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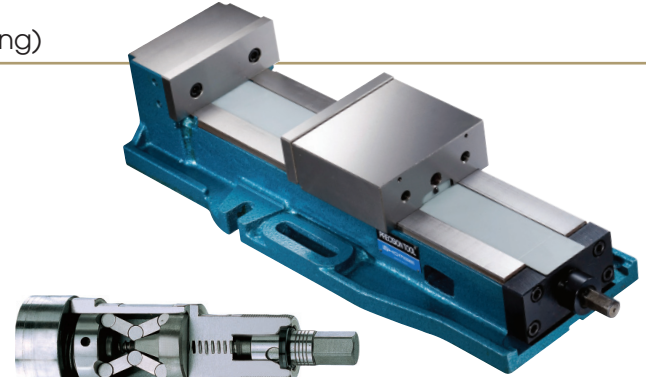
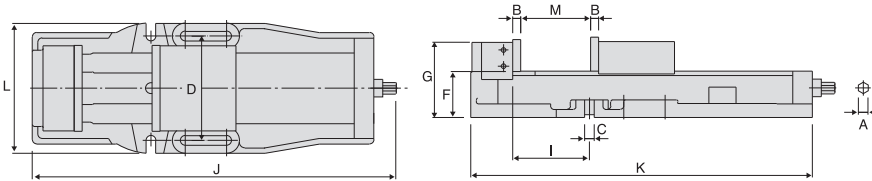
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# INTRODUCING HOMGE WORKHOLDING SYSTEMS

## Standard Fixed Angle Precision Vises (Extended Opening)

- ▶ Material: FCD 60 ductile iron; Hardness: 50 HRC
- ▶ Standard clamping leadscrew
- ▶ Super-opening design allows jaws to open 340mm for HEAV-160 and 425mm for HEAV-200
- ▶ With jaws mounted externally maximum workholding capacity is 480mm for HEAV-160 and 580mm for HEAV-200



Multi-Power Clamping System

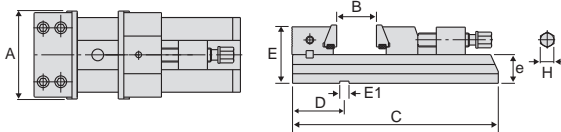
Dimensions are stated in mm

Model	A	B	C	D	F	G	I	J	K	L	M	M1	Weight (kg)	Code No.	Price
HEAV-160	19	15	18	192	85 ±0.01	140	141±0.01	683	628	240	0-340	140-480	50	277014	\$ 1,352.00
HEAV-200	19	18	18	240	100 ±0.01	160	190±0.01	775	720	280	0-425	155-580	95	277016	1,955.00

## Precision Rapid Vises

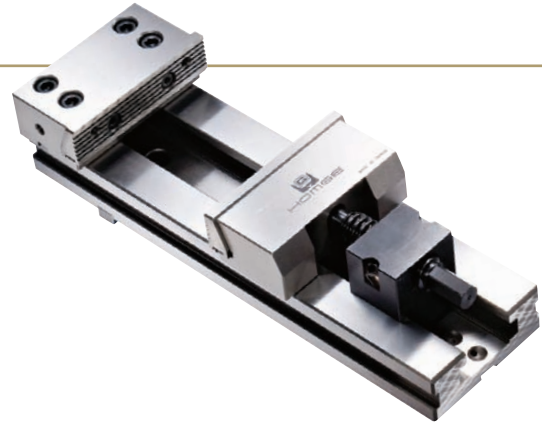
- ▶ Designed with an instant clamping hex nut for quick adjustment when clamping workpieces of different lengths
- ▶ Moveable jaw is short in length for maximum opening capacity
- ▶ Tapered jaws provide more stable clamping force
- ▶ 100% steel construction provides better strength and accuracy retention
- ▶ Compact design allows maximum workholding capacity on machine

STANDARD ACCESSORIES: 2 alignment wedges, 4 clamps



Dimensions are stated in mm

Model	A	B	D	E	E1	e	C	H	Clamping Force	Weight (kg)	Code No.	Price
HG-100	100	100	73 ±0.02	68	14	37 ±0.01	250	12	2 Tons	8	277030	\$ 1,220.00
HG-150A	150	150	88 ±0.02	95	18	48 ±0.01	350	23	4 Tons	23	277032	1,340.00
HG-150B	150	200	88 ±0.02	95	18	48 ±0.01	400	23	4 Tons	25	277034	1,380.00
HG-150D	150	300	88 ±0.02	95	18	48 ±0.01	500	23	4 Tons	29	277036	1,860.00
HG-200A	205	200	85 ±0.02	126	18	63 ±0.01	470	26	5 Tons	55	277038	1,960.00
HG-200C	205	300	85 ±0.02	126	18	63 ±0.01	570	26	5 Tons	73	277040	2,190.00



