

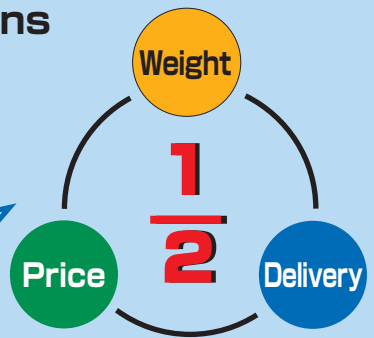
# ANGLE HEAD HALF UNIVERSAL HALF



**Optimal design for the necessary functions and performance**

★Drilling and tapping account for 80% of angle head operation.★

Therefore, optimal design is used to limit the rigidity and accuracy to the necessary levels (rigidity: 1/2).



**Do you have any of these problems for an angle head?**

**Expensive**

**It cannot be used immediately after purchase.**

- Delivery may take some time.
- Installation of a positioning block on the machine spindle is required.
- Installation on the machine spindle is complicated.

**Heavy! Big**

5.5 kg

- Automatic tool changing (ATC) is not available on a small machining centers.

**Repair is not easy**

Failure

- Delivery will take some time because repairs are made at the manufacturer's factory.
- Expensive repair cost

Manufacturer repair

**Angle Head Half provides the perfect solution.**

- All kinds of existing positioning block are available without any modification. Customer's custom-made positioning block can also be used.

- The BT30 (small machining center): small, compact and ATC-compatible.

2.3 kg

- Not required for fine matching and adjustment.
- The use of commercially available parts!

## Simple construction results in affordable and quick delivery

Reducing the number of parts from 50 to 22 pcs. Moreover, clearance for each part has been minimized, and no fine matching and adjustment is required. Now that commercially available gears and bearings are used, you can replace them easily at lower cost. An informative video and an instruction manual for disassembly and reassembly are provided. Anyone can easily assemble and disassemble the system, and maintenance is fast and inexpensive.

**Anyone can easily overhaul it**

Using commercially standard gears and bearings.

The number of parts is half that for the conventional angle head.

Instruction video

You can carry out maintenance and repairs on your own.

Plus, lower running costs

Only **1/10** !!

# ANGLE HEAD HALF

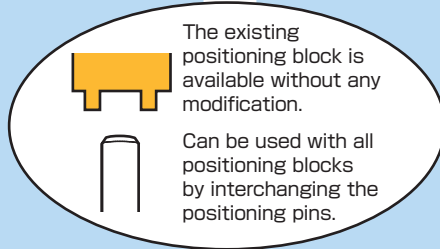
— 90° Type —



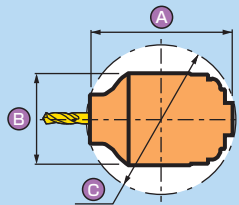
Drill·Endmill  
φ1~20  
Tap M2~M16

2.3 kg

MIN. φ71



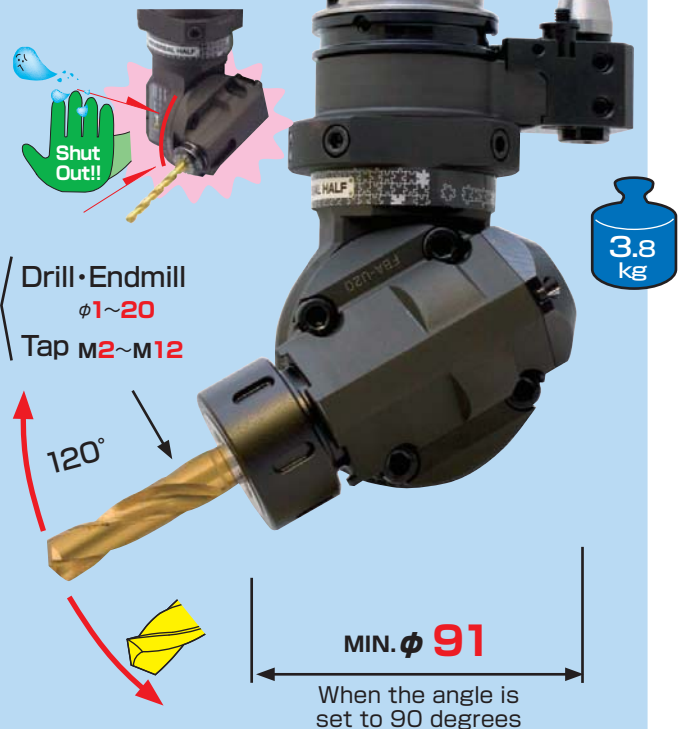
	A	B	C	Chucking range
HFD 7	68	38	71	φ1 ~ φ 7
HFD12	93	58	98	φ2.5~φ13
HFA20	111	64	119	φ5.8~φ20
HFT 4	73	38	74	M2 ~M 8
HFT 6	92	58	97	M3 ~M12
HFT12	115	64	116	M3 ~M16



# ANGLE HEAD UNIVERSAL HALF

— Free setting of cutting directions —

Large flange swivel system prevents the intrusion of coolant and cutting chips.

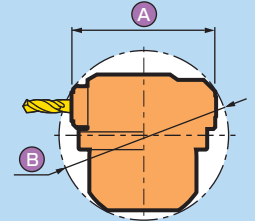


Drill·Endmill  
φ1~20  
Tap M2~M12

3.8 kg

MIN. φ91

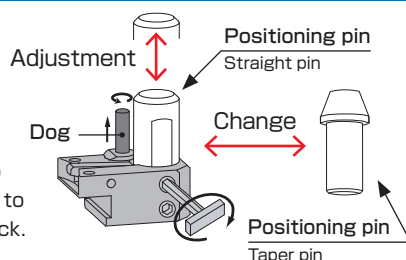
	A	B	Chucking range
HUD 7	80	91	φ1 ~ φ 7
HUA10	101	95	φ2.6~φ10
HUA20	119	136	φ5.8~φ20
HUT 4	89	108	M2 ~M 8
HUT 6	100	119	M3 ~M16



All kinds of positioning blocks can be used by using standard parts and adjustment-type positioning pins

The existing positioning block is available without any modification!

It was necessary to study many machine specifications in order to design and produce precise parts to fit various kinds of positioning block.



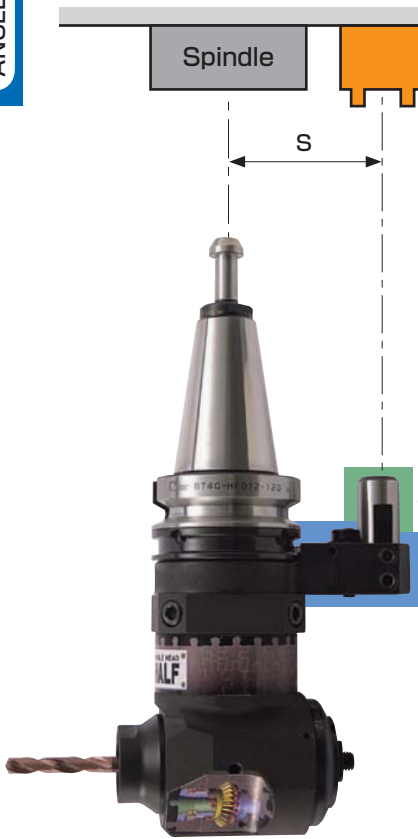
Assembly Kit  
Kit package

- Ideal as a training kit for learning.
- With only 20 parts, assembly can be completed in only 10 minutes.
- Comes with spare maintenance parts and tools for assembly.
- Easy to assemble – even for first-timers.

