

ROTTLER

F107AHL / F109AHL 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

In some cases you may be requested to send a photo of the part you are ordering if it is a replacement part, or doesn't appear in the database.

If you are unsure which part you need to order, contact our service department and ask to speak to one of our service consultants. They will assist you in determining which part you require.

THERE IS A MINIMUM ORDER OF \$25.00

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Wireless Probing System for Automatic Centering and Measuring

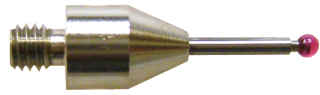
10110 Renishaw Wireless Radio Probing System Parts



10110A



650-3-59C



650-3-59E



6648S



650-3-59K



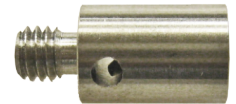
650-3-59Z



6648Q



6648R



6648T



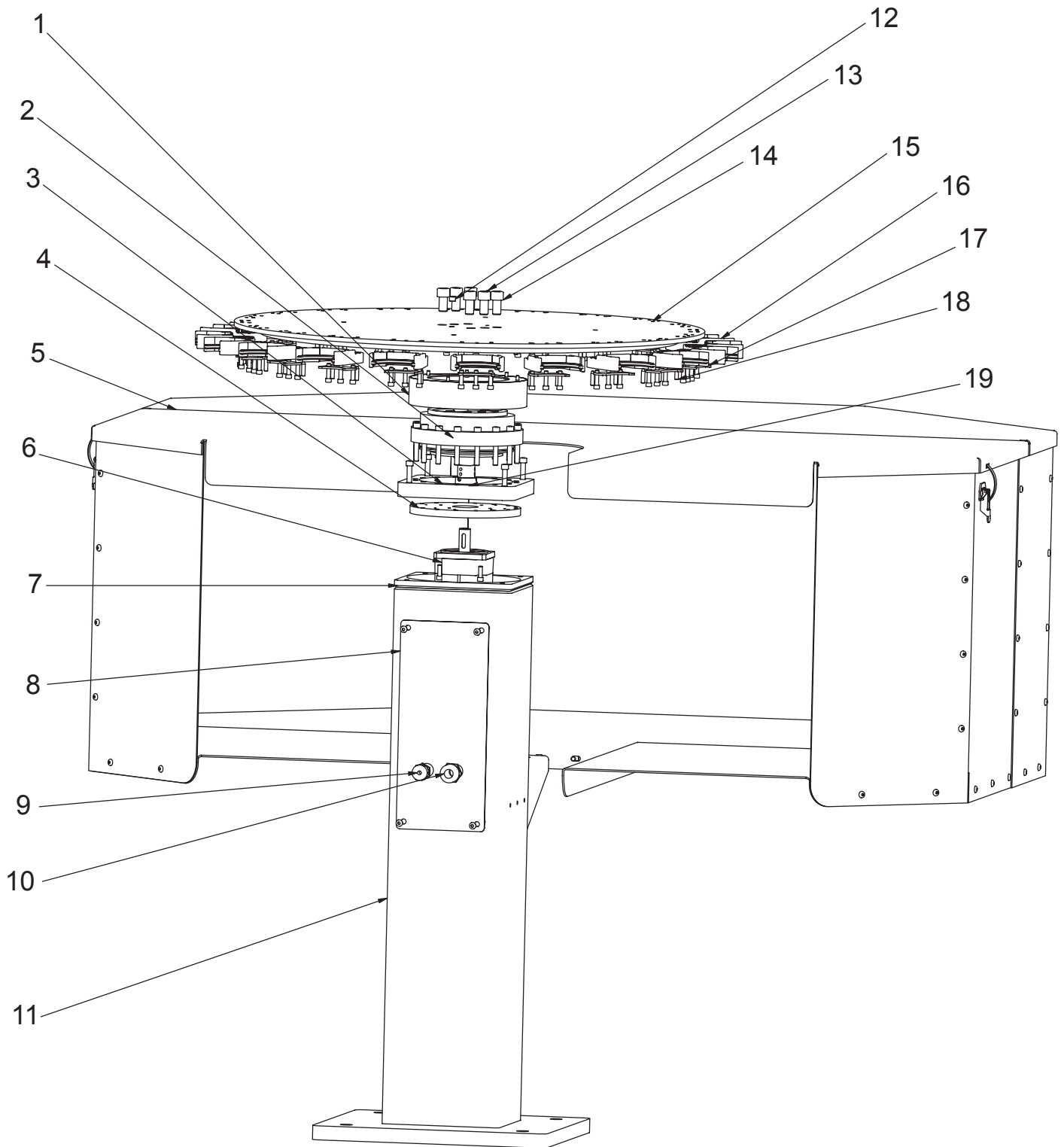
650-3-59D



6648U

Automatic Tool Changing System

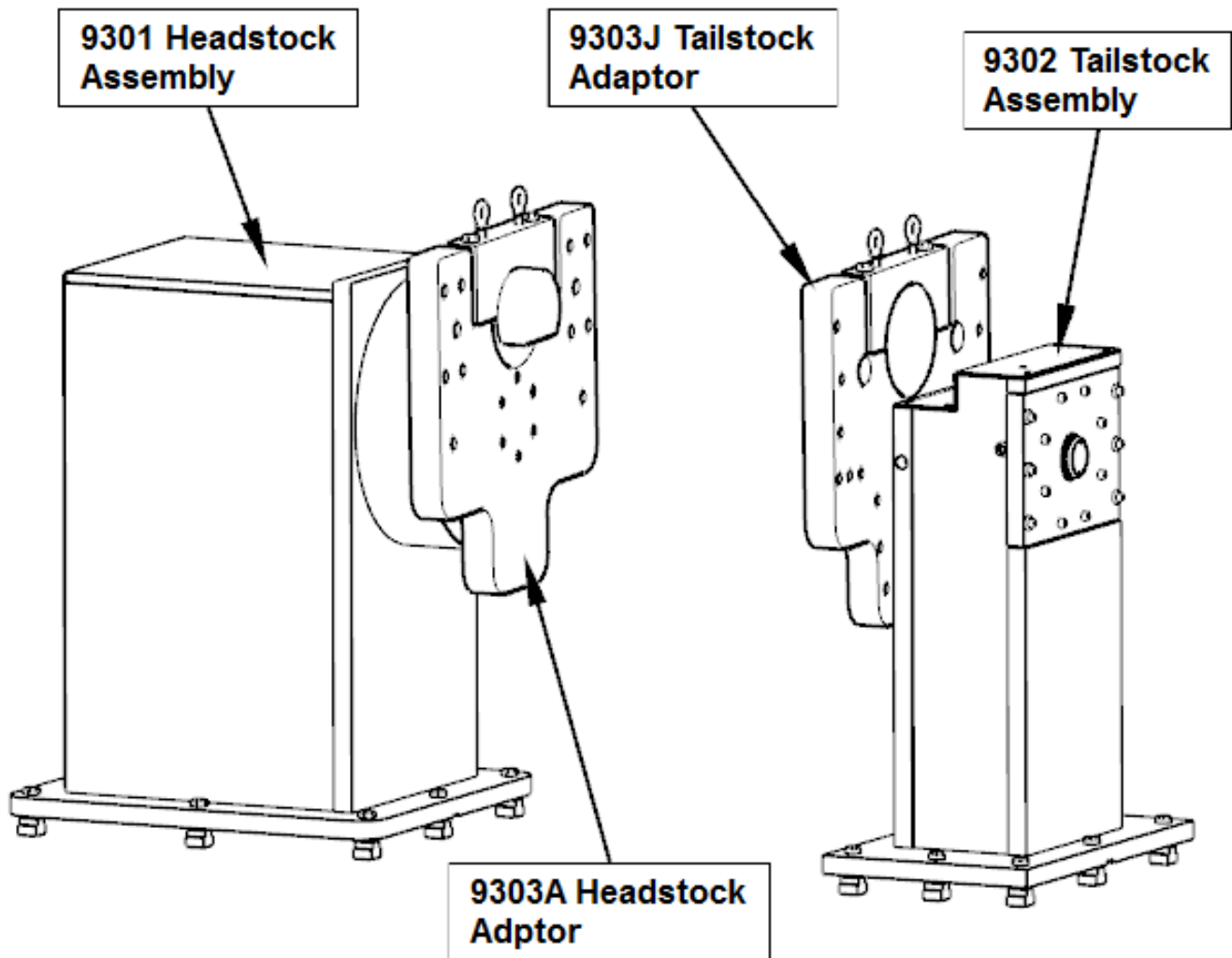
10360 Automatic Tool Changing System Parts



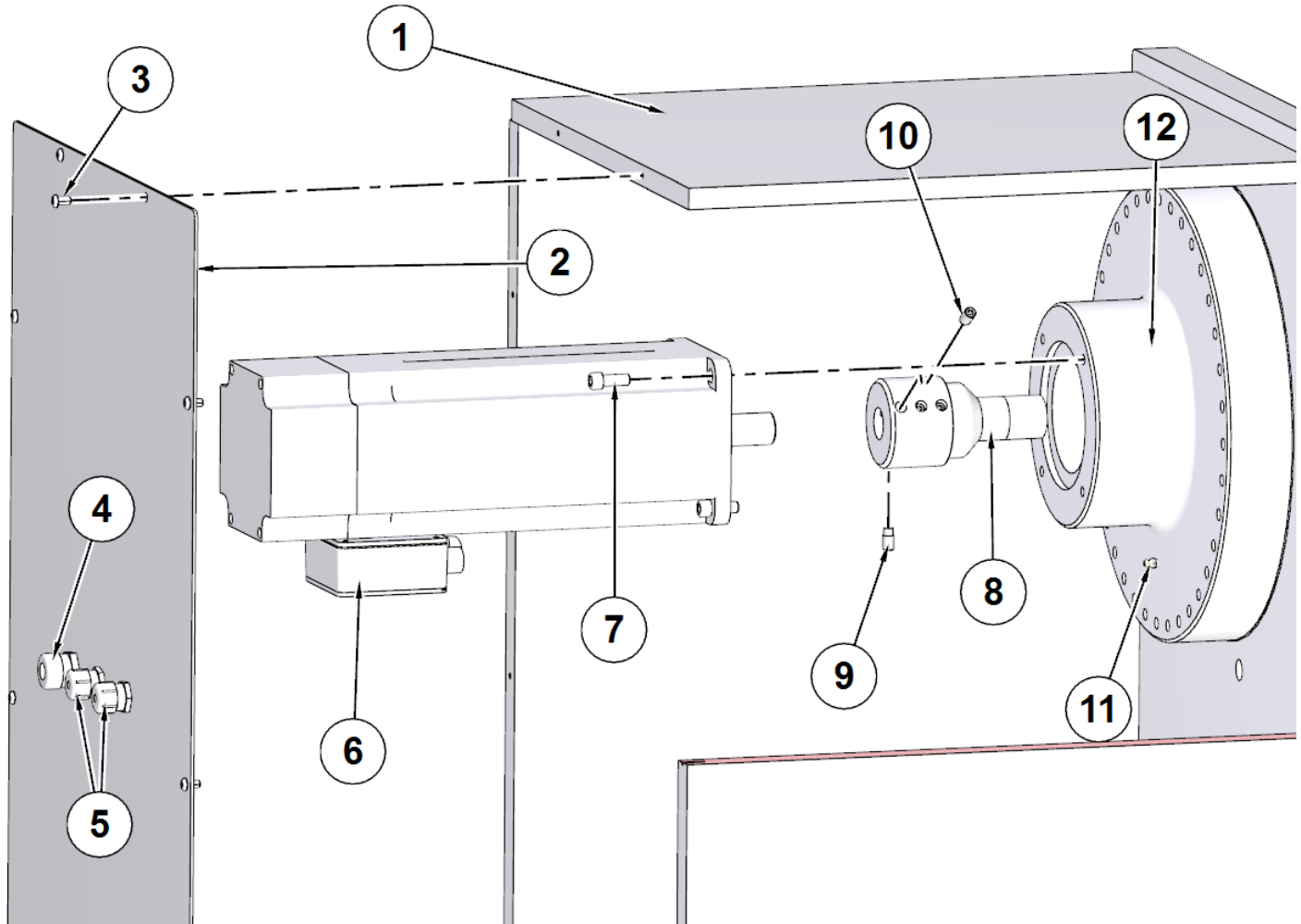
ITEM	PART #	DESCRIPTION
1	514-13-14K	COVER, GEAR BOX
2	5506C	GEARBOX ASSEMBLY
3	11042D	PLATE, TOOL CHANGER GEARBOX MOUNTING
4	514-13-14J	ADAPTOR, MOTOR GEAR BOX
5	10360M	ENCLOSURE, TOOL CHANGER
6	9020N	MOTOR WITH BISS ENCODER
7	11042E	PLATE, TOOL CHANGER GEARBOX MOUNTING
8	11042C	PLATE, TOOL CHANGER ACCESS
9	6354D	STRAIN RELIEF-1/2" (1/8 TO 1/4")
10	400-7-7	CONNECTOR, STRAIN RELIEF 5/8
11	10360B	TOWER, TOOL CHANGER
12	MF-233	MALE SOCKET PIPE PLUG 1/8-27
13	MF-189	1/4-28 STRAIGHT LUBE GREASE FITTINGS
14	650-4-49	METRIC SOCKET HEAD CAPSCREW-M14X 2 X 25MM
15	10360E	PLATE, TOOL CHANGER TURRET
16	10360G	GRIPPER, HSK 80
17	10360H	INDEXER, GRIPPER HSK 80
18	10360J	PIN, GRIPPER LOCATOR HSK 80
19	5506D	INPUT SHAFT-GEARBOX ASSEMBLY

Automatic Power Roll Over Block Fixture

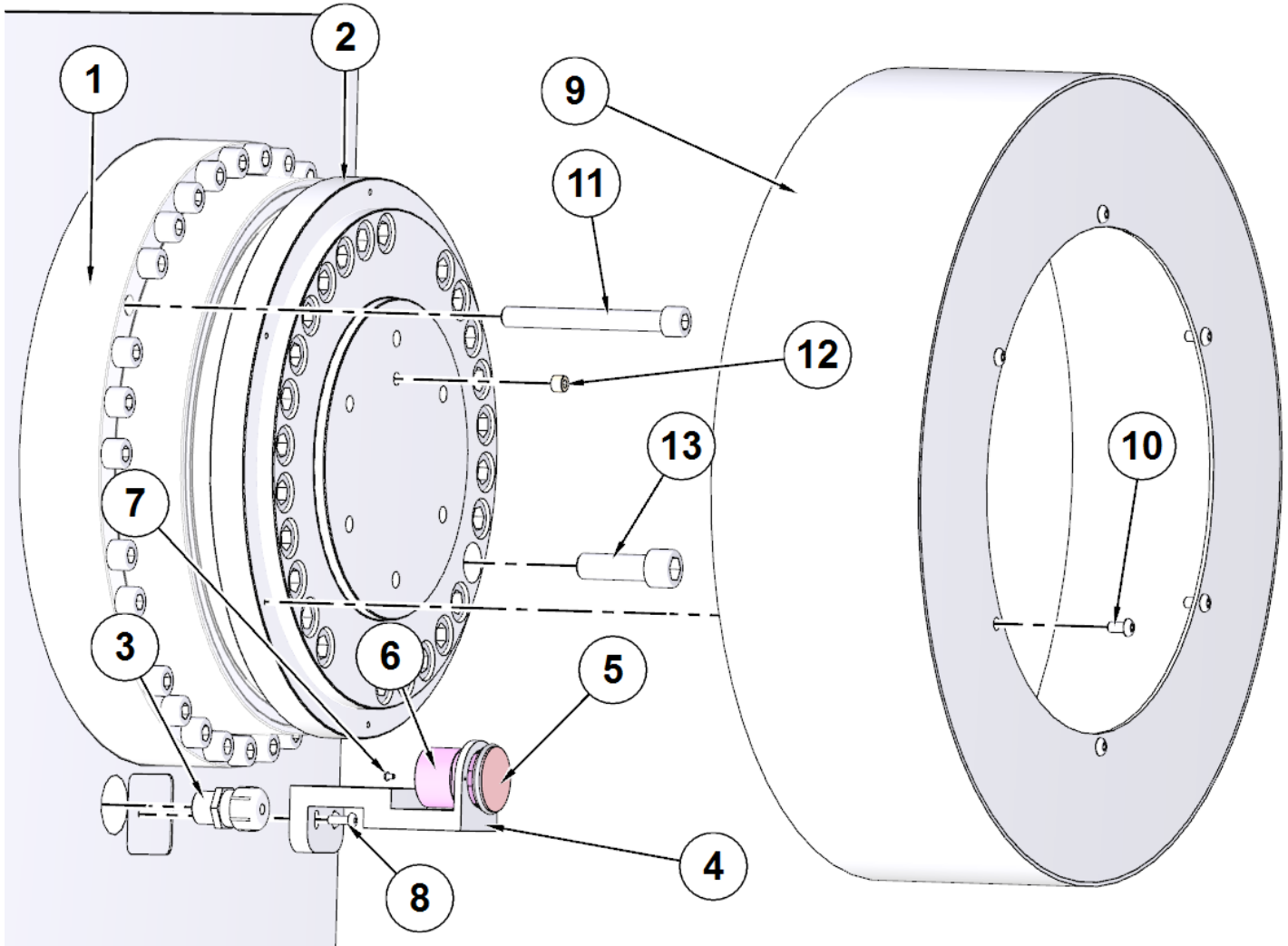
9300 4Th Axis Block Roll Over Fixture Components



9301 Headstock Assembly Parts

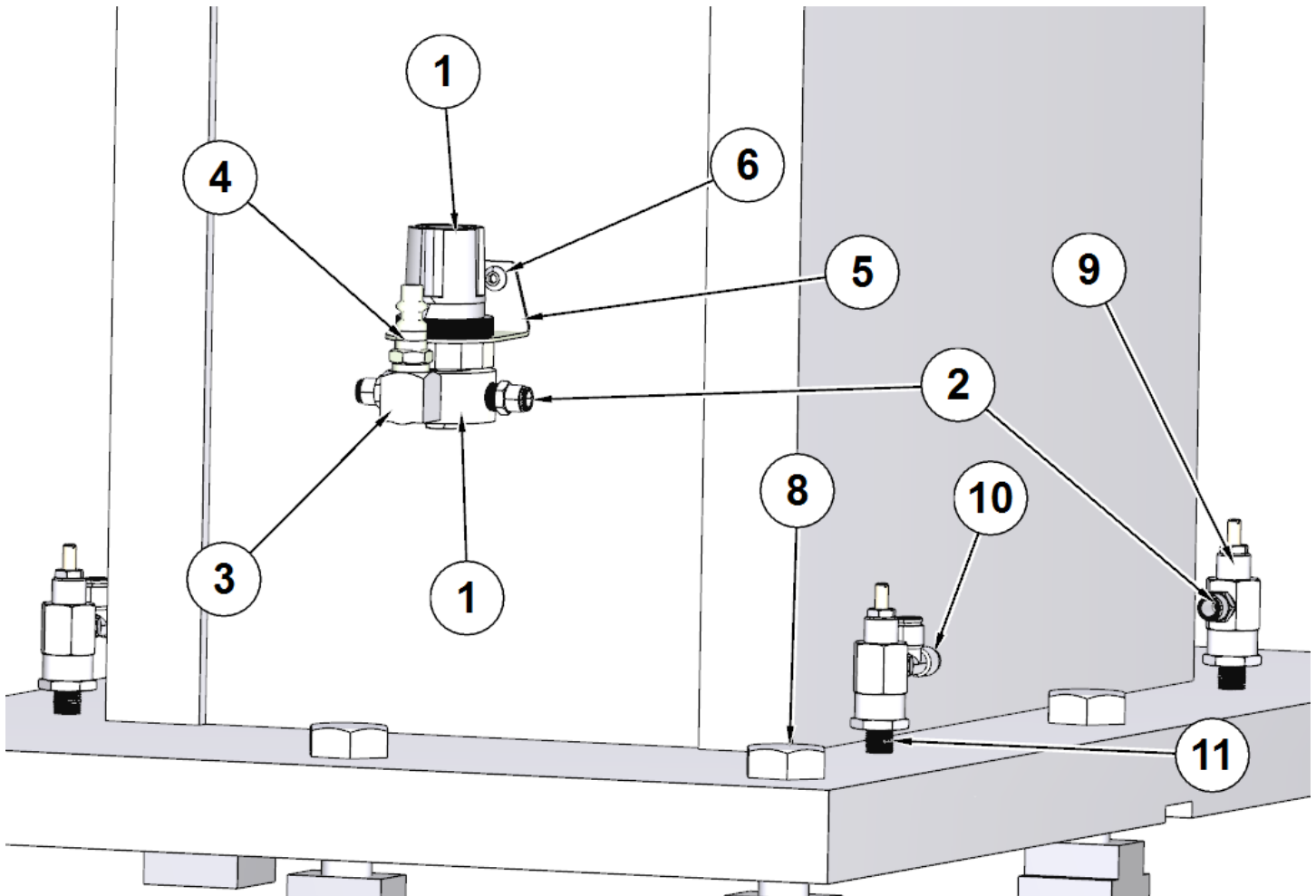


ITEM	PART #	DESCRIPTION
1	9301B	HOUSING, HEADSTOCK
2	9301L	COVER, HEADSTOCK REAR
3	MF-90	SOCKET BUTTON HEAD SCREW 1/4-20 X 1/2"
4	400-7-7	CONNECTOR, STRAIN RELIEF 5/8
5	6354D	STRAIN RELIEF-1/2" (1/8 TO 1/4")
6	9301G	MOTOR, HEADSTOCK
7	MF-31	SOCKET HEAD CAP SCREW 3/8-16 X 1"
8	9301M	SHAFT, HEADSTOCK INPUT
9	9301Q	SET SCREW, HEADSTOCK INPUT SHAFT
10	650-3-92Z	SCREW, SOCKET SET-FLAT POINT-(3/8-24 X 3/4")
11	MF-189	1/4-28 STRAIGHT LUBE GREASE FITTINGS
12	9301D	MOUNT PLATE, HEADSTOCK MOTOR

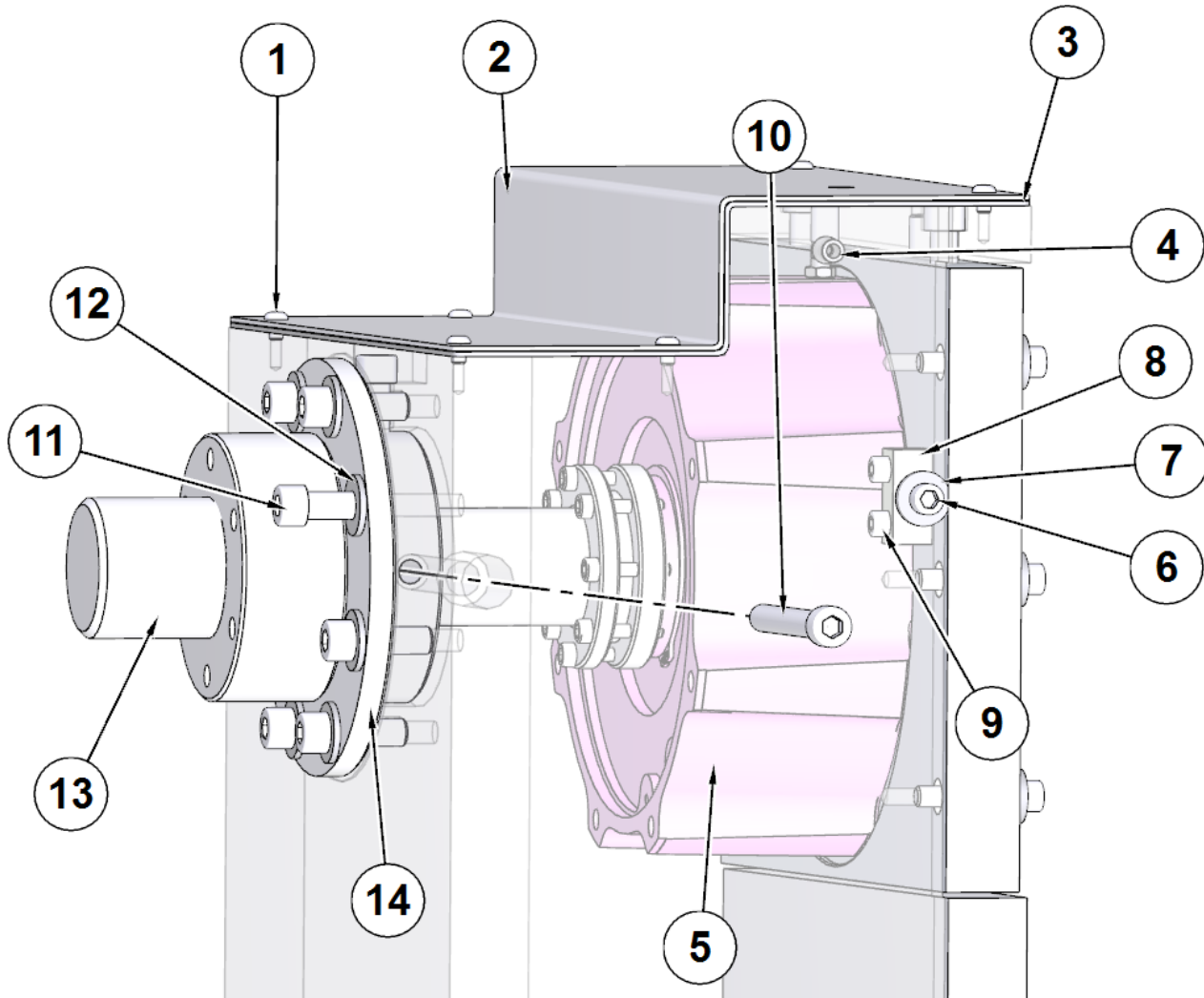


ITEM	PART #	DESCRIPTION
1	9301C	GEAR HEAD, HEADSTOCK
2	9301K	FACEPLATE, 4TH AXIS HEADSTOCK
3	6354D	STRAIN RELIEF-1/2" (1/8 TO 1/4")
4	9301T	BRACKET, HEADSTOCK ENCODER
5	9301U	WHEEL, HEADSTOCK ENCODER
6	9301V	ENCODER, HEADSTOCK MULTI-TURN BISS
7		4-40 X 3/16 BUTTON HEAD CAP SCREW
8	MF-89	SOCKET BUTTON HEAD SCREW 10-24 X 5/8"
9	9301J	COVER, HEADSTOCK GEAR
10	MF-90	SOCKET BUTTON HEAD SCREW 1/4-20 X 1/2"
11	MF-41B	SOCKET HEAD CAP SCREW 1/2-13 X 4 1/2"
12		PLUG 1/8 NPT
13		M16X2 X 50MM SOCKET HEAD CAP SCREW

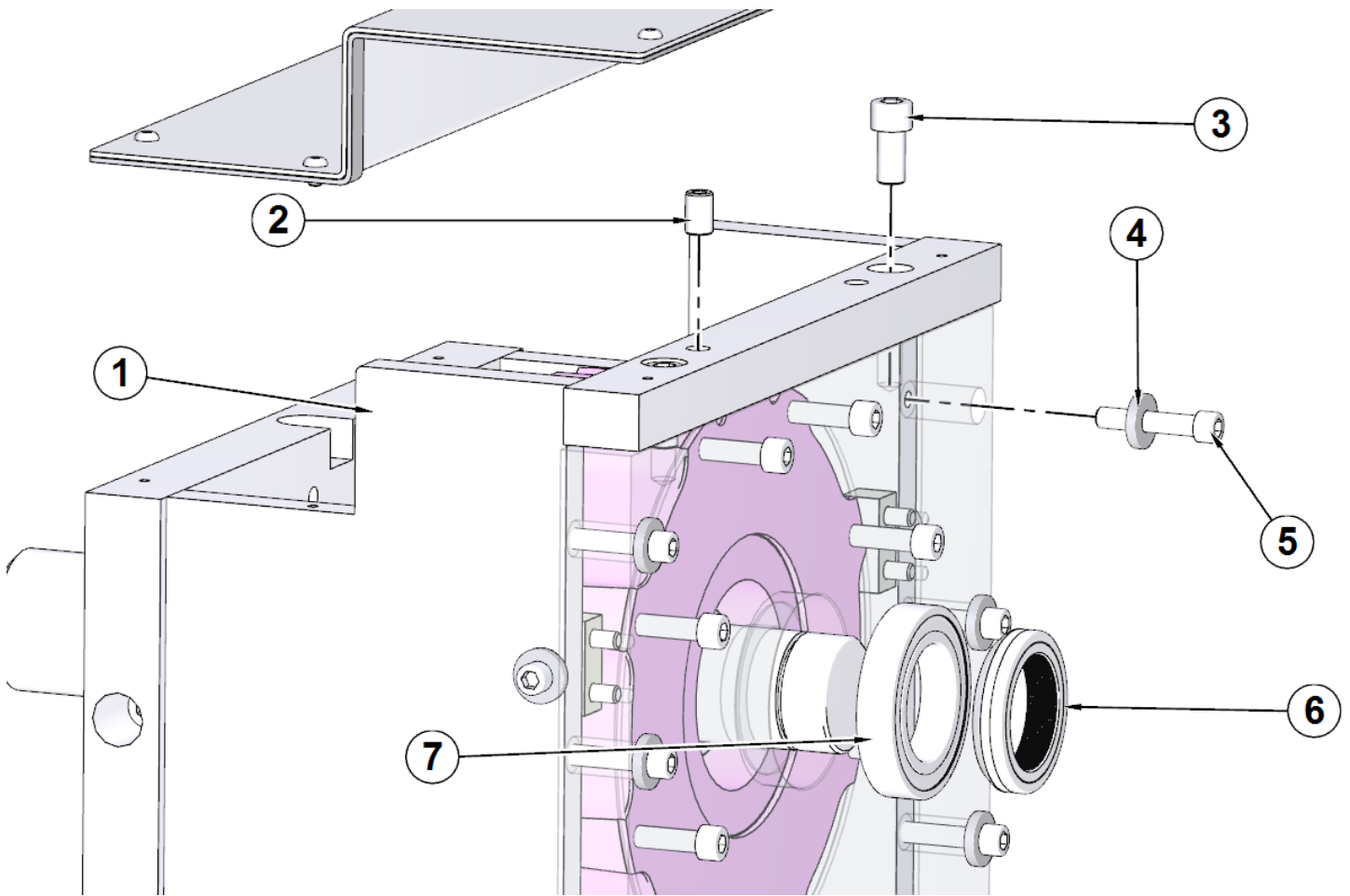
9302 Tailstock Assembly Parts



ITEM	PART #	DESCRIPTION
1	502-27-17	REGULATOR,AIR 0-60 PSI
2	514-4-17W	FITTING 1/8 NPT X 1/4 POLY STRAIGHT
3	502-11-17S	ELBOW, ST, 1/4 FPT X 1/4 MPT
4	502-11-16X	CONNECTOR, MALE THREAD 1/4 NPTF
5	502-27-17A	BRACKET, MOUNTING - REGULATOR
6	MF-88	SOCKET BUTTON HEAD SCREW 10-24 X 3/8"
7	6160	NUT, "T"-HARDENED
8	MF-154J	HEX BOLT 3/4-10 X 3 "
9	502-11-35A	VALVE, CONTROL - RFC FLO
10	514-4-17X	TEE, RUNNING 1/8-NPT X 1/4 POLY
11	502-11-17J	NIPPLE,CLOSE 1/8" MPT

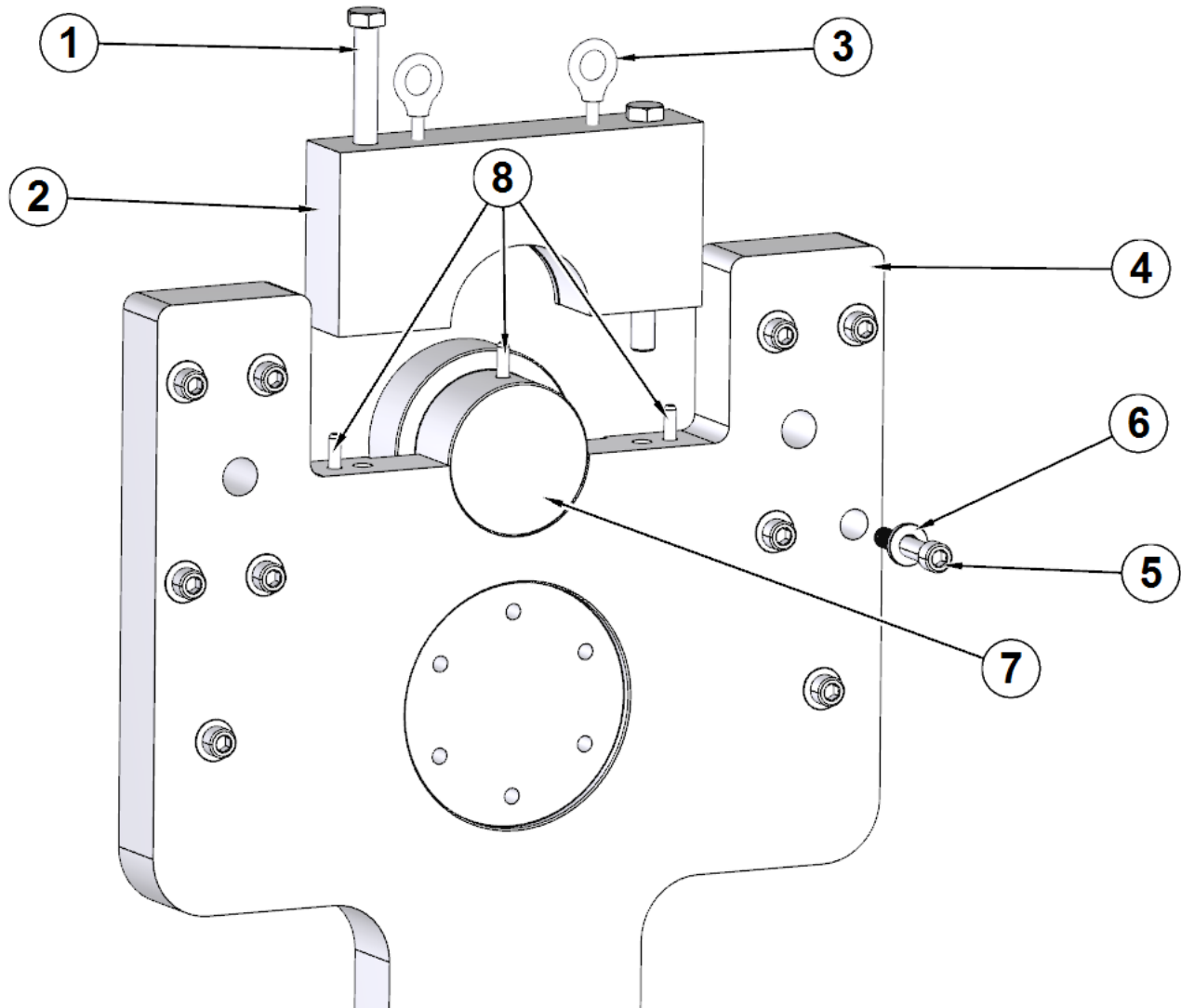


ITEM	PART #	DESCRIPTION
1	MF-248	SOCKET BUTTON HEAD SCREW 1/4-20 X 3/8"
2	9302H	COVER, TAILSTOCK
3		.125 WEATHER STRIPPING
4	514-4-17Y	FITTING 1/4NPT X 1/4 POLY-90 DEGREE
5	9302C	BRAKE, TAILSTOCK SHAFT
6	MF-32	SOCKET HEAD CAP SCREW 3/8-16 X 1 1/4"
7	100-19C	WASHER, HARDENED 13/32 ID
8	6451Q	BLOCK, ADJUSTING-BELT-SERVO MOTOR
9	MF-24	SOCKET HEAD CAP SCREW 5/16-18 X 1 1/4"
10		1/2-20 X 4 1/2 SOCKET HEAD CAP SCREW
11	MF-44	SOCKET HEAD CAP SCREW 1/2-13 X 1 1/2"
12	100-19A	WASHER, HARDENED 17/32" ID
13	9302F	SHAFT, TAILSTOCK
14	9302G	HOUSING, TAILSTOCK FRONT BEARING



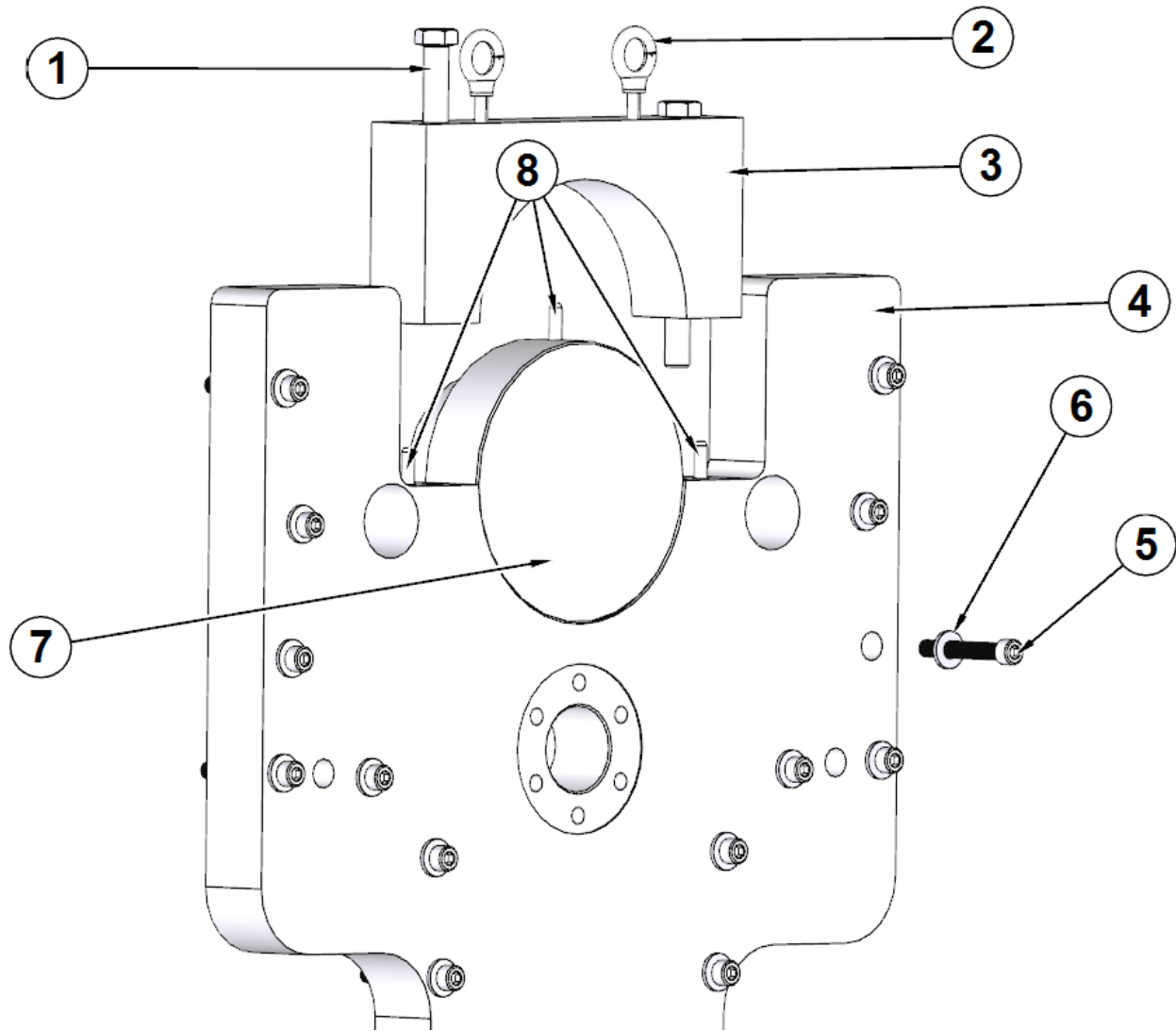
ITEM	PART #	DESCRIPTION
1	9302B	HOUSING, TAILSTOCK
2		1/2-20 X 3/4 SOCKET SET SCREW FLAT POINT
3		1/2-20 X 1 SOCKET HEAD CAP SCREW
4	100-19C	WASHER, HARDENED 13/32 ID
5	MF-34	SOCKET HEAD CAP SCREW 3/8-16 X 2"
6	11001C	BEARING NUT, INNER SPINDLE
7	9302J	BEARING, TAILSTOCK

9303A Headstock Adaptor Parts



ITEM	PART #	DESCRIPTION
1		3/4-10 X 7 1/2 HEX BOLT
2	9303E	MOUNT CAP, 4TH AXIS HEADSTOCK BLOCK
3	6190N	EYE BOLT-3/8" X 1 1/4"
4	9303D	ADAPTOR, 4TH AXIS HEADSTOCK BLOCK
5	MF-46K	SOCKET HEAD CAP SCREW 5/8-11 X 3-1/2"
6	502-1-16	WASHER, HARDENED
7	9303F	LOCATOR, 4TH AXIS HEADSTOCK BLOCK

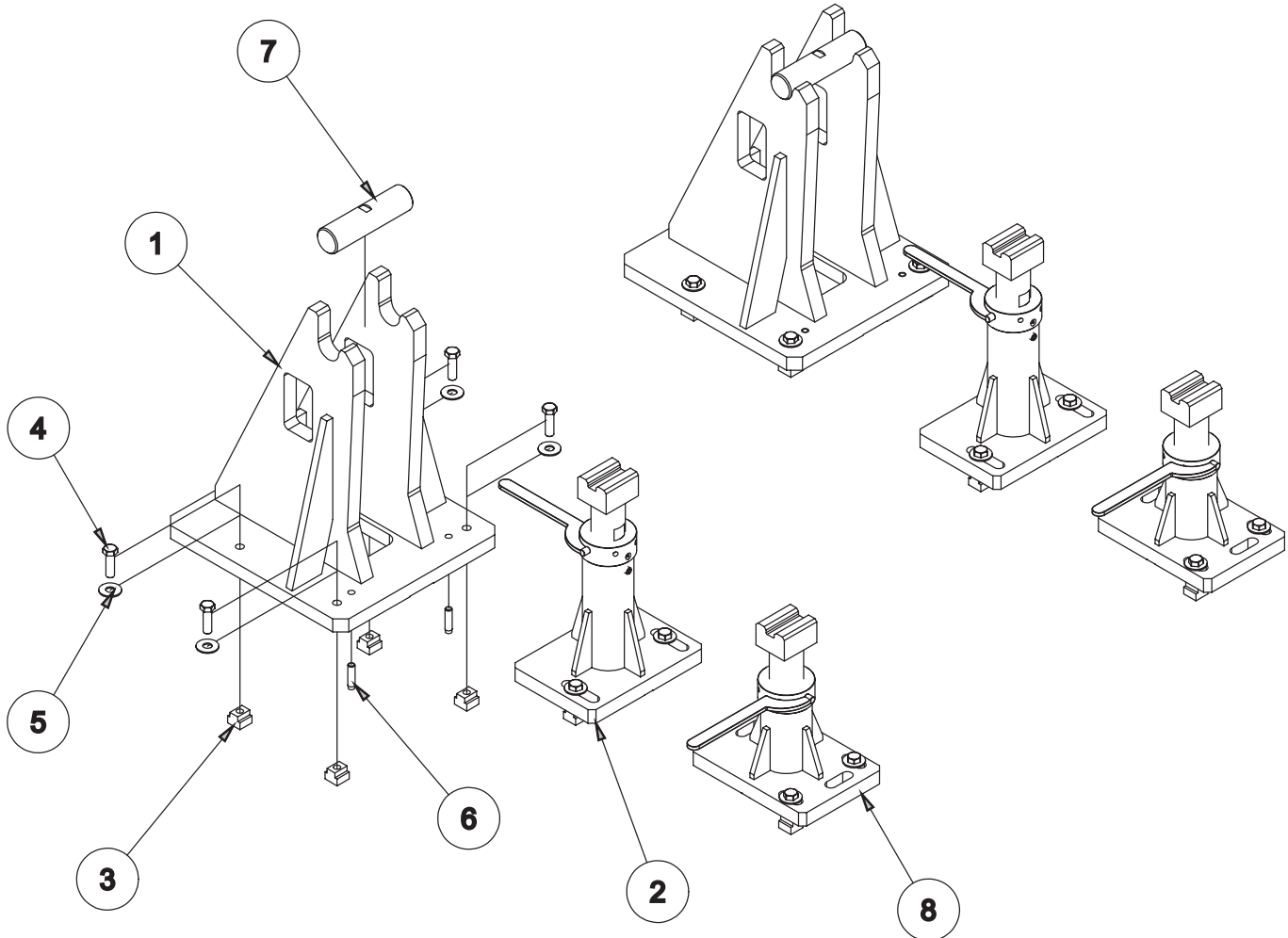
9303J Tailstock Adaptor Parts



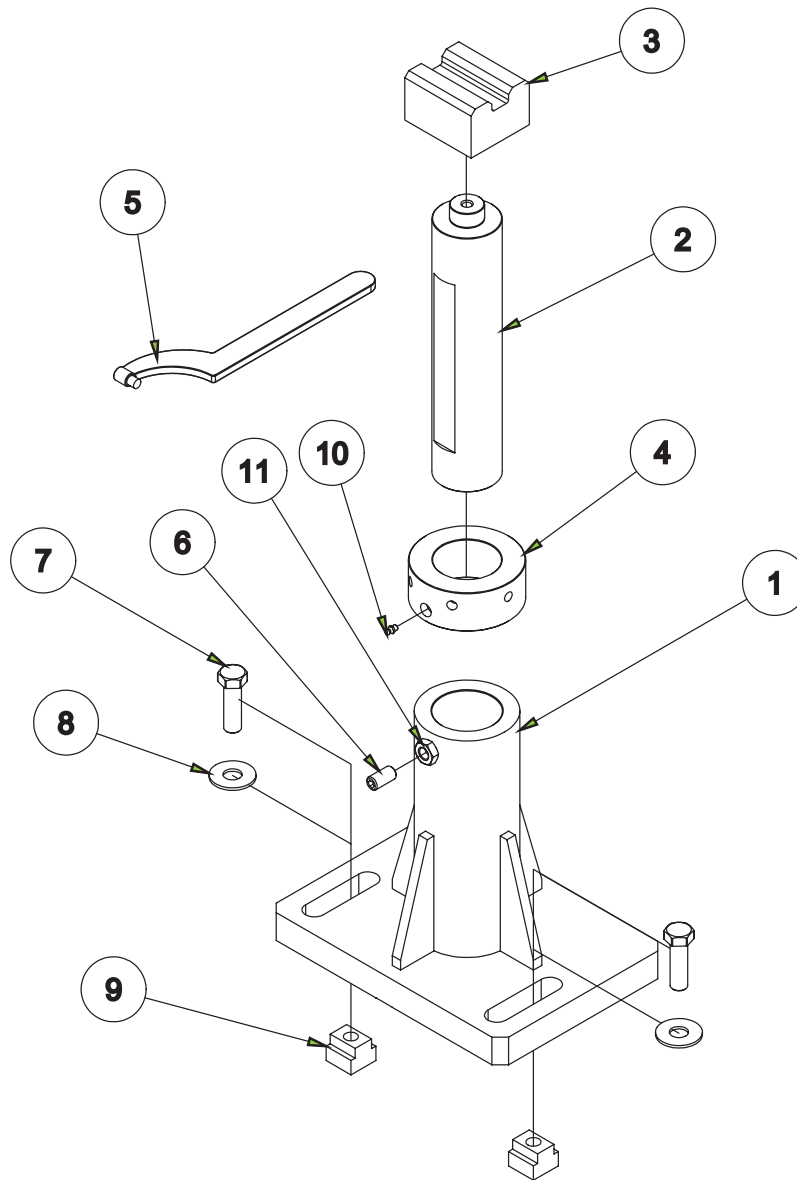
ITEM	PART #	DESCRIPTION
1		3/4-10 X 7 1/2 HEX BOLT
2	6190N	EYE BOLT-3/8" X 1 1/4"
3	9303N	MOUNT CAP, 4TH AXIS TAILSTOCK BLOCK
4	9303M	ADAPTOR, 4TH AXIS TAILSTOCK BLOCK
5	MF-41A	SOCKET HEAD CAP SCREW 1/2-13 X 3 1/2"
6	100-19A	WASHER, HARDENED 17/32" ID
7	9303P	LOCATOR, 4TH AXIS TAILSTOCK BLOCK
8	MF-212A	DOWEL PIN 3/8 X 2 1/4"

Fixturing for Extra Large In-Line and V Blocks

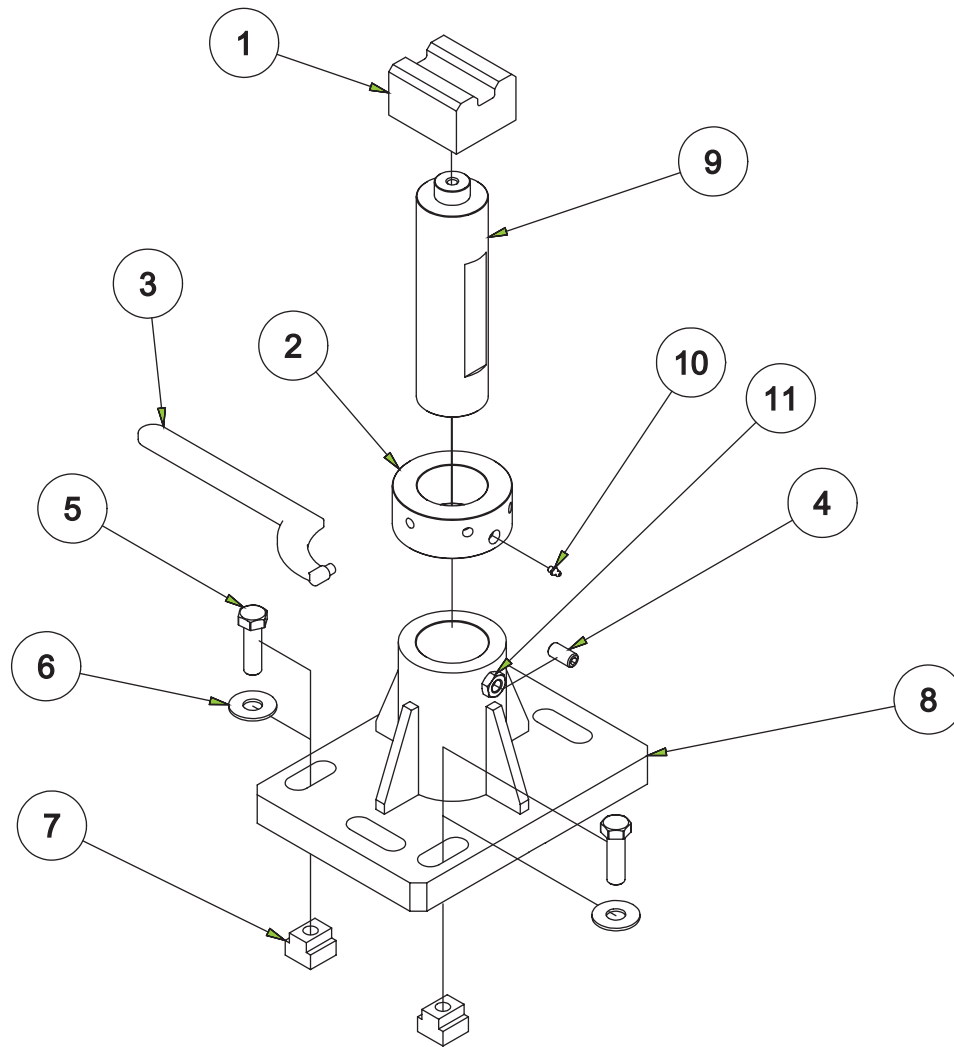
10100 Fixture Parts



10100 UPPER END BLOCK MACHINING - V-BLOCK W/ LOW CRANKSHAFT - F100			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	2	10101	SUPPORT (MACHINING), MAIN BEARING - UPPER MACHINING
2	2	10350	12" JACK ASSEMBLY - UPPER BLOCK MACHINING - F100
3	8	6160	Nut, T - Hardened
4	8	MF-154C	3/4-10UNC x 2-1/2" LG. HEX BOLT
5	8	MF-181A	3/4" FLAT WASHER
6	4	10101B	5/8 x 2 1/2 DOWEL PIN
7	2	10102	CENTER PIN, MAIN LOCATOR - UPPER BLOCK MACHINING - F100
8	2	10350D	8" JACK ASSEMBLY - UPPER BLOCK MACHINING - F100

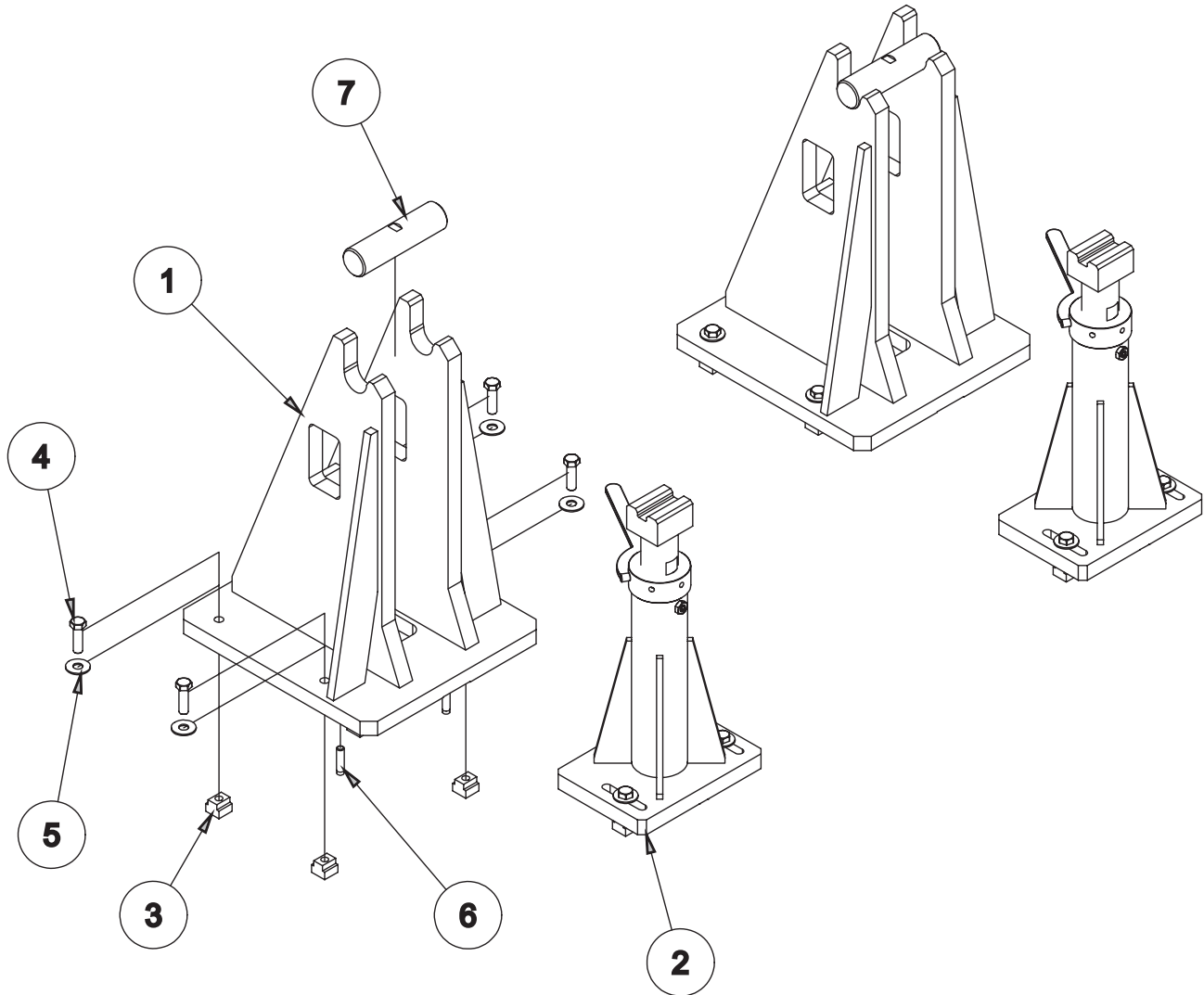


10350 JACK ASSEMBLY 12" UPPER BLOCK MACHINING - F100			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	10350A	JACK BODY (MACHINING)
2	1	10350H	JACK SCREW 12" - JACK ASSEMBLY - UPPER BLOCK MACHINING - F100
3	1	10350M	JACK PAD
4	1	10350L	JACK NUT
5	1	10350K	SPANNER WRENCH
6	1	10350N	SOCKET SET SCREW FLAT POINT 5/8-11UNC x 1-1/4" LG.
7	2	MF-154C	3/4-10UNC x 2-1/2" LG. HEX BOLT
8	2	MF-181A	MF-181A
9	2	6160	Nut, T - Hardened
10	1	MF-189	STRAIGHT GREASE FITTING
11	1	MF-173	5/8-11UNC HEX JAM NUT

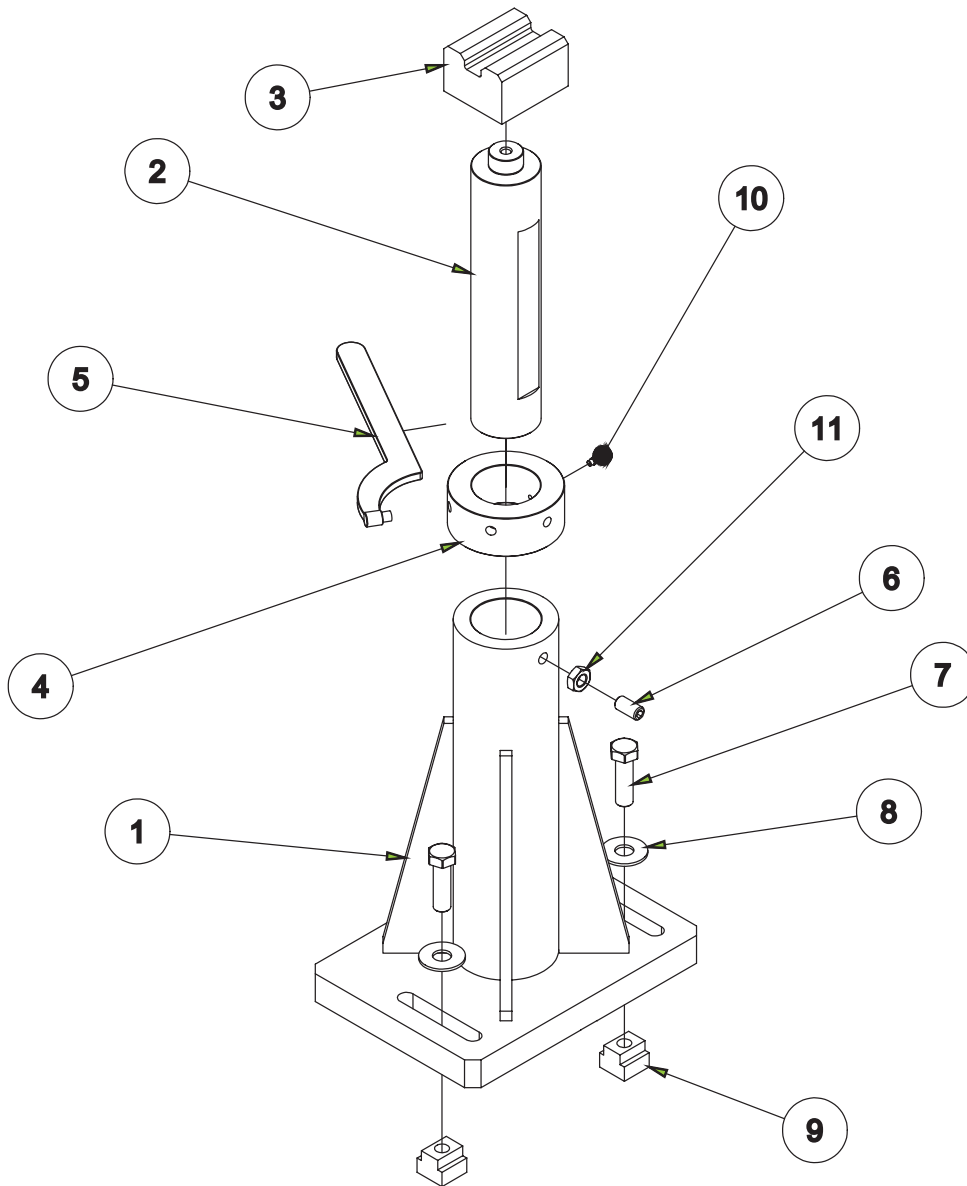


10350D JACK ASSEMBLY 8" UPPER BLOCK MACHINING - F100			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	10350M	JACK PAD
2	1	10350L	JACK NUT
3	1	10350K	SPANNER WRENCH
4	1	10350N	SOCKET SET SCREW FLAT POINT 5/8-11UNC x 1-1/4" LG.
5	2	MF-154C	MF-154C
6	2	MF-181A	MF-181A
7	2	6160	Nut, T - Hardened
8	1	10350E	JACK BODY (MACHINING)
9	1	10350J	JACK SCREW 8" - JACK ASSEMBLY - UPPER BLOCK MACHINING - F100
10	1	MF-189	STRAIGHT GREASE FITTING
11	1	MF-173	5/8-11UNC HEX JAM NUT

10100A Fixture Parts

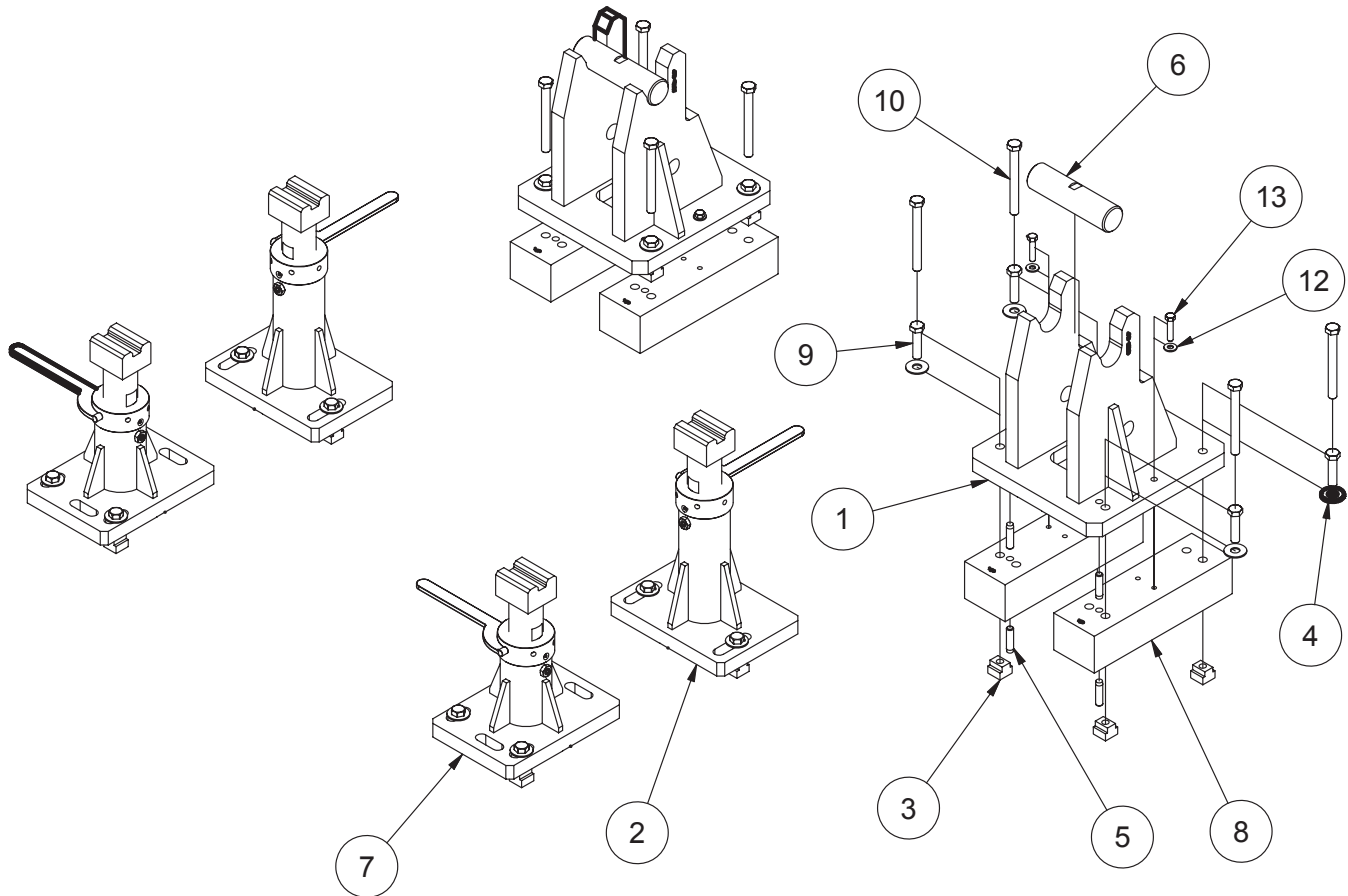


10100A UPPER END BLOCK MACHINING - V-BLOCK W/ HIGH CRANKSHAFT - F100			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	2	10100B	SUPPORT 30" (MACHINING), MAIN BEARING - UPPER MACHINING
2	2	10350P	18" JACK ASSEMBLY - UPPER BLOCK MACHINING - F100
3	8	6160	Nut, T - Hardened
4	8	MF-154C	3/4-10UNC x 2-1/2" HEX BOLT
5	8	MF-181A	3/4" FLAT WASHER
6	4	10101B	5/8 x 2 1/2 DOWEL PIN
7	2	10102	CENTER PIN, MAIN LOCATOR - UPPER BLOCK MACHINING - F100

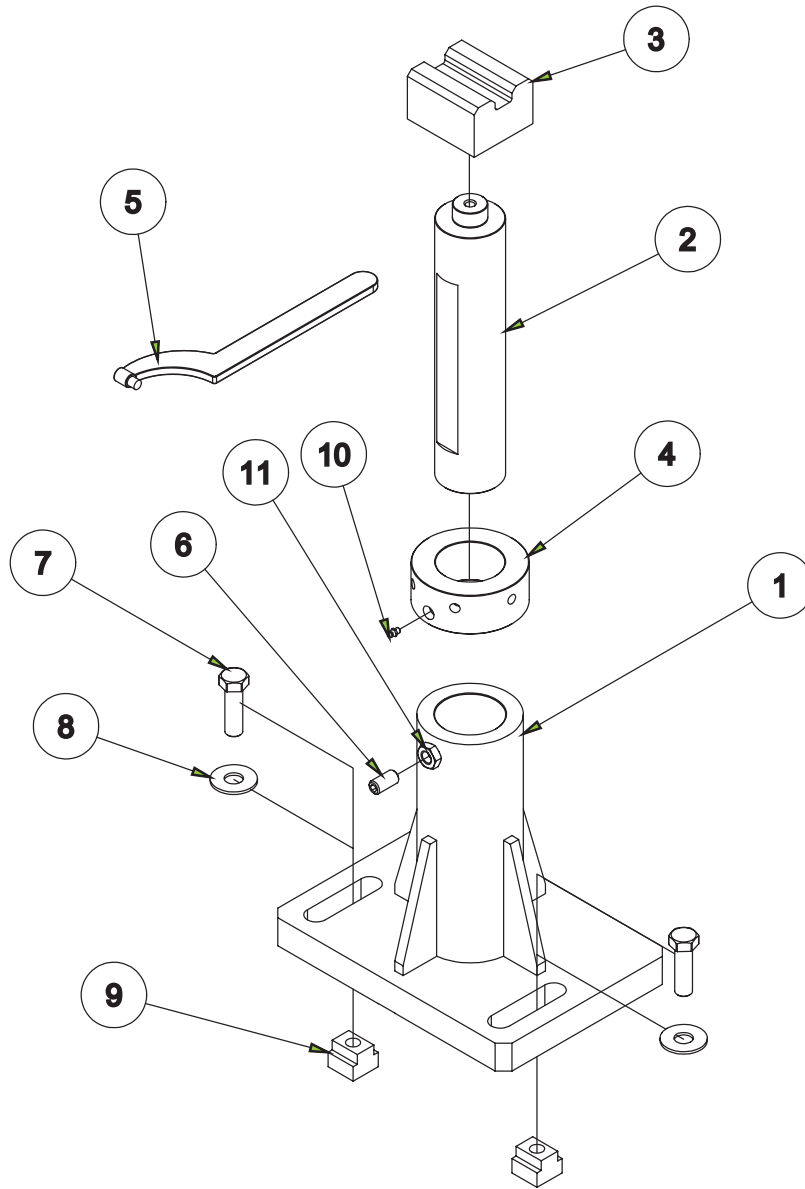


10350P JACK ASSEMBLY 18" UPPER BLOCK MACHINING - F100			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	10350Q	JACK BODY (MACHINING)
2	1	10350H	JACK SCREW 12" - JACK ASSEMBLY - UPPER BLOCK MACHINING - F100
3	1	10350M	JACK PAD
4	1	10350L	JACK NUT
5	1	10350K	SPANNER WRENCH
6	1	10350N	SOCKET SET SCREW FLAT POINT 5/8-11UNC x 1-1/4" LG.
7	2	MF-154C	MF-154C
8	2	MF-181A	MF-181A
9	2	6160	Nut, T - Hardened
10	1	MF-189	STRAIGHT GREASE FITTING
11	1	MF-173	5/8-11UNC HEX JAM NUT

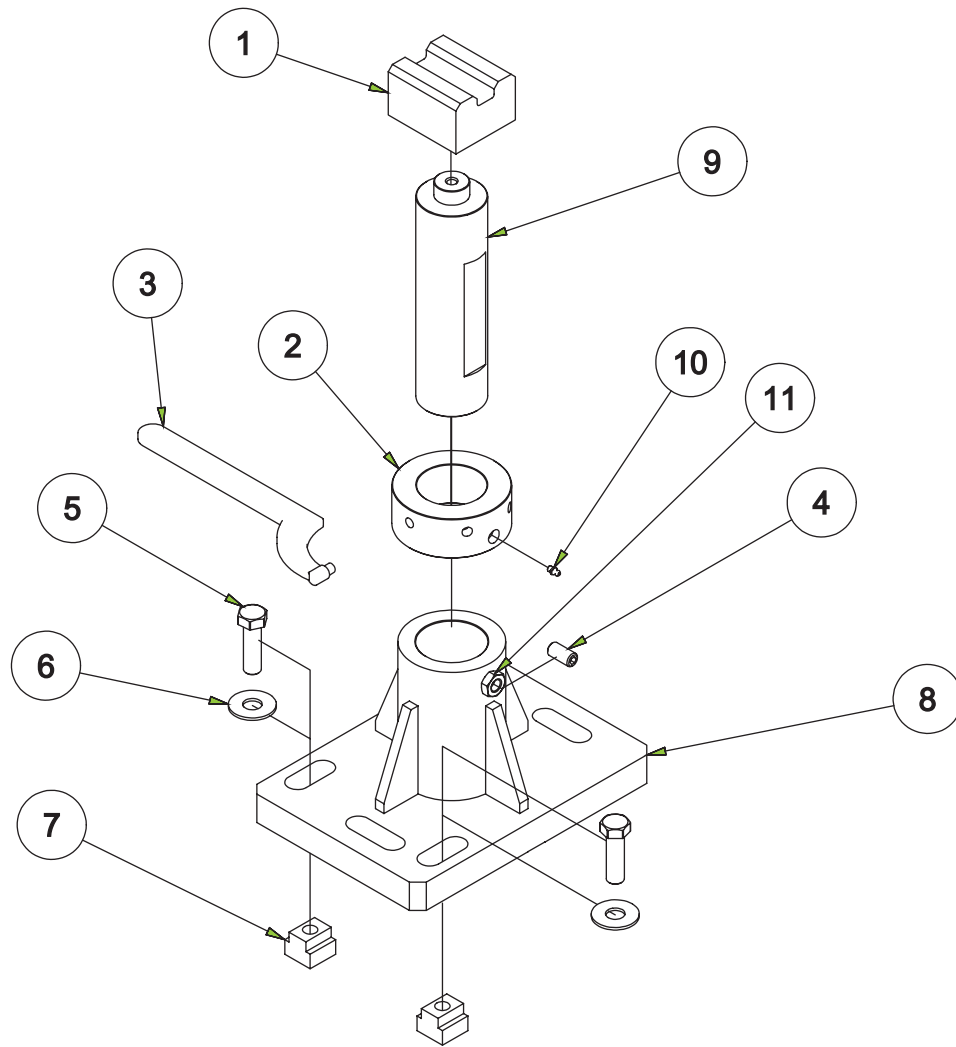
10100D Fixture Parts



10100D UPPER END BLOCK MACHINING - EMD710/645 - F109			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	2	10100E	SUPPORT (MACHINING), MAIN BEARING 15.5" - EMD-710/645 UPPER MACHINING - F109
2	2	10350	12" JACK ASSEMBLY - UPPER BLOCK MACHINING - F100
3	8	6160	Nut, T - Hardened
4	8	MF-181A	3/4" FLAT WASHER
5	8	10101B	5/8 x 2 1/2 DOWEL PIN
6	2	10102	CENTER PIN, MAIN LOCATOR - UPPER BLOCK MACHINING - F100
7	2	10350D	8" JACK ASSEMBLY - UPPER BLOCK MACHINING - F100
8	4	10100G	4" RISER, 15.5" SUPPORT - EMD 710/645 UPPER MACHINING - F109
9	8	MF-154J	Hex Cap Screw 3/4-10UNC x 3" LONG
10	8	10100H	Hex Cap Screw 3/4-10UNC x 7" LONG
12	4	100-19A	Hardened washer 17/32 I.D.
13	4	MF-149A	HEX BOLT 1/2-13UNC x 2-1/4" LONG GRADE 5



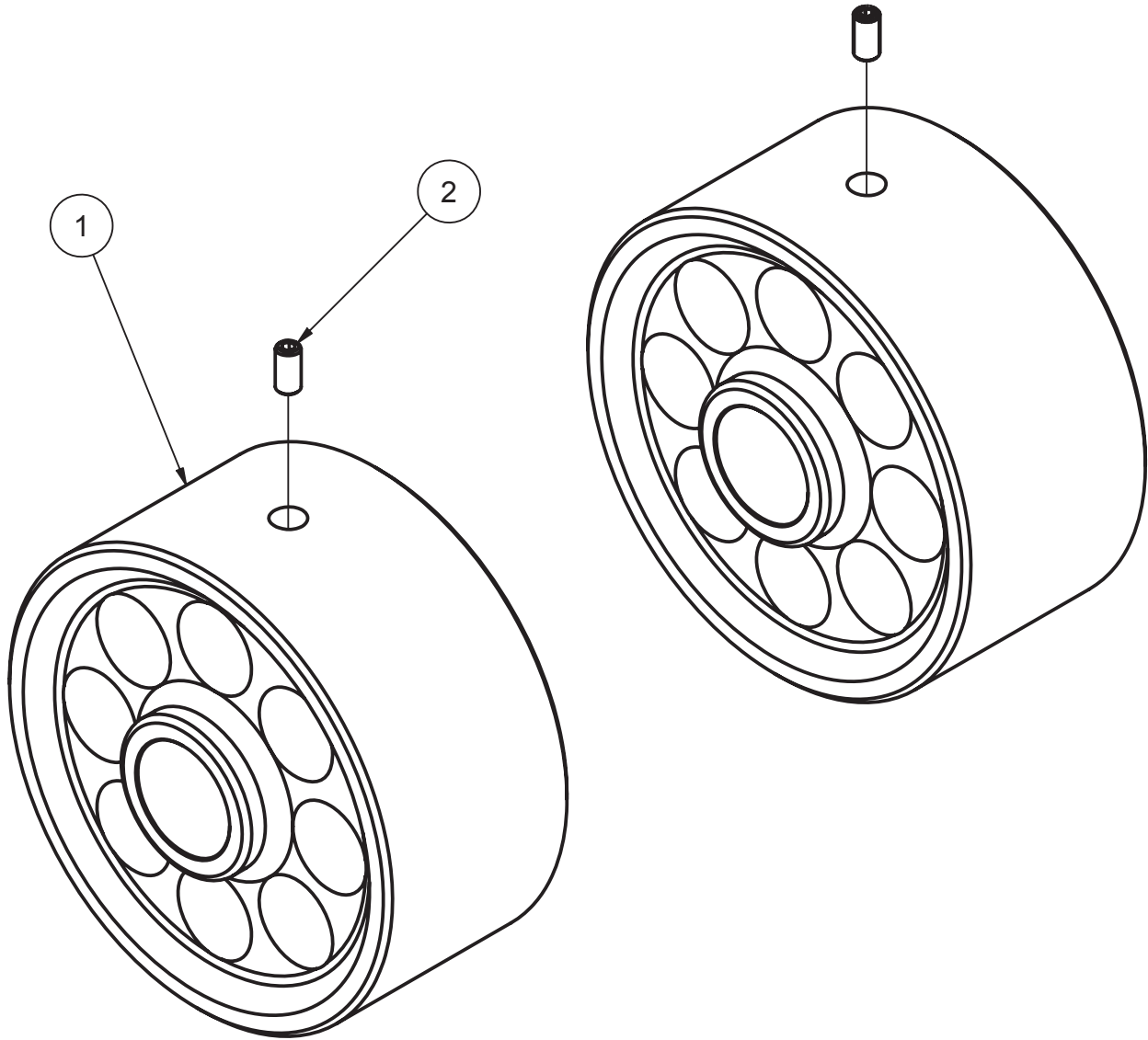
10350 JACK ASSEMBLY 12" UPPER BLOCK MACHINING - F100			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	10350A	JACK BODY (MACHINING)
2	1	10350H	JACK SCREW 12" - JACK ASSEMBLY - UPPER BLOCK MACHINING - F100
3	1	10350M	JACK PAD
4	1	10350L	JACK NUT
5	1	10350K	SPANNER WRENCH
6	1	10350N	SOCKET SET SCREW FLAT POINT 5/8-11UNC x 1-1/4" LG.
7	2	MF-154C	3/4-10UNC x 2-1/2" LG. HEX BOLT
8	2	MF-181A	MF-181A
9	2	6160	Nut, T - Hardened
10	1	MF-189	STRAIGHT GREASE FITTING
11	1	MF-173	5/8-11UNC HEX JAM NUT



10350D JACK ASSEMBLY 8" UPPER BLOCK MACHINING - F100			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	10350M	JACK PAD
2	1	10350L	JACK NUT
3	1	10350K	SPANNER WRENCH
4	1	10350N	SOCKET SET SCREW FLAT POINT 5/8-11UNC x 1-1/4" LG.
5	2	MF-154C	MF-154C
6	2	MF-181A	MF-181A
7	2	6160	Nut, T - Hardened
8	1	10350E	JACK BODY (MACHINING)
9	1	10350J	JACK SCREW 8" - JACK ASSEMBLY - UPPER BLOCK MACHINING - F100
10	1	MF-189	STRAIGHT GREASE FITTING
11	1	MF-173	5/8-11UNC HEX JAM NUT

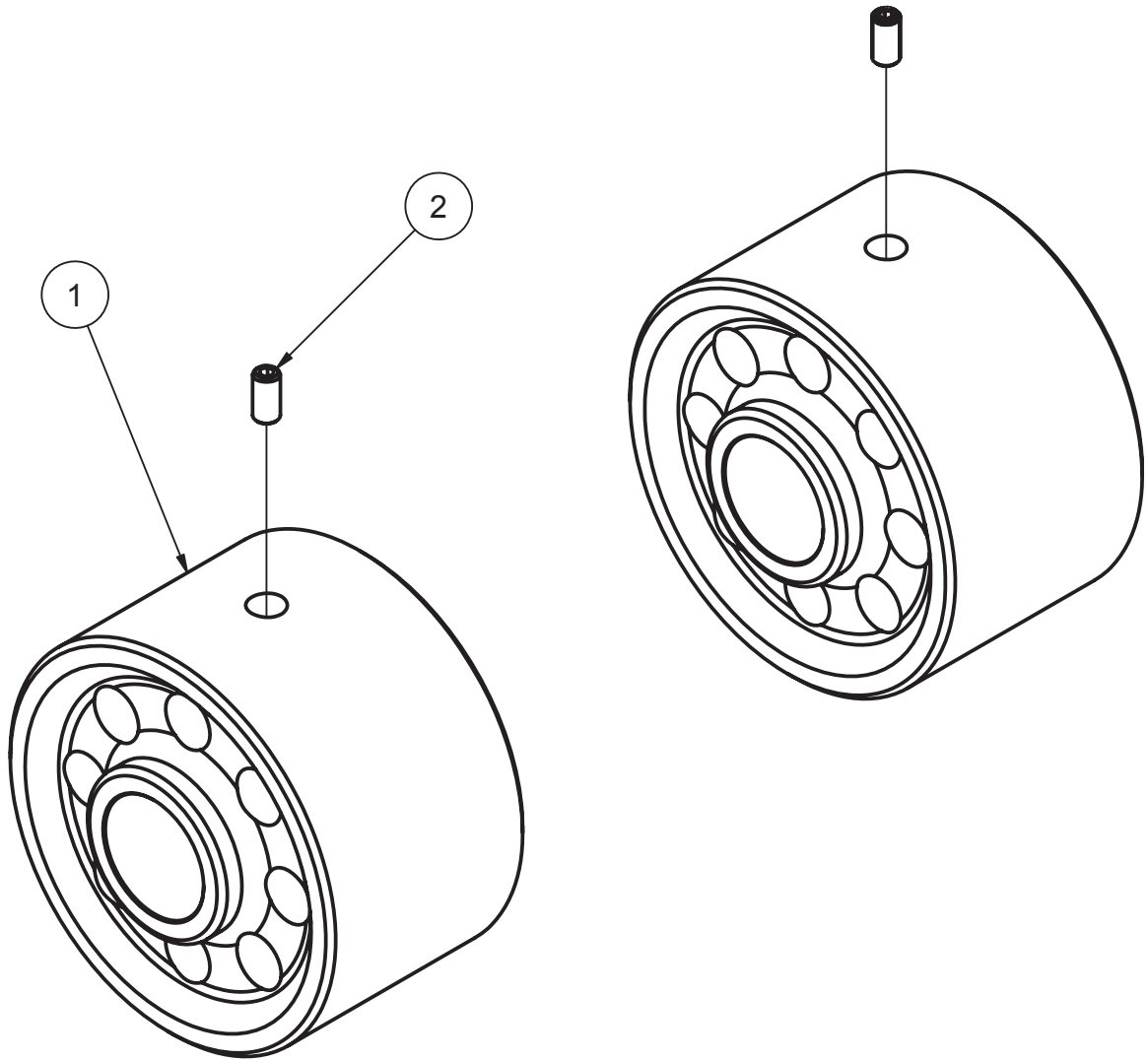
Main Bearing Bore Locator Sets

10102A Main Line Locator Parts



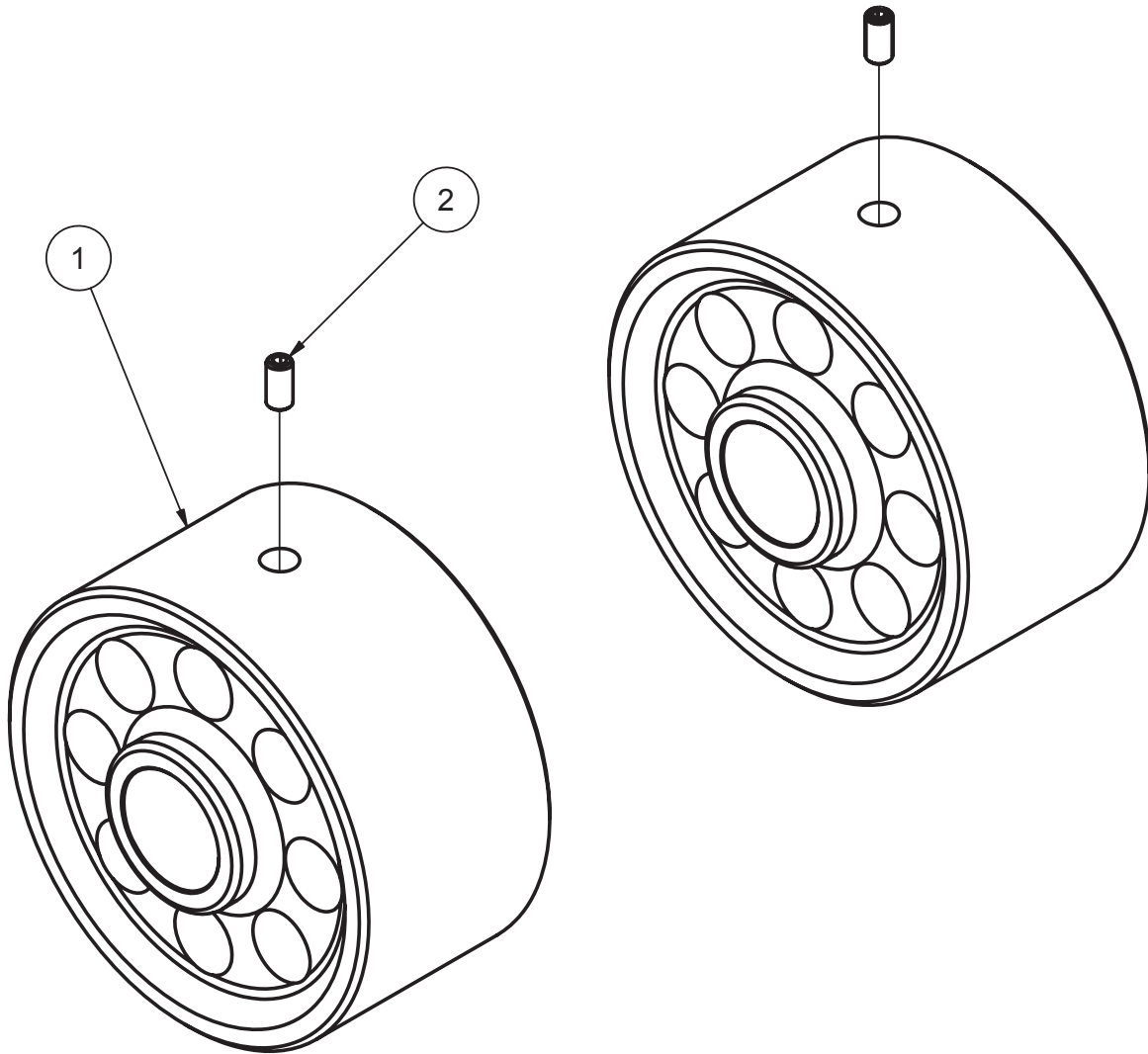
10102A MAIN LOCATOR ASS'Y CAT 3600 STD. BORE - F100			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	2	10102B	MAIN LOCATOR - CAT 3616 STD. BORE - UPPER BLOCK MACHINING - F100
2	2	MF-72	SOCKET SET SCREW FLAT POINT 1/2-13 UNC x 1" LG.

10102C Main Line Locator Parts



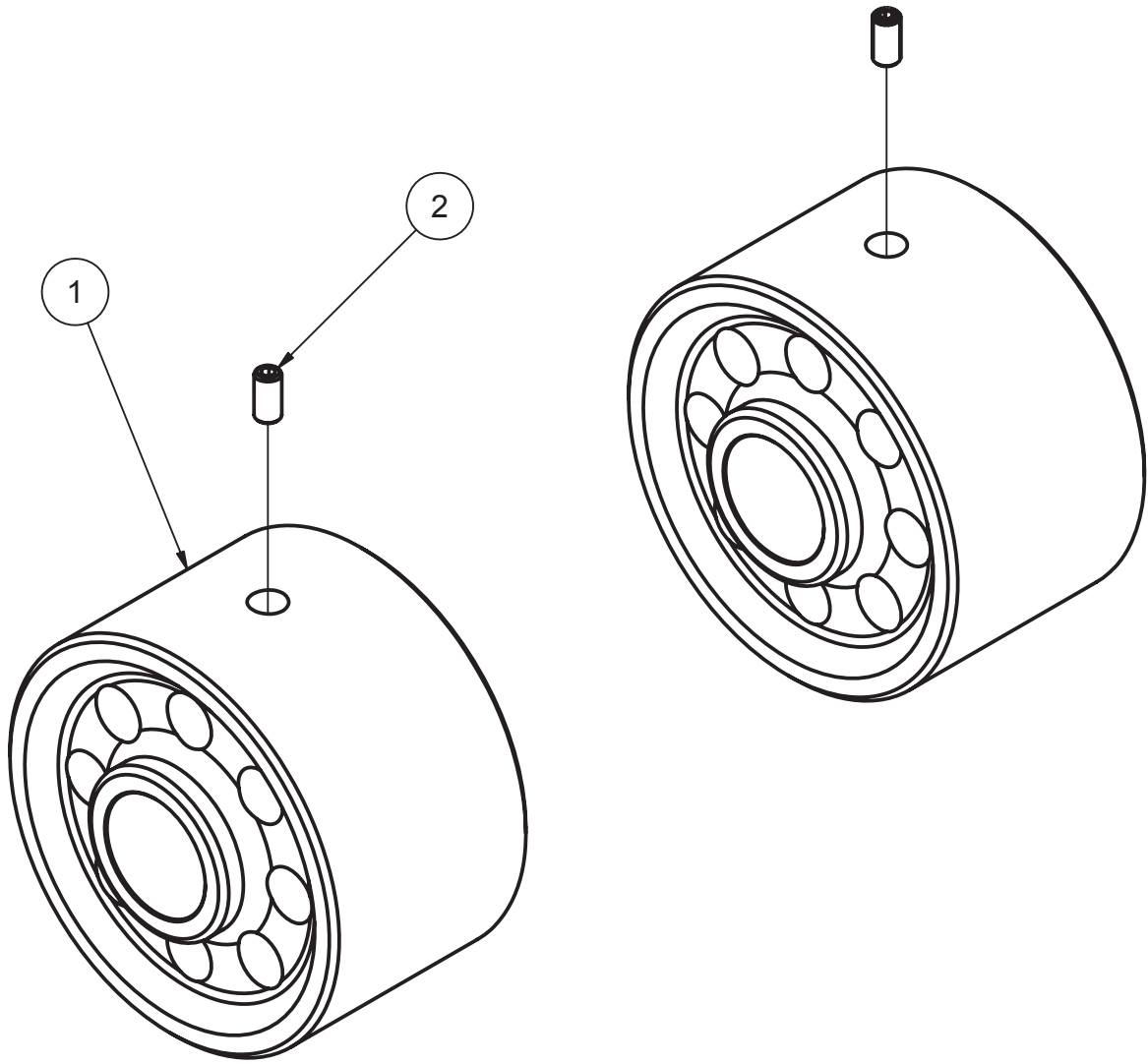
10102C MAIN LOCATOR ASS'Y WHITE SUPERIOR 2416 - F100			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	2	10102D	MAIN LOCATOR - WHITE SUPERIOR 2416 - UPPER BLOCK MACHINING - F100
2	2	MF-72	SOCKET SET SCREW FLAT POINT 1/2-13 UNC x 1" LG.

10102E Main Line Locator Parts



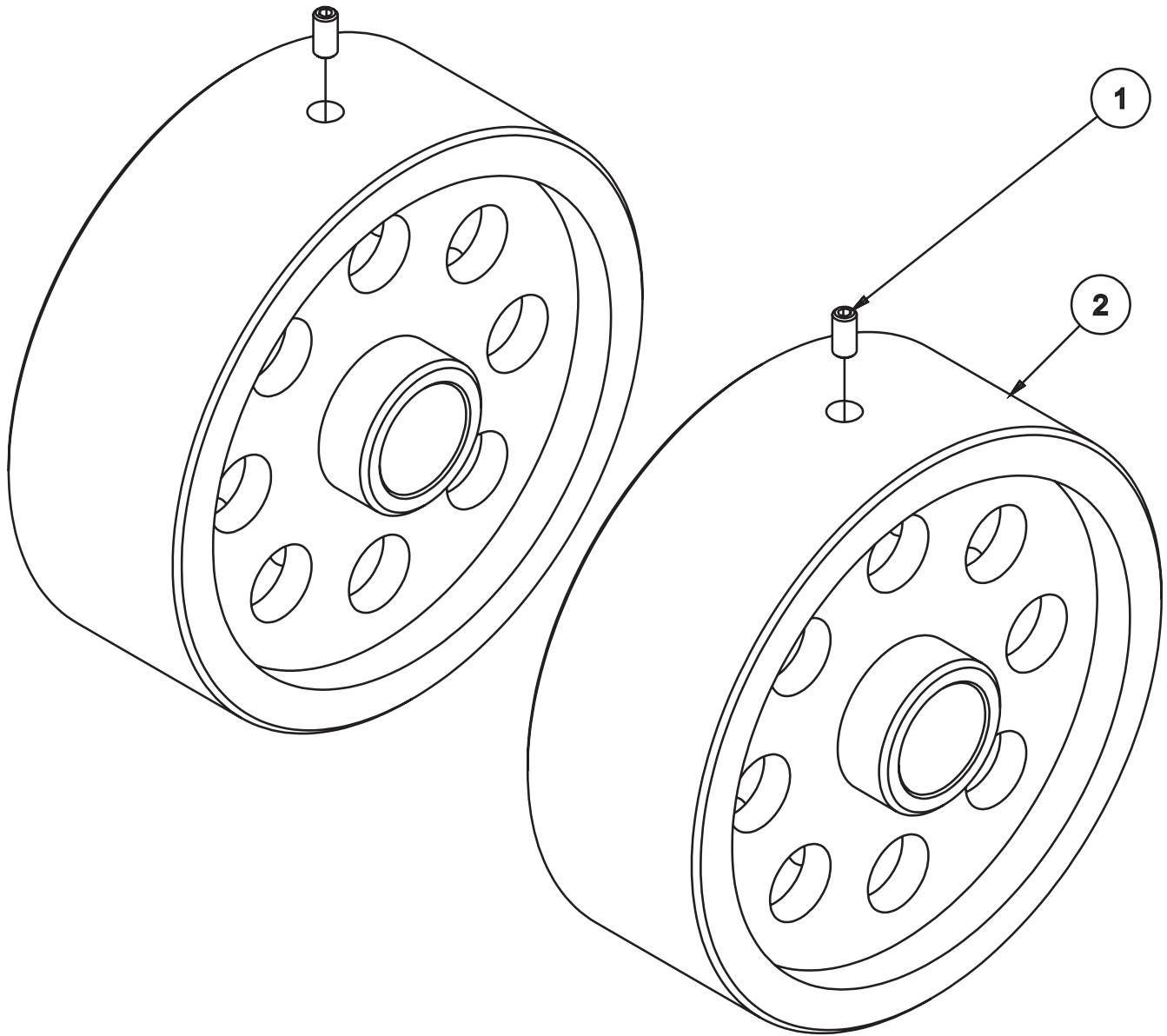
10102E MAIN LOCATOR ASS'Y WAUKESHA AT - F100			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	2	10102F	MAIN LOCATOR - WAUKESHA AT - UPPER BLOCK MACHINING - F100
2	2	MF-72	SOCKET SET SCREW FLAT POINT 1/2-13 UNC x 1" LG.

10102L Main Line Locator Parts



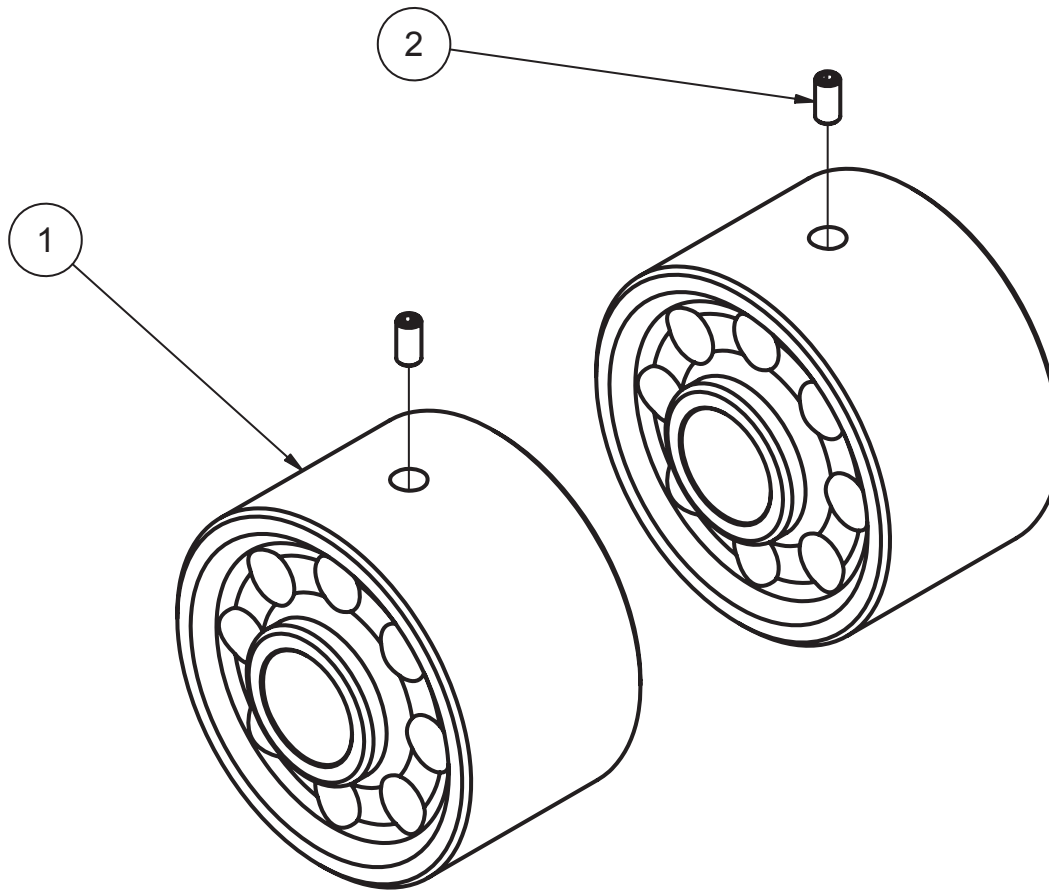
10102L MAIN LOCATOR ASS'Y MTU 1163 - F109			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	2	10102M	LOCATOR, MAIN - MTU 1163 (8.3858-8.3870 DIA.) UPPER BLOCK MACHINING - F109
2	2	MF-72	SOCKET SET SCREW FLAT POINT 1/2-13 UNC x 1" LG.

