



Fixed Type / Flexible Type Angle Head



Angle head with various shank types including BT30 and HSK now available!

Angle Head Fixed Type

- Center-thru coolant is possible by adding the coolant unit and the coolant collet.
 - Higher rigidity compared with the flexible type.
- (Please refer to our sample cutting conditions shown on the back cover.)

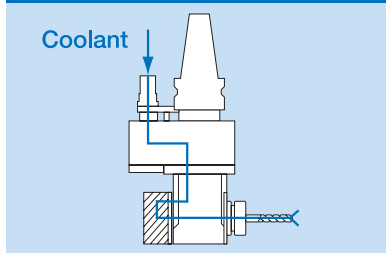
Angle Head Flexible Type

- Adjustable to any angle of 0-90°.

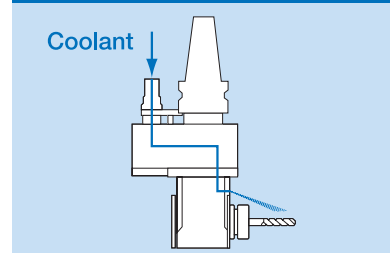
Center-thru coolant feed



The combination of the coolant unit and the coolant collet allows center-thru coolant feed.

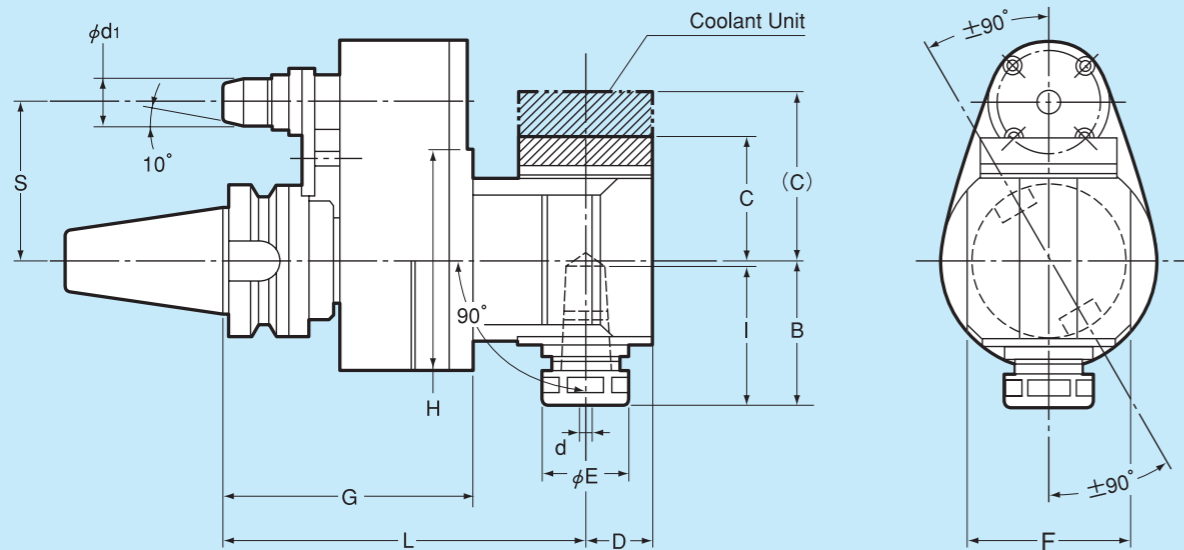


Adjustable coolant nozzle allows precise coolant supply at the cutting edge.



