



ALLIED MACHINE  
& ENGINEERING

WOHLHAUPTER®

Holemaking Solutions for Today's Manufacturing



Boring



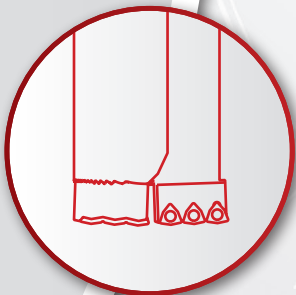
Reaming



Burnishing



Threading



Specials



## Drilling

▶ Revolution Drill®

Large Diameter IC Insert Drilling System

# Revolution Drill®

Large Diameter Replaceable IC Insert Drilling System

▶ Diameter Range: 47.62mm - 101.60mm (1.875" - 4.000")



## Large Scale Innovation

The Revolution Drill™ has an innovative design that allows for adjustability of 5.1mm (0.200") on diameter. This eliminates the need for special tooling and/or subsequent boring operations. With the ability to drill from solid, the Revolution Drill™ does not require a previously drilled pilot hole. The replaceable cartridges reduce set-up time, and the indexable inserts protect your investment. The insert design provides excellent chip control and aggressive penetration rates.

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](http://www.alliedmachine.com) for the most up-to-date information and procedures.

Drills from solid	Drill depths up to 4.5xD	Excellent chip control
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## Industries applicables



Aerospace



Agriculture



Automotive



Firearms



General Machining



Oil & Gas



Renewable Energy

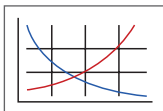
# Revolution Drill® Contents

## Reference Icons

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



**Setup / Assembly Information**  
Detailed instructions and information regarding the corresponding part(s)



**Recommended Cutting Data**  
Speed and feed recommendations for optimum and safe drilling

Series	Diameter Range	
	Metric (mm)	Imperial (inch)
34	47.62 - 50.80	1.875 - 2.000
36	50.80 - 55.88	2.000 - 2.200
38	55.88 - 60.96	2.200 - 2.400
42	60.96 - 66.04	2.400 - 2.600
44	66.04 - 71.12	2.600 - 2.800
46	71.12 - 76.20	2.800 - 3.000
48	76.20 - 81.28	3.000 - 3.200
52	81.28 - 86.36	3.200 - 3.400
54	86.36 - 91.44	3.400 - 3.600
56	91.44 - 96.52	3.600 - 3.800
58	96.52 - 101.60	3.800 - 4.000

## Information Introduction

Product Overview . . . . .	2 - 3
Set-up Instructions . . . . .	4
Product Nomenclature . . . . .	5

## Drill Series

34 Series . . . . .	6 - 7
36 Series . . . . .	8 - 9
38 Series . . . . .	10 - 11
42 Series . . . . .	12 - 13
44 Series . . . . .	14
46 Series . . . . .	15
48 Series . . . . .	16
52 Series . . . . .	17
54 Series . . . . .	18
56 Series . . . . .	19
58 Series . . . . .	20

## Recommended Cutting Data

Metric (mm) . . . . .	21
Imperial (inch) . . . . .	22



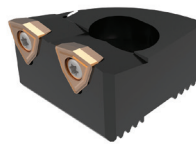
## Product Overview

Series	Diameter Range		Length to Diameter Ratio	Shank Options			Inserts per Cartridge	Page
	Metric (mm)	Imperial (in)		Straight	CAT40	CAT50		
34	47.62 - 50.80	1.875 - 2.000	2.2, 3.5, 4.5	✓	✓	✓	2	6 - 7
36	50.80 - 55.88	2.000 - 2.200	2.2, 3.5, 4.5	✓	✓	✓	2	8 - 9
38	55.88 - 60.96	2.200 - 2.400	2.2, 3.5, 4.5	✓	✓	✓	2	10 - 11
42	60.96 - 66.04	2.400 - 2.600	2.2, 3.5, 4.5	✓	✓	✓	2	12 - 13
44	66.04 - 71.12	2.600 - 2.800	2.2, 3.5	✓		✓	3	14
46	71.12 - 76.20	2.800 - 3.000	2.2, 3.5	✓		✓	3	15
48	76.20 - 81.28	3.000 - 3.200	1.0, 2.5	✓		✓	3	16
52	81.28 - 86.36	3.200 - 3.400	1.0, 2.5	✓		✓	3	17
54	86.36 - 91.44	3.400 - 3.600	1.0, 2.5	✓		✓	3	18
56	91.44 - 96.52	3.600 - 3.800	1.0, 2.5	✓		✓	4	19
58	96.52 - 101.60	3.800 - 4.000	1.0, 2.5	✓		✓	4	20

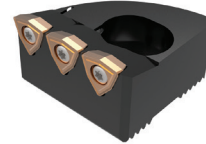
**NOTE:** Stacked plate styles are also available upon request for use in short length holders only. Please contact AMEC® Technical Department for details.

### Features & Benefits

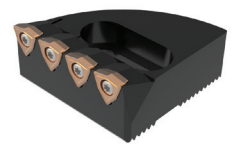
- Adjustability of 5.1mm (0.200") on diameter
- Drill depths up to 4.5xD (standard)
- The replaceable cartridges protect your investment
- Adjustable diameter reduces inventory and cost
- The insert design allows for excellent chip control and aggressive penetration rates
- No pilot hole needed



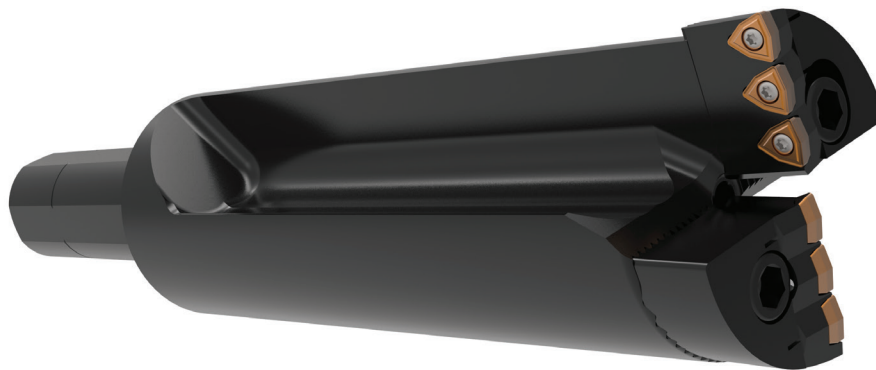
**2 Inserts**  
(34 - Series 42)



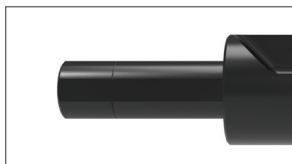
**3 Inserts**  
(44 - Series 54)



**4 Inserts**  
(56 - Series 58)



### Shank Options



Straight Shank  
(all series)



CAT40 Shank  
(34, 36, 38, 42 series)



CAT50 Shank  
(all series)

### Body Lengths

- 1.0xD (48, 52, 54, 56, 58 series)
- 2.2xD (34, 36, 38, 42, 44, 46 series)
- 2.5xD (48, 52, 54, 56, 58 series)
- 3.5xD (34, 36, 38, 42, 44, 46 series)
- 4.5xD (34, 36, 38, 42, 44, 46 series)

A  
DRILLING

B  
BORING

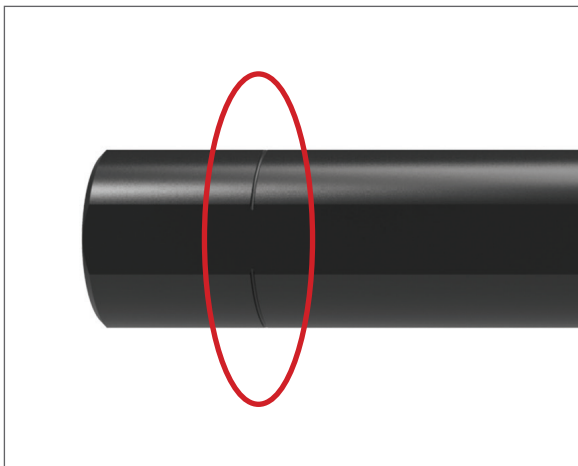
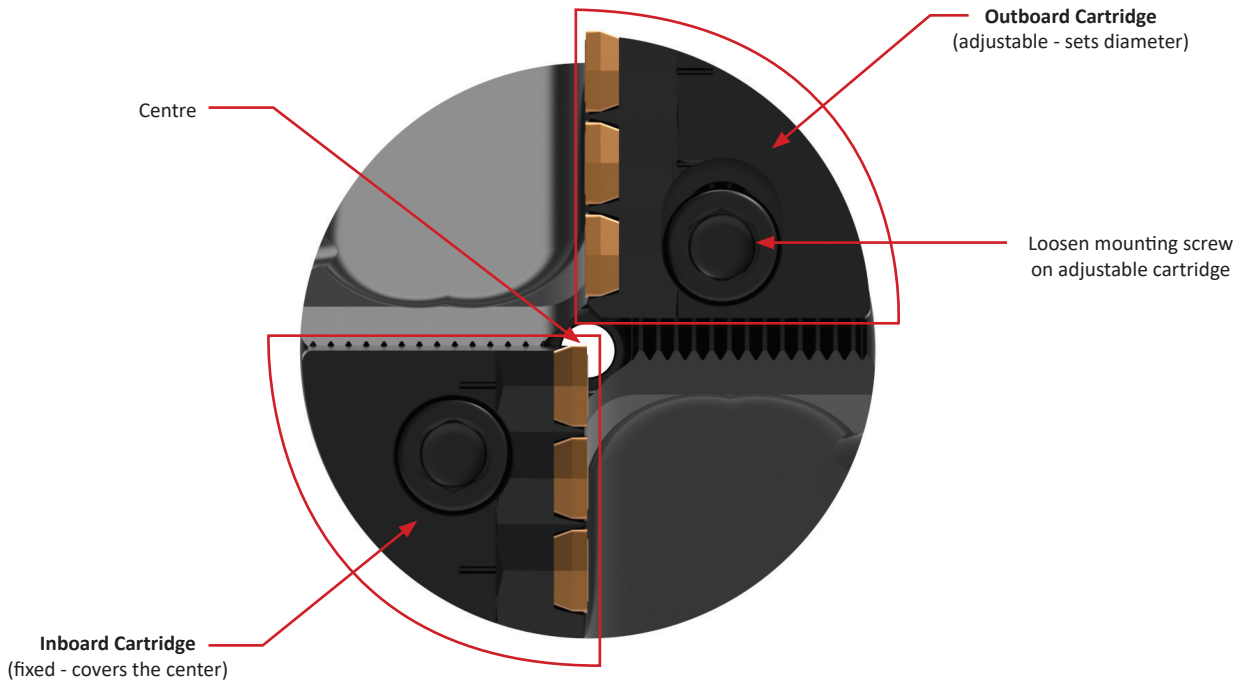
C  
REAMING

