

# SNAGGING WHEELS, CONES AND PLUGS

## Cones and Plugs

For consistent, quality performance in foundries, welding shops, fabrication facilities, steel mills and shipyards, Norton cones and plugs maximize your productivity.

### Typical Applications

- For hard-to-reach areas inside castings
- Removing flaws and cracks
- Removing metal in corners



<b>BEST</b> NorZon The Absolute Force Cones and Plugs	
<b>FEATURES</b>	<b>BENEFITS</b>
<ul style="list-style-type: none"> <li>• High performance NorZon (zirconia alumina) abrasive</li> <li>• Advanced-technology, proprietary bond system</li> </ul>	<ul style="list-style-type: none"> <li>• Ideal for high-powered machines</li> <li>• 3 – 5X the life of standard aluminum oxide</li> <li>• Exceptional cut rate</li> <li>• Superior performance on ferrous metals and nickel alloys</li> </ul>



<b>BETTER</b> Charger AZ Cones and Plugs	
<b>FEATURES</b>	<b>BENEFITS</b>
<ul style="list-style-type: none"> <li>• Zirconia alumina/aluminum oxide abrasive blend</li> </ul>	<ul style="list-style-type: none"> <li>• 2-3X life advantage over aluminum oxide with better cutting action</li> <li>• Fast accurate grinding</li> <li>• High performance products for grinding steel, steel alloys and irons</li> </ul>



<b>GOOD</b> Gemini Cones and Plugs	
<b>FEATURES</b>	<b>BENEFITS</b>
<ul style="list-style-type: none"> <li>• 57A aluminum oxide abrasive</li> </ul>	<ul style="list-style-type: none"> <li>• Strong performance to price relationship</li> <li>• For all steel, steel alloys and irons</li> </ul>



## TECHtip






■ Maintain recommended air supply (pressure and volume) for highest efficiency.



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



## Cones and Plugs

SIZE D X T X H	MAX. RPM	STD. PKG.	BEST NORZON TAF		BETTER CHARGER		GOOD GEMINI	
			SPEC	UPC NO.	SPEC	UPC NO.	SPEC	UPC NO.
<b>TYPE 16 CONES</b> 								
1 X 3 X 3/8-24 (ME 107019)	36,290	10					57A24-R	61463622342
1-1/2 X 2-1/2 X 3/8-24 (ME 44436)	24,190	10					57A24-R	61463622349
1-1/2 X 3 X 3/8-24 (ME 139029)	24,190	10			AZ24-R	61463614587		
1-1/2 X 3 X 5/8-11 (ME 70535)	24,190	10	NZ TAF	61463644231	AZ20-R	61463614588	57A24-R	61463622190
1-3/4 X 3 X 3/8-24 (ME49226)	20,735	10					57A24-R	61463614503
1-3/4 X 3 X 5/8-11 (ME 33432)	20,740	10					57A24-R	61463622195
2 X 3 X 5/8-11 (ME 28229)	18,145	10	NZ TAF	61463644232	AZ20-R	61463614604	57A24-R	61463622218
2-3/4 x 3-1/2 x 5/8-11 (ME 18265)	13,195	10			AZ16-R	61463614599	57A24-R	61463622387
<b>TYPE 17 CONES, SQUARE TIP</b> 								
1-1/2 / 1/2 X 3 X 3/8-24	24,190	10					57A24-R	61463622194
2 / 1/2 x 3 x 5/8-11	18,145	10					57A24-R	61463615722
<b>TYPE 17R CONES, ROUND TIP</b> 								
2 / 3/4 x 3 x 5/8-11 (ME 151373)	18,145	10			AZ20-R	61463615866		
<b>TYPE 18 PLUGS, SQUARE TIP</b> 								
1-1/2 X 2-1/2 X 3/8-24	24,190	10					57A24-R	61463622217
1-1/2 X 2-1/2 X 5/8-11	24,190	10	NZ TAF	61463644224	AZ20-R	61463644256	57A24-R	61463622351
1-1/2 X 3 X 5/8-11	24,190	10			AZ20-R	61463644257	57A24-R	61463622191
2 X 3 X 5/8-11	18,145	10	NZ TAF	61463644234	AZ20-R AZ24-R	61463614601 61463614595	57A24-R	61463622219
2 x 4 x 5/8-11	18,145	10					57A24-R	61463622366
<b>TYPE 18R PLUGS, ROUND TIP</b> 								
1-1/2 X 3 X 3/8-24	24,190	10					57A24-R	61463622192
2 x 3 x 5/8-11	18,145	10			AZ20-R	61463644259	57A24-R	61463622220

### GOOD

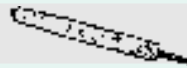
SIZE: T X W X L

STD PKG

SPEC

UPC NO.

