

CUTTING TOOLS

JOBBER DRILL BITS - METRIC



METRIC JOBBERS DRILL BITS

Will perform in a broad range of materials and in various types of drilling equipment, both machine and portable.

High Speed: Broad range of materials

Cobalt Steel: Stainless Steel and Titanium

HIGH SPEED STEEL (BRIGHT FINISH)

<u>PART #</u>	<u>DIA.</u>	<u>PART #</u>	<u>DIA.</u>	<u>PART #</u>	<u>DIA.</u>
20 001	.25mm	20 013	4.0mm	20 025	10.0mm
20 002	.30mm	20 014	4.5mm	20 026	10.5mm
20 003	.35mm	20 015	5.0mm	20 027	11.0mm
20 004	.40mm	20 016	5.5mm	20 028	11.5mm
20 005	.45mm	20 017	6.0mm	20 029	12.0mm
20 006	.50mm	20 018	6.5mm	20 030	12.5mm
20 007	1.0mm	20 019	7.0mm	20 031	13.0mm
20 008	1.5mm	20 020	7.5mm	20 032	13.5mm
20 009	2.0mm	20 021	8.0mm	20 033	14.0mm
20 010	2.5mm	20 022	8.5mm	20 034	14.5mm
20 011	3.0mm	20 023	9.0mm	20 035	15.0mm
20 039	3.2mm	20 024	9.5mm	20 036	15.5mm
20 012	3.5mm			20 037	16.0mm

COBALT STEEL

<u>PART #</u>	<u>DIA.</u>	<u>PART #</u>	<u>DIA</u>	<u>PART #</u>	<u>DIA</u>
20 007C	1.0mm	20 017C	6.0mm	20 028C	11.5mm
20 008C	1.5mm	20 018C	6.5mm	20 029C	12.0mm
20 009C	2.0mm	20 019C	7.0mm	20 030C	12.5mm
20 010C	2.5mm	20 020C	7.5mm	20 031C	13.0mm
20 011C	3.0mm	20 021C	8.0mm	20 032C	13.5mm
20 039C	3.2mm	20 022C	8.5mm	20 033C	14.0mm
20 012C	3.5mm	20 023C	9.0mm	20 034C	14.5mm
20 013C	4.0mm	20 024C	9.5mm	20 035C	15.0mm
20 014C	4.5mm	20 025C	10.0mm	20 036C	15.5mm
20 015C	5.0mm	20 026C	10.5mm	20 037C	16.0mm
20 016C	5.5mm	20 027C	11.0mm		

JOBBER'S DRILL BITS - FRACTIONAL**FRACTIONAL JOBBERS DRILL BITS**

Will perform in a broad range of materials
and in various types of drilling equipment,
both machine and portable.

High Speed: Broad range of materials

Cobalt Steel: Stainless Steel and Titanium

HIGH SPEED STEEL (BRIGHT FINISH)

<u>PART #</u>	<u>DIA.</u>	<u>PART #</u>	<u>DIA.</u>	<u>PART #</u>	<u>DIA.</u>
21 001	1/64"	21 015	1/4"	21 030	17/32"
21 002	1/32"	21 016	17/64"	21 031	35/64"
21 003	3/64"	21 017	9/32"	21 032	9/16"
21 004	1/16"	21 018	19/64"	21 033	37/64"
21 005	5/64"	21 019	21/64"	21 034	19/32"
21 006	3/32"	21 020	3/8"	21 035	39/64"
21 007	7/64"	21 021	25/64"	21 036	5/8"
21 008	1/8"	21 022	13/32"	21 037	41/64"
21 009	9/64"	21 023	27/64"	21 038	21/32"
21 010	5/32"	21 024	7/16"	21 039	43/64"
21 011	11/64"	21 025	29/64"	21 040	11/16"
21 061	3/16"	21 026	15/32"		
21 012	13/64"	21 027	31/64"		
21 013	7/32"	21 028	1/2"		
21 014	15/64"	21 029	33/64"		

COBALT STEEL

<u>PART #</u>	<u>DIA.</u>	<u>PART #</u>	<u>DIA.</u>
21 001C	1/64"	21 015C	1/4"
21 002C	1/32"	21 016C	17/64"
21 003C	3/64"	21 017C	9/32"
21 004C	1/16"	21 018C	19/64"
21 005C	5/64"	21 019C	21/64"
21 006C	3/32"	21 020C	3/8"
21 007C	7/64"	21 021C	25/64"
21 008C	1/8"	21 022C	13/32"
21 009C	9/64"	21 023C	27/64"
21 010C	5/32"	21 024C	7/16"
21 011C	11/64"	21 025C	29/64"
21 061C	3/16"	21 026C	15/32"
21 012C	13/64"	21 027C	31/64"
21 013C	7/32"	21 028C	1/2"
21 014C	15/64"		

JOBBER DRILL BITS



METRIC JOBBERS DRILL BIT SETS

High speed and cobalt steel in metal index.

<u>PART #</u>	<u>DESCRIPTION</u>	<u>BITS</u>	<u>ISSA #</u>
	<u>HIGH SPEED</u>		
20 177	1.5- 6.5mm by 0.5mm	13	63 02 52
20 175	1-10.0mm by 0.5mm	19	63 02 54
20 176	1-13.0mm by 0.5mm	25	63 02 55
	<u>COBALT STEEL</u>		
20 209	1-6.0 mm by 0.5 mm	13	
20 178	1-10.0mm by 0.5mm	19	
20 179	1-13.0mm by 0.5mm	25	



FRACTIONAL JOBBERS DRILL BIT SETS

High speed and cobalt steel in metal index.

<u>PART #</u>	<u>DESCRIPTION</u>	<u>BITS</u>
	<u>HIGH SPEED</u>	
20 454	1/16"-1/4" by 64ths	13
20 455	1/16"-3/8" by 64ths	21
20 456	1/16"-1/2" by 64ths	29
	<u>COBALT STEEL</u>	
20 457	1/16"-1/4" by 64ths	13
20 458	1/16"-3/8" by 64ths	21
20 459	1/16"-1/2" by 64ths	29

STEP DRILLS

Ideal for drilling multiple diameter holes in steel, copper, brass, aluminum, PVC, wood, and laminates up to 1/8" thick



<u>PART#</u>	<u>SIZE</u>	
20 240	1/8"-1/2"	step 1/32"
20 241	1/4"-3/4"	step 1/16"
20 242	1/4"-1-3/8"	step 1/8"
20 248	1/8"-7/8"	
20 247	5-pc metric set	
	4-12mm, 9 steps with 6 mm shank	
	4-12mm, 5 steps with 6mm shank	
	6-18mm, 7 steps with 8 mm shank	
	4-22mm, 10 steps with 8 mm shank	
	6-35mm, 13 steps with 10 mm shank	

TAPER SHANK DRILL BITS - METRIC**METRIC TAPER SHANK DRILL BITS**

High speed steel.

Metric taper shank drills are made to fit tapered holders.

