

PSG 612

PERSONAL SURFACE GRINDER

PRODUCT DATASHEET

PSG
2-AXIS
AUTOMATIC
612



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PRODUCT DATASHEET

PERSONAL SURFACE GRINDER

PRODUCT OVERVIEW

The Tormach PSG 612 is designed as an economical solution to automate repetitive surface grinding tasks in the small shop. It features automated longitudinal and cross feed with 4 selectable grinding patterns, making it a perfect choice for delivering consistent results for small batch surface grinding operations.

Each PSG 612 is engineered for a lifetime of worry-free operation. The rigid cast iron frame features a stout column that resists wheel deflection. Slide ways are hand scraped dovetails with taper gib adjustments, and each sliding surface is bonded with a low friction PTFE-filled acetyl co-polymer, similar to Turcite® or Rulon®. A single shot lubrication system distributes oil to all key surfaces with one pull.

Like all Tormach products, the PSG is backed with a standard 12 month warranty and our industry-best technical support. With a space-saving footprint, simple operator's interface, and robust electronics, the Tormach PSG 612 is ready to take on your next short run or small batch surface grinding job today.

PN 31386:TORMACH SURFACE GRINDER - PSG 612



PSG 612

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PERSONAL SURFACE GRINDER

Dimensions/Weight:	
Table Size	6" X 12"
Table Slots	1 Slot: 1/2" X 15 1/2" T
Longitudinal Max Travel	13 7/8"
Cross Feed Max Travel	8 1/4"
Min / Max Distance to Spindle Center	3" min, 12" max
Maximum Working Height (Above Table)	8 3/4"
Elevation, (Z) Graduation	0.001"
Floor to Table Height	40"
Space Required for Full Range of Movement	51" W X 66" H X 30" D
Stand Footprint	24" X 24"
Approximate Shipping Weight	720 lbs.
Weight	400 lbs.
Crate Dimensions	43 1/2" W X 66" H X 30" D
Max Workpiece	400 lbs.

Power:	
Power Requirements	Single Phase, 115 V, 50/60 Hz 8 Amp Peak / 4 Amp Continuous 15 A Breaker Recommended

Spindle:	
Spindle Motor	Industrial Grade 3/4 HP TEFC Single Phase, 115 V 60 Hz 7 Amp Peak Induction Motor
Wheel Size	7" X 1-1/4" X 1/2"
Wheel Speed	3450 RPM (@60 Hz) providing 6300 SFM

Iron:	
Frame and Table	Yard-aged Cast Iron, with Hand-Scraped Hydrodynamic Dovetailed Slide Ways and Tapered Adjustment Gibs
Slide Way Surfaces	Low Friction PTFE-filled Acetyl Bonded Sliding Surface, Similar to Turcite® or Rulon®

Motion:	
Feedrate	0-45 ft/min Longitudinal (X) 0-24 ft/min Cross Feed (Y)
Axis Drives	NEMA 34 Stepper Motors with Leadshine® High Performance Microstepping Drivers
Locomotion	Longitudinal: Rack and Pinion (automatic) Cross: Leadscrew w/ Anti-backlash Nut (Automatic or Manual) Vertical: Leadscrew w/ Anti-Backlash Nut (Manual)
Vertical Handwheel Graduation	0.0005" (0.012mm)
Cross Feed Handwheel Graduation	0.001" (0.025mm)

Control:	
Operator Console	Wheel On/Off, Automatic Mode Select, Longitudinal Speed and Cross Feed Control, Power On, E-Stop, 4-Mode Automatic Feed

Other Features:	
Paint	2-Part Copolymer Enamel, Cross-linked Acrylic /Modified Amino Resin
Stand	Sheet Metal With Storage Cabinet and Adjustable Footpads
Lubrication	Single Shot Distribution, 5 Points

Warranty:	
Standard Warranty	12 Month Tormach Standard Warranty
Extended Warranty	12 Month Optional Extended Warranty, Renewable Yearly



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ENABLING YOUR IDEAS

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DS10172_PERSONAL_SURFACE_GRINDER_0814A

ACCESSORIES - GRINDING WHEELS

7" ALUMINUM OXIDE GRINDING WHEELS

WAB (AZ) grinding wheels are a good choice for general purpose surface grinding of ferrous. They have a cool, fast cutting action and require minimal dressing.

