klamp™

Efficient workholding

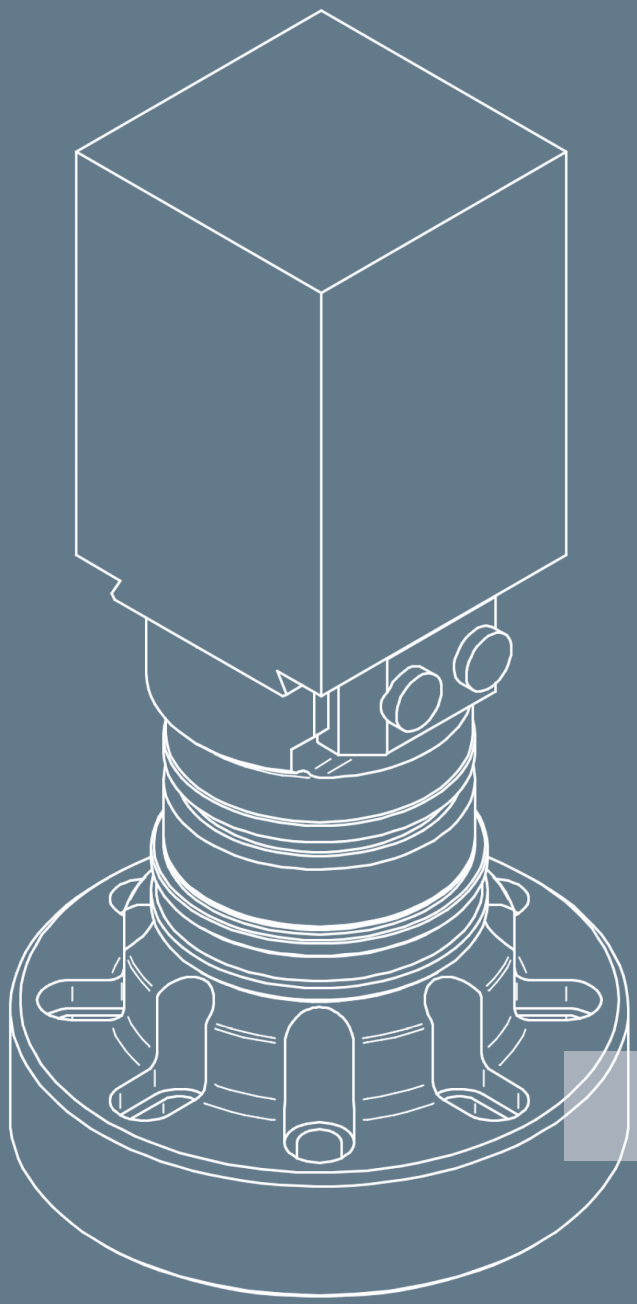
5-Axis Workholding

Notes

Index of Swift Klamp Products

5-Axis Workholding

Swift Klamp Series



This work-piece clamping system maximizes the performance of your 5-axis machining center

The HSK interface (between the head and the work-holder) and the dovetail clamping (between the work-holder and the work-piece) create a compact design with less interference and high rigidity for metalworking applications

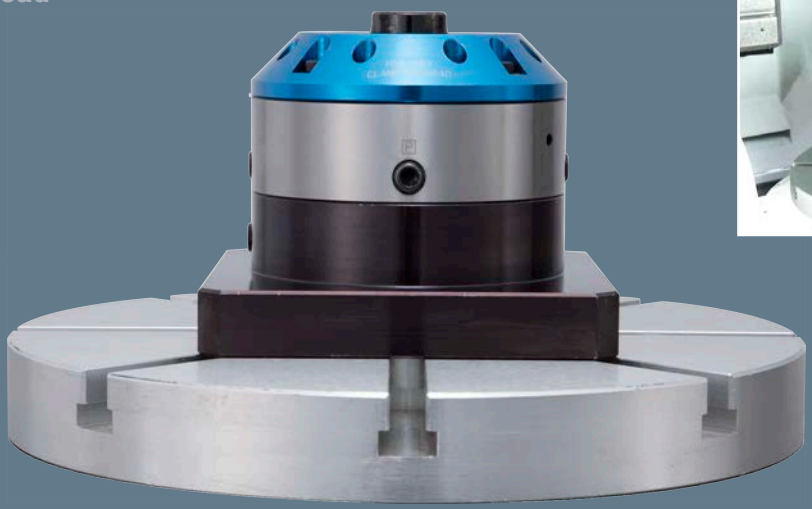
- The rigid system developed for metalworking applications.
- No interference and superior accessibility.
- Handling the work-piece is easy using a general-purpose robot.

2-Face Clamping
Work-Piece

Dovetail Clamping
Work-Holder

Supports Various Work-Piece Shapes

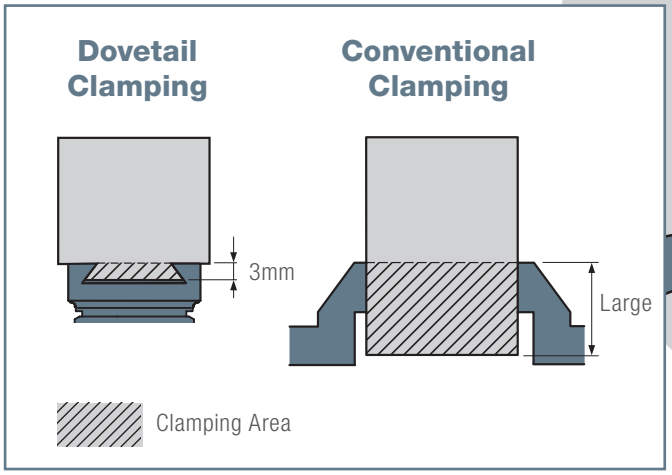
HSK Interface
Head

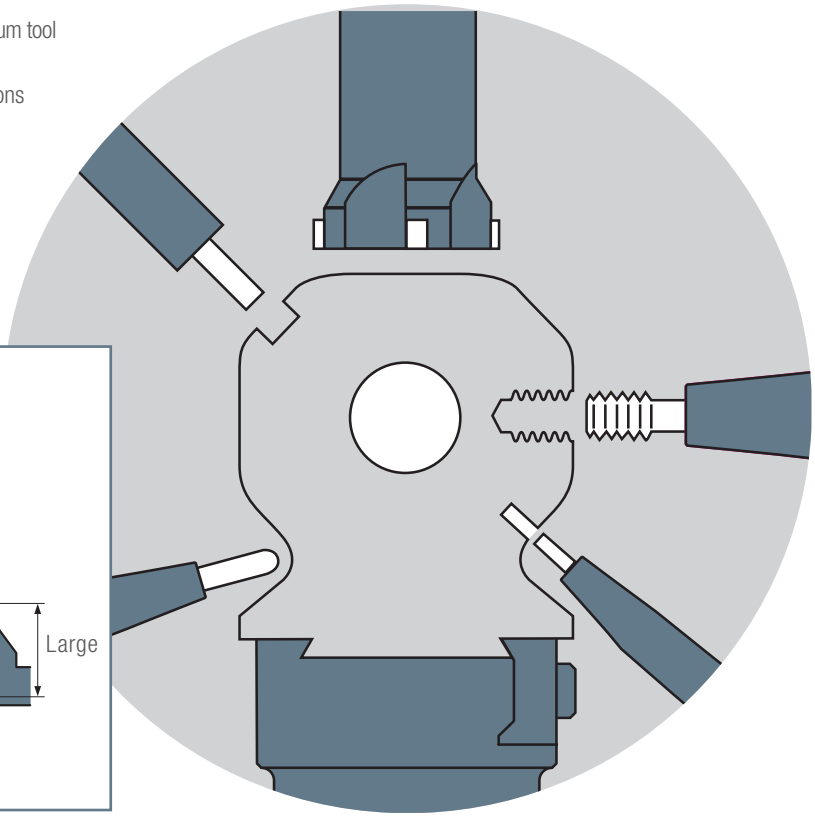


Dovetail Clamping System

Strong Clamping with Small Clamping Area

- By minimizing the clamping surface of the work-piece, optimum tool holder accessibility is possible.
- It allows stable and heavy machining from various directions without the work-piece rising.





