

Master
SERIES
by BLACK&DECKER®

5590 5000 RPM 9" Angle Grinder

5591 6000 RPM 7" Angle Grinder:

Premium quality large angle grinders designed to work with 7" and 9" grinding wheels and backing pads for grinding and sanding in the most demanding applications.



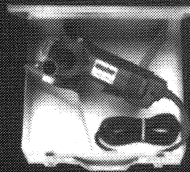
5580 4 1/2" Angle Grinder:

Premium quality small angle grinder for grinding and sanding for a variety of jobs.



5581 4 1/2" Angle Grinder Kit:

The same high quality grinder as the 5580 with a metal kit box.



5321 Variable-Speed Cut-Saw™ Reciprocating Saw:

Premium quality saw with an easy-to-use thumb dial variable speed control.



5111 Holgun® 3/8" VSR Drill:

Premium quality pistol-grip drill designed for long life in heavy-duty use in a variety of materials—wood, masonry and composites.



5130 Holgun® 1/2" VSR Drill:

Premium quality drill with maximum power for its compact size. Designed for drilling larger diameter holes with a no-load speed of 600 RPM.



5140 1/2" Spade Handle Drill:

Premium quality spade handle drill for the heaviest industrial and construction demands.



5274 Versa-Clutch® Scrugun® VSR Screwdriver:

Premium quality adjustable clutch screwdriver designed to drive a wide variety of fasteners to perfect tightness.



5158 Timberwolf™ 1/2" Right Angle Drill:

Premium quality drill designed for plumbers and electricians who need to drill large diameter holes in tight quarters.



5159 Timberwolf™ 1/2" Right Angle Drill Kit:

The same quality drill as the 5158 with a metal kit box.



Master
SERIES

by BLACK&DECKER®

**Instruction
Manual**

**5590
5000 RPM
9" Angle
Grinder**

**5591
6000 RPM
7" Angle
Grinder**

**Masterpieces
of Power and
Performance**

 **BLACK&DECKER®**

5590, 5591

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BLACK & DECKER (U.S.) Inc., U.S. Power Tools Group, 701 E. Joppa Rd., Towson, MD 21286 U.S.A.

Extension Cords

Tools that have 3-wire cords requiring grounding must only be used with extension cords that have 3-prong grounding type plugs and 3-pole receptacles. Only round jacketed extension cords should be used, and we recommend that they be listed by Underwriters Laboratories (U.L.) (C.S.A. in Canada). If the extension will be used outside, the cord must be suitable for outdoor use. Any cord marked as outdoor can also be used for indoor work. The letters "WA" on the cord jacket indicate that the cord is suitable for outdoor use.

An extension cord must have adequate wire size (AWG or American Wire Gauge) for safety, and to prevent loss of power and overheating. The smaller the gauge number of the wire, the greater the capacity of the cable, that is 16 gauge has more capacity than 18 gauge. When using more than one extension to make up the total length, be sure each individual extension contains at least the minimum wire size.

To determine the minimum wire size required, refer to the chart below.

CHART FOR MINIMUM WIRE SIZE (AWG) OF EXTENSION CORDS

NAMEPLATE RATING-AMPS	TOTAL EXTENSION CORD LENGTH-FEET							
	25	50	75	100	125	150	175	200
0 - 10.0	18	18	16	16	14	14	12	12
10.1 - 13.0	16	16	14	14	14	12	12	12
13.1 - 15.0	14	14	12	12	12	12	12	---

Before using an extension cord, inspect it for loose or exposed wires, damaged insulation, and defective fittings. Make any needed repairs or replace the cord if necessary.

Caution

To assure product SAFETY and RELIABILITY, repairs, maintenance and adjustment should be performed by BLACK & DECKER Service Centers or other qualified service organizations, always using BLACK & DECKER replacement parts.

Warranty

Black & Decker (U.S.) Inc. warrants this product for one year from date of purchase. We will repair without charge, any defects due to faulty material or workmanship. Please return the complete unit, transportation prepaid, to any Black & Decker Service Center or Authorized Service Station listed under "Tools Electric" in the yellow pages. This warranty does not apply to accessories or damage caused where repairs have been made or attempted by others.

Every Black & Decker tool is of the highest quality. If you wish to contact us regarding this product, please call us toll free between 8:00 a.m. and 5:00 p.m. ET, Monday through Friday. 1-800-762-6672.

Like most Black & Decker products your tool is listed by Underwriters Laboratories to ensure that it meets stringent safety requirements.

This symbol on the nameplate means the product is listed by Underwriter's Laboratories, Inc.



See 'Tools-Electric'
—Yellow Pages—
for Service & Sales

Finally, a large angle grinder designed to improve upon perfection

Accessories

See your local Black & Decker dealer for a wide array of accessories.