D  
BURNISHING

E  
THREADING

X  
SPECIALS

**Product Overview**



**Straight Shanks**

- Designed for lathe applications
- Can be cut off for use in end-mill holders
- The score mark (circled above) is provided for recommended cut length
- Cut and deburr at the score mark
- This improves rigidity when the body sits against the face of an end-mill holder



A DRILLING

B BORING

C REAMING

D BURNISHING

E THREADING

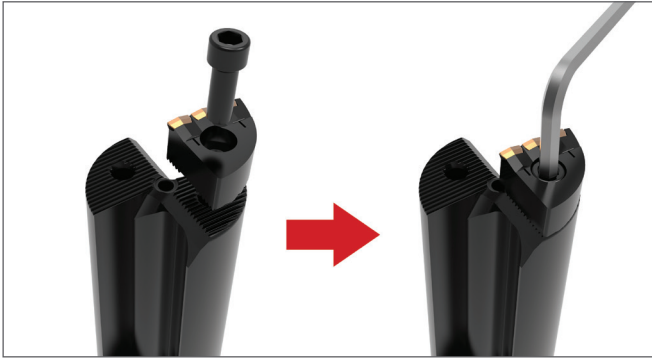
X SPECIALS



## Set-up Instructions

A

DRILLING



**Step 1:**  
Mount the fixed cartridge and tighten the mounting screw to 15-19 Nm (11-14 ft-lbf).



**Step 2:**  
Finger-tighten the mounting screw on the adjustable cartridge.

B

BORING



**Step 3:**  
Set the diameter using the adjustment screw against the mounting screw. Place the drill in a presetter to ensure the correct diameter setting.



**Step 3:**  
Set the diameter using the adjustment screw against the mounting screw. Place the drill in a presetter to ensure the correct diameter setting.

C

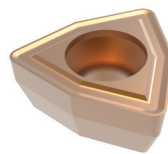
REAMING

D

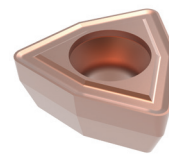
BURNISHING

### IC Inserts

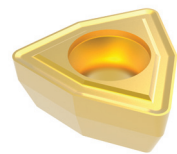
- The design allows for excellent chip control and aggressive penetration rates
- The proprietary AM200® and AM300® coatings increase tool life above competitors' premium coatings
- The same inserts are used for both Revolution Drill™ and Opening Drill™ products



AM300®



AM200®



TiN

### Insert Application Recommendations

#### Carbide Grade Options

P35 (C5)	General purpose carbide grade suitable for most applications. ▶ <i>Common application in steels and stainless steels.</i>
K35 (C1)	Toughest carbide grade. Provides the best combination of edge strength and tool life. ▶ <i>Recommended for less rigid applications.</i>
K25 (C2)	Higher wear resistant carbide suitable for abrasive material applications. ▶ <i>Recommended for grey, ductile, and nodular irons.</i>

#### Additional Geometry Option

High Rake (HR)	Provides superior chip control and tool life in long chipping carbon and Aciers alliés below 200 Bhn.
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E

THREADING

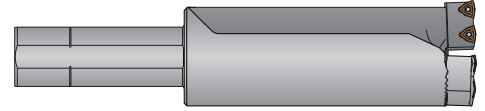
X

SPECIALS

## Nomenclature des Produits

### Revolution Drill™ Holders

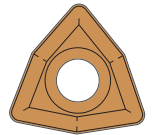
<b>R</b>	<b>34</b>	<b>X</b>	<b>22</b>	<b>-</b>	<b>150L</b>
1	2		3		4



1. Drill Style	2. Series	3. Length to Diameter Ratio	4. Shank Information
<b>R</b> = Standard <b>SP</b> = Stacked Plate	<b>34</b> = Series 34 <b>44</b> = Series 44 <b>54</b> = Series 54 <b>36</b> = Series 36 <b>46</b> = Series 46 <b>56</b> = Series 56 <b>38</b> = Series 38 <b>48</b> = Series 48 <b>58</b> = Series 58 <b>42</b> = Series 42 <b>52</b> = Series 52	<b>10</b> = 1.0xD <b>22</b> = 2.2xD <b>25</b> = 2.5xD <b>35</b> = 3.5xD <b>45</b> = 4.5xD	<b>40M</b> = 40mm ISO 9766 <b>50M</b> = 50mm ISO 9766 <b>150L</b> = 38.10mm Ø Straight <b>200L</b> = 50.80 Ø Straight <b>CV40</b> = CAT40 <b>CV50</b> = CAT50

### Revolution Drill™ Inserts

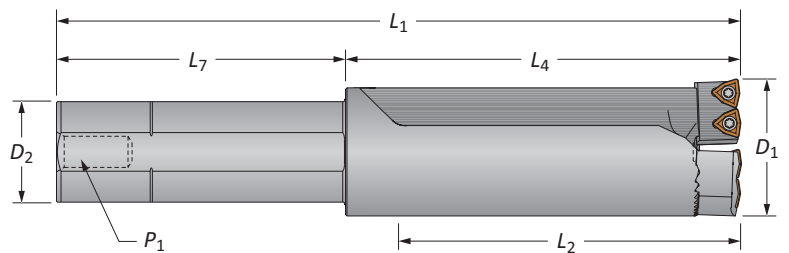
<b>OP</b>	<b>-</b>	<b>05</b>	<b>T3</b>	<b>08</b>	<b>-</b>	<b>1</b>	<b>H</b>	<b>HR</b>
1		2	3	4		5	6	7



1. Compatible with:	2. IC Type	3. Thickness	4. Radius	5. Carbide Grade
Opening Drill™ Revolution Drill™	<b>05</b> = 7.94mm (5/16")	<b>T3</b> = 3.97mm (5/32")	<b>08</b> = 1/32"	<b>Blank</b> = P35 (C5) <b>1</b> = K35 (C1) <b>2</b> = K25 (C2)
6. Coating	7. Geometry			
<b>P</b> = AM300® <b>H</b> = AM200® <b>T</b> = TiN <b>A</b> = TiAlN <b>N</b> = TiCN <b>U</b> = Uncoated	<b>Blank</b> = General Purpose <b>HR</b> = High Rake			

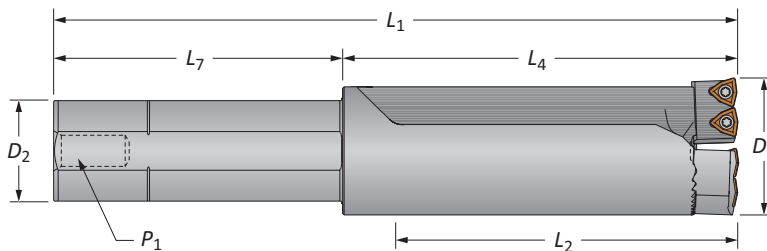
### Reference Key

Symbol	Attribute
$D_1$	Drill Diameter Ranges
$D_2$	Shank diameter
$L_1$	Overall length
$L_2$	Maximum drill depth
$L_4$	Holder length
$L_7$	Shank length
$P_1$	Rear pipe tap



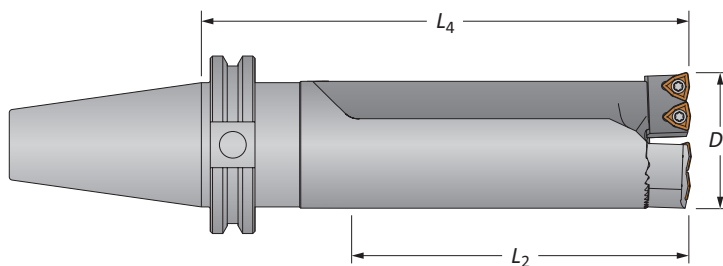
Revolution Drill™ Holders

Series 34 | Diameter Range: 47.62mm - 50.80mm (1.875" - 2.000")



Straight Shank

Metric	Style	Length	D <sub>1</sub> Range	Holder			Shank			Part No.	Cartridges
				L <sub>2</sub>	L <sub>4</sub>	L <sub>1</sub>	D <sub>2</sub>	L <sub>7</sub>	P <sub>1</sub>		
M	Standard	2.2xD	47.62 - 50.80	115	137.4	207.4	40	70	-	R34X22-40M	C34-...
	Standard	3.5xD	47.62 - 50.80	178	200.9	270.9	40	70	-	R34X35-40M	C34-...
	Standard	4.5xD	47.62 - 50.80	229	251.7	321.7	40	70	-	R34X45-40M	C34-...
	Stacked Plate	2.2xD	47.62 - 50.80	112	134.8	204.8	40	70	-	SP34X22-40M	C34SP-...
I	Standard	2.2xD	1.875 - 2.000	4-17/32	5-13/32	9-13/32	1-1/2	4	1/4	R34X22-150L	C34-...
	Standard	3.5xD	1.875 - 2.000	7-1/32	7-29/32	11-29/32	1-1/2	4	1/4	R34X35-150L	C34-...
	Standard	4.5xD	1.875 - 2.000	9-1/32	9-29/32	13-29/32	1-1/2	4	1/4	R34X45-150L	C34-...
	Stacked Plate	2.2xD	1.875 - 2.000	4-27/64	5-5/16	9-5/16	1-1/2	4	1/4	SP34X22-150L	C34SP-...

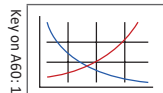


CV40 Shank

Metric	Style	Length	D <sub>1</sub> Range	Holder		Shank	Part No.	Cartridges
				L <sub>2</sub>	L <sub>4</sub>			
I	Standard	2.2xD	1.875 - 2.000	4-17/32	6-25/32	CAT40	R34X22-CV40	C34-...
	Standard	3.5xD	1.875 - 2.000	7-1/32	9-9/32	CAT40	R34X35-CV40	C34-...
	Standard	4.5xD	1.875 - 2.000	9-1/32	11-9/32	CAT40	R34X45-CV40	C34-...
	Stacked Plate	2.2xD	1.875 - 2.000	4-27/64	6-11/16	CAT40	SP34X22-CV40	C34SP-...

