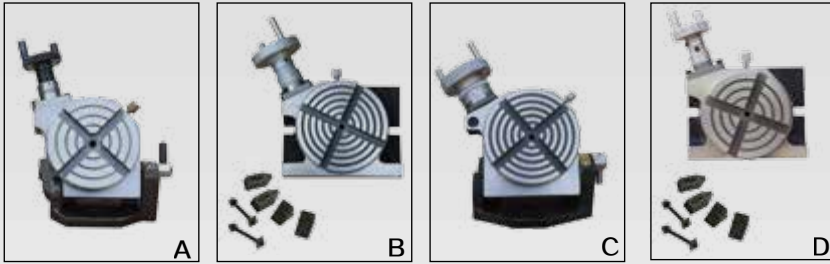


## Mini Series Rotary Table



### A 3" Tilting Rotary Table

- ◆ Manufactured from precision-ground graded casts iron
- ◆ Worm gear is hardened and ground
- ◆ Work table is graduated to a full 360°
- ◆ Collar is graduated in 15 minute increments
- ◆ Gear ratio:36:1
- ◆ Table tilt:0-90°
- ◆ Table height in horizontal position:2<sup>1</sup>/<sub>8</sub>"
- ◆ T-slot size:<sup>5</sup>/<sub>16</sub>"
- ◆ Mounting hole size:<sup>5</sup>/<sub>16</sub>"

### B 3" Rotary Table With Clamps

- ◆ Horizontal or vertical use
- ◆ Table height in horizontal position:1<sup>5</sup>/<sub>8</sub>"
- ◆ Table height in vertical position:3<sup>1</sup>/<sub>4</sub>"
- ◆ 3" Diameter table rotates 360°
- ◆ Low profile, only 1.67" tall
- ◆ <sup>5</sup>/<sub>16</sub>" T-slots
- ◆ <sup>5</sup>/<sub>16</sub>" Mounting holes
- ◆ 1:36 Ratio or 10° per handwheel revolution
- ◆ Scale reads to 15°
- ◆ Brass lock knob

### C4" Rotary Table with Tilting Base

- ◆ This 4" Rotary Table offers the added benefit and flexibility of a 90° tilting base. Great for precision model making applications where table angel setting is important. Features 360° table rotation, four <sup>5</sup>/<sub>16</sub>" T-slots, 1:36 handwheel ratio, 5 Minute scale resolution, and ball-bearing rotary support. Table measures 2<sup>5</sup>/<sub>8</sub>" high in the horizontal position. Mounting holes.

### D 4" Rotary Table with set of Clamps

- ◆ This is the perfect rotary table for all you model makers and those doing smaller. precision work. It features a whole degree scale on the dial, worm gear drive. lash adjustment screw. reference lines, and ball bearing rotary support. Coes supplied with 2 each : 6mm clamping studs-2<sup>3</sup>/<sub>8</sub>" long, T-nuts, clamping straps, and steps. Table height in horizontal position is 2<sup>1</sup>/<sub>8</sub>" ,table height in vertical position is 4<sup>1</sup>/<sub>8</sub>". This remarkable little rotary table is priced affordably, too!



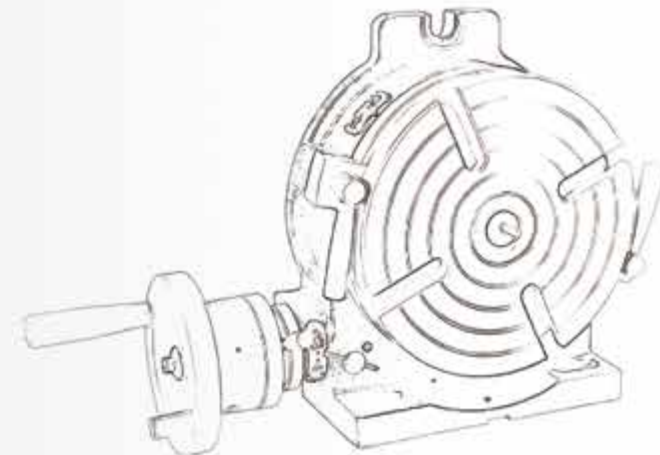
MODEL	HV-3	HV-4
A	84	105.5
B	108	133
C	42	54
D	80	102
G	8	10
H	44	55
N	30	40

