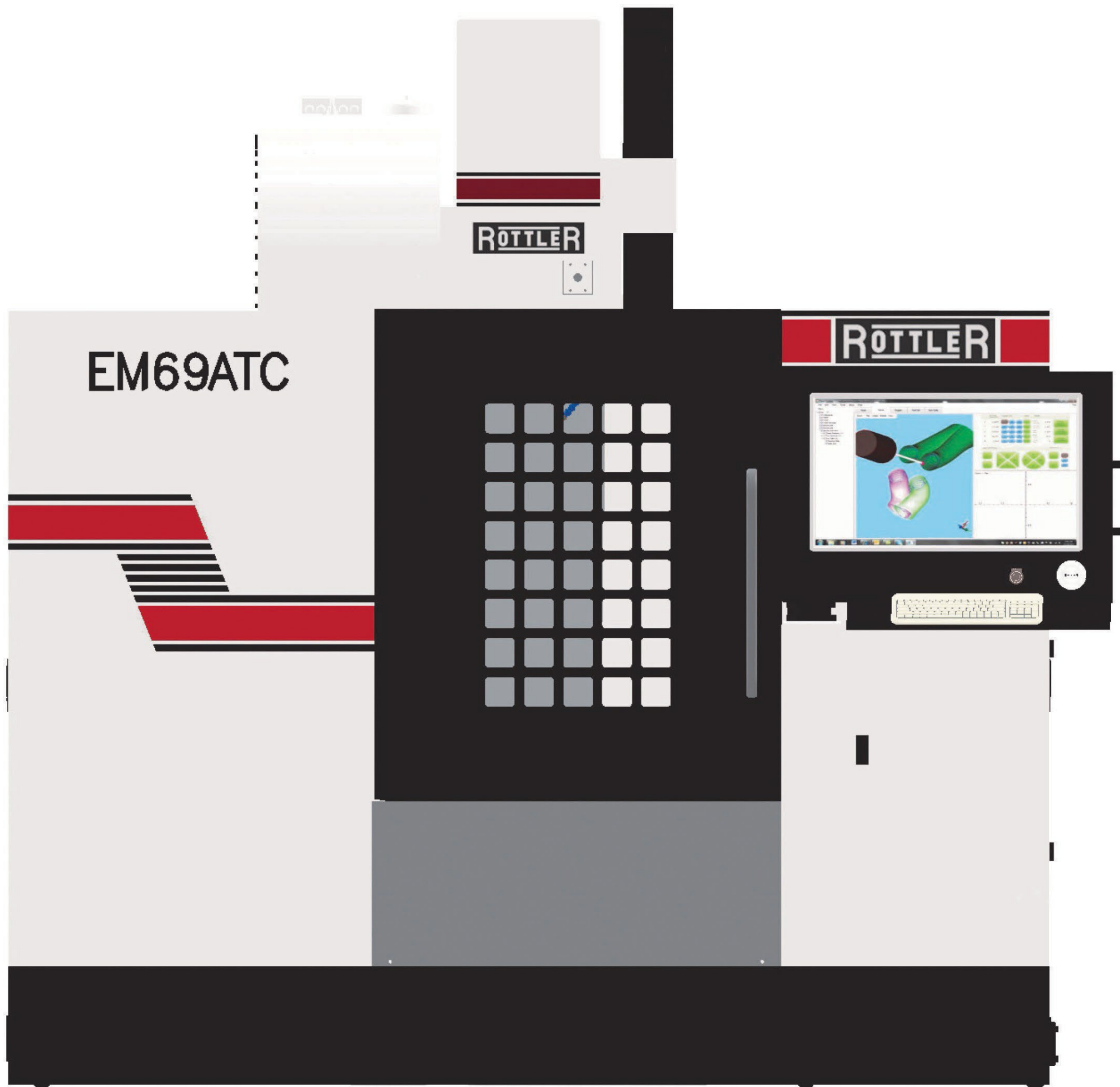


ROTTLER

EM69ATC OPTIONAL EQUIPMENT PARTS MANUAL



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 or intlparts@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



EM69ATC OPTIONAL EQUIPMENT PARTS MANUAL

Contents

Cylinder Bore Centering 1

Automatic Centering 1

650-3-59Y Renishaw Wireless Probing System Parts
 1 Manual Centering
 2

502-12-7B Digital Runout Probe and Readout Parts
 2

502-9-9A Mechanical Runout Indicator 3

502-12-4 Magnetic Base Parts 3

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

LOCATOR SETS 8

650-3-68 Locator Assembly (Small Block Chevy) 8

650-3-68B Locator Assembly (Big Block Chevy) 8

650-3-68L Locator Assembly (327 Small Journal Crank) 9

650-3-68J Locator Assembly (400 Small Block Chevy) 9

650-3-68G Locator Assembly (Chevy Bowtie Block) 9

650-3-68F Locator Assembly (Chevy 58mm Cam Bore) for 55mm Cam Journal
 10

650-3-68E Locator Assembly (Chevy 63mm Cam Bore) for 60mm Cam Journal
 10

650-3-68M Locator Assembly (Chevy 5½ liter 99 & Up)
 10

650-3-68R Locator Assembly (Chevy Gen3 LS1 to LS6) 11

650-3-68T Locator Assembly (Chevy LS7) 11

FORD SETS 1



650-3-68A Locator Assembly (Ford 289/302) **1**

650-3-68H Locator Assembly (Ford 351W)..... **2**

650-3-68P Locator Assembly (Ford 351C)..... **2**



650-3-68C Locator assembly (Ford 460) 2

MOPAR SETS 3

650-3-68K Locator Assembly (Mopar 318) 3

650-3-68D Locator Assembly (Mopar 360) 3

650-3-68Q Locator Assembly (Mopar 383,426,440) 3

Block End Truing 4

650-3-30A Block End Truing Fixture Assembly Parts 4

650-3-30A Block End Truing Fixture Setup 5

650-3-84 Overhead Cam Block Fixture Parts 6

650-3-84 Overhead Cam Block Fixture Setup 7

Cylinder Head Surfacing Fixture 2

7209M Leveling Table Sections 2

Table	Section	Parts
		21

Tilt	Clamp	Section	Parts
			22

Front	/	Rear	Tilt	Section	Parts
					23 Left / Right

Tilt	Section	Parts
		25 Tensioner

Section	Parts
26	Base

	Section	Parts
		27

7226G	Exhaust	and	Intake	Manifold	Surfacing	Fixture
Parts						28

Block Main Line Boring and Cam Boring Fixtures 3

650-3-86 Line Bore Fixt Table Parts 3

6866 Wedge for Cummins 59liter Camshaft Line Boring



Parts 32

Special Application Fixture 3

650-3-82 Mopar 57L Hemi Fixture Assembly

Parts 33 Miscellaneous

Accessories

34

650-3-37 1/2" (127mm) Universal Clamping Kit 3

7219W 5/2" (13808mm) Heavy Duty T-Slot Universal Parallel Parts 5

Tooling for Engine Block Boring and Resleeving 5



650-2-1D Cutterhead Package Components 5

650-2-1E Cutterhead Assembly Parts 67

900-2-19 Micrometer Parts 3

6801B Insert Holder Parts 29

6801C Insert Holder Parts 40

6801D Insert Holder Parts 41

6801E Insert Holder Parts 42

6801F Insert Holder Parts 43

650-2-14B Cutterhead Package Components 4

650-2-14C Cutterhead Parts 45

900-2-20 Micrometer Parts 46

6593C Insert Holder Parts 47

6593D Insert Holder Parts 47

6260W Insert Cartridge Parts 48

6598M Insert Cartridge Parts 48

6260L Insert Cartridge Parts 49

650-2-14F Cutterhead Package Components 5

650-2-14G Cutterhead Assembly Parts 61

900-2-20 Micrometer Parts 62

6593C Insert Holder Parts 63

6593D Insert Holder Parts 63

6520H Tool Holder Parts 64

6520A Tool Holder Parts 64

6520B Tool Holder Parts 65

6598M Insert Cartridge Parts 65

6260L Insert Cartridge Parts 65

6260W Insert Cartridge Parts 67

650-2-16D 1/400" (35/5mm) Spacer (Extension) for 650-2-14B&F Cutterheads 5

Miscellaneous Tooling for 650-2-14B&F

Cutterheads 58 501-29-6K PCD Tipped Triangular

Insert 58

6513J Brazed Carbide Tool Bit 5

6513L Brazed Carbide Tool Bit 5

6513N Brazed Carbide Tool Bit 5

6513P Brazed Carbide Tool Bit 5

6513Q Brazed Carbide Tool Bit 5





Positive Rake, 13/16 Shank Length, for Counter Boring 5

6747K Cartridge Assembly

59

6747P Cartridge Assembly 5

6747G Cartridge Assembly 5

6747F Cartridge Assembly 5

6747M Cartridge Assembly 5

6747H Cartridge Assembly 5

511-29-12C Insert Retaining Screw 5

6633L Cartridge Assembly 6

6633M Cartridge Assembly 6

6633N Cartridge Assembly 6

6633P Cartridge Assembly 6

Inserts for Cutterhead Tooling

64

RT21I Triangular Insert RT212

Triangular Insert RT21I Triangular

Insert RT21I Triangular

Insert 6

RT22F Triangular Insert RT22F

Triangular Insert RS322

Square Insert 64

Surfacing Tooling 5

6602-9E Surfacing Cutterhead Parts 5

Inserts for Surfacing Cutterhead

66 6303B

CBN Insert

66

6303M PCD Insert 6

6303K Coated Carbide Insert 6

6303S CBN Insert 6



650-28K Surfacing Cutterhead Parts 6

Tooling for Lifter Bore Machining 6

650-2-60B Lifter Bore Tooling Kit Components 6

650-2-60N Setting Fixture 6



650-2-60G Insert for 0750 - 0900 diameter cartridge 76 9

650-2-60H Insert for 0920 - 1180 diameter cartridge 76 9

Main Line Bore Tooling 76 7

6753Q Main Line Bore 90 Degree Right Angle Drive Assembly Parts 76 7

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

73 6753Y Narrow Right Angle Drive

Components 76

6753X Right Angle Drive Parts 77

900-2-19 Micrometer Parts 73

6801B Insert Holder Parts 20

6801N Insert Holder Parts 21

650-2-39B Line Boring Cutterhead Package Components 8

650-2-39F Cutterhead Parts 23

900-2-19 Micrometer Parts 24

6801B Insert Holder Parts 25

6801C Insert Holder Parts 25

6801D Insert Holder Parts 25

6801E Insert Holder Parts 25

6801F Insert Holder Parts 27

650-2-39C Cutterhead Package Components 8

650-2-39G Cutterhead Parts 23

900-2-19 Micrometer Parts 20

6801B Insert Holder Parts 21

6801C Insert Holder Parts 21

6801D Insert Holder Parts 22

6801E Insert Holder Parts 22

6801F Insert Holder Parts 23

6801G Insert Holder Parts 23

6801H Insert Holder Parts 24

6801J Inset Holder Parts 24 Special

Main Line Boring Thrust Facing Tool 76 5

6801M Insert Holder Package

Components 95

6801P Inset Holder Parts 5

EM69ATC



Optional Equipment
Parts Manual

501-29-6G Triangular Insert S

501-29-6H Inset Screw S

Special Main Line Boring Chamfering Tool 9



199 Series Tool Holder Parts 9

501-33E Tool bit, 45Degree Chamfer 9

Cam Line Boring Tooling 8

650-3-43T Cam Line Bore Tooling Package Parts 8

650-2-3R Cutter Head Assembly Parts

900-2-19 Micrometer Parts

650-2-19G Universal Drive Parts

199-96B Tool Holder Parts

6802B Insert Holder Parts 102 Cam Line

Bar Bushings 650-3-

43B Bushing - 63mm (2.480" +/- 0.007)

103

650-3-43C Bushing - 58mm (2.282" +/- 0.007) 6

650-3-43D Bushing - (2.250" +/- 0.007) 6

650-3-43E Bushing - (2.790" +/- 0.007) 6

650-3-43F Bushing - (2.309" +/- 0.007) 6

650-3-43G Bushing - (2.500" +/- 0.007) 6

650-3-43H Bushing - (2.120" +/- 0.007) 6

650-3-43J Bushing - (2.030" +/- 0.007) 6

650-3-43K Bushing - (2.040" +/- 0.015) 6

650-3-43L Bushing - (2.400" +/- 0.007) 6

650-3-43M Bushing - (2.125" +/- 0.007) 6

650-3-43N Bushing - (2.150" +/- 0.007) 6

650-3-43P Bushing - (2.300" +/- 0.007) 6

650-3-43Q Bushing - (2.060" +/- 0.007) 6

650-3-43R Bushing - (2.6733" +/- 0.007) 6

650-3-43S Bushing - (2.0450" +/- 0.007) 6

Thread Tapping Tooling 6

650-2-11K Quick Change Tap Holder Cartridge Assembly Parts 6

650-2-11C Torque Control Tap Holder for 1/4" (635mm) taps 6

EM69ATC



Optional Equipment
Parts Manual

650-2-11D Torque Control Tap Holder for 5/16" (795mm) taps  6



650-2-11E Torque Control Tap Holder for 3/8" (9525mm) taps 6

650-2-11F Torque Control Tap Holder for 7/16" 1113mm) taps 6

650-2-11G Torque Control Tap Holder for 1/2" (1270mm) taps 6

Drill Tooling

107 **650-2-44M** **Precision** **Drill** **Chuck** **Parts**

107 Shell Mill

Assemblies

108

650-2-44N 2 1/2" (6350mm) Shell Mill Parts 6

650-2-44P 4" (10160mm) Shell Mill Parts 6

Gages and Indicators 6

650-3-38 Level-for Intake and Exhaust Manifolds 6

7152A Dual Axis Level Assembly Parts 10

650-2-44Q **Three** **Dimensional** **Electronic** **Position** **Finder**

Parts 111 502-9-9S Indicator

Mount 111

502-9-9A Mechanical Run Out Indicator 111

502-11-39D Mechanical Run Out Indicator 111

502-12-4 Magnetic Base Parts 2

502-12-4A Magnetic Indicator Holder Assembly Parts 6

Tooling for Crankshaft Stroker Clearancing/Notching 114

650-2-45H Roughing End Mill 1

650-2-44A End Mill Adapter Parts 1

Tooling for Splayed 4 Bolt Main Cap Machining 115

650-2-53 Splayed 4 Bolt Main Cap Machining Tooling Package Components 6

650-2-11K Quick Change Tap Holder Parts 6

650-2-44M Quick Change Drill Chuck Parts 6

650-2-44N Quick Change 2 1/2" Shell Mill Parts 7



Block Lightening Tooling Packages 

650-2-44W Block Lightening Tooling Package for Dart Small Block Chev Components  **118**

650-2-44X Block Lightening Tooling Package for World Products Small Block Chev Components  **119**

650-2-45J Block Lightening Tooling Package (CAT40 Taper) for Big Block Chevy Components

 **120**



650-2-45Q Big Block Main Cap Lightening Fixture Assembly Parts 1

Connecting Rod Fixturing 2

650-3-44S Rottler Precision Connecting Rod Fixturing System Components 2

Frame Assembly Parts 123 Carriage

Assembly Parts 125 Clamp Arm

Assembly Parts 127 Control Panel

Assembly Parts 128 650-2-3S

Cutterhead Package Components 3

650-2-34X Precision Cutterhead Parts 30

650-2-34C Digital Indicator Parts 31

650-2-3T Cutterhead Package Components 2

650-2-3U Cutterhead Parts 33

900-2-19 Micrometer Parts 34

6801B Insert Holder Parts 3

6801C Insert Holder Parts 3

6801D Insert Holder Parts 3

6801E Insert Holder Parts 3

6801F Insert Holder Parts 3

650-2-15F Cutterhead Package Components 3

650-2-15G Cutterhead Parts 39

900-2-20 Micrometer Parts 40

6593C Insert Holder Parts 41

6593D Insert Holder Parts 41

6598K Insert Cartridge Parts 42

6520H Toolholder Parts 42

6520A Toolholder Parts 43

6520B Toolholder Parts 43

6520C Toolholder Parts 44

6520D Toolholder Parts 44

6520E Toolholder Parts 45

6520F Toolholder Parts 45

6520G Toolholder Parts 46


6598M Insert Cartridge Parts 46


6260L Insert Cartridge Parts 47


6260W Insert Cartridge Parts 48


RTRC22 Insert 8





System for Cutting Serrated Connecting Rods  1

6867V Serrated Rod Cutting Package Components  2

6867V Serrated Rod Cutting Package Setup  3

6868 Six Pitcher Cutter  4

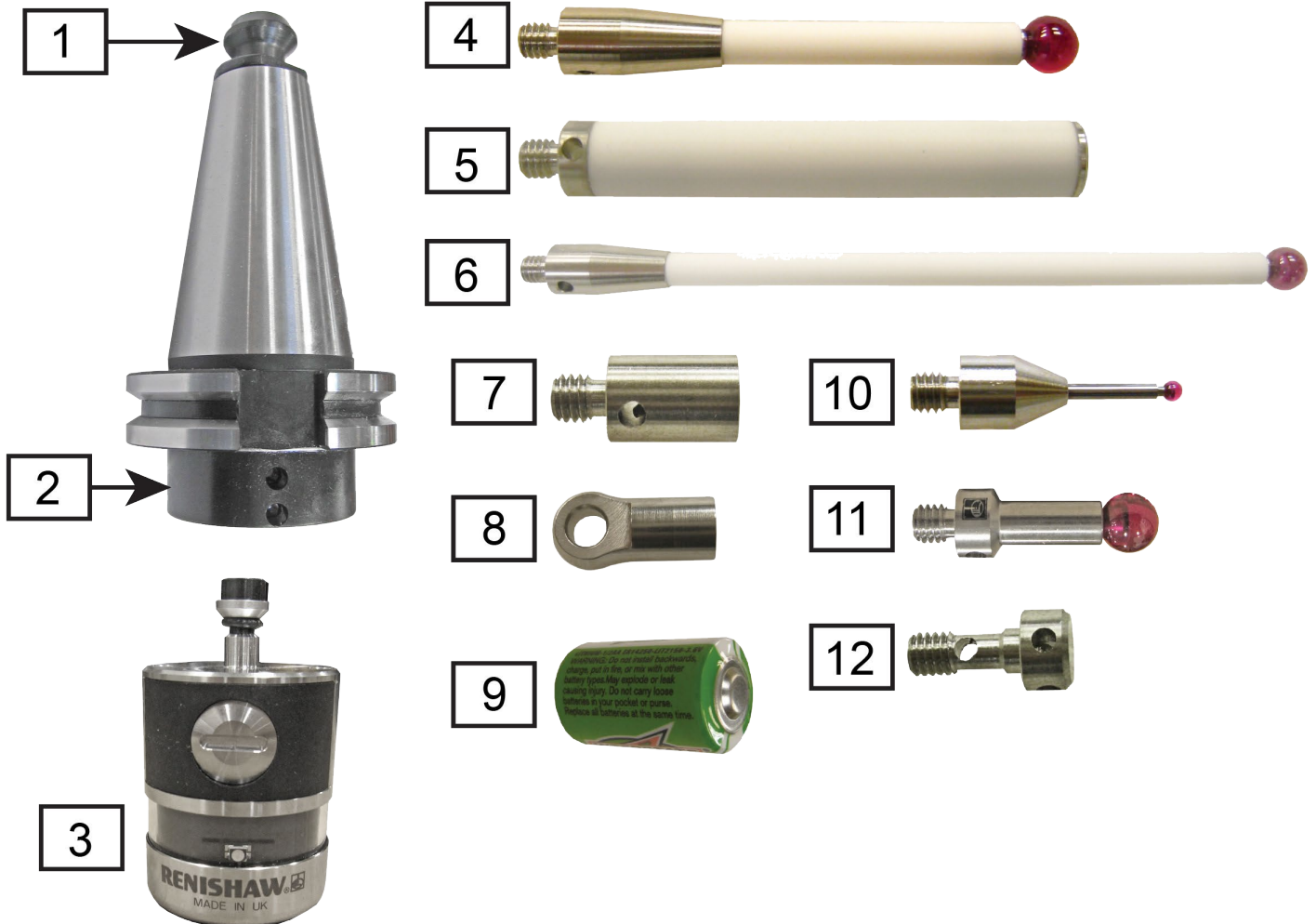
6868G 3mm Pitch Cutter  5

6868H 4mm Pitch Cutter  5

Cylinder Bore Centering

Automatic Centering

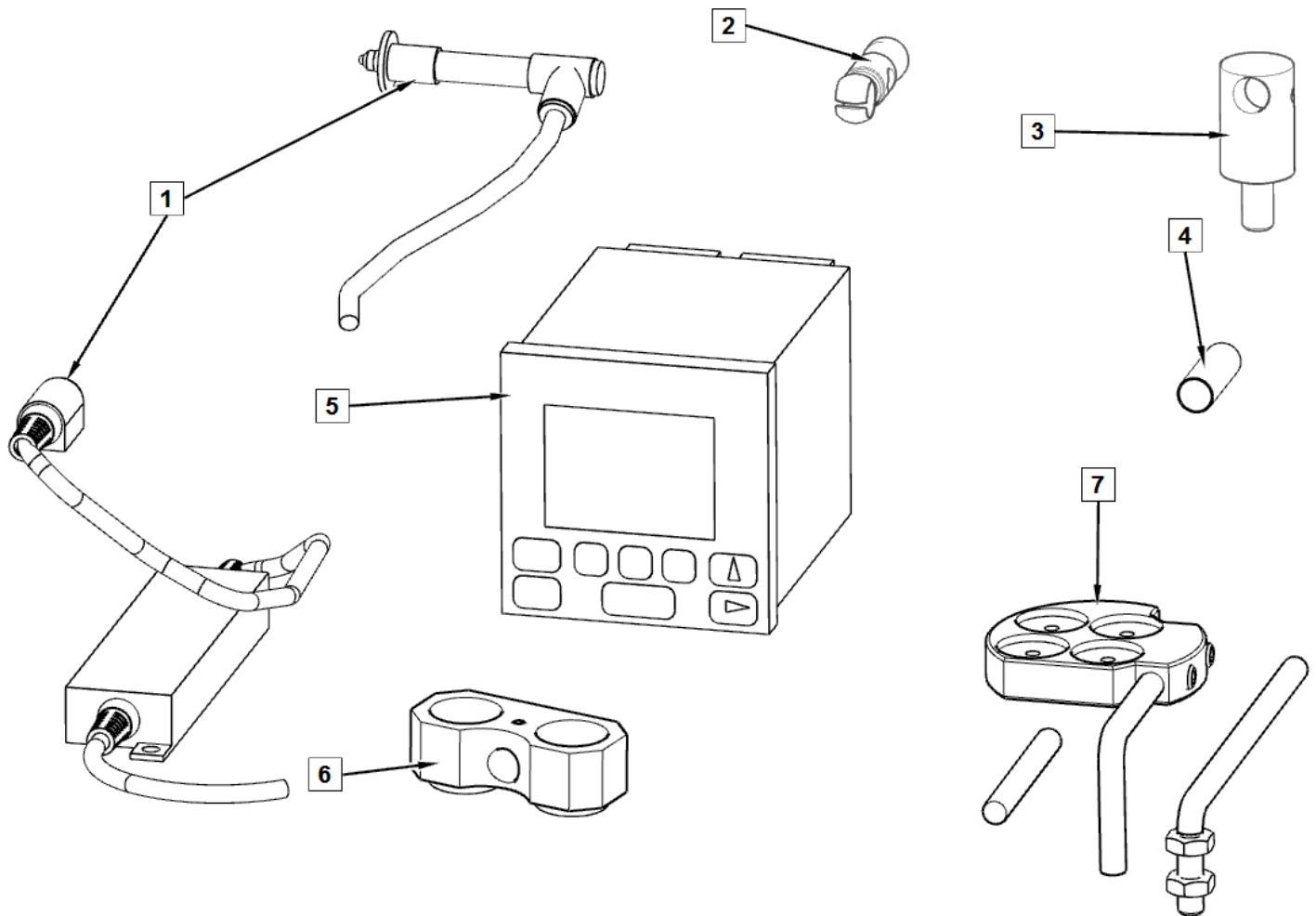
650-3-59Y Renishaw Wireless Probing System Parts



ITEM	PART #	DESCRIPTION
1	650-2-44L	CAT 40 RETENTION KNOB
2	6648P	CAT 40 SHANK
3	650-3-59Z	PROBE RMP40
4	650-3-59C	50MM LONG X 6MM DIA. STYLUS PROBE
5	650-3-59K	STYLUS EXTENSION (50MM)
6	650-3-59D	100MM LONG X 6MM DIA. STYLUS PROBE
7	6648T	STYLUS EXTENSION
8	6648R	SWIVEL ADAPTER FOR STYLUS
9	6648U	LITHIUM BATTERY
10	650-3-59E	20MM LONG X 2MM DIA. STYLUS PROBE
11	6648Q	17.5MM LONG X 6MM DIA. STYLUS PROBE
12	6648S	CRASH PROTECTION DEVICE FOR STYLUS

Manual Centering

502-12-7B Digital Runout Probe and Readout Parts



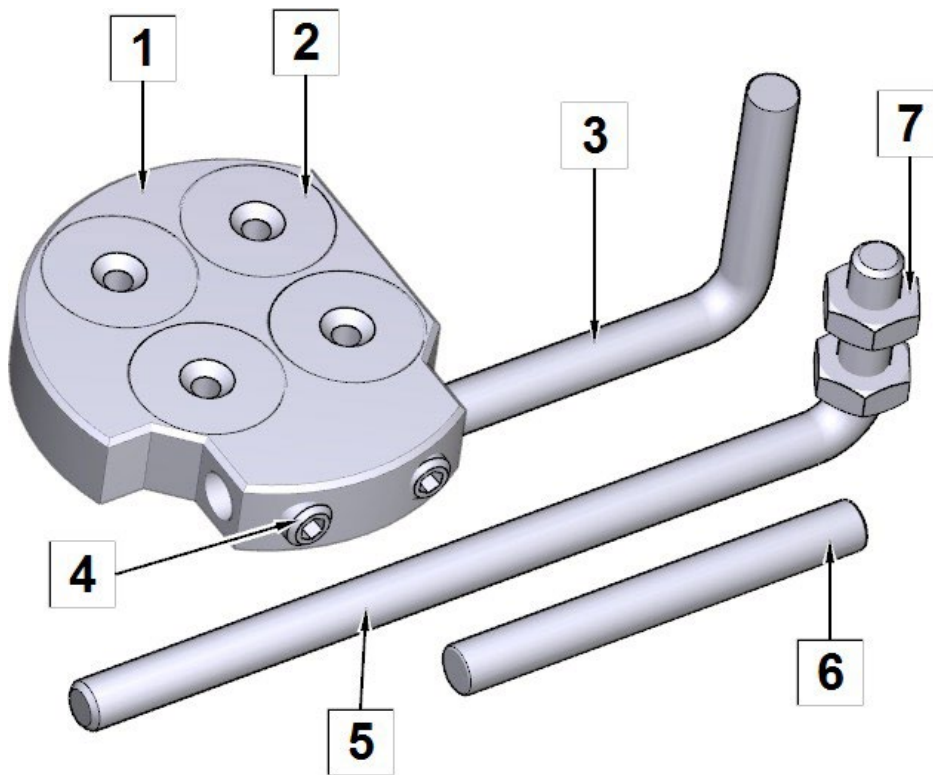
ITEM	PART #	DESCRIPTION
1	502-12-7C	DIGITAL GAUGE
2	502-11-40	CLAMP BODY
3	502-9-9S	INDICATOR MOUNT,RIGHT ANGLE DRIVE
4	502-12-7E	GAUGE ADAPTER SLEEVE
5	502-12-7D	1 AXIS GAGING DISPLAY-DIGITAL RUNOUT GAUGE
6	502-12-4A	MAGNETIC HOLDER ASSEMBLY
7	502-12-4	MAGNETIC HOLDER ASSEMBLY

502-9-9A Mechanical Runout Indicator

Sold as only complete assembly.

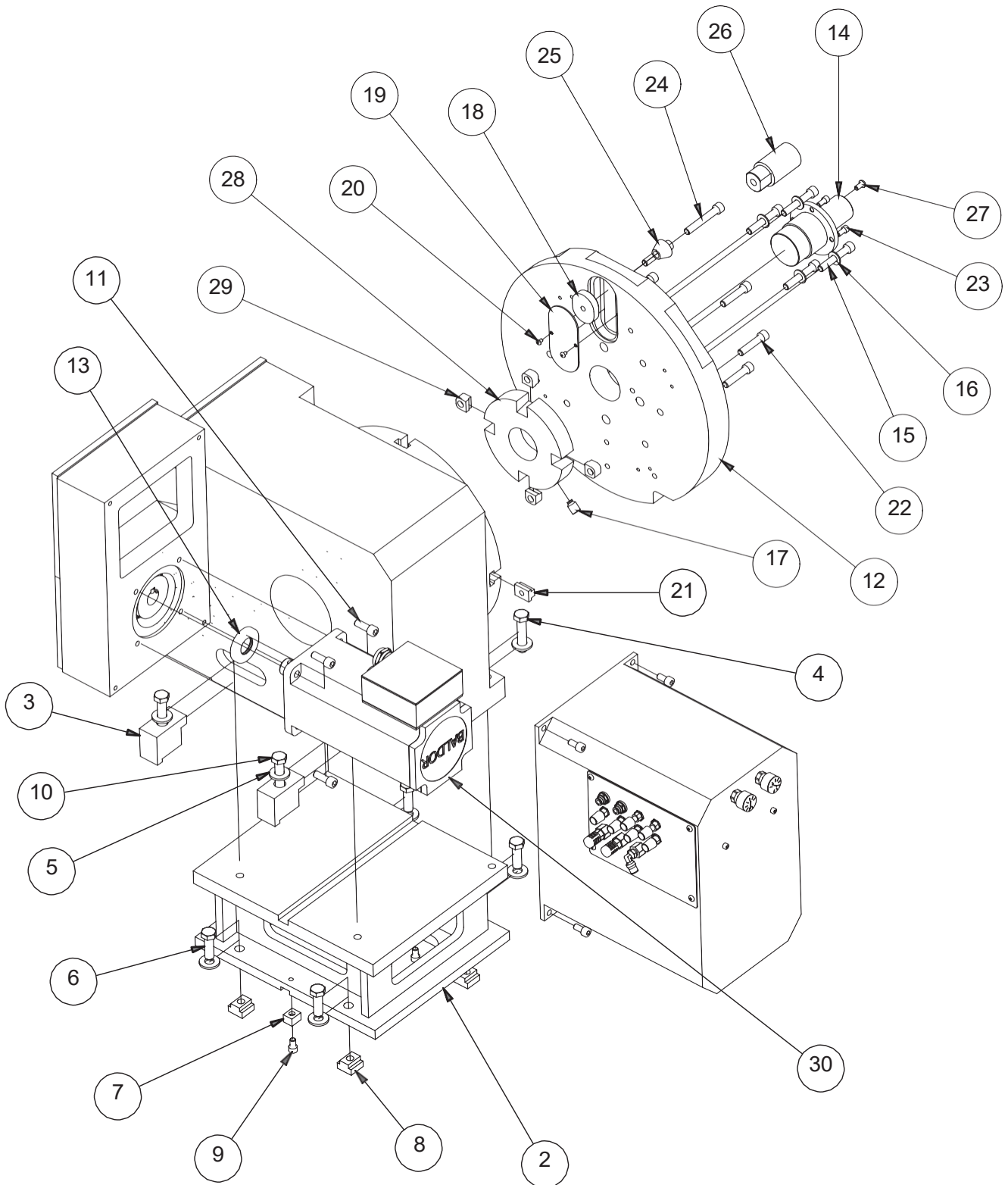


502-12-4 Magnetic Base Parts



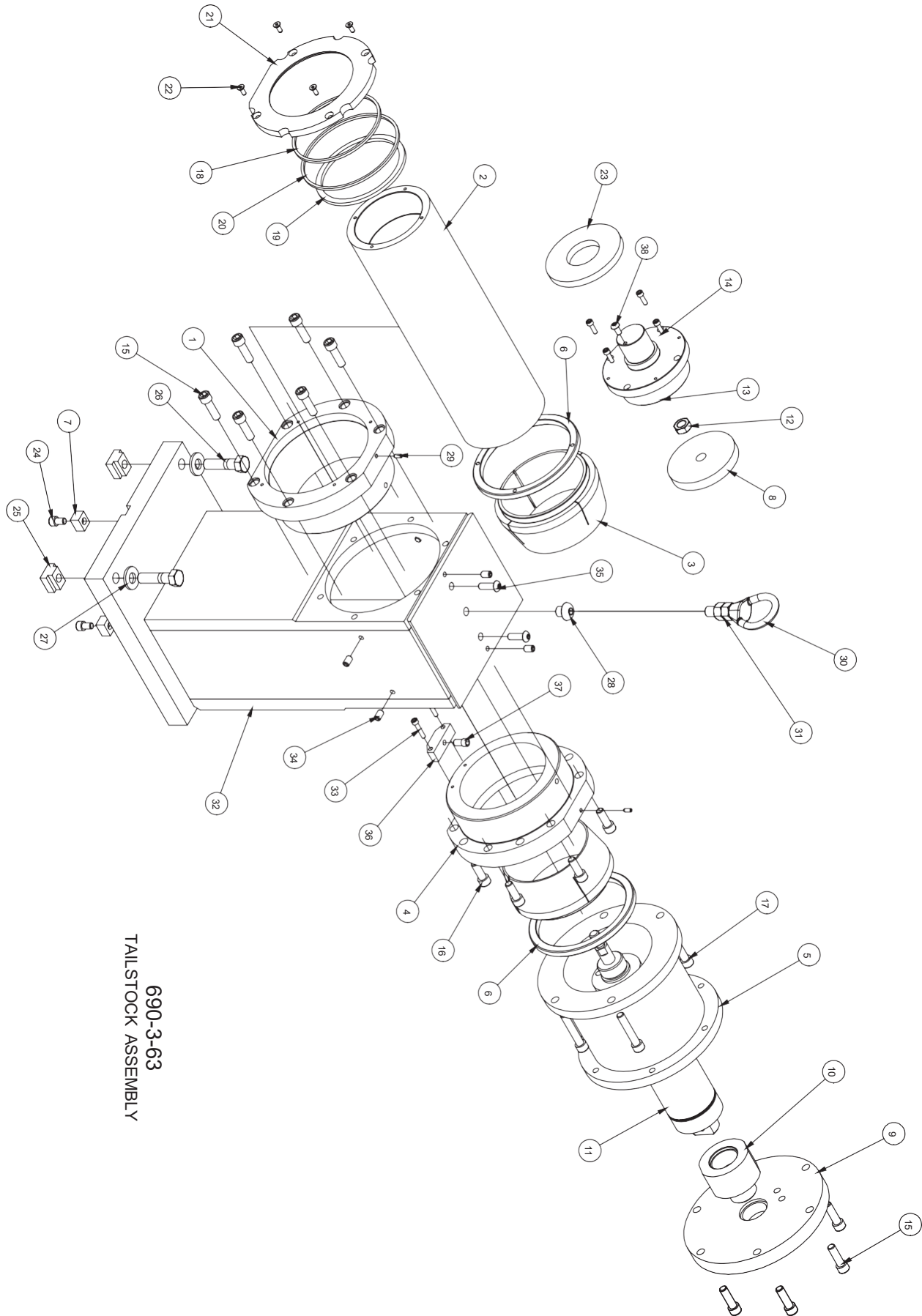
ITEM	PART #	DESCRIPTION
1	502-11-39A	HOLDER,MAGNET
2	502-11-39	MAGNETS, SHALLOW POT
3	502-11-39B	ROD, ADAPTOR, RIGHT ANGLE-SHORT
4	MF-58	SOCKET SET SCREW FLAT POINT 1/4-20 X 1/4"
5	502-11-39Q	ROD, ADAPTOR, RIGHT ANGLE-LONG
6	MF-208	DOWEL PIN 1/4 X 2 1/4"
7	MF-163	HEX NUT 1/4-20 NC

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



690-3-63
HEADSTOCK ASSEMBLY

690-3-63 4TH AXIS FIXTURE HEADSTOCK ASSEMBLY			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	690-3-96	INDEXER, 4TH AXIS FIXTURE
2	1	650-3-85C	RISER, MACHINING, - 4TH AXIS INDEXER
3	2	650-3-85D	CLAMP, INDEXER - 4TH AXIS FIXTURE
4	2	MF-49A	1/2-13UNC x 2-1/4" LG. HEX BOLT
5	8	100-19A	Hardened washer 17/32 I.D.
6	4	MF-137A	1/2-13UNC x 1-1/2" LG. HEX BOLT
7	2	650-3-9	Key
8	4	650-3-10	TN-5 T-Nut
9	2	MF-21A	5/16-18UNC x 1/2" LG. S.H.C.S.
10	2	MF-150C	1/2-13UNC x 2-3/4" HEX BOLT
11	4	MF-143	3/8-16UNC x 1" LG. S.H.C.S.
12	1	650-3-62B	FACEPLATE - AUTO PERFORMANCE FIXTURE
13	1	6481H	Seal
14	1	650-3-62H	PINION, FACEPLATE - AUTO PERFORMANCE FIXTURE
15	4	MF-35	3/8-16UNC x 2-1/4" LG. S.H.C.S.
16	4	MF-178	3/8" FLAT WASHER
17	1	6310L	1/2-13UNC x 5/8" LONG SET SCREW, BRASS TIPPED
18	1	650-3-62V	NUT, EXPANDING CAM LOCATOR - AUTO PERFORMANCE FIXTURE
19	1	650-3-62G	COVER, CAM LOCATOR NUT - AUTO PERFORMANCE FIXTURE
20	2	MF-86	8-32UNC x 1/4" LG. SOCKET BUTTON HEAD CAPSCREW
21	6	650-3-61P	T-NUT, FACEPLATE - AUTO PERF. FIXTURE
22	6	MF-33A	3/8-16UNC x 1-3/4" LG. S.H.C.S.
23	4	MF-12	1/4-20UNC x 1/2" LG. S.H.C.S.
24	1	MF-36	3/8-16UNC x 2-1/2" LG. S.H.C.S.
25	1	650-3-70D	CONE WASHER, EXPANDING CAM LOCATOR - AUTO PERFORMANCE FIXTURE
26	1	650-3-62D	CAM LOCATION SET-UP TOOL - AUTO PERFORMANCE FIXTURE
27	1	MF-90	1/4-20UNC x 1/2" LG. SOCKET BUTTON HEAD CAPSCREW
28	1	650-3-96A	CENTERING RING, FACEPLATE, 4TH AXIS FIXTURE
29	4	650-3-96B	CENTERING WEDGE, FACEPLATE, 4TH AXIS FIXTURE
30	1	9020H	MOTOR



690-3-63
TAILSTOCK ASSEMBLY

690-3-63 4th AXIS FIXTURE TAILSTOCK ASSEMBLY			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	6225A	Lower Bearing Carrier
2	1	650-3-61G	PISTON TUBE, TAILSTOCK ASSEMBLY - 4TH AXIS FIXTURE
3	2	6222B	BUSHING, TAILSTOCK SPINDLE, 4TH AXIS FIXTURE
4	1	650-3-74	REAR BEARING CARRIER, TAILSTOCK - 4TH AXIS FIXTURE
5	1	650-3-61C	EXTENSION, TAIL STOCK - AUTO PERFORMANCE FIXTURE
6	2	6223	Outer Spindle Nut
7	2	650-3-9	Key
8	1	650-3-61J	NOSE PLATE, TAILSTOCK - AUTO PERFORMANCE FIXTURE
9	1	650-3-61L	ENDCAP, TAILSTOCK - AUTO PERFORMANCE FIXTURE
10	1	650-3-61M	SPACER, AIR CYLINDER, TAILSTOCK - AUTO PERFORMANCE FIXTURE
11	1	650-3-61E	STROKING CYLINDER, TAILSTOCK - AUTO PERFORMANCE FIXTURE
12	1	MF-172	1/2-20UNF HEX JAM NUT
13	1	650-3-61H	PISTON CAP, TAILSTOCK - AUTO PERFORMANCE FIXTURE
14	4	Mf-5	Socket Head Cap screw No. 10 - 24 UNC - 5/8
15	12	Mf-32	Socket Head Cap screw 3/8 - 16 UNC - 1 1/4
16	6	Mf-31	Socket Head Cap screw 3/8 - 16 UNC - 1
17	4	Mf-34	Socket Head Cap screw 3/8 - 16 UNC - 2
18	1	6248	Square Ring
19	1	6249	Felt Oiler
20	1	6251	Square Ring
21	1	6247A	Retainer Machining
22	4	Mf-79	Hexagon Socket Flat Countersunk Head Cap Screw
23	1	650-3-61K	CUSHION, TAILSTOCK - AUTO PERFORMANCE FIXTURE
24	2	Mf-21A	Socket Head Cap screw 5/16 - 18 UNC - 1/2
25	3	650-3-10	TN-5 T-Nut
26	3	MF-149C	1/2-13UNC x 2" LG. HEX BOLT
27	3	100-19A	Hardened washer 17/32 I.D.
28	1	650-3-61S	1/2-13UNC x 5/8" LG. SOCKET BUTTON HEAD SCREW
29	2	100-82-2B	Brassed Tipped Set Screw
30	1	502-3-13	Lift Eye
31	2	MF-171	1/2-13UNC HEX JAM NUT
32	1	650-3-61X	TAILSTOCK HOUSING (MACHINING) 4TH AXIS FIXTURE
33	2	MF-6A	S.H.C.S. 10 - 24 UNC - 1
34	6	MF-68D	5/16-18UNC x 1/2" LG. FLAT POINT SET SCREW
35	2	MF-95	5/16-18UNC x 1" SOCKET BUTTON HEAD SCREW
36	1	650-3-74A	KEY BLOCK
37	1	650-3-74B	KEY BOLT
38	1	MF-90	1/4-20UNC x 1/2" LG. Hexagon Socket Button Head Cap Screw

LOCATOR SETS

For 4th AXIS includes front & rear main locator and rear cam locator

Note: When ordering multiple locator assemblies, please check that there are no duplicates of individual locators.

If Customer Requires Sizes Other than Available from Stock, Rottler Will Manufacture the Required Size. Customer Must Provide the Size, Including Tolerance of the Bore/s that the Locator will be used in. Rottler will use this information to Design the Actual Locators.

CHEVROLET SETS

650-3-68 Locator Assembly (Small Block Chevy)

650-3-70C



650-3-69



650-3-69E



650-3-68B Locator Assembly (Big Block Chevy)

650-3-62W



650-3-69B



650-3-69G



650-3-68L Locator Assembly (327 Small Journal Crank)

650-3-62X



650-3-69C



650-3-69H



650-3-68J Locator Assembly (400 Small Block Chevy)

650-3-70C



650-3-69T



650-3-69U

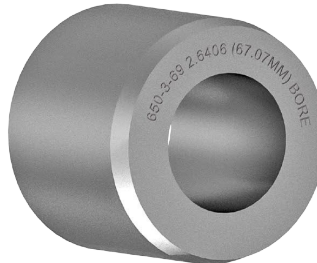


650-3-68G Locator Assembly (Chevy Bowtie Block)

650-3-70B



650-3-69



650-3-69E



650-3-68F Locator Assembly (Chevy 58mm Cam Bore) for 55mm Cam Journal

650-3-70A



650-3-69



650-3-69E



650-3-68E Locator Assembly (Chevy 63mm Cam Bore) for 60mm Cam Journal

650-3-70



650-3-69



650-3-69E



650-3-68M Locator Assembly (Chevy 5 1/3 liter 99 & Up)

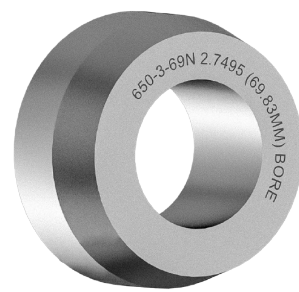
650-3-70C



650-3-69M



650-3-69N



650-3-68R Locator Assembly (Chevy Gen3 LS1 to LS6)

650-3-70H



650-3-69M



650-3-69N



650-3-68T Locator Assembly (Chevy LS7)

650-3-83M



650-3-69M



650-3-69N



FORD SETS

650-3-68A Locator Assembly (Ford 289/302)

650-3-62Z



650-3-69A



650-3-69F



650-3-68H Locator Assembly (Ford 351W)

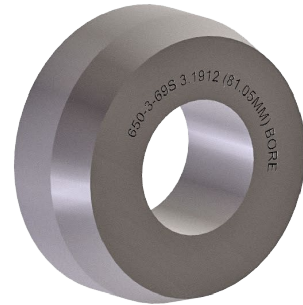
650-3-62Z



650-3-69R



650-3-69S



650-3-68P Locator Assembly (Ford 351C)

650-3-62Z



650-3-69V



650-3-69W

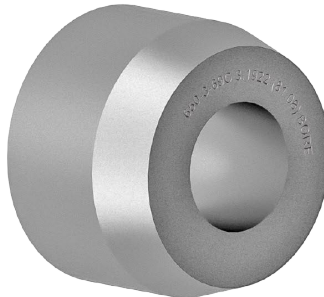


650-3-68C Locator assembly (Ford 460)

650-3-62X



650-3-69C



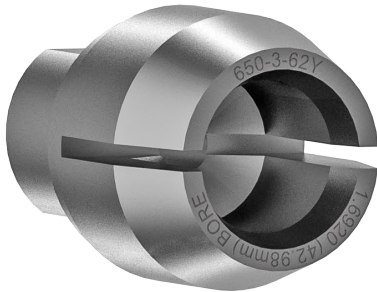
650-3-69H



MOPAR SETS

650-3-68K Locator Assembly (Mopar 318)

650-3-62Y



650-3-69P

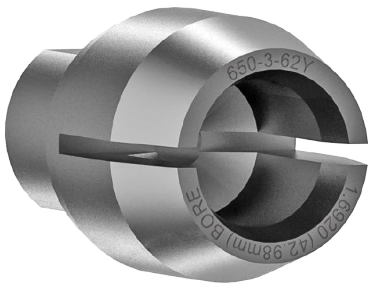


650-3-69Q



650-3-68D Locator Assembly (Mopar 360)

650-3-62Y



650-3-69D



650-3-69J



650-3-68Q Locator Assembly (Mopar 383,426,440)

650-3-70G



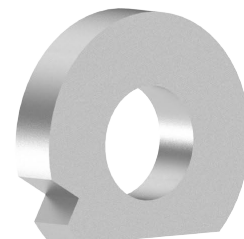
650-3-69Z



650-3-71G

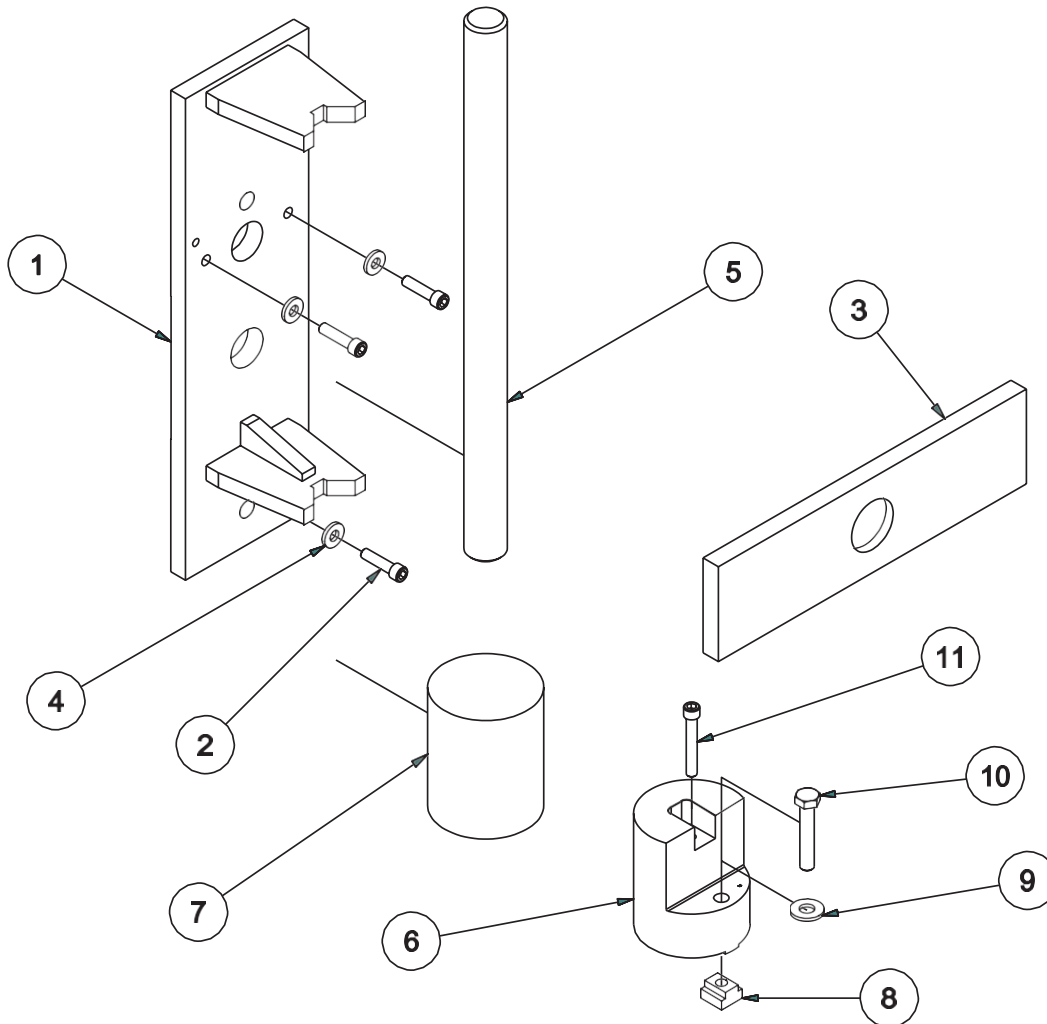


650-3-61V



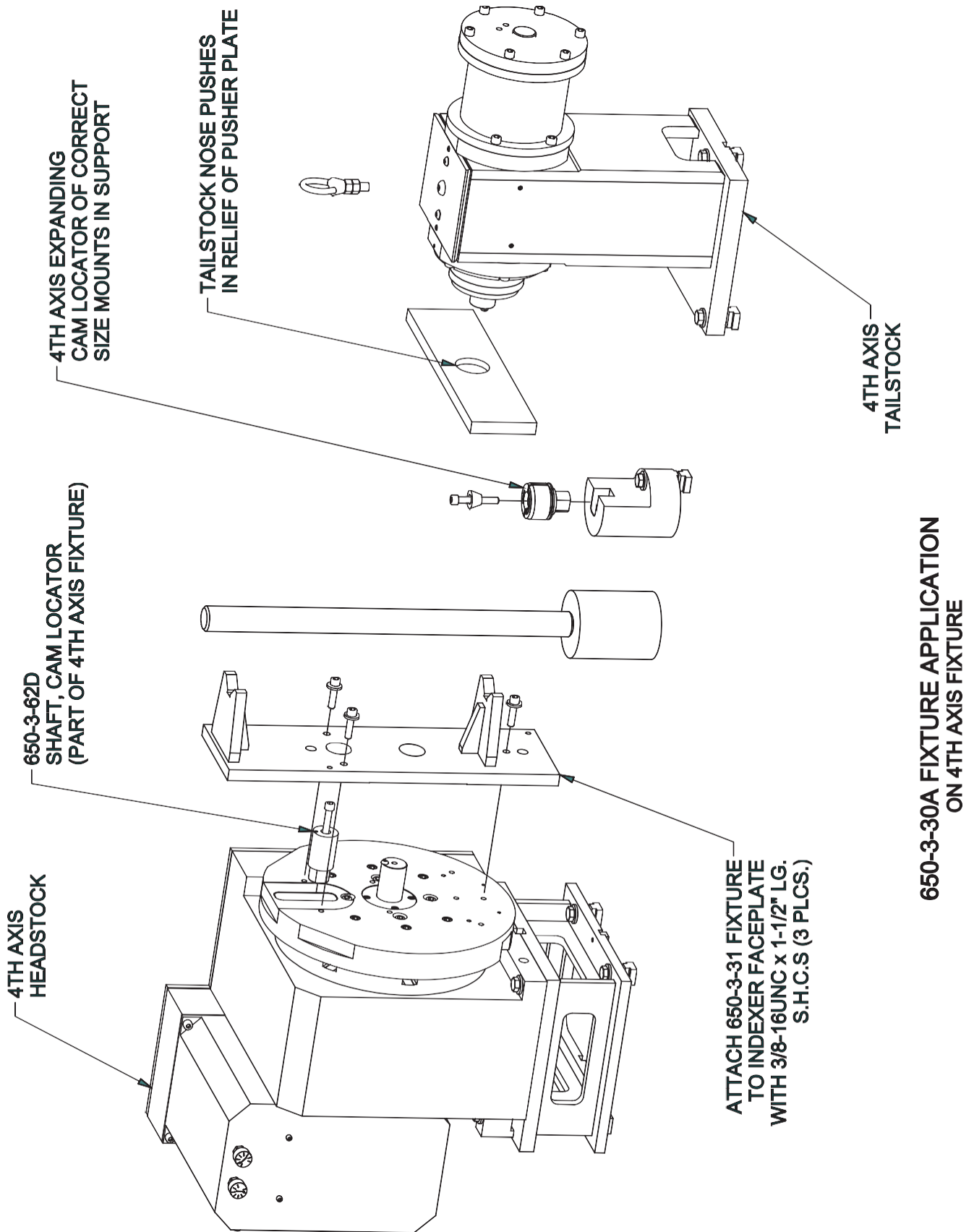
Block End Truing

650-3-30A Block End Truing Fixture Assembly Parts



650-3-30A BLOCK END TRUING FIXTURE ASSEMBLY, 4TH AXIS FIXTURE			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	650-3-31	BLOCK END TRUING FIXTURE (MACHINING)
2	3	MF-33	3/8-16UNC x 1-1/2" LG. S.H.C.S.
3	1	650-3-32	PUSHER PLATE BLOCK END TRUING FIXTURE
4	3	100-28-18	Washer
5	1	650-3-33A	BAR (1-1/2") VERTICAL BLOCK END TRUING FIXTURE
6	1	650-3-43X	SUPPORT LOCATOR, CAM - (4.7" RISER) CAM LINE BORING FIXTURE
7	1	650-3-43V	RISER, BLOCK END TRUING
8	1	650-3-10	TN-5 T-Nut
9	1	100-19A	Hardened washer 17/32 I.D.
10	1	MF-150C	1/2-13UNC x 2-3/4" LG. HEX BOLT
11	1	Mf-36	3/8-16UNC x 2-1/2" LG. S.H.C.S.

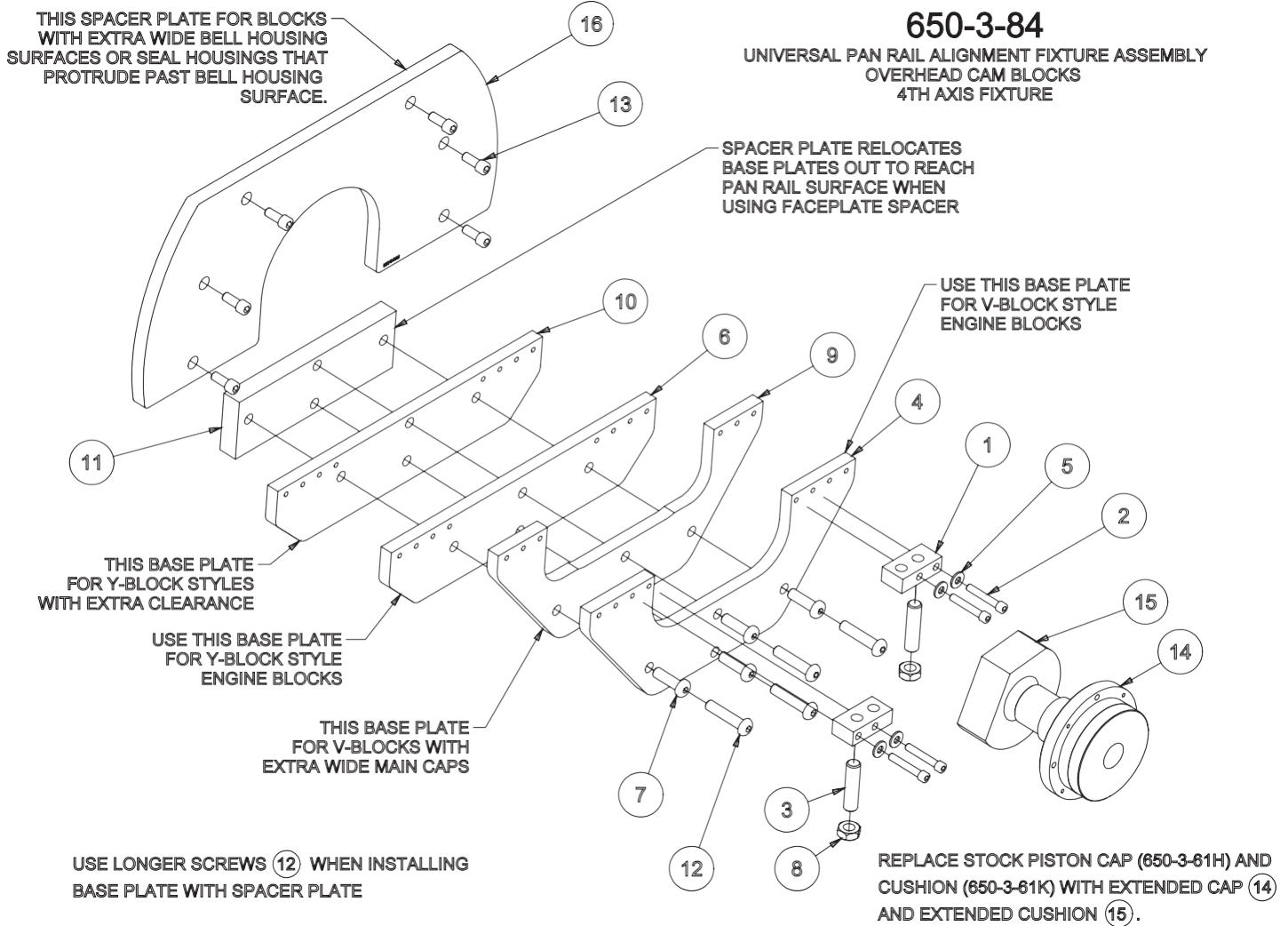
650-3-30A Block End Truing Fixture Setup



650-3-84 Overhead Cam Block Fixture Parts

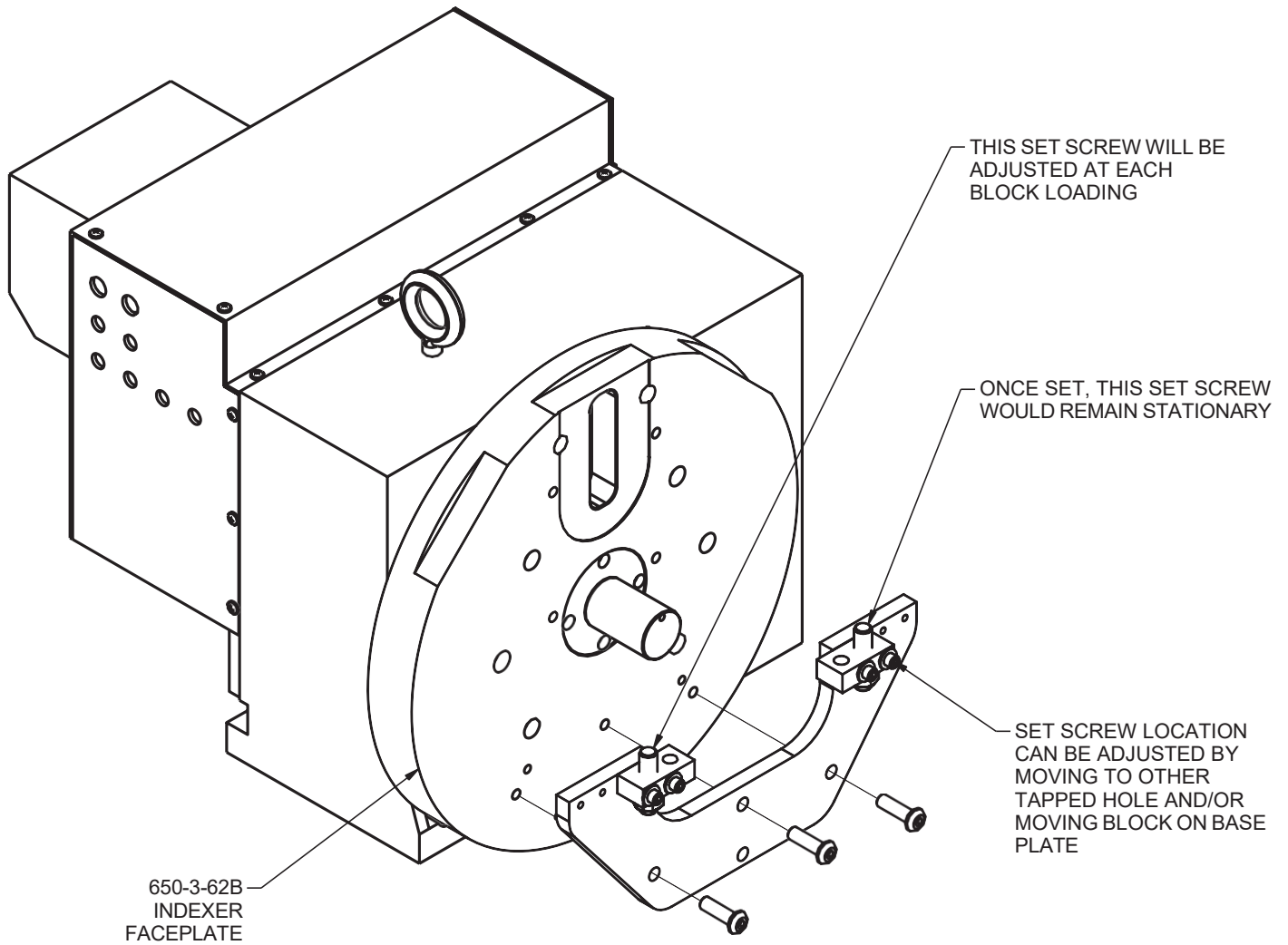
650-3-84

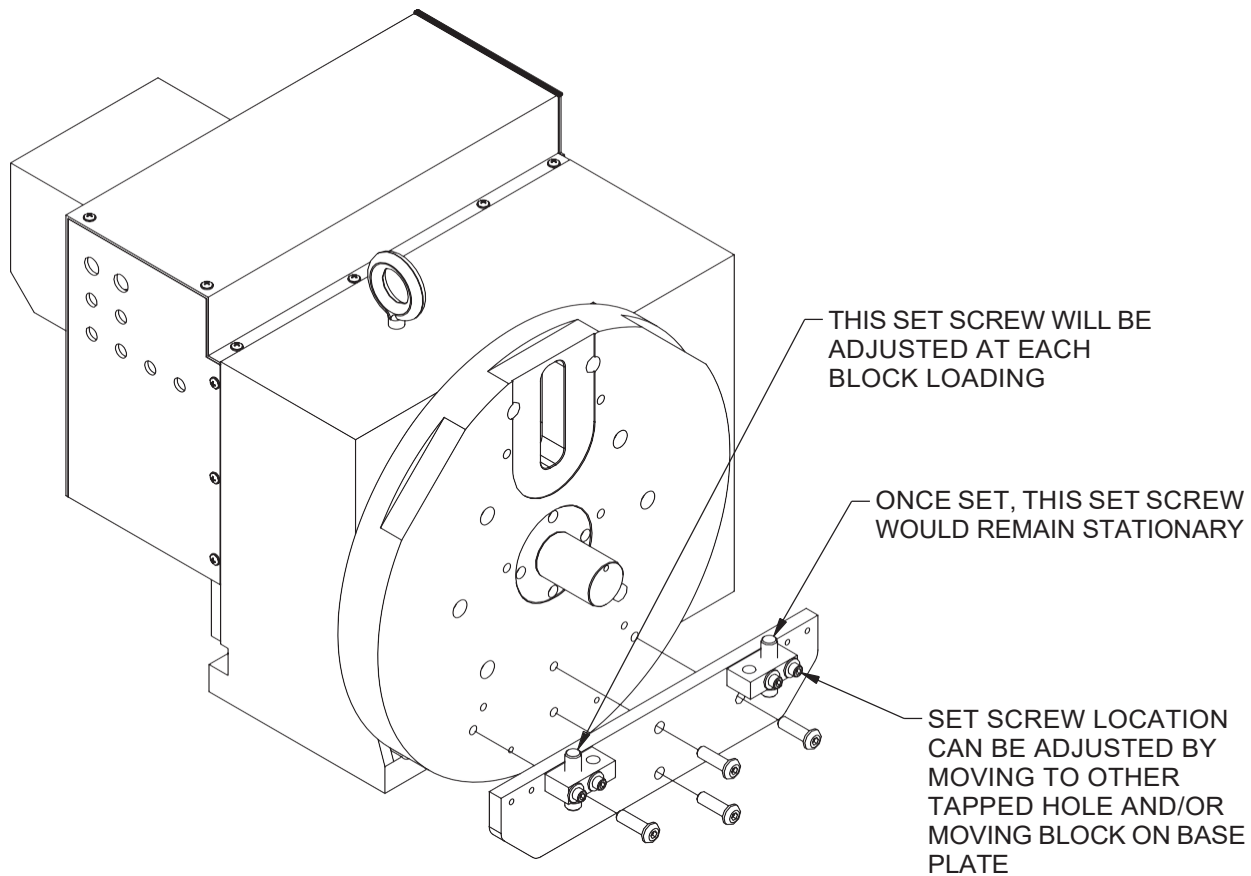
**UNIVERSAL PAN RAIL ALIGNMENT FIXTURE ASSEMBLY
OVERHEAD CAM BLOCKS
4TH AXIS FIXTURE**



650-3-84 OVERHEAD CAM BLOCK FIXTURE ASSEMBLY			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	2	650-3-84C	PUSH BLOCK
2	4	MF-17	1/4-20UNC x 1-1/2" LG. S.H.C.S.
3	2	650-3-84D	1/2-13UNC x 2" LG. SOCKET FLAT POINT SET SCREW
4	1	650-3-84A	FRAME (MACHINING), V-BLOCK STYLE (STANDARD WIDTH) PAN RAIL ALIGNMENT FIXTURE
5	4	MF-176	1/4" FLAT WASHER
6	1	650-3-84E	FRAME, Y-BLOCK STYLE (STANDARD), PAN RAIL ALIGNMENT FIXTURE
7	4	MF-97C	3/8-16UNC x 1-1/4" LG. Hexagon Socket Button Head Cap Screw
8	2	MF-171	1/2-13UNC HEX JAM NUT
9	1	650-3-84F	FRAME (MACHINING), V-BLOCK STYLE (WIDE CLEARANCE) PAN RAIL ALIGNMENT FIXTURE
10	1	650-3-84G	FRAME, Y-BLOCK STYLE (EXTENDED), PAN RAIL ALIGNMENT FIXTURE
11	1	650-3-84p	SPACER, PAN RAIL FIXTURE - 4TH AXIS FIXTURE
12	4	650-3-84T	3/8-16UNC x 1-3/4" LG. SOCKET BUTTON HEAD CAPSCREW
13	6	MF-22	S.H.C.S.5/16 - 18 UNC - 3/4
14	1	650-3-84Q	PISTON CAP, SPECIAL 1" EXTENDED, TAILSTOCK - 4TH AXIS FIXTURE
15	1	650-3-84R	CUSHION, SPECIAL EXTENDED, TAILSTOCK - 4TH AXIS FIXTURE
16	1	650-3-84M	SPACER PLATE (MACHINING), HEADSTOCK, LKQ BLOCK SELECTION - 4TH AXIS FIXTURE

650-3-84 Overhead Cam Block Fixture Setup





650-3-84 OVERHEAD CAM BLOCK FIXTURE INSTALLATION AND OPERATING INSTRUCTIONS Y-BLOCK APPLICATIONS

INSTALLATION: LOCATE THE 650-3-84E BASE PLATE ONTO THE 650-3-62B INDEXER FACEPLATE USING (4) EXISTING 3/8-16UNC TAPPED HOLES IN FACEPLATE. FASTEN BASE PLATE USING (4) MF-97C SOCKET BUTTONHEAD SCREWS.

