

NEW Performance

“X” Series

- ▶ Smooth centering & penetration by conical helix design
- ▶ Patented conical helix point geometry to reduce cutting load
- ▶ Effectively use for tough material like stainless, titanium
- ▶ 20~30% machine load reduction than ordinary drill insert

★ Born to be never experienced performance! ★



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“X” Series

(Excellent)

Hole making No.1



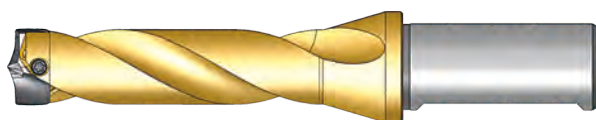
Multi-tasking in single drill

- ▶ Smooth centering
- ▶ Higher straightness
- ▶ Super penetrations
- ▶ Super chip's ejection
- ▶ Minimizing built-up edge by helical cutting edge design

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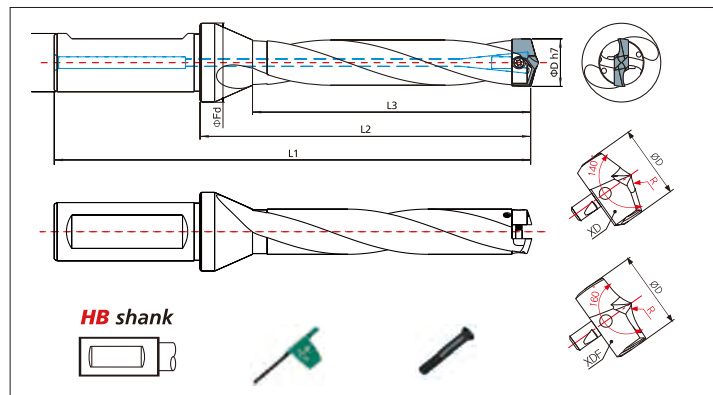
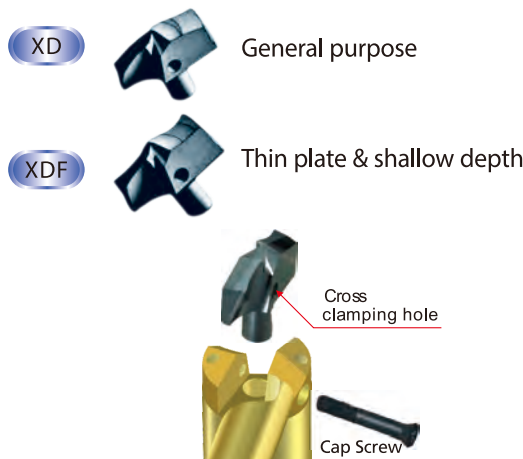


X-series +higher helix & carbide insert



- Higher helix flute to reduce machine load and faster chip ejection
- Rugged flange type to decrease vibration or chattering
- Interchangeable <XD>, <XDF>, <XDH>, <XDFH>
- Drill body consists of premium tool steel with heat treatment
- Increased tool life by less vibration
- Internal coolant fed design
- "X" series and insert available upon request only
- Single lock clamping

