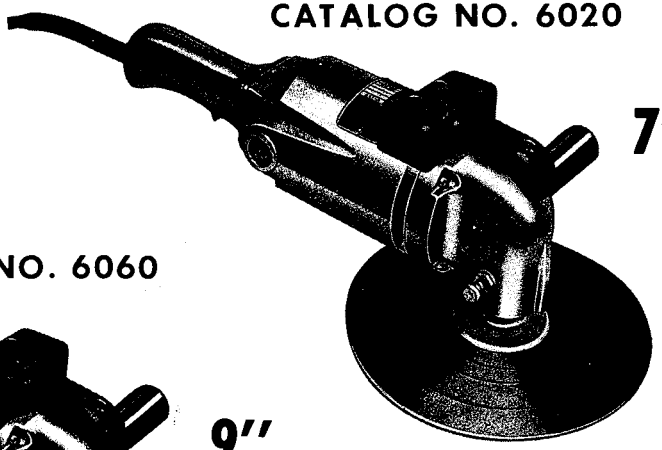
READ AND KEEP THIS FOR FUTURE REFERENCE

The Care and Operation of

YOUR NEW Milwaukee SANDER-GRINDER

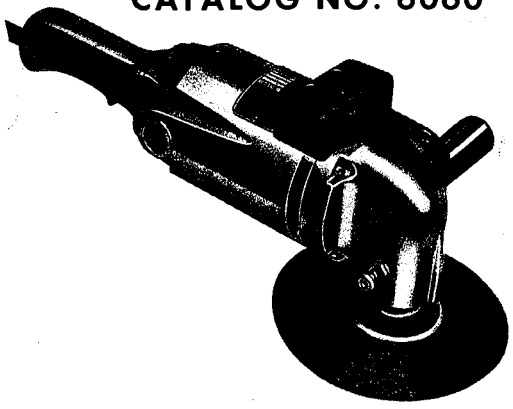
CATALOG NO. 6020

7"



CATALOG NO. 6060

9"



CATALOG NO. 6100

9"

UL SA *Listed*

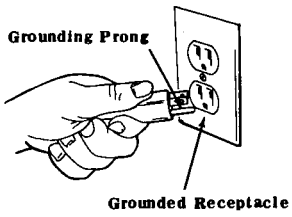
USE ONLY IDENTICAL REPLACEMENT PARTS
Parts List Available On Request
When ordering, include Catalog Number and Serial No. of Tool
Write:
SERVICE DEPARTMENT
MILWAUKEE ELECTRIC TOOL CORP.
13135 W. Lisbon Rd. Brookfield, Wis. 53005

IMPORTANT

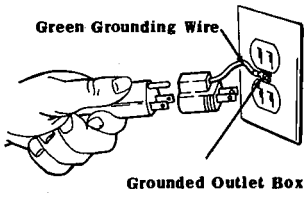
1. Milwaukee Sander-Grinders are designed for operation on 115 volt, 0-60 cycle current only. Check the outlet voltage before plugging in tool.

2. This tool is equipped with a 3-prong plug for your safety. When the plug is inserted in a properly grounded receptacle, it will protect the operator from shock if the insulation should fail. An adapter may be used (except in Canada) where 3-prong receptacles are not available. When using an adapter, always attach the green ground wire to a grounded outlet box as shown at right. Be sure the outlet box is grounded and there is metal to metal contact when making the connection.

PLUGGING IN DIRECTLY



PLUGGING IN WHEN USING ADAPTER



3. Wear goggles in all abrasive sanding operations. Use a dust mask where sanding operation of some materials causes clouds of dust.

4. Always be sure the switch is "OFF" before you unplug the tool from the supply line. This prevents any damage when plugging in while tool is in an "ON" position.

