



EM69P OPTIONAL EQUIPMENT CATALOG



ORDERING PROCEDURE

Contact your regional Rottler sales rep for assistance in ordering optional equipment, replacement parts, or tooling.

If you are unable to contact your regional Rottler sales rep, call the factory at 253-872-7050 and ask to speak to the parts sales specialist.

Have the following information handy to expedite the ordering process:

1. Your name, business name, and contact number
2. Customer number
3. If you don't have a customer number, your billing address
4. Shipping address if different from billing address
5. Machine model and serial number
6. Part number and description of what you want to order
7. Preferred method of shipment

You may also contact us via e-mail with the above information. Send e-mail requests to:

parts@rottlermfg.com or intlparts@rottlermfg.com

In some cases you may be requested to send a photo of the part you are ordering if it is a replacement part, or doesn't appear in the database.

If you are unsure which part you need to order, contact our service department and ask to speak to one of our service consultants. They will assist you in determining which part you require.

THERE IS A MINIMUM ORDER OF \$25.00

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Optional Digitizing and Probing System

APD-PROBE4

Digitizing Software System with Renishaw Probe including selection of Stylus and Extenders - true 5 axis digitizing software reproduces sample ports with no need to manually "clean up" digitized data. Typical digitizing to machining a port is one to two hours per cylinder including intake, exhaust and combustion chamber. Dividing Line Blending feature allows for a programmable overlapping toolpath taper that compensates for any mechanical or thermal inaccuracies at the port dividing line for near seamless transitions.



Operator Training

The Rottler digitizing and porting software is extremely easy to learn and takes only a few days. Average operator requires 6 days of hands-on training by a factory technician after the machine has been installed in the customer shop. The customer receives training information by email after the order has been confirmed and the operator should study this information before the factory technician arrives for hands on training.

Training is charged at a daily rate and can be extended or reduced per day at customer request. The number of days at time of quote is an estimate of the average time required from previous experience.

After an order is placed, the training videos on www.RottlerTube.com must be studied before Rottler training technician travels to the machine for on site training. Operators must continue to view these training videos after training to keep up to date with operation of the control and up to date with the latest features.

Additional Support after installation and training is available via Internet and/or telephone, charges apply at hourly rate in 15 minute increments.

Factory Technician for Machine Installation & Digitizing and Porting Operator Training

The complete installation procedure is detailed in Chapter 2 of the Machine Manual available on Rottler website www.rottermfg.com. Customer must read and understand this procedure before technician departs for installation and training. Customer must provide concrete floor to specifications detailed in the installation section of the machine manual. Customer is responsible for unpacking and cleaning machine of rust preventative and have the machine in place on the supplied jacking bolts and leveling pads. If the machine requires anchor hold down system, it is the customer responsibility to have the anchor hold down system installed as specified in the installation section of the machine manual. Power and Air should be connected as specified in the machine manual. Anchor system, Power and Air must be completed before factory technician departs. Customer to provide suitable engine blocks/heads and any required lifting equipment including for the ATC unit during installation.

Factory Technician for Machine Installation and Operator Training is based on 8 hour work day.

TRAVEL

Travel Days includes Technician Time/Cost traveling to and from home and the customer location. This charge also includes airfare and incurred expenses. Please note that travel time is classified as working time and the technician is paid normal hourly rate while traveling to and from home and the customer location. The total number of travel days is determined by the location of the customer and the home of the technician. Please contact Rottler Service Department for exact number of travel days. When multiple machines are to be installed at same time, the total number of travel days will be reduced to one machine travel cost.

INSTALL

Days recommended for machine installation. If installation is completed in less time, training can start once installation is complete.

TRAINING

Recommend Number of Days for training on the basic touch screen control for engine machining work. Extra days may be required depending on optional equipment ordered with the machine and skill level of the operator. Total number of days will be determined at time of final quotation and order confirmation. If, at time of installation, additional training days are required, then the cost will be charged on a daily basis. If Rottler PATH is ordered together with the machine, Rottler PATH training will be required to be added to the machine order.

DAILY-ACCOM

Flat daily rate to include hotel accommodation, per-diem, transportation to and from hotel and job site, incidentals and insurance. This rate must equal the number of days the technician will be on the job site. *NOTE: If an install and training require the technician to be in the customer location over a weekend then 2 extra days should be added to this total to cover weekend hotel and food costs.*

If the customer requires that the technician leave the job site and return at a later date to continue training, extra TRAVEL days will be charged.

Rottler Path & 4C Software Options

RPATH-4C

Next Generation Toolpath Software powered by 4C allows users to quickly and easily produce CNC toolpath programs for producing custom parts and fixtures. Intuitive Conversational programming with no G-code knowledge necessary for 2+1 axis machining.

RPATH-4C-PRO

Next Generation Toolpath Software powered by 4C allows users to quickly and easily produce CNC toolpath programs for producing custom parts and fixtures. Intuitive Conversational programming with no G-code knowledge necessary for 3+2 axis machining. Features 3D CAD model import.

RPORT-MAX

Next Generation Porting Toolpath Software Powered by 4C. Allows for 5 axis machining applications such as porting. Features 3D CAD model import.

When Rottler Path is purchased together with a new machine, there are 2 versions of introductory training available:

1. One Day introductory software tutorial at place of machine installation during the installation process.
2. Three Day introductory training course at Rottler factory. Additional training on Rottler Path after the above training is provided through instructional videos at www.RottlerTube.com or by Internet and/or telephone support, hourly charges apply.

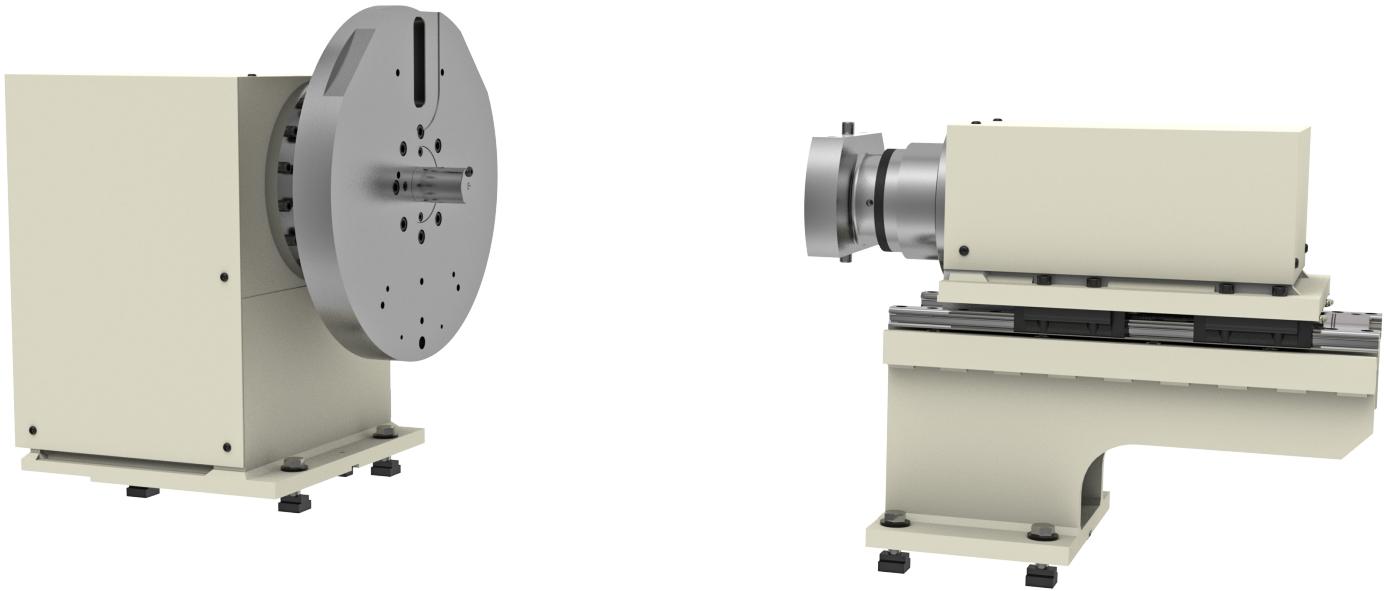
RPATH-RL-INTRO

One day introduction tutorial on Rottler PATH software at place of machine installation during the installation process. Customers must have purchased #RPATH Rottler Path Software package before undergoing this tutorial. Full details of costs and conditions is available from the Rottler Service Department.

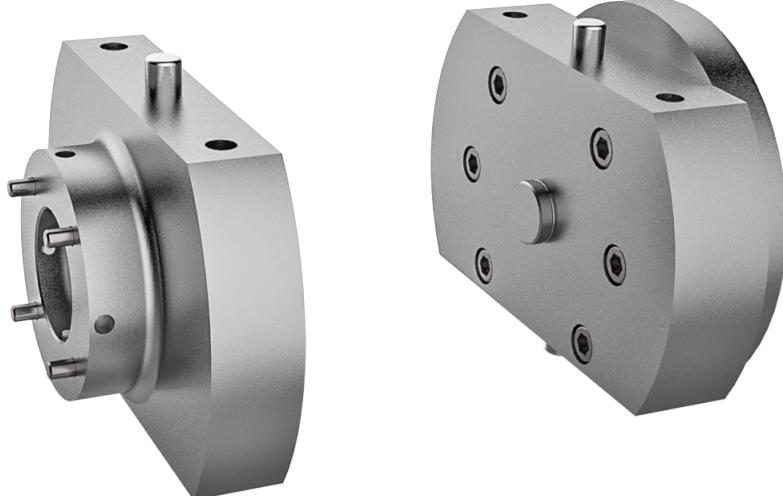
Contact Rottler Service for Software Upgrades Compatibility and Availability.

Optional 4th Axis Fixture for Cylinder Heads, Engine Blocks and Miscellaneous Parts**5537A Computer Controlled Automatic 4th Axis Roll Over**

Fixture for Cylinder Heads and Engine Blocks and various parts includes Software Package. Power Sliding Tail Stock on Linear Slideways for increased versatility and fast set up and change over. Requires mounting system adapter kits listed below. Maximum Cylinder Head Length 37" (940mm) overall/outside length.

**Mounting System Adapters Kit for Cylinder Heads****5537B Universal Cylinder Head Mounting System**

Required to mount head fixture plates in 5537A 4th axis roll over fixture. Universal System to mount Rottler fixture plates and semi-finished fixture plates for digitizing and porting a wide variety of cylinder heads from the smallest single cylinder to large inline cylinder heads. For setting up cylinder heads, fixture plates are required, listed below.



