

SPECIALIZING IN CARBIDE DIE COMPONENTS

dura-carb
inc.

Since 1977

dura-carb was founded in April of 1977 and has specialized in manufacturing only carbide punches and dies for the metal stamping industry, including the following sectors: Electronics, Automotive, Appliances and Canning.

Introduction

History

Since the founding of the company in 1977, we at Dura-Carb have been dedicated to providing top-quality carbide tooling products to the metal forming industry. Dura-Carb specializes in the manufacturing of carbide die components. For over thirty years, the emphasis has been on the production of precision die components...punches, ejectors, quills, pilots and bushings for a wide range of stamping and forming applications.

You can depend on Dura-Carb technology and expertise. Our solid manufacturing background and years of experience in the grinding of carbide die components enables us to respond to your needs, whether for high-quality parts in stock, custom designed punches or dies, or special purpose shapes.

Dura-Carb actively assists its customers in minimizing downtime by maintaining a large stock of finished and semi-finished blanks, of both inch and metric punches and bushings in many grades, in its inventory. This gives us the ability to ship a wide variety of finished parts on short notice.

Our Goal

Dura-Carb is dedicated to provide top quality, precision carbide die components, manufactured to meet today's highest standards, priced competitively and delivered on time to meet our customers' requirements.

You can rely on Dura-Carb as your quality supplier of Specialized Carbide Die Components.

To find out how Dura-Carb can assist you simply call us toll-free, 1-800-526-1081

About Selecting Tungsten Carbide

We at Dura-Carb do not claim to be engineers or die designers; when we need assistance in that field we call an expert. We hope our customers and potential customers will do the same when they need help in grade selection for various applications.

Since there are numerous grades of carbide manufactured for the metal stamping industry, it is necessary to have someone who is knowledgeable in selecting the proper grade of carbide needed in your particular stamping or forming application. Trained personnel at Dura-Carb can help you select the grade that will give you the longest wear no matter what the application.

Quality

All of us at Dura-Carb are dedicated to quality. Each employee participates in a total quality program that encompasses every operation beginning with the customer's clearly defined specifications. Quality control includes rigid inspection of the raw product...strict adherence to production requirements and gauging and inspection of the finished product before shipment.

Our systems and methods are constantly being reviewed and updated to ensure ourselves and our customers that they can depend on receiving the best quality products possible consistently...on time...competitively priced.

Equipment List

March 2006

- 8 - Precision OD Grinders
- 2 - Royal Master Centerless grinders
- 6 - Surface Grinders
- 6 - Precision Automatic & Manual ID Grinders
- 2 - Vertical Rotary Grinders
- 2 - Brown & Sharp Optical Grinders
- 1 - Sodick W.E.D.M.
- 4 - Polishing Lathes - with optical attachments

- 3 - Lapping Machines - used for smaller ID work
- 1 - Bridgeport Milling Machine - used for fixturing
- 1 - 10 Horsepower Compressor
- 1 - 14" J&L Optical Comparator
- 1 - 30" J&L Optical Comparator
- 1 - Auto Cad 2004 System
- 2 - Mititoyo Inspection Microscopes

Complete inventory of various diamond wheels and points.

Extensive inventory of standard and special carbide blanks in many grades that are used in the general metal stamping industry.

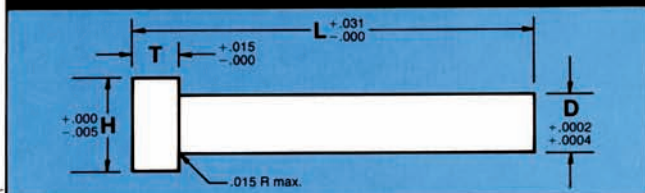


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Carbide Punch Blanks

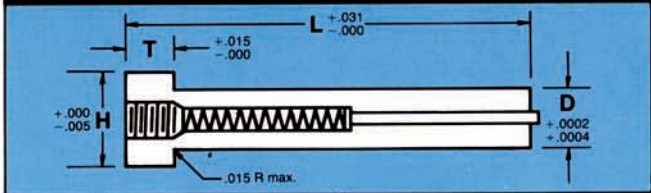


TYPE	BODY DIAMETER D	HEAD DIAMETER H	HEAD THICKNESS T	OVERALL LENGTH L				
				2	2¼	2½	2¾	3
DPB 12	1/8	3/16	1/8	■	■	■	■	■
DPB 15	5/32	7/32	1/8	■	■	■	■	■
DPB 18	3/16	1/4	1/8	■	■	■	■	■
DPB 25	1/4	3/8	3/16	■	■	■	■	■
DPB 31	5/16	7/16	3/16	■	■	■	■	■
DPB 37	3/8	1/2	3/16	■	■	■	■	■
DPB 43	7/16	9/16	3/16	■	■	■	■	■
DPB 50	1/2	5/8	3/16	■	■	■	■	■
DPB 62	5/8	3/4	3/16	■	■	■	■	■
DPB 75	3/4	7/8	3/16	■	■	■	■	■

HOW TO ORDER

QUANTITY	TYPE	OVERALL LENGTH
12	DPB-62	2½

Carbide Ejector Blanks

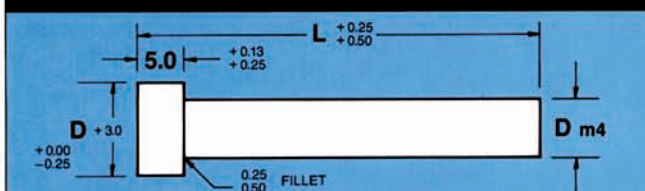


TYPE	BODY DIAMETER D	HEAD DIAMETER H	HEAD THICKNESS T	OVERALL LENGTH L				
				2	2¼	2½	2¾	3
DEB 12	1/8	3/16	1/8	■	■	■		
DEB 18	3/16	1/4	1/8	■	■	■	■	■
DEB 25	1/4	3/8	3/16	■	■	■	■	■
DEB 31	5/16	7/16	3/16	■	■	■	■	■
DEB 37	3/8	1/2	3/16	■	■	■	■	■
DEB 43	7/16	9/16	3/16	■	■	■	■	■
DEB 50	1/2	5/8	3/16	■	■	■	■	■
DEB 62	5/8	3/4	3/16	■	■	■	■	■
DEB 75	3/4	7/8	3/16	■	■	■	■	■

HOW TO ORDER

QUANTITY	TYPE	OVERALL LENGTH
24	DEB-43	2¾

Metric Carbide Punch Blanks

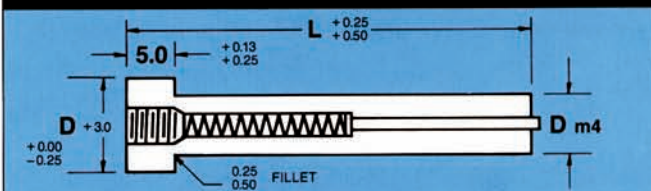


D	TYPE	OVERALL LENGTH L						
		40.0	45.0	50.0	56.0	63.0	71.0	80.0
4.0	MPB 004	■	■	■	■	■	■	
5.0	MPB 005	■	■	■	■	■	■	■
6.0	MPB 006	■	■	■	■	■	■	■
8.0	MPB 008	■	■	■	■	■	■	■
10.0	MPB 010	■	■	■	■	■	■	■
13.0	MPB 013	■	■	■	■	■	■	■
16.0	MPB 016	■	■	■	■	■	■	■
20.0	MPB 020	■	■	■	■	■	■	■

