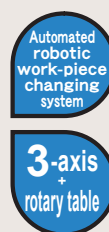
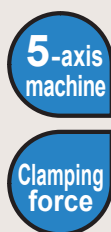
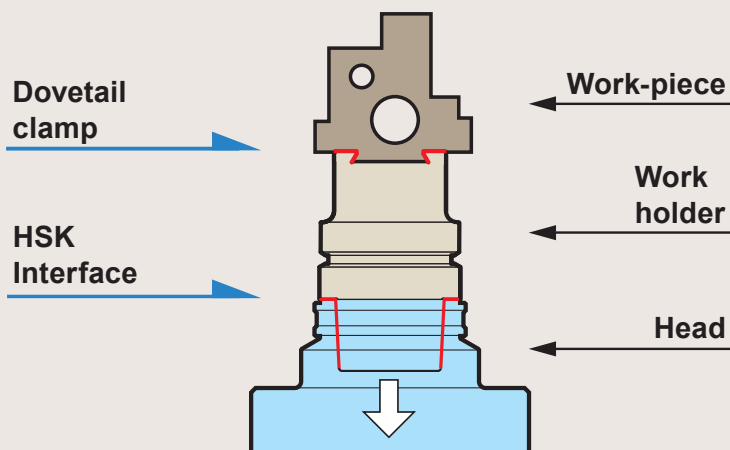


The fixture creates the new machining process.

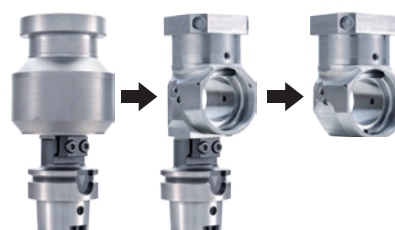
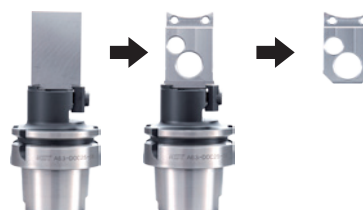
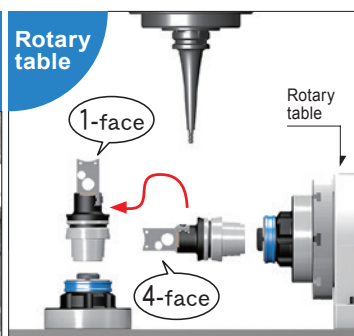
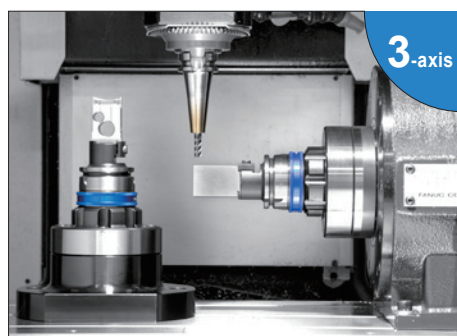
- ▷ A highly rigid work-clamping fixture developed for both 5-axis machining centers and multi-surface machining with 3-axis machining centers (with a rotary table)



Small- and Medium-size Enterprises Award for Excellence in New Innovative Technologies and Products
The Resona Foundation for Small and Medium Enterprise Promotion and The Daily Industrial News

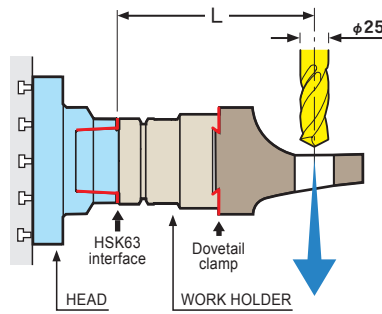
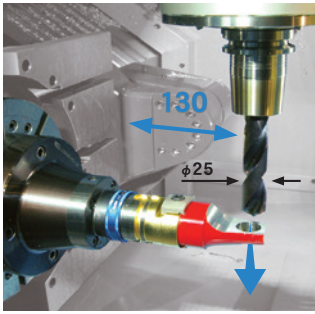
Multi-surface machining

Process integration on a **3-axis** machining center with a rotary table and **5-axis** machining center