A60: 21 - 22

A60: 2 - 4

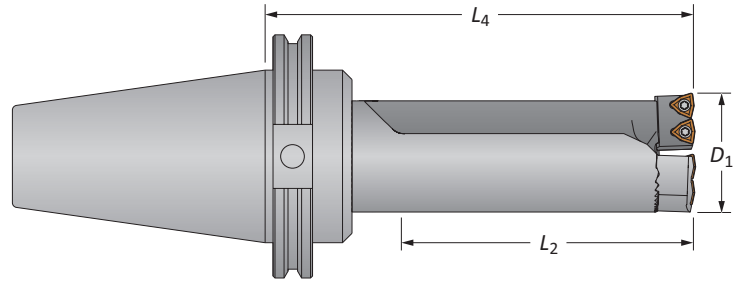


M = Metric (mm)  
I = Imperial (in)



## Revolution Drill™ Holders

Series 34 | Diameter Range: 47.62mm - 50.80mm (1.875" - 2.000")



### CV50 Shank

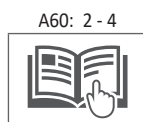
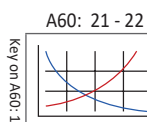
Style	Length	D <sub>1</sub> Range	Holder		Shank	Part No.	Cartridges
			L <sub>2</sub>	L <sub>4</sub>			
Standard	2.2xD	1.875 - 2.000	4-17/32	6-25/32	CAT50	R34X22-CV50	C34-...
Standard	3.5xD	1.875 - 2.000	7-1/32	9-9/32	CAT50	R34X35-CV50	C34-...
Standard	4.5xD	1.875 - 2.000	9-1/32	11-9/32	CAT50	R34X45-CV50	C34-...
Stacked Plate	2.2xD	1.875 - 2.000	4-27/64	6-11/16	CAT50	SP34X22-CV50	C34SP-...

### Cartridges



Holder Part No.	Replacement Cartridges	Qty. Inserts Needed	Mounting Screw	Adjusting Screw
R34...	C34-FIX	2	MS-17M-1	AS-18T9-1
	C34-ADJ	2	MS-17M-1	AS-18T9-1
SP34...	C34SP-FIX	2	MS-17M-1	AS-18T9-1
	C34SP-ADJ	2	MS-17M-1	AS-18T9-1

### IC Inserts

Carbide Grade	Geometry	Part No.			Insert Screws
		AM300®	AM200®	TiN	
P35 (C5)	Standard	OP-05T308-P	OP-05T308-H	OP-05T308-T	IS-10-1
K35 (C1)	Standard	OP-05T308-1P	OP-05T308-1H	OP-05T308-1T	IS-10-1
K25 (C2)	Standard	OP-05T308-2P	OP-05T308-2H	-	IS-10-1
P35 (C5)	High Rake	OP-05T308-PHR	OP-05T308-HHR	-	IS-10-1

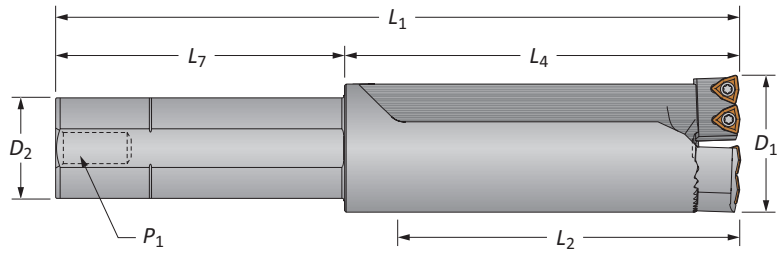


Mounting screws sold in multiples of 4 | Adjusting screws sold in multiples of 4  
 IC inserts sold in multiples of 10 | Insert screws sold in multiples of 10

 = Metric (mm)  
 = Imperial (in)

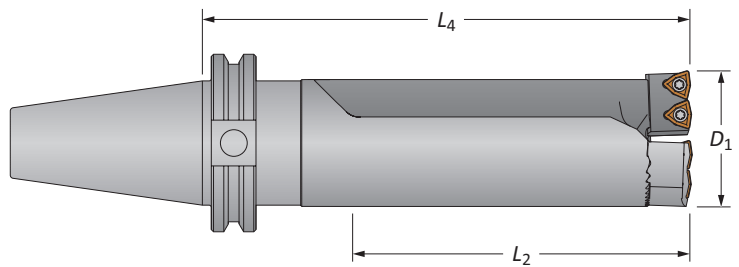
## Revolution Drill™ Holders

Series 36 | Diameter Range: 50.80mm - 55.88mm (2.000" - 2.200")



### Straight Shank

Style	Length	D <sub>1</sub> Range	Holder			Shank			Part No.	Cartridges	
			L <sub>2</sub>	L <sub>4</sub>	L <sub>1</sub>	D <sub>2</sub>	L <sub>7</sub>	P <sub>1</sub>			
m	Standard	2.2xD	50.80 - 55.88	126	149.6	219.6	40	70	-	R36X22-40M	C36-...
	Standard	3.5xD	50.80 - 55.88	196	219.4	289.4	40	70	-	R36X35-40M	C36-...
	Standard	4.5xD	50.80 - 55.88	253	276.6	346.6	40	70	-	R36X45-40M	C36-...
	Stacked Plate	2.2xD	50.80 - 55.88	124	147.6	217.6	40	70	-	SP36X22-40M	C36SP-...
i	Standard	2.2xD	2.000 - 2.200	4-61/64	5-57/64	9-57/64	1-1/2	4	1/4	R36X22-150L	C36-...
	Standard	3.5xD	2.000 - 2.200	7-45/64	8-41/64	12-41/64	1-1/2	4	1/4	R36X35-150L	C36-...
	Standard	4.5xD	2.000 - 2.200	9-61/64	10-57/64	14-57/64	1-1/2	4	1/4	R36X45-150L	C36-...
	Stacked Plate	2.2xD	2.000 - 2.200	4-7/8	5-13/16	9-13/16	1-1/2	4	1/4	SP36X22-150L	C36SP-...

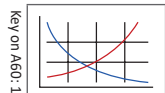


### CV40 Shank

Style	Length	D <sub>1</sub> Range	Holder		Shank	Part No.	Cartridges	
			L <sub>2</sub>	L <sub>4</sub>				
i	Standard	2.2xD	2.000 - 2.200	4-61/64	7-17/64	CAT40	R36X22-CV40	C36-...
	Standard	3.5xD	2.000 - 2.200	7-45/64	10-1/64	CAT40	R36X35-CV40	C36-...
	Standard	4.5xD	2.000 - 2.200	9-61/64	12-17/64	CAT40	R36X45-CV40	C36-...
	Stacked Plate	2.2xD	2.000 - 2.200	4-57/64	7-35/64	CAT40	SP36X22-CV40	C36SP-...

A60: 21 - 22

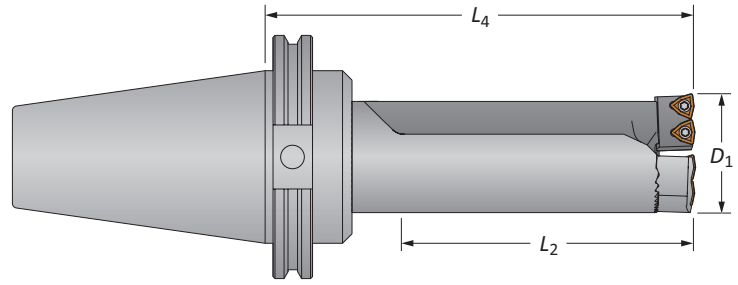
A60: 2 - 4



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

## Revolution Drill™ Holders

Series 36 | Diameter Range: 50.80mm - 55.88mm (2.000" - 2.200")



### CV50 Shank

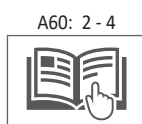
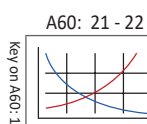
Style	Length	D <sub>1</sub> Range	Holder		Shank	Part No.	Cartridges
			L <sub>2</sub>	L <sub>4</sub>			
Standard	2.2xD	2.000 - 2.200	4-61/64	7-17/64	CAT50	R36X22-CV50	C36-...
Standard	3.5xD	2.000 - 2.200	7-45/64	10-1/64	CAT50	R36X35-CV50	C36-...
Standard	4.5xD	2.000 - 2.200	9-61/64	12-17/64	CAT50	R36X45-CV50	C36-...
Stacked Plate	2.2xD	2.000 - 2.200	4-57/64	7-35/64	CAT50	SP36X22-CV50	C36SP-...

### Cartridges



Holder Part No.	Replacement Cartridges	Qty. Inserts Needed	Mounting Screw	Adjusting Screw
R36...	C36-FIX	2	MS-17M-1	AS-18T9-1
	C36-ADJ	2	MS-17M-1	AS-18T9-1
SP36...	C36SP-FIX	2	MS-17M-1	AS-18T9-1
	C36SP-ADJ	2	MS-17M-1	AS-18T9-1

### IC Inserts

Carbide Grade	Geometry	Part No.			Insert Screws
		AM300®	AM200®	TiN	
P35 (C5)	Standard	OP-05T308-P	OP-05T308-H	OP-05T308-T	IS-10-1
K35 (C1)	Standard	OP-05T308-1P	OP-05T308-1H	OP-05T308-1T	IS-10-1
K25 (C2)	Standard	OP-05T308-2P	OP-05T308-2H	-	IS-10-1
P35 (C5)	High Rake	OP-05T308-PHR	OP-05T308-HHR	-	IS-10-1



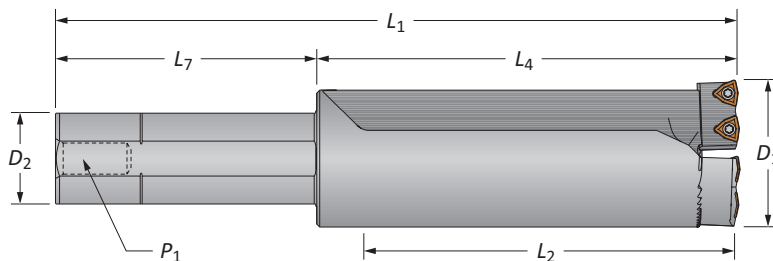
Mounting screws sold in multiples of 4 | Adjusting screws sold in multiples of 4  
 IC inserts sold in multiples of 10 | Insert screws sold in multiples of 10

 = Metric (mm)  
 = Imperial (in)



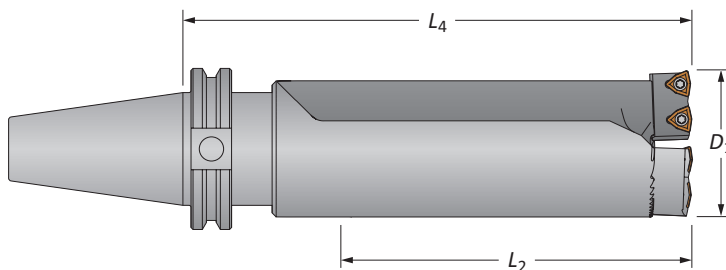
## Revolution Drill™ Holders

Series 38 | Diameter Range: 55.88mm - 60.96mm (2.200" - 2.400")