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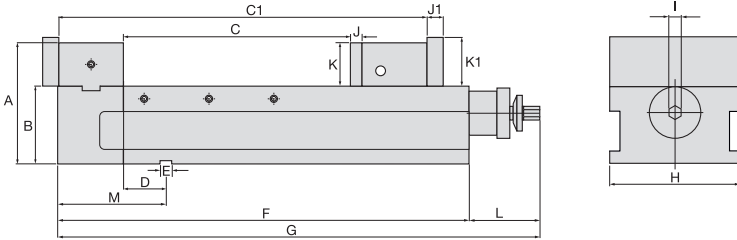
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## Multi-Power CNC Super Vises

- ▶ Material: FCD 60 ductile iron; Hardness: 50 HRC
- ▶ Short length with large jaw opening
- ▶ Extremely high accuracy and repeatability
- ▶ Special Multi-Power design enhances clamping force up to 8000 kg



Dimensions are stated in mm

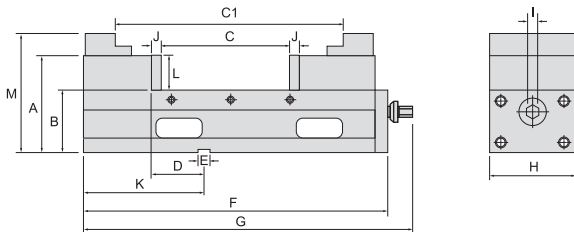
Model	A	B	C	C1	D	E	F	G	H	I	J	J1	K	K1	L	M	Max. Clamping Force (kg)	Weight (kg)	Code No.	Price
HPAQ-160	168	115 ±0.01	0-300	195-490	57 ±0.02	18	560	677	160	19	15	21	53	63	117	145	8,000	73	277000	\$ 2,486.00
HPAQ-200	187	120 ±0.01	0-350	220-570	66 ±0.02	18	637	754	200	19	18	25	66	75	117	168	8,000	120	277002	3,293.00



STANDARD ACCESSORIES: 2 alignment wedges, 4 clamps

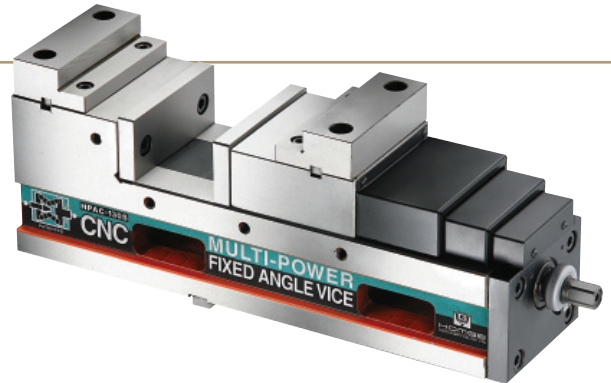
## Multi-Power CNC Precision Fixed Angle Vise

- ▶ Material: FCD 60 ductile iron; Hardness: 50 HRC
- ▶ Mounts horizontally or vertically
- ▶ Short length with large jaw opening
- ▶ Extremely high accuracy and repeatability
- ▶ Special Multi-Power design enhances clamping force up to 8000 kg



Dimensions are stated in mm

Model	A	B	C	C1	D	E	F	G	H	I	J	K	L	M	Max. Clamping Force (kg)	Weight (kg)	Code No.	Price
HPAC-160S	160	105 ±0.01	0-250	190-430	80 ±0.02	18	532	580	160	19	15	183	58	196	8,000	64	277005	\$ 3,067.00



STANDARD ACCESSORIES: 2 alignment wedges, 4 clamps

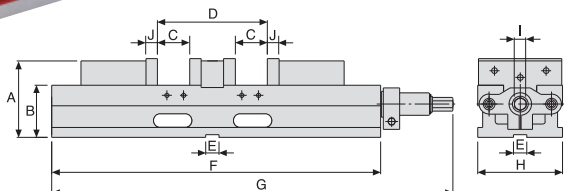
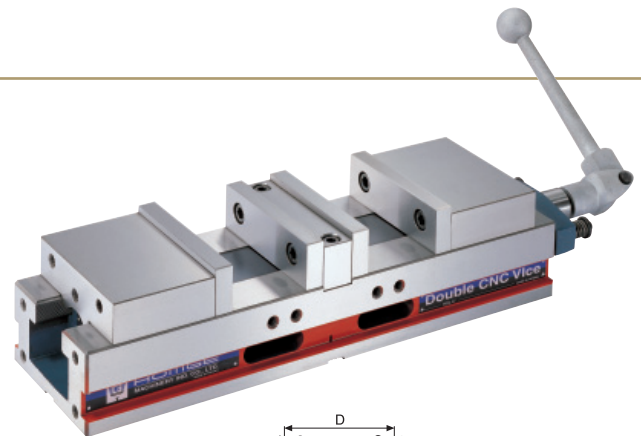
## Double CNC Precision Vises

- ▶ Material: FCD 55 ductile iron; Hardness: 50 HRC
- ▶ Increases the workholding capacity of CNC machining centers by holding two pieces of different sizes (max. opening difference 70mm)
- ▶ Compact design allows several vises to be fitted to the machine table
- ▶ Center jaw may be removed to hold larger workpieces
- ▶ When center jaw is removed the vise is self-centering
- ▶ Special spring device allows an extra range of up to 5mm in workpiece size, enabling quick positioning and clamping

