

ROTTLER

F60 SERIES CNC MACHINING CENTER

OPTIONAL EQUIPMENT CATALOG



RamSpeed.com.au

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@rottermfg.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



F60 SERIES OPTIONAL EQUIPMENT CATALOG

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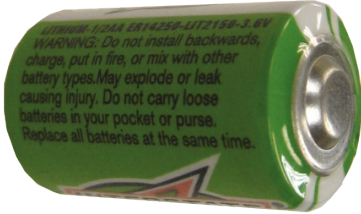
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Spare Parts for Automatic Wireless Probe

6648U Spare Battery
for Renishaw probe (2 Required)



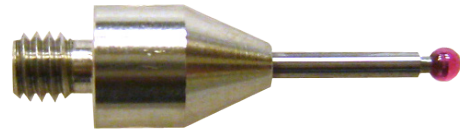
650-3-59C 50mm long X 6mm diameter Stylus



650-3-59D 100mm long X 6mm diameter Stylus



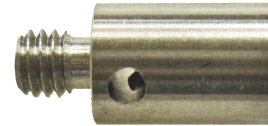
650-3-59E 20mm long X 2mm diameter Stylus



650-3-59K 50mm Extension for 50mm & 100mm Stylus



6648T 10mm Stylus Extension

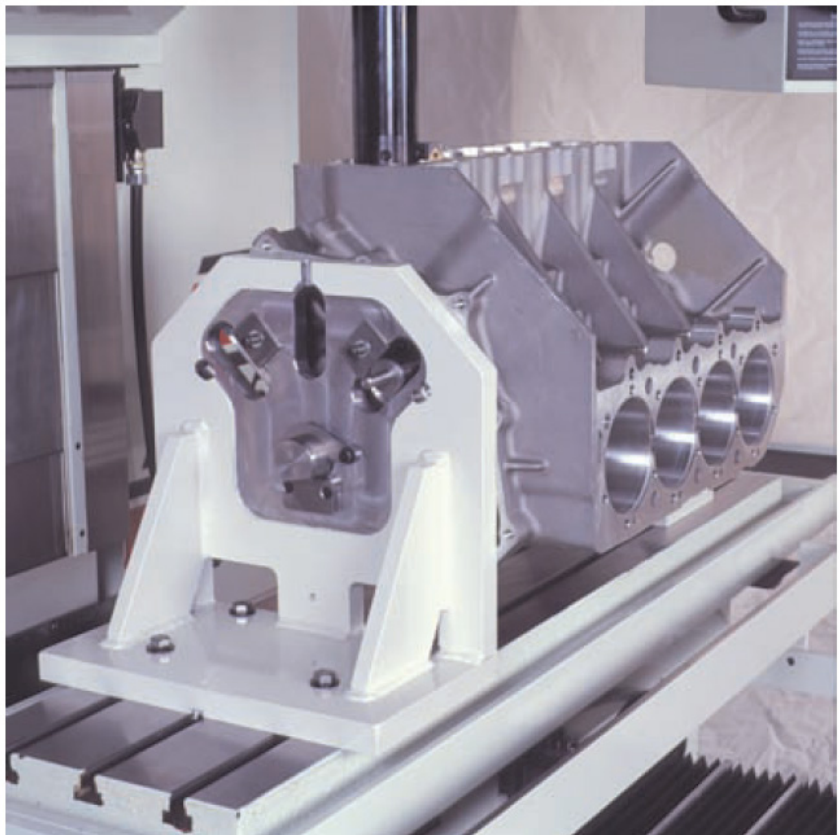
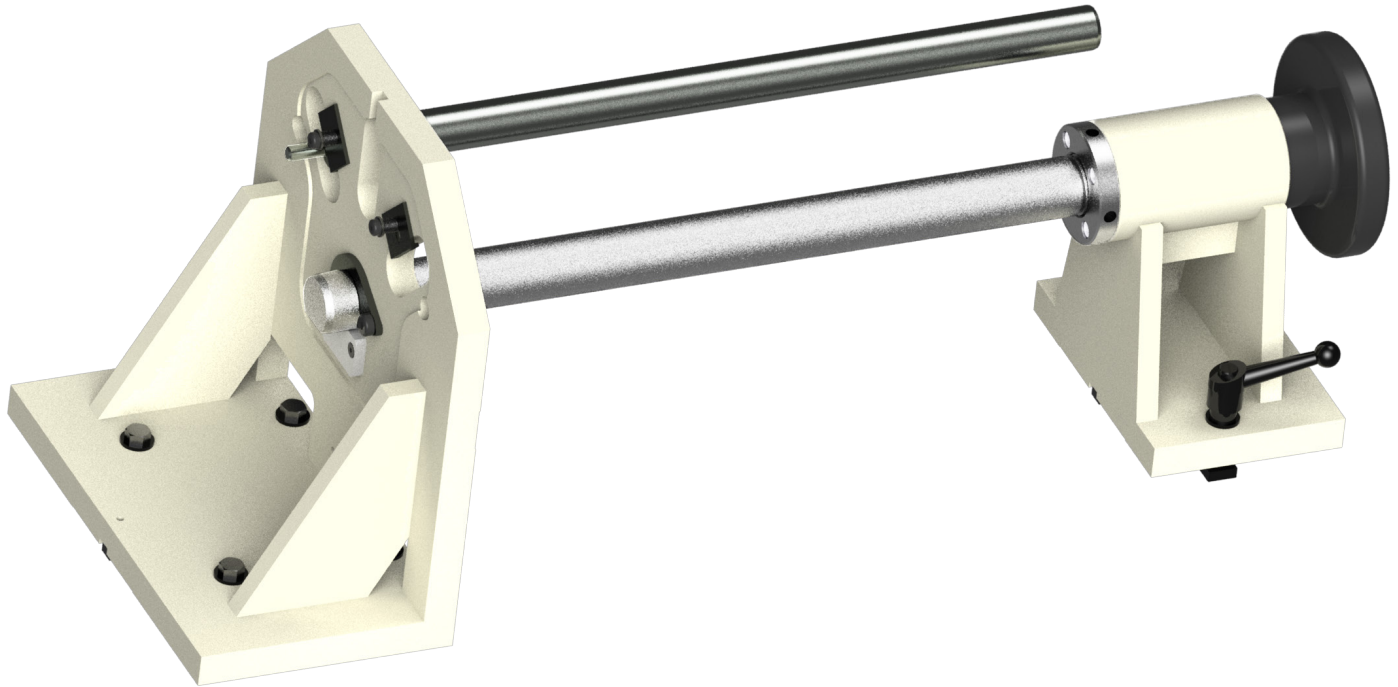


6648Q 17.5mm long X 6mm diameter Stylus



Fixturing**650-3-1 Performance 90 Degree V Block Fixture**

Heavy Duty, Including Crankshaft and Camshaft Bars to Accommodate Max. Block Length of 23.85" (606mm). Customer Must Order Main and Cam Locators Required from List Below. Fixture Price Does not Include Locators



Optional Crankshaft and Camshaft Bars for Longer Block Models

650-3-4E Crankshaft Bar for Longer Block Models

V10. Maximum Block Length 31.85" (809mm)



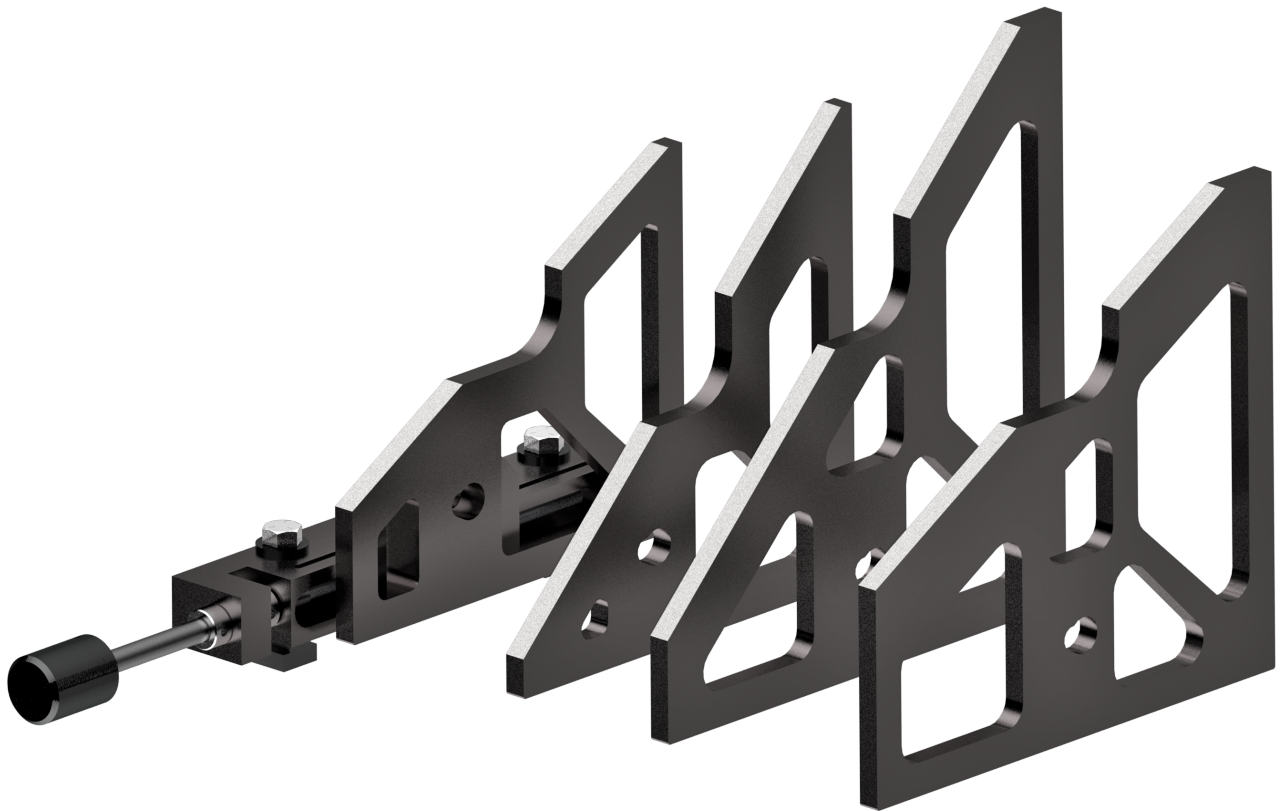
650-3-7K Camshaft Bar for Longer Block Models

V10. Maximum Block Length 31.85" (809mm)

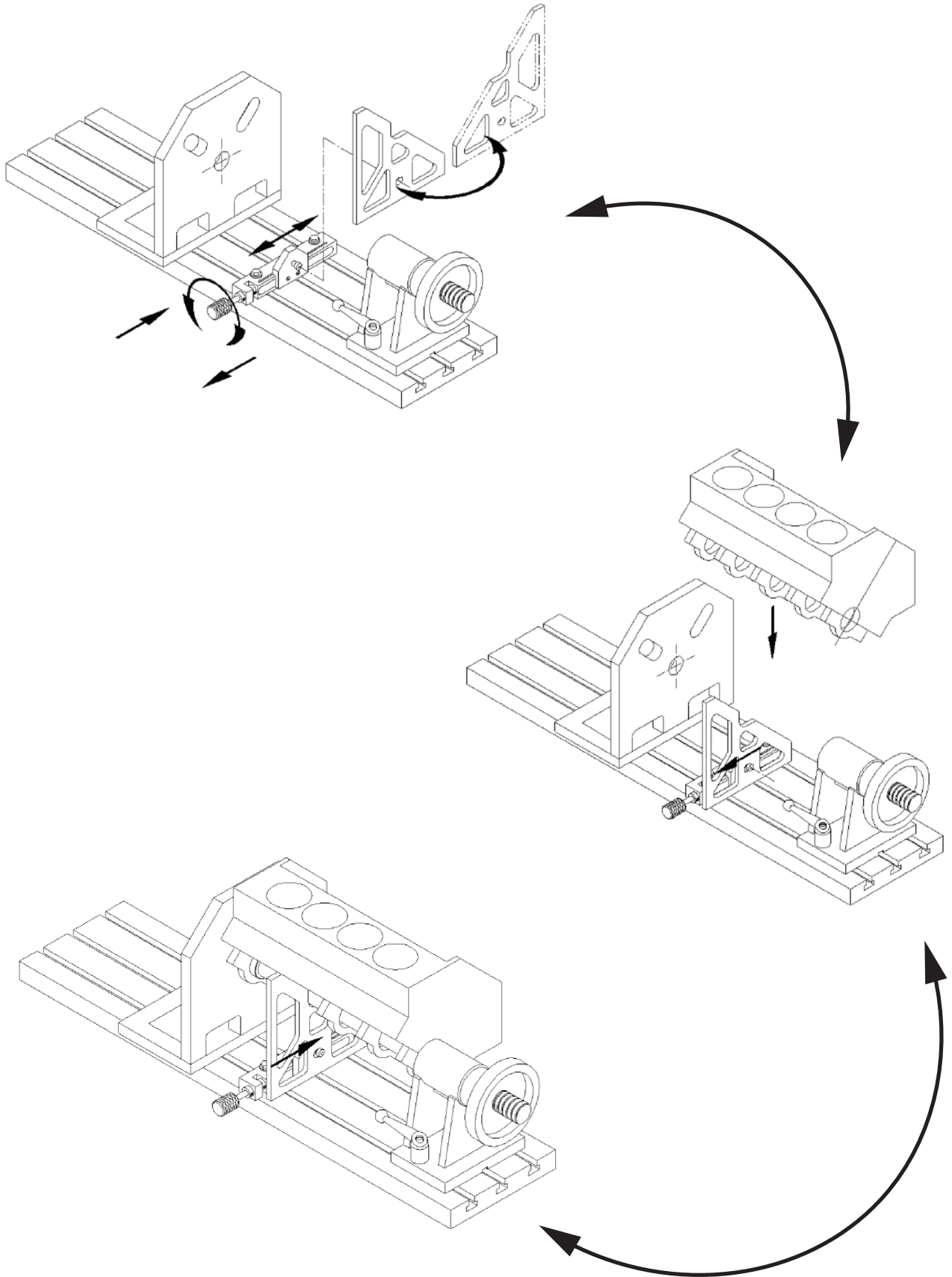


650-3-20A Pan Rail Wedge Fixture

(Requires Performance Fixture Part #650-3-1). Used for Fixturing 60 & 90-Degree Overhead CAM Blocks