### Straight Shank

	Style	Length	D <sub>1</sub> Range	Holder			Shank			Part No.	Cartridges
				L <sub>2</sub>	L <sub>4</sub>	L <sub>1</sub>	D <sub>2</sub>	L <sub>7</sub>	P <sub>1</sub>		
M	Standard	2.2xD	55.88 - 60.96	139	162.2	232.2	40	70	–	R38X22-40M	C38-...
	Standard	3.5xD	55.88 - 60.96	215	238.4	308.4	40	70	–	R38X35-40M	C38-...
	Standard	4.5xD	55.88 - 60.96	278	301.9	371.9	40	70	–	R38X45-40M	C38-...
	Stacked Plate	2.2xD	55.88 - 60.96	137	160.0	230.0	40	70	–	SP38X22-40M	C38SP-...
I	Standard	2.2xD	2.200 - 2.400	5-29/64	6-25/64	10-25/64	1-1/2	4	1/4	R38X22-150L	C38-...
	Standard	3.5xD	2.200 - 2.400	8-29/64	9-25/64	13-25/64	1-1/2	4	1/4	R38X35-150L	C38-...
	Standard	4.5xD	2.200 - 2.400	10-61/64	11-57/64	15-57/64	1-1/2	4	1/4	R38X45-150L	C38-...
	Stacked Plate	2.2xD	2.200 - 2.400	5-3/8	6-19/64	10-19/64	1-1/2	4	1/4	SP38X22-150L	C38SP-...



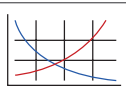
### CV40 Shank

	Style	Length	D <sub>1</sub> Range	Holder		Shank	Part No.	Cartridges
				L <sub>2</sub>	L <sub>4</sub>			
I	Standard	2.2xD	2.200 - 2.400	5-29/64	7-49/64	CAT40	R38X22-CV40	C38-...
	Standard	3.5xD	2.200 - 2.400	8-29/64	10-49/64	CAT40	R38X35-CV40	C38-...
	Standard	4.5xD	2.200 - 2.400	10-61/64	13-17/64	CAT40	R38X45-CV40	C38-...
	Stacked Plate	2.2xD	2.200 - 2.400	5-3/8	7-43/64	CAT40	SP38X22-CV40	C38SP-...

A60: 21 - 22

A60: 2 - 4

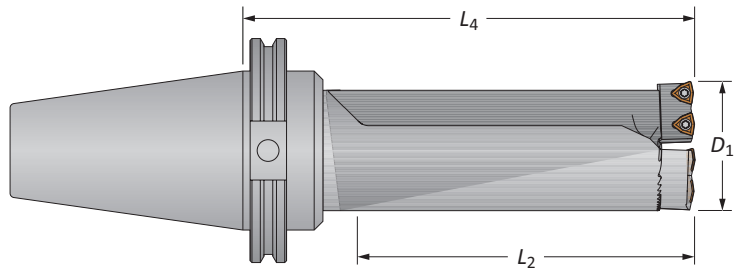
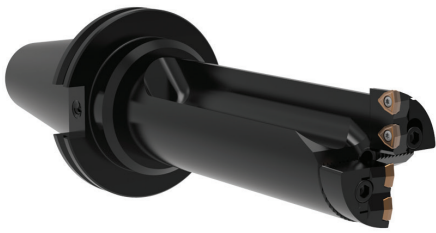
Key on A60: 1



M = Metric (mm)  
I = Imperial (in)

## Revolution Drill™ Holders

Series 38 | Diameter Range: 55.88mm - 60.96mm (2.200" - 2.400")



### CV50 Shank

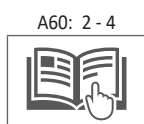
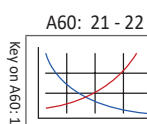
Style	Length	D <sub>1</sub> Range	Holder		Shank	Part No.	Cartridges	
			L <sub>2</sub>	L <sub>4</sub>				
i	Standard	2.2xD	2.200 - 2.400	5-29/64	7-49/64	CAT50	R38X22-CV50	C38-...
	Standard	3.5xD	2.200 - 2.400	8-29/64	10-49/64	CAT50	R38X35-CV50	C38-...
	Standard	4.5xD	2.200 - 2.400	10-61/64	13-17/64	CAT50	R38X45-CV50	C38-...
	Stacked Plate	2.2xD	2.200 - 2.400	5-3/8	7-43/64	CAT50	SP38X22-CV50	C38SP-...

### Cartridges



Holder Part No.	Replacement Cartridges	Qty. Inserts Needed	Mounting Screw	Adjusting Screw
R38...	C38-FIX	2	MS-17M-1	AS-18T9-1
	C38-ADJ	2	MS-17M-1	AS-18T9-1
SP38...	C38SP-FIX	2	MS-17M-1	AS-18T9-1
	C38SP-ADJ	2	MS-17M-1	AS-18T9-1

### IC Inserts

Carbide Grade	Geometry	Part No.			Insert Screws
		AM300®	AM200®	TiN	
P35 (C5)	Standard	OP-05T308-P	OP-05T308-H	OP-05T308-T	IS-10-1
K35 (C1)	Standard	OP-05T308-1P	OP-05T308-1H	OP-05T308-1T	IS-10-1
K25 (C2)	Standard	OP-05T308-2P	OP-05T308-2H	-	IS-10-1
P35 (C5)	High Rake	OP-05T308-PHR	OP-05T308-HHR	-	IS-10-1



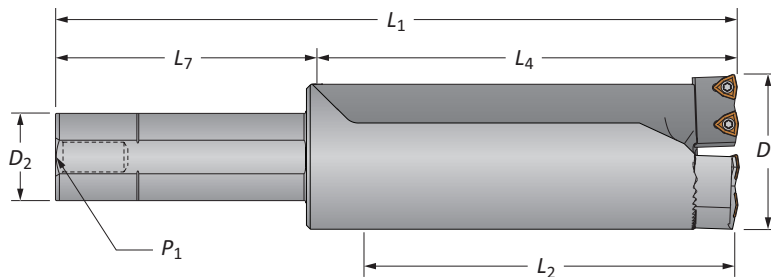
Mounting screws sold in multiples of 4 | Adjusting screws sold in multiples of 4  
 IC inserts sold in multiples of 10 | Insert screws sold in multiples of 10

 = Metric (mm)  
 = Imperial (in)



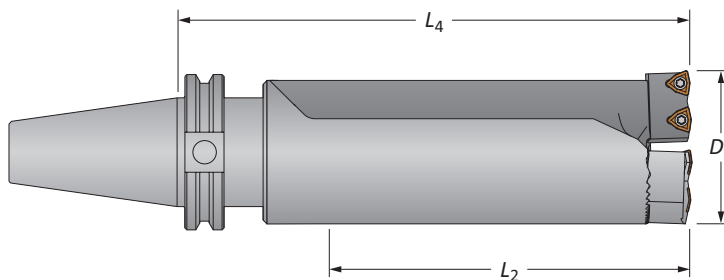
## Revolution Drill™ Holders

Series 42 | Diameter Range: 60.96mm - 66.04mm (2.400" - 2.600")



### Straight Shank

	Style	Length	D <sub>1</sub> Range	Holder			Shank			Part No.	Cartridges
				L <sub>2</sub>	L <sub>4</sub>	L <sub>1</sub>	D <sub>2</sub>	L <sub>7</sub>	P <sub>1</sub>		
M	Standard	2.2xD	60.96 - 66.04	145	171.7	241.7	40	70	–	R42X22-40M	C42-...
	Standard	3.5xD	60.96 - 66.04	234	260.6	330.6	40	70	–	R42X35-40M	C42-...
	Standard	4.5xD	60.96 - 66.04	297	324.1	394.1	40	70	–	R42X45-40M	C42-...
	Stacked Plate	2.2xD	60.96 - 66.04	146	172.9	242.9	40	70	–	SP42X22-40M	C42SP-...
I	Standard	2.2xD	2.400 - 2.600	5-45/64	6-49/64	10-49/64	1-1/2	4	1/4	R42X22-150L	C42-...
	Standard	3.5xD	2.400 - 2.600	9-13/64	10-17/64	14-17/64	1-1/2	4	1/4	R42X35-150L	C42-...
	Standard	4.5xD	2.400 - 2.600	11-45/64	12-49/64	16-49/64	1-1/2	4	1/4	R42X45-150L	C42-...
	Stacked Plate	2.2xD	2.400 - 2.600	5-3/4	6-13/16	10-13/16	1-1/2	4	1/4	SP42X22-150L	C42SP-...

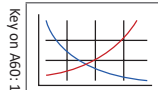


### CV40 Shank

	Style	Length	D <sub>1</sub> Range	Holder		Shank	Part No.	Cartridges
				L <sub>2</sub>	L <sub>4</sub>			
I	Standard	2.2xD	2.400 - 2.600	5-45/64	8-9/64	CAT40	R42X22-CV40	C42-...
	Standard	3.5xD	2.400 - 2.600	9-13/64	11-41/64	CAT40	R42X35-CV40	C42-...
	Standard	4.5xD	2.400 - 2.600	11-45/64	14-9/64	CAT40	R42X45-CV40	C42-...
	Stacked Plate	2.2xD	2.400 - 2.600	5-3/4	8-3/16	CAT40	SP42X22-CV40	C42SP-...

A60: 21 - 22

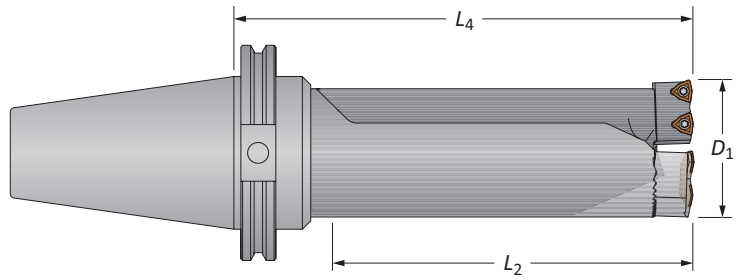
A60: 2 - 4



M = Metric (mm)  
I = Imperial (in)

## Revolution Drill™ Holders

Series 42 | Diameter Range: 60.96mm - 66.04mm (2.400" - 2.600")






### CV50 Shank

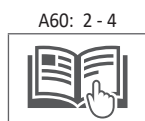
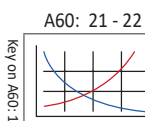
Style	Length	D <sub>1</sub> Range	Holder		Shank	Part No.	Cartridges
			L <sub>2</sub>	L <sub>4</sub>			
Standard	2.2xD	2.400 - 2.600	5-45/64	8-9/64	CAT50	<b>R42X22-CV50</b>	C42-...
Standard	3.5xD	2.400 - 2.600	9-13/64	11-41/64	CAT50	<b>R42X35-CV50</b>	C42-...
Standard	4.5xD	2.400 - 2.600	11-45/64	14-9/64	CAT50	<b>R42X45-CV50</b>	C42-...
Stacked Plate	2.2xD	2.400 - 2.600	5-3/4	8-3/16	CAT50	<b>SP42X22-CV50</b>	C42SP-...