Insert selection



Please make required cutting depth in the □ like T, P, H, L

Hole size range	Code No.	Shank Φ d / (L)	Cutting depth (Length x ΦD)	L1	L2	L3	Flanged dia.(ΦFd)	Insert Code No. to fit in body		XD	XDF	Cap Screw	Torx driver					
Ø10.0 ~Ø10.4	X-100 □	12.0 (48)	T(3xD)	99	51	40	18	For General Purpose	XD 100, XD 101, XD 102, XD 103, XD 104 XDF 100, XDF 101, XDF 102, XDF 103, XDF 104		CS100	T6 Torque 0.6Nm (Max)						
			P(5xD)	119	71	60		For Hard Materials	XDH 100, XDH 101, XDH 102, XDH 103, XDH 104 XDFH 100, XDFH 101, XDFH 102, XDFH 103, XDFH 104									
			H(7xD)	139	91	80		For General Purpose	XD 105, XD 106, XD 107, XD 108, XD 109 XDF 105, XDF 106, XDF 107, XDF 108, XDF 109									
			L(10xD)	169	121	110			For Hard Materials	XDH 105, XDH 106, XDH 107, XDH 108, XDH 109 XDFH 105, XDFH 106, XDFH 107, XDFH 108, XDFH 109								
Ø10.5 ~Ø10.9	X-105 □		T(3xD)	102	54	42				21			For General Purpose	XD 110, XD 111, XD 112, XD 113, XD 114 XDF 110, XDF 111, XDF 112, XDF 113, XDF 114		-115 SL		
			P(5xD)	123	75	63							For Hard Materials	XDH 110, XDH 111, XDH 112, XDH 113, XDH 114 XDFH 110, XDFH 111, XDFH 112, XDFH 113, XDFH 114				
			H(7xD)	144	96	84		For General Purpose					XD 115, XD 116, XD 117, XD 118, XD 119 XDF 115, XDF 116, XDF 117, XDF 118, XDF 119					
			L(10xD)	176	128	116			For Hard Materials				XDH 115, XD 116, XD 117, XD 118, XD 119 XDFH 115, XDFH 116, XDFH 117, XDFH 118, XDFH 119					
Ø11.0 ~Ø11.4	X-110 □		T(3xD)	104	56	44							24	For General Purpose	XD 120, XD 121, XD 122, XD 123, XD 124 XDF 120, XDF 121, XDF 122, XDF 123, XDF 124		CS120	
			P(5xD)	126	78	66								For Hard Materials	XDH 120, XDH 121, XDH 122, XDH 123, XDH 124 XDFH 120, XDFH 121, XDFH 122, XDFH 123, XDFH 124			
			H(7xD)	148	100	88		For General Purpose						XD 125, XD 126, XD 127, XD 128, XD 129 XDF 125, XDF 126, XDF 127, XDF 128, XDF 129				
			L(10xD)	181	133	121			For Hard Materials					XDH 125, XD 126, XD 127, XD 128, XD 129 XDFH 125, XDFH 126, XDFH 127, XDFH 128, XDFH 129				
Ø11.5 ~Ø11.9	X-115 □		T(3xD)	107	59	46	27				For General Purpose			XD 130, XD 131, XD 132, XD 133, XD 134 XDF 130, XDF 131, XDF 132, XDF 133, XDF 134				-135 SL
			P(5xD)	130	82	69					For Hard Materials			XDH 130, XDH 131, XDH 132, XDH 133, XDH 134 XDFH 130, XDFH 131, XDFH 132, XDFH 133, XDFH 134				
			H(7xD)	153	105	92		For General Purpose			XD 135, XD 136, XD 137, XD 138, XD 139 XDF 135, XDF 136, XDF 137, XDF 138, XDF 139							
			L(10xD)	188	140	127			For Hard Materials		XDH 135, XD 136, XD 137, XD 138, XD 139 XDFH 135, XDFH 136, XDFH 137, XDFH 138, XDFH 139							
Ø12.0 ~Ø12.4	X-120 □		T(3xD)	109	61	48				30	For General Purpose			XD 140, XD 141, XD 142, XD 143, XD 144 XDF 140, XDF 141, XDF 142, XDF 143, XDF 144		CS140		
			P(5xD)	133	85	72					For Hard Materials			XDH 140, XDH 141, XDH 142, XDH 143, XDH 144 XDFH 140, XDFH 141, XDFH 142, XDFH 143, XDFH 144				
			H(7xD)	157	109	96		For General Purpose			XD 145, XD 146, XD 147, XD 148, XD 149 XDF 145, XDF 146, XDF 147, XDF 148, XDF 149							
			L(10xD)	193	145	132			For Hard Materials		XDH 145, XD 146, XD 147, XD 148, XD 149 XDFH 145, XDFH 146, XDFH 147, XDFH 148, XDFH 149							
Ø12.5 ~Ø12.9	X-125 □	T(3xD)	111	63	50	33					For General Purpose	XD 150, XD 151, XD 152, XD 153, XD 154 XDF 150, XDF 151, XDF 152, XDF 153, XDF 154		-155 SL				
		P(5xD)	136	88	75						For Hard Materials	XDH 150, XDH 151, XDH 152, XDH 153, XDH 154 XDFH 150, XDFH 151, XDFH 152, XDFH 153, XDFH 154						
		H(7xD)	161	113	100			For General Purpose			XD 155, XD 156, XD 157, XD 158, XD 159 XDF 155, XDF 156, XDF 157, XDF 158, XDF 159							
		L(10xD)	199	151	138				For Hard Materials		XDH 155, XD 156, XD 157, XD 158, XD 159 XDFH 155, XDFH 156, XDFH 157, XDFH 158, XDFH 159							
Ø13.0 ~Ø13.4	X-130 □	T(3xD)	114	66	52		36				For General Purpose	XD 160, XD 161, XD 162, XD 163, XD 164 XDF 160, XDF 161, XDF 162, XDF 163, XDF 164			CS160			
		P(5xD)	140	92	78						For Hard Materials	XDH 160, XDH 161, XDH 162, XDH 163, XDH 164 XDFH 160, XDFH 161, XDFH 162, XDFH 163, XDFH 164						
		H(7xD)	166	118	104			For General Purpose			XD 165, XD 166, XD 167, XD 168, XD 169 XDF 165, XDF 166, XDF 167, XDF 168, XDF 169							
		L(10xD)	205	157	143				For Hard Materials		XDH 165, XD 166, XD 167, XD 168, XD 169 XDFH 165, XDFH 166, XDFH 167, XDFH 168, XDFH 169							
Ø13.5 ~Ø13.9	X-135 □	T(3xD)	116	68	54					39	For General Purpose	XD 170, XD 171, XD 172, XD 173, XD 174 XDF 170, XDF 171, XDF 172, XDF 173, XDF 174				-175 SL		
		P(5xD)	143	95	81						For Hard Materials	XDH 170, XDH 171, XDH 172, XDH 173, XDH 174 XDFH 170, XDFH 171, XDFH 172, XDFH 173, XDFH 174						
		H(7xD)	170	122	108			For General Purpose			XD 175, XD 176, XD 177, XD 178, XD 179 XDF 175, XDF 176, XDF 177, XDF 178, XDF 179							
		L(10xD)	211	163	149				For Hard Materials		XDH 175, XD 176, XD 177, XD 178, XD 179 XDFH 175, XDFH 176, XDFH 177, XDFH 178, XDFH 179							



