



MADE IN GERMANY

Angle Grinder

SAFETY Training

Angle Grinder Usage requires CAUTION

Thousands of angle grinder-related injuries are reported each year - injuries that could have been prevented.

Why do Accidents Happen?

- 1 - Fatigue
- 2 - Rushing to finish a job
- 3 - Lack of awareness of the potential risks
- 4 - Use of the wrong tool or wrong accessories
- 5 - Removal or bypassing the tools safety features

Accidents Happen... FAST!

A 6" thin cutting wheel has a no-load speed of 9,600 RPM, which equals

170 MPH!

CAUTION: SAFETY ZONE

 **smith**
GAS, WELDING, & SAFETY SOLUTIONS

Angle Grinder **USAGE** CHECKLIST



Before any grinder is issued a job, ask the following questions:

- **Is the angle grinder the correct choice of tool for the required work?**
If the answer is no, **STOP!** Decide a better way to do the job.
- **Is the operator trained in the use of angle grinders and trained to recognize the possible hazards associated with the use of an angle grinders?**
If the answer is no, **STOP!** Get the needed training/assign only trained operators.
- **Does the operator have the required PPE?**
If the answer is no, **STOP!** Issue the proper, required PPE before issuing the grinder.

Tool Maintenance/ **ISSUANCE** CHECKLIST

Check overall condition of grinder and ensure there are no outward signs of damage.

- **Side handle:** Attached and in good order. If cracked, broken, or ill fitting, replace it.
- **Specification label:** Readable. If not, do not issue grinder until it is replaced.
- **Wheel guard:** Securely attached to the grinder. If guard is adjustable, does it adjust freely then lock into place?
 - 1) Ensure guard is the correct size per the specification label.
 - 2) Ensure guard is the proper type for the accessory being issued.
 - 3) Check for condition of guard; replace if bent, cracked, or altered in any way.
 - 4) Ensure abrasive issued fits inside the curled lip of the guard.
- **Accessories:** Use only accessories that match the diameter, and equal or exceed the speed rating (RPM), found on the specification label of the grinder. Inspect for cracks, decay, warping or signs of abuse. If questionable, replace it.
- **Mounting hardware:** Insure proper wheel flanges are being used, and are not worn or warped. Be sure raised area of flange fits snugly into the accessory, or that threaded spin on accessories match the thread of the grinder spindle. If spanner wrench is required for tightening accessory, be sure it fits the locking flange and is issued with the tool.
- **Power cord:** Inspect for breaks, kinks, pinches, splices, frayed areas or exposed wires, bent or loose prongs on the plug. Follow OSHA or manufacturer's recommended extensions cord usage.
- **On / Off Switch:** Be sure it works properly and freely.
- **Spindle lock:** Be sure the button moves freely and locks spindle when engaged.

For more information, please contact your S.J. Smith account manager,
call us at 563-324-5237 or go to www.sjsmith.com.

STEP 1: PROPER USE OF PPE

Be sure to check with your safety officer for specific PPE requirements for your company.

- Safety Glasses
- Face Shields
- Work Gloves
- Flame retardant clothing
- Protective foot wear
- Protective head gear



STEP 2: PROPERLY PREPARED WORK ENVIRONMENT

If you see something or someone that looks unsafe... **TELL A SUPERVISOR IMMEDIATELY**

Grinders Throw Sparks

- Remove all combustible materials including paper, cardboard and rags
- Never work near combustible liquids, gases or dust

Never operate power tools in wet environments

Power Tools require your full attention

- Clear your mind and avoid distractions
- Secure loose hair, clothing and jewelry away from moving parts
- Never work under the influence of substances

STEP 3: SELECTION OF THE PROPER TOOL

Check with your safety officer regarding company specific requirements for working at heights/drop protection

The Right Tool for the Job

- Match rated RPMs and power to the work being performed.
- Use specific tools for unique applications

Never Alter a Tool

- Do not bypass the on/off switch
- Never use "non-grinder accessories"
- Use manufacturer supplied or OSHA recommended guards for the application
- **ALWAYS** use a side handle *WITH* two hands on the grinder



STEP 4: PROPER USE OF ACCESSORIES & START-UP

Always match the diameter of the wheel with the rating on the grinder.

Refer to the spec plate or *owners manual* for details.

Below are imperial to metric sizes:

Dia.	mm
4-1/2"	115 mm
5"	125 mm
6"	150 mm
7"	180 mm
9"	230 mm

Always Inspect Wheels Prior to Using

- Visually inspect for chips or imperfections, replace if found
- **ALWAYS** start grinder with the wheel facing away from the body and other workers. Run for 60 seconds to test the wheels integrity
- **NEVER** use a wheel with a rated speed lower than the rated speed of the grinder
- **NEVER** use an unapproved accessory
- **ALWAYS** start your work with a new wheel, don't rely on a wheel you haven't tested

STEP 5: PROPER TECHNIQUES

- Always keep an “athletic stance” with **both hands on the grinder**
- Do not overreach
- Properly support **BOTH** sides of the work to avoid pinch or bind
- Always cut from the top to the bottom - use gravity to your advantage
- Never cut two planes at once
- Properly tether tools when working at height as required



Personal Safety Cutting Zone:
Keeping both hands on the grinder at all times

STEP 6: REDUCING THE CHANCE OF KICKBACK

Be constantly aware of the possibility of kickback. It can happen before you can react!

Tool Specific Solution

- S-Automatic Safety Clutch
- First introduced by Metabo in 1966
- Clutch allows gear slippage in a pinch or bind situation
- Helps user maintain control during jams
- Greatly reduces the likelihood of shattered wheels
- Available on select 4-1/2" - 6" professional series grinders



STEP 7: REDUCING WHEEL SPIN DOWNTIME

It takes 8-12 seconds for a wheel to come to a complete stop.

Many accidents occur during this time, such as:

- Brush by accidents
- Catching your hand
- Swiping a nearby co-worker

Grinder may “walk, spin-out, run away, etc.” if placed on a surface before wheel completely stops.

The Solution:

The Metabo Mechanical Brake

- Stops grinding wheels in under 2 seconds
- Stops cut-off wheels in under 1 second



STEP 8: REDUCING VIBRATION

The Dangers of Vibration

- Repetitive Strain Injury (RSI)
- Hand/Arm Vibration (“White Finger”) Syndrome
- Effects are irreversible

The Solution:

MVT Handle

- Reduces vibration by 60%
- Ergonomically designed drip is insulated from attached bolt

Auto-Balancer

- Reduces accessory vibration transmission to the user by up to 92%
- Increases tool and wheel life up to 100%