<u>PART #</u>	<u>DIA.</u>	<u>M.T.</u>	<u>ISSA #</u>	<u>PART #</u>	<u>DIA.</u>	<u>M.T.</u>	<u>ISSA #</u>
20 058	10.0mm	2 MT	63 03 01	20 091	23.5mm	3 MT	63 03 28
20 059	10.5mm	2 MT	63 03 02	20 092	24.0mm	3 MT	63 03 29
20 060	11.0mm	2 MT	63 03 03	20 093	24.5mm	3 MT	63 03 30
20 061	11.5mm	2 MT	63 03 04	20 094	25.0mm	3 MT	63 03 31
20 062	12.0mm	2 MT	63 03 05	20 095	25.5mm	3 MT	63 03 32
20 063	12.5mm	2 MT	63 03 06	20 096	26.0mm	3 MT	63 03 33
20 070	13.0mm	2 MT	63 03 07	20 097	26.5mm	3 MT	63 03 34
20 071	13.5mm	2 MT	63 03 08	20 098	27.0mm	4 MT	63 03 35
20 072	14.0mm	2 MT	63 03 09	20 099	27.5mm	4 MT	63 03 36
20 073	14.5mm	2 MT	63 03 10	20 100	28.0mm	4 MT	63 03 37
20 074	15.0mm	2 MT	63 03 11	20 101	28.5mm	4 MT	63 03 38
20 075	15.5mm	2 MT	63 03 12	20 102	29.0mm	4 MT	63 03 39
20 076	16.0mm	2 MT	63 03 13	20 103	29.5mm	4 MT	63 03 40
20 077	16.5mm	2 MT	63 03 14	20 104	30.0mm	4 MT	63 03 41
20 078	17.0mm	2 MT	63 03 15	20 105	31.0mm	4 MT	63 03 43
20 079	17.5mm	2 MT	63 03 16	20 106	32.0mm	4 MT	63 03 45
20 080	18.0mm	2 MT	63 03 17	20 107	33.0mm	4 MT	63 03 46
20 081	18.5mm	2 MT	63 03 18	20 108	34.0mm	4 MT	63 03 47
20 082	19.0mm	2 MT	63 03 19	20 109	35.0mm	4 MT	63 03 48
20 083	19.5mm	2 MT	63 03 20	20 110	36.0mm	4 MT	63 03 49
20 084	20.0mm	3 MT	63 03 21	20 111	37.0mm	5 MT	63 03 50
20 085	20.5mm	3 MT	63 03 22	20 112	38.0mm	5 MT	63 03 51
20 086	21.0mm	3 MT	63 03 23	20 113	39.0mm	5 MT	63 03 52
20 087	21.5mm	3 MT	63 03 24	20 114	40.0mm	5 MT	63 03 53
20 088	22.0mm	3 MT	63 03 25	20 395	45.0mm	5 MT	
20 090	23.0mm	3 MT	63 03 27	20 396	50.0mm	5 MT	

REDUCED SHANK DRILLS**REDUCED SHANK DRILLS.**

1/2" Shank, Silver and Deming drills, H.S. steel,
118 degree point.

<u>PART #</u>	<u>DIA.</u>	<u>PART #</u>	<u>DIA.</u>	<u>PART #</u>	<u>DIA.</u>
20 710	13.0 mm	20 722	19.0 mm	20 735	25.0 mm
20 711	13.5 mm	20 723	19.5 mm	20 736	25.5 mm
20 712	14.0 mm	20 724	20.0 mm	20 737	26.0 mm
20 713	14.5 mm	20 725	20.5 mm	20 738	26.5 mm
20 714	15.0 mm	20 726	21.0 mm	20 739	27.0 mm
20 715	15.5 mm	20 727	21.5 mm	20 740	27.5 mm
20 716	16.0 mm	20 728	22.0 mm	20 741	28.0 mm
20 717	16.5mm	20 729	22.5 mm	20 742	28.5 mm
20 718	17.0 mm	20 730	23.0mm	20 743	29.0 mm
20 719	17.5 mm	20 731	23.5 mm	20 744	29.5 mm
20 720	18.0 mm	20 732	24.0 mm	20 745	30.0 mm
20 721	18.5 mm	20 734	24.5 mm	20 746	30.5 mm
				20 747	31.0 mm

DRILL SLEEVES**DRILL SLEEVES**

Designed for drilling with morse taper shanks.

<u>PART #</u>	<u>M.T. SIZE</u>	<u>ISSA #</u>
20 595	1 X 2	63 23 51
20 596	2 X 3	63 23 53
20 597	3 X 4	63 23 55
20 598	4 X 5	63 23 58
20 599	1 X 3	63 23 52
20 593	2 X 4	63 23 54
20 594	3 X 5	63 23 56

METRIC END MILLS**METRIC END MILLS, H.S.**

High speed steel, single end, 4 flute.

<u>PART #</u>	<u>DIA.</u>	<u>SHANK</u>	<u>O.L.</u>	<u>FLUTE</u>	<u>PART #</u>	<u>DIA.</u>	<u>SHANK</u>	<u>O.L.</u>	<u>FLUTE</u>
20 149	3mm	10mm	60mm	13mm	20 155	9mm	10mm	60mm	15mm
20 147	3.5mm	10mm	60mm	13mm	20 156	10mm	10mm	64mm	20mm
20 150	4mm	10mm	60mm	13mm	20 157	11mm	10mm	64mm	20mm
20 148	4.5mm	10mm	60mm	13mm	20 158	12mm	12mm	75mm	25mm
20 151	5mm	10mm	60mm	13mm	20 159	13mm	12mm	80mm	28mm
20 173	5.5mm	10mm	60mm	15mm	20 160	14mm	12mm	80mm	28mm
20 152	6mm	10mm	60mm	15mm	20 161	16mm	12mm	84mm	33mm
20 174	6.5mm	10mm	60mm	15mm	20 162	18mm	12mm	84mm	33mm
20 153	7mm	10mm	60mm	15mm	20 163	20mm	19mm	95mm	38mm
20 154	8mm	10mm	60mm	15mm	20 164	24mm	22mm	95mm	38mm
20 139	8.5mm	10mm	60mm	15mm	20 165	26mm	25mm	105mm	42mm

**METRIC END MILLS, CARBIDE**

Solid Carbide, single end, 4 flute.

Center cutting geometry, used for finishing operation.

Made of premium sub micron grain carbide

<u>PART #</u>	<u>DIA.</u>	<u>SHANK</u>	<u>O.L.</u>	<u>FLUTE</u>	<u>PART #</u>	<u>DIA.</u>	<u>SHANK</u>	<u>O.L.</u>	<u>FLUTE</u>
20 149C	3mm	3mm	38mm	12mm	20 158C	12mm	12mm	75mm	25mm
20 147C	3.5mm	4mm	50mm	12mm	20 159C	13mm	14mm	89mm	32mm
20 150C	4mm	4mm	50mm	14mm	20 160C	14mm	14mm	89mm	32mm
20 148C	4.5mm	6mm	50mm	16mm	20 161C	16mm	16mm	89mm	32mm
20 151C	5mm	6mm	50mm	16mm	20 162C	18mm	18mm	100mm	38mm
20 173C	5.5mm	6mm	50mm	19mm	20 163C	20mm	20mm	100mm	38mm
20 152C	6mm	6mm	50mm	19mm	20 164C	22mm	22mm	100mm	38mm
20 153C	7mm	8mm	63mm	20mm	20 165C	25mm	25mm	100mm	38mm
20 154C	8mm	8mm	63mm	20mm					
20 155C	9mm	10mm	75mm	22mm					
20 156C	10mm	10mm	75mm	22mm					
20 157C	11mm	12mm	75mm	25mm					



COMB. DRILL & COUNTERSINK

Center drills, H.H.S., 60 degree, A-type.

<u>PART #</u>	<u>DRILL x BODY</u>	<u>NO.</u>	<u>ISSA #</u>
20 049	1.0 x 3.15mm	#0	63 05 01
20 050	1.6 x 4.0mm	#1	63 05 02
20 051	2.0 x 5.0mm	#2	63 05 03
20 052	2.5 x 6.3mm	#3	63 05 04
20 053	3.15 x 8.0mm	#4	63 05 05
20 054	4.0 x 10.0mm	#5	63 05 06
20 055	5.6 x 12.7mm	#6	
20 056	6.3 x 16.0mm	#7	63 05 07
20 057	10.0 x 25.0mm	#8	63 05 08



COMB. DRILL & COUNTERSINK SET

Center drill set, H.H.S., 60 degree, A-type.

