserts – C1 (K35)

Series	Fractional Equivalent	Insert			Part No.	
		D_1 inch	D_1 mm	T_1	 Super Cobalt	 C1 (K35)
2	1	1.0000	25.40	3/16	452H-0100-HE	4C12H-0100-HE
	–	1.0236	26.00	3/16	452H-26-HE	4C12H-26-HE
	1-1/16	1.0625	26.99	3/16	452H-0102-HE	4C12H-0102-HE
	–	1.0630	27.00	3/16	452H-27-HE	4C12H-27-HE
	1-1/8	1.1250	28.58	3/16	452H-0104-HE	4C12H-0104-HE
2.5	1-3/16	1.1875	30.16	3/16	452H-0106-HE	4C12H-0106-HE
	–	1.2205	31.00	3/16	452H-31-HE	4C12H-31-HE
	1-1/4	1.2500	31.75	3/16	452H-0108-HE	4C12H-0108-HE
	–	1.2992	33.00	3/16	452H-33-HE	4C12H-33-HE
	1-5/16	1.3125	33.34	3/16	452H-0110-HE	4C12H-0110-HE
	1-3/8	1.3750	34.93	3/16	452H-0112-HE	4C12H-0112-HE

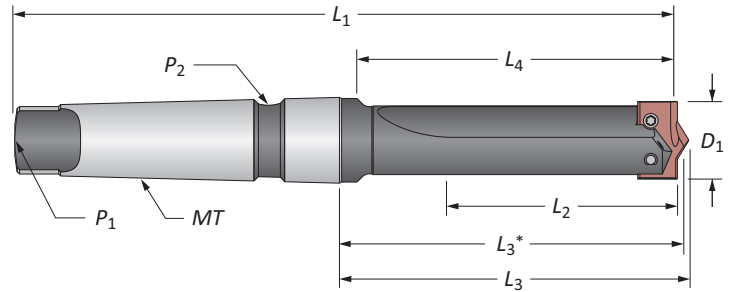


Inserts sold in multiples of 2



T-A® Structural Steel Drill Insert Holders

2 Series | Taper Shank



Straight Flute #4 Morse Taper

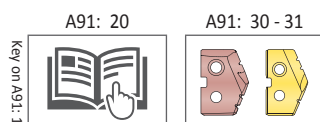
				Body					Shank			
Series		Length	D ₁	L ₂	L ₄	L ₃	L ₃ [*]	L ₁	MT	P ₁	P ₂	Part No.
i	2	Short	1 – 1-3/8	3-3/8	4-1/2	4-63/64	4-57/64	9-3/8	#4	TTC	TSC	22020S-004IS100
	2.5	Short	1-3/16 – 1-3/8	3-3/8	4-1/2	4-63/64	4-57/64	9-3/8	#4	TTC	TSC	22025S-004IS112
m	2	Short	26	86	114	126.6	124.2	238	#4	TTC	TSC	22020S-004IS100
	2.5	Short	31	86	114	126.6	124.2	238	#4	TTC	TSC	22025S-004IS112

*If using Structural Steel holder with Notch Point®, GEN2 T-A, or 150° Structural Steel T-A drill insert geometry

Connection Accessories

Series	Insert Screws	Nylon Locking Screws	Insert Driver	Preset Torque Hand Driver	Replacement Tips	Admissible Tightening Torque*
2	7495-IP15-1	7495N-IP15-1	8IP-15	8IP-15TL	8IP-15B	61.0 in-lbs (690 N-cm)
2.5	7495-IP15-1	7495N-IP15-1	8IP-15	8IP-15TL	8IP-15B	61.0 in-lbs (690 N-cm)

*Tightening torques are calculated with a friction coefficient of $\mu = 0.14$ and develop 90% of ultimate yield strength

