ALLIED MACHINE & ENGINEERING

Holemaking Solutions for Today's Manufacturing

Boring

Reaming

Burnishing

Threading

Specials

Drilling

▶ Structural Steel Drilling Solutions

GEN3SYS® XT | Original T-A® | GEN2 T-A®

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 Future

Allied Machine is constantly investing in the brightest and sharpest minds, shaping a future filled with success and quality for customers around the world.

Steve Stokey
Executive Vice President

William H. Stokey
President and CEO

Mike Stokey
Executive Vice President

ALLIED MACHINE & ENGINEERING

Holemaking Solutions for Today's Manufacturing

WOHLHAUPTER® ThreadMills USA™ SUPERION™ CRITERION™

DRILLING

High Penetration

GEN3SYS® XT Pro

GEN3SYS® XT

ASC 320®

General Production

(certain sizes are ideal for deep hole drilling and/or large diameter drilling)

GEN2 T-A®

Original T-A®

High Performance

Universal

Large Diameter

Revolution Drill®

Opening Drill®

Large Diameter / Deep Hole

APX Drill

Deep Hole

BT-A Drill

Guided T-A® Drill
(special)

Porting

AccuPort 432®

Structural Steel

GEN3SYS® XT

T-A®

BORING

WOHLHAUPTER®

Bringing you the finest in precision cutting tools

CRITERION™

REAMING

ALVAN®
Reaming Systems

BURNISHING

S.C.A.M.I.®
Roller Burnishing

THREADING

AccuThread™ 856
Pin Style Indexable

AccuThread™ 856
Bolt-in Style Indexable

AccuThread™ 856
Solid Carbide

ThreadMills USA
Solid Carbide

ThreadMills USA™

SPECIALS

Insta-Quote™
Online custom tool builder and quote generator

i-Form
Custom indexable drill / form tool system

Engineered Specials

If your special holemaking needs cannot be met with the Insta-Quote system, Allied Machine can specially engineer ANY product to make your application a success. Simply contact your local Field Sales Engineer or the Allied Machine Application Engineering department for assistance with creating your special tooling. Let Allied Machine resolve your challenges today.

Allied Machine & Engineering patent information can be found at **www.alliedmachine.com/patents**

Structural Steel Drilling Solutions

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

- **GEN3SYS XT 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, 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

Applicable Industries

Structural Steel

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

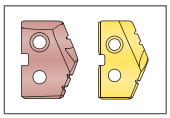
WARNING (shown above) means that failure to follow the precautions in this message could result in tool failure and serious injury.

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.

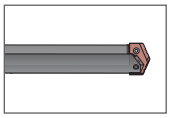
NOTE and **IMPORTANT** are also used. These are important that you read and follow but are not safety-related.

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

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

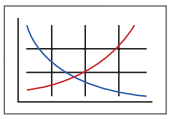


Corresponding T-A Inserts
Refers to the corresponding T-A insert items that connect with each specific holder series



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

Series	GEN3SYS XT 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 Solutions Contents

Introduction Information

GEN3SYS® XT Drill Series

T-A® Drill Series

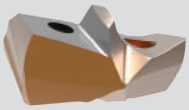
Recommended Cutting Data

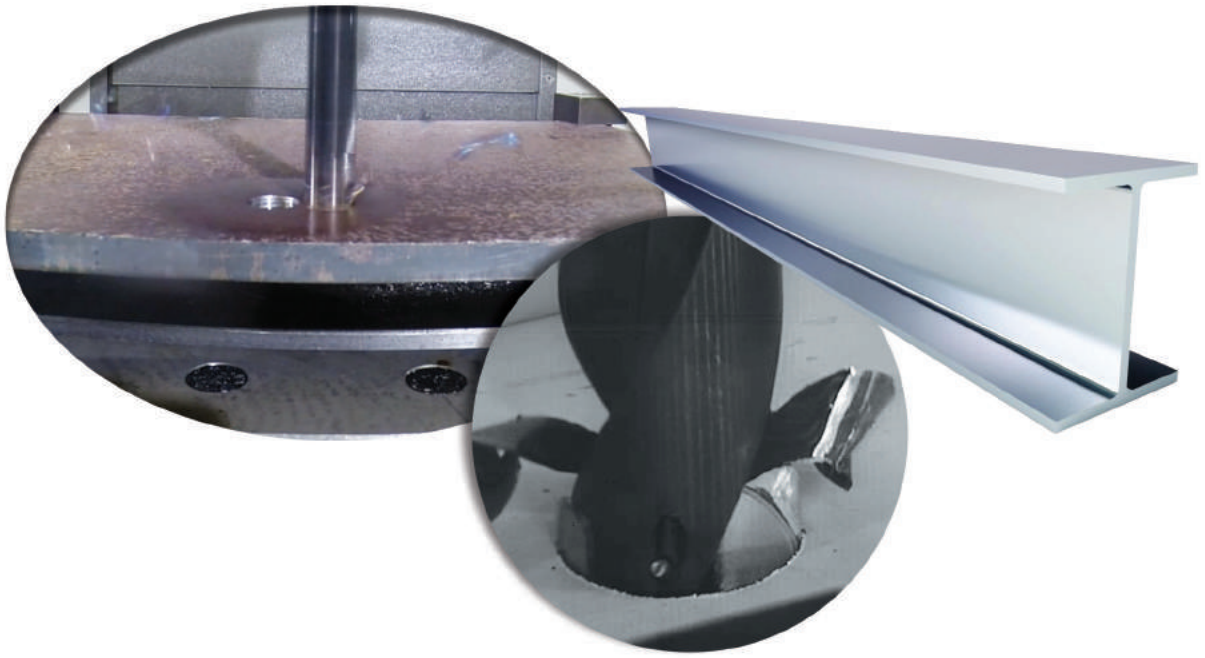
Structural Steel Drilling

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 product lines, you have multiple options to solve your application problems.

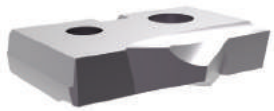
Insert Style Comparison

	 GEN3SYS® XT Structural Steel	 Original T-A® Thin Wall	 Original T-A® Notch Point®	 Original T-A® 150° Structural Steel	 GEN2 T-A® High Efficiency
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:

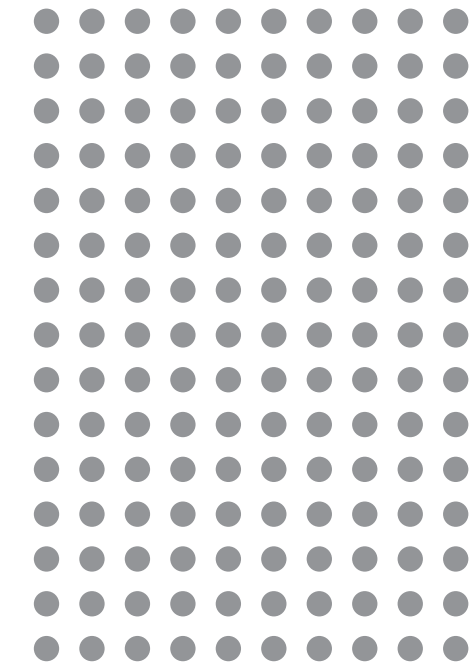
The customer was able to take advantage of Allied Machine's vast experience in the structural steel drilling niche. Allied's wide variety of stocked solutions for specific customer problems allows for a remarkable increase in tool life.

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)

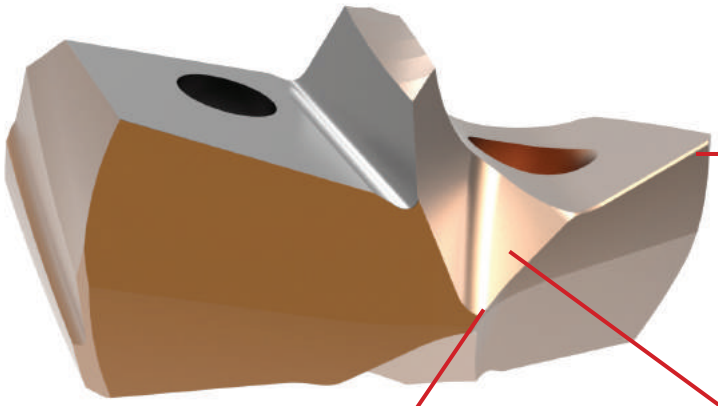


Overall ***SAVINGS*** of

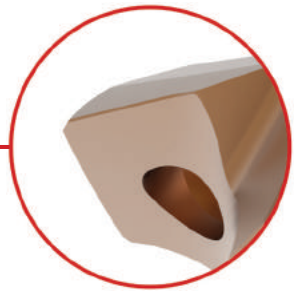
89%

GEN3SYS® XT Structural Steel Drilling System

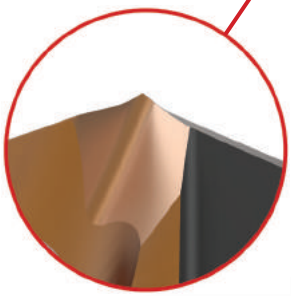
STRUCTURAL STEEL **ENHANCEMENTS** | GEN3SYS XT



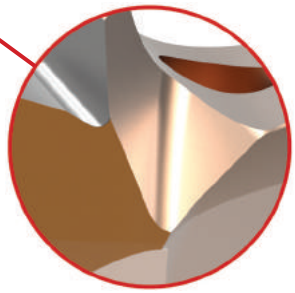
Available in AM300® Coating



Improved Radial Rake
Improves chip control



Spur Point
Increases stability



Improved Notch Point
Reduces lead-off

Holder Anatomy

1. Flanged Shank with Flat
2. Coolant Inlet
3. Flute (straight only)
4. Coolant Outlets

Straight Flute

NOTICE: Structural Steel GEN3SYS XT holders are specifically designed to be used only with ST 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

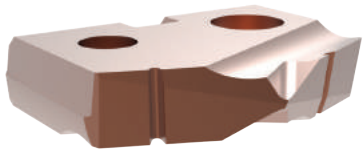
High Efficiency (-HE)

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

Original T-A Inserts
Available in AM200® and TiAlN Coatings

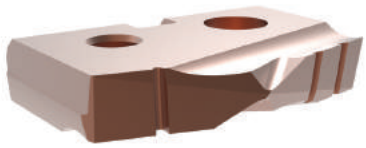
Thin Wall (-TW)

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



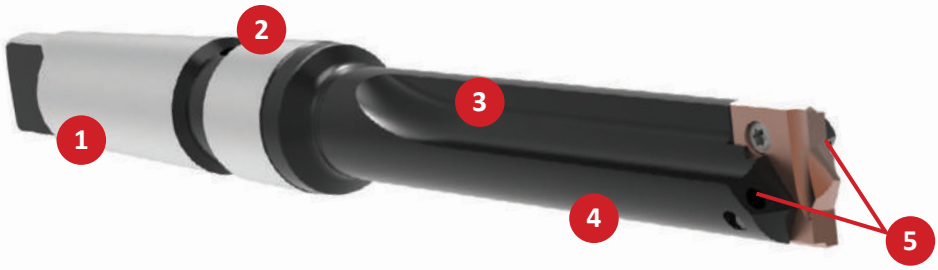
Notch Point® (-NP)

