



NEW ZEALAND

Evacut[®]

EXPORT CATALOGUE



Evacut

No. E2M Drill Set
19 High Speed Steel Drills
1.0 to 10.0mm x 0.5mm rises

WOOD METAL PLASTIC

Industrial Quality

Patience & Nicholson
LIMITED

Quality Endorsed Company
ISO 9002



High Speed Steel Drills
1.0 to 13.0mm x 0.5 rises

WOOD
 METAL
 PLASTIC

Industrial Quality

18mm 22mm 25mm

4RM Metric
1/2" diameter shank High Speed Steel

NO. E1 DRILLS

Sp 1/16

WOOD METAL PLA

Patience & Nicholson
LIMITED

PATIENCE & NICHOLSON (NZ) LTD

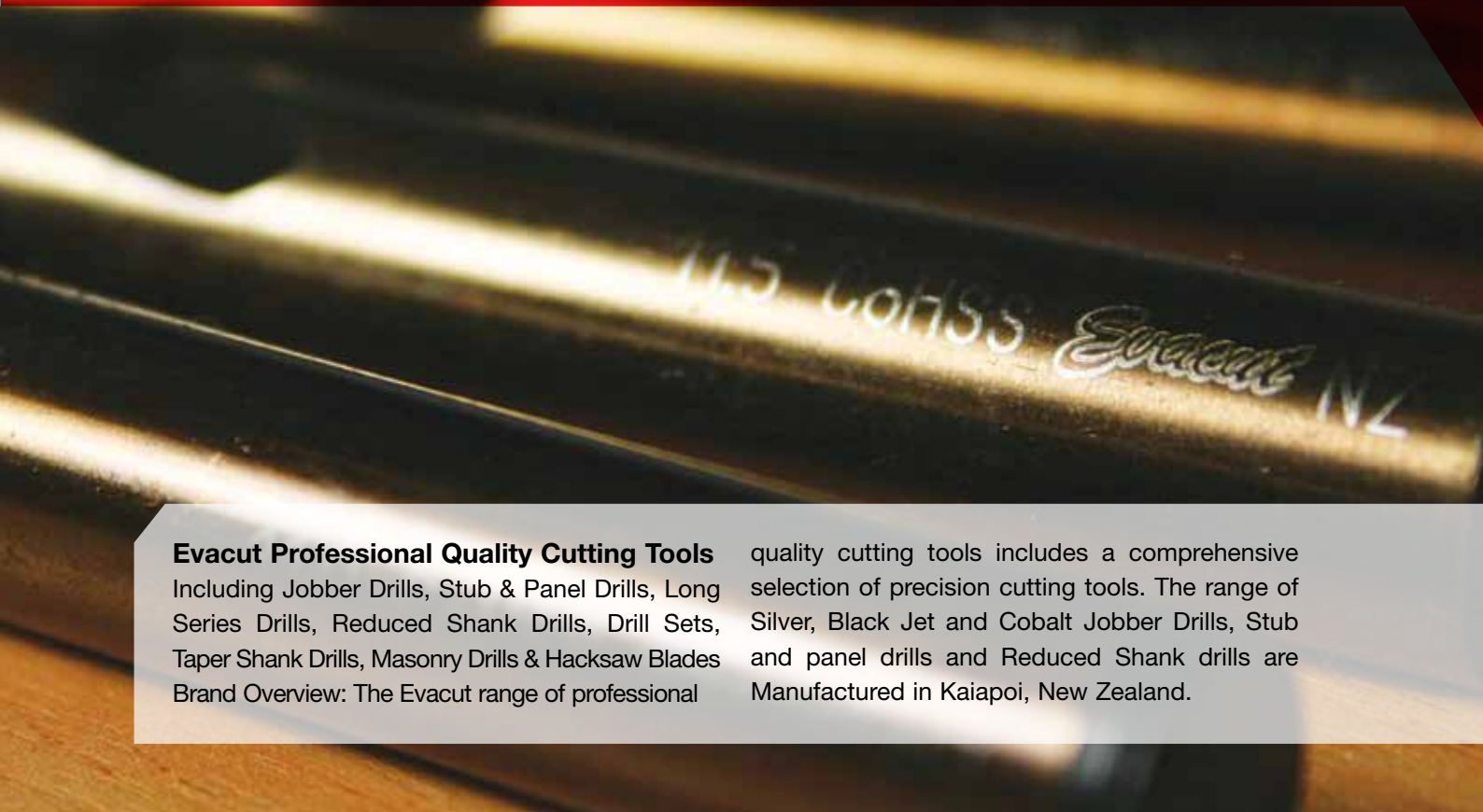
Leading manufacturer of quality precision cutting tools



BUY NEW ZEALAND MADE

When you buy the Jobber Drills, Reduced Shank Drills and Taper Shank Drills that we make here in New Zealand you are getting some of the best cutting tools available in the world. You are not only supporting our business and its employees you are also supporting a wide range of other New Zealand companies that we rely on. We invest many millions of dollars in the New Zealand economy and we appreciate your support and hope that you will continue supporting all things "NZ Made".











CONTENTS



Evacut Professional Quality Cutting Tools

Including Jobber Drills, Stub & Panel Drills, Long Series Drills, Reduced Shank Drills, Drill Sets, Taper Shank Drills, Masonry Drills & Hacksaw Blades
Brand Overview: The Evacut range of professional

quality cutting tools includes a comprehensive selection of precision cutting tools. The range of Silver, Black Jet and Cobalt Jobber Drills, Stub and panel drills and Reduced Shank drills are Manufactured in Kaiapoi, New Zealand.

 Jobber Drills.....4- 8	 Toolbits 21
 Stub & Panel Drills 9	 Hacksaw Blades 22
 Long Series Drills.....10 - 11	 Powersaw Blades23 - 25
 Morse Taper Shank Drills12 - 14	Drill Selection Chart 26
 Reduced Shank Drills.....15 - 17	Drill & Tapping Chart 27
 Drill Set Guide..... 18	Drill use & Maintenance 28
 Drill Sets 19	Twist Drill Technical Section29 - 30
 Masonry Drills & Set 20	

JOBBER DRILLS



*Up to 5.0mm - 10 pieces, 5.1mm to 5.4mm - 5 pieces, 5.5mm - 10mm pieces, 5.6mm to 5.9mm - 5 pieces, 6mm -10 pieces, 6.1mm to 6.4mm - 5 pieces, 6.5mm - 10 pieces, 6.6mm to 13.0mm - 5 pieces. Up to 17/64" - 10 pieces, 9/32 to 1/2"- 5 pieces



SURFACE FINISH		SILVER	BLACK JET	SILVER	COBALT
PACKAGING		BULK	BULK	PREPACK	PREPACK
MATERIAL		HSS	HSS	HSS	HSS CO.5
ORDER QTY		*AS ABOVE	*AS ABOVE	1	1
DIA (INCH)	DIA (MM)	ITEM NO.	ITEM NO.	ITEM NO.	ITEM NO.
1/64	0.35	104635			
		101016			
	0.40	104640			
	0.45	104645			
	0.50	104650			
	0.55	104655			
	0.60	104817			
	0.65	104826			
	0.70	104833			
1/32	0.75	104850			
		101028			
	0.80	104868			
	0.85	104876			
	0.90	104884			
	0.95	104892			
	1.00	105007	113573	106593	108011
	1.05	105015	113576		
	1.10	105023	113579		
3/64	1.15	105031	113581		
		101036	101389		102507
	1.20	105058	113583		
	1.25	105066	113586		
	1.30	105074	113589		
	1.35	105082	113592		
	1.40	105090	113595		
	1.45	105104	113598		
	1.50	105112	113646	106658	108020
1/16	1.55	105120	113650		
		101044	101397	102083	102511
	1.60	105139	113653		
	1.65	105147	113656		
	1.70	105155	113659		
	1.75	105163	113662		
	1.80	105171	113665		
	1.85	105198	113668		
	1.90	105201	113671		
5/64	1.95	105228	113674		
		101052	101400	102091	102520
	2.00	105236	113697	106704	108029
	2.05	105244	113699		
	2.10	105252	113701		



JOBBER DRILLS

*Up to 5.0mm - 10 pieces, 5.1mm to 5.4mm - 5 pieces, 5.5mm - 10mm pieces, 5.6mm to 5.9mm - 5 pieces, 6mm -10 pieces, 6.1mm to 6.4mm - 5 pieces, 6.5mm - 10 pieces, 6.6mm to 13.0mm - 5 pieces. Up to 17/64" - 10 pieces, 9/32 to 1/2" - 5 pieces