STANDARD ACCESSORIES: 2 alignment wedges, 4 clamps

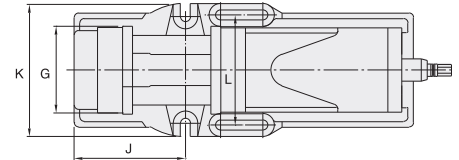
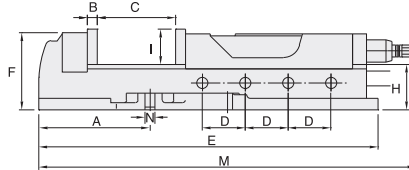
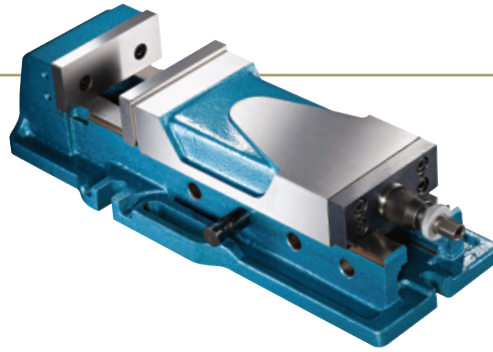
Dimensions are stated in mm

Model	A	B	C	D	E	F	G	H	I	J	Weight (kg)	Code No.	Price
HDL-4"	92	63 ±0.01	74	200	18	395	480	104	14	14	20	277008	\$ 1,925.00
HDL-6"	118	80 ±0.01	100	270	18	517	615	154	19	18	46	277010	2,140.00



## Super Open Quick Action Vise

- ▶ Material: FCD 60 ductile iron; Hardness: 50 HRC
- ▶ Patented Multi-Power System provides extremely high clamping force of 0-4500 kg
- ▶ Consistent clamping pressure
- ▶ Eliminates all leakage and maintenance problems associated with hydraulic vises
- ▶ More compact than hydraulic vises
- ▶ Body has one-piece construction for high rigidity and precision
- ▶ Angle lock mechanism provides downward pressure on jaw to ensure parallel clamping force
- ▶ Both surfaces of slideways are heat treated for durability
- ▶ Large opening capacity up to 300mm

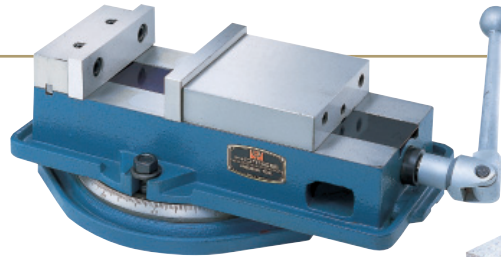


Dimensions are stated in mm

Model	A	B	C	D	E	F	G	H	I	J	K	L	M	N	Weight (kg)	Code No.	Price
HSAC-160	200	15	300	77	610	139	158	82	63	200	240	190	915	18	58	277011	\$ 1,610.00

## Precision Angle Lock Machine Visers

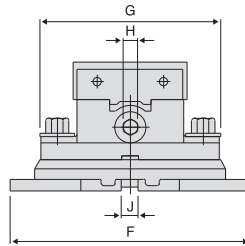
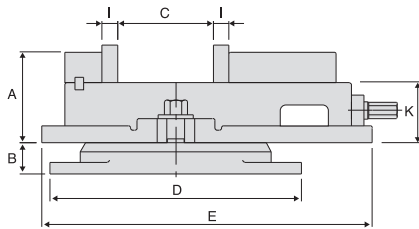
- ▶ Material: FCD 55 ductile iron; Hardness: 45 HRC
- ▶ Two set screws in the fixed jaw ensure that jaws do not tilt backwards when high clamping force is applied
- ▶ Iron leadscrew cover protects vise internals from contamination
- ▶ Both sides of slideways are heat treated for durability
- ▶ Angle lock mechanism creates downward pressure on jaw ensuring both jaws are parallel during clamping
- ▶ Needle bearing thrust collar cuts friction and increases clamping pressure by 80%



HAV



6" SUPER OPEN 8"

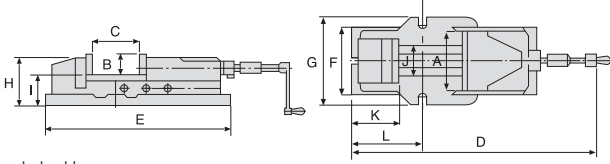


Model	Clamping Range (mm/Inch)	Clamping Range (mm/Inch)	Clamping Range (mm/Inch)	Clamping Range (mm/Inch)
HAV-4"	107/4.09	154/6.06	220/8.66	271/10.67
HAV-5"	110/4.33	163/6.42	249/9.80	304/11.97
HAV-8"	198/7.80	264/10.39	402/15.83	476/18.74
HAV-12"	320/12.60	400/15.75	480/18.90	560/22.05
6" SUPER OPEN 8"	190/7.48	263/10.35	349/13.74	413/16.26