HSK Interface

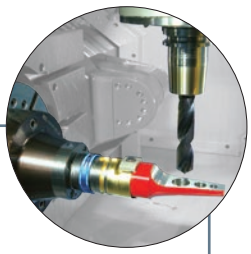
Strong Clamping

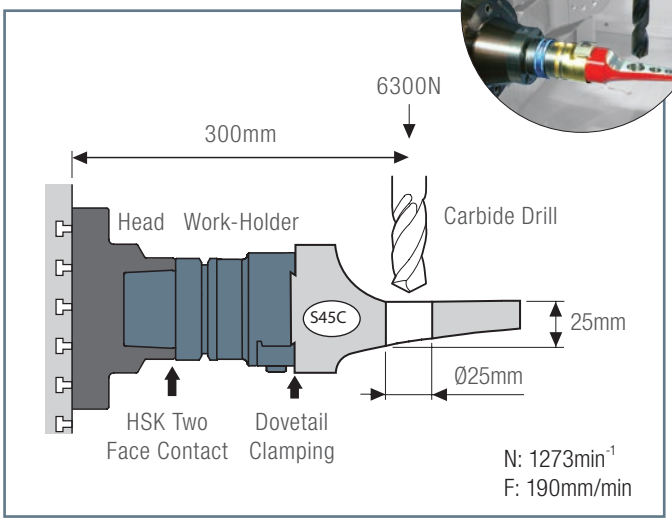
- Uses the HSK-A type, time-proven tool holder shank to connect the head and the work-piece holder.

HSK Type	Clamping Force kN
HSK-A40	10
HSK-A63	20
HSK-A100	30

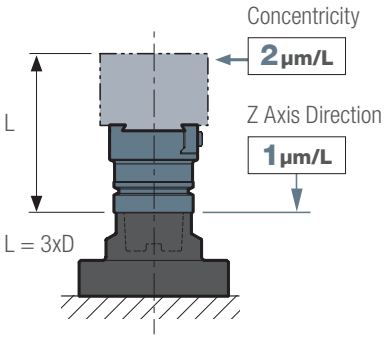
Superior Bending Rigidity

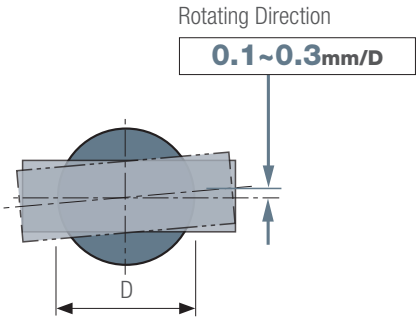
- The dovetail clamping work-holder with the HSK head works with heavy-duty milling.





High Positioning Accuracy



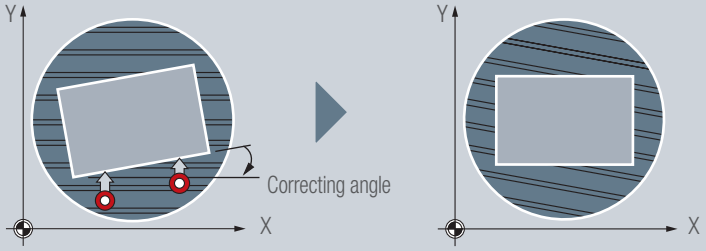


	D
HSK-A40	40
HSK-A63	63
HSK-A100	100

Offsetting the work-piece position in the rotating direction using a touch probe

- Measuring two locations along the work-piece side face using a touch probe enables you to offset the machine table angle easily.

BLUM high accuracy touch probe



Quick Work-piece Changing (Manual Clamping Head)

Off-line setup in advance allows quick work-piece changing, minimizing machine downtime.

For Automation (Hydraulic Automatic Clamping Head)

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

Hydraulic Automatic Clamping Head

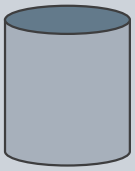
Work-piece Clamping & Mounting Options

The Swift Klamp System:

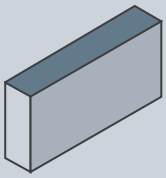
Workpiece Options

Dovetail (max. ☐ 200mm)

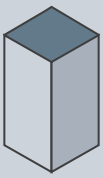
Large Diameters (max. 200mm)



Rectangular (max.depth 30mm)



Square (max. 40mm)

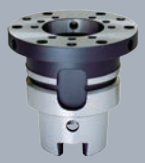


Small diameters (max. 25mm)

Workholder Options

Dovetail Clamping
Page 9

Dovetail Vise
Pages 9-10



Flange Clamping
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Side Clamp A
Page 16

Side Clamp B

Collet Holder

Direct Clamping

Dovetail Clamping
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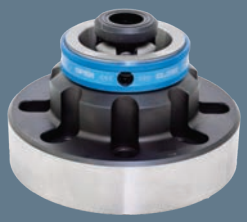
Flange Clamping
Page 19

Head Options

Manual Clamping



Manual Clamping Head
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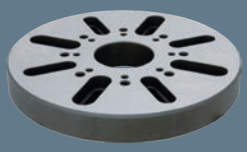
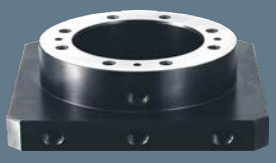


Mounting Plate

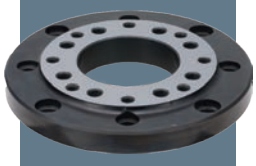
HSK-A40
HSK-A63
HSK-A100

Automatic Clamping

Hydraulic Automatic Clamping Head
Pages 17-18



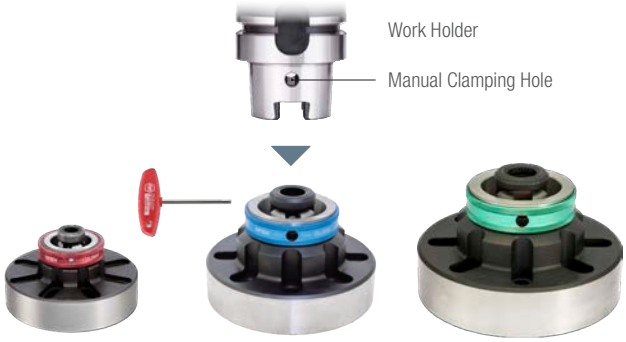
Mounting Plate



Mounting Plate

Machine Table

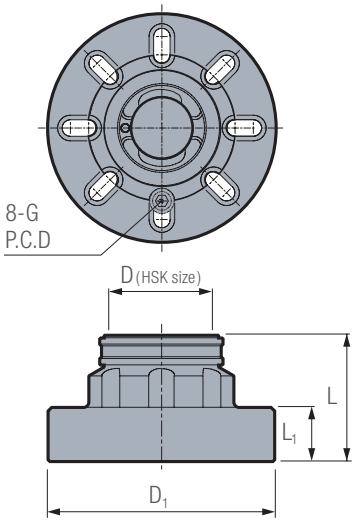
Manual Clamping Head (Manual Exchange)



HSK-A40 MHK-A40-50

HSK-A63 MHK-A63-70

HSK-A100 MHK-A100-110



Part No.	HSK Type	L	ØD	ØD$_1$	L$_1$	G	PCD	Clamping Force kN	Kg
MHK-A40-50	HSK-A40	50	40	100	25	M6x30	55~85	10	1.7
MHK-A63-70	HSK-A63	70	63	125	30	M8x35	80~100	20	3.8
MHK-A100-110	HSK-A100	110	100	200	50	M12x50	125~160	30	14

Option

- Mounting plate

Standard Accessories

- T-handle wrench
- Mounting bolt×4pcs.

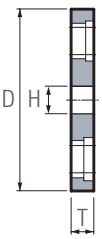
Note

- The manual clamping hole on the work holder is required for mounting.
- When you can't install it directly on the machine table, please use the mounting plate
- Contact us about the custom-mad e mounting plate for your machine table.

Mounting Plate

In the case where you can't mount the head directly to your machine table, please use this mounting plate. We can supply a blank that is customisable and also manufacture a special mounting plate just for you. For more information, please feel free to contact us.