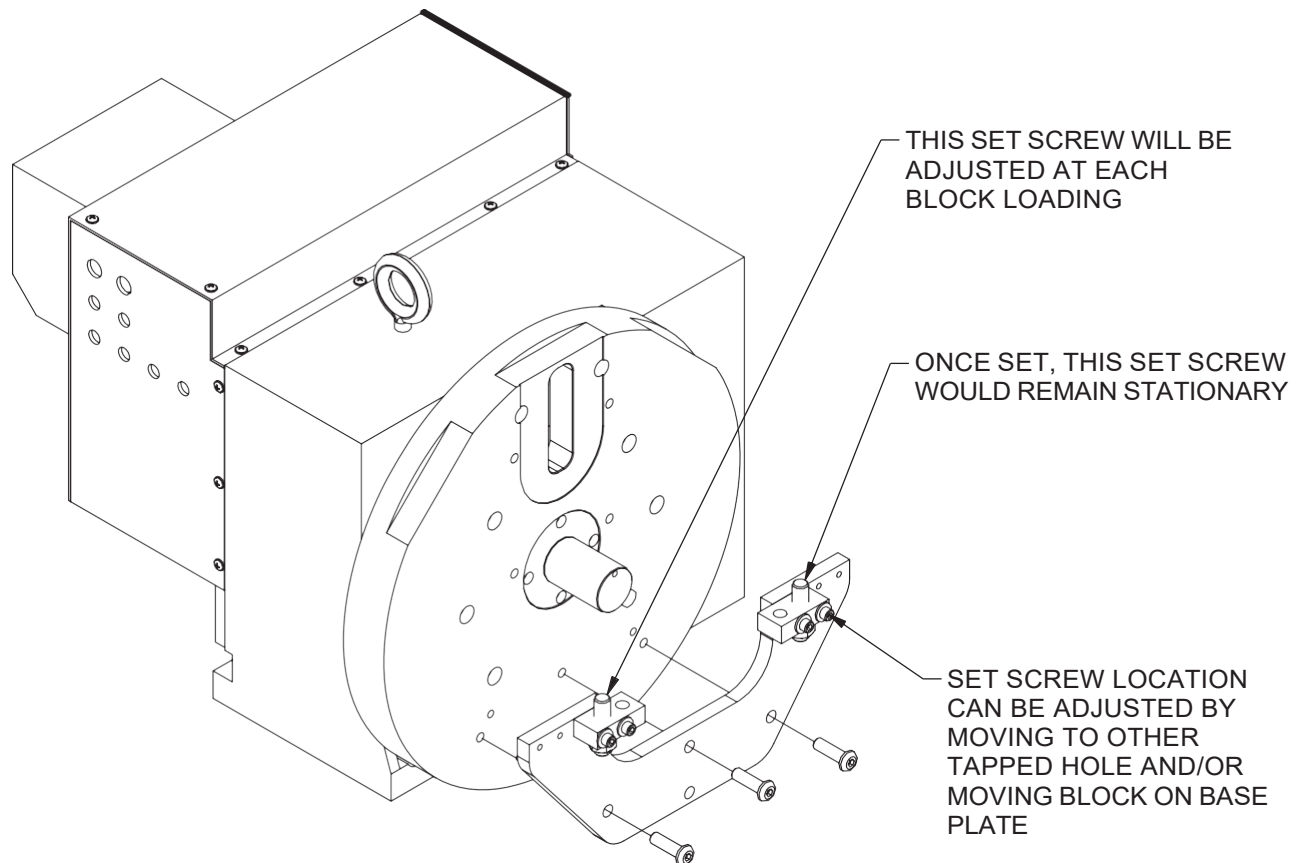
OPERATING: THIS FIXTURE LOCATES THE PAN RAILS OF OVERHEAD CAM BLOCKS USING (2) 650-3-84D FLAT POINT SET SCREWS TO LEVEL THE BLOCK.

INSTALL THE BLOCK USING THE APPROPRIATE MAIN LOCATORS WITH THE INDEXER SET AT 0 DEGREES.

WITH THE MF-171 HEX NUTS LOOSE, ADJUST THE 650-3-84D SET SCREWS TO CONTACT THE PAN RAIL OF THE BLOCK. MULTIPLE MOUNTING HOLES ARE PROVIDED TO ALTER THE LOCATION OF THE 650-3-84C PUSH BLOCKS AND THE SET SCREWS CAN BE MOVED TO EITHER HOLE TO FIT DIFFERENT BLOCKS.

ONCE THE BLOCK IS LEVEL AND THE SET SCREWS ARE BOTH CONTACTING THE PAN RAILS, TIGHTEN THE MF-171 HEX NUTS, CHECK THE BLOCK FOR LEVEL, AND MACHINE.

TO UNLOAD THIS BLOCK AND LOAD ANOTHER BLOCK OF THE SAME STYLE:
LOOSEN THE HEX NUT AND SET SCREW NEAREST TO THE OPERATOR. REMOVE THE BLOCK AND INSTALL THE NEXT BLOCK. ROTATE THIS BLOCK TO CONTACT THE SET SCREW TO THE REAR OF THE FACEPLATE (FURTHEST FROM THE OPERATOR). ADJUST FRONT SET SCREW TO CONTACT THE BLOCK AND TIGHTEN THE HEX NUT. IT IS ADVISABLE TO CHECK THE BLOCK FOR LEVEL DUE TO THE POSSIBILITY OF VARIATION BETWEEN BLOCKS.



650-3-84 OVERHEAD CAM BLOCK FIXTURE INSTALLATION AND OPERATING INSTRUCTIONS V-BLOCK APPLICATIONS

INSTALLATION: LOCATE THE 650-3-84A BASE PLATE ONTO THE 650-3-62B INDEXER FACEPLATE USING (4) EXISTING 3/8-16UNC TAPPED HOLES IN FACEPLATE. FASTEN BASE PLATE USING (4) MF-97C SOCKET BUTTONHEAD SCREWS.

OPERATING: THIS FIXTURE LOCATES THE PAN RAILS OF V-STYLE OVERHEAD CAM BLOCK USING (2) 650-3-84D FLAT POINT SET SCREWS TO LEVEL THE BLOCK.

INSTALL THE BLOCK USING THE APPROPRIATE MAIN LOCATORS WITH THE INDEXER SET AT 0 DEGREES.

WITH THE MF-171 HEX NUTS LOOSE, ADJUST THE 650-3-84D SET SCREWS TO CONTACT THE PAN RAIL OF THE BLOCK. MULTIPLE MOUNTING HOLES ARE PROVIDED TO ALTER THE LOCATION OF THE 650-3-84C PUSH BLOCKS AND THE SET SCREWS CAN BE MOVED TO EITHER HOLE TO FIT DIFFERENT BLOCKS.

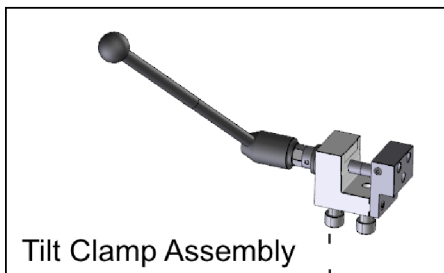
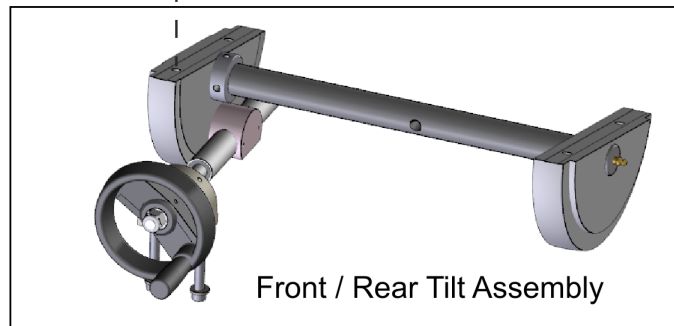
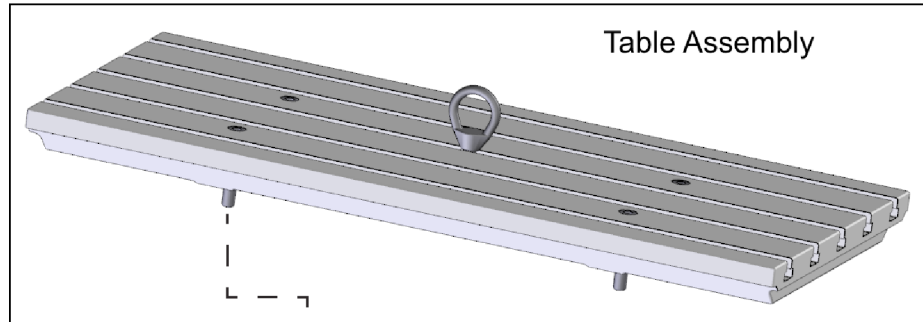
ONCE THE BLOCK IS LEVEL AND THE SET SCREWS ARE BOTH CONTACTING THE PAN RAILS, TIGHTEN THE MF-171 HEX NUTS, CHECK THE BLOCK FOR LEVEL, AND MACHINE.

TO UNLOAD THIS BLOCK AND LOAD ANOTHER BLOCK OF THE SAME STYLE:
LOOSEN THE HEX NUT AND SET SCREW NEAREST TO THE OPERATOR. REMOVE THE BLOCK AND INSTALL THE NEXT BLOCK. ROTATE THIS BLOCK TO CONTACT THE SET SCREW TO THE REAR OF THE FACEPLATE (FURTHEST FROM THE OPERATOR). ADJUST FRONT SET SCREW TO CONTACT THE BLOCK AND TIGHTEN THE HEX NUT. IT IS ADVISABLE TO CHECK THE BLOCK FOR LEVEL DUE TO THE POSSIBILITY OF VARIATION BETWEEN BLOCKS.

Cylinder Head Surfacing Fixture

7209M Leveling Table Sections

7209M Leveling Table Sections



Tensioner Assembly

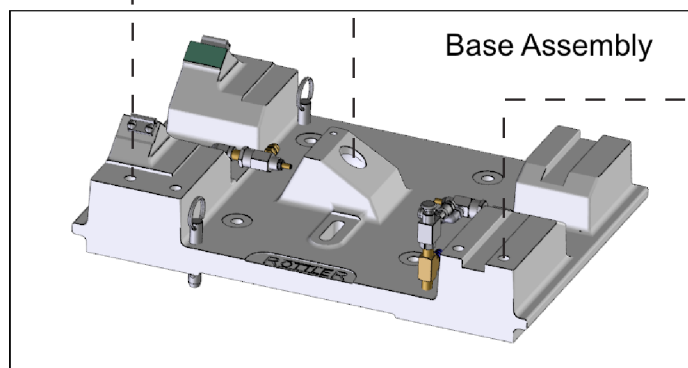
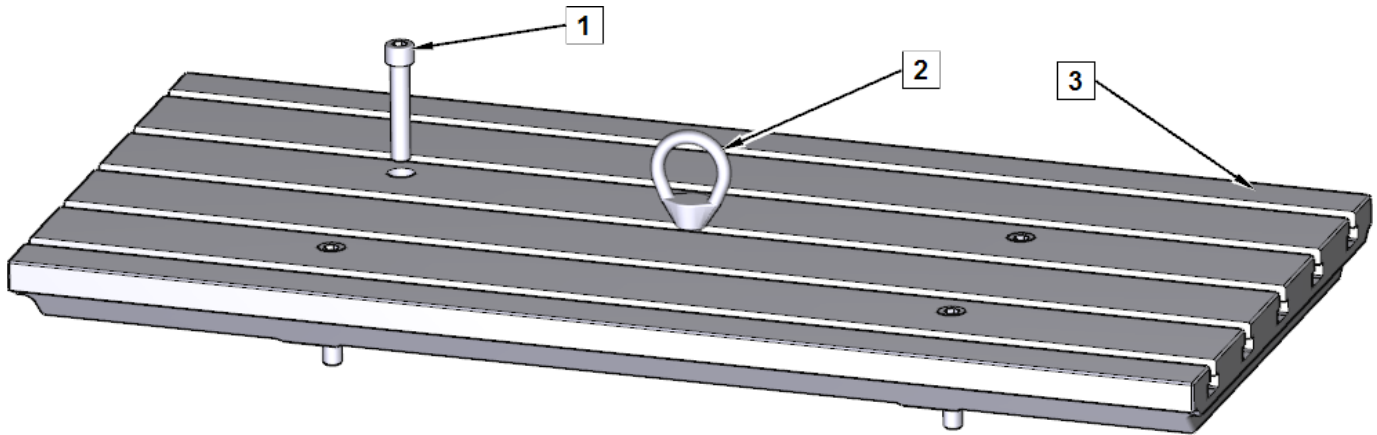
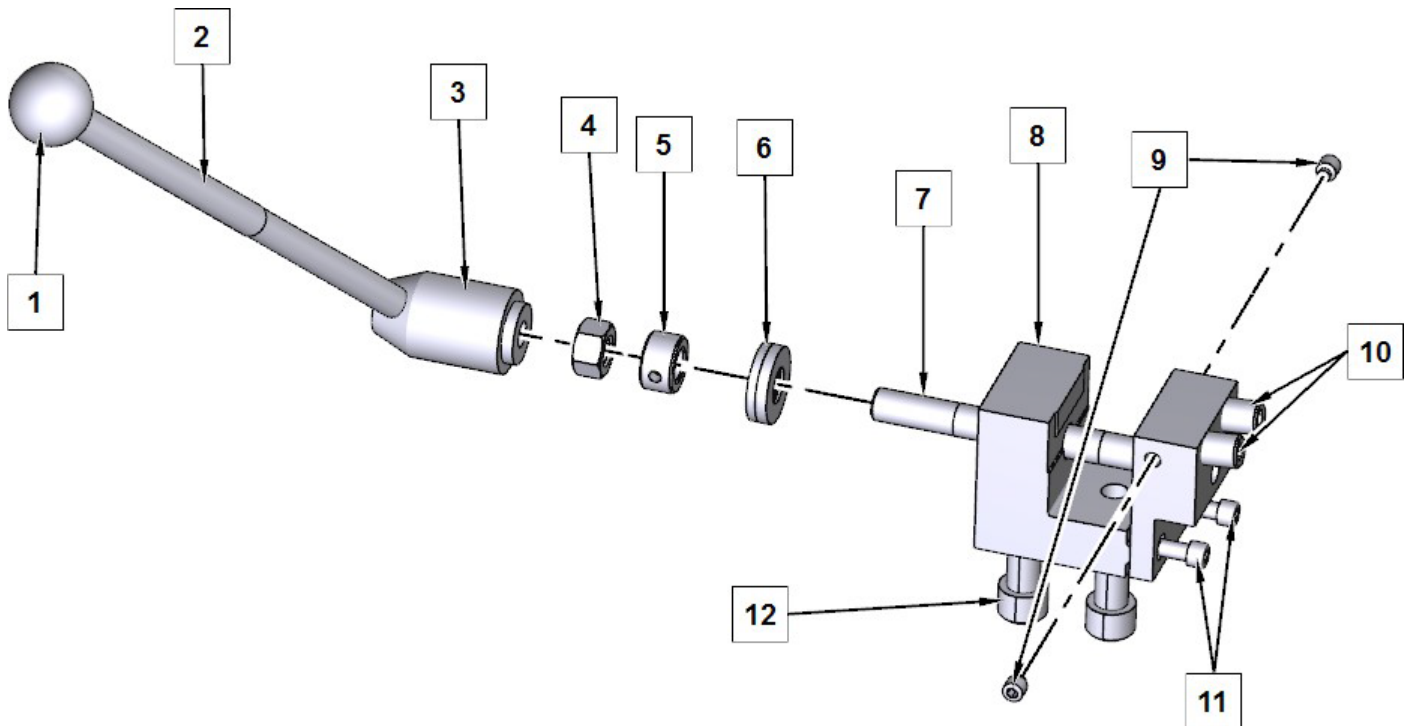


Table Section Parts



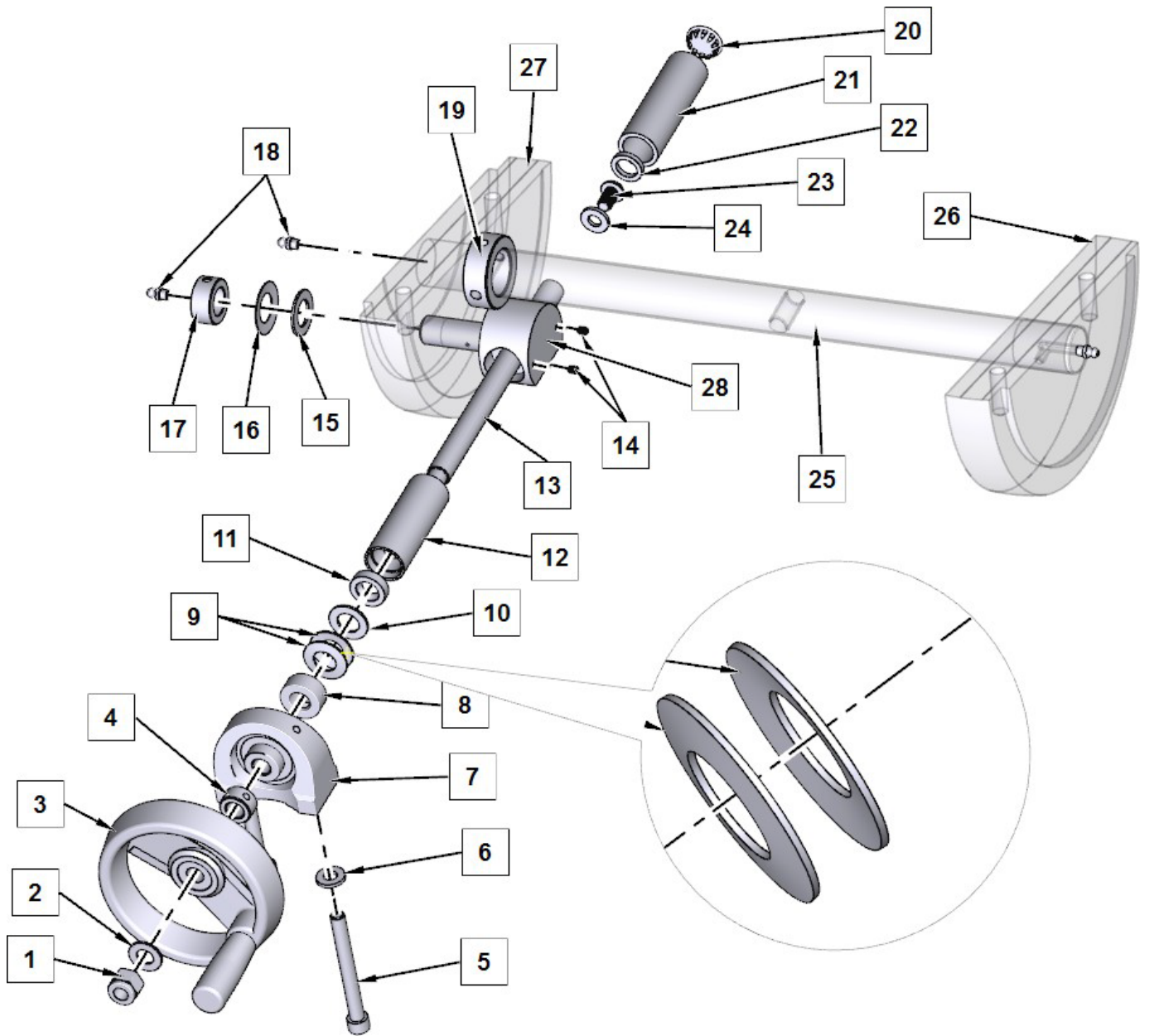
ITEM	PART #	DESCRIPTION
1	MF-45	SOCKET HEAD CAPSCREW 1/2-13 X 2"
2	502-3-13	EYE, LIFTING
3	7207C	TABLE, DUAL AXIS HEAD FIXTURE

Tilt Clamp Section Parts



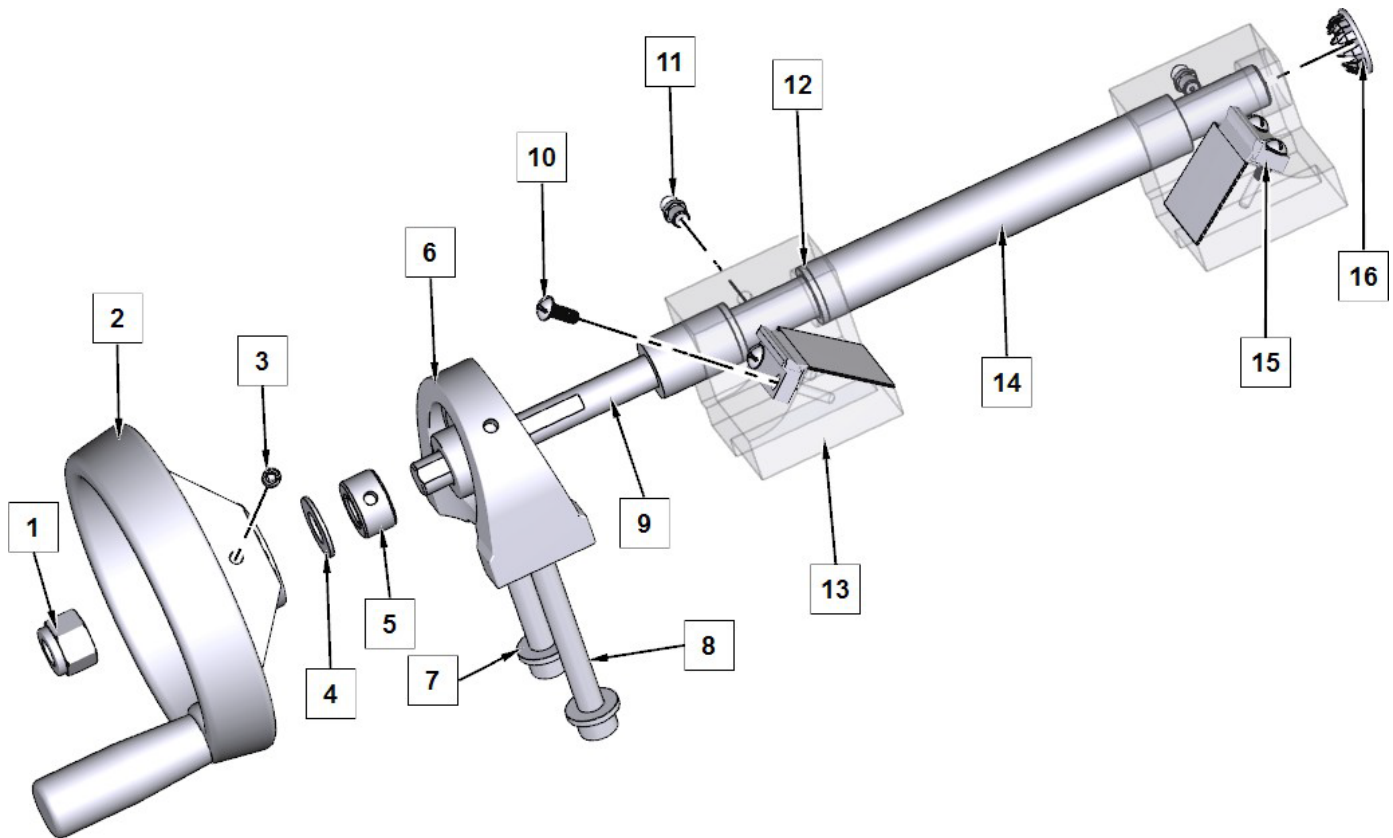
ITEM	PART #	DESCRIPTION
1	514-2-39E	KNOB, ADJUSTABLE HANDLE
2	514-2-39B	EXTENDER, ADJUSTABLE HANDLE
3	514-2-39D	HANDLE,ADJUSTABLE-CLAMP STOP
4	MF-165	HEX NUT 1/2-13 NC
5	7209J	COLLAR, 1/2" SHAFT
6	7209E	WASHER, SPHERICAL
7	7207Z	SHAFT, JOURNAL CLAMP
8	7210J	CLAMP BLOCK, JOURNAL CLAMP
9	504-29-36	SCREW, SET - BRASS TIPPED 5/16-18NC X 5/16"
10	7209B	SCREW, SET 1/2-20UNF X 3/4" (BRASS TIPPED)
11	MF-12	SOCKET HEAD CAP SCREW 1/4-20 X 1/2"
12	MF-45	SOCKET HEAD CAP SCREW 1/2-13 X 2"

Front / Rear Tilt Section Parts



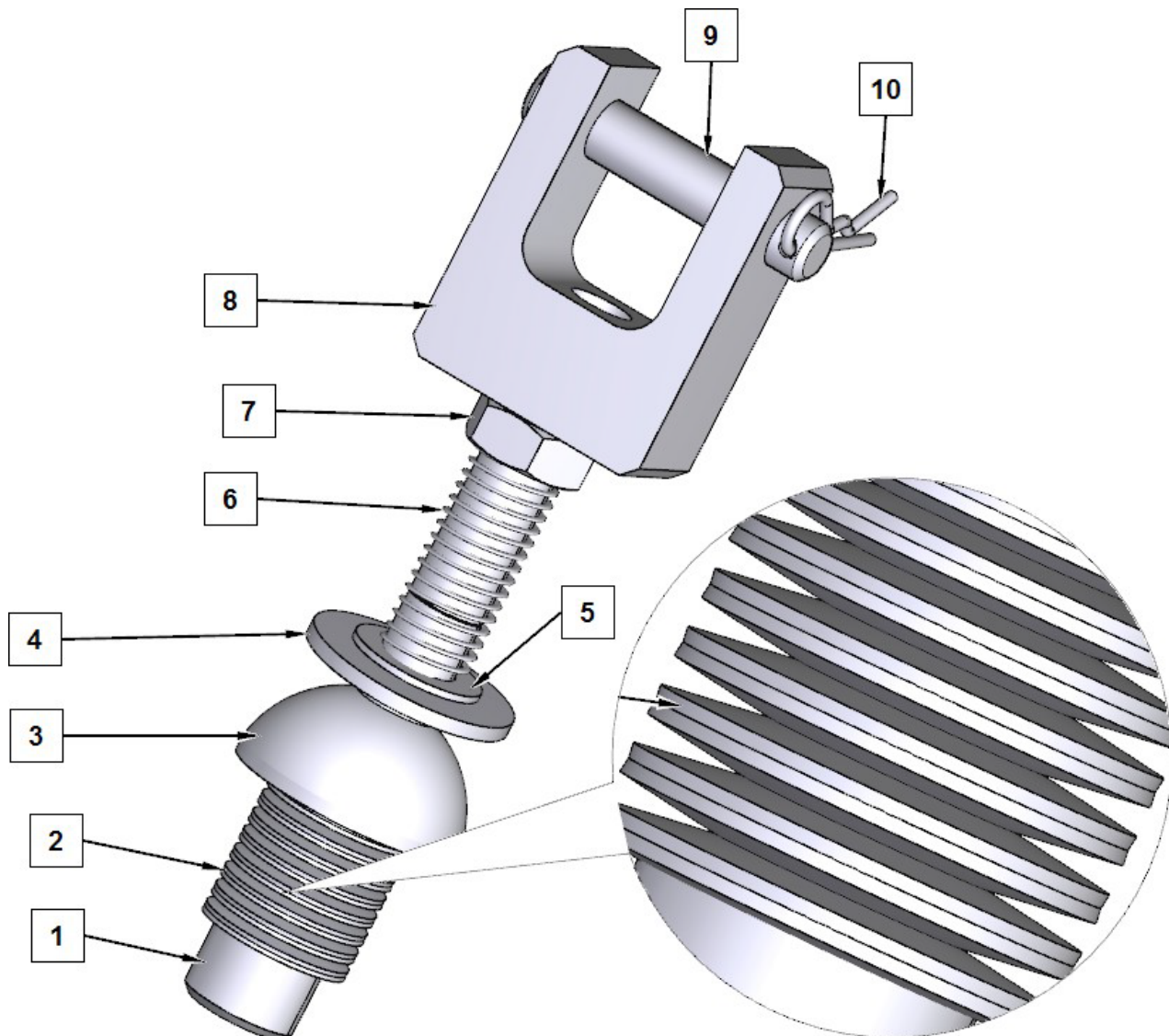
ITEM	PART #	DESCRIPTION
1	MF-186	NYLOCK NUT 1/2-13 NC
2	100-19	WASHER, THRUST
3	7201M	HANDWHEEL
4	7209J	COLLAR, 1/2" SHAFT
5	MF-36A	SOCKET HEAD CAP SCREW 3/8-16 X 3 1/2"
6	100-28-32	WASHER, 3/32" THICK
7	7201D	BLOCK, PILLOW LEVEL ADJUST
8	7199E	COLLAR, SUPPORT BLOCK (5/8" DIA)
9	514-7-21	WASHER, BELLEVILLE
10	514-7-20	WASHER, THRUST
11	7209F	SEAL, PIVOT NUT TUBE
12	7201Y	TUBE, SEALED-PIVOT NUT
13	7209Q	SHAFT, FRONT/REAR TABLE TILT
14	MF-52	SOCKET SET SCREW CUP POINT 10-24 X 1/4"
15	514-2-90	WASHER, THRUST
16	7209K	WASHER, BELLEVILLE-PIVOT NUT
17	7201X	COLLAR, PIVOT NUT
18	MF-189	1/4-28 STRAIGHT LUBE GREASE FITTING
19	7207X	COLLAR, CLAMP BAR-1 1/4"
20	506-3-1	PLUG, SNAP IN HOLE-7/8"
21	7201T	TUBE, CAPPED-PIVOT NUT
22	514-7-35	O RING, LEVELING TABLE
23	MF-97	SOCKET BUTTON HEAD SCREW 3/8-16 X 5/8"
24	100-28-32	WASHER, 3/32"
25	7207V	BAR, CLAMP
26	7207J	JOURNAL, RIGHT
27	7207H	JOURNAL, LEFT

Left / Right Tilt Section Parts



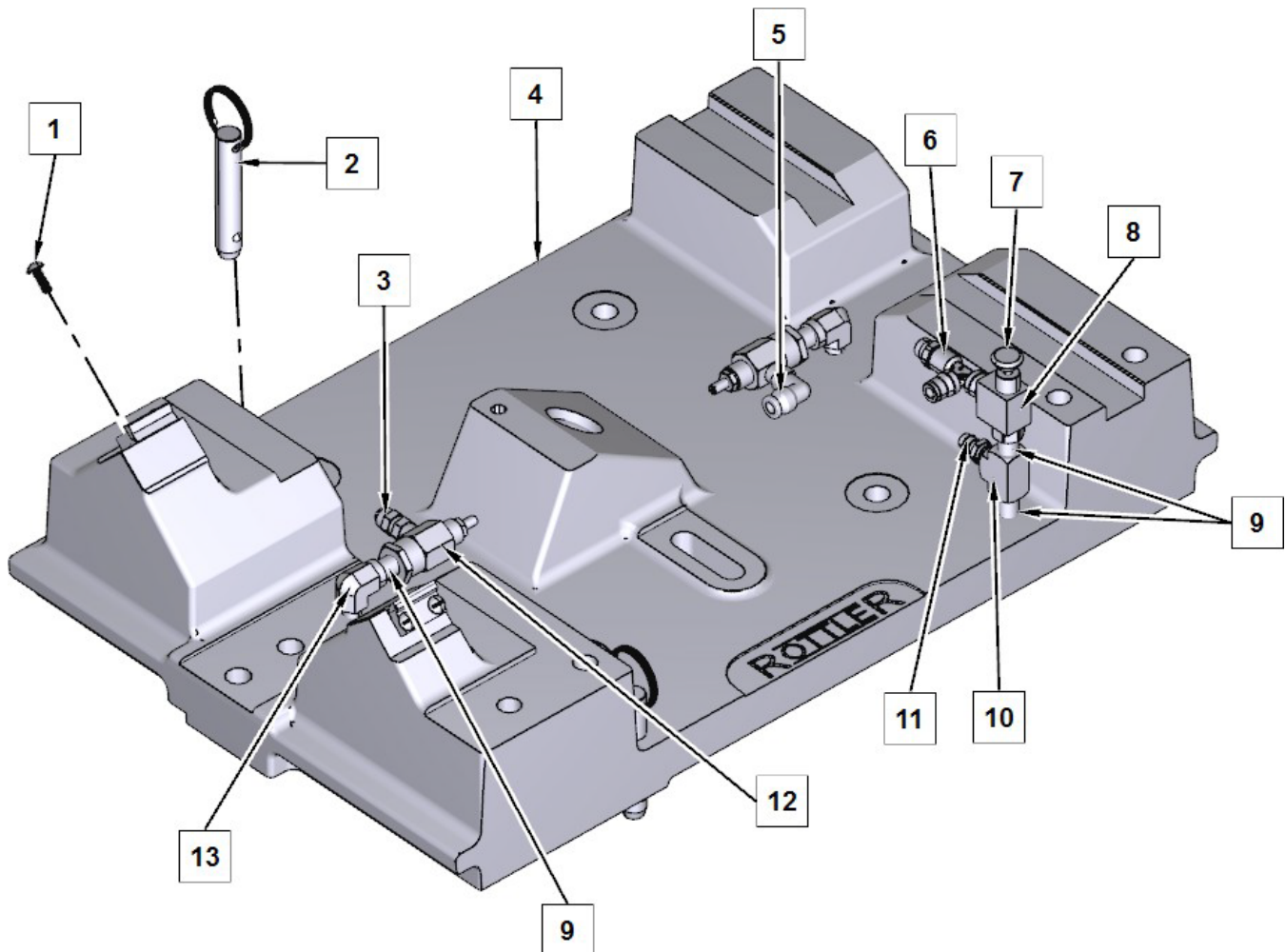
ITEM	PART #	DESCRIPTION
1	MF-186	NYLOCK NUT 1/2-13 NC
2	7201M	HANDWHEEL
3	MF-60	SOCKET SET SCREW CUP POINT 1/4-20 X 1/4"
4	100-19	WASHER, THRUST
5	7209J	COLLAR, 1/2" SHAFT
6	7201D	BLOCK, PILLOW LEVEL ADJUST
7	100-28-32	WASHER, 3/32"
8	MF-36A	SOCKET HEAD CAP SCREW 3/8-16 X 3 1/2"
9	7207M	SHAFT, LEFT/RIGHT TILT
10	MF-111	ROUND HEAD MACHINE SCREW 10-24 X 1/2"
11	MF-189	1/4-28 STRAIGHT LUBE GREASE FITTING
12	7209H	BUMPER, LEFT/RIGHT PIVOT
13	7222	BLOCK, FRONT BEARING
14	7207N	COVER, LEFT/RIGHT TILT SHAFT
15	7198Y	WIPER, JOURNAL
16	506-3-1	PLUG, SNAP IN HOLE-7/8"

Tensioner Section Parts



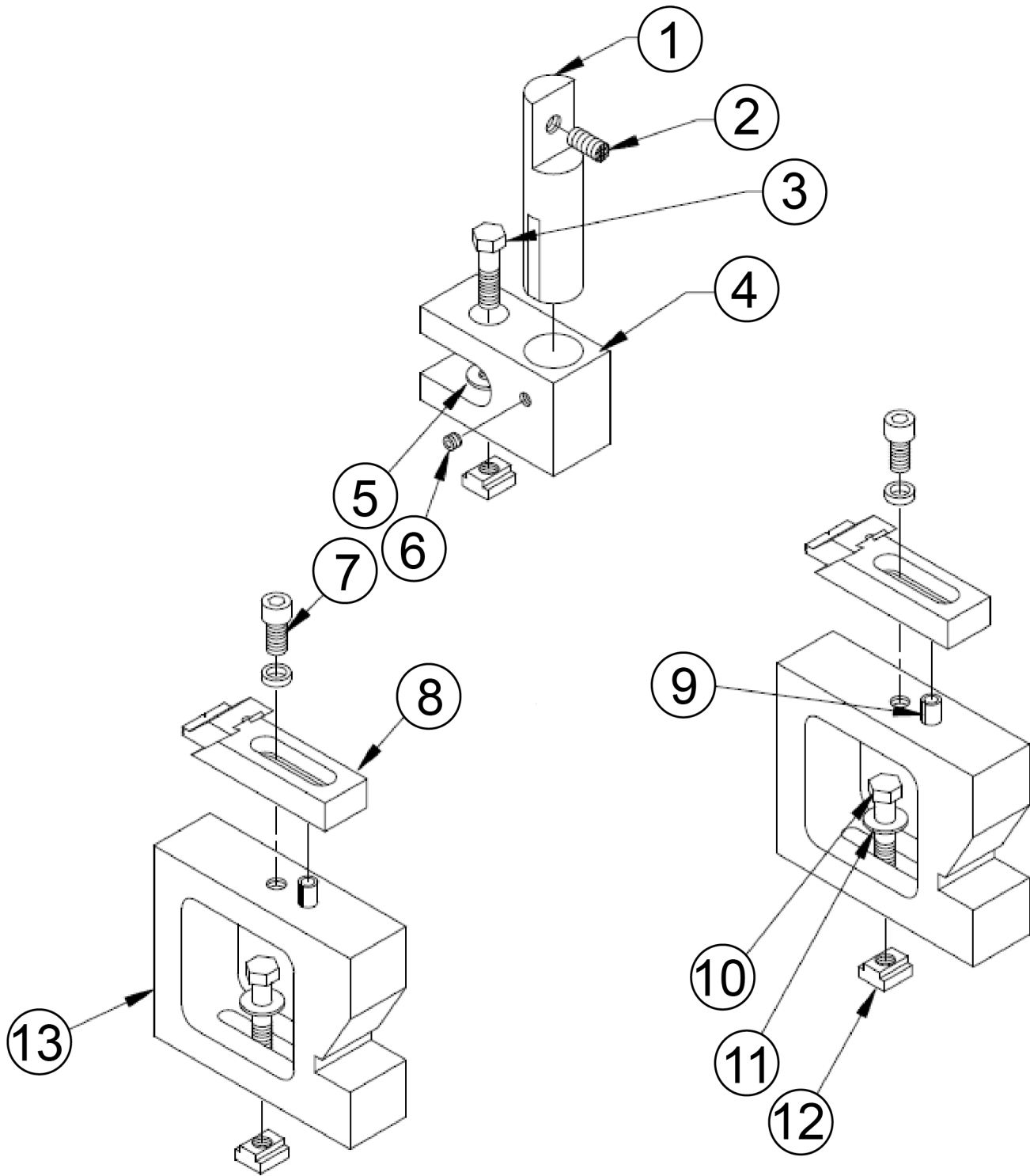
ITEM	PART #	DESCRIPTION
1	7209W	SCREW, CLAMP BAR
2	514-7-21	WASHER, BELLEVILLE
3	7209U	WASHER, SPHERICAL-HOLD DOWN
4	MF-181	FLAT WASHERS 5/8"
5	514-7-20	WASHER, THRUST
6	100-28-20C	SPRING, HOLD DOWN
7	MF-173	HEX JAM NUT 5/8-11 NC
8	7209S	ROD END, CLAMP BAR
9	7210B	PIN, CLEVIS
10	7232K	HITCH PIN CLIP

Base Section Parts



ITEM	PART #	DESCRIPTION
1	MF-111	ROUND HEAD MACHINE SCREW 10-24 X 1/2"
2	7210C	PIN, GUIDE ROTTLER LEVELING TABLE
3	502-11-16E	CONNECTOR, MALE, 1/4 X 1/8" PT
4	7233	FRAME, TABLE
5	514-4-17E	ELBOW, 90 DEGREE MALE - 1/4" X 1/8" NPT
6	514-4-17X	TEE, RUNNING 1/8-NPT X 1/4
7	502-1-56	PUSHBUTTON
8	514-2-65	VALVE, AIR - LIMIT & STOP
9	502-11-17J	NIPPLE,CLOSE 1/8" MPT
10	502-11-17C	TEE, 1/8 X 1/8"
11	502-1-96A	INSERT, BARBED - HOSE
12	502-11-35A	VALVE, CONTROL - RFC FLO
13	502-11-17R	ELBOW, ST, 1/8 FPT X 1/8 MPT

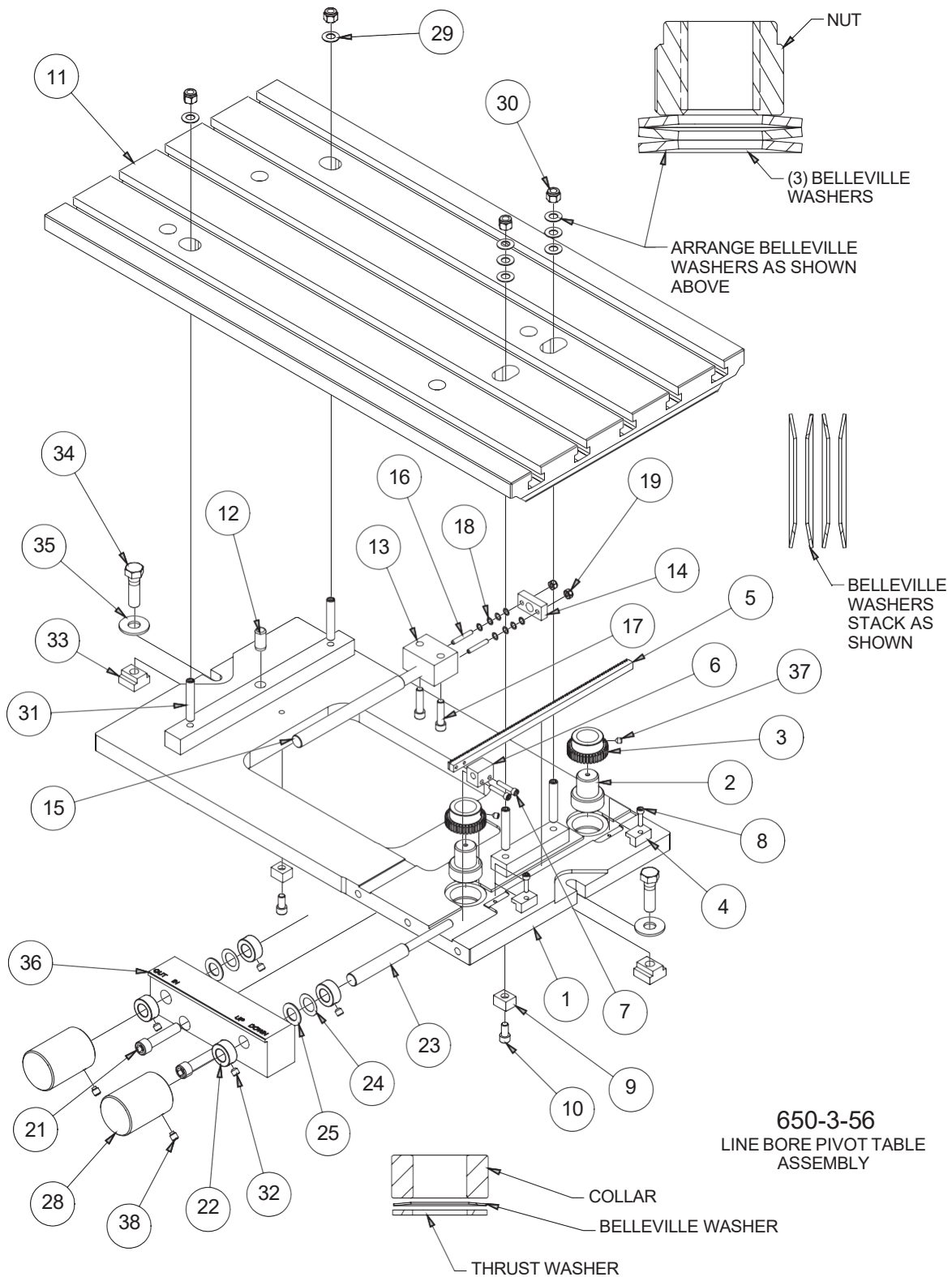
7226G Exhaust and Intake Manifold Surfacing Fixture Parts



ITEM	PART #	DESCRIPTION
1	7226F	PIN, SUPPORT
2	7226M	GRIPPER
3	MF-150A	HEX BOLT 1/2-13 X 1 1/2"
4	7226D	BRACKET, PIN SUPPORT
5	100-19	WASHER, THRUST
6	MF-71A	SOCKET SET SCREW CUP POINT 3/8-16 X 1/2"
7	MF-42	SOCKET HEAD CAP SCREW 1/2-13 X 1"
8	7226H	CLAMP, TOE AND WASHER
9	7226J	PIN, GUIDE-TOE CLAMP
10	MF-149B	HEX BOLT 1/2-13 X 1 3/4"
11	100-19A	WASHER, HARDENED 17/32" ID
12	7137B	NUT,"T"-LEVELING BRACKET
13	7226L	BRACKET, SUPPORT

Block Main Line Boring and Cam Boring Fixtures

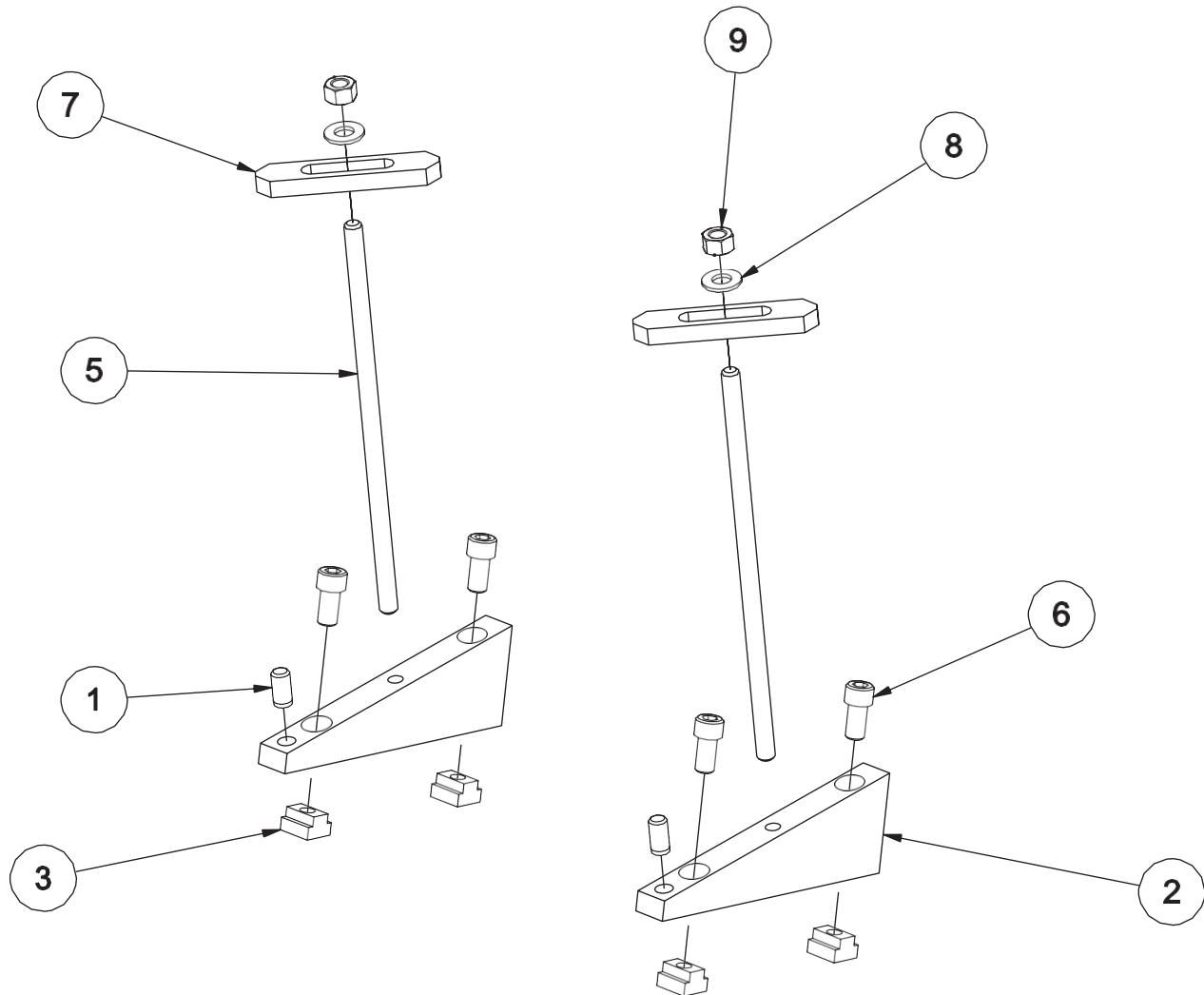
650-3-56 Line Bore Pivot Table Parts



650-3-56
LINE BORE PIVOT TABLE
ASSEMBLY

650-3-56 LINE BORE PIVOT TABLE ASSEMBLY			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	650-3-56C	LINE BORE PIVOT TABLE ASSEMBLY
2	2	650-3-56D	JACK SCREW - PIVOT TABLE
3	2	650-3-56F	GEAR, JACK SCREW - PIVOT TABLE
4	2	650-3-56K	RETAINER, RACK - PIVOT TABLE
5	1	650-3-56V	RACK - PIVOT TABLE
6	1	650-3-56W	THREADED BLOCK - PIVOT TABLE
7	2	MF-6A	10-24UNC x 1" LG. S.H.C.S.
8	2	MF-6	10-24UNC x 3/4" LG. S.H.C.S.
9	2	650-3-9	Key
10	2	MF-21	5/16-18UNC x 5/8" LG. S.H.C.S.
11	1	650-3-56A	TABLE TOP - PIVOT TABLE
12	1	MF-213B	1/2" x 1" LG. DOWEL PIN
13	1	650-3-56N	THREADED BLOCK, PIVOT - PIVOT TABLE
14	1	650-3-56R	LOCK PLATE - PIVOT TABLE
15	1	650-2-29D	SHAFT, ROTATE ADJUST - PIVOT TABLE
16	2	MF-57A	10-24UNC x 1-1/4" LG. SOCKET SET SCREW
17	2	MF-24	5/16-18UNC x 1-1/4" LG. S.H.C.S.
18	8	650-3-56Q	BELLEVILLE SPRING
19	2	MF-186B	10-24UNC HEX NYLOCK NUT
21	2	MF-40A	7/16-14UNC x 2" LG. S.H.C.S.
22	4	7199E	COLLAR 1/2"
23	1	650-3-56U	lift Adjust Shaft
24	2	650-3-56S	Belleville spring Reid BDB-65
25	2	514-7-20	THRUST WASHER
28	2	650-2-29E	HANDLE
29	8	650-2-28P	BELLEVILLE WASHER
30	4	MF-187B	3/8-16UNC NYLOCK NUT
31	4	MF-75B	3/8-16UNC x 2-1/4" LG. SOCKET SET SCREW
32	4	6863	5/16-18 x 5/16" LG. CONE POINT SET SCREW
33	2	650-3-10	TN-5 T-Nut
34	2	MF-137F	1/2-13UNC x 1-3/4" LG. HEX BOLT
35	2	MF-180	1/2" FLAT WASHER
36	1	650-3-56L	CONTROL BLOCK - PIVOT TABLE
37	2	MF-59B	1/4-20UNC x 5/16" CONE POINT SET SCREW
38	2	504-29-36	5/16-18UNC x 5/8" LG. SOCKET HALF DOG SET SCREW

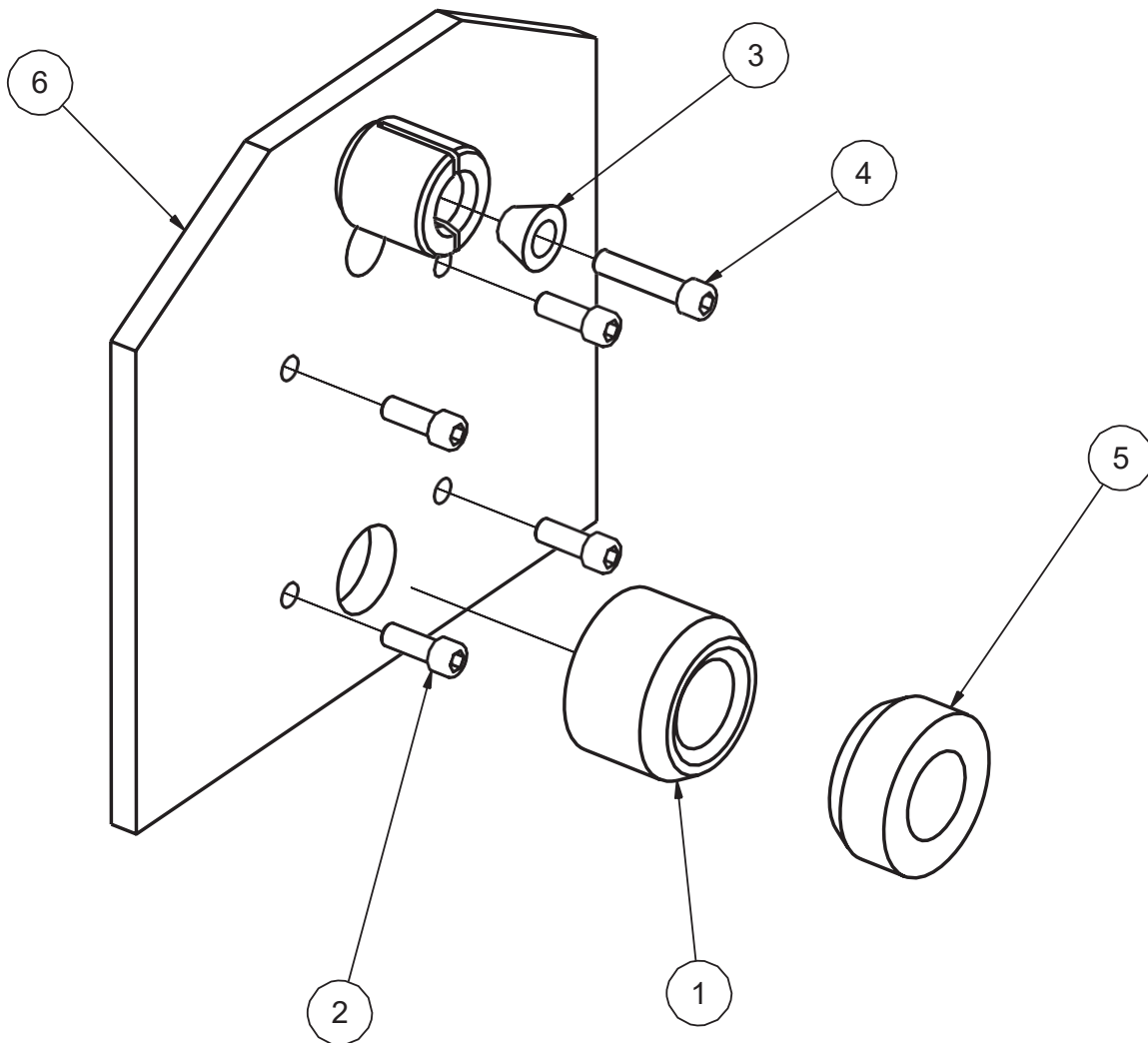
6866 Wedge for Cummins 5.9liter Camshaft Line Boring Parts



6866 15 DEG. WEDGE ASSEMBLY			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	2	MF-213B	1/2 x 1 Dowel Pin
2	2	6866A	15 DEGREE WEDGE CUMMINS DIESEL CAM BORING FIXTURE
3	4	7137B	T-Nut
5	2	6833B	CLAMP ROD 12"
6	4	MF-42	S.H.C.S. 1/2 - 13 UNC - 1
7	2	650-3-57B	CLAMP BAR
8	2	MF-180	1/2" FLAT WASHER
9	2	MF-165	1/2-13UNC HEX NUT

Special Application Fixture

650-3-82 Mopar 5.7L Hemi Fixture Assembly Parts

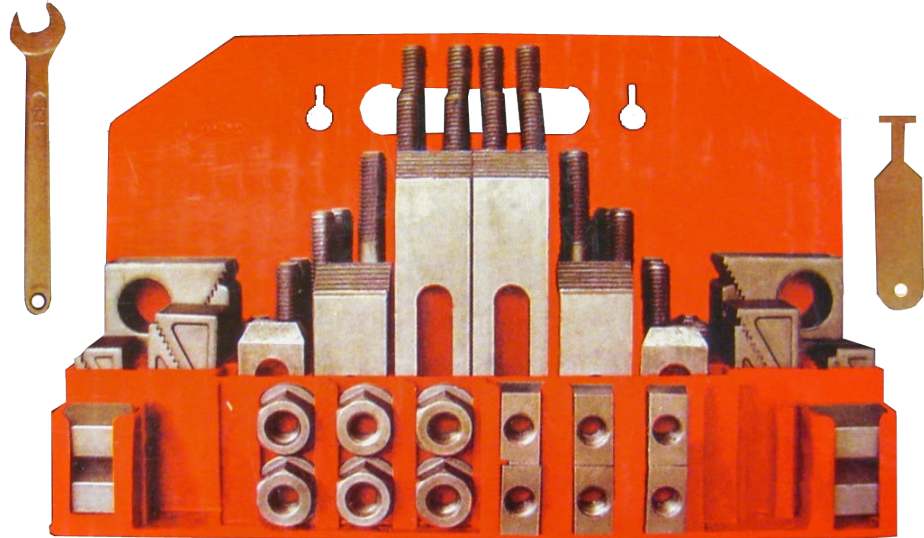


650-3-82 MOPAR 5.7L HEMI FIXTURE ASSEMBLY			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	650-3-82D	LOCATOR, #5 MAIN 1.7509 DIA. BORE, MOPAR 5.7L HEMI - 4TH AXIS FIXTURE
2	4	Mf-31	Socket Head Cap screw 3/8 - 16 UNC - 1
3	1	650-3-70D	CONE WASHER, EXPANDING CAM LOCATOR - AUTO PERFORMANCE FIXTURE
4	1	Mf-33A	Socket Head Cap screw 3/8 - 16 UNC - 1 3/4
5	1	650-3-82E	LOCATOR, #1 MAIN, 1.7509 DIA. BORE, MOPAR 5.7L HEMI - 4TH AXIS FIXTURE
6	1	650-3-82F	ADAPTER PLATE ASSEMBLY, MOPAR 5.7L HEMI - 4TH AXIS FIXTURE

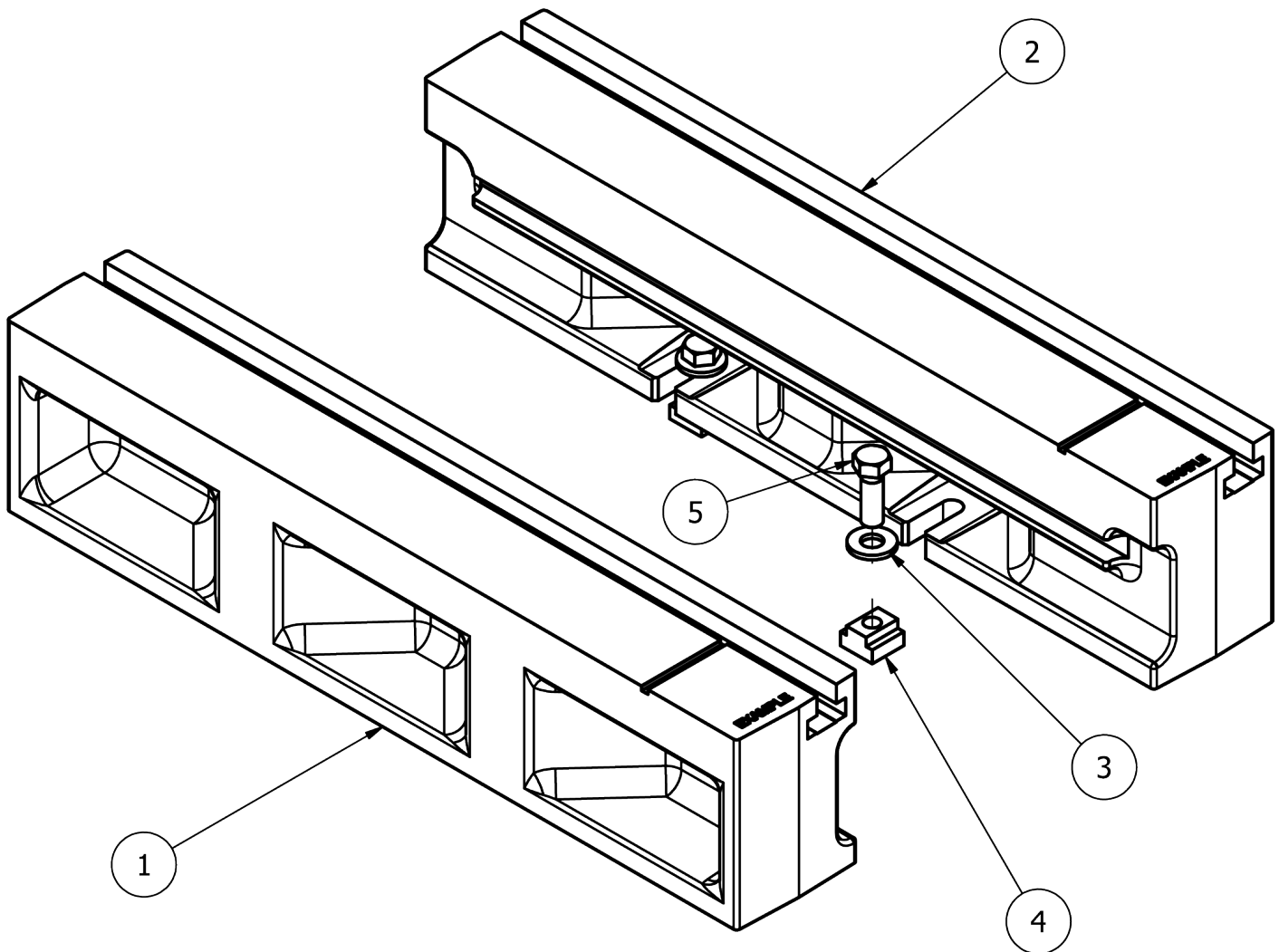
Miscellaneous Accessories

650-3-37 1/2" (12 ϕ 7mm) Universal Clamping Kit

Sold only as complete kit.



