WORKHOLDING DYNOGRIP™ DYNOLOCK™ DYNOMOUNT™

INSTRUCTIONS ENGLISH

MATE®
PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

OPERATOR'S MANUAL

Vise, Base and Mount Instructions

DYNOGRIP™ SELF-CENTERING VISES
DYNOLOCK™ BASES
DYNOMOUNT™ MOUNTS

MADE IN THE USA

DYNOGRIP™ SELF-CENTERING VISES
DYNOLOCK™ BASES & DYNOMOUNT™ MOUNTS
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DYNOGRIP™ SELF-CENTERING VISES

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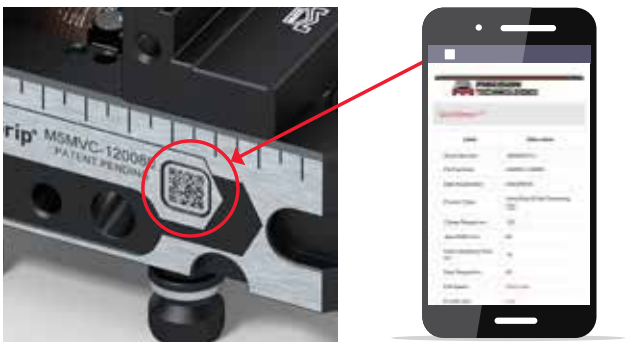
DYNOMOUNT™ MOUNTS

USING QUICKSPECS™



MAINTENANCE LOG

Mate Precision Technologies • 1295 Lund Boulevard • Anoka, Minnesota 55303 USA • Phone +1.763.421.0230 • 800.328.4492 • Fax +1.763.421.0285 • 800.541.0285

Dimensions in Inches(millimeters) mate.com
LIT01465 Rev A

DYNOGRIP™ SELF-CENTERING VISE
INSTRUCTIONS

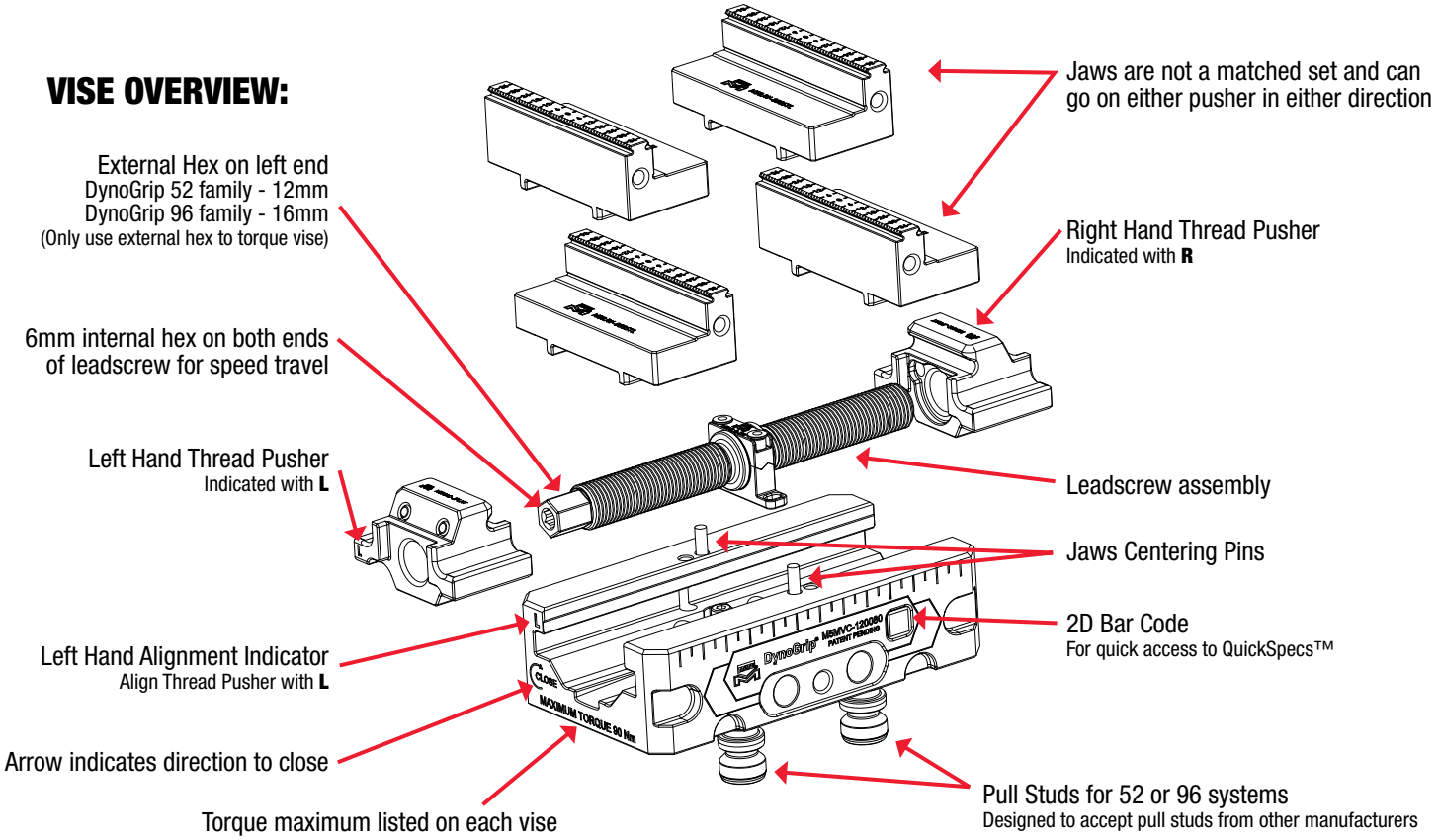
DYNOGRIP™ VISES

DYNOGRIP SELF-CENTERING VISE OVERVIEW
Not just any CNC workholding vise, Mate DynoGrip self-centering vises are engineered to shorten setup time and reduce process variability. A closer look shows just how much thought went into designing and building the ultimate workholding vise.

PRODUCT HIGHLIGHTS
- Maximum holding power in a compact form with minimal part lift and excellent repeatability
- Quick change jaws
- Zero point quality engagement with 52mm and 96mm four post pull stud pattern
- Compatible with other mounting systems or mount directly to the machine bed
- Available in 13 size variations
- Patents pending
- Made in USA

MOUNTING OPTIONS
- Mount on 52mm or 96mm pattern bases (See page 8 for instructions)
- Mount on Schunk Vero-S system (See page 9 for compatibility)
- Mount directly on machine bed (Consult machine owner's manual)

VISE OVERVIEW:



DYNOGRIP™ SELF-CENTERING VISE
INSTRUCTIONS

DYNOGRIP™ SELF-CENTERING VISE MAINTENANCE OVERVIEW
Mate DynoGrip self-centering vises are engineered to shorten setup time and reduce process variability. For optimal operation, it is important to establish a proper regular maintenance schedule and follow usage guidelines for your DynoGrip vise.

LUBRICATION/MAINTENANCE SCHEDULE

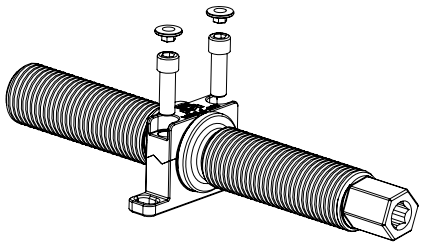
UNBOXING/FIRST USE:
All Mate Workholding products ship ready for use — greased and coated with a corrosion inhibitor.