MODEL	TSK-3	TSK-4
A	104	143
B	108	130
C	95	105
D	80	102
d	8	18
H	55	68

# PRECISION ROTARY TABLES AND TILTING ROTARY TABLE



## Operation Manual & Parts List

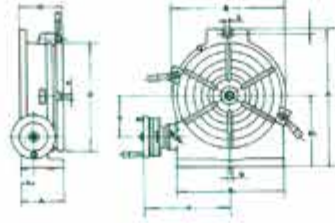


# PRECISION ROTARY TABLES

Two types of Rotary tables are summarized here collectively. The mechanisms common to these tables are shown on some page of their description.

## HORIZONTAL/VERTICAL PRECISION ROTARY TABLE

This rotary table is so designed as to permit machining operations at a higher dimension than that of Horizontal Type rotary tables. The base can be used in a vertical position to enabling to carry out center work.



SPECIFICATIONS:

Unit:mm/inches

Horizontal/Vertical Type	MODEL NO.	Table			Based dimension			Width of T-slot		Bolt slots	Center sleeve	Worm Gear ratio	Gross Weight kg/lb	
		Outer diameter		Height	H1	A	B	e	Type					g
		D	A1	H										
	RT-HV6	150	78	83	100	200	160	12	⊕	16	MT-2	90: 1	12	
		5.91	3.07	3.26	3.94	7.87	6.30	0.47		0.63				26.4
	RT-HV8	200	100	105	135	265	220	14	⊕	17	MT-3	90: 1	30.0	
		7.87	3.94	4.13	5.31	10.43	8.66	0.55		0.67				66.1
	RT-HV10	250	110	115	165	325	280	14	⊗	17	MT-3	90: 1	45	
		9.84	4.33	4.53	6.50	12.80	11.02	0.55		0.67				99
	RT-HV12	300	128	132	195	391	330	16	⊗	18	MT-4	90: 1	83	
		11.81	5.04	5.19	7.68	15.39	12.99	0.63		0.71				182.6
	RT-HV14	350	128	138	230	450	390	16	⊗	18	MT-4	90: 1	95.0	
		13.78	5.04	5.43	9.06	17.72	15.35	0.63		0.71				209.4
	RT-HV16	406	150	155	255	500	430	16	⊗	18	MT-4	90: 1	135	
		15.98	5.90	6.10	10.03	19.69	16.93	0.63		0.71				297



## MINI SERIES ROTARY TABLE



Items	Specifications		
	3"	4"	5"
Table diameter mm	F76.2	F76.2	F27
Morse taper of the center hole	MT2		
Height of center for verti mounting mm	59	81.5	90
Width of the T-slot	8	12	12
Adjacent angle of table T-slot	90°	120°	120°
Width of the locating key mm	12	12	12
Module of the worm gear	1	1	1
Transmission ratio of the worm gear	1: 36	1: 72	1: 72
Graduation of the table	360°	360°	360°
Rotating angle of table with one revolution of the worm	10°	5°	5°
Minimum value of vernier			
Indexing accuracy			
Max.bearing ( with table Hor. ) kg	100	150	200
Max.bearing ( with table Vert. ) kg	50	75	100

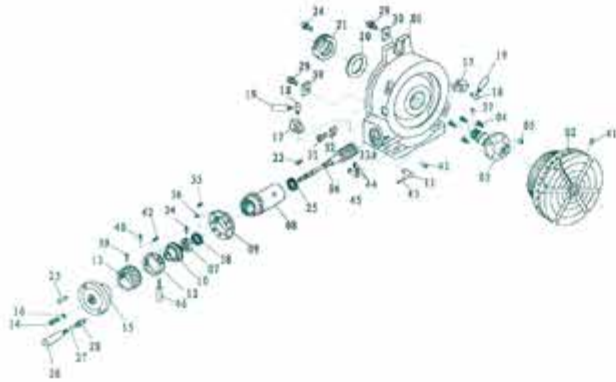
mini H/V rotary table is one of the main accessories of DIY and home use milling machines it is used for index boring milling.circle cutting.spot facing and boring hole etc on milling machine.Rotary table in vertical with tailstock working together.it can used on complex work for circle index boring and milling.