650-3-20A Pan Rail Wedge Fixture Setup

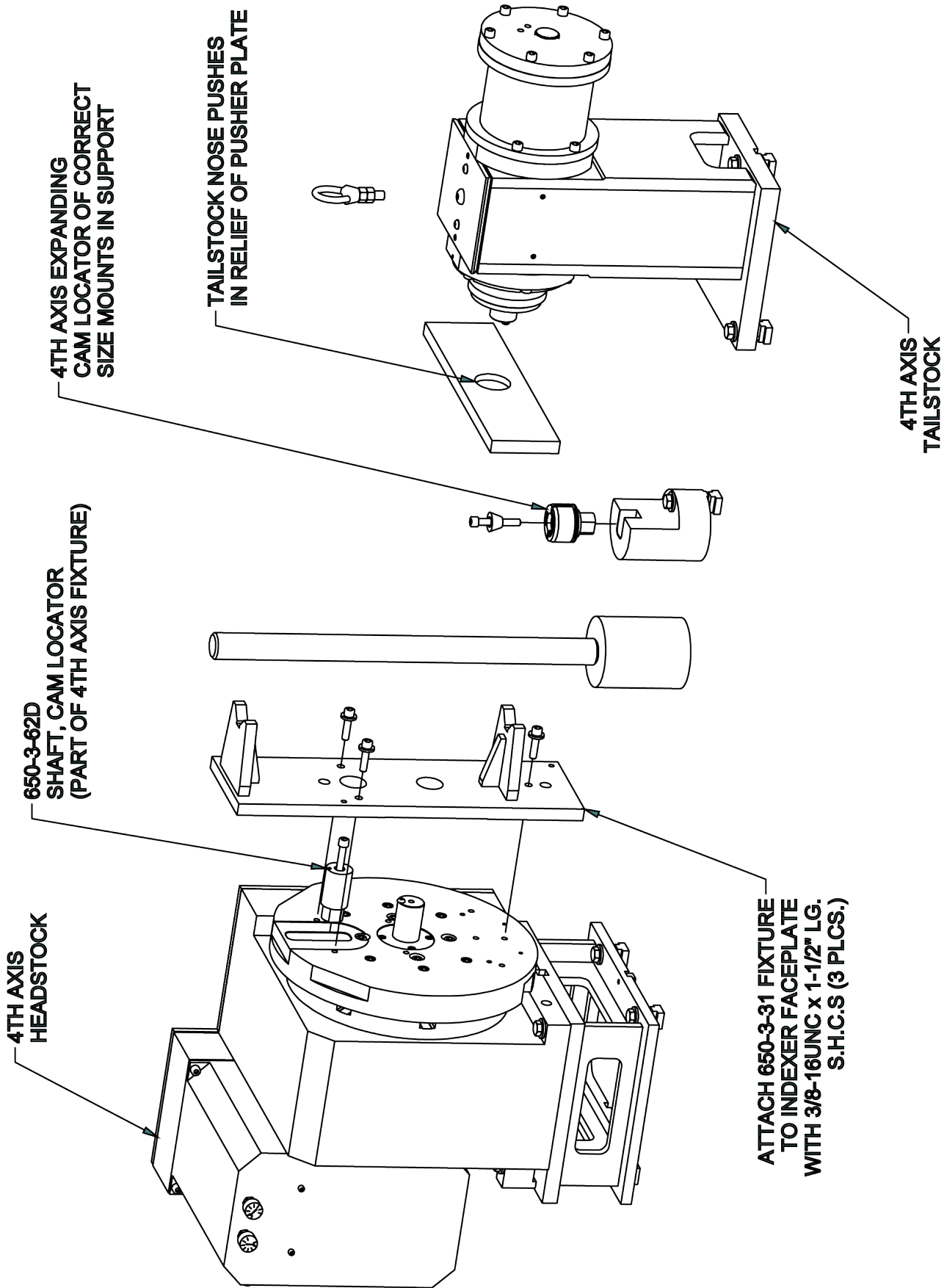


650-3-30 Block End Truing Fixture Assembly

(Requires Performance Fixture Part #650-3-1) Used for Surfacing and Machining Front and Rear End of Block True to Crankshaft Centerline.



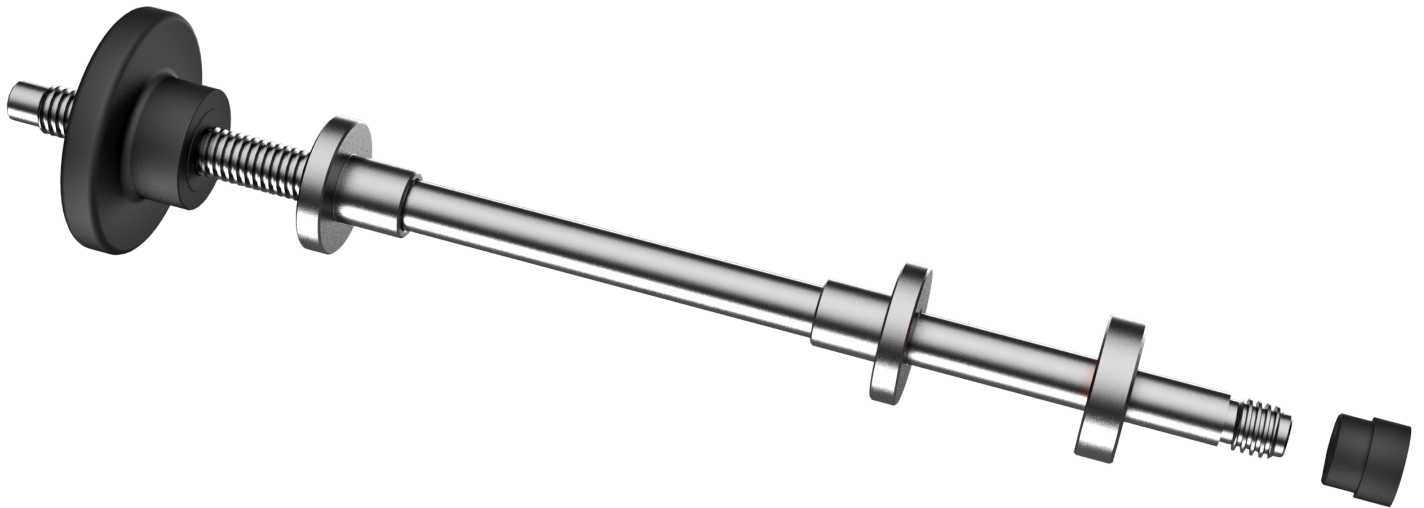
650-3-30 Block End Truing Fixture Setup



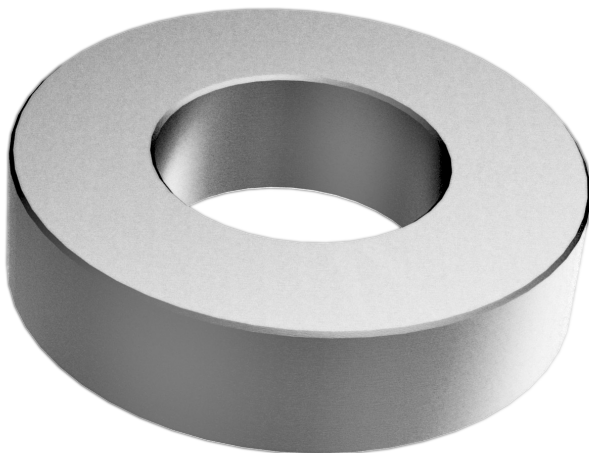
650-3-30A FIXTURE APPLICATION ON 4TH AXIS FIXTURE

650-3-1A Lower End Machining Package Assembly

(Requires Performance Fixture Part #650-3-1) Used for Set Up for Main Line Boring and Angle Adjustment for Splayed Cap Drilling and Tapping.

**650-3-4F Spacer Set for Honda, Subaru, Mitsubishi Blocks**

For Boring and Milling/Surfacing with the 650-3-1 Performance Fixture.



LOCATOR SETS FOR PERFORMANCE FIXTURE 650-3-1

Domestic Main Locators

502-1-47A Chevy SB

Locator, Main Bearing Chevy V8 (350) Chevy V6 (4.3L) 2.6391" (67.033mm) Chevy V8 (400Sb) Chevy V6 (3.4L) 2.8390" (72.111mm) 1 pair



502-1-47B Chevy BB

Locator, Main Bearing Chevy V8 (396/400BB/454) 2.9365" (74.587mm) Buick V6 (231 Cu. In.) 2.6855" (68.212mm) 1 pair



502-1-47D Ford V8

Locator, Main Bearing Ford V8 (351C) 2.9402" (74681mm) Ford V8 (351W / 429 / 460) 3.1907" (81.044mm) 1 pair



502-1-47E Ford, Mopar V8

Locator, Main Bearing Ford V8 (289/302) 2.4397" (61.968mm) Mopar V8 (360) 3.0010" (76.225mm) 1 pair



502-1-47F Mopar V8

Locator, Main Bearing Mopar V8 (318/340) 2.6910" (68.351mm) Mopar V8 (426 / 440) 2.9410" (74.701mm) 1 pair



502-1-47G Chevy V8

Locator, Main Bearing Chevy V8 (283/327 Early) 2.4892" (63.226mm) Chevy V8 (5.3L 1999 & Newer) 2.7490" (69.825mm) Chevy LS-1 2.7495" (69.825mm) 1 pair



502-1-47C Bearing Buick/Olds/Pontiac V8

Locator, Main Bearing Buick/Olds/Pontiac V8 (350/389/400) 3.1866" (80.940mm) Buick/Pontiac V8 (421/428/455) 3.4365" (87.287mm) 1 pair



502-1-47K GM 6.5L Diesel

Locator, Main Bearing GM 6.5L/395 Cu. In. Diesel
Application 3.1420" (79.807mm) 1 pair



502-1-47L Ford 4.6 & Zetec

Locator, Main Bearing Ford 4.6 (2.8491") Ford
Zetec 2.4528" (62.301mm) 1 pair



Import Main Locators

502-1-47J Porsche 928

Locator, Main Bearing 928 Porsche V8 5L Block 2.953"
(75.260mm) 1 pair



502-1-47M Honda & Mitsubishi

Locator, Main Bearing Honda 1.8 (2.3216") Mitsubishi 2.0
- 2.4002" (60.965mm) 1 pair



502-1-47Q Holden V8

Locator, Main Bearing Holden V8 - 2.5906/2.5916"
(65.801/65.827mm) 1 pair



502-1-47R Subaru & Honda

Locator, Main Bearing 2.5 Liter Subaru
2.5185/2.5195" (63.970/63996mm) 2.2 Liter Honda
2.1250/2.1260" (53.975/54.00mm) 1 pair



502-1-47P 7.3 IHC Diesel & Toyota 3.0 V6

Locator, Main Bearing 7.3 IHC Diesel V8 3.315/3.316"
(84.201/84.226mm) 3.0 Toyota V6 2.677/2.678"
(67.996/68.021mm) 1 pair



If Customer Requires Sizes Other Than Listed Below, Rottler Will Manufacture the Required Size.

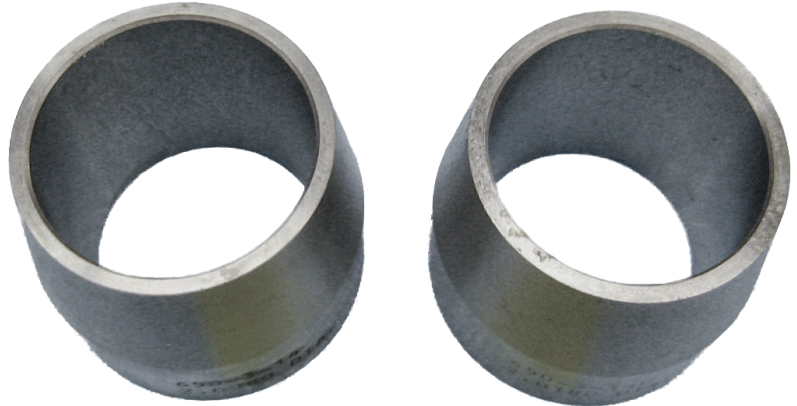
Customer Must Provide the Size, Including Tolerance, of the Bore/s the Locator will be used in. Rottler Will use this Information to Design the Actual Locator. Sold In Pairs.

CAM BEARING LOCATOR SETS FOR PERFORMANCE FIXTURE 650-3-1

Chevrolet Sets

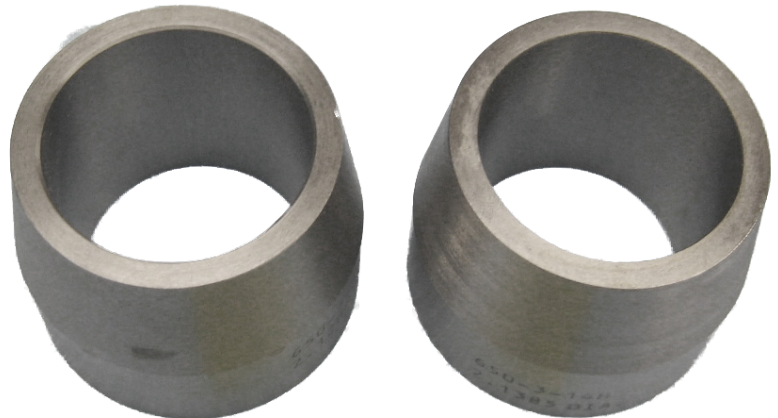
650-3-19 Locator, Cam Bearing Small Block Chevy

(283/327/350/400) Bore#1 2.019/2.021" #5
(2.009/2.011)



650-3-19A Locator, Cam Bearing Big Block Chevy

(396/427/454) Bore#1 2.1395/2.1405" #5
(2.1295/2.1305)



650-3-19G Locator, Cam Bearing Special Prostock Racing Big Block Chevy

63mm Roller Bearing Bore 2.4780/2.4790"



650-3-19H Locator, Cam Bearing Special Prostock Racing Big Block Chevy

Bore 2.6733/2.6743"



650-3-19J Locator, Cam Bearing Small Block Chevy Roller Bearing

Bore 1.8745/1.8750"



650-3-19L Locator, Cam Bearing Chevy Bow-Tie Block

Bore 2.1200/2.1210"



650-3-19M Locator, Cam Bearing Chevy 58mm Roller Bearing

Bore 2.2827/2.2831"



650-3-19N Locator, Cam Bearing Chevy Bow-Tie Block

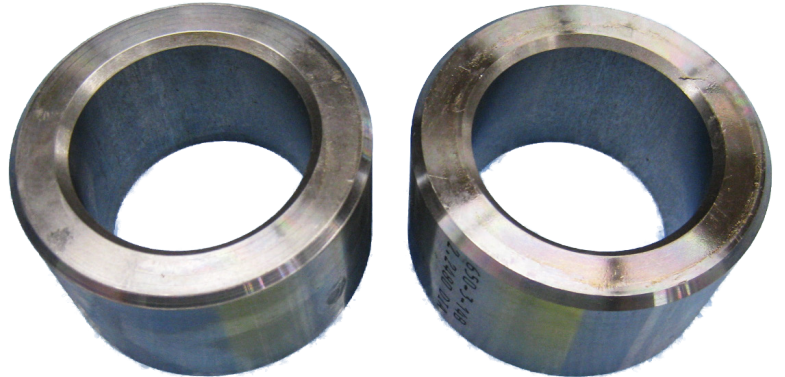
Bore 1.999/2.0010"



Ford Sets

650-3-19B Locator, Cam Bearing Big Block Ford (427/429/460)

Bore#1 2.2495/2.2505" - #5 2.2495/2.2505"



650-3-19C Locator, Cam Bearing Small Block Ford (260/289/302/351W)

Bore#1 2.2041/2.2051 - #5 2.144/2.145"



650-3-19D Locator, Cam Bearing Small Block Ford (351M)

Bore#1 2.2495/2.2505" - #5 2.1440/2.1450"



650-3-19Q Locator, Cam Bearing Big Block Ford 390

Bore#1 2.3095/2.3105" - #5 2.2495/2.2505"



Mopar Sets

650-3-19E Locator, Cam Bearing Small Block Mopar (318/340/360)

Bore#1 2.1295/2.1305" - #5 1.6920/1.6930"



650-3-19F Locator, Cam Bearing Big Block Mopar (383/426/440)

Bore#1 2.1295/2.1305" - #5 1.8795/1.8805"



If Customer Requires Sizes Other Than Listed Below, Rottler Will Manufacture the Required Size.

Customer must provide the Size, Including Tolerance, of the Housing Bore/s the Locator Will be used in. Rottler will use this information to design the actual locator. Locators are Machined Smaller than Housing Bore. Sold In Pairs.

Spacers Required for the Performance Fixture #650-3-1

To Set V Blocks at the Correct Angle for Lifter Boring Machine Work

650-3-7E 4-Degree Cam Bar Spacer-Chev. Small Block Only



650-3-7F 6.25 Degree Cam Bar Spacer-Chev. Big Block Only



650-3-7G Spacer, Cam Bar 3.5 Degree Ford 289/302/351W



650-3-7H Spacer, Cam Bar 4-Degree Ford 429/400



650-3-7J Spacer Cam Bar 48-Degree Mopar Small Block (Race)



650-3-7N Spacer, Cam Bar 42-Degree Chevy Aurora



**650-3-7P Spacer, Cam Bar 43-Degree Chevy
Aurora**



**650-3-7Q Spacer, Cam Bar 44-Degree Chevy
Aurora**



**650-3-7S Spacer, Cam Bar 44-Degree Chevy Small
Block**



**650-3-7T Spacer, Cam Bar 48-Degree Chrysler Big
Block**



650-3-30 Block End Truing Fixture Assembly

(Requires Performance Fixture Part #650-3-19) Used for Surfacing and Machining Front and Rear End of Block True to Crankshaft Centerline.