SURFACE FINISH		SILVER	BLACK JET	SILVER	COBALT
PACKAGING		BULK	BULK	PREPACK	PREPACK
MATERIAL		HSS	HSS	HSS	HSS CO.5
ORDER QTY		*AS ABOVE	*AS ABOVE	1	1
DIA (INCH)	DIA (MM)	ITEM NO.	ITEM NO.	ITEM NO.	ITEM NO.
	2.15	105260	113704		
	2.20	105279	113707		
	2.25	105287	113710		
	2.30	105295	113713		
	2.35	105309	113716		
3/32		101060	101419	102105	102523
	2.40	105317	113719		
	2.45	105325	113722		
	2.50	105333	113743	106755	108038
	2.55	105341	113746		
	2.60	105368	113749		
	2.65	105376	113752		
	2.70	105384	113755		
	2.75	105392	113758		
7/64		101079	101427	102113	102526
	2.80	105406	113761		
	2.85	105414	113764		
	2.90	105422	113767		
	2.95	105430	113770		
	3.00	105449	113808	106828	108047
	3.10	105457	113811		
1/8		101087	101435	102121	102529
	3.20	105465	113810		
	3.30	105473	113814		
	3.40	105481	113820		
	3.50	105503	113859	106879	108056
9/64		101095	101443	102148	102538
	3.60	105511	113862		
	3.70	105538	113867		
	3.80	105546	113873		
	3.90	105554	113878		
5/32		101109	101451	102156	102547
	4.00	105562	113905	106925	108065
	4.10	105570	113908		
	4.20	105589	113913		
	4.25		113921		
	4.30	105597	113924		
	4.40	105600	113933		
11/64		101117	101478	102164	102556
	4.50	105619	113964	106984	108074
	4.60	105627	113969		
	4.70	105635	113973		

JOBBER DRILLS



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SURFACE FINISH		SILVER	BLACK JET	SILVER	COBALT
PACKAGING		BULK	BULK	PREPACK	PREPACK
MATERIAL		HSS	HSS	HSS	HSS CO.5
ORDER QTY		*AS ABOVE	*AS ABOVE	1	1
DIA (INCH)	DIA (MM)	ITEM NO.	ITEM NO.	ITEM NO.	ITEM NO.
3/16	4.80	101125	101486	102172	102565
	4.90	105643	113978		
	5.00	105651	113984		
	5.10	105678	114014	107042	108083
	5.10	105686	114017		
13/64	5.20	101133	101494	102180	102574
	5.30	105694	114020		
	5.40	105708	114023		
	5.40	105716	114027		
	5.50	105724	114065	107093	108092
7/32	5.60	101141	101508	102199	102583
	5.70	105732	114068		
	5.70	105740	114071		
	5.80	105759	114074		
	5.90	105767	114077		
15/64	6.00	101168	101516	102202	102592
	6.00	105775	114138	107158	108101
	6.10	105783	114141		
	6.20	105791	114144		
	6.30	105805	114147		
1/4	6.40	101176	101524	102210	102601
	6.40	105813	114150		
	6.50	105821	114189	107204	108110
	6.60	105848	114192		
	6.70	105856	114196		
17/64	6.80	101184	101532	102229	102610
	6.80	105864	114200		
	6.90	105872	114203		
	7.00	105880	114235	107255	108119
	7.10	105899	114239		
9/32	7.10	101192	101540	102237	102619
	7.20	105902	114242		
	7.30	105910	114245		
	7.40	105929	114248		
	7.50	105937	114294	107328	108128
19/64	7.50	101206	101559	102245	102628
	7.60	105945	114301		
	7.70	105953	114304		
	7.80	105961	114307		
	7.90	105988	114311		
5/16		101214	101567	102253	102637



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SURFACE FINISH		SILVER	BLACK JET	SILVER	COBALT
PACKAGING		BULK	BULK	PREPACK	PREPACK
MATERIAL		HSS	HSS	HSS	HSS CO.5
ORDER QTY		*AS ABOVE	*AS ABOVE	1	1
DIA (INCH)	DIA (MM)	ITEM NO.	ITEM NO.	ITEM NO.	ITEM NO.
	8.00	105996	114340	107379	108137
	8.10	106003	114343		
	8.20	106011	114346		
	8.30	106038	114349		
21/64		101222	101575	102261	102646
	8.40	106046	114352		
	8.50	106054	114391	107425	108146
	8.60	106062	114394		
	8.70	106070	114397		
11/32		101230	101583	102288	102655
	8.80	106089	114402		
	8.90	106097	114406		
	9.00	106100	114456	107484	108155
	9.10	106119	114460		
23/64		101249	101591	102296	102664
	9.20	106127	114463		
	9.30	106135	114468		
	9.40	106143	114472		
	9.50	106151	114502	107530	108164
3/8		101257	101605	102318	102673
	9.60	106178	114505		
	9.70	106186	114508		
	9.80	106194	114512		
	9.90	106208	114516		
25/64		101265	101613	102326	102682
	10.00	106216	114553	107581	108173
	10.10	106224	114557		
	10.20	106232	114560		
	10.30	106240	114564		
13/32		101273	101621	102334	102691
	10.40	106259	114569		
	10.50	106267	114626	107654	108182
	10.60	106275	114630		
	10.70	106283	114633		
27/64		101281	101648	102342	102700
	10.80	106291	114637		
	10.90	106305	114640		
	11.00	106313	114677	107700	108191
	11.10	106321	114681		
7/16		101303	101656	102350	102709
	11.20	106348	114684		
	11.20	106348	114684		

JOBBER DRILLS

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SURFACE FINISH		SILVER	BLACK JET	SILVER	COBALT
PACKAGING		BULK	BULK	PREPACK	PREPACK
MATERIAL		HSS	HSS	HSS	HSS CO.5
ORDER QTY		*AS ABOVE	*AS ABOVE	1	1
DIA (INCH)	DIA (MM)	ITEM NO.	ITEM NO.	ITEM NO.	ITEM NO.
29/64	11.30	106356	114692		
	11.40	106364	114699		
	11.50	106372	114723	107751	108200
		101311	101664	102369	102718
	11.60	106380	114727		
15/32	11.70	106399	114732		
	11.80	106402	114735		
	11.90	106410	114738		
		101338	101672	102377	102727
	12.00	106429	114782	107816	108209
31/64	12.10	106437	114786		
	12.20	106445	114791		
	12.30	106453	114797		
		101346	101680	102385	102736
	12.40	106461	114804		
1/2	12.50	106488	114839	107867	108218
	12.60	106496	114844		
	12.70	106518	114848		
		101354	101699	102393	102745
	12.80	106526	114853		
	12.90	106534	114859		
	13.00	106542	114898	107913	108227

*Bulk and prepack merchandiser options available.



Bulk merchandiser



Prepack merchandiser



DOUBLE END



SINGLE END



STUB & PANEL DRILLS

STUB & PANEL DRILLS

SURFACE FINISH		SILVER	BLACK JET
DIA (INCH)	DIA (MM)	ITEM NO.	ITEM NO.
STUB DRILL			
	1.00		117899
3/64			111345
	1.50		117902
1/16			111347
3/64			111349
	2.00		117905
3/32			111351
	2.50		117907
7/64			111353
	3.00		117910
1/8		116769	111355
	3.30		117912
	3.50		117913
9/64			111357
5/32			111359
	4.00		117916
	4.10	116866	117917
11/64			111361
	4.50		117919
3/16			111363
	4.90	116947	117921
	5.00		117922
13/64			111365
	5.50		117925
7/32			111367
15/64			111369
	6.00		117928
1/4			111371
	6.50		117931
17/64			111373
	7.00		117934
9/32			111375
	7.50		117937
5/16			111379
	8.00		117940
21/64			111381

SURFACE FINISH		BLACK JET
DIA (INCH)	DIA (MM)	ITEM NO.
	8.50	117943
11/32		111383
	9.00	117946
23/64		111385
3/8		111387
13/32		111391
	10.50	117955
27/64	11.00	117958
7/16	11.50	117961
15/32	12.00	117964
31/64	12.50	117967
1/2		111403
	13.00	117970