5. Never use the spindle lock button as a brake to stop rotation of the spindle.

6. Avoid crimping the cord. Continuous flexing of wire may cause a break in the cord.

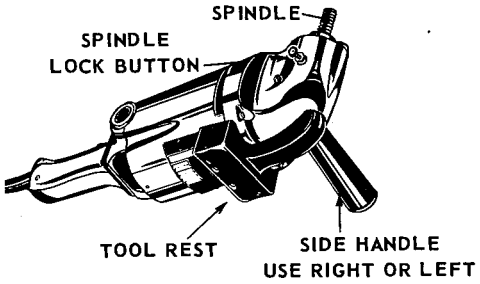
7. When the tool is not in operation and in an "OFF" position, place the tool on the tool rest - never on the face of the disc.

8. Do not operate the tool in gaseous or explosive atmospheres.

9. Always use guards with Reinforced Grinding Discs or Cup Grinding Wheels.

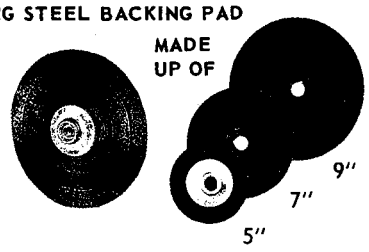
TO INSTALL or REMOVE DISCS

With the plug disconnected from the line, place the tool on the tool rest with the spindle in an upright position. Slip the Disc Nut through the arbor hole in the abrasive disc and hub assembly. Screw Disc Nut down clockwise. To tighten pad assembly, depress the Spindle Lock Button on the left side of gear case and with



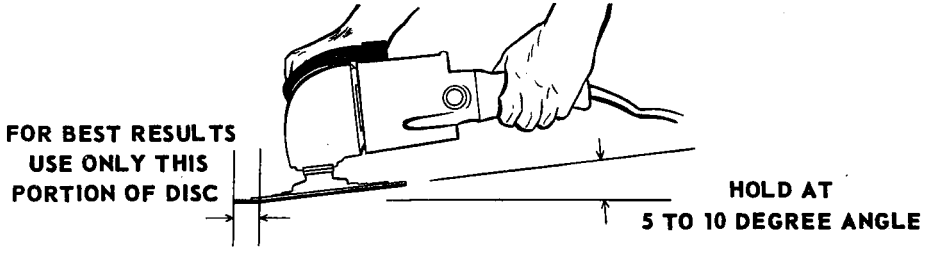
TO INSTALL or REMOVE DISCS (Continued)

the other hand turn the pad to the right until it engages and locks . . . then turn the pad down as tight as possible. No wrench or other means of tightening is required. To remove the disc, reverse the procedure. Exert a sharp left turn on the pad to loosen the Disc Nut. If the disc slips, loosen with a large screwdriver using the slot in the Disc Nut.



HOW TO USE YOUR SANDER-GRINDER

Check the line voltage and be sure it is the same as on the nameplate of the tool. Grasp the rear and side handles firmly before starting and while the tool in in operation. Use long sweeping strokes from side to side advancing to produce the desired finish. Hold the Sander-Grinder at a 5 to 10 degree angle. At this angle, the pad holds the disc against the surface with a constant but not heavy pressure leaving a band wide enough for easy sanding and control. For steel, an 80 grit disc turning at the speed of MILWAUKEE'S Sander-Grinders produces a finish suitable for any final finishing. When finishing after grinding with a coarse disc, strokes should be at right angles to those made by the coarse disc. This is the fastest method of producing uniform finish -- removing only the ridges with minimum sanding to valleys. Operation can be accurately controlled and previous grinding marks are easily watched when cross sanding. Blending from one area to another is easier as the abrasive removes existing flats and depressions.



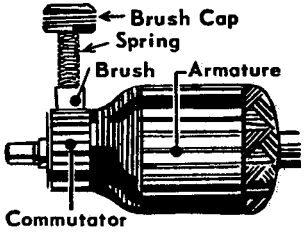
LUBRICATION

It is necessary to grease the gear case chamber only after constant use (about 2 to 6 months). Remove the 4 screws holding the gear case to the motor housing. Lift off the gear case. Take out as much of the old grease as possible. Be sure no dirt or foreign matter enters the chamber. Do not disturb gears or other parts. Fill no more than 3/4 full. Excessive greasing causes friction and overheating. Use only MILWAUKEE type C grease.