7219W 5 ϕ 2" (138 ϕ 08mm) Heavy Duty T-Slot Universal Parallel Parts

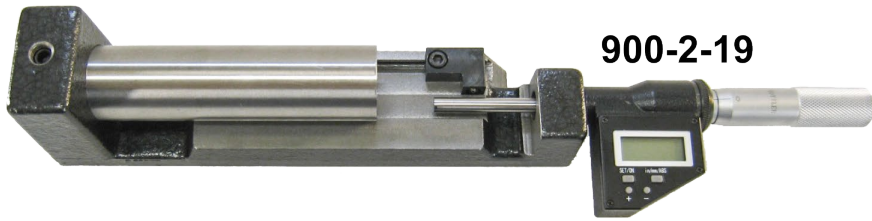
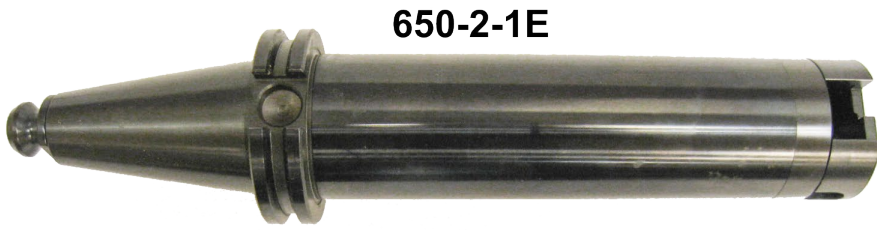


7219W Parts List - 5.19" Parallels

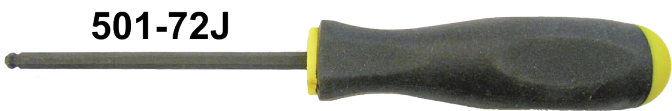
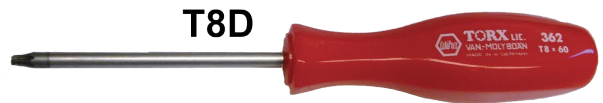
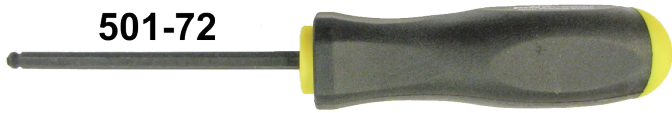
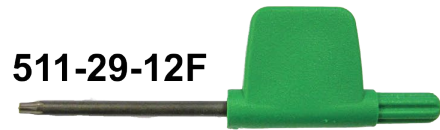
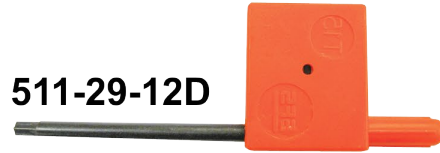
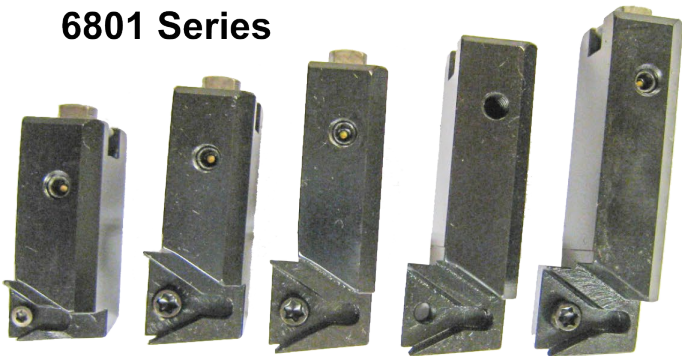
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	7219V	Riser, 5.19" Left Hand
2	1	7219T	Riser, 5.19" Right Hand
3	4	100-19A	Hardened washer 17/32 I.D.
4	4	650-3-10	TN-5 T-Nut
5	4	MF-137A	1/2-13UNC x 1-1/2" LG. HEX BOLT

Tooling for Engine Block Boring and Resleeving

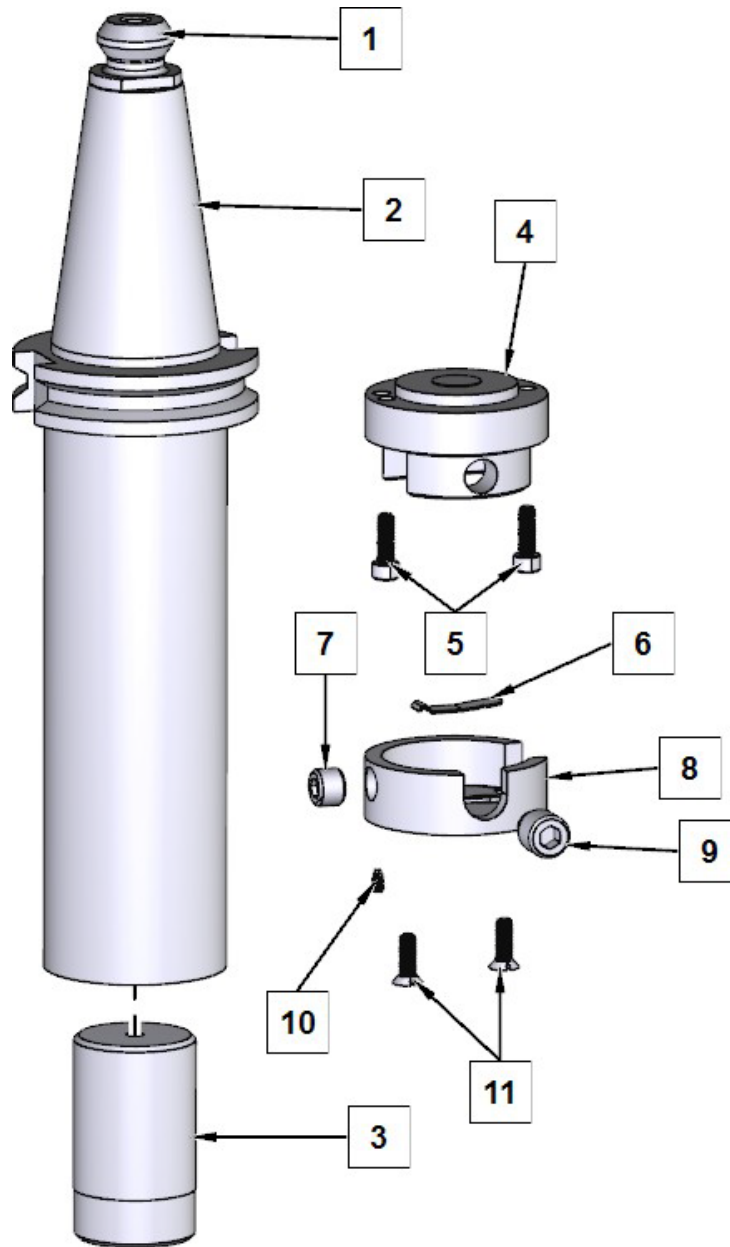
650-2-1D Cutterhead Package Components



6801 Series

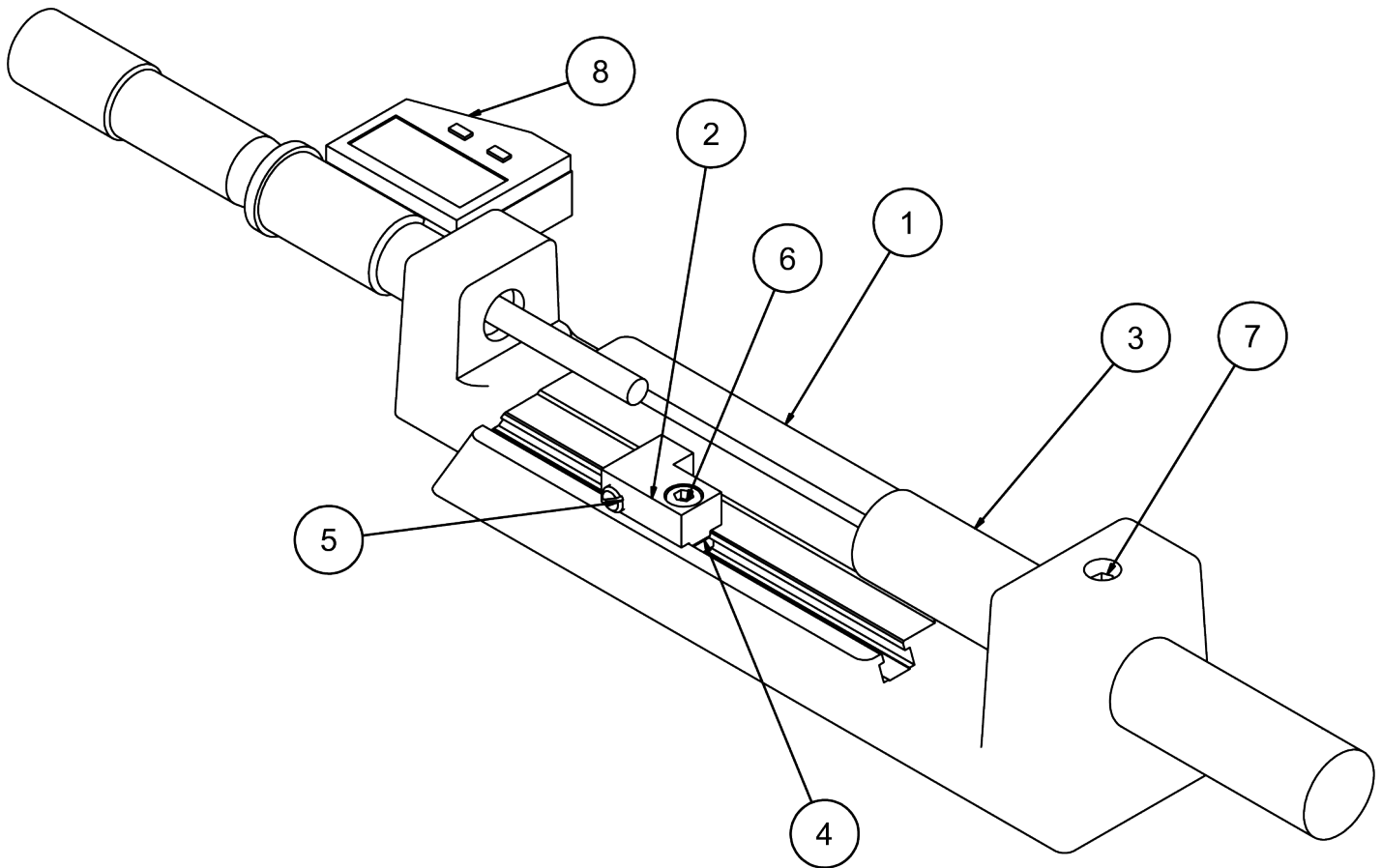


650-2-1E Cutterhead Assembly Parts



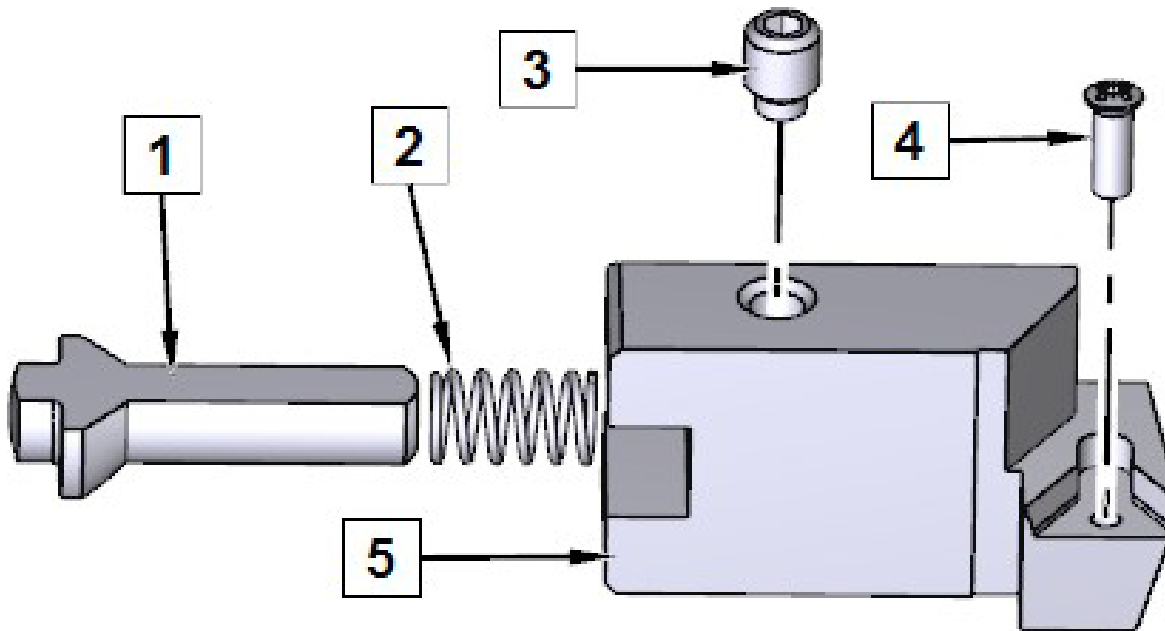
ITEM	PART #	DESCRIPTION
1	650-2-44L	CAT 40 RETENTION KNOB
2	650-2-3N	ADAPTER, 2.0" STUB BAR CAT 40 TAPER (INCH)
3	650-2-5	COUNTERWEIGHT 2.0" STUB BAR
4	650-2-4	BODY, 2.0" STUB BAR
5	650-2-4A	SOCKET HEAD CAP SCREW 8-32 X 1/2"
6	100-1B	SPRING, TOOL LOCK 15/16"
7	502-2-85B	SCREW, SET-INDEX 3/8-40 FINE THREAD
8	650-2-6	CAP, 2.0" STUB BAR
9	501-70C	SCREW, TOOL HOLDER LOCK
10	650-2-6A	SOCKET SET SCREW BRASS TIPPED 4-40 X 3/16"
11	MF-123	FLAT HEAD MACHINE SCREW 8-32 X 1/2"

900-2-19 Micrometer Parts



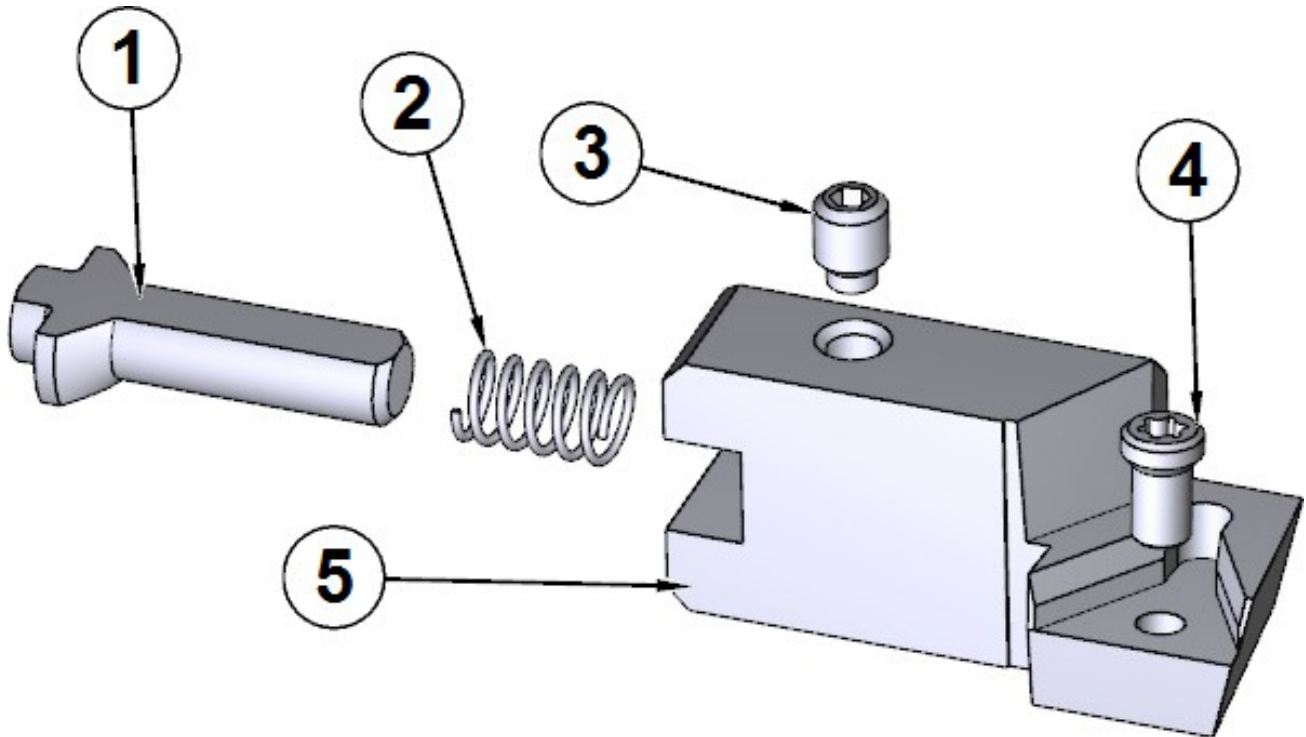
900-2-19 Micrometer Assembly			
ITEM	QTY	PART NUMBE	DESCRIPTION
1	1	502-30-10B	Frame
2	1	502-30-10M	Clamp Block
3	1	502-31-10A	Anvil
4	1	502-30-10J	Square Nut
5	1	502-30-10K	Ball Plunger
6	1	ANSI B18.3 - No. 10 - 24 UNC - 3/8	Hexagon Socket Head Cap Screw
7	1	502-30-10L	Brass Tipped Set Screw
8	1	501-34-2R	Digital Micrometer Head

6801B Insert Holder Parts



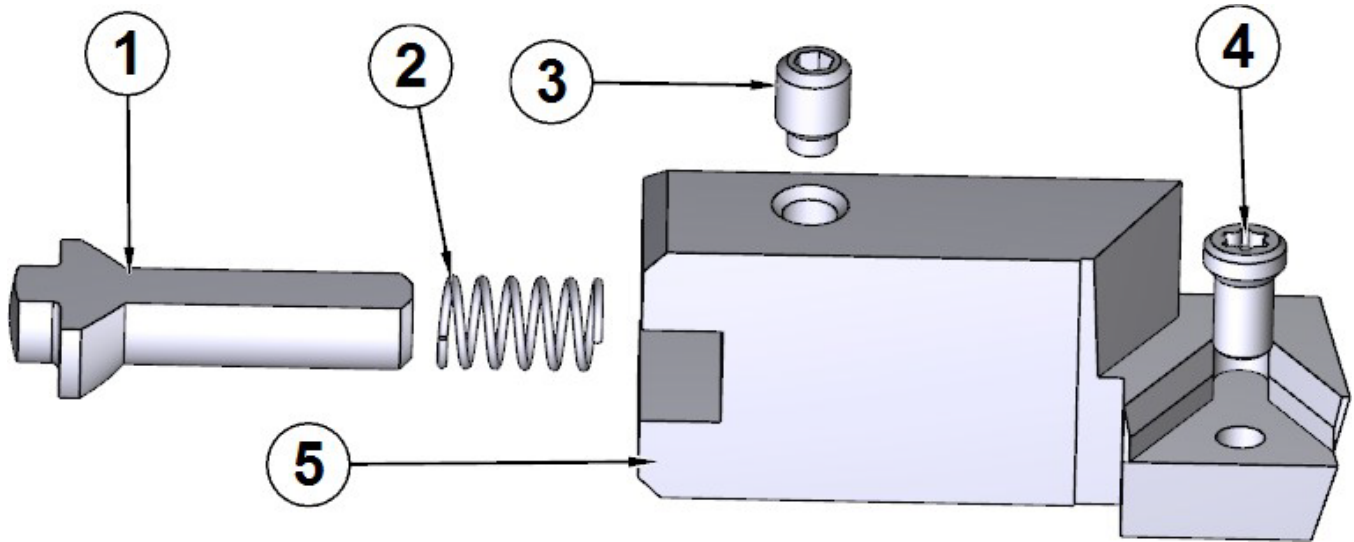
ITEM	PART #	DESCRIPTION
1	100-82-3B	PIN, ADJUSTING LONG
2	100-82-1	SPRING, ADJUSTING PIN
3	100-82-2	SCREW, SET-BRASS GIB - 3/16" LONG
4	511-29-12C	SCREW, TORX M4 X .7 X .315" LONG
5	6800B	TOOLHOLDER, INDEXABLE INSERT- 1/4" TRIANGLE, OFFSET, POSITIVE RAKE

6801C Insert Holder Parts



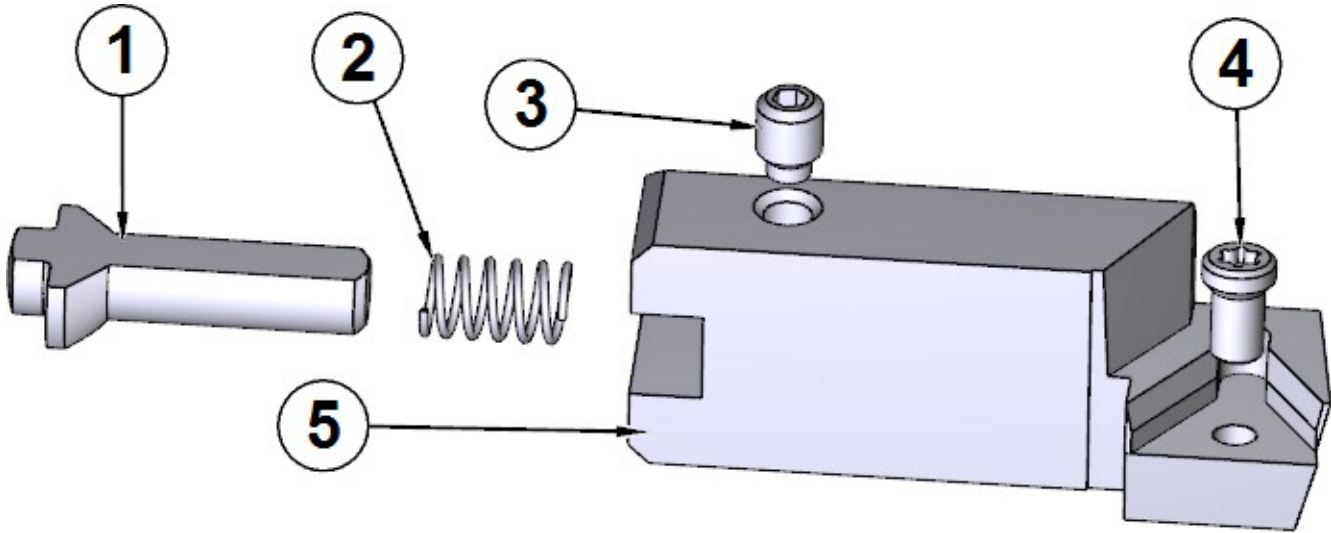
ITEM	PART #	DESCRIPTION
1	100-82-3B	PIN ADJUSTING LONG INDEXABLE INSERT TOOLHOLDER
2	100-82-1	SPRING, ADJUSTING PIN
3	100-82-2	SCREW, SET-BRASS GIB - 3/16" LONG
4	511-29-12C	SCREW, TORX M4 X .7 X .315" LONG
5	6800C	TOOLHOLDER, INDEXABLE INSERT- 3/8" IC TRIANGLE, OFFSET POSITIVE RAKE

6801D Insert Holder Parts



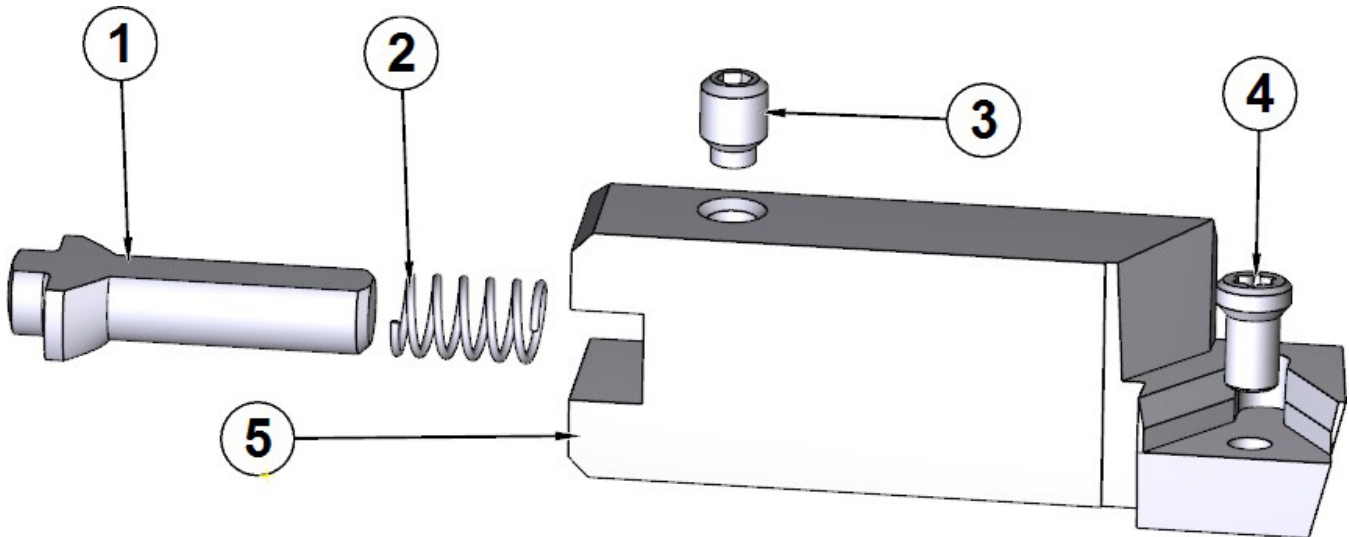
ITEM	PART #	DESCRIPTION
1	100-82-3B	PIN ADJUSTING LONG INDEXABLE INSERT TOOLHOLDER
2	100-82-1	SPRING, ADJUSTING PIN
3	100-82-2	SCREW, SET-BRASS GIB - 3/16" LONG
4	511-29-12C	SCREW, TORX M4 X .7 X .315" LONG
5	6800D	TOOLHOLDER, INDEXABLE INSERT- 3/8" IC TRIANGLE, OFFSET POSITIVE RAKE

6801E Insert Holder Parts



ITEM	PART #	DESCRIPTION
1	100-82-3B	PIN ADJUSTING LONG INDEXABLE INSERT TOOLHOLDER
2	100-82-1	SPRING, ADJUSTING PIN
3	100-82-2	SCREW, SET-BRASS GIB - 3/16" LONG
4	511-29-12C	SCREW, TORX M4 X .7 X .315" LONG
5	6800E	TOOLHOLDER, INDEXABLE INSERT- 3/8" IC TRIANGLE, OFFSET POSITIVE RAKE

6801F Insert Holder Parts



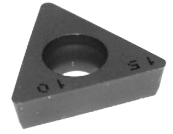
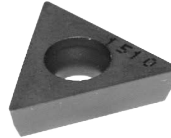
ITEM	PART #	DESCRIPTION
1	100-82-3B	PIN ADJUSTING LONG INDEXABLE INSERT TOOLHOLDER
2	100-82-1	SPRING, ADJUSTING PIN
3	100-82-2	SCREW, SET-BRASS GIB - 3/16" LONG
4	511-29-12C	SCREW, TORX M4 X .7 X .315" LONG
5	6800F	TOOLHOLDER, INDEXABLE INSERT- 3/8" IC TRIANGLE, OFFSET POSITIVE RAKE

650-2-14B Cutterhead Package Components

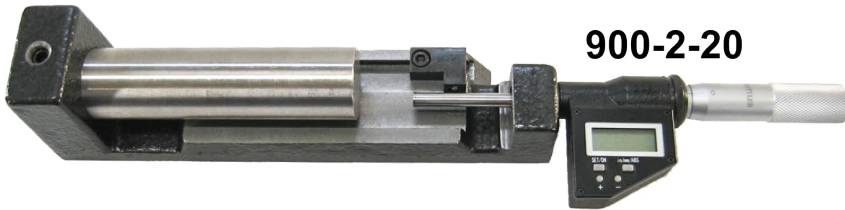
RT321

RT322

650-2-14C



RS322



900-2-20



6260L

6593 Series



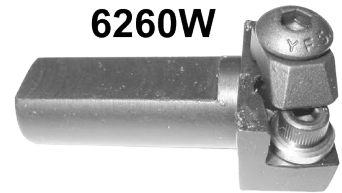
6520 Series



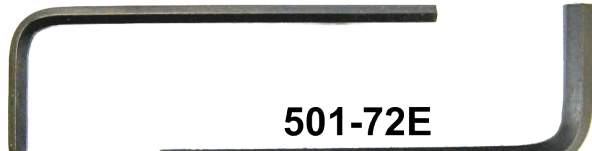
6598M



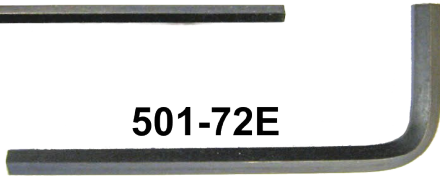
6260W



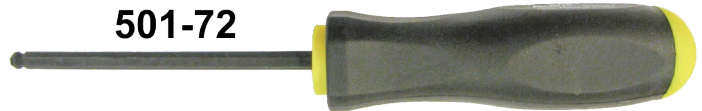
501-72B



501-72E



501-72



501-72J



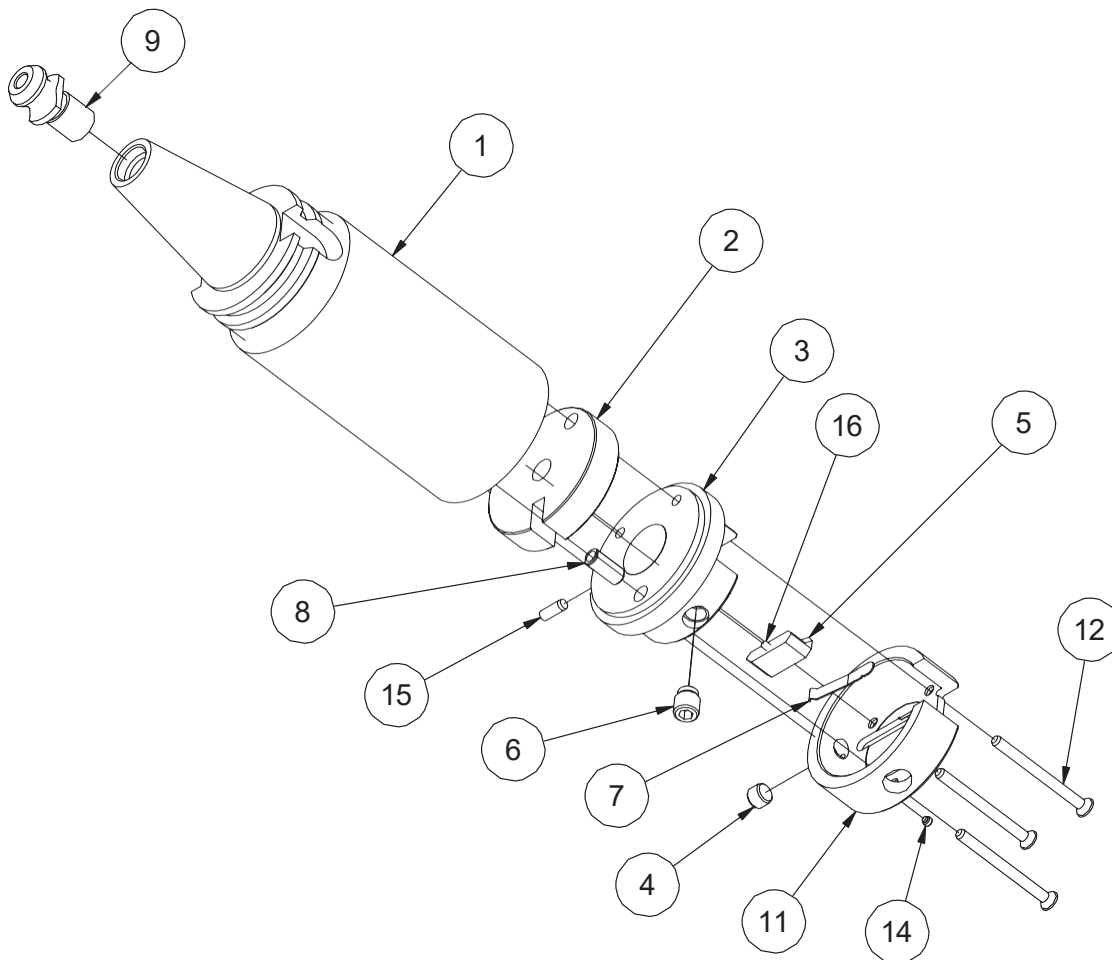
100-24



511-29-12D

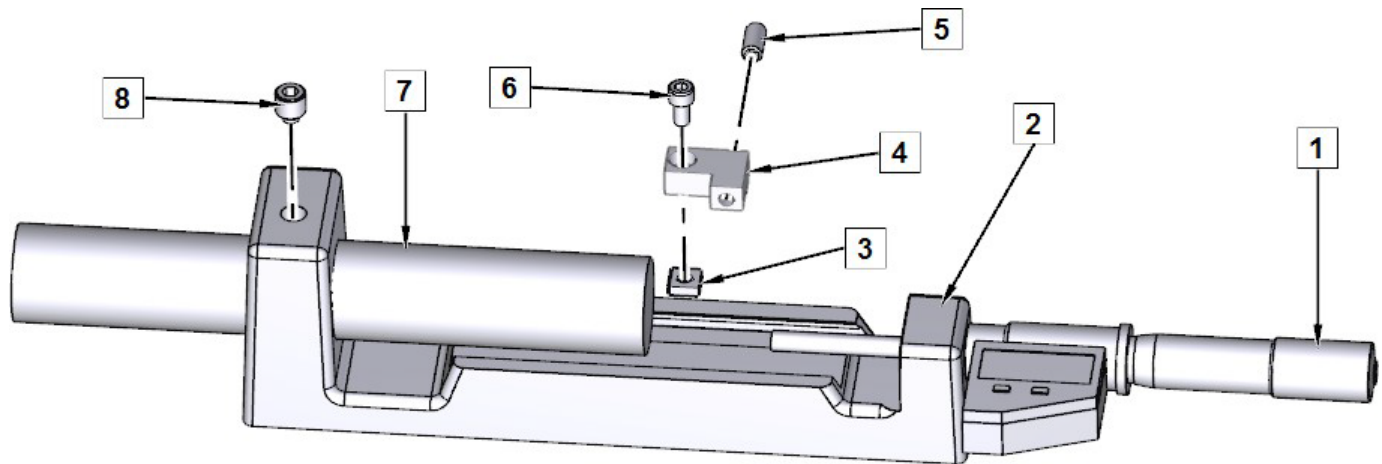


650-2-14C Cutterhead Parts



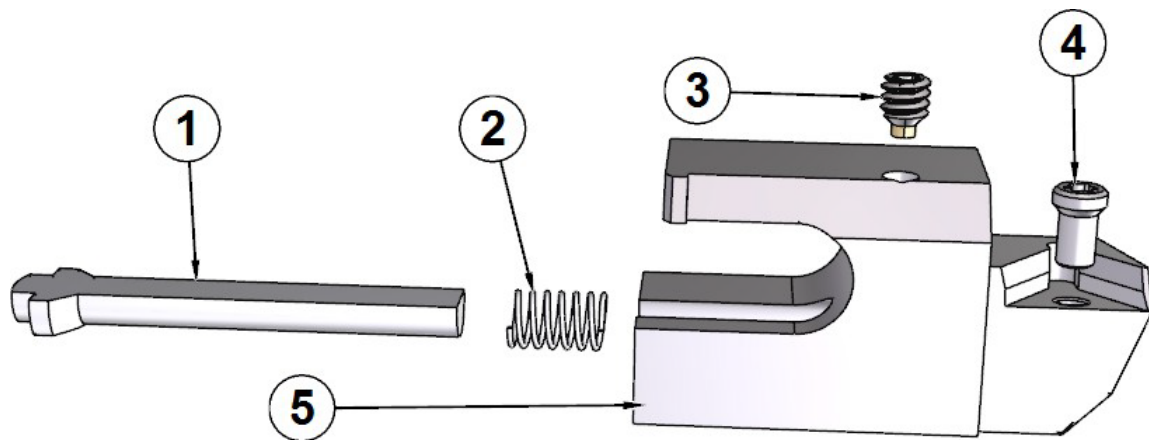
CUTTERHEAD ASSEMBLY W/O TOOLING 2.9"TO 5.0" x 7.0"			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	650-2-15E	ADAPTER, 2.9" STUB BAR CAT 40 TAPER (INCH)
2	1	6521	Counter Weight
3	1	650-2-16	BODY, 2.9" STUB BAR
4	1	502-2-85B	Index Screw
5	1	6263A	Tool Holder Clamp Screw
6	1	501-70A	Tool Holder Lock Screw ass'y
7	1	100-1A	Tool Lock Spring
8	1	502-2-45B	Bushing - Counterweight
9	1	650-2-44L	CAT40 RETENTION KNOB
11	1	650-2-17	Cap, 2.9" Stub Bar
12	3	MF-81C	Socket Flat Head 10-24 UNC x 2.25
14	1	502-12-4D	SOCKET SET SCREW, BRASS TIPPED 8-32 X 1//8
15	1	MF-196	3/16 x 1/2 Dowel Pin
16	1	MF-193C	1/8 x 3/8 Dowel Pin

900-2-20 Micrometer Parts



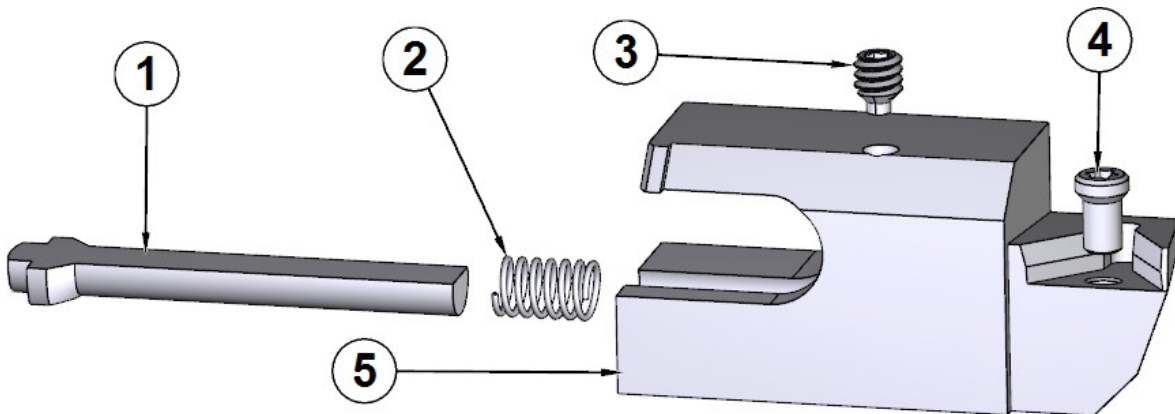
ITEM	PART #	DESCRIPTION
1	501-34-2R	HEAD, MICROMETER UNIVERSAL MIC HEAD DIGITAL READING INCH AND METRIC
2	502-30-10C	FRAME, MICROMETER
3	502-30-10J	SQUARE NUT-#10-24 MICROMETER FRAME
4	502-30-10M	CLAMP, MICROMETER
5	502-30-10K	BALL PLUNGER, 1/4-20 MICROMETER FRAME
6	MF-9A	SOCKET HEAD CAPSCREW 10-32 X 3/8"
7	502-30-10A	ANVIL, MICROMETER 7/8" DIAMETER X 5 5/8" LONG
8	502-30-10L	SET SCREW, BRASS TIPPED 3/8-24 X 3/8" LONG

6593C Insert Holder Parts



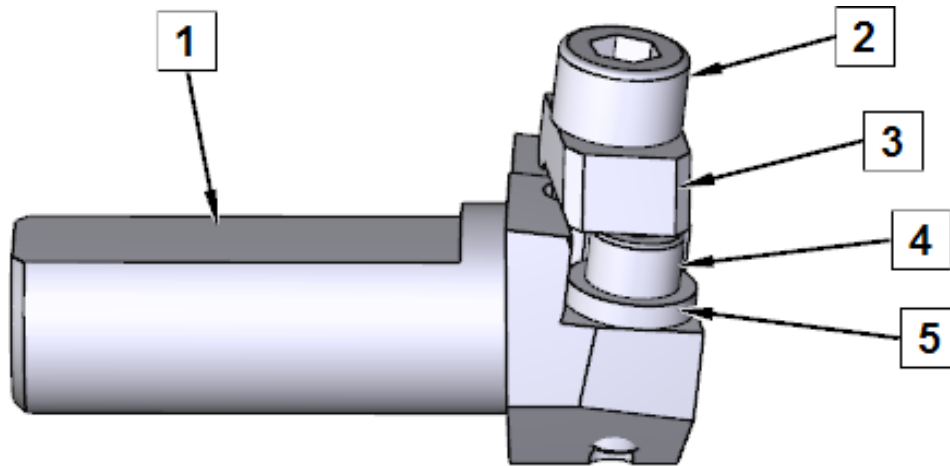
ITEM	PART #	DESCRIPTION
1	6593Q	PIN, ADJUSTING - TOOLHOLDER
2	100-82-4	SPRING, ADJUSTING PIN
3	100-82-2	SCREW, SET-BRASS GIB - 3/16" LONG
4	511-29-12C	SCREW, TORX M4 X .7 X .315" LONG
5	6593E	CARTRIDGE/TOOL HOLDER - INDEX. INSERT, TRIANGULAR-POSITIVE RAKE (2.90- 3.40 DIA)

6593D Insert Holder Parts



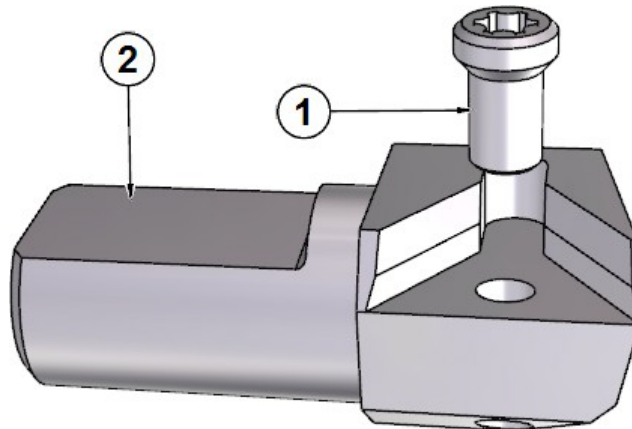
ITEM	PART #	DESCRIPTION
1	6593Q	PIN, ADJUSTING - TOOLHOLDER
2	100-82-4	SPRING, ADJUSTING PIN
3	100-82-2	SCREW, SET-BRASS GIB - 3/16" LONG
4	511-29-12C	SCREW, TORX M4 X .7 X .315" LONG
5	6593F	CARTRIDGE/TOOL HOLDER - INDEX. INSERT, TRIANGULAR-POSITIVE RAKE (3.40 TO 3.90)

6260W Insert Cartridge Parts



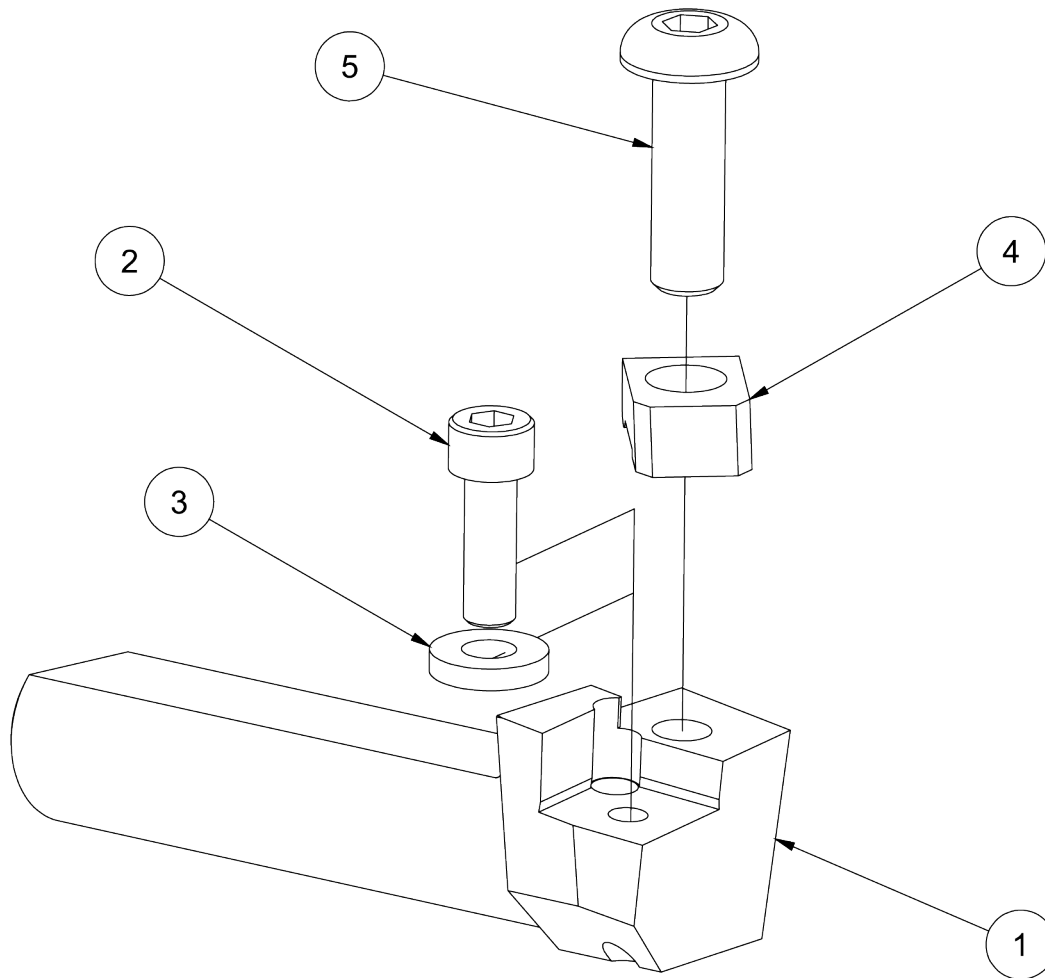
ITEM	PART #	DESCRIPTION
1	6594J	CARTRIDGE, OFFSET 3/8" SQUARE, NEGATIVE RAKE
2	MF-9	SOCKET HEAD CAP SCREW 10-32 X 5/8"
3	6594K	CLAMP, TOOL SQUARE INSERT
4	511-29-12	SCREW, SOCKET HEAD CAP 6/32 X 7/16" LONG
5	511-29-12B	WASHER, PRECISION-HOLDING SCREW

6598M Insert Cartridge Parts



ITEM	PART #	DESCRIPTION
1	511-29-12C	SCREW, TORX M4 X .7 X .315" LONG
2	6598L	CARTRIDGE, INDEXABLE INSERT, 13/16" FOR TRIANGULAR POSITIVE RAKE INSERTS

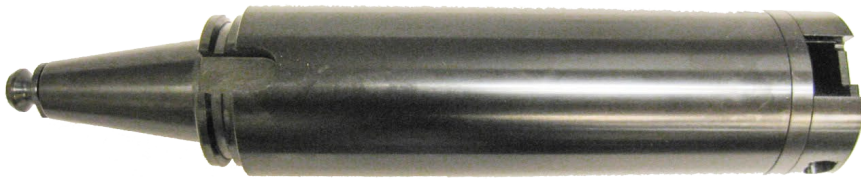
6260L Insert Cartridge Parts



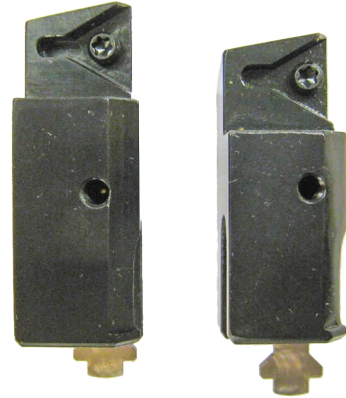
6260L CARTRIDGE ASSEMBLY - SQUARE INSERT NEG. RAKE INDEXABLE - 1.88" SHANK			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	6594G	CARTRIDGE - SQUARE INSERT NEG. RAKE INDEXABLE - 1.88" SHANK
2	1	511-29-12	Screw
3	1	511-29-12B	Washer
4	1	6594K	Insert Clamp
5	1	MF-89A	10-32UNF x 5/8" LG. SOCKET BUTTON HEAD CAPSCREW

650-2-14F Cutterhead Package Components

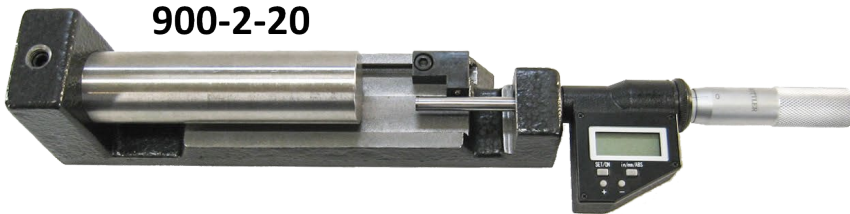
650-2-14G



6593 Series



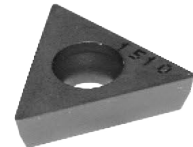
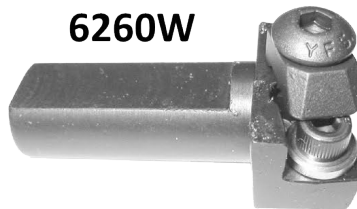
900-2-20



6520 Series

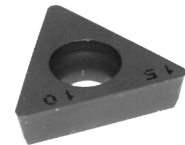


6260W



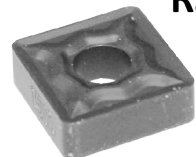
RT321

6598M



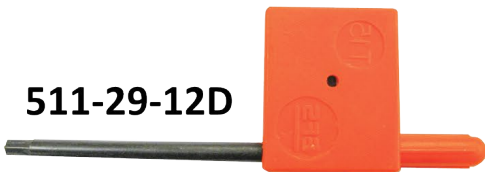
RT322

6260L



RS322

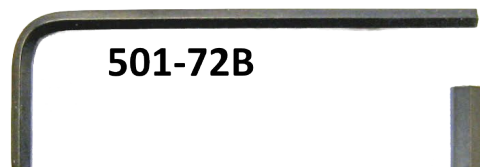
511-29-12D



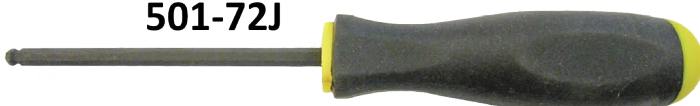
501-72



501-72B



501-72J



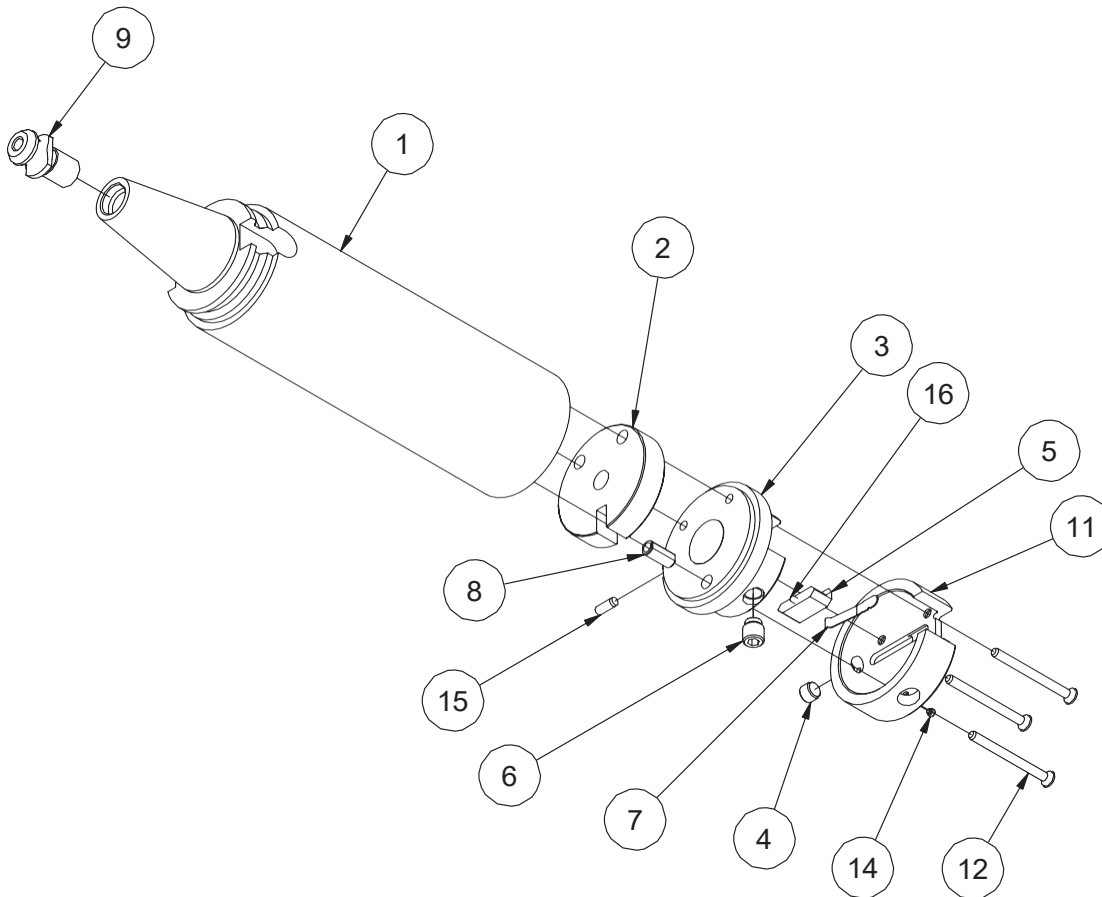
501-72E



100-24

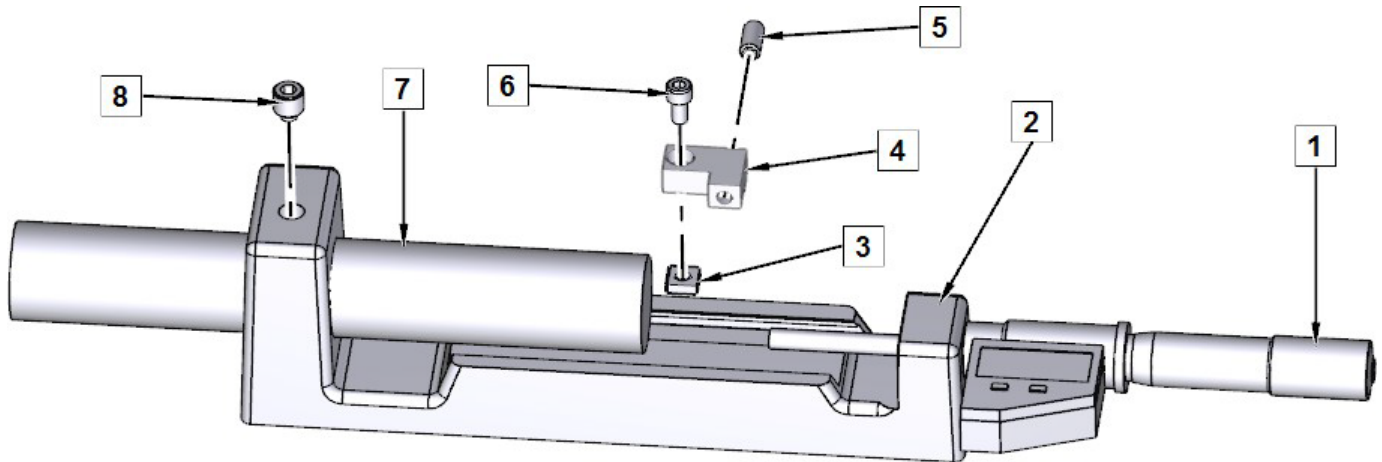


650-2-14G Cutterhead Assembly Parts



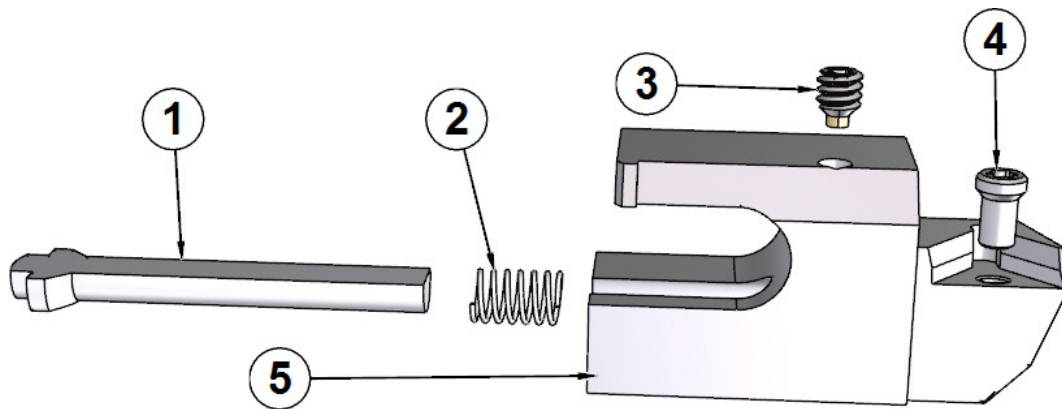
650-2-14G STUB BAR ASSEMBLY 2.9" TO 5.0" x 10" LG. CAT40(INCH)			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	650-2-15K	ADAPTER, 2.9" STUB BAR x 10" LG. CAT 40 TAPER (INCH)
2	1	6521	Counter Weight
3	1	650-2-16	BODY, 2.9" STUB BAR F60
4	1	502-2-85B	Index Screw
5	1	6263A	Tool Holder Clamp Screw
6	1	501-70A	Tool Holder Lock Screw ass'y
7	1	100-1A	Tool Lock Spring
8	1	502-2-45B	Bushing - Counterweight
9	1	650-2-44L	CAT40 RETENTION KNOB
11	1	650-2-17	Cap, 2.9" Stub Bar
12	3	MF-81C	Socket Flat Head 10-24 UNC x 2.25
14	1	502-12-4D	SOCKET SET SCREW, BRASS TIPPED 8-32 X 1//8
15	1	MF-196	3/16 x 1/2 Dowel Pin
16	1	MF-193C	1/8 x 3/8 Dowel Pin