Model	HV-3"	HV-4"	HV-5"
A	98	145	155
B	78	114	127
C	59	85.5	90
D	F76.2	F110	F127
E	12	12	12
G			
H	83	85	85
J			15
M	MT2		MT2
N	71	68	68

**1.Adjusting Mesh of Worm Gear :** Loosen the metal clamp handle and turn the switch metal clockwise until it touches the stopper.The worm gear has now been disengaged.Turn it counterclockwise until it touches the stopper,the worm and gear wheel will engage.Tighten the metal clamp handle after engagement.An additional adjustment can be obtained by removing the screw (A) and steel ball and turning the inner screw (B) counterclockwise,so bringing the worm in closer engagement with the gear wheel.Turning clockwise brings the worm away from the wheel.After adjustment insert the steel ball and tighten the screw (A)

**2.Axial Adjustment of Worm Shaft :** When axial slack occurs gear adjustment is carried out by tightening the inside worm shaft nut after the handle,vernier ring and switch metal have been removed.After adjustment.lock the nut on the shaft by means of the set screw.(The ERT-6 has an adjusting nut,which can be used after removal of the handle.)

# Horizontal and Vertical Type Rotary Table



## PARTS LIST For HV6,HV8,HV10,HV12,HV14,HV16

Part No.	Description	Part No.	Description
HV-P01	Main body	HV-P24	Hex.socket cap screw
HV-P02	Table	HV-P25	Bearing thrust collar
HV-P03	Table sleeve	HV-P26	Handle
HV-P04	Hex.socket cap screw	HV-P27	Circlips
HV-P05	Oil cup	HV-P28	Screw rod
HV-P06	Worm rod	HV-P29	Hex.socket cap screw
HV-p07	Lock nuts	HV-P30	Guide key
HV-P08	Worm metal	HV-P31	Hex.socket cap screw
HV-P09	Adjusting dial	HV-P32	Limit Plate
HV-P10	Adjusting dial	HV-P33	Set screw
HV-P11	Metal setting screw	HV-P34	Set screw
HV-P12	Vernier ring	HV-P35	Hex.socket cap screw
HV-P13	Micro-collar	HV-P36	Set screw
HV-P14	Hex.Socket cap screw	HV-P37	Pin
HV-P15	Handle wheel	HV-P38	Bearing thrust collar
HV-P16	Washer	HV-P39	Collar set screw
HV-P17	Clamp piece	HV-P40	Collar set screw
HV-P18	Clamp bolt	HV-P41	Oil cup
HV-P19	Clamp handle	HV-P42	Hex.socket cap screw
HV-P20	Ring	HV-P43	Lock handle
HV-P21	Lock nuts	HV-P44	Rivets
HV-P22	Key	HV-P45	Plate
HV-P23	Handle	HV-P46	Handle

### Operating Instruction and Function of Each Unit

- The worm gear ratio is 1 : 90.
  - one turn of the handle moves the table by 4°
  - Micro-collar is graduated in steps of 1 min.
  - Vernier scale makes settings down to 10 seconds possible.  
(20 seconds for (HV6))
- Dividing of 2 to 100 can be carried out quickly and accurately by attaching a Dividing Mechanism.
- Center work can also be carried out by using the base in the vertical position in conjunction with a tailstock.(See Page 4.)

### \* Suggestions for Order

When ordering parts for replacement,indicate Model No.and Part No.



# Optional Accessories TAIL STOCK

The height can be varied when working with different index centers,while the angle of inclination can be changed for various machining applications.In addition,the tip of the center is finely rotatable.Clamping is made by means of the lever handle.



TS-1



TS-2/TS-3

### SPECIFICATIONS FOR TAIL STOCK

Unit:mm/inches

MODEL NO.	Center Height		Suitable For
	Max	Min	
TS-1	131 5.15	97 3.81	HV6
TS-2	210 8.26	130 5.12	HV8 HV10 HV12
TS-3	300 11.81	210 8.27	HV14,HV16

### Dividing Mechanism



Dividing Plate set includes index plate,crank handle,3 pcs screw,sector,& U-washer



### RT with Dividing Plate

### SPECIFICATIONS FOR DIVIDING PLATES

Unit:mm/inches

MODEL NO.	Major dimension of DM				Weight kg /lb	Applicable table	
	Dividing plate set screw	Inner diameter of sector arm	Outer diameter of spring clip	Grove width in handle plate			
DP-1	PCD. 32 1.26 F	21 0.83	18 0.71	9 0.03	2.5 5.51	MINI(HV3HV4/HV5) HV6	P7P9P10
DP-2	(3holes) PCD. 46 1.81	28.7 1.12	44 1.73	10 0.39	4 8.82	HV8,10,12,14,16	P7P9P10



**In case of An Optional DM Device Attached**

Indexing of 2 to 100 can be made accurately and quickly.