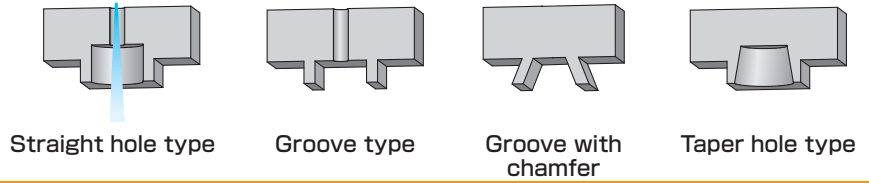


# INSTALLATION FOR MACHINES

This product can be used with any type of positioning block through a combination of a positioning pin and bracket. Suitable for any kind of positioning block. (MST's Flush holder/Oil hole holder/ Angle head).



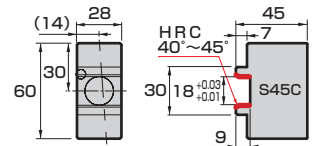
## Positioning block



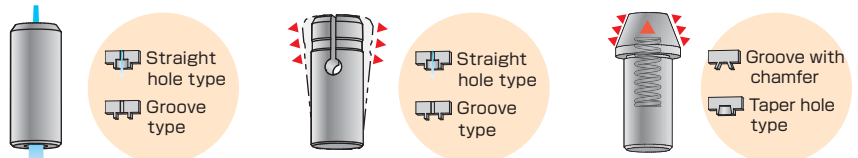
## Semi-finished positioning block

For any machine that is not provided with a positioning block, a semi-finished position block is available, which the customer can easily fabricate.

CODE
HB-01



## Positioning pin



Straight pin (S)

Expansion pin (W)

Taper pin (T)

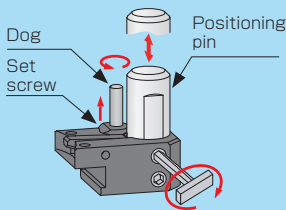
- Mainly for drilling and tapping use.
- Coolant can be supplied.

- The gap between the positioning block and pin has been eliminated to ensure tighter engagement.
- ATC is not applicable.

- The spring force presses the pin into the taper hole.

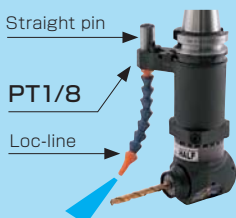
### Adjustable pin height

- The pin can be easily adjusted in length and replaced by simply loosening the bolt.
- Loosening the dog and set screw, and then turning the pin with an Allen wrench allows you to adjust the pin height easily.



### The coolant can be supplied

The coolant can be supplied to the edge of cutter precisely by using the coolant hose, LOC-LINE(LOC6) through straight pin.



## Stationary bracket

Choose a type based on the pitch (dimension P) between the center of the machine spindle and positioning pin.

	CODE	S	Shank type	Holder type
Positioning pin Dog Stationary bracket	FKA- 60	60	BT30 BT40 A 63 BT50	HFD 7 HFD12 HFT 4 HFT 6 HUD 7 HUA10 HUT 4
	- 65	65		
	- 80	80		
	- 85	85		
	-110	110		
Positioning pin Dog Stationary bracket	FKB- 60	60	BT40 A 63 BT50	HFA20 HFT12 HUA20 HUT 6
	- 65	65		
	- 80	80		
	- 85	85		
	-110	110		

Positioning block list for machines

● FANUC LTD.

For ROBODRILL



α-T21iD

Positioning block



CODE
ABF005

● BROTHER INDUSTRIES, LTD.

For TAPPING CENTER



TC-R2A



TC-S2C

Positioning block



CODE	Model
ABF060	TC-S2B / TC-S2C
ABF099	TC-R2A

● YAMAZAKI MAZAK CORP.

For SUPER VELOCITY CENTER



2000L/120  
2000L/200

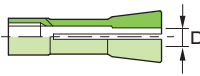
Positioning block

※Positioning blocks for the Angle Head are available from Yamazaki Mazak Corp.

DETa-1 collet



See P.11



Spring collet

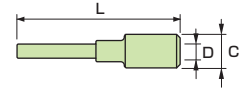


See P.20



Collapsibility : 0.2mm

Tap sleeve



CODE	φD	Collapsibility	Holder type
D 7- 1.5	1 ~ 1.5 (.039" ~ .059")	0.5	HFD 7 HUD 7
	- 2 (.059" ~ .079")		
	- 2.5 (.059" ~ .098")		
- 3	2 ~ 2.5 (.098" ~ .118")	1	
	- 4 (.118" ~ .157")		
	- 5 (.157" ~ .197")		
	- 6 (.197" ~ .236")		
- 7	5 ~ 6 (.236" ~ .276")	1.5	HFD12
	D12- 4 (.25" ~ .4") (.098" ~ .157")		
	- 6 (.157" ~ .236")		
- 8	6 ~ 8 (.236" ~ .315")	2	
	- 10 (.315" ~ .394")		
- 12	10 ~ 12 (.394" ~ .472")		
- 13	11 ~ 13 (.433" ~ .512")		

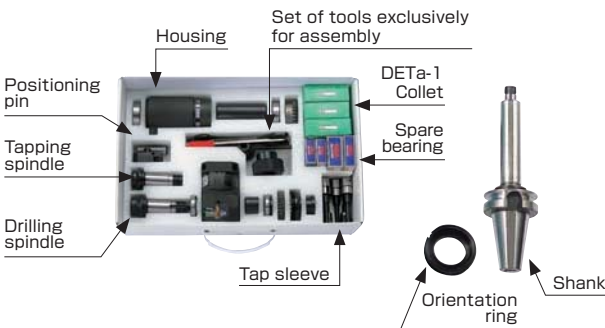
CODE	φD	Holder type
C10-D	2.6 2.8 3 3.2 3.4 ... (0.2 Steps) ... 9.4 9.6 9.8 10	HUA10
	mm	
C20-D	6 6.2 6.4 6.6 6.8 ... (0.2 Steps) ... 19.4 19.6 19.8 20	HFA20 HUA20
	mm	

CODE	φD	Holder type
C10-1/4	6.35 (.25")	HUA10
	- 5/16 (.31")	
- 3/8	9.53 (.38")	
inch		

CODE	φD	L	φC	Holder type
TA 4-M 2	M2, M2.6	67.5	16	HFT 4 HUT 4
	-M 3			
	-M 4			
	-M 5			
	-M 6			
-M 8	M 8	92	19	HFT 6 HUT 6 HFT12
	TA 6-M 3			
	-M 4			
-M 5	M 5	111.5	25	HFT12
	-M 6			
	-M 8			
	-M10			
-M12	M12			
	TA12-M14	M14		
-M16	M16			

※Available for ANSI, DIN and ISO tap sleeve upon request.

