

ARCH[®]

Cutting Tools

- Milling
- Drilling
- Finishing
- Contouring
- Slotting
- Turning
- Boring
- Tool Holding
- Custom Solutions

THE
COLLECTION

THE COMPLETE TOOL MAKING AUTHORITY[®]

2023

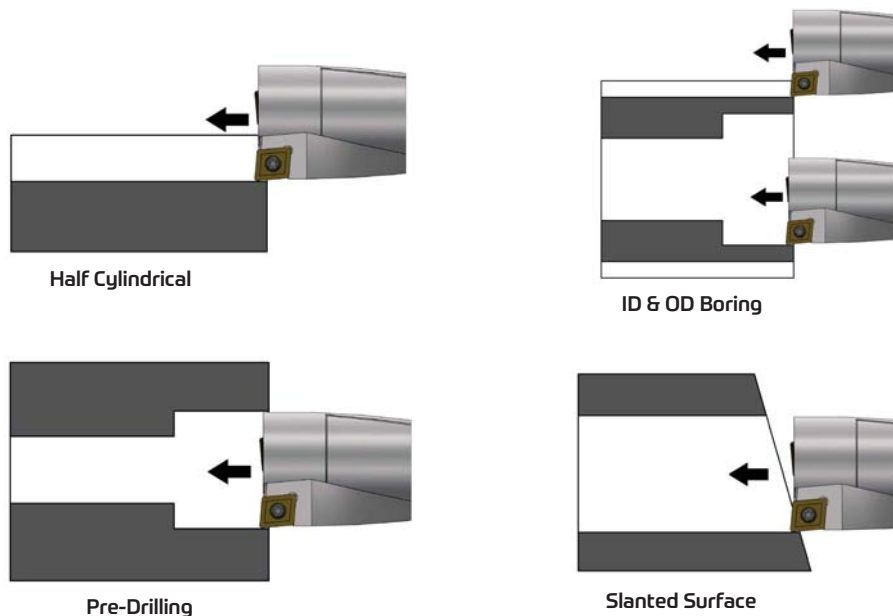
INDEXABLE DRILLS

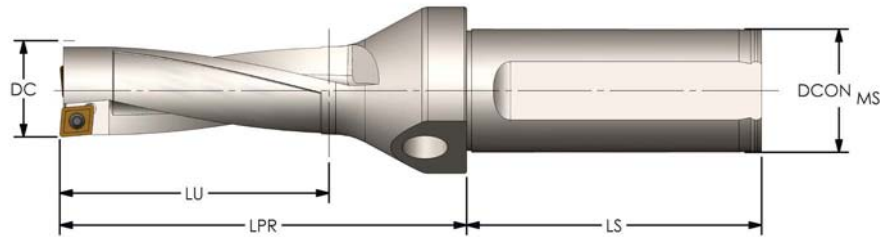
ARCH[®]
Cutting Tools



ARCH Cutting Tools Patriot High Performance PD1 portfolio of indexable drills excels across a broad spectrum of ISO class workpiece materials. From general steels, cast irons, HSRA, and many more, when there is a high demand to Reduce cost per feature in hole making applications. With diameters from 0.5625" (15mm) to 2.125" (54mm) offered in both imperial and metric sizes. Our range covers a Comprehensive application base providing universal insert geometries and grades, suitable for most applications across all industry segments that focus on hole quality. These include general engineering, die and mold, automotive, and aerospace & defense.

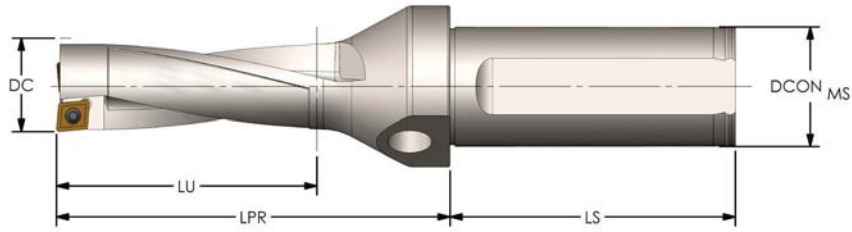
- Available in diameters 0.562" (15mm) - 2.125" (54mm), 2xD, 3xD, and 4xD
- 2-ported precision through coolant for excellent chip evacuation
- Versatility - Facing, boring, O.D. and I.D. turning capabilities
- Capable of drilling into slanted workpieces without pre-drilling
- Radial offset capability to adjust diameter size in non- rotating applications
- Economical 4-edge insert design providing excellent chip formation and lower spindle loads
- High quality tool steel bodies for added rigidity, wear resistance and reduced chip wash