Hole size range	Code No.	Shank Φ d / (L)	Cutting depth (Length x ØD)	L1	L2	L3	Flanged dia. (ØFd)	Insert Code No. to fit in body		XD	XDF	Cap Screw	Torx driver
Ø30.0 ~Ø30.4	X-300 □	32.0 (60)	T(3xD)	209	149	120	39	For General Purpose	XD 300, XD 301, XD 302, XD 303, XD 304 XDF 300, XDF 301, XDF 302, XDF 303, XDF 304	CS 300 -315 SL			
			For Hard Materials	XDH 300, XDH 301, XDH 302, XDH 303, XDH 304 XDFH 300, XDFH 301, XDFH 302, XDFH 303, XDFH 304									
			For General Purpose	XD 305, XD 306, XD 307, XD 308, XD 309 XDF 305, XDF 306, XDF 307, XDF 308, XDF 309									
			For Hard Materials	XDH 305, XDH 306, XDH 307, XDH 308, XDH 309 XDFH 305, XDFH 306, XDFH 307, XDFH 308, XDFH 309									
Ø31.0 ~Ø31.4	X-310 □		T(3xD)	214	154	124		For General Purpose	XD 310, XD 311, XD 312, XD 313, XD 314 XDF 310, XDF 311, XDF 312, XDF 313, XDF 314				
			For Hard Materials	XDH 310, XDH 311, XDH 312, XDH 313, XDH 314 XDFH 310, XDFH 311, XDFH 312, XDFH 313, XDFH 314									
			For General Purpose	XD 315, XD 316, XD 317, XD 318, XD 319 XDF 315, XDF 316, XDF 317, XDF 318, XDF 319									
			For Hard Materials	XDH 315, XDH 316, XDH 317, XDH 318, XDH 319 XDFH 315, XDFH 316, XDFH 317, XDFH 318, XDFH 319									
Ø31.5 ~Ø31.9	X-315 □		T(3xD)	217	157	126		For General Purpose	XD 320, XD 321, XD 322, XD 323, XD 324 XDF 320, XDF 321, XDF 322, XDF 323, XDF 324				
			For Hard Materials	XDH 320, XDH 321, XDH 322, XDH 323, XDH 324 XDFH 320, XDFH 321, XDFH 322, XDFH 323, XDFH 324									
			For General Purpose	XD 325, XD 326, XD 327, XD 328, XD 329 XDF 325, XDF 326, XDF 327, XDF 328, XDF 329									
			For Hard Materials	XDH 325, XDH 326, XDH 327, XDH 328, XDH 329 XDFH 325, XDFH 326, XDFH 327, XDFH 328, XDFH 329									
Ø32.0 ~Ø32.4	X-320 □		T(3xD)	219	159	128		For General Purpose	XD 330, XD 331, XD 332, XD 333, XD 334 XDF 330, XDF 331, XDF 332, XDF 333, XDF 334				
			For Hard Materials	XDH 330, XDH 331, XDH 332, XDH 333, XDH 334 XDFH 330, XDFH 331, XDFH 332, XDFH 333, XDFH 334									
			For General Purpose	XD 335, XD 336, XD 337, XD 338, XD 339 XDF 335, XDF 336, XDF 337, XDF 338, XDF 339									
			For Hard Materials	XDH 335, XDH 336, XDH 337, XDH 338, XDH 339 XDFH 335, XDFH 336, XDFH 337, XDFH 338, XDFH 339									
Ø32.5 ~Ø32.9	X-325 □		T(3xD)	221	161	130		For General Purpose	XD 340, XD 341, XD 342, XD 343, XD 344 XDF 340, XDF 341, XDF 342, XDF 343, XDF 344				
			For Hard Materials	XDH 340, XDH 341, XDH 342, XDH 343, XDH 344 XDFH 340, XDFH 341, XDFH 342, XDFH 343, XDFH 344									
			For General Purpose	XD 345, XD 346, XD 347, XD 348, XD 349 XDF 345, XDF 346, XDF 347, XDF 348, XDF 349									
			For Hard Materials	XDH 345, XDH 346, XDH 347, XDH 348, XDH 349 XDFH 345, XDFH 346, XDFH 347, XDFH 348, XDFH 349									
Ø33.0 ~Ø33.4	X-330 □		T(3xD)	224	164	132		For General Purpose	XD 350, XD 351, XD 352, XD 353, XD 354 XDF 350, XDF 351, XDF 352, XDF 353, XDF 354				
			For Hard Materials	XDH 350, XDH 351, XDH 352, XDH 353, XDH 354 XDFH 350, XDFH 351, XDFH 352, XDFH 353, XDFH 354									
			For General Purpose	XD 355, XD 356, XD 357, XD 358, XD 359 XDF 355, XDF 356, XDF 357, XDF 358, XDF 359									
			For Hard Materials	XDH 355, XDH 356, XDH 357, XDH 358, XDH 359 XDFH 355, XDFH 356, XDFH 357, XDFH 358, XDFH 359									
Ø33.5 ~Ø33.9	X-335 □		T(3xD)	226	166	134		For General Purpose	XD 360, XD 361, XD 362, XD 363, XD 364 XDF 360, XDF 361, XDF 362, XDF 363, XDF 364				
			For Hard Materials	XDH 360, XDH 361, XDH 362, XDH 363, XDH 364 XDFH 360, XDFH 361, XDFH 362, XDFH 363, XDFH 364									
			For General Purpose	XD 365, XD 366, XD 367, XD 368, XD 369 XDF 365, XDF 366, XDF 367, XDF 368, XDF 369									
			For Hard Materials	XDH 365, XDH 366, XDH 367, XDH 368, XDH 369 XDFH 365, XDFH 366, XDFH 367, XDFH 368, XDFH 369									
Ø34.0 ~Ø34.4	X-340 □		T(3xD)	239	169	136		For General Purpose	XD 370, XD 371, XD 372, XD 373, XD 374 XDF 370, XDF 371, XDF 372, XDF 373, XDF 374				
