

Norton diamond lapping compound polishes all materials – hard and soft. Diamond powders are uniformly distributed in a liquid vehicle for aggressive polishing and consistent part quality. Easy-to-use plastic syringe for quick clean-up.

Applications: For mold, die, and tool polishing, polishing to final tolerance of ceramic parts, initial charging of lapping plates and discs, and other processes that require mirror finish and close tolerance performance.

Syringe Size: 5 and 18 gram syringes
Type: Water soluble – when soap/water is used for clean-up
 Oil soluble – when solvent is used for clean-up

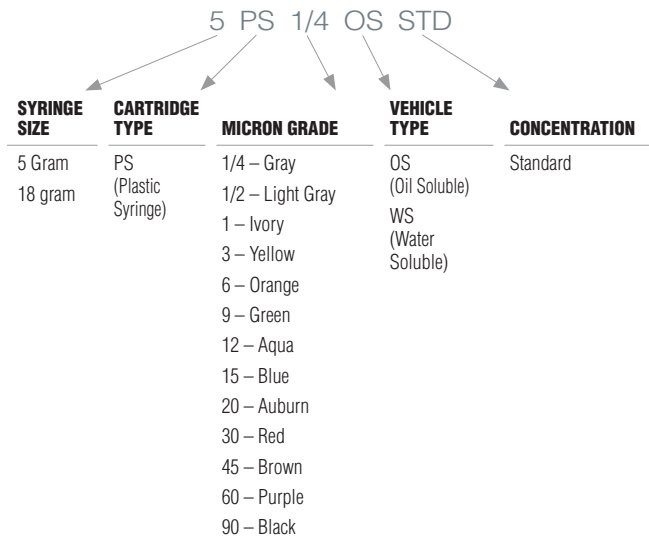


PRODUCT #	MICRON GRADE	COLOR	PART #	
Diamond Compound – Water Soluble				
5 Gram Syringes				
5PS1/4WSSTD	1/4	Ultra Fine	Gray	66260300362
5PS1/2WSSTD	1/2	Ultra Fine	Lt. Gray	66260300417
5PS1WSSTD	1	Ultra Fine	Ivory	66260300368
5PS3WSSTD	3	Super Fine	Yellow	66260300667
5PS6WSSTD	6	Super Fine	Orange	66260300372
5PS9WSSTD	9	Super Fine	Green	66260300375
5PS12WSSTD	12	Super Fine	Aqua	66260300376
5PS15WSSTD	15	Fine	Blue	66260300379
5PS20WSSTD	20	Fine	Auburn	66260300381 *
5PS30WSSTD	30	Fine	Red	66260300383
5PS45WSSTD	45	Fine	Brown	66260300384
5PS60WSSTD	60	Fine	Purple	66260300388
5PS90WSSTD	90	Fine	Black	66260300389
18 Gram Syringes				
18PS1/4WSSTD	1/4	Ultra Fine	Gray	66260300392
18PS1/2WSSTD	1/2	Ultra Fine	Lt. Gray	66260300394
18PS1WSSTD	1	Ultra Fine	Ivory	66260300396
18PS3WSSTD	3	Super Fine	Yellow	66260300398
18PS6WSSTD	6	Super Fine	Orange	66260300400
18PS9WSSTD	9	Super Fine	Green	66260300402
18PS12WSSTD	12	Super Fine	Aqua	66260300404 *
18PS15WSSTD	15	Fine	Blue	66260300406
18PS20WSSTD	20	Fine	Auburn	66260300408
18PS30WSSTD	30	Fine	Red	66260300410 *
18PS45WSSTD	45	Fine	Brown	66260300412 *
18PS60WSSTD	60	Fine	Purple	66260300414 *
18PS90WSSTD	90	Fine	Black	66260300416 *