MD200-K63



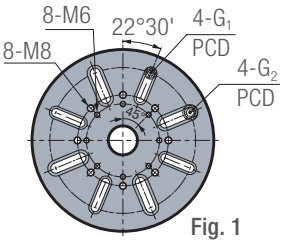


Fig. 1

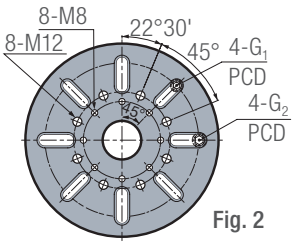


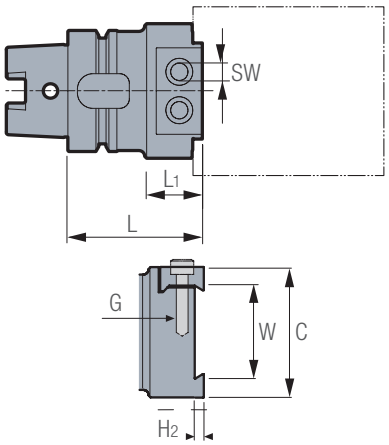
Fig. 2

Part No.	HSK Type	Fig.	T	ØD	ØH	G$_1$	G$_2$	PCD	Kg
MD160-K40	HSK-A40	1	20	160	32	M5x20	M6x20	80~125	2.6
MD200-K40		1	25	200	32	M8x25	M10x25	100~160	5
MD160-K63	HSK-A63	1	20	160	50	M5x20	M6x20	80~125	2.4
MD200-K63		1	25	200	50	M8x25	M10x25	100~160	4.7
MD250-K63		2	30	250	50	M10x30	M12x30	140~200	9.4
MD250-K100	HSK-A100	2	30	250	80	M10x30	M12x30	140~200	8.7

Dovetail Clamping

Dovetail Workholder

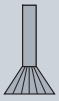
TDK-A63-25-65



Examples of work-piece clamping

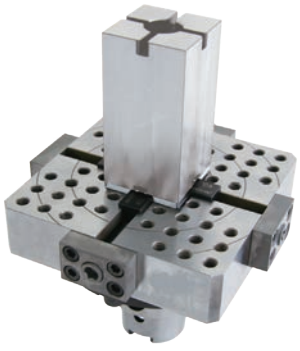
Part No.	HSK Type	L	L_1	ØC	W	H_2	G	SW	Kg
TDK-A40-17.5-55	HSK-A40	55	25	30	17.5	2	M5	4	0.4
TDK-A40-25-55		55	28	40	25	3	M6	5	0.6
TDK-A40-35-55		55	25	50	35	3	M6	5	0.7
TDK-A40-50-60		60	30	70	50	5	M8	6	1.2
TDK-A63-25-65	HSK-A63	65	27	40	25	3	M6	5	1.2
TDK-A63-35-65		65	27	50	35	3	M6	5	1.3
TDK-A63-50-70		70	30	70	50	5	M8	6	1.8
TDK-A63-70-75		75	35	100	70	3	M10	8	3
TDK-A100-35-70	HSK-A100	70	27	50	35.0	3	M6	5	3.3
TDK-A100-50-75		75	32	70	50	5	M8	6	3.8
TDK-A100-70-75		75	35	100	70	5	M10	8	5
TDK-A100-100-85		85	40	140	100	10	M12	10	7.7

Note
Dovetail machining of the work-piece clamping area using an angular cutter is required prior to machining.

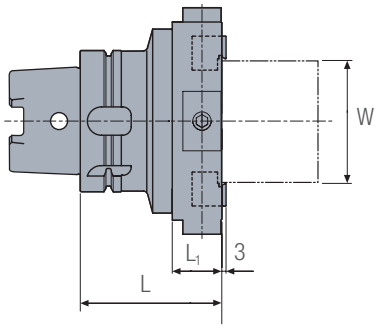


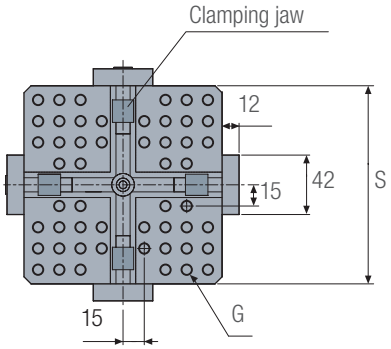
Angular Cutter
For more information, please go to page 11.

Dovetail Vice A

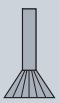


DAK-A63-110





Part No.	HSK Type	S	W	G (depth)	L	L_1	Kg
DAK-A63-110	HSK-A63	110	36~80	24 – M8(10)	90	35	5.7
DAK-A100-140	HSK-A100	140	36~110	52 – M8(10)	100	35	9.9



Angular Cutter
For more information, please go to page 11.

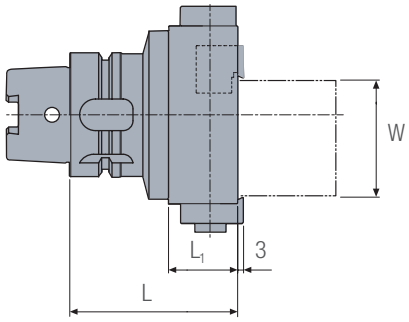
Standard Accessories
- 8mm hex wrench

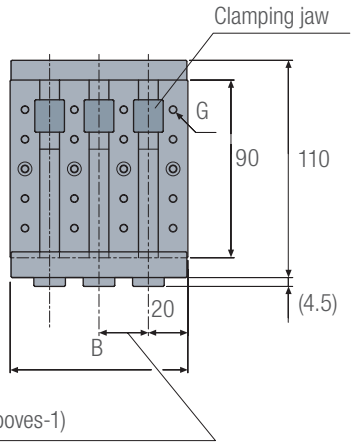
Note
- Dovetail machining of the work-piece clamping area using an angular cutter is required prior to machining.
- Work-piece clamping jaws move individually.
- Please use screw holes on the top face as necessary.

Dovetail Vice

Dovetail Vice B

DBK-A63-90





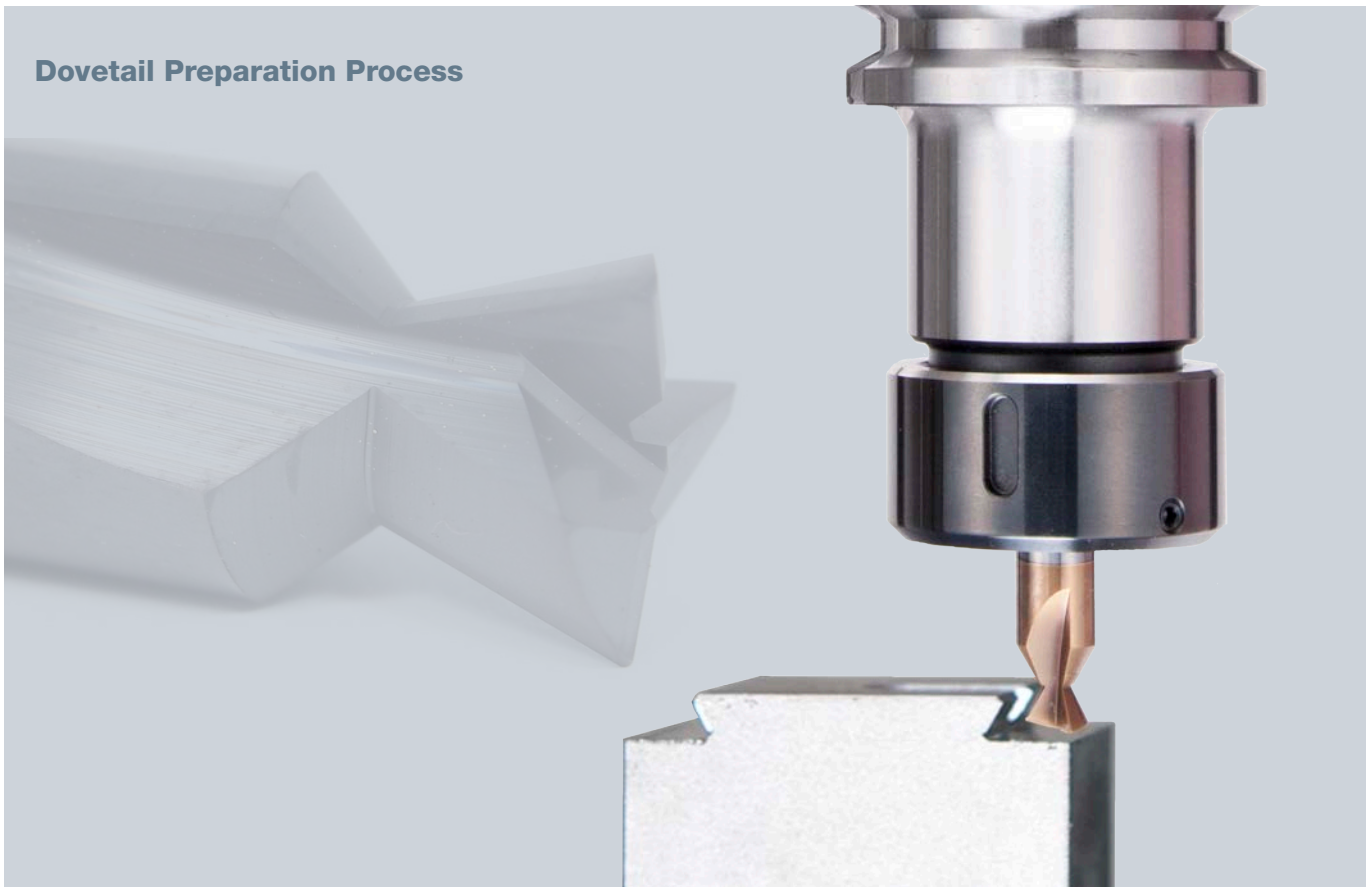
Part No.	HSK Type	No. of Grooves	B	W	G (depth)	L	L_1	Kg
DBK-A63-90	HSK-A63	3	90	12~73	20 – M4(6)	85	35	3.8
DBK-A100-140	HSK-A100	5	140	12~73	30 – M4(6)	100	35	7.7

Angular Cutter
For more information, please go to page 11.

