

ROTTLER

P69AHD 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 specialists.

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

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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Transformers

P69AHD machine requires 205-250V 50A, 50/60hZ, 3 phase power supply. If the voltage at place of installation is above or below this range, a transformer is required.

6761 Transformer

For Supply Voltage 380V, 415V, 440V. For supply voltage above or below this range, special transformer will be quoted.



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 "clean up" digitized data. Typical digitizing to machining a port is one to two hours per port including intake, exhaust and combustion chamber..



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 and Operator 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 this installed as specified in the installation section of the machine manual. Power and Air should be connected as specified in the installation section of the machine manual, before factory technician arrives. Customer to provide suitable engine blocks/heads and lifting equipment. .

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

TRAVEL

Travel Days includes Technician Time/Cost traveling to and from the customer, Airfare, per-diem while traveling to and from home and customer and incurred expenses. Please note the technician is paid normal hourly rate while traveling.

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.*

INST

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

TRAIN

Recommend Number of Days for training on the basic touch screen control for engine machining work. Extra days will 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 CAM #9043 is ordered together with the machine, Rottler CAM training may be required to be added.

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.

CAM (Computer Aided Manufacturing) Software

Required for manufacturing parts and machining semi-finished fixtures #5517B & #5517S for example for overhead camshaft cylinder heads.

9043 Rottler CAM Software Package.

When Rottler CAM #9043 is purchased together with a new machine, a three day introductory training course at Rottler factory is available for purchase. Additional training on Rottler CAM after the three day course is provided through instructional videos at www.RottlerTube.com or by Internet and/or telephone support, charges apply.

RCAM-IH-INTRO

Three days introductory training for one person on Rottler CAM software at Rottler factory in a group class setting. Customers must have purchased #9043 Rottler CAM Software package before attending this training course. Customer must supply own Windows laptop. Full details of costs and conditions is available from the Rottler Sales Department.

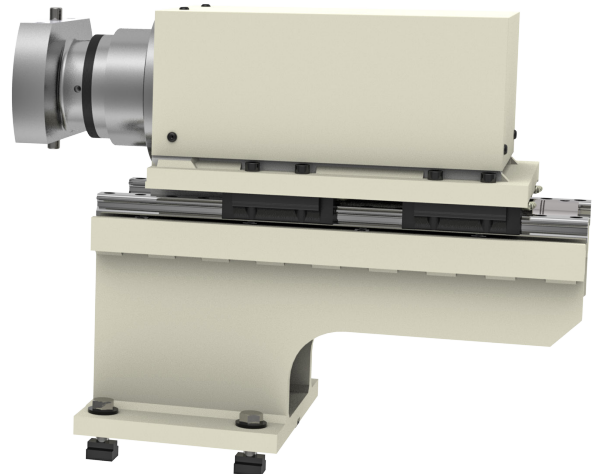
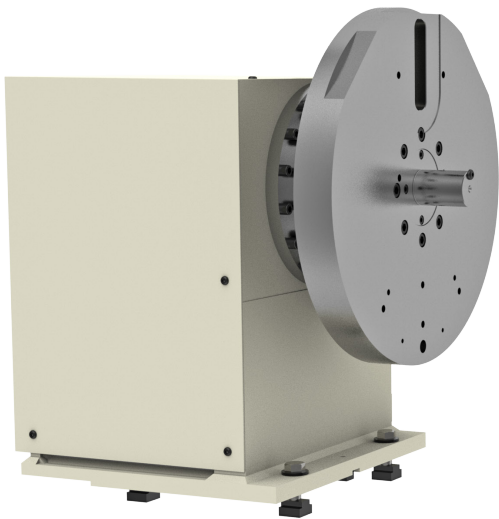
Optional 4th Axis Fixture for Cylinder Heads and Engine Blocks

5537 Computer Controlled Automatic 4th Axis Fixture.

For Cylinder Heads, In-line and V Blocs.

Fixture package includes the following features:

1. Rottler 4th Axis Automatic Roll Over Software Package.
 2. Universal Engine Block Mounting System to locate and hold a wide variety of Engine Blocks with reference to the block crankshaft centerline. Engines with Camshaft in the block require Main and Cam Locators. Overhead Camshaft Engines require Main Locators and 650-3-84 Overhead Camshaft Block Fixture Assembly.
 3. Adjustable Camshaft Centerline Locating Device to Set Up Camshaft Type V Blocks with Reference to the Centerline of their Camshaft and Crankshaft.
 4. Power Sliding Tail Stock on Linear Slideways for Quick Mounting of Blocks and Rigid Support during Machining.
 5. Universal System to mount Rottler digitizing and porting fixture plates and semi-finished fixture plates for digitizing and porting a wide variety of cylinder heads from the smallest to extra large diesel heads.
- For digitizing and porting cylinder heads, porting fixture plates are required, see listing below. For setting up engine blocks, locators are required, see F60 & 70 Catalog for listing of available locators.
 - *Note: Price includes factory install of 4th Axis Fixture when ordered together with new machine. Field retrofit will require additional service charges.*



Cylinder Head Digitizing and Porting Fixture Plates

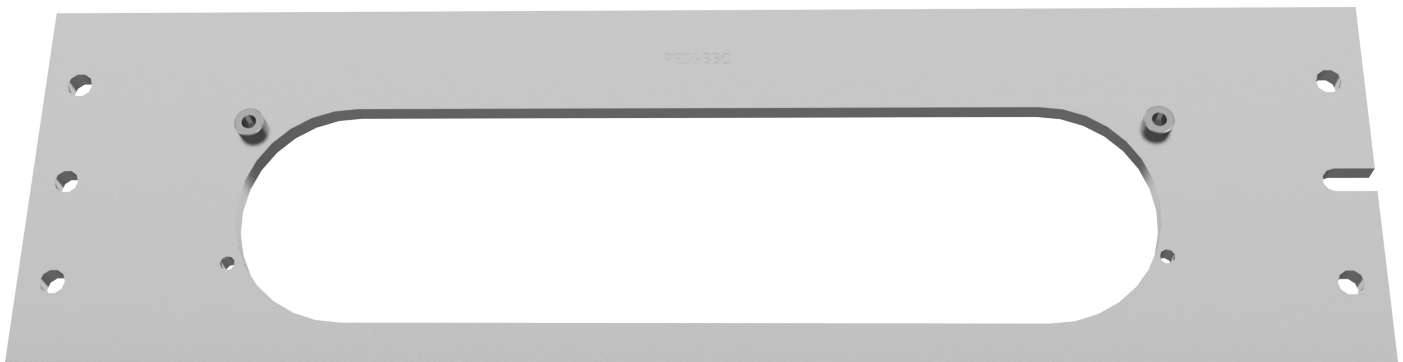
Fixtures not listed are made to order - require head, gasket or drawing

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)



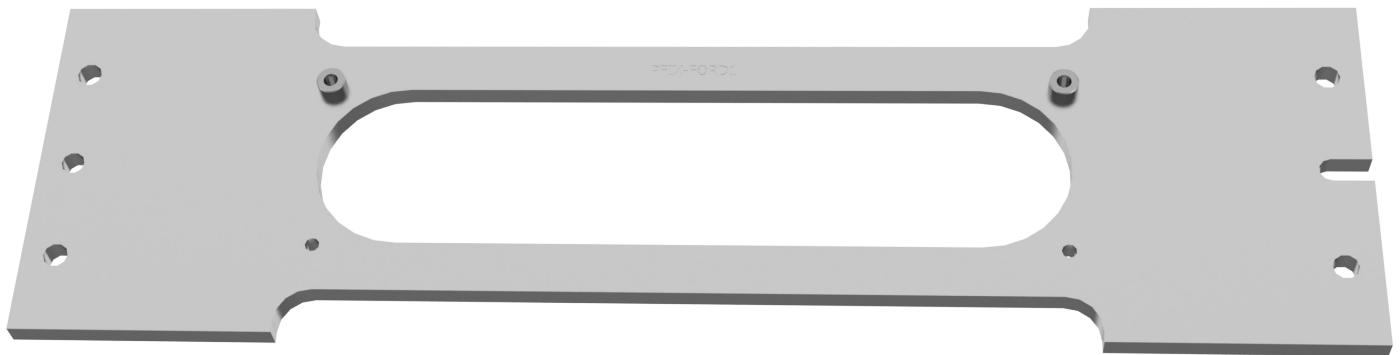
PFIX-BBF Porting Fixture Big Block Ford (429, 460)