900-2-20 Micrometer Parts



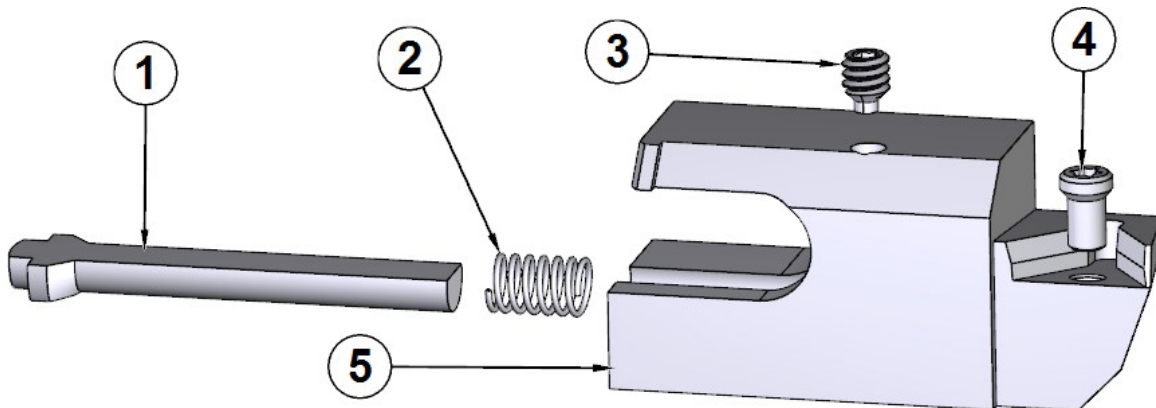
ITEM	PART #	DESCRIPTION
1	501-34-2R	HEAD, MICROMETER UNIVERSAL MIC HEAD DIGITAL READING INCH AND METRIC
2	502-30-10C	FRAME, MICROMETER
3	502-30-10J	SQUARE NUT-#10-24 MICROMETER FRAME
4	502-30-10M	CLAMP, MICROMETER
5	502-30-10K	BALL PLUNGER, 1/4-20 MICROMETER FRAME
6	MF-9A	SOCKET HEAD CAPSCREW 10-32 X 3/8"
7	502-30-10A	ANVIL, MICROMETER 7/8" DIAMETER X 5 5/8" LONG
8	502-30-10L	SET SCREW, BRASS TIPPED 3/8-24 X 3/8" LONG

6593C Insert Holder Parts



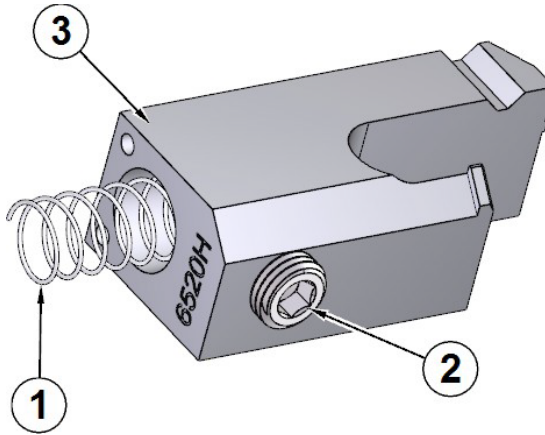
ITEM	PART #	DESCRIPTION
1	6593Q	PIN, ADJUSTING - TOOLHOLDER
2	100-82-4	SPRING, ADJUSTING PIN
3	100-82-2	SCREW, SET-BRASS GIB - 3/16" LONG
4	511-29-12C	SCREW, TORX M4 X .7 X .315" LONG
5	6593E	CARTRIDGE/TOOL HOLDER - INDEX. INSERT, TRIANGULAR-POSITIVE RAKE (2.90- 3.40 DIA)

6593D Insert Holder Parts



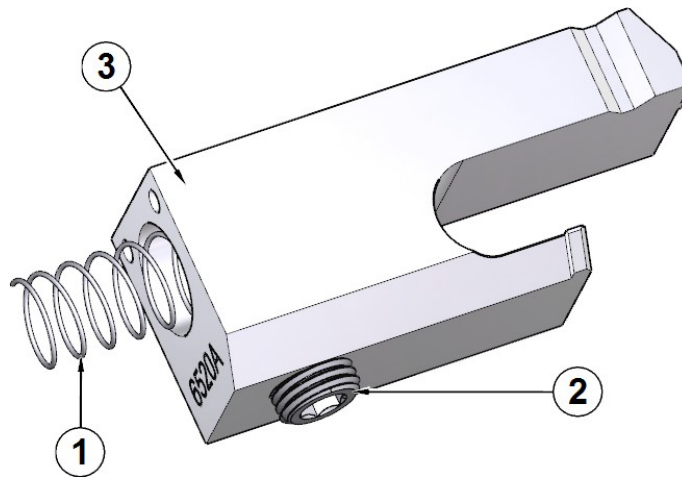
ITEM	PART #	DESCRIPTION
1	6593Q	PIN, ADJUSTING - TOOLHOLDER
2	100-82-4	SPRING, ADJUSTING PIN
3	100-82-2	SCREW, SET-BRASS GIB - 3/16" LONG
4	511-29-12C	SCREW, TORX M4 X .7 X .315" LONG
5	6593F	CARTRIDGE/TOOL HOLDER - INDEX. INSERT, TRIANGULAR-POSITIVE RAKE (3.40 TO 3.90)

6520H Tool Holder Parts



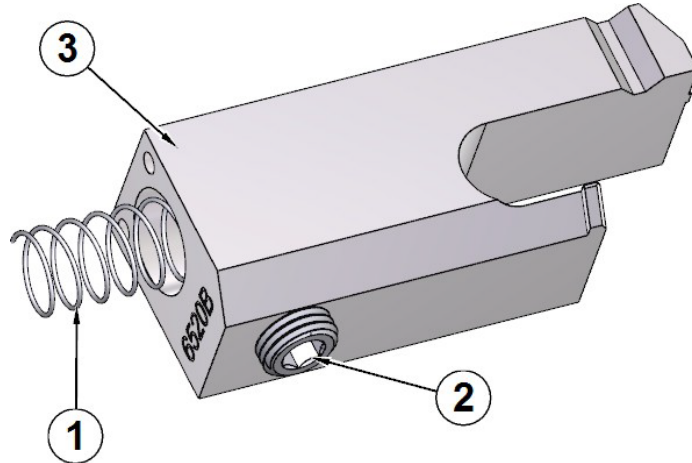
ITEM	PART #	DESCRIPTION
1	6300B	SPRING, COMPRESSION-TOOLHOLDER (1 7/16")
2	502-2-85	SCREW, SET-TOOLHOLDER INDEX
3	6520H	TOOL HOLDER, 2 1/4" LONG

6520A Tool Holder Parts



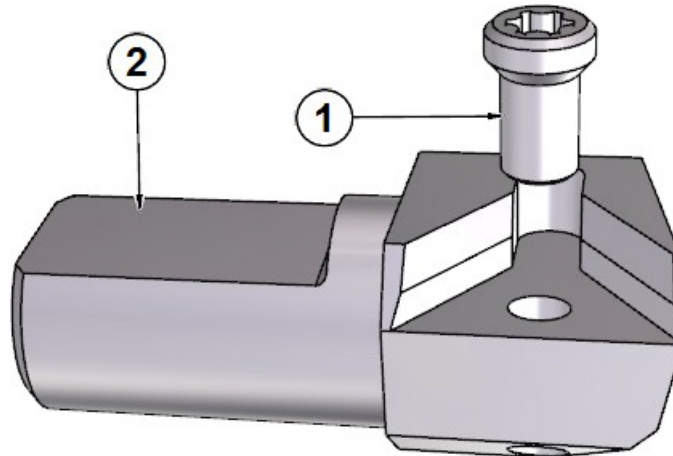
ITEM	PART #	DESCRIPTION
1	6300B	SPRING, COMPRESSION-TOOLHOLDER (1 7/16")
2	502-2-85	SCREW, SET-TOOLHOLDER INDEX
3	6520A	TOOL HOLDER, 2 3/8" LONG

6520B Tool Holder Parts



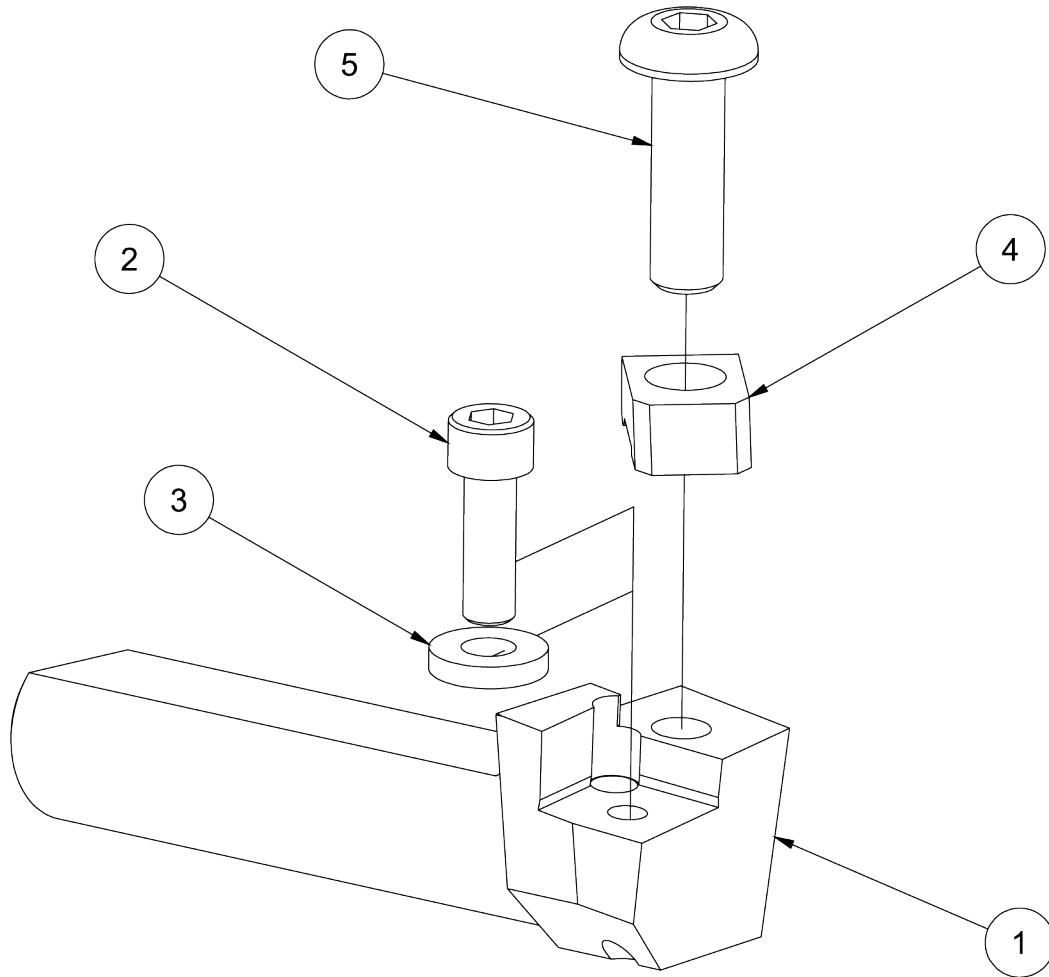
ITEM	PART #	DESCRIPTION
1	6300B	SPRING, COMPRESSION-TOOLHOLDER (1 7/16")
2	502-2-85	SCREW, SET-TOOLHOLDER INDEX
3	6520B	TOOL HOLDER, 2 5/8" LONG

6598M Insert Cartridge Parts



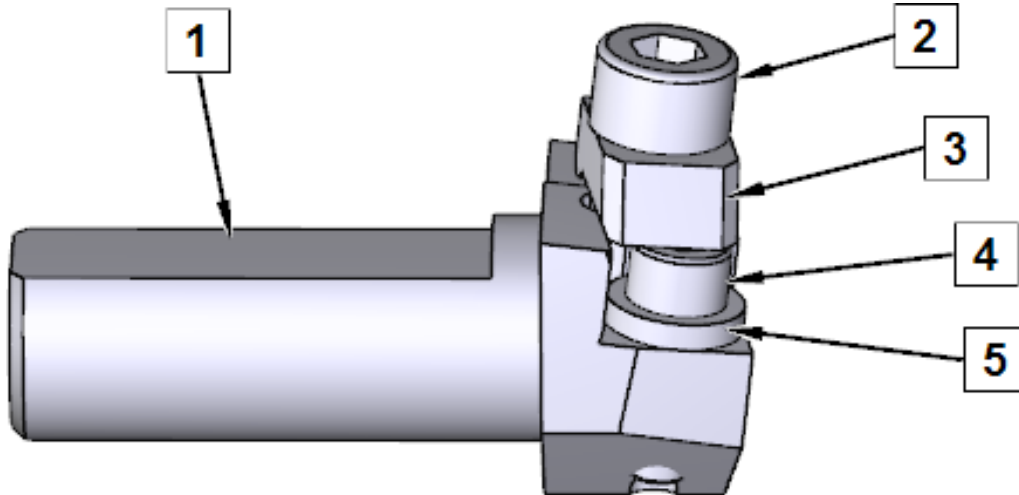
ITEM	PART #	DESCRIPTION
1	511-29-12C	SCREW, TORX M4 X .7 X .315" LONG
2	6598L	CARTRIDGE, INDEXABLE INSERT, 13/16" FOR TRIANGULAR POSITIVE RAKE INSERTS

6260L Insert Cartridge Parts



6260L CARTRIDGE ASSEMBLY - SQUARE INSERT NEG. RAKE INDEXABLE - 1.88" SHANK			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	6594G	CARTRIDGE - SQUARE INSERT NEG. RAKE INDEXABLE - 1.88" SHANK
2	1	511-29-12	Screw
3	1	511-29-12B	Washer
4	1	6594K	Insert Clamp
5	1	MF-89A	10-32UNF x 5/8" LG. SOCKET BUTTON HEAD CAPSCREW

6260W Insert Cartridge Parts



ITEM	PART #	DESCRIPTION
1	6594J	CARTRIDGE, OFFSET 3/8" SQUARE, NEGATIVE RAKE
2	MF-9	SOCKET HEAD CAP SCREW 10-32 X 5/8"
3	6594K	CLAMP, TOOL SQUARE INSERT
4	511-29-12	SCREW, SOCKET HEAD CAP 6/32 X 7/16" LONG
5	511-29-12B	WASHER, PRECISION-HOLDING SCREW

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

Sold only as complete assembly.

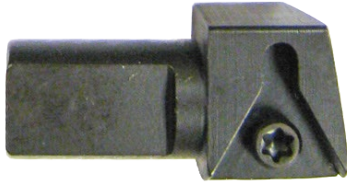


Miscellaneous Tooling for 650-2-14B&F Cutterheads

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

6598M Cartridge Assembly

Positive Rake, 13/16 Shank Length, for Counter Boring

**6747K Cartridge Assembly**

5 Degree Chamfer for Triangular Positive Rake Inserts

**6747P Cartridge Assembly**

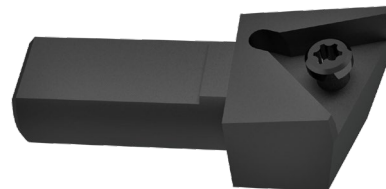
10 Degree Chamfer for Triangular Positive Rake Inserts

**6747G Cartridge Assembly**

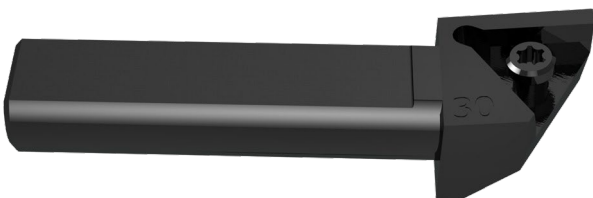
15 Degree Chamfer for Triangular Positive Rake Inserts

**6747F Cartridge Assembly**

20 Degree Chamfer for Triangular Positive Rake Inserts

**6747M Cartridge Assembly**20 Degree Chamfer for Triangular Positive Rake Inserts
(Special Application Only)**6747H Cartridge Assembly**

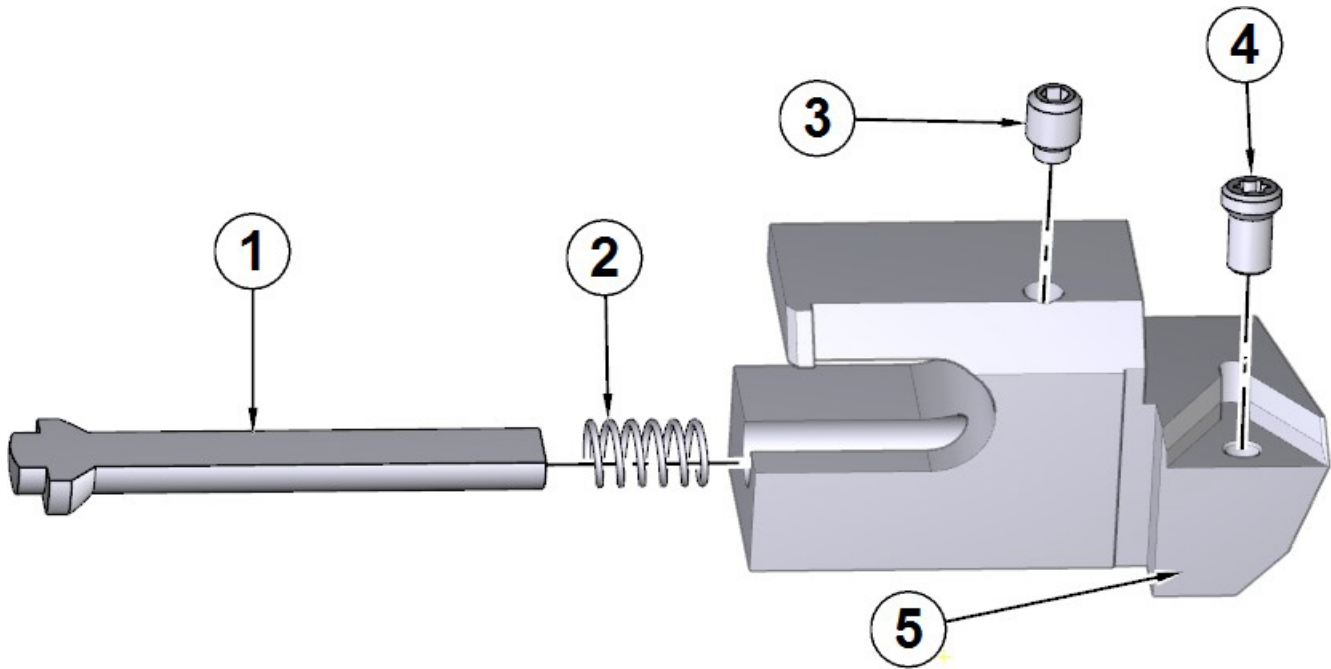
30 Degree Chamfer for Triangular Positive Rake Inserts

**511-29-12C Insert Retaining Screw**

Torx screw for above cartridges.

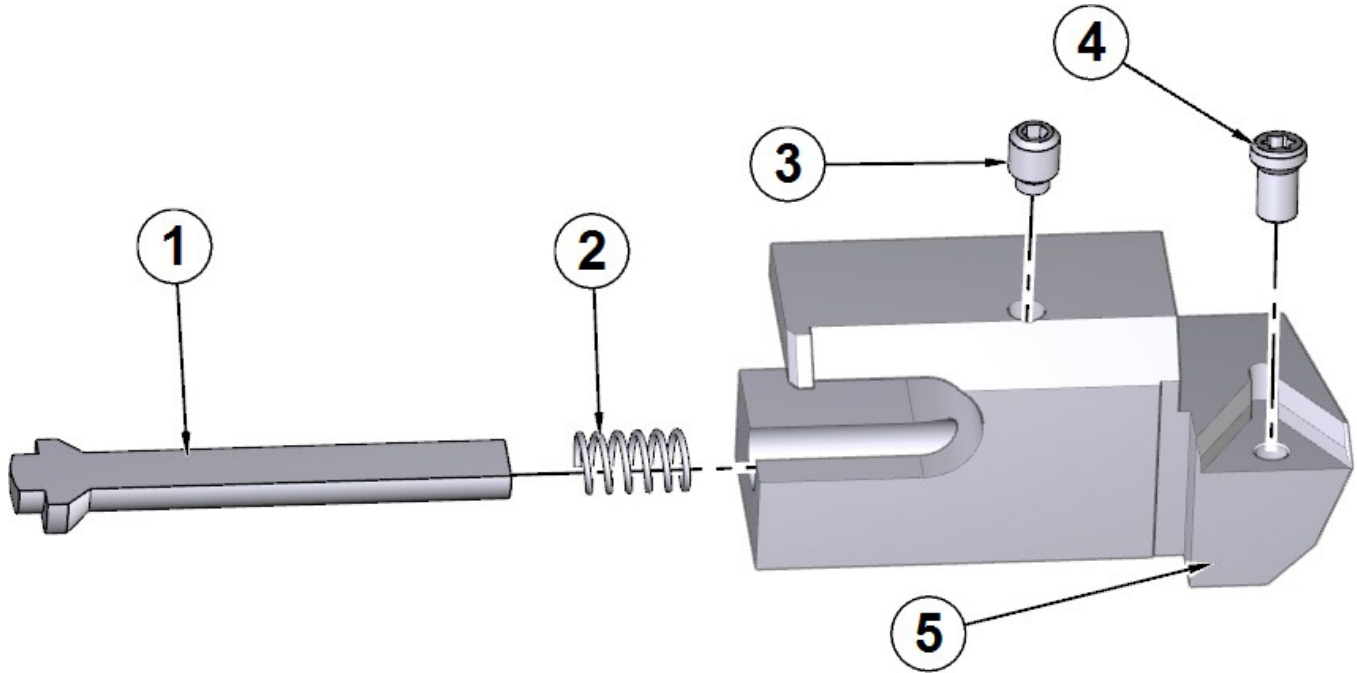


6593L Cartridge Assembly



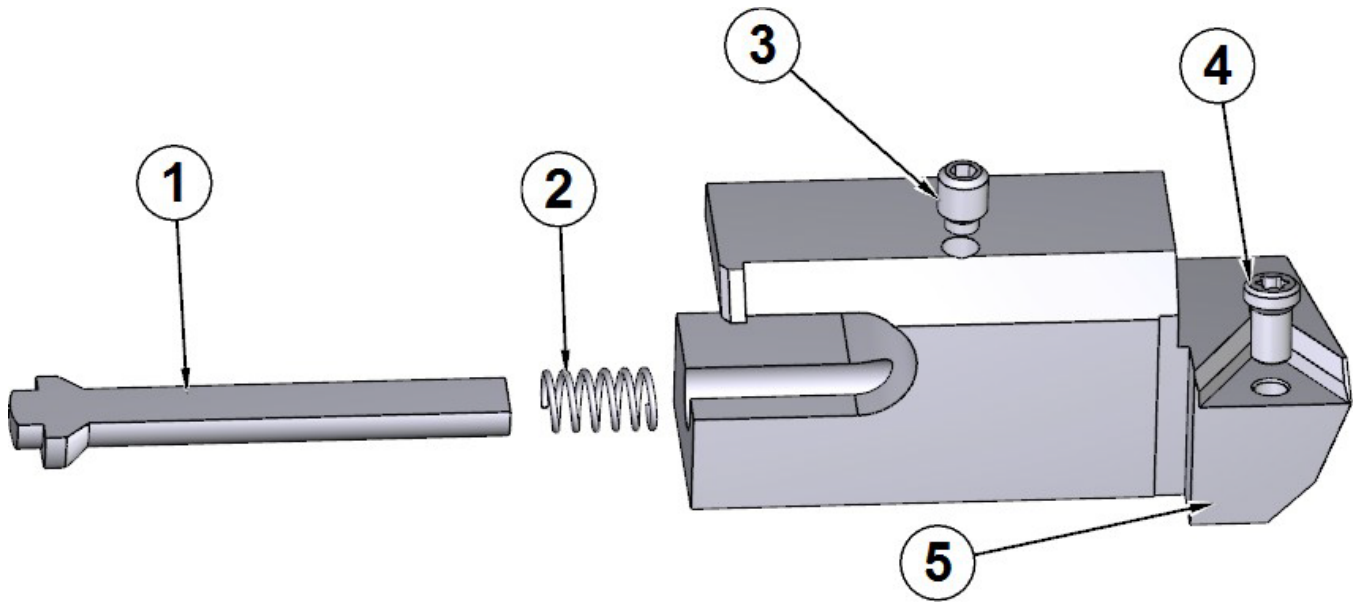
ITEM	PART #	DESCRIPTION
1	6593B	PIN, ADJUSTING-TOOLHOLDER
2	100-82-1	SPRING, ADJUSTING PIN
3	100-82-2	SCREW, SET-BRASS GIB - 3/16" LONG
4	511-29-12C	SCREW, TORX M4 X .7 X .315" LONG
5	6593G	CARTRIDGE/TOOL HOLDER - INDEX. INSERT, TRIANGULAR-POSITIVE RAKE (3.14-3.40)

6593M Cartridge Assembly



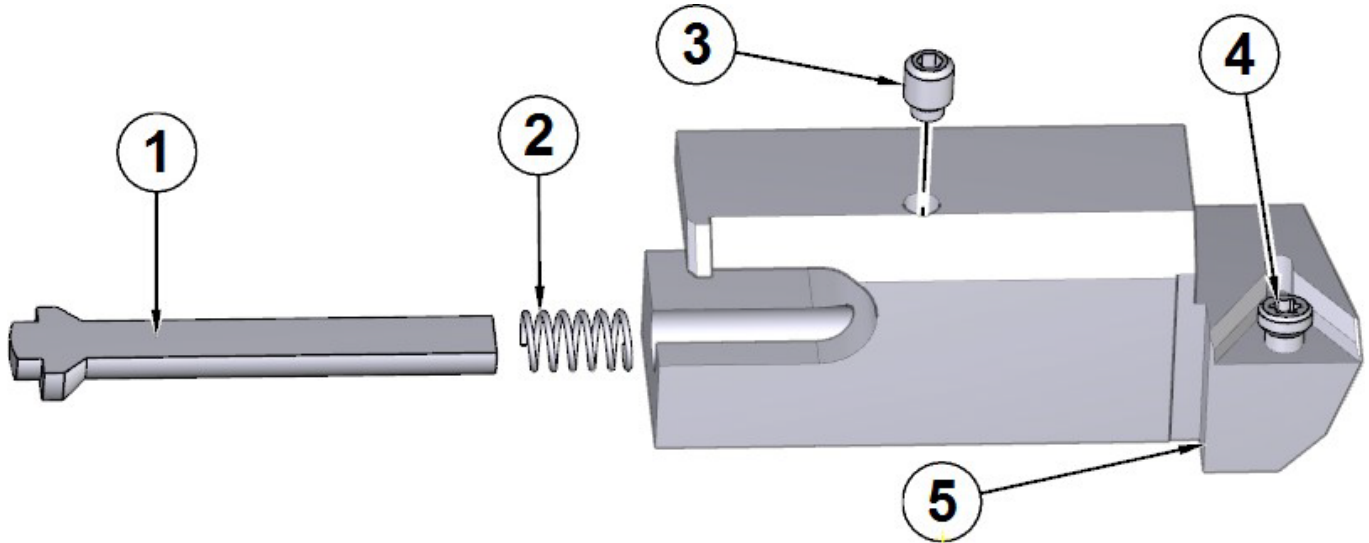
ITEM	PART #	DESCRIPTION
1	6593B	PIN, ADJUSTING-TOOLHOLDER
2	100-82-1	SPRING, ADJUSTING PIN
3	100-82-2	SCREW, SET-BRASS GIB - 3/16" LONG
4	511-29-12C	SCREW, TORX M4 X .7 X .315" LONG
5	6593H	CARTRIDGE/TOOL HOLDER - INDEX. INSERT, TRIANGULAR-POSITIVE RAKE (3.14-3.40)

6593N Cartridge Assembly



ITEM	PART #	DESCRIPTION
1	6593B	PIN, ADJUSTING-TOOLHOLDER
2	100-82-1	SPRING, ADJUSTING PIN
3	100-82-2	SCREW, SET-BRASS GIB - 3/16" LONG
4	511-29-12C	SCREW, TORX M4 X .7 X .315" LONG
5	6593J	CARTRIDGE/TOOL HOLDER - INDEX. INSERT, TRIANGULAR-POSITIVE RAKE (3.14-3.40)

6593P Cartridge Assembly



ITEM	PART #	DESCRIPTION
1	6593B	PIN, ADJUSTING-TOOLHOLDER
2	100-82-1	SPRING, ADJUSTING PIN
3	100-82-2	SCREW, SET-BRASS GIB - 3/16" LONG
4	511-29-12C	SCREW, TORX M4 X .7 X .315" LONG
5	6593K	CARTRIDGE/TOOL HOLDER - INDEX. INSERT, TRIANGULAR-POSITIVE RAKE (3.14-3.40)

Inserts for Cutterhead Tooling

RT211 Triangular Insert

1/4" (6.35mm) 1/64" (.397mm) radius,
1/4" triangular Insert holders only,
general purpose and sleeving


RT212 Triangular Insert

1/4" (6.35mm) 1/32" (.787mm) radius,
1/4" triangular Insert holders only,
general purpose and sleeving


RT321 Triangular Insert

Positive rake, 3/8" (9.525mm) 1/64"
(.397mm) radius, general purpose and
sleeving


RT322 Triangular Insert

Positive rake, 3/8" (9.525mm) 1/32"
(.787mm) radius, general purpose and
sleeving


RT321F Triangular Insert

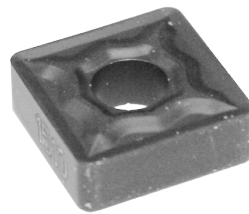
Positive rake, 3/8" 1/64" Radius,
Precision Counterboring


RT322F Triangular Insert

Positive rake, 3/8" 1/32" Radius,
Precision Counterboring

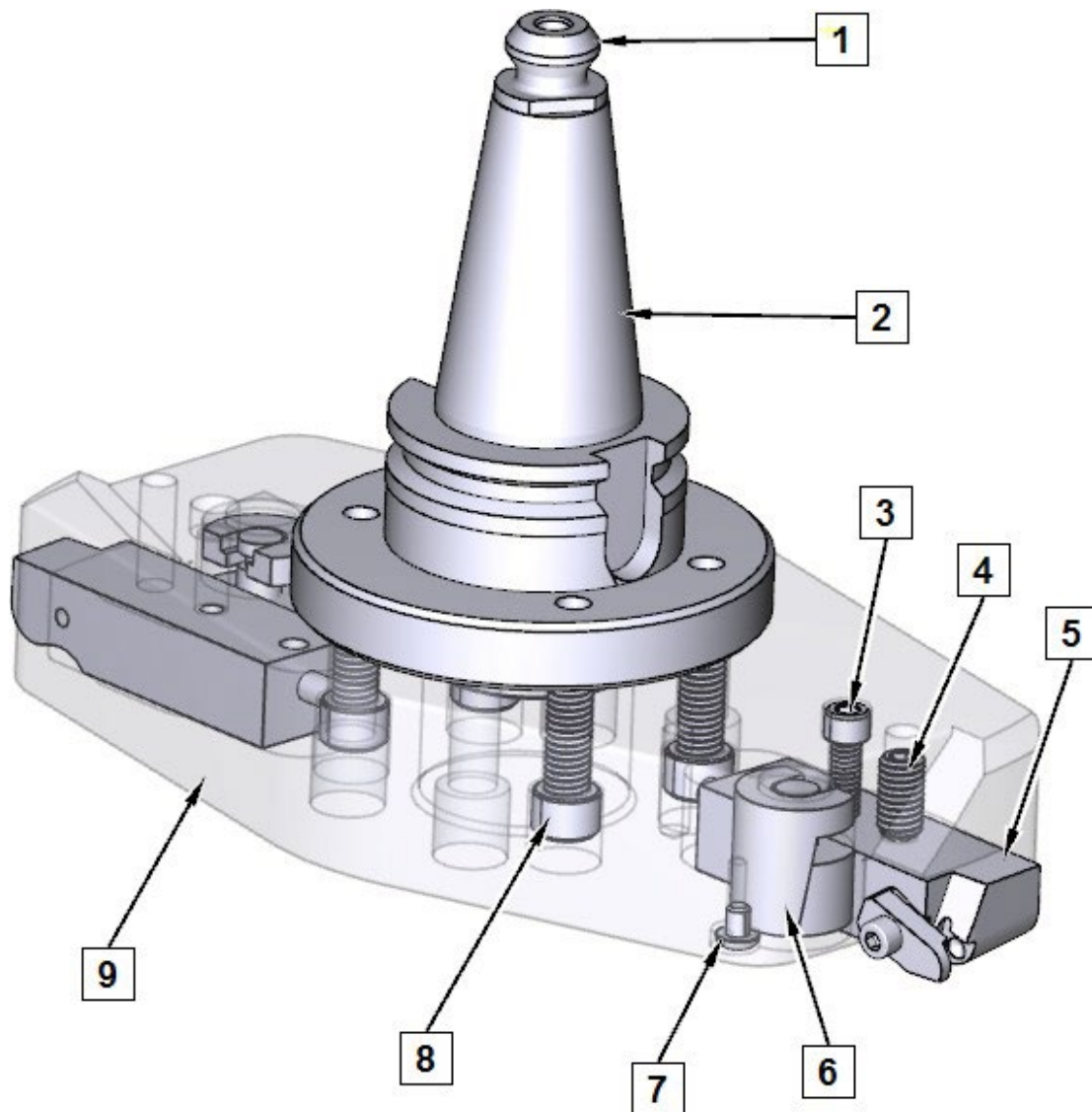

RS322 Square Insert

Negative rake, 1/32" (.787mm) radius,
3/8" (9.525mm) IC, black ceramic
coated for high speed oversize thru
boring



Surfacing Tooling

650-2-8E Surfacing Cutterhead Parts



ITEM	PART #	DESCRIPTION
1	650-2-44L	CAT 40 RETENTION KNOB
2	650-2-7E	ADAPTER, 10 AND 14" FLYCUTTER CAT 40 TAPER (INCH)
3	MF-15	SOCKET HEAD CAPSCREW 1/4-20 X 1"
4	7202C	SCREW, ADJUSTING SURFACING CUTTERHEAD 3/8-16NC X 3/8" OVAL POINT SET SCREW
5	7207W	BAR, CLAMP ASSEMBLY
6	7206K	"L" LOCK-SURFACING CUTTERHEAD
7	MF-87	SOCKET BUTTON HEAD SCREW 10-24 X 1/4"
8	MF-33	SOCKET HEAD CAPSCREW 3/8-16 X 1 1/2"
9	7206L	CUTTERHEAD , SURFACING 10 1/4"

Inserts for Surfacing Cutterhead

6303B CBN Insert

Round, Double-Sided, 3/8" (9.525mm) IC, for Cutting Cast Iron (15% Discount on orders of 10 or more)



6303M PCD Insert

Round, 3/8" (9.525mm) IC, for Cutting Aluminum (15% Discount on orders of 10 or more)



6303K Coated Carbide Insert

Round, 3/8" (9.525mm) IC, for General Purpose Use

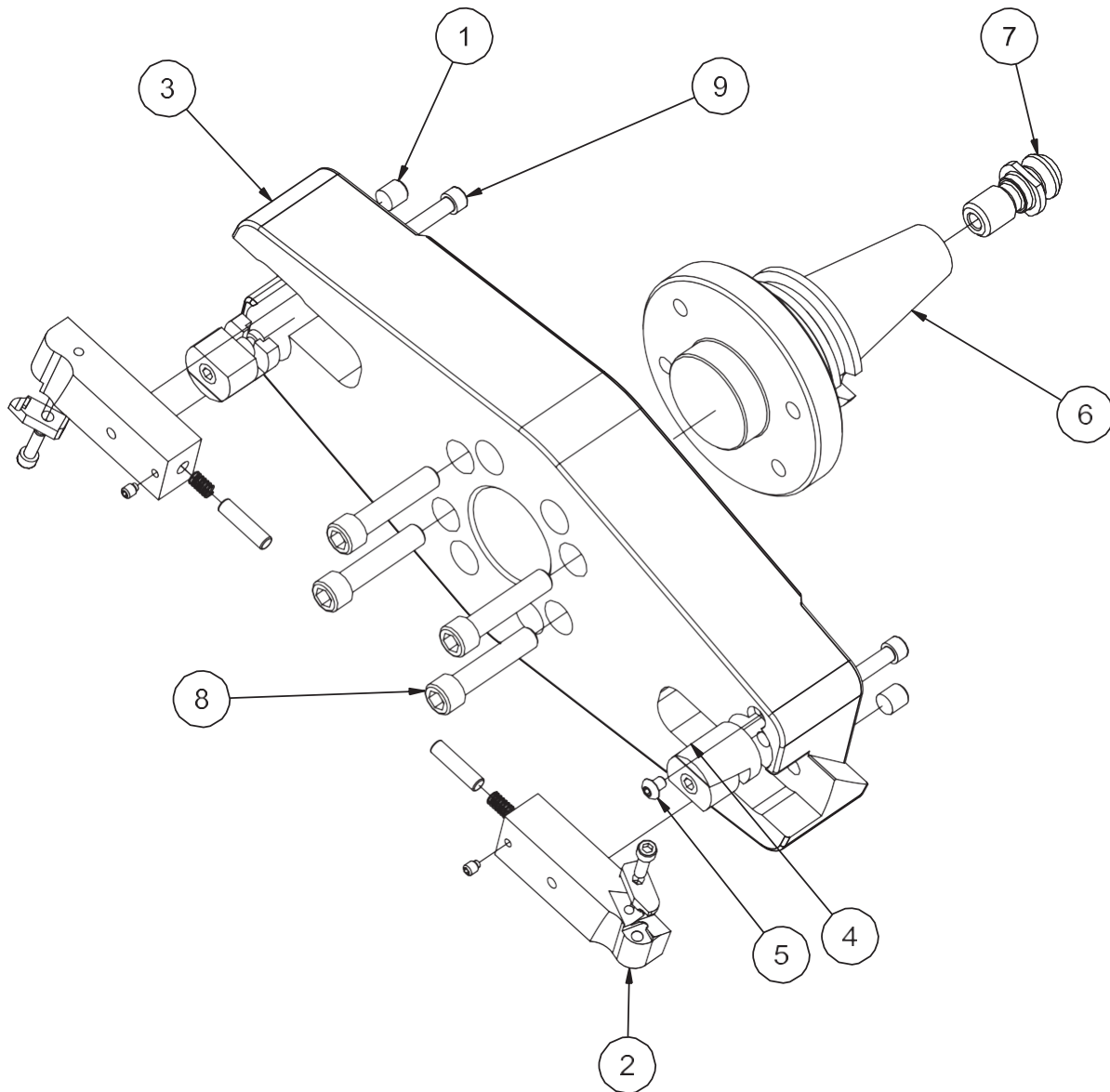


6303S CBN Insert

Round, 3/8" (9.525mm) IC, for Cutting Aluminum Blocks with Liners (15% Discount on orders of 10 or more)



650-2-8K Surfacing Cutterhead Parts



650-2-8K 14" FLYCUTTER ASSEMBLY (ALUMINUM) EM69			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	2	7202C	Hexagon Socket Set Screw - Oval Point
2	2	7202W	TOOL HOLDER ASSEMBLY, FLY CUTTER
3	1	650-2-8L	MILLING CUTTERHEAD (ALUMINUM), 14" DIA. WITH 3/4 x 1 TOOL HOLDER - EM69
4	2	7206K	L' LOCK
5	2	Mf-87	Socket Button Head Cap Screw 10 - 24 x 1/4
6	1	650-2-7E	ADAPTER, 10 & 14 INCH FLYCUTTER - CAT 40 - F69
7	1	650-2-44L	CAT40 RETENTION KNOB
8	4	MF-33A	3/8-16UNC x 1-3/4" LG. S.H.C.S.
9	2	MF-16	1/4-20UNC x 1-1/4" LG. S.H..C.S

Tooling for Lifter Bore Machining

650-2-60B Lifter Bore Tooling Kit Components

650-2-60C



650-2-60D



650-2-60K



650-2-60J



650-2-60E



650-2-60F



650-2-60H



650-2-60G



650-2-20C



650-2-20L



650-2-60L

650-2-44A



650-2-32U



511-29-12F



650-2-32J

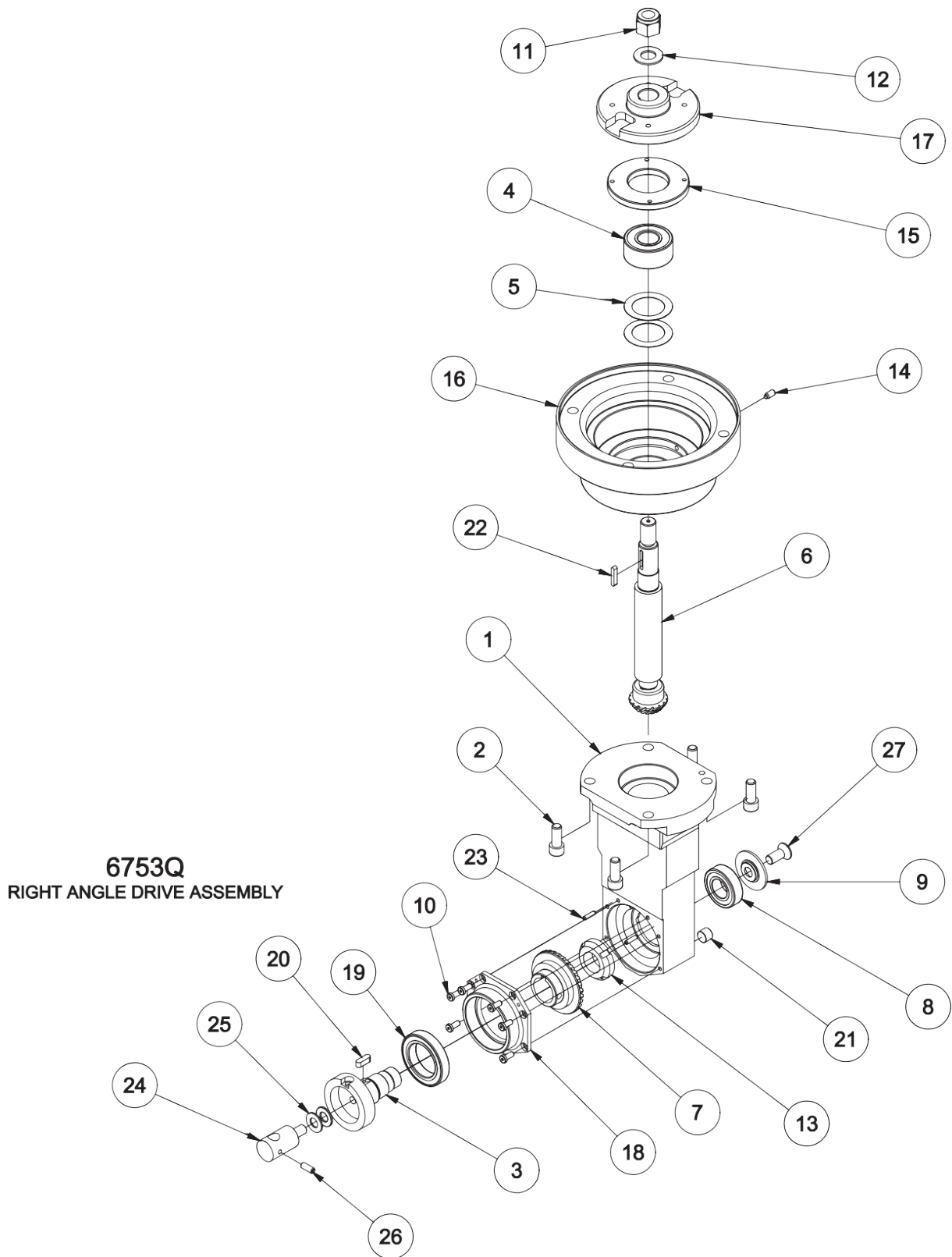
650-2-60N Setting Fixture

Sold only as complete assembly

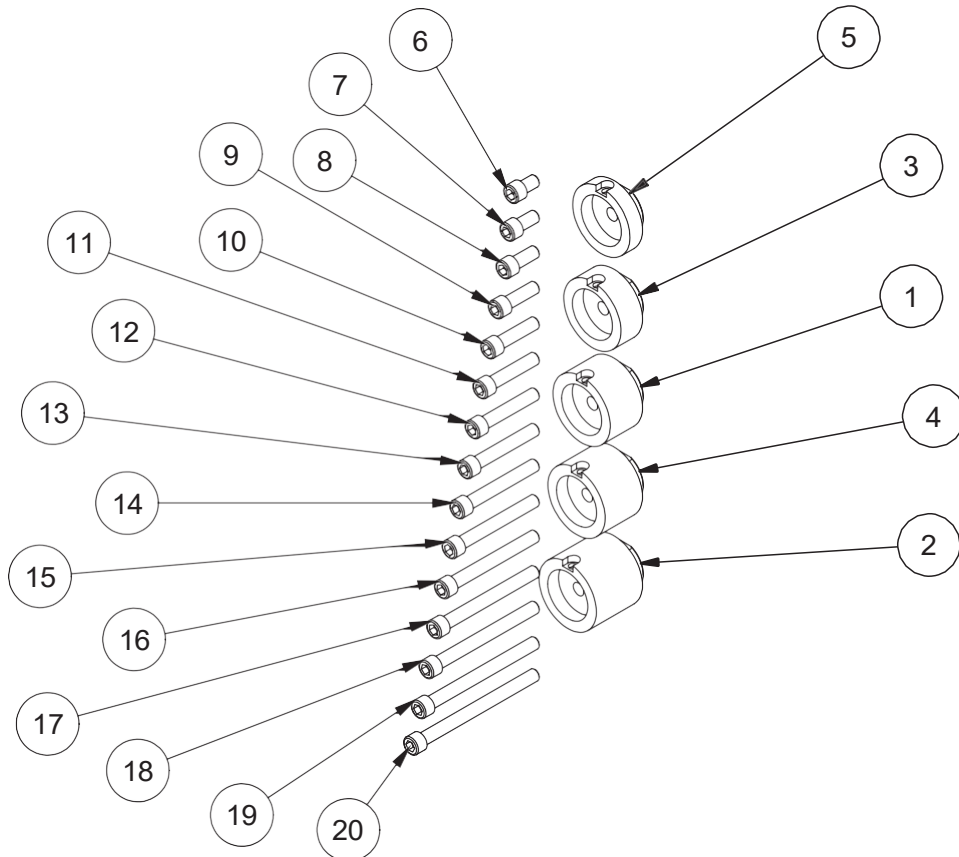
**650-2-60G Insert for 0φ750 - 0φ900
diameter cartridge****650-2-60H Insert for 0φ920 - 1φ180
diameter cartridge**

Main Line Bore Tooling

6753Q Main Line Bore 90 Degree Right Angle Drive Assembly Parts



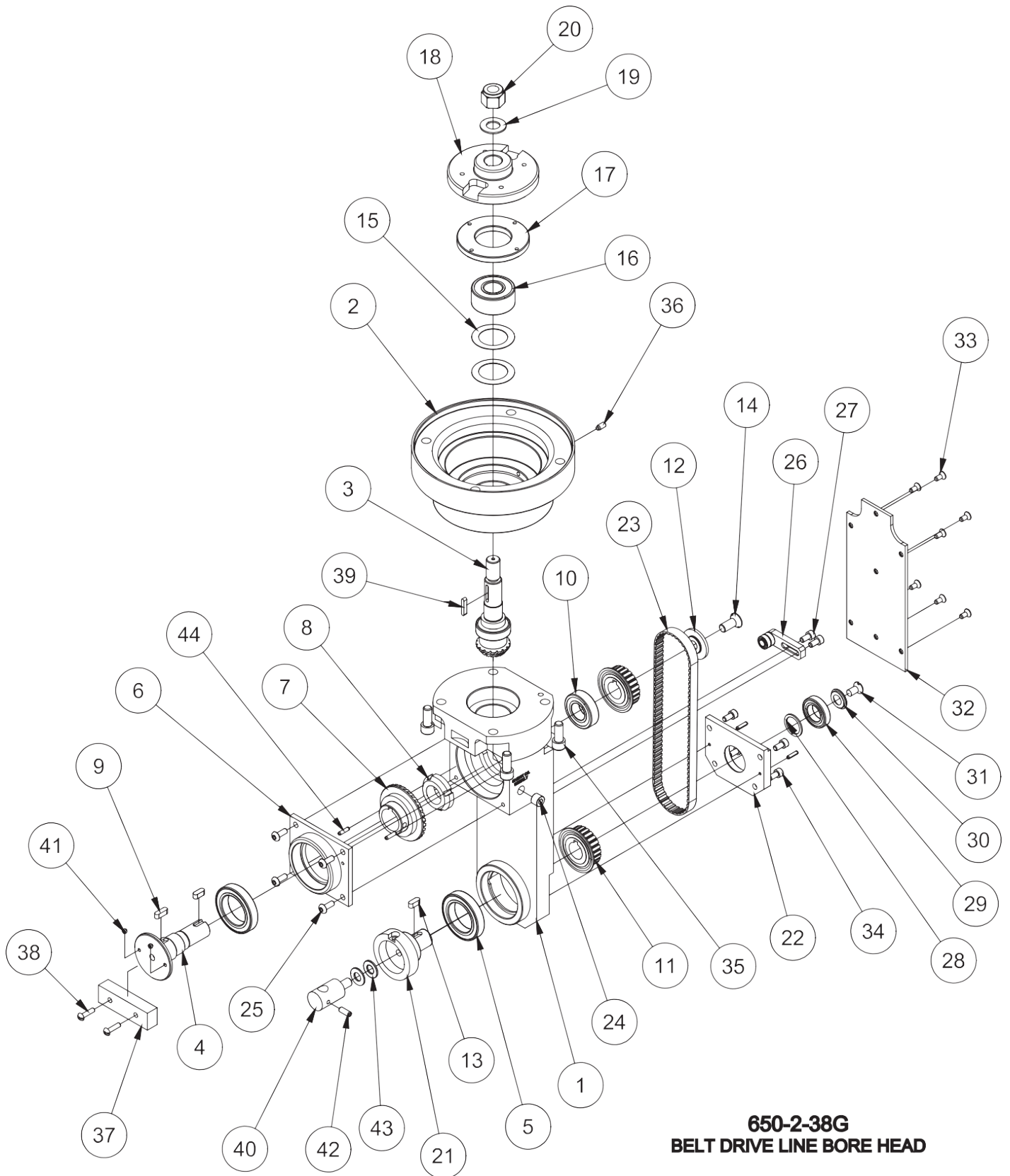
6753Q RIGHT ANGLE DRIVE ASSEMBLY			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	6773C	HOUSING, GEAR LINE BORE HEAD
2	4	MF-22	5/16-18UNC x 3/4" LG. S.H.C.S.
3	1	650-2-42	SHAFT, HORIZONTAL PRECISION R.A.D.
4	1	502-9-32	Bearing, Ball MRC 5203SBKFF
5	2	6007A	Bellville Spring, BS203
6	1	6775A	PINION AND SHAFT ASSEMBLY - R.A.D.
7	1	6766W	RING GEAR REWORK - F60 SMALL 90 DEG. R.A.D.
8	1	6753E	Bearing, NDH Z99L03
9	1	6766F	End Cap
10	6	6774E	Hexagon Socket Head Cap Screw
11	1	MF-186	1/2-13 Nylock Nut
12	1	100-19	Washer
13	1	6705B	BEARING LOCK NUT
14	1	100-82-2A	10-24UNC BRASS TIPPED SOCKET SET SCREW
15	1	6772A	Nut, Bearing Line Bore Head
16	1	6770G	HUB, MOUNTING
17	1	6771B	DRIVER, F60 LINE BORE HEAD
18	1	6774D	COVER, BEARING RETAINER - R.A.D.
19	1	502-9-72C	OUTER BALL BEARING, R.A.D.
20	1	650-2-18M	KEY, HORIZONTAL SHAFT, R.A.D
21	1	MF-233	Countersunk Hex-Head Plug 1/8
22	1	6753V	KEY (MICARTA), PINION - 90 DEGREE HEAD
23	2	MF-217	1/8 x 1/2 Roll Pin
24	1	502-9-9S	INDICATOR MOUNT, R.A.D.
25	2	MF-177	SAE FLAT WASHER 5/16"
26	1	MF-58A	10-24UNC x 1/2" LG. SOCKET FLAT POINT SET SCREW
27	1	6774K	5/16-24UNF x 3/4" LG. HEX SOCKET FLAT HEAD SCREW



CUTTERHEAD SPACER SET - LINE BORE HEAD

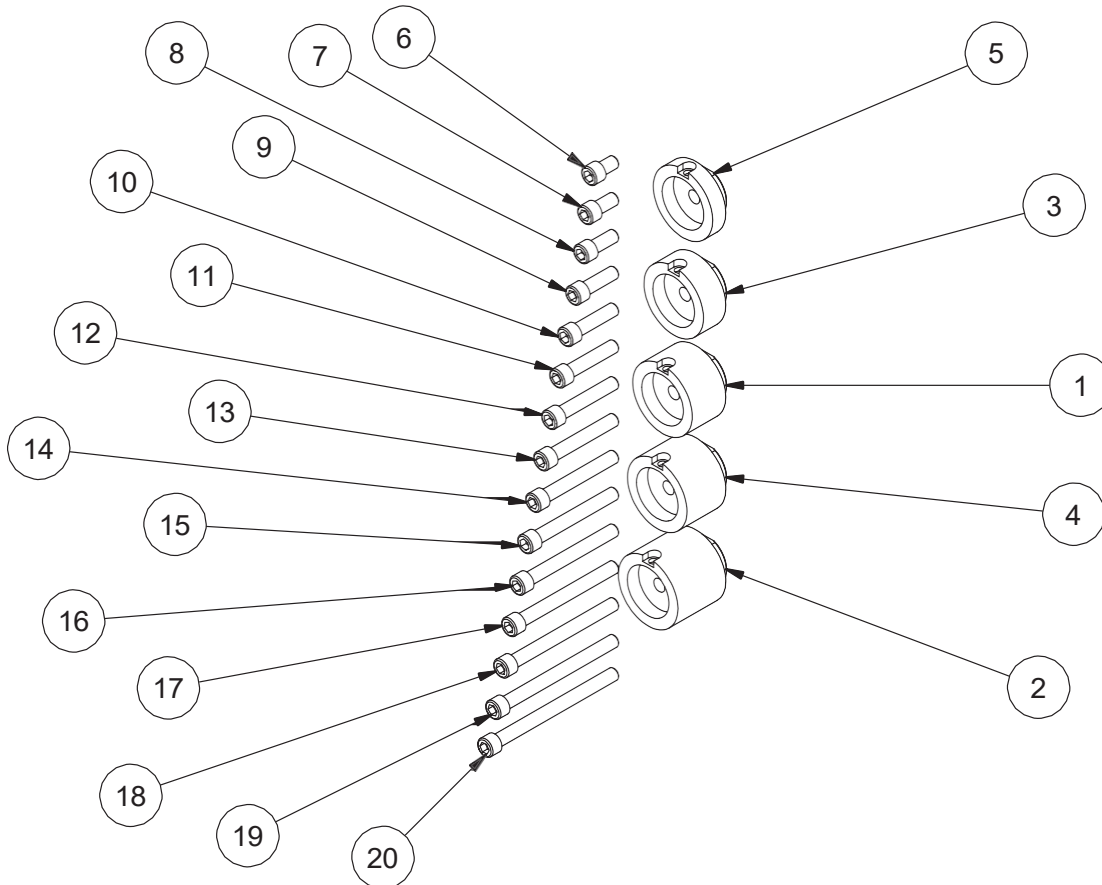
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	650-2-43	1.05 SPACER
2	1	650-2-43A	SPACER - 1.50" LONG
3	1	650-2-43B	SPACER - .70" LONG
4	1	650-2-43D	SPACER - 1.215" LONG
5	1	650-2-43E	SPACER - .41" LONG
6	1	MF21A	S.H.C.S. 5/16 - 18 UNC - 1/2
7	1	MF-21	S.H.C.S. 5/16 - 18 UNC - 5/8
8	1	MF-22	S.H.C.S. 5/16 - 18 UNC - 3/4
9	1	MF-23	S.H.C.S. 5/16 - 18 UNC - 1
10	1	MF-24	S.H.C.S. 5/16 - 18 UNC - 1-1/4
11	1	MF-25	S.H.C.S. 5/16 - 18 UNC - 1 1/2
12	1	Mf-26	S.H.C.S. 5/16 - 18 UNC - 1-3/4
13	1	MF-27	S.H.C.S. 5/16 - 18 UNC - 2
14	1	MF-27C	S.H.C.S. 5/16 - 18 UNC - 2-1/4
15	1	MF-27A	S.H.C.S. 5/16 - 18 UNC - 2 1/2
16	1	MF-28	S.H.C.S. 5/16 - 18 UNC - 2 3/4
17	1	MF-28E	S.H.C.S. 5/16 - 18 UNC - 3
18	1	MF-28F	S.H.C.S. 5/16 - 18 UNC - 3-1/4
19	1	MF-28A	S.H.C.S. 5/16 - 18 UNC - 3-1/2
20	1	MF-28G	S.H.C.S. 5/16 - 18 UNC - 3-3/4