**Equation of Indexing**

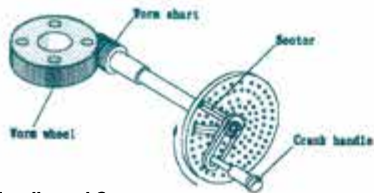
Since the worm ratio is 1:90,when the handle is made to rotate a 360° revolution,the table therefore will rotate a 1/90 revolution.The relationships between handle revolution ' N ' and dividural number ' T ' to be sought are shown in the following equation:

$$N = \frac{90}{T}$$

Remarks:The index table on Page 6 is made on the basis of this equation.

**(Example)**

In case where the operator wants to index thed position divided into 29 equal parts.Hints on operation As for 29 dividural numbers.the number of crank handle revolutions (N)is 3  $\frac{1}{29}$  as shown in the talbe on Page 6,So that the handle should be rotated a full 360° revolution three times plus an interval of nine holes (in this time,it means hole intervals not hole numbers).After setting this point as a start point,rotate the handle a full 360° revolution three times plus an interval of nine holes (in this time,it means hole intervals not hole numbers).After setting this point as a start point,rotate the handle a full 360° revolution three times plus an interval of nine holes.When the procedure is repeated in turn as many as 29 times,the indexing of dividing into 29 equal parts is thus achieved.



**Operations of Crank Handle and Sector**

In case of the Example'Division into 29 Equal Parts' aforesaid,it is nateral that indexing operation should proceed with the intervals of nine holes after setting the index plate (B plate)on which a row of 87 holes are provided.But in this method,the operator has to count nine holes' intervals one by one. He must feel inefficient.In this viewpoint,it is necessary to use a device called'sector' to avoid such troublesome procedures.The following will describe some necessary procedures for operation of the sector.

a.Loosen the crank handle lock nut,adjust its length so as to cause the index pin to fall in the train of 87 holes,and retighten it.

b.Loosen the set-screws of the sector.open two arms in accordance with the interval of nine holes (total numbers of holes are ten).and retighten with setscrews.

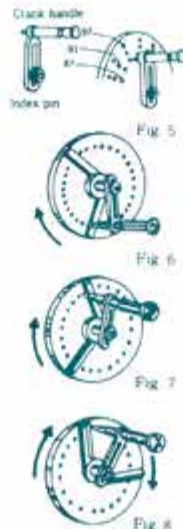
c.First,bring the left arm of the sector near to the index pin's left side.

d.Next,rotate the crank handle clockwise to apply it to the right arm of the sector so that the index pin will fall in the hole located at this right arm's left side surface.

e.Rotate the sector clckwise this time,and put the right side surface of the left arm to the left side of the index pin.In this time,the relationships between the index pin and the sector's left arm in their positions are the same as in Par.c).

The index plate hole that actually accommodates the index pin is located at the point where goes across ten holes to the right away from the hole as in par.c).

f.Repeat the same procedures as neces-sary.



