



MODULAR BORING SYSTEM

A FOCUSED LOOK AT Precision Boring



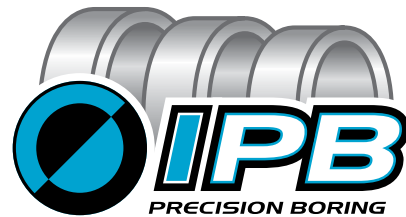
Ingersoll Cutting Tools is pleased to introduce the Ingersoll Precision Boring (IPB) System, engineered to support a full range of roughing and finishing boring applications with exceptional precision. This comprehensive product line features a user-friendly modular connection designed to deliver superior versatility and consistent accuracy across operations. Whether the goal is to improve operational efficiency, enhance machining performance, or simplify daily processes, the IPB system has been developed with the end user in mind.

EXPERIENCE. QUALITY. INNOVATION.

Ingersoll offers a full line of standard metal cutting tools including milling, turning, grooving, threading, holemaking, high-precision boring and reaming, PCD form tooling, and more. Additionally, expert Ingersoll engineers take great pride in conceptualizing and manufacturing custom-engineered special tooling for unique applications.

Key Features of the IPB System:

- Extensive arbor offerings, including HSK, CAT, MAS403-BT, and NMTB configurations
- Broad application range for rough and finish boring, covering diameters from Ø .098-23.580"
- Modular extensions and reducers to accommodate a wide variety of bore depths
- Modular chucking solutions, including ER collet, side lock, and face mill drivers
- Full compatibility and interchangeability with the previous D'Andrea boring system
- Reliable performance supported by expert product knowledge and application assistance



Rockford, Illinois Campus



Content

LANDING PAGE

Scan the QR code to access detailed specifications, dimensional data, and the full product offering of the Ingersoll Precision Boring (IPB) System in our e-catalog.



CROSS REFERENCE

This document provides a detailed, side-by-side comparison of components from the legacy boring system alongside their corresponding IPB equivalents.



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Ingersoll is continuously updating insert geometries and grades. Scan the QR code for the latest list of compatible insert offerings.



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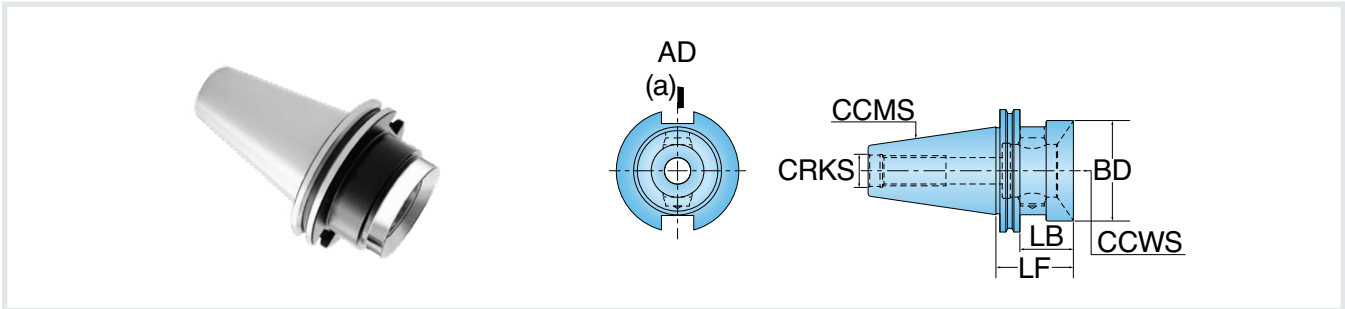
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Series IPB-ANSI/CAT

ANSI CAT SPINDLE ADAPTER (METRIC PULL STUD)



Part Number	CCMS Conn. Code Machine Side	CRKS Conn. Ret. Knob Thread Size	BD Body Diameter	LF Funct. Length	LB Body Length	CCWS Conn. Code Wrkpc. Side	WT Weight (lbs)
INCH							
ANSI/CAT40-IPB50.66	CAT40	M16	50.00 mm	2.59	1.850	IPB-50	2.420
ANSI/CAT40-IPB63.100	CAT40	M16	63.00 mm	3.94	-	IPB-63	4.180
ANSI/CAT50-IPB50.48	CAT50	M24	50.00 mm	1.89	1.140	IPB-50	6.390
ANSI/CAT50-IPB80.62	CAT50	M24	80.00 mm	2.44	1.692	IPB-80	7.500

Series IPB-CAT_UNC

CAT SPINDLE ADAPTER (INCH PULL STUD)

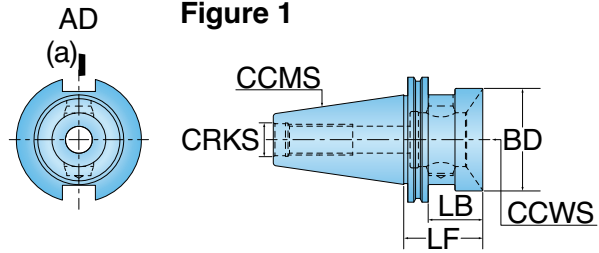
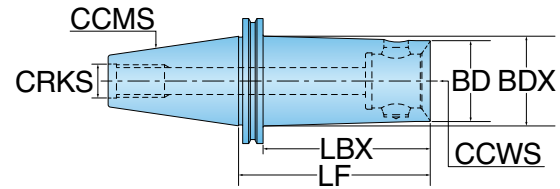


Figure 2



Part Number	CCMS Conn. Code Machine Side	CRKS Conn. Ret. Knob Thread Size	BD Body Diameter	BDX Body Diameter Max.	LF Funct. Length	LB Body Length	LBX Body Length Max.	CCWS Conn. Code Wrkpc. Side	WT Weight (lbs)	Fig.
INCH										
CAT40UNC-IPB50.66	CAT40	5/8 UNC	50.00 mm	-	2.60	1.851	-	IPB-50	2.430	1
CAT40UNC-IPB50.120	CAT40	5/8 UNC	50.00 mm	2.756	4.72	-	3.980	IPB-50	3.750	2
CAT40UNC-IPB63.100	CAT40	5/8 UNC	63.00 mm	-	3.94	-	-	IPB-63	4.190	1
CAT45UNC-IPB50.48	CAT45	3/4 UNC	50.00 mm	-	1.89	1.143	-	IPB-50	3.750	1
CAT50UNC-IPB50.48	CAT50	1 UNC	50.00 mm	-	1.89	1.142	-	IPB-50	5.290	1
CAT50UNC-IPB50.120	CAT50	1 UNC	50.00 mm	2.756	4.72	-	3.980	IPB-50	7.720	2
CAT50UNC-IPB63.56	CAT50	1 UNC	63.00 mm	-	2.21	1.457	-	IPB-63	6.390	1
CAT50UNC-IPB63.150	CAT50	1 UNC	63.00 mm	2.756	5.90	-	5.160	IPB-63	11.020	2
CAT50UNC-IPB80.62	CAT50	1 UNC	80.00 mm	-	2.44	1.693	-	IPB-80	7.050	1
CAT50UNC-IPB80.180	CAT50	1 UNC	80.00 mm	-	7.09	-	6.340	IPB-80	15.210	2

Series IPB-CAT_UNC_FC (Face Contact)

CAT SPINDLE ADAPTER FC (FACE CONTACT) (INCH PULL STUD)

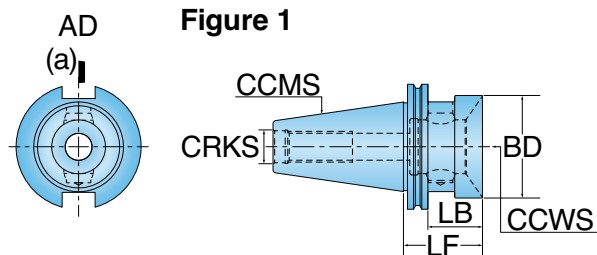
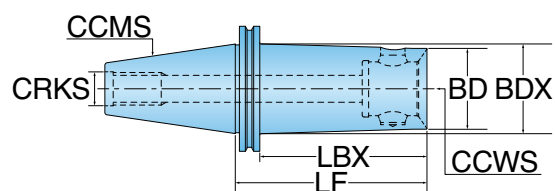


Figure 1

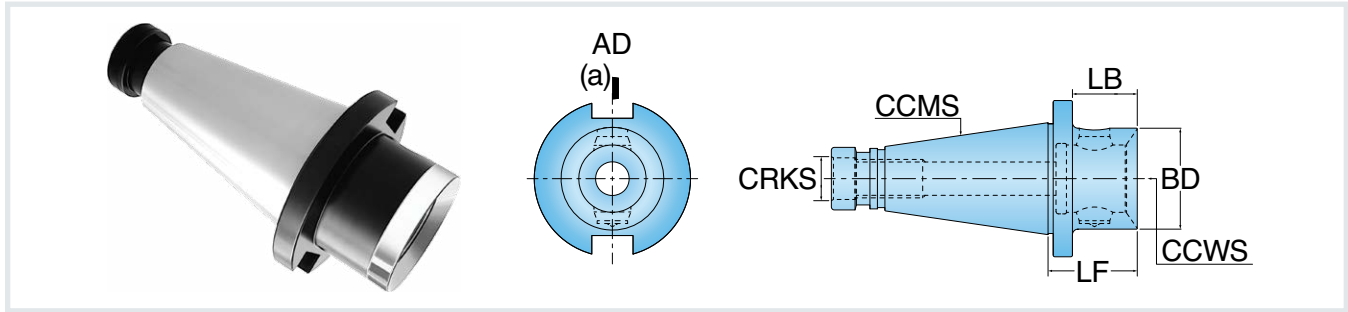
Figure 2



Part Number	CCMS Conn. Code Machine Side	CRKS Conn. Ret. Knob Thread Size	BD Body Diameter	BDX Body Diameter Max.	LF Funct. Length	LB Body Length	LBX Body Length Max.	CCWS Conn. Code Wrkpc. Side	WT Weight (lbs)	Fig.
INCH										
CAT40UNC-FC-IPB50.66	CAT40FC	5/8 UNC	50.00 mm	-	2.59	1.850	-	IPB-50	2.430	1
CAT40UNC-FC-IPB50.120	CAT40FC	5/8 UNC	50.00 mm	1.968	4.72	-	3.980	IPB-50	5.950	2
CAT50UNC-FC-IPB50.48	CAT50FC	1 UNC	50.00 mm	-	1.89	1.142	-	IPB-50	5.290	1
CAT50UNC-FC-IPB63.56	CAT50FC	1 UNC	63.00 mm	-	2.20	1.460	-	IPB-63	6.390	1
CAT50UNC-FC-IPB80.62	CAT50FC	1 UNC	80.00 mm	-	2.44	1.690	-	IPB-80	7.090	1

Series IPB-NMTB

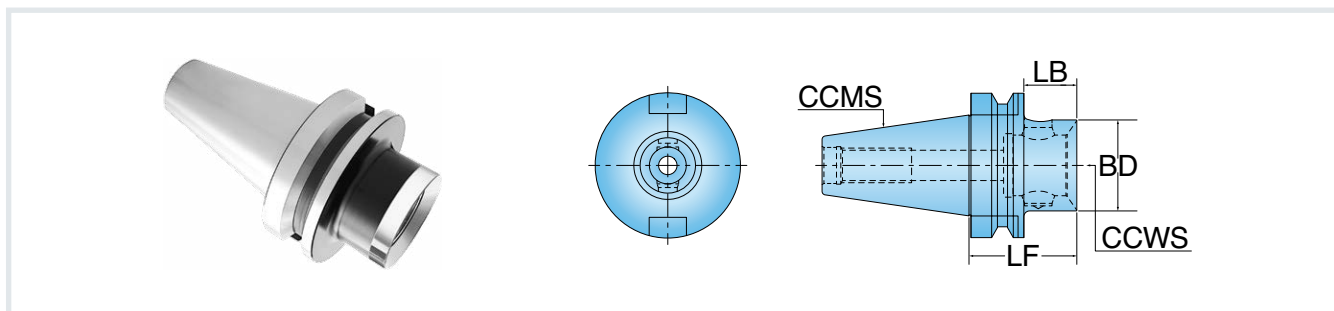
NMTB SPINDLE ADAPTER



Part Number	CCMS Conn. Code Machine Side	CRKS Conn. Ret. Knob Thread Size	BD Body Diameter	LF Funct. Length	LB Body Length	CCWS Conn. Code Wrkpc. Side	WT Weight (lbs)
INCH							
NMTB40-IPB63.60	NMTB40	5/8 UNC	63.00 mm	1.88	1.430	IPB-63	2.640
NMTB50-IPB50.48	NMTB50	1 UNC	50.00 mm	1.88	1.300	IPB-50	5.730
NMTB50-IPB63.56	NMTB50	1 UNC	63.00 mm	2.20	1.610	IPB-63	5.950
NMTB50-IPB80.60	NMTB50	1 UNC	80.00 mm	2.36	1.770	IPB-80	7.050

Series IPB-MAS403-BT

MAS403-BT SPINDLE ADAPTER



Part Number	CCMS Conn. Code Machine Side	BD Body Diameter	LF Funct. Length	LB Body Length	CCWS Conn. Code Wrkpc. Side	WT Weight (lbs)
INCH						
MAS403-BT30-IPB50.60	BT30	50.00 mm	2.36	1.420	IPB-50	1.540
MAS403-BT40-IPB50.48	BT40	50.00 mm	1.89	0.830	IPB-50	1.980
MAS403-BT40-IPB63.66	BT40	63.00 mm	2.60	-	IPB-63	2.640
MAS403-BT45-IPB50.62	BT45	50.00 mm	2.44	1.140	IPB-50	3.740
MAS403-BT50-IPB50.66	BT50	50.00 mm	2.60	1.100	IPB-50	7.700
MAS403-BT50-IPB63.75	BT50	63.00 mm	1.97	0.470	IPB-63	7.500
MAS403-BT50-IPB80.75	BT50	80.00 mm	2.95	1.460	IPB-80	8.810

Series IPB-MAS403-BT_FC (Face Contact)

MAS403-BT (FACE CONTACT) SPINDLE ADAPTER



Figure 1

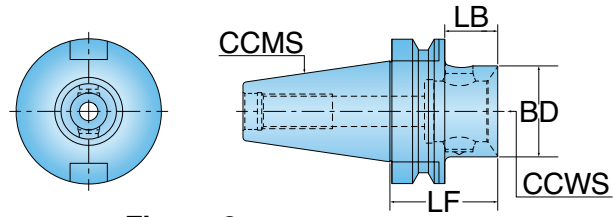
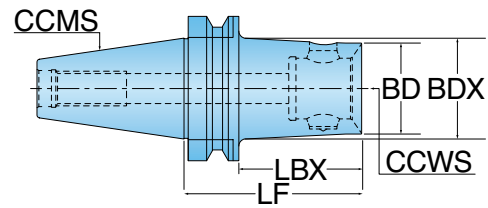


Figure 2



Part Number	CCMS Conn. Code Machine Side	BD Body Diameter	BDX Body Diameter Max.	LF Funct. Length	LB Body Length	LBX Body Length Max.	CCWS Conn. Code Wrkpc. Side	WT Weight (lbs)	Fig.
INCH									
MAS403-BT40-FC-IPB50.48	BT40	50.00 mm	-	1.89	0.830	-	IPB-50	1.980	1
MAS403-BT40-FC-IPB50.120	BT40	50.00 mm	-	4.72	3.660	-	IPB-50	1.900	1
MAS403-BT40-FC-IPB63.66	BT40	63.00 mm	-	2.60	-	-	IPB-63	2.650	1
MAS403-BT50-FC-IPB50.66	BT50	50.00 mm	-	2.60	1.100	-	IPB-50	7.280	1
MAS403-BT50-FC-IPB63.150	BT50	63.00 mm	2.894	5.91	-	4.410	IPB-63	12.790	2
MAS403-BT50-FC-IPB80.75	BT50	80.00 mm	-	2.95	1.460	-	IPB-80	8.820	1
MAS403-BT50-FC-IPB80.180	BT50	80.00 mm	-	7.09	-	5.590	IPB-80	16.530	2

Series IPB-PSC (ISO26623-1)

POLYGON SHANK CONNECTION SPINDLE ADAPTER



Figure 1

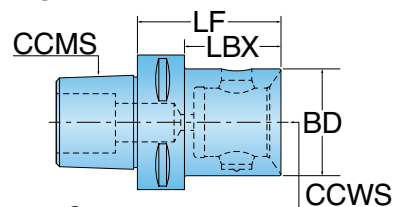
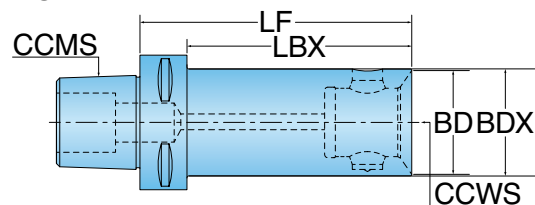


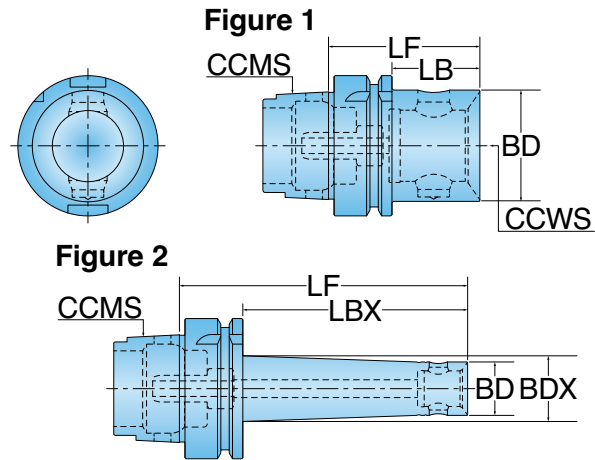
Figure 2



Part Number	CCMS Conn. Code Machine Side	BD Body Diameter	BDX Body Diameter Max.	LF Funct. Length	LB Body Length	LBX Body Length Max.	CCWS Conn. Code Wrkpc. Side	WT Weight (lbs)	Fig.
INCH									
C4-IPB32.42	C4	32.00	-	1.65	0.870	-	IPB-32	0.660	1
C5-IPB50.55	C5	50.00 mm	-	2.17	-	-	IPB-50	1.760	1
C6-IPB40.50	C6	40.00 mm	-	1.97	1.102	-	IPB-40	1.980	1
C6-IPB40.120	C6	40.00 mm	1.732	4.72	-	3.858	IPB-40	3.310	2
C6-IPB50.55	C6	50.00 mm	-	2.17	1.299	-	IPB-50	2.430	1
C6-IPB50.67	C6	50.00 mm	-	2.64	1.772	-	IPB-50	2.430	1
C6-IPB50.120	C6	50.00 mm	2.126	4.72	-	3.850	IPB-50	1.900	2
C6-IPB63.77	C6	63.00 mm	-	3.03	-	-	IPB-63	4.190	1
C8-IPB50.60	C8	50.00 mm	-	2.36	1.181	-	IPB-50	4.410	1
C8-IPB50.120	C8	50.00 mm	2.126	4.72	3.540	-	IPB-50	6.170	2
C8-IPB63.70	C8	63.00 mm	-	2.76	1.575	-	IPB-63	5.070	1
C8-IPB63.150	C8	63.00 mm	2.638	5.91	4.720	-	IPB-63	8.820	2
C8-IPB80.75	C8	80.00 mm	-	2.95	-	-	IPB-80	5.730	1

