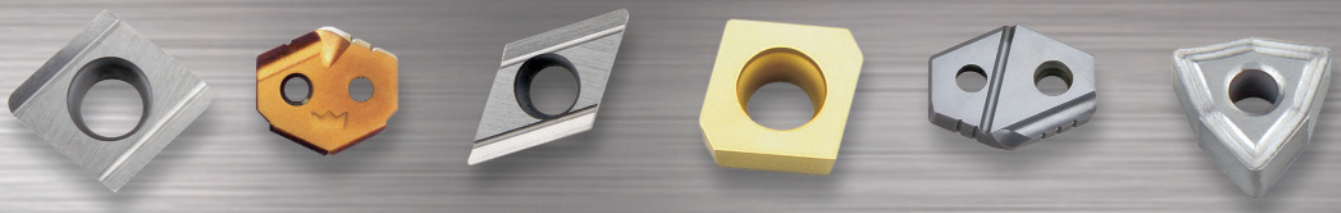


2007 CATALOG

PREV. TABLE OF CONTENTS NEXT

INDEXA-V®

Drill Products

MEETING YOUR DRILLING NEEDS TODAY WITH TOMORROW'S TECHNOLOGY

CONTENTS

Inserts

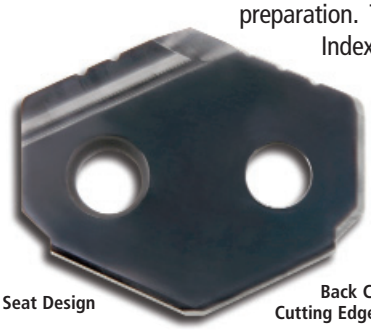
- Patented "V" seat design provides accurate repeatability
- No more re-grinding! Obtain the same quality edge with each new insert
- Custom order YOUR size and Tolerance.
- Change inserts without resetting tool length
- Improve tool life with our micro grain substrates, cutting edge preparation and State-Of-The-Art coatings.
- Two drill point styles available – Radial and Penetrator
- All inserts surfaces are ground for accuracy

Holders

- Only eight holder sizes needed to cover the diameters ranging from .4375" to 1.375"
- Combination Tools available for drilling, top chamfer and back chamfer with one tool.
- All holders are C.N.C. Manufactured using premium heat treated steel.
- Holders are available with thru tool coolant capability
- Patented "V" pocket design with 2 TORX® screws provide insert clamping
- All tools are manufactured under a stringent ISO-9001 certified quality system

Meeting Your Drilling Needs Today with Tomorrow's Technology

Indexa-V drill products are high quality tools with a unique "V" seat design to maintain accuracy. Indexa-V means greater stability, better size control and improved machined surface finishes. Indexa-V drill products are designed using various geometries and are manufactured on robotic C.N.C. grinding equipment. Thru tool coolant capability improves chip evacuation and penetration rates.



"V" Seat Design

Back Chamfer Cutting Edge

Indexa-V drill products have over sixty years carbide cutting tool experience and technology built into each and every tool. Our micro grain substrates are chemically coated with the latest technology available as well as application specific cutting edge preparation. This allows for drilling a wide variety of materials.

Indexa-V drill products are available as multi-function tools, combining drilling, top chamfering and back-chamfering operations using a single tool and machine set-up. Indexa-V products come in a wide range of diameters and lengths to fit most applications. Special tool designs are also available to meet specific requirements. Changing the drill insert can be performed right in the machine without resetting the tool length.

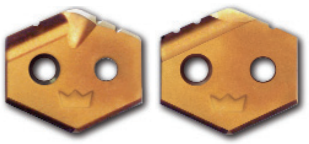
INDEXA-V Drill Products. Tomorrow's Technology…Today!

Custom Tools

Let us customize a tool for your application. By considering the part geometry, application requirements, machine characteristics and production volumes we can design a tool with optimum performance by reducing unused holder length and increasing holder diameters wherever possible. The result is a tool that is more stable and rigid than standard off-the-shelf tooling.

The Indexa-V Advantage

Indexa-V drill inserts provide the option of back-chamfering.

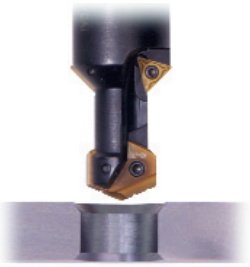


Through-Hole Only

Through-Hole with Back Chamfer

Using either the process of C.N.C. circular interpolation or lathe offset, the work can be back-chamfered without the need to change the fixture or modify the tool assembly.