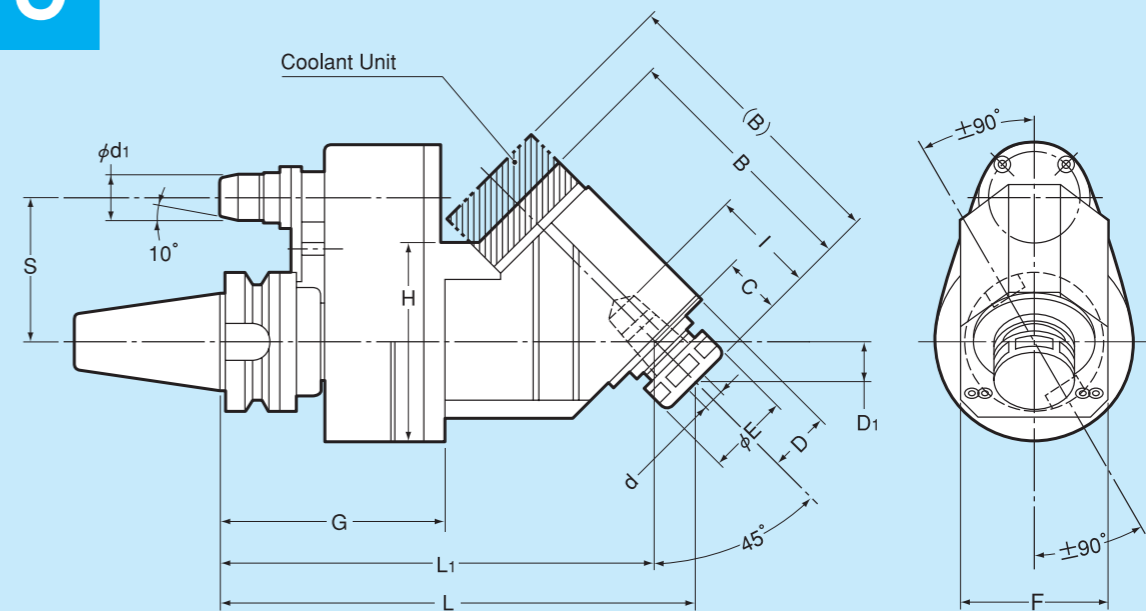
Touch The Future
NT TOOL

90°



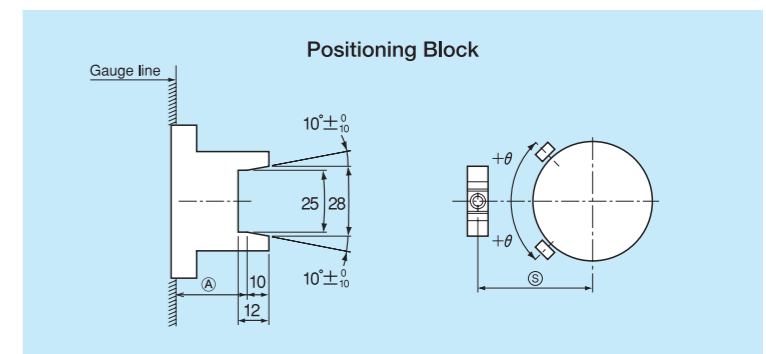
Model	d	L	B	C·(C)	D	φE	F	G	H	I	φd1	S	Collet	
BT30	-AH0790 -120- 50- ^(A)	φ0.5~7	120	42	33	17	23	45	75.3	78	40	13	50	FDC-07 (FDC-07-OH or C)
	-AH1290 -125- 50- ^(A)	φ2.5~12	125	58	44.5	22	32	47			63.5			
BT40	-150- 65- ^(A)		150											
	-180- 65- ^(A)		180											
	-AH0790 (-AH0790-OH) -210- 65- ^(A)	φ0.5~7	210	42	33 (46.5)	17	23	51			40			FDC-07 (FDC-07-OH or C)
	-240- 65- ^(A)		240											
	-270- 65- ^(A)		270											
	-150- 65- ^(A)		150											
-AH0990 (-AH0990-OH) -210- 65- ^(A)	φ2.5~9	180	53.5	44.5 (58.5)	22	26.3	58	103	90	55	19.6	65	FDC-09 (FDC-09-OH or C)	
-240- 65- ^(A)		240												
-150- 65- ^(A)		150												
-AH1690 (-AH1690-OH) -180- 65- ^(A)	φ3.5~16	180	59	51 (64.5)	28	36.3	67	103		59			FDC-16 (FDC-16-OH or C)	
-210- 65- ^(A)		210												
BT50	-165- 80- ^(A)		165											
	-195- 80- ^(A)		195											
	-225- 80- ^(A)		225											
	-255- 80- ^(A)		255											
	-AH0790 (-AH0790-OH) -285- 80- ^(A)	φ0.5~7	285	42	33 (46.5)	17	23	51			40			FDC-07 (FDC-07-OH or C)
	-165-110- ^(A)		165											
	-195-110- ^(A)		195											