HOW TO ORDER

QUANTITY	TYPE	OVERALL LENGTH
12	MPB-010	40.0

Metric Carbide Ejector Blanks

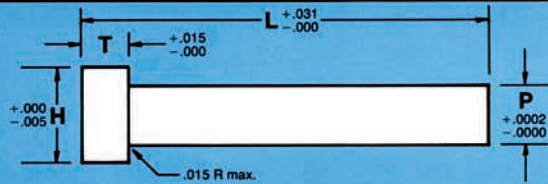


D	TYPE	OVERALL LENGTH L						
		40.0	45.0	50.0	56.0	63.0	71.0	80.0
5.0	MEB 005	■	■	■	■	■		
6.0	MEB 006	■	■	■	■	■		
8.0	MEB 008	■	■	■	■	■	■	■
10.0	MEB 010	■	■	■	■	■	■	■
13.0	MEB 013	■	■	■	■	■	■	■
16.0	MEB 016	■	■	■	■	■	■	■
20.0	MEB 020	■	■	■	■	■	■	■

HOW TO ORDER

QUANTITY	TYPE	OVERALL LENGTH
24	MEB-013	50.0

Carbide Quills

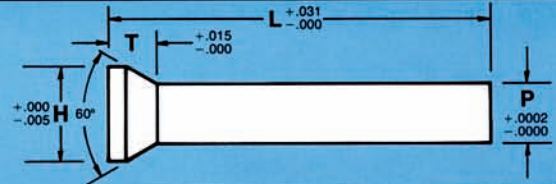


TYPE	HEAD DIAMETER H	HEAD THICKNESS T	PUNCH DIAMETER P		OVERALL LENGTH L							
			MIN	MAX	1½	1¾	2	2¼	2½	2¾	3	
1DQP	⅜	⅜	.045	.065	■	■	■					
2DQP	⅜	⅜	.066	.086	■	■	■	■	■			
3DQP	11/64	⅜	.087	.125	■	■	■	■	■			
4DQP	13/64	⅜	.126	.140	■	■	■	■	■			
5DQP	7/32	⅜	.141	.156	■	■	■	■	■	■	■	
6DQP	15/64	⅜	.157	.172	■	■	■	■	■	■	■	
7DQP	¼	⅜	.173	.187	■	■	■	■	■	■	■	
8DQP	¼	⅜	.1875		■	■	■	■	■	■	■	
9DQP	17/64	⅜	.188	.204	■	■	■	■	■	■	■	
10DQP	9/32	⅜	.205	.218	■	■	■	■	■	■	■	
11DQP	19/64	⅜	.219	.234	■	■	■	■	■	■	■	
12DQP	5/16	3/16	.235	.249	■	■	■	■	■	■	■	
13DQP	5/16	3/16	.250		■	■	■	■	■	■	■	
14DQP	21/64	3/16	.251	.265	■	■	■	■	■	■	■	
15DQP	11/32	3/16	.266	.281	■	■	■	■	■	■	■	
16DQP	23/64	3/16	.282	.297	■	■	■	■	■	■	■	
17DQP	3/8	3/16	.298	.312	■	■	■	■	■	■	■	
18DQP	3/8	3/16	.3125		■	■	■	■	■	■	■	
19DQP	13/32	3/16	.313	.343	■	■	■	■	■	■	■	
20DQP	13/32	3/16	.344	.374	■	■	■	■	■	■	■	
21DQP	13/32	3/16	.375		■	■	■	■	■	■	■	

HOW TO ORDER

QUANTITY	TYPE	PUNCH DIAMETER	OVERALL LENGTH
16	4DQP	.135	2

Carbide 60° Quills



TYPE	HEAD DIAMETER H	HEAD THICKNESS T	PUNCH DIAMETER P		OVERALL LENGTH L							
			MIN	MAX	1½	1¾	2	2¼	2½	2¾	3	
1DQA	3/32	5/64	.047	.055	■	■	■					
2DQA	7/64	5/64	.056	.064	■	■	■	■				
3DQA	1/8	5/64	.065	.078	■	■	■	■	■			
4DQA	9/64	3/32	.079	.087	■	■	■	■	■			
5DQA	5/32	3/32	.088	.099	■	■	■	■	■			
6DQA	11/64	3/32	.100	.120	■	■	■	■	■			
7DQA	3/16	3/32	.121	.131	■	■	■	■	■			
8DQA	13/64	3/32	.132	.147	■	■	■	■	■	■	■	
9DQA	7/32	3/32	.148	.163	■	■	■	■	■	■	■	
10DQA	15/64	3/32	.164	.179	■	■	■	■	■	■	■	
11DQA	¼	3/32	.180	.194	■	■	■	■	■	■	■	
12DQA	17/64	3/32	.195	.210	■	■	■	■	■	■	■	
13DQA	9/32	3/32	.211	.225	■	■	■	■	■	■	■	
14DQA	19/64	3/32	.226	.241	■	■	■	■	■	■	■	
15DQA	5/16	3/32	.242	.251	■	■	■	■	■	■	■	

HOW TO ORDER

QUANTITY	TYPE	PUNCH DIAMETER	OVERALL LENGTH
12	14DQA	.235	2½

STEEL HEADS ALSO AVAILABLE

Dura-Carb...precision carbide tools for precision products.

ALL PRODUCTS ARE ALSO AVAILABLE IN METRICS.

PRICES QUOTED ON REQUEST

Solid Carbide Punches

<p>+0.000 -0.005</p> <p>T</p> <p>+0.015 -0.000</p> <p>L +.031 -0.000</p> <p>B</p> <p>+0.0002 -0.0000</p> <p>P</p> <p>.015 R max.</p> <p>D +.0002 +0.0004</p> <p>1/4 R</p> <p>.0002 T.I.R.</p>										<p>+0.0002 -0.0000</p> <p>P</p>		<p>+0.0002 -0.0000</p> <p>P</p>		<p>+0.0002 -0.0000</p> <p>W</p> <p>+0.0002 -0.0000</p> <p>P</p>		<p>+0.0002 -0.0000</p> <p>W</p> <p>+0.0002 -0.0000</p> <p>P</p>		<p>+0.0002 -0.0000</p> <p>W</p> <p>+0.0002 -0.0000</p> <p>P</p>	
TYPE DSP, DSS, DSR, DSO, DSF	BODY DIAMETER D	HEAD DIAMETER H	HEAD THICKNESS T	POINT B LENGTH	OVERALL LENGTH L					DSP ROUND P		DSS SQUARE P		DSR RECTANGLE W		DSO OBLONG W		DSF FLATTED ROUND W	
					2	2 1/4	2 1/2	2 3/4	3	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
() 12	1/8	3/16	1/8	to 1/2	■	■	■	■	■	.031	.125	.060	.089	.060	.099	.060	.125	.060	.125
() 15	5/32	7/32	1/8	to 1/2	■	■	■	■	■	.031	.156	.062	.109	.060	.124	.060	.156	.060	.156
() 18	3/16	1/4	1/8	to 3/4	■	■	■	■	■	.046	.187	.062	.131	.062	.141	.060	.186	.060	.187
() 25	1/4	3/8	3/16	to 1	■	■	■	■	■	.060	.250	.062	.176	.062	.208	.062	.250	.062	.250
() 31	5/16	7/16	3/16	to 1	■	■	■	■	■	.125	.312	.093	.220	.093	.250	.093	.312	.093	.312
() 37	3/8	1/2	3/16	to 1	■	■	■	■	■	.187	.375	.125	.265	.125	.312	.125	.375	.125	.374
() 43	7/16	9/16	3/16	to 1	■	■	■	■	■	.312	.437	.187	.308	.156	.343	.156	.437	.187	.437
() 50	1/2	5/8	3/16	to 1	■	■	■	■	■	.375	.500	.218	.353	.187	.375	.187	.500	.187	.500
() 62	5/8	3/4	3/16	to 1	■	■	■	■	■	.438	.625	.250	.441	.250	.500	.250	.625	.250	.625
() 75	3/4	7/8	3/16	to 1	■	■	■	■	■	.530	.750	.375	.531	.312	.625	.312	.750	.312	.750