<u>PART #</u>	<u>DESCRIPTION</u>
20 042	5-Pc set 1.0 x 3.15 mm 2.0 x 4.76 mm 2.7 x 6.3 mm 3.15 x 8.0 mm 4.7 x 11.0 mm



CENTER REAMER SET

Single flutes will countersink holes much smaller than multi-flute tools.

5-Pc set, 1/4", 3/8", 1/2", 3/4" & 1"

<u>PART #</u>	<u>DESCRIPTION</u>
20 044	60 DEG.
20 046	82 DEG.
20 064	90 DEG.

EXTRACTORS**SCREW EXTRACTOR SETS**

Chrome Molybdenum steel in molded plastic box.

<u>PART #</u>	<u>SIZE</u>	<u>ISSA #</u>
20 615	# 1-6	63 24 87
20 616	# 1-8	

**SCREW EXTRACTOR SETS**

Spiral and Multi-Spline extractors, Bolt extractors and left-hand Cobalt drill bits. Molded plastic case.

<u>PART #</u>	<u>SIZE</u>
20 249	25-Pc set, 1/8" - 1/2"
20 250	48-Pc set, 1/8" - 1/2"

**BOLT-GRIP EXTRACTOR SETS**

Reverse spiral flutes are designed to bite down to provide maximum gripping power. High Carbon steel. Set includes plastic case.

<u>PART #</u>	<u>SIZE</u>
20 460	9-Pc set, 6-19 mm
20 463	9-Pc set, 8-19 mm
20 465	13-Pc set, 6-19 mm

**TAP EXTRACTOR SETS**

The hardened steel fingers of Tap Extractors fit in the flutes of a broken tap to back it out simply and safely.

<u>PART#</u>	<u>CONTENTS</u>
20 065	6-Pc, 3/16", 1/4", 5/16", 3/8", 7/16" & 1/2"
20 066	6-Pc, 1/4", 5/16", 3/8", 7/16", 1/2" & 5/8"
20 067	6-Pc, 5/16", 3/8", 7/16", 1/2", 9/16" & 5/8"
20 068	11-Pc, 1/8", 3/16", 1/4", 5/16", 3/8", 7/16", 1/2", 5/8", 3/4", 7/8", 1"

**METRIC TAP SETS**

Tungsten steel.

Metric: Set of 3 taps: taper, plug & bottoming

B.S.P.: Set of 2 taps: taper & parallel thread

B.S.W.: Set of 3 taps: taper, plug & bottoming

STANDARD COARSE THREAD

<u>PART#</u>	<u>SIZExPITCH</u>	<u>PART#</u>	<u>SIZExPITCH</u>	<u>PART#</u>	<u>SIZExPITCH</u>
20 320	M2 x 0.4	20 327	M7 x 1.0	20 334	M16 x 2.0
20 321	M3 x 0.5	20 328	M8 x 1.25	20 335	M18 x 2.5
20 322	M3.5 x 0.6	20 329	M9 x 1.25	20 336	M20 x 2.5
20 323	M4 x 0.7	20 330	M10 x 1.50	20 337	M22 x 2.5
20 324	M4.5 x 0.75	20 331	M11 x 1.50	20 338	M24 x 3.0
20 325	M5 x 0.8	20 332	M12 x 1.75	20 339	M27 x 3.0
20 326	M6 x 1.0	20 333	M14 x 2.00	20 340	M30 x 3.5

SPECIAL FINE THREAD

<u>PART#</u>	<u>SIZExPITCH</u>	<u>PART#</u>	<u>SIZExPITCH</u>	<u>PART#</u>	<u>SIZExPITCH</u>
20 382	M4 x 0.5	20 704	M14 x 1.5	20 346	M22 x 1.0
20 383	M5 x 0.75	20 343	M14 x 1.75	20 639	M22 x 1.25
20 384	M6 x 0.5	20 635	M16 x 1.0	20 643	M22 x 1.5
20 385	M6 x 0.75	20 344	M16 x 1.25	20 706	M22 x 2.0
20 701	M8 x 0.5	20 345	M16 x 1.5	20 644	M24 x 1.0
20 386	M8 x 0.75	20 391	M16 x 1.75	20 645	M24 x 1.25
20 341	M8 x 1.0	20 636	M18 x 1.0	20 347	M24 x 1.5
20 702	M10 x 0.75	20 641	M18 x 1.25	20 707	M24 x 2.0
20 342	M10 x 1.0	20 392	M18 x 1.5	20 640	M24 x 2.5
20 387	M10 x 1.25	20 637	M18 x 1.75	20 479	M27 x 1.0
20 388	M12 x 1.0	20 393	M18 x 2.0	20 708	M27 x 1.5
20 703	M12 x 1.25	20 638	M20 x 1.0	20 646	M27 x 2.0
20 389	M12 x 1.50	20 642	M20 x 1.25	20 709	M30 x 1.0
20 390	M14 x 1.25	20 705	M20 x 1.5	20 348	M30 x 1.5
		20 394	M20 x 2.0	20 358	M30 x 2.0

B.S.P. (BRITISH STANDARD PIPE THREAD)

<u>PART#</u>	<u>SIZExTHREAD</u>	<u>PART#</u>	<u>SIZExTHREAD</u>	<u>PART#</u>	<u>SIZExTHREAD</u>
20 370	1/8" x 28	20 374	5/8" x 14	20 378	1-1/8" x 11
20 371	1/4" x 19	20 375	3/4" x 14	20 379	1-1/4" x 11
20 372	3/8" x 19	20 376	7/8" x 14	20 380	1-1/2" x 11
20 373	1/2" x 14	20 377	1" x 11	20 381	2" x 11

B.S.W. (BRITISH STANDARD WHITWORTH)

<u>PART#</u>	<u>SIZExTHREAD</u>	<u>PART#</u>	<u>SIZExTHREAD</u>	<u>PART#</u>	<u>SIZExTHREAD</u>
20 350	1/8" x 40	20 356	3/8" x 16	20 364	7/8" x 9
20 351	5/32" x 32	20 357	7/16" x 14	20 365	1" x 8
20 352	3/16" x 24	20 360	1/2" x 12	20 366	1-1/8" x 7
20 353	7/32" x 24	20 361	9/16" x 12	20 367	1-1/4" x 7
20 354	1/4" x 20	20 362	5/8" x 11	20 368	1-1/2" x 6
20 355	5/16" x 18	20 363	3/4" x 10	20 369	2" x 4.5

**ROUND ADJUSTABLE DIES**

Tungsten steel.

STANDARD COARSE THREAD

<u>PART#</u>	<u>SIZE x PITCH</u>	<u>PART#</u>	<u>SIZE x PITCH</u>	<u>PART#</u>	<u>SIZE x PITCH</u>
20 253	M2 x 0.4	20 260	M7 x 1.0	20 267	M16 x 2.0
20 254	M3 x 0.5	20 261	M8 x 1.25	20 268	M18 x 2.5
20 255	M3.5 x 0.6	20 262	M9 x 1.25	20 269	M20 x 2.5
20 256	M4 x 0.7	20 263	M10 x 1.50	20 270	M22 x 2.5
20 257	M4.5 x 0.75	20 264	M11 x 1.50	20 271	M24 x 3.0
20 258	M5 x 0.8	20 265	M12 x 1.75	20 272	M27 x 3.0
20 259	M6 x 1.0	20 266	M14 x 2.00	20 273	M30 x 3.5