	-225-110- ^(A)		225											
	-255-110- ^(A)		255											
	-285-110- ^(A)		285											
	-165- 80- ^(A)		165											
	-195- 80- ^(A)		195											
	-225- 80- ^(A)		225											
	-AH0990 (-AH0990-OH) -255- 80- ^(A)	φ2.5~9	255	53.5	44.5 (58.5)	22	26.3	58	135	90	55			FDC-09 (FDC-19-OH or C)
-165-110- ^(A)		165												
-195-110- ^(A)		195												
-225-110- ^(A)		225												
-255-110- ^(A)		255												
-285-110- ^(A)		285												
-165- 80- ^(A)		165												
-195- 80- ^(A)		195												
-225- 80- ^(A)		225												
-AH1690 (-AH1690-OH) -165-110- ^(A)	φ3.5~16	165	59	51 (64.5)	28	36.3	67	118		59			FDC-16 (FDC-16-OH or C)	
-195-110- ^(A)		195												
-225-110- ^(A)		225												
-180- 80- ^(A)		180												
-210- 80- ^(A)		210												
-AH2290 (-AH2290-OH) -240- 80- ^(A)	φ3.5~22φ	240	69	57 (70.5)	34.5	46.3	75						FDC-22 (FDC-22-OH or C)	
-180-110- ^(A)		180												
-210-110- ^(A)		210								117	113			
-240-110- ^(A)		240												
-AH2590 (-AH2590-OH) -195- 80- ^(A)	3.5~22	195	90	73 (86.5)	45	65	90						80	
-195-110- ^(A)													110	

45°

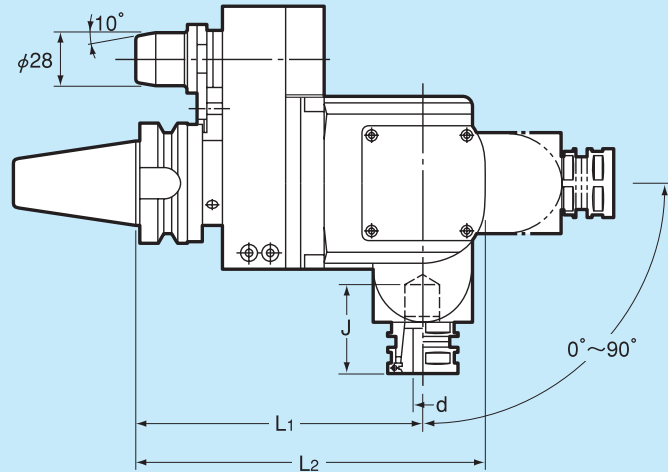
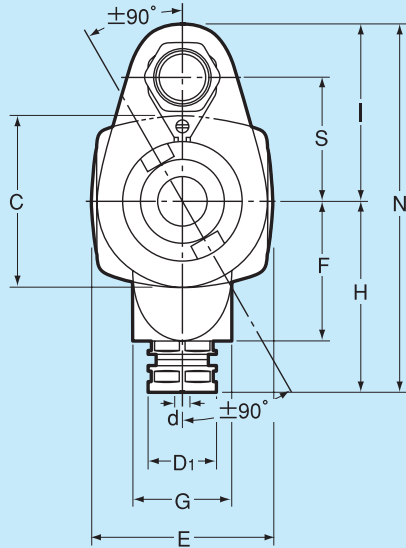