Standard Accessories
- 8mm hex wrench

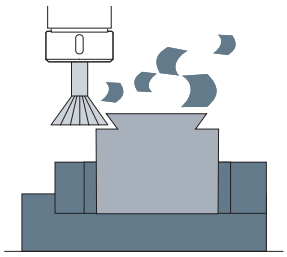
Note
- Dovetail machining of the work-piece clamping area using an angular cutter is required prior to machining.
- Work-piece clamping jaws move individually.
- Please use screw holes on the top face as necessary.

Dovetail Preparation Process

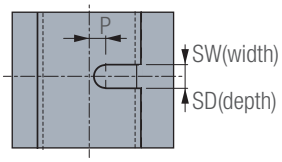


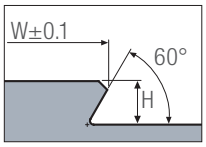
Dovetail Preparation

Dovetail Grooving



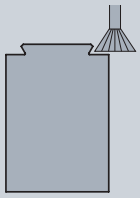
Dovetail Dimensions



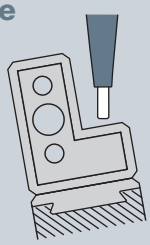


Work holder Size	W	H	P	SW	SD
17.5	17.5	2.5	2.5	4	2
25	25	3.5	2.5	6	2.5
35	35	3.5	5.5	8	2.5
50	50	5.5	9	10	4
70	70	5.5	18	12	4
100	100	10.5	26	15	4

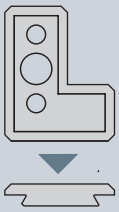
Procedures for Machining a Work-piece



Pre-machining a dovetail on the work-piece using the angular cutter.



Insert the dovetail into the dovetail groove, tighten it and you are ready to machine.



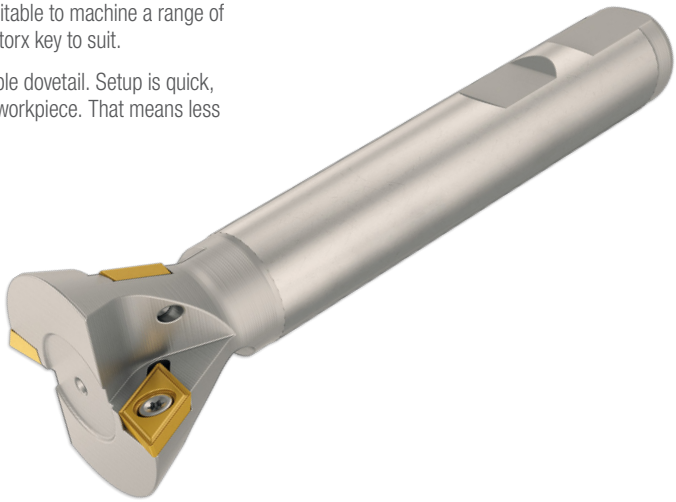
Cut off the work-piece dovetail

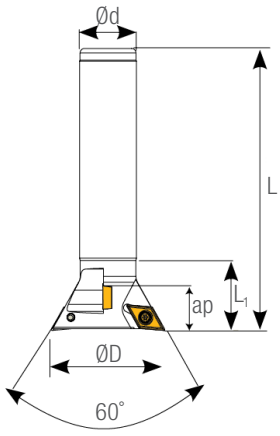
Swift Klamp Dovetail Cutter

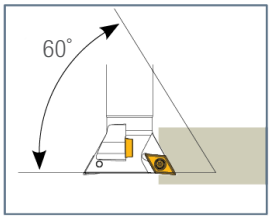
The Swift Klamp dovetail cutter can be used to prepare all workpieces for all the Swift Klamp dovetail systems. The TDC62A is an indexable insert dovetail cutter taking ISO standard inserts suitable to machine a range of materials. The TDC62A is supplied with a set of ten carbide inserts, screws and torx key to suit.

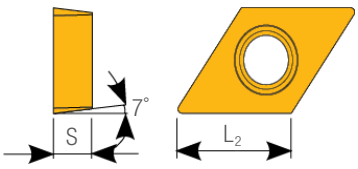
All Swift Klamp Dovetail work holders are attached to the workpiece using a simple dovetail. Setup is quick, easy and dovetail work holders only require the minimum of material to hold the workpiece. That means less waste, easy preparation and no distortion to the workpiece.

- Suitable to machine Aluminium, Steel and Titanium
- Indexable inserts for longevity and to accomadate various materials.
- One size fits all - Swift Klamp dovetail cutter to suit all workholder sizes









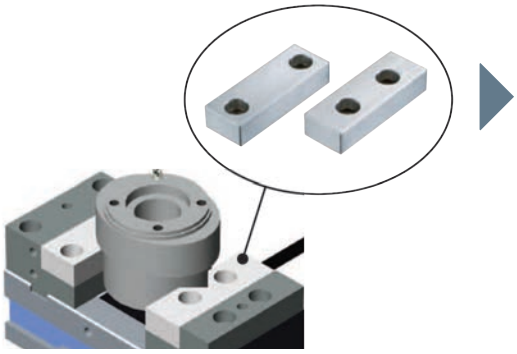
Part No.	Cutter Dia. Ø D	Shaft Dia. Ø d	Cutter Length L	Cutting Head Depth L_1	Max. Depth of Cut ap	Carbide Insert Length L_2	Carbide Insert Depth S	Weight Kgs
TDC62A	50	25	120	30	18	11.3	3.97	0.48

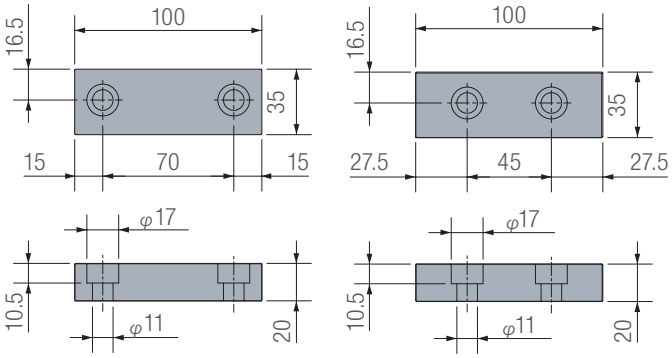
Pre-machining Vice for Raw Billet Dovetail Preparation

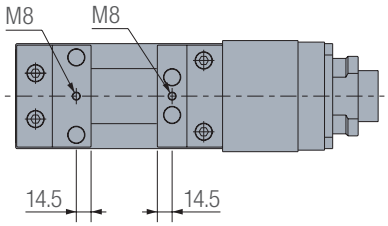
- High rigidity steel body
- Low height – offering a large machining area
- Aluminium jaws provided as standard allowing irregular and circular workpieces to be gripped by forming
- Large jaw opening allowing up top 204mm workpieces to be gripped.
- Stable clamping force provided by the mechanical force amplifier toggle mechanism
- Minimal jaw lift – 0.015mm or less

Aluminium Jaws Application

Irregular Workpiece Gripping

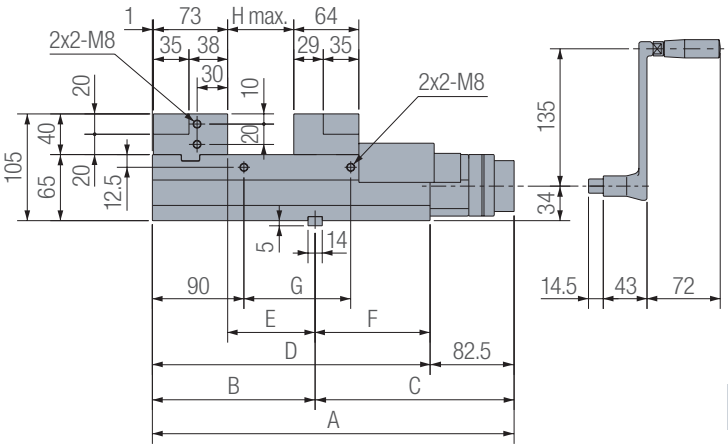


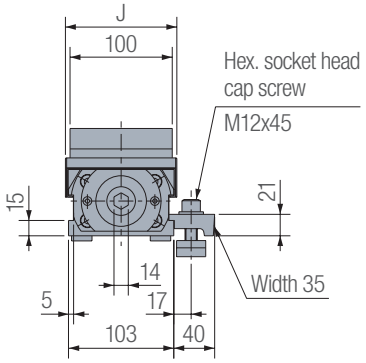




Model	Clamping Force Range			
	3	2	1	0
VC103N VC104N	20kN	15kN	10kN	8kN

* Zero range means clamp without a step-up mechanism. Clamp force shows an allowable amount.