10102N Main Line Locator Parts



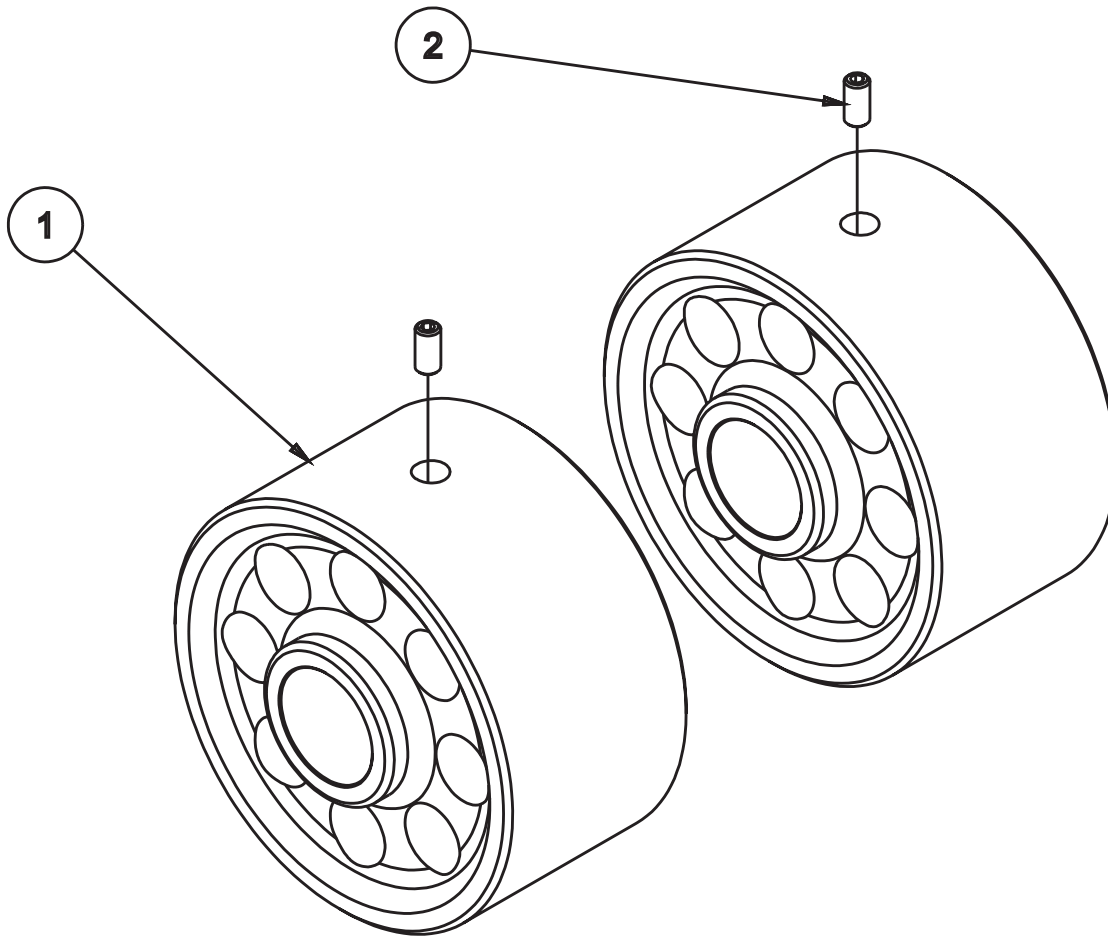
10102N MAIN LOCATOR ASSEMBLY MTU 8000 - F109			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	2	MF-72	SOCKET SET SCREW FLAT POINT 1/2-13 UNC x 1" LG.
2	2	10102P	LOCATOR, MAIN, MTU 8000 BLOCK, UPPER BLOCK MACHINING - F109

10102R Main Line Locator Parts



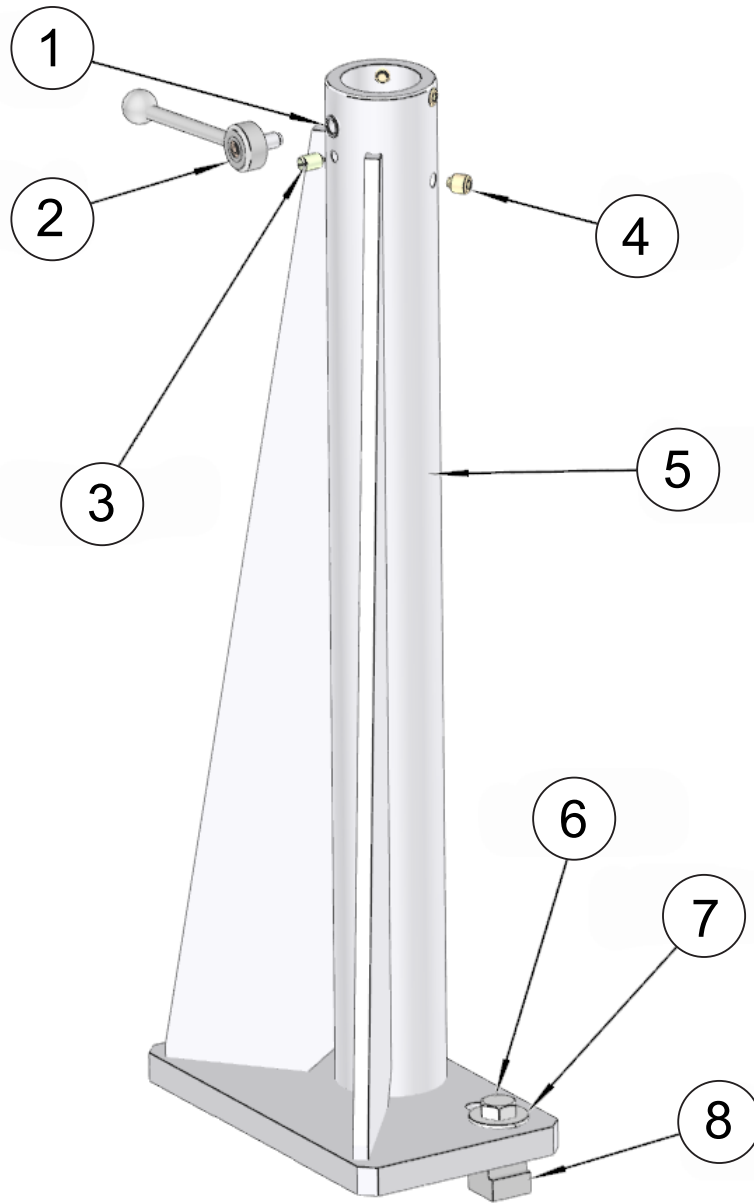
10102R MAIN LOCATOR ASSEMBLY, EMD 645 - F109			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	2	10102S	MAIN LOCATOR - EMD 645 - UPPER BLOCK MACHINING - F109
2	2	MF-72	1/2-13UNC x 1" LG. SOCKET FLAT POINT SET SCREW

10102G Main Line Locator Parts

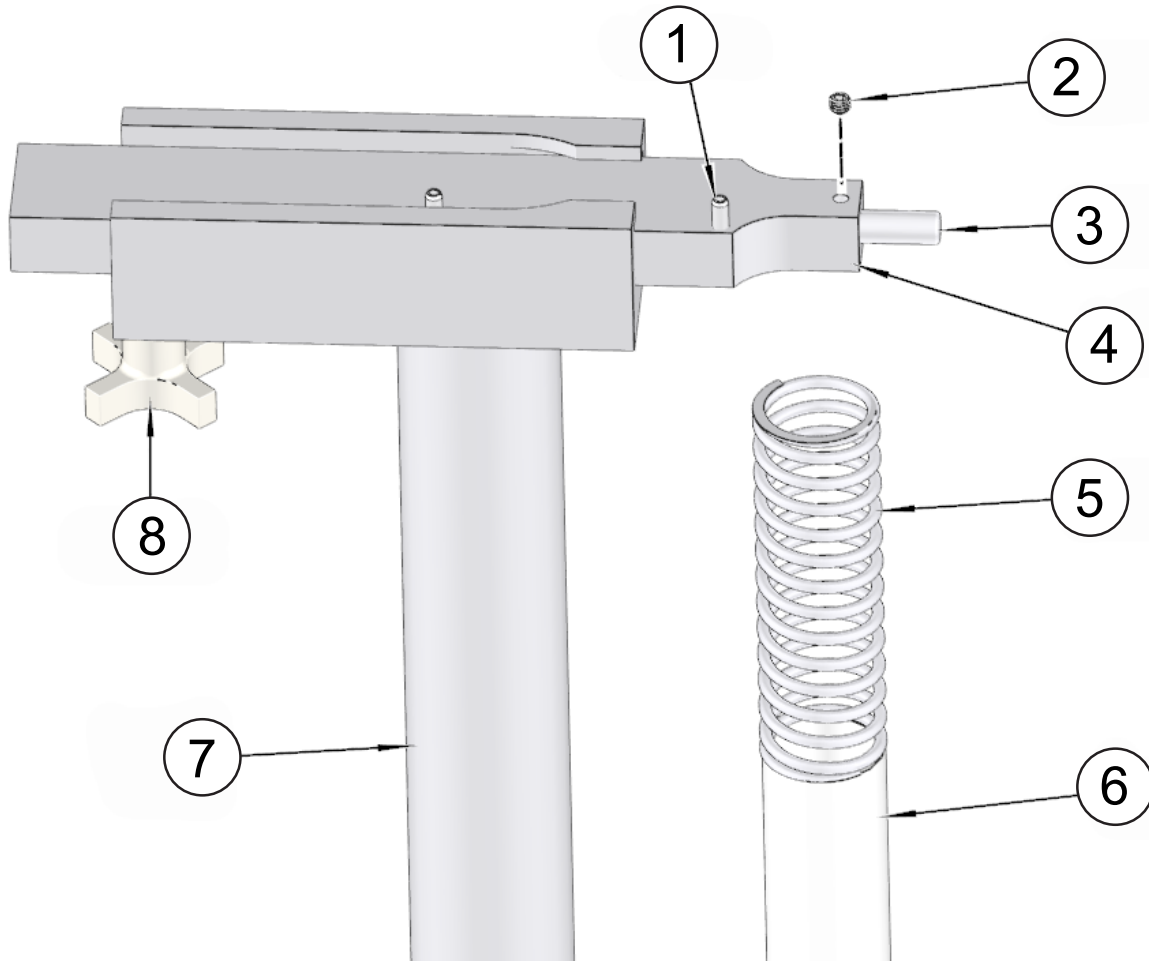


10102G MAIN LOCATOR ASSEMBLY, EMD 710 - F109			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	2	10102H	MAIN LOCATOR - EMD 710 - UPPER BLOCK MACHINING - F109
2	2	MF-72	1/2-13UNC x 1" LG. SOCKET FLAT POINT SET SCREW

6309P Clamping System Parts



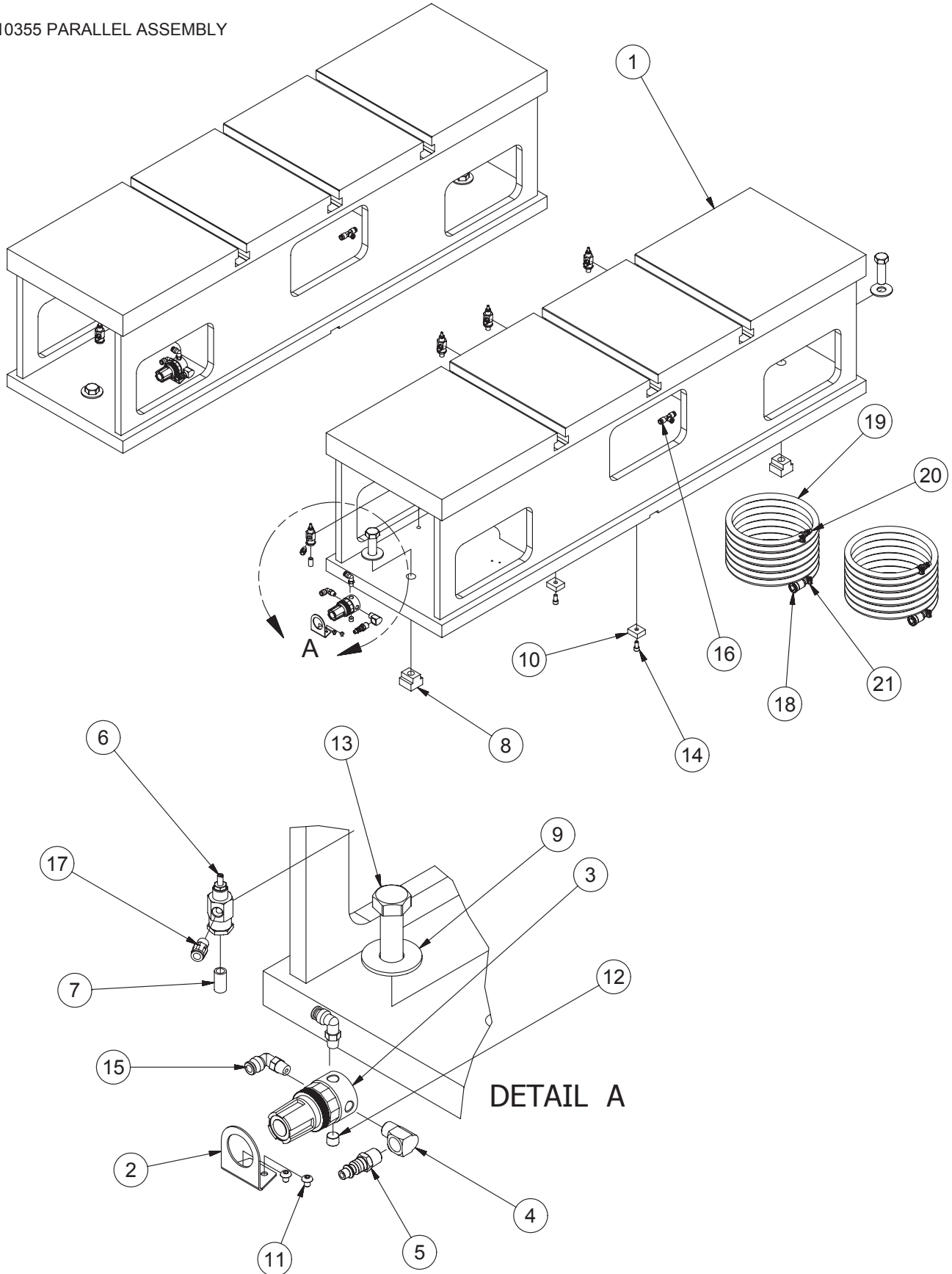
ITEM	PART #	DESCRIPTION
1	6310R	INSERT, THREAD
2	6310N	HANDLE ASSY, CLAMP TOWER
3	502-8-52C	PLUNGER, SPRING
4	6310Y	SCREW, SET-BRASS TIPPED 5/8-11 X 5/8"
5	6309R	BASE, CLAMP ARM
6	MF-154K	HEX BOLT 3/4-10 X 2"
7	MF-181A	FLAT WASHERS 3/4"
8	6160	NUT, "T"-HARDENED



ITEM	PART #	DESCRIPTION
1	MF-227	ROLL PIN 1/4 X 1 1/4"
2	MF-67	SOCKET SET SCREW FLAT POINT 5/16-18 X 1/4"
3	MF-124	FLAT HEAD MACHINE SCREW 8-32 X 1"
4	6310H	SHOE, BLOCK CLAMPS
5	6310S	SPRING, SHOCK CLAMP LEG
6	6309S	SPACER, EXTRA LONG-SPRING SHOCK
7	6310T	LEG, LONG BLOCK CLAMPS
8	6310K	HAND KNOB BLOCK CLAMP

10355 Set of Parallels Parts

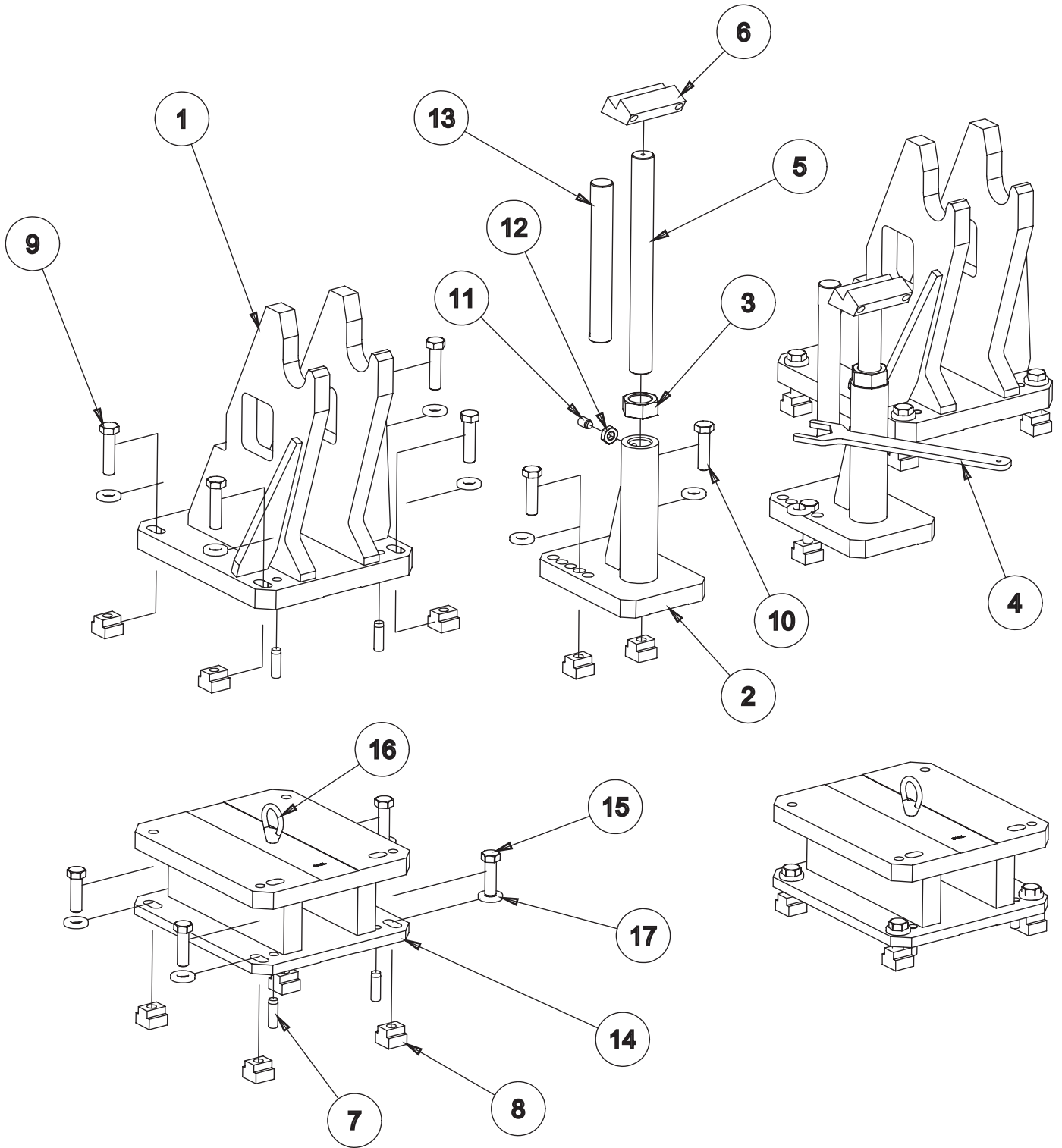
10355 PARALLEL ASSEMBLY



10355 15-1/2" PARALLEL ASSEMBLY - F107/9			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	2	10355A	PARALLEL, 15-1/2" F-100 (MACHINING)
2	2	502-27-17A	Regulator Bracket
3	2	502-27-17	Regulator 0 - 60 PSI
4	2	502-11-17S	1/4 STREET ELL
5	2	502-11-16X	Quick Connect air Fitting Male
6	8	502-11-35A	Flo Control
7	8	502-11-17J	Nipple, Close 1/8" NPT
8	4	6160	Nut, T - Hardened
9	4	MF-181A	3/4" FLAT WASHER
10	4	6553K	Locating key
11	4	MF-87	10-24UNC x 1/4" LG. SOCKET BUTTONHEAD SCREW
12	2	MF-233	1/8-27NPT PIPE PLUG
13	4	MF-154C	3/4-10UNC x 2-1/2" LG. HEX BOLT
14	4	MF-21	S.H.C.S. 5/16 - 18 UNC - 5/8
15	4	514-4-17E	ELBOW, MALE - 1/4" x 1/8"
16	4	514-4-17N	Tee, Union 1/4 Tube
17	8	514-4-17W	FITTING 1/8NPT x 1/4" POLY STRAIGHT
18	2	502-11-16W	Quick connect air fitting female
19	2	502-1-98	1/4" AIR HOSE
20	2	502-11-16Y	CONNECTOR, MALE AIR 1/4 NPTF
21	4	502-1-97	CLAMP, 1/4" I.D. HOSE

Fixturing for Mid Range to Large In-Line and V Blocks

6405F Large V Block Fixture Parts



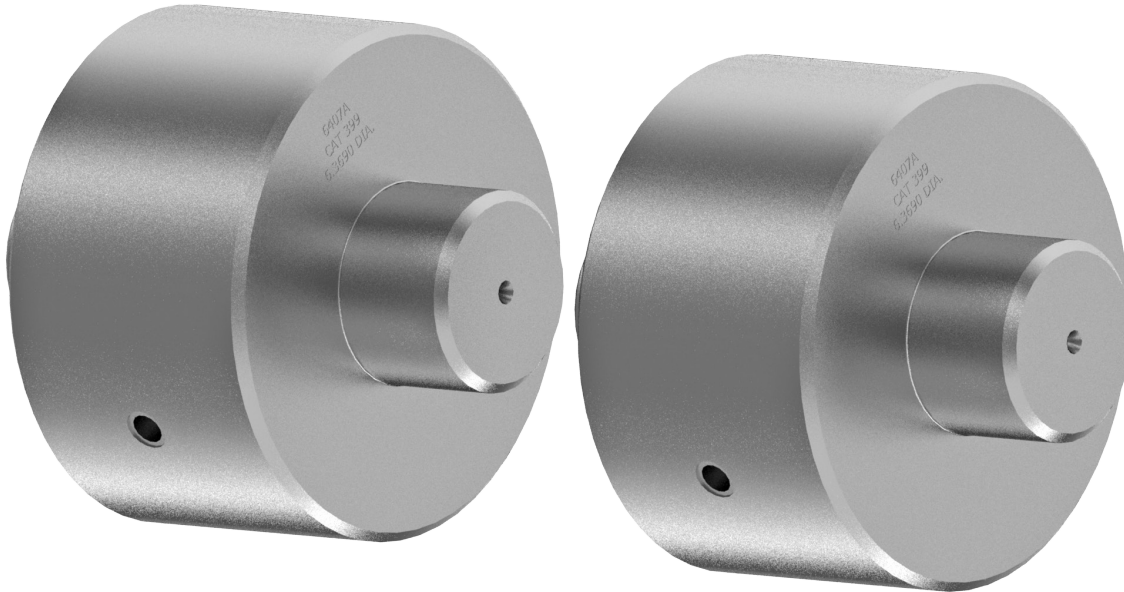
6405F
LARGE DIESEL FIXTURE ASSEMBLY
F90/F105

6405F LARGE V-BLOCK FIXTURE - F90/F105			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	2	6405G	SUPPORT (MACHINING) LARGE V-BLOCK, UPPER BLOCK MACHINING - F90
2	2	6412A	JACK BODY (MACHINING) - 399 CAT BLOCK F80/90
3	2	6566H	Jacking Nut
4	1	6566K	WRENCH, JACKING NUT - DIESEL FIXTURING
5	2	6396B	Jacking Screw 15.5"
6	2	6413	Jacking Block
7	8	502-11-60	Dowel Pin 5/8 x 2
8	20	6160	Nut, T - Hardened
9	8	MF-154J	3/4-10UNC x 3" LG. HEX BOLT
10	4	MF-154H	3/4-10UNC x 2-3/4" LG. HEX BOLT
11	2	6395B	5/8-11UNC x 1" LG. HALF DOG SET SCREW
12	2	MF-173	5/8-11UNC HEX JAM NUT
13	2	6396A	JACKING SCREW - V-BLOCK FIXTURE 11.3" LG.
14	2	6405K	6" RISER (MACHINING), LARGE V-BLOCK FIXTURE - F100
15	8	MF-154C	3/4-10UNC x 2-1/2" LG. HEX BOLT
16	2	502-3-13	Lift Eye
17	20	6287	WASHER, THRUST 3/4"

Main Bearing Bore Locator Sets

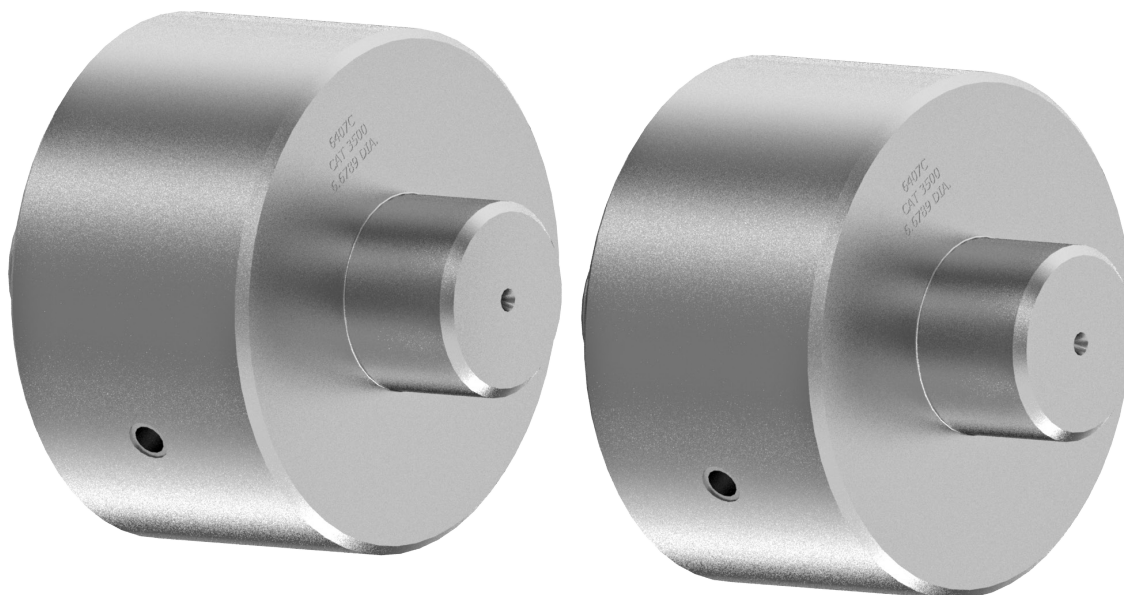
6407A Locator Assembly

Sold only as matched pairs.



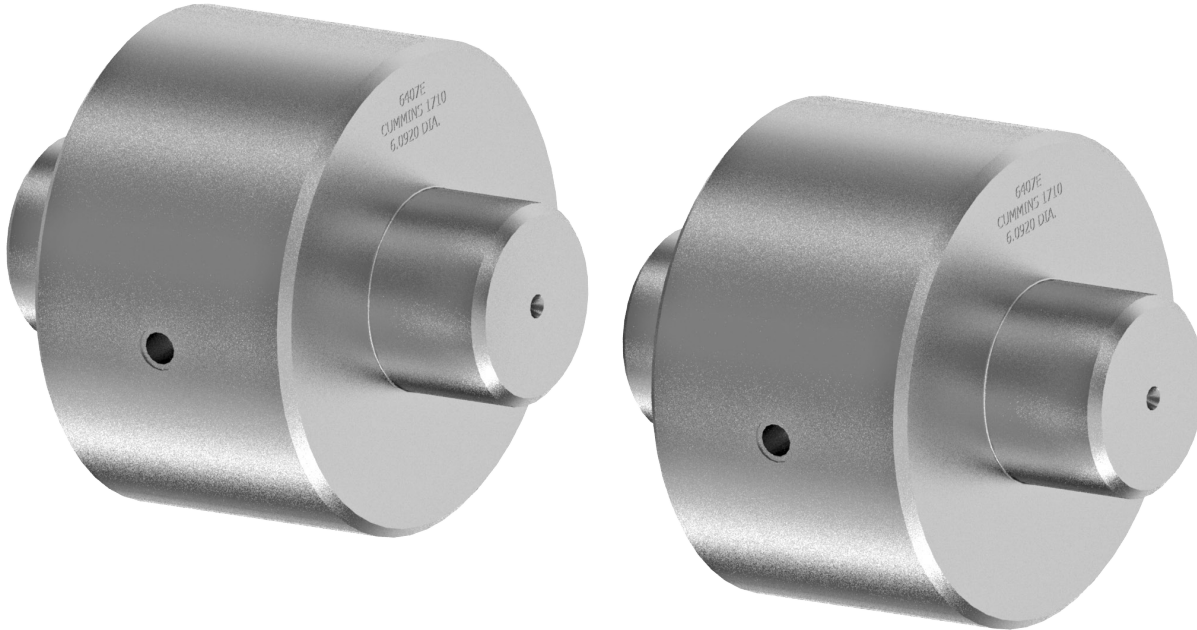
6407C Locator Assembly

Sold only as matched pairs.



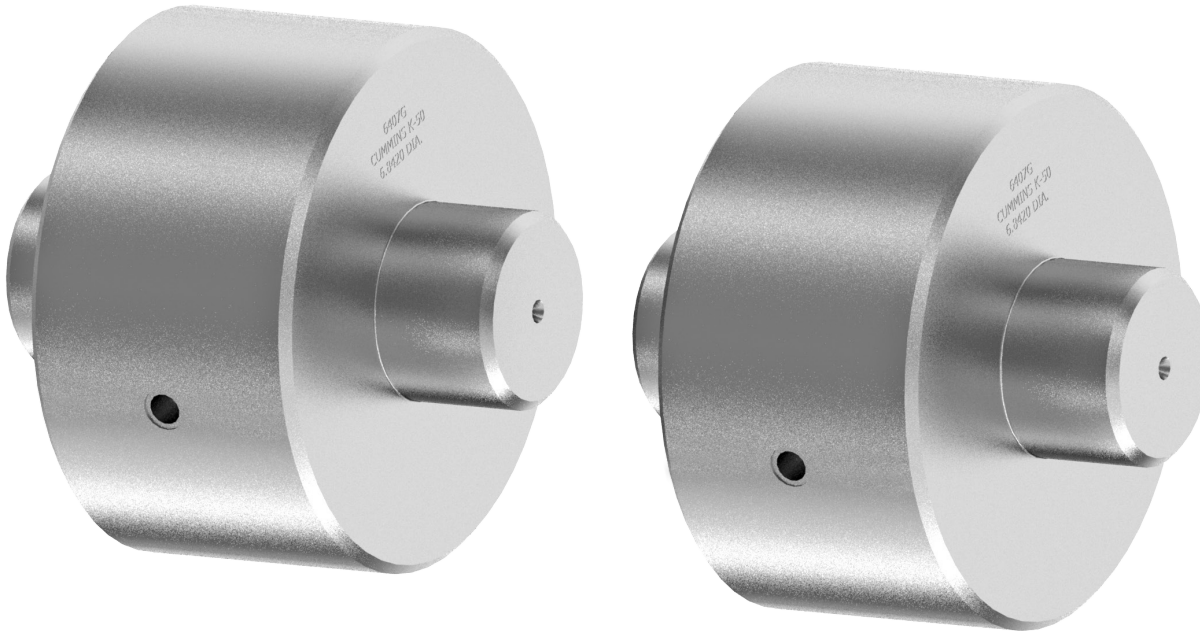
6407E Locator Assembly

Sold only as matched pairs.



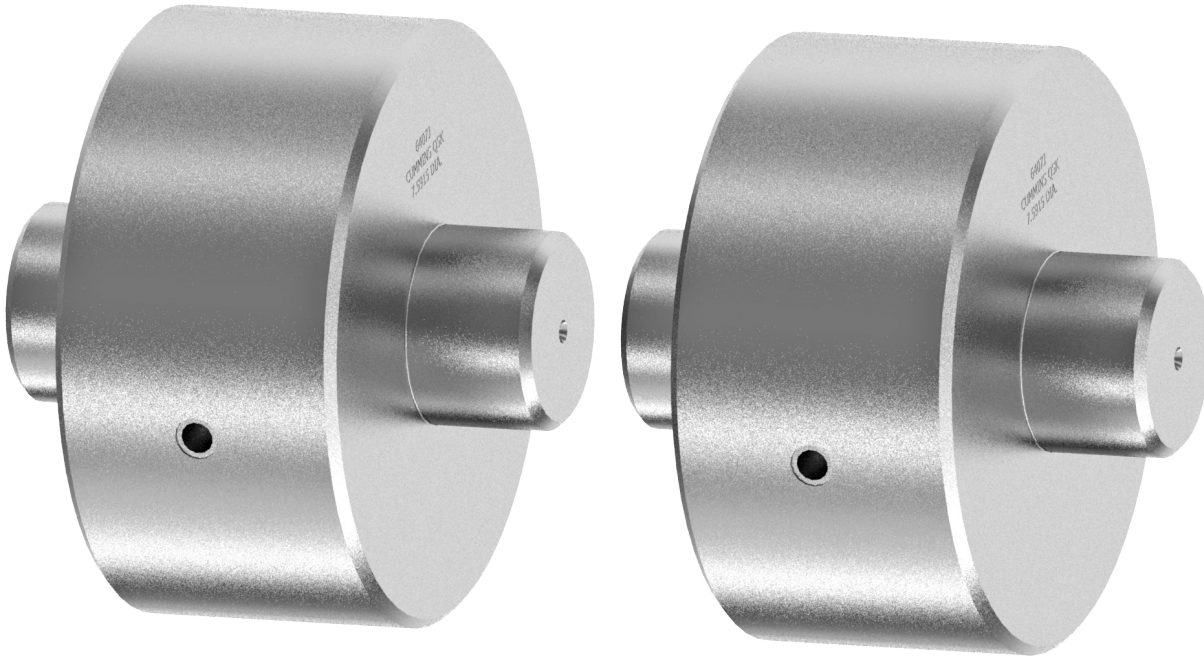
6407G Locator Assembly

Sold only as matched pairs.



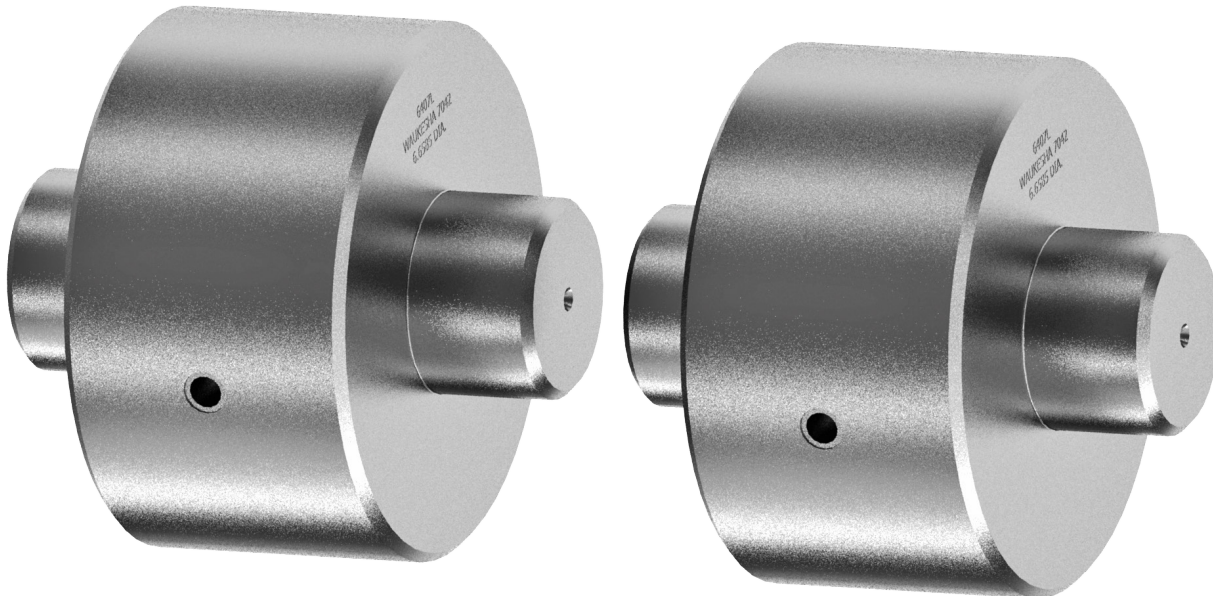
6407J Locator Assembly

Sold only as matched pairs.



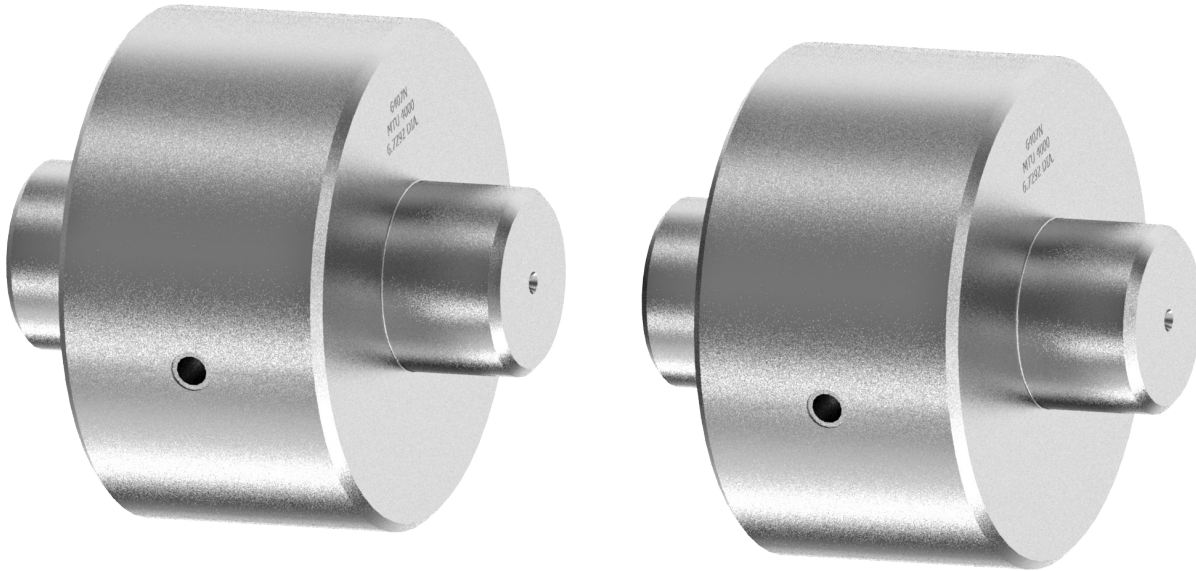
6407L Locator Assembly

Sold only as matched pairs.



6407N Locator Assembly

Sold only as matched pairs.



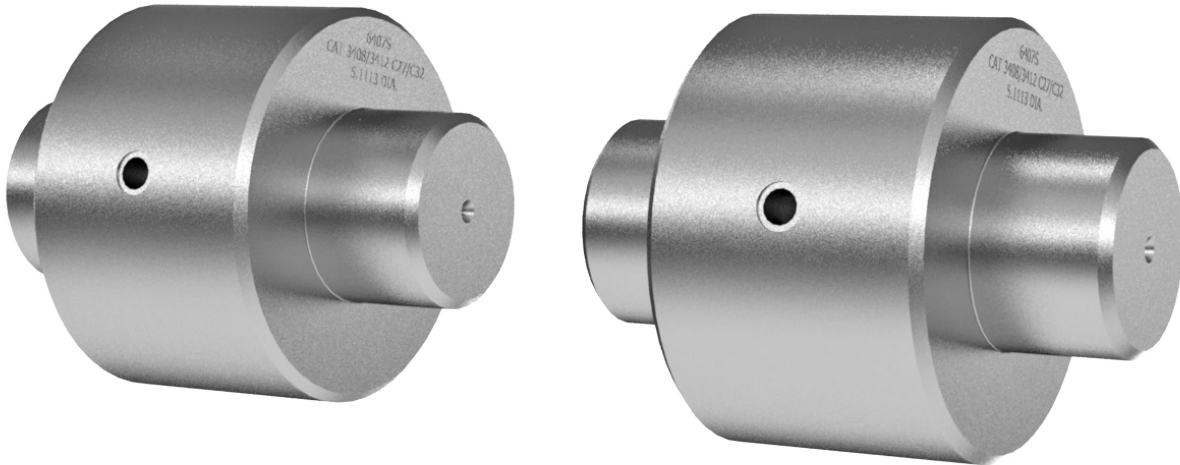
6407Q Locator Assembly

Sold only as matched pairs.



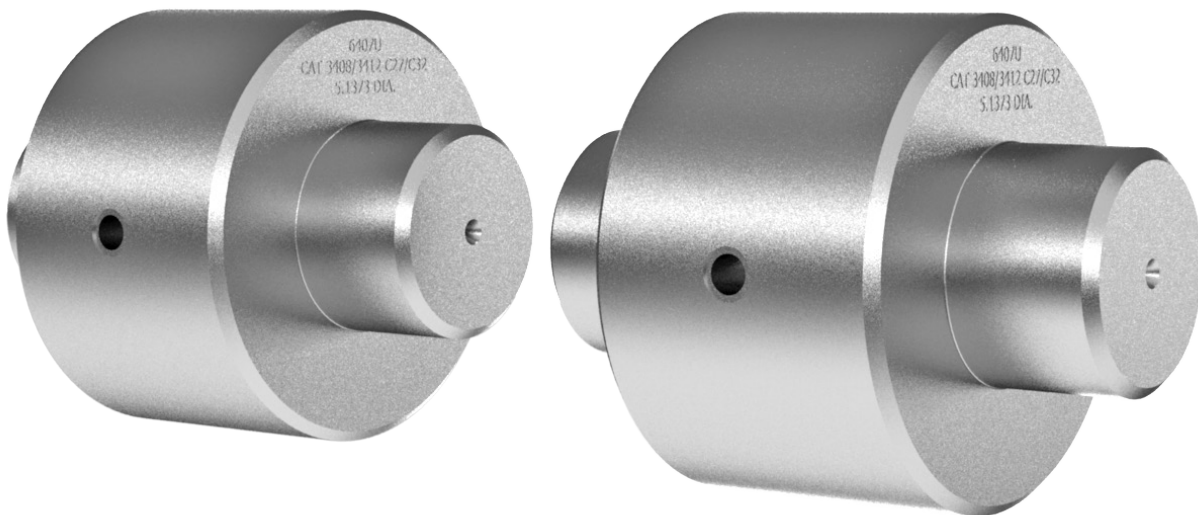
6407S Locator Assembly

Sold only as matched pairs.



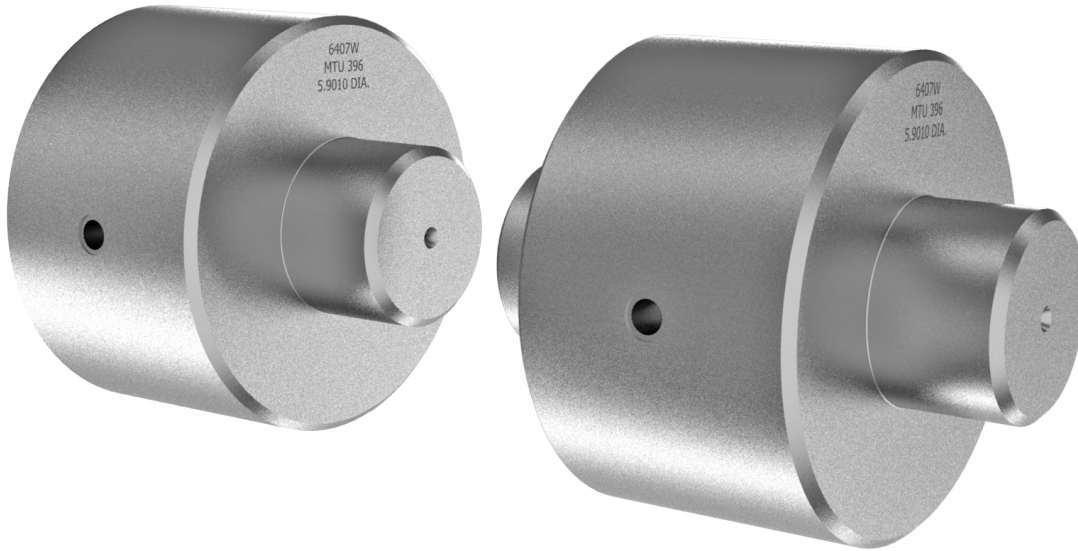
6407U Locator Assembly

Sold only as matched pairs.

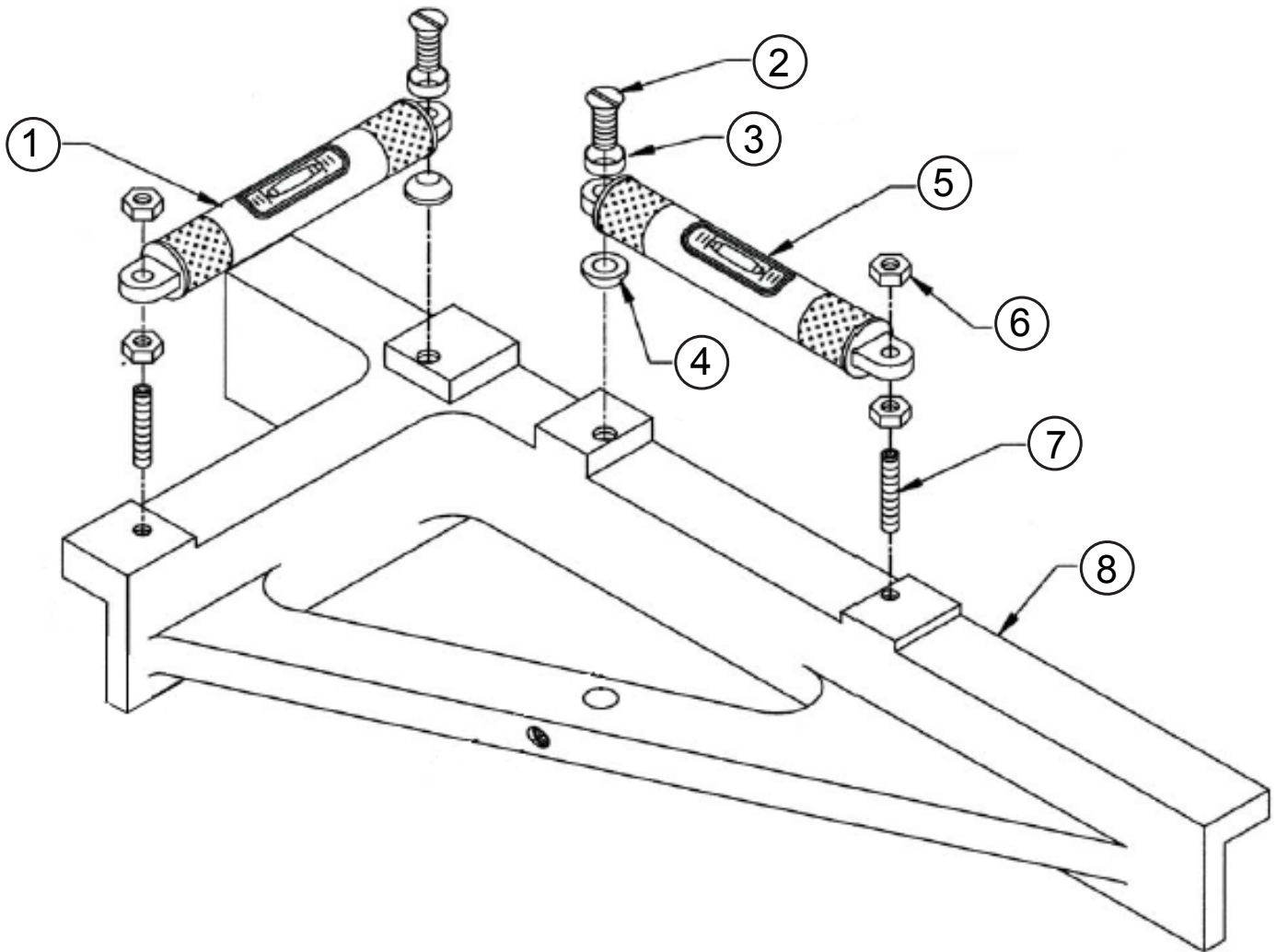


6407W Locator Assembly

Sold only as matched pairs.

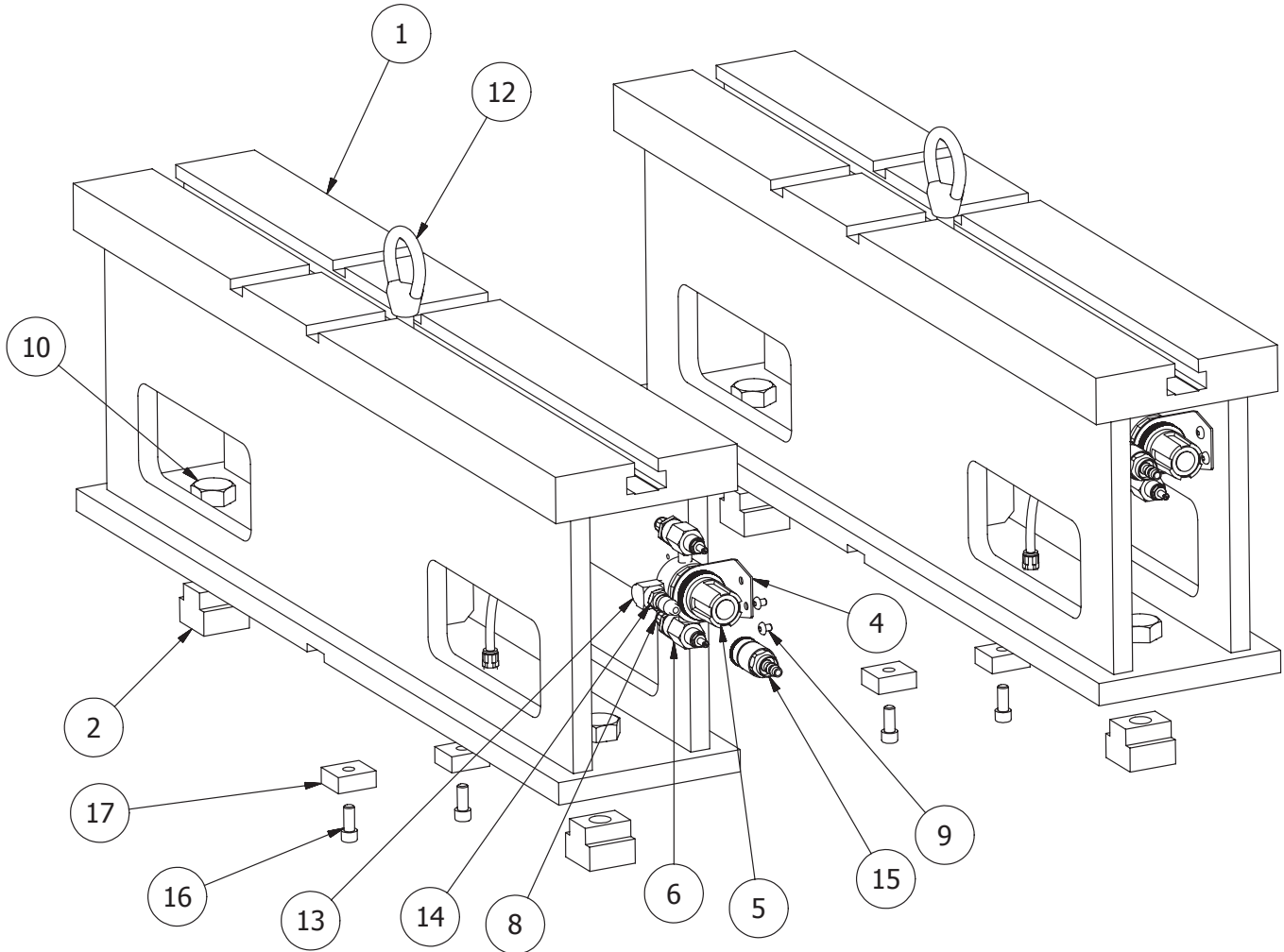


7152A Dual Axis Level Assembly Parts



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

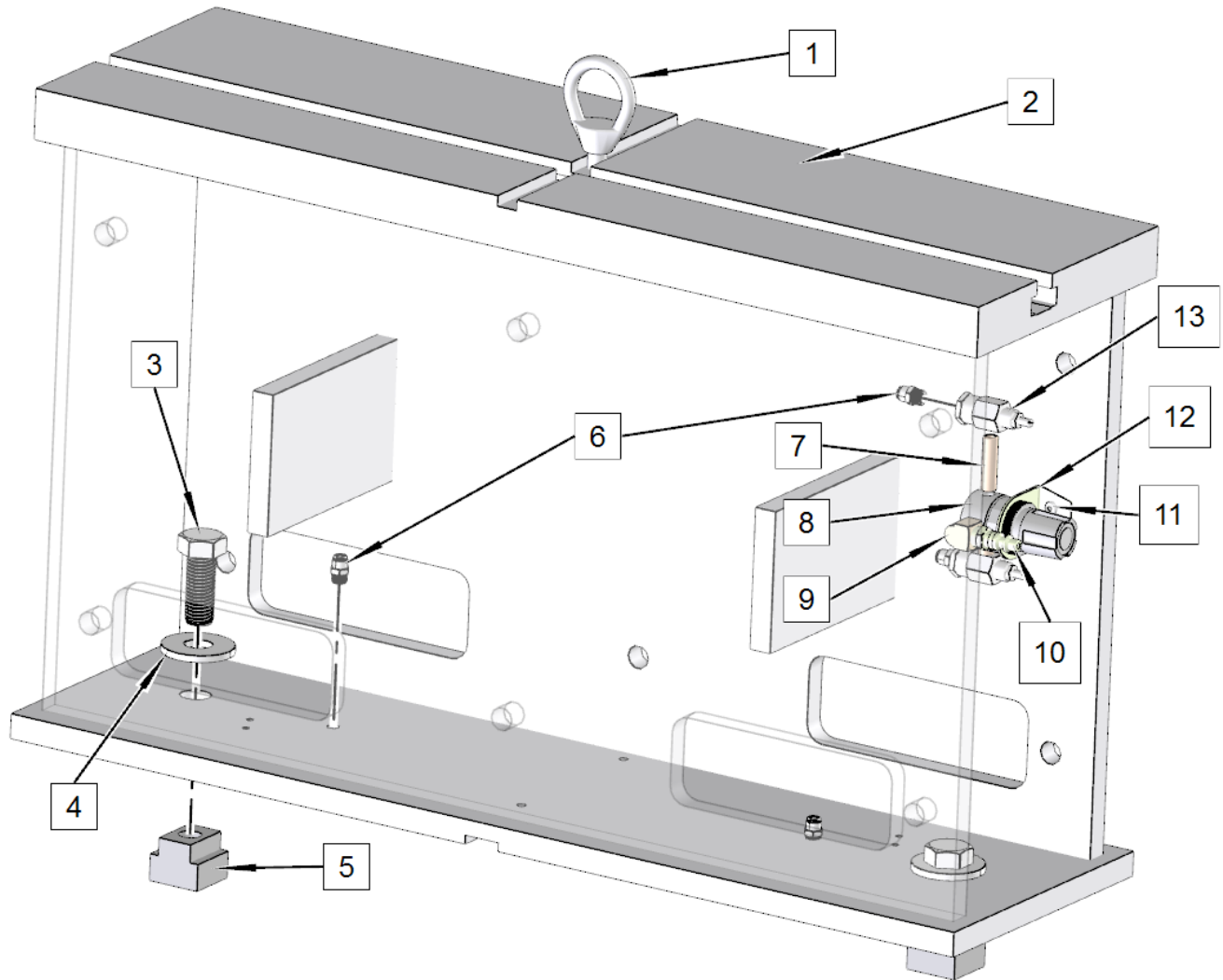
6370Z Set Of Parallels Parts



6370Z Parts List - 10" Parallels

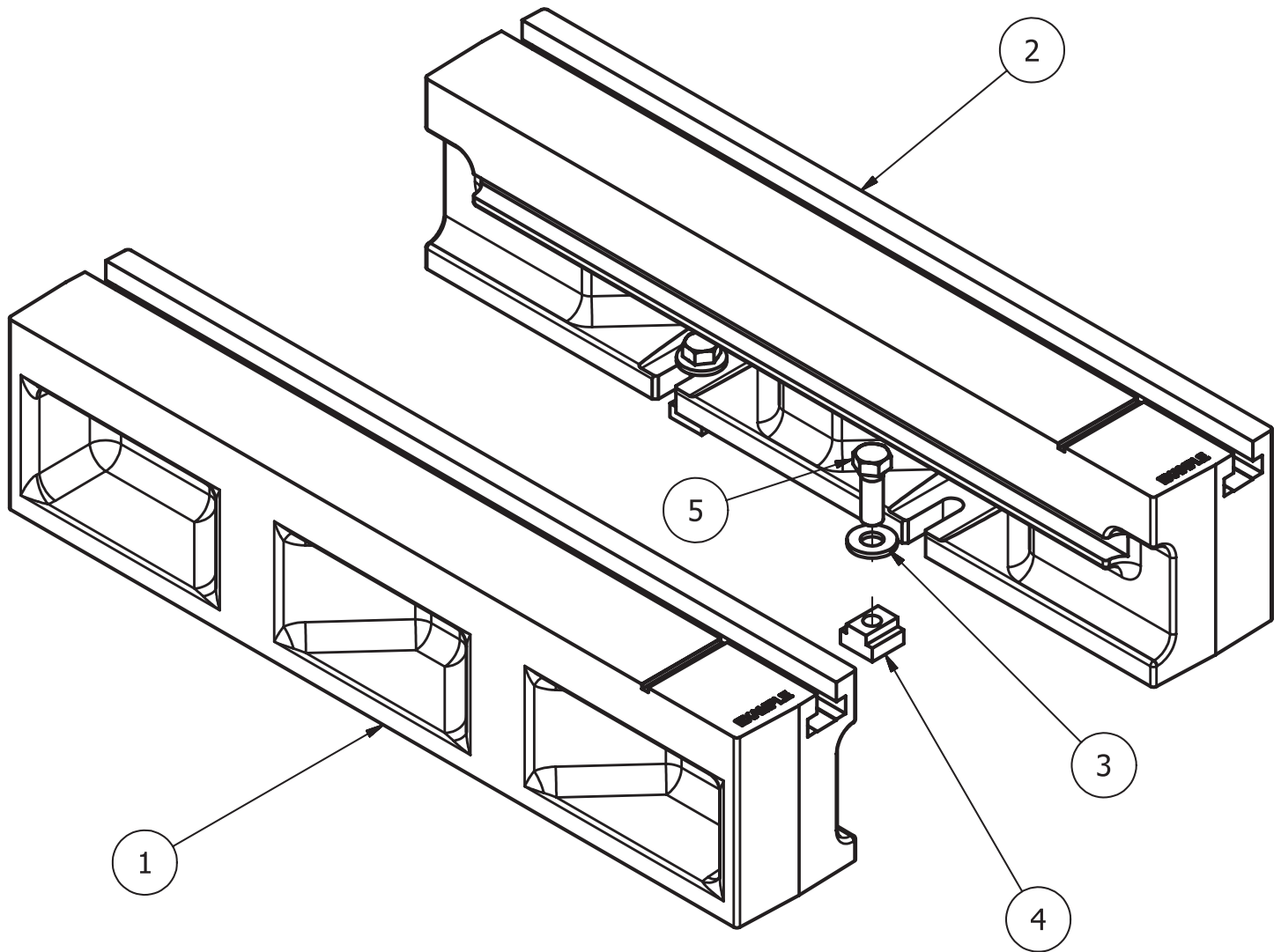
ITEM	QTY	PART NUMBER	DESCRIPTION
1	2	6370Y	10" Parallel Machining
2	4	6160	Nut, T - Hardened
4	2	502-27-17A	Regulator Bracket
5	2	502-27-17	Regulator 0 - 60 PSI
6	4	502-11-35A	Flo Control
7	4	502-11-17J	Close Nipple
8	8	514-4-17W	Legris Straight 1/4 x 1/8 npt
9	4	MF-87	10-24UNC x 1/4" LG. SOCKET BUTTON HEAD SCREW
10	4	MF-154B	3/4-10UNC x 1-3/4" LG. HEX BOLT
12	2	502-3-13	Lift Eye
13	2	502-11-17S	1/4 STREET ELL
14	2	502-11-16X	Quick Connect air Fitting Male
15	2	502-11-16W	Quick connect air fitting female
16	4	MF-21	5/16-18UNC x 5/8" LG. S.H.C.S.
17	4	6553K	Locating key

6370C Set Of Parallels Parts



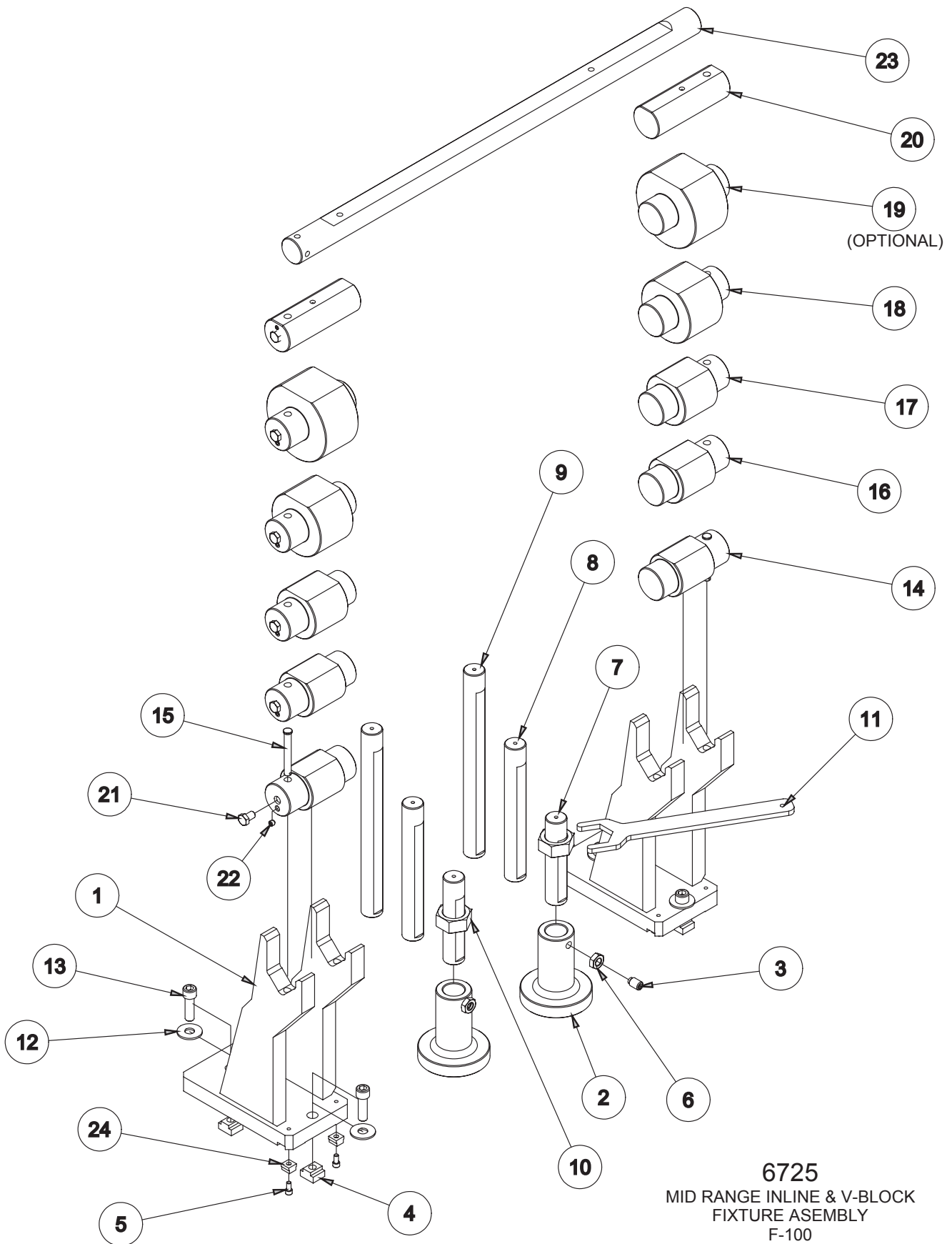
ITEM	PART #	DESCRIPTION
1	502-3-13	EYE, LIFTING
2	6370K	SUPPORT, PARALLEL
3	MF-154K	HEX BOLT 3/4-10 X 2"
4	MF-181A	FLAT WASHERS 3/4"
5	6160	NUT, "T"-HARDENED
6	514-4-17W	FITTING 1/8 NPT X 1/4 POLY STRAIGHT
7	502-11-17J	NIPPLE,CLOSE 1/8" MPT
8	502-27-17	REGULATOR,AIR 0-60 PSI
9	502-11-17S	ELBOW, ST, 1/4 FPT X 1/4 MPT
10	502-11-16X	CONNECTOR, MALE THREAD 1/4 NPTF
11	MF-87	SOCKET BUTTON HEAD SCREW 10-24 X 1/4"
12	502-27-17A	BRACKET, MOUNTING - REGULATOR
13	502-11-35A	VALVE, CONTROL - RFC FLO

7219W Heavy Duty T-Slot Universal Parallels 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

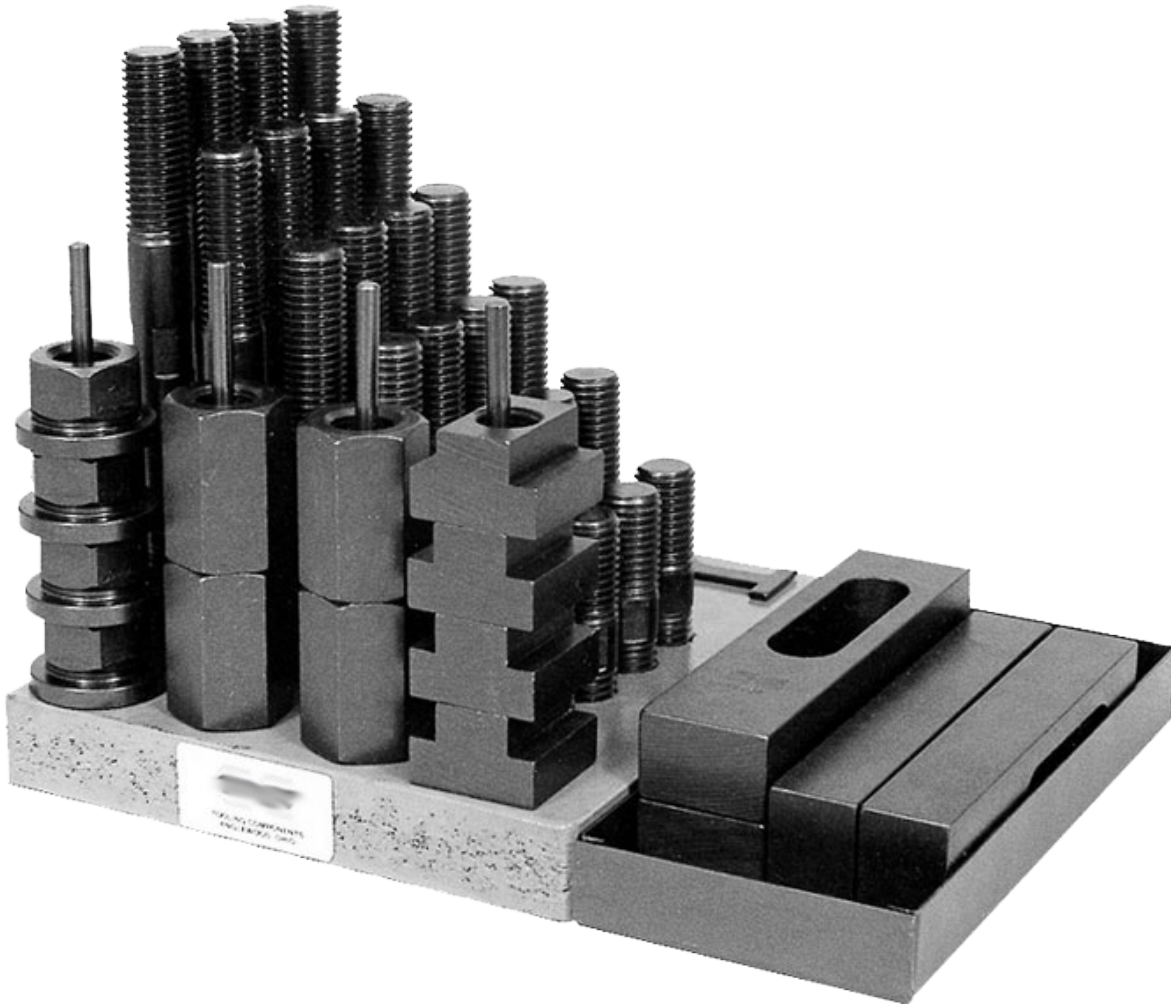
6725 Mid-Range In-Line and V Block Fixture Parts



6725 MID RANGE INLINE & V-BLOCK FIXTURE ASSEMBLY - F100			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	2	6553F	Machining, Main Bearing Support
2	2	6395D	JACK BODY
3	2	6395B	5/8-11 Half Dog 1" long
4	4	502-1-11A	3/4" T-Nut
5	4	MF-21	S.H.C.S. 5/16 - 18 UNC - 5/8
6	2	MF-173	5/8-11UNC HEX JAM NUT
7	2	6396	JACKING SCREW 7" LG.
8	2	6396A	JACKING SCREW 11-1/4" LG.
9	2	6396B	JACKING SCREW 15-1/2" LG.
10	2	6566H	Jacking Nut
11	1	6566K	WRENCH, JACKING NUT - DIESEL FIXTURING
12	4	MF-181	5/8" FLAT WASHER
13	4	MF-46D	S.H.C.S. 5/8 - 11 UNC - 2
14	2	6787C	LOCATOR, MAIN BEARING 3.22 TO 3.50 DIA.
15	2	6553H	PIN, LOCATION - DIESEL FIXTURE
16	2	6787D	Locator, main Bearing 3.50 to 4.00 dia.
17	2	6787E	Locator, main Bearing 4.00 to 5.00 dia.
18	2	6787F	Locator, main Bearing 5.00 to 6.00 dia.
19	2	6787G	Locator, main Bearing 6.00 to 7.00 dia. (OPTIONAL)
20	2	6787M	Locator, Main Bearing 2-1/2-3" dia.
21	10	MF-137E	1/2-13UNC x 3/4" LONG HEX BOLT
22	10	6788Q	SCREW, SET - BRASS TIPPED 3/8-16UNC x 5/16"
23	1	7241E	LOCATOR BAR, ECONOMY HEAD AND BLOCK FIXTURE
24	4	6869A	STEP KEY 3/4" - 5/8"

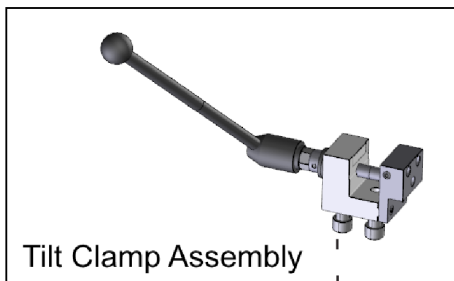
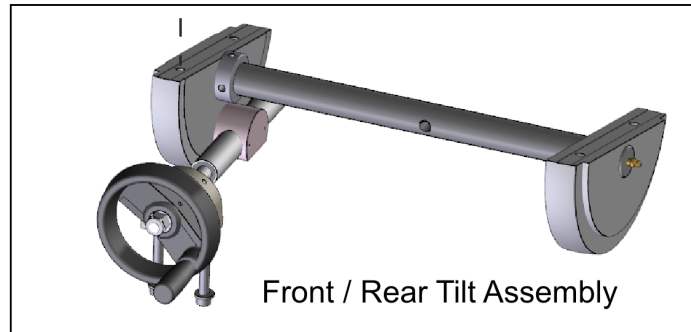
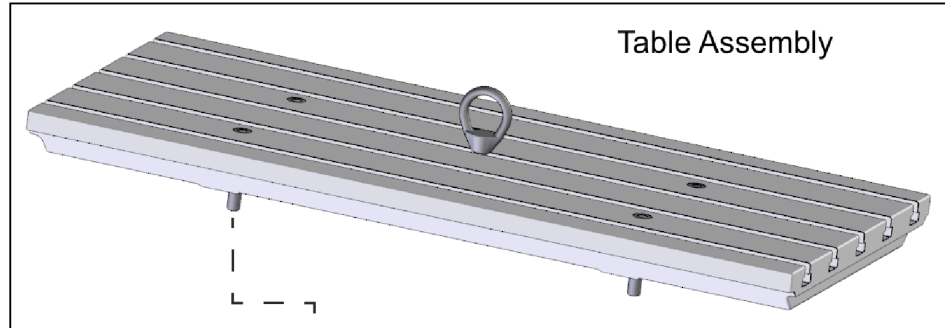
6511 3/4" (19.05mm) Clamp Kit

Sold only as complete kit.



Fixturing for Surfacing Cylinder Heads and Manifolds
7209M Leveling Table Parts

7209M Leveling Table Sections



Tensioner Assembly

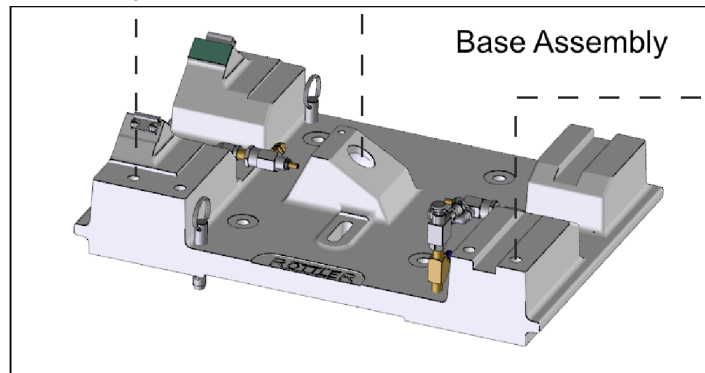
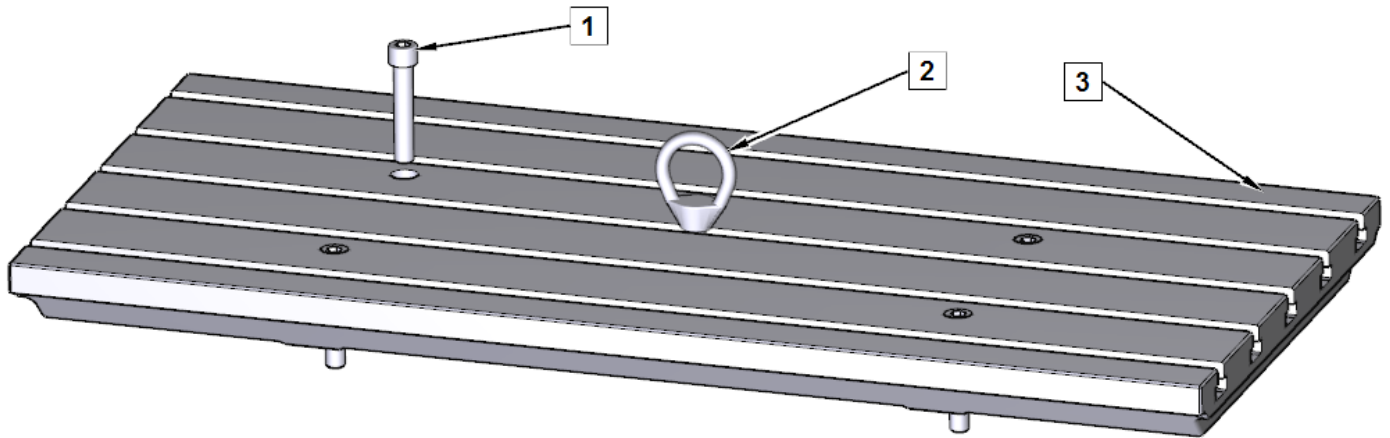
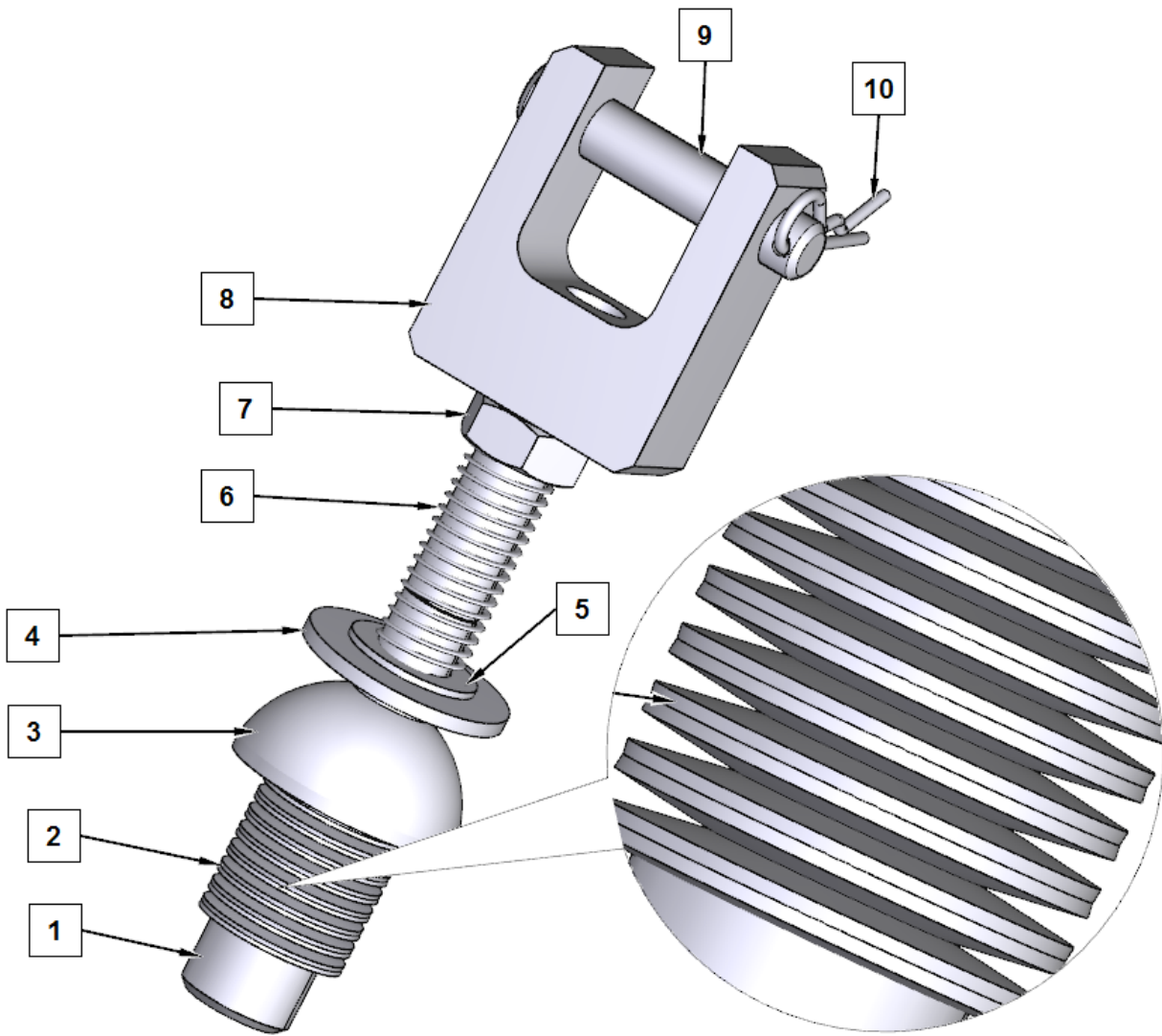


Table Assembly Parts



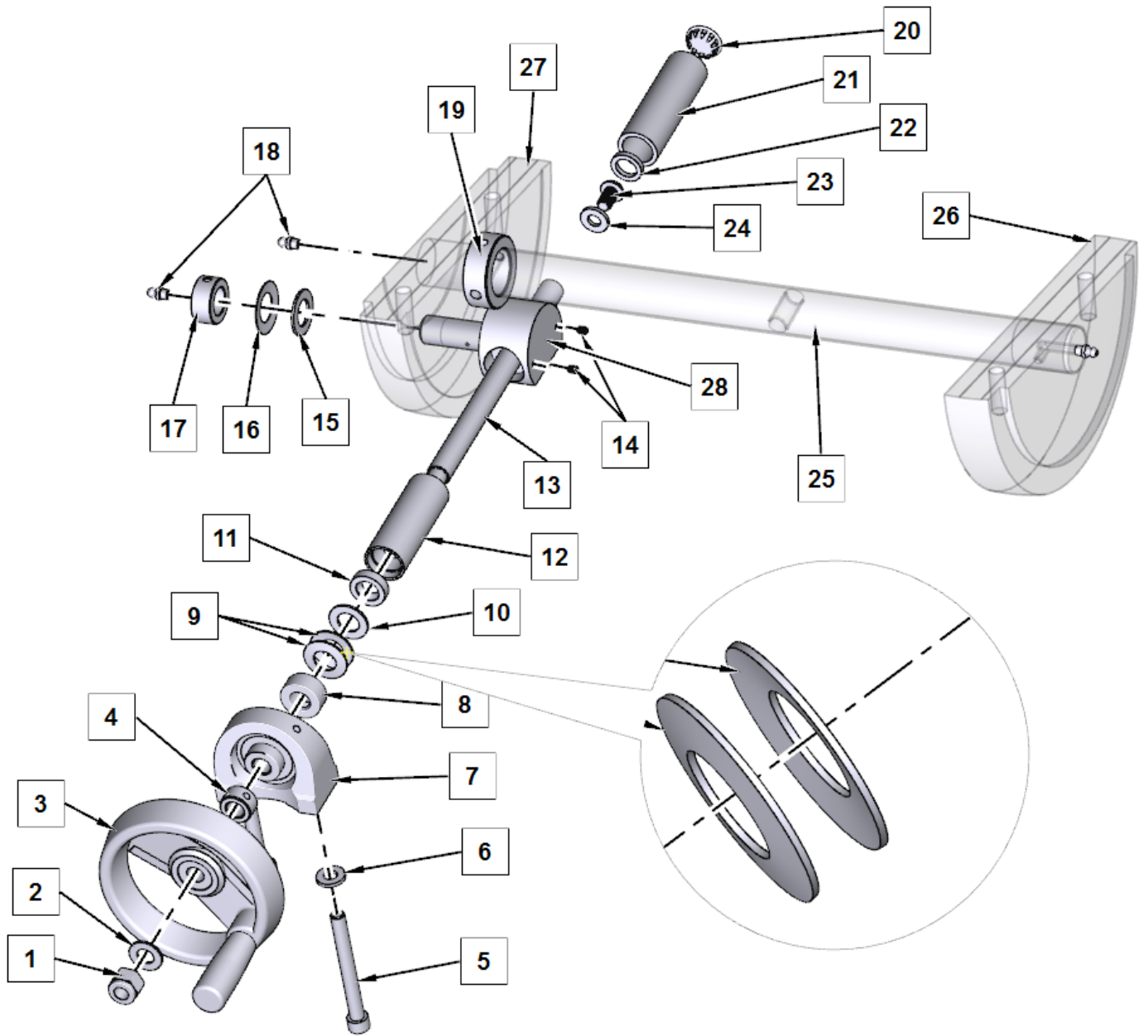
ITEM	PART #	DESCRIPTION
1	MF-45	SOCKET HEAD CAPSCREW 1/2-13 X 2"
2	502-3-13	EYE, LIFTING
3	7207C	TABLE, DUAL AXIS HEAD FIXTURE

Tensioner Assembly Parts



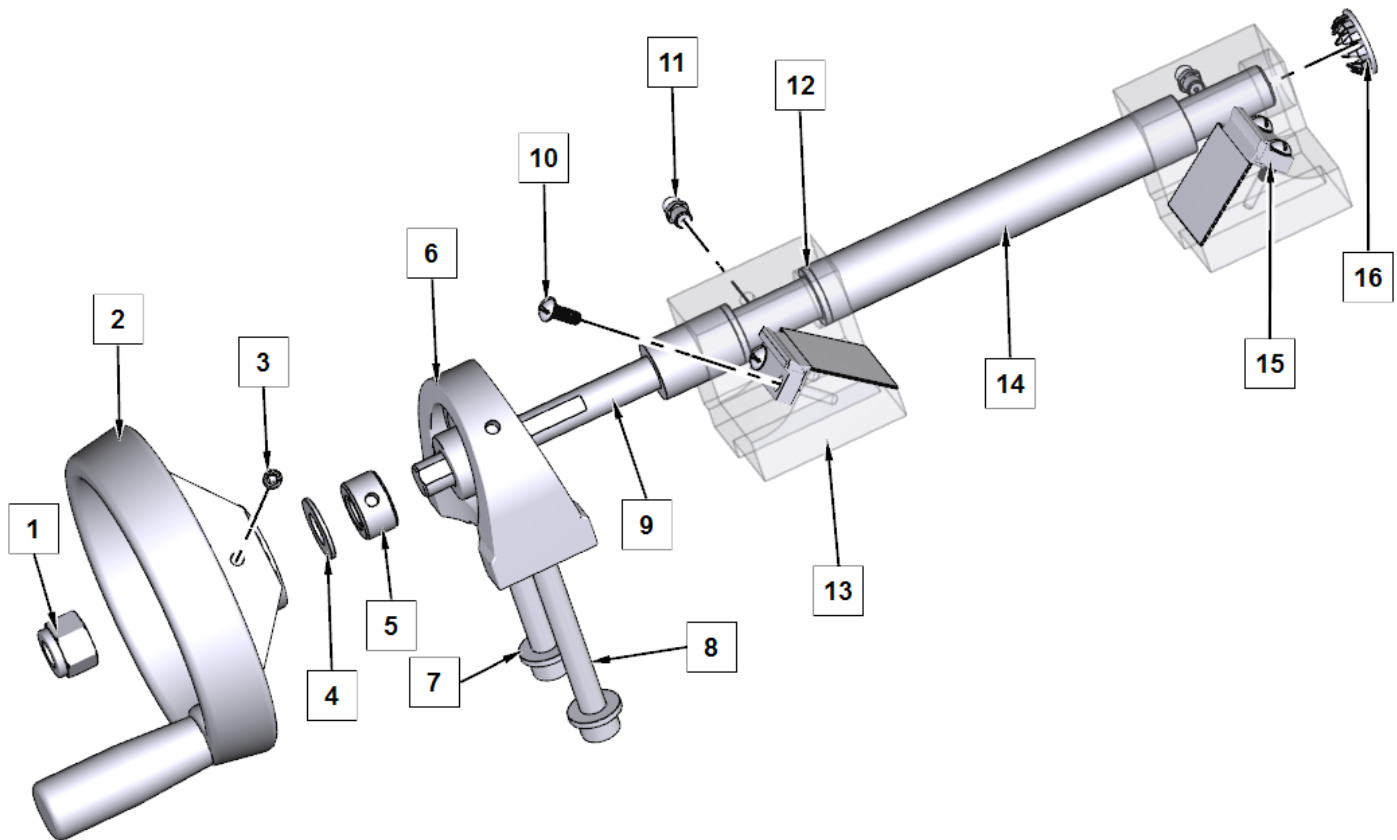
ITEM	PART #	DESCRIPTION
1	7209W	SCREW, CLAMP BAR
2	514-7-21	WASHER, BELLEVILLE
3	7209U	WASHER, SPHERICAL-HOLD DOWN
4	MF-181	FLAT WASHERS 5/8"
5	514-7-20	WASHER, THRUST
6	100-28-20C	SPRING,HOLD DOWN
7	MF-173	HEX JAM NUT 5/8-11 NC
8	7209S	ROD END, CLAMP BAR
9	7210B	PIN, CLEVIS
10	7232K	HITCH PIN CLIP

Front / Rear Tilt Assembly Parts



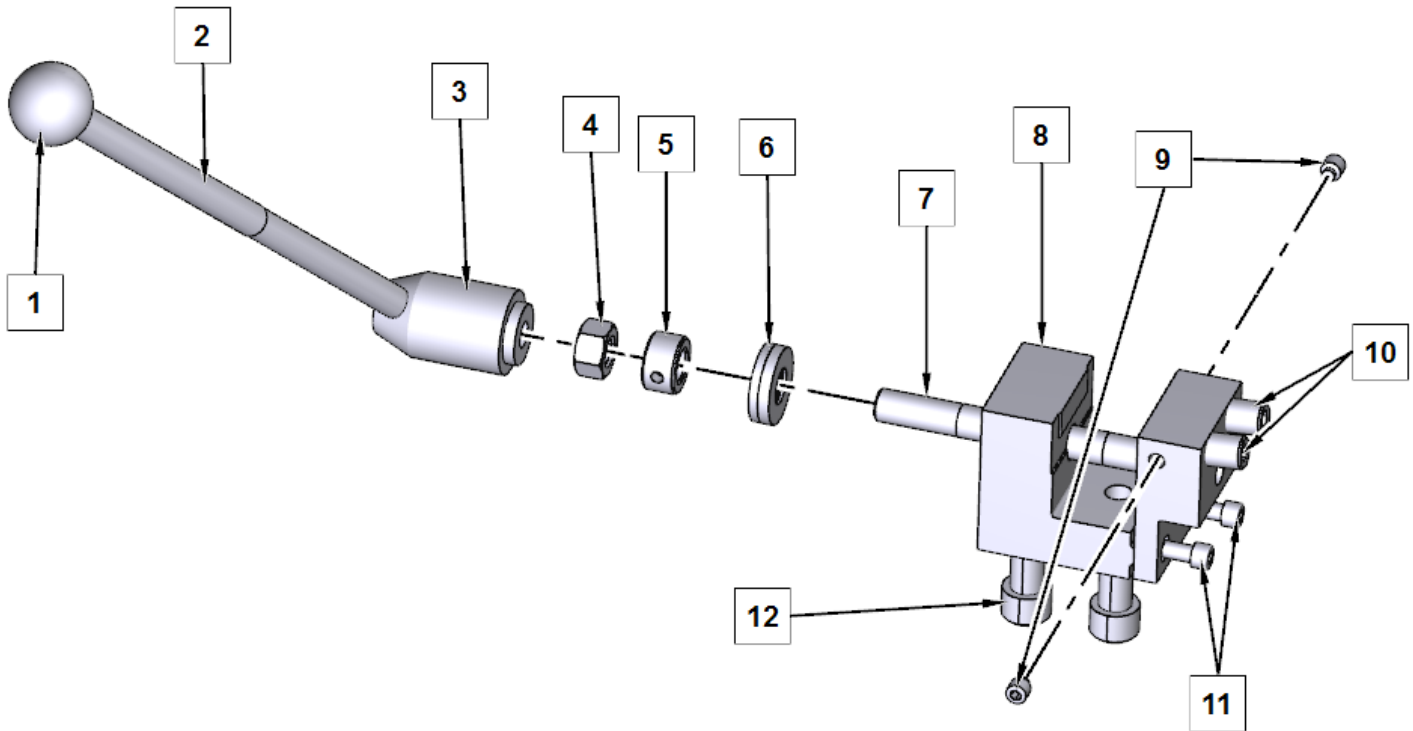
ITEM	PART #	DESCRIPTION
1	MF-186	NYLOCK NUT 1/2-13 NC
2	100-19	WASHER, THRUST
3	7201M	HANDWHEEL
4	7209J	COLLAR, 1/2" SHAFT
5	MF-36A	SOCKET HEAD CAP SCREW 3/8-16 X 3 1/2"
6	100-28-32	WASHER, 3/32" THICK
7	7201D	BLOCK, PILLOW LEVEL ADJUST
8	7199E	COLLAR, SUPPORT BLOCK (5/8" DIA)
9	514-7-21	WASHER, BELLEVILLE
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 Assembly Parts



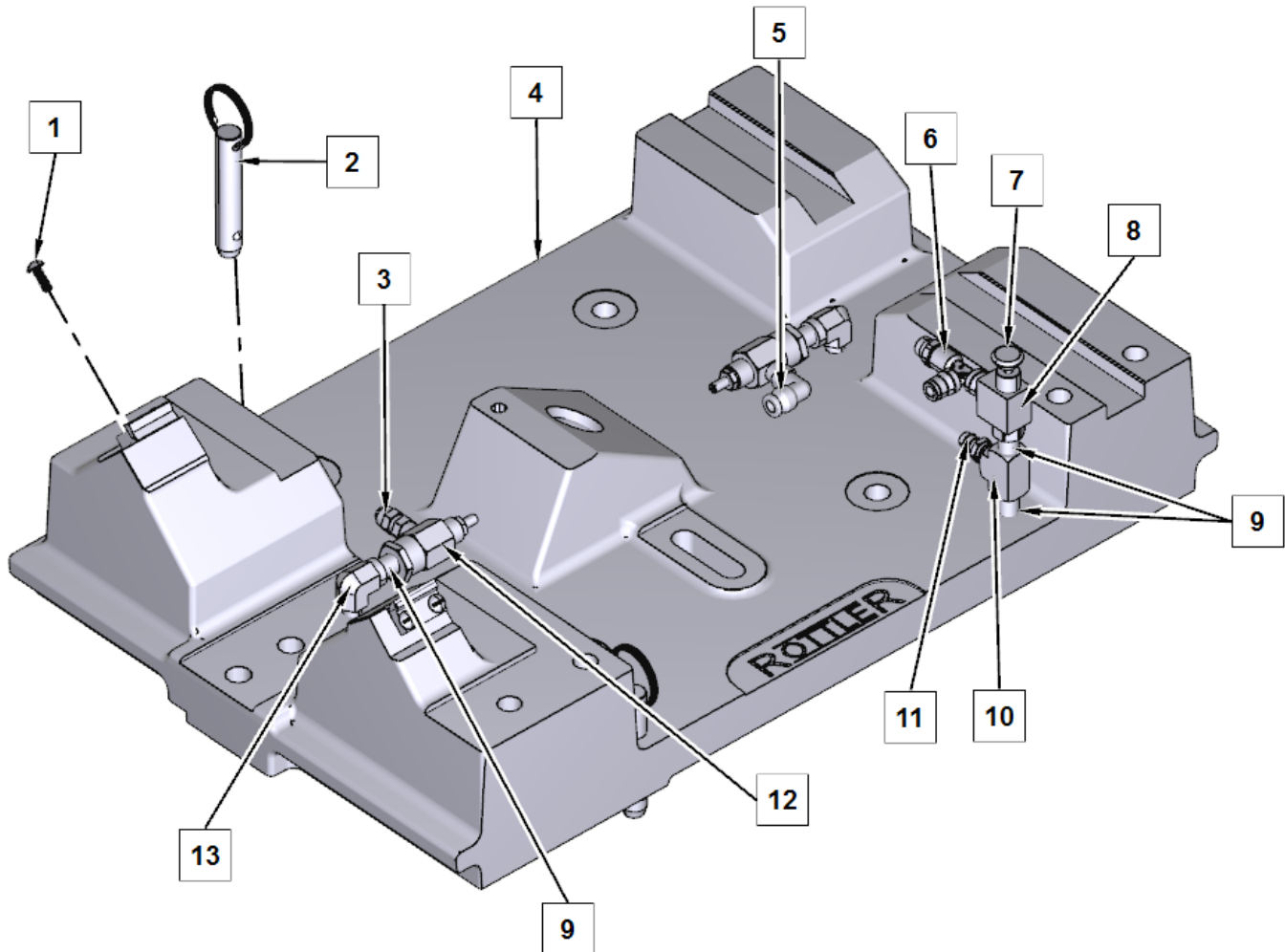
ITEM	PART #	DESCRIPTION
1	MF-186	NYLOCK NUT 1/2-13 NC
2	7201M	HANDWHEEL
3	MF-60	SOCKET SET SCREW CUP POINT 1/4-20 X 1/4"
4	100-19	WASHER, THRUST
5	7209J	COLLAR, 1/2" SHAFT
6	7201D	BLOCK, PILLOW LEVEL ADJUST
7	100-28-32	WASHER, 3/32"
8	MF-36A	SOCKET HEAD CAP SCREW 3/8-16 X 3 1/2"
9	7207M	SHAFT, LEFT/RIGHT 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"

Tilt Clamp Assembly Parts



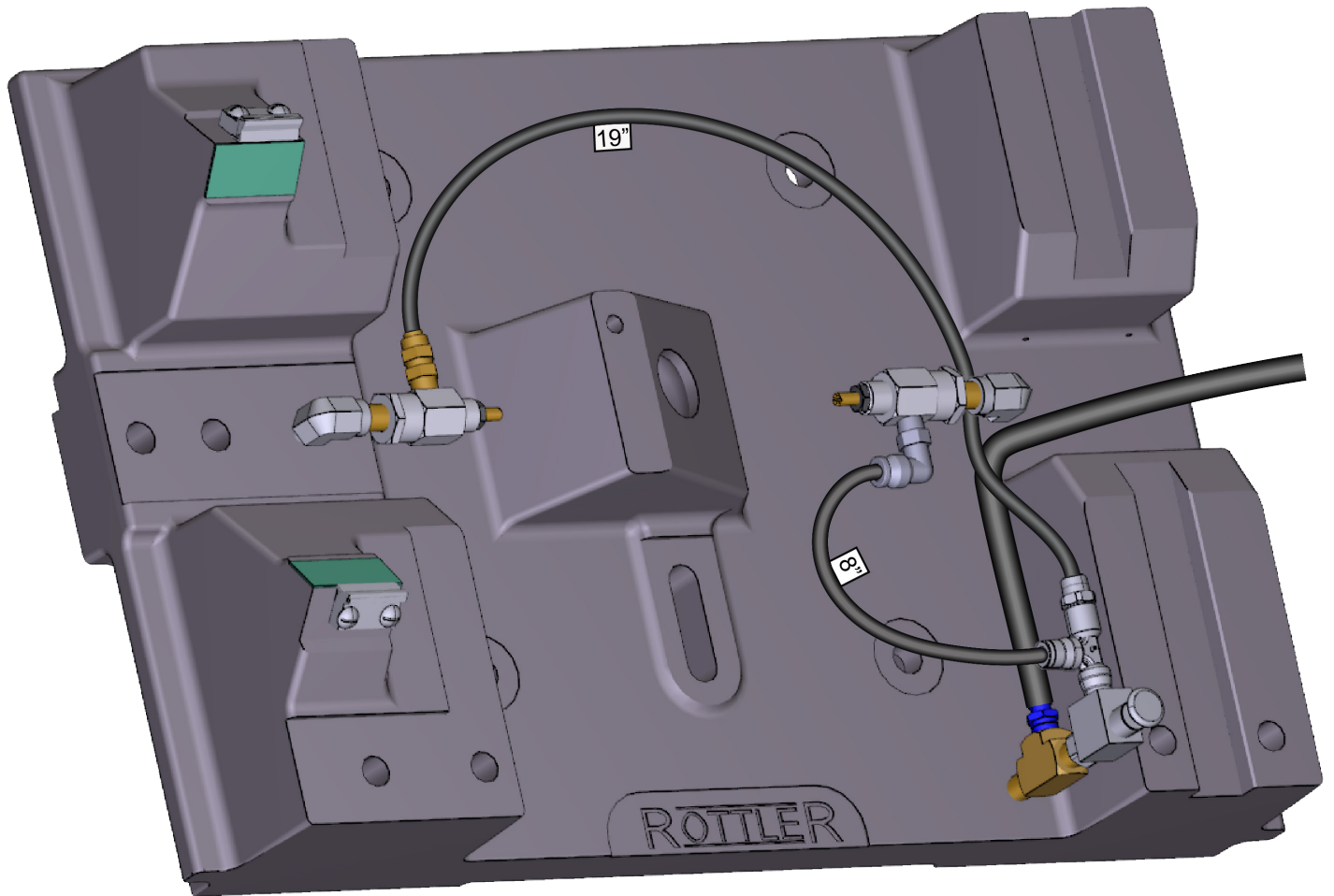
ITEM	PART #	DESCRIPTION
1	514-2-39E	KNOB, ADJUSTABLE HANDLE
2	514-2-39B	EXTENDER, ADJUSTABLE HANDLE
3	514-2-39D	HANDLE, ADJUSTABLE-CLAMP STOP
4	MF-165	HEX NUT 1/2-13 NC
5	7209J	COLLAR, 1/2" SHAFT
6	7209E	WASHER, SPHERICAL
7	7207Z	SHAFT, JOURNAL CLAMP
8	7210J	CLAMP BLOCK, JOURNAL CLAMP
9	504-29-36	SCREW, 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"