Model	d	L	L1	B·(B)	C	D	D1	φE	F	G	H	I	φd1	S	Collet	
BT40	-AH0745 (-AH0745-OH) -195- 65- ^(A)	φ0.5~7	195	179.5	88.5 (102)	22	17	15.6	23	51			35		FDC-07 (FDC-07-OH)	
	-215- 65- ^(A)		215	199.5												
	-245- 65- ^(A)		245	229.5												
	-205- 65- ^(A)		205	186.5												
	-AH0945 (-AH0945-OH) -230- 65- ^(A)	φ2.5~9	230	211.5	104 (118)	27	22	19.1	26.3	58	103	90	45	19.6	65	FDC-09 (FDC-09-OH)
	-260- 65- ^(A)		260	241.5												
-AH1645 (-AH1645-OH) -215- 65- ^(A)	φ3.5~16	215	197	113.5 (127)	26	28	18.4	36.3	67			53			FDC-16 (FDC-16-OH)	
-245- 65- ^(A)		245	227													
BT50	-210- 80- ^(A)		210	194.5												
	-230- 80- ^(A)		230	214.5												
	-AH0745 (-AH0745-OH) -260- 80- ^(A)	φ0.5~7	260	244.5	88.5 (102)	22	17	15.6	23	51			35		FDC-07 (FDC-07-OH)	
	-210-110- ^(A)		210	194.5												
	-230-110- ^(A)		230	214.5												
	-260-110- ^(A)		260	244.5												
	-220- 80- ^(A)		220	201.5												
	-245- 80- ^(A)		245	226.5												
	-AH0945 (-AH0945-OH) -275- 80- ^(A)	φ2.5~9	275	256.5	104 (118)	27	22	19.1	26.3	58	118	90	45	28	80	FDC-09 (FDC-09-OH)
	-220-110- ^(A)		220	201.5												
	-245-110- ^(A)		245	226.5												
	-275-110- ^(A)		275	256.5												
-230- 80- ^(A)		230	212													
-AH1645 (-AH1645-OH) -260- 80- ^(A)	φ3.5~16	260	242	113.5 (127)	26	28	18.4	36.3	67			53		FDC-16 (FDC-16-OH)		
-230-110- ^(A)		230	212													
-260-110- ^(A)		260	242													

- Item numbers in brackets designate center-thru coolant models.
- Max. operating speed for AH0790 and AH0745 models is 6000 min⁻¹. Max. operating speed for all other models is 3000 min⁻¹.
- When ordering, please specify ^(A) dimension. (See positioning block illustration to the right)
- AH1690 AH1645 and AH2290 models allow M3-M22 tapping with the use of an optional tapping chuck.



0°~90°



Model	d	L ₁	L ₂	φD ₁	C	E	F	G	H	I	J	N	S	Collet												
BT40	-AHS07 -150- 60- [Ⓐ]	0.5~ 7.0	150	183	23	90	96	73	52	100	93	65	193	65	FDC-07											
	-AHS09 -150- 60- [Ⓐ]	2.5~ 9.0			26							47			FDC-09											
	-AHS16 -150- 60- [Ⓐ]	3.5~16.0			36							47			FDC-16											
BT50	-AHS07 -165- 80- [Ⓐ]	0.5~ 7.0	165	198	23	90	96	73	52	100	108	65	208	80	FDC-07											
	-AHS09 -165- 80- [Ⓐ]	2.5~ 9.0			26							47			FDC-09											
	-AHS16 -165- 80- [Ⓐ]	3.5~16.0			36							47			FDC-16											
	-AHS07 -165-110- [Ⓐ]	0.5~ 7.0			23							138			238	110	FDC-07									
	-AHS09 -165-110- [Ⓐ]	2.5~ 9.0			26												FDC-09									
	-AHS16 -165-110- [Ⓐ]	3.5~16.0			36												FDC-16									
	-AHL16 -165- 80- [Ⓐ]	3.5~16.0			36												70	218	80	FDC-16						
	-AHL22 -165- 80- [Ⓐ]	3.5~22.0			46												65			FDC-22						
	-AHL16 -165-110- [Ⓐ]	3.5~16.0			205												36	110	73	78	66	110	70	248	110	FDC-16
	-AHL22 -165-110- [Ⓐ]	3.5~22.0																					46			65

The Angle Head Flexible Type is adjustable to any angle of 0-90° without any additional options or expense.

