



**ALLIED MACHINE
& ENGINEERING**

WOHLHAUPTER®

Holemaking Solutions for Today's Manufacturing



Boring



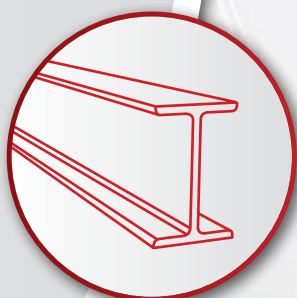
Reaming



Burnishing



Threading



Specials



Drilling

► Structural Steel Drilling Solutions

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

Structural Steel Drilling Solutions

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

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



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, T-A® Original, 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
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Applicable Industries



Structural Steel

Your safety and the safety of others is very important. This catalogue 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 catalogue, 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 catalogue. 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.

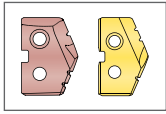
NOTE and **IMPORTANT** are also used. These are important that you read and follow but are not safety-related.

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

Structural Steel Drilling Solutions Contents

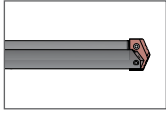
Reference Icons

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



Corresponding T-A® Inserts

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



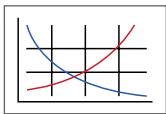
Corresponding T-A® Holders

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



Setup / Assembly Information

Detailed instructions and information regarding the corresponding part(s)



Recommended Cutting Data

Speed and feed recommendations for optimum and safe drilling

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Recommended Cutting Data

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

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



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	 T-A® Original Thin Wall	 T-A® Original Notch Point®	 T-A® Original 150° Structural Steel	 GEN2 T-A® High Efficiency
Material less than 6mm thick		☒			
Material over 6mm 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 H-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
- 0.25 mm/rev (0.010 IPR)
- 165.1 mm/min (6.5 IPM)

The tool drilled a 22.23mm (0.875") diameter hole to a 6mm(0.2362") 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
- 0.25 mm/rev (0.010 IPR)
- 111.7 mm/min (4.4 IPM)

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 £1.29 to just £0.14. This reduction resulted in a **savings of 89%** for the customer.

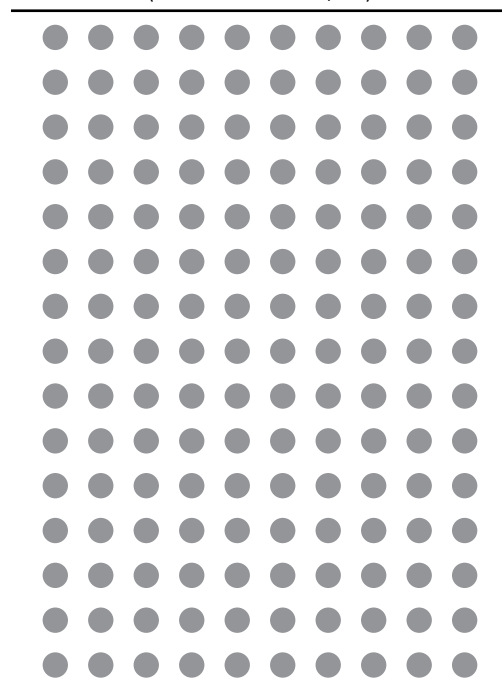


The **PROOF** is in the
NUMBERS

Competitor Insert Tool Life
(number of holes = 20)



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



Overall **SAVINGS** of
89%



PREMIUM SOLUTION



GEN3SYS® XT Structural Steel Drilling System

A
DRILLING

B
BORING

C
REAMING

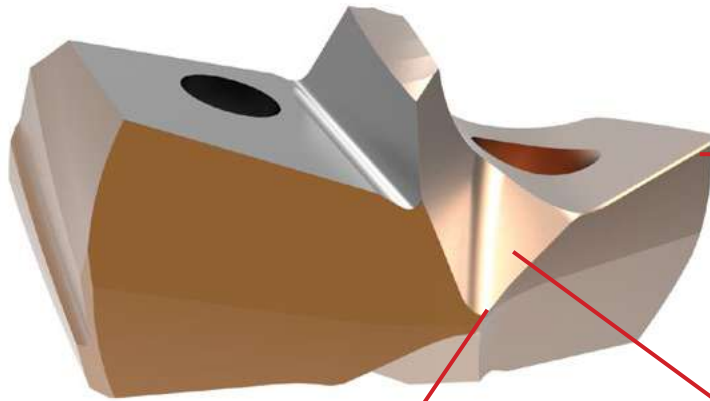
D
BURNISHING

E
THREADING

X
SPECIALS

STRUCTURAL STEEL ENHANCEMENTS

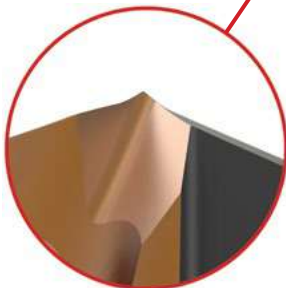
GEN3SYS®XT



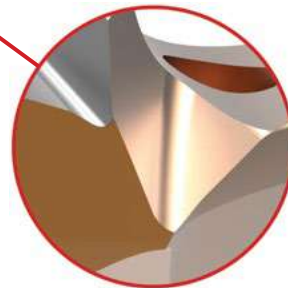
Available in AM300® Coating



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 T-A® Original & GEN2 T-A®

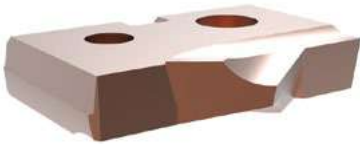
GEN2 T-A® Insert
Available in AM200® Coating



High Efficiency (-HE)

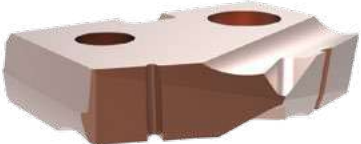
- Improves performance
- Improves tool life
- Improves chip formation in structural steel materials

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



Thin Wall (-TW)

- Designed for drilling 6mm thick or less H-Beam or structural materials
- Increases hole diameter tolerance
- Improves hole roundness
- Decreases material deflection



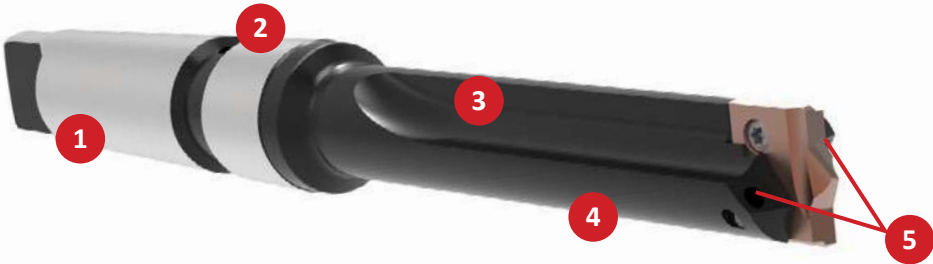
Notch Point® (-NP)

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



Structural Steel (-SS)

- Designed for drilling 6mm thick or thicker H-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



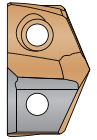
Helical Flute

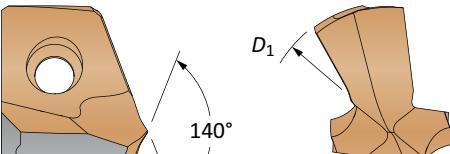


GEN3SYS® XT Drill Nomenclature

GEN3SYS®XT Drill Inserts

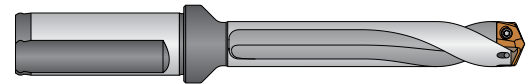
7	C2	14	P	–	0018	ST
1	2	3	4		5	6



1. XT Drill Insert 7 = XT insert	2. Insert Material C2 = K20 (C2) carbide	3. Series 12 = 12 series 17 = 17 series 24 = 24 series 14 = 14 series 18 = 18 series 26 = 26 series 15 = 15 series 20 = 20 series 29 = 29 series 16 = 16 series 22 = 22 series 32 = 32 series			4. Coating P = AM300®			
5. Diameter 18 = Metric 0102 = Inch	6. Geometry ST = Structural steel	Reference Key<table><tr><th>Symbol</th><th>Attribute</th></tr><tr><td>D_1</td><td>Insert diameter</td></tr></table> 			Symbol	Attribute	D_1	Insert diameter
Symbol	Attribute							
D_1	Insert diameter							

GEN3SYS®XT Drill Holders

ST	03	12	0	–	20	FM
1	2	3	4		5	6

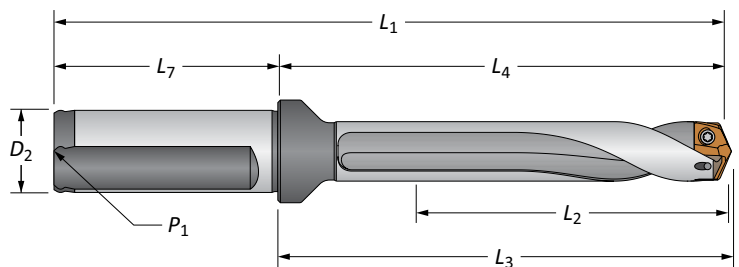


1. Holder	2. Length	3. Series	4. Body Diameter
ST = Structural steel holder	03 = 3x Diameter 05 = 5x Diameter 07 = 7x Diameter	12 = 12 series 17 = 17 series 24 = 24 series 14 = 14 series 18 = 18 series 26 = 26 series 15 = 15 series 20 = 20 series 29 = 29 series 16 = 16 series 22 = 22 series 32 = 32 series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

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

Reference Key

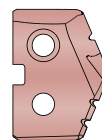
Symbol	Attribute
D_2	Shank diameter
L_1	Overall length
L_2	Drill depth
L_3	Holder reference length
L_4	Holder body length
L_7	Shank length
P_1	Rear pipe tap



T-A® Drill Nomenclature

T-A® Drill Inserts

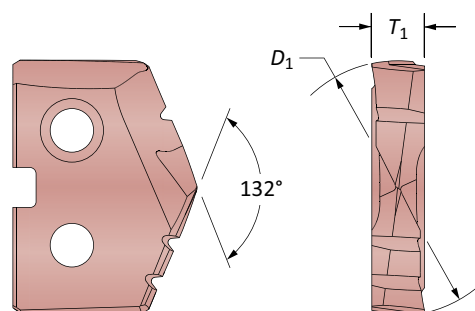
4	5	3	H	-	0115	-	HE
1	2	3	4		5		6



1. Insert	2. Material	3. Series	4. Coating	5. Diameter	6. Geometry
1 = T-A® Original 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	13 = Metric .515 = Decimal 0017 = Inch	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

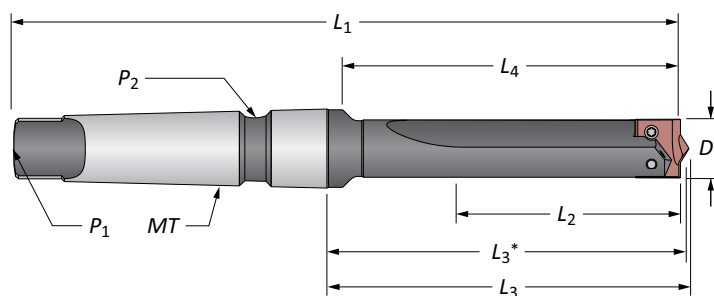


1. Holder	2. Length	3. Series	4. Flute
2 = T-A® holder	20 = Short 40 = Standard 50 = Extended 60 = Long	00 = 0 series 05 = 0.5 series 10 = 1 series 15 = 1.5 series 20 = 2 series 25 = 2.5 series 30 = 3 series	S = Straight H = Helical
5. Shank Designator	6. Shank Code	7. Minimum Insert Diameter	
003 = 3MT 004 = 4MT	IS = Imperial Morse taper structural steel	In increments of 0.4mm (1/64")	

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: 12.00mm - 12.99mm (0.4724" - 0.5117")