Other vice specifications are available. For more information, please contact us.

Part No.	A	B	C	D	E	F	G	H	J	Max. Clamping force kN	Kg
VC103N	355.5	160	195.5	273	86	113	105	128	109	20	16
VC104N	431.5	200	231.5	349	126	149	181	204	112	20	19

Standard Accessories

- Clamp device assembly (clamp device, T-nut(s), bolt(s), washer(s)), handle, L-shaped hexagonal wrench, C-caps, slide cover.

Option

- Parallel clamp device, stepped guide block, ratchet handle, extension bar, soft jaws (a set of moving side and fixed side jaws).
- The guide block can be changed to suit the machine. In this case please contact us.

Machine Ready Dovetailed Prototype Blanks

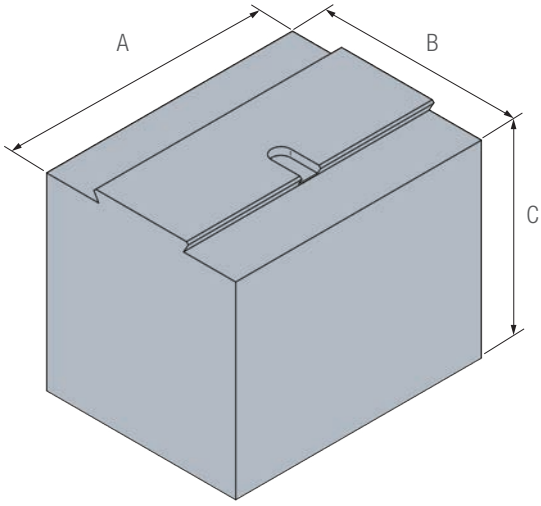
Pre-machined prototype blanks enable you to use your Swift Klamp system straight away

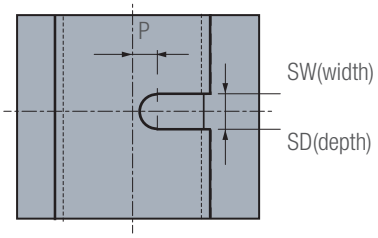
Swift Klamp Dovetailed prototype blanks are available in EN3B Steel (UK: 070M20, Germany: CK20, France: C18) or He30 Aluminium (UK: 6082-T6, Euro Std: EN-AW-6082, Sweden: 6082) and are supplied as standard sizes specified below. Each blank includes a machined dovetail feature to match your specific Swift Klamp dovetail work holder, ready to go into your machining centres and start cutting straight away.

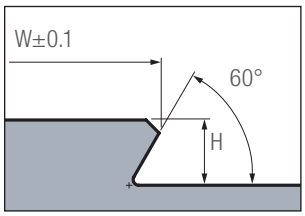
Maximize your investment in Swift Klamp dovetail work holders with 'ready to go' dovetailed blanks which enables you to:

- Prototype and test your machining process
- Reduce setup time, including the number of setups
- Make fixturing and clamping faster and easier

RB25-558
pre-machined
aluminium dovetailed
blank with positioning slot







Standard Machine Ready Dovetailed Prototype Blanks

- Other dimensions are available – for more information, contact us.

Work Holder Size	Part No.	Raw Billet dimensions A x B x C	Raw Billet Weight (EN3B Steel) Kgs	Wedge Width W	Wedge Height H	Slot offset P	Slot width SW	Slot Depth SD
17.5	RB175-335	30 x 30 x 50	0.4	17.5	2.5	2.5	4	2
	RB175-345	30 x 40 x 50	0.5					
	RB175-445	40 x 40 x 50	0.6					
25	RB25-448	40 x 40 x 80	1.0	25	3.5	2.5	6	2.5
	RB25-458	40 x 50 x 80	1.3					
	RB25-558	50 x 50 x 80	1.6					
35	RB35-5510	50 x 50 x 100	2.0	35	3.5	5.5	8	2.5
	RB35-5710	50 x 70 x 100	2.7					
	RB35-7710	70 x 70 x 100	3.8					
50	RB50-7712	70 x 70 x 120	4.6	50	5.5	9	10	4
	RB50-71012	70 x 100 x 120	6.6					
	RB50-101012	100 x 100 x 120	9.4					
70	RB70-101020	100 x 100 x 200	15.7	70	5.5	18	12	4
	RB70-101420	100 x 140 x 200	21.9					
	RB70-141420	140 x 140 x 200	30.7					
100	RB100-141430	140 x 140 x 300	46.0	100	10.5	26	15	4
	RB100-142030	140 x 200 x 300	65.8					
	RB100-202030	200 x 200 x 300	94.0					

Flange Clamping

Flange Clamp Workholder

FPK-A63-85-50

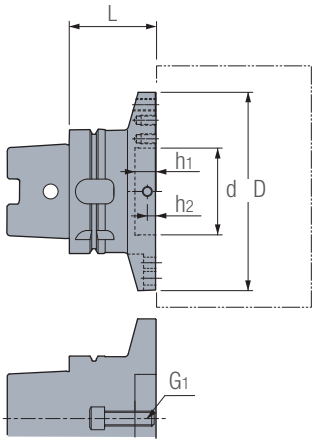


Fig. 1

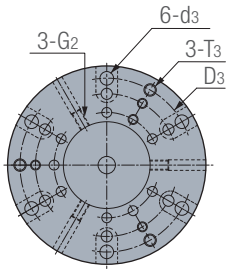


Fig. 2

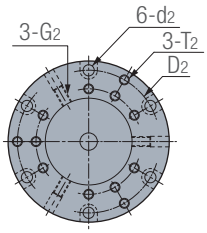
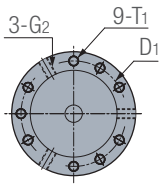


Fig. 3



Part No.	HSK Type	Fig.	L	ØD	$ØD_1$	$ØD_2$	$ØD_3$	Ød	h_1	h_2	T_1	T_2	T_3	$Ød_2$	$Ød_3$	G_1	G_2	Kg
FPK-A40-40-35	HSK-A40	3	35	40	32	-	-	25	12	4	M4×6	-	-	-	-	M6×15	M4×8	0.3
FPK-A40-63-40		2	40	63	32	50	-	25	12	4	M4×6	M5	-	5.5	-	M6×20	M4×8	0.5
FPK-A63-63-45	HSK-A63	3	45	63	50	-	-	40	13	5	M5×8	-	-	-	-	M10×20	M6×10	0.9
FPK-A63-85-50		2	50	85	50	73	-	40	13	5	M5×8	M6	-	6.6	-	M10×25	M6×10	1.2
FPK-A63-110-55		1	55	110	50	73	95	40	13	5	M5×8	M6×9	M8	6.6	9	M10×30	M6×10	1.7
FPK-A100-100-55	HSK-A100	3	55	100	85	-	-	70	17	7	M8×12	-	-	-	-	M12×25	M8×16	3.0
FPK-A100-130-65		2	65	130	85	115	-	70	17	7	M8×12	M8	-	9	-	M12×35	M8×16	4.2
FPK-A100-160-70		1	70	160	85	115	140	70	17	7	M8×12	M8×12	M10	9	11	M12×40	M8×16	5.3

Standard Accessories

- Center bolt (G_1) ×1pc. • Set screw (G_2) ×3pcs. • M6 special small head bolt (the head diameter size is the same as the M5 bolt.) ×3 pcs. (A63-FP85-50 / A63-FP110-55) • Regular M6 cap screw doesn't fit.