Angle head half kit package



Content of kit

CODE	BT40-HF12-LK	Q'ty	BT50-HF12-LK	Q'ty
Master holder	BT40-HFD12-180-S65	1pc.	BT50-HFD12-195-S80	1pc.
Tapping spindle	FR-T6	1pc.	FR-T6	1pc.
Tap sleeve	TA6-3, 4, 5, 6, 8	1pc.	TA6-3, 4, 5, 6, 8	1pc.
DETa-1 Collet	D12-4, 6, 8, 10, 12, 13	1pc.	D12-4, 6, 8, 10, 12, 13	1pc.
Positioning pin	HP-50C	1pc.	HP-62C	1pc.
Spare bearing	7005ADB	1set	7005ADB	1set
	6805	2pcs.	6805	2pcs.
	51106	1pc.	51106	1pc.

Cutting data

● See P.57






# CODE SYSTEM

※ Please specify the model no. of angle head and bracket set, when ordering

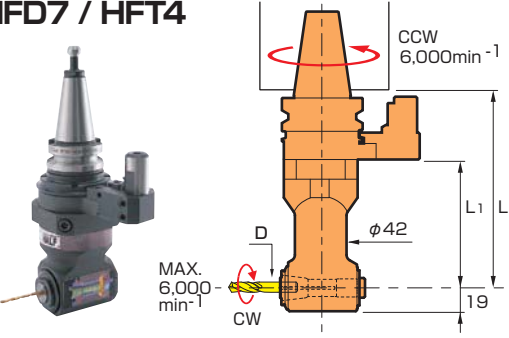
Master holder			Stationary bracket set		See P.40
Shank	Holder type	Dimension L	Positioning pin type	Dimension S	
<b>BT40</b>	<b>HFA20</b>	<b>135</b>	<b>S</b>	<b>65</b>	

+	DETa-1 Collet D7 / D12 	Spring collet C10 / C20 	Tap sleeve TA4 / TA6 / TA12 	Positioning block 	Retention knob 
---	-------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------

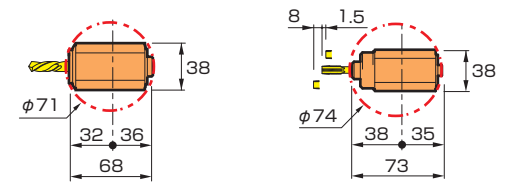
## ANGLE HEAD HALF (HFD/HFA/HFT)

### HFD7 / HFT4

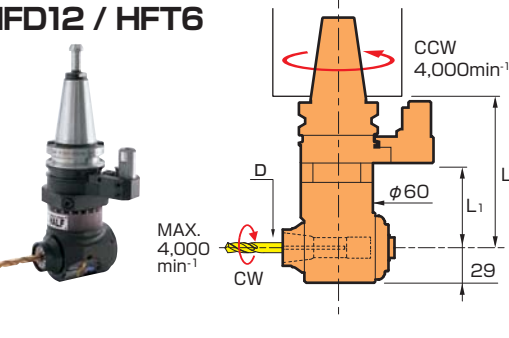


CCW 6,000min<sup>-1</sup>  
MAX. 6,000 min<sup>-1</sup> CW

**HFD7** For drilling  
**HFT4** For tapping

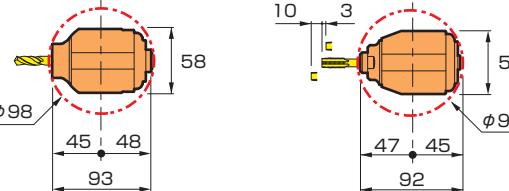



### HFD12 / HFT6



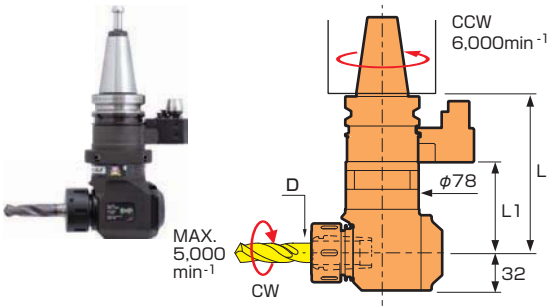
CCW 4,000min<sup>-1</sup>  
MAX. 4,000 min<sup>-1</sup> CW

**HFD12** For drilling  
**HFT6** For tapping

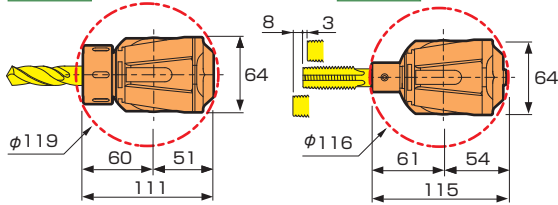


CODE	φD	L	L <sub>1</sub>	Kg (lbs)	
BT30 - HFD 7 - 122	1 ~ 7	122	70	2.3	D 7
- 182		182	130	3.0	
- HFD12 - 122	2.5~ 13	122	70	2.9	D 12
- HFT 4 - 122	M2~M 8			2.3	TA 4
- 182		182	130	3.0	
- HFT 6 - 122	M3~M12	122	70	2.9	TA 6
BT40 - HFD 7 - 120	1 ~ 7	120		3.0	D 7
- 180		180	130	3.3	
- HFD12 - 120	2.5~ 13	120	70	3.6	D 12
- 180		180	130	4.9	
<b>BT</b> - HFA20 - 135	5.8~ 20	135	77	4.4	C 20
- 195		195	137	5.6	
- HFT 4 - 120	M2~M 8	120	130	3.0	TA 4
- 180		180		3.3	
- HFT 6 - 120	M3~M12	120	70	3.6	TA 6
- 180		180	130	4.9	
- HFT12 - 135	M3~M16	135	77	4.4	TA 6
- 195		195	137	5.6	TA12
BT50 - HFD 7 - 195	1 ~ 7	195	130	6.4	D 7
- 255		255	190	6.8	
- HFD12 - 135	2.5~ 13	135	70	6.3	D 12
- 195		195	130	7.6	
- 255		255	190	8.9	
- HFA20 - 150	5.8~ 20	150	77	7.1	C 20
- 210		210	137	8.3	
- 270		270	197	9.4	
- HFT 4 - 195	M2~M 8	195	130	6.4	TA 4
- 255		255	190	6.8	
- HFT 6 - 135	M3~M12	135	70	6.3	TA 6
- 195		195	130	7.6	
- 255		255	190	8.9	
- HFT12 - 150	M3~M16	150	77	7.1	TA 6
- 210		210	137	8.3	TA12
- 270		270	197	9.4	
<b>A 63 - HFD 7 - 183</b>	1 ~ 7	183	130	3.5	D 7
- 243		243	190	3.9	
- HFD12 - 123	2.5~ 13	123	70	3.3	D 12
- 183		183	130	4.7	
- 243		243	190	6.0	
- HFA20 - 198	5.8~ 20	198	137	5.4	C 20
- 258		258	197	6.5	
<b>HSK</b> - HFT 4 - 183	M2~M 8	183	130	3.5	TA 4
- 243		243	190	3.9	
- HFT 6 - 123	M3~M12	123	70	3.3	TA 6
- 183		183	130	4.7	
- 243		243	190	6.0	
- HFT12 - 198	M3~M16	198	137	5.4	TA 6
- 258		258	197	6.5	TA12

HFA20 / HFT12



**HFA20** For drilling · endmilling    **HFT12** For tapping



- **Option**
  - DETa-1 Collet (For HFD)    •Spring collet (For HFA)
  - Tap sleeve (For HFT)    •Retention knob→P.37
  - Spanner KS-22(HFD7, HFT4), KS-30(HFD12, HFT6)
- **Standard Accessories**
  - Coolant duct (HSK-A)    •Hexagonal wrench set
  - Spanner(For HFA)
- **Note**
  - Please specify the model no. of angle head and bracket set, when ordering.
  - Other shanks are also available upon request.

