

ROTTLER

THE CUTTING EDGE

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@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

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
Rottler CAM (Computer Aided Manufacturing) Software	1
9043 Rottler CAM (Computer Aided Manufacturing) Software Package.....	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 Fixture for In-Line and V-Blocks	5
11121 Mid-Range Universal Fixture for Small to Mid Range in-line and V-blocks.....	5
Fixtures for Performance Blocks	6
Automatic 360 Degree Roll Over Block Fixture	6
690-3-63 Computer Controlled Automatic 4Th Axis Block Roll Over Fixture	6
11110 Parallels/Risers	7
Overhead Cam Block Fixturing	7
650-3-84 Overhead Cam Block Fixture	7
Manual Fixture	8
650-3-1 Performance 90 Degree V Block Fixture.....	8
Optional Performance Fixture Crank and Cam Bars for Longer Blocks.....	9
650-3-4E Crankshaft Bar for Longer Block Models.....	9
650-3-7K Camshaft Bar for Longer Block Models	9
Adaptor for F60 Model Fixtures	9

9111A T-slot plate	9
Miscellaneous Accessories	10
11111 Clamp Tower Assembly	10
11112 Universal 8" (203mm) Heavy Duty T-Slot Parallels	11
11114 Universal 16" (406mm) Heavy Duty T-Slot Parallels	12
11115 2" (50mm) X 3" (75mm) Parallels.....	13
650-3-37 1/2" (12.7mm) Universal Clamping Kit	13
Boring/Sleeving/Chamfering/O-Ring Tooling	14
650-2-1D Cutterhead Package 2.0 - 4.0" (50.80 - 101.60mm) diameter X 7.0" (177.80mm) length	14
650-2-14B Cutterhead Package 2.9 - 3.8" (73.66 - 96.50mm) diameter X 7.0" (177.80mm) length	15
11100 Cutterhead Package 3.8 - 5.0" (96.50mm - 127.00mm) Diameter	16
11101 Cutter Head, Heavy Duty 4.5 x 7" (115 x 178mm) Diameter	17
Extender for 650-2-14B Cutterhead Assembly	17
650-2-16D 1.400" (35.5mm) Spacer (Extension) for 650-2-14B&F Cutterheads.....	17
Miscellaneous Tooling for 11100, 11101, 650-2-14 Cutterheads.....	18
6593S Cartridge, Triangular.....	18
6598M Cartridge, Triangular, 13/16" (20mm) length	18
6598K Cartridge, Triangular, 1-7/8" (48mm) length	18
6598R Cartridge, Triangular Offset .250 (6.4mm)	18
6260L Cartridge, Square	18
6260W Cartridge, Square, Offset.....	18
6513J Tool bit, Brazed Carbide - .037" (.940mm) Wide O Ring Grooving	18
6513L Tool bit, Brazed Carbide - .039" (.991mm) Wide O Ring Grooving	18
6513N Tool bit, Brazed Carbide - .060" (1.524mm) Wide O Ring Grooving.....	18
6513Q Tool bit, Brazed Carbide - .120" (3.048mm) Wide O Ring Grooving	18
6513P Tool bit, Brazed Carbide - .085" (2.159mm) Wide O Ring Grooving.....	19
6747K Cartridge, Triangular - 5 Degree Chamfer.....	19
6747P Cartridge, Triangular - 10 Degree Chamfer.....	19
6747G Cartridge, Triangular - 15 Degree Chamfer	19
6747F Cartridge, Triangular- 20 Degree Chamfer	19
6747M Cartridge, Triangular - 20 Degree Chamfer	19
6747H Cartridge, Triangular - 30 Degree Chamfer.....	19
6593L Cartridge, Triangular, Offset Indexable Insert, 3.14 - 3.40" (79.756 - 86.36mm) diameter	20
6593M Cartridge, Triangular, Offset Indexable Insert, 3.40 - 3.90" (86.36 - 99.06mm) diameter.....	20
6593N Cartridge, Triangular, Offset Indexable Insert, 3.90 - 4.40" (99.06 - 111.76mm) diameter	20
6593P Cartridge, Triangular, Offset Indexable Insert, 4.40 - 4.90" (111.76 - 124.46mm) diameter.....	20
Tool Holders for Brazed Tool bits (Chamfering) on Cutterhead 650-2-1D	21

199-96 Tool holder, Length 1.250" (31.75mm).....	21
199-89 Tool holder, Length 1.500" (38.10mm).....	21
199-90 Tool holder, Length 1.750" (44.45mm).....	21
199-94 Tool holder, Length 2.250" (57.15mm).....	21
200-1 Tool holder, Length 2.500" (63.50mm).....	21
200-2 Tool holder, Length 3.000" (63.50mm).....	21
200-3 Tool holder, Length 3.560" (63.50mm).....	21
Brazed Carbide Tool Bits for Tool Holders to be use on Cutterhead 650-2-1D	22
100-29 Offset tool bit for boring blind holes	22
100-29-6 Offset FR tool bit, (Mercury outboard blind hole sleeves).....	22
100-29-7 Offset GM tool bit (GM 60-degree V/6)	22
100-74 VW thrust facing tool bit.....	22
100-76 Offset tool bit, 1/2" (12.70mm) wide, VW cylinder head facing.....	22
501-28 Steel cutting tool bit with chip curler	22
501-29A FR facing and counterboring tool bit.....	22
501-30-1 R1 carbide tool bit, 1" (25.40mm) hi-speed finishing, non-interrupted cuts	22
501-30-2 R1 carbide tool bit, 1-3/8" (34.925mm).....	22
501-31-1 R8 carbide tool bit, 1" (25.40mm)	22
501-31-2 R8 carbide tool bit, 1-3/8" (34.925mm).....	23
501-31A Cummins counterbore tool bit	23
501-31-1A R8 carbide tool bit, 11/16" (17.475mm).....	23
501-32-1 Special grooving tool bit, .048" (1.219mm).....	23
501-32-2 Special grooving tool bit, .072" (1.829mm).....	23
501-32-3 Special grooving tool bit, .037" (0.940mm).....	23
501-32-4 Special grooving tool bit, .152" (3.861mm).....	23
501-32-6 Special grooving tool bit, .039" (0.991mm).....	23
501-33B 15-degree chamfer tool bit (for chamfering Cummins blocks)	24
501-33D 30-degree chamfer tool bit.....	24
501-33E 45-degree chamfer tool bit.....	24
501-33-1 R8 carbide 12-degree hi-rake tool bit.....	24
501-33-2 R1 carbide 12-degree hi-rake tool bit.....	24
Cutting Inserts	25
501-29-6KPCD Tipped Triangular Insert for Boring/Counterboring Aluminum Only	25
6303K Coated Carbide Insert, Round, 3/8" (9.525mm) IC.....	25
RT211 Insert, triangular 1/4" (6.35mm) 1/64" (.397mm) radius.....	25
RT212 Insert, triangular 1/4" (6.35mm) 1/32" (.787mm) radius	25
RT321 Insert, triangular positive rake, 3/8" (9.525mm) 1/64" (.397mm) radius	25
RT322 Insert, triangular positive rake, 3/8" (9.525mm) 1/32" (.787mm) radius	25
RT321F Insert, triangular positive rake, 3/8" 1/64" Radius, Precision Counterboring	25
RT322F Insert, triangular positive rake, 3/8" 1/32" Radius, Precision Counterboring	25

RS322 Insert, square negative rake, 1/32" (.787mm) radius, 3/8" (9.525mm).....	25
Surfacing Tooling	26
650-2-8E Surfacing Cutterhead, Flycutter, 10" (254mm) Diameter	26
650-2-8F Surfacing Cutterhead, Flycutter, 14" (356mm) Diameter	27
6303B CBN Insert, Round, Double-Sided, 3/8" (9.525mm) IC.....	27
6303M PCD Insert, Round, 3/8" (9.525mm) IC.....	27
6303S CBN Insert, Round, 3/8" (9.525mm) IC	27
6303U CBN Round Insert, Single Sided, 3/8" IC	27
6303V CBN Insert, Octagonal (16-Cutting Corners) for surfacing large diesel blocks.....	27
Cylinder Head Surfacing Fixture.....	28
7209M Leveling Table with Air Float	28
7152A Dual Axis Level Assembly.....	28
General Purpose Tooling	29
6648W CAT 3400 Series Tappet Bore Repair Tooling Package	29
11116 Cross Feed Head Assembly	29
Tooling for Stroker Crank Clearance	30
650-2-45H 1" (25.4mm) diameter roughing end mill X 8 1/2" (216mm) long	30
650-2-44A End Mill Adapter, 1" (25.4mm)	30
Lifter Bore Tooling.....	31
650-2-60B Lifter Bore Tooling Kit.....	31
650-2-60N Setting Fixture	32
650-2-60G Insert for 0.750 - 0.900 diameter cartridge	32
650-2-60H Insert for 0.920 - 1.180 diameter cartridge	32
Main Line Boring and Cam Boring Fixtures.....	33
650-3-56 Line Bore Pivot Table, Complete with Universal Work Hold System	33
6866 Cummins Wedge for Camshaft Line Boring	33
11113 Adjustable Universal Line Boring Parallel Assembly	34
11112 Universal 8" (203mm) Heavy Duty T-Slot Parallels with Air Float	35
11114 Universal 16" (406mm) Heavy Duty T-Slot Parallels with Air Float	35
6843 90 Degree V Block Supports	36
6789E 115 Degree V Block Supports for CAT 3400	36
6789L 113 Degree V Block Supports for Detroit Diesel V53	37
6789N 116 Degree V Block Supports for Detroit Diesel V71 & V92.....	37
Main Line Bore Tooling	38
11103 Main Line Bore 90 Degree Right Angle Drive Assembly	38
11103E Main Line Bore 90 Degree Right Angle Drive Assembly.....	39
11104 Special Belt Drive 90 Degree Right Angle Drive Assembly	40

11105 Narrow Right Angle Drive 1.9 - 2.4" (48 - 60.9mm)	41
650-2-39B Cutterhead Assembly Line Boring 1.9 - 4.0" (48.26 - 101.60mm) Diameter	42
650-2-39C Cutterhead Assembly Line Boring 2.9 - 5.6" (73.66 - 142.24mm) Diameter	43
Special Main Line Boring Thrust Facing Tooling for Small Blocks	44
6801M Tool holder, Indexable Insert, Thrust Facing .160 IC, Positive Rake	44
6801P Tool holder, Indexable Insert, Thrust Facing	44
501-29-6G Insert, Triangular, .160 IC 1/64" (.397mm) Radius	44
501-29-6J Insert, Triangular, .160 IC 1/32" (.787mm) Radius	44
501-29-6H Insert Screw	44
Special Main Line Boring Thrust Facing Tooling for Mid-Size Blocks	45
6855Q Thrust Facing Tooling Package for Main Line Bore for Mid-Size Blocks.....	45
Special Main Line Boring Chamfering Tool	45
199-90 Tool holder, 2 - 3" (50.80 - 76.20mm)	45
199-96 Tool holder, 3 - 4" (76.20 - 101.60mm)	45
501-33E Tool bit, 45-Degree Chamfer	45
Line Bore Set Up and Alignment Equipment	46
502-12-7B Digital Runout Probe and Readout.....	46
502-9-9A Mechanical Run Out Indicator	46
502-9-9J Mechanical Run Out Indicator	46
502-12-4 General Purpose Magnetic Indicator Holder	46
502-12-4A Magnetic Indicator Holder for 2 - 3" (50 - 75mm) Diameter	46
Equipment for Preparing Blocks for Line Boring.....	47
7209N 2-Piece Vise for Surfacing Main Bearing Housing Caps.....	47
7209M Leveling Table with Air Float	47
Shell Mill Assemblies	48
650-2-44N 2 1/2" (63.50mm) Shell Mill Assembly	48
650-2-44P 4" (101.60mm) Shell Mill Assembly.....	48
Thread Tapping Tooling	49
650-2-11K Quick Change Tap Holder Cartridge Assembly with Adaptor	49
Drill Tooling.....	49
650-2-44M Precision Drill Chuck Assembly	49
Connecting Rod Boring Tooling	50
Connecting Rod Boring and Serrating Equipment	50
650-2-3S Cutterhead Package 1.0 - 2.0" (25 - 50mm) Diameter X 3.0" (75mm) Long.....	50
650-2-3T Cutterhead Package 2.0 - 4.0" (50 - 100mm) Diameter X 4.0" (100mm) Long	51
650-2-15F Cutterhead Package 2.9 - 8.0" (73.5 - 200mm) Diameter X 4.0" (100mm) Long	52
RTCR322 Insert, Triangular Positive Rake, 3/8 IC 1/64" 9.397mm) Radius.....	52
Connecting Rod Fixturing	53



650-3-44S Rottler Precision Connecting Rod Fixturing System 53

650-3-64 Rottler Precision Connecting Rod Fixturing System 53

System for Cutting Serrated Connecting Rods 54

6867VSerrated Rod Cutting Package 54

6868 Six pitcher cutter used on the VHP rod and some CGF rods..... 54

6868G 3mm pitch cutter used on VGF rods..... 54

6868H 4mm pitch cutter used on some VGF rods..... 54

Suggested Hold Down Anchor System 55

9203V Hold Down Anchor Kit For F79A Machine Installation 55



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

Rottler CAM (Computer Aided Manufacturing) Software

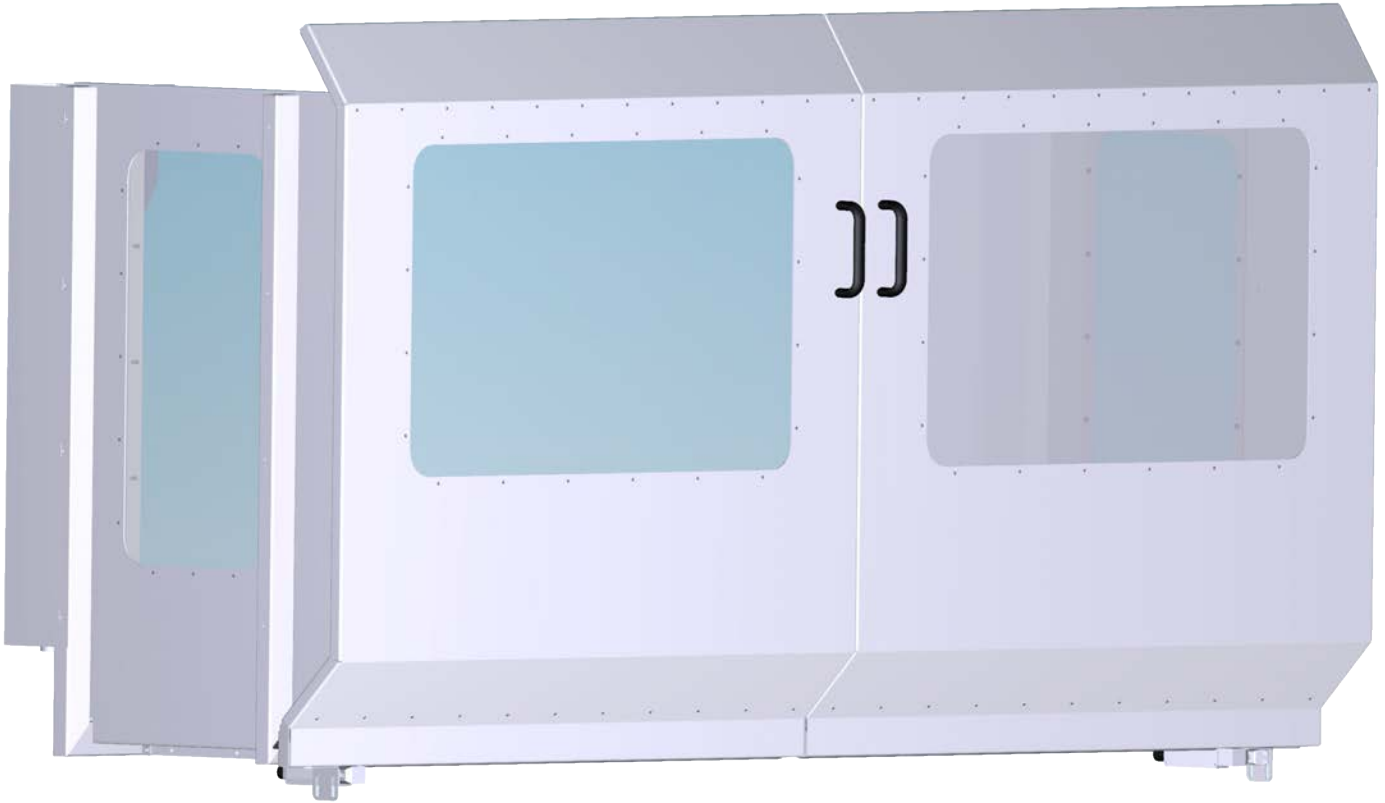
9043 Rottler CAM (Computer Aided Manufacturing) Software Package