DAILY:
Clean vise and leadscrew of visible chips and debris.

MONTHLY:
Clean and grease regularly (once a month or every 500 cycles) for optimal performance and reduced wear.
- Mate Recommends MobileGrease XHP 322 grease which offers least wear and highest output force
- Apply a thin coat of grease on all sliding contact surfaces
  - Pushers: Grease the underside of the hook, the top and bottom of flanges and the very bottom
  - Vise Body: Both top surfaces, the upper opening sides where the jaw rails slide, the top and bottom of the rails where the pusher flanges slide in and the top pocket bottom surfaces on both sides of the ramps
  - Jaws: Outside portion of the rails, bottom sliding faces and inside the bottom pocket where the pusher hook engages
- Pull Studs: Inspect for signs of wear. If grooves are forming on one or more pull stud(s), replace to ensure precision location continuity.
  - Check for loosening pull studs. Hold unit up to a light — make sure there is no visible light under the stud. Re-tighten if needed.
- Grease leadscrew threads
  - Fill threads half way around diameter a thumb thickness wide on each side and then run threads of pushers over this area
  - To minimize chips and slivers clinging to the leadscrew, consider applying the grease in a location of known travel by the pushers based on the part length machined.

Note: Machine coolant has some inherent lubrication properties and is often used as a substitute for grease. Reduced output force and faster wear may occur when relying on machine coolant as compared to grease and its superior lubricating elements. If using water soluble coolant, maintain coolant concentration to the minimum recommendation from the manufacturer to inhibit corrosion and pitting.

6 MONTHS:
Center Support: Clean and grease every 6 months.



1. Remove jaws from vise and unscrew the pushers from leadscrew assembly
2. OPTIONAL: Remove leadscrew assembly from the vise (unscrew lower screws)
   - It is recommended to follow all steps to clean and grease the vise for best operation
3. 96 ONLY: Remove screw caps and screws at the top of the center support — save for reuse
4. Separate the center support into two pieces
5. Clean parts
6. Add enough new grease such that some squeezes out while reassembling the two center support pieces onto the leadscrew
7. Install screws and torque to 4.5 Nm (40 in-lb) for DynoGrip 52 and 10 Nm (90 in-lb) for DynoGrip 96
8. Snap screw caps back into place
9. Insert leadscrew assembly into center pocket of vise body orienting external hex to the “L” labeled side of vise body
10. Position the rectangular washers over slots of center support
11. Insert the screws through the washers, slots of center support and thread into vise body until snug, then back off a 1/4 turn to leave lead screw assembly loose
12. Insert flanges of pushers into vise body slots and symmetrically thread pushers onto leadscrew threads with desired hook orientation
13. Install jaws and follow precision vise calibration procedure (see page 6)

STORAGE:
Clean all chips and debris from vise — Follow monthly and 6 month maintenance procedures. Coat entire vise with rust inhibitor.

DYNOGRIP™ SELF-CENTERING VISE
INSTRUCTIONS

PROPER PART LOADING

Single Station Self-Centering Jaw Configuration:

- It is important to symmetrically load single or multiple parts axially on-center to the vise to avoid excessive jaw twist
- Individual part clamped sides should be within .15mm (.006") parallelism for clamping on smooth jaw surface and within .51mm(.020") when using the grips to provide secure part retention
- When loading two or more parts on a 2-jaw vise, the clamped sides should vary in size by no more than .15mm (.006") when clamped on smooth jaw surfaces and no more than .51mm (.020") when using the grips to provide secure part retention

Double Station Center Jaw Configuration:

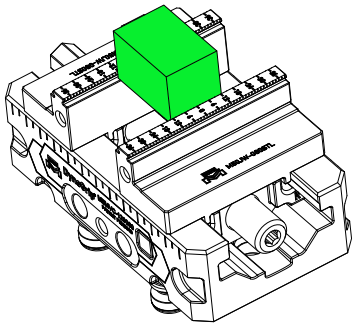
- Parts must be loaded on both sides of the center jaw. Symmetric loading still applies
- DynoGrip 52 with a center jaw allows for 2mm clamping size variation between parts*
  DynoGrip 96 with a center jaw allows for 3mm clamping size variation between parts*

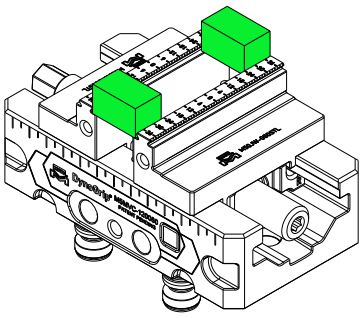
* See "Prep for Center Jaw Attachment" for correct setup on page 7

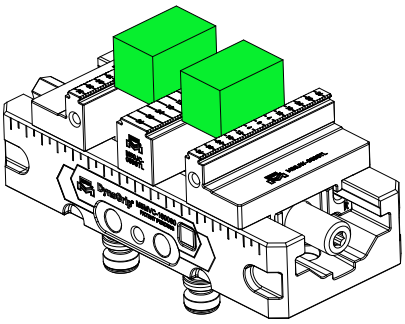
Jaw Range:

- Extending the jaws beyond the length of the vise body can reduce the effectiveness of the jaw pull-down feature

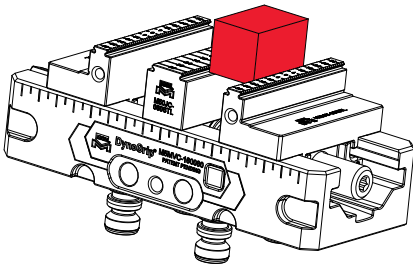
EXAMPLES OF CORRECT PART LOCATING



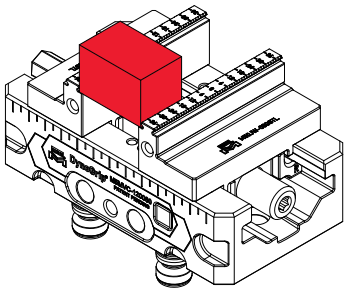




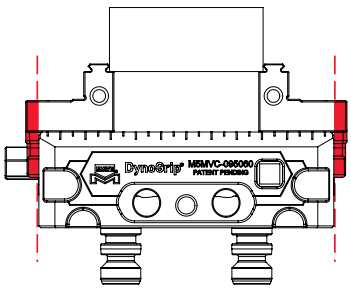
EXAMPLES OF INCORRECT PART LOCATION



DO NOT load singles part in a double vise



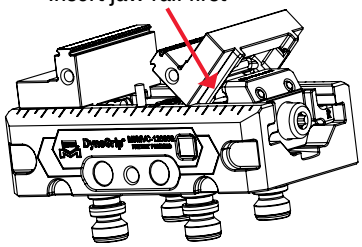
Center load single parts **ONLY**.
DO NOT side load