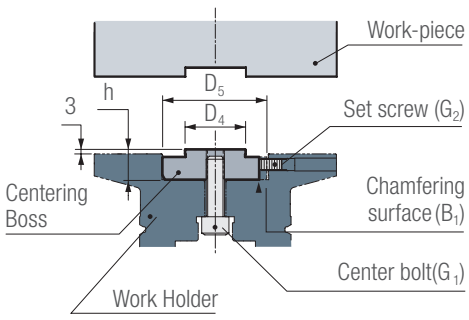
Note

- Centering boss • Adapter

Not Option

- Use the G2 set screw when you use the center blot 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 (G_2).

Centering Boss (Flange Clamping)



CBK40-15

Part No.	HSK Type	$ØD_4$	$ØD_5$	h	Kg
CBK40-15	HSK-A40	15 $^{0}_{-0.027}$	25	15	0.05
CBK63-25	HSK-A63	25 $^{0}_{-0.033}$	40	16	0.1
CBK100-40	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 ØD (B_1) of the boss, and fix it using a set screw (G_2).

Adapter (Flange Clamping)

Adapter (Flange Clamping)

- Used with the flange clamping work holder
- Minimizing clamping area for a small-size work-piece, reducing the machining interference area.

Fig. 1

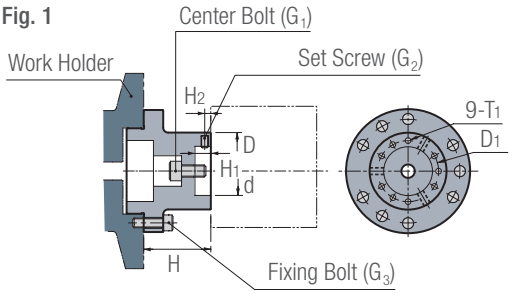
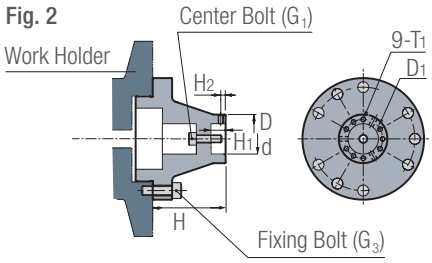
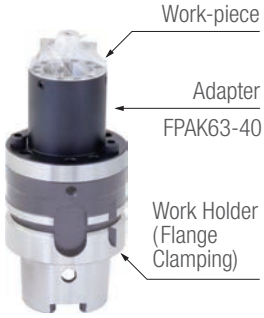


Fig. 2





Part No.	Flange Clamp Type	Fig.	ØD	$ØD_1$	Ød	H_1	H_2	H	T_1	G_1	G_2	G_3	Kg
FPAK63-40	FPK63-63-45	1	40 +0.053 +0.020	32	25	12	4	50	M4×6	M6×20	M4×8	M5x16	0.5
	FPK63-85-50	1		32	25	12	4	50	M4×6	M6×20	M4×8	M5x16	0.5
	FPK63-110-55	1		32	25	12	4	50	M4×6	M6×20	M4×8	M5x16	0.5
FPAK100-40	FPK100-100-55	2	40 +0.053 +0.020	32	25	12	4	60	M4×6	M6×20	M4×8	M8x25	1.5
	FPK100-130-65	2		32	25	12	4	60	M4×6	M6×20	M4×8	M8x25	1.5
	FPK100-160-70	2		32	25	12	4	60	M4×6	M6×20	M4×8	M8x25	1.5
FPAK100-63	FPK100-100-55	1	63 +0.064 +0.025	50	40	13	5	55	M5×8	M10×20	M6x10	M8x25	1.7
	FPK100-130-65	1		50	40	13	5	55	M5×8	M10×20	M6x10	M8x25	1.7
	FPK100-160-70	1		50	40	13	5	55	M5×8	M10×20	M6x10	M8x25	1.7

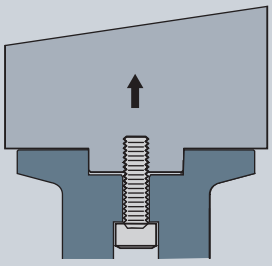
Standard Accessories

- Center screw (G_1) × 1pc. • Set screw (G_2) × 3pcs. • Fixing bolt (G_3) × 3pcs.

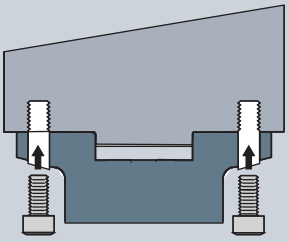
Note

- Clamp the work-piece with the center bolt(G_1). When you do not want the work-piece to rotate, secure the chamfering surface using a set screw.

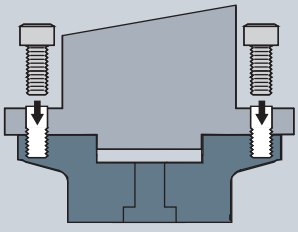
Work-piece Mounting Methods



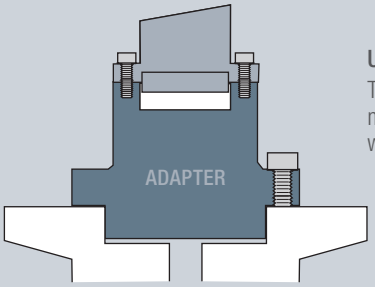
Center Bolt Type
The center bolt clamps the work-piece from behind the work holder taper shank.



Flange Bolt Type
Bolts clamp the work-piece through the work holder bolt holes. Screw holes are required on the work-piece.



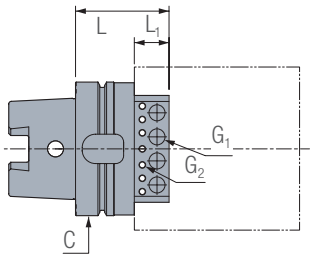
Flange Tap Type
The work-piece is clampe using the thread on the work holder. Screw holes are required on the work-piece.

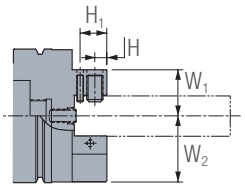


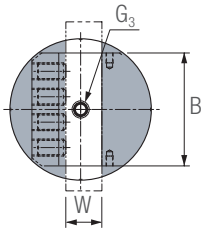
Using an Adapter
The small work-piece is mounted using a adapter with a large diameter holder.

Side Clamp Workholder

Side Clamp A







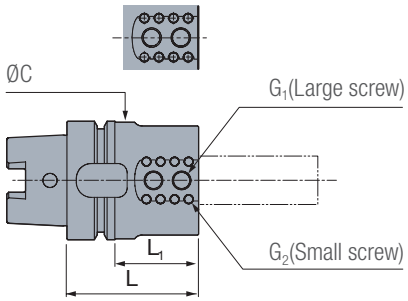

SAK-A63-10-55

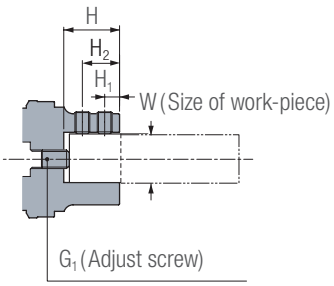
Part No.	HSK Type	W	W_1	W_2	B	L	L_1	ØC	H	H_1	G_1 (Bolt)	G_2	G_3	Kg
SAK-A40-10-40	HSK-A40	5~10	13	18.6	30	40	11	39	4.5	-	M6×L10	-	M6	0.5
SAK-A63-10-55	HSK-A63	5~10	20	23.5	50	55	21	62	7.5	17	M6×L15	M5	M10	1.1
SAK-A63-20-55		15~20	25	28.5	50	55	21	62	7.5	17	M6×L15	M5	M10	1.1
SAK-A100-20-70	HSK-A100	12~20	29.5	34	80	70	26	99	9	20	M12×L20	M5	M12	3.6
SAK-A100-30-70		22~30	34.5	39	80	70	26	99	9	20	M12×L20	M5	M12	3.6

Standard Accessories

- Large screw(G_1) ×2 pcs.

