

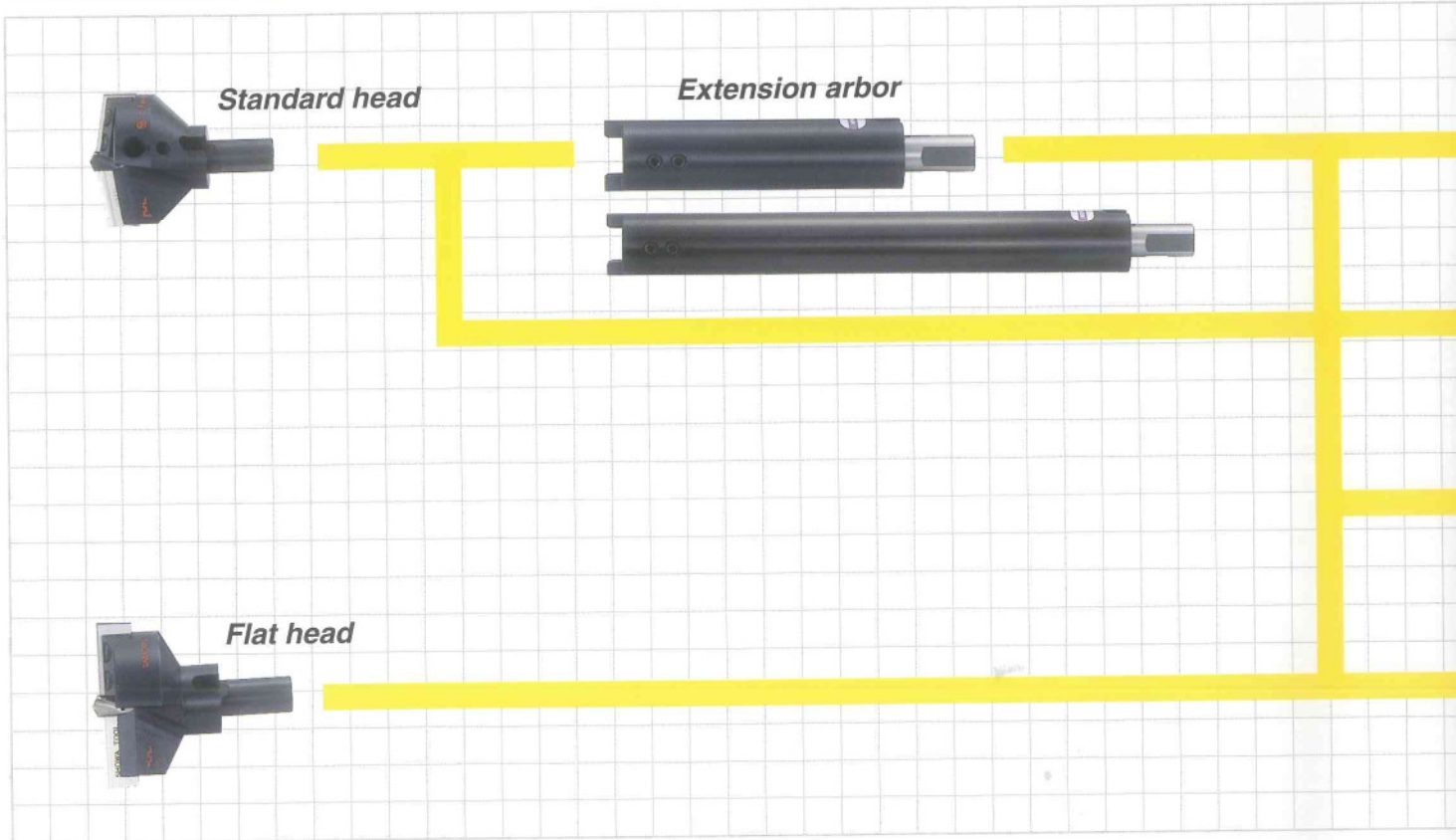
NEW SUPER DRILL

**DEEP BORING
UP TO 15 TIMES
THE DIAMETER!**



SHOWA TOOL CO., LTD.

EASY ASSEMBLY, FLEXIBLE FOR VARIOUS APPLICATIONS



Guide Values for New Super Drill

Speed (min⁻¹) Feed (mm/rev.)