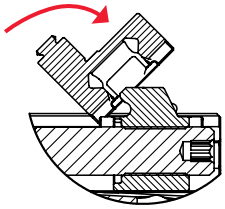


DO NOT extend jaws over ends of vise body

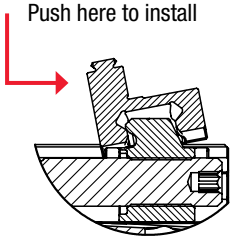
JAW INSTALLATION OR REMOVAL

Insert jaw rail first





Push here to install



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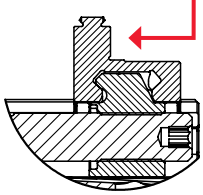


Dimensions in Inches(millimeters) mate.com
LIT01465 Rev A

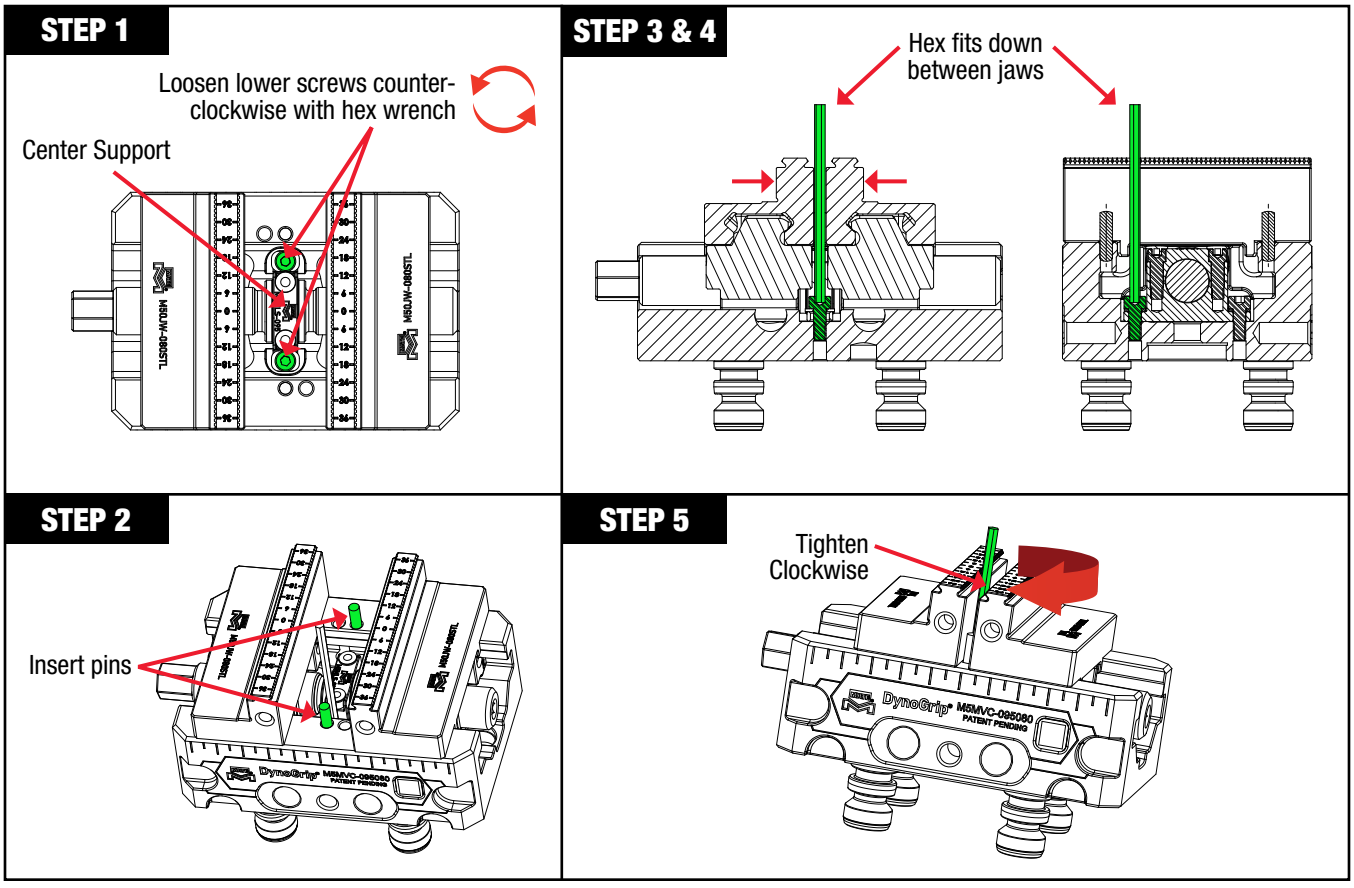
DYNOGRIP™ SELF-CENTERING VISE
INSTRUCTIONS

PRECISION VISE CALIBRATION PROCEDURE

Vises purchased with the standard removable jaws are pre-centered. When the jaws or pushers are reversed/replaced on a vise, calibration is recommended. Follow the procedure below:

1. Install new jaws and then loosen the lower two center support screws a 1/4 turn counter-clockwise using the appropriate hex wrench
   - DynoGrip 52: 3mm hex
   - DynoGrip 96: 4mm hex

   Note: The upper center support screws with black plugs are not to be loosened for this procedure
2. Insert the two centering dowel pins supplied with the vise
   - DynoGrip 52: 4mm x 16mm
   - DynoGrip 96: 5mm x 16mm
3. Firmly clamp jaws against dowel pins and verify there is no gap between pins and jaws
4. Tighten the lower two center support screws clockwise
   - DynoGrip 52: 4.5 Nm (40 in-lb)
   - DynoGrip 96: 9.7 Nm (86 in-lb)
5. Loosen the jaws by turning the leadscrew counter-clockwise
6. Remove the centering dowel pins
7. The vise is now calibrated



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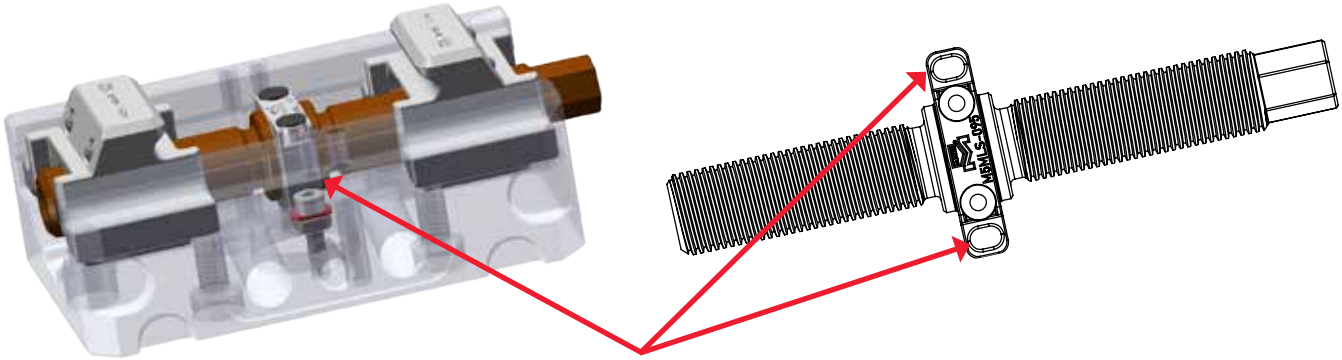
DYNOGRIP™ SELF-CENTERING VISE
INSTRUCTIONS