Accessory Type	Notes	Usages
DEPRESSED CENTER WHEELS	USE GUARD SUPPLIED WITH TOOL	Use for moderate metal & masonry removal on flat or contoured surfaces.
SANDING DISCS	UP TO 9" WITH 5590 & 5591	Use for smoothing welds, and sharp edges, and automotive body work.
WIRE BRUSHES	MAX. 4" KNOTTED WHEEL MAX. 2 3/4" CUP WHEEL	Use for rust removal and surface preparation before painting.

The accessories listed in this manual are available at extra cost from your local dealer or Black & Decker Service Center. A complete listing of service centers is included on the owner's registration card packed with your tool.

If you need assistance in locating any accessory, please contact:

Black & Decker (U.S.) Inc.
User Services Department
626 Hanover Pike
P.O. Box 618
Hampstead, MD 21074-0618

CAUTION: The use of any accessory or attachment other than those recommended in this manual may be hazardous.

Tool Catalog No.	Guard	Wheels Used With Guard
5590, 5591	Supplied	All Black & Decker 7 inch Depressed Center Wheels.
5590 5591	Supplied 37109*	All 9 inch Depressed Center Wheels with adequate speed rating as shown on tool's nameplate.
5590, 5591	38517*	All Black & Decker 4 inch Flaring Cup Wheels.
5590 ONLY	38518*	All Black & Decker 5 inch Flaring Cup Wheels.
5590 ONLY	38519*	All Black & Decker 6 inch Flaring Cup Wheels.

*Guards available at extra cost.

WARNING—To reduce the risk of injury, always use proper guards when grinding and wear eye protection.

You're a pro. Proud of your work. Always ready to take on a new challenge. Confident you'll do the best job possible.

With the new Master Series™ large angle grinder you can count on doing the job even better. Because your new grinder is better than any you've used before. Both models 5590 and 5591 are designed specifically to handle 7" and 9" grinding wheels and backing pads for grinding and sanding in the most demanding applications. These tools exceed the durability requirement of your work environment.

The Master Series large angle grinder gives you more of what you want. More power. More performance. And gives it to you better. With better design. Better parts. Better service.

You get more performance with the largest, most powerful Black & Decker built motor available.

You get more durability from the hardened spiral bevel gears and the full metal motor housing and gear case.

You get an adjustable position wheel guard with the tool that complies with the ANSI safety code.

The polished metal housing and gear case guarantees you superior quality inside and out.

Once you use your new Master Series grinder, we think you are going to agree Master Series tools are masterpieces of power and performance.

Available accessories:

Black & Decker's complete line of grinding and sanding accessories.

Specifications:

Wheel capacity (inches)		7/9
Current rating @ 120V AC/DC (amps)		15.0
No load speed (rpm) (nominal)	5590	5000
	5591	6000
Speed @ rated current (rpm)	5590	3555
	5591	4645
Maximum power output (watts/horsepower)		2500/3.3
Power output @ rated current (watts/horsepower)		950/1.3
Maximum torque output (in. lbs.)	5590	396
	5591	360
Torque output @ rated current (in. lbs.)	5590	23
	5591	16.8
Overall gear reduction ratio	5590	4.67:1
	5591	3.79:1
Spindle thread (inches)		5/8-11
Weight w/o guard (lbs.)	5590	13.9
	5591	13.9
Shipping weight (lbs.)	5590	17.0
	5591	17.0

Commonly used service parts' numbers:

Power supply cord	50272
Separable cord protector	33005-03
Switch	133077-01
Brushes including brush springs (2 required)	131602-00
Armature	131490-31
Field	131491-71

Standard equipment:

5590 includes wheel flange, 9" grinding wheel, wheel nut, auxiliary handle, 9" guard and wheel wrench.

5591 includes wheel flange, 7" grinding wheel, wheel nut, auxiliary handle, 7" guard and wheel wrench.

Regulatory agency listing and compliance:

5590 and 5591 are U.L. listed and in compliance with OSHA.



Important Safety Instructions (For All Tools)

WARNING: When using electric tools, basic safety precautions should always be followed to reduce the risk of fire, electric shock, and personal injury, including the following:

READ ALL INSTRUCTIONS

1. **KEEP WORK AREA CLEAN.** Cluttered areas and benches invite injuries.
2. **CONSIDER WORK AREA ENVIRONMENT.** Don't expose power tools to rain. Don't use power tools in damp or wet locations. Keep work area well lit.
3. **GUARD AGAINST ELECTRIC SHOCK.** Prevent body contact with grounded surfaces. For example: pipes, radiators, ranges, refrigerator enclosures.
4. **KEEP CHILDREN AWAY.** All visitors should be kept away from work area. Do not let visitors contact tool or extension cord.
5. **STORE IDLE TOOLS.** When not in use, tools should be stored in dry, and high or locked-up place—out of reach of children.
6. **DON'T FORCE TOOL.** It will do the job better and safer at the rate for which it is intended.
7. **USE RIGHT TOOL.** Don't force small tool or attachment to do the job of a heavy-duty tool. Don't use tool for purpose not intended, for example, don't use circular saw for cutting tree limbs or logs.
8. **DRESS PROPERLY.** Do not wear loose clothing or jewelry. They can be caught in moving parts. Rubber gloves and non-skid footwear are recommended when working outdoors. Wear protective hair covering to contain long hair.
9. **USE SAFETY GLASSES.** Also use face or dustmask if cutting operation is dusty.
10. **DON'T ABUSE CORD.** Never carry tool by cord or yank it to disconnect from receptacle. Keep cord from heat, oil, and sharp edges.
11. **SECURE WORK.** Use clamps or a vise to hold work. It's safer than using your hand and it frees both hands to operate tool.
12. **DON'T OVERREACH.** Keep proper footing and balance at all times.
13. **MAINTAIN TOOLS WITH CARE.** Keep tools sharp and clean for better and safe performance. Follow instructions for lubricating and changing accessories. Inspect tool cords periodically and if damaged have repaired by authorized service facility. Inspect extension cords periodically and replace if damaged. Keep handles dry, clean, and free from oil and grease.
14. **DISCONNECT TOOLS.** When not in use, before servicing, and when changing accessories, such as blades, bits, cutters.
15. **REMOVE ADJUSTING KEYS AND WRENCHES.** Form habit of checking to see that keys and adjusting wrenches are removed from tool before turning it on.
16. **AVOID UNINTENTIONAL STARTING.** Don't carry plugged-in tool with finger on switch. Be sure switch is off when plugging in.
17. **OUTDOOR USE EXTENSION CORDS.** When tool is used outdoors, use only extension cords intended for use outdoors and so marked. More detailed information can be found on page 11.
18. **STAY ALERT.** Watch what you are doing. Use common sense. Do not operate tool when you are tired.
19. **CHECK DAMAGED PARTS.** Before further use of the tool, a guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function. Check for alignment of moving parts, binding of moving parts, breakage of parts, mounting and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced by an authorized service center unless otherwise indicated elsewhere in this instruction manual. Have defective switches replaced by authorized service center. Do not use tool if switch does not turn it on and off.
20. **DO NOT OPERATE** portable electric tools near flammable liquids or in gaseous or explosive atmospheres. Motors in these tools normally spark, and the sparks might ignite fumes.

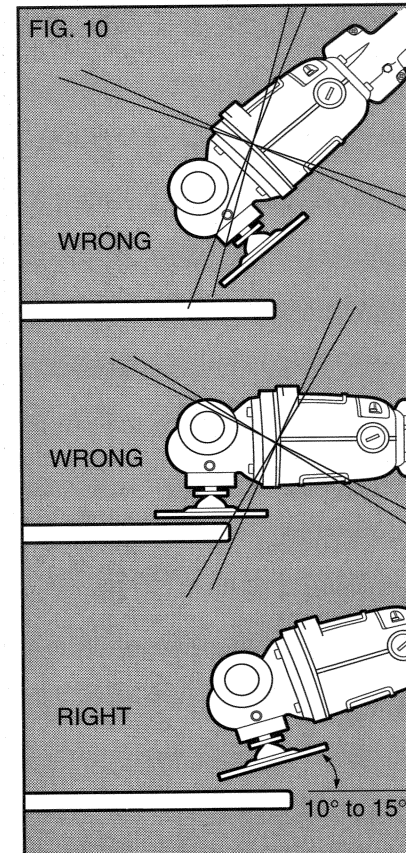
**SAVE THESE INSTRUCTIONS
FOR FUTURE USE.**

Removal of Backing Disc and Sanding Disc

1. Be sure tool is disconnected from power supply and switch is in "OFF" position.
2. Depress the spindle lock pin to lock the spindle. Using a cloth or glove to protect your hand, loosen and remove disc.

Sanding Operation

When using a sanding disc, hold the tool so that an angle of 10° to 15° exists between the disc and the work, as shown in Figure 10. If only the outer edge of the sanding disc is used, a rough cut surface will result. If the sanding disc is pressed flat against the work the sanding action will be irregular and bumpy, and the tool will be difficult to control.



Wire Cup and Knotted Wire Wheel Brushes

Common applications for knotted wire cup brushes including cleaning welds, angles, corners and paint removal. Usage of the knotted wire wheel brush is the same as the cup brush. They can also be used to finish irregular surfaces and corners.

1. Disconnect tool from power source. Rest Grinder on its back with spindle facing up.
2. Ensure that the rated speed of the wire brush is equal to or higher than the rated speed of the grinder found on the nameplate.
3. **UNSCREW AND REMOVE THE WHITE RETAINER, THE UNIVERSAL TOOL FLANGE AND THE ORANGE SPACER SHOWN IN FIGURE 8.** These parts cannot be used with Wire Brushes.
4. Thread brush onto spindle and tighten.

Flaring Cup Grinding Wheels

Flaring Cup Grinding Wheels are used for moderate to heavy metal removal on flat or contoured surfaces.