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

Enclosure

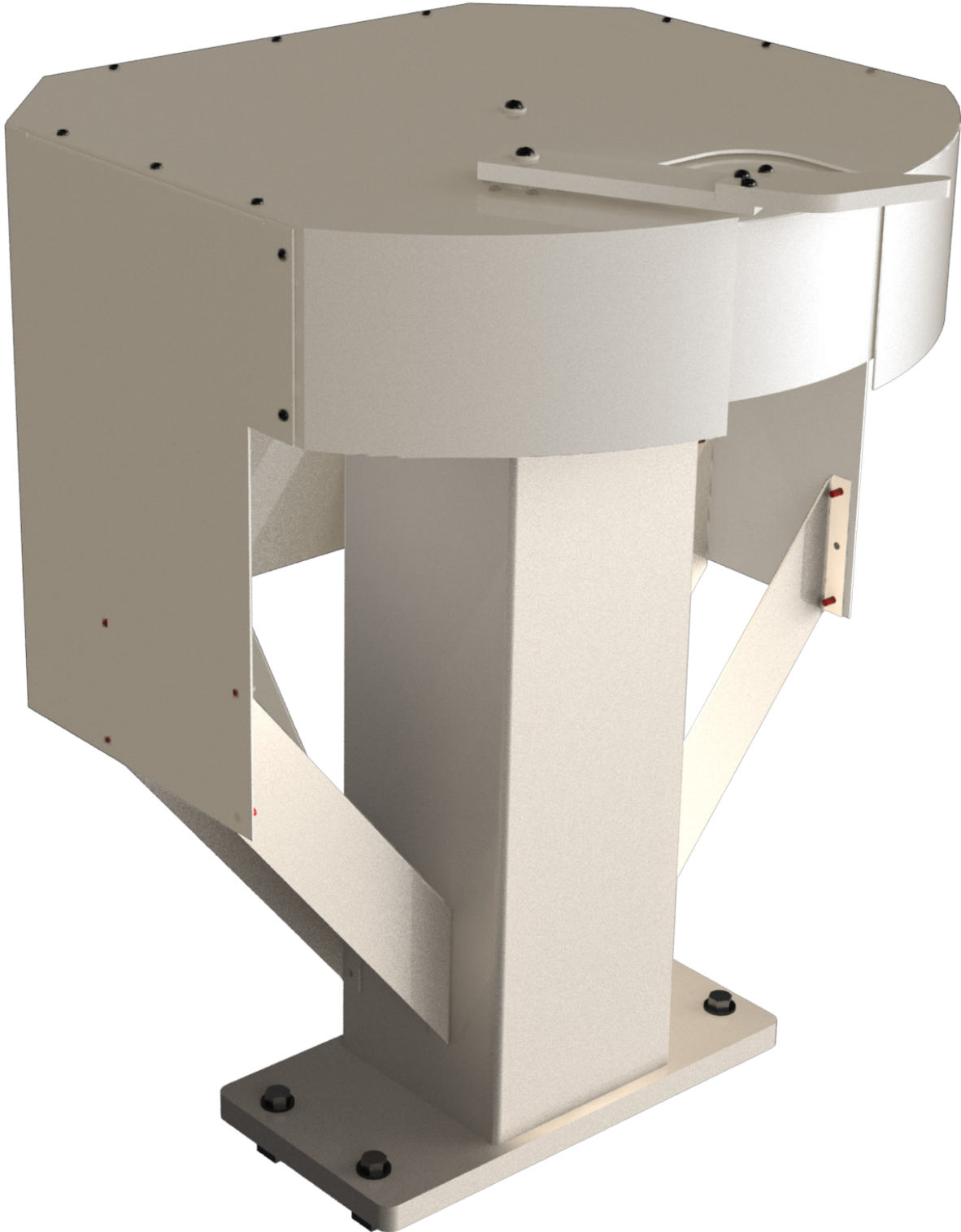
11038 Optional Full Enclosure

With sliding doors and large viewing windows



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

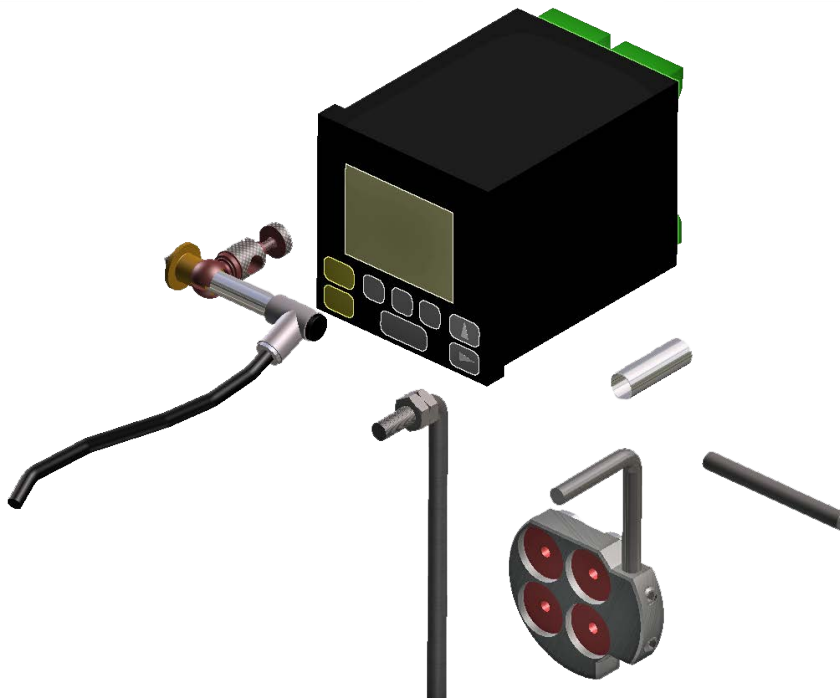
Including 5 Probes/Stylus and Software designed to work together with Rottler 4th Axis Fixture System.



Manual Centering

502-12-7B Digital Runout Probe and Readout

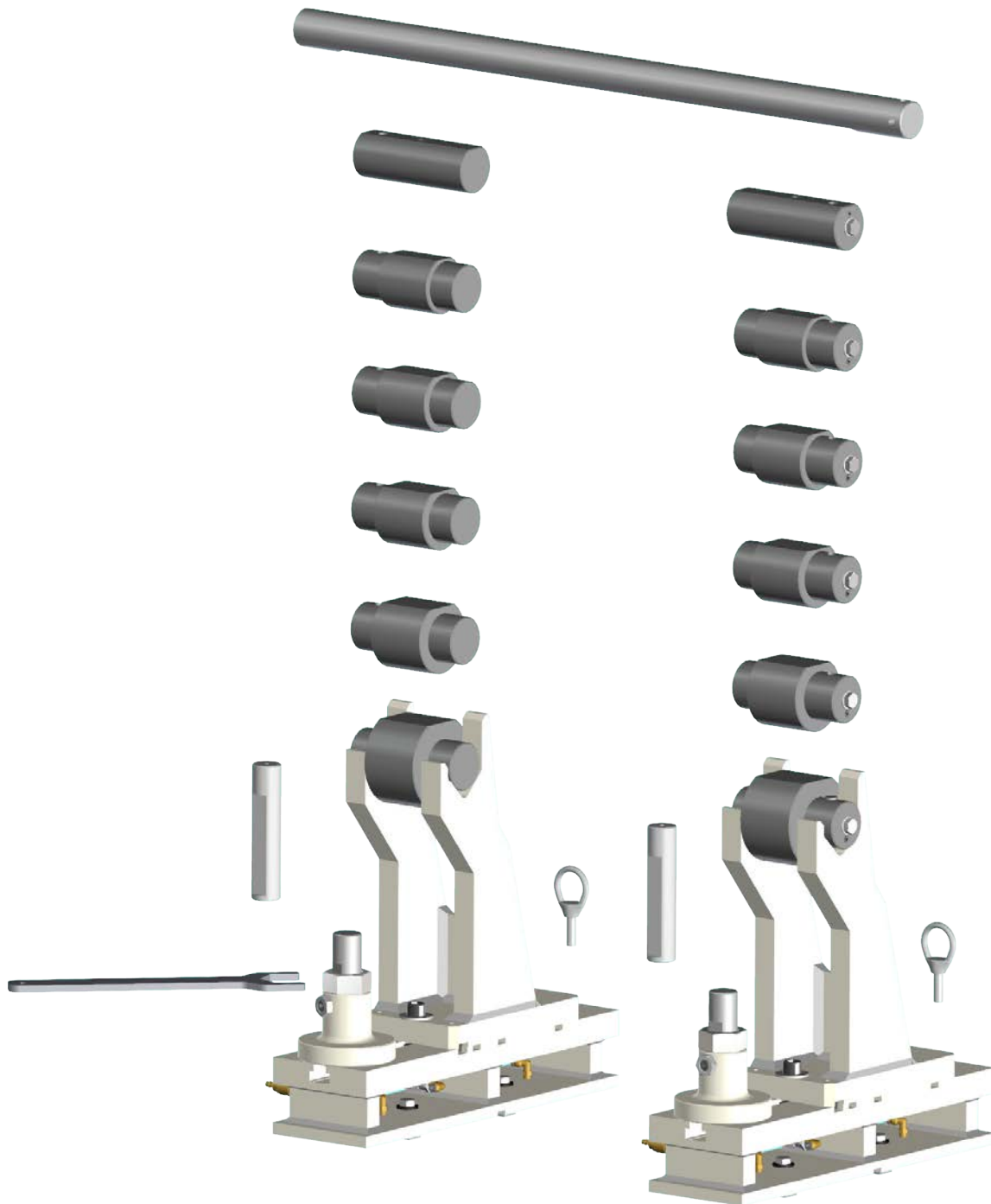
Including Magnetic Holder for Block Set Up and Manual Centering of Cylinder Bores and Main Line Bores



Universal Fixture for In-Line and V-Blocks

11121 Mid-Range Universal Fixture for Small to Mid Range in-line and V-blocks

Fixture Includes Five Pair Locators to Cover 2.5 - 6.0" (63.5 - 152mm) Main Line Diameter Range. Package includes 2" (50.8mm) bar to support small in-line and V-blocks, selection of locators available for most common blocks. See F60/F70 Locator Catalog for listing of available locators. Includes pair of 3" (76.2mm) Risers. Requires 11112 8" (203mm) Parallels and 11111 Clamp Towers.



Fixtures for Performance Blocks

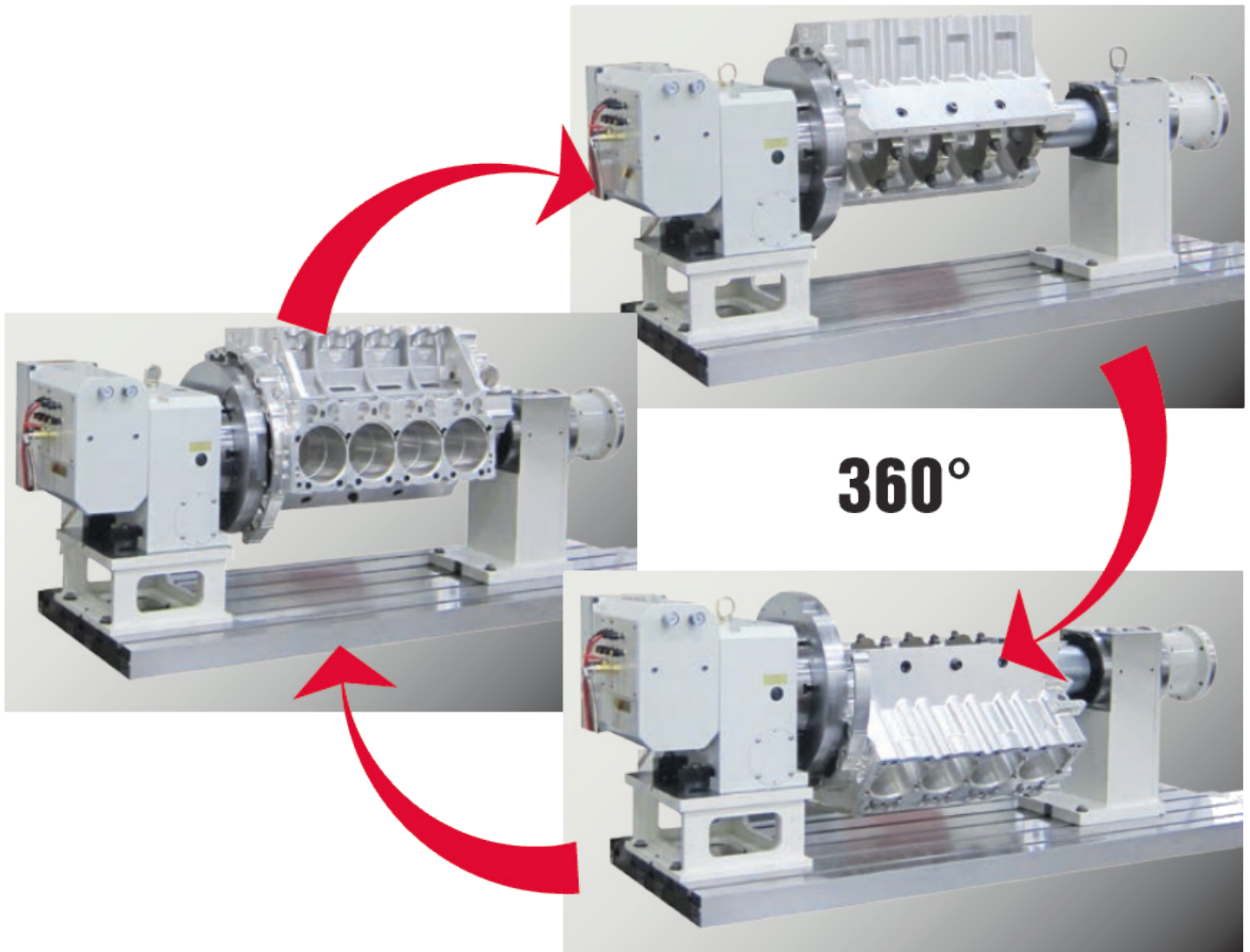
Automatic 360 Degree Roll Over Block Fixture