Side Clamp B






SBK-A63-30-70

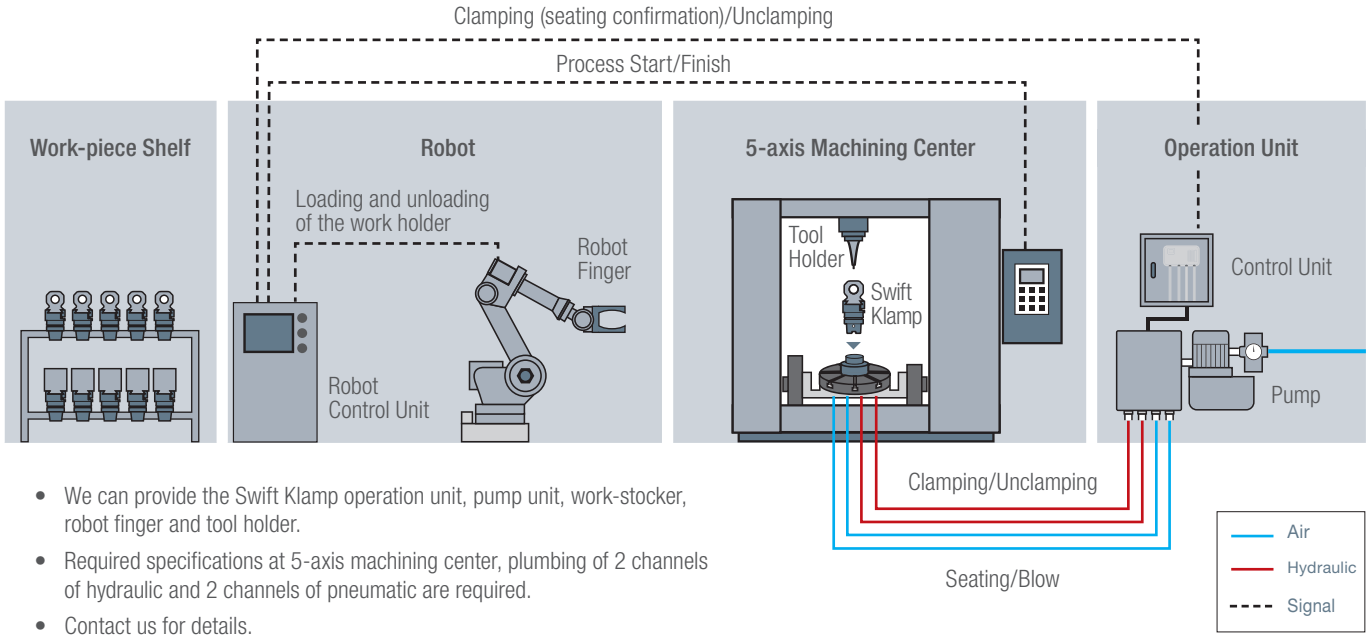
Part No.	HSK Type	W	L	L_1	ØC	H	H_1	H_2	G_1	G_2	G_3	Kg
SBK-A40-20-55	HSK-A40	15~20	55	30	49	25	11	-	M8×16	M4×12	M10	0.5
SBK-A63-20-65	HSK-A63	15~20	65	30	49	25	11	-	M8×16	M4×12	M10	1.2
SBK-A63-25-70		20~25	70	35	56	30	8	20	M8×16	M4×12	M10	1.3
SBK-A63-30-70		20~30	70	44	62	35	9	24	M10×20	M5×12	M10	1.4
SBK-A63-40-85		35~40	85	52	76	45	12	30	M10×20	M6×12	M10	1.9
SBK-A100-20-70	HSK-A100	15~20	70	30	49	25	11	-	M8×16	M4×12	M10	3
SBK-A100-25-75		20~25	75	35	56	30	8	20	M8×16	M4×12	M10	3.4
SBK-A100-30-80		25~30	80	35	62	35	9	24	M10×20	M5×12	M10	3.5
SBK-A100-40-90		35~40	90	45	76	45	12	30	M10×20	M5×12	M10	3.9

Standard Accessories

- Large screw(G_1) ×4 pcs.

Overview of Automation

The System Development with the Systems Integrator



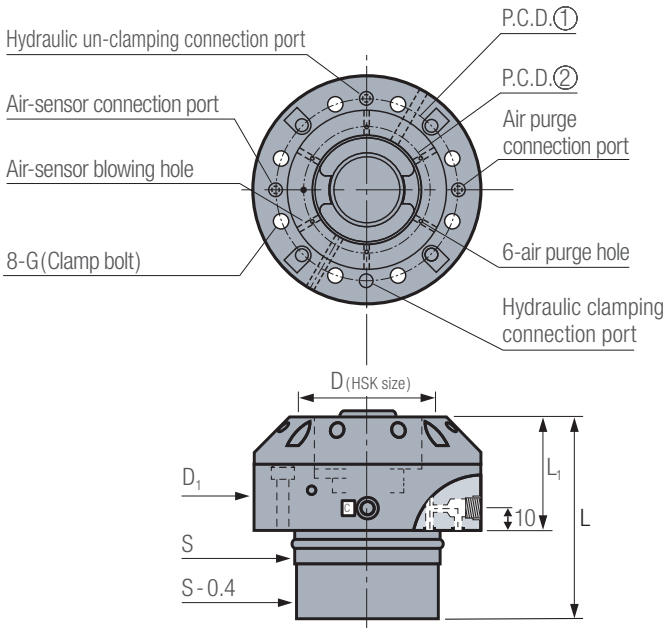
- We can provide the Swift Klamp operation unit, pump unit, work-stocker, robot finger and tool holder.
- Required specifications at 5-axis machining center, plumbing of 2 channels of hydraulic and 2 channels of pneumatic are required.
- Contact us for details.

Hydraulic Automatic Clamping Head (Automatic Exchange)

HSK-A40 AHK-A40-64

HSK-A63 AHK-A63-89

HSK-A100 AHK-A100-139

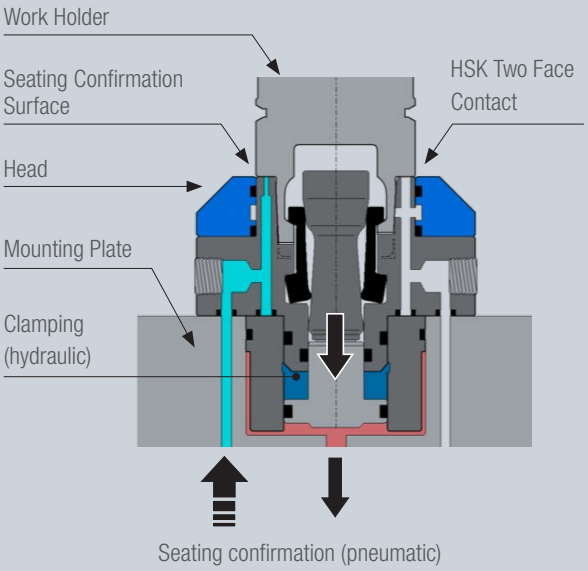


Part No.	HSK Type	L	ØD	ØD$_1$	ØS$_{(g6)}$	L$_1$	G	PCD$_1$	PCD$_2$	Clamping Force kN	Max Loading Weight	Kg
AHK-A40-64	HSK-A40	64	40	70	45	35	M5x20	55	35	6	50	1.1
AHK-A63-89	HSK-A63	89	63	100	65	50	M6x30	80	55	24	140	3.1
AHK-A100-139	HSK-A100	139	100	140	100	80	M8x45	120	88	55	640	9.7

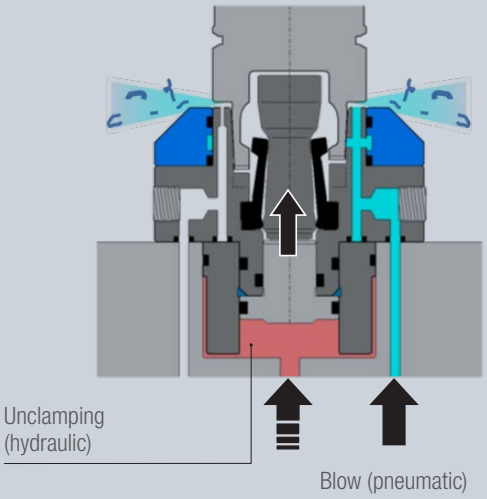
Note Hydraulic capacity: 3.5MPa

Hydraulic Automatic Clamping Head Specifications

Clamping



Unclamping



3.5MPa

Low-pressure hydraulic (3.5MPa) system for clamping/unclamping. Can be used with an air booster pump.