### Cartridges

Holder Part No.	Replacement Cartridges	Qty. Inserts Needed	Mounting Screw	Adjusting Screw
R42...	<b>C42-FIX</b>	2	MS-19M-1	AS-18T9-1
	<b>C42-ADJ</b>	2	MS-19M-1	AS-18T9-1
SP42...	<b>C42SP-FIX</b>	2	MS-19M-1	AS-18T9-1
	<b>C42SP-ADJ</b>	2	MS-19M-1	AS-18T9-1

### IC Inserts

Carbide Grade	Geometry	Part No.			Insert Screws
		 AM300®	 AM200®	 TiN	
P35 (C5)	Standard	<b>OP-05T308-P</b>	<b>OP-05T308-H</b>	<b>OP-05T308-T</b>	IS-10-1
K35 (C1)	Standard	<b>OP-05T308-1P</b>	<b>OP-05T308-1H</b>	<b>OP-05T308-1T</b>	IS-10-1
K25 (C2)	Standard	<b>OP-05T308-2P</b>	<b>OP-05T308-2H</b>	-	IS-10-1
P35 (C5)	High Rake	<b>OP-05T308-PHR</b>	<b>OP-05T308-HHR</b>	-	IS-10-1



Mounting screws sold in multiples of 4 | Adjusting screws sold in multiples of 4  
 IC inserts sold in multiples of 10 | Insert screws sold in multiples of 10

 = Metric (mm)  
 = Imperial (in)

44

DRILLING | Revolution Drill™ Large Diameter Replaceable IC Insert Drilling System

**Revolution Drill™ Holders**

Series 44 | Diameter Range: 66.04mm - 71.12mm (2.600" - 2.800")

**Straight Shank**

Metric	Style	Length	D <sub>1</sub> Range	Holder			Shank			Part No.	Cartridges
				L <sub>2</sub>	L <sub>4</sub>	L <sub>1</sub>	D <sub>2</sub>	L <sub>7</sub>	P <sub>1</sub>		
mm	Standard	2.2xD	66.04 - 71.12	158	190.7	260.7	40	70	–	R44X22-40M	C44-...
	Standard	3.5xD	66.04 - 71.12	253	285.9	355.9	40	70	–	R44X35-40M	C44-...
	Stacked Plate	2.2xD	66.04 - 71.12	159	191.7	261.7	40	70	–	SP44X22-40M	C44SP-...
in	Standard	2.2xD	2.600 - 2.800	6-13/64	7-1/2	11-1/2	1-1/2	4	1/4	R44X22-150L	C44-...
	Standard	3.5xD	2.600 - 2.800	9-61/64	11-1/4	15-1/4	1-1/2	4	1/4	R44X35-150L	C44-...
	Stacked Plate	2.2xD	2.600 - 2.800	6-1/4	7-35/64	11-35/64	1-1/2	4	1/4	SP44X22-150L	C44SP-...

**CV50 Shank**

Metric	Style	Length	D <sub>1</sub> Range	Holder		Shank	Part No.	Cartridges
				L <sub>2</sub>	L <sub>4</sub>			
mm	Standard	2.2xD	2.600 - 2.800	6-13/64	8-7/8	CAT50	R44X22-CV50	C44-...
	Standard	3.5xD	2.600 - 2.800	9-61/64	12-5/8	CAT50	R44X35-CV50	C44-...
	Stacked Plate	2.2xD	2.600 - 2.800	6-1/4	8-59/64	CAT50	SP44X22-CV50	C44SP-...

**Cartridges**

Holder Part No.	Cartridges de rechange	Qty. Inserts Needed	Mounting Screw	Adjusting Screw
R44...	C44-FIX	3	MS-19M-1	AS-18T9-1
	C44-ADJ	3	MS-19M-1	AS-18T9-1
SP44...	C44SP-FIX	3	MS-19M-1	AS-18T9-1
	C44SP-ADJ	3	MS-19M-1	AS-18T9-1

**IC Inserts**

Carbide Grade	Geometry	Part No.			Insert Screws
		AM300®	AM200®	TiN	
P35 (C5)	Standard	OP-05T308-P	OP-05T308-H	OP-05T308-T	IS-10-1
K35 (C1)	Standard	OP-05T308-1P	OP-05T308-1H	OP-05T308-1T	IS-10-1
K25 (C2)	Standard	OP-05T308-2P	OP-05T308-2H	–	IS-10-1
P35 (C5)	High Rake	OP-05T308-PHR	OP-05T308-HHR	–	IS-10-1

A60: 21 - 22  
Key on A60: 1  
A60: 2 - 4  
Mounting screws sold in multiples of 4 | Adjusting screws sold in multiples of 4  
IC inserts sold in multiples of 10 | Insert screws sold in multiples of 10mm = Metric (mm)  
in = Imperial (in)

A60: 14

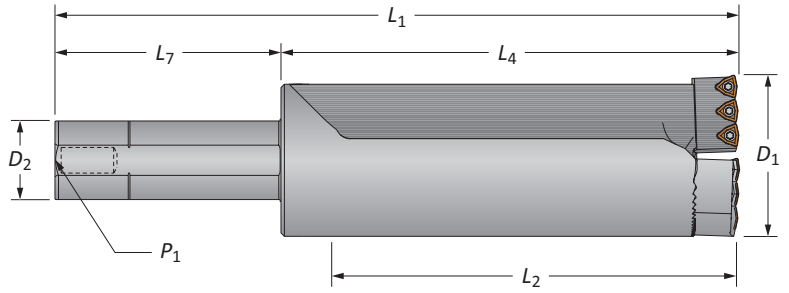
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SPECIALS



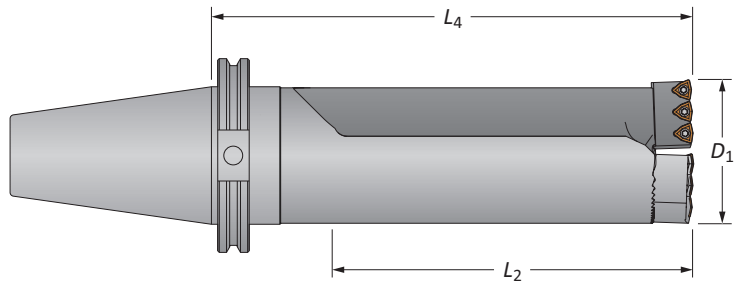
## Revolution Drill™ Holders

Series 46 | Diameter Range: 71.12mm - 76.20mm (2.800" - 3.000")



### Straight Shank

Metric	Style	Length	D <sub>1</sub> Range	Holder			Shank			Part No.	Cartridges
				L <sub>2</sub>	L <sub>4</sub>	L <sub>1</sub>	D <sub>2</sub>	L <sub>7</sub>	P <sub>1</sub>		
mm	Standard	2.2xD	71.12 - 76.20	170	203.4	273.4	40	70	-	R46X22-40M	C46-...
	Standard	3.5xD	71.12 - 76.20	266	298.6	368.6	40	70	-	R46X35-40M	C46-...
	Stacked Plate	2.2xD	71.12 - 76.20	171	204.4	274.4	40	70	-	SP46X22-40M	C46SP-...
in	Standard	2.2xD	2.800 - 3.000	6-45/64	8	12	1-1/2	4	1/4	R46X22-150L	C46-...
	Standard	3.5xD	2.800 - 3.000	10-29/64	11-3/4	15-3/4	1-1/2	4	1/4	R46X35-150L	C46-...
	Stacked Plate	2.2xD	2.800 - 3.000	6-3/4	8-3/64	12-3/64	1-1/2	4	1/4	SP46X22-150L	C46SP-...



### CV50 Shank

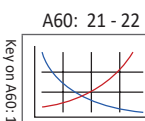
Metric	Style	Length	D <sub>1</sub> Range	Holder		Shank	Part No.	Cartridges
				L <sub>2</sub>	L <sub>4</sub>			
mm	Standard	2.2xD	2.800 - 3.000	6-45/64	9-25/64	CAT50	R46X22-CV50	C46-...
	Standard	3.5xD	2.800 - 3.000	10-29/64	13-1/8	CAT50	R46X35-CV50	C46-...
	Stacked Plate	2.2xD	2.800 - 3.000	6-3/4	9-27/64	CAT50	SP46X22-CV50	C46SP-...

### Cartridges

Holder Part No.	Cartridges de rechange	Qty. Inserts Needed	Mounting Screw	Adjusting Screw
R46...	C46-FIX	3	MS-21M-1	AS-18T9-1
	C46-ADJ	3	MS-21M-1	AS-18T9-1
SP46...	C46SP-FIX	3	MS-21M-1	AS-18T9-1
	C46SP-ADJ	3	MS-21M-1	AS-18T9-1

### IC Inserts

Carbide Grade	Geometry	Part No.			Insert Screws
		AM300®	AM200®	TiN	
P35 (C5)	Standard	OP-05T308-P	OP-05T308-H	OP-05T308-T	IS-10-1
K35 (C1)	Standard	OP-05T308-1P	OP-05T308-1H	OP-05T308-1T	IS-10-1
K25 (C2)	Standard	OP-05T308-2P	OP-05T308-2H	-	IS-10-1
P35 (C5)	High Rake	OP-05T308-PHR	OP-05T308-HHR	-	IS-10-1



A60: 2 - 4



Mounting screws sold in multiples of 4 | Adjusting screws sold in multiples of 4  
 IC inserts sold in multiples of 10 | Insert screws sold in multiples of 10

mm = Metric (mm)  
 in = Imperial (in)

48

DRILLING | Revolution Drill™ Large Diameter Replaceable IC Insert Drilling System

**Revolution Drill™ Holders**

Series 48 | Diameter Range: 76.20mm - 81.28mm (3.000" - 3.200")

**Straight Shank**

Metric	Style	Length	D <sub>1</sub> Range	Holder			Shank			Part No.	Cartridges
				L <sub>2</sub>	L <sub>4</sub>	L <sub>1</sub>	D <sub>2</sub>	L <sub>7</sub>	P <sub>1</sub>		
M	Standard	1.0xD	76.20 - 81.28	80	114.5	194.5	50	80	-	R48X10-50M	C48-...
	Standard	2.5xD	76.20 - 81.28	201	235.2	315.2	50	80	-	R48X25-50M	C48-...
	Stacked Plate	1.0xD	76.20 - 81.28	82	116.5	196.5	50	80	-	SP48X10-50M	C48SP-...
	Stacked Plate	2.5xD	76.20 - 81.28	203	237.2	317.2	50	80	-	SP48X25-50M	C48SP-...
I	Standard	1.0xD	3.000 - 3.200	3-5/32	4-33/64	9-1/64	2	4-1/2	1/4	R48X10-200L	C48-...
	Standard	2.5xD	3.000 - 3.200	7-29/32	9-17/64	13-49/64	2	4-1/2	1/4	R48X25-200L	C48-...
	Stacked Plate	1.0xD	3.000 - 3.200	3-15/64	4-19/32	9-3/32	2	4-1/2	1/4	SP48X10-200L	C48SP-...
	Stacked Plate	2.5xD	3.000 - 3.200	7-63/64	9-11/32	13-27/32	2	4-1/2	1/4	SP48X25-200L	C48SP-...