Base Assembly Parts

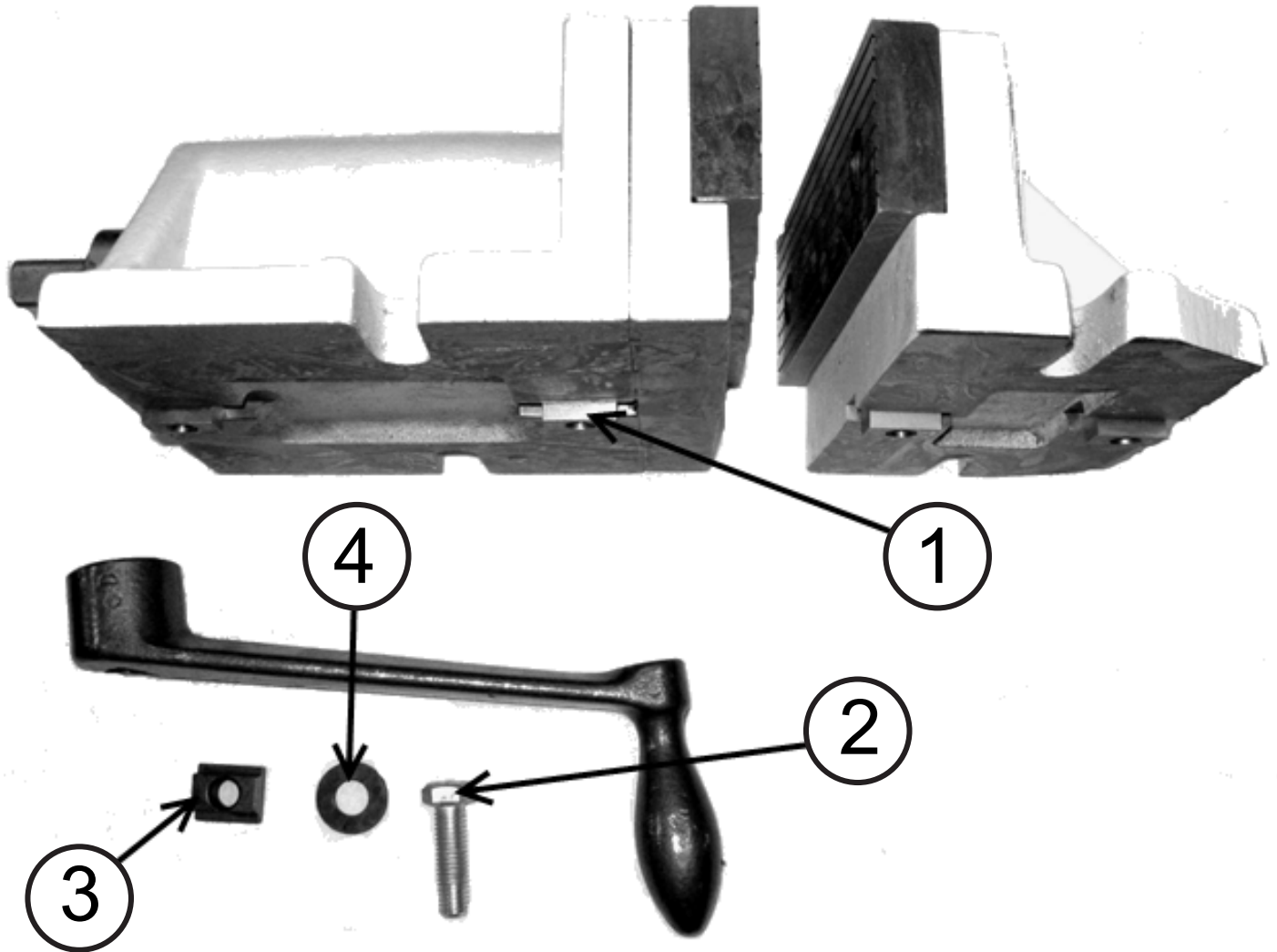


ITEM	PART #	DESCRIPTION
1	MF-111	ROUND HEAD MACHINE SCREW 10-24 X 1/2"
2	7210C	PIN, GUIDE ROTTLER LEVELING TABLE
3	502-11-16E	CONNECTOR, MALE, 1/4 X 1/8" PT
4	7233	FRAME, TABLE
5	514-4-17E	ELBOW, 90 DEGREE MALE - 1/4" X 1/8" NPT
6	514-4-17X	TEE, RUNNING 1/8-NPT X 1/4
7	502-1-56	PUSHBUTTON
8	514-2-65	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

Air Line Layout



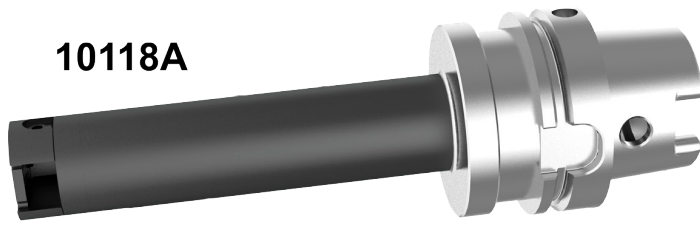
7209N 2-Piece Vise Parts



ITEM	PART #	DESCRIPTION
1	7210E	KEY, STEPPED
2	MF-137F	HEX BOLT 1/2-13 X 1 3/4"
3	7137B	NUT, "T"
4	100-19A	WASHER, HARDENED 17/32" ID

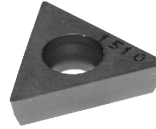
Boring and Sleeving Tooling for HSK80A Spindle Taper

10118 Blind Hole Stub Cutterhead Components and Parts

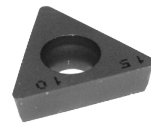


10118A

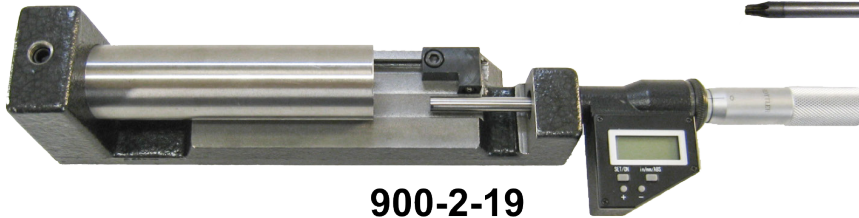
RT321



RT322

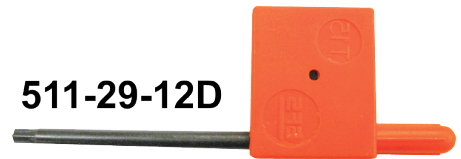


T8D

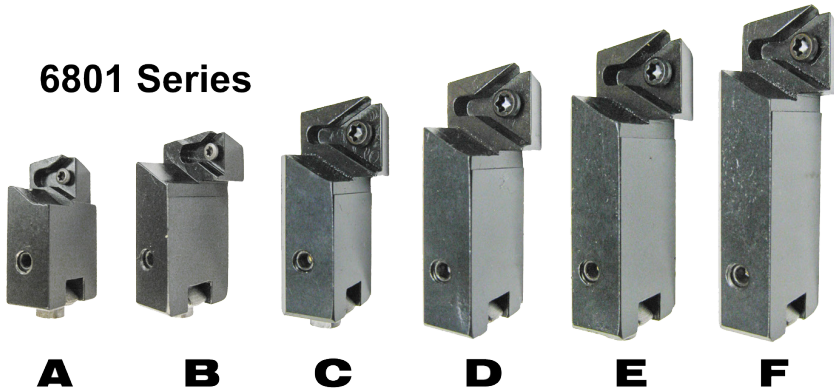


900-2-19

511-29-12D



6801 Series



A

B

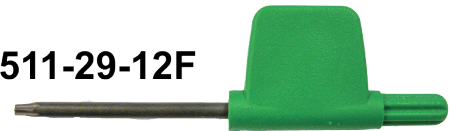
C

D

E

F

511-29-12F



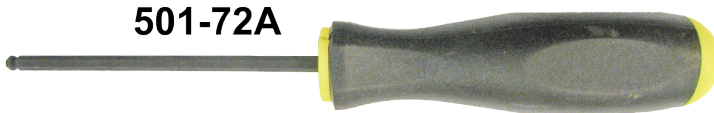
RT321F



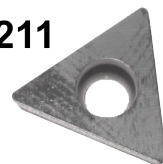
RT322F



501-72A



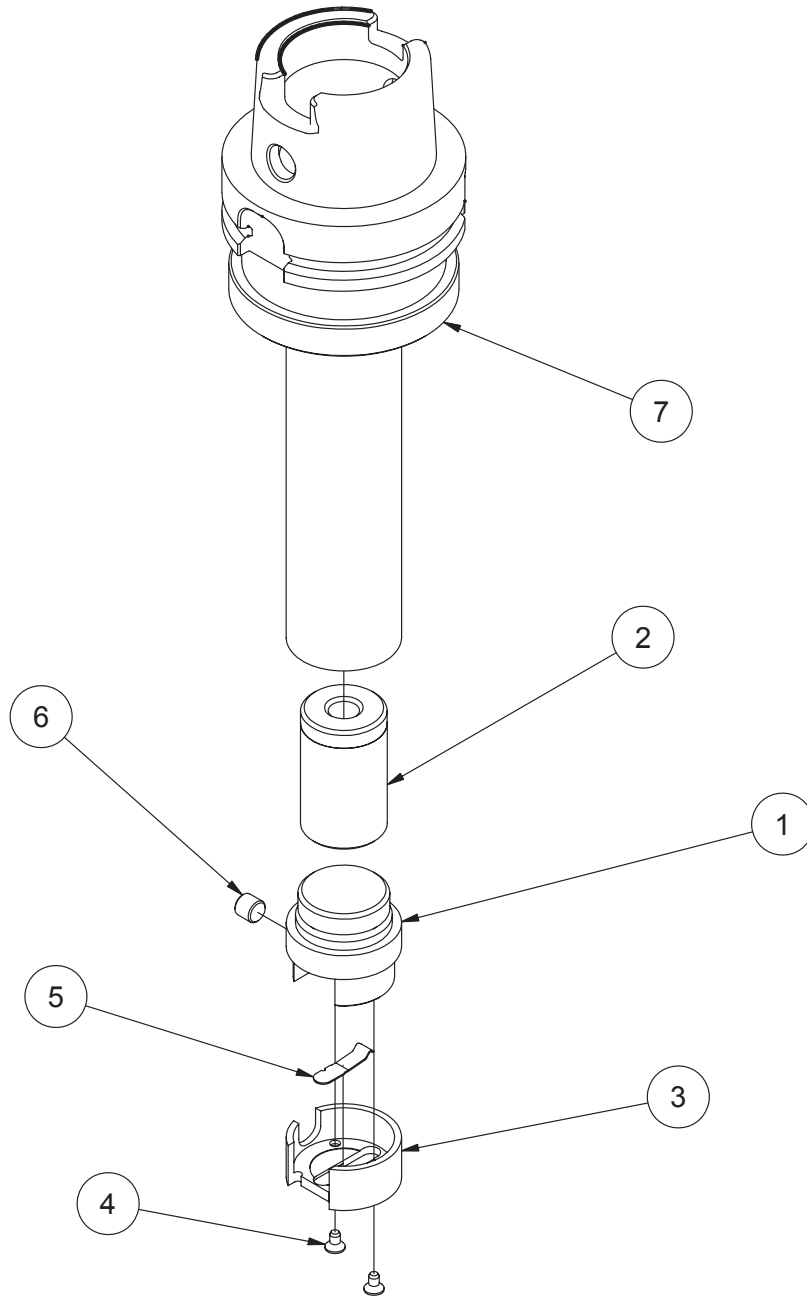
RT211



RT212

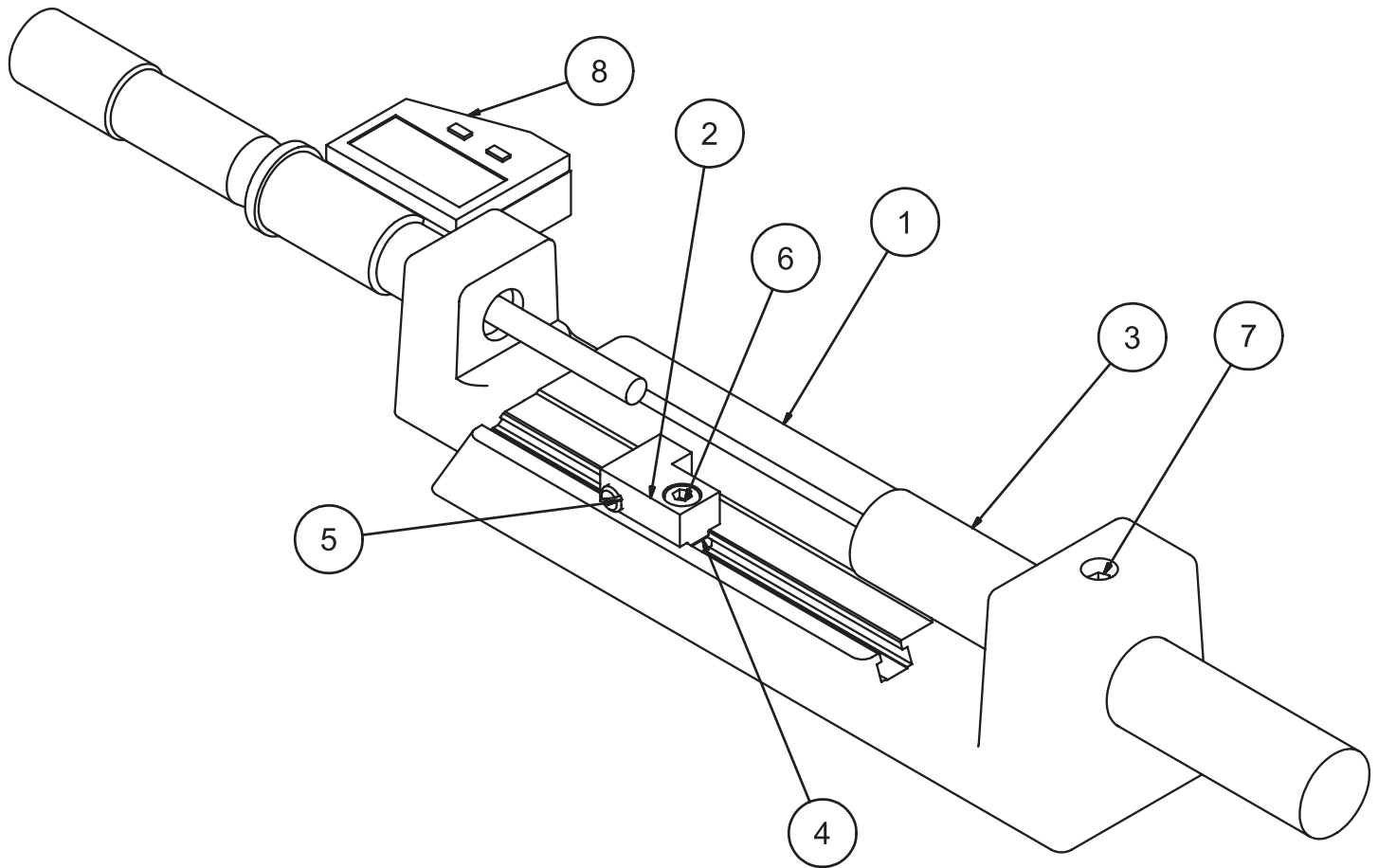


10118A Cutterhead Parts



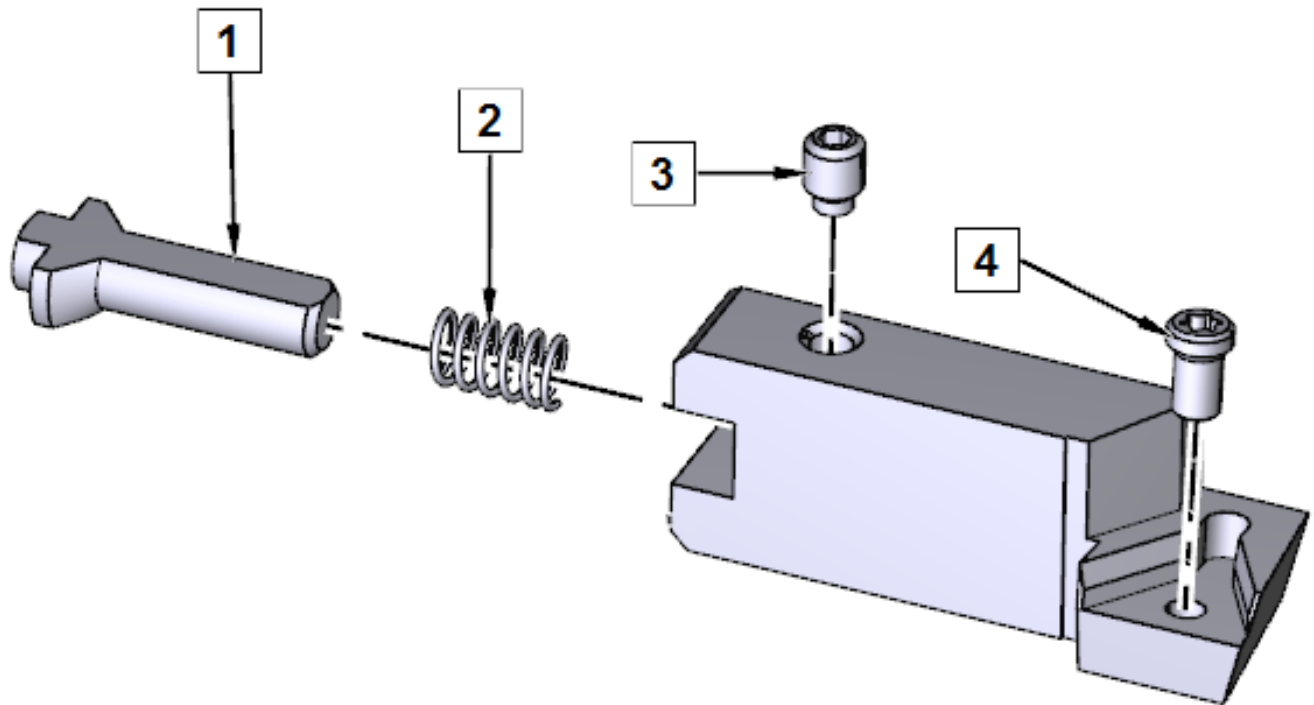
10118A CUTTERHEAD ASSEMBLY, 1-1/2" x 6.5" LG. STUB BAR W/O TOOLING			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	600-7-2D	Lower Body 1-1/2" Stub Bar
2	1	600-8-2	Counter Weight
3	1	600-5	Cutter Head Cap
4	2	MF-120A	Socket Flat Head 6-32 UNC x 0.25
5	1	100-1B	Tool Lock Spring
6	1	502-25-1	Tool Holder Lock Screw
7	1	10118B	HSK ADAPTER 2.88 DIA. STUB BAR CUTTERHEAD

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

6801 Series Insert Holder Parts



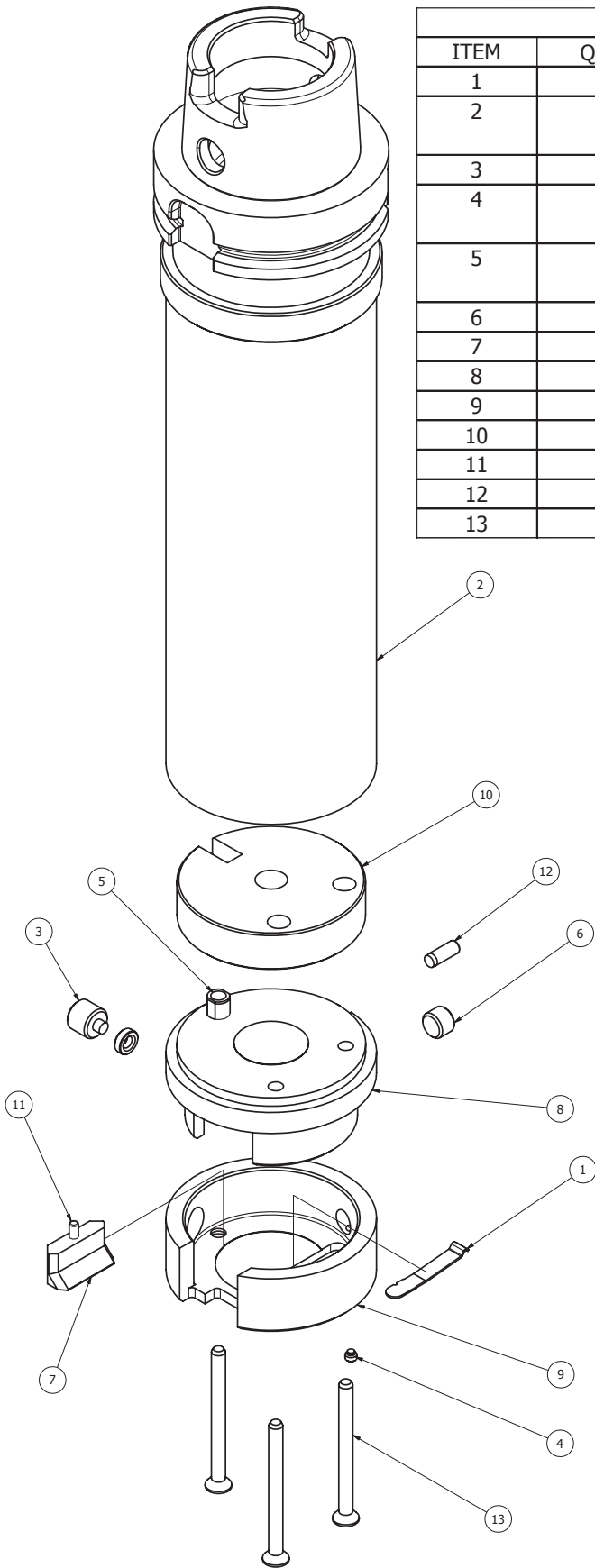
ITEM	PART #	DESCRIPTION
1	100-82-3B	PIN ADJUSTING LONG INDEXABLE INSERT TOOLHOLDER
2	100-82-1	SPRING, ADJUSTING PIN
3	100-82-2	SCREW, SET-BRASS GIB - 3/16" LONG
4	511-29-12C	SCREW, TORX M4 X .7 X .315" LONG

10108B Blind Hole Stub Cutterhead Components

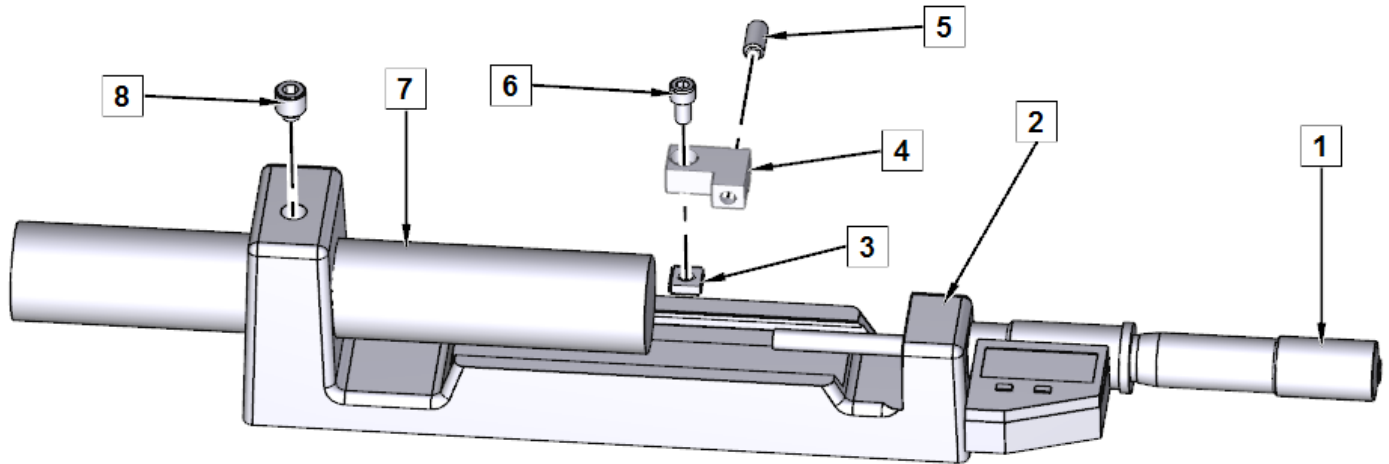


10108 Cutterhead Parts

10108 2-7/8 Stub Bar (W/O Tooling) - HSK			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	100-1A	Tool Lock Spring
2	1	10108A	HSK ADAPTER 2.88 DIA. STUB BAR CUTTERHEAD
3	1	501-70A	Tool Holder Lock Screw ass'y
4	1	502-12-4D	SOCKET SET SCREW, BRASS TIPPED 8-32 X 1//8
5	1	502-2-45B	BUSHING - UPPER CENTERING FINGER RETAINER
6	1	502-2-85B	Index Screw
7	1	6263A	Tool Holder Clamp Screw
8	1	650-2-16	BODY, 2.9" STUB BAR F60
9	1	650-2-17	Cap, 2.9" Stub Bar
10	1	6521	Counter Weight
11	1	MF-193	1/8 x 1/2 Dowel Pin
12	1	MF-196	3/16 x 1/2 Dowel Pin
13	3	MF-81C	Socket Flat Head 10-24 UNC x 2.25

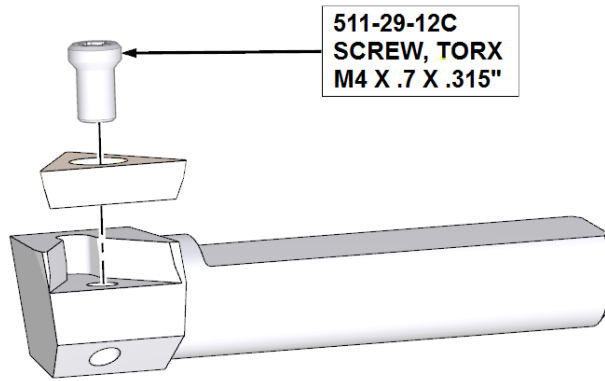


900-2-20 Micrometer Parts



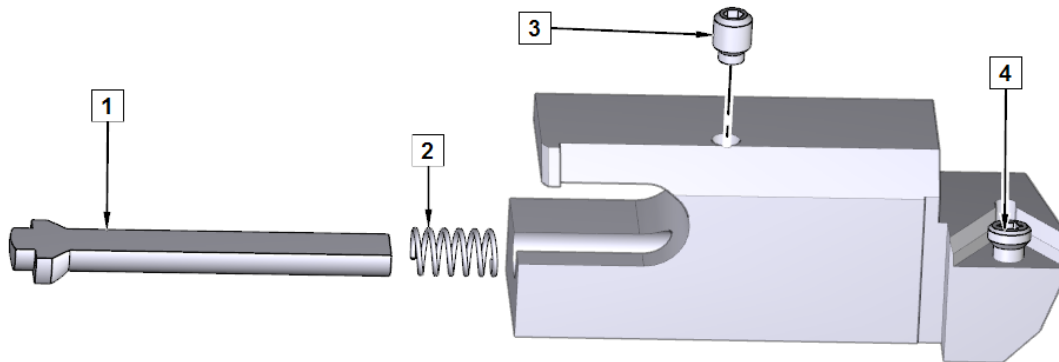
ITEM	PART #	DESCRIPTION
1	501-34-2R	HEAD, MICROMETER UNIVERSAL MIC HEAD DIGITAL READING INCH AND METRIC
2	502-30-10C	FRAME, MICROMETER
3	502-30-10J	SQUARE NUT-#10-24 MICROMETER FRAME
4	502-30-10M	CLAMP, MICROMETER
5	502-30-10K	BALL PLUNGER, 1/4-20 MICROMETER FRAME
6	MF-9A	SOCKET HEAD CAPSCREW 10-32 X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

6598 Series Insert Holder Parts



**511-29-12C
SCREW, TORX
M4 X .7 X .315"**

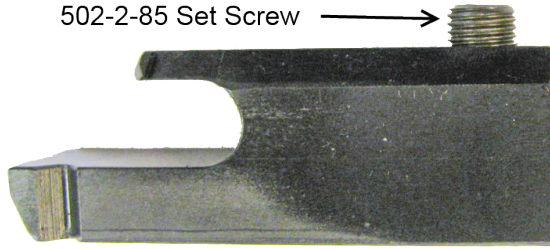
6593 Series Insert Holder Parts



ITEM	PART #	DESCRIPTION
1	6593Q	PIN, ADJUSTING - TOOLHOLDER #6593C AND D ONLY
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

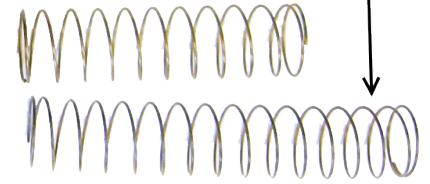
6520 Series Tool Holder Parts

502-2-85 Set Screw

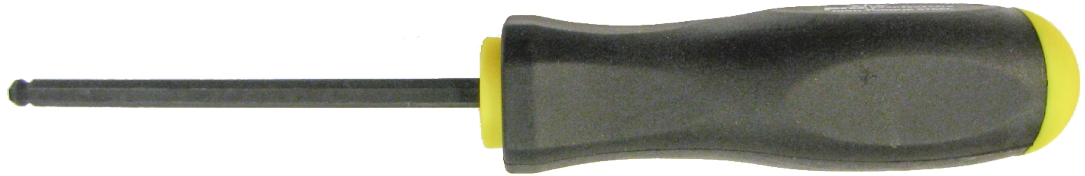


6300C Long Spring

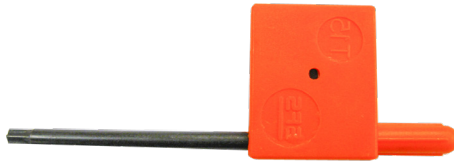
6300B Short Spring



501-72 Hex Driver



511-29-12D Torx Wrench



RT321 Insert



RT322 Insert



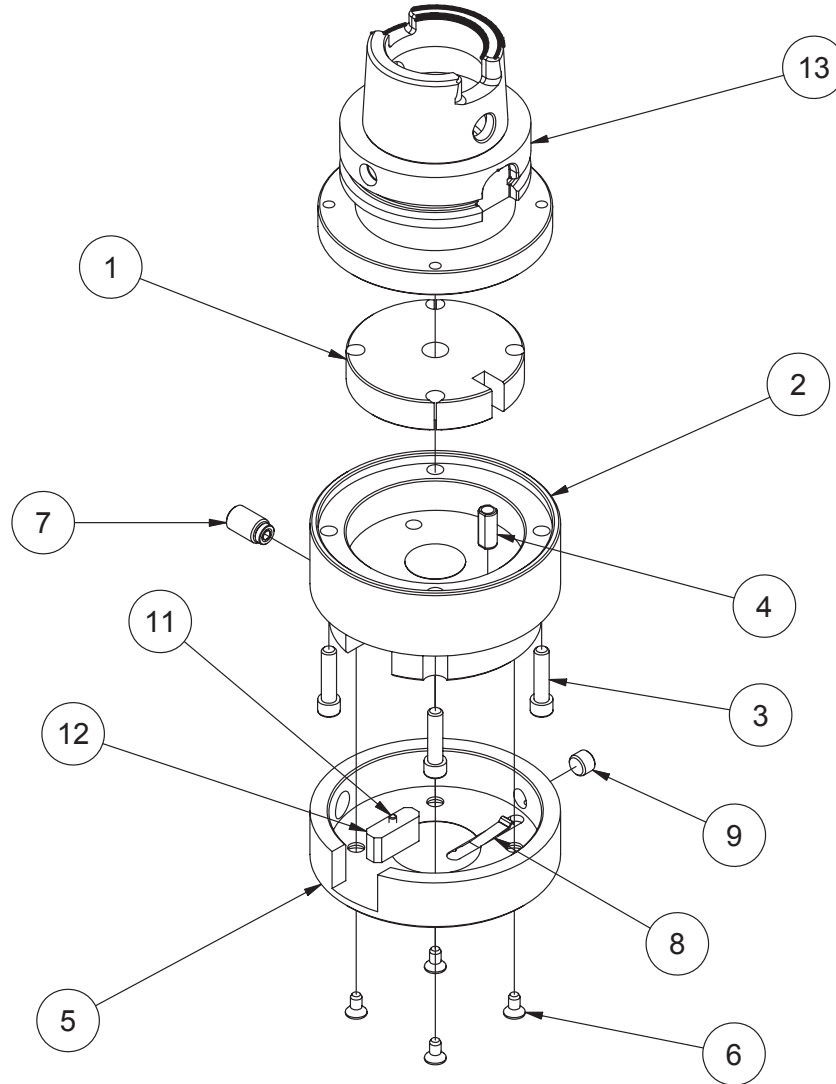
RT321F Insert



RT322F Insert



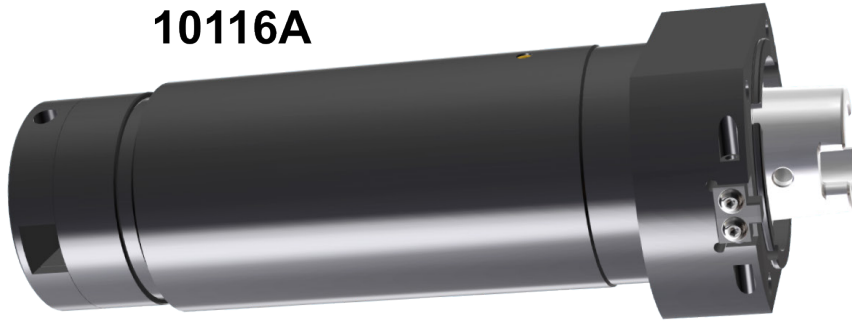
10117A Blind Hole Cutterhead Parts



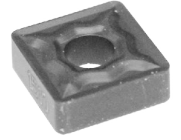
10117A 4.5"-9.0" DIA. PRODUCTION CUTTERHEAD ASSEMBLY, HSK80A, F100			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	600-20-11	Counter Weight
2	1	6256L	BODY, CUTTERHEAD 4.50" (NO CENTERING)
3	4	MF-15	S.H.C.S. 1/4 - 20 UNC - 1
4	1	502-2-45B	BUSHING - UPPER CENTERING FINGER RETAINER
5	1	6256N	Cap, Cutterhead 4.50" (No Centering)
6	4	MF-78	Socket Flat Head 10-24 UNC x 0.375
7	1	501-70	Tool Holder lock Screw ass'y
8	1	100-1E	Tool Lock Spring
9	1	502-2-85B	Index Screw
10	1	502-12-4D	SOCKET SET SCREW, BRASS TIPPED 8-32 X 1/8
11	1	MF-193	1/8 x 1/2 Dowel Pin
12	1	6263B	Clamp Shoe (Tool Holder)
13	1	10107A	HSK ADAPTER 4.50 CUTTERHEAD

10116 Extended Spindle Blind Hole Cutterhead Components and Parts

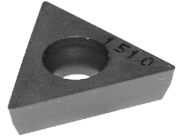
10116A



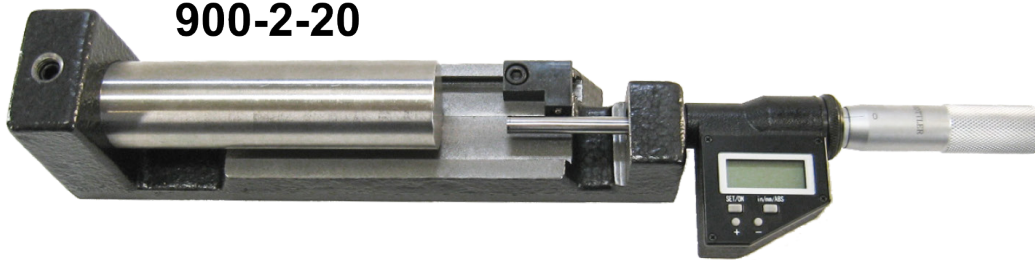
RS322



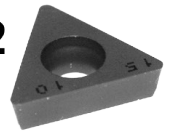
RT321



900-2-20



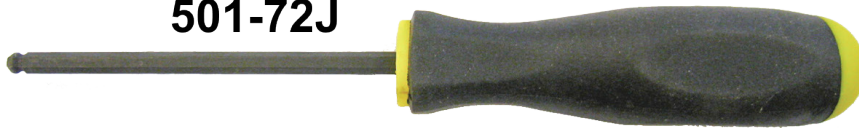
RT322



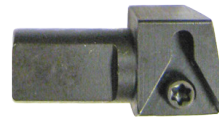
RT322F



501-72J



6598M



RT321F

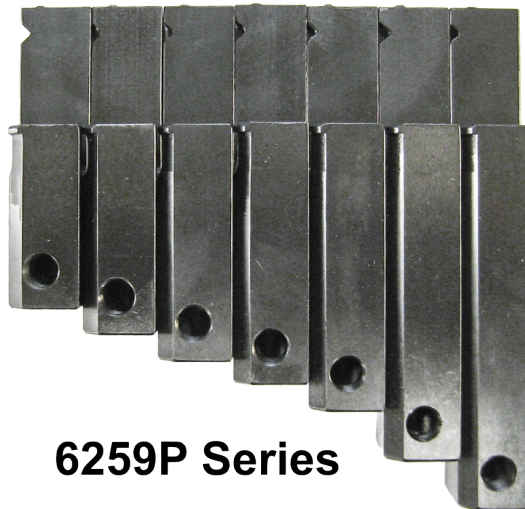
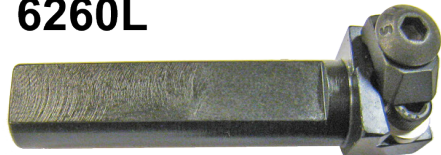


6598K

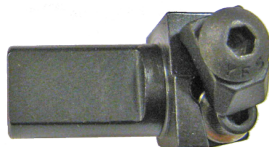


P C D I E F G

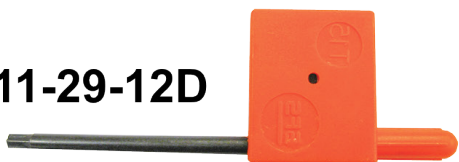
6260L



6260M

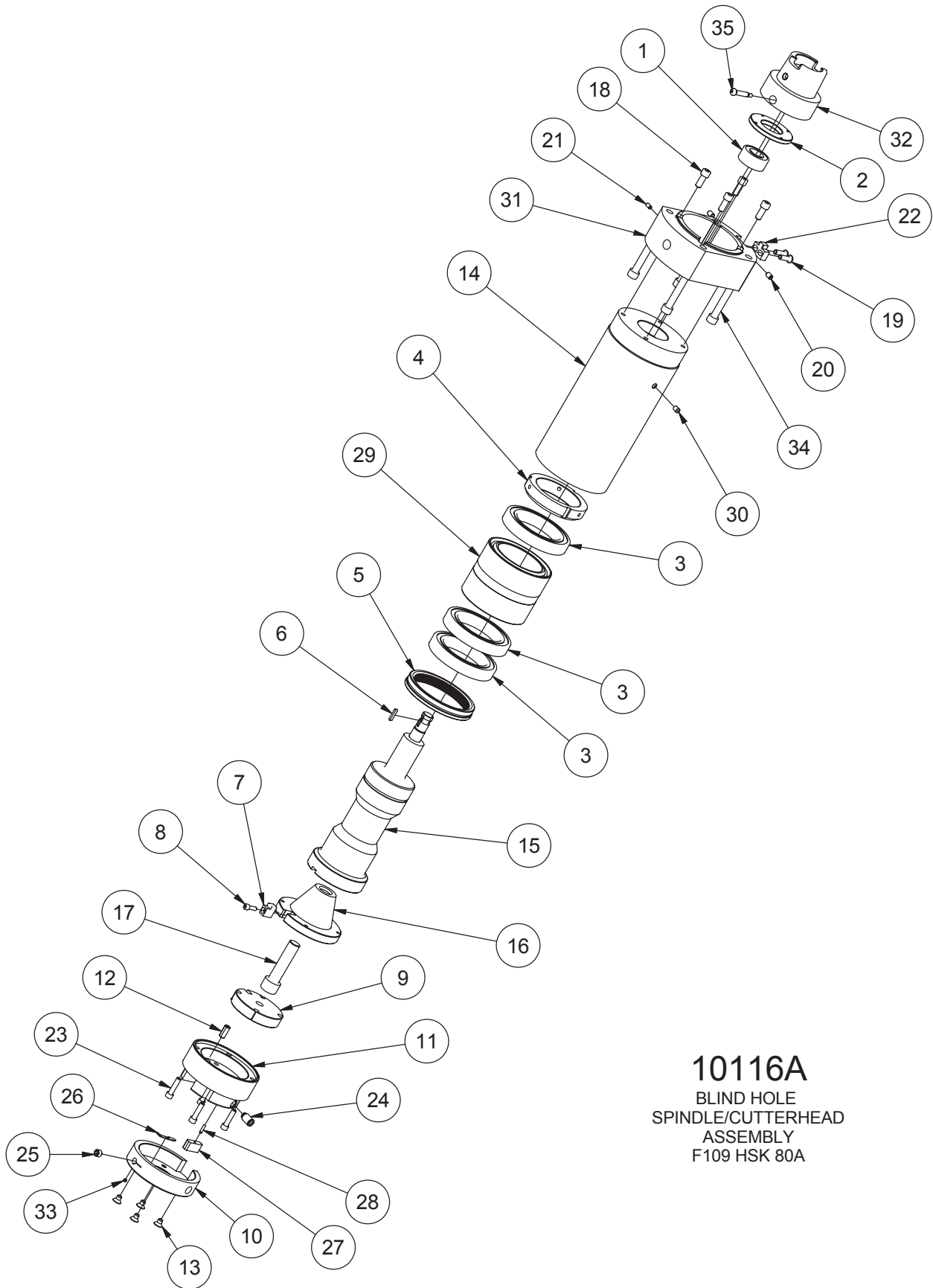


511-29-12D



6259P Series

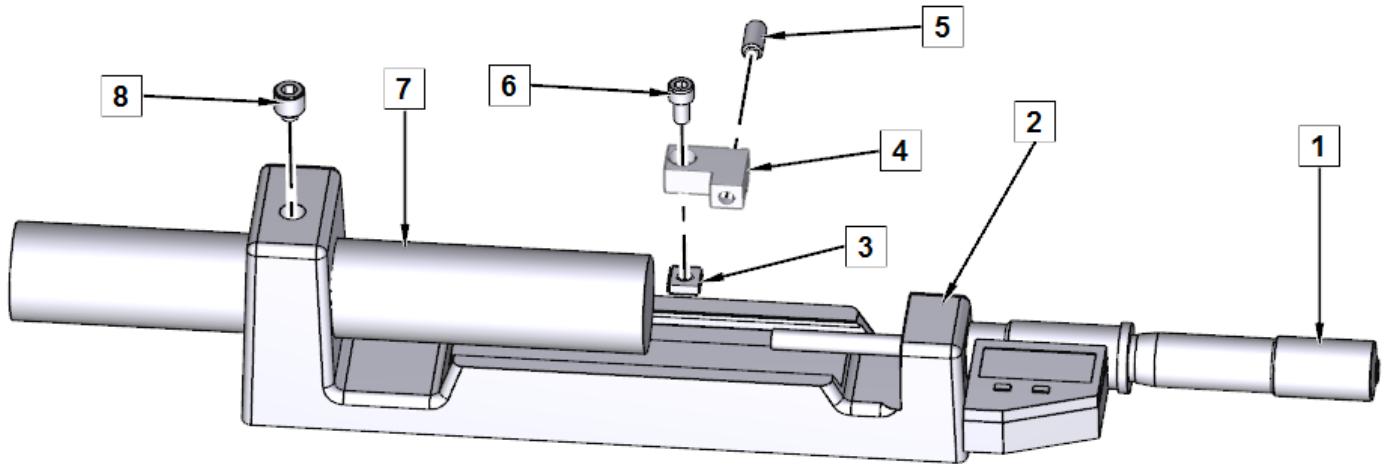
10116A Cutterhead Parts



10116A
BLIND HOLE
SPINDLE/CUTTERHEAD
ASSEMBLY
F109 HSK 80A

10116A BLIND HOLE SPINDLE/CUTTERHEAD ASSEMBLY - F109 HSK 80A			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	502-9-32	Bearing, Ball MRC 5203SBKFF
2	1	6772A	Nut, Bearing Line Bore Head
3	3	6116E	Bearing (set of 3)
4	1	6116F	Shoelock Nut
5	1	6305D	Throwback Ring
6	1	6752Q	KEY, PINION 90 DEG. HEAD
7	1	6181A	KEY - MILLING CUTTERHEAD DRIVE F80
8	1	MF-5	10-24UNC x 5/8" LG. S.H.C.S.
9	1	600-20-11	Counter Weight
10	1	6256N	Cap, Cutterhead 4.50" (No Centering)
11	1	6256L	BODY, CUTTERHEAD 4.50" (NO CENTERING)
12	1	502-2-45B	BUSHING - UPPER CENTERING FINGER RETAINER
13	4	MF-82B	1/4-20UNC x 3/8" LG. SOCKET FLAT HEAD SCREW
14	1	10103B	BODY, BLIND HOLE SPINDLE/CUTTERHEAD ASSEMBLY - F109
15	1	10103G	INNER SPINDLE, BLIND HOLE SPINDLE/CUTTERHEAD - F109
16	1	10103D	ADAPTER, CUTTERHEAD, SPINDLE/CUTTERHEAD ASSEMBLY - F109
17	1	10103E	MOUNTING BOLT, CUTTERHEAD ADAPTER - BLIND HOLE SPINDLE/CUTTERHEAD - F109
18	4	MF-22	5/16-18UNC x 3/4" LG. S.H.C.S.
19	2	MF-92	1/4-20UNC x 3/4" LG. SOCKET BUTTON HEAD SCREW
20	2	MF-59	1/4-20UNC x 3/8" LG. SOCKET FLAT POINT SET SCREW
21	1	100-82-2A	Brass tipped 10-24 Socket Set Screw
22	1	6750K	Key, Location 90 Degree Head
23	4	MF-15	1/4-20UNC x 1" LG. S.H.C.S.
24	1	501-70	Tool Holder lock Screw ass'y
25	1	502-2-85B	Index Screw
26	1	100-1E	Tool Lock Spring
27	1	6263B	Clamp Shoe (Tool Holder)
28	1	MF-193	1/8" x 1/2" LG. DOWEL PIN
29	1	6172E	SPACER (SET) - PRECISION BEARING SPINDLE
30	1	502-9-68B	Flush Grease Fitting
31	1	6770K	MOUNTING HUB, H.D. OFFSET R.A.D - F109 HSK 80A
32	1	10114A	ADAPTER, DRIVE, R.A.D. - F109 - HSK 80A
33	1	502-12-4D	SOCKET SET SCREW, BRASS TIPPED 8-32 X 1//8
34	4	MF-34	S.H.C.S.3/8 - 16 UNC - 2
35	1	10114G	1/4" DIA. x 1" LONG SOCKET SHOULD BOLT

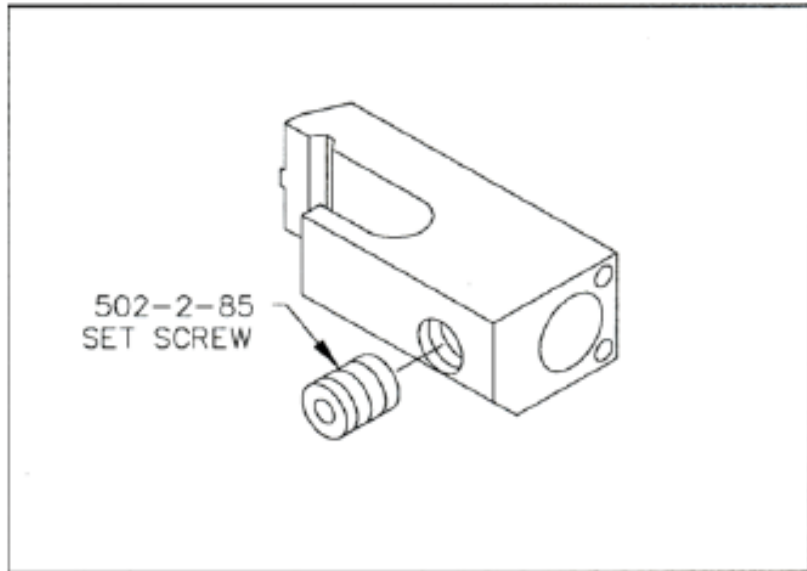
900-2-20 Micrometer Parts



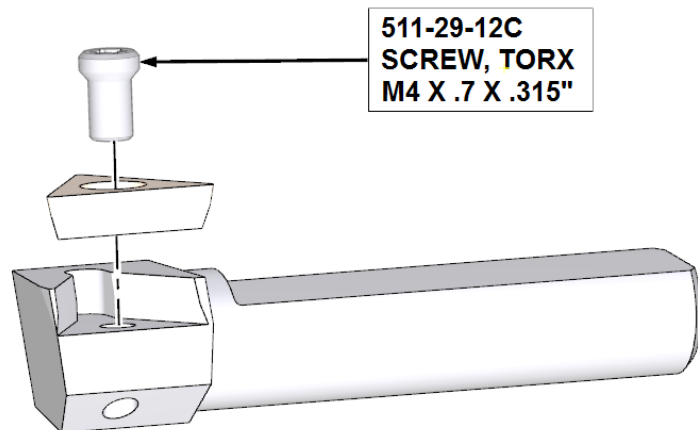
ITEM	PART #	DESCRIPTION
1	501-34-2R	HEAD, MICROMETER UNIVERSAL MIC HEAD DIGITAL READING INCH AND METRIC
2	502-30-10C	FRAME, MICROMETER
3	502-30-10J	SQUARE NUT-#10-24 MICROMETER FRAME
4	502-30-10M	CLAMP, MICROMETER
5	502-30-10K	BALL PLUNGER, 1/4-20 MICROMETER FRAME
6	MF-9A	SOCKET HEAD CAPSCREW 10-32 X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

6259 Series Toolholder Parts

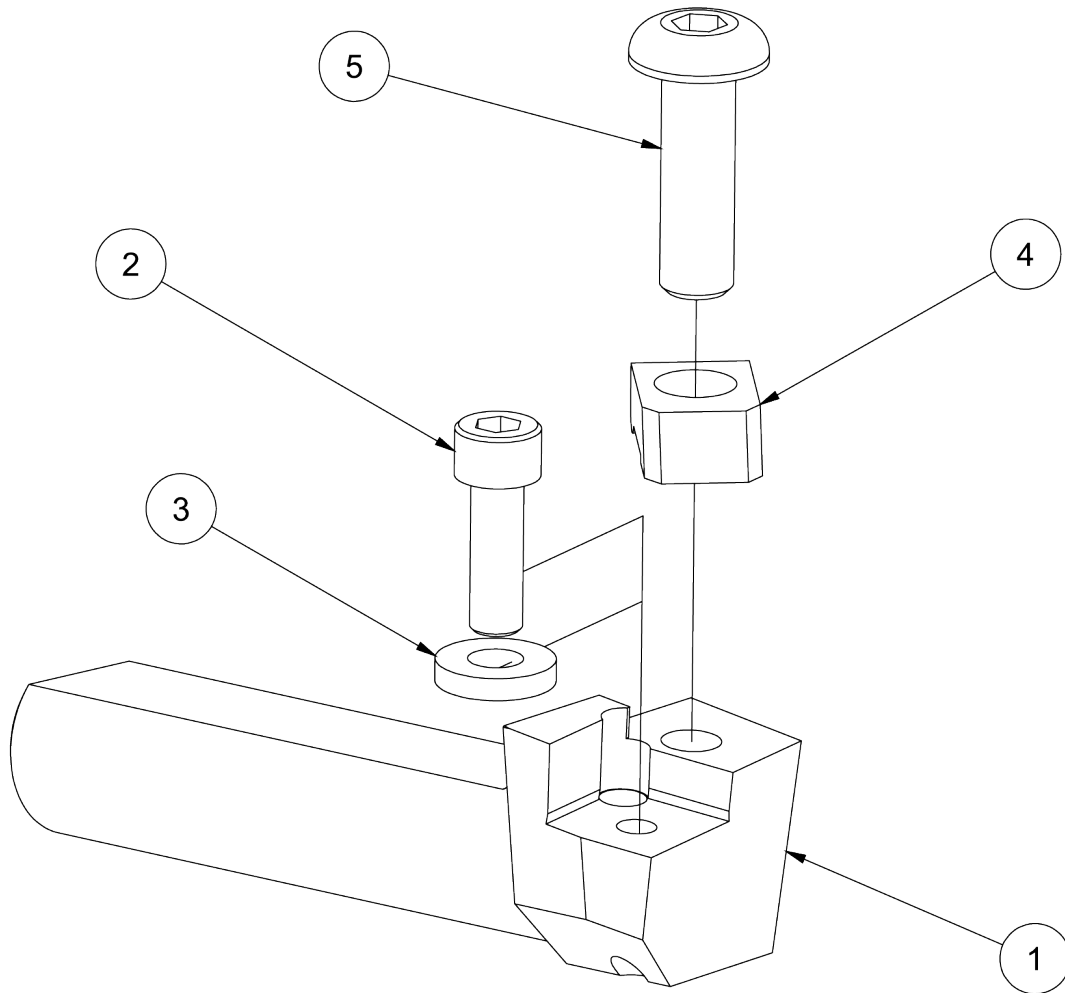
6259 Series Tool Holders			
Tool Holder	Length	Bore Range mm	Bore Range inches
6259P	3.13"	114.3mm-120.65mm	4.5"-4.75"
6259C	3.37"	120.65mm-127.0mm	4.75"-5.0"
6259D	3.62"	127.0mm-139.7mm	5.0"-5.5"
6259I	3.87"	139.7mm-152.4mm	5.5"-6.0"
6259E	4.13"	152.4mm-177.8mm	6.0"-7.0"
6259F	4.62"	177.88mm-203.2mm	7.0"-8.0"
6259G	5.13"	203.2mm-228.6mm	8.0"-9.0"



6598 Series Insert Cartridge Parts

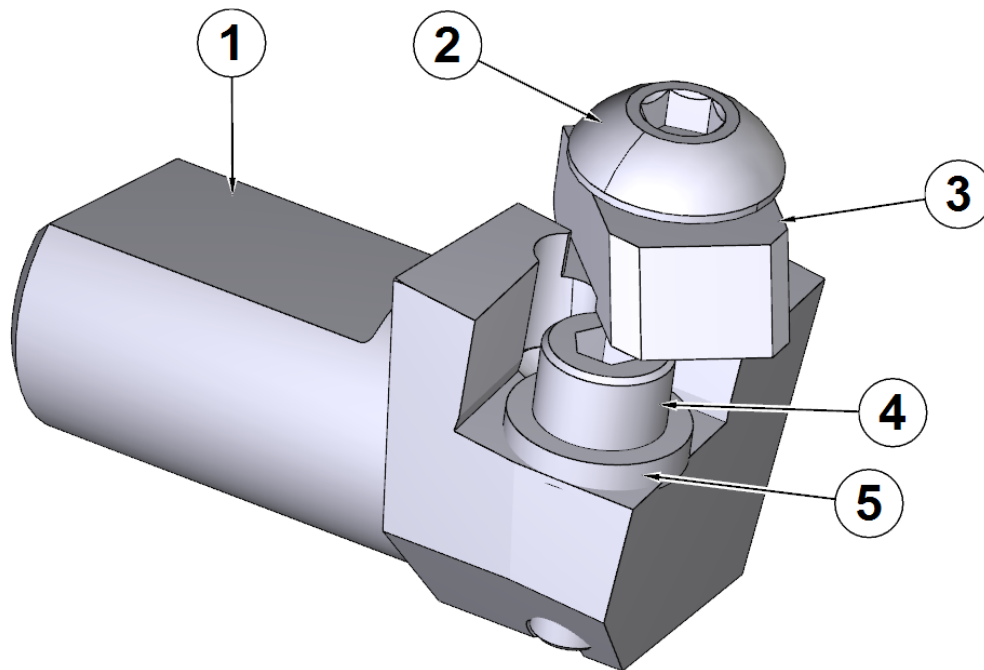


6260L Insert Cartridge Parts



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

6260M Insert Cartridge Parts

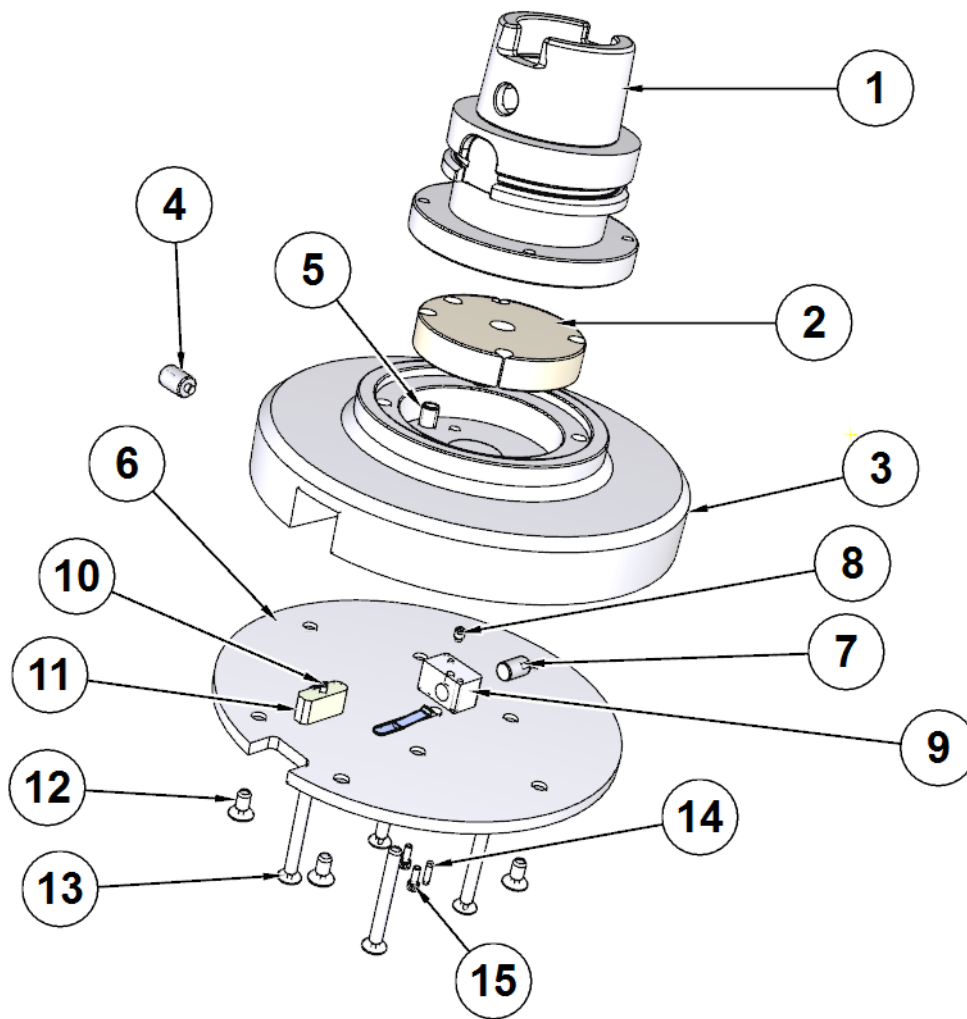


ITEM	PART #	DESCRIPTION
1	6594H	CARTRIDGE ONLY, INDEXABLE INSERT 13/16" LONG
2	MF-89A	SOCKET BUTTON HEAD SCREW 10-32 X 5/8"
3	6594K	CLAMP, TOOL SQUARE INSERT
4	511-29-12	SCREW, SOCKET HEAD CAP 6/32 X 7/16"
5	511-29-12B	WASHER, PRECISION-HOLDING SCREW

10107B Blind Hole Cutterhead Package Components

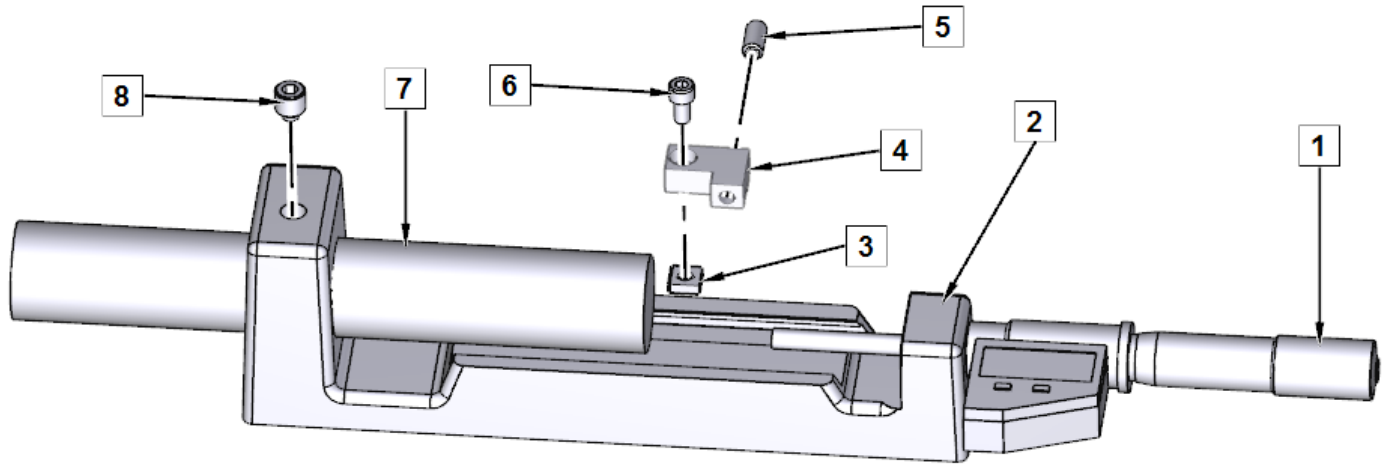


10107 Cutterhead Parts



ITEM	PART #	DESCRIPTION
1	10107A	ADAPTER, 4.5" CUTTERHEAD W/HSK80A SHANK
2	600-20-11	COUNTERWEIGHT, CUTTERHEAD
3	6466A	CUTTERHEAD-7 3/4"
4	501-70F	SCREW, TOOL HOLDER LOCK
5	502-2-45B	BUSHING, UPPER RETAINER
6	6469A	CAP, 7 3/4" CUTTERHEAD
7	6468A	SCREW, ADJUSTING 3/8-24 X 5/8"
8	100-82-2	SCREW, SET-BRASS GIB - 3/16"
9	6468	PLUG
10	MF-193	DOWEL PIN 1/8 X 1/2"
11	6263B	SHOE, CLAMP TOOLHOLDER
12	MF-82	SOCKET FLAT HEAD SCREW 1/4-20 X 1/2"
13	MF-83A	SOCKET FLAT HEAD SCREW 1/4-20 X 2 1/4"
14	ME-193	DOWEL PIN 1/8 X 1/2"
15	MF-1B	SOCKET HEAD CAP SCREW 6-32 X 3/8"

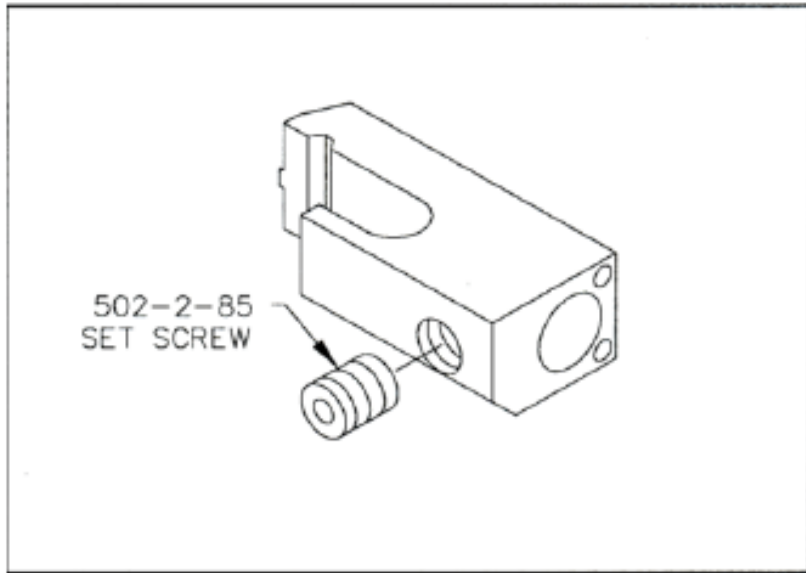
900-2-20 Micrometer Parts



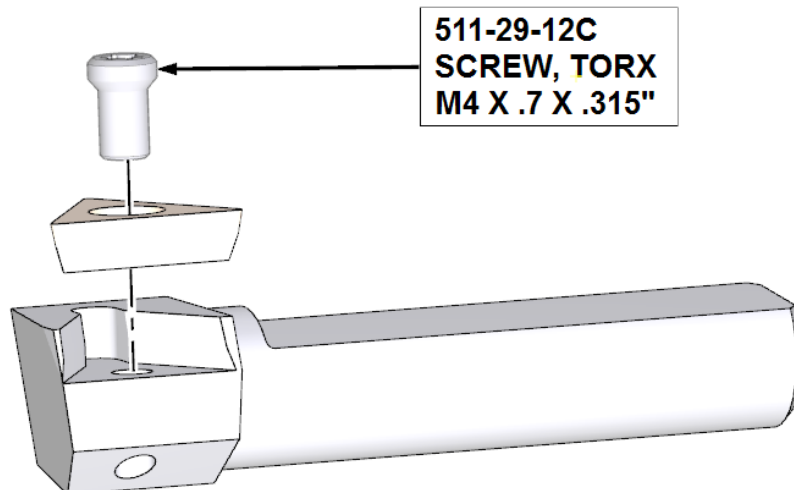
ITEM	PART #	DESCRIPTION
1	501-34-2R	HEAD, MICROMETER UNIVERSAL MIC HEAD DIGITAL READING INCH AND METRIC
2	502-30-10C	FRAME, MICROMETER
3	502-30-10J	SQUARE NUT-#10-24 MICROMETER FRAME
4	502-30-10M	CLAMP, MICROMETER
5	502-30-10K	BALL PLUNGER, 1/4-20 MICROMETER FRAME
6	MF-9A	SOCKET HEAD CAPSCREW 10-32 X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

6259 Series Toolholder Parts

6259 Series Tool Holders			
Tool Holder	Length	Bore Range mm	Bore Range inches
6259P	3.13"	114.3mm-120.65mm	4.5"-4.75"
6259C	3.37"	120.65mm-127.0mm	4.75"-5.0"
6259D	3.62"	127.0mm-139.7mm	5.0"-5.5"
6259I	3.87"	139.7mm-152.4mm	5.5"-6.0"
6259E	4.13"	152.4mm-177.8mm	6.0"-7.0"
6259F	4.62"	177.88mm-203.2mm	7.0"-8.0"
6259G	5.13"	203.2mm-228.6mm	8.0"-9.0"



6598 Series Insert Holder Parts



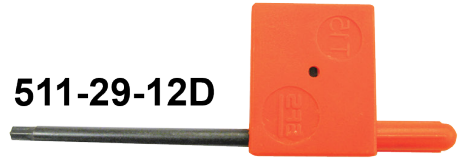
10104B Blind Hole Cutterhead Components



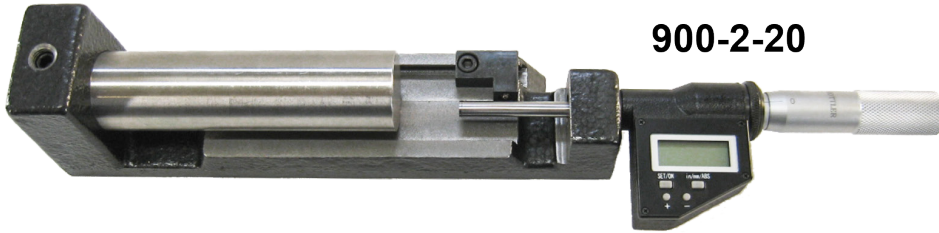
C D I E F G



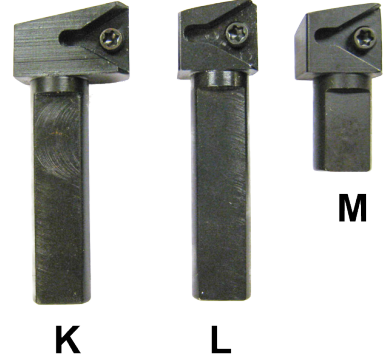
511-29-12D



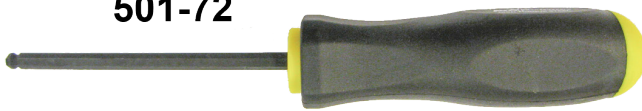
900-2-20



6598 Series



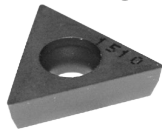
501-72



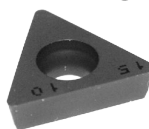
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RT321



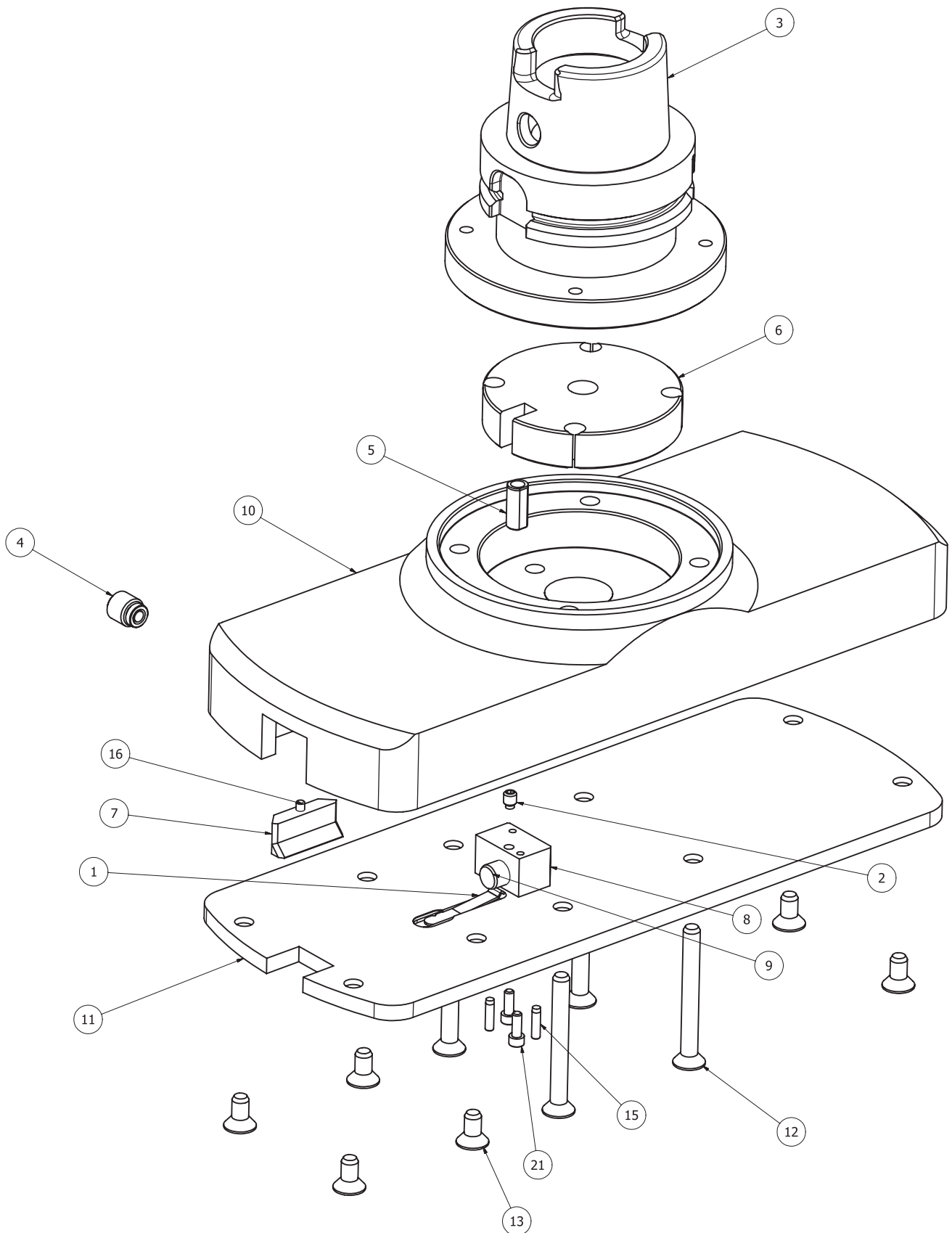
RT322



RT322F

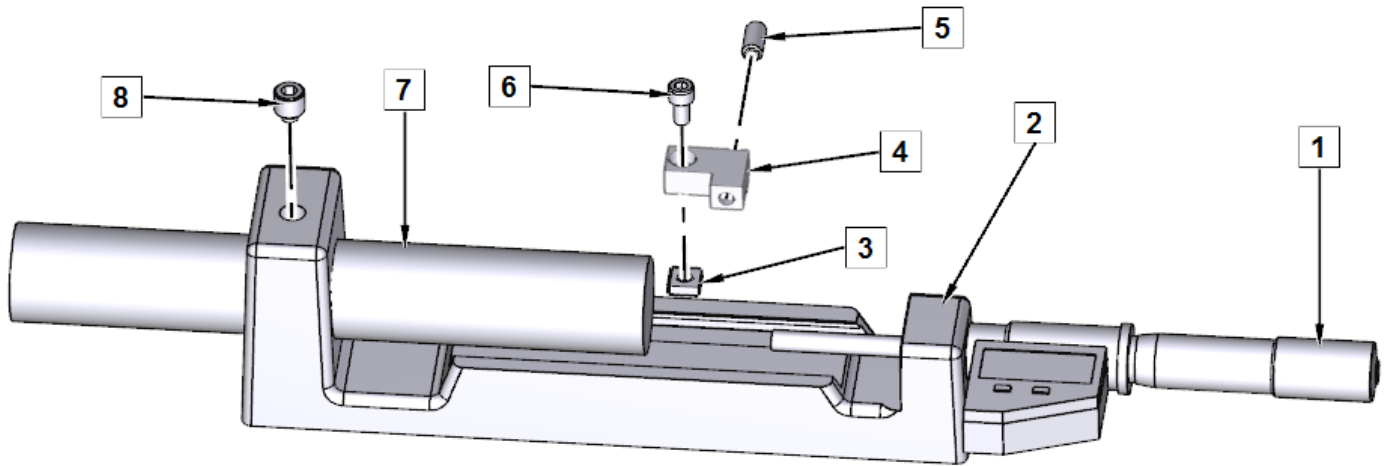


10104 Cutterhead Parts



10104 12" CUTTERHEAD ASSEMBLY (w/o tooling) - HSK			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	100-1E	Tool Lock Spring
2	1	100-82-2	Set Screw, brass tipped
3	1	10104A	HSK ADAPTER 7-3/4 DIA. CUTTERHEAD
4	1	501-70A	Tool Holder Lock Screw ass'y
5	1	502-2-45B	BUSHING - UPPER CENTERING FINGER RETAINER
6	1	600-20-11	Counter Weight
7	1	6263	Tool Holder Clamp Shoe
8	1	6468	PLUG, CUTTERHEAD 7-3/4" CUTTERHEAD
9	1	6468A	Adjusting Screw
10	1	6588B	BODY, 12" CUTTERHEAD
11	1	6588C	CAP, 12" CUTTERHEAD
12	4	MF-83A	Hexagon Socket Flat Countersunk Head Cap Screw
13	6	MF-82	Hexagon Socket Flat Countersunk Head Cap Screw
15	2	MF-193	Pin - Hardened Ground Production Dowel
16	1	MF-193C	Pin - Hardened Ground Production Dowel
21	2	MF-1B	S.H.C.S. 6 - 32 UNC - 3/8

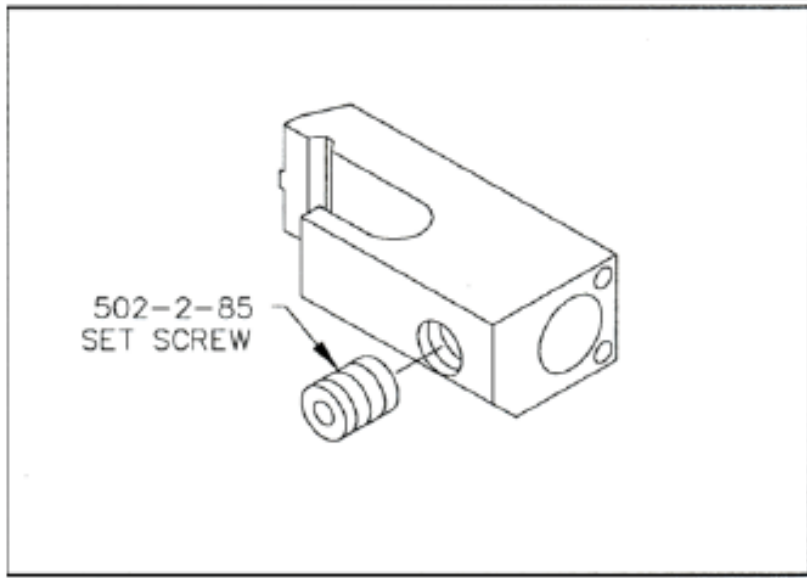
900-2-20 Micrometer Parts



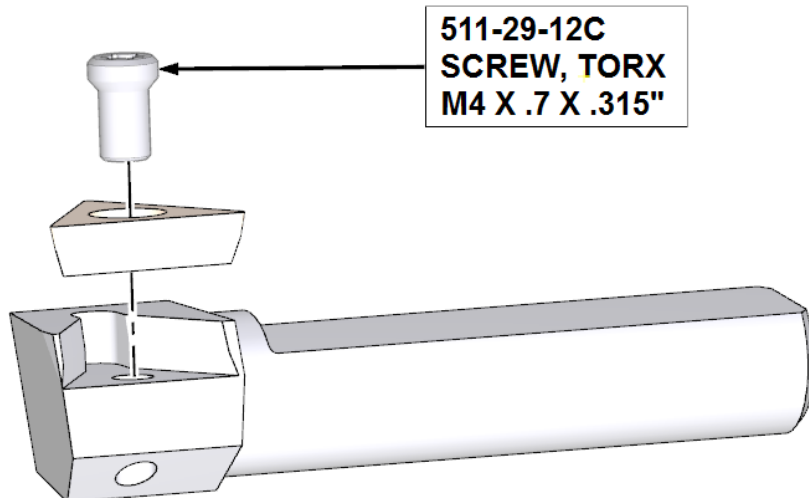
ITEM	PART #	DESCRIPTION
1	501-34-2R	HEAD, MICROMETER UNIVERSAL MIC HEAD DIGITAL READING INCH AND METRIC
2	502-30-10C	FRAME, MICROMETER
3	502-30-10J	SQUARE NUT-#10-24 MICROMETER FRAME
4	502-30-10M	CLAMP, MICROMETER
5	502-30-10K	BALL PLUNGER, 1/4-20 MICROMETER FRAME
6	MF-9A	SOCKET HEAD CAPSCREW 10-32 X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

6259 Series Toolholder Parts

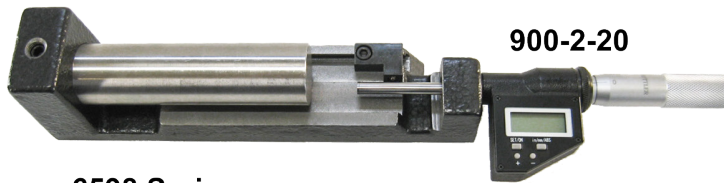
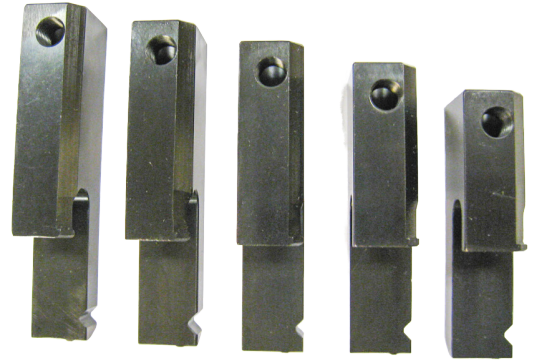
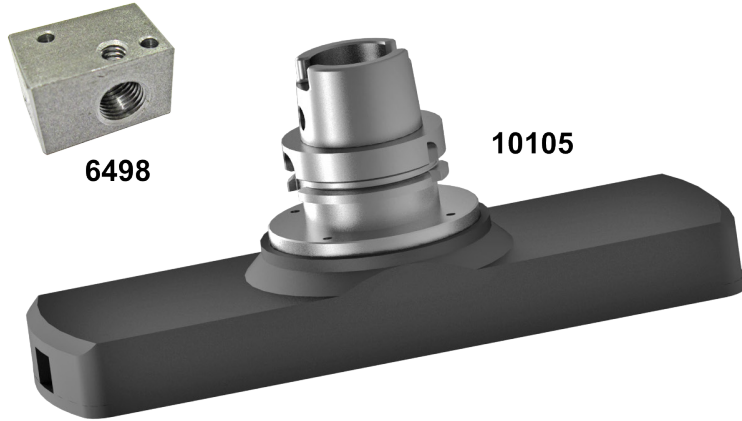
6259 Series Tool Holders			
Tool Holder	Length	Bore Range mm	Bore Range inches
6259P	3.13"	114.3mm-120.65mm	4.5"-4.75"
6259C	3.37"	120.65mm-127.0mm	4.75"-5.0"
6259D	3.62"	127.0mm-139.7mm	5.0"-5.5"
6259I	3.87"	139.7mm-152.4mm	5.5"-6.0"
6259E	4.13"	152.4mm-177.8mm	6.0"-7.0"
6259F	4.62"	177.88mm-203.2mm	7.0"-8.0"
6259G	5.13"	203.2mm-228.6mm	8.0"-9.0"



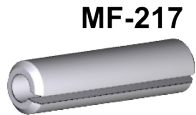
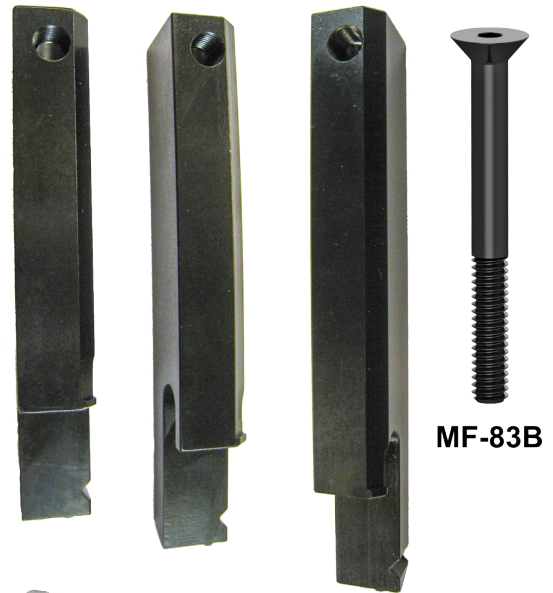
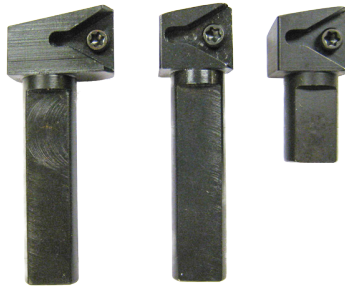
6598 Series Insert Holder Parts



10105B Blind Hole Cutterhead Components

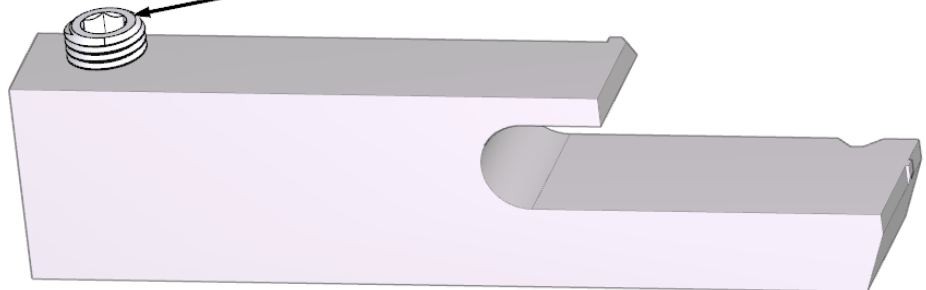


6598 Series

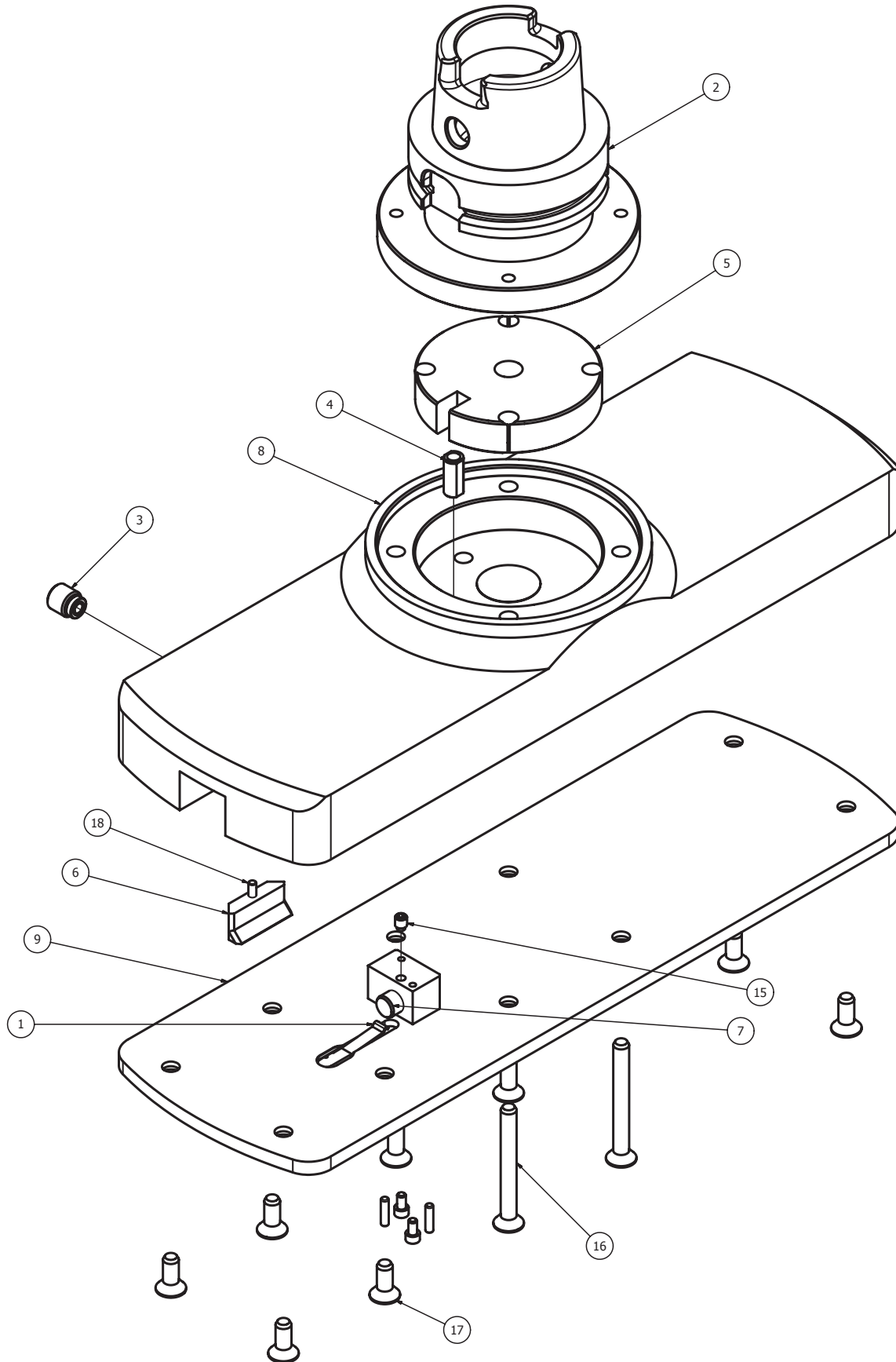


502-2-85 SCREW, SET-TOOLHOLDER INDEX

6259 Series Toolholder Parts

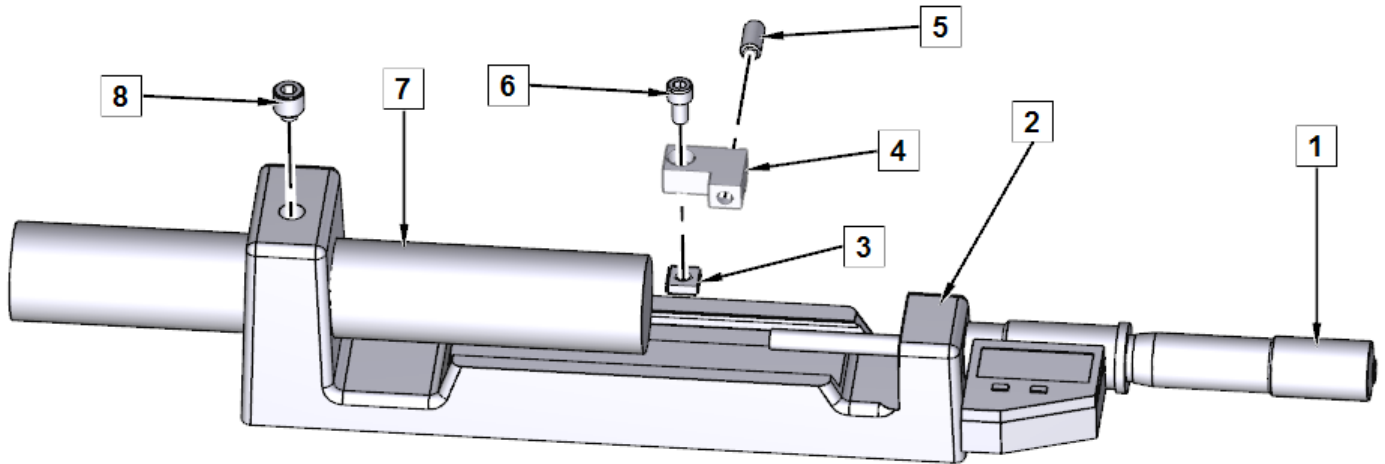


10105 Cutterhead Parts



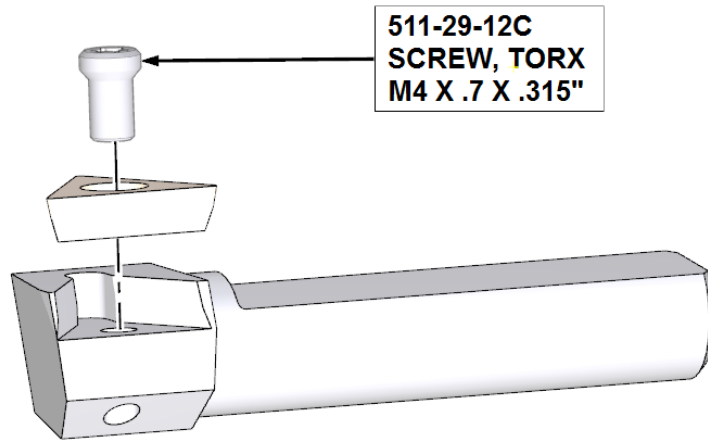
10105 14" DIA. CUTTERHEAD (w/o tooling) - HSK			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	100-1E	Tool Lock Spring
2	1	10104A	HSK ADAPTER 7-3/4 DIA. CUTTERHEAD
3	1	501-70A	Tool Holder Lock Screw ass'y
4	1	502-2-45B	BUSHING - UPPER CENTERING FINGER RETAINER
5	1	600-20-11	Counter Weight
6	1	6263	Tool Holder Clamp Shoe
7	1	6468A	Adjusting Screw
8	1	6587A	Body 14" dia. Cutter Head
9	1	6587E	Cap Ass'y - 14" dia. cutter head
15	1	MF-57B	Hexagon Socket Set Screw - Half Dog Point
16	4	MF-83A	Hexagon Socket Flat Countersunk Head Cap Screw
17	6	MF-82A	Hexagon Socket Flat Countersunk Head Cap Screw
18	1	MF-193	Pin - Hardened Ground Production Dowel

900-2-20 Micrometer Parts

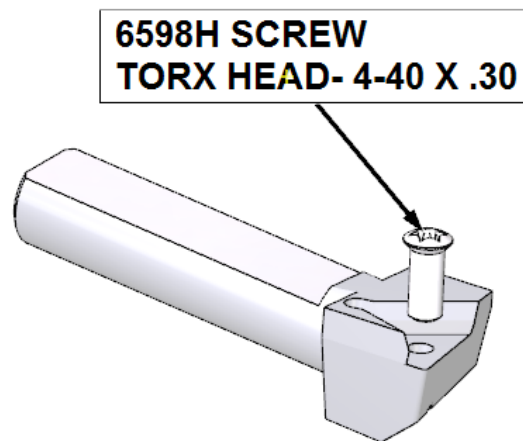


ITEM	PART #	DESCRIPTION
1	501-34-2R	HEAD, MICROMETER UNIVERSAL MIC HEAD DIGITAL READING INCH AND METRIC
2	502-30-10C	FRAME, MICROMETER
3	502-30-10J	SQUARE NUT-#10-24 MICROMETER FRAME
4	502-30-10M	CLAMP, MICROMETER
5	502-30-10K	BALL PLUNGER, 1/4-20 MICROMETER FRAME
6	MF-9A	SOCKET HEAD CAPSCREW 10-32 X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

6598 Insert Holder Parts

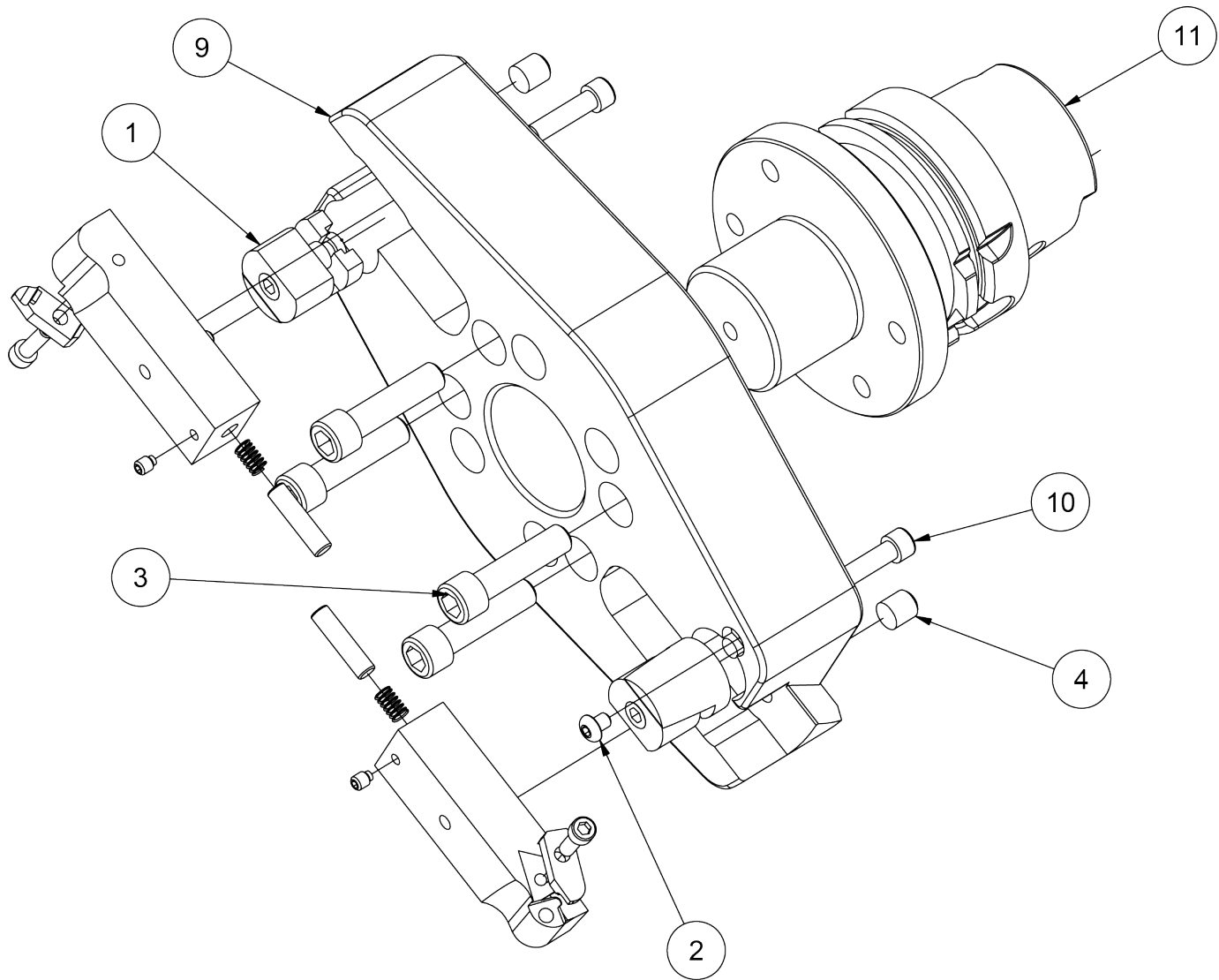


6593S Insert Holder Parts



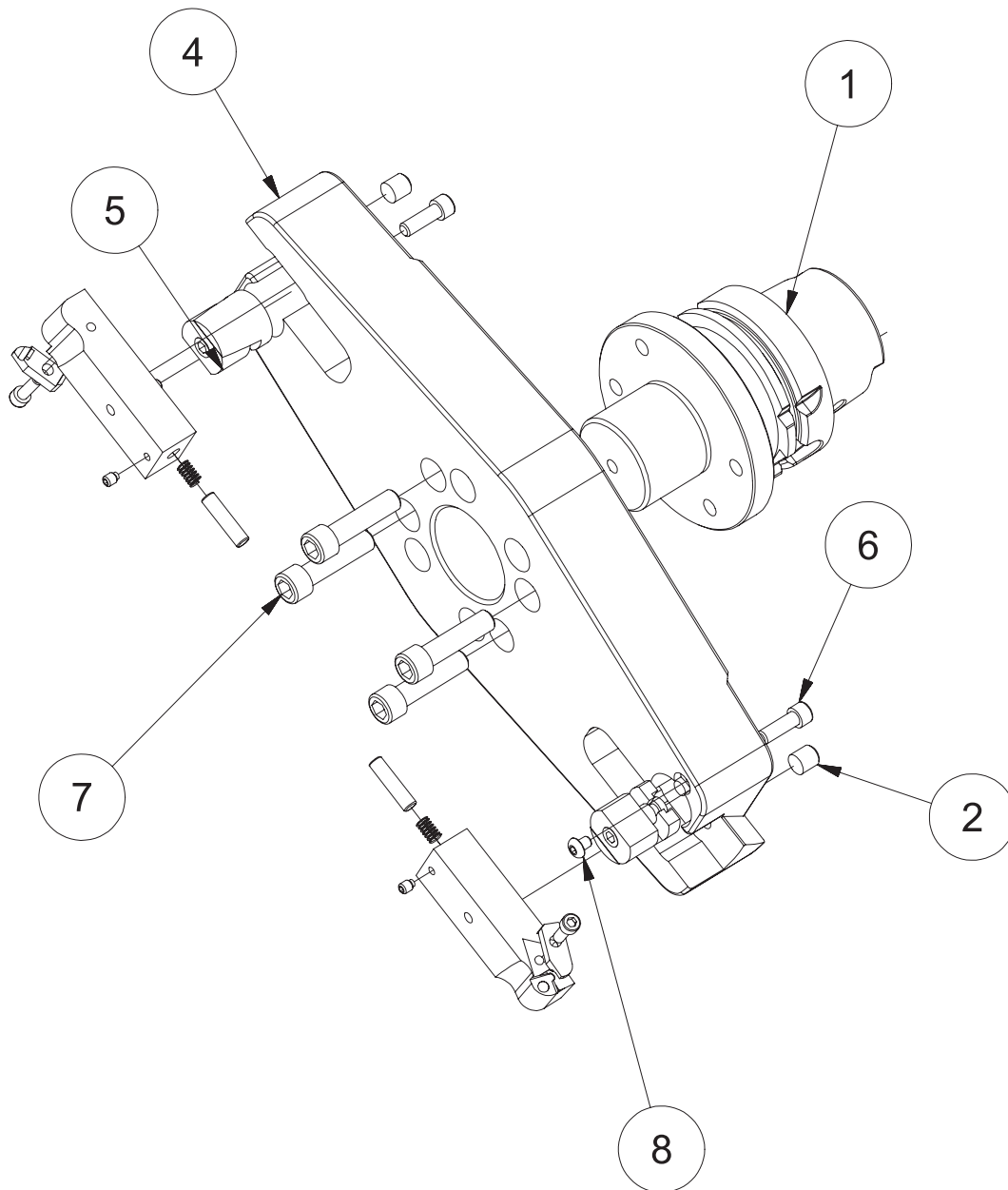
Surfacing Tooling for HSK80A Spindle Taper

