

KMG Grinder Training

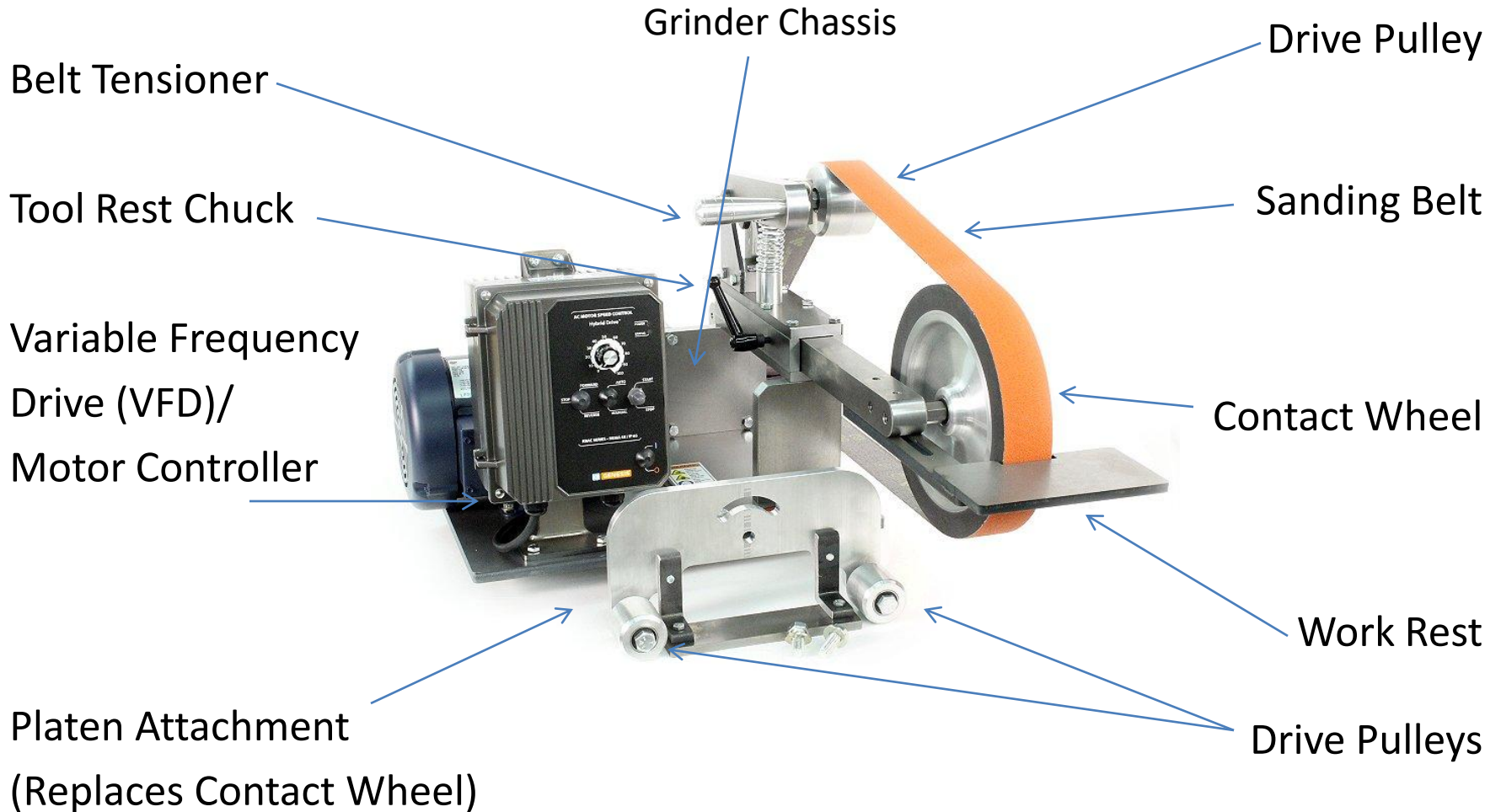
Dallas Makerspace

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Safety First

- Clothing
 - Natural Fabrics and/or
 - Fire Resistant Clothing
- No loose-fitting/dangling clothing
- No Open-Toed Shoes
- Tie back loose hair, remove earbuds, necklaces, etc.
- Personal Protection Equipment (PPE)
 - Eye protection
 - Hearing Protection
 - Respiration Protection
- No Gloves when using the Grinder
 - (Snatch risk)
- Recommend no earbud music
 - Snatch Risk
 - Remain aware of surroundings

KMG Grinder Overview



Belt Selection and Speeds

- Different Materials
 - **Alumina Zirconia** - A very hard and sharp grain that works well for grinding of stainless steel, spring steel, titanium and other hard steels and for dimensioning of wood.
 - **Aluminum Oxide** - A blocky, hard grain best suited for sanding and grinding of ferrous and non-ferrous metals, wood and solid surface materials.
 - **Silicon Carbide** - A sharp, very hard and brittle grain best suited for sanding of glass, plastics, rubber, ceramics, solid surface materials and some non-ferrous metals.
 - **Ceramics** - Expensive. Ceramics were created for rough grinding on metal. Best value using ceramics for coarse grinding, then switching to AO or SC for intermediate and finish grits.
- Different Grits
 - 60-80 – very rough, rapid material removal
 - 80-150 – Polishing
 - 180-320 – Finishing
 - 440-500+ - fine finish – might be better hand-sanded rather than via KMG

Belt Installation

- Turn off
- Installation Direction
 - Look for arrow on underside of belt
- Press to remove tension
- Roll belt onto rollers
- Turn on and run
- Adjusting Tracking
 - Variations in belt manufacture may make belt track off to one side
 - Use adjustment screw to tune where belt runs across platen/wheel

Starting, Stopping, and Shutdown

- Why Two Switches?
 - On/Off enables VFD
 - First switch set
 - Last switch turned off
 - Start/stop (enables the motor)
 - After VFD turned on, enables/disables motor
 - Press switch up to engage
 - When stopped, VFD will handle stop sequence and braking
 - Can't do this if On/Off turned off
- Initiation of VFD
 - Use Bottom Switch
- Starting
 - Use the Top Switch
- Stopping
 - Use the Top Switch
- End of Use Shutdown
 - Use Bottom Switch



Where to Grind

- Platen
 - Flat plate provides a flat surface to press against
- Contact Wheel
 - Rubber-coated wheel rolls with belt
 - Can be used for a flat or hollow grind
 - Use Work Rest when grinding across belt
- Small, removable contact wheels
 - Come in several diameters
 - Roll with belt
 - Can be used for tight radius-grinding
- Slackbelt can be used to soften sharp edges

Where NOT to Grind

- Drive Wheels
 - Used to rotate belt
 - Not a consumable
 - Not for grinding against

What to Grind

- Steel/Ferrous Metal
 - Low Carbon
 - High Carbon
 - Easier if annealed
 - Forge Scale
 - Very hard on belts
 - Consider Wire Wheel first
- Copper
 - OK
- Aluminum
 - OK on sanding belts
 - **NOT OK** on grinding wheels

Grinding Risks

- Airborne Material
 - Use PPE
 - Zinc/Galvanized dust
 - Abrasives
- Abrasion Injury
- Gouge/Catch/Throw Injury