

ROTTLER

F79A CNC MACHINING CENTER

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

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

F79A OPTIONAL EQUIPMENT CATALOG

Contents

Software Packages.....	1
6758T Automatic Boring and Sleaving	1
6758U Multiple Pass Programmable Depth of Cut	1
6773B Main Line Bore Machining	1
6758Z Stroker Crankshaft Connecting Rod Clearancing Software	1
9044 Connecting Rod Boring Software	1
9046 Lifter Bore Machining Software	1
8300 Splayed 4 Bolt Main Cap Machining Software.....	1
Rottler CAM (Computer Aided Manufacturing) Software	1
9043 Rottler CAM (Computer Aided Manufacturing) Software Package.....	1
RCAM-IH-INTRO.....	1
Enclosure	2
11038 Optional Full Enclosure	2
Automatic Tool Changer	3
11042 Automatic Rotary Tool Changer.....	3
Cylinder Bore and Main Line Bore Centering	4
Automatic Centering	4
650-3-59Y Renishaw Wireless Probing System.....	4
Manual Centering	4
502-12-7B Digital Runout Probe and Readout.....	4
Universal Fixtures for In-Line and V-Blocks	5
11121 Mid Range Universal Fixture.....	5
11122 Diesel Fixture Assembly	6
11111 Clamp Tower Assembly	7
Miscellaneous Accessories and Parallels.....	7
11112 Universal 8" (203mm) Heavy Duty T-Slot Parallels with Air Float	7
11113L Universal 4" (102mm) Heavy Duty T-Slot Parallels with Air Float	8
11114 Universal 16" (406mm) Heavy Duty T-Slot Parallels with Air Float	8
11115 2" (50mm) X 3" (75mm) Parallels.....	9
650-3-37 1/2" (12.7mm) Universal Clamping Kit	9
Fixtures for Performance Blocks	10

Automatic 360 Degree Roll Over Block Fixture	10
690-3-63 Computer Controlled Automatic 4Th Axis Block Roll Over Fixture	10
11110 Parallels/Risers	11
Overhead Cam Block Fixturing	11
650-3-84 Overhead Cam Block Fixture	11
Using 3rd Party Tooling in Rottler Machines with CAT 40 Tooling.....	12
Tooling for Engine Block Boring and Resleeving	13
Boring/Sleevng/Chamfering/O-Ring Tooling	13
650-2-1D Cutterhead Package	13
650-2-14B Cutterhead Package	14
11100 Cutterhead Package	15
11101 Heavy Duty Cutter Head Package	16
Extender for 650-2-14B Cutterhead Assembly	16
650-2-16D 1.400" (35.5mm) Spacer (Extension)	16
Miscellaneous Tooling for 11100, 11101, 650-2-14 Cutterheads.....	17
6593S Cartridge, Triangular.....	17
6598M Cartridge, Triangular, 13/16" (20mm) length	17
6598K Cartridge, Triangular, 1-7/8" (48mm) length	17
6598R Cartridge, Triangular Offset .250 (6.4mm)	17
6260L Cartridge, Square	17
6260W Cartridge, Square, Offset.....	17
6513J Tool bit, Brazed Carbide - .037" (.940mm) Wide O Ring Grooving	17
6513L Tool bit, Brazed Carbide - .039" (.991mm) Wide O Ring Grooving	17
6513N Tool bit, Brazed Carbide - .060" (1.524mm) Wide O Ring Grooving.....	17
6513Q Tool bit, Brazed Carbide - .120" (3.048mm) Wide O Ring Grooving	17
6513P Tool bit, Brazed Carbide - .085" (2.159mm) Wide O Ring Grooving.....	18
6747K Cartridge, Triangular - 5 Degree Chamfer.....	18
6747P Cartridge, Triangular - 10 Degree Chamfer.....	18
6747G Cartridge, Triangular - 15 Degree Chamfer	18
6747F Cartridge, Triangular- 20 Degree Chamfer	18
6747M Cartridge, Triangular - 20 Degree Chamfer	18
6747H Cartridge, Triangular - 30 Degree Chamfer.....	18
6593L Cartridge, Triangular, Offset Indexable Insert, 3.14 - 3.40" (79.756 - 86.36mm) diameter	19
6593M Cartridge, Triangular, Offset Indexable Insert, 3.40 - 3.90" (86.36 - 99.06mm) diameter.....	19
6593N Cartridge, Triangular, Offset Indexable Insert, 3.90 - 4.40" (99.06 - 111.76mm) diameter	19
6593P Cartridge, Triangular, Offset Indexable Insert, 4.40 - 4.90" (111.76 - 124.46mm) diameter.....	19
Surfacing Tooling	19
650-2-8E Surfacing Cutterhead, 10" (254mm) Diameter	19
650-2-8F Surfacing Cutterhead, 14" (356mm) Diameter	20

6303B CBN Insert, Round	20
6303M PCD Insert, Round.....	20
6303S CBN Insert, Round	20
6303U CBN Round Insert.....	20
6303V CBN Insert, Octagonal	20
Cylinder Head Surfacing Fixture.....	21
7209M Leveling Table with Airfloat	21
7152A Dual Axis Level Assembly.....	22
General Purpose Tooling	22
6648W Cat 3400 Series Tappet Bore Repair Tooling Package	22
11116 Cross Feed Head Assembly.....	23
Tooling for Crankshaft Stroker Clearancing/Notching	23
650-2-45H Roughing End Mill	23
650-2-44A End Mill Adapter	24
Tooling for Splayed 4 Bolt Main Cap Machining	24
650-2-53 Splayed 4 Bolt Main Cap Machining Tooling Package	24
Tooling for Lifter Bore Machining	25
650-2-60B Lifter Bore Tooling Kit.....	25
650-2-60N Setting Fixture for 650-2-60B Lifter Tooling Package	26
650-2-60G Insert for 0.750 - 0.900 diameter cartridge	26
650-2-60H Insert for 0.920 - 1.180 diameter cartridge	26
Main Line Boring and Cam Boring Fixtures	27
650-3-56 Line Bore Pivot Table.....	27
6866 Wedge for Cummins 5.9liter Camshaft Line Boring.....	27
11113 Adjustable Universal Line Boring Parallel Assembly	28
11112 Universal 8" (203mm) Heavy Duty T-Slot Parallels with Air Float	28
11114 Universal 16" (406mm) Heavy Duty T-Slot Parallels with Air Float	29
6843 90 Degree V Block Supports	29
6789E 115 Degree V Block Supports for CAT 3400	30
6789L 113 Degree V Block Supports for Detroit Diesel V53	30
6789N 116 Degree V Block Supports for Detroit Diesel V71 & V92.....	31
Main Line Boring and Cam Boring Tooling	31
11103 Main Line Bore 90 Degree Right Angle Drive Assembly	31
11103E Main Line Bore 90 Degree Right Angle Drive Assembly.....	32
11104 Special Belt Drive 90 Degree Right Angle Drive Assembly	33
11105 Narrow Right Angle Drive	34

650-2-39B Line Boring Cutterhead Package	35
650-2-39C Cutterhead Assembly Line Boring.....	36
Special Main Line Boring Thrust Facing Tooling for Small Blocks	37
6801M Tool Holder Package	37
6801P Tool Holder Package.....	37
501-29-6G Insert, Triangular	37
501-29-6J Insert, Triangular	37
501-29-6H Insert Screw	37
Special Main Line Boring Thrust Facing Tooling for Mid-Size Blocks	37
6855Q Thrust Facing Tooling Package.....	37
Special Main Line Boring Chamfering Tool	38
199-90 Tool Holder, 2 - 3" (50.80 - 76.20mm).....	38
199-96 Tool holder, 3 - 4" (76.20 - 101.60mm)	38
501-33E Tool Bit, 45-Degree Chamfer.....	38
Line Bore Set Up and Alignment Equipment	38
502-12-7B Digital Runout Probe and Readout.....	38
502-9-9S Indicator Mount.....	39
502-9-9A Mechanical Run Out Indicator.....	39
502-9-9J Mechanical Run Out Indicator	39
502-12-4 General Purpose Magnetic Indicator Holder	39
502-12-4A Magnetic Indicator Holder	39
Equipment for Preparing Blocks for Line Boring.....	40
7209N 2-Piece Vise	40
7209M Leveling Table with Air Float	40
Shell Mill Assemblies	41
650-2-44N 2 1/2" (63.50mm) Shell Mill Assembly	41
650-2-44P 4" (101.60mm) Shell Mill Assembly.....	41
Thread Tapping Tooling	42
650-2-11K Quick Change Tap Holder Cartridge Assembly	42
Drill Tooling.....	42
650-2-44M Precision Drill Chuck Assembly	42
Connecting Rod Boring and Serrating Equipment	43
650-2-3S Cutterhead Package	43
650-2-3T Cutterhead Package	43
650-2-15F Cutterhead Package	44
RTCR322 Insert, Triangular	44

Connecting Rod Fixturing	45
650-3-44S Rottler Precision Connecting Rod Fixturing System	45
650-3-64 Rottler Precision Connecting Rod Fixturing System	45
System for Cutting Serrated Connecting Rods	46
6867V Serrated Rod Cutting Package	46
6868 Six pitcher cutter used on the VHP rod and some CGF rods.....	46
6868G 3mm pitch cutter used on VGF rods.....	46
6868H 4mm pitch cutter used on some VGF rods.....	46

Software Packages

6758T Automatic Boring and Sleaving

Including Lower Offset for Honing Clearance, Automatic Cycle

6758U Multiple Pass Programmable Depth of Cut

Rough and Finish Milling/Surfacing, Automatic Cycle. Note: Software allows surfaces wider than flycutter to be machined.

6773B Main Line Bore Machining

Including Circular Interpolation Thrust Facing, Automatic Cycle

6758Z Stroker Crankshaft Connecting Rod Clearancing Software

9044 Connecting Rod Boring Software

9046 Lifter Bore Machining Software

8300 Splayed 4 Bolt Main Cap Machining Software

Requires 9043 Rottler CAM Software

Rottler CAM (Computer Aided Manufacturing) Software

9043 Rottler CAM (Computer Aided Manufacturing) Software Package

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

RCAM-IH-INTRO

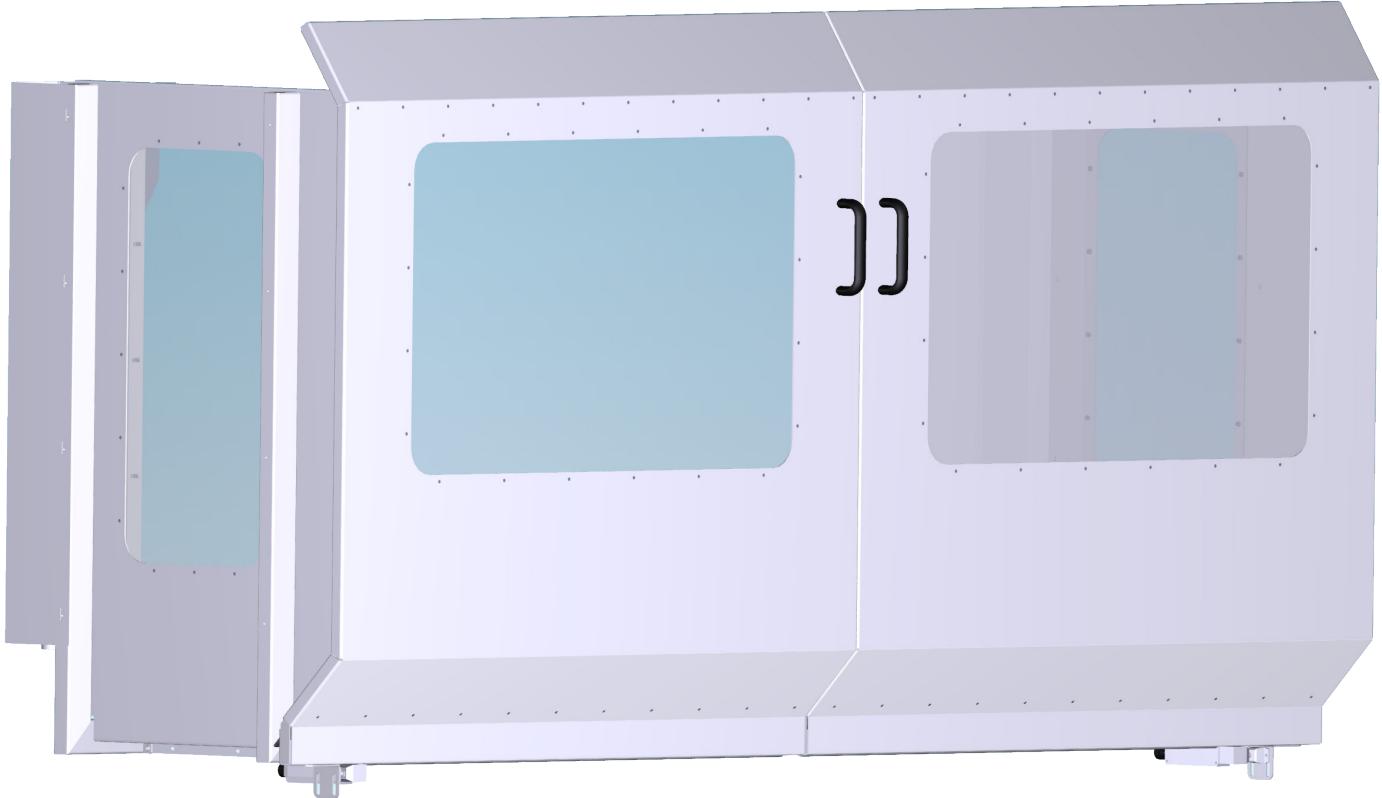
Three days introductory training for one person on Rottler CAM software at Rottler factory in a group class setting. Customers must have purchased #9043 Rottler CAM Software package before attending this training course. Customer must supply own Windows laptop. Full details of costs and conditions is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