PREP FOR CENTER JAW ATTACHMENT

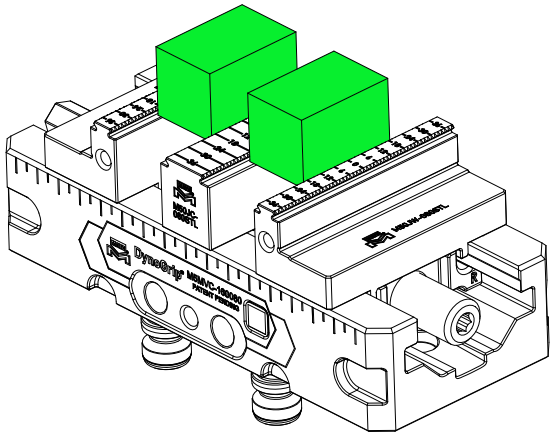
1. Loosen the two lower center support screws counter-clockwise a 1/4 turn to allow leadscrew assembly to float.
   - **Note:** The screws will not spin out due to having a locking patch
   - DynoGrip 52 with loosened screws will allow 2mm material of width variation
   - DynoGrip 96 with loosened screws will allow 3mm material of width variation
   - **Caution:** Damage can occur to the center jaw if the screws are not loosened
   - Keeping the screws and washers in place helps keep the slots free of chips



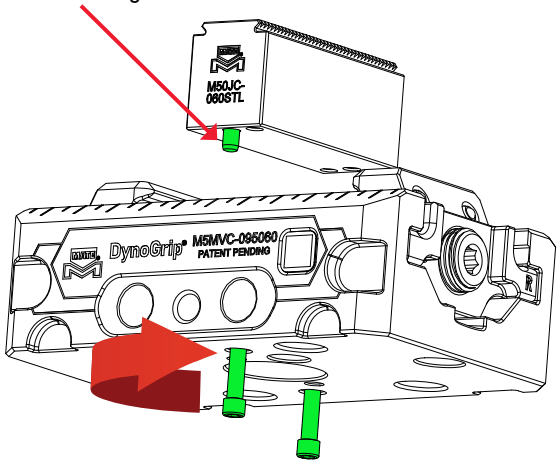
Slots allow movement to accommodate variation in material width

CENTER JAW ATTACHMENT TO VISE BODY

1. Remove the screws from the bottom of the center jaw
2. Place the center jaw onto the vise orienting the locating pins (see below)
3. Install the bottom center jaw screws clockwise as shown
   - 3mm hex for DynoGrip 52 and 4mm for DynoGrip 96
   - These are special reduced head screws
   - SHC00041 for DynoGrip 52 vises and SHC00040 for DynoGrip 96 vises
4. Torque with T-handle wrench or torque wrench set to:
   - Dynogrip 52: 4.5 Nm (40 in-lb)
   - Dynogrip 96: 9.7 Nm (86 in-lb)
5. Review symmetric part loading section for correct part locating



Jaw Locating Pins



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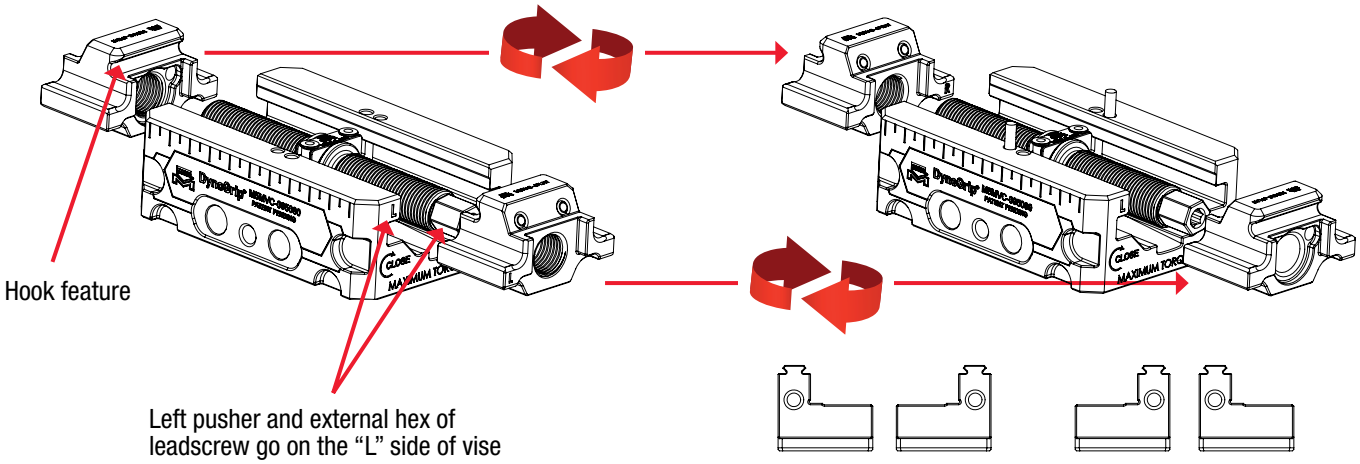
DYNOGRIP™ SELF-CENTERING VISE
INSTRUCTIONS

REVERSE FORCE CLAMPING SETUP

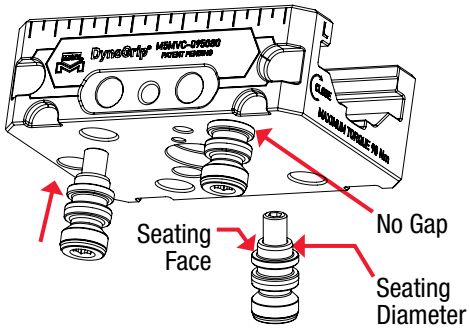
To switch from inward clamping to reverse force clamping:

1. Remove the pushers from the leadscrew
2. Keeping each pusher on the end it was removed from, rotate each pusher so that the top hook feature faces away from the vise center
3. Thread the pushers simultaneously back onto the leadscrew
4. Install the jaws in desired orientation
5. Center the jaws per the vise calibration procedure on page 6

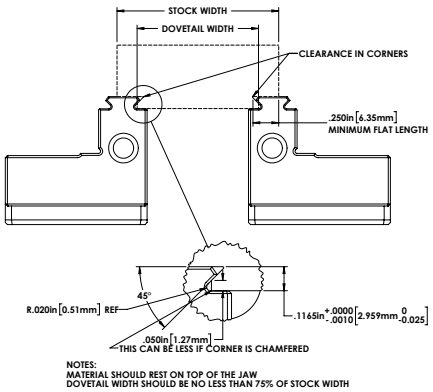


DYNOGRIP 52/96 PULL STUD INSTALLATION:

1. Oil the pull stud seating diameter with light machine oil
2. Hand tighten each pull stud clockwise until seating face is close to vise surface
3. Tighten each pull stud with hex wrench until seating face is flush with vise surface
   - 6mm hex for DynoGrip 52
   - 8mm hex for DynoGrip 96
     - Verify that no gap is visible
4. Secure the pull stud an additional 1/8 of a turn but DO NOT exceed torque specifications:
   - 30 Nm/22 ft-lb on DynoGrip 52
   - 50 Nm/37 ft-lb on DynoGrip 96



DOVETAIL PREPARATION:

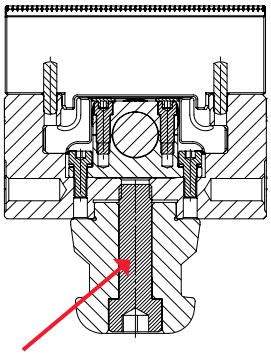


DYNOGRIP™ SELF-CENTERING VISE
INSTRUCTIONS

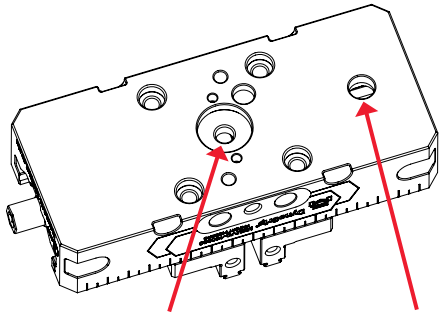
DYNOGRIP 96 ARE COMPATIBLE WITH SCHUNK VERO-S SYSTEMS

96 Family / Size	Part Number	Center ZPS Hole	Hole Location for ZPS/ NSE Orientation Pin	Two Additional ZPS Holes at 100mm From Center	Compatible
96 155 080 with Chamfer	M9MVC-155080	Yes	66mm		Yes
96 205 080 with Chamfer	M9MVC-205080	Yes	66mm		Yes
96 155 125	M9MVC-155125	Yes	66mm		Yes
96 205 125	M9MVC-205125	Yes	66mm		Yes
96 255 125	M9MVC-255125	Yes	66mm	Yes	Yes
96 305 125	M9MVC-305125	Yes	66mm	Yes	Yes
96 355 125	M9MVC-355125	Yes	66mm	Yes	Yes

96 Family



Socket Head Cap Screws
DYNOGRIP-96:
M10x1.5 x 40mm long

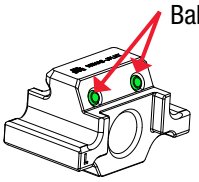


All 96 vises have a center ZPS hole:
ø25 H6 hole with M10x1.5-6H fits Schunk:
- SPA 40
- SPB 40

ø12 H7 Hole for
M00AC-PN-01
Orientation Pin:

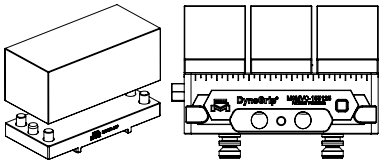
MORE INFORMATION:

See DynoGrip Vise Service Kit Instructions — LIT01470
- For BPL0007 ball plunger replacement on vise pushers



Vise Service Kit

See DynoGrip Jaw Kit Instructions — LIT01474
- For machinable jaw setup, use and installation
- 3-jaw machinable jaw setups and cautions



Jaw Kit

See Workholding Catalog — LIT01473
- For complete access to all of Mate's Workholding products, simply scan the code at right with your mobile device.

Catalog

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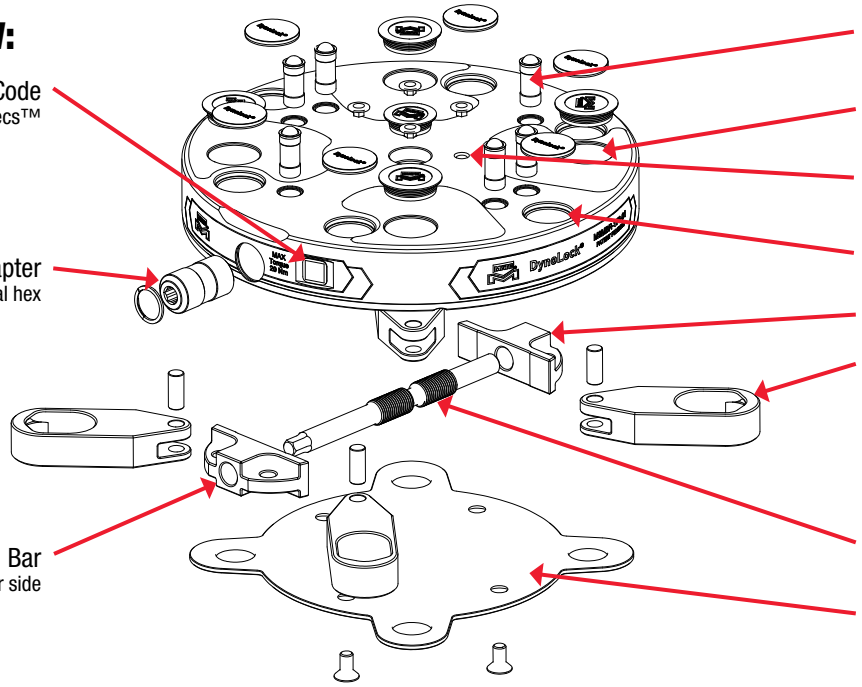
DYNOLOCK™ BASE
INSTRUCTIONS

DYNOLOCK™ BASES

DYNOLOCK BASE OVERVIEW
- Mate's DynoLock quick change base system is the foundation of your workholding and the key to superior productivity.
- DynoLock bases mount to the machine bed, tombstone, pyramid, riser or dual right angle.
- Offering best-in-class accuracy and repeatability, DynoLock maintains a superior holding force with the top tool.
- Whether you change the same vise repeatedly or exchange it for a different one, DynoLock holds secure.
- Mate DynoLock bases reduce your machine setup times and keeps you in the cut.

PRODUCT HIGHLIGHTS:
- Best-in-class accuracy - engaging top tool on center to ±0.013mm (±0.0005")
- Best-in-class repeatability - engagement of top tool to same location 0.002mm (0.00008")
- Best in-class holding force - secure hold of top tool. Force required to separate top tool 0.013mm from base is greater than 21 kN (Move 0.0005" is greater than 4800lbf)
- Pull studs are firmly secured and held by a collar which has superior holding functionality
- Zero point quality engagement as all four pull studs are drawn to the base center for superior accuracy
- Available in 11 size variations
- Poka-Yoke feature
- Patents Pending
- Made in USA

VISE OVERVIEW:



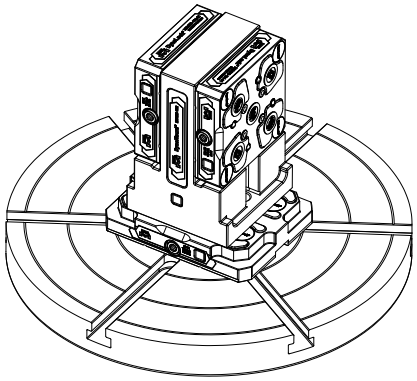
POKA-YOKE ALIGNMENT FEATURE
- The Poka-Yoke alignment feature on DynoLock bases can be used to ensure correct orientation of a DynoGrip vise
- An M5 x 6mm socket head cap screw* can be installed in one of 4 locations on the base depending on desired vise orientation
- The DynoGrip vise has one pocket hole which allows the vise to seat fully onto the base only if oriented correctly
- Prevents costly error from machining a part fixtured incorrectly

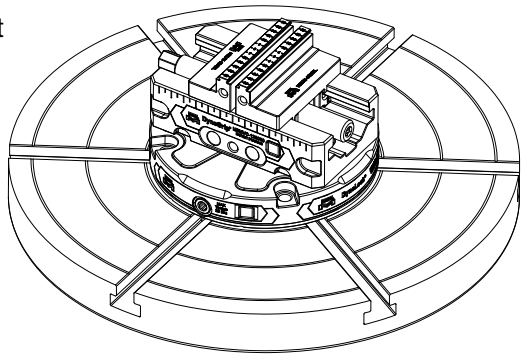
*Order P/N SHC11957 - SOCKET HEAD CAP SCREW M5x.8 X 6 DIN 912-12.9, or similar M5 x 6mm cap screw