2xD

PRODUCT #	DESIGNATION	DC [in.]	DCONMS [in.]	LS [in.]	LPR [in.]	LU [in.]	INSERT	SCREW	WRENCH
970-000-034	PD1-0562-2D-075	0.562	0.750	1.900	2.042	1.242	PD1 042004	PD1-16	T-6-S
970-000-038	PD1-0625-2D-075	0.625	0.750	1.900	2.168	1.368	PD1 052804	PD1-2	
970-000-042	PD1-0687-2D-075	0.687	0.750	1.900	2.292	1.492			
970-000-047	PD1-0750-2D-100	0.750	1.000	2.400	2.561	1.618	PD1 063306	PD1-22	T-7-S
970-000-051	PD1-0812-2D-100	0.812	1.000	2.400	2.686	1.743			
970-000-055	PD1-0875-2D-100	0.875	1.000	2.400	2.811	1.868			
970-000-058	PD1-0937-2D-125	0.937	1.250	2.900	2.936	1.993	PD1 074006	PD1-25	
970-000-062	PD1-1000-2D-125	1.000	1.250	2.900	3.061	2.118			
970-000-066	PD1-1125-2D-125	1.125	1.250	2.900	3.311	2.368			
970-000-070	PD1-1250-2D-125	1.250	1.250	2.900	3.600	2.657	PD1 094508	PD1-35	T-15-S
970-000-074	PD1-1375-2D-125	1.375	1.250	2.900	3.850	2.907			
970-000-078	PD1-1500-2D-150	1.500	1.500	2.900	4.100	3.157			
970-000-081	PD1-1625-2D-150	1.625	1.500	2.900	4.390	3.447	PD1 125812	PD1-5	T-20-S
970-000-084	PD1-1750-2D-150	1.750	1.500	2.900	4.600	3.657			
970-000-088	PD1-2000-2D-150	2.000	1.500	2.900	5.100	4.157			
970-000-131	PD1-2125-2D-150	2.125	1.500	2.900	5.350	4.407	PD1 156812	PD1-6	T-25-S

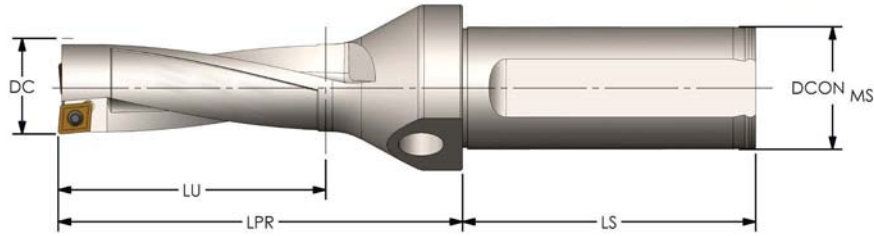


3xD IMPERIAL

PRODUCT #	DESIGNATION	DC [in.]	DCONMS [in.]	LS [in.]	LPR [in.]	LU [in.]	INSERT	SCREW	WRENCH	
970-000-035	PD1-0562-3D-075	0.562	0.750	1.900	2.747	1.804	PD1 042004	PD1-16	T-6-S	
970-000-036	PD1-0594-3D-075	0.594	0.750	1.900	2.843	1.900				
970-000-037	PD1-0609-3D-075	0.609	0.750	1.900	2.888	1.945				
970-000-039	PD1-0625-3D-075	0.625	0.750	1.900	2.936	1.993	PD1 052804	PD1-2		
970-000-041	PD1-0669-3D-075	0.669 (17mm)	0.750	1.900	3.069	2.126				
970-000-043	PD1-0687-3D-075	0.687	0.750	1.900	3.122	2.179				
970-000-045	PD1-0709-3D-075	0.709	0.750	1.900	3.187	2.244	PD1 063306	PD1-22	T-7-S	
970-000-046	PD1-0734-3D-100	0.734	1.000	2.400	3.263	2.320				
970-000-048	PD1-0750-3D-100	0.750	1.000	2.400	3.311	2.368				
970-000-050	PD1-0787-3D-100	0.787 (20mm)	1.000	2.400	3.422	2.479				
970-000-052	PD1-0812-3D-100	0.812	1.000	2.400	3.499	2.556				
970-000-054	PD1-0844-3D-100	0.844	1.000	2.400	3.637	2.694				
970-000-056	PD1-0875-3D-100	0.875	1.000	2.400	3.686	2.743	PD1 074006	PD1-25		
970-000-059	PD1-0937-3D-125	0.937	1.250	2.900	3.874	2.931				
970-000-061	PD1-0984-3D-125	0.984 (25mm)	1.250	2.900	4.014	3.071				
970-000-063	PD1-1000-3D-125	1.000	1.250	2.900	4.061	3.118	PD1 094508	PD1-35		T-15-S
970-000-065	PD1-1062-3D-125	1.062	1.250	2.900	4.249	3.306				
970-000-067	PD1-1125-3D-125	1.125	1.250	2.900	4.436	3.493				
970-000-069	PD1-1181-3D-125	1.181 (30mm)	1.250	2.900	4.645	3.702	PD1 125812	PD1-5	T-20-S	
970-000-071	PD1-1250-3D-125	1.250	1.250	2.900	4.850	3.907				
970-000-073	PD1-1312-3D-125	1.312	1.250	2.900	5.039	4.095				
970-000-075	PD1-1375-3D-125	1.375	1.250	2.900	5.225	4.282	PD1 156812	PD1-6	T-25-S	
970-000-077	PD1-1437-3D-125	1.437	1.250	2.900	5.413	4.470				
970-000-079	PD1-1500-3D-150	1.500	1.500	2.900	5.640	4.697				
970-000-082	PD1-1625-3D-150	1.625	1.500	2.900	6.015	5.072	PD1 156812	PD1-6		
970-000-085	PD1-1750-3D-150	1.750	1.500	2.900	6.390	5.447				
970-000-087	PD1-1875-3D-150	1.875	1.500	2.900	6.825	5.882				
970-000-089	PD1-2000-3D-150	2.000	1.500	2.900	7.140	6.197	PD1 156812	PD1-6		
970-000-091	PD1-2125-3D-150	2.125	1.500	2.900	7.515	6.572				