PRODUCT #	MICRON GRADE	COLOR	PART #	
Diamond Compound – Oil Soluble				
5 Gram Syringes				
5PS1/4OSSTD	1/4	UltraFine	Gray	61463691123 *
5PS1/2OSSTD	1/2	UltraFine	Lt. Gray	66260300363
5PS1OSSTD	1	UltraFine	Ivory	61463691133
5PS3OSSTD	3	Super Fine	Yellow	61463691138
5PS6OSSTD	6	Super Fine	Orange	61463691143
5PS9OSSTD	9	Super Fine	Green	61463691148
5PS12OSSTD	12	Super Fine	Aqua	66260300377 *
5PS15OSSTD	15	Fine	Blue	61463691153
5PS20OSSTD	20	Fine	Auburn	66260300380 *
5PS30OSSTD	30	Fine	Red	61463691158
5PS45OSSTD	45	Fine	Brown	61463691163
5PS60OSSTD	60	Fine	Purple	66260300386
5PS90OSSTD	90	Fine	Black	66260300390
18 Gram Syringes				
18PS1/4OSSTD	1/4	UltraFine	Gray	66260300391
18PS1/2OSSTD	1/2	UltraFine	Lt. Gray	66260300393 *
18PS1OSSTD	1	UltraFine	Ivory	61463691134 *
18PS3OSSTD	3	Super Fine	Yellow	61463691139
18PS6OSSTD	6	Super Fine	Orange	66260300399
18PS9OSSTD	9	Super Fine	Green	61463691149 *
18PS12OSSTD	12	Super Fine	Aqua	66260300403 *
18PS15OSSTD	15	Fine	Blue	61463691154
18PS20OSSTD	20	Fine	Auburn	66260300407
18PS30OSSTD	30	Fine	Red	66260300409
18PS45OSSTD	45	Fine	Brown	61463691164 *
18PS60OSSTD	60	Fine	Purple	66260300413
18PS90OSSTD	90	Fine	Black	66260300415

* Non-stock; contact your Norton representative for current lead-times.

Marking System



TECH TIP

Diamond Compound Application Guide

APPLICATION	MICRON GRADE	MICRON RANGE	MESH SIZE EQUIV.	COLOR	CONC.
ULTRA FINE Applying finest finishes on metals and ceramics	1/4	(0-1/2)	100,000	Gray	Std.
	1/2	(0-1)	60,000	Lt. Gray	Std.
	1	(0-2)	14,000	Ivory	Std.
SUPER FINE Final finishing of dies, molds, seals, most applications (RMS 4-12)	3	(2-4)	8,000	Yellow	Std.
	6	(4-8)	3,000	Orange	Std.
	9	(8-12)	1,800	Green	Std.
	12	(9-15)	1,500	Aqua	Std.
FINE FINISH Preparatory lapping (RMS 12-20)	15	(12-22)	1,200	Blue	Std.
	20	(15-25)	800	Auburn	Std.
	30	(22-36)	600	Red	Std.
	45	(36-45)	325	Brown	Std.
	60	(54-80)	230	Purple	Std.
	90	(80-100)	170	Black	Std.

⚠ WARNING

Improper use of abrasive products might cause grinding wheel breakage and serious injury. Comply with ANSI B7.1, OSHA and Safety Guide furnished with package. Don't overspeed, abuse, or drop wheel. Always use a guard, personal protective equipment and proper mounting procedures.



Speeds

Check machine spindle speed and speed listed on machine against safe maximum operating speed marked on the grinding wheel. Do not overspeed the wheel. Refer to the "Proper Grinding Wheel Operating Speeds and Safety" article on page 336 for more information.



Flanges

When mounting most grinding wheels, use flanges of equal diameter and bearing surface. For exceptions, see ANSI B7.1.



Safety Gloves

Grinding applications are conducted in harsh environments. The use of proper fitting gloves is recommended.



Wheel Guard

Always use the wheel guard as supplied by the machine manufacturer, in the proper position.



Do Not Use Damaged Wheel

Always check each wheel for cracks or damage before use. Never use a damaged wheel.



Eye/Face Protection

Always wear government-approved face and eye protection when using abrasive products.



Hearing Protection

Use of abrasive products can create elevated sound levels. Hearing protection must be worn where required.