Series IPB-HSK-A (DIN 69893)

HSK-A DIN SPINDLE ADAPTER



Part Number	CCMS Conn. Code Machine Side	BD Body Diameter	BDX Body Diameter Max.	LF Funct. Length	LB Body Length	LBX Body Length Max.	CCWS Conn. Code Wrkpc. Side	WT Weight (lbs)	Fig.
INCH									
HSK-A50-IPB50.66	HSK A50	50.00 mm	-	2.6	1.574	-	IPB-50	1.320	1
HSK-A63-IPB40.60	HSK A63	40.00 mm	-	2.36	1.338	-	IPB-40	1.540	1
HSK-A63-IPB40.120	HSK A63	40.00 mm	1.811	4.72	-	3.700	IPB-40	1.540	2
HSK-A63-IPB50.66	HSK A63	50.00 mm	-	2.6	1.574	-	IPB-50	1.940	1
HSK-A63-IPB50.120	HSK A63	50.00 mm	-	4.72	3.700	-	IPB-50	1.940	1
HSK-A63-IPB63.75	HSK A63	63.00 mm	-	2.95	-	-	IPB-63	2.420	1
HSK-A80-IPB50.70	HSK A80	50.00 mm	-	2.76	1.732	-	IPB-50	3.300	1
HSK-A80-IPB63.80	HSK A80	63.00 mm	-	3.15	2.130	-	IPB-63	3.960	1
HSK-A80-IPB80.86	HSK A80	80.00 mm	-	3.39	-	-	IPB-80	4.620	1
HSK-A100-IPB50.72	HSK A100	50.00 mm	-	2.83	1.690	-	IPB-50	5.290	1
HSK-A100-IPB50.120	HSK A100	50.00 mm	2.362	4.72	-	3.580	IPB-50	7.050	2
HSK-A100-IPB63.82	HSK A100	63.00 mm	-	3.23	2.086	-	IPB-63	5.950	1
HSK-A100-IPB63.150	HSK A100	63.00 mm	2.756	5.91	-	4.760	IPB-63	9.920	2
HSK-A100-IPB80.88	HSK A100	80.00 mm	-	3.46	2.320	-	IPB-80	6.600	1
HSK-A100-IPB80.180	HSK A100	80.00 mm	3.149	7.09	-	5.940	MHD 80	14.330	2

Series IPB-DIN69871

DIN69871 SPINDLE ADAPTER

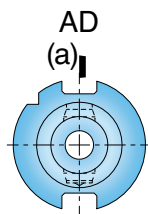


Figure 1

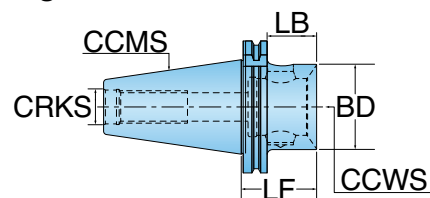
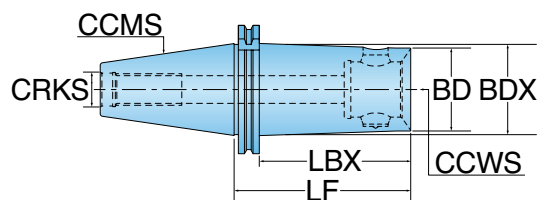


Figure 2



Part Number	CCMS Conn. Code Machine Side	BD Body Diameter	BDX Body Diameter Max.	LF Funct. Length	LB Body Length	LBX Body Length Max.	CCWS Conn. Code Wrkpc. Side	WT Weight (lbs)	Fig.
INCH									
DIN69871-30-IPB50.60	DIN69871-30	50.00 mm	-	2.36	-	-	IPB-50	0.600	1
DIN69871-40-IPB40.45	DIN69871-40	50.00 mm	-	1.77	1.020	-	IPB-40	0.900	1
DIN69871-40-IPB40.120	DIN69871-40	40.00 mm	1.752	4.72	-	3.976	IPB-40	0.900	2
DIN69871-40-IPB50.48	DIN69871-40	50.00	-	1.89	1.140	-	IPB-50	0.900	1
DIN69871-40-IPB50.120	DIN69871-40	50.00 mm	1.968	4.72	-	3.976	IPB-50	0.900	2
DIN69871-40-IPB63.80	DIN69871-40	63.00 mm	-	3.15	-	-	IPB-63	1.500	1
DIN69871-50-IPB50.48	DIN69871-50	50.00 mm	-	1.89	1.140	-	IPB-50	2.700	1
DIN69871-50-IPB50.120	DIN69871-50	50.00 mm	2.362	4.72	-	3.976	IPB-50	2.700	2
DIN69871-50-IPB63.56	DIN69871-50	63.00 mm	-	2.20	1.460	-	IPB-63	2.800	1
DIN69871-50-IPB63.150	DIN69871-50	63.00 mm	2.874	5.91	-	5.157	IPB-63	2.800	2
DIN69871-50-IPB80.62	DIN69871-50	80.00 mm	-	2.44	1.690	-	IPB-80	3.400	1
DIN69871-50-IPB80.180	DIN69871-50	80.00 mm	3.149	7.09	-	6.338	IPB-80	3.400	2

Series IPB-DIN69871_FC (Face Contact)

DIN69871_FC (FACE CONTACT) SPINDLE ADAPTER

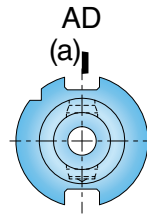


Figure 1

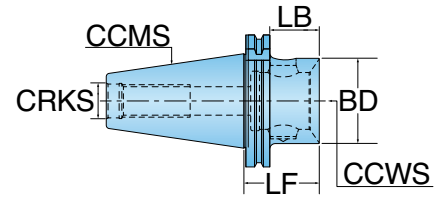
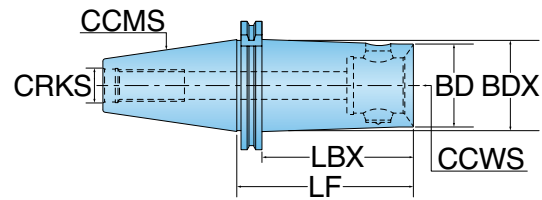


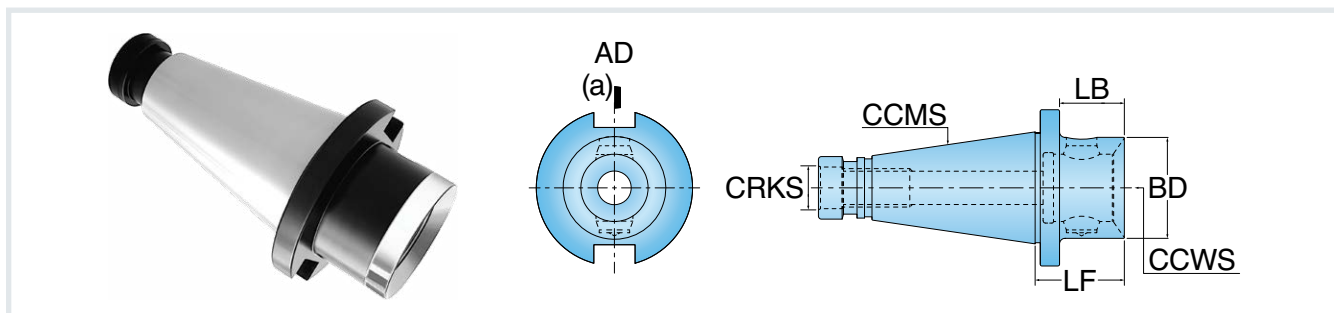
Figure 2



Part Number	CCMS Conn. Code Machine Side	BD Body Diameter	BDX Body Diameter Max.	LF Funct. Length	LB Body Length	LBX Body Length Max.	CCWS Conn. Code Wrkpc. Side	WT Weight (lbs)	Fig.
INCH									
DIN69871-40-FC-IPB50.48	DIN69871-40	50.00 mm	-	1.89	1.142	-	IPB-50	1.980	1
DIN69871-40-FC-IPB50.120	DIN69871-40	50.00 mm	2.362	4.72	-	3.976	IPB-50	3.750	2
DIN69871-50-FC-IPB50.48	DIN69871-50	50.00 mm	-	1.89	1.142	-	IPB-50	5.510	1
DIN69871-50-FC-IPB50.120	DIN69871-50	50.00 mm	2.362	4.72	-	3.976	IPB-50	7.720	2
DIN69871-50-FC-IPB63.56	DIN69871-50	63.00 mm	-	2.20	1.460	-	IPB-63	6.170	1
DIN69871-50-FC-IPB63.150	DIN69871-50	63.00 mm	2.756	5.91	-	5.157	IPB-63	11.020	2
DIN69871-50-FC-IPB80.62	DIN69871-50	80.00 mm	-	2.44	1.693	-	IPB-80	7.500	1
DIN69871-50-FC-IPB80.180	DIN69871-50	80.00 mm	3.149	7.09	-	6.338	IPB-80	15.210	2

Series IPB-DIN2080-A

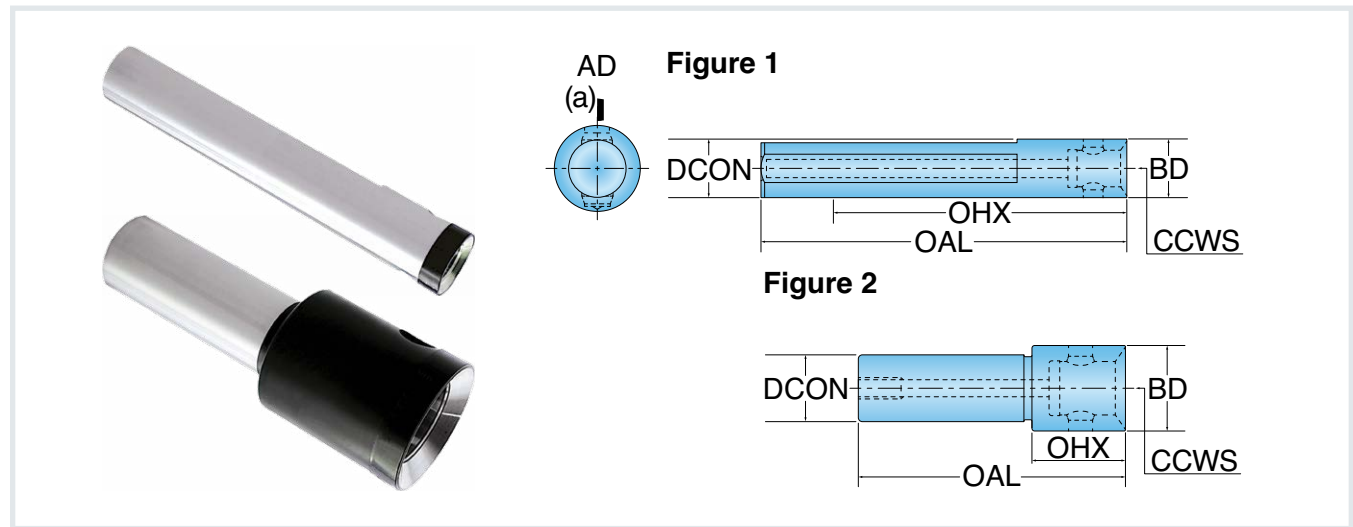
DIN SPINDLE ADAPTER



Part Number	CCMS Conn. Code Machine Side	CRKS Conn. Ret. Knob Thread Size	BD Body Diameter	LF Funct. Length	LB Body Length	CCWS Conn. Code Wrkpc. Side	WT Weight (lbs)
INCH							
DIN2080-A30-IPB50.58	NMTB30	M12	50.00 mm	2.28	-	MHD 50	1.320
DIN2080-A40-IPB50.48	NMTB40	M16	50.00 mm	1.89	1.440	MHD 50	1.980
DIN2080-A40-IPB63.60	NMTB40	M16	63.00 mm	2.36	-	MHD 63	2.640
DIN2080-A50-IPB50.48	NMTB50	M24	50.00 mm	1.89	1.290	MHD 50	5.730
DIN2080-A50-IPB63.56	NMTB50	M24	63.00 mm	2.20	1.610	MHD 63	5.950
DIN2080-A50-IPB80.60	NMTB50	M24	80.00 mm	2.36	1.770	MHD 80	7.050

Series IPB-SS - Steel Straight Shank

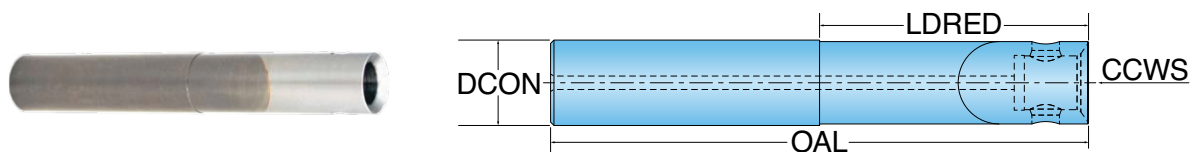
CYLINDRICAL OR FLATTED SHANK



Part Number	DCON Shank Diameter	BD Body Diameter	OAL Overall Length	OHX Overhang Max.	CCWS Conn. Code Wrkpc. Side	WT Weight (lbs)	Fig.
INCH							
SS-1-IPB32.35	1.000	1.260	3.937	1.38	IPB-32	1.540	2
SS-1.25-IPB50.60	1.250	1.968	5.512	2.36	IPB-50	2.200	2
METRIC							
SS-16-IPB16.100	16.00 mm	16.00 mm	100.0 mm	-	IPB-16	0.330	1
SS-20-IPB20.125	20.00 mm	20.00 mm	125.0 mm	-	IPB-20	0.660	1
SS-25-IPB32.35	25.00 mm	32.00 mm	100.0 mm	35.00 mm	IPB-32	1.540	2
SS-32-IPB50.60	32.00 mm	50.00 mm	140.0 mm	60.00 mm	IPB-50	2.200	2

Series IPB-SE - Carbide Shank

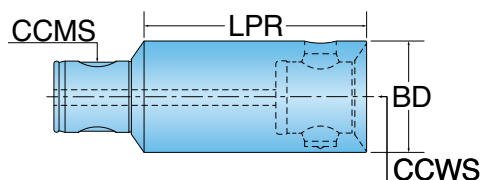
CYLINDRICAL SHANK



Part Number	DCON Shank Diameter	OAL Overall Length	LDRED Reduced Body Diameter Length	CCWS Conn. Code Wrkpc. Side	WT Weight (lbs)
INCH					
SE-5/8-IPB16.140	0.625	5.510	2.480	IPB-16	0.880
SE-5/8-IPB16.170	0.625	6.690	3.150	IPB-16	1.100
SE-3/4-IPB20.210	0.750	8.260	3.940	IPB-20	1.900
SE-1-IPB25.160	1.000	6.290	3.150	IPB-25	1.980
SE-1-IPB25.255	1.000	10.030	4.920	IPB-25	3.530
SE-1-1/4-IPB32.195	1.250	7.670	3.940	IPB-32	4.630
SE1-1/4-IPB32.315	1.250	12.400	6.300	IPB-32	7.720
METRIC					
SE-16-IPB16.110	16.00 mm	110.0 mm	50.0 mm	IPB-16	0.660
SE-16-IPB16.140	16.00 mm	140.0 mm	63.0 mm	IPB-16	0.880
SE-16-IPB16.170	16.00 mm	170.0 mm	80.0 mm	IPB-16	1.100
SE-20-IPB20.135	20.00 mm	135.0 mm	63.0 mm	IPB-20	1.320
SE-20-IPB20.170	20.00 mm	170.0 mm	80.0 mm	IPB-20	1.650
SE-20-IPB20.210	20.00 mm	210.0 mm	100.0 mm	IPB-20	1.980
SE-25-IPB25.160	25.00 mm	160.0 mm	80.0 mm	IPB-25	2.200
SE-25-IPB25.205	25.00 mm	205.0 mm	100.0 mm	IPB-25	2.870
SE-25-IPB25.255	25.00 mm	255.0 mm	125.0 mm	IPB-25	3.530
SE-32-IPB32.195	32.00 mm	195.0 mm	100.0 mm	IPB-32	4.630
SE-32-IPB32.250	32.00 mm	250.0 mm	125.0 mm	IPB-32	6.170
SE-32-IPB32.315	32.00 mm	315.0 mm	160.0 mm	IPB-32	7.720

This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and extend across the width of the page. In the bottom right corner, there is a blue decorative element consisting of a curved shape.