PANEL DRILLS

SURFACE FINISH		SILVER
DIA (INCH)	MM	ITEM NO.
SINGLE END PANEL DRILLS - 10 BOXES		
1/8		111805
3.3	#30	115878
4.1	#20	115894
4.9	#11	115916
DOUBLE END PANEL DRILLS - 10 BOXES		
1/8		111821
3.3	#30	115975
4.1	#20	115991
4.9	#11	116017
TWIN PACK DOUBLE END PANEL DRILLS - CARDED		
1/8		111872
3.3	#30	116300
4.1	#20	116327
4.9	#11	116343
TWIN PACK SINGLE PANEL DRILLS - CARDED		
1/8		111856
3.3	#30	116297
4.1	#20	116319
4.9	#11	116335
10 PACK PANEL DRILLS		
1/8	#10	111838
3.3	#30	116127
4.1	#20	116143
4.9	#11	116155

*Prepack Merchandiser option available

LONG SERIES DRILLS



IMPERIAL PREPACK



METRIC PREPACK



SURFACE FINISH	BLACK JET			
PACKAGING	PREPACK			
MATERIAL	HSS			
ORDER QTY	1			
DIA (INCH)	OAL (METRIC)	MM	OAL (METRIC)	ITEM NO.
3/64	76.5	1.00	57	122002
		1.50	76	121029
1/16	76.5			122011
5/64	96			121037
3/32	109	2.00	109	121045
				122020
7/76	118	2.50	118	121053
				122029
1/8	131.5	3.00	131.8	121061
				122038
9/64	139	3.50	139	121088
				122047
5/32	139			121096
				121118
11/64	148	4.00	148	122056
				121126
3/16	148	4.50	148	122065
		4.50	300	127604
13/64	154	5.00	154	121134
		5.00	300	122074
7/32	154	5.50	154	127825
		5.50	300	121142
15/64	159	6.00	159	122083
		6.00	300	128066
1/4	163	6.50	163	121150
		6.50	300	121169
17/64	163	7.00	163	122092
		7.00	300	128287
9/32	163	7.50	166	121177
		7.50	300	122101
19/64	166			128503
				121185
5/16	166			122110
				128724
				121193
				122119
				128937
				121207
				121215



IMPERIAL PREPACK



METRIC PREPACK



LONG SERIES DRILLS

LONG SERIES DRILLS

SURFACE FINISH		BLACK JET		
PACKAGING		PREPACK		
MATERIAL		HSS		
ORDER QTY		1		
DIA (INCH)	OAL (METRIC)	MM	OAL (METRIC)	ITEM NO.
21/64	166	8.00	169	122128
		8.00	300	129151
11/32	169	8.50	169	122137
		8.50	300	129313
23/64	176	9.00	176	122146
		9.00	300	129488
3/8	176	9.50	176	122155
		9.50	300	129666
25/64	183	10.00	176	122164
		10.00	300	129844
13/32	183	10.50	183	122173
		10.50	300	130001
27/64	189	11.00	189	122182
		11.00	300	130184
7/16	189	11.50	196	122191
		11.50	300	130354
29/64	196	12.00	203	122200
		12.00	300	130516
15/32	196	12.50	203	122209
		12.50	300	130672
31/64	203	12.50	203	122209
		12.50	300	130672
1/2	203	13.00	210	122218
		13.00	300	130842

*Prepack Merchandiser option available

MORSE TAPER SHANK DRILLS



SURFACE FINISH BLUE		PREPACK HSS
INCH	MM	ITEM NO.
MORSE TAPER SHANK NO.1		
	10.00	D1151000
	10.50	D1151050
	11.00	D1151100
7/16		D1151111
	11.50	D1151150
29/64		D1151151
15/32		D1151191
	12.00	D1151200
31/64		D1151231
	12.50	D1151250
1/2		D1151269
	13.00	D1151300
33/64		D1151310
17/32		D1151349
	13.50	D1151350
35/64		D1151389
	14.00	D1151400

MORSE TAPER SHANK NO.2		
9/16		D1151429
	14.50	D1151450
37/64		D1151468
	15.00	D1151500
19/32		D1151508
39/64		D1151548
	15.50	D1151550
5/8		D1151588
	16.00	D1151600
41/64		D1151627
	16.50	D1151650
21/32		D1151667
	17.00	D1151700
43/64		D1151707
11/16		D1151746
	17.50	D1151750
45/64		D1151786
	18.00	D1151800
23/32		D1151826
	18.50	D1151850
47/64		D1151865
	19.00	D1151900

SURFACE FINISH BLUE		PREPACK HSS
INCH	MM	ITEM NO.
MORSE TAPER SHANK NO.2		
3/4		D1151905
49/64		D1151945
	19.50	D1151950
25/32		D1151984
	20.00	D1152000
51/64		D1152024
	20.50	D1152050
13/16		D1152064
	21.00	D1152100
53/64		D1152103
27/32		D1152143
	21.50	D1152150
55/64		D1152183
	22.00	D1152200
7/8		D1152223
	22.50	D1152250
57/64		D1152262
	23.00	D1152300
29/32		D1152302

MORSE TAPER SHANK NO.3		
59/64		D1152342
	23.50	D1152350
15/16		D1152381
	24.00	D1152400
61/64		D1152421
	24.50	D1152450
31/32		D1152461
	25.00	D1152500
63/64		D1152501
1"		D1152540
	25.50	D1152550
1 -1/64		D1152580
	26.00	D1152600
1 -1/32		D1152619
	26.50	D1152650
1 -3/64		D1152659
1 -1/16		D1152699
	27.00	D1152700
1 -5/64		D1152738
	27.50	D1152750
1 -3/32		D1152778



*0-32mm currently made in New Zealand with range extensions underway.



MORSE TAPER SHANK DRILLS

SURFACE FINISH BLUE		PREPACK HSS
INCH	MM	ITEM NO.
MORSE TAPER SHANK NO.3		
	28.00	D1152800
1- 7/64		D1152818
	28.50	D1152850
1- 1/8		D1152858
1- 9/64		D1152897
	29.00	D1152900
1- 5/32		D1152937
	29.50	D1152950
1- 11/64		D1152977
	30.00	D1153000
1- 3/16		D1153016
	30.50	D1153050
1- 13/64		D1153056
1-7/32		D1153096
	31.00	D1153100
1- 15/64		D1153135
	31.50	D1153150
1- 1/4		D1153175
MORSE TAPER SHANK NO.4		
	32.00	D1153200
	32.50	D1153250
1- 9/32		D1153254
	33.00	D1153300
1- 5/16		D1153334
	33.50	D1153350
	34.00	D1153400
1- 11/32		D1153413
	34.50	D1153450
1- 3/8		D1153493
	35.00	D1153500
	35.50	D1153550
1- 13/32		D1153572
	36.00	D1153600
	36.50	D1153650

SURFACE FINISH BLUE		PREPACK HSS
INCH	MM	ITEM NO.
MORSE TAPER SHANK NO.4		
1- 7/16		D1153651
	37.00	D1153700
1- 15/32		D1153731
	37.50	D1153750
	38.00	D1153800
1 -1/2		D1153810
1- 17/32		D1153889
	39.00	D1153900
	39.50	D1153950
1 9/16		D1153969
	40.00	D1154000
1 -19/32		D1154048
	40.50	D1154050
	41.00	D1154100
1- 5/8		D1154128
	41.50	D1154150
	42.00	D1154200
1-21/32		D1154207
	42.50	D1154250
1-11/16		D1154286
	43.00	D1154300
	43.50	D1154350
1- 23/32		D1154366
	44.00	D1154400
1- 3/4		D1154445
	44.50	D1154450
	45.00	D1154500
1- 25/32		D1154524
	45.50	D1154550
	46.00	D1154600
1- 13/16		D1154604

MORSE TAPER SHANK DRILLS



*0-32mm currently made in New Zealand with range extensions underway.

