

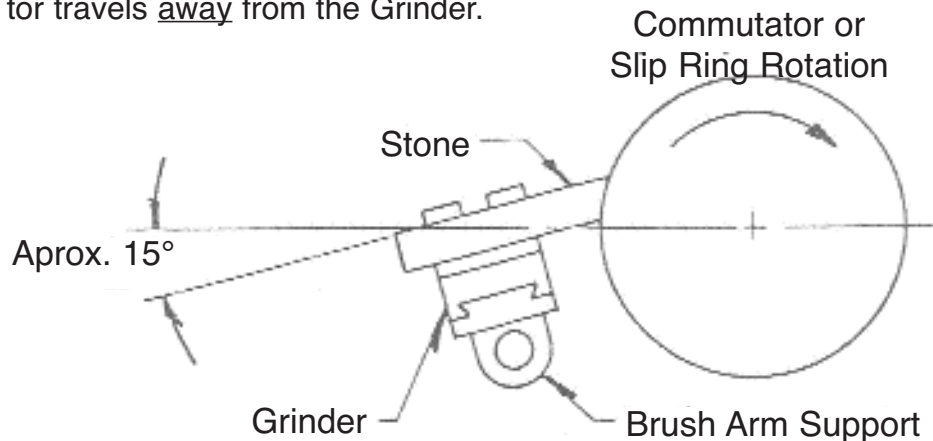
# MARTINDALE

## COMMUTATOR GRINDING AND TURNING TOOLS - STRAIGHT INSTRUCTIONS

**CAUTION:** All Grinder Supports **MUST BE INSULATED** from electrically live circuits and tested for absence of current at the Grinder, before beginning work.

### OPERATION:

1. Mount the Grinder on the proper side of the machine so the top of the commutator travels away from the Grinder.



2. To change the handwheel from the right-hand to left-hand operation — remove 2 screws from the Cross-Slide End Plate — remove the cross-slide and insert it from the opposite side. For Right-Angle Grinders — reverse the cross-slide as above — remove the Shaft Bushing and the Cap from the right-angle drive housing, and insert from the other side. (Do not reverse the Carriage because the gib adjustment will throw it off center and the screw will then not turn freely.)

3. Choose a brush stud which is accessible, in a comfortable grinding position, and where the operation and results of grinding can be seen. Loosen the brush holders, and either remove them from the stud or slide them clear of the commutator. If the brush-arms are close together it may be necessary to remove the holders from two adjacent studs to make room for the Grinder.

4. Clamp the Grinder Support over the brush stud. Be sure at least one of the split fiber bushings is around the stud to insulate the Grinder. Use as many of the fiber bushings as are necessary to bring the stud diameter up to 1-1/8"



5. Adjust the support so when the Grinder is in place the stones will be a little above center. The front edge of the support should be approximately 2" away from the commutator.

6. If a Turning Tool is used — insert the tool holder upside down. This set-up provides that if the mounting should slip, the Commstones or the turning tool will be pushed away from the commutator instead of digging in.

7. Position the Grinder on the support at the center of the commutator. To align the Grinder lay a 2" steel bar along the commutator and bump the Grinder base against it. Bolt it tightly in place. If the commutator is tapered originally the amount of taper can be determined by a level on the top of the commutator, providing the base of the machine is level. In such a case the taper may be removed by the setting of the Grinder.

8. Best results are obtained when using the full travel of the carriage, and the stone size should be such as to permit full travel.

9. It is possible to use only one Commstone. One stone may be used in the stoneholder by blocking up the clamps, either with the stub of the old stone, or with a block of the same thickness. If the motor frame overhangs the commutator one stone may be set at an angle to reach the riser. Commstones will quickly shape themselves to the commutator.

10. Surface speed of the commutator should be approximately 2,000 feet per minute. The grinding operation should be a rapid traverse with a small feed. If the commutator is burned or badly grooved, start out with a coarse (Grade C) Commstone, and finish with a fine (Grade F) Commstone. If the commutator is not too bad, a medium (Grade M) Commstone may be used. Extra coarse (Grade EC) and extra fine (Grade EF) Commstones are also available.

11. After grinding, the mica slots should be cleaned out. A fine wire or nylon brush is recommended for this operation. Undercutting is not necessary unless the mica strips are nearly even with the copper bars. Copper wears faster than mica, and if the mica projects above the copper the brushes will jump and arc. If undercutting is necessary we recommend one of the several styles of Undercutters shown in the Martindale catalog.

12. When the machine is back in service the brushes should be reseated with a Martindale Brush Seater as the grooves which were in the commutator before grinding may still be in the brushes.