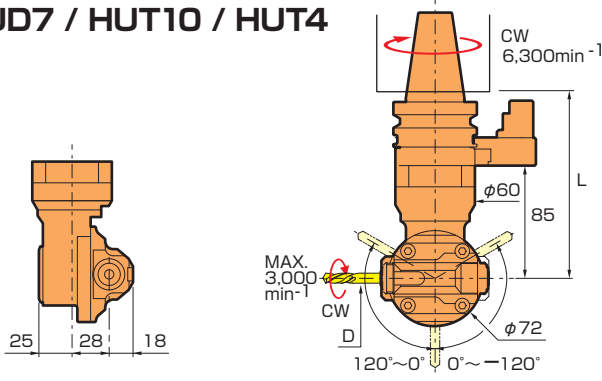
CODE	φD	L	L <sub>1</sub>	Kg (lbs)	
DN40A-HFD 7-135	1 ~ 7	135	70	3.1	D 7
		195	130	3.4	
-HFD12-135	2.5~ 13	135	70	3.7	D 12
		195	130	5.0	
-HFA20-150	5.8~ 20	150	77	4.7	C 20
		210	137	5.8	
-HFT 4-135	M2~M 8	135	70	3.1	TA 4
		195	130	3.4	
-HFT 6-135	M3~M12	135	70	3.7	TA 6
		195	130	5.0	
-HFT12-150	M3~M16	150	77	4.7	TA 6 TA12
		210	137	5.8	
DN50A-HFD 7-195	1 ~ 7	195	130	5.9	D 7
		255	190	6.3	
-HFD12-135	2.5~ 13	135	70	5.8	D 12
		195	130	7.1	
-255		255	190	8.4	
		255	190	8.4	
-HFA20-150	5.8~ 20	150	77	6.6	C 20
		210	137	7.8	
-270		270	197	8.9	
		270	197	8.9	
-HFT 4-195	M2~M 8	195	130	5.9	TA 4
		255	190	6.3	
-HFT 6-135	M3~M12	135	70	5.8	TA 6
		195	130	7.1	
-255		255	190	8.4	
		255	190	8.4	
-HFT12-150	M3~M16	150	77	6.6	TA12
		210	137	7.8	
-270		270	197	8.9	
		270	197	8.9	
CT40 -HFD 7-135	1 ~ 7	135 (5.31")	70 (2.75")	3.1 (6.8)	D 7
		195 (7.68")	130 (5.11")	3.4 (7.5)	
-HFD12-135	2.5~ 13	135 (5.31")	70 (2.75")	3.7 (8.2)	D 12
		195 (7.68")	130 (5.11")	5.0 (11.0)	
-HFA20-150	5.8~ 20 (.23"~ .79")	150 (5.91")	77 (3.03")	4.7 (10.4)	C 20
		210 (8.27")	137 (5.39")	5.8 (12.9)	
-HFT 4-135	M2~M 8	135 (5.31")	70 (2.75")	3.1 (6.8)	TA 4
		195 (7.68")	130 (5.11")	3.4 (7.5)	
-HFT 6-135	M3~M12	135 (5.31")	70 (2.75")	3.7 (8.2)	TA 6
		195 (7.68")	130 (5.11")	5.0 (11.0)	
-HFT12-150 (#4" ~ 5/8")	M3~M16	150 (5.91")	77 (3.03")	4.7 (10.4)	TA12
		210 (8.27")	137 (5.39")	5.8 (12.9)	
CT50 -HFD 7-195	1 ~ 7	195 (7.68")	130 (5.11")	5.9 (13.0)	D 7
		255 (10.04")	190 (7.47")	6.3 (13.8)	
-HFD12-135	2.5~ 13 (.10"~ .51")	135 (5.31")	70 (2.75")	5.8 (12.8)	D 12
		195 (7.68")	130 (5.11")	7.1 (15.6)	
-255		255 (10.04")	190 (7.47")	8.4 (18.5)	
		255	190	8.4	
-HFA20-150	5.8~ 20 (.23"~ .79")	150 (5.91")	77 (3.03")	6.6 (14.7)	C 20
		210 (8.27")	137 (5.39")	7.8 (17.3)	
-270		270 (10.63")	197 (7.76")	8.9 (19.8)	
		270	197	8.9	
-HFT 4-195	M2~M 8	195 (7.68")	130 (5.11")	5.9 (13.0)	TA 4
		255 (10.04")	190 (7.47")	6.3 (13.8)	
-HFT 6-135	M3~M12	135 (5.31")	70 (2.75")	5.8 (12.8)	TA 6
		195 (7.68")	137 (5.39")	7.1 (15.6)	
-255		255 (10.04")	190 (7.47")	8.4 (18.5)	
		255	190	8.4	
-HFT12-150 (#4" ~ 5/8")	M3~M16	150 (5.91")	77 (3.03")	6.6 (14.7)	TA12
		210 (8.27")	137 (5.39")	7.8 (17.3)	
-270		270 (10.63")	197 (7.76")	8.9 (19.8)	
		270	197	8.9	

CAT.

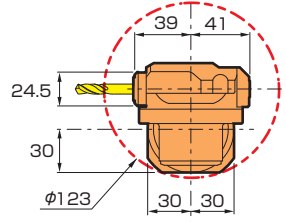
# ANGLE HEAD UNIVERSAL HALF (HUD/HUA/HUT)