DYNOLOCK™ BASE
INSTRUCTIONS

BASIC OPERATION

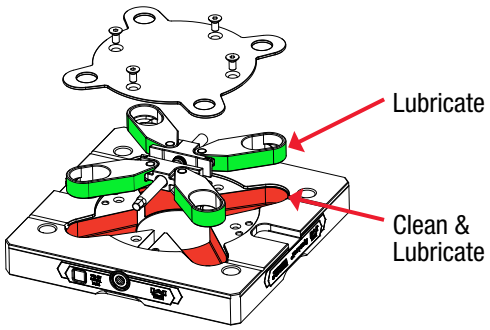
1. Clean machine table
   - Remove any metal bits, chips, or machining swarf
2. Begin with a clean base assembly
   - Remove any metal bits, chips or machining swarf
3. Attach base to machine table with appropriate fasteners
     - M10 socket head cap screws are typically used
     - M12 screws will fit in most bases — see specific base specifications
   - If keying locates base adequately, then tighten fasteners securely
   - If base needs a precise positioning:
     - Loosely tighten fasteners enough to allow movement of base
     - Indicate position with probing, move base, repeat until position is correct
     - Tighten fasteners securely and re-check position
4. Prepare base for vise installation
   - The base should always be in the fully open position when a vise is not installed.
     - DO NOT close base without a vise or top tool present
   - Verify that the base is fully open by turning the socket adapter with a 6mm hex key counter-clockwise until the hex key stops
     - DO NOT over rotate - damage may occur
5. Align vise pull studs with pull stud pockets on base and seat squarely
   - Pull studs should easily fit into the pull stud pockets. If not, ensure that the base is in the fully open position and there are no obstructions.
   - Lifters will hold vise approximately 2mm above base pads
   - DO NOT use a hammer or mallet to seat vise
6. Turn socket adapter clockwise with a 6mm hex key
   - Top tool will seat securely to base
   - DO NOT tighten beyond MAX Torque — 20 Nm
7. The assembly ready for use.





MAINTENANCE AND CLEANING

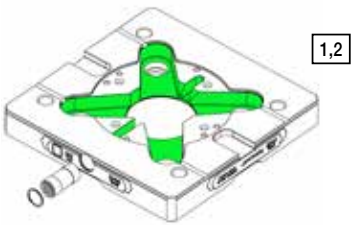
- Avoid unnecessary contact or immersion in water or water-based coolant
  Note: Machine coolant has some inherent lubrication properties and is often used as a substitute for grease. If using water soluble coolant, maintain coolant concentration to the minimum recommendation from the manufacturer to inhibit corrosion and pitting.
- Blow off top of base with air when vise or workpiece is changed
- Install plugs and caps when base is not in use
- When the base is in use, keep the caps in place on the unused holes unless they interfere with the vise.
- If base is to be stored long-term, spray or wipe with a rust inhibitor such as Acekote or Zerust
  - If the base is exposed to large amounts of machining, grinding particles or clamping operation becomes difficult, then refer to the Dynolock assembly instructions.
  - When base is reassembled:
    - Apply grease to any sliding or contact surfaces of the clamping mechanism
    - Use NLGI Grade 2 Li-based grease with MoS2 (MobilGrease XHP 322 Mine or similar)

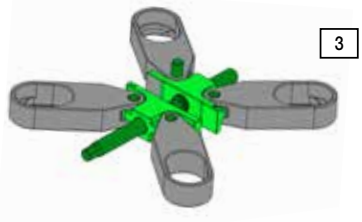


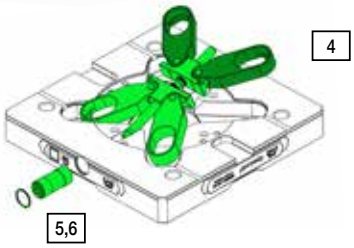
DYNOLOCK™ BASE
INSTRUCTIONS

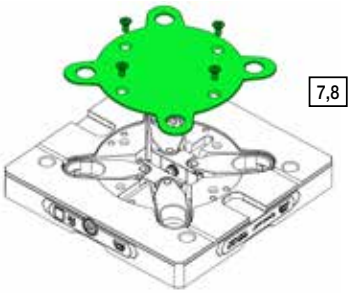
DYNOLOCK ASSEMBLY INSTRUCTIONS

1. Starting with an opened, clean base with internal parts removed
   a. Remove any metal bits, chips, or machining swarf and clean interior surfaces
   b. Set base on table open end up (upside down)
2. Lightly grease inside surfaces where moving parts will be installed
   a. Use NLGI Grade 2 Li-based grease with MoS2 (such as Mobil XHP 322 Mine or similar)
   b. Apply grease to the inside flat surface of base body where moving parts will contact
3. Arrange yokes, pull bars and lead screw sub-assembly above the base opening with wedges up
   a. If starting with complete sub-assembly from service kits M5MAC-BS or M9MAC-BS and corresponding the socket adapter, remove any tape or packaging and install (See step 4 below)
   b. If starting with separate parts:
      i. Thoroughly apply grease to lead screw threads
      ii. Thread left pull bar onto hex end of lead screw making one full rotation
      iii. Thread right pull bar onto other end of lead screw making one full rotation
      iv. Orient pull bars with letters “R” and “L” are up or are visible
      v. Hold pull bars and lead screw assembly in your hand and turn the hex end until the pull bars come together and center fully on lead screw
      vi. Arrange yokes (4) with internal gripping wedge at the bottom
         – Grease gap in yokes where the pull bars will contact
      vii. Assemble the yokes on to the pull bars
      viii. Insert drive pins into the yokes and the pull bars
         – Grease drive pins
4. Carefully set yokes, pull bars and lead screw sub-assembly into base
   a. With hex end of lead screw toward socket adapter opening put hex end in first and then the whole sub-assembly will swing down into place
5. Install socket adapter
   a. Stepped end, with smaller diameter, should be toward outside of base body
      – Grease socket adapter on the outside and in the inner hex
6. Install retaining ring
   a. Wind 2-layer retaining ring into place starting with one end
7. Replace cover
   a. Lightly grease inside of cover
8. Torque screws to 6,5 Nm or 60 in-lb.