With Indexa-V chamfer inserts, through-hole drilling, chamfering, and back-chamfering can be accomplished in a single assembled tool.



Insert Nomenclature

IN - 1D - 0.5000 - ST - R - TiAlN

Holder	Dia. Size	Corner Clip Design	Insert Point	Coating Type
D=Drill BC=Back Chamfer	Imperial Metric	ST=Steel CA3=Cast Iron AL=Aluminum	P=Penetrator® R=Radial	(Specify TiN, TiCN, TiAlN or N/A)

Coating Specifications
TiN- Titanium Nitride
TiCN- Titanium Carbonitride
TiAlN-Titanium Aluminum Nitride
N/A- No Coating

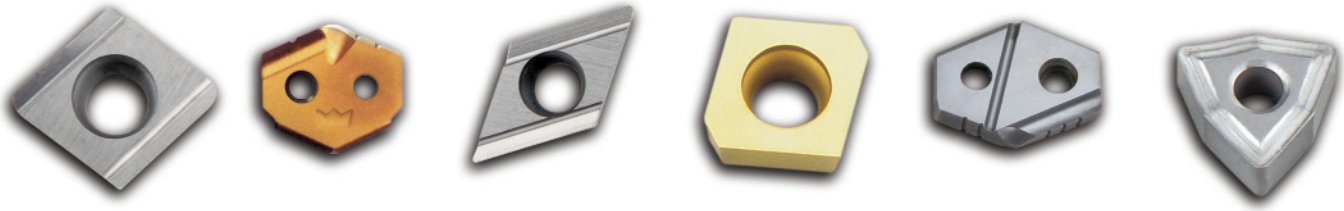

Radial Point Insert: Primarily used for steels


Penetrator™ Point Insert: Primarily used for cast-iron and non-ferrous materials

Radial and Penetrator Inserts

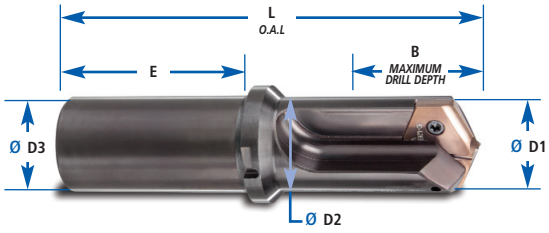
Insert Series	Description	Cutting Drill Diameter Size Range Decimal	(MM)
1	Radial or Penetrator Point	0.4375″ to 0.5300″	(11.11mm to 13.46mm)
2	Radial or Penetrator Point	0.5311″ to 0.5890″	(13.47mm to 14.96mm)
3	Radial or Penetrator Point	0.5891″ to 0.6460″	(14.97mm to 16.40mm)
4	Radial or Penetrator Point	0.6461″ to 0.7500″	(16.41mm to 19.05mm)
5	Radial or Penetrator Point	0.7501″ to 0.8840″	(19.06mm to 22.45mm)
6	Radial or Penetrator Point	0.8841″ to 1.0180″	(22.46mm to 25.85mm)
7	Radial or Penetrator Point	1.0181″ to 1.1500″	(25.86mm to 29.21mm)
8	Radial or Penetrator Point	1.1501″ to 1.3780″	(29.22mm to 35.00mm)

Indexa-V Inserts available in any diameter within series range.



IVD-S-Short Straight Series

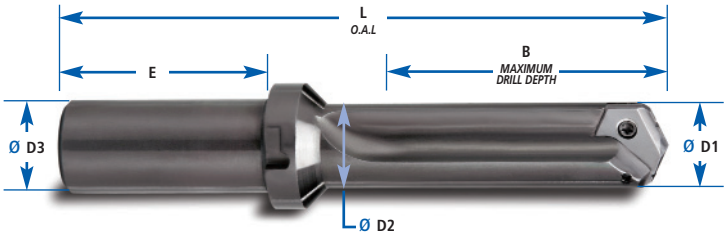
Straight Short | Straight Regular | Twist | Chamfer