1. Disconnect tool from power source. Rest grinder on its back with spindle facing up.
2. Ensure that the rated speed of the Flaring Cup Wheel is equal to or higher than the rated speed of the grinder found on the tool's nameplate.
3. **UNSCREW AND REMOVE THE WHITE RETAINER, THE UNIVERSAL TOOL FLANGE AND THE ORANGE SPACER SHOWN IN FIGURE 8.** These parts cannot be used with Flaring Cup Wheels.
4. Thread the wheel on the spindle and tighten securely.

Maintenance of Tool Cleaning

Blowing dust and grit out of the motor housing using compressed air is a necessary regular maintenance procedure. Dust and grit containing particles from metal grinding often accumulate on interior surfaces and could create an electrical shock hazard if not frequently cleaned out. **ALWAYS WEAR SAFETY GLASSES.**

CAUTION: Never use solvents or other harsh chemicals for cleaning the non-metallic parts of the tool. Use clean, dry rag only.

Lubrication

Black & Decker tools are properly lubricated at the factory and are ready for use. Tools should be relubricated regularly every sixty days to six months, depending on usage. (Tools used constantly on production for heavy-duty jobs and tools exposed to heat may require more frequent lubrication.) This lubrication should only be attempted by trained power tool repairpersons such as those at Black & Decker Service Centers or in other qualified service organizations.

Motor Brushes

Your tool is equipped with the Black & Decker brush Checkpoint™ system. When the brushes become worn out, the tool will automatically stop and prevent damage to the motor. Brush replacement should be performed by Black & Decker service centers or other qualified service organizations.

Be sure tool is unplugged before inspecting brushes. Carbon Brushes should be regularly inspected for wear. To inspect brushes, unscrew the plastic brush inspection caps (located in the sides of the motor housing) and the spring and brush assemblies may be withdrawn from the tool.

Keep brushes clean and sliding freely in their guides. Carbon brushes have varying symbols stamped into them, and if the brushes are worn down to the line closest to the spring, they must be replaced. New brush assemblies are available at Black & Decker Service Centers; see TOOLS, ELECTRIC in the Yellow Pages.

Sanding with Sanding Discs

Using Wheelfast™ Rubber Backing Pad Sanding Accessory

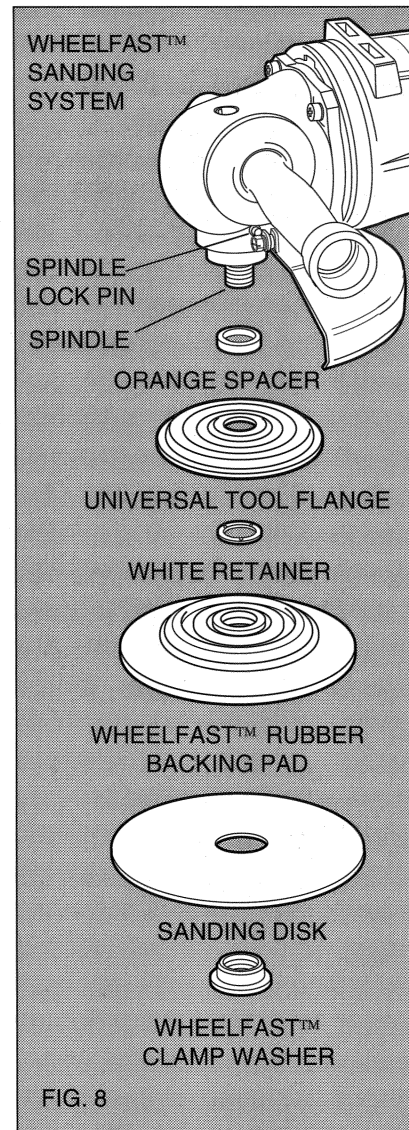
Black & Decker accessory catalog number 54671 (not included with unit). 54671 Rubber Backing Pad is for the 5590 only. It has a 5000 RPM rating and is 7" in diameter.

Installation of Wheelfast Rubber Backing Pad and Sanding Discs

1. Be sure tool is disconnected from power supply and switch is in "OFF" position.
2. With the orange spacer, universal tool flange and white retainer in place (Fig. 8), install the Wheelfast™ rubber backing pad. Install the sanding disc and Wheelfast™ clamp washer included with cat. no. 54671 Backing Pad.)
3. Depress the spindle lock pin to lock the spindle. Grasp the sanding disc and the Wheelfast™ rubber backing pad and turn until the Wheelfast™ clamp washer is tight. See Figure 8.

Removal of Wheelfast Rubber Backing Pad and Sanding Disc

1. Be sure tool is disconnected from power supply and switch is in "OFF" position.
2. Depress the spindle lock pin to lock the spindle.
3. Using a cloth or glove to protect your hand, grasp the sanding disc and the Wheelfast™ rubber backing pad and unscrew them.