10119 10" Surfacing Cutterhead Parts



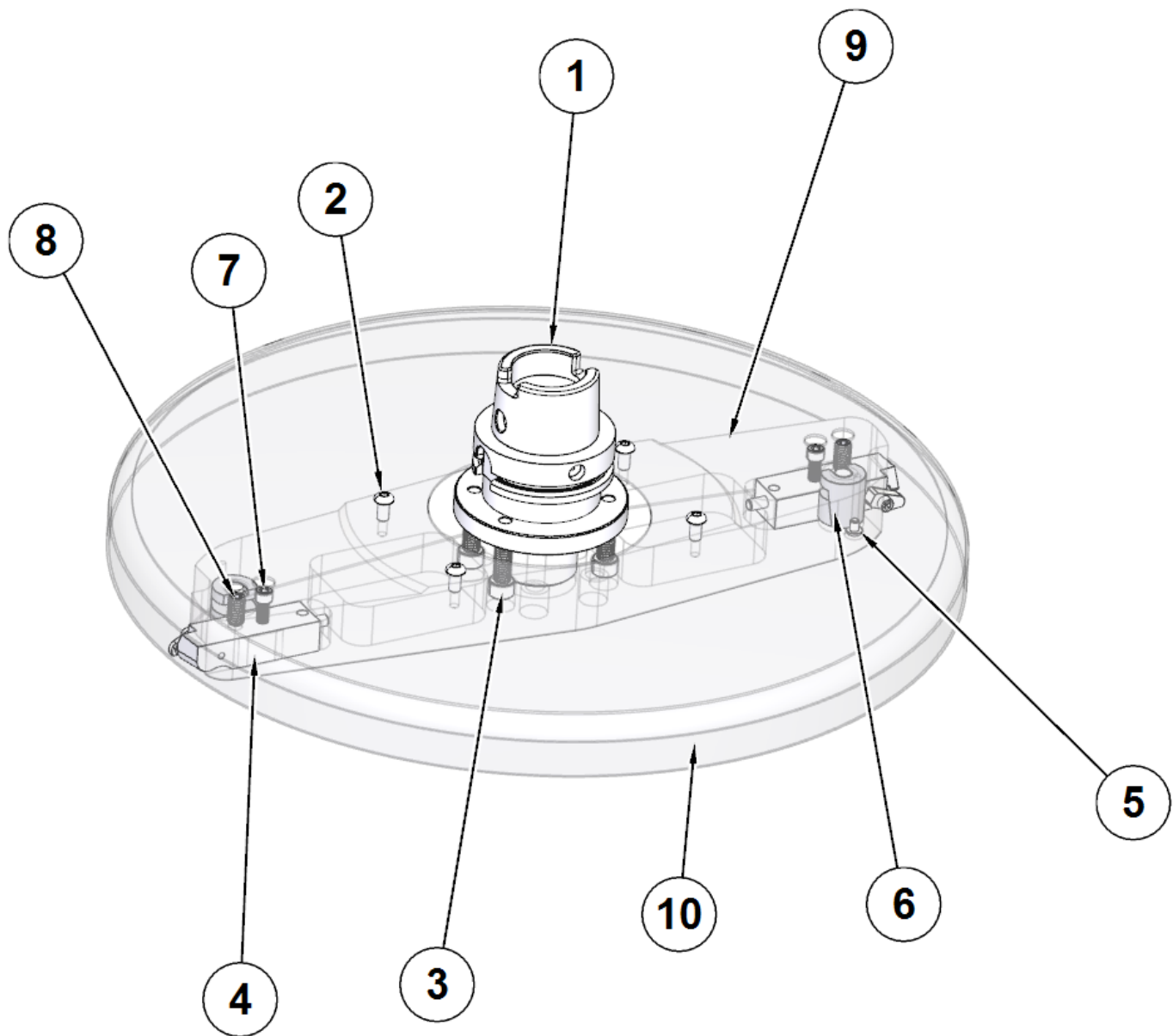
10119 10" FLYCUTTER ASSEMBLY - F109 HSK80A			
ITEM	QTY	RMC PART	PART DESCRIPTION
1	2	7206K	'L' LOCK
2	2	MF-87	Hexagon Socket Button Head Cap Screw 10-24 x 1/4"
3	4	MF-33	Hexagon Socket Head Cap Screw 3/8-16 x 1-1/2"
4	2	7202C	Hexagon Socket Set Screw - Oval Point 3/8-16 x 3/8"
6	2	7202W	TOOL HOLDER ASSEMBLY, FLY CUTTER
9	1	7206L	10" CUTTERHEAD BODY - SURFACING
10	2	MF-15	Hexagon Socket Head Cap Screw 1/4-20 x 1"
11	1	10106A	ADAPTER, MILLING CUTTERHEAD - HSK 80A

10106C Surfacing Cutterhead Parts



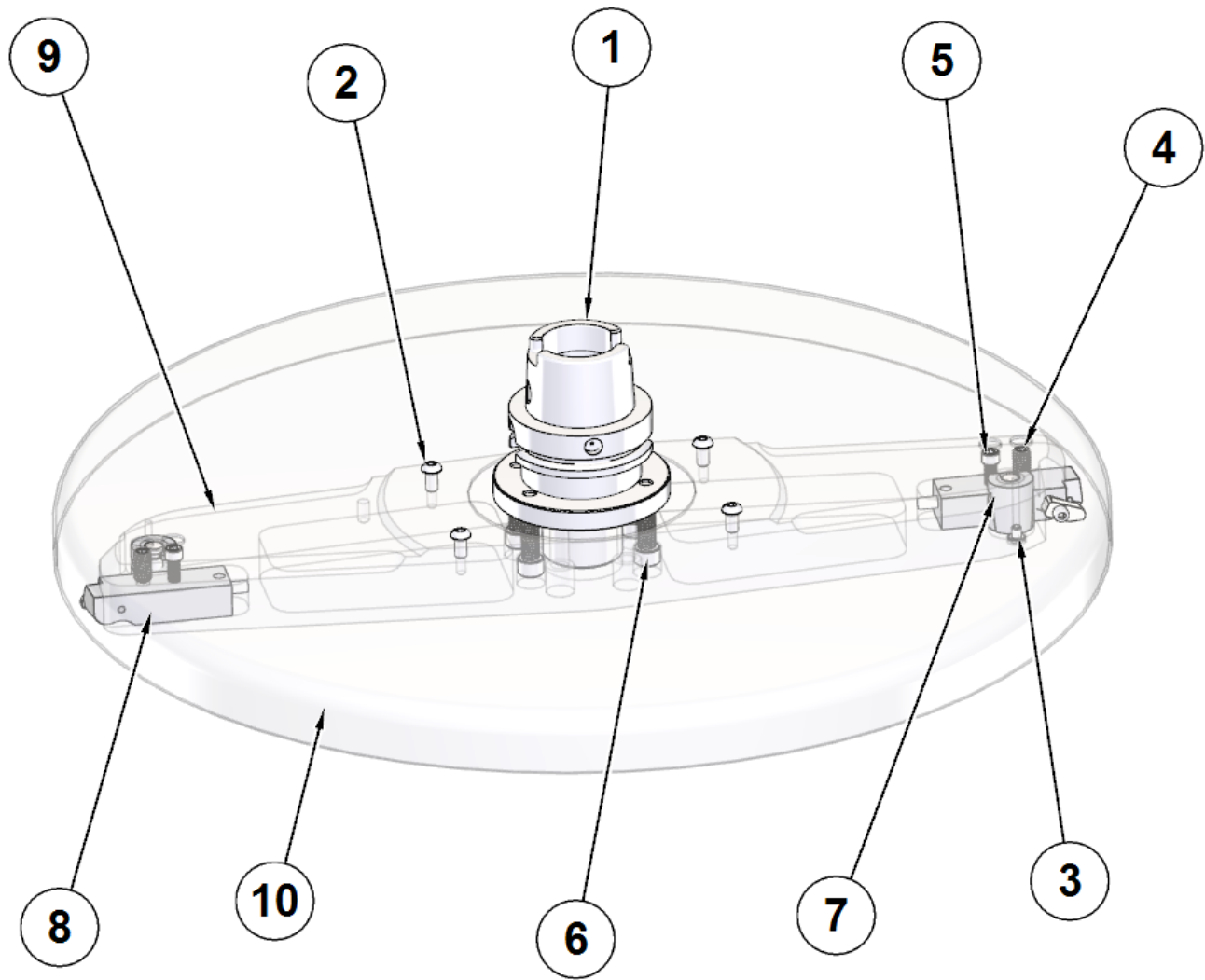
14" FLYCUTTER ASSEMBLY - HSK			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	10106A	HSK ADAPTER MILLING CUTTERHEAD
2	2	7202C	Hexagon Socket Set Screw - Oval Point
3	2	7202W	TOOL HOLDER ASSEMBLY, FLY CUTTER
4	1	7206G	MILLING CUTTERHEAD, 14" DIA. WITH 3/4 x 1 TOOL HOLDER
5	2	7206K	L' LOCK
6	2	Mf-14	Hexagon Socket Head Cap Screw 1/4-20 X 3/4"
7	4	Mf-33	Socket Head Cap screw 3/8 - 16 UNC - 1 1/2
8	2	Mf-87	Socket Button Head Cap Screw 10 - 24 x 1/4

10115 18" Surfacing Cutterhead Parts



ITEM	PART #	DESCRIPTION
1	10106A	ADAPTER, MILLING CUTTER HEAD W/HSK80A SHANK
2	MF-90	SOCKET BUTTON HEAD SCREW 1/4-20 X 1/2"
3	MF-33	SOCKET HEAD CAP SCREW 3/8-16 X 1 1/2"
4	7202W	HOLDER ASSY, FLY CUTTER TOOL
5	MF-87	SOCKET BUTTON HEAD SCREW 10-24 X 1/4"
6	7206K	"L" LOCK-SURFACING CUTTERHEAD
7	MF-15	SOCKET HEAD CAP SCREW 1/4-20 X 1"
8	7202C	SCREW, ADJUSTING SURFACING CUTTERHEAD 3/8-16NC X 3/8" OVAL POINT SET SCREW
9	6294S	CUTTERHEAD BODY-SURFACING
10	650-2-8G	SHROUD, 18" SURFACING CUTTERHEAD

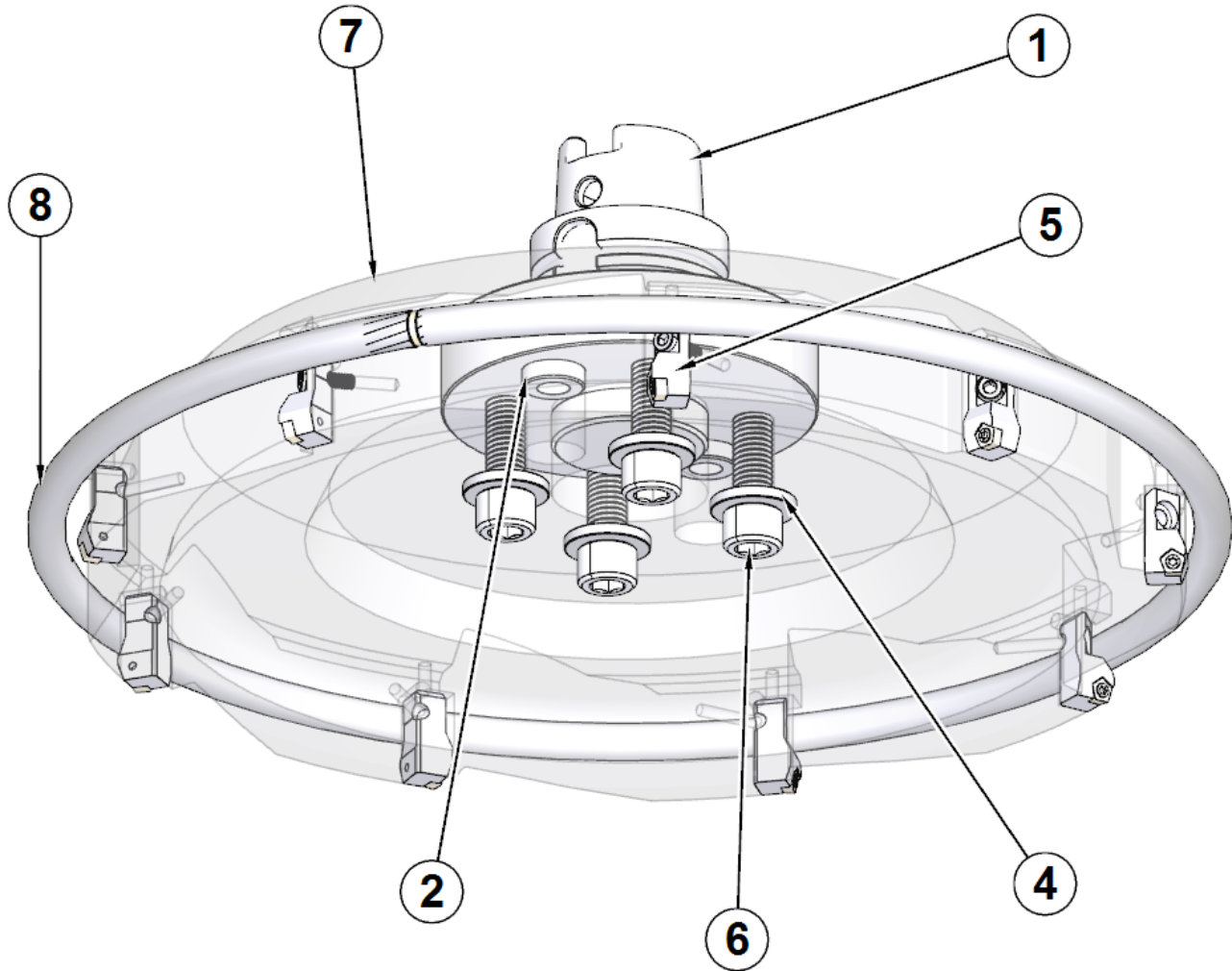
10106B Surfacing Cutterhead Parts



ITEM	PART #	DESCRIPTION
1	10106A	ADAPTER, MILLING CUTTER HEAD W/HSK80A SHANK
2	MF-90	SOCKET BUTTON HEAD SCREW 1/4-20 X 1/2"
3	MF-87	SOCKET BUTTON HEAD SCREW 10-24 X 1/4"
4	7202C	SCREW, ADJUSTING SURFACING CUTTERHEAD 3/8-16NC X 3/8" OVAL POINT SET SCREW
5	MF-14	SOCKET HEAD CAP SCREW 1/4-20 X 3/4"
6	MF-33	SOCKET HEAD CAP SCREW 3/8-16 X 1 1/2"
7	7206K	"L" LOCK-SURFACING CUTTERHEAD
8	7202P	HOLDER, FLY CUTTER TOOL
9	6294X	CUTTERHEAD BODY-SURFACING
10	650-2-8H	SHROUD, 22" SURFACING CUTTERHEAD

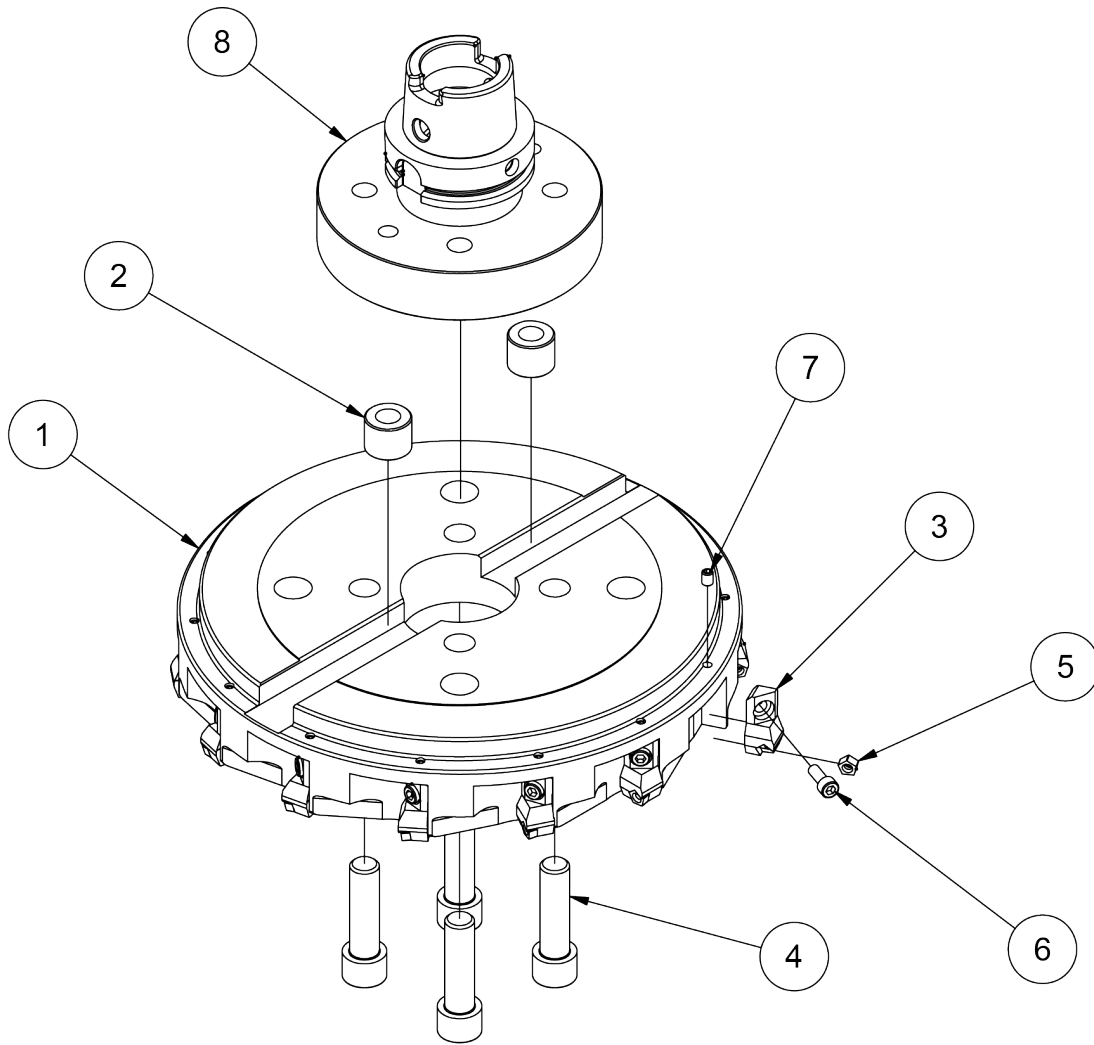
Special Surfacing Tooling for Milling Metal Sprayed Head Gasket Decks

10109B Special Multi Tooth Milling Head Parts



ITEM	PART #	DESCRIPTION
1	10109A	ADAPTER, LARGE SHELL MILL - HSK80A
2	6514U	DRIVE PIN-18" MILLING HEAD
4	502-1-16	WASHER, HARDENED
5	6864D	CARTRIDGE COMPLETE WITH 6864F INSERT SCREW
6	MF-46E	SOCKET HEAD CAP SCREW 5/8-11 X 2 1/4"
7	6864A	SPECIAL 18" MULTI TOOTH MILLING HEAD
8	6864H	DAMPENER ASSEMBLY

10120 Special Multi Tooth Milling Head Parts



10120 SPECIAL 12" MULTITOOTH MILLING HEAD - F109 HSK80A			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	6865A	12" FACE MILL BODY
2	2	6514U	DRIVE KEY - LARGE SHELL MILL ADAPTER F8
3	14	6864D	CARTRIDGE, 18" MULTITOOTH FACEMILL
4	4	MF-46E	5/8-11UNC x 2-1/4" LG. S.H.C.S.
5	14	6864E	INSERT, 18" MILLING HEAD ASSEMBLY
6	14	SOCKET HEAD CAPSCREW	M6x1 x 16mm LG. S.H.C.S. INCLUDED WITH 6864D CARTRIDGE
7	14	SOCKET SET SCREW	M6x1 x 10mm LG. FLAT POINT SOCKET SET SCREW INCLUDED WITH 6865A MILL BODY
8	1	10109A	HSK ADAPTER LARGE SHELL MILL

6301J CBN Insert

1/16 Radius, for Surfacing Large Blocks (15% Discount on orders of 10 or more)



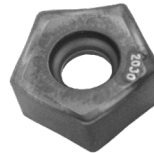
6303V CBN Insert

Octagonal (16-Cutting Corners) for surfacing large diesel blocks (15% Discount on orders of 10 or more)



6864E Replacement Insert

(10 cutting edges per insert) for 6864 and 6865 Milling Head



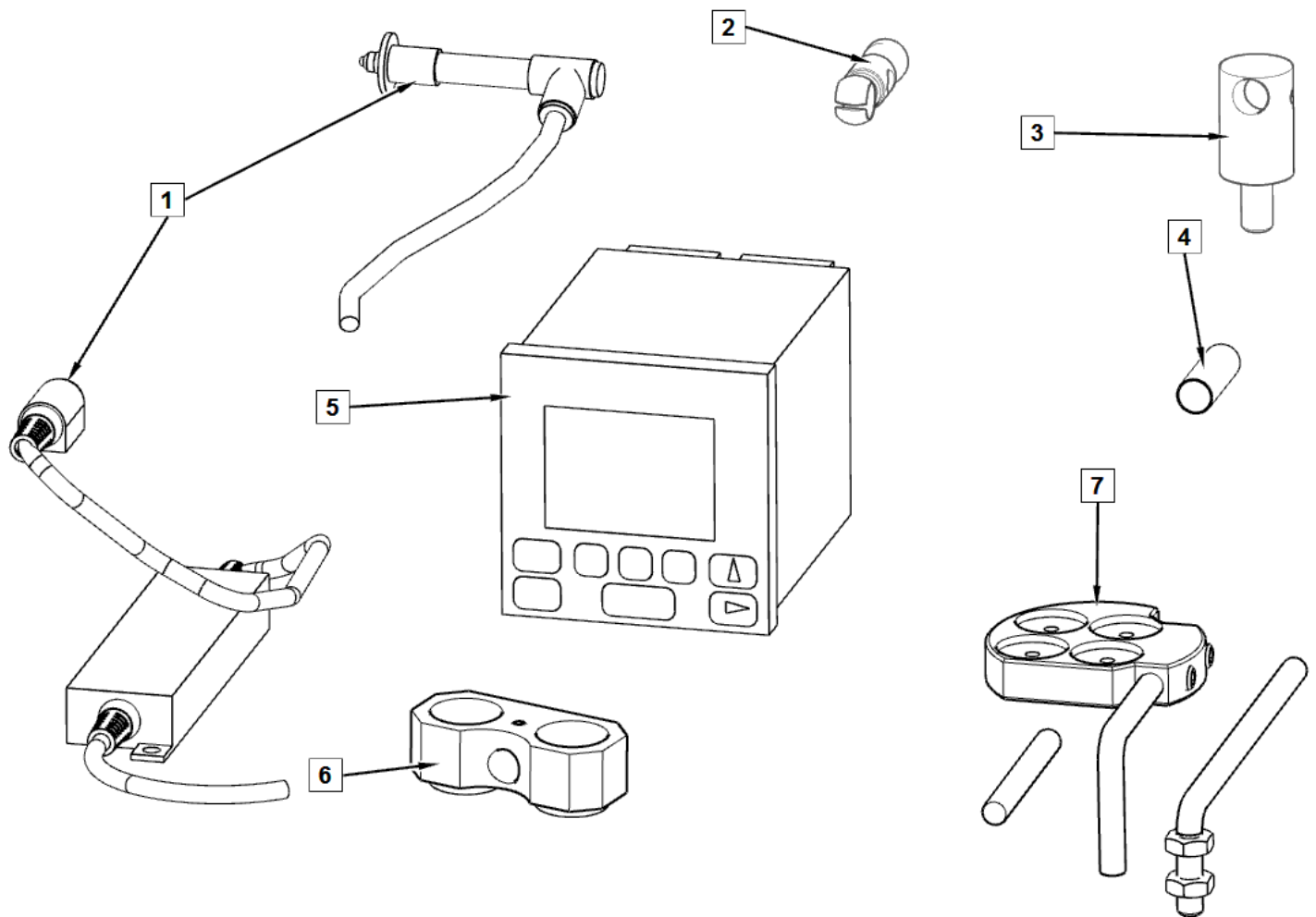
6864D Replacement Cartridge

For 6864 Milling Head



General Purpose Accessories

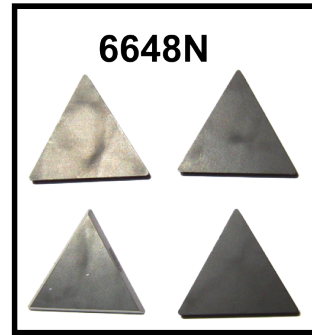
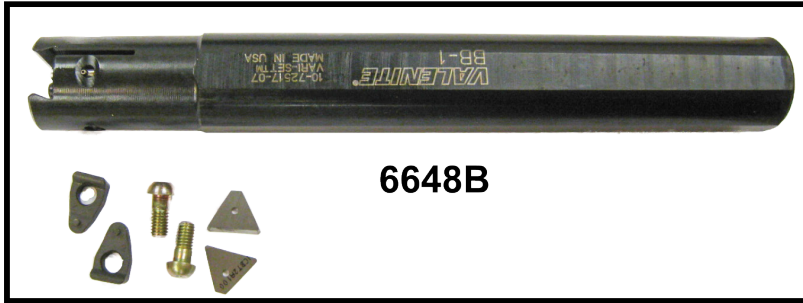
502-12-7B Digital Runout Probe and Readout Parts



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

General Purpose Tooling

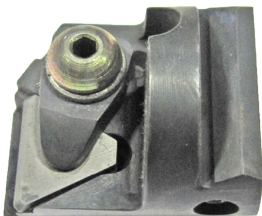
10121 Caterpillar 3400 Series Tappet Bore Repair Tooling Package Components



6648F



6648C

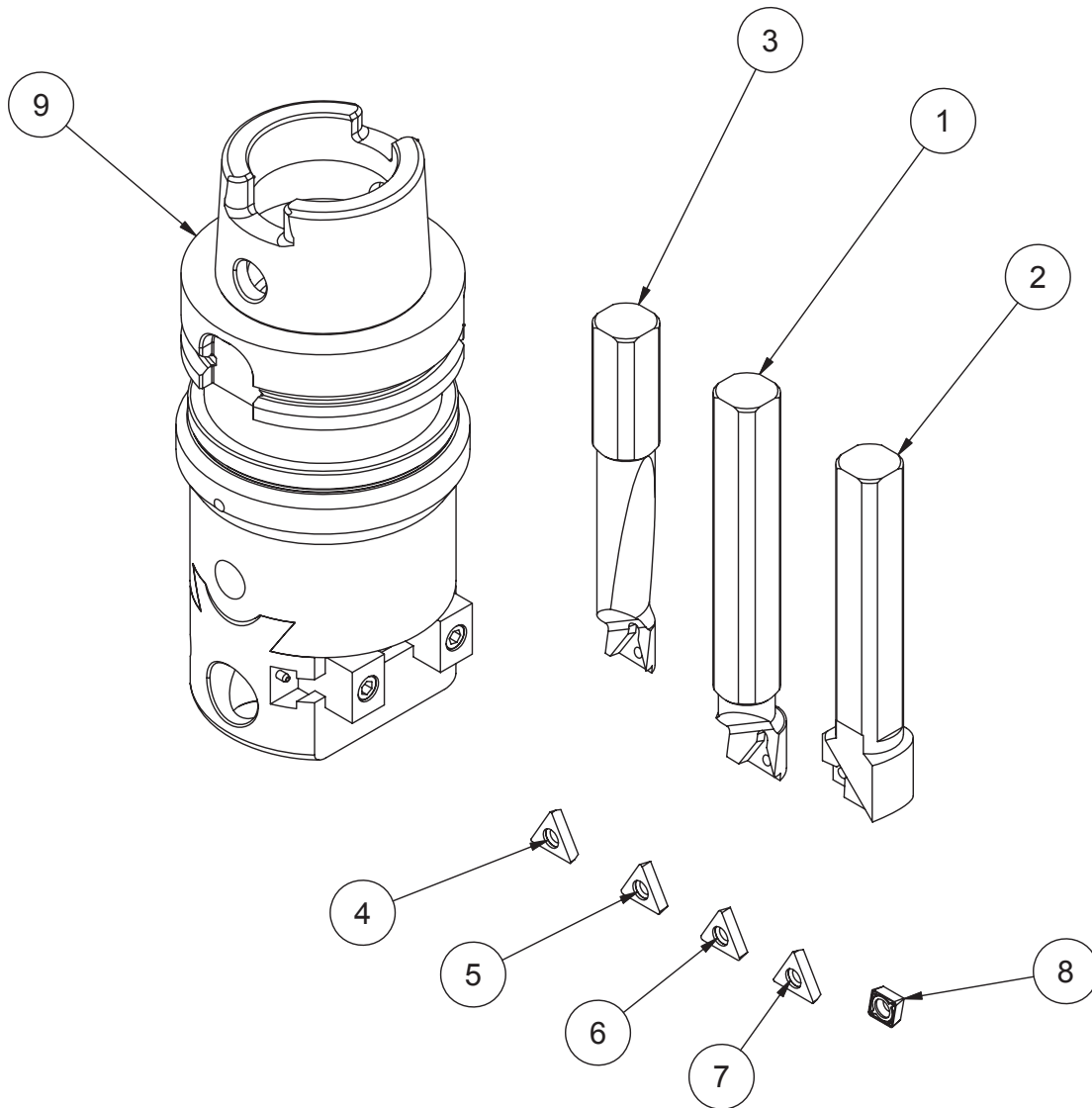


502-11-39F



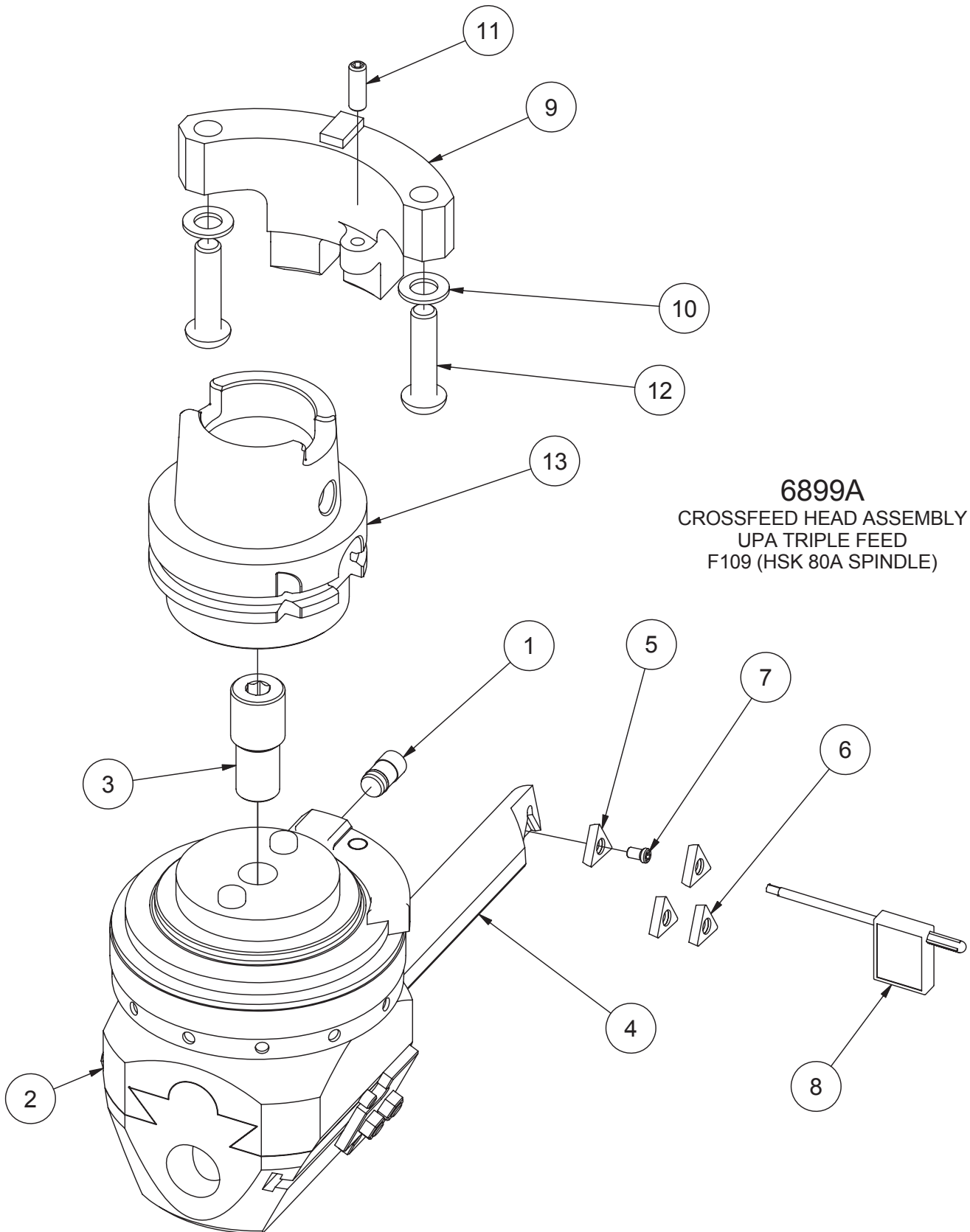
6648D

10122 Small Precision Adjustable Boring Head Parts



10122 SMALL PRECISION BORING HEAD ASSEMBLY W/ TOOLING - F109 HSK80A			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	650-2-34P	BORING BAR, 1" PRECISION BORING HEAD ASS'Y
2	1	650-2-34U	FACING BAR - PRECISION BORING HEAD ASSEMBLY
3	1	650-2-34Q	BORING BAR, 3/4" PRECISION BORING HEAD ASS'Y
4	1	RT321	INSERT, TRIANGULAR POS. RAKE 3/8" I.C.
5	1	RT322	INSERT, TRIANGULAR 3/8" I.C.
6	1	RT322F	INSERT, TRIANGLE 1/32" R. PRECISION BORING
7	1	RT321F	INSERT, TRIANGULAR POS. RAKE 3/8" I.C. 1/64" R.
8	1	650-2-34V	INSERT, DIAMOND SHAPE 1/32" R.
9	1	10122B	SMALL PRECISION BORING HEAD W/O TOOLING - F109 HSK80A

6899A Large Heavy Duty Adjustable Boring/Facing Head Parts



6899A
CROSSFEED HEAD ASSEMBLY
UPA TRIPLE FEED
F109 (HSK 80A SPINDLE)

6899A CROSSFEED HEAD ASSEMBLY, UPA TRIPLE FEED - F109 (HSK 80A SPINDLE)			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	6647H	TORQUE SHAFT REWORK, WOHLHAUPTER CROSSFEED HEAD
2	1	6757X	WOHLHAUPTER CROSS FEED HEAD
3	1	6517Z	DIFFERENTIAL SCREW
4	1	6647J	INDEXABLE BORING BAR, WOHLHAUPTER HEAD
5	2	RT321	INSERT, TRIANGULAR POS. RAKE 3/8" I.C.
6	2	RT322	INSERT, TRIANGULAR 3/8" I.C.
7	1	511-29-12C	TORX SCREW M4x.7
8	1	511-29-12D	Torx wrench T-15
9	1	6647Q	DRIVER, TORQUE SHAFT, CROSSFEED HEAD ASSEMBLY - F109HSK80A
10	2	MF-178	3/8" FLAT WASHER
11	1	MF-64A	1/4-20UNC x 3/4" LG. FLAT POINT SOCKET SET SCREW
12	2	MF-97D	3/8-16UNC x 1-1/2" LG. SOCKET BUTTON HEAD SCREW
13	1	10132	ADAPTER, UPA TRIPLE FEED HEAD - HSK 80A



10124 Collet Kit

Sold only as complete Kit

Assembly Image and Parts List are unavailable at this time.

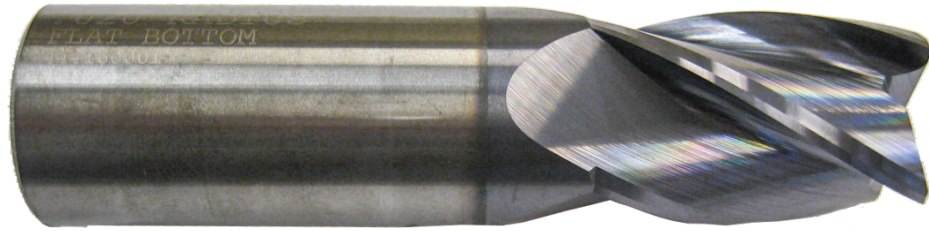
Please visit the service tab of our web page at Send a Service Request www.rottlermfg.com or contact the Rottler Factory Service at service@rottlermfg.com for assistance and your service request.

You may also call Rottler at 1-800-452-0534 or 1-253-872-7050

Please ensure you have the Machine Model and Serial Number available when contacting Rottler for Service

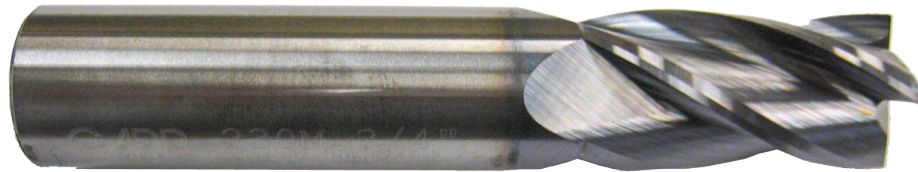
650-2-45G Solid Carbide End Mill

1" (25.4mm) Diameter x 4.00" (101.4mm) overall length. Used for machining head gasket fire deck surface for water hole corrosion repairs.



650-2-43F Four Fluted End Mill

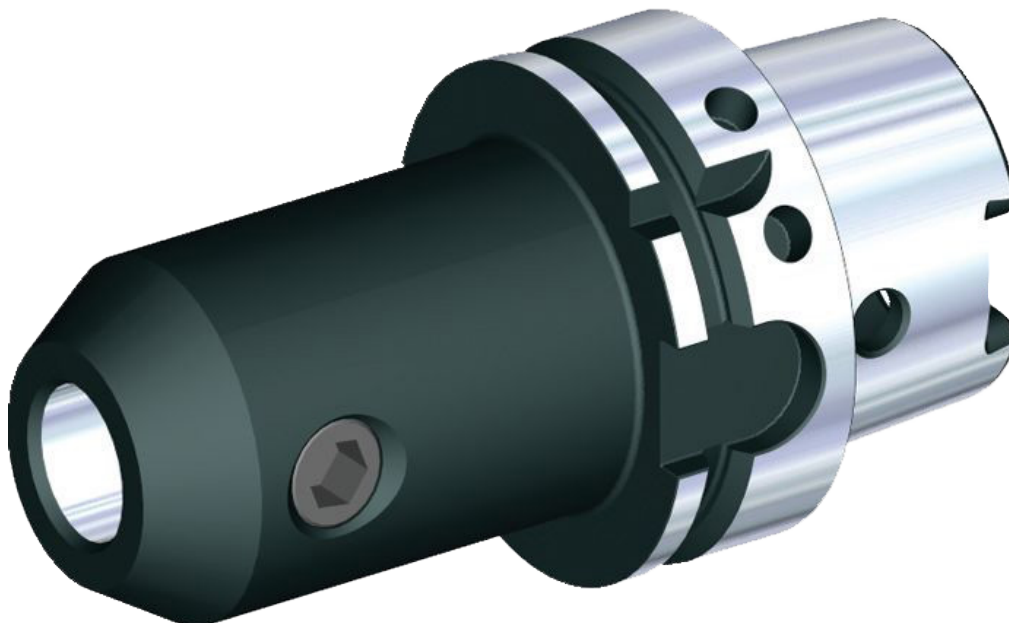
3/4" (19.05mm) X 4" (101.4mm) Overall length (.020" corner radius, flat bottom, no dish) Used for Machining Head Gasket Fire Deck Surface for Water Hold Corrosion Repairs



Spindle Adapters for Mounting Universal Tooling

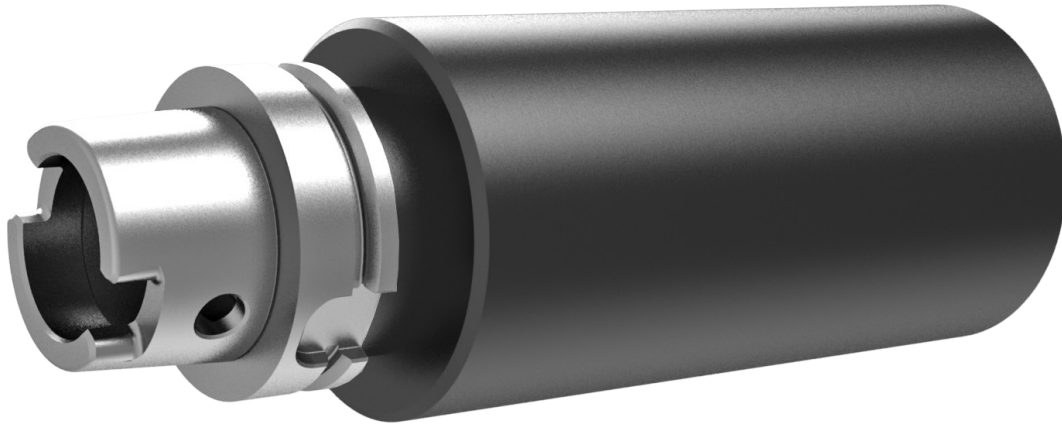
10113 1" (25.4mm) Spindle Adapter

Sold only as complete assembly.



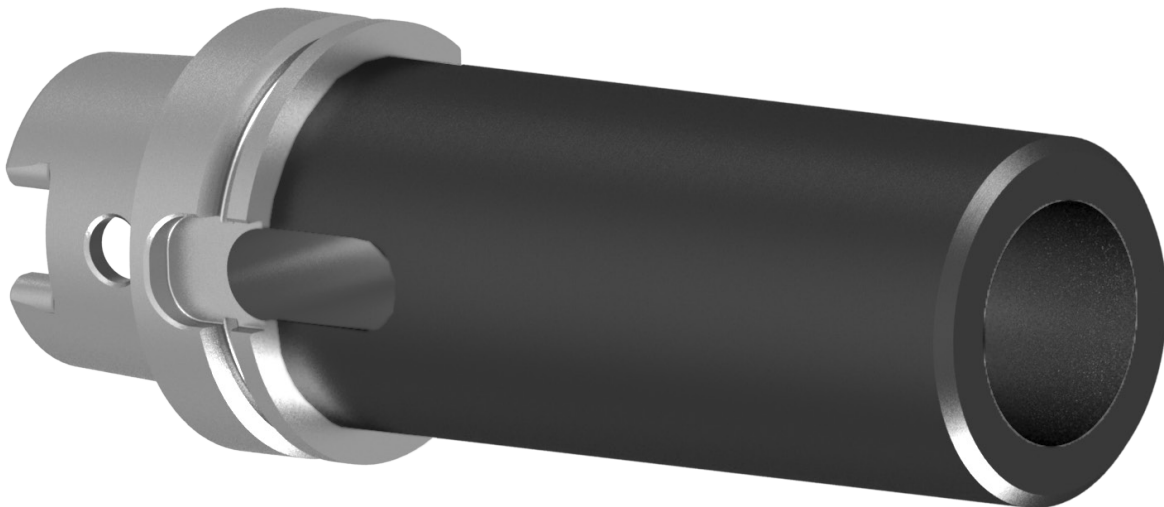
10125 Blank Adapter

Can be Machined by Customer to Suit Special Requirements
Sold only as complete assembly.

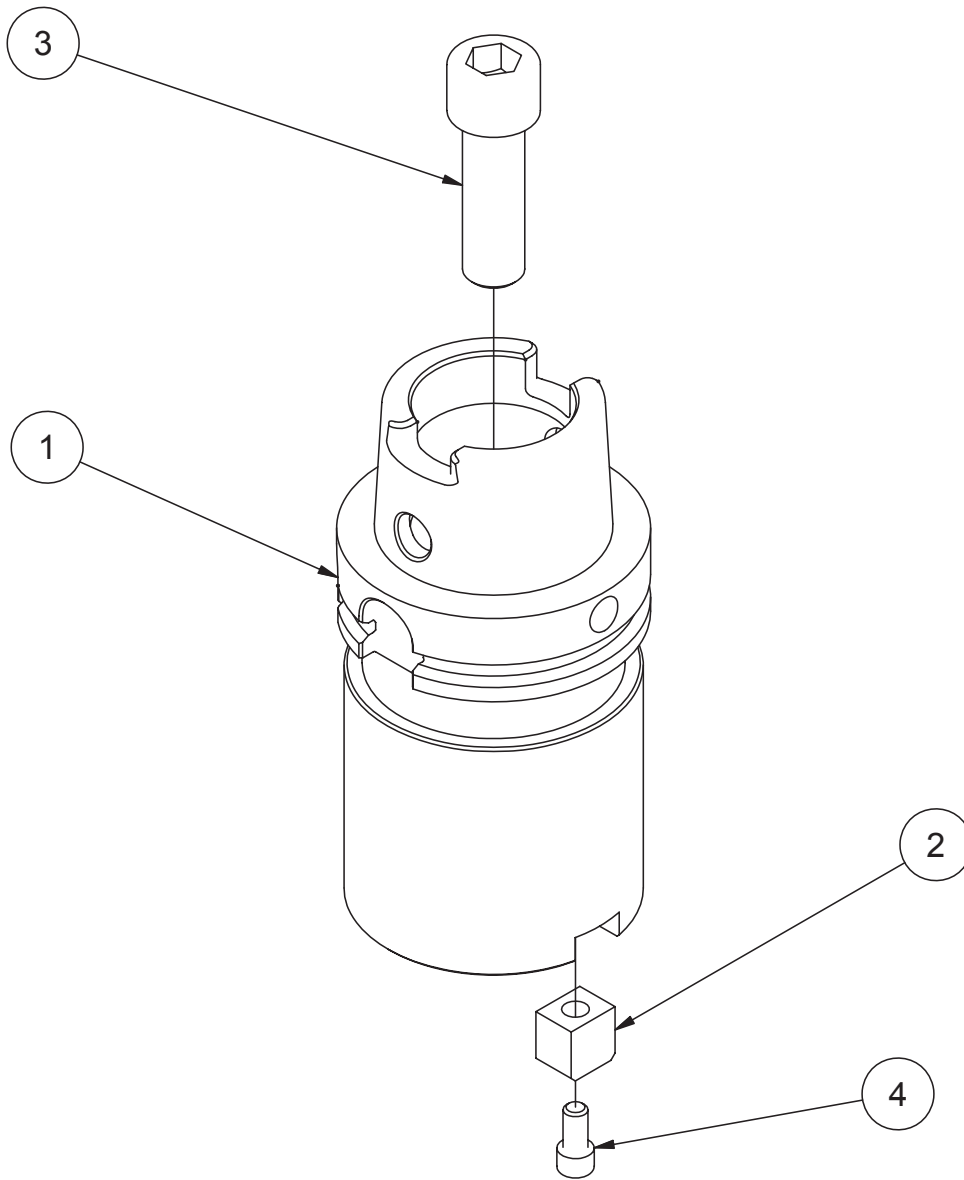


10128 #5 Morse Taper Adapter

Sold only as complete assembly.

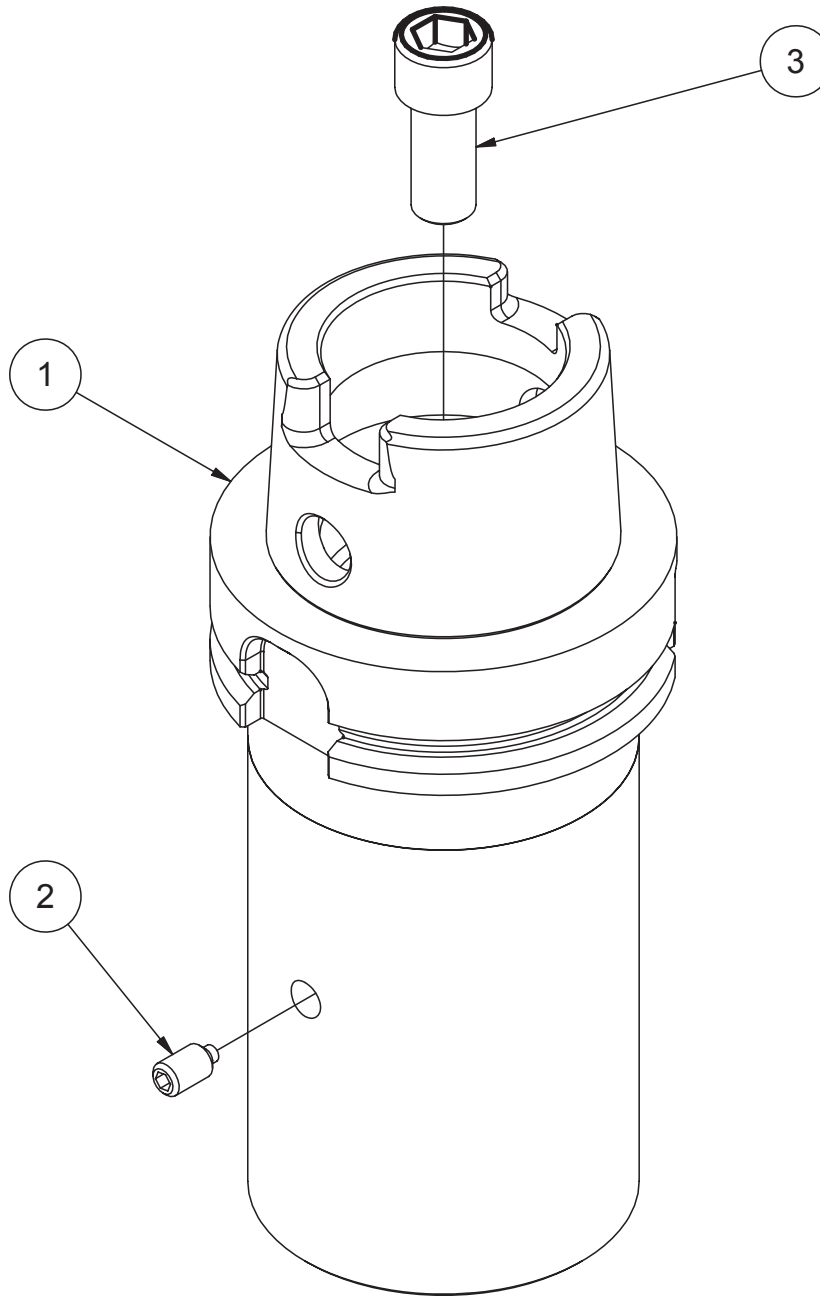


10126 #40 Taper Adapter Parts



10126 CAT40 ADAPTER ASSEMBLY - F109HSK80A			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	10126A	ADAPTER, #40 TAPER - HSK 80A
2	1	6170H	DRIVE KEY - F80/90 #40 TAPER ADAPTER
3	1	MF-46D	S.H.C.S. 5/8 - 11 UNC - 2
4	1	MF-12	S.H.C.S. 1/4 - 20 UNC - 1/2

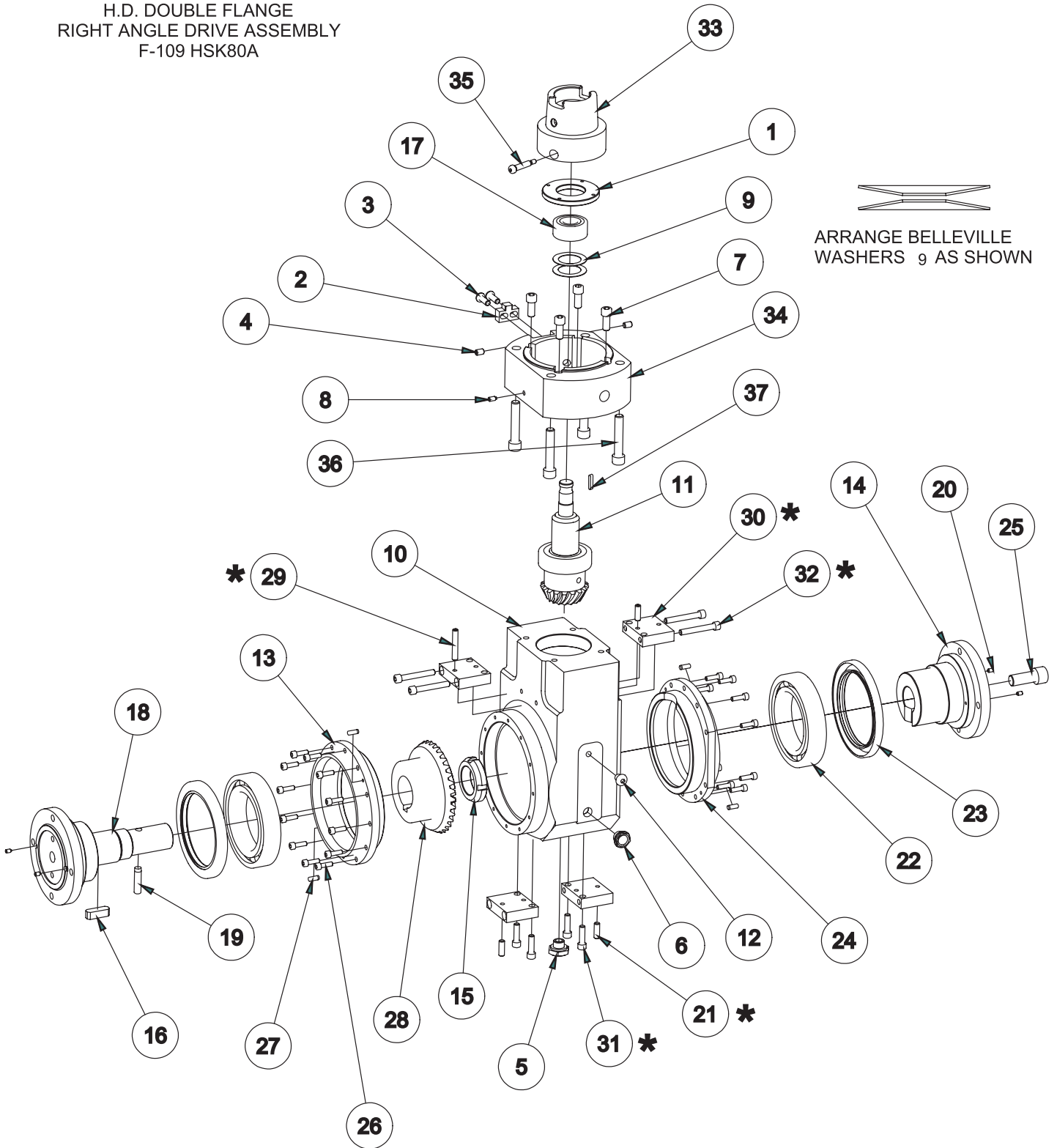
10127 R8 Taper Adaptor Parts



10127 R8 ADAPTER ASSEMBLY - F109HSK80A			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	10127A	ADAPTER, R8 TAPER - HSK 80A
2	1	514-3-12K	SET SCREW - HALF DOG 1/4-28UNF
3	1	6170P	S.H.C.S.7/16-20 UNF - 1

6898 Extra Heavy Duty 90 Degree Right Angle Drive Parts

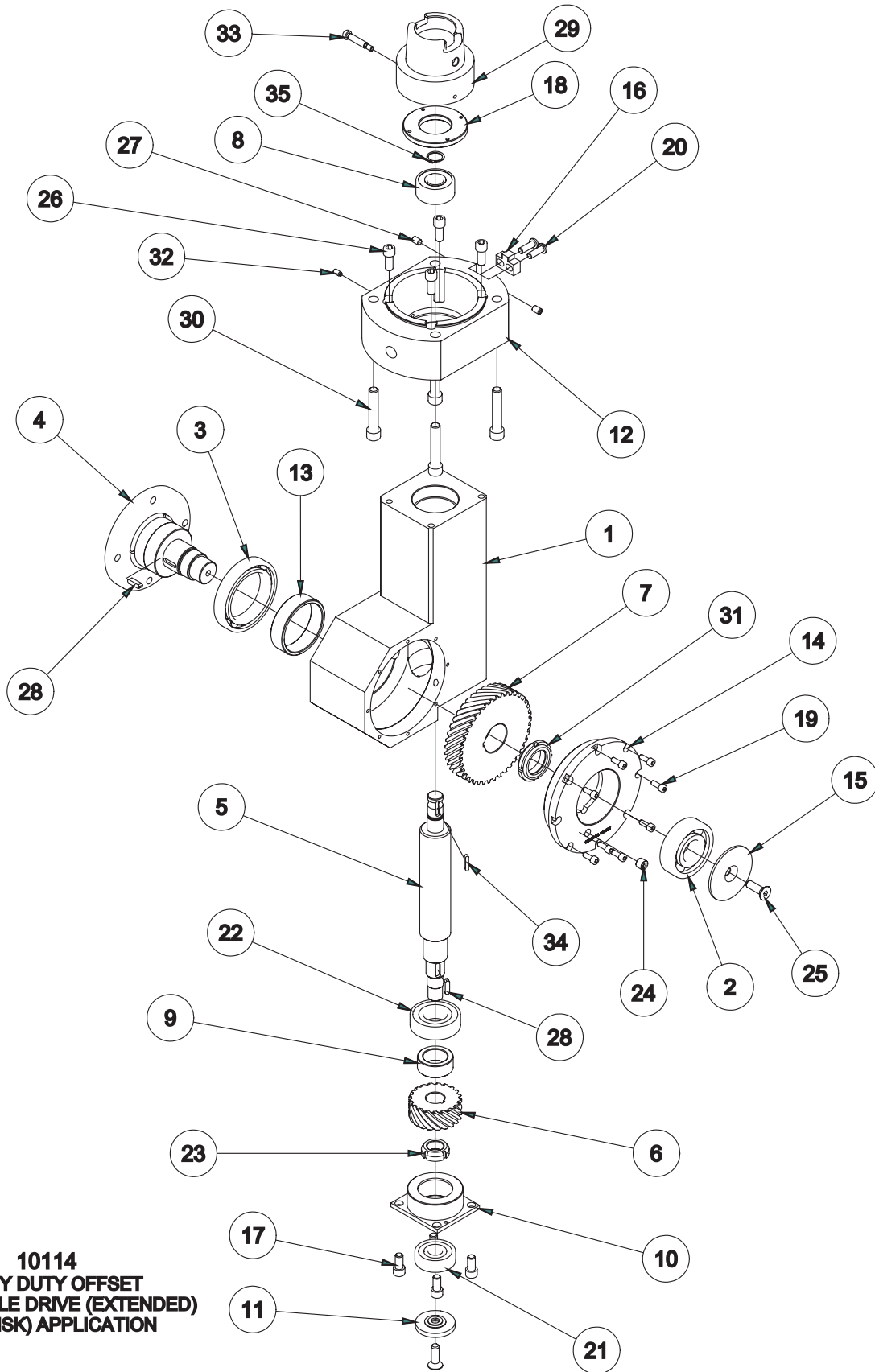
6898
H.D. DOUBLE FLANGE
RIGHT ANGLE DRIVE ASSEMBLY
F-109 HSK80A



* THESE PARTS ARE USED FOR DRIVE SET UP ONLY
AND MUST BE REMOVED BEFORE USE.

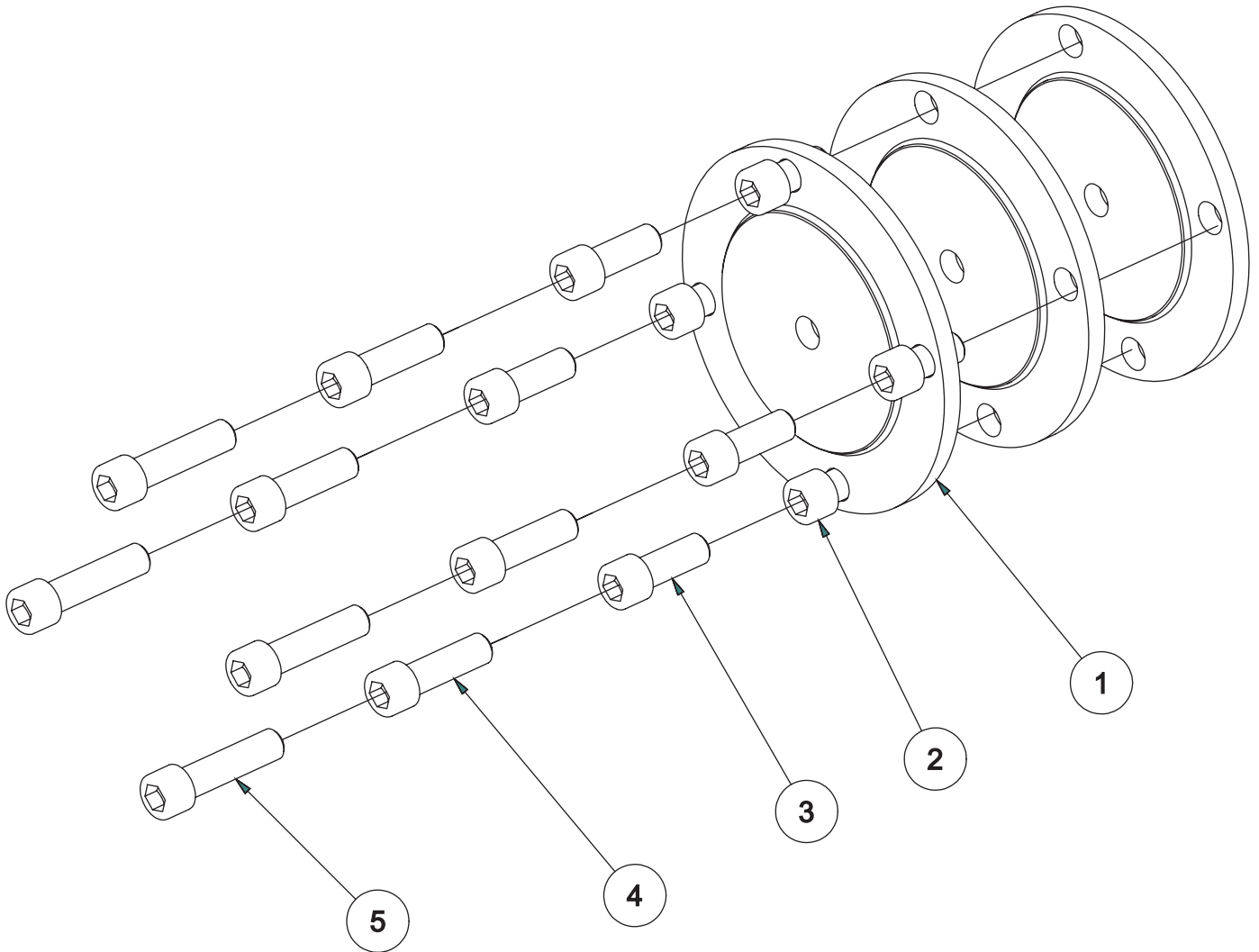
6898 H.D. DOUBLE FLANGE R.A.D. ASSEMBLY - F109 HSK80A			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	6772A	Nut, Bearing Line Bore Head
2	1	6750K	Key, Location 90 Degree Head
3	2	Mf-92	Socket Button Head 1/4 - 20 x 3/4
4	2	MF-59	Flat Point 1/4-20 UNC x 0.38
5	1	6888J	MAGNETIC DRAIN PLUG ASSEMBLY, R.A.D.
6	1	6888M	OIL LEVEL SIGHT GLASS
7	4	MF-22	S.H.C.S. 5/16 - 18 UNC - 3/4
8	1	100-82-2A	Brass tipped 10-24 Socket Set Screw
9	2	6007A	Bellville Spring, BS203
10	1	6897A	HOUSING (DOUBLE FLANGE), H.D. R.A.D. - F109
11	1	6890S	VERTICAL SHAFT ASSEMBLY, H.D. DOUBLE FLANGE R.A.D. - F109 HSK80A
12	1	MF-93B	Hexagon Socket Button Head Cap Screw 5/16-18UNC x 3/8" LG.
13	1	6897C	FRONT BEARING CARRIER, HORIZONTAL SHAFT, H.D. R.A.D. F109
14	1	6897F	SHAFT, REAR HORIZONTAL H.D. DOUBLE FLANGE R.A.D. - F109
15	1	6890L	LOCK NUT, HORIZONTAL SHAFT, HD R.A.D.
16	1	6890N	DRIVE KEY, HORIZONTAL SHAFT, H.D. R.A.D.
17	1	502-9-32	BALL BEARING
18	1	6897B	FRONT SHAFT, HORIZONTAL H.D. DOUBLE FLANGE R.A.D. - F109
19	1	6896E	5/16 x 1-1/4" LG. DOWEL PIN
20	4	MF-50	8-32UNC x 1/4" LG. CUP POINT SOCKET SET SCREW
21	3	MF-64A	1/4-20UNC x 3/4" LG. FLAT POINT SOCKET SET SCREW (SET UP ONLY)
22	2	6897D	ANGULAR CONTACT BEARING
23	2	6897E	OIL SEAL
24	1	6897G	REAR BEARING CARRIER, HORIZONTAL SHAFT, H.D. R.A.D. F109
25	1	6897J	1/2-20UNF x 1-1/4" LG. S.H.C.S.
26	22	MF-5	S.H.C.S. 10 - 24 UNC - 5/8
27	4	MF-196	Pin - Hardened Ground Production Dowel
28	1	6890J	SPIRAL BEVEL GEAR, HORIZONTAL SHAFT - MID SIZE R.A.D.
29	1	MF-66	1/4-20UNC x 1-1/2" LG. FLAT POINT SOCKET SET SCREW (SET UP ONLY)
30	4	6897H	FINE ADJUSTING BLOCK - H.D. R.A.D. - F109 (SET UP ONLY)
31	4	MF-15A	S.H.C.S. 1/4 - 20 UNC - 7/8 (SET UP ONLY)
32	4	MF-18	S.H.C.S. 1/4-20UNC x 1-3/4" LG. (SET UP ONLY)
33	1	10114A	ADAPTER, DRIVE, R.A.D. - F109 - HSK 80A
34	1	6770R	MOUNTING HUB, H.D. DOUBLE FLANGE R.A.D - F109 HSK 80A
35	1	10114G	Hexagon Socket Head Shoulder Screw 1/4" x 1" LONG
36	4	MF-34	S.H.C.S. 3/8 - 16 UNC - 2" LONG
37	1	6752Q	KEY, PINION 90 DEG. HEAD

10114 Heavy Duty Offset 90 Degree Right Angle Drive Parts



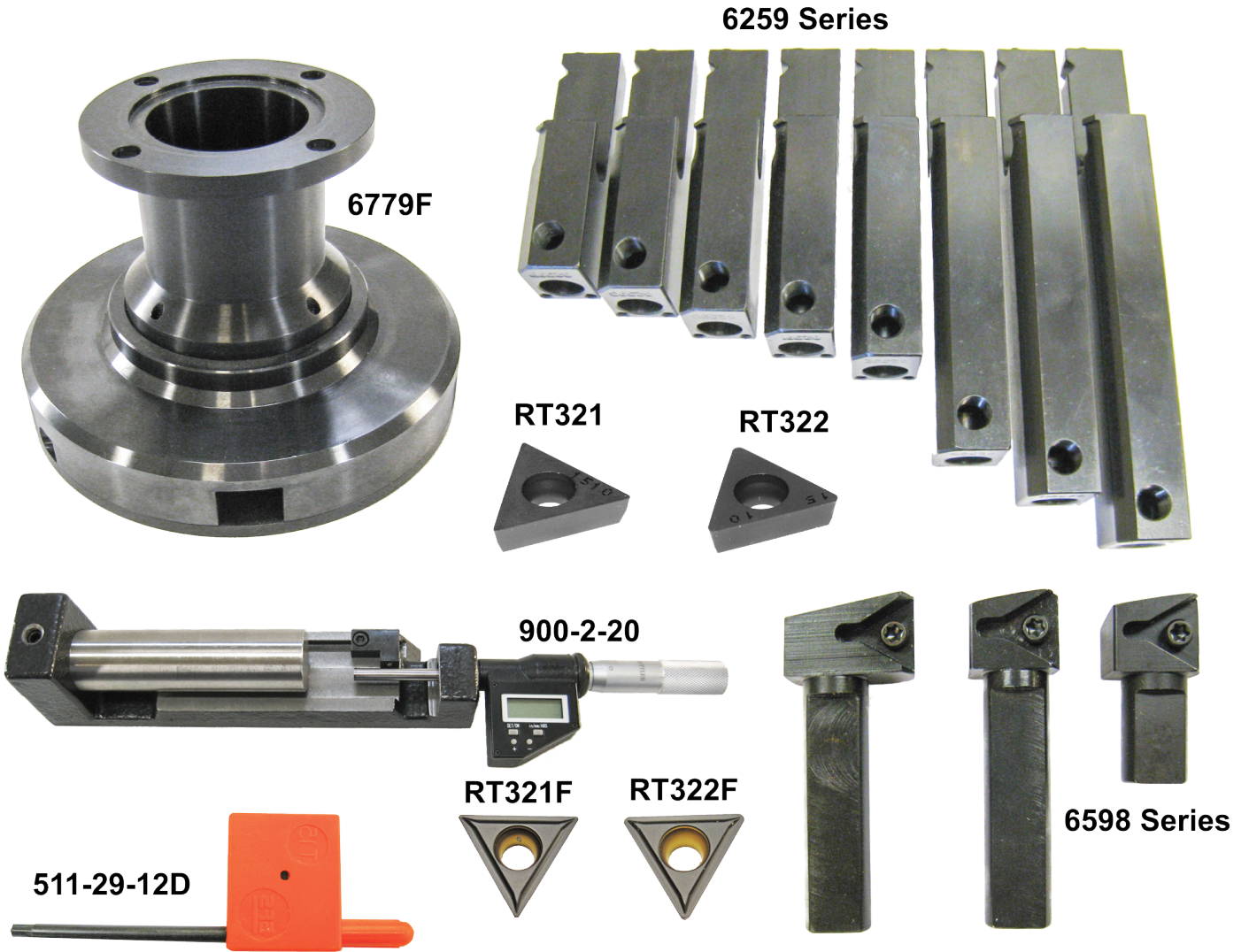
**10114
HEAVY DUTY OFFSET
RIGHT ANGLE DRIVE (EXTENDED)
F109 (HSK) APPLICATION**

10114 H.D. OFFSET R.A.D. (EXTENDED) - F109 HSK 80A			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	6774L	HOUSING, GEAR HEAVY DUTY LINE BORE HEAD
2	1	6778F	Deep Groove Ball Bearing
3	1	6778E	Deep Groove Ball Bearing
4	1	6766X	HORIZONTAL SHAFT H.D. LINE BORE HEAD
5	1	6777E	SHAFT, VERTICAL HEAVY DUTY LINE BORE HEAD (EXTENDED) - F109 HSK 80A
6	1	6778	DRIVE GEAR, HEAVY DUTY LINE BORE HEAD
7	1	6778B	DRIVE GEAR, HEAVY DUTY LINE BORE HEAD
8	1	502-9-32	Bearing, Ball MRC 5203SBKFF
9	1	6775F	SPACER, BEARING VERTICAL
10	1	6774F	BEARING RETAINER, VERTICAL H.D. LINE BORE HEAD
11	1	6777A	CAP, END VERTICAL SHAFT
12	1	6770K	MOUNTING HUB, H.D. OFFSET R.A.D - F109 HSK 80A
13	1	6775D	SPACER, BEARING, HORIZONTAL
14	1	6774G	BEARING RETAINER - HORIZONTAL H.D. LINE BORE HEAD
15	1	6775E	CAP, END HORIZONTAL SHAFT
16	1	6750K	Key, Location 90 Degree Head
17	4	MF-21	5/16-18UNC x 5/8" LG. S.H.C.S.
18	1	6772A	Nut, Bearing Line Bore Head
19	8	MF-5A	S.H.C.S. 10 - 24 UNC - 1/2
20	2	Mf-92	Socket Button Head DESIGNATION}
21	1	6778C	Bearing SKF 6302 2RSJEM
22	1	6778D	Bearing SKF 6205 2RZ
23	1	6777C	Lock Nut BH-03
24	1	MF-233	Countersunk Hex-Head Plug 1/8
25	2	MF-77B	5/16-18UNC x 1" LG. SOCKET FLAT HEAD SCREW
26	4	MF-22	5/16-18UNC x 3/4" LG. S.H.C.S.
27	2	MF-59	Flat Point 1/4-20 UNC x 0.38
28	2	7088A	KEY, PULLEY SF-1
29	1	10114A	ADAPTER, DRIVE, R.A.D. - F109 - HSK 80A
30	4	MF-34	S.H.C.S. 3/8 - 16 UNC - 2
31	1	6777B	LOCKNUT BH-06
32	1	100-82-2A	Brass tipped 10-24 Socket Set Screw
33	1	10114G	1/4" x 1" LONG HEX SOCKET SHOULDER SCREW
34	1	6753V	KEY (MICARTA), PINION - 90 DEGREE HEAD

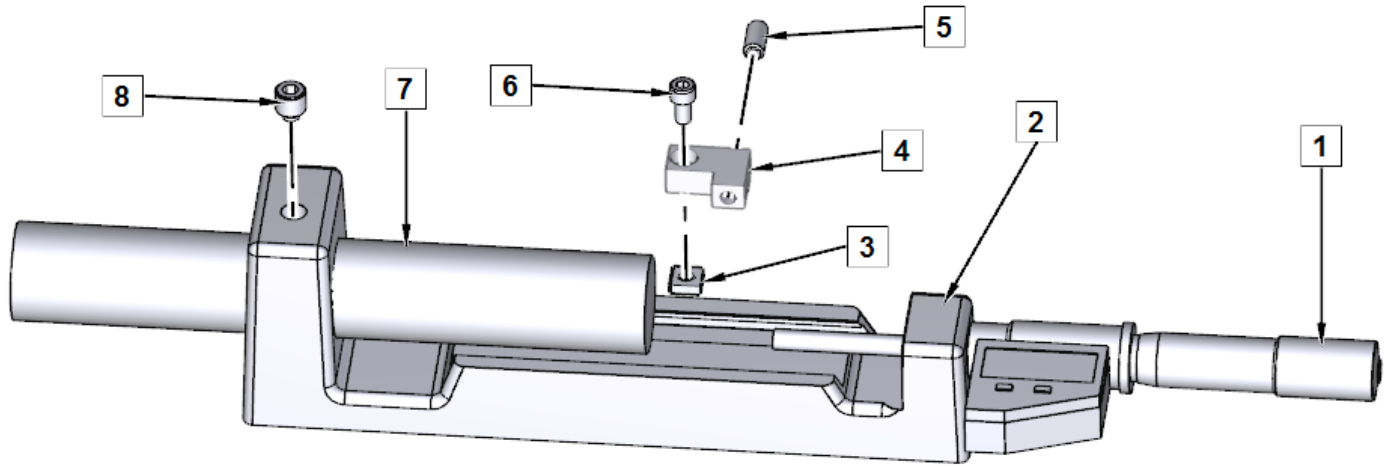


H.D. R.A.D. CUTTHEAD SPACERS AND SCREWS			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	3	6519W	1/4" Spacer Heavy duty line bore head
2	4	Mf-30	S.H.C.S.3/8 - 16 UNC - 3/4
3	4	MF-31	S.H.C.S.3/8 - 16 UNC - 1
4	4	MF-32	S.H.C.S.3/8 - 16 UNC - 1 1/4
5	4	MF-33	S.H.C.S. 3/8 - 16UNC - 1 1/2

6779A Heavy Duty Line Bore Cutterhead Package Components

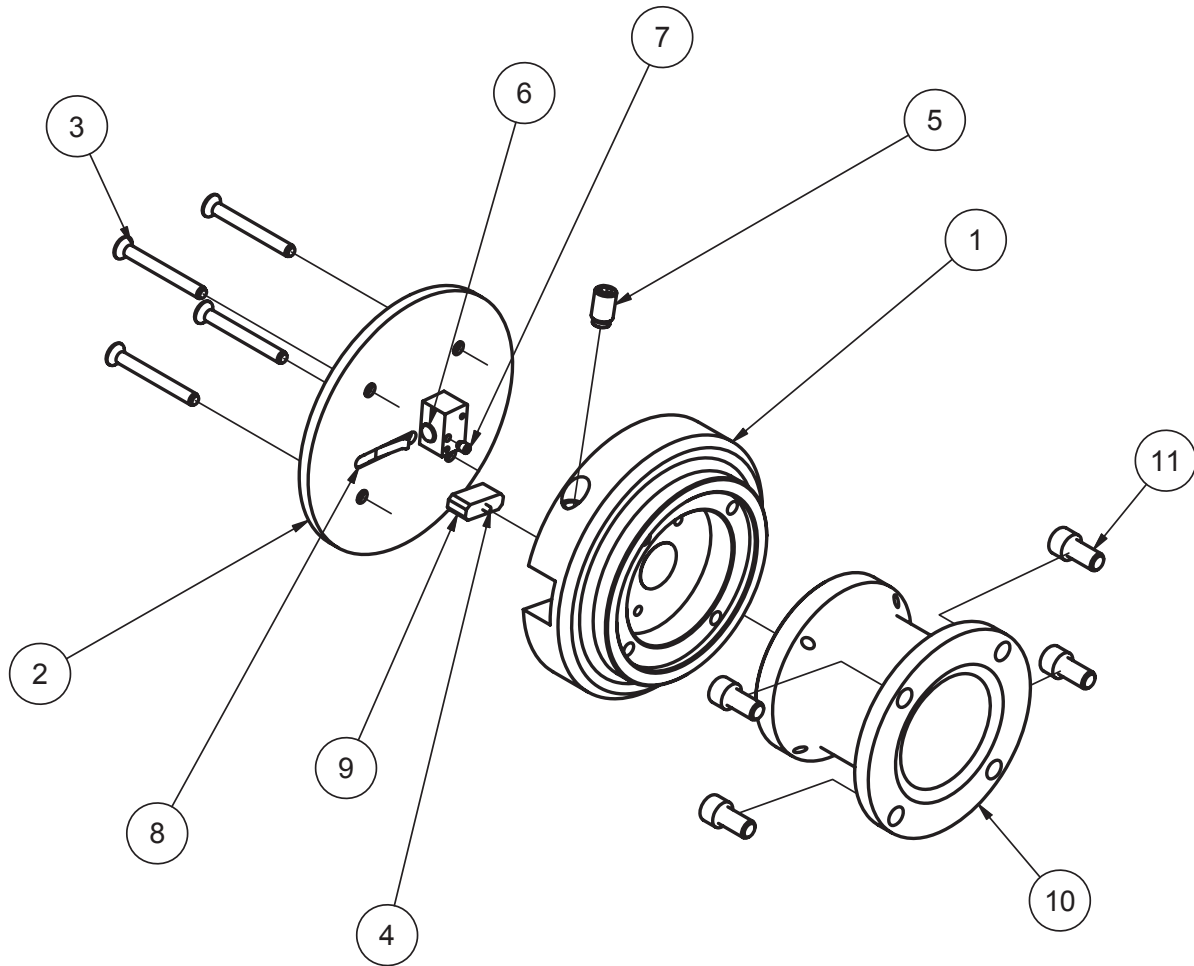


900-2-20 Micrometer Parts



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

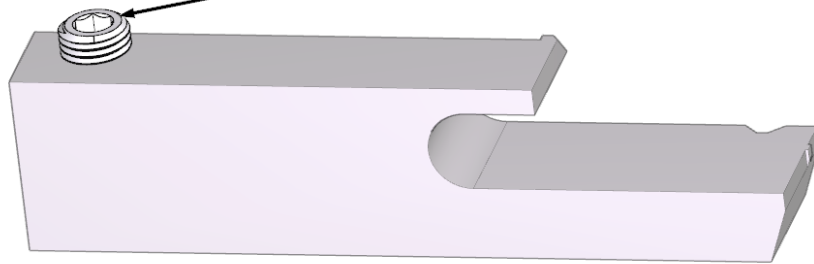
6779F Cutterhead Parts



6779F 7.75 DIA. CUTTERHEAD ASSEMBLY W/O TOOLING - LINE BORE F100			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	6466B	BODY, LINE BORE CUTTERHEAD ASSEMBLY 8.00"-14.00"
2	1	6469B	CAP, 8.00" TO 14.00" LINE BORE HEAD ASSEMBLY
3	4	1/4-2.25-UNC	Socket Flat Head 1/4-20 UNC x 2.25
4	1	MF-193	1/8 x 1/2 Dowel Pin
5	1	501-70	Tool Holder lock Screw ass'y
6	1	6468A	Adjusting Screw
7	1	100-82-2	Set Screw, brass tipped
8	1	100-1E	Tool Lock Spring
9	1	6263B	Clamp Shoe (Tool Holder)
10	1	6779E	ADAPTOR, 7-3/4" CUTTERHEAD TO H.D. R.A.D.
11	4	Mf-30	S.H.C.S.3/8 - 16 UNC - 3/4

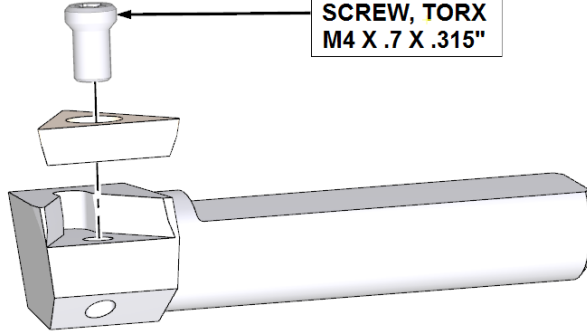
6259 Series Toolholder Parts

502-2-85 SCREW,SET-TOOLHOLDER INDEX



6598 Insert Holder Parts

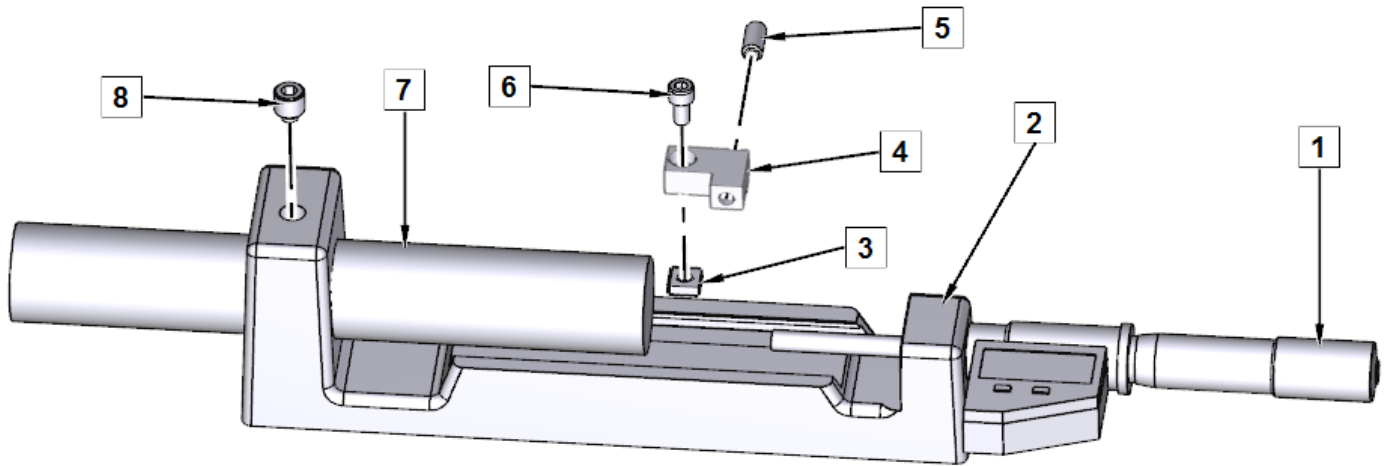
511-29-12C
SCREW, TORX
M4 X .7 X .315"



6519V Heavy Duty Line Bore Cutterhead Package Components

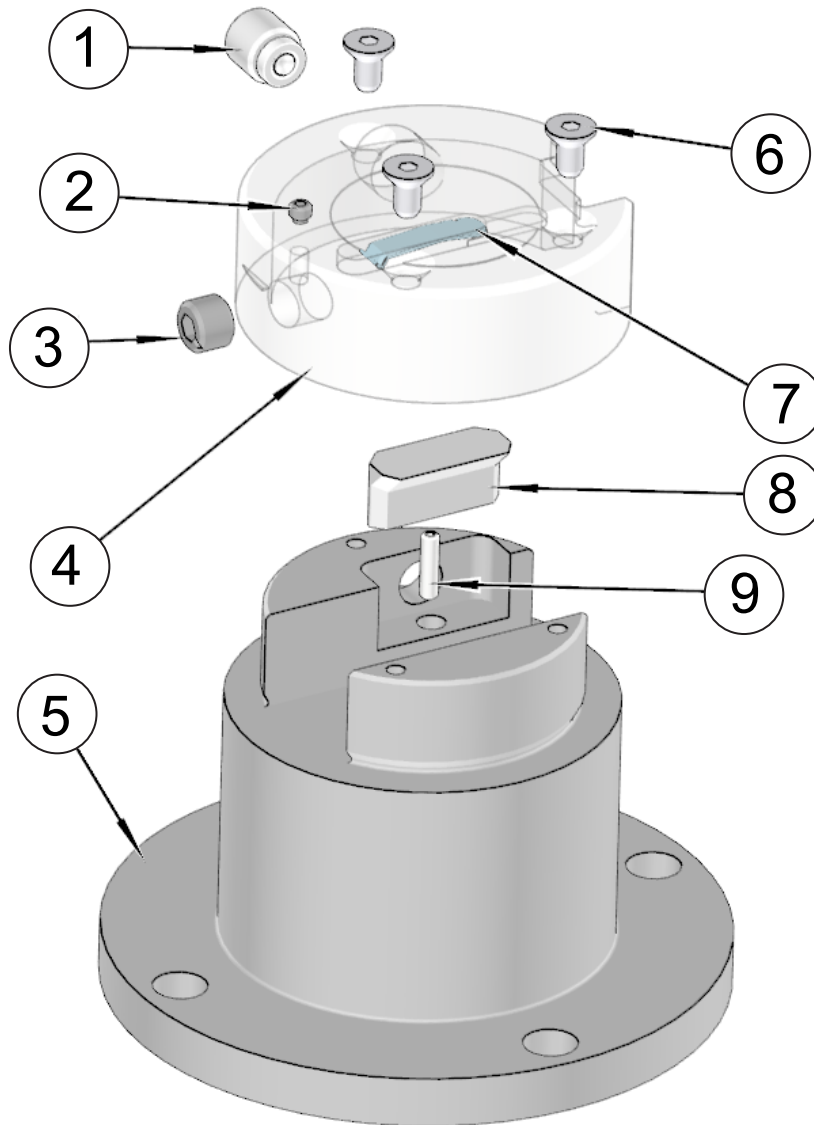


900-2-20 Micrometer Parts



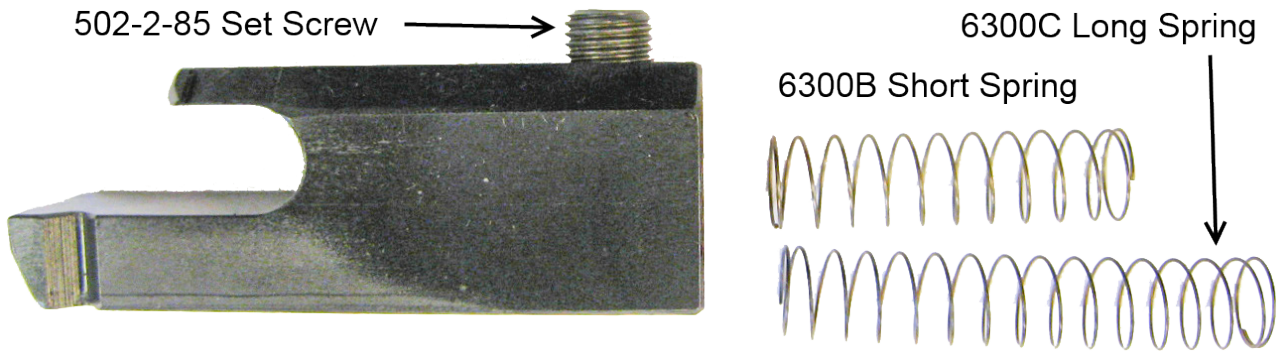
ITEM	PART #	DESCRIPTION
1	501-34-2R	HEAD, MICROMETER UNIVERSAL MIC HEAD DIGITAL READING INCH AND METRIC
2	502-30-10C	FRAME, MICROMETER
3	502-30-10J	SQUARE NUT-#10-24 MICROMETER FRAME
4	502-30-10M	CLAMP, MICROMETER
5	502-30-10K	BALL PLUNGER, 1/4-20 MICROMETER FRAME
6	MF-9A	SOCKET HEAD CAPSCREW 10-32 X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

6519U Cutterhead Parts

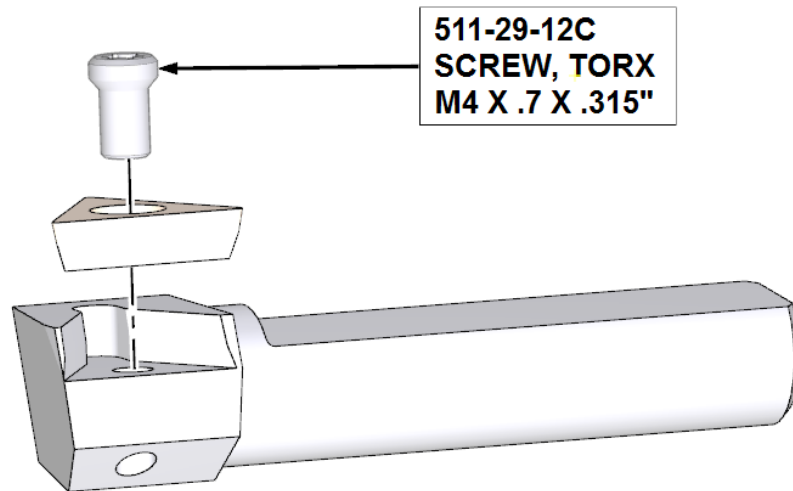


ITEM	PART #	DESCRIPTION
1	501-70A	SCREW, TOOL HOLDER LOCK ASSY
2	502-12-4D	SOCKET SET SCREW 8-32 X 1/8" (BRASS TIPPED)
3	502-2-85B	SCREW, SET-INDEX 3/8-40 FINE THREAD
4	650-2-17	CAP, 2.9" STUB BAR
5	6519T	CUTTERHEAD BODY
6	MF-78	SOCKET FLAT HEAD SCREW 10-24 X 3/8"
7	100-1A	SPRING, TOOL LOCK 1 13/32"
8	6263A	SHOE, CLAMP-TOOL HOLDER PRODUCTION STUB BAR
9	MF-217	ROLL PIN 1/8 X 1/2"