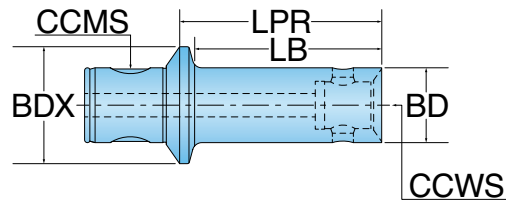
Series IPB-XT - Extension



Part Number	CCMS Conn. Code Machine Side	BD Body Diameter	LPR Protruding Length	CCWS Conn. Code Wrkpc. Side	WT Weight (lbs)
INCH					
IPB16-XT-25	IPB-16	16.000 mm	0.98	IPB-16	0.088
IPB20-XT-32	IPB-20	20.000 mm	1.26	IPB-20	0.154
IPB25-XT-25	IPB-25	25.000 mm	0.98	IPB-25	0.198
IPB25-XT-40	IPB-25	25.000 mm	1.57	IPB-25	0.330
IPB32-XT-32	IPB-32	32.000 mm	1.26	IPB-32	0.440
IPB32-XT-50	IPB-32	32.000 mm	1.97	IPB-32	0.661
IPB40-XT-40	IPB-40	40.000 mm	1.57	IPB-40	0.881
IPB40-XT-63	IPB-40	40.000 mm	2.48	IPB-40	1.320
IPB50-XT-50	IPB-50	50.000 mm	1.97	IPB-50	1.540
IPB50-XT-80	IPB-50	50.000 mm	3.15	IPB-50	2.425
IPB50-XT-100	IPB-50	50.000 mm	3.94	IPB-50	3.306
IPB63-XT-63	IPB-63	63.000 mm	2.48	IPB-63	3.086
IPB63-XT-100	IPB-63	63.000 mm	3.94	IPB-63	4.850
IPB63-XT-125	IPB-63	63.000 mm	4.92	IPB-63	6.393
IPB80-XT-125	IPB-80	80.000 mm	4.92	IPB-80	10.140
IPB80-XT-160	IPB-80	80.000 mm	6.30	IPB-80	13.440

Spare Parts - Page 64

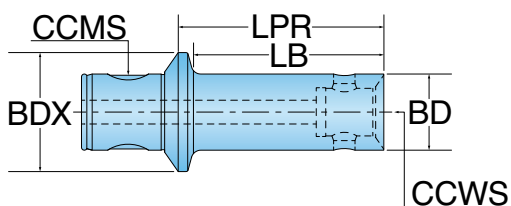
Series IPB-RT - Reducer



Part Number	CCMS Conn. Code Machine Side	BD Body Diameter	BDX Body Diameter Max.	LPR Protruding Length	LB Body Length	CCWS Conn. Code Wrkpc. Side	WT Weight (lbs)
INCH							
IPB20-RT16-20	IPB-20	20.000 mm	20.000 mm	0.78	0.62	IPB-16	0.110
IPB25-RT16-20	IPB-25	16.000 mm	25.000 mm	0.78	0.59	IPB-16	0.154
IPB25-RT20-25	IPB-25	20.000 mm	25.000 mm	0.98	0.78	IPB-20	0.176
IPB32-RT16-24	IPB-32	16.000 mm	32.000 mm	0.94	0.70	IPB-16	0.330
IPB32-RT20-25	IPB-32	20.000 mm	32.000 mm	0.98	0.78	IPB-20	0.330
IPB32-RT25-28	IPB-32	25.000 mm	32.000 mm	1.10	0.90	IPB-25	0.330
IPB40-RT16-24	IPB-40	16.000 mm	40.000 mm	0.94	0.66	IPB-16	0.396
IPB40-RT20-26	IPB-40	20.000 mm	40.000 mm	1.02	0.78	IPB-20	0.440
IPB40-RT25-28	IPB-40	25.000 mm	40.000 mm	1.10	0.86	IPB-25	0.551
IPB40-RT32-32	IPB-40	32.000 mm	40.000 mm	1.26	1.06	IPB-32	0.651
IPB50-RT16-24	IPB-50	16.000 mm	50.000 mm	0.94	0.59	IPB-16	0.881
IPB50-RT20-26	IPB-50	20.000 mm	50.000 mm	1.02	0.70	IPB-20	0.881
IPB50-RT25-28	IPB-50	25.000 mm	50.000 mm	1.10	0.82	IPB-25	0.881
IPB50-RT32-32	IPB-50	32.000 mm	50.000 mm	1.26	0.98	IPB-32	0.992
IPB50-RT40-36	IPB-50	40.000 mm	50.000 mm	1.41	1.18	IPB-40	1.102
IPB63-RT50-40	IPB-63	50.000 mm	63.000 mm	1.57	1.33	IPB-50	1.984
IPB80-RT50-45	IPB-80	50.000 mm	80.000 mm	1.77	1.41	IPB-50	2.666
IPB80-RT63-60	IPB-80	63.000 mm	80.000 mm	2.36	2.04	IPB-63	3.747

Spare Parts - Page 64

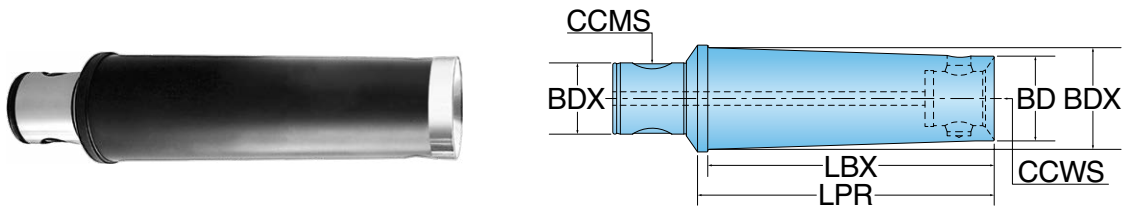
Series IPB-RT - Extended Reach Reducer



Part Number	CCMS Conn. Code Machine Side	BD Body Diameter	BDX Body Diameter Max.	LPR Protruding Length	LB Body Length	CCWS Conn. Code Wrkpc. Side	WT Weight (lbs)
INCH							
IPB50-RT16-40	IPB-50	16.000 mm	50.000 mm	1.57	1.260	IPB-16	0.440
IPB50-RT16-74	IPB-50	16.000 mm	50.000 mm	2.91	2.550	IPB-16	0.551
IPB50-RT20-70	IPB-50	20.000 mm	50.000 mm	2.75	2.440	IPB-20	0.661
IPB50-RT20-93	IPB-50	20.000 mm	50.000 mm	3.66	3.340	IPB-20	0.771
IPB50-RT25-87	IPB-50	25.000 mm	50.000 mm	3.42	3.150	IPB-25	1.322
IPB50-RT25-117	IPB-50	25.000 mm	50.000 mm	4.60	4.330	IPB-25	1.433
IPB50-RT32-87	IPB-50	32.000 mm	50.000 mm	3.42	3.150	IPB-32	1.653
IPB50-RT32-144	IPB-50	32.000 mm	50.000 mm	5.66	5.390	IPB-32	2.204
IPB50-RT40-87	IPB-50	40.000 mm	50.000 mm	3.42	3.150	IPB-40	1.984
IPB50-RT40-176	IPB-50	40.000 mm	50.000 mm	6.92	6.690	IPB-40	3.968

Spare Parts - Page 64

Series IPB-ART - Vibration Dampened Reducer

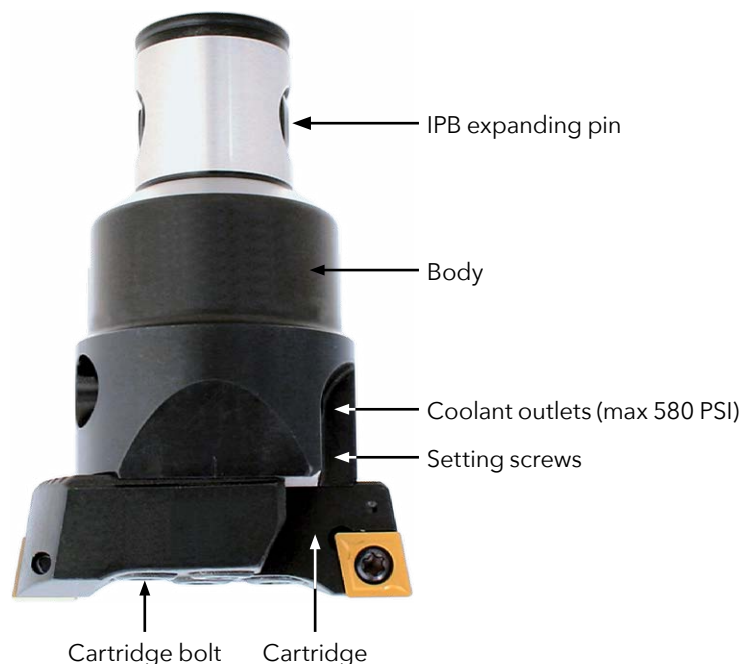


Part Number	CCMS Conn. Code Machine Side	LPR Protruding Length	LBX Body Length Max.	BD Body Diameter	BDX Body Diameter Max.	DF Flange Diameter	CCWS Conn. Code Wrkpc. Side
INCH							
IPB50-ART16-74	IPB-50	2.91	2.560	16.00 mm	17.50 mm	50.00 mm	IPB-16
IPB50-ART20-93	IPB-50	3.66	3.346	20.00 mm	21.50 mm	50.00 mm	IPB-20
IPB50-ART25-117	IPB-50	4.61	4.331	25.00 mm	27.00 mm	50.00 mm	IPB-25
IPB50-ART32-144	IPB-50	5.67	5.433	32.00 mm	35.00 mm	50.00 mm	IPB-32
IPB50-ART40-176	IPB-50	6.93	6.693	40.00 mm	47.00 mm	50.00 mm	IPB-40
IPB63-ART50-220	IPB-63	8.66	8.425	50.00 mm	60.00 mm	63.00 mm	IPB-50
IPB80-ART63-280	IPB-80	11.02	10.709	63.00 mm	77.00 mm	80.00 mm	IPB-63

Spare Parts - Page 64

Roughing Heads

Ø .708-7.874" (18.0-200.0 MM)



Series RH-IPB Rough Boring Heads

Part Number	Diameter Range
RH-IPB16-16	.708 - .866" (18 - 22 mm)
RH-IPB20-20	.866 - 1.102" (22 - 28 mm)
RH-IPB25-25	1.102 - 1.496" (28 - 38 mm)
RH-IPB32-32	1.397 - 1.968" (35.5 - 50 mm)
RH-IPB40-40	1.968 - 2.677" (50 - 68 mm)
RH-IPB50-50	2.677 - 3.543" (68 - 90 mm)
RH-IPB50-63	3.543 - 4.724" (90 - 120 mm)
RH-IPB63-63	3.543 - 4.724" (90 - 120 mm)
RH-IPB80-80	4.724 - 7.874" (120 - 200 mm)

FIGURE 1

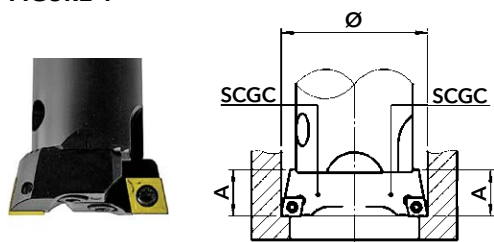


FIGURE 2

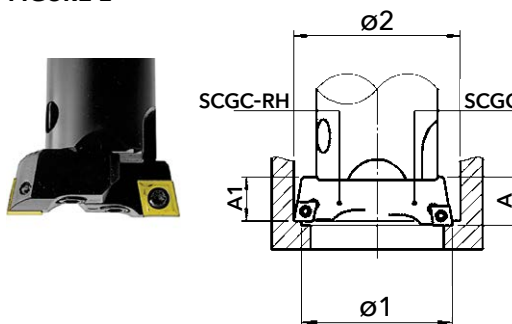
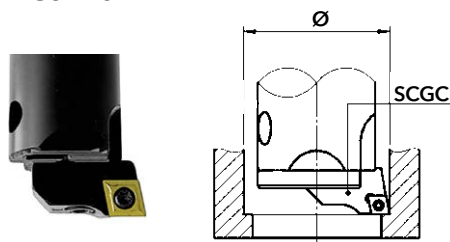


FIGURE 3



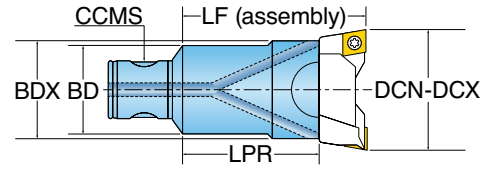
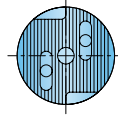
Radial positioning of the cutting edges should be performed using calibrated tool presetting equipment.

Roughing heads utilize 2 cartridges for heavy stock removal and can be configured as shown:

- **Figure 1:** 2 SCGC cartridges on the same plane, with two cutting edges set at identical radial distance for standard roughing applications
- **Figure 2:** 1 SCGC cartridge paired with 1 SCGC-RH cartridge, offset on separate planes with cutting edges set at differing radial distances, optimized for high cutting depth roughing applications
- **Figure 3:** 1 SCGC cartridge can be used for both light roughing and semi-finishing applications

Series IPB-RH - Rough Boring Head

Ø .708-7.874" (18.0-200.0 MM)



Note: LPR + WF (cartridge) = LF (assembly)

Part Number	DCN Cutting Diameter Min.	DCX Cutting Diameter Max.	CCMS Conn. Code Machine Side	BD Body Diameter	BDX Body Diameter Max.	LPR Protruding Length	WT Weight (lbs)
INCH							
RH-IPB16-16	0.708	0.866	IPB-16	16.00 mm	-	1.02	0.110
RH-IPB20-20	0.866	1.102	IPB-20	20.00 mm	-	1.22	0.198
RH-IPB25-25	1.102	1.496	IPB-25	25.00 mm	-	1.48	0.440
RH-IPB32-32	1.397	1.968	IPB-32	32.00 mm	-	1.89	0.771
RH-IPB40-40	1.968	2.677	IPB-40	40.00 mm	-	2.20	1.543
RH-IPB50-50	2.677	3.543	IPB-50	50.00 mm	55.00 mm	2.68	3.395
RH-IPB50-63	3.543	4.724	IPB-50	50.00 mm	72.00 mm	3.07	4.409
RH-IPB63-63	3.543	4.724	IPB-63	63.00 mm	72.00 mm	3.07	6.613
RH-IPB80-80	4.724	7.874	IPB-80	80.00 mm	95.00 mm	3.27	11.680
Roughing Cartridges - Page 36-40 Spare Parts - Page 64 Operating Guidelines - Page 66							

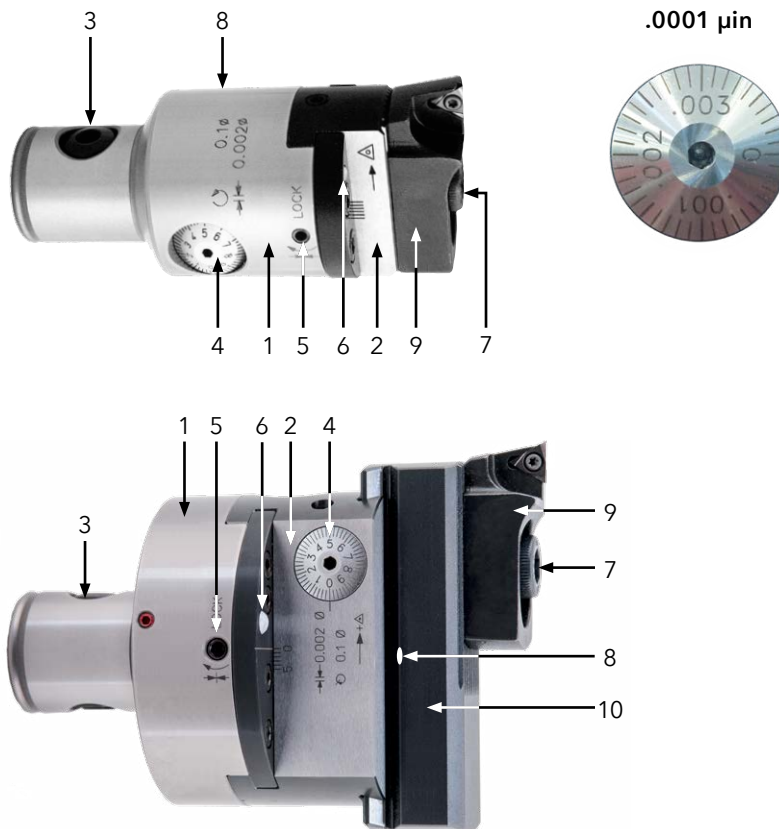
AFH Analog Finish Heads

AFH 16-125 (Ø .098-19.690")

AFH-IPB16-16-INCH
 AFH-IPB20-20-INCH
 AFH-IPB25-25-INCH
 AFH-IPB32-32-INCH
 AFH-IPB40-40-INCH
 AFH-IPB50-50-INCH
 AFH-IPBxx-63-INCH
 AFH-IPBxx-80-INCH
 AFH-IPB80-125-INCH

AFH heads deliver high-precision machining and excellent surface finishes within IT6 tolerance. Each vernier dial mark represents .0001" and is easy to see and adjust while the tool is in the machine.

1. Body
2. Slide
3. IPB expanding pin
4. Vernier dial
5. Slide lock screw
6. Coolant outlet (max 580 PSI)
7. Cartridge bolt
8. Oiler
9. Cartridge
10. Dovetail slide

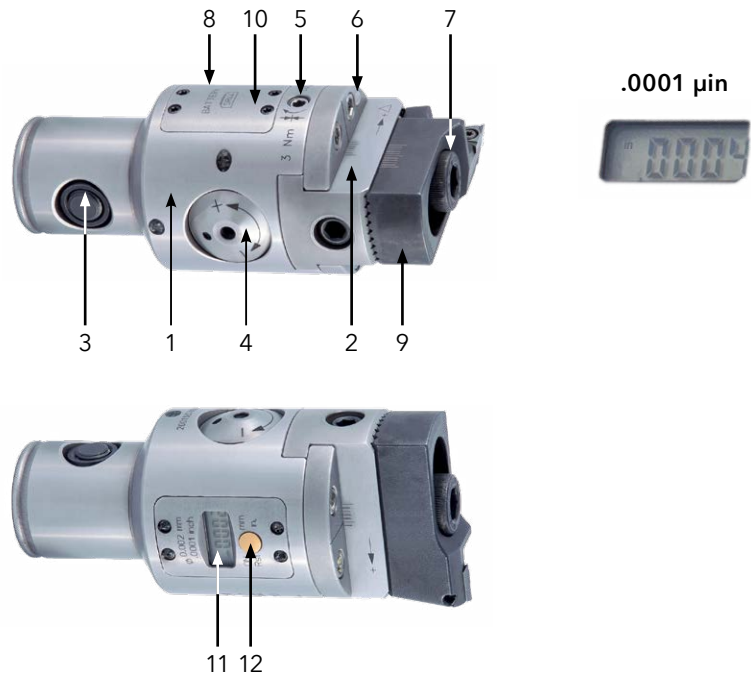


DFH Digital Display Finish Head

DFH-IPB50-69K (Ø .098-5.59")

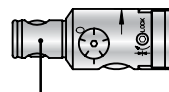
DHF heads deliver high-precision machining and excellent surface finishes within IT6 tolerance. The adjustment of .0001" is fast, accurate, and easily read on the integrated digital display. DHF are rated IPB69K against ingress of dust and coolant.