			For Hard Materials	XDH 370, XDH 371, XDH 372, XDH 373, XDH 374 XDFH 370, XDFH 371, XDFH 372, XDFH 373, XDFH 374									
			For General Purpose	XD 375, XD 376, XD 377, XD 378, XD 379 XDF 375, XDF 376, XDF 377, XDF 378, XDF 379									
			For Hard Materials	XDH 375, XDH 376, XDH 377, XDH 378, XDH 379 XDFH 375, XDFH 376, XDFH 377, XDFH 378, XDFH 379									
Ø34.5 ~Ø34.9	X-345 □		T(3xD)	241	171	138		For General Purpose	XD 380, XD 381, XD 382, XD 383, XD 384 XDF 380, XDF 381, XDF 382, XDF 383, XDF 384				
			For Hard Materials	XDH 380, XDH 381, XDH 382, XDH 383, XDH 384 XDFH 380, XDFH 381, XDFH 382, XDFH 383, XDFH 384									
			For General Purpose	XD 385, XD 386, XD 387, XD 388, XD 389 XDF 385, XDF 386, XDF 387, XDF 388, XDF 389									
			For Hard Materials	XDH 385, XDH 386, XDH 387, XDH 388, XDH 389 XDFH 385, XDFH 386, XDFH 387, XDFH 388, XDFH 389									
Ø35.0 ~Ø35.4	X-350 □		T(3xD)	243	173	140		For General Purpose	XD 390, XD 391, XD 392, XD 393, XD 394 XDF 390, XDF 391, XDF 392, XDF 393, XDF 394				
			For Hard Materials	XDH 390, XDH 391, XDH 392, XDH 393, XDH 394 XDFH 390, XDFH 391, XDFH 392, XDFH 393, XDFH 394									
			For General Purpose	XD 395, XD 396, XD 397, XD 398, XD 399 XDF 395, XDF 396, XDF 397, XDF 398, XDF 399									
			For Hard Materials	XDH 395, XDH 396, XDH 397, XDH 398, XDH 399 XDFH 395, XDFH 396, XDFH 397, XDFH 398, XDFH 399									
Ø35.5 ~Ø35.9	X-355 □	T(3xD)	246	176	142	For General Purpose	XD 400, XD 401, XD 402, XD 403, XD 404 XDF 400, XDF 401, XDF 402, XDF 403, XDF 404						
		For Hard Materials	XDH 400, XDH 401, XDH 402, XDH 403, XDH 404 XDFH 400, XDFH 401, XDFH 402, XDFH 403, XDFH 404										
		For General Purpose	XD 405, XD 406, XD 407, XD 408, XD 409 XDF 405, XDF 406, XDF 407, XDF 408, XDF 409										
		For Hard Materials	XDH 405, XDH 406, XDH 407, XDH 408, XDH 409 XDFH 405, XDFH 406, XDFH 407, XDFH 408, XDFH 409										
Ø36.0 ~Ø36.4	X-360 □	T(3xD)	248	178	144	For General Purpose	XD 410, XD 411, XD 412, XD 413, XD 414 XDF 410, XDF 411, XDF 412, XDF 413, XDF 414						
		For Hard Materials	XDH 410, XDH 411, XDH 412, XDH 413, XDH 414 XDFH 410, XDFH 411, XDFH 412, XDFH 413, XDFH 414										
		For General Purpose	XD 415, XD 416, XD 417, XD 418, XD 419 XDF 415, XDF 416, XDF 417, XDF 418, XDF 419										
		For Hard Materials	XDH 415, XDH 416, XDH 417, XDH 418, XDH 419 XDFH 415, XDFH 416, XDFH 417, XDFH 418, XDFH 419										
Ø36.5 ~Ø36.9	X-365 □	T(3xD)	251	181	146	For General Purpose	XD 420, XD 421, XD 422, XD 423, XD 424 XDF 420, XDF 421, XDF 422, XDF 423, XDF 424						
		For Hard Materials	XDH 420, XDH 421, XDH 422, XDH 423, XDH 424 XDFH 420, XDFH 421, XDFH 422, XDFH 423, XDFH 424										
		For General Purpose	XD 425, XD 426, XD 427, XD 428, XD 429 XDF 425, XDF 426, XDF 427, XDF 428, XDF 429										
		For Hard Materials	XDH 425, XDH 426, XDH 427, XDH 428, XDH 429 XDFH 425, XDFH 426, XDFH 427, XDFH 428, XDFH 429										
Ø37.0 ~Ø37.4	X-370 □	T(3xD)	253	183	148	For General Purpose	XD 430, XD 431, XD 432, XD 433, XD 434 XDF 430, XDF 431, XDF 432, XDF 433, XDF 434						
		For Hard Materials	XDH 430, XDH 431, XDH 432, XDH 433, XDH 434 XDFH 430, XDFH 431, XDFH 432, XDFH 433, XDFH 434										
		For General Purpose	XD 435, XD 436, XD 437, XD 438, XD 439 XDF 435, XDF 436, XDF 437, XDF 438, XDF 439										
		For Hard Materials	XDH 435, XDH 436, XDH 437, XDH 438, XDH 439 XDFH 435, XDFH 436, XDFH 437, XDFH 438, XDFH 439										
Ø37.5 ~Ø37.9	X-375 □	T(3xD)	255	185	150	For General Purpose	XD 440, XD 441, XD 442, XD 443, XD 444 XDF 440, XDF 441, XDF 442, XDF 443, XDF 444						
		For Hard Materials	XDH 440, XDH 441, XDH 442, XDH 443, XDH 444 XDFH 440, XDFH 441, XDFH 442, XDFH 443, XDFH 444										
		For General Purpose	XD 445, XD 446, XD 447, XD 448, XD 449 XDF 445, XDF 446, XDF 447, XDF 448, XDF 449										
		For Hard Materials	XDH 445, XDH 446, XDH 447, XDH 448, XDH 449 XDFH 445, XDFH 446, XDFH 447, XDFH 448, XDFH 449										