1 lb. Type C Grease Catalog No. 49-08-1000.

BRUSHES AND COMMUTATOR

To inspect brushes, pull plug and unscrew the brush retainer caps located on the motor housing. Pull out retainer springs and brushes. Replace brushes when worn down to 1/4". Always replace both brushes at the same time. When inspecting brushes, also check the commutator for wear. If rough or dirty retouch with o/o sandpaper while motor is running. Do not use emery cloth. If worn badly, send the complete tool to a MILWAUKEE Service Station for turning.



TOO MUCH PRESSURE

Heavy pressure reduces disc life and slows the sanding action. When disc is bent too sharply, sanding pressure is excessive, forcing grains into the work in irregular patterns or the sanding band becomes too narrow at the bend in the pad. A bumpy surface and a tool that is difficult to control means the disc is held too flat against the work.

CIRCULAR GRINDING MARKS

Circular grinding marks are caused by using a disc of too coarse a grit on the final sanding operation and not crossing grain marks in final sanding or holding the sanding disc at a steep angle.

DEEP SCRATCHES

A rough ground surface or ridges occur when using only the outer edge of the disc. Deep scratches can result from using too coarse a grit, a partially glazed disc, dirt or loose metal on work, loose grit on disc, or from not crossing grain lines when changing from coarse to finishing disc. Limit coarse sanding to the immediate area when removing welds or hammer marks. It will then be easier to do the final sanding with a fine grit disc. Prevent deep scratches by keeping the work clean. Loose paint and other foreign matter should be swept from the surface periodically. Closed coated discs practically eliminate the problem of grains working loose and scratching the work.

BURNED SPOTS

Bluish discoloration of the metal surface indicates excessive heat and burning. This condition is caused by slow movement of disc across the work, circular motion, sanding in one spot, excessive pressure or the use of a worn-out or glazed disc. When polishing metal, move constantly on the surface using one-second strokes two or three feet long on 24 guage or heavier stock. Work faster on curved surfaces where contact areas are smaller and pressure becomes greater. Proper pressure is maintained when the pad is raised at a 5 to 10 degree angle and a one inch rim of the disc is applied against the work surface.

FLAT AREAS AND LOW SPOTS

Flat areas appear when the pressure is too heavy at the end of the stroke. Reverse strokes, without easing up on the pressure at the end of each stroke, increases sanding time and produces extended low areas. Going over original low spots on metal surfaces is ideal when using the MILWAUKEE Nested Spring Steel Backing Pad Assembly. This stiffer pad rides over the low areas and sands the high surrounding area down to match. A soft backing pad follows the contours of the surface too closely and forces sanding discs into shallow spots.

