

CENTERLESS AND FEED WHEELS



CATEGORY DEFINITION

Centerless grinding is a production process that produces extremely close tolerances on metal cylindrical forms or parts. Centerless grinding is used on a wide variety of workpieces. The key components in the process are the grinding wheel, the work rest blade (used to support the work) and the regulating or “feed” wheel (the drive mechanism for the workpiece).

- APPLICATIONS:**
- High production operations on large volume continuous grinding
 - Parts ranging from miniature roller bearings to train axles and bearings
 - Fastener and tool manufacturing
 - Steel mills
 - Automotive related components
 - Bearing
 - Machine tools
 - Aircraft
 - Turbine blades – land- and air-based

SHAPE: Centerless wheels: Type 01 Straight
Feed wheels: Type 01 Straight and Type 07 Recessed 2 Sides

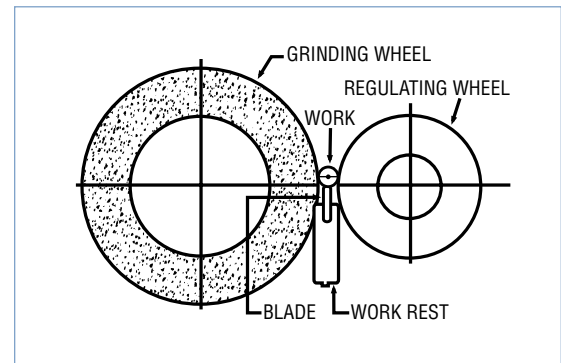
SIZE RANGE: Centerless wheels: 16” – 24” diameter
Feed wheels: 12” and 14” diameter

ABRASIVE GRAIN: Aluminum Oxide, Aluminum Oxide/Silicon Carbide Blend

MATERIAL-TO-PRODUCT RECOMMENDATION GUIDE

APPLICATION	WHEEL SPECIFICATIONS
Alnico	64A60-KVCE, 55A60-KVS3, 32AC54-QB
Cast Iron	64A60-KVCE, 55A60-KVS3, 32AC54-QB
Hastalloy	64A60-LVCE
Inconel	64A60-LVCE
Stainless	64A60-KVCE
Stainless – 300 series	64A60-KVCE
Stainless – 400 series (commercial finish)	55A60-KVS3, 64A60-KVCE
Steel – Hard or Soft	
Less than 1/2" diameter	55A80-LVS3, 64A80-LVCE
5/8" to 2-1/2" diameter	55A60-KVS3, 64A60-LVCE
Over 2-1/2" diameter	55A60-KVS3, 64A60-LVCE, 32AC54-QB
High Speed (commercial finish)	64A60-KVCE, 55A60-KVS3, 32AC54-QB
High Speed (fine finish)	32AC90-QB

NOTE: GRADE, GRIT AND ABRASIVE TUNING MAY BE NECESSARY TO OBTAIN OPTIMUM PERFORMANCE



STATIONARY DRESSING TOOL RECOMMENDATIONS FOR CENTERLESS WHEELS

Grinding Wheel Diameter	Diamond Carat Weight	SINGLE POINT		INDEXABLE SINGLE POINT		MULTI-POINT (GRIT)	
		Tool Product # Part # 0° Angle	Tool Product # Part # 0° Angle	Tool Product # Part # 0° Angle	Shape	Tool Product # Part # 15° Angle	Shape
11" - 14"	1/2	BC5M7 66260195005	BCUD5 66260195025	BC65 66260195015	3/8 Round	BC63 66260195013	1/4 x 1/2
		NS5M7 66260195127	NSUD5 66260195163	2R6K7 66260195096		2A6E7 66260195049	Rectangle
15" - 20"	3/4	BC7M7 66260195007	N/A	BC62 66260195012	1/4 x 1/2	BC63 66260195013	1/4 x 1/2
		NS7M7 66260195132	NSUD7 66260195164	2A6D7 66260195046	Rectangle	2A6E7 66260195049	Rectangle
21" +	1	BC10M7 66260195009	N/A	BC61 66260195011	1/4 x 3/4	BC60 66260195010	1/4 x 3/4
		NS10M7 66260195137	NSUD10 66260195165	1A6A7 66260195031	Rectangle	1A6C7 66260195039	Rectangle