**Index Table(For worm ratio 1:90) DP-1 For HV6/MINI(HV3/HV4/HV5)**

T	H	N	T	H	N	T	H	N
1		45	43		2 4/43	82	C-41	1 4/11
2		30	44	C-43		83		
3		30	45		2	84		
4	A-20	22 10/20	46	B-23	1 22/23	85		
5		18	47	C-47	1 43/47	86	C-43	1 2/43
6	B-21	15	48	A-16	1 14/16	87	B-29	1 1/29
7	B-21	12 8/21	49	C-49	1 41/49	88		
8	A-20	11 5/20	50	A-20	1 16/20	89		
9		10	51			90		
10		9	52			91		
11	B-33	8 6/33	53			92		
12	A-20	7 10/20	54	A-18	1 12/18	93	B-31	30/31
13	C-39	6 30/39	55	B-33	1 21/33	94	C-47	45/47
14	B-21	6 9/21	56			95	A-19	18/19
15		6	57	A-19	1 11/19	96	A-16	15/16
16	A-16	5 10/16	58	B-29	1 16/29	97		
17	A-17	5 5/17	59			98	C-49	45/49
18		5	60	A-20	1 1/20	99	B-33	30/33
19	A-19	4 14/19	61			100	A-20	18/20
20	A-20	4 10/20	62	B-31	1 14/31			
21	B-21	4 6/21	63	B-21	1 9/21			
22	B-33	4 3/33	64					
23	B-23	3 21/23	65	C-39	1 15/39			
24	A-20	3 15/20	66	B-33	1 12/33			
25	A-20	3 12/20	67					
26	C-39	3 18/39	68					
27	A-18	3 6/18	69	B-23	1 7/23			
28			70	B-21	1 6/21			
29	B-29	3 3/29	71					
30		3	72	A-20	1 5/20			
31	B-31	2 28/31	73					
32	A-16	2 13/16	74	C-37	1 8/37			
33	B-33	2 24/33	75	A-20	1 4/20			
34	A-17	2 11/17	76					
35	B-21	2 12/21	77					
36	A-20	2 10/20	78	C-39	1 6/39			
37	C-37	2 16/37	79					
38	A-19	2 7/19	80	A-16	1 2/16			
39	C-39	2 12/39	81	A-18	1 2/18			
40	A-20	2 15/20						
41	C-41	2 8/41						
42	B-21	2 3/21						

**DP-2 For HV8, HV10, HV12, HV14,HV16**

T	H	N	T	H	N	T	H	N
2		45	32	A-32	2 26/32	65	B-91	1 35/91
3		30	33	B-99	2 72/99	66	A-44	1 16/44
4	A-26	22 13/26	34	A-34	2 22/34	67	B-99	1 36/99
5	A-28	22 14/28	35	A-28	2 16/28	67	B-67	1 23/67
6		18		B-63	2 36/63	68	A-34	1 11/34
7	A-28	12 24/28	36	A-26	2 13/26	69	A-46	1 14/46
8	A-28	11 7/28	37	A-37	2 16/37	70	A-28	1 8/28
9	A-44	11 11/44	38	A-38	2 14/38	70	B-63	1 18/63
10		10	39	A-26	2 8/26	71	B-71	1 19/71
11	A-44	8 8/44	40	B-91	2 28/91	72	A-32	1 8/32
12	B-77	8 8/77	41	A-28	2 7/28	72	A-44	1 11/44
13	A-26	7 13/26	42	A-44	2 11/44	73	B-73	1 17/73
14	A-28	7 14/28	43	A-41	2 8/41	74	A-37	1 8/37
15	A-29	6 24/26	44	A-28	2 4/28	75	A-30	1 6/30
16	B-91	6 84/91	45	B-63	2 9/63	76	A-38	1 7/38
17	A-28	6 12/28	46	A-43	2 4/43	77	B-77	1 13/77
18	B-77	6 33/77	47	A-44	2 2/44	78	A-39	1 6/39
19		6	48	A-46	2 2/46	79	B-91	1 14/91
20	A-32	5 20/32	49	B-69	1 66/69	80	B-79	1 11/79
21	A-34	5 10/34	50	A-67	1 43/47	81	A-32	1 4/32
22		5	51	A-32	1 28/32	81	B-81	1 9/81
23	A-38	4 28/38	52	A-49	1 41/49	82	A-41	1 4/41
24	A-26	4 13/26	53	A-30	1 24/30	83	B-83	1 7/83
25	A-28	4 14/28	54	A-34	1 26/34	84	A-28	1 2/28
26	A-28	4 8/28	55	A-26	1 19/26	85	A-34	1 2/34
27	B-77	4 22/77	56	A-53	1 37/53	86	A-43	1 2/43
28	A-46	3 42/46	57	A-30	1 20/30	87	B-87	1 3/87
29	B-69	3 63/69	58	B-63	1 42/63	88	A-44	1 14/44
30	A-28	3 21/28	59	A-44	2 8/44	89	B-89	1 1/89
31	A-30	3 18/30	60	B-77	1 49/77	90		
32	A-26	3 12/26	61	A-28	1 17/28	91	B-91	90/91
33	B-31	3 42/61	62	B-38	1 22/38	92	A-46	45/46
34	A-30	3 10/30	63	B-87	1 48/87	93	B-93	80/93
35	B-63	3 21/63	64	A-59	1 31/59	94	A-47	45/47
36	A-28	3 6/28	65	A-34	1 17/34	95	A-38	36/38
37	B-87	3 9/87		A-32	1 16/32	96	A-32	30/32
38		3		A-61	1 29/61	97	B-97	30/97
39				B-93	1 42/93	98	A-49	45/49
40				B-49	1 21/49	99	A-44	40/44
41				B-77	1 33/77		B-99	90/99
42				A-32	1 13/32	100	A-30	27/30
43				A-26	1 10/26			