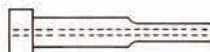
FOR SOLID CARBIDE PUNCHES WITH
AIR-HOLE, SEE BOTTOM OF PAGE.

"D" PRESS FIT TOLERANCES	
Type 1 +.00005 -.0000	Type 2 +.0002 +.0004
If unspecified, Type 2 will be given	

FOR STEEL-HEADED AND STEEL-COLLARED
PUNCHES AND EJECTORS, SEE PAGE 8.

Solid Carbide Ejectors

<p>Technical drawing of a solid carbide ejector. Dimensions and tolerances: T (head thickness) +.015/-.000; L (overall length) +.031/-.000; B (body diameter) +.0002/-.0000; P (point diameter) +.0002/-.0000; H (head height) +.000/-.005; D (head diameter) +.0002/+.0004; .015 R max. (fillet radius); 1/4 R (point radius); .0002 T.I.R. (total indicator runout).</p>										<p>+ .0002 - .0000</p>		<p>+ .0002 - .0000</p>		<p>+ .0002 - .0000</p>		<p>+ .0002 - .0000</p>		<p>+ .0002 - .0000</p>	
TYPE DEP, DES, DER, DEO, DEF	BODY DIAMETER D	HEAD DIAMETER H	HEAD THICKNESS T	POINT LENGTH B	OVERALL LENGTH L					DEP ROUND P		DES SQUARE P		DER RECTANGLE W		DEO OBLONG W		DEF FLATTED ROUND W	
					2	2 1/4	2 1/2	2 3/4	3	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
() 12	1/8	3/16	1/8	to 1/2	■	■	■			.062	.125	.062	.089	.062	.099	.062	.125	.062	.125
() 18	3/16	1/4	1/8	to 3/4	■	■	■			.062	.187	.062	.131	.062	.141	.062	.187	.062	.125
() 25	1/4	3/8	3/16	to 1	■	■	■	■	■	.093	.250	.062	.176	.062	.208	.062	.250	.093	.250
() 31	5/16	7/16	3/16	to 1	■	■	■	■	■	.125	.312	.093	.220	.093	.250	.093	.312	.125	.312
() 37	3/8	1/2	3/16	to 1 1/4	■	■	■	■	■	.187	.375	.125	.265	.125	.312	.125	.375	.156	.375
() 43	7/16	9/16	3/16	to 1 1/4	■	■	■	■	■	.312	.437	.187	.308	.156	.343	.156	.437	.187	.437
() 50	1/2	5/8	3/16	to 1 1/4	■	■	■	■	■	.375	.500	.218	.353	.187	.375	.187	.500	.312	.500
() 62	5/8	3/4	3/16	to 1 1/4	■	■	■	■	■	.500	.625	.281	.441	.281	.500	.282	.625	.312	.750



For air-hole type punch, order
Type DAP, DAS, DAR, DAO, or DAF

HOW TO ORDER

QUANTITY	TYPE	POINT DIAMETER	POINT LENGTH	OVERALL LENGTH	QUANTITY	TYPE	POINT DIMENSIONS	POINT LENGTH	OVERALL LENGTH
12	DSP-31	.130	1/2	2	5	DEO-50	W.250 P.437	3/4	3

Metric Solid Carbide Punches

<p>Technical drawing of a Metric Solid Carbide Punch. Dimensions and tolerances: Body Diameter D (+0.00/-0.25), Point Length B (+0.13/+0.25), Overall Length L (+0.25/+0.50), Point Diameter D m4 (+0.005/-0.000), Body Length B (+1.5/-0.0), Point Radius R 13, and Point Taper P (+0.005/-0.000). A 0.25/0.50 FILLET is shown at the transition.</p>										<p>MSP ROUND P + .005 - .000</p>		<p>MSS SQUARE P + .005 - .000</p>		<p>MSR RECTANGLE W P + .005 - .000</p>		<p>MSO OBLONG W P + .005 - .000</p>		<p>MSF FLATTED ROUND W P + .005 - .000</p>		
TYPE MSP, MSS, MSR, MSO, MSF	BODY DIAMETER D	POINT LENGTH B	OVERALL LENGTH L							MSP ROUND P		MSS SQUARE P		MSR RECTANGLE W P		MSO OBLONG W P		MSF FLATTED ROUND W P		
			40.0	45.0	50.0	56.0	63.0	71.0	80.0	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	
()	4.0	32 Max.	■	■	■	■	■		0.80	3.95	2.50	3.95	2.50	3.95	2.50	3.95	2.50	3.95	2.50	3.95
()	5.0	32 Max.	■	■	■	■	■		1.20	4.95	2.50	4.95	2.50	4.95	2.50	4.95	2.50	4.95	2.50	4.95
()	6.0	32 Max.	■	■	■	■	■	■	1.60	5.95	2.50	5.95	2.50	5.95	2.50	5.95	2.50	5.95	2.50	5.95
()	8.0	38 Max.	■	■	■	■	■	■	2.50	7.95	2.50	7.95	2.50	7.95	2.50	7.95	2.50	7.95	2.50	7.95
()	10.0	38 Max.	■	■	■	■	■	■	3.20	9.95	3.20	9.95	3.20	9.95	3.20	9.95	3.20	9.95	3.20	9.95
()	13.0	38 Max.	■	■	■	■	■	■	6.00	12.95	5.00	12.95	5.00	12.95	5.00	12.95	5.00	12.95	5.00	12.95
()	16.0	38 Max.	■	■	■	■	■	■	8.00	15.95	6.00	15.95	6.00	15.95	6.00	15.95	6.00	15.95	6.00	15.95
()	20.0	38 Max.	■	■	■	■	■	■	10.00	19.95	8.00	19.95	8.00	19.95	8.00	19.95	8.00	19.95	8.00	19.95
()	25.0	38 Max.	■	■	■	■	■	■	12.80	24.95	9.00	24.95	9.00	24.95	9.00	24.95	9.00	24.95	9.00	24.95

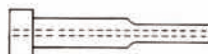
FOR SOLID CARBIDE PUNCHES WITH
AIR-HOLE, SEE BOTTOM OF PAGE.

