

DTH Hammer & BIT

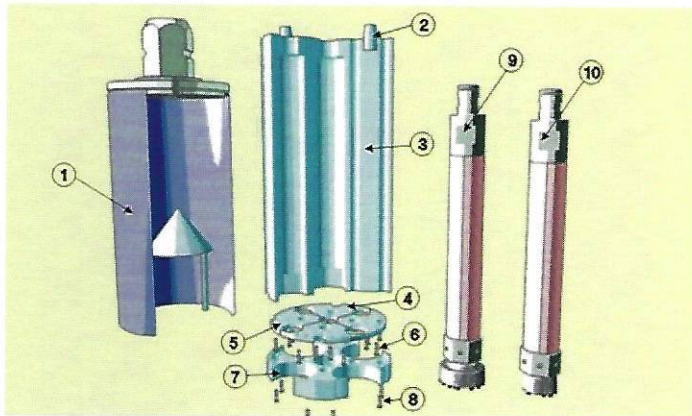


HAMMER Series



CD (Multi Hammer Super Drill) - Patented

- CD Hammer is designed to drill holes of over 2000mm diameter in a single pass. The model of CD hammer is determined according to the conditions of construction job site, hole diameter, model of drilling rig and so on.
- Kukje is producing CD hammer from 380mm up to 2000mm in drilling hole diameter.
- CD hammer drilling has been proven for the performance of efficient, low noise and high speed in the construction job sites.
- The drilling rigs such as Augur Machine, Crane Kelly Drive, Crane Top Drive, and other suitable one can be used together with CD hammer.

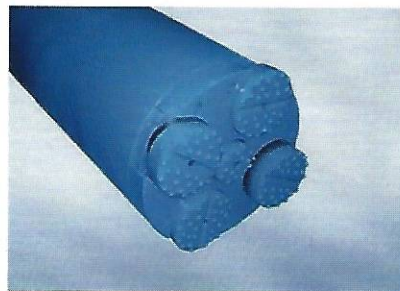


No	PARTS NAME
1	AIR TANK
2	DOWEL PIN
3	FRAME
4	NUT+SPRING+WASHER
5	BOTTOM PAD
6	BOLT
7	BOTTOM COVER
8	BOLT
9	INNER SIDE HAMMER
10	INNER CENTER HAMMER

HAMMER Feature

- The design of hammer is simplified so as to reduce the number of consumable parts and also to let operators easily carry out the hammer assembly/disassembly operations.
- Kukje Hammer and bits are manufactured under the strict quality control and manufacturing technology developed by Kukje. This assures that these products will retain longer service life under hard conditions.
- The hammer operates at highest efficiency with a blank choke. Bypass choke can be used when additional air is required for cuttings removal.

Casing information will be required when ordering. Alternative bit sizes are available.



CD (Multi Hammer Super Drill)

Model	Hole Dia	Casing Out Dia	Total Length	No. of Hammers Combined
KSD-380	380mm	366mm	1800mm	3EA
KSD-450	450mm	436mm	2100mm	4EA
KSD-508	508mm	495mm	2200mm	5EA
KSD-550	550mm	542mm	2300mm	5EA
KSD-600	600mm	570mm	2300mm	5EA
KSD-650	650mm	620mm	2300mm	5EA
KSD-800	812mm	775mm	2380mm	5EA
KSD-1000	1000mm	950mm	2380mm	5EA
KSD-1350	1350mm	1300mm	2380mm	7EA
KSD-1500	1500mm	1450mm	2380mm	7EA
KSD-2000	2000mm	1950mm	2380mm	9EA