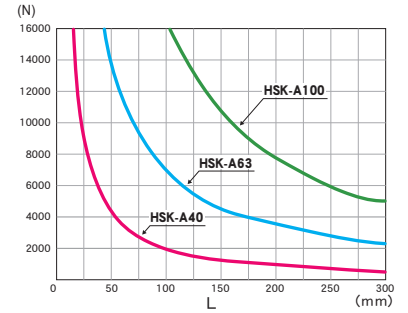


Clamping force

HSK (2-face clamping interface) and dovetail clamping

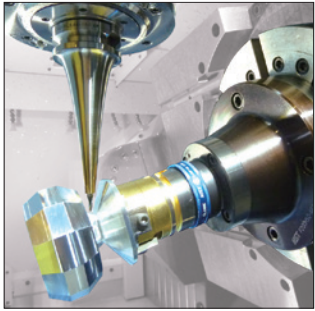


Maximum cutting force

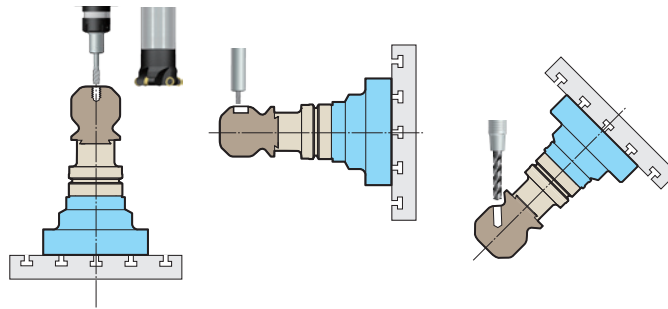


Avoids interference

The fixture(work-holders and heads) design has much smaller than the work-piece.



- The fixture has less interference with a tool holder and a cutting tool and it endures large machining force in a different direction.

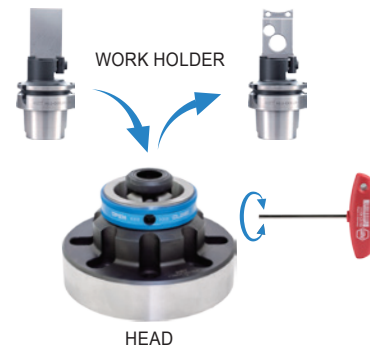


Quick change

Clamping 5-sec. Unclamping 5-sec.



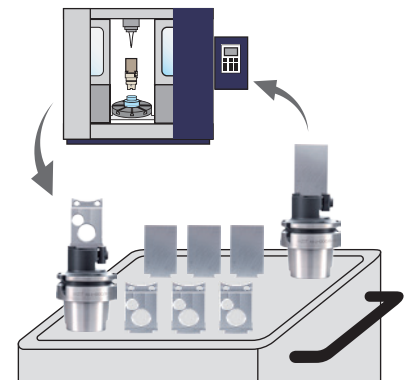
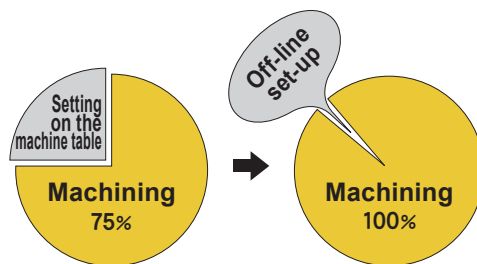
- Easy operation – just mount the work holder on the head and tighten with a wrench.



Off-line set-up

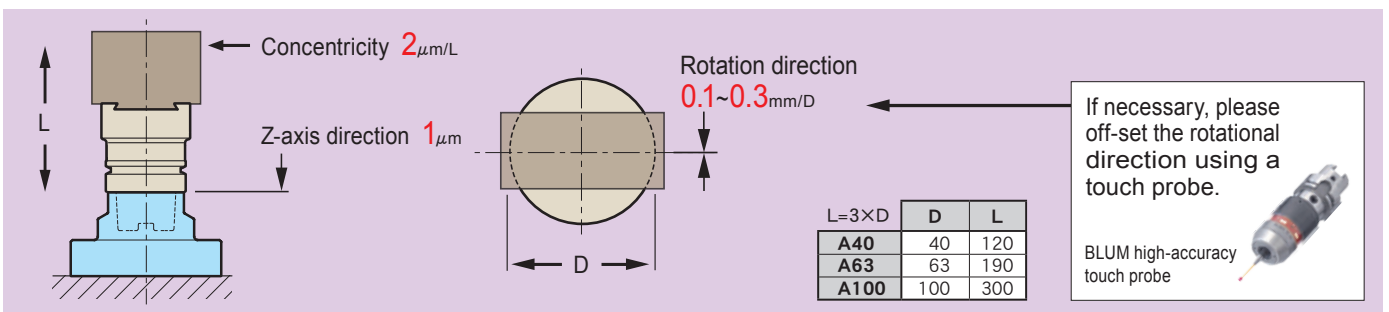
Minimizing machine downtime.