Enclosure

11038 Optional Full Enclosure

With sliding doors and large viewing windows

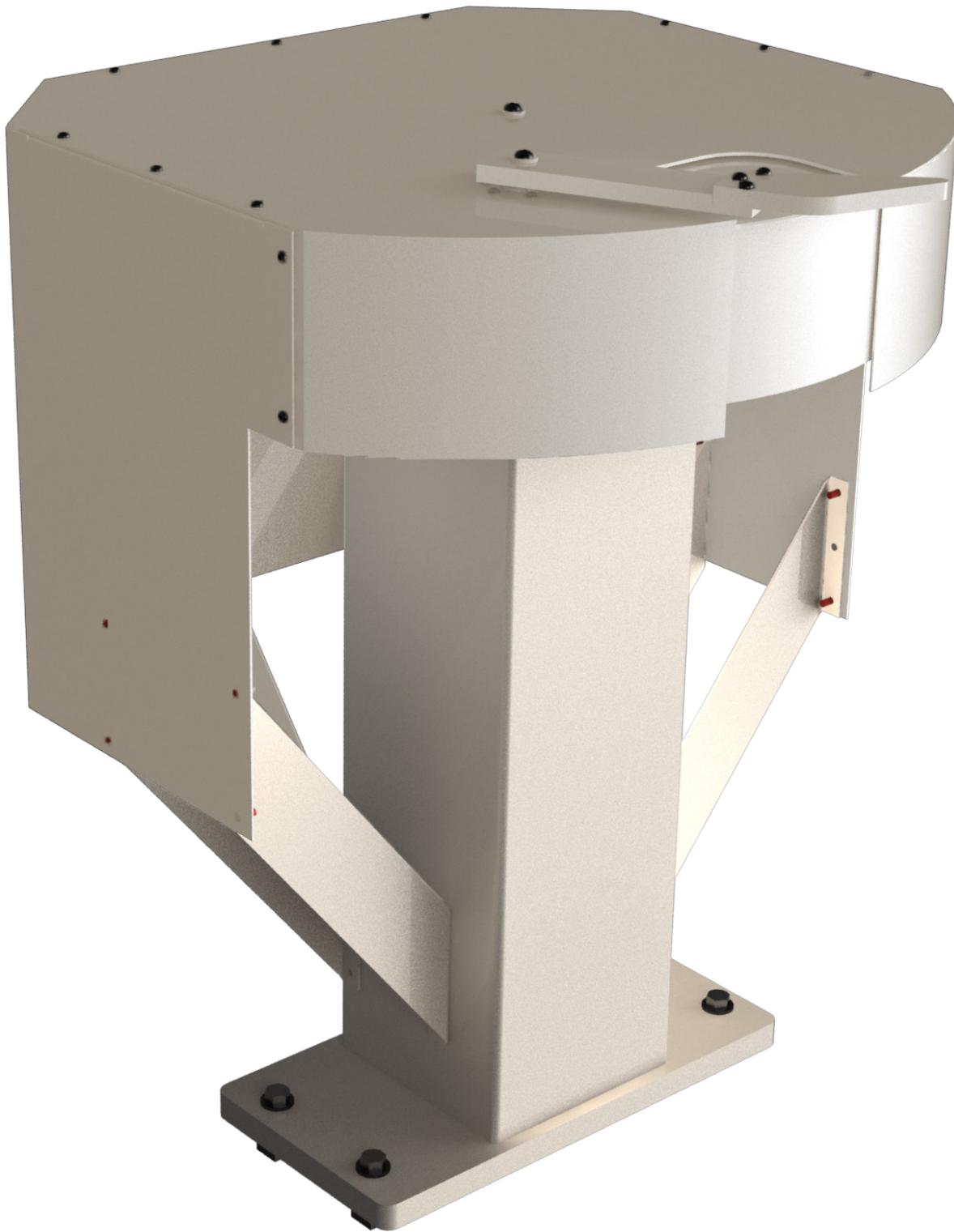
Note: When 11038 enclosure supplied with new machine, standard chip guard is not included



Automatic Tool Changer

11042 Automatic Rotary Tool Changer

with 14 CAT 40 Tool Pockets



Cylinder Bore and Main Line Bore Centering

Automatic Centering

650-3-59Y Renishaw Wireless Probing System

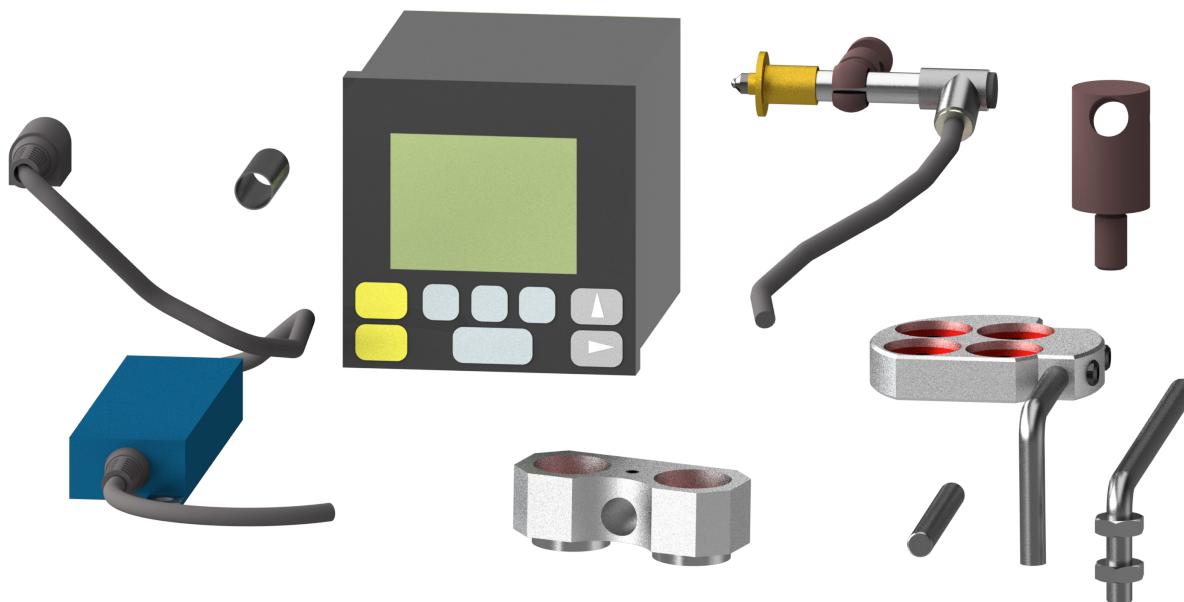
Including 5 Probes/Stylus and Software designed to work together with Rottler 4th Axis Fixture System.



Manual Centering

502-12-7B Digital Runout Probe and Readout

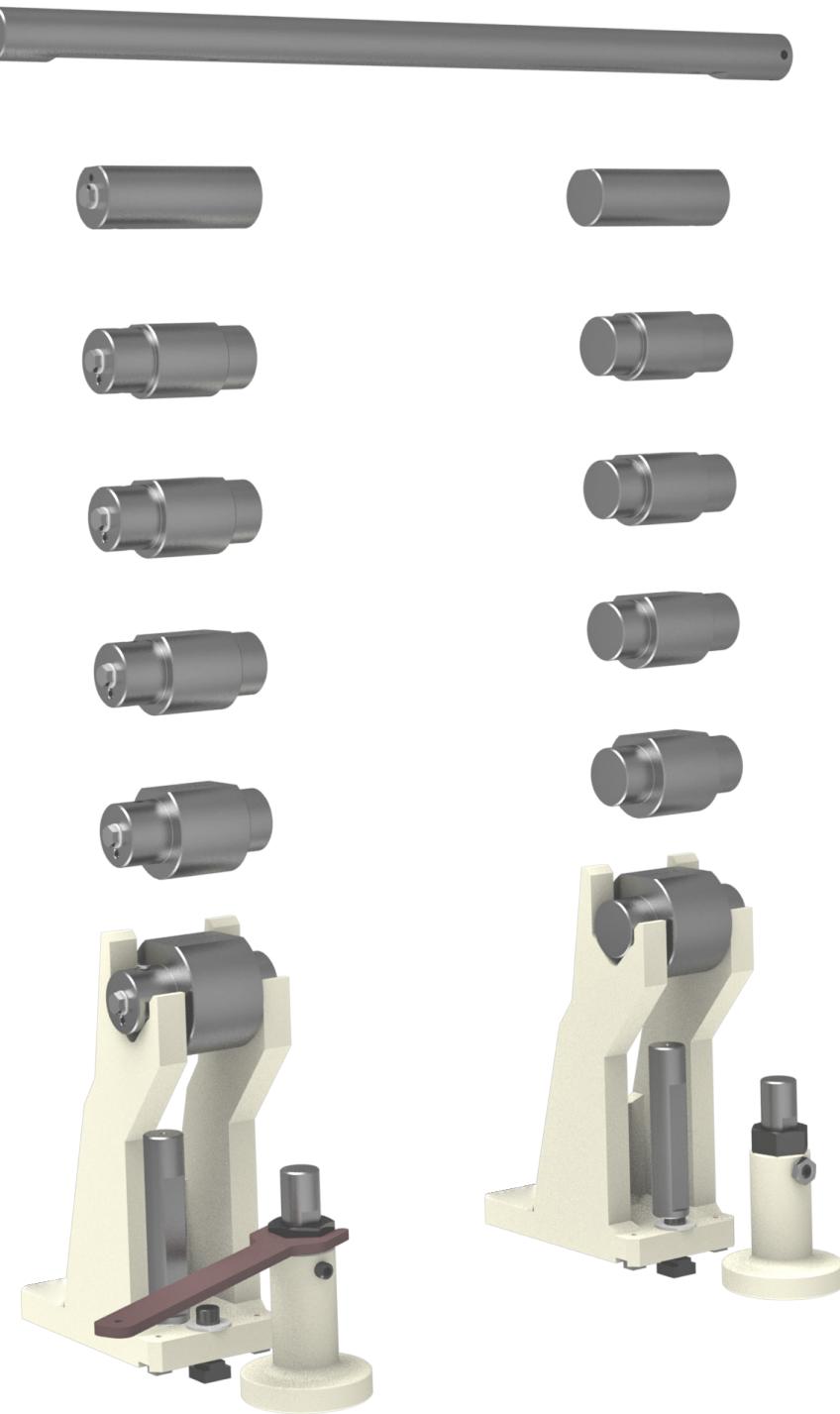
Including Magnetic Holder for Block Set Up and Manual Centering of Cylinder Bores and Main Line Bores

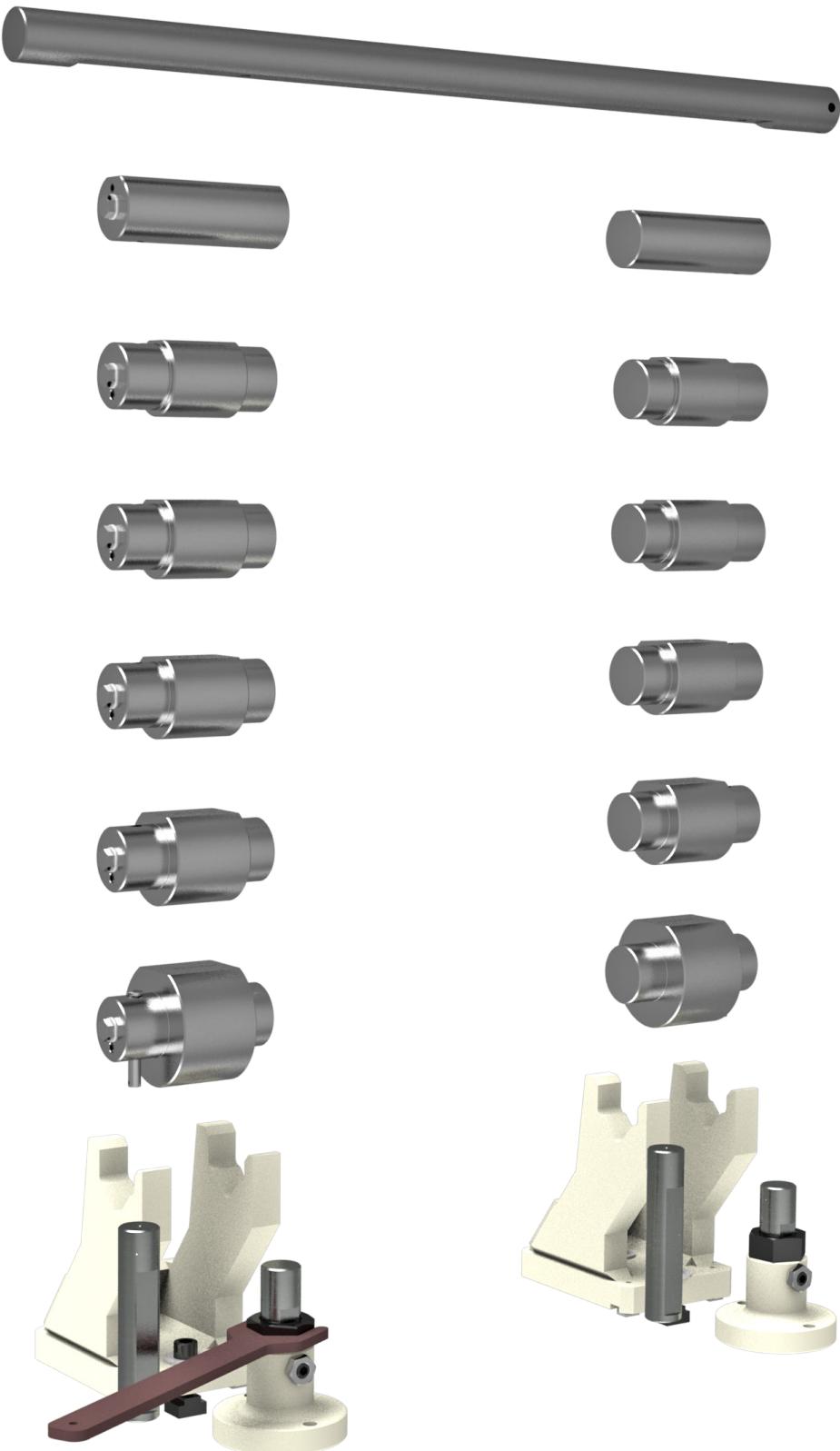


Universal Fixtures for In-Line and V-Blocks

11121 Mid Range Universal Fixture

Upper End Block Machining for Small to Mid Range In-line and V-blocks. Fixture includes Six Sets of Locators to cover Main Line Diameter Range 2.0 - 6.0" (50 - 152mm). Assembly includes 2" (50.8mm) bar to support small in-line and V-blocks when use of performance locators is desired. See F60 & F70 Locator pricesheet for listing of available locators. Requires 11111 Clamp Towers. Recommend that 11113L 4" (102mm) and 11112 8" (203mm) Parallels are ordered together with this fixture.