HAMMER Specification

HAMMER SIZE		2"	3"	4"				5"		6"		
HAMMER MODEL		K060D	K080D	K090E	K090D	K090S	K090M	K110D	K110S	K140D	K140S	K140X
Bit Shank	KukJe	K060										
	Ingersoll	DHD2.5	DHD3.5	DHD340A	DHD340A			DHD350R		DHD360		
	Sandvik					SD4			SD5		SD6	XL6
	Numa											
	Halco						MACH44					
Recommended Hole DIA.	mm Inch	2½"~3¼" (65~82)	3¼"~4¼" (82~108)	4½" ~ 5" (105~127)				5½"~5¾" (130~146)		6" ~ 7½" (152~190)		
Hammer DIA.	mm	58	79	94	94	94	94	116	116	140	140	140
Cylinder Bore	mm	44.4	61	75	75	75	75	91	91	115	115	115
Piston Stroke	mm	100	100	100	100	100	100	100	100	100	100	100
Piston Weight	kg	3.0	4.5	6.0	6.5	6.0	6.0	9.4	9.4	23.0	23.0	23.0
Length (Less bit)	mm	790	839	875	925	926	910	1017	1017	1264	1280	1290
Weight (Less bit)	kg	14	28	34	33	35	33.5	60	62	104	104	105
Connection Type		50mm JIS Rod Pin	API 2% Reg.Pin	API 2% Reg.Pin				API 3½ Reg.Pin		API 3½ Reg.Pin		
Air Flow Needed SCFM (m³/min)	150PSI (10.5kg/cm²)	135 (3.8)	173 (4.9)	230 (6.5)	240 (6.8)	240 (6.8)	230 (6.5)	290 (8.2)		400 (11.3)	420 (11.9)	420 (11.9)
	200PSI (14.0kg/cm²)	198 (5.6)	242 (6.8)	300 (8.5)	315 (8.9)	315 (8.9)	300 (8.5)	410 (11.6)		545 (15.4)	580 (16.4)	580 (16.4)
	250PSI (17.6kg/cm²)	270 (7.6)	325 (9.2)	380 (10.8)	400 (11.3)	400 (11.3)	380 (10.8)	510 (14.4)		700 (19.8)	740 (20.9)	740 (20.9)
	300PSI (21.0kg/cm²)	350 (9.9)	410 (11.6)	470 (13.3)	495 (14.0)	495 (14.0)	470 (13.3)	620 (17.6)		860 (24.4)	910 (25.8)	910 (25.8)
	350PSI (24.1kg/cm²)			530 (15.0)	550 (15.5)	550 (15.5)	530 (15.0)	750 (21.2)		1025 (29)	1060 (30)	1060 (30)

HAMMER SIZE		8"		10"			12"						
HAMMER MODEL		K170S	K180D	K220	K220S	KA12	K270	K270R	K270D	K270S	K270S-D	K270N	K270SR
Bit Shank	KukJe			K220		KA12	K270	K270R					
	Ingersoll-Rand		DHD380						DHD112				
	Sandvik	SD8			SD10					SD12	SD-12D		SD12
	Numa											N120	
	Halco												
Recommended Hole DIA.	In.(mm)	7½"~10" (190~253)	7¾"~10½" (195~270)	9¾"~11½" (250~300)	9¾"~12" (250~305)	11½"~15" (300~380)	11½" ~ 17½" (300~445)						
Hammer DIA.	mm	168	182	220	226	245	275	285		275			285x275
Cylinder Bore	mm	132	148		165					216			
Piston Stroke	mm	100	100		105					105			
Piston Weight	kg	31	38		46					125			
Length (Less bit)	mm	1309	1345	1525	1480	1430	1818	1662	1750	1729	1729	1750	1728
Weight (Less bit)	kg	170	200	350	360	325	645	715	620	618	618	618	637
Connection Type		API 4½ Reg.Pin		API 5½ Reg.Pin	API 6% Reg.Pin	HEX JOINT	API 6% Reg.Pin	HEX JOINT	API 6% Reg.Pin				
Air Flow Needed SCFM (m³/min)	100PSI (7.0kg/cm²)	-	-	-	-	-	-	-	-	-	-	-	-
	150PSI (10.5kg/cm²)	510 (14.4)	610 (17.3)	690 (19.5)			880 (24.9)	880 (24.9)	880 (24.9)	880 (24.9)	880 (24.9)	880 (24.9)	880 (24.9)
	200PSI (14.0kg/cm²)	690 (19.5)	(830) 23.5	980 (27.8)			1250 (35.4)	1250 (35.4)	1250 (35.4)	1250 (35.4)	1250 (35.4)	1250 (35.4)	1250 (35.4)
	250PSI (17.6kg/cm²)	890 (25.2)	1070 (30.3)	1290 (36.5)			1700 (48.1)	1700 (48.1)	1700 (48.1)	1700 (48.1)	1700 (48.1)	1700 (48.1)	1700 (48.1)
	300PSI (21.0kg/cm²)	1090 (30.9)	1315 (37.2)	1610 (45.6)			-	-	-	-	-	-	-
	350PSI (24.1kg/cm²)	-	-	-			-	-	-	-	-	-	-