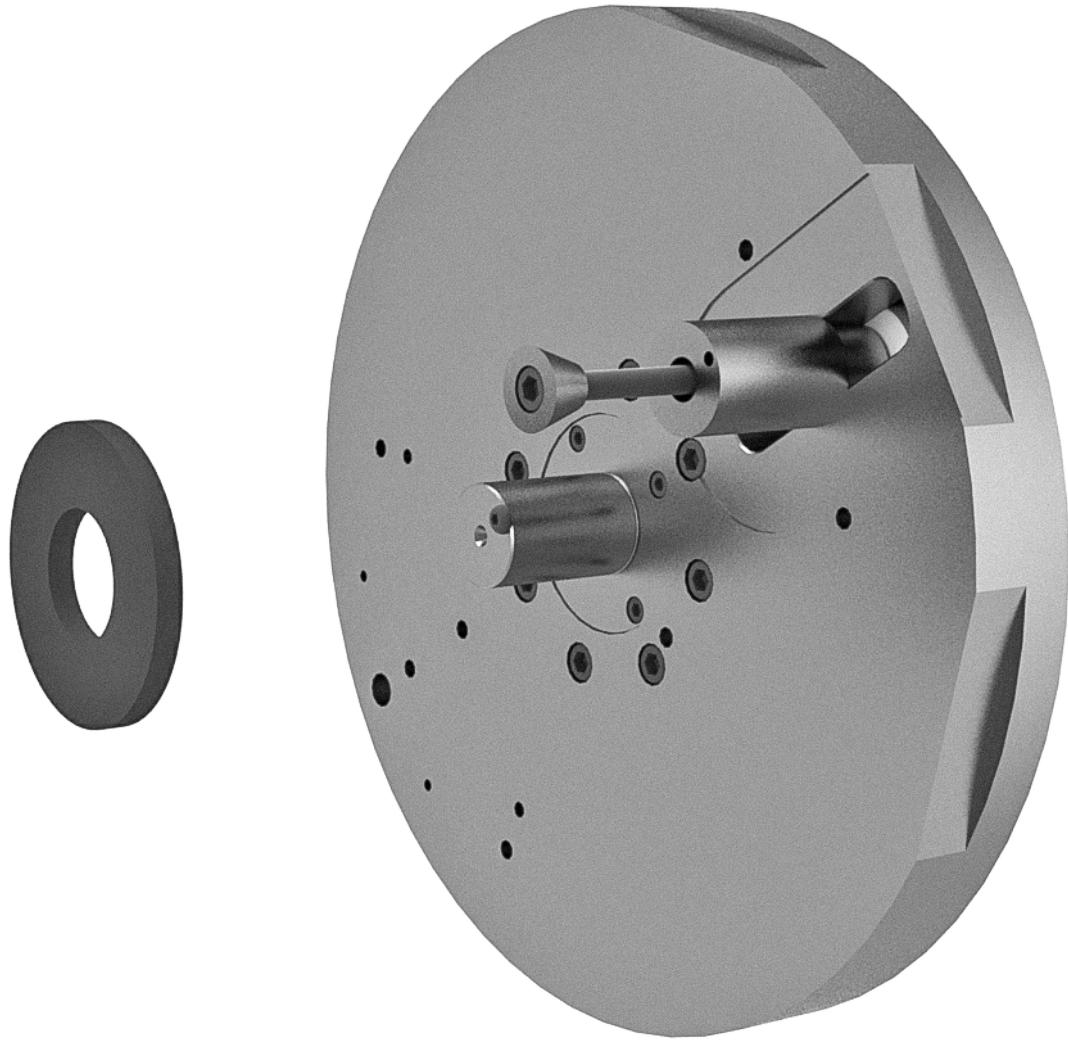
Mounting System Adapters Kit for Engine Blocks

5537C Universal Engine Block Mounting System

Required to set up Engine Blocks in 5537A 4th axis roll over fixture. Locate and hold a wide variety of Engine Blocks with reference to the block crankshaft centerline. V Blocks with Camshaft in the block require Main and Cam Locators, see Locator Catalog for listing of available locators. Overhead Camshaft Engines require Main Locators and 650-3-84 Overhead Camshaft Block Fixture Assembly.

Note: Power Sliding Tail Stock on Linear Slideways allows for Quick Mounting and change over of Engine Blocks and Rigid Support during Machining.

Note: Adjustable Camshaft Centerline Locating Device available to Set Up Camshaft Type V Blocks with Reference to the Centerline of the Camshaft.

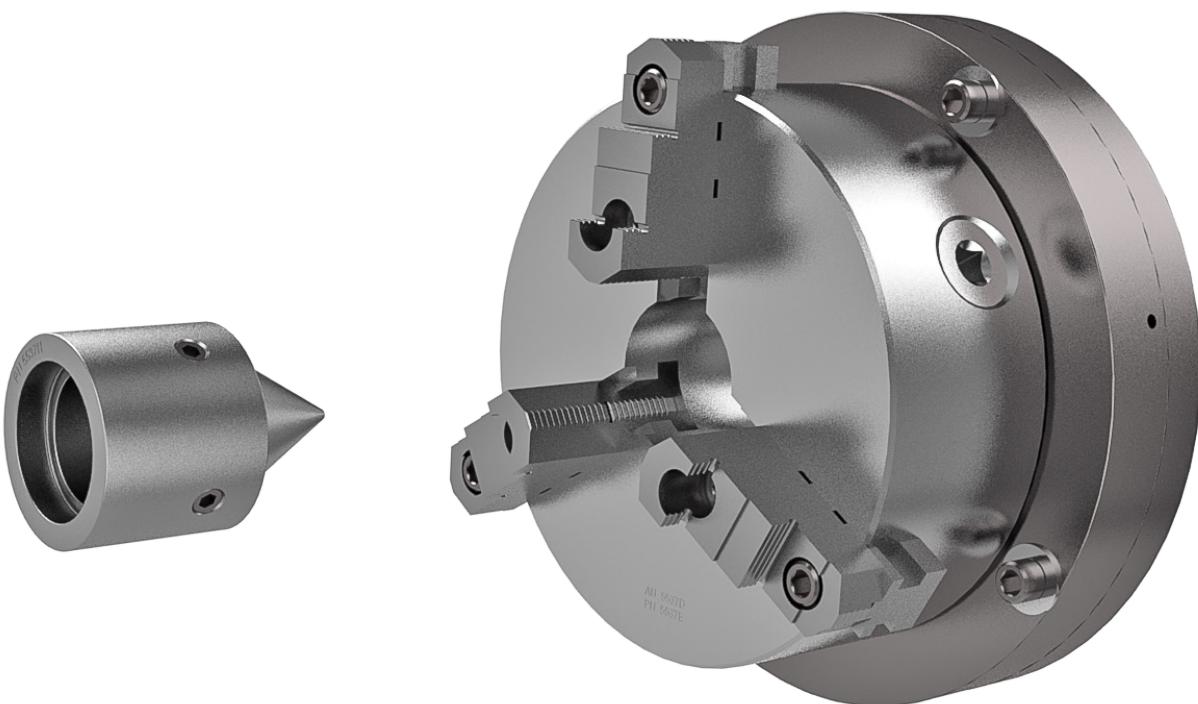


650-3-84 Overhead Camshaft Block Fixture for Overhead Cam Blocks

Requires 4th Axis Fixture 690-3-63 or 5537A with 5537C.

**Mounting System Adapter Kit for Rotating Parts such as Crankshaft and Propeller / Impeller****5537D Universal 3 Jaw Chuck and Center**

Universal chuck and tailstock center for fixturing and rotating round workpieces. Requires 5537A.

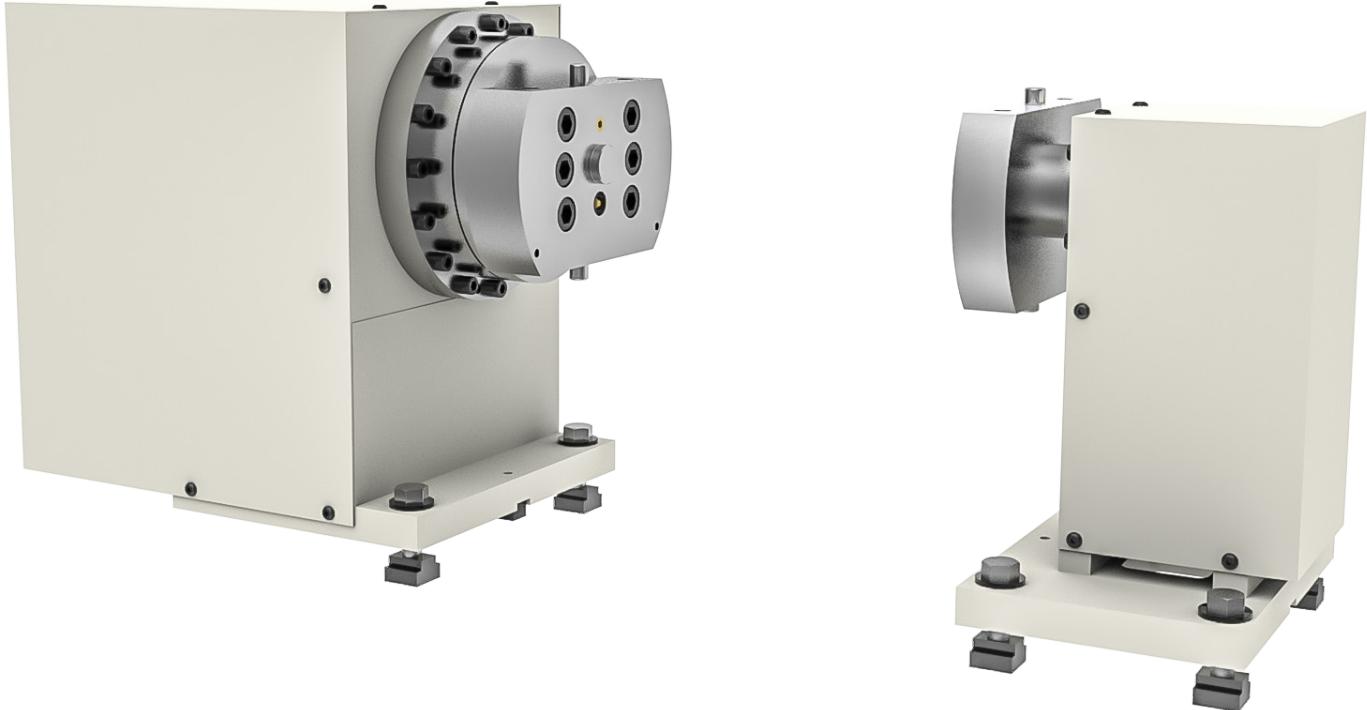


Optional 4th Axis Fixture for Cylinder Heads Only**5511 Computer Controlled Automatic 4th Axis Cylinder Head Fixture**

For digitizing and porting cylinder heads, porting fixture plates are required.

Note: Price includes factory install of 4th Axis Fixture when ordered together with new machine. Field retrofit will require additional service charges.

Note: Max head length 41.1" (1,044mm) outside/overall length.