STATIONARY DRESSING TOOL RECOMMENDATIONS FOR FEED WHEELS

Feed Wheel Diameter	Tool Carat Weight	Tool Shank Diameter	INDEXABLE SINGLE POINT	
			Tool Product #	Tool Part #
Up to 14"	1/2	7/16"	NSUD5	66260195163

TECHtip

PROPER WHEEL MOUNTING

1. Thoroughly clean spindle and flange bearing area of all dirt and foreign material.
2. Inspect for worn, distorted or damaged areas on flanges and spindle.
3. If mounting a wide centerless wheel on a spindle (i.e., twin-grip), do not use grease or other petroleum lubricants. Use a silicone spray lubricant on the spindle to ease mounting the wheel, if necessary.
4. Ensure mount up arrow is at the top of the wheel. In the case of butted sets, assemble so that the arrow is formed across the top of the wheel face.
5. Ensure proper blotters are installed; one on each flange mating surface. Always use new blotters.
6. Install blotter flange and snug up the bolts only finger tight.
7. Using a torque wrench, tighten all bolts in an alternating pattern from side to side to 15 foot pounds.
8. Repeat the same tightening sequence, increasing the torque to 35 foot pounds.
 - a.) for wide wheels (18"-20"), torque the bolts at 45 to 50 foot pounds
 - b.) for narrower wheels (2"-12"), a torque of 35 foot pounds is sufficient
9. Retorque the flange bolts to specification after the first eight hours of operation.

- Use vitrified bond wheels for form holding and plunge grinding
- Use resinoid bond wheels for stock removal, long irregular parts and faster throughfeed grinding
- Vitrified Centerless Wheel Speeds:
 - 64A46-KVCE wheels: 6500 SFPM max. operating speed
 - All other vitrified centerless stock products: 8500 SFPM max. operating speed
 - Always check wheel speed markings on wheels before running wheel



It is the user's responsibility to refer to and comply with ANSI B7.1

TO MAKE A WHEEL ACT SOFTER:

- Increase work speed/regulating wheel speed
- Increase throughput speed/regulating wheel speed
- Increase infeed
- Decrease wheel speed
- Dress at a faster traverse rate

TO MAKE A WHEEL ACT HARDER:

- Decrease work speed/regulating wheel speed
- Decrease throughput speed/regulating wheel speed
- Decrease infeed
- Increase wheel speed (observe safe limits)

FEATURED PRODUCTS



55A-VS3

BETTER CHOICE WHEN ONE WHEEL IS USED TO GRIND SEVERAL DIFFERENT MATERIALS

FEATURES

- Advanced combination of monocrystalline 55A aluminum oxide and coolest cutting, high-speed, precise form holding Vitrium 3 VS3 Bond

BENEFITS

- Superior performance on centerless plunge and throughfeed, surface, grinders
- 2X+ the life of competitive aluminum oxide wheels
- Ideal for simple- to complex-shaped components
- Increased productivity; more quality parts at low cost per part

32AC

BETTER CHOICE WHEN ONE WHEEL IS USED TO GRIND SEVERAL DIFFERENT MATERIALS

FEATURES

- Aluminum oxide/silicon carbide abrasive blend in a strong resin bond

BENEFITS

- Ideal when one wheel is used to grind several different materials from high to low tensile strength



57A WITH FINE/HARD SIDE

GOOD FOR HARD-TO-GRIND FASTENERS

FEATURES

- Durable, cool cutting aluminum oxide abrasive with a strong vitrified bond
- 3/16" thick fine/hard side

BENEFITS

- Cool cutting with consistent stock removing performance on narrow to medium contact areas
- Provides good form holding while grinding stainless and Inconel fasteners

64A

GOOD CHOICE FOR GRINDING A VARIETY OF MATERIALS, ECONOMICALLY

FEATURES

- Specially blended aluminum oxide abrasive coupled with a superior vitrified bond
- Broad availability
- Versatile

BENEFITS

- Will maintain high grinding rates without wheel breakdown
- Quick delivery on popular sizes
- Engineered to grind a variety of materials