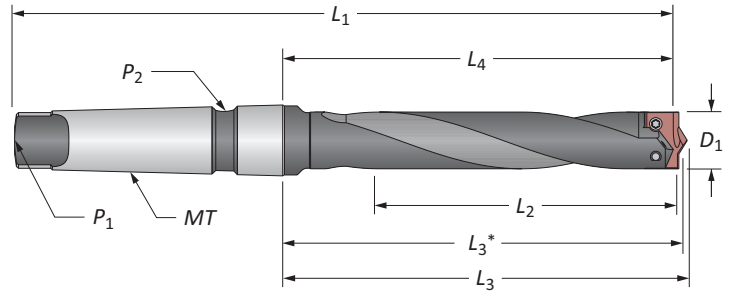


i = Imperial (in)
m = Metric (mm)

Screws sold in multiples of 10

T-A® Structural Steel Drill Insert Holders

2 Series | Taper Shank



Helical Flute #3 Morse Taper

Series	Length	D_1	Body						Shank			Part No.
			L_2	L_4	L_3	L_3^*	L_1	MT	P_1	P_2		
i	2	Extended	1 - 1-3/8	6-1/2	9-11/32	9-3/4	9-29/64	13-7/32	#3	TTC	TSC	⚠ 25020H-003IS100
m	2	Extended	26	165	237	247.7	240.1	336	#3	TTC	TSC	⚠ 25020H-003IS100

*If using Structural Steel holder with Notch Point®, GEN2 T-A, or 150° Structural Steel T-A drill insert geometry

Helical Flute #4 Morse Taper

Series		Length	D ₁	Body					Shank			Part No.
				L ₂	L ₄	L ₃	L ₃ *	L ₁	MT	P ₁	P ₂	
i	2	Standard	1 – 1-3/8	5-3/8	6-1/2	6-63/64	6-57/64	11-3/8	#4	TTC	TSC	24020H-004IS100
		Extended	1 – 1-3/8	6-1/2	9-7/32	9-3/4	9-43/64	14-5/32	#4	TTC	TSC	⚠ 25020H-004IS100
		Long	1 – 1-3/8	6-1/2	16	16-15/32	16-25/64	20-7/8	#4	TTC	TSC	⚠ 26020H-004IS100
	2.5	Standard	1-3/16 – 1-3/8	5-3/8	6-1/2	6-63/64	6-57/64	11-3/8	#4	TTC	TSC	24025H-004IS112
m	2	Standard	26	137	165	177.4	175.0	289	#4	TTC	TSC	24020H-004IS100
		Extended	26	165	237	247.7	240.1	360	#4	TTC	TSC	⚠ 25020H-004IS100
		Long	26	165	406	418.3	416.3	530	#4	TTC	TSC	⚠ 26020H-004IS100
	2.5	Standard	31	137	165	177.4	175.0	289	#4	TTC	TSC	24025H-004IS112

*If using Structural Steel holder with Notch Point®, GEN2 T-A, or 150° Structural Steel T-A drill insert geometry

i = Imperial (in)

m = Metric (mm)

Screws sold in multiples of 10

WARNING Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page A91: 35 for deep hole drilling guidelines in this section of the catalog. Visit www.alliedmachine.com/DeepHoleGuidelines for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering Team.

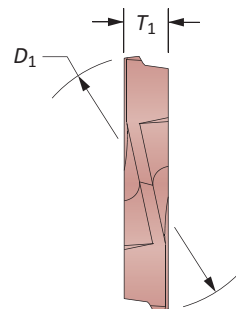
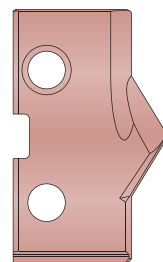


Original T-A® Structural Steel Drill Inserts

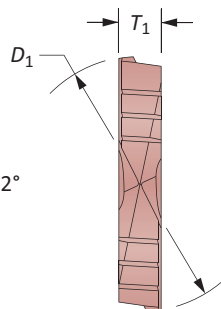
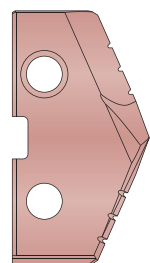
3 Series | Diameter Range: 1.4375" - 1.5625" (36.51mm - 39.69mm)