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**

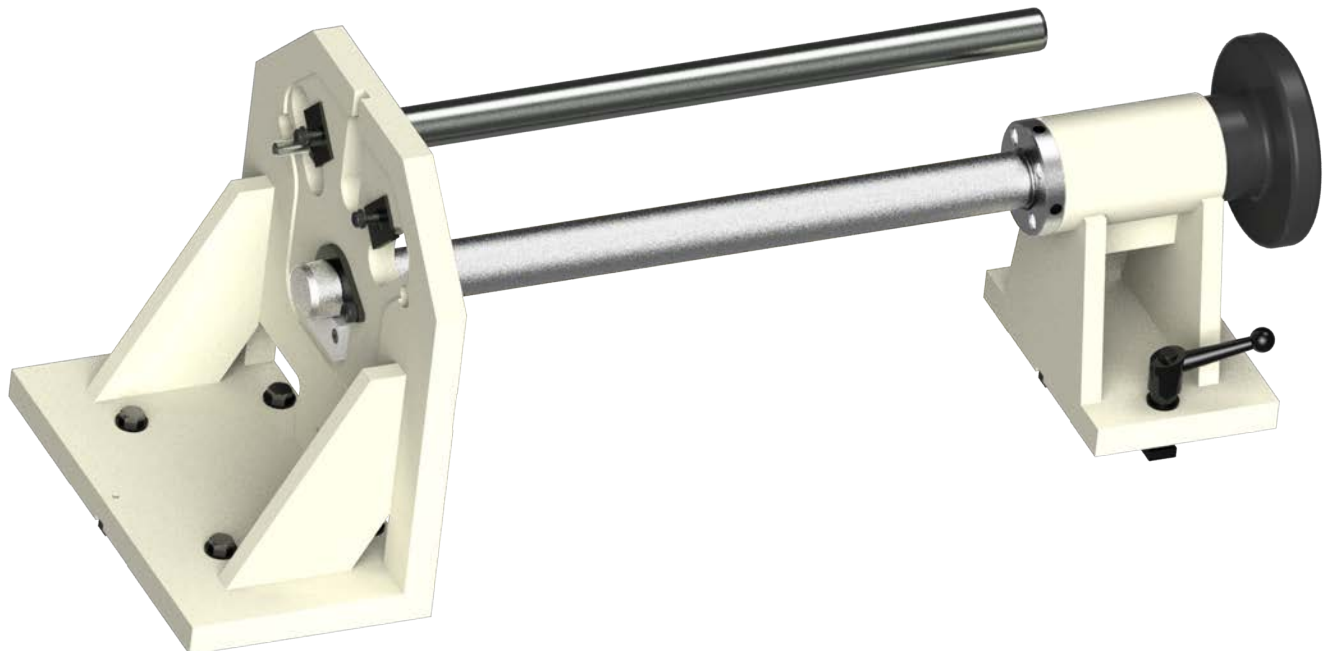
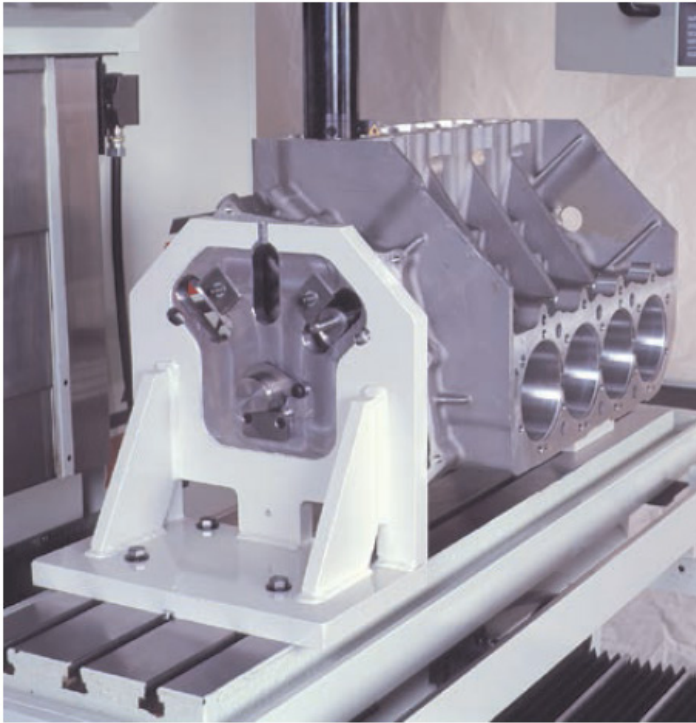
For Mounting Overhead Cam Blocks on 4th Axis Fixture (650-3-63)



Manual Fixture

650-3-1 Performance 90 Degree V Block Fixture

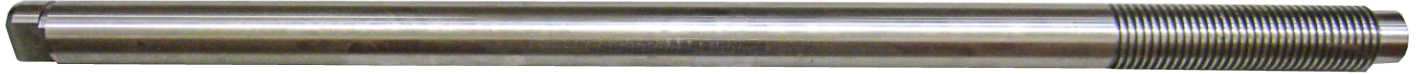
Heavy Duty, Including Crankshaft and Camshaft Bars to Accommodate Max. Block Length of 23.85" (606mm). Customer Must Order Main and Cam Locators Required from List Below. Fixture Price Does not Include Locators. See F60/70 Locator Catalog for listing of available locators.



Optional Performance Fixture Crank and Cam Bars for Longer Blocks

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)



Adaptor for F60 Model Fixtures

9111A T-slot plate

Allows use of 650-3-1 F60 Performance Fixture, Pivot Table and Block End Truing Fixtures on F79A.

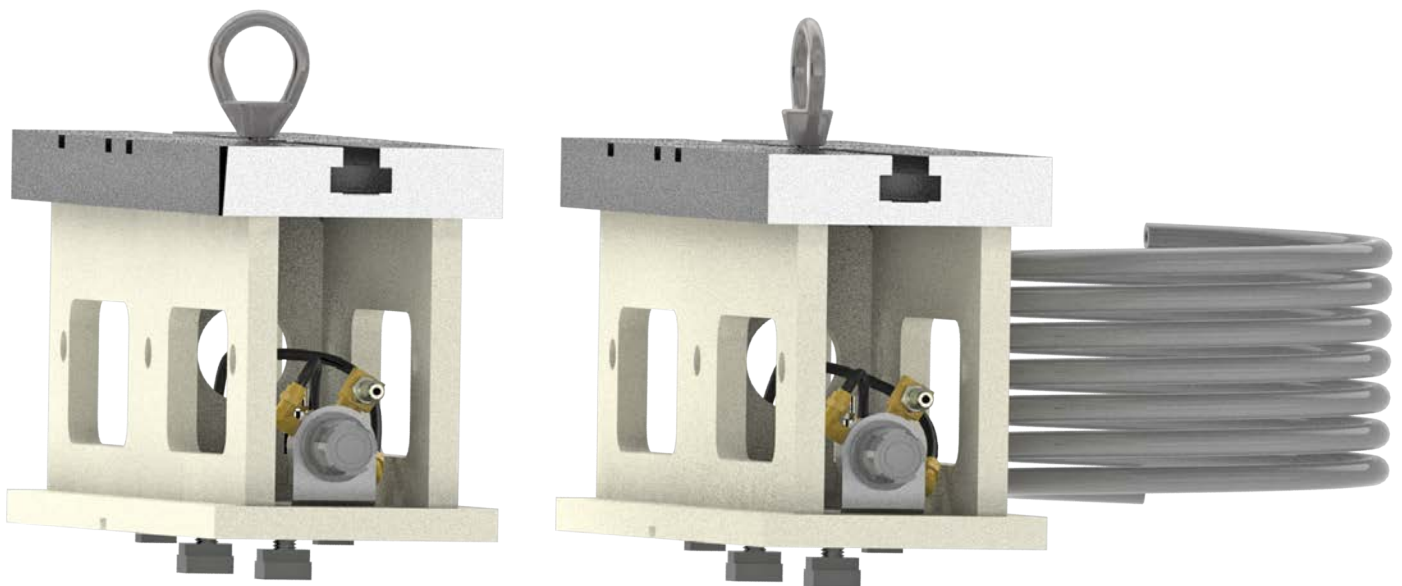
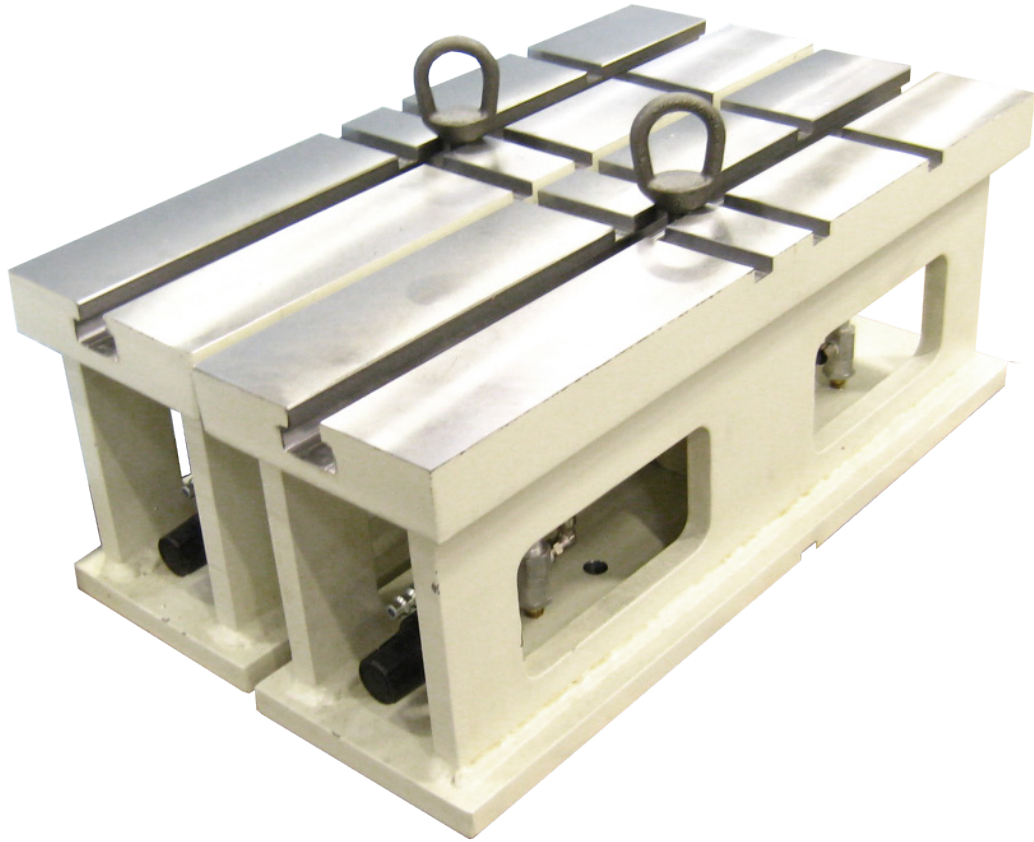


Miscellaneous Accessories

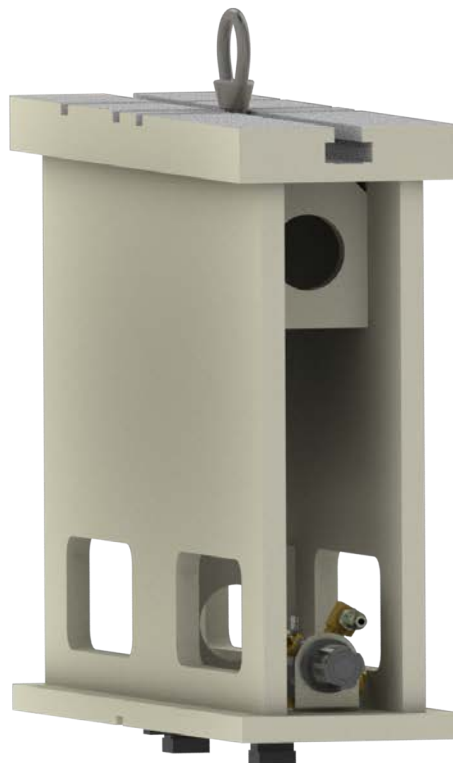
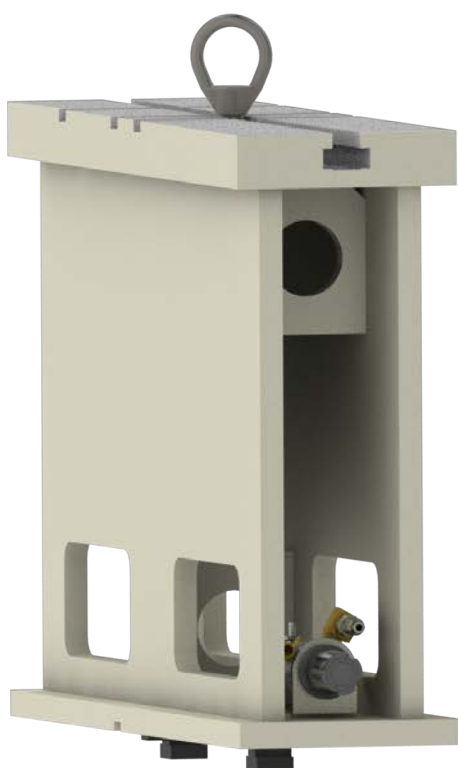
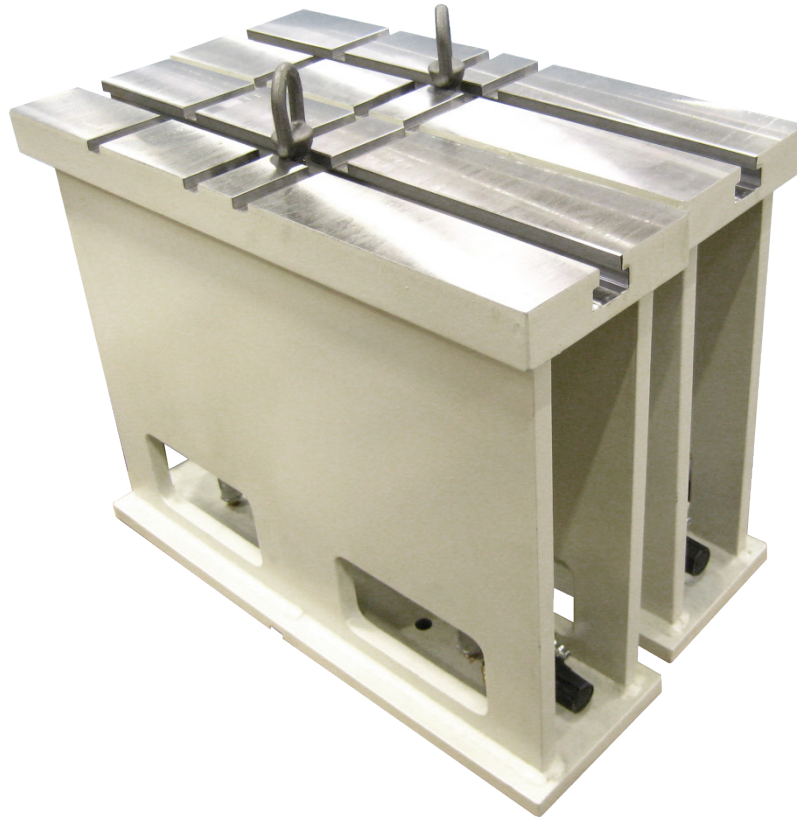
11111 Clamp Tower Assembly