MORSE TAPER SHANK DRILLS



SURFACE FINISH BLUE		PREPACK HSS
INCH	MM	ITEM NO.
MORSE TAPER SHANK NO.4		
	46.50	D1154650
1- 27/32		D1154683
	47.00	D1154700
	47.50	D1154750
1- 7/8		D1154763
	48.00	D1154800
1- 29/32		D1154842
	48.50	D1154850
	49.00	D1154900
1- 15/16		D1154921
	49.50	D1154950
	50.00	D1155000
1- 31/32		D1155001
2"		D1155080

SURFACE FINISH BLUE		PREPACK HSS
INCH	MM	ITEM NO.
MORSE TAPER DRILL SLEEVES		
1	2	D1180012
1	3	D1180013
2	3	D1180023
2	4	D1180024
3	4	D1180034
3	5	D1180035
4	5	D1180045



REDUCED SHANK DRILLS

3/8" SHANK

MORSE TAPER SHANK DRILLS

PACKAGING	PREPACK	
MATERIAL	HSS	
ORDER QTY	1	
DIA (INCH)	DIA (MM)	ITEM NO.
3/8" SHANK		
	10.00	162957
13/32		161284
	11.00	162965
7/16		161152
	11.50	162970
15/32		161306
	12.00	162973
	12.50	162981
1/2		161179
	13.00	162987
17/32		161310
	13.50	162992
	14.00	163007
9/16		161195
	14.50	163012
	15.00	163016
19/32		161316
	15.50	163019
5/8		161217
	16.00	163023
	16.50	163030
21/32		161322
	17.00	163036
	17.50	163041
	18.00	163058
23/32		161328
	18.50	163062
	19.00	163067
3/4		161268
	19.50	163071
	20.00	163074

REDUCED SHANK DRILLS

1/2" SHANK



PACKAGING	PREPACK	
MATERIAL	HSS	
ORDER QTY	1	
DIA (INCH)	DIA (MM)	ITEM NO.
1/2" SHANK		
33/64		151009
17/32		151017
	13.50	155004
35/64		151025
	14.00	155012
9/16		151033
	14.50	155020
37/64		151041
	15.00	155039
19/32		151068
39/64		151076
	15.50	155047
5/8		151084
	16.00	155055
41/64		151092
	16.50	155063
21/32		151106
	17.00	155071
43/64		151114
11/16		151122
	17.50	155098
45/64		151130
	18.00	155101
23/32		151149
	18.50	155128
47/64		151157
	19.00	155136
3/4		151165
49/64		151173
	19.50	155144
25/32		151181
	20.00	155152
51/64		151203
	20.50	155160
13/16		151211
	21.00	155179
53/64		151238
27/32		151246



REDUCED SHANK DRILLS

1/2" SHANK

REDUCED SHANK DRILLS

PACKAGING	PREPACK	
MATERIAL	HSS	
ORDER QTY	1	
DIA (INCH)	DIA (MM)	ITEM NO.
1/2" SHANK		
	21.50	155187
55/64		151254
	22.00	155195
7/8		151262
	22.50	155209
57/64		151270
	23.00	155217
29/32		151289
59/64		151297
	23.50	155225
15/16		151300
	24.00	155233
61/64		151319
	24.50	155241
31/32		151327
	25.00	155268
63/64		151335
1"		151343
	25.50	155276
1 1/32		151357
	26.00	155284
	26.50	155292
1 1/16		151394
	27.00	155306
	27.50	155314
	28.00	155322
	28.50	155330
1 1/8		151432
	29.00	155349
	29.50	155357
1 3/16		151475
	30.00	155365
	30.50	155367
	31.00	155370
	31.50	155373
1 1/4		151513
	32.00	155376

*Merchandise option available

DRILL SET GUIDE



No 4 & No 4M
171182 & 175129



DD13M & DD19M
175307 & 175330



DD13 & DD21
171298 & 171301



No 4RM
176794



No 8RM
176801



E2 170941
E3 170968
E1 170933



E2M
174963



E3M
174971



E1M
174955



G3M
175097



50M
175137



51M
175188



2M
175056



3M
175099



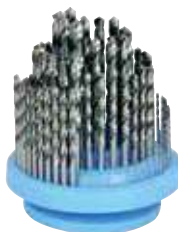
No 2
171050



No 3
171115



H1 & H1M REFILL KITS
172405 & 176405 (SILVER) & 176456 (BLACK JET)



M99
175340



EM22R
174974



H2 & H2M REFILL KITS
175340 & 176448 (SILVER) & 176462 (BLACK JET)



DRILL SETS

DRILL SETS

SURFACE FINISH				SILVER	BLACK JET	COBALT
MATERIAL				HSS		HSS CO.5
SET NO.	RANGE & RISES	NO.DRILLS	CASE	ITEM NO.	ITEM NO.	ITEM NO.
IMPERIAL						
No.2	1/16-3/8x64ths	21	Metal	171050		
No.3	1/16-1/2x64ths	29	Metal	171115	172898	
E1	1/16-1/4x64ths	13	ABS	170933	172820	
E2	1/16-3/8x64ths	21	ABS	170941	172839	170927
E3	1/16-1/2x64ths	29	ABS	170968	172847	
No.4	1/16-1/4x64ths	13	Plastic	171182		
DD13	1/16-1/4x64ths	13	Plastic Dial-a-Drill	171298		
DD21	1/16-3/8x64ths	21	Plastic Dial-a-Drill	171301		
H1	1/16-1/8x64ths	5	Plastic Tray	172405		
H2	1/16-3/16x32nds	5	Plastic Tray	172448		
METRIC						
No.2M	1.00-10.00mmx.5mm	19	Metal	175056	172936	175204
No.3M	1.00-13.00mmx.5mm	25	Metal	175099	172928	175206
50M	1.00-5.90mmx.1mm	50	Metal	175137	175190	
51M	6.00-10.00mmx.1mm	41	Metal	175188	175193	
E1M	1.0-6.5mmx.5mm	12	ABS	174955	172957	
E2M	1.0-10.0mmx.5mm	19	ABS	174963	172963	175238
E3M	1.0-13.0mmx.5mm	25	ABS	174971	172979	
G3M	1.0-13.0mm x.5mm	25	Metal	175097		
No.4M	1.0-6.5mmx.5mm	12	Plastic	175129		
DD13M	1.00-7.00mmx.5mm	13	Plastic Dial-a-Drill	175307		
DD19M	1.00-10.00mmx.5mm	19	Plastic Dial-a-Drill	175330		
H1M	1.5,2.0,2.5,3.0,3.5	5	Plastic Tray	176405	176456	
H2M	1.5,2.0,3.0,4.0,5.0	5	Plastic Tray	176448	176462	
M99 ROTARY SET 1mm - 9.9mm by 0.1mm rises 10mm - 13.0mm by 0.5 rises + 10.9, 11.9 & 12.9mm			Plastic	175340		
MISCELLANEOUS						
Ezizer - Drill & Screw Gauge Card			Plastic Card	340892		
Tip Tool Drill Kit		12		171700		
Imperial Drill Dispenser- Empty			Metal -Counter	171379		
Metric Drill Dispenser - Empty			Metal -Counter	175374		

REDUCED SHANK DRILL SETS

SET NO.	RANGE & RISES	NO.DRILLS	CASE	ITEM NO.
3/8" SHANK				
EM22R	1.0-10.0x0.5mm rises with 11.0,12.0,13.0mm-10.0mm shank	22	Plastic	174974
1/2" SHANK				
4RM	16.0, 18.0, 22.0, 25.0	4	Foam pack	176794
8RM	14.0, 15.0, 16.0, 16.5, 18.0, 20.0, 22.0, 25.0	8	Plastic	176801



MASONRY DRILLS & SET

SURFACE FINISH		SILVER (PREPACK)				
MATERIAL		TUNGSTEN CARBIDE TIPPED				
TYPE				(SF) STANDARD FIXING	(SB) SINGLE BRICK	(DB) DOUBLE BRICK
INCH (DIA)	MM (DIA)	MM (OAL)	SHANK SIZE	ITEM NO.	ITEM NO.	ITEM NO.
1/8	3.50	75		182850		
5/32	4.00	75		182877		
3/16	5.00	85		182915		
		150			181412	
		85		182931		
1/4	6.00	150			181417	
		100		182966		
		150			181420	
1/4	6.50	100		182982		
		150			181439	
		400				191086
9/32	7.00	100		183008		
5/16	8.00	117		183040		
		150			181455	
		400				191108
3/8	10.00	117	10	183067		
		150	10		181471	
		400	10			191124
7/16	11.00	150	10		181501	
		12.00	10	183105		
		150	10		181528	
1/2	13.00	400	10			191159
		117	10	183121		
		150	10		181536	
5/8	16.00	400	10			191167
		150	12		181552	
		400	12			191183
23/32	18.00	150	12		181560	
3/4	20.00	150	12		181579	
		400	12			191205
		150	12		181595	
7/8	22.00	150	12			191221
		400	12			
		150	12		181617	
1"	26.00	150	12			
		400	12			191256