METRIC SHANK

PRODUCT #	DESIGNATION	DC [mm]	DCONMS [mm]	LS [mm]	LPR [mm]	LU [mm]	INSERT	SCREW	WRENCH	
970-000-115	PD1-0170-3D-20MM	17.00	20.00	44.00	74.00	54.00	PD1 052804	PD1-2	T-6-S	
970-000-116	PD1-0180-3D-25MM	18.00	25.00	56.00	81.00	57.00				
970-000-117	PD1-0190-3D-25MM	19.00	25.00	56.00	84.00	60.00				
970-000-118	PD1-0200-3D-25MM	20.00	25.00	56.00	84.00	60.00	PD1 063306	PD1-22		
970-000-119	PD1-0210-3D-25MM	21.00	25.00	56.00	90.00	66.00				
970-000-120	PD1-0220-3D-25MM	22.00	25.00	56.00	93.00	69.00				
970-000-121	PD1-0230-3D-25MM	23.00	25.00	56.00	96.00	72.00	PD1 074006	PD1-25	T-7-S	
970-000-122	PD1-0240-3D-25MM	24.00	25.00	56.00	98.00	75.00				
970-000-123	PD1-0250-3D-25MM	25.00	25.00	56.00	102.00	78.00				
970-000-124	PD1-0260-3D-32MM	26.00	32.00	60.00	105.00	81.00				
970-000-125	PD1-0270-3D-32MM	27.00	32.00	60.00	108.00	84.00				
970-000-126	PD1-0280-3D-32MM	28.00	32.00	60.00	111.00	87.00				
970-000-127	PD1-0290-3D-32MM	29.00	32.00	60.00	115.00	91.00	PD1 094508	PD1-35		T-15-S
970-000-128	PD1-0300-3D-32MM	30.00	32.00	60.00	118.00	94.00				



4xD



PRODUCT #	DESIGNATION	DC [in.]	DCONMS [in.]	LS [in.]	LPR [in.]	LU [in.]	INSERT	SCREW	WRENCH
970-000-129	PD1-0562-4D-075	0.562	0.750	1.900	3.166	2.366	PD1 042004	PD1-16	T-6-S
970-000-040	PD1-0625-4D-075	0.625	0.750	1.900	3.418	2.618	PD1 052804	PD1-2	T-6-S
970-000-044	PD1-0687-4D-075	0.687	0.750	1.900	3.667	2.867			
970-000-049	PD1-0750-4D-100	0.750	1.000	2.400	4.061	3.118	PD1 063306	PD1-22	T-7-S
970-000-053	PD1-0812-4D-100	0.812	1.000	2.400	4.312	3.369			
970-000-057	PD1-0875-4D-100	0.875	1.000	2.400	4.561	3.618			
970-000-060	PD1-0937-4D-125	0.937	1.250	2.900	4.812	3.869	PD1 074006	PD1-25	
970-000-064	PD1-1000-4D-125	1.000	1.250	2.900	5.061	4.118			
970-000-068	PD1-1125-4D-125	1.125	1.250	2.900	5.561	4.618	PD1 094508	PD1-35	
970-000-072	PD1-1250-4D-125	1.250	1.250	2.900	6.100	5.157			
970-000-076	PD1-1375-4D-125	1.375	1.250	2.900	6.600	5.627	PD1 125812	PD1-5	T-20-S
970-000-080	PD1-1500-4D-150	1.500	1.500	2.900	7.140	6.197			
970-000-083	PD1-1625-4D-150	1.625	1.500	2.900	7.640	6.697	PD1 156812	PD1-6	T-25-S
970-000-086	PD1-1750-4D-150	1.750	1.500	2.900	8.140	7.197			
970-000-090	PD1-2000-4D-150	2.000	1.500	2.900	9.140	8.197			
970-000-130	PD1-2125-4D-150	2.125	1.500	2.900	9.640	8.697			