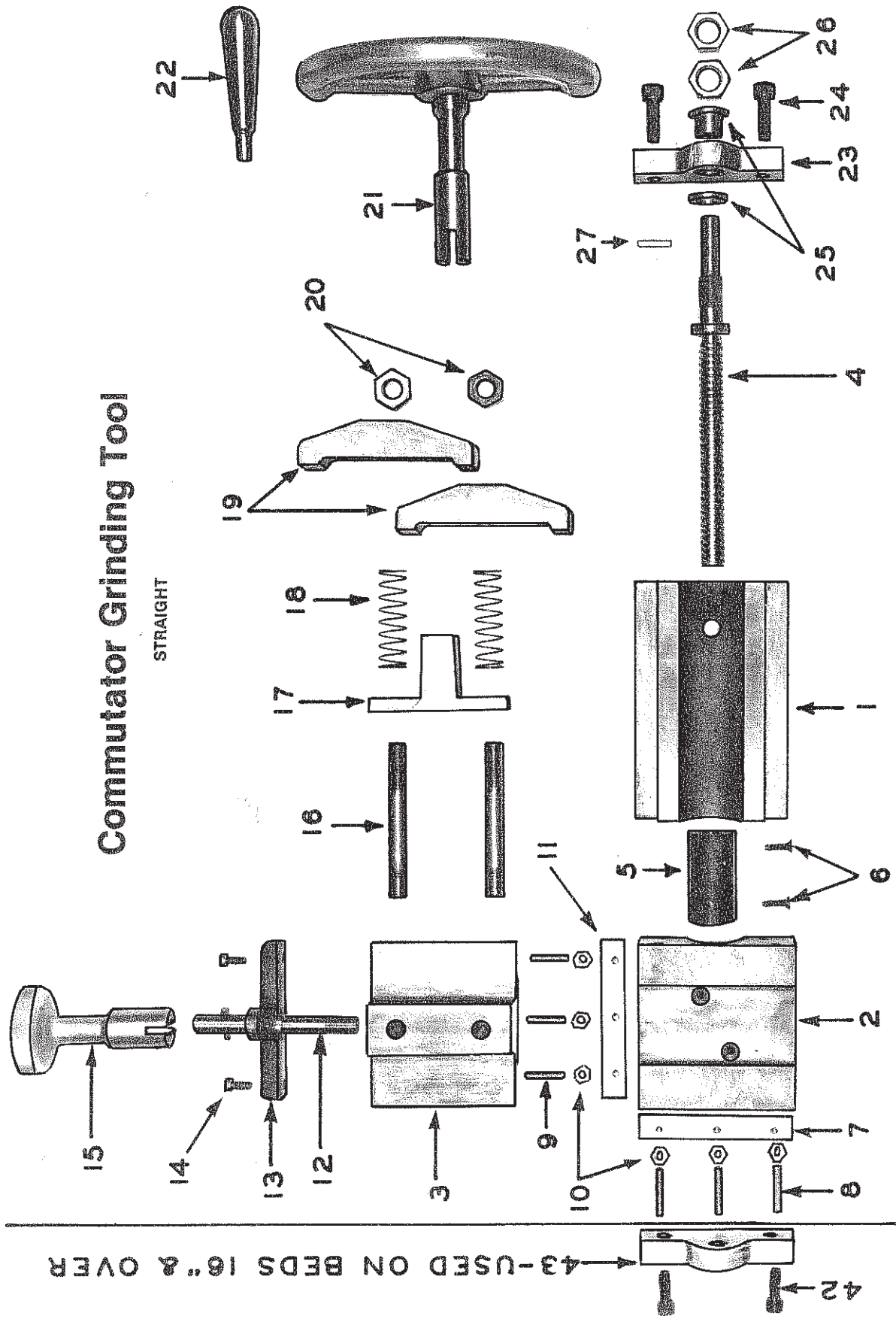


13. As grinding dust is an abrasive, we suggest that the dust be blown from both the Grinder and the machine frequently during the operation.
14. An occasional few drops of oil on the ways will allow it to work freely.

#### **COMMENTS:**

We have found several common causes for excessive wear of the commutator:

1. The brush tension of all brushes should be equal. The pressure should be from 2 pounds per square inch of surface area on light stationary machines, to 6 pounds per square inch on heavy traction motors which are subject to vibration.
2. Be sure that all electrical connections to the brushes are clean and tight so that each brush carries its full load.
3. If brushes are staggered around a commutator they should be arranged so each brush is tracked by one of opposite polarity, never by one of the same polarity.



# Commutator Grinding Tool

STRAIGHT

43-USED ON BEDS 16" & OVER



**COMMUTATOR GRINDING AND TURNING TOOLS - STRAIGHT  
PARTS LIST**

ITEM NO.	PART NO.	DESCRIPTION	QUANTITY
1	C-588	Bed (6" to 48") Straight (Specify Length)	1
2	C-589	Carriage	1
3	C-590	Stone Holder	1
4	D-592	Lead Screw (Specify Bed Length)	1
5	D-605	Bed Nut	1
6	----	Screw	2
7	D-599	Upper Gib	1
8	----	Screw	3
9	----	Screw	3
10	----	Nut	6
11	D-598	Lower Gib	1
12	D-594	Stone Adjusting Screw	1
13	D-602	Stone Holder End Plate	1
14	----	Screw	2
15	D-619	Knob	1
16	D-603	Clamp Stud	2
17	D-608	Clamp Aligner	1
18	D-604	Clamp Spring	2
19	D-607	Clamp	2
20	----	Nut	2
21	D-591	Hand Wheel	1
22	----	Handle (H63002)	1
23	----	Bed End Plate (62-25)	
24	----	Screw	
25	----	Bushing (FF-703-3)	
26	----	Jam Nut	
27	----	Driv-Lok Pin	1
42	----	Screw	2
43	D-600	Long Screw End Plate	1