1. Body
2. Slide
3. IPB expanding pin
4. Adjustment dial
5. Slide lock screw
6. Coolant outlet (max 580 PSI)
7. Cartridge bolt
8. Oiler
9. Cartridge
10. Battery cover
11. Digital display
12. Selection button



AFH 16-40

AFH-IPB16-16-INCH Ø .708-.906"

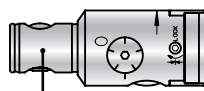


IPB16



FH-SCGC-16

AFH-IPB20-20-INCH Ø .866-1.142"

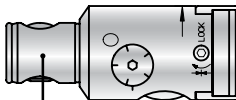


IPB20



FH-SCGC-20

AFH-IPB25-25-INCH Ø 1.102-1.496"



IPB25

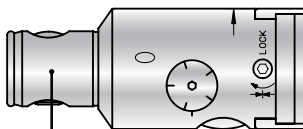


FH-SCGC-25

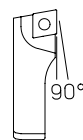


FH-STGP-25

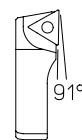
AFH-IPB32-32-INCH Ø 1.397-2.027"



IPB32

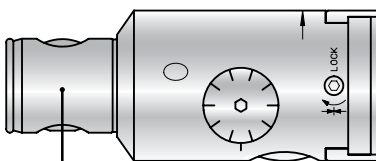


FH-SCGC-32

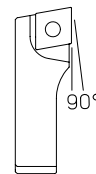


FH-STGP-32

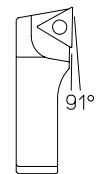
AFH-IPB40-40-INCH Ø 1.889-2.480"



IPB40



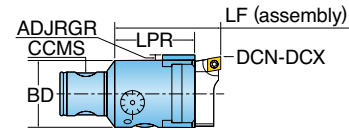
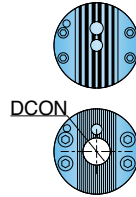
FH-SCGC-40



FH-STGP-40

Series IPB-AFH - Analog Finish Boring Head

Ø .708-2.480" (18.0-63.0 MM)



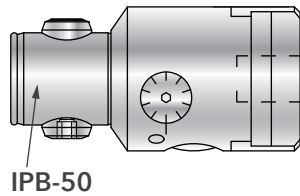
Note: LPR + WF (cartridge) = LF (assembly)

Part Number	DCN Cutting Diameter Min.	DCX Cutting Diameter Max.	CCMS Conn. Code Machine Side	BD Body Diameter	LPR Protruding Length	ADJRGR Adjustment Range Radial	WT Weight (lbs)	Max. RPM
INCH								
AFH-IPB16-16-INCH	0.708	0.906	IPB-16	16.00 mm	1.02	0.039	0.110	12,000
AFH-IPB20-20-INCH	0.866	1.142	IPB-20	20.00 mm	1.24	0.079	0.221	12,000
AFH-IPB25-25-INCH	1.102	1.496	IPB-25	25.00 mm	1.58	0.079	0.441	10,000
AFH-IPB32-32-INCH	1.397	2.027	IPB-32	32.00 mm	2.03	0.119	0.772	10,000
AFH-IPB40-40-INCH	1.889	2.480	IPB-40	40.00 mm	2.60	0.158	1.544	10,000
METRIC								
AFH-IPB16-16	18.0 mm	23.0 mm	IPB-16	16.00 mm	26.0 mm	1.0 mm	0.050	12,000
AFH-IPB20-20	22.0 mm	29.0 mm	IPB-20	20.00 mm	31.5 mm	2.0 mm	0.100	12,000
AFH-IPB25-25	28.0 mm	38.0 mm	IPB-25	25.00 mm	40.0 mm	2.0 mm	0.200	10,000
AFH-IPB32-32	35.5 mm	51.5 mm	IPB-32	32.00 mm	51.5 mm	3.0 mm	0.350	10,000
AFH-IPB40-40	48.0 mm	63.0 mm	IPB-40	40.00 mm	66.0 mm	4.0 mm	0.700	10,000
Finishing Cartridges - Page 41-42 Spare Parts - Page 64 Operating Guidelines - Page 66								

AFH 50 and DFH 50

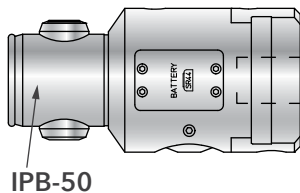
AFH 50 Analog Finish Boring Head

AFH-IPB50 » Ø.098-5.512" • Pg. 29



DFH 50 Digital Finish Boring Head

DFH-IPB50 » Ø.098-5.512" • Pg. 29



▼ 3xD Steel

▼ 5xD Heavy Metal

▼ 8xD Carbide

DXX • See pg. 62

Ø.098-.157" Ø.157-.236"
5xD Carbide • Pg. 44

Ø
.236-
.315"

IPB-3X_ • Pg. 45

IPB-5X_ • Pg. 46

IPB-8X_ • Pg. 47

Ø
.315-
.394"

IPB-3X_ • Pg. 45

IPB-5X_ • Pg. 46

IPB-8X_ • Pg. 47

Ø
.390-
.472"

IPB-3X_ • Pg. 45

IPB-5X_ • Pg. 46

IPB-8X_ • Pg. 47

Ø
.433-
.551"

IPB-3X_ • Pg. 45

IPB-5X_ • Pg. 46

IPB-8X_ • Pg. 47

Ø
.551-
.630"

IPB-3X_ • Pg. 45

IPB-5X_ • Pg. 46

IPB-8X_ • Pg. 47

Ø
.630-
.708"

IPB-3X_ • Pg. 45

IPB-5X_ • Pg. 46

IPB-8X_ • Pg. 47

Ø
.708-
.886"

IPB-3X_ • Pg. 45

Ø
.866-
1.180"

IPB-3X_ • Pg. 45

AFH 50 / DFH 50
Ø1.102-1.654"

AFH 50 / DFH 50
Ø1.417-2.126"

FH-SCGC-06-25 • FH-SCGC-06-32 • Pg. 41

FH-SLB-16-53 • Pg. 50

FH-SLB-16-95 • Pg. 50

FH-STGP-25 • FH-STGP-32 • Pg. 42

1 AFH 50 / DFH 50
Ø2.126-3.307"

2 AFH 50 / DFH 50
Ø3.150-4.252"

3 AFH 50 / DFH 50
Ø4.134-5.512"

SE_ • Pg. 16

1 FH-SCGC-09-40 • FH-SCGC-09-50 • Pg. 41

FH-STGP-11-40 • FH-STGP-11-50 • Pg. 42

2

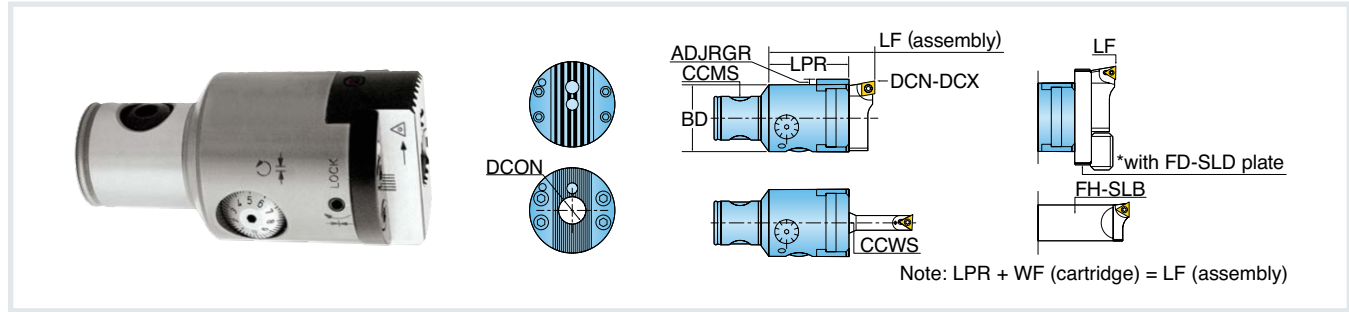
FH-SLD-24-75 • FH-SLD-24-100 • Pg. 51

3

Counterweight

Series IPB-AFH - Analog Finish Boring Head

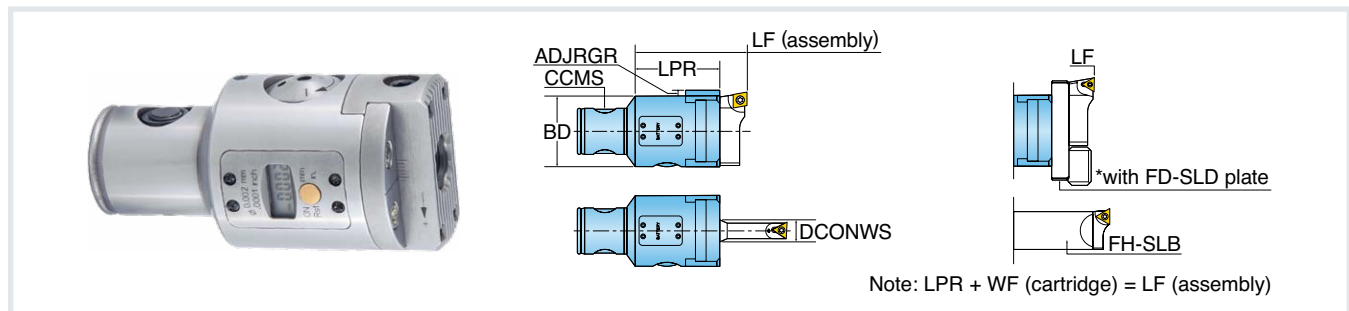
Ø .098-5.512" (2.5-140.0 MM)



Part Number	DCN Cutting Diameter Min.	DCX Cutting Diameter Max.	CCMS Conn. Code Machine Side	BD Body Diameter	LPR Protruding Length	ADJRGR Adjustment Range Radial	WT Weight (lbs)	Max. RPM
INCH								
AFH-IPB50-50-INCH	0.098	5.512	IPB-50	50.00 mm	2.36	0.157	2.205	8,000
METRIC								
AFH-IPB50-50	2.5 mm	140.0 mm	IPB-50	50.00 mm	60.0 mm	4.0 mm	2.205	8,000
Finishing Cartridges - Page 41-42 Boring Bars - Page 44-47 Spare Parts - Page 64 Operating Guidelines - Page 66								

Series IPB-DFH - Digital Finish Boring Head

Ø .098-5.512" (2.5-140.0 MM)

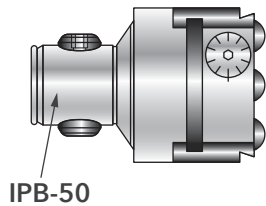


Part Number	DCN Cutting Diameter Min.	DCX Cutting Diameter Max.	CCMS Conn. Code Machine Side	BD Body Diameter	LPR Protruding Length	ADJRGR Adjustment Range Radial	WT Weight (lbs)	Max. RPM
INCH								
DFH-IPB50-69K	0.098	5.512	IPB-50	50.00 mm	2.36	0.157	2.425	20,000
Finishing Cartridges - Page 41-42 Boring Bars - Page 44-47 Spare Parts - Page 64 Operating Guidelines - Page 66								

AFH 50/63 and AFH 63/63

AFH 50/63

AFH-IPB50-63
Ø3.030-6.299" • Pg. 31

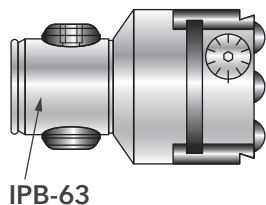


IPB-50

FH-SLV-30-16 • Pg. 48

AFH 63/63

AFH-IPB63-63
Ø3.030-6.299" • Pg. 31



IPB-63

▼ 3xD Steel

▼ 5xD Heavy Metal

▼ 8xD Carbide

DXX • See pg. 62

Ø.098-.157" Ø.157-.236"
5xD Carbide • Pg. 44

Ø .236-.315"	IPB-3X_ • Pg. 45	IPB-5X_ • Pg. 46	IPB-8X_ • Pg. 47
Ø .315-.394"	IPB-3X_ • Pg. 45	IPB-5X_ • Pg. 46	IPB-8X_ • Pg. 47
Ø .390-.472"	IPB-3X_ • Pg. 45	IPB-5X_ • Pg. 46	IPB-8X_ • Pg. 47
Ø .433-.551"	IPB-3X_ • Pg. 45	IPB-5X_ • Pg. 46	IPB-8X_ • Pg. 47
Ø .551-.630"	IPB-3X_ • Pg. 45	IPB-5X_ • Pg. 46	IPB-8X_ • Pg. 47
Ø .630-.708"	IPB-3X_ • Pg. 45	IPB-5X_ • Pg. 46	IPB-8X_ • Pg. 47
Ø .708-.886"	IPB-3X_ • Pg. 45		
Ø .866-1.180"	IPB-3X_ • Pg. 45		

Ø1.181-2.598"

Ø1.397-3.031"

FH-SCGC-06-25 • FH-SCGC-06-32 • Pg. 41

FH-STGP-09-25 • FH-STGP-09-32 • Pg. 42

FH-SLDE-30-40 • FH-SLDE-30-70 • FH-SLDE-30-115 • Pg. 50

FH-SLD-30-75 • Pg. 49

FH-SCGC-09-40 • FH-SCGC-09-50 • Pg. 41

Ø3.031-3.937"

Ø3.031-6.299"

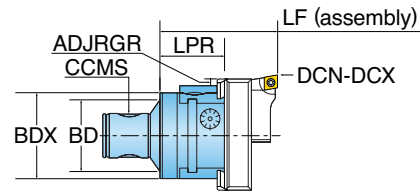
FH-SLD-30-93 • Pg. 49

Ø3.740-6.299"

FH-STGP-11-40 • FH-STGP-11-50 • Pg. 42

Series IPB-AFH Analog Finish Head (Dovetail)

Ø 3.030-6.299" (77.0-160.0 MM)



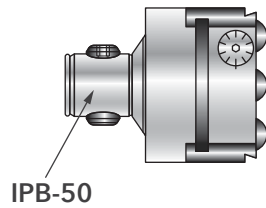
Note: LPR + WF (cartridge) = LF (assembly)

Part Number	DCN Cutting Diameter Min.	DCX Cutting Diameter Max.	CCMS Conn. Code Machine Side	BD Body Diameter	BDX Body Diameter Max.	LPR Protruding Length	ADJRGR Adjustment Range Radial	WT Weight (lbs)	Max. RPM
INCH									
AFH-IPB50-63-INCH	3.030	6.299	IPB-50	50.00 mm	63.00 mm	1.930	0.197	3.747	6,000
AFH-IPB63-63-INCH	3.030	6.299	IPB-63	63.00 mm	63.00 mm	1.930	0.197	4.409	6,000
METRIC									
AFH-IPB50-63	77.0 mm	160.0 mm	IPB-50	50.00 mm	63.00 mm	49.0 mm	5.0 mm	3.747	6,000
AFH-IPB63-63	77.0 mm	160.0 mm	IPB-63	63.00 mm	63.00 mm	49.0 mm	5.0 mm	4.409	6,000
Dovetail Slides - Page 49-51 Spare Parts - Page 64 Operating Guidelines - Page 66									

AFH 50/80 and AFH 80/80

AFH 50/80

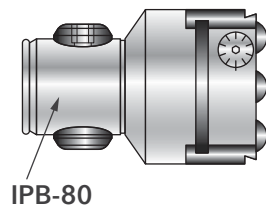
AFH-IPB50-80
Ø3.740-8.661" • Pg. 33



FH-SLV-30-16 • Pg. 48

AFH 80/80

AFH-IPB80-80
Ø3.740-8.661" • Pg. 33



▼ 3xD Steel

▼ 5xD Heavy Metal

▼ 8xD Carbide

DXX • See pg. 62

Ø.098-.157" Ø.157-.236"
5xD Carbide • Pg. 44

Ø .236-.315"	IPB-3X_ • Pg. 45	IPB-5X_ • Pg. 46	IPB-8X_ • Pg. 47
Ø .315-.394"	IPB-3X_ • Pg. 45	IPB-5X_ • Pg. 46	IPB-8X_ • Pg. 47
Ø .390-.472"	IPB-3X_ • Pg. 45	IPB-5X_ • Pg. 46	IPB-8X_ • Pg. 47
Ø .433-.551"	IPB-3X_ • Pg. 45	IPB-5X_ • Pg. 46	IPB-8X_ • Pg. 47
Ø .551-.630"	IPB-3X_ • Pg. 45	IPB-5X_ • Pg. 46	IPB-8X_ • Pg. 47
Ø .630-.708"	IPB-3X_ • Pg. 45	IPB-5X_ • Pg. 46	IPB-8X_ • Pg. 47
Ø .708-.886"	IPB-3X_ • Pg. 45		
Ø .866-1.180"	IPB-3X_ • Pg. 45		

Ø1.181-3.267"

Ø1.397-3.740"

FH-SCGC-06-25 • FH-SCGC-06-32 • Pg. 41

FH-STGP-09-25 • FH-STGP-09-32 • Pg. 42

FH-SLDE-30-40 • FH-SLDE-30-70 • FH-SLDE-30-115 • Pg. 50

FH-SLD-30-93 • Pg. 49

Ø3.740-5.512"

FH-SLD-30-135 • Pg. 49

Ø5.512-8.661"

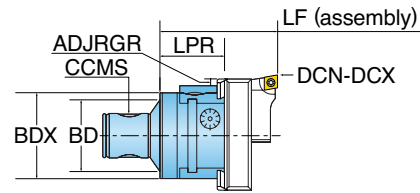
FH-SCGC-09-40 • FH-SCGC-09-50 • Pg. 41

Ø3.740-8.661"

FH-STGP-11-40 • FH-STGP-11-50 • Pg. 42

Series IPB-AFH Analog Finish Head (Dovetail)

Ø 3.740-8.661" (95.0-220.0 MM)



Note: LPR + WF (cartridge) = LF (assembly)