- Type: T1
- Abrasive: White Aluminum Oxide + Blue Bond (WAB/AZ)
- Color: Blue
- Grade: K
- Structure: 8
- Bond: V32A (Vitrified)
- Manufacturer: CGW / Camel

PN 33257: 7" GRINDING WHEEL - AZ46-K8-V32A

PN 33258: 7" GRINDING WHEEL - AZ60-K8-V32A

PN 33259: 7" GRINDING WHEEL - AZ80-K8-V32A

PN 33260: 7" GRINDING WHEEL - AZ100-K8-V32A



WHEEL HUB AND BALANCE WEIGHTS

Multiple wheels hubs allow for a collection of ready and available grinding wheels in varying abrasions, types and profiles.

Two blotters and three balance weights are included.

PN 33199: WHEEL HUB AND BALANCE WEIGHTS



ACCESSORIES

MAGNETIC CHUCK

0.0005" dial indicator, for precise measurement of the Z-axis during grinding operations.

PN 33210: MAGNETIC CHUCK

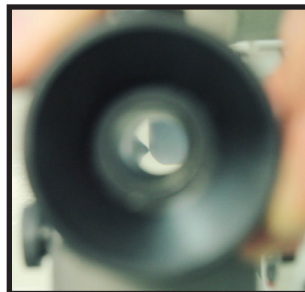


OPTICAL WHEEL DRESSER

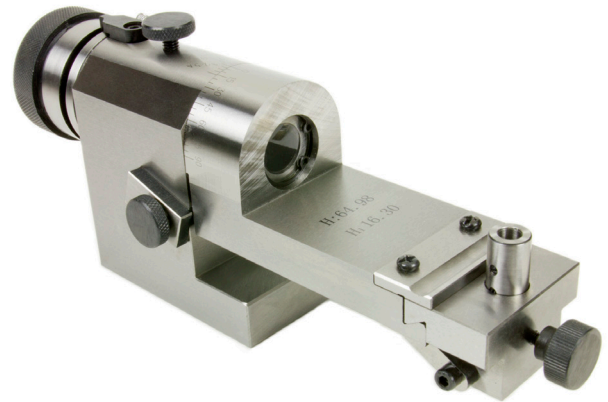
Used to dress straight line bevels, concave arcs, convex arcs, or combination profiles. Fully adjustable and precision ground.

PN 33241: OPTICAL WHEEL DRESSER

RECOMMENDED ACCESSORY
PN 33182: RADIUS DIAMOND DRESSING PIN



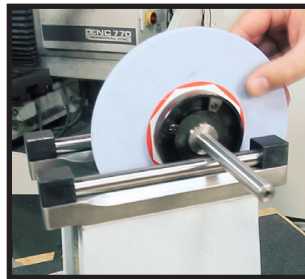
View through the eyepiece.



BALANCING STAND

Adjustable balancing stand. Cast iron construction with chrome rails and fully adjustable feet.

PN 33265: BALANCING STAND



DIAL INDICATOR

0.0005" dial indicator, for precise measurement of the Z-axis during grinding operations.

PN 34026: 0.0005 DIAL INDICATOR



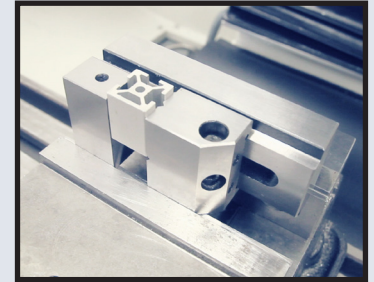
ACCESSORIES - WORKHOLDING

TOOLMAKER VISES

Tool maker vises are excellent for holding delicate material and great for working on the end of a workpiece. Since the sides of toolmaker vises are precision ground, they can be easily used to do parallel or perpendicular work on opposing or adjacent sides of a workpiece, without the need to re-indicate parts.

Other tool maker vise applications include:

- Working on the end of a pin or cylinder
- Flycutting and/or facing of small cross sections
- End Drilling
- Cross drilling
- Edge milling thin sections



50mm TOOLMAKER SINE VISE WITH SCREW

Precision Toolmaker Vise. Screw and bushing design for simple and secure clamping of small parts.

- Hardened Steel Jaws and Bed
- 50mm x 25mm Jaw Size
- 60mm Max Jaw Opening
- 140mm Overall Length
- Fixed Jaw and Moveable Jaw have Tapped Hole (M5)
- Black anodized screw with knurled knob and brass bushing
- Adjustable angle pivots from 0-45 degrees

PN 32549 50MM TOOLMAKER SINE VISE W/SCREW



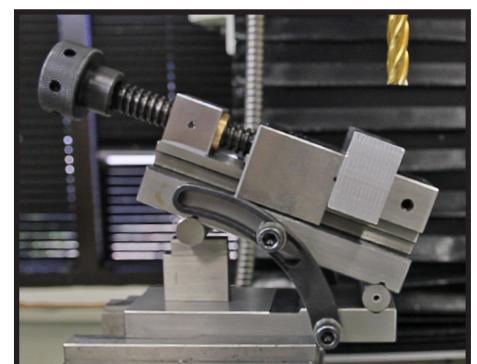
RECOMMENDED ACCESSORY

GAUGE BLOCK SET (36 PIECES)

Steel Gauge Block Set. Precision Ground, 36 pieces.