T20

Torque
5.0Nm
(Max)

New

X-series +higher helix & carbide insert

Hole size range	Code No.	Shank Φ d / (L)	Cutting depth (Length x Φ D)	L1	L2	L3	Flanged dia. (Φ Fd)	Insert Code No. to fit in body	XD 	XDF 	Cap Screw 	Torx driver 
Ø38.0 ~Ø38.4	X-380 □	40.0 (70)	T(3xD)	258	188	152	55	For General Purpose	XD 380, XD 381, XD 382, XD 383, XD 384 XDF 380, XDF 381, XDF 382, XDF 383, XDF 384		CS 360 ~395 SL	T20 Torque 5.0Nm (Max)
			P(5xD)	334	264	228		For Hard Materials	XDH 380, XDH 381, XDH 382, XDH 383, XDH 384 XDFH 380, XDFH 381, XDFH 382, XDFH 383, XDFH 384			
			H(7xD)	410	340	304		For General Purpose	XD 385, XD 386, XD 387, XD 388, XD 389 XDF 385, XDF 386, XDF 387, XDF 388, XDF 389			
L(10xD)	524		454	418	For Hard Materials	XDH 385, XDH 386, XDH 387, XDH 388, XDH 389 XDFH 385, XDFH 386, XDFH 387, XDFH 388, XDFH 389						
Ø38.5 ~Ø38.9	X-385 □		T(3xD)	260	196	154		For General Purpose	XD 390, XD 391, XD 392, XD 393, XD 394 XDF 390, XDF 391, XDF 392, XDF 393, XDF 394			
			P(5xD)	337	267	231		For Hard Materials	XDH 390, XDH 391, XDH 392, XDH 393, XDH 394 XDFH 390, XDFH 391, XDFH 392, XDFH 393, XDFH 394			
			H(7xD)	414	344	308		For General Purpose	XD 395, XD 396, XD 397, XD 398, XD 399 XDF 395, XDF 396, XDF 397, XDF 398, XDF 399			
L(10xD)	530		460	424	For Hard Materials	XDH 395, XDH 396, XDH 397, XDH 398, XDH 399 XDFH 395, XDFH 396, XDFH 397, XDFH 398, XDFH 399						
Ø39.0 ~Ø39.4	X-390 □		T(3xD)	263	193	156		For General Purpose	XD 400, XD 401, XD 402, XD 403, XD 404 XDF 400, XDF 401, XDF 402, XDF 403, XDF 404			
			P(5xD)	341	271	234		For Hard Materials	XDH 400, XDH 401, XDH 402, XDH 403, XDH 404 XDFH 400, XDFH 401, XDFH 402, XDFH 403, XDFH 404			
			H(7xD)	419	349	312		For General Purpose	XD 405, XD 406, XD 407, XD 408, XD 409 XDF 405, XDF 406, XDF 407, XDF 408, XDF 409			
L(10xD)	536		466	429	For Hard Materials	XDH 405, XDH 406, XDH 407, XDH 408, XDH 409 XDFH 405, XDFH 406, XDFH 407, XDFH 408, XDFH 409						
Ø39.5 ~Ø39.9	X-395 □		T(3xD)	265	195	158		For General Purpose	XD 410, XD 411, XD 412, XD 413, XD 414 XDF 410, XDF 411, XDF 412, XDF 413, XDF 414			
			P(5xD)	344	274	237		For Hard Materials	XDH 410, XDH 411, XDH 412, XDH 413, XDH 414 XDFH 410, XDFH 411, XDFH 412, XDFH 413, XDFH 414			
			H(7xD)	423	353	316		For General Purpose	XD 415, XD 416, XD 417, XD 418, XD 419 XDF 415, XDF 416, XDF 417, XDF 418, XDF 419			
L(10xD)	542		472	435	For Hard Materials	XDH 415, XDH 416, XDH 417, XDH 418, XDH 419 XDFH 415, XDFH 416, XDFH 417, XDFH 418, XDFH 419						
Ø40.0 ~Ø40.4	X-400 □		T(3xD)	267	197	160		For General Purpose	XD 420, XD 421, XD 422, XD 423, XD 424 XDF 420, XDF 421, XDF 422, XDF 423, XDF 424			
			P(5xD)	347	277	240		For Hard Materials	XDH 420, XDH 421, XDH 422, XDH 423, XDH 424 XDFH 420, XDFH 421, XDFH 422, XDFH 423, XDFH 424			
			H(7xD)	427	357	320		For General Purpose	XD 425, XD 426, XD 427, XD 428, XD 429 XDF 425, XDF 426, XDF 427, XDF 428, XDF 429			
L(10xD)	547		477	440	For Hard Materials	XDH 425, XDH 426, XDH 427, XDH 428, XDH 429 XDFH 425, XDFH 426, XDFH 427, XDFH 428, XDFH 429						