AVAILABLE IN STEEL-HEAD
AND STEEL-COLLARS.

P to D 0.008

Metric Solid Carbide Ejectors

<p>Technical drawing of a Metric Solid Carbide Ejector. Dimensions and tolerances: Body Diameter D (+0.00/-0.25), Point Length B (+0.13/+0.25), Overall Length L (+0.25/+0.50), Point Diameter D m4 (+0.005/-0.000), Body Length B (+1.5/-0.0), Point Radius R 13, and Point Taper P (+0.005/-0.000). A fillet of 0.25 to 0.50 is shown at the base of the point.</p>																			
TYPE MEP, MES, MER, MEO, MEF	BODY DIAMETER D	POINT LENGTH B	OVERALL LENGTH L						MEP ROUND P		MES SQUARE P		MER RECTANGLE W P		MEO OBLONG W P		MEF FLATTED ROUND W P		
			40.0	45.0	50.0	56.0	63.0	71.0	80.0	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
()	5.0	25 Max.	■	■	■	■	■		1.60	4.95	1.60	4.95	1.60	4.95	1.60	4.95	1.60	4.95	
()	6.0	25 Max.	■	■	■	■	■		2.40	5.95	2.40	5.95	2.40	5.95	2.40	5.95	2.40	5.95	
()	8.0	32 Max.	■	■	■	■	■	■	3.20	7.95	3.20	7.95	3.20	7.95	3.20	7.95	3.20	7.95	
()	10.0	32 Max.	■	■	■	■	■	■	4.50	9.95	4.50	9.95	4.50	9.95	4.50	9.95	4.50	9.95	
()	13.0	32 Max.	■	■	■	■	■	■	6.00	12.95	6.00	12.95	6.00	12.95	6.00	12.95	6.00	12.95	
()	16.0	32 Max.	■	■	■	■	■	■	8.00	15.95	8.00	15.95	8.00	15.95	8.00	15.95	8.00	15.95	
()	20.0	32 Max.	■	■	■	■	■	■	10.00	19.95	10.00	19.95	10.00	19.95	10.00	19.95	10.00	19.95	
()	25.0	32 Max.	■	■	■	■	■	■	12.80	24.95	12.80	24.95	12.80	24.95	12.80	24.95	12.80	24.95	



For air-hole type punch, order
Type MAP, MAS, MAR, MAO, or MAF

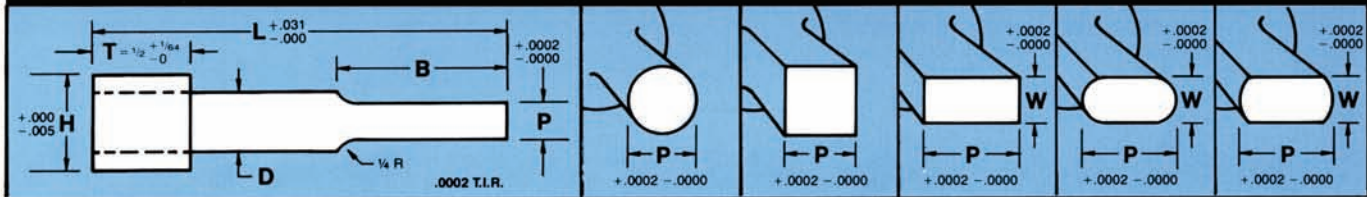
HOW TO ORDER

QUANTITY	TYPE	POINT DIAMETER	POINT LENGTH	OVERALL LENGTH	QUANTITY	TYPE	POINT DIMENSIONS	POINT LENGTH	OVERALL LENGTH
12	MSP-5	3.60	25	50.0	5	MEO-8	W - 4.20 P - 7.90	32	63.0

Carbide Punches

brazed machinable
steel head

TO ORDER, FIND TYPE NUMBER
ON PAGE 6, AND ADD "O"

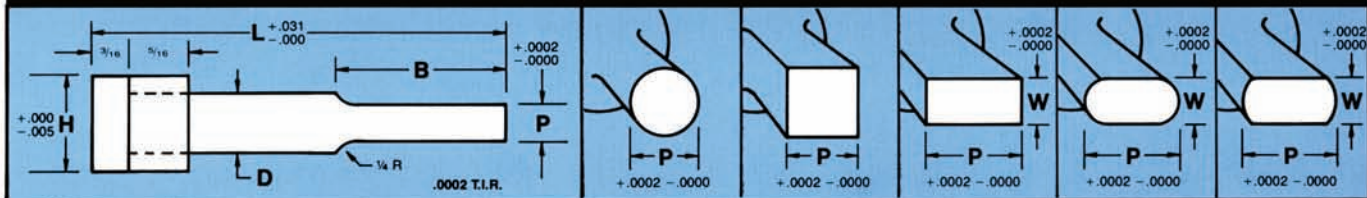


T—other head thicknesses available

Solid Carbide Punches

removable hardened
steel collar

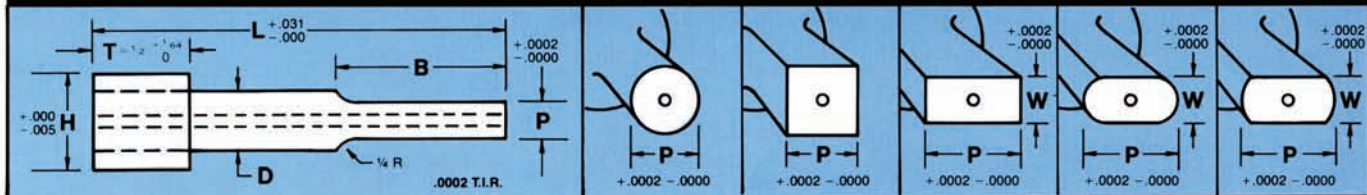
TO ORDER, FIND TYPE NUMBER
ON PAGE 6, AND ADD "OC"



Carbide Punches

with air-hole
brazed machinable steel head

TO ORDER, FIND TYPE NUMBER
ON PAGE 6, AND ADD "O"

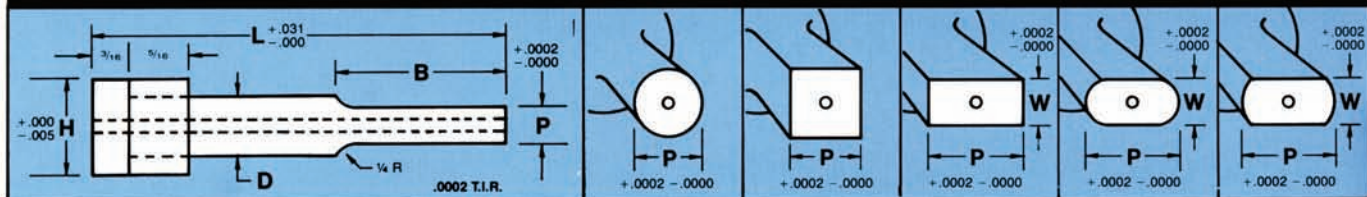


T—other head thicknesses available

Solid Carbide Punches

with air-hole
removable hardened steel collar

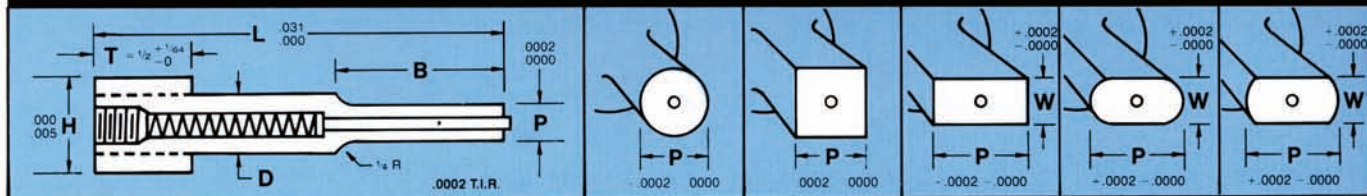
TO ORDER, FIND TYPE NUMBER
ON PAGE 6, AND ADD "OC"