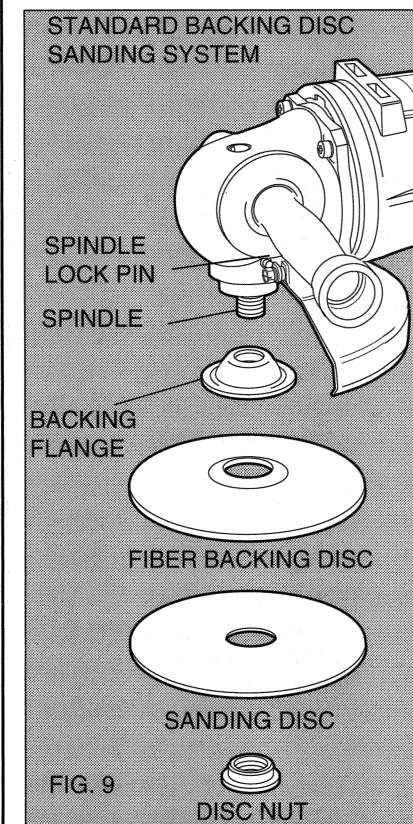
Using Standard Backing Disc Accessories

Note: Black & Decker offers a wide array of backing discs of various flexibilities to fit all types of sanding jobs. Select the combination of discs best suited to your application and install them according to the instructions in this manual.

If you need assistance determining which disc or combination of discs will best fit your needs, contact your local Black & Decker Service Center or call, tool free, 1-800-762-6672 for consumer assistance.

Installation of Standard Backing Disc and Sanding Disc

1. Be sure tool is disconnected from power supply and switch is in "OFF" position.
2. Remove white retainer by unscrewing it over the spindle threads. Remove the universal tool flange and the orange spacer. See Figure 8.
3. Assemble backing flange, backing disc, sanding disc, and disc nut to the spindle.
4. Depress the spindle lock pin to lock the spindle. Using a cloth or glove to protect your hand, grasp the sanding disc and the fiber backing disc and turn until the disc nut is tight. See Figure 9.



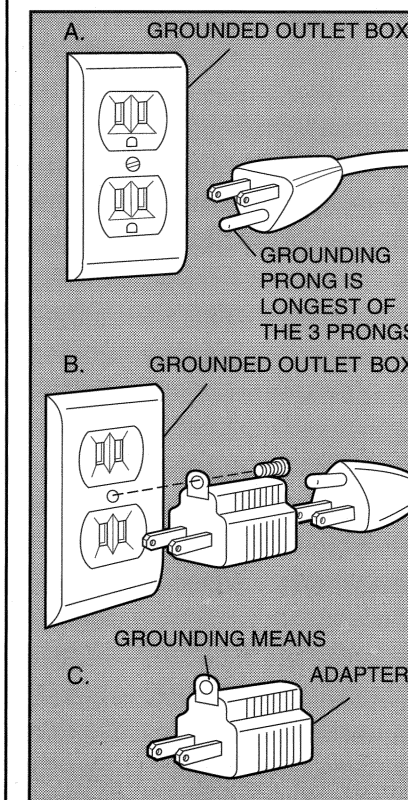
Safety Rules For Sanders and Grinders

1. Always wear safety goggles or other eye protection when using this tool.
2. When grinding, always keep guard in place.
3. Use only rotating accessories, such as grinding wheels, sanding discs and wire brushes which are marked to show maximum safe RPM equal to or greater than the maximum RPM stated on the tool's nameplate. The 5590 and the 5591 grinders discussed in this manual have RPM statements on their nameplates that are explicit about the RPM of the accessories to use. The nameplate on the 5590 Grinder says "Do not use accessories rated less than 6000 RPM." The 5591 Grinder nameplate says "Do not use accessories rated less than 7000 RPM."
4. Before using, inspect recommended accessory for cracks or flaws. If such a crack or flaw is evident—discard the accessory! The accessory should also be inspected whenever you think the tool may have been dropped.
5. When starting the tool (with a new or replacement wheel installed) hold the tool in a well protected area and let it run for one minute. If the wheel has an undetected crack or flaw, it should burst in less than one minute. Never start the tool with a person in line with the wheel. This includes the operator.
6. In operation, avoid bouncing the wheel or giving it rough treatment. If this occurs, stop the tool and inspect the wheel.
7. Always use guards with depressed-center or flaring cup grinding wheels.
8. Clean your tool out periodically following the procedure in the maintenance section.