Model	A (mm/Inch)	B (mm/Inch)	C (mm/Inch)	D (mm/Inch)	E (mm/Inch)	F (mm/Inch)	G (mm/Inch)	H (mm/Inch)	I (mm/Inch)	J (mm/Inch)	K (mm/Inch)	Weight (kg)	Code No.	Price
HAV-4"	87/3.43	30/1.18	107/4.09	242/9.53	318/12.52	230/9.06	172/6.77	14/0.55	15/0.59	16/0.63	58/2.28	20	277020	\$ 660.00
HAV-5"	98/3.86	32/1.26	110/4.33	280/11.02	355/13.98	256/10.00	210/8.27	15/0.59	15/0.59	16/0.63	66/2.60	29	277022	740.00
HAV-8"	136/5.35	55/2.17	198/7.80	422/16.61	555/21.85	380/14.96	305/12.00	19/0.75	24/0.94	18/0.71	84/3.31	80	277024	1,580.00
HAV-12"	219/8.62	-	320/12.60	-	738/29.06	-	408/16.06	19/0.75	24/0.94	-	102/4.02	125	277026	2,590.00
6" SUPER OPEN 8"	114/4.49	42/1.65	198/7.80	336/13.23	433/17.05	300/11.81	238/9.37	19/0.75	18/0.71	18/0.71	75/2.95	50	277027	790.00

## Hydraulic Machine Vises

- ▶ Constructed with a hydraulic cylinder which absorbs cutting vibration and improves the precision of machining while maintaining a high clamping force
- ▶ Vise body is made of high tensile cast iron and slideways are hardened and ground to ensure rigidity, durability and minimal deformation
- ▶ Jaws are made of special hardened alloy steel and are precision ground



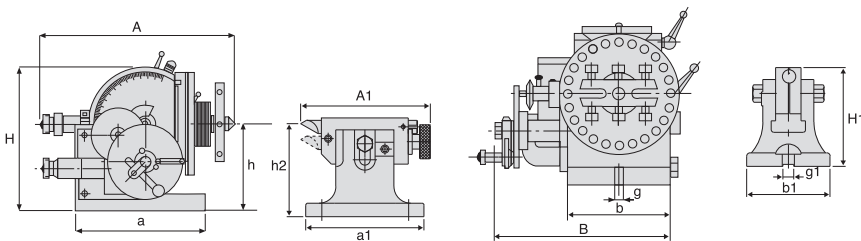
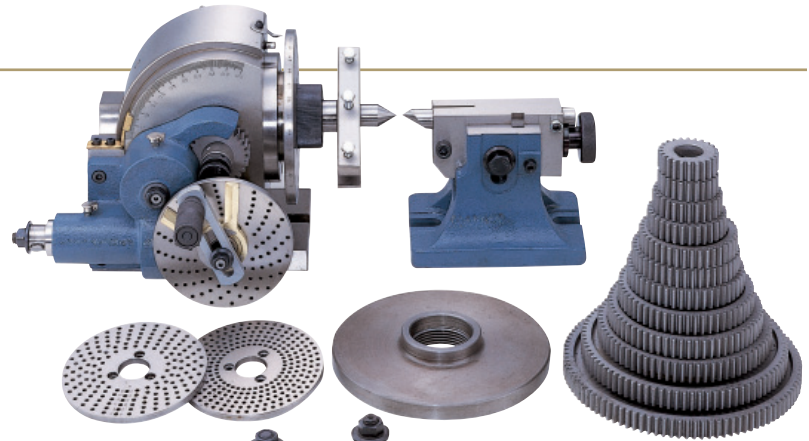
Dimensions are stated in mm

Model	A	B	C	D	E	F	G	H	I	J	K	L	Clamping Force (kg)	Body Weight (kg)	Base Weight (kg)	Code No.	Price
HH-100	100	36	170	525	430	130	160	94	60	78	100	155	2,500	16	6	277050	\$ 1,025.00
HH-125	125	46	220	670	540	165	185	118	72	97	117	185	3,500	33	7	277052	1,125.00
HH-150	150	51	300	800	620	200	240	133	82	116	125	207	4,500	54	16	077054	1,225.00
HH-200	200	62	300	900	700	225	280	160	100	160	150	265	8,500	90	20	077056	2,125.00



## Universal Dividing Heads

- ▶ Designed for all types of gear cutting applications
- ▶ Precision dividing and spiral dividing (except type BS-0 and BS-1) are accomplished with accuracy and efficiency
- ▶ Center face can be tilted from a horizontal position of 90° down to -10° from vertical
- ▶ Scale graduated in 1° increments
- ▶ The center is built to the highest engineering standards
- ▶ Ratio of worm to gear is 40:1
- ▶ Units are factory inspected and tested



### Universal Dividing Heads

Model	A (mm/Inch)	B (mm/Inch)	H (mm/Inch)	h (mm/Inch)	a (mm/Inch)	b (mm/Inch)	g (mm/Inch)	Taper of Center	Weight (kg)	Code No.	Price
BS-2	365/14.37	272/10.71	236/9.29	132.7/5.22	213/8.39	134/5.28	16/0.63	B&S No.10	73	277075	\$ 1,610.00