Carbide Ejector Punches

brazed machinable
steel head

TO ORDER, FIND TYPE NUMBER
ON PAGE 6, AND ADD "O"

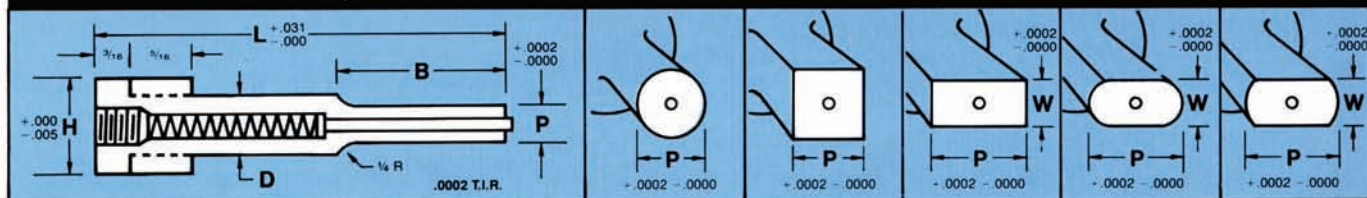


T—other head thicknesses available

Solid Carbide Ejector Punches

removable hardened
steel collar

TO ORDER, FIND TYPE NUMBER
ON PAGE 6, AND ADD "OC"



FOR "D" PRESS FIT TOLERANCES ON ALL OF THE ABOVE, SEE TABLE ON PAGE 6

Solid Carbide Ball-Lock Punches — Solid

TYPE	BODY DIAMETER D	POINT DIAMETER P		POINT LENGTH B	OVERALL LENGTH L				
		MIN	MAX		2	2 1/4	2 1/2	2 3/4	3
BLC 25	1/4	.060	.250	1/2	■	■	■	■	■
BLC 37	3/8	.125	.375	1/2	■	■	■	■	■
BLC 50	1/2	.180	.500	3/4	■	■	■	■	■
BLC 62	5/8	.340	.625	3/4	■	■	■	■	■

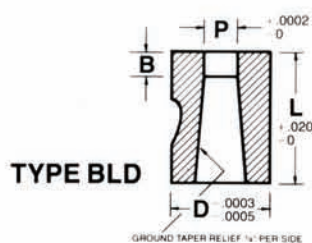
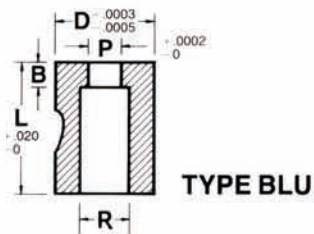
Solid Carbide Ball-Lock Punches with Air-Hole

TYPE	BODY DIAMETER D	POINT DIAMETER P		POINT LENGTH B	OVERALL LENGTH L				
		MIN	MAX		2	2 1/4	2 1/2	2 3/4	3
BLA 25	1/4	.060	.250	1/2	■	■	■	■	■
BLA 37	3/8	.125	.375	1/2	■	■	■	■	■
BLA 50	1/2	.180	.500	3/4	■	■	■	■	■
BLA 62	5/8	.340	.625	3/4	■	■	■	■	■

Solid Carbide Ball-Lock Punches — Ejector

TYPE	BODY DIAMETER D	POINT DIAMETER P		POINT LENGTH B	OVERALL LENGTH L				
		MIN	MAX		2	2 1/4	2 1/2	2 3/4	3
BLE 25	1/4	.060	.250	1/2	■	■	■	■	■
BLE 37	3/8	.125	.375	1/2	■	■	■	■	■
BLE 50	1/2	.180	.500	3/4	■	■	■	■	■
BLE 62	5/8	.340	.625	3/4	■	■	■	■	■

ALSO AVAILABLE IN SHAPES



Round Carbide Ball-Lock Die Buttons

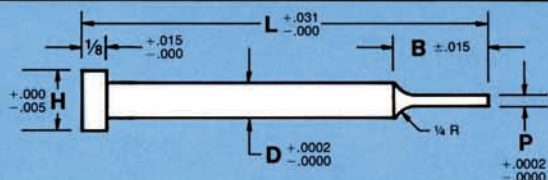
TYPE BLU BLD	BODY DIAMETER D	INSIDE DIAMETER P		MIN LAND B	OVERALL LENGTH L
		MIN	MAX		
() 50	1/2	.062	.195	1/8	13/16
() 62	5/8	.110	.282	1/4	13/16
() 75	3/4	.125	.345	1/4	13/16
() 87	7/8	.196	.458	1/4	13/16
() 100	1	.346	.645	5/16	13/16

ALSO AVAILABLE
IN EDM SHAPES

ALL PRODUCTS ARE
ALSO AVAILABLE
IN METRICS

OTHER LENGTHS AVAILABLE

Carbide Small Head Punches

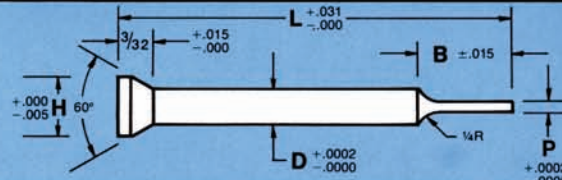


TYPE	BODY DIAMETER D	HEAD DIAMETER H	POINT DIAMETER P		POINT LENGTH B	OVERALL LENGTH L		
			MIN	MAX		1 1/2	2	2 1/2
DSH 06	1/16 (.0625)	1/8	.029	.0625	3/16	■	■	
DSH 09	3/32 (.0937)	5/32	.063	.0937	1/4	■	■	■
DSH 12	1/8 (.125)	3/16	.094	.125	5/16	■	■	■
DSH 15	5/32 (.1562)	7/32	.126	.1562	3/8	■	■	■
DSH 18	3/16 (.1875)	1/4	.157	.1875	7/16	■	■	■
DSH 21	7/32 (.2187)	9/32	.188	.2187	1/2	■	■	■
DSH 25	1/4 (.250)	5/16	.219	.250	9/16	■	■	■