ANGLE HEAD

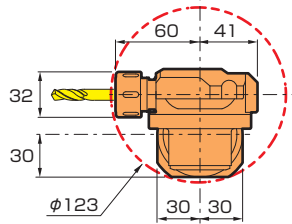
## HUD7 / HUT10 / HUT4



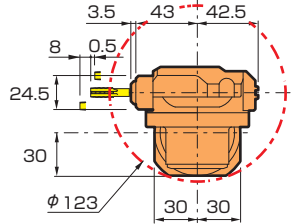
**HUD7** For drilling



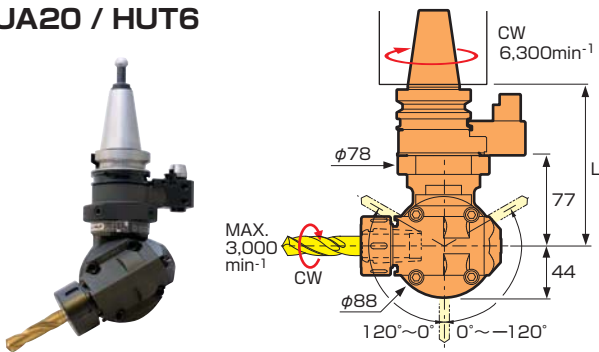
**HUA10** For drilling · endmilling



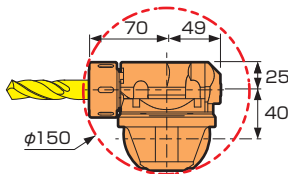
**HUT4** For tapping



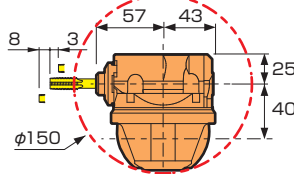
## HUA20 / HUT6



**HUA20** For drilling · endmilling



**HUT6** For tapping



CODE	φD	L	Kg	Moment ※	Collet
<b>BT</b> BT40-HUD 7-135	1.0 ~ 7	135	3.8	251	D 7
-HUA10-135	2.6 ~ 10		3.9	268	C10
-HUA20-135	5.8 ~ 20		4.8	392	C20
-HUT 4-135	M2 ~ M 8		3.8	251	TA4
-HUT 6-135	M3 ~ M12		4.8	392	TA6
BT50-HUD 7-150	1.0 ~ 7		150	6.6	277
-HUA10-150	2.6 ~ 10	6.7		295	C10
-HUA20-150	5.8 ~ 20	7.5		440	C20
-HUT 4-150	M2 ~ M 8	6.6		277	TA4
-HUT 6-150	M3 ~ M12	7.5		440	TA6
<b>DIN</b> DN40A-HUD 7-150	1 ~ 7	150		3.8	251
-HUA10-150	2.4~10		3.9	268	C10
-HUA20-150	5.8~ 20		5.0	392	C20
-HUT 6-150	M3~M12				TA6
DN50A-HUD 7-150	1 ~ 7	150	6.6	277	D 7
-HUA10-150	2.6~10		6.7	295	C10
-HUA20-150	5.8~ 20		7.0	440	C20
-HUT 4-150	M2~M8		6.6	277	T 4
-HUT 6-150	M3~M12		7.0	440	TA6
<b>CAT.</b> CT40 -HUD 7-150	1 ~ 7 (.04°~.28°)		150 (5.91")	3.8 (8.4)	251
-HUA10-150	2.4~10 (.09°~.39°)	3.9 (8.6)		268	C10
-HUA20-150	5.8~20 (.23°~.79°)	5.0 (11.0)		392	C20
-HUT 4-150	M2~M8	3.8 (8.4)		251	T 4
-HUT 6-150	M3~M16 (#4°~ 1/2°)	5.0 (11.0)		392	TA6
CT50 -HUD 7-150	1 ~ 7 (.04°~.28°)	150 (5.91")		6.6 (14.6)	277
-HUA10-150	2.4~10 (.09°~.39°)		6.7 (14.8)	295	C10
-HUA20-150	5.8~20 (.23°~.79°)		7.0 (15.4)	440	C20
-HUT 4-150	M2~M8		6.6 (14.6)	277	T 4
-HUT 6-150	M3~M16 (#4°~ 1/2°)		7.0 (15.4)	440	TA6

※Distance from a gage line to center of gravity × weight (kg·mm)

- Option
  - DETa-1 Collet (For HUD)
  - Spring collet (For HUA)
  - Tap sleeve (For HUT)
  - Retention knob→P.37
- Standard Accessories
  - The tool for assembly
  - Spanner (KS-21)
  - Hexagonal wrench set (W-1550S)
  - Spanner (For HUA)
- Note
  - Please specify the model no. of angle head and bracket set. when ordering.
  - Other shanks are also available upon request.

# HFD7 / HFT4 PARTS LIST

	1	2	8		9	19	26	27
	Shank	Orientation Ring	Washer for intermediate bearing		Intermediate bearing	Head	Positioning pin	Bracket
BT30 -HFD7-122	BT30-FSA-7S	ORR-30	-		-	FBA-7S	HP -50A -50B -50C	FKA- 60 - 65
-HFT4-122					6804ZZ	-7L		
-HFD7-182	-7L							
-HFT4-182								
BT40 -HFD7-120	BT40-FSA-7S	-40	-		-	-7S		
-HFT4-120					6804ZZ	-7L		
-HFD7-180	-7L							
-HFT4-180								
BT50 -HFD7-195	BT50-FSA-7L		-		-	-7XL	-62A -62B -62C -62A-20 -62B-20	- 80 - 85 -110
-HFT4-195								
-HFD7-255	-7XL							
-HFT4-255								
A63 -HFD7-183	A 63-FSA-7L	ORR-40	FZ-7		6804ZZ	FBA-7L	HP -50A -50B -50C	FKA- 60 - 65
-HFT4-183								
-HFD7-243	-7XL							
-HFT4-243								
DN40A-HFD7-135	DN40A-FSA-7S	ORR-40	-		-	FBA-7S	HP -62A -62B -50CL	FKA-60-L -65-L
-HFT4-135								
-HFD7-195	-7L							
-HFT4-195								
DN50A-HFD7-195	DN50A-FSA-7L		-		-	-7XL	-62A -62B -62C -62A-20 -62B-20	- 80 - 85 -110
-HFT4-195								
-HFD7-255	-7XL							
-HFT4-255								
CT40 -HFD7-135	CT40-FSA-7S	ORR-40	-		-	FBA-7S	HP -62A -62B -50CL	FKA-60-L -65-L
-HFT4-135								
-HFD7-195	-7L							
-HFT4-195								
CT50 -HFD7-195	CT50-FSA-7L		-		-	-7XL	-62A -62B -62C -62A-20 -62B-20	- 80 - 85 -110
-HFT4-195								
-HFD7-255	-7XL							
-HFT4-255								

## The tool for assembly (Option)

Wrench (For shank)



CODE  
FC-32

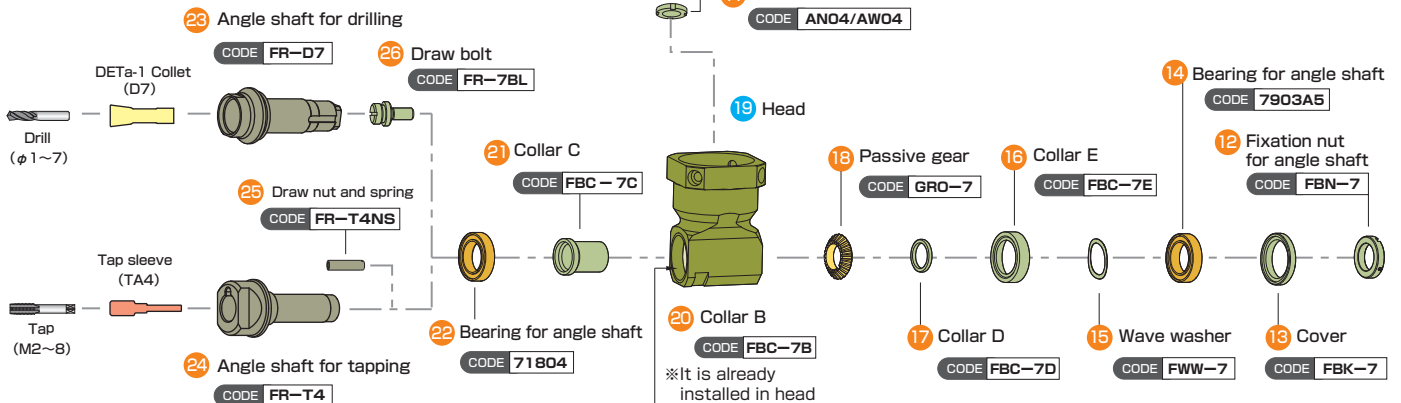
■ Note •To be used for tightening No.11 (Shank Lock Nut).

Wrench (For head)



CODE  
TSH-HF7

■ Note •To be used for tightening No.13(Cover).  
No.12(Fixation Nut For Angle Shaft).