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



650-2-38G
BELT DRIVE LINE BORE HEAD

650-2-38G BELT DRIVE RIGHT ANGLE DRIVE			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	650-2-38B	HOUSING, RIGHT ANGLE DRIVE BELT DRIVE
2	1	6770G	HUB, MOUNTING
3	1	650-2-37X	PINION & SHAFT ASSEMBLY BELT DRIVE LINE BORE HEAD
4	1	650-2-37D	SHAFT, HORIZONTAL UPPER - BELT DRIVE LINE BORE HEAD
5	2	502-9-72C	OUTER BALL BEARING, RIGHT ANGLE LINE BORING HEAD
6	1	650-2-37C	BEARING COVER, BELT DRIVE RIGHT ANGLE DRIVE
7	1	6766W	RING GEAR REWORK
8	1	6705B	BEARING LOCK NUT
9	1	650-2-18M	KEY, HORIZONTAL SHAFT, R.A.D.
10	1	6753E	Bearing, NDH Z99L03
11	2	650-2-37G	PULLEY (REWORK), BELT DRIVE R.A.D.
12	1	650-2-37E	ENDCAP, UPPER PULLEY RETAINER - BELT DRIVE LINE BORE HEAD
13	2	650-2-37U	MICARTA KEY, BELT DRIVE LINE BORE HEAD
14	1	6774K	HEX SOCKET FLATHEAD SCREW 5/16-24UNF x 3/4"
15	2	6007A	Bellville Spring, BS203
16	1	502-9-32	Bearing, Ball MRC 5203SBKFF
17	1	6772A	Nut, Bearing Line Bore Head
18	1	6771B	DRIVER, LINE BORE HEAD
19	1	100-19	Washer
20	1	MF-186	1/2-13 Nylock Nut
21	1	650-2-42B	Horizontal Shaft
22	1	650-2-37L	LOWER BEARING RETAINER - BELT DRIVE LINE BORE HEAD
23	1	650-2-38D	TIMING BELT, BELT DRIVE LINE BORE HEAD
24	1	MF-233	1/8-27NPT PIPE PLUG
25	4	Mf-88A	Socket Button Head Cap Screw 10 - 24 x 1/2
26	1	650-2-37P	BELT TENSIONER ASSY, BELT DRIVE LINE BORE HEAD
27	2	MF-4	10-24UNC x 3/8" LG. S.H.C.S
28	1	650-2-37V	SPACER, LOWER PULLEY - BELT DRIVE LINE BORE HEAD
29	1	650-2-37J	BEARING, BELT DRIVE LINE BOER HEAD
30	1	650-2-37K	END CAP, LOWER - BELT DRIVE LINE BORE HEAD
31	1	650-2-37Z	1/4-28UNF x 1/2" SLOTTED FLATHEAD SCREW
32	1	650-2-38C	BELT COVER, BELT DRIVE LINE BORE HEAD
33	7	MF-76	Socket Flat Head 8-32 UNC x 0.375
34	4	MF-4	S.H.C.S. 10 - 24 UNC - 3/8
35	4	MF-22	S.H.C.S. 5/16 - 18 UNC - 3/4
36	1	100-82-2A	Brass tipped 10-24 Socket Set Screw
37	1	650-2-38a	RETAINING TOOL - BELT DRIVE R.A.D.
38	2	MF-105	ROUND HEAD MACHINE SCREW 8-32 x 5/8"
39	1	6753V	KEY (MICARTA), PINION - 90 DEGREE HEAD
40	1	502-9-9S	INDICATOR MOUNT, R.A.D.
41	2	MF-49	8-32UNC x 1/8" LONG SOCKET SET SCREW
42	1	MF-58A	10-24UNC x 1/2" LG. SOCKET FLAT POINT SET SCREW
43	2	MF-177	SAE FLAT WASHER 5/16"
44	4	MF-217	1/8 x 1/2 Roll Pin



CUTTERHEAD SPACER SET - BELT DRIVE LINE BORE HEAD			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	650-2-43	1.05 SPACER
2	1	650-2-43A	SPACER - 1.50" LONG
3	1	650-2-43B	SPACER - .70" LONG
4	1	650-2-43D	SPACER - 1.215" LONG
5	1	650-2-43E	SPACER - .41" LONG
6	1	MF21A	Hexagon Socket Head Cap Screw
7	1	MF-21	S.H.C.S. 5/16 - 18 UNC - 5/8
8	1	MF-22	S.H.C.S. 5/16 - 18 UNC - 3/4
9	1	MF-23	Hexagon Socket Head Cap Screw
10	1	MF-24	Hexagon Socket Head Cap Screw
11	1	MF-25	S.H.C.S. 5/16 - 18 UNC - 1 1/2
12	1	Mf-26	Hexagon Socket Head Cap Screw
13	1	MF-27	S.H.C.S. 5/16 - 18 UNC - 2
14	1	MF-27C	S.H.C.S. 5/16 - 18 UNC - 2-1/4
15	1	MF-27A	S.H.C.S. 5/16 - 18 UNC - 2 1/2
16	1	MF-28	S.H.C.S. 5/16 - 18 UNC - 2 3/4
17	1	MF-28E	S.H.C.S. 5/16 - 18 UNC - 3
18	1	MF-28F	S.H.C.S. 5/16 - 18 UNC - 3-1/4
19	1	MF-28A	S.H.C.S. 5/16 - 18 UNC - 3-1/2
20	1	MF-28G	S.H.C.S. 5/16 - 18 UNC - 3-3/4

6753Y Narrow Right Angle Drive Components



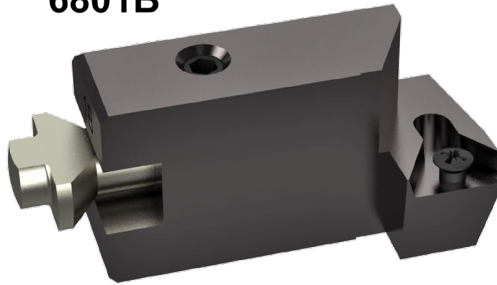
6801N



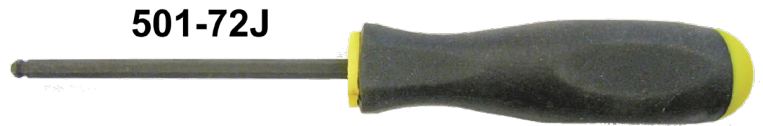
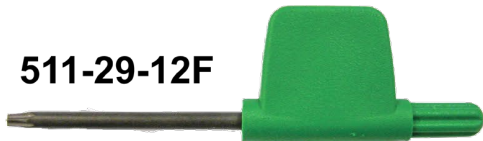
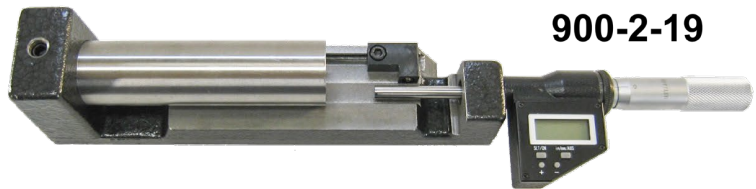
RT211



6801B

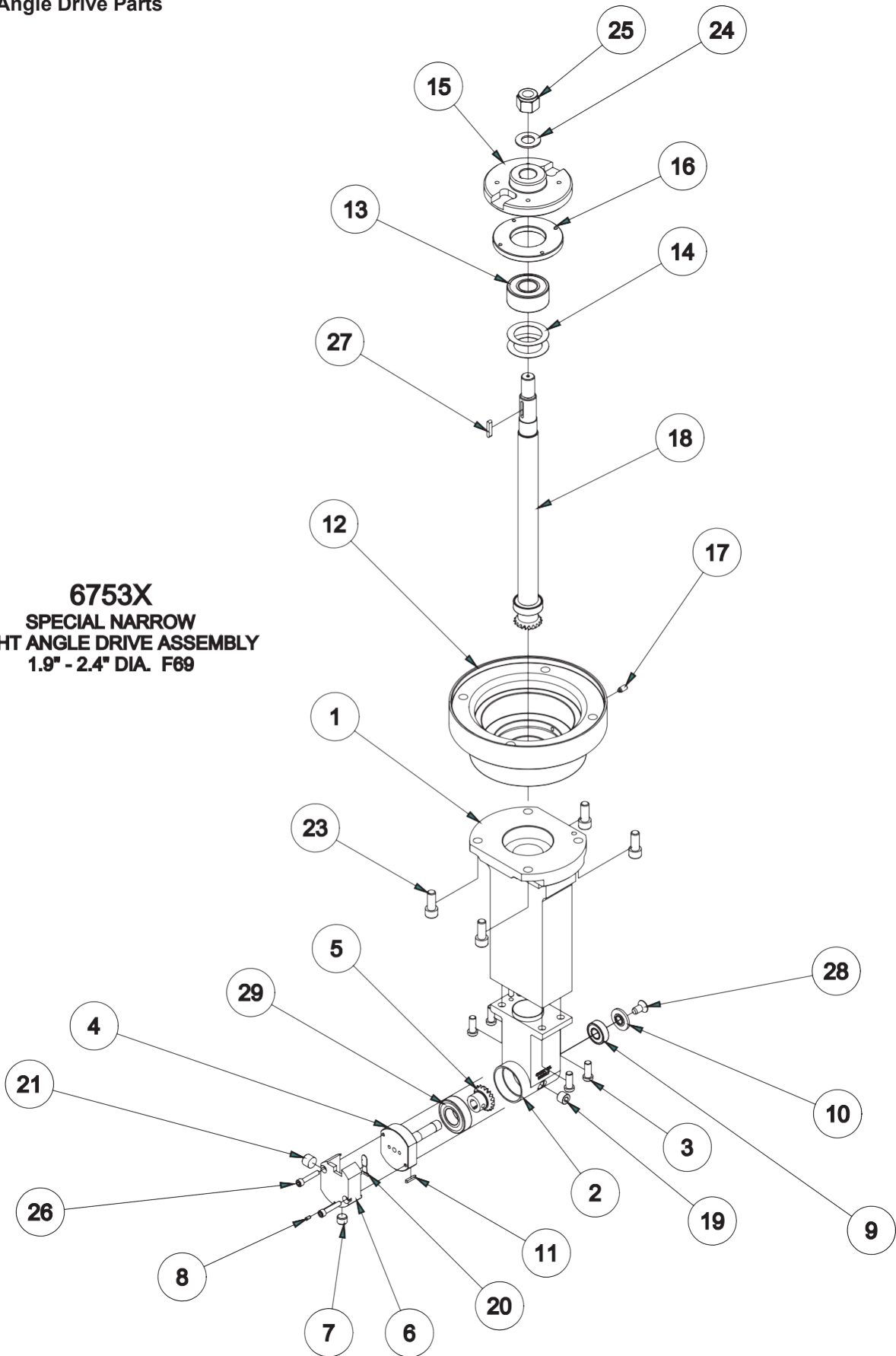


RT212



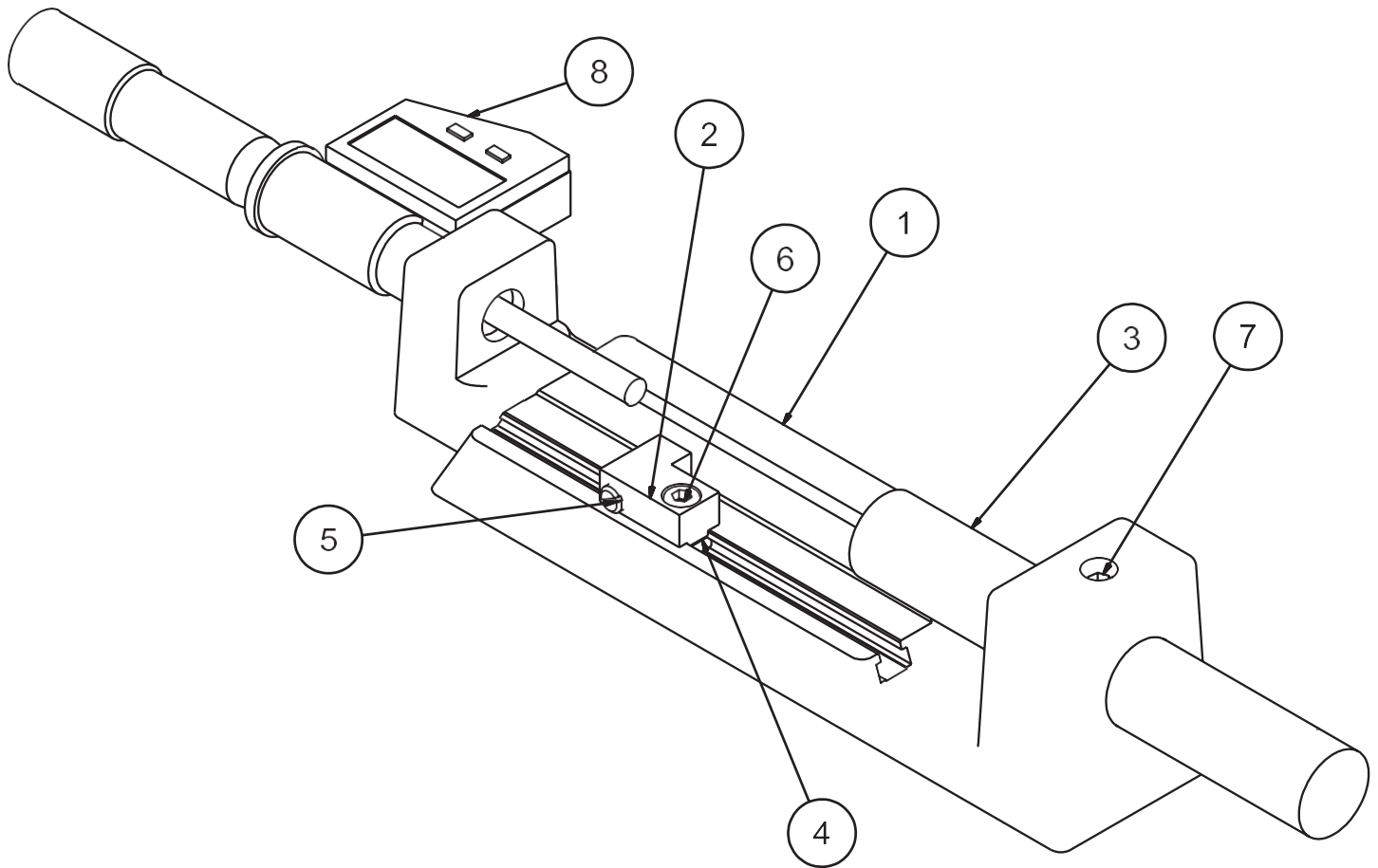
6753X Right Angle Drive Parts

6753X
SPECIAL NARROW
RIGHT ANGLE DRIVE ASSEMBLY
1.9" - 2.4" DIA. F69



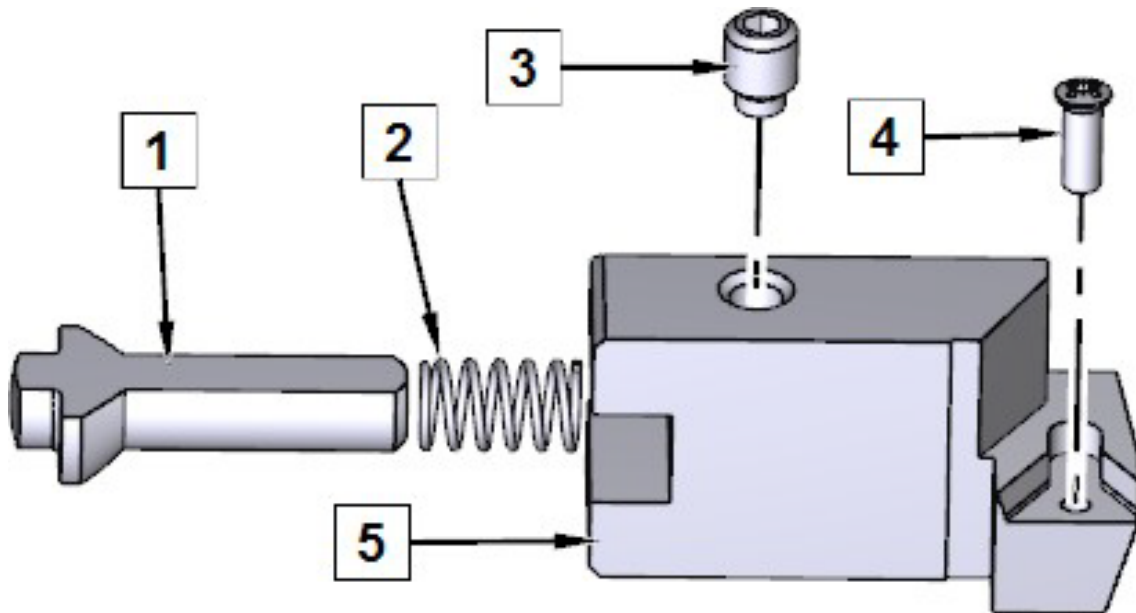
6753X SPECIAL RIGHT ANGLE DRIVE ASSEMBLY			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	650-2-19X	Upper Housing, Right Angle Drive Narrow
2	1	650-2-19Y	LOWER HOUSING
3	4	650-4-18	Low Head Cap Screw, 1/4-20 x 5/8
4	1	650-2-19J	Shaft, Horizontal
5	1	650-2-19R	RING GEAR (REWORK) F65 LINE BORE HEAD (NARROW)
6	1	650-2-19H	Cutter Head Cap
7	1	502-2-85B	Index Screw
8	1	650-2-6A	4-40 brass tipped set screw
9	1	650-2-19L	Bearing
10	1	650-2-19S	Cover Rear, End Cap
11	1	650-2-19W	Key
12	1	6770G	HUB, MOUNTING
13	1	502-9-32	Bearing, Ball
14	2	6007A	Bellville Spring
15	1	6771B	DRIVER, LINE BORE HEAD
16	1	6772A	Nut, Bearing Line Bore Head
17	1	100-82-2A	Brass tipped 10-24 Socket Set Screw
18	1	650-2-19Z	Assembly, Vertical shaft
19	1	MF-233	Countersunk Hex-Head Plug 1/8-27 NP T
20	1	100-1B	Tool Lock Spring
21	1	501-70G	SCREW, TOOL HOLDER LOCK ASSEMBLY
23	4	MF-22	S.H.C.S. 5/16 - 18 UNC - 3/4
24	1	100-19	Washer
25	1	MF-186	1/2-13 Nylock Nut
26	2	MF-3A	8-32UNC x 7/8" LG. S.H.C.S
27	1	6753V	KEY (MICARTA), PINION - 90 DEGREE HEAD
28	1	MF-82	1/4-20UNC x 1/2" LG. SOCKET FLAT HEAD SCREW
29	1	6753E	BALL BEARING

900-2-19 Micrometer Parts



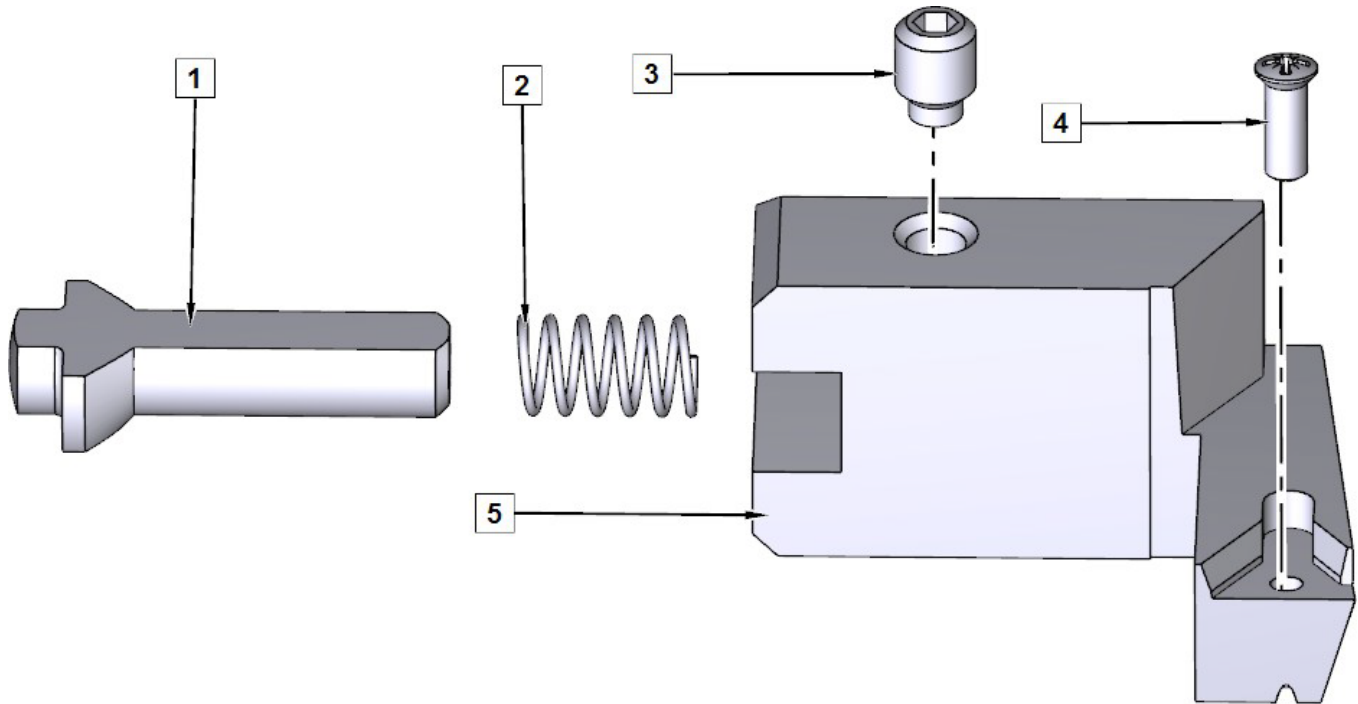
900-2-19 Micrometer Assembly			
ITEM	QTY	PART NUMBE	DESCRIPTION
1	1	502-30-10B	Frame
2	1	502-30-10M	Clamp Block
3	1	502-31-10A	Anvil
4	1	502-30-10J	Square Nut
5	1	502-30-10K	Ball Plunger
6	1	ANSI B18.3 - No. 10 - 24 UNC - 3/8	Hexagon Socket Head Cap Screw
7	1	502-30-10L	Brass Tipped Set Screw
8	1	501-34-2R	Digital Micrometer Head

6801B Insert Holder Parts



ITEM	PART #	DESCRIPTION
1	100-82-3B	PIN, ADJUSTING LONG
2	100-82-1	SPRING, ADJUSTING PIN
3	100-82-2	SCREW, SET-BRASS GIB - 3/16" LONG
4	511-29-12C	SCREW, TORX M4 X .7 X .315" LONG
5	6800B	TOOLHOLDER, INDEXABLE INSERT- 1/4" TRIANGLE, OFFSET, POSITIVE RAKE

6801N Insert Holder Parts



ITEM	PART #	DESCRIPTION
1	100-82-3B	PIN ADJUSTING LONG
2	100-82-1	SPRING, ADJUSTING PIN
3	100-82-2	SCREW, SET-BRASS GIB - 3/16" LONG
4	511-29-12E	SCREW, TORX M2.5 X 0.45 X .29" LONG
5	6800N	CARTRIDGE, INDEXABLE INSERT 1/4" TRIANGLE POSITIVE RAKE LINE BORING

650-2-39B Line Boring Cutterhead Package Components

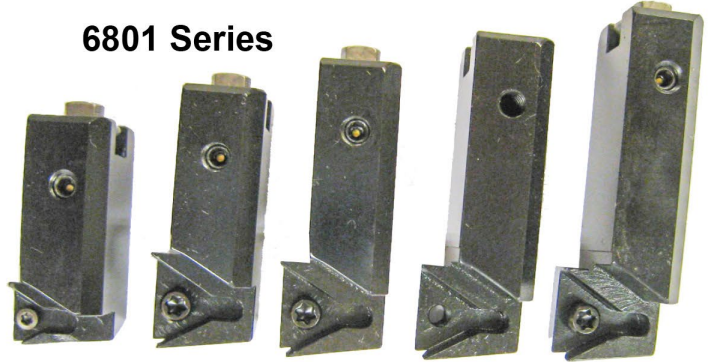


650-2-39F



RT321F

6801 Series



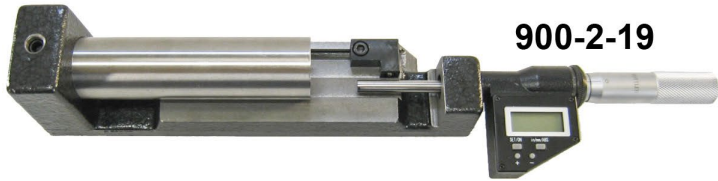
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C

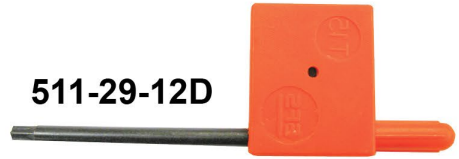
D

E

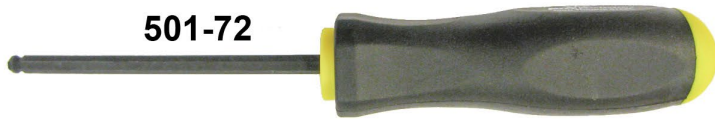
F



900-2-19



511-29-12D



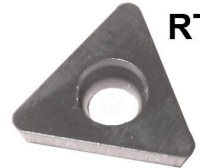
501-72



T7D



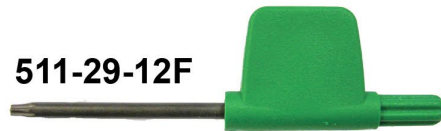
RT211



RT212



RT322F



511-29-12F

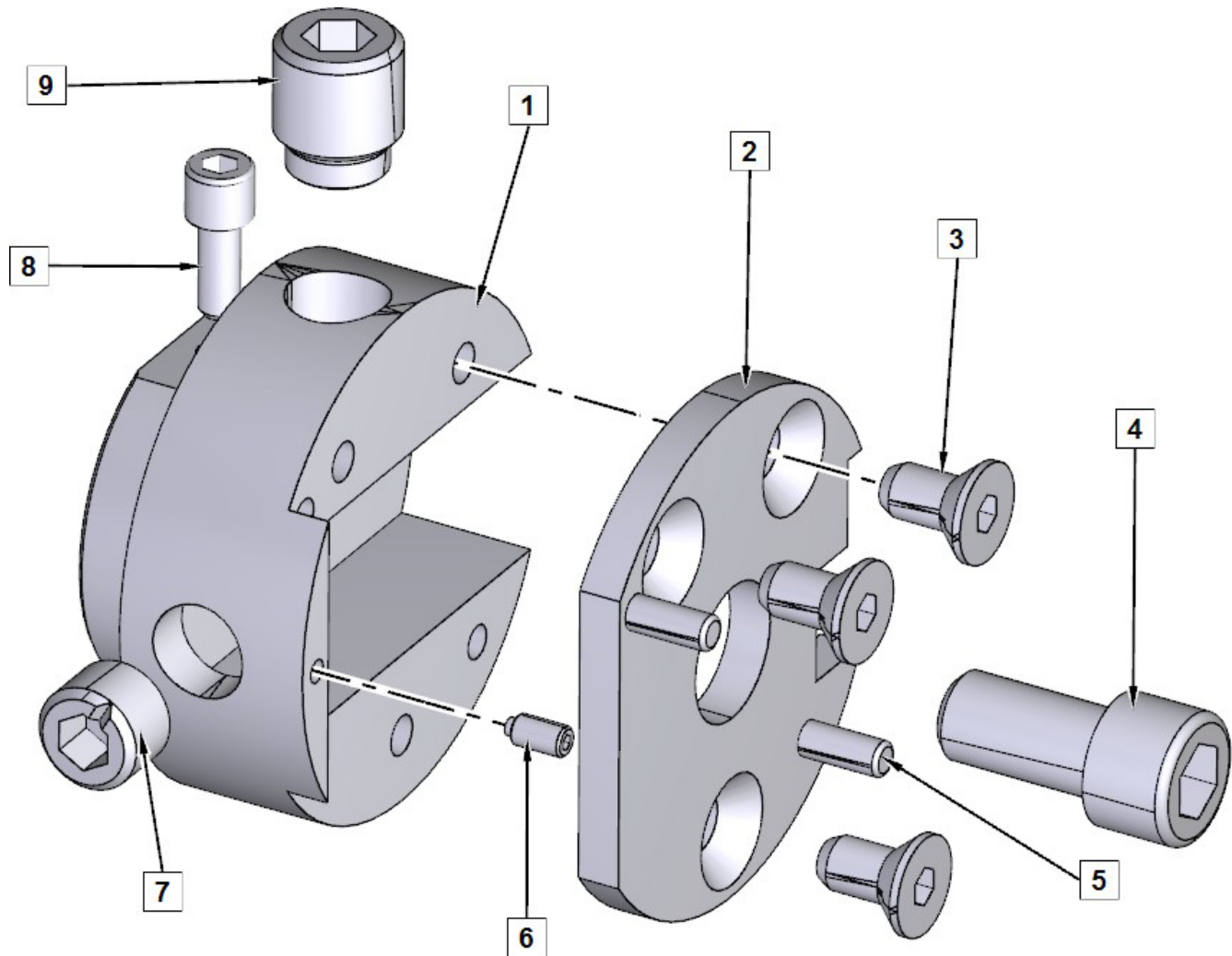


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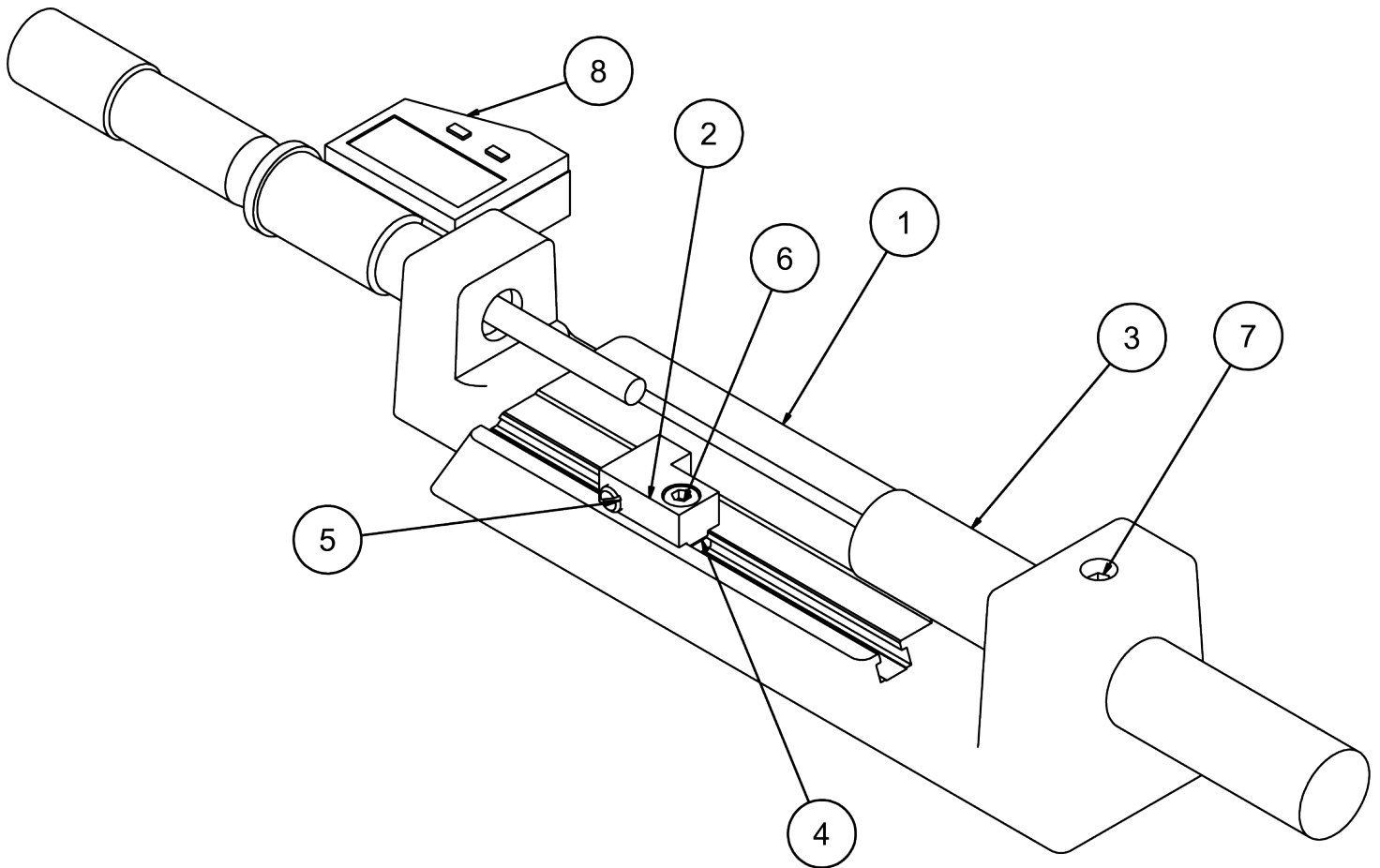
RT322

650-2-39F Cutterhead Parts



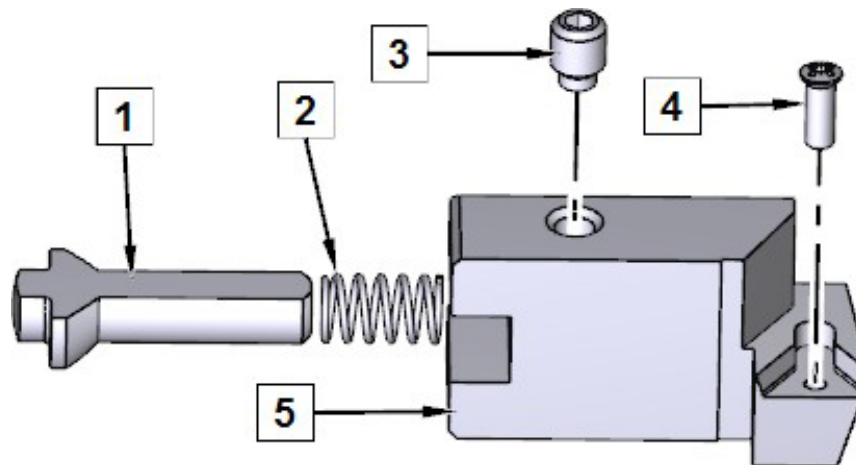
ITEM	PART #	DESCRIPTION
1	650-2-40A	BODY, 1.9" PRECISION LINE BORE CUTTERHEAD
2	650-2-41	CAP, 1.9" DIAMETER PRECISION LINE BORE HEAD
3	MF-78	SOCKET FLAT HEAD SCREW 10-24 X 3/8"
4	MF-21	SOCKET HEAD CAP SCREW 5/16-18 X 5/8"
5	MF-193C	DOWEL PINS 1/8 X 3/8"
6	650-2-6A	SOCKET SET SCREW BRASS TIPPED 4-40 X 3/16" LONG
7	502-2-85B	SCREW, SET-INDEX 3/8-40 FINE THREAD
8	MF-4	SOCKET HEAD CAP SCREW 10-24 X 3/8"
9	501-70A	SCREW, TOOL HOLDER LOCK ASSY

900-2-19 Micrometer Parts



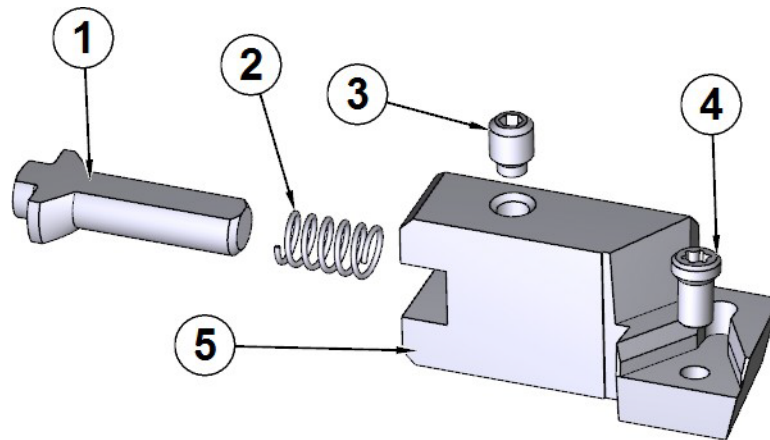
900-2-19 Micrometer Assembly			
ITEM	QTY	PART NUMBE	DESCRIPTION
1	1	502-30-10B	Frame
2	1	502-30-10M	Clamp Block
3	1	502-31-10A	Anvil
4	1	502-30-10J	Square Nut
5	1	502-30-10K	Ball Plunger
6	1	ANSI B18.3 - No. 10 - 24 UNC - 3/8	Hexagon Socket Head Cap Screw
7	1	502-30-10L	Brass Tipped Set Screw
8	1	501-34-2R	Digital Micrometer Head

6801B Insert Holder Parts



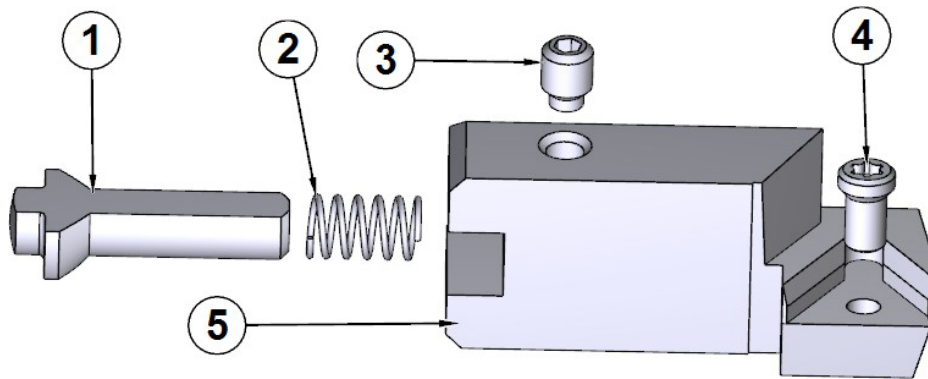
ITEM	PART #	DESCRIPTION
1	100-82-3B	PIN, ADJUSTING LONG
2	100-82-1	SPRING, ADJUSTING PIN
3	100-82-2	SCREW, SET-BRASS GIB - 3/16" LONG
4	511-29-12C	SCREW, TORX M4 X .7 X .315" LONG
5	6800B	TOOLHOLDER, INDEXABLE INSERT- 1/4" TRIANGLE, OFFSET, POSITIVE RAKE

6801C Insert Holder Parts



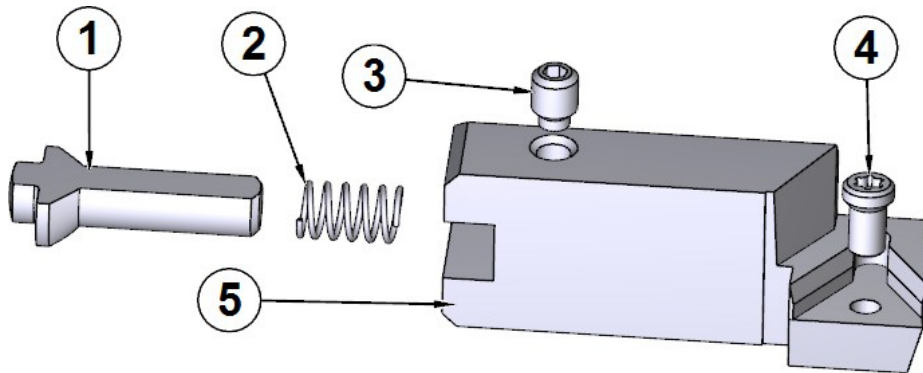
ITEM	PART #	DESCRIPTION
1	100-82-3B	PIN ADJUSTING LONG INDEXABLE INSERT TOOLHOLDER
2	100-82-1	SPRING, ADJUSTING PIN
3	100-82-2	SCREW, SET-BRASS GIB - 3/16" LONG
4	511-29-12C	SCREW, TORX M4 X .7 X .315" LONG
5	6800C	TOOLHOLDER, INDEXABLE INSERT- 3/8" IC TRIANGLE, OFFSET POSITIVE RAKE

6801D Insert Holder Parts



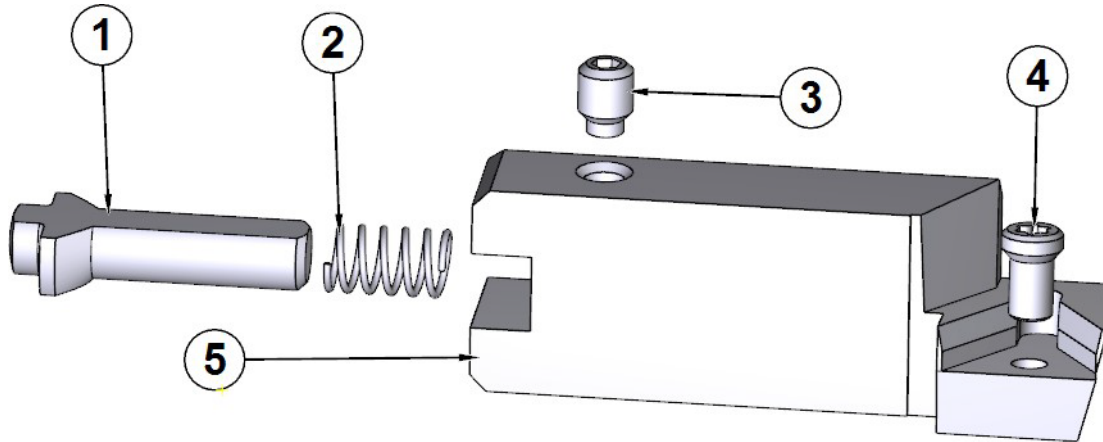
ITEM	PART #	DESCRIPTION
1	100-82-3B	PIN ADJUSTING LONG INDEXABLE INSERT TOOLHOLDER
2	100-82-1	SPRING, ADJUSTING PIN
3	100-82-2	SCREW, SET-BRASS GIB - 3/16" LONG
4	511-29-12C	SCREW, TORX M4 X .7 X .315" LONG
5	6800D	TOOLHOLDER, INDEXABLE INSERT- 3/8" IC TRIANGLE, OFFSET POSITIVE RAKE

6801E Insert Holder Parts



ITEM	PART #	DESCRIPTION
1	100-82-3B	PIN ADJUSTING LONG INDEXABLE INSERT TOOLHOLDER
2	100-82-1	SPRING, ADJUSTING PIN
3	100-82-2	SCREW, SET-BRASS GIB - 3/16" LONG
4	511-29-12C	SCREW, TORX M4 X .7 X .315" LONG
5	6800E	TOOLHOLDER, INDEXABLE INSERT- 3/8" IC TRIANGLE, OFFSET POSITIVE RAKE

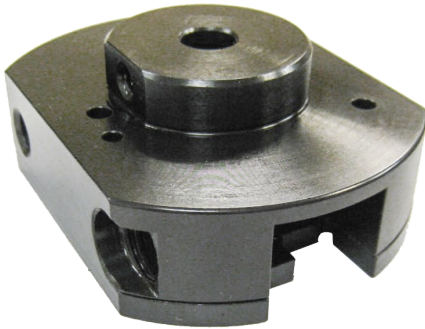
6801F Insert Holder Parts



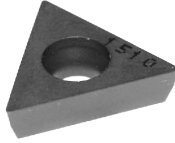
ITEM	PART #	DESCRIPTION
1	100-82-3B	PIN ADJUSTING LONG INDEXABLE INSERT TOOLHOLDER
2	100-82-1	SPRING, ADJUSTING PIN
3	100-82-2	SCREW, SET-BRASS GIB - 3/16" LONG
4	511-29-12C	SCREW, TORX M4 X .7 X .315" LONG
5	6800F	TOOLHOLDER, INDEXABLE INSERT- 3/8" IC TRIANGLE, OFFSET POSITIVE RAKE

650-2-39C Cutterhead Package Components

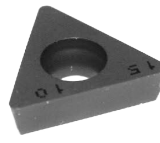
650-2-39G



RT321



RT322



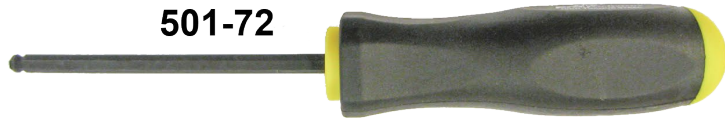
RT321F



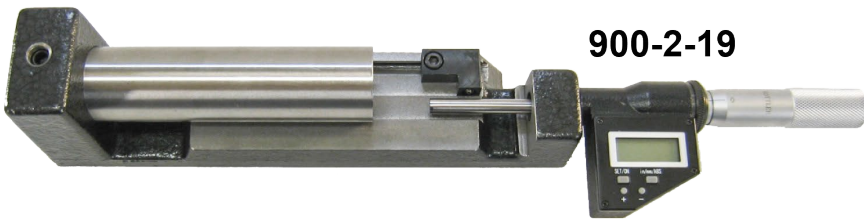
RT322F



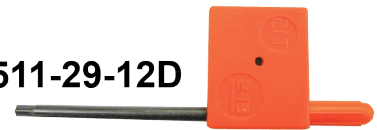
501-72



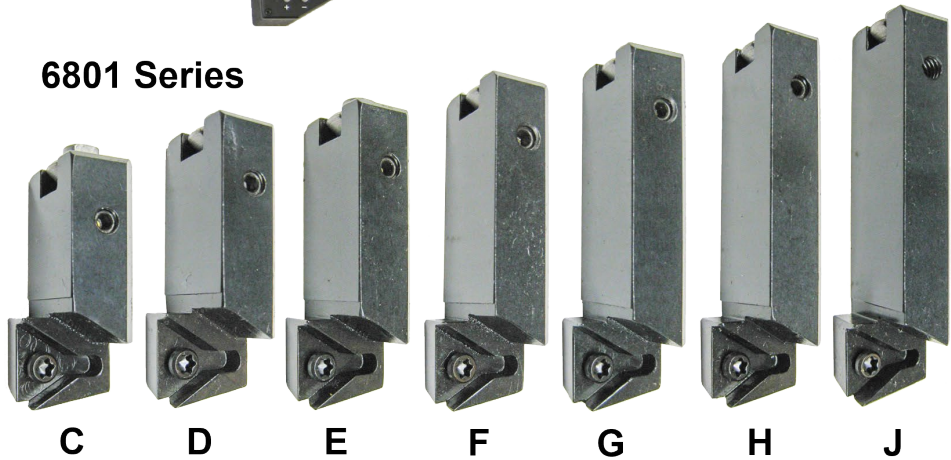
900-2-19



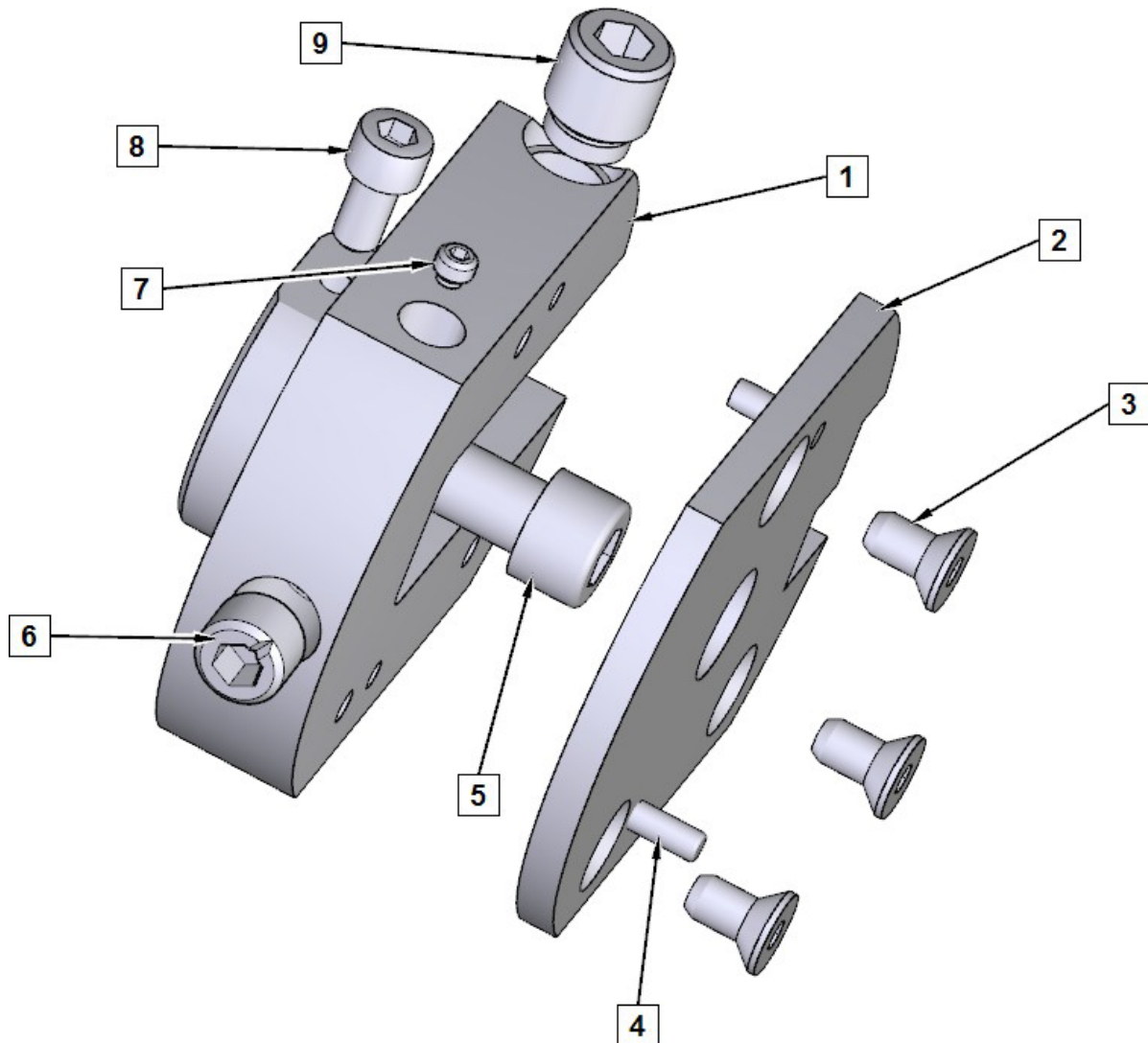
511-29-12D



6801 Series

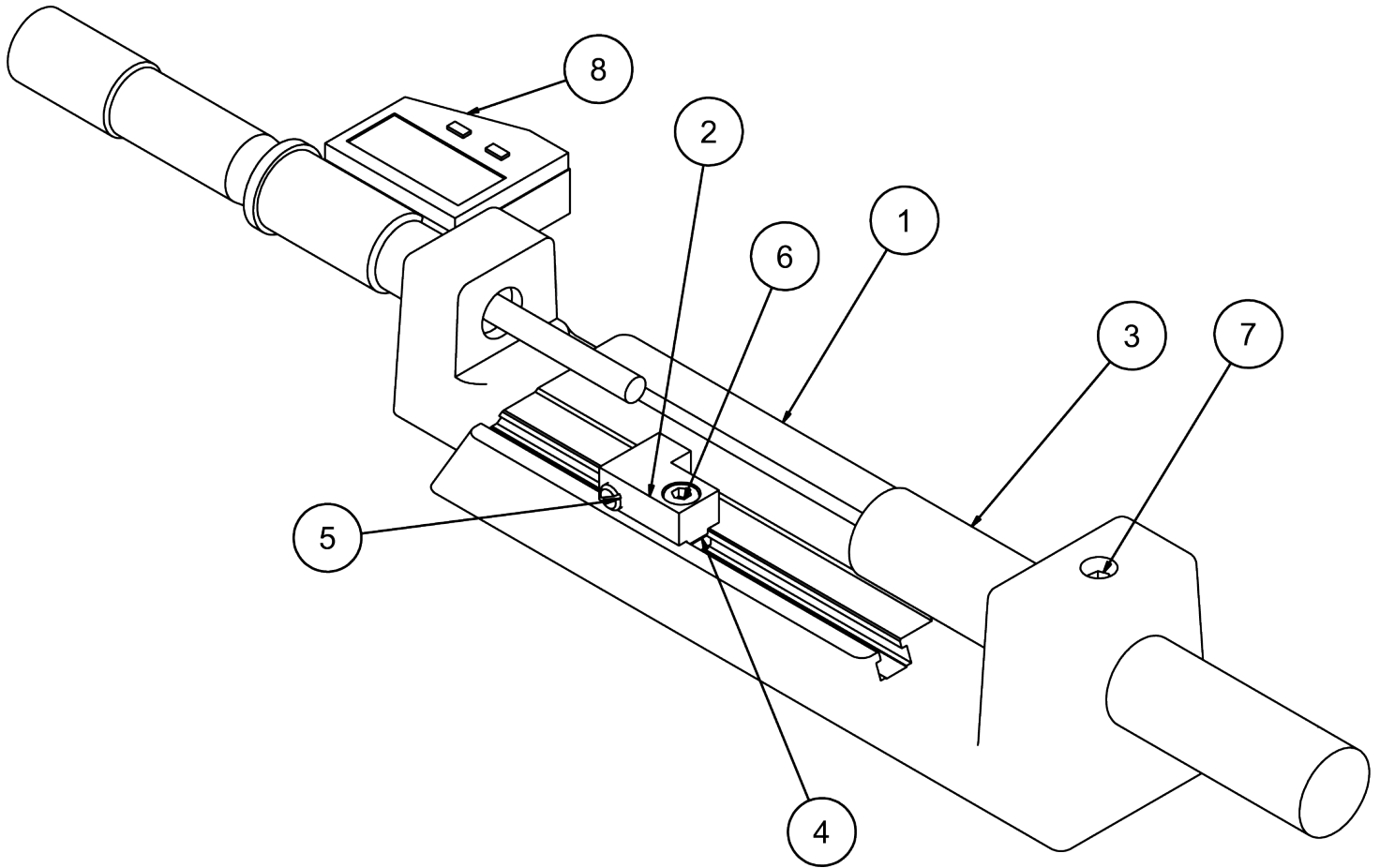


650-2-39G Cutterhead Parts



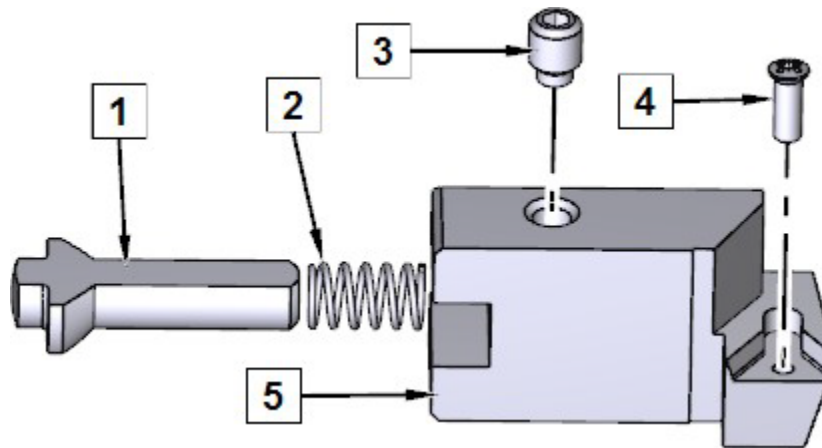
ITEM	PART #	DESCRIPTION
1	650-2-16E	BODY, 2.9" DIAMETER PRECISION LINE BORE CUTTERHEAD
2	650-2-17A	CAP, 2.9" DIAMETER PRECISION LINE BORE CUTTERHEAD
3	MF-78	SOCKET FLAT HEAD SCREW 10-24 X 3/8"
4	MF-193C	DOWEL PINS 1/8 X 3/8"
5	MF-21	SOCKET HEAD CAP SCREW 5/16-18 X 5/8"
6	502-2-85B	SCREW, SET-INDEX 3/8-40 FINE THREAD
7	502-12-4D	SOCKET SET SCREW 8-32 X 1/8" (BRASS TIPPED)
8	MF-4	SOCKET HEAD CAP SCREW 10-24 X 3/8"
9	501-70A	SCREW, TOOL HOLDER LOCK ASSY

900-2-19 Micrometer Parts



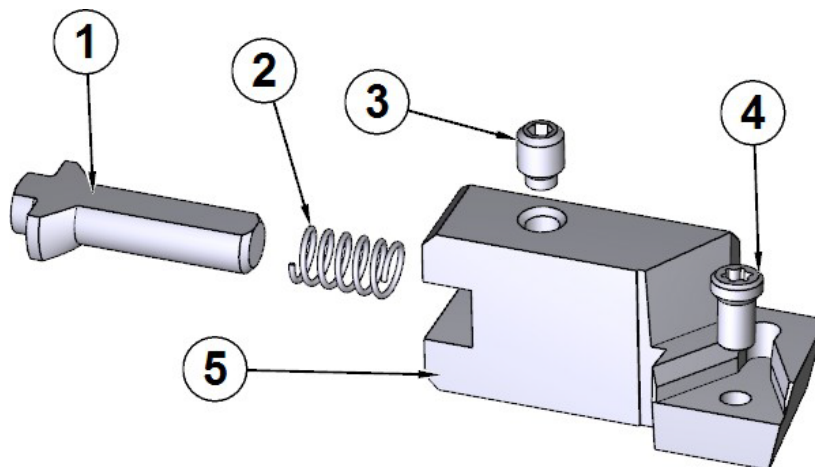
900-2-19 Micrometer Assembly			
ITEM	QTY	PART NUMBE	DESCRIPTION
1	1	502-30-10B	Frame
2	1	502-30-10M	Clamp Block
3	1	502-31-10A	Anvil
4	1	502-30-10J	Square Nut
5	1	502-30-10K	Ball Plunger
6	1	ANSI B18.3 - No. 10 - 24 UNC - 3/8	Hexagon Socket Head Cap Screw
7	1	502-30-10L	Brass Tipped Set Screw
8	1	501-34-2R	Digital Micrometer Head

6801B Insert Holder Parts



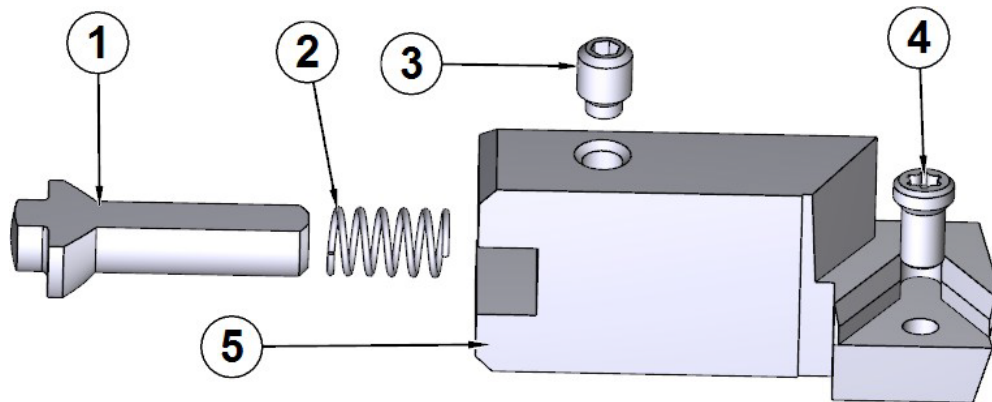
ITEM	PART #	DESCRIPTION
1	100-82-3B	PIN, ADJUSTING LONG
2	100-82-1	SPRING, ADJUSTING PIN
3	100-82-2	SCREW, SET-BRASS GIB - 3/16" LONG
4	511-29-12C	SCREW, TORX M4 X .7 X .315" LONG
5	6800B	TOOLHOLDER, INDEXABLE INSERT- 1/4" TRIANGLE, OFFSET, POSITIVE RAKE

6801C Insert Holder Parts



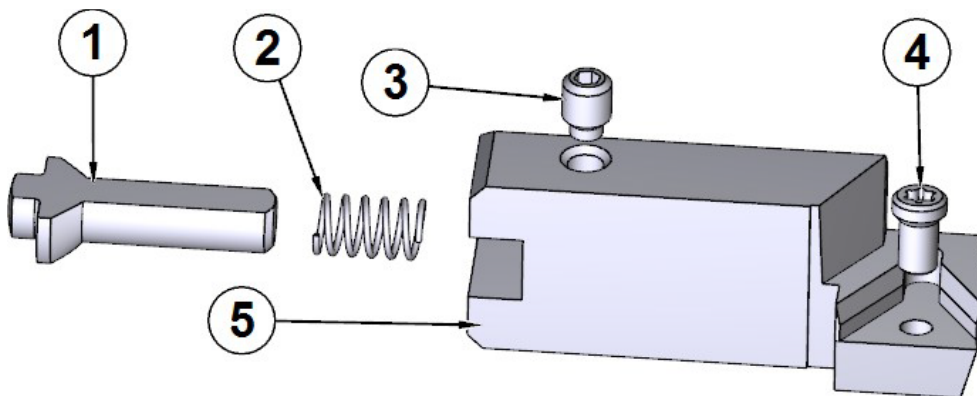
ITEM	PART #	DESCRIPTION
1	100-82-3B	PIN ADJUSTING LONG INDEXABLE INSERT TOOLHOLDER
2	100-82-1	SPRING, ADJUSTING PIN
3	100-82-2	SCREW, SET-BRASS GIB - 3/16" LONG
4	511-29-12C	SCREW, TORX M4 X .7 X .315" LONG
5	6800C	TOOLHOLDER, INDEXABLE INSERT- 3/8" IC TRIANGLE, OFFSET POSITIVE RAKE

6801D Insert Holder Parts



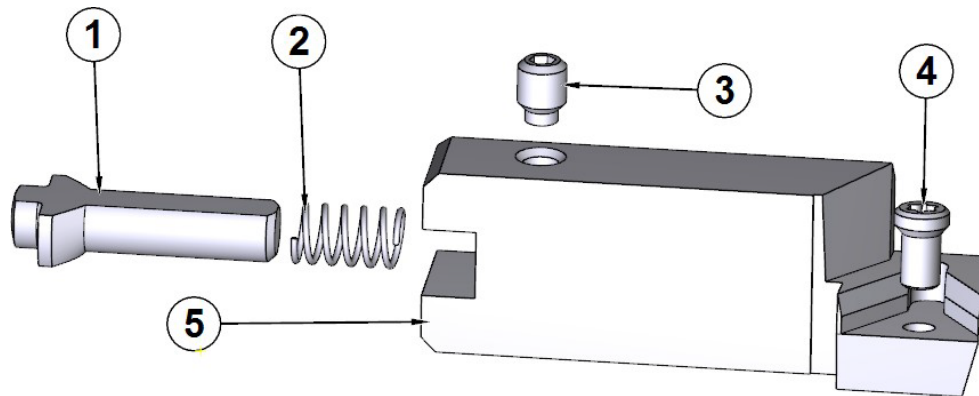
ITEM	PART #	DESCRIPTION
1	100-82-3B	PIN ADJUSTING LONG INDEXABLE INSERT TOOLHOLDER
2	100-82-1	SPRING, ADJUSTING PIN
3	100-82-2	SCREW,SET-BRASS GIB - 3/16" LONG
4	511-29-12C	SCREW, TORX M4 X .7 X .315" LONG
5	6800D	TOOLHOLDER, INDEXABLE INSERT- 3/8" IC TRIANGLE, OFFSET POSITIVE RAKE