Ø40.5 ~Ø40.9	X-405 □		T(3xD)	270	200	162		For General Purpose	XD 430, XD 431, XD 432, XD 433, XD 434 XDF 430, XDF 431, XDF 432, XDF 433, XDF 434			
			P(5xD)	351	281	243		For Hard Materials	XDH 430, XDH 431, XDH 432, XDH 433, XDH 434 XDFH 430, XDFH 431, XDFH 432, XDFH 433, XDFH 434			
			H(7xD)	432	362	324		For General Purpose	XD 435, XD 436, XD 437, XD 438, XD 439 XDF 435, XDF 436, XDF 437, XDF 438, XDF 439			
L(10xD)	554		484	446	For Hard Materials	XDH 435, XDH 436, XDH 437, XDH 438, XDH 439 XDFH 435, XDFH 436, XDFH 437, XDFH 438, XDFH 439						
Ø41.0 ~Ø41.4	X-410 □		T(3xD)	272	202	164		For General Purpose	XD 440, XD 441, XD 442, XD 443, XD 444 XDF 440, XDF 441, XDF 442, XDF 443, XDF 444			
			P(5xD)	354	284	246		For Hard Materials	XDH 440, XDH 441, XDH 442, XDH 443, XDH 444 XDFH 440, XDFH 441, XDFH 442, XDFH 443, XDFH 444			
			H(7xD)	436	366	328		For General Purpose	XD 445, XD 446, XD 447, XD 448, XD 449 XDF 445, XDF 446, XDF 447, XDF 448, XDF 449			
L(10xD)	559		489	451	For Hard Materials	XDH 445, XDH 446, XDH 447, XDH 448, XDH 449 XDFH 445, XDFH 446, XDFH 447, XDFH 448, XDFH 449						
Ø41.5 ~Ø41.9	X-415 □		T(3xD)	275	205	166		For General Purpose	XD 450, XD 451, XD 452, XD 453, XD 454 XDF 450, XDF 451, XDF 452, XDF 453, XDF 454			
			P(5xD)	358	288	249		For Hard Materials	XDH 450, XDH 451, XDH 452, XDH 453, XDH 454 XDFH 450, XDFH 451, XDFH 452, XDFH 453, XDFH 454			
			H(7xD)	441	371	332		For General Purpose	XD 455, XD 456, XD 457, XD 458, XD 459 XDF 455, XDF 456, XDF 457, XDF 458, XDF 459			
L(10xD)	566		496	457	For Hard Materials	XDH 455, XDH 456, XDH 457, XDH 458, XDH 459 XDFH 455, XDFH 456, XDFH 457, XDFH 458, XDFH 459						
Ø42.0 ~Ø42.4	X-420 □		T(3xD)	277	207	168		For General Purpose	XD 460, XD 461, XD 462, XD 463, XD 464 XDF 460, XDF 461, XDF 462, XDF 463, XDF 464			
			P(5xD)	361	291	252		For Hard Materials	XDH 460, XDH 461, XDH 462, XDH 463, XDH 464 XDFH 460, XDFH 461, XDFH 462, XDFH 463, XDFH 464			
			H(7xD)	445	375	336		For General Purpose	XD 465, XD 466, XD 467, XD 468, XD 469 XDF 465, XDF 466, XDF 467, XDF 468, XDF 469			
L(10xD)	571		501	462	For Hard Materials	XDH 465, XDH 466, XDH 467, XDH 468, XDH 469 XDFH 465, XDFH 466, XDFH 467, XDFH 468, XDFH 469						
Ø42.5 ~Ø42.9	X-425 □		T(3xD)	279	209	170		For General Purpose	XD 470, XD 471, XD 472, XD 473, XD 474 XDF 470, XDF 471, XDF 472, XDF 473, XDF 474			
			P(5xD)	364	294	255		For Hard Materials	XDH 470, XDH 471, XDH 472, XDH 473, XDH 474 XDFH 470, XDFH 471, XDFH 472, XDFH 473, XDFH 474			
			H(7xD)	449	379	340		For General Purpose	XD 475, XD 476, XD 477, XD 478, XD 479 XDF 475, XDF 476, XDF 477, XDF 478, XDF 479			
L(10xD)	577		507	468	For Hard Materials	XDH 475, XDH 476, XDH 477, XDH 478, XDH 479 XDFH 475, XDFH 476, XDFH 477, XDFH 478, XDFH 479						
Ø43.0 ~Ø43.4	X-430 □		T(3xD)	282	212	172		For General Purpose	XD 480, XD 481, XD 482, XD 483, XD 484 XDF 480, XDF 481, XDF 482, XDF 483, XDF 484			
			P(5xD)	368	298	258		For Hard Materials	XDH 480, XDH 481, XDH 482, XDH 483, XDH 484 XDFH 480, XDFH 481, XDFH 482, XDFH 483, XDFH 484			