*Merchandise option available

MASONRY DRILL SET

DESCRIPTION	CONTENTS	ITEM NO.
MASONRY SET		
SF6	4.0, 5.0, 5.5, 6.5, 8.0, 10.0mm	173400



TOOL BITS

M2 HIGH SPEED STEEL - ROUND

SURFACE FINISH		SILVER
ORDER QTY		5 (1 FOR > 1/2)
MATERIAL		M2 HSS
SHAPE		ROUND
INCH (DIA)	INCH (OAL)	ITEM NO.
3/32	3	245062
1/8	3	245089
1/8	4	245127
1/8	4	245143
1/8	4	245178
1/8	4	245194
1/2	4	245232
1/2	6	245245

M2 HIGH SPEED STEEL - SQUARE

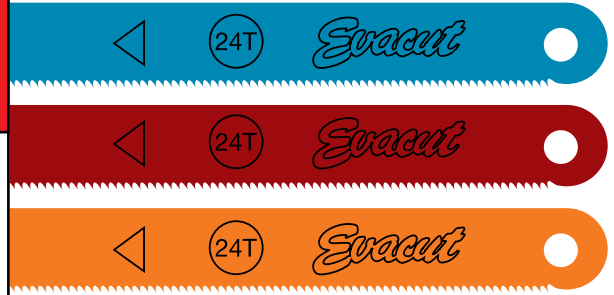
SURFACE FINISH		SILVER
ORDER QTY		5 (1 FOR > 1/2)
MATERIAL		M2 HSS
SHAPE		SQUARE
INCH (DIA)	INCH (OAL)	ITEM NO.
3/16	2 1/2	245518
1/4	2 1/2	245534
1/4	3	245539
1/4	4	245542
5/16	2 1/2	245550
5/16	4	245555
3/8	3	245577
3/8	4	245580
3/8	6	245584
3/8	4	245593
5/8	4 1/2	245615

M42 COBALT HIGH SPEED STEEL - SQUARE

SURFACE FINISH		SILVER
ORDER QTY		5 (1 FOR > 1/2)
MATERIAL		M42 COHSS
SHAPE		SQUARE
INCH (DIA)	INCH (OAL)	ITEM NO.
3/16	2 1/2	242500
3/16	3	242519
1/4	2 1/2	242535
1/4	3	242543
1/4	4	242551
5/16	2 1/2	242578
5/16	3	242586
5/16	4	242594
3/8	3	242608
3/8	4	242616
3/8	6	242624
1/2	4	242640
1/2	6	242659
5/8	4 1/2	242691
3/4	5	242748
1"	7	242829

M42 COBALT HIGH SPEED STEEL - BEVEL

SURFACE FINISH		SILVER
ORDER QTY		5 (1 FOR > 1/2)
MATERIAL		M42 COHSS
SHAPE		BEVEL
INCH (DIA)	INCH (OAL)	ITEM NO.
1/2	3/32x4-1/2	241504
5/8	3/32x5	241547
3/4	1/8x6	241598
7/8	1/8x7	241644
1"	3/16x8	241687



HACKSAWS

HAND HELD BLADES & FRAMES

SURFACE FINISH		GREY	RED
PACKAGING		BULK	PACK
MATERIAL		LOW ALLOY	FLEXIBLE
ORDER QTY		10	10
SIZE	MM	ITEM NO.	ITEM NO.
12x1/2x18	300x13x18	255149	255572
12x1/2x24	300x13x24	255157	255580
12x1/2x32	300x13x32	255165	255599
SURFACE FINISH		BLUE	
PACKAGING		BULK	TWIN PACK
MATERIAL		ALL HARD HSS	
ORDER QTY		10	1
SIZE	MM	ITEM NO.	ITEM NO.
12x1/2x14	300x13x14	255483	
12x1/2x18	300x13x18	255491	255696
12x1/2x24	300x13x24	255505	255718
12X1/2X32	300X13X32	255513	255726
SURFACE FINISH		ORANGE	
PACKAGING		BULK	TWIN PACK
MATERIAL		BI-METAL-HSS	
ORDER QTY		10	1
SIZE	MM	ITEM NO.	ITEM NO.
12x1/2x14	300x13x14	255831	
12x1/2x18	300x13x18	255858	255998
12x1/2x24	300x13x24	255866	256005
12X1/2X32	300X13X32	255874	256013

POWERSAW BLADES

POWERBLADES

SURFACE FINISH		BLUE	ORANGE	
MATERIAL		ALL HARD HSS	BI-METAL HSS	
ORDER QTY		10	10	
SIZE (INCH)	TEETH/INCH	SIZE (MM)	ITEM NO.	ITEM NO.
12" POWERSAW BLADES				
12" x 1"	10	300mm	256080	256803
12" x 1"	14	300mm	256099	256811
14" POWERSAW BLADES				
14" x 1"	10	350mm	256188	256870
14" x 1"	14	350mm	256196	256889
14" x 1.25"	6	350mm	256226	256919
14" x 1.25"	10	350mm	256234	256927
14" x 1.25"	14	350mm	256239	256935
16" POWERSAW BLADES				
16" x 1.25"	6	400mm	256307	257001
16" x 1.25"	10	400mm	256315	257028
16" x 1.25"	14	400mm	256293	257036
18" POWERSAW BLADES				
18" x 1.25"	6	450mm	256420	257095
18" x 1.25"	10	450mm	256439	257109
18" x 1.50"	6	450mm	256498	
18" x 1.50"	10	450mm	256501	