### STOCK RESINOID CORE FILES – SILICON CARBIDE



1/2 X 1 X 10  
(ME21427)

5

37C24-SB

61463610314

# PORTABLE SNAGGING WHEELS

## Portable Snagging Wheels – Straight and Cup

For consistent, quality performance in foundries, welding shops, fabrication facilities, steel mills and shipyards, Norton snagging wheels maximize your productivity.

### Typical Applications

- Removing flaws and cracks
- Removing gates, risers and parting lines
- Smoothing weld seams
- Cleaning castings
- Rough beveling
- Preparing surfaces for plating or painting



<b>BEST</b> NorZon III and NorZon IV Wheels – Highest performance zirconia alumina grain	
FEATURES	BENEFITS
• NZ III – 4NZ and NZC	• Engineered for high-powered machines • Exceptional wheel life and cut
• NZ IV – 4NZ and NZC	• Developed for medium- to high-powered machines • Outstanding cut rate and wheel life
• NZC – zirconia alumina and silicon carbide blend	• Ideal for dirty, scale-covered castings



<b>BETTER</b> Charger Snagging Wheels – Aggressive zirconia alumina grain	
FEATURES	BENEFITS
• Fully reinforced straight wheels	• Improved strength for all ferrous metals and metal alloys
• 4NZ – zirconia alumina abrasive	• Fast, smooth grinding • Up to 5X the life of aluminum oxide with better cutting action
• NZC – zirconia alumina/silicon carbide abrasive blend	• Use on dirty, scale-covered castings • Strong performance to price ratio



<b>GOOD</b> Gemini 57A, 57AC Snagging Wheels – Versatile aluminum oxide grain	
FEATURES	BENEFITS
• Fully reinforced straight wheels	• Improved operator safety
• 57A – aluminum oxide	• For steel, steel alloys and irons
• 57AC – aluminum oxide/silicon carbide blend	• For dirty, scale-covered steel or iron parts



### Portable Straight and Cup Wheel Starting Recommendations by Material

CASTING TYPE		BEST	BETTER	GOOD
Iron	Gray Ductile/Malleable Dirty/Scale-covered	NZ III 4NZ1434-RBX348	CHARGER 4NZ14-RS	57A16-Q Gemini
		NZ III 4NZ1434-RBX348	CHARGER 4NZ14-RS	57A16-Q Gemini
		NZ IV NZC14-QS	CHARGER NZC16-QS	57AC16-Q Gemini
		NZ III NZC1624-Q5BSX348		
Steel	Carbon and Low Alloy	NZ IV 4NZ16-Q	CHARGER 4NZ16-QS	57A16-Q Gemini
		NZ III 4NZ1634-Q5BX348		
Aluminum Alloy	Stainless and High Alloy	NZ IV 4NZ16-P	CHARGER 4NZ16-QS	57A16-Q Gemini
		NZ III NZC1624-Q5BX348	NZC16-Q	57AC16-Q, 37C16-P
Copper Alloys, Brass, Bronze		NZ III NZC1624-Q5BX348	NZC16-Q	

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

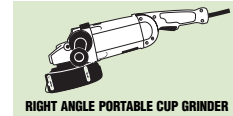
# PORTABLE SNAGGING WHEELS

## Portable Snagging Wheels – Straight



SIZE D X T X H	MAX. RPM	STD. PKG.	BEST NORZON		BETTER CHARGER		GOOD	
			SPEC	UPC NO.	SPEC	UPC NO.	SPEC	UPC NO.
<b>TYPE 01 STRAIGHT</b>								
2-1/2 x 1/2 x 3/8	21,700	10					57A24-RBRA	66243522381
3 x 1/4 x 3/8	20,370	10			Charger 4NZ20-TBRA	66243509999	57A24-TBRA	66243528831
3 x 3/8 x 3/8	18,080	10					57A24-RBRA	66243522415
3 x 1/2 x 3/8	18,080	10					57A24-PBRA	66243522417
4 x 1/4 x 3/8	15,280	10			Charger 4NZ20-TBRA	66243510000	57A24-RBRA	66243522221
6 x 1 x 5/8 S Webs	8,000	5	NZ III	66252838075				
			4NZ1434-Q5BSX348	66252837961				
			NZ III	66252837965				
			4NZ1434-R5BSX348	66252837965				
		10	NZC1624-Q5BSX348		Charger 4NZ14-RS	66252809564	Gemini 57A16-QS	66252809563
8 x 3/4 x 5/8 S Webs	6,000	10			Charger 4NZ14-RS	66253006674		
8 x 1 x 5/8 S Webs	6,000	5	NZ IV 4NZ16-QS	66253030778				
			NZ III 4NZ1634-QS	66253044532				
			NZ IV NZC14-QS	66253030782				
					10		Charger 4NZ14-RS	66253006672
					Charger 4NZ14-TS	66253006673		
					Charger 4NZ16-QS	66253006670		
					Charger NZC16-QS	66253006671		