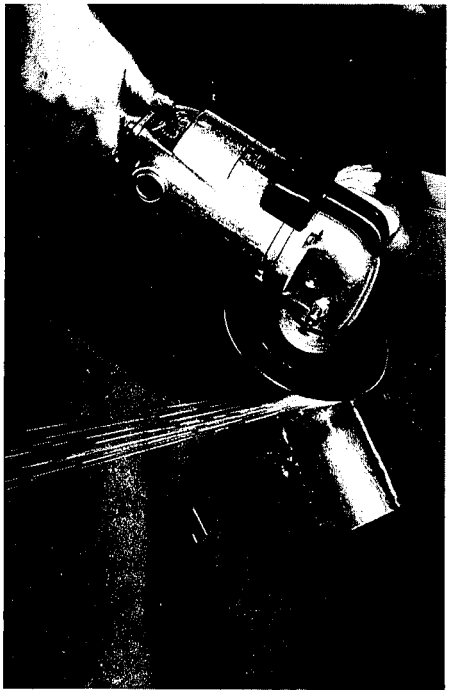
SALVAGING WORN ABRASIVE DISCS

MILWAUKEE'S Exclusive Spring Steel Backing Pad triples abrasive disc life. Using the Disc Trimmer on Page 6 , 9" abrasive discs can be trimmed to 7" and then 5" and used with the corresponding smaller diameter Spring Steel Backing Discs. Only 1" to 1-1/4" of the outer edge is used making this possible. Worn discs will continue to sand. Disc glazing is caused by dulled grain cutting edges or when the small spaces between abrasive grains fill in with grindings. Avoid using loaded or glazed discs. If the worn disc is clean, there is no danger of making deep scratches or burning as the grains will cut and not rub.

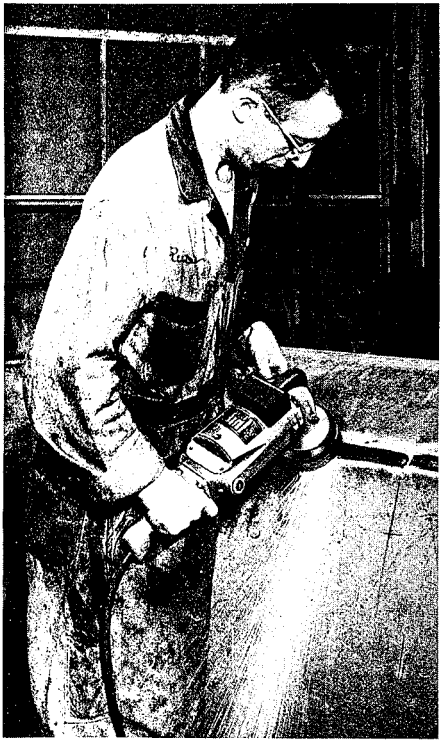
SANDING-GRINDING

Finishing surface of concrete pier on expressway project using Sander - Grinder with disc wheel.

MILWAUKEE Sander-Grinder used in body work. Nested spring steel backing pad assembly follows contours and produces even blend in surface.



Dressing welds with nested spring steel backing pad and abrasive sanding disc.

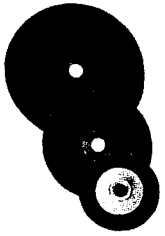


Grinding off welds on a road roller using a flared cup grinding wheel.

SANDER-GRINDER ACCESSORIES

Various applications require special types and grades or grit of abrasives. MILWAUKEE abrasive discs are coated abrasives. The coarse grades rough out the material quickly and the fine grades remove less material to produce a smoother surface for painting or refinishing.

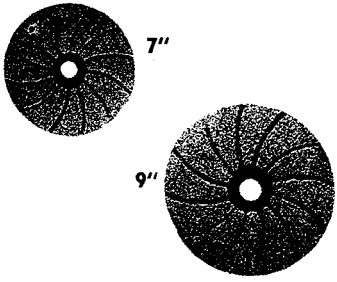
Exclusive . . . NESTED SPRING STEEL BACKING PAD



Lightest, perfectly balanced sander pads provide flexibility for curves and contours. Made up of 3 spring steel discs, 5", 7" and 9" diameters. The 5" disc is integral with a hub and a disc nut holds the assembly on the spindle. By removing the outer disc, the abrasive papers trimmed to the next smallest diameter affords greater economy.