SPECIAL FINE THREAD

<u>PART#</u>	<u>SIZE x PITCH</u>	<u>PART#</u>	<u>SIZE x PITCH</u>	<u>PART#</u>	<u>SIZE x PITCH</u>
20 304	M4 x .5	20 315	M14 x 1.5	20 431	M20 x 2.0
20 305	M5 x .75	20 316	M14 x 1.75	20 648	M22 x 1.0
20 306	M6 x .5	20 623	M16 x 1.0	20 649	M22 x 1.25
20 307	M6 x .75	20 627	M16 x 1.25	20 432	M22 x 1.5
20 308	M8 x .5	20 401	M16 x 1.5	20 433	M22 x 2.0
20 309	M8 x .75	20 408	M16 x 1.75	20 632	M24 x 1.0
20 310	M8 x 1.0	20 628	M18 x 1.0	20 633	M24 x 1.25
20 045	M8 x 1.5	20 629	M18 x 1.25	20 434	M24 x 1.5
20 317	M10 x .75	20 409	M18 x 1.5	20 475	M24 x 2.0
20 318	M10 x 1.0	20 647	M18 x 1.75	20 476	M24 x 2.5
20 319	M10 x 1.25	20 429	M18 x 2.0	20 700	M27 x 1.5
20 311	M12 x 1.0	20 630	M20 x 1.0	20 634	M27 x 2.0
20 312	M12 x 1.25	20 631	M20 x 1.25	20 477	M30 x 1.0
20 313	M12 x 1.50	20 430	M20 x 1.5	20 478	M30 x 1.5
20 314	M14 x 1.25			20 359	M30 x 2.0

B.S.P. (BRITISH STANDARD PIPE THREAD)

<u>PART#</u>	<u>SIZE x THREAD</u>	<u>PART#</u>	<u>SIZE x THREAD</u>	<u>PART#</u>	<u>SIZE x THREAD</u>
20 292	1/8" x 28	20 296	5/8" x 14	20 300	1-1/8" x 11
20 293	1/4" x 19	20 297	3/4" x 14	20 301	1-1/4" x 11
20 294	3/8" x 19	20 298	7/8" x 14	20 302	1-1/2" x 11
20 295	1/2" x 14	20 299	1" x 11	20 303	2" x 11

B.S.W. (BRITISH STANDARD WHITWORTH)

<u>PART#</u>	<u>SIZE x THREAD</u>	<u>PART#</u>	<u>SIZE x THREAD</u>	<u>PART#</u>	<u>SIZE x THREAD</u>
20 274	1/8" x 40	20 280	3/8" x 16	20 286	7/8" x 9
20 275	5/32" x 32	20 281	7/16" x 14	20 287	1" x 8
20 276	3/16" x 24	20 282	1/2" x 12	20 288	1-1/8" x 7
20 277	7/32" x 24	20 283	9/16" x 12	20 289	1-1/4" x 7
20 278	1/4" x 20	20 284	5/8" x 11	20 290	1-1/2" x 6
20 279	5/16" x 18	20 285	3/4" x 10	20 291	2" x 4.5

**HEXAGON RE-THREADING DIES**

Tungsten steel.

METRIC COARSE THREAD

<u>PART #</u>	<u>SIZE x PITCH</u>	<u>PART #</u>	<u>SIZE x PITCH</u>	<u>PART #</u>	<u>SIZE x PITCH</u>
20 180	M2 x 0.4	20 187	M7 x 1.0	20 194	M16 x 2.0
20 181	M3 x 0.5	20 188	M8 x 1.25	20 195	M18 x 2.5
20 182	M3.5 x 0.6	20 189	M9 x 1.25	20 196	M20 x 2.5
20 183	M4 x 0.7	20 190	M10 x 1.5	20 197	M22 x 2.5
20 184	M4.5 x 0.75	20 191	M11 x 1.5	20 198	M24 x 3.0
20 185	M5 x 0.8	20 192	M12 x 1.75	20 199	M27 x 3.0
20 186	M6 x 1.0	20 193	M14 x 2.0	20 200	M30 x 3.5

B.S.P. (BRITISH STANDARD PIPE THREAD)

<u>PART #</u>	<u>SIZE x THR.</u>	<u>PART #</u>	<u>SIZE x THR.</u>	<u>PART #</u>	<u>SIZE x THR.</u>
20 228	1/8" x 28	20 232	5/8" x 14	20 236	1 1/8" x 11
20 229	1/4" x 19	20 233	3/4" x 14	20 237	1 1/4" x 11
20 230	3/8" x 19	20 234	7/8" x 14	20 238	1 1/2" x 11
20 231	1/2" x 14	20 235	1" x 11	20 239	2" x 11

B.S.W. (BRITISH STANDARD WHITWORTH)

<u>PART #</u>	<u>SIZE x THR.</u>	<u>PART #</u>	<u>SIZE x THR.</u>	<u>PART #</u>	<u>SIZE x THR.</u>
20 210	1/8" x 40	20 216	3/8" x 16	20 222	7/8" x 9
20 211	5/32" x 32	20 217	7/16" x 14	20 223	1" x 8
20 212	3/16" x 24	20 218	1/2" x 12	20 224	1 1/8" x 7
20 213	7/32" x 24	20 219	9/16" x 12	20 225	1 1/4" x 7
20 214	1/4" x 20	20 220	5/8" x 11	20 226	1 1/2" x 6
20 215	5/16" x 18	20 221	3/4" x 10	20 227	2" x 4.5

**NPT TAPER PIPE TAPS**

High Speed Steel

NPT PIPE TAPS

<u>PART #</u>	<u>SIZE x THR.</u>	<u>PART #</u>	<u>SIZE x THR.</u>	<u>PART #</u>	<u>SIZE x THR.</u>
20 750	1/16" x 27	20 755	3/4" x 14	20 760	2-1/2" x 8
20 751	1/8" x 27	20 756	1" x 11-1/2	20 761	3" x 8
20 752	1/4" x 18	20 757	1 1/4" x 11-1/2	20 762	3-1/2" x 8
20 753	3/8" x 18	20 758	1 1/2" x 11-1/2	20 763	4" x 8
20 754	1/2" x 14	20 759	2" x 11-1/2		

**NPT HEXAGON PIPE DIES**

High Speed Steel

NPT HEX PIPE DIES

<u>PART #</u>	<u>SIZE x THR.</u>	<u>PART #</u>	<u>SIZE x THR.</u>	<u>PART #</u>	<u>SIZE x THR.</u>
20 767	1/16" x 27	20 772	3/4" x 14	20 777	2-1/2" x 8
20 768	1/8" x 27	20 773	1" x 11-1/2	20 778	3" x 8
20 769	1/4" x 18	20 774	1 1/4" x 11-1/2	20 779	3-1/2" x 8
20 770	3/8" x 18	20 775	1 1/2" x 11-1/2		
20 771	1/2" x 14	20 776	2" x 11-1/2		

TAP WRENCHES & DIE STOCKS



TAP WRENCH - "T"-HANDLE

Spring type with 4 jaws of hardened steel.

<u>PART #</u>	<u>CAPACITY</u>	<u>NO.</u>	<u>ISSA #</u>
20 410	3 to 6mm	1	63 34 12
20 411	5 to 10mm	2	63 34 13
20 412	6 to 13mm	3	63 34 14



TAP WRENCH - RATCHET

Spring type with 2 jaws of hardened steel.

<u>PART #</u>	<u>CAPACITY</u>	<u>NO.</u>
20 413	3 to 10mm	1
20 414	5 to 12mm	2



TAP WRENCH - ADJUSTABLE

Die casted body, steel handle.

<u>PART #</u>	<u>CAPACITY</u>	<u>NO.</u>	<u>ISSA#</u>
20 403	0 to 6mm	0	63 34 01
20 415	1 to 10mm	4	63 34 02
20 416	3 to 13mm	5	63 34 03
20 417	6 to 20mm	6	63 34 04
20 418	10 to 25mm	7	63 34 05



DIE STOCKS

Die casted body, steel handle, for round dies.