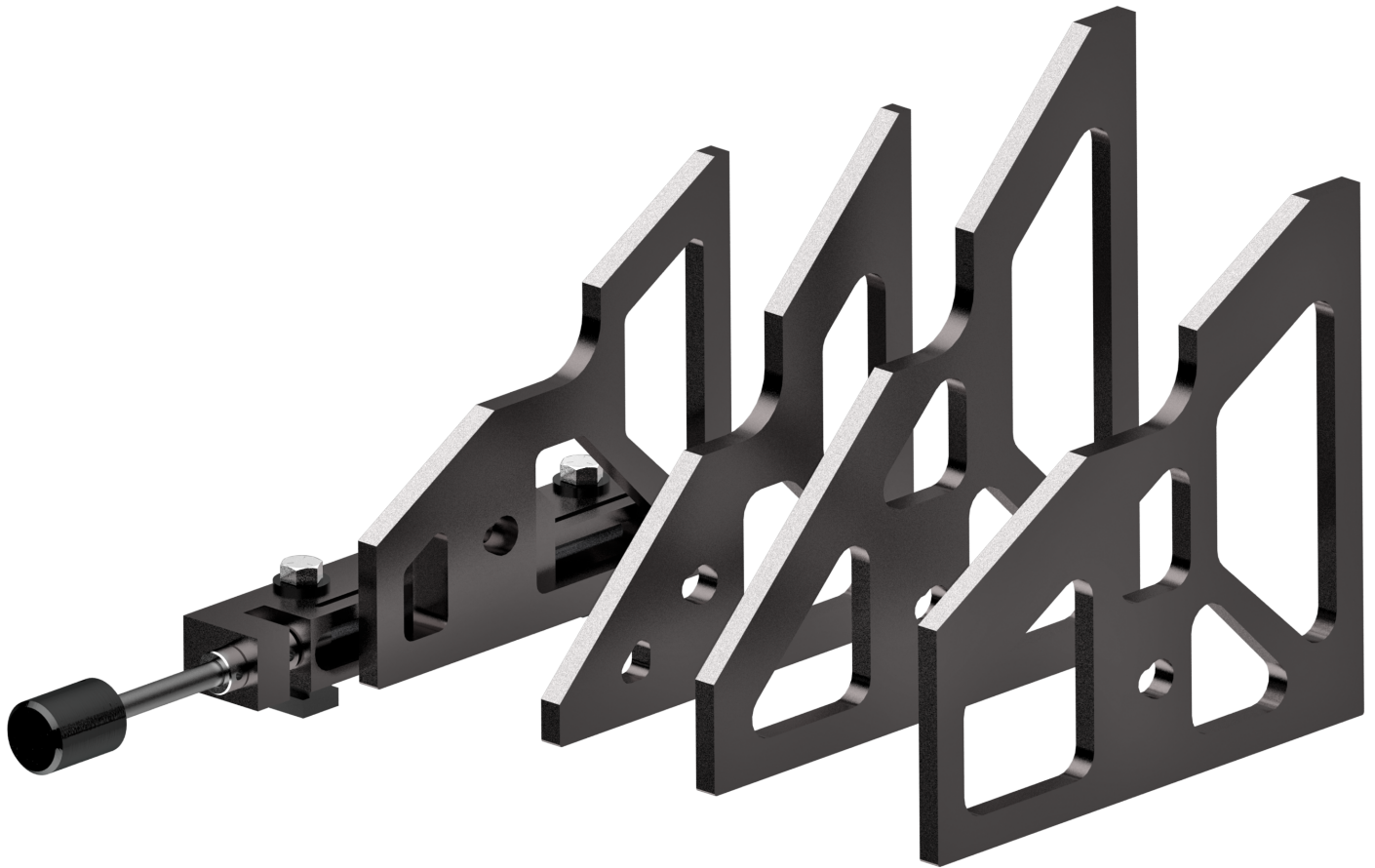
650-3-30A Block End Truing Fixture Assembly

(Requires 4th Axis Fixture #650-3-59) Used for Surfacing and Machining Front and Rear End of Block True to Crankshaft Centerline.



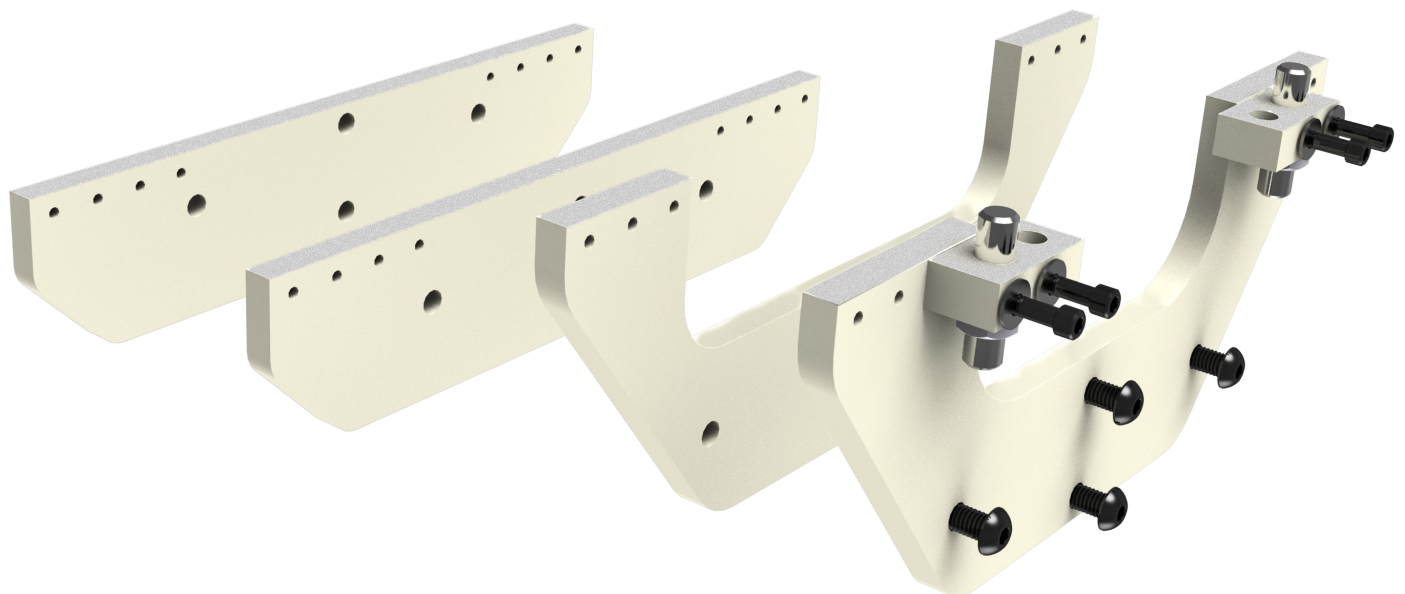
650-3-20A Pan Rail Wedge Fixture

(Requires Performance Fixture Part #650-3-1). Used for Fixturing 60 & 90-Degree OHC Blocks



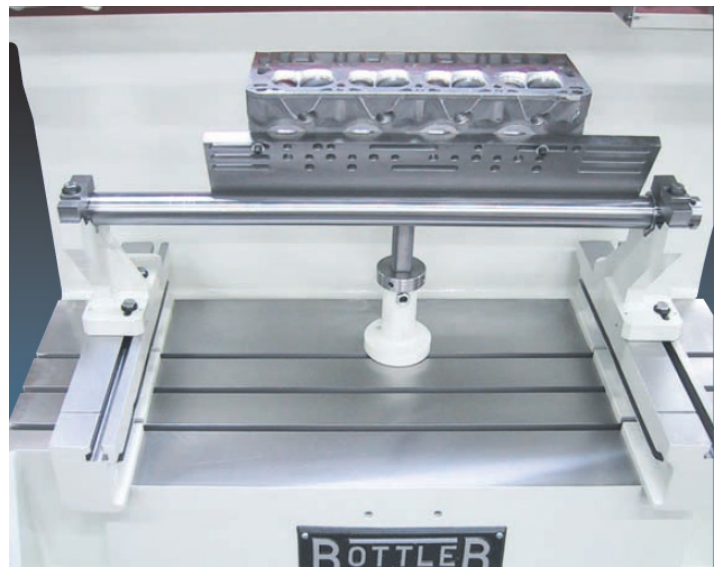
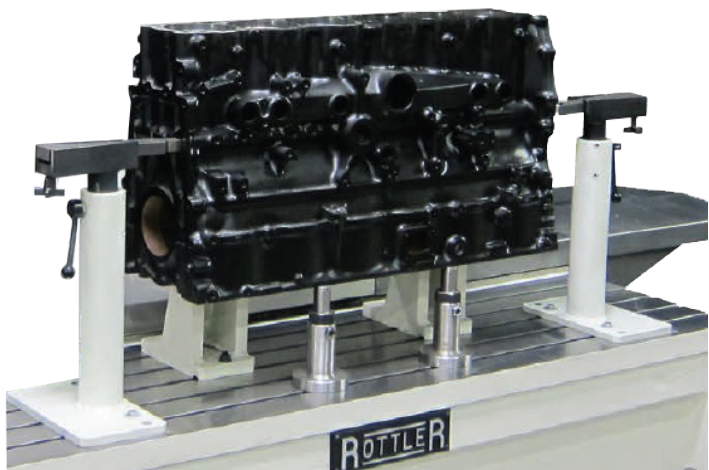
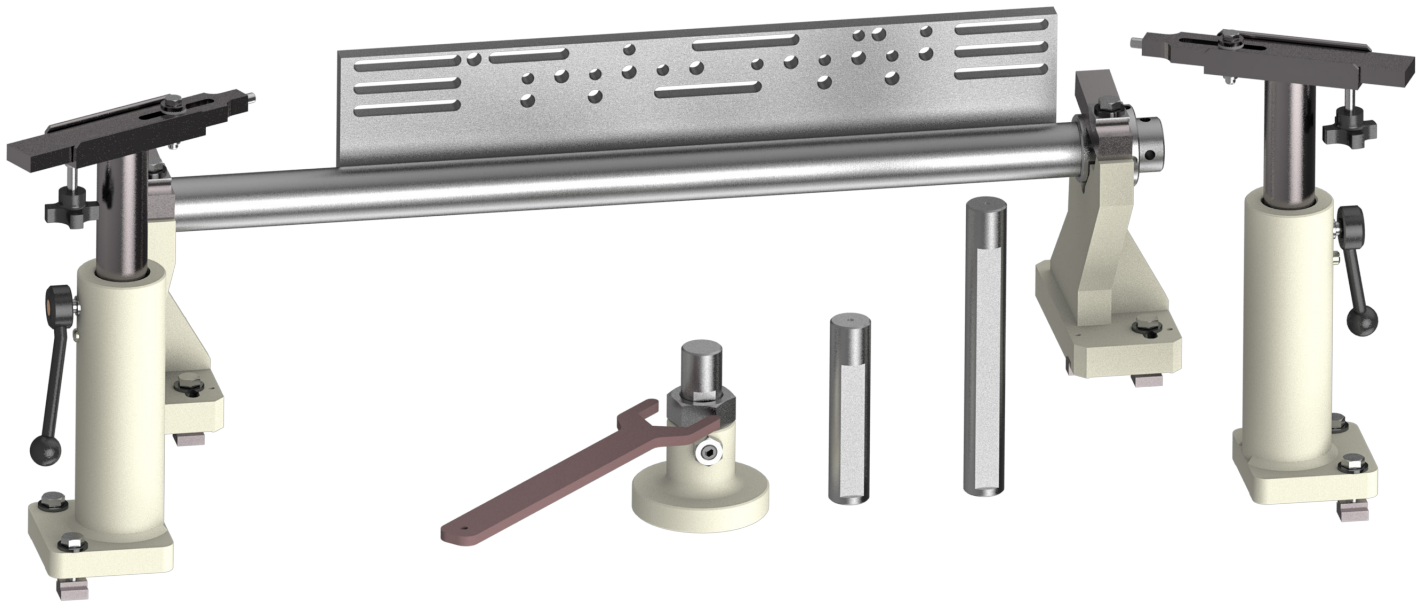
650-3-84 Overhead Cam Block Fixture

For V6 V8 engines, 4th Axis



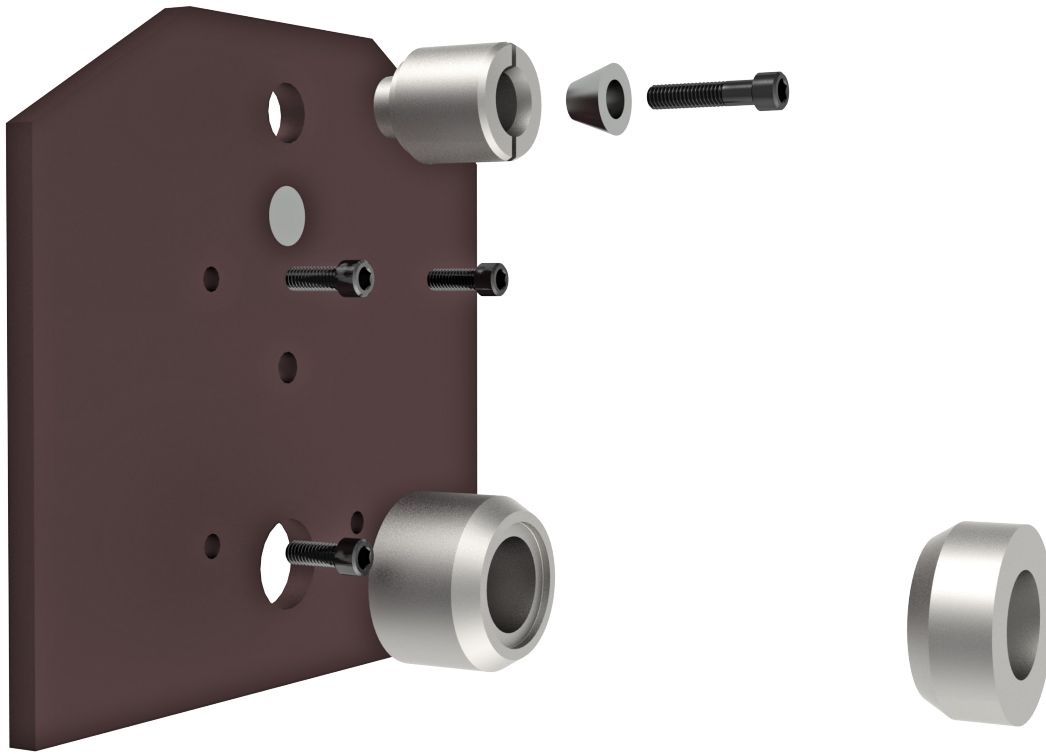
7241P Economy Universal Head and Block Fixture Assembly

(Includes Clamp Towers - 7242M)