- 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

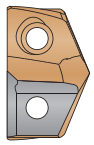
Straight Flute

Helical Flute

GEN3SYS® XT Drill Nomenclature

GEN3SYS XT Drill Inserts

7	C2	14	P	–	0018	ST
1	2	3	4		5	6

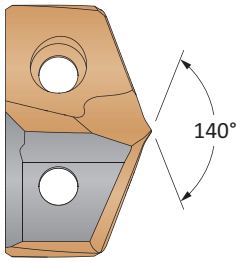


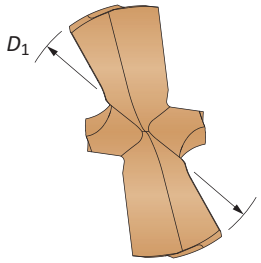
1. XT Drill Insert	2. Insert Material	3. Series	4. Coating
7 = XT insert	**C2** = C2 (K20) carbide	**12** = 12 series **14** = 14 series **15** = 15 series **16** = 16 series **17** = 17 series **18** = 18 series **20** = 20 series **22** = 22 series **24** = 24 series **26** = 26 series **29** = 29 series **32** = 32 series	**P** = AM300®

5. Diameter	6. Geometry
0102 = Inch **18** = Metric	**ST** = Structural steel

Reference Key

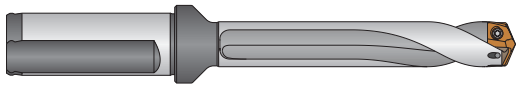
Symbol	Attribute
D_1	Insert diameter





GEN3SYS XT Drill Holders

ST	03	12	0	–	20	FM
1	2	3	4		5	6

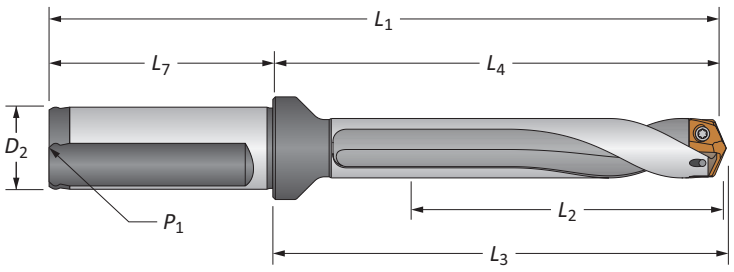


1. Holder	2. Length	3. Series	4. Body Diameter
ST = Structural steel holder	**03** = 3x Diameter **05** = 5x Diameter **07** = 7x Diameter	**12** = 12 series **14** = 14 series **15** = 15 series **16** = 16 series **17** = 17 series **18** = 18 series **20** = 20 series **22** = 22 series **24** = 24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

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

Reference Key

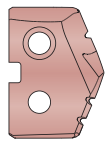
Symbol	Attribute
D_2	Shank diameter
L_1	Overall length
L_2	Drill depth
L_3	Holder reference length
L_4	Holder body length
L_7	Shank length
P_1	Rear pipe tap



T-A® Drill Nomenclature

T-A Drill Inserts

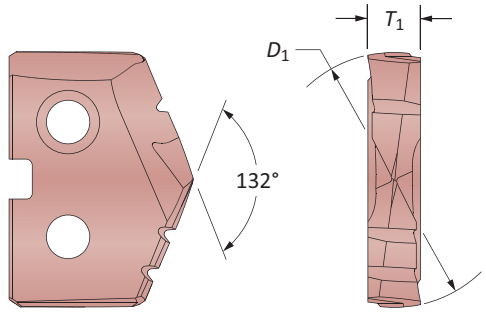
4	5	3	H	–	0115	–	HE
1	2	3	4		5		6



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

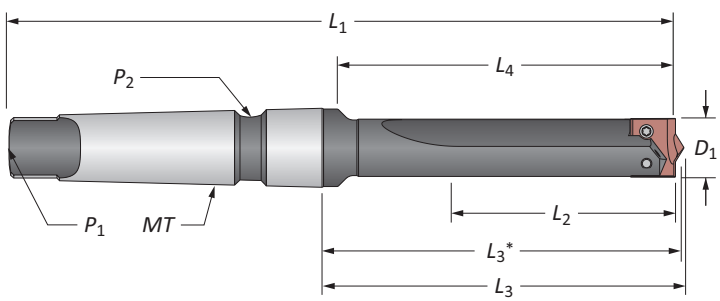
1. Holder	2. Length	3. Series	4. Flute
2 = T-A holder	**20** = Short **40** = Standard **50** = Extended **60** = Long	**00** = 0 series **05** = 0.5 series **10** = 1 series **15** = 1.5 series **20** = 2 series **25** = 2.5 series **30** = 3 series	**S** = Straight **H** = Helical

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

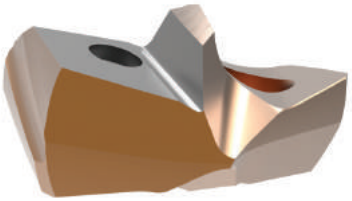
Symbol	Attribute	Symbol	Attribute
D_1	Drill insert range	L_4	Flute length
L_1	Overall length	P_1	Rear pipe tap
L_2	Drill depth	P_2	Side pipe tap
L_3	Holder reference length	*MT*	Morse taper size
L_3*	Holder reference length		

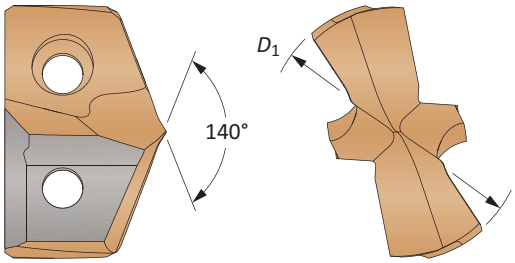
*If using Structural Steel holder with Notch Point®, GEN2 T-A, or 150° Structural Steel T-A drill insert geometry



GEN3SYS® XT Structural Steel Drilling System

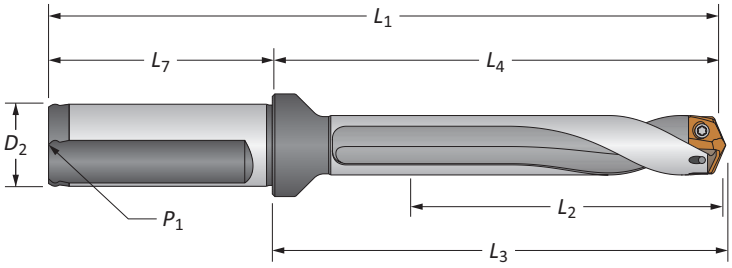
12 Series | Diameter Range: 0.4724" - 0.5117" (12.00mm - 12.99mm)





Inserts

Insert				
Carbide Substrate	Fractional Equivalent	D_1 inch	D_1 mm	Structural Steel Part No.
C2 (K20)	–	0.4724	12.00	**7C212P-12ST**

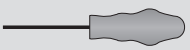
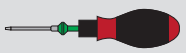
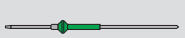


Holders

	Length	Body L_2	Body L_4	Body L_3	Body L_1	Shank L_7	Shank D_2	Shank P_1	Shank Flat	Part No.
i	3xD	1-17/32	2-5/8	2-45/64	4-21/32	2-1/32	3/4	1/8	YES	**ST03120-075F**
i	5xD	2-9/16	3-41/64	3-47/64	5-43/64	2-1/32	3/4	1/8	YES	**ST05120-075F**
i	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**
m	5xD	65.0	94.8	94.8	144.8	50	20	1/8*	YES	**ST05120-20FM**
m	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 μ = 0.14 and develop 90% of ultimate yield strength

A91: 36 - 37
Key on A91: 1
A91: 4

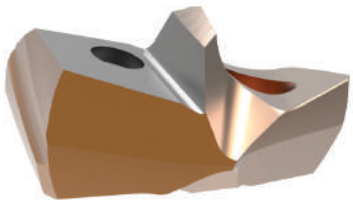
ⓘ = Imperial (in)
ⓜ = Metric (mm)

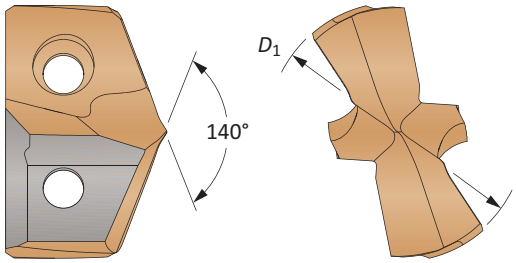
Inserts sold in multiples of 1 | Screws sold in multiples of 10

NOTICE: Structural Steel GEN3SYS XT holders are specifically designed to be used only with ST 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 Structural Steel Drilling System

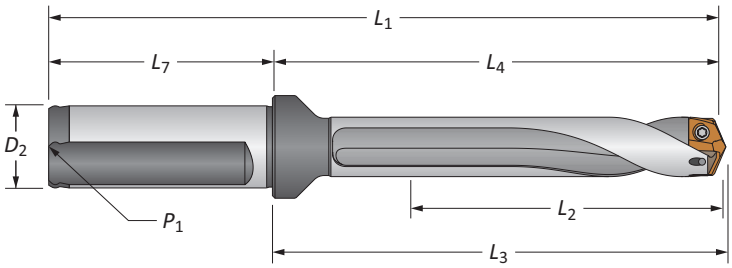
14 Series | Diameter Range: 0.5512” - 0.5905” (14.00mm - 14.99mm)





Inserts

Insert				
Carbide Substrate	Fractional Equivalent	D_1 inch	D_1 mm	Structural Steel Part No.
C2 (K20)	–	0.5512	14.00	**7C214P-14ST**
	9/16	0.5625	14.29	**7C214P-0018ST**

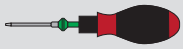


Holders

	Length	Body L_2	Body L_4	Body L_3	Body L_1	Shank L_7	Shank D_2	Shank P_1	Shank Flat	Part No.
ⓘ	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**
ⓜ	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 μ = 0.14 and develop 90% of ultimate yield strength

A91: 36 - 37
Key on A91: 1
A91: 4

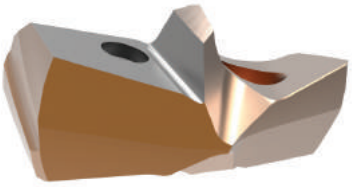
ⓘ = Imperial (in)
ⓜ = Metric (mm)

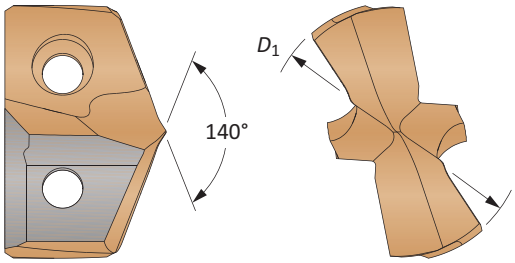
Inserts sold in multiples of 1 | Screws sold in multiples of 10