Order No.	D-1 Range	B Depth	D3 Shank	L O.A.L.	E	D2	Screw
IVD-S-001-S	.4375/.5300	0.7	3/4	4.2	2.25	0.415	SB-3A
IND-S-0M1-S	(11.11/13.46)	(18)	(20)	(107)	(57)	(10.54)	SB-3A
IVD-S-002-S	.5301/.5890	1.0	3/4	4.6	2.25	.500	SB-3A
IVD-S-0M2-S	(13.47/14.96)	(25)	(20)	(117)	(57)	(12.7)	SB-3A
IVD-S-003-S	.5891/.6460	1.0	3/4	4.6	2.25	.560	SB-3
IVD-S-0M3-S	(14.97/16.40)	(25)	(20)	(117)	(57)	(14.22)	SB-3
IVD-S-004-S	.6461/.7500	1.2	3/4	4.8	2.25	.620	SB-3
IVD-S-0M4-S	(16.41/19.05)	(30)	(20)	(122)	(57)	(15.74)	SB-3
IVD-S-005-S	.7501/.8840	1.3	1.0	5.2	2.50	.715	SB-5
IVD-S-0M5-S	(19.06/22.45)	(33)	(25)	(132)	(64)	(18.16)	SB-5
IVD-S-006-S	.8841/1.0180	1.4	1.0	5.4	2.50	.855	SB-6
IVD-S-0M6-S	(22.46/25.85)	(36)	(25)	(137)	(64)	(21.71)	SB-6
IVD-S-007-S	1.0181/1.1500	3.0	1-1/4	6.9	2.50	.975	SB-7
IVD-S-0M7-S	(25.86/29.21)	(76)	(32)	(175)	(64)	(24.76)	SB-7
IVD-S-008-S	1.1501/1.3780	3.0	1-1/4	6.9	2.50	1.095	SB-7
IVD-S-0M8-S	(29.22/35.00)	(76)	(32)	(175)	(64)	(27.81)	SB-7

IVD-S-Regular Straight Series

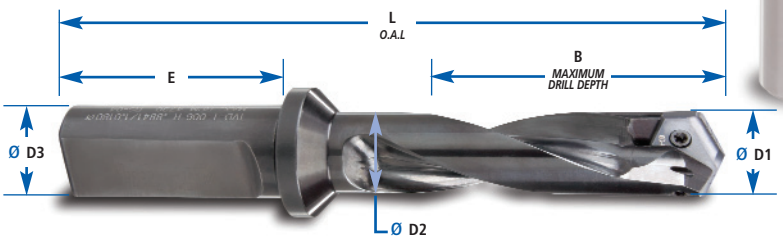
Straight Short | **Straight Regular** | Twist | Chamfer



Order No.	D-1 Range	B Depth	D3 Shank	L O.A.L.	E	D2	Screw
IVD-S-001-R	.4375/.5300	1.7	3/4	5.2	2.25	0.415	SB-3A
IVD-S-0M1-R	(11.11/13.46)	(43)	(20)	(132)	(57)	(10.54)	SB-3A
IVD-S-002-R	.5301/.5890	2.0	3/4	5.6	2.25	.500	SB-3A
IVD-S-0M2-R	(13.47/14.96)	(50)	(20)	(142)	(57)	(12.7)	SB-3A
IVD-S-003-R	.5891/.6460	2.0	3/4	5.6	2.25	.560	SB-3
IVD-S-0M3-R	(14.97/16.40)	(50)	(20)	(142)	(57)	(14.22)	SB-3
IVD-S-004-R	.6461/.7500	2.4	3/4	6.0	2.25	.620	SB-3
IVD-S-0M4-R	(16.41/19.05)	(61)	(20)	(152)	(57)	(15.74)	SB-3
IVD-S-005-R	.7501/.8840	2.7	1.0	6.6	2.50	.715	SB-5
IVD-S-0M5-R	(19.06/22.45)	(69)	(25)	(168)	(64)	(18.16)	SB-5
IVD-S-006-R	.8841/1.0180	3.0	1.0	7.0	2.50	.855	SB-6
IVD-S-0M6-R	(22.46/25.85)	(76)	(25)	(178)	(64)	(21.71)	SB-6
IVD-S-007-R	1.0181/1.1500	7.0	1-1/4	10.9	2.50	.975	SB-7
IVD-S-0M7-R	(25.86/29.21)	(178)	(32)	(277)	64)	(24.76)	SB-7
IVD-S-008-R	1.1501/1.3780	7.0	1-1/4	10.9	2.50	1.095	SB-7
IVD-S-0M8-R	(29.22/35.00)	(178)	(32)	(277)	(64)	(27.81)	SB-7