## Portable Snagging Wheels – Cup



SIZE D X T X H	MAX. RPM	STD. PKG.	BEST NORZON		BETTER CHARGER		GOOD GEMINI	
			SPEC	UPC NO.	SPEC	UPC NO.	SPEC	UPC NO.
<b>TYPE 06 STRAIGHT CUP</b>								
6 x 2 x 5/8-11 Rim 2" Back 3/4" Steel Back (ME 22293)	6,000	5	NZ III	66252838577				
			4NZ1634-R5BX348					
<b>TYPE 11 FLARING CUP</b>								
4/3 x 2 x 5/8-11 Rim 3/4" Back 3/4" (ME 48976)	9,070	10	NZ IV 4NZ16-Q	66243530761	Charger 4NZ16-Q	66243509998	Gemini 57A16-Q	66243510512
4/3 x 2 x 5/8-11 Rim 3/4" Back 3/4" (ME102535) Steel Back	9,070	10			Charger 4NZ16-Q	66243527807		
5/3-3/4 x 2 x 5/8-11 Rim 1" Back 3/4" (ME 49857)	7,260	10			Charger 4NZ16-Q	66252809208	Gemini 57A16-Q	66252809598
5/3-13/16 x 2 x 5/8-11 Rim 1" Back 3/4" (ME76472) Steel Back	7,260	10			Charger 4NZ16-Q	66252823518		
6/4-3/4 x 2 x 5/8-11 Rim 1" Back 3/4" (ME22100)	6,000	5	NZ III	66252838568	Charger 4NZ16-P	66252825197	Gemini 57A16-Q	66252825201
			4NZ1634-Q5BX348	66252838566				
			4NZ1634-R5BX348					
6/4-3/4 x 2 x 5/8-11 Rim 1-1/2" Back 3/4" (ME 24180)	6,000	5	NZ IV 4NZ16-P	66252830765	Charger 4NZ14-R	66252809211	Gemini 37C16-P	66252809609
					Charger 4NZ16-Q	66252809209	Gemini 57A16-Q	66252809618
					Charger NZC16-Q	66252809210	Gemini 57AC16-Q	66252809608
6/4-13/16 x 2 x 5/8-11 Rim 1-1/2" Back 3/4" (ME 71438) Steel Back	6,000	5			Charger 4NZ14-R	66252809213	Gemini 57A16-Q	66252809599
					Charger 4NZ16-Q	66252809212	Gemini 57AC16-Q	66252809600
					Charger NZC16-Q	66252825195		

# FLOORSTAND AND SWINGFRAME SNAGGING WHEELS

## Floorstand and Swingframe Wheels

For consistent, quality performance in foundries, welding shops, fabrication facilities, steel mills and shipyards, Norton snagging wheels maximize your productivity.



SNAGGING WHEELS, CONES AND PLUGS

### Typical Applications

- Removing unwanted metal on castings
- Removing flaws and cracks
- Removing gates, risers and parting lines

### **BEST** 4ZF, 4NZ and NZC Wheels – Premium zirconia alumina abrasives; proprietary bonds

FEATURES	BENEFITS
• 4ZF	• Engineered for high-pressure, heavy-duty, snagging operations • Exceptional wheel life
• 4NZ	• Developed for low- to medium-pressure operations • Exceptionally high cut rate • The most operator-friendly wheels
• NZC – zirconia alumina and silicon carbide blend	• Ideal for dirty, scale-covered castings

### **BETTER** Charger Wheels – Strong performance to price ratio

FEATURES	BENEFITS
• Strong zirconia alumina abrasive	• Very good cut rate and life

### **GOOD** 5ZF and Gemini Wheels – Versatile

FEATURES	BENEFITS
• Gemini: Versatile aluminum oxide formulation	• Works well with a variety of machines, horsepower and operations
• Competitively priced	• The choice for initial-price-conscious end-users
• 5ZF: Zirconia alumina	• Ideal for lower horsepower or low-pressure applications