**Description of In the index table.**  
This table is the one being calculated for the index plate with hole numbers shown below.  
**Description of codes used in the index table**  
T:Desired dividural number  
N:Number of revolution of the index plate  
Option  
A:Using A plate  
B:Using B plate

**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**  
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

# TS...A SERIES ROTARY TABLE



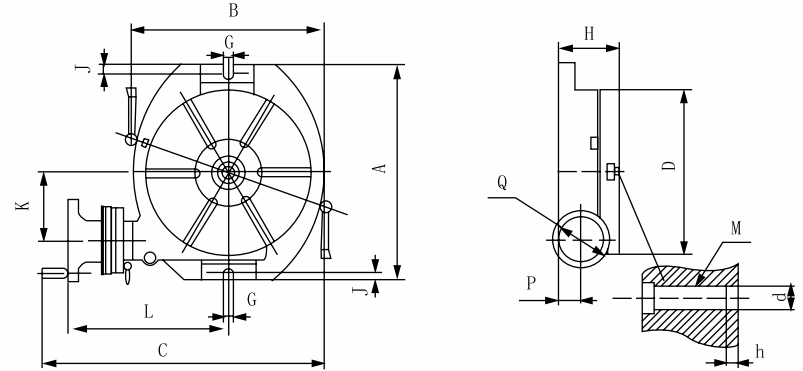
TS...A series rotary table is one of the most important accessory of milling machine. It is widely used for index boring, milling, circle cutting, circle curve plane and segment etc operation.

As a option, different table supply different flange, flange will be packed separately. otherwise, dividing plates which provides from the option can indexing all of the integer between 2 and 66 also can indexing the numbers between 67 and 132 can be divided exactly by numbr 2,3 and 5.

Main technical parameter:

Specifications Items	TS160A	TS200A	TS250A	TS320A	TS400A	TS500A	TS630A	TS800A	TS1000A
Table diameter mm	Φ160	Φ200	Φ250	Φ250	Φ400	Φ500	Φ630	Φ800	Φ1000
Morse taper of the center hole	2#	3#		4#		5#		6#	
Width of the T-slot mm	10	12		14		18		22	
Adjacent angle of table T-slot	90°		60°			45°			
Width of the locating key mm	12	14		18		-	-	-	-
Graduation of the table	360°								
Minimum value of vernier	10"								
Indexing accuracy	80"		60"						
Max. workload kg	100	150	200	250	300	550	700	1200	2000
Net weight kg	16.5	22.5	33.5	65	125	215	345	800	1300
Gross weight kg	21.5	31	44.5	76	145	238	377	855	1400
Overall dimensions mm	400×330 ×200	400×360 ×208	500×400 ×210	580×480 ×238	750×616 ×280	850×730 ×302	995×900 ×326	1175×1090 ×391	1430×1224 ×550

## TS...A DIMENSIONAL SKETCH



Installation sketch and dimensions

Model	TS160A	TS200A	TS250A	TS320A	TS400A	TS500A	TS630A	TS800A	TS1000A
A	260	290	330	410	530	640	920	1000	1170
B	196	238	286	360	450	560	700	890	1080
C	332	368	422	493	612	753	898	1090	1295
D	Φ160	Φ200	Φ250	Φ320	Φ400	Φ500	Φ630	Φ900	Φ1000
G	12	14		18		22		22	—
H	75	80	90	110	140	158.5	160	215	250
J	12	14		18		22		30	—
K	76	91.25	102.5	128.5	180	230	295	364	364
L	194	211	241	273	337	383	488	535	654
M	MT2	MT3		MT4		MT5		MT6	
P	27	27	30.5	44	60	65	60	78	108
Q	125				160	180	220	250	
d	Φ25	Φ30		Φ40		Φ50		Φ50	
h	6			10		12		14	