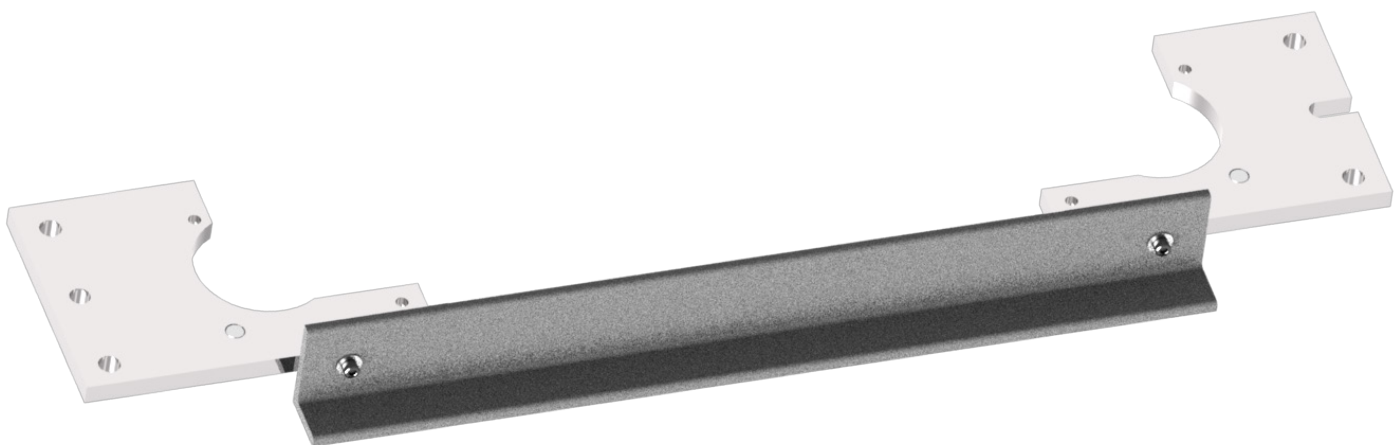
PFIX-BBF1 Porting Fixture - Big Block Ford FE (390,426,427)



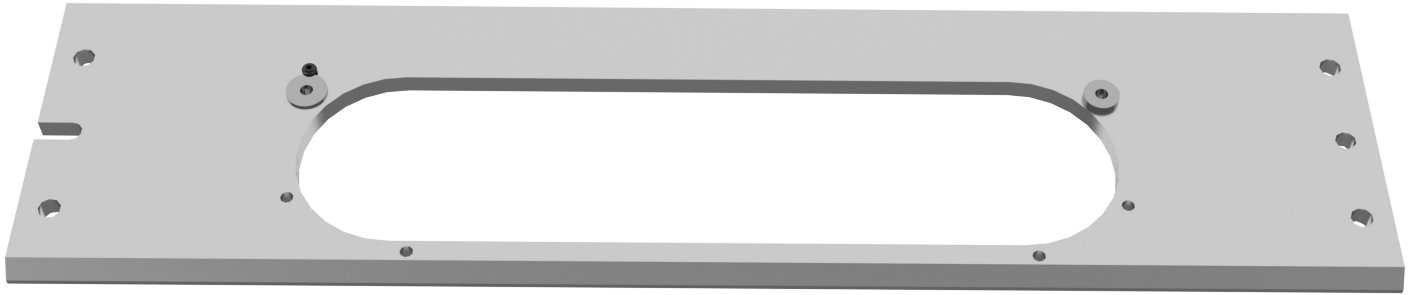
PFIX-FORD1 Porting Fixture - Ford 5.4



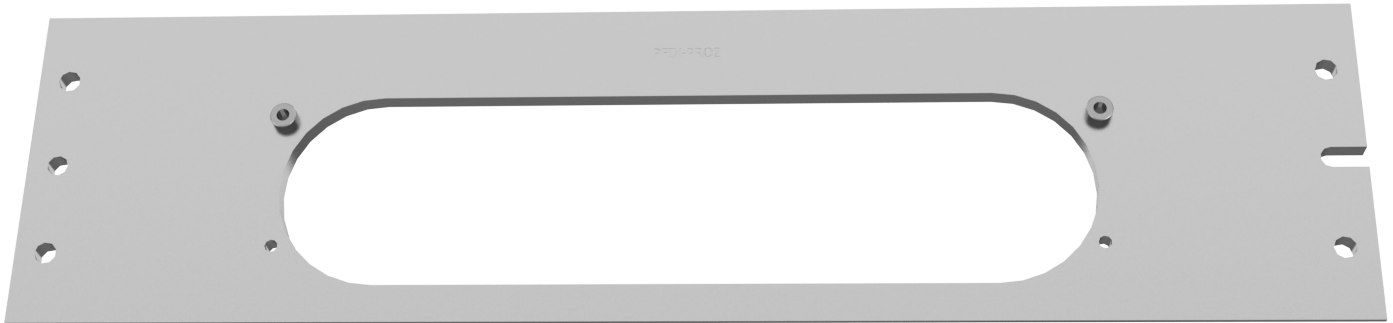
PFIX- FORD2 Porting Fixture - Ford In-line 6 Cylinder Iron



PFIX-PRO1 Porting Fixture Pro Stock Big Block Chevrolet



PFIX-PRO2 Porting Fixture Prostock Big Block Oldsmobile DRCE Big Block



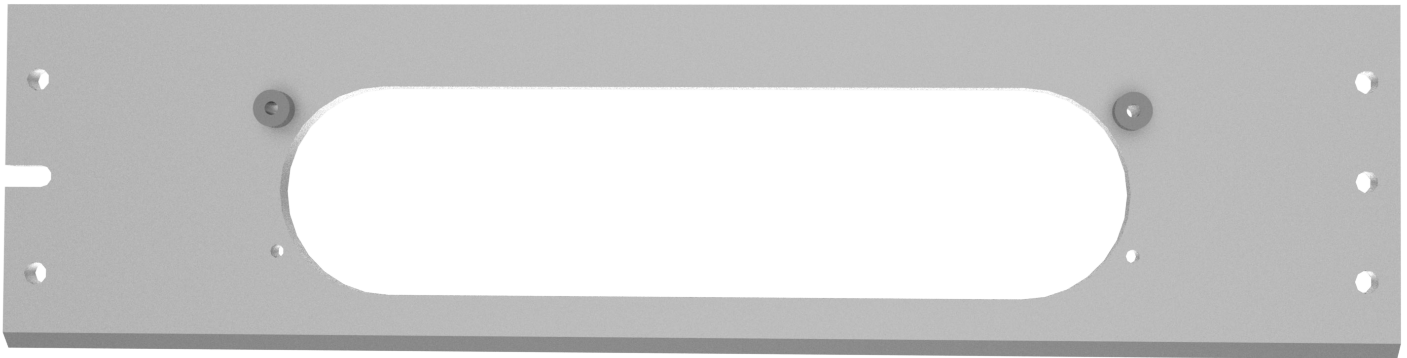
PFIX-PRO3 Porting Fixture - Pro Stock Big Block Chevrolet 5.0" Bore Spacing