Centerless Wheels



AVAILABILITY

		TIER: BETTER		TIER: BETTER		TIER: GOOD	
		TRADENAME: CENTERLESS VITRIFIED WHEELS		TRADENAME: CENTERLESS RESINOID WHEELS		TRADENAME: CENTERLESS VITRIFIED WHEELS	
		ABRASIVE: Aluminum Oxide		ABRASIVE: Aluminum Oxide/Silicon Carbide		ABRASIVE: Aluminum Oxide	
SIZE (D x T x H)	STD. PKG.	SPEC.	PART #	SPEC.	PART #	SPEC.	PART #
Type 01 Straight							
16 x 4 x 10	1					57A80-L8VCN	66253465001
20 x 2 x 12	1					53A60-K8VCN	69078665347
20 x 4 x 12	1					64A60-KVCE	69078666723
	1					64A80-LVCE	69078666727
20 x 6 x 12	1	55A60-KVS3	66253387817	32AC54-QB	69078666545	64A60-KVCE	69078666729
	1	55A80-LVS3	66253387815			Gemini 60-L	66253246994
20 x 8 x 12	1	55A60-KVS3	66253387819	32AC54-QB	69078666546	64A60-KVCE	69078666748
	1	55A80-LVS3	66253387818			64A60-LVCE	69078666749
	1					64A80-KVCE	69078666751
	1					64A80-LVCE	69078666752
	1					Gemini 54-J	66253247001
24 x 1-1/2 x 12	1					57A 80/120 O/Q	66253193575
w/ 3/16" fine/hard layer	1					57A 80/120 P/R	66253354449
24 x 2-1/2 x 12	1					57A 80/120 O/Q	66253285629
w/ 3/16" fine/hard layer	1					57A 80/120 P/R	66253340540
24 x 3 x 12	1					64A60-K8V127	69083166708
24 x 6 x 12	1	55A80-LVS3	66253387821	32AC54-QB	69083166547	Gemini 60-K	66253247047
24 x 8 x 12	1	55A60-KVS3	66253387827	32AC54-QB	69083166548	64A60-LVCE	69083166767
	1	55A80-LVS3	66253387825				
24 x 10 x 12	1	55A60-KVS3	66253387830	32AC54-QB	69083166549	64A80-KVCE	69083166788
	1	55A80-LVS3	66253387828				
24 x 20 x 12	1			32AC54-QB	69083166552		
Composed of 2	1			32AC54-SB	69083166553		
Wheels							
10" Thick (ME90362)							

Rubber Bond Feed Wheels

AVAILABILITY

		TIER: BETTER	
		ABRASIVE: Aluminum Oxide	
SIZE (D x T x H)	STD. PKG.	SPEC.	PART #
Type 01 Straight			
12 x 2 x 5	1	57A80-RR51	66253222840
Type 07 Recessed Two Sides			
12 x 4 x 5	1	57A80-RR51	66253222844
Rec 2 Sides 7-1/2 x 1-1/2			
12 x 6 x 5	1	57A80-RR51	66253222846
Rec Side A 7-1/2 x 1-1/2			
Rec Side B 7-1/2 x 1-1/2			
12 x 6 x 5	1	57A80-RR51	66253222847
Rec 2 Sides 7-1/2 x 1-1/2			
12 x 8 x 5	1	57A80-RR51	66253222850
Rec Side A 7-1/2 x 2-1/2			
Rec Side B 7-1/2 x 1-1/2			
14 x 8 x 5	1	57A80-RR51	66253322859
Rec Side A 8 x 2			
Rec Side B 8 x 1-1/2			
14 x 20 x 6	1	57A80-RR51	66253322196
Rec 2 Sides 8-1/2 x 1-1/2			
Butted Feed Wheels			
Composed of 2 Wheels			
10" Thick (ME91512)			

Plastic Bond Feed Wheels

AVAILABILITY

		TIER: BETTER	
		ABRASIVE: Aluminum Oxide	
SIZE (D x T x H)	STD. PKG.	SPEC.	PART #
Type 07 Recessed Two Sides			
12 x 8 x 5	1	57A80-RP4	66253222199
Rec Side A 7-1/2 x 2-1/2			
Rec Side B 7-1/2 x 1-1/2			

There are many more sizes and specifications available made-to-your-order, including wheels made from our blank stock FastTrack Service for rush orders. Contact your Norton representative with your custom centerless requirements.