1. Suitable for drilling and light milling.
2. Our AHS16 and AHL22 models allow M3-M22 tapping with the use of an optional tapping chuck.
3. Max. operating speed is 3,000 min⁻¹.
4. When ordering, please specify [Ⓐ] dimension. (See positioning block illustration to the left.)

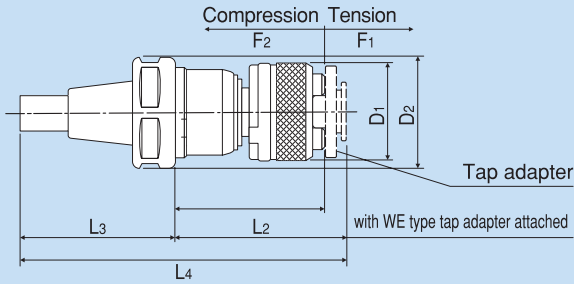
Please note :

Angle Head Flexible Type is not available in center-thru or side coolant.

Positioning Block

1. If using your own positioning block, specify [Ⓐ] dimension when ordering. Please note that the angle of the positioning block should be 10°.
2. If purchasing a positioning block from NT, please specify the machine tool builder and the M/C model name.

Tapping Chuck (Option)



Type	Tap adapter size	L ₁	L ₂	L ₃	L ₄	D ₁	D ₂	Axial compensation		Holder
								F ₁	F ₂	
TPC16-1	1	49.5	56.5	64.5	121	32	36	10	2	AHS16 AHL16 AH1645 AH1690
TPC22-1				70	126.5		46			AHL22 AH2290
TPC22-2	2	69	80	70	150	50				

- Tapping chuck TPC 16-1(for M3-M15) is for use with angle head AH1690, AH1645 and AHS16.
- Tapping chucks TPC22-1(for M3-M15) and TPC 22-2(forM8-M22) are for use with angle head AH2290 and AHL22.
- All tapping chucks accept both Bilz-NT and Bilz tap adaptors.

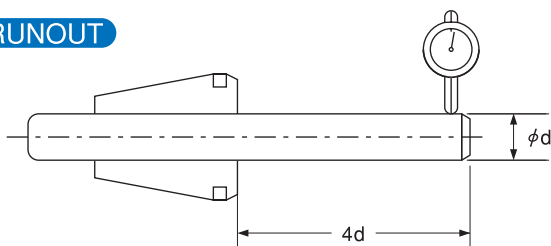
Coolant Collet Model FDC-OH or FDC-C

Other sizes not listed below are available in 0.1mm increments upon request.