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



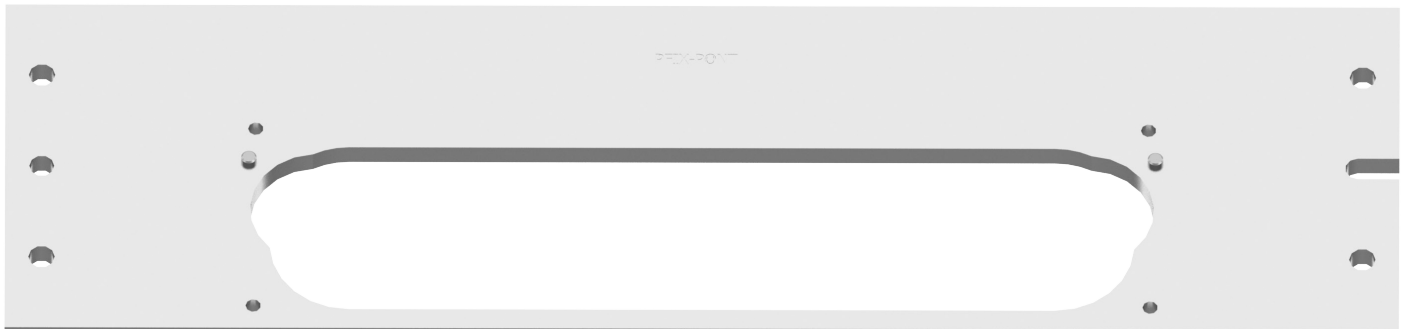
PFIX-SBM Porting Fixture - Small Block MOPAR (318, 340, 360)



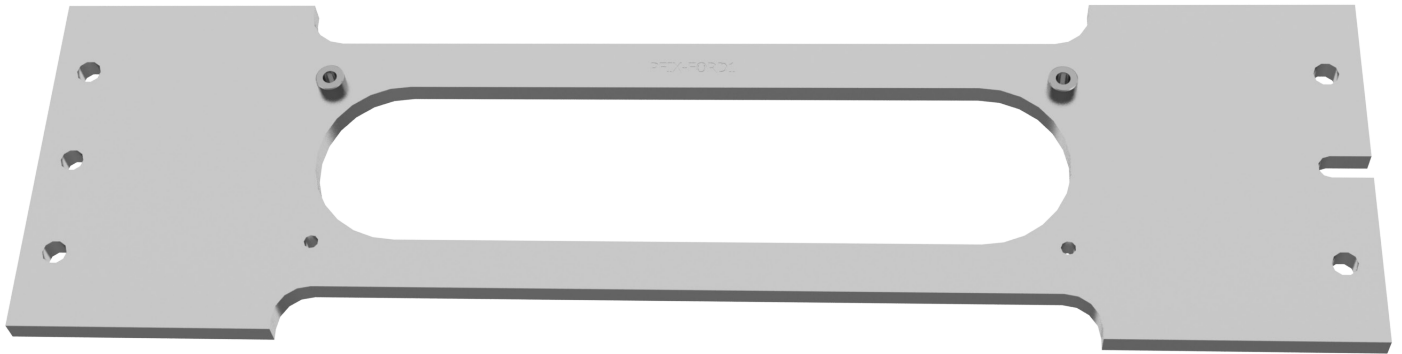
PFIX-BBM Porting Fixture - Big Block MOPAR (440)



PFIX-PONT Porting Fixture - Pontiac



PFIX-FORD1 Porting Fixture - Ford (Modular)



PFIX-HEMI Porting Fixture - Mopar 5.7 Hemi



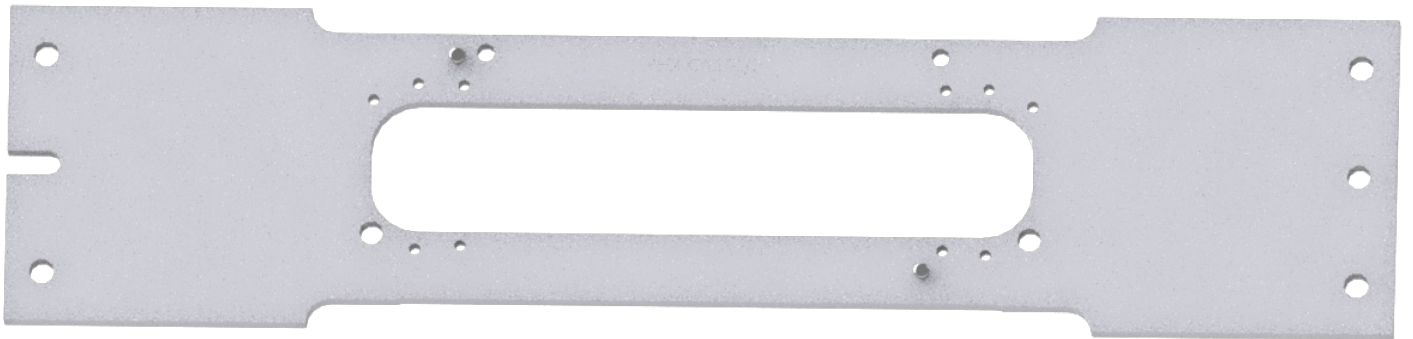
PFIX-ASTON Porting Fixture - Aston Martin V8



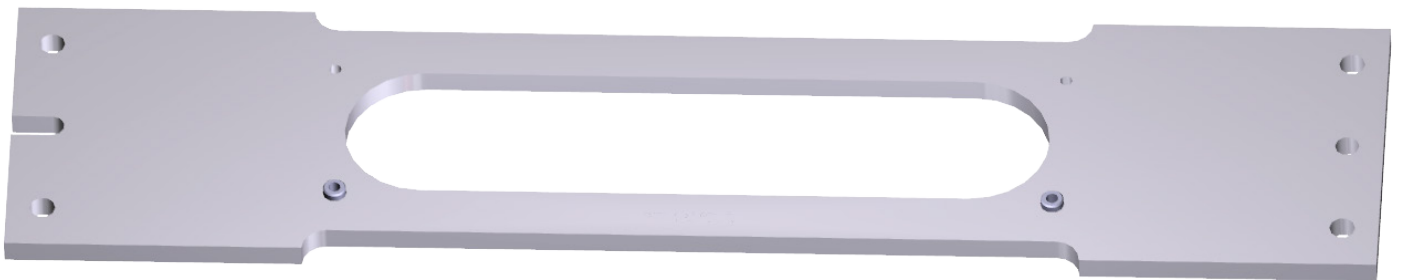
PFIX-CYCLE Porting Fixture - Honda Inline 4



PFIX-CYCLE1 Porting Fixture - Triumph Inline 3



PFIX-CYCLE3 Porting Fixture - Yamaha YZF1000



PFIX-CYCLE5 Porting Fixture - Yamaha

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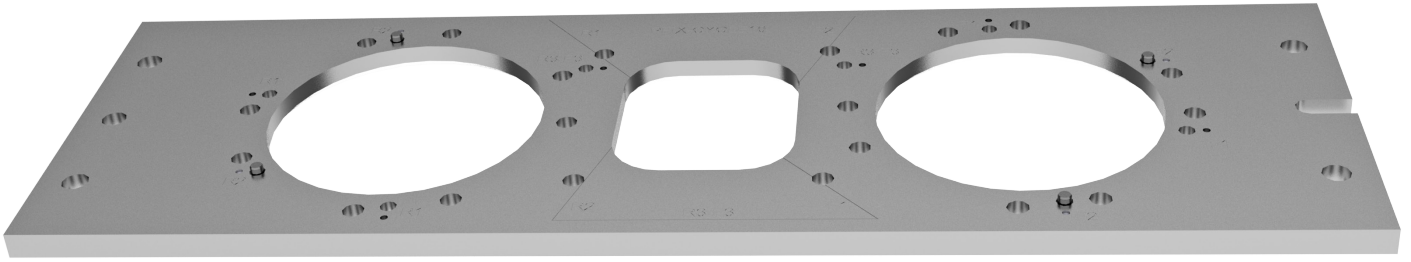
PFIX-CYCLE6 Porting Fixture - Rotax

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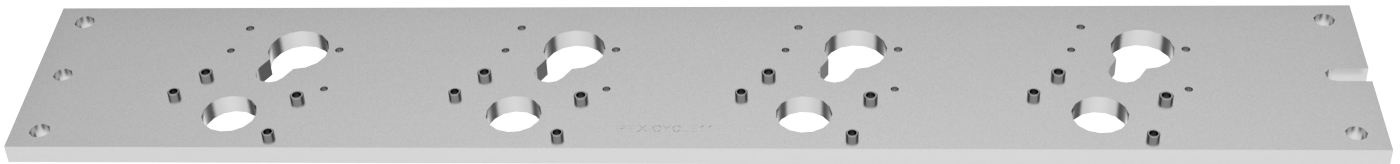
PFIX-CYCLE7 Porting Fixture - Kawasaki