■ Standard Accessories •Spanner(KS-22) •Spanner(13mm)  
•Hexagonal wrench set(W-1550S)

※ 3, 9, 11, 14, 15, 22 are able to use standard commercial items.

※ 25, 26 are the attachments of 23, 24

# HFD12 / HFT6 PARTS LIST

ANGLE HEAD

	1	2	3	4	6		7	8	25	26
	Shank	Orientation ring	Angular bearing	Housing	Collar A		Collar AXL	Intermediate bearing	Positioning pin	Bracket
BT30 -HFD12-122 -HFT 6-122	BT30-FSA-12S	ORR-30	7005ADB	FHA -S	FHC -S		-	-	HP -50A -50B -50C	FKA - 60 - 65
BT40 -HFD12-120 -HFT 6-120	BT40-FSA-12S	-40		-L	-L					
-HFD12-180 -HFT 6-180	-12L									
BT50 -HFD12-135 -HFT 6-135	BT50-FSA-12S			-S	-S				-62A -62B -62C -62A-20 -62B-20	- 80 - 85 -110
-HFD12-195 -HFT 6-195	-12L		-L	-L						
-HFD12-255 -HFT 6-255	-12XL		7906A5DB	-XL	-XL1 (*)					
A63 -HFD12-123 -HFT 6-123	A 63-FSA-12S	ORR-40	7005ADB	FHA -S	FHC -S				HP -50A -50B -50C	FKA - 60 - 65
-HFD12-183 -HFT 6-183	-12L			-L	-L					
-HFD12-243 -HFT 6-243	-12XL		7906A5DB	-XL	-XL1 (*)					
DN40A-HFD12-135 -HFT 6-135	DN40A-FSA-12S	ORR-40	7005ADB	FHA -S	FHC -S				HP -62A -62B -50CL	FKA-60-L -65-L
-HFD12-195 -HFT 6-195	-12L			-L	-L					
-HFD12-255 -HFT 6-255	-12XL		7906A5DB	-XL	-XL1 (*)					
DN50A-HFD12-135 -HFT 6-135	DN50A-FSA-12S			-S	-S				-62A -62B -62C -62A-20 -62B-20	- 80 - 85 -110
-HFD12-195 -HFT 6-195	-12L		-L	-L						
-HFD12-255 -HFT 6-255	-12XL		7906A5DB	-XL	-XL1 (*)					
CT40 -HFD12-135 -HFT 6-135	CT40-FSA-12S	ORR-40	7005ADB	FHA -S	FHC -S				HP -62A -62B -50CL	FKA-60-L -65-L
-HFD12-195 -HFT 6-195	-12L			-L	-L					
CT50 -HFD12-135 -HFT 6-135	CT50-FSA-12S			-S	-S				-62A -62B -62C -62A-20 -62B-20	- 80 - 85 -110
-HFD12-195 -HFT 6-195	-12L		-L	-L						
-HFD12-255 -HFT 6-255	-12XL		7906A5DB	-XL	-XL1 (*)					

■ Standard Accessories ●Spanner(KS-30) ●Hexagonal wrench set(W-1550S) ●Spanner(17mm)

## The tool for assembly (Option)

Wrench (For shank)



CODE  
TSS-HF12

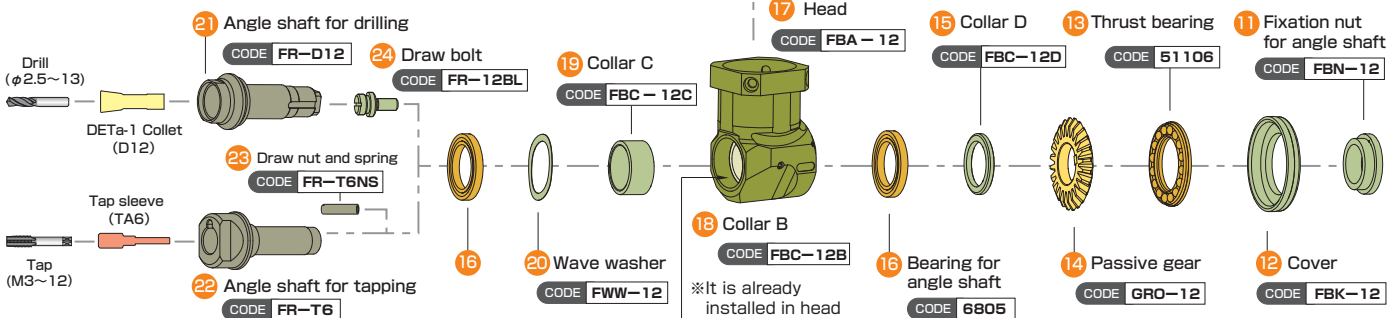
■ Note ●To be used for tightening No.10(Shank Lock Nut).

Wrench (For head)



CODE  
TSH-HF12

■ Note ●To be used for tightening No.12(Cover), No.11 (Fixation Nut For Angle Shaft).



(※) FHC-XL1/XL2FHC-XL1/XL2 Set 2pcs-Each

※ 3, 8, 10, 13, 16, 20, are able to use standard commercial items.  
※ 23, 24 are the attachments of 21, 22.

# HFA20 / HFT12 PARTS LIST

	1 Shank	3 Needle bearing	5 Angular bearing	6 Collar A	7 Angular bearing		11 Housing	27 Positioning pin	28 Bracket
BT40 -HFA20-135	BT40-FSA-20S	-	7906A5	FHC-20S	7905A5		FHA-20S	HP-50A -50B -50C	FKB- 60 - 65
-HFT12-135	-20L			-20L			-20L		
-HFA20-195	-20L			-20L			-20L		
-HFT12-195	-20L			-20L			-20L		
BT50 -HFA20-150	BT50-FSA-20S						-20S	-62A -62B -62C -62A-20 -62B-20	FKB- 80 - 85 -110
-HFT12-150	-20L			-20L			-20L		
-HFA20-210	-20L			-20L			-20L		
-HFT12-210	-20L			-20L			-20L		
-HFA20-270	-20XL	TAF374720	7905A5DB	-20XL	-		-20XL		
-HFT12-270	-20XL			-20XL			-20XL		
A63 -HFA20-198	A63 -FSA-20L	-	7906A5	FHC-20L	7905A5		FHA-20L	HP-50A -50B -50C	FKB- 60 - 65
-HFT12-198	-20XL	TAF374720	7905A5DB	-20XL	-		-20XL		
-HFA20-258	-20XL	TAF374720	7905A5DB	-20XL	-	-20XL			
-HFT12-258	-20XL			-20XL		-20XL			
DN40A-HFA20-150	DN40A-FSA-20S	-	7906A5	FHC-20S	7905A5	FHA-20S	HP-62A -62B -50CL	FKB- 60 - 65	
-HFT12-150	-20L			-20L		-20L			
-HFA20-210	-20L			-20L		-20L			
-HFT12-210	-20L			-20L		-20L			
DN50A-HFA20-150	DN50A-FSA-20S					-20S	-62A -62B -62C -62A-20 -62B-20	- 80 - 85 -110	
-HFT12-150	-20L			-20L		-20L			
-HFA20-210	-20L			-20L		-20L			
-HFT12-210	-20L			-20L		-20L			
-HFA20-270	-20XL	TAF374720	7905A5DB	-20XL	-	-20XL			
-HFT12-270	-20XL			-20XL		-20XL			
CT40 -HFA20-150	CT40 -FSA-20S	-	7906A5	FHC-20S	7905A5	FHA-20S	HP-62A -62B -50CL	FKB- 60 - 65	
-HFT12-150	-20L			-20L		-20L			
-HFA20-210	-20L			-20L		-20L			
-HFT12-210	-20L			-20L		-20L			
CT50 -HFA20-150	CT50 -FSA-20S					-20S	-62A -62B -62C -62A-20 -62B-20	- 80 - 85 -110	
-HFT12-150	-20L			-20L		-20L			
-HFA20-210	-20L			-20L		-20L			
-HFT12-210	-20L			-20L		-20L			
-HFA20-270	-20XL	TAF374720	7905A5DB	-20XL	-	-20XL			
-HFT12-270	-20XL			-20XL		-20XL			