NOTICE: Structural Steel GEN3SYS XT holders are specifically designed to be used only with ST 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 Structural Steel Drilling System

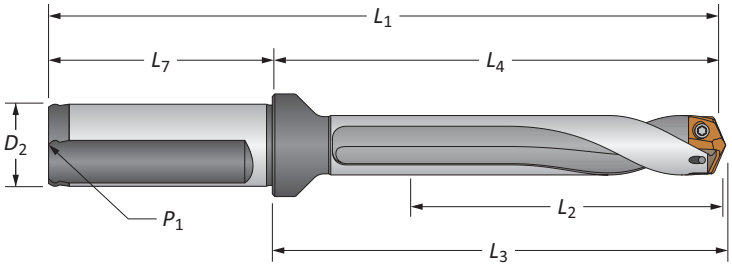
15 Series | Diameter Range: 0.5906" - 0.6298" (15.00mm - 15.99mm)





Inserts

Insert				
Carbide Substrate	Fractional Equivalent	D_1 inch	D_1 mm	Structural Steel Part No.
C2 (K20)	5/8	0.6250	15.88	**7C215P-0020ST**



Holders

	Length	Body L_2	Body L_4	Body L_3	Body L_1	Shank L_7	Shank D_2	Shank P_1	Shank Flat	Part No.
ⓘ	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**
ⓜ	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 μ = 0.14 and develop 90% of ultimate yield strength

A91: 36 - 37
Key on A91: 1
A91: 4

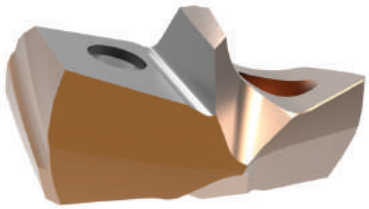
ⓘ = Imperial (in)
ⓜ = Metric (mm)

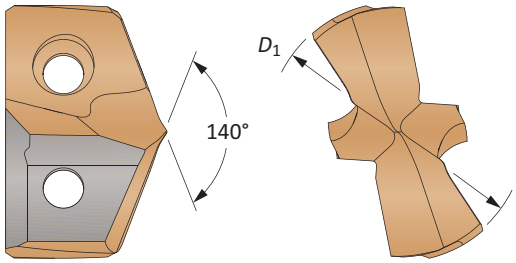
Inserts sold in multiples of 1 | Screws sold in multiples of 10

NOTICE: Structural Steel GEN3SYS XT holders are specifically designed to be used only with ST 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 Structural Steel Drilling System

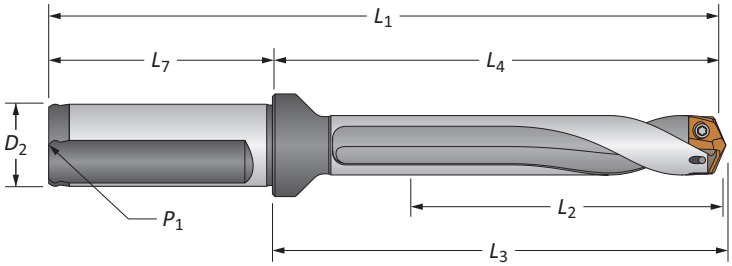
16 Series | Diameter Range: 0.6299” - 0.6692” (16.00mm - 16.99mm)





Inserts

Insert				
Carbide Substrate	Fractional Equivalent	D_1 inch	D_1 mm	Structural Steel Part No.
C2 (K20)	–	0.6299	16.00	**7C216P-16ST**

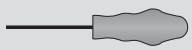
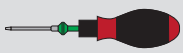


Holders

	Length	Body L_2	Body L_4	Body L_3	Body L_1	Shank L_7	Shank D_2	Shank P_1	Shank Flat	Part No.
ⓘ	3xD	3-1/64	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**
ⓜ	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**

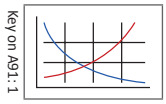
*Thread to BSP and ISO 7-1

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 μ = 0.14 and develop 90% of ultimate yield strength

A91: 36 - 37



A91: 4

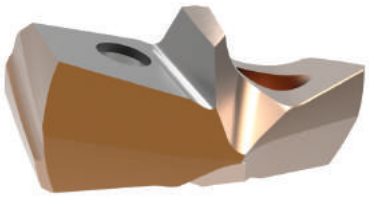
ⓘ = Imperial (in)
ⓜ = Metric (mm)

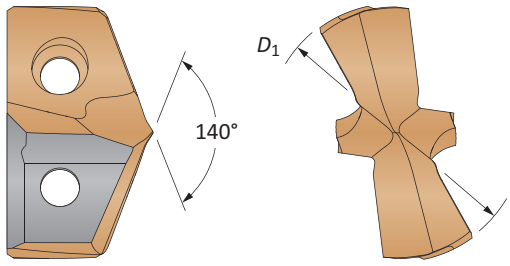
Inserts sold in multiples of 1 | Screws sold in multiples of 10

NOTICE: Structural Steel GEN3SYS XT holders are specifically designed to be used only with ST 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 Structural Steel Drilling System

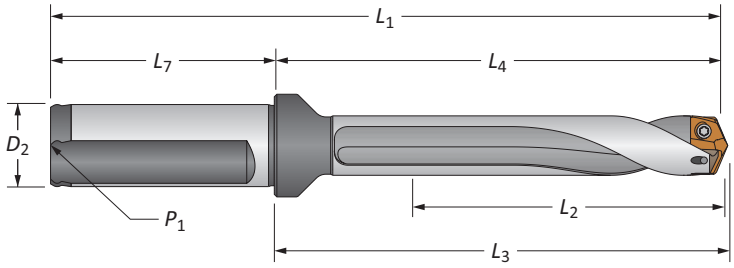
17 Series | Diameter Range: 0.6693” - 0.7086” (17.00mm - 17.99mm)





Inserts

Insert				
Carbide Substrate	Fractional Equivalent	D_1 inch	D_1 mm	Structural Steel Part No.
C2 (K20)	11/16	0.6875	17.46	**7C217P-0022ST**

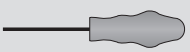
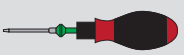
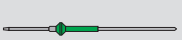


Holders

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

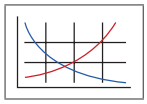
*Thread to BSP and ISO 7-1

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 μ = 0.14 and develop 90% of ultimate yield strength

A91: 36 - 37



A91: 4

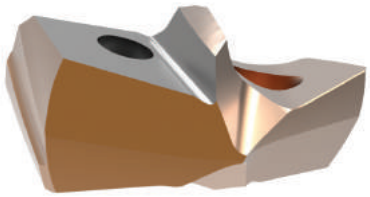
i = Imperial (in)
m = Metric (mm)

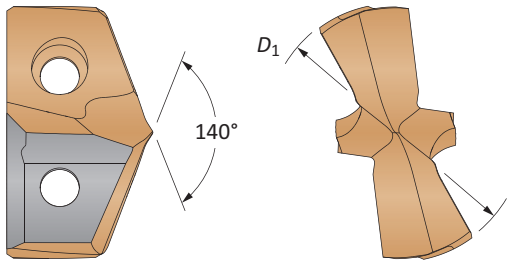
Inserts sold in multiples of 1 | Screws sold in multiples of 10

NOTICE: Structural Steel GEN3SYS XT holders are specifically designed to be used only with ST 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 Structural Steel Drilling System

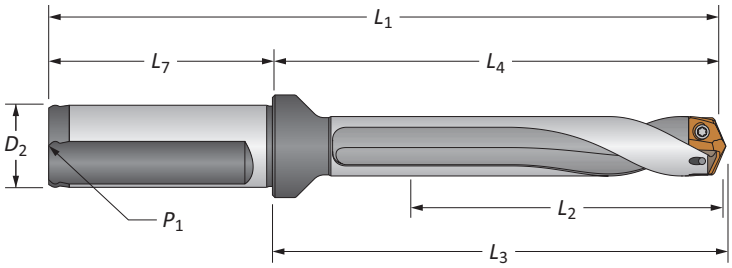
18 Series | Diameter Range: 0.7087” - 0.7873” (18.00mm - 19.99mm)





Inserts

Insert				
Carbide Substrate	Fractional Equivalent	D_1 inch	D_1 mm	Structural Steel Part No.
C2 (K20)	–	0.7087	18.00	**7C218P-18ST**

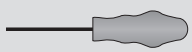
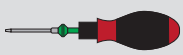
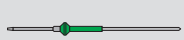


Holders

	Length	Body L_2	Body L_4	Body L_3	Body L_1	Shank L_7	Shank D_2	Shank P_1	Shank Flat	Part No.
ⓘ	3xD	2-3/8	3-45/64	3-53/64	5-63/64	2-9/32	1	1/8	YES	**ST03180-075F**
ⓘ	5xD	3-15/16	5-9/32	5-25/64	7-9/16	2-9/32	1	1/8	YES	**ST05180-075F**
ⓘ	7xD	5-33/64	6-27/32	6-31/32	9-1/8	2-9/32	1	1/8	YES	**ST07180-075F**
ⓜ	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 μ = 0.14 and develop 90% of ultimate yield strength

A91: 36 - 37
Key on A91: 1
A91: 4

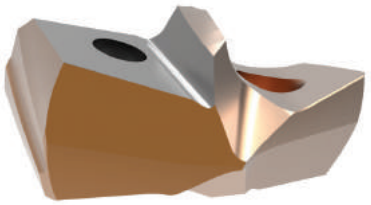
ⓘ = Imperial (in)
ⓜ = Metric (mm)

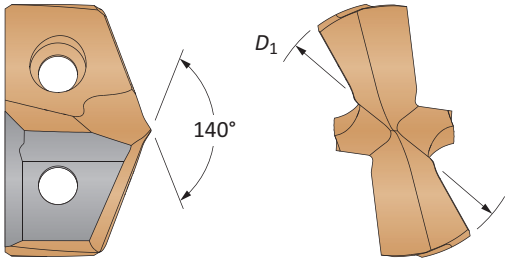
Inserts sold in multiples of 1 | Screws sold in multiples of 10

NOTICE: Structural Steel GEN3SYS XT holders are specifically designed to be used only with ST 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 Structural Steel Drilling System

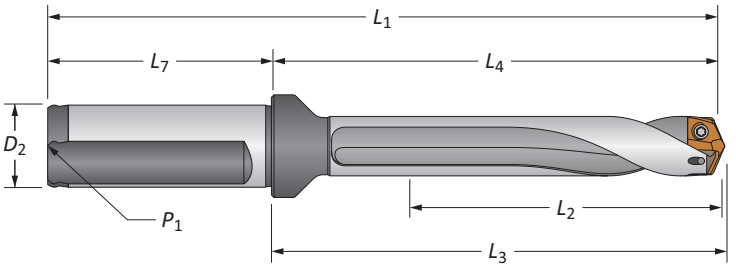
20 Series | Diameter Range: 0.7874" - 0.8660" (20.00mm - 21.99mm)