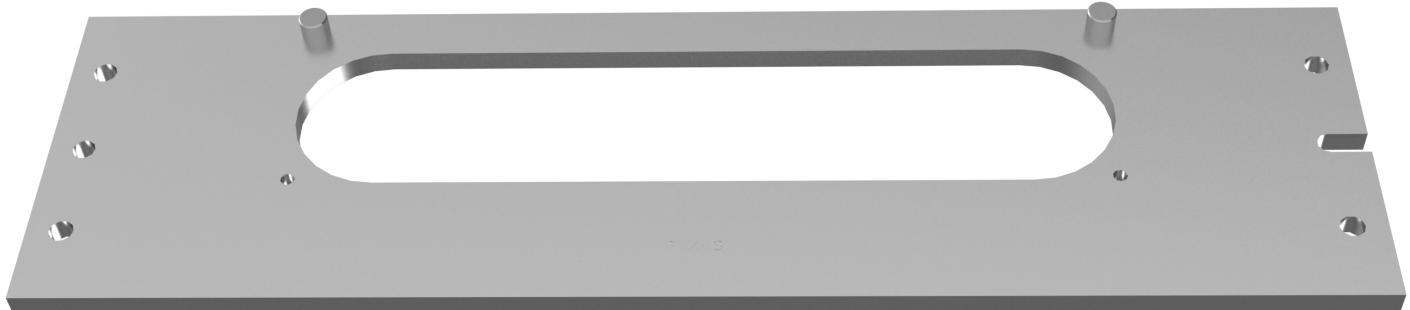
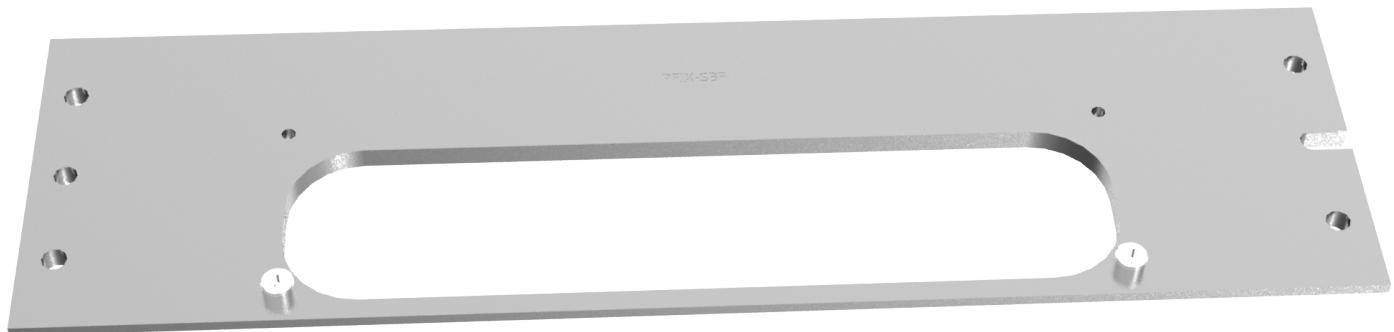
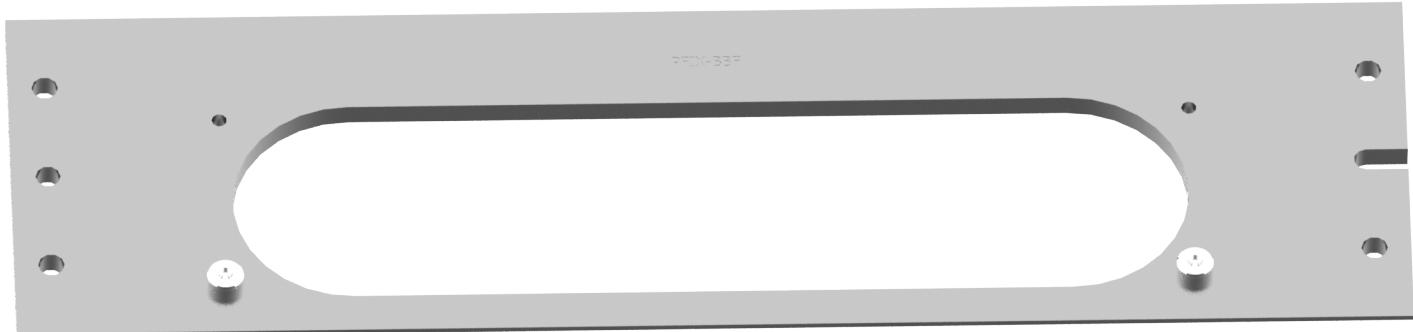


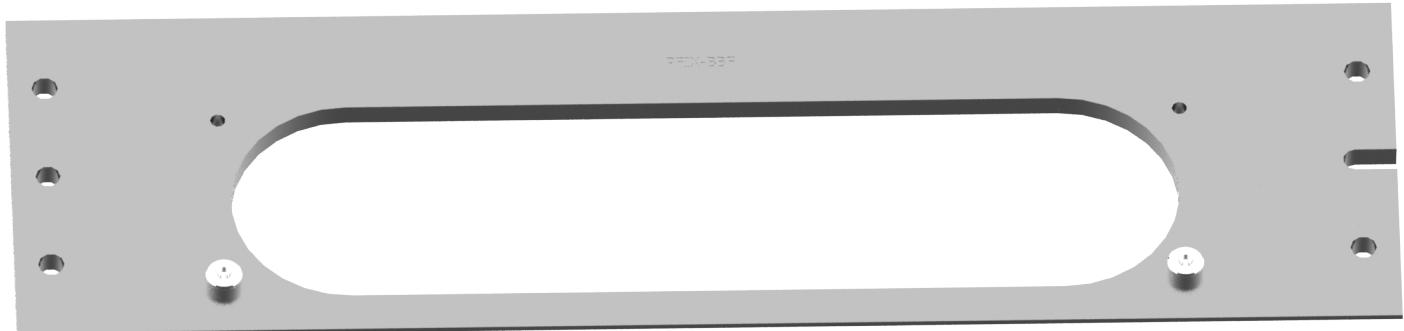
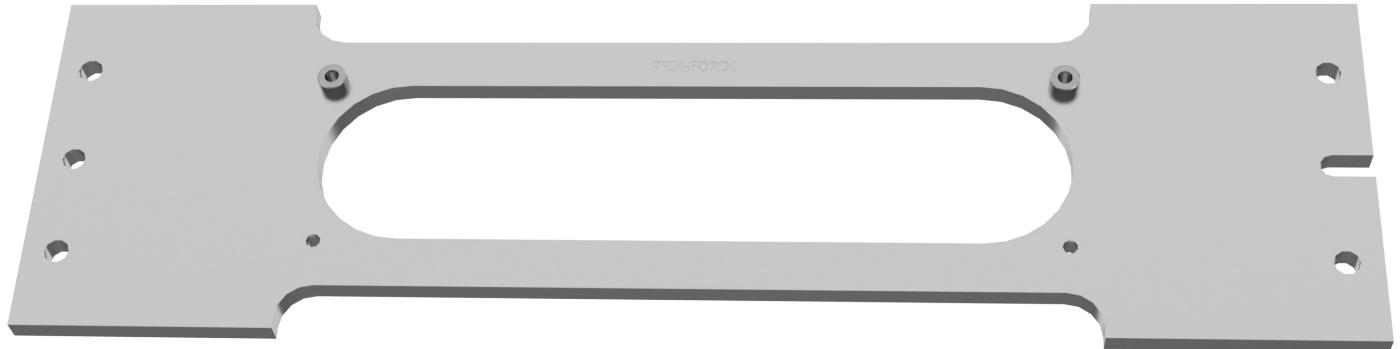
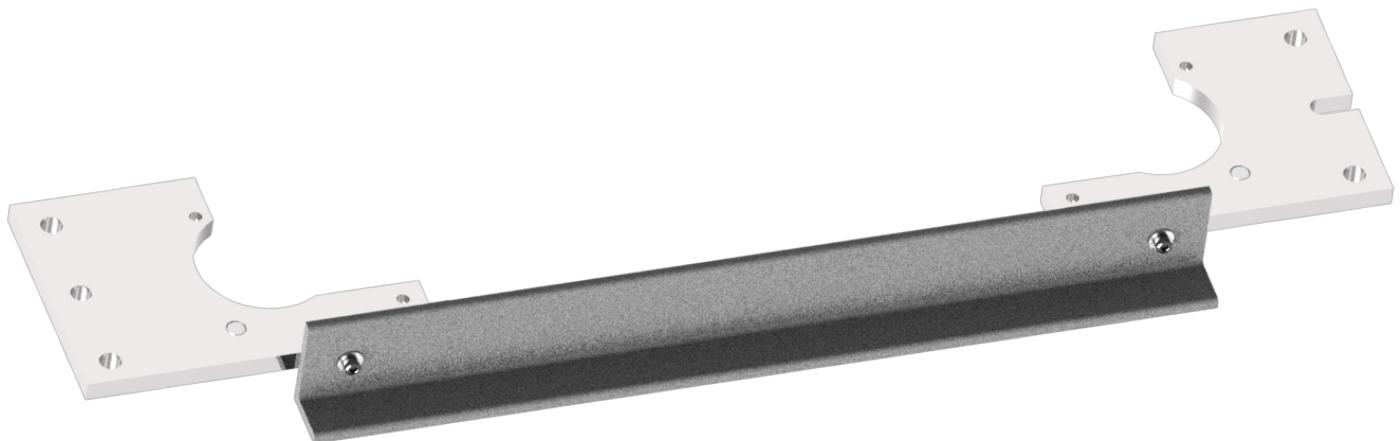
Cylinder Head Digitizing and Porting Fixture Plates

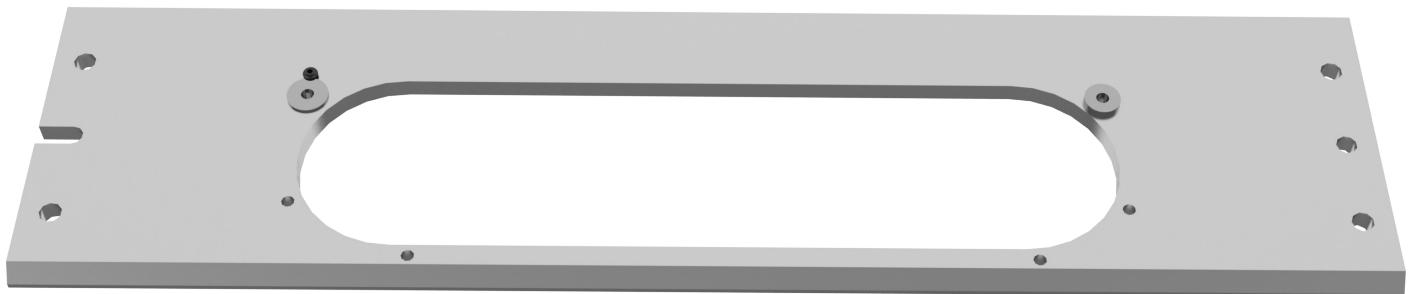
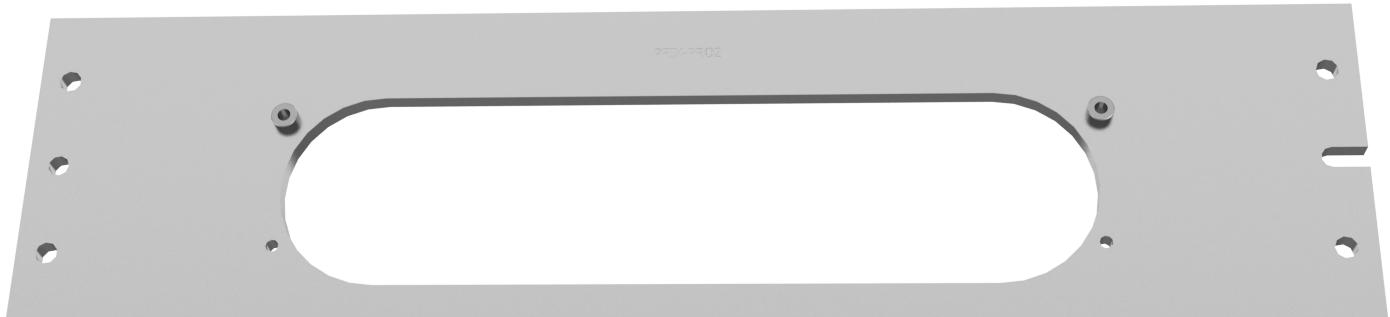
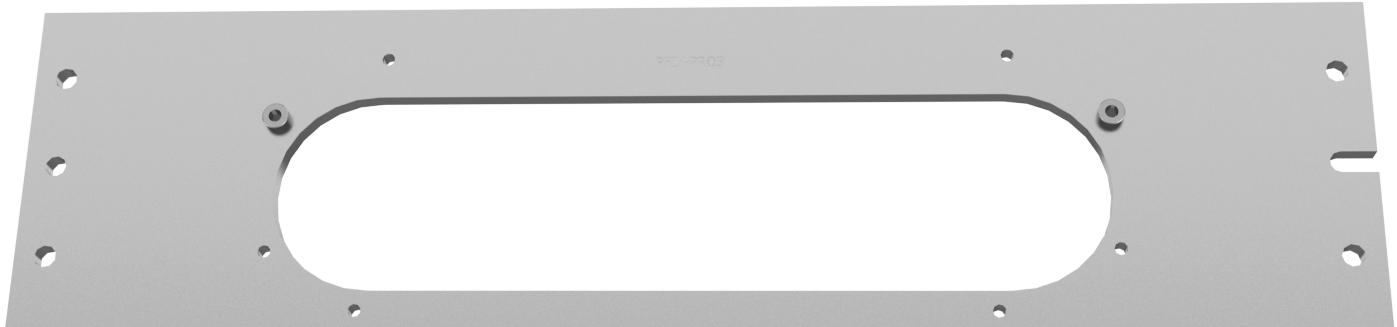
Fixtures not listed are made to order - require head, gasket or drawing