6801E Insert Holder Parts



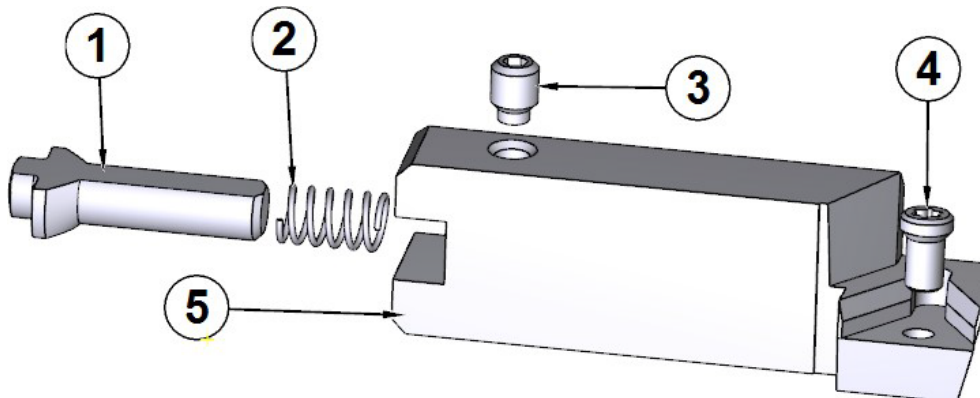
ITEM	PART #	DESCRIPTION
1	100-82-3B	PIN ADJUSTING LONG INDEXABLE INSERT TOOLHOLDER
2	100-82-1	SPRING, ADJUSTING PIN
3	100-82-2	SCREW,SET-BRASS GIB - 3/16" LONG
4	511-29-12C	SCREW, TORX M4 X .7 X .315" LONG
5	6800C	TOOLHOLDER, INDEXABLE INSERT- 3/8" IC TRIANGLE, OFFSET POSITIVE RAKE

6801F Insert Holder Parts



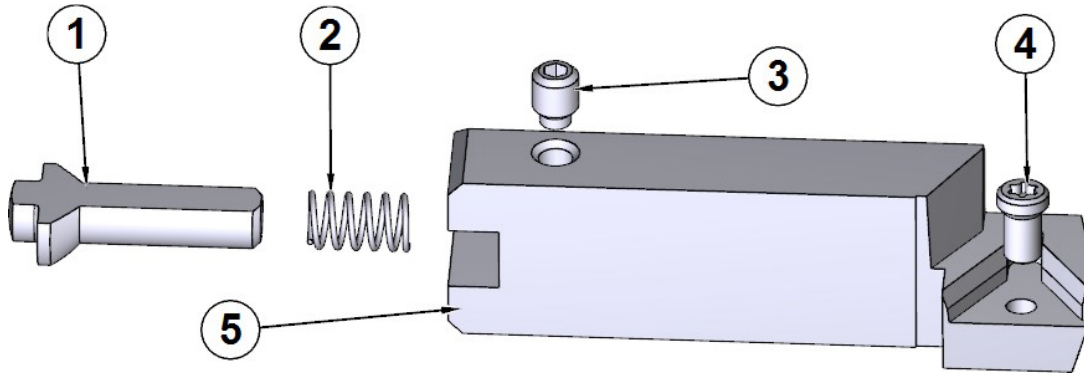
ITEM	PART #	DESCRIPTION
1	100-82-3B	PIN ADJUSTING LONG INDEXABLE INSERT TOOLHOLDER
2	100-82-1	SPRING, ADJUSTING PIN
3	100-82-2	SCREW, SET-BRASS GIB - 3/16" LONG
4	511-29-12C	SCREW, TORX M4 X .7 X .315" LONG
5	6800F	TOOLHOLDER, INDEXABLE INSERT- 3/8" IC TRIANGLE, OFFSET POSITIVE RAKE

6801G Insert Holder Parts



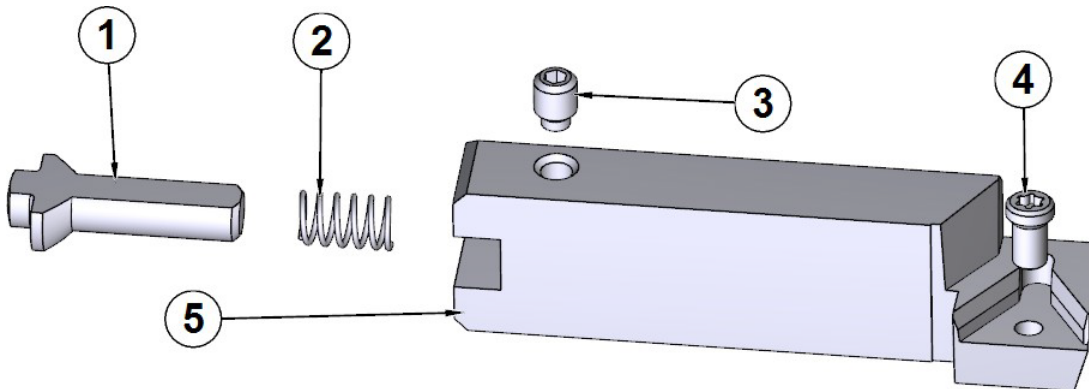
ITEM	PART #	DESCRIPTION
1	100-82-3B	PIN ADJUSTING LONG INDEXABLE INSERT TOOLHOLDER
2	100-82-1	SPRING, ADJUSTING PIN
3	100-82-2	SCREW, SET-BRASS GIB - 3/16" LONG
4	511-29-12C	SCREW, TORX M4 X .7 X .315" LONG
5	6800C	TOOLHOLDER, INDEXABLE INSERT- 3/8" IC TRIANGLE, OFFSET POSITIVE RAKE

6801H Insert Holder Parts



ITEM	PART #	DESCRIPTION
1	100-82-3B	PIN ADJUSTING LONG INDEXABLE INSERT TOOLHOLDER
2	100-82-1	SPRING, ADJUSTING PIN
3	100-82-2	SCREW, SET-BRASS GIB - 3/16" LONG
4	511-29-12C	SCREW, TORX M4 X .7 X .315" LONG
5	6800H	TOOLHOLDER, INDEXABLE INSERT- 3/8" IC TRIANGLE, OFFSET POSITIVE RAKE

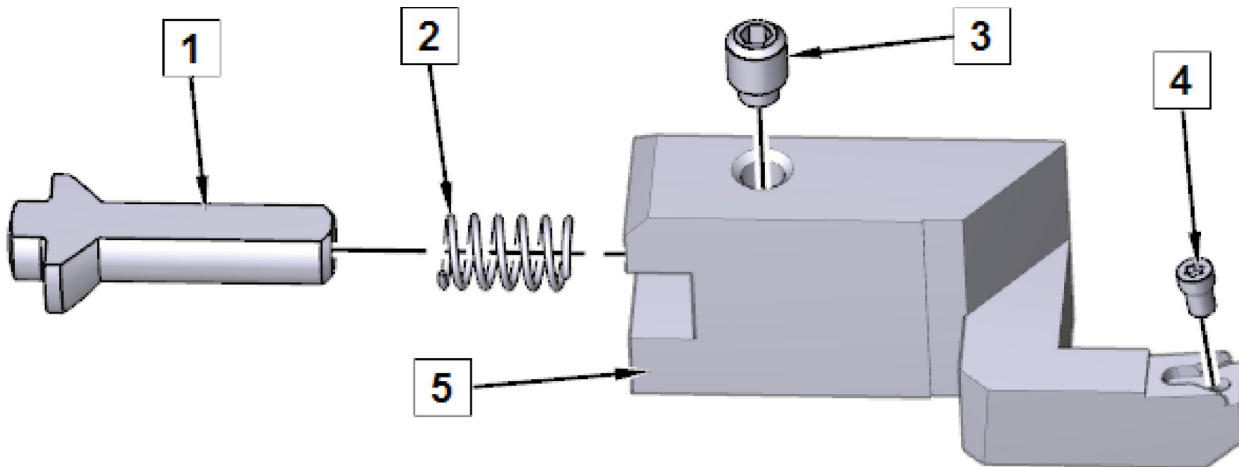
6801J Insert Holder Parts



ITEM	PART #	DESCRIPTION
1	100-82-3B	PIN ADJUSTING LONG INDEXABLE INSERT TOOLHOLDER
2	100-82-1	SPRING, ADJUSTING PIN
3	100-82-2	SCREW, SET-BRASS GIB - 3/16" LONG
4	511-29-12C	SCREW, TORX M4 X .7 X .315" LONG
5	6800J	TOOLHOLDER, INDEXABLE INSERT- 3/8" IC TRIANGLE, OFFSET POSITIVE RAKE

Special Main Line Boring Thrust Facing Tool

6801M Insert Holder Package Components



ITEM	PART #	DESCRIPTION
1	100-82-3B	PIN ADJUSTING LONG
2	100-82-1	SPRING, ADJUSTING PIN
3	100-82-2	SCREW, SET-BRASS GIB - 3/16" LONG
4	501-29-6H	SCREW, INSERT THRUST FACING TOOLBIT
5	6800M	CARTRIDGE, INDEXABLE INSERT-THRUST FACING



501-29-6G INSERT, TRIANGLE-.160" IC 1/64 RADIUS



501-29-6H SCREW, INSERT THRUST FACING
TOOLBIT-.160" IC TRIANGLE

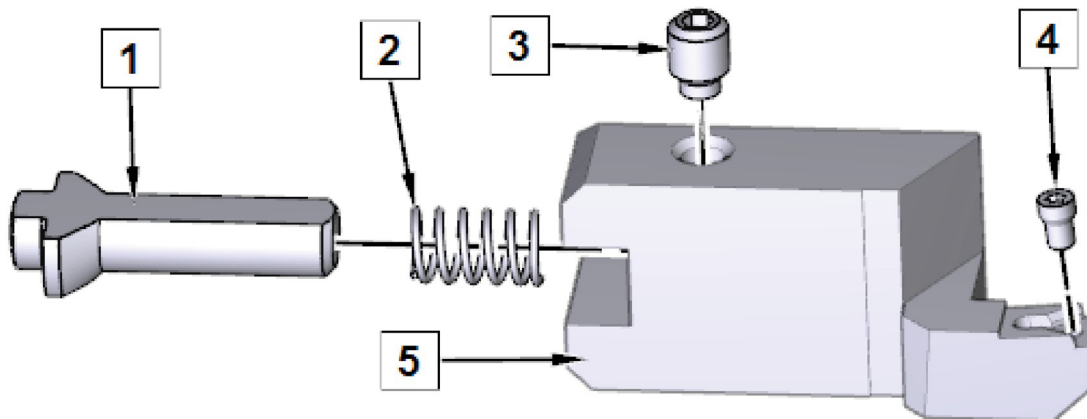


T7D T7 TORX TIP HOLDING SCREW DRIVER



T8D T8 TORX TIP HOLDING SCREW DRIVER

6801P Insert Holder Parts



ITEM	PART #	DESCRIPTION
1	100-82-3B	PIN ADJUSTING LONG
2	100-82-1	SPRING, ADJUSTING PIN
3	100-82-2	SCREW, SET-BRASS GIB - 3/16" LONG
4	501-29-6H	SCREW, INSERT
5	6800P	CARTRIDGE, INDEXABLE INSERT



501-29-6G INSERT, TRIANGLE-.160" IC 1/64 RADIUS



501-29-6J INSERT, TRIANGLE-.160" IC 1/32 RADIUS

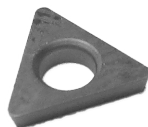


511-29-12F WRENCH, TORX



T8D T8 TORX TIP HOLDING SCREW DRIVER

501-29-6G Triangular Insert

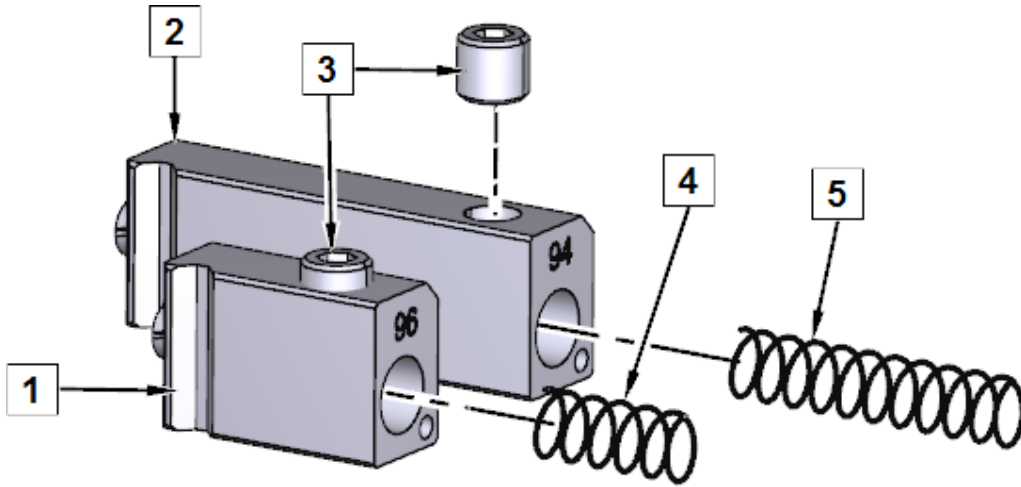


501-29-6H Insert Screw



Special Main Line Boring Chamfering Tool

199 Series Tool Holder Parts



ITEM	PART #	DESCRIPTION
1	199-96	HOLDER, TOOL 1-1/4"
2	199-94	HOLDER, TOOL 2-1/4"
3	502-25-1	SCREW, SOCKET SET- 5/16-18 X 5/16" LONG
4	200-1-6D	SPRING, TOOL BIT 3/4"
5	200-1-6C	SPRING, TOOL BIT 1-7/16"

501-33E Tool bit, 45-Degree Chamfer

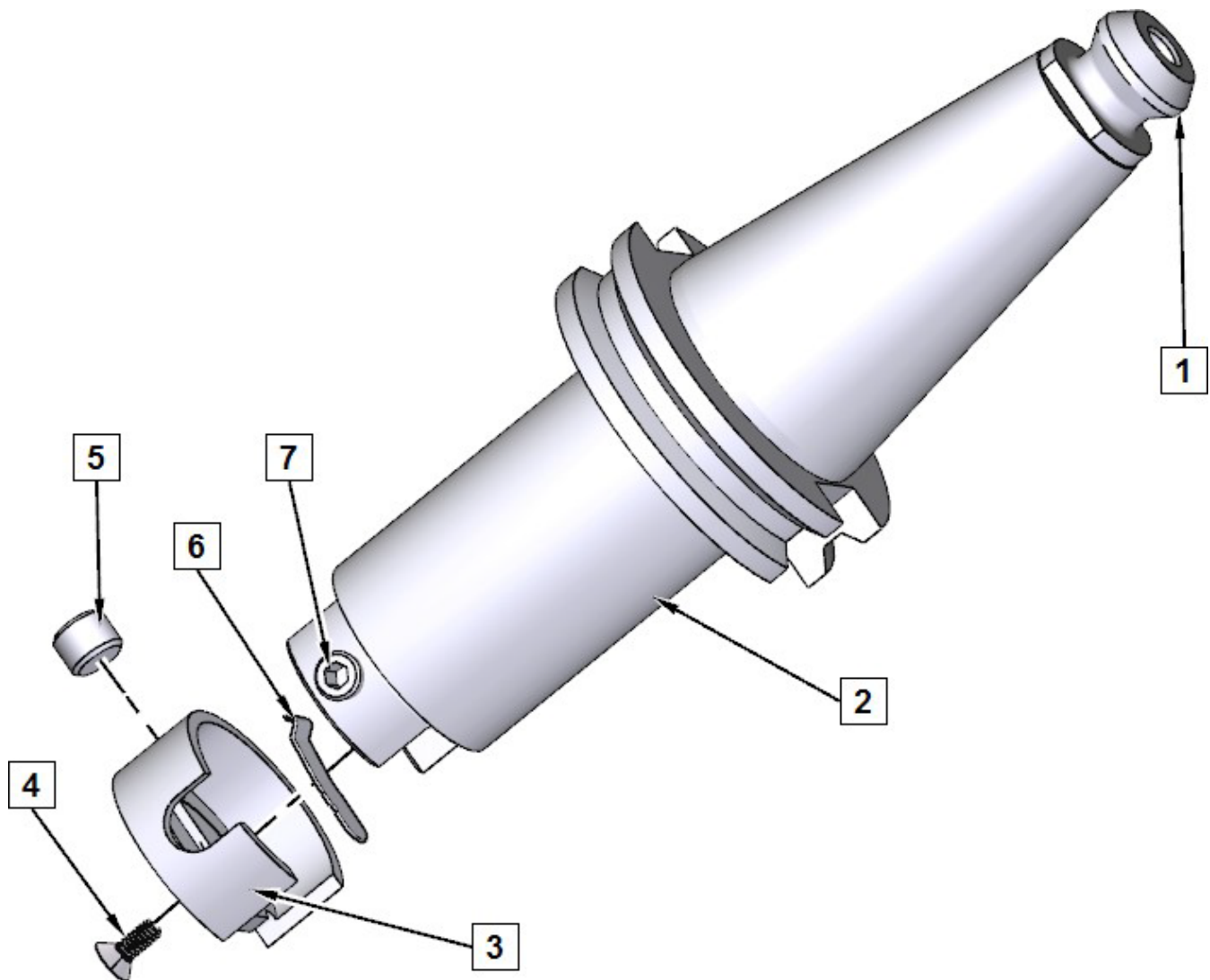


Cam Line Boring Tooling

650-3-43T Cam Line Bore Tooling Package Parts

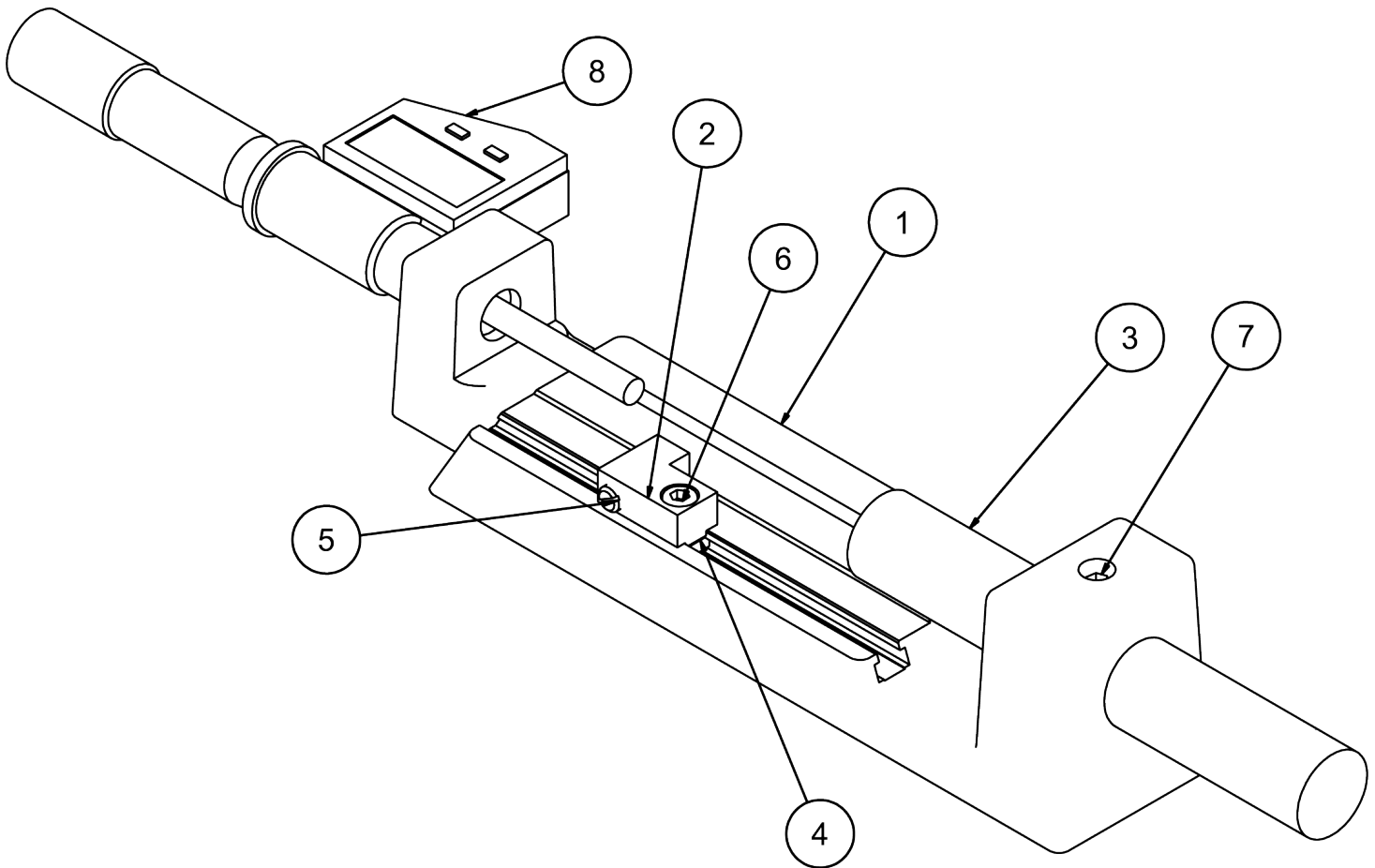


650-2-3R Cutter Head Assembly Parts



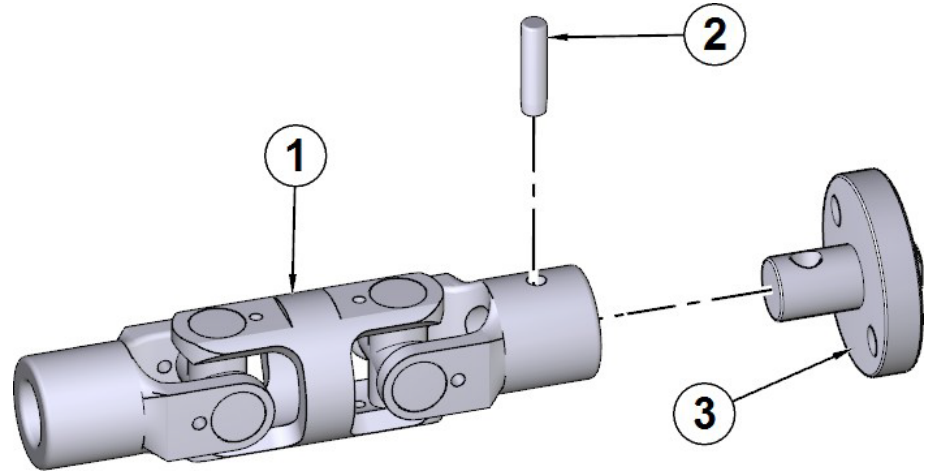
ITEM	PART #	DESCRIPTION
1	650-2-44L	CAT 40 RETENTION KNOB
2	650-2-3M	ADAPTER, CAM LINE BORING STUB BAR CAT 40 TAPER
3	600-5C	CAP, CUTTERHEAD
4	MF-122B	SOCKET FLAT HEAD SCREW 6-32UNC X 3/8"
5	502-2-85G	SCREW, SET-INDEX 1/4-40 FINE THREAD
6	100-1B	SPRING, TOOL LOCK 15/16"
7	502-25-1	SCREW, SOCKET SET- TOOLBIT (ALLEN) SET SCREW 5/16-18 X 5/16" LONG

900-2-19 Micrometer Parts



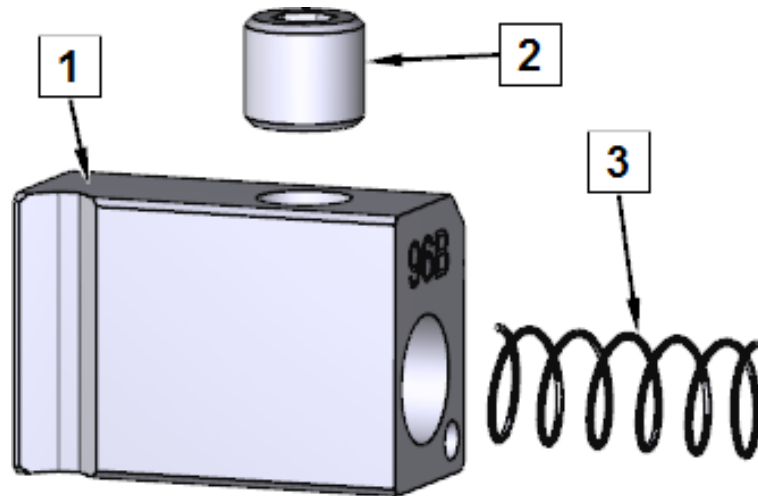
900-2-19 Micrometer Assembly			
ITEM	QTY	PART NUMBE	DESCRIPTION
1	1	502-30-10B	Frame
2	1	502-30-10M	Clamp Block
3	1	502-31-10A	Anvil
4	1	502-30-10J	Square Nut
5	1	502-30-10K	Ball Plunger
6	1	ANSI B18.3 - No. 10 - 24 UNC - 3/8	Hexagon Socket Head Cap Screw
7	1	502-30-10L	Brass Tipped Set Screw
8	1	501-34-2R	Digital Micrometer Head

650-2-19G Universal Drive Parts



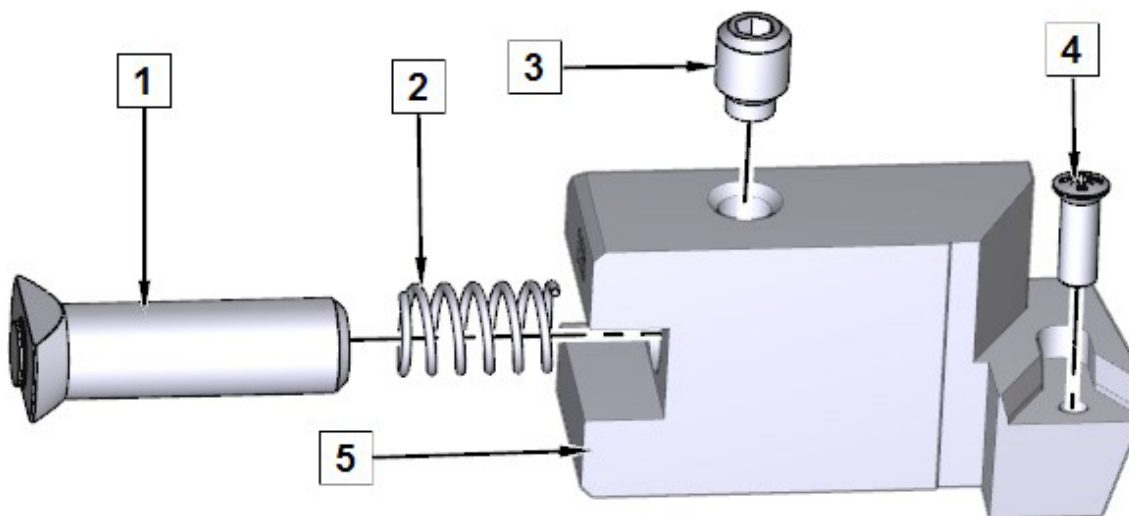
ITEM	PART #	DESCRIPTION
1	650-2-33A	COUPLING, DUALFLEX WITH COUPLING DRIVE SCREW
2	650-2-33C	PIN, SHEAR-DRIVE COUPLING
3	650-2-19F	ADAPTER

199-96B Tool Holder Parts



ITEM	PART #	DESCRIPTION
1	199-96B	HOLDER, TOOL - SPECIAL 1.5" DIAMETER STUB BAR
2	502-25-1	SCREW, SOCKET SET- TOOLBIT (ALLEN) SET SCREW 5/16-18 X 5/16" LONG
3	200-1-6D	SPRING, TOOL BIT 3/4"

6802B Insert Holder Parts



ITEM	PART #	DESCRIPTION
1	100-82-3D	PIN ADJUSTING LONG
2	100-82-1	SPRING, ADJUSTING PIN
3	100-82-2	SCREW, SET-BRASS GIB - 3/16" LONG
4	511-29-12E	SCREW, TORX M2.5 X 0.45 X .29" LONG
5	6800B	TOOLHOLDER, INDEXABLE INSERT- 1/4" TRIANGLE, OFFSET, POSITIVE RAKE

Cam Line Bar Bushings

- 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 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.

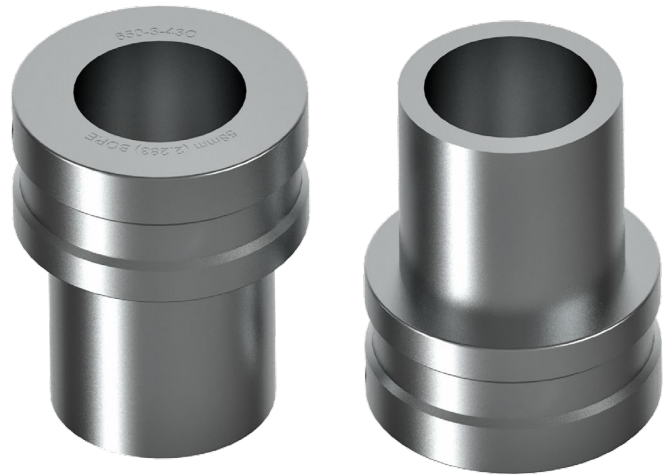
650-3-43B Bushing - 63mm (2 ϕ 480" +/- ϕ 0007)

(Sold in pairs)



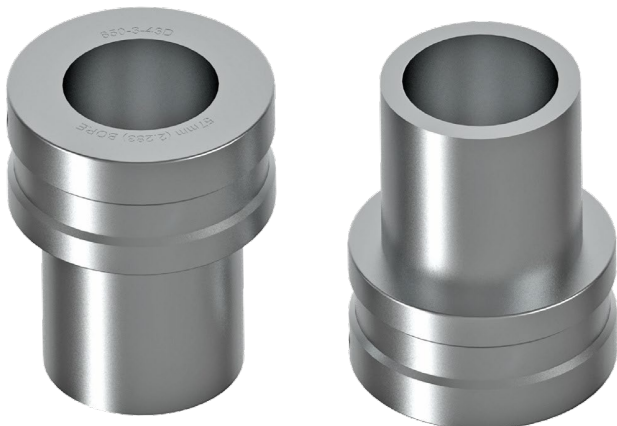
650-3-43C Bushing - 58mm (2 ϕ 282" +/- ϕ 0007)

(Sold in pairs)



650-3-43D Bushing - (2 ϕ 250" +/- ϕ 0007)

(Sold in pairs)



650-3-43E Bushing - (2 ϕ 790" +/- ϕ 0007)

(Sold in pairs)



650-3-43F Bushing - (2 ϕ 309" +/- ϕ 0007)

(Sold in pairs)



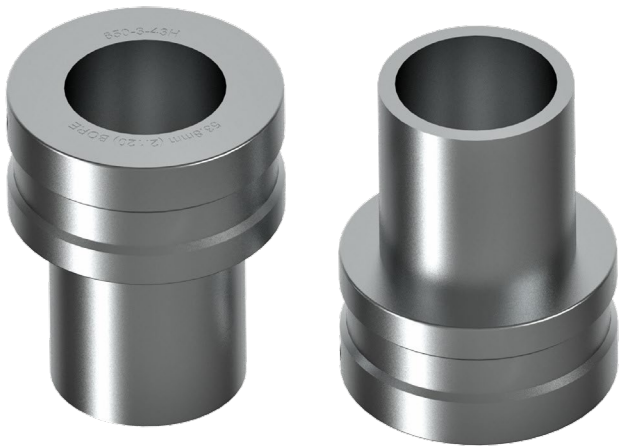
650-3-43G Bushing - (2 ϕ 500" +/- ϕ 0007)

(Sold in pairs)



650-3-43H Bushing - (2 ϕ 120" +/- ϕ 0007)

(Sold in pairs)



650-3-43J Bushing - (2 ϕ 030" +/- ϕ 0007)

(Sold in pairs)



650-3-43K Bushing - (2 ϕ 040" +/- ϕ 0015)

(Sold in pairs)



650-3-43L Bushing - (2 ϕ 400" +/- ϕ 0007)

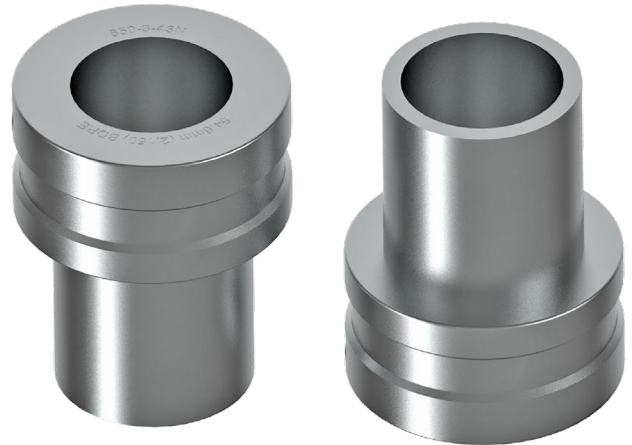
(Sold in pairs)



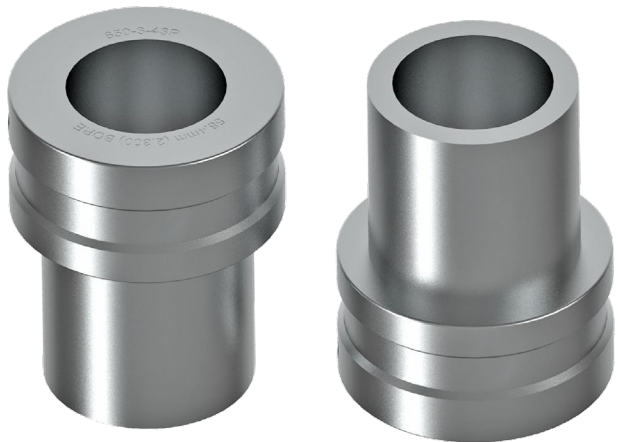
650-3-43M Bushing - ($2\phi 125'' \pm \phi 0007$)
(Sold in pairs)



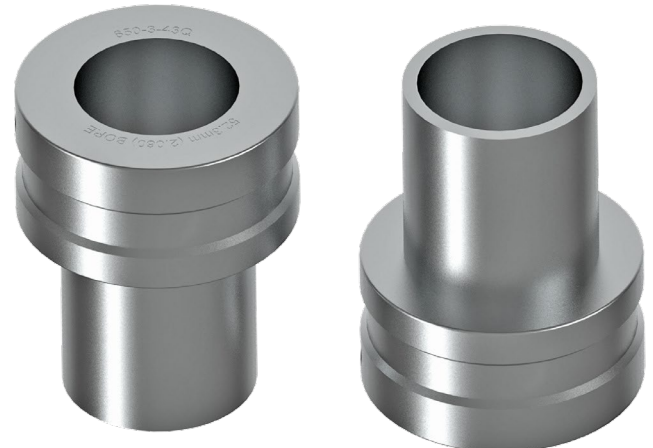
650-3-43N Bushing - ($2\phi 150'' \pm \phi 0007$)
(Sold in pairs)



650-3-43P Bushing - ($2\phi 300'' \pm \phi 0007$)
(Sold in pairs)



650-3-43Q Bushing - ($2\phi 060'' \pm \phi 0007$)
(Sold in pairs)



650-3-43R Bushing - ($2\phi 6733'' \pm \phi 0007$)
(Sold in pairs)

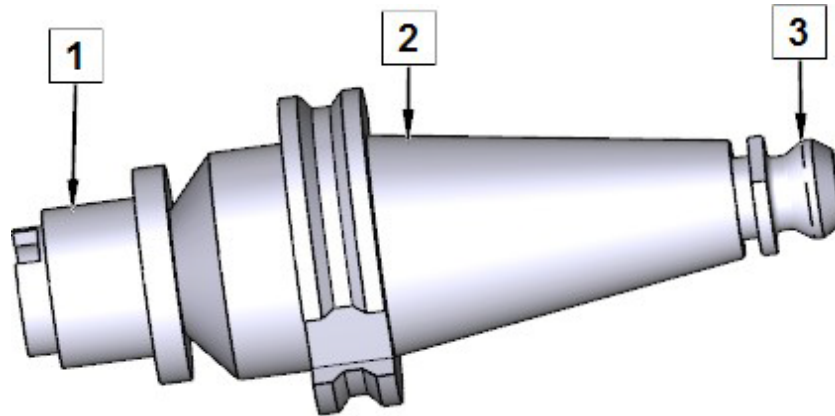


650-3-43S Bushing - ($2\phi 0450 \pm \phi 0007$)
(Sold in pairs)



Thread Tapping Tooling

650-2-11K Quick Change Tap Holder Cartridge Assembly Parts



ITEM	PART #	DESCRIPTION
1	650-2-11B	TAP HOLDER CARTRIDGE-QUICK CHANGE STRAIGHT SHANK (3/4" SHANK)
2	650-2-44C	END MILL ADAPTER-3/4" COMPLETE WITH 650-2-44L RETENTION KNOB CAT 40 TAPER
3	650-2-44L	CAT 40 RETENTION KNOB

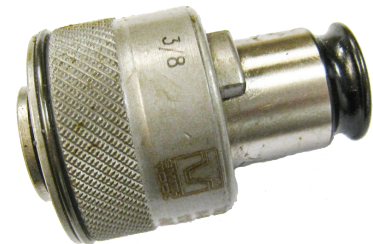
650-2-11C Torque Control Tap Holder for 1/4" (6φ35mm) taps



650-2-11D Torque Control Tap Holder for 5/16" (7φ95mm) taps



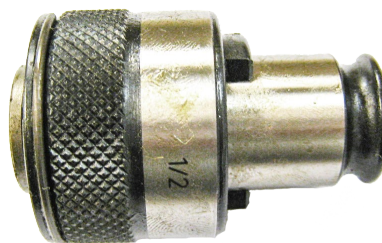
650-2-11E Torque Control Tap Holder for 3/8" (9φ525mm) taps



650-2-11F Torque Control Tap Holder for 7/16" (11φ13mm) taps

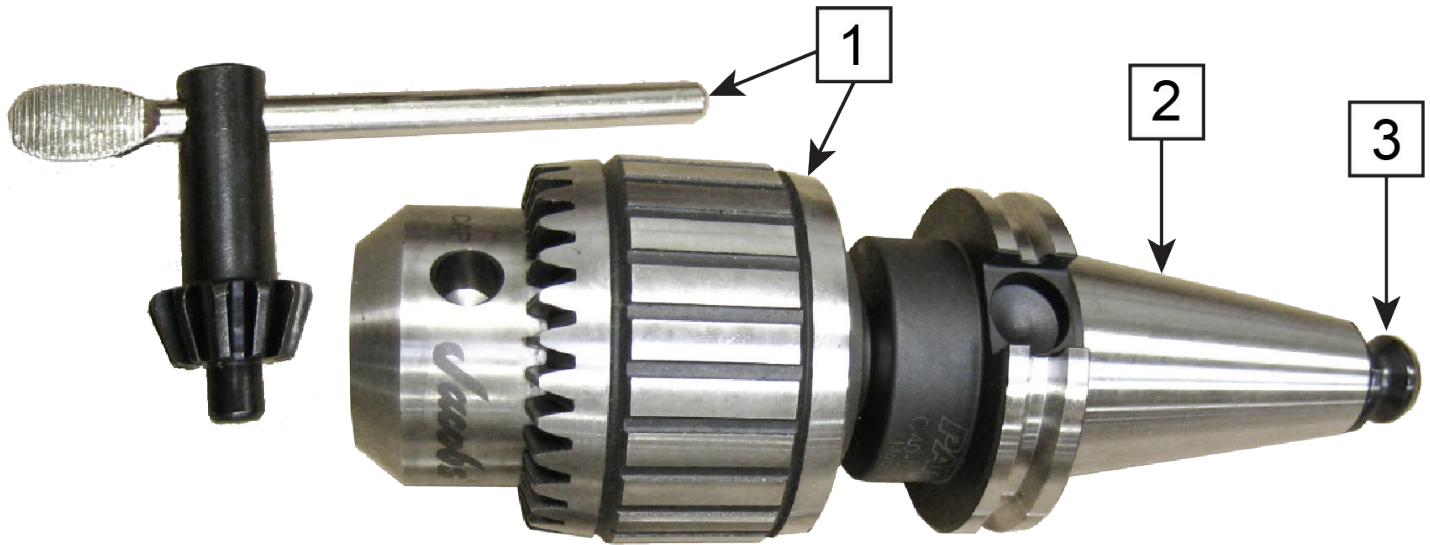


650-2-11G Torque Control Tap Holder for 1/2" (12φ70mm) taps



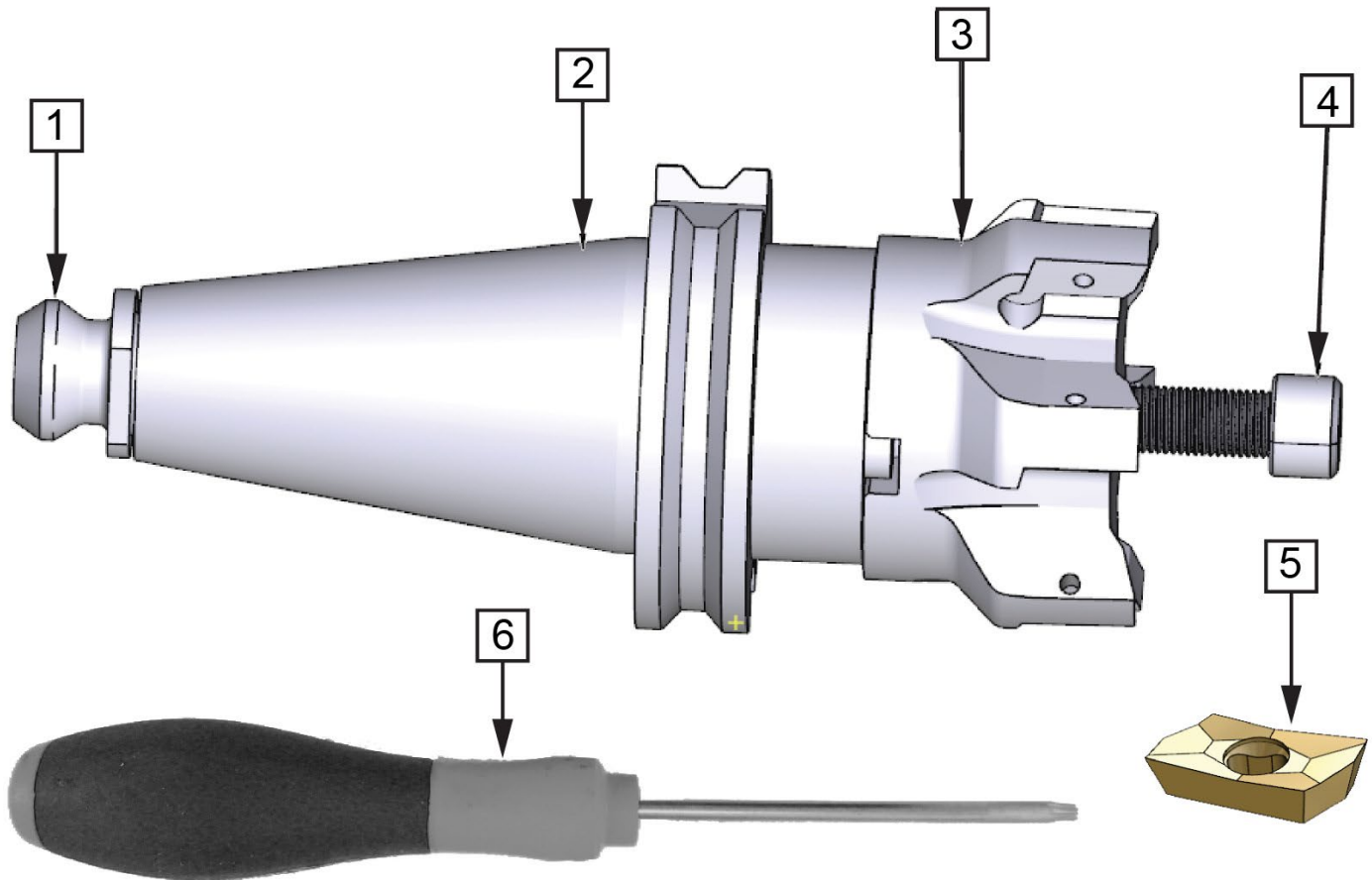
Drill Tooling

650-2-44M Precision Drill Chuck Parts



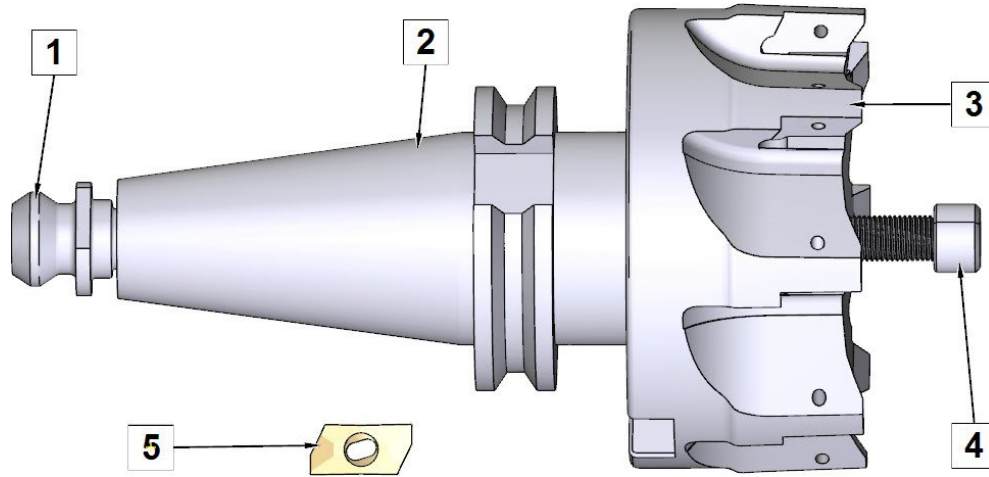
ITEM	PART #	DESCRIPTION
1	650-2-9B	DRILL CHUCK-1/8-5/8 WITH KEY
2	650-2-44	DRILL CHUCK ADAPTOR CAT 40 TAPER
3	650-2-44L	CAT 40 RETENTION KNOB

Shell Mill Assemblies

650-2-44N 2 1/2" (63 ϕ 50mm) Shell Mill Parts

ITEM	PART #	DESCRIPTION
1	650-2-44L	CAT 40 RETENTION KNOB
2	650-2-44G	ADAPTER FOR SHELL MILLS WITH 3/4" BORE COMPETE WITH 650-2-44L RETENTION KNOB CAT 40 TAPER
3	7224E	SHELL MILL 2 1/2"
4	7224D	SCREW, SOCKET HEAD CAP 3/8-24NF X 1" 2 1/2"
5	6514T	INSERT, SHELL MILLS 18MM .03 (0.8MM)
6	T15D	T15 TORX TIP HOLDING SCREW DRIVER

650-2-44P 4" (101 ϕ 60mm) Shell Mill Parts



ITEM	PART #	DESCRIPTION
1	650-2-44L	CAT 40 RETENTION KNOB
2	650-2-44F	ADAPTER FOR SHELL MILLS WITH 1 1/2" BORE COMPLETE WITH 650-2-44L RETENTION KNOB CAT 40 TAPER
3	7224F	SHELL MILL 4"
4	7224D	SCREW, SOCKET HEAD CAP 3/8-24NF X 1" 2 1/2"
5	6514T	INSERT, SHELL MILLS 18MM .03 (0.8MM)

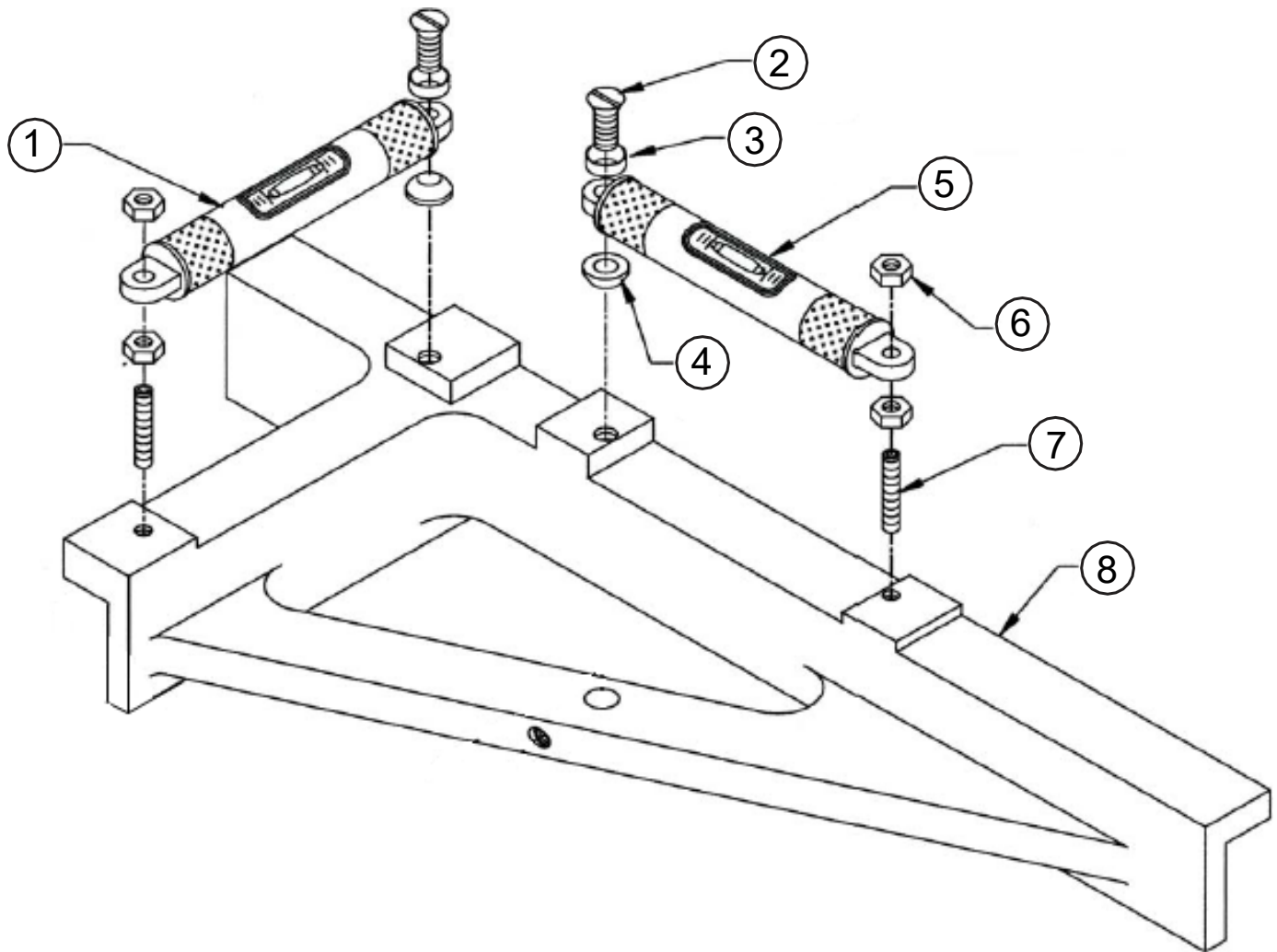
Gages and Indicators

650-3-38 Level-for Intake and Exhaust Manifolds

Sold only as complete assembly.

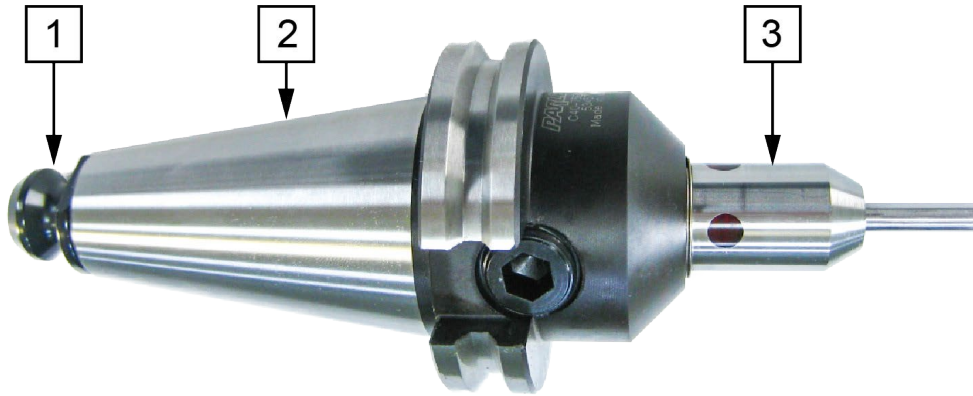


7152A Dual Axis Level Assembly Parts



ITEM	PART #	DESCRIPTION
1	7152	VIAL ONLY LEVEL SF
2	7153G	SCREW,FLAT HEAD,12-24 HEAD SURFACING LEVEL
3	7153Z	WASHER, LEVEL MOUNTING (COUNTERSUNK HEAD)
4	7153V	WASHER, LEVEL MOUNTING (RADIUS HEAD)
5	7152C	COMPLETED VIAL LONGITUDINAL SF LEVEL ASSEMBLY
6	7153H	NUT,12-24 HEAD SURFACING LEVEL
7	7153J	SCREW,SOCKET SET 12-24 X 1" HEAD SURFACING LEVEL
8	7153S	BASE,HEAD SURFACE LEVEL

650-2-44Q Three Dimensional Electronic Position Finder Parts



ITEM	PART #	DESCRIPTION
1	650-2-44L	CAT 40 RETENTION KNOB
2	650-2-44C	END MILL ADAPTER-3/4" COMPLETE WITH 650-2-44L RETENTION KNOB CAT 40 TAPER
3	650-2-22	POSITION FINDER, ELECTRONIC 3 DIMENSIONAL

502-9-9S Indicator Mount

Angled for small diameter main line bores



502-9-9A Mechanical Run Out Indicator

General Purpose (.001 Resolution)

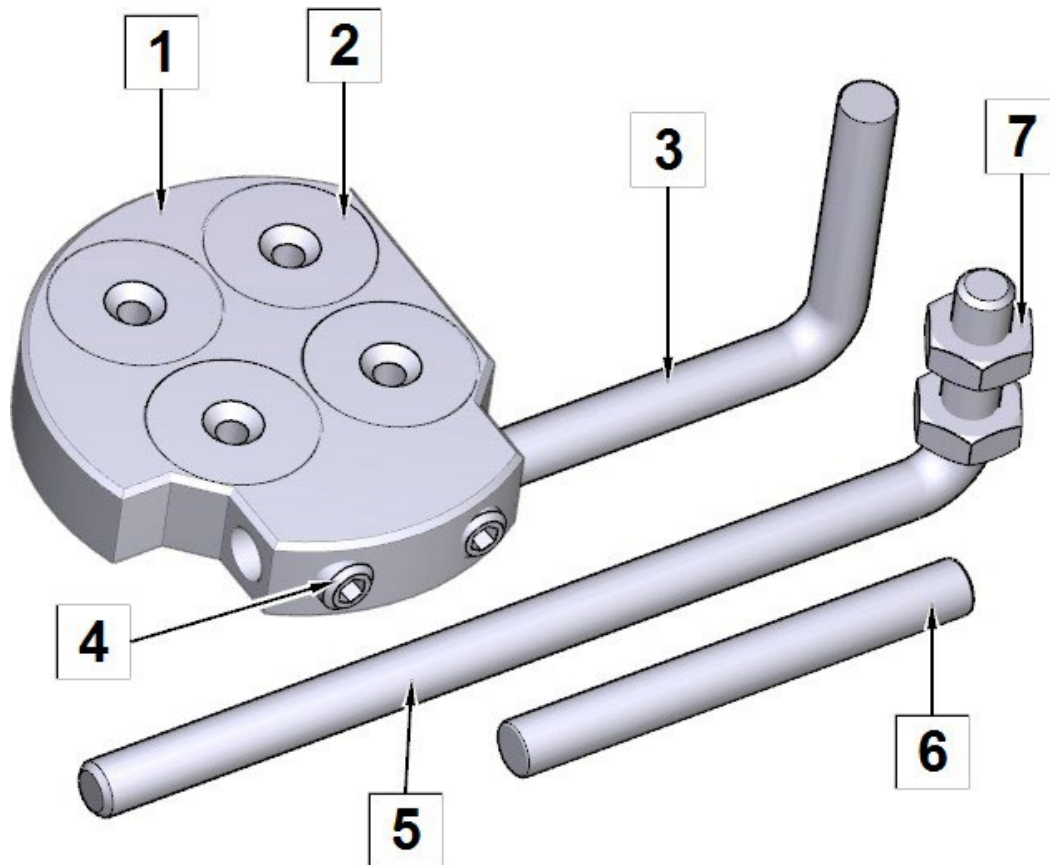


502-11-39D Mechanical Run Out Indicator

For Precision Bore Adjustment (.0001 Resolution)

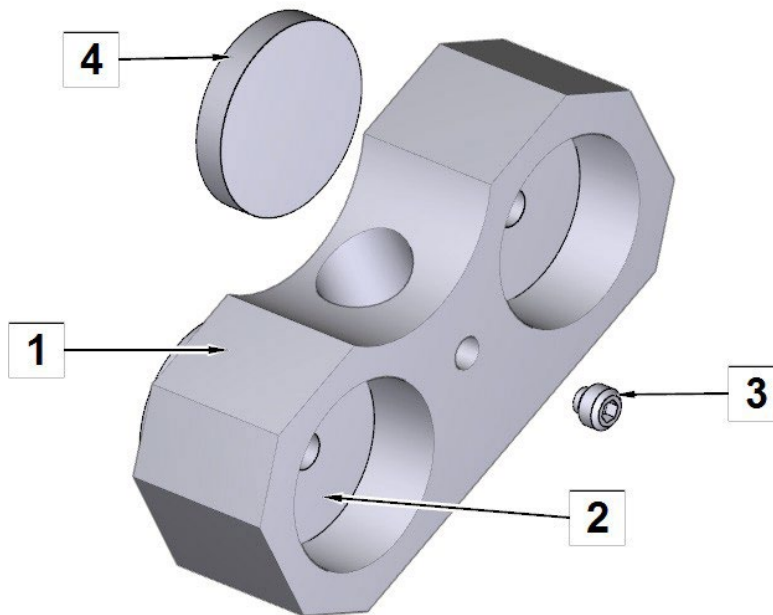


502-12-4 Magnetic Base Parts



ITEM	PART #	DESCRIPTION
1	502-11-39A	HOLDER,MAGNET
2	502-11-39	MAGNETS, SHALLOW POT
3	502-11-39B	ROD, ADAPTOR, RIGHT ANGLE-SHORT
4	MF-58	SOCKET SET SCREW FLAT POINT 1/4-20 X 1/4"
5	502-11-39Q	ROD, ADAPTOR, RIGHT ANGLE-LONG
6	MF-208	DOWEL PIN 1/4 X 2 1/4"
7	MF-163	HEX NUT 1/4-20 NC

502-12-4A Magnetic Indicator Holder Assembly Parts



ITEM	PART #	DESCRIPTION
1	502-12-4B	MAGNETIC HOLDER INDICATOR LINE BORING
2	502-11-39	MAGNET, SHALLOW POT
3	502-12-4D	SOCKET SET SCREW 8-32 X 1/8" (BRASS TIPPED)
4		MAGNET WASHER

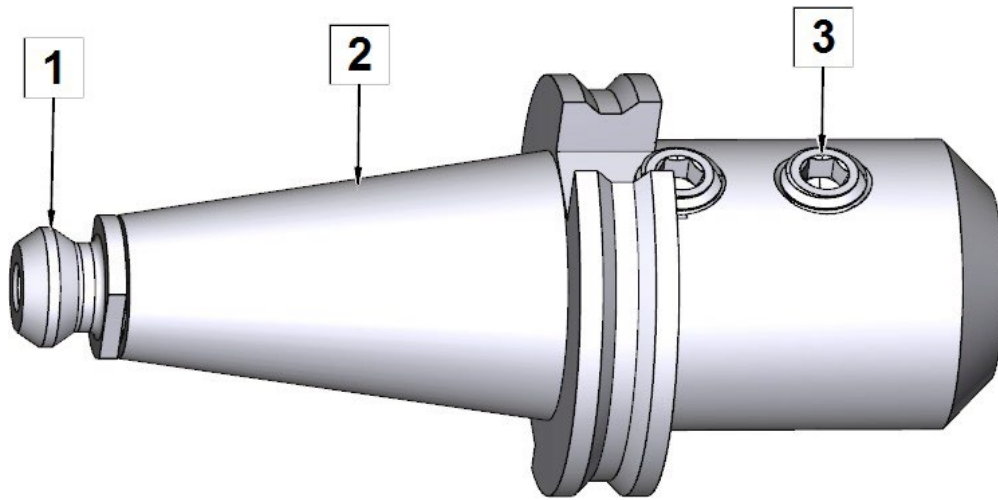
Tooling for Crankshaft Stroker Clearancing/Notching

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 Parts



ITEM	PART #	DESCRIPTION
1	650-2-44L	CAT 40 RETENTION KNOB
2	650-2-44A	END MILL ADAPTER-1" COMPLETE WITH 650-2-44L RETENTION KNOB CAT 40 TAPER
3	MF-85	SOCKET FLAT HEAD SCREW 3/8-16 X 3/4"