### Tail-Stock for Universal Dividing Heads

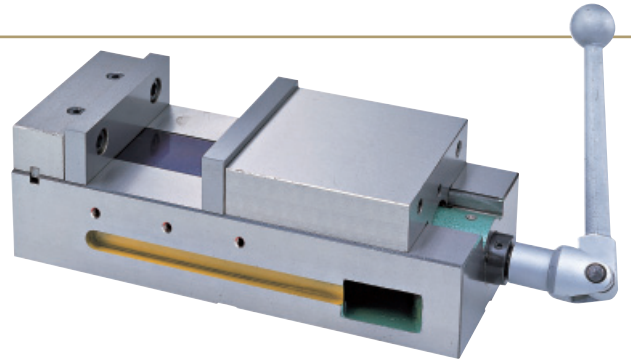
Model	A1 (mm/Inch)	a1 (mm/Inch)	b1 (mm/Inch)	g1 (mm/Inch)	H1 (mm/Inch)	h2 Center Height Max./Min. (mm)	Weight (kg)	Measurement M <sup>3</sup>
BS-2	194/7.64	177/6.97	125/4.92	16/0.63	147/5.79	138/115		Packed with the Dividing Head

### Standard Accessories: Dividing Plate A, B, C. Number of Holes of Dividing Plate (Worm Gear Reduction Ratio 40:1)

Number of Holes	Plate A	15	16	17	18	19	20
	Plate B	21	23	27	29	31	33
	Plate C	37	39	41	43	47	49

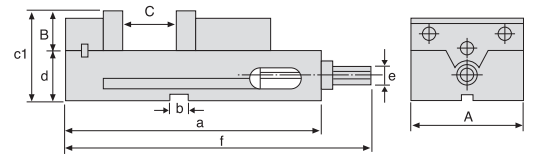
## Lock II Machine Vise

- ▶ Ideal design for CNC machining applications
- ▶ No coolant through design enables "ganging" a series of these vises side-by-side on the machine table
- ▶ Minimum center-to-center machining distance when vises are ganged together
- ▶ Reduces set up time and provides cost savings
- ▶ Both sides are precision ground parallel to each other and perpendicular to the base
- ▶ Vise can also be used in a vertical position due to it's ground surfaces
- ▶ Perpendicularity to bottom: 0.01mm
- ▶ Parallelism of sides: 0.02mm
- ▶ Fixed jaw located and held in position by keyway



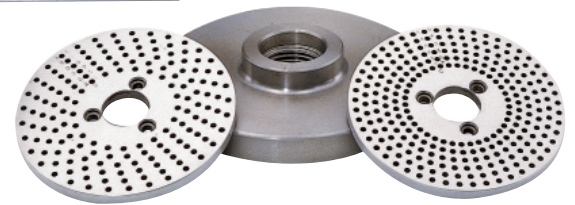
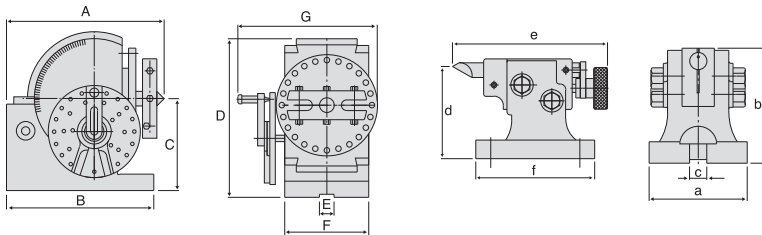
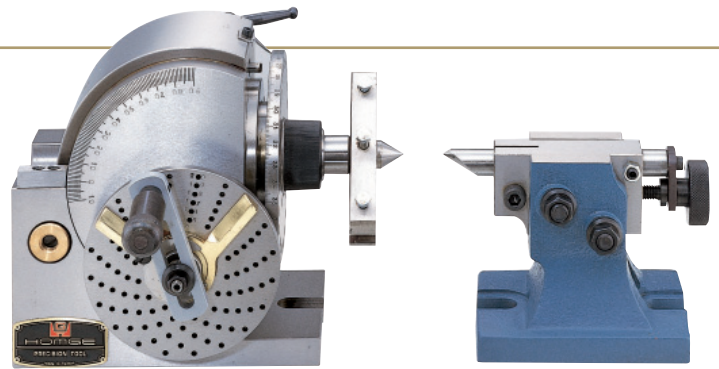
Dimensions are stated in mm

Model	A	B	C	a	b	c1	d	e	f	Weight (kg)	Code No.	Price
HMC-6"	156	44	146	370	18	119	75	19	438	32	277059	\$ 1,090.00



## Semi-Universal Dividing Heads

- ▶ A simplified type of universal index center
- ▶ Can be used for either direct or indirect dividing
- ▶ Direct indexing plate with 24 holes enables dividing by 2, 3, 4, 6, 8, 12 and 24 divisions
- ▶ Three additional indexing plates included to provide the ability of indirect dividing of all divisions from 2 to 50 and also most common divisions up to 380