Collet Model Tool's Shank	FDC-07-OH(or C)	FDC-09-OH(or C)	FDC-12-OH(or C)	FDC-16-OH(or C)	FDC-22-OH(or C)
φ 3.0	FDC-03007-OH(or C)	FDC-03009-OH(or C)	FDC-03012-OH(or C)	—	—
φ 3.5	FDC-03507-OH(or C)	FDC-03509-OH(or C)	FDC-03512-OH(or C)	—	—
φ 4.0	FDC-04007-OH(or C)	FDC-04009-OH(or C)	FDC-04012-OH(or C)	—	—
φ 4.2	FDC-04207-OH(or C)	FDC-04209-OH(or C)	FDC-04212-OH(or C)	—	—
φ 4.5	FDC-04507-OH(or C)	FDC-04509-OH(or C)	FDC-04512-OH(or C)	—	—
φ 5.0	FDC-05007-OH(or C)	FDC-05009-OH(or C)	FDC-05012-OH(or C)	—	—
φ 5.5	FDC-05507-OH(or C)	FDC-05509-OH(or C)	FDC-05512-OH(or C)	—	—
φ 6.0	FDC-06007-OH(or C)	FDC-06009-OH(or C)	FDC-06012-OH(or C)	FDC-06016-OH(or C)	FDC-06022-OH(or C)
φ 6.5	FDC-06507-OH(or C)	FDC-06509-OH(or C)	FDC-06512-OH(or C)	FDC-06516-OH(or C)	FDC-06522-OH(or C)
φ 6.8	FDC-06807-OH(or C)	FDC-06809-OH(or C)	FDC-06812-OH(or C)	FDC-06816-OH(or C)	FDC-06822-OH(or C)
φ 7.0	FDC-07007-OH(or C)	FDC-07009-OH(or C)	FDC-07012-OH(or C)	FDC-07016-OH(or C)	FDC-07022-OH(or C)
φ 7.5		FDC-07509-OH(or C)	FDC-07512-OH(or C)	FDC-07516-OH(or C)	FDC-07522-OH(or C)
φ 8.0		FDC-08009-OH(or C)	FDC-08012-OH(or C)	FDC-08016-OH(or C)	FDC-08022-OH(or C)
φ 8.5		FDC-08509-OH(or C)	FDC-08512-OH(or C)	FDC-08516-OH(or C)	FDC-08522-OH(or C)
φ 9.0		FDC-09009-OH(or C)	FDC-09012-OH(or C)	FDC-09016-OH(or C)	FDC-09022-OH(or C)
φ 9.5			FDC-09512-OH(or C)	FDC-09516-OH(or C)	FDC-09522-OH(or C)
φ10.0			FDC-10012-OH(or C)	FDC-10016-OH(or C)	FDC-10022-OH(or C)
φ10.2			FDC-10212-OH(or C)	FDC-10216-OH(or C)	FDC-10222-OH(or C)
φ10.5			FDC-10512-OH(or C)	FDC-10516-OH(or C)	FDC-10522-OH(or C)
φ11.0			FDC-11012-OH(or C)	FDC-11016-OH(or C)	FDC-11022-OH(or C)
φ11.5			FDC-11512-OH(or C)	FDC-11516-OH(or C)	FDC-11522-OH(or C)
φ12.0			FDC-12012-OH(or C)	FDC-12016-OH(or C)	FDC-12022-OH(or C)
φ13.0			—	FDC-13016-OH(or C)	FDC-13022-OH(or C)
φ16.0			—	FDC-16016-OH(or C)	FDC-16022-OH(or C)
φ18.0			—	—	FDC-18022-OH(or C)
φ20.0			—	—	FDC-20022-OH(or C)
φ22.0			—	—	FDC-22022-OH(or C)
Spanner	S-0	S-1L	S-3L	S-4L	S-5L



RUNOUT



Accuracy class	A A	A	B
Chucking accuracy at 4d	5μm	10μm	15μm

BT50-AH2290-180-80 Cutting examples						
Tool	2-flute HSS endmill (dia. 10mm)			2-flute HSS endmill (dia. 20mm)		
Workpiece material	S55C	FC250	A2017	S55C	FC250	A2017
Depth of cut (mm)	11	12	11	4	5	5
Rotational speed (min ⁻¹)	630	1,000	2,000	400	500	1,000
Cutting speed (m/min)	20	40	63	25	31	63
Feed (mm/min)	60	100	200	60	50	100
Feed per rotation (mm/rev)	0.09	0.1	0.1	0.15	0.1	0.1