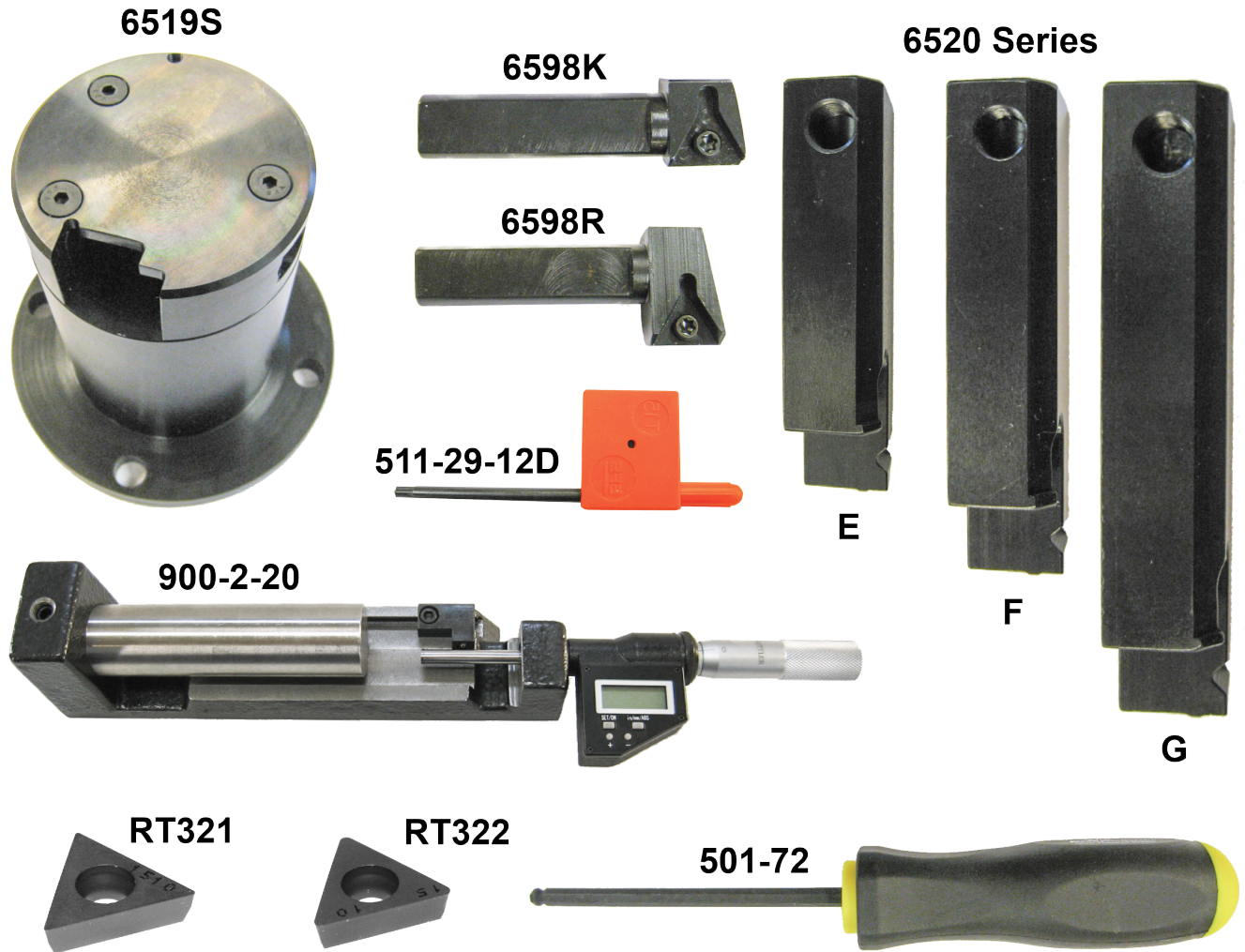
6520 Series Toolholder Parts



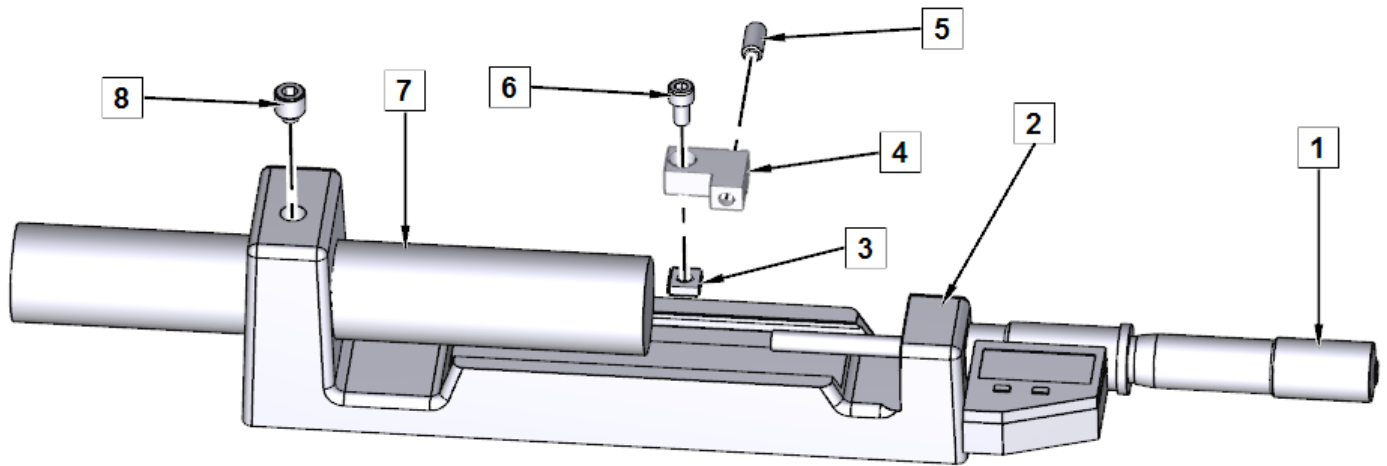
6598 Series Insert Holder Parts



6519P Heavy Duty Line Bore Cutterhead Package Components

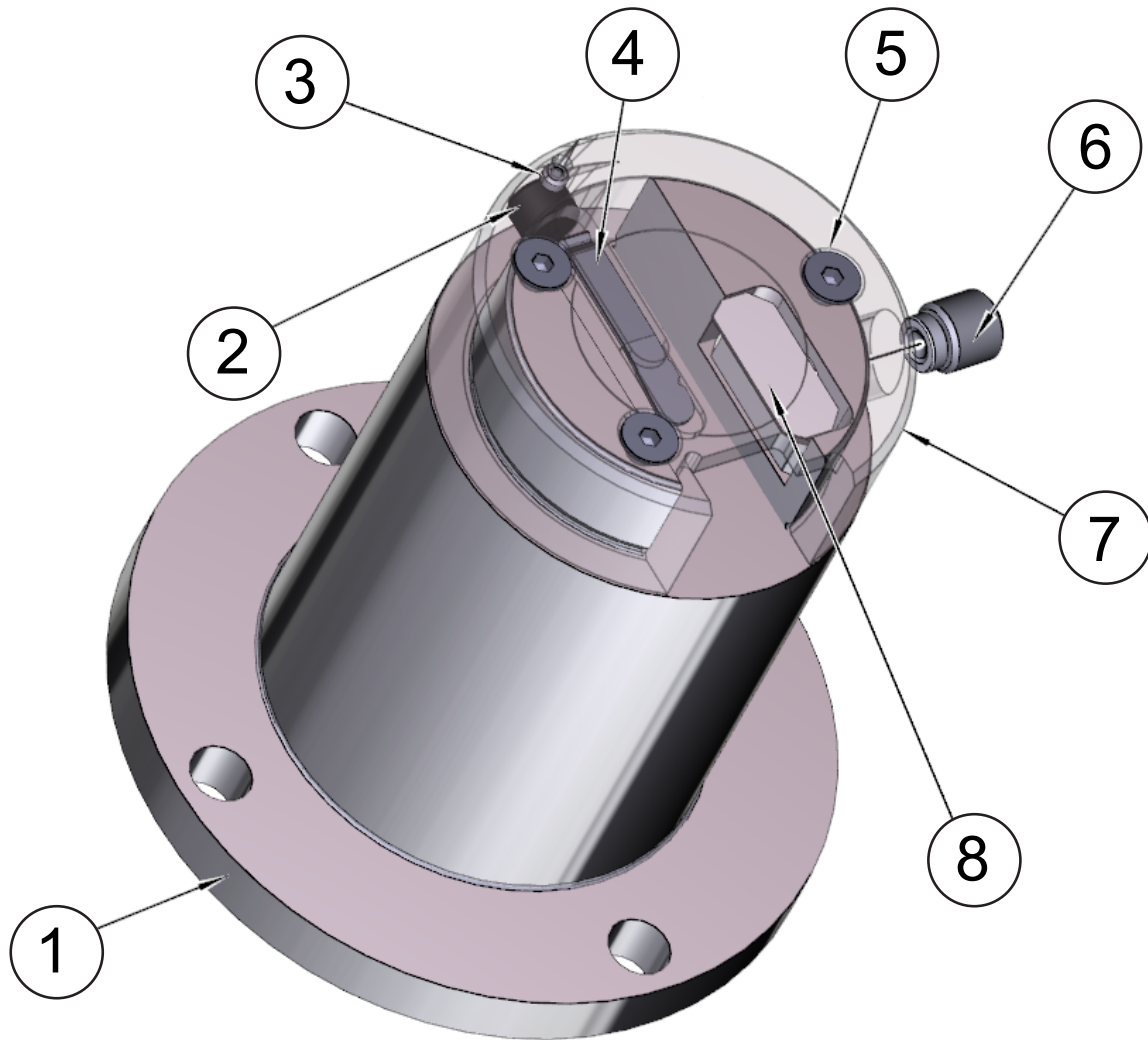


900-2-20 Micrometer Parts



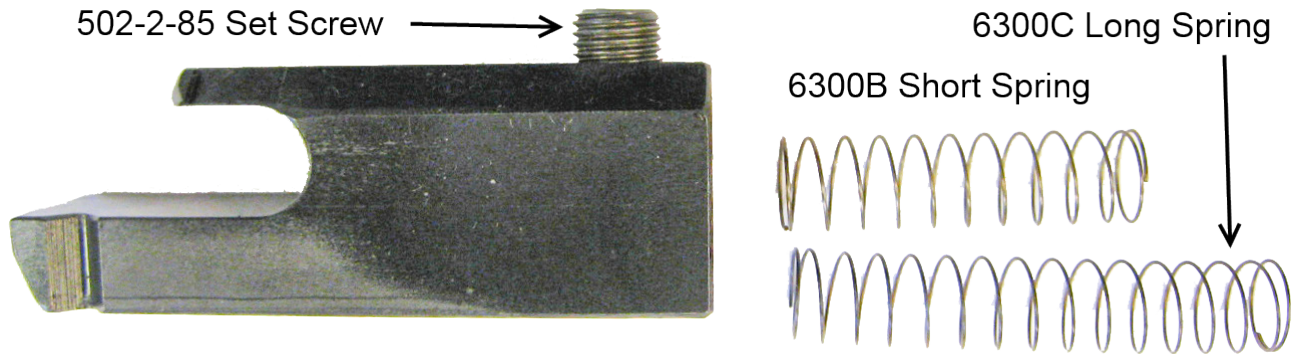
ITEM	PART #	DESCRIPTION
1	501-34-2R	HEAD, MICROMETER UNIVERSAL MIC HEAD DIGITAL READING INCH AND METRIC
2	502-30-10C	FRAME, MICROMETER
3	502-30-10J	SQUARE NUT-#10-24 MICROMETER FRAME
4	502-30-10M	CLAMP, MICROMETER
5	502-30-10K	BALL PLUNGER, 1/4-20 MICROMETER FRAME
6	MF-9A	SOCKET HEAD CAPSCREW 10-32 X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

6519S Cutterhead Parts

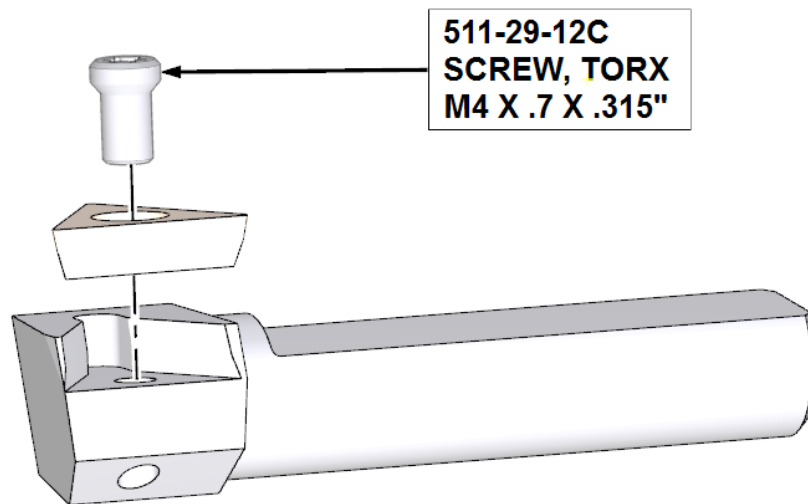


ITEM	PART #	DESCRIPTION
1	6519L	CUTTERHEAD BODY
2	502-2-85B	SCREW, SET-INDEX 3/8-40 FINE THREAD
3	502-12-4D	SOCKET SET SCREW 8-32 X 1/8" (BRASS TIPPED)
4	100-1A	SPRING, TOOL LOCK 1 13/32"
5	MF-78	SOCKET FLAT HEAD SCREW 10-24 X 3/8"
6	501-70A	SCREW, TOOL HOLDER LOCK ASSY
7	650-2-17	CAP, 2.9" STUB BAR
8	6263A	SHOE, CLAMP-TOOL HOLDER PRODUCTION STUB BAR

6520 Series Toolholder Parts

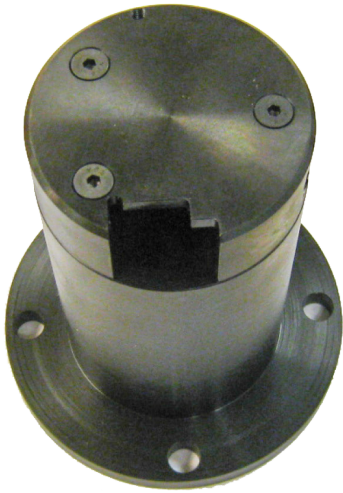


6598 Series Insert Holder Parts



6519M Heavy Duty Line Bore Cutterhead Package Components

6519Q



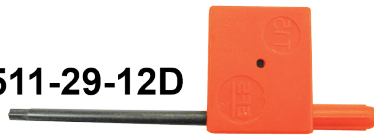
6598K



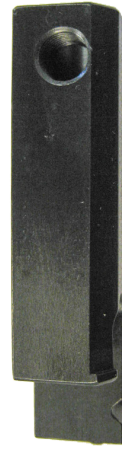
6598R



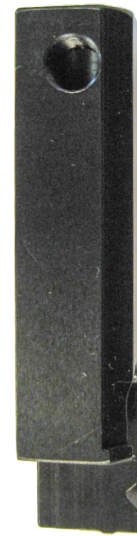
511-29-12D



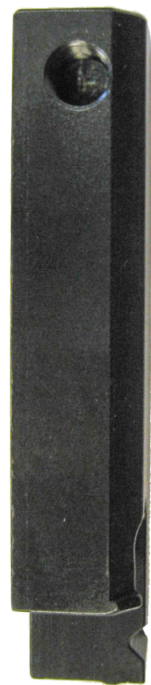
6520 Series



E

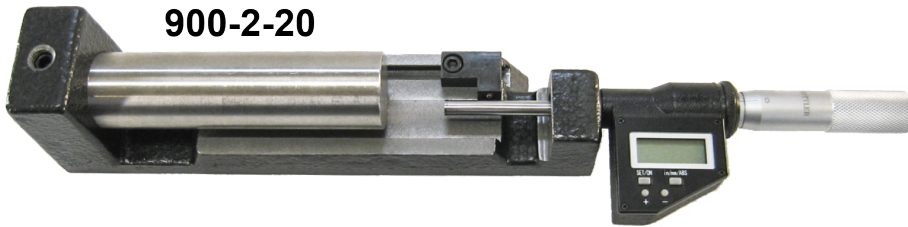


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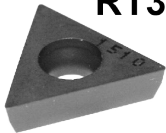


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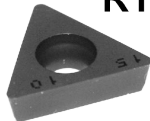
900-2-20



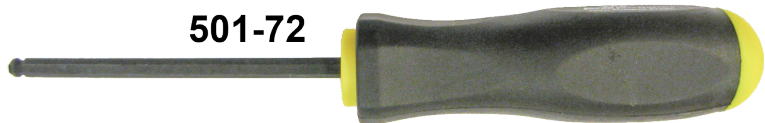
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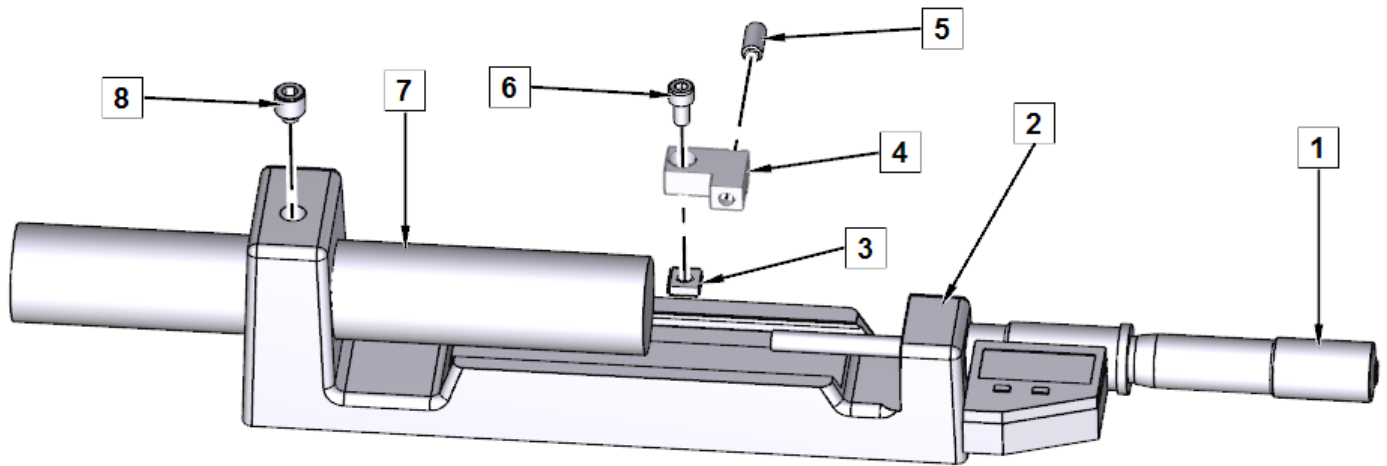
RT322



501-72

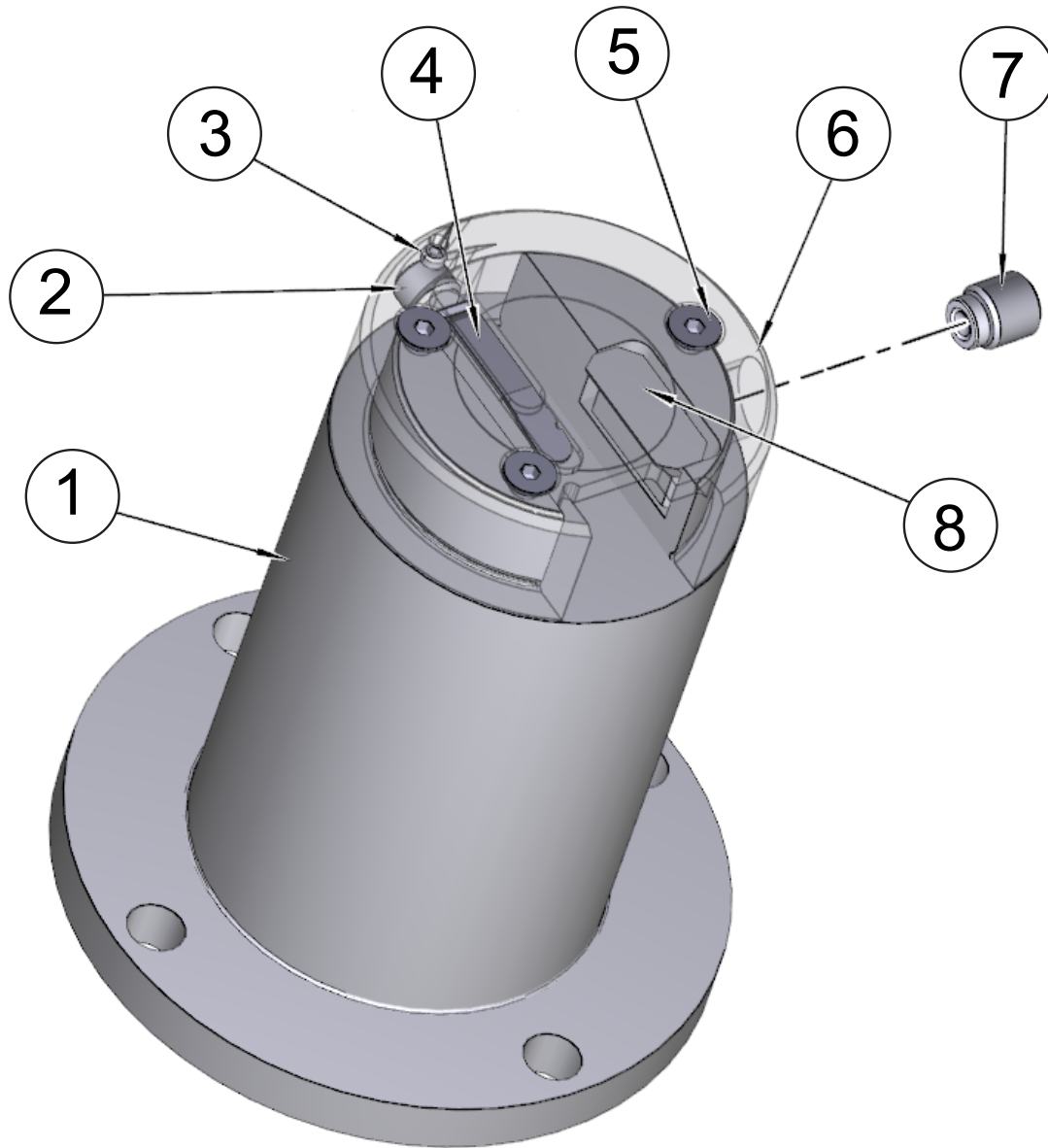


900-2-20 Micrometer Parts



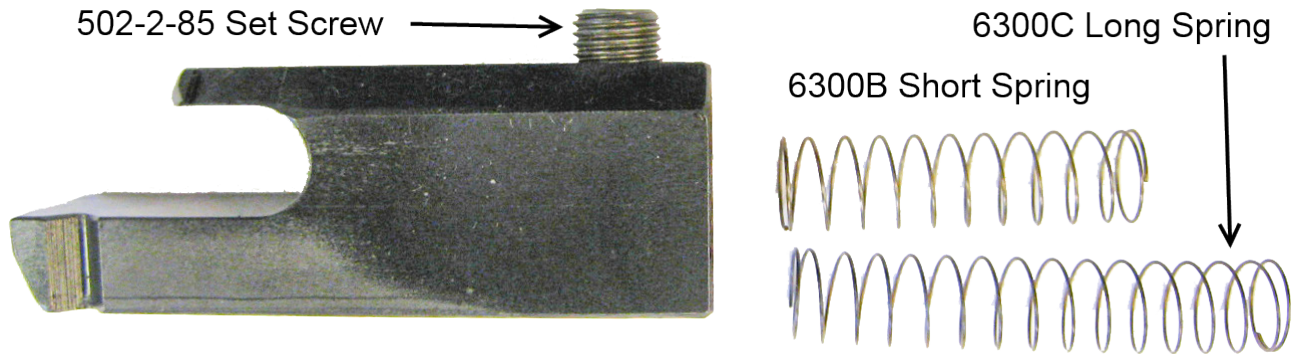
ITEM	PART #	DESCRIPTION
1	501-34-2R	HEAD, MICROMETER UNIVERSAL MIC HEAD DIGITAL READING INCH AND METRIC
2	502-30-10C	FRAME, MICROMETER
3	502-30-10J	SQUARE NUT-#10-24 MICROMETER FRAME
4	502-30-10M	CLAMP, MICROMETER
5	502-30-10K	BALL PLUNGER, 1/4-20 MICROMETER FRAME
6	MF-9A	SOCKET HEAD CAPSCREW 10-32 X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

6519Q Cutterhead Parts

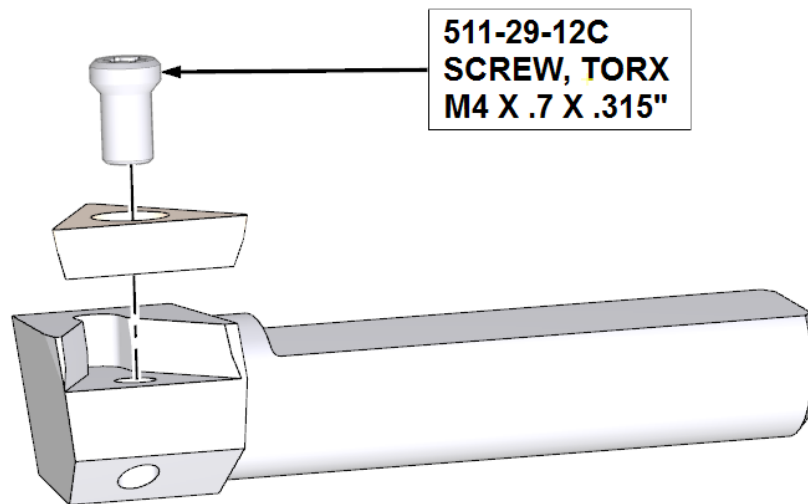


ITEM	PART #	DESCRIPTION
1	6519J	CUTTERHEAD BODY
2	502-2-85B	SCREW, SET-INDEX 3/8-40 FINE THREAD
3	502-12-4D	SOCKET SET SCREW 8-32 X 1/8" (BRASS TIPPED)
4	100-1A	SPRING, TOOL LOCK 1 13/32"
5	MF-78	SOCKET FLAT HEAD SCREW 10-24 X 3/8"
6	650-2-17	CAP, 2.9" STUB BAR
7	501-70C	SCREW, TOOL HOLDER LOCK
8	6263A	SHOE, CLAMP-TOOL HOLDER PRODUCTION STUB BAR

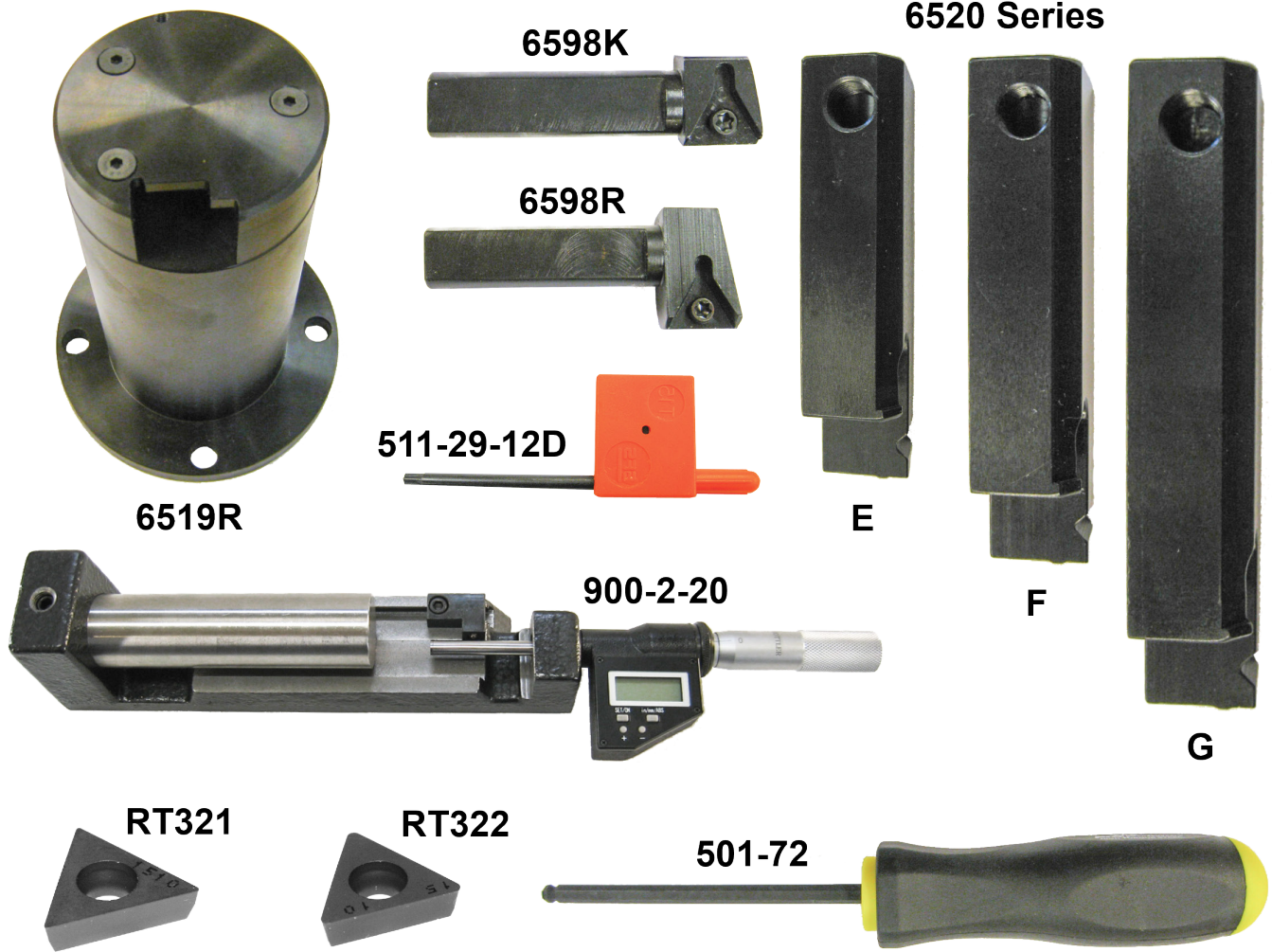
6520 Series Toolholder Parts



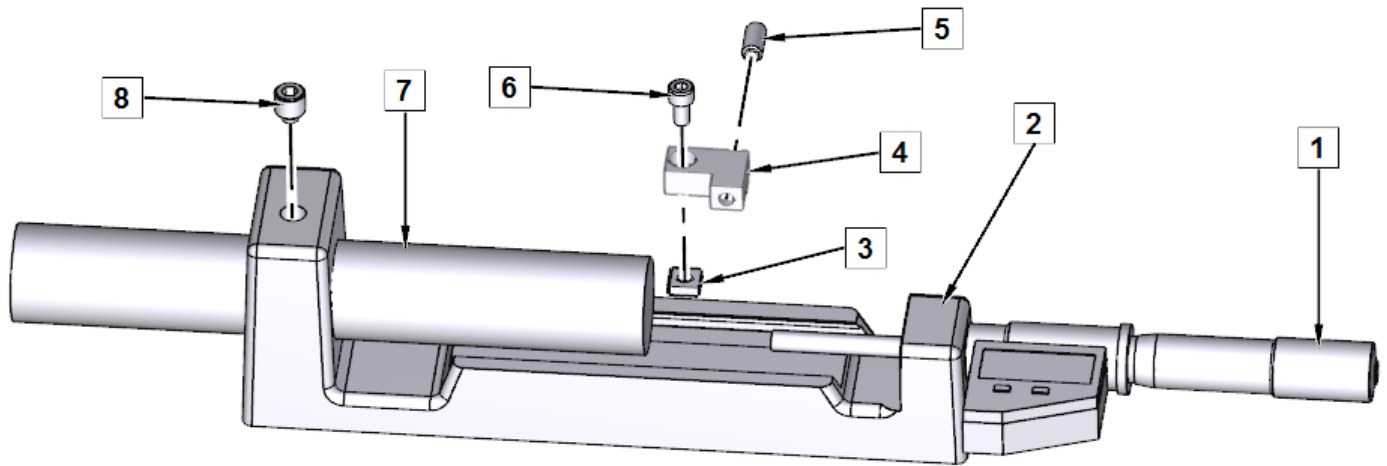
6598 Series Insert Holder Parts



6519N Heavy Duty Line Bore Cutterhead Package Components

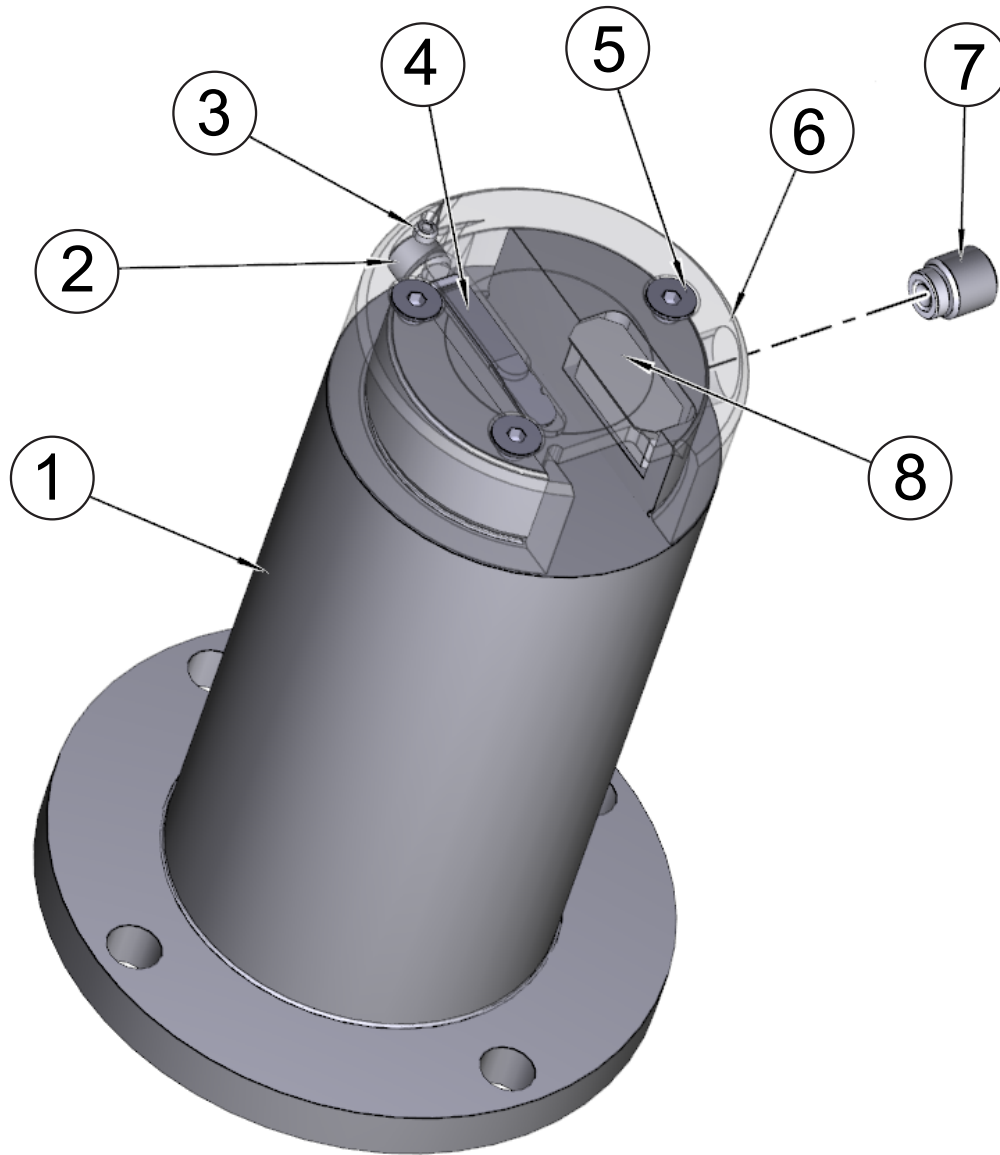


900-2-20 Micrometer Parts



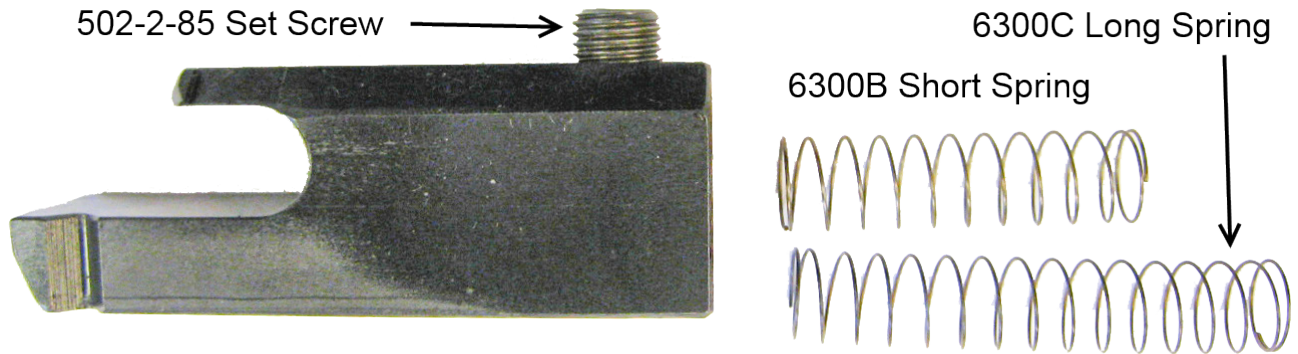
ITEM	PART #	DESCRIPTION
1	501-34-2R	HEAD, MICROMETER UNIVERSAL MIC HEAD DIGITAL READING INCH AND METRIC
2	502-30-10C	FRAME, MICROMETER
3	502-30-10J	SQUARE NUT-#10-24 MICROMETER FRAME
4	502-30-10M	CLAMP, MICROMETER
5	502-30-10K	BALL PLUNGER, 1/4-20 MICROMETER FRAME
6	MF-9A	SOCKET HEAD CAPSCREW 10-32 X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

6519R Cutterhead Parts

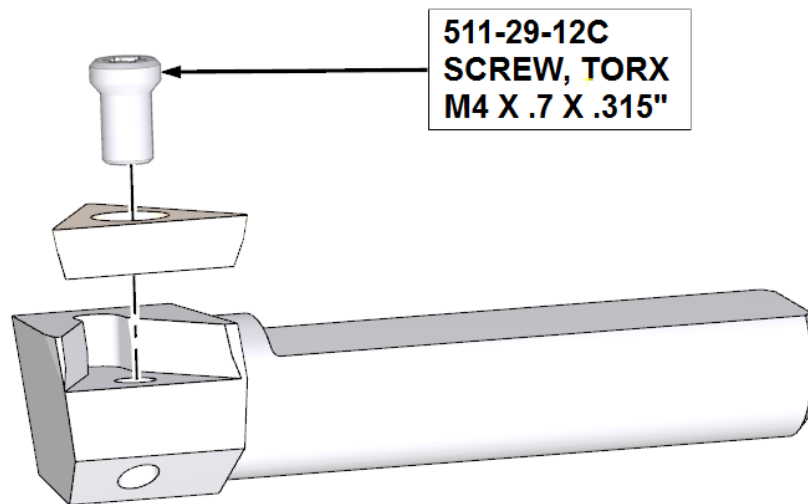


ITEM	PART #	DESCRIPTION
1	6519K	CUTTERHEAD BODY
2	502-2-85B	SCREW, SET-INDEX 3/8-40 FINE THREAD
3	502-12-4D	SOCKET SET SCREW 8-32 X 1/8" (BRASS TIPPED)
4	100-1A	SPRING, TOOL LOCK 1 13/32"
5	MF-78	SOCKET FLAT HEAD SCREW 10-24 X 3/8"
6	650-2-17	CAP, 2.9" STUB BAR
7	501-70C	SCREW, TOOL HOLDER LOCK
8	6263A	SHOE, CLAMP-TOOL HOLDER PRODUCTION STUB BAR

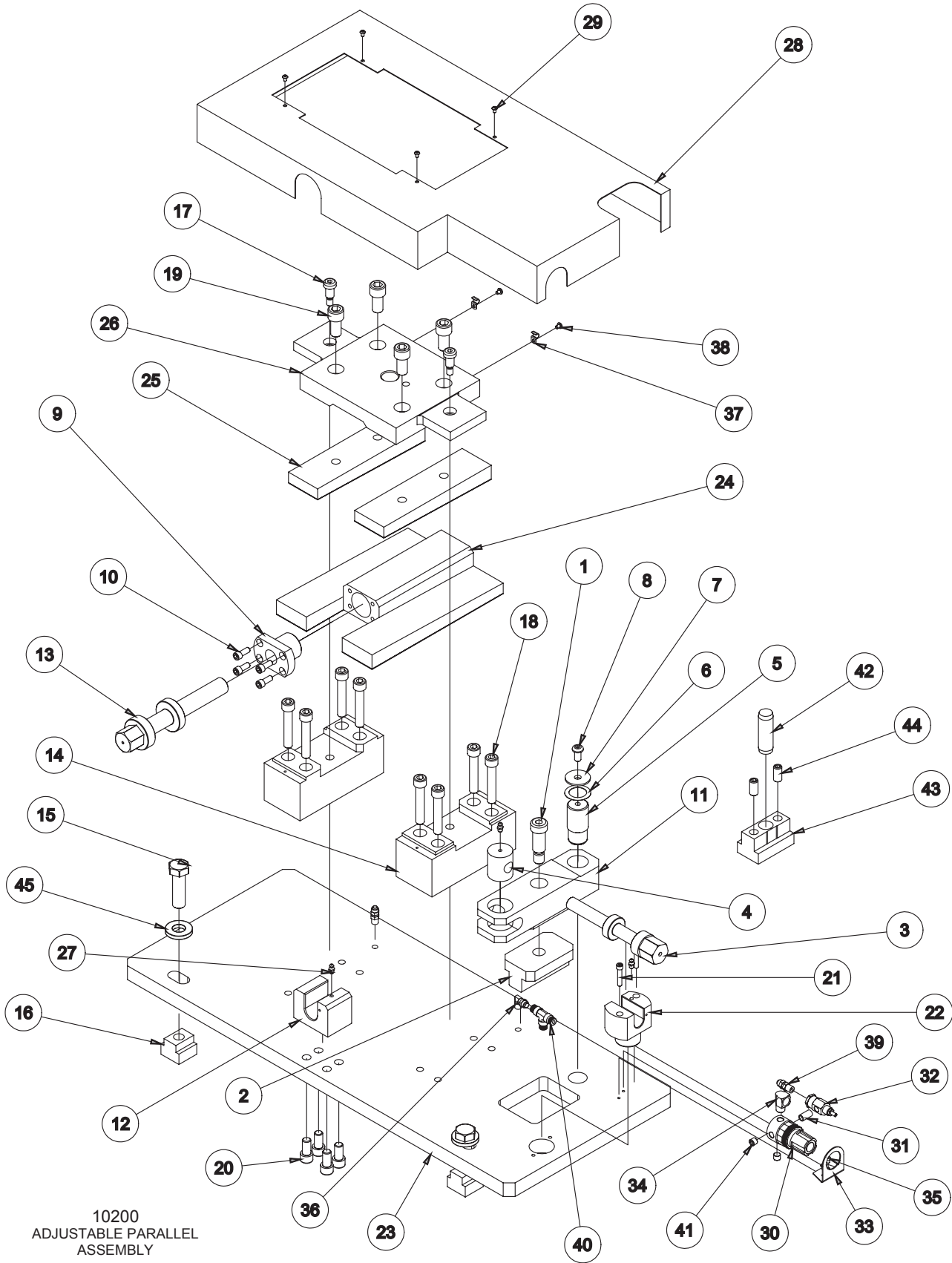
6520 Series Toolholder Parts



6598 Series Insert Holder Parts



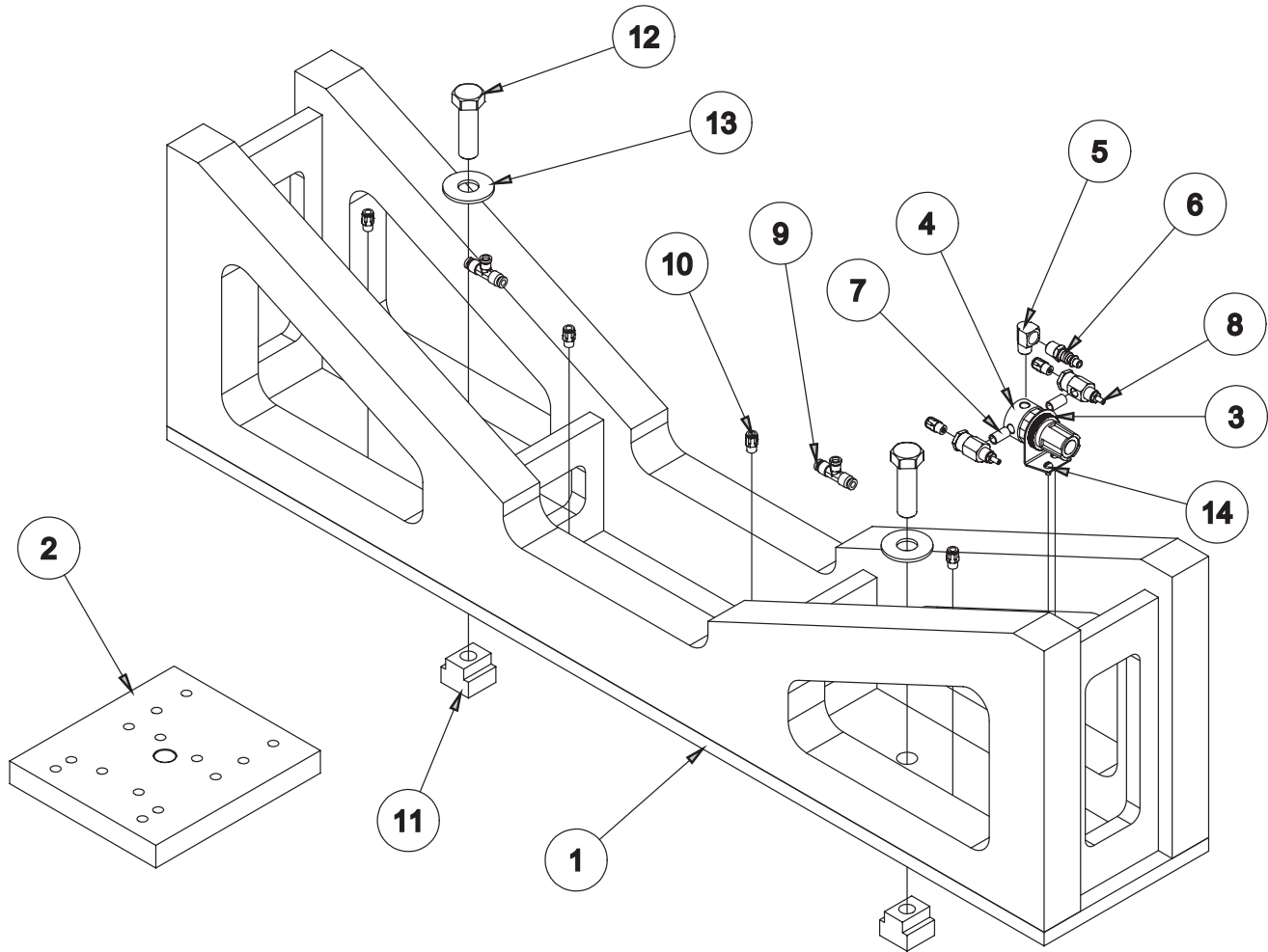
Line Bore Fixturing for Extra Large Block 10200 Adjustable Universal Line Boring Fixture Parts



10200
ADJUSTABLE PARALLEL
ASSEMBLY

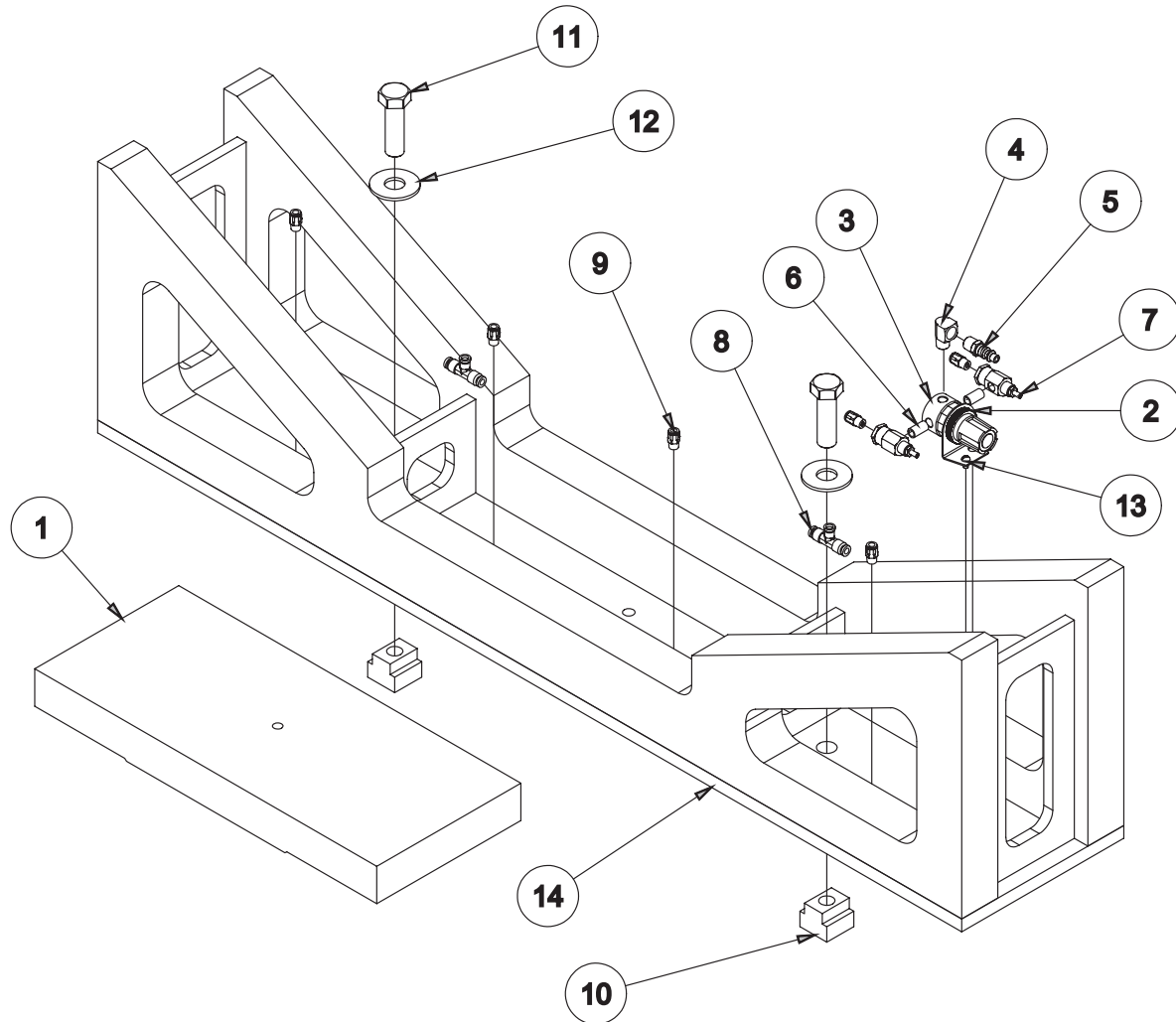
10200 ADJUSTABLE PARALLEL ASSEMBLY			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	10201X	3/4" x 1-1/2" SHOULDER SCREW
2	1	10201V	LOWER KEY, IN/OUT ADJUST, ADJUSTABLE PARALLEL, LINE BORE FIXTURE - F100
3	1	6828	SCREW, ADJUSTABLE PARALLEL F-8 LINE BORE FIXTURE
4	1	10201R	PIVOT NUT, IN/OUT ADJUST, ADJUSTABLE PARALLEL, LINE BORE FIXTURE - F100
5	1	10201Q	PIVOT PIN, IN/OUT ADJUST, ADJUSTABLE PARALLEL, LINE BORE FIXTURE - F100
6	1	6007A	Bellville Spring, BS203
7	1	10201W	HOLD DOWN WASHER, IN/OUT ADJUST, ADJUSTABLE PARALLEL, LINE BORE FIXTURE - F100
8	1	MF-96	3/8-16UNC x 3/4" SOCKET BUTTON HEAD SCREW
9	1	10201L	INSERT NUT, VERTICAL ADJUST, ADJUSTABLE PARALLEL, LINE BORE FIXTURE - F100
10	4	MF-22	S.H.C.S. 5/16 - 18 UNC - 3/4
11	1	10201P	PIVOT ARM, IN/OUT ADJUST, ADJUSTABLE PARALLEL, LINE BORE FIXTURE - F100
12	1	10201N	BRACKET, SCREW - ADJUSTABLE PARALLEL, LINE BORE FIXTURE - F100
13	1	10201M	SCREW, VERTICAL ADJUSTMENT, ADJUSTABLE PARALLEL, LINE BORE FIXTURE - F100
14	2	10201E	ALIGNMENT BLOCK, VERTICAL ADJUST, ADJUSTABLE PARALLEL, LINE BORE FIXTURE - F100
15	2	MF-154C	3/4-10UNC x 2-1/2" LG. HEX BOLT
16	2	6160	Nut, T - Hardened
17	2	650-4-45	1/2" x 3/4" SHOULDER SCREW
18	8	MF-45B	S.H.C.S. 1/2 - 13 UNC - 2 3/4
19	4	MF-46	S.H.C.S. 5/8 - 11 UNC - 1 1/4
20	4	MF-42	S.H.C.S. 1/2 - 13 UNC - 1
21	2	MF-16	S.H.C.S. 1/4 - 20 UNC - 1 1/4
22	1	10201T	BRACKET, SCREW (PIVOT), IN/OUT ADJUST, ADJUSTABLE PARALLEL, LINE BORE FIXTURE - F100
23	1	10201C	LOWER PLATE (MACH.) - ADJUSTABLE PARALLEL, LINE BORE FIXTURE - F-100
24	1	10201J	LOWER WEDGE ASSEMBLY, ADJUSTABLE PARALLEL, LINE BORE FIXTURE - F100
25	2	10201G	UPPER WEDGE ASSEMBLY, ADJUSTABLE PARALLEL, LINE BORE FIXTURE - F100
26	1	10201F	TOP PLATE, ADJUSTABLE PARALLEL, LINE BORE FIXTURE - F100
27	3	MF-189	STRAIGHT GREASE FITTING
28	1	10201Y	COVER, ADJUSTABLE PARALLEL, LINE BORE FIXTURE - F100
29	4	MF-86	BUTTON HEAD SCREW 8-32UNC x 1/4" LG.
30	1	502-27-17	Regulator 0 - 60 PSI
31	1	502-11-17J	Nipple, Close 1/8" NPT
32	1	502-11-35A	Flo Control
33	1	502-27-17A	Regulator Bracket
34	1	502-11-17S	1/4 STREET ELL
35	2	MF-109	ROUND HEAD MACHINE SCREW 10-24UNC x 1/4"
36	1	502-11-16I	Elbow, Male 1/4 FPT x 1/8 PT
37	2	502-12-16	Wire Clip
38	2	MF-87	10-24UNC x .25 LG. SOCKET BUTTON HEAD SCREW
39	2	502-11-16E	Connector, Male 1/4 x 1/8 PT
40	1	514-4-17N	Union Tee 1/4"
41	2	MF-233	Countersunk Hex-Head Plug 1/8
42	1	6819	Locating, Pivot Pin
43	1	6820	LOCATING PIVOT KEY, DIESEL LINE BORE FIXTURE
44	2	MF-72	Flat Point 1/2-13 UNC x 1
45	2	6287	WASHER, THRUST 3/4"

10201 Adapter Package and Support Cradle Parts



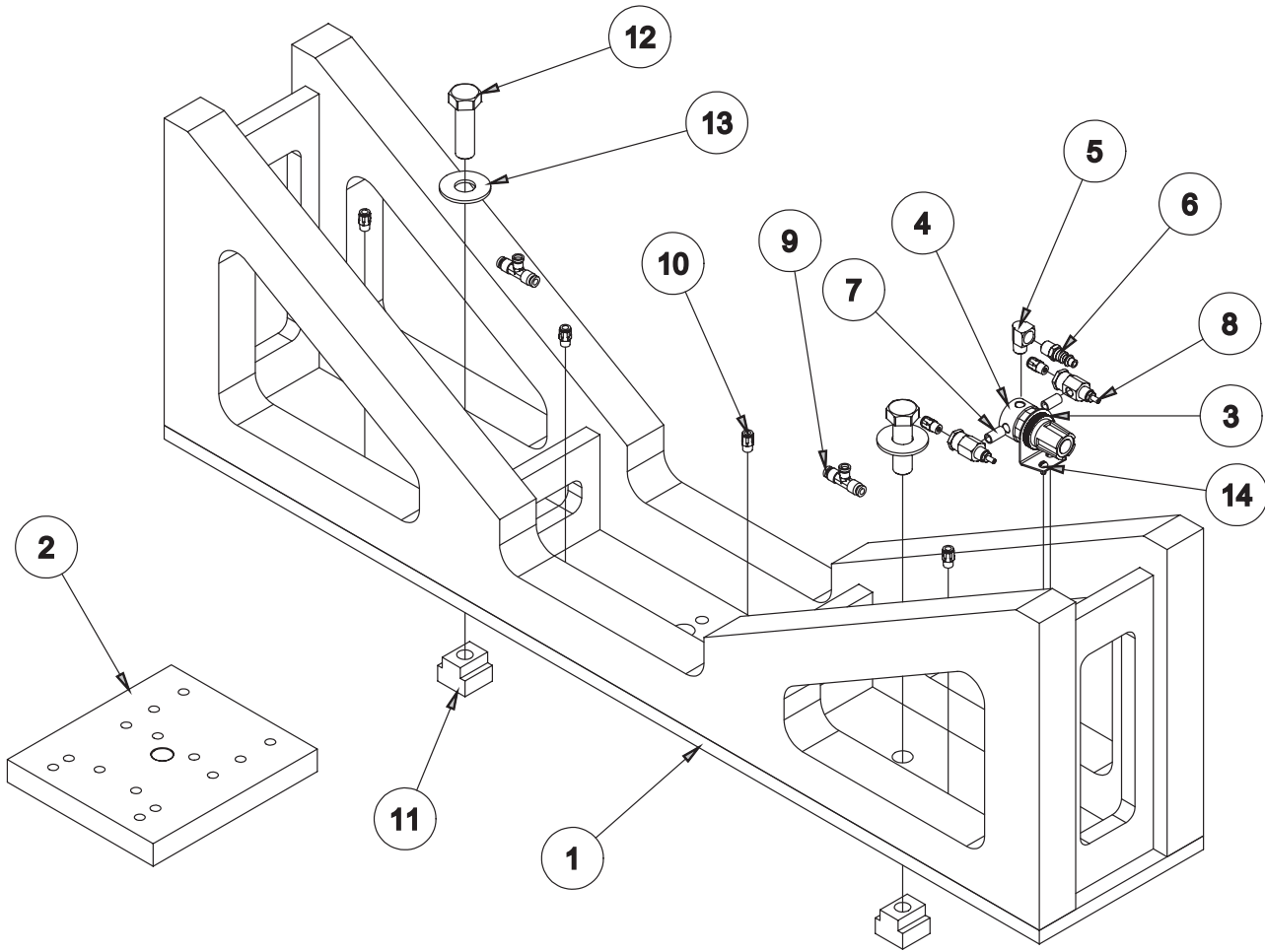
10201 CAT 3616 LINE BORE FIXTURE ASSEMBLY			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	10201A	CRADLE (MACHINING), CAT 3616 LINE BORE - F100
2	1	10203C	ADAPTER PLATE ASSEMBLY, CAT 3616, ADJUSTABLE PARALLEL, LINE BORE FIXTURE - F100
3	1	502-27-17A	Regulator Bracket
4	1	502-27-17	Regulator 0 - 60 PSI
5	1	502-11-17S	1/4 STREET ELL
6	1	502-11-16X	Quick Connect air Fitting Male
7	2	502-11-17J	Nipple, Close 1/8" NPT
8	2	502-11-35A	Flo Control
9	2	514-4-17N	Tee, Union 1/4 Tube
10	6	514-4-17W	FITTING 1/8NPT x 1/4" POLY STRAIGHT
11	2	6160	Nut, T - Hardened
12	2	MF-154C	MF-154C
13	2	MF-181A	MF-181A
14	2	MF-110	ROUND HEAD MACHINE SCREW 10-24UNC x 3/8"

10202 Adapter Package and Support Cradle Parts



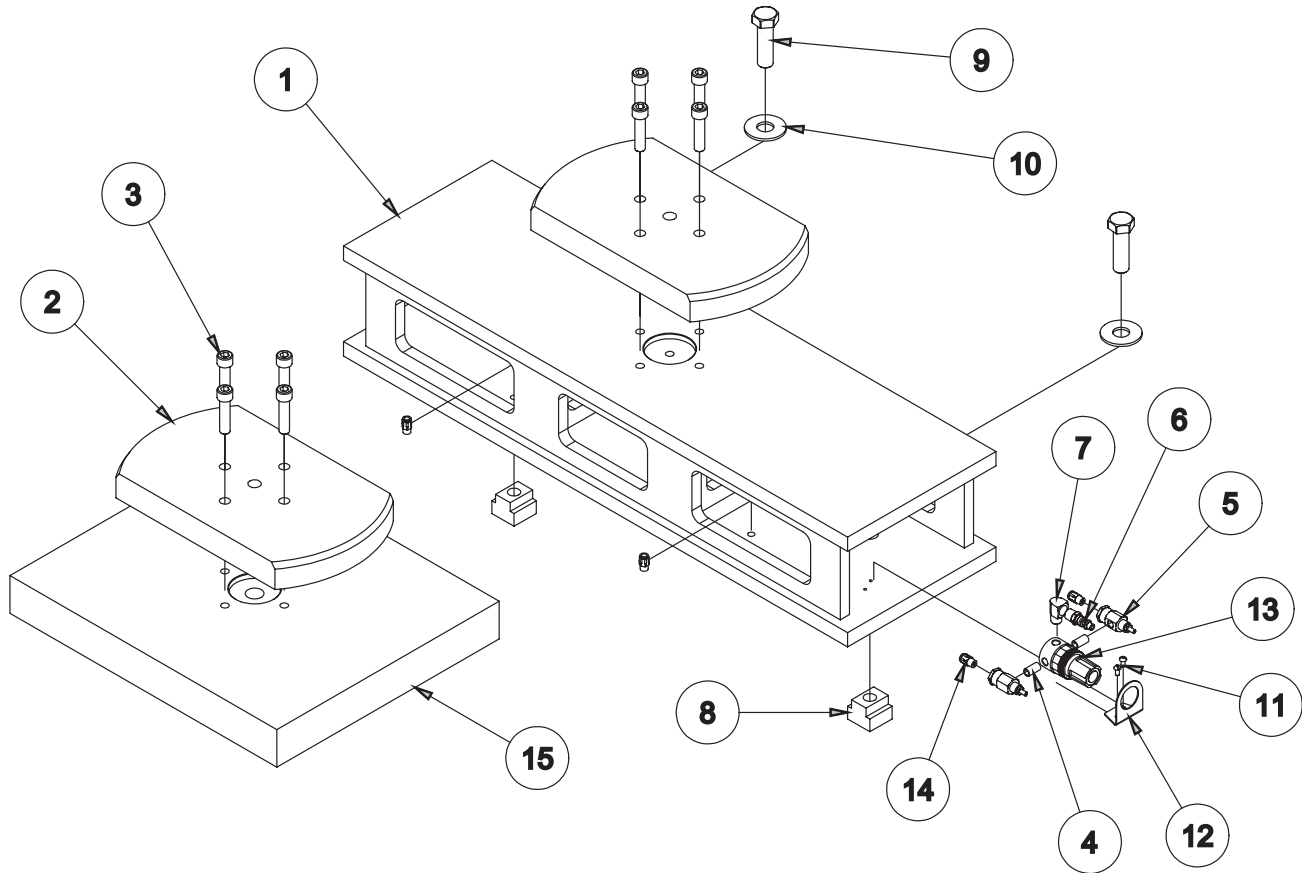
10202 WAUKESHA AT LINE BORE FIXTURE ASSEMBLY			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	10202C	ADAPTER PLATE ASSEMBLY, WAUKESHA AT, ADJUSTABLE PARALLEL, LINE BORE FIXTURE - F100
2	1	502-27-17A	Regulator Bracket
3	1	502-27-17	Regulator 0 - 60 PSI
4	1	502-11-17S	1/4 STREET ELL
5	1	502-11-16X	Quick Connect air Fitting Male
6	2	502-11-17J	Nipple, Close 1/8" NPT
7	2	502-11-35A	Flo Control
8	2	514-4-17N	Tee, Union 1/4 Tube
9	6	514-4-17W	FITTING 1/8NPT x 1/4" POLY STRAIGHT
10	2	6160	Nut, T - Hardened
11	2	MF-154C	3/4-10UNC x 2-1/2" LG. HEX BOLT
12	2	MF-181A	MF-181A
13	2	MF-110	ROUND HEAD MACHINE SCREW 10-24UNC x 3/8"
14	1	10202A	WAUKESHA AT LINE BORE CRADLE (MACHINING)

10203 Adapter Package and Support Cradle Parts



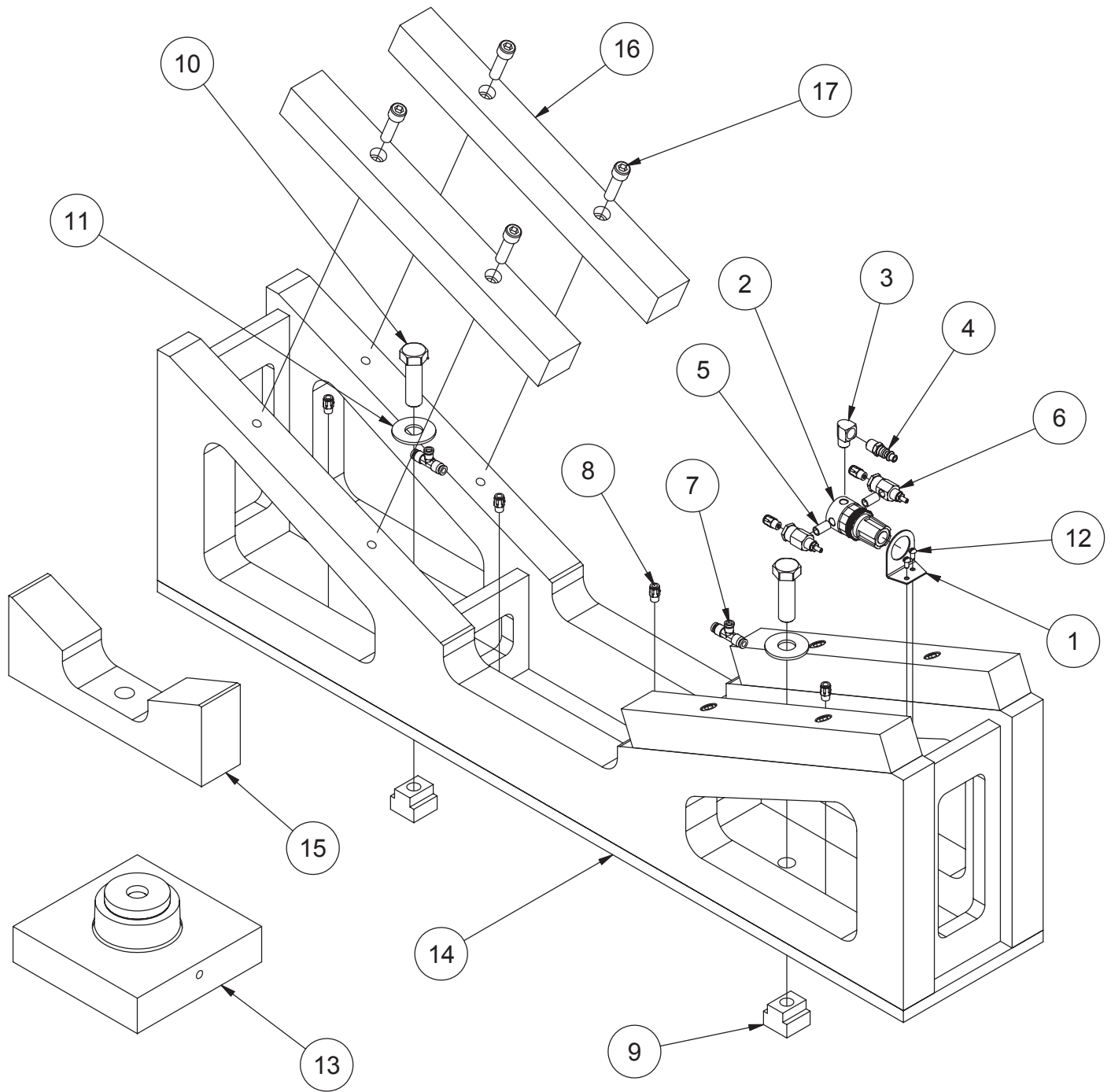
10203 WHITE SUPERIOR 2416 LINE BORE FIXTURE ASSEMBLY			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	10203A	CRADLE (MACHINING), WHITE SUPERIOR 2416 LINE BORE - F100
2	1	10203C	ADAPTER PLATE ASSEMBLY, CAT 3616/W.S. 2416, ADJUSTABLE PARALLEL, LINE BORE FIXTURE - F100
3	1	502-27-17A	Regulator Bracket
4	1	502-27-17	Regulator 0 - 60 PSI
5	1	502-11-17S	1/4 STREET ELL
6	1	502-11-16X	Quick Connect air Fitting Male
7	2	502-11-17J	Nipple, Close 1/8" NPT
8	2	502-11-35A	Flo Control
9	2	514-4-17N	Tee, Union 1/4 Tube
10	6	514-4-17W	FITTING 1/8NPT x 1/4" POLY STRAIGHT
11	2	6160	Nut, T - Hardened
12	2	MF-154C	MF-154C
13	2	MF-181A	MF-181A
14	2	MF-110	ROUND HEAD MACHINE SCREW 10-24UNC x 3/8"

10204 Adapter Package Parts



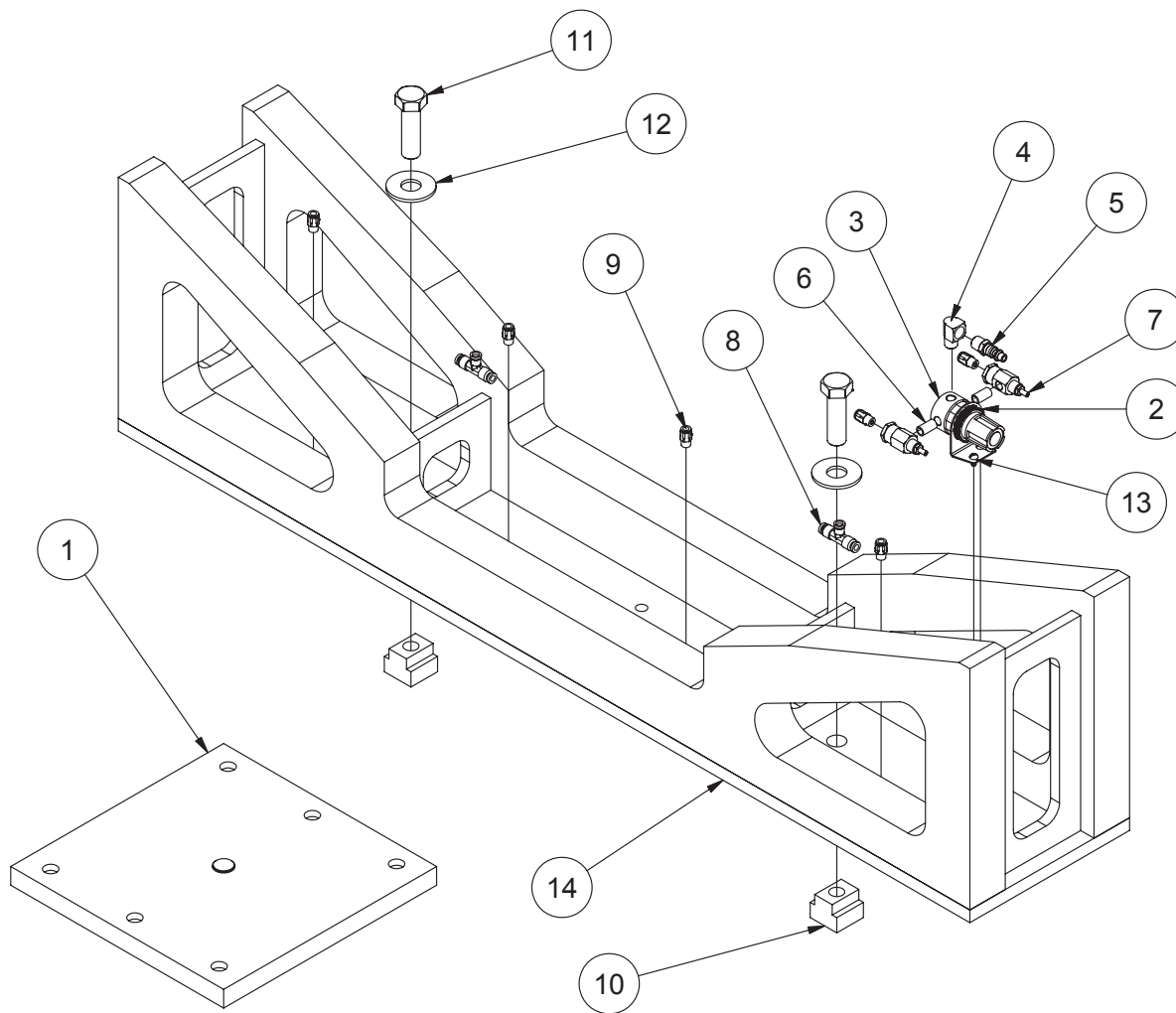
10204 FIXTURE ASSEMBLY - CAT 3600 INLINE BLOCK LINE BORE - F100			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	10204C	STATIONARY SUPPORT WELDMENT, INLINE BLOCK LINE BORE - F100
2	2	10204A	LOCATOR, CAT 3600 INLINE LINE BORE FIXTURE - F100
3	8	MF-45	1/2-13UNC x 2" LG. S.H.C.S.
4	2	502-11-17J	Nipple, Close 1/8" NPT
5	2	502-11-35A	Flo Control
6	1	502-11-16X	Quick Connect air Fitting Male
7	1	502-11-17S	1/4 STREET ELL
8	2	6160	Nut, T - Hardened
9	2	MF-154C	3/4-10UNC x 2-1/2" LG. HEX BOLT
10	2	MF-181A	3/4" FLAT WASHER
11	2	MF-110	ROUND HEAD MACHINE SCREW 10-24UNC x 3/8"
12	1	502-27-17A	Regulator Bracket
13	1	502-27-17	Regulator 0 - 60 PSI
14	4	514-4-17W	FITTING 1/8NPT x 1/4" POLY STRAIGHT
15	1	10204E	ADAPTER PLATE ASSY - INLINE BLOCK LINE BORE - F100

10205 Adapter Package and Support Cradle Parts



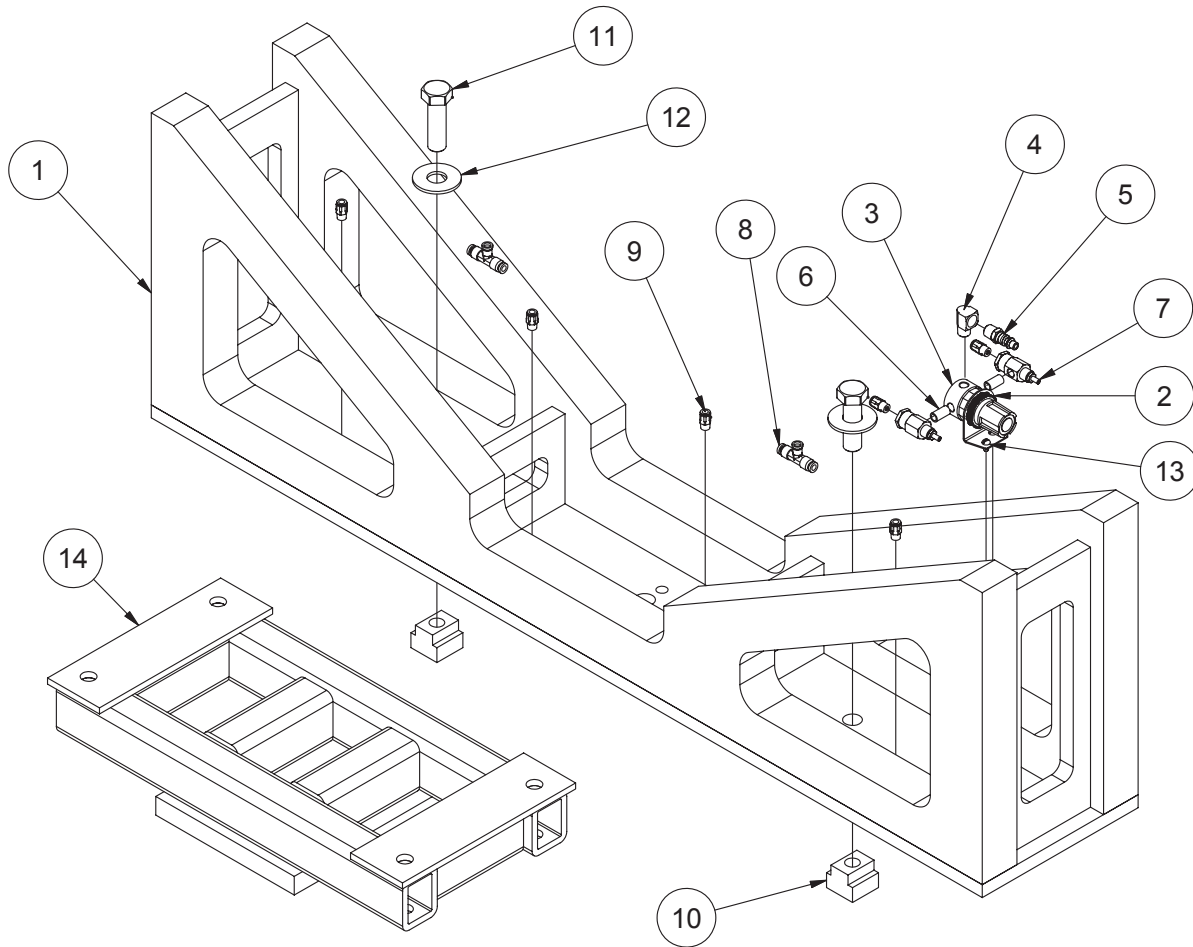
10205 GE EVO / 7 FDL BLOCK LINE BORE FIXTURE ASSEMBLY			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	502-27-17A	Regulator Bracket
2	1	502-27-17	Regulator 0 - 60 PSI
3	1	502-11-17S	1/4 STREET ELL
4	1	502-11-16X	Quick Connect air Fitting Male
5	2	502-11-17J	Nipple, Close 1/8" NPT
6	2	502-11-35A	Flo Control
7	2	514-4-17N	Tee, Union 1/4 Tube
8	6	514-4-17W	FITTING 1/8NPT x 1/4" POLY STRAIGHT
9	2	6160	Nut, T - Hardened
10	2	MF-154C	3/4-10UNC x 2-1/2" LG. HEX BOLT
11	2	MF-181A	MF-181A
12	2	MF-110	ROUND HEAD MACHINE SCREW 10-24UNC x 3/8"
13	1	10205B	ADAPTER ASSEMBLY, GE BLOCK LINE BORE FIXTURE
14	1	10205A	CRADLE (REWORK), GE EVO / 7FSL BLOCK, LINE BORE FIXTURE - F100
15	1	10205G	ADAPTER ASSEMBLY, GE 7FDL LINE BORE FIXTURE ASSEMBLY - F109
16	4	10205K	SPACER, CRADLE, GE 7FDL LINE BORE FIXTURE ASSEMBLY - F109
17	8	MF-44A	1/2-13UNC x 1-3/4" LONG S.H.C.S.

10206 Adapter Package and Support Cradle Parts



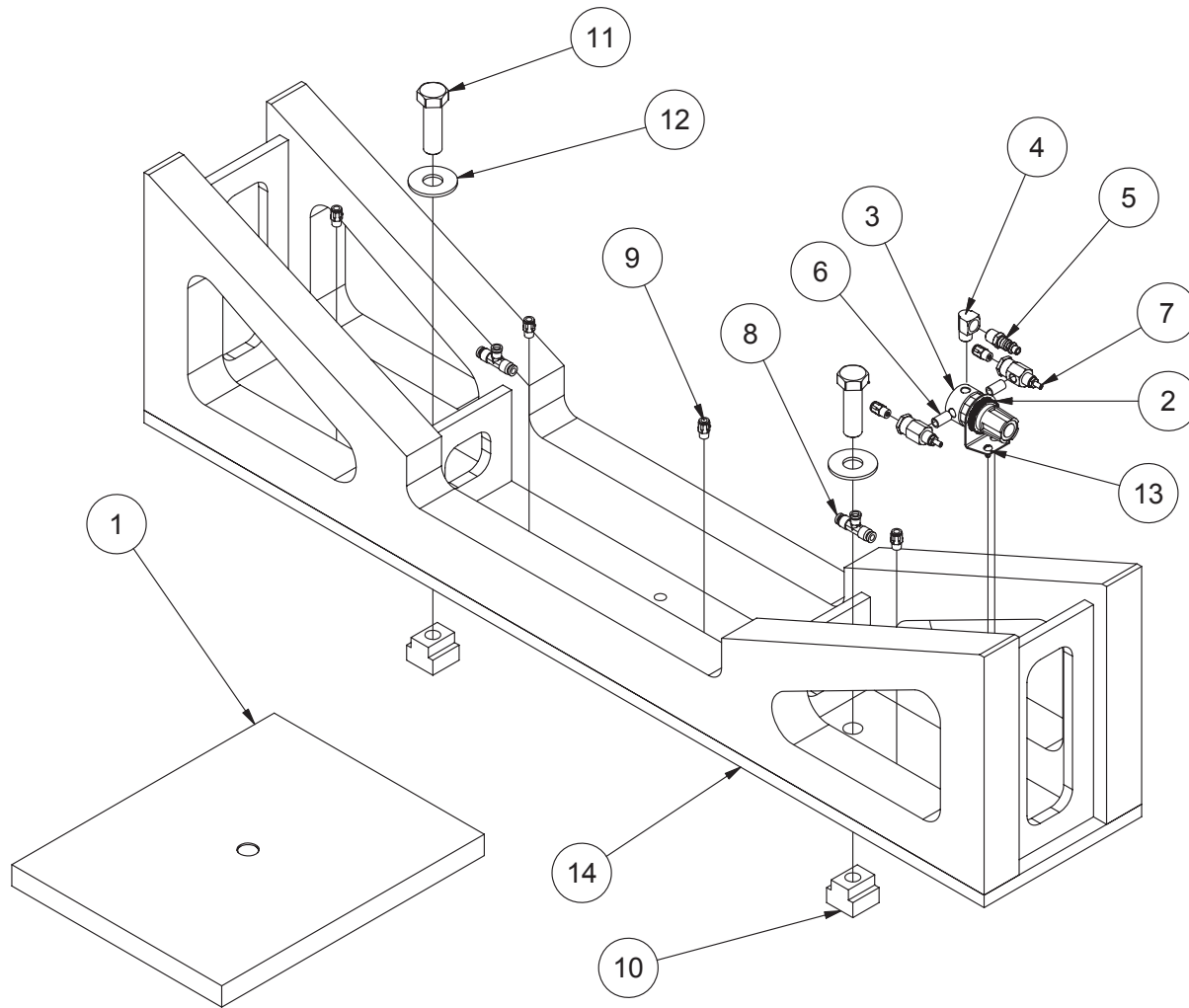
10206 EMD 710 LINE BORE FIXTURE ASSEMBLY - F109			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	10206B	ADAPTER PLATE ASSEMBLY - EMD 710, ADJUSTABLE PARALLEL, LINE BORE FIXTURE - F109
2	1	502-27-17A	Regulator Bracket
3	1	502-27-17	Regulator 0 - 60 PSI
4	1	502-11-17S	1/4 STREET ELL
5	1	502-11-16X	Quick Connect air Fitting Male
6	2	502-11-17J	Nipple, Close 1/8" NPT
7	2	502-11-35A	Flo Control
8	2	514-4-17N	Tee, Union 1/4 Tube
9	6	514-4-17W	FITTING 1/8NPT x 1/4" POLY STRAIGHT
10	2	6160	Nut, T - Hardened
11	2	MF-154C	3/4-10UNC x 2-1/2" LG. HEX BOLT
12	2	MF-181A	MF-181A
13	2	MF-110	ROUND HEAD MACHINE SCREW 10-24UNC x 3/8"
14	1	10206A	CRADLE (MACHINING), EMD 710, LINE BORE FIXTURE - F109

10207 Adapter Package and Support Cradle Parts



10207 MTU 1163 LINE BORE FIXTURE ASSEMBLY			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	10203A	CRADLE (MACHINING), WHITE SUPERIOR 2416 LINE BORE - F100
2	1	502-27-17A	Regulator Bracket
3	1	502-27-17	Regulator 0 - 60 PSI
4	1	502-11-17S	1/4 STREET ELL
5	1	502-11-16X	Quick Connect air Fitting Male
6	2	502-11-17J	Nipple, Close 1/8" NPT
7	2	502-11-35A	Flo Control
8	2	514-4-17N	Tee, Union 1/4 Tube
9	6	514-4-17W	FITTING 1/8NPT x 1/4" POLY STRAIGHT
10	2	6160	Nut, T - Hardened
11	2	MF-154C	3/4-10UNC x 2-1/2" LG. HEX BOLT
12	2	MF-181A	MF-181A
13	2	MF-110	ROUND HEAD MACHINE SCREW 10-24UNC x 3/8"
14	1	10207A	ADAPTER ASSEMBLY, MTU 1163 LINE BORE FIXTURE - F109

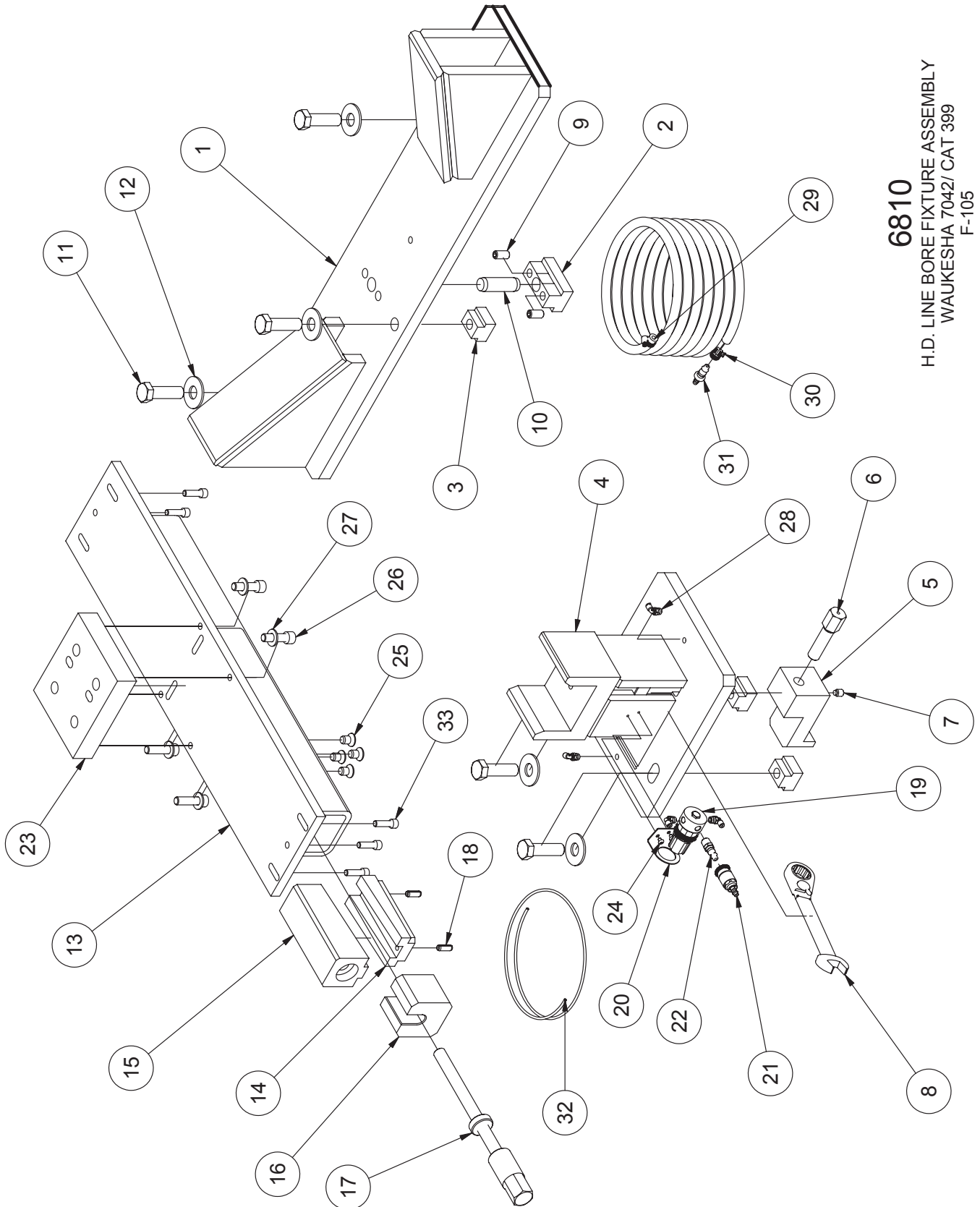
10208 Adapter Package and Support Cradle Parts



10208 MTU 8000 LINE BORE FIXTURE ASSEMBLY - F109			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	10208B	ADAPTER PLATE ASSEMBLY - MTU 8000, ADJUSTABLE PARALLEL, LINE BORE FIXTURE - F109
2	1	502-27-17A	Regulator Bracket
3	1	502-27-17	Regulator 0 - 60 PSI
4	1	502-11-17S	1/4 STREET ELL
5	1	502-11-16X	Quick Connect air Fitting Male
6	2	502-11-17J	Nipple, Close 1/8" NPT
7	2	502-11-35A	Flo Control
8	2	514-4-17N	Tee, Union 1/4 Tube
9	6	514-4-17W	FITTING 1/8NPT x 1/4" POLY STRAIGHT
10	2	6160	Nut, T - Hardened
11	2	MF-154C	3/4-10UNC x 2-1/2" LG. HEX BOLT
12	2	MF-181A	MF-181A
13	2	MF-110	ROUND HEAD MACHINE SCREW 10-24UNC x 3/8"
14	1	10208A	CRADLE (MACHINING), MTU 8000, LINE BORE FIXTURE - F109

Line Bore Fixturing for Large Blocks

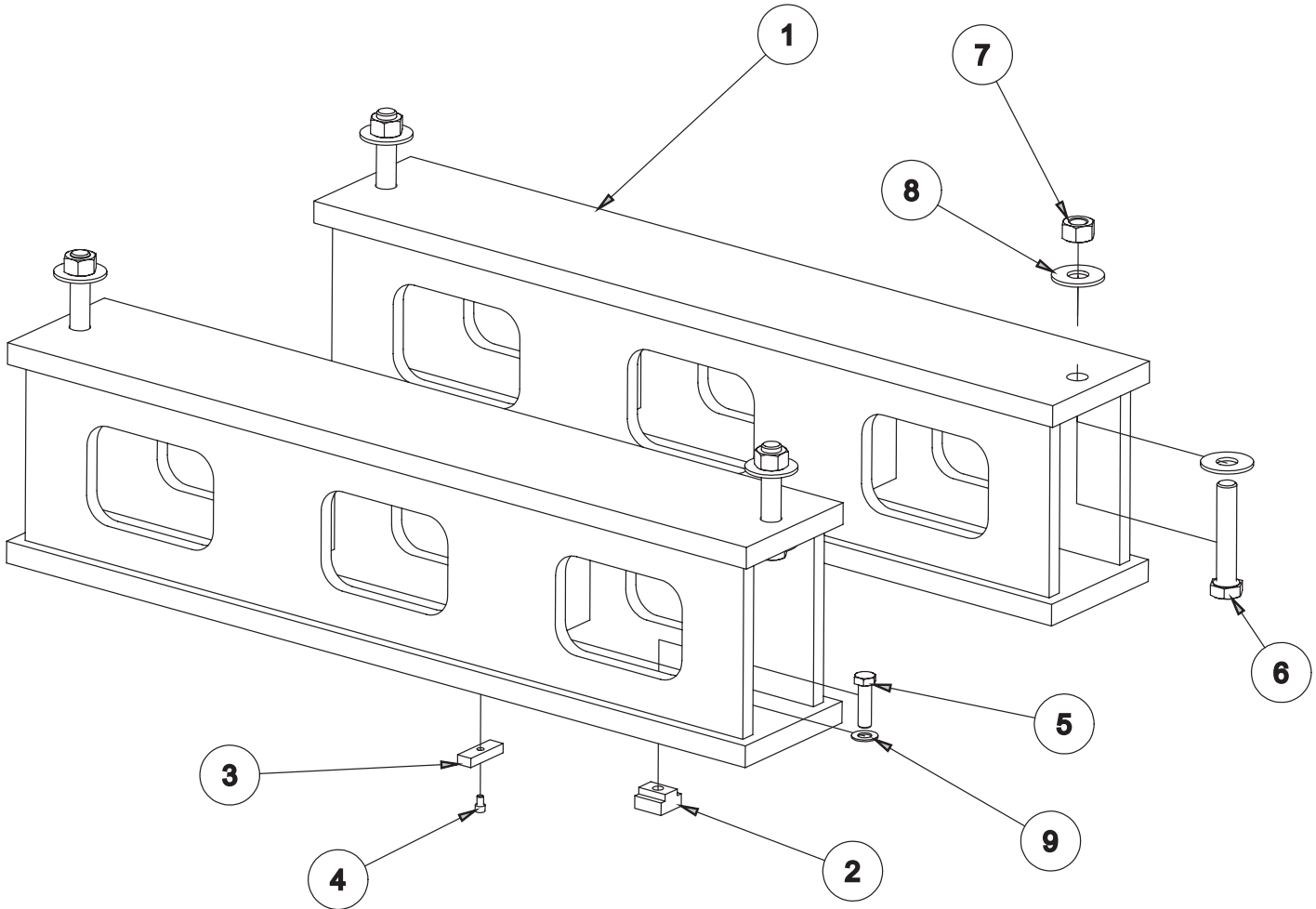
6810 Line Boring Fixture Parts



6810
H.D. LINE BORE FIXTURE ASSEMBLY
WAUKESHA 7042/ CAT 399
F-105

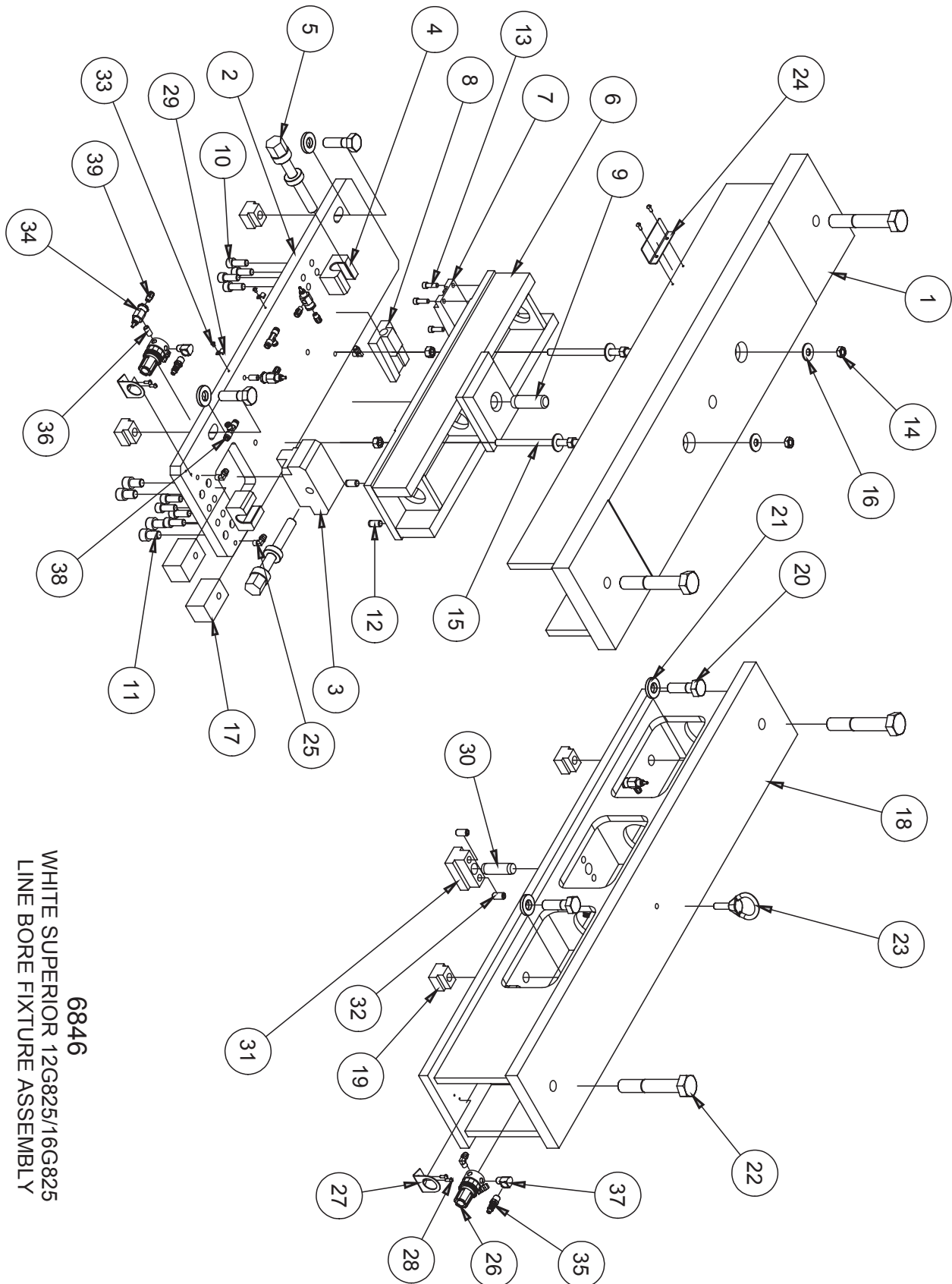
6810 HEAVY DUTY LINE BORE FIXTURE ASSEMBLY FOR WAUKESHA 7042/ CAT 399			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	6811B	CRADLE (MACHINING) L.H. ADJUSTING, WAUKESHA 7042 LINE BORE FIXTURE
2	1	6820	LOCATING PIVOT KEY, DIESEL LINE BORE FIXTURE
3	5	6160	Nut, T - Hardened
4	1	6812C	SUPPORT (MACHINING) - WAUKESHA 7042/ CAT 399 LINE BORE FIXTURE
5	1	6814A	ADJUSTING BLOCK - WAUKESHA 7042/ CAT 399 LINE BORE FIXTURE
6	1	6812E	SCREW, ADJUSTING SUPPORT, WAUKESHA 7042/ CAT 399 LINE BORE FIXTURE
7	1	500-96-3C	7/16-14 x 1/2" BRASS TIPPED SET SCREW
8	1	6812F	1" REVERSIBLE RATCHETING WRENCH
9	2	MF-72	Flat Point 1/2-13 UNC x 1
10	1	6819	Locating, Pivot Pin
11	5	MF-154C	3/4-10UNC x 2-1/2" LG. HEX BOLT
12	5	MF-181A	3/4" FLAT WASHER
13	1	6813	TUBE ASSEMBLY, ADJUSTABLE, WAUKESHA 7042/ CAT 399 LINE BORE FIXTURE
14	1	6411	Lower Leveling Pad
15	1	6410	Upper Leveling Pad
16	1	6409	BRACKET, LEVELING SCREW (399 CAT) F-88
17	1	6408	Leveling Screw
18	2	MF-229B	Pin - Slotted Spring
19	1	502-27-17	Regulator 0 - 60 PSI
20	1	502-27-17A	Regulator Bracket
21	1	502-11-16W	Quick connect air fitting female
22	1	502-11-16X	Quick Connect air Fitting Male
23	1	6813C	ADAPTER, CAT 399 - WAUKESHA 7042/CAT 399 LINE BORE FIXTURE
24	2	MF-87	Socket Button Head 10 - 24 x 1/4
25	4	6409A	1/2-13UNC x 3/4" LG. SOCKET FLAT HEAD SCREW
26	4	MF-44A	Hexagon Socket Head Cap Screw
27	4	MF-180	1/2" FLAT WASHER
28	4	514-4-18	1/8 npt x 1/8 poly 90
29	1	502-1-98	1/4" AIR HOSE
30	2	502-1-97	CLAMP, 1/4" I.D. HOSE
31	1	502-11-16Y	CONNECTOR, MALE AIR 1/4 NPTF
32	1	514-4-24	1/4" AIR HOSE - 2 FEET
33	6	MF-32	S.H.C.S.3/8 - 16 UNC - 1 1/4

6815 Line Boring Fixture Parts



6815 WHITE SUPERIOR 8G825 LINE BORE FIXTURE ASSEMBLY			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	2	6816A	W.S. 8G825 LINE BORE FIXTURE (MACH.)
2	4	502-1-11B	T-Nut 3/4"
3	2	6831	KEY, FIXTURE
4	2	MF-11	S.H.C.S. 1/4 - 20 UNC - 3/8
5	4	MF-149B	1/2-13UNC x 1-3/4" LG. HEX BOLT
6	4	6822A	3/4-10UNC x 4" LONG HEX BOLT
7	4	MF-166A	3/4-10UNC HEX NUT
8	8	MF-181A	3/4" FLAT WASHER
9	4	MF-180	1/2" FLAT WASHER