HOW TO ORDER

QUANTITY	TYPE	POINT DIAMETER	OVERALL LENGTH
20	DSH12	.120	2 1/2

Carbide 60° Quill Punches

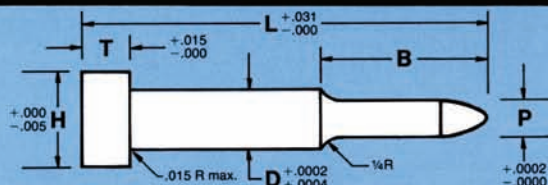


TYPE	BODY DIAMETER D	HEAD DIAMETER H	POINT DIAMETER P		POINT LENGTH B	OVERALL LENGTH L		
			MIN	MAX		1 1/2	2	2 1/2
DSA 06	1/16 (.0625)	7/64	.029	.0625	3/16	■	■	
DSA 09	3/32 (.0937)	5/32	.063	.0937	1/4	■	■	■
DSA 12	1/8 (.125)	3/16	.094	.125	5/16	■	■	■
DSA 15	5/32 (.1562)	7/32	.126	.1562	3/8	■	■	■
DSA 18	3/16 (.1875)	1/4	.157	.1875	7/16	■	■	■
DSA 21	7/32 (.2187)	9/32	.188	.2187	1/2	■	■	■
DSA 25	1/4 (.250)	5/16	.219	.250	9/16	■	■	■

HOW TO ORDER

QUANTITY	TYPE	POINT DIAMETER	OVERALL LENGTH
10	DSA18	.165	2

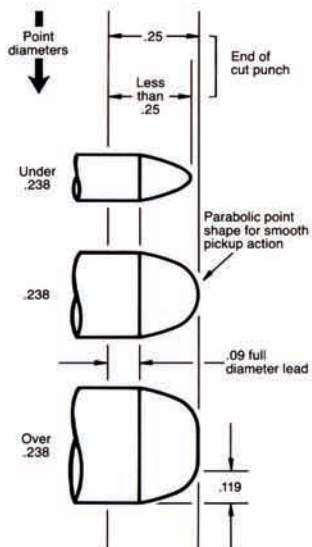
Carbide Pilots



TYPE	BODY DIAMETER D	HEAD DIAMETER H	HEAD THICKNESS T	POINT LENGTH B	POINT DIAMETER P		OVERALL LENGTH L				
					MIN	MAX	2	2 1/4	2 1/2	2 3/4	3
DPN 12	1/8	3/16	1/8	to 1/2	.031	.125	■	■	■	■	■
DPN 15	5/32	7/32	1/8	to 1/2	.031	.156	■	■	■	■	■
DPN 18	3/16	1/4	1/8	to 3/4	.046	.187	■	■	■	■	■
DPN 25	1/4	3/8	3/16	to 1	.060	.250	■	■	■	■	■
DPN 31	5/16	7/16	3/16	to 1	.125	.312	■	■	■	■	■
DPN 37	3/8	1/2	3/16	to 1	.187	.375	■	■	■	■	■
DPN 43	7/16	9/16	3/16	to 1	.312	.437	■	■	■	■	■
DPN 50	1/2	5/8	3/16	to 1	.375	.500	■	■	■	■	■
DPN 62	5/8	3/4	3/16	to 1	.438	.625	■	■	■	■	■
DPN 75	3/4	7/8	3/16	to 1	.530	.750	■	■	■	■	■

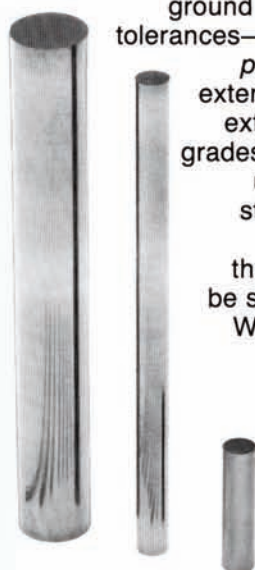
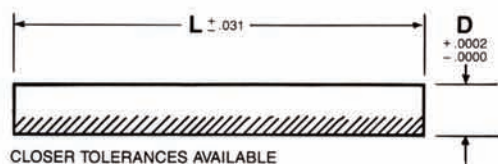
HOW TO ORDER

QUANTITY	TYPE	POINT LENGTH	POINT DIAMETER	OVERALL LENGTH
10	DPN-25	3/8	.225	2 1/2



ALL PRODUCTS ARE ALSO AVAILABLE IN METRICS.

PRICES QUOTED ON REQUEST



Dura-Carb can supply centerless ground rod to very close tolerances—with standard or *polished* finish. An extensive inventory of extruded rod, in the grades most commonly used in the metal stamping industry, is maintained so that your order can be shipped promptly. When required, we will accept and grind customer-supplied material.

Carbide Centerless Ground Rod

DGR SERIES		OVERALL LENGTH L						
TYPE	D DIAMETER	1¼	1¾	2	2¼	2½	2¾	3
1DGR	.045 - .0649	■	■	■	■	■	■	■
2DGR	.065 - .0879	■	■	■	■	■	■	■
3DGR	.088 - .1249	■	■	■	■	■	■	■
4DGR	.1250 - .1409	■	■	■	■	■	■	■
5DGR	.141 - .1569	■	■	■	■	■	■	■
6DGR	.157 - .1729	■	■	■	■	■	■	■
7DGR	.173 - .1875	■	■	■	■	■	■	■
8DGR	.1876 - .2049	■	■	■	■	■	■	■
9DGR	.205 - .2199	■	■	■	■	■	■	■
10DGR	.220 - .2359	■	■	■	■	■	■	■
11DGR	.236 - .2499	■	■	■	■	■	■	■
12DGR	.250 - .2669	■	■	■	■	■	■	■
13DGR	.267 - .2829	■	■	■	■	■	■	■
14DGR	.283 - .2979	■	■	■	■	■	■	■
15DGR	.298 - .3129	■	■	■	■	■	■	■
16DGR	.3125 - .3439	■	■	■	■	■	■	■
17DGR	.344 - .3749	■	■	■	■	■	■	■

HOW TO ORDER

QUANTITY	TYPE	DIAMETER	LENGTH
6	8DGR	.196	3

LARGER OR SMALLER "D" DIAMETERS AVAILABLE.

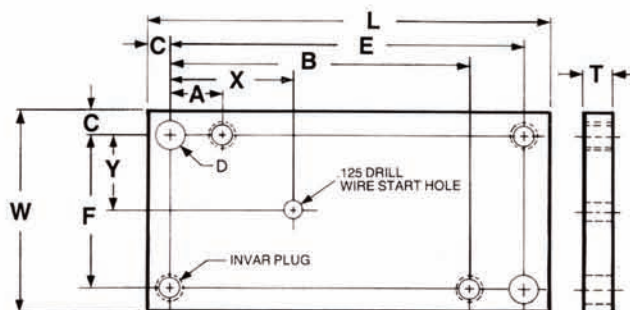
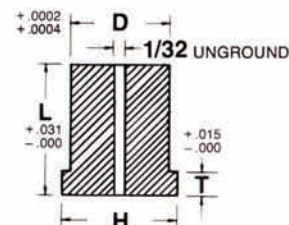
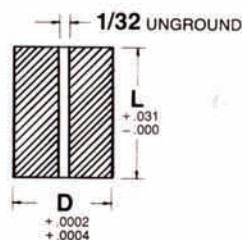
Carbide Wire EDM Blanks

TYPE HEADLESS DW () HEADED DWD ()	BODY DIAMETER D	HEAD DIAMETER H	HEAD THICKNESS T	OVERALL LENGTH L			
				½	¾	1	1¼
() 25	¼	¾	⅜	■	■	■	■
() 31	⅝	7/16	⅜	■	■	■	■
() 37	¾	1/2	⅜	■	■	■	■
() 43	7/16	9/16	⅜	■	■	■	■
() 50	1/2	5/8	⅜	■	■	■	■
() 62	5/8	¾	⅜	■	■	■	■
() 75	¾	7/8	⅜	■	■	■	■
() 87	7/8	1	⅜	■	■	■	■
() 100	1	1 1/8	⅜	■	■	■	■

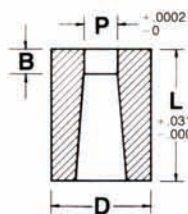
COUNTERBORES AVAILABLE

If more than one start/flush hole is required a drawing is necessary, other size start/flush holes are available.