A

DRILLING

B

BORING

C

REAMING

D

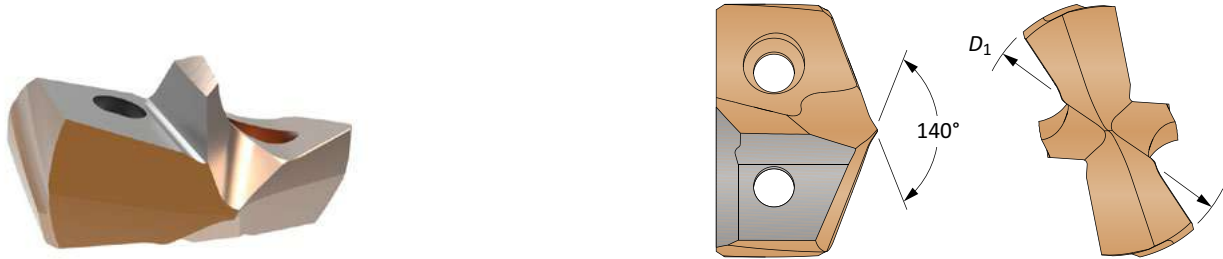
BURNISHING

E

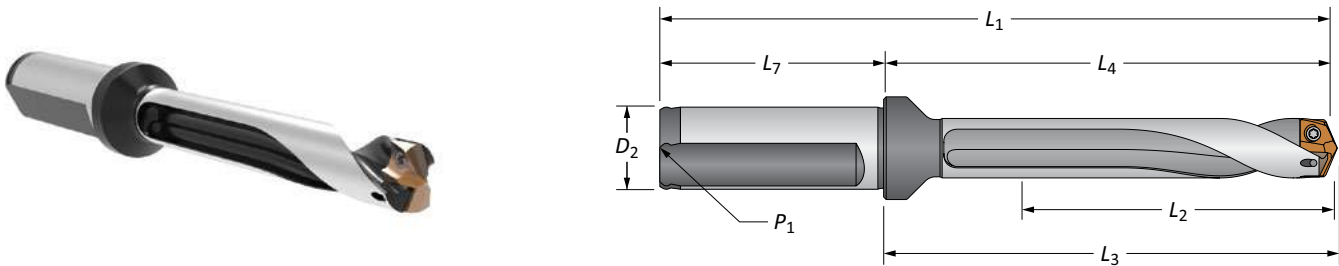
THREADING

X

SPECIALS



Insert				
Carbide Substrate	Fractional Equivalent	D ₁ mm	D ₁ inch	Structural Steel Part No.
K20 (C2)	–	12.00	0.4724	7C212P-12ST
	–	13.00	0.5118	7C212P-13ST



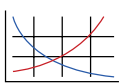
Holders										
Length		Body				Shank				Part No.
		L ₂	L ₄	L ₃	L ₁	L ₇	D ₂	P ₁	Flat	
m	3xD	39.0	66.6	68.6	116.6	50	20	3.18*	YES	ST03120-20FM
	5xD	65.0	92.6	94.8	142.6	50	20	3.18*	YES	ST05120-20FM
	7xD	91.0	118.5	120.8	168.5	50	20	3.18*	YES	ST07120-20FM
i	3xD	1-17/32	2-5/8	2-45/64	4-21/32	2-1/32	3/4	1/8	YES	ST03120-075F
	5xD	2-9/16	3-41/64	3-47/64	5-43/64	2-1/32	3/4	1/8	YES	ST05120-075F
	7xD	3-37/64	4-43/64	4-3/4	6-45/64	2-1/32	3/4	1/8	YES	ST07120-075F

*Thread to BSP and ISO 7-1

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

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

A91: 36 - 37



A91: 4



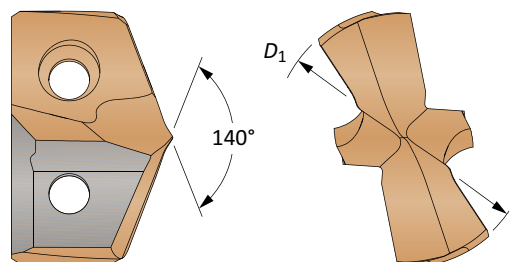
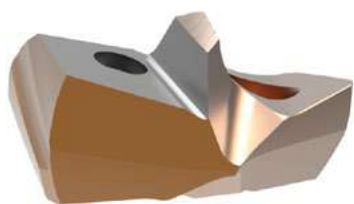
 = Metric (mm)
 = Imperial (in)

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.

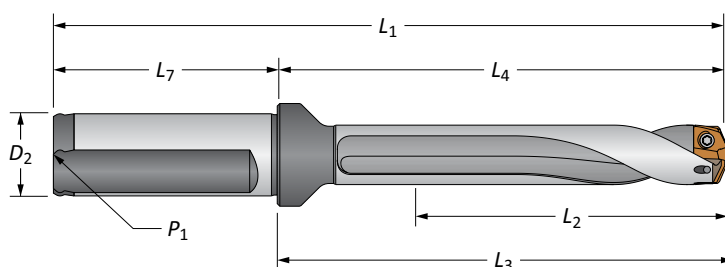
GEN3SYS® XT Structural Steel Drilling System

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



Inserts

Insert				 Structural Steel Part No.
Carbide Substrate	Fractional Equivalent	D ₁ mm	D ₁ inch	
K20 (C2)	—	14.00	0.5512	7C214P-14ST
	9/16	14.29	0.5625	7C214P-0018ST



Holders

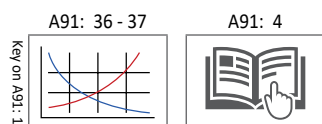
Length		Body				Shank				Part No.
		L ₂	L ₄	L ₃	L ₁	L ₇	D ₂	P ₁	Flat	
m	3xD	45.0	72.4	75.0	122.4	50	20	3.18*	YES	ST03140-20FM
	5xD	75.0	102.4	104.9	152.4	50	20	3.18*	YES	ST05140-20FM
	7xD	104.9	132.3	134.9	182.3	50	20	3.18*	YES	ST07140-20FM
i	3xD	1-25/32	2-27/32	2-61/64	4-7/8	2-1/32	3/4	1/8	YES	ST03140-075F
	5xD	2-61/64	4-1/32	4-1/8	6-1/16	2-1/32	3/4	1/8	YES	ST05140-075F
	7xD	4-9/64	5-13/64	5-5/16	7-15/64	2-1/32	3/4	1/8	YES	ST07140-075F

*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	84 N-cm (7.4 in-lbs)

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



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

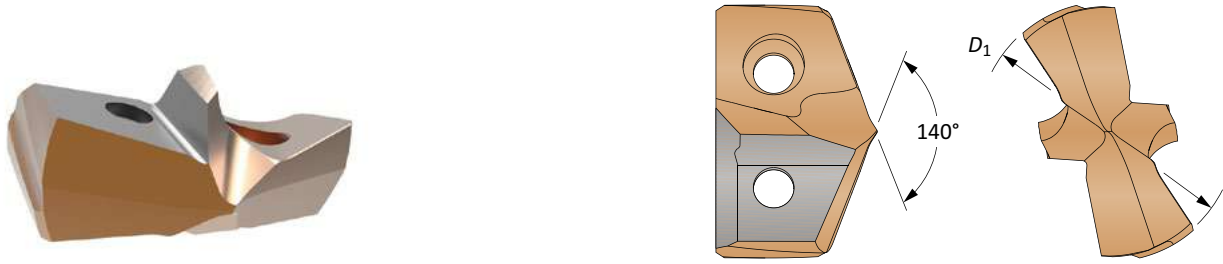
Inserts sold in multiples of 1 | Screws sold in multiples of 10

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

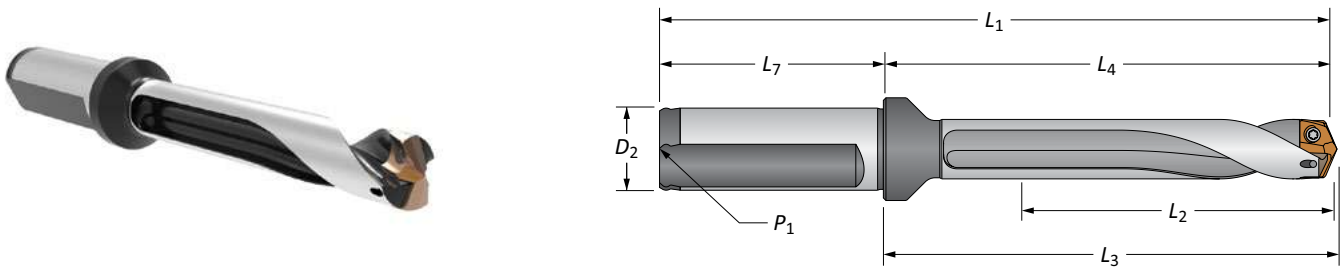
15 Series | Diameter Range: 5.00mm - 15.99mm (0.5906" - 0.6298")

A
DRILLING



Inserts

Insert				
Carbide Substrate	Fractional Equivalent	D ₁ mm	D ₁ inch	Structural Steel Part No.
K20 (C2)	-	15.00	0.5906	7C215P-15ST
K20 (C2)	5/8	15.88	0.6250	7C215P-0020ST



Holders

		Body				Shank				Part No.
Length		L ₂	L ₄	L ₃	L ₁	L ₇	D ₂	P ₁	Flat	
	3xD	48.0	75.1	77.6	125.1	50	20	3.18*	YES	ST03150-20FM
	5xD	80.0	107.0	109.6	157.0	50	20	3.18*	YES	ST05150-20FM
	7xD	111.9	139.0	141.6	189.0	50	20	3.18*	YES	ST07150-20FM
	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

*Thread to BSP and ISO 7-1

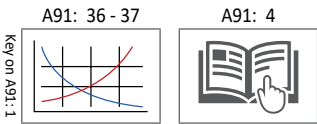
D
BURNISHING

Connection Accessories

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

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

F
THREADING



 = Metric (mm)
 = Imperial (in)

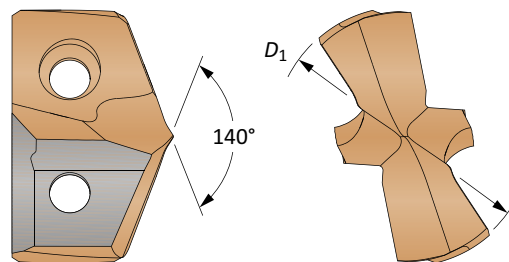
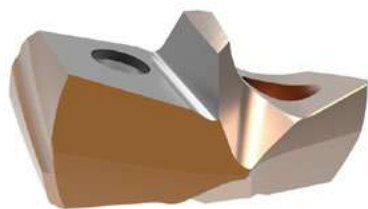
Inserts sold in multiples of 1 | Screws sold in multiples of 10

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.

X
SPECIALS

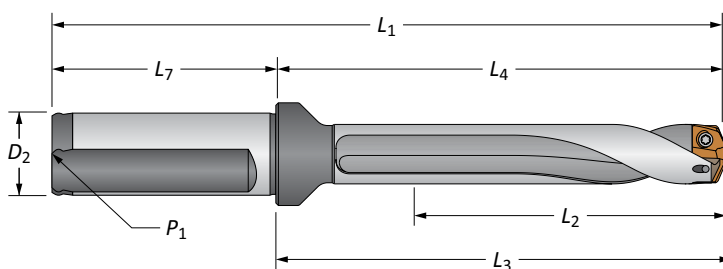
GEN3SYS® XT Structural Steel Drilling System

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



Inserts

Insert				 Structural Steel Part No.
Carbide Substrate	Fractional Equivalent	D ₁ mm	D ₁ inch	
K20 (C2)	–	16.00	0.6299	7C216P-16ST



Holders

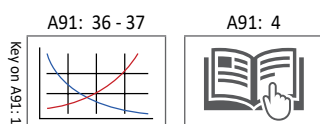
Length		Body				Shank				Part No.
		L ₂	L ₄	L ₃	L ₁	L ₇	D ₂	P ₁	Flat	
m	3xD	51.0	81.3	84.2	131.3	50	20	3.18*	YES	ST03160-20FM
	5xD	84.9	115.3	118.2	165.3	50	20	3.18*	YES	ST05160-20FM
	7xD	118.9	149.3	152.2	199.3	50	20	3.18*	YES	ST07160-20FM
i	3xD	3-1/64	3-13/64	3-5/16	5-15/64	2-1/32	3/4	1/8	YES	ST03160-075F
	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

*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	175 N-cm (15.5 in-lbs)

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



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

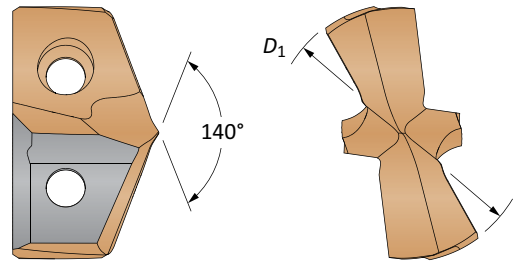
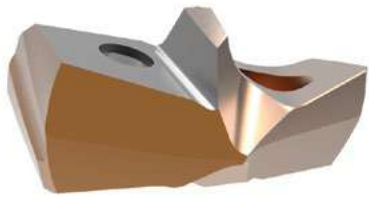
Inserts sold in multiples of 1 | Screws sold in multiples of 10

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.