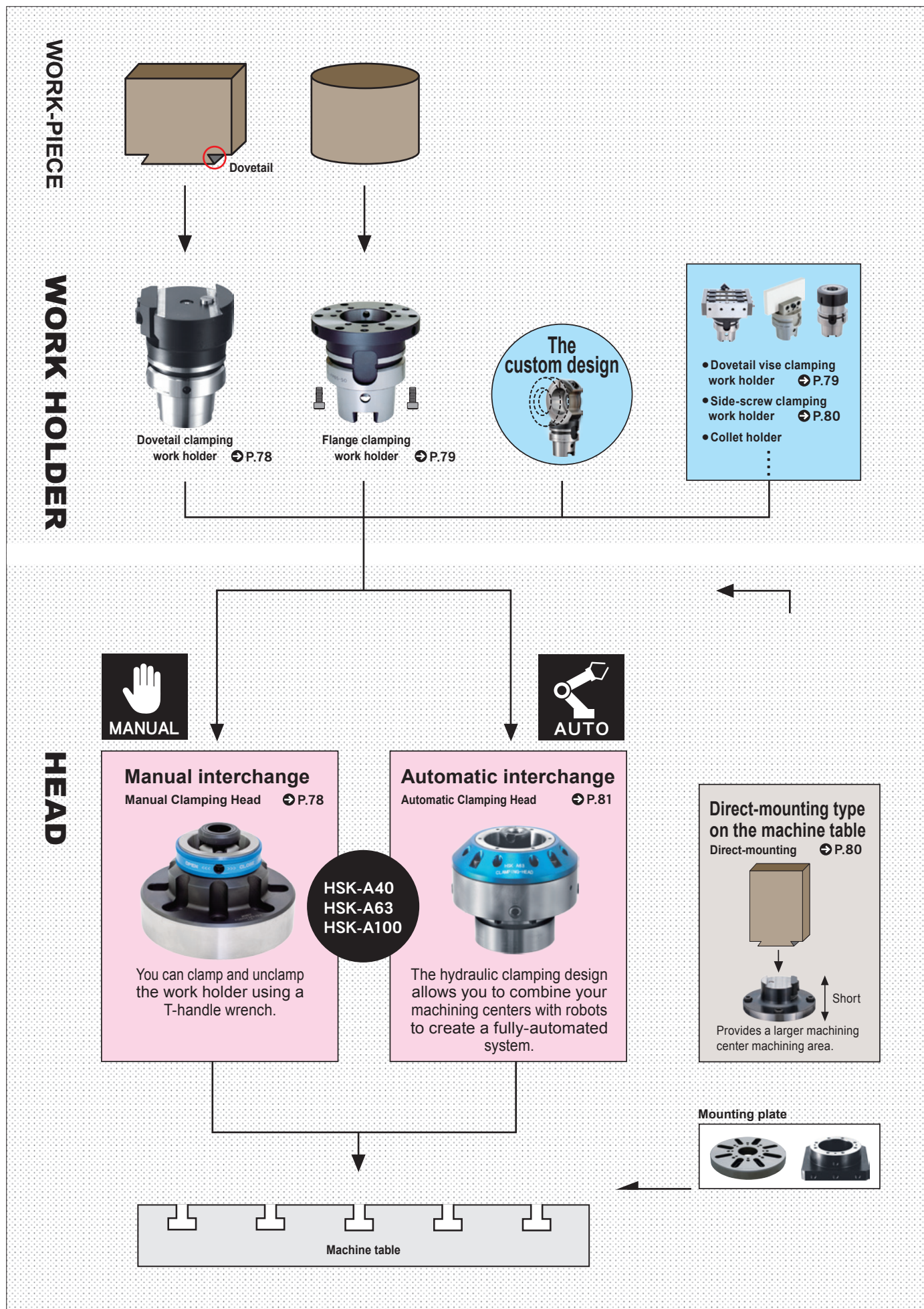
- You can start machining the next work-piece quickly when it is mounted in a work holder in advance.
- The machine runs continuously, so you can maximize the machine utilization ratio.