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

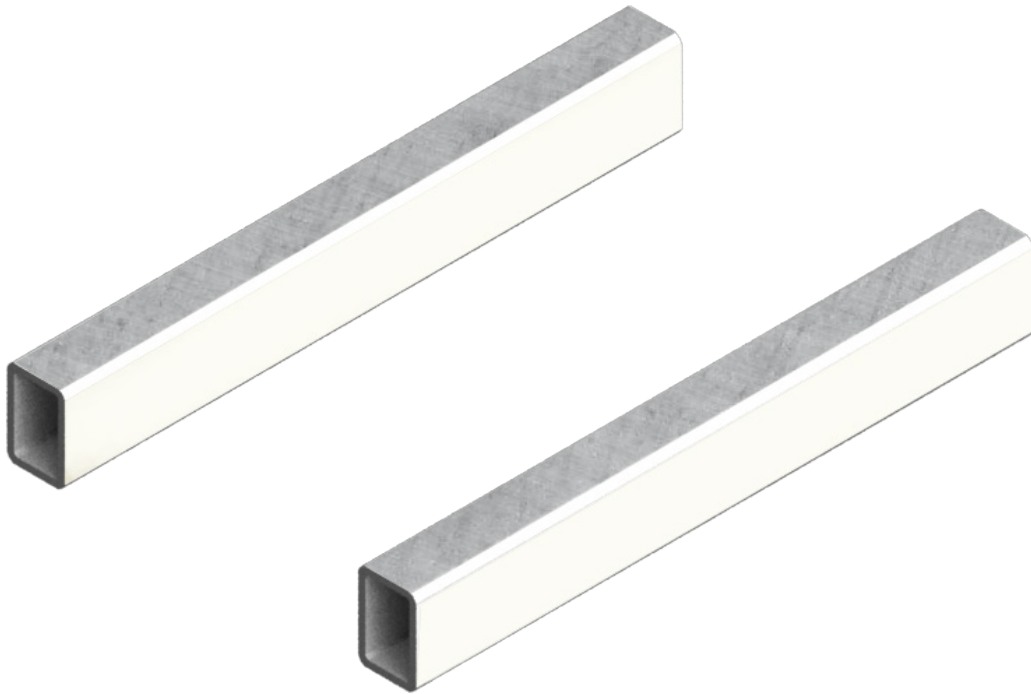


11114 Universal 16" (406mm) Heavy Duty T-Slot Parallels
With Air Float

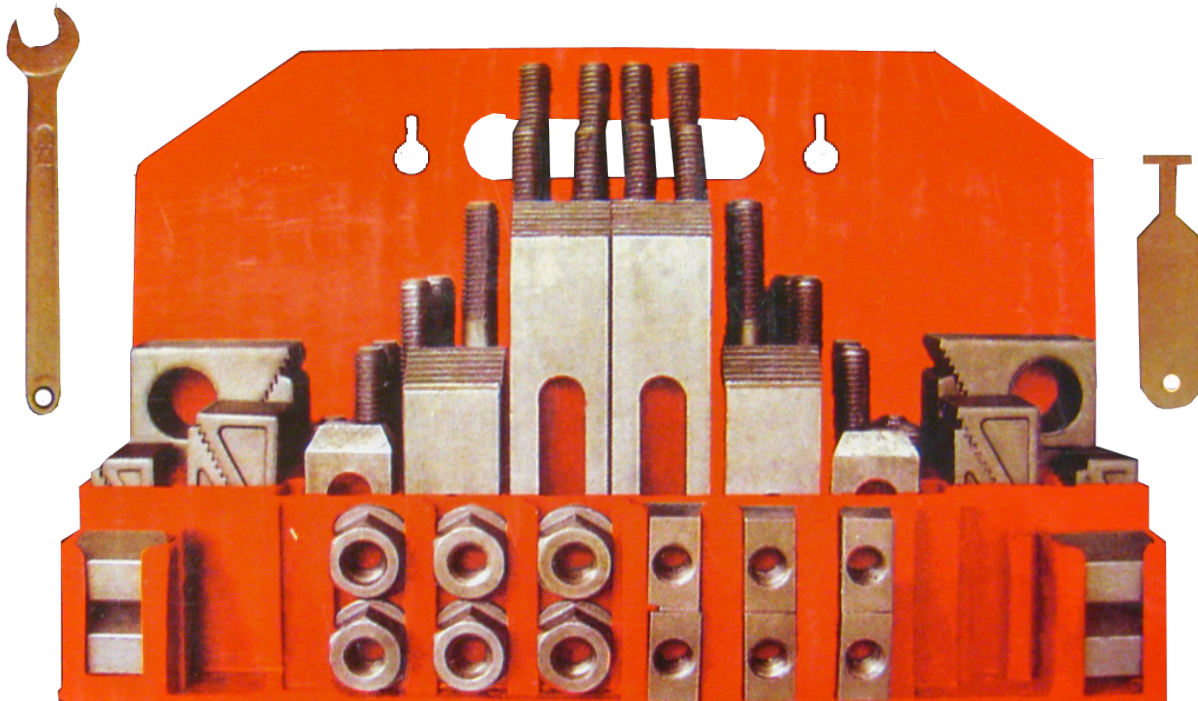


11115 2" (50mm) X 3" (75mm) Parallels

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.

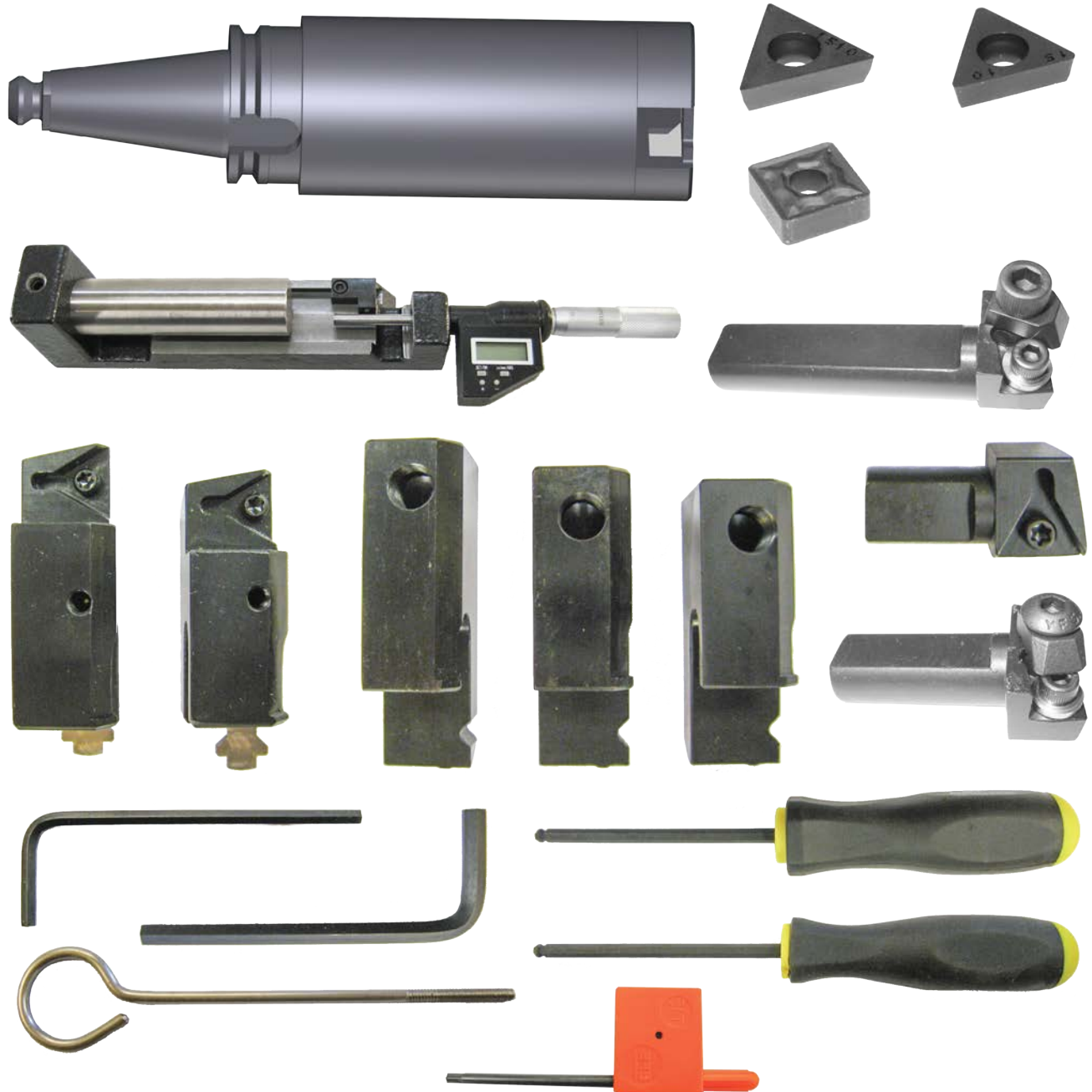


Boring/Sleeving/Chamfering/O-Ring Tooling

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, required for cylinder diameter smaller than 3.8" (96.5mm)

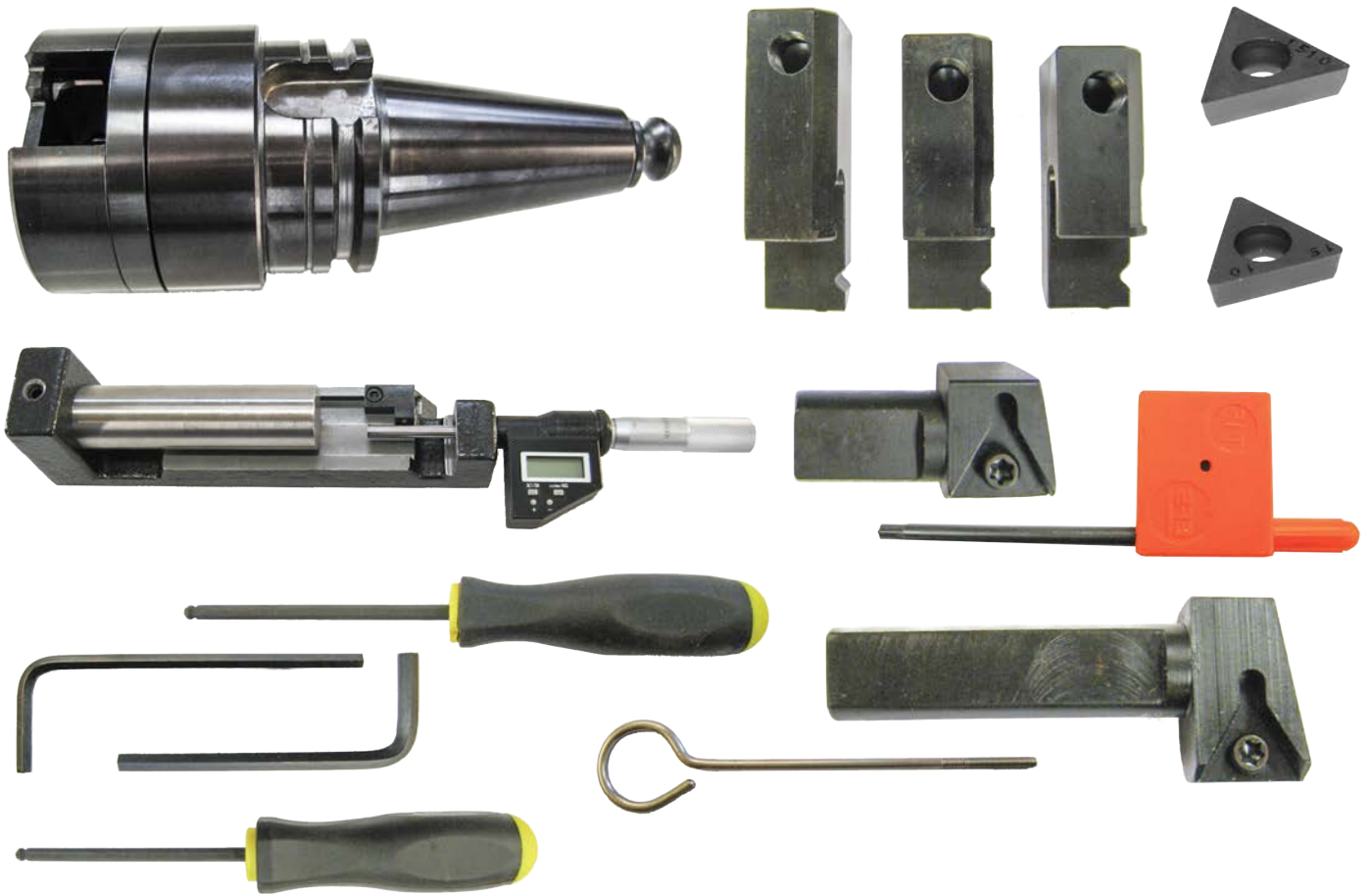


650-2-14B Cutterhead Package 2.9 - 3.8" (73.66 - 96.50mm) diameter X 7.0" (177.80mm) length
 Complete with tooling and Digital Micrometer, required for cylinder diameter smaller than 3.8" (96.5mm) Cutterhead 11100 is recommended for boring diameters larger than 3.8" (96.5mm). For bores longer than 7.0" (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 Cutter Head, Heavy Duty 4.5 x 7" (115 x 178mm) Diameter
Complete with Tooling and Digital Micrometer