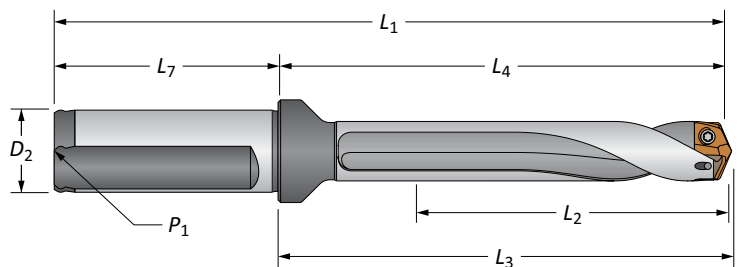
GEN3SYS® XT Structural Steel Drilling System

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



Inserts

Insert				 Structural Steel Part No.
Carbide Substrate	Fractional Equivalent	D ₁ mm	D ₁ inch	
K20 (C2)	-	17.00	0.6693	7C217P-17ST
	11/16	17.46	0.6875	7C217P-0022ST

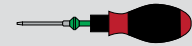


Holders

		Body				Shank				Part No.
	Length	L ₂	L ₄	L ₃	L ₁	L ₇	D ₂	P ₁	Flat	
m	3xD	54.0	84.1	87.0	134.1	50	20	3.18*	YES	ST03170-20FM
	5xD	89.9	120.0	122.9	170.0	50	20	3.18*	YES	ST05170-20FM
	7xD	125.9	156.0	158.9	206.0	50	20	3.18*	YES	ST07170-20FM
i	3xD	2-1/8	3-5/16	3-27/64	5-11/32	2-1/32	3/4	1/8	YES	ST03170-075F
	5xD	3-35/64	4-23/32	4-27/32	6-3/4	2-1/32	3/4	1/8	YES	ST05170-075F
	7xD	4-31/32	6-9/64	6-1/4	8-11/64	2-1/32	3/4	1/8	YES	ST07170-075F

*Thread to BSP and ISO 7-1

Connection Accessories

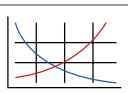
 Insert Screws	 Nylon Locking Screws	 Insert Driver	 Preset Torque Hand Driver	 Replacement Tips	Admissible Tightening Torque*
72567-IP8-1	72567N-IP8-1	8IP-8	8IP-8TL	8IP-8B	175 N-cm (15.5 in-lbs)

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

A91: 36 - 37

A91: 4

Key on A91: 1



m = Metric (mm)

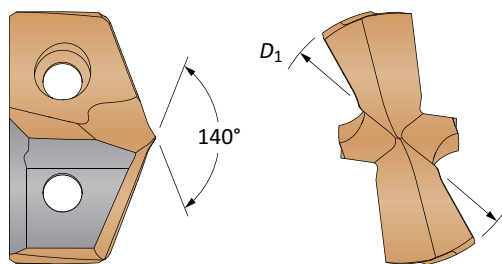
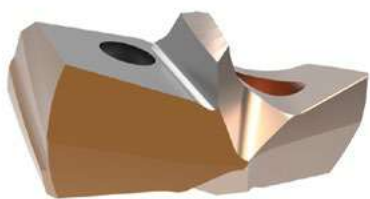
i = Imperial (in)

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.

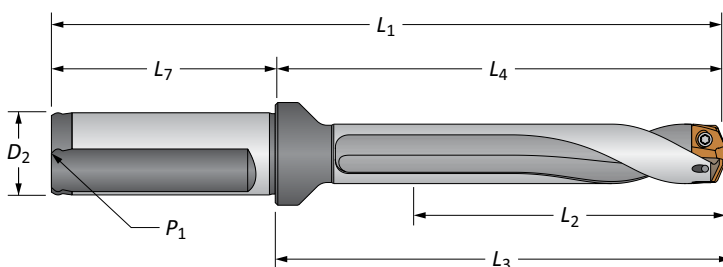
GEN3SYS® XT Structural Steel Drilling System

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



Inserts

Insert				 Structural Steel Part No.
Carbide Substrate	Fractional Equivalent	D ₁ mm	D ₁ inch	
K20 (C2)	–	18.00	0.7087	7C218P-18ST
	–	19.00	0.7480	7C218P-19ST



Holders

Length		Body				Shank				Part No.
		L ₂	L ₄	L ₃	L ₁	L ₇	D ₂	P ₁	Flat	
m	3xD	60.0	94.0	97.1	144.0	50	20	3.18*	YES	ST03180-20FM
	5xD	99.9	134.0	137.1	184.0	50	20	3.18*	YES	ST05180-20FM
	7xD	139.9	174.0	177.1	224.0	50	20	3.18*	YES	ST07180-20FM
i	3xD	2-3/8	3-45/64	3-53/64	5-63/64	2-9/32	1	1/8	YES	ST03180-100F
	5xD	3-15/16	5-9/32	5-25/64	7-9/16	2-9/32	1	1/8	YES	ST05180-075F
	7xD	5-33/64	6-27/32	6-31/32	9-1/8	2-9/32	1	1/8	YES	ST07180-075F

*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	305 N-cm (27.0 in-lbs)

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



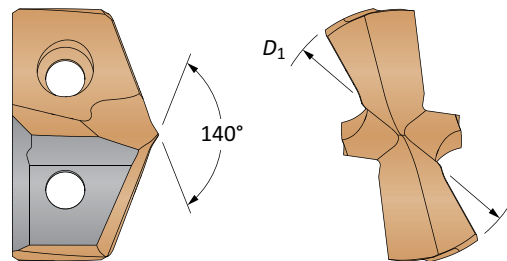
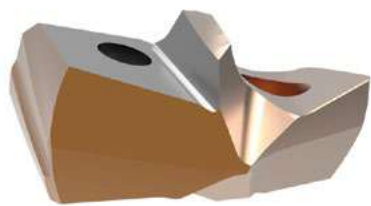
m = Metric (mm)
i = Imperial (in)

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

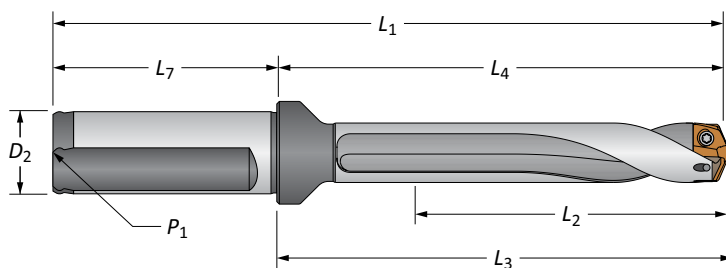
NOTICE: Structural Steel GEN3SYS®XT holders are specifically designed to be used only with ST geometry inserts. Using other GEN3SYS®XT or XT Pro insert geometries in these holders could lead to chip packing and tool failure. Contact Application Engineering for questions regarding proper use of tools.

**GEN3SYS® XT Structural Steel Drilling System**

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

**Inserts**

Insert				 Structural Steel Part No.
Carbide Substrate	Fractional Equivalent	D ₁ mm	D ₁ inch	
K20 (C2)	–	20.00	0.7874	7C220P-20ST
	13/16	20.64	0.8125	7C220P-0026ST
	–	21.00	0.8268	7C220P-21ST
	55/64	21.83	0.8594	7C220P-0026ST

**Holders**

		Body				Shank				Part No.
Length		L ₂	L ₄	L ₃	L ₁	L ₇	D ₂	P ₁	Flat	
	3xD	66.0	100.1	103.3	156.1	56	25	3.18*	YES	ST03200-25FM
	5xD	110.0	144.1	147.2	200.1	56	25	3.18*	YES	ST05200-25FM
	7xD	153.9	188.1	191.2	244.1	56	25	3.18*	YES	ST07200-25FM
	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

*Thread to BSP and ISO 7-1

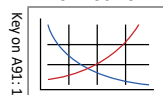
Connection Accessories

 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	

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

A91: 36 - 37

A91: 4

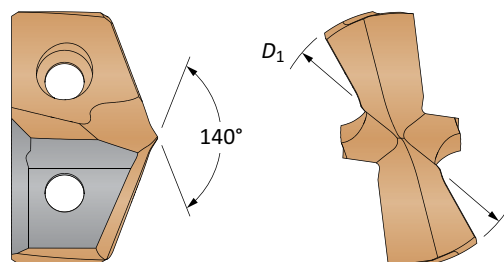
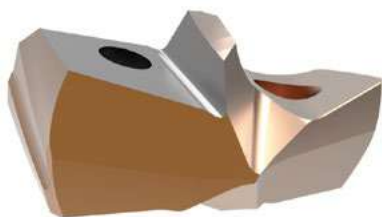

 = Metric (mm)
 = Imperial (in)

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.

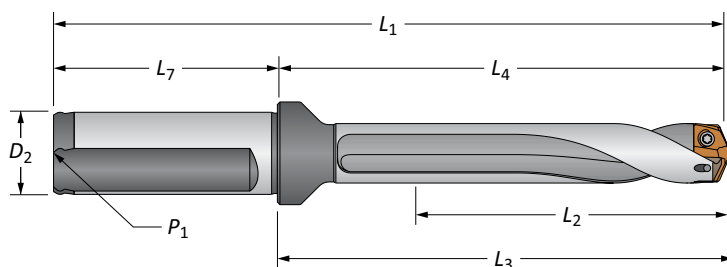
GEN3SYS® XT Structural Steel Drilling System

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



Inserts

Insert				 Structural Steel Part No.
Carbide Substrate	Fractional Equivalent	D ₁ mm	D ₁ inch	
K20 (C2)	–	22.00	0.8661	7C222P-22ST
	7/8	22.23	0.8750	7C222P-0028ST
	–	23.00	0.9055	7C222P-23ST
	15/16	23.81	0.9375	7C222P-0030ST

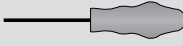


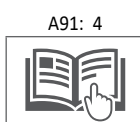
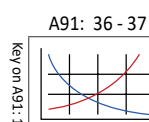
Holders

		Body				Shank				Part No.
	Length	L ₂	L ₄	L ₃	L ₁	L ₇	D ₂	P ₁	Flat	
M	3xD	72.0	105.3	108.7	161.3	56	25	3.18*	YES	ST03220-25FM
	3xD	72.0	105.3	108.7	161.3	56	25	3.18*	YES	ST03225-25FM**
	5xD	119.9	153.3	156.7	209.3	56	25	3.18*	YES	ST05220-25FM
	5xD	119.9	153.3	156.7	209.3	56	25	3.18*	YES	ST05225-25FM**
	7xD	167.9	201.3	204.7	257.3	56	25	3.18*	YES	ST07220-25FM
	7xD	167.9	201.3	204.7	257.3	56	25	3.18*	YES	ST07225-25FM**
I	3xD	2-53/64	4-9/64	4-9/32	6-27/64	2-9/32	1	1/8	YES	ST03220-100F
	3xD	2-53/64	4-9/64	4-9/32	6-27/64	2-9/32	1	1/8	YES	ST03225-100F**
	5xD	4-23/32	6-1/32	6-11/64	8-5/16	2-9/32	1	1/8	YES	ST05220-100F
	5xD	4-23/32	6-1/32	6-11/64	8-5/16	2-9/32	1	1/8	YES	ST05225-100F**
	7xD	6-39/64	7-59/64	8-1/16	10-13/64	2-9/32	1	1/8	YES	ST07220-100F
	7xD	6-39/64	7-59/64	8-1/16	10-13/64	2-9/32	1	1/8	YES	ST07225-100F**

*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	

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

M = Metric (mm)

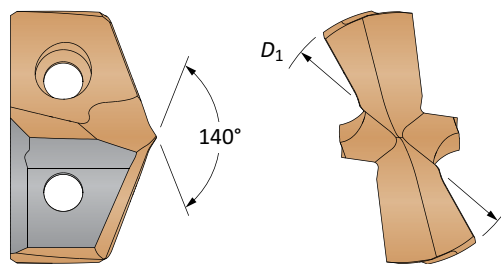
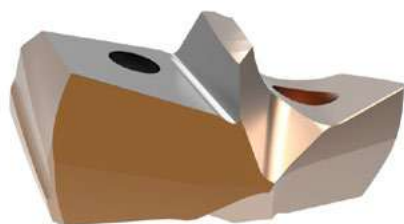
I = Imperial (in)

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.