Repeatability

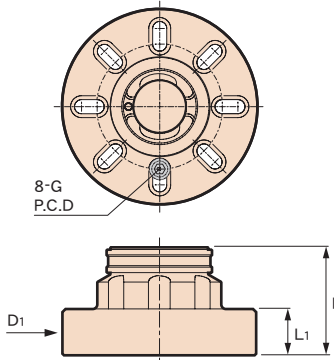
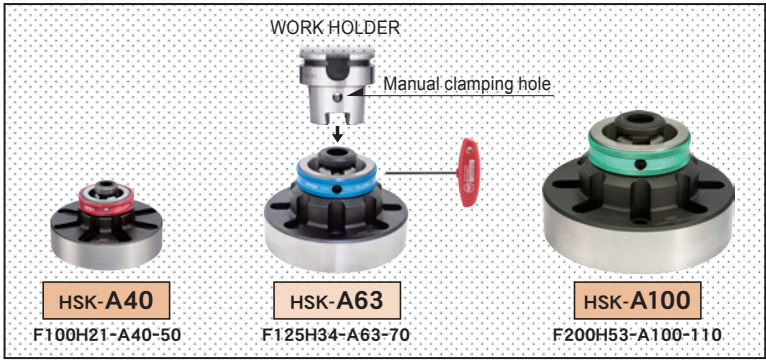
No alignment by experienced workers required.





HEAD

The Manual Clamping Head (Manual exchange)



CODE	Interface	L	ϕD_1	L ₁	G	P.C.D.	Clamping force (kN)	Kg
F 100H21-A40 - 50	HSK-A40	50	100	25	M 6×30	55~ 85	10	1.7
F 125H34-A63 - 70	HSK-A63	70	125	30	M 8×35	80~100	20	3.8
F 200H53-A100-110	HSK-A100	110	200	50	M12×50	125~160	30	14

- Option
 - Mounting plate
- Std access.
 - T-handle wrench • Mounting bolt × 4pcs.
- Note
 - A manual clamping hole on the work holder is required for mounting.

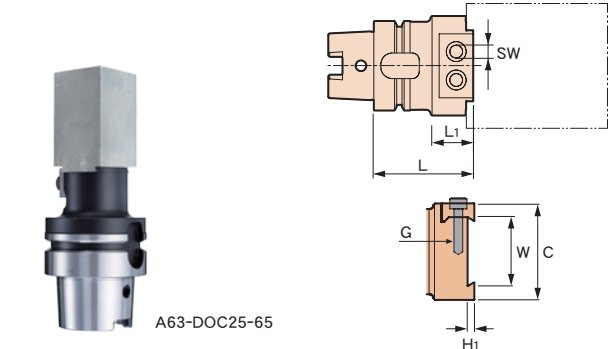
Please use a mounting plate if the fixing hole of the head doesn't match with a T-groove on the machine table. Also, we can make a custom-designed mounting plate for you if necessary.

CODE	Interface	T	ϕD	ϕH	G ₁	G ₂	G ₃	P.C.D.	Kg
F160H32-A40	HSK-A40	20	160	32	M 5×20	M 6×20	M 6	80~125	2.6
F200H32-A40		25	200		M 8×25	M10×25		100~160	5
F160H50-A63	HSK-A63	20	160	50	M 5×20	M 6×20	M 6	80~125	2.4
F200H50-A63		25	200		M 8×25	M10×25		100~160	4.7
F250H50-A63		30	250	50	M10×30	M12×30	M12	140~200	9.4
F250H80-A100	HSK-A100	30	250	80	M10×30	M12×30	M12	140~200	8.7



WORK HOLDER

Dovetail clamping work holder



CODE	L	L ₁	ϕC	W	H ₁	G	SW	Kg
A40 -DOC 17.5-55	55	25	30	17.5	2	M 5	4	0.4
-DOC 25 -55		28	40	25	3	M 6	5	0.6
-DOC 35 -55		25	50	35				0.7
-DOC 50 -60	60	30	70	50	5	M 8	6	1.2
A63 -DOC 25 -65	65	27	40	25	3	M 6	5	1.2
-DOC 35 -65			50	35				1.3
-DOC 50 -70	70	30	70	50	5	M 8	6	1.8
-DOC 70 -75	75	35	100	70		M10	8	3
A100-DOC 35 -70	70	27	50	35	3	M 6	5	3.3
-DOC 50 -75	75	32	70	50	5	M 8	6	3.8
-DOC 70 -75		35	100	70		M10	8	5
-DOC100 -85	85	40	140	100	10			7.7

Dovetail grooving a work-piece

Dovetail grooving of the work-piece clamping area using an angular cutter is required prior to machining. After machining, cut off the dovetail of the work-piece.