Seating Detection Air

Detecting poor work holder seating

Air Blow

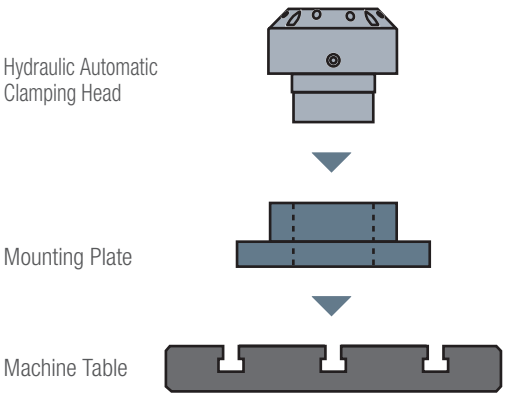
Prevents the intake of cutting chips into the head

Mounting Plate

A mounting plate is required for the hydraulic clamping-type auto-head. The mounting plate is the adapter for installation on the machine table and for connecting the hydraulic and pneumatic lines.

Note
Please provide us with a detailed drawing of your machine table and the plumbing drawing of your hydraulic and pneumatic lines. We can design and produce an exclusive mounting plate, so please contact us for more information.

Seating confirmation

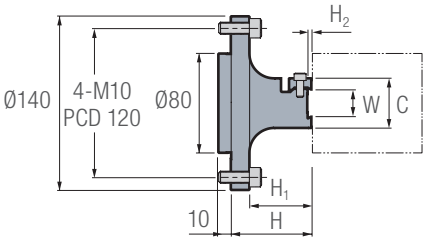


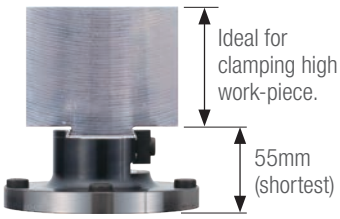
Direct Clamping (Direct Mounting Type on the Machine Table)

- It clamps a work-piece with the shortest length thanks to direct mounting on the table, and provides a larger machining area.

Dovetail Clamping

Part No.	H	H_1	H_2	ØC	W	Kg
TDS80-17.5-60	60	45	2	30	17.5	2.5
TDS80-25-60	60	45	3	40	25	2.6
TDS80-35-55	55	40	3	50	35	2.8
TDS80-50-55	55	40	5	70	50	3.4
TDS80-70-55	55	40	5	100	70	4.7
TDS80-100-55	55	40	10	140	100	5.5





TDS80-50-55

Standard Accessories
- Fixing bolt×4 pcs.

Note
- Dovetail machining of the work piece clamping area using an angular cutter is required prior to machining.
- The mounting plate is required to install it on the machine table.

Option
- Mounting plate

Angular Cutter
For more information, please go to page 11.

Flange Clamping

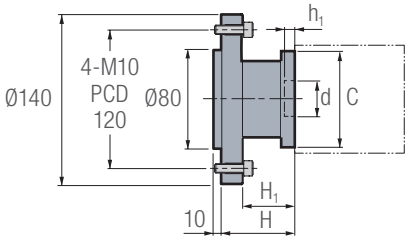


Fig. 1

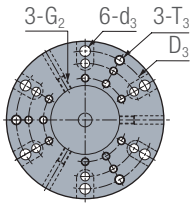


Fig. 2

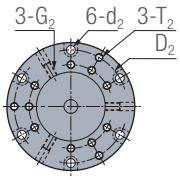
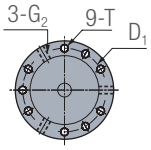


Fig. 3



FPS80-85-50

Part No.	Fig.	H	H_1	ØC	$ØD_1$	$ØD_2$	$ØD_3$	Ød	h_1	T_1	T_2	T_3	d_2	d_3	G_2	Kg
FPS80-60-50	3	50	25	63	50	-	-	40	13	M5x8	-	-	-	-	M6x10	2.6
FPS80-85-50	2	50	25	85	50	73	-	40	13	M5x8	M6	-	6.6	-	M6x10	3.1
FPS80-110-70	1	70	45	110	50	73	95	40	13	M5x8	M6x9	M8	6.6	9	M6x10	3.7
FPS80-130-75	2	75	45	130	85	115	-	70	17	M8x12	M8	-	9	-	M8x16	5.5

Standard Accessories
- Fixing bolt×4 pcs.

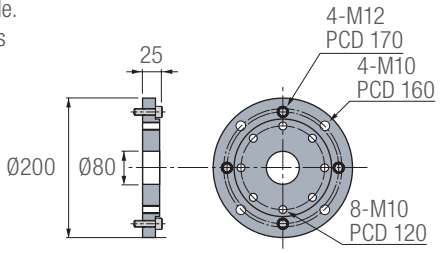
Note
- The mounting plate is required to install it on the machine table.

Option
- Mounting plate • Positioner boss • Adapter

Mounting Plate

The mounting plate is required to install the direct clamping type, Smart Grip, on the machine table. We can design and produce an exclusive mounting plate to meet your needs, so please contact us for more information.

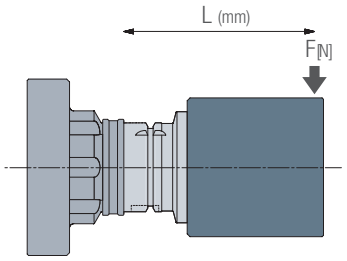
Part No.	Kg
MD200-S140-25	4.3

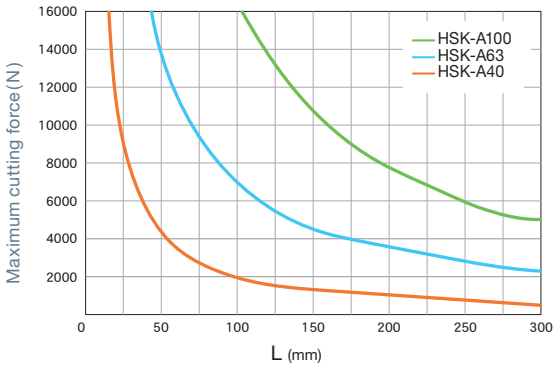


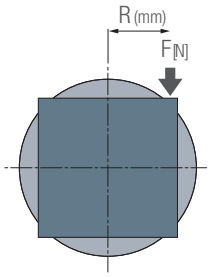
Technical Data

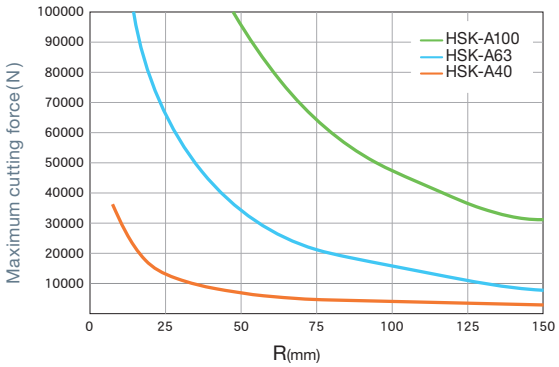
Maximum Cutting Force

Using the charts below, please confirm the machining load limits for your work-piece size (length L and dia R.). When you start machining using the Smart Grip, reduce the machining load 60~80% based upon the chart. Please choose the optimum work holder for your machining conditions.

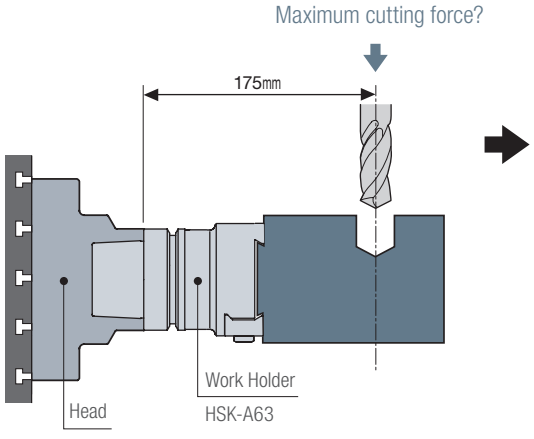


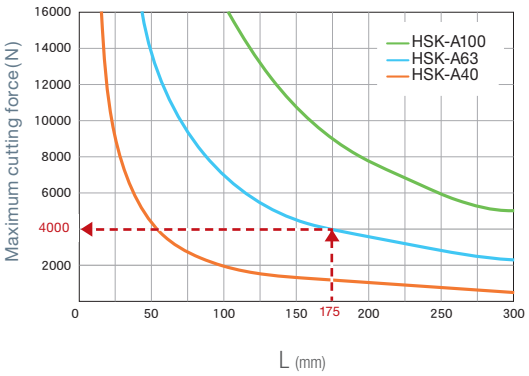






(ex.) The value of maximum cutting force





Please confirm the machining load limit value (N) of the HSK-A63 with L=175mm from the chart. Max. 4,000N (please start at 2,400~3,200N)

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