Miscellaneous Accessories

650-3-82 Mopar 5.7L Hemi Fixture Assembly

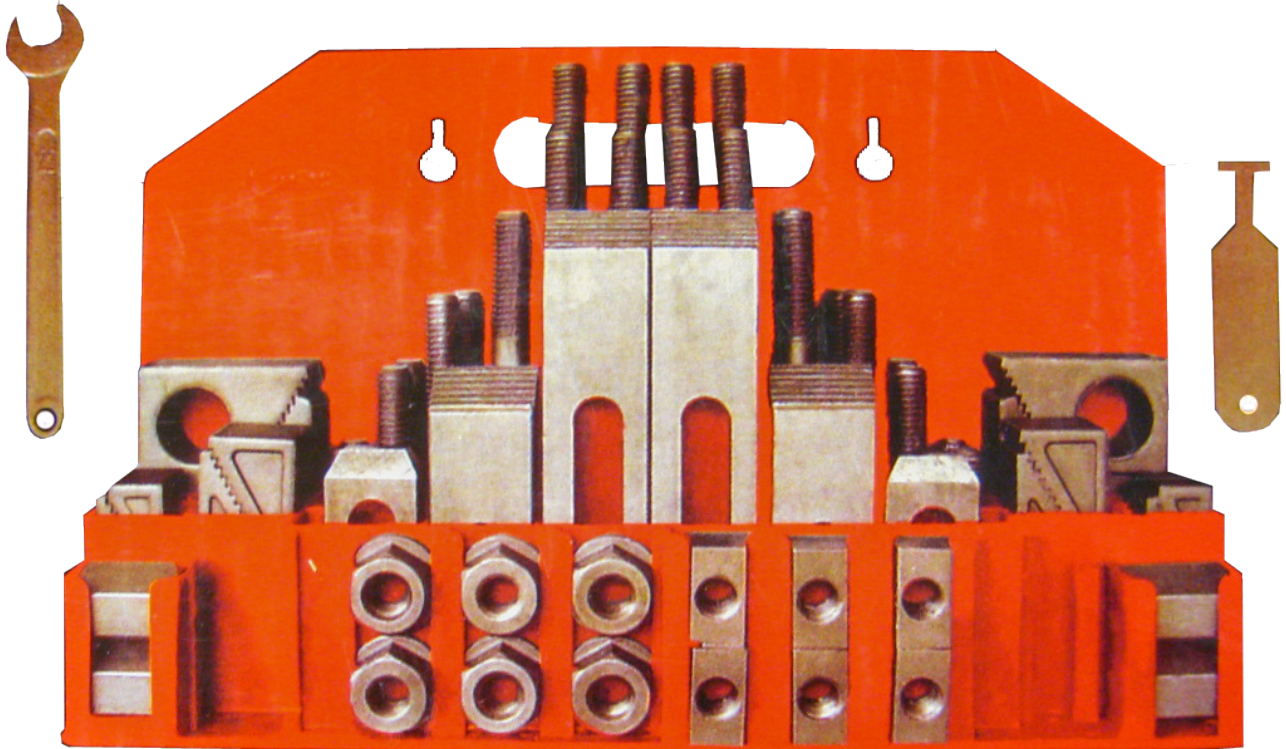


7242M Clamp Tower Assembly
(1 pair)



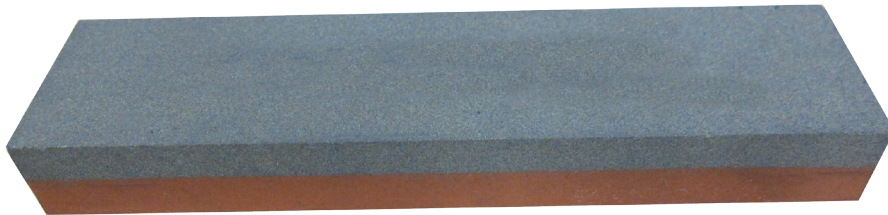
650-3-37 1/2" (12.7mm) Universal Clamping Kit

Including T-Nuts, Bolts, Studs, Strap Clamps, Etc.



650-2-11H Combination Grit Sharpening Stone

6 X 2 X 1" (152.40 X 50.80 X 25.40mm)



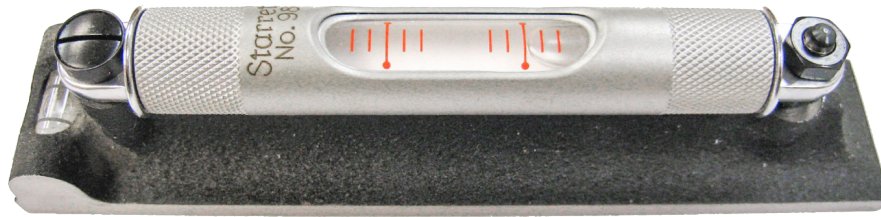
650-2-45H Roughing End Mill

1" (25.4mm) diameter X 8 1/2" (215.90mm) long for block stoker clearance

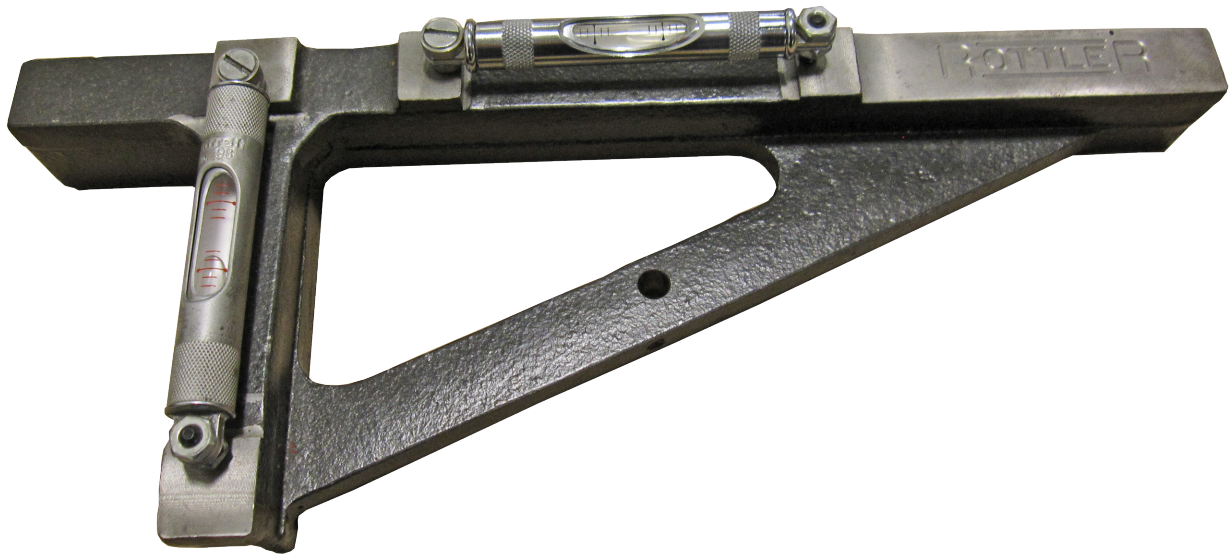


Gages and Indicators

650-3-38 Level-Intake and Exhaust Manifolds

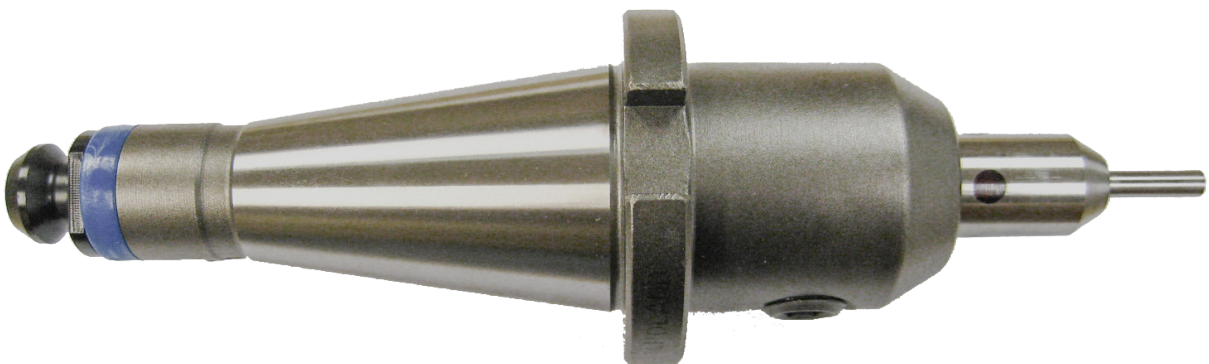


7152A Dual Axis Level Assembly



502-9-9G Three Dimensional Electronic Position Finder

With Spindle Adaptor



502-9-9A Mechanical Run Out Indicator

General Purpose (.001 Resolution)



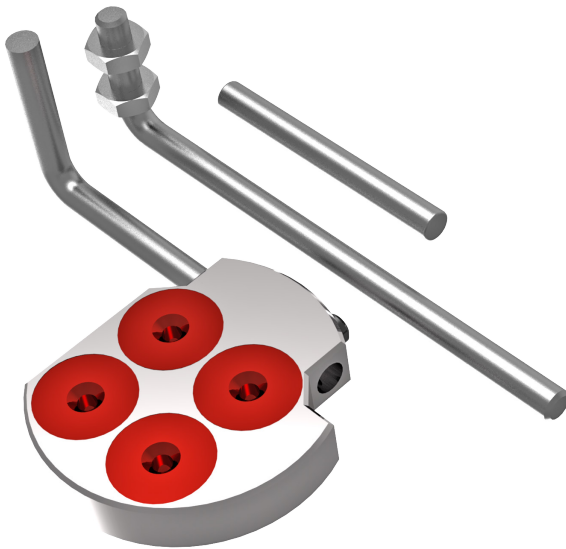
502-11-39D Mechanical Run Out Indicator

For Precision Bore Adjustment (.0001 Resolution)



502-12-4 Magnetic Base

Including (2) Extension Arms for Indicators



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.

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.



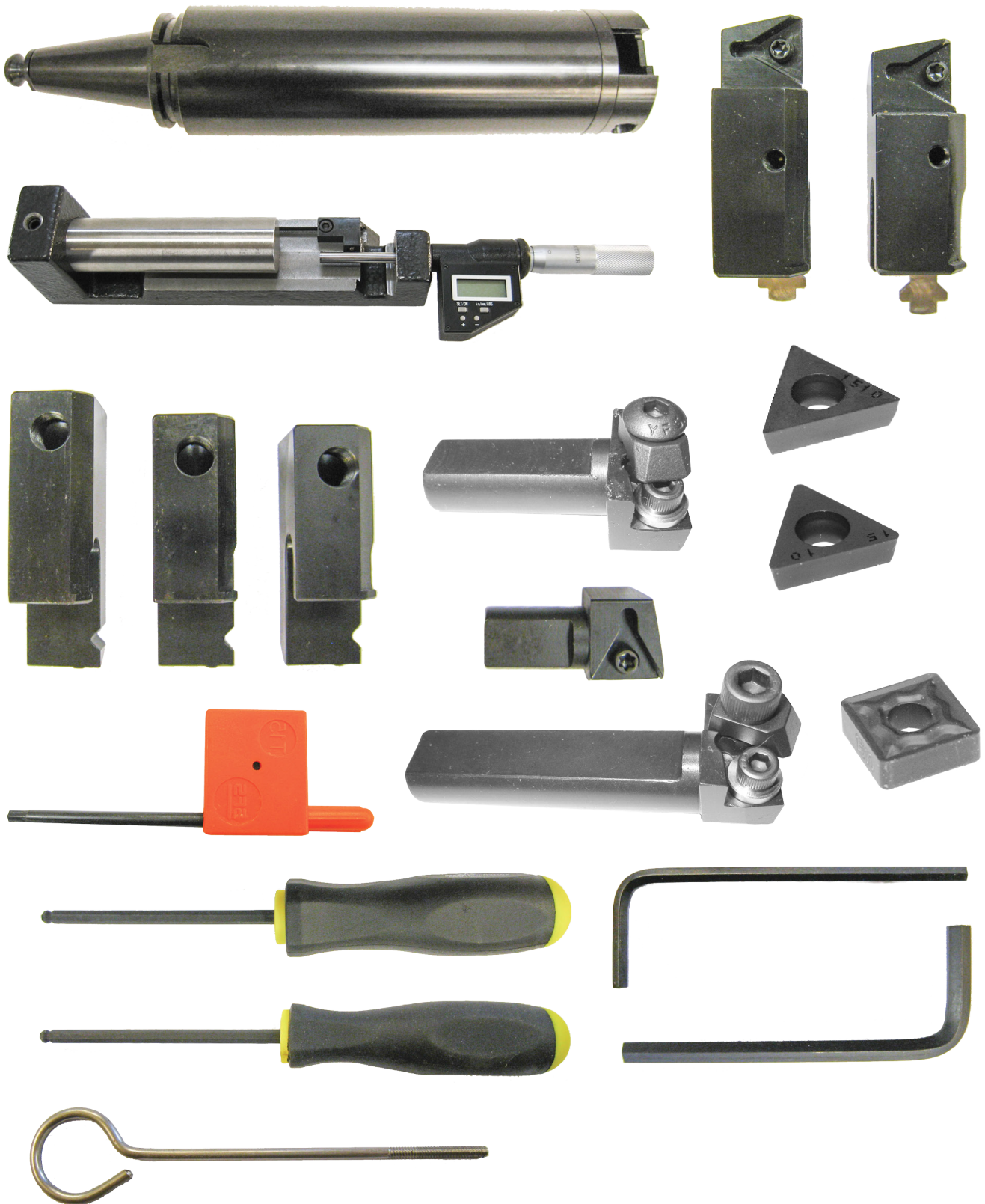
650-2-14B Cutterhead Package

2.9 - 5.0" (73.66 - 127.00mm) diameter X 7.0" (177.80mm) length complete with tooling and Digital Micrometer as Listed Below



650-2-14F Cutterhead Package

2.9 - 5.0" (73.66 - 127.00mm) Diameter X 10.0" (254mm) Length Complete with Tooling and Digital Micrometer (See 'F60 Options' for breakdown)



Extender for 650-2-14A & F Cutterheads

650-2-16D 1.400" (35.56mm) Spacer (Extension)

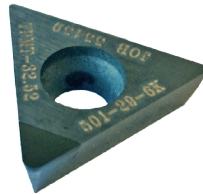
For 650-2-14A and F 2.9" (73.66mm) Cutterheads



Miscellaneous Tooling for 650-2-14 Cutterheads

501-29-6K PCD Tipped Triangular Insert

For Boring/Counterboring Aluminum Only



<p>6598M Cartridge, Triangular, Positive Rake 13/16" (20.650mm) Shank Length, for Counter Boring</p> 	<p>6599 Cartridge, Triangular, Zero Rake 1.88" (47.75mm) Long, for Steel Cutting, requires RTS inserts</p> 	<p>6599D Cartridge, Triangular, Zero Rake 1.88" (47.75mm) Long, insert offset down .250" (6.4mm) for blind holes, for Steel Cutting, requires RTS inserts</p> 
<p>6513J Tool Bit Braze Carbide - .037" (.940mm) Wide O Ring Grooving</p> 	<p>6513L Tool Bit Braze Carbide - .039" (.991mm) Wide O Ring Grooving</p> 	<p>6513N Tool Bit Braze Carbide - .060" (1.524mm) Wide O Ring Grooving</p> 
<p>6513Q Tool Bit Braze Carbide - .120" (3.048mm) Wide O Ring Grooving</p> 	<p>6513P Tool Bit Braze Carbide - .085" (2.159mm) Wide O Ring Grooving</p> 	<p>6747K Cartridge Assembly 5 Degree Chamfer for Triangular Positive Rake Inserts</p> 

