



PRECISION MACHINE TOOLS

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SHARP RD Series
Radial Drills

Drilling - Tapping - Boring Cast Iron - Steel 5 Models to choose from

- All major castings made from closed grain, fully ribbed grey iron for maximum stability under cutting stress
- Headstock gears are made of hardened and ground Chrom-Moly alloy steel material for minimum wear.
- Oversized spindle delivers heavier cutting capability and enhanced stability at higher speed and faster feeds
- The spindle is counterbalance by special designed spring, to balance the tool. Adjustable counter balance spindle is standard on larger models
- Spindles equipped with clutch are standard on larger models
- The arm is designed with hardened and ground slide-ways
- Elevation of the arm is done by electric power
- Overload protections with safety stops are standard to prevent arm or head from over travel. It also prevents arm from falling due to deterioration of the bronze nut holding the arm.
- The rigidly ribbed machine base is designed with T-slots for mounting of box table. It is also equipped with drain channel for easy disposal of coolant fluid
- Double Tube construction for the column is standard on larger models
- Manual clamping and power clamping are standard on various models
- All models come standard with coolant system, box table and tools.



Manual Clamping
RD-820
8.27" Column
33.46" Arm
3 HP Motor
2,646 Lbs.



Electric Clamping
RD-1230
11.81" Column
47.64" Arm
5HP (Two Speed Motor)
4,630 Lbs.



Hydraulic Clamping
RD-1600
17.01" Column
61.02" Arm
7-1/2 HP Motor
9,370 Lbs.



Hydraulic Clamping
RD-2000
17.01" Column
81.1" Arm
7-1/2 HP Motor
12,346 Lbs.



Hydraulic Clamping
RD-2500
21.65" Column
98.43" Arm
10 HP Motor
24,251 Lbs.

Competitive Advantage of SHARP Models

Model RD-820

- Manual clamping for column and arm.
- 3 HP spindle motor, 1 HP arm elevating motor.
- Built-in mechanical switch for spindle forward/reverse action.
- Auto spindle reverse for tapping.
- Extra dial on drill head showing spindle downfeed depth for the entire 8.27" range.
- Spring loaded spindle counter balanced system.
- Safety nut to stop sudden drop of arm. Extra dial on drill head.



Model RD-820

Model RD-1230, RD-1600

- Double Tube Column design for extra load support of arm and spindle head.
- Adjustable spindle counter balance.
- Circulating oil pump lubricates and cool off gears inside gearbox of the spindle head maintains gears integrity under heavy cutting and long time usage.
- Power arm elevation
Model RD-1230 Electric motor elevating arm with separate motor for clamping.
- Power clamping for arm, column and spindle head.
- Forward / Reverse friction style clutch in spindle enhance large tool cutting by absorbing heavy impact force at spindle to protect transmission gears. This feature allows quick spindle return and enhance tapping operations.
- Independent push button clamp or release of arm, column or spindle head. This feature allows easy operation and positioning of spindle after tool change.
- Auto spindle reverse function for tapping.
- Built-in automatic tool ejector for easy tool change. (RD-1600 only)



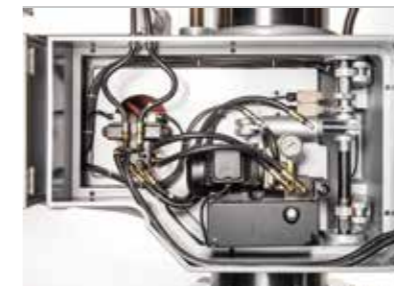
Model RD-1230



Model RD-1600



Model RD-1230 Electric motor elevating arm with separate motor for clamping.



Model RD-1600 Hydraulic motor for individual clamping with separate motor for clamping of arm, column and spindle head.