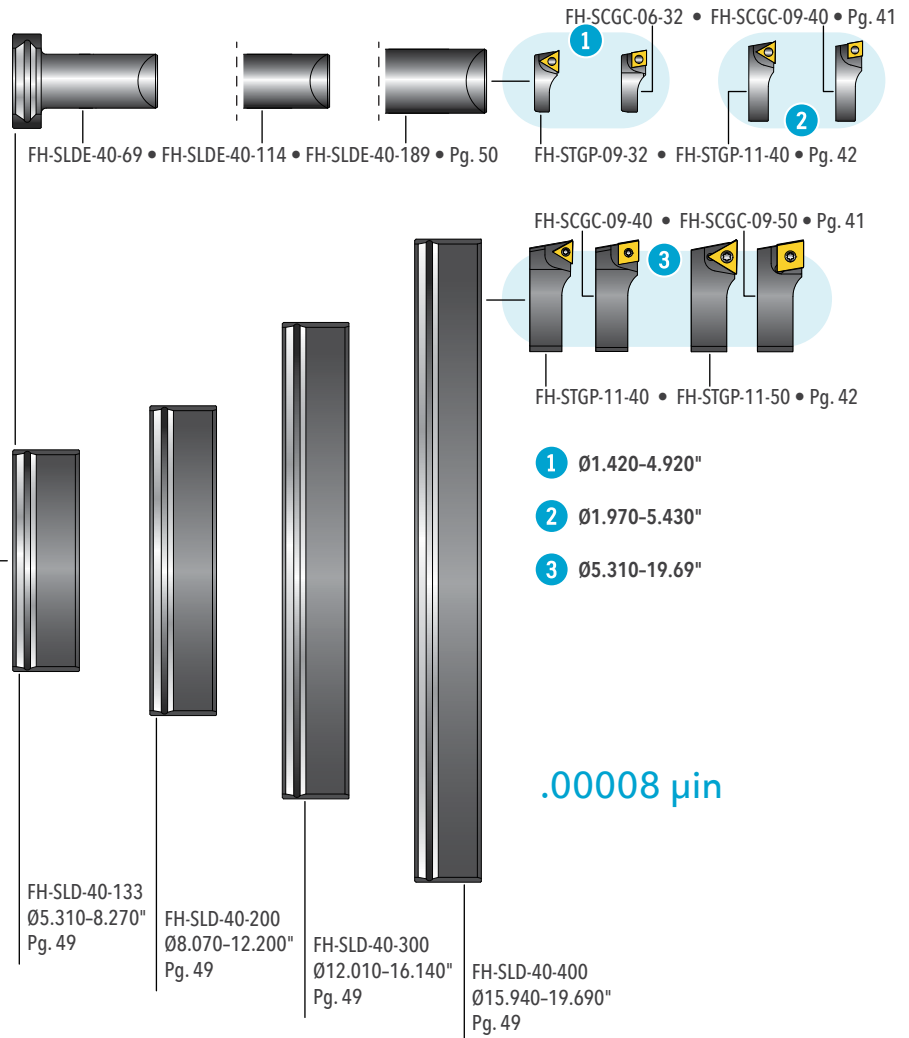
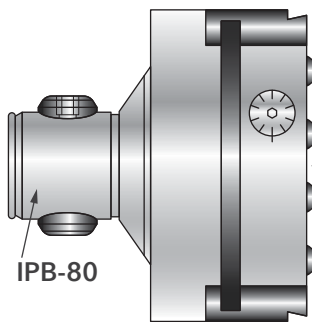
Part Number	DCN Cutting Diameter Min.	DCX Cutting Diameter Max.	CCMS Conn. Code Machine Side	BD Body Diameter	BDX Body Diameter Max.	LPR Protruding Length	ADJRGR Adjustment Range Radial	WT Weight (lbs)	Max. RPM
INCH									
AFH-IPB50-80-INCH	3.740	8.661	IPB-50	50.00 mm	80.00 mm	2.283	0.197	5.732	5,000
AFH-IPB80-80-INCH	3.740	8.661	IPB-80	80.00 mm	80.00 mm	2.283	0.197	6.834	5,000
METRIC									
AFH-IPB50-80	95.0 mm	220.0 mm	IPB-50	50.00 mm	80.00 mm	58.0 mm	5.0 mm	5.732	5,000
AFH-IPB80-80	95.0 mm	220.0 mm	IPB-80	80.00 mm	80.00 mm	58.0 mm	5.0 mm	6.834	5,000
Dovetail Slides - Page 49-51 Spare Parts - Page 64 Operating Guidelines - Page 66									

AFH 80/125

COMPONENT BREAKDOWN

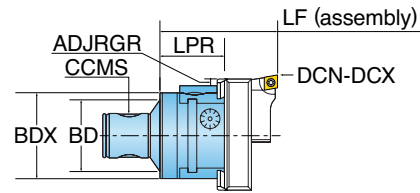
AFH 80/125

AFH-IPB80-125
Ø5.310-19.690" • Pg. 35



Series IPB-AFH Analog Finish Head (Dovetail)

Ø 5.310-19.690" (135.0-500.0 MM)

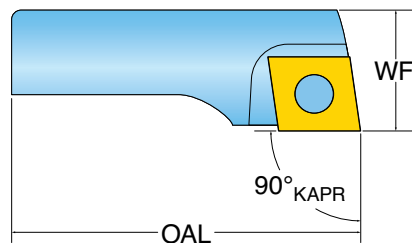


Note: LPR + WF (cartridge) = LF (assembly)

Part Number	DCN Cutting Diameter Min.	DCX Cutting Diameter Max.	CCMS Conn. Code Machine Side	BD Body Diameter	BDX Body Diameter Max.	LPR Protruding Length	ADJRGR Adjustment Range Radial	WT Weight (lbs)	Max. RPM
INCH									
AFH-IPB80-125-INCH	5.310	19.690	IPB-80	80.00 mm	125.00 mm	2.48	0.197	15.873	4,000
METRIC									
AFH-IPB80-125	135.0 mm	500.0 mm	IPB-80	80.00 mm	125.00 mm	63.0 mm	5.0 mm	15.873	4,000
Dovetail Slides - Page 49-51 Spare Parts - Page 64 Operating Guidelines - Page 66									

Series IPB-SCG_ - Rough Cartridge

FOR USE WITH RH ROUGHING HEADS



Part Number	WF Funct. Width	OAL Overall Length	INSERT Insert Series	WT Weight (lbs)
INCH				
SCGC-06-16-IPB	0.32	0.59	CCMT 0602..	0.010
SCGC-06-20-IPB	0.37	0.75	CCMT 0602..	0.010
SCGC-06-25-IPB	0.49	0.91	CCMT 0602..	0.020
SCGC-06-32-IPB	0.59	1.26	CCMT 0602..	0.040
SCGC-09-33-IPB	0.59	1.26	CCMT 09T3..	0.060
SCGC-09-40-IPB	0.75	1.74	CCMT 09T3..	0.130
SCGC-12-41-IPB	0.75	1.57	CCMT 1204..	0.130
SCGC-12-50-IPB	0.87	2.13	CCMT 1204..	0.220
SCGC-12-63-IPB	1.06	2.78	CCMT 1204..	0.440
SCGC-12-80-IPB	1.26	3.72	CCMT 1204..	1.100
SCGC-12-90-IPB	1.26	5.12	CCMT 1204..	1.540
SCGN-19-95-IPB	1.57	5.12	CNMG 1906..	1.980

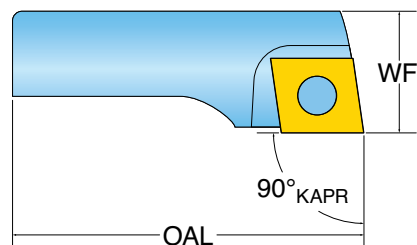
Spare Parts - Page 64

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Series IPB-SCGC_RH - Rough Cartridge

FOR USE WITH RH ROUGHING HEADS



Part Number	WF Funct. Width	OAL Overall Length	INSERT Insert Series	WT Weight (lbs)
INCH				
SCGC-06-25-IPB-RH	0.48	0.91	CCMT 0602..	0.020
SCGC-06-32-IPB-RH	0.58	1.26	CCMT 0602..	0.040
SCGC-09-33-IPB-RH	0.58	1.26	CCMT 09T3..	0.060
SCGC-09-40-IPB-RH	0.74	1.57	CCMT 09T3..	0.130
SCGC-12-41-IPB-RH	0.74	1.57	CCMT 1204..	0.130
SCGC-12-50-IPB-RH	0.85	2.13	CCMT 1204..	0.220
SCGC-12-63-IPB-RH	1.05	2.78	CCMT 1204..	0.440
SCGC-12-80-IPB-RH	1.25	3.72	CCMT 1204..	1.100
SCGC-12-90-IPB-RH	1.25	5.12	CCMT 1204..	1.540

Spare Parts - Page 64

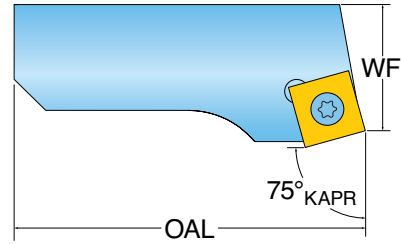
*Use with series IPB-SCG_ for staggered roughing

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Series IPB-SSR_ - 15° Rough Cartridge

FOR USE WITH RH ROUGHING HEADS



Part Number	WF Funct. Width	OAL Overall Length	INSERT Insert Series	WT Weight (lbs)
INCH				
SSRC-09-32-IPB	0.59	1.26	SCMT 09T3..	0.040
SSRC-09-40-IPB	0.75	1.57	SCMT 09T3..	0.130
SSRC-12-50-IPB	0.81	2.13	SCMT 1204..	0.220
SSRC-12-63-IPB	1.06	2.78	SCMT 1204..	0.440
SSRC-12-80-IPB	1.26	3.72	SCMT 1204..	1.100
SSRC-12-90-IPB	1.26	5.12	SCMT 1204..	1.540
SSRN-19-90-IPB	1.57	5.12	SNM_1906	1.980

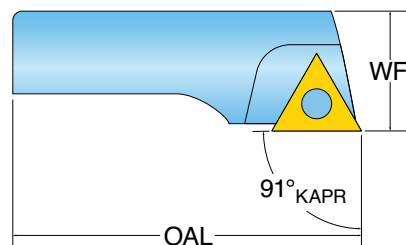
Spare Parts - Page 64

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Series IPB-STG_ - Rough Cartridge

FOR USE WITH RH ROUGHING HEADS



Part Number	WF Funct. Width	OAL Overall Length	INSERT Insert Series	WT Weight (lbs)
INCH				
STGC-22-63-IPB	1.06	2.78	TCMT 2204..	0.440
STGC-22-80-IPB	1.26	3.72	TCMT 2204..	1.100
STGC-22-90-IPB	1.26	5.12	TCMT 2204..	1.540

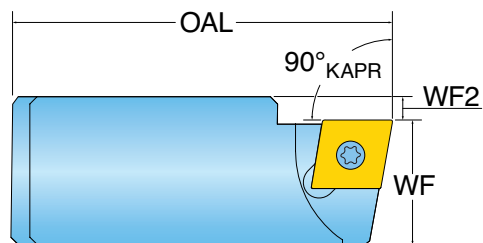
Spare Parts - Page 64

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Series IPB-SCXC - Back Bore Rough Cartridge

FOR USE WITH RH ROUGHING HEADS



Part Number	WF Funct. Width	WF2 Funct. Width 2	OAL Overall Length	INSERT Insert Series	WT Weight (lbs)
INCH					
SCXC-06-16-IPB	0.39	0.08	0.63	CCMT 0602..	0.010
SCXC-06-20-IPB	0.43	0.06	0.77	CCMT 0602..	0.020
SCXC-06-25-IPB	0.57	0.10	0.94	CCMT 0602..	0.040
SCXC-09-32-IPB	0.67	0.12	1.26	CCMT 09T3..	0.070
SCXC-12-40-IPB	0.83	0.14	1.65	CCMT 1204..	0.180
SCXC-12-50-IPB	0.96	0.14	2.24	CCMT 1204..	0.330
SCXC-12-63-IPB	0.98	0.14	2.99	CCMT 1204..	0.660
SCXC-12-80-IPB	1.24	0.14	3.98	CCMT 1204..	1.320
SCXC-12-90-IPB	1.10	0.14	4.88	CCMT 1204..	1.760

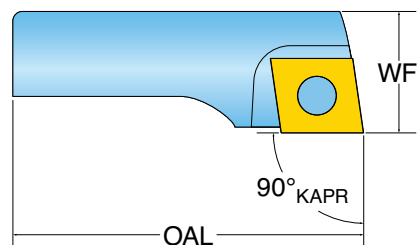
Spare Parts - Page 64

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inserts >



Series IPB-FH_SCGC - Finish Cartridge

USE WITH AFH/DFH HEADS



Part Number	WF Funct. Width	OAL Overall Length	INSERT Insert Series	WT Weight (lbs)
INCH				
FH-SCGC-06-16-IPB	0.32	0.70	CCxT 0602	0.010
FH-SCGC-06-20-IPB	0.34	0.83	CCxT 0602	0.010
FH-SCGC-06-25-IPB	0.39	1.40	CCxT 0602	0.020
FH-SCGC-06-32-IPB	0.45	1.36	CCxT 0602	0.040
FH-SCGC-09-40-IPB	0.55	1.73	CCxT 09T3	0.090
FH-SCGC-09-50-IPB	0.75	2.05	CCxT 09T3	0.200

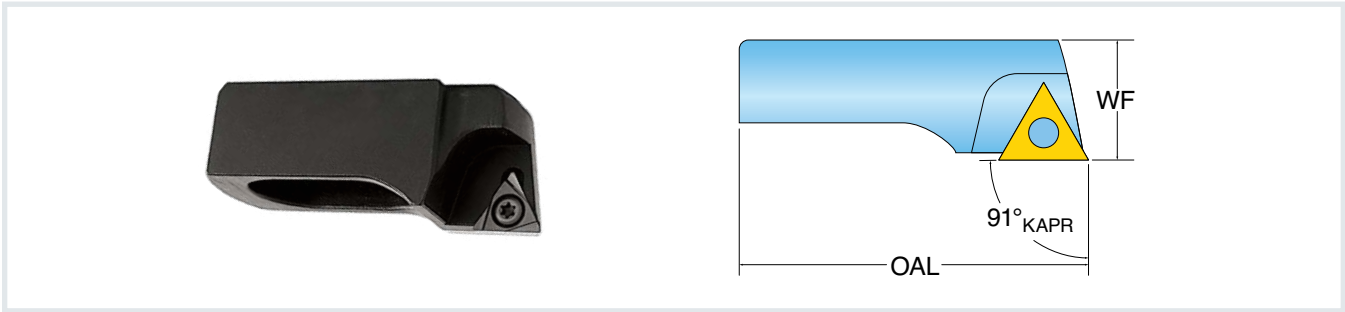
Spare Parts - Page 64

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Series IPB-FH-STGP - Finish Cartridge

USE WITH AFH/DFH HEADS



Part Number	WF Funct. Width	OAL Overall Length	INSERT Insert Series	WT Weight (lbs)
INCH				
FH-STGP-09-25-IPB	0.39	1.04	TPGX 0902..	0.020
FH-STGP-09-32-IPB	0.45	1.36	TPGX 0902..	0.040
FH-STGP-11-40-IPB	0.55	1.73	TPGX 1103..	0.090
FH-STGP-11-50-IPB	0.75	2.05	TPGX 1103..	0.200

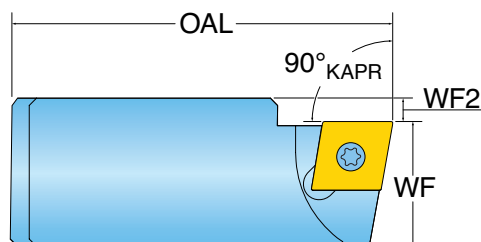
Spare Parts - Page 64

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inserts >



Series IPB-FH_SCXC - Back Bore Finishing Cartridge

USE WITH AFH/DFH HEADS



Part Number	WF Funct. Width	WF2 Funct. Width 2	OAL Overall Length	INSERT Insert Series	WT Weight (lbs)
INCH					
FH-SCXC-06-16-IPB	0.39	0.08	0.71	CCxT 0602	0.010
FH-SCXC-06-20-IPB	0.41	0.08	0.89	CCxT 0602	0.020
FH-SCXC-06-25-IPB	0.47	0.10	1.12	CCxT 0602	0.020
FH-SCXC-06-32-IPB	0.53	0.10	1.40	CCxT 0602	0.070
FH-SCXC-09-40-IPB	0.65	0.12	1.81	CCxT 09T3	0.130
FH-SCXC-09-50-IPB	0.81	0.12	2.09	CCxT 09T3	0.220

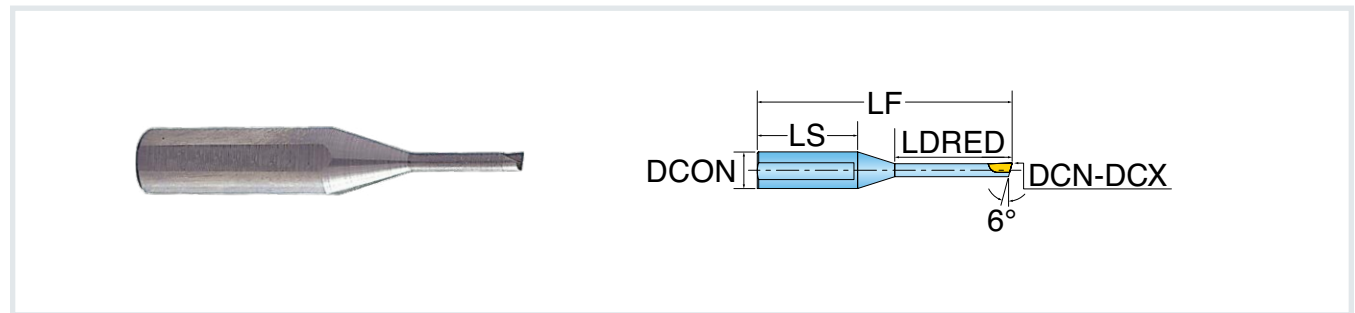
Spare Parts - Page 64

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Series IPB-5X - Small Diameter Carbide Boring Bar

Ø .098-.236" (2.5-6.0 MM)

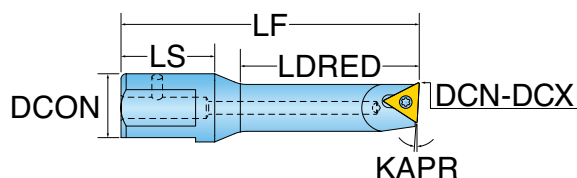


Part Number	DCN Cutting Diameter Min.	DCX Cutting Diameter Max.	DCON Connection Diameter	LS Shank Length	LF Funct. Length	LDRED Reduced Body Diameter Length	WT Weight (lbs)
INCH (METRIC)							
IPB-5X-E2.5-4-8	0.098 (2.5 mm)	0.157 (4.0 mm)	8 mm	0.87 (22.1 mm)	1.690 (42.9 mm)	0.492 (12.5 mm)	0.04
IPB-5X-E4-6-8	0.157 (4.0 mm)	0.236 (6.0 mm)	8 mm	0.94 (24.0 mm)	1.890 (48.0 mm)	0.787 (20.0 mm)	0.04

Spare Parts - Page 64

Series IPB-3X - Steel Boring Bar

Ø .236-1.180" (6.0-30.0 MM)