			H(7xD)	454	384	344		For General Purpose	XD 485, XD 486, XD 487, XD 488, XD 489 XDF 485, XDF 486, XDF 487, XDF 488, XDF 489			
L(10xD)	583		513	473	For Hard Materials	XDH 485, XDH 486, XDH 487, XDH 488, XDH 489 XDFH 485, XDFH 486, XDFH 487, XDFH 488, XDFH 489						
Ø43.5 ~Ø43.9	X-435 □		T(3xD)	284	214	174		For General Purpose	XD 490, XD 491, XD 492, XD 493, XD 494 XDF 490, XDF 491, XDF 492, XDF 493, XDF 494			
			P(5xD)	371	301	261		For Hard Materials	XDH 490, XDH 491, XDH 492, XDH 493, XDH 494 XDFH 490, XDFH 491, XDFH 492, XDFH 493, XDFH 494			
			H(7xD)	458	388	348		For General Purpose	XD 495, XD 496, XD 497, XD 498, XD 499 XDF 495, XDF 496, XDF 497, XDF 498, XDF 499			
L(10xD)	589		519	479	For Hard Materials	XDH 495, XDH 496, XDH 497, XDH 498, XDH 499 XDFH 495, XDFH 496, XDFH 497, XDFH 498, XDFH 499						
Ø44.0 ~Ø44.4	X-440 □		T(3xD)	287	217	176		For General Purpose	XD 500, XD 491, XD 492, XD 493, XD 494 XDF 500, XDF 491, XDF 492, XDF 493, XDF 494			
			P(5xD)	375	305	264		For Hard Materials	XDH 500, XDH 491, XDH 492, XDH 493, XDH 494 XDFH 500, XDFH 491, XDFH 492, XDFH 493, XDFH 494			
			H(7xD)	463	393	352		For General Purpose	XD 505, XD 496, XD 497, XD 498, XD 499 XDF 505, XDF 496, XDF 497, XDF 498, XDF 499			
L(10xD)	595		525	484	For Hard Materials	XDH 505, XDH 496, XDH 497, XDH 498, XDH 499 XDFH 505, XDFH 496, XDFH 497, XDFH 498, XDFH 499						
Ø44.5 ~Ø44.9	X-445 □		T(3xD)	289	219	178		For General Purpose	XD 510, XD 496, XD 497, XD 498, XD 499 XDF 510, XDF 496, XDF 497, XDF 498, XDF 499			
			P(5xD)	378	308	267		For Hard Materials	XDH 510, XD 496, XD 497, XD 498, XD 499 XDFH 510, XDFH 496, XDFH 497, XDFH 498, XDFH 499			
			H(7xD)	467	397	356		For General Purpose	XD 515, XD 496, XD 497, XD 498, XD 499 XDF 515, XDF 496, XDF 497, XDF 498, XDF 499			
L(10xD)	601		531	490	For Hard Materials	XDH 515, XD 496, XD 497, XD 498, XD 499 XDFH 515, XDFH 496, XDFH 497, XDFH 498, XDFH 499						
Ø45.0 ~Ø45.4	X-450 □		T(3xD)	291	221	180		For General Purpose	XD 520, XD 496, XD 497, XD 498, XD 499 XDF 520, XDF 496, XDF 497, XDF 498, XDF 499			
			P(5xD)	381	311	270		For Hard Materials	XDH 520, XD 496, XD 497, XD 498, XD 499 XDFH 520, XDFH 496, XDFH 497, XDFH 498, XDFH 499			
			H(7xD)	471	401	360		For General Purpose	XD 525, XD 496, XD 497, XD 498, XD 499 XDF 525, XDF 496, XDF 497, XDF 498, XDF 499			
L(10xD)	606		536	495	For Hard Materials	XDH 525, XD 496, XD 497, XD 498, XD 499 XDFH 525, XDFH 496, XDFH 497, XDFH 498, XDFH 499						
Ø45.5 ~Ø45.9	X-455 □		T(3xD)	294	224	182		For General Purpose	XD 530, XD 496, XD 497, XD 498, XD 499 XDF 530, XDF 496, XDF 497, XDF 498, XDF 499			
			P(5xD)	385	315	273		For Hard Materials	XDH 530, XD 496, XD 497, XD 498, XD 499 XDFH 530, XDFH 496, XDFH 497, XDFH 498, XDFH 499			
			H(7xD)	476	406	364		For General Purpose	XD 535, XD 496, XD 497, XD 498, XD 499 XDF 535, XDF 496, XDF 497, XDF 498, XDF 499			
L(10xD)	613		543	501	For Hard Materials	XDH 535, XD 496, XD 497, XD 498, XD 499 XDFH 535, XDFH 496, XDFH 497, XDFH 498, XDFH 499						