IVD-Twist Series

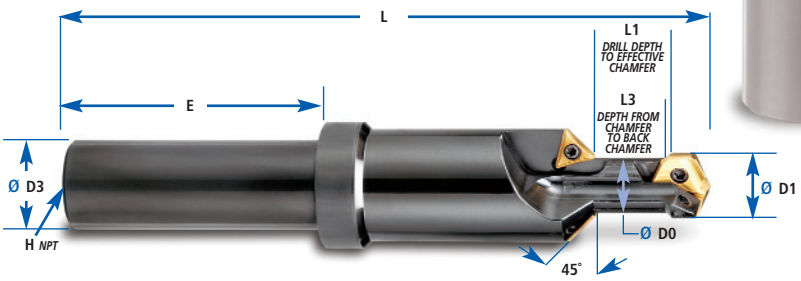
Straight Short | Straight Regular | **Twist** | Chamfer



Series	D-1 Range	B Depth	D3 Shank	L O.A.L.	E	D2	Screw
IVD-T-001	.4375/.5300	1.7	3/4	5.2	2.25	0.415	SB-3A
IVD-T-0M1	(11.11/13.46)	(43)	(20)	(132)	(57)	(10.54)	SB-3A
IVD-T-002	.5301/.5890	2.0	3/4	5.6	2.25	.500	SB-3A
IVD-T-0M2	(13.47/14.96)	(50)	(20)	(142)	(57)	(12.7)	SB-3A
IVD-T-003	.5891/.6460	2.0	3/4	5.6	2.25	.560	SB-3
IVD-T-0M3	(14.97/16.40)	(50)	(20)	(142)	(57)	(14.22)	SB-3
IVD-T-004	.6461/.7500	2.4	3/4	6.0	2.25	.620	SB-3
IVD-T-0M4	(16.41/19.05)	(61)	(20)	(152)	(57)	(15.74)	SB-3
IVD-T-005	.7501/.8840	2.7	1.0	6.6	2.50	.715	SB-5
IVD-T-0M5	(19.06/22.45)	(69)	(25)	(168)	(64)	(18.16)	SB-5
IVD-T-006	.8841/1.0180	3.0	1.0	7.0	2.50	.855	SB-6
IVD-T-0M6	(22.46/25.85)	(76)	(25)	(178)	(64)	(21.71)	SB-6
IVD-T-007	1.0181/1.1500	7.0	1-1/4	10.9	2.50	.975	SB-7
IVD-T-0M7	(25.86/29.21)	(178)	(32)	(277)	(64)	(24.76)	SB-7
IVD-T-008	1.1501/1.3780	7.0	1-1/4	10.9	2.50	1.095	SB-7
IVD-T-0M8	(29.22/35.00)	(178)	(32)	(277)	(64)	(27.81)	SB-7

IVD-Chamfer 9000 Series

Straight Short | Straight Regular | Twist | Chamfer



Series	DO	L1 D-1 Range	L3 Depth	L Shank	O.A.L.	E	T	C	H	Drill Screw	Chamfer Insert	Chamfer Screw
IVD-C-9001	.41	.4375/.5300	.602 / .710	3/4	5.2	2.25	0.125	.130/.163	1/8	SB-3A	TCMT/W-06T102	SB-1
IVD-C-90M1	(10.4)	(11.11/13.46)	(15.29)/(18.03)	(20)	(132)	(57)	(3.18)	(3.30)/(4.14)	(3.17)	SB-3A	TCMT/W-06T102	SB-1
IVD-C-9002	.41	.5301/.5890	.572/.730	3/4	5.6	2.25	.125	.110/.130	1/8	SB-3A	TCMT/W-06T102	SB-1
IVD-C-90M2	(10.4)	(13.47/14.96)	(14.53)/(18.54)	(20)	(142)	(57)	(3.18)	(2.79)/(3.30)	(3.17)	SB-3A	TCMT/W-06T102	SB-1
IVD-C-9003	.41	.5891/.6460	.884 / .971	3/4	5.6	2.25	.125	.177/.205	1/8	SB-3	TCMT/W-090204	SB-2
IVD-C-90M3	(10.4)	(14.97/16.40)	(22.45)/(22.66)	(20)	(142)	(57)	(3.18)	(4.50)/(5.21)	(3.17)	SB-3	TCMT/W-090204	SB-2
IVD-C-9004	.53	.6461/.7500	.791/1.237	3/4	6.0	2.25	.155	.125/.176	1/8	SB-3	TCMT/W-090204	SB-2
IVD-C-90M4	(13.5)	(16.41/19.05)	(20.09)/(31.42)	(20)	(152)	(57)	(3.94)	(3.18)/(4.47)	(3.17)	SB-3	TCMT/W-090204	SB-2

Technical Information

These parameters are only estimated, every application has variables (depth of hole, machine characteristics, coolant, etc.) that change the tools performance. This is reference only.