HAMMER Specification

HAMMER SIZE		14"						15"	16"			
HAMMER MODEL		K320	K320R	K320KR	K320N	K320NR	K320NS	K350	K370	K370S	K370R	K370KR
Bit Shank	KukJe	K320	K320R	K320				K350	K370		K370	K370
	Ingersoll-Rand											
	Sandvik									SD-15		
	Numa				N120	N120S	N120S					
	Halco											
Recommended Hole DIA.	In.(mm)	14" ~20" (355~508)				18"~24" (460~610)		17½"~22" (445~560)	17½"~24" (445~610)			
Hammer DIA.	mm	320	325			370X325	325	355	376			
Cylinder Bore	mm	240						260	280			
Piston Stroke	mm	115						125	125			
Piston Weight	kg	155	151	155				180	202	220	205	202
Length (Less bit)	mm	1820	1765	1820		2056	1986	1885	1895	1904	2000	1895
Weight (Less bit)	kg	905	1037	932		1008	1023	1100	1248	1250	1380	1235
Connection Type		API 7% Reg.Pin	HEX' JOINT	API 7% Reg.Pin		API 6% Reg.Pin		API 7% Reg.Pin	API 8% Reg.Pin		HEX' JOINT	API 8% Reg.Pin
Air Flow Needed SCFM (m³/min)	100PSI (7.0kg/cm²)	-	-	-	-	-	-	-	1280(36.2)			
	150PSI (10.5kg/cm²)	1150 (32.6)	1150 (32.6)	1150 (32.6)	1150 (32.6)	1150 (32.6)	1150 (32.6)	1650 (46.7)	1890(53.5)			
	200PSI (14.0kg/cm²)	1650 (46.7)	1650 (46.7)	1650 (46.7)	1650 (46.7)	1650 (46.7)	1650 (46.7)	2090 (59.2)	2730(77.3)			
	250PSI (17.6kg/cm²)	2110 (59.8)	2110 (59.8)	2110 (59.8)	2110 (59.8)	2110 (59.8)	2110 (59.8)	2680 (75.9)				
	300PSI (21.0kg/cm²)	-	-	-	-	-	-	-				

HAMMER SIZE		18"			24"				28"	35"	40"
HAMMER MODEL		K410N	K410S	K410SR	K520K	K520N	K520NR	K520NSU	K640	K760	K900
Bit Shank	KukJe				K520			K520SU	K640	K760	K900
	Ingersoll-Rand										
	Sandvik		SD18	SD18							
	Numa	N180				N240	N240				
	Halco										
Recommended Hole DIA.	In.(mm)	18½" ~ 25½" (460~650)			24" ~ 33½" (610~850)			30"~39¾" (760~1000)	28" ~38" (700~960)	34" ~ 50" (860~1270)	40" ~ 59" (1010~1500)
Hammer DIA.	mm	410		435x410	520		533x520	670x520	640	760	900
Cylinder Bore	mm	310			380				470	540	650
Piston Stroke	mm	150			150				150	150	150
Piston Weight	kg	275	263		376				520	910	1300
Length (Less bit)	mm	1993	2040	2090	1971	1975	2025	2321	2200	2214	2200
Weight (Less bit)	kg	1574	1560	2071	2440	2388	2451	3016	3800	5700	6950
Connection Type		API 8½ Reg.Pin & Box			API 8½ Reg.Pin				API 8½ Reg.Pin	HEX' JOINT	HEX' JOINT
Air Flow Needed SCFM(m³/min)	100PSI (7.0kg/cm²)	1430 (40.5)			1760(49.8)				2300 (65)	300 (93.5)	3640 (103)
	150PSI (10.5kg/cm²)	2120 (60.0)			2540(71.9)				3400 (96.2)	4750 (134.6)	5330 (151)
	200PSI (14.0kg/cm²)	3000 (85)			3580(101.4)				4800 (135.8)	6700 (189.8)	7490 (212)
	250PSI (17.6kg/cm²)	-									
	300PSI (21.0kg/cm²)										

※ The hammers over 32 inch will be customized. ※ The specification in above can be modified without an advance notice.