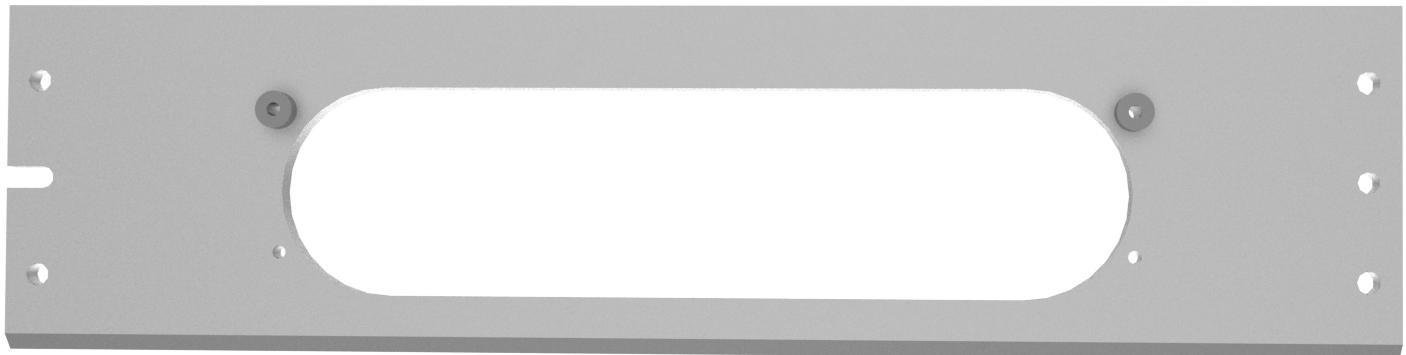
Following fixtures are stock items:

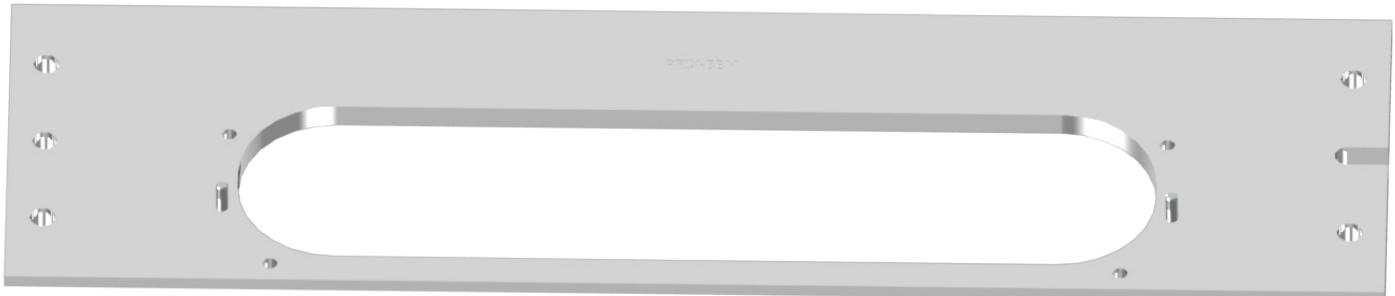
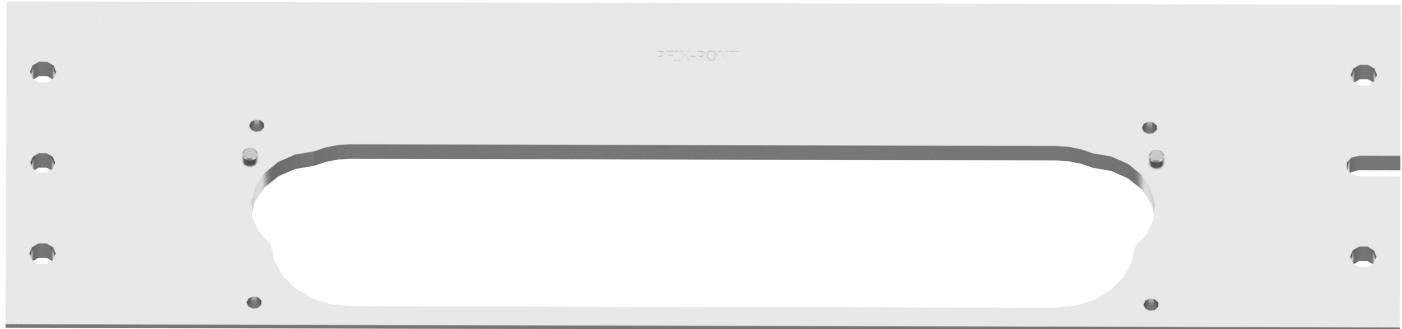
PFIX-SBC Porting Fixture Small Block Chevy**PFIX-BBC Porting Fixture Big Block Chevy**

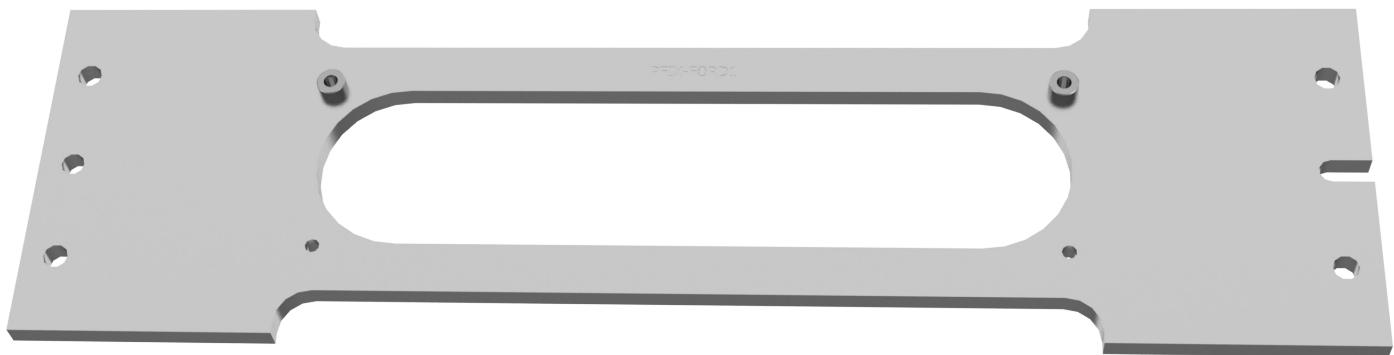
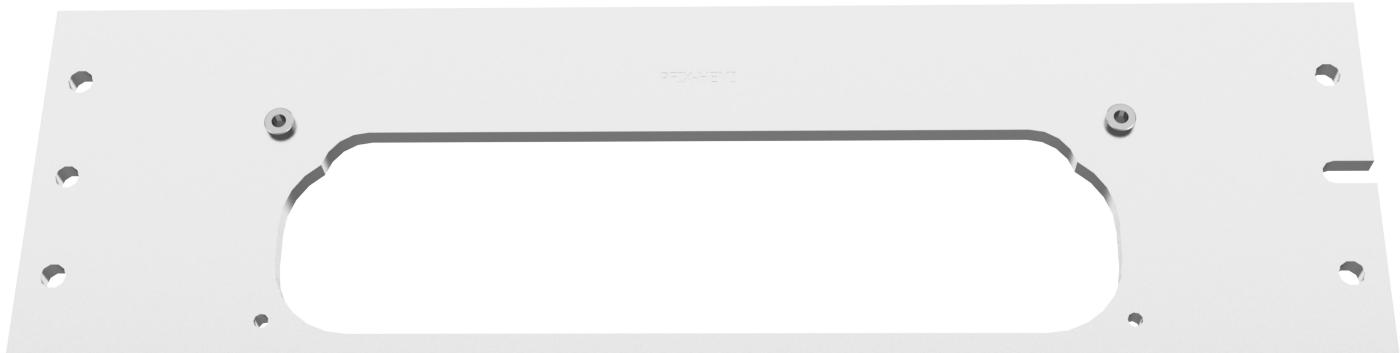
PFIX-LS1 Porting Fixture LS1 Chevrolet**PFIX-SBF Porting Fixture Small Block Ford (289, 302, 351C)****PFIX-BBF Porting Fixture Big Block Ford (429, 460)**

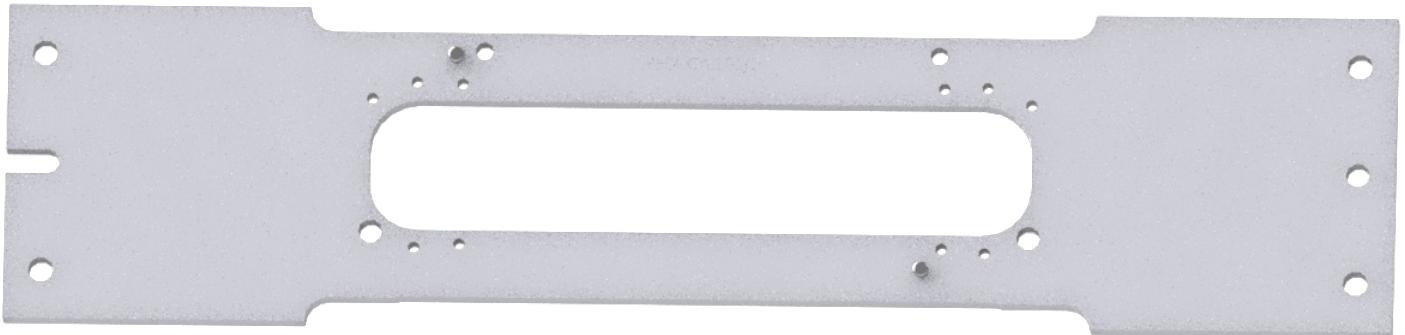
PFIX-BBF1 Porting Fixture - Big Block Ford FE (390,426,427)**PFIX-FORD1 Porting Fixture - Ford 5.4****PFIX-FORD2 Porting Fixture - Ford In-line 6 Cylinder Iron**

PFIX-PRO1 Porting Fixture Pro Stock Big Block Chevrolet**PFIX-PRO2 Porting Fixture Prostock Big Block Oldsmobile DRCE Big Block****PFIX-PRO3 Porting Fixture - Pro Stock Big Block Chevrolet 5.0" Bore Spacing**

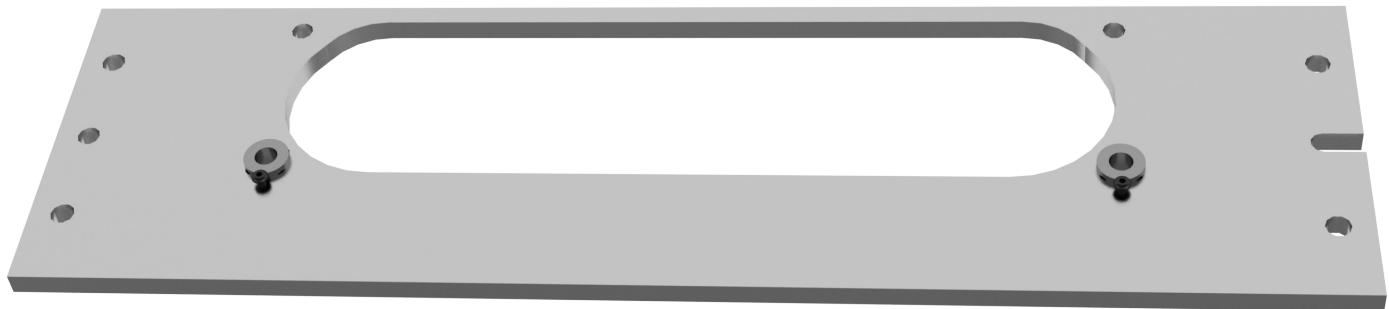
PFIX-PRO4 Porting Fixture - Pro Stock Big Block Chevrolet 5.3" Bore Spacing**PFIX-PRO5 Porting Fixture - Pro Stock Big Block Oldsmobile DRCE****PFIX-BUICK Porting Fixture - Buick 3800 V6**