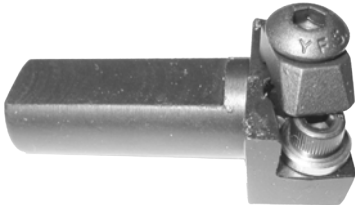






Extender for 650-2-14B Cutterhead Assembly

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



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

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

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**



Tool Holders for Brazed Tool bits (Chamfering) on Cutterhead 650-2-1D

199-96 Tool holder, Length 1.250" (31.75mm)
 For range 2.150" - 2.800" (54.61mm - 71.12mm)



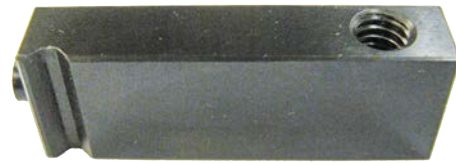
199-89 Tool holder, Length 1.500" (38.10mm)
 For range 2.800" - 3.450" (71.12mm - 87.63mm)



199-90 Tool holder, Length 1.750" (44.45mm)
 For range 3.450" - 4.100" (87.63mm - 104.14mm)



199-94 Tool holder, Length 2.250" (57.15mm)
 For range 4.100" - 4.750" (104.14mm - 120.65mm)



200-1 Tool holder, Length 2.500" (63.50mm)
 For range 3.270" - 4.270" (83.06mm - 108.45mm)




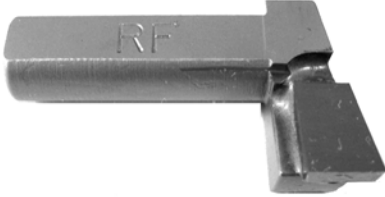
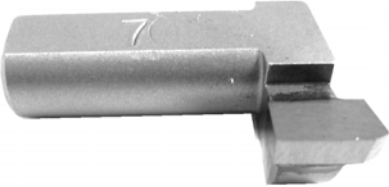
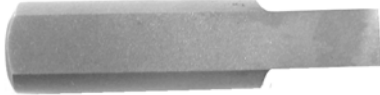
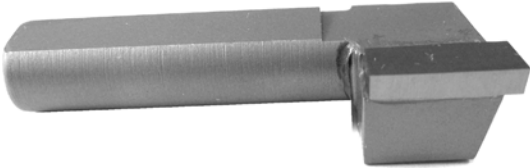
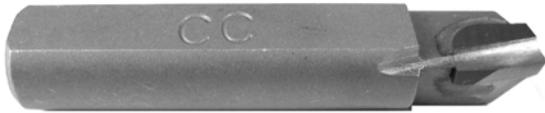
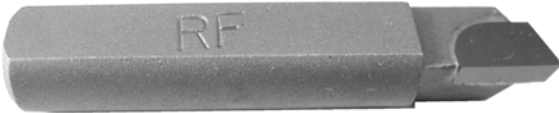


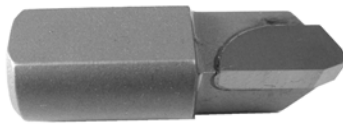
200-2 Tool holder, Length 3.000" (63.50mm)
 For range 4.000" - 5.150" (101.60mm - 130.81mm)

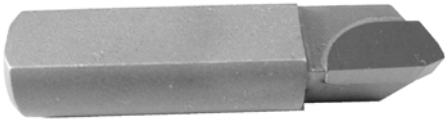

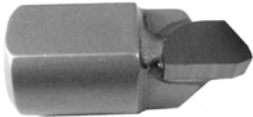







200-3 Tool holder, Length 3.560" (63.50mm)
 For range 5.100" - 6.000" (129.54mm - 152.40mm)



Brazed Carbide Tool Bits for Tool Holders to be use on Cutterhead 650-2-1D

<p>100-29 Offset tool bit for boring blind holes</p> 	<p>100-29-6 Offset FR tool bit, (Mercury outboard blind hole sleeves)</p> 
<p>100-29-7 Offset GM tool bit (GM 60-degree V/6)</p> 	<p>100-74 VW thrust facing tool bit</p> 
<p>100-76 Offset tool bit, 1/2" (12.70mm) wide, VW cylinder head facing</p> 	<p>501-28 Steel cutting tool bit with chip curler</p> 
<p>501-29A FR facing and counterboring tool bit. (for cast iron blocks, sleeve cutoff.)</p> 	<p>501-30-1 R1 carbide tool bit, 1" (25.40mm) hi-speed finishing, non-interrupted cuts</p> 
<p>501-30-2 R1 carbide tool bit, 1-3/8" (34.925mm)</p> 	<p>501-31-1 R8 carbide tool bit, 1" (25.40mm) General purpose & heavy cuts on cast iron, recommended for interrupted cuts</p> 

<p>501-31-2 R8 carbide tool bit, 1-3/8" (34.925mm)</p> 	<p>501-31A Cummins counterbore tool bit</p> 
<p>501-31-1A R8 carbide tool bit, 11/16" (17.475mm)</p> 	<p>501-32-1 Special grooving tool bit, .048" (1.219mm) (O-ring tool)</p> 
<p>501-32-2 Special grooving tool bit, .072" (1.829mm)</p> 	<p>501-32-3 Special grooving tool bit, .037" (0.940mm)</p> 
<p>501-32-4 Special grooving tool bit, .152" (3.861mm)</p> 	<p>501-32-6 Special grooving tool bit, .039" (0.991mm)</p> 

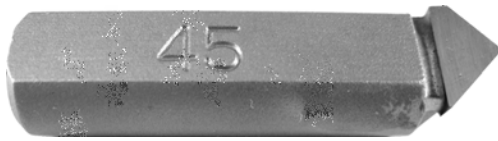
501-33B 15-degree chamfer tool bit (for chamfering Cummins blocks)



501-33D 30-degree chamfer tool bit (for general cast iron.)



501-33E 45-degree chamfer tool bit



501-33-1 R8 carbide 12-degree hi-rake tool bit (for roughing cuts)

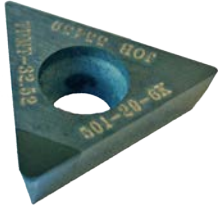



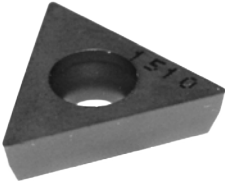
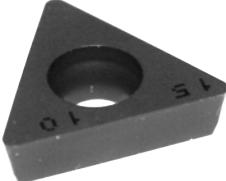


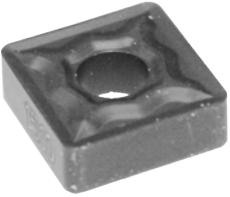


501-33-2 R1 carbide 12-degree hi-rake tool bit (for aluminum - Vega)



Cutting Inserts

See Cutting Insert Bulletin for more details

<p>501-29-6KPCD Tipped Triangular Insert for Boring/Counterboring Aluminum Only Ideal for Finishing Boring and Counterboring of Aluminum/Alusil Blocks in Preparation for a Sleeve.</p> 	<p>6303K Coated Carbide Insert, Round, 3/8" (9.525mm) IC For General Purpose Use</p> 
<p>RT211 Insert, triangular 1/4" (6.35mm) 1/64" (.397mm) radius 1/4" triangular Insert holders only, general purpose and sleeving (10% Discount on orders of 10-49, 20% Discount on orders of 50 or more)</p> 	<p>RT212 Insert, triangular 1/4" (6.35mm) 1/32" (.787mm) radius 1/4" triangular Insert holders only, general purpose and sleeving (10% Discount on orders of 10-49, 20% Discount on orders of 50 or more)</p> 
<p>RT321 Insert, triangular positive rake, 3/8" (9.525mm) 1/64" (.397mm) radius General purpose and sleeving (10% Discount on orders of 10-49, 20% Discount on orders of 50 or more)</p> 	<p>RT322 Insert, triangular positive rake, 3/8" (9.525mm) 1/32" (.787mm) radius General purpose and sleeving (10% Discount on orders of 10-49, 20% Discount on orders of 50 or more)</p> 
<p>RT321F Insert, triangular positive rake, 3/8" 1/64" Radius, Precision Counterboring (10% Discount on orders of 10-49, 20% Discount on orders of 50 or more)</p> 	<p>RT322F Insert, triangular positive rake, 3/8" 1/32" Radius, Precision Counterboring (10% Discount on orders of 10-49, 20% Discount on orders of 50 or more)</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 (10% Discount on orders of 10-49, 20% Discount on orders of 50 or more)</p> 	

Surfacing Tooling

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

650-2-8E Surfacing Cutterhead, Flycutter, 10" (254mm) Diameter



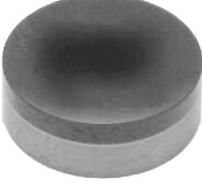


Including (2) Radially and Axially Adjustable 3/8" (9.525mm) IC Insert Holders. Inserts must be ordered separately



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

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

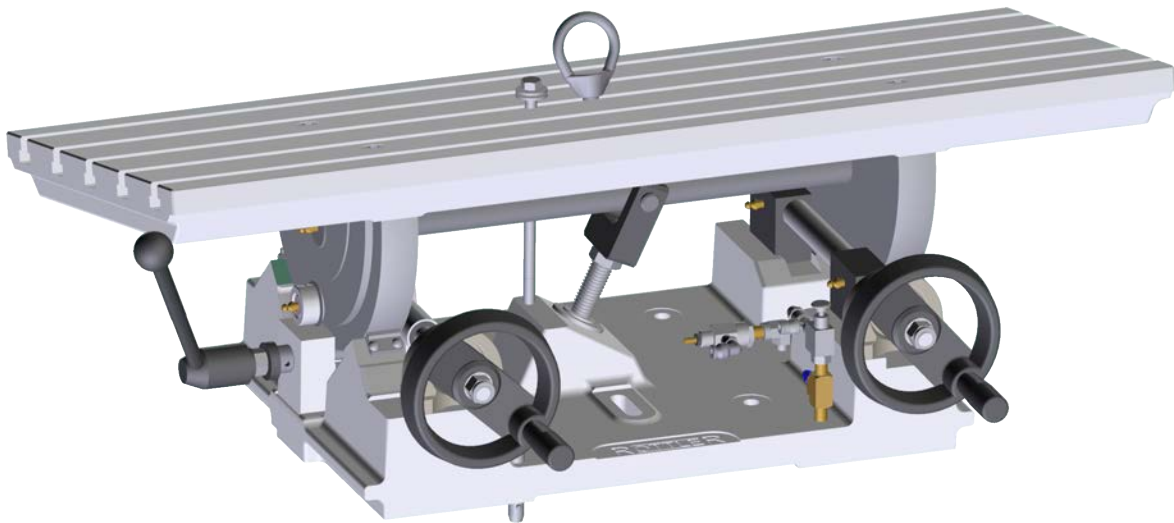
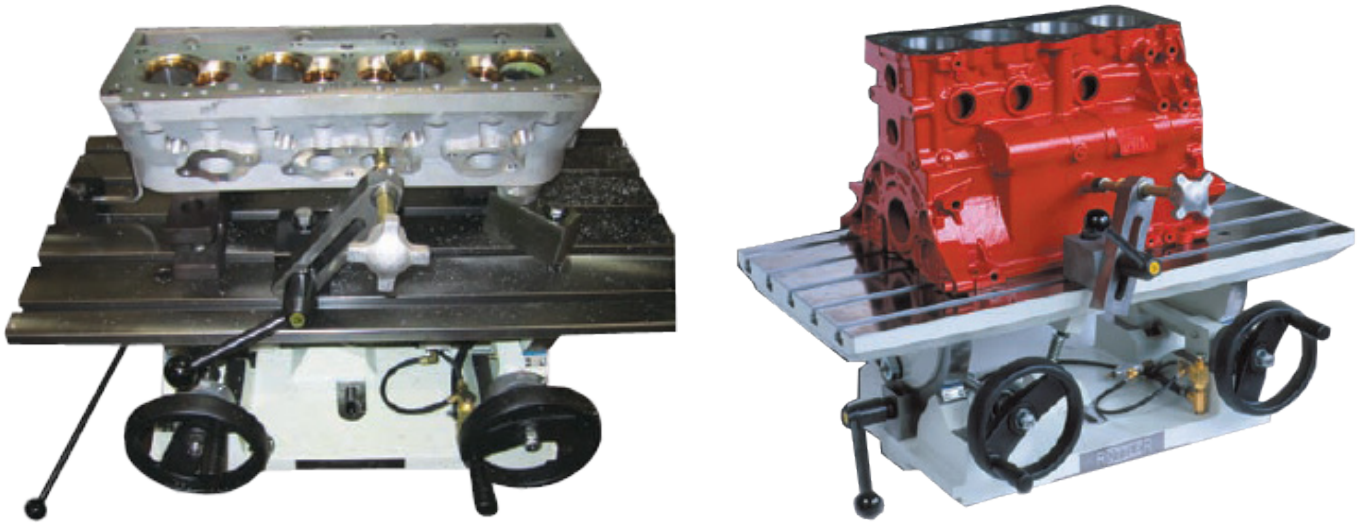


<p>6303B CBN Insert, Round, Double-Sided, 3/8" (9.525mm) IC For Cutting Cast Iron (15% Discount on orders of 10 or more)</p> 	<p>6303M PCD Insert, Round, 3/8" (9.525mm) IC For Cutting Aluminum (15% Discount on orders of 10 or more)</p> 
<p>6303S CBN Insert, Round, 3/8" (9.525mm) IC For Cutting Aluminum Blocks With Liners (15% Discount on orders of 10 or more)</p> 	<p>6303U CBN Round Insert, Single Sided, 3/8" IC For hard cast iron (15% Discount on orders of 10 or more)</p> 
<p>6303V CBN Insert, Octagonal (16-Cutting Corners) for surfacing large diesel blocks (15% Discount on orders of 10 or more)</p> 	

Cylinder Head Surfacing Fixture

7209M Leveling Table with Air Float

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 Stroker Crank Clearance

650-2-45H 1" (25.4mm) diameter roughing end mill 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