Inserts

Carbide Substrate	Fractional Equivalent	D_1 inch	D_1 mm	Structural Steel Part No.
C2 (K20)	–	0.7874	20.00	**7C220P-20ST**
	13/16	0.8125	20.64	**7C220P-0026ST**



Holders

	Length	Body L_2	Body L_4	Body L_3	Body L_1	Shank L_7	Shank D_2	Shank P_1	Shank Flat	Part No.
ⓘ	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**
ⓜ	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

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 μ = 0.14 and develop 90% of ultimate yield strength

A91: 36 - 37
Key on A91: 1
A91: 4

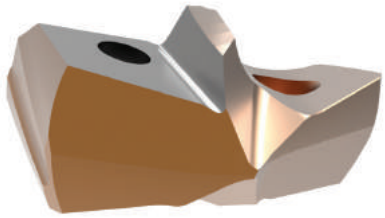
ⓘ = Imperial (in)
ⓜ = Metric (mm)

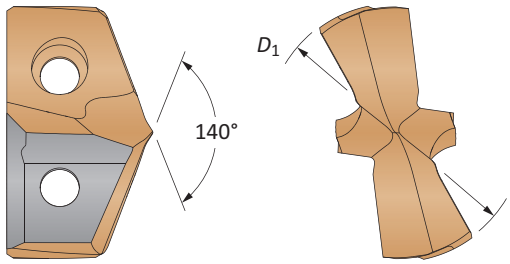
Inserts sold in multiples of 1 | Screws sold in multiples of 10

NOTICE: Structural Steel GEN3SYS XT holders are specifically designed to be used only with ST 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 Structural Steel Drilling System

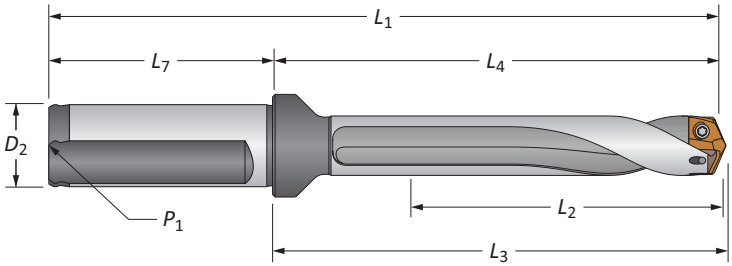
22 Series | Diameter Range: 0.8661" - 0.9448" (22.00mm - 23.99mm)





Inserts

Insert				
Carbide Substrate	Fractional Equivalent	D_1 inch	D_1 mm	Structural Steel Part No.
C2 (K20)	–	0.8661	22.00	**7C222P-22ST**
	7/8	0.8750	22.23	**7C222P-0028ST**
	15/16	0.9375	23.81	**7C222P-0030ST**

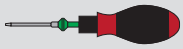


Holders

	Length	Body L_2	Body L_4	Body L_3	Body L_1	Shank L_7	Shank D_2	Shank P_1	Shank Flat	Part No.
i	3xD	2-53/64	4-9/64	4-9/32	6-27/64	2-9/32	1	1/8	YES	**ST03220-100F**
i	3xD	2-53/64	4-9/64	4-9/32	6-27/64	2-9/32	1	1/8	YES	**ST03225-100F****
i	5xD	4-23/32	6-1/32	6-11/64	8-5/16	2-9/32	1	1/8	YES	**ST05220-100F**
i	5xD	4-23/32	6-1/32	6-11/64	8-5/16	2-9/32	1	1/8	YES	**ST05225-100F****
i	7xD	6-39/64	7-59/64	8-1/16	10-13/64	2-9/32	1	1/8	YES	**ST07220-100F**
i	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**
m	3xD	72.0	105.3	108.7	161.3	56	25	1/8*	YES	**ST03225-25FM****
m	5xD	119.9	153.3	156.7	209.3	56	25	1/8*	YES	**ST05220-25FM**
m	5xD	119.9	153.3	156.7	209.3	56	25	1/8*	YES	**ST05225-25FM****
m	7xD	167.9	201.3	204.7	257.3	56	25	1/8*	YES	**ST07220-25FM**
m	7xD	167.9	201.3	204.7	257.3	56	25	1/8*	YES	**ST07225-25FM****

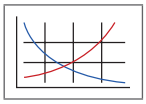
*Thread to BSP and ISO 7-1 | **Oversized body holder (minimum drill diameter = 23mm)

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 μ = 0.14 and develop 90% of ultimate yield strength

A91: 36 - 37



Key on A91: 1

A91: 4

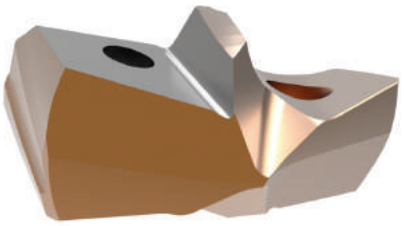
i = Imperial (in)
m = Metric (mm)

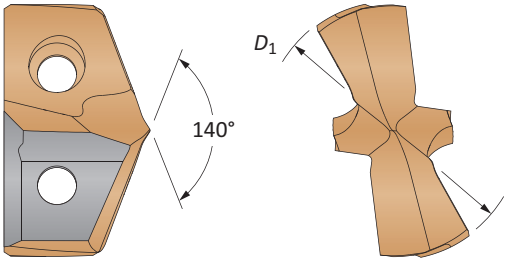
Inserts sold in multiples of 1 | Screws sold in multiples of 10

NOTICE: Structural Steel GEN3SYS XT holders are specifically designed to be used only with ST 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 Structural Steel Drilling System

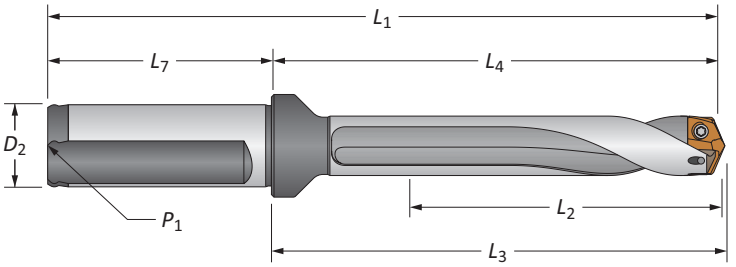
24 Series | Diameter Range: 0.9449” - 1.0235” (24.00mm - 25.99mm)





Inserts

Insert				
Carbide Substrate	Fractional Equivalent	D_1 inch	D_1 mm	Structural Steel Part No.
C2 (K20)	–	0.9449	24.00	**7C224P-24ST**
	1	1.0000	25.40	**7C224P-0100ST**

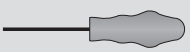
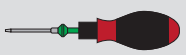
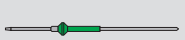


Holders

	Length	Body L_2	Body L_4	Body L_3	Body L_1	Shank L_7	Shank D_2	Shank P_1	Shank Flat	Part No.
i	3xD	3-5/64	4-31/64	4-5/8	6-49/64	2-9/32	1	1/8	YES	**ST03240-100F**
i	5xD	5-1/8	6-17/32	6-21/32	8-13/16	2-9/32	1	1/8	YES	**ST05240-100F**
i	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**
m	5xD	129.9	165.8	169.2	221.8	56	25	1/8*	YES	**ST05240-25FM**
m	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

 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 μ = 0.14 and develop 90% of ultimate yield strength

A91: 36 - 37
Key on A91: 1
A91: 4

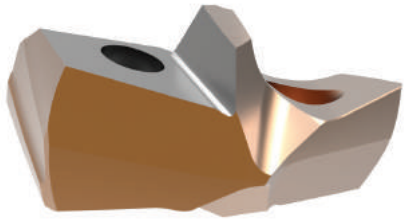
i = Imperial (in)
m = Metric (mm)

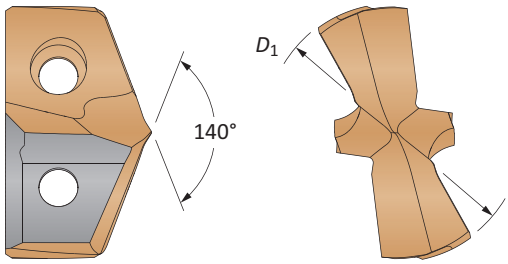
Inserts sold in multiples of 1 | Screws sold in multiples of 10

NOTICE: Structural Steel GEN3SYS XT holders are specifically designed to be used only with ST 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 Structural Steel Drilling System

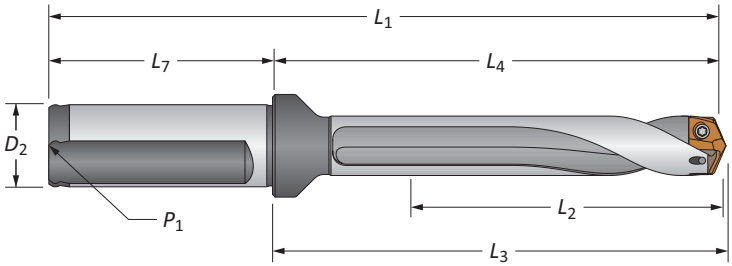
26 Series | Diameter Range: 1.0236” - 1.1416” (26.00mm - 28.99mm)





Inserts

Carbide Substrate	Insert: Fractional Equivalent	Insert: D_1 inch	Insert: D_1 mm	Structural Steel Part No.
C2 (K20)	–	1.0236	26.00	**7C226P-26ST**
	1-1/16	1.0625	26.99	**7C226P-0102ST**
	–	1.0630	27.00	**7C226P-27ST**
	–	1.1024	28.00	**7C226P-28ST**
	1-1/8	1.1250	28.58	**7C226P-0104ST**

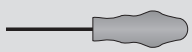
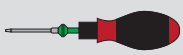
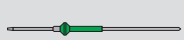


Holders

	Length	Body: L_2	Body: L_4	Body: L_3	Body: L_1	Shank: L_7	Shank: D_2	Shank: P_1	Shank: Flat	Part No.
ⓘ	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**
ⓜ	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 μ = 0.14 and develop 90% of ultimate yield strength

A91: 36 - 37
Key on A91: 1
A91: 4

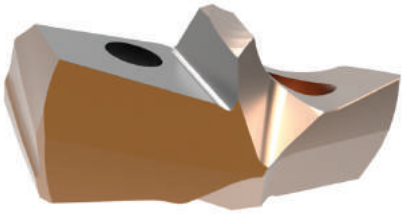
ⓘ = Imperial (in)
ⓜ = Metric (mm)

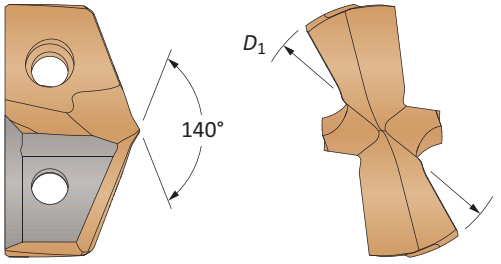
Inserts sold in multiples of 1 | Screws sold in multiples of 10

NOTICE: Structural Steel GEN3SYS XT holders are specifically designed to be used only with ST 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 Structural Steel Drilling System