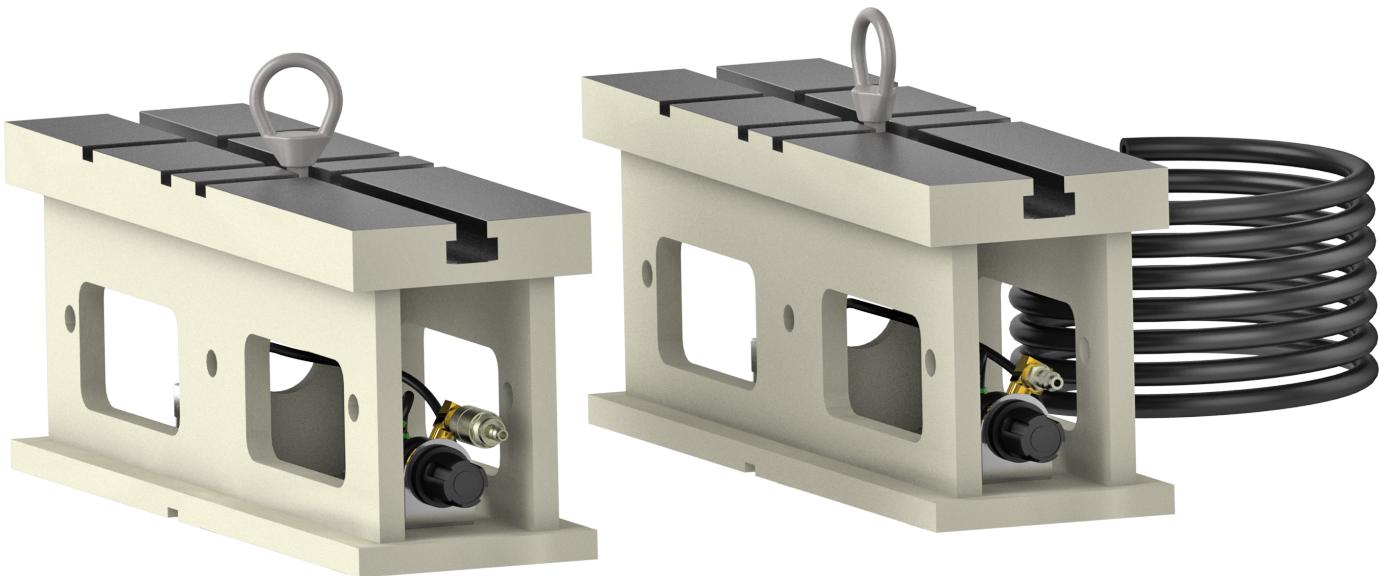
11122 Diesel Fixture Assembly
(Short Version) In-Line And Mid-Range V Block

11111 Clamp Tower Assembly

(1 Pair)

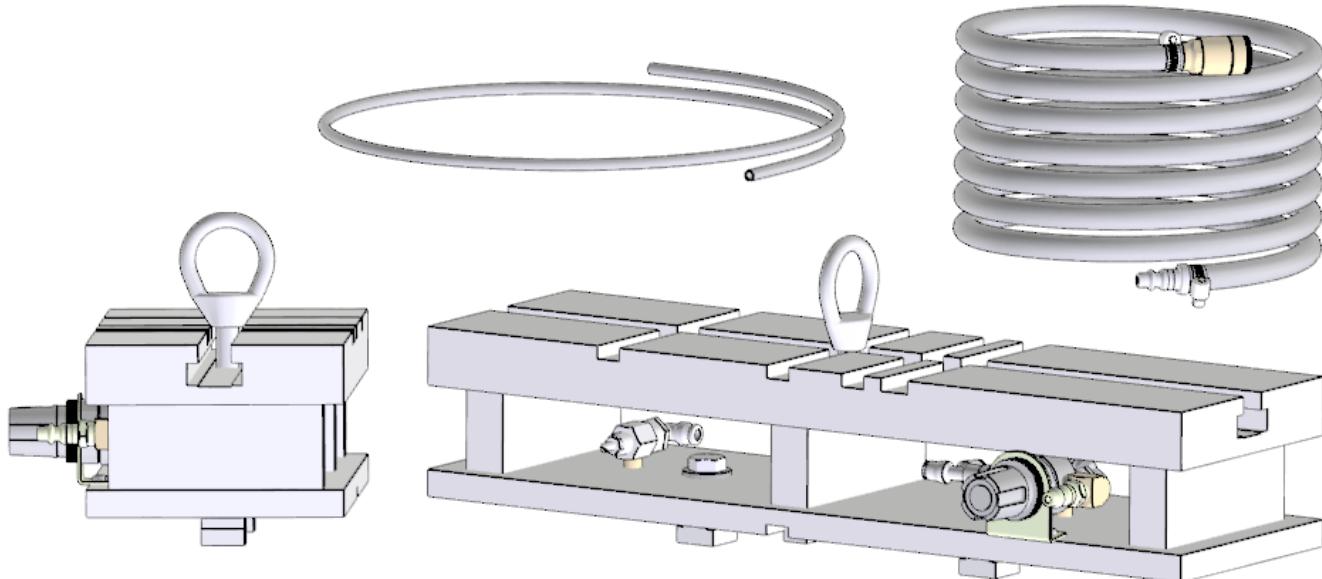
**Miscellaneous Accessories and Parallels****11112 Universal 8" (203mm) Heavy Duty T-Slot Parallels with Air Float**

Recommended for 11112 Upper Block Machining Fixture, 11113 Line Bore Fixture, 650-3-56 Line Bore Pivot Table, 7209M Leveling Surfacing Table

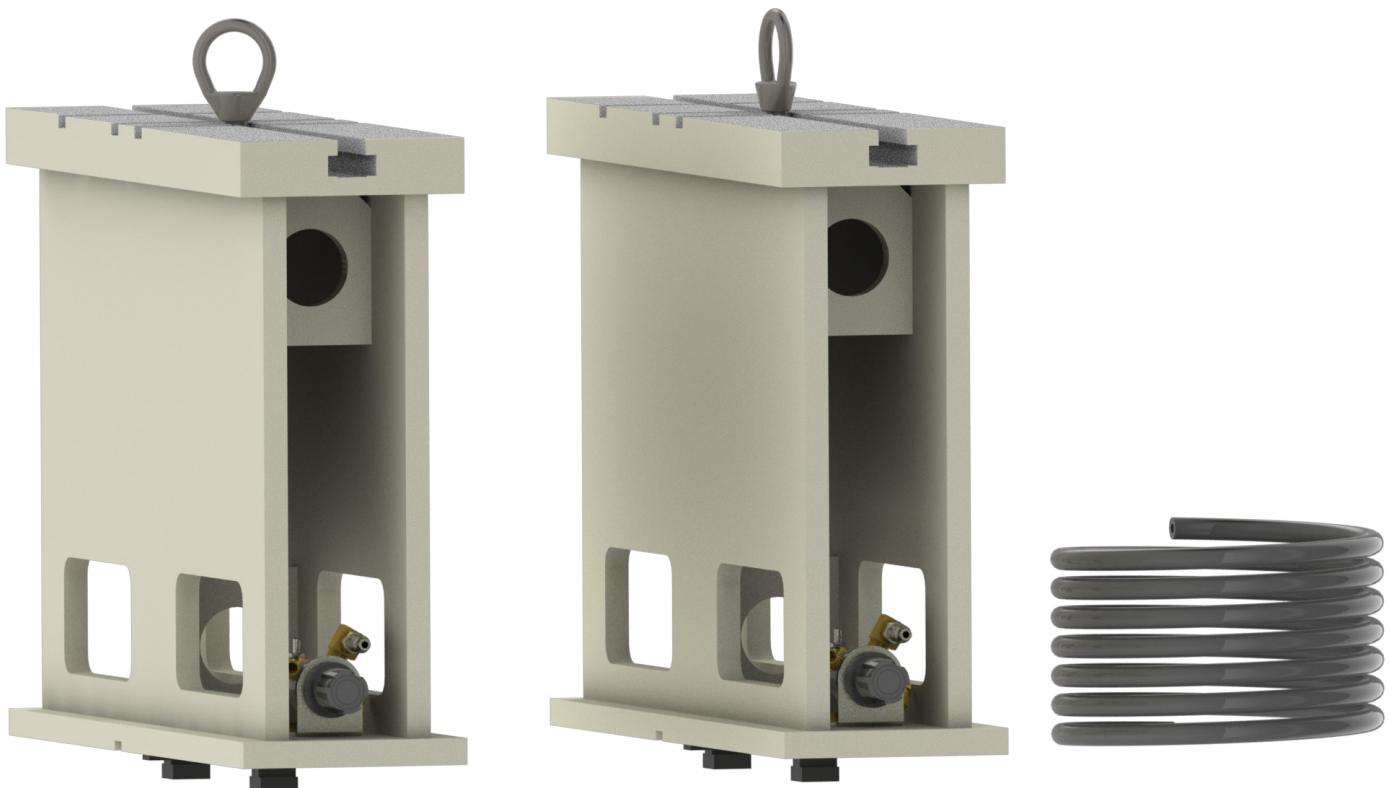


11113L Universal 4" (102mm) Heavy Duty T-Slot Parallels with Air Float

Recommended for 11121 Upper Block Machining Fixture, 11113 Line Bore Fixture, 650-3-56 Line Bore Pivot Table.

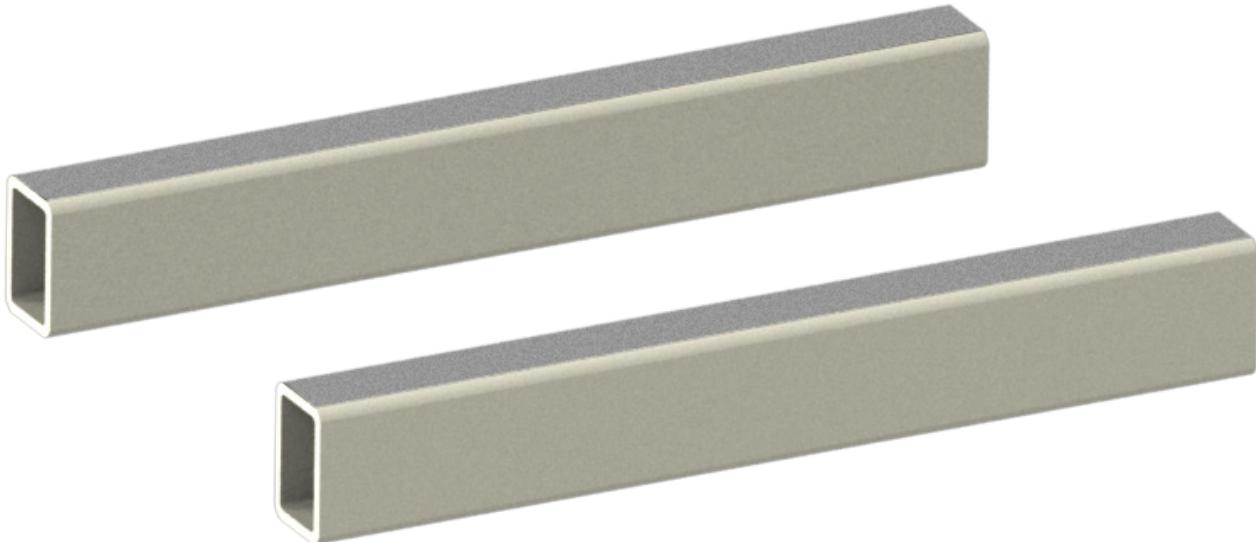
**11114 Universal 16" (406mm) Heavy Duty T-Slot Parallels with Air Float**

Recommended for 650-3-56 Line Bore Pivot Table, 7209M Leveling Surfacing Fixture.

