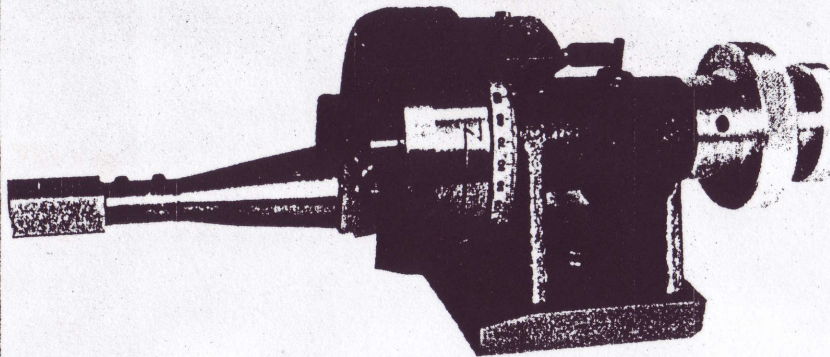


**500-000**  
**-001N**

# RADIUS DRESSER



### Specifications & Accessories

• Specifications	550-000	550-001N
Maximum diameter of wheel	8"	12"
Convex radii	0~1 $\frac{3}{16}$ "	0~1 $\frac{5}{8}$ "
Concave radii	$\frac{1}{32}$ "~1 $\frac{3}{16}$ "	$\frac{1}{32}$ "~1 $\frac{5}{8}$ "

### • Standard accessories

Hexagon spanners	G3, G5	1each
Height gauge		1
Plastic hammer	$\frac{1}{4}$	1
Container		1

### • Optional accessories for 550-001N

553-308..... Extention adaptor for 1 $\frac{5}{8}$ " to 6" concave and convex radii

### Examples of formed grindstones

Radius Dresser permits dressing a wheel to the various shapes as shown Fig. 1.

This device assures angle dressing, R dressing and combination of them with higher accuracy and easier handling.

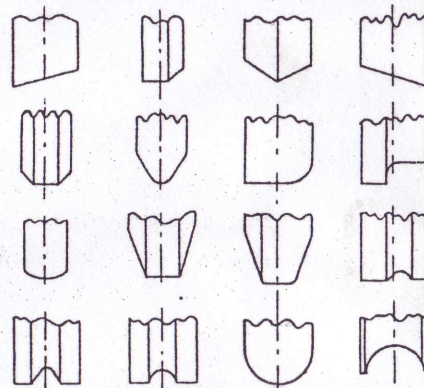
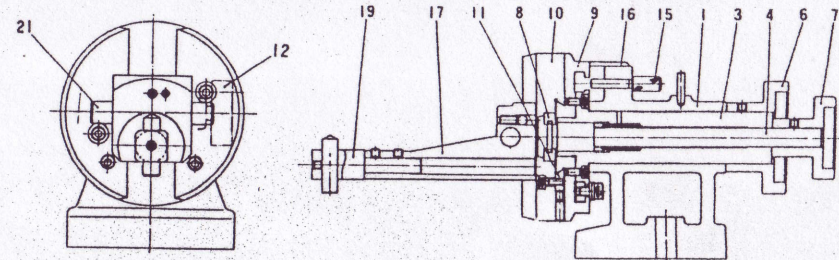
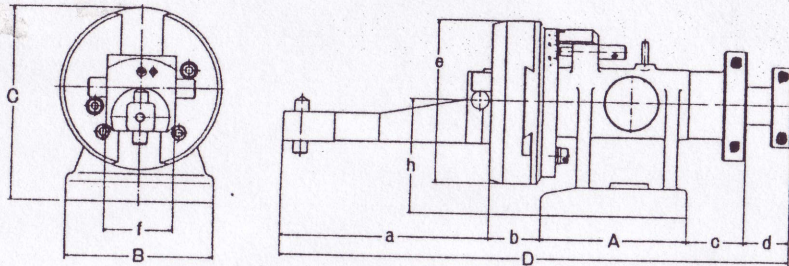


Fig 1



### Order No. & Dimensions

Unit : mm/in.