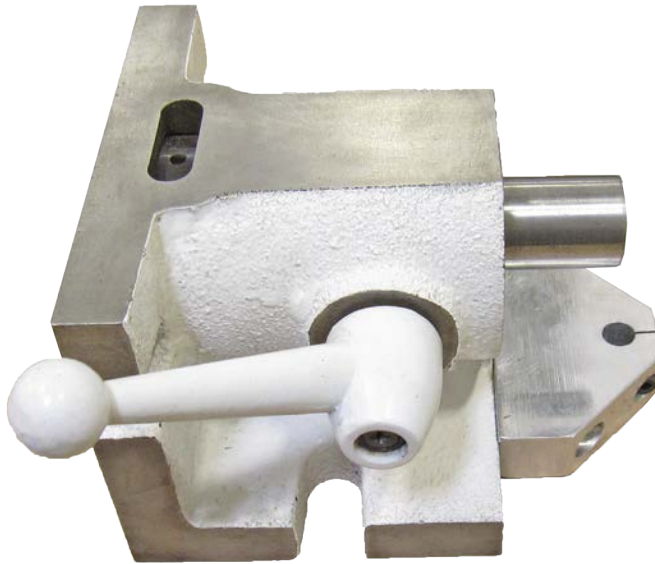
Lifter Bore Tooling

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



Main Line Boring and Cam Boring Fixtures

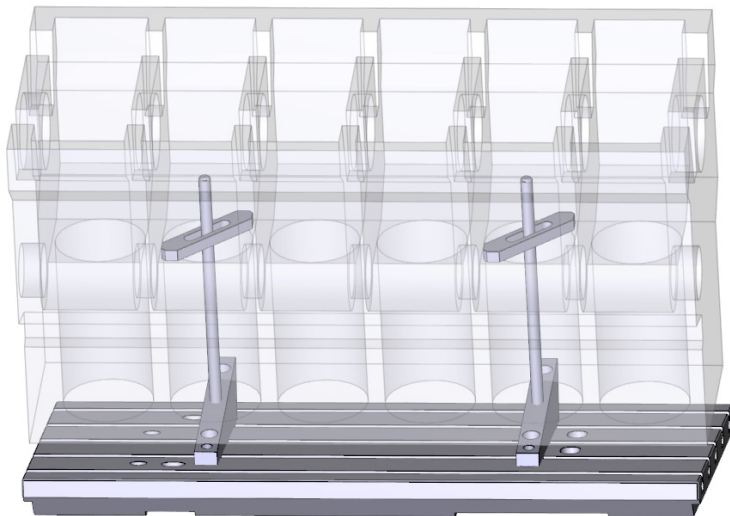
650-3-56 Line Bore Pivot Table, Complete with Universal Work Hold System

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 Cummins Wedge for Camshaft Line Boring

Requires 650-3-56 Pivot Table

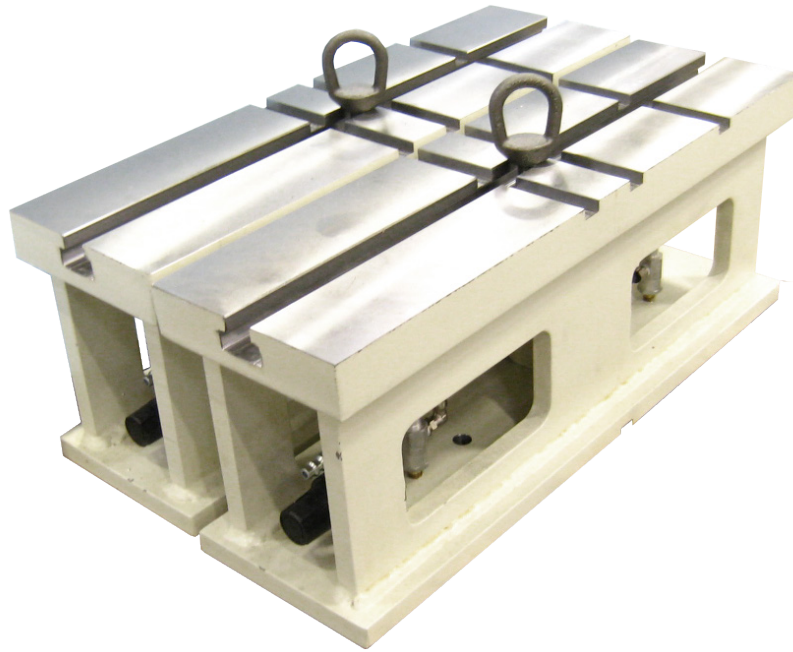


11113 Adjustable Universal Line Boring Parallel Assembly

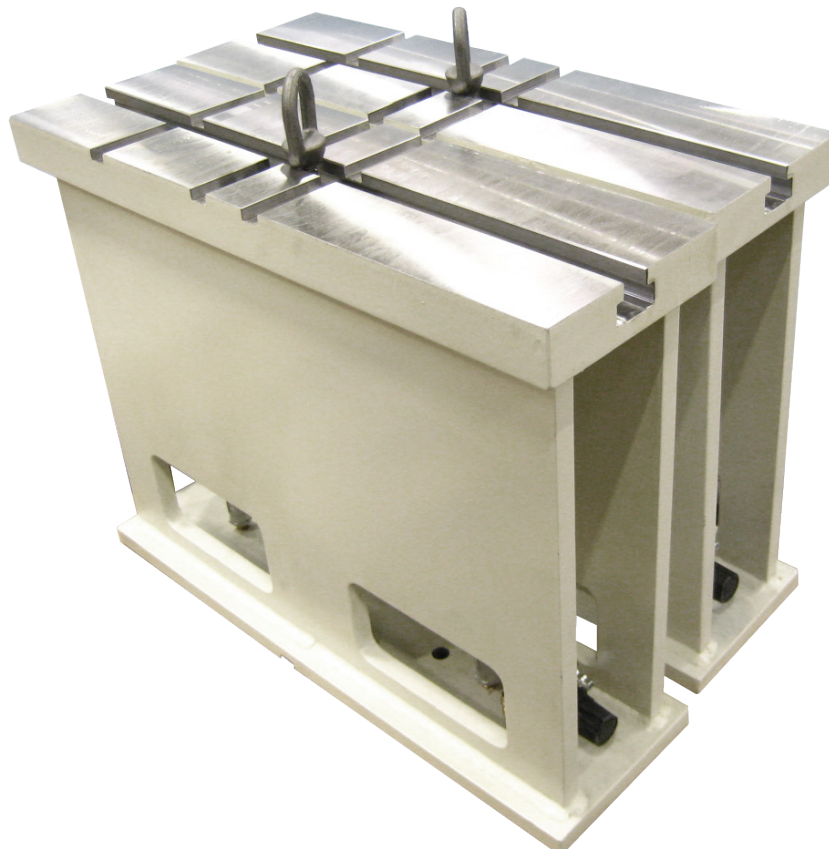
Includes Locators for In-Line Blocks, Supports for V Blocks Must Be Ordered Separately. 11112 8" (203mm) and 11114 16" (406mm) Parallels may be required.



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

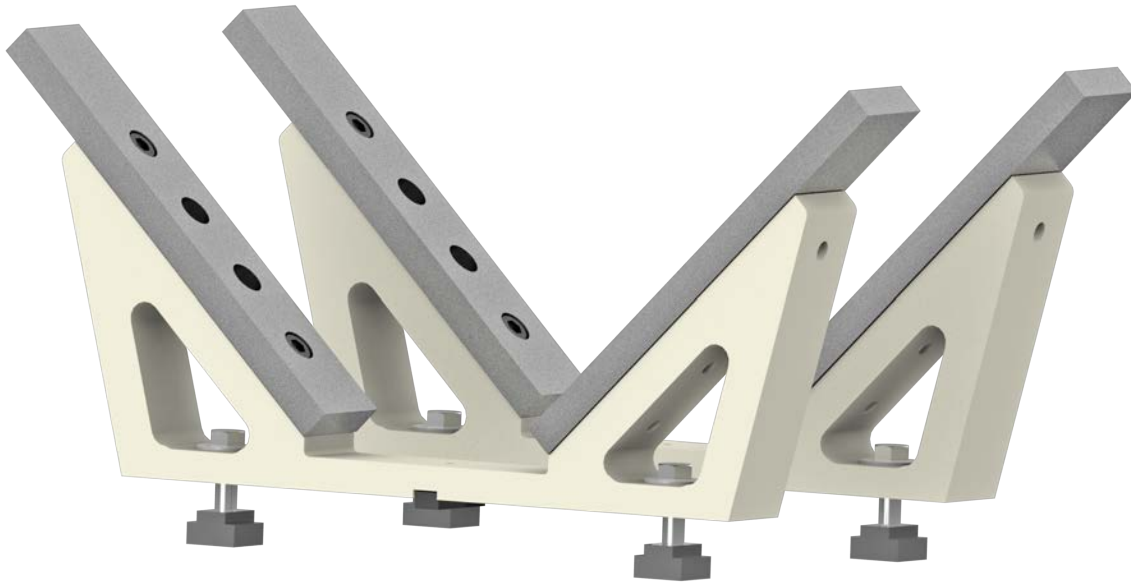


11114 Universal 16" (406mm) Heavy Duty T-Slot Parallels with Air Float

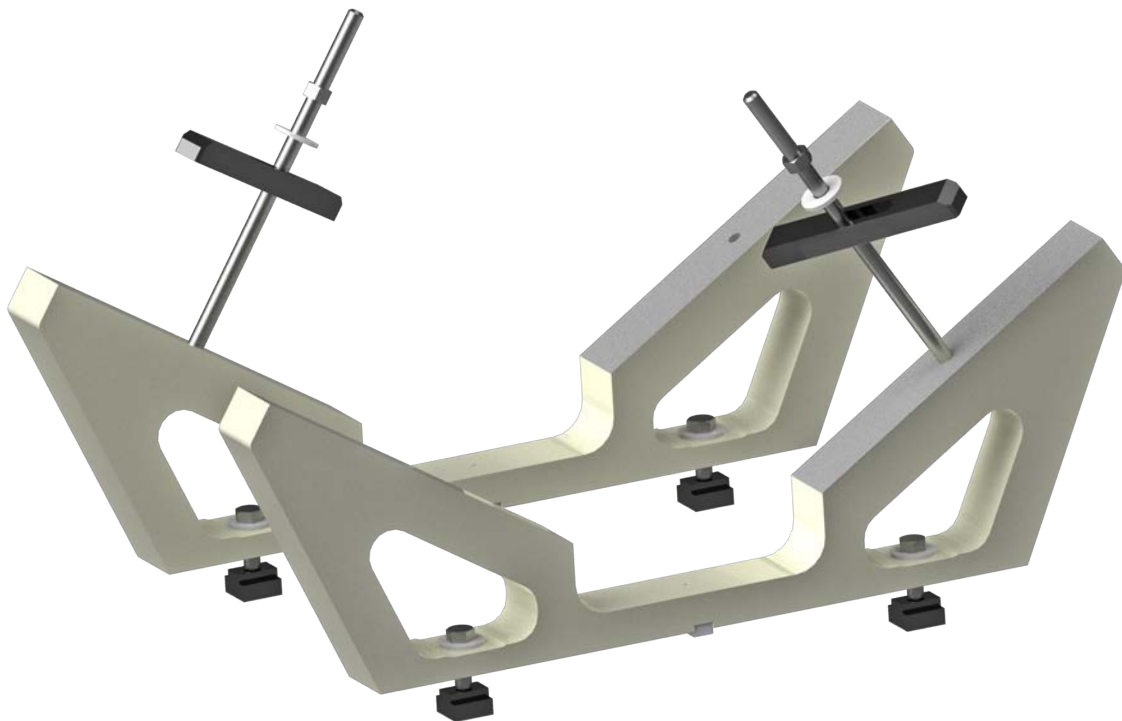


6843 90 Degree V Block Supports

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

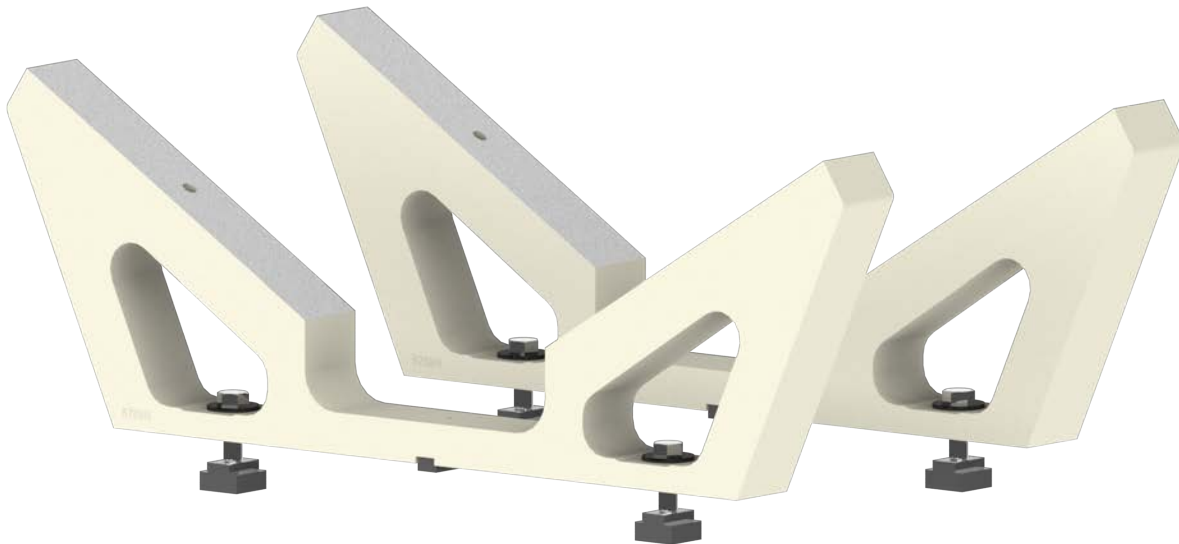


6789L 113 Degree V Block Supports for Detroit Diesel V53

For use on Line Bore Fixtures 6821 and 11113

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

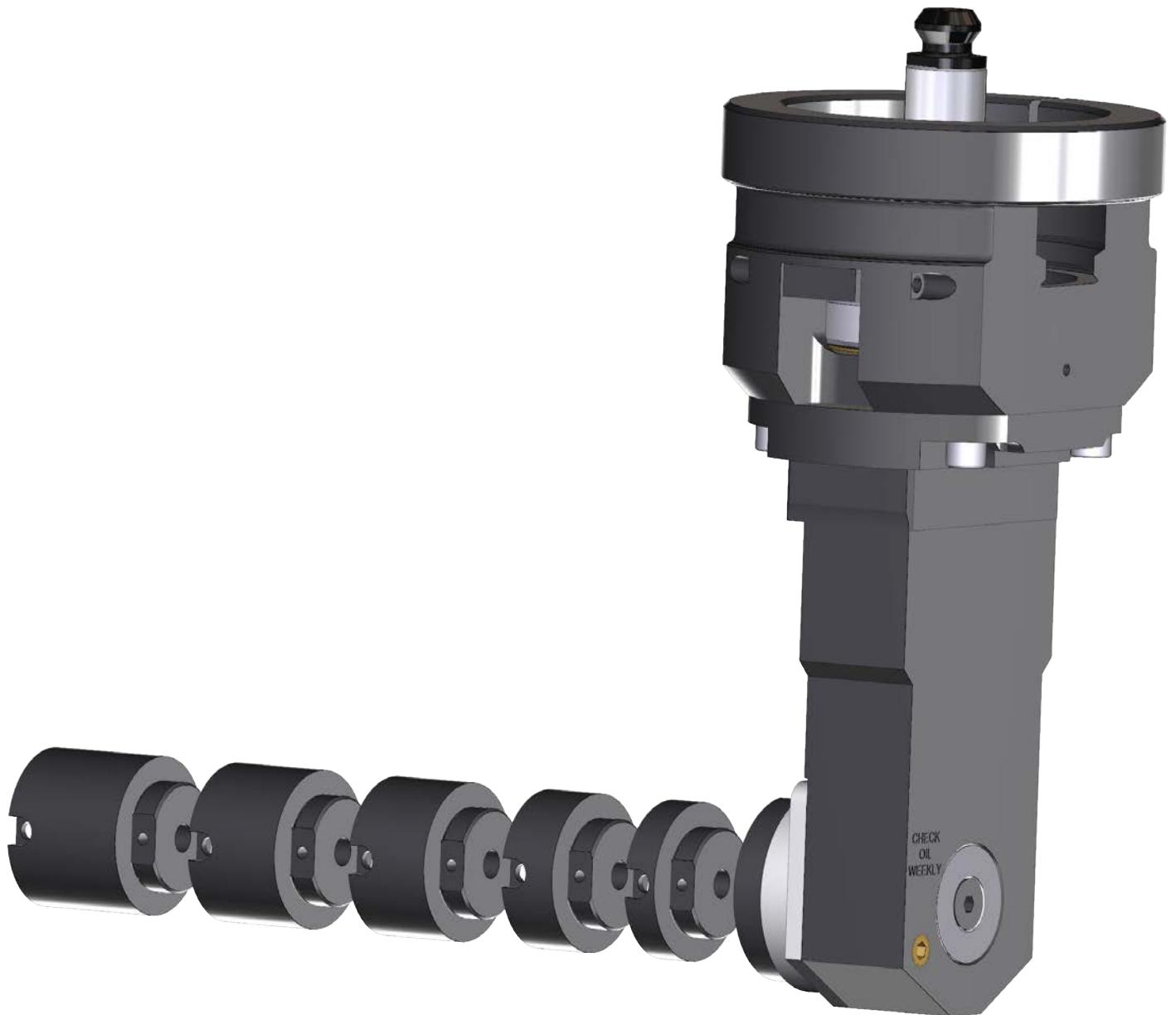
For use on Line Bore Fixtures 6821 and 11113