<u>PART #</u>	<u>DIE DIA</u>	<u>ISSA #</u>
20 419	20mm	63 34 22
20 420	25mm	63 34 23
20 421	30mm	
20 422	38mm	63 34 24
20 423	45mm	
20 424	50mm	63 34 25
20 425	63mm	63 34 27
20 426	75mm	63 34 29

TAP & DIE SETS



TAP & DIE SET - 2 to 6MM

High quality tungsten steel. 20-pc. set.
(2,2.5,3,3.5,4,4.5,5,5.5,6mm coarse thread)

PART #
20 492

DESCRIPTION

9 Plug taps
9 Round dies
1 Adjustable tap wrench
1 Die stock 1" OD
Weight: 1.5 Lbs.

ISSA # 63 22 11



TAP & DIE SET - 3 to 12MM

High quality tungsten steel. 39-pc. set.
(3,4,5,6,7,8,10,12mm coarse & fine thread.)

PART #
20 400

DESCRIPTION

17 taps, 17 round dies
2 tap wrenches
1 Adjustable tap wrench
1 Die stock 1" O.D.
1 Metric screw pitch gauge
1 Screwdriver
Weight: 3.0 Lbs.

ISSA # 63 22 09



TAP & DIE SET - 6 to 24MM

High quality tungsten steel. 45-pc. set.
(6,8,10,12,14,16,18,20,22,24mm) NC/NF

PART #
20 402

DESCRIPTION

20 taps, 20 round dies
2 Adjustable tap wrenches
1 Die stock 2" OD
1 Die Adaptor, 1 screwdriver
Weight: 11 lbs.

ISSA # 63 22 03

TAP & DIE SETS



TAP & DIE SET - 1/4" to 1/2" NC/NF

High quality tungsten steel. 39-pc. set. NC/NF
(4-40,6-32,8-32,10-24,12-24,1/4",5/16",3/8",7/16",1/2")

PART #
20 398

DESCRIPTION

17 taps, 17 round dies
2 tap wrenches
1 Adjustable tap wrench
1 Die stock 1" O.D.
1 Metric screw pitch gauge
1 Screwdriver
Weight: 3.0 Lbs.



TAP & DIE SET - 1/4" to 1" NC/NF

High quality tungsten steel. 45-pc. set.

PART #
20 399

DESCRIPTION

20 taps
20 dies

Weight: 5.4 lbs.



TAP & DIE SET - 1/8" to 1" NPT

High quality tungsten steel. 12-pc. set.
(1/8", 1/4", 3/8", 1/2", 3/4", 1")

PART #
20 404

DESCRIPTION

6 taps
6 Hex dies

Weight: 5.4 lbs.

TAP & DIE SETS



TAP & DIE SET - 1/4" to 1" B.S.W.

High quality tungsten steel. 21-pc. set.
(1/4", 5/16", 3/8", 7/16", 1/2", 5/8", 3/4", 7/8", 1")

PART #
20 405

DESCRIPTION

9 Plug taps
9 Round dies
2 Adjustable tap wrenches
1 Die stock 2" O.D.
Weight: 13 lbs.

ISSA # 63 22 35



TAP & DIE SET - 1/8" to 1" B.S.P.

High quality tungsten steel. 20-pc. set.
(1/8", 1/4", 3/8", 1/2", 5/8", 3/4", 7/8", 1")

PART #
20 407

DESCRIPTION

8 Taper taps
8 Round dies
2 Adjustable tap wrenches
2 Die stocks 2" & 2-1/2" O.D.
Weight: 15 lbs.

ISSA # 63 22 53



TAP & DIE SET - FRACTIONAL/METRIC

High carbon steel. **110-pc. set.**
UNC/UNF/UNS/NPT/METRIC
#4-3/4", 6mm-18mm, 1/4"-24, 1/4"-32, 1/8" & 1/4" NPT

PART #
20 406

DESCRIPTION

35 Taper taps, 35 Bottom taps
35 Round dies
2 Adjustable tap wrenches
1 T-handle tap wrench
2 Die stocks 1" & 1-1/2" O.D.
Weight: 15 lbs.

TAPS INCLUDED (NOT SHOWN)

CARBIDE TOOL BITS**STRAIGHT TURNING TOOL - STYLE A**

<u>LEFT HAND</u>		<u>RIGHT HAND</u>
<u>PART #</u>	<u>SIZE</u>	<u>PART #</u>
20 480	6x6x0mm	20 489
20 481	8x8x57mm	20 490
20 482	10x10x63mm	20 491
20 484	12x12x90mm	20 493
20 485	16x16x100mm	20 494
20 486	20x20x115mm	20 495
20 487	25x25x175mm	20 496

STRAIGHT TURNING TOOL - STYLE B

<u>LEFT HAND</u>		<u>RIGHT HAND</u>
<u>PART #</u>	<u>SIZE</u>	<u>PART #</u>
20 780	6x6x50mm	20 789
20 781	8x8x57mm	20 790
20 782	10x10x63mm	20 791
20 784	12x12x90mm	20 793
20 785	16x16x100mm	20 794
20 786	20x20x115mm	20 795
20 787	25x25x175mm	20 796

SQUARE NOSE TOOL - STYLE C

<u>PART #</u>	<u>SIZE</u>	<u>NO.</u>
20 513	6x6x50mm	4
20 514	8x8x57mm	5
20 515	10x10x63mm	6
20 517	12x12x90mm	8
20 518	16x16x100mm	10
20 519	20x20x115mm	12
20 501	25x25x175mm	16

POINTED NOSE TOOL 80 - STYLE D

<u>PART #</u>	<u>SIZE</u>	<u>NO.</u>
20 505	6x6x50mm	4
20 506	8x8x57mm	5
20 507	10x10x63mm	6
20 509	12x12x90mm	8
20 510	16x16x100mm	10
20 511	20x20x115mm	12
20 512	25x25x175mm	16

CARBIDE TIPPED TOOL BITS**THREADING TOOL 60 DEGR. - STYLE E**

<u>PART #</u>	<u>SIZE</u>	<u>NO.</u>
20 498	6x6x50mm	4
20 499	8x8x57mm	5
20 500	10x10x63mm	6
20 502	12x12x90mm	8
20 503	16x16x100mm	10
20 504	20x20x115mm	12
20 521	25x25x175mm	16

OFFSET THREADING TOOL

Offset cutting tool, style EL & ER

**EL****ER**

<u>PART #</u>	<u>SIZE</u>	<u>PART #</u>
20 170	6x6x50mm	20 140
20 171	10x10x63mm	20 141
20 172	12x12x90mm	20 142

OFFSET CUTTING TOOL - STYLE F

End cutting tool, style FR & FL

**LEFT HAND****RIGHT HAND**

<u>PART #</u>	<u>SIZE</u>	<u>PART #</u>
20 115	12x12x90mm	20 119
20 116	16x16x100mm	20 120
20 117	20x20x115mm	20 121
20 118	25x25x175mm	20 122

OFFSET CUTTING TOOL - STYLE G

Side cutting tool, style GR & GL

**LEFT HAND****RIGHT HAND**

<u>PART #</u>	<u>SIZE</u>	<u>PART #</u>
20 243	12x12x90mm	20 143
20 244	16x16x100mm	20 144
20 245	20x20x115mm	20 146
20 246	25x25x175mm	20 145

LATHE TOOLS

CARBIDE TIPPED PARTING TOOLS



<u>PART #</u>	<u>TIP</u>	<u>HEIGHT</u>	<u>LENGTH</u>	<u>ISSA #</u>
20 128	4mm	25mm	125mm	63 30 41
20 129	5mm	25mm	125mm	63 30 42
20 130	6mm	25mm	125mm	63 30 43
20 131	8mm	25mm	125mm	63 30 44
20 132	10mm	32mm	125mm	63 30 45

CARBIDE TIPPED BORING TOOL



<u>PART #</u>	<u>SHANK</u>	<u>LENGTH</u>	<u>ISSA #</u>
20 133	10mm	100mm	
20 134	12mm	140mm	63 30 56
20 135	16mm	160mm	63 30 57
20 136	20mm	180mm	63 30 58
20 137	25mm	200mm	63 30 59

BORING TOOL HOLDERS

A-Type round boring bar with square shank.
For square tool bits.