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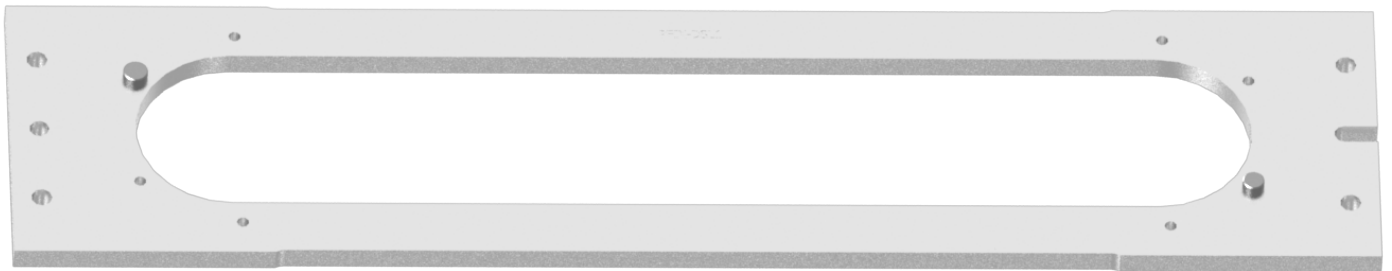
PFIX-CYCLE10 Porting Fixture - Harley Buell Prostock - Rocker Cover Mount



PFIX-CYCLE11 Porting Fixture - Harley Buell Prostock - Head Gasket Mount



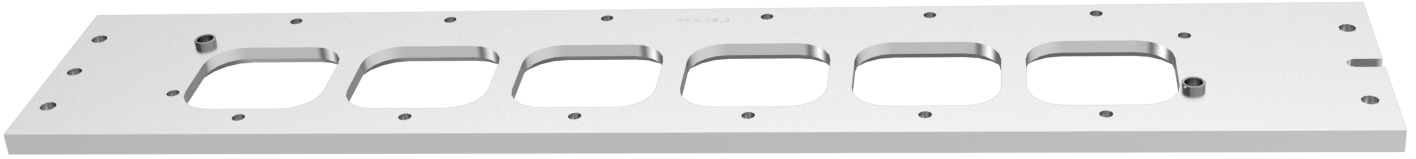
PFIX-DSL1 Porting Fixture - Cummins Diesel 5.9L



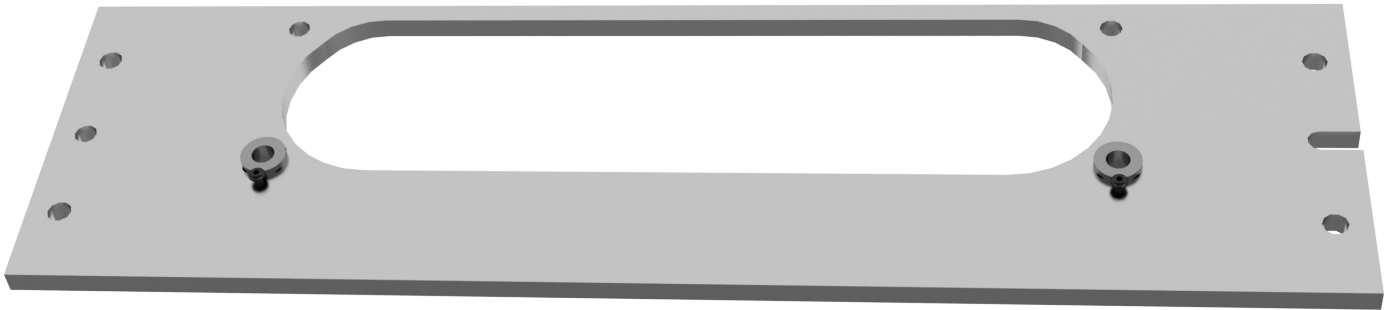
PFIX-DSL2 Porting Fixture - Duramax Diesel



PFIX-DSL3 Porting Fixture - International Diesel Inline 6



PFIX-DSL4 Porting Fixture - Ford Diesel 6.0/6.4



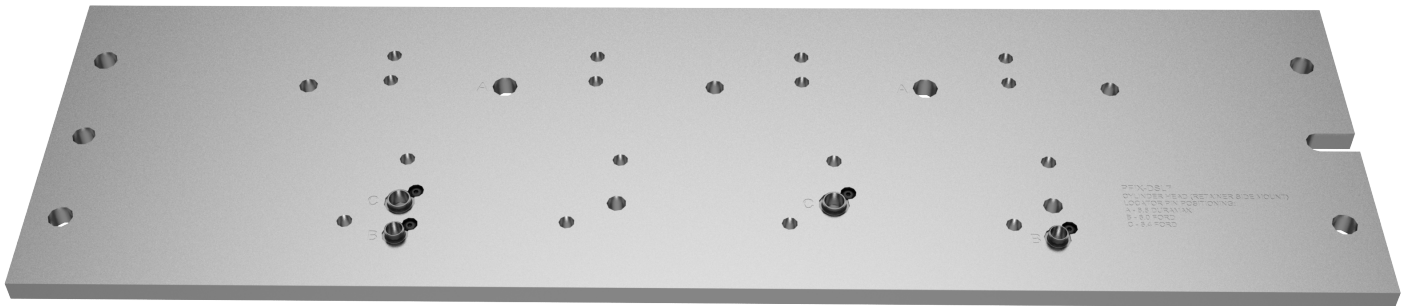
PFIX-DSL5 Porting Fixture - Ford Diesel 7.3



PFIX-DSL6 Porting Fixture - Cummins Diesel 5.9/6.7 Retainer Side Mount



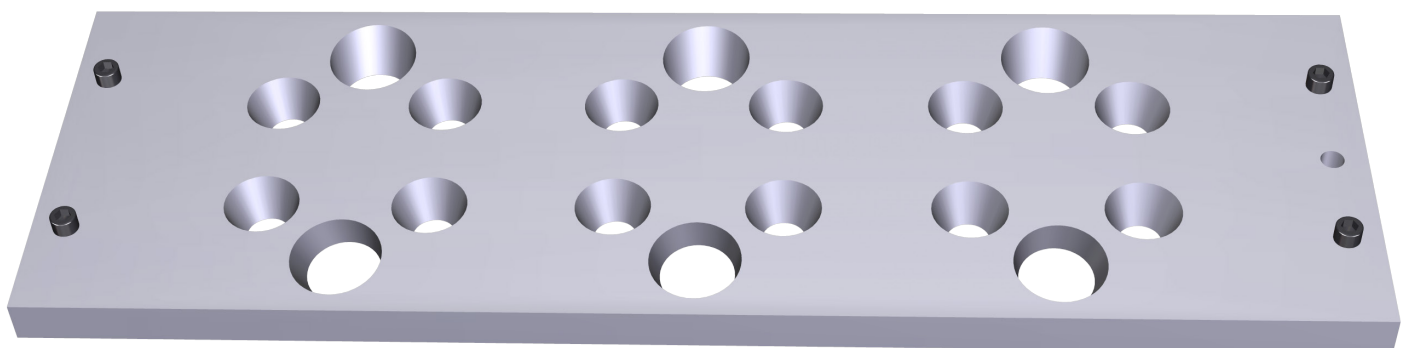
PFIX-DSL7 Porting Fixture - Duramax 6.6 and Ford 6.0/6.4 Retainer Side Mount