- Meets ASME B89.1.9-2002 Standard
- Precision Ground
- Grade: Economy
- Includes Certificate of Calibration and Traceability

PN 33181 GAUGE BLOCK SET (36 PIECES)



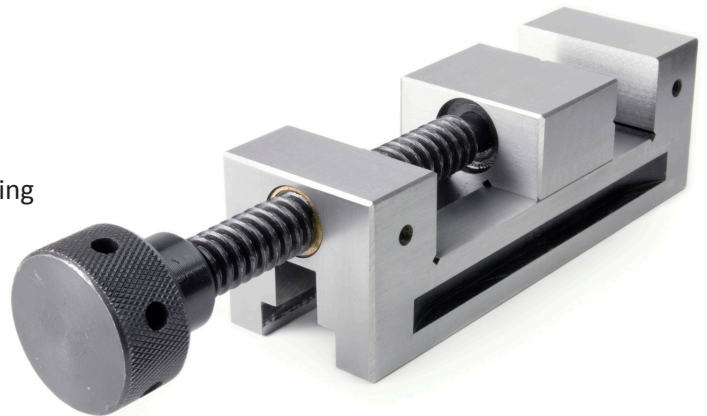
Gauge blocks are stacked under the sine vise to achieve precise angles.

ACCESSORIES - WORKHOLDING

50mm TOOLMAKER VISE WITH SCREW

Precision Toolmaker Vise. Screw driven moveable jaw for applying clamping force.

- Hardened Steel Jaws and Bed
- Black Anodized Screw with Knurled Knob and Brass Bushing
- 50mm x 25mm Jaw Size
- 65mm Max Jaw Opening
- 155mm Overall Length (Does not include screw)
- Fixed Jaw, Moveable Jaw and Screw Block have Tapped Hole (M5)
- Clamping Slot Runs Length of Vise



PN 32545 50MM TOOLMAKER VISE WITH SCREW

34mm TOOLMAKER VISE, SCREWLESS

Precision Toolmaker Vise. Adjustable pin and spring design for simple and secure clamping of small parts.

- Hardened Steel Jaws and Bed
- 34mm x 15mm Jaw Size
- 25mm Max Jaw Opening
- 75mm Overall Length
- Fixed Jaw has Tapped Hole (M5)

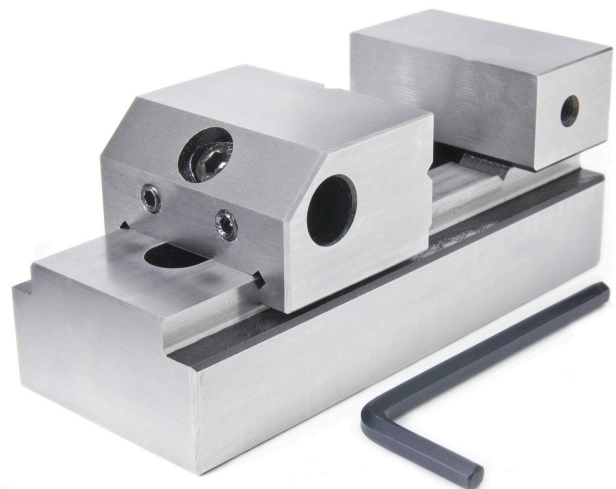


PN 32546 34MM TOOLMAKER VISE, SCREWLESS

45mm TOOLMAKER VISE, SCREWLESS

Precision Toolmaker Vise. Adjustable pin and spring design for simple and secure clamping of small parts.

- Hardened Steel Jaws and Bed
- 45mm x 20mm Jaw Size
- 50mm Max Jaw Opening
- 110mm Overall Length
- Fixed Jaw has Tapped Hole (M5)



PN 32547 45MM TOOLMAKER VISE, SCREWLESS

ACCESSORIES - WORKHOLDING

70mm TOOLMAKER VISE, SCREWLESS

Precision Toolmaker Vise. Adjustable pin and spring design for simple and secure clamping of small parts.