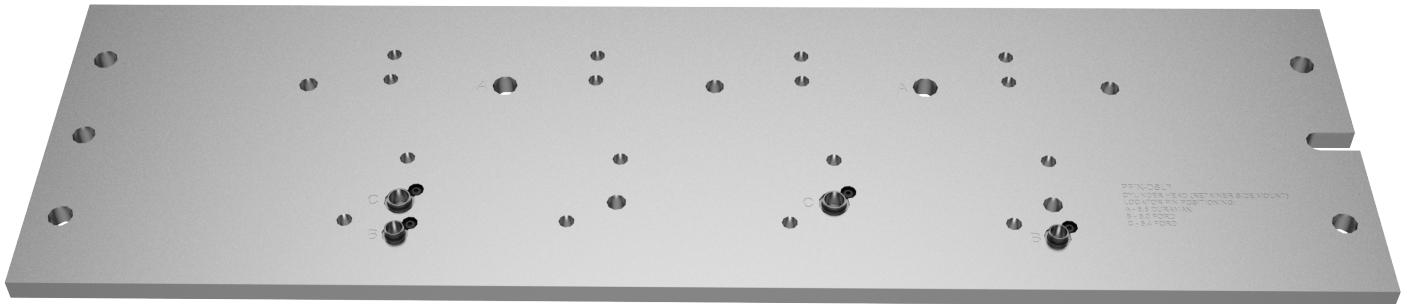
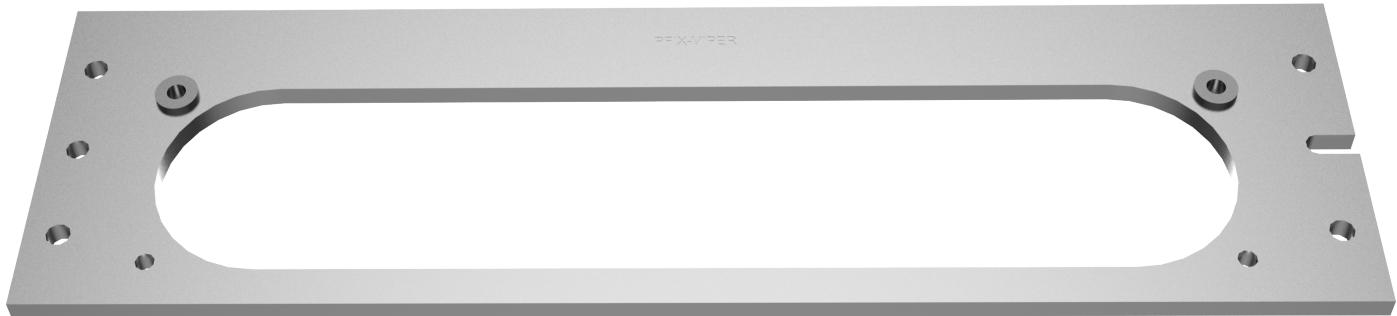
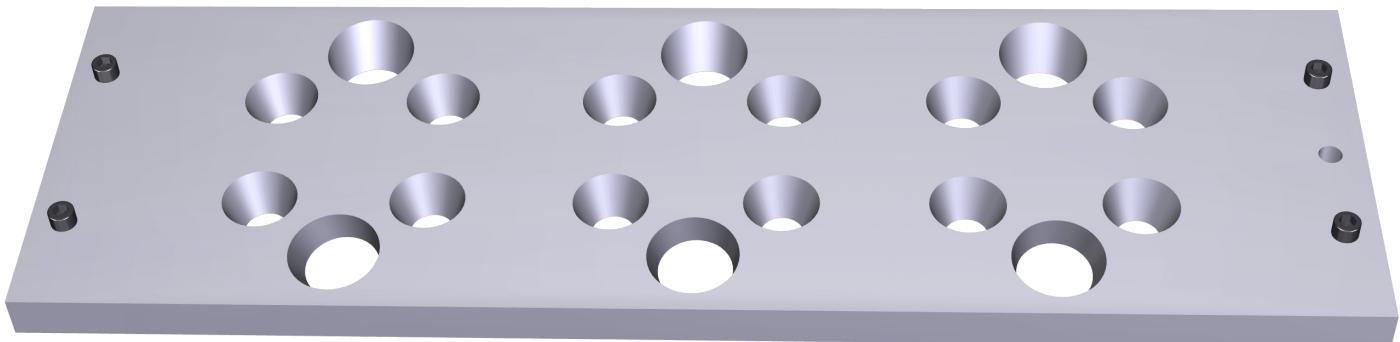
PFIX-SBM Porting Fixture - Small Block MOPAR (318, 340, 360)**PFIX-BBM Porting Fixture - Big Block MOPAR (440)****PFIX-PONT Porting Fixture - Pontiac**

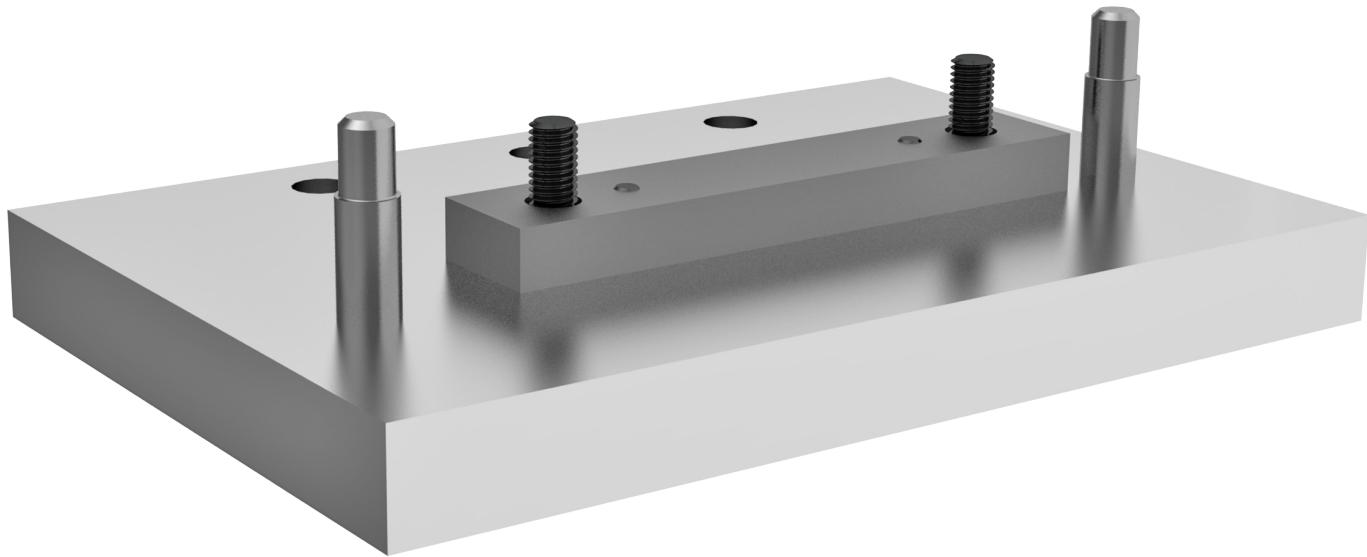
PFIX-FORD1 Porting Fixture - Ford (Modular)**PPIX-HEMI Porting Fixture - Mopar 5.7 Hemi****PPIX-CYCLE Porting Fixture - Honda Inline 4**

PFIX-CYCLE1 Porting Fixture - Triumph Inline 3**PFIX-CYCLE3 Porting Fixture - Yamaha YZF1000****PFIX-CYCLE10 Porting Fixture - Harley Buell Prostock - Rocker Cover Mount**

PFIX-CYCLE11 Porting Fixture - Harley Buell Prostock - Head Gasket Mount**PFIX-DSL1 Porting Fixture - Cummins Diesel 5.9L****PFIX-DSL2 Porting Fixture - Duramax Diesel**

PFIX-DSL3 Porting Fixture - International Diesel Inline 6**PFIX-DSL4 Porting Fixture - Ford Diesel 6.0/6.4****PFIX-DSL5 Porting Fixture - Ford Diesel 7.3****PFIX-DSL6 Porting Fixture - Cummins Diesel 5.9/6.7 Retainer Side Mount**

PFIX-DSL7 Porting Fixture - Duramax 6.6 and Ford 6.0/6.4 Retainer Side Mount**PFIX-VIPER Porting Fixture - Dodge Viper V10****PFIX - PORSCHE Porting Fixture - Porsche 911 Air Cooled 6 head fixture**

5536 Porting Fixture - VW Air Cooled 2 Cylinder**Using 3rd Party Tooling in Rottler Machines with CAT 40 Tooling.**

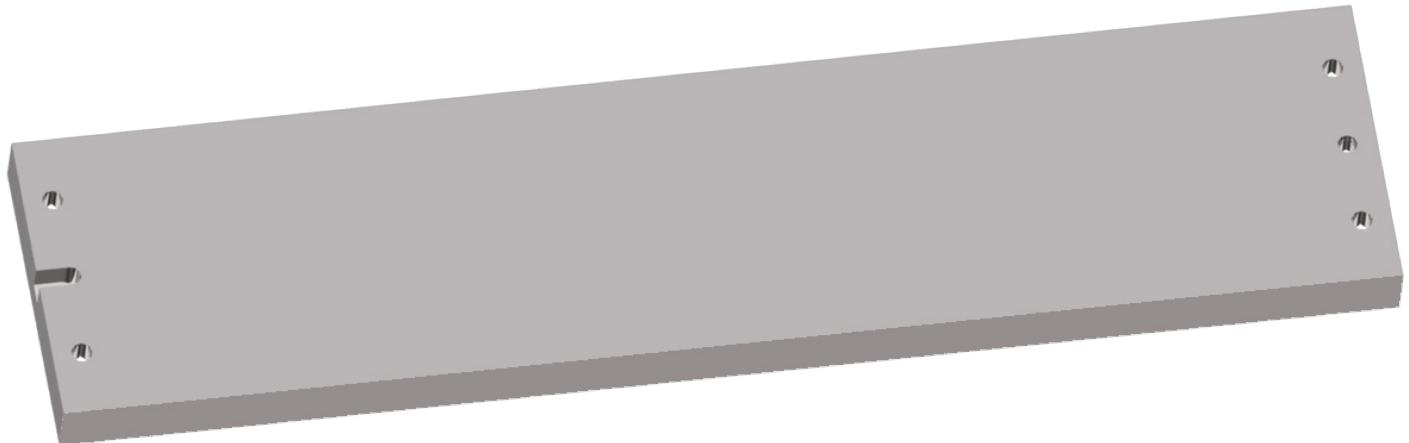
When it is not convenient for the customer to order CAT 40 tooling from the factory or if the customer needs tooling that we don't stock, they may purchase tooling from 3rd part vendors such as MSC. The customer must specify a DIN 69871 SK 40 or ANSI B 5.50 CAT 40 tapered adaptor for use in Rottler machines.

Rottler uses a Parlec - A Style, CAT40 Taper, 5/8-11 Thread, 45 Degree Angle Radius, Standard Retention Knob with the following specifications: 1.68 Inch Overall Length, 0.281 Inch Coolant Hole Diameter, 0.74 Inch Knob Diameter, 0.12 Inch Flange Thickness, 0.64 Inch Knob to Flange Length, 0.635 Inch Pilot Diameter, Through Coolant

If customer purchases a DIN spec adaptor they will need to source a metric equivalent of the retention knob.