<u>PART #</u>	<u>BIT SIZE</u>	<u>LENGTH</u>	<u>ISSA #</u>
20 610	3.0mm	115mm	
20 611	5.0mm	135mm	63 32 21
20 612	6.0mm	170mm	63 32 22
20 613	8.0mm	235mm	63 32 23
20 614	10.0mm	295mm	63 32 24

BORING BARS

Plain round boring bar with square holes in
each end for square tool bits.



<u>PART #</u>	<u>BIT</u>	<u>SHANK</u>	<u>ISSA #</u>
20 166	5mm	16x250mm	63 32 31
20 167	6mm	19x300mm	63 32 32
20 168	8mm	25x300mm	63 32 33
20 169	10mm	32x400mm	63 32 34

LATHE TOOLS



TURNING TOOL HOLDERS

For square tool bits. Complete with wrench.
Tool bits **not** included.

LEFT HAND

<u>PART #</u>	<u>BIT SIZE</u>
20 524	5mm
20 525	6mm
20 526	8mm
20 527	10mm
20 529	12mm

STRAIGHT

<u>PART #</u>	<u>BIT SIZE</u>
20 523	5mm
20 530	6mm
20 531	8mm
20 532	10mm
20 534	12mm

RIGHT HAND

<u>PART #</u>	<u>BIT SIZE</u>
20 522	5mm
20 535	6mm
20 536	8mm
20 537	10mm
20 539	12mm



SPRING CUT-OFF TOOL HOLDER

Complete with wrench. Blade **not** included.
For trapezoid cut-off blades.

LEFT HAND

<u>PART #</u>	<u>BIT SIZE</u>
20 540	2.4 x 12.7mm
20 541	2.4 x 15.9mm
20 542	3.2 x 19.0mm
20 543	3.2 x 22.0mm
20 544	4.8 x 25.4mm

STRAIGHT

<u>PART #</u>	<u>BIT SIZE</u>
20 546	2.4 x 12.7mm
20 547	2.4 x 15.9mm
20 548	3.2 x 19.0mm
20 549	3.2 x 22.0mm
20 550	4.8 x 25.4mm

RIGHT HAND

<u>PART #</u>	<u>BIT SIZE</u>
20 552	2.4 x 12.7mm
20 553	2.4 x 15.9mm
20 554	3.2 x 19.0mm
20 555	3.2 x 22.0mm
20 556	4.8 x 25.4mm

LATHE TOOLS



INDEXABLE EXTERNAL THREADING TOOL HOLDERS

Right hand external threads cut.

<u>PART #</u>	<u>SHANK</u>	<u>OAL</u>	<u>INSERT</u>
20 508	3/8X3/8	2-1/2	3/8
20 516	1/2X1/2	3-1/4	3/8
20 520	5/8X5/8	5	3/8
20 528	3/4X3/4	5	3/8
20 533	1X1	6	3/8



INDEXABLE EXTERNAL THREADING TOOL HOLDER KITS

Right hand external threads cut.

Kit includes; 1 tool holder, 10 TiN coated carbide insert, 1 Torx wrench, complete with case

<u>PART #</u>	<u>SHANK</u>	<u>INSERT</u>
20 800	5/16	08ERA60
20 801	3/8	11ERA60
20 802	1/2	11ERA60
20 803	5/8	16ERAG60
20 804	3/4	16ERAG60

INDEXABLE INTERNAL THREADING TOOL HOLDERS

Right hand internal threads cut.



<u>PART #</u>	<u>SHANK</u>	<u>OAL</u>	<u>INSERT</u>
20 810	3/8	4	1/4
20 811	5/8	7	3/8
20 812	3/4	7	3/8
20 813	3/4	8	3/8
20 814	3/4	10	1/2
20 815	1"	7	3/8
20 816	1"	10	1/2



INDEXABLE INTERNAL THREADING TOOL HOLDER KITS

Right hand external threads cut.

Kit includes; 1 tool holder, 10 TiN coated carbide insert, 1 Torx wrench, complete with case

<u>PART #</u>	<u>SHANK</u>	<u>INSERT</u>
20 817	3/8	11ERA60
20 818	1/2	11ERA60
20 819	5/8	16ERAG60
20 820	3/4	16ERAG60

LATHE TOOLS



TIN COATED 60° THREADING CARBIDE INSERTS

60° V partial profile threading insert.

<u>PART #</u>	<u>INSERT</u>	<u>I.C.</u>
20 792	08ERA60	8mm
20 797	11ERA60	11mm
20 798	11IRA60	11mm
20 799	16ERAG60	16mm
20 783	16IRAG60	16mm



CUT-OFF & GROOVING CARBIDE INSERTS

C-2 for cast iron and general purpose

C-6 for all steel and general purpose

TiN (C-6) for increased productivity

<u>C-2</u>		<u>C-6</u>		<u>TiN (C-6)</u>	
<u>PART #</u>	<u>INSERT</u>	<u>PART #</u>	<u>INSERT</u>	<u>PART #</u>	<u>INSERT</u>
20 821	GTN-2	20 828	GTN-2	20 835	GTN-2
20 822	GTN-2.4	20 829	GTN-2.4	20 836	GTN-2.4
20 823	GTN-3	20 830	GTN-3	20 837	GTN-3
20 824	GTN-4	20 831	GTN-4	20 838	GTN-4
20 825	GTN-4.8	20 832	GTN-4.8	20 839	GTN-4.8
20 826	GTN-5	20 833	GTN-5	20 840	GTN-5
20 827	GTN-6	20 834	GTN-6	20 841	GTN-6

THREADING INSERTS

INTERNAL THREADING CARBIDE INSERTS (METRIC)

Triangular Carbide , partial 60 degrees



<u>PART #</u>	<u>INSERT</u>	<u>I.C.</u>	<u>PITCH</u>
6006-1006	RT16.01N-1.25GM	3/8"	1.25
6006-1007	RT16.01N-1.50GM	3/8"	1.50
6006-1008	RT16.01N-1.75GM	3/8"	1.75
6006-1009	RT16.01N-2.00GM	3/8"	2.00
6006-1010	RT16.01N-2.50GM	3/8"	2.50
6006-1011	RT16.01N-3.00GM	3/8"	3.00

EXTERNAL THREADING CARBIDE INSERTS (METRIC)

Triangular Carbide , partial 60 degrees



<u>PART #</u>	<u>INSERT</u>	<u>I.C.</u>	<u>PITCH</u>
6006-3006	RT16.0W-1.25GM	3/8"	1.25
6006-3007	RT16.0W-1.50GM	3/8"	1.50
6006-3008	RT16.0W-1.75GM	3/8"	1.75
6006-3009	RT16.0W-2.00GM	3/8"	2.00
6006-3010	RT16.0W-2.50GM	3/8"	2.50
6006-3011	RT16.0W-3.00GM	3/8"	3.00

INTERNAL THREADING CARBIDE INSERTS (INCH)

Triangular Carbide , partial 60 degrees



<u>PART #</u>	<u>INSERT</u>	<u>I.C.</u>	<u>PITCH</u>
6006-4008	RT16.01N-8UN	3/8"	8 TPI
6006-4010	RT16.01N-10UN	3/8"	10 TPI
6006-4012	RT16.01N-12UN	3/8"	12 TPI
6006-4014	RT16.01N-14UN	3/8"	14 TPI
6006-4016	RT16.01N-16UN	3/8"	16 TPI
6006-4018	RT16.01N-18UN	3/8"	18 TPI
6006-4020	RT16.01N-20UN	3/8"	20 TPI