DTH HAMMER BITS

INTERCHANGEABLE BIT

BIT Shank Type		Recommended Hole Diameter Inch. (mm)	Standard of the KUKJE Hammer
DHD065	Ingersoll-Rand	2½"(65) ~ 3¼"(82)	K065D
COP32	Ingersoll-Rand	3¼"(82) ~ 4½"(114)	KJ32
DHD3.5	Ingersoll-Rand	3¼"(82) ~ 4¼"(108)	K080D
SECOROC 3	Secoroc	3⅝"(92) ~ 4"(102)	
A30-15 (DIGGER3)	Sandvik (TRW Mission)		
K090	KUKJE	4⅞"(105) ~ 5"(127)	K090
XL-4	Sandvik		K090X
COP42	Ingersoll-Rand		
DHD340A (COP44)	Ingersoll-Rand		K090D
SD-4 (A34-15)	Sandvik (TRW Mission)		K090S
MACH44	Halco		K090M
QL-40	Ingersoll-Rand		K090Q
DHD350R(COP54)	Ingersoll-Rand	5⅞"(127) ~ 5¾"(146)	K110D, K120D
SD-5 (A43-15)	Sandvik (TRW Mission)		K110S, K120S
MACH50	Sandvik		K110M
QL-50	Ingersoll-Rand		KJ50
DHD360 (COP64)	Ingersoll-Rand	6"(152) ~ 7½"(190)	K140D
SANDVIK360	Sandvik		
HALCO360	Halco		
SD-6 (A53-15)	Sandvik (TRW Mission)		K140S
XL-6	Sandvik		K140X
QL-60	Ingersoll-Rand	6"(152) ~ 8½"(216)	KJ60
KM60	KUKJE		KM60
MISSION6	Driltech Mission		
SD-8 (A63-15)	Sandvik (TRW Mission)	7½"(190) ~ 10"(253) 7¾"(195) ~ 10⅝"(253) 7⅞"(195) ~ 12"(305) 9⅞"(250) ~ 11⅞"(300) 9⅞"(250) ~ 12"(305) 11⅞"(300) ~ 15"(380)	K170S
DHD380 (COP84)	Ingersoll-Rand		K180D
QL-80	Ingersoll-Rand		KJ80
K220	KUKJE		K220
N100	NUMA		SIC10
SD-10	Sandvik		K220S
KA12	KUKJE		KA12
K270	KUKJE		K270
AD270H	Tone		K270T
DD10C	Koken		K270G
S-55	Ilsin (Japan)	13"(331) ~ 15"(381) 12⅞"(300) ~ 17½"(445)	
DHD112	Ingersoll-Rand		K270D
DHD112S	Ingersoll-Rand		K270DS
QL-120	Ingersoll-Rand		Kj120

SHANK TYPE

BIT Shank Type		Recommended Hole Diameter Inch. (mm)	Standard of the KUKJE Hammer
SD-12 (A100~15)	Sandvik (TRW Mission)	11 $\frac{1}{8}$ "(300) ~ 17 $\frac{1}{2}$ "(445)	K270S
SD-12D	Sandvik (TRW Mission)		K270S-D
N120	NUMA		K270N, K320N
N120S	NUMA	18"(460) ~ 24"(610)	K320NS
N125	NUMA	13 $\frac{3}{8}$ "(350) ~ 20"(508)	K270NA, K320NA
K320	KUKJE	14"(355) ~ 20"(508)	K320
K320R	KUKJE		K320R
K350	KUKJE	17 $\frac{1}{2}$ "(445) ~ 21 $\frac{5}{8}$ "(560)	K350
AD-350H	Tone		K350T
SD-15	Sandvik (TRW Mission)	17 $\frac{1}{2}$ "(445) ~ 26"(660)	K360S, K370S
K370	KUKJE	17 $\frac{1}{2}$ "(445) ~ 24"(610)	K370
K370R	KUKJE		K370R
DD14C	Koken	17 $\frac{1}{2}$ "(445) ~ 22"(560)	
QL-200	Ingersoll-Rand	18"(460) ~ 25 $\frac{1}{2}$ "(650)	410L
QL200S	Ingersoll-Rand	25"(635) ~ 34 $\frac{4}{9}$ "(875)	
N180	NUMA	18"(460) ~ 25 $\frac{1}{2}$ "(650)	K410N
SD-18	Sandvik		K410S, K410SR
DD-16A	Koken		
AD-450H	Tone	20"(508) ~ 30"(762)	K450T
K470	KUKJE	21"(535) ~ 30 $\frac{3}{8}$ "(770)	K470
KRC47	KUKJE		KRC47
N240	NUMA	24"(610) ~ 33 $\frac{1}{2}$ "(850)	K520N
K520	KUKJE		K520K
K520SU	KUKJE	30"(760) ~ 39 $\frac{3}{8}$ "(100)	K520SU
K640	KUKJE	28"(700) ~ 38"(960)	K640
KSL35	KUKJE	32"(810) ~ 46 $\frac{3}{8}$ "(1170)	KSL35
K760	KUKJE	34"(860)~50"(1270)	K760
K900	KUKJE	40"(1010) ~ 59"(1500)	K900
AD180H	Tone	7 $\frac{3}{4}$ "(195) ~ 10 $\frac{5}{8}$ "(270)	
AD220H	Tone	9 $\frac{7}{8}$ "(250) ~ 11 $\frac{5}{8}$ "(300)	
AD250	Tone	12"(305) ~ 15 $\frac{1}{6}$ "(385)	
Ad320	Tone	17 $\frac{1}{2}$ "(445) ~ 22"(560)	
DD4C	Koken	4 $\frac{3}{8}$ "(111) ~ 5 $\frac{1}{4}$ "(133)	
DD8	Koken	7 $\frac{3}{5}$ "(193) ~ 10 $\frac{5}{9}$ "(268)	
DD10	Koken	11 $\frac{7}{8}$ "(300) ~ 17 $\frac{1}{2}$ "(445)	
K060	KUKJE	2 $\frac{1}{2}$ "(65) ~ 3 $\frac{1}{4}$ "(82)	K060D