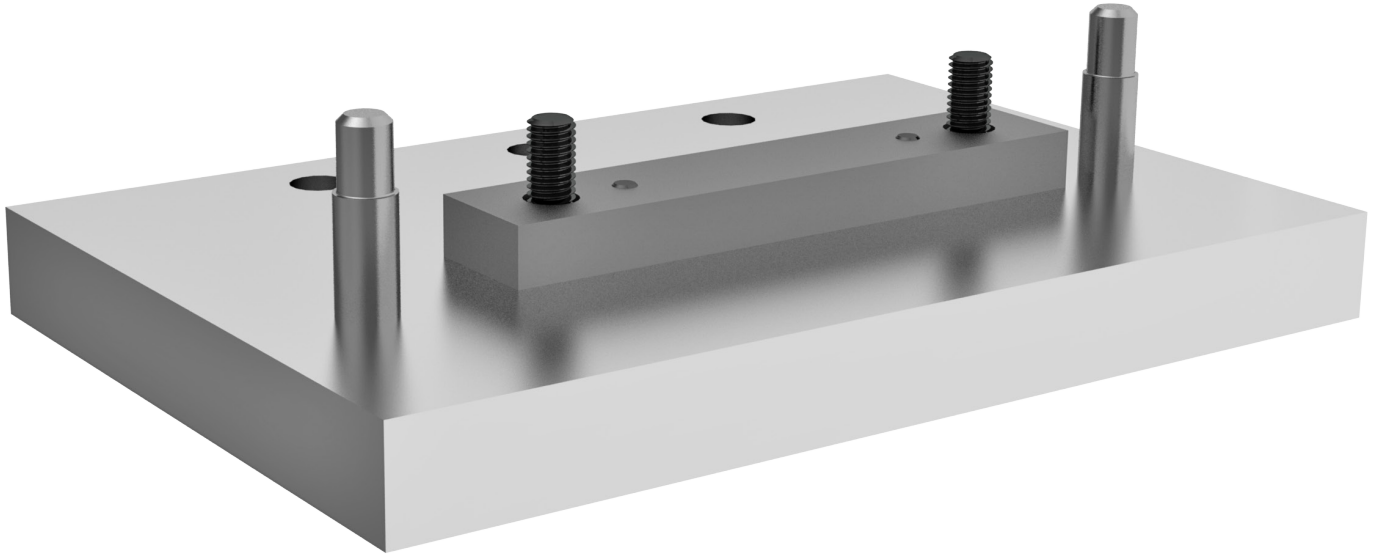


PFIX-VIPER Porting Fixture - Dodge Viper V10



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**

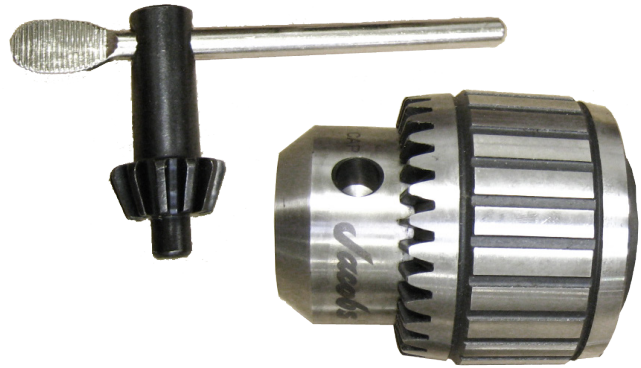
For Overhead Camshaft Cylinder Heads maximum overall/outside length of cylinder head 36" (914mm), requires Rottler CAM software #9043 and CAT 40 Spindle adapter and universal chuck with drills/reamers to machine to suit overhead camshaft cylinder heads



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

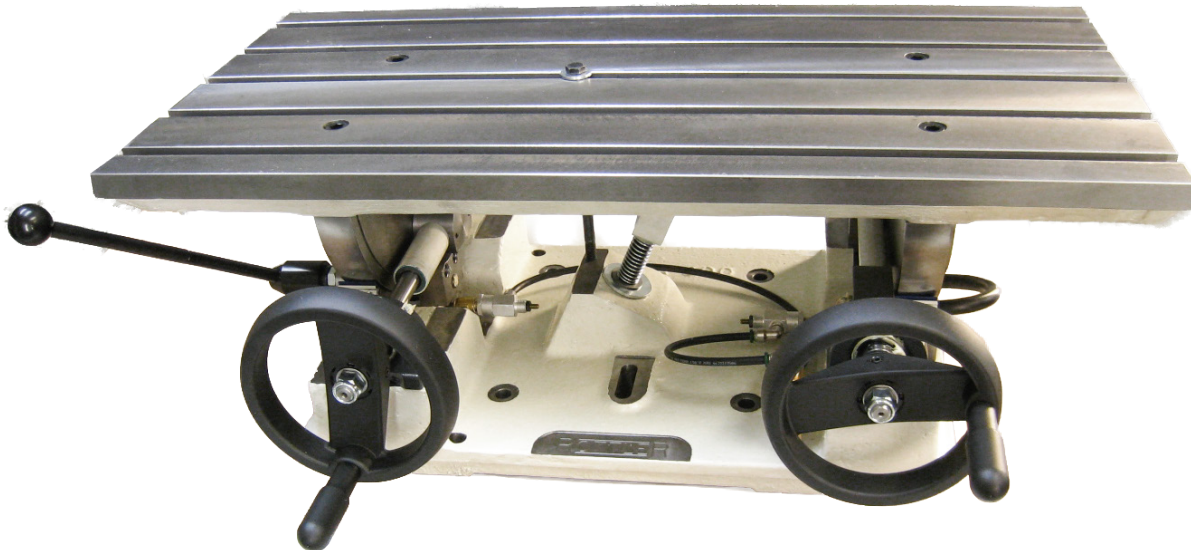
Fits in standard 5th axis, same as the porting fixtures are fitted, allows clamping of parts such as Cylinder Heads and Manifolds for surfacing or machining