Part Number	DCN Cutting Diameter Min.	DCX Cutting Diameter Max.	LF Funct. Length	LDRED Reduced Body Diameter Length	LS Shank Length	DCON Connection Code Machine Size	INSERT Insert Series	WT Weight (lbs)
INCH (METRIC)								
IPB-3X-A6-8-W02	0.236 (6.0 mm)	0.315 (8.0 mm)	2.000 (50.8 mm)	0.827 (21.0 mm)	0.870	Shank 16 mm	WCGT 0201..	0.08
IPB-3X-A8-10-W02	0.315 (8.0 mm)	0.393 (10.0 mm)	2.280 (57.9 mm)	1.102 (28.0 mm)	0.870	Shank 16 mm	WCGT 0201..	0.09
IPB-3X-A10-12-T09	0.394 (10.0 mm)	0.472 (12.0 mm)	2.560 (65.0 mm)	1.380 (35.1 mm)	0.870	Shank 16 mm	TPGX 0902..	0.11
IPB-3X-A11-13-T09	0.433 (11.0 mm)	0.512 (13.0 mm)	2.750 (69.9 mm)	1.570 (39.9 mm)	0.870	Shank 16 mm	TPGX 0902..	0.12
IPB-3X-A12-14-T09	0.472 (12.0 mm)	0.551 (14.0 mm)	2.750 (69.9 mm)	1.650 (41.9 mm)	0.870	Shank 16 mm	TPGX 0902..	0.13
IPB-3X-A14-16-T09	0.551 (14.0 mm)	0.630 (16.0 mm)	2.910 (73.9 mm)	1.970 (50.0 mm)	0.870	Shank 16 mm	TPGX 0902..	0.15
IPB-3X-A16-18-T09	0.630 (16.0 mm)	0.708 (18.0 mm)	3.150 (80.0 mm)	1.970 (50.0 mm)	0.870	Shank 16 mm	TPGX 0902..	0.15
IPB-3X-A18-22-T09	0.708 (18.0 mm)	0.866 (22.0 mm)	3.350 (85.1 mm)	- (-)	0.870	Shank 16 mm	TPGX 0902..	0.22
IPB-3X-A22-30-T09	0.866 (22.0 mm)	1.180 (30.0 mm)	3.540 (89.9 mm)	- (-)	0.870	Shank 16 mm	TPGX 0902..	0.22

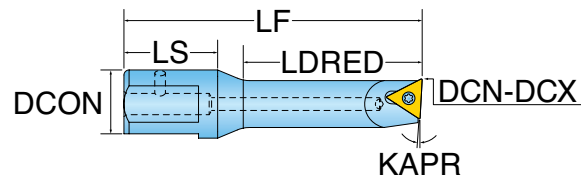
Spare Parts - Page 64

Scan for
inserts >



Series IPB-5X - Heavy Metal Boring Bar

Ø .236-.708" (6.0-18.0 MM)



Part Number	DCN Cutting Diameter Min.	DCX Cutting Diameter Max.	LF Funct. Length	LDRED Reduced Body Diameter Length	LS Shank Length	DCON Connection Code Machine Size	INSERT Insert Series	WT Weight (lbs)
INCH (METRIC)								
IPB-5X-H6-8-W02	0.236 (6.0 mm)	0.315 (8.0 mm)	2.280 (57.9 mm)	1.417 (36.0 mm)	0.870	Shank 16 mm	WCGT 0201..	0.17
IPB-5X-H8-10-W02	0.315 (8.0 mm)	0.393 (10.0 mm)	2.760 (70.1 mm)	1.890 (48.0 mm)	0.870	Shank 16 mm	WCGT 0201..	0.20
IPB-5X-H10-12-T09	0.393 (10.0 mm)	0.472 (12.0 mm)	3.230 (82.0 mm)	2.360 (59.9 mm)	0.870	Shank 16 mm	TPGX 0902..	0.22
IPB-5X-H12-14-T09	0.472 (12.0 mm)	0.551 (14.0 mm)	3.700 (94.0 mm)	2.830 (71.9 mm)	0.870	Shank 16 mm	TPGX 0902..	0.22
IPB-5X-H14-16-T09	0.551 (14.0 mm)	0.630 (16.0 mm)	4.170 (105.9 mm)	3.307 (84.0 mm)	0.870	Shank 16 mm	TPGX 0902..	0.44
IPB-5X-H16-18-T09	0.630 (16.0 mm)	0.708 (18.0 mm)	4.650 (118.1 mm)	3.780 (96.0 mm)	0.870	Shank 16 mm	TPGX 0902..	0.66

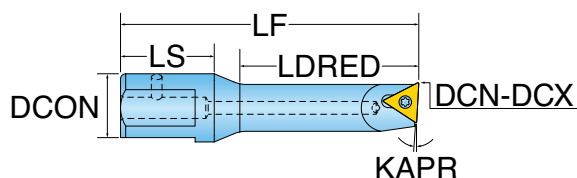
Spare Parts - Page 64

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inserts >



Series IPB-8X - Carbide Boring Bar

Ø .236-.708" (6.0-18.0 MM)



Part Number	DCN Cutting Diameter Min.	DCX Cutting Diameter Max.	LF Funct. Length	LDRED Reduced Body Diameter Length	LS Shank Length	DCON Connection Code Machine Size	INSERT Insert Series	WT Weight (lbs)
INCH (METRIC)								
IPB-8X-E6-8-W02	0.236 (6.0 mm)	0.315 (8.0 mm)	2.640 (67.1 mm)	1.770 (45.0 mm)	0.870	Shank 16 mm	WCGT 0201..	0.14
IPB-8X-E8-10-W02	0.315 (8.0 mm)	0.393 (10.0 mm)	3.230 (82.0 mm)	2.360 (59.9 mm)	0.870	Shank 16 mm	WCGT 0201..	0.18
IPB-8X-E10-12-T09	0.393 (10.0 mm)	0.472 (12.0 mm)	3.819 (97.0 mm)	2.950 (74.9 mm)	0.870	Shank 16 mm	TPGX 0902..	0.22
IPB-8X-E12-14-T09	0.472 (12.0 mm)	0.551 (14.0 mm)	4.409 (112.0 mm)	3.540 (89.9 mm)	0.870	Shank 16 mm	TPGX 0902..	0.44
IPB-8X-E14-16-T09	0.551 (14.0 mm)	0.630 (16.0 mm)	5.000 (127.0 mm)	4.133 (105.0 mm)	0.870	Shank 16 mm	TPGX 0902..	0.44
IPB-8X-E16-18-T09	0.630 (16.0 mm)	0.708 (18.0 mm)	5.590 (142.0 mm)	4.724 (120.0 mm)	0.870	Shank 16 mm	TPGX 0902..	0.66

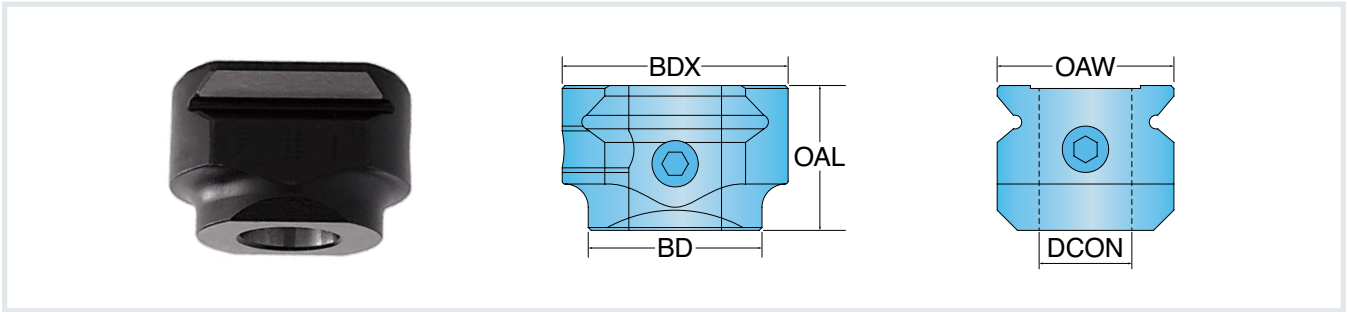
Spare Parts - Page 64

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inserts >



Series IPB-FH_SLV

BORING BAR HOLDER FOR AFH (DOVETAIL)

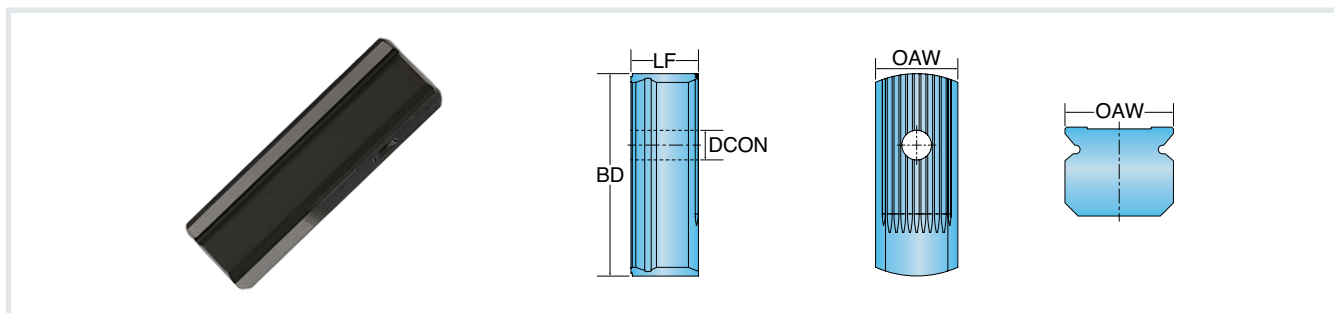


Part Number	BD Body Diameter	BDX Body Diameter Max.	OAL Overall Length	OAW Overall Width	DCON Connection Diameter	WT Weight (lbs)
INCH						
FH-SLV-30-16	1.180	1.540	0.980	1.200	16.00 mm	0.440

Spare Parts - Page 64

Series IPB-FH_SLD for AFH (Dovetail)

SLIDE FOR AFH (DOVETAIL)

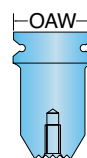
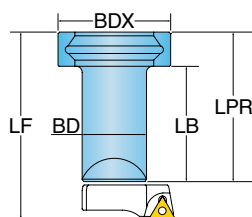


Part Number	DCN Cutting Diameter Min.	DCX Cutting Diameter Max.	BD Body Diameter	OAW Overall Width	LF Funct. Length	WT Weight (lbs)
INCH						
FH-SLD-30-75	3.030	3.940	2.952	1.200	0.984	0.881
FH-SLD-30-93	3.700	4.920	3.661	1.200	0.984	1.102
FH-SLD-30-135	5.510	6.300	5.314	1.200	0.984	1.543
FH-SLD-40-133	5.310	8.270	5.236	1.574	1.574	3.306
FH-SLD-40-200	8.070	12.200	7.874	1.574	1.574	5.291
FH-SLD-40-300	12.010	16.140	11.811	1.574	1.574	7.716
FH-SLD-40-400	15.940	19.690	15.748	1.574	1.574	10.141

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Series IPB-FH_SLDE for AFH (Dovetail)

HOLDER FOR AFH (DOVETAIL)



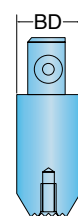
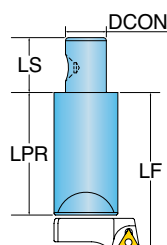
Note: LPR + WF (cartridge) = LF (assembly)

Part Number	BD Body Diameter	BDX Body Diameter Max.	OAW Overall Width	LB Body Length	LPR Protruding Length	WT Weight (lbs)
INCH						
FH-SLDE-30-40	0.984	1.692	1.200	1.574	2.07	0.660
FH-SLDE-30-70	0.984	1.692	1.200	2.755	3.25	0.880
FH-SLDE-30-115	1.062	1.692	1.200	4.527	5.02	1.540
FH-SLDE-40-69	1.259	2.204	1.574	2.716	3.39	1.540
FH-SLDE-40-114	1.259	2.204	1.574	4.488	5.16	2.200
FH-SLDE-40-189	1.496	2.204	1.574	7.440	8.11	4.410

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Series IPB-FH_SLB

HOLDER FOR AFH & DFH -IPB50



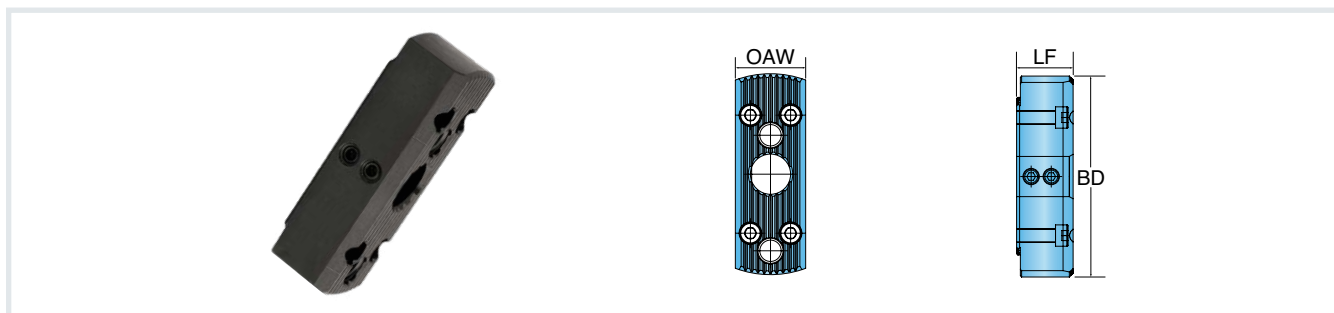
Note: LPR + WF (cartridge) = LF (assembly)

Part Number	BD Body Diameter	LPR Protruding Length	LS Shank Length	WT Weight (lbs)
INCH				
FH-SLB-16-53	0.984	2.09	0.840	1.100
FH-SLB-16-95	0.984	3.74	0.840	1.700

Spare Parts - Page 64

Series IPB-FH_SLD (Serrated)

SERRATED SLIDE FOR AFH & DFH - IPB50

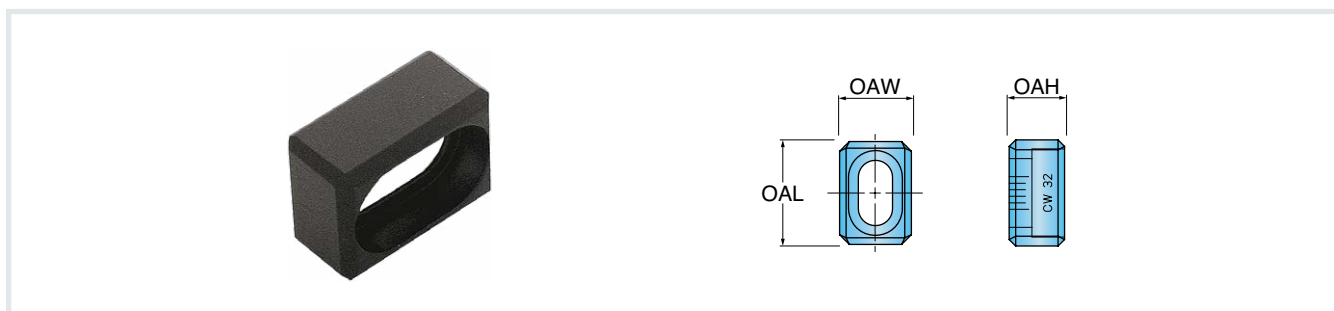


Part Number	BD Body Diameter	OAW Overall Width	LF Funct. Length	WT Weight (lbs)
INCH				
FH-SLD-24-75	2.950	0.940	0.570	0.419
FH-SLD-24-100	3.940	0.940	0.570	0.440

Spare Parts - Page 64

Series IPB-CW Counterweight

USED WITH AFH50/DFH50 FINE BORING HEADS

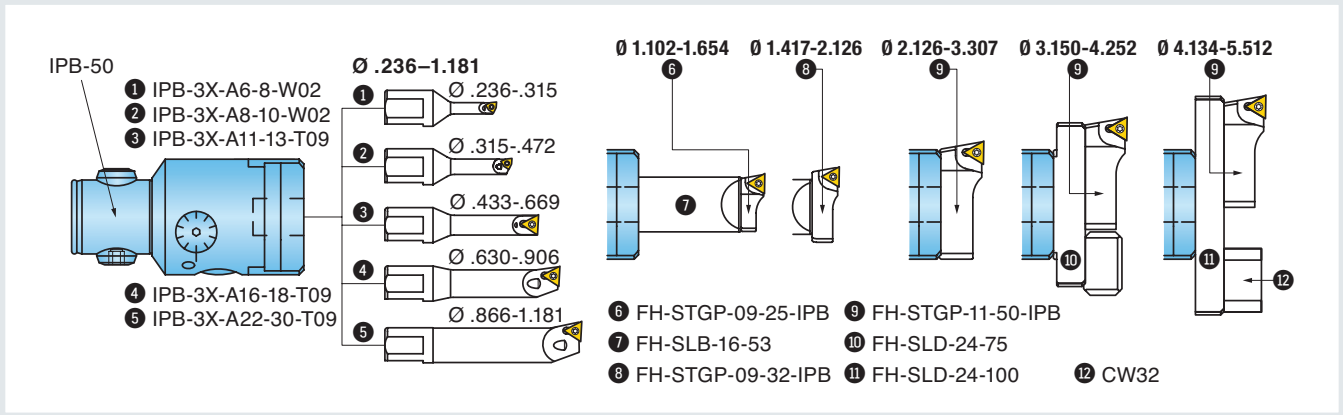


Part Number	OAW Overall Width	OAH Overall Height	OAL Overall Length	WT Weight (lbs)
INCH				
CW32	0.870	0.670	1.240	1.100

Spare Parts - Page 64

Series IPB-KIT_AFH50

Ø .236-5.512"