E.S.BIT – Under Reaming Systems (Extend-Shrink Bit)

Features

High Drilling Efficiency

The design of the E.S.Bit enables the Guide Bit to perform most of the drilling directly while the expanded Bit Heads perform the reaming. This minimizes loss of hammer energy and maintains a high drilling efficiency.

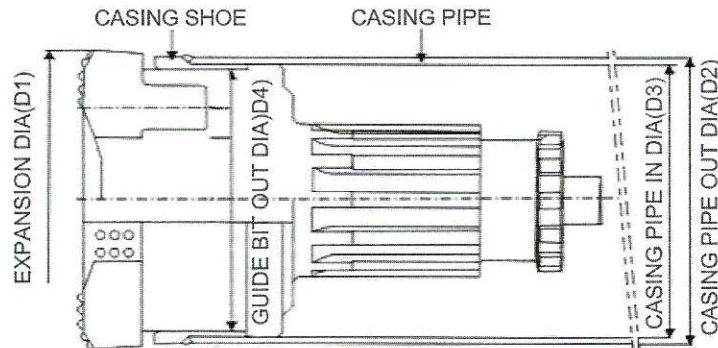
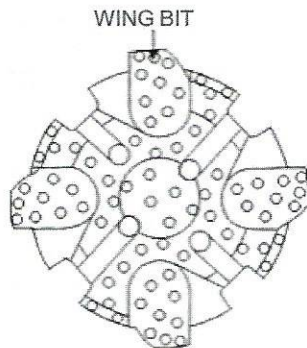
Concentric Drilling

Since E.S.Bit Heads expand and retract concentrically, they will drill and maintain a round hole. The E.S.Bit system has no tendency to wander, or to produce an offset. This feature assures a straight, round hole, equivalent to that drilled with a conventional bit.

Easily Retractable

After drilling to the required depth, the E.S.Bit Heads are retracted by rotating in the reverse direction when the bit body is lifted.

Bit Specification, Applicable casing and Hammer



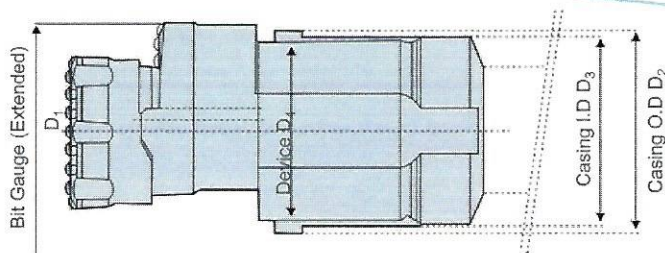
Casing information will be required when ordering. Alternative bit sizes are available.