THREADING INSERTS



EXTERNAL THREADING CARBIDE INSERTS (INCH)

Triangular Carbide , partial 60 degrees

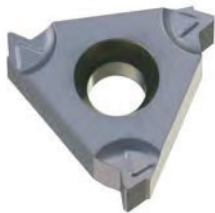
<u>PART #</u>	<u>INSERT</u>	<u>I.C.</u>	<u>PITCH</u>
6006-4108	RT16.01N-8UN	3/8"	8 TPI
6006-4110	RT16.01N-10UN	3/8"	10 TPI
6006-4112	RT16.01N-12UN	3/8"	12 TPI
6006-4114	RT16.01N-14UN	3/8"	14 TPI
6006-4116	RT16.01N-16UN	3/8"	16 TPI
6006-4118	RT16.01N-18UN	3/8"	18 TPI
6006-4120	RT16.01N-20UN	3/8"	20 TPI



EXTERNAL THREADING CARBIDE INSERTS (INCH)

Triangular Carbide , partial 60 degrees

<u>PART #</u>	<u>INSERT</u>	<u>I.C.</u>	<u>PITCH</u>
6006-6011	RT16.001N-11.5NPT	.375"	11.5 TPI
6006-6014	RT16.001N-14NPT	.375"	14 TPI
6006-6018	RT16.001N-18NPT	.375"	18 TPI
6006-6027	RT16.001N-27NPT	.375"	27 TPI



EXTERNAL THREADING CARBIDE INSERTS (INCH)

Triangular Carbide , partial 60 degrees

<u>PART #</u>	<u>INSERT</u>	<u>I.C.</u>	<u>PITCH</u>
6006-6111	RT16.001W-11.5NPT	.375"	11.5 TPI
6006-6114	RT16.001W-14NPT	.375"	14 TPI
6006-6118	RT16.001W-18NPT	.375"	18 TPI
6006-6127	RT16.001W-27NPT	.375"	27 TPI

LATHE TOOLS



INDEXABLE CUT-OFF TOOLS & KITS

15-PC KIT

<u>PART #</u>	
20 850	5/8" shank
Content:	1 tool block 1 blade 10 inserts 1 insert holder 1 allen wrench 1 case

16-PC KIT

<u>PART #</u>	
20 851	3/4" shank
Content:	1 tool block 2 blade 10 inserts 2 insert holder 1 allen wrench 1 case

22-PC KIT

<u>PART #</u>	
20 852	1" shank
Content:	1 tool block 6 blade 12 inserts 1 insert holder 1 allen wrench 1 case

INDEXABLE CUT-OFF BLADES



<u>PART #</u>	<u>WIDTH</u>	<u>OAL</u>	<u>STYLE</u>
20 860	3/4	3.4	19-2
20 861	1-1/32	4-1/4	26-2
20 862	1-1/32	4-1/4	26-3
20 863	1-1/32	4-1/4	26-4
20 864	1-1/32	4-1/4	26-5
20 865	1-1/32	4-1/4	26-6
20 866	1-1/4	5-7/8	32-3
20 867	1-1/4	5-7/8	32-4
20 868	1-1/4	5-7/8	32-5
20 869	1-1/4	5-7/8	32-6

INDIVIDUAL TOOL BLOCKS



<u>PART #</u>	<u>WIDTH</u>	<u>OAL</u>	<u>BLADE WIDTH</u>
20 870	1.02	3.4	3/4"
20 871	1.31	3.4	1-1/32"
20 872	1.45	3.4	1-1/32"
20 873	1.50	3.95	1-1/4"
20 874	1.75	4.33	1-1/4"
20 875	1.90	4.33	1-1/4"

TOOL BITS

SQUARE TOOL BITS

High speed steel.



<u>PART #</u>	<u>SIZE</u>	<u>ISSA #</u>
20 435	3 x 3 x 63mm	
20 436	5 x 5 x 63mm	63 26 01
20 437	6 x 6 x 63mm	63 26 02
20 438	8 x 8 x 63mm	63 26 03
20 439	10 x 10 x 75mm	63 26 04
20 441	12 x 12 x 100mm	63 26 05
20 442	16 x 16 x 115mm	63 26 06
20 443	20 x 20 x 125mm	63 26 07

SQUARE TOOL BITS - LONG

High speed steel.



<u>PART #</u>	<u>SIZE</u>
20 444	6 x 6 x 100 mm
20 445	6 x 6 x 150mm
20 446	6 x 6 x 200mm
20 447	8 x 8 x 150mm
20 448	10 x 10 x 100mm
20 449	10 x 10 x 150mm
20 450	10 x 10 x 200mm
20 452	12 x 12 x 150mm
20 453	12 x 12 x 200mm

ROUND TOOL BITS

High speed steel.



<u>PART #</u>	<u>SIZE</u>	<u>ISSA #</u>
20 201	4x70mm	63 26 61
20 202	5x85mm	63 26 62
20 203	6x100mm	63 26 63
20 204	8x110mm	63 26 64
20 205	10x125mm	63 26 65
20 206	12x150mm	63 26 66
20 207	16x150mm	63 26 67
20 208	20x150mm	63 26 68

TOOL BITS



CUT-OFF BLADES

High speed trapezoid cut-off blade.

<u>PART #</u>	<u>SIZE</u>	<u>ISSA #</u>
20 470	2.4x12.7x115mm	63 26 51
20 471	2.4x15.9x125mm	63 26 52
20 472	3.2x19.0x150mm	63 26 53
20 473	3.2x22.0x175mm	
20 474	4.8x25.4x200mm	63 26 54

KNURLING TOOL HOLDER

High quality self centering knuckle, pivoted head, fitted with 1 pair of knurls, Type A.

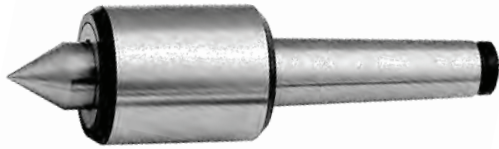


<u>PART #</u>	<u>SIZE</u>	<u>KNURL DIA.</u>	<u>ISSA #</u>
20 560	10x22x140mm	16mm	63 32 41
20 561	13x29x165mm	19mm	63 32 42
20 562	16x35x191mm	19mm	63 32 43

KNURLING TOOL HOLDER

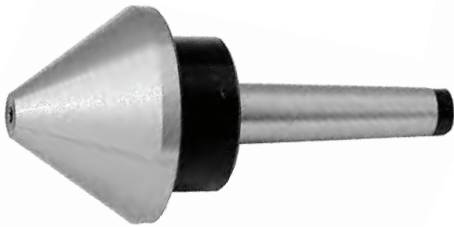
High quality self centering knuckle, revolving head, fitted with 3 pair of knurls, Type B.

<u>PART #</u>	<u>SIZE</u>	<u>KNURL DIA.</u>	<u>ISSA #</u>
20 563	10x22x140mm	16mm	63 32 44
20 564	13x29x165mm	19mm	63 32 45
20 565	16x35x191mm	19mm	63 32 46

ROLLING LIVE CENTERS**ROLLING LIVE CENTERS**

High speed rolling center with taper roller bearing.