<p>6747P Cartridge Assembly 10 Degree Chamfer for Triangular Positive Rake Inserts</p> 	<p>6747G Cartridge Assembly 15 Degree Chamfer for Triangular Positive Rake Inserts</p> 	<p>6747F Cartridge Assembly 20 Degree Chamfer for Triangular Positive Rake Inserts</p> 
<p>6747M Cartridge Assembly 20 Degree Chamfer for Triangular Positive Rake Inserts (Special Application Only)</p> 	<p>6747H Cartridge Assembly 30 Degree Chamfer for Triangular Positive Rake Inserts</p> 	<p>6593L Cartridge Assembly Offset Indexable Insert, Triangular Positive Rake, 3.14 - 3.40" (79.756 - 86.36mm) diameter</p> 
<p>6593M Cartridge Assembly Offset Indexable Insert, Triangular Positive Rake, 3.40 - 3.90" (86.36 - 99.06mm) diameter</p> 	<p>6593N Cartridge Assembly Offset Indexable Insert, Triangular Positive Rake, 3.90 - 4.40" (99.06 - 111.76mm) diameter</p> 	<p>6593P Cartridge Assembly Offset Indexable Insert, Triangular Positive Rake, 4.40 - 4.90" (111.76 - 124.46mm) diameter</p> 
<p>RT211 Triangular Insert 1/4" (6.35mm) 1/64" (.397mm) radius, 1/4" triangular Insert holders only, general purpose and sleeving.</p> 	<p>RT212 Triangular Insert 1/4" (6.35mm) 1/32" (.787mm) radius, 1/4" triangular Insert holders only, general purpose and sleeving.</p> 	<p>RT321 Triangular Insert Positive rake, 3/8" (9.525mm) 1/64" (.397mm) radius, general purpose and sleeving.</p> 

<p>RT322 Triangular Insert Positive rake, 3/8" (9.525mm) 1/32" (.787mm) radius, general purpose and sleeving.</p> 	<p>RT321F Triangular Insert Positive rake, 3/8" 1/64" Radius, Precision Counterboring.</p> 	<p>RT322F Triangular Insert Positive rake, 3/8" 1/32" Radius, Precision Counterboring.</p> 
<p>RTS322 Triangular Insert Positive Rake, 3/8" 1/32" Radius, General Purpose Steel Cutting.</p> 	<p>RTS321 Triangular Insert 3/8" 1/64" Radius, General Purpose Steel Cutting.</p> 	<p>RS322 Square Insert Negative rake, 1/32" (.787mm) radius, 3/8" (9.525mm) IC, black ceramic coated for high speed oversize through boring.</p> 

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)



650-2-8F Surfacing Cutterhead, 14" (356mm) Diameter

Including (2) Radially and Axially Adjustable 3/8" (9.525mm) IC Insert Holders (Inserts Must be Ordered Separately)

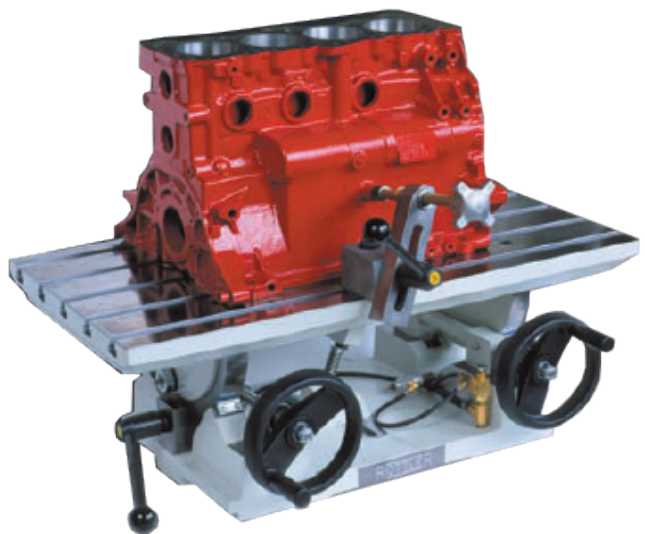
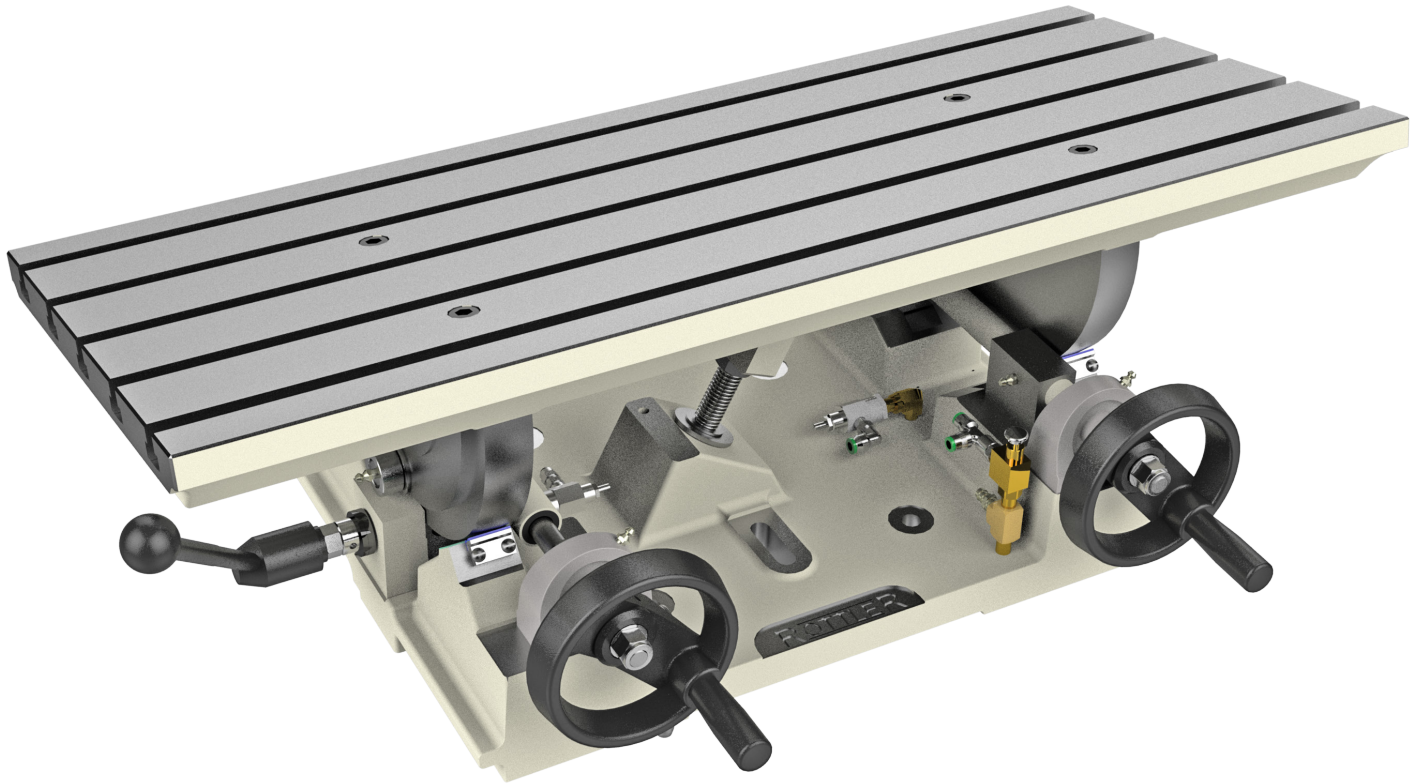


<p>6303B CBN Round Insert Double-Sided, 3/8" (9.525mm) IC, for Cutting Cast Iron.</p> 	<p>6303M PCD Round Insert 3/8" (9.525mm) IC, for Cutting Aluminum.</p> 	<p>6303K Coated Carbide Round Insert 3/8" (9.525mm) IC, for General Purpose Use</p> 
<p>6303S CBN Round Insert 3/8" (9.525mm) IC, for Cutting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

Surfacing Fixtures

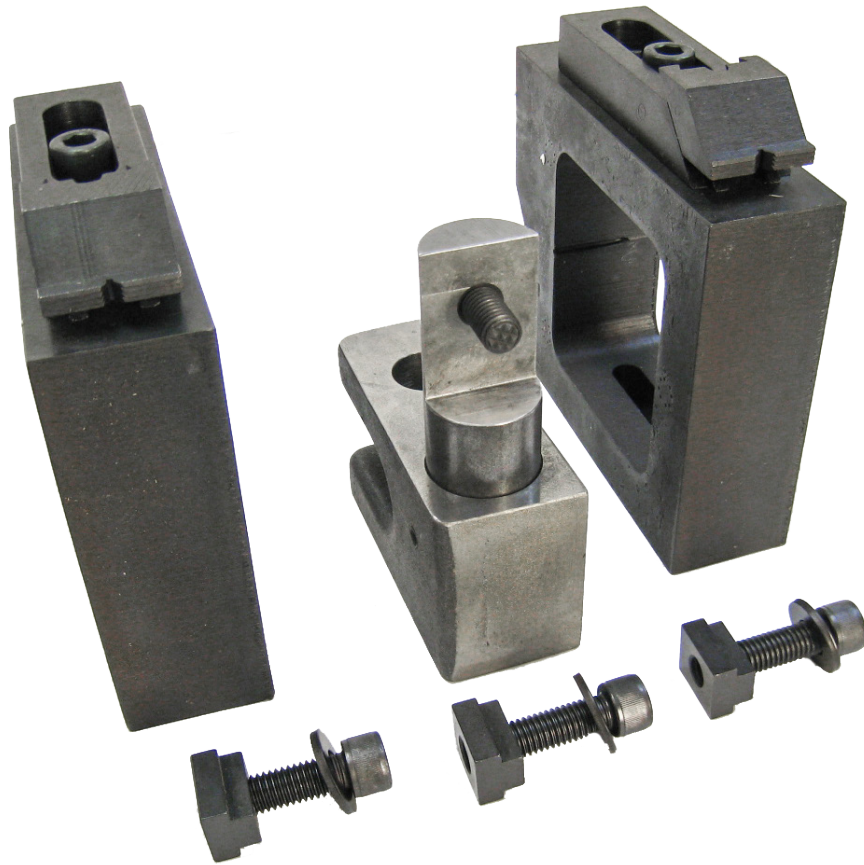
7209M Leveling Table with Airfloat

Complete with Universal Work Holding System for Surfacing Cylinder Heads and Small In-Line Blocks



7226G Exhaust and Intake Manifold Surfacing Fixture System

For 7209M Table



7152A Dual Axis Level Assembly



Main Line Bore Tooling

6753Q Main Line Bore 90 Degree Right Angle Drive Assembly

Diameter 1.9 - 5.6" (48 - 142.2mm) Minimum clearance 3.29" (83.6mm) with 650-2-39B Cutterhead, Includes 5 extensions spacers



650-2-38G 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, includes 5 extension spacers

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.

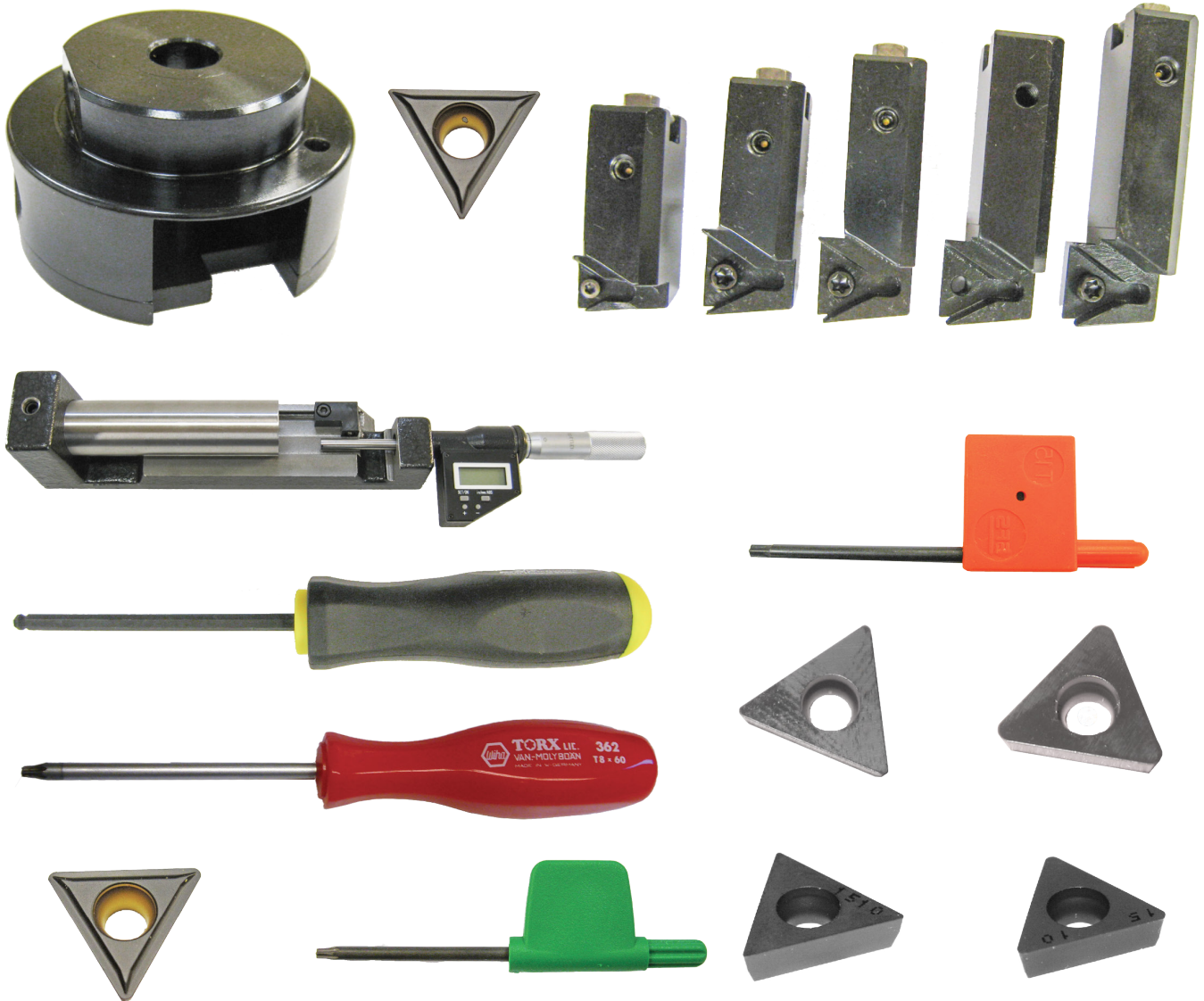
Note: Length of Bores can be Increased with Extension Spacers. The Addition of Extension Spacers Will Increase The Minimum Distance Between Bearing Housings by the Length of the Spacer. Allow for some Clearance either side of the Assembly for Safety While

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.