Hole size range	Code No.	Shank Φ d / (L)	Cutting depth (Length x ΦD)	L1	L2	L3	Flanged dia.(ΦFd)		XD 	XDF 	Cap Screw 	Torx driver 
Ø46.0 ~Ø46.4	X-460 □	40.0 (70)	T(3xD)	296	226	184	55	For General Purpose	XD 460, XD 461, XD 462, XD 463, XD 464 XDF 460, XDF 461, XDF 462, XDF 463, XDF 464		CS 450 -500 SL	T20 Torque 5.0Nm (Max)
			P(5xD)	388	318	276		For Hard Materials	XDH 460, XDH 461, XDH 462, XDH 463, XDH 464 XDFH 460, XDFH 461, XDFH 462, XDFH 463, XDFH 464			
			H(7xD)	480	410	368		For General Purpose	XD 465, XD 466, XD 467, XD 468, XD 469 XDF 465, XDF 466, XDF 467, XDF 468, XDF 469			
			L(10xD)	618	548	506			For Hard Materials	XDH 465, XDH 466, XDH 467, XDH 468, XDH 469 XDFH 465, XDFH 466, XDFH 467, XDFH 468, XDFH 469		
T(3xD)	299		229	186	For General Purpose	XD 470, XD 471, XD 472, XD 473, XD 474 XDF 470, XDF 471, XDF 472, XDF 473, XDF 474						
P(5xD)	395		325	282		For Hard Materials		XDH 470, XDH 471, XDH 472, XDH 473, XDH 474 XDFH 470, XDFH 471, XDFH 472, XDFH 473, XDFH 474				
H(7xD)	489		419	376				For General Purpose	XD 475, XD 476, XD 477, XD 478, XD 479 XDF 475, XDF 476, XDF 477, XDF 478, XDF 479			
L(10xD)	630		560	517	For Hard Materials				XDH 475, XDH 476, XDH 477, XDH 478, XDH 479 XDFH 475, XDFH 476, XDFH 477, XDFH 478, XDFH 479			
T(3xD)	301		231	188		For General Purpose			XD 480, XD 481, XD 482, XD 483, XD 484 XDF 480, XDF 481, XDF 482, XDF 483, XDF 484			
P(5xD)	395		325	282				For Hard Materials	XDH 480, XDH 481, XDH 482, XDH 483, XDH 484 XDFH 480, XDFH 481, XDFH 482, XDFH 483, XDFH 484			
H(7xD)	489		419	376	For General Purpose				XD 485, XD 486, XD 487, XD 488, XD 489 XDF 485, XDF 486, XDF 487, XDF 488, XDF 489			
L(10xD)	630		560	517		For Hard Materials			XDH 485, XDH 486, XDH 487, XDH 488, XDH 489 XDFH 485, XDFH 486, XDFH 487, XDFH 488, XDFH 489			
T(3xD)	303		233	190				For General Purpose	XD 490, XD 491, XD 492, XD 493, XD 494 XDF 490, XDF 491, XDF 492, XDF 493, XDF 494			
P(5xD)	398		328	285	For Hard Materials				XDH 490, XDH 491, XDH 492, XDH 493, XDH 494 XDFH 490, XDFH 491, XDFH 492, XDFH 493, XDFH 494			
H(7xD)	493		423	380		For General Purpose			XD 495, XD 496, XD 497, XD 498, XD 499 XDF 495, XDF 496, XDF 497, XDF 498, XDF 499			
L(10xD)	636		566	523				For Hard Materials	XDH 495, XDH 496, XDH 497, XDH 498, XDH 499 XDFH 495, XDFH 496, XDFH 497, XDFH 498, XDFH 499			
T(3xD)	306		236	192	For General Purpose				XD 500, XD 501, XD 502, XD 503, XD 504 XDF 500, XDF 501, XDF 502, XDF 503, XDF 504			
P(5xD)	402		332	288		For Hard Materials			XDH 500, XDH 501, XDH 502, XDH 503, XDH 504 XDFH 500, XDFH 501, XDFH 502, XDFH 503, XDFH 504			
H(7xD)	498		428	384				For General Purpose	XD 490, XD 491, XD 492, XD 493, XD 494 XDF 490, XDF 491, XDF 492, XDF 493, XDF 494			
L(10xD)	642		572	528	For Hard Materials				XDH 490, XDH 491, XDH 492, XDH 493, XDH 494 XDFH 490, XDFH 491, XDFH 492, XDFH 493, XDFH 494			
T(3xD)	308	238	194	For General Purpose		XD 495, XD 496, XD 497, XD 498, XD 499 XDF 495, XDF 496, XDF 497, XDF 498, XDF 499						
P(5xD)	405	335	291			For Hard Materials	XDH 495, XDH 496, XDH 497, XDH 498, XDH 499 XDFH 495, XDFH 496, XDFH 497, XDFH 498, XDFH 499					
H(7xD)	502	432	388		For General Purpose		XD 500, XD 501, XD 502, XD 503, XD 504 XDF 500, XDF 501, XDF 502, XDF 503, XDF 504					
L(10xD)	648	578	534	For Hard Materials			XDH 500, XDH 501, XDH 502, XDH 503, XDH 504 XDFH 500, XDFH 501, XDFH 502, XDFH 503, XDFH 504					
T(3xD)	311	241	196			For General Purpose	XD 490, XD 491, XD 492, XD 493, XD 494 XDF 490, XDF 491, XDF 492, XDF 493, XDF 494					
P(5xD)	409	339	294		For Hard Materials		XDH 490, XDH 491, XDH 492, XDH 493, XDH 494 XDFH 490, XDFH 491, XDFH 492, XDFH 493, XDFH 494					
H(7xD)	507	437	392	For General Purpose			XD 495, XD 496, XD 497, XD 498, XD 499 XDF 495, XDF 496, XDF 497, XDF 498, XDF 499					
L(10xD)	654	584	539			For Hard Materials	XDH 495, XDH 496, XDH 497, XDH 498, XDH 499 XDFH 495, XDFH 496, XDFH 497, XDFH 498, XDFH 499					
T(3xD)	313	243	198		For General Purpose		XD 495, XD 496, XD 497, XD 498, XD 499 XDF 495, XDF 496, XDF 497, XDF 498, XDF 499					
P(5xD)	412	342	297	For Hard Materials			XDH 495, XDH 496, XDH 497, XDH 498, XDH 499 XDFH 495, XDFH 496, XDFH 497, XDFH 498, XDFH 499					
H(7xD)	511	441	396			For General Purpose	XD 500, XD 501, XD 502, XD 503, XD 504 XDF 500, XDF 501, XDF 502, XDF 503, XDF 504					
L(10xD)	660	590	545		For Hard Materials		XDH 500, XDH 501, XDH 502, XDH 503, XDH 504 XDFH 500, XDFH 501, XDFH 502, XDFH 503, XDFH 504					
T(3xD)	315	245	200	For General Purpose			XD 500, XD 501, XD 502, XD 503, XD 504 XDF 500, XDF 501, XDF 502, XDF 503, XDF 504					
P(5xD)	415	345	300			For Hard Materials	XDH 500, XDH 501, XDH 502, XDH 503, XDH 504 XDFH 500, XDFH 501, XDFH 502, XDFH 503, XDFH 504					
H(7xD)	515	445	400		For General Purpose		XD 500, XD 501, XD 502, XD 503, XD 504 XDF 500, XDF 501, XDF 502, XDF 503, XDF 504					
L(10xD)	665	595	550	For Hard Materials			XDH 500, XDH 501, XDH 502, XDH 503, XDH 504 XDFH 500, XDFH 501, XDFH 502, XDFH 503, XDFH 504					