Tooling for Splayed 4 Bolt Main Cap Machining

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



650-2-44J



650-2-11F



650-2-53B



650-2-11K



650-2-44M



650-2-44N



650-2-53C

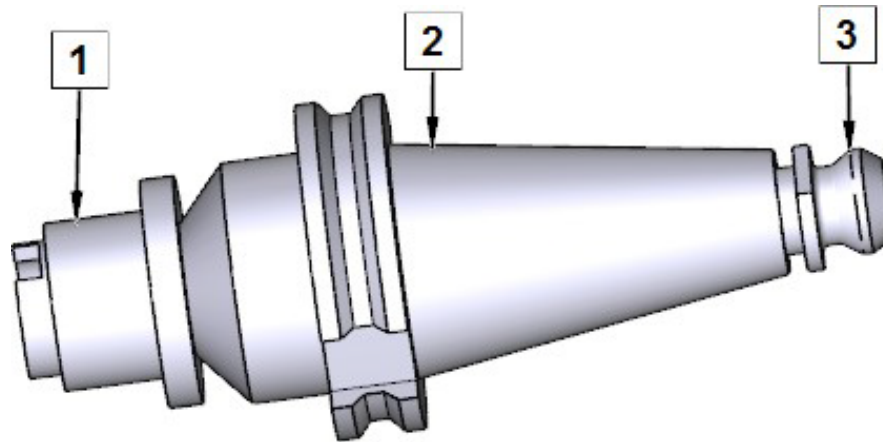


650-2-53A



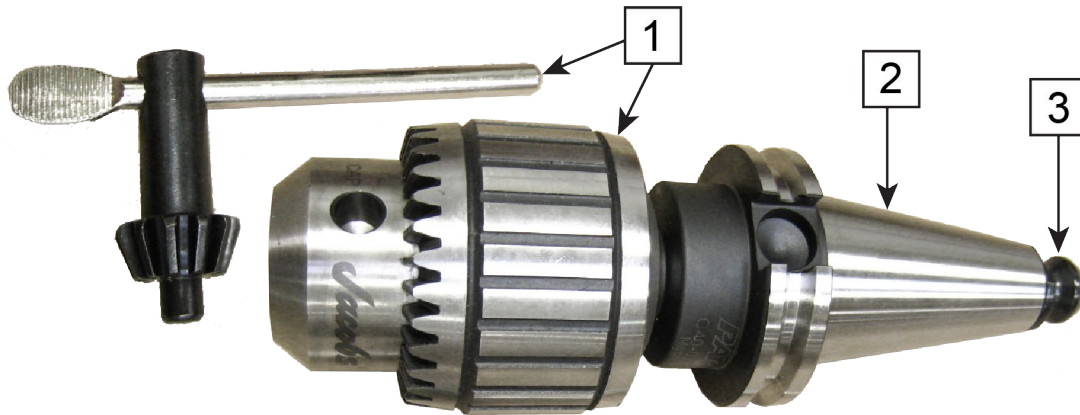
650-2-53D

650-2-11K Quick Change Tap Holder Parts



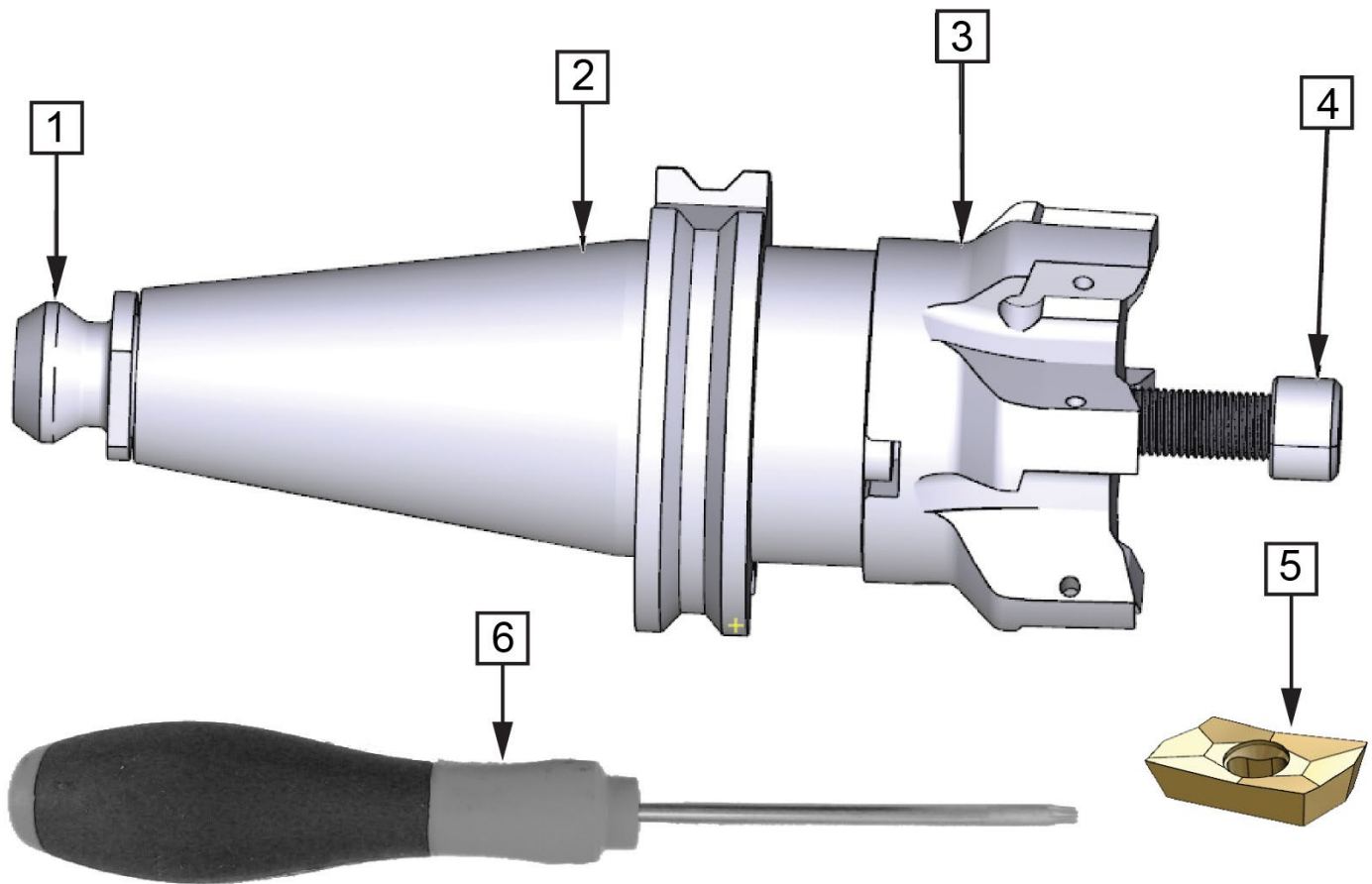
ITEM	PART #	DESCRIPTION
1	650-2-11B	TAP HOLDER CARTRIDGE-QUICK CHANGE STRAIGHT SHANK (3/4" SHANK)
2	650-2-44C	END MILL ADAPTER-3/4" COMPLETE WITH 650-2-44L RETENTION KNOB CAT 40 TAPER
3	650-2-44L	CAT 40 RETENTION KNOB

650-2-44M Quick Change Drill Chuck Parts



ITEM	PART #	DESCRIPTION
1	650-2-9B	DRILL CHUCK-1/8-5/8 WITH KEY
2	650-2-44	DRILL CHUCK ADAPTOR CAT 40 TAPER
3	650-2-44L	CAT 40 RETENTION KNOB

650-2-44N Quick Change 2 1/2" Shell Mill Parts



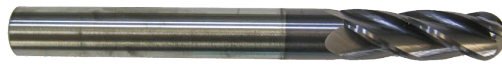
ITEM	PART #	DESCRIPTION
1	650-2-44L	CAT 40 RETENTION KNOB
2	650-2-44G	ADAPTER FOR SHELL MILLS WITH 3/4" BORE COMPETE WITH 650-2-44L RETENTION KNOB CAT 40 TAPER
3	7224E	SHELL MILL 2 1/2"
4	7224D	SCREW, SOCKET HEAD CAP 3/8-24NF X 1" 2 1/2"
5	6514T	INSERT, SHELL MILLS 18MM .03 (0.8MM)
6	T15D	T15 TORX TIP HOLDING SCREW DRIVER

Block Lightening Tooling Packages

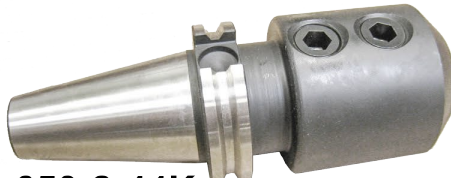
650-2-44W Block Lightening Tooling Package for Dart Small Block Chev Components



650-2-44A



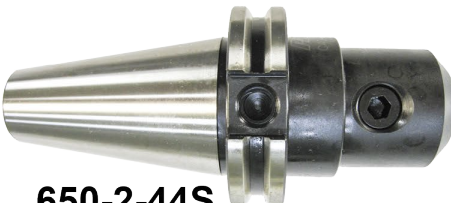
650-2-44T



650-2-44K



650-2-45A



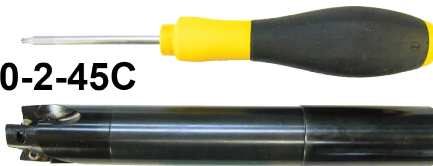
650-2-44S



650-2-45C



650-2-44U



650-2-44V



650-3-14R



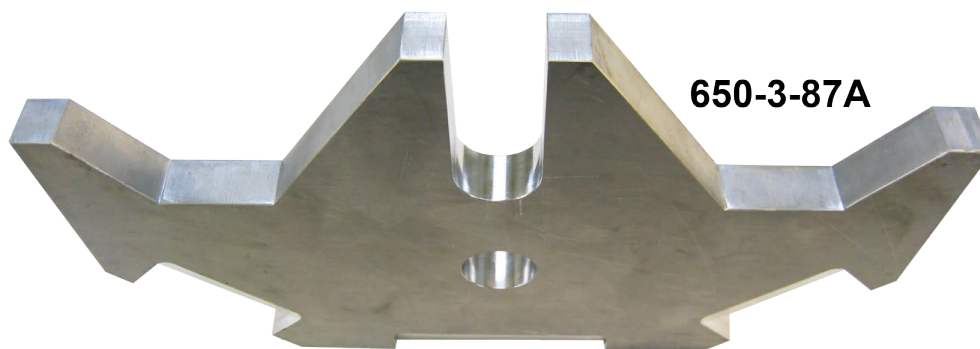
650-3-69



650-2-45D

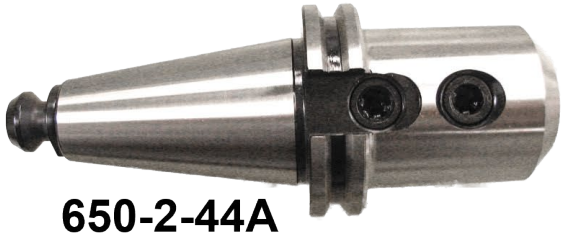


650-2-45B

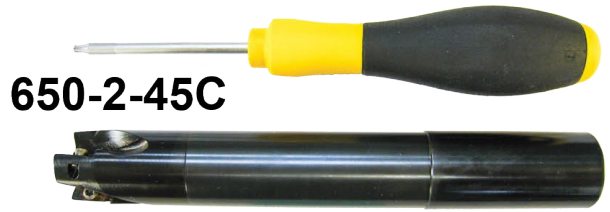


650-3-87A

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



650-2-44A



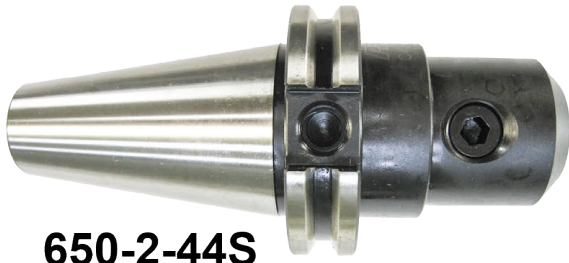
650-2-45C



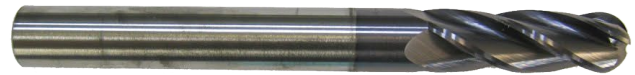
650-2-44K



650-2-45A



650-2-44S



650-2-44T



650-2-44V



650-3-14



650-3-39

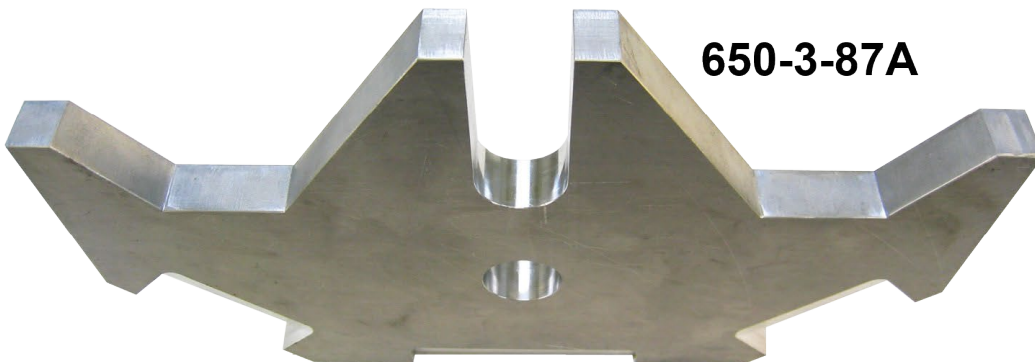


650-2-44U

650-3-87A

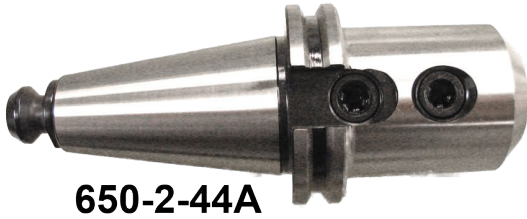


650-2-45D

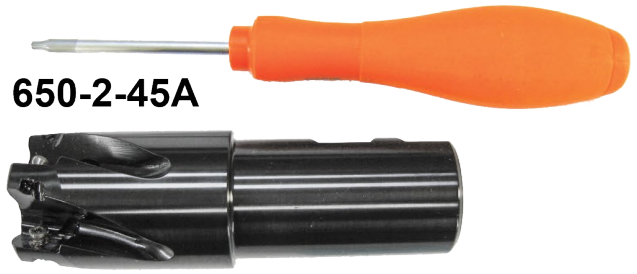


650-2-45B

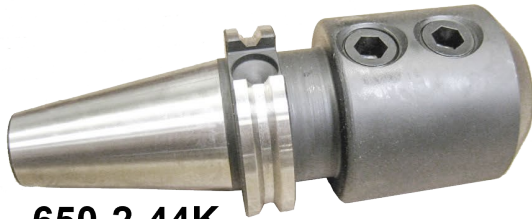
650-2-45J Block Lightning Tooling Package (CAT40 Taper) for Big Block Chevy Components



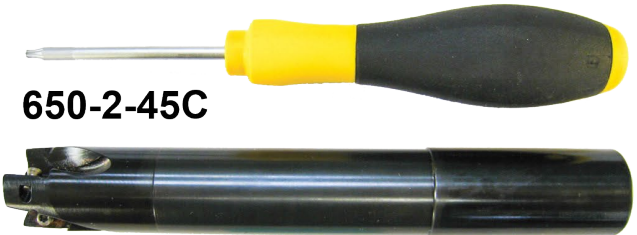
650-2-44A



650-2-45A



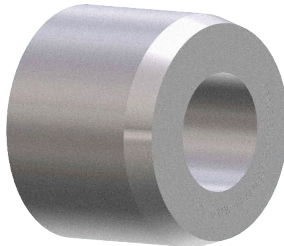
650-2-44K



650-2-45C



650-3-14P



650-3-69B



650-2-45L



650-2-45N



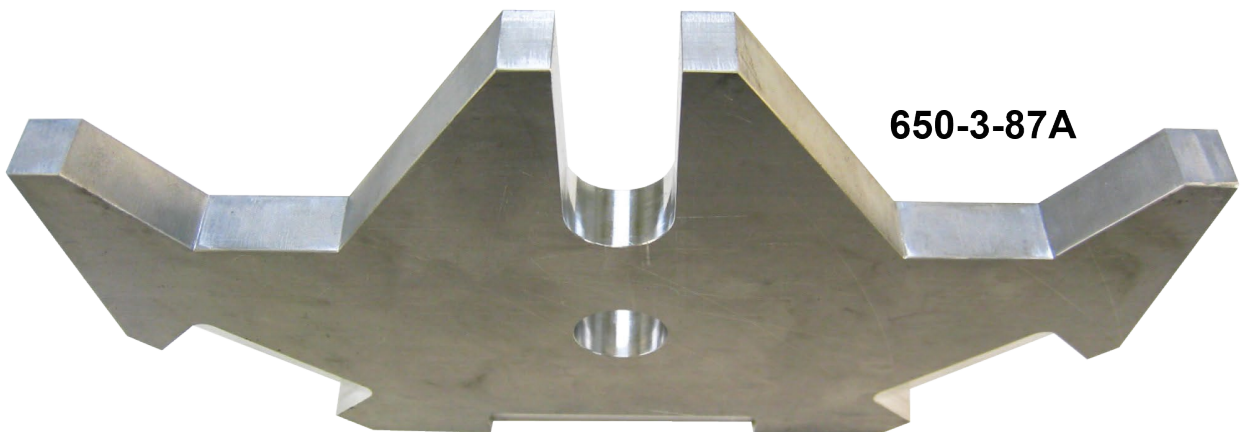
650-2-45M



650-2-45B

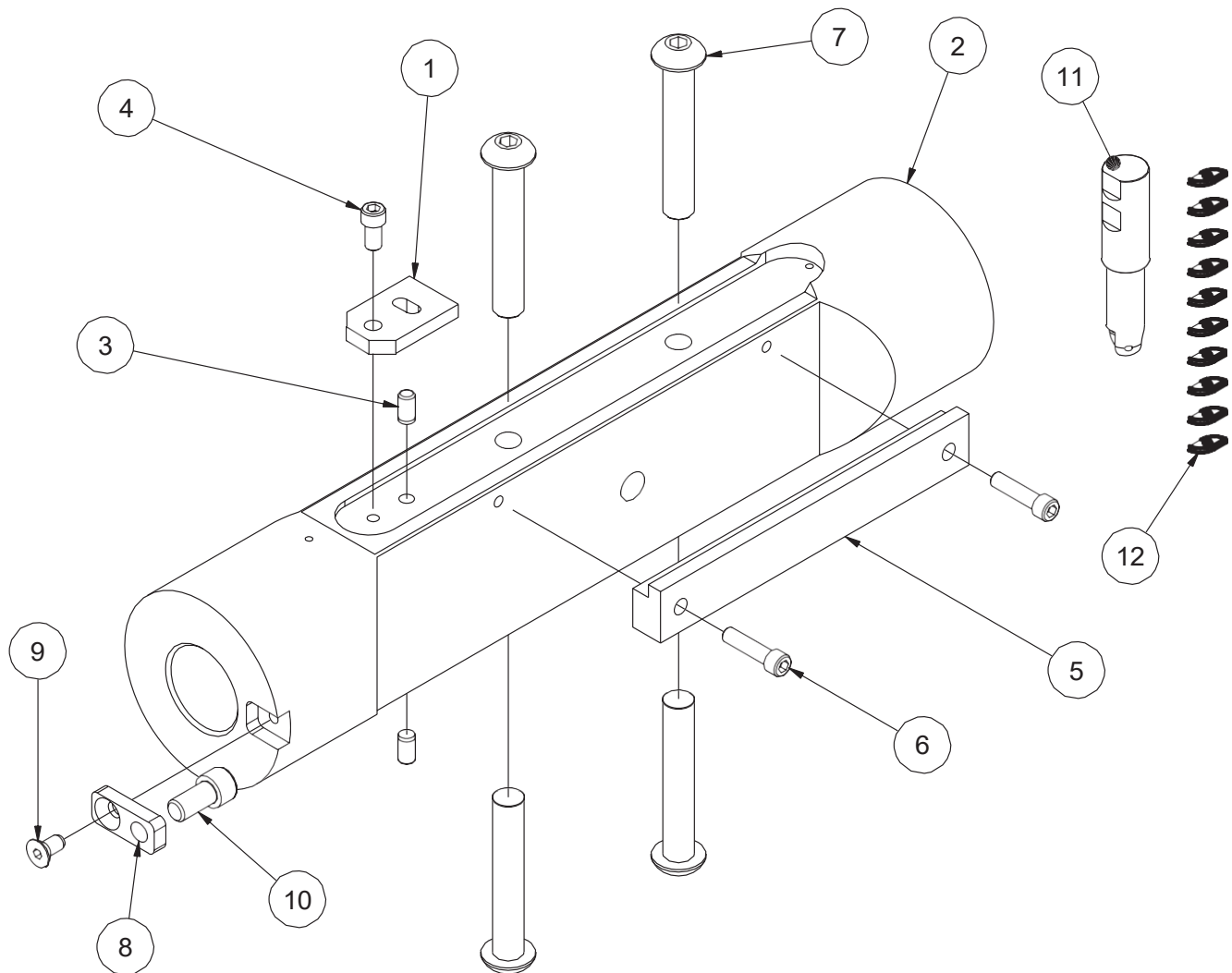


650-2-45D



650-3-87A

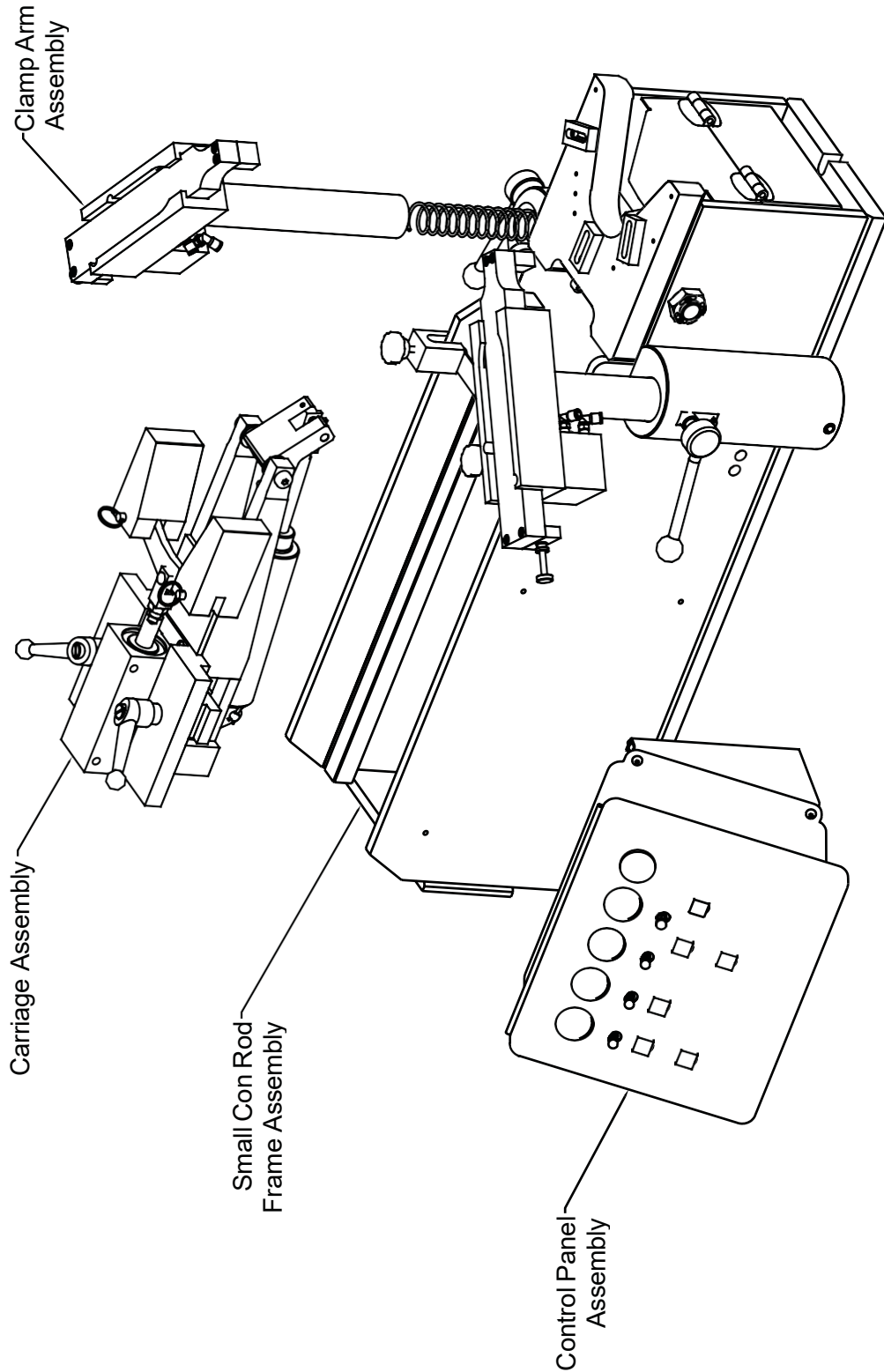
650-2-45Q Big Block Main Cap Lightening Fixture Assembly Parts



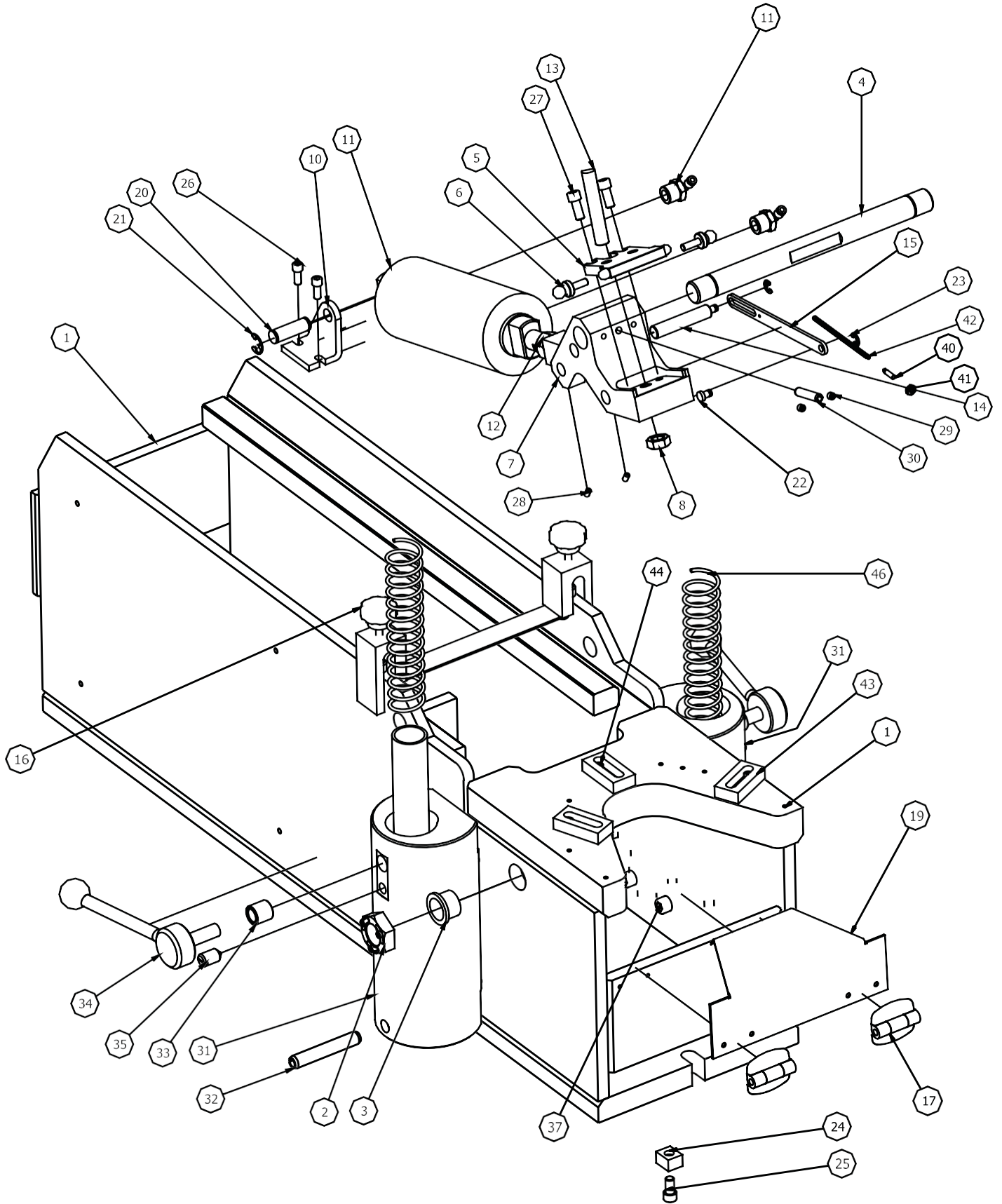
650-2-45Q MAIN BEARING CAP LIGHTENING FIXTURE ASSEMBLY			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	650-2-45S	SPACER PLATE, MAIN BEARING CAP LIGHTENING FIXTURE
2	1	650-2-45R	FIXTURE, MAIN BEARING CAP LIGHTENING
3	2	MF-202	1/4 x 1/2 Dowel Pin
4	1	MF-12	S.H.C.S. 1/4 - 20 UNC - 1/2
5	1	650-2-45T	LOCATOR, REAR MAIN BEARING CAP - MAIN BEARING CAP LIGHTENING FIXTURE
6	2	MF-15	S.H.C.S. 1/4 - 20 UNC - 1
7	4	650-2-45W	BUTTON HEAD SCREW 1/2-13UNC x 3" LG.
8	1	650-2-45X	DRIVER, MAIN BEARING CAP LIGHTENING FIXTURE
9	1	MF-82	Socket Flat Head 1/4-20 UNC x 0.5
10	1	Mf-30	S.H.C.S. 3/8 - 16 UNC - 3/4
11	1	650-2-45Y	SOFTWARE PACKAGE - MAIN BEARING CAP LIGHTENING
11	1	650-2-45U	INDEXABLE BALL NOSE ENDMILL
12	10	650-2-45V	CARBIDE INSERT - BALL NOSE ENDMILL

Connecting Rod Fixturing

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

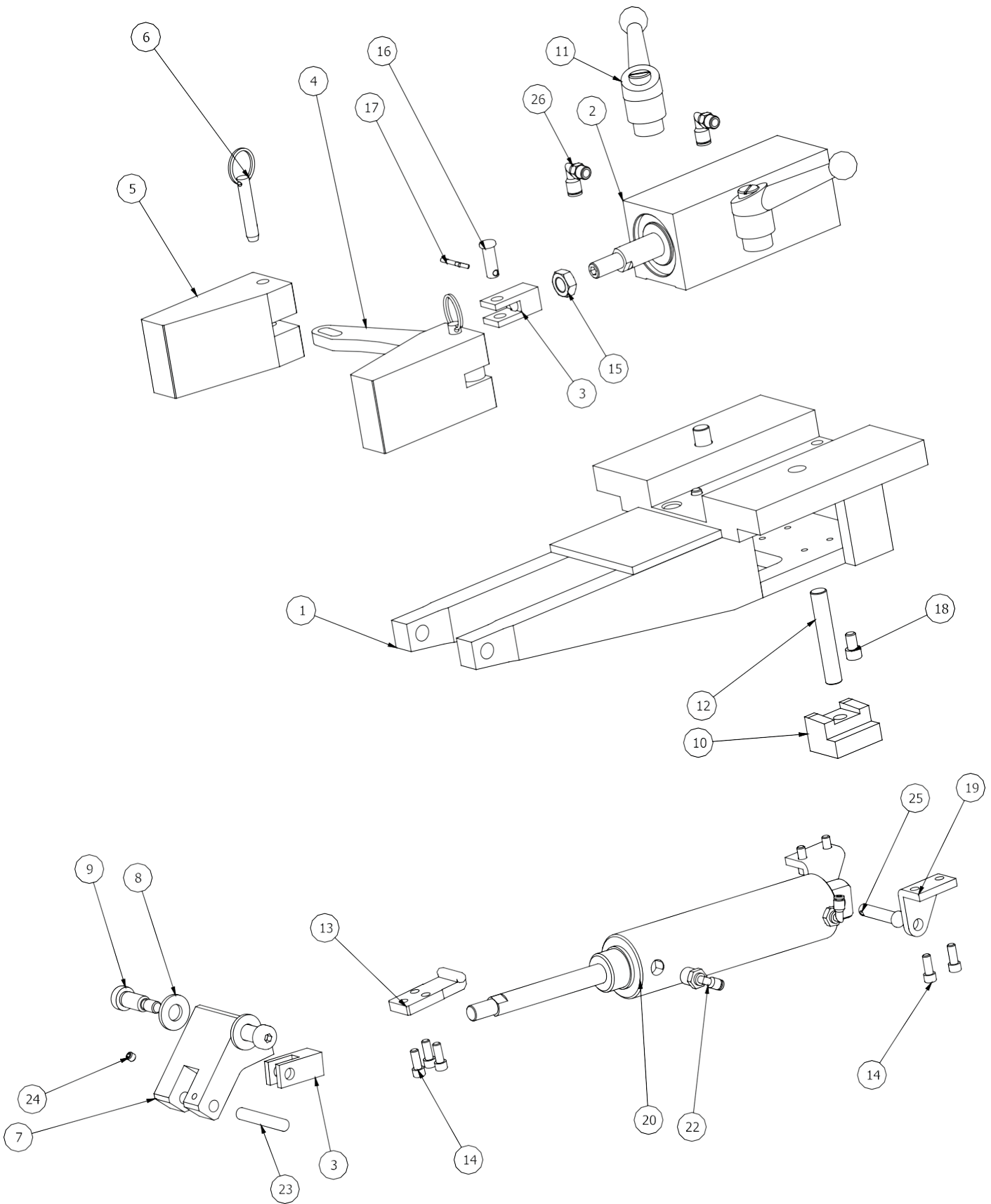


Frame Assembly Parts



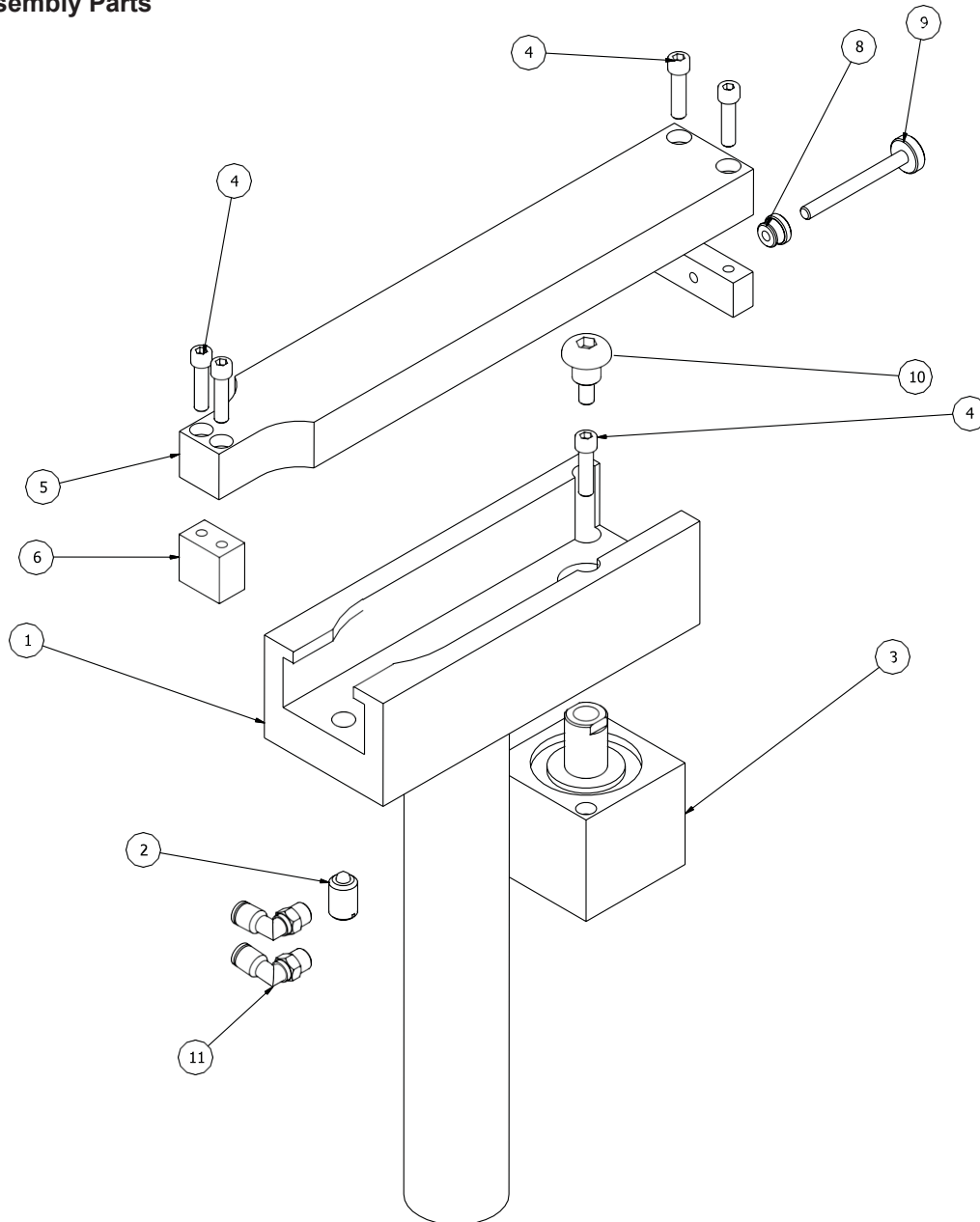
Small Precision Connecting Rod Fixture Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	650-3-67B	Small Frame
2	2	650-3-46T	Lock Nut REID BLN-105
3	2	650-3-46U	Flange Bearing Symmco SF-2832-12
4	1	650-3-46G	Pivot Shaft
5	1	650-3-46N	Locator 1.78
6	2	650-3-46C	Tooling Ball Reid #TCB-26820
7	1	650-3-46J	Locator Holder
8	1	ANSI B18.2.2 - 1/2 - 13	Hex Jam Nut
9	1	650-3-45H	Pivot Bracket Right
10	1	650-3-45K	Pivot Bracket Left
11	1	650-3-45G	Locating Cylinder
12	1	650-3-45J	Rod Clevis
13	1	650-3-47K	Stop Screw - Set 1/2-13 x 3
14	1	650-3-46K	Pivot Pin
15	1	650-3-46L	Linkage Arm
16	1	650-3-47B	Support Strap
17	2	650-3-46S	Hinge, Dust Cover
19	1	650-3-46Q	Locator Cover Con Rod Fixture
20	1	PIN1	Included in 650-3-47J
21	2	E_CLIP	Included in 650-3-47J
22	1	650-3-46H	Linkage Pin
23	2	650-3-46R	E-clip - Truearc E-Ring #RE-25ST
24	2	650-3-9	Key
25	2	MF-21 ANSI B18.3 - 5/16 - 18 - 5/8	Hexagon Socket Head Cap Screw
26	4	MF-13 ANSI B18.3 - 1/4 - 20 - 5/8	Hexagon Socket Head Cap Screw
27	2	MF-22 ANSI B18.3 - 5/16 - 18 - 3/4	Hexagon Socket Head Cap Screw
28	2	MF-53 ANSI B18.3 - 10-24 UNC - 0.375	Type B - Hexagon Socket Set Screw - Cup Point - UNC (Regular Thread - Inch)
29	2	MF-60 ANSI B18.3 - 1/4-20 UNC - 0.25	Type B - Hexagon Socket Set Screw - Cup Point - UNC (Regular Thread - Inch)
30	1	MF-210 ANSI B18.8.2 - 5/16 x 2.1/2	Pin - Slotted Spring
31	2	650-3-49Q	Clamp Base, ConRod Clamp arms
32	2	ANSI B18.8.2 - 1/2 x 3	Pin - Slotted Spring
33	2	6310R	Thread Insert
34	2	6310N	Handle
35	2	502-8-52C	Spring Plunger
37	8	ANSI B18.3 - 3/8 - 16 - 1	Hexagon Socket Head Cap Screw
40	1	650-3-48P	spring anchor Reid CSA-50
41	1	ANSI B18.6.3 - 8 - 32	Hex Machine Screw Nut UNC
42	1	514-7-83N	Extension Spring
43	3	650-3-48L	Support Parallel
44	3	ANSI B18.3 - No. 10 - 24 - 3/8	Hexagon Socket Head Cap Screw
45	2	650-3-49G	Support Tube
46	2	650-3-49M	Spring

Carriage Assembly Parts



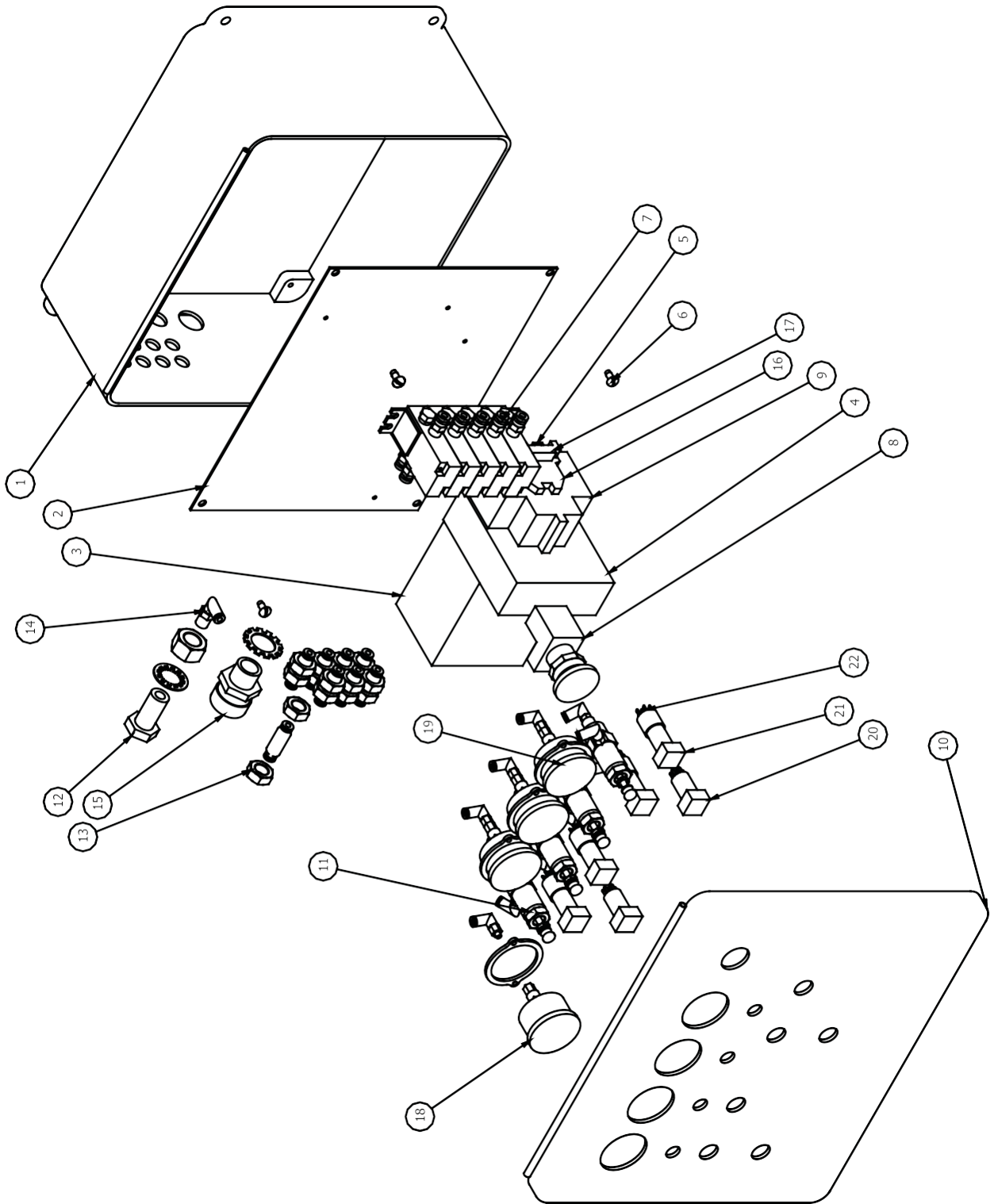
Small Precision Connecting Rod Fixture Carriage Assembly Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	650-3-67	Carriage, Machining
2	1	650-3-45D	Wedge Cylinder
3	2	650-3-45L	Clevis
4	1	650-3-48J	Linkage, Wedge
5	2	650-3-48G	Wedge Clamp - Medium Con-Rod Fixture ass'y
6	2	650-3-48K	Release Pin, Clamp Wedge
7	1	650-3-47D	Centering Lever
8	2	100-19A	Hardened washer 17/32 I.D.
9	2	650-4-45	Hexagon Socket Head Shoulder Screw 0.500 x 1
10	2	650-3-48	Clamp Shoe
11	2	514-2-39	Handle
12	2	514-4-5B	Stud
13	1	650-3-47S	Centering Block - Medium Long
14	7	MF-13 ANSI B18.3 - 1/4 - 20 - 5/8	Hexagon Socket Head Cap Screw
15	1	ANSI B18.2.2 - 1/2 - 20	Hex Jam Nut
16	1	Rod Clevis Pin RC-5	
17	2	ANSI B18.8.1 - 1/8 x 3/4 Extended Prong Square Cut Type	Pin - Cotter
18	4	ANSI B18.3 - 5/16 - 18 - 1/2	Hexagon Socket Head Cap Screw
19	2	650-3-45K	Pivot Bracket
20	1	650-3-45F	Norgren RLG04
22	2	legris angle 25x532	Legris Angle 25X532
23	1	MF-212A ANSI B18.8.2 - 3/8 x 2 1/4	Pin - Hardened Ground Production Dowel
24	1	MF-60 ANSI B18.3 - 1/4-20 UNC x 0.25	Hexagon Socket Set Screw - Cup Point
25	1	Pivot Pin Norgren cyl	
26	2		Legris Angle

Clamp Arm Assembly Parts



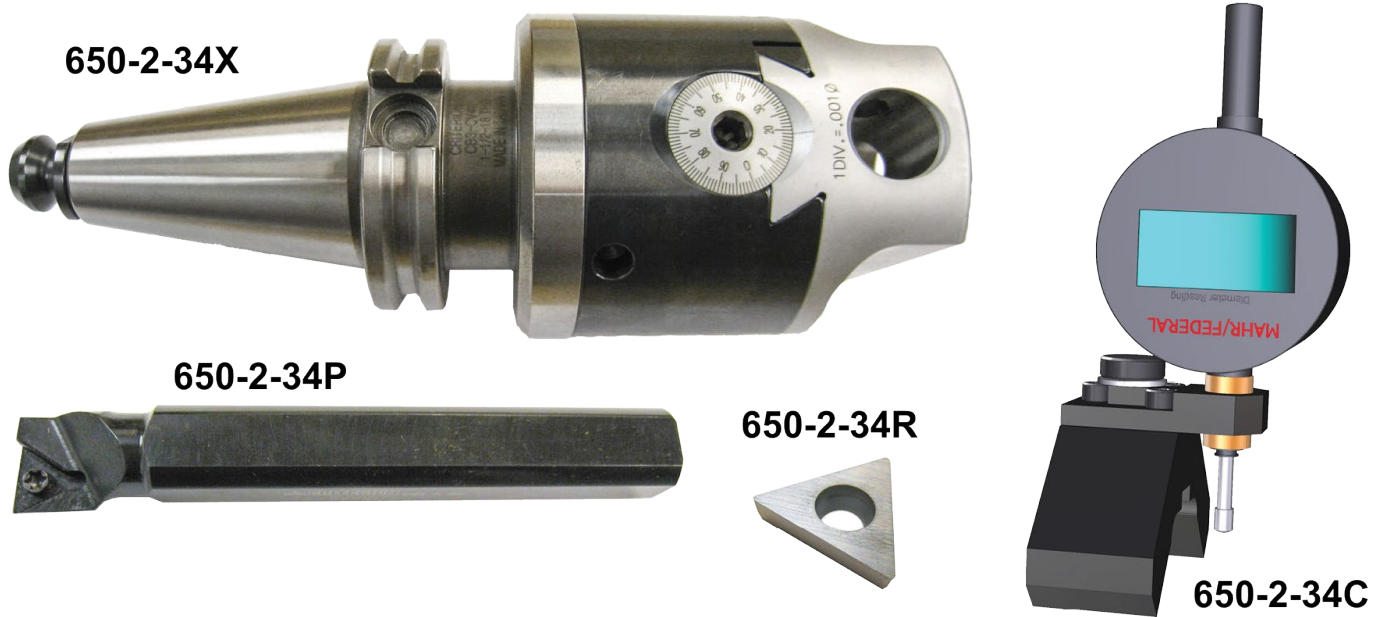
Small Precision Connecting Rod Fiture Clamp Arm Assembly Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	650-3-49H	Clamp Leg
2	1	502-8-52C	Spring Plunger
3	1	650-3-45E	Clamp Arm Cylinder
4	6	ANSI B18.3 - 1/4 - 20 UNC - 1	Hexagon Socket Head Cap Screw
5	1	650-3-49K	Clamp Arm
6	1	650-3-49L	Extension
7	1	650-3-49N	Stop Block
8	1	650-3-34J	Thumbknob Reid aj-721
9	1	650-3-34S	Clamp Screw
10	1	ANSI B18.3 - 1/2-20 - 5/8	Hexagon Socket Button Head Cap Screw
11	2	514-4-17Y	Legris Angle

Control Panel Assembly Parts

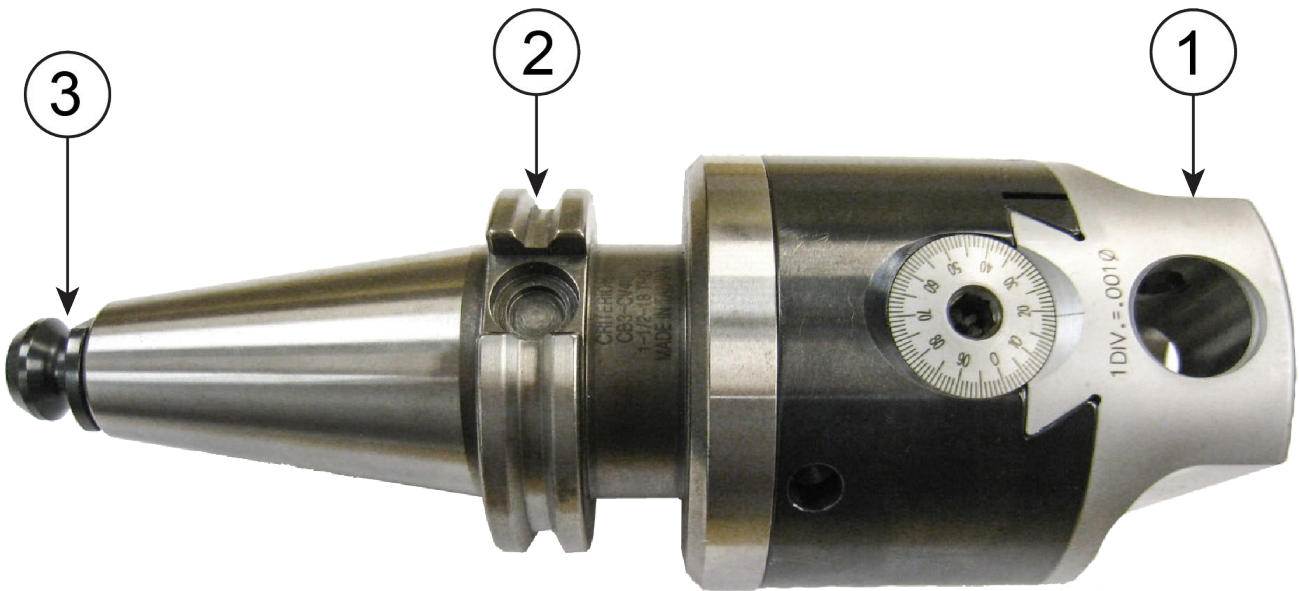


650-3-47T Parts List - Control Panel Complete w/ Air (Buchanan)			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	J1210HPL	Enclosure
2	1	BP1210AL	Enclosure Panel
3	1	PLC	Micro 3
4	1	650-3-47V	Power Supply
5	1	504-35-3F	Din Rail
6	4	ANSI B18.6.4 - 10-32 UNF - 0.375	Slotted Pan Head Tapping Screw - Type C
7	1	410-24vdc	Solenoid Assembly
8	1	6389	E-Stop Button
9	1	504-35-3	BREAKER, 2 AMP
10	1	Con Rod Lid1	
11	4	RSR	HUMPHREY, REGULATOR
12	1	PMF 532-N01U	NWH, BULKHEAD 1/4
13	8	C2029200	NORGREN, BULKHEAD 1/8
14	1	Air Fitting2	90 Degree
15	1	400-7-7	Strain Relief Assembly
16	1	514-7-74E	Ground Block
17	2	504-35-3M	End Cap
18	3	15.110.160PSI 1/8NPT 10/32PMC	NOSHOK, 160 PSI GAUGE
19	1	15.110.60PSI 1/8NPT 10/31PMC	NOSHOK, 60 PSI GAUGE
20	2	6491U	PUSHBUTTON, WHITE
21	4	6491S	PUSHBUTTON, GREEN
22	4	502-37-59A	PUSHBUTTON, SOCKET

650-2-3S Cutterhead Package Components

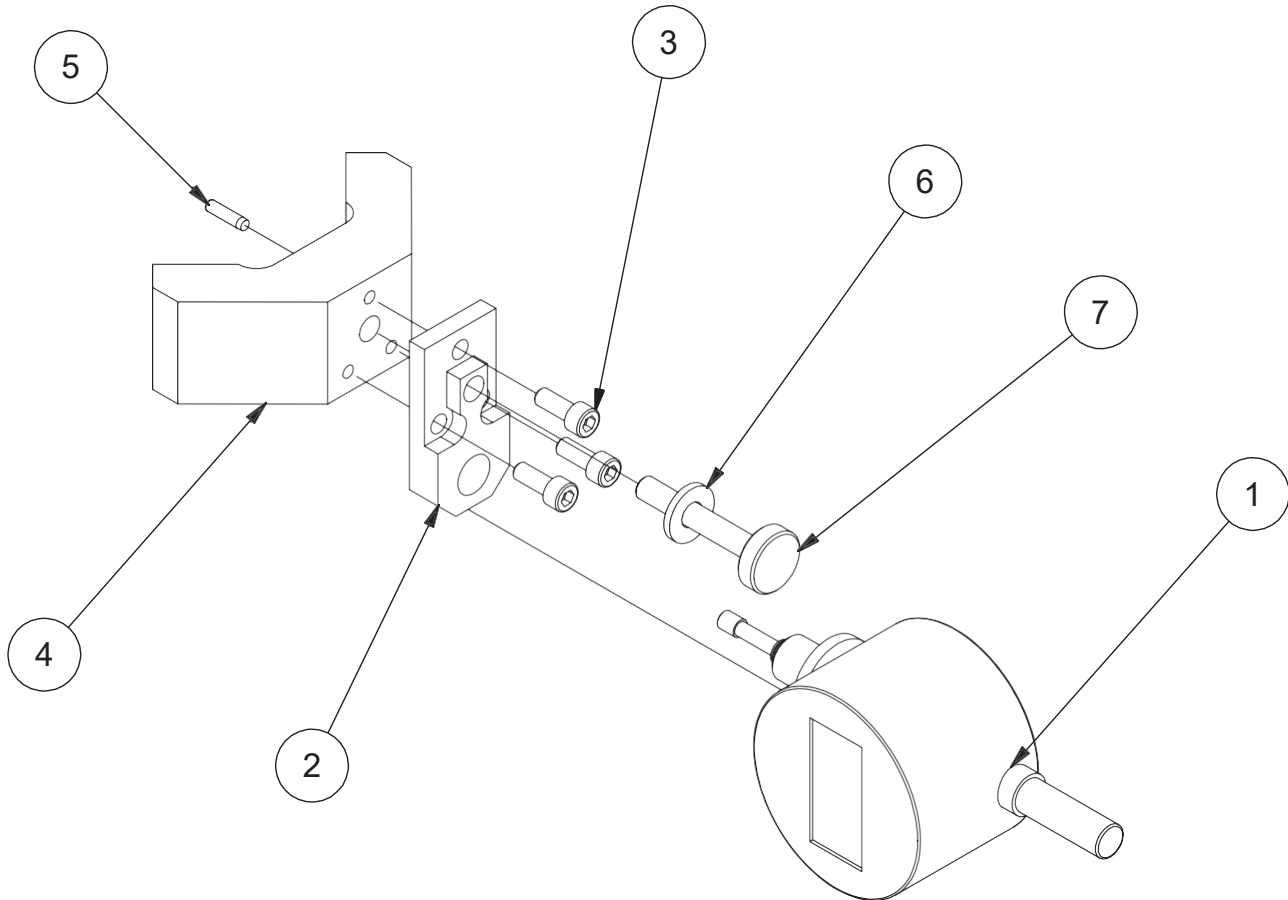


650-2-34X Precision Cutterhead Parts



ITEM	PART #	DESCRIPTION
1	650-2-34B	PRECISION BORING HEAD ASSY 1.0" TO 2.0" DIA
2	650-2-34W	ADAPTER, CAT 40 TAPER PRECISION BORING HEAD
3	650-2-44L	CAT 40 RETENTION KNOB

650-2-34C Digital Indicator Parts



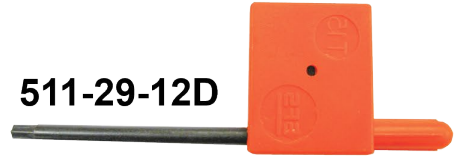
650-2-34C DIGITAL INDICATOR ASSEMBLY			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	650-2-34D	DIGITAL TRAVEL INDICATOR
2	1	650-2-34E	MOUNTING BLOCK, INDICATOR FRAME - CRITERION PRECISION BORING HEAD
3	3	MF-5A	S.H.C.S. 10 - 24 UNC - 1/2
4	1	650-2-34F	FRAME, INDICATOR ASSEMBLY - CRITERION PRECISION BORING HEAD
5	1	MF-193	1/8 x 1/2 Dowel Pin
6	1	MF-179	1/4" FLAT WASHER
7	1	650-2-34T	CLAMP SCREW - INDICATOR FRAME - CRITERION PRECISION BORING HEAD