Material	42CrMo4		CK35-55		1025		ST		W1-10		D2		40-50		SUS27		ALUMINUM	
	USA	4140			1025		D		W1-10		D2		40-50		SUS27			
	JIS	SCM440	S35C-55C	S25C	SS	SK3	SKD11	FC25-40	SUS27									
Dia.	Speed	Feed	Speed	Feed	Speed	Feed	Speed	Feed	Speed	Feed	Speed	Feed	Speed	Feed	Speed	Feed	Speed	Feed
50-60	160-180	0.1	160-180	0.1	190-210	0.1	210-240	0.1	80-90		70-80		140-150	0.15	75-90	0.06	450-500	0.15
60-70	140-160	0.15	150-160	0.15	170-190	0.15	190-210	0.18	80-85		55-70		120-140	0.25	60-75	0.12	400-450	0.25
70-80	110-140	0.1	120-140		155-170		170-190		70-80	0.08	50-55	0.06	100-120		55-70		350-400	
80-90	100-120		110-120		140-155		155-170		60-70		45-50		90-100		50-60		300-350	
90-100	90-110	0.15	100-110		125-140	0.1	140-155		55-60	0.15	40-50	0.1	80-90	0.15	45-50	0.06	300-330	0.15
100-110	80-100	0.1	90-100		110-125	0.18	130-140		50-55		35-40		70-80	0.35	40-45	0.13	280-300	0.35
110-120	70-90		80-90		100-110		120-130		45-50		30-35		65-70		35-40		250-290	
120-130	70-80	0.18	70-80		90-100		105-120		40-45		30-35		60-65		30-35		230-250	
130-140	65-70		65-70		80-90		90-100		35-40		25-30		50-60		25-30		200-230	
140-150	50-60	0.06	50-60		75-80		80-90		30-35		25-30		40-50		20-30		180-200	
150-160	50-60		50-60		70-75		75-85		25-35		20-25		35-45		20-25		170-180	
160-170	50-60	0.12	50-60	0.06	65-70		70-80	0.1	25-30		20-25		35-45		15-25		160-170	
170-180	45-50		45-50		60-65		65-75		25-30		20-25		35-40		15-25		150-160	
180-190	45-50	0.06	45-50	0.12	60-65		60-70		20-30		20-25		30-40		15-25		140-150	
190-200	40-45		45-50		55-60		60-65		20-25		0.06		15-20		0.05		30-40	
200-210	40-45	0.15	40-45		55-60	0.16	55-65		20-25	0.15	15-20	0.1	30-35	0.25	10-20	0.12	130-135	0.2
210-220	40-45		40-45		50-55		55-60		15-25		15-20		25-35		10-20		120-130	
220-230	35-40	0.15	40-45		50-55		50-60		15-20		15-20		25-35		10-20		115-120	
230-240	35-40		35-40		45-50		50-55		15-20		15-20		25-30		10-20		110-115	
240-250	30-35	0.15	35-40		45-50		45-55		15-20		15-20		25-30		10-20		105-110	
250-260	30-35		30-35		45-50		45-50		15-20		15-20		20-25		10-20		100-110	
260-270	30-35	30-35	30-35		40-45		40-50		15-20		10-15		20-25		10-15		100-110	

NOTE: Reduce drill speed by 30%~50% in case of quenched and tempered Chromoly, structural steel, etc. depending on their hardness.

NEW SUPER DRILL

Morse taper shank (Standard)



Morse taper shank (for oil hole holder)



Straight shank (for milling chuck)



Straight shank (for turret lathe)



ASSEMBLY



New Super Drill's cutting edge consists of three cutters a roughing (R) blade, a finishing (S) blade and a center drill. This combination of cutters gives outstanding drilling efficiency.

Procedure

- ① Insert the center drill in the center of the head.
- ② Clamp the roughing (R) blade in the seat marked with □□.