OTHER LENGTHS AVAILABLE



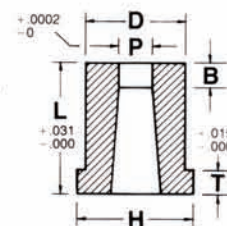
Carbide Wire EDM Punch & Die Blocks are also available per prints.



GROUND TAPER RELIEF
1/4" PER SIDE
STANDARD
TAPERED TO TOP
(NO LAND)
ALSO AVAILABLE



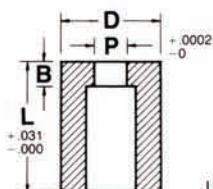
GROUND TAPER RELIEF
1/4" PER SIDE
STANDARD
TAPERED TO TOP
(NO LAND)
ALSO AVAILABLE



Taper Relief Carbide Round Die Bushings

TYPE HEADLESS DD () HEADED DHD ()	BODY DIAMETER D	HEAD DIAMETER H	HEAD THICKNESS T	MINIMUM LAND B	HEADLESS OR HEADED P		OVERALL LENGTH L	
					MIN	MAX	1	1 1/4
() 12	1/8	3/16	1/16	1/16	.031	.062	■	■
() 18	3/16	5/16	1/8	1/8	.062	.128	■	■
() 25	1/4	3/8	3/16	5/32	.062	.150	■	■
() 31	5/16	7/16	3/16	5/32	.062	.170	■	■
() 37	3/8	1/2	3/16	3/16	.062	.190	■	■
() 43	7/16	9/16	3/16	3/16	.156	.300	■	■
() 50	1/2	5/8	3/16	3/16	.156	.305	■	■
() 62	5/8	3/4	3/16	3/16	.250	.425	■	■
() 75	3/4	7/8	3/16	1/4	.312	.531	■	■
() 87	7/8	1	3/16	1/4	.375	.656	■	■
() 100	1	1 1/8	3/16	1/4	.437	.781	■	■

OTHER LENGTHS AVAILABLE

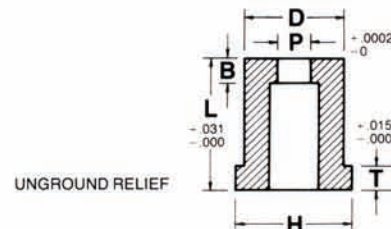


UNGROUND RELIEF

Wire and conventional EDM
die button blanks available

"D" PRESS FIT TOLERANCES	
Type 1 +.00015 +.00020	Type 2 +.0002 +.0004
TIR = .0002	

If unspecified, Type 2 will be given

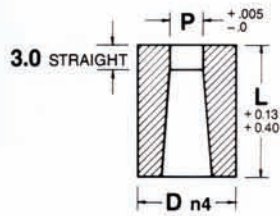


UNGROUND RELIEF

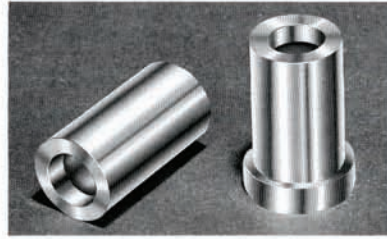
Counterbored Carbide Round Die Bushings

TYPE HEADLESS DU () HEADED DHU ()	BODY DIAMETER D	HEAD DIAMETER H	HEAD THICKNESS T	MINIMUM LAND B	HEADLESS OR HEADED P		OVERALL LENGTH L	
					MIN	MAX	1	1 1/4
() 12	1/8	3/16	1/16	1/16	.031	.062	■	■
() 18	3/16	5/16	1/8	1/8	.062	.128	■	■
() 25	1/4	3/8	3/16	5/32	.062	.150	■	■
() 31	5/16	7/16	3/16	5/32	.062	.170	■	■
() 37	3/8	1/2	3/16	3/16	.062	.190	■	■
() 43	7/16	9/16	3/16	3/16	.156	.300	■	■
() 50	1/2	5/8	3/16	3/16	.156	.305	■	■
() 62	5/8	3/4	3/16	3/16	.250	.425	■	■
() 75	3/4	7/8	3/16	1/4	.312	.531	■	■
() 87	7/8	1	3/16	1/4	.375	.656	■	■
() 100	1	1 1/8	3/16	1/4	.437	.781	■	■

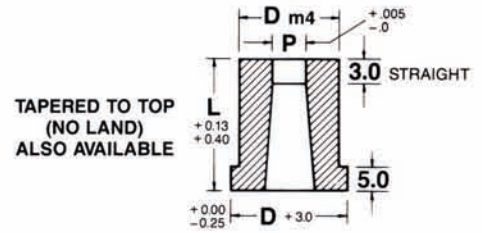
OTHER LENGTHS AVAILABLE



TAPERED TO TOP
(NO LAND)
ALSO AVAILABLE



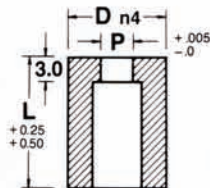
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TAPERED TO TOP
(NO LAND)
ALSO AVAILABLE

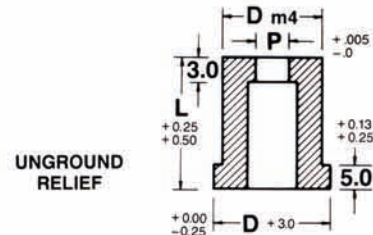
Metric Taper Relief Carbide Round Die Bushings

D	TYPE HEADLESS MD () HEADED MHD ()	HEADLESS OR HEADED P		OVERALL LENGTH L							
		MIN.	MAX.	13	16	19	22	25	28	32	35
5.0	() 05	1.600	3.200	■	■	■	■	■	■		
6.0	() 06	1.600	3.900	■	■	■	■	■	■		
8.0	() 08	2.400	5.400	■	■	■	■	■	■		
10.0	() 10	3.200	6.800	■	■	■	■	■	■	■	■
13.0	() 13	5.400	8.800	■	■	■	■	■	■	■	■
16.0	() 16	7.400	10.800			■	■	■	■	■	■
20.0	() 20	9.500	13.600			■	■	■	■	■	■
25.0	() 25	12.000	17.000			■	■	■	■	■	■



UNGROUND
RELIEF

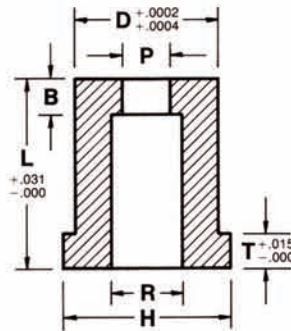
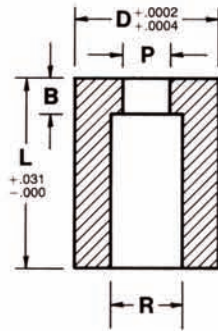
P to D 0.008