Safety Guides, SDS and Wheel Warning Messages

Before using any abrasive materials, READ:

- The Safety Guides
- Wheel Warning Messages
- Safety Data Sheets (SDS)

All Norton products provide information pertaining to safe use. Please take the time to read it carefully. Contact suppliers of the workpiece and abrasive materials for copies of the SDS if one is not readily available. Norton abrasives SDS can be obtained on www.nortonabrasives.com



Dust Protection

Exposure to dust generated from workpiece and/or abrasive materials can result in lung damage and/or other physical injury.

Use dust capture or local exhaust as stated in the SDS. Wear government-approved respiratory protection and eye and skin protection. Failure to follow this warning can result in serious lung damage and/or physical injury.

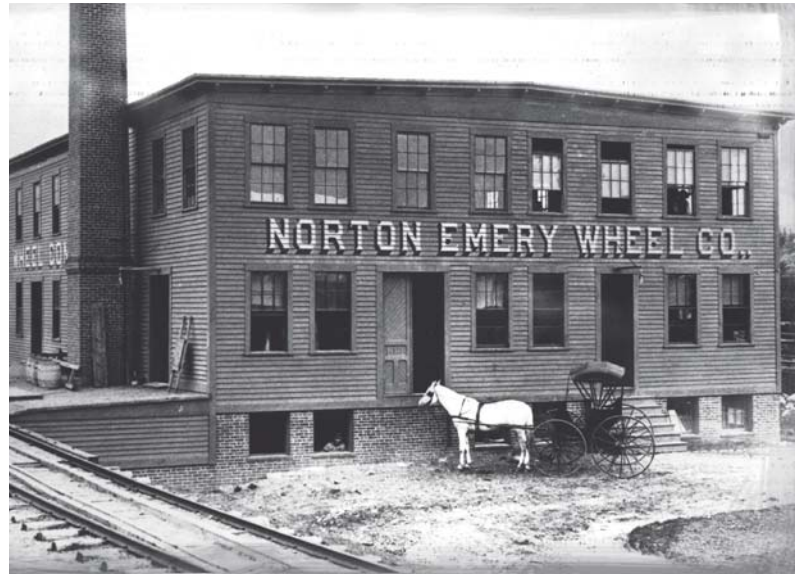
This is a general dust warning and does not cover specific situations. For more information, refer to the SDS dust warning provided with your products, and workpiece.

100 Years of Safety Leadership

The year 2016 marked the 100-year anniversary of the leadership of the former Norton Company in the creation of the first ever safety code for abrasives.

In 1916, following more than a decade of safety research, advocacy, and leadership by the Norton Company (now Norton | Saint-Gobain Abrasives), “The Safety Code for the Use and Care of Abrasive Wheels” was published. This 13-page booklet, containing an unprecedented set of safety device recommendations and procedures, was a spark that changed the entire future of the abrasives industry.

In the 1970s, this code received the ultimate endorsement when selected by OSHA as the basis of new federal regulations concerning abrasive wheel machinery. Today, the ever-evolving “Safety Requirements for the Use, Care and Protection of Abrasive Wheels” (commonly known as the ANSI B7.1 standard) continues to mirror the latest technologies and remains the global authoritative abrasives safety standard.



Breakages/Personal Injury

In the event of on-machine breakage of Norton abrasive products, call your local Norton distributor immediately. Whether involving personal injury or not, the abrasive user should leave the equipment and other evidence undisturbed until a Norton sales representative has been notified and conducts an investigation. Prompt action on the part of abrasive users, distributor, and Norton sales personnel is important to ensure swift determination of the breakage cause and to guard against recurrence.



It is the user’s responsibility to refer to and comply with ANSI B7.1 and B7.7 – Contact us for a free copy.

Play it Safe AT THE WHEEL

- 1 Speed:** Never exceed the Maximum RPM marked on the wheel.
- 2 Guard:** Always use the proper guard in the proper position on the tool.
- 3 Mount:** Inspect the wheel before mounting and use a hoist in an enclosed area, prior to grinding. Only use grinders with proper flanges.
- 4 Protect:** Wear all required personal protective equipment (PPE) including but not limited to eye, face, ear and respiratory protection.

