

# TOOLROOM WHEELS

**NORTON  
ADVANTAGE**

*The abrasives and bonds in our toolroom wheels have all been carefully selected and pre-engineered to produce the most versatile wheel performance possible.*

## TYPICAL APPLICATIONS

- ▶ Surface grinding
- ▶ Tool and cutter grinding
- ▶ Drill sharpening
- ▶ Cylindrical grinding



Industry	Bearing	Auto OEM	Auto Ancillaries	Cutting Tool	General Engg	Others	Tools & Dies	
Usage	●	●	●	●	●	●	●	
	● Primary Use		● Secondary Use					

**SG**

*The world's best vitrified toolroom wheel is now available in India. It will work on your current grinding machine and drastically lower your total grinding costs.*



**BEST**

**SG**

### FEATURES

- ▶ High performance ceramic aluminium oxide abrasive
- ▶ Self-sharpening abrasive
- ▶ High performance vitrified bond

### BENEFITS

- ▶ Fast stock removal; cool cutting
- ▶ Allows increased depth of cut and hence increased material removal rate and reduced cycle time
- ▶ Reduced spark out time again resulting in lower cycle time
- ▶ Significant reduction in burn occurrences and dressing frequency
- ▶ No metallurgical damages
- ▶ Enhanced wheel life, superior form holding

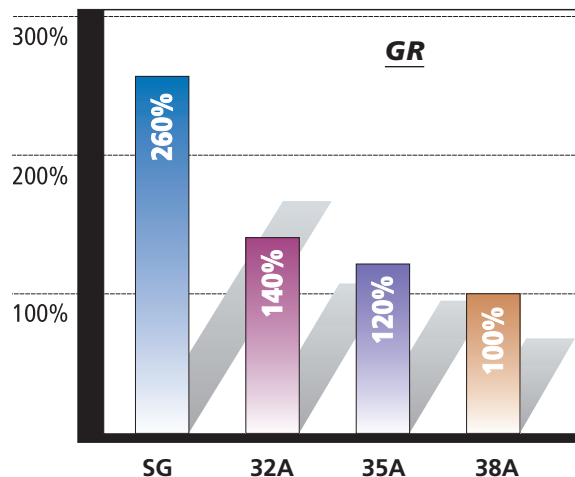
## TechTips



### WHEEL DRESSING

- ▶ For best results while dressing/truing your wheel, use any of the wide range of Norton Diamond Dressers available.

### ABRASIVE RELATIVE PERFORMANCE CHART



**BONDED ABRASIVES**

# TOOLROOM WHEELS

BONDED ABRASIVES

## 35A

**35A is the standard in toolroom. Its versatility and performance increase your production when compared to other aluminium oxide products.**



### BETTER 35A

#### FEATURES

- ▶ Sharp abrasive
- ▶ Advanced bond technology

#### BENEFITS

- ▶ Outstanding form holding, freer cutting
- ▶ Optimum porosity, strength and rigidity for precision grinding

## 38A

**This wheel is priced to give good value while going for cool, fast tool reconditioning. The first choice for light grinding applications on all tool steels.**



### GOOD 38A MIKRON PLUS

#### FEATURES

- ▶ Friable abrasive
- ▶ Consistent quality, excellent balance

#### BENEFITS

- ▶ Cool and burn-free cutting
- ▶ Lesser vibration in machine system
- ▶ High dimensional accuracy time after time

## STOCK AVAILABILITY TABLE

### Toolroom Wheels

Size Dia x Thk x Bore	Std. Pkg.	Specification	Stock No.
150 x 13 x 31.75	14	38A 120 J8 VBE	V100
150 x 13 x 31.75	14	38A 46/54 KV1	V105N
150 x 13 x 31.75	14	38A 80K5 VBE	V106
150 x 13 x 31.75	14	38A 60 KV1	V106W
150 x 20 x 31.75	10	38A 60 K5 VBE	V113
150 x 20 x 31.75	10	38A 60 KV1	V113W
180 x 13 x 31.75	14	38A 46 K5 VBE	V153
180 x 13 x 31.75	14	38A 46/54 K5 VBE	V154
180 x 13 x 31.75	14	38A 46/54 KV1	V154N
180 x 13 x 31.75	14	38A 60 K5 VBE	V157
180 x 13 x 31.75	14	38A 60 KV1	V157W
200 x 6 x 31.75	15	38A 60 K5 VBE	V168
200 x 6 x 31.75	15	38A 60 KV1	V168W
200 x 13 x 31.75	9	38A 46/54 K5 VBE	V176
200 x 13 x 31.75	9	38A 46/54 KV1	V176N
200 x 13 x 31.75	9	38A 60 K5 VBE	V177