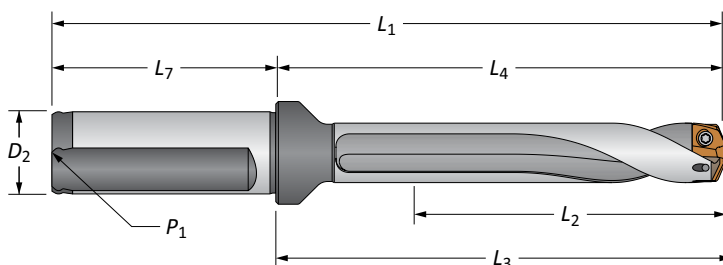
GEN3SYS® XT Structural Steel Drilling System

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



Inserts

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

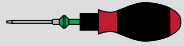


Holders

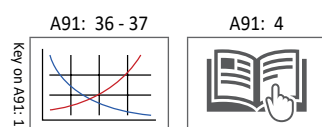
		Body				Shank				Part No.
Length		L ₂	L ₄	L ₃	L ₁	L ₇	D ₂	P ₁	Flat	
	3xD	78.0	113.8	117.3	169.8	56	25	3.18*	YES	ST03240-25FM
	5xD	129.9	165.8	169.2	221.8	56	25	3.18*	YES	ST05240-25FM
	7xD	181.9	217.8	221.2	273.8	56	25	3.18*	YES	ST07240-25FM
	3xD	3-5/64	4-31/64	4-5/8	6-49/64	2-9/32	1	1/8	YES	ST03240-100F
	5xD	5-1/8	6-17/32	6-21/32	8-13/16	2-9/32	1	1/8	YES	ST05240-100F
	7xD	7-11/64	8-37/64	8-45/64	10-55/64	2-9/32	1	1/8	YES	ST07240-100F

*Thread to BSP and ISO 7-1

Connection Accessories

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

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



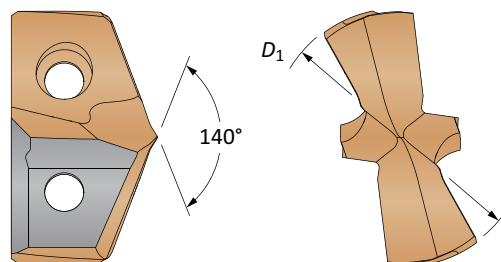
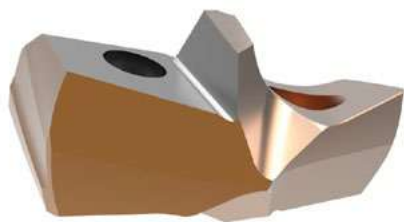
 = Metric (mm)
 = Imperial (in)

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.

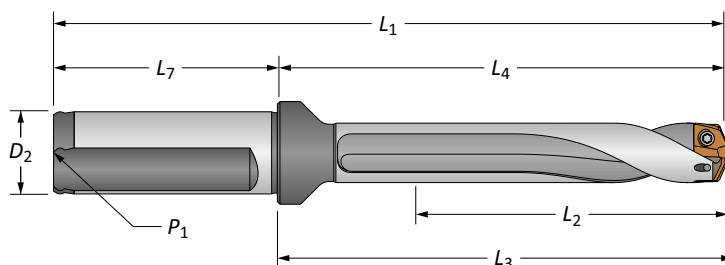
GEN3SYS® XT Structural Steel Drilling System

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



Inserts

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



Holders

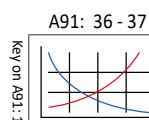
Length		Body				Shank				Part No.
		L ₂	L ₄	L ₃	L ₁	L ₇	D ₂	P ₁	Flat	
m	3xD	87.0	128.1	131.4	188.1	60	32	6.35*	YES	ST03260-32FM
	5xD	145.0	186.1	189.4	246.1	60	32	6.35*	YES	ST05260-32FM
	7xD	202.9	244.0	247.4	304.0	60	32	6.35*	YES	ST07260-32FM
i	3xD	3-27/64	5-1/16	5-3/16	7-11/32	2-9/32	1-1/4	1/4	YES	ST03260-125F
	5xD	5-23/32	7-11/32	7-31/64	9-5/8	2-9/32	1-1/4	1/4	YES	ST05260-125F
	7xD	7-63/64	9-5/8	9-49/64	11-29/32	2-9/32	1-1/4	1/4	YES	ST07260-125F

*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	690 N-cm (61.0 in-lbs)

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



A91: 4



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

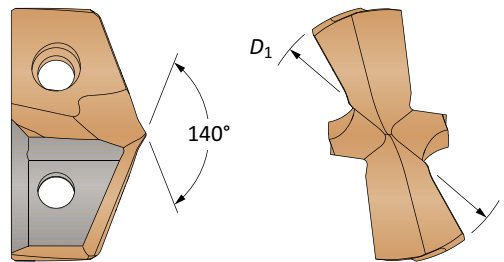
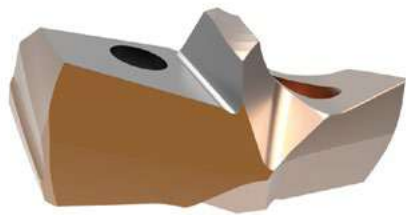
Inserts sold in multiples of 1 | Screws sold in multiples of 10

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: 29.00mm - 31.99mm (1.1417" - 1.2597")

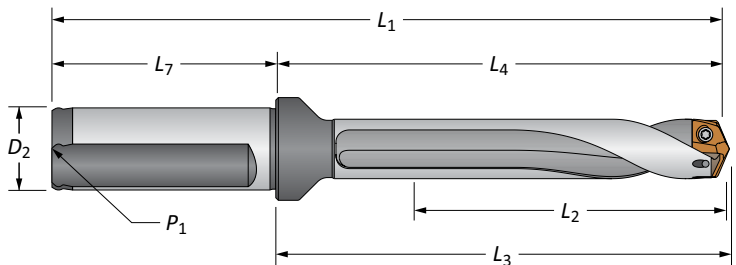
A
DRILLING



Inserts

Insert				
Carbide Substrate	Fractional Equivalent	D ₁ mm	D ₁ inch	Structural Steel Part No.
K20 (C2)	–	29.00	1.1417	7C229P-29ST
	–	30.00	1.1811	7C229P-30ST
	1-3/16	30.16	1.1875	7C229P-0106ST
	–	30.50	1.2007	7C229P-30.5ST
	–	31.00	1.2205	7C229P-31ST
	1-1/4	31.75	1.2500	7C229P-0108ST

C
REAMING



Holders

Length		Body				Shank				Part No.
		L ₂	L ₄	L ₃	L ₁	L ₇	D ₂	P ₁	Flat	
	3xD	96.0	136.2	139.7	196.2	60	32	6.35*	YES	ST03290-32FM
	5xD	159.9	200.1	203.7	260.1	60	32	6.35*	YES	ST05290-32FM
	7xD	223.9	264.1	267.7	324.1	60	32	6.35*	YES	ST07290-32FM
	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

*Thread to BSP and ISO 7-1

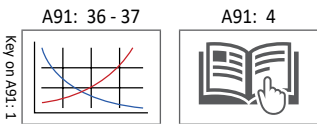
E
THREADING

Connection Accessories

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

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

X
SPECIALS



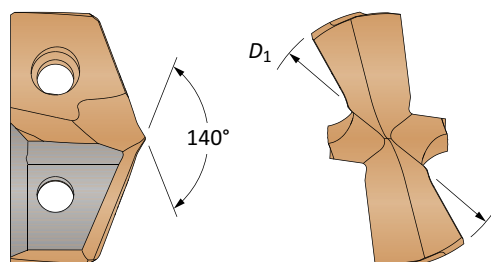
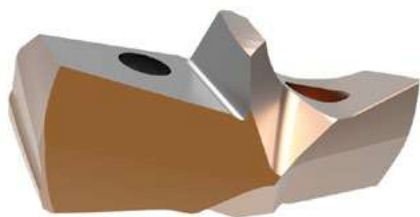
 = Metric (mm)
 = Imperial (in)

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.

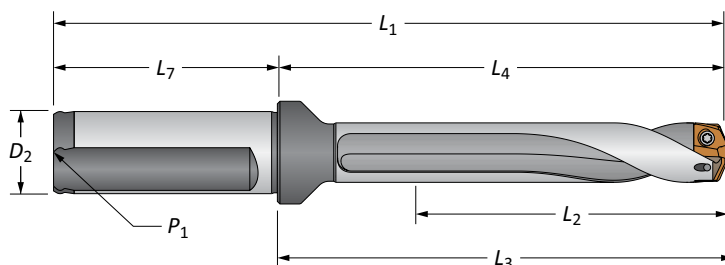
GEN3SYS® XT Structural Steel Drilling System

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



Inserts

Insert				 Structural Steel Part No.
Carbide Substrate	Fractional Equivalent	D ₁ mm	D ₁ inch	
K20 (C2)	–	32.00	1.2598	7C232P-32ST
	–	33.00	1.2992	7C232P-33ST
	1-5/16	33.34	1.3125	7C232P-0110ST
	–	34.00	1.3386	7C232P-34ST
	1-3/8	34.93	1.3750	7C232P-0112ST



Holders

	Length	Body				Shank				Part No.
		L ₂	L ₄	L ₃	L ₁	L ₇	D ₂	P ₁	Flat	
m	3xD	105.0	157.7	162.0	217.7	60	32	6.35*	YES	ST03320-32FM
	3xD	105.0	157.7	162.0	227.7	70	40	6.35*	YES	ST03320-40FM
	5xD	175.0	227.7	232.0	287.7	60	32	6.35*	YES	ST05320-32FM
	5xD	175.0	227.7	232.0	297.7	70	40	6.35*	YES	ST05320-40FM
	7xD	244.9	297.7	302.2	357.7	60	32	6.35*	YES	ST07320-32FM
	7xD	244.9	297.7	302.2	367.7	70	40	6.35*	YES	ST07320-40FM
i	3xD	4-9/64	6-7/32	6-3/8	8-29/32	2-11/16	1-1/2	1/4	YES	ST03320-150F
	5xD	6-59/64	8-31/32	9-1/8	11-21/32	2-11/16	1-1/2	1/4	YES	ST05320-150F
	7xD	9-41/64	11-23/32	11-57/64	14-13/32	2-11/16	1-1/2	1/4	YES	ST07320-150F

*Thread to BSP and ISO 7-1

Connection Accessories

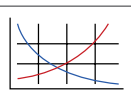
 Insert Screws	 Nylon Locking Screws	 Insert Driver	 Preset Torque Hand Driver	 Replacement Tips	Admissible Tightening Torque*
7495-IP15-1	7495N-IP15-1	8IP-15	8IP-15TL	8IP-15B	

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

A91: 36 - 37

A91: 4

Key on A91: 1



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

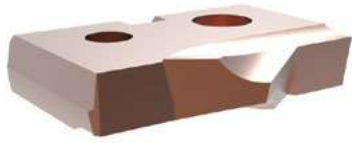
Inserts sold in multiples of 1 | Screws sold in multiples of 10

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.