For additional information on grinding wheel safety, please refer to ANSI B7.1, OSHA, the Norton Abrasives Safety website, or contact the Saint-Gobain Abrasives Product Safety Department at (508) 735-2317 or your Norton representative.

www.nortonindustrial.com/safety

Safety Poster

(Form # 7868-English, 7868-French, 7868-Spanish)

To order this poster for your shop,
<mailto:nortonliterature@saint-gobain.com>

Abrasive Safety References



Safety Information on the Web

Norton website <http://www.nortonabrasives.com/en-us/norton-product-safety>

UAMA (United Abrasives Manufacturers Association) website at <http://www.safety.uama.org>



Safety Video

Watch our videos on: [YouTube.com/NortonAbrasives](https://www.youtube.com/NortonAbrasives)

- Norton Abrasives: Safety, It's The Smart Thing To Do (Safety information for portable grinding and cutting wheels)
- Norton Abrasives: Foundry Safety
- Norton Abrasives: First in Precision Grinding Safety
- Norton Abrasives: Proper Grinding Wheel Mounting
- Norton Abrasives: Railroad Abrasive Safety
- Norton Abrasives: Coated Abrasive Belt and Disc Safety

Safe Operating Practices

Safe operating practices must be part of every grinding wheel user's operation. The greatest efficiency and lowest overall abrasive cost can be realized only if proven care and use techniques become standard practice.

- Be sure to read any safety material/guidelines provided with the abrasive product.
- Always check the wheel for cracks or damage before use.
- Always properly maintain your machine; especially governors on pneumatic machines and linkage on floorstand machines.
- Never use the incorrect air, hydraulic or electric power supply.
- Never mount grinding wheels directly on electric motors.
- Never mount grinding wheels on the wrong size machine for the grinding wheel.
- Before mounting the wheel, use a tachometer to measure the spindle speed.
- Ensure the mounting flanges, backplate or adapter supplied by the machine manufacturer are used and kept in good condition. ANSI Safety Requirement B7.1 provides wheel mounting requirements. Check mounting flanges for equal and correct diameter and use blotters when supplied.
- Always mount, true and dress the wheel in conformance with the guidelines published in the ANSI Safety Requirements B7.1.
- Ensure the correct wheel guard is in place before starting the wheel. Allow the wheel to come up to full operating speed before starting to grind for a minimum of one minute, and stand out of the plane of rotation.
- NEVER use a high speed air sander as a portable grinder.
- NEVER use grinding wheel with a rated speed less than that of the grinder.
- NEVER exceed the maximum operating speed marked on the wheel being used. The following formula may be used to calculate wheel speed:
SFPM = Spindle Speed in RPM x Wheel Dia. in inches x .262
- Avoid dropping or bumping the wheel.
- When not using the wheel, store the wheel in its original packing materials. This protects the wheel from chips and cracking, as well as provides easy identification of the wheel.
- Refer to proper safe storage schematic on page 266.



Pistol Grip Air Sander

A Deadly Equation

Pistol Grip Air Sander + Grinding Wheel = Certain Injury!

- Never use a high-speed air sander as a portable grinder
- Use only sanding discs specifically designed for sanders
- Because the speed of these sanders far exceeds the maximum rated speeds for grinding wheels, a potentially lethal wheel breakage might occur

Dangerous Pairing: Die grinders and Cut-off Wheels

While die grinders and portable cut-off tools may look similar, they are by no means interchangeable. Several crucial differences exist between the two handheld machines.

GUARD

Cut-off wheels must be used on guarded machines for the safety of the operator and bystanders.

SPEED

Cut-off wheels must be used at or below their maximum operating speed, marked clearly on the side of the wheel. Excessive speed can result in breakage and serious personal injury.