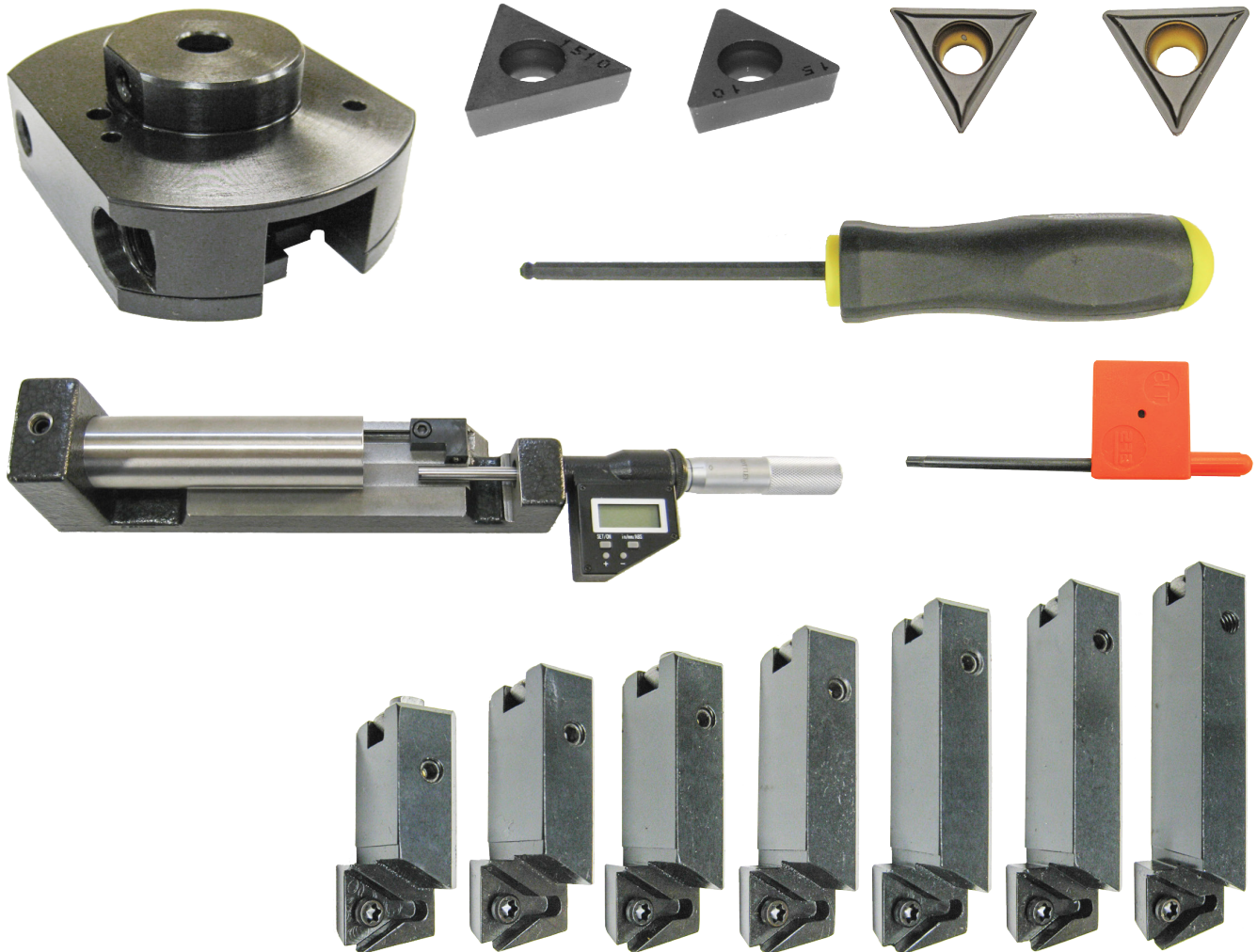
650-2-39B Cutterhead Package Line Boring 1.9 - 4.0" (48.26 - 101.60mm) Diameter

Complete with Tooling and Digital Micrometer. (When used with 11103 Drive, minimum distance between Bearing Housings 3.29") (83.6mm)



650-2-39C Cutterhead Package 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)

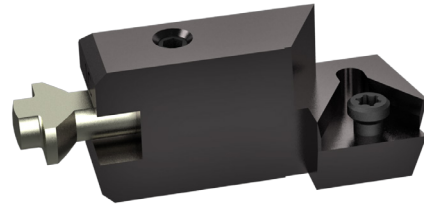


Tooling For Cutterheads 650-2-39B & 650-2-39C

6801B Tool holder Assembly, Indexable Insert
 1/4" Triangle, Positive Rake, 1.44" (36.576mm) Overall Length



6801C Tool holder Assembly, Indexable Insert
 3/8" Triangle, Positive Rake, 1.65" (41.91mm) Overall Length



6801D Tool holder Assembly, Indexable Insert
 3/8" Triangle, Positive Rake, 1.85" (46.99mm) Overall Length



6801E Tool holder Assembly, Indexable Insert
 3/8" Triangle, Positive Rake, 2.05" (52.07mm) Overall Length



6801F Tool holder Assembly, Indexable Insert
 3/8" Triangle, Positive Rake, 2.25" (57.15mm) Overall Length



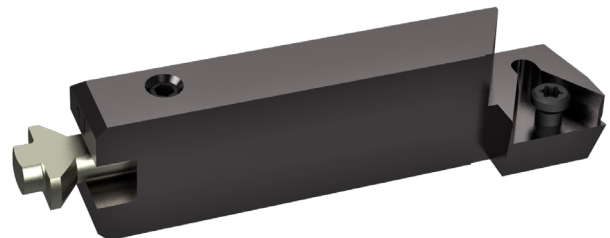
6801G Tool holder Assembly, Indexable Insert
 3/8" Triangle, Positive Rake, 2.45" (62.23mm) Overall Length



6801H Tool holder Assembly, Indexable Insert
 3/8" Triangle, Positive Rake, 2.65" (67.31mm) Overall Length

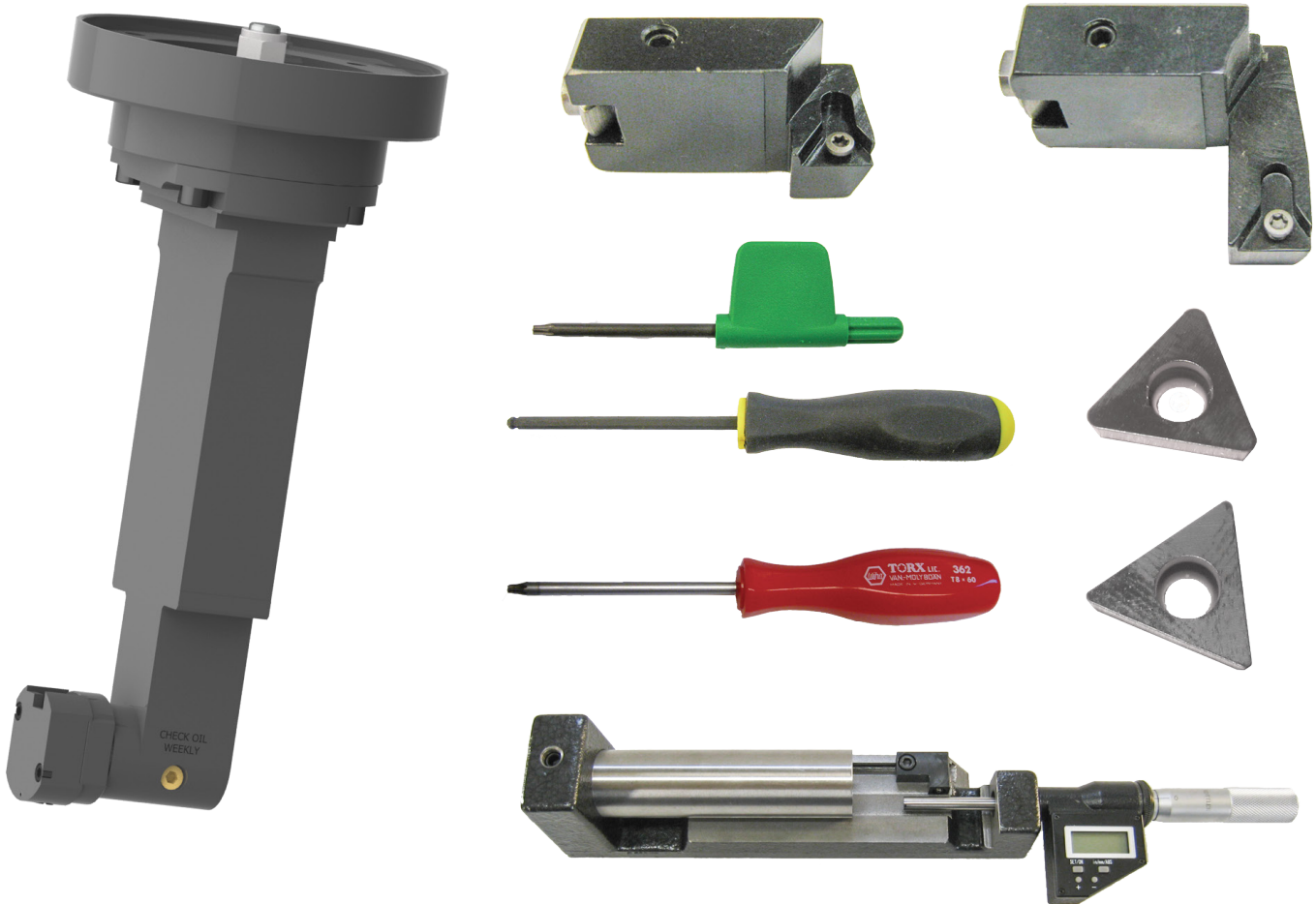


6801J Tool holder Assembly, Indexable Insert
 3/8" Triangle, Positive Rake, 2.85" (72.39mm) Overall Length



6753N Special Extended Main Line Bore 90-Degree Right Angle Drive Package

Complete with Narrow Cutterhead and Tooling 1.9 - 2.4" (48.26 - 50.96mm) diameter. Minimum Distance Between Bearing Caps 3.08" (78.232mm)



Special Main Line Boring Thrust Facing Tools

<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>501-29-6J Insert, Triangular .160 IC 1/32" (.787mm) Radius</p> 	<p>501-29-6H Insert Screw</p> 

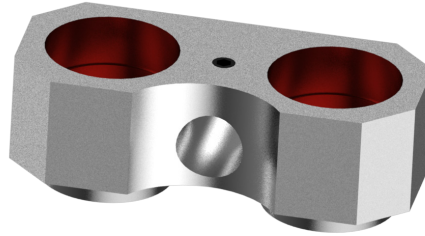
Special Main Line Boring Chamfering Tools

<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> 
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Equipment for Centering In Bores

502-12-4A Magnetic Indicator Holder Assembly

(Requires 502-9-9A Mechanical Runout Indicator)



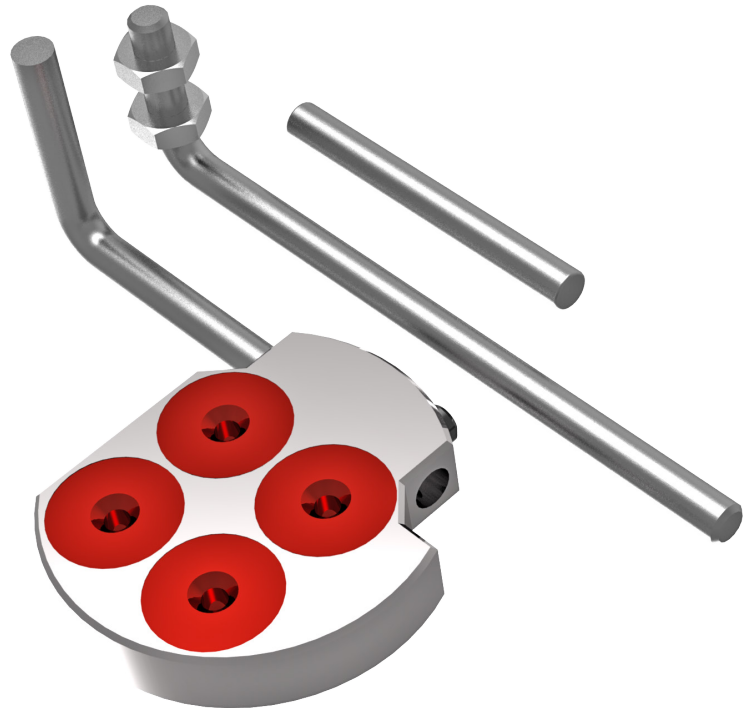
502-9-9A Mechanical Run Out Indicator

General Purpose (.001 Resolution)



502-12-4 Magnetic Base

Including (2) Extension Arms for Indicators



Cam Line Boring Tooling

650-3-43T Cam Line Bore Tooling Package

(Requires 650-3-30 Block End Truing Fixture, 650-3-1 Performance Fixture and 6753Q Right Angle Drive Assembly)
Customer Must Order Cam Line Bar Bushings and Cam Bearing Locators to Suit Diameter to be Line Bored.

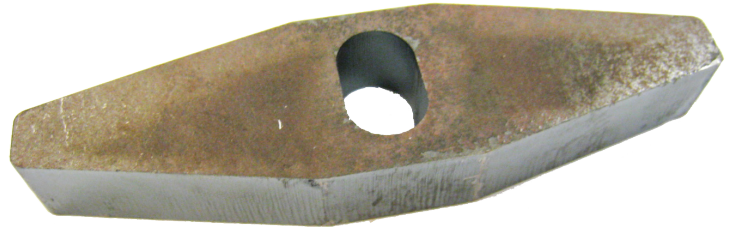


650-3-43 Support, Locator-Cam Line Boring

(Customer Must Choose the Cam Bearing Locators they Require from the Listing of 650-3-19 Series Cam Bearing Locators - two are Required for Use with Support)



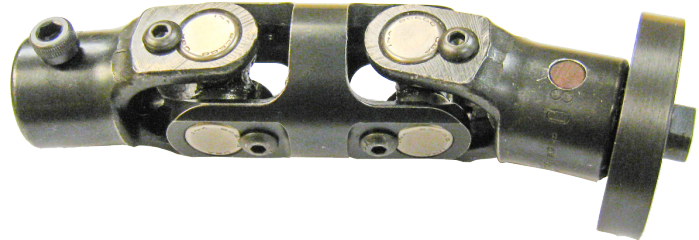
650-2-32 Block Clamp Arm Cam Line Boring



650-2-32A Stud, Block Clamp Arm Cam Line Boring



650-2-19G Adapter and Dual Flex Coupling Assembly Cam Line Boring



650-2-32D Bar, Cam Line Boring

1-3/4" X 45" (44.45 X 1143.00mm) Long



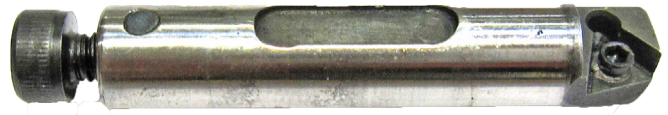
650-2-32E Cartridge, Indexable Insert Cam Line Boring

1.530" (38.862mm) Long, Range 1.985 - 2.650" (50.419 - 67.310mm) diameter.



650-2-32F Cartridge, Indexable Insert Cam Line Boring

1.650" (41.91mm) Long, Range 2.250 - 2.850" (57.150 - 72.390mm) diameter.