Material	Material Hardness (BHN)	TiAN SFM/ (M/min.)	Feed Per Revolution .4375" (11.11) to .5300" (13.46)	.5301" (13.47) to .6875" (17.46)	.6876" (17.47) to .9375" (23.81)	.9376" (23.82) to 1.378" (35.00)
	120-150	470/(144)	.006-(.15)	.010-(.25)	.013-(.33)	.017-(.43)
Cast Iron	150-200	410/(125)	.005-(.13)	.009-(.23)	.012-(.30)	.016-(.41
Gray, Nodular,	200-220	370/(113)	.005-(.13)	.008-(.20)	.010-(.25)	.014-(.36)
Ductile	220-260	320/(98)	.004-(.10)	.007-(.18)	.009-(.23)	.012-(.30)
	260-320	280/(85)	.004-(.10)	.006-(.15)	.008-(.20)	.010-(.25)
Aluminum	30	11510/(460)	.008-(.20)	.014-(.36)	.018-(.46)	.022-(.56)
	180	1010/(308)	.007-(.18)	.012-(.30)	.016-(.41)	.020-(.51)
Free Machining	100-150	430/(131)	.006-(.15)	.010-(.25)	.014-(.36)	.017-(.43)
Steel	150-200	370/(113)	.006-(.15)	.009-(.23)	.013-(.33)	.015-(.38)
1118, 1215, 21L14	200-250	350/(107)	.005-(.13)	.009-(.23)	.012-(.30)	.014-(.36)
Low Carbon	85-125	400/(122)	.006-(.15)	.009-(.23)	.012-(.30)	.016-(.41)
Steel	125-175	350/(107)	.005-(.13)	.009-(.23)	.012-(.30)	.016-(.41)
1010, 1020, 1025,	175-225	320/(98)	.004-(.10)	.008-(.20)	.010-(.25)	.014-(.36)
1522, 1144	225-275	280/(85)	.004-(.10)	.008-(.20)	.010-(.25)	.014-(.36)
Medium Carbon	125-175	350/(107)	.005-(.13)	.009-(.23)	.012-(.30)	.016-(.41)
Steel	175-225	320/(98)	.005-(.13)	.008-(.20)	.010-(.25)	.014-(.36)
1030, 1040, 1050,	225-275	280/(85)	.004-(.10)	.008-(.20)	.010-(.25)	.014-(.36)
1527, 1140, 1151	275-325	240/(73)	.004-(.10)	.007-(.18)	.008-(.20)	.012-(.30)
Structural Steel	100-150	320/(98)	.006-(.15)	.011-(.28)	.013-(.33)	.014-(.36)
A36, A285,	150-250	260/(79)	.005-(.13)	.009-(.23)	.011-(.28)	.013-(.33)
A516, etc.	250-350	240/(73)	.004-(.10)	.008-(.20)	.010-(.25)	.011-(.28)
Alloy Steel	125-175	335/(102)	.005-(.13)	.009-(.23)	.012-(.30)	.015-(.38)
4140, 5140, 8640	175-225	310/(94)	.005-(.13)	.008-(.20)	.011-(.28)	.014-(.36)
	225-275	280/(85)	.004-(.10)	.008-(.20)	.011-(.28)	.014-(.36)
	275-325	260/(79)	.004-(.10)	.007-(.18)	.010-(.25)	.013-(.33)
	325-375	230/(70)	.003-(.07)	.006-(.15)	.010-(.25)	.012-(.30)
High Strength	225-300	210/(64)	.005-(.13)	.008-(.20)	.010-(.25)	.012-(.30)
Alloy	300-350	190/(58)	.004-(.10)	.007-(.18)	.009-(.23)	.011-(.28)
4130, etc.	350-400	170/(52)	.003-(.07)	.006-(.15)	.008-(.20)	.010-(.25)
Tool H-13,	150-200	230/(70)	.003-(.07)	.006-(.15)	.009-(.23)	.011-(.28)
D-2, A-4, O-2, P-20	200-250	180/(55)	.003-(.07)	.006-(.15)	.009-(.23)	.011-(.28)
Stainless Steel	135-185	220/(67)	.006-(.15)	.009-(.23)	.011-(.28)	.013-(.33)
303, 416, 420, 17-4PH	185-275	170/(52)	.005-(.13)	.008-(.20)	.010-(.25)	.012-(.30)
High Temp. Alloy	140-220	115/(35)	.003-(.07)	.007-(.18)	.009-(.23)	.011-(.28)
Inconel 600, Hastelloy B, etc.	220-310	95/(29)	.003-(.07)	.006-(.15)	.008-(.20)	.010-(.25)