Order No.	Base dimension		Over all height	Over all length	Center height							Weight kg/lb
	A	B				C	D	h	a	b	c	
550-000	100	100	131.2	347	76.2	142	34	40	31	110	47	7.5
	3.94	3.94	5.17	13.66	3.00	5.59	1.34	1.57	1.22	4.33	1.85	16.5
550-001N	136	105	152.76	410	86.36	164	38	46	31	132.8	47	10.5
	5.35	4.13	6.01	16.14	3.40	6.46	1.50	1.81	1.22	5.23	1.85	23.1

### Parts No. and Parts names

NRD-01	Body	NRD-11	Gib
NRD-03	Spindle	NRD-12	Spindle lock handle
NRD-04	Pinion shaft	NRD-15	Stopper pin
NRD-06	Spindle handle	NRD-16	Vernier
NRD-07	Pinion shaft handle	NRD-17	Arbor body
NRD-08	Rack	NRD-19	Arbor
NRD-09	Disc (A)	NRD-21	Measuring pin
NRD-10	Disc (B)		

### Operating Instructions and Functions of Each Part

- Radius Dresser is built with precision components. So great care should be taken in handling. (It is contained in a portable case for safety.)
  - Check if no one of the accessories is missing.
  - Remove the anticorrosive oil prior to use.
  - Check each part for normal operation.

## 1-1

**Vertical adjustment of arbor body**

Loosen the arbor body set screw and move it vertically on the dovetail slot of disc B.

In this case, moving the measuring pin 21 right will lower the arbor body 17 and moving it left will lift the arbor body. Fit a block gauge in the clearance of the measuring pin to determine the distance from the spindle center to the diamond dresser. The movable range of the arbor body is 1.2" both upward and downward. (Fig. 4)

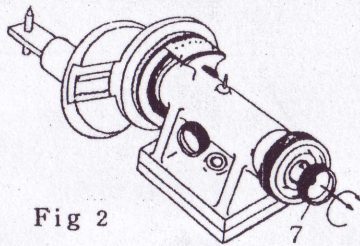


Fig 2

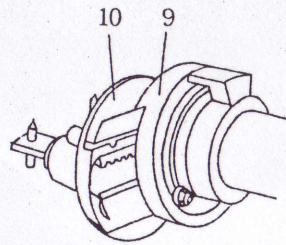


Fig 3

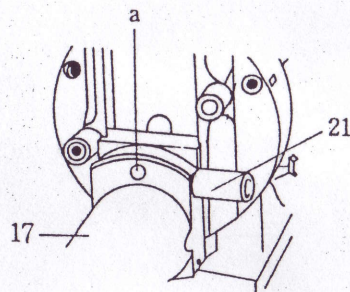


Fig 4

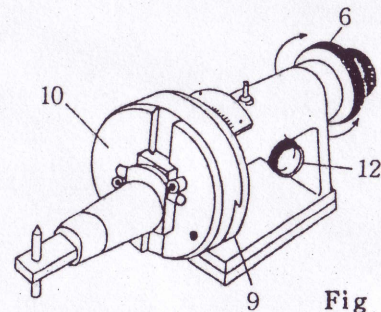


Fig 5

## 1-2

**R dressing**

First turn the spindle lock handle 12 anti-clockwise and rotate the spindle handle 6, and thus the disc A 9 and disc B 10 will be revolved. As a result, the diamond dresser located at the arbor end is largely swiveled around the spindle center.

On the other hand, rotate the spindle handle 6 clockwise and counter-clockwise within the narrow range, and the diamond dresser will swing around the spindle center looking at front way. (Fig. 5)

## 1-3

**Angle dressing**

Tighten the spindle lock handle 12 to lock the spindle 6. When making angle dressing alone, rotate the pinion handle (while pulling it toward you). The rotative range of the pinion handle is 1.25° both clockwise and counterclockwise. (Fig. 2 & 3)

## 1-4

**Angle read-out**

The disc A 9 is graduated in 360 degrees symmetrically by 180 degrees on the circumference. (Fig. 6)

46° section of the vernier scale is equally divided into 24, reading up to 5'. (Fig. 7)

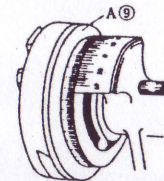


Fig 6



Fig 7

## 1-5

**How to set angle range of R dressing**

Two stopper bosses are provided on the T-slot located on the side of the disc A 9. First unscrew them with the hex. wrench key (G5) in such a manner as shown Fig. 8, move them to the desired angle and tighten them.