650-2-32G Wrench

Tool Bit Adjusting Cam Line Boring (3mm)



650-2-32H Wrench

Tool Bit Lockscrew Cam Line Boring (2.5mm)



650-2-32J Wrench

Tool Bit Insert Screw Cam Line Boring T-6



650-2-32L Insert, Cam Line Boring



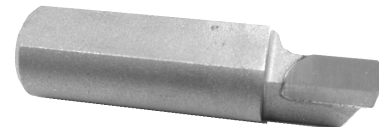
650-2-33 Indicator, Tool Setting

With Magnetic Base Cam Line Boring



650-2-32K Tool Bit

Oil Groove Cam Line Boring



199-96 Tool Holder, 1-1/4" (31.75mm)



650-2-32M Screw

Insert Cam Line Boring



650-2-3Q Stub Bar Package

1.9 - 2.3" (48.26 - 58.42mm) diameter with Standard Tooling. 1.9 - 2.7" (48.26 - 68.58mm) With Optional Tool holder



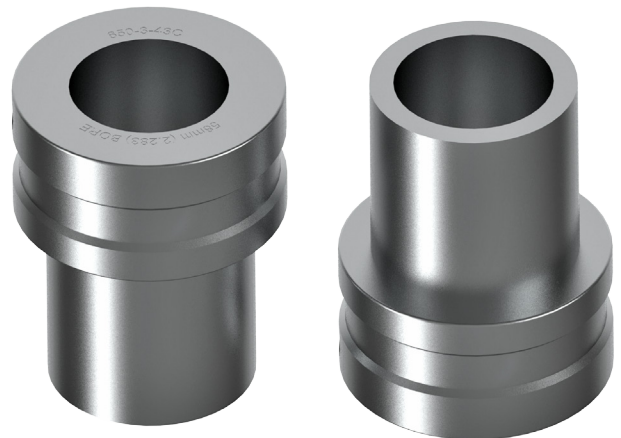
Cam Line Bar Bushings

If Customer Requires Sizes Other Than Listed, Rottler Will Manufacture the Required Size.
 Customer Must Provide the Size, Including Tolerance, of the Housing Bore/s the Bushing will be used in.
 Rottler will use this Information to Design the Actual Bushing.
 Bushings are Machined Smaller than Housing Bore. (Sold In Pairs)

650-3-43B Bushing - 62.992mm (2.480" +/- .0007)
 (Sold in pairs)



650-3-43C Bushing - 57.963mm (2.282" +/- .0007)
 (Sold in pairs)



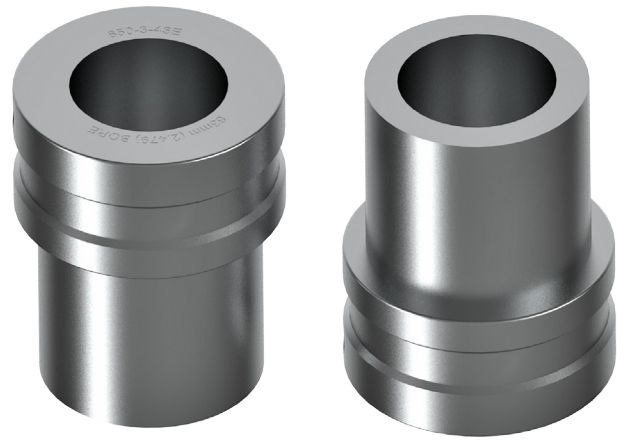
650-3-43D Bushing - 57.150mm (2.250" +/- .0007)

(Sold in pairs)



650-3-43E Bushing - 70.866mm (2.790" +/- .0007)

(Sold in pairs)



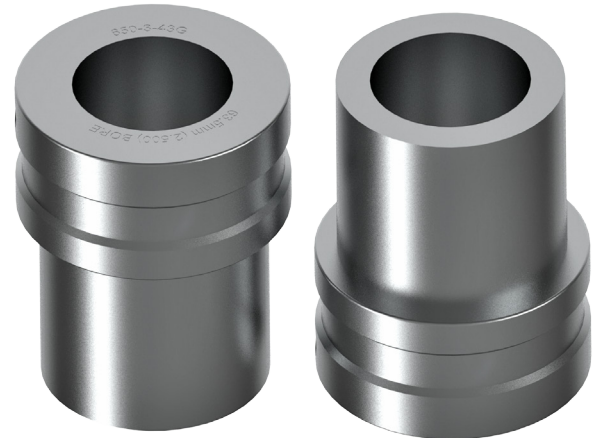
650-3-43F Bushing - 58.649mm (2.309" +/- .0007)

(Sold in pairs)



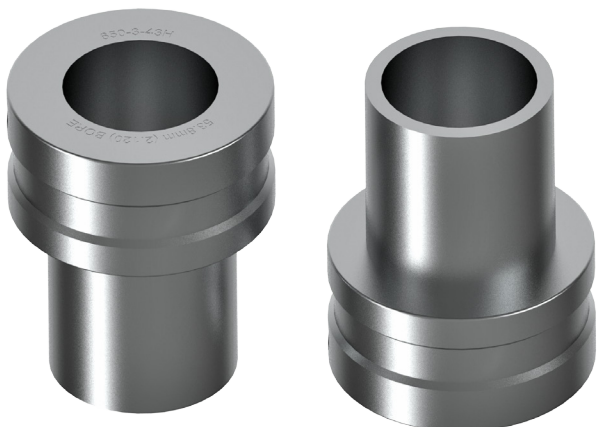
650-3-43G Bushing - 63.500mm (2.500" +/- .0007)

(Sold in pairs)



650-3-43H Bushing - 53.848mm (2.120" +/- .0007)

(Sold in pairs)



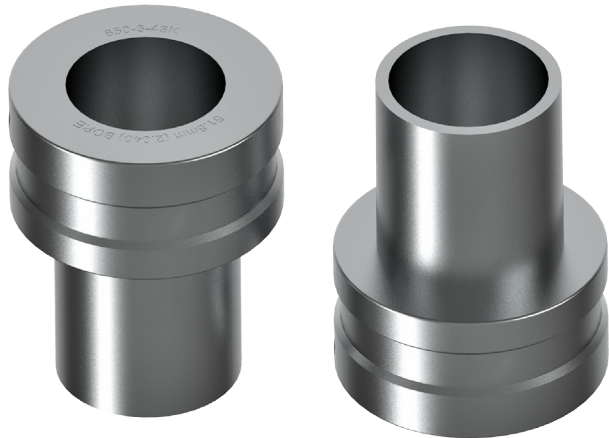
650-3-43J Bushing - 51.562mm (2.030" +/- .0007)

(Sold in pairs)



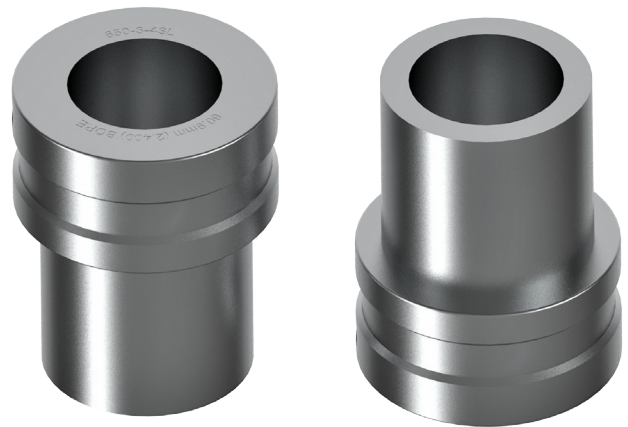
650-3-43K Bushing - 51.816mm (2.040" +/- .0015)

(Sold in pairs)



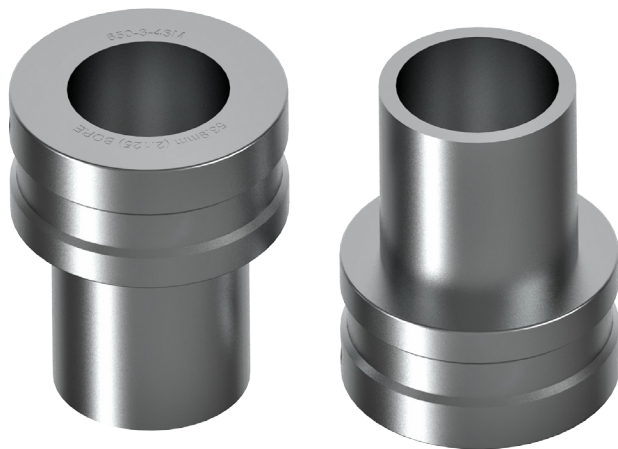
650-3-43L Bushing - 60.960mm (2.400" +/- .0007)

(Sold in pairs)



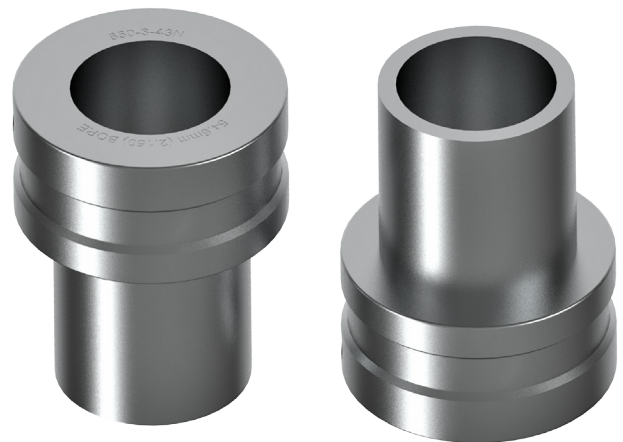
650-3-43M Bushing - 53.975mm (2.125" +/- .0007)

(Sold in pairs)



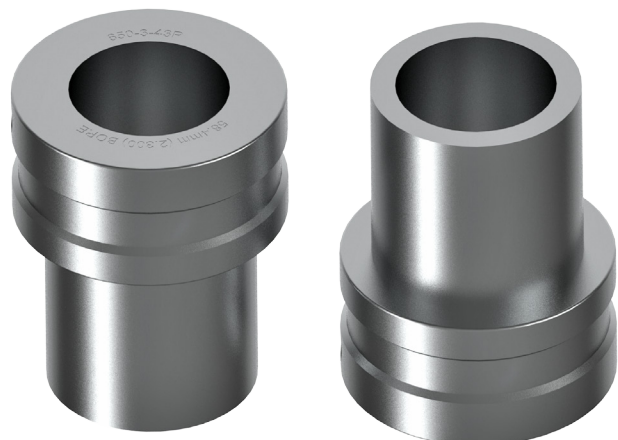
650-3-43N Bushing - 54.610mm (2.150" +/- .0007)

(Sold in pairs)



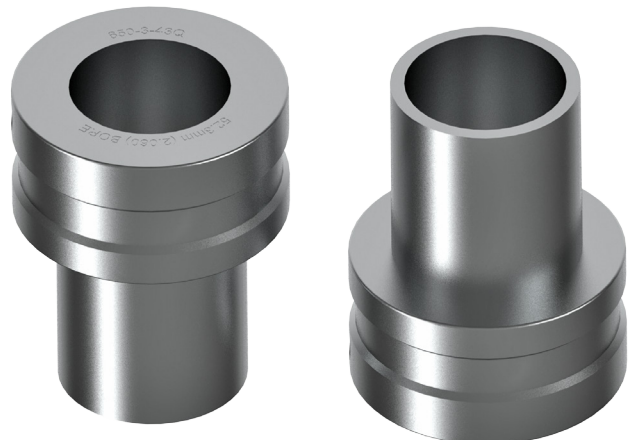
650-3-43P Bushing - 58.420mm (2.300" +/- .0007)

(Sold in pairs)



650-3-43Q Bushing - 52.324mm (2.060" +/- .0007)

(Sold in pairs)



650-3-43R Bushing - 67.902mm (2.6733" +/- .0007)
(Sold in pairs)



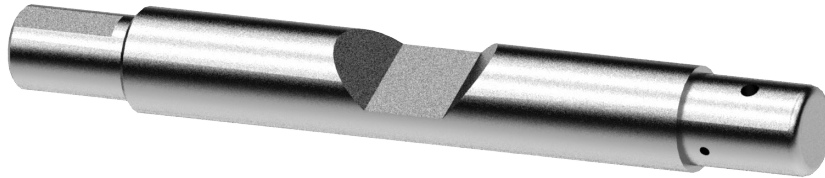
650-3-43S Bushing - 51.943mm (2.0450 +/- .0007)
(Sold in pairs)



Lifter Bore Bushing Installation Tooling

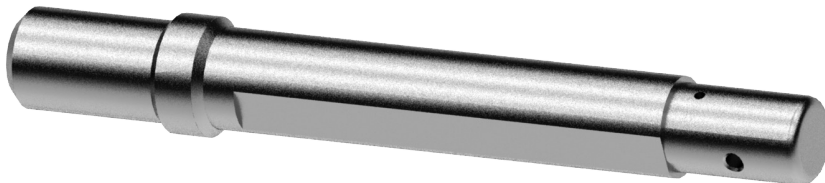
11117A 31mm Lifter Sleeve Press Tool

Requires CAT 40 Adapter 1"



11117B 26.9mm Lifter Sleeve Press Tool

Requires CAT 40 Adapter 1"



Lifter Bore Tooling

650-2-60B Lifter Bore Tooling Kit

For F69A only



Spacers for the Performance Fixture 650-3-1

Required to set V blocks at the correct angle for lifter boring machine work.

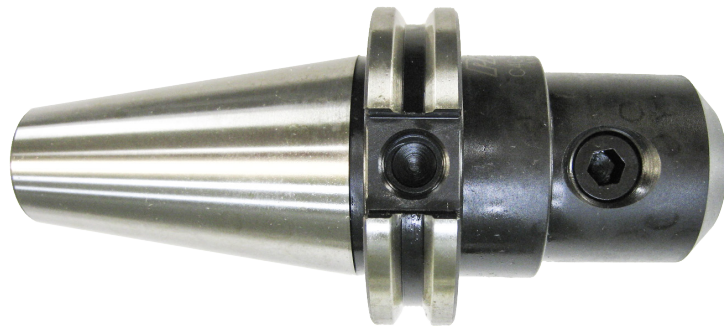
<p>650-3-7E 4-Degree Cam Bar Spacer-Chev. Small Block Only</p> 	<p>650-3-7F 6.25 Degree Cam Bar Spacer-Chev. Big Block Only</p> 	<p>650-3-7G Spacer, Cam Bar 3.5 Degree Ford 289/302/351W</p> 
<p>650-3-7H Spacer, Cam Bar 4-Degree Ford 429/400</p> 	<p>650-3-7J Spacer Cam Bar 48-Degree Mopar Small Block (Race)</p> 	<p>650-3-7N Spacer, Cam Bar 42-Degree Chevy Aurora</p> 
<p>650-3-7P Spacer, Cam Bar 43-Degree Chevy Aurora</p> 	<p>650-3-7Q Spacer, Cam Bar 44-Degree Chevy Aurora</p> 	<p>650-3-7S Spacer, Cam Bar 44-Degree Chevy Small Block</p> 
<p>650-3-7T Spacer, Cam Bar 48-Degree Chrysler Big Block</p> 		

CAT 40 Taper End Mill Holders

650-2-44J Adaptor 1/2" (12.70mm)



650-2-44S Adaptor 5/8" (15.875mm)



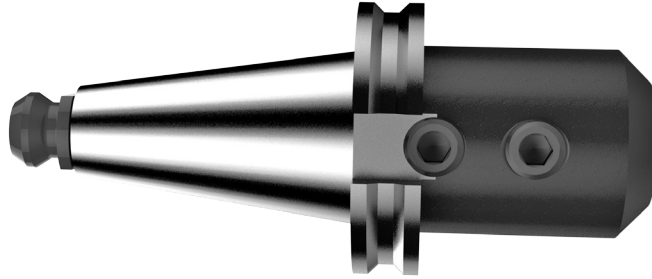
650-2-44C Adaptor 3/4" (19.05mm)



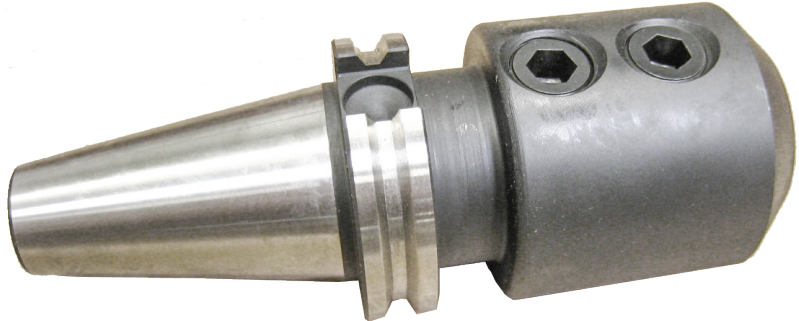
650-2-44B Adaptor 7/8" (22.225mm)



650-2-44A Adaptor 1" (25.40mm)

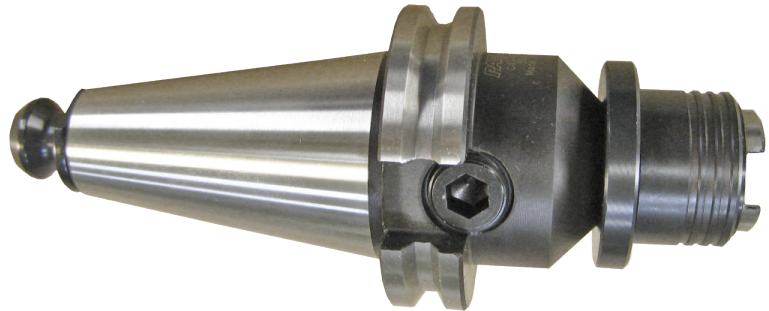


650-2-44K Adaptor 1-1/4" (31.75mm)