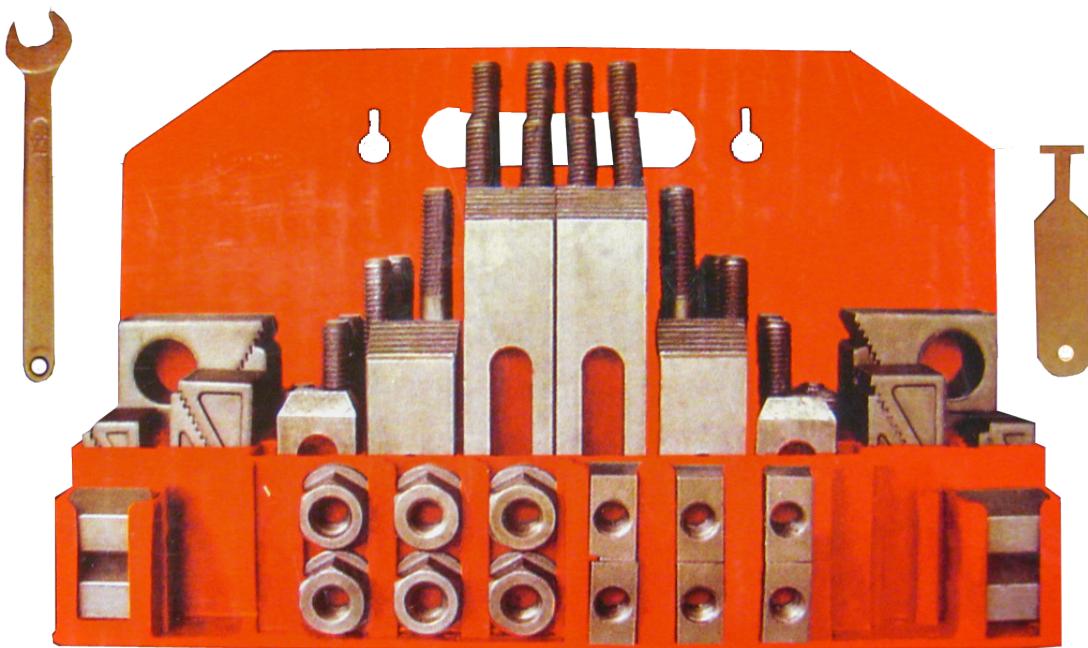


11115 2" (50mm) X 3" (75mm) Parallels

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

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

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



Fixtures for Performance Blocks

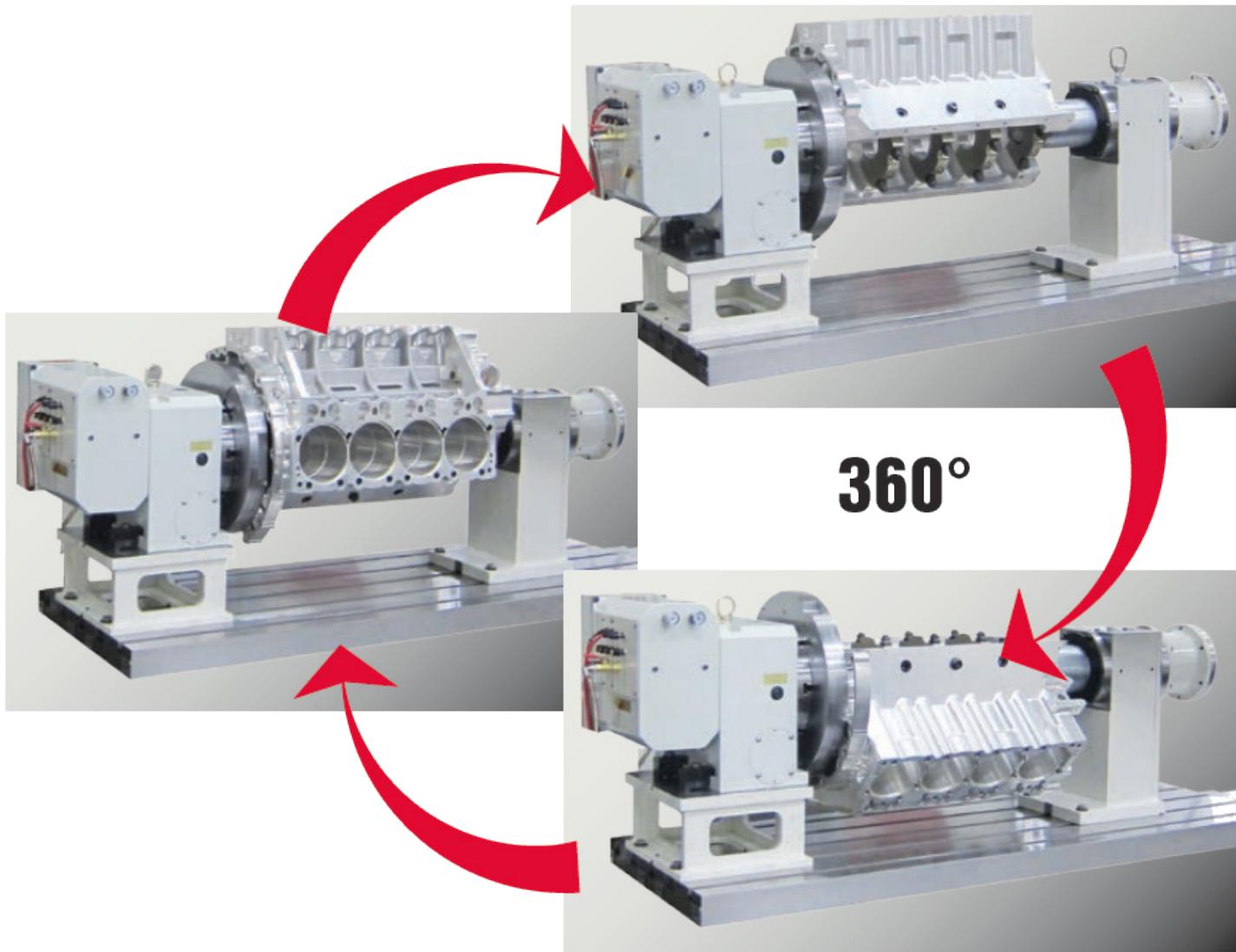
Automatic 360 Degree Roll Over Block Fixture

690-3-63 Computer Controlled Automatic 4Th Axis Block Roll Over Fixture

Requires 11110 Parallels/Risers and locators, see F60/70 Locator Catalog for listing of available locators. Fixture price does not include locators.

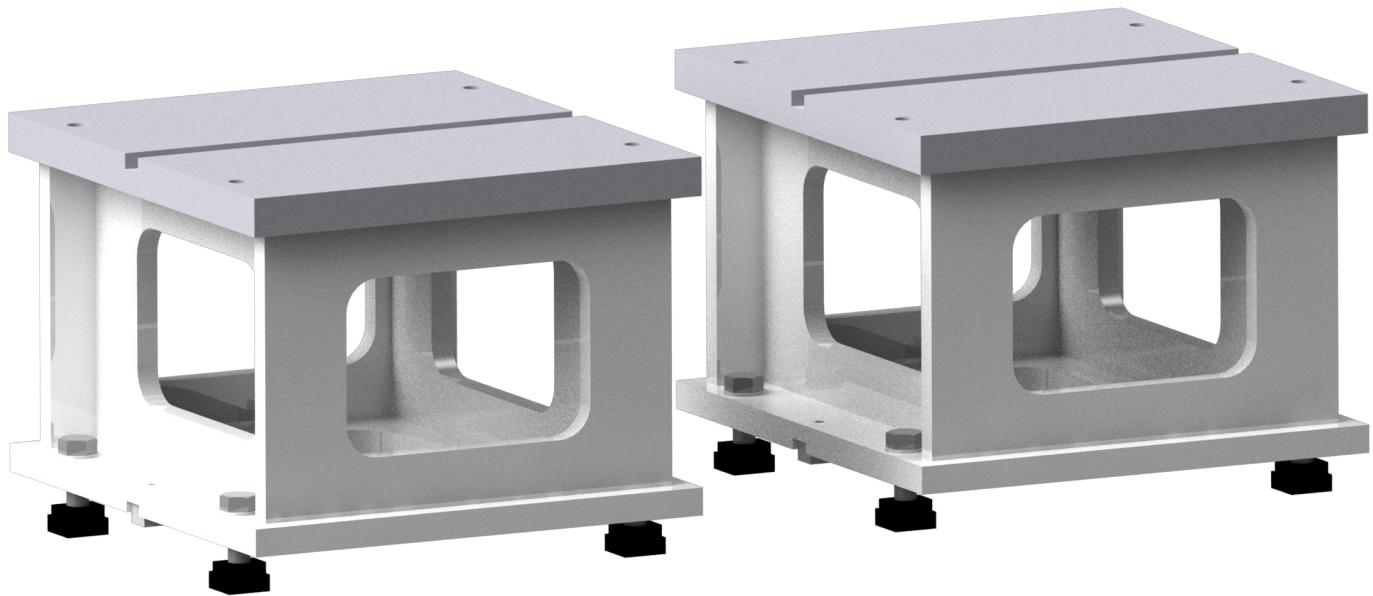
Note: Price includes factory install of 4th Axis Fixture when ordered together with new machine. Field retrofit will require additional service charges.

- 1: Rottler 4th Axis Software Package.
- 2: Universal Engine Block Mounting System to Locate and Hold A Wide Variety of Camshaft Type V Blocks, Requires Main and Cam Bearing Locators to Precision Mount Blocks.
- 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 Tail Stock for Quick Mounting of Blocks and Rigid Support During Machining.

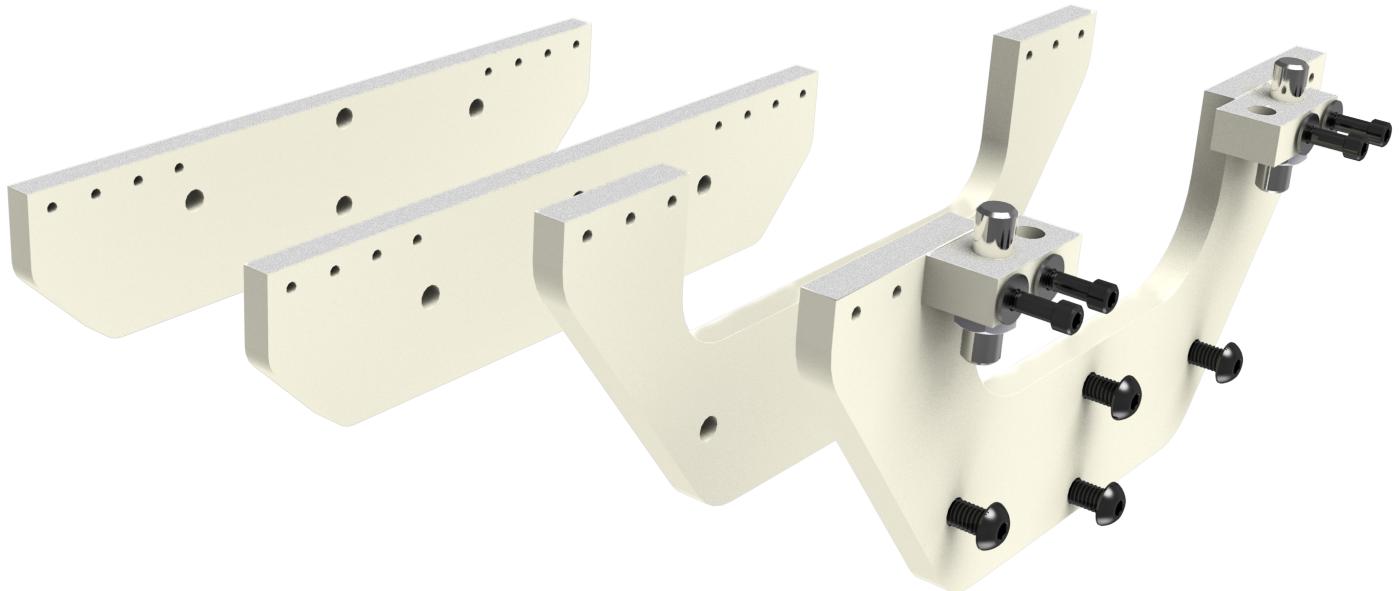


11110 Parallels/Risers

Required for 650-3-59 4th Block Axis

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

For Mounting Overhead Cam Blocks on 4th Axis Fixture (650-3-63)



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.

Tooling for Engine Block Boring and Resleeving Boring/Sleevng/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, required for cylinder diameter smaller than 3.8" (96.5mm)



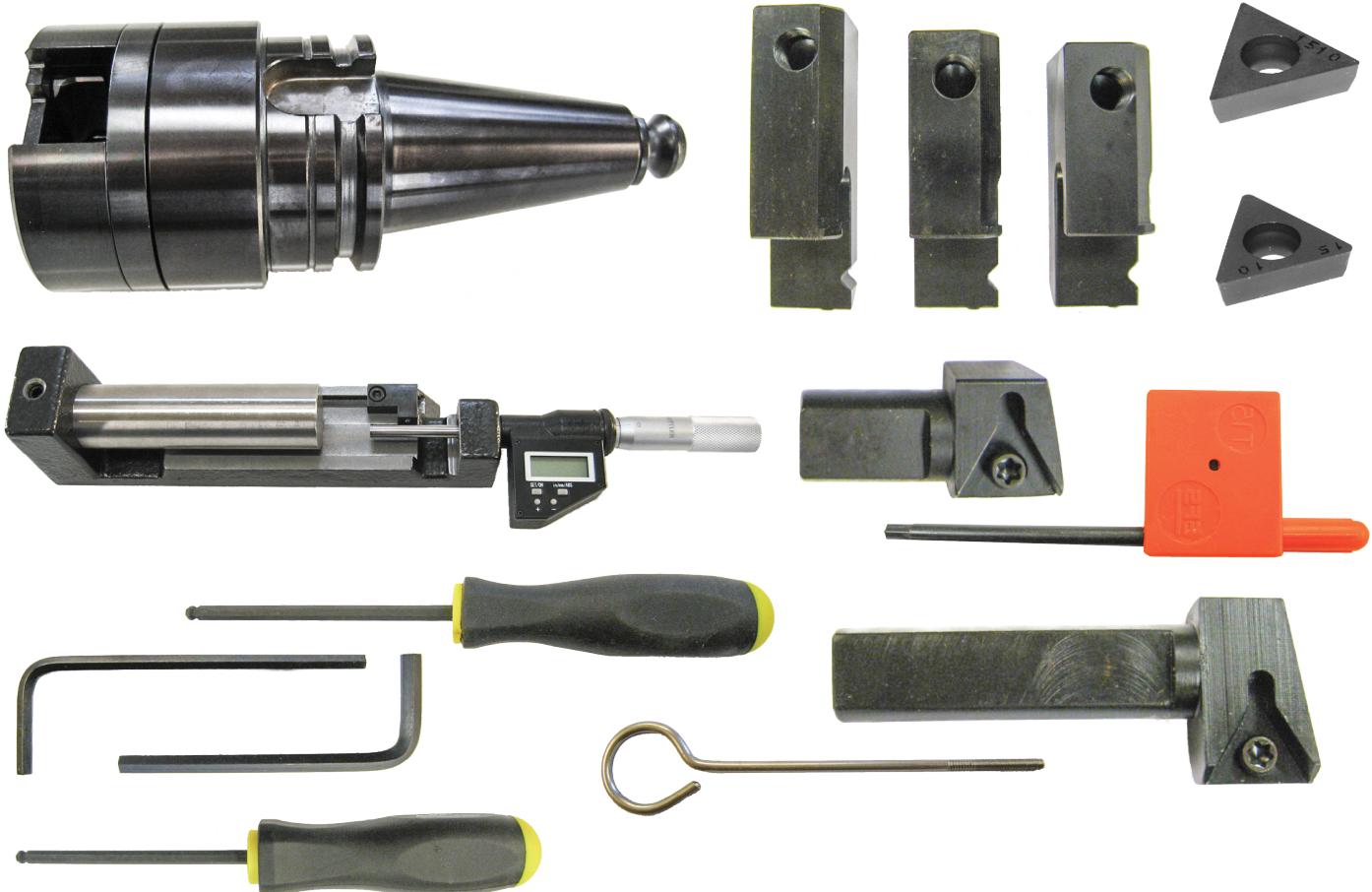
650-2-14B Cutterhead Package

2.9 - 3.8" (73.66 - 96.50mm) diameter X 7.0" (177.80mm) length complete with tooling and Digital Micrometer, required for cylinder diameter smaller than 3.8" (96.5mm) Cutterhead 11100 is recommended for boring diameters larger than 3.8" (96.5mm). For bores longer than 7.0" (178mm) add 1.4" (35.5mm) extender 650-2-16D listed below.