As a result, the angle range of the spindle is limited to the desired angle, when the spindle handle 6 is rotated. On the other hand, the spindle can be freely rotated independently of the stopper boss position by drawing out the stopper pin 15. (Fig. 8)

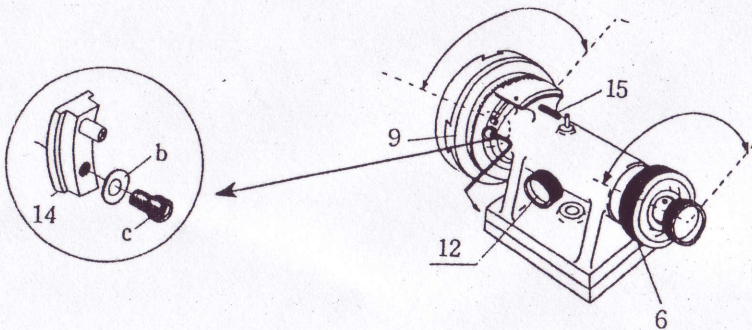


Fig 8

## 1-6

**Center height of diamond dresser**

Place Radius Dresser on a surface plate and put the measuring pin 21 of the arbor body 17 between the right and left pins on the disc 10.

Set the dial at  $90^\circ$  and fix it with the spindle lock handle 12. Fix the diamond dresser to the arbor 19 with set screw in such a way that both lengths of the shank projected become equal.

Then, adjust the height of the diamond dresser by loosening the two set screws of the arbor body 17 so that the both heights of the dresser may be equal, using a dial gauge. (After adjustment, remove the diamond dresser.)

Set the dial at  $180^\circ$  and fix it with the spindle lock handle.

Place the height gauge (accessory) under the diamond dresser mounting hole of the arbor and insert the diamond dresser into the mounting hole from the upside.

Then, put the diamond dresser to the height gauge lightly and fix it with set screw. As a result, the tip of the diamond dresser has been completely adjusted to the spindle center line. Forming sizes are determined from this reference position with a block gauge etc. (Fig.9)

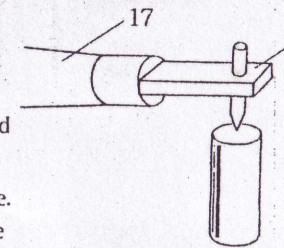


Fig 9

## 1-7

**How to mount rat tail type diamond dresser**

For dressing of  $180^\circ$  concave R, use a rat tail type diamond dresser. In this case, draw out the arbor 19 from the arbor body 17 and insert the rat tail dresser into this hole. Therefore, it is impossible to determine the size of R by putting a block gauge between the measuring pin and the stop pin. Place Radius Dresser on a surface plate and set the dial at  $0^\circ$ . Insert the rat tail type diamond dresser into the hole of the arbor body 17 in such a way that its diamond tip is turned upward. Place a block gauge having a thickness equivalent to required R on the height gauge and lay it aside. Place a flat plate on the diamond dresser and the block gauge, and position the arbor so that its upside surface becomes parallel while using a dial gauge. The tip of the diamond dresser is set above the spindle center line by a distance equivalent to the thickness of the block gauge, enabling  $180^\circ$  concave R dressing.

### Working Example

The tip of the diamond dresser set by the height gauge is completely adjusted to the spindle center line, and the operation is started from this reference position to form wheel to the desired dimensions.

#### 2-1

##### How to set Radius Dresser

Set Radius Dresser to be parallel with the wheel and position the diamond dresser just under the wheel center line.

Fix Radius Dresser on a table securely or set it on the upside of a magnetic chuck. (Fig.10)

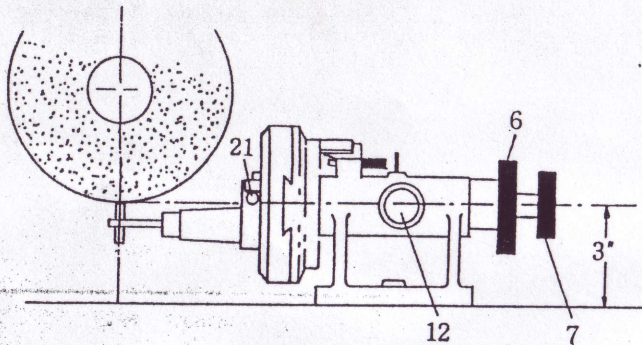


Fig 10

#### 2-2

##### Angle dressing

Loosen the spindle lock handle 12, rotate the spindle with the spindle handle 6 and adjust the 30° graduation of the disc 9 to the 0 graduation of the vernier accurately. Tighten the spindle lock handle 12, and then bring the diamond dresser into contact with the wheel gradually by turning the spindle right and left while pulling the pinion handle toward you. Thus, the wheel can be dressed to the specified angle. (Fig.11)

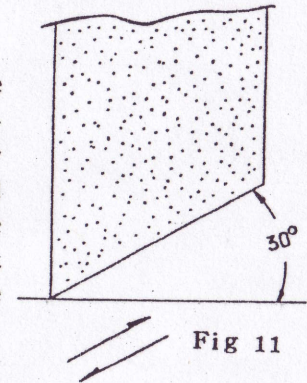


Fig 11

#### 2-3

##### Convex R dressing

The tip of the diamond dresser is located lower than the spindle center line.