650-2-3T Cutterhead Package Components

650-2-3U



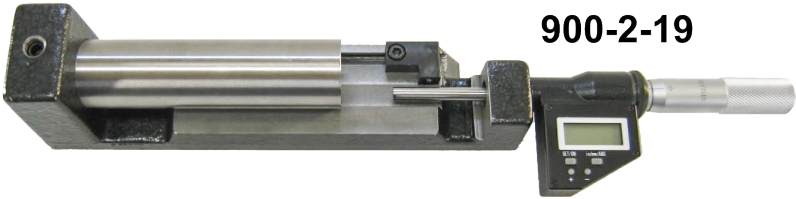
511-29-12D



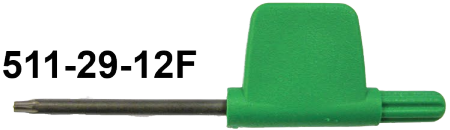
T8D



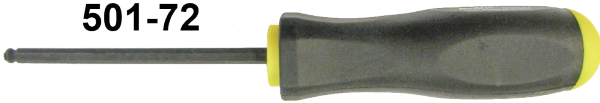
900-2-19



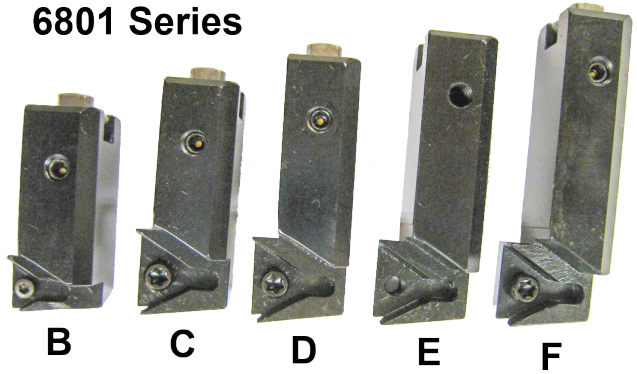
511-29-12F



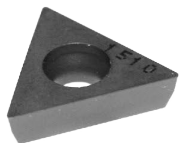
501-72



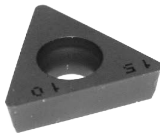
6801 Series



501-72J



RT321



RT322



RT211

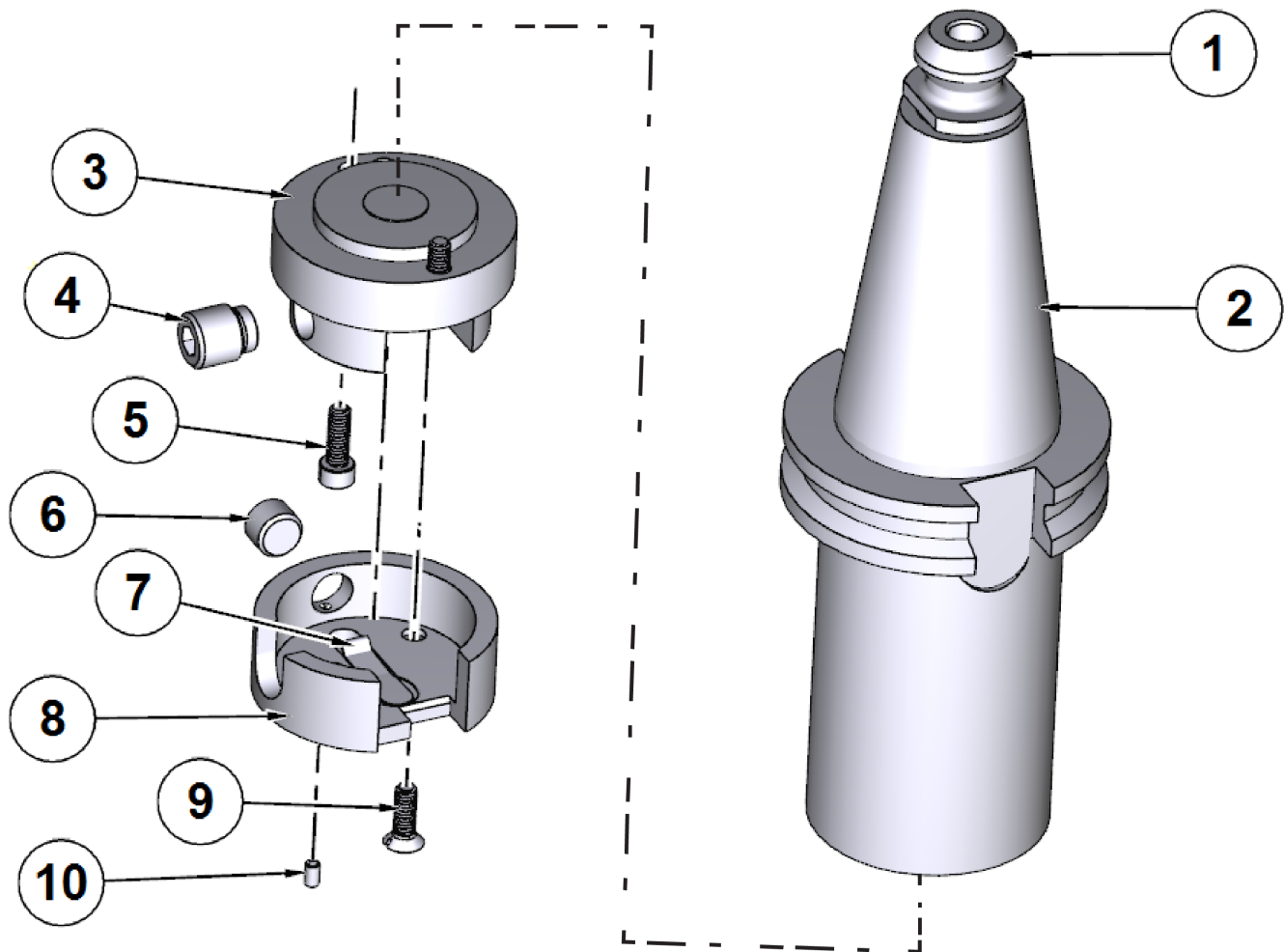


RT212



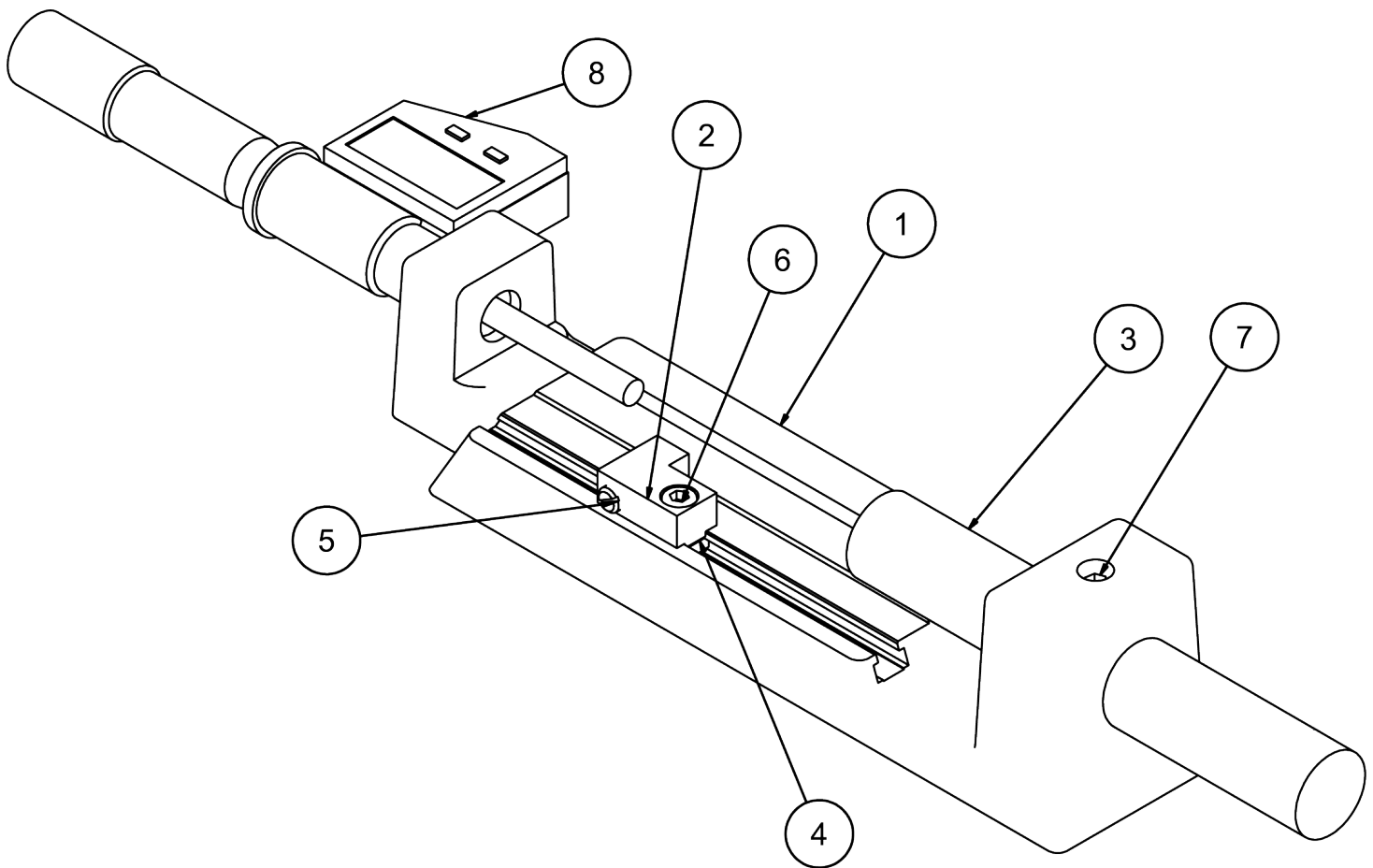
RTCR321

650-2-3U Cutterhead Parts



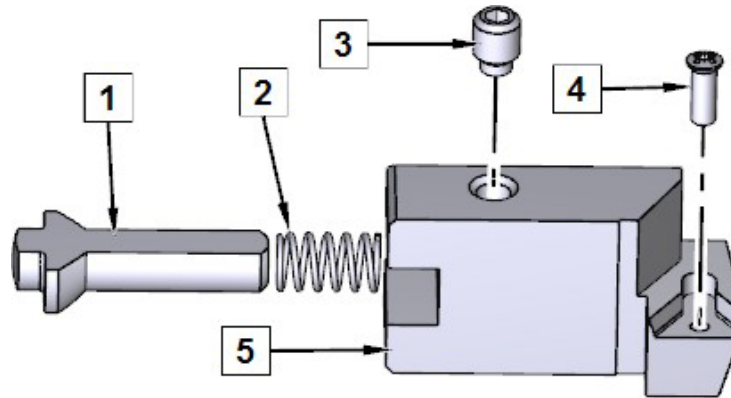
ITEM	PART #	DESCRIPTION
1	650-2-44L	CAT 40 RETENTION KNOB
2	650-2-3P	ADAPTER, 2.0" STUB BAR CAT 40 TAPER (INCH) 4 " LONG
3	650-2-4	BODY, 2.0" STUB BAR
4	501-70C	SCREW, TOOL HOLDER LOCK
5	650-2-4A	SOCKET HEAD CAP SCREW 8-32 X 1/2"
6	502-2-85B	SCREW, SET-INDEX 3/8-40 FINE THREAD
7	100-1B	SPRING, TOOL LOCK 15/16"
8	650-2-4	BODY, 2.0" STUB BAR
9	MF-123	FLAT HEAD MACHINE SCREW 8-32 X 1/2"
10	650-2-6A	SOCKET SET SCREW BRASS TIPPED 4-40 X 3/16" LONG

900-2-19 Micrometer Parts



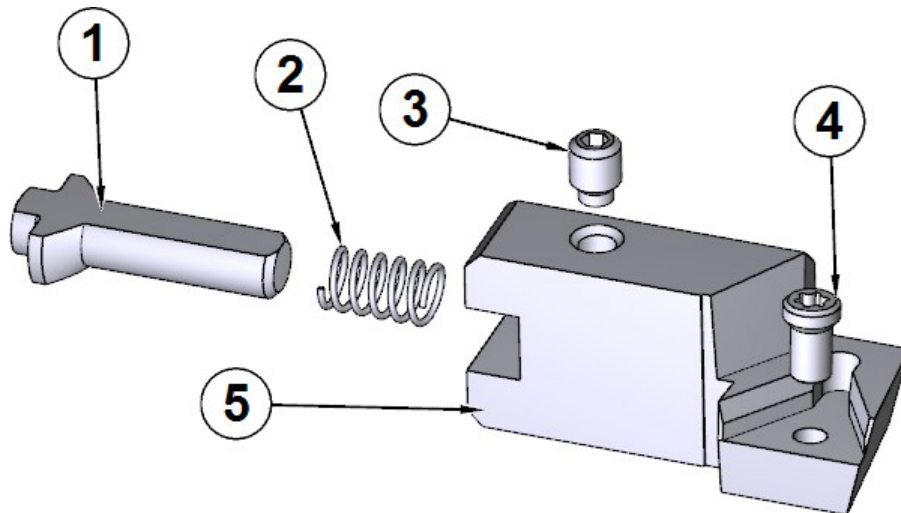
900-2-19 Micrometer Assembly			
ITEM	QTY	PART NUMBE	DESCRIPTION
1	1	502-30-10B	Frame
2	1	502-30-10M	Clamp Block
3	1	502-31-10A	Anvil
4	1	502-30-10J	Square Nut
5	1	502-30-10K	Ball Plunger
6	1	ANSI B18.3 - No. 10 - 24 UNC - 3/8	Hexagon Socket Head Cap Screw
7	1	502-30-10L	Brass Tipped Set Screw
8	1	501-34-2R	Digital Micrometer Head

6801B Insert Holder Parts



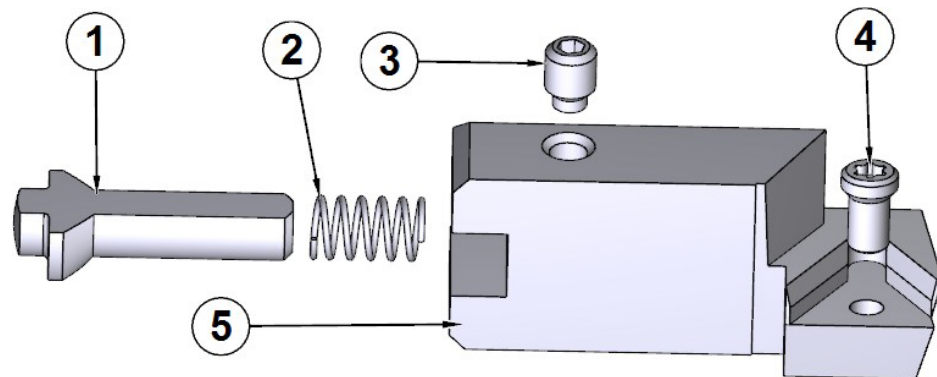
ITEM	PART #	DESCRIPTION
1	100-82-3B	PIN, ADJUSTING LONG
2	100-82-1	SPRING, ADJUSTING PIN
3	100-82-2	SCREW, SET-BRASS GIB - 3/16" LONG
4	511-29-12C	SCREW, TORX M4 X .7 X .315" LONG
5	6800B	TOOLHOLDER, INDEXABLE INSERT- 1/4" TRIANGLE, OFFSET, POSITIVE RAKE

6801C Insert Holder Parts



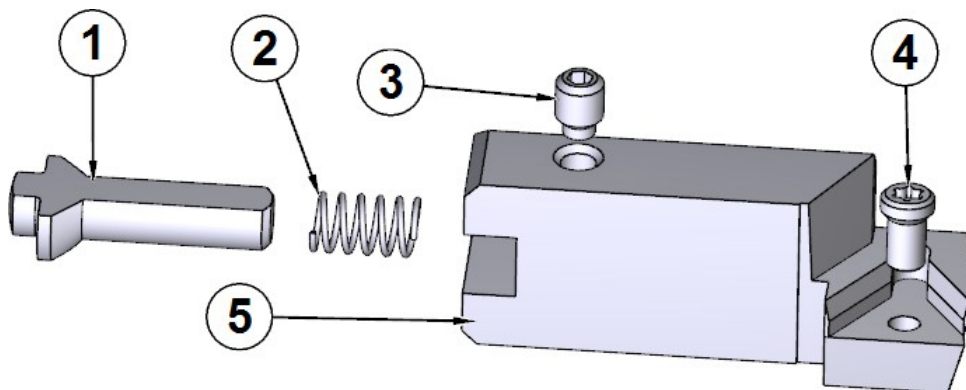
ITEM	PART #	DESCRIPTION
1	100-82-3B	PIN ADJUSTING LONG INDEXABLE INSERT TOOLHOLDER
2	100-82-1	SPRING, ADJUSTING PIN
3	100-82-2	SCREW, SET-BRASS GIB - 3/16" LONG
4	511-29-12C	SCREW, TORX M4 X .7 X .315" LONG
5	6800C	TOOLHOLDER, INDEXABLE INSERT- 3/8" IC TRIANGLE, OFFSET POSITIVE RAKE

6801D Insert Holder Parts



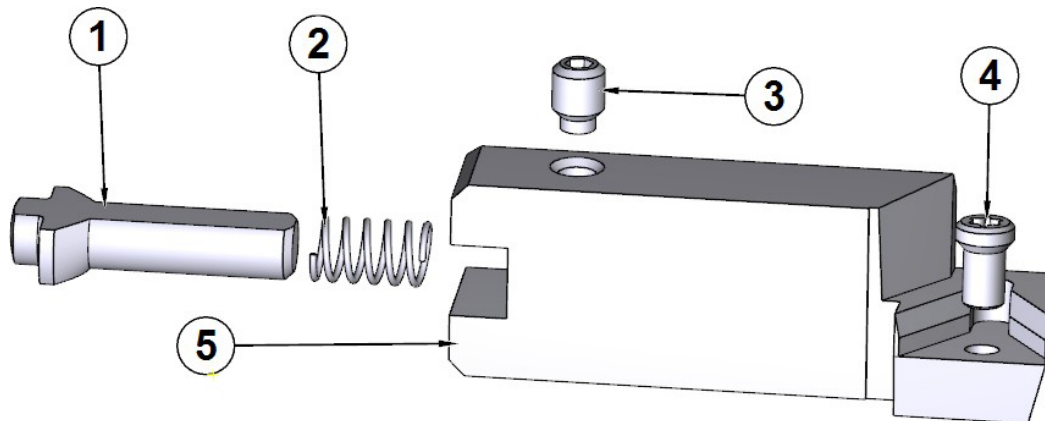
ITEM	PART #	DESCRIPTION
1	100-82-3B	PIN ADJUSTING LONG INDEXABLE INSERT TOOLHOLDER
2	100-82-1	SPRING, ADJUSTING PIN
3	100-82-2	SCREW, SET-BRASS GIB - 3/16" LONG
4	511-29-12C	SCREW, TORX M4 X .7 X .315" LONG
5	6800D	TOOLHOLDER, INDEXABLE INSERT- 3/8" IC TRIANGLE, OFFSET POSITIVE RAKE

6801E Insert Holder Parts



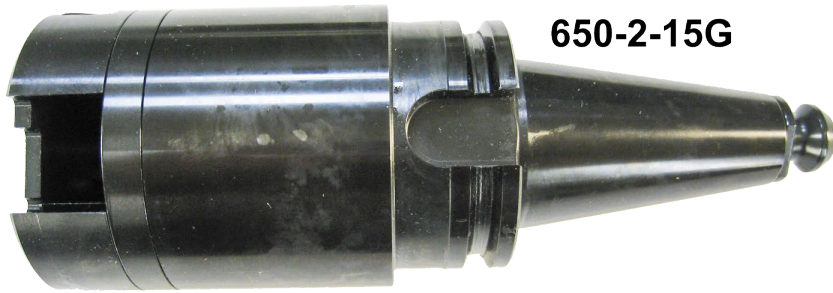
ITEM	PART #	DESCRIPTION
1	100-82-3B	PIN ADJUSTING LONG INDEXABLE INSERT TOOLHOLDER
2	100-82-1	SPRING, ADJUSTING PIN
3	100-82-2	SCREW, SET-BRASS GIB - 3/16" LONG
4	511-29-12C	SCREW, TORX M4 X .7 X .315" LONG
5	6800C	TOOLHOLDER, INDEXABLE INSERT- 3/8" IC TRIANGLE, OFFSET POSITIVE RAKE

6801F Insert Holder Parts



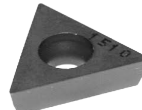
ITEM	PART #	DESCRIPTION
1	100-82-3B	PIN ADJUSTING LONG INDEXABLE INSERT TOOLHOLDER
2	100-82-1	SPRING, ADJUSTING PIN
3	100-82-2	SCREW, SET-BRASS GIB - 3/16" LONG
4	511-29-12C	SCREW, TORX M4 X .7 X .315" LONG
5	6800F	TOOLHOLDER, INDEXABLE INSERT- 3/8" IC TRIANGLE, OFFSET POSITIVE RAKE

650-2-15F Cutterhead Package Components

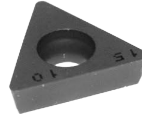


650-2-15G

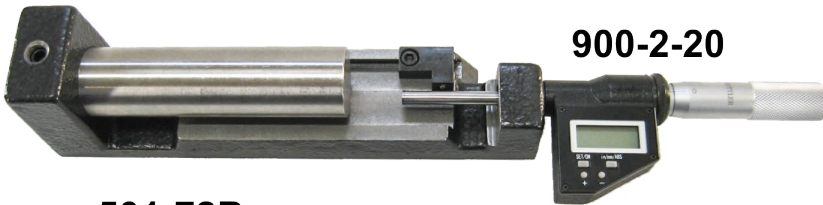
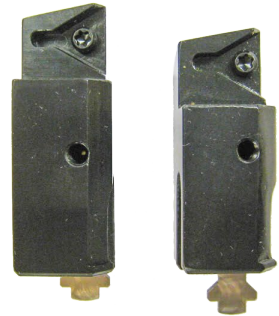
RT321



RT322



6593 Series



900-2-20

6598K



501-72B

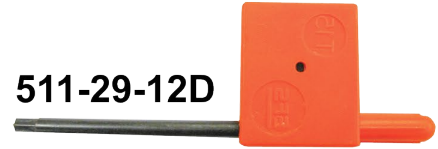


501-72E

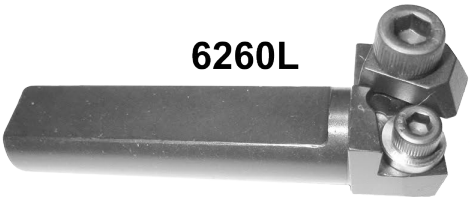
6260W



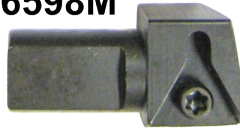
511-29-12D



6260L



6598M



RS322

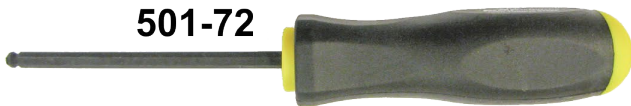


RTCR321

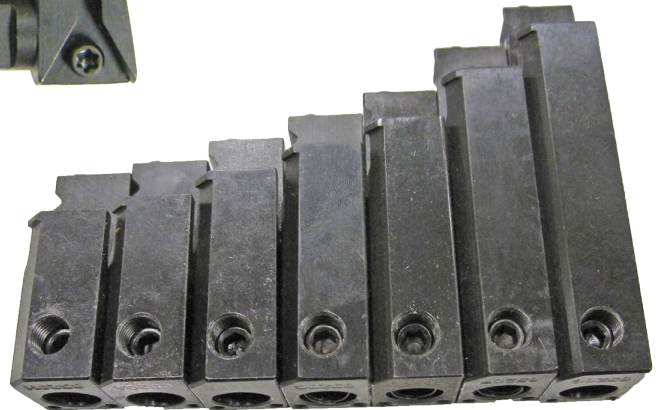
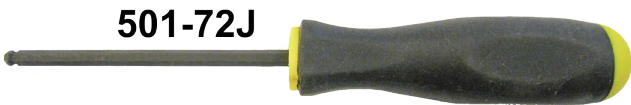
100-24



501-72

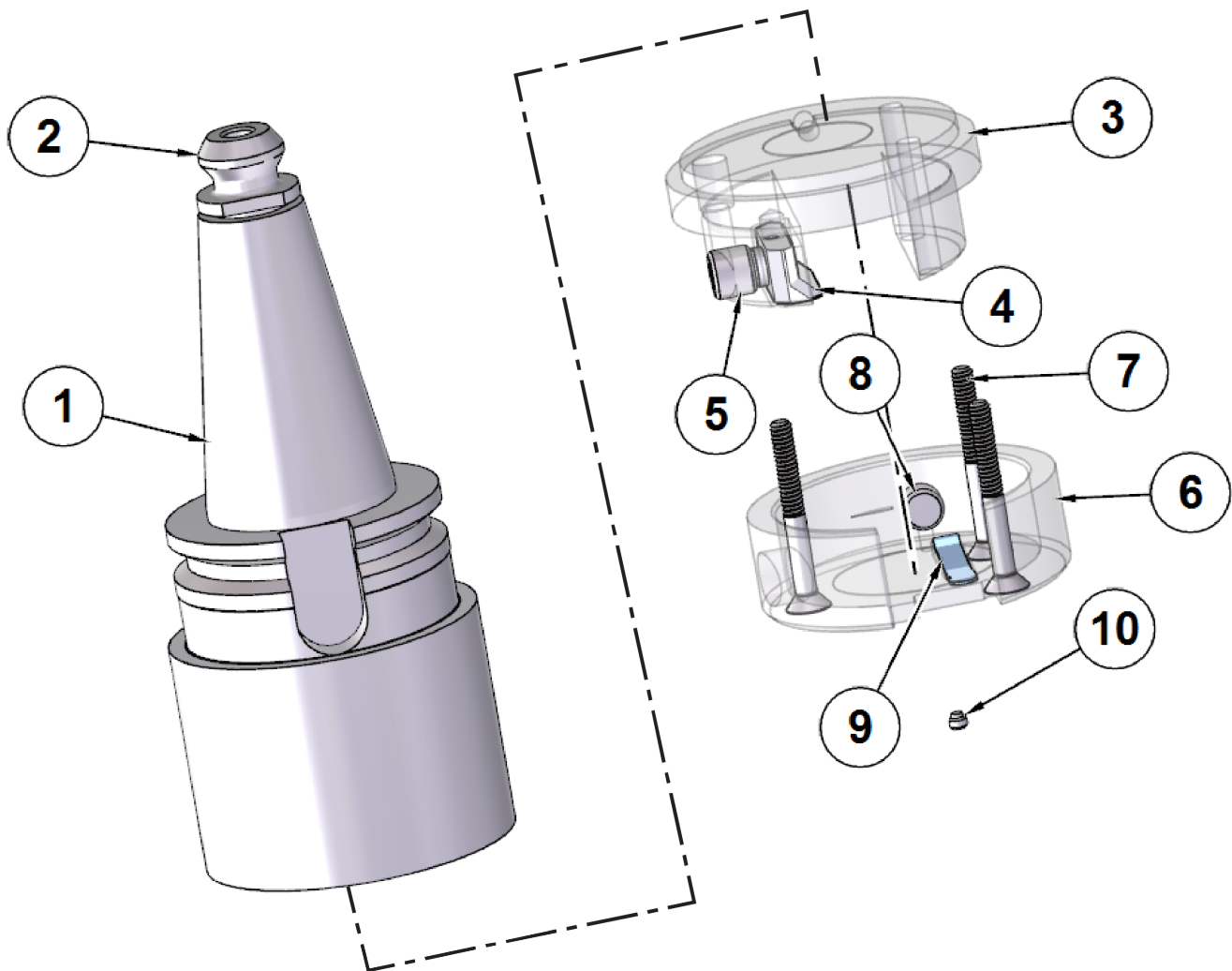


501-72J



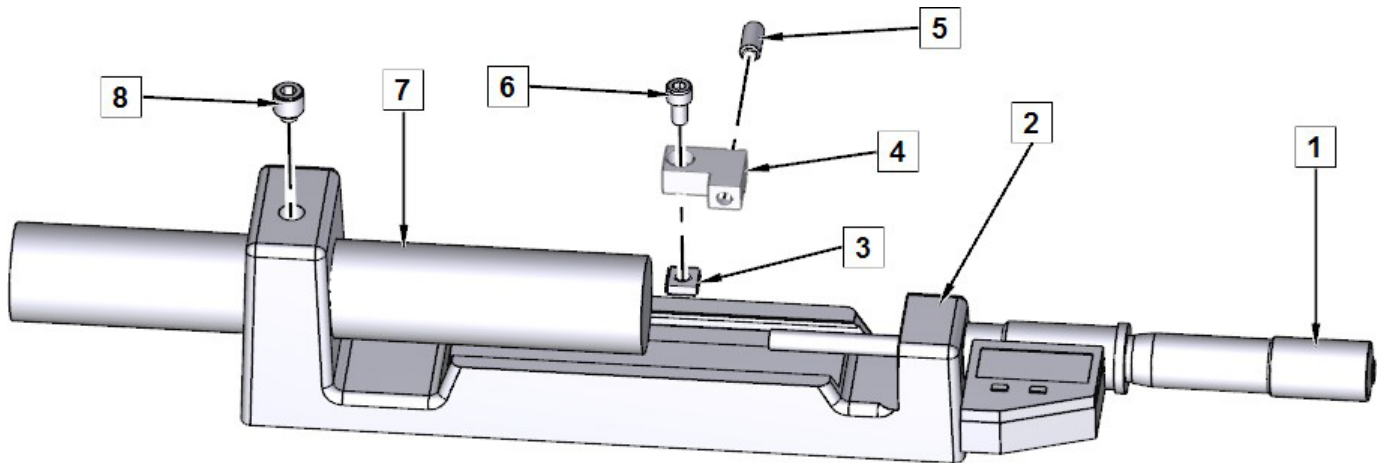
6520 Series

650-2-15G Cutterhead Parts



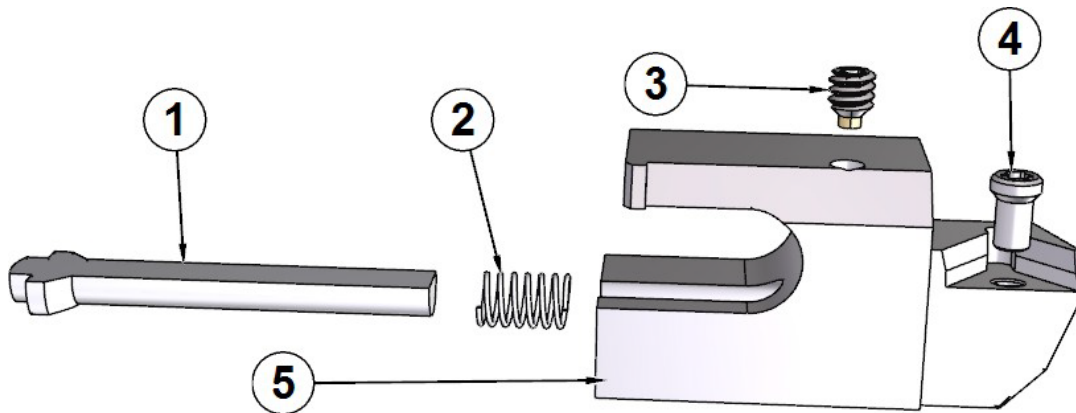
ITEM	PART #	DESCRIPTION
1	650-2-15H	ADAPTER, 2.9" STUB BAR CAT 40 TAPER (INCH) 4" LONG
2	650-2-44L	CAT 40 RETENTION KNOB
3	650-2-16	BODY, 2.9" STUB BAR
4	6263A	SHOE, CLAMP-TOOL HOLDER
5	501-70C	SCREW, TOOL HOLDER LOCK
6	650-2-17	CAP, 2.9" STUB BAR
7	MF-81D	SOCKET FLAT HEAD SCREW 10-24 X 1 3/4"
8	502-2-85B	SCREW, SET-INDEX 3/8-40 FINE THREAD
9	100-1A	SPRING, TOOL LOCK 1 13/32"
10	502-12-4D	SOCKET SET SCREW 8-32 X 1/8" (BRASS TIPPED)

900-2-20 Micrometer Parts



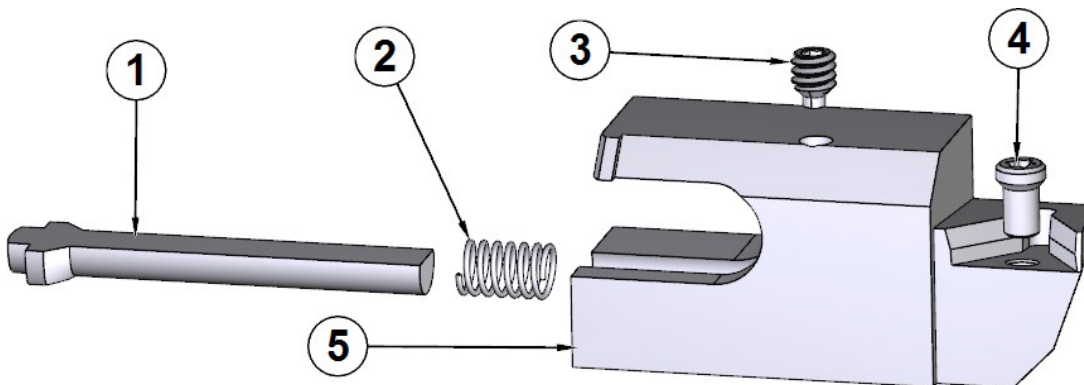
ITEM	PART #	DESCRIPTION
1	501-34-2R	HEAD, MICROMETER UNIVERSAL MIC HEAD DIGITAL READING INCH AND METRIC
2	502-30-10C	FRAME, MICROMETER
3	502-30-10J	SQUARE NUT-#10-24 MICROMETER FRAME
4	502-30-10M	CLAMP, MICROMETER
5	502-30-10K	BALL PLUNGER, 1/4-20 MICROMETER FRAME
6	MF-9A	SOCKET HEAD CAPSCREW 10-32 X 3/8"
7	502-30-10A	ANVIL, MICROMETER 7/8" DIAMETER X 5 5/8" LONG
8	502-30-10L	SET SCREW, BRASS TIPPED 3/8-24 X 3/8" LONG

6593C Insert Holder Parts



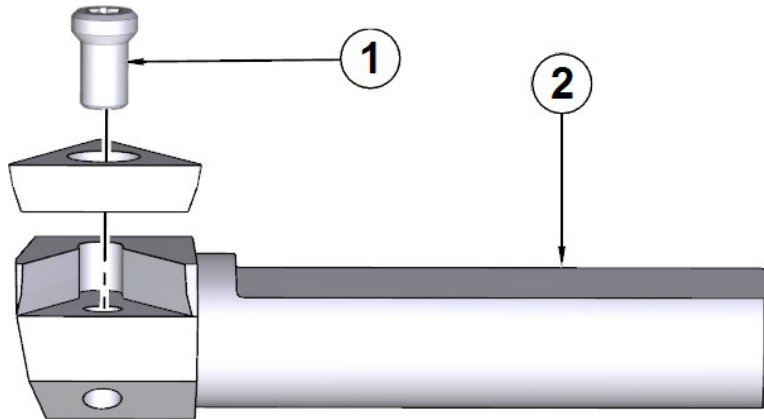
ITEM	PART #	DESCRIPTION
1	6593Q	PIN, ADJUSTING - TOOLHOLDER
2	100-82-4	SPRING, ADJUSTING PIN
3	100-82-2	SCREW, SET-BRASS GIB - 3/16" LONG
4	511-29-12C	SCREW, TORX M4 X .7 X .315" LONG
5	6593E	CARTRIDGE/TOOL HOLDER - INDEX. INSERT, TRIANGULAR-POSITIVE RAKE (2.90- 3.40 DIA)

6593D Insert Holder Parts



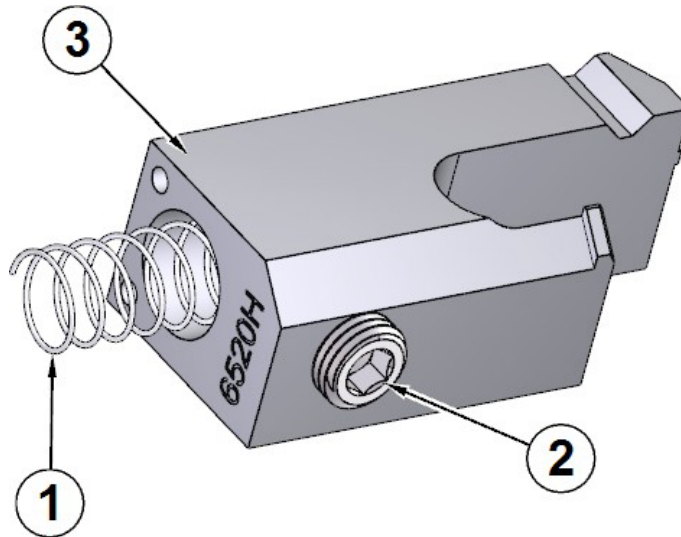
ITEM	PART #	DESCRIPTION
1	6593Q	PIN, ADJUSTING - TOOLHOLDER
2	100-82-4	SPRING, ADJUSTING PIN
3	100-82-2	SCREW, SET-BRASS GIB - 3/16" LONG
4	511-29-12C	SCREW, TORX M4 X .7 X .315" LONG
5	6593F	CARTRIDGE/TOOL HOLDER - INDEX. INSERT, TRIANGULAR-POSITIVE RAKE (3.40 TO 3.90)

6598K Insert Cartridge Parts



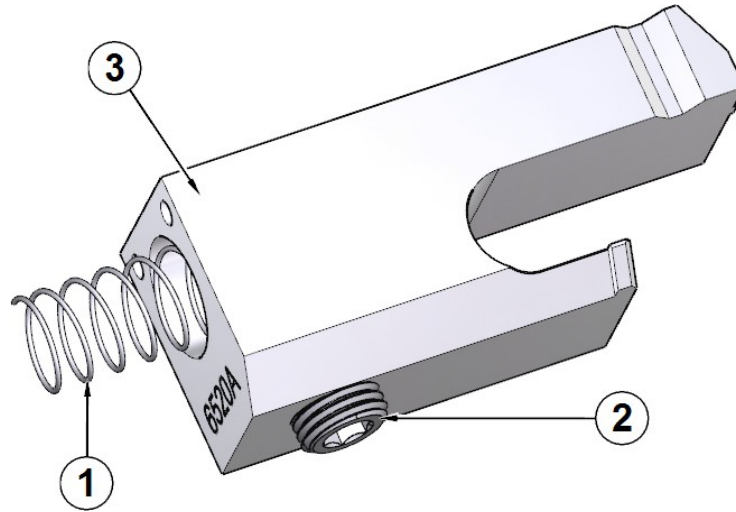
ITEM	PART #	DESCRIPTION
1	511-29-12C	SCREW, TORX M4 X .7 X .315" LONG
2	6598J	CARTRIDGE, INDEXABLE INSERT, 1 7/8" FOR TRIANGULAR POSITIVE RAKE INSERTS

6520H Toolholder Parts



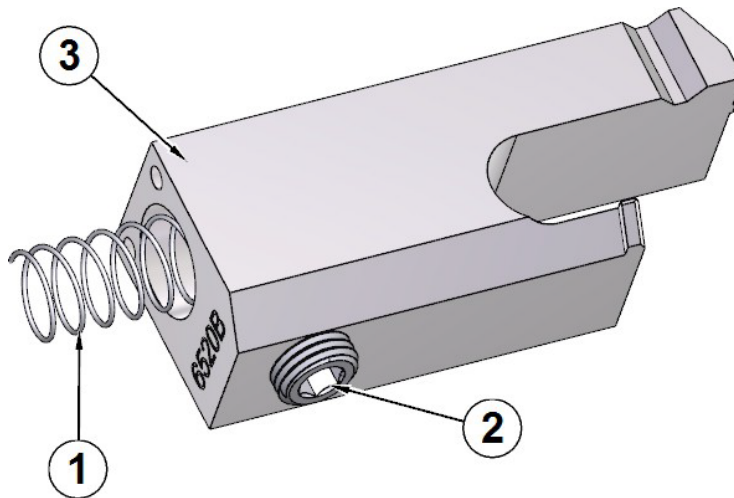
ITEM	PART #	DESCRIPTION
1	6300B	SPRING, COMPRESSION-TOOLHOLDER (1 7/16")
2	502-2-85	SCREW, SET-TOOLHOLDER INDEX
3	6520H	TOOL HOLDER, 2 1/4" LONG

6520A Toolholder Parts



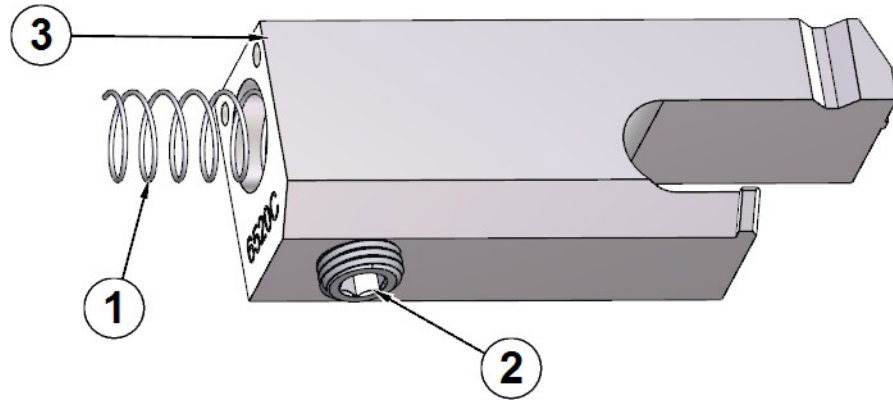
ITEM	PART #	DESCRIPTION
1	6300B	SPRING, COMPRESSION-TOOLHOLDER (1 7/16")
2	502-2-85	SCREW, SET-TOOLHOLDER INDEX
3	6520A	TOOL HOLDER, 2 3/8" LONG

6520B Toolholder Parts



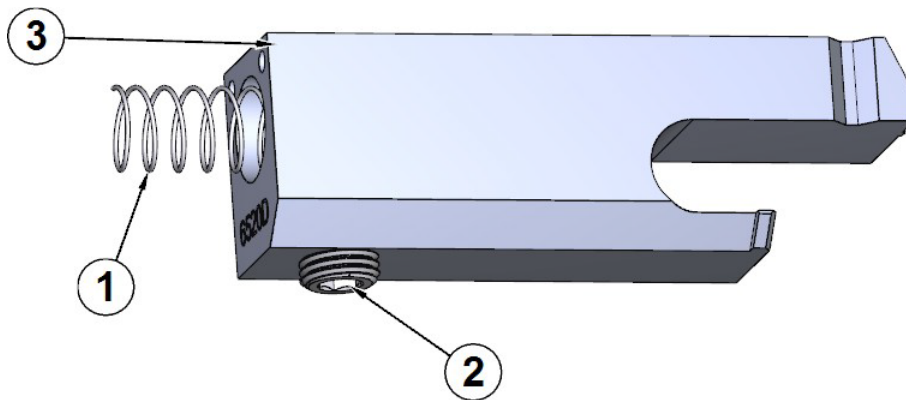
ITEM	PART #	DESCRIPTION
1	6300B	SPRING, COMPRESSION-TOOLHOLDER (1 7/16")
2	502-2-85	SCREW, SET-TOOLHOLDER INDEX
3	6520B	TOOL HOLDER, 2 5/8" LONG

6520C Toolholder Parts



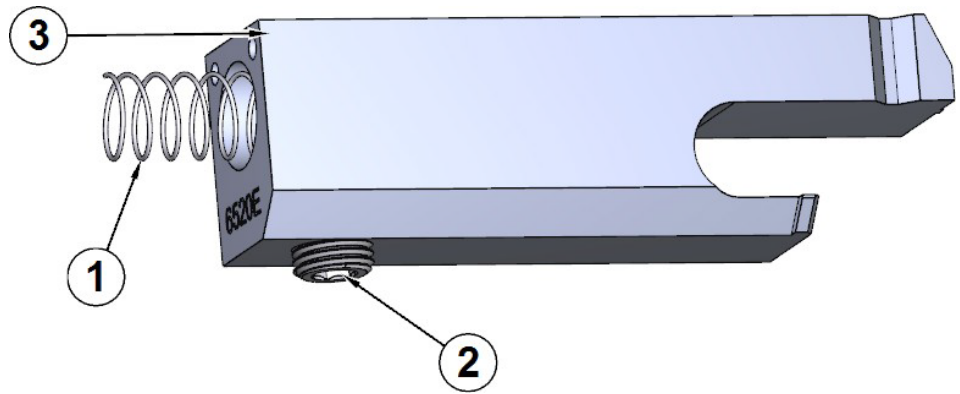
ITEM	PART #	DESCRIPTION
1	6300B	SPRING, COMPRESSION-TOOLHOLDER (1 7/16")
2	502-2-85	SCREW, SET-TOOLHOLDER INDEX
3	6520C	TOOL HOLDER, 2 7/8" LONG

6520D Toolholder Parts



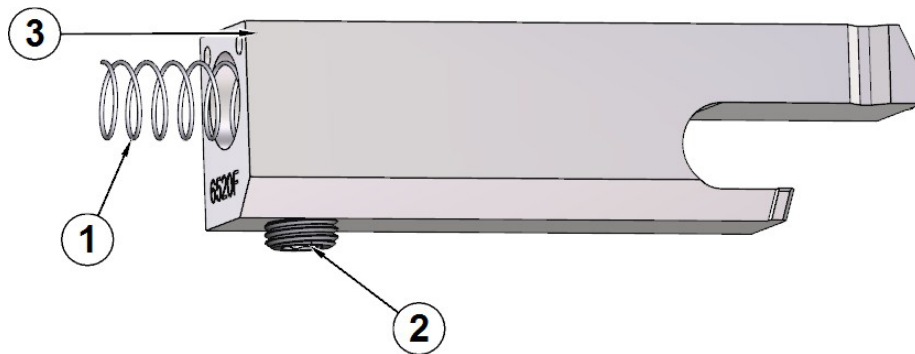
ITEM	PART #	DESCRIPTION
1	6300B	SPRING, COMPRESSION-TOOLHOLDER (1 7/16")
2	502-2-85	SCREW, SET-TOOLHOLDER INDEX
3	6520B	TOOL HOLDER, 2 5/8" LONG

6520E Toolholder Parts



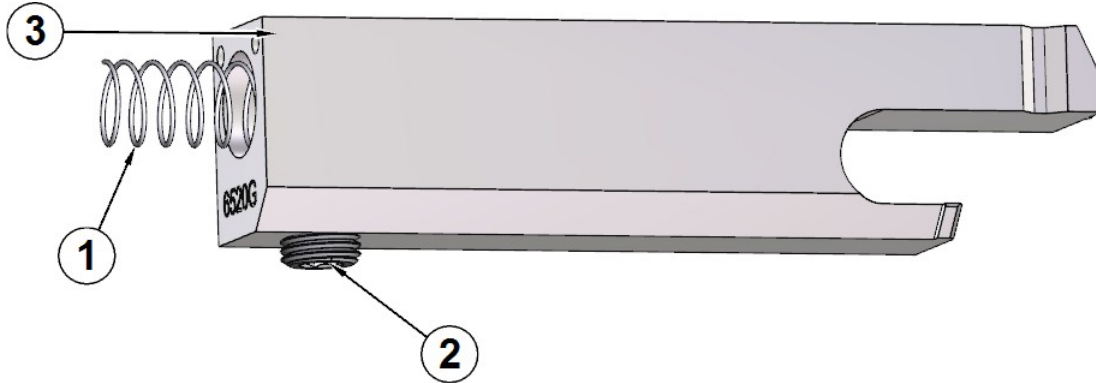
ITEM	PART #	DESCRIPTION
1	6300C	SPRING, COMPRESSION-TOOLHOLDER (2.0")
2	502-2-85	SCREW, SET-TOOLHOLDER INDEX
3	6520E	TOOL HOLDER, 3 3/8" LONG

6520F Toolholder Parts



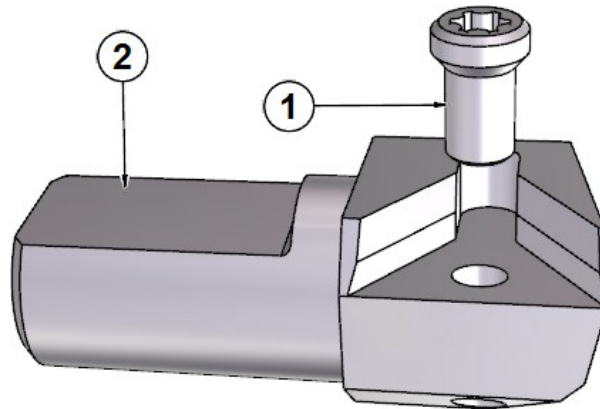
ITEM	PART #	DESCRIPTION
1	6300C	SPRING, COMPRESSION-TOOLHOLDER (2.0")
2	502-2-85	SCREW, SET-TOOLHOLDER INDEX
3	6520F	TOOL HOLDER, 3 5/8" LONG

6520G Toolholder Parts



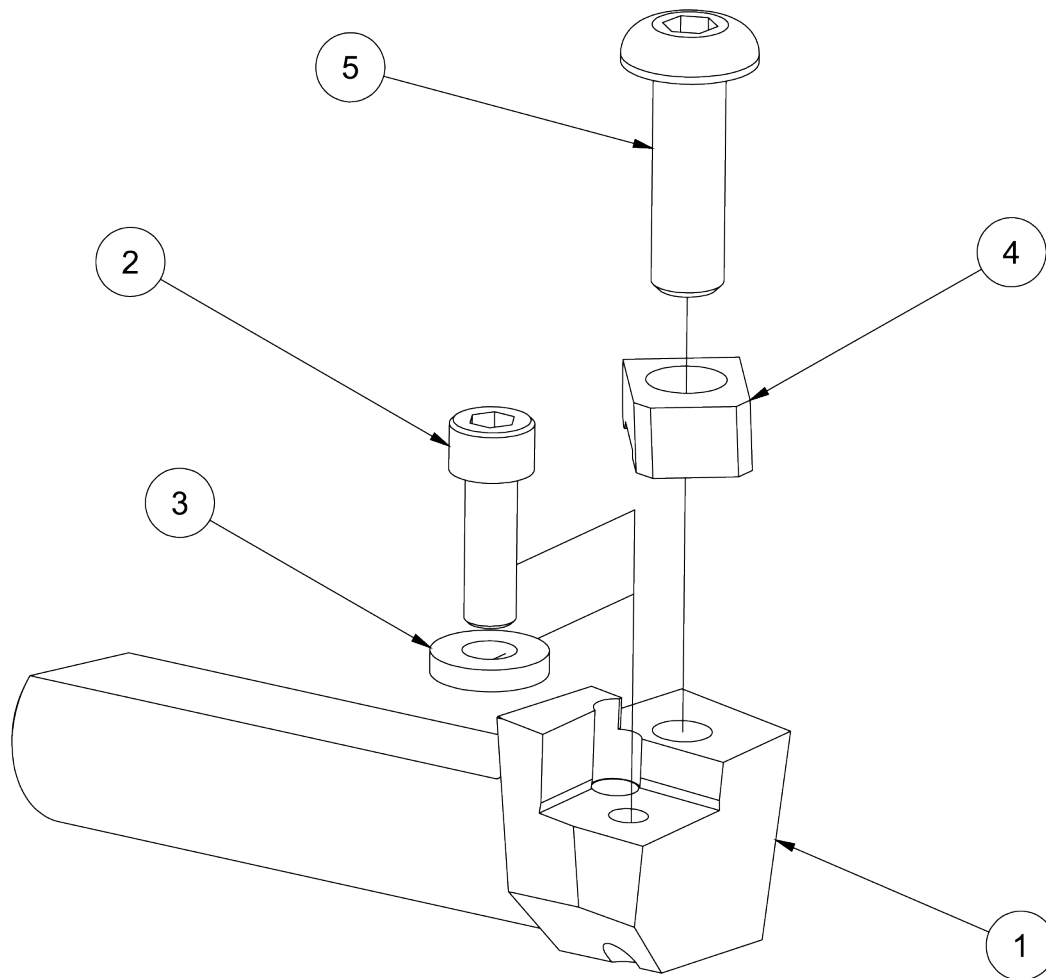
ITEM	PART #	DESCRIPTION
1	6300C	SPRING, COMPRESSION-TOOLHOLDER (2.0")
2	502-2-85	SCREW, SET-TOOLHOLDER INDEX
3	6520G	TOOL HOLDER, 4 1/8" LONG

6598M Insert Cartridge Parts



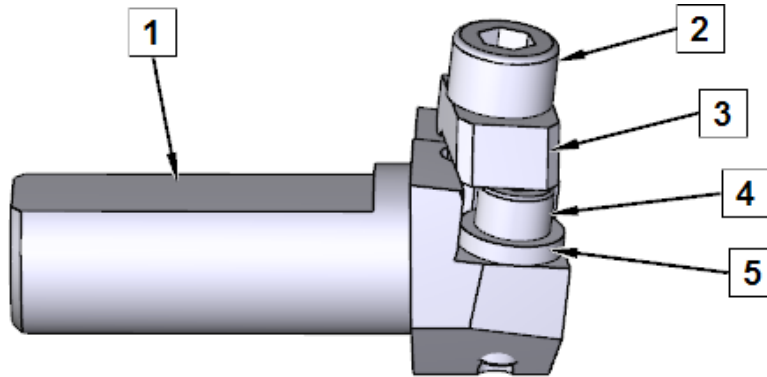
ITEM	PART #	DESCRIPTION
1	511-29-12C	SCREW, TORX M4 X .7 X .315" LONG
2	6598L	CARTRIDGE, INDEXABLE INSERT, 13/16" FOR TRIANGULAR POSITIVE RAKE INSERTS

6260L Insert Cartridge Parts



6260L CARTRIDGE ASSEMBLY - SQUARE INSERT NEG. RAKE INDEXABLE - 1.88" SHANK			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	6594G	CARTRIDGE - SQUARE INSERT NEG. RAKE INDEXABLE - 1.88" SHANK
2	1	511-29-12	Screw
3	1	511-29-12B	Washer
4	1	6594K	Insert Clamp
5	1	MF-89A	10-32UNF x 5/8" LG. SOCKET BUTTON HEAD CAPSCREW

6260W Insert Cartridge Parts



ITEM	PART #	DESCRIPTION
1	6594J	CARTRIDGE, OFFSET 3/8" SQUARE, NEGATIVE RAKE
2	MF-9	SOCKET HEAD CAP SCREW 10-32 X 5/8"
3	6594K	CLAMP, TOOL SQUARE INSERT
4	511-29-12	SCREW, SOCKET HEAD CAP 6/32 X 7/16" LONG
5	511-29-12B	WASHER, PRECISION-HOLDING SCREW

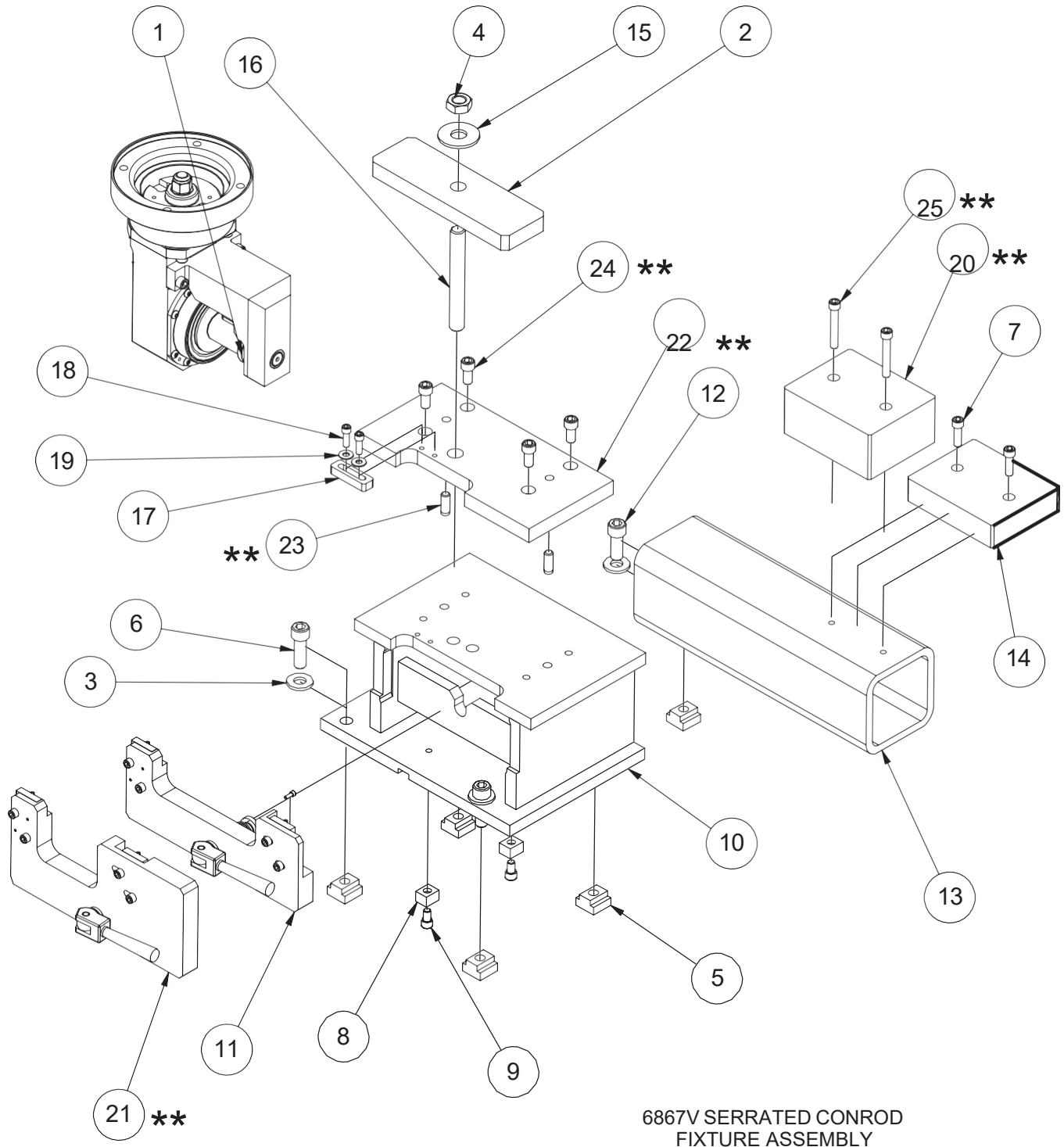
RTCR322 Insert

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



System for Cutting Serrated Connecting Rods

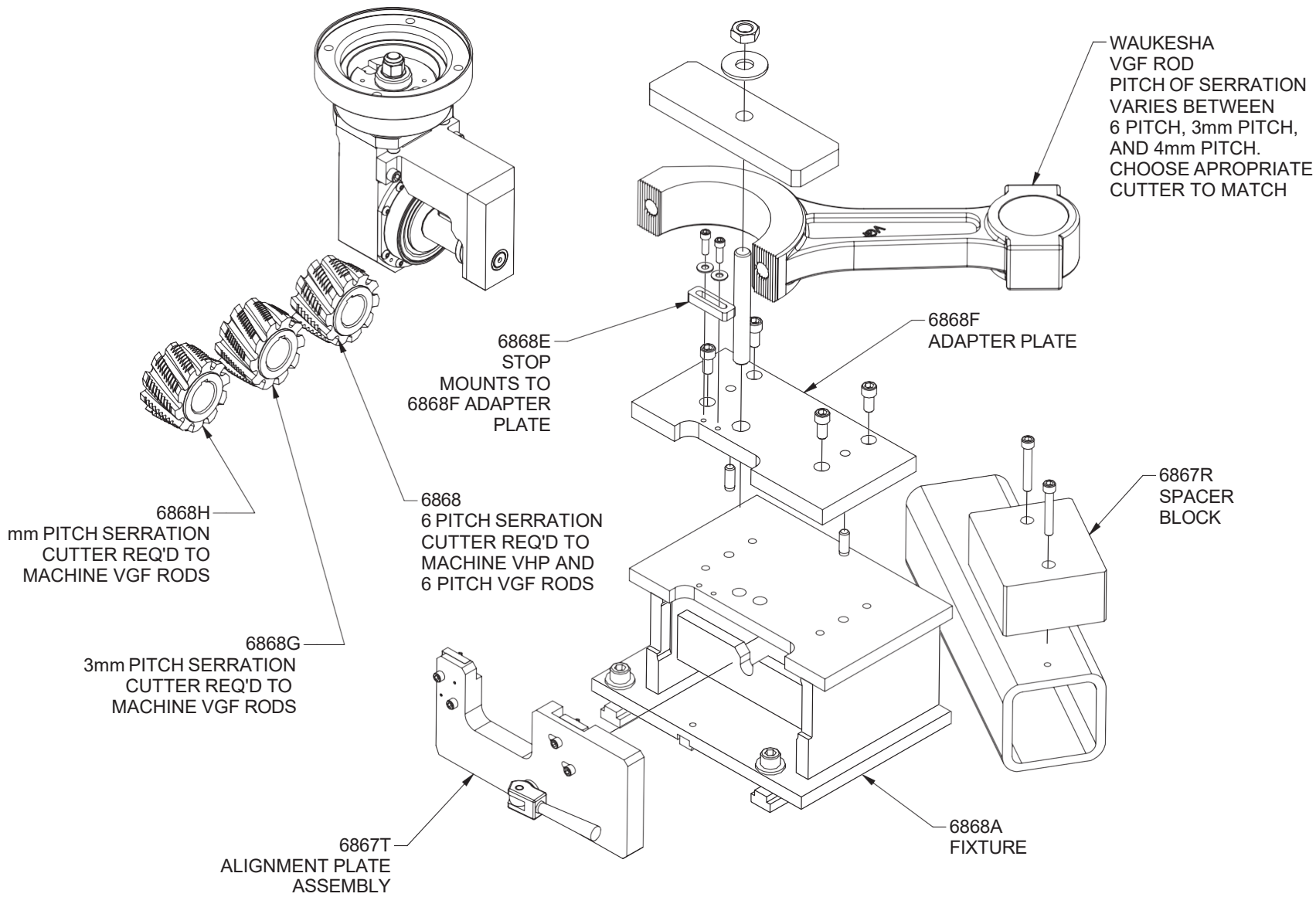
6867V Serrated Rod Cutting Package Components



6867V SERRATED CONROD FIXTURE ASSEMBLY			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	6856G	MID SIZE R.A.D. ASSEMBLY FOR SERRATION CUTTING FIXTURE
2	1	6867K	CLAMP BAR - SERRATED CONROD FIXTURE
3	5	100-19A	Hardened washer 17/32 I.D.
4	1	MF-166	5/8-11UNC HEX NUT
5	5	650-3-10	TN-5 T-Nut
6	4	MF-44	Hexagon Socket Head Cap Screw
7	2	MF-23	S.H.C.S. 5/16 - 18 UNC - 1
8	2	650-3-9	Key
9	2	MF21A	Hexagon Socket Head Cap Screw
10	1	6868A	FIXTURE (MACHINING) SERRATED CONROD FIXTURE
11	1	6867B	ALIGNMENT PLATE ASSY
12	1	MF-43	S.H.C.S. 1/2 - 13 UNC - 1 1/4
13	1	6867P	SMALL END SUPPORT - SERRATED CONROD FIXTURE
14	1	6867N	SPACER BLOCK, SMALL END SUPPORT, VHP ROD - SERRATED CONROD FIXTURE
15	1	MF-181	5/8" FLAT WASHER
16	1	6868D	CLAMP STUD - SERRATED CONROD FIXTURE
17	1	6868E	STOP, SERRATED CONROD FIXTURE
18	2	MF-14	Hexagon Socket Head Cap Screw
19	2	MF-176	SAE FLAT WASHER 1/4"
20	1	6867R **	SPACER BLOCK, SMALL END SUPPORT - SERRATED CONROD FIXTURE
21	1	6867S **	ALIGNMENT PLATE ASSY
22	1	6868F **	ADAPTER PLATE
23	2	MF-212 **	3/8" x 1" LG. DOWEL PIN
24	4	MF-30 **	3/8-16UNC x 3/4" LG. S.H.C.S.
25	2	MF-27 **	5/16-18UNC x 2" LG. S.H.C.S.

** THESE PARTS REQUIRED FOR MACHINING WAUKESHA VGF RODS AND CAPS ONLY.

6867V Serrated Rod Cutting Package Setup



6867V
SERRATED CONROD FIXTURE ASSEMBLY
CONFIGURED FOR MACHINING WAUKESHA VGF RODS

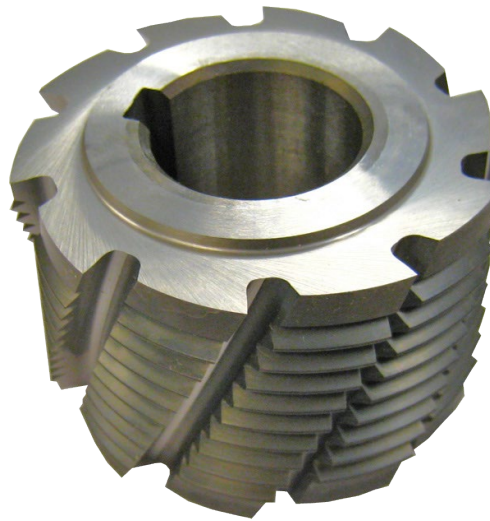
6868 Six Pitcher Cutter

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