### Semi-Universal Dividing Heads

Model	A (mm/Inch)	B (mm/Inch)	C (mm/Inch)	D (mm/Inch)	E (mm/Inch)	F (mm/Inch)	G (mm/Inch)	Weight (kg)	Code No.	Price
BS-0	189/7.44	160/6.30	100/3.94	173/6.81	16/0.63	91/3.58	140/5.51	22	277070	\$ 750.00
BS-1	293/11.34	210/8.27	128/5.04	220/8.66	16/0.63	114/4.49	156/6.14	36	277072	1,030.00

### Tail-Stock for Semi-Universal Dividing Heads

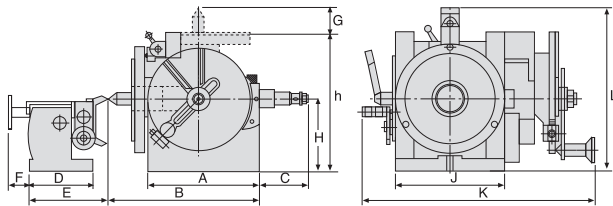
Model	a (mm/Inch)	b (mm/Inch)	c (mm/Inch)	d (mm/Inch)	e (mm/Inch)	f (mm/Inch)	Taper of Center	Diameter of Spindle Hole
BS-0	90/3.54	105/4.13	16/0.63	100/3.94	166/6.54	127/5.00	B&S No. 7	18
BS-1	108/4.25	134/5.28	16/0.63	128/5.04	184/7.24	150/5.91	B&S No. 9	20

### Standard Accessories: Dividing Plate A, B, C. Number of Holes of Dividing Plate (Worm Gear Reduction Ratio 40:1)

Number of Holes	Plate A	Plate B	Plate C
15	16	17	18
19	20	21	23
27	29	31	33
41	43	47	49

## Superior Universal Dividing Head

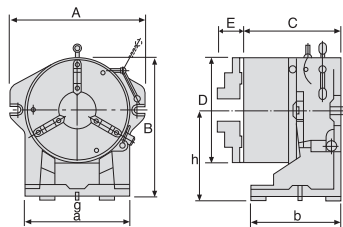
- ▶ Can be used for simple dividing and also for producing worms, by changing gears and gear quadrant. A particular feature of the design is the 55.5mm through bore and the MT6 taper. The unit can also be tilted from 0-90°
- ▶ The spindle, worm and gear are made of high grade steel, hardened and ground for high accuracy and durability
- ▶ The tail stock is designed with dovetail construction for high rigidity and can be adjusted in either direction to achieve the correct alignment
- ▶ The worm and gear provide a reduction ratio of 40:1 and the unit is supplied with a double sided dividing plate
- ▶ Divisions on face A: 24, 25, 28, 30, 34, 37, 39, 41, 42 and 43
- ▶ Divisions on face B: 46, 47, 49, 51, 53, 54, 57, 58, 59, 62 and 66
- ▶ The change gears supplied are 24, 28, 32, 38, 40, 44, 48, 56, 64, 72, 86 and 100 teeth, providing a very wide and comprehensive range of indexing
- ▶ Each universal dividing head is supplied complete with center, carrier change gear quadrant, set of change gears, tail stock and dividing plate



Model	A (mm/Inch)	B (mm/Inch)	C (mm/Inch)	D (mm/Inch)	E (mm/Inch)	F (mm/Inch)	G (mm/Inch)	H (mm/Inch)	h (mm/Inch)	J (mm/Inch)	K (mm/Inch)	L (mm/Inch)	Weight (kg)	Code No.	Price
HCM-2	245/9.65	322/12.68	152/5.98	166/6.54	198/7.80	50/1.96	52/2.05	143/5.63	278/10.94	194/7.64	465/18.31	290/11.42	132	277105	\$ 4,600.00

## Simple Indexing Spacer

- ▶ Mount on milling machines, drilling machines and other machine tools where an indexing facility is required
- ▶ Three-jaw chucks of both the CC-6" and the CC-8" models have a large through bore of 44mm and 63mm respectively
- ▶ Designed for use in horizontal or vertical positions
- ▶ The master indexing plate has 24 divisions and is permanently fixed inside the indexer
- ▶ Divisions of 2, 3, 4, 6, 8 and 12 can also be achieved by the use of the sub-plates, which can be installed quickly following these steps:
  1. Open rear cover
  2. Insert plate
  3. Close cover
  4. Loosen locking handle
  5. Move dividing pin so as to separate it from the master plate
  6. Turn the chuck. When the master plate and sub plate are aligned the pin will lock into the slot automatically
  7. Fasten locking handle. Ready for machining