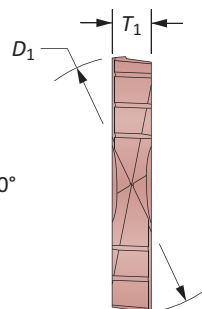
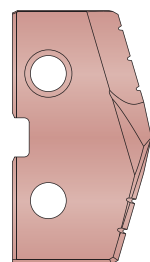
Thin Wall
For material up to 7/16" thick



Notch Point®
For material over 7/16" thick

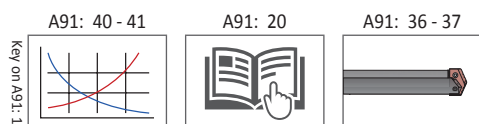


150° Structural Steel
For material over 7/16" thick
and for reduced exit burr



HSS Inserts – Super Cobalt

Insert				Thin Wall		Notch Point		150° Structural Steel	
Fractional Equivalent	D ₁ inch	D ₁ mm	T ₁						
AM200 Part No.	TiAlN Part No.	AM200 Part No.	TiAlN Part No.	AM200 Part No.	TiAlN Part No.	AM200 Part No.	TiAlN Part No.	AM200 Part No.	TiAlN Part No.
1-7/16	1.4375	36.51	1/4	153H-0114-TW	153A-0114-TW	153H-0114-NP	153A-0114-NP	153H-0114-SS	153A-0114-SS
1-1/2	1.5000	38.10	1/4	153H-0116-TW	153A-0116-TW	153H-0116-NP	153A-0116-NP	153H-0116-SS	153A-0116-SS
–	1.5354	39.00	1/4	153H-39-TW	153A-39-TW	153H-39-NP	153A-39-NP	153H-39-SS	153A-39-SS
1-9/16	1.5625	39.69	1/4	153H-0118-TW	153A-0118-TW	153H-0118-NP	153A-0118-NP	153H-0118-SS	153A-0118-SS

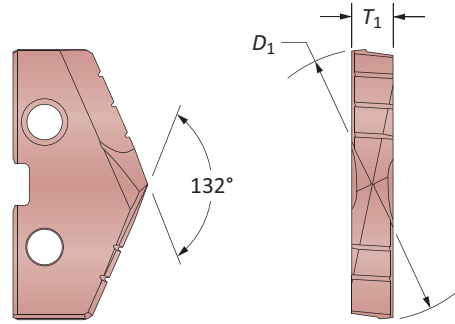


Inserts sold in multiples of 1

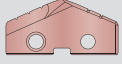


GEN2 T-A® Structural Steel Drill Inserts

3 Series | Diameter Range: 1.4375" - 1.5625" (36.51mm - 39.69mm)



HSS Inserts – Super Cobalt

Fractional Equivalent	Insert			Part No.
	D_1 inch	D_1 mm	T_1	 Super Cobalt
1-7/16	1.4375	36.51	1/4	453H-0114-HE
1-1/2	1.5000	38.10	1/4	453H-0116-HE
–	1.5354	39.00	1/4	453H-39-HE
1-9/16	1.5625	39.69	1/4	453H-0118-HE