PRODUCT #	DESIGNATION	HP600	HK356	HN300
914-000-085	PD1 042004	•		
914-000-083			•	
914-000-084				•
914-000-088	PD1 052804	•		
914-000-086			•	
914-000-087				•
914-000-091	PD1 063306	•		
914-000-089			•	
914-000-090				•
914-000-094	PD1 074006	•		
914-000-092			•	
914-000-093				•
914-000-097	PD1 094508	•		
914-000-095			•	
914-000-096				•
914-000-100	PD1 125812	•		
914-000-098			•	
914-000-99				•
914-000-103	PD1 156812	•		
914-000-101			•	
914-000-102				•

PRODUCT #	Insert Screw
968-000-112	PD1-16
968-000-113	PD1-2
968-000-114	PD1-22
968-000-115	PD1-25
968-000-116	PD1-35
968-000-117	PD1-5
968-000-118	PD1-6

PACKAGE SIZE OF 5



PD1

PACKAGE SIZE OF 10



ISO	MATERIAL	HARDNESS	GRADE	Vc (SFM)*	INDEXABLE DRILL DIAMETER (INCH)		
					0.5620"-0.7499"	0.7500" - 1.4999"	1.5000" - 2.2500"
					Fz = IPR (INCH PER REVOLUTION)*		
P	CARBON STEELS 1018, 1040, 1080, 1090, 10L50, 1140, 1212, 12L15, 1525, 1536	≤ 275 BHN or ≤ 28 HRC	HP 600	350-900	.0015-.0060	.0020-.0075	.0030-.0120
	ALLOY STEELS 4140, 4150, 4320, 5120, 5150, 8630, 86L20, 17-4 PH	≤ 375 BHN or ≤ 40 HRC		260-750	.0020-.0070	.0020-.0085	.0030-.0095
M	STAINLESS STEELS (Free MACHINING) 303, 416, 420F, 430F, 440F	≤ 275 BHN or ≤ 28 HRC	HP 600	230-700	.0018-.0040	.0030-.0065	.0030-.0085
	STAINLESS STEELS (DIFFICULT) 304, 304L, 316, 316L	≤ 275 BHN or ≤ 28 HRC		260-750	.0018-.0040	.0030-.0065	.0030-.0085
K	GRAY IRONS Class 20, 30, 40 ,50, 60, G3000, G3500	≤ 220 BHN or ≤ 19 HRC	HK 356	285-1000	.0025-.0055	.0035-.0070	.0040-.0085
	DUCTILE IRONS D&M series, 250, 300, 350, 400, 60-40-18, 65-45-12	≤ 260 BHN or ≤ 26 HRC		230-740	.0020-.0050	.0028-.0065	.0030-.0070
N	NON-FERROUS Aluminum, Aluminum cast, Brass, Copper, Bronze, Non Metallic	≤ 271 BHN or ≤ 28 HRC	HN 300	600-1150	.0020-.0075	.0030-.0090	.0045-.0115
H	TOOL STEELS A2, D2, H13, L2, M2, P20, S7, T15, W2"	≤ 375 BHN or ≤ 55 HRC	HP 600	80-275	.0018-.0065	.0020-.0075	.0030-.0080
S	HR SUPER ALLOYS Inconel 718, Waspaloy, Hastelloy, Inconel 625, Stellite 31, Haynes 25, REne 41	≤ 275 BHN or ≤ 28 HRC	HP 600	55-270	.0016-.0032	.0020-.0055	.0025-.0060
	TITANIUM 6AL-4V, ASTM 1, 2, 3, 6AL-2S	≤ 275 BHN or ≤ 28 HRC		95-460	.0019-.0055	.0020-.0065	.0025-.008

Recommendations

Productivity and tooling performance is not only influenced by grade and geometry, but also by clamping the tool securely and accurately as possible.

- It is Recommended to use precision holders i.e. hydraulic, shrink fit
- It is Recommended to use internal coolant – minimum Recommended pressure 145 psi

*Speeds & feeds are starting Recommendations only. Factors such as machine type, fixture, tooling rigidity, available horsepower, coolant delivery method and others will affect the performance significantly.