Size Dia x Thk x Bore	Std. Pkg.	Specification	Stock No.
200 x 13 x 31.75	9	38A 60 KV1	V77W
200 x 20 x 31.75	6	38A 46/54 KV1	V184N
200 x 20 x 31.75	6	38A 60 K5 VBE	V185
200 x 20 x 31.75	6	38A 60 KV1	V185W
200 x 20 x 50.8	6	38A 46/54 KV1	V188N
200 x 20 x 50.8	6	38A 60 KV1	V190W
200 x 25 x 31.75	5	38A 60 K5 VBE	V198
200 x 25 x 31.75	5	38A 60 KV1	V198W
200 x 25 x 31.75	5	38A 46/54 KV1	V212N
100 x 50 x 31.75	12	A46/54 L5 VN	V40
125 x 50 x 31.75	8	38A 60 K5 VBE	V72
150 x 6 x 31.75	24	38A 60 K5 VBE	V88
150 x 13 x 31.75	14	38A 46/54 KV1	V97N
150 x 13 x 31.75	14	38A 60 K5 VBE	V98
150 x 13 x 31.75	14	38A 60 KV1	V98W

# TOOLROOM WHEELS

## SpecCheck

**NORTON**  
ADVANTAGE

ABRASIVE		GRIT	GRADE	BOND	POROUS BOND	DRESSING TOOL
More Durable	SG	46 (Coarse)	F (Soft)	VS3	VS3P	SG Tool
↑ ↓	32A	↑ ↓	↑ ↓	VS3	VS3P	Standard Tool
	35A			VS3	VS3P	Standard Tool
	38A			VS3	VS3P	Standard Tool
More Friable		220 (Fine)	Q (Hard)	VBE		

### HOW TO USE SPEC CHECK:

**Abrasive:** Select abrasive type based on required performance, stock removal rate and material type.

**Grit Size:** Select the grit size depending on finish required and stock removal rate needed.

**Bond:** Select the appropriate bond based on the abrasive selected, and the contact area.

**Grade:** Selection based on bond selected and contact area.

#### ABRASIVE:

- SG:** Exceptional durability and coolness of cut for all high speed tool steels especially the most difficult-to-grind. Use on the most demanding applications for the highest level of performance of moderate to very heavy stock removal rates.
- 35A:** A strong, sharp, very versatile abrasive for a wide range of applications. For all tool steels requiring moderate to heavy stock removal rate.
- 38A:** The most friable abrasive for light grinding applications on all tool steels. Offers outstanding coolness of cut in light to medium stock removal rates.

#### GRIT:

- 46:** Typically for roughing and general purpose, finish rougher than 0.8  $\mu$ Ra.
- 60:** Typically for commercial finish, 0.5, 0.6  $\mu$ Ra.
- 80:** Fine finish, 0.4  $\mu$ Ra or better, corner/form applications.

#### BOND:

- VBE:** 32A (Off-white) and 38A (White) only. General purpose; narrow/medium\* contact area; cool cutting; less burn; high chip clearance; high stock removal.
- VS3P:** 32A (Off-white) and 38A (White) only. Porous bond; medium/wide\* contact area; cool cutting; less burn; high chip clearance; high stock removal.
- VS3:** Superior corner retention properties, engineered for precision applications, compatible with all the abrasives mentioned.

#### GRADE:

- F-I:** VSP bond — "G" grade to start, medium/wide\* contact area.
- I-K:** VS bond — "I" grade to start for general purpose, narrow/medium\* contact area.
- K, L:** VS bond — for narrow\* contact area or form/corner holding applications.
- H-K:** VBE bond — "I" grade to start, general purpose, narrow/medium\* contact area.
- K, L:** VBE bond — narrow\* contact area; corner holding applications.
- F-H:** VBEP bond — "G" grade to start, medium/wide\* contact area.

\* Definitions of contact area:

Wide : The contact area of grinding is greater than 50% of the wheel width or over 13 mm wide.

Medium : The contact area of grinding is 25 - 50% of the wheel width or over 6 - 13 mm wide.

Narrow : The contact area of grinding is less than 25% of the wheel width or less than 6 mm wide.

## TROUBLESHOOTING GUIDE

PROBLEM	POSSIBLE CAUSES	SUGGESTED CORRECTION
Wheel corner breakdown	<ul style="list-style-type: none"> <li>Poor wheel dressing</li> <li>Wheel too coarse</li> <li>Wheel too soft</li> <li>Worn machine bearings</li> </ul>	<ul style="list-style-type: none"> <li>Fine-dress the wheel</li> <li>Use finer grit</li> <li>Use harder grade</li> <li>Check for run-out and correct</li> </ul>
Burns on workpiece area	<ul style="list-style-type: none"> <li>Poor coolant flow</li> <li>Wheel acting hard</li> <li>Work speed too slow</li> <li>Infeed too fast</li> </ul>	<ul style="list-style-type: none"> <li>Increase or direct coolant flow to contact area</li> <li>Dress wheel coarser or use softer wheel</li> <li>Increase work speed</li> <li>Reduce stock removal per pass</li> </ul>
Poor surface finish or quality of grind	<ul style="list-style-type: none"> <li>Wheel too hard</li> <li>Wheel too fine</li> <li>Dirty coolant</li> <li>Poor wheel dressing</li> </ul>	<ul style="list-style-type: none"> <li>Use softer grade</li> <li>Use coarser grit</li> <li>Filter coolant or replace coolant</li> <li>Increase dressing frequency or increase dresser traverse rate.</li> </ul>