A91: 40 - 41

A91: 20

A91: 36 - 37

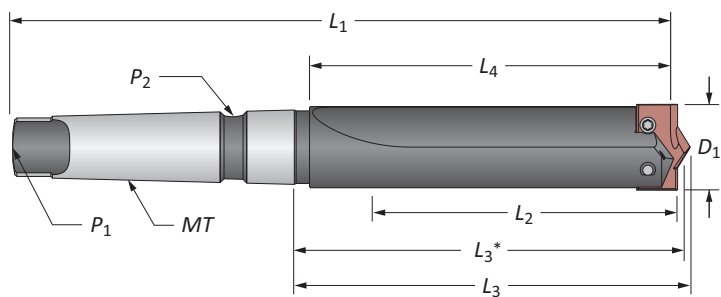
Key on A91: 1

Inserts sold in multiples of 1



T-A® Structural Steel Drill Insert Holders

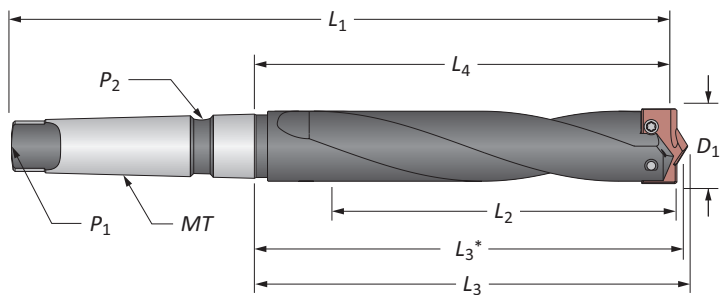
3 Series | Taper Shank



Straight Flute #4 Morse Taper

	Length	D_1	Body					Shank			Part No.
			L_2	L_4	L_3	L_3^*	L_1	MT	P_1	P_2	
①	Short	1-13/32 - 1-7/8	4-3/4	6	6-1/2	6-7/16	10-7/8	#4	TTC	TSC	22030S-004IS126

*If using Structural Steel holder with Notch Point®, GEN2 T-A, or 150° Structural Steel T-A drill insert geometry



Helical Flute #4 Morse Taper

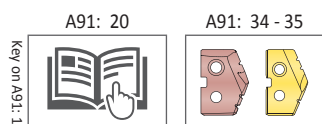
	Length	D_1	Body					Shank			Part No.
			L_2	L_4	L_3	L_3^*	L_1	MT	P_1	P_2	
①	Standard	1-13/32 - 1-7/8	6-1/2	7-3/4	8-1/4	8-3/16	12-5/8	#4	TTC	TSC	24030H-004IS126

*If using Structural Steel holder with Notch Point®, GEN2 T-A, or 150° Structural Steel T-A drill insert geometry

Connection Accessories

Insert Screws	Nylon Locking Screws	Insert Driver	Preset Torque Hand Driver	Replacement Tips	Admissible Tightening Torque*
7514-IP20-1	7514N-IP20-1	8IP-20	—	—	121.3 in-lbs (1370 N-cm)

*Tightening torques are calculated with a friction coefficient of $\mu = 0.14$ and develop 90% of ultimate yield strength