Competitive Advantage of SHARP Models

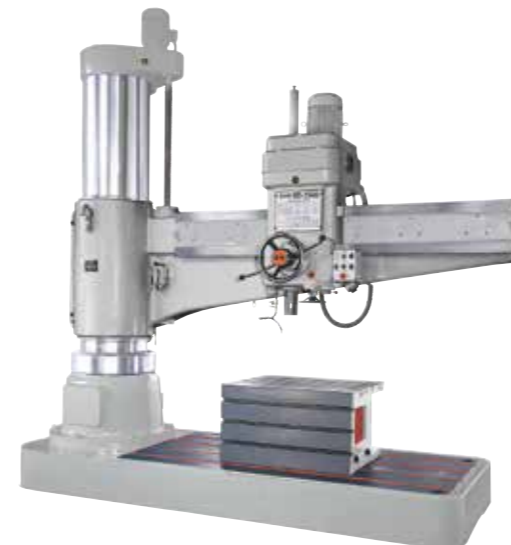
Hydraulic Clamping

Model RD-2000, RD-2500

- Double Tube Column design for extra load support of arm and spindle head.
- Adjustable spindle counter balance.
- Circulating oil pump lubricates and cool off gears inside gearbox of the spindle head maintains gears integrity under heavy cutting and long term usage.
- Power arm elevation.
- Power clamping for arm, column and spindle head.
- Forward/Reverse friction style clutch in spindle enhance large tool cutting by absorbing heavy impact force at spindle to protect transmission gears. This feature allows quick spindle return and enhance tapping operations.
- Auto spindle reverse function for tapping.
- Independent push button clamp or release of arm, column or spindle head. This feature allows easy operation and positioning of spindle after tool change.
- Built-in automatic tool ejector for easy tool change.
- Preset spindle speeds with hydraulic driven device.



Model RD-2000



Model RD-2500



Tilting box table

STANDARD ACCESSORIES

Box table, Coolant system Work light Tools

OPTIONAL ACCESSORIES

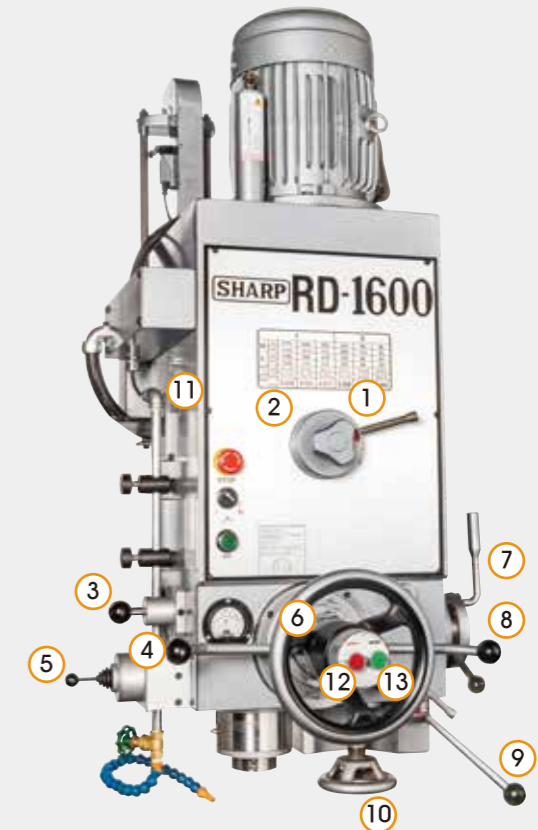
1. Tilting box table: Tilts full 90 degree with indicator
Regular size tilting table: 20.4" x 20" x 22.4"
(For models RD-820, 1230, 1600)
Large size tilting table: 31.8" x 28"x 24"
(For Models RD-1230, 1600, 2000, 2500)
2. Auto reverse spindle tapping function
3. Tapping sets: DT-33 MT#4, DT-33 MT#5
4. Clamping kits: 5/8", 3/4", M 18
5. Transformer for 440V (RD-1230 only)

RD-1230 Operating Panel and High Quality Components



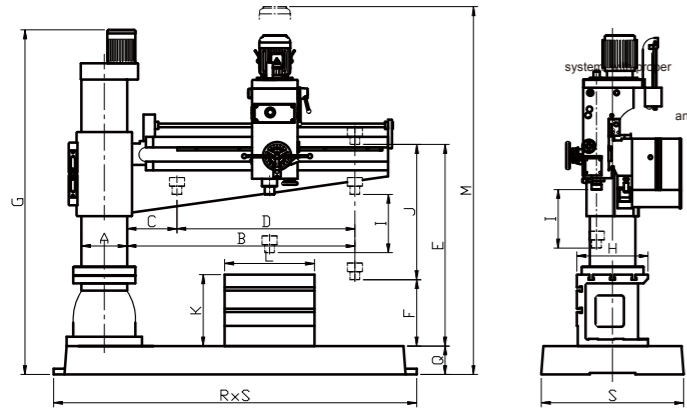
1. Clamp of arm swivel and spindle head horizontal movement
2. Spindle downfeed manual micro adjustment
3. Unclamp of arm swivel and spindle head horizontal movement
4. Clamp arm elevating
5. Unclamp arm elevation
6. High / Low spindle speed
7. Power indicator
8. Emergency stop
9. Coolant support bracket knob
10. Coolant support bracket knob
11. Joystick for arm elevation, and spindle forward / reverse