SAVE THESE INSTRUCTIONS

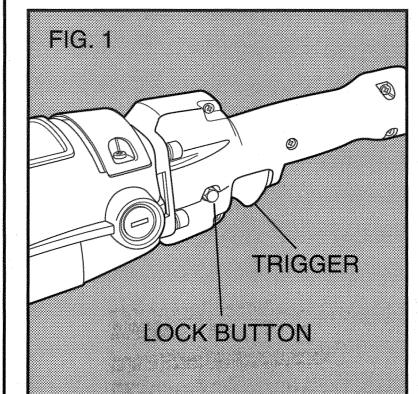
Grounding

This tool should be grounded while in use to protect the operator from electric shock. The tool is equipped with an approved three-conductor cord and three prong grounding type plug to fit the proper grounding type receptacle. The green (or green and yellow) conductor in the cord is the grounding wire. Never connect the green (or green and yellow) wire to a live terminal. Your unit is for use on less than 150 volts and has a plug like that shown in Figure A. An adapter, Figures B and C, is available for connecting Figure A plugs to two-prong receptacles. The green-colored rigid ear, lug, etc., must be connected to a permanent ground such as a properly grounded outlet box. **ADAPTOR SHOWN IN FIGURES B & C IS NOT FOR USE IN CANADA.**



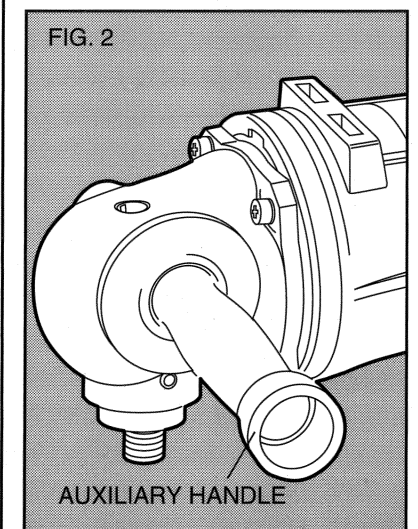
Switch Operation (Fig. 1)

To start the tool, depress the trigger by squeezing. To turn the tool off, release the trigger. The switch can be locked on by engaging the lock button located near the trigger while holding the trigger depressed. Always be sure that the tool is not locked on before plugging it in. To turn the tool off when it is locked on, squeeze and release the trigger once.



Auxiliary Handle (Fig. 2)

An auxiliary handle is furnished with your tool and can be screwed into either side of the front housing. This handle **SHOULD BE USED AT ALL TIMES** to maintain complete control of the tool.



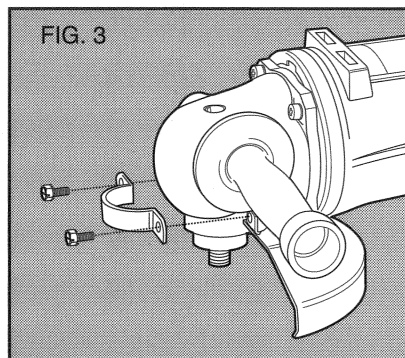
Grinding With Depressed Center Wheels (Fig. 4)

Depressed center wheels may be used for moderate metal removal on flat or contoured surfaces.

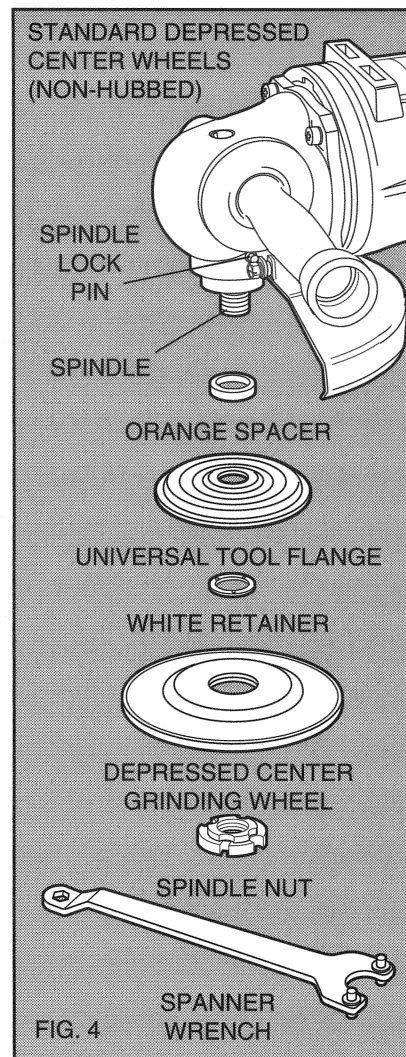
CAUTION: NEVER USE DEPRESSED CENTER WHEELS WITHOUT THE PROPER GUARD.

Installation of Standard Depressed Center Wheels (Non-Hubbed)

1. Be sure tool is disconnected from power supply and switch is in "OFF" position.
2. Be sure the guard assembly is securely attached to the spindle housing, as shown in Figure 3.



3. Put the orange spacer over the spindle, as shown in Figure 4.
4. Put the Universal Tool Flange onto the tool spindle as shown. See Figure 4.
5. Secure the Universal Tool Flange by threading the white retainer onto the spindle.
6. Check MAX. RPM rating on Depressed Center Wheel. Never use wheel with MAX. RPM lower than the speed on the nameplate.
7. Install the Depressed Center Wheel on the tool spindle as shown in Figure 4.
8. Install the spindle nut on the spindle. Depress the spindle lock pin to lock the spindle.
9. Tighten spindle nut with the spanner wrench provided. See Figure 4.