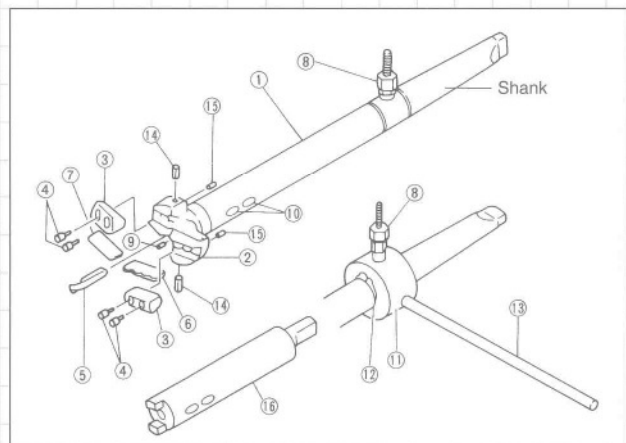
The inside edge of the roughing blade must contact tightly against the side slot of the center drill, to prevent the center drill from turning freely.

- ③ Clamp the finishing (S) blade in the seat marked S.
- ④ Finally, tighten the center drill setting screw.

New Super Drill Drilling Data

Item	Nominal Dia. (mm)	Speed (min ⁻¹)	Material : S50C Cut. speed : 20m/min Feed : 0.15		
			Cut. torque (kN·m)	Cut. power (kW)	Thrust force (kN)
A1-50~55	50	127	0.17	2.2	4.8
	55	116	0.20	2.3	5.2
A2-55~65	60	106	0.23	2.5	5.6
	65	98	0.26	2.6	6.0
B-65~80	70	91	0.30	2.8	6.4
	75	85	0.33	2.9	6.8
C-80~100	80	80	0.37	3.1	7.2
	85	75	0.41	3.2	7.5
D-100~120	90	71	0.46	3.4	7.9
	95	67	0.50	3.5	8.3
E-120~150	100	64	0.55	3.6	8.6
	105	61	0.60	3.8	9.0
F-150~180	110	58	0.64	3.9	9.3
	115	55	0.70	4.0	9.7
G-180~210	120	53	0.75	4.2	10.0
	125	51	0.80	4.3	10.4
H-210~240	130	49	0.86	4.4	10.7
	135	47	0.92	4.6	11.1
I-240~270	140	45	0.97	4.7	11.4
	145	44	1.03	4.8	11.8
A1-50~55	150	42	1.10	4.9	12.1
	155	41	1.16	5.0	12.4
A2-55~65	160	40	1.22	5.2	12.8
	165	39	1.29	5.3	13.1
B-65~80	170	37	1.36	5.4	13.4
	175	36	1.43	5.5	13.7
C-80~100	180	35	1.50	5.6	14.1
	185	34	1.57	5.8	14.4
D-100~120	190	34	1.64	5.9	14.7
	195	33	1.72	6.0	15.1
E-120~150	200	32	1.79	6.1	15.4
	205	31	1.87	6.2	15.7
F-150~180	210	30	1.95	6.3	16.0
	215	30	2.03	6.4	16.3
G-180~210	220	29	2.11	6.5	16.6
	225	28	2.19	6.7	17.0
H-210~240	230	28	2.28	6.8	17.3
	235	27	2.36	6.9	17.6
I-240~270	240	27	2.45	7.0	17.9
	245	26	2.54	7.1	18.2
A1-50~55	250	25	2.63	7.2	18.5
	255	25	2.72	7.3	18.8
A2-55~65	260	24	2.81	7.4	19.1
	265	24	2.90	7.5	19.4
B-65~80	270	24	3.00	7.6	19.7

NOTE: The above values are not ones measured in actual drilling. It is recommended to use New Super Drill on a machine having 50% or more bigger capacity than these values for efficient drilling.



Standard set

- ① Shank (Arbor)
- ② Head
- ③ Clamp
- ④ Set bolt
- ⑤ Center drill
- ⑥ Roughing blade
- ⑦ Finishing blade
- ⑧ Oil plug
- ⑨ Set screw
- ⑩ Set screw

Option

- ⑪ Oil ring
- ⑫ Snap ring
- ⑬ Stopper
- ⑭ T/C Guide
- ⑮ Set screw
- ⑯ Extension arbor

STANDARD HEAD TYPE

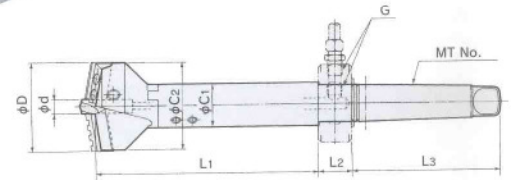
NEW SUPER DRILL

MORSE TAPER SHANK SET (Standard)