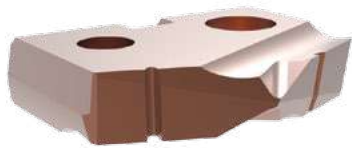
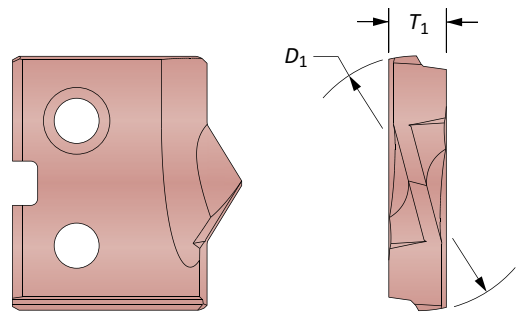
T-A® Original Structural Steel Drill Inserts

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



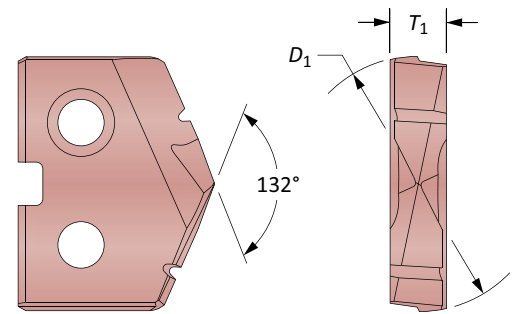
Thin Wall

For material up to 6mm thick



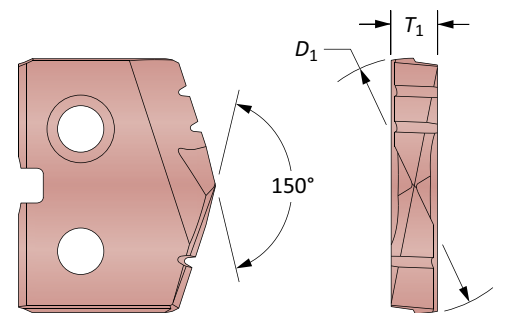
Notch Point®

For material over 6mm thick



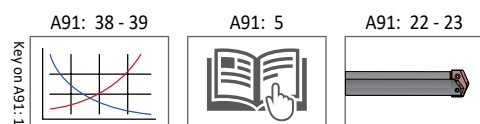
150° Structural Steel

For material over 6mm thick and for reduced exit burr



HSS Inserts – Super Cobalt

Series	Insert				Thin Wall		Notch Point		150° Structural Steel	
	Fractional Equivalent	D ₁ mm	D ₁ inch	T ₁						
0	–	14.00	0.5512	3.18						
	9/16	14.29	0.5625	3.18						
	5/8	15.88	0.6250	3.18						
0.5	–	16.00	0.6299	3.18						
	11/16	17.46	0.6875	3.18						

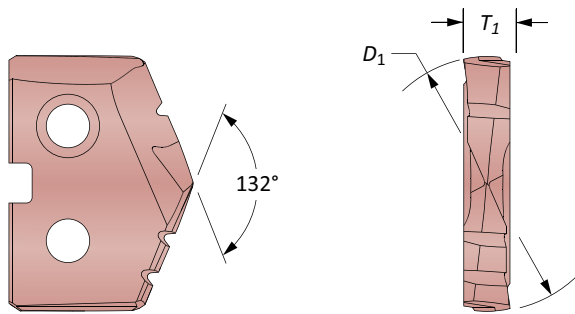


Inserts sold in multiples of 2



GEN2 T-A® Structural Steel Drill Inserts

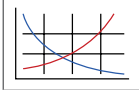
0 Series | Diameter Range: 14.00mm - 17.46mm (0.5512" - 0.6875")



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

Series	Fractional Equivalent	Insert			Part No.	
		D ₁ mm	D ₁ inch	T ₁	 Super Cobalt	 C1 (K35)
0	–	14.00	0.5512	3.18	450H-14-HE	4C10H-14-HE
	9/16	14.29	0.5625	3.18	450H-0018-HE	4C10H-0018-HE
0.5	5/8	15.88	0.6250	3.18	450H-0020-HE	4C10H-0020-HE
	–	16.00	0.6299	3.18	450H-16-HE	4C10H-16-HE
	11/16	17.46	0.6875	3.18	450H-0022-HE	4C10H-0022-HE

A91: 38 - 39



A91: 5



A91: 22 - 23

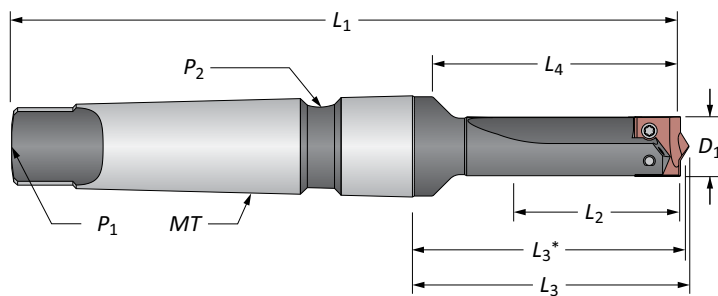


Key on A91: 1

Inserts sold in multiples of 2

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

0 Series | Taper Shank

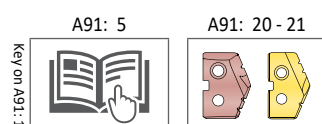
**Straight Flute #3 Morse Taper**

				Body					Shank			
Series		Length	D_1	L_2	L_4	L_3	L_3^*	L_1	MT	P_1	P_2	Part No.
m	0	Short	14	35	56	64.7	63.1	154	#3	TTC	TSC	22000S-003IS036
		Short	16	35	56	64.7	63.1	154	#3	TTC	TSC	22000S-003IS040
		Short	17.46	35	56	64.7	63.1	154	#3	TTC	TSC	22000S-003IS044
i	0	Short	9/16	1-3/8	2-3/16	2-35/64	2-31/64	6-1/16	#3	TTC	TSC	22000S-003IS036
		Short	5/8	1-3/8	2-3/16	2-35/64	2-31/64	6-1/16	#3	TTC	TSC	22005S-003IS040
		Short	11/16	1-3/8	2-3/16	2-35/64	2-31/64	6-1/16	#3	TTC	TSC	22005S-003IS044

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

Connection Accessories

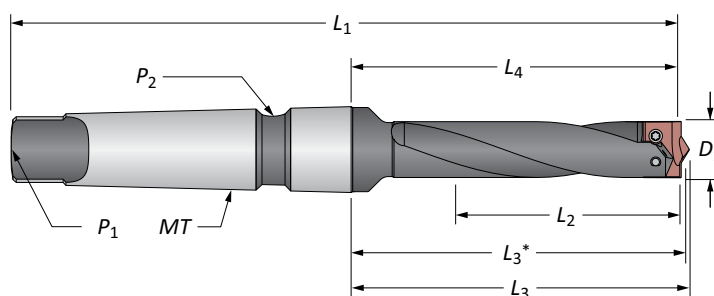
Series	Insert Screws	Nylon Locking Screws	Insert Driver	Preset Torque Hand Driver	Replacement Tips	Admissible Tightening Torque*
0	72556-IP8-1	72556N-IP8-1	8IP-8	8IP-8TL	8IP-8B	175 N-cm (15.5 in-lbs)
0.5	72567-IP8-1	72567N-IP8-1	8IP-8	8IP-8TL	8IP-8B	175 N-cm (15.5 in-lbs)

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

Screws sold in multiples of 10

T-A® Structural Steel Drill Insert Holders

0 Series | Taper Shank



Helical Flute #3 Morse Taper

				Body					Shank			
Series		Length	D_1	L_2	L_4	L_3	L_3^*	L_1	MT	P_1	P_2	Part No.
m	0	Standard	14	64	84	93.3	91.7	183	#3	TTC	TSC	24000H-003IS036
		Extended	14	165	240	248.8	243.7	338	#3	TTC	TSC	⚠ 25000H-003IS036
	0.5	Standard	16	64	84	93.3	91.7	183	#3	TTC	TSC	24005H-003IS040
		Standard	17.46	64	84	93.3	91.7	183	#3	TTC	TSC	24005H-003IS044
		Extended	17.46	165	240	248.8	243.7	338	#3	TTC	TSC	⚠ 25005H-003IS044
i	0	Standard	9/16	2-1/2	3-5/16	3-43/64	3-39/64	7-3/16	#3	TTC	TSC	24000H-003IS036
		Extended	9/16	6-1/2	9-7/16	9-51/64	9-19/32	13-5/64	#3	TTC	TSC	⚠ 25000H-003IS036
	0.5	Standard	5/8	2-1/2	3-5/16	3-43/64	3-39/64	7-3/16	#3	TTC	TSC	24005H-003IS040
		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
			Extended	11/16	6-1/2	9-7/16	9-51/64	9-19/32	13-5/64	#3	TTC	TSC

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

m = Metric (mm)

i = Imperial (in)

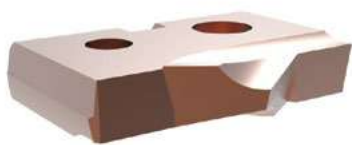
Screws sold in multiples of 10

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



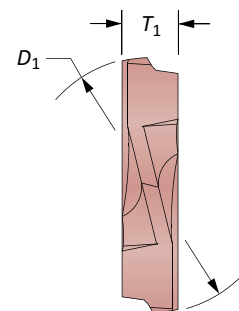
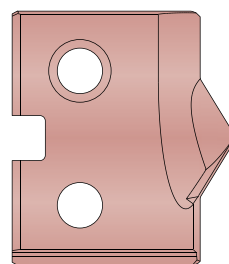
T-A® Original Structural Steel Drill Inserts

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



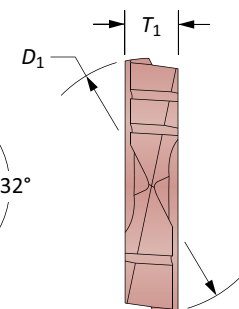
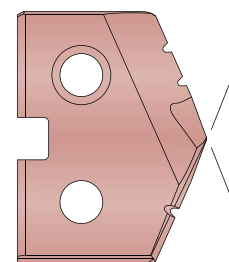
Thin Wall

For material up to 6mm thick



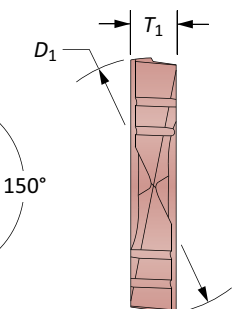
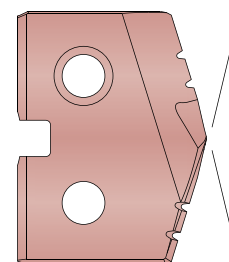
Notch Point®

For material over 6mm thick



150° Structural Steel

For material over 6mm thick and for reduced exit burr



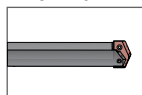
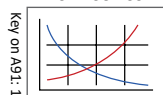
HSS Inserts – Super Cobalt

Series	Insert				Thin Wall		Notch Point		150° Structural Steel	
	Fractional Equivalent	D ₁ mm	D ₁ inch	T ₁						
1	–	18.00	0.7087	3.97	151H-18-TW	151A-18-TW	151H-18-NP	151A-18-NP	151H-18-SS	151A-18-SS
	13/16	20.64	0.8125	3.97	151H-0026-TW	151A-0026-TW	151H-0026-NP	151A-0026-NP	151H-0026-SS	151A-0026-SS
	–	21.00	0.8268	3.97	151H-21-TW	151A-21-TW	151H-21-NP	151A-21-NP	151H-21-SS	151A-21-SS
	–	22.00	0.8661	3.97	151H-22-TW	151A-22-TW	151H-22-NP	151A-22-NP	151H-22-SS	151A-22-SS
1.5	7/8	22.23	0.8750	3.97	151H-0028-TW	151A-0028-TW	151H-0028-NP	151A-0028-NP	151H-0028-SS	151A-0028-SS
	15/16	23.81	0.9375	3.97	151H-0030-TW	151A-0030-TW	151H-0030-NP	151A-0030-NP	151H-0030-SS	151A-0030-SS
	–	24.00	0.9449	3.97	151H-24-TW	151A-24-TW	151H-24-NP	151A-24-NP	151H-24-SS	151A-24-SS