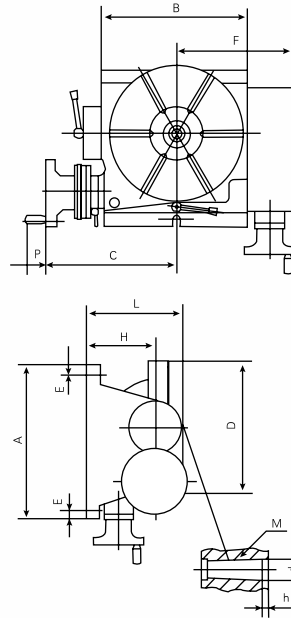
Optional:

Dividing plate 1 set      Flange 1 set

## TSK SERIES TILTING ROTARY TABLE



Dimensional sketch



The TSK series tilting rotary tables are one of main accessories for milling, boring or drilling machines. They can be used for machining, the oblique hole or surface and hole of compound angle at one set-up. Besides this, it is so designed as to be used in a vertical position to carry out center work with a tailstock. This table can be tilted to any position from 0~ to 90~ and locked.

A flange for connecting scroll chuck is special supplied, and be packed independent. For special order, the dividing plates accessory allows the operator to accurately divide the 360~ rotation of the clamping surface into divisions of 2 through 66, and all divisible of 2, 3 and 5 from 67-132.

Items	Specifications	TSK160	TSK250	TSK320	TSK400
Diameter of table mm		Φ160	Φ250	Φ320	Φ400
Morse taper of the center hole		2#	3#	4#	
Diameter of the center hole mm		Φ25×6	Φ30×6	Φ40×10	
Width of T-Slot mm		10	12	14	
Modules of worm and worm gear		1.5	2	2.5	3.5
Width of the locating key mm		1.2	14	18	
Adjacent angle of T-slot		90°	60°		
Transmission ratio of the worm gear		1:90			
Graduation of the table		360°			
Tilting angle		0°~90°			
Readout of the handwheel		1'			
Minimum value of vernier		10"			
Minimum reading of the tilting vernier		2'			
Indexing accuracy		80"	60"		
Max. bearing (With table Hor.) kg		100	200	250	300
Max. bearing (with table Vert.) kg		50	100	1125	150
Net weight kg		36	80	135	280
Gross weight kg		44	93	150	305
Overall dimensions mm		425×380×300	550×430×330	630×490×950	830×600×460

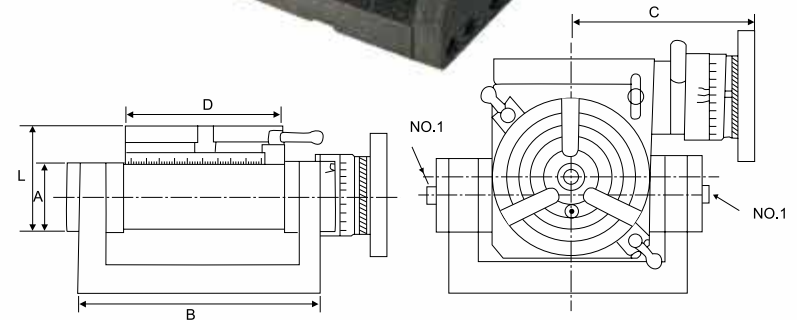
Installation sketch and dimensions:

	TSK160	TSK200	TSK250	TSK320	TSK400
A	255	296	310	380	500
B	172	213	252	322	400
C	168	186	235	252	306
D	Φ160	Φ200	Φ250	Φ320	Φ400
E	11	14		16	
F	138	175.5	199	241	295
H	100	120	140	175	217
L	160	180	205	255	320
M	MT2	MT3		MT4	
P	40			50	
D	F25	Φ30		40	
H	6			10	

Accessories T-slot bolt Set 2sets

Optional: Hole plate 1set Flange 1set

## TSK SERIES SIMPLE AND EASY TILTING ROTARY TABLE



	TSK3	TSK4	TSK5	TSK6	TSK8
L	115	120	135	123	160
B	130	172	190	212	280
C	122	135	150	160	210
D	75	110	127	150	200
A	69	67	80	67	95