Universal Quick Leveling Cylinder Head Fixture

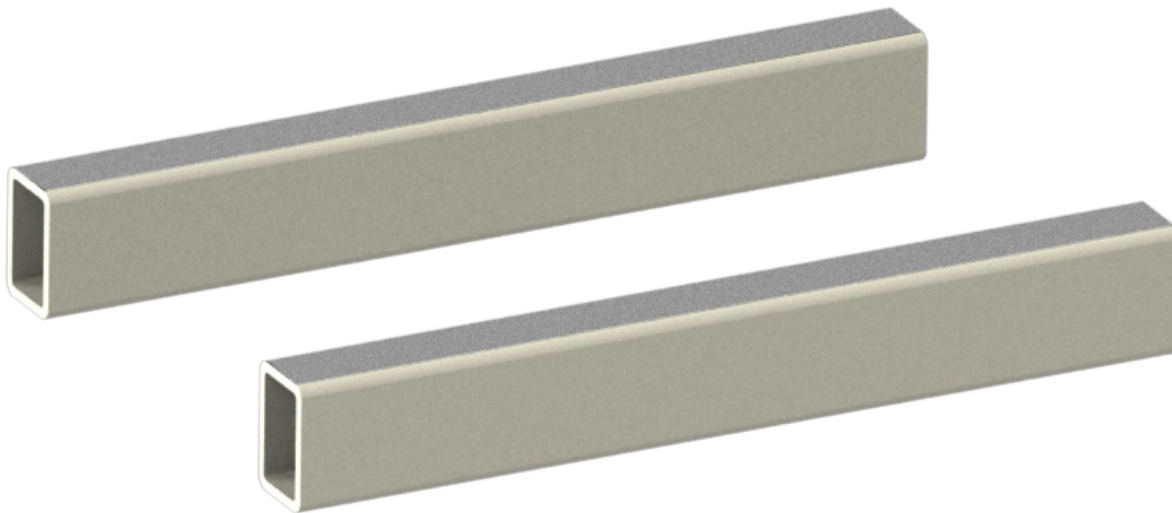
7209M Leveling Table

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



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

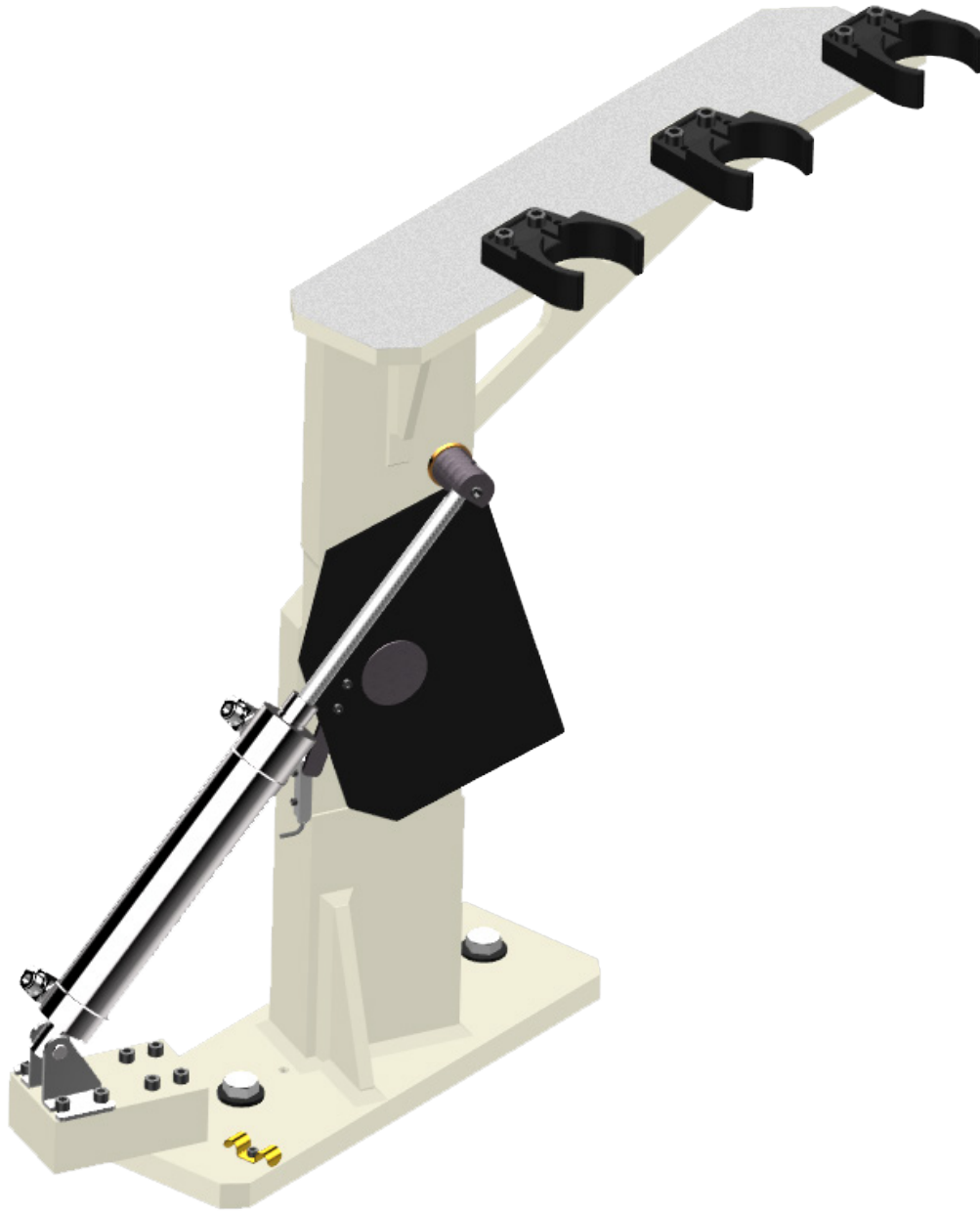


Automatic Tool Changer

5531 Automatic 3 position CAT40 tool changer - LEFT HAND



5532 Automatic 3 position CAT40 tool changer - RIGHT HAND



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.

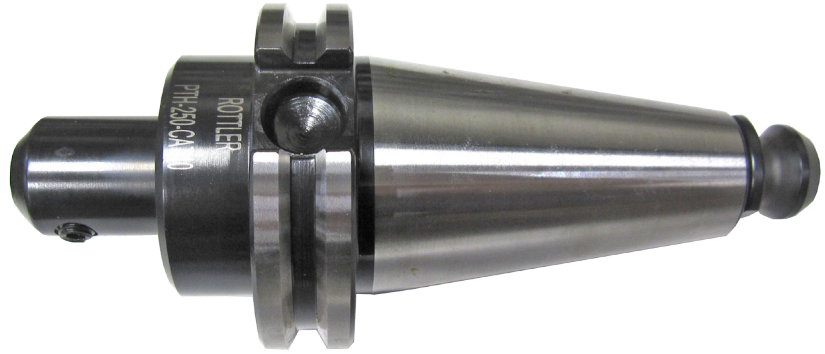


<p>6303B CBN Insert Round, Double-Sided, 3/8" (9.525mm) IC, for Cutting Cast Iron</p> 	<p>6303M PCD Insert Round, 3/8" (9.525mm) IC, for Cutting</p> 	<p>6303K Coated Carbide Insert Round, 3/8" (9.525mm) IC, for General Purpose Use</p> 
<p>6303S CBN Insert Round, 3/8" (9.525mm) IC, for Cutting Aluminum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

Porting Tool Holders

PTH-250 CAT40

1/4" (19.05mm) Diameter X CAT40 Taper



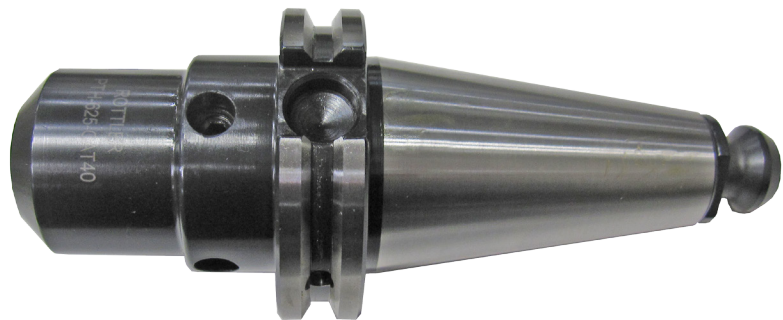
PTH-500-CAT40

1/2" (12.7mm) Diameter X CAT40 Taper



PTH-625-CAT40

5/8" (15.875mm) Diameter X CAT40 Taper



Combustion Chamber Tooling

EM-250

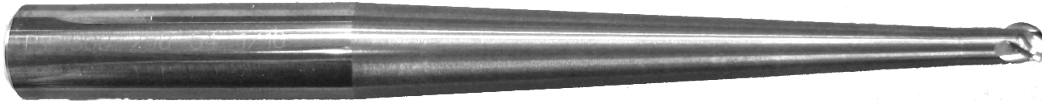
1/4" (19.05mm) Ballnose End Mill



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)



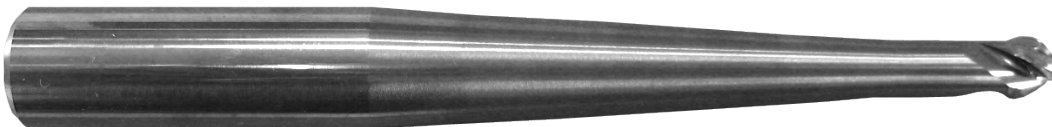
PT500-375-60

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



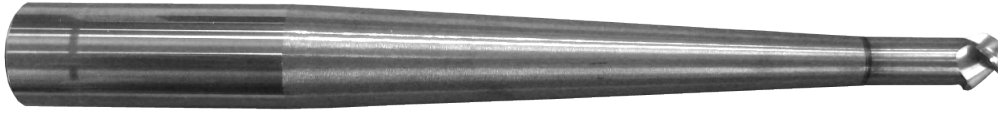
PT625-375-54

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



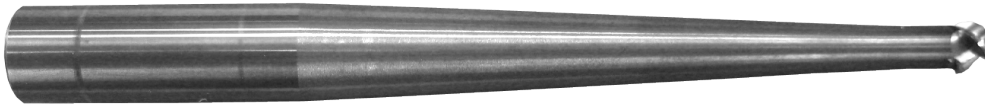
PT625-375-60

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



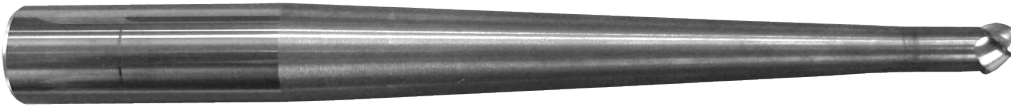
PT625-375-64

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)