Standard Collet Model FDC

Collet Model	FDC-07	FDC-09	FDC-12	FDC-16	FDC-22	
Tool's Shank						
φ 1.0 ~ 0.5	FDC-01007	—	—	—	—	φ16.5 ~ 16.0 FDC-16522
φ 1.5 ~ 1.0	FDC-01507	—	—	—	—	φ17.0 ~ 16.5 FDC-17022
φ 2.0 ~ 1.5	FDC-02007	—	—	—	—	φ17.5 ~ 17.0 FDC-17522
φ 2.5 ~ 2.0	FDC-02507	—	—	—	—	φ18.0 ~ 17.5 FDC-18022
φ 3.0 ~ 2.5	FDC-03007	FDC-03009	FDC-03012	—	—	φ18.5 ~ 18.0 FDC-18522
φ 3.5 ~ 3.0	FDC-03507	FDC-03509	FDC-03512	—	—	φ19.0 ~ 18.5 FDC-19022
φ 4.0 ~ 3.5	FDC-04007	FDC-04009	FDC-04012	FDC-04016	FDC-04022	φ19.5 ~ 19.0 FDC-19522
φ 4.5 ~ 4.0	FDC-04507	FDC-04509	FDC-04512	FDC-04516	FDC-04522	φ20.0 ~ 19.5 FDC-20022
φ 5.0 ~ 4.5	FDC-05007	FDC-05009	FDC-05012	FDC-05016	FDC-05022	φ20.5 ~ 20.0 FDC-20522
φ 5.5 ~ 5.0	FDC-05507	FDC-05509	FDC-05512	FDC-05516	FDC-05522	φ21.0 ~ 20.5 FDC-21022
φ 6.0 ~ 5.5	FDC-06007	FDC-06009	FDC-06012	FDC-06016	FDC-06022	φ21.5 ~ 21.0 FDC-21522
φ 6.5 ~ 6.0	FDC-06507	FDC-06509	FDC-06512	FDC-06516	FDC-06522	φ22.0 ~ 21.5 FDC-22022
φ 7.0 ~ 6.5	FDC-07007	FDC-07009	FDC-07012	FDC-07016	FDC-07022	—
φ 7.5 ~ 7.0	—	FDC-07509	FDC-07512	FDC-07516	FDC-07522	—
φ 8.0 ~ 7.5	—	FDC-08009	FDC-08012	FDC-08016	FDC-08022	—
φ 8.5 ~ 8.0	—	FDC-08509	FDC-08512	FDC-08516	FDC-08522	—
φ 9.0 ~ 8.5	—	FDC-09009	FDC-09012	FDC-09016	FDC-09022	—
φ 9.5 ~ 9.0	—	—	FDC-09512	FDC-09516	FDC-09522	—
φ10.0 ~ 9.5	—	—	FDC-10012	FDC-10016	FDC-10022	—
φ10.5 ~ 10.0	—	—	FDC-10512	FDC-10516	FDC-10522	—
φ11.0 ~ 10.5	—	—	FDC-11012	FDC-11016	FDC-11022	—
φ11.5 ~ 11.0	—	—	FDC-11512	FDC-11516	FDC-11522	—
φ12.0 ~ 11.5	—	—	FDC-12012	FDC-12016	FDC-12022	—
φ12.5 ~ 12.0	—	—	—	FDC-12516	FDC-12522	—
φ13.0 ~ 12.5	—	—	—	FDC-13016	FDC-13022	—
φ13.5 ~ 13.0	—	—	—	FDC-13516	FDC-13522	—
φ14.0 ~ 13.5	—	—	—	FDC-14016	FDC-14022	—
φ14.5 ~ 14.0	—	—	—	FDC-14516	FDC-14522	—
φ15.0 ~ 14.5	—	—	—	FDC-15016	FDC-15022	—
φ15.5 ~ 15.0	—	—	—	FDC-15516	FDC-15522	—
φ16.0 ~ 15.5	—	—	—	FDC-16016	FDC-16022	—
Spanner	S-0	S-1L	S-3L	S-4L	S-5L	— S-5L



加工の問題点をお知らせください。お客様とともに、問題解決にむけてご協力させていただきます。

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