A91: 38 - 39

A91: 5

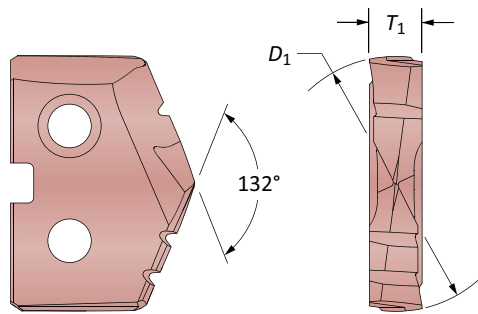
A91: 26 - 27



Inserts sold in multiples of 2

GEN2 T-A® Structural Steel Drill Inserts

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



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

Series	Fractional Equivalent	Insert			Part No.	
		D_1 mm	D_1 inch	T_1	 Super Cobalt	 C1 (K35)
1	–	18.00	0.7087	3.97	451H-18-HE	4C11H-18-HE
	13/16	20.64	0.8125	3.97	451H-0026-HE	4C11H-0026-HE
	–	21.00	0.8268	3.97	451H-21-HE	4C11H-21-HE
	–	22.00	0.8661	3.97	451H-22-HE	4C11H-22-HE
1.5	7/8	22.23	0.8750	3.97	451H-0028-HE	4C11H-0028-HE
	15/16	23.81	0.9375	3.97	451H-0030-HE	4C11H-0030-HE
	–	24.00	0.9449	3.97	451H-24-HE	4C11H-24-HE

A

DRILLING

B

BORING

C

REAMING

D

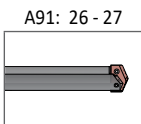
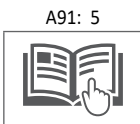
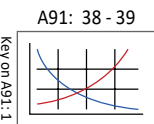
BURNISHING

E

THREADING

X

SPECIALS

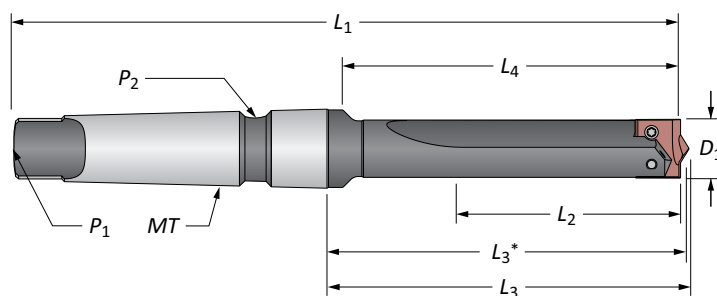


Inserts sold in multiples of 2



T-A® Structural Steel Drill Insert Holders

1 Series | Taper Shank



Straight Flute #3 Morse Taper

Series		Length	D_1	Body					Shank			Part No.
				L_2	L_4	L_3	L_3^*	L_1	MT	P_1	P_2	
m	1	Short	18	70	98	108.4	106.8	197	#3	TTC	TSC	22010S-003IS045
		Short	20.64	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
i	1	Short	18mm	2-3/4	3-7/8	4-17/64	4-13/64	7-3/4	#3	TTC	TSC	22010S-003IS045
		Short	13/16	2-3/4	3-7/8	4-17/64	4-13/64	7-3/4	#3	TTC	TSC	22010S-003IS052
	1.5	Short	7/8	2-3/4	3-7/8	4-17/64	4-13/64	7-3/4	#3	TTC	TSC	22015S-003IS056
		Short	15/16	2-3/4	3-7/8	4-17/64	4-13/64	7-3/4	#3	TTC	TSC	22015S-003IS060

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

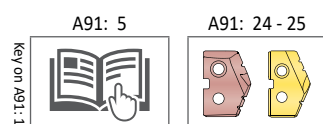
Straight Flute #4 Morse Taper

Series		Length	D ₁	Body					Shank			Part No.
				L ₂	L ₄	L ₃	L ₃ *	L ₁	MT	P ₁	P ₂	
m	1	Short	18	70	98	109.9	108.3	222	#4	TTC	TSC	22010S-004IS045
		Short	20.64	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
i	1	Short	18mm	2-3/4	3-7/8	4-21/64	4-17/64	8-3/4	#4	TTC	TSC	22010S-004IS045
		Short	13/16	2-3/4	3-7/8	4-21/64	4-17/64	8-3/4	#4	TTC	TSC	22010S-004IS052
	1.5	Short	7/8	2-3/4	3-7/8	4-21/64	4-17/64	8-3/4	#4	TTC	TSC	22015S-004IS056
		Short	15/16	2-3/4	3-7/8	4-21/64	4-17/64	8-3/4	#4	TTC	TSC	22015S-004IS060

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

Connection Accessories

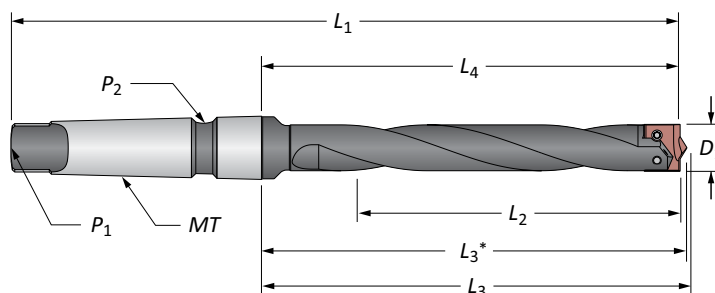
Series	Insert Screws	Nylon Locking Screws	Insert Driver	Preset Torque Hand Driver	Replacement Tips	Admissible Tightening Torque*
1	7375-IP9-1	7375N-IP9-1	8IP-9	8IP-9TL	8IP-9B	305 N-cm (27.0 in-lbs)
1.5	739-IP9-1	739N-IP9-1	8IP-9	8IP-9TL	8IP-9B	305 N-cm (27.0 in-lbs)

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

Screws sold in multiples of 10

T-A® Structural Steel Drill Insert Holders

1 Series | Taper Shank



Helical Flute #3 Morse Taper

				Body					Shank			
Series		Length	D ₁	L ₂	L ₄	L ₃	L ₃ *	L ₁	MT	P ₁	P ₂	Part No.
m	1	Standard	18	121	149	159.2	157.6	248	#3	TTC	TSC	24010H-003IS045
		Standard	20.64	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
i	1	Standard	18mm	4-3/4	5-7/8	6-17/64	6-13/64	9-3/4	#3	TTC	TSC	24010H-003IS045
		Standard	13/16	4-3/4	5-7/8	6-17/64	6-13/64	9-3/4	#3	TTC	TSC	24010H-003IS052
		Extended	18mm	6-1/2	9-11/32	9-47/64	9-1/2	13-7/32	#3	TTC	TSC	⚠ 25010H-003IS045
		Extended	13/16	6-1/2	9-11/32	9-47/64	9-1/2	13-7/32	#3	TTC	TSC	⚠ 25010H-003IS052
	1.5	Standard	7/8	4-3/4	5-7/8	6-17/64	6-13/64	9-3/4	#3	TTC	TSC	24015H-003IS056
		Standard	15/16	4-3/4	5-7/8	6-17/64	6-13/64	9-3/4	#3	TTC	TSC	24015H-003IS060
		Extended	15/16	6-1/2	9-11/32	9-47/64	9-15/32	13-7/32	#3	TTC	TSC	⚠ 25015H-003IS060

*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

				Body					Shank			
Series		Length	D ₁	L ₂	L ₄	L ₃	L ₃ *	L ₁	MT	P ₁	P ₂	Part No.
m	1	Standard	18	121	149	159.2	157.6	248	#4	TTC	TSC	24010H-004IS045
		Standard	20.64	121	149	159.2	157.6	248	#4	TTC	TSC	24010H-004IS056
		Extended	20.64	165	237	247.3	241.3	336	#4	TTC	TSC	⚠ 25010H-004IS056
		Long	20.64	165	237	247.3	241.3	336	#4	TTC	TSC	⚠ 26010H-004IS056
	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
i	1	Standard	18mm	4-3/4	5-7/8	6-21/64	6-17/64	10-3/4	#4	TTC	TSC	24010H-004IS045
		Standard	13/16	4-3/4	5-7/8	6-21/64	6-17/64	10-3/4	#4	TTC	TSC	24010H-004IS052
		Extended	13/16	6-1/2	9-9/32	9-47/64	9-43/64	14-5/32	#4	TTC	TSC	⚠ 25010H-004IS052
		Long	13/16	6-1/2	15-25/32	16-15/64	16-11/64	20-21/32	#4	TTC	TSC	⚠ 26010H-004IS052
	1.5	Standard	7/8	4-3/4	5-7/8	6-21/64	6-17/64	10-3/4	#4	TTC	TSC	24015H-004IS056
		Standard	15/16	4-3/4	5-7/8	6-21/64	6-17/64	10-3/4	#4	TTC	TSC	24015H-004IS060
		Extended	15/16	6-1/2	9-9/32	9-47/64	9-43/64	14-5/32	#4	TTC	TSC	⚠ 25015H-004IS060
		Long	15/16	6-1/2	15-13/16	16-17/64	16-13/64	20-11/16	#4	TTC	TSC	⚠ 26015H-004IS060

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

m = Metric (mm)

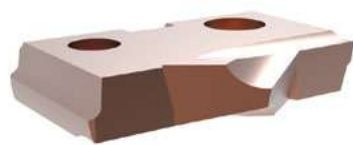
i = Imperial (in)

Screws sold in multiples of 10

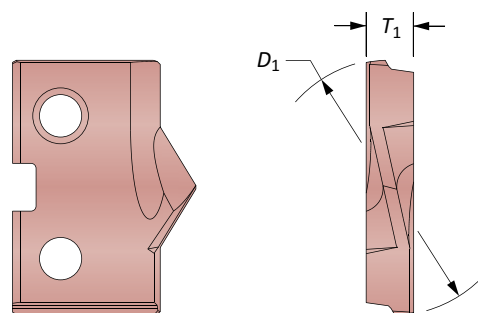
WARNING Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page A91: 35 for deep hole drilling guidelines in this section of the catalogue. Visit www.alliedmachine.com/deepholeguidelines.aspx for the most up-to-date information and procedures. Factory technical assistance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

T-A® Original Structural Steel Drill Inserts

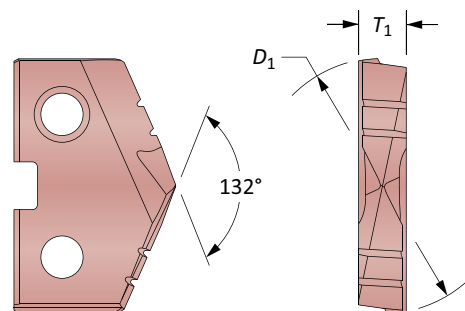
2 Series | Diameter Range: 25.40mm - 34.93mm (1.0000" - 1.3750")



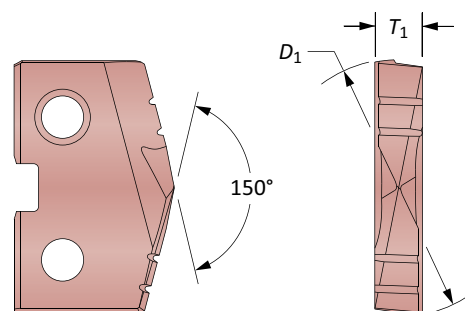
Thin Wall
For material up to 6mm thick



Notch Point®
For material over 6mm thick



150° Structural Steel
For material over 6mm thick and for reduced exit burr



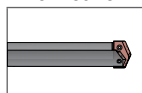
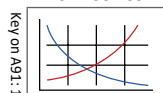
HSS Inserts – Super Cobalt