DRILL SELECTION CHART

Drill Size					Drill Size					Drill Size					Drill Size				
Metric	Fractional	Gauge	mm Equiv*	Inches Equiv*	Metric	Fractional	Gauge	mm Equiv*	Inches Equiv*	Metric	Fractional	Gauge	mm Equiv*	Inches Equiv*	Metric	Fractional	Gauge	mm Equiv*	Inches Equiv*
			0.10	.0039				2.20	.0860			4	5.31	.2090				10.80	.4252
			0.20	.0079				2.20	.0866				5.40	.2126				11.00	.4331
			0.25	.0098				2.25	.0886				5.41	.2130				11.11	.4375
			0.30	.0118				2.26	.0890				5.50	.2165			7/16	11.20	.4409
			0.34	.0135				2.30	.0906				5.56	.2188				11.50	.4528
		80	0.35	.0138				2.35	.0926				5.60	.2205				11.51	.4531
			0.37	.0145				2.37	.0935				5.70	.2244				11.80	.4646
		79	0.38	.0150				2.40	.0938				5.79	.2280				12.00	.4724
			0.40	.0156				2.44	.0960				5.80	.2283				12.20	.4803
		1/64	0.40	.0157				2.45	.0965				5.90	.2323				12.50	.4921
			0.41	.0160				2.45	.0965				5.94	.2340				12.70	.5000
		78	0.42	.0165				2.50	.0980				5.95	.2344				12.80	.5039
			0.45	.0177				2.50	.0984				6.00	.2362				13.00	.5118
		77	0.46	.0180				2.53	.0995				6.05	.2380				13.20	.5197
			0.48	.0189				2.55	.1004				6.10	.2402				13.50	.5315
			0.50	.0197				2.58	.1015				6.15	.2420				13.80	.5433
			0.51	.0200				2.60	.1024				6.20	.2441				13.89	.5469
		76	0.52	.0205				2.65	.1043				6.30	.2480				14.00	.5512
			0.53	.0210				2.70	.1063				6.40	.2520				14.25	.5610
			0.55	.0217				2.75	.1065				6.50	.2559				14.50	.5612
		74	0.57	.0225				2.75	.1063				6.53	.2570				14.75	.5807
			0.58	.0228				2.77	.1065				6.60	.2598				15.00	.5906
			0.60	.0236				2.78	.1094				6.70	.2638				15.25	.6004
		73	0.61	.0240				2.79	.1100				6.75	.2656				15.50	.6102
		72	0.64	.0250				2.80	.1102				6.80	.2677				15.75	.6201
			0.65	.0256				2.82	.1110				6.90	.2717				16.00	.6299
		71	0.66	.0260				2.85	.1122				7.00	.2756				16.20	.6406
			0.70	.0276				2.87	.1130				7.04	.2770				16.50	.6496
		70	0.71	.0280				2.90	.1142				7.10	.2795				16.60	.6562
		69	0.74	.0292				2.95	.1160				7.14	.2812				17.00	.6693
			0.75	.0295				2.95	.1162				7.14	.2812				17.00	.6693
		68	0.79	.0310				3.00	.1181				7.20	.2835				17.50	.6890
			0.80	.0315				3.05	.1200				7.30	.2874				18.00	.7087
			0.81	.0320				3.10	.1220				7.37	.2900				18.00	.7087
		67	0.84	.0330				3.18	.1250				7.40	.2913				18.50	.7284
		66	0.85	.0335				3.20	.1260				7.49	.2950				18.50	.7284
			0.85	.0335				3.26	.1285				7.50	.2953				19.00	.7480
		65	0.89	.0350				3.30	.1299				7.60	.3071				19.00	.7480
			0.90	.0354				3.40	.1339				7.70	.3020				19.50	.7677
		64	0.91	.0360				3.40	.1339				7.80	.3051				19.50	.7677
		63	0.94	.0370				3.50	.1378				7.90	.3110				20.00	.7874
			0.95	.0374				3.57	.1405				7.94	.3125				20.50	.8071
		62	0.97	.0380				3.57	.1406				8.00	.3150				21.00	.8268
		61	0.99	.0390				3.60	.1417				8.03	.3160				21.00	.8268
			1.00	.0394				3.66	.1440				8.10	.3189				21.50	.8465
		60	1.02	.0400				3.70	.1457				8.20	.3228				22.00	.8661
		59	1.04	.0410				3.73	.1470				8.20	.3228				22.50	.8858
			1.05	.0414				3.80	.1496				8.30	.3268				23.00	.9055
		58	1.07	.0420				3.86	.1520				8.33	.3281				23.50	.9252
		57	1.09	.0430				3.90	.1535				8.40	.3307				24.00	.9448
			1.10	.0433				3.90	.1535				8.40	.3307				24.50	.9646
			1.15	.0453				3.91	.1540				8.43	.3320				25.00	.9842
			1.18	.0465				3.97	.1562				8.50	.3346				25.00	.9842
		3/64	1.19	.0469				3.99	.1570				8.60	.3386				25.00	.9842
			1.20	.0472				4.00	.1575				8.61	.3390				25.40	.9844
			1.25	.0492				4.00	.1575				8.70	.3425				25.40	.9844
			1.30	.0512				4.04	.1590				8.73	.3438				25.40	.9844
			1.32	.0520				4.09	.1610				8.80	.3465				25.40	.9844
		55	1.35	.0532				4.10	.1614				8.84	.3480				25.40	.9844
			1.40	.0550				4.20	.1654				8.90	.3504				25.40	.9844
			1.45	.0571				4.22	.1660				9.00	.3543				25.40	.9844
			1.50	.0591				4.30	.1693				9.09	.3580				25.40	.9844
			1.51	.0595				4.31	.1695				9.13	.3594				25.40	.9844
		53	1.55	.0610				4.37	.1719				9.20	.3622				25.40	.9844
			1.55	.0625				4.39	.1730				9.20	.3622				25.40	.9844
			1.59	.0625				4.40	.1732				9.35	.3680				25.40	.9844
			1.60	.0630				4.40	.1732				9.50	.3740				25.40	.9844
			1.61	.0635				4.50	.1770				9.53	.3750				25.40	.9844
		52	1.65	.0650				4.50	.1772				9.56	.3770				25.40	.9844
			1.70	.0669				4.60	.1811				9.80	.3858				25.40	.9844
			1.70	.0670				4.60	.1811				9.80	.3860				25.40	.9844
		51	1.75	.0689				4.62	.1820				9.92	.3906				25.40	.9844
			1.75	.0700				4.70	.1850				10.00	.3937				25.40	.9844
		50	1.78	.0700				4.70	.1850				10.00	.3937				25.40	.9844
			1.80	.0709				4.76	.1875				10.08	.3970				25.40	.9844
			1.85	.0729				4.80	.1890				10.20	.4016				25.40	.9844
		49	1.85	.0730				4.85	.1910				10.26	.4040				25.40	.9844
			1.90	.0748				4.90	.1929				10.32	.4062				25.40	.9844
			1.93	.0760				10	.491				10.49	.4130				25.40	.9844
			1.95	.0768				9	.498				10.50	.4134				25.40	.9844
			1.98	.0781				5.00	.1969				10.72	.4219				25.40	.9844
		5/64	1.99	.0785				5.05	.1990				10.80	.4252				25.40	.9844
			2.00	.0787				5.10	.2008				11.00	.4331				25.40	.9844
			2.05	.0807				5.11	.2010				11.11	.4375				25.40	.9844
			2.06	.0810				5.16	.2031				11.20	.4409				25.40	.9844
			2.08	.0820				5.18	.2040									25.40	.9844
			2.10	.0827				5.20	.2047									25.40	.9844
			2.15	.0847				5.22	.2055									25.40	.9844
			2.18	.0860				5.30	.2087									25.40	.9844
		44	2.20	.0866				5.31	.2090									25.40	.9844

DRILL & TAPPING CHART

BSW Whitworth*		55° thread form			
Size inch	Threads per inch	Tapping Drill Sizes			
		Preferred		Alternative	
		mm	inch	mm	inch
1/16"	60	1.2	3/64	1.05	
3/32"	48	1.9		1.75	
1/8	40	2.55		2.5	3/32
5/32"	32	3.2	1/8	2.95	
3/16	24	3.7		3.6	9/64
7/32"	24	4.5		4.3	11/64
1/4	20	5.1		5.0	3/16
5/16	18	6.5		6.4	1/4
3/8	16	7.9	5/16	7.8	19/64
7/16	14	9.5		9.2	23/64
1/2	12	10.5		10.3	13/32
9/16	12			12.0	15/32
5/8	11	13.5	17/32		33/64
3/4	10	16.5	41/64	16.0	5/8
7/8	9		3/4	19.0	47/64
1	8	22.0	55/64		27/32
1-1/8	7		31/32	24.5	61/64
1-1/4	7	28.0	1-3/32	27.5	1-5/64
1-1/2	6	33.5	1-5/16	33.0	1-19/64
1-3/4	5	39.0	1-17/32	38.5	1-33/64
2	4 1/2	44.5	1-49/64	44.0	1-3/4

UNC UNS*		60° thread form			
Size inch	Threads per inch	Tapping Drill Sizes			
		Preferred		Alternative	
		mm	inch	mm	inch
No. 2	56	1.85		1.8	
No. 3	48	2.1		2.05	5/64
No. 4	40	2.35	3/32	2.3	
No. 5	40	2.65		2.6	
No. 6	32	2.85		2.8	
No. 8	32	3.5		3.4	
No. 10	24	3.9	5/32	3.8	
No. 12	24	4.5		4.4	11/64
1/8"	40	2.65		2.6	
5/32"	32	3.3		3.1	1/8
3/16"	24	3.8		3.7	
7/32"	24	4.6		4.5	
1/4	20	5.2	13/64	5.1	
5/16	18	6.6	17/64	6.5	1/4
3/8	16	8.1		8.0	5/16
7/16	14	9.5	3/8		23/64
1/2	13	11.0		10.8	27/64
9/16	12	12.2	31/64		
5/8	11	13.8	35/64	13.5	17/32
11/16"	11	15.25		15.0	19/32
3/4	10		21/32	16.5	41/64
13/16"	10		23/32	18.0	
7/8	9	19.5	49/64		
1	8		7/8	22.5	
1-1/8	7			25.0	63/64
1-1/4	7		1-7/64	28.0	
1-3/8	6	31.0	1-7/32		1-13/64
1-1/2	6		1-11/32	34.0	1-21/64

UNF UNS*		60° thread form			
Size inch	Threads per inch	Tapping Drill Sizes			
		Preferred		Alternative	
		mm	inch	mm	inch
No. 5	44	2.7		2.65	
No. 6	40	2.95		2.9	
No. 8	36	3.6	9/64	3.5	
No. 10	32	4.1		4.0	5/32
No. 12	28	4.7		4.6	
1/8"	40	2.65		2.6	
5/32"	32	3.3		3.1	1/8
3/16"	32	4.1		3.9	5/32
7/32"	32	4.9		4.8	3/16
1/4	28	5.5	7/32	5.4	
5/16	24	6.9		6.8	
3/8	24	8.5		8.4	
7/16	20	10.0	25/64	9.8	
1/2	20	11.5	29/64		
9/16	18		33/64	12.8	
5/8	18	14.5	37/64		
11/16"	16	16.0	5/8	15.75	
3/4	16	17.5	11/16		
13/16"	16		3/4	19.0	
7/8	14		13/16	20.5	
1	12	23.5	59/64		
1"	14		15/16	23.5	
1-1/8	12	26.5	1-3/64		
1-1/4	12		1-11/64	29.5	
1-3/8	12	33.0	1-19/64		
1-1/2	12	36.0	1-27/64		