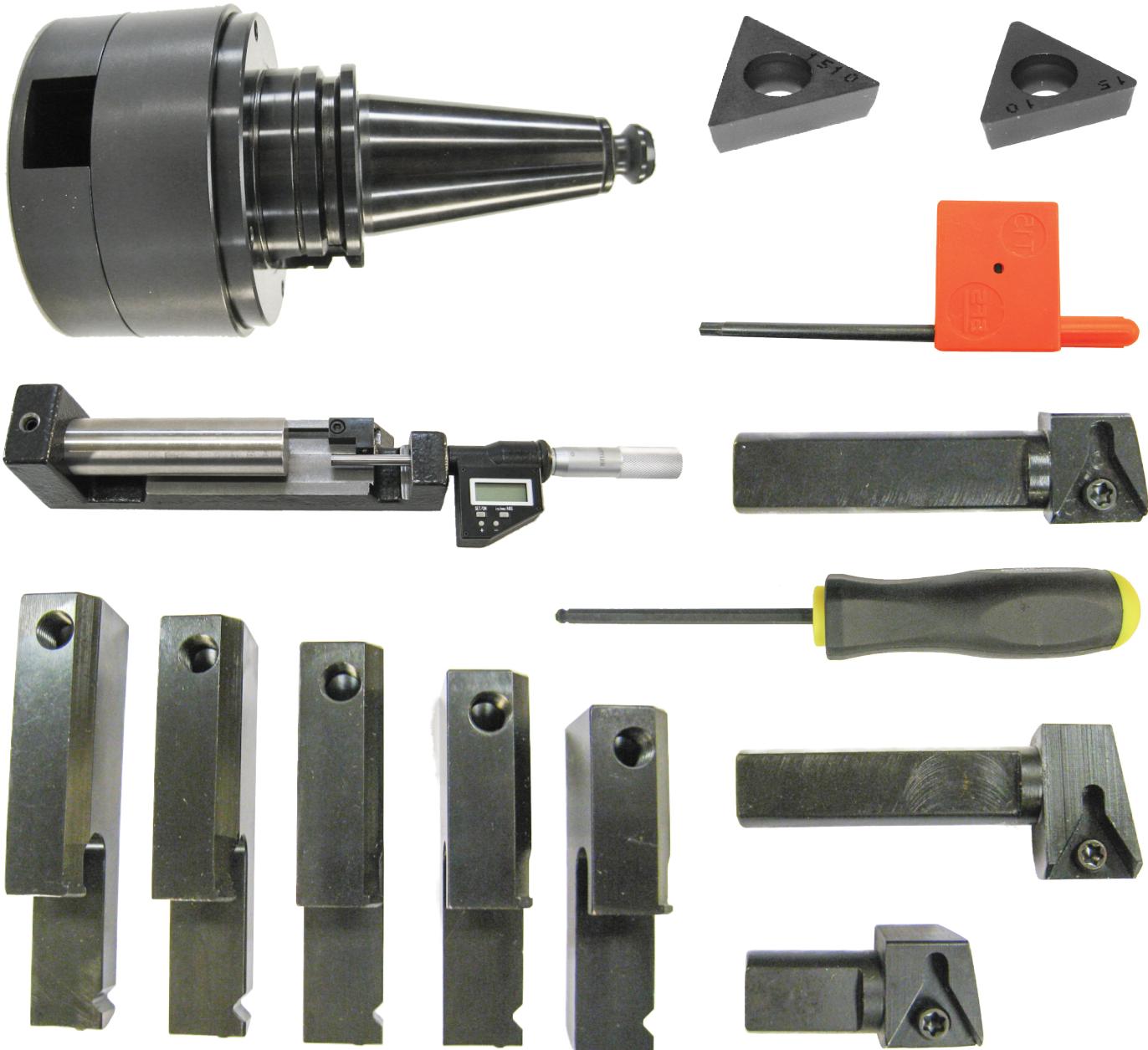
11100 Cutterhead Package

3.8 - 5.0" (96.50mm - 127.00mm) Diameter Complete with Tooling and Digital Micrometer, recommended for bore diameter larger than 3.8" (96.5mm)

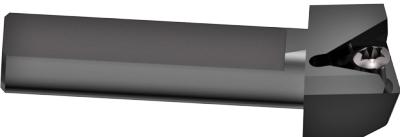


11101 Heavy Duty Cutter Head Package

4.5 x 7" (115 x 178mm) Diameter Complete with Tooling and Digital Micrometer

**Extender for 650-2-14B Cutterhead Assembly****650-2-16D 1.400" (35.5mm) Spacer (Extension)**

Miscellaneous Tooling for 11100, 11101, 650-2-14 Cutterheads

6593S Cartridge, Triangular For Circular Interpolation Counterbore Facing	6598M Cartridge, Triangular, 13/16" (20mm) length For Counterboring
	
6598K Cartridge, Triangular, 1-7/8" (48mm) length For Counterboring	6598R Cartridge, Triangular Offset .250 (6.4mm) For Blind Holes
	
6260L Cartridge, Square For Hi Speed through Boring	6260W Cartridge, Square, Offset For Cylinders with Clearance Problems.
	
6513J Tool bit, Brazed Carbide - .037" (.940mm) Wide O Ring Grooving	6513L Tool bit, Brazed Carbide - .039" (.991mm) Wide O Ring Grooving
	
6513N Tool bit, Brazed Carbide - .060" (1.524mm) Wide O Ring Grooving	6513Q Tool bit, Brazed Carbide - .120" (3.048mm) Wide O Ring Grooving
	

6513P Tool bit, Brazed Carbide - .085" (2.159mm) Wide O Ring Grooving 	6747K Cartridge, Triangular - 5 Degree Chamfer 
6747P Cartridge, Triangular - 10 Degree Chamfer 	6747G Cartridge, Triangular - 15 Degree Chamfer 
6747F Cartridge, Triangular- 20 Degree Chamfer 	6747M Cartridge, Triangular - 20 Degree Chamfer (Special Application Only) 
6747H Cartridge, Triangular - 30 Degree Chamfer 	

6593L Cartridge, Triangular, Offset Indexable Insert, 3.14 - 3.40" (79.756 - 86.36mm) diameter	6593M Cartridge, Triangular, Offset Indexable Insert, 3.40 - 3.90" (86.36 - 99.06mm) diameter
	

6593N Cartridge, Triangular, Offset Indexable Insert, 3.90 - 4.40" (99.06 - 111.76mm) diameter	6593P Cartridge, Triangular, Offset Indexable Insert, 4.40 - 4.90" (111.76 - 124.46mm) diameter
	

Surfacing Tooling

Note: Surfaces wider than diameter of cutterhead can be machined using 6758U software package

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



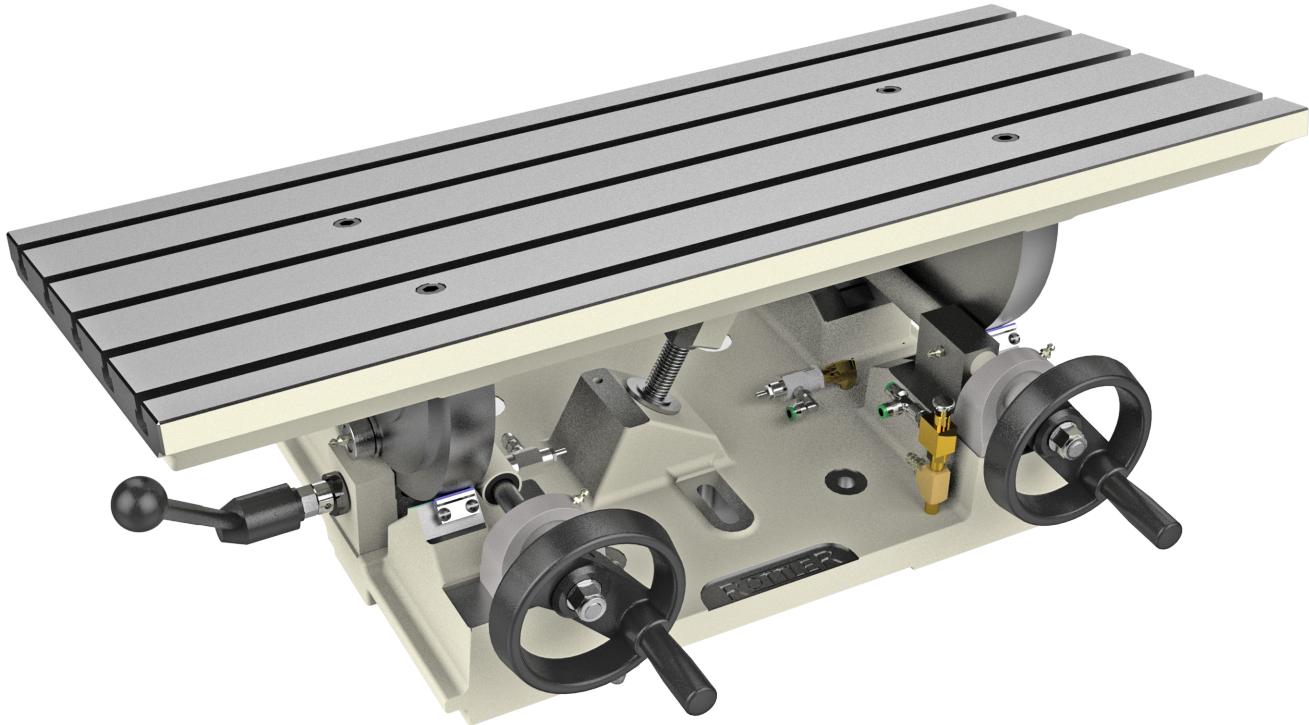
6303B CBN Insert, Round Double-Sided, 3/8" (9.525mm) IC, for Cutting Cast Iron	6303M PCD Insert, Round 3/8" (9.525mm) IC, for Cutting Aluminum	6303S CBN Insert, Round 3/8" (9.525mm) IC, for Cutting Aluminum Blocks With Liners

6303U CBN Round Insert Single Sided, 3/8" IC. For hard cast iron	6303V CBN Insert, Octagonal (16-Cutting Corners) for surfacing large diesel blocks	

Cylinder Head Surfacing Fixture

7209M Leveling Table with Airfloat

Complete with Universal Work Holding System for Surfacing Cylinder Heads and Small In-Line Blocks, requires 11114 16" (406mm) Parallels



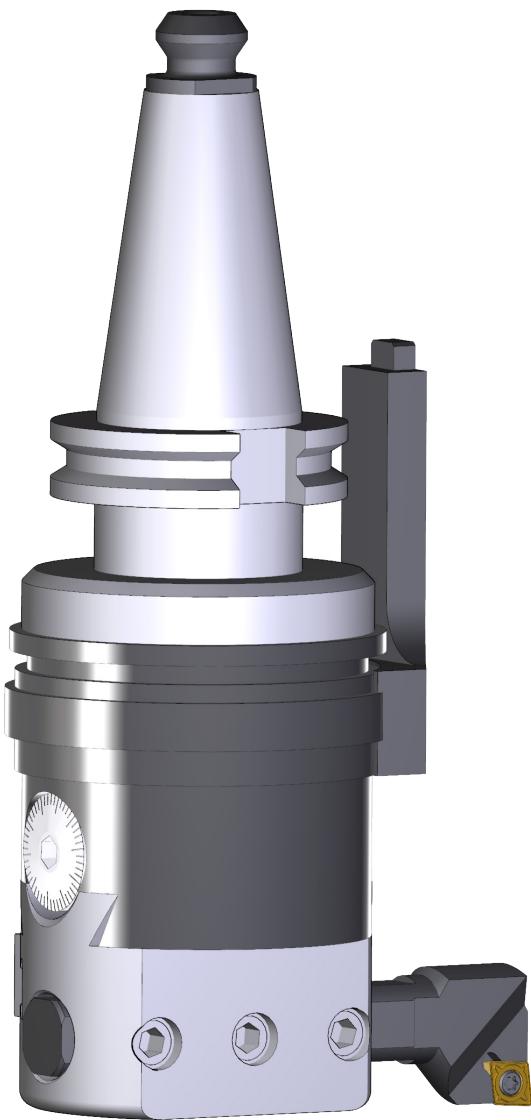
7152A Dual Axis Level Assembly**General Purpose Tooling****6648W Cat 3400 Series Tappet Bore Repair Tooling Package**

Including Digital indicator and 1" Spindle Adaptor for F79A



11116 Cross Feed Head Assembly

Includes software package. Facing bar includes 80 degree cutting insert. Capable of handling wide variety of facing boring and chamfering machine work.