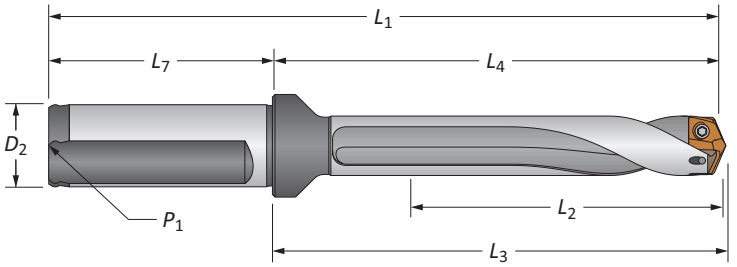
29 Series | Diameter Range: 1.1417" - 1.2597" (29.00mm - 31.99mm)





Inserts

Insert				
Carbide Substrate	Fractional Equivalent	D_1 inch	D_1 mm	Structural Steel Part No.
C2 (K20)	–	1.1417	29.00	**7C229P-29ST**
	–	1.1811	30.00	**7C229P-30ST**
	1-3/16	1.1875	30.16	**7C229P-0106ST**
	–	1.2205	31.00	**7C229P-31ST**
	1-1/4	1.2500	31.75	**7C229P-0108ST**

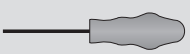
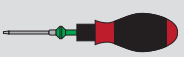
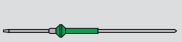


Holders

	Length	Body L_2	Body L_4	Body L_3	Body L_1	Shank L_7	Shank D_2	Shank P_1	Shank Flat	Part No.
ⓘ	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**
ⓜ	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

 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 μ = 0.14 and develop 90% of ultimate yield strength

A91: 36 - 37
Key on A91: 1
A91: 4

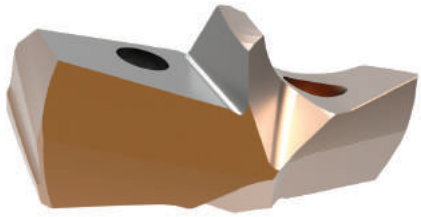
ⓘ = Imperial (in)
ⓜ = Metric (mm)

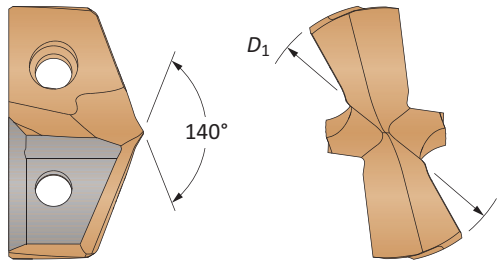
Inserts sold in multiples of 1 | Screws sold in multiples of 10

NOTICE: Structural Steel GEN3SYS XT holders are specifically designed to be used only with ST 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 Structural Steel Drilling System

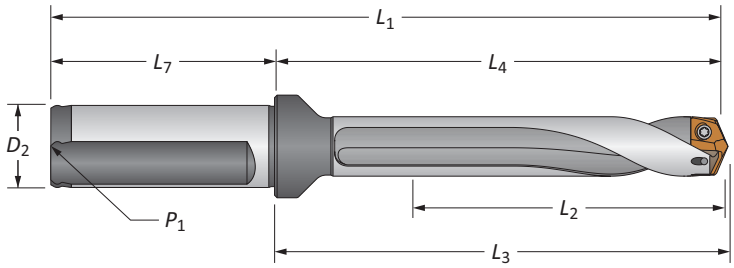
32 Series | Diameter Range: 1.2598” - 1.3780” (32.00mm - 35.00mm)





Inserts

Insert				
Carbide Substrate	Fractional Equivalent	D_1 inch	D_1 mm	Structural Steel Part No.
C2 (K20)	–	1.2598	32.00	**7C232P-32ST**
	–	1.2992	33.00	**7C232P-33ST**
	1-5/16	1.3125	33.34	**7C232P-0110ST**
	1-3/8	1.3750	34.93	**7C232P-0112ST**

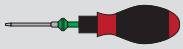


Holders

	Length	Body L_2	Body L_4	Body L_3	Body L_1	Shank L_7	Shank D_2	Shank P_1	Flat	Part No.
ⓘ	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**
ⓜ	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**

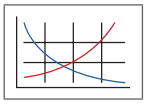
*Thread to BSP and ISO 7-1

Connection Accessories

 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 μ = 0.14 and develop 90% of ultimate yield strength

A91: 36 - 37



Key on A91: 1

A91: 4

ⓘ = Imperial (in)
ⓜ = Metric (mm)

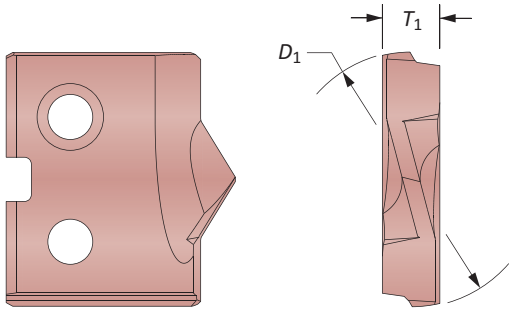
Inserts sold in multiples of 1 | Screws sold in multiples of 10

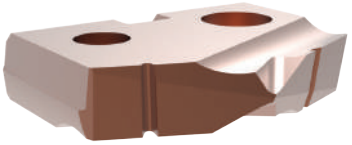
NOTICE: Structural Steel GEN3SYS XT holders are specifically designed to be used only with ST geometry inserts. Using other GEN3SYS XT or XT Pro insert geometries in these holders could lead to chip packing and tool failure. Contact Application Engineering for questions regarding proper use of tools.

Original T-A® Structural Steel Drill Inserts

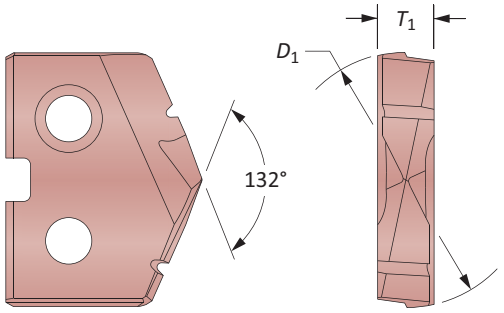
0 Series | Diameter Range: 0.5512” - 0.6875” (14.00mm - 17.46mm)

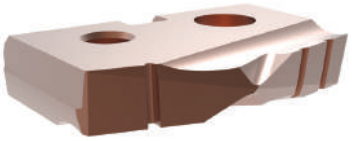
Thin Wall
For material up to 7/16” thick



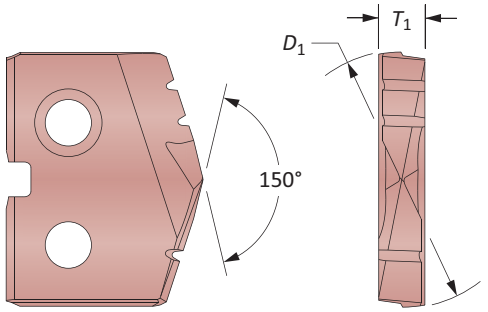


Notch Point®
For material over 7/16” thick





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



HSS Inserts – Super Cobalt

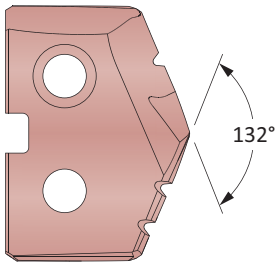
Series	Insert: Fractional Equivalent	Insert: D_1 inch	Insert: D_1 mm	Insert: T_1	Thin Wall: AM200 Part No.	Thin Wall: TiAlN Part No.	Notch Point: AM200 Part No.	Notch Point: TiAlN Part No.	150° Structural Steel: AM200 Part No.	150° Structural Steel: TiAlN Part No.
0	–	0.5512	14.00	1/8	150H-14-TW	150A-14-TW	150H-14-NP	150A-14-NP	150H-14-SS	150A-14-SS
	9/16	0.5625	14.29	1/8	150H-0018-TW	150A-0018-TW	150H-0018-NP	150A-0018-NP	150H-0018-SS	150A-0018-SS
0.5	5/8	0.6250	15.88	1/8	150H-0020-TW	150A-0020-TW	150H-0020-NP	150A-0020-NP	150H-0020-SS	150A-0020-SS
	–	0.6299	16.00	1/8	150H-16-TW	150A-16-TW	150H-16-NP	150A-16-NP	150H-16-SS	150A-16-SS
	11/16	0.6875	17.46	1/8	150H-0022-TW	150A-0022-TW	150H-0022-NP	150A-0022-NP	150H-0022-SS	150A-0022-SS

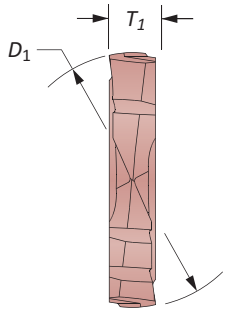
A91: 38 - 39
Key on A91: 1
A91: 5
A91: 22 - 23

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	Insert: Fractional Equivalent	Insert: D_1 inch	Insert: D_1 mm	Insert: T_1	Part No.: Super Cobalt	Part No.: 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**

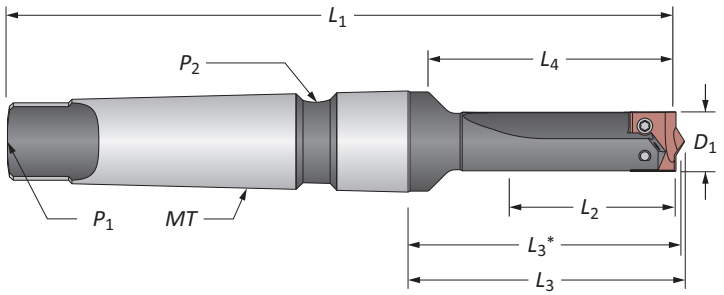
A91: 38 - 39 | A91: 5 | A91: 22 - 23

Key on A91: 1

Inserts sold in multiples of 2

T-A® Structural Steel Drill Insert Holders

0 Series | Taper Shank



Straight Flute #3 Morse Taper

	Series	Length	D_1	Body L_2	Body L_4	Body L_3	Body L_3*	Body L_1	Shank MT	Shank P_1	Shank P_2	Part No.
ⓘ	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**
ⓘ	0.5	Short	11/16	1-3/8	2-3/16	2-35/64	2-31/64	6-1/16	#3	TTC	TSC	**22005S-003IS044**
ⓜ	0	Short	14	35	56	64.7	63.1	154	#3	TTC	TSC	**22000S-003IS036**
ⓜ	0	Short	16	35	56	64.7	63.1	154	#3	TTC	TSC	**22000S-003IS040**
ⓜ	0	Short	17.5	35	56	64.7	63.1	154	#3	TTC	TSC	**22000S-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 μ = 0.14 and develop 90% of ultimate yield strength