RD-1600 Operating Panel and Superior Structural Components



1. High / Low spindle feed knob
2. Spindle down feed rate selection
3. Coolant tube bracket knob
4. Tool ejector
5. Joy stick: up / down arm elevation, left / right spindle reverse
6. Pull and push lever for spindle up and down
7. Spindle speed, red/black
8. Spindle individual speed selection
9. Spindle High / Low
10. Spindle downfeed, manual micro feed
11. Oil splash view glass
12. Red button: clamp arm elevation and spindle head horizontal movement
13. Green button: unclamp arm elevation and spindle head horizontal movement

Specifications:



MODEL/ ITEM		A	B	C	D	E	F	E-F-I	J	L	K	H	R	S	Q	I	M	G
RD-820	inch (mm)	8.27 (210)	33.46 (850)	9.06 (230)	24.41 (620)	47.64 (1210)	14.76 (375)	24.61 (625)	32.87 (835)	23.62 (600)	17.52 (445)	14.96 (380)	49.20 (1250)	25.2 (640)	6.3 (160)	8.27 (210)	91.34(2320)	79.13 (2010)
RD-1230	inch (mm)	11.81 (300)	47.64 (1210)	12.99 (330)	34.65 (880)	53.54 (1360)	18.39 (467)	24.41 (620)	35.16 (893)	25.0 (635)	20.47 (520)	16.34 (415)	67.72 (1720)	28.15 (715)	7.28 (185)	10.63 (270)	105.12 (2670)	81.5 (2070)
RD-1600	inch (mm)	17.01 (432)	61.02 (1550)	17.32 (440)	43.7 (1110)	64.57 (1640)	14.96 (380)	34.45 (875)	49.61 (1260)	27.56 (700)	19.69 (500)	15.75 (400)	97.24 (2470)	40.55 (1030)	7.87 (200)	14.57 (370)	123.23 (3130)	104.72 (2660)
RD-2000	inch (mm)	17.01 (432)	81.1 (2060)	17.32 (440)	63.78 (1620)	76.77 (1950)	15.55 (395)	46.65 (1185)	61.22 (1555)	39.37 (1000)	31.5 (800)	19.69 (500)	114.96 (2920)	44.09 (1120)	10.24 (260)	14.57 (370)	138.58 (3520)	120.08 (3050)
RD-2500	inch (mm)	21.65 (550)	98.43 (2500)	19.69 (500)	78.74 (2000)	78.74 (2000)	21.65 (550)	39.37 (1000)	57.09 (1450)	39.37 (1000)	31.5 (800)	22.05 (560)	138.58 (3520)	55.12 (1400)	12.6 (320)	17.72 (450)	157.09 (3990)	151.57 (3850)