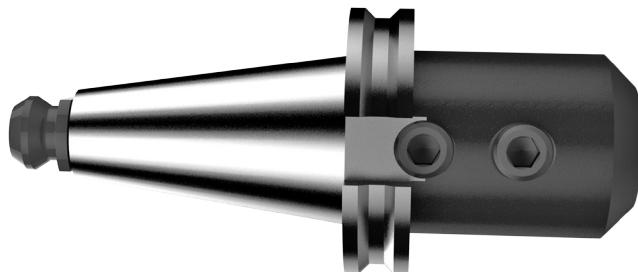
**Tooling for Crankshaft Stroker Clearancing/Notching****650-2-45H Roughing End Mill**

1" (25.4mm) diameter X 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**

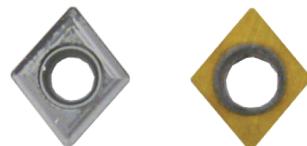
Includes CAT40 Spindle adapters, spot facer, center drill, drill, 7/16" tap and torque tap holder. Recommend software packages 8300 & 9043 and 4th Axis Block Fixture 690-3-63.



Tooling for Lifter Bore Machining

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**

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, requires 11112 8" (203mm) or 11114 16" (406mm) Parallels



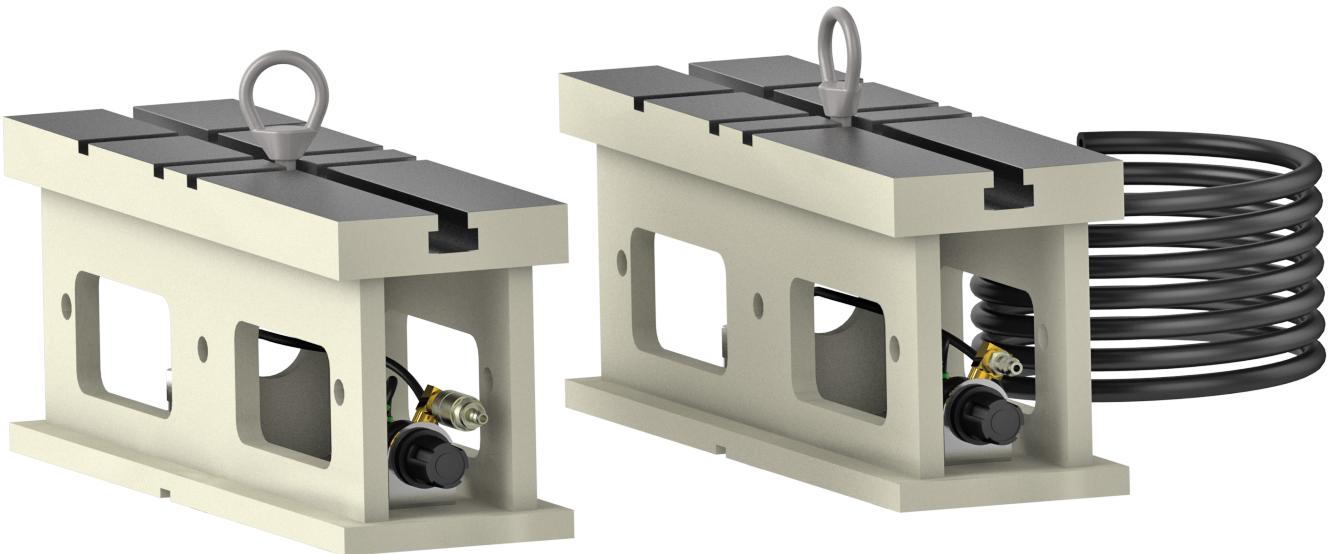
6866 Wedge for Cummins 5.9liter Camshaft Line Boring

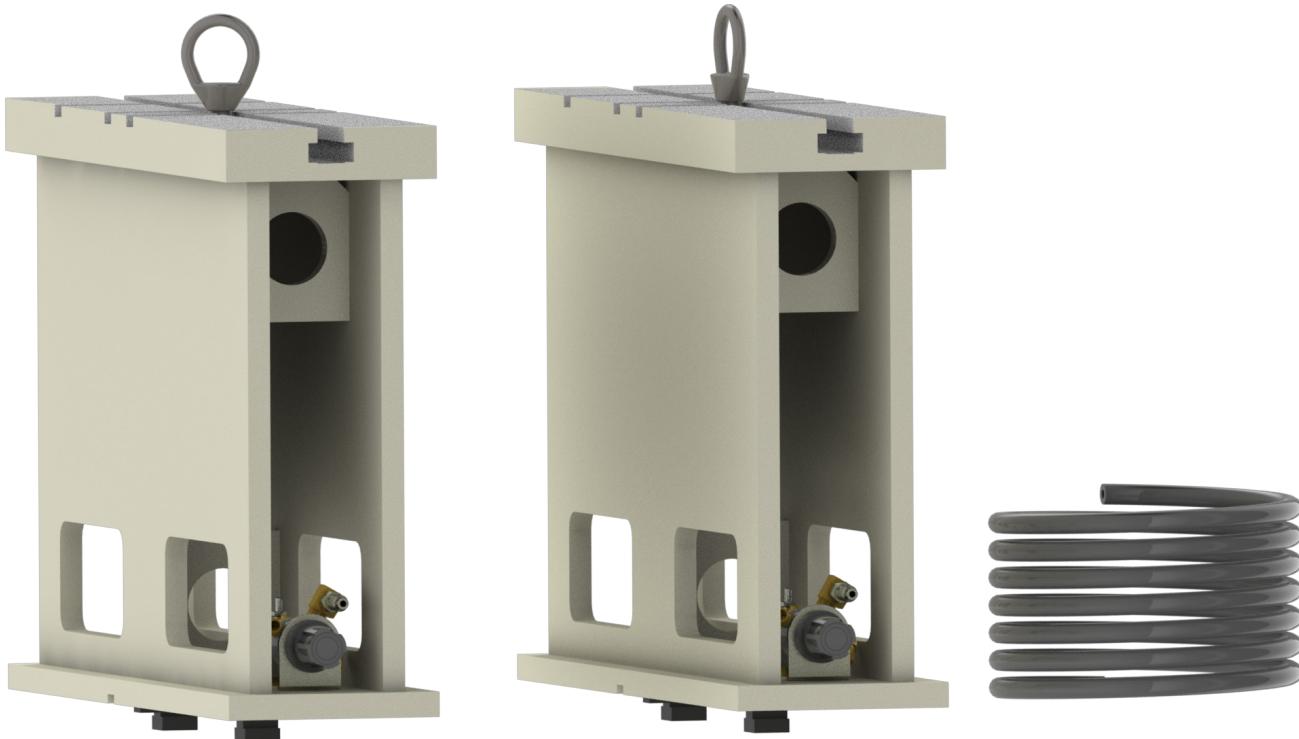
Requires 650-3-56 Pivot Table



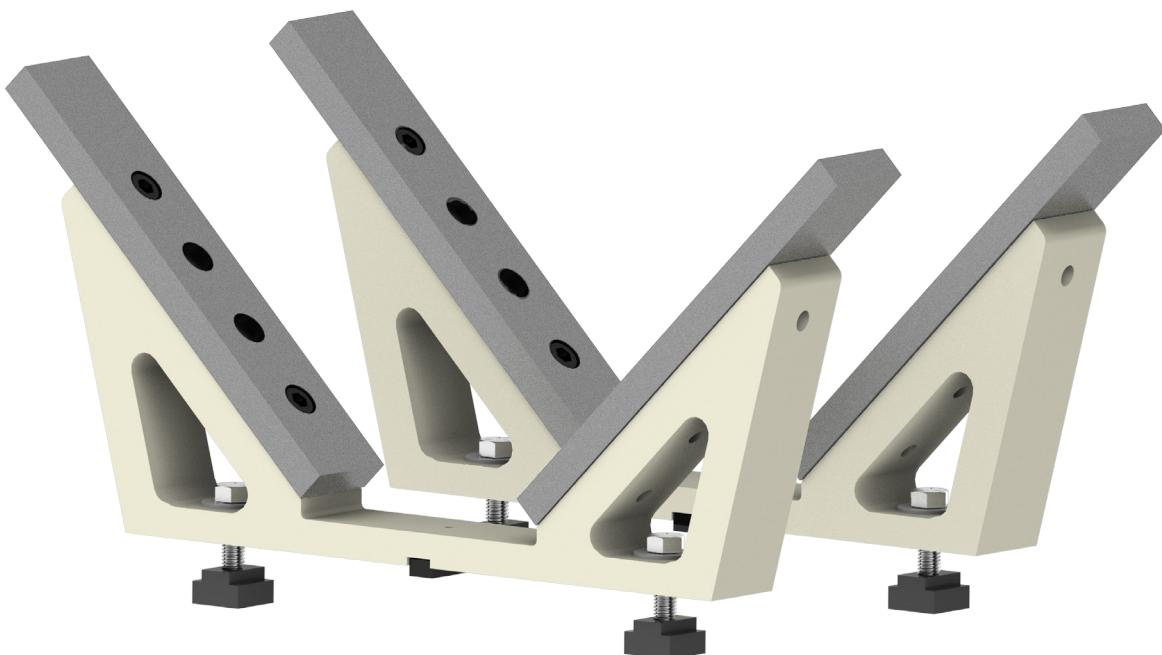
11113 Adjustable Universal Line Boring Parallel Assembly

Includes Locators for In-Line Blocks, Supports for V Blocks Must Be Ordered Separately. 11112 8" (203mm) and 11114 16" (406mm) Parallels may be required.

**11112 Universal 8" (203mm) Heavy Duty T-Slot Parallels with Air Float**

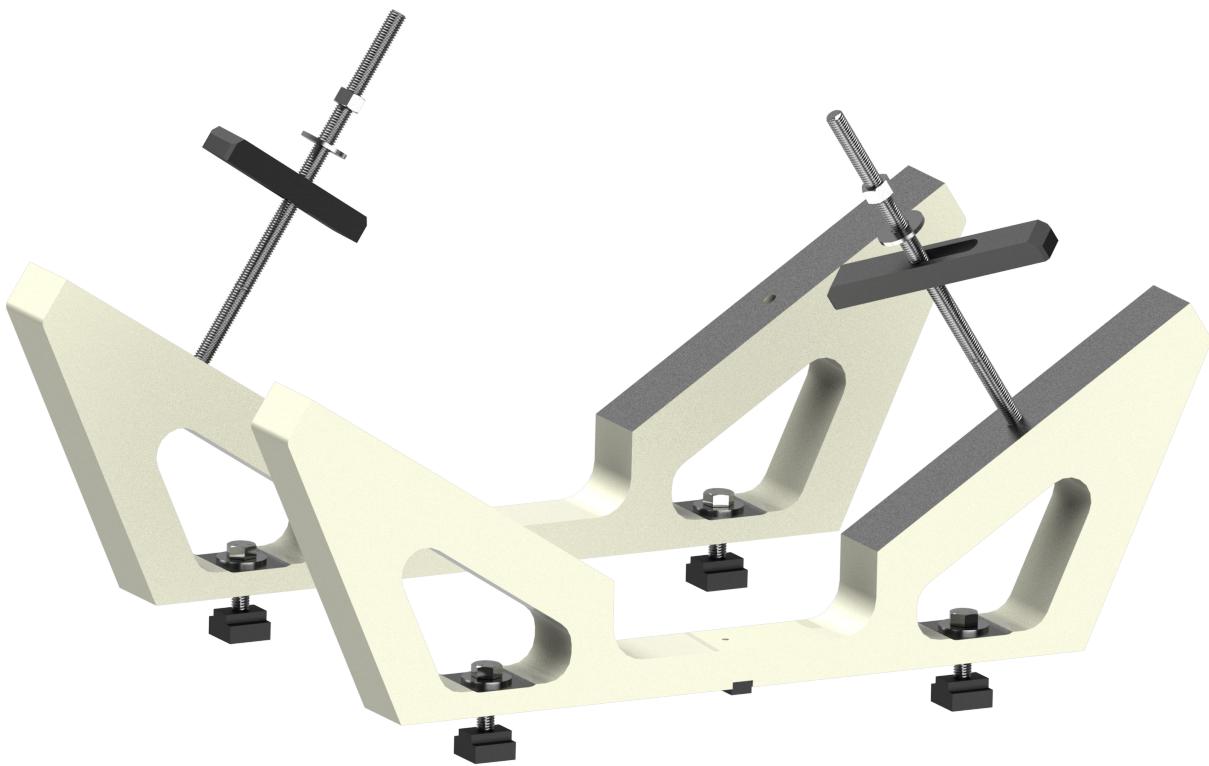
11114 Universal 16" (406mm) Heavy Duty T-Slot Parallels with Air Float**6843 90 Degree V Block Supports**

For Small To Mid-Size 90 Degree V Blocks, for use on Line Bore Fixtures 6821 and 11113