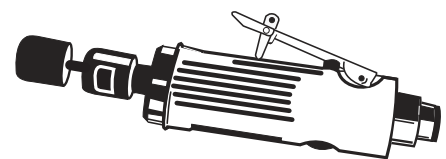
Die grinders often operate above 25,000 rpm and therefore are too fast for abrasive wheels. The speed hazard is increased by the absence of a guard. Portable cut-off tools, however, rotate at speeds compatible with the abrasive wheels for which they are designed. And, their guards prevent use of an oversize wheel.

MOUNTING

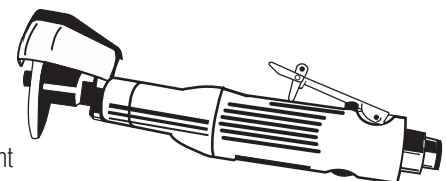
Cut-off wheels must be mounted between proper flanges, as described in the national safety standard for abrasive wheels, ANSI B7.1. Die grinders make use of a collet for mounting

Portable cut-off tools use flanges for mounting, flanges designed according to the ANSI B7.1 safety standard.

Now that you have learned the three crucial differences between die grinders and portable cut-off tools – GUARD, SPEED and MOUNTING – be on watch for the dangerous pairing of cut-off wheels and die grinders, and warn your friends and colleagues of the same.



Die Grinder



Portable Cut-off Tool

Starting a Grinding Wheel

ANSI's Procedure for Starting an Abrasive Wheel

In the past several years wheel breakages and accidents have been reported involving abrasive wheels breaking on start-up. This article is designed to remind users of the proper procedure when starting a machine with a new abrasive wheel mounted on it, or starting a machine after the machine and wheel have been stored for a period of time, or remounting a wheel. ANSI B7.1-2000 requires the following procedure when starting a newly mounted grinding wheel.

9.8 Starting the Wheel (Requirements)

All abrasive wheels shall be run at operating speeds with the safety guard in place or in a protected enclosure for at least one minute before applying work. During this time no one shall stand in front of or in line with the wheel. (See section 4, for safety guard requirements.) This provision shall apply each time one of the following conditions occur: a) a new wheel has been mounted; or b) a used wheel has been remounted.

E 9.8 Starting the Wheel (Explanatory Information)

An abrasive wheel may be damaged in shipment or storage, or the wheel may be subjected to improper, excessive stresses during mounting. Wheels which have been damaged or are under excessive stress, are likely to fracture within the first minute of rotation at operating speed. While this procedure is most important at the time when an abrasive wheel is mounted or remounted, damage may also occur to a wheel during a shut down of the machine on which it is mounted. The user should evaluate the circumstances and length of machine shut down to determine additional times that the operating rule should be followed.

Improper wheel mounting is a major cause of wheel breakages. Always use proper mounting procedures as outlined in ANSI B7.1, machine manufacturer's instructions and those supplied with the abrasive wheel. Be safe, know and follow the rules!

What are the Major Causes of Grinding Wheel Breakages?

- Using a grinding wheel damaged during transportation, storage or as a result of careless or improper handling. Inspect all grinding wheels before mounting them on a machine. **NEVER MOUNT A DAMAGED GRINDING WHEEL.**
- Selecting the wrong grinding wheel for the job. **DON'T GRIND MATERIAL FOR WHICH THE WHEEL IS NOT DESIGNED.**
- Incorrect machine. **NEVER MOUNT A GRINDING WHEEL ON A MACHINE NOT DESIGNED AND GUARDED FOR THAT GRINDING WHEEL.**
- Machine speed higher than the grinding wheel speed. **NEVER OVER-SPEED A GRINDING WHEEL.**
- Poor machine maintenance. **FAILURE TO PROPERLY MAINTAIN A GRINDING MACHINE CAN CAUSE GRINDING WHEEL BREAKAGES RESULTING IN SERIOUS INJURY OR DEATH.**
- The improper mounting of grinding wheels. See ANSI B7.1 and literature provided for proper mounting procedures.
- Operator carelessness. **ALL GRINDING WHEELS CAN BE BROKEN IF NOT USED PROPERLY.**
- Lack of knowledge or training. **IF YOU DO NOT KNOW HOW TO USE A GRINDING WHEEL OR THE GRINDER, GET HELP!**
- Poor wheel balance caused by the failure to turn off coolant before stopping the grinding wheel. Always spin coolant out of a grinding wheel before shutting the operation down.
- Jamming the work into the grinding wheel.
- Force grinding, so that the motor slows noticeably or the work gets hot.
- Grinding on the wrong surface of a grinding wheel, i.e. grinding on the side of a Type 1 straight grinding wheel.