<u>PART #</u>	<u>M.T.</u>	<u>ANGLE</u>	<u>ISSA #</u>
20 566	#1	60	63 24 21
20 567	#2	60	63 24 22
20 568	#3	60	63 24 23
20 569	#4	60	63 24 24
20 580	#5	60	63 24 25
20 581	#6	60	63 24 26

**H.D. BULL NOSE LIVE CENTERS**

<u>PART #</u>	<u>M.T.</u>	<u>BEV. DIA.</u>	<u>ANGLE</u>	<u>ISSA #</u>
20 570	#2	12 x 63mm	70	63 24 41
20 571	#3	18 x 78mm	70	63 24 42
20 572	#3	32 x 102mm	75	63 24 43
20 573	#4	32x 102mm	75	63 24 44
20 574	#4	35 x 128mm	75	63 24 45
20 575	#5	32 x 120mm	75	63 24 46
20 576	#5	35 x 152mm	75	63 24 47

**LIVE CENTER SETS, 7-PC**

High grade tool steel hardened and ground.
Precision needle bearings used for high accuracy with long life. Accuracy 0.0012-0.0039" at center head. Complete with fitted case.

<u>PART #</u>	<u>M.T.</u>	<u>THRUST LOAD LBS.</u>
20 551	#2	650
20 557	#3	900
20 558	#4	1200
20 559	#5	1600

**INTERCHANGEABLE POINT
LIVE CENTER SETS, 7-PC**

Includes live Center Body, 3 Bull Nose Point,
2 Cone Shape Point, 1 Serrated Point, 1 Wrench Tool.

<u>PART #</u>	<u>M.T.</u>	<u>LOAD LBS.</u>
20 582	#2	650
20 583	#3	900
20 584	#4	2600
20 586	#5	4400

DRILL CHUCKS**DRILL CHUCKS WITH KEY, TAPERED**

Heavy duty type for portable and bench type power tools with tapered spindles.

<u>PART #</u>	<u>CAPACITY</u>	<u>M.T.</u>	<u>ISSA #</u>
20 680	0-6.5 mm	#1	63 23 34
20 681	1.5-10 mm	#2	63 23 37
20 682	1.5-13 mm	#2	63 23 38
20 683	3-16 mm	#3	63 23 40
20 684	5-20 mm	#3	63 23 41

**DRILL CHUCKS WITH KEY, THREADED**

Heavy duty type for portable and bench type power tools with threaded spindles.

<u>PART #</u>	<u>CAPACITY</u>	<u>THREAD</u>
20 585	0-6.5 mm	3/8"-24
20 588	1.5-10 mm	3/8"-24
20 589	1.5-10 mm	1/2"-20
20 590	1.5-13 mm	3/8"-24
20 591	1.5-13 mm	1/2"-20
20 592	3-16 mm	5/8"-16

**DRILL CHUCK KEYS**

<u>PART #</u>	<u>SIZE</u>	<u>NO.</u>
20 125	10mm	5
20 126	13mm	6
20 127	16mm	7

DRILL CHUCKS**H.D. KEYLESS DRILL CHUCK**

Keyless chuck used for precision drilling.
Self-tightening design. Solid steel body.



<u>PART #</u>	<u>CAPACITY</u>	<u>TAPER MOUNT.</u>
20 600	0-10 mm	#2
20 601	0-10 mm	#33
20 602	0-13 mm	#33
20 603	0-13 mm	#2
20 123	0-13 mm	#6
20 604	3-16 mm	#6

**ULTRA PRECISION KEYLESS
DRILL CHUCK W/INTEGRAL SHANKS**

Integrated design maximizes rigidity & accuracy.
Integral shank is more compact and eliminates the
chuck slipping on its arbor.



<u>PART #</u>	<u>CAPACITY</u>	<u>SHANK</u>
20 607	0-13 mm	CAT40
20 608	3-16 mm	CAT40
20 609	0-13 mm	BT30
20 617	0-13 mm	BT40
20 618	3-16 mm	BT40
20 692	0-13 mm	R8
20 693	3-16 mm	R8
20 694	0-13 mm	MT3
20 695	0-13 mm	MT4
20 696	3-16 mm	MT3
20 697	3-16 mm	MT4
20 698	0-13 mm	40NMTB
20 699	3-16 mm	40NBTM



VALVE SEAT CUTTER

The valve seat cutter is ideal for re-surfacing of the valve seat surfaces on most types of valves. Set is supplied with five cutter sizes.

PART #
41 169

CONTENTS
Spindle, fixing bed, handle,
lock nut & adj. screw.
Cutters: 1-2-3-4 & 5"

ISSA # 63 34 51



GRINDING WHEEL DRESSER

Designed for dressing round grinding stones.

PART #
20 041

DESCRIPTION
Complete tool

20 043

Spare wheels
Set of 4 pc.

A**B****NUT SPLITTER - MECHANICAL**

Chrome Vanadium steel.

<u>PART #</u>	<u>SIZE</u>
20 619	9-12mm
20 624	12-16mm
20 625	16-22mm
20 626	22-27mm
20 038	12-23mm Heavy duty.

**NUT SPLITTER SET - HYDRAULIC**

Heat treated steel. Splits frozen or rusted nuts without damage to the bolt. Hydraulic ram attachment & 5 nut splitters in carrying case.

<u>PART#</u>	<u>CAPACITY</u>
20 069	5 to 26mm
	Weight: 9.5 Lbs.

**STUD SETTER & REMOVER**

Chrome Vanadium steel.

<u>PART #</u>	<u>CAPACITY</u>	<u>ISSA #</u>
20 620	5-10mm	
20 621	8-19mm	61 04 86
20 622	18-25mm	

**FLANGE JACKS—2 PIECE SET**

Solid cast iron jacks exert tremendous pressure smoothly and evenly.

<u>PART #</u>	<u>DESCRIPTION</u>
20 040	50-500mm dia. pipe size.
	ISSA # 61 51 84

CARBIDE ROTARY BURS – 1/4" Shank



**CYLINDRICAL
SA**

**CYLINDRICAL
BALL NOSE**



**BALL SHAPE
SD**

**TREE SHAPE
SF**



**CONE SHAPE
BALL NOSE
SL**

**POINTED TREE
SHAPE
SG**



**FLAME SHAPE
SH**

**CONE SHAPE
SM**



<u>PART #</u>	<u>SIZE</u>	<u>NO.</u>	<u>ISSA #</u>
20 650	4mm	SA-12	63 25 02
20 651	6mm	SA-1	63 25 03
20 652	8mm	SA-2	63 25 04
20 653	10mm	SA-3	63 25 05
20 654	12mm	SA-5	63 25 06
20 655	4mm	SC-12	63 25 12
20 656	6mm	SC-1	63 25 13
20 657	8mm	SC-2	63 25 14
20 658	10mm	SC-3	63 25 15
20 659	12mm	SC-5	63 25 16
20 660	4mm	SD-12	63 25 22
20 661	6mm	SD-1	
20 662	8mm	SD-2	63 25 23
20 663	10mm	SD-3	63 25 24
20 664	12mm	SD-5	63 25 25
20 665	4mm	SF-12	63 25 31
20 666	6mm	SF-1	63 25 32
20 667	8mm	SF-2	63 25 33
20 668	10mm	SF-3	63 25 34
20 669	12mm	SF-5	63 25 35
20 670	6mm	SL-1	63 25 43
20 671	8mm	SL-2	63 25 44
20 672	10mm	SL-3	63 25 45
20 673	12mm	SL-5	63 25 46
20 674	16mm	SL-6	63 25 47
20 675	6mm	SG-1	63 25 52
20 676	8mm	SG-2	63 25 53
20 690	10mm	SG-3	
20 691	12mm	SG-5	
20 677	6mm	SH-1	63 25 56
20 678	10mm	SH-2	63 25 57
20 679	12mm	SH-5	63 25 58
20 685	16mm	SH-6	63 25 59
20 686	6mm	SM-1	63 25 61
20 687	10mm	SM-3	63 25 62
20 688	12mm	SM-5	



CARBIDE ROTARY BUR SET

Solid carbide steel with 1/4" shank in metal case.

<u>PART #</u>	<u>DESCRIPTION</u>
20 689	8-pc. set