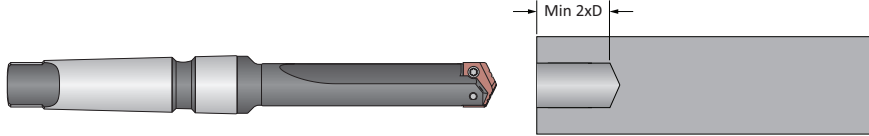
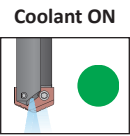
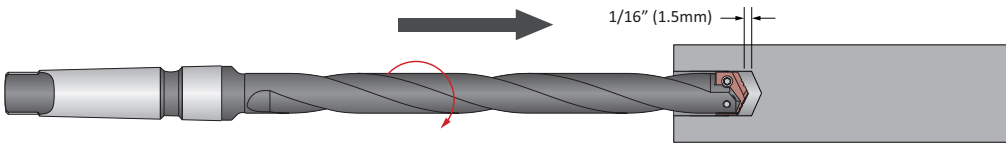
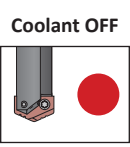
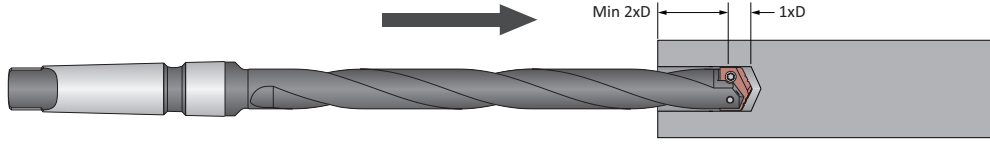
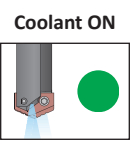
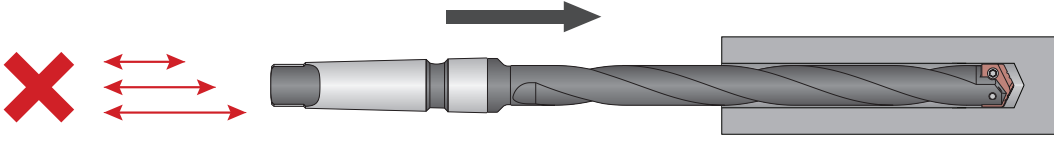
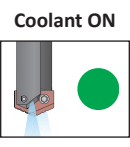
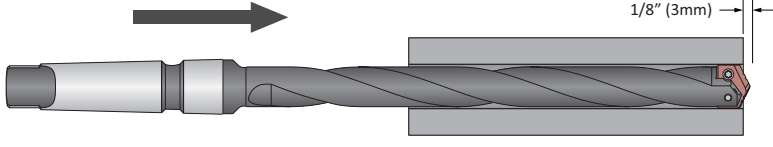
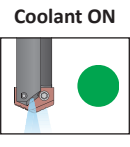
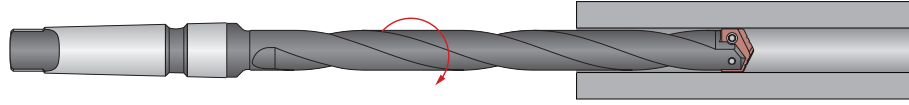
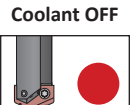


① = Imperial (in)
Ⓜ = Metric (mm)

Screws sold in multiples of 10

Deep Hole Drilling Guidelines

For Use with Drills Greater than 9xD (Extended, Long, XL, 3XL, and Special Length)

1. Pilot Hole 100 % RPM 100% IPR (mm/rev)	Establish the pilot hole using the same diameter short drill to a depth of 2xD minimum. Utilize a pilot drill with the same or larger included point angle.	 
 2. Feed-in 50 RPM max 12 IPM (300 mm/min)	Feed the longer drill within 1/16" (1.5mm) short of the established pilot hole bottom at a maximum of 50 RPM and 12 IPM (300 mm/min) feed rate.	 
3. Deep Hole Transition Drilling 50 % RPM 75% IPR (mm/rev)	Drill additional 1xD past the bottom of the pilot hole at 50% reduction of recommended speed and 25% reduction of recommended feed. Minimum of 1 second dwell is required to meet full speed before feeding.	 
4. Deep Hole Drilling - Blind 100% RPM 100% IPR (mm/rev)	Drill to full depth at recommended speed and feed for longer drill according to Allied speed and feed charts. No peck cycle recommended.	 
5. Deep Hole Drilling - at Breakout 50% RPM 75% IPR (mm/rev)	For through holes only: Reduce speed by 50% and feed by 25% prior to breakout. Do not break out more than 1/8" (3mm) past the full diameter of the drill.	 
 6. Drill Retract 50 RPM max	Reduce speed to a maximum of 50 RPM before retracting from the hole.	 

 WARNING Tool failure can cause serious injury. To prevent:

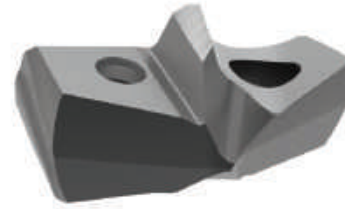
- When using holders without support bushing, use a short T-A® holder to establish an initial hole that is a minimum of 2 diameters deep.
- Do not rotate tool holders more than 50 RPM unless it is engaged with the workpiece or fixture.

Visit www.alliedmachine.com/DeepHoleGuidelines for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering Team.