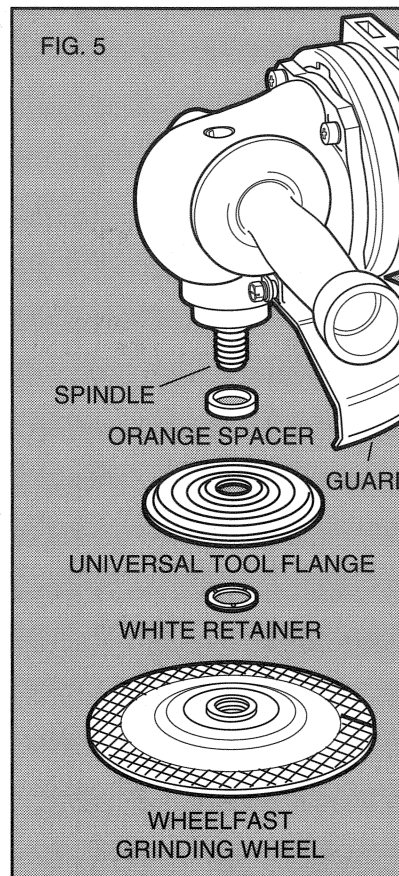
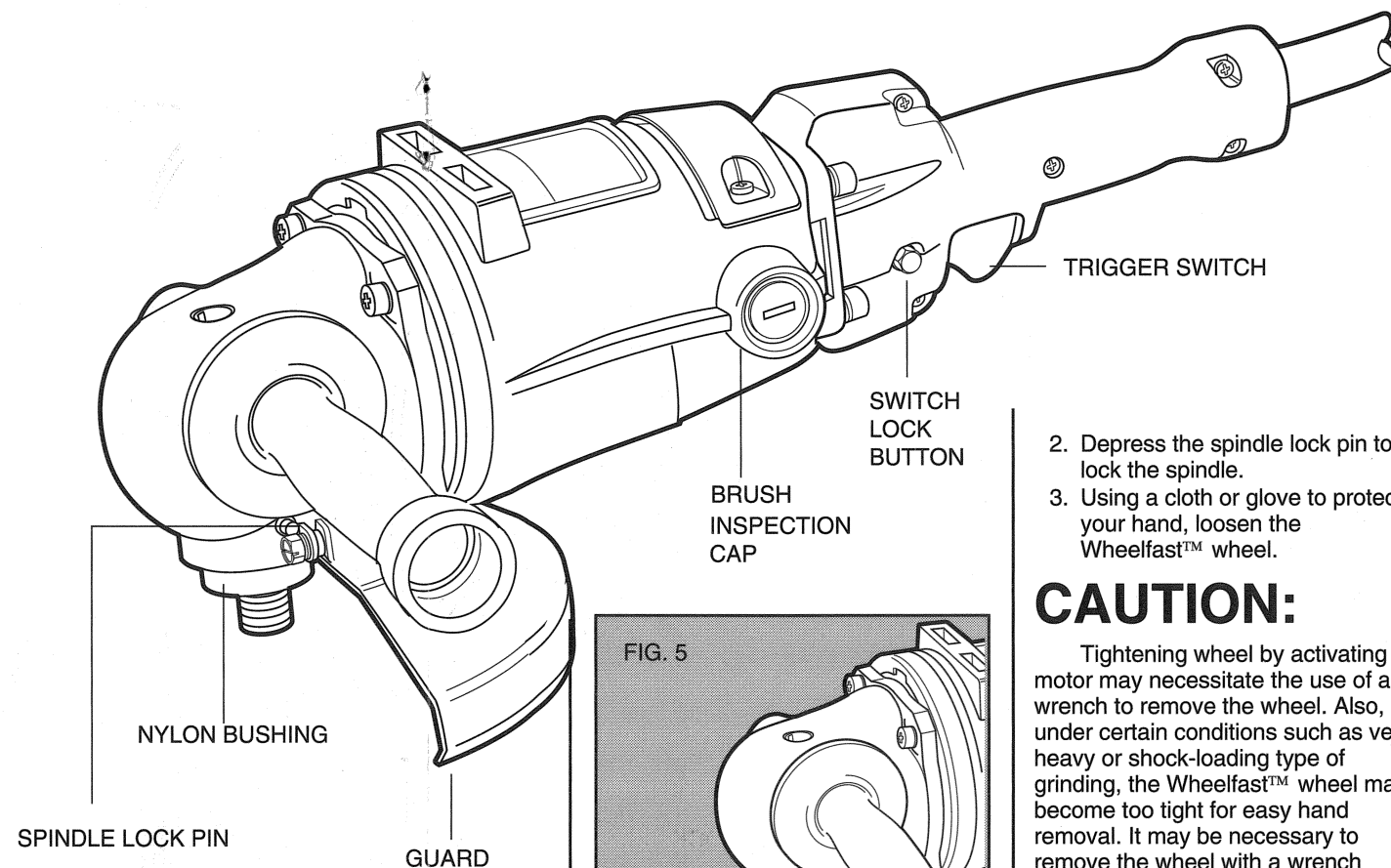
Removal of Standard Depressed Center Wheels