- Hardened Steel Jaws and Bed
- 70mm x 30mm Jaw Size
- 80mm Max Jaw Opening
- 160mm Overall Length
- Fixed Jaw has Tapped Hole (M5)
- Clamping Slot Runs Length of Vise

PN 32548 70MM TOOLMAKER VISE, SCREWLESS

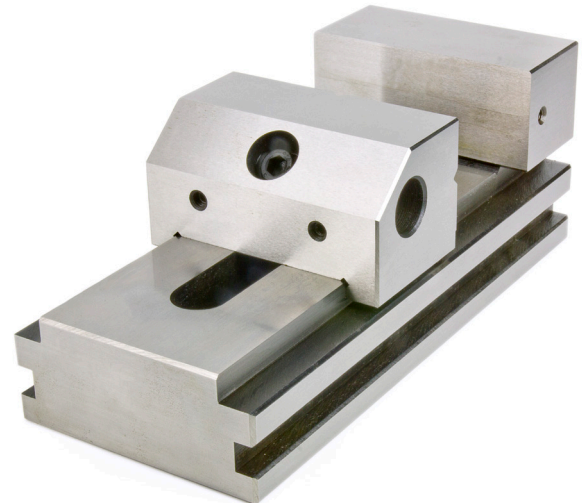


90mm TOOLMAKER VISE, SCREWLESS

Precision Toolmaker Vise. Adjustable pin and spring design for simple and secure clamping of small parts.

- Hardened Steel Jaws and Bed
- 90mm x 40mm Jaw Size
- 120mm Max Jaw Opening
- 210mm Overall Length
- Fixed Jaw has Tapped Hole (M5)
- Clamping Slot Runs Length of Vise

PN 33110 90MM TOOLMAKER VISE, SCREWLESS

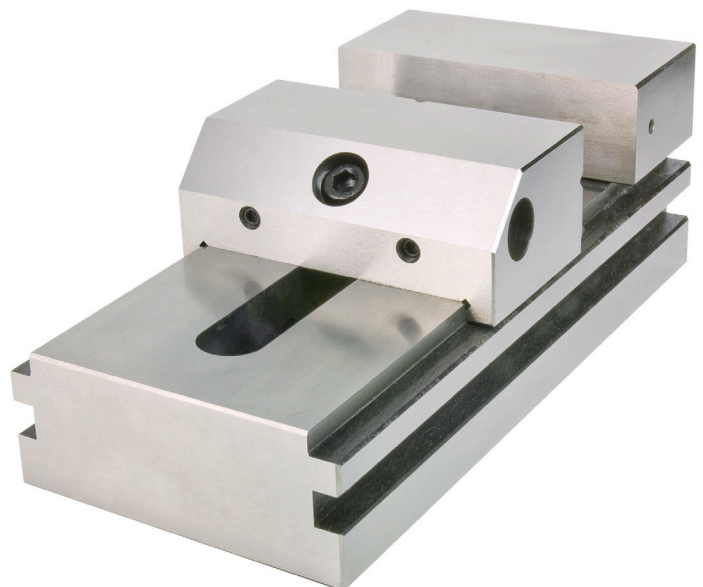


120mm TOOLMAKER VISE, SCREWLESS

Precision Toolmaker Vise. Adjustable pin and spring design for simple and secure clamping of small parts.

- Hardened Steel Jaws and Bed
- 120mm x 40mm Jaw Size
- 150mm Max Jaw Opening
- 280mm Overall Length
- Fixed Jaw has Tapped Hole (M5)
- Clamping Slot Runs Length of Vise

PN 33111 120MM TOOLMAKER VISE, SCREWLESS



ACCESSORIES - WORKHOLDING

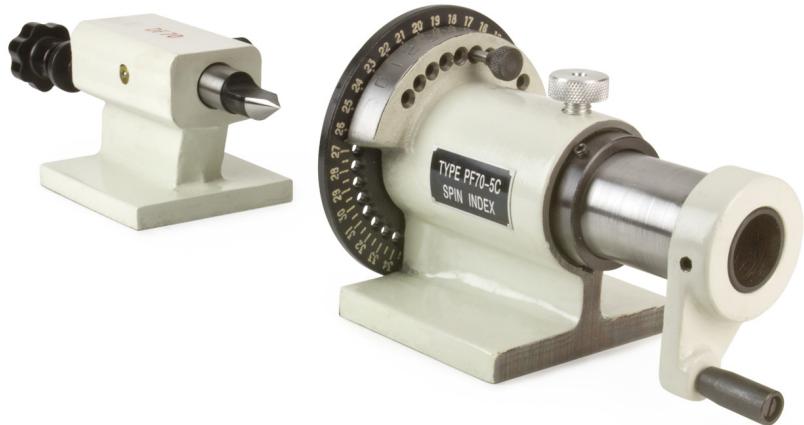
5C COLLET OVERVIEW

5C Collets are a popular standard for mill and lathe work. They are used to hold cylindrical stock up to 1" (25mm) in diameter and offer superior concentricity to faster setup than 3 Jaw chucks. Our affordable line includes 5C collet sets, 5C collet chucks, and 5C collet fixtures.