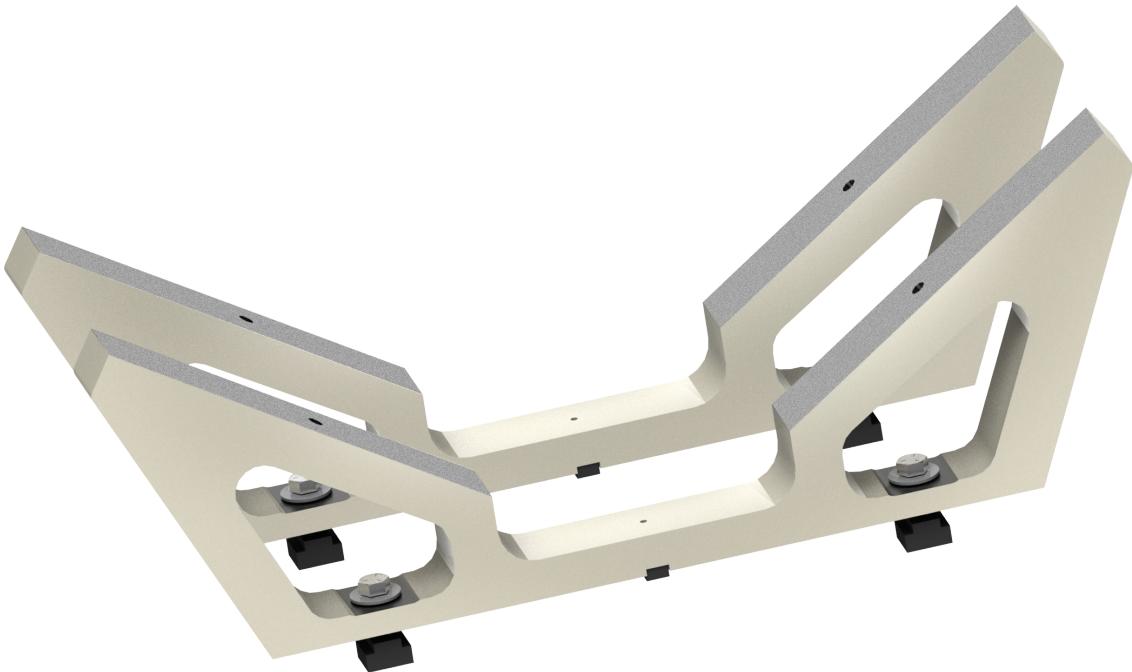


6789E 115 Degree V Block Supports for CAT 3400

For use on Line Bore Fixtures 6821 and 11113

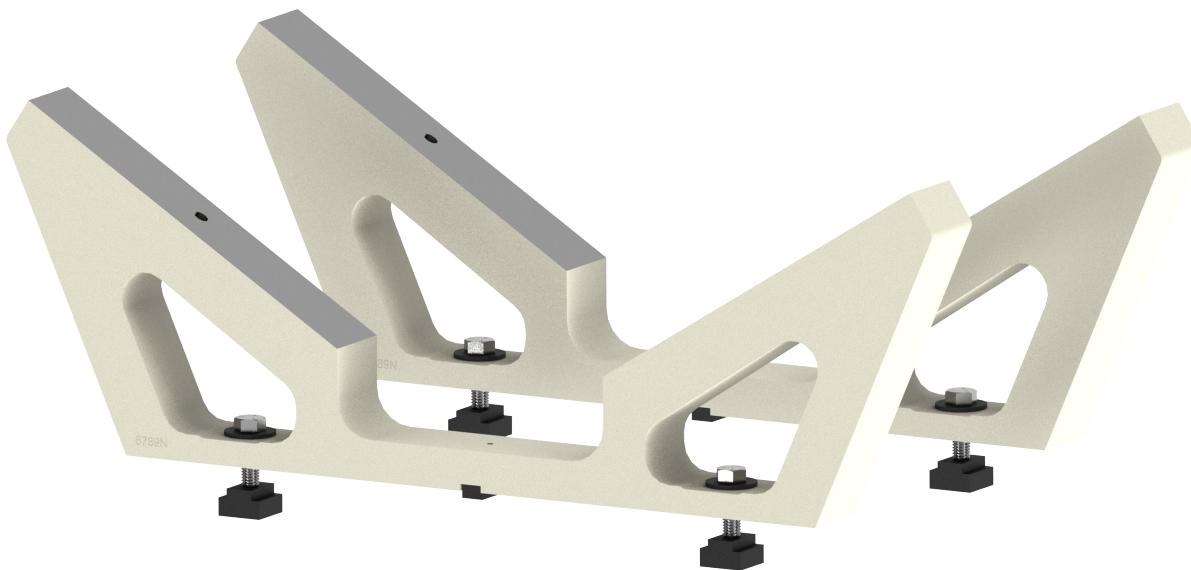
**6789L 113 Degree V Block Supports for Detroit Diesel V53**

For use on Line Bore Fixtures 6821 and 11113



6789N 116 Degree V Block Supports for Detroit Diesel V71 & V92

For use on Line Bore Fixtures 6821 and 11113

**Main Line Boring and Cam Boring Tooling****11103 Main Line Bore 90 Degree Right Angle Drive Assembly**

1.9 to 5.6" DIA. (48-142.2 MM) (Minimum Clearance 3.29" (83.66MM) Includes 5 Extension Spacers (Cutterheads Must Be Ordered Separately)



11103E Main Line Bore 90 Degree Right Angle Drive Assembly

Extended 2" (50MM) Diameter 1.9 - 5.6" (48 - 142.2mm) Minimum clearance 3.29" (83.6mm) Includes 5 extensions spacers (Cutterheads Must be Ordered Separately)



11104 Special Belt Drive 90 Degree Right Angle Drive Assembly

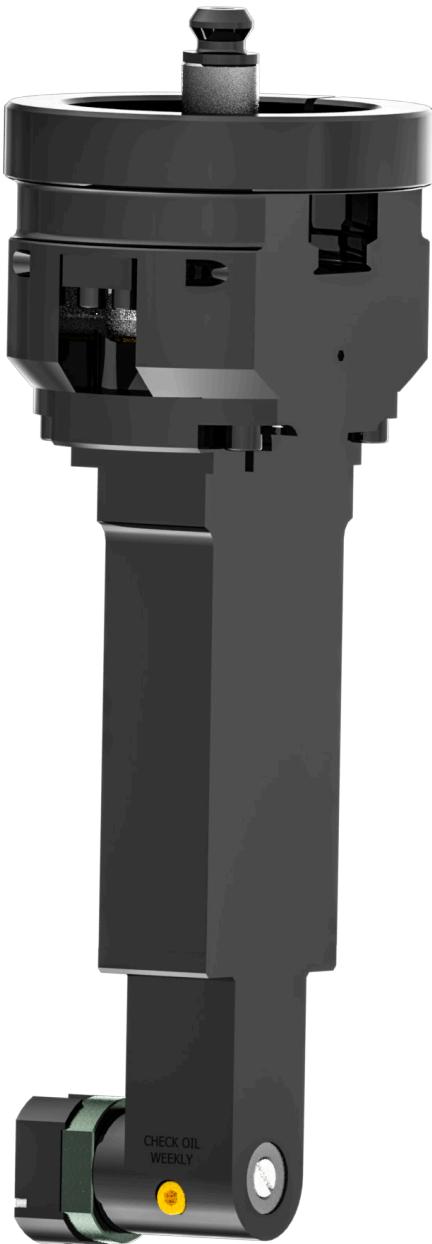
For Limited Clearance Between Bearing Caps, Diameter 1.9 - 4.0" (48 - 101.6mm) Minimum clearance 2.7" (69mm) with 650-2-39B Cutterhead, includes 5 extension spacers



11105 Narrow Right Angle Drive

1.9 - 2.4" (48 - 60.9mm) for special applications such as Cummins 5.9 camshaft tunnel. This Right Angle Drive does not require Cutterhead. Cummins 5.9 requires 6866 Wedge and 650-3-56 Line Bore Pivot Table

- 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.



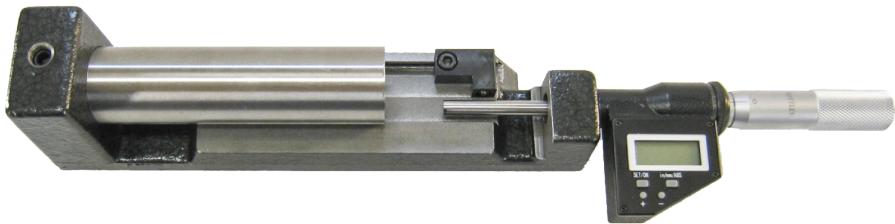
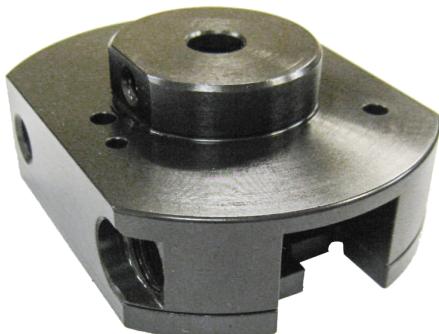
650-2-39B Line Boring Cutterhead Package

1.9 - 4.0" (48.26 - 101.60mm) Diameter Complete with Tooling and Digital Micrometer. (When used with 11103E 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 11103E Drive, minimum distance between Bearing Housings 4.07" (103.4mm)



Special Main Line Boring Thrust Facing Tooling for Small Blocks

6801M Tool Holder Package

Indexable Insert Thrust Facing .160 IC, Positive Rake



6801P Tool Holder Package

Indexable Insert Thrust Facing 350 Chevy and other small blocks line boring



501-29-6G Insert, Triangular
.160 IC 1/64" (.397mm) Radius



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



501-29-6H Insert Screw



Special Main Line Boring Thrust Facing Tooling for Mid-Size Blocks

6855Q Thrust Facing Tooling Package

For Main Line Bore for Mid-Size Blocks



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

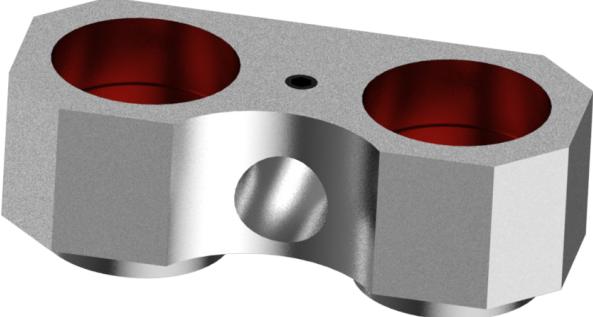


Line Bore Set Up and Alignment Equipment

502-12-7B Digital Runout Probe and Readout

Including Magnetic Holder for Block Set Up and Manual Centering of Cylinder Bores and Main Line Bores

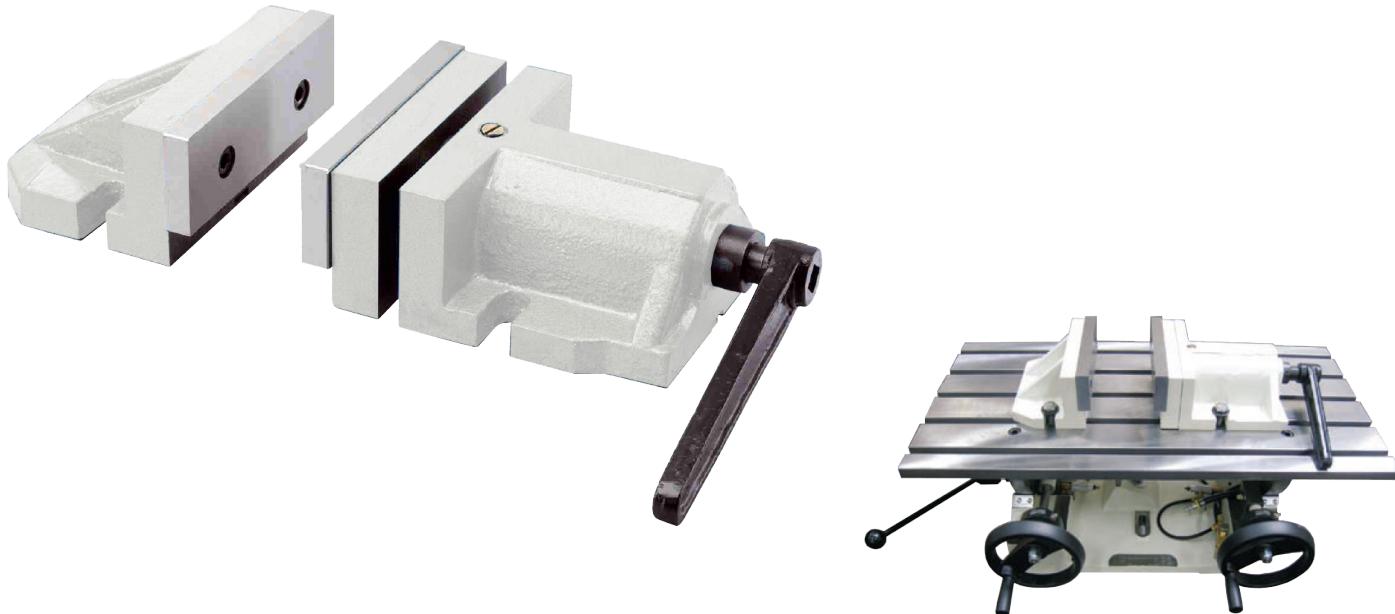


<p>502-9-9S Indicator Mount Angled for small diameter main line bores</p> 	<p>502-9-9A Mechanical Run Out Indicator General Purpose (.001" Inch Resolution)</p> 	<p>502-9-9J Mechanical Run Out Indicator General Purpose (.01mm Metric Resolution)</p> 
<p>502-12-4 General Purpose Magnetic Indicator Holder (requires #502-9-9A or J Indicator)</p> 	<p>502-12-4A Magnetic Indicator Holder For 2 - 3" (50 - 75mm) Diameter (Requires 502-9-9A or J Indicator)</p> 	