Angular cutter
For more information, please contact us.

Details of dovetail dimensions

Holder type	W	H	P	SW	SD
DOC 17.5	17.5	2.5	2.5	4	2
DOC 25	25	3.5		6	2.5
DOC 35	35		5.5	8	
DOC 50	50	5.5	9	10	4
DOC 70	70		18	12	
DOC100	100	10.5	26	15	

Flange clamping work holder



A63-FP85-50

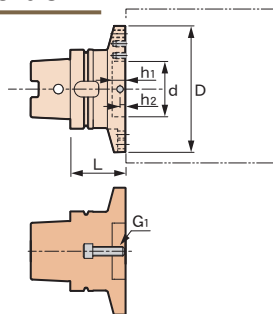


Fig. 1

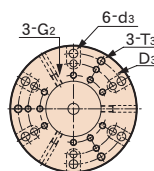


Fig. 2

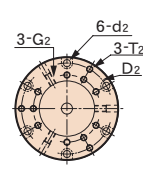
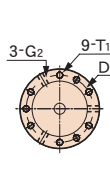
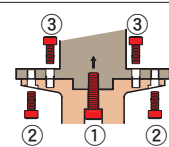


Fig. 3



3 Ways to Mount Work-pieces

- ① Center bolt
- ② Flange bolt from the head
- ③ Flange bolt from the work-piece



CODE	Fig.	L	φD	φD1	φD2	φD3	φd	h1	h2	T1	T2	T3	φd2	φd3	G1	G2	KG
A40 -FP 40-35	3	35	40	32	—	—	25	12	4	M4×6	—	—	—	—	M 6×15	M4×8	0.3
-FP 63-40	2	40	63	—	50	—	+0.053 +0.020	—	—	—	M5	—	5.5	—	M 6×20	—	0.5
A63 -FP 63-45	3	45	63	50	—	—	40	13	5	M5×8	—	—	—	—	M10×20	M6×10	0.9
-FP 85-50	2	50	85	—	73	—	+0.064 +0.025	—	—	—	M6	—	6.6	—	M10×25	—	1.2
-FP110-55	1	55	110	—	—	95	—	—	—	—	M6×9	M 8	—	9	M10×30	—	1.7
A100-FP100-55	3	55	100	85	—	—	70	17	7	M8×12	—	—	—	—	M12×25	M8×16	3.0
-FP130-65	2	65	130	—	115	—	+0.076 +0.030	—	—	—	M8	—	9	—	M12×35	—	4.2
-FP160-70	1	70	160	—	—	140	—	—	—	—	M8×12	M10	—	11	M12×40	—	5.3

Std access.

- Center bolt (G1)×1pc. • Set screw (G2)×3pcs.
- M6 special small-head bolt (the head diameter size is the same as the M5 bolt)×3pcs. (A63FP-85-50 / A63FP110-55)
- ※Regular M6 cap screw doesn't fit.

Option

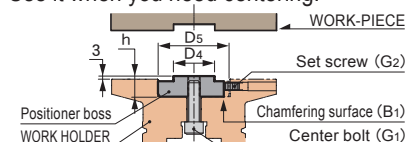
- Positioner boss • Adapter

Note

- Use the G1 set screw when you use the center bolt to clamp the work-piece. When you need whirl-stop machining of a work-piece, make a flat surface on the work-piece and clamp it using a set screw (G2).

Positioner boss (Flange clamping)

Use it when you need centering.



CODE	Holder type	φD4	φD5	h	KG
IR15-A40 FP	HSK-A40	15 ⁰ _{-0.027}	25	15	0.05
IR25-A63 FP	HSK-A63	25 ⁰ _{-0.033}	40	16	0.1
IR40-A100FP	HSK-A100	40 ⁰ _{-0.039}	70	20	0.5

Note

- When you do not want the work-piece to rotate, make a flat surface on the O.D. (B1) of the boss, and attach it using a set screw (G2).



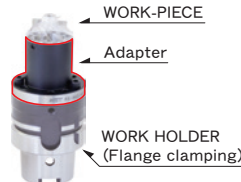
IR25-A63FP

Please use an adapter for small size work-pieces.

Minimizing clamping area for a small-size work-pieces reduces the interference area.