Recommended Cutting Data

GEN3SYS® XT Pro (XTST)



Imperial (inch)

ISO	Material	Speed (SFM) - Mist Coolant		Feed Rate (IPR) by Diameter			
		Hardness (BHN)	AM420 Speed 	12 series 0.4724 - 0.5117	13 series 0.5118 - 0.5511	14 series 0.5512 - 0.5905	15 series 0.5906 - 0.6298
P	Structural Steel A36, A285, A516, A572, etc.	100 - 150	350	0.008	0.009	0.010	0.010
		150 - 250	300	0.007	0.008	0.009	0.009
		250 - 350	260	0.006	0.007	0.008	0.008

Metric (mm)

ISO	Material	Speed (M/mm) - Mist Coolant		Feed Rate (mm/rev) by Diameter			
		Hardness (BHN)	AM420 Speed 	12 series 12.00 - 12.99	13 series 13.00 - 13.99	14 series 14.00 - 14.99	15 series 15.00 - 15.99
P	Structural Steel A36, A285, A516, A572, etc.	100 - 150	107	0.20	0.22	0.25	0.25
		150 - 250	91	0.18	0.20	0.23	0.23
		250 - 350	79	0.15	0.17	0.20	0.20

Speed and Feed Multiplier

	Depth of Cut	
	<= 1.5xD	> 1.5xD
Speed	See above chart	0.75
Feed	See above chart	0.90

NOTE: The speeds and feeds listed above are based on a rigid setup using air mist through tool coolant. Speed may be increased up to 50% if using high pressure flood or through coolant.

NOTE: If drilling dry without coolant, speed must be reduced significantly based on setup, drill depth, and material hardness. Up to 50% speed and feed reduction may be necessary in these types of applications. Contact the Application Engineering department for assistance.

NOTE: If drilling material thickness of 0.500" (12.7mm) or less, a minimum of 10% reduction in feed is required to minimize material deflection.

A

DRILLING

B

BORING

C

REAMING

D

BURNISHING

E

THREADING

X

SPECIALS

Feed Rate (IPR) by Diameter

16 series 0.6299 - 0.6692	17 series 0.6693 - 0.7086	18 series 0.7087 - 0.7873	20 series 0.7874 - 0.8660	22 series 0.8661 - 0.9448	24 series 0.9449 - 1.0235	26 series 1.0236 - 1.1416	29 series 1.1417 - 1.2597	32 series 1.2598 - 1.3780
0.012	0.012	0.014	0.015	0.016	0.017	0.018	0.019	0.019
0.010	0.010	0.012	0.014	0.015	0.016	0.017	0.018	0.018
0.009	0.009	0.011	0.012	0.013	0.014	0.015	0.016	0.016

Feed Rate (mm/rev) by Diameter

16 series 16.00 - 16.99	17 series 17.00 - 17.99	18 series 18.00 - 19.99	20 series 20.00 - 21.99	22 series 22.00 - 23.99	24 series 24.00 - 25.99	26 series 26.00 - 28.99	29 series 29.00 - 31.99	32 series 32.00 - 35.00
0.30	0.30	0.36	0.38	0.41	0.43	0.46	0.48	0.48
0.25	0.25	0.30	0.36	0.38	0.41	0.43	0.46	0.46
0.23	0.23	0.28	0.30	0.33	0.36	0.38	0.41	0.41

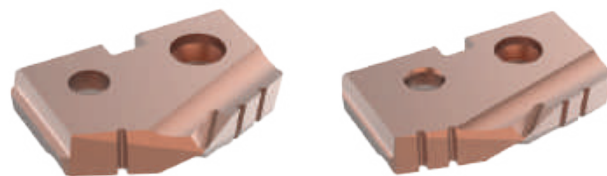
Recommended Cutting Data | Imperial (inch)