Thread Tapping Tooling

650-2-11K Quick Change Tap Holder Cartridge Assembly with Adaptor



650-2-11B Quick Change Straight Shank Tap Holder Cartridge

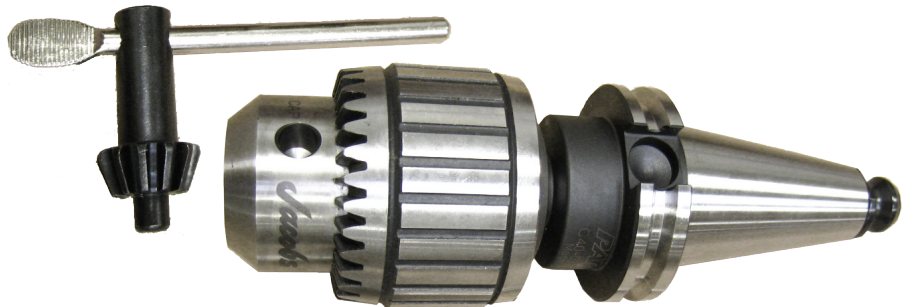


Torque Control Tap Holders for 650-2-11B Straight Shank Tap Holder Cartridge

<p>650-2-11C Torque Control Tap Holder for 1/4" (6.35mm) Taps</p> 	<p>650-2-11D Torque Control Tap Holder for 5/16" (7.95mm) Taps</p> 	<p>650-2-11E Torque Control Tap Holder for 3/8" (9.525mm) Taps</p> 
<p>650-2-11F Torque Control Tap Holder for 7/16" (11.13mm) Taps</p> 	<p>650-2-11G Torque Control Tap Holder for 1/2" (12.70mm) Taps</p> 	

Drill Tooling

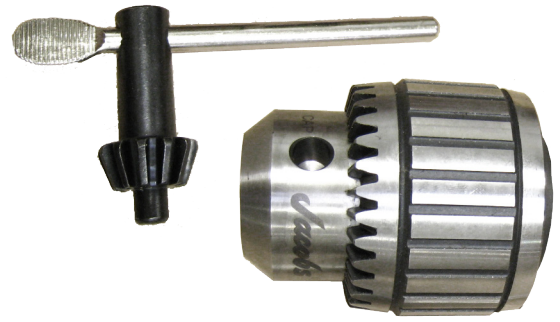
650-2-44M Precision Drill Chuck Assembly



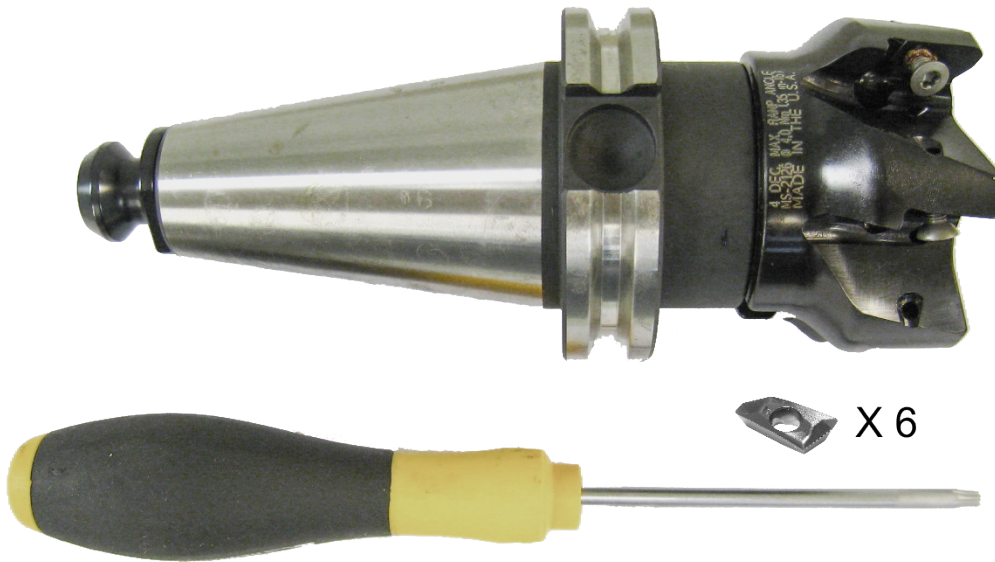
650-2-9A Drill Chuck Adaptor



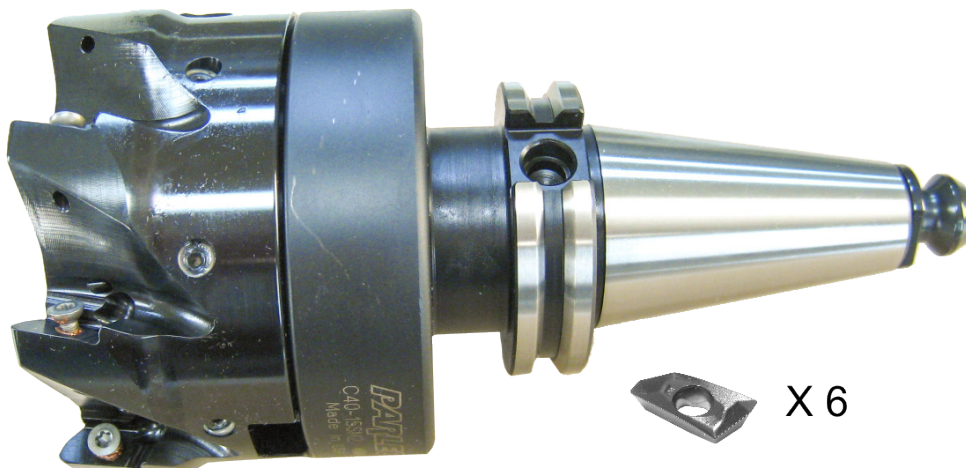
650-2-9B Drill Chuck 1/8-5/8" (3.175-15.875mm) With Key



650-2-44N 2 1/2" (63.50mm) Shell Mill Package



650-2-44P 4" (101.60mm) Shell Mill Package



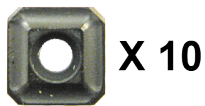
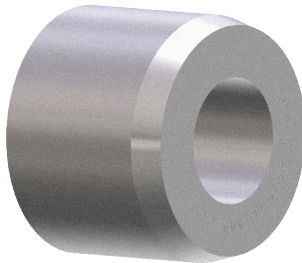
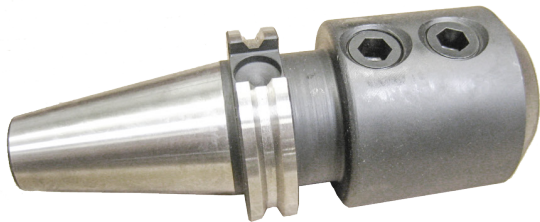
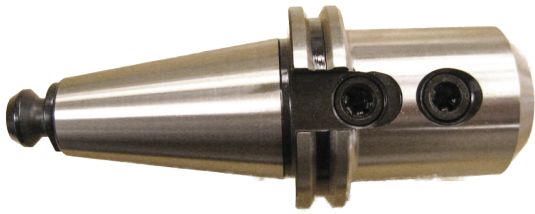
650-2-44W Block Lightening Tooling Package for Dart Small Block Chev



650-2-44X Block Lightning Tooling Package for World Products Small Block Chev



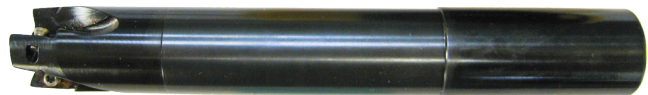
650-2-45J Block Lightening Tooling Package for Big Block Chevy



X 10



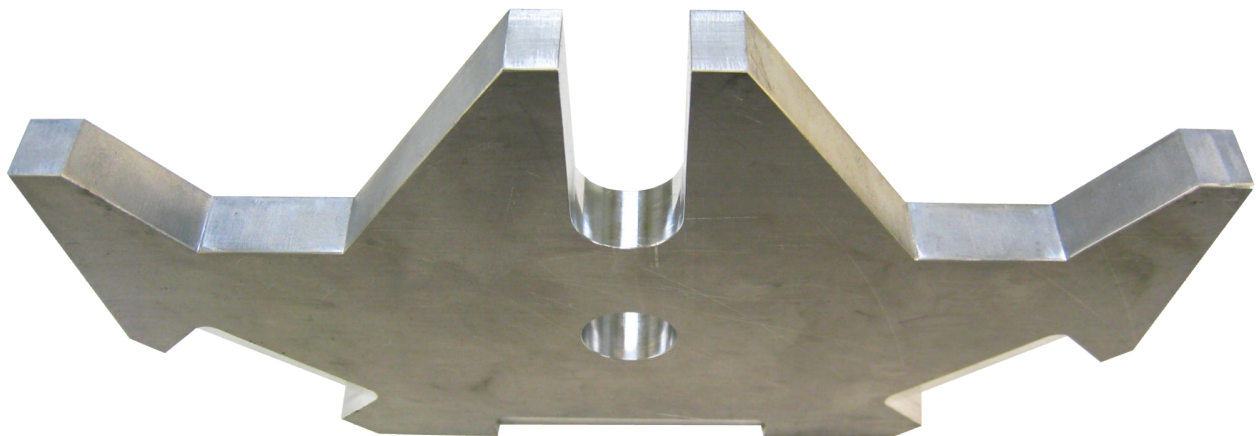
X 10



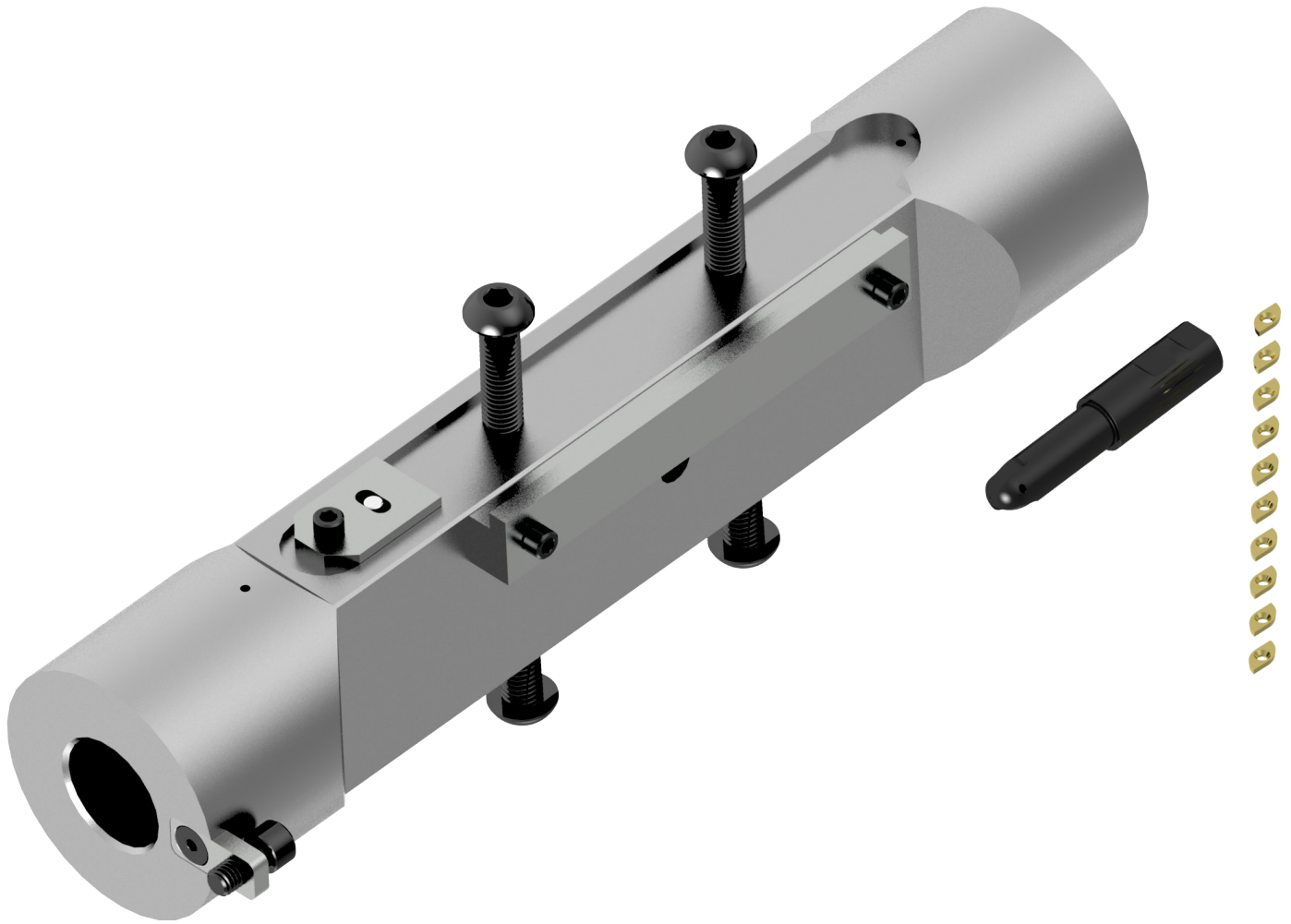
X 10



X 10



650-2-45Q Big Block Main Cap Lightening Fixture Assembly with Tooling



Connecting Rod Fixturing And Tooling

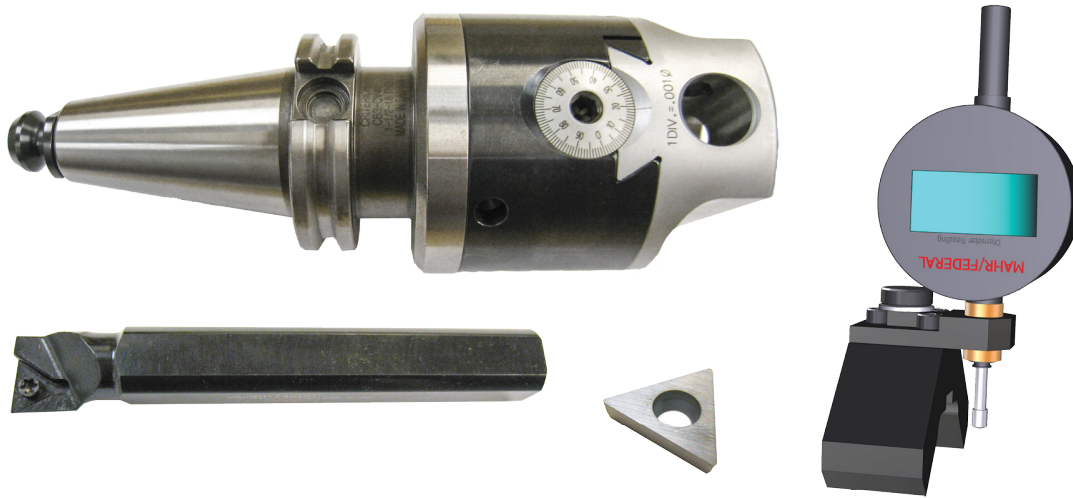
650-3-44S Rottler Precision Connecting Rod Fixturing System

For Connecting Rods Center to Center Distance Approx 8 - 24" (200 - 600mm)



650-2-3S Cutterhead Package

1.0 - 2.0" (25 - 50mm) Diameter X 3.0" (75mm) Long Complete with Tooling and Digital Micrometer for Con Rod Application



650-2-3T Cutterhead Package

2.0 - 4.0" (50 - 100mm) Diameter X 4.0" (100mm) Long Complete with Tooling and Digital Micrometer for Con Rod Application.



650-2-15F Cutterhead Package

2.9 - 8.0" (73.5 - 200mm) Diameter X 4.0" (100mm) Long Complete with Tooling and Digital Micrometer for Con Rod Application.



RTCR322 Insert, Triangular Positive Rake

3/8 IC 1/64" (9.397mm) Radius, for Connecting Rod Steel Cutting Only