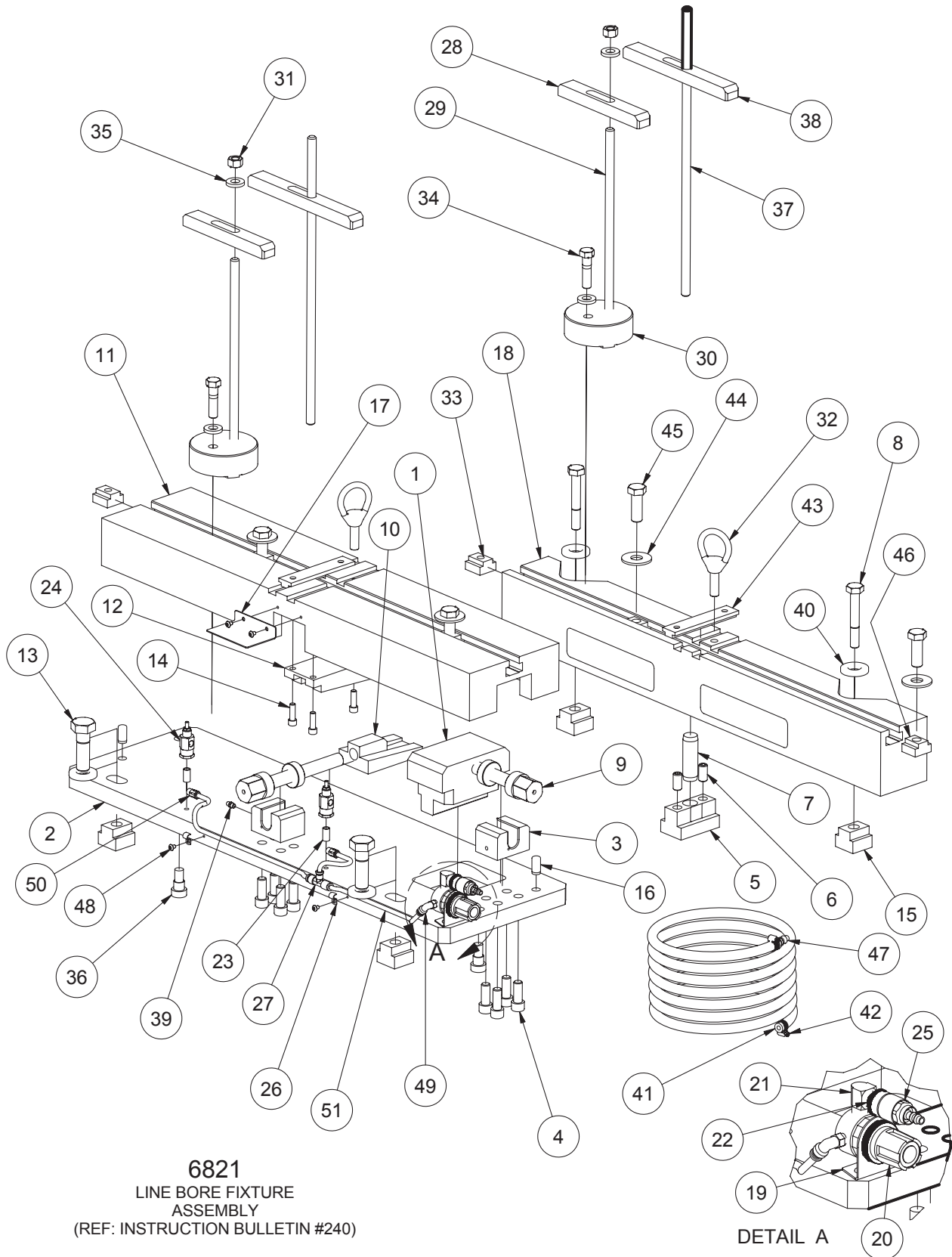
6846 Line Boring Fixture Parts



6846
WHITE SUPERIOR 12G825/16G825
LINE BORE FIXTURE ASSEMBLY

6846 WHITE SUPERIOR 12G825/16G825 LINE BORE FIXTURE			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	6848A	ADAPTER (MACH.)
2	1	6852	LOWER PLATE REWORK
3	1	6830	Block, Adjusting Adjustable Parrallel
4	2	6829	Bracket, Screw Adjustable
5	2	6828	SCREW, ADJUSTABLE PARALLEL
6	1	6849A	TILT ARM (MACH.)
7	1	6826	Wedge, Upper Adjustable Parrallel
8	1	6827	Wedge, Lower Adjustable Parrallel
9	1	6853	LOCATING PIN
10	8	MF-43	1/2-13UNC x 1-1/4" S.H.C.S
11	4	MF-46F	5/8-11UNC x 1" S.H.C.S.
12	2	MF-213B	1/2" DIA. x 1" LG. DOWEL PIN
13	3	Mf-23	Socket Head Cap screw 5/16 - 18 UNC - 1
14	6	MF-165	1/2-13UNC HEX NUT
15	2	6848B	CLAMP STUD, ADJUSTABLE PARALLEL, WHITE SUPERIOR LINE BORE FIXTURE - F90
16	4	MF-180	1/2" FLAT WASHER
17	2	6850	LIFT BLOCK
18	1	6847A	STATIONARY PARALLEL
19	4	6160	Nut, T - Hardened
20	4	MF-154C	3/4-10UNC x 2-1/2" LG. HEAVY HEX BOLT
21	4	6287	WASHER, THRUST 3/4"
22	4	6854	1"-8UNC x 6" LG. HEAVY HEX BOLT
23	1	502-3-13	Lift Eye
24	1	6851	Chip Shield, Upper Pad Adjsutable Parrallel
25	6	502-11-16I	Elbow, Male 1/4 FPT x 1/8 PT
26	2	502-27-17	Regulator 0 - 60 PSI
27	2	502-27-17A	Regulator Bracket
28	6	MF-111	10-24UNC x 1/2" LG. SLOTTED ROUND HEAD MACHINE SCREW
29	2	502-12-16	Wire Clip
30	1	6819	Locating, Pivot Pin
31	1	6820	Locating Pivont Key, Waukesha 7042/ CAT 399
32	2	MF-72	1/2-13UNC x 1" LG. SOCKET FLAT POINT SET SCREW
33	2	Mf-86	Socket Button Head Cap Screw 8 - 32 x 1/4
34	6	502-11-35A	Flo Control
35	2	502-11-16X	Quick Connect air Fitting Male
36	5	502-11-17J	Nipple, Close 1/8" NPT
37	2	502-11-17S	1/4 STREET ELL
38	3	514-4-17N	Tee, Union 1/4 Tube
39	7	514-4-17W	FITTING 1/8NPT x 1/4" POLY STRAIGHT

Line Bore Fixturing for Large Blocks 6821 Adjustable Universal Line Boring Parallel Parts

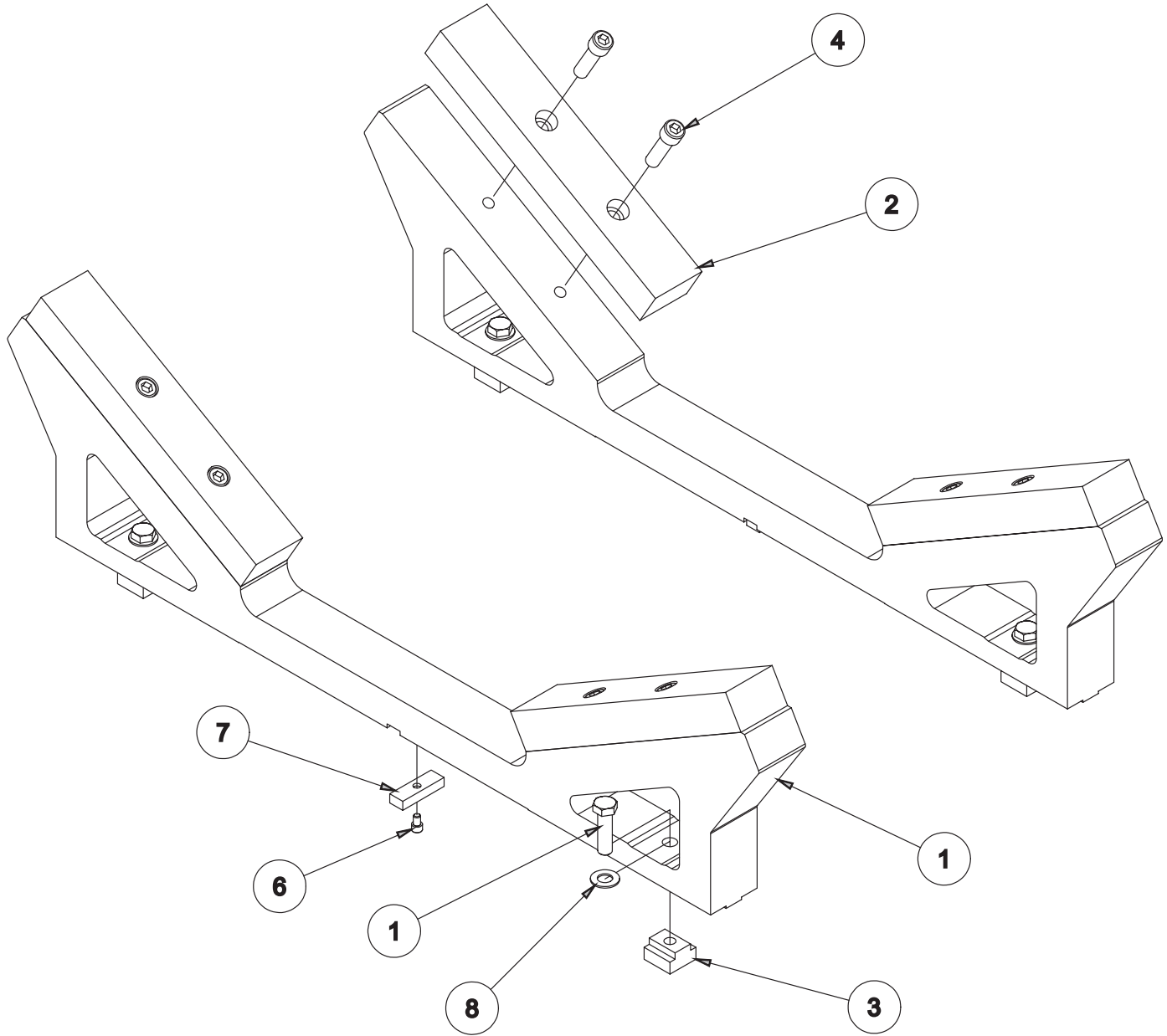


6821
LINE BORE FIXTURE
ASSEMBLY
(REF: INSTRUCTION BULLETIN #240)

DETAIL A

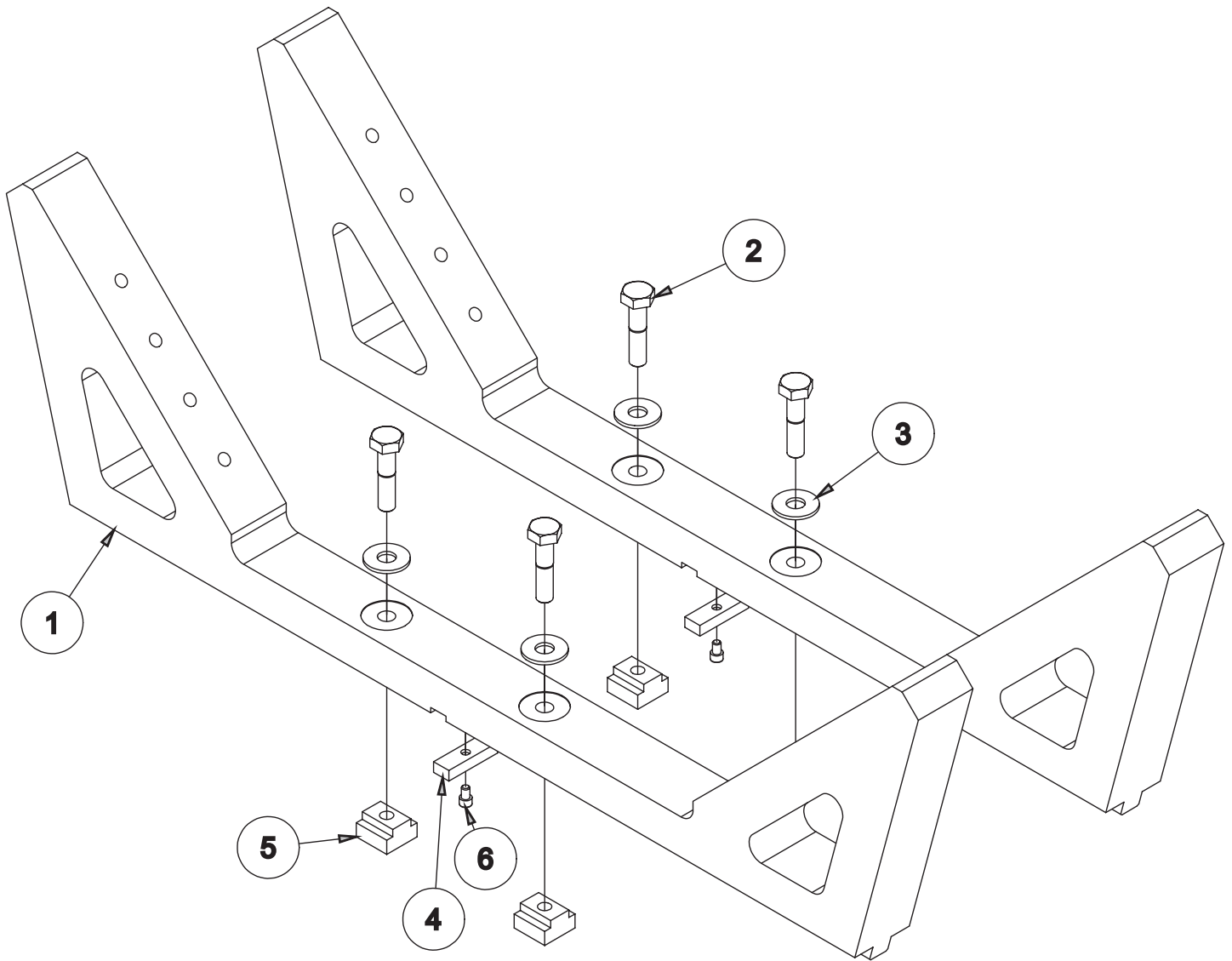
4	8	MF-43	1/2-13UNC x 1-1/4" S.H.C.S.
5	1	6820	Locating Pivot Key, Waukesha 7042/ CAT 399
6	2	MF-72	1/2-13UNC x 1" FLAT POINT SET SCREW
7	1	6819	Locating, Pivot Pin
8	2	6822B	3/4-10UNC x 4" LONG HEX BOLT
9	2	6828	SCREW, ADJUSTABLE PARALLEL F-8 LINE BORE FIXTURE
10	1	6827	Wedge, Lower Adjustable Parrallel
11	1	6824A	Pad, Upper Adjustable Parrallel
12	1	6826	Wedge, Upper Adjustable Parrallel
13	2	MF-154C	3/4-10 x 2-1/2" HEX BOLT
14	3	MF-23	5/16-18UNC x 1" S.H.C.S.
15	4	6160	Nut, T - Hardened
16	2	MF-213B	1/2" x 1" DOWEL PIN
17	1	6834	Chip Shield, Upper Pad Adjsutable Parrallel
18	1	6822A	Parrallel, Stationary Adjustable
19	1	502-27-17A	Regulator Bracket
20	1	502-27-17	Regulator 0 - 60 PSI
21	1	502-11-17S	1/4 STREET ELL
22	1	502-11-16X	Quick Connect air Fitting Male
23	2	502-11-17J	Nipple,Close 1/8" NPT
24	2	502-11-35A	Flo Control
25	1	502-11-16W	Quick connect air fitting female
26	2	502-12-16	Wire Clip
27	1	514-4-17N	Tee, Union 1/4 Tube
28	2	6833A	CLAMP BAR (7" LG), INLINE BLOCK F-88 LINE BORE FIXTURE
29	2	6833B	CLAMP ROD, (12") INLINE BLOCK F-88 LINE BORE FIXTURE
30	2	6833	Locator, In-Line Block
31	2	MF-165	1/2-13UNC HEX NUT
32	2	502-3-13	Lift Eye
33	2	502-1-11B	T-Nut 3/4"
34	2	MF-149C	1/2-13UNC x 2" HEX BOLT
35	4	MF-180	1/2" FLAT WASHER
36	2	514-7-22	Screw, Shoulder
37	2	6833D	CLAMP ROD, (18") INLINE BLOCK F-88 LINE BORE FIXTURE
38	2	6833E	CLAMP BAR (9"), INLINE BLOCK F-88 LINE BORE FIXTURE
39	1	MF-189	STRAIGHT GREASE FITTING
40	4	6287	WASHER, THRUST 3/4"
41	1	502-1-98	1/4" AIR HOSE
42	2	502-1-97	CLAMP, 1/4" I.D. HOSE
43	2	6372	KEY, LOCATION - 10" PARALLEL - F90
44	4	MF-181	5/8" FLAT WASHER
45	4	MF-154F	5/8-11UNC x 1-3/4" LG. HEX BOLT
46	4	502-1-11A	3/4" T-Nut

6823B 120 Degree V Block Support Parts



6823B CAT 3500 120 DEGREE V-BLOCK CRADLE ASSEMBLY			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	2	6823A	CAT 3500 CRADLE
2	4	6789H	ADAPTER PLATE 1.5"
3	4	502-1-11B	T-Nut 3/4"
4	8	MF-44A	Hexagon Socket Head Cap Screw
5	4	MF-149B	1/2-13UNC x 1-3/4 HEX BOLT
6	2	MF-11	S.H.C.S. 1/4 - 20 UNC - 3/8
7	2	6831	KEY, FIXTURE
8	4	MF-180	1/2" FLAT WASHER

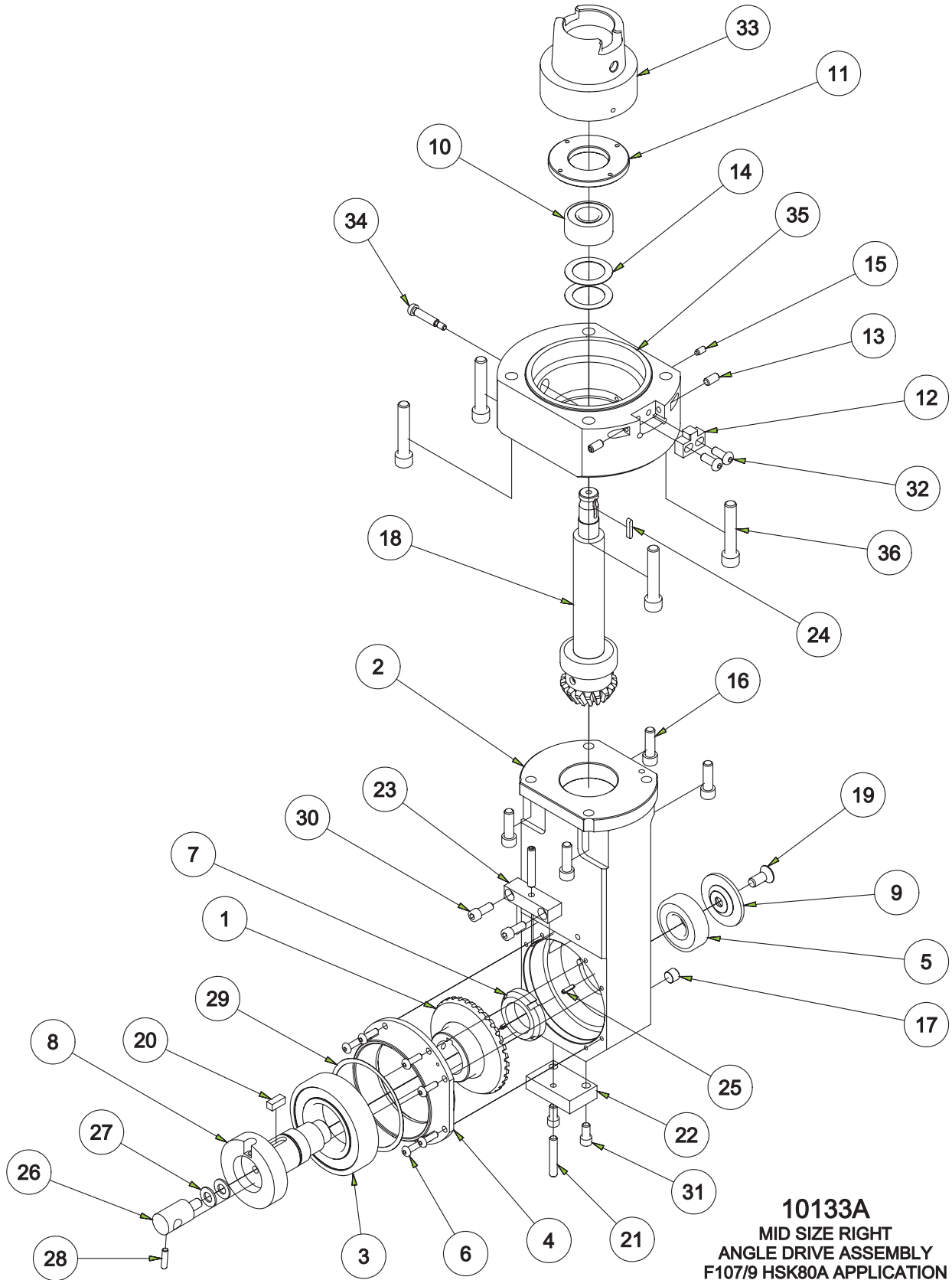
6823E 90 Degree V Block Support Parts



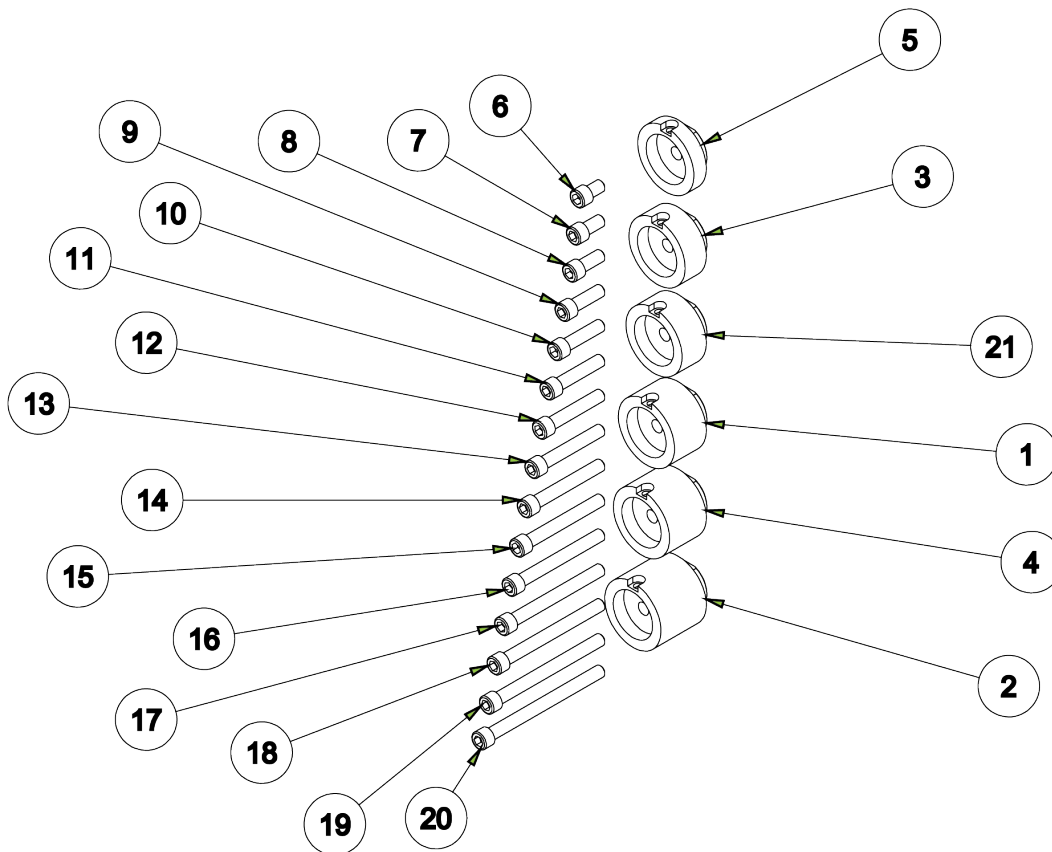
6823E LARGE 90 DEG V-BLOCK CRADLE ASSEMBLY			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	2	6823D	CRADLE, LARGE 90 DEGREE V-BLOCK
2	4	MF-149A	Heavy Hex Bolt 1/2-13UNC x 2-1/4"
3	4	MF-180	1/2" FLAT WASHER
4	2	6831	KEY, FIXTURE
5	4	502-1-11B	T-Nut 3/4"
6	2	MF-149A ANSI B18.3 - 1/4 - 20 - 3/8	Hexagon Socket Head Cap Screw

Line Bore Tooling for Small to Large Blocks and Heads

10133 Straight 90 Degree Right Angle Drive Parts



10133A MID SIZE RIGHT ANGLE DRIVE ASSEMBLY - F107/9 HSK80A			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	6859	REWORK 6859A SPIRAL BEVEL GEAR
2	1	6857	HOUSING, MID SIZE RIGHT ANGLE DRIVE F90
3	1	650-1-21A	BEARING, MID SIZE R.A.D.
4	1	6861	COVER, BEARING RETAINER - MID SIZE RIGHT ANGLE DRIVE
5	1	502-35-14	Bearing
6	8	MF-89	10-24UNC x 5/8" LG. SOCKET BUTTON HEAD SCREW
7	1	6048	Bearing Nut
8	1	6860	HORIZONTAL SHAFT - MID SIZE RIGHT ANGLE DRIVE
9	1	6862	END CAP, BEARING RETAINER - MID SIZE RIGHT ANGLE DRIVE
10	1	502-9-32	Bearing, Ball MRC 5203SBKFF
11	1	6772A	Nut, Bearing Line Bore Head
12	1	6750K	Key, Location 90 Degree Head
13	2	100-82-2A	BRASS TIPPED 10-24UNC SOCKET SET SCREW
14	2	6007A	Bellville Spring, BS203
15	1	100-82-2A	Brass tipped 10-24 Socket Set Screw
16	4	Mf-23	Socket Head Cap screw 5/16 - 18 UNC - 1
17	1	MF-233	1/8-27NPT PIPE PLUG
18	1	6858F	PINION SHAFT ASSEMBLY - MID SIZE RIGHT ANGLE DRIVE , F109 (HSK80A)
19	1	6774K	HEXAGON SOCKET FLAT COUNTERSUNK HEAD CAP SCREW 5/16-24UNF x 3/4" LG.
20	1	7191K	KEY, HORIZONTAL SHAFT MID SIZE R.A.D.
21	2	MF-66	1/4-20UNC x 1-1/2" LG. SOCKET SET SCREW
22	1	6857F	FINE ADJUSTING BLOCK, LOWER - MID SIZE R.A.D.
23	1	6857E	FINE ADJUSTING BLOCK, UPPER - MID SIZE R.A.D.
24	1	6753V	KEY (MICARTA), PINION - 90 DEGREE HEAD
25	2	MF-217	Pin - Slotted Spring
26	1	502-9-9S	INDICATOR MOUNT, R.A.D.
27	2	MF-177	SAE FLAT WASHER 5/16"
28	1	MF-58	10-24UNC x .5 LG. SICKE
29	1	6861A	SHIM, BEARING SPACER - HORIZONTAL SHAFT - MID SIZE F90 R.A.D.
30	2	MF-13	S.H.C.S.1/4 - 20 UNC - 5/8
31	2	MF-12	S.H.C.S.1/4 - 20 UNC - 1/2
32	2	MF-91	1/4-20UNC x 5/8 SOCKET BUTTONHEAD SCREW
33	1	10114A	ADAPTER, DRIVE, R.A.D. - F109 - HSK 80A
34	1	10114G	1/4" x 1" LONG HEX SOCKET SHOULDER SCREW
35	1	6770S	MOUNTING HUB, MID-SIZE RAD ASSEMBLY - F109 HSK80A
36	4	MF-34	S.H.C.S.3/8 - 16 UNC - 2



CUTTERHEAD SPACER SET - LINE BORE HEAD F107/9			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	650-2-43	SPACER (1.05" LG.) PRECISION LINE BORE HEAD
2	1	650-2-43A	SPACER (1.50" LG.) PRECISION LINE BORE HEAD
3	1	650-2-43B	SPACER (.70" LG.) PRECISION LINE BORE HEAD
4	1	650-2-43D	SPACER (1.215" LG.) PRECISION LINE BORE HEAD
5	1	650-2-43E	SPACER (.41" LG.) PRECISION LINE BORE HEAD
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
21	1	650-2-43G	SPACER (.80" LG.) PRECISION LINE BORE HEAD

650-2-39B Cutterhead Package Components

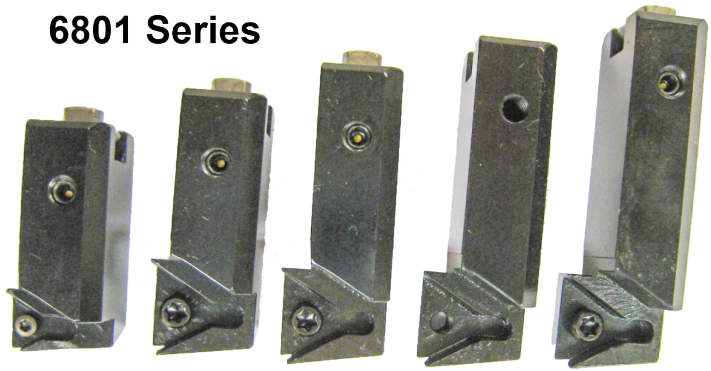


650-2-39F

RT321F



6801 Series



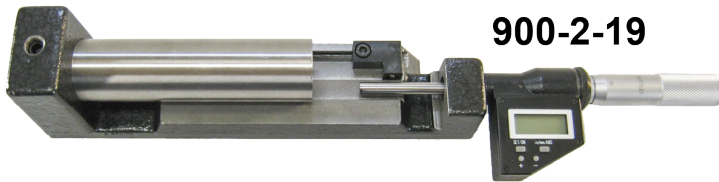
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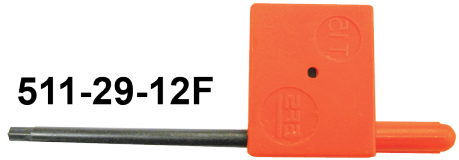
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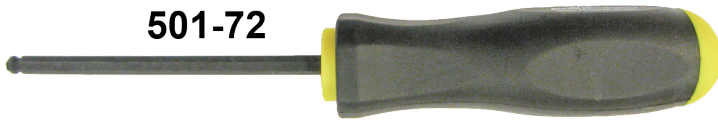


900-2-19



511-29-12F

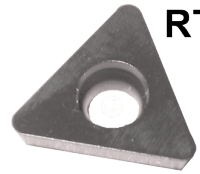
501-72



RT211



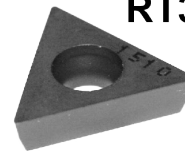
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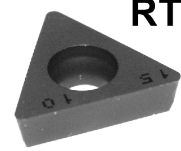
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RT321



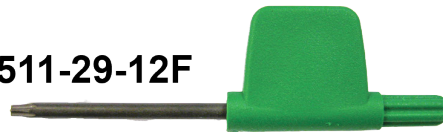
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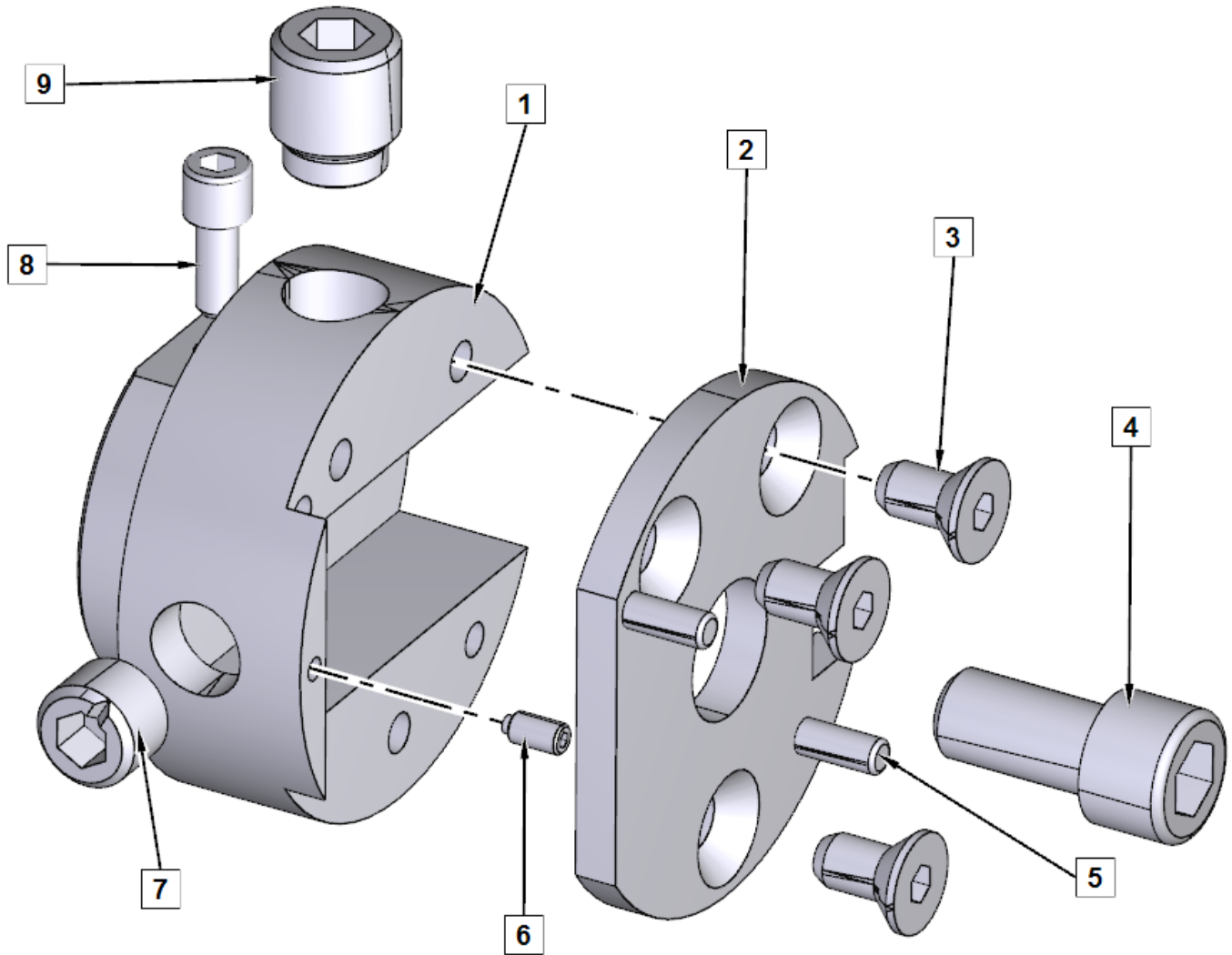
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511-29-12F

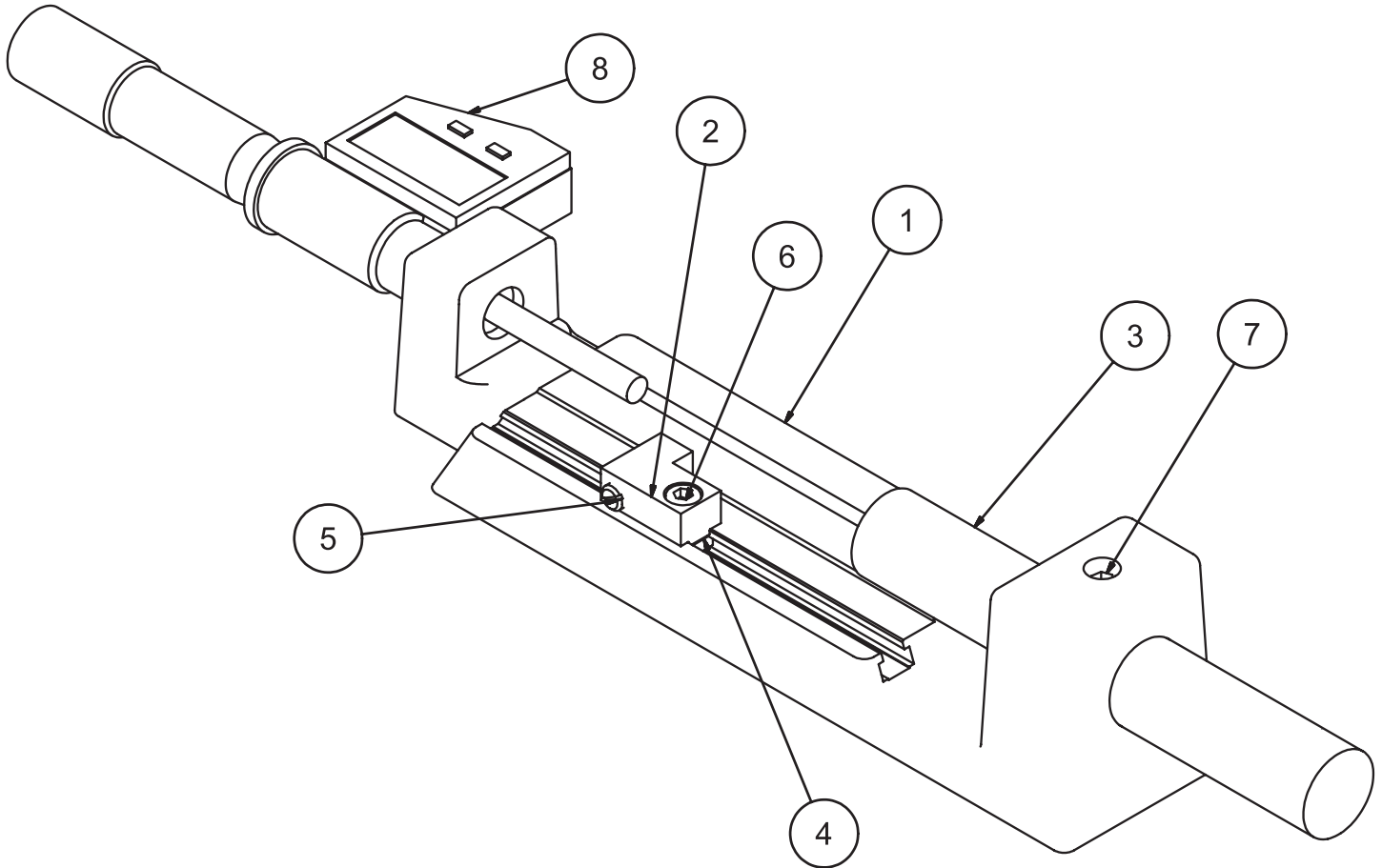


650-2-39F Cutterhead Parts



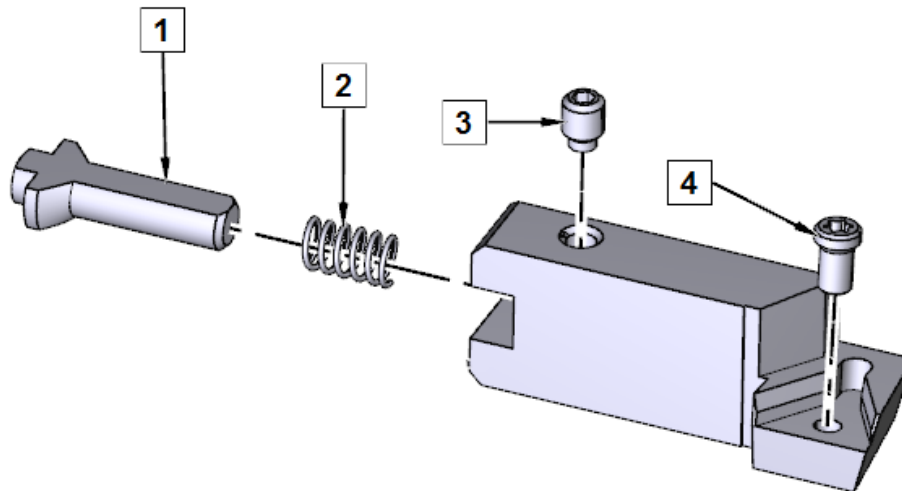
ITEM	PART #	DESCRIPTION
1	650-2-40A	BODY, 1.9" PRECISION LINE BORE CUTTERHEAD
2	650-2-41	CAP, 1.9" DIAMETER PRECISION LINE BORE HEAD
3	MF-78	SOCKET FLAT HEAD SCREW 10-24 X 3/8"
4	MF-21	SOCKET HEAD CAP SCREW 5/16-18 X 5/8"
5	MF-193C	DOWEL PINS 1/8 X 3/8"
6	650-2-6A	SOCKET SET SCREW BRASS TIPPED 4-40 X 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

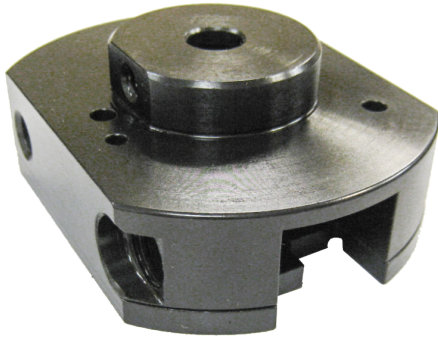
6801 Series Insert Holder Parts



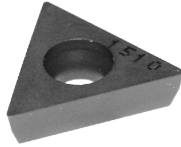
ITEM	PART #	DESCRIPTION
1	100-82-3B	PIN ADJUSTING LONG INDEXABLE INSERT TOOLHOLDER
2	100-82-1	SPRING, ADJUSTING PIN
3	100-82-2	SCREW,SET-BRASS GIB - 3/16" LONG
4	511-29-12C	SCREW, TORX M4 X .7 X .315" LONG

650-2-39C Cutterhead Package Components

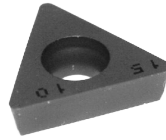
650-2-39G



RT321



RT322



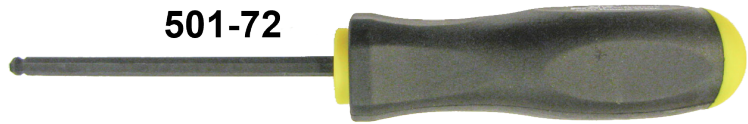
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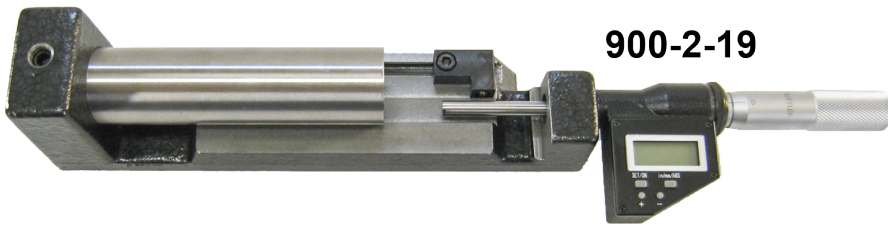
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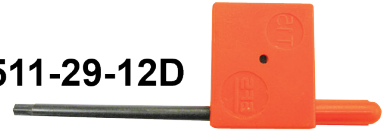
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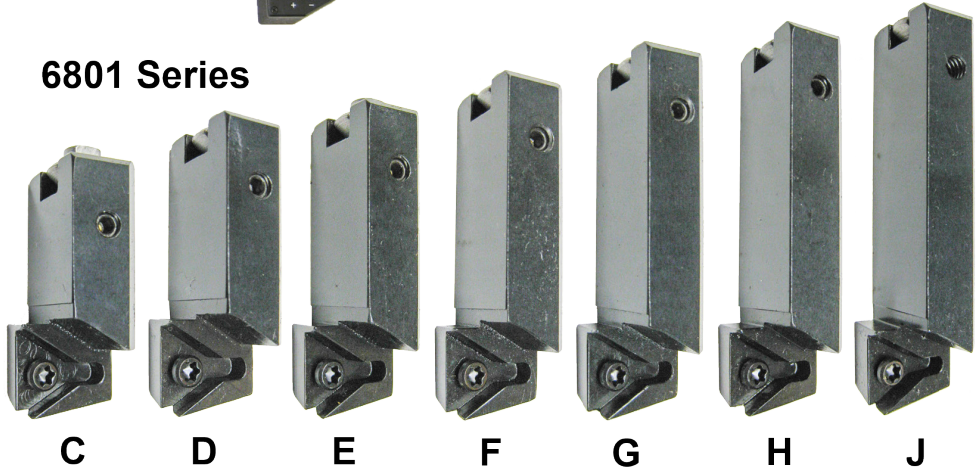
900-2-19



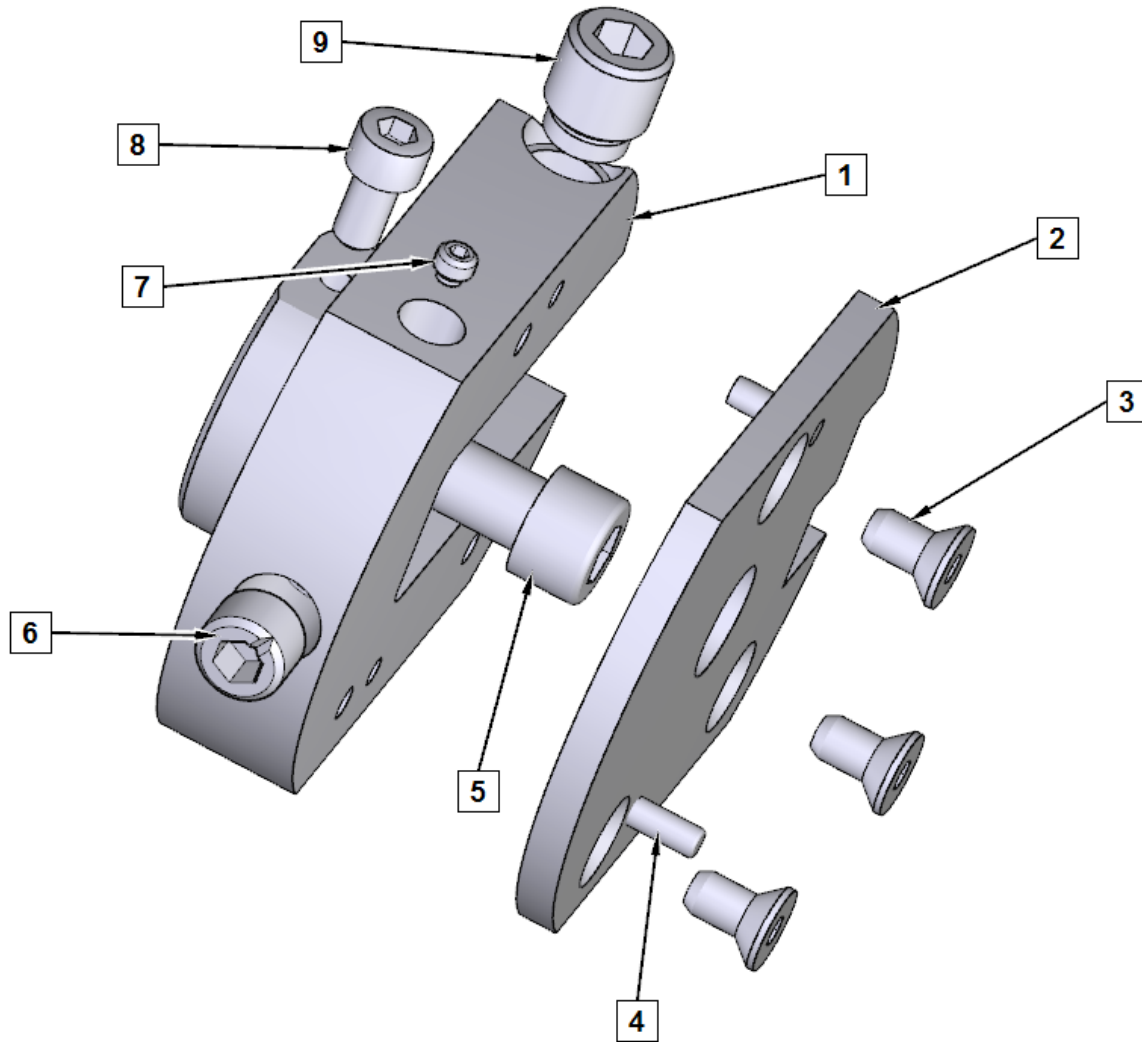
511-29-12D



6801 Series

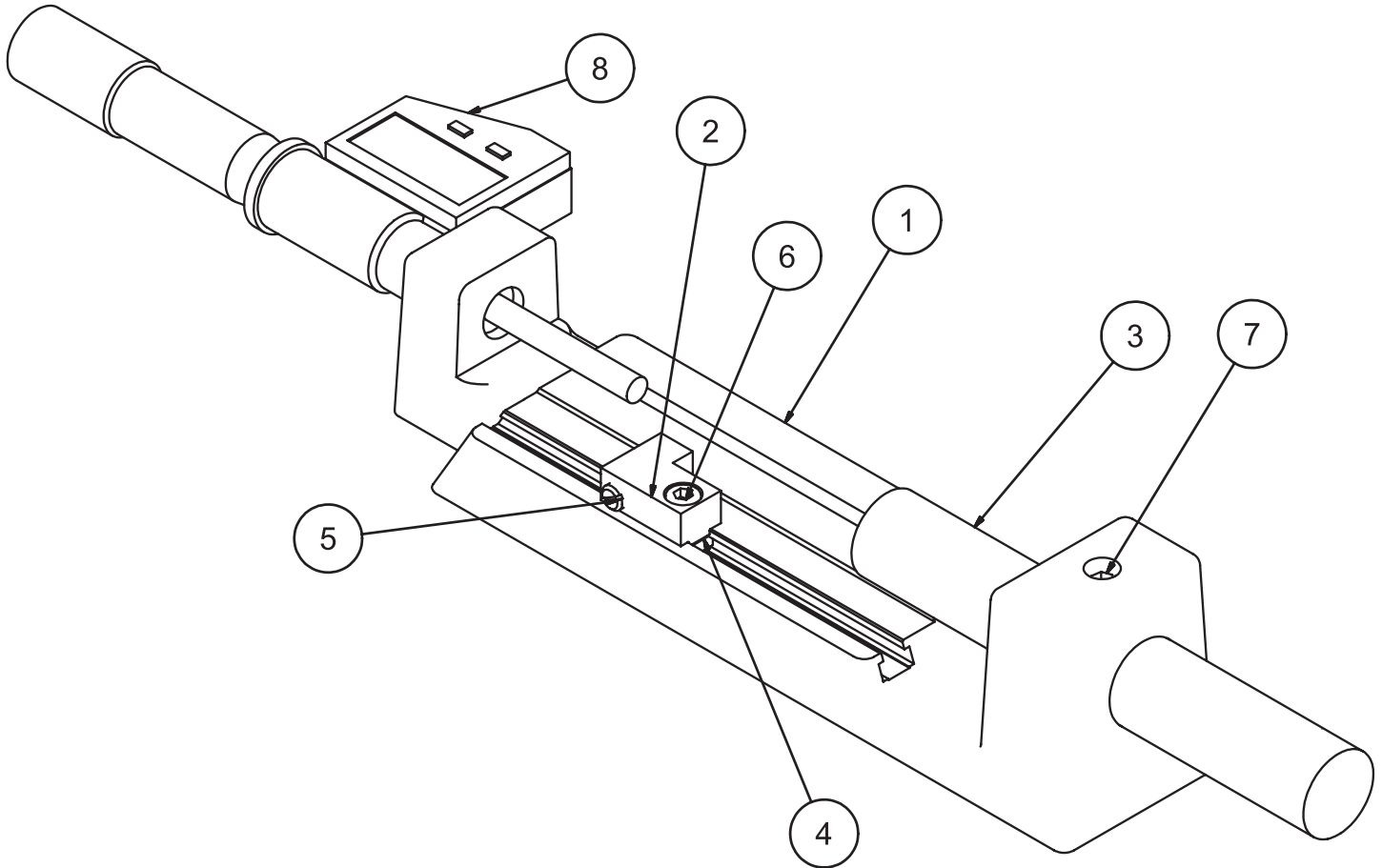


650-2-39G Cutterhead Parts



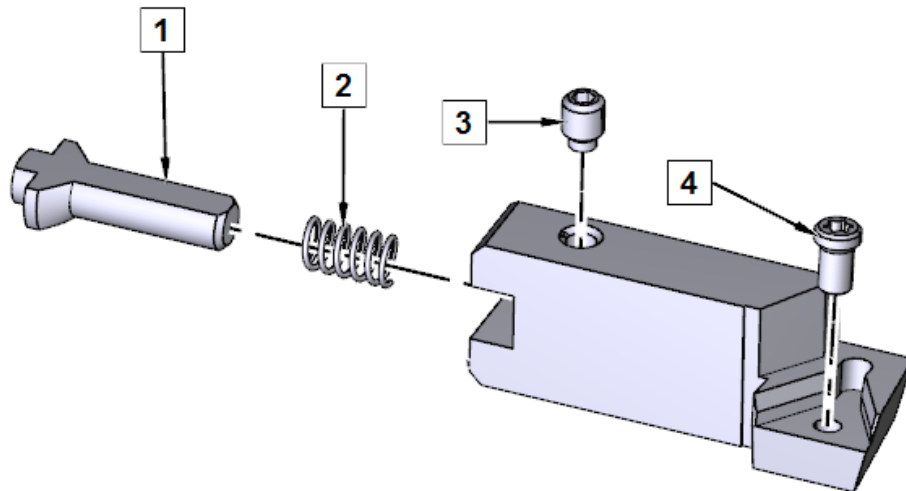
ITEM	PART #	DESCRIPTION
1	650-2-16E	BODY, 2.9" DIAMETER PRECISION LINE BORE CUTTERHEAD
2	650-2-17A	CAP, 2.9" DIAMETER PRECISION LINE BORE CUTTERHEAD
3	MF-78	SOCKET FLAT HEAD SCREW 10-24 X 3/8"
4	MF-193C	DOWEL PINS 1/8 X 3/8"
5	MF-21	SOCKET HEAD CAP SCREW 5/16-18 X 5/8"
6	502-2-85B	SCREW, SET-INDEX 3/8-40 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

6801 Series Insert Holder Parts

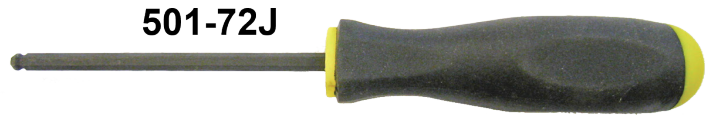


ITEM	PART #	DESCRIPTION
1	100-82-3B	PIN ADJUSTING LONG INDEXABLE INSERT TOOLHOLDER
2	100-82-1	SPRING, ADJUSTING PIN
3	100-82-2	SCREW,SET-BRASS GIB - 3/16" LONG
4	511-29-12C	SCREW, TORX M4 X .7 X .315" LONG

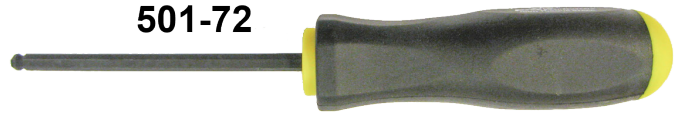
650-2-39A Cutterhead Package Components



650-2-39E



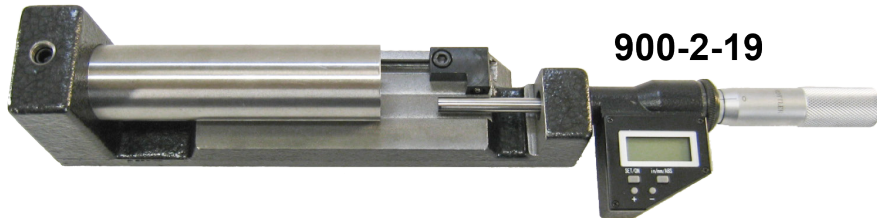
501-72J



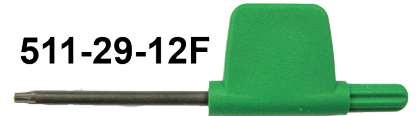
501-72



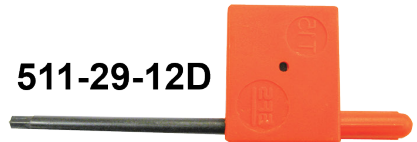
T8D



900-2-19

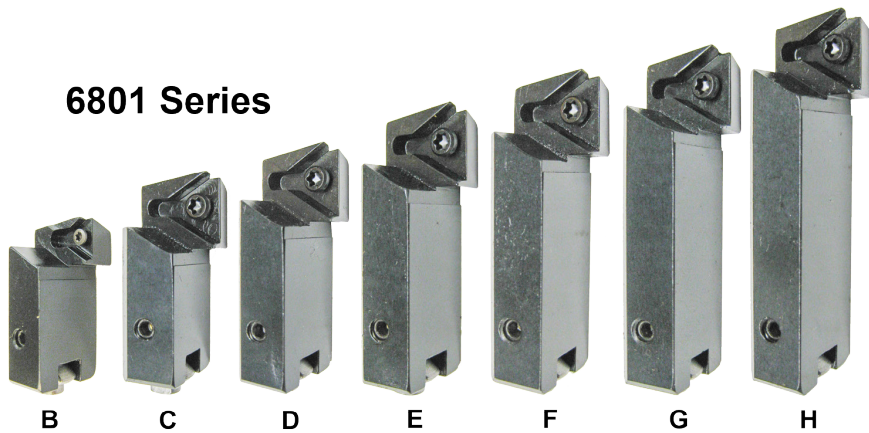


511-29-12F



511-29-12D

6801 Series



B

C

D

E

F

G

H

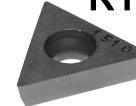
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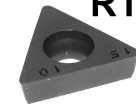
RT212



RT321



RT322



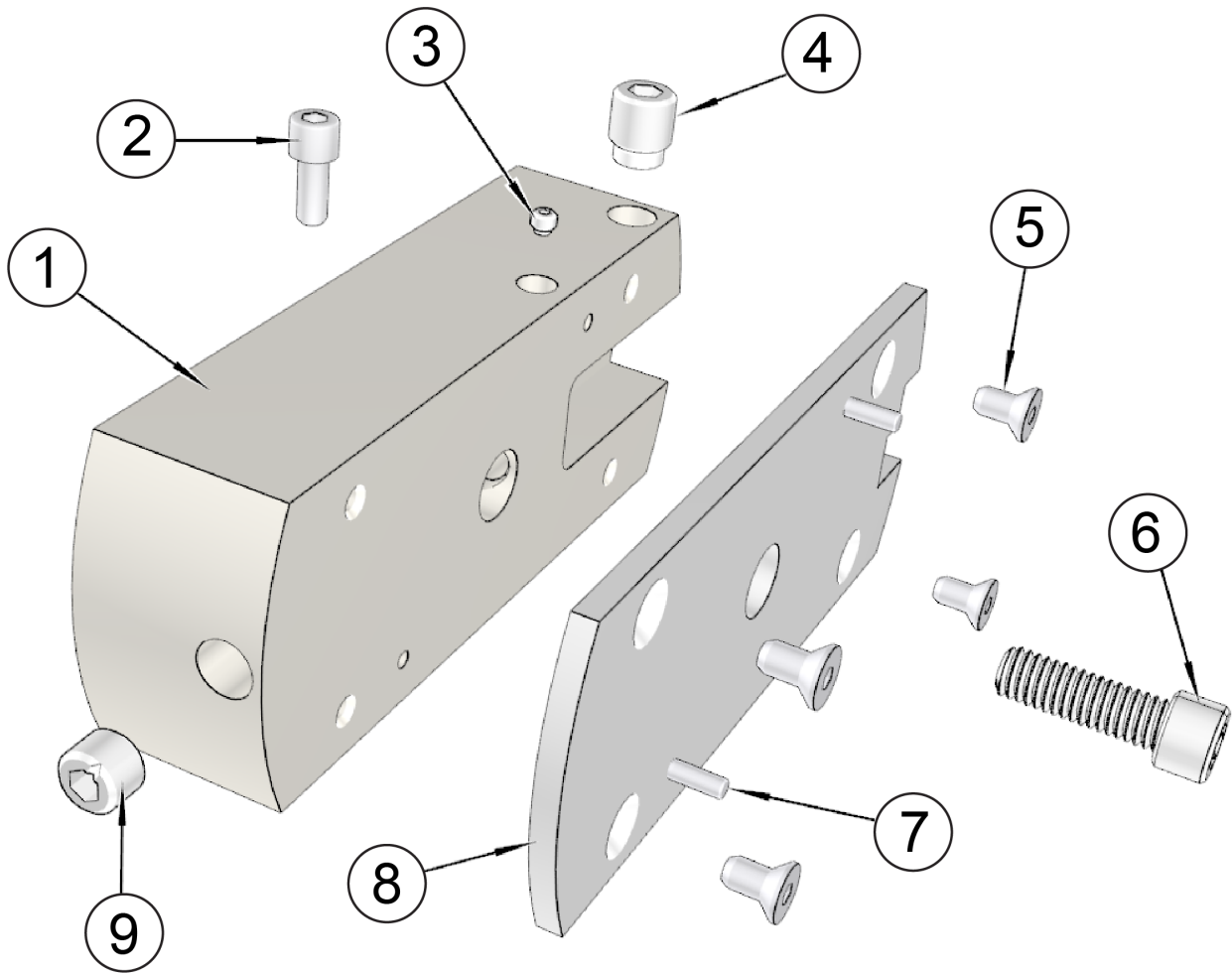
RT321F



RT322F

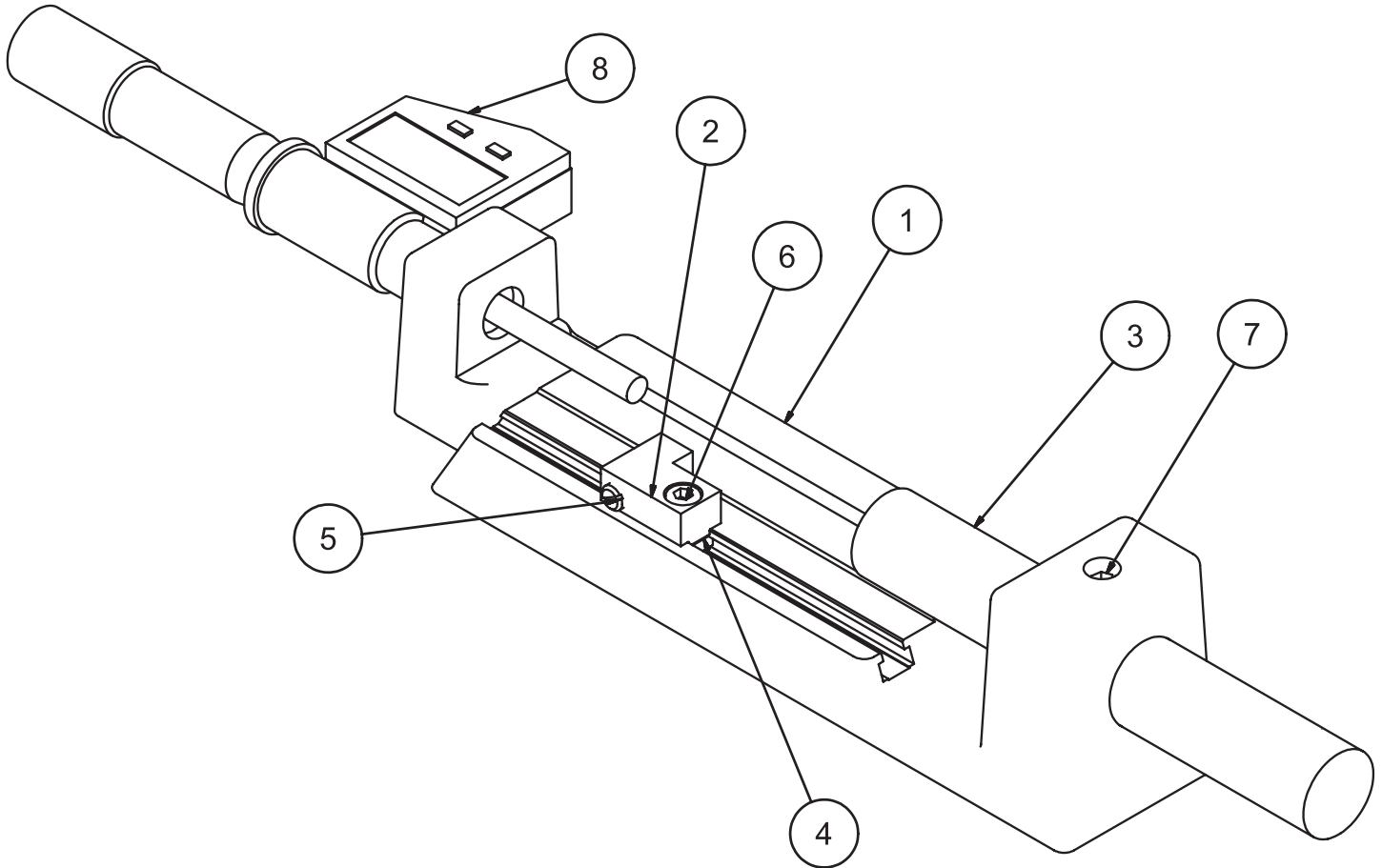


650-2-39E Cutterhead Parts



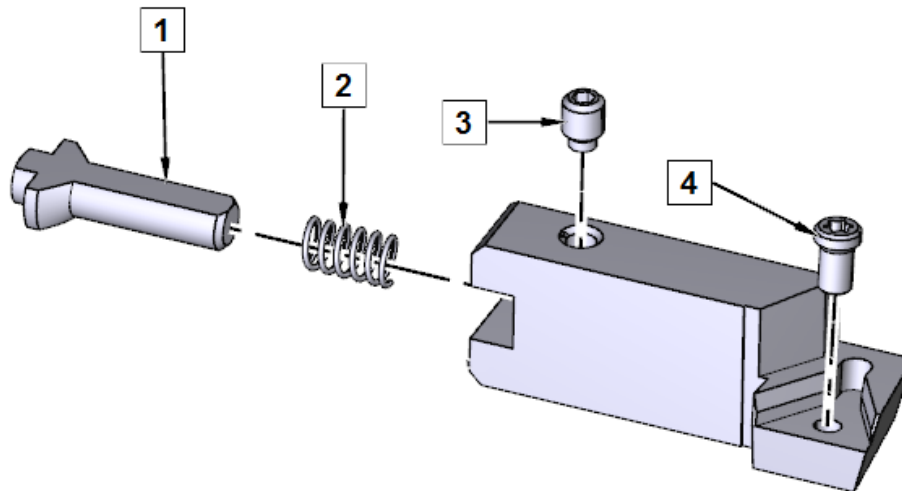
ITEM	PART #	DESCRIPTION
1	650-2-16C	BODY, 5.4" PRECISION LINE BORE CUTTERHEAD
2	MF-4	SOCKET HEAD CAP SCREW 10-24 X 3/8"
3	502-12-4D	SOCKET SET SCREW 8-32 X 1/8" (BRASS TIPPED)
4	501-70A	SCREW, TOOL HOLDER LOCK ASSY
5	MF-78	SOCKET FLAT HEAD SCREW 10-24 X 3/8"
6	MF-23	SOCKET HEAD CAP SCREW 5/16-18 X 1"
7	MF-193C	DOWEL PIN 1/8 X 3/8"
8	650-2-17B	CAP, 5.4" PRECISION LINE BORE CUTTERHEAD
9	502-2-85B	SCREW, SET-INDEX 3/8-40 FINE THREAD

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

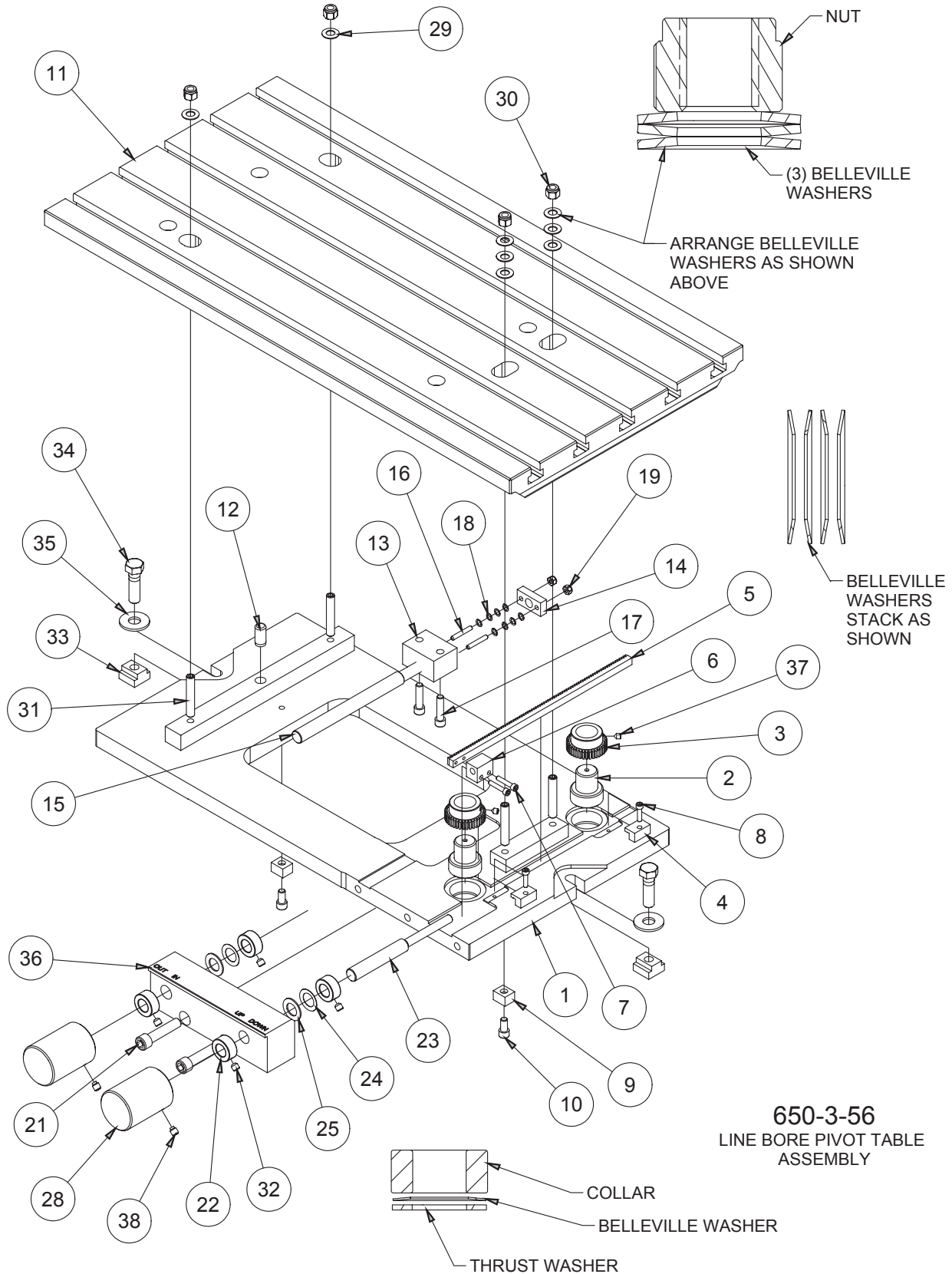
6801 Series Insert Holder Parts



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

Line Bore Fixturing for Small to Large Blocks and Heads

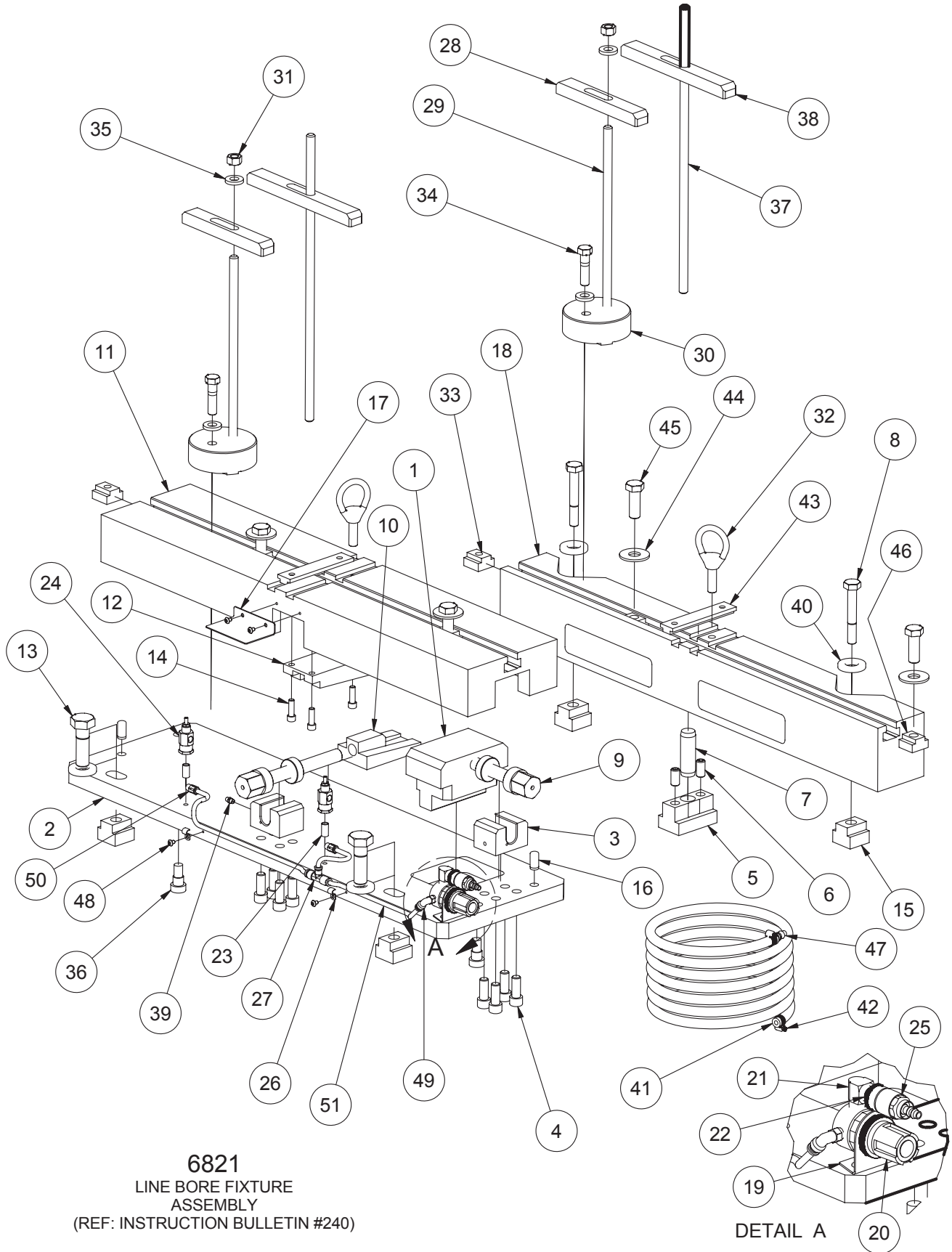
650-3-56 Line Bore Pivot Table Fixture Parts



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

6821 Adjustable Universal Line Boring Fixture Parts

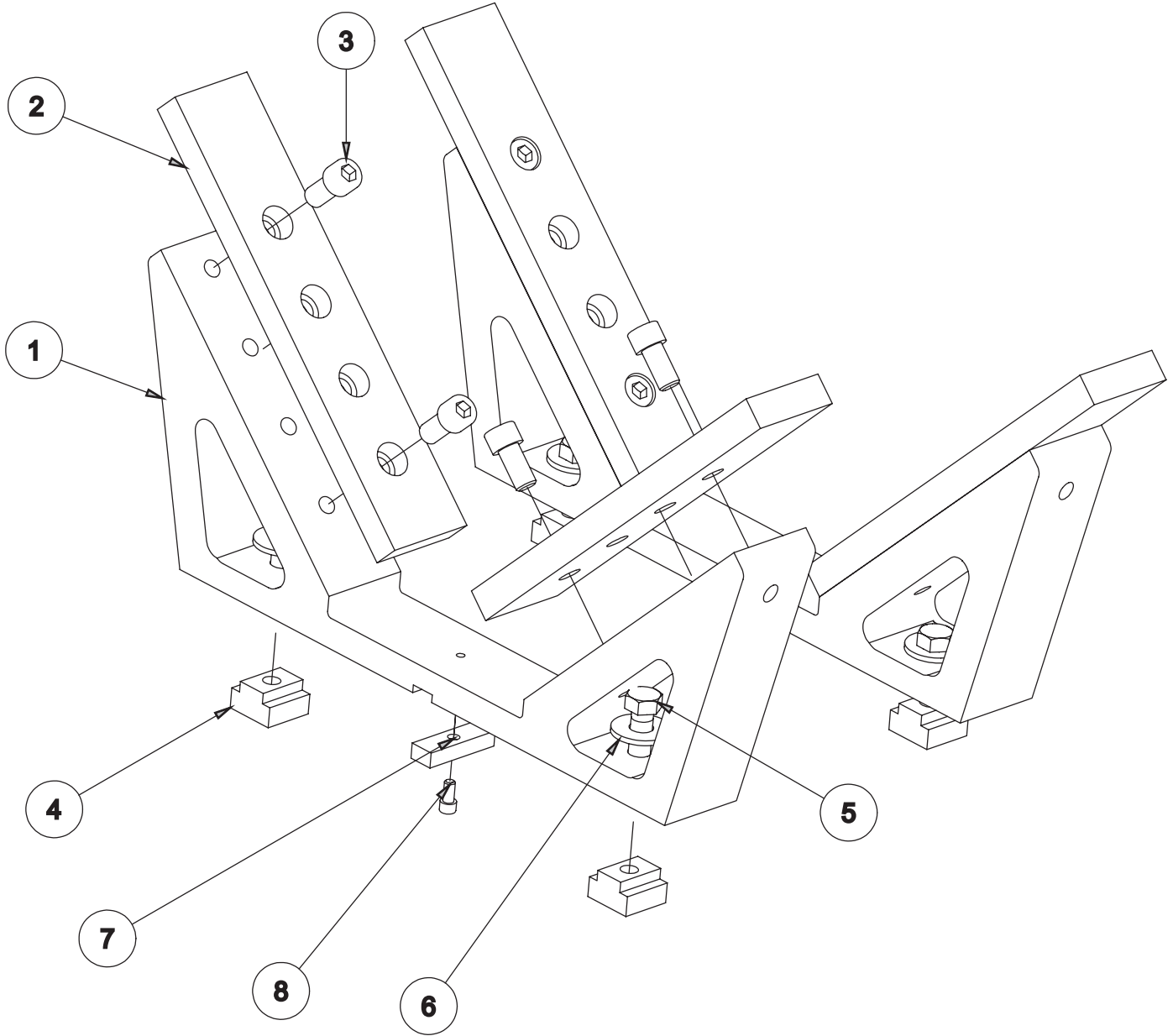


6821
LINE BORE FIXTURE
ASSEMBLY
(REF: INSTRUCTION BULLETIN #240)

DETAIL A

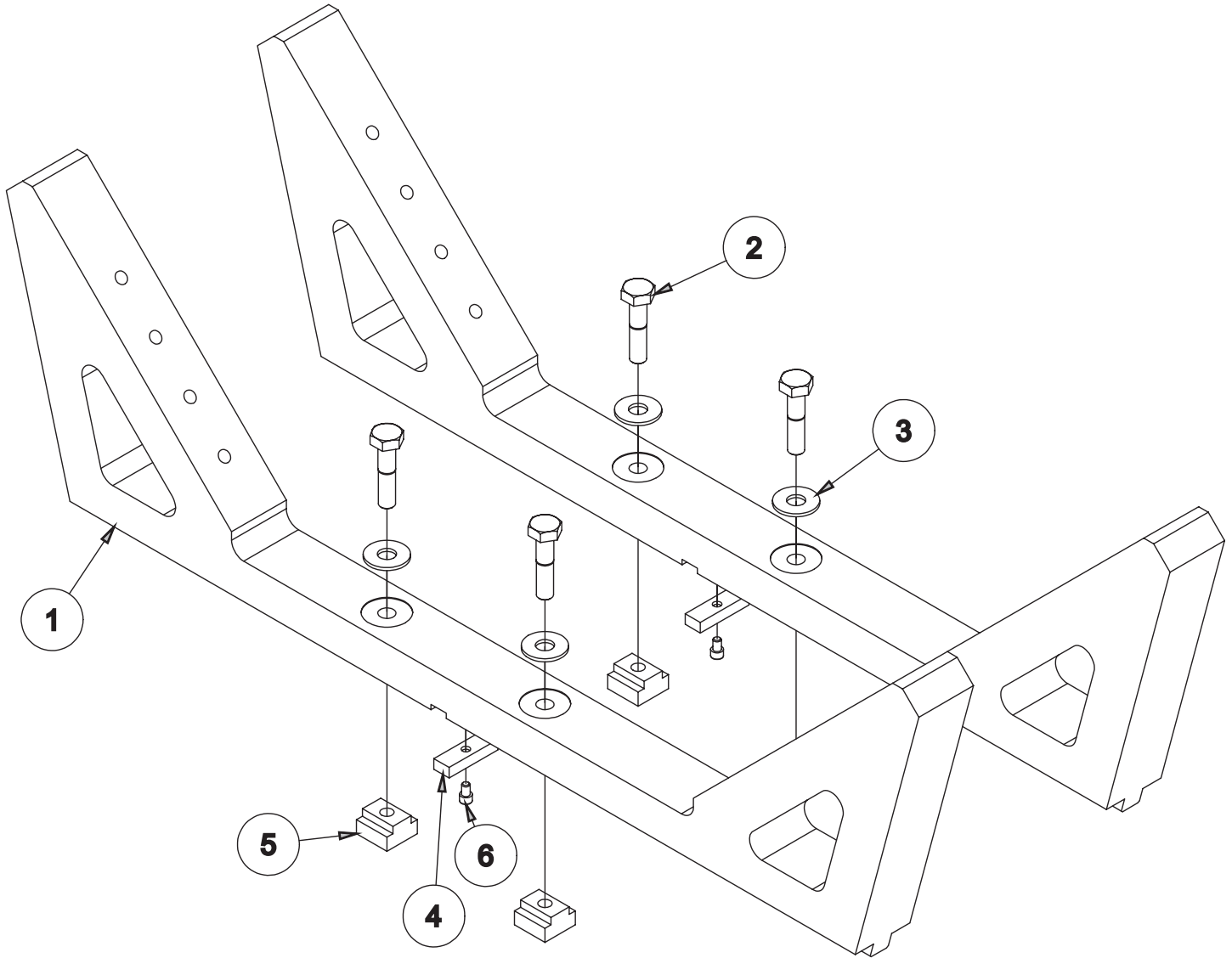
4	8	MF-43	1/2-13UNC x 1-1/4" S.H.C.S.
5	1	6820	Locating Pivot Key, Waukesha 7042/ CAT 399
6	2	MF-72	1/2-13UNC x 1" FLAT POINT SET SCREW
7	1	6819	Locating, Pivot Pin
8	2	6822B	3/4-10UNC x 4" LONG HEX BOLT
9	2	6828	SCREW, ADJUSTABLE PARALLEL F-8 LINE BORE FIXTURE
10	1	6827	Wedge, Lower Adjustable Parrallel
11	1	6824A	Pad, Upper Adjustable Parrallel
12	1	6826	Wedge, Upper Adjustable Parrallel
13	2	MF-154C	3/4-10 x 2-1/2" HEX BOLT
14	3	MF-23	5/16-18UNC x 1" S.H.C.S.
15	4	6160	Nut, T - Hardened
16	2	MF-213B	1/2" x 1" DOWEL PIN
17	1	6834	Chip Shield, Upper Pad Adjsutable Parrallel
18	1	6822A	Parrallel, Stationary Adjustable
19	1	502-27-17A	Regulator Bracket
20	1	502-27-17	Regulator 0 - 60 PSI
21	1	502-11-17S	1/4 STREET ELL
22	1	502-11-16X	Quick Connect air Fitting Male
23	2	502-11-17J	Nipple,Close 1/8" NPT
24	2	502-11-35A	Flo Control
25	1	502-11-16W	Quick connect air fitting female
26	2	502-12-16	Wire Clip
27	1	514-4-17N	Tee, Union 1/4 Tube
28	2	6833A	CLAMP BAR (7" LG), INLINE BLOCK F-88 LINE BORE FIXTURE
29	2	6833B	CLAMP ROD, (12") INLINE BLOCK F-88 LINE BORE FIXTURE
30	2	6833	Locator, In-Line Block
31	2	MF-165	1/2-13UNC HEX NUT
32	2	502-3-13	Lift Eye
33	2	502-1-11B	T-Nut 3/4"
34	2	MF-149C	1/2-13UNC x 2" HEX BOLT
35	4	MF-180	1/2" FLAT WASHER
36	2	514-7-22	Screw, Shoulder
37	2	6833D	CLAMP ROD, (18") INLINE BLOCK F-88 LINE BORE FIXTURE
38	2	6833E	CLAMP BAR (9"), INLINE BLOCK F-88 LINE BORE FIXTURE
39	1	MF-189	STRAIGHT GREASE FITTING
40	4	6287	WASHER, THRUST 3/4"
41	1	502-1-98	1/4" AIR HOSE
42	2	502-1-97	CLAMP, 1/4" I.D. HOSE
43	2	6372	KEY, LOCATION - 10" PARALLEL - F90
44	4	MF-181	5/8" FLAT WASHER
45	4	MF-154F	5/8-11UNC x 1-3/4" LG. HEX BOLT
46	4	502-1-11A	3/4" T-Nut

6843 90 Degree V Block Support Parts



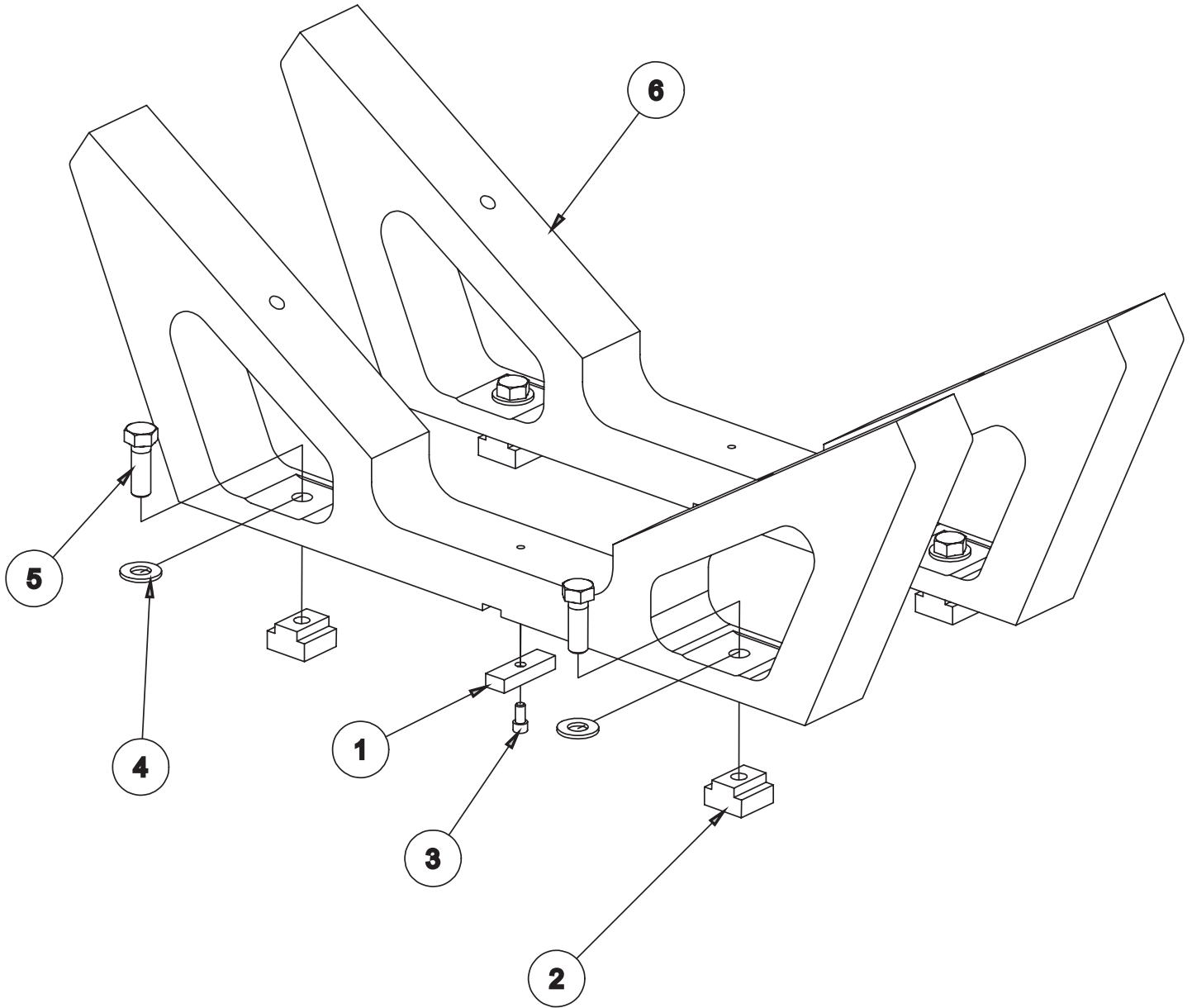
6843 90 DEG. V-BLOCK CRADLE ASSEMBLY			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	2	6843A	Cradle, Right and Left V Block
2	4	6789D	ADAPTER PLATE, V-BLOCK CRADLE
3	8	MF-42	1/2-13UNC x 1" S.H.C.S.
4	4	502-1-11B	T-Nut 3/4"
5	4	MF-150A	1/2-13UNC x 1-1/2" HEX BOLT
6	4	MF-180	1/2" FLAT WASHER
7	2	6831	KEY
8	2	MF-12	1/4-20UNC x 1/2" S.H.C.S.