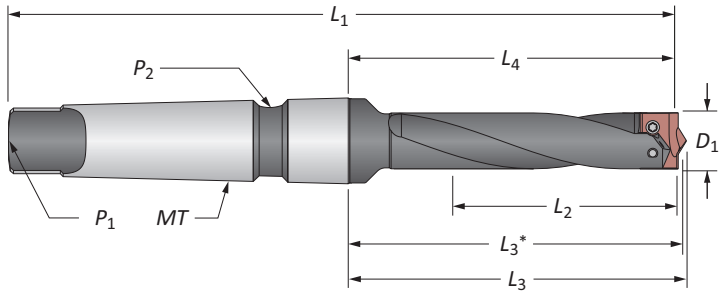
A91: 5 — Key on A91: 1

A91: 20 - 21

ⓘ = Imperial (in)
ⓜ = Metric (mm)
Screws sold in multiples of 10

T-A® Structural Steel Drill Insert Holders

0 Series | Taper Shank



Helical Flute #3 Morse Taper

	Series	Length	D_1	Body L_2	Body L_4	Body L_3	Body L_3*	Body L_1	Shank MT	Shank P_1	Shank P_2	Part No.
	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**
		Standard	11/16	2-1/2	3-5/16	3-43/64	3-39/64	7-3/16	#3	TTC	TSC	**24005H-003IS044**
		Extended	11/16	6-1/2	9-7/16	9-51/64	9-19/32	13-5/64	#3	TTC	TSC	⚠ **25005H-003IS044**
	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**
		Standard	17.5	64	84	93.3	91.7	183	#3	TTC	TSC	**24005H-003IS044**
		Extended	17.5	165	240	248.8	243.7	338	#3	TTC	TSC	⚠ **25005H-003IS044**

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

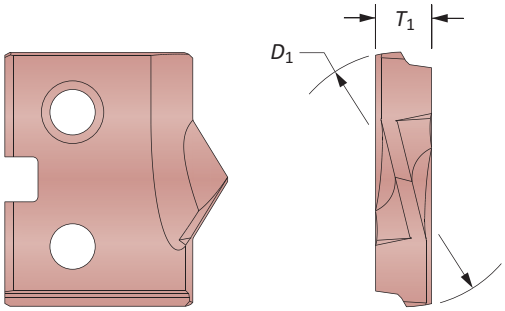
ⓘ = Imperial (in)
ⓜ = Metric (mm)
Screws sold in multiples of 10

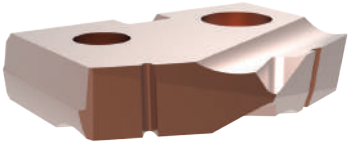
⚠ WARNING Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page A91: 35 for deep hole drilling guidelines in this section of the catalog. Visit **www.alliedmachine.com/DeepHoleGuidelines** for the most up-to-date information and procedures. Factory technical assistance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

Original T-A® Structural Steel Drill Inserts

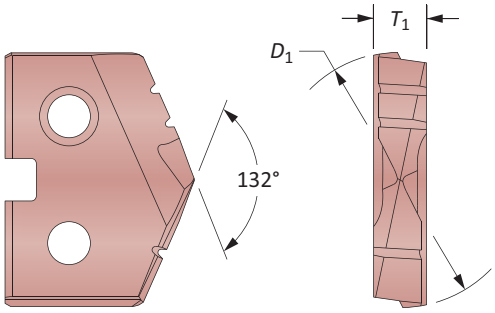
1 Series | Diameter Range: 0.7087” - 0.9449” (18.00mm - 24.00mm)

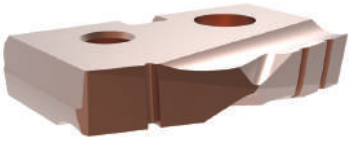
Thin Wall
For material up to 7/16” thick



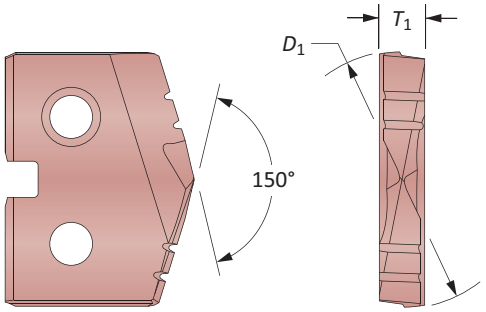


Notch Point®
For material over 7/16” thick





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



HSS Inserts – Super Cobalt

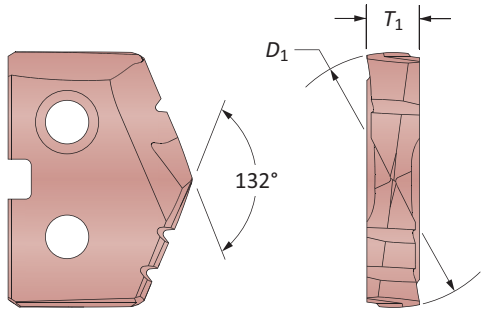
Series	Insert: Fractional Equivalent	Insert: D_1 inch	Insert: D_1 mm	Insert: T_1	Thin Wall: AM200 Part No.	Thin Wall: TiAlN Part No.	Notch Point: AM200 Part No.	Notch Point: TiAlN Part No.	150° Structural Steel: AM200 Part No.	150° Structural Steel: TiAlN Part No.
1	–	0.7087	18.00	5/32	151H-18-TW	151A-18-TW	151H-18-NP	151A-18-NP	151H-18-SS	151A-18-SS
	13/16	0.8125	20.64	5/32	151H-0026-TW	151A-0026-TW	151H-0026-NP	151A-0026-NP	151H-0026-SS	151A-0026-SS
	–	0.8268	21.00	5/32	151H-21-TW	151A-21-TW	151H-21-NP	151A-21-NP	151H-21-SS	151A-21-SS
	–	0.8661	22.00	5/32	151H-22-TW	151A-22-TW	151H-22-NP	151A-22-NP	151H-22-SS	151A-22-SS
1.5	7/8	0.8750	22.23	5/32	151H-0028-TW	151A-0028-TW	151H-0028-NP	151A-0028-NP	151H-0028-SS	151A-0028-SS
	15/16	0.9375	23.81	5/32	151H-0030-TW	151A-0030-TW	151H-0030-NP	151A-0030-NP	151H-0030-SS	151A-0030-SS
	–	0.9449	24.00	5/32	151H-24-TW	151A-24-TW	151H-24-NP	151A-24-NP	151H-24-SS	151A-24-SS

A91: 38 - 39
Key on A91: 1
A91: 5
A91: 26 - 27

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)

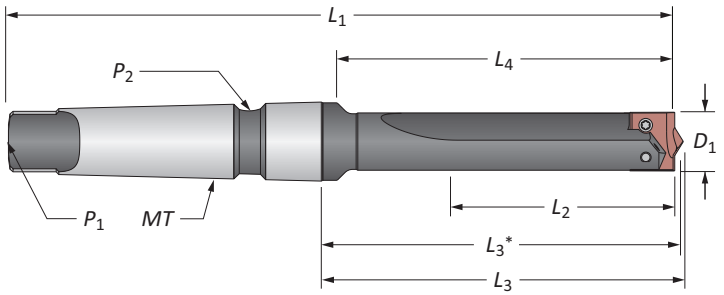
Series	Insert: Fractional Equivalent	Insert: D_1 inch	Insert: D_1 mm	Insert: T_1	Part No.: Super Cobalt	Part No.: C1 (K35)
1	–	0.7087	18.00	5/32	**451H-18-HE**	**4C11H-18-HE**
	13/16	0.8125	20.64	5/32	**451H-0026-HE**	**4C11H-0026-HE**
	–	0.8268	21.00	5/32	**451H-21-HE**	**4C11H-21-HE**
	–	0.8661	22.00	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**

A91: 38 - 39
Key on A91: 1
A91: 5
A91: 26 - 27

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 L_2	Body L_4	Body L_3	Body L_3*	Body L_1	Shank MT	Shank P_1	Shank P_2	Part No.
ⓘ	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**
ⓜ	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 L_2	Body L_4	Body L_3	Body L_3*	Body L_1	Shank MT	Shank P_1	Shank P_2	Part No.
ⓘ	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**
ⓜ	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)

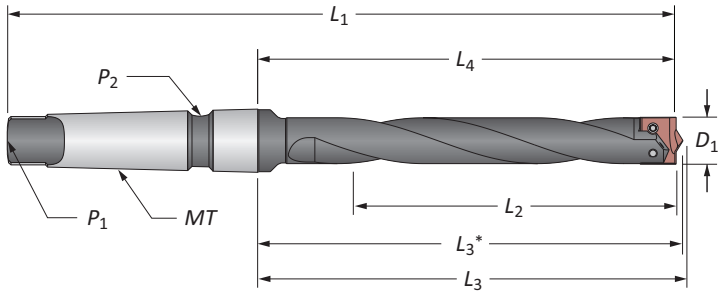
*Tightening torques are calculated with a friction coefficient of μ = 0.14 and develop 90% of ultimate yield strength

A91: 5
Key on A91: 1
A91: 24 - 25

ⓘ = Imperial (in)
ⓜ = Metric (mm)
Screws sold in multiples of 10

T-A® Structural Steel Drill Insert Holders

1 Series | Taper Shank



Helical Flute #3 Morse Taper

	Series	Length	D_1	Body L_2	Body L_4	Body L_3	Body L_3*	Body L_1	Shank MT	Shank P_1	Shank P_2	Part No.
	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
	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 L_2	Body L_4	Body L_3	Body L_3*	Body L_1	Shank MT	Shank P_1	Shank P_2	Part No.
	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
	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

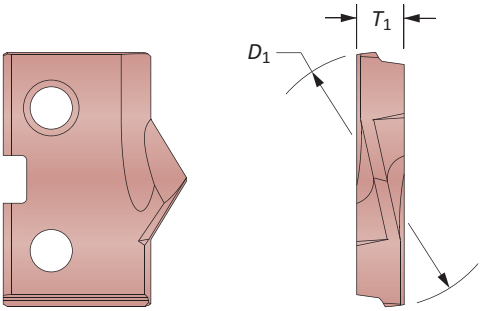
ⓘ = Imperial (in)
ⓜ = Metric (mm)
Screws sold in multiples of 10

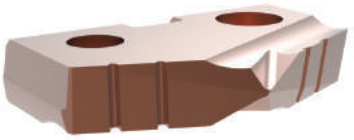
⚠ WARNING Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page A91: 35 for deep hole drilling guidelines in this section of the catalog. Visit **www.alliedmachine.com/DeepHoleGuidelines** for the most up-to-date information and procedures. Factory technical assistance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

Original T-A® Structural Steel Drill Inserts

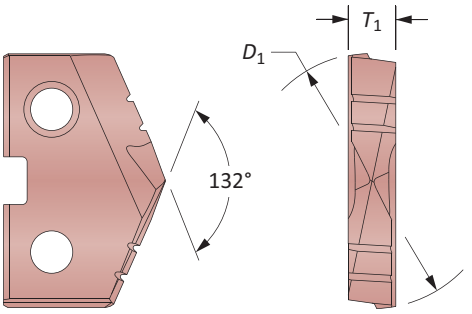
2 Series | Diameter Range: 1.0000” - 1.3750” (25.40mm - 34.93mm)