Shelf Life of Grinding Wheels

The best rule of thumb is to have any wheel that is two years old or older re-speed tested and re-inspected to ensure it is fit for use.

Organic-Bonded Abrasive Products

It has always been Norton | Saint-Gobain Abrasives recommendation that resinoid bonded grinding wheels be used within 2 years from the date of manufacture. This recommendation assumes that resinoid bonded grinding wheels have been stored under ideal storage conditions.

It might be true that under ideal storage conditions resinoid bonded grinding wheels can survive without any degradation in strength for well over two years. However, it is always wise to suspect any wheels over two years old and have them re-inspected or re-speed tested to determine if there has been any degradation in strength. If the wheels are stored under less than ideal conditions, they might have a much shorter shelf life depending upon the severity of storage conditions. These same comments also apply to rubber and shellac bonded grinding wheels.

See “Proper Storage of Grinding Wheels” schematic on page 266.

Vitrified-Bonded Abrasive Products

The shelf life of these product is less influenced by humidity and adverse storage conditions as compared to organic products (resinoid, rubber, and shellac), but even vitrified grinding wheels do not have an infinite shelf life.

The best procedure and the best rule of thumb is to have any wheel that is two years old or older re-speed tested and re-inspected to ensure it is fit for use. The procedure for having this done and the charges will be explained by our Customer Service Department. The cost of shipping as well as the cost of re-inspection is the customer's responsibility. Also, any wheels rejected or otherwise lost in the re-inspection process will also be the responsibility of the customer.

Keep in mind, however, that this procedure is good to verify the reliability of a product but must not be performed until you are ready to consume the wheel. If wheels are sent back after the two-year time frame for re-inspection and re-testing, and then put back on the shelf, there is no telling how long they will be fit for use after that last inspection. Therefore, these wheels must be consumed as soon as is practical.

How to Perform a Ring Test on a Grinding Wheel

One method of grinding wheel inspection is called ring testing. OSHA, ANSI and the grinding wheel manufacturers require this method of grinding wheel inspection. It must be performed BEFORE the wheel is mounted on a grinding machine. Ring testing depends on the damping characteristics of a cracked wheel to alter the sound emitted when the wheel is tapped lightly. It is subject to interpretation by the inspector and is primarily applicable to vitrified bonded wheels. To perform the ring test, wheels should be tapped gently with a light nonmetallic implement, such as the handle of a screw driver for light wheels, or a wooden mallet for heavier wheels.

- Tap wheels about 45 degrees each side of the vertical line and about 1" or 2" from the periphery. Rotate the wheel 45 degrees and repeat the test.
- Large and thick wheels may be given the ring test by striking the wheel on the periphery rather than the side of the wheel.
- A sound and undamaged wheel will give a clear tone. If cracked, there will be a dead sound and not a clear ring and the wheel should not be used.
- Wheels must be dry and free of sawdust when applying the ring test, otherwise the sound may be deadened. The ring test is not applicable to certain wheels because of their size, shape or composition.



Proper Grinding Wheel Operating Speeds and Safety!

As abrasive wheel producers have known for many years, most grinding wheel breakages and injuries are caused by one major oversight. That oversight is operating a grinding wheel in an over-speed condition. A grinding wheel should never be operated at speeds greater than the wheel's rated speed.