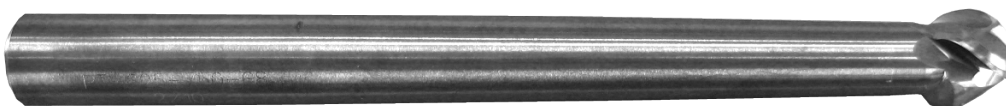
PT625-375-75

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

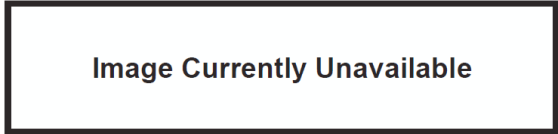
5/8 diameter shank X 3/4 diameter ball mill X 6.80" long (15.875 X 19.05 X 172.72mm)



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)



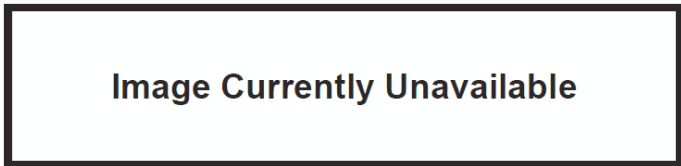
PT625-375-70CI

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

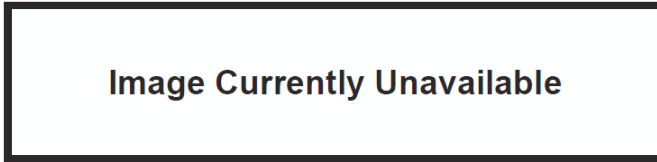
5/8 diameter shank X 3/4 diameter ball mill X 6.80" long (15.875 X 19.05 X 172.72mm)



Porting Tools for Ductile Iron

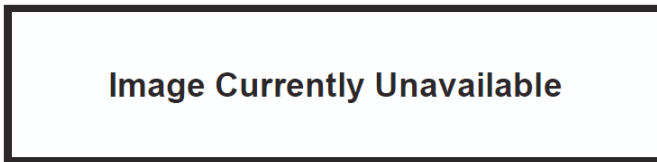
PT625-375-65DI

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



PT625-500-65DI

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



Coolant for Aluminum Cutting

DYNA-KOOL

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



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 F69A 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



Miscellaneous Tooling for 650-2-14B&F Cutterheads

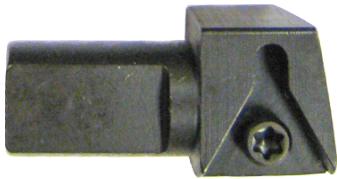
650-2-16D 1.400" (35.5mm) Spacer (Extension)



<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



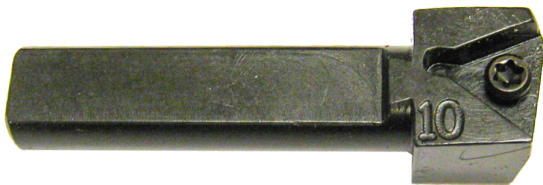
6747K Cartridge Assembly

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



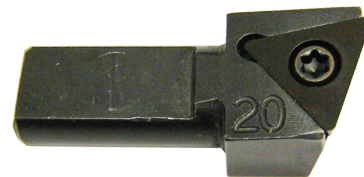
6747F Cartridge Assembly

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



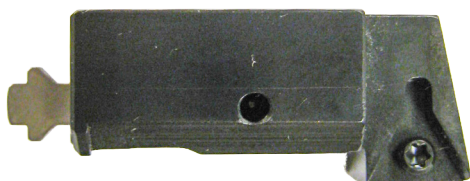
6593L Cartridge Assembly

Offset Indexable Insert, Triangular Positive Rake (3.14 - 3.40" Diameter)



6593M Cartridge Assembly

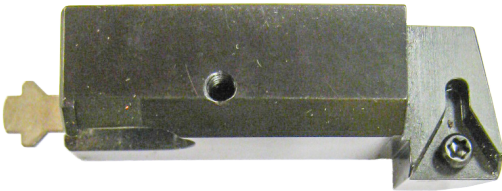
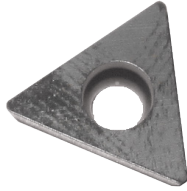

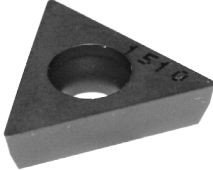
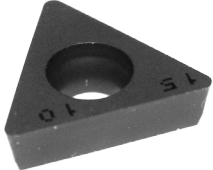


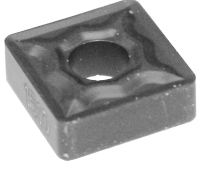
Offset Indexable Insert, Triangular Positive Rake (3.40 - 3.90" Diameter)



6593N Cartridge Assembly

Offset Indexable Insert, Triangular Positive Rake (3.90 - 4.40" Diameter)



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

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



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

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

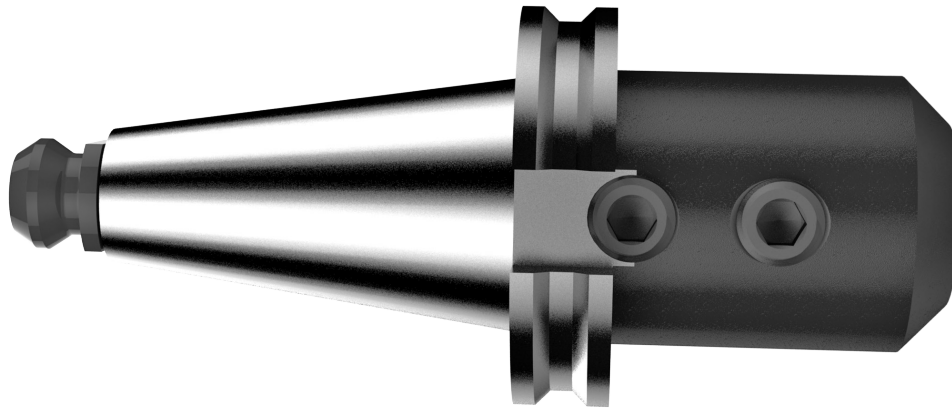
650-2-45H 1" (25.4Mm) Diameter Roughing End Mill

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

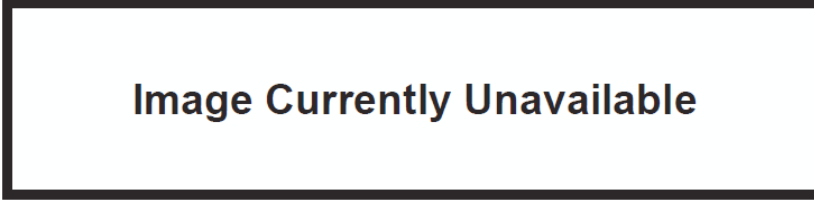
Includes CAT40 Spindle adapters, spot facer, center drill, drill, 7/16" tap and torque tap holder. Recommend software packages 8300 & 9043 and 4th Axis Block Fixture 690-3-63.



Main Line Bore Tooling

6753QX Main Line Bore 90 Degree Right Angle Drive Assembly

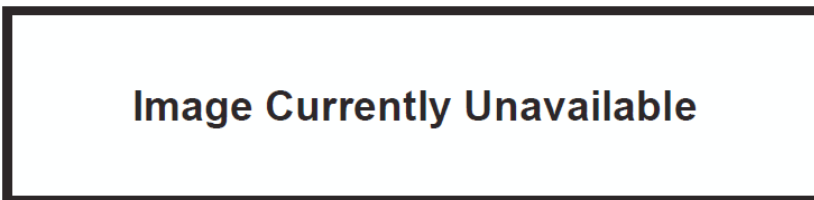
Diameter 1.9 - 5.6" (48 - 142.2mm) Minimum clearance 3.29" (83.6mm) When used with 650-2-39B Cutterhead