Kit Part Number: KIT AFH-IPB50-50 INCH

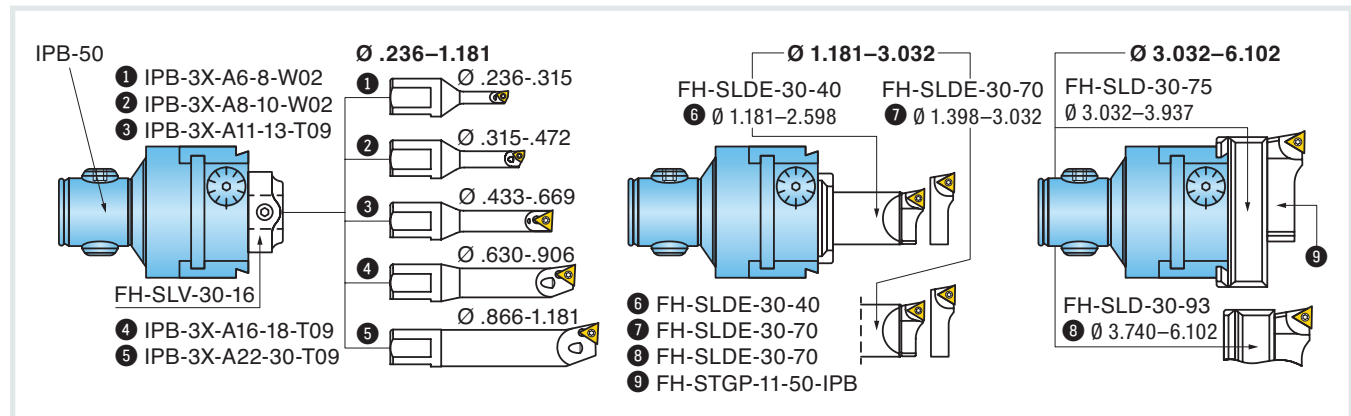


Label Number	Part Number	Catalog Page Number Reference for part details
1	IPB-3X-A6-8-W02	45
2	IPB-3X-A8-10-W02	45
3	IPB-3X-A11-13-T09	45
4	IPB-3X-A16-18-T09	45
5	IPB-3X-A22-30-T09	45
6	FH-STGP-09-25-IPB	42
7	FH-SLB-16-53	51
8	FH-STGP-09-32-IPB	42
9	FH-STGP-11-50-IPB	42
10	FH-SLD-24-75	51
11	FH-SLD-24-100	51
12	CW32	51

*Metric kits available upon request

Series IPB-KIT_AFH50/63

Ø .236-6.102"



Kit Part Number: KIT AFH-IPB50-63 INCH

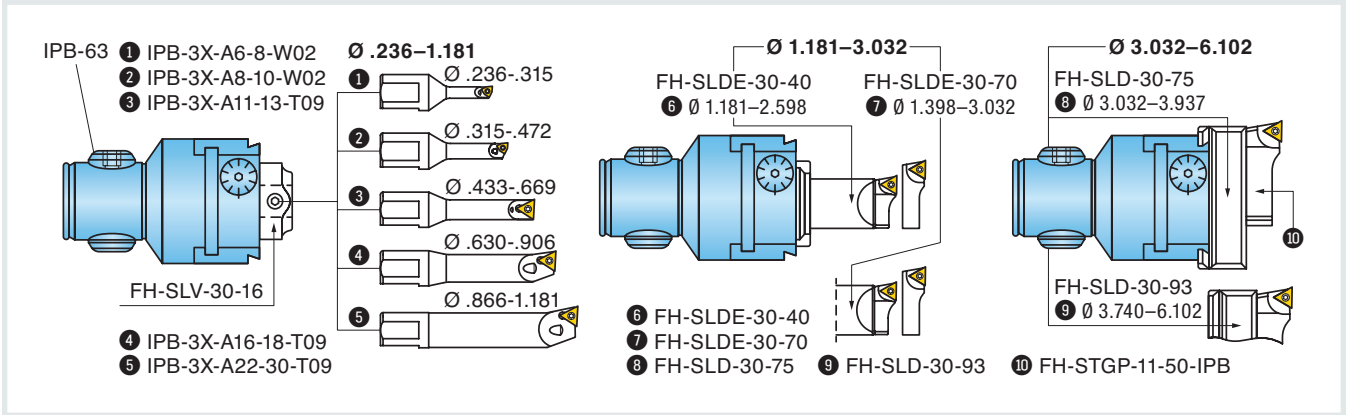


Label Number	Part Number	Catalog Page Number Reference for part details
1	IPB-3X-A6-8-W02	45
2	IPB-3X-A8-10-W02	45
3	IPB-3X-A11-13-T09	45
4	IPB-3X-A16-18-T09	45
5	IPB-3X-A22-30-T09	45
6	FH-SLDE-30-40	50
7	FH-SLDE-30-70	50
8	FH-SLD-30-93	49
9	FH-STGP-11-50-IPB	42

*Metric kits available upon request

Series IPB-KIT_AFH63/63

Ø .236-6.102"



Kit Part Number: KIT AFH-IPB63-63 INCH

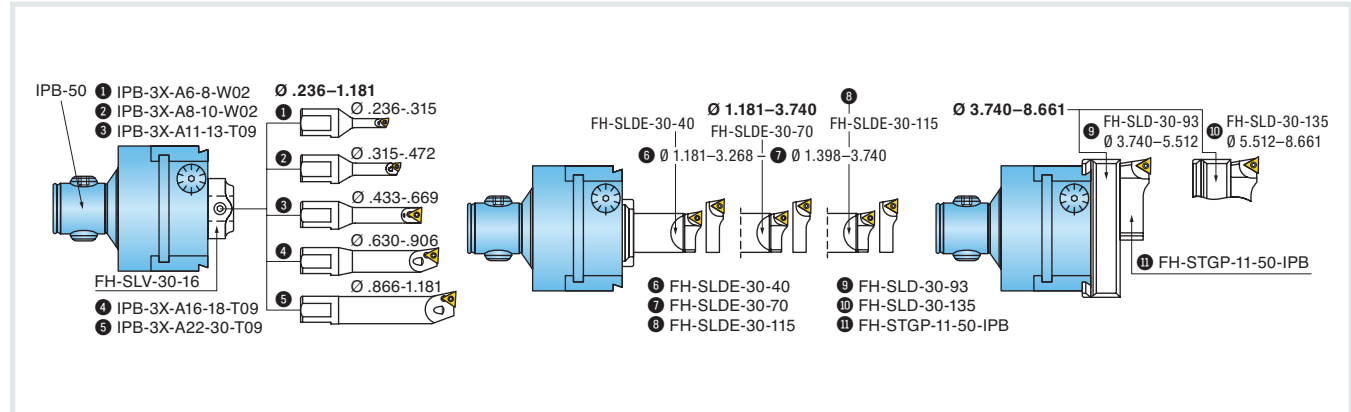


Label Number	Part Number	Catalog Page Number Reference for part details
1	IPB-3X-A6-8-W02	45
2	IPB-3X-A8-10-W02	45
3	IPB-3X-A11-13-T09	45
4	IPB-3X-A16-18-T09	45
5	IPB-3X-A22-30-T09	45
6	FH-SLDE-30-40	50
7	FH-SLDE-30-70	50
8	FH-SLD-30-75	49
9	FH-SLD-30-93	49
10	FH-STGP-11-50-IPB	42

*Metric kits available upon request

Series IPB-KIT_AFH50/80

Ø .236-8.661"



Kit Part Number: KIT AFH-IPB50-80 INCH

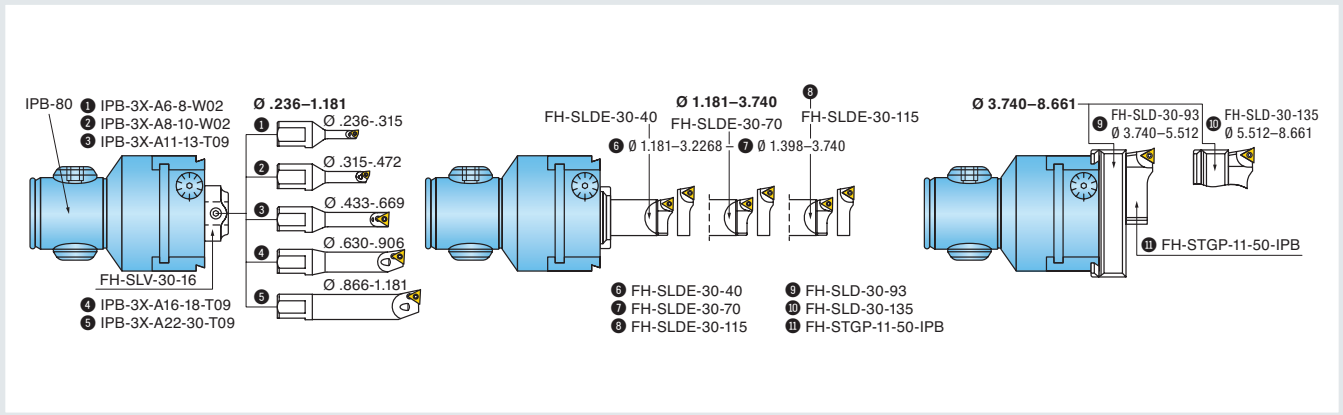


Label Number	Part Number	Catalog Page Number Reference for part details
1	IPB-3X-A6-8-W02	45
2	IPB-3X-A8-10-W02	45
3	IPB-3X-A11-13-T09	45
4	IPB-3X-A16-18-T09	45
5	IPB-3X-A22-30-T09	45
6	FH-SLDE-30-40	50
7	FH-SLDE-30-70	50
8	FH-SLDE-30-115	50
9	FH-SLD-30-93	49
10	FH-SLD-30-135	49
11	FH-STGP-11-50-IPB	42

*Metric kits available upon request

Series IPB-KIT_AFH80/80

Ø .236-8.661"



Kit Part Number: KIT AFH-IPB50-80 INCH

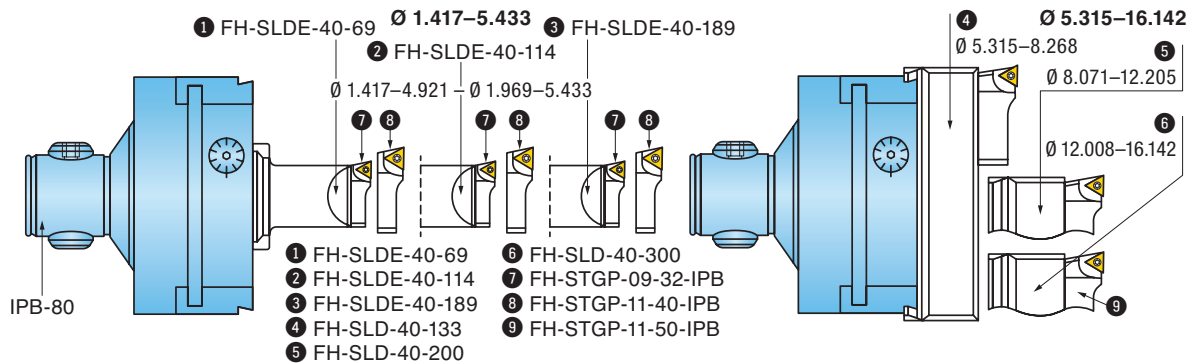


Label Number	Part Number	Catalog Page Number Reference for part details
1	IPB-3X-A6-8-W02	45
2	IPB-3X-A8-10-W02	45
3	IPB-3X-A11-13-T09	45
4	IPB-3X-A16-18-T09	45
5	IPB-3X-A22-30-T09	45
6	FH-SLDE-30-40	50
7	FH-SLDE-30-70	50
8	FH-SLDE-30-115	50
9	FH-SLD-30-93	49
10	FH-SLD-30-135	49
11	FH-STGP-11-50-IPB	42

*Metric kits available upon request

Series IPB-KIT_AFH80/125

Ø 1.417-16.142" (EXCLUDES AFH80/125 BORING HEAD)



Kit Part Number: KIT AFH-IPB80-125 INCH

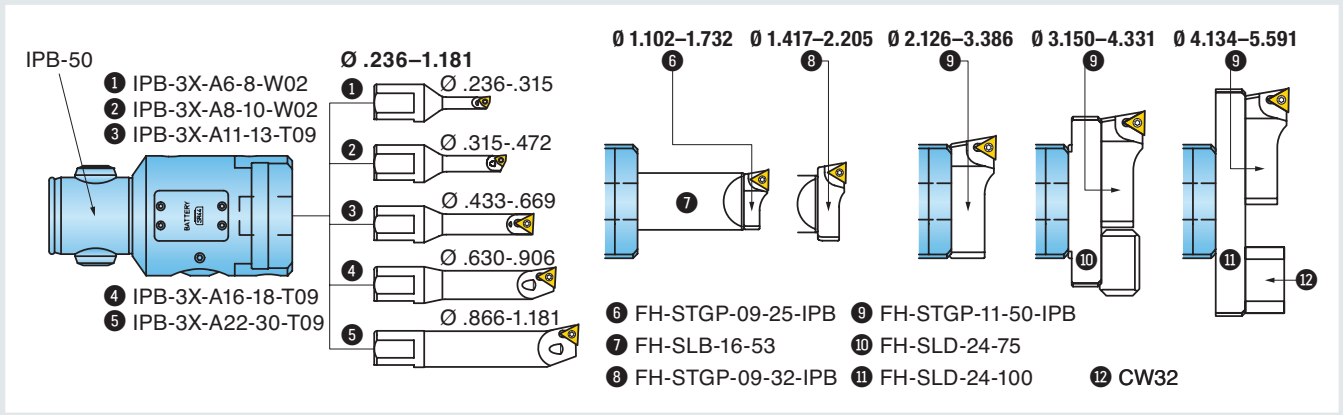


Label Number	Part Number	Catalog Page Number Reference for part details
1	FH-SLDE-40-69	50
2	FH-SLDE-40-114	50
3	FH-SLDE-40-189	50
4	FH-SLD-40-133	49
5	FH-SLD-40-200	49
6	FH-SLD-40-300	49
7	FH-STGP-09-32-IPB	42
8	FH-STGP-11-40-IPB	42
9	FH-STGP-11-50-IPB	42

*Metric kits available upon request

Series IPB-KIT_DFH

Ø .236-5.591"



Kit Part Number: KIT DFH-IPB50-50-69K

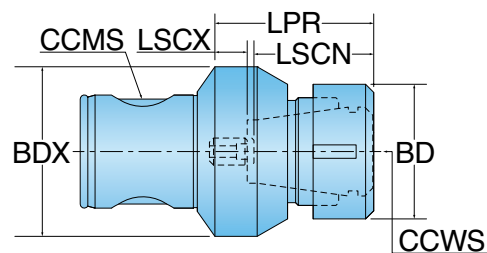


Label Number	Part Number	Catalog Page Number Reference for part details
1	IPB-3X-A6-8-W02	45
2	IPB-3X-A8-10-W02	45
3	IPB-3X-A11-13-T09	45
4	IPB-3X-A16-18-T09	45
5	IPB-3X-A22-30-T09	45
6	FH-STGP-09-25-IPB	42
7	FH-SLB-16-53	51
8	FH-STGP-09-32-IPB	42
9	FH-STGP-11-50-IPB	42
10	FH-SLD-24-75	51
11	FH-SLD-24-100	51
12	CW32	51

*Metric kits available upon request

Series IPB-ER Collet

TAPPING COLLETS WITHOUT AXIAL COMPENSATION



Part Number	CCMS Conn. Code Machine Side	BDX Body Diameter Max.	LPR Protruding Length	LSCN Clamping Length Min.	LSCX Clamping Length Max.	CCWS Conn. Code Wrkpc. Side	WT Weight (lbs)
INCH							
ER16.ER11M	IPB-16	16.0 mm	0.980	0.079	0.100	ER11	0.07
ER20.ER16M	IPB-20	20.0 mm	1.260	0.079	0.040	ER16	0.13
ER32.ER25M	IPB-32	32.0 mm	1.650	0.079	0.060	ER25	0.55
ER40.ER25	IPB-40	40.0 mm	1.770	0.079	0.200	ER25	0.88
ER50.ER25	IPB-50	50.0 mm	1.890	0.079	0.280	ER25	1.54
ER50.ER32	IPB-50	50.0 mm	2.170	0.079	0.310	ER32	2.20
ER63.ER32	IPB-63	63.0 mm	2.320	0.079	0.470	ER32	2.87

Spare Parts - Page 64

Series IPB-WEL - Side Lock

SIDE LOCK HOLDER



Figure 1

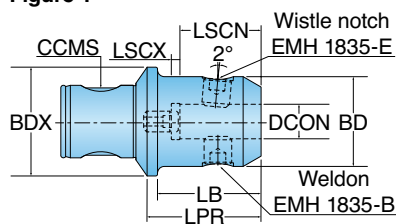
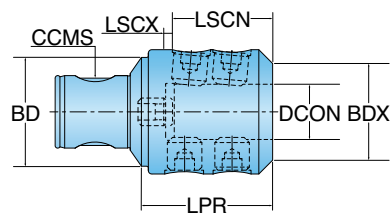


Figure 2



Part Number	CCMS Conn. Code Machine Side	DCON Connection Diameter	BD Body Diameter	BDX Body Diameter Max.	LPR Protruding Length	LB Body Length	LSCN Clamping Length Min.	LSCX Clamping Length Max.	WT Weight (lbs)	Fig.
INCH										
IPB50-WEL-1/4	IPB50	0.250	0.980	1.968	1.380	0.930	1.30	1.10	1.10	1
IPB50-WEL-3/8	IPB50	0.375	1.380	1.968	2.050	1.650	1.93	1.62	1.54	1
IPB50-WEL-1/2	IPB50	0.500	1.650	1.968	2.240	1.890	2.12	1.81	1.76	1
IPB50-WEL-5/8	IPB50	0.625	1.890	1.968	2.630	2.400	2.47	1.97	2.43	1
IPB50-WEL-3/4	IPB50	0.750	1.970	1.968	2.630	-	2.47	2.00	2.65	1
IPB63-WEL-1/2	IPB63	0.500	1.650	2.480	2.240	1.890	2.12	1.81	3.09	1
IPB63-WEL-5/8	IPB63	0.625	1.890	2.480	2.520	2.090	2.36	1.97	3.09	1
IPB63-WEL-3/4	IPB63	0.750	1.970	2.480	2.600	2.200	2.44	2.05	3.31	1
IPB63-WEL-1	IPB63	1.000	2.480	2.480	3.070	-	2.91	2.48	4.63	2
IPB63-WEL-1-1/4	IPB63	1.250	2.760	2.760	3.070	-	2.91	2.52	5.29	2
IPB80-WEL-1-1/2	IPB80	1.500	3.150	3.150	3.270	-	3.11	2.84	7.00	2
IPB80-WEL-2	IPB80	2.000	3.740	3.740	3.940	-	3.78	3.47	10.14	2
METRIC										
IPB50-WEL-6	IPB50	6.0 mm	25.0 mm	-	44.0 mm	32.50 mm	42.0 mm	37.0 mm	1.10	1
IPB50-WEL-8	IPB50	8.0 mm	28.0 mm	-	44.0 mm	33.00 mm	42.0 mm	37.0 mm	1.10	1
IPB50-WEL-10	IPB50	10.0 mm	35.0 mm	-	52.0 mm	42.00 mm	39.0 mm	49.0 mm	1.54	1
IPB50-WEL-12	IPB50	12.0 mm	42.0 mm	-	57.0 mm	48.00 mm	54.0 mm	54.0 mm	1.76	1
IPB50-WEL-14	IPB50	14.0 mm	42.0 mm	-	57.0 mm	48.00 mm	54.0 mm	54.0 mm	1.76	1
IPB50-WEL-16	IPB50	16.0 mm	48.0 mm	-	67.0 mm	61.00 mm	63.0 mm	63.0 mm	2.43	1
IPB50-WEL-20	IPB50	20.0 mm	51.0 mm	-	67.0 mm	-	63.0 mm	63.0 mm	2.65	1
IPB50-WEL-25	IPB50	25.0 mm	-	63.0 mm	80.0 mm	-	76.0 mm	76.0 mm	3.97	2
IPB63-WEL-16	IPB63	16.0 mm	48.0 mm	-	64.0 mm	53.00 mm	60.0 mm	60.0 mm	3.09	1
IPB63-WEL-20	IPB63	20.0 mm	52.0 mm	-	66.0 mm	56.00 mm	62.0 mm	62.0 mm	3.31	1
IPB63-WEL-25	IPB63	25.0 mm	-	64.0 mm	74.0 mm	-	70.0 mm	60.0 mm	4.63	2
IPB63-WEL-32	IPB63	32.0 mm	-	72.0 mm	76.0 mm	-	72.0 mm	72.0 mm	5.51	2
IPB80-WEL-40	IPB80	40.0 mm	-	80.0 mm	83.0 mm	-	79.0 mm	79.0 mm	7.05	2