SIZE D X T X H	MAX. RPM	STD. PKG.	BEST NORZON		BETTER CHARGER		GOOD	
			SPEC	UPC NO.	SPEC	UPC NO.	SPEC	UPC NO.
<b>TYPE 01 STRAIGHT</b>								
24 x 3 x 12 HS Steel Rings with Fine Centers, S Webs	1,990	1 10 1	4ZF1234-R5B38S	69083166310			5ZF14-QS 5ZF14-QS Gemini All Purp.	69083166858 69083123732* 69083167173
30 x 2 x 12 HS Steel Rings with Fine Centers, S Webs	1,595	1 1 1 10 1 1	4NZ1434-R5B38S 4NZ1634-Q5B38S 4ZF1434-Q5B38S 4ZF1434-R5B38S 4ZF1434-R5B38S 4ZF1634-Q5B38S NZC142-R5B38S	69210421413 69210421412 69210466456 69210466458 69210419707* 69210466460 69210421414	Charger Free Cut Charger Long Life	69210421417 69210421418	5ZF14-R Gemini All Purp.	69210467105 69210417463

\* PACKAGED 10 WHEELS PER PALLET. MUST BE ORDERED IN MULTIPLES OF 10.  
FOR YOUR SAFETY: ALL FLOORSTAND AND SWINGFRAME WHEELS HAVE STRONG FINE CENTERS, STEEL RINGS AND HIGH STRENGTH FIBERGLASS REINFORCEMENT CONSTRUCTION.



## Floorstand Snagging Wheel Starting Recommendations by Material

CASTING TYPE	BEST	BETTER	GOOD
Iron Gray Ductile/ Malleable	4ZF1434-R5B38S 4ZF1434-Q5B38S	Charger Long Life Charger Long Life	Gemini All Purpose Gemini All Purpose
Steel Carbon and Low Alloy Stainless and High Alloy	4NZ1434-R5B38S 4NZ1634-Q5B38S	Charger Free Cut Charger Free Cut	Gemini All Purpose Gemini All Purpose

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

## Swingframe Wheel Starting Recommendations by Material

CASTING TYPE	BEST	GOOD
Iron Gray Ductile/ Malleable	4ZF1234-R5B38S 4ZF1234-R5B38S	Gemini All Purpose Gemini All Purpose
Steel Carbon and Low Alloy Stainless and High Alloy	4ZF1434-R5B38S	Gemini All Purpose Gemini All Purpose
Aluminum Alloy	NZC142-R5B38S	
Copper Alloys, Brass, Bronze	NZC142-R5B38S	

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

## Troubleshooting Guide

PROBLEM	POSSIBLE CAUSE	SUGGESTED CORRECTION
Poor stock removal	Insufficient pressure applied Wheel too coarse or hard Inadequate abrasive	Increase pressure to use all available power Use finer grit and/or softer grade wheel Try NorZon or 4ZF specification
Grinding costs too high	Wheel acting too soft Low performance specification	Use harder and/or coarser wheel Try NorZon products
Wheel loading or glazing	Grade too hard Grit too coarse Dirty, scale-covered parts	Try softer grade Try finer grit Try NZC wheels
Wheels "dusty"	Wheel too soft	Try harder grade
Wheel doesn't hold corner or wheel spalling	Wheel too coarse Wheel too soft	Use finer grit and/or 2 grit combination Use harder grade
Burning the workpiece	Wheel too hard Wheel glazed or loaded Grinding pressure too low Grinding pressure too high	Use softer grade Dress the wheel face Increase grinding force Reduce grinding force
Surface finish too rough	Wheel too coarse Wheel speed too slow Worn machine bearings	Try finer grit Try higher speed machine (Do not exceed max. operating speed of wheel) Rebuild machine
Vibration	Wheel worn out of round Faulty flanges Bent machine spindle Worn machine bearings	Try truing the wheel Check flanges for flatness and burrs (see ANSI B7.1) Check spindle run-out Rebuild machine
Wheel stalls or slows	Grinding force too high Wheel too hard Machine power too low	Reduce pressure or contact area Use softer grade wheel Replace machine with higher power grinder

## TECHtips

- Always ensure proper mounting of floorstand and swingframe wheels by mounting with arrow down as marked on wheel.
- Always use safety guard.
- Always run wheel for 1 minute before grinding.
- For optimum performance, ensure adequate air pressure and air volume when using pneumatic machines.

- Use constant surface foot per minute machines for highest efficiency.
- Do not overdress the wheel face.
- Avoid loading or glazing by changing the contact angle.
- Use pressure assist whenever possible to obtain maximum cut rate.



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