1. Be sure tool is disconnected from power supply and switch is in "OFF" position.
2. Depress the spindle lock pin to lock the spindle.
3. Insert the spanner wrench into the spindle nut. Unscrew and remove the spindle nut and the grinding wheel.

Installation of Wheelfast™ Wheels

1. Be sure tool is disconnected from power supply and switch is in "OFF" position.

2. Be sure the guard assembly is securely attached to the spindle housing, as shown in Figure 3.
3. Put the orange spacer over the spindle, as shown in Figure 5.
4. Put the Universal Tool Flange onto the tool spindle as shown.
5. Secure the Universal Tool Flange by threading the white retainer onto the spindle. **NOTE:** Once the Universal Tool Flange is installed, it need never be removed. (Exception—When using wire cup & knotted wire wheel brushes, fiber backing discs and standard hubbed wheels).
6. Check MAX. RPT rating on Wheelfast™ wheel. Never use wheel with MAX. RPM lower than the speed on the nameplate of the tool.
7. Thread the Wheelfast™ Wheel on the tool spindle as shown. Tighten the wheel firmly by hand while depressing the Spindle Lock Pin. See Figure 5.



Removal of Wheelfast™ Wheels

1. Be sure tool is disconnected from power supply and switch is in "OFF" position.

2. Depress the spindle lock pin to lock the spindle.
3. Using a cloth or glove to protect your hand, loosen the Wheelfast™ wheel.

CAUTION:

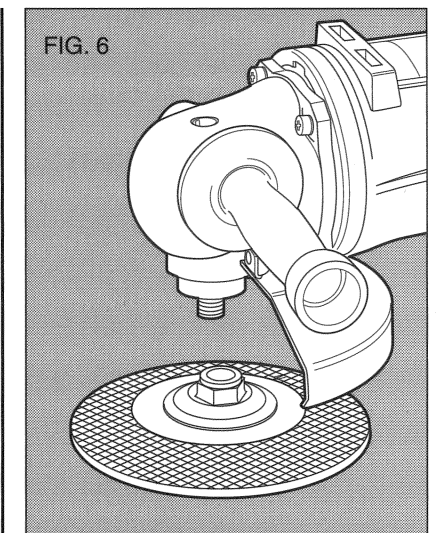
Tightening wheel by activating motor may necessitate the use of a wrench to remove the wheel. Also, under certain conditions such as very heavy or shock-loading type of grinding, the Wheelfast™ wheel may become too tight for easy hand removal. It may be necessary to remove the wheel with a wrench applied to the flats on the bottom of the Wheelfast™ wheel.

The Universal Tool Flange is required to mount Non-Hubbed or Wheelfast™ grinding wheels.

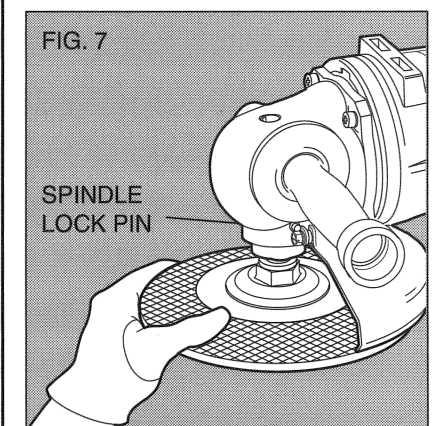
NOTE: Never depress the Spindle Lock Pin when the tool is running or coasting. Damage to the gear and lock pin will result.

Installation of Standard Depressed Center Wheels (Hubbed)

1. Be sure tool is disconnected from power supply and switch is in "OFF" position.
2. Be sure guard assembly is securely attached to the spindle housing, as shown in Figure 3.
3. Remove white retainer by unscrewing it over the spindle threads. Remove the universal tool flange and the orange spacer. See Figure 5.
4. Using a cloth or glove to protect your hand, thread the wheel on the tool spindle as shown in Figures 6 & 7.



Tighten wheel firmly by hand while depressing the Spindle Lock Pin. See Figure 7.



Removal of Standard Depressed Center Wheels (Hubbed)

1. Be sure tool is disconnected from power supply and switch is in "OFF" position.
2. Depress the spindle lock pin to lock the spindle.
3. Using a wrench on the hex of the wheel hub, loosen and remove the wheel.

Grinding Operation

When using any Depressed Center Wheel, hold the tool so that an angle of approximately 30° exists between the wheel and the work.