RS-A63-A40



CODE	Work holder	Fig.	φD	φD1	φd	H1	H2	H	T1	G1	G2	G3	KG
RS-A63 -A40	A63 -FP 63-45	1	40	32	25	12	4	50	M4×6	M 6×20	M4×8	M5×16	0.5
	-FP 85-50		+0.064 +0.025										
	-FP110-55												
RS-A100-A40	A100-FP100-55	2	40	32	25	12	4	60	M4×6	M 6×20	M4×8	M8×25	1.5
	-FP130-65		+0.053 +0.020										
	-FP160-70												
RS-A100-A63	A100-FP100-55	1	63	50	40	13	5	55	M5×8	M10×20	M6×10	M8×25	1.7
	-FP130-65		+0.053 +0.020										
	-FP160-70												

Std access.

- Center bolt (G1)×1pc. • Set screw (G2)×3pcs.
- Fixing bolt (G3)×3pcs.

Note

- Attach the work-piece with the center bolt (G1). When you do not want the work-piece to rotate, secure the chamfering surface using a set screw.

Fig. 1

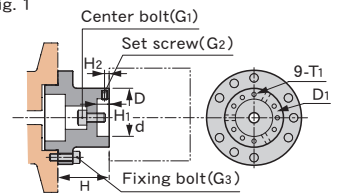
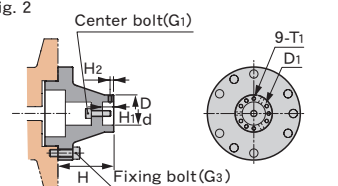


Fig. 2

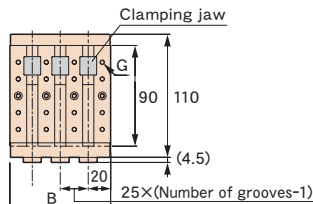
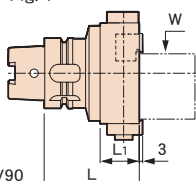


Dovetail Vise clamping work holder



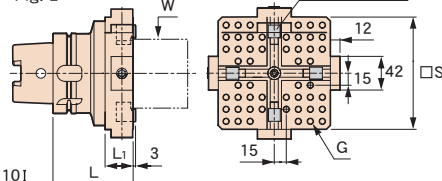
A63-DOV90

Fig. 1



A63-DOV110I

Fig. 2



CODE	Fig.	□S	Number of grooves	B	W	G (Depth)	L	L1	KG
A63 -DOV 90	1	—	3	90	12~ 73	20-M4(6)	85	35	3.8
110I	2	110	—	—	36~ 80	24-M8(10)	90	—	5.7
A100-DOV140	1	—	5	140	12~ 73	30-M4(6)	100	35	7.7
140I	2	140	—	—	36~ 110	52-M8(10)	—	—	9.9

Std access.

- 8mm hexagonal wrench



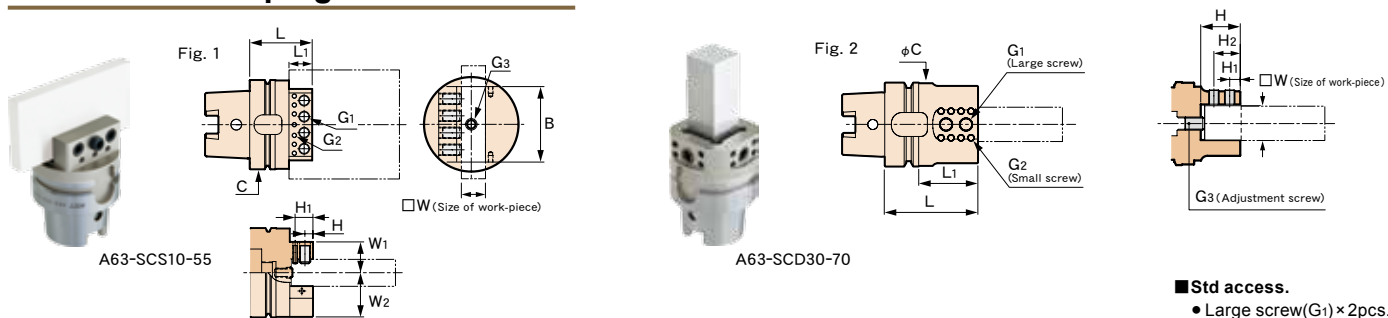
Angular cutter

For more information, please contact MST.

Note

- Dovetail grooving of the work-piece clamping area using an angular cutter is required prior to machining. After machining, cut off the dovetail of the work-piece.
- Work-piece clamping jaws move individually.
- Please use the screw hole on the top face as necessary.