Series	Insert				Thin Wall		Notch Point		150° Structural Steel	
	Fractional Equivalent	D ₁ mm	D ₁ inch	T ₁						
2	1	25.40	1.0000	4.76	152H-0100-TW	152A-0100-TW	152H-0100-NP	152A-0100-NP	152H-0100-SS	152A-0100-SS
	–	26.00	1.0236	4.76	152H-26-TW	152A-26-TW	152H-26-NP	152A-26-NP	152H-26-SS	152A-26-SS
	1-1/16	26.99	1.0625	4.76	152H-0102-TW	152A-0102-TW	152H-0102-NP	152A-0102-NP	152H-0102-SS	152A-0102-SS
	–	27.00	1.0630	4.76	152H-27-TW	152A-27-TW	152H-27-NP	152A-27-NP	152H-27-SS	152A-27-SS
	1-1/8	28.58	1.1250	4.76	152H-0104-TW	152A-0104-TW	152H-0104-NP	152A-0104-NP	152H-0104-SS	152A-0104-SS
2.5	1-3/16	30.16	1.1875	4.76	152H-0106-TW	152A-0106-TW	152H-0106-NP	152A-0106-NP	152H-0106-SS	152A-0106-SS
	–	31.00	1.2205	4.76	152H-31-TW	152A-31-TW	152H-31-NP	152A-31-NP	152H-31-SS	152A-31-SS
	1-1/4	31.75	1.2500	4.76	152H-0108-TW	152A-0108-TW	152H-0108-NP	152A-0108-NP	152H-0108-SS	152A-0108-SS
	–	33.00	1.2992	4.76	152H-33-TW	152A-33-TW	152H-33-NP	152A-33-NP	152H-33-SS	152A-33-SS
	1-5/16	33.34	1.3125	4.76	152H-0110-TW	152A-0110-TW	152H-0110-NP	152A-0110-NP	152H-0110-SS	152A-0110-SS
	1-3/8	34.93	1.3750	4.76	152H-0112-TW	152A-0112-TW	152H-0112-NP	152A-0112-NP	152H-0112-SS	152A-0112-SS

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A91: 5

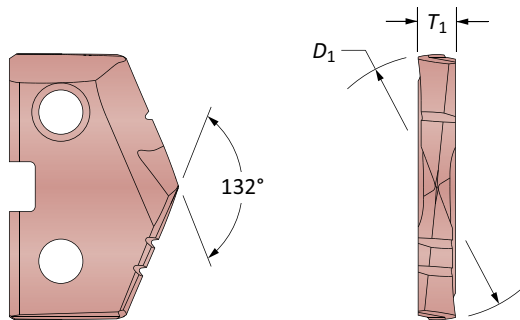
A91: 30 - 31



Inserts sold in multiples of 2

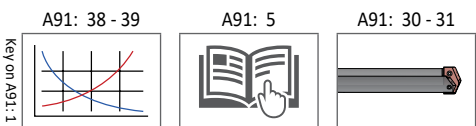
GEN2 T-A® Structural Steel Drill Inserts

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



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

Series	Fractional Equivalent	Insert			Part No.	
		D_1 mm	D_1 inch	T_1	 Super Cobalt	 C1 (K35)
2	1	25.40	1.0000	4.76	452H-0100-HE	4C12H-0100-HE
	–	26.00	1.0236	4.76	452H-26-HE	4C12H-26-HE
	1-1/16	26.99	1.0625	4.76	452H-0102-HE	4C12H-0102-HE
	–	27.00	1.0630	4.76	452H-27-HE	4C12H-27-HE
	1-1/8	28.58	1.1250	3/16	452H-0104-HE	4C12H-0104-HE
2.5	1-3/16	30.16	1.1875	4.76	452H-0106-HE	4C12H-0106-HE
	–	31.00	1.2205	4.76	452H-31-HE	4C12H-31-HE
	1-1/4	31.75	1.2500	4.76	452H-0108-HE	4C12H-0108-HE
	–	33.00	1.2992	4.76	452H-33-HE	4C12H-33-HE
	1-5/16	33.34	1.3125	4.76	452H-0110-HE	4C12H-0110-HE
	1-3/8	34.93	1.3750	4.76	452H-0112-HE	4C12H-0112-HE



Inserts sold in multiples of 2

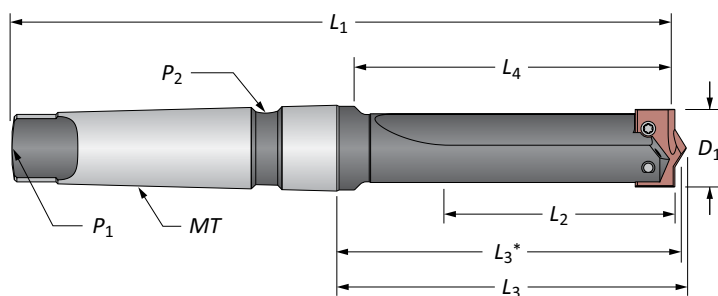


T-A® Structural Steel Drill Insert Holders

2 Series | Taper Shank

A

DRILLING



Straight Flute #4 Morse Taper

				Body					Shank			
Series		Length	D_1	L_2	L_4	L_3	L_3^*	L_1	MT	P_1	P_2	Part No.
m	2	Short	26	86	114	126.6	124.2	238	#4	TTC	TSC	22020S-004IS100
	2.5	Short	30.16	86	114	126.6	124.2	238	#4	TTC	TSC	22025S-004IS112
i	2	Short	1 - 1-3/8	3-3/8	4-1/2	4-63/64	4-57/64	9-3/8	#4	TTC	TSC	22020S-004IS100
	2.5	Short	1-3/16 - 1-3/8	3-3/8	4-1/2	4-63/64	4-57/64	9-3/8	#4	TTC	TSC	22025S-004IS112

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

C

REAMING

D

BURNISHING

F

THREADING

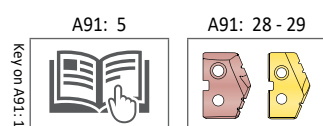
X

SPECIALS

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	690 N-cm (61.0 in-lbs)
2.5	7495-IP15-1	7495N-IP15-1	8IP-15	8IP-15TL	8IP-15B	690 N-cm (61.0 in-lbs)

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

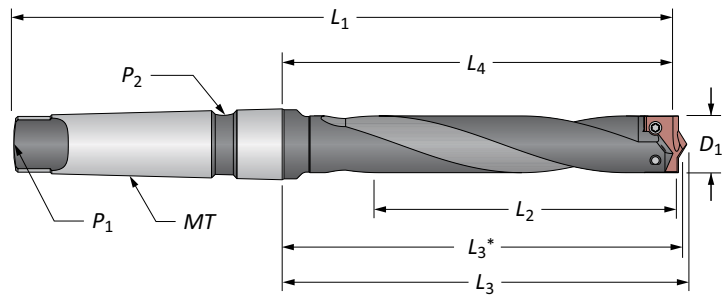


m = Metric (mm)
i = Imperial (in)

Screws sold in multiples of 10

T-A® Structural Steel Drill Insert Holders

2 Series | Taper Shank



Helical Flute #3 Morse Taper

				Body					Shank			Part No.
Series	Length	D ₁	L ₂	L ₄	L ₃	L ₃ *	L ₁	MT	P ₁	P ₂		
m	2	Extended	26	165	237	247.7	240.1	336	#3	TTC	TSC	⚠ 25020H-003IS100
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

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

Helical Flute #4 Morse Taper

Series		Length	D ₁	Body					Shank			Part No.
				L ₂	L ₄	L ₃	L ₃ *	L ₁	MT	P ₁	P ₂	
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	30.16	137	165	177.4	175.0	289	#4	TTC	TSC	24025H-004IS112
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

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

m = Metric (mm)

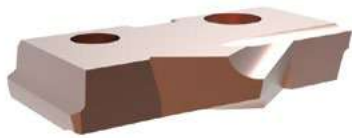
i = Imperial (in)

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

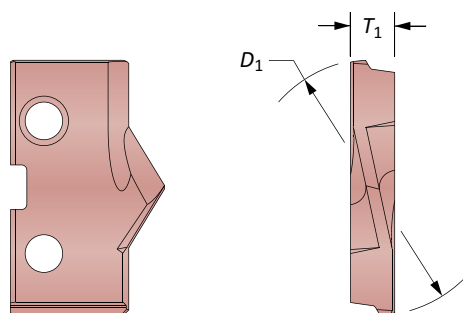
T-A® Original Structural Steel Drill Inserts

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



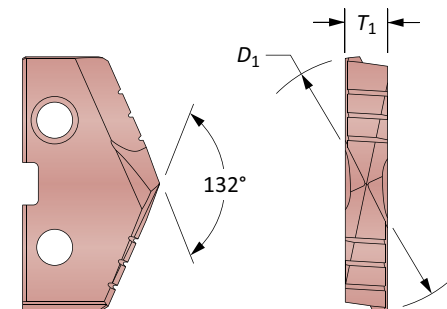
Thin Wall

For material up to 6mm thick



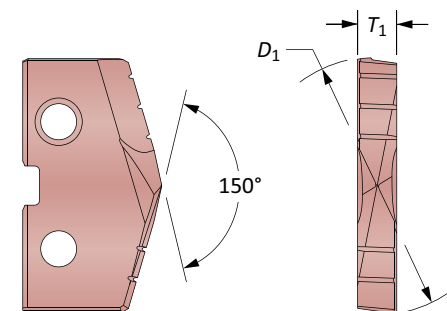
Notch Point®

For material over 6mm thick



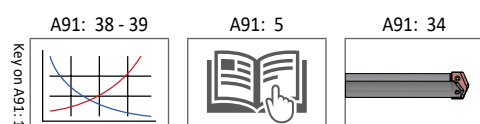
150° Structural Steel

For material over 6mm thick and for reduced exit burr



HSS Inserts – Super Cobalt

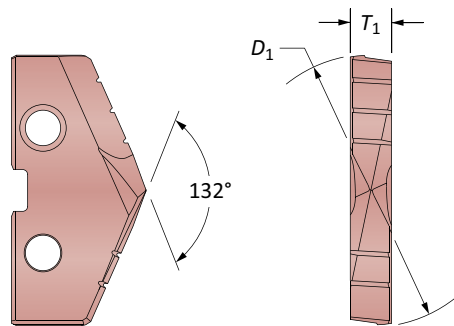
Insert				Thin Wall		Notch Point		150° Structural Steel	
Fractional Equivalent	D ₁ mm	D ₁ inch	T ₁						
AM200 Part No.	TiAlN Part No.	AM200 Part No.	TiAlN Part No.	AM200 Part No.	TiAlN Part No.	AM200 Part No.	TiAlN Part No.	AM200 Part No.	TiAlN Part No.
1-7/16	36.51	1.4375	6.35	153H-0114-TW	153A-0114-TW	153H-0114-NP	153A-0114-NP	153H-0114-SS	153A-0114-SS
1-1/2	38.10	1.5000	6.35	153H-0116-TW	153A-0116-TW	153H-0116-NP	153A-0116-NP	153H-0116-SS	153A-0116-SS
–	39.00	1.5354	6.35	153H-39-TW	153A-39-TW	153H-39-NP	153A-39-NP	153H-39-SS	153A-39-SS
1-9/16	39.69	1.5625	6.35	153H-0118-TW	153A-0118-TW	153H-0118-NP	153A-0118-NP	153H-0118-SS	153A-0118-SS



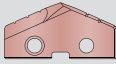
Inserts sold in multiples of 1

GEN2 T-A® Structural Steel Drill Inserts

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



HSS Inserts – Super Cobalt

Fractional Equivalent	Insert			Part No.
	D ₁ mm	D ₁ inch	T ₁	 Super Cobalt
1-7/16	36.51	1.4375	6.35	453H-0114-HE
1-1/2	38.10	1.5000	6.35	453H-0116-HE
–	39.00	1.5354	6.35	453H-39-HE
1-9/16	39.69	1.5625	6.35	453H-0118-HE