Thin Wall
For material up to 7/16” thick

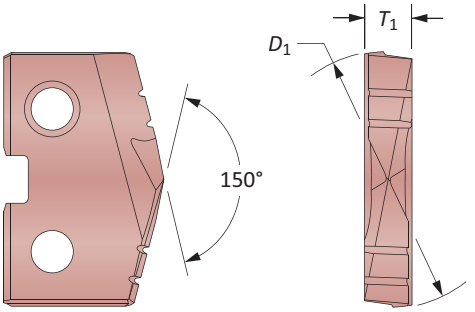




Notch Point®
For material over 7/16” thick



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



HSS Inserts – Super Cobalt

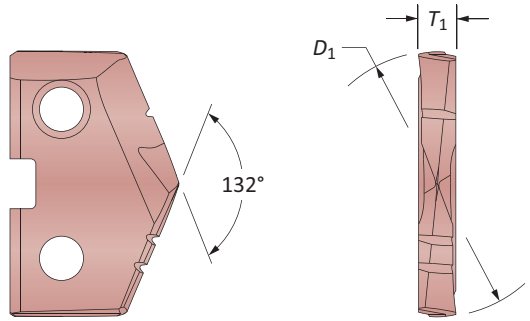
Series	Insert: Fractional Equivalent	Insert: D_1 inch	Insert: D_1 mm	Insert: T_1	Thin Wall: AM200 Part No.	Thin Wall: TiAlN Part No.	Notch Point: AM200 Part No.	Notch Point: TiAlN Part No.	150° Structural Steel: AM200 Part No.	150° Structural Steel: TiAlN Part No.
2	1	1.0000	25.40	3/16	152H-0100-TW	152A-0100-TW	152H-0100-NP	152A-0100-NP	152H-0100-SS	152A-0100-SS
	–	1.0236	26.00	3/16	152H-26-TW	152A-26-TW	152H-26-NP	152A-26-NP	152H-26-SS	152A-26-SS
	1-1/16	1.0625	26.99	3/16	152H-0102-TW	152A-0102-TW	152H-0102-NP	152A-0102-NP	152H-0102-SS	152A-0102-SS
	–	1.0630	27.00	3/16	152H-27-TW	152A-27-TW	152H-27-NP	152A-27-NP	152H-27-SS	152A-27-SS
	1-1/8	1.1250	28.58	3/16	152H-0104-TW	152A-0104-TW	152H-0104-NP	152A-0104-NP	152H-0104-SS	152A-0104-SS
2.5	1-3/16	1.1875	30.16	3/16	152H-0106-TW	152A-0106-TW	152H-0106-NP	152A-0106-NP	152H-0106-SS	152A-0106-SS
	–	1.2205	31.00	3/16	152H-31-TW	152A-31-TW	152H-31-NP	152A-31-NP	152H-31-SS	152A-31-SS
	1-1/4	1.2500	31.75	3/16	152H-0108-TW	152A-0108-TW	152H-0108-NP	152A-0108-NP	152H-0108-SS	152A-0108-SS
	–	1.2992	33.00	3/16	152H-33-TW	152A-33-TW	152H-33-NP	152A-33-NP	152H-33-SS	152A-33-SS
	1-5/16	1.3125	33.34	3/16	152H-0110-TW	152A-0110-TW	152H-0110-NP	152A-0110-NP	152H-0110-SS	152A-0110-SS
	1-3/8	1.3750	34.93	3/16	152H-0112-TW	152A-0112-TW	152H-0112-NP	152A-0112-NP	152H-0112-SS	152A-0112-SS

A91: 38 - 39
Key on A91: 1
A91: 5
A91: 30 - 31

Inserts sold in multiples of 2

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)

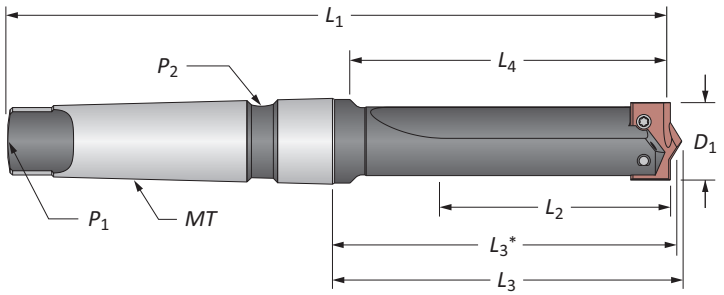
Series	Insert: Fractional Equivalent	Insert: D_1 inch	Insert: D_1 mm	Insert: T_1	Part No.: Super Cobalt	Part No.: C1 (K35)
2	1	1.0000	25.40	3/16	**452H-0100-HE**	**4C12H-0100-HE**
	–	1.0236	26.00	3/16	**452H-26-HE**	**4C12H-26-HE**
	1-1/16	1.0625	26.99	3/16	**452H-0102-HE**	**4C12H-0102-HE**
	–	1.0630	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**

A91: 38 - 39
Key on A91: 1
A91: 5
A91: 30 - 31

Inserts sold in multiples of 2

T-A® Structural Steel Drill Insert Holders

2 Series | Taper Shank



Straight Flute #4 Morse Taper

	Series	Length	D_1	Body L_2	Body L_4	Body L_3	Body L_3*	Body L_1	Shank MT	Shank P_1	Shank P_2	Part No.
ⓘ	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**
ⓜ	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)

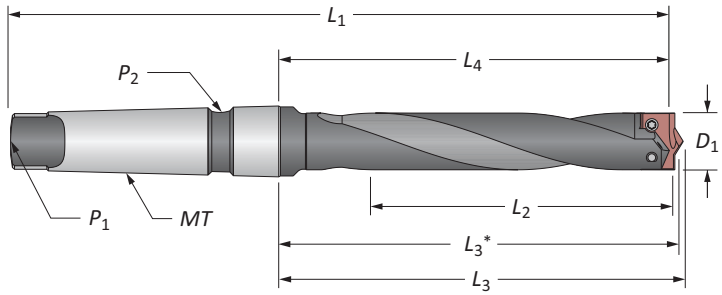
*Tightening torques are calculated with a friction coefficient of μ = 0.14 and develop 90% of ultimate yield strength

A91: 5
Key on A91: 1
A91: 28 - 29

ⓘ = Imperial (in)
ⓜ = 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 L_2	Body L_4	Body L_3	Body L_3*	Body L_1	Shank MT	Shank P_1	Shank P_2	Part No.
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 L_2	Body L_4	Body L_3	Body L_3*	Body L_1	Shank MT	Shank P_1	Shank P_2	Part No.
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	15-5/32	#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	336	#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

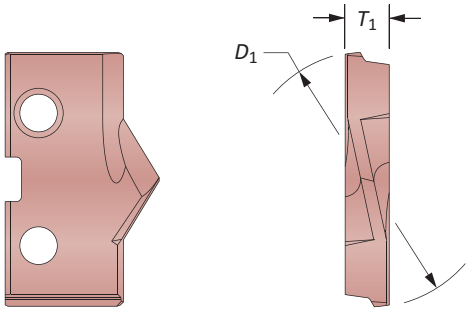
i = Imperial (in)
m = Metric (mm)
Screws sold in multiples of 10

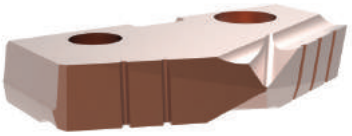
⚠ WARNING Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page A91: 35 for deep hole drilling guidelines in this section of the catalog. Visit **www.alliedmachine.com/DeepHoleGuidelines** for the most up-to-date information and procedures. Factory technical assistance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

Original T-A® Structural Steel Drill Inserts

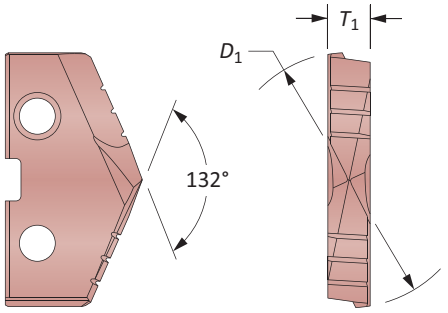
3 Series | Diameter Range: 1.4375” - 1.5625” (36.51mm - 39.69mm)

Thin Wall
For material up to 7/16” thick

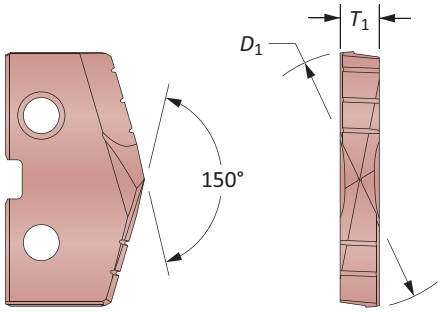




Notch Point®
For material over 7/16” thick



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



HSS Inserts – Super Cobalt

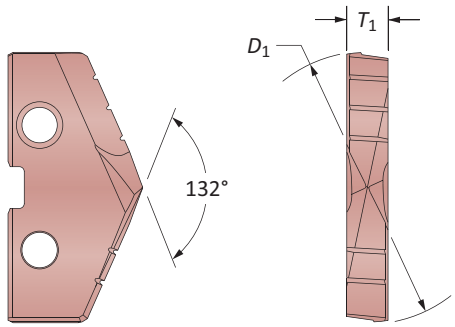
Insert				Thin Wall		Notch Point		150° Structural Steel	
Fractional Equivalent	D_1 inch	D_1 mm	T_1	AM200 Part No.	TiAlN Part No.	AM200 Part No.	TiAlN Part No.	AM200 Part No.	TiAlN Part No.
1-7/16	1.4375	36.51	1/4	**153H-0114-TW**	**153A-0114-TW**	**153H-0114-NP**	**153A-0114-NP**	**153H-0114-SS**	**153A-0114-SS**
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**

A91: 38 - 39
Key on A91: 1
A91: 5
A91: 34

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

Insert				Part No.
Fractional Equivalent	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**

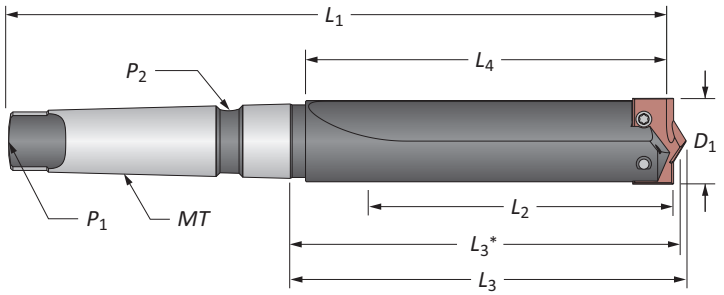
A91: 38 - 39 | A91: 5 | A91: 34

Key on A91: 1

Inserts sold in multiples of 1

T-A® Structural Steel Drill Insert Holders

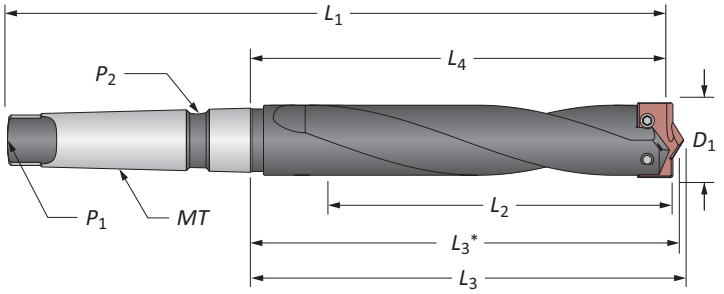
3 Series | Taper Shank



Straight Flute #4 Morse Taper

	Length	D_1	Body L_2	Body L_4	Body L_3	Body L_3*	Body L_1	Shank MT	Shank P_1	Shank P_2	Part No.
i	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