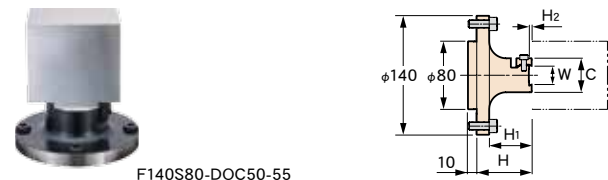
Side screw clamping work holder



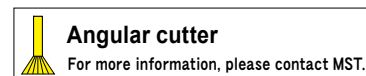
CODE	Fig.	□W	W ₁	W ₂	B	L	L ₁	φC	H	H ₁	H ₂	G ₁ (Bolt)	G ₂	G ₃	Kg
A40 -SCS10-40	1	5 ~ 10	13	18.6	30	40	11	39	4.5	—	—	M 6×10	—	M 6	0.5
-SCD20-55	2	15 ~ 20	—	—	—	55	30	49	25	11	—	M 8×16	M4	M10	0.5
A63 -SCS10-55	1	5 ~ 10	20	23.5	50	55	21	62	7.5	17	—	M10×15	M5	M10	1.1
-SCS20-55		15 ~ 20	25	28.5											
-SCD20-65	2	15 ~ 20	—	—	—	65	30	49	25	11	—	M 8×16	M4	M10	1.2
-SCD25-70		20 ~ 25	—	—	—	70	35	56	30	8	20				1.3
-SCD30-70		25 ~ 30	—	—	—		44	62	35	9	24	M10×20	M5		1.4
-SCD40-85		35 ~ 40	—	—	—	85	52	76	45	12	30	M12×20	M6		1.9
A100 -SCS20-70	1	12 ~ 20	29.5	34	80	70	26	99	9	20	—	M12×20	M5	M12	3.6
-SCS30-70		22 ~ 30	34.5	39											
-SCD20-70	2	15 ~ 20	—	—	—	70	30	49	25	11	—	M 8×16	M4	M10	3
-SCD25-75		20 ~ 25	—	—	—	75	35	56	30	8	20				3.4
-SCD30-80		25 ~ 30	—	—	—	80		62	35	9	24	M10×20	M5		3.5
-SCD40-90		35 ~ 40	—	—	—	90	45	76	45	12	30	M12×20	M6		3.9

Direct-mounting (Direct-mounting type on the machine table)

Dovetail clamping type



CODE	H	H ₁	H ₂	φC	W	Kg
F140S80-DOC17.5-60	60	45	2	30	17.5	2.5
-DOC25 -60			3	40	25	2.6
-DOC35 -55	55	40		50	35	2.8

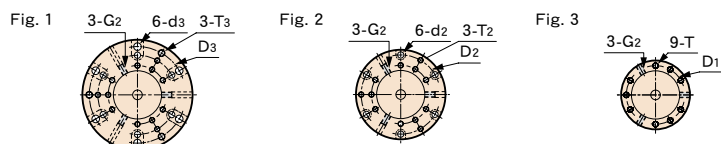
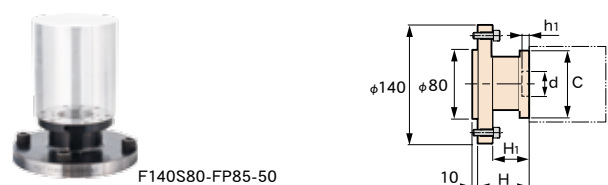


- Option
● Mounting plate
- Std access.
● Mounting bolt×4pcs. (DOC100)

- Note
● Dovetail grooving of the work-piece clamping area using an angular cutter is required prior to machining. After machining, cut off the dovetail of the work-piece.

CODE	H	H ₁	H ₂	φC	W	Kg
F140S80-DOC 50-55	55	40	5	70	50	3.4
-DOC 70-55				100	70	4.7
-DOC100-55			10	140	100	5.5

Flange clamping type



CODE	Fig.	H	H ₁	φC	φD ₁	φD ₂	φD ₃	φd	h ₁	T ₁	T ₂	T ₃	d ₂	d ₃	G ₂	Kg
F140S80-FP 63-50	3	50	25	63	50	—	—	40	13	M5×8	—	—	—	—	M6×10	2.6
-FP 85-50	2			85		73					M6		6.6			3.1
-FP110-70	1	70	45	110			95				M6×9	M8		9		3.7
-FP130-75	2	75		130	85	115	—	70	17	M8×12	M8	—	9	—	M8×16	5.5

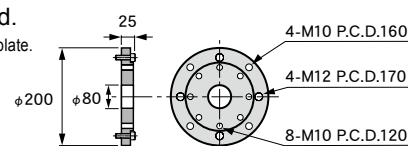
- Option
● Mounting plate ● Positioner boss → P.79 ● Adapter → P.79

The mounting plate is required.