5C SPIN INDEXER

5C Collet Spin Indexer with Tailstock for precise angular positioning in 1° increments.

33102: 5C SPIN INDEXER



5C COLLET BLOCK SET

5C Collet block set (5 Pieces).
Includes both Hex and Square Blocks.

33103: 5C COLLET BLOCK SET



5C ADJUSTABLE COLLET STOP

Positive Solid Stop for 5C Collets.

33108: 5C ADJUSTABLE COLLET STOP



ACCESSORIES - WORKHOLDING

INDIVIDUAL 5C COLLETS

Individual 5C Collets can be purchased in Imperial or Metric sizes.



9 PIECE 5C COLLET SET - METRIC

9 Piece Metric 5C Collet Set. Covers 4-12mm nominal diameters in 1mm increments.

PN 32308: 9 PIECE 5C COLLET SET - METRIC



13 PIECES 5C COLLET SET - METRIC

13 Piece Metric 5C Collet Set. Covers 13-25mm nominal diameters in 1mm increments.

PN 32307: 13 PIECE 5C COLLET - METRIC

15 PIECE 5C COLLET SET - IMPERIAL

15 Piece Imperial 5C Collet Set. Covers 1/8" to 1" nominal diameters (1/16" increments).

PN 30252: 15 PIECE 5C COLLET SET - IMPERIAL



ACCESSORIES - WORKHOLDING

5C COLLET SETS

We offer both metric and imperial 5C collet sets. Imperial sets are available in 1/16" increment and metric sets are available in 1mm increment. Each 5C Collet is precision machined from high quality spring steel.

11 PIECE 5C SQUARE COLLET SET

11 Piece Imperial 5C Square Collet Set.

- Covers 1/8" to 3/4" (1/16" increments)
- Steel, hardened and precision ground

PN 33104: 11 PIECE 5C SQUARE COLLET SET



13 PIECE 5C HEX COLLET SET

13 Piece Imperial 5C Hex Collet Set.

- Covers 1/8" to 7/8" (1/16" increments)
- Steel, hardened and precision ground

PN 33105: 13 PIECE 5C HEX COLLET SET

5C EMERGENCY BRASS COLLET

5C Emergency Brass Collet can be bored or machined to desired size or hole geometry.

- 1/16" Pilot Hole
- Pinned for machining accuracy
- Internally threaded to accept collet stop

PN 33107: 5C EMERGENCY BRASS COLLET



OPTIONS

AUTOMATIC OILER

The automatic oiler has programmable time settings for both stroke length and stroke interval, as well as a force feed override. It also features audible warnings for refill level as well as abnormal pressure and overheating. Includes wiring kit, mounting hardware, 4mm distribution hosing, and necessary compression fittings to interface with your surface grinder.

Choose the 115 VAC model to interface with the PSG 612.

PN 31373: AUTOMATIC OILER - 115 VAC



PN 31373: Automatic Oiler - 115 VAC

PERSONAL SURFACE GRINDER

ABOUT TORMACH

The people at Tormach are dedicated to delivering tools, accessories, and components of unprecedented value in the world of CNC and motion control. Whether you're involved in R&D, education, short run production, or simply an entrepreneur with an idea, you need to make things.

Tormach products allow you to make what you need easier, quicker, and more affordable. We want to help make your goal a reality, to enable your ideas. Our mission is to empower people who make things. Whether you're cutting parts with our machine tools or building your own equipment using our components, our focus is to manifest your concepts and help you bring your ideas into reality.

ORDERING, PAYMENT & SHIPPING

Quotations can be requested online using our web based quotation system, or through FAX, email, or over the phone. Machines and accessories can also be ordered using our secure web shopping cart. Payment can be made by check, credit card, or wire transfer. Machines and machine stands are shipped via truck freight in North America, while accessories are normally shipped via package service (UPS, USPS, FedEx). Tormach ships worldwide in cooperation with established international freight forwarding companies.

WARRANTY AND SUPPORT

Machines and accessories are warranted for 12 months. Warranty service is limited to repair or replacement of components with telephone support, there is no on-site field service staff. Replacement parts are stocked at our Wisconsin facility.

Additional information is available at www.tormach.com.



WWW.TORMACH.COM

ENABLING YOUR IDEAS

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