- Never use a grinding wheel with a rated speed less than that of the grinder
- Never mount grinding wheels on sanders (Pistol Grip Air Sanders)
- Never mount grinding wheels directly on electric motors
- Never mount grinding wheels on the wrong size machine for the grinding wheel
- Always properly maintain your machine: especially governors on pneumatic machines and linkage on floorstand machines
- Never use the incorrect air, hydraulic or electric power supply
- Never use the improper speed setting on a machine

What you might not be cognizant of is that slight over-speed can cause damage to a wheel. If an operator continues to use this damaged wheel, it might break. In a reinforced wheel for example, cracks might form, be forced open and jam or catch the wheel on the workpiece resulting in a wheel breakage. The use of a 9" Type 27 Wheel on a 7" angle grinder is very dangerous! Normal stresses that occur during grinding along

with the additional stress caused by over-speed are additive. The act of operating a wheel in a slight over-speed condition is very dangerous. We must understand and communicate this danger.

One of the major forces at work on a grinding wheel is called "centrifugal force." To demonstrate this force take a piece of string and tie a small weight to one end. Hold the other end of the string so the weight will travel in a circle. Rotate the weight and you will feel a pull on the string. The weight tries to fly off in a straight line, but the string holds it and compels it to travel in a circle. This pull on the string is called "centrifugal force." Warning: If you attempt this experiment take all the proper precautions related to the object used to avoid injury to yourself or others.

If you swing the weight at a speed of 50 revolutions per minute (RPM) and could measure the pull on the string at this speed, then increase the swing to 100 revolutions per minute and again measure the pull, you would find the pull was not merely two times greater, but was actually four times greater than it was at one half the speed. Therefore, the force increases exponentially with the speed or RPM.

Centrifugal force increases in proportion to the square of the velocity. Think again of the weight and the string. We find that the square of 50 is 2,500, ($50 \times 50 = 2,500$); and the square of 100 is 10,000, ($100 \times 100 = 10,000$). As 10,000 is four times as great as 2,500, so is the pull on the string at 100 revolutions per minute four times as great as it was at 50 revolutions per minute.

Centrifugal force applies to grinding wheels in the same manner as the weight to the string. Increasing the RPM or speed beyond the maximum safe operating speed (MOS) might be more dangerous than might be expected. Placing and operating a 9" Type 27 grinding wheel with a maximum operating speed of 6,600 RPM on a 5" right angle grinder with a rated speed of 10,000 RPM represents an over-speed of approximately 1.515 times the wheel's designated speed. The resulting rotational stress caused by the centrifugal force would be approximately 2.3 times greater than the maximum allowed. Add this additional stress to the stresses that occur during normal grinding and even the strongest wheel might break.

In short, NEVER over-speed a grinding wheel. Always compare the speed marked on the wheel or package to make sure the machine's speed is at, or below, the speed or MOS of the grinding wheel. Speed can kill. NEVER over-speed a grinding wheel.





Conversion Table – Wheel Speeds

REVOLUTIONS PER MINUTE FOR VARIOUS DIAMETERS OF GRINDING WHEELS TO GIVE SURFACE SPEED IN FEET PER MINUTE AS INDICATED
(FOR WHEEL MARKING PURPOSES THE CALCULATED RPM FIGURES LISTED BELOW ARE ROUNDED OFF TO THE NEXT 5)

Surface Speed in Feet Per Minute (SFFPM)