6823E 90 Degree V Block Support Parts



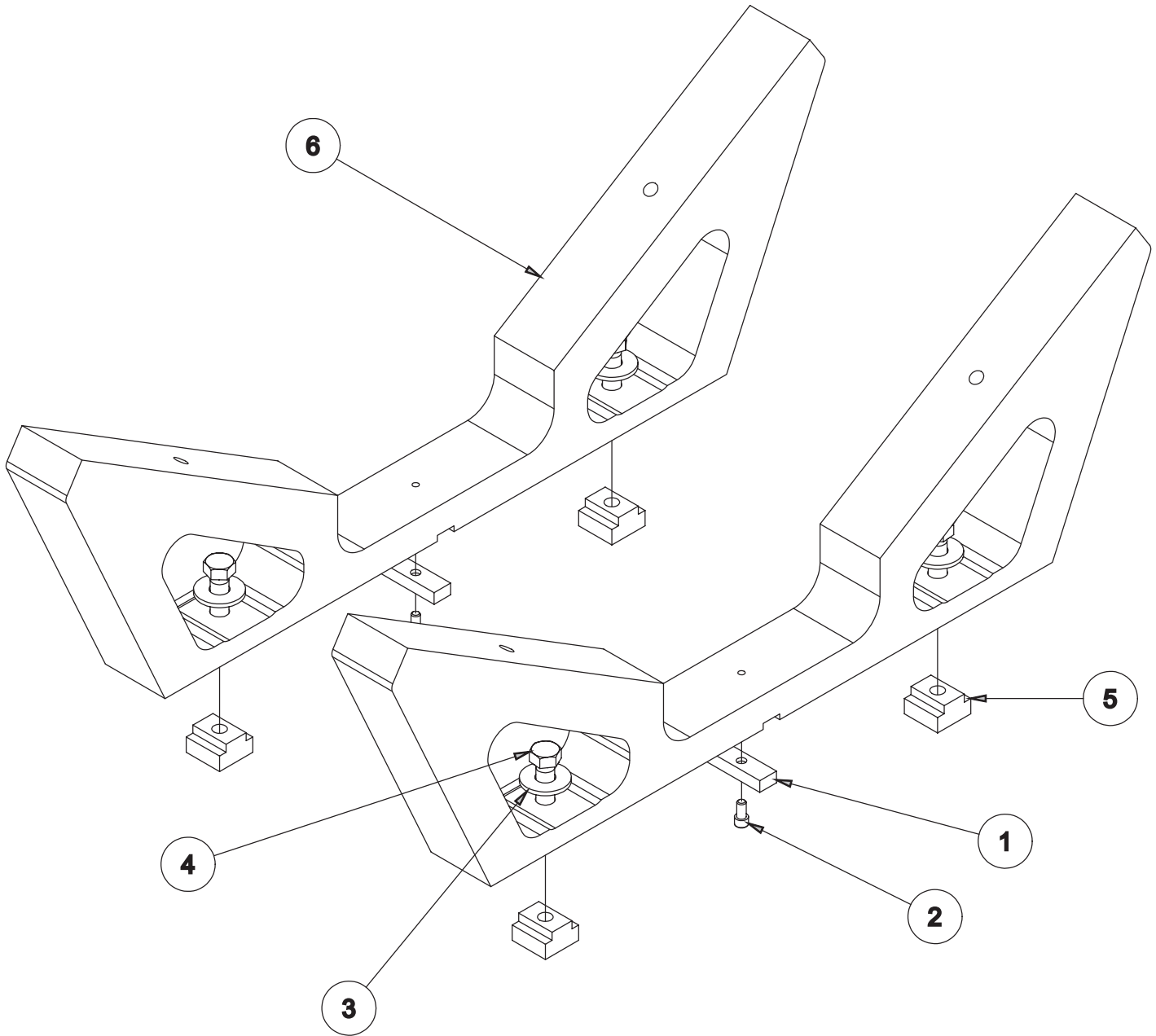
6823E LARGE 90 DEG V-BLOCK CRADLE ASSEMBLY			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	2	6823D	CRADLE, LARGE 90 DEGREE V-BLOCK
2	4	MF-149A	Heavy Hex Bolt 1/2-13UNC x 2-1/4"
3	4	MF-180	1/2" FLAT WASHER
4	2	6831	KEY, FIXTURE
5	4	502-1-11B	T-Nut 3/4"
6	2	MF-149A ANSI B18.3 - 1/4 - 20 - 3/8	Hexagon Socket Head Cap Screw

6789L 113 Degree V Block Support Parts



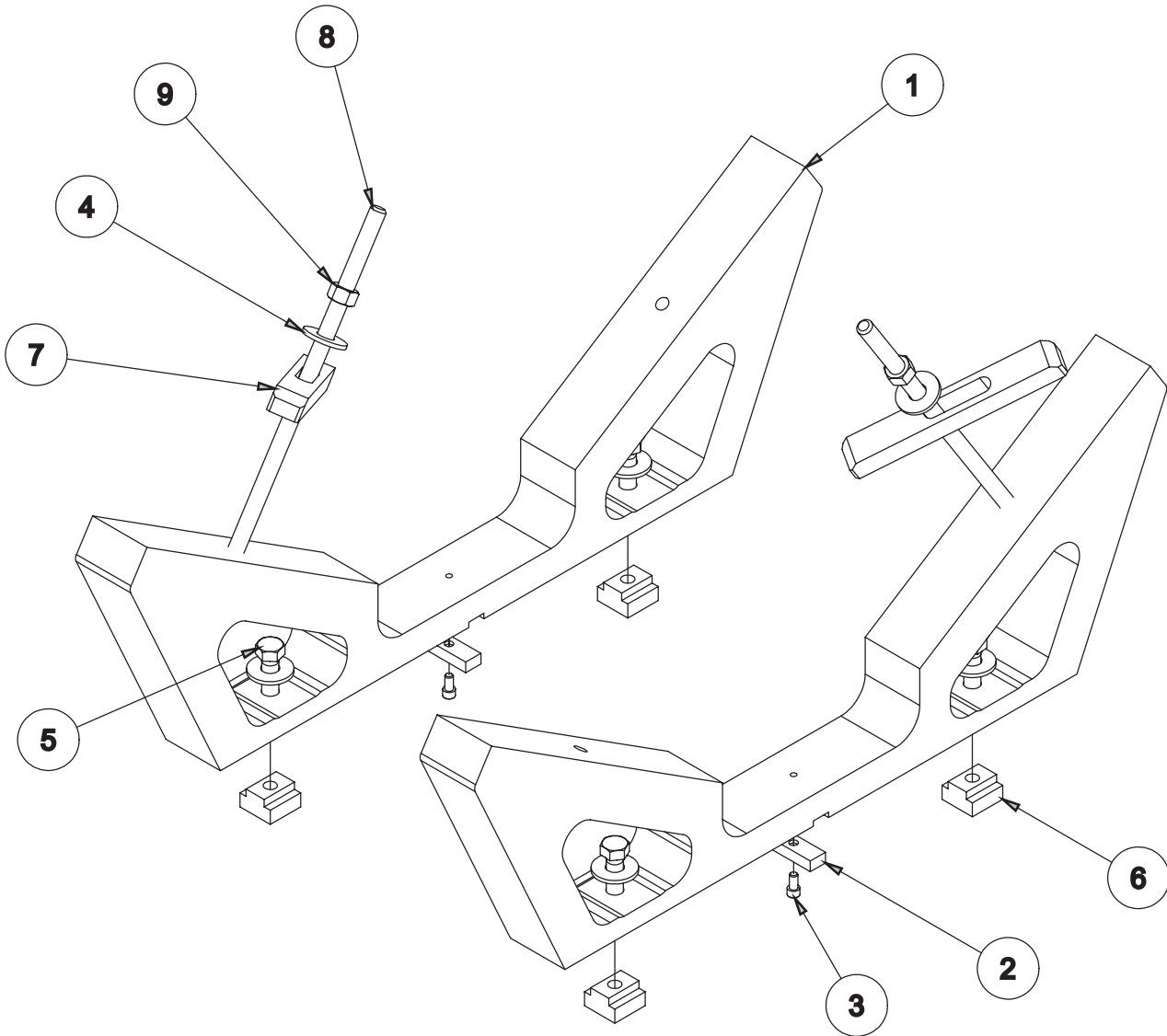
6789L DETROIT DIESEL V53 V-BLOCK CRADLE ASSEMBLY			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	2	6831	KEY, FIXTURE
2	4	502-1-11B	T-Nut 3/4"
3	2	MF-12	S.H.C.S. 1/4 - 20 UNC - 1/2
4	4	MF-180	1/2" FLAT WASHER
5	4	MF-150A	1/2-13UNC x 1-1/2" LG. HEX BOLT
6	2	6789M	CRADLE, DETROIT DIESEL V53 BLOCK 113 DEG. 11'

6789N 116 Degree V Block Support Parts



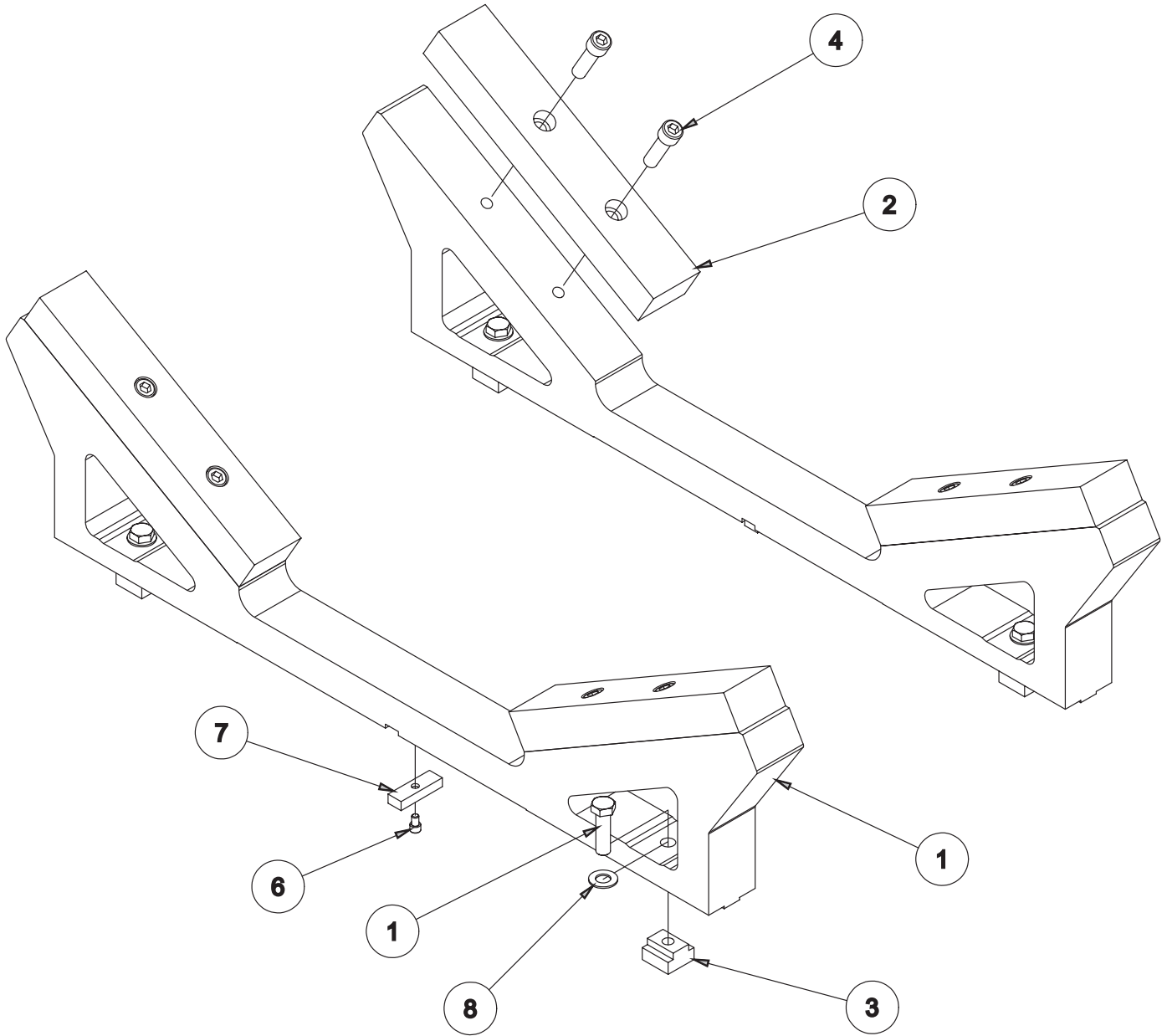
6789N 116DEG. 12 MIN. V-BLOCK CRADLE ASSEMBLY			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	2	6831	KEY, FIXTURE
2	2	MF-12	1/4-20UNC x 1/2" S.H.C.S.
3	4	MF-180	1/2" FLAT WASHER
4	4	MF-150A	1/2-13UNC x 1-1/2" HEX BOLT
5	4	502-1-11B	1/2-13UNC T-NUT
6	2	6789P	116 DEG. 12' V-BLOCK CRADLE

6789E 115 Degree V Block Support Parts



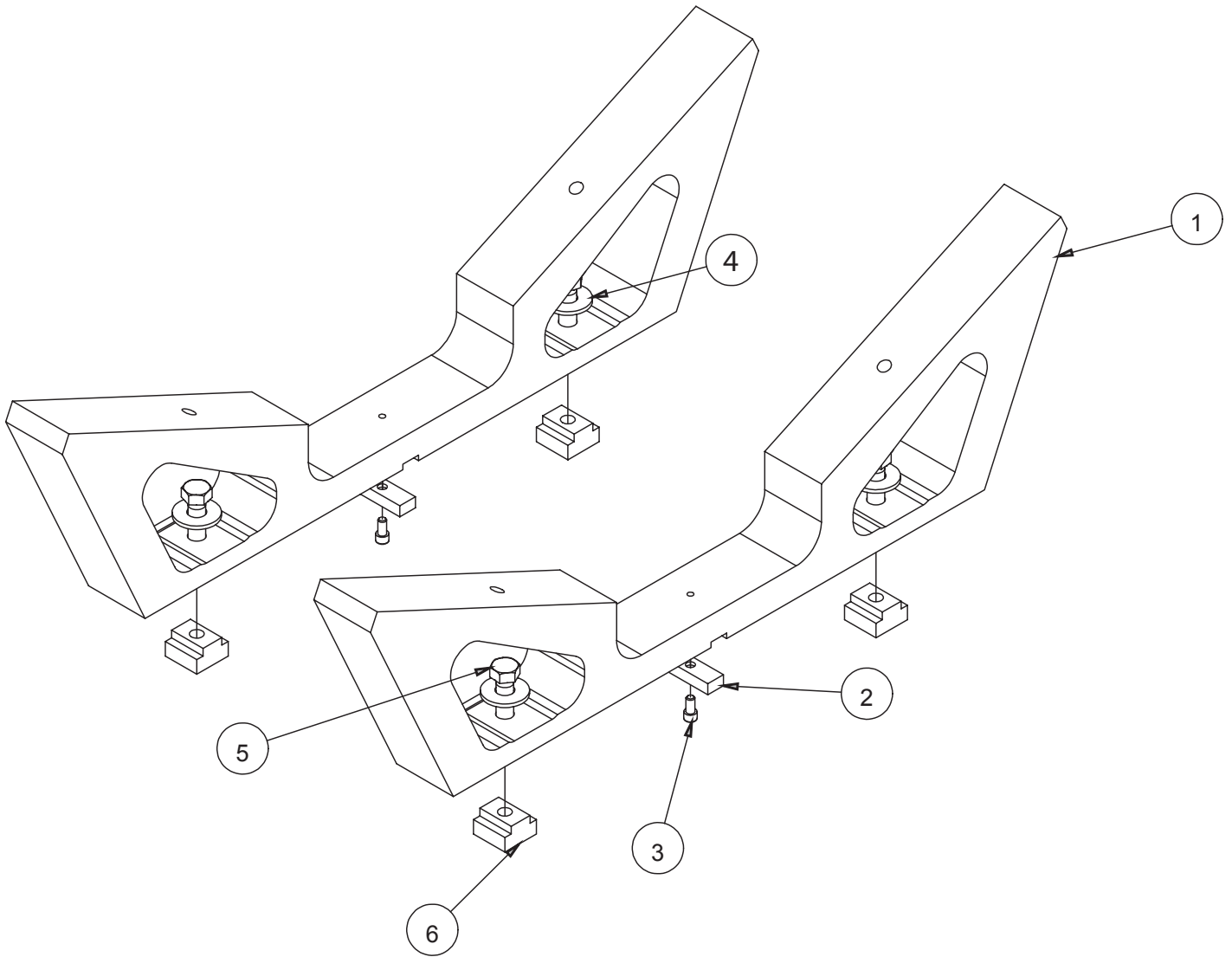
6789E CAT 3400 SERIES V-BLOCK CRADLE ASSEMBLY			
ITEM	QTY	RMC PART NO.	DESCRIPTION
1	2	6789F	115 DEG. V-BLOCK CRADLE
2	2	6831	KEY
3	2	MF-12	1/4-20UNC x 1/2" S.H.C.S.
4	6	MF-180	1/2" FLAT WASHER
5	4	MF-150A	1/2-13UNC x 1-1/2" HEX BOLT
6	4	502-1-11B	1/2-13UNC T-NUT
7	2	6833A	CLAMP BAR
8	2	6833B	CLAMP ROD
9	2	MF-165	1/2-13UNC HEX NUT

6823B 120 Degree V Block Support Parts



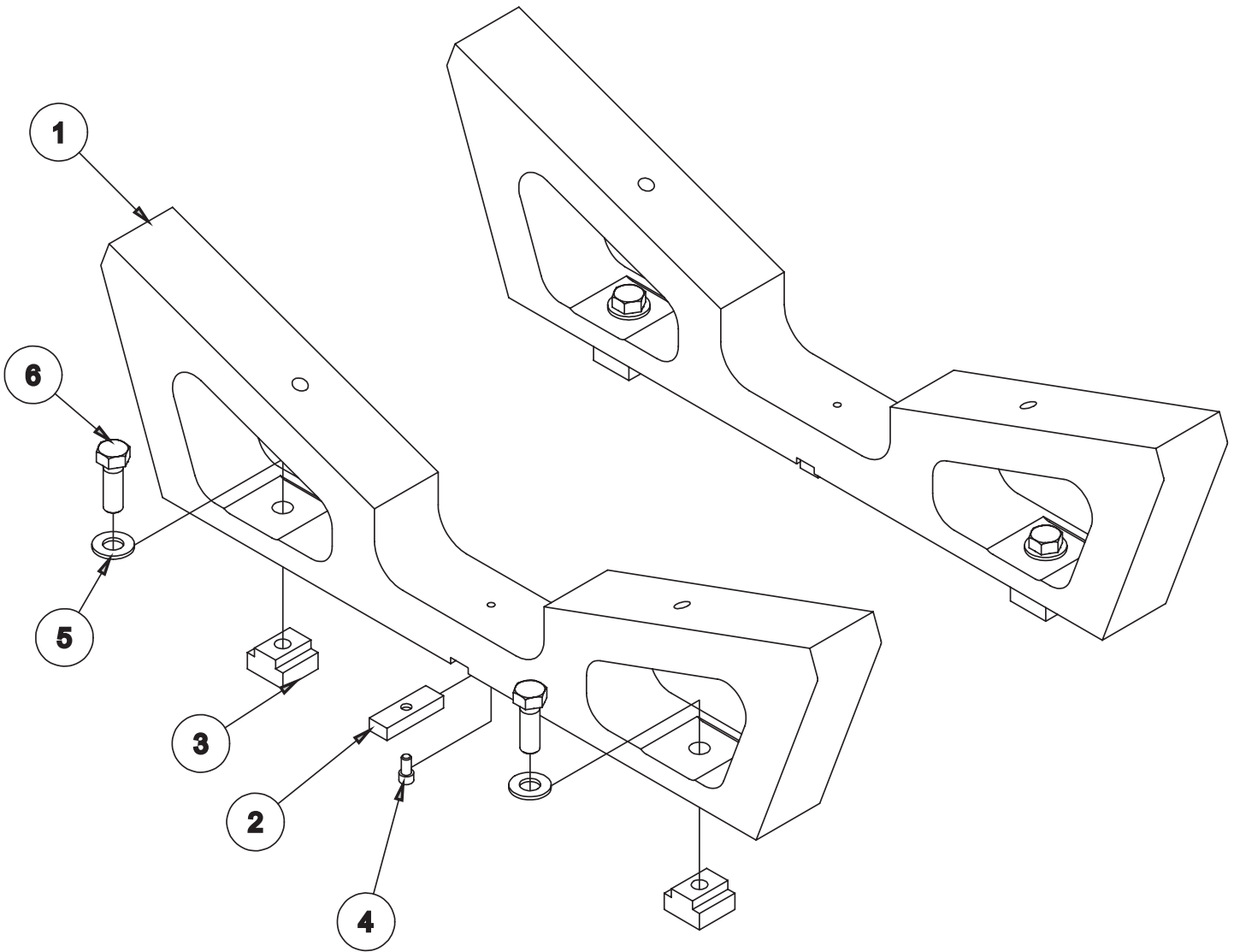
6823B CAT 3500 120 DEGREE V-BLOCK CRADLE ASSEMBLY			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	2	6823A	CAT 3500 CRADLE
2	4	6789H	ADAPTER PLATE 1.5"
3	4	502-1-11B	T-Nut 3/4"
4	8	MF-44A	Hexagon Socket Head Cap Screw
5	4	MF-149B	1/2-13UNC x 1-3/4 HEX BOLT
6	2	MF-11	S.H.C.S. 1/4 - 20 UNC - 3/8
7	2	6831	KEY, FIXTURE
8	4	MF-180	1/2" FLAT WASHER

6789K 130 Degree V Block Support Parts



6789K 130 DEG. V-BLOCK SUPPORT ASSEMBLY			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	2	6789J	130 DEG. V-BLOCK CRADLE
2	2	6831	KEY
3	2	MF-12	1/4-20UNC x 1/2" S.H.C.S.
4	4	MF-180	1/2" FLAT WASHER
5	4	MF-150A	1/2-13UNC x 1-1/2" HEX BOLT
6	4	502-1-11B	1/2-13UNC T-NUT

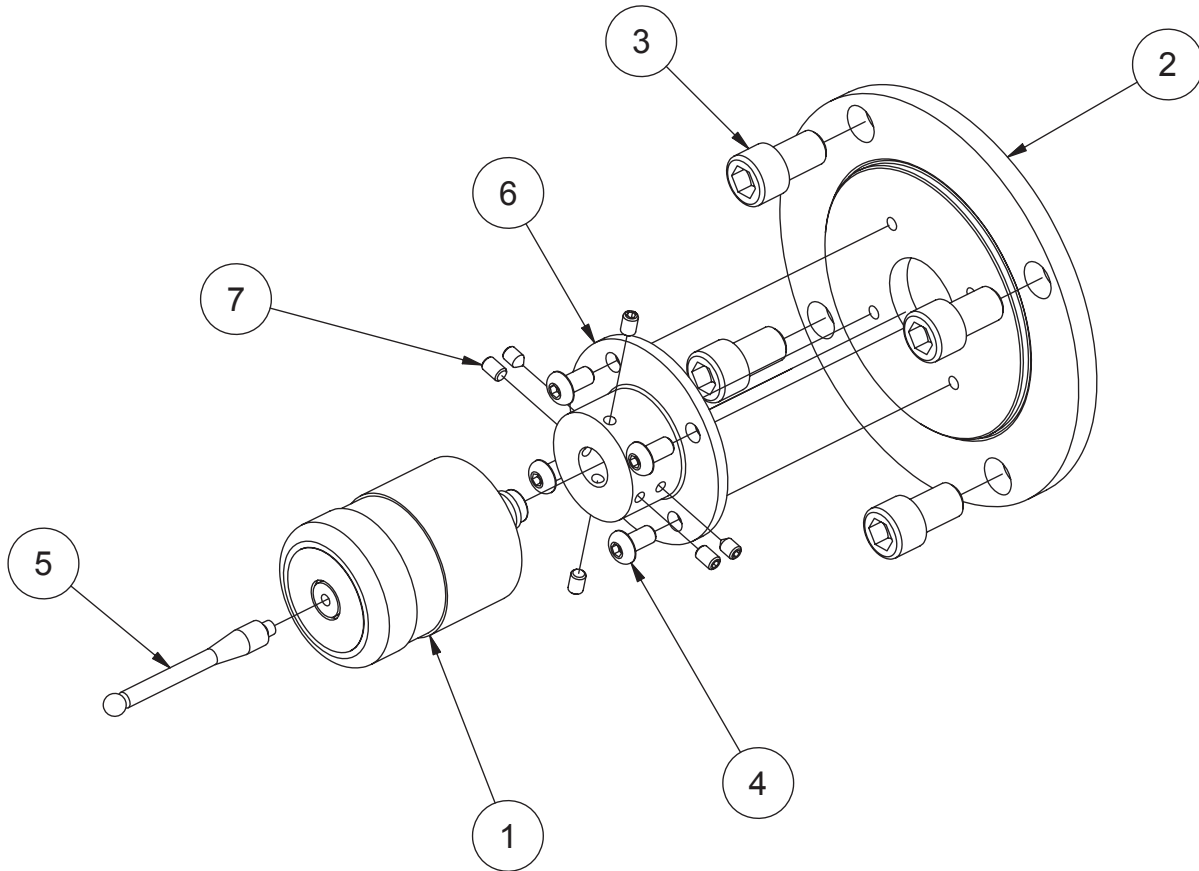
6789Q 140 Degree V Block Support Parts



6789Q 140 DEG. V-BLOCK CRADLE ASSEMBLY			
ITEM	QTY	PART NUMBER	PART DESCRIPTION
1	2	6789S	CRADLE 140 DEG.
2	2	6831	KEY, FIXTURE ADJUSTABLE
3	4	502-1-11B	T-NUT
4	2	MF-12	1/4-20UNC x 1/2" LG. S.H.C.S.
5	4	MF-180	1/2" FLAT WASHER
6	4	MF-150A	1/2-13UNC x 1-1/2" LG. HEX BOLT

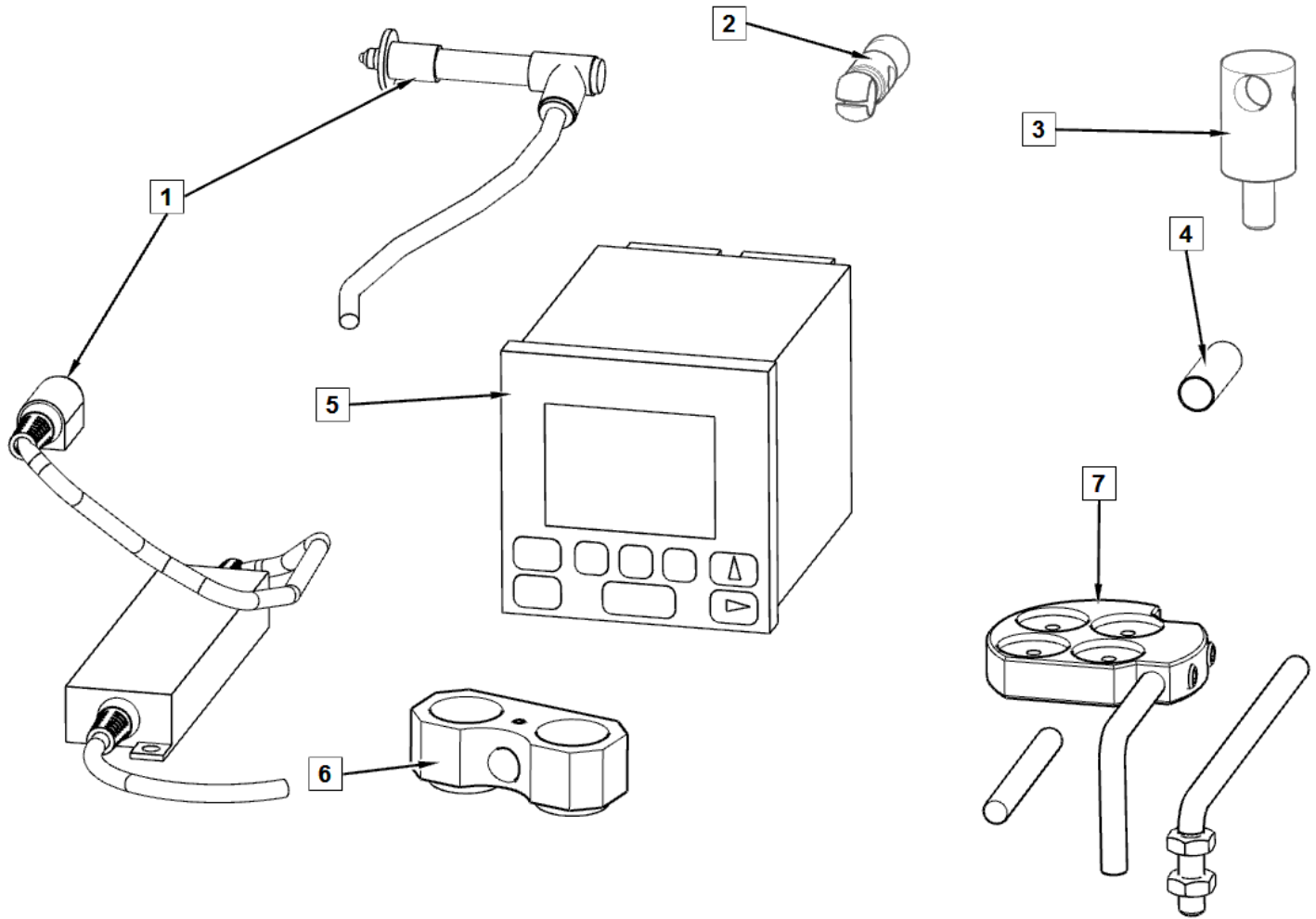
Line Bore Set Up and Alignment Equipment

6889B Adapter Parts



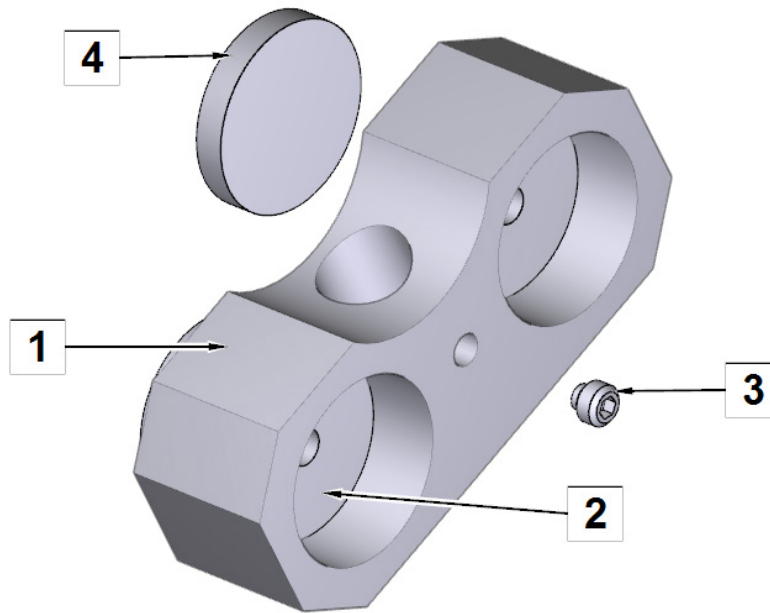
6889B RADIO PROBE ASSEMBLY - H.D. OFFSET R.A.D.			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	650-3-59U PROBE	RMP40 PROBE
2	1	6889C	MOUNT PLATE, RADIO PROBE MOUNT ASSEMBLY, H.D. OFFSET R.A.D.
3	4	6889E	3/8-16UNC x 5/8" LG. S.H.C.S.
4	4	MF-88	10-24UNC x 3/8" LG. SOCKET BUTTONHEAD SCREW
5	1	650-3-59C	50 mm Stylus
6	1	6889D	PROBE MOUNT, H.D. OFFSET R.A.D.
7	6	650-3-59U SET SCREWS	METRIC SET SCREWS INCLUDED WITH 650-3-59U PROBE KIT

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

502-12-4A Magnetic Indicator Holder Parts

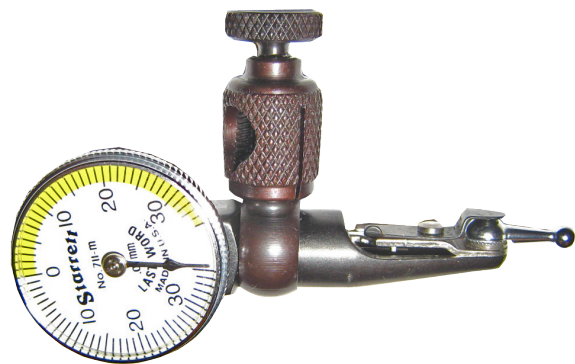


ITEM	PART #	DESCRIPTION
1	502-12-4B	MAGNETIC HOLDER INDICATOR LINE BORING
2	502-11-39	MAGNET, SHALLOW POT
3	502-12-4D	SOCKET SET SCREW 8-32 X 1/8" (BRASS TIPPED)
4		MAGNET WASHER

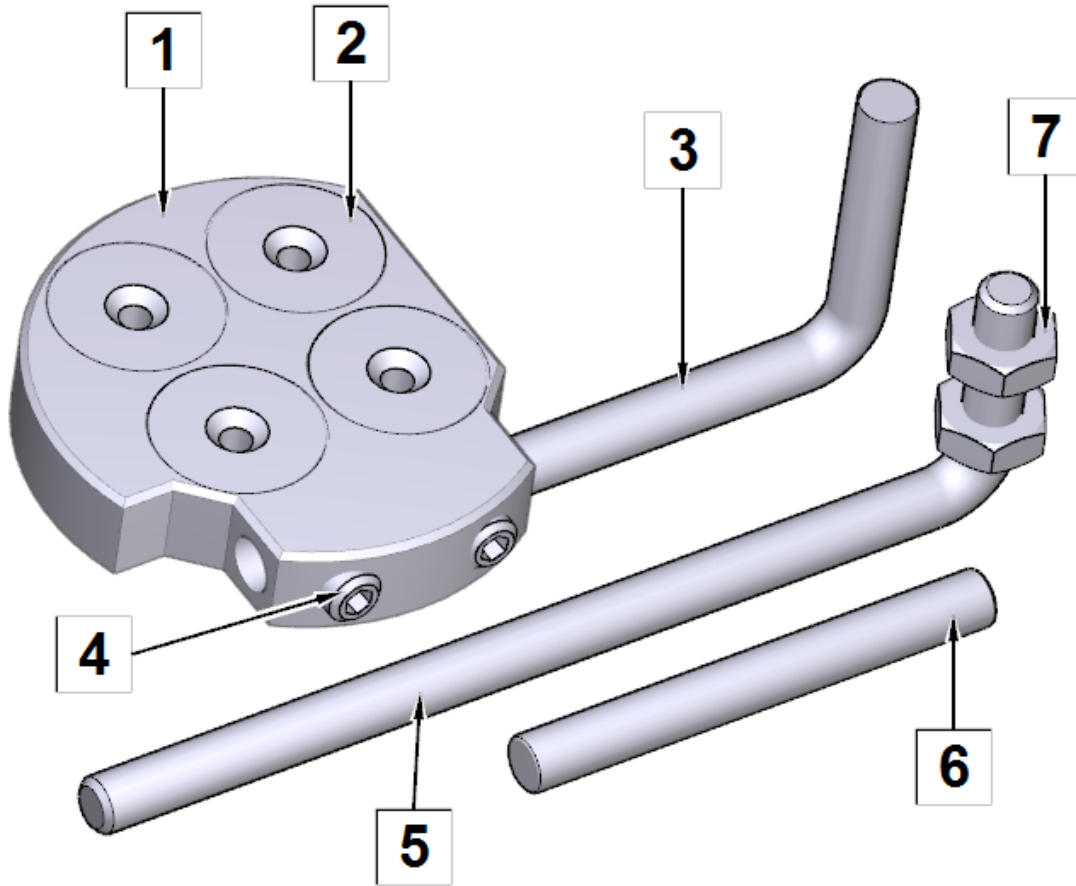
502-9-9A Mechanical Run Out Indicator
Sold only as complete assembly.



502-9-9J Mechanical Run Out Indicator
Sold only as complete assembly.



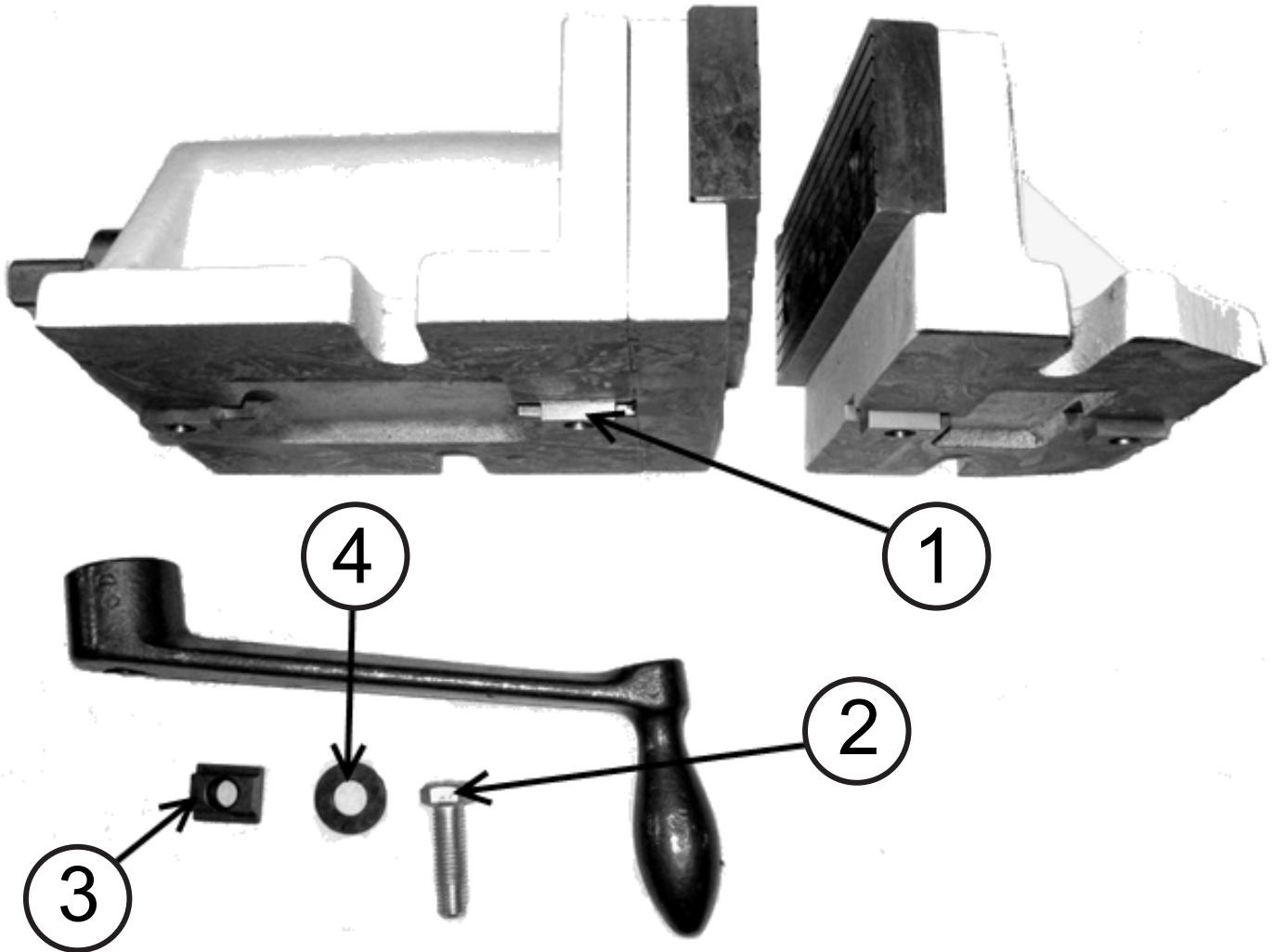
502-12-4 Magnetic Indicator Holder Parts



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

Equipment for Preparing Blocks for Line Boring

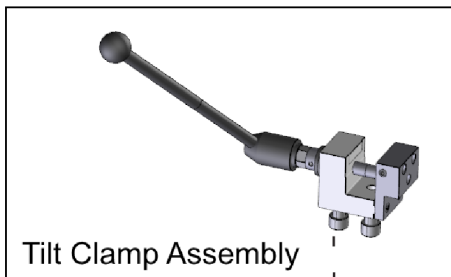
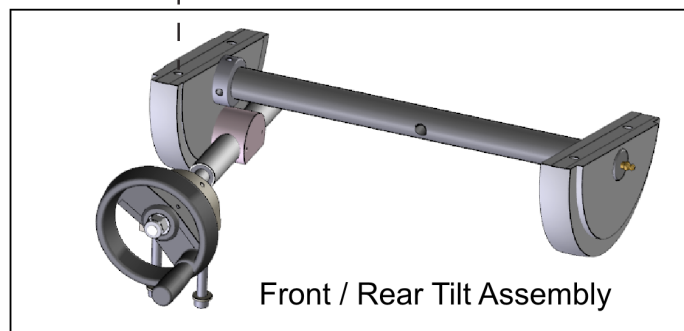
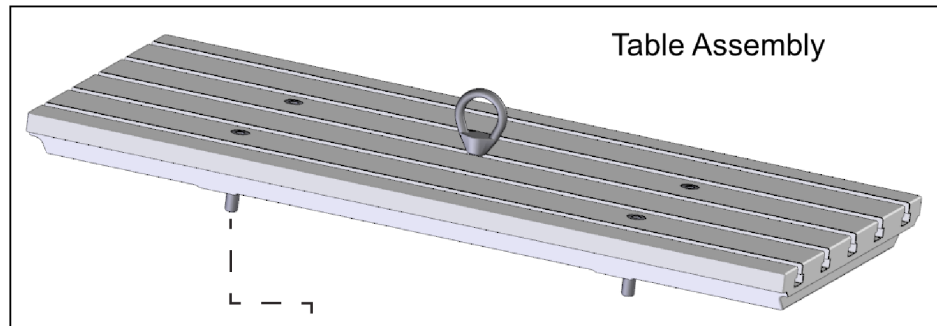
7209N 2-Piece Vise Parts



ITEM	PART #	DESCRIPTION
1	7210E	KEY, STEPPED
2	MF-137F	HEX BOLT 1/2-13 X 1 3/4"
3	7137B	NUT, "T"
4	100-19A	WASHER, HARDENED 17/32" ID

7209M Leveling Table Parts

7209M Leveling Table Sections



Tensioner Assembly

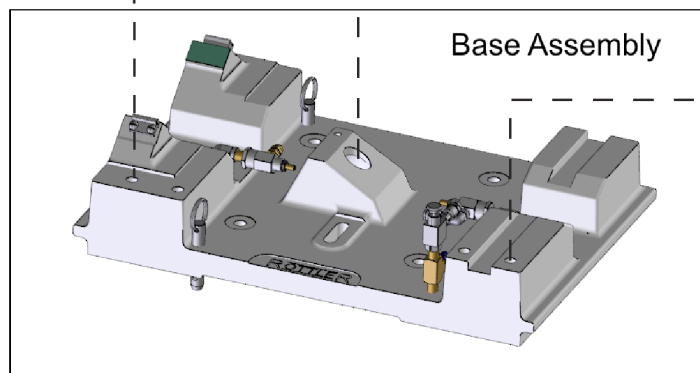
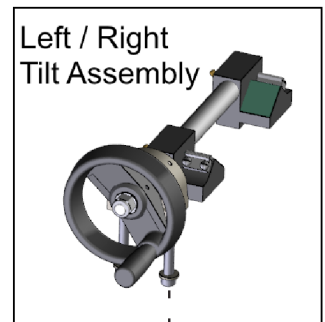
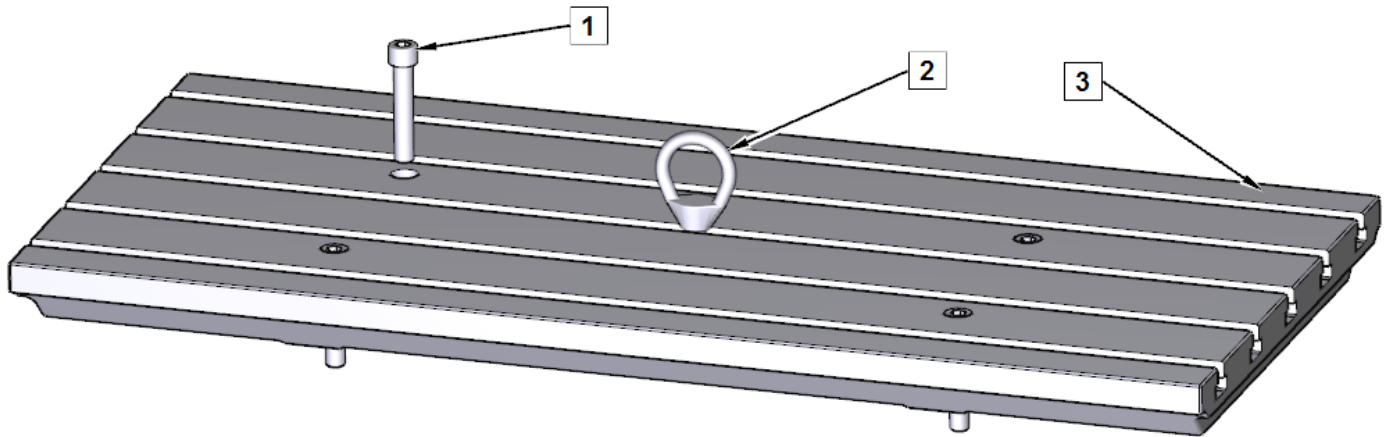
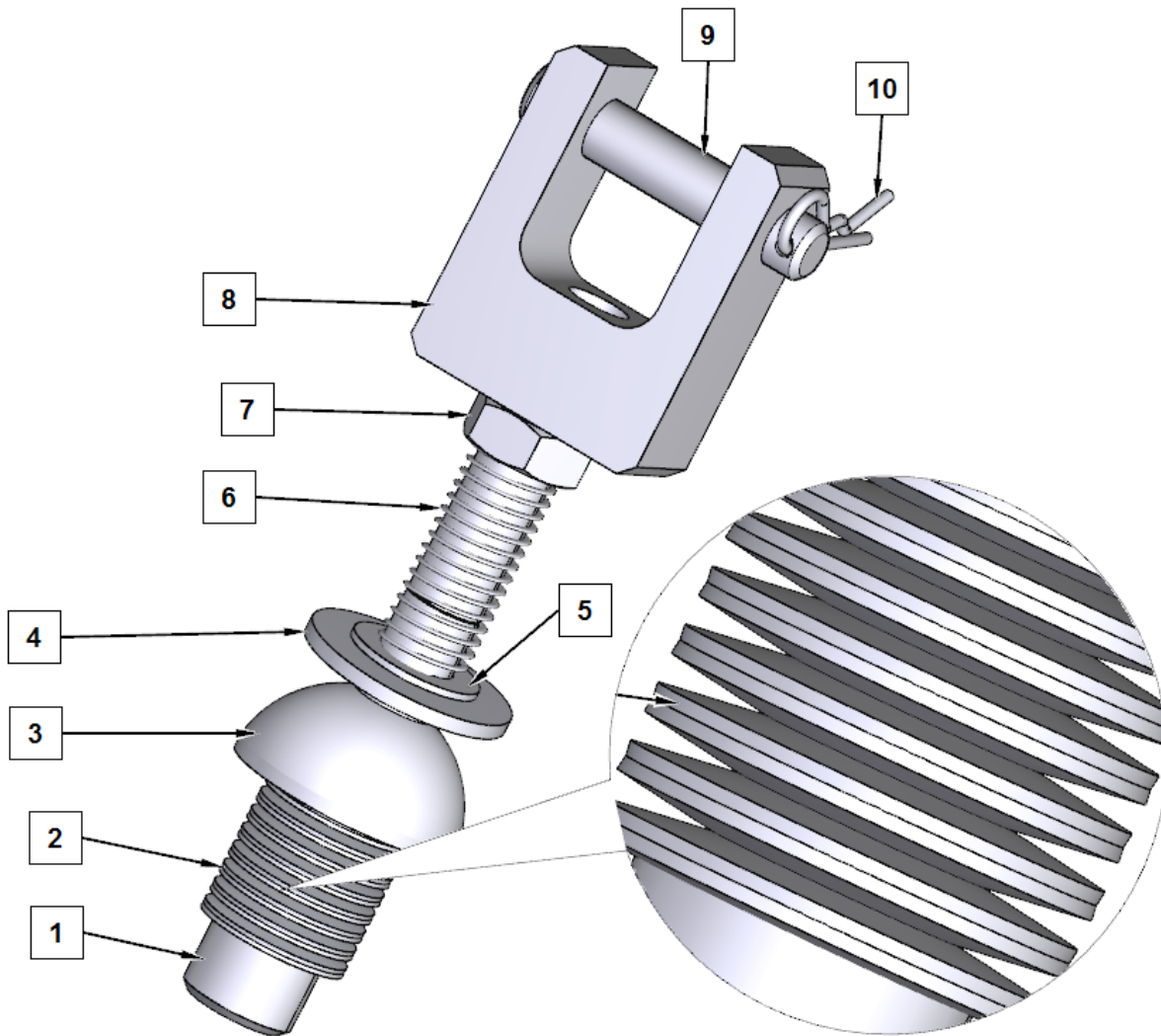


Table Assembly Parts



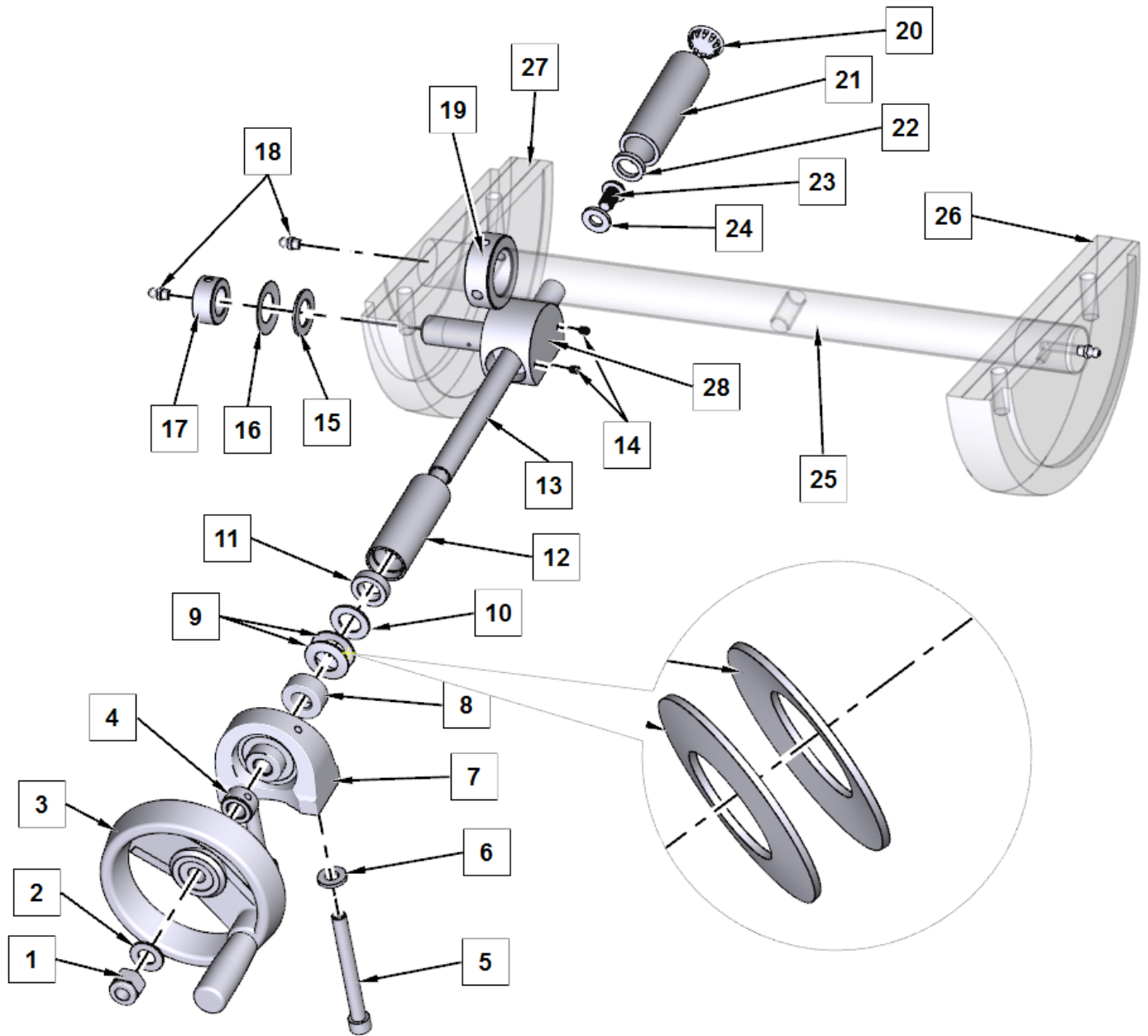
ITEM	PART #	DESCRIPTION
1	MF-45	SOCKET HEAD CAPSCREW 1/2-13 X 2"
2	502-3-13	EYE, LIFTING
3	7207C	TABLE, DUAL AXIS HEAD FIXTURE

Tensioner Assembly Parts



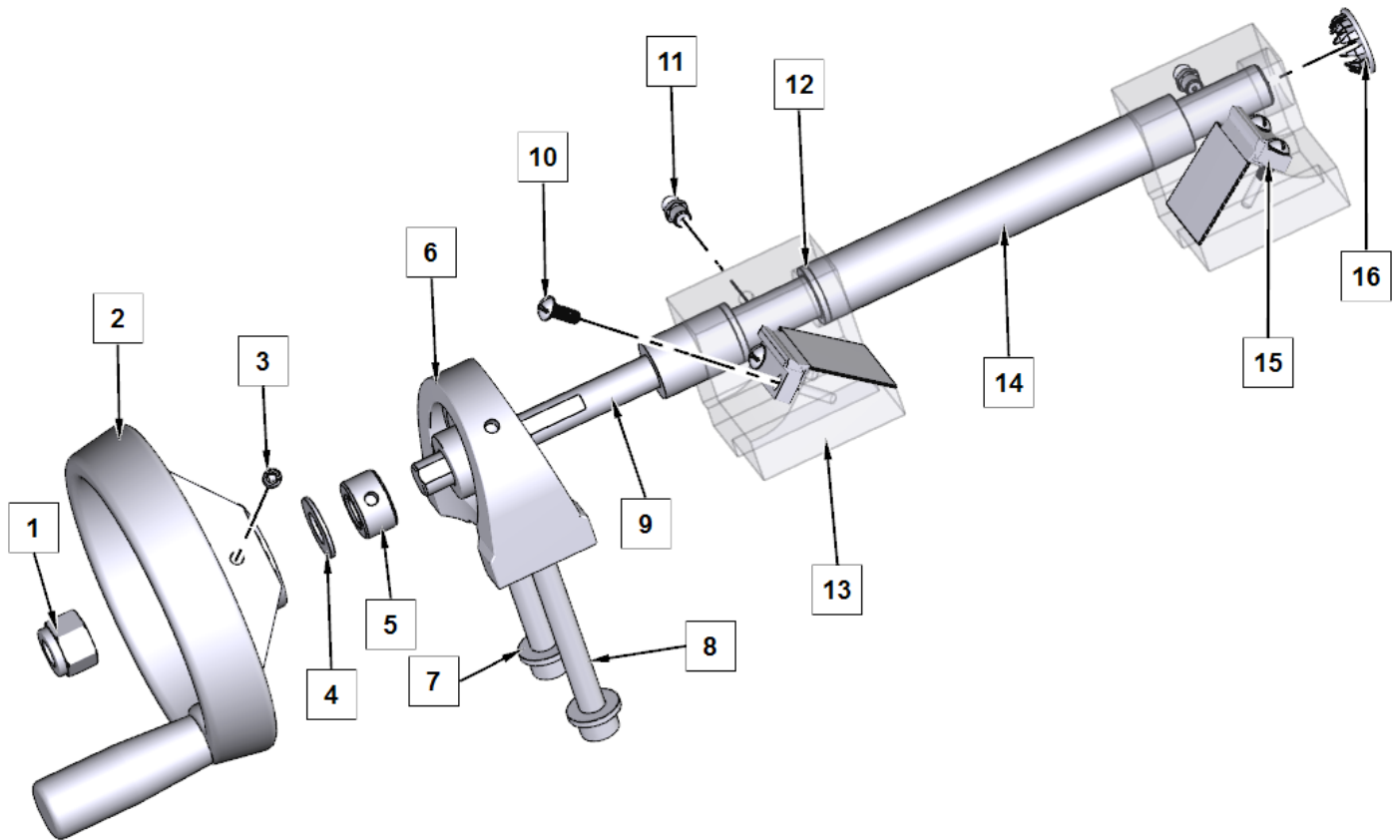
ITEM	PART #	DESCRIPTION
1	7209W	SCREW, CLAMP BAR
2	514-7-21	WASHER, BELLEVILLE
3	7209U	WASHER, SPHERICAL-HOLD DOWN
4	MF-181	FLAT WASHERS 5/8"
5	514-7-20	WASHER, THRUST
6	100-28-20C	SPRING,HOLD DOWN
7	MF-173	HEX JAM NUT 5/8-11 NC
8	7209S	ROD END, CLAMP BAR
9	7210B	PIN, CLEVIS
10	7232K	HITCH PIN CLIP

Front / Rear Tilt Assembly Parts



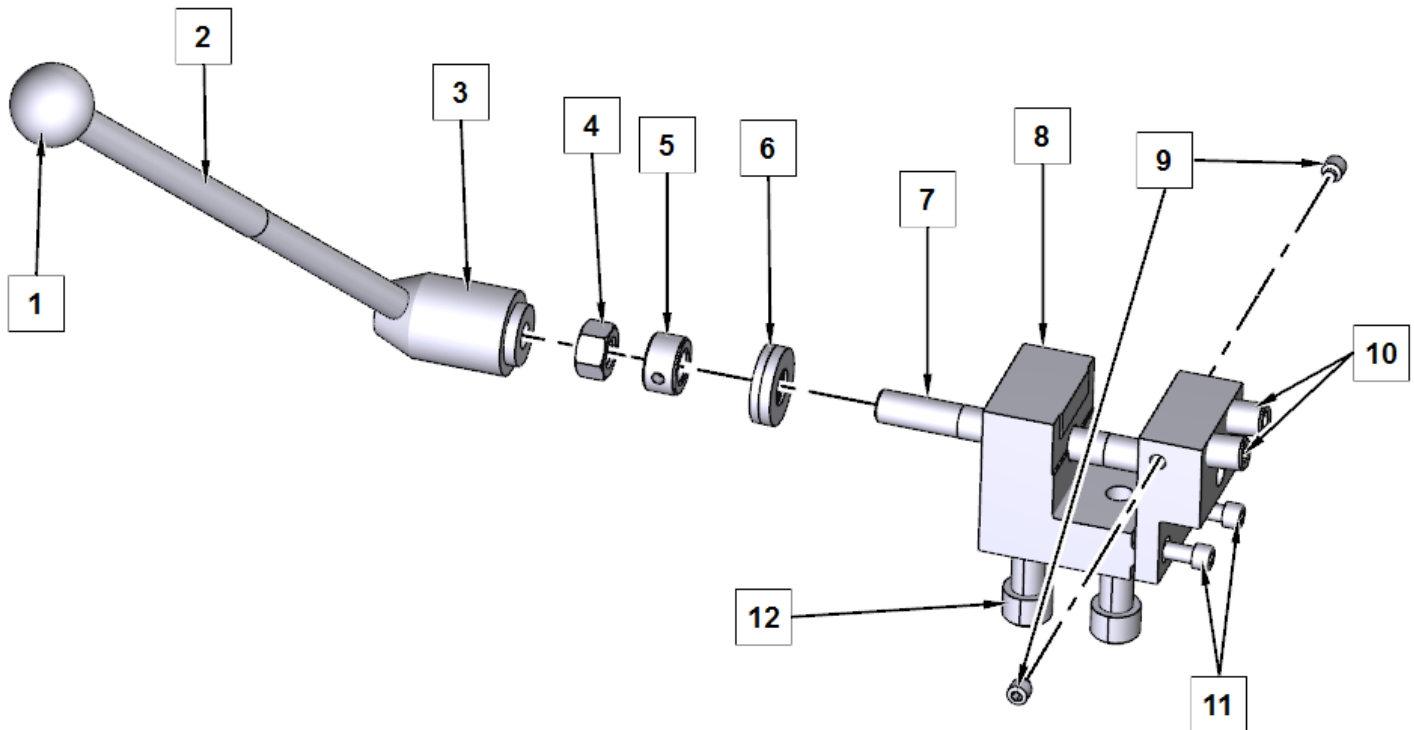
ITEM	PART #	DESCRIPTION
1	MF-186	NYLOCK NUT 1/2-13 NC
2	100-19	WASHER, THRUST
3	7201M	HANDWHEEL
4	7209J	COLLAR, 1/2" SHAFT
5	MF-36A	SOCKET HEAD CAP SCREW 3/8-16 X 3 1/2"
6	100-28-32	WASHER, 3/32" THICK
7	7201D	BLOCK, PILLOW LEVEL ADJUST
8	7199E	COLLAR, SUPPORT BLOCK (5/8" DIA)
9	514-7-21	WASHER, BELLEVILLE
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 Assembly Parts



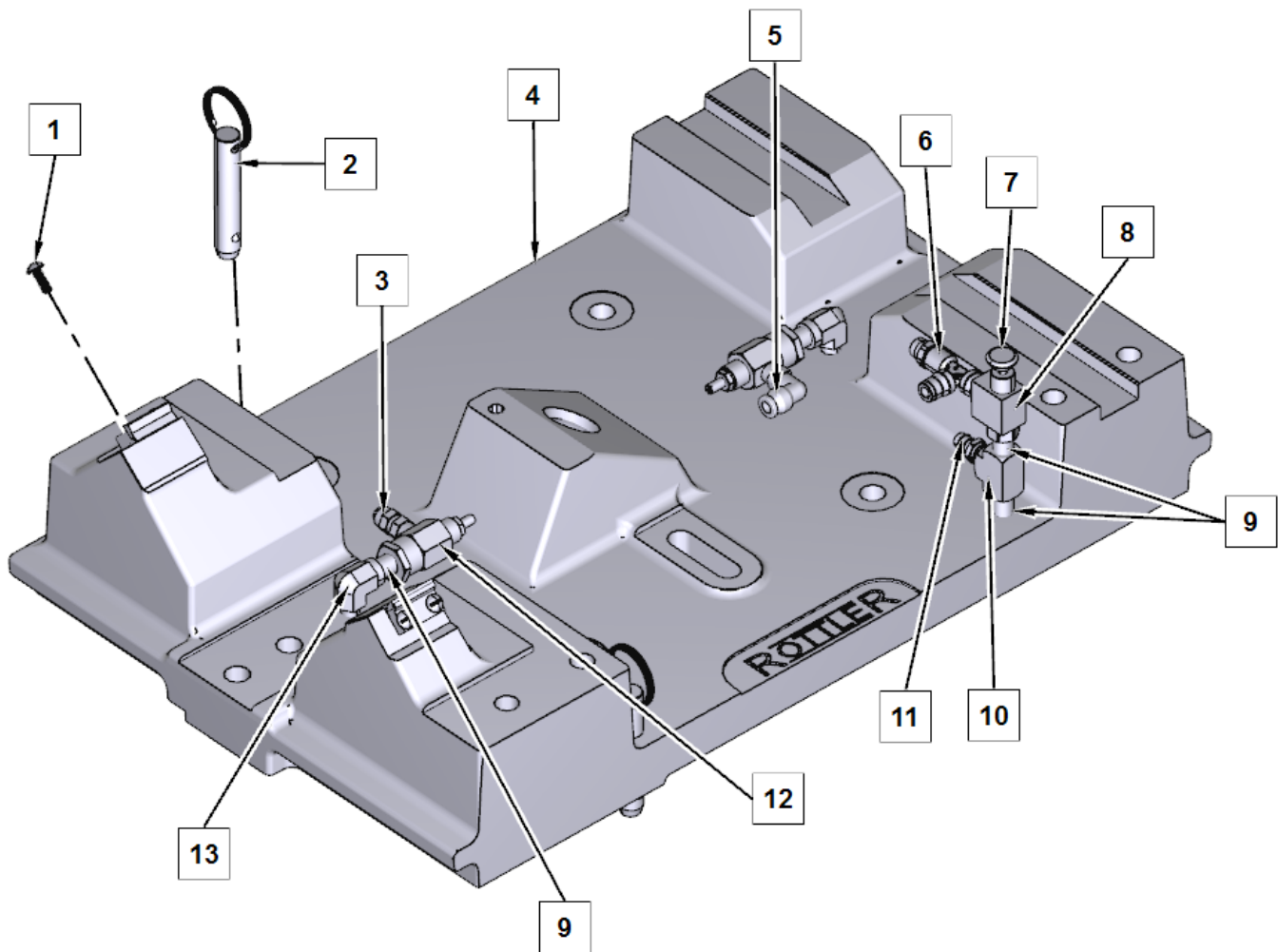
ITEM	PART #	DESCRIPTION
1	MF-186	NYLOCK NUT 1/2-13 NC
2	7201M	HANDWHEEL
3	MF-60	SOCKET SET SCREW CUP POINT 1/4-20 X 1/4"
4	100-19	WASHER, THRUST
5	7209J	COLLAR, 1/2" SHAFT
6	7201D	BLOCK, PILLOW LEVEL ADJUST
7	100-28-32	WASHER, 3/32"
8	MF-36A	SOCKET HEAD CAP SCREW 3/8-16 X 3 1/2"
9	7207M	SHAFT, LEFT/RIGHT 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"

Tilt Clamp Assembly Parts



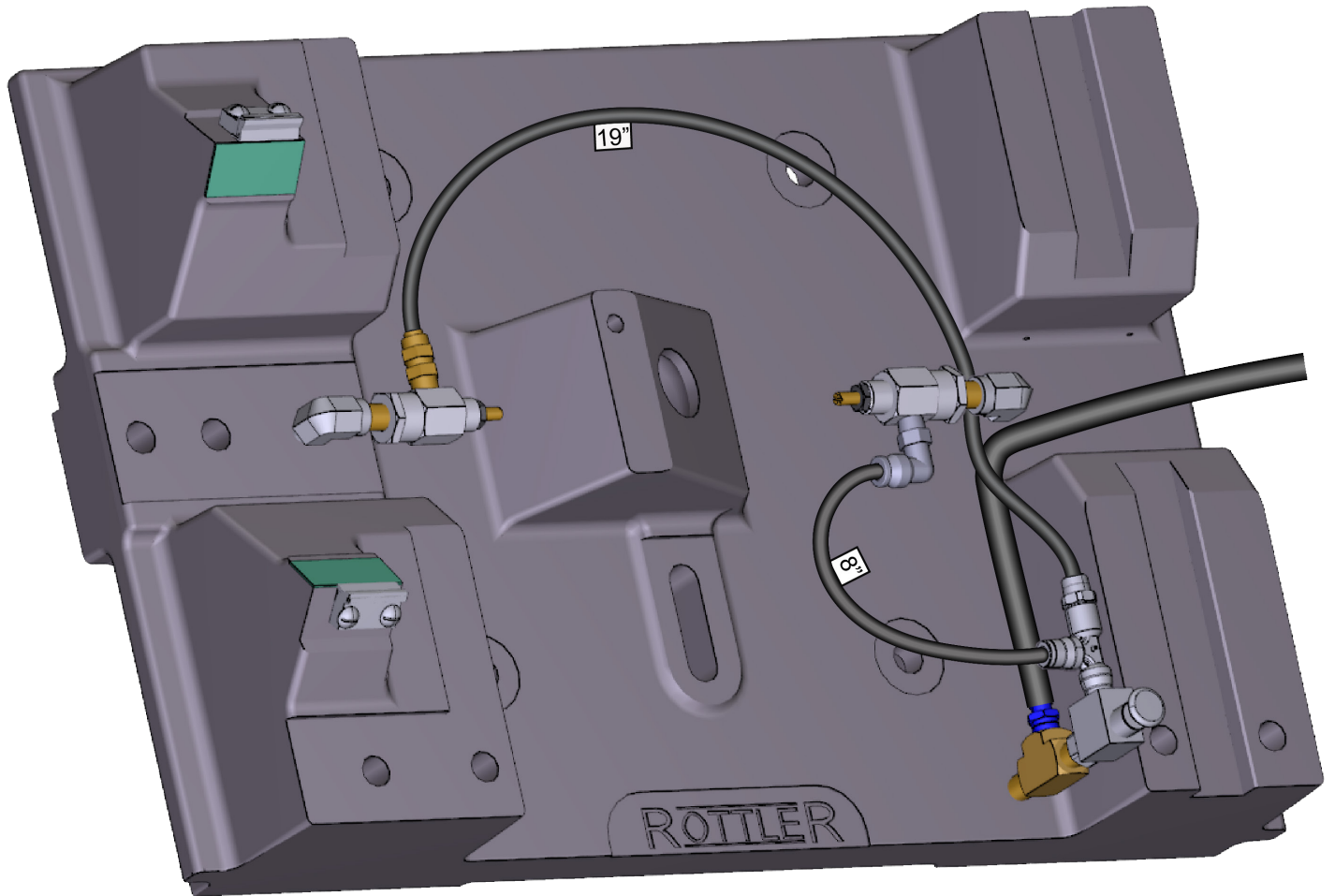
ITEM	PART #	DESCRIPTION
1	514-2-39E	KNOB, ADJUSTABLE HANDLE
2	514-2-39B	EXTENDER, ADJUSTABLE HANDLE
3	514-2-39D	HANDLE,ADJUSTABLE-CLAMP STOP
4	MF-165	HEX NUT 1/2-13 NC
5	7209J	COLLAR, 1/2" SHAFT
6	7209E	WASHER, SPHERICAL
7	7207Z	SHAFT, JOURNAL CLAMP
8	7210J	CLAMP BLOCK,JOURNAL CLAMP
9	504-29-36	SCREW, 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"

Base Assembly Parts

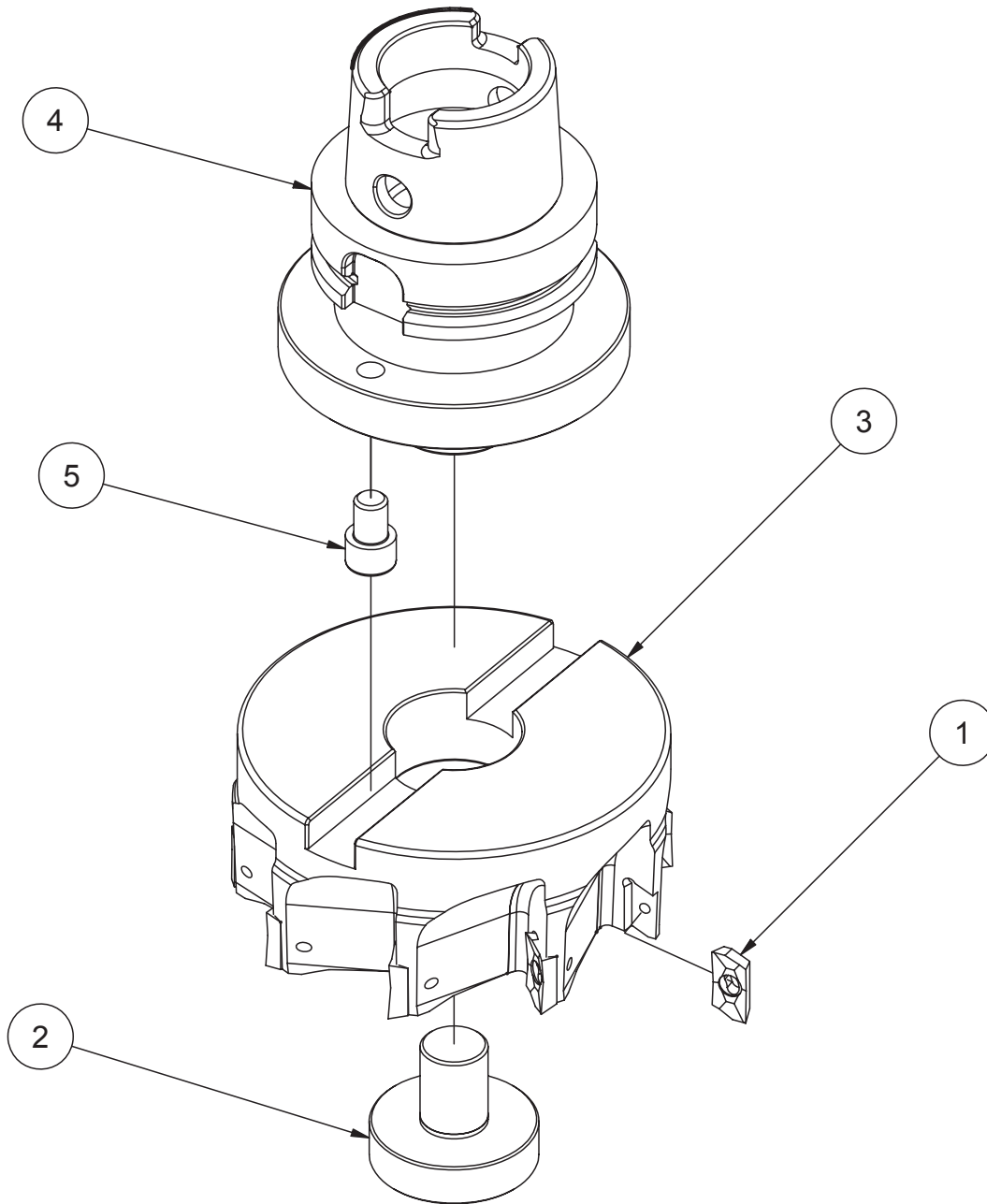


ITEM	PART #	DESCRIPTION
1	MF-111	ROUND HEAD MACHINE SCREW 10-24 X 1/2"
2	7210C	PIN, GUIDE ROTTLER LEVELING TABLE
3	502-11-16E	CONNECTOR, MALE, 1/4 X 1/8" PT
4	7233	FRAME, TABLE
5	514-4-17E	ELBOW, 90 DEGREE MALE - 1/4" X 1/8" NPT
6	514-4-17X	TEE, RUNNING 1/8-NPT X 1/4
7	502-1-56	PUSHBUTTON
8	514-2-65	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

Air Line Layout

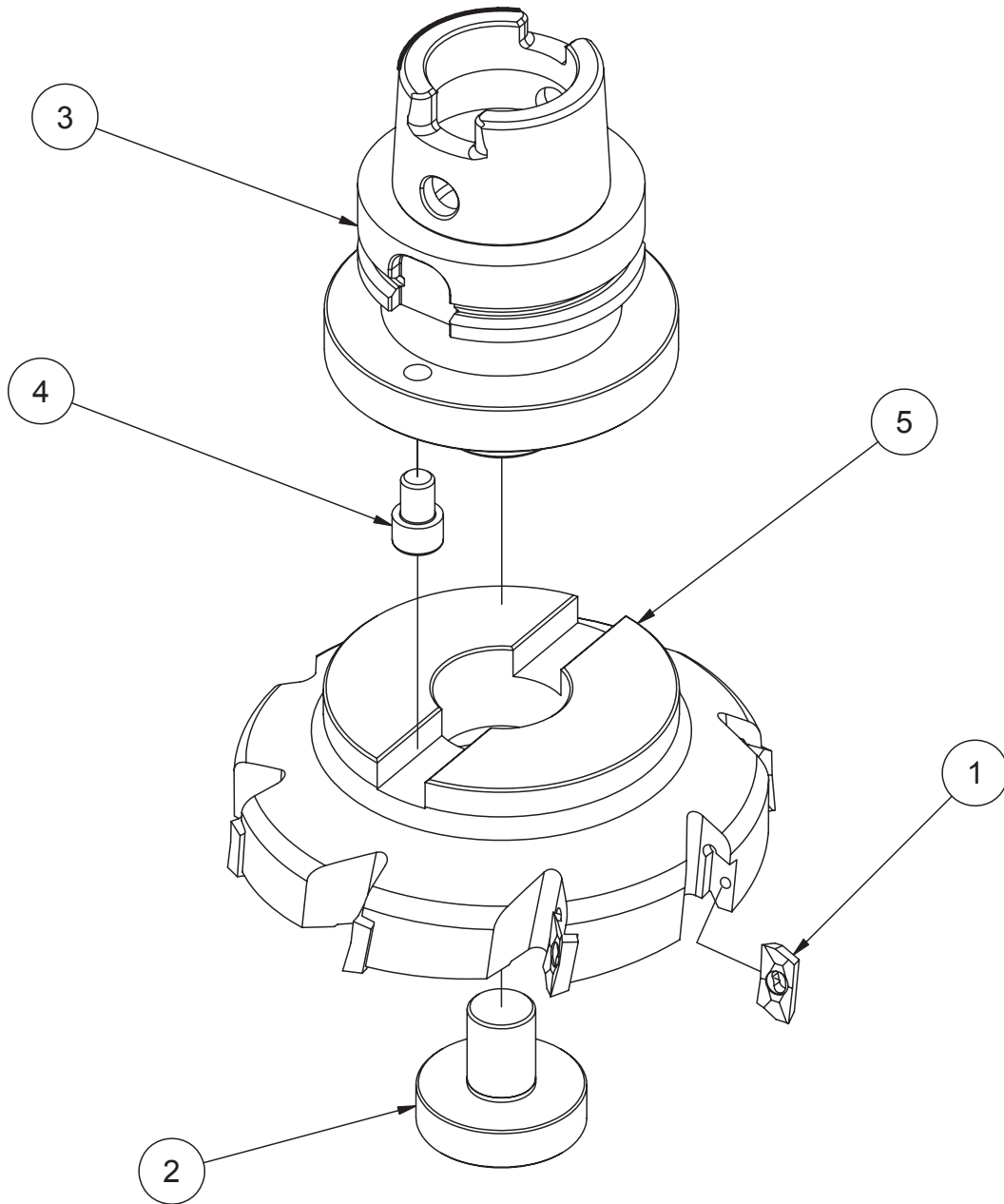


10129 Shell Mill Parts



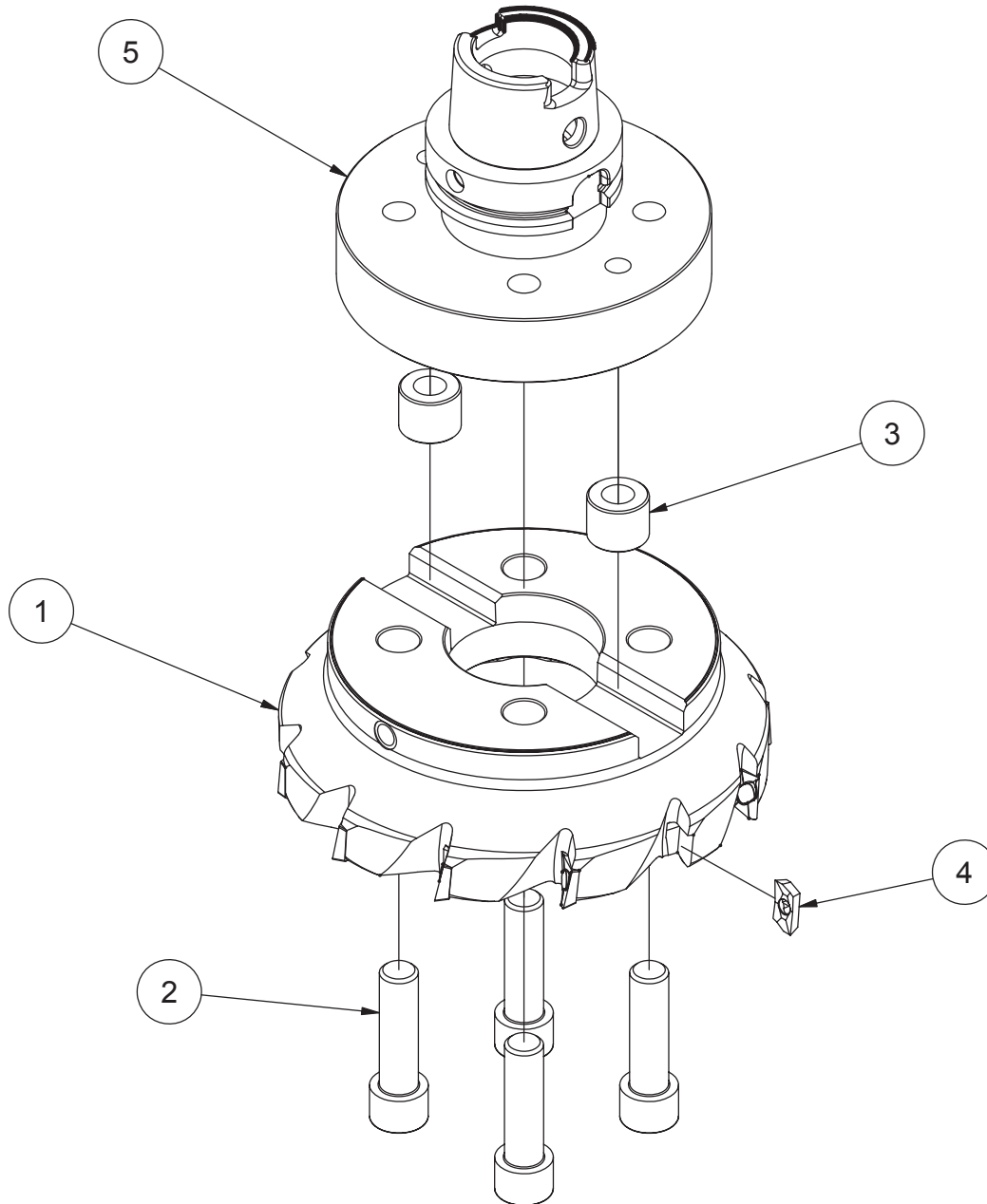
10129 5" SHELL MILL ASSEMBLY - F109HSK80A			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	9	6514T	INSERT, SHELL MILL 18MM
2	1	6514R SCREW	MOUNTING SCREW, 5" SHELL MILL
3	1	6514S	5" SHELL MILL
4	1	10130A	HSK ADAPTER LARGE SHELL MILL
5	1	MF-29	S.H.C.S. 3/8 - 16 UNC - 1/2

10130 Shell Mill Parts



10130 6" SHELL MILL ASSEMBLY - F109HSK80A			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	8	6514T	INSERT, SHELL MILL 18MM
2	1	6514R SCREW	MOUNTING SCREW, 5" SHELL MILL
3	1	10130A	ADAPTER, 5" & 6" SHELL MILL - HSK 80A
4	1	MF-29	S.H.C.S. 3/8 - 16 UNC - 1/2
5	1	7224H	SHELL MILL, 6" DIA.

10109C Shell Mill Parts



10109C 8" SHELL MILL ASSEMBLY - F109 HSK80A			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	6514X	8" SHELL MILL
2	4	MF-46E	S.H.C.S. 5/8 - 11 UNC - 2 1/4
3	2	6514U	DRIVE KEY - LARGE SHELL MILL ADAPTER F8
4	1	6514Y	INSERT, SHELL MILL
5	1	10109A	HSK ADAPTER LARGE SHELL MILL

6514T Insert

For 6514L & 6514V Shell Mills, .030" (0.8mm)
Corner Radius, different radius available on
request



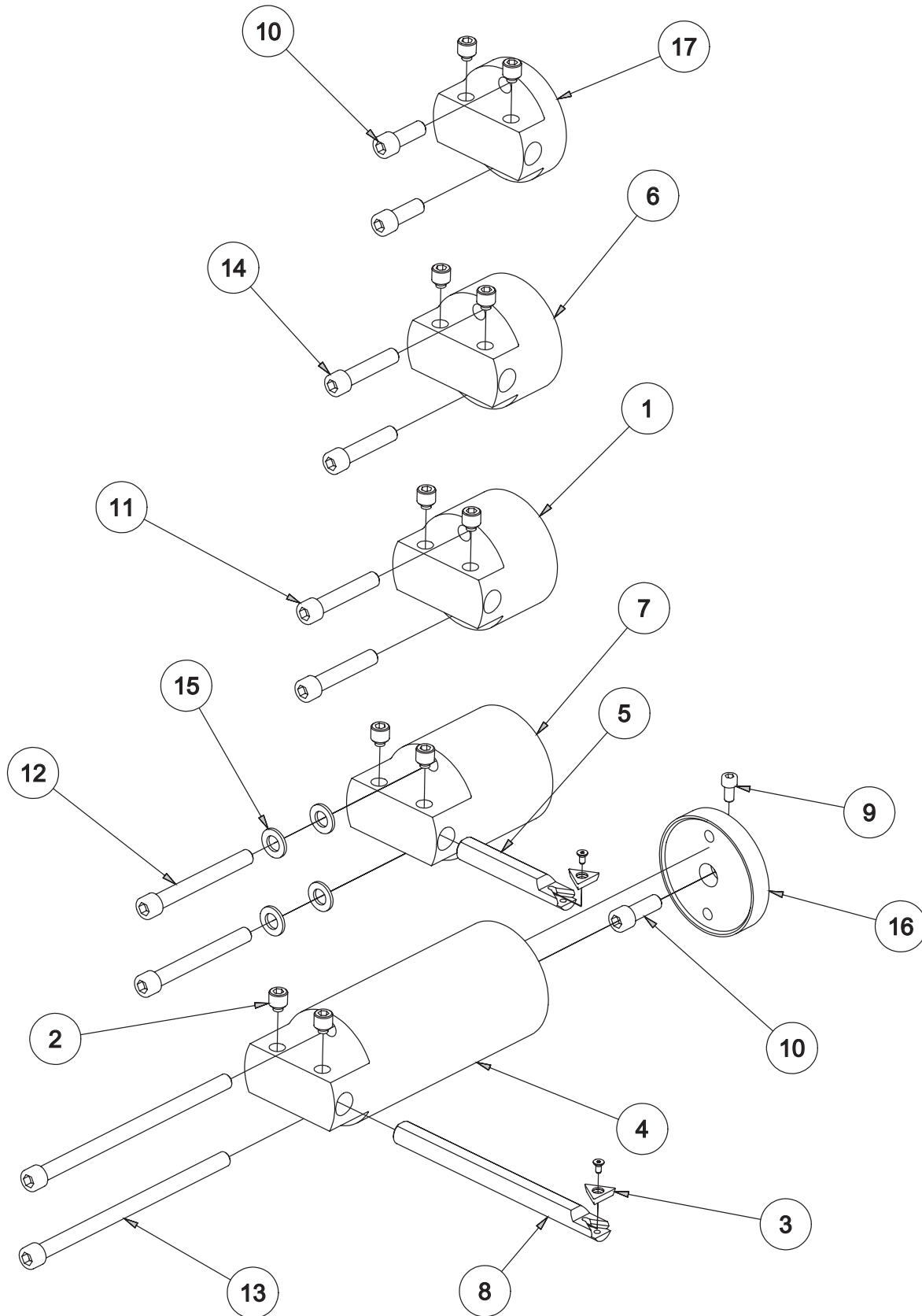
6514Y Insert

For 6514L, 6514V & 6514W Shell Mills, .125"
(3.2mm) Corner Radius, different radius
available on request



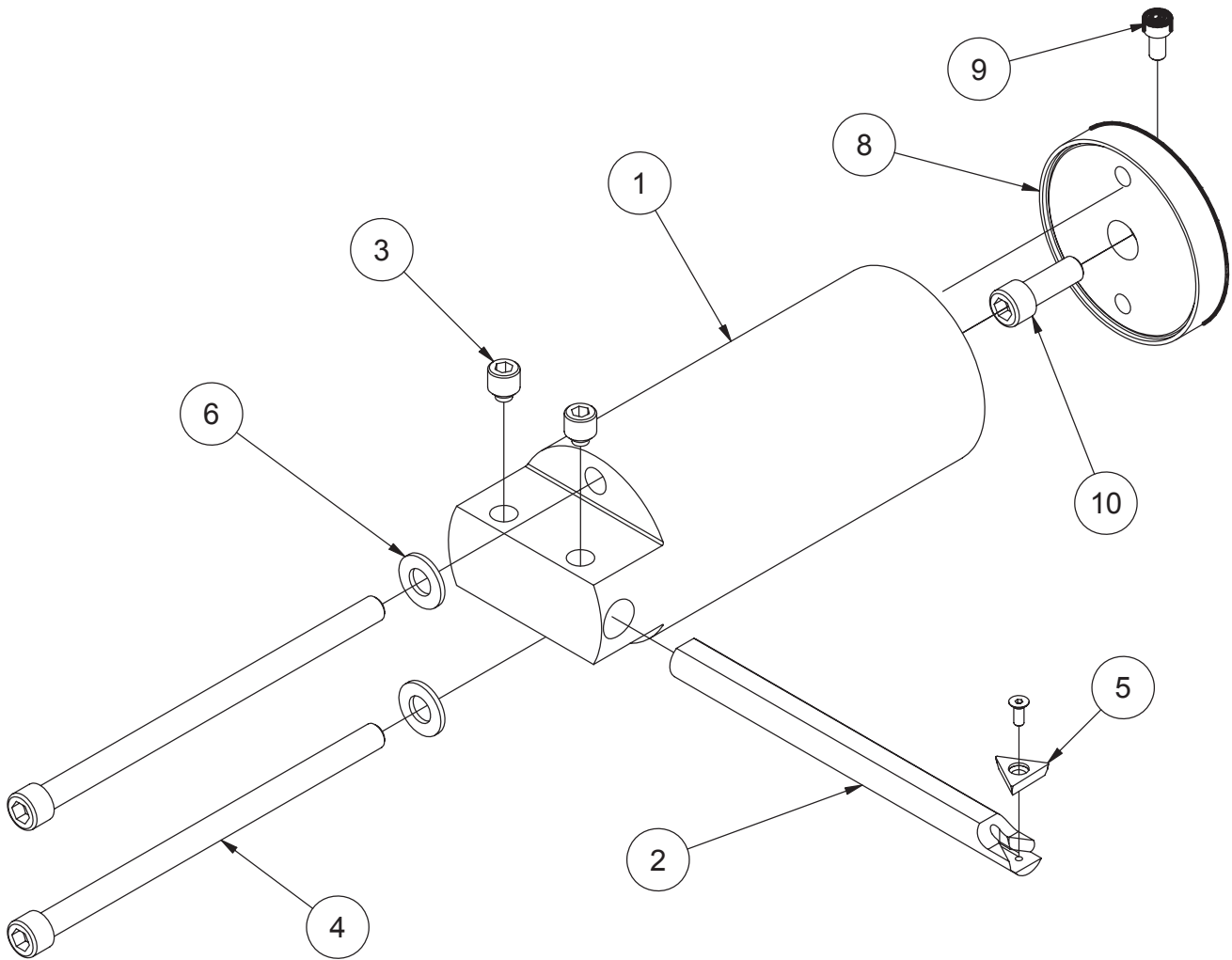
Equipment for Facing Thrust Bearing Surfaces for Main Line

6855C Thrust Facing Tooling Package Parts



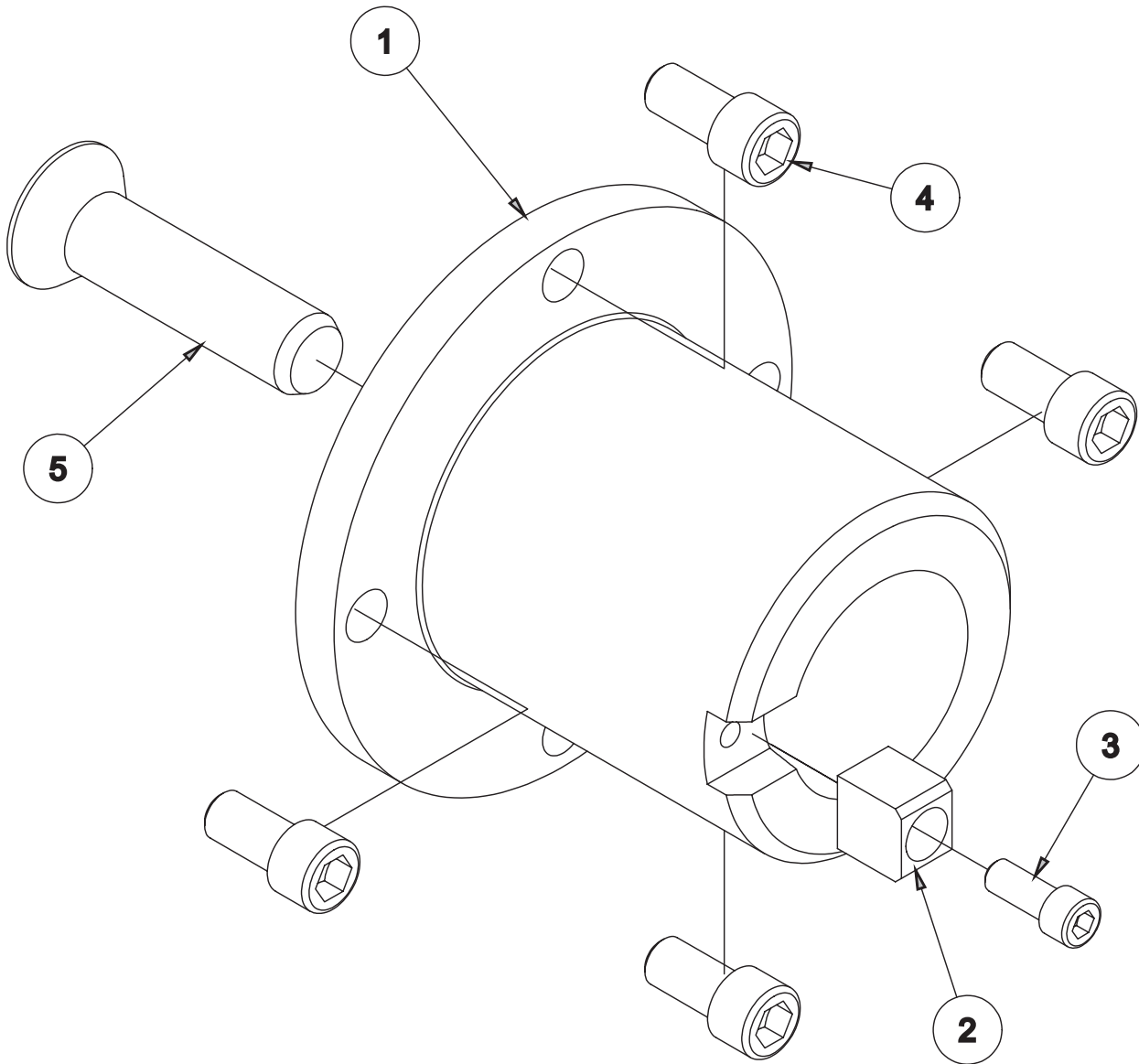
6855C THRUST FACING HEAD ASSEMBLY			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	6855A	HEAD, THRUST FACING (2.18" LONG) LINE BORE
2	10	502-30-10L	Brass Tipped Set Screw
3	2	RT321	INSERT, TRIANGULAR POS. RAKE 3/8" I.C.
4	1	6855B	HEAD, THRUST FACING (6.25" LONG) LINE BORE
5	1	6855D	TRIANGLE INSERT CARTRIDGE - MAIN LINE THRUST FACING
6	1	6855E	HEAD, THRUST FACING (1.88" LONG) LINE BORE
7	1	6855F	HEAD, THRUST FACING (3.40" LONG) LINE BORE
8	1	6757R	TRIANGLE INSERT CARTRIDGE - MAIN LINE THRUST FACING
9	1	MF-4	S.H.C.S. 10 - 24 UNC - 3/8
10	3	MF-21C	S.H.C.S. 5/16 - 18 UNC - 7/8
11	2	Mf-26	S.H.C.S. 5/16 - 18 UNC - 1 3/4
12	2	MF-28	S.H.C.S. 5/16 - 18 UNC - 2 3/4
13	2	MF-28D	S.H.C.S. 5/16 - 18 UNC - 5 1/2
14	2	MF-25	S.H.C.S. 5/16 - 18 UNC - 1 1/2
15	4	MF-177	5/16 SAE FLAT WASHER
16	1	6855	MOUNTING PLATE - THRUST FACING HEAD
17	1	6855J	HEAD, THRUST FACING (1.25" LONG) LINE BORE

6855G Thrust Facing Tooling Package Parts



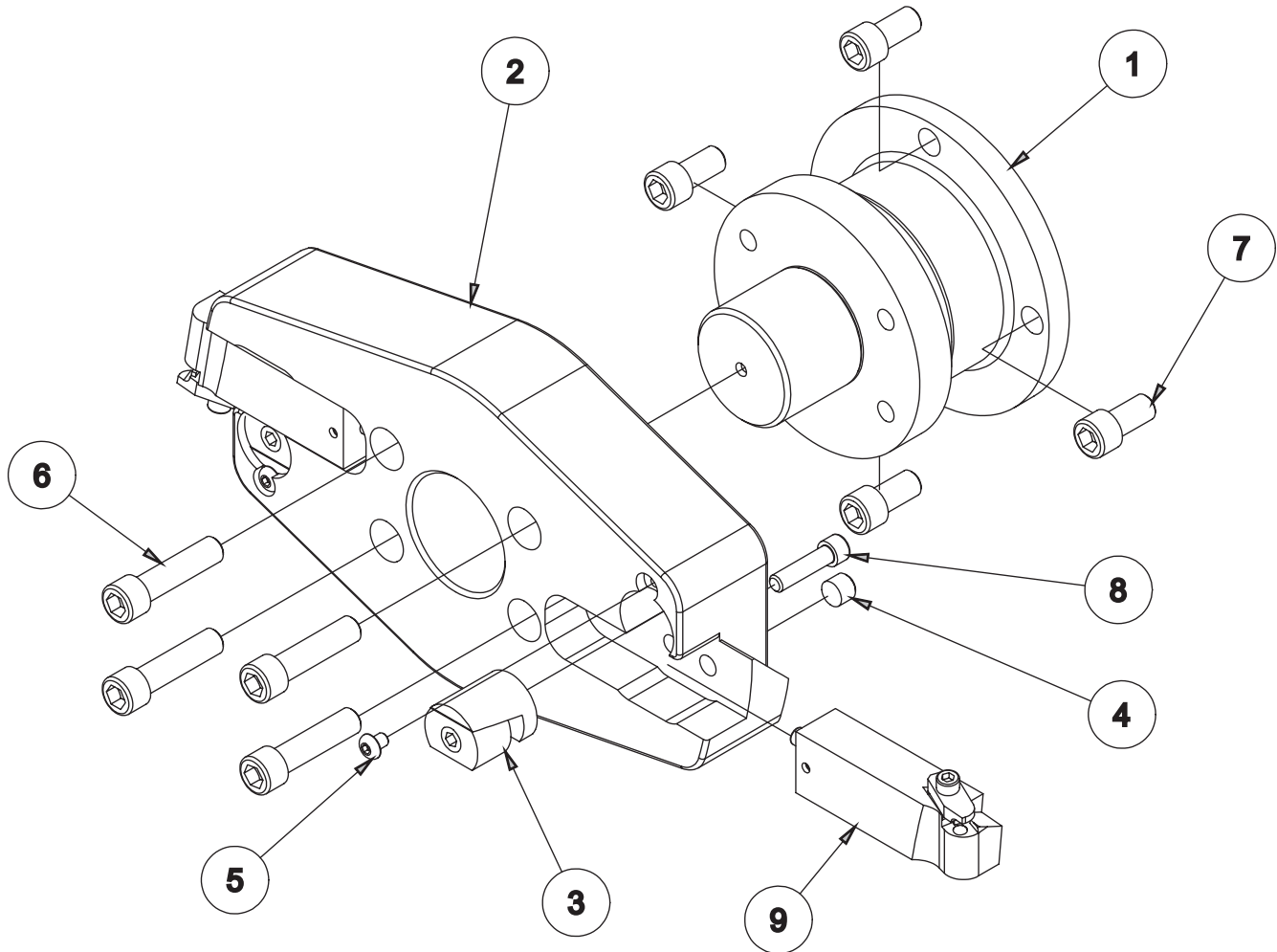
6855G THRUST FACING TOOLING PACKAGE - EXTRA LARGE BLOCK			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	6855B	HEAD, THRUST FACING (6.25" LONG) LINE BORE
2	1	6757R	TRIANGLE INSERT CARTRIDGE - MAIN LINE THRUST FACING
3	2	502-30-10L	Brass Tipped Set Screw
4	2	MF-28D	S.H.C.S. 5/16 - 18 UNC - 5 1/2
5	1	RT321	INSERT, TRIANGULAR POS. RAKE 3/8" I.C.
6	2	MF-177	SAE FLAT WASHER 1/4"
8	1	6855	MOUNTING PLATE - THRUST FACING HEAD
9	1	MF-4	S.H.C.S. 10 - 24 UNC - 3/8
10	1	MF-21C	S.H.C.S. 5/16 - 18 UNC - 7/8

Special Tooling for Block End Machining
6779H Adaptor for 40 Taper Tooling Parts



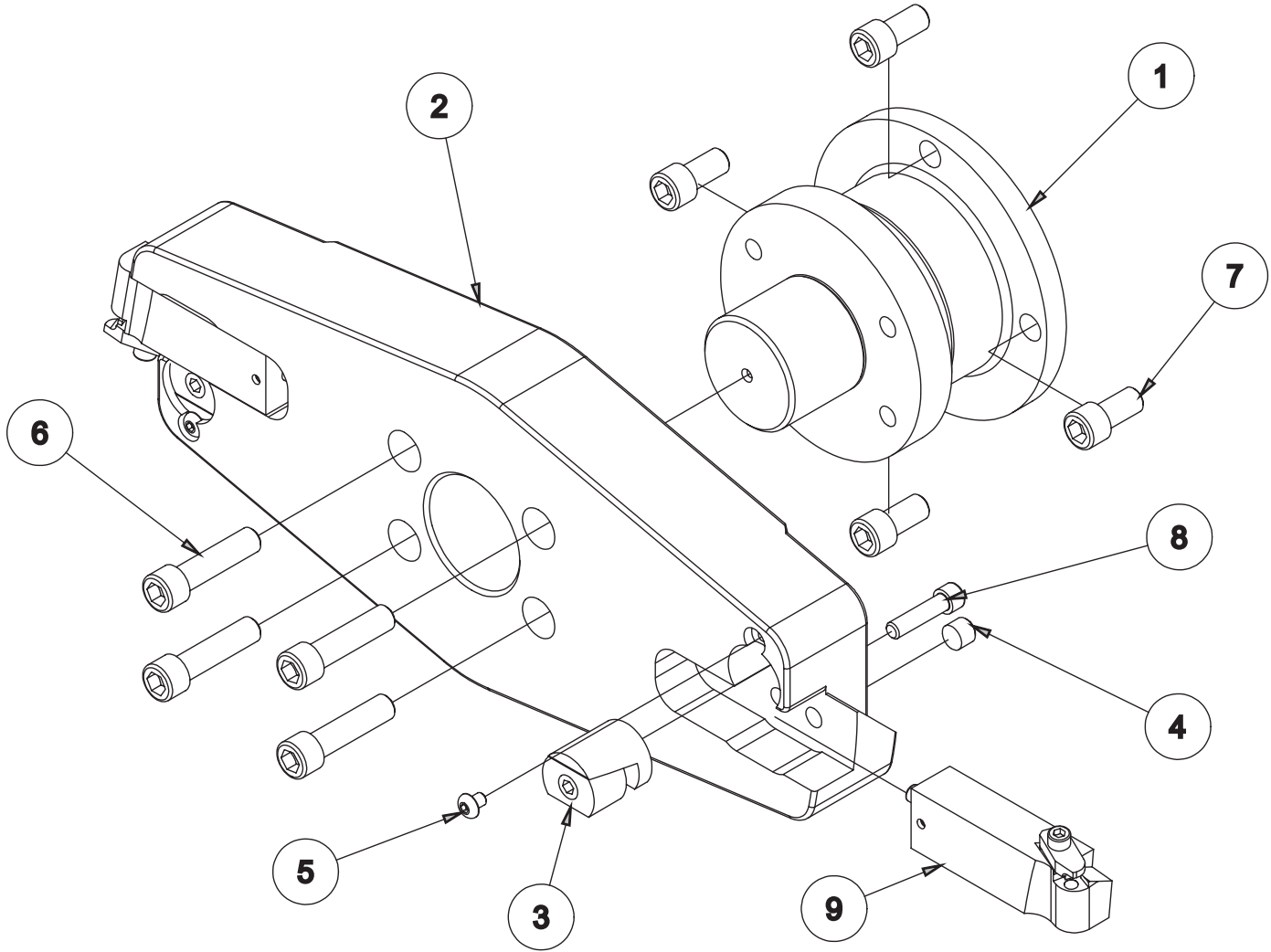
6779H ADAPTER ASSEMBLY, 40 TAPER - H.D. OFFSET R.A.D.			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	6779J	CAT 40 ADAPTER - H.D. OFFSET R.A.D.
2	1	6170H	Drive key
3	1	MF-13	1/4-20UNC x 5/8" LG. S.H.C.S.
4	4	MF-30	3/8-16UNC x 3/4" LG. S.H.C.S.
5	1	502-1-86D	5/8-11UNC x 2-1/2" LONG SOCKET FLAT HEAD SCREW

6779L Surfacing Cutterhead Parts



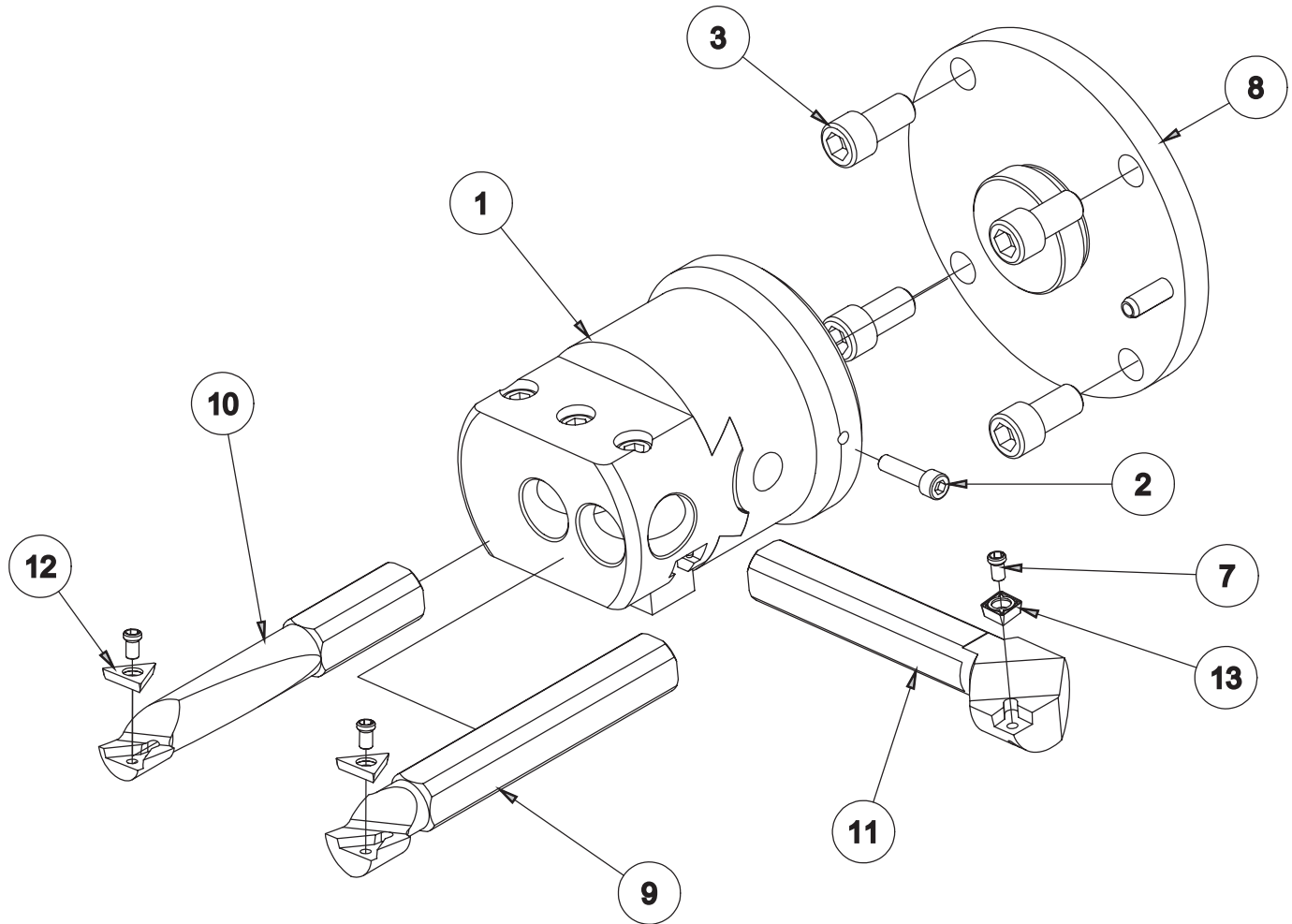
6779L 10" FLYCUTTER ASSEMBLY - H.D. OFFSET R.A.D.			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	6779G	ADAPTOR, 7-3/4" CUTTERHEAD TO H.D. R.A.D.
2	1	7206L	CUTTERHEAD, SURFACING 10"
3	2	7206K	L-LOCK ASSEMBLY
4	2	7202C	10-24UNC x 3/8" LG. SOCKET OVAL POINT SET SCREW
5	2	MF-87	10-24UNC x 1/4" LG. SOCKET BUTTON HEAD SCREW
6	4	MF-33	3/8-16UNC x 1-1/2" LG. S.H.C.S.
7	4	MF-30	3/8-16UNC x 3/4" LONG S.H.C.S.
8	2	MF-15	1/4-20UNC x 1" LG. S.H.C.S.
9	2	7202W	TOOL HOLDER ASSEMBLY, FLY CUTTER

6779M Surfacing Cutterhead Parts



6779M 14" FLYCUTTER ASSEMBLY - H.D. OFFSET R.A.D.			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	6779G	ADAPTOR, 7-3/4" CUTTERHEAD TO H.D. R.A.D.
2	1	7206G	CUTTERHEAD, SURFACING 14"
3	2	7206K	L-LOCK ASSEMBLY
4	2	7202C	10-24UNC x 3/8" LG. SOCKET OVAL POINT SET SCREW
5	2	MF-87	10-24UNC x 1/4" LG. SOCKET BUTTON HEAD SCREW
6	4	MF-33	3/8-16UNC x 1-1/2" LG. S.H.C.S.
7	4	MF-30	3/8-16UNC x 3/4" LG. S.H.C.S.
8	2	MF-15	1/4-20UNC x 1" LG. S.H.C.S.
9	2	7202W	TOOL HOLDER ASSEMBLY, FLY CUTTER

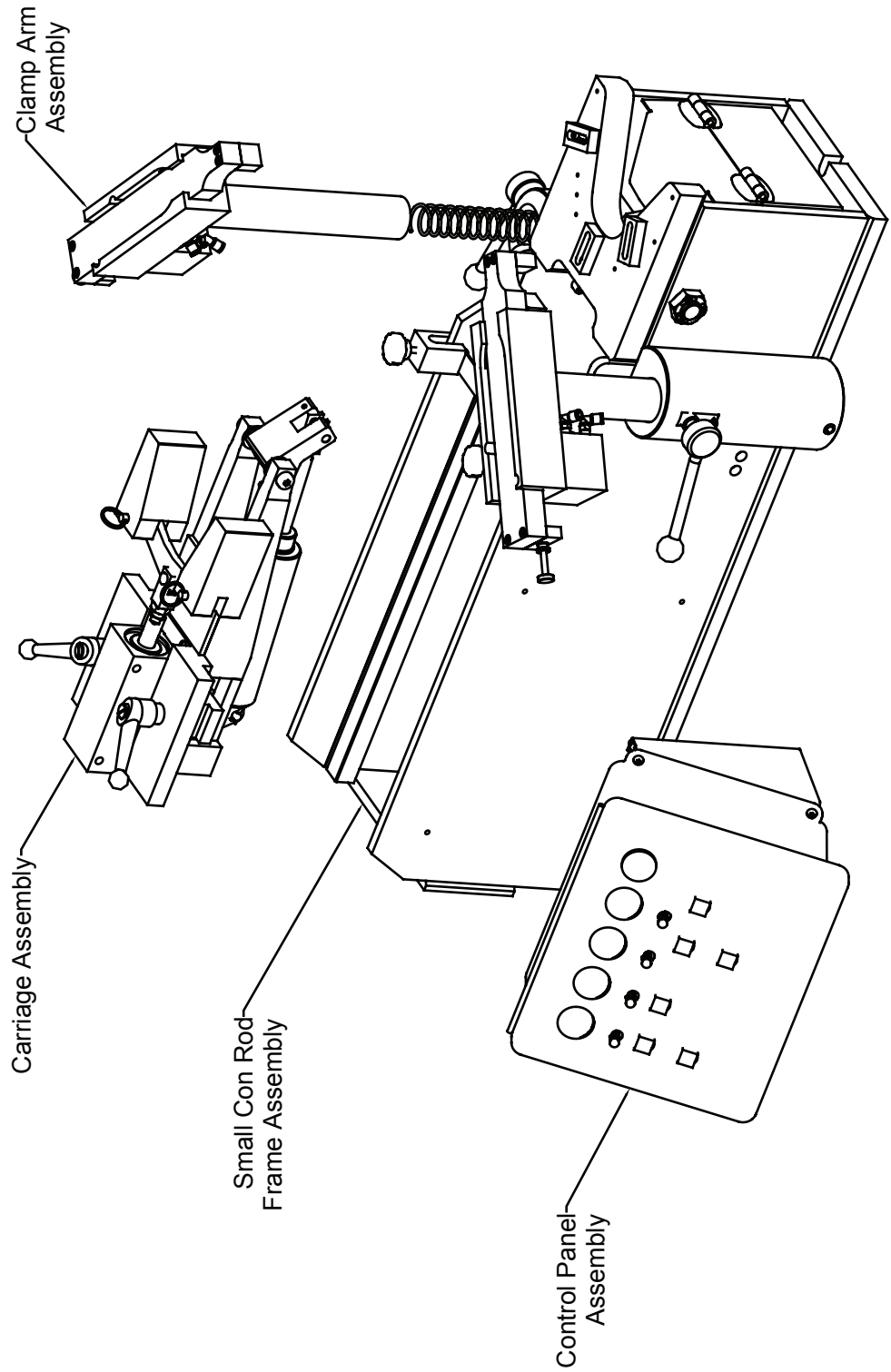
6779N Crossfeed Head Parts



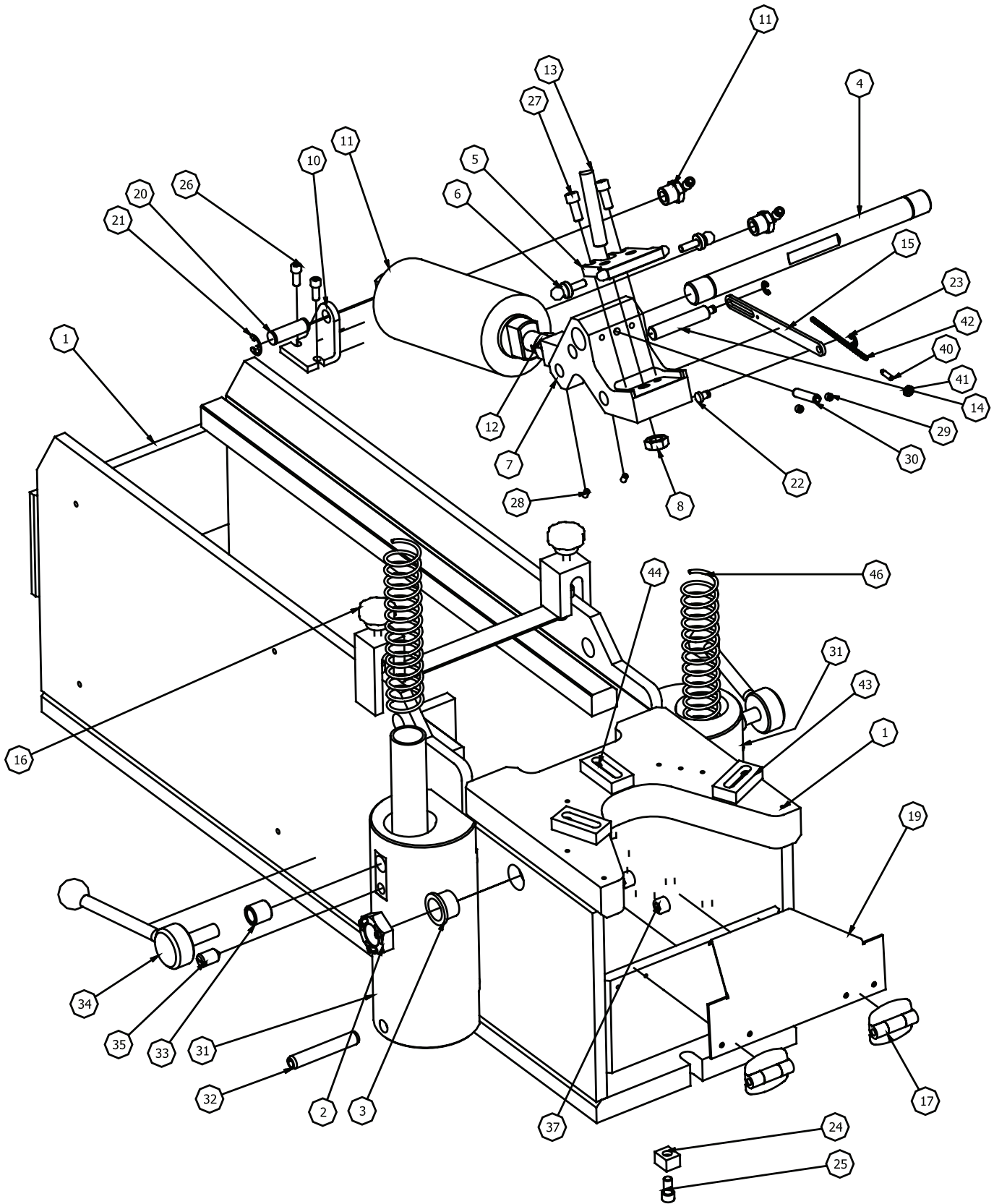
6779N CROSSFEED HEAD ASSEMBLY - H.D. OFFSET R.A.D.			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	6565X	HEAD, CROSSFEED CRITERION
2	1	MF-10	10-32UNC x 3/4" LG. S.H.C.S.
3	4	Mf-30	3/8-16UNC x 3/4" LG. S.H.C.S.
7	3	CLAMP SCREW	SUPPLIED WITH BORING BAR
8	1	6779P	ADAPTER ASSEMBLY, CROSSFEED HEAD TO H.D. OFFSET R.A.D.
9	1	650-2-34P	BORING BAR, 1" PRECISION BORING HEAD ASS'Y
10	1	650-2-34Q	BORING BAR, 3/4" PRECISION BORING HEAD ASS'Y
11	1	650-2-34U	FACING BAR - PRECISION BORING HEAD ASSEMBLY
12	2	650-2-34R	INSERT, TRIANGULAR POS. RAKE 3/8" I.C.
13	1	650-2-34V	INSERT, DIAMOND SHAPE 1/32" R.