For 3/8" R dressing, put a 3/8" block gauge between the measuring pin and the right side stop pin and then clamp it by moving the arbor body.

Form the wheel by moving the spindle handle right and left. (Fig.12)

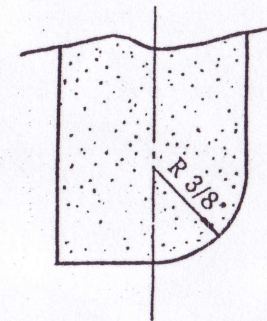


Fig 12

#### 2-4

##### Concave R dressing

The tip of the diamond dresser is located higher than the spindle center line.

For 3/8" R dressing, put a 3/8" block gauge between the measuring pin and the left side stop pin and then clamp it by moving the arbor body.

Form the wheel by moving the spindle right and left in the same manner as of convex R dressing. (Fig.13)

(note) Convex or concave dressing depends on the positional relation between the diamond dresser tip and the spindle center.

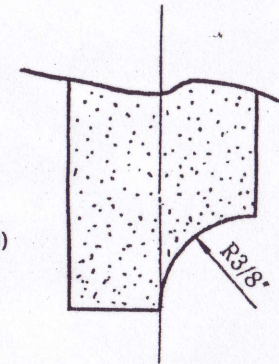


Fig 13

## 2-5

**180° concave R dressing**

Use the rat tail type diamond dresser.

Set the diamond dresser as described in 1-7 "How to mount rat tail type diamond dresser", so that the wheel may be dressed in the shape as shown Fig. 14 by turning the spindle handle clockwise and anti-clockwise. (Fig.14)

## 2-6

**Combination of convex R dressing and angle dressing**

For dressing of convex R and straight line, first make 60° convex dressing of both sides. Then move the arbor body to 3/8" convex R dressing position and clamp it. Make R dressing until the dressed part comes to the straight line while rotating the spindle handle clockwise and counter-clockwise.

Set the angle range of the spindle by setting the both stopper bosses at 60° (Fig.15)

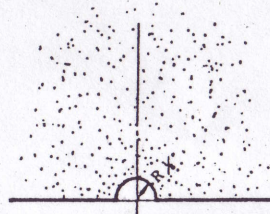


Fig 14

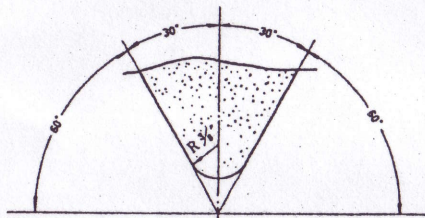


Fig 15

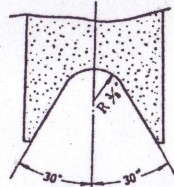


Fig 16

## 2-7

**Combination of concave dressing and angle dressing**

For dressing of concave R and straight line, first make 180° 3/8" concave dressing. Then make 30° concave dressing on both sides until the dressed part comes to the R 3/8" line. (Fig.16)

**Maintenance**

1. After completion of operations, set Radius Dresser as before use.
2. After completion of operations, wipe off water, metal chips, etc., and apply anticorrosive oil or spindle oil.
3. Check the tools and accessories.
4. Store Radius Dresser in the case as before.  
(If it will be out of service for long, wrap it with old papers before storage.)
5. Keep it free from moisture.

For any questions to this manual, inform our technical service section given on the other page of the leaflet.

© Specifications are subject to change without notice for further improvement.

**YUASA INTERNATIONAL**

Yuasa International (Main Office)  
10715 Springdale Ave., Unit #3  
Santa Fe Springs, CA 90670  
Tel: 310-941-8822  
FAX: 310-944-9447  
Telex: 696-413

Yuasa International  
825 North Cass Ave.,  
Suite 206  
Westmont, IL 60559  
Tel: 708-986-0901  
FAX: 708-323-1094