MT^{No.}-DRILL CODE[Ⓞ]MAX-^{L₁}

A to D set consists of :

1. Standard head	1pc
2. MT Drill arbor	1pc
3. Center drill	1pc
4. Drill blade	2sets
5. Oil plug	1pc
6. Wrenches	1set
7. Steel case	1pc



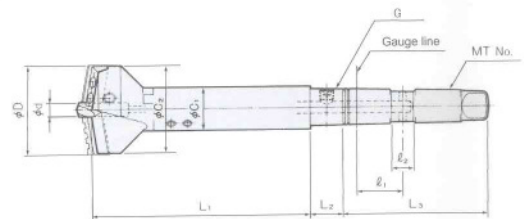
CODE		Hole dia. φD	Set blade	φd	L1	L2	L3	φC1	φC2	MT No.	G	N/W (kg)	
MT4	-A1s55-200S	54000	50~55	BK50 BK53	12	200	30	130	29	48	MT4	PT1/4	2.1
	-A2 65-200S	54001	55~65	BK55 BK60					53	53			2.2
	-B 80-200S	54002	65~80	BK65 BK73					35	63			2.7
	-C 100-200S	54003	80~100	BK80 BK90					38	78			3.2
	-D 120-200S	54004	100~120	BK100 BK110					45	98			4.3
MT5	-E 150-200S	54005	120~150	Center drill and blades sold separately	20	200	30	163	55	118	MT5	PT1/4	7.0
	-F 180-200S	54006	150~180						65	148			9.4
	-G 210-200S	54007	180~210						75	178			12.5
MT6	-H 240-300S	54008	210~240		20	300	40	228	85	207	MT6	PT3/8	23.9
	-I 270-300S	54009	240~270						95	237			28.6

MORSE TAPER SHANK SET (For Oil-Hole Adapter)

MT^{No.}-DRILL CODE[Ⓞ]MAX-^{L₁}-OH

A to D set consists of :

1. Standard head	1pc
2. MT Drill arbor	1pc
3. Center drill	1pc
4. Drill blade	2sets
5. Oil plug	1pc
6. Wrenches	1set
7. Steel case	1pc



CODE		Hole dia. φD	Set blade	φd	L1	L2	L3	l1	l2	C1	C2	MT No.	G	N/W (kg)	
MT4	-A1s55-200-OHS	54530	50~55	BK50 BK53	12	200	30	130	41	20	29	48	MT4	PT1/4	2.1
	-A2 65-200-OHS	54531	55~65	BK55 BK60							53	53			2.2
	-B 80-200-OHS	54532	65~80	BK65 BK73							35	63			2.7
	-C 100-200-OHS	54533	80~100	BK80 BK90							38	78			3.2
	-D 120-200-OHS	54534	100~120	BK100 BK110							45	98			4.3

STANDARD HEAD TYPE

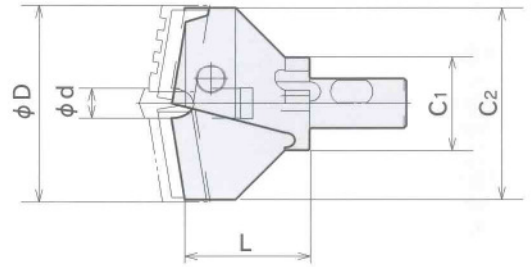
NEW SUPER DRILL

STANDARD HEAD ASS'Y

HD-DRILL CODE[Ⓜ]MAX



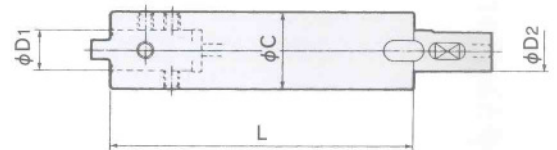
WITH BLADE CLAMPS
(Blade and center drill are sold separately.)