**CV50 Shank**

Metric	Style	Length	D <sub>1</sub> Range	Holder		Shank	Part No.	Cartridges
				L <sub>2</sub>	L <sub>4</sub>			
I	Standard	1.0xD	3.000 - 3.200	3-5/32	5-57/64	CAT50	R48X10-CV50	C48-...
	Standard	2.5xD	3.000 - 3.200	7-29/32	10-41/64	CAT50	R48X25-CV50	C48-...
	Stacked Plate	1.0xD	3.000 - 3.200	3-15/64	5-31/32	CAT50	SP48X10-CV50	C48SP-...
	Stacked Plate	2.5xD	3.000 - 3.200	7-63/64	10-23/32	CAT50	SP48X25-CV50	C48SP-...

**Cartridges**

Holder Part No.	Cartridges de rechange	Qty. Inserts Needed	Mounting Screw	Adjusting Screw
R48...	C48-FIX	3	MS-21M-1	AS-18T9-1
	C48-ADJ	3	MS-21M-1	AS-18T9-1
SP48...	C48SP-FIX	3	MS-21M-1	AS-18T9-1
	C48SP-ADJ	3	MS-21M-1	AS-18T9-1

**IC Inserts**

Carbide Grade	Geometry	Part No.			Insert Screws
		AM300®	AM200®	TiN	
P35 (C5)	Standard	OP-05T308-P	OP-05T308-H	OP-05T308-T	IS-10-1
K35 (C1)	Standard	OP-05T308-1P	OP-05T308-1H	OP-05T308-1T	IS-10-1
K25 (C2)	Standard	OP-05T308-2P	OP-05T308-2H	-	IS-10-1
P35 (C5)	High Rake	OP-05T308-PHR	OP-05T308-HHR	-	IS-10-1

A60: 21 - 22

A60: 2 - 4

Mounting screws sold in multiples of 4 | Adjusting screws sold in multiples of 4  
IC inserts sold in multiples of 10 | Insert screws sold in multiples of 10M = Metric (mm)  
I = Imperial (in)

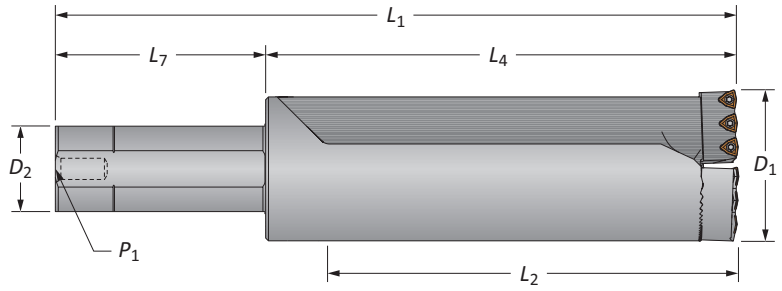
A60: 16

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A  
DRILLINGB  
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SPECIALS

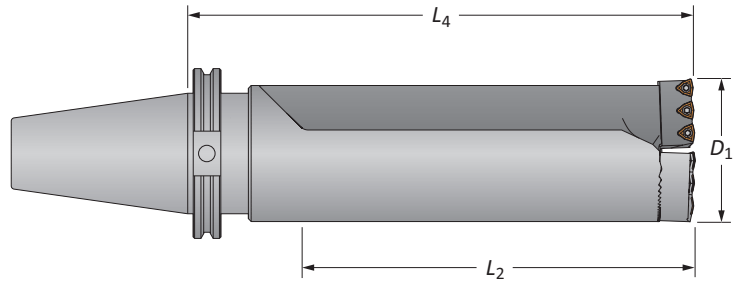
## Revolution Drill™ Holders

Series 52 | Diameter Range: 81.28mm - 86.36mm (3.200" - 3.400")



### Straight Shank

Metric (m)	Style	Length	D <sub>1</sub> Range	Holder			Shank			Part No.	Cartridges
				L <sub>2</sub>	L <sub>4</sub>	L <sub>1</sub>	D <sub>2</sub>	L <sub>7</sub>	P <sub>1</sub>		
m	Standard	1.0xD	81.28 - 86.36	87	127.2	207.2	50	80	–	R52X10-50M	C52-...
	Standard	2.5xD	81.28 - 86.36	214	254.2	334.2	50	80	–	R52X25-50M	C52-...
	Stacked Plate	1.0xD	81.28 - 86.36	89	129.1	209.1	50	80	–	SP52X10-50M	C52SP-...
	Stacked Plate	2.5xD	81.28 - 86.36	216	256.1	336.1	50	80	–	SP52X25-50M	C52SP-...
i	Standard	1.0xD	3.200 - 3.400	3-27/64	5-1/64	9-33/64	2	4-1/2	1/4	R52X10-200L	C52-...
	Standard	2.5xD	3.200 - 3.400	8-27/64	10-1/64	14-33/64	2	4-1/2	1/4	R52X25-200L	C52-...
	Stacked Plate	1.0xD	3.200 - 3.400	3-31/64	5-5/64	9-37/64	2	4-1/2	1/4	SP52X10-200L	C52SP-...
	Stacked Plate	2.5xD	3.200 - 3.400	8-31/64	10-5/64	14-37/64	2	4-1/2	1/4	SP52X25-200L	C52SP-...



### CV50 Shank

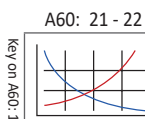
Metric (m)	Style	Length	D <sub>1</sub> Range	Holder		Shank	Part No.	Cartridges
				L <sub>2</sub>	L <sub>4</sub>			
i	Standard	1.0xD	3.200 - 3.400	3-27/64	6-25/64	CAT50	R52X10-CV50	C52-...
	Standard	2.5xD	3.200 - 3.400	8-27/64	11-25/64	CAT50	R52X25-CV50	C52-...
	Stacked Plate	1.0xD	3.200 - 3.400	3-31/64	6-29/64	CAT50	SP52X10-CV50	C52SP-...
	Stacked Plate	2.5xD	3.200 - 3.400	8-31/64	11-29/64	CAT50	SP52X25-CV50	C52SP-...

### Cartridges

Holder Part No.	Cartridges de rechange	Qty. Inserts Needed	Mounting Screw	Adjusting Screw
R52...	C52-FIX	3	MS-19M-1	AS-18T9-1
	C52-ADJ	3	MS-19M-1	AS-18T9-1
SP52...	C52SP-FIX	3	MS-19M-1	AS-18T9-1
	C52SP-ADJ	3	MS-19M-1	AS-18T9-1

### IC Inserts

Carbide Grade	Geometry	Part No.			Insert Screws
		AM300®	AM200®	TiN	
P35 (C5)	Standard	OP-05T308-P	OP-05T308-H	OP-05T308-T	IS-10-1
K35 (C1)	Standard	OP-05T308-1P	OP-05T308-1H	OP-05T308-1T	IS-10-1
K25 (C2)	Standard	OP-05T308-2P	OP-05T308-2H	–	IS-10-1
P35 (C5)	High Rake	OP-05T308-PHR	OP-05T308-HHR	–	IS-10-1



A60: 21 - 22



A60: 2 - 4

Mounting screws sold in multiples of 4 | Adjusting screws sold in multiples of 4  
IC inserts sold in multiples of 10 | Insert screws sold in multiples of 10

 = Metric (mm)  
 = Imperial (in)

54

DRILLING | Revolution Drill™ Large Diameter Replaceable IC Insert Drilling System

**Revolution Drill™ Holders**

Series 54 | Diameter Range: 86.36mm - 91.44mm (3.400" - 3.600")

**Straight Shank**

Metric	Style	Length	D <sub>1</sub> Range	Holder			Shank			Part No.	Cartridges
				L <sub>2</sub>	L <sub>4</sub>	L <sub>1</sub>	D <sub>2</sub>	L <sub>7</sub>	P <sub>1</sub>		
m	Standard	1.0xD	86.36 - 91.44	93	133.6	213.6	50	80	–	R54X10-50M	C54-...
	Standard	2.5xD	86.36 - 91.44	226	266.9	346.9	50	80	–	R54X25-50M	C54-...
	Stacked Plate	1.0xD	86.36 - 91.44	95	135.1	215.1	50	80	–	SP54X10-50M	C54SP-...
	Stacked Plate	2.5xD	86.36 - 91.44	228	268.5	348.5	50	80	–	SP54X25-50M	C54SP-...
i	Standard	1.0xD	3.400 - 3.600	3-21/32	5-17/64	9-49/64	2	4-1/2	1/4	R54X10-200L	C54-...
	Standard	2.5xD	3.400 - 3.600	8-29/32	10-33/64	15-1/64	2	4-1/2	1/4	R54X25-200L	C54-...
	Stacked Plate	1.0xD	3.400 - 3.600	3-23/32	5-21/64	9-53/64	2	4-1/2	1/4	SP54X10-200L	C54SP-...
	Stacked Plate	2.5xD	3.400 - 3.600	8-31/32	10-37/64	15-5/64	2	4-1/2	1/4	SP54X25-200L	C54SP-...