Connecting Rod Boring and Surfacing Equipment

650-3-44R Precision Connecting Rod Fixturing System Parts

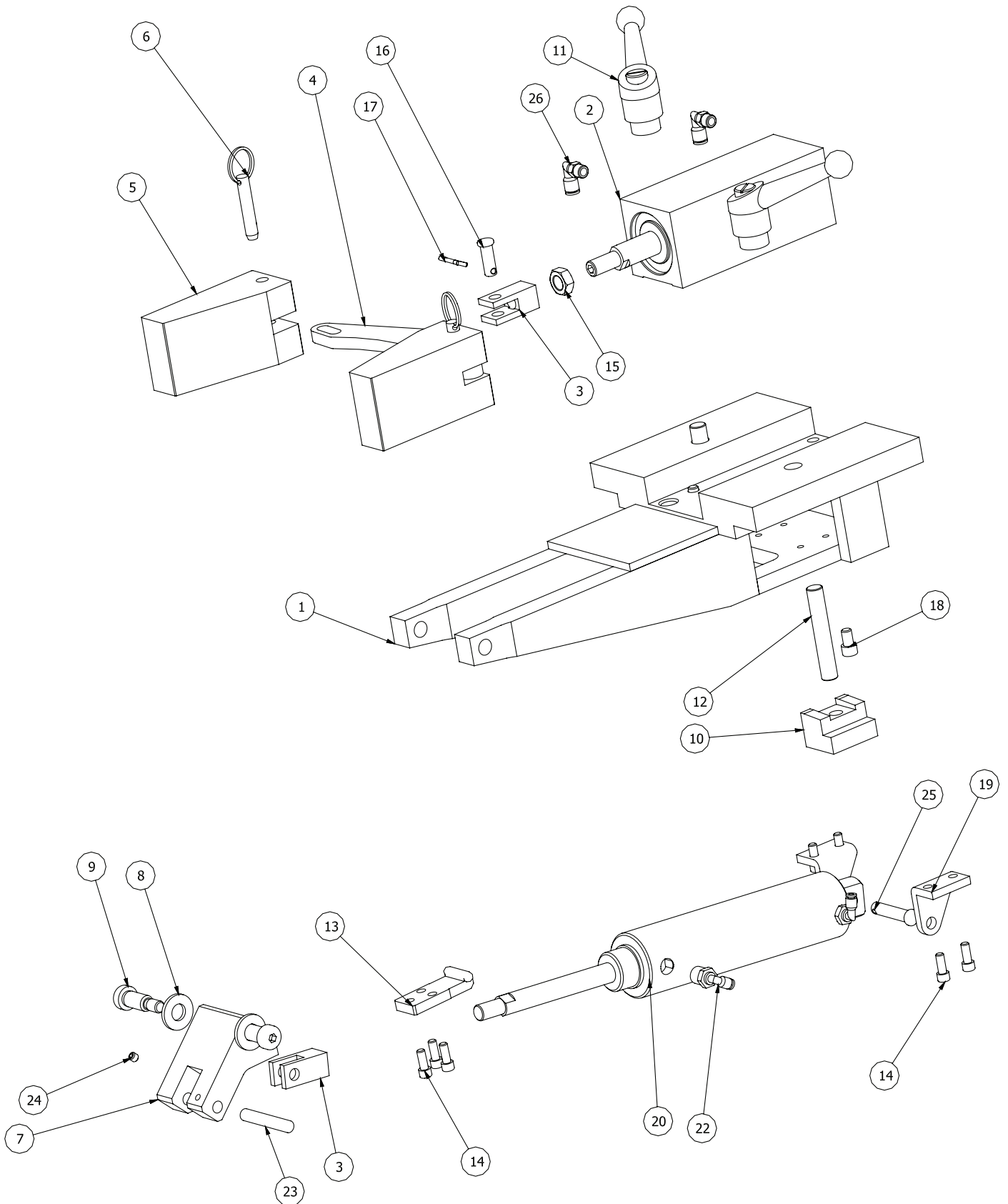


Frame Assembly Parts



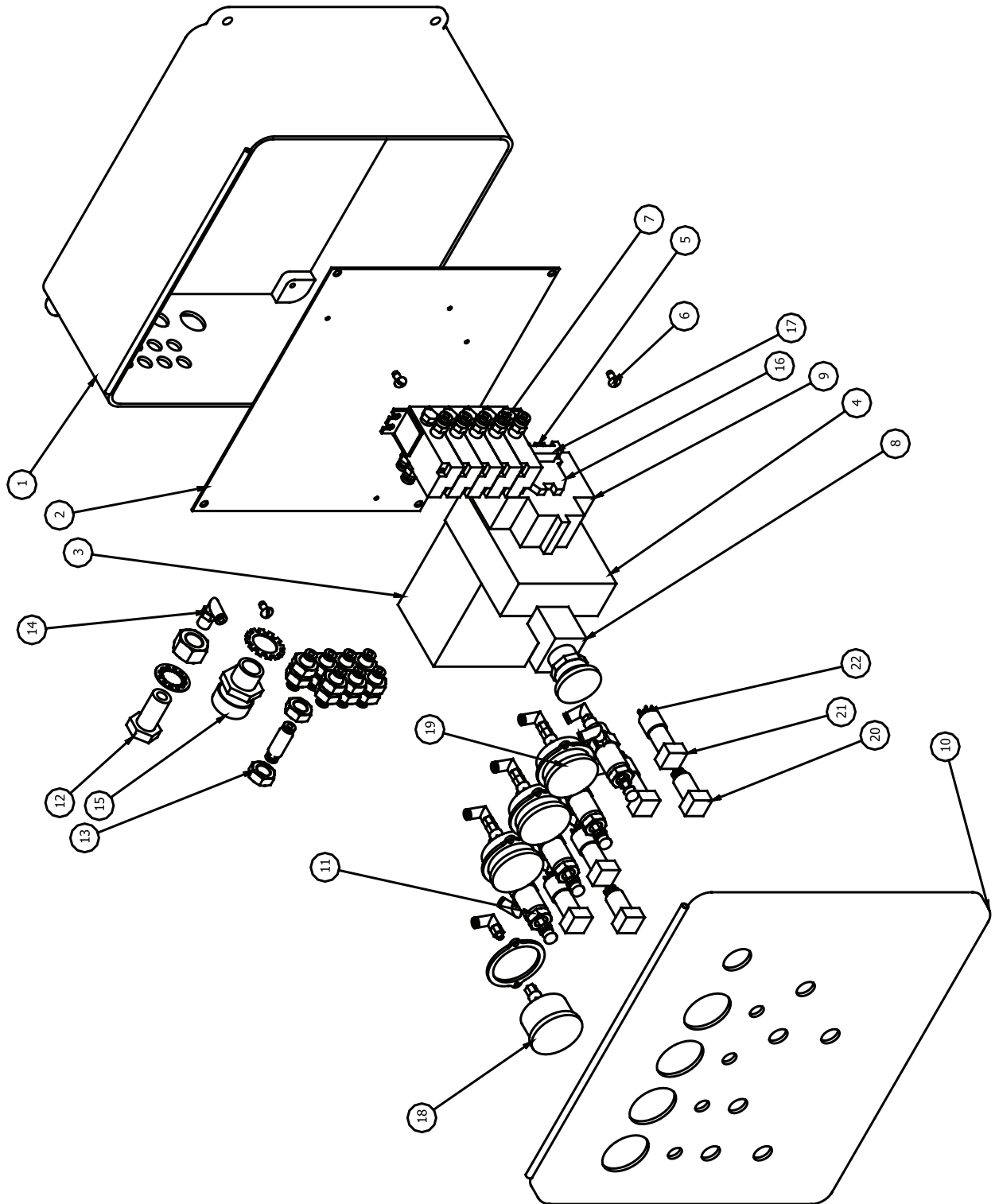
Small Precision Connecting Rod Fixture Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	650-3-67B	Small Frame
2	2	650-3-46T	Lock Nut REID BLN-105
3	2	650-3-46U	Flange Bearing Symmco SF-2832-12
4	1	650-3-46G	Pivot Shaft
5	1	650-3-46N	Locator 1.78
6	2	650-3-46C	Tooling Ball Reid #TCB-26820
7	1	650-3-46J	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

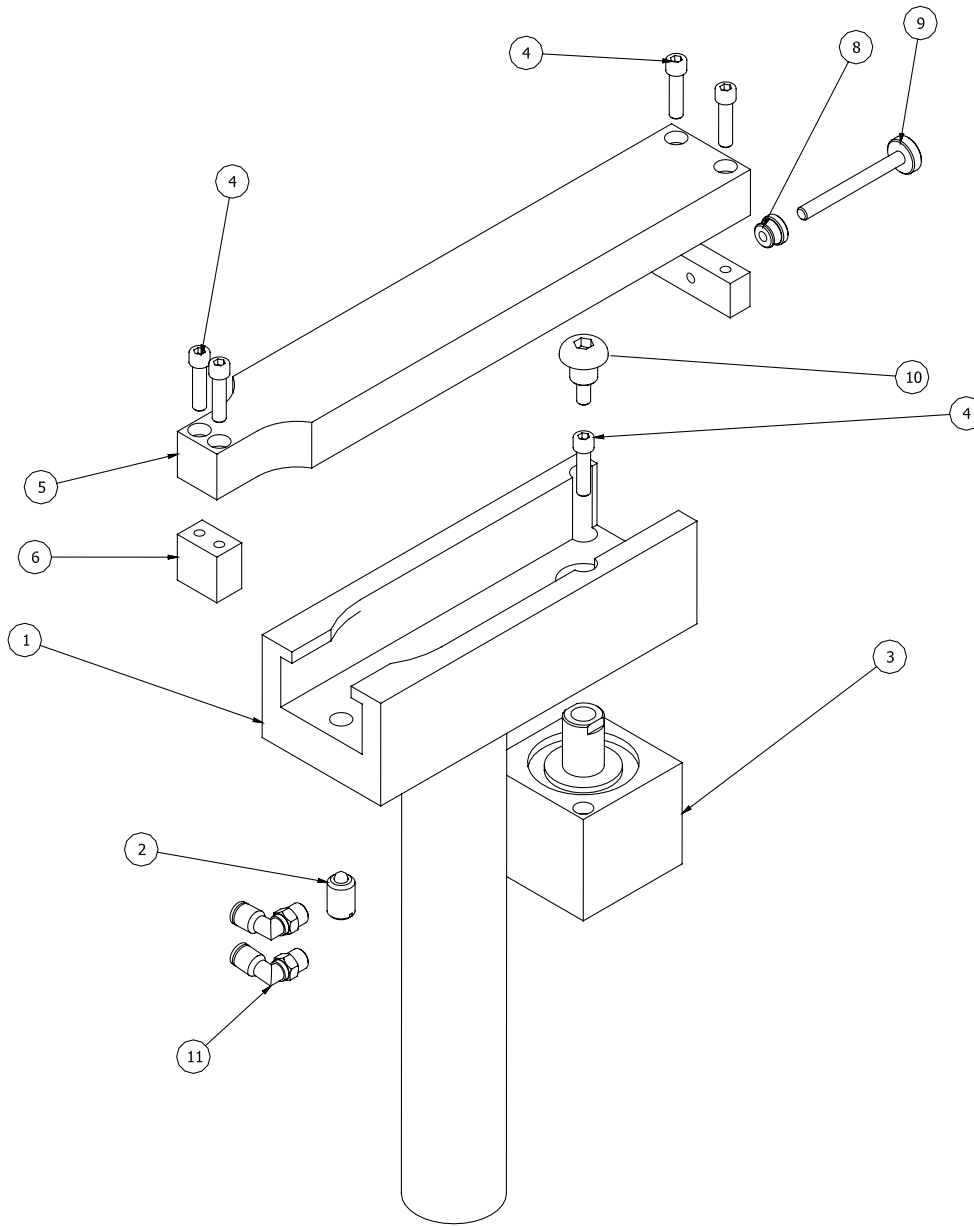
Control Box Parts



650-3-47T Parts List - Control Panel Complete w/ Air (Buchannan)

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	PUCHBUTTON, SOCKET

Clamp Arm Assembly Parts

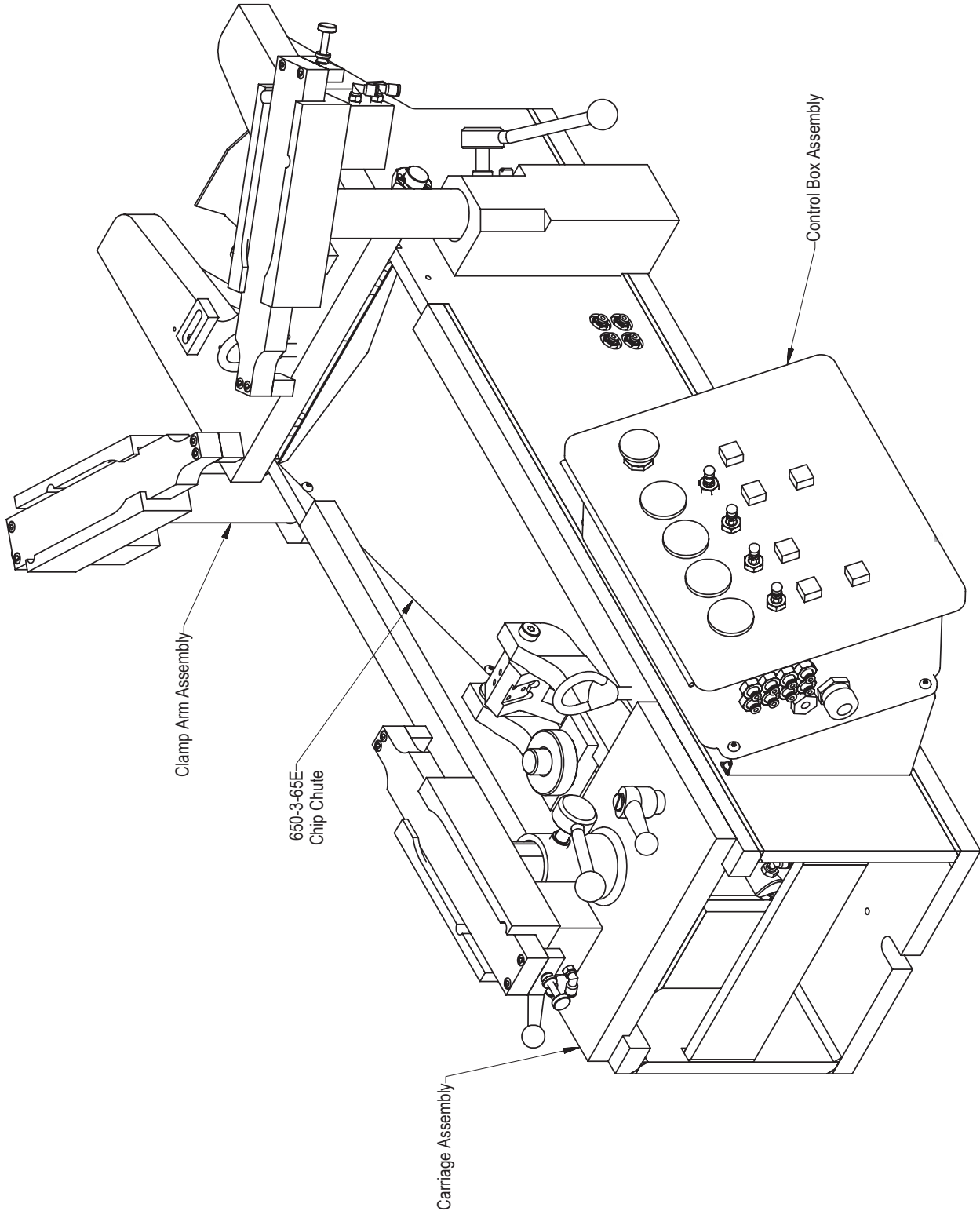


Small Precision Connecting Rod Fiture Clamp Arm Assembly Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	650-3-49H	Clamp Leg
2	1	502-8-52C	Spring Plunger
3	1	650-3-45E	Clamp Arm Cylinder
4	6	ANSI B18.3 - 1/4 - 20 UNC - 1	Hexagon Socket Head Cap Screw
5	1	650-3-49K	Clamp Arm
6	1	650-3-49L	Extension
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

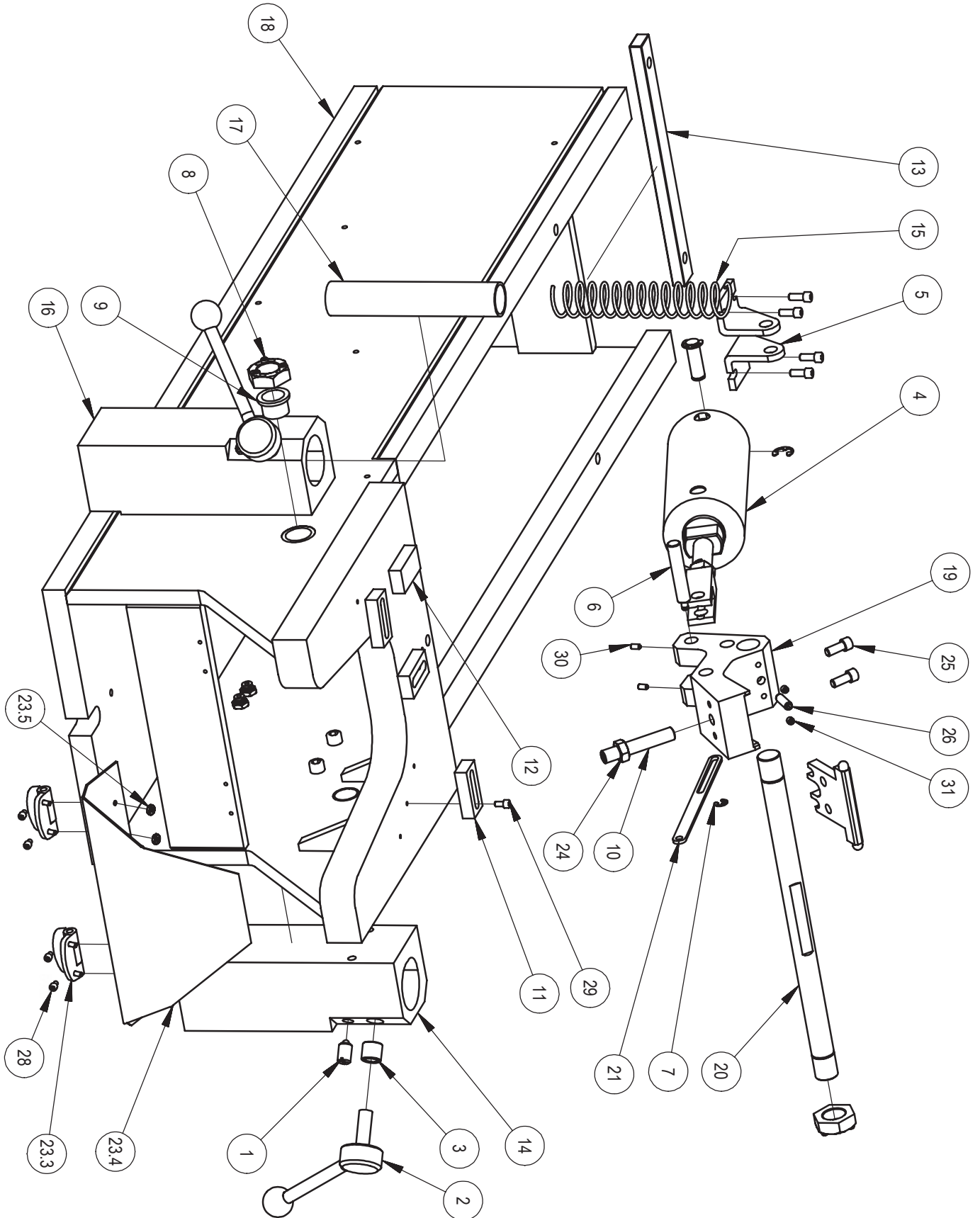
Fixturing & Tooling for Machining Large Engine & Compressor Connecting Rods

650-3-64 Precision Connecting Rod Fixturing System Parts

Heavy Duty ConRod Fixture

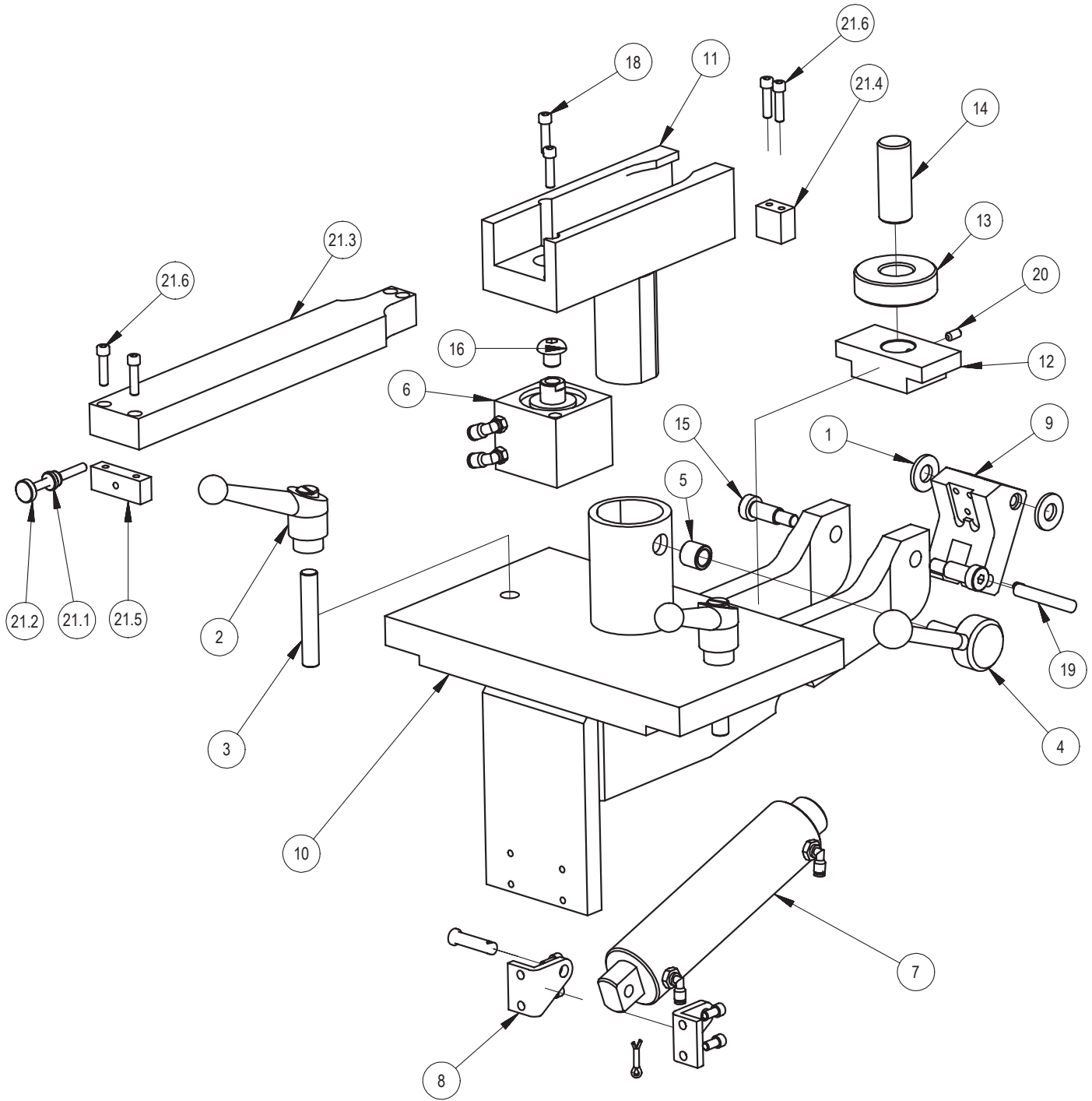


Carriage Assembly Parts



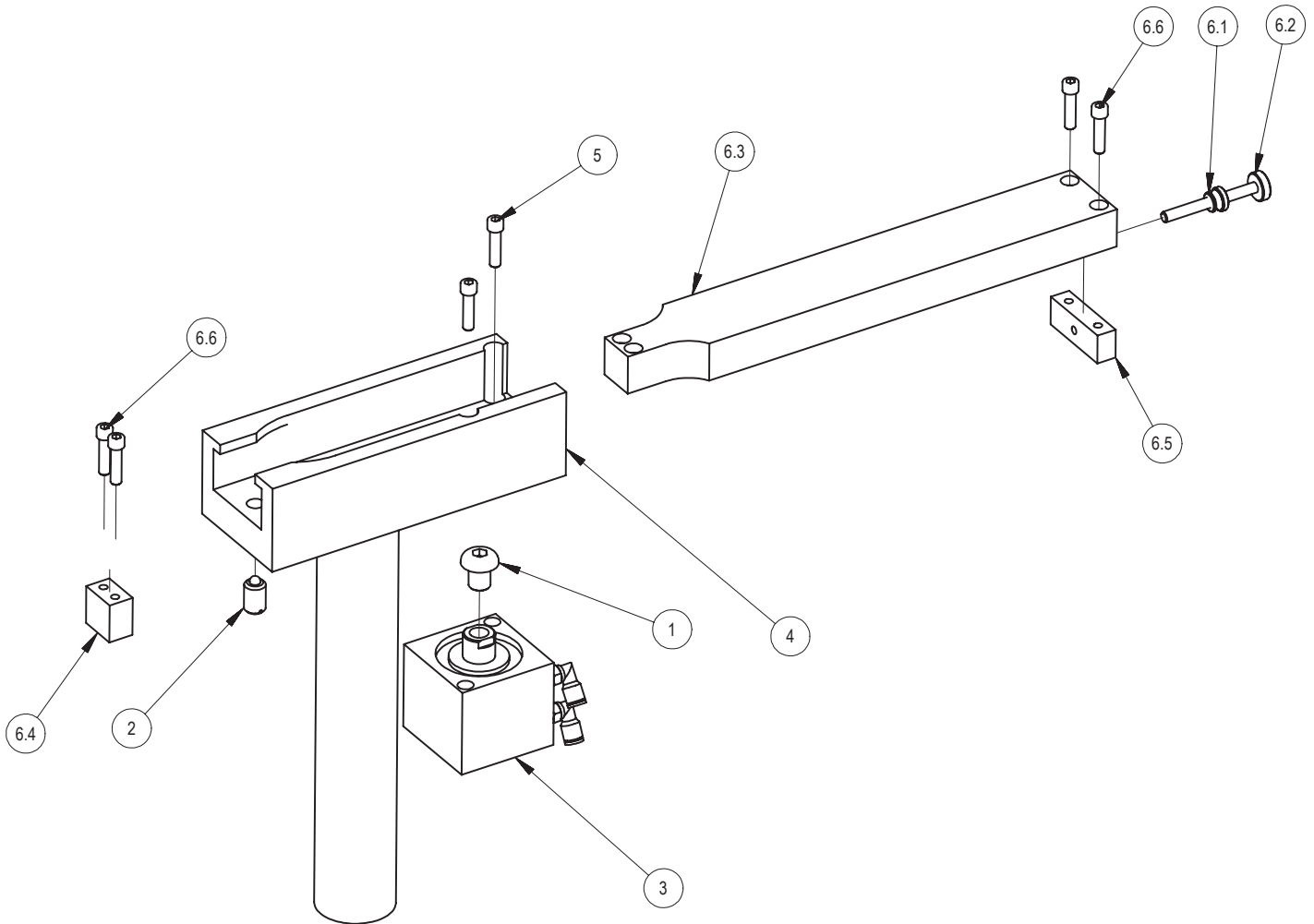
Conrod Centering Cylinder Assembly			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	2	502-8-52C	Spring Plunger
2	2	6310J	Clamp Handle
3	2	6310R	Thread Insert
4	2	650-3-45G	Locate Cylinder
5	1	650-3-45H	Pivot Bracket, Bimba #D-13512-A
6	1	650-3-46K	Pivot Pin
7	1	650-3-46R	E-clip - Truearc E-Ring #RE-25ST
8	2	650-3-46T	Lock Nut REID BLN-105
9	2	650-3-46U	Flange Bearing Symmco SF-2832-12
10	1	650-3-47K	Stop Screw
11	3	650-3-48L	Support Parallel
12	1	650-3-48M	Support Parallel, +.002
13	1	650-3-48R	Clamp Bar, Carriage, Large ConRod fixture
14	1	650-3-49F	Clamp Base - Left Side
15	2	650-3-49M	Spring
16	1	650-3-49e	Clamp Base - Right Side
17	2	650-3-49g	Clamp Leg Spacer Tube.
18	1	650-3-64A	Main Frame (Machining)
19	1	650-3-64G	Locator Holder
20	1	650-3-64M	Pivot Shaft
21	1	650-3-65G	Linkage Arm
22	2	650-3-9	Key
23.1	1	650-3-46H	Linkage Pin
23.2	1	650-3-46R	E-clip - Truearc E-Ring #RE-25ST
23.3	2	650-3-46S	Hinge
23.4	1	650-3-65F	Dust Cover
23.5	4	MF-160	Hex Machine Screw Nut 8-32
23.6	4	MF-3D	S.H.C.S. 8 - 32 UNC - 3/8
24	1	MF-165	Hex Jam Nut 1/2-13
25	2	MF-22	S.H.C.S. 5/16 - 18 UNC - 3/4
26	1	MF-227A	5/16 x 1-1/4 Roll Pin
27	8	MF-31	S.H.C.S. 3/8 - 16 UNC - 1
28	4	MF-3B	S.H.C.S. 8 - 32 UNC - 1/4
29	3	MF-4	S.H.C.S. 10 - 24 UNC - 3/8
30	2	MF-53	Cup Point Set Screw 10 - 24 x 3/8
31	2	MF-60	Cup Point Set Screw 1/4 - 20 x 1/4
32	2	MF21A	S.H.C.S. 5/16 - 18 UNC - 1/2

Centering Cylinder Parts



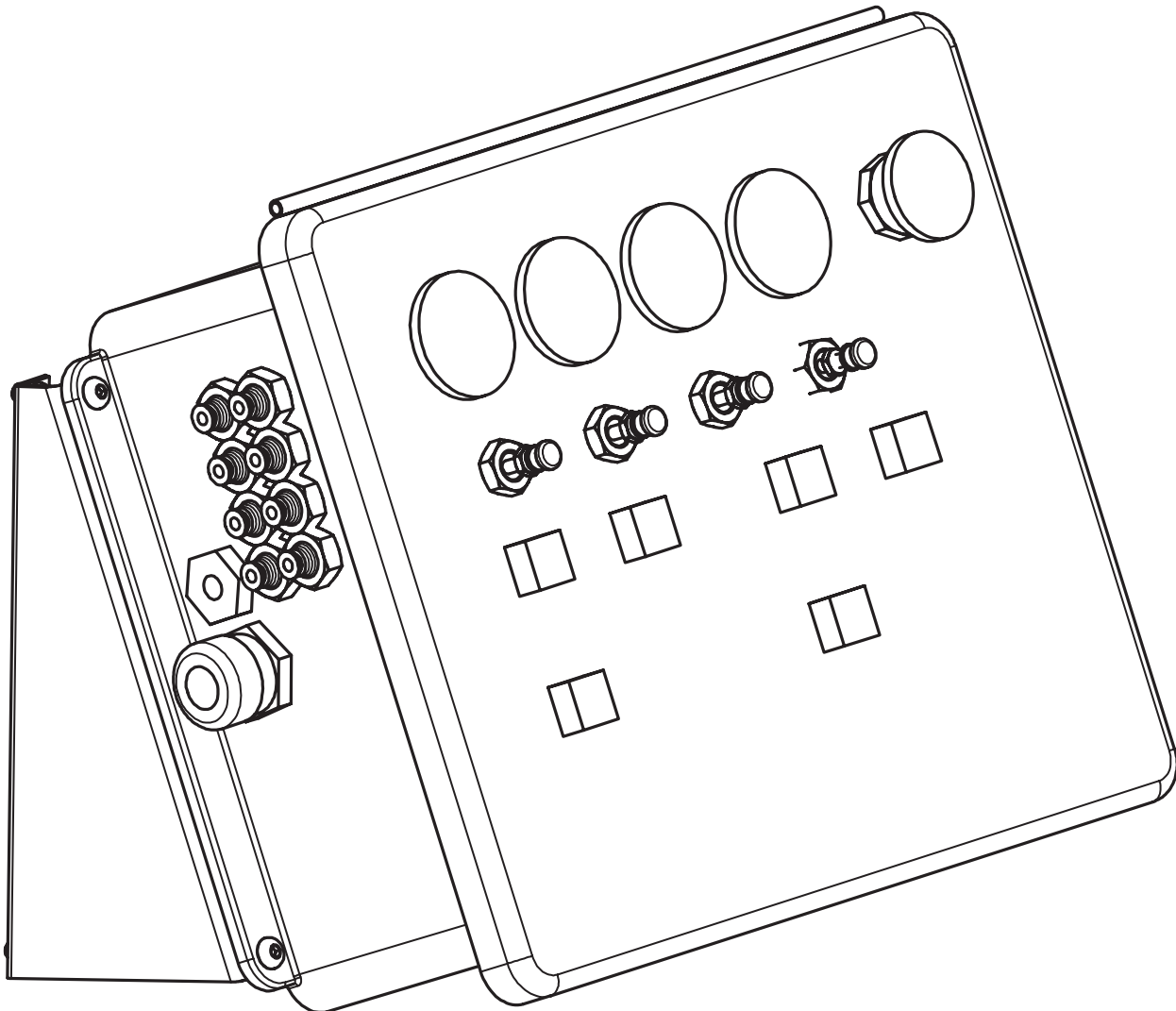
Carriage Assembly			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	2	100-19A	Hardened washer 17/32 I.D.
2	2	514-2-39	Handle
3	2	514-4-5B	Stud
4	1	6310J	Clamp Handle
5	1	6310R	Thread Insert
6	1	650-3-45E	Clamp Arm Cylinder
7	1	650-3-45F	Centering Cylinder
8	1	650-3-45K	Pivot Bracket
9	1	650-3-47D	Centering Lever
10	1	650-3-64C	Carriage
11	1	650-3-64F	Short Clamp Arm
12	1	650-3-65A	Jack Body
13	1	650-3-65B	Jacking Nut
14	1	650-3-65C	Jacking Screw
15	2	650-4-18A	Shoulder screw, 1/2" x 1" long
16	1	650-4-41	Socket Button Head Cap Screw
17	1	ANSI B18.3 - 1/4-20 UNC x 0.38	Hexagon Socket Set Screw - Cup Point
18	2	MF-15	S.H.C.S. 1/4 - 20 UNC - 1
19	1	MF-212A	Pin - Hardened Dowel
20	1	MF-61	Hexagon Socket Set Screw - Cup Point
21.1	1	650-3-34J	Thumbknob Reid aj-721
21.2	1	650-3-34S	Clamp Screw
21.3	1	650-3-49K	Clamp Arm
21.4	1	650-3-49L	Clamp Arm Extension
21.5	1	650-3-49N	Stop Block
21.6	4	MF-15	S.H.C.S. 1/4 - 20 UNC - 1

Clamp Arm Assembly Parts



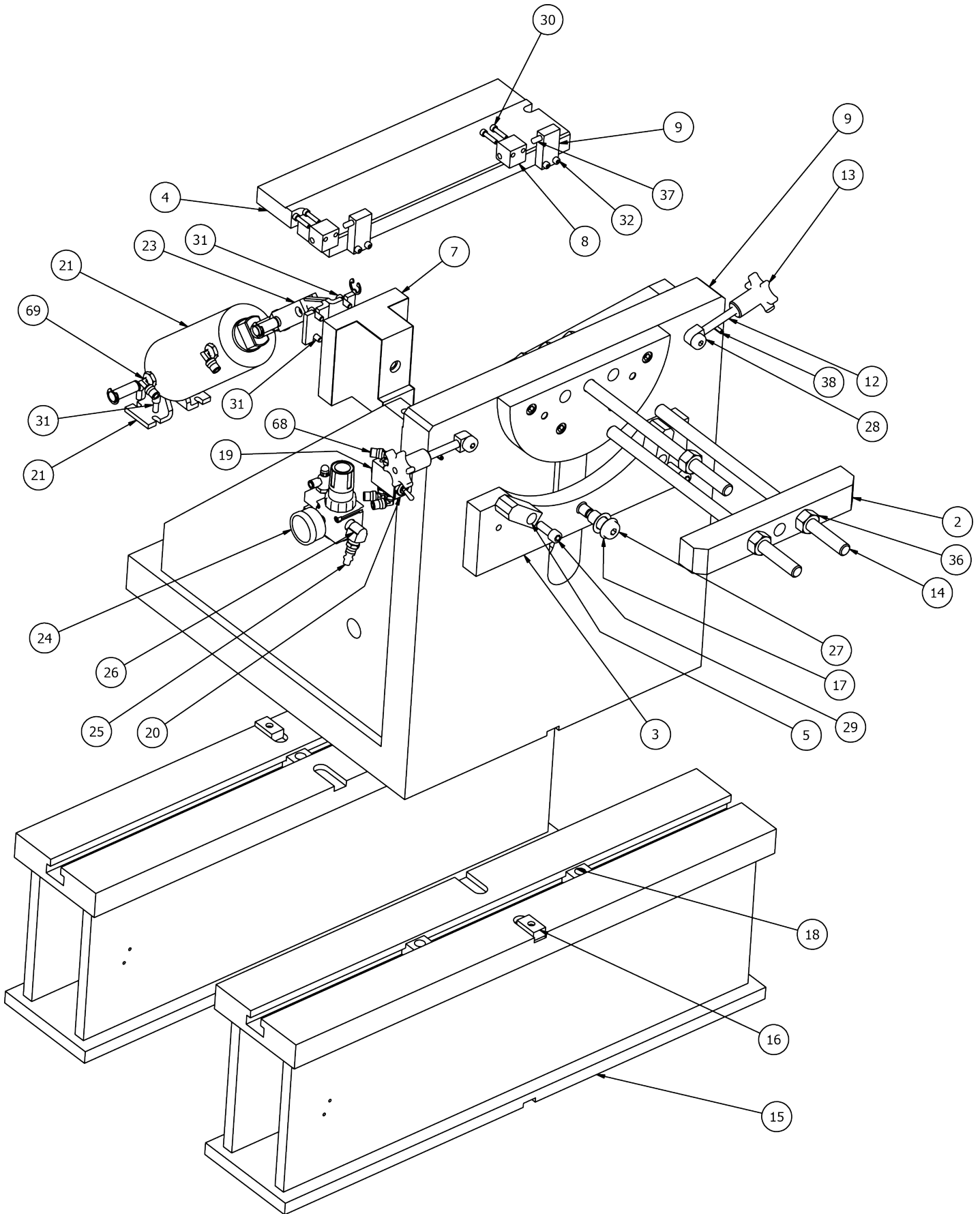
Clamp Arm Assembly			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	650-4-41	Socket Button Head
2	1	502-8-52C	Spring Plunger
3	1	650-3-45E	Clamp Arm Cylinder
4	1	650-3-49H	Clamp Leg
5	2	MF-15	S.H.C.S. 1/4 - 20 UNC - 1
6.1	1	650-3-34J	Thumbknob Reid aj-721
6.2	1	650-3-34S	Clamp Screw
6.3	1	650-3-49K	Clamp Arm
6.4	1	650-3-49L	Clamp Arm Extension
6.5	1	650-3-49N	Stop Block
6.6	4	MF-15	S.H.C.S. 1/4 - 20 UNC - 1

Control Box Assembly Parts



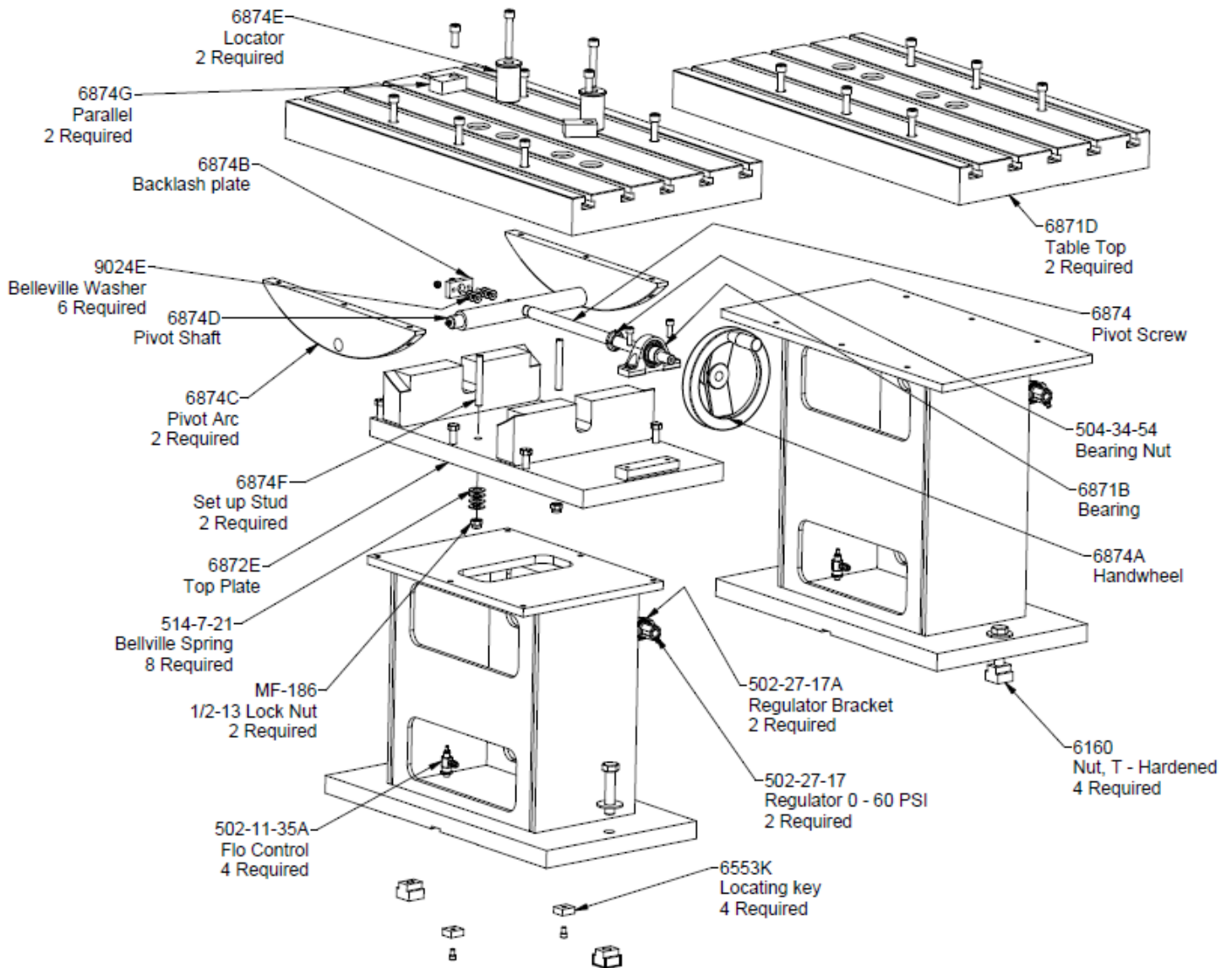
Control Box Assembly			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	650-3-47T	Conrod Control Box Assembly
2	4	650-3-47W	Rivet nut Reid ALC-47850
3	2	650-3-65D	Bracket, Control Box ConRod Fixture
4	4	ANSI B18.3 - 1/4 - 20 x 3/8	Button Head Cap Screw
5	4	MF-91	Button Head Cap Screw

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	650-3-66C	Carriage, Cap Cutting Fixture
3	1	650-3-66D	Locate Plate
4	1	650-3-66B	Clamp Bar
5	2	650-3-66P	Eye bolt - reid swb-1
6	2	650-3-66N	Knob - reid tc2a
9	2	650-3-45G	Pivot Shaft
9.3	1	650-3-45J	CLevis 1" Bimba D-8314-A
13	2	650-3-66E	Lift Arm
14	2	650-3-66H	Lower Hinge
15	2	650-3-66J	Upper Hinge
16	2	MF-207 ANSI B18.8.2 - 1/4 x 1 1/2	Pin - Hardened Ground Production Dowel
18	4	MF-5 ANSI B18.3 - No. 10 - 24 - 5/8	Hexagon Socket Head Cap Screw
19	8	ANSI B18.3 - 1/4 - 20 - 5/8	Hexagon Socket Head Cap Screw
20	2	6370Y	10" Support Parallel
21	2	6553J	Locating Key
22	3	502-1-11A	T-Nut 3/4 table, 5/8-11 thread
23	3	MF-152A ANSI/ASME B18.2.1 - 5/8-11 UNC - 2.5	Hex Bolt - UNC (Regular Thread - Inch)
24	1	650-3-66G	Slide ass'y (Turcite)
25	3	650-3-66M	Clamp Stud
26	6	MF-166 ANSI B18.2.2 - 5/8 - 11	Hex Thick Nut
27	1	650-3-66k	Main Frame Assembly
27.1	1	650-3-66A	Cap Fixture Main Base
27.2	1	650-3-66L	Thrust Parallel
27.4	4	MF-31 ANSI B18.3 - 3/8 - 16 - 1	Hexagon Socket Head Cap Screw
27.5	2	MF-30 ANSI B18.8.2 - 3/16 x 3/4	Pin - Slotted Spring
27.6	2	MF-213ANSI B18.8.2 - 3/8 x 1 1/2	Pin - Hardened Ground Production Dowel
28	1	Air Switch Assembly	
28.1	1	502-1-55A	Air switch mount bracket
28.2	1	502-1-55	Air Switch, Clippard #MJTU-4
28.3	2	mf-4 ANSI B18.3 - No. 10 - 24 - 3/8	Hexagon Socket Head Cap Screw
28.4	1	Nut	Mount nut for 502-1-55 air switch.
29	2	650-3-56S	Belleville spring Reid BDB-65
30	1	514-2-70k	Regulator Ass'y
32	1	502-11-35A	Flow Control
33	1	502-11-17S	1/4 STREET ELL
34	1	502-11-16X	Quick Connect air Fitting Male
39	1	650-3-45H	Pivot Bracket
40	3	514-4-17V	1/4 poly x 1/4 npt 90, Legris metal
41	2	514-4-18B	1/4 poly x 1/4 npt 90, Legris metal
42	4	MF-6 ANSI B18.3 - No. 10 - 24 UNC - 3/4	Hexagon Socket Head Cap Screw
43	1	650-3-66Q	Shoulder Screw 5/8 X 1.25
44	2	650-3-66R	Shoulder Screw 1/2 X 1/2
45	2	MF-223ANSI B18.3 - 3/8 - 16 UNC - 1 1/4	Hexagon Socket Head Cap Screw
46	2	MF-3A ANSI B18.3 - No. 8 - 32 UNC - 7/8	Hexagon Socket Head Cap Screw

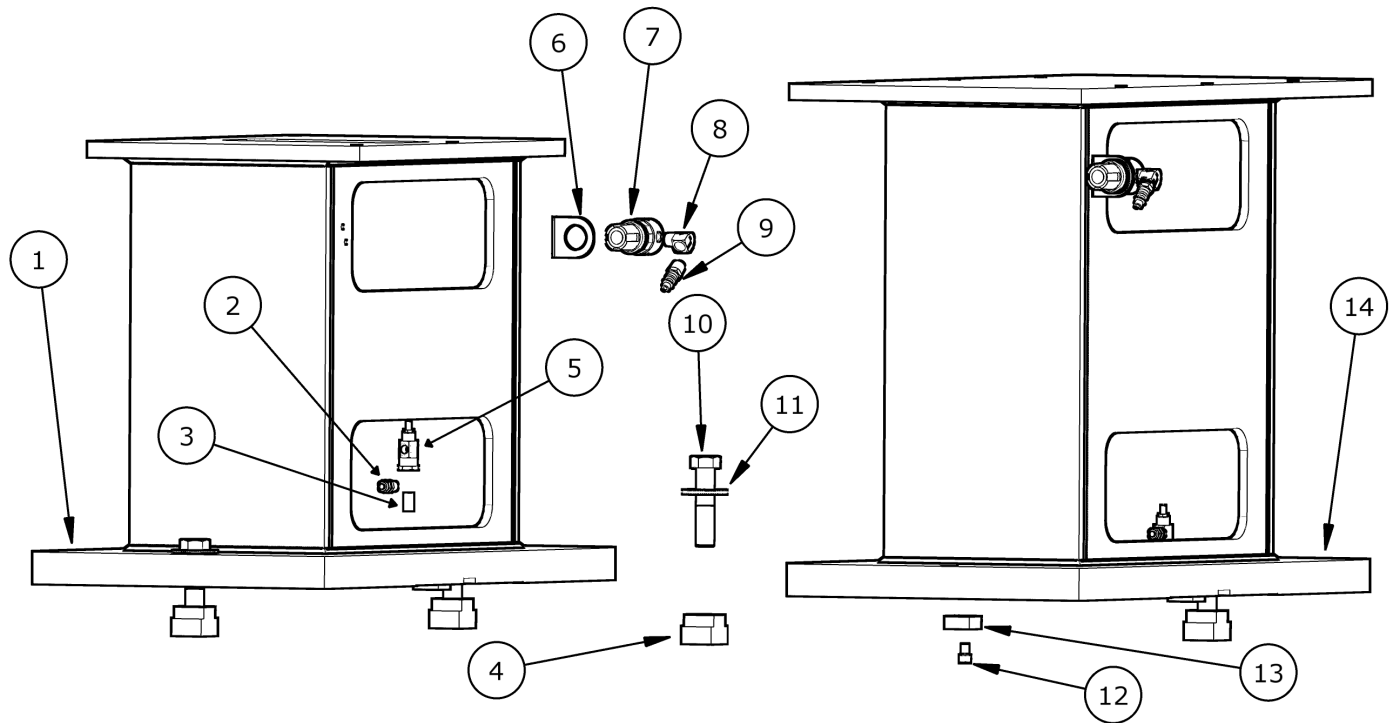


Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	650-3-66A	Cap Fixture Main Base
2	1	650-3-66B	Clamp Bar
3	1	650-3-66C	Carriage, Cap Cutting Fixture
4	1	650-3-66D	Locate Plate
5	2	650-3-66E	Lift Arm
6	1	650-3-66G	Slide Assembly
7	1	650-3-66F	Slide
8	2	650-3-66H	Lower Hinge
9	2	650-3-66J	Upper Hinge
10	1	650-3-66K	Cap fixture Main Base Assembly
11	1	650-3-66L	Thrust Parallel
12	2	650-3-66P	Eye bolt - reid swb-1
13	2	650-3-66N	Knob - reid tc2a
14	3	650-3-66M	Clamp Stud
15	2	6370Z	10" Support Parallel
16	2	6553J	Locating Key
17	2	650-3-56S	Belleville spring Reid BDB-65
18	3	502-1-11A	T-Nut 3/4 table, 5/8-11 thread
19	1	502-1-55	Air Switch, Clippard #MJTU-4
20	1	502-1-55A	Air switch mount bracket
21	1	650-3-45G	Locate Cylinder 704-dxp
22	2	650-3-45H	Pivot Bracket ass'y
23	1	650-3-45J	CLevis 1" Bimba D-8314-A
24	1	514-2-70k	Regulator Ass'y
25	1	502-11-16X	Quick Connect air Fitting Male
26	1	502-11-17S	1/4 STREET ELL
27	1	6613G	Shoulder Screw 5/8 X 1.25
28	2	7149B	Shoulder Screw 1/2 X 1/2
29	6	MF-31 - 3/8 - 16 - 1	Hexagon Socket Head Cap Screw
30	4	MF-___ - No. 10 - 24 - 7/8	Hexagon Socket Head Cap Screw
31	8	MF- 13 - 1/4 - 20 - 5/8	Hexagon Socket Head Cap Screw
32	4	MF-5 - No. 10 - 24 - 5/8	Hexagon Socket Head Cap Screw
33	2	MF-4 - No. 10 - 24 - 3/8	Hexagon Socket Head Cap Screw
34	2	MF-3F 8 - 32 - 1 1/2	Hexagon Socket Head Cap Screw
35	3	MF-152A - 5/8-11 - 2-1/2	Hex Bolt - UNC (Regular Thread - Inch)
36	6	MF-166 - 5/8 - 11	Hex Thick Nut
37	2	MF- 207 - 1/4 x 1 1/2	Pin - Hardened Ground Production Dowel
38	2	MF ___ - 3/16 x 3/4	Pin - Slotted Spring
39	2	MF - 213 - 3/8 x 1 1/2	Pin - Hardened Ground Production Dowel
68	3	514-4-17V	1/4 poly x 1/4 npt 90, Legris metal
69	2	514-4-18B	1/4 poly x 1/4 npt 90, Legris metal

6870 Precision Large Connecting Rod Fixture Parts

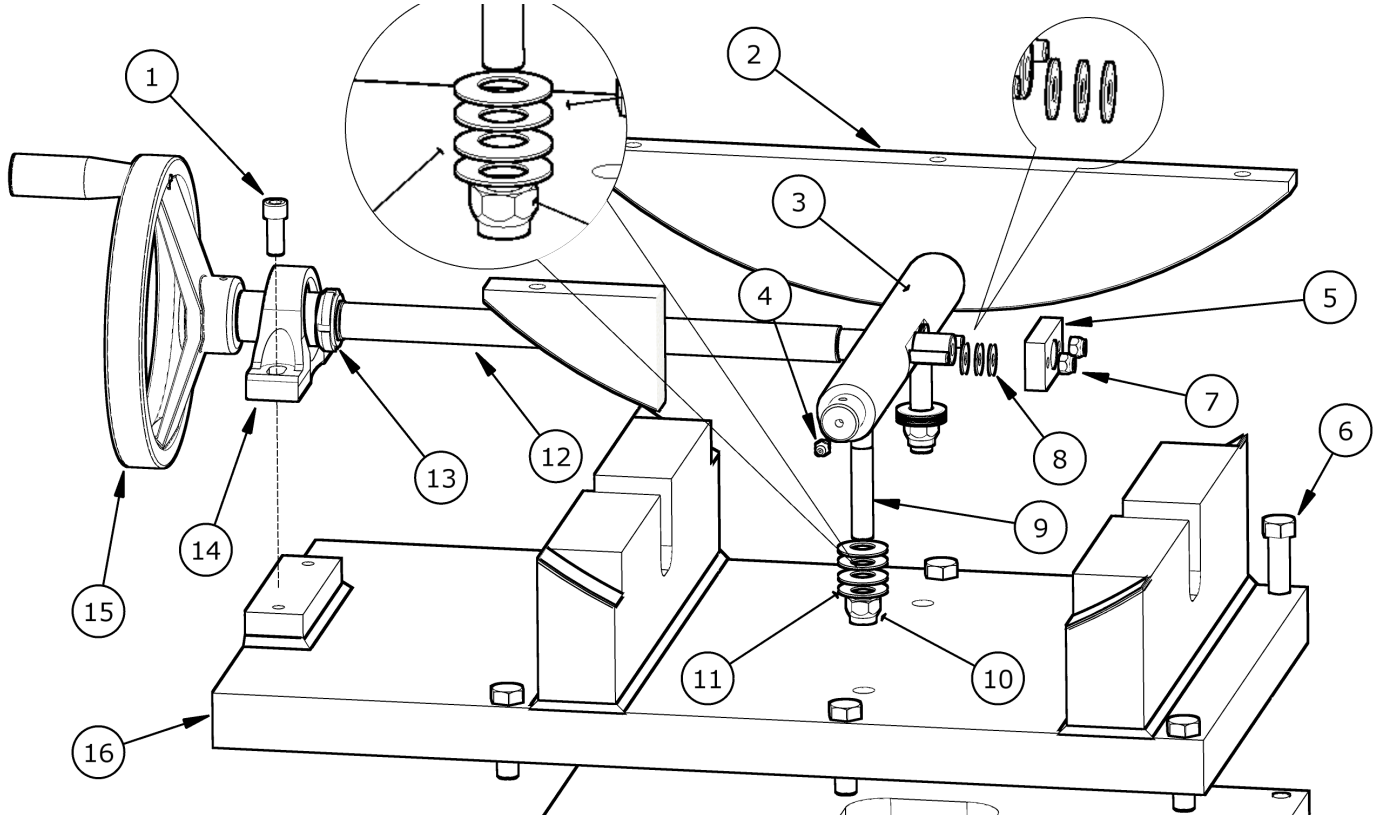


Support Table Parts



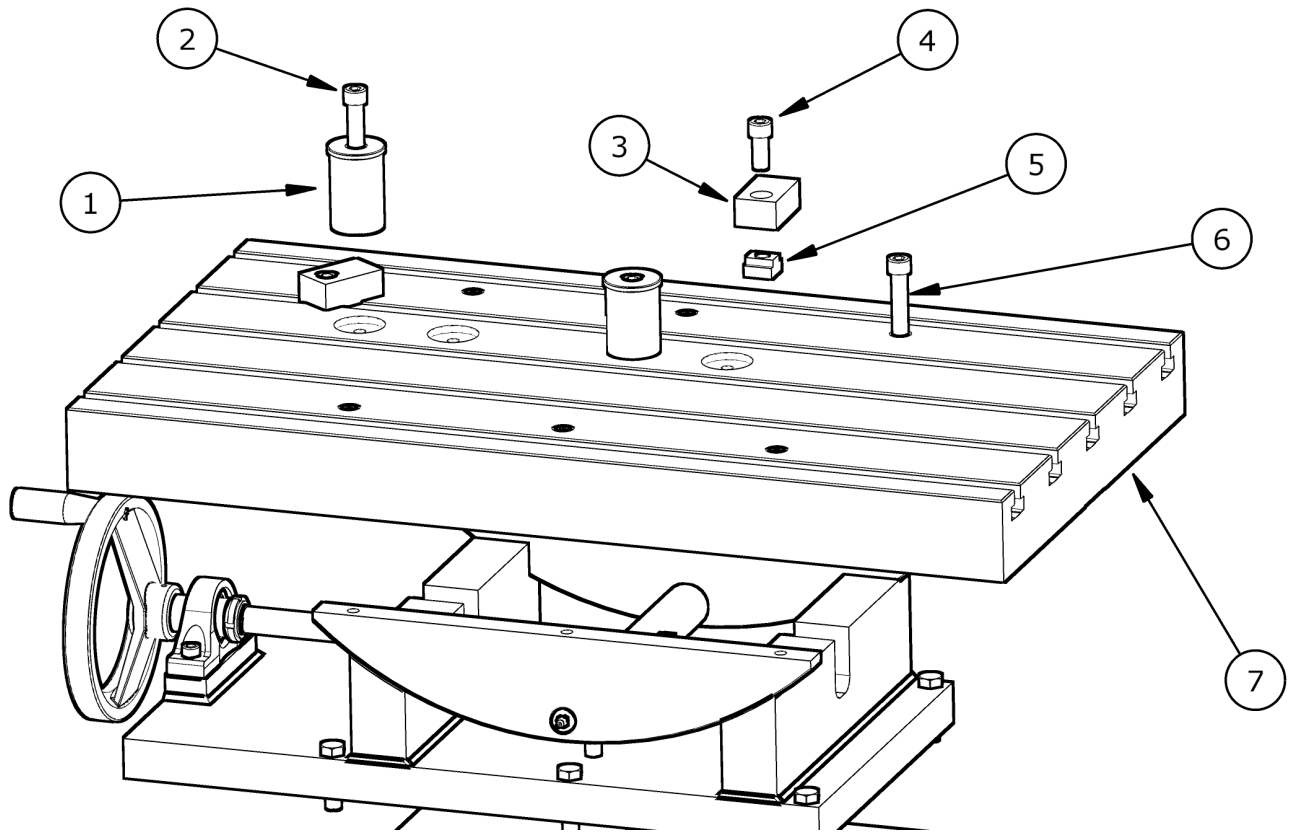
SUPPORT TABLE PARTS			
ITEM	PART NUMBER	DESCRIPTION	QTY
1	6872B	PIVOT TABLE SUPPORT	1
2	514-4-17W	FITTING 1/8 NPT X 1/4 POLY STRAIGHT	2
3	502-11-17J	NIPPLE,CLOSE 1/8" MPT	2
4	6160	NUT, "T"-HARDENED	4
5	502-11-35A	VALVE, CONTROL - RFC FLO	2
6	502-27-17A	BRACKET, MOUNTING - REGULATOR	2
7	502-27-17	REGULATOR,AIR 0-60 PSI	2
8	502-11-17S	ELBOW, ST, 1/4 FPT X 1/4 MPT	2
9	502-11-16X	CONNECTOR, MALE THREAD 1/4 NPTF V6/V8 FIXTURE	2
10		3/4 X 3 1/2 UNC HEX BOLT	4
11	MF-181A	FLAT WASHERS 3/4"	4
12		5/16 - 18 X 1/2 SHCS	2
13	6553K	KEY, LOCATOR	2
14	6871C	TABLE SUPPORT	1

Pivot Base Assembly Parts



PIVOT ASSEMBLY PARTS			
ITEM	PART NUMBER	DESCRIPTION	QTY
1		3/8 – 16 x 1	2
2	6874C	PIVOT ARC	2
3	6874D	PIVOT SHAFT	1
4	MF-189	1/4-28 STRAIGHT GREASE FITTING	2
5	6874B	BACKLASH PLATE	1
6	MF-149C	HEX BOLT 1/2-13 X 2	6
7		1/4 – 20 NYLOK NUT	2
8	9024E	SPRING,BELLEVILLE	6
9	6874F	SET UP STUD	2
10		1/2 – 13 NYLOK NUT	2
11	514-7-21	WASHER, BELLEVILLE	8
12	6874	PIVOT SCREW	1
13	504-34-54	LOCKNUT	1
14	6871B	BEARING	1
15	6874A	HANDWHEEL	1
16	6872E	CRADLE	1

Pivot Table Assembly Parts



PIVOT TABLE PARTS			
ITEM	PART NUMBER	DESCRIPTION	QTY
1	6874E	LOCATOR	2
2		1/2 – 13 X 3 1/4	2
3	6874G	PARALLEL	2
4		1/2 – 13 X 1 1/4	2
5	650-3-10	T-NUT, 1/2-13 WITH 5/8" TABLE SLOT	2
6		1/2 – 13 X 3 1/4	6
7	6871D	PIVOT TABLE TOP	1

Table Clamps and Jacks Parts

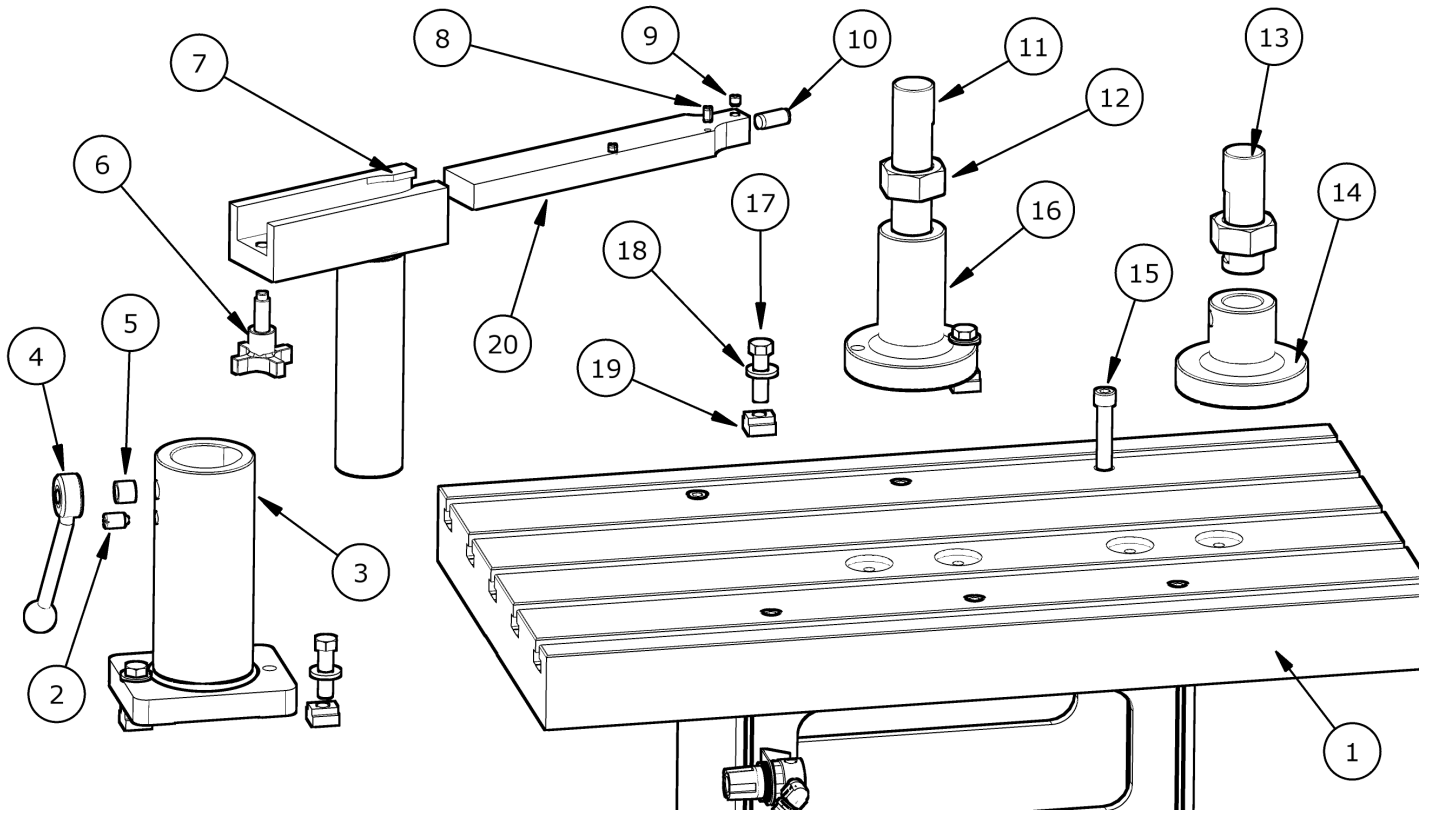
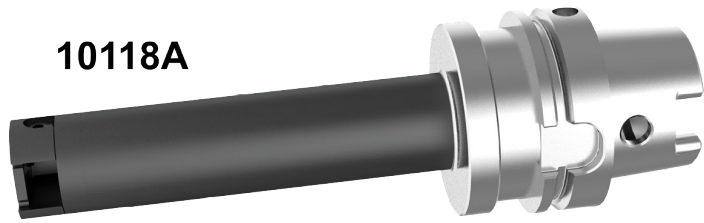


TABLE JACK AND CLAMP PARTS			
ITEM	PART NUMBER	DESCRIPTION	QTY
1	6871D	TABLE TOP	1
2	502-8-52C	PLUNGER, SPRING	4
3	6870C	CLAMP SUPPORT	4
4	6310J	HANDLE, ADJUSTABLE	4
5	6310R	INSERT, THREAD	4
6	6310K	HAND KNOB BLOCK CLAMP	4
7	6873	CLAMP LEG	4
8		SLOTTED SPRING PIN 1/4 X 1/2	8
9		CUP POINT SET SCREW 5/16 X 5/16	4
10		DOWEL PIN 1/2 X 1 1/4	4
11	6396	SCREW, JACKING-V BLOCK FIXTURE (7")	1
12	6566H	NUT, JACKING(2 1/2")	2
13	7241N	SCREW, JACKING-ECONOMY FIXTURE (4 3/4")	1
14	7241Q	JACK BODY	1
15		1/2 – 13 X 3 1/4 SHCS	6
16	6395E	JACK BODY	1
17	MF-149C	HEX BOLT 1/2-13 X 2	10
18	100-19A	WASHER, HARDENED 17/32" ID	10
19	650-3-10	T-NUT, 1/2-13 WITH 5/8" TABLE SLOT	10
20	6310H	SHOE, BLOCK CLAMPS	4

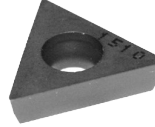
Tooling for Connecting Rod Boring

10118 Blind Hole Cutterhead Components

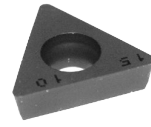


10118A

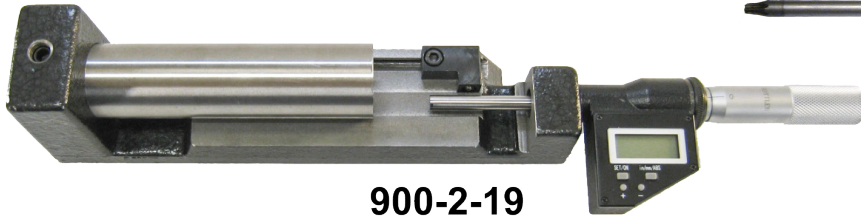
RT321



RT322

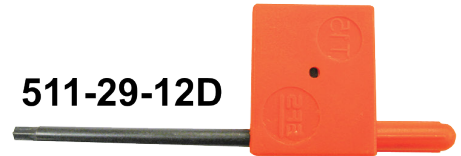


T8D

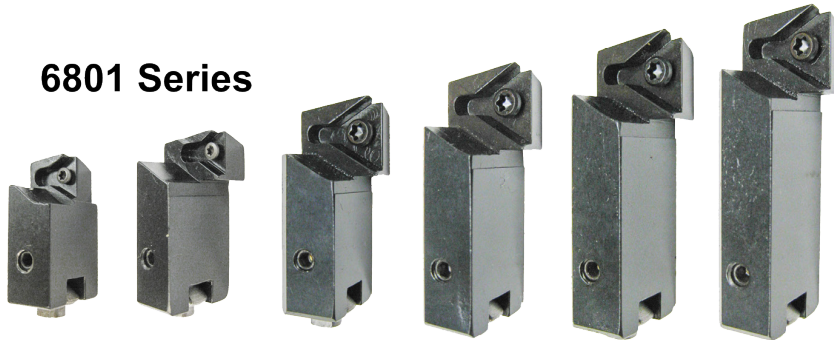


900-2-19

511-29-12D



6801 Series



A

B

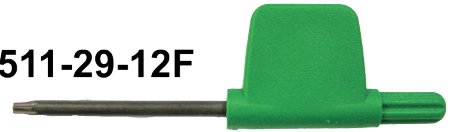
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D

E

F

511-29-12F



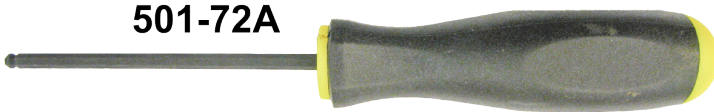
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RT322F



501-72A



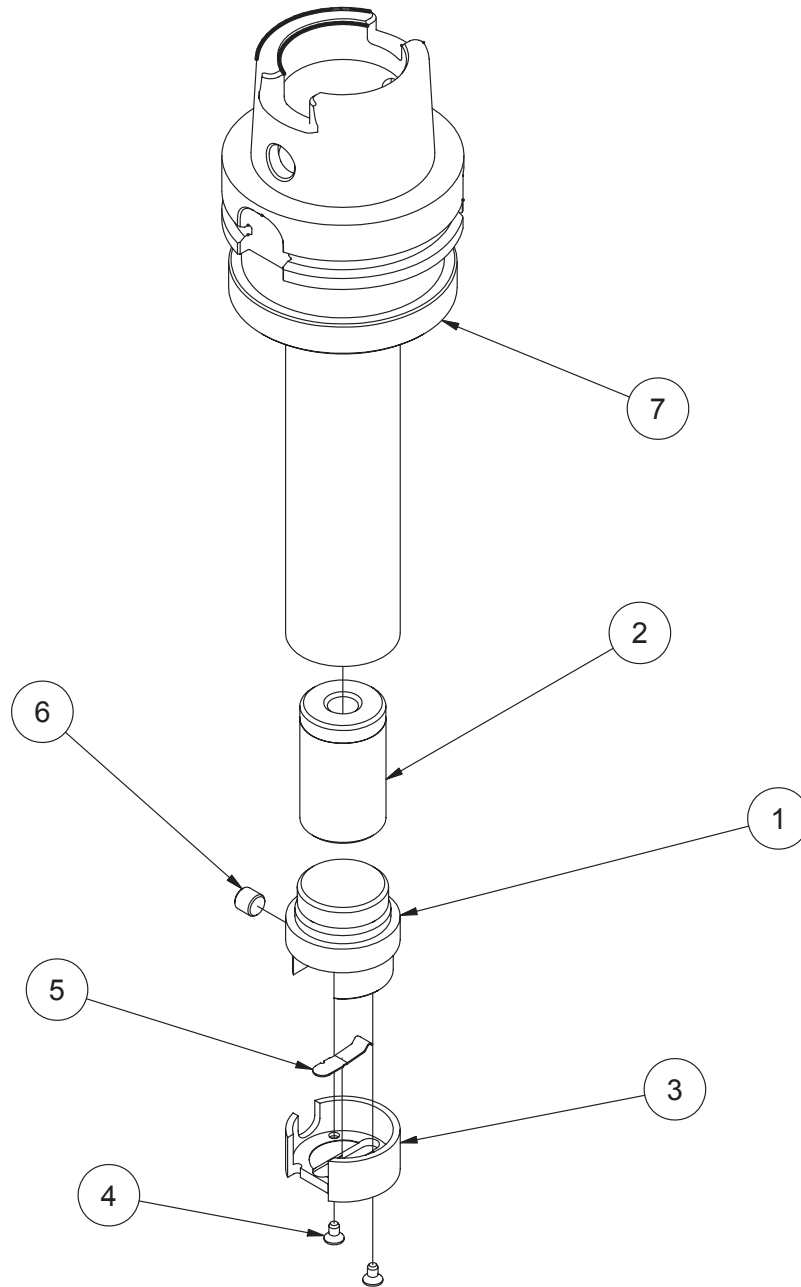
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RT212

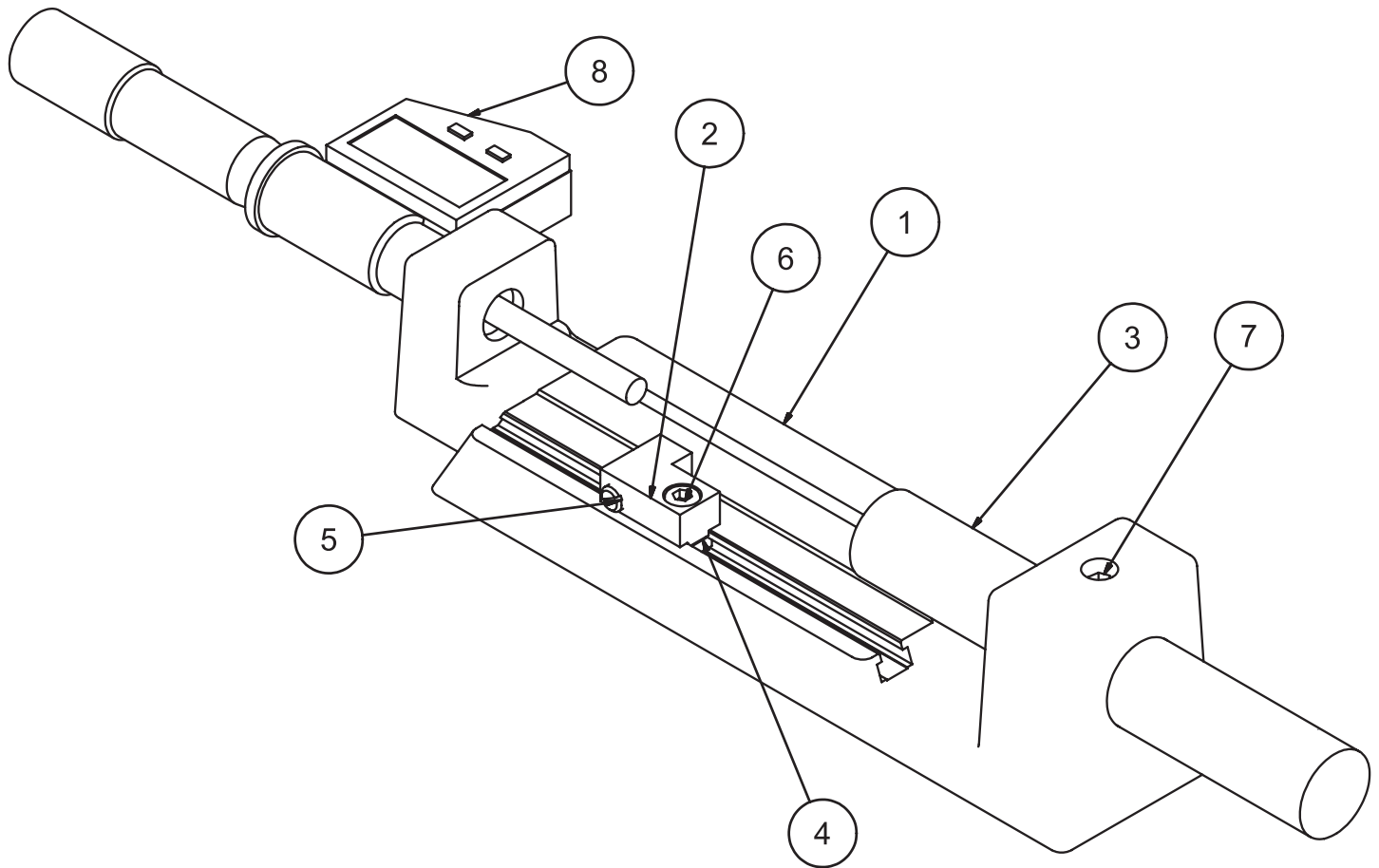


10118A Cutterhead Parts



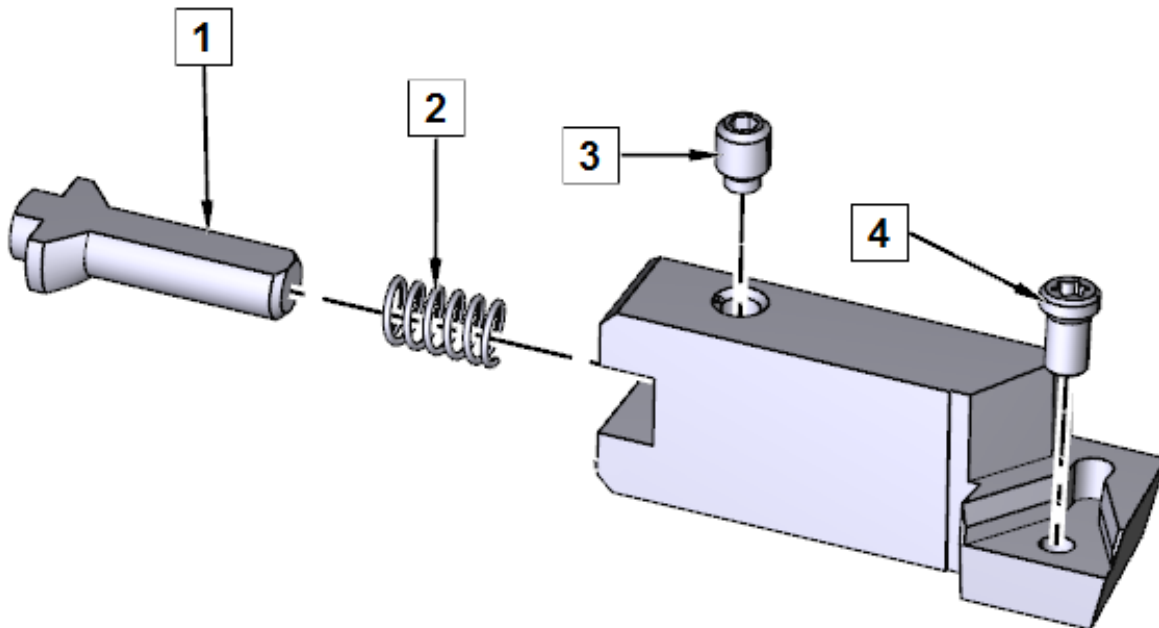
10118A CUTTERHEAD ASSEMBLY, 1-1/2" x 6.5" LG. STUB BAR W/O TOOLING			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	600-7-2D	Lower Body 1-1/2" Stub Bar
2	1	600-8-2	Counter Weight
3	1	600-5	Cutter Head Cap
4	2	MF-120A	Socket Flat Head 6-32 UNC x 0.25
5	1	100-1B	Tool Lock Spring
6	1	502-25-1	Tool Holder Lock Screw
7	1	10118B	HSK ADAPTER 2.88 DIA. STUB BAR CUTTERHEAD

900-2-19 Micrometer Parts



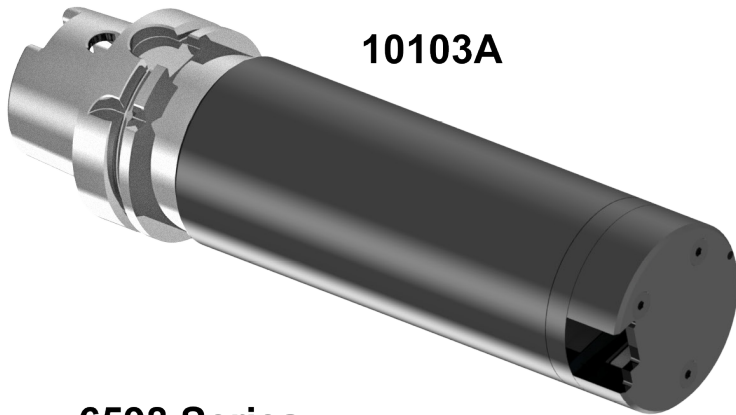
900-2-19 Micrometer Assembly			
ITEM	QTY	PART NUMBE	DESCRIPTION
1	1	502-30-10B	Frame
2	1	502-30-10M	Clamp Block
3	1	502-31-10A	Anvil
4	1	502-30-10J	Square Nut
5	1	502-30-10K	Ball Plunger
6	1	ANSI B18.3 - No. 10 - 24 UNC - 3/8	Hexagon Socket Head Cap Screw
7	1	502-30-10L	Brass Tipped Set Screw
8	1	501-34-2R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

6801 Series 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

10131 Blind Hole Cutterhead Components and Parts

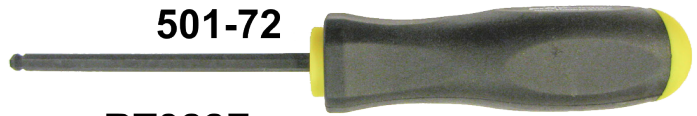
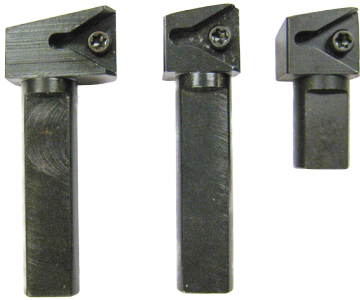


10103A



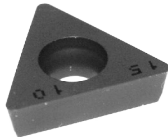
6520 Series

6598 Series



501-72

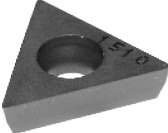
RT321



RT322F



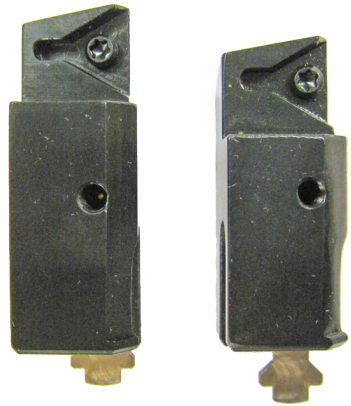
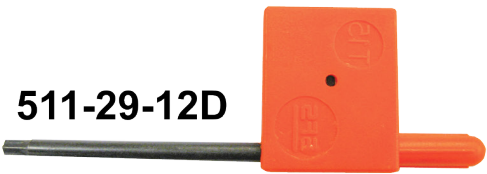
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RT321F

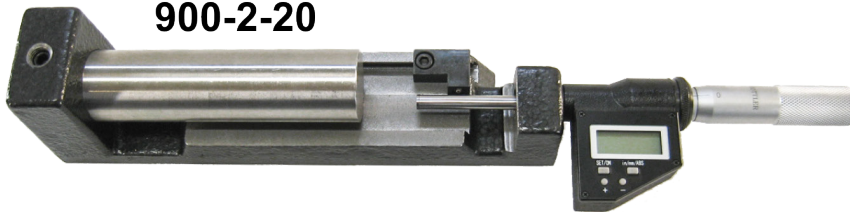


511-29-12D

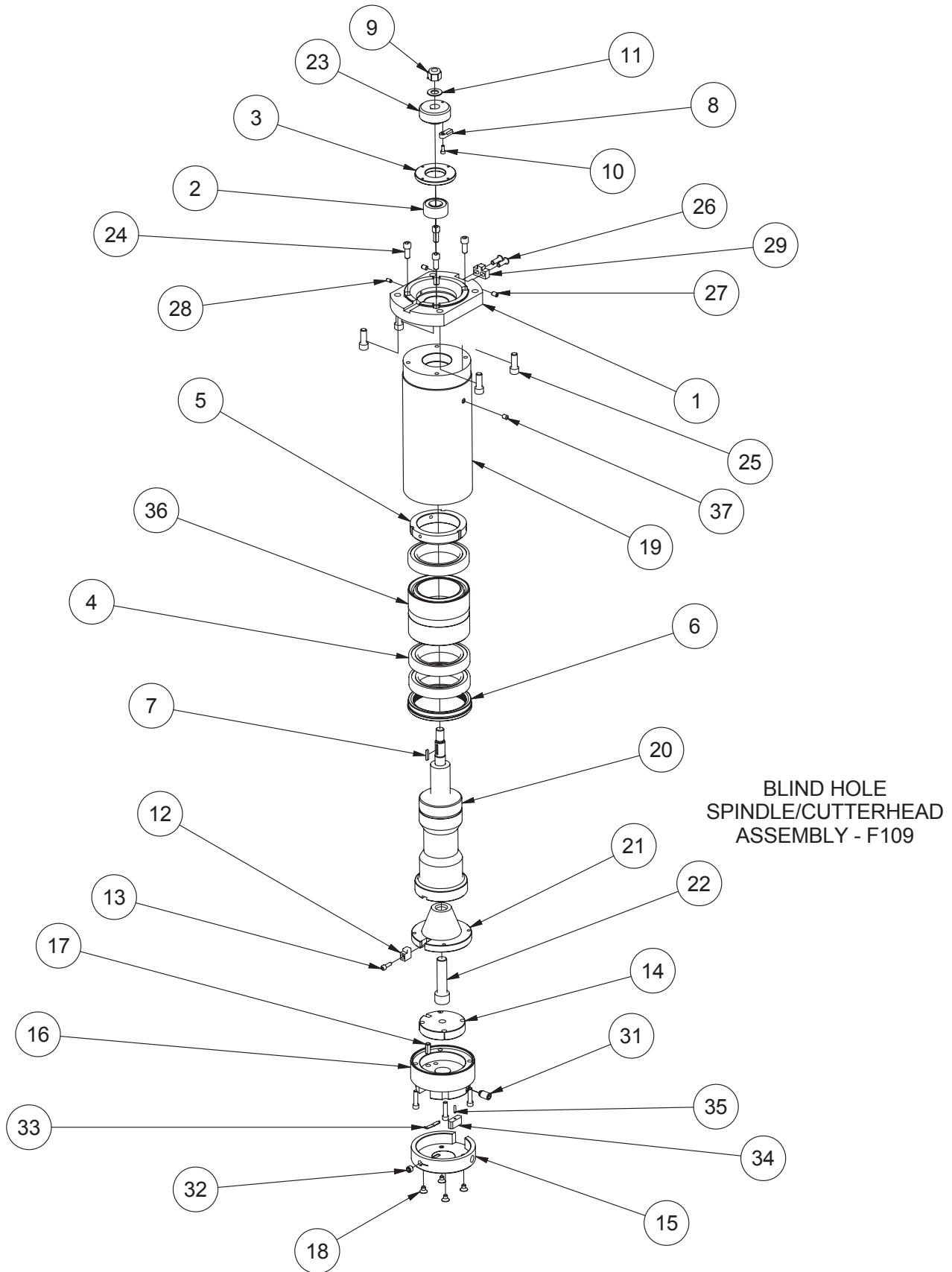


6593 Series

900-2-20