CODE	φ D Hole dia.		φ d	φ C1	φ C2	L	N/W (kg)		
	MIN.	MAX.							
HD	-A ₁ 55	54020	50	12	29	48	40	0.4	
	-A ₂ 65	54021	55		53	41.5	0.5		
	-B 80	54022	65		80	35	63	47	0.7
	-C 100	54023	80		100	38	78	50.5	1.0
	-D 120	54024	100		120	45	98	62	1.7
	-E 150	54025	120	150	55	118	55	2.6	
	-F 180	54026	150	180	65	148	63.5	4.3	
	-G 210	54027	180	210	75	178	75	6.7	
	-H 240	54028	210	240	85	207	75.5	10.0	
	-I 270	54029	240	270	95	237	76	11.8	

EXTENSION ARBOR (For Standard Head)

EXT-DRILL CODE-[Ⓛ]



CODE	L	φ D ₁ , D ₂	φ C	HEAD	N/W (kg)
EXT	-A-150	54151	150	A ₁ 55 - A ₂ 65	0.8
	-300	54301	300		1.6
	-B-150	54152	150	B 80	1.2
	-300	54302	300		2.3
	-C-150	54153	150	C100	1.4
	-300	54303	300		2.7
	-D-150	54154	150	D120	1.9
	-300	54304	300		3.8
	-E-150	54155	150	E150	2.8
	-300	54305	300		5.5
	-F-150	54156	150	F180	3.9
	-300	54306	300		7.8
	-G-150	54157	150	G210	5.1
	-300	54307	300		10.2
	-H-150	54158	150	H240	6.4
	-300	54308	300		12.8
	-I-150	54159	150	I 270	7.9
	-300	54309	300		16.0

Extensions are not recommended for flat head Superdrill.

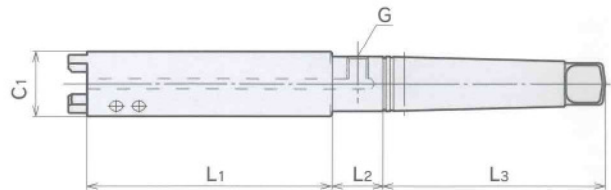
EXT - A - 150

ORDERING EXAMPLE

L
Head type
Name

MT DRILL ARBOR

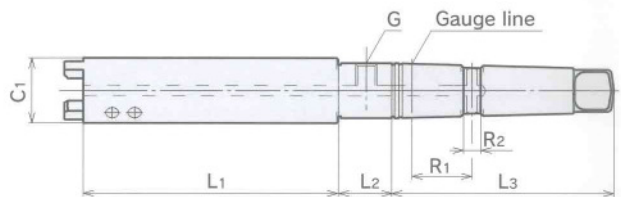
MT^{No.}-DRILL CODE-200 or 300



CODE	MT No.	C1	L1	L2	L3	G	DRILL HEAD	N/W (kg)	
MT4-A-200	54041	29	157	30	130	PT1/4	A1-55	1.4	
MT4-B-200	54042						A2-65		
MT4-C-200	54043						B80		
MT4-D-200	54044						C100		
MT5-E-200	54055	65	137		163		E150	3.8	
MT5-F-200	54056						F180	4.5	
MT5-G-200	54067						G210	5.2	
MT6-H-300	54068	85	300				40	228	PT3/8
MT6-I-300	54069			I270		11.0			

OH MT DRILL ARBOR

MT^{No.}-DRILL CODE-200-OH



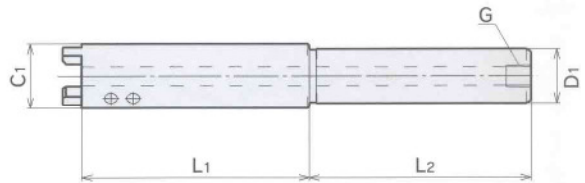
CODE	MT No.	C1	L1	L2	L3	l1	l2	G	DRILL HEAD	N/W (kg)				
MT4-A-200-OH	54141	29	157	30	130	41	20	PT1/4	A1-55	1.4				
MT4-B-200-OH	54142								A2-65					
MT4-C-200-OH	54143								B80					
MT4-D-200-OH	54144								C100					
		45	131										D120	2.5