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Metric ISO Coarse		60° thread form			
Size mm	Pitch mm	Tapping Drill Sizes			
		Preferred		Alternative	
		mm	inch	mm	inch
2.0	0.40	1.65		1.6	1/16
2.5	0.45	2.1		2.05	
3.0	0.50	2.55		2.5	
3.5	0.60	2.95		2.9	
4.0	0.70	3.4		3.3	
4.5	0.75	3.8		3.7	
5.0	0.80	4.3	11/64	4.2	
6.0	1.00	5.1	13/64	5.0	
7.0	1.00	6.1		6.0	15/64
8.0	1.25	6.9		6.8	17/64
9.0	1.25	7.9	5/16	7.8	
10.0	1.50	8.6	11/32	8.5	
11.0	1.50			9.5	3/8
12.0	1.75		13/32	10.2	
14.0	2.00	12.2	31/64	12.0	15/32
16.0	2.00	14.25	9/16	14.0	35/64
18.0	2.50	15.75		15.5	39/64
20.0	2.50		45/64	17.5	11/16
22.0	2.50		25/32	19.5	49/64
24.0	3.00		21.0	53/64	
27.0	3.00		61/64	24.0	15/16
30.0	3.50			26.5	1-3/64
33.0	3.50		1-11/64	29.5	1-5/32
36.0	4.00		1-17/64	32.0	1-1/4

Metric ISO Fine		60° thread form			
Size mm	Pitch mm	Tapping Drill Sizes			
		Preferred		Alternative	
		mm	inch	mm	inch
8.0	1.00	7.1	9/32	7.0	
10.00	1.25	8.9		8.8	11/32
12.0	1.50		27/64	10.5	
14.0	1.50		1/2	12.5	
16.0	1.50	14.75	37/64	14.5	
18.0	1.50		21/32	16.5	
20.0	1.50		47/64	18.5	
22.0	1.50		13/16	20.5	
24.0	2.00		7/8	22.0	

BSF		55° thread form			
Size inch	Threads per inch	Tapping Drill Sizes			
		Preferred		Alternative	
		mm	inch	mm	inch
3/16	32	4.0	5/32	3.9	
1/4	26	5.3		5.2	13/64
5/16	22	6.8	17/64	6.7	
3/8	20	8.3	21/64	8.2	5/16
7/16	18			9.5	3/8
1/2	16		7/16	11.0	27/64
9/16	16		1/2	12.5	31/64
5/8	14	14.0	35/64	13.8	17/32
3/4	12			16.5	21/32
7/8	11		25/32	19.5	49/64
1	10		57/64	22.5	7/8
1-1/4	9	28.5	1-1/8		1-7/64
1-1/2	8	34.5	1-23/64		1-11/32
1-3/4	7	40.5	1-19/32	40.0	1-37/64

BA		47.5° thread form			
Size	Pitch	Tapping Drill Sizes			
		Preferred		Alternative	
mm	mm	mm	inch	mm	inch
0	1.00	5.1	13/64	5.0	
1	0.90	4.5		4.4	11/64
2	0.81	4.0	5/32	3.9	
3	0.73	3.4		3.3	
4	0.66	3.0		2.95	
5	0.59	2.7		2.6	
6	0.53	2.35		2.25	
7	0.48	2.1		2.0	5/64
8	0.43	1.8		1.75	
9	0.39	1.55		1.5	
10	0.35	1.4		1.35	
11	0.31	1.2	3/64	1.15	
12	0.28	1.05		1.0	

Metric Conduit		60° thread form			
Size mm	Pitch mm	Tapping Drill Sizes			
		Preferred		Alternative	
		mm	inch	mm	inch
16	1.5	14.75	37/64	14.5	5/16
20	1.5		47/64	18.5	
25	1.5			23.5	59/64
32	1.5		1-13/64	30.5	
40	1.5			38.5	1-33/64
50	1.5			48.5	1-29/32

BSPT (Taper Pipe)		55° thread form			
Size inch	Threads per inch	Tapping Drill Sizes			
		With Reamer		Without Reamer	
		mm	inch	mm	inch
1/8	28	8.0	5/16	8.4	21/64
1/4	19	10.8	27/64	11.2	7/16
3/8	19	14.25	9/16	14.75	37/64
1/2	14		45/64		23/32
3/4	14	23.0	29/32		15/16
1	11	29.0	1-9/64	30.0	1-11/64
1-1/4	11	37.5	1-15/32	38.5	1-33/64
1-1/2	11	43.5	1-23/32	44.5	1-3/4
2	11		2-5/32		2-3/16

BSPF (Parallel Pipe)		55° thread form			
Size inch	Threads per inch	Tapping Drill Sizes			
		Preferred		Alternative	
		mm	inch	mm	inch
1/8	28	8.8		8.7	11/32
1/4	19	11.8	15/32	11.5	29/64
3/8	19	15.25		15.0	19/32
1/2	14	19.0	3/4		47/64
5/8	14	21.0	53/64		13/16
3/4	14	24.5	31/32		61/64
7/8	14		1-7/64	28.0	
1	11		1-7/32	30.5	
1-1/4	11	39.5	1-35/64	39.0	
1-1/2	11	45.5	1-25/32	45.0	1-49/64
2	11		2-1/4		
2-1/2	11		2-27/32		
3	11		Hole size 3.369 - 3.344 inch		

NPT (Taper Pipe)		60° thread form			
Size inch	Threads per inch	Tapping Drill Sizes			
		With Reamer		Without Reamer	
		mm	inch	mm	inch
1/8	27	8.3	21/64	8.4	
1/4	18	10.8	27/64	11.2	7/16
3/8	18	14.25	9/16	14.25	9/16
1/2	14	17.5	11/16	17.5	45/64
3/4	14	22.5	57/64	23.0	29/32
1	11-1/2	28.5	1-1/8	29.0	1-9/64
1-1/4	11-1/2	37.0	1-15/32	37.5	1-31/64
1-1/2	11-1/2	43.5	1-23/32	44.0	1-47/64
2	11-1/2		2-3/16		2-13/64

NPS (Parallel Pipe)		60° thread form			
Size inch	Threads per inch	Tapping Drill Sizes			
		NPS		NPSM	
		mm	inch	mm	inch
1/8	27	8.7	11/32	9.2	23/64
1/4	18	11.2	7/16	12.0	15/32
3/8	18	14.75	37/64	15.5	39/64
1/2	14	18.0	23/32	19.0	3/4

NPS - Pressure tight coupling thread
NPSM - Mechanical fastening thread

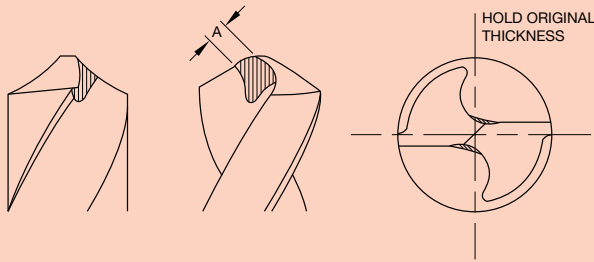
Brass		55° thread form			
Size inch	Threads per inch	Tapping Drill Sizes			
		Preferred		Alternative	
		mm	inch	mm	inch
1/4	26	5.3		5.2	13/64
5/16	26	6.9		6.8	17/64
3/8	26	8.5		8.4	21/64
7/16	26	10.2		10.0	25/64
1/2	26	11.8		11.5	29/64
9/16	26	13.2			33/64
5/8	26			14.75	37/64

DRILL USE & MAINTENANCE

WEB THINNING

On most drills the web increases in thickness towards the shank with the result that, as the drill is shortened by repeated sharpening, the chisel edge will become wider.

As the chisel edge does not cut but forces the metal out of the way, too wide a chisel edge will result in more pressure required for penetration, leading to greater heat generation and a resultant loss of life.



CUTTING FLUIDS

The use of cutting fluids is an advantage in most drilling operations and essential in some. The two main functions of the cutting fluid are lubrication and cooling.

The purpose of lubrication is to reduce friction by lubricating the surfaces tool and work, to facilitate easier sliding of the chips up the flute and to prevent the chips welding to the cutting edges.

In production work, particularly when drilling deep holes, the cooling action of the fluid is often more important than the lubrication. Overheating will shorten the life of the drill.

Intermittent feed on deep holes, where possible, not only clears the chips but permits more effective cooling.

SPEEDS

The speed of a drill is the rate at which the periphery of the drill moves in relation to the work being drilled.

As a rule, with a drill working within its speed range for a specific material, more holes between sharpenings will be achieved if the speed is reduced and less holes if the speed is increased.