Spare Parts - Page 64

Series IPB-FD

FACE MILL DRIVERS



Figure 1

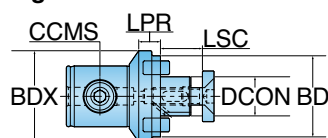
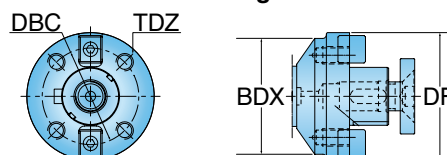


Figure 2

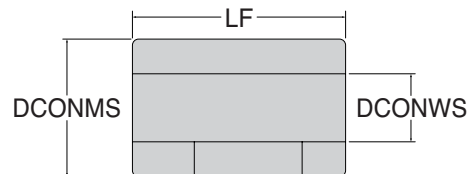


Part Number	CCMS Conn. Code Machine Side	DCON Connection Diameter	BD Body Diameter	BDX Body Diameter Max.	DBC Bolt Circle	TDZ Thread Size	LSC Clamping Length	LPR Protruding Length	WT Weight (lbs)	Fig.
INCH										
IPB50-FD-3/4	IPB50	0.750	1.570	1.968	-	-	0.680	0.590	1.10	1
IPB50-FD-1	IPB50	1.000	1.960	1.968	-	-	0.680	0.590	1.32	1
IPB63-FD-1	IPB63	1.000	2.360	2.480	-	-	0.680	0.590	2.20	1
IPB63-FD-1-1/4	IPB63	1.250	2.750	2.480	-	-	0.680	0.750	2.87	1
IPB80-FD-1-1/2	IPB80	1.500	3.460	3.150	-	-	0.940	0.940	4.85	1
IPB80-FD-2	IPB80	2.000	2.850	3.150	-	-	0.940	1.060	6.61	1
METRIC										
IPB40-FD-16	IPB40	16.0 mm	32.0 mm	40.0 mm	-	-	17.0 mm	15.0 mm	0.66	1
IPB40-FD-22	IPB40	22.0 mm	40.0 mm	40.0 mm	-	-	19.0 mm	13.0 mm	0.88	1
IPB50-FD-16	IPB50	16.0 mm	32.0 mm	50.0 mm	-	-	17.0 mm	15.0 mm	1.10	1
IPB50-FD-22	IPB50	22.0 mm	40.0 mm	50.0 mm	-	-	19.0 mm	15.0 mm	1.10	1
IPB50-FD-27	IPB50	27.0 mm	50.0 mm	50.0 mm	-	-	21.0 mm	15.0 mm	1.32	1
IPB50-FD-32	IPB50	32.0 mm	60.0 mm	50.0 mm	-	-	24.0 mm	15.0 mm	1.54	1
IPB63-FD-22	IPB63	22.0 mm	60.0 mm	63.0 mm	-	-	19.0 mm	15.0 mm	1.98	1
IPB63-FD-27	IPB63	27.0 mm	60.0 mm	63.0 mm	-	-	21.0 mm	15.0 mm	2.43	1
IPB63-FD-32	IPB63	32.0 mm	63.0 mm	63.0 mm	-	-	24.0 mm	15.0 mm	2.65	1
IPB80-FD-32	IPB80	32.0 mm	80.0 mm	80.0 mm	-	-	24.0 mm	24.0 mm	3.75	1
IPB80-FD-40	IPB80	40.0 mm	84.0 mm	80.0 mm	66.7 mm	M12	27.0 mm	24.0 mm	4.19	2
IPB80-FD-50	IPB80	50.0 mm	90.0 mm	80.0 mm	-	-	30.0 mm	24.0 mm	4.41	1
IPB80-FD-60	IPB80	60.0 mm	128.5 mm	80.0 mm	101.6 mm	M16	40.0 mm	31.5 mm	7.72	2

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Series IPB-DXX Reducer Sleeves

FOR BORING BARS

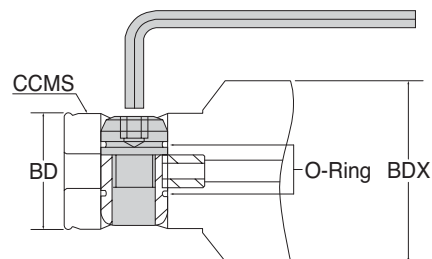


Part Number	DCONMS Connection Diameter Machine Side	DCONWS Connection Diameter Workpiece Side	LF Funct. Length
INCH			
SLEEVE D8-D16	16.0mm	8.0mm	0.860

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Series IPB Expanding Pin

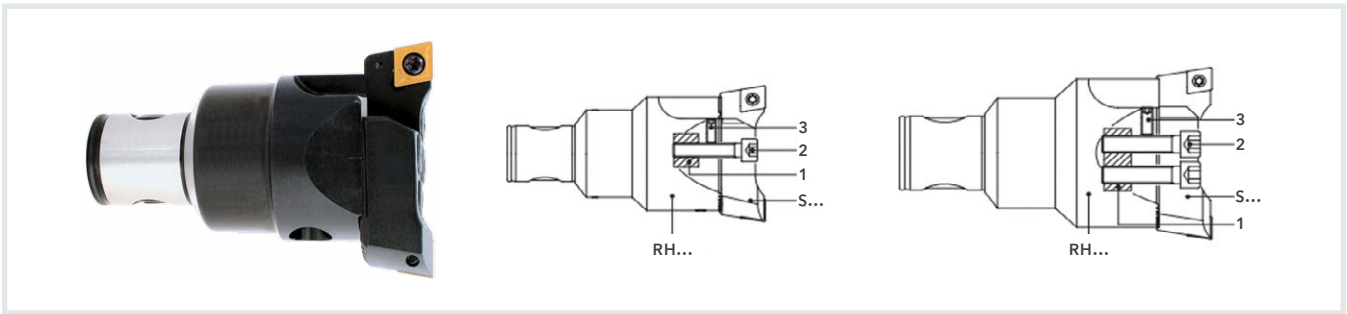
EXPANDING PIN COUPLING FOR IPB MODULAR SYSTEM



Part Number	CCMS Conn. Code Machine Side	BDX Body Diameter Max.	BD Body Diameter
INCH			
IPB-16	IPB16	16.0mm	10.0mm
IPB-20	IPB20	20.0mm	13.0mm
IPB-25	IPB25	25.0mm	16.0mm
IPB-32	IPB32	32.0mm	20.0mm
IPB-40	IPB40	40.0mm	25.0mm
IPB-50	IPB50	50.0mm	32.0mm
IPB-63-80	IPB63-80	63.0mm/80.0mm	42.0mm

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IPB RH Spare Parts



Part Number	EXPANDING IPB CONNECTION	#1 (NUT/ADJ BARREL)	#2 (CARTRIDGE BOLT)	#3 (ADJ SCREWS)
	DESC	DESC	DESC	DESC
RH-IPB16-16	IPB-16	BH NUT BHR MB16	SR M3X14DIN912	SR M3X4DIN913
RH-IPB20-20	IPB-20	BH NUT BHR MB20	SR M4X15DIN912	SR M3X5DIN913
RH-IPB25-25	IPB-25	BH NUT BHR MB25	SR M4X20DIN912	SR M3X8DIN913
RH-IPB32-32	IPB-32	BH NUT BHR MB32	SR M5X25DIN912	SR M4X12DIN913
RH-IPB40-40	IPB-40	BH NUT BHR MB40	SR M6X30DIN912	SR M5X14DIN913
RH-IPB50-50	IPB-50	BH NUT BHR MB50	SR M8X35DIN912	SR M5X12DIN913
RH-IPB50-63		BH NUT BHR MB63	SR M10X40DIN912	SR M6X16DIN913
RH-IPB63-63	IPB-63-80	BH NUT BHR MB63	SR M10X40DIN912	SR M6X16DIN913
RH-IPB80-80		BH NUT BHR MB80	SR M12X45DIN912	SR M8X25DIN913

IPB AFH Spare Parts

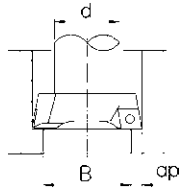
Part Number	EXPANDING IPB CONNECTION	SLIDE LOCK SCREW	CARTRIDGE BOLT	DOVETAIL BOLT	Fig.
	DESC	DESC	DESC	DESC	
AFH-IPB16-16	IPB-16	BH-E/F SLIDE LOCK M3X4.5	SR M3X6DIN912	N/A	1
AFH-IPB16-16-INCH					
AFH-IPB20-20	IPB-20		SR M4X8DIN912		
AFH-IPB20-20-INCH					
AFH-IPB25-25	IPB-25	SRM4X4DIN913	SR M5X10DIN912		
AFH-IPB25-25-INCH					
AFH-IPB32-32	IPB-32	SR M4X6DIN914	SR M6X12DIN912		
AFH-IPB32-32-INCH					
AFH-IPB40-40	IPB-40	SR M5X6DIN914	SR M8X14DIN912		
AFH-IPB40-40-INCH					
AFH-IPB50-50	IPB-50	SR M5X8DIN914	SR M10X25DIN912		
AFH-IPB50-50-INCH					
AFH-IPB50-63		SR M6X10DIN915	N/A	SRM5X12DIN912	2
AFH-IPB50-63-INCH				SR M6X12DIN912	
AFH-IPB50-80	SR M6X14DIN915	SR M5X12DIN912			
AFH-IPB50-80-INCH		SR M6X12DIN912			
AFH-IPB63-63	IPB-63-80	SR M6X10DIN915		SR M5X12DIN912	
AFH-IPB63-63-INCH					
AFH-IPB80-80		SR M6X14DIN915		SR M6X12DIN912	
AFH-IPB80-80-INCH					
AFH-IPB80-125		SR M6X22DIN915		SR M8X20DIN912	
AFH-IPB80-125-INCH					

Operating Guidelines

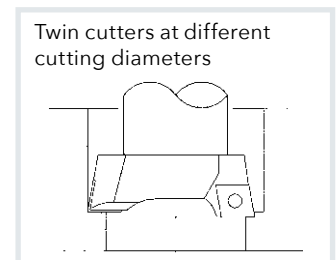
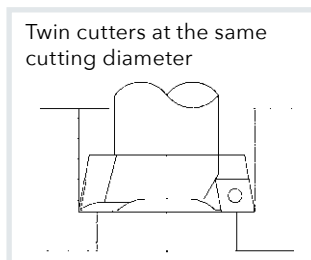
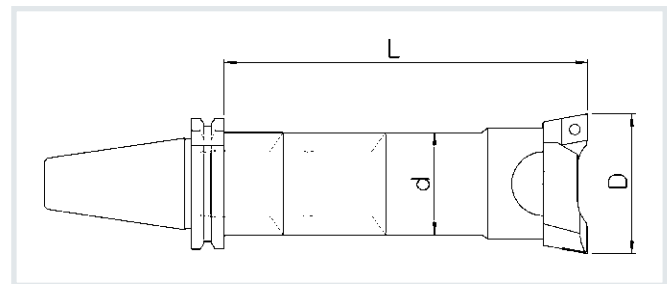
RECOMMENDED CUTTING CONDITIONS FOR ROUGHING OPERATIONS

ISO	Material Group	Boring Bar Dimensions	Working Conditions	Cutting Speed $V_c = \text{sfm}$			Feed $f = \text{ipr}$		
				Diameter			Insert Radius		
				D < 1.50	D = 1.50-4.72	D > 4.72	R=.008	R=.016	R=.031
P	Carbon steel HB ≤ 200	L/d = 2.5	good	393-590	460-655	525-820	-	.008-.016	.012-.020
		L/d = 4	normal	328-525	393-590	460-655	-	.008-.016	.012-.020
		L/d = 6.3	difficult	230-328	230-328	230-328	.006-.012	.008-.016	-
	Carbon steel HB > 200	L/d = 2.5	good	328-525	393-590	460-655	-	.008-.016	.012-.020
		L/d = 4	normal	260-460	328-525	393-590	-	.008-.016	.012-.020
		L/d = 6.3	difficult	196-295	230-328	230-328	.006-.012	.008-.016	-
M	Stainless steel AISI 304-316	L/d = 2.5	good	260-360	295-393	328-460	-	.008-.016	.012-.020
		L/d = 4	normal	230-328	260-360	295-393	-	.008-.016	.012-.020
		L/d = 6.3	difficult	196-295	196-295	196-295	.006-.012	.008-.016	-
K	Cast iron	L/d = 2.5	good	295-393	328-460	393-525	-	.008-.016	.012-.020
		L/d = 4	normal	230-328	295-393	328-460	-	.008-.016	.012-.020
		L/d = 6.3	difficult	196-295	196-295	196-295	.006-.012	.008-.016	-
N	Aluminium	L/d = 2.5	good	525-820	655-984	820-1148	-	.012-.020	.016-.024
		L/d = 4	normal	460-655	525-820	820-984	-	.012-.020	.016-.024
		L/d = 6.3	difficult	328-492	328-492	328-492	.006-.012	.012-.020	-

Note: Feed and speed recommendations are starting operating parameters. They are only guidelines from which further optimization should take place. Operating parameters are influenced by many machining variables. These variables may cause for reductions in feeds and speed or dramatic increases. Additionally, DOC and WOC may need to be revised to optimize the tools performance.

Cutting Depth	Working Range	Max. Cutting Depth	
$a_p = \text{inch}$	$\varnothing = \text{inch}$	Steel	Cast Iron, Aluminium
	0.708 - 1.10	0.06 - 0.07	0.07 - 0.09
	1.10 - 1.97	0.07 - 0.12	0.09 - 0.14
	1.97 - 2.67	0.12 - 0.15	0.14 - 0.19
	2.67 - 7.87	0.15 - 0.19	0.19 - 0.27
	7.87 - 19.68	0.19 - 0.23	0.23 - 0.31

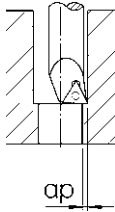
It's advisable to start with B hole $\geq$ the boring bar diameter d.



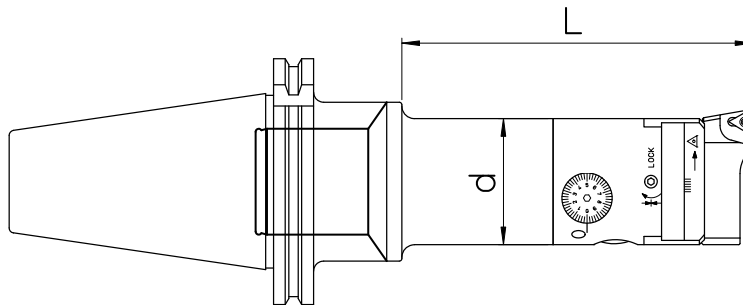
ATTENTION: For boring operations at different diameters, reduce to a half the feed indicated on the above table.

Operating Guidelines

RECOMMENDED CUTTING CONDITIONS FOR FINISH BORING OPERATIONS

ISO	Material Group	Boring Bar Dimensions	Working Conditions	Cutting Speed Vc = sfm	Feed f = ipr			Cutting Depth
					Insert Radius			
					R=.000	R=.008	R=.016	
P	Carbon steel HB ≤ 200	L/d = 2.5	good	655-984	-	.002-.003	.003-.004	 .004-.010
		L/d = 4	normal	525-820	-	.002-.003	.003-.004	
		L/d = 6.3	difficult	230-328	.002-.03	.002-.003	-	
	Carbon steel HB > 200	L/d = 2.5	good	525-820	-	.002-.003	.003-.004	
		L/d = 4	normal	492-655	-	.002-.003	.003-.004	
		L/d = 6.3	difficult	230-328	.002-.03	.002-.003	-	
M	Stainless steel AISI 304-316	L/d = 2.5	good	393-525	-	.002-.003	.003-.004	
		L/d = 4	normal	328-460	-	.002-.003	.003-.004	
		L/d = 6.3	difficult	230-328	.002-.03	.002-.003	-	
K	Cast iron	L/d = 2.5	good	393-525	-	.002-.003	.003-.004	
		L/d = 4	normal	328-460	-	.002-.003	.003-.004	
		L/d = 6.3	difficult	230-328	.002-.03	.002-.003	-	
N	Aluminium	L/d = 2.5	good	984-1312	-	.002-.003	.003-.004	
		L/d = 4	normal	820-1148	-	.002-.003	.003-.004	
		L/d = 6.3	difficult	260-492	.002-.03	.002-.003	-	
H	Hardened steel HRC > 50	L/d = 2.5	good	260-328	-	.002-.003	.002-.03	
		L/d = 4	normal	260-328	-	.002-.003	.002-.03	

Note: Feed and speed recommendations are starting operating parameters. They are only guidelines from which further optimization should take place. Operating parameters are influenced by many machining variables. These variables may cause for reductions in feeds and speed or dramatic increases. Additionally, DOC and WOC may need to be revised to optimize the tools performance.





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