Equipment for Preparing Blocks for Line Boring

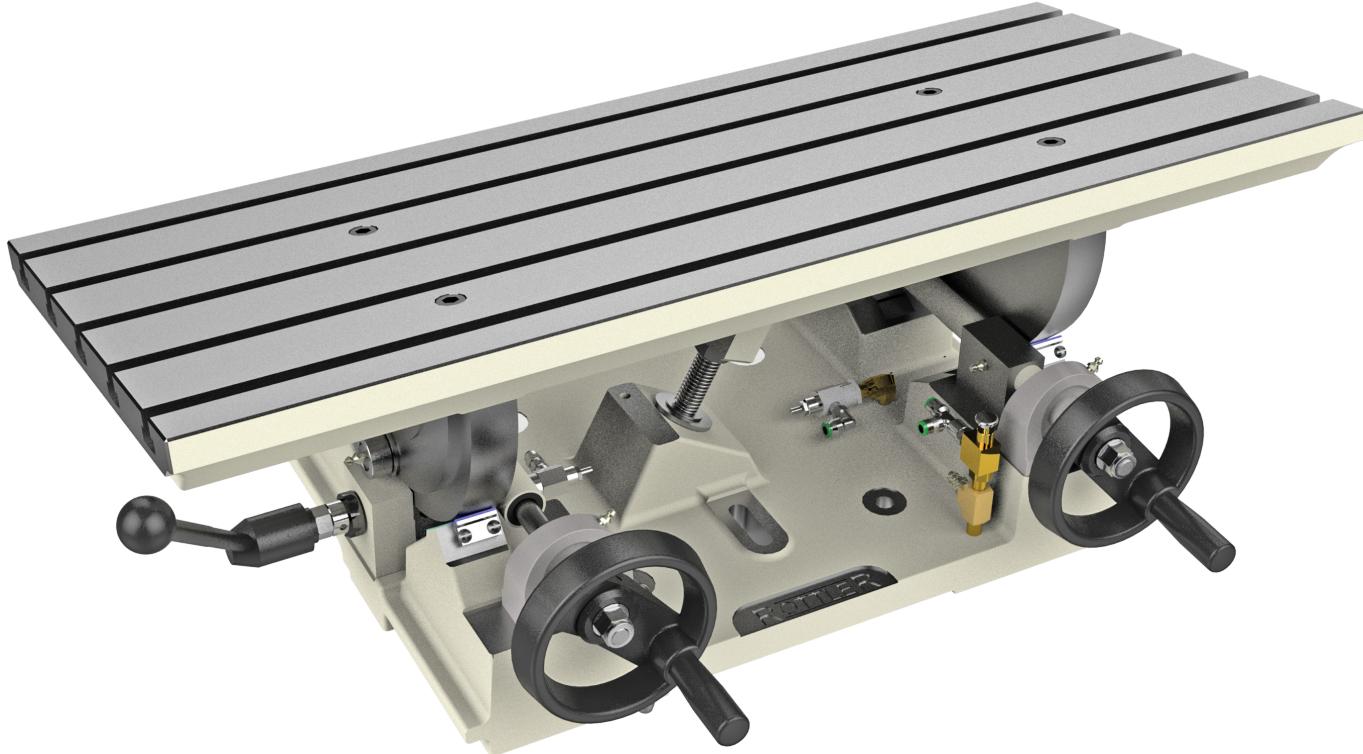
7209N 2-Piece Vise

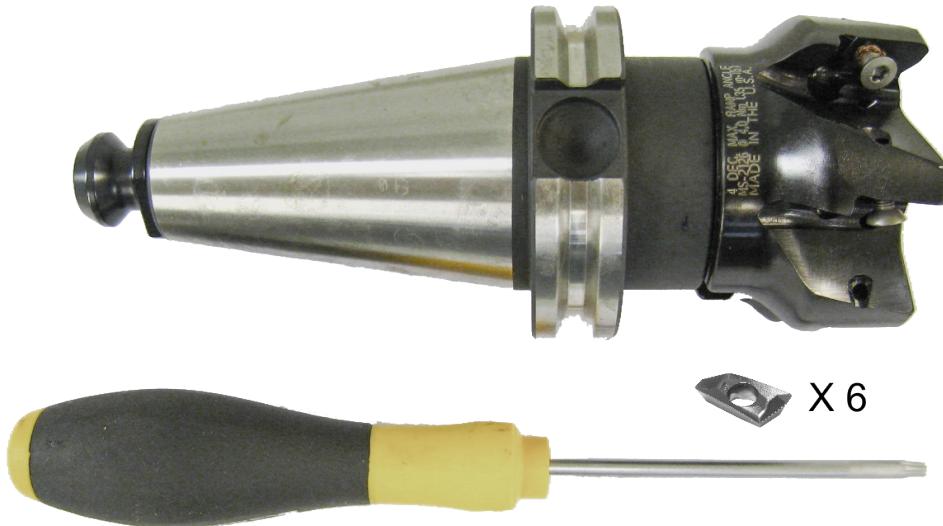
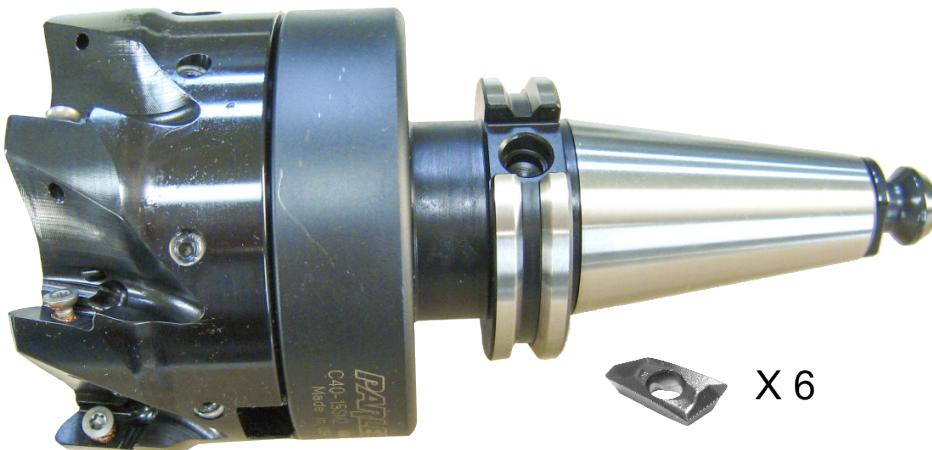
For Surfacing Main Bearing Housing Caps in Preparation for Main Line Boring. Also used for Holding Exhaust Manifolds for Surfacing. Requires 7209M Leveling Table.



7209M Leveling Table with Air Float

Complete with Universal Work Holding System for Surfacing Cylinder Heads and Manifolds. Requires One Set of 6370C Parallels



Shell Mill Assemblies**650-2-44N 2 1/2" (63.50mm) Shell Mill Assembly****650-2-44P 4" (101.60mm) Shell Mill Assembly**

Thread Tapping Tooling**650-2-11K Quick Change Tap Holder Cartridge Assembly**

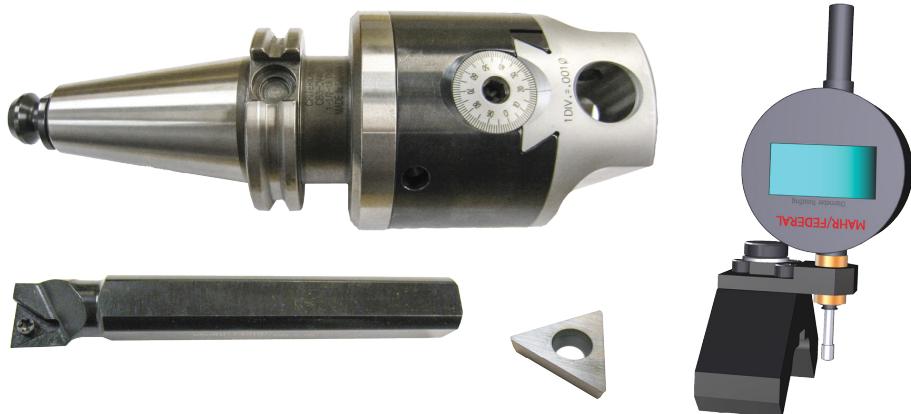
Requires tap holders

**Drill Tooling****650-2-44M Precision Drill Chuck Assembly**

Connecting Rod Boring and Serrating Equipment

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**

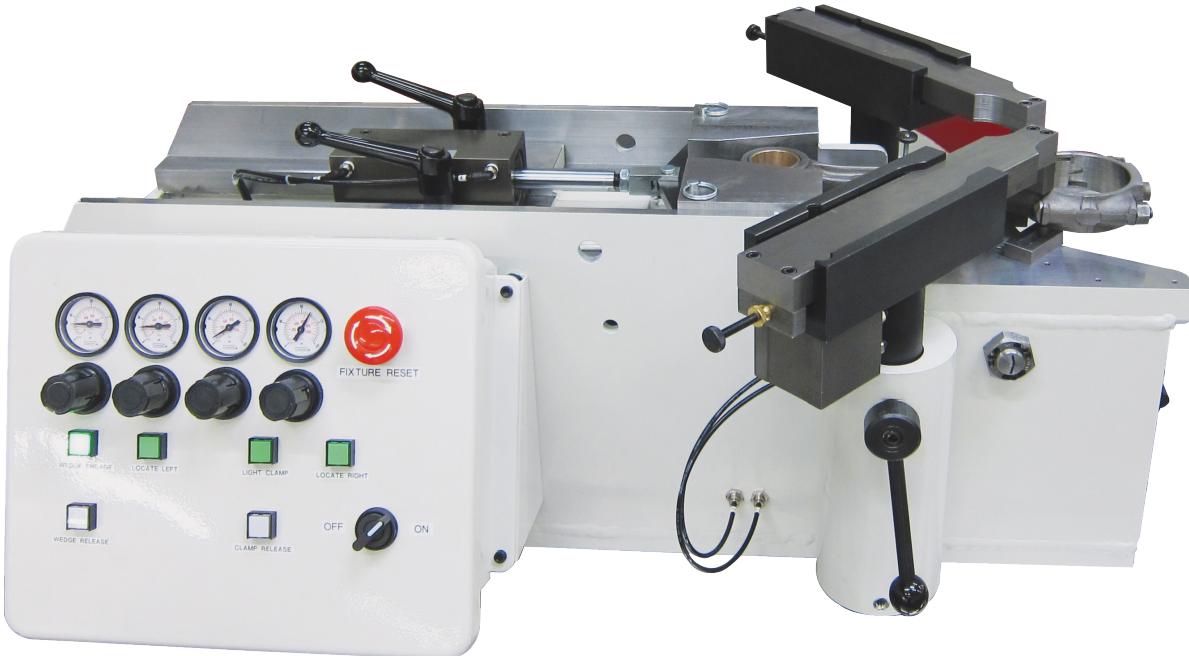
Positive Rake, 3/8 IC 1/64" 9.397mm) Radius, for Connecting Rod Steel Cutting Only



Connecting Rod Fixturing

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

For Connecting Rods Center to Center Distance Approx 8 - 24" (200 - 600mm), requires 8" (203mm) 11112 or 16" (406mm) 11114 Parallels



650-3-64 Rottler Precision Connecting Rod Fixturing System

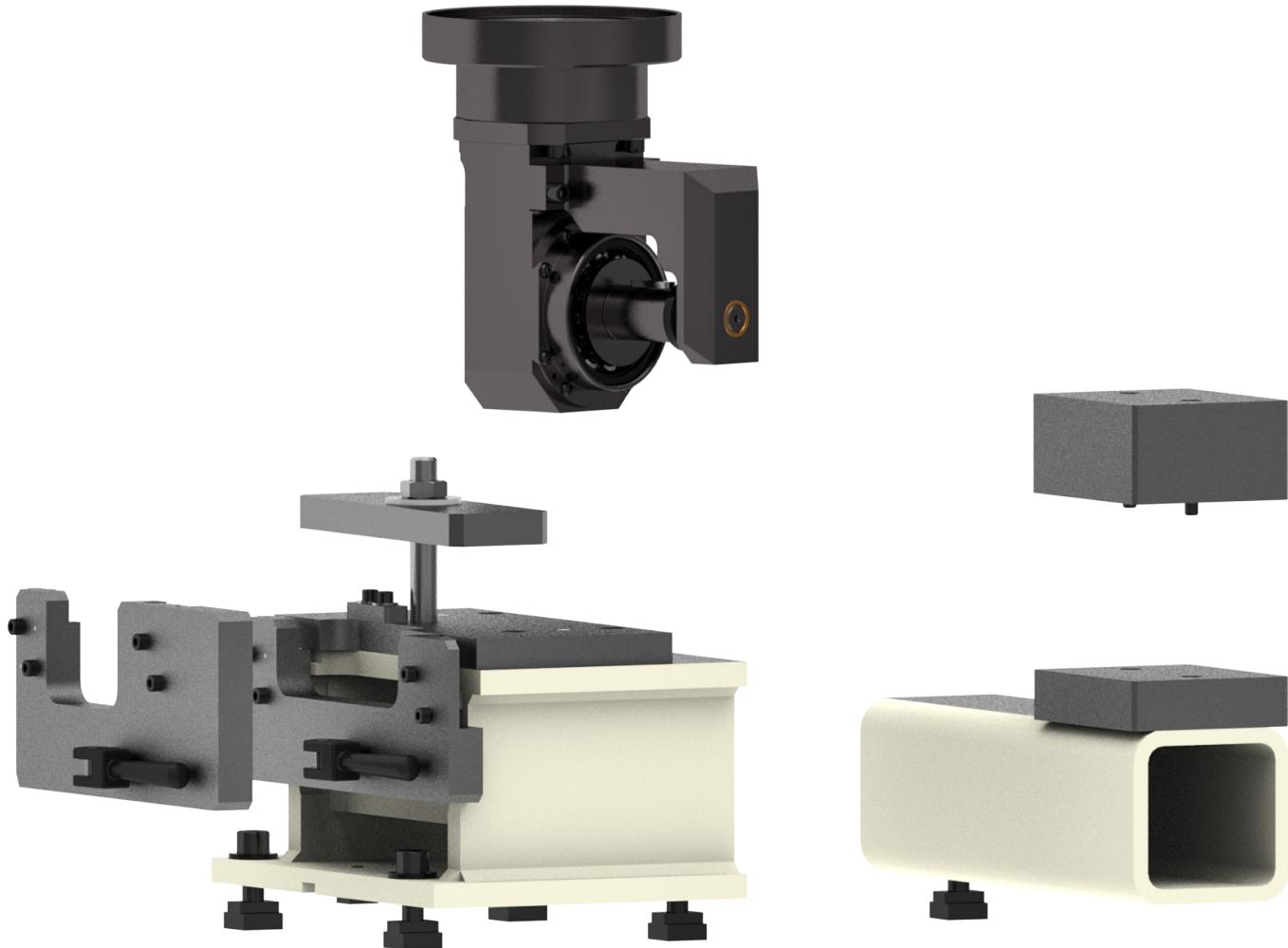
Special Version to Handle Natural Gas Compressor Connecting Rods and Large Engine Connecting Rods Such as Waukesha 7042 and White Superior 825, requires 8" (203mm) 11112 or 16" (406mm) 11114 Parallels



System for Cutting Serrated Connecting Rods

6867V Serrated Rod Cutting Package

Including special right angle drive and fixture system for Waukesha VHP and VGF Connecting Rods



6868 Six pitcher cutter used on the VHP rod and some CGF rods



6868G 3mm pitch cutter used on VGF rods



6868H 4mm pitch cutter used on some VGF rods