Main Line Bore Tooling

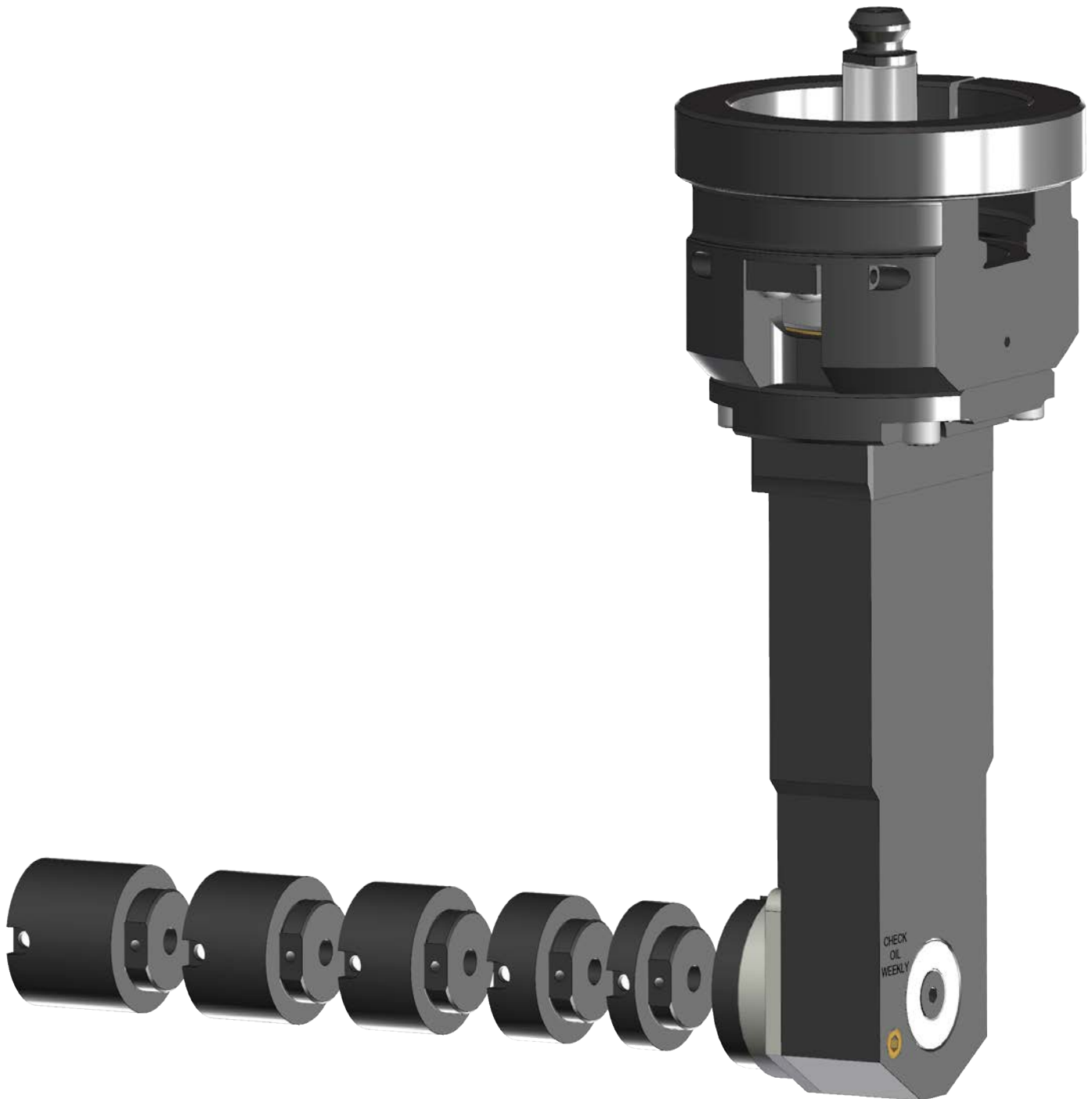
11103 Main Line Bore 90 Degree Right Angle Drive Assembly

F70 Series-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)-F70 Series 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



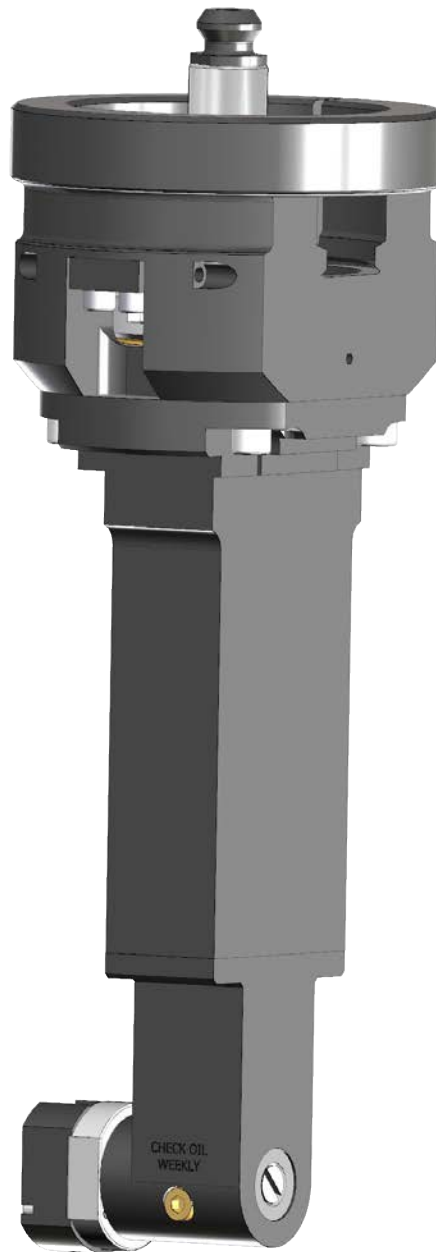
11105 Narrow Right Angle Drive 1.9 - 2.4" (48 - 60.9mm)

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.



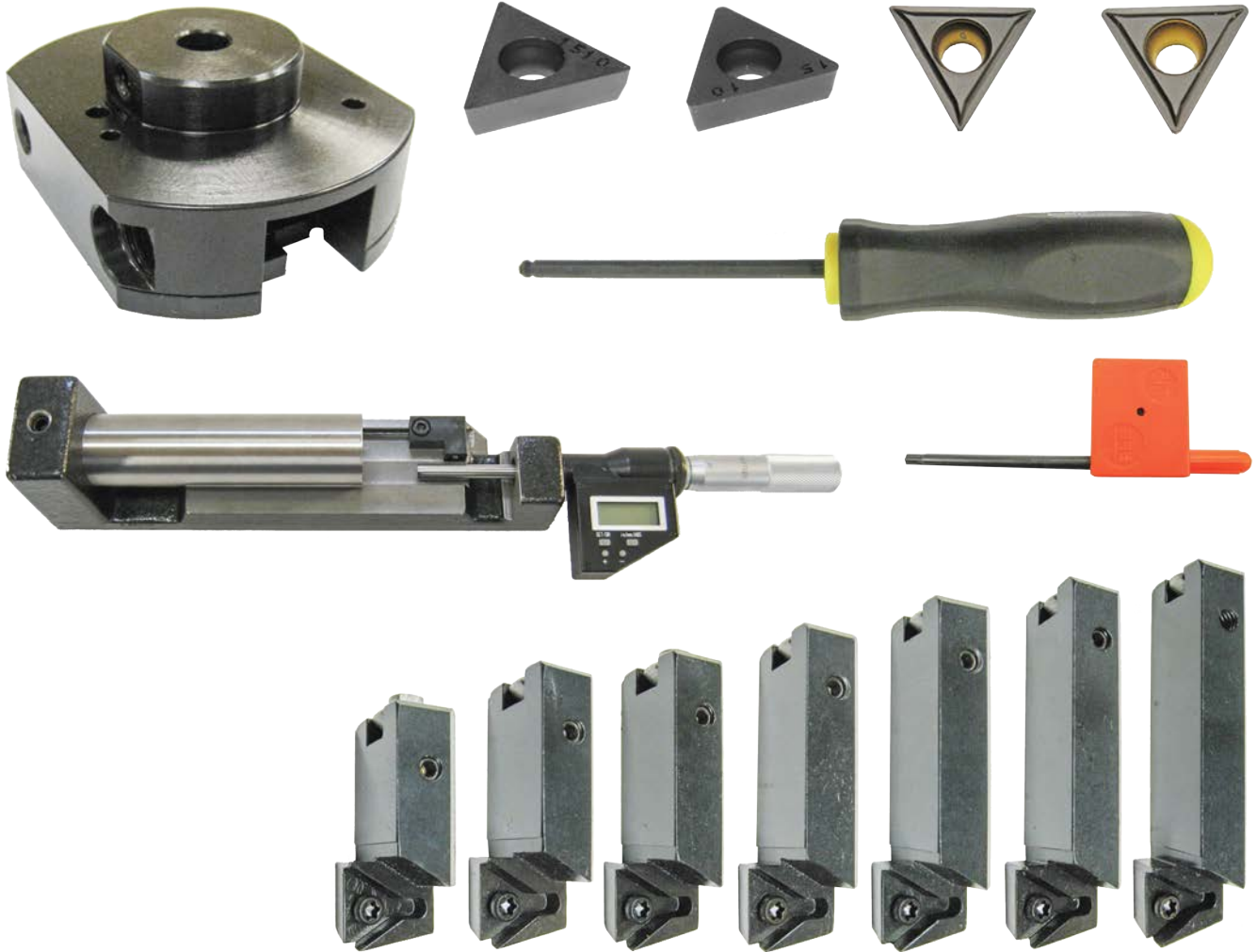
650-2-39B Cutterhead Assembly Line Boring 1.9 - 4.0" (48.26 - 101.60mm) Diameter

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)



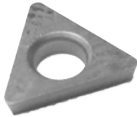


Special Main Line Boring Thrust Facing Tooling for Small Blocks

**6801M Tool holder, Indexable Insert, Thrust Facing
.160 IC, Positive Rake**



**6801P Tool holder, Indexable Insert,
Thrust Facing**
350 Chevy and other small blocks line boring






<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 Thrust Facing Tooling for Mid-Size Blocks

6855Q Thrust Facing Tooling Package for Main Line Bore for Mid-Size Blocks



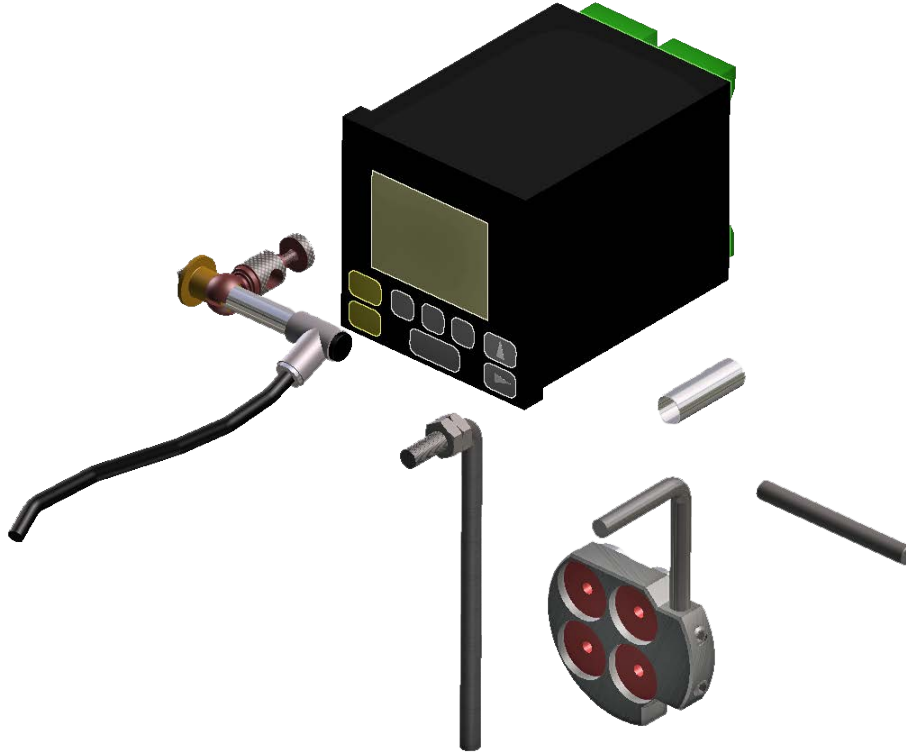
Special Main Line Boring Chamfering Tool




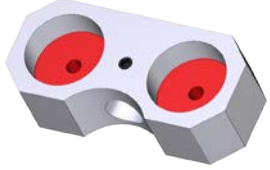
<p>199-90 Tool holder, 2 - 3" (50.80 - 76.20mm)</p> 	<p>199-96 Tool holder, 3 - 4" (76.20 - 101.60mm)</p> 
<p>501-33E Tool bit, 45-Degree Chamfer</p> 	