Also, we can make a custom design mounting plate.

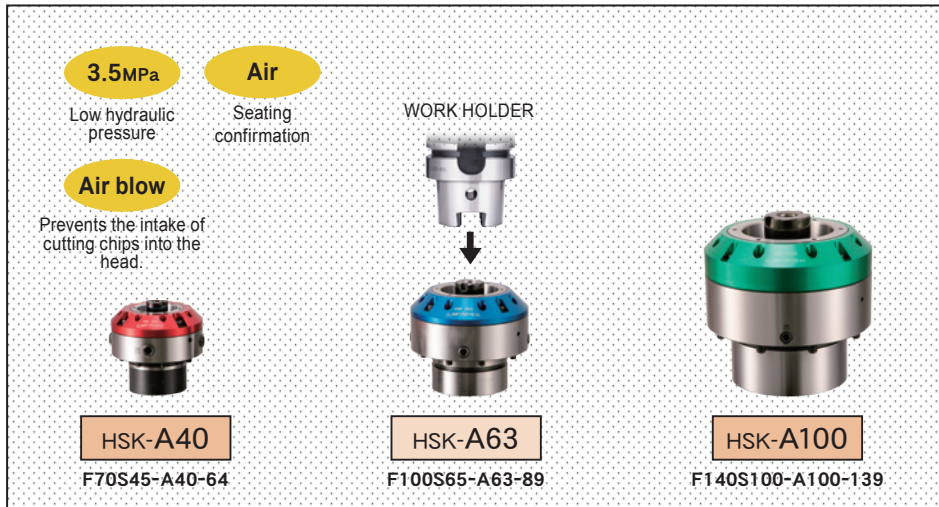
CODE	Kg
F200H80-MP140-25	4.3

- Std access. ● Mounting bolt×4pcs.



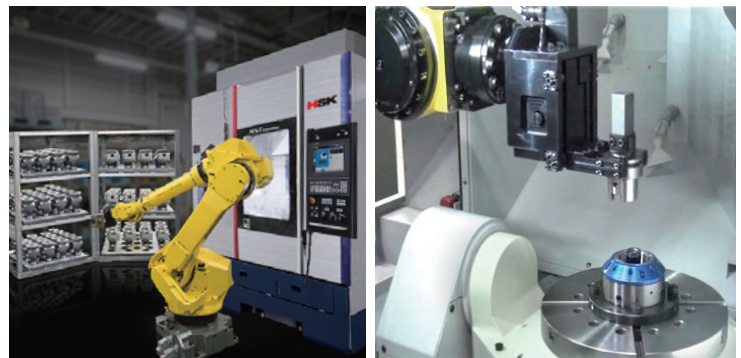
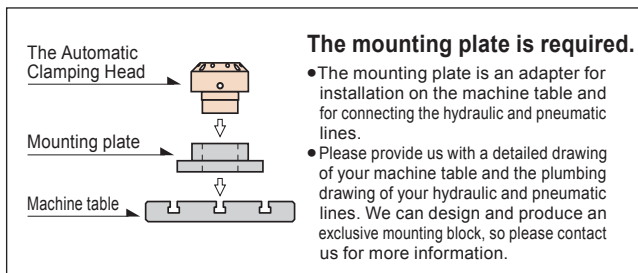
The Automatic Clamping Head (Automatic exchange)

The hydraulic clamping design allows you to interchange work-pieces automatically, and makes it possible for you to combine your machining centers with robots to create a fully-automated system.



CODE	Interface	L	φD1	L1	Clamping force (kN)	Max. loading weight (kg)	Kg
F70S45 -A40 - 64	HSK-A40	64	70	35	6	50	1.1
F100S65 -A63 - 89	HSK-A63	89	100	50	24	140	3.1
F140S100-A100-139	HSK-A100	139	140	80	55	640	9.7

Note
• Hydraulic pressure : 3.5MPa



Fully-automated system

We can provide the following items to automate your system:

- **Control unit**
- **Work-piece shelf**
- **Robot finger**