Description	Dia.	Catalog No.
COMPLETE DISC ASSEMBLY	5"	48-80-0750
	7"	49-36-3100
	9"	49-36-3300
SPRING STEEL DISC	7"	48-80-0900
	9"	48-80-1100

ABRASIVE SANDING DISCS

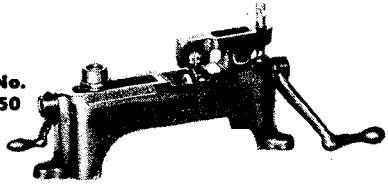


Description			Catalog No.
FOR 7" DIA.	16 Grit	PACKED ONLY IN BOXES OF 10 DISCS	48-80-2000
	24 Grit		48-80-2050
	36 Grit		48-80-2100
	60 Grit		48-80-2200
	80 Grit		48-80-2250
FOR 9" DIA.	16 Grit		48-80-2500
	24 Grit		48-80-2550
	36 Grit		48-80-2600
	60 Grit		48-80-2700
	80 Grit		48-80-2750

Specially selected extra hard aluminum oxide grits are applied with plastic adhesive to rigid fibre backing for long life . . . will not crack, curl or tear. Special spiral design speeds cutting, cools as it cuts. They are waterproof and can be dipped in gasoline and scrubbed for re-use. Packed 10 discs per box. Available in 7" and 9" diameters in 16, 24, 36, 60 and 80 grit.

DISC TRIMMER

Catalog No. 49-84-0050



Invaluable for reclaiming edge worn abrasive discs. Abrasive discs can be quickly cut down to smaller useable diameters to gain maximum service life. Equipped with adjustable center hole pilot and calibrated trim size indicator.

SANDER-GRINDER ACCESSORIES

REINFORCED GRINDING DISCS AND GUARDS

	Description			Catalog No.
FLAT REINFORCED GRINDING DISCS				
A	ROUGH	With 5/8" - 11 Threaded Hub	7" x 1/4"	49-93-3110
			9" x 1/4"	49-93-3230
	FINISH		7" x 1/4"	49-93-3170
			9" x 1/4"	49-93-3290
B	GUARD		Fits 7"	49-12-0080
			Fits 9"	49-12-0090
CURVED REINFORCED GRINDING DISCS				
C	ROUGH	With 5/8" - 11 Threaded Hub	7" x 1/4"	49-93-3120
			9" x 1/4"	49-93-3240
	FINISH		7" x 1/4"	49-93-3180
			9" x 1/4"	49-93-3300
D	GUARD		Fits 7"	49-12-0100
			Fits 9"	49-12-0110

Strong and tough, with high safety factor. Reinforced with layers of fibre glass, the resinoid disc resists breakage from twisting, torque or lateral pressure and will withstand rough usage. These 7" or 9" discs have hubs with 5/8"-11 thread permanently mounted. Steel Disc Wheel Guards are required for use with these discs and are adaptable to 7" grinders with Serial No. 49-4600 and above; 9" grinders Serial No. 48-3300 and above. Maximum operating speed 7" - 7750 r.p.m.; 9" - 6000 r.p.m.

Disc Wheel Hub Adapter Catalog No. 48-03-1000. For use with reinforced grinding discs with depressed center and 7/8" hole.

FLARED CUP GRINDING WHEELS AND GUARDS

Resinoid bonded. For all general purpose grinding work. These wheels are fitted with 1/2"-13 or 5/8"-11 threaded bushing molded intergrally for ready mounting to sander-grinder spindle. Cup Grinding Wheel Guards are required when using 4" and 5" wheels.

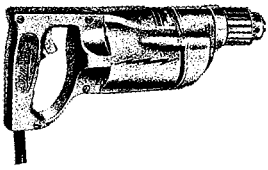
Description		Catalog No.
4" FLARE DIA. FOR 7"	1/2" - 13 Thread	49-93-5100
	5/8" - 11 Thread	49-93-5140
5" FLARE DIA. FOR 9"	1/2" - 13 Thread	49-93-5180
	5/8" - 11 Thread	49-93-5220
GUARD	For 4" Flared Cup	49-12-0060
	For 5" Flared Cup	49-12-0070

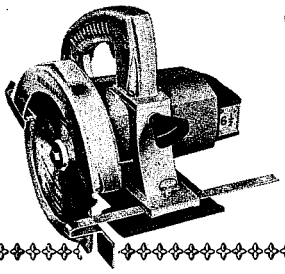
WIRE CUP BRUSHES

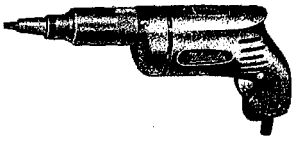
Finest quality wire to give long service on tough cleaning jobs. Ideally suited for cleaning castings, structural steel, tanks, vats, sheet metal, stone, concrete, and for removing paint.