Diameter of Wheel in Inches	6,500	7,000	7,500	8,000	8,500	9,000	9,500	10,000	12,000	12,500	14,200	16,000	16,500	17,000	19,685	20,000
	Revolutions Per Minute (RPM)															
1	24,828	26,737	28,647	30,558	32,467	34,377	36,287	38,196	45,836	47,745	54,240	61,116	63,025	64,935	75,190	76,395
2	12,414	13,368	14,328	15,278	16,238	17,188	18,143	19,098	22,918	23,875	27,120	30,558	31,510	32,465	37,595	38,195
3	8,276	8,913	9,549	10,186	10,822	11,459	12,096	12,732	15,278	15,915	18,080	20,372	21,010	21,645	25,065	25,465
4	6,207	6,685	7,162	7,640	8,116	8,595	9,072	9,549	11,459	11,940	13,560	15,278	15,755	16,235	18,800	19,100
5	4,966	5,348	5,730	6,112	6,494	6,876	7,258	7,640	9,168	9,550	10,850	12,224	12,605	12,985	15,040	15,280
6	4,138	4,456	4,775	5,092	5,411	5,729	6,048	6,366	7,639	7,960	9,040	10,186	10,505	10,820	12,530	12,730
7	3,547	3,820	4,092	4,366	4,638	4,911	5,183	5,456	6,548	6,820	7,750	8,732	9,005	9,275	10,740	10,915
8	3,103	3,342	3,580	3,820	4,058	4,297	4,535	4,775	5,729	5,970	6,780	7,640	7,880	8,115	9,400	9,550
9	2,758	2,970	3,182	3,396	3,606	3,820	4,032	4,244	5,092	5,305	6,030	6,792	7,000	7,215	8,355	8,490
10	2,483	2,674	2,865	3,056	3,247	3,438	3,629	3,820	4,584	4,775	5,425	6,112	6,300	6,495	7,520	7,640
12	2,069	2,228	2,386	2,546	2,705	2,864	3,023	3,183	3,820	3,980	4,520	5,092	5,250	5,410	6,265	6,365
14	1,773	1,910	2,046	2,182	2,319	2,455	2,592	2,728	3,274	3,410	3,875	4,366	4,500	4,640	5,370	5,455
16	1,552	1,672	1,791	1,910	2,029	2,149	2,268	2,387	2,865	2,985	3,390	3,820	3,940	4,060	4,700	4,775
18	1,379	1,485	1,591	1,698	1,803	1,910	2,016	2,122	2,546	2,655	3,015	3,396	3,500	3,605	4,175	4,245
20	1,241	1,337	1,432	1,528	1,623	1,719	1,814	1,910	2,292	2,390	2,715	3,056	3,150	3,245	3,760	3,820
22	1,128	1,215	1,302	1,388	1,476	1,562	1,649	1,736	2,084	2,170	2,465	2,776	2,865	2,950	3,420	3,470
24	1,034	1,115	1,194	1,274	1,353	1,433	1,512	1,591	1,910	1,990	2,260	2,546	2,625	2,705	3,135	3,185
26	955	1,028	1,101	1,176	1,248	1,322	1,395	1,468	1,762	1,840	2,090	2,352	2,425	2,495	2,890	2,940
28	887	955	1,023	1,092	1,159	1,228	1,296	1,364	1,637	1,705	1,940	2,182	2,250	2,320	2,685	2,730
30	828	891	955	1,018	1,082	1,146	1,210	1,274	1,528	1,595	1,810	2,056	2,100	2,165	2,505	2,545
32	776	836	895	954	1,014	1,074	1,134	1,194	1,432	1,495	1,695	1,910	1,970	2,030	2,350	2,385
34	730	786	843	898	955	1,011	1,067	1,124	1,348	1,405	1,595	1,796	1,855	1,910	2,210	2,245
36	690	742	795	848	902	954	1,007	1,061	1,273	1,330	1,510	1,698	1,750	1,805	2,090	2,120
38	653	704	754	804	854	904	955	1,006	1,206	1,260	1,430	1,608	1,660	1,710	1,980	2,010
40	620	669	716	764	812	860	908	956	1,146	1,195	1,355	1,528	1,575	1,625	1,880	1,910
42	591	636	682	732	775	818	863	908	1,090	1,140	1,295	1,464	1,500	1,545	1,790	1,820

For intermediate diameters not listed use the formula listed in Section 1.2.10 of ANSI B7.1

SFFPM = .262 x wheel diameter in inches x RPM.

To convert meters per second (m/s) to SFFPM: m/s x 196.85 = SFFPM

To convert SFFPM to m/s: SFFPM/196.85 = m/s.

To convert RPM to SFFPM: Wheel Diameter x RPM x 0.262 = SFFPM

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