Original T-A® | GEN2 T-A®

Thin Wall Inserts Super Cobalt



		Speed (SFM) - Mist Coolant			Feed Rate (IPR) by Diameter			
		Hardness (BHN)	 AM200 Speed	 TiAlN Speed	0 series 9/16 - 11/16	1 series 13/16 - 15/16	2 series 1 - 1-3/8	3 series 1-13/32 - 1-7/8
ISO	Material							
P	Structural Steel A36, A285, A516, etc.	100 - 150	125	110	0.012	0.018	0.019	0.020
		150 - 250	115	100	0.011	0.016	0.017	0.019
		250 - 350	105	90	0.010	0.014	0.016	0.018



Notch Point® and 150° Structural Steel Inserts Super Cobalt

		Speed (SFM) - Mist Coolant			Feed Rate (IPR) by Diameter			
		Hardness (BHN)	 AM200 Speed	 TiAlN Speed	0 series 9/16 - 11/16	1 series 13/16 - 15/16	2 series 1 - 1-3/8	3 series 1-13/32 - 1-7/8
ISO	Material							
P	Structural Steel A36, A285, A516, etc.	100 - 150	125	110	0.010	0.012	0.014	0.018
		150 - 250	115	100	0.009	0.011	0.012	0.016
		250 - 350	105	90	0.008	0.010	0.011	0.014



GEN2 T-A Inserts Super Cobalt

		Speed (SFM) - Mist Coolant		Feed Rate (IPR) by Diameter			
		Hardness (BHN)	 AM200 Speed	0 series 9/16 - 11/16	1 series 13/16 - 15/16	2 series 1 - 1-3/8	3 series 1-13/32 - 1-7/8
ISO	Material						
P	Structural Steel A36, A285, A516, etc.	100 - 150	125	0.010	0.012	0.014	0.018
		150 - 250	115	0.009	0.011	0.012	0.016
		250 - 350	105	0.008	0.010	0.011	0.014

GEN2 T-A Inserts Carbide C1 (K35)

		Speed (SFM) - Mist Coolant		Feed Rate (IPR) by Diameter			
		Hardness (BHN)	 AM200 Speed	0 series 9/16 - 11/16	1 series 13/16 - 15/16	2 series 1 - 1-3/8	3 series 1-13/32 - 1-7/8
ISO	Material						
P	Structural Steel A36, A285, A516, etc.	100 - 150	165	0.008	0.011	0.015	0.017
		150 - 250	155	0.006	0.010	0.013	0.015
		250 - 350	140	0.005	0.009	0.012	0.013

NOTE: The speeds and feeds listed above are based on a rigid setup using air mist through tool coolant. Speed may be increased up to 50% if using high pressure flood or through coolant.

NOTE: If drilling dry without coolant, speed must be reduced significantly based on setup, drill depth, and material hardness. Up to 50% speed and feed reduction may be necessary in these types of applications. Contact the Application Engineering department for assistance.

Recommended Cutting Data | Metric (mm)

Original T-A® | GEN2 T-A®

Thin Wall Inserts Super Cobalt

		Speed (M/mm) - Mist Coolant			Feed Rate (mm/rev) by Diameter			
		Hardness (BHN)	 AM200 Speed	 TiAlN Speed	0 series 14 - 16	1 series 18 - 24	2 series 25 - 35	3 series 36 - 47
ISO	Material	100 - 150	39	34	0.30	0.45	0.48	0.50
P	Structural Steel A36, A285, A516, etc.	150 - 250	35	31	0.28	0.40	0.43	0.48
		250 - 350	32	28	0.25	0.36	0.40	0.45

Notch Point® and 150° Structural Steel Inserts Super Cobalt

		Speed (M/mm) - Mist Coolant			Feed Rate (mm/rev) by Diameter			
		Hardness (BHN)	 AM200 Speed	 TiAlN Speed	0 series 14 - 16	1 series 18 - 24	2 series 25 - 35	3 series 36 - 47
ISO	Material							
P	Structural Steel A36, A285, A516, etc.	100 - 150	39	34	0.25	0.30	0.36	0.45
		150 - 250	35	31	0.23	0.28	0.30	0.40
		250 - 350	35	28	0.20	0.25	0.28	0.36