STANDARD HEAD TYPE

NEW SUPER DRILL

ST DRILL ARBOR

ST[®]-DRILL CODE-200

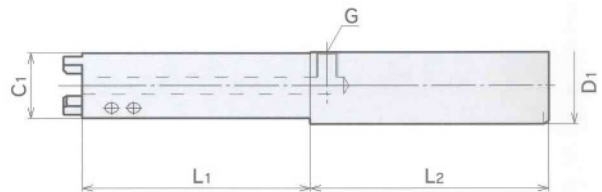


CODE		D1	C1	L1	L2	G	DRILL HEAD	N/W (kg)	
ST32 (ST125)	-A-200	54321*	32 (1-1/4")	29	157	130	PT1/4	A1-55	1.6
	-B-200	54322*		35				B80	
	-C-200	54323*		38				C100	
	-D-200	54324*		45				D120	
ST42	-A-200	54421*	42	29	157	130	PT3/8	A1-55	1.8
	-B-200	54422*		35				B80	
	-C-200	54423*		38				C100	
	-D-200	54424*		45				D120	

* When ordering inch size diameters, please add "S" to the part number - 54321S.

ST DRILL ARBOR (FOR LATHE)

ST[®]-DRILL CODE-200



CODE		D1	C1	L1	L2	G	DRILL HEAD	N/W (kg)	
ST45 (ST175)	-A-200	54451*	45 (1-3/4")	29	157	140	PT1/4	A1-55	1.9
	-B-200	54452*		35				B80	
	-C-200	54453*		38				C100	
	-D-200	54454*		45				D120	

* When ordering inch size diameters, please add "S" to the part number - 54451S.

CENTER DRILL

CD-DIAMETER

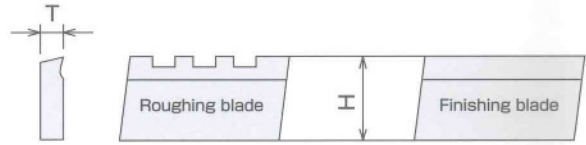


CODE	DIA.	HEAD	
CD-12	51062	12mm	A1-55, A2-65, B80, C100, D120
CD-12C*	51061	12mm	A1-55, A2-65, B80, C100, D120
CD-20	51066	20mm	E150, F180, G210, H240, I270

* "C" denotes TiN coating.

BLADE (For Standard Heads)

BK®



Each set consists of a roughing blade (R) and a finishing blade (S).

CODE	Hole dia Dmm	T	H	Blade	Head	CODE	Hole dia Dmm	T	H	Blade	Head
BK50	52002	50	(50~53)*	A19 R & S	A1s-55	BK100	52018	100	(100~110)*	D44 R & S	D-120
BK51	52032	51		A19.5 R & S		BK101	52116	101		D44.5 R & S	
BK52	52034	52		A20 R & S		BK102	52118	102		D45 R & S	
BK53	52004	53	(53~55)*	A20.5 R & S		BK103	52120	103		D45.5 R & S	
BK54	52036	54		A21 R & S		BK104	52122	104		D46 R & S	
BK55	52006	55		A21.5 R & S		BK105	52124	105		D46.5 R & S	
BK55	52006	55	(55~60)*	A21.5 R & S		BK106	52126	106		D47 R & S	
BK56	52038	56		A22 R & S		BK107	52128	107		D47.5 R & S	
BK57	52040	57		A22.5 R & S		BK108	52130	108		D48 R & S	
BK58	52042	58		A23 R & S		BK109	52132	109		D48.5 R & S	
BK59	52044	59		A23.5 R & S	BK110	52020	110	(110~120)*	D49 R & S		
BK60	52008	60	(60~65)*	A24 R & S	BK111	52134	111		D49.5 R & S		
BK61	52046	61		A24.5 R & S	BK112	52136	112		D50 R & S		
BK62	52048	62		A25 R & S	BK113	52138	113		D50.5 R & S		
BK63	52050	63		A25.5 R & S	BK114	52140	114		D51 R & S		
BK64	52052	64		A26 R & S	BK115	52142	115		D51.5 R & S		
BK65	52010	65		B26.5 R & S	BK116	52144	116		D52 R & S		
BK65	52010	65	(65~73)*	B26.5 R & S	BK117	52146	117		D52.5 R & S		
BK66	52054	66		B27 R & S	BK118	52148	118		D53 R & S		
BK67	52056	67		B27.5 R & S	BK119	52150	119		D53.5 R & S		
BK68	52058	68		B28 R & S	BK120D	52152	120		D54 R & S		
BK69	52060	69		B28.5 R & S	BK120E	52154	120				
BK70	52062	70		B29 R & S	BK125	52156	125				
BK71	52064	71		B29.5 R & S	BK130	52158	130				
BK72	52066	72		B30 R & S	BK135	52160	135				
BK73	52012	73	(73~80)*	B30.5 R & S	BK140	52162	140				
BK74	52068	74		B31 R & S	BK145	52164	145				
BK75	52070	75		B31.5 R & S	BK150E	52166	150				
BK76	52072	76		B32 R & S	BK150F	52168	150				
BK77	52074	77		B32.5 R & S	BK155	52170	155				
BK78	52076	78		B33 R & S	BK160	52172	160				
BK79	52078	79		B33.5 R & S	BK165	52174	165				
BK80	52014	80		C34 R & S	BK170	52176	170				
BK80	52014	80	(80~90)*	C34 R & S	BK175	52178	175				
BK81	52080	81		C34.5 R & S	BK180	52180	180				
BK82	52082	82		C35 R & S	BK180	52180	180				
BK83	52084	83		C35.5 R & S	BK190	52182	190				
BK84	52086	84		C36 R & S	BK200	52184	200				
BK85	52088	85		C36.5 R & S	BK210	52186	210				
BK86	52090	86		C37 R & S	BK210	52186	210				
BK87	52092	87		C37.5 R & S	BK220	52188	220				
BK88	52094	88		C38 R & S	BK230	52190	230				
BK89	52096	89		C38.5 R & S	BK240	52192	240				
BK90	52016	90	(90~100)*	C39 R & S	BK240	52192	240				
BK91	52098	91		C39.5 R & S	BK250	52194	250				
BK92	52100	92		C40 R & S	BK260	52196	260				
BK93	52102	93		C40.5 R & S	BK270	52198	270				
BK94	52104	94		C41 R & S							
BK95	52106	95		C41.5 R & S							
BK96	52108	96		C42 R & S							
BK97	52110	97		C42.5 R & S							
BK98	52112	98		C43 R & S							
BK99	52114	99		C43.5 R & S							
BK100	52018	100		D44 R & S							