Universal Semi-finished Fixture Plate for Overhead Camshaft Cylinder Heads**5517B Universal Semi-finished Fixture Plate**

For Overhead Camshaft Cylinder Heads maximum overall/outside length of cylinder head 30" (762mm), requires Rottler CAM software #9043 and CAT 40 Spindle adapter and universal chuck with drills/reamers to machine to suit overhead camshaft cylinder heads

**5517S Universal Semi-finished Fixture Plate**

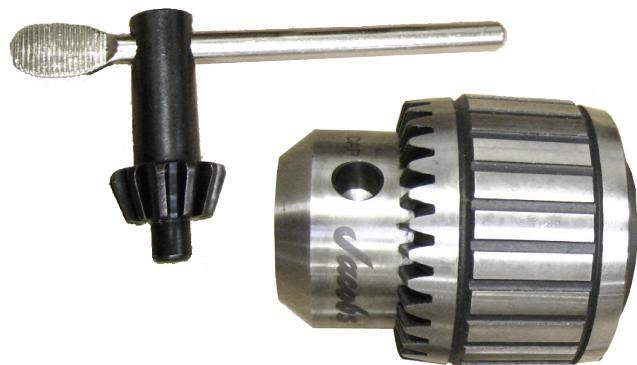
For Overhead Camshaft Cylinder Heads maximum overall/outside length of cylinder head 36" (914mm), requires Rottler CAM software #9043 and CAT 40 Spindle adapter and universal chuck with drills/reamers to machine to suit overhead camshaft cylinder heads



650-2-44 Spindle Adapter CAT 40 for 650-2-9B Universal Chuck



650-2-9B Universal Chuck requires 650-2-44 Spindle Adapter



Universal T Slot Table

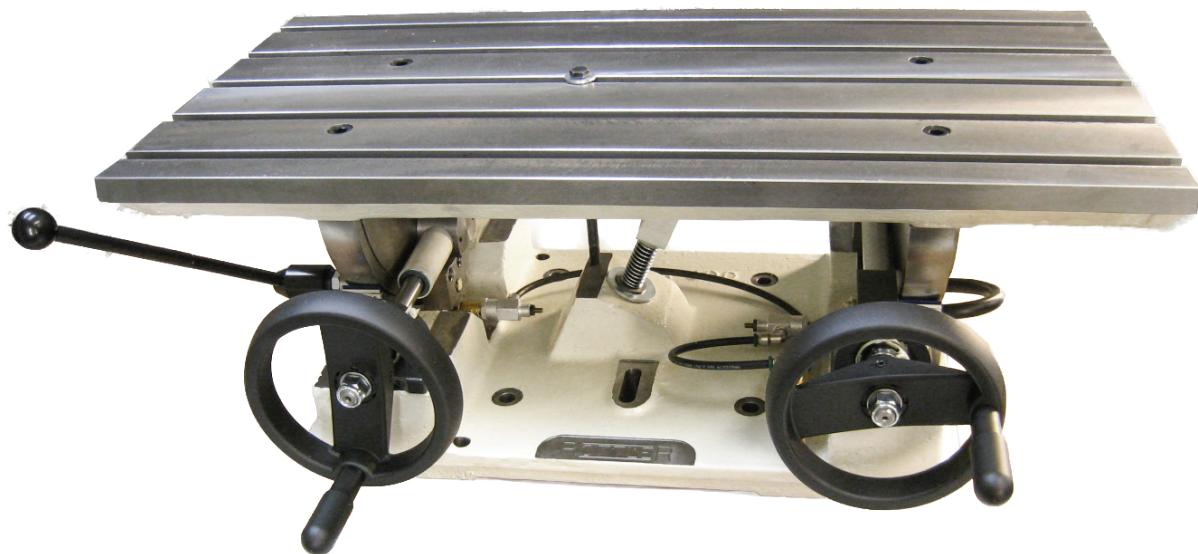
5517F Universal T Slot Table

Fits in standard 5th axis, same as the porting fixtures are fitted, allows clamping of parts such as Cylinder Heads and Manifolds for surfacing or machining

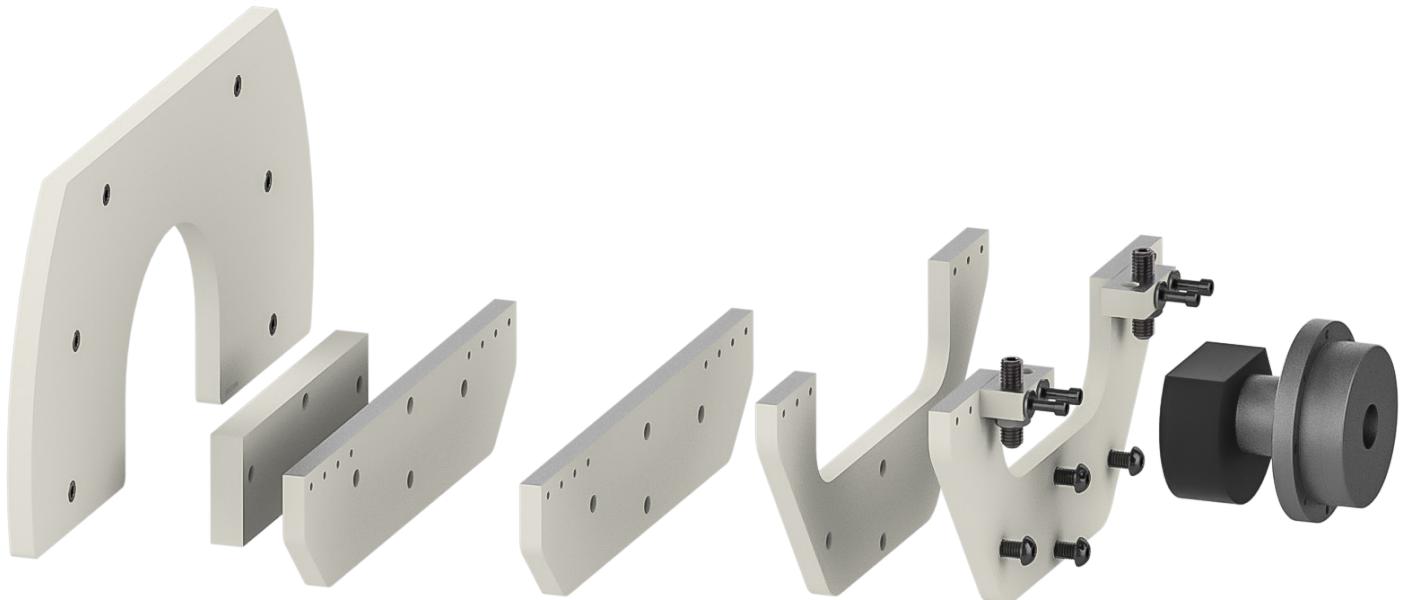


Universal Quick Leveling Cylinder Head Fixture**7209M Leveling Table**

Complete with universal quick clamp work holding system for cylinder heads
Fits direct on the machine table between the head and tailstocks requires 11115 Parallels

**Overhead Camshaft Engine Block Fixturing****650-3-84 Overhead Cam Block Fixture**

for Overhead Cam Blocks for 4th Axis Fixture (690-3-63)



11115 2" (50mm) X 3" (75mm) Parallels

For general purpose machine work such as setting up in-line blocks on the pan or small single cylinders.

**7152A Dual Axis Level Assembly**

Surface Milling Cutterheads for Surfacing Cylinder Head Fire Deck Gasket Surfaces

Surfacing Tooling

650-2-8E Surfacing Cutterhead

10" (254mm) Diameter Including (2) Radially and Axially Adjustable 3/8" (9.525mm) IC Insert Holders. Inserts must be ordered separately.



6303B CBN Insert Round, Double-Sided, 3/8" (9.525mm) IC, for Cutting Cast Iron 	6303M PCD Insert Round, 3/8" (9.525mm) IC, for Cutting 	6303K Coated Carbide Insert Round, 3/8" (9.525mm) IC, for General Purpose Use
6303S CBN Insert Round, 3/8" (9.525mm) IC, for Cutting Aluminum Blocks with Liners 	6303U CBN Round Insert, Single Sided, 3/8" IC. For hard cast iron 	

Porting Tool Holders

4-way adjustable to allow the point of the porting tool to be adjusted for zero run out for improved surface finish and reduced cutting noise.

PTH-250 CAT40

1/4" (19.05mm) Diameter X Special 4-way
adjustable Porting Tool Holder - CAT40 Taper



PTH-500-CAT40

1/2" (12.7mm) Diameter X Special 4-way
adjustable Porting Tool Holder - CAT40 Taper



PTH-625-CAT40

5/8" (15.875mm) Diameter X Special 4-way
adjustable Porting Tool Holder - CAT40 Taper



Combustion Chamber Tooling

EM-250

1/4" (19.05mm) Ballnose End Mill



Porting Tools

PT500-250-54

1/2 diameter shank X 1/4 diameter ball mill X 5.40" long (12.7 X 19.05 X 137.16mm)



PT500-250-60

1/2 diameter shank X 1/4 diameter ball mill X 6.00" long (12.7 X 19.05 X 152.4mm)



PT500-375-60

1/2 diameter shank X 3/8 diameter ball mill X 6.00" long (12.7 X 9.525 X 152.4mm)



PT625-375-54

5/8 diameter shank X 3/8 diameter ball mill X 5.40" long (15.875 X 9.525 X 137.16mm)



PT625-375-60

5/8 diameter shank X 3/8 diameter ball mill X 6.00" long (15.875 X 9.525 X 152.4mm)

**PT625-375-64**

5/8 diameter shank X 3/8 diameter ball mill X 6.40" long (15.875 X 9.525 X 165.56mm)

**PT625-375-65**

5/8 diameter shank X 3/8 diameter ball mill X 6.50" long (15.875 X 9.525 X 165.1mm)

**PT625-375-70**

5/8 diameter shank X 3/8 diameter ball mill X 7.00" long (15.875 X 9.525 X 177.8mm)

**PT625-375-75**

5/8 diameter shank X 3/8 diameter ball mill X 7.50" long (15.875 X 9.525 X 190.5mm)

**PT625-750-68**

5/8 diameter shank X 3/4 diameter ball mill X 6.80" long (15.875 X 19.05 X 172.72mm)



Porting Tools for Cast Iron**PT500-250-54CI**

1/2 diameter shank X 1/4 diameter ball mill X 5.40" long (12.7 X 19.05 X 137.16mm)

**PT500-250-60CI**

1/2 diameter shank X 1/4 diameter ball mill X 6.00" long (12.7 X 19.05 X 152.4mm)

**PT500-375-60CI**

1/2 diameter shank X 3/8 diameter ball mill X 6.00" long (12.7 X 9.525 X 152.4mm)

**PT625-375-54CI**

5/8 diameter shank X 3/8 diameter ball mill X 5.40" long (15.875 X 9.525 X 137.16mm)

**PT625-375-60CI**

5/8 diameter shank X 3/8 diameter ball mill X 6.00" long (15.875 X 9.525 X 152.4mm)



PT625-375-64CI

5/8 diameter shank X 3/8 diameter ball mill X 6.40" long (15.875 X 9.525 X 165.56mm)

**PT625-375-65CI**

5/8 diameter shank X 3/8 diameter ball mill X 6.50" long (15.875 X 9.525 X 165.1mm)

**PT625-375-70CI**

5/8 diameter shank X 3/8 diameter ball mill X 7.00" long (15.875 X 9.525 X 177.8mm)

**PT625-750-68CI**

5/8 diameter shank X 3/4 diameter ball mill X 6.80" long (15.875 X 19.05 X 172.72mm)

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Porting Tools for Ductile Iron

PT625-375-65DI

5/8" shank - 3/8" ball - for ductile iron

Image Currently Unavailable

PT625-500-65DI

5/8" shank - 1/2" ball - for ductile iron

Image Currently Unavailable

Coolant for Aluminum Cutting

DYNA-KOOL

Synthetic coolant concentrate - 5 gal (20 liter) (mix with water 20:1)



Optional Equipment for Engine Block Machining

Software Packages for Engine Block Machining

Software Packages for Engine Block machining must be ordered separately.

Optional Equipment tooling for Engine Block Machining can be selected from EM69ATC Optional Equipment Catalog.