**CV50 Shank**

Metric	Style	Length	D <sub>1</sub> Range	Holder		Shank	Part No.	Cartridges
				L <sub>2</sub>	L <sub>4</sub>			
i	Standard	1.0xD	3.400 - 3.600	3-21/32	6-41/64	CAT50	R54X10-CV50	C54-...
	Standard	2.5xD	3.400 - 3.600	8-29/32	11-57/64	CAT50	R54X25-CV50	C54-...
	Stacked Plate	1.0xD	3.400 - 3.600	3-23/32	6-11/16	CAT50	SP54X10-CV50	C54SP-...
	Stacked Plate	2.5xD	3.400 - 3.600	8-31/32	11-15/16	CAT50	SP54X25-CV50	C54SP-...

**Cartridges**

Holder Part No.	Cartridges de rechange	Qty. Inserts Needed	Mounting Screw	Adjusting Screw
R54...	C54-FIX	3	MS-19M-1	AS-18T9-1
	C54-ADJ	3	MS-19M-1	AS-18T9-1
SP54...	C54SP-FIX	3	MS-19M-1	AS-18T9-1
	C54SP-ADJ	3	MS-19M-1	AS-18T9-1

**IC Inserts**

Carbide Grade	Geometry	Part No.			Insert Screws
		AM300®	AM200®	TiN	
P35 (C5)	Standard	OP-05T308-P	OP-05T308-H	OP-05T308-T	IS-10-1
K35 (C1)	Standard	OP-05T308-1P	OP-05T308-1H	OP-05T308-1T	IS-10-1
K25 (C2)	Standard	OP-05T308-2P	OP-05T308-2H	–	IS-10-1
P35 (C5)	High Rake	OP-05T308-PHR	OP-05T308-HHR	–	IS-10-1

A60: 21 - 22  
Key on A60: 1  
A60: 2 - 4  
old in multiples of 4 | Adjusting screws sold in multiples of 4  
IC inserts sold in multiples of 10 | Insert screws sold in multiples of 10m = Metric (mm)  
i = Imperial (in)

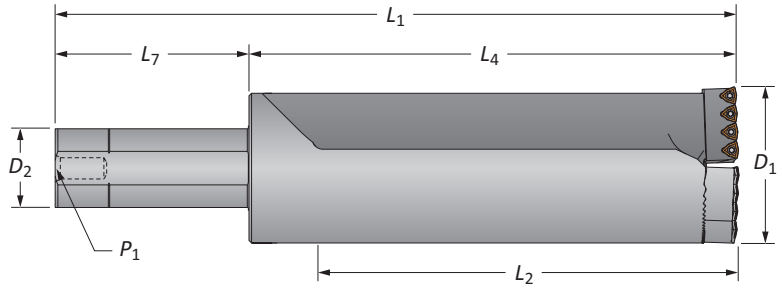
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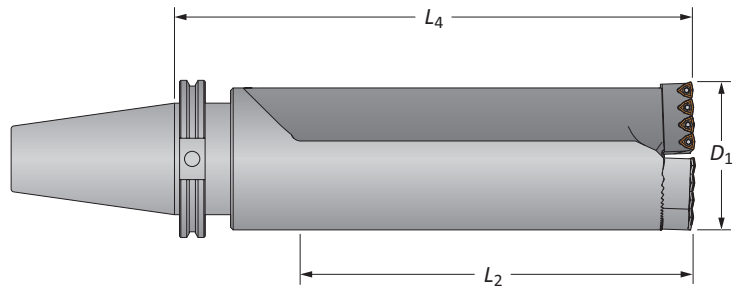
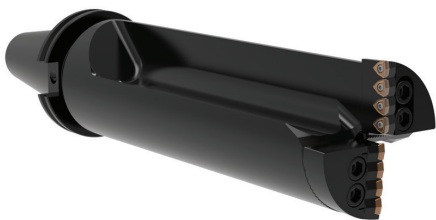
## Revolution Drill™ Holders

Series 56 | Diameter Range: 91.44mm - 96.52mm (3.600" - 3.800")



### Straight Shank

Metric (m)	Style	Length	D <sub>1</sub> Range	Holder			Shank			Part No.	Cartridges
				L <sub>2</sub>	L <sub>4</sub>	L <sub>1</sub>	D <sub>2</sub>	L <sub>7</sub>	P <sub>1</sub>		
m	Standard	1.0xD	91.44 - 96.52	99	146.2	226.2	50	80	-	R56X10-50M	C56-...
	Standard	2.5xD	91.44 - 96.52	238	285.9	365.9	50	80	-	R56X25-50M	C56-...
	Stacked Plate	1.0xD	91.44 - 96.52	100	147.6	227.6	50	80	-	SP56X10-50M	C56SP-...
	Stacked Plate	2.5xD	91.44 - 96.52	240	287.3	367.3	50	80	-	SP56X25-50M	C56SP-...
Imperial (i)	Standard	1.0xD	3.600 - 3.800	3-7/8	5-3/4	10-1/4	2	4-1/2	1/4	R56X10-200L	C56-...
	Standard	2.5xD	3.600 - 3.800	9-3/8	11-1/4	15-3/4	2	4-1/2	1/4	R56X25-200L	C56-...
	Stacked Plate	1.0xD	3.600 - 3.800	3-15/16	5-13/16	10-5/16	2	4-1/2	1/4	SP56X10-200L	C56SP-...
	Stacked Plate	2.5xD	3.600 - 3.800	9-7/16	11-5/16	15-13/16	2	4-1/2	1/4	SP56X25-200L	C56SP-...



### CV50 Shank

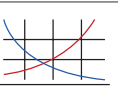

Metric (m)	Style	Length	D <sub>1</sub> Range	Holder		Shank	Part No.	Cartridges
				L <sub>2</sub>	L <sub>4</sub>			
i	Standard	1.0xD	3.600 - 3.800	3-7/8	7-1/8	CAT50	R56X10-CV50	C56-...
	Standard	2.5xD	3.600 - 3.800	9-3/8	12-5/8	CAT50	R56X25-CV50	C56-...
	Stacked Plate	1.0xD	3.600 - 3.800	3-15/16	7-3/16	CAT50	SP56X10-CV50	C56SP-...
	Stacked Plate	2.5xD	3.600 - 3.800	9-7/16	12-11/16	CAT50	SP56X25-CV50	C56SP-...

### Cartridges

Holder Part No.	Cartridges de rechange	Qty. Inserts Needed	Mounting Screw	Adjusting Screw
R56...	C56-FIX	4	MS-21M-1	AS-18T9-1
	C56-ADJ	4	MS-21M-1	AS-18T9-1
SP56...	C56SP-FIX	4	MS-21M-1	AS-18T9-1
	C56SP-ADJ	4	MS-21M-1	AS-18T9-1



### IC Inserts

Carbide Grade	Geometry	Part No.			Insert Screws
		AM300®	AM200®	TiN	
P35 (C5)	Standard	OP-05T308-P	OP-05T308-H	OP-05T308-T	IS-10-1
	Standard	OP-05T308-1P	OP-05T308-1H	OP-05T308-1T	
K25 (C2)	Standard	OP-05T308-2P	OP-05T308-2H	-	IS-10-1
	High Rake	OP-05T308-PHR	OP-05T308-HHR	-	

A60: 21 - 22  A60: 2 - 4 

Key on A60: 1

Mounting screws sold in multiples of 4 | Adjusting screws sold in multiples of 4  
 IC inserts sold in multiples of 10 | Insert screws sold in multiples of 10

 = Metric (mm)  
 = Imperial (in)

58

DRILLING | Revolution Drill™ Large Diameter Replaceable IC Insert Drilling System

**Revolution Drill™ Holders**

Series 58 | Diameter Range: 96.52mm - 101.60mm (3.800" - 4.000")

**Straight Shank**

Metric	Style	Length	D <sub>1</sub> Range	Holder			Shank			Part No.	Cartridges
				L <sub>2</sub>	L <sub>4</sub>	L <sub>1</sub>	D <sub>2</sub>	L <sub>7</sub>	P <sub>1</sub>		
M	Standard	1.0xD	96.52 - 101.60	98	146.05	226.2	50	80	-	R58X10-50M	C58-...
	Standard	2.5xD	96.52 - 101.60	251	298.45	378.6	50	80	-	R58X25-50M	C58-...
	Stacked Plate	1.0xD	96.52 - 101.60	100	147.64	227.4	50	80	-	SP58X10-50M	C58SP-...
	Stacked Plate	2.5xD	96.52 - 101.60	252	300.04	379.8	50	80	-	SP58X25-50M	C58SP-...
I	Standard	1.0xD	3.800 - 4.000	3-7/8	5-3/4	10-1/4	2	4-1/2	1/4	R58X10-200L	C58-...
	Standard	2.5xD	3.800 - 4.000	9-7/8	11-3/4	16-1/4	2	4-1/2	1/4	R58X25-200L	C58-...
	Stacked Plate	1.0xD	3.800 - 4.000	3-15/16	5-13/16	10-5/16	2	4-1/2	1/4	SP58X10-200L	C58SP-...
	Stacked Plate	2.5xD	3.800 - 4.000	9-15/16	11-13/16	16-5/16	2	4-1/2	1/4	SP58X25-200L	C58SP-...

**CV50 Shank**

Metric	Style	Length	D <sub>1</sub> Range	Holder		Shank	Part No.	Cartridges
				L <sub>2</sub>	L <sub>4</sub>			
I	Standard	1.0xD	3.800 - 4.000	3-7/8	7-1/8	CAT50	R58X10-CV50	C58-...
	Standard	2.5xD	3.800 - 4.000	9-7/8	13-1/8	CAT50	R58X25-CV50	C58-...
	Stacked Plate	1.0xD	3.800 - 4.000	3-15/16	7-3/16	CAT50	SP58X10-CV50	C58SP-...
	Stacked Plate	2.5xD	3.800 - 4.000	9-15/16	13-3/16	CAT50	SP58X25-CV50	C58SP-...