Model		RD-820	RD-1230	RD-1600	RD-2000	RD-2500		
Diameter of Column	inch (mm)	8.27 (210)	11.81 (300)	17.01 (432)	17.01 (432)	21.65 (550)	A	
Distance from column surface to spindle center, Max.	inch (mm)	33.46 (850)	47.64 (1210)	61.02 (1550)	81.1 (2060)	98.43 (2500)	B	
Distance from column surface to spindle center, Min.	inch (mm)	9.06 (230)	12.99 (330)	17.32 (440)	17.32 (440)	19.69 (500)	C	
Travel of spindle head	inch (mm)	24.41 (620)	34.65 (880)	43.7 (1110)	63.78 (1620)	78.74 (2000)	D	
Distance from base surface to spindle end, Max.	inch (mm)	47.64 (1210)	53.54 (1360)	64.57 (1640)	76.77 (1950)	78.74 (2000)	E	
Distance from base surface to spindle end, Min.	inch (mm)	14.76 (375)	18.39 (467)	14.96 (380)	15.55 (395)	21.65 (550)	F	
Elevating height of Arm	inch (mm)	24.61 (625)	24.41 (620)	34.45 (875)	46.65 (1185)	39.37 (1000)	E-F-I	
Effective area of machining	inch (mm)	32.87 (835)	35.16 (893)	49.61 (1260)	61.22 (1555)	57.09 (1450)	J	
Effective area of table	inch (mm)	23.62x17.52x14.96 (600x445x380)	25.0x20.47x16.34 (635x520x415)	27.56x19.69x15.75 (700x500x400)	39.37x31.5x19.69 (1000x800x500)	39.37x31.5x22.05 (1000x800x500)	LxKxH	
Dimensions of base	inch (mm)	49.2x25.2x6.3 (1250x640x160)	67.72x28.15x7.28 (1720x715x185)	97.24x40.55x7.87 (2470x1030x200)	114.96x44.09x10.24 (2920x1120x260)	138.58x55.12x12.6 (3520x1400x320)	RxSxQ	
Taper hole In spindle		MT#4	MT#4	MT#5	MT#5	MT#6		
Stroke of spindle	inch (mm)	8.27 (210)	10.63 (270)	14.57 (370)	14.57 (370)	17.72 (450)	I	
RPM of spindle	50HZ	(rpm range X steps)	73~1247x6	37~1253x12	29~1575x12	29~1575x12	16~1250x16	
	60HZ	(rpm range X steps)	88~1500x6	44~1500x12	35~1890x12	35~1890x12	16~1250x16	
Feed of spindle	(rev.x steps)	0.05, 0.09, 0.15x3	0.05, 0.09, 0.15x3	0.07-0.96x6	0.07-0.96x6	0.04-3.20x16		
Main Motor	(HP)	3HP	5HP (two speed motor)	7-1/2HP	7-1/2HP	10HP		
Elevating Motor	(HP)	1HP	1HP	2HP	3HP	5HP		
Clamping Motor	(HP)		1HP	1HP	1HP	1HP		
Coolant equipment	(HP)	1/8 HP	1/8HP	1/8HP	1/8HP	1/4 HP		
Machine height from floor, Max	inch (mm)	91.34(2320)	105.12 (2670)	123.23 (3130)	138.58 (3520)	157.09 (3990)	M	
Base + column height	inch (mm)	79.13 (2010)	81.5 (2070)	104.72 (2660)	120.08 (3050)	151.57 (3850)	G	
Net weight (approx)	Lbs.	2,646 Lbs.	4,630 Lbs.	9,370 Lbs.	12,346 Lbs.	24,251 Lbs.		
Shipping weight (approx)	Lbs.	2,976 Lbs.	5,071 Lbs.	10,362 Lbs.	13,448 Lbs.	27,558 Lbs.		
Shipping dimensions (LxWxH)	inch (mm)	66x32x87 (1680x810x2210)	80x39x88 (2030x990x2240)	111x57x115 (2820x1450x2930)	126x57x130 (3200x1450x3300)	164x74x152 (4160x1880x3850)		
Capacity	Drilling	Steel	inch (mm)	Ø1.26 (32)	Ø1.65 (42)	Ø2.56 (65)	Ø2.56 (65)	Ø3.15 (80)
		Cast iron	inch (mm)	Ø1.97 (50)	Ø2.17 (55)	Ø2.76 (70)	Ø2.76 (70)	Ø3.94 (100)
	Tapping	Steel	inch (mm)	Ø0.98 (25)	Ø0.98 (25)	Ø1.97 (50)	Ø1.97 (50)	Ø2.56 (65)
		Cast iron	inch (mm)	Ø1.26 (32)	Ø1.5 (38)	Ø2.36 (60)	Ø2.36 (60)	Ø2.95 (75)
	Boring	Steel	inch (mm)	Ø2.75 (70)	Ø3.38 (86)	Ø5 (127)	Ø5 (127)	Ø6.5 (165)
		Cast iron	inch (mm)	Ø4.17 (106)	Ø4.75 (120.7)	Ø7.25 (184)	Ø7.25 (184)	Ø8.25 (210)

*Above listed specifications are within +/-0.28" tolerances.
 * Power Foundation and environmental controls are required.
 *Specification is subject to change without further notice.