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

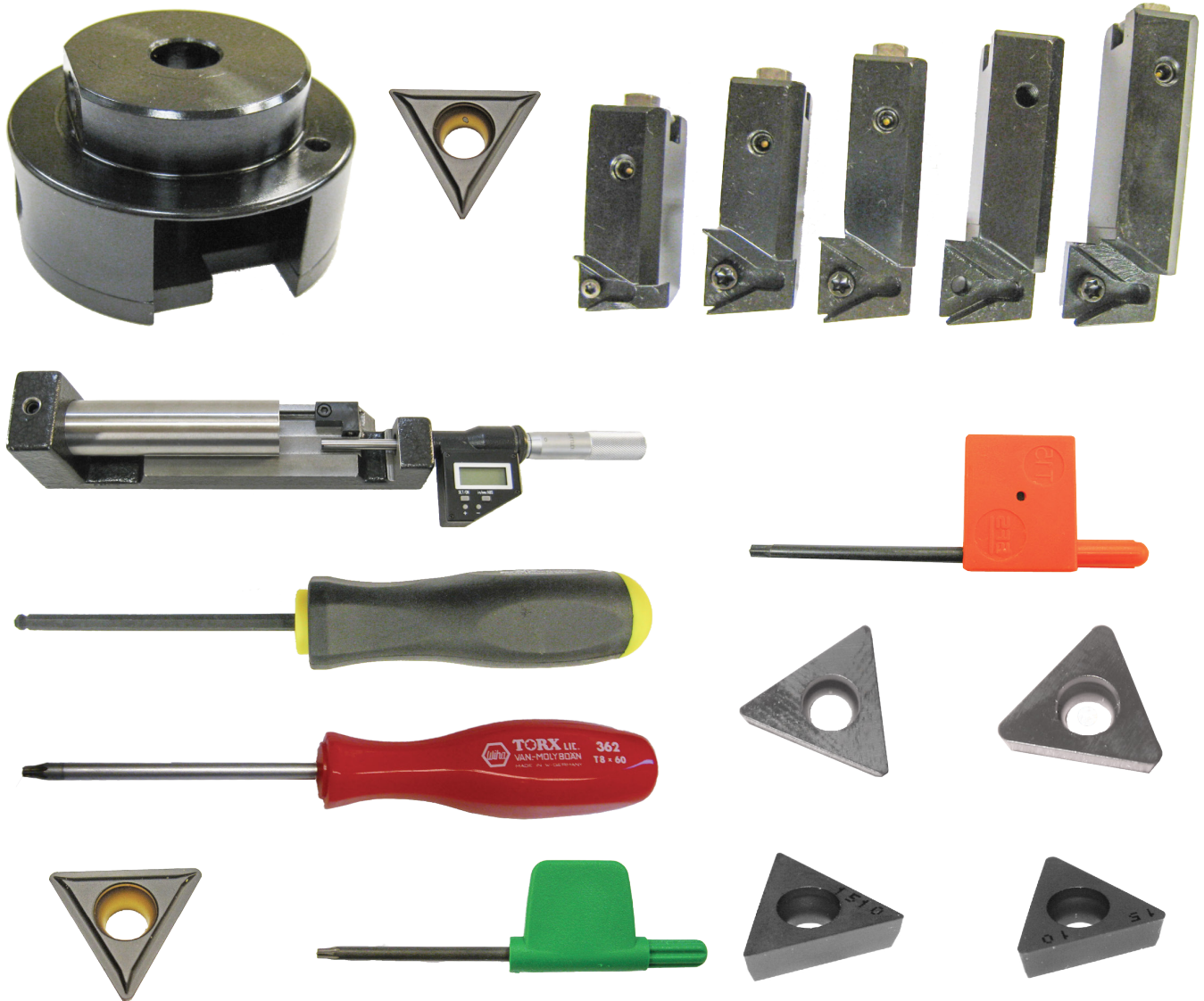
For Limited Clearance Between Bearing Caps, Diameter 1.9 - 4.0" (48 - 101.6mm) Minimum clearance 2.7" (69mm) with 650-2-39B Cutterhead

- 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 While
- 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.



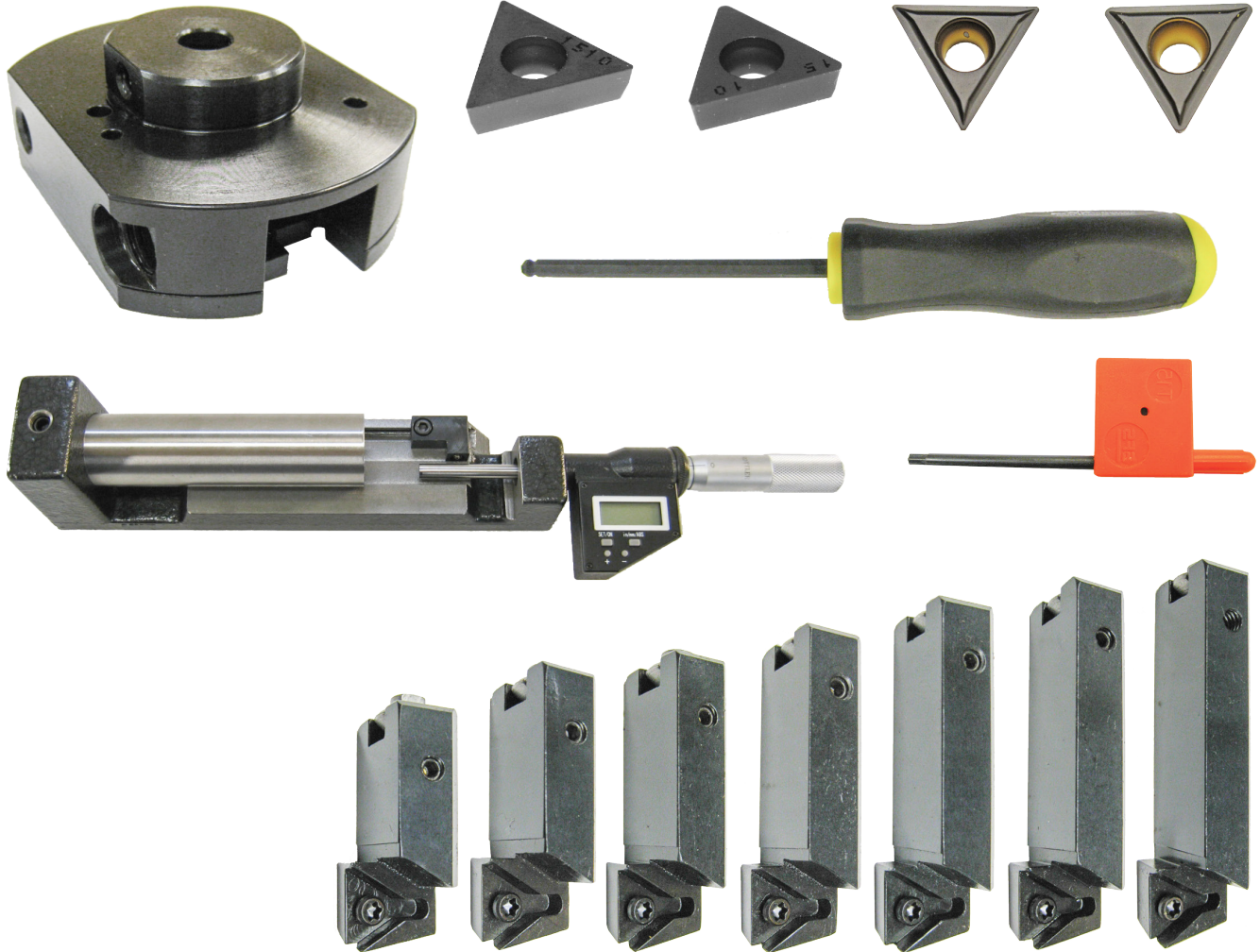
650-2-39B Cutterhead Assembly

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)



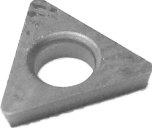



650-2-39C Cutterhead Assembly Line Boring




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

<p>6801M Tool holder Indexable Insert, Thrust Facing .160 IC, Positive Rake</p> 		<p>6801P Tool holder Indexable Insert, Thrust Facing 350 Chevy and Other Small Blocks Line Boring</p> 	
<p>501-29-6G Insert Triangular, .160 IC 1/64" (.397mm) Radius</p> 	<p>501-29-6H Insert Screw</p> 		

Special Main Line Boring Chamfering Tool

<p>199-90 Tool holder 2 - 3" (50.80 - 76.20mm)</p> 		<p>199-96 Tool holder 3 - 4" (76.20 - 101.60mm)</p> 	
<p>501-33E Tool bit 45-Degree Chamfer</p> 			

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.