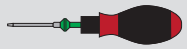


Helical Flute #4 Morse Taper

	Length	D_1	Body L_2	Body L_4	Body L_3	Body L_3*	Body L_1	Shank MT	Shank P_1	Shank P_2	Part No.
i	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**

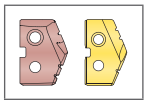
*If using Structural Steel holder with Notch Point®, GEN2 T-A, or 150° Structural Steel T-A drill insert geometry

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 μ = 0.14 and develop 90% of ultimate yield strength

A91: 5 

A91: 32 - 33 

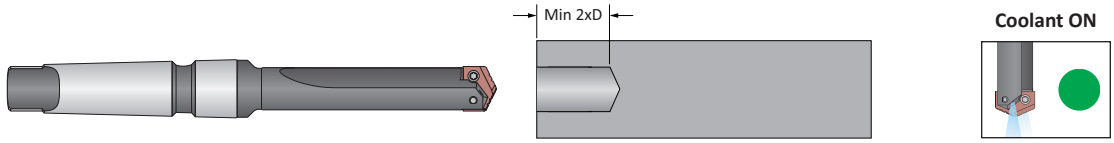
i = Imperial (in)
m = Metric (mm)
Screws sold in multiples of 10

Deep Hole Drilling Guidelines

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

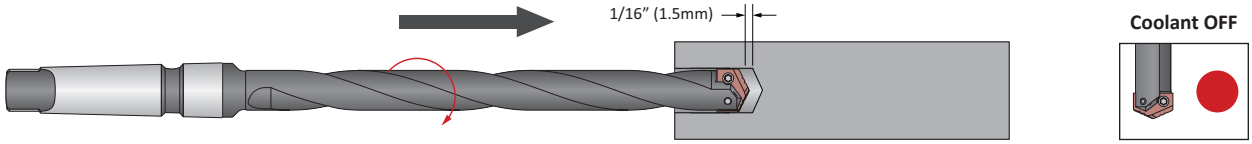
1. Pilot Hole
100 % RPM
100% IPR (mm/rev)

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.



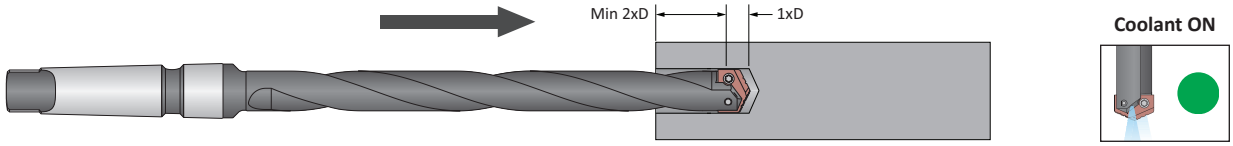
2. Feed-in
50 RPM max
12 IPM (300 mm/min)

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.



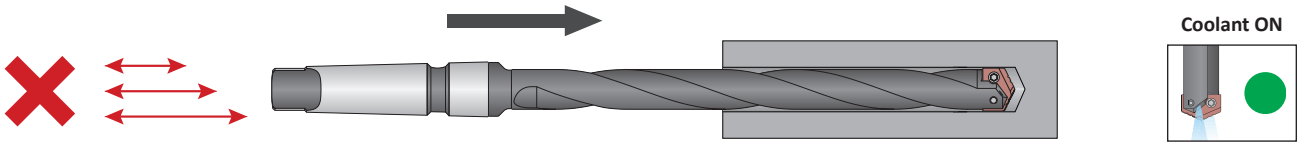
3. Deep Hole Transition Drilling
50 % RPM
75% IPR (mm/rev)

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.



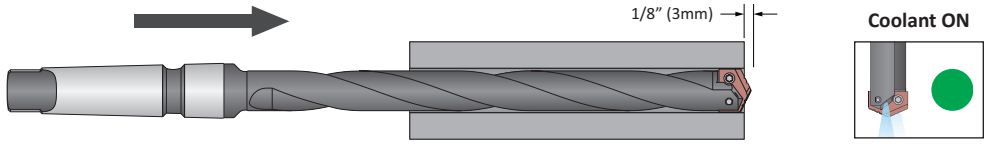
4. Deep Hole Drilling - Blind
100% RPM
100% IPR (mm/rev)

Drill to full depth at recommended speed and feed for longer drill according to Allied speed and feed charts.
No peck cycle recommended.



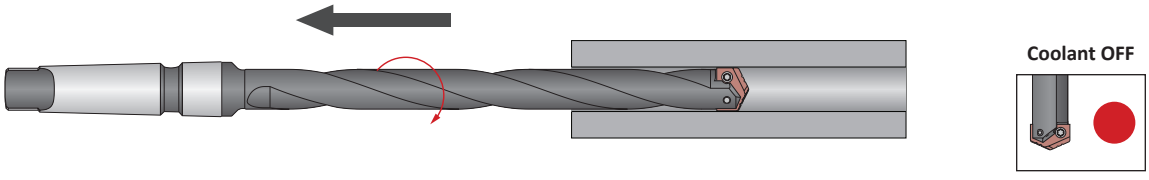
5. Deep Hole Drilling - at Breakout
50% RPM
75% IPR (mm/rev)

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.

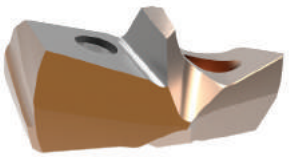


⚠ WARNING **Tool failure can cause serious injury. To prevent:**
- When using holders without support bushing, use a short T-A® holder to establish an initial hole that is a minimum of 2 diameters deep.
- Do not rotate tool holders more than 50 RPM unless it is engaged with the workpiece or fixture.

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



Imperial (inch)

ISO	Material	Speed (SFM) - Mist Coolant		Feed Rate (IPR) by Diameter			
		Hardness (BHN)	 AM300 Speed	12 series 0.4724 - 0.5117	14 series 0.5512 - 0.5905	15 series 0.5906 - 0.6298	16 series 0.6299 - 0.6692
P	**Structural Steel** A36, A285, A516, A572, etc.	100 - 150	350	0.008	0.010	0.010	0.012
		150 - 250	300	0.007	0.009	0.009	0.010
		250 - 350	260	0.006	0.008	0.008	0.009

Metric (mm)

ISO	Material	Speed (M/mm) - Mist Coolant		Feed Rate (mm/rev) by Diameter			
		Hardness (BHN)	 AM300 Speed	12 series 12.00 - 12.99	14 series 14.00 - 14.99	15 series 15.00 - 15.99	16 series 16.00 - 16.99
P	**Structural Steel** A36, A285, A516, A572, etc.	100 - 150	107	0.20	0.25	0.25	0.30
		150 - 250	91	0.18	0.23	0.23	0.25
		250 - 350	79	0.15	0.20	0.20	0.23

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.

Feed Rate (IPR) by Diameter							
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	0.014	0.015	0.016	0.017	0.018	0.019	0.019
0.010	0.012	0.014	0.015	0.016	0.017	0.018	0.018
0.009	0.011	0.012	0.013	0.014	0.015	0.016	0.016

Feed Rate (mm/rev) by Diameter							
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	0.36	0.38	0.41	0.43	0.46	0.48	0.48
0.25	0.30	0.36	0.38	0.41	0.43	0.46	0.46
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

ISO	Material	Hardness (BHN)	Speed (SFM) - Mist Coolant: AM200 Speed	Speed (SFM) - Mist Coolant: TiAlN Speed	Feed Rate (IPR) by Diameter: 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
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

ISO	Material	Hardness (BHN)	Speed (SFM) - Mist Coolant: AM200 Speed	Speed (SFM) - Mist Coolant: TiAlN Speed	Feed Rate (IPR) by Diameter: 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
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

ISO	Material	Hardness (BHN)	Speed (SFM) - Mist Coolant: AM200 Speed	Feed Rate (IPR) by Diameter: 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
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)

ISO	Material	Hardness (BHN)	Speed (SFM) - Mist Coolant: AM200 Speed	Feed Rate (IPR) by Diameter: 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
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

ISO	Material	Hardness (BHN)	Speed (M/mm) - Mist Coolant: AM200 Speed	Speed (M/mm) - Mist Coolant: TiAlN Speed	Feed Rate (mm/rev) by Diameter: 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	34	0.30	0.45	0.48	0.50
		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

ISO	Material	Hardness (BHN)	Speed (M/mm) - Mist Coolant: AM200 Speed	Speed (M/mm) - Mist Coolant: TiAlN Speed	Feed Rate (mm/rev) by Diameter: 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	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	Hardness (BHN)	Speed (M/mm) - Mist Coolant: AM200 Speed	Feed Rate (mm/rev) by Diameter: 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	Hardness (BHN)	Speed (M/mm) - Mist Coolant: AM200 Speed	Feed Rate (mm/rev) by Diameter: 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.

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: _____ (Lathe / Screw machine / Machine center / etc.)

Builder: _____ (Haas, Mori Seiki, etc.)

Model #: _____

Shank Required: _____ (CAT50 / Morse taper, etc.)

Power: _____ HP/KW

Rigidity:
- ☐ Excellent
- ☐ Good
- ☐ Poor

Orientation:
- ☐ Vertical
- ☐ Horizontal

Tool Rotating:
- ☐ Yes
- ☐ No

Thrust: _____ lbs/N

Coolant Information

Coolant Delivery: _____ (Through tool / Flood)

Coolant Pressure: _____ PSI / bar

Coolant Type: _____ (Air mist, oil, synthetic, water soluble, etc.)

Coolant Volume: _____ GPM / LPM

Requested Tooling

QTY	Item Number

QTY	Item Number

ALLIED MACHINE & ENGINEERING

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Toll Free USA & Canada: (800) 321-5537
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Allied Machine & Engineering warrants to original equipment manufacturers, distributors, industrial and commercial users of its products that each new product manufactured or supplied by Allied Machine shall be free from defects in material and workmanship.

Allied Machine's obligation under this warranty is limited to furnishing without additional charge a replacement or, at its option repairing or issuing credit for any product which shall within one year from the date of sale be returned freight prepaid to the plant designated by an Allied Machine representative and which upon inspection is determined by Allied Machine to be defective in materials or workmanship.

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

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