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



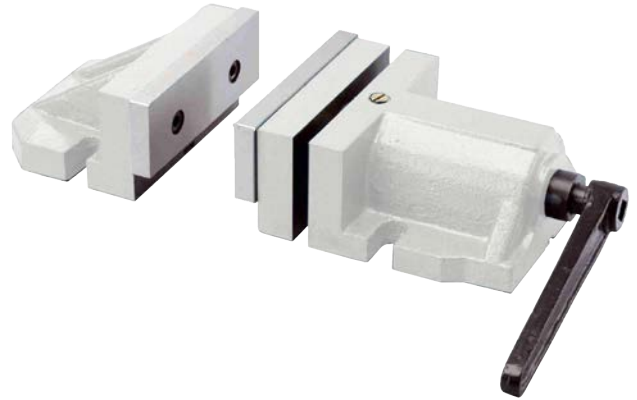
<p>502-9-9A Mechanical Run Out Indicator General Purpose (.001" Inch Resolution)</p> 	<p>502-9-9J Mechanical Run Out Indicator General Purpose (.01mm Metric Resolution)</p> 
<p>502-12-4 General Purpose Magnetic Indicator Holder (requires #502-9-9A or J Indicator)</p> 	<p>502-12-4A Magnetic Indicator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

Equipment for Preparing Blocks for Line Boring

Use following Shell Mill Assemblies for Surfacing Main Bearing Cap Register Face in Blocks in Preparation for Main Line Boring

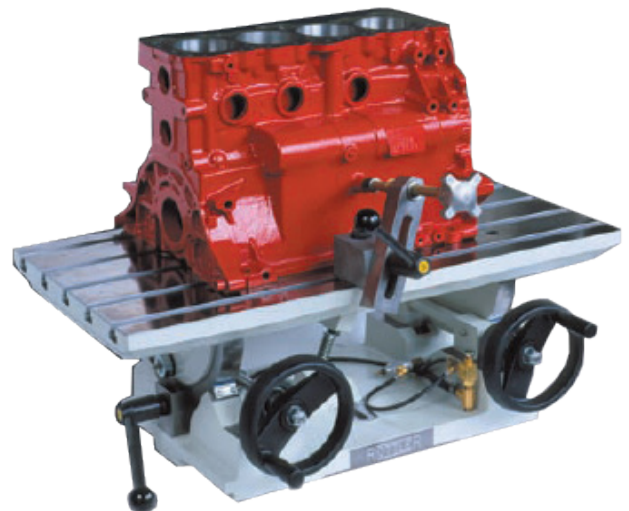
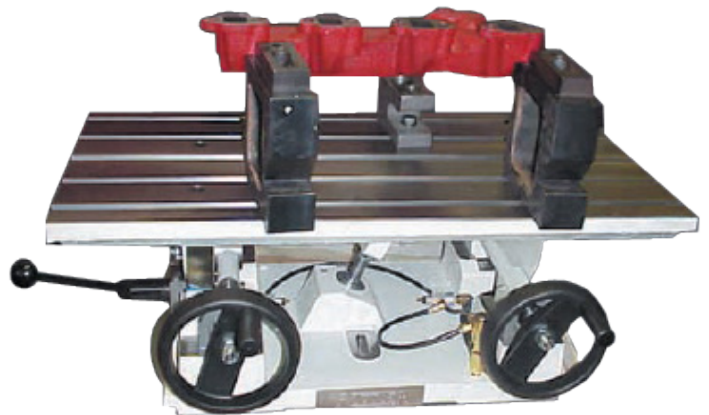
7209N 2-Piece Vise for Surfacing Main Bearing Housing Caps

Preparation for Main Line Boring. Also used for Holding Exhaust Manifolds for Surfacing. Requires 7209M Leveling Table.



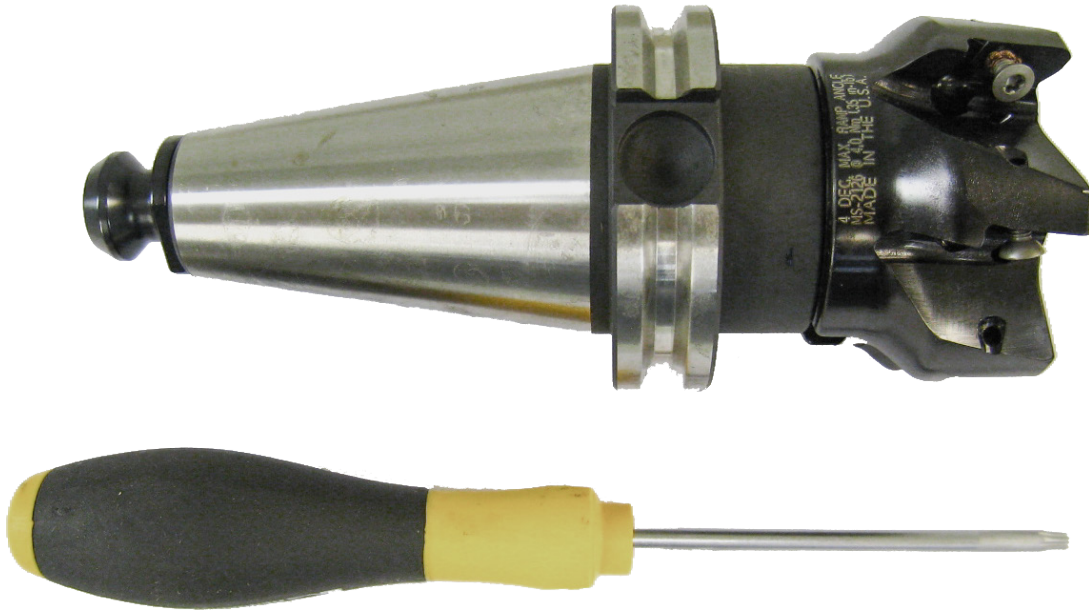
7209M Leveling Table with Air Float

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

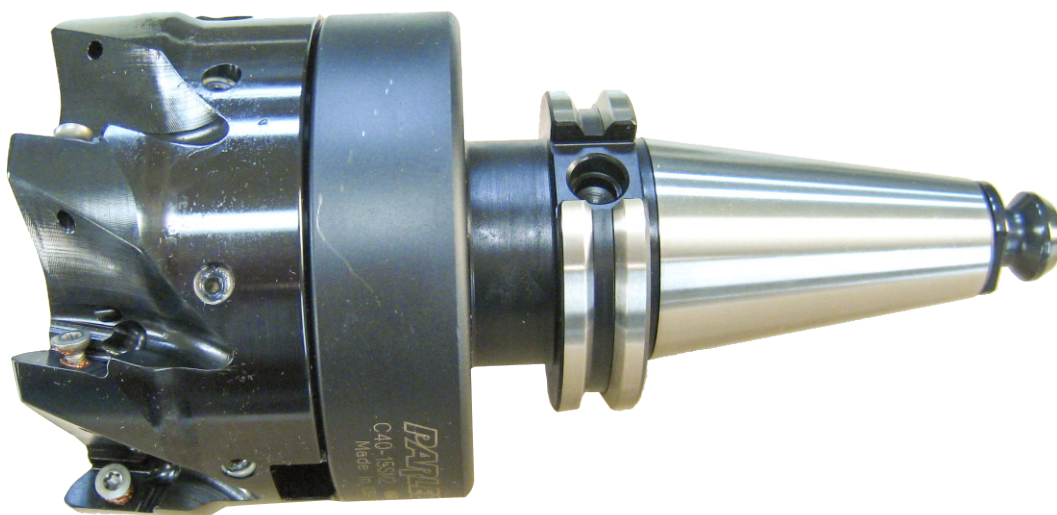


Shell Mill Assemblies

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



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



Thread Tapping Tooling

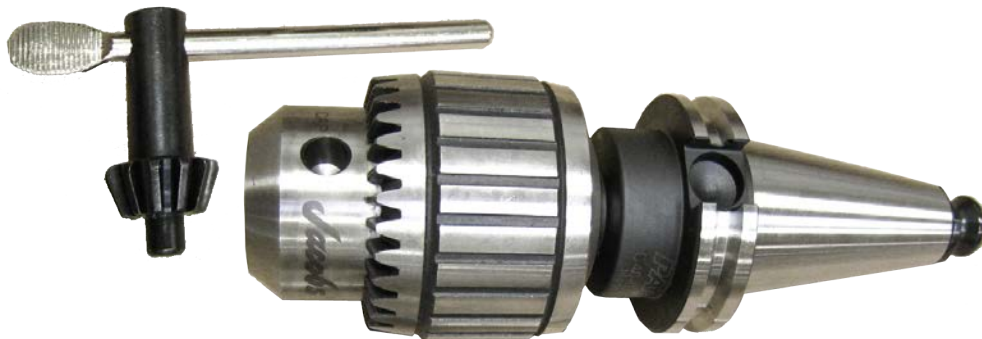
650-2-11K Quick Change Tap Holder Cartridge Assembly with Adaptor

Requires tap holders



Drill Tooling

650-2-44M Precision Drill Chuck Assembly

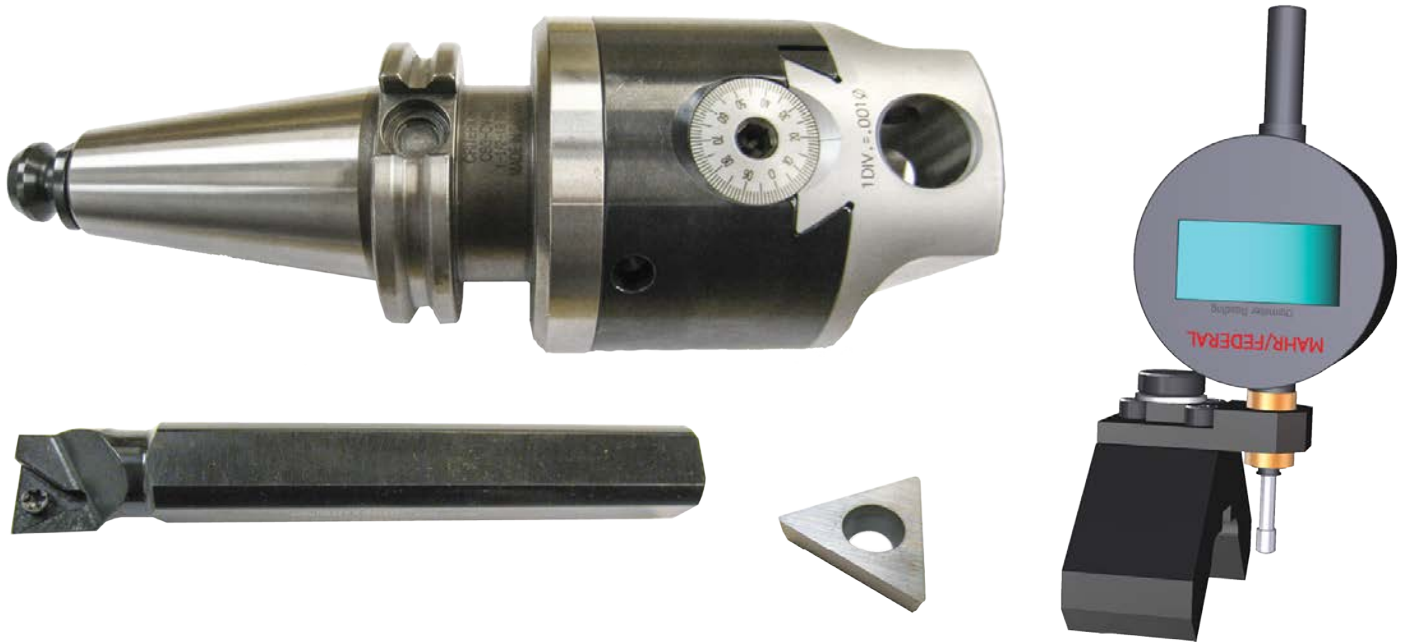


Connecting Rod Boring Tooling

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

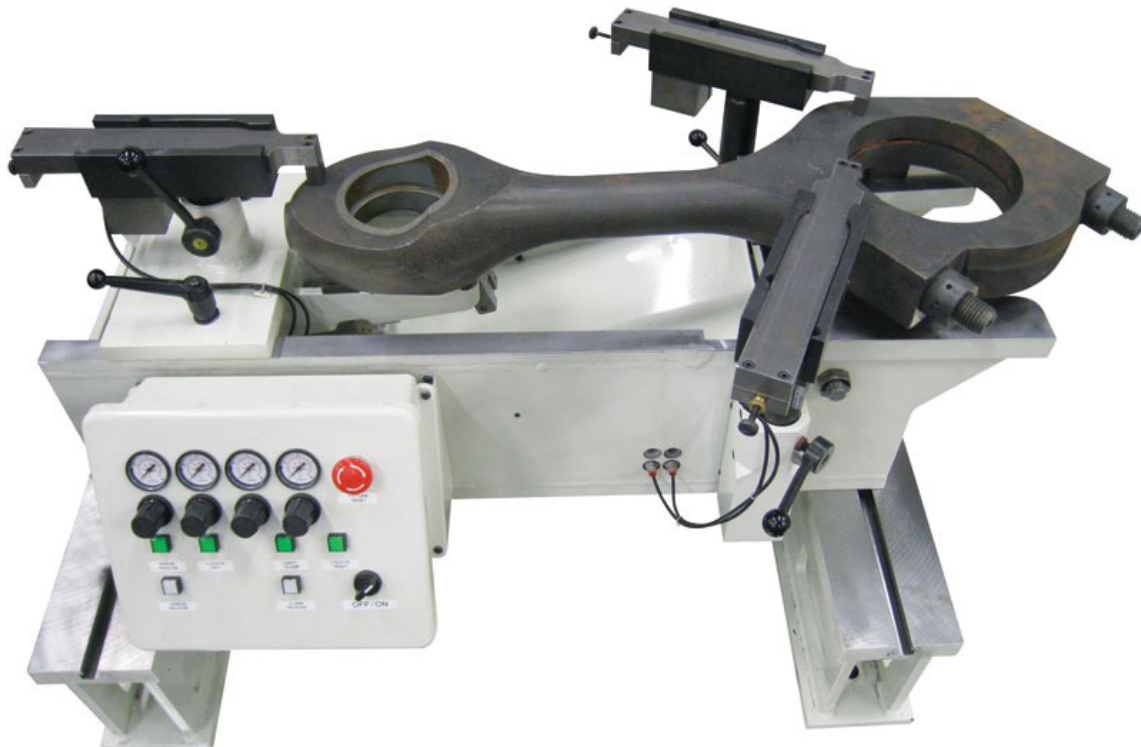
650-3-44S Rottler Precision Connecting Rod Fixturing System

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

6867VSerrated 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



Suggested Hold Down Anchor System

9203V Hold Down Anchor Kit For F79A Machine Installation