■ Standard Accessories ●Spanner(KS-41) ●Hexagonal wrench set(W-1550S) ●Spanner(FC-50)\*Only HFA20

## The tool for assembly (Option)

Wrench (For shank and head)



CODE  
TS-HA20

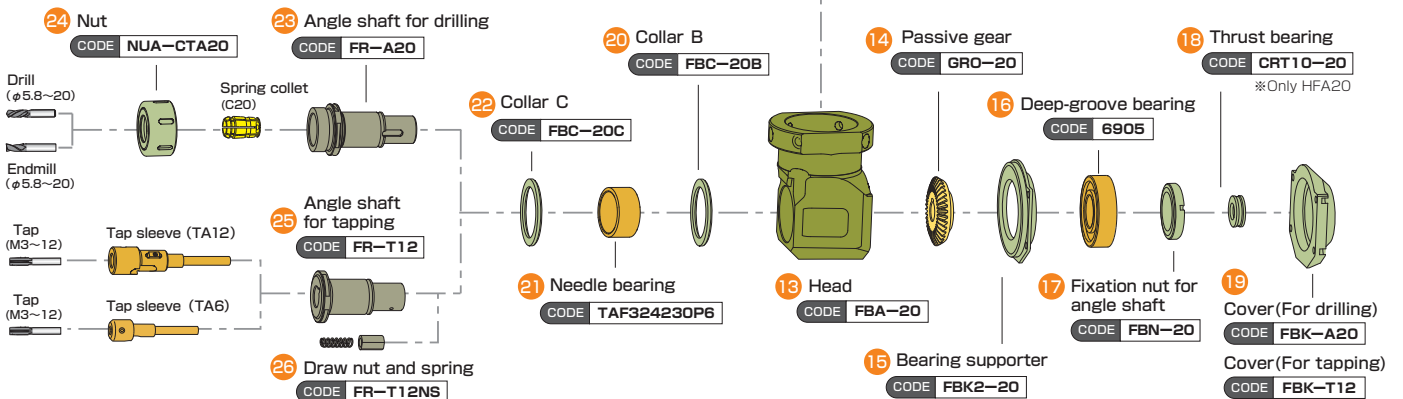
■Note  
●To be used for tightening No.10(Shank Lock Nut), No.17 (Fixation Nut For Angle Shaft).

Assembling tool for needle bearings



CODE  
TPN-HA20

■Note  
●No.21(Needle bearing) Fixation nut for angle shaft.



\* 5, 7, 16, 18, 21 are able to use standard commercial items.

# HUD7 / HUA10 / HUT4 PARTS LIST

	1 Shank	34 Positioning pin	35 Bracket
BT40 -HUD 7-135	BT40-FSA-U7	HP -50A -50B -50C	FKA- 60 - 65
-HUA10-135			
-HUT 4-135			
BT50 -HUD 7-150	BT50-FSA-U7	-62A -62B -62C -62A-20 -62B-20	- 80 - 85 -110
-HUA10-150			
-HUT 4-150			
DN40A-HUD 7-150	DN40A-FSA-U7	HP -62A -62B -50CL	FKA- 60-L - 65-L
-HUA10-150			
-HUT 4-150			
DN50A-HUD 7-150	DN50A-FSA-U7	-62A -62B -62C -62A-20 -62B-20	- 80 - 85 -110
-HUA10-150			
-HUT 4-150			
CT40 -HUD 7-150	CT40-FSA-U7	HP -62A -62B -50CL	FKA- 60-L - 65-L
-HUA10-150			
-HUT 4-150			
CT50 -HUD 7-150	CT50-FSA-U7	-62A -62B -62C -62A-20 -62B-20	- 80 - 85 -110
-HUA10-150			
-HUT 4-150			

■ Standard Accessories ●Spanner(KS-21) ●Hexagonal wrench set(W-1550S)  
●Spanner(FC-32)\*Only HUA10

## The tool for assembly (Option)

Wrench (For shank)



CODE  
FC-32

■Note  
●To be used for tightening No.8(Shank Lock Nut).

Wrench (For hed)



CODE  
TP-U7F

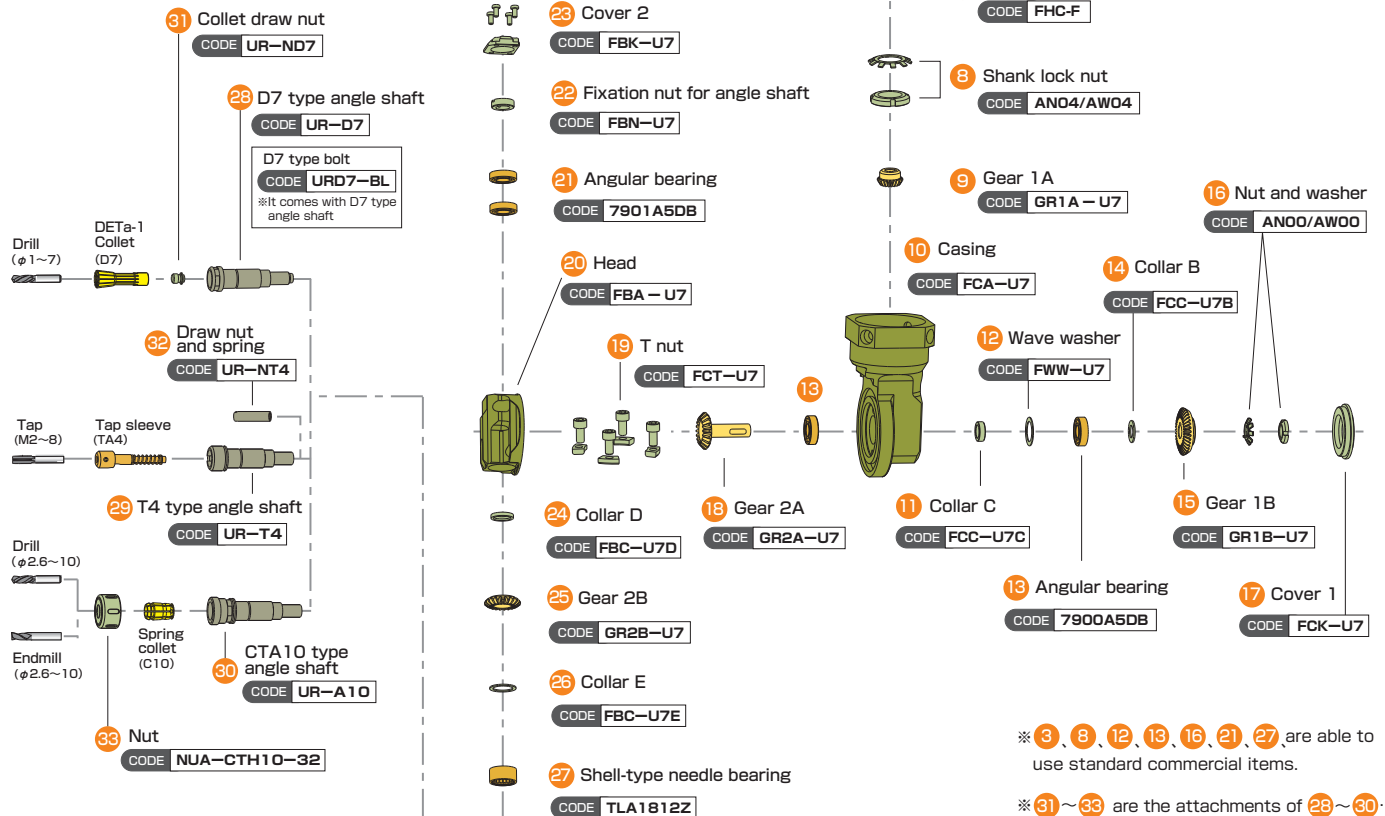
■Note  
●No.16(Nut),No.22(Fixation nut for angle shaft) used for assembling and disassembling.