Formula:

Decimal:

$$RPM = \frac{SFM \times 3.82}{Dia.}$$

$$IPM = RPM \times IPR$$

$$SFM = \frac{RPM \times Dia.}{3.82}$$

Metric:

$$RPM = \frac{M/min. \times 318.47}{Dia.}$$

$$mm/min. = RPM \times mm/Rev$$

$$M/min. = \frac{RPM \times Dia.}{318.47}$$

Replacement Parts

Holder Series Any Style	Insert Screw (6 in a pack)	Torx® Wrench
Series 1	SB-3A	T-8
Series 2	SB-3A	T-8
Series 3	SB-3	T-8
Series 4	SB-3	T-8
Series 5	SB-5	T-8
Series 6	SB-6	T-15
Series 7	SB-7	T-15
Series 8	SB-7	T-15

Standard Chamfer Inserts	Insert Screw (6 in a pack)	Torx® Wrench
TCMT 06T102	SB-1	T-6
TCMT 090204	SB-2	T-7
TCMT 110204	SB-3	T-8
TCMW 06T102	SB-2	T-7
TCMW 090204	SB-2	T-7
TCMW 110204	SB-3	T-8

Notes:

INDEXA-V® Drill Products

Salesman:
Phone:
E-Mail:

Client Information

Client/End User: _____
Client Contact: _____
Distributor/Salesman: _____
Date: _____

Req. No. _____
Country: _____
City: _____
State: _____
Mail Code: _____

Application Data

Hole Dia. _____
Required Hole Tolerance: _____
Material _____

Depth of cut: _____
Req. Hole RMS Finish _____
☐ "Blind Hole" ☐ "Thru" Hole
☐ Front Chamfer ☐ Back Chamfer

Hardness:

Machine Tool Type

☐ CNC Machining Center ☐ Gantry ☐ Lathe
☐ Multi Spindle Drill Head ☐ Transfer Line ☐ Other

If Other, Explain: _____

Machine Builder: _____ Model: _____

Horsepower: P Per Machine: Per Spindle: Per Drill Head _____

Spindle Position
☐ Horizontal
☐ Vertical
☐ "Bottom-Up"
Other:

Feed Mechanism
☐ Ball Screw ☐ Mechanical
☐ Hydraulic ☐ Pneumatic

Coolant Application
☐ Thru-Spindle
☐ Thru Tool ☐ Flood

Coolant Flow Rate
PSI _____
GPM _____

Coolant Type
☐ Dry ☐ Water Soluble ☐ Cutting Oil ☐ Casting
Other: ☐ Round

Work Place Condition
☐ Stacked ☐ Cold-Rolled ☐ Plate
☐ Forging ☐ Hot-Rolled

Current Tool History Manufacturer: _____

Tool Grade
☐ H.S.S. ☐ Carbide
Other: _____

Drill Type
☐ Solid ☐ Indexable
☐ Brazed ☐ "Spade-Tipped"

Coatings
☐ Uncoated ☐ TIN ☐ TiCN ☐ TiAN
Other: _____

Current Speed: RPM: _____ SFM: _____ M/Min: _____
Current Feed: IPR: _____ IPM: _____ mm/Rev: _____ mm/Min: _____
Average No. Of Holes Drilled: _____
Common Failure Mode:

Additional Comments:

Material Required for test:

Tool Holder:
Insert:
Insert:

TOOLING SYSTEMS, INC.

Distribution Services of:

INDEXA-V® Drill Products

OMNIthread THREAD MILLING

MILLSTAR®

MISSION STATEMENT

INDEXA-V Drill Products, Inc. is dedicated to providing products and services which meet or exceed customer requirements. Our continuous improvement activities maximize the effectiveness of human, technical, manufacturing and financial resources assuring the attainment of this goal.

INDEXA-V® Drill Products

A Cole TOOLING SYSTEMS CO.

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LIMITED WARRANTY

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