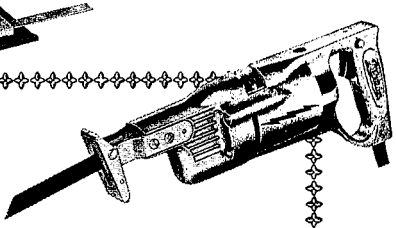
4" DIA. FOR 7"		
30 ga. crimped wire	5/8" - 11 Thread	48-52-1300
24 ga. knot wire		48-52-1350
6" DIA. FOR 9"		
25 ga. crimped wire	5/8" - 11 Thread	48-52-1600
5 ga. knot wire		48-52-1650

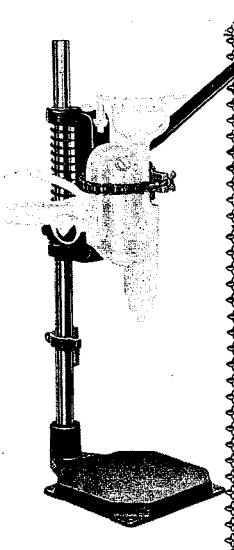
HEAVY-DUTY TOOLS FOR CONTRACTORS & INDUSTRY







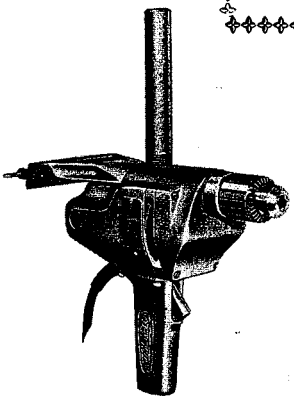


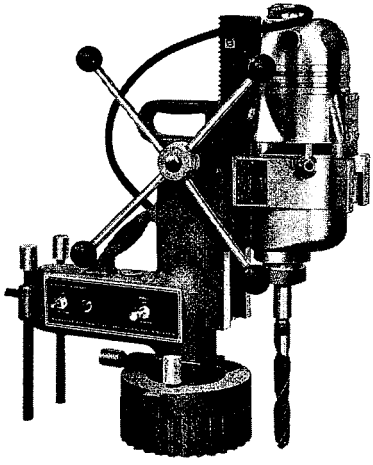


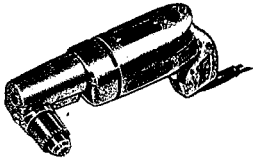
Milwaukee

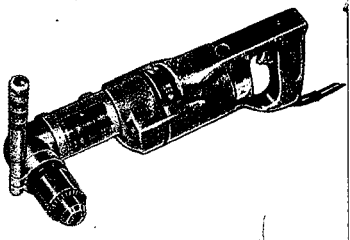
GUARANTEE

Every MILWAUKEE Tool is thoroughly inspected and tested before leaving the factory. It is guaranteed against defective workmanship and materials. Should any trouble develop, return the complete tool prepaid to the Factory, Branch or nearest Authorized MILWAUKEE Service Station. If inspection shows trouble is caused by defective workmanship or material, all repairs will be made without charge and returned transportation prepaid. The guarantee does not apply where: Repairs or attempted repairs have been made by persons other than Factory, Branch or Authorized Service Station personnel; repairs are due to normal wear; the tool has been abused or in an accident; misuse is evident—caused by overloading the tool beyond its rated capacity, use of the tool after partial failure or use with improper accessories. No other guarantee, written or verbal, is authorized.









Milwaukee

MILWAUKEE ELECTRIC TOOL CORP.

13135 W. LISBON ROAD BROOKFIELD, WISCONSIN 53005

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