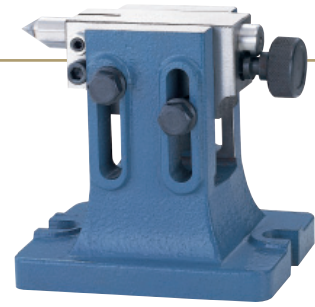
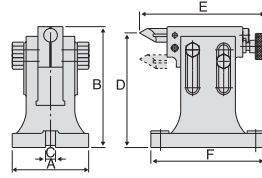


Dimensions are stated in mm

Model	Dividable Number	A	B	C	D	E	a	b	h	Inner Jaw	g Guide Block	Outer Jaw	Diameter of Turret Hole	Diameter of Chuck Hole	Weight (kg)	Code No.	Price
CC-6"	2, 3, 4, 6, 8, 12, 24	260	218	133	167	27	190	110	125	4-42	16	10-156	44	36	32	277080	\$ 990.00
CC-8"	2, 3, 4, 6, 8, 12, 24	312	270	157	210	28	220	135	150	4-62	16	10-180	63	63	55	277082	1,390.00

## Tail Stock for CC and CS Type Indexing Spacers

- ▶ When using indexing spacers in a vertical position, these tail stocks can be used to support the workpiece and ensure accurate alignment

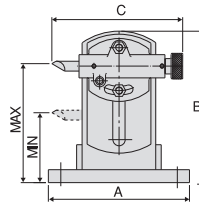


Dimensions are stated in mm

Model	Suitable for...	A	B	C	Center Height Max./Min.	E	F	Weight (kg)	Code No.	Price
TS-4	CC-6"/CS-6"	125	147	16	138/115	194	177	8.2	277084	\$ 220.00
TS-5	CC-8"/CS-8"	123	194	16	170/130	204	184	8.6	277086	330.00

## Tail Stock for HHV Type Indexing Spacers

- ▶ This tail stock can be used for accurate centering when the rotary table is used in a vertical position

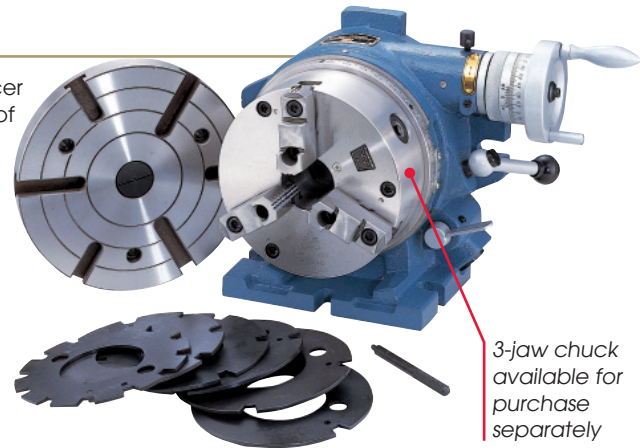
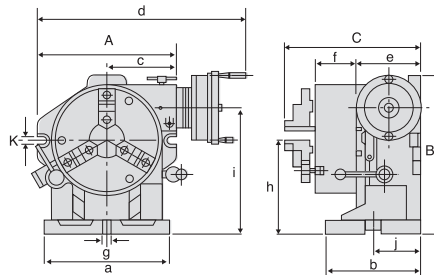


Dimensions are stated in mm

Model	Suitable for...	A	B	C	Center Height Max./Min.	Weight (kg)	Code No.	Price
TS-1	HHV-200/HHV-250	230	247	210	190/110	13	277092	\$ 220.00
TS-2	HHV-300	230	280	210	220/140	15	277094	260.00
TS-3	HHV-350/HHV-400	230	330	210	264/184	17	277096	330.00

## Super Indexing Spacer

- ▶ In addition to all of the features of the simple indexing spacer, the super indexing spacer incorporates a worm gear and is supplied with a face plate. With the further addition of the optional dividing plate set, it can also be used as a dividing head.
- ▶ The worm gear is hardened and precision ground to minimize wear



Dimensions are stated in mm

Model	Dividable Number	Chuck				Face Plate		Code No.	Price
		Outer Diameter	Inner Jaw	Outer Jaw	Inner Diameter	Outer Diameter	Thickness		
CS-6"	2, 3, 4, 6, 8, 12, 24	167	4-42	10-155	44	203	50	277088	\$ 1,290.00
CS-8"	2, 3, 4, 6, 8, 12, 24	210	4-62	10-180	63	254	58	277090	1,790.00

Model	A	B	C	a	b	c	d	e	f	g	h	i	j	k	Weight (kg)
CS-6"	250	224	190	190	140	117	420	97	65	16	130	198	84	18	35
CS-8"	310	295	212	225	160	142	460	108	76	16	160	245	95	18	70

## Dividing Plate Sets

The dividing plate set consists of two indexing plates, a sector and a handle with plunger. Using this set, the indexing of 2 to 100 divisions can be attained quickly and accurately.