Assembling tool for needle bearings



CODE  
TP-U7

■Note  
●No.27(Shell-type needle bearing) used for assembling and disassembling.



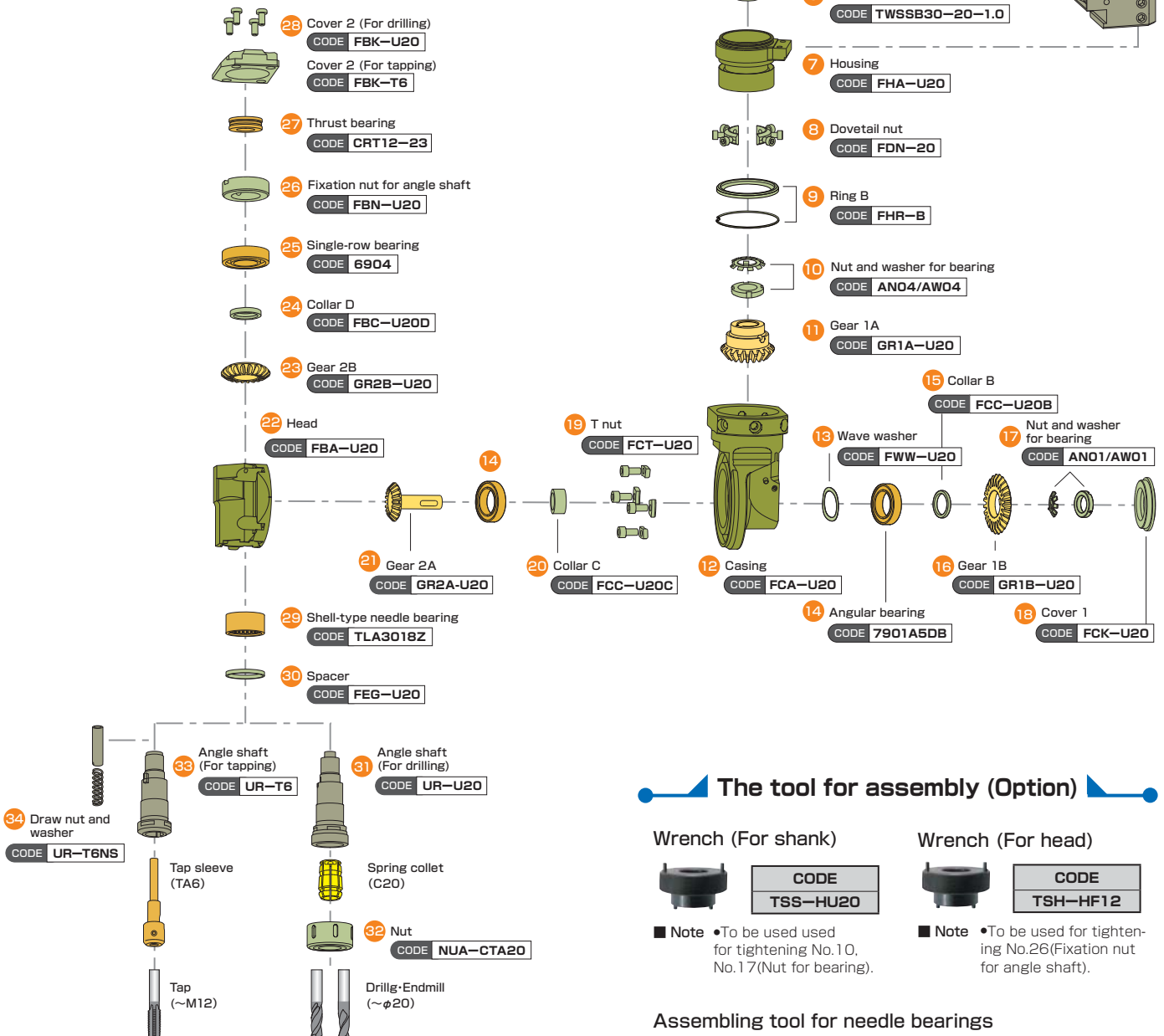
\* 3, 8, 12, 13, 16, 21, 27 are able to use standard commercial items.

\* 31~33 are the attachments of 28~30.

# HUA20 / HUT6 PARTS LIST

	1 Shank	35 Positioning pin	36 Bracket
BT40-HUA20-135 -HUT 6-135	BT40 -FSA-U20	HP -50A -50B -50C	FKB- 60 - 65
BT50-HUA20-150 -HUT 6-150	BT50 -FSA-U20	-62A -62B -62C -62A-20 -62B-20	FKB- 80 - 85 -110
DN40A-HUA20-150 -HUT 6-150	DN40A-FSA-U20	HP -62A -62B -50CL	FKB- 60 - 65
DN50A-HUA20-150 -HUT 6-150	DN50A-FSA-U20	-62A -62B -62C -62A-20 -62B-20	FKB- 80 - 85 -110
CT40 -HUA20-150 -HUT 6-150	CT40 -FSA-U20	HP -62A -62B -50CL	FKB- 60 - 65
CT50 -HUA20-150 -HUT 6-150	CT50 -FSA-U20	-62A -62B -62C -62A-20 -62B-20	FKB- 80 - 85 -110

■ Standard Accessories ●Spanner(KS-33) ●Hexagonal wrench set(W-1560S)  
●Spanner(FC-50)\*Only HUA20



\* 3, 5, 10, 13, 14, 17, 25, 27, 29, are able to use standard commercial items.

## The tool for assembly (Option)

Wrench (For shank)



■ Note ●To be used used for tightening No.10, No.17(Nut for bearing).

Wrench (For head)



■ Note ●To be used for tightening No.26(Fixation nut for angle shaft).

Assembling tool for needle bearings



CODE TPN-HU20

■ Note ●No.29(Shell-type needle bearing)used for assembling and disassembling.