6758T

Automatic Boring, Sleeving Including Lower Offset for Honing Clearance, Automatic Cycle

6758U

Multiple Pass Programmable Depth Of Cut - Rough and Finish Milling/Surfacing, Automatic Cycle

6773B

Main Line Bore Machining Including Circular Interpolation Thrust Facing, Automatic Cycle

650-2-20A

Lifter Bore Machining, Automatic Cycle

6758Z

Stroker Crankshaft Connecting Rod Clearance Software Package

8300

Splayed 4 Bolt Main Cap Machining Software, requires 9043 Rottler CAM Software

Tooling for Engine Block Boring and Resleeving

Boring/Sleeving/Chamfering/O-Ring Tooling

650-2-1D Cutterhead Package

2.0 - 4.0" (50.80 - 101.60mm) Diameter X 7.0" (177.80mm) Length Complete with Tooling and Digital Micrometer



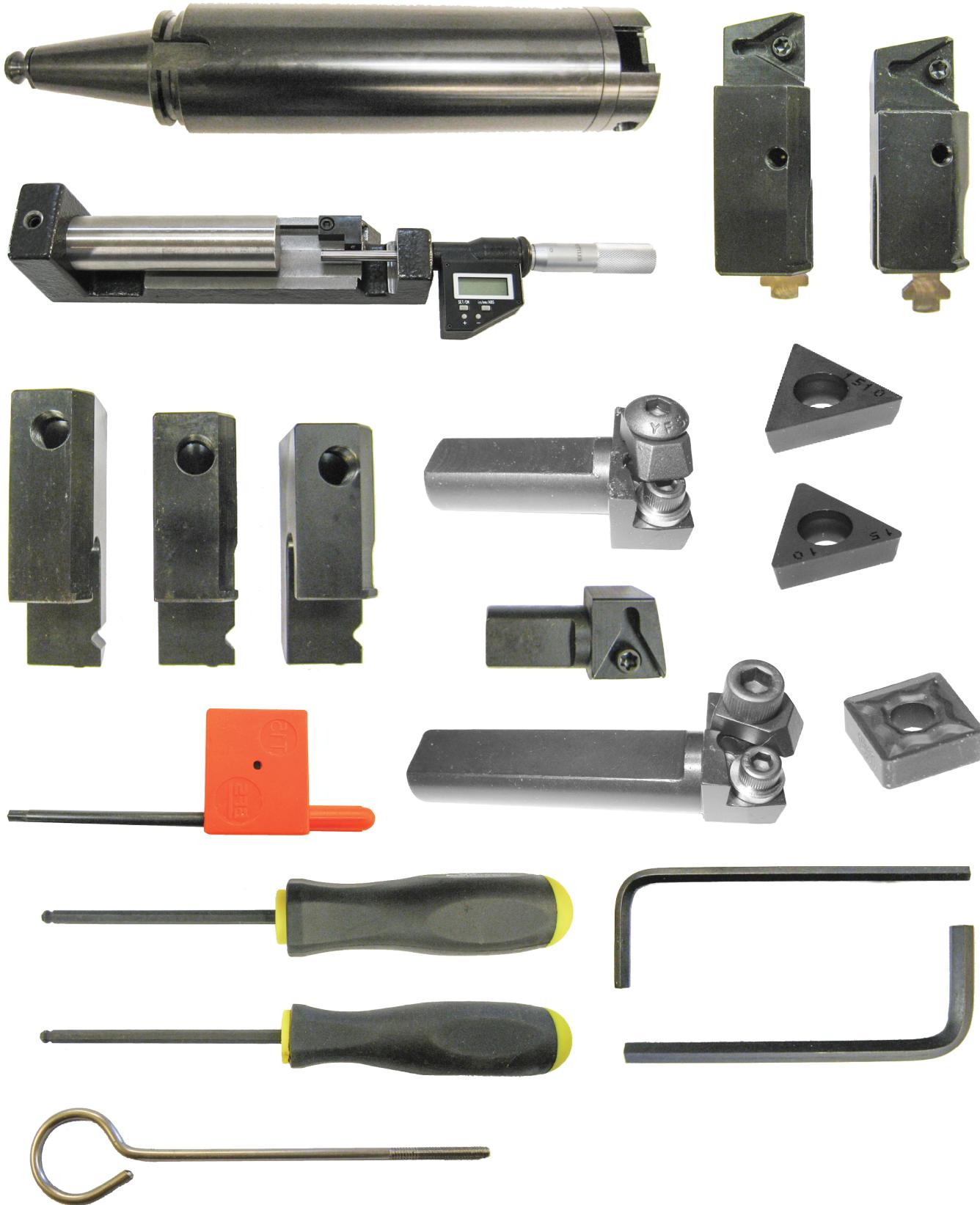
650-2-14B Cutterhead Package

2.9 - 5.0" (73.66 - 127.00mm) Diameter X 7.0" (177.80mm) Length Complete with Tooling and Digital Micrometer

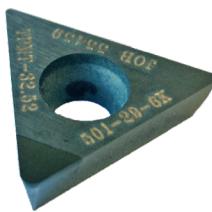


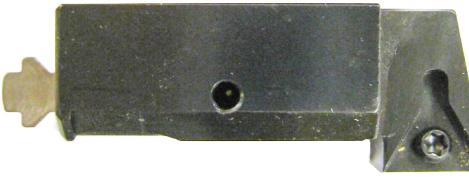
650-2-14F Cutterhead Assembly

2.9 - 5.0" (73.66 - 127.00mm) Diameter X 10.0" (254mm) Length Complete with Tooling and Digital Micrometer



Miscellaneous Tooling for 650-2-14B&F Cutterheads**650-2-16D 1.400" (35.5mm) Spacer (Extension)**

<p>501-29-6K PCD Tipped Triangular Insert For Boring/Counterboring Aluminum Only</p> 	<p>6513J Tool bit, Brazed Carbide .037" Wide O Ring Grooving</p> 	<p>6513L Tool bit, Brazed Carbide .039" Wide O Ring Grooving</p> 
<p>6513N Tool bit, Brazed Carbide .060" Wide O Ring Grooving</p> 	<p>6513P Tool bit, Brazed Carbide .085" Wide O Ring Grooving</p> 	<p>6513Q Tool bit, Brazed Carbide .120" Wide O Ring Grooving</p> 

6598M Cartridge Triangular, Positive Rake, 13/16 Shank Length, for Counter Boring	6747K Cartridge Assembly 5 Degree Chamfer for Triangular Positive Rake Inserts
	
6747P Cartridge Assembly 10 Degree Chamfer for Triangular Positive Rake Inserts	6747G Cartridge Assembly 15 Degree Chamfer for Triangular Positive Rake Inserts
	
6747F Cartridge Assembly 20 Degree Chamfer for Triangular Positive Rake Inserts	6747M Cartridge Assembly 20 Degree Chamfer for Triangular Positive Rake Inserts (Special Application Only)
	
6747H Cartridge Assembly 30 Degree Chamfer for Triangular Positive Rake Inserts	6593L Cartridge Assembly Offset Indexable Insert, Triangular Positive Rake (3.14 - 3.40" Diameter)
	
6593M Cartridge Assembly Offset Indexable Insert, Triangular Positive Rake (3.40 - 3.90" Diameter)	6593N Cartridge Assembly Offset Indexable Insert, Triangular Positive Rake (3.90 - 4.40" Diameter)
	

6593P Cartridge Assembly Offset Indexable Insert, Triangular Positive Rake (4.40 - 4.90" Diameter)	RT211 Insert Triangular 1/4" (6.35mm) 1/64" (.397mm) radius, 1/4" triangular Insert holders only, general purpose and sleeving	
		
RT212 Insert Triangular 1/4" (6.35mm) 1/32" (.787mm) radius, 1/4" triangular Insert holders only, general purpose and sleeving	RT321 Insert Triangular positive rake, 3/8" (9.525mm) 1/64" (.397mm) radius, general purpose and sleeving	RT322 Insert Triangular positive rake, 3/8" (9.525mm) 1/32" (.787mm) radius, general purpose and sleeving
		
RT321F Insert Triangular positive rake, 3/8" 1/64" Radius, Precision Counterboring	RT322F Insert Triangular positive rake, 3/8" 1/32" Radius, Precision Counterboring	RS322 Insert Square negative rake, 1/32" (.787mm) radius, 3/8" (9.525mm) IC, black ceramic coated for high speed oversize thru boring
		

Tooling for Surfacing

650-2-8E Surfacing Flycutter

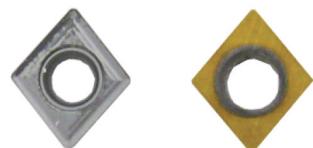
10" (254mm) Diameter Including (2) Radially and Axially Adjustable 3/8" (9.525mm) IC Insert Holders. Inserts must be ordered separately



6303B CBN Insert Round, Double-Sided, 3/8" (9.525mm) IC, for Cutting Cast Iron		6303M PCD Insert Round, 3/8" (9.525mm) IC, for Cutting Aluminum	
6303K Coated Carbide Insert Round, 3/8" (9.525mm) IC, for General Purpose Use		6303S CBN Insert, Round 3/8" (9.525mm) IC, for Cutting Aluminum Blocks with Liners	

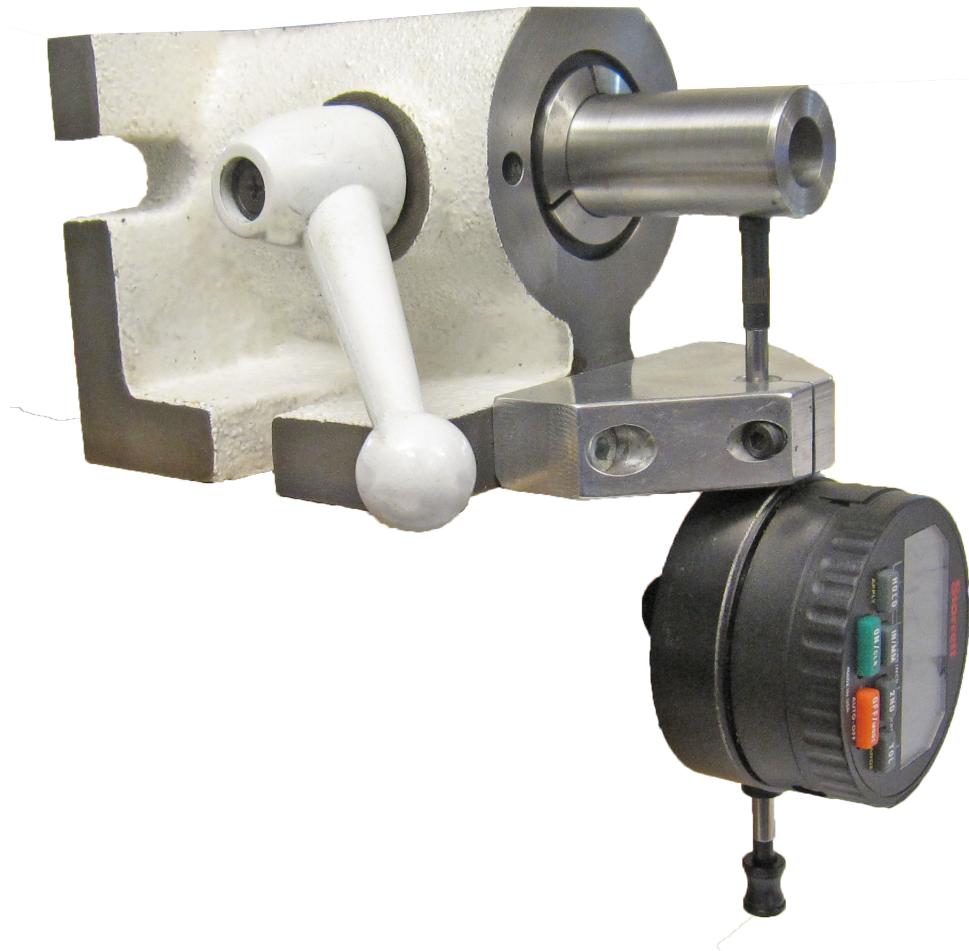
Tooling for Lifter Bore Tooling**650-2-60B Lifter Bore Tooling Kit**

Utilizing Micro Adjustable Boring Bars from .750 - 1.180" (19.05 - 29.97mm)



650-2-60N Setting Fixture

For 650-2-60B Lifter Tooling Package

**650-2-60G Insert**

For 0.750 - 0.900 diameter cartridge

**650-2-60H Insert**

For 0.920 - 1.180 diameter cartridge



Tooling for Stroker Clearance/Notching**650-2-45H 1" (25.4Mm) Diameter Roughing End Mill**

8 1/2" (216mm) long for block stroker clearance

**650-2-44A End Mill Adapter, 1" (25.4mm)**

Complete with 650-2-44L Retention Knob CAT 40 Taper



Tooling for Splayed 4 Bolt Main Cap Machining**650-2-53 Splayed 4 Bolt Main Cap Machining Tooling Package**

Includes CAT40 Spindle adapters, spot facer, center drill, drill, 7/16" tap and torque tap holder. Recommend software packages 8300 & 9043 and 4th Axis Block Fixture 690-3-63.