GEN2 T-A Inserts Super Cobalt



ISO	Material	Speed (M/mm) - Mist Coolant		Feed Rate (mm/rev) by Diameter			
		Hardness (BHN)	 AM200 Speed	0 series 14 - 16	1 series 18 - 24	2 series 25 - 35	3 series 36 - 47
P	Structural Steel A36, A285, A516, etc.	100 - 150	39	0.25	0.30	0.36	0.46
		150 - 250	35	0.23	0.28	0.30	0.40
		250 - 350	35	0.20	0.25	0.28	0.36

GEN2 T-A Inserts Carbide C1 (K35)

ISO	Material	Speed (M/mm) - Mist Coolant		Feed Rate (mm/rev) by Diameter			
		Hardness (BHN)	 AM200 Speed	0 series 14 - 16	1 series 18 - 24	2 series 25 - 35	3 series 36 - 47
P	Structural Steel A36, A285, A516, etc.	100 - 150	50	0.20	0.28	0.38	0.43
		150 - 250	47	0.15	0.25	0.33	0.38
		250 - 350	43	0.13	0.23	0.30	0.33

NOTE: The speeds and feeds listed above are based on a rigid setup using air mist through tool coolant. Speed may be increased up to 50% if using high pressure flood or through coolant.

NOTE: If drilling dry without coolant, speed must be reduced significantly based on setup, drill depth, and material hardness. Up to 50% speed and feed reduction may be necessary in these types of applications. Contact the Application Engineering department for assistance.



Notes

A

DRILLING

B

BORING

C

REMAINING

D

BURNISHING

E

THREADING

x

SPECIALS



Notes

A

DRILLING

B

BORING

C

REMAINING

D

BURNISHING

E

THREADING

x

SPECIALS

Guaranteed Test / Demo Application Form

Distributor PO #

The following must be filled out completely before your test will be considered

Distributor Information

Company Name: _____
Contact: _____
Account Number: _____
Phone: _____
Email: _____

End User Information

Company Name: _____
Contact: _____
Industry: _____
Phone: _____
Email: _____

Current Process List all tooling, coatings, substrates, speeds and feeds, tool life, and any problems you are experiencing

Test Objective List what would make this a successful test (i.e. penetration rate, finish, tool life, hole size, etc.)

Application Information

Hole Diameter: _____ in/mm Tolerance: _____ Material: _____
(4150 / A36 / Cast Iron / etc.)
Pre-existing Diameter: _____ in/mm Depth of Cut: _____ in/mm Hardness: _____
(BHN / Rc)
Required Finish: _____ RMS State: _____
(Casting / Hot rolled / Forging)

Machine Information

Machine Type: _____ Builder: _____ Model #: _____
(Lathe / Screw machine / Machine center / etc.) (Haas, Mori Seiki, etc.)
Shank Required: _____ Power: _____ HP/KW
(CAT50 / Morse taper, etc.)
Rigidity: Orientation: Tool Rotating: Thrust: _____ lbs/N
☐ Excellent ☐ Vertical ☐ Yes
☐ Good ☐ Horizontal ☐ No
☐ Poor

Coolant Information

Coolant Delivery: _____ Coolant Pressure: _____ PSI / bar
(Through tool / Flood)
Coolant Type: _____ Coolant Volume: _____ GPM / LPM
(Air mist, oil, synthetic, water soluble, etc.)

Requested Tooling

QTY	Item Number	QTY	Item Number



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Complete information as to operating conditions, machine, setup, and the application of cutting fluid should accompany any product returned for inspection. This warranty shall not apply to any Allied Machine products which have been subjected to misuse, abuse, improper operating conditions, improper machine setup or improper application of cutting fluid or which have been repaired or altered if such repair or alteration, in the judgement of Allied Machine, would adversely affect the performance of the product.

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