Thus, for each production run, a speed must be established which will result in the highest rate of production without excessive breakdown time or drill usage. The factors governing speed are: Component material, hardness of material, depth of hole, quality required, condition of drilling machine, efficiency of cutting fluid.

FEEDS

The feed of the drill is governed by the drill size and the component material.

As with speeds, an increase in feed will lessen the number of holes produced sharpening but it is essential that a constant feed be maintained. If a drill is allowed to dwell, breakdown of the cutting edges will result.

SMALL DRILL FEEDS AND SPEEDS

Breakdown of small drills can most often be attributed to two faults: speed too high and feed too low.

A feed which will produce CHIPS not POWDER, coupled with a speed compatible with the strength of the drill is essential for small hole drilling. Feeds must be based on thickness of chip, not mm/min, and speeds adjusted accordingly. EXAMPLE: A 1 mm drill is to operate at a feed of 0.013mm /rev, drilling steel.

While the material may permit a speed of 30m/min or 9,500 RPM it is obvious that the drill could not withstand a load of 0.013mm feed at this speed; a penetration rate of 124mm/min. The correct procedure is to retain the feed but reduce the speed to obtain a penetration within the capacity of the strength of the drill.

DEEP HOLE DRILLING

When drilling deep holes, speeds and feeds should be reduced as follows:

DEPTH OF HOLE	REDUCTION PER CENT %	
	SPEED	FEED
3 times drill diameter	10	10
4 times drill diameter	30	10
5 times drill diameter	30	20
6 to 8 times drill diameter	35 to 40	20

TWIST DRILL

STANDARD	POINT RELIEVED	POINT THINNED	CENTRE CUTTING (CRANKSHAFT SPLIT STYLE)
<p>General Purpose</p>	<p>Improves chisel edge chip flow. Recommended for soft materials.</p>	<p>Reduces end thrust and improves centre cutting efficiency. Recommended for (1) Restoring chisel edge to original length after several regrinds. (2) For larger drill where the machine thrust is limited. (3) For difficult materials.</p>	<p>Minimises end thrust. Maximises centre cutting efficiency. Recommended for difficult materials and deep hole drilling.</p>
HEAVY DUTY HIGH TENSILE NOTCH	LONG POINT	FLAT POINT	DOUBLE POINT ANGLE
<p>Reduces thrust, optimises centre cutting efficiency with chisel strength. Recommended for hard and high strength materials.</p>	<p>Wood, Bakelite, Hard Rubber and Fibres.</p>	<p>Hard and Tough Materials (Manganese Steel Rail etc). And thin section material.</p>	<p>Soft or Open Grained Cast Iron</p>

BLACK JET/BLUE BULLET JOBBER DRILLS

Evacut "Black Jet" and Sutton "Blue Bullet" jobber drills provide ultimate performance and value for money. You get 2-3 times more life when drilling ferrous materials e.g.: stainless steel, high tensile steel, alloy and tool steels and cast iron.

What is the difference: a ferric-oxide (Fe₂O₃) surface coating improves heat dissipation, lowers friction and reduces material build up on the cutting edge, hole accuracy and size is improved in production applications and provides longer tooling life at the same feeds and speeds of conventional bright drills.



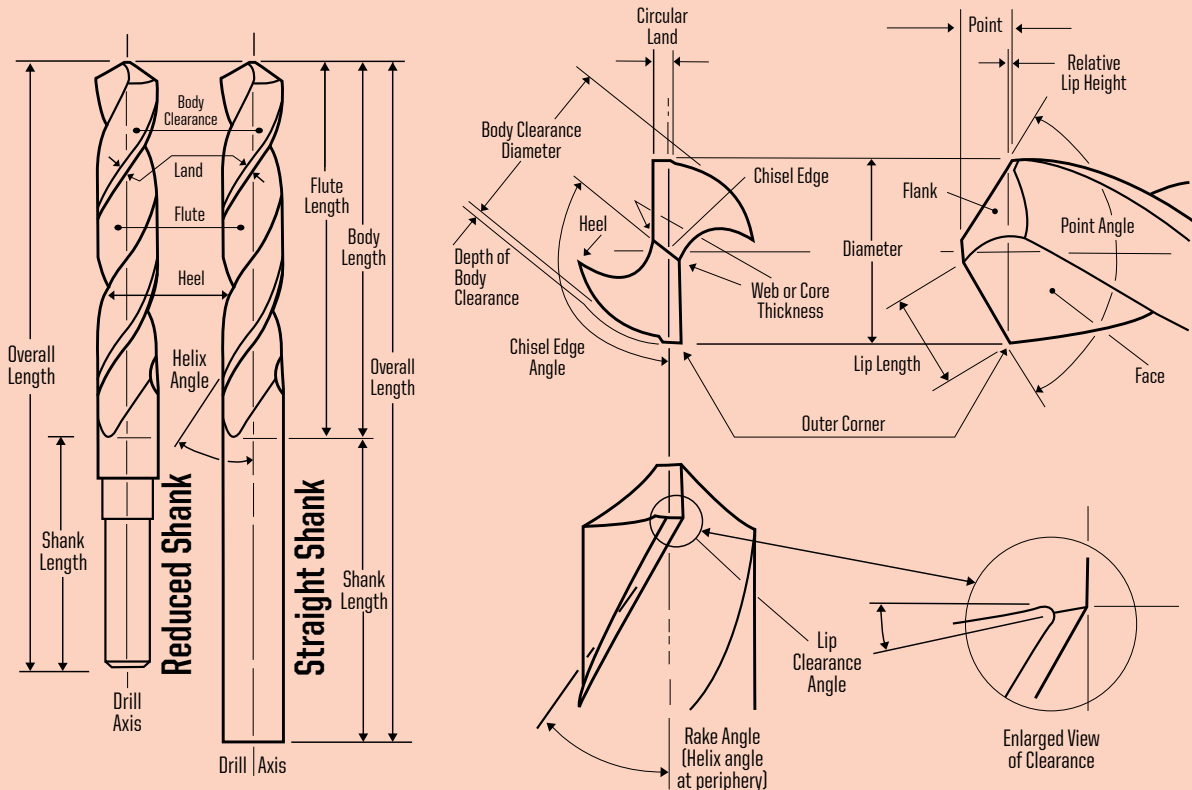
SILVER/BRIGHT FINISH JOBBER DRILLS

The silver or bright finish jobber drills are made from the same quality material as the Black Jet/Blue Bullet drills. The shiny smooth surface finish makes them more suited for repetitive drilling in non-ferrous material like aluminium and brass when the softer sticky material can bind to the cutting edge.



* Tool life and finish quality will be increased by using a suitable coolant/lubricant

TWIST DRILL



THE BODY

The portion of the drill extending from the extreme cutting end to the commencement of the shank.

BODY CLEARANCE

The portion of the body reduced in the diameter to provide diametrical clearance.

CHISEL EDGE ANGLE

The obtuse angle between the tangent to the projection of the chisel edge axis and the projection of the line through either outer corner and corresponding chisel edge corner on a plane normal to the drill axis. This angle lies in a plane normal to the drill axis.

DRILL DIAMETER

The measurement across the cylindrical lands at the outer corners of the drill.

FLUTE LENGTH

The axial length from the outer corners of the cutting lips to the extreme back end of the flutes, including point.

HELIX ANGLE

The acute angle between the tangent to the helical leading edge of the flute at a point in this edge and a plane containing (drill and helix) axis and the point in question. This angle lies in a plane normal to the radius at the point on the edge. The helix angle is usually measured at a point close to or coincident with the outer corner.

LIP CLEARANCE ANGLE

The acute angle between a plane normal to the drill axis and the tangent at a point on the lip to the drill flank, in a plane normal to the radius at the point in question. This angle is specified and measured at the outer corner.

LIP LENGTH

The minimum distance between the outer corner and the chisel edge corner or inner corner. (For a straight lip, it is the true length of the lip).

POINT ANGLE

The included angle between the projections of the lines joining the outer corners and the corresponding chisel edge corners on a plane parallel to one (or both) of these lines and the drill axis.

WEB (CORE) THICKNESS

The diameter of the circle normal to the axis through the roots of the flutes at the point end of the drill.

FLUTES

The grooves in the body of the drill which provide lips and permit the removal of chips and allow cutting fluid to reach the lips.

NOTES

NOTES

NOTES



Evacut[®]
PRECISION CUTTING TOOLS

NEW ZEALAND MANUFACTURING PLANT

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