**Cartridges****IC Inserts**

Holder Part No.	Cartridges de rechange	Qté de plaquettes requise	Mounting Screw	Adjusting Screw	Carbide Grade	Geometry	Part No.			Insert Screws
							AM300®	AM200®	TiN	
R58...	C58-FIX	4	MS-21M-1	AS-18T9-1	P35 (C5)	Standard	OP-05T308-P	OP-05T308-H	OP-05T308-T	IS-10-1
	C58-ADJ	4	MS-21M-1	AS-18T9-1	K35 (C1)	Standard	OP-05T308-1P	OP-05T308-1H	OP-05T308-1T	IS-10-1
SP58...	C58SP-FIX	4	MS-21M-1	AS-18T9-1	K25 (C2)	Standard	OP-05T308-2P	OP-05T308-2H	-	IS-10-1
	C58SP-ADJ	4	MS-21M-1	AS-18T9-1	P35 (C5)	High Rake	OP-05T308-PHR	OP-05T308-HHR	-	IS-10-1

A60: 21 - 22

A60: 2 - 4




Mounting screws sold in multiples of 4 | Adjusting screws sold in multiples of 4  
IC inserts sold in multiples of 10 | Insert screws sold in multiples of 10M = Metric (mm)  
I = Imperial (in)

A60: 20

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

ISO	Material	Hardness (BHN)	Vitesse (M/min)			Feed Rate (mm/rev)
			 AM300®	 AM200®	 TIN	
P	Free Machining Steel 1118, 1215, 12L14, etc.	100 - 250	274 - 396	259 - 366	213 - 274	0.09 - 0.18
	Low Carbon Steel 1010, 1020, 1025, 1522, 1144, etc.	85 - 275	259 - 381	244 - 351	198 - 259	0.08 - 0.17
	Medium Carbon Steel 1030, 1040, 1050, 1527, 1140, 1151, etc.	125 - 325	244 - 320	229 - 290	183 - 259	0.09 - 0.17
	Alloy Steel 4140, 5140, 8640, etc.	125 - 375	229 - 305	213 - 274	183 - 259	0.09 - 0.17
	High Strength Steel 4340, 4330V, 300M, etc.	225 - 400	183 - 259	168 - 229	122 - 198	0.08 - 0.13
	Structural Steel A36, A285, A516, etc.	100 - 350	259 - 320	244 - 290	198 - 259	0.08 - 0.17
	Tool Steel H-13, H-21, A-4, O-2, S-3, etc.	150 - 250	122 - 244	107 - 213	76 - 198	0.06 - 0.13
S	High Temperature Alloy Hastelloy B, Inconel 600, etc.	140 - 310	76 - 137	76 - 107	46 - 91	0.06 - 0.11
M	Stainless Steel 400 Series 416, 420, etc.	185 - 350	183 - 259	168 - 229	122 - 198	0.08 - 0.15
	Stainless Steel 300 Series 304, 316, 17-4PH, etc.	135 - 275	183 - 259	168 - 229	122 - 198	0.08 - 0.15
	Super Duplex Stainless Steel	135 - 275	152 - 228	137 - 198	91 - 152	0.05 - 0.12
K	Nodular, Grey, Ductile Cast Iron	120 - 320	213 - 274	198 - 244	152 - 213	0.10 - 0.20
N	Cast Aluminium	30 - 180	381 - 503	381 - 472	290 - 335	0.15 - 0.30
	Wrought Aluminium	30 - 180	381 - 503	381 - 472	290 - 335	0.15 - 0.30
	Brass	30 - 100	290 - 411	274 - 381	229 - 335	0.13 - 0.23

**Material Constants**

Type of Material	Hardness (BHN)	kPa
Free Machining Steel	100 - 250	5.17
Low Carbon Steel	85 - 275	5.86
Medium Carbon Steel	125 - 325	6.21
Alloy Steel	125 - 375	6.90
High Strength Steel	225 - 400	7.93
Structural Steel	100 - 350	6.90
Tool Steel	150 - 250	6.21
High Temperature Alloy	140 - 310	9.93
Titanium Alloy	140 - 310	4.97
Aerospace Alloy	185 - 350	4.83
Stainless Steel 400 Series	185 - 350	7.45
Stainless Steel 300 Series	135 - 275	6.48
Super Duplex Stainless Steel	135 - 275	6.48
Wear Plate	400 - 600	11.04
Hardened Steel	300 - 500	9.66
Nodular, Ductile Cast Iron	120 - 320	4.48
Grey Cast Iron	120 - 320	5.17
Cast Aluminium	30 - 180	2.76
Wrought Aluminium	30 - 180	2.76
Aluminium Bronze	100 - 250	3.45
Brass	100	2.41
Copper	60	2.07

**Formulas**

1. <b>RPM</b>	<b>= (318.31 • M/min) / DIA</b>
where:	
RPM	= revolutions per minute (rev/min)
M/min	= speed (M/min)
DIA	= diameter of drill (mm)
2. <b>kW</b>	<b>= (DIA<sup>2</sup> • mm/rev • RPM • K<sub>m</sub>) / 181,018</b>
where:	
kW	= tool power (kW)
DIA	= diameter of drill (mm)
mm/rev	= feed rate (mm/rev)
RPM	= revolutions per minute (rev/min)
K <sub>m</sub>	= specific cutting energy (kPa) machine efficiency (using 0.80 as constant)
3. <b>Thrust</b>	<b>= 148.78 • mm/rev • DIA • K<sub>m</sub></b>
where:	
Thrust	= axial thrust (N)
mm/rev	= feed rate (mm/rev)
DIA	= diameter of drill (mm)
K <sub>m</sub>	= specific cutting energy (kPa)
5. <b>Torque</b>	<b>= (kW • 9549.3) / RPM</b>
where:	
Torque	= torque (Nm)
HP	= tool power (kW)
RPM	= revolutions per minute (rev/min)




The table and equations on this page are found in the Machinery's Handbook. Permission to simplify and print the equations is granted by the Editor of the Machinery's Handbook.

**IMPORTANT:** The speeds and feeds listed above are considered a general starting point for all applications. Factory technical assistance is available for your specific applications through our Application Engineering department.

A  
DRILLING  
B  
BORING  
C  
REAMING  
D  
BURNISHING  
E  
THREADING  
X  
SPECIALS



**Recommended Cutting Data | Imperial (inch)**

ISO	Material	Hardness (BHN)	Speed (SFM)			Feed Rate (IPR)
			 AM300®	 AM200®	 TIN	
P	Free Machining Steel 1118, 1215, 12L14, etc.	100 - 250	900 - 1300	850 - 1200	700 - 900	.0035 - .007
	Low Carbon Steel 1010, 1020, 1025, 1522, 1144, etc.	85 - 275	850 - 1250	800 - 1150	650 - 850	.003 - .0065
	Medium Carbon Steel 1030, 1040, 1050, 1527, 1140, 1151, etc.	125 - 325	800 - 1050	750 - 950	600 - 850	.0035 - .0065
	Alloy Steel 4140, 5140, 8640, etc.	125 - 375	750 - 1000	700 - 900	600 - 850	.0035 - .0065
	High Strength Steel 4340, 4330V, 300M, etc.	225 - 400	600 - 850	550 - 750	400 - 650	.003 - .005
	Structural Steel A36, A285, A516, etc.	100 - 350	850 - 1050	800 - 950	650 - 850	.003 - .0065
	Tool Steel H-13, H-21, A-4, O-2, S-3, etc.	150 - 250	400 - 800	350 - 700	250 - 650	.0025 - .005
	S	High Temp Alloy Hastelloy B, Inconel 600, etc.	140 - 310	250 - 450	250 - 350	150 - 300
M	Stainless Steel 400 Series 416, 420, etc.	185 - 350	600 - 850	550 - 750	400 - 650	.003 - .006
	Stainless Steel 300 Series 304, 316, 17-4PH, etc.	135 - 275	600 - 850	550 - 750	400 - 650	.003 - .006
	Super Duplex Stainless Steel	135 - 275	500 - 750	450 - 650	300 - 550	.002 - .005
K	Nodular, Grey, Ductile Cast Iron	120 - 320	700 - 900	650 - 800	500 - 700	.004 - .008
N	Cast Aluminium	30 - 180	1250 - 1650	1200 - 1550	950 - 1100	.006 - .012
	Wrought Aluminium	30 - 180	1250 - 1650	1200 - 1550	950 - 1100	.006 - .012
	Brass	30 - 100	950 - 1350	900 - 1250	750 - 1100	.005 - .009

**Material Constants**

Type of Material	Hardness (BHN)	K <sub>m</sub> (lbs/in <sup>2</sup> )
Free Machining Steel	100 - 250	0.75
Low Carbon Steel	85 - 275	0.85
Medium Carbon Steel	125 - 325	0.90
Alloy Steel	125 - 375	1.00
High Strength Steel	225 - 400	1.15
Structural Steel	100 - 350	1.00
Tool Steel	150 - 250	0.90
High Temperature Alloy	140 - 310	1.44
Titanium Alloy	140 - 310	0.72
Aerospace Alloy	185 - 350	0.70
Stainless Steel 400 Series	185 - 350	1.08
Stainless Steel 300 Series	135 - 275	0.94
Super Duplex Stainless Steel	135 - 275	0.94
Wear Plate	400 - 600	1.60
Hardened Steel	300 - 500	1.40
Nodular, Ductile Cast Iron	120 - 320	0.65
Grey Cast Iron	120 - 320	0.75
Cast Aluminium	30 - 180	0.40
Wrought Aluminium	30 - 180	0.40
Aluminium Bronze	100 - 250	0.50
Brass	100	0.35
Copper	60	0.30

**Formulas**

1. <b>RPM</b> = $(3.82 \cdot \text{SFM}) / \text{DIA}$ where: RPM = revolutions per minute (rev/min) SFM = speed (M/min) DIA = diameter of drill (mm)
2. <b>HP</b> = $(0.6676 \cdot \text{DIA}^2 \cdot \text{IPR} \cdot \text{RPM} \cdot K_m) / 0.80$ where: Tool Power = tool power (HP) DIA = diameter of drill (mm) IPR = feed rate (in/rev) RPM = revolutions per minute (rev/min) K <sub>m</sub> = specific cutting energy (lbs/in <sup>2</sup> ) machine efficiency (using 0.80 as constant)
3. <b>Thrust</b> = $148,500 \cdot \text{IPR} \cdot \text{DIA} \cdot K_m$ where: Thrust = axial thrust (lbs) IPR = feed rate (in/rev) DIA = diameter of drill (mm) K <sub>m</sub> = specific cutting energy (lbs/in <sup>2</sup> )
5. <b>Torque</b> = $(\text{HP} \cdot 5252) / \text{RPM}$ where: Torque = torque (ft/lbs) HP = tool power (kW) RPM = revolutions per minute (rev/min)

The table and equations on this page are found in the Machinery's Handbook. Permission to simplify and print the equations is granted by the Editor of the Machinery's Handbook.

**IMPORTANT:** The speeds and feeds listed above are considered a general starting point for all applications. Factory technical assistance is available for your specific applications through our Application Engineering department.



## Notes

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- A**
- DRILLING
- B**
- BORING
- C**
- REAMING
- D**
- BURNISHING
- E**
- THREADING
- X**
- SPECIALS



## Notes

**A**

DRILLING

**B**

BORING

**C**

REAMING

**D**

BURNISHING

**F**

THREADING

**X**

SPECIALS

Notes

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**A**  
DRILLING

**B**  
BORING

**C**  
REAMING

**D**  
BURNISHING

**E**  
THREADING

**X**  
SPECIALS

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