



Pilot™ Turret Calibration System

FOR THICK TURRET PUNCH PRESSES

Superior piece part quality, extended machine life and longer tool life is achieved when the upper and lower turrets of a punch press are precisely aligned. New turrets are aligned by the factory technicians and are verified during installation. Over time, used turrets often require some realignment.

The Mate Pilot™ Turret Calibration System is the most accurate system available today for ensuring precision concentric and angular alignment of your punch press turret.

THE MATE PILOT TURRET CALIBRATION SYSTEM OPERATES IN TWO MODES.

Verification Mode – Used to confirm the precise concentric and angular alignment of your turret to maintain high quality piece parts, extend machine life, improve tool life and increase productivity.

Alignment Mode – Used to restore the concentric and angular alignment of each station with the same or better precision as the initial machine installation. Achieving precise alignment improves piece part quality, extends machine life, extends tool life and increases productivity.

The Mate Pilot™ Turret Calibration System is simply the best system available.

ACCURATE:

Each calibration instrument is machined from a single piece of high quality tool steel. The upper and lower halves are separated near the end of the production process, just prior to installation of the hardware. This eliminates the possibility of cumulative tolerances adversely affecting the accuracy of the finished instrument.

SIMPLE TO USE:

Install the two halves of the calibration instrument into the turret station to be aligned. Use the adjustment handle to draw the two halves of the calibration instrument together.

The interlocking design of the interface between the two halves causes the loosened die holder to be drawn into concentric and angular alignment relative to the upper bore as the two halves of the calibration instrument engage.

The tri-color LED indicator light will glow green to confirm accurate concentric and angular alignment of the tool station.

COMPREHENSIVE:

The Mate Pilot Calibration system with the interlocking design and tri-color LED indicator lights is available to suit 1-1/4" B, 2" C, 3-1/2" D, and 4-1/2" E stations. The alignment tools for 1/2" A stations and Prima Power Multi-Tool stations use a twin dowel pin design. The Mate Pilot calibration system is also available in two packages to suit thick turret and Prima Power punch presses.



[Dimensions in Inches (mm)]

MATCHED SET:

The upper and lower calibration instruments are produced from the same piece of tool steel. The two halves are separated near the end of the production process. This ensures both items are precisely matched.



Interlocking Geometry:

The interlocking geometry of the interface between the two halves causes the loosened die holder assembly, to be drawn into concentric and angular alignment relative to the upper turret bore or tool holder as the two halves of the calibration instrument engage.



⊙ Concentricity

∠ Angularity

⊕ Position

INDICATOR LIGHT:

The Pilot Turret Calibration system is equipped with a tri-color LED indicator light to confirm when the two halves are fully engaged and the upper turret bore or tool holder and lower die holder are accurately aligned.

- Engaged, but not aligned
- Angularity and concentricity within 0.0012(0.030)
- adequate for most punching applications.
- Angularity and concentricity within 0.0003(0.008)
- recommended for 0.048(1.20) material thickness or less.



ADJUSTMENT HANDLE:

Includes knurled tensioning knob to prevent over tightening in verification mode, and T-bar for use in alignment mode.

RELEASE BUTTON:

Actuates the spring-loaded lock pawl which maintains separation of the upper and lower assemblies during turret rotation.

**A STATION-1/2" (12.70)**

- Two dowel pins on the upper assembly engage with two precision machined holes on the lower assembly for precise alignment.
- Integral lifter handle adds convenience.

B STATION-1-1/4" (31.70)

- Interlocking design of interface between two halves draws lower turret into concentric and angular alignment with upper turret.
- Tri-color LED indicator confirms when precise alignment is achieved.
- Integral adjustment handle adds convenience.
- Hardened and ground double-D shaped pin on lower assembly for precise engagement with keyway in lower turret.

**C STATION-2" (50.80)**

- Interlocking design of interface between two halves draws lower turret into concentric and angular alignment with upper turret.
- Tri-color LED indicator confirms when precise alignment is achieved.
- Precision ground keyways in upper and lower assemblies for precise engagement with alignment keys on turret.
- Integral adjustment handle adds convenience.

D STATION-3-1/2" (88.90)

- Interlocking design of interface between two halves draws lower turret into concentric and angular alignment with upper turret.
- Tri-color LED indicator confirms when precise alignment is achieved.
- Robust construction with hardened and ground surfaces for extended service life
- Integral adjustment handle adds convenience.



[Dimensions in Inches (mm)]

**E STATION – 4-1/2" (114.30)**

- Interlocking design of interface between two halves draws lower turret into concentric and angular alignment with upper turret.
- Tri-color LED indicator confirms when precise alignment is achieved.
- Integral adjustment handle adds convenience.

MULTI TOOL STATION (PRIMA POWER)

- Two pins on the upper assembly engage with two holes on the lower assembly for precise alignment.
- Precision ground surfaces ensure convenient and accurate installation into turret furniture.
- Integral lifter handle adds convenience.



COMPLETE MATE PILOT™ CALIBRATION SYSTEMS

Two complete Mate Pilot calibration systems are available to suit thick turret and Prima Power punch presses for added ordering convenience.

Station	Part Number	THICK TURRET	PRIMA POWER
		Package A: MATE00665	Package F: MATE00672
A Station 1/2" (12.70)	MATE00670	•	
B Station 1-1/4" (31.80)	MATE00666	•	•
C Station 2" (50.80)	MATE00667	•	•
D Station 3-1/2" (88.90)	MATE00668	•	•
E Station 4-1/2" (114.30)	MATE00669	•	
Multi-Tool Station	MATE00671		•
Accessory Kit	MATE00662	•	•

ACCESSORY KIT (MATE00662)

Operation of the Mate Pilot Calibration system requires the use of an accessory kit that is sold separately. The same kit can be used for each station.

ACCESSORY KIT COMPRISES:

Alignment Bar – precision ground bar mounted to the upper assembly. Used in conjunction with a dial-test-indicator (not included) to indicate the alignment of upper turret with the punch press frame.

Adjustment Bar – used in conjunction with the Alignment Bar to adjust the alignment of the upper turret.

[Dimensions in Inches (mm)]

LIT00365 Rev E PN 2020





MATE PRECISION TECHNOLOGIES GLOBAL COVERAGE

WORLDWIDE HEADQUARTERS:

1295 Lund Boulevard, Anoka, Minnesota 55303 USA
Tel +1.763.421.0230 mate.com

orders@mate.com