Models: DP-1, DP-2, DP-3

Number of Holes:

DP-1.....A Plate: 15, 16, 17, 18, 19, 20  
 B Plate: 21, 23, 27, 29, 31, 33  
 C Plate: 37, 39, 41, 43, 47, 49

DP-2 and DP-3 ....A Plate: 26, 28, 30, 32, 34, 37, 38, 39, 41, 43, 44, 46, 47, 49, 51, 53, 57, 59  
 B Plate: 61, 63, 67, 69, 71, 73, 77, 79, 81, 83, 87, 89, 91, 93, 97, 99

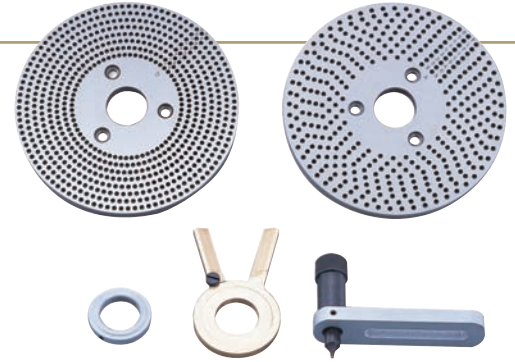
Models: DP-4, DP-5

Number of Holes:

DP-4 and DP-5 ....A Plate: 26, 28, 30, 32, 34, 37, 38, 39, 41, 43, 44, 46, 47, 49, 51, 53, 57, 59  
 ..... B Plate: 61, 63, 67, 69, 71, 73, 77, 79, 81, 83, 87, 89, 91, 93, 97, 99

DP-4 for CS-6" Super Indexing Spacer

DP-5 for CS-8" Super Indexing Spacer



Model	Suitable for...	Major Dimensions of DM				Weight (kg)	Code No.	Price
		Dividing Plate Mount (mm/Inch)	Inner Diameter of Sector Arm (mm/Inch)	Outer Diameter of Spring Clip (mm/Inch)	Groove Width in Handle Plate (mm/Inch)			
DP-1	HHV-150/HHT-150	PCD 32/1.26	21/0.83	18/0.71	9/0.35	2.5	277100	\$ 210.00
DP-2	HHV-200/HHV-250/ HHT-200/HHT-250	PCD 46/1.81 (3 holes)	28.7/1.13	44/1.73	10/0.39	4	277102	220.00
DP-3	HHV-300/HHV-350/HHV-400/ HHT-300/HHT-350	PCD 46/1.81 (3 holes)	28.7/1.13	44/1.73	10/0.39	4	277104	240.00
DP-4	CS-6 Super Indexing Spacer	-	-	-	-	-	277101	305.00
DP-5	CS-8 Super Indexing Spacer	-	-	-	-	-	277103	305.00

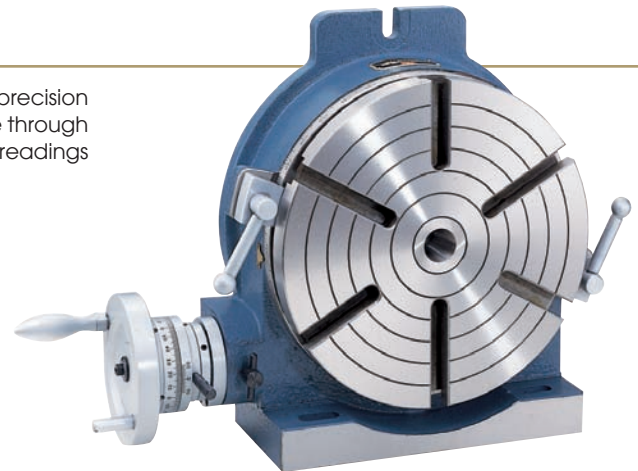
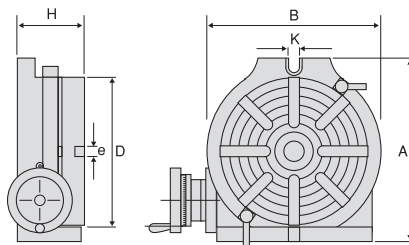
## Horizontal/Vertical Rotary Table

The work table is graduated 360 degrees around its circumference and is driven by a precision worm and gear providing a 90:1 reduction ratio. One turn of the handle moves the table through four degrees. The dial is graduated in divisions of 1 minute and the vernier scale allows readings down to 10 seconds.

- ▶ The worm is hardened and precision ground to minimize wear of the worm gear
- ▶ Both the upper and lower surface of the rotary plates are precision ground
- ▶ Operation and service manual included

OPTIONAL ACCESSORIES:

- Tail Stock
- Dividing Plate Set
- 3-Jaw Chuck



Dimensions are stated in mm

Model	Table		Base Dimension A x B	Bolt Slots K	Center Sleeve	Worm Gear Ratio	Weight (kg)	Code No.	Price
	D	H							
HHV-150	150	92	220 x 160	18	MT-2	90:1	12.5	277106	\$ 506.10
HHV-200	200	120	310 x 225	18	MT-3	90:1	31	277107	743.70
HHV-250	250	120	320 x 280	18	MT-3	90:1	48.5	277108	829.30
HHV-300	300	140	410 x 325	18	MT-4	90:1	77	277109	1,066.90
HHV-400	400	140	510 x 435	18	MT-5	90:1	130	277110	1,694.10