Main Line Bore Tooling**6753QX Main Line Bore 90 Degree Right Angle Drive Assembly**

Diameter 1.9 - 5.6" (48 - 142.2mm) Minimum clearance 3.29" (83.6mm) When used with 650-2-39B Cutterhead



650-2-38GX Special Belt Drive 90 Degree Right Angle Drive Assembly

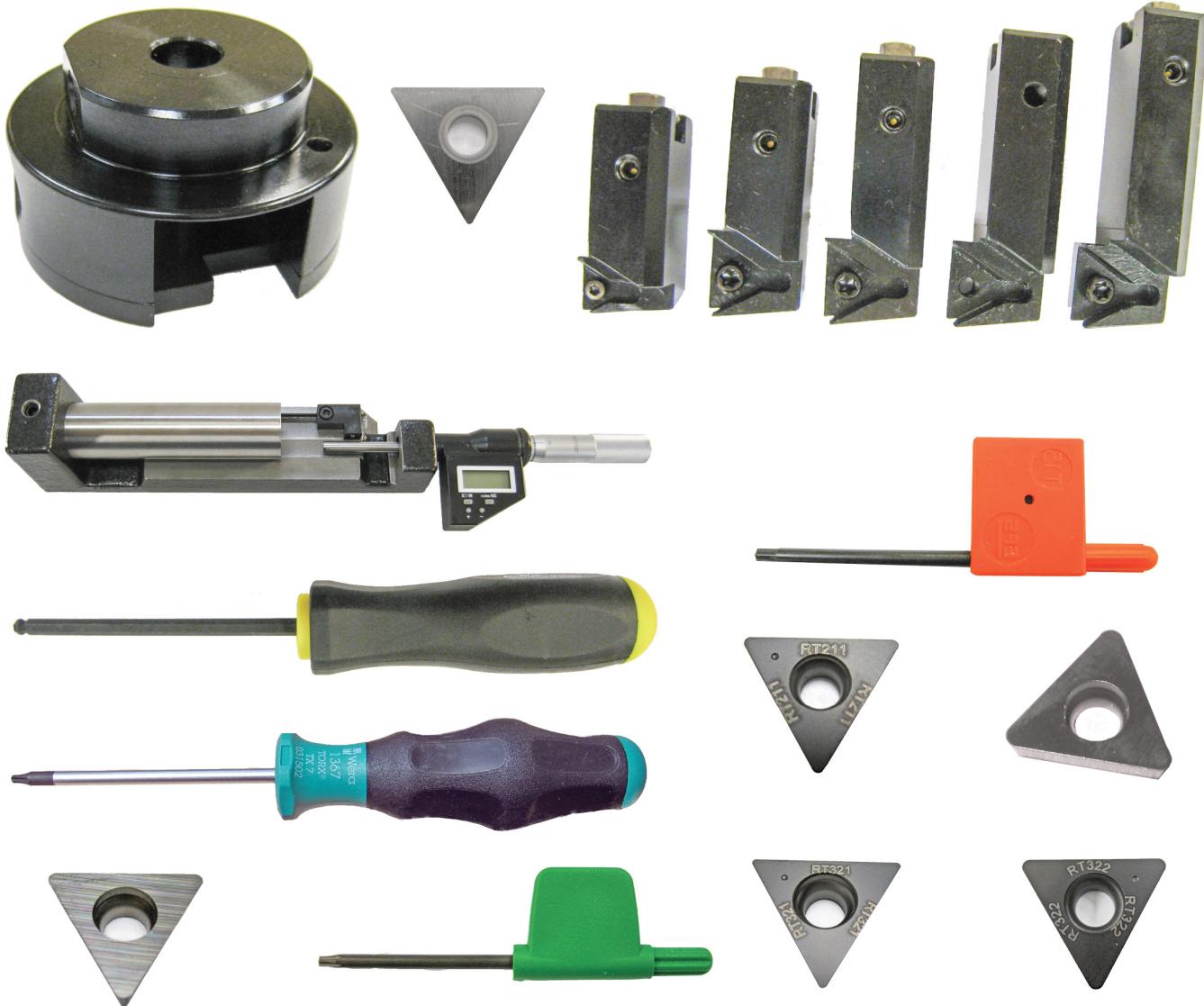
For Limited Clearance Between Bearing Caps, Diameter 1.9 - 4.0" (48 - 101.6mm) Minimum clearance 2.7" (69mm) with 650-2-39B Cutterhead.

- Note: Cutterheads are not included with right angle drive and must be ordered separately.
- Note: The Belt Drive Right Angle Drive is Designed for Limited Clearance Between Bearing Caps and It's Cutting Performance Will Deteriorate as Larger Diameters are Bored and Extension Spacers are Used.
- Note: Length of Bores can be Increased with Extension Spacers. The Addition of Extension Spacers Will Increase The Minimum Distance Between Bearing Housings by the Length of the Spacer. Allow for some Clearance either side of the Assembly for Safety.
- Rottler Right Angle Drive Line Bore System will not be able to Line Bore Blocks that have Castings Between the Main Bearing Caps Found in Some New Design Light Weight Blocks.
- Special Right Angle Drives are available for line boring overhead camshaft cylinder heads. Contact Rottler for more details and pricing..



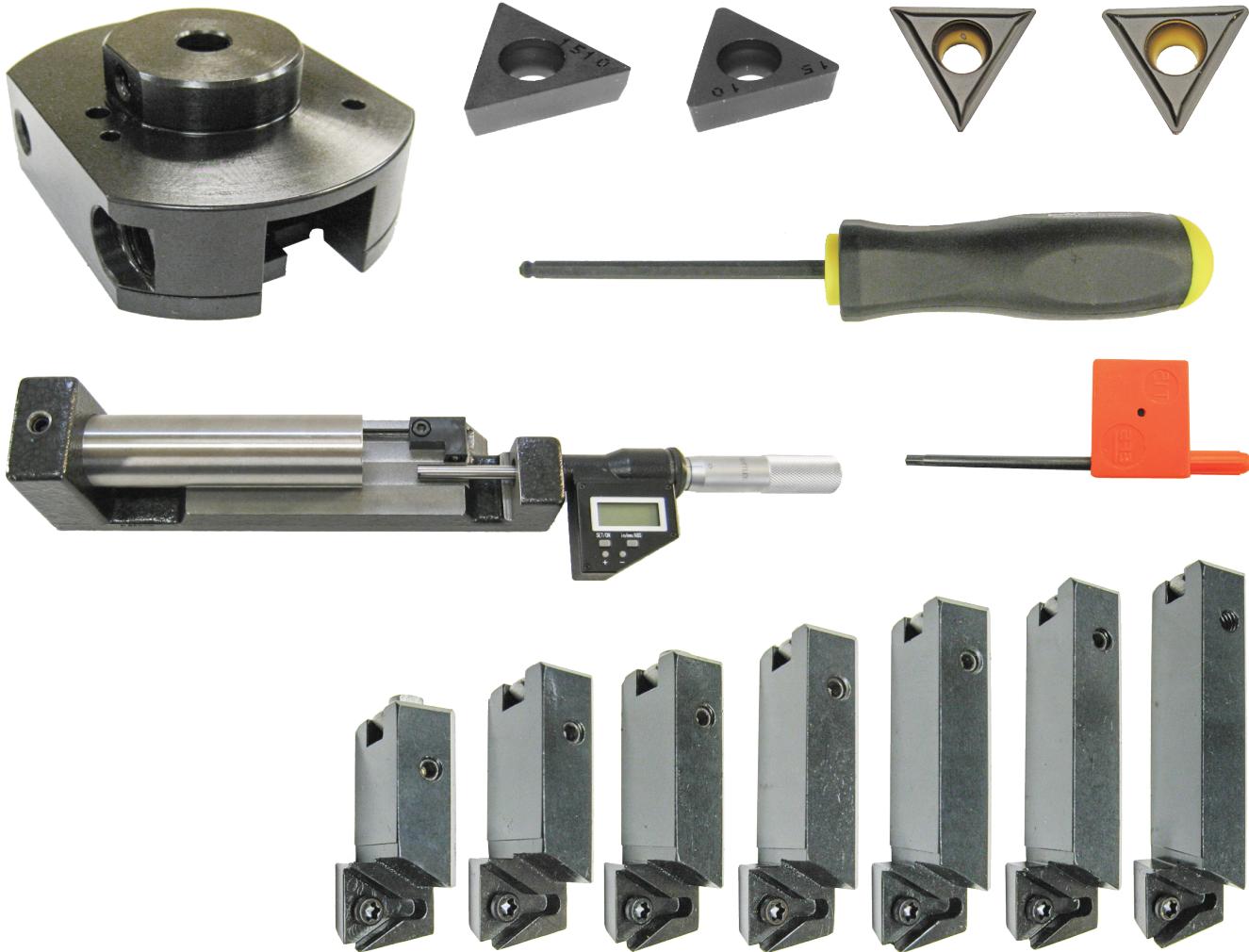
650-2-39B Cutterhead Assembly

Line Boring 1.9 - 4.0" (48.26 - 101.60mm) Diameter Complete with Tooling and Digital Micrometer. (When used with 11103 Drive, minimum distance between Bearing Housings 3.29") (83.6mm)

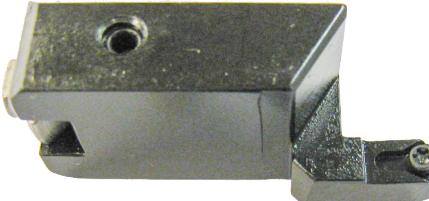


650-2-39C Cutterhead Assembly Line Boring

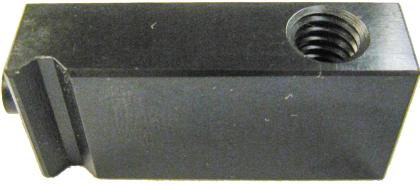
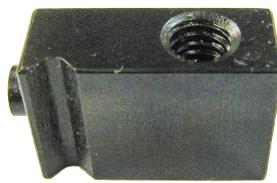
2.9 - 5.6" (73.66 - 142.24mm) Diameter Complete with Tooling and Digital Micrometer. When used with 11103 Drive, minimum distance between Bearing Housings 4.07" (103.4mm)



Special Main Line Boring Thrust Facing Tooling

6801M Tool holder Indexable Insert, Thrust Facing .160 IC, Positive Rake	6801P Tool holder Indexable Insert, Thrust Facing 350 Chevy and Other Small Blocks Line Boring
	

Special Main Line Boring Chamfering Tool

199-90 Tool holder 2 - 3" (50.80 - 76.20mm)	199-96 Tool holder 3 - 4" (76.20 - 101.60mm)
	

501-33E Tool bit 45-Degree Chamfer
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Block Main Line Boring and Cam Boring Fixtures**650-3-56 Line Bore Pivot Table**

Complete with Universal Work Hold System for Small In Line and 90 Degree V Blocks, Used for Main Line Boring and Stroker Crank Clearance.