UNGROUND
RELIEF

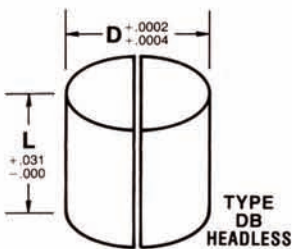
Metric Counterbored Carbide Round Die Bushings

D	TYPE HEADLESS MU () HEADED MHU ()	HEADLESS OR HEADED P		OVERALL LENGTH L							
		MIN.	MAX.	13	16	19	22	25	28	32	35
5.0	() 05	1.600	3.200	■	■	■	■	■	■		
6.0	() 06	1.600	3.900	■	■	■	■	■	■		
8.0	() 08	2.400	5.400	■	■	■	■	■	■	■	■
10.0	() 10	3.200	6.800	■	■	■	■	■	■	■	■
13.0	() 13	5.400	8.800	■	■	■	■	■	■	■	■
16.0	() 16	7.400	10.800			■	■	■	■	■	■
20.0	() 20	9.500	13.600			■	■	■	■	■	■
25.0	() 25	12.000	17.000			■	■	■	■	■	■

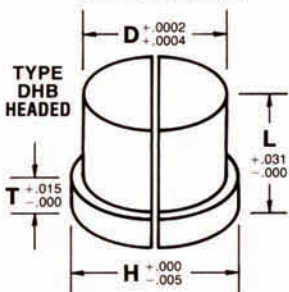


Carbide EDM Shaped Bushings

TYPE HEADLESS D_() HEADED DH_()	BODY DIAMETER D	HEAD DIAMETER H	MIN. LAND B	HEADLESS DS HEADED DHS		HEADLESS DR HEADED DHR		HEADLESS DO HEADED DHO		HEADLESS DF HEADED DHF		R MAX. RELIEF HOLE	OVERALL LENGTH L	
				P	MAX. DIAG.	W MIN.	MAX. DIAG.	W MIN.	P MAX.	W MIN.	P MAX.		1	1 1/4
() 37	3/8	1/2	3/16	.062	.200	.062	.200	.062	.195	.062	.195	.228	■	■
() 50	1/2	5/8	3/16	.093	.285	.093	.285	.062	.270	.062	.270	.312	■	■
() 62	5/8	3/4	3/16	.125	.365	.125	.365	.093	.365	.093	.365	.385	■	■
() 75	3/4	7/8	1/4	.187	.437	.187	.437	.156	.437	.156	.437	.468	■	■
() 87	7/8	1	1/4	.250	.540	.250	.540	.187	.520	.187	.520	.578	■	■
() 100	1	1 1/8	1/4	.375	.650	.375	.650	.250	.650	.250	.650	.687	■	■



ALSO AVAILABLE
IN SHAPES
SHOWN ABOVE



Carbide Split Die Blanks

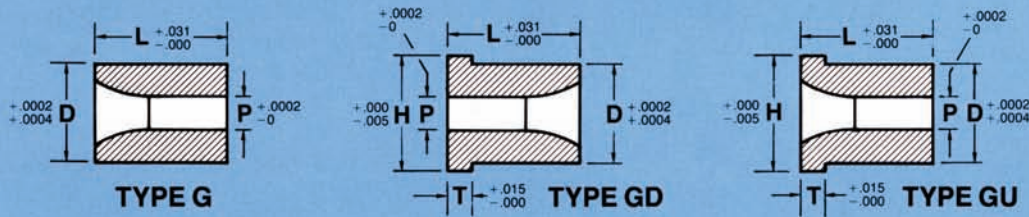
TYPE DB () DHB ()	BODY DIAMETER D	HEAD DIAMETER H	HEAD THICKNESS T	OVERALL LENGTH L			
				1/2	3/4	1	1 1/4
() 18	.1875	5/16	1/8	■	■	■	
() 25	.250	3/8	3/16	■	■	■	
() 31	.3125	7/16	3/16	■	■	■	■
() 37	.375	1/2	3/16	■	■	■	■
() 43	.4375	9/16	3/16	■	■	■	■
() 50	.500	5/8	3/16		■	■	■
() 62	.625	3/4	3/16		■	■	■
() 75	.750	7/8	3/16		■	■	■
() 87	.875	1	3/16		■	■	■
() 100	1.000	1 1/8	3/16		■	■	■

HOW TO ORDER

QUANTITY	TYPE	W-P	OVERALL LENGTH	HEADLESS HEADED	QUANTITY	TYPE	OVERALL LENGTH	HEADLESS HEADED
6	DF-75	W-.165 P-.420	1 1/4	HEADLESS	10	DHB-43	3/4	HEADED

ALL PRODUCTS ARE ALSO AVAILABLE IN METRICS.

Carbide Round Stripper Guide Bushings



TYPE G-GD-GU	BODY DIAMETER D	HEAD DIAMETER H	HEAD THICKNESS T	HOLE DIAMETER P		OVERALL LENGTHS					
				MIN.	MAX.	1/4	5/16	3/8	1/2	5/8	3/4
() 12	1/8	3/16	1/16	.029	.062	■	■	■			
() 18	3/16	5/16	1/8	.062	.128			■	■		
() 25	1/4	3/8	1/8	.062	.170			■	■	■	
() 31	5/16	7/16	1/8	.093	.212			■	■	■	■
() 37	3/8	1/2	1/8	.125	.255			■	■	■	■
() 43	7/16	9/16	1/8	.187	.297			■	■	■	■
() 50	1/2	5/8	1/8	.212	.344				■	■	■
() 62	5/8	3/4	1/8	.293	.425					■	■

Carbide Special Shapes

Fine precision tooling results in improved production and quality. You can depend on Dura-Carb to maintain that superior quality.

Carbide draw dies and punches along with extrusion pins are nothing new to Dura-Carb personnel. Beginning with the proper carbide grade selection, precision grinding and more importantly...finishes, we feel our products will outlast any other on the market today.

Carbide draw dies and punches

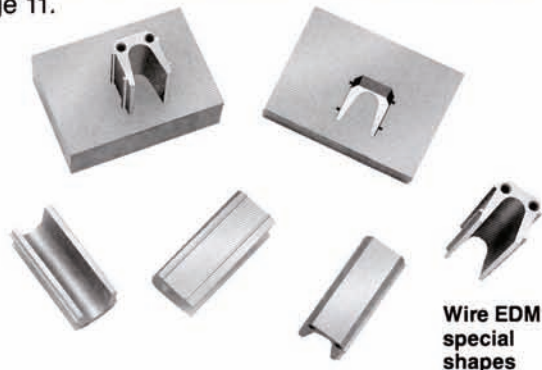


Dura-Carb can supply punches and dies in many special shapes. For quotations, send your drawings specifying all dimensions, tolerances, grade and relationship of shape to shank or body. If you require locking devices, specify the relationship of the locking device to the shape.



Carbide extrusion pins

Wire EDM resources are available with special carbide capabilities to .0001 tolerances. Solid carbide punches and die block blanks are also available, precision ground to customer specifications. See page 11.



Wire EDM special shapes