* Indicates that the stated range may be achieved by adjusting ONLY the finishing blade to the desired diameter in the stated range"

Do not shift the roughing blade in any circumstance as it is used to prevent rotation of the center drill"

T/C GUIDE (For Through Hole with Standard Head)

DG-DRILL CODE



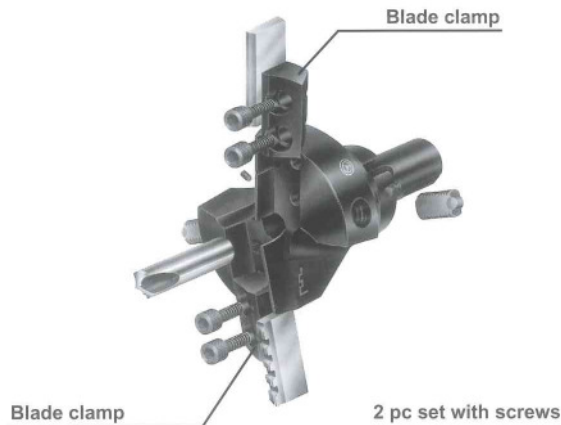
2pc/set

	CODE	HEAD	WRENCH
DG	-B80-S 51031	B-80 (φ 65-φ 73)	No wrench
	-B80-L 51034	B-80 (φ 73-φ 80)	
	-C/D 51036	C-100/D-120	w/wrench
	-E/F 51038	E-150/F-180	
	-G/H/I 51040	G-210/H-240/I-270	

T/C guides will minimize vibration when drill goes through the other end.

SPARE BLADE CLAMP

BC-DRILL CODE®MAX



FOR STANDARD HEAD

	CODE	
BC	-A1s55 51003	
	-A2 65 51004	
	-B 80 51006	
	-C 100 51008	
	-D 120 51010	
	-E 150 51012	
	-F 180 51014	
	-G 210 51016	
	-H 240 51018	
-I 270 51020		

FOR FLAT HEAD

	CODE	
BC	-A1s55FT 51045	
	-A2 65FT 51046	
	-B 80FT 51047	
	-C 100FT 51048	
	-D 120FT 51049	

BC-DRILL CODE®MAX FT

RE-GRINDING FIXTURE

SBG-100 or 200



SBG-100

	CODE	HOLE DIA
SBG	-100 51042	50~120
	-200 51044	120~270