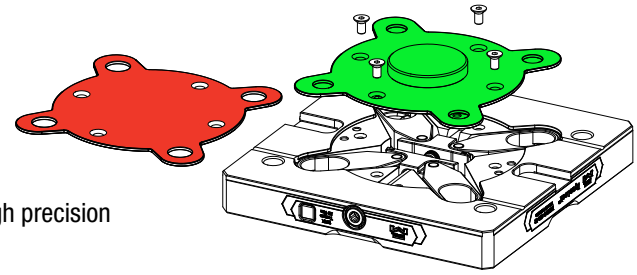






CENTERING BOTTOM COVER INSTALLATION AND USE

1. Set base on table to expose cover (upside down)
2. Remove bottom cover (shown in red)
3. Install centering bottom cover (shown in green)
4. Centering spud should be clearance-fit to machine socket
   • Additional positioning (probe indicating, etc.) may be needed for high precision



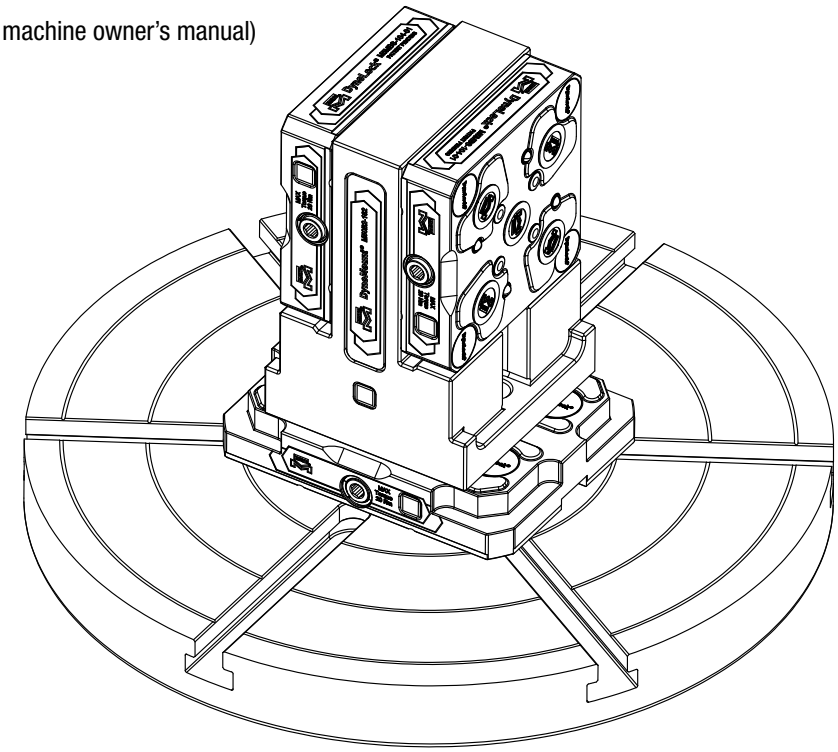
DYNOMOUNT™ MOUNT
INSTRUCTIONS

DYNOMOUNT™ MOUNTS

DYNOMOUNT OVERVIEW
Mate DynoMount mounts come ready to securely accept Mate DynoLock precision bases. DynoMount mounts are engineered to shorten setup time and reduce process variability. A closer look shows just how much thought went into designing and building the ultimate workholding mounts.

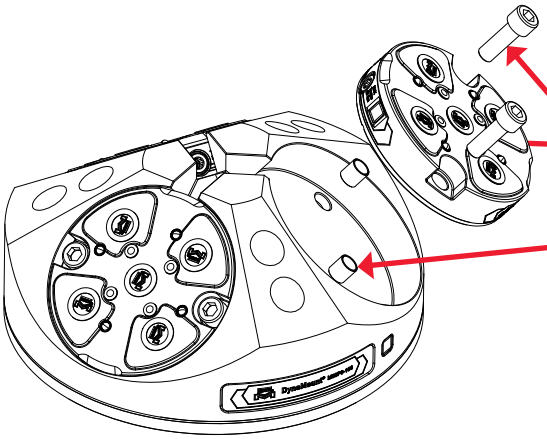
PRODUCT HIGHLIGHTS
- Quick change, modular design in a 52/96 zero point quality engagement design
- Available in 52mm or 96mm four post pull stud pattern
- 96 mounts include optional direct mount to the machine bed
- Modular design allows for machining flexibility
- Increases productivity by reducing work piece distance from tools
- Reduces setup time
- Increases running time
- Facilitates production automation
- Increases speed
- Available in a wide variety of configuration to meet your needs
- Made in USA

MOUNTING OPTIONS
- Mount DynoMount on to DynoLock base
- Mount DynoMount directly on machine bed (Consult machine owner's manual)



DYNOMOUNT™ MOUNT
INSTRUCTIONS

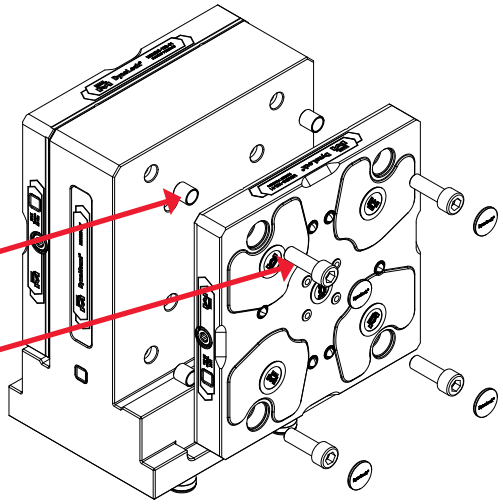
DYNOMOUNT OVERVIEW:



2x Socket Head Cap Screw
M10x1.50 X 30 Din 912-12.9

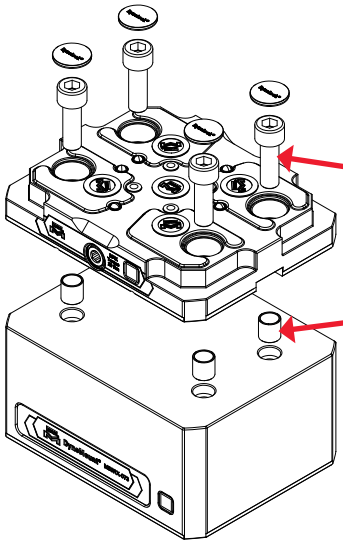
DynoMount Precision Bushing
2, 4 or 6 bushings per mount

4x Socket Head Cap Screw
M10x1.50 X 30 Din 912-12.9



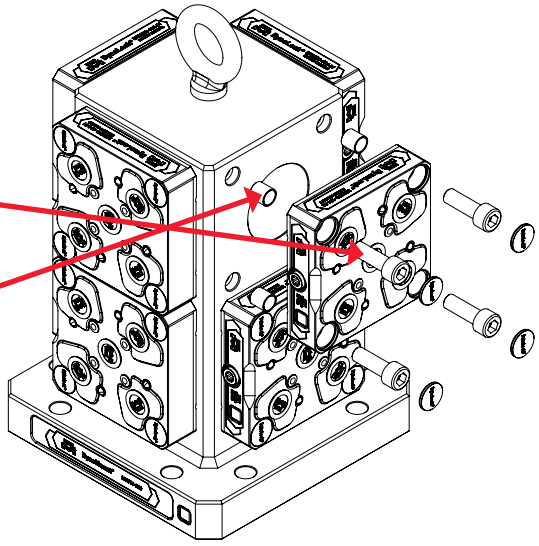
52/96 PYRAMID MOUNTS

52/96 DUAL RIGHT ANGLE MOUNTS



4x Socket Head Cap Screw
M10x1.50 X 30 Din 912-12.9

4x DynoMount Precision Bushing



52/96 RISER MOUNTS
33mm or 73mm height riser assembled with
27mm base = 50mm or 100mm height

52/96 TOMBSTONE MOUNTS
3 or 4 sided

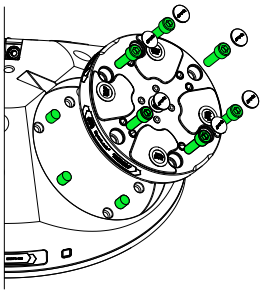
Bushing and Bolt Kits:

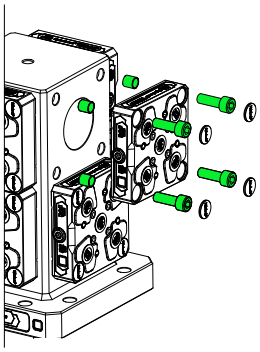
M00AC-BU	DynoMount 4-piece precision bushing and bolt kit
M00AC-BU-01	DynoMount 24-piece precision bushing and bolt kit for 3-sided tombstone 260mm height with DynoLock-52 bases
M00AC-BU-02	DynoMount 32-piece precision bushing and bolt kit for 4-sided tombstone 260mm height with DynoLock-52 bases
M00AC-BU-03	DynoMount 48-piece precision bushing and bolt kit for 4-sided tombstone 668mm height with DynoLock-96 bases
M00AC-BU-04	DynoMount 80-piece precision bushing and bolt kit for 4-sided tombstone 668mm height with DynoLock-52 bases

DYNOMOUNT™ MOUNT
INSTRUCTIONS

BASE INSTALLATION IN TOMBSTONES, PYRAMIDS AND DUAL RIGHT ANGLES

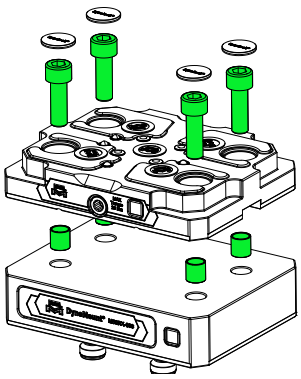
1. Start with clean base assemblies
   - Any metal bits, chips, or machining swarf removed
2. Install bushings into precision bores in tombstones or pyramid
   - Use included bushing kit except with tombstones (bushing kits sold separately - see page 14)
   - See page 16 for bushing installation procedure
3. Set bases onto bushings
   - Be sure bases are oriented to allow access to base actuator (6mm hex socket)
4. Tighten fasteners securely





BASE INSTALLATION IN RISERS

1. Start with clean base assemblies
   - Any metal bits, chips, or machining swarf removed
2. Install bushings into precision bores in riser
   - Use bushing kit – M00AC-BU – set of 4 - 12mm OD bushings
   - See page 14 and 16 for bushing installation procedure
3. Set base onto bushings — cap screws may help alignment
4. Tighten fasteners securely



DYNOMOUNT™ MAINTENANCE OVERVIEW

Mate DynoMount mounts are engineered to shorten setup time and reduce process variability. For optimal operation it is important to establish a proper regular maintenance schedule and follow usage guidelines.

LUBRICATION/MAINTENANCE SCHEDULE

UNBOXING:

All Mate DynoMount products are coated with a corrosion inhibitor.

DAILY:

Clean mount of visible chips and debris.

MONTHLY:

Clean and re-grease surfaces and pull studs regularly for optimal performance and reduced wear.

- Mate Recommends MobileGrease XHP 322 grease which offers least wear and highest output force
- Apply a thin coat of grease on all sliding contact surfaces

Note: Machine coolant generally has some lubrication element and is often used as a substitute for grease. But note that faster wear may occur when compared to grease and its superior lubricating elements.

STORAGE:

Clean all chips and debris from mount — Follow monthly maintenance procedure. Coat entire mount with rust inhibitor.

DYNOMOUNT™ MOUNT
INSTRUCTIONS

FIRST USE & BASIC OPERATION

Mate DynoMount mounts comes ready with everything needed to securely accept Mate DynoLock precision bases.

FIRST USE:

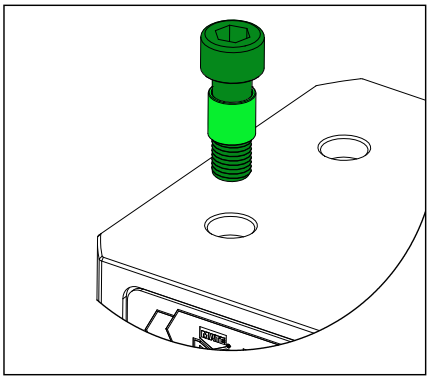
Precision Bushing Installation.

For Tombstone, Pyramid and Dual Right Angle mounts

1. Slide precision bushings into counter-bored threaded holes
2. Bushings are a slide fit for easy installation and removal
3. Place DynoLock base over installed bushings
4. Insert M10 socket head cap screw
5. Tighten M10 socket head cap screw with M8 hex wrench clockwise until tight
   - Torque M10 socket head cap screw to 87 Nm or 64 ft-lb

For Riser mounts only

1. Combine precision bushings with M10 socket head cap screw (see figure at right)
2. Bushings are a press fit for better accuracy
3. Insert into appropriate counter-bored threaded holes
4. Turn clockwise with hand held hex wrench to seat the bushing in to the DynoMount body
5. Stop when bushing and M10 socket head cap screw reach a positive stop
   - CAUTION: DO NOT over-tighten
6. Repeat in all four holes — all bushings are now installed
7. Remove M10 socket head cap screw and set aside
8. Position appropriate DynoLock base over bushings, seat and then re-insert cap screws
9. Tighten M10 socket head cap screw with M8 hex wrench clockwise until tight
   - Torque M10 socket head cap screw to 87 Nm or 64 ft-lb



For Risers Only

The bushing has a light press to allow for better accuracy. The bushing is not removable after installation.

BASIC OPERATION:

1. Clean machine table and/or base
   - Remove any metal bits, chips, or machining swarf
2. Begin with a clean DynoMount assembly
   - Remove any metal bits, chips, or machining swarf
3. Set the DynoMount (Tombstone, Pyramid, Riser, or Dual Right Angle) mount on to the machine table or to the appropriate 52/96 family base that is mounted to the machine table
4. Attach DynoMount to machine table or base with appropriate mounting method
   - All DynoMount mounts come pre-installed with pull studs except M90T4-668 (DynoMount 96 family) Tombstones
   - See your machine operation manual for specifications to install M90T4-668 (DynoMount 96 family) Tombstones
5. DynoMount is ready to accept a base installation
   - Clean and lightly oil contact surfaces for optimum operation
   - Remove M10 socket head cap screw if not removed and set aside
   - Align base counter bored mounting locations with bushings
   - Insert M10 socket head cap screw and turn clockwise with M8 hex wrench until tight
   - Torque cap screws to 87 Nm or 64 ft-lb

QUICKSPECS™
FEATURES & INSTRUCTIONS

USING QUICKSPECS™

The Mate 52/96 zero point workholding system includes QuickSpecs™, a unique product identification system that provides real-time access to product information and potential integration into your business systems.

Simply use your smart phone and scan the 2D bar code on the side of the product. You will have access to all information about the product — including CAD files, full product instructions and more — all related to the specific serial number of the item.

Click the Link adjacent to the “Email Link” and use your phone to email a link to yourself. When you receive the email on your desktop computer, you will see a link to the on-line repository for the CAD models.

MATE WORKHOLDING

MAINTENANCE LOG

MAINTENANCE LOG

DATE	MAINTENANCE PERFORMED

MATE WORKHOLDING

MAINTENANCE LOG

MAINTENANCE LOG

DATE	MAINTENANCE PERFORMED

Dimensions in Inches(millimeters) mate.com

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MATE®

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MATE PRECISION TECHNOLOGIES GLOBAL COVERAGE

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