A

DRILLING

B

BORING

C

REAMING

D

BURNISHING

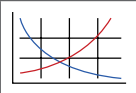
E

THREADING

X

SPECIALS

A91: 38 - 39



A91: 5



A91: 34



Key on A91: 1

Inserts sold in multiples of 1

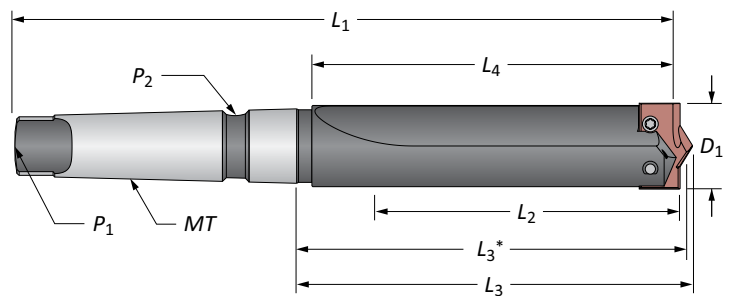


T-A® Structural Steel Drill Insert Holders

3 Series | Taper Shank

A

DRILLING



Straight Flute #4 Morse Taper

	Length	D_1	Body					Shank			Part No.
			L_2	L_4	L_3	L_3^*	L_1	MT	P_1	P_2	
m	Short	39	121	152.14	165.1	163.5	276	4	TTC	TSC	22030S-004IS126
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

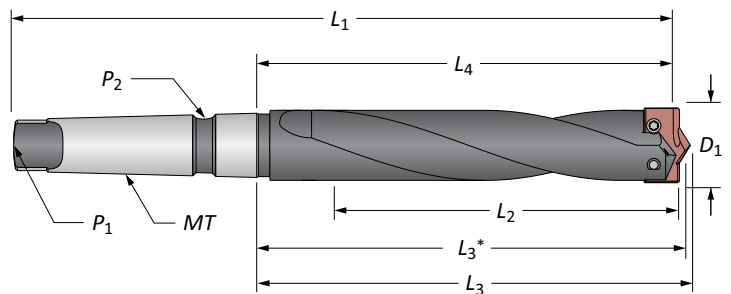
*If using Structural Steel holder with Notch Point®, GEN2 T-A®, or 150° Structural Steel T-A® drill insert geometry

B

BORING

C

REAMING



Helical Flute #4 Morse Taper

	Length	D_1	Body					Shank			Part No.
			L_2	L_4	L_3	L_3^*	L_1	MT	P_1	P_2	
m	Short	35.71	165.1	197	209.55	207.9	320.68	4	TTC	TSC	24030H-004IS126
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

D

BURNISHING

E

THREADING

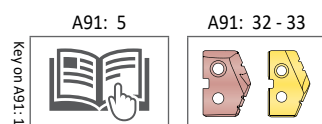
Connection Accessories

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

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

X

SPECIALS



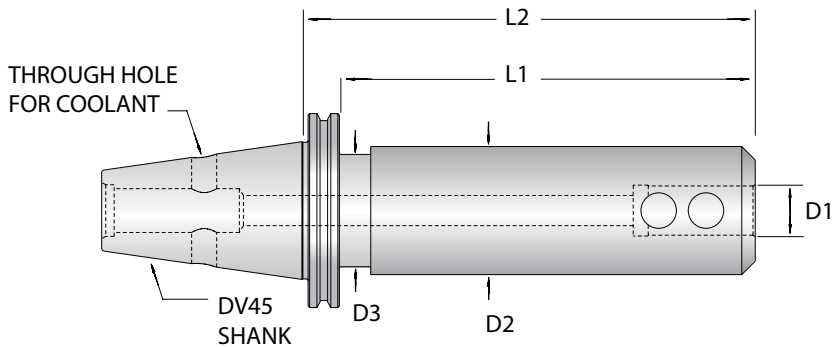
m = Metric (mm)
i = Imperial (in)

Screws sold in multiples of 10



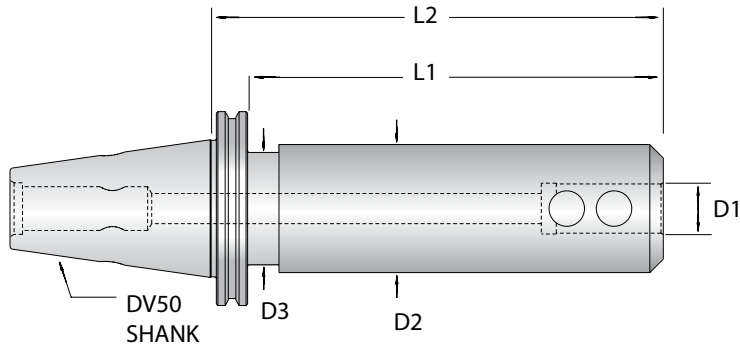
T-A® Structural Steel Adaptors

DV45 & DV50 Adaptors



DV45 Adaptor

Item Number	Outer Taper	D1 Inner Ø mm	D2 Ø	D3 Ø	L1	L2	Qty of Clamping Screws
AMDV45-EM20-120	DV45	20	52	57	101	120	1
AMDV45-EM25-120	DV45	25	65	57	101	120	2
AMDV45-EM32-120	DV45	32	78	57	101	120	2
AMDV45-EM20-230	DV45	20	52	57	211	230	1
AMDV45-EM25-230	DV45	25	65	57	211	230	2
AMDV45-EM32-230	DV45	32	78	57	211	230	2



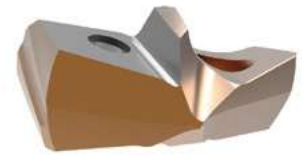
DV50 Adaptor

Item Number	Outer Taper	D1 Inner Ø mm	D2 Ø	D3 Ø	L1	L2	Qty of Clamping Screws
AMDV45-EM50-120	DV50	50	100	69.858	100	120	2



Recommended Cutting Data

GEN3SYS® XT



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

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

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

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

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

**Recommended Cutting Data | Metric (mm)**

T-A® Original | GEN2 T-A®

A

DRILLING

**Thin Wall Inserts
Super Cobalt**

		Speed (M/mm) - Mist Coolant			Feed Rate (mm/rev) by Diameter			
		Hardness (BHN)	 AM200 Speed	 TiAlN Speed	0 series 14 - 16	1 series 18 - 24	2 series 25 - 35	3 series 36 - 47
ISO	Material							
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

B

BORING

**Notch Point® and 150° Structural Steel Inserts
Super Cobalt**

		Speed (M/mm) - Mist Coolant			Feed Rate (mm/rev) by Diameter			
		Hardness (BHN)	 AM200 Speed	 TiAlN Speed	0 series 14 - 16	1 series 18 - 24	2 series 25 - 35	3 series 36 - 47
ISO	Material							
P	Structural Steel A36, A285, A516, etc.	100 - 150	39	34	0.25	0.30	0.36	0.45
		150 - 250	35	31	0.23	0.28	0.30	0.40
		250 - 350	32	28	0.20	0.25	0.28	0.36

C

REAMING

D

BURNISHING

**GEN2 T-A® Inserts
Super Cobalt**

ISO	Material	Speed (M/mm) - Mist Coolant		Feed Rate (mm/rev) by Diameter			
		Hardness (BHN)	 AM200 Speed	0 series 14 - 16	1 series 18 - 24	2 series 25 - 35	3 series 36 - 47
P	Structural Steel A36, A285, A516, etc.	100 - 150	39	0.25	0.30	0.36	0.46
		150 - 250	35	0.23	0.28	0.30	0.40
		250 - 350	32	0.20	0.25	0.28	0.36

E

THREADING

**GEN2 T-A® Inserts
Carbide C1 (K35)**

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

X

SPECIALS

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 | Imperial (inch)

T-A® Original | GEN2 T-A®

Thin Wall Inserts Super Cobalt

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

GEN2 T-A® Inserts Super Cobalt

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

GEN2 T-A® Inserts Carbide C1 (K35)

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



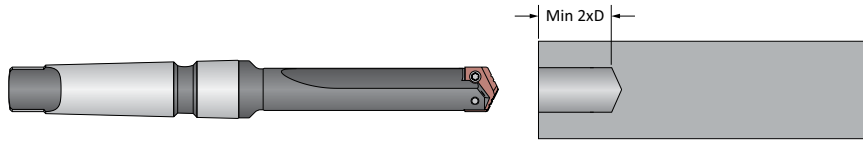
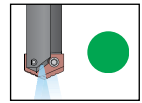
Deep Hole Drilling Guidelines

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

A
DRILLING

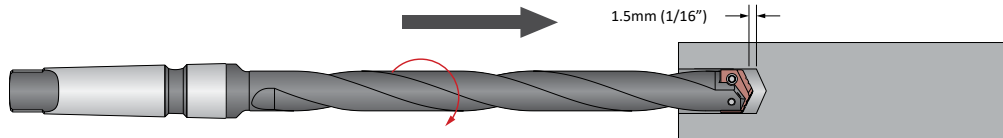
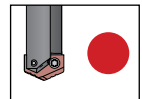
- 1. Pilot Hole**
100 % RPM
100% mm/rev (IPR)

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.

**Coolant ON**B
BORING

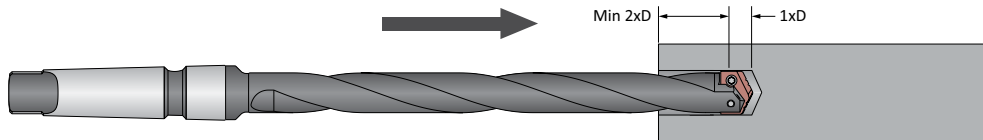
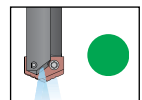
- 2. Feed-in**
50 RPM max
300 mm/min (12 IPM)

Feed the longer drill within 1.5mm (1/16") short of the established pilot hole bottom at a **maximum of 50 RPM** and 300 mm/min (12 IPM) feed rate.

**Coolant OFF**C
REAMING

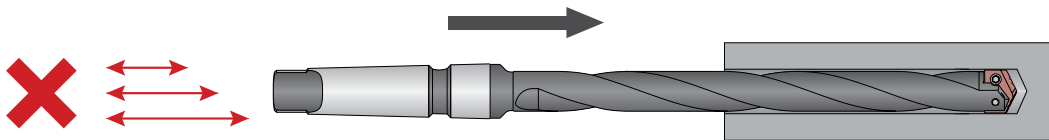
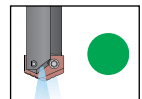
- 3. Deep Hole Transition Drilling**
50 % RPM
75 mm/rev (IPR)

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.

**Coolant ON**D
BURNISHING

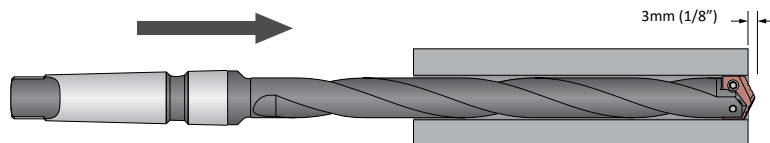
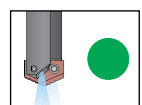
- 4. Deep Hole Drilling - Blind**
100% RPM
100% mm/rev (IPR)

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

**Coolant ON**E
THREADING

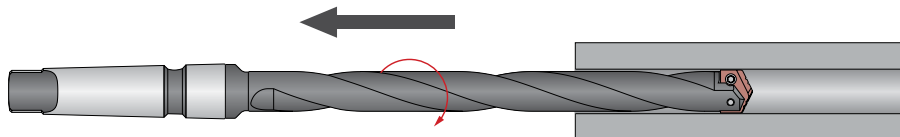
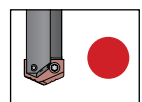
- 5. Deep Hole Drilling - at Breakout**
50% RPM
75 mm/rev (IPR)

For through holes only:
Reduce speed by 50% and feed by 25% prior to breakout.
Do not breakout more than 3mm (1/8") past the full diameter of the drill.

**Coolant ON**

- 6. Drill Retract**
50 RPM max

Reduce speed to a **maximum of 50 RPM** before retracting from the hole.

**Coolant OFF**

⚠ 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 for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering Team.

X
SPECIALS