Type	Wing	Bit Gauge		Applicable Casing pipe			Guide Bit Device O.D. D ₄ (mm)	Hammer Type
		Extended D ₁ (mm)	Retracted (mm)	Max. O.D. D ₂ (mm)	Min. I.D. D ₃ (mm)	Normal Size (in.)		
160	2	214	155	190.7	174.7	7"	157	SD5, DHD350R
190	3	230	181	216.3	200.3	8"	183	SD6, DHD360
240	3	286	232	267.4	249.4	10"	234	SD8, DHD380
280	4	336	277	318.5	297.9	12"	279	SD10, N100
315	4	373	318	355.6	336.6	14"	320	SD12, DHD112, N120, K270
365	4	425	363	406.4	387.4	16"	365	SD12, DHD112, N120, K320
410	4	478	412	457.2	435.0	18"	414	SD15, K350
460	4	530	461	508.0	482.6	20"	463	SD15, K370, SD18, N180
510	4	580	509	558.8	533.4	22"	511	SD18, N180
560	4	630	559	609.6	584.2	24"	561	SD18, N180, K470
600	4	685	600	660.4	631.8	26"	603	K520, N240
660	4	737	654	711.2	683.2	28"	656	K520, N240
710	4	784	699	758.0	730.0	30"	701	K520, N240
750	4	838	750	812.8	787.4	32"	752	K520, K640, N240
810	4	886	797	858.0	826.0	34"	799	K520, K640, N240
860	4	945	856	914.4	886.4	36"	858	K520, K640, N240
900	4	995	906	965.2	937.2	38"	908	K520, K640, K760
960	4	1050	954	1016.0	984.0	40"	956	K640, K760
1010	4	1100	1002	1066.8	1034.0	42"	1004	K640, K760

KODEX BIT

The KODEX Product Range

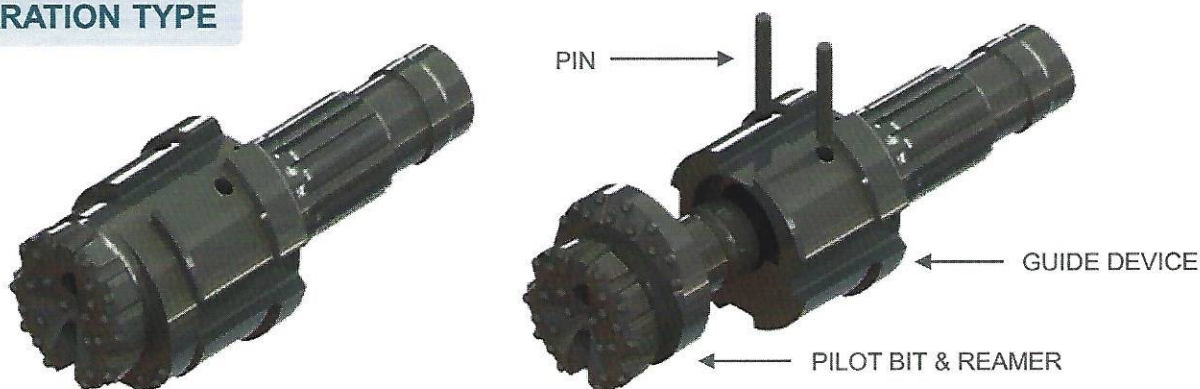
- When drilling in unstable ground conditions, collapse of side wall cause the difficult drilling work and higher expense.
- Kukje Kodex bit provides the perfect solution to these problems by drilling the ground with casing work at the same time.
- After drilling to the required depth, Kodex bit can be lifted up by rotation to the opposite direction through the casing.
- Further drilling can be achieved by changing it into a conventional DTH bit.
- Size of casing is designed to be purchased for low cost in the market.



Casing information will be required when ordering. Alternative bit sizes are available.

Type	Bit Gauge	Applicable Casing pipe			Device O.D. D ₄ (mm)	Hammer Type
	Reamed DIA. D ₁ (mm).	Max. O.D. D ₂ (mm).	Min. I.D. D ₃ (mm).	Normal Size (in.)		
90	123	115.0	102.3	4"	92	DHD3.5
115	150	141.3	126.6	5"	115	K090, DHD340A
140	185	168.3	153.2	6"	140	K110(SD5)
165	215	196.0	178.8	7"	167	K140(SD6), DHD360, XL6
190	235	222.0	202.3	8"	190	K140(SD6), DHD360, XL6
215	256	241.8	229.4	9"	212	K170(SD8), K180(DHD380)
240	290	273.1	254.5	10"	240	K170(SD8), K180(DHD380)
280	340	323.9	301.7	12"	283	K220(SD10), N100
315	375	355.6	336.6	14"	320	K270(SD12), DHD112, N120
355	440	406.4	382.4	16"	365	K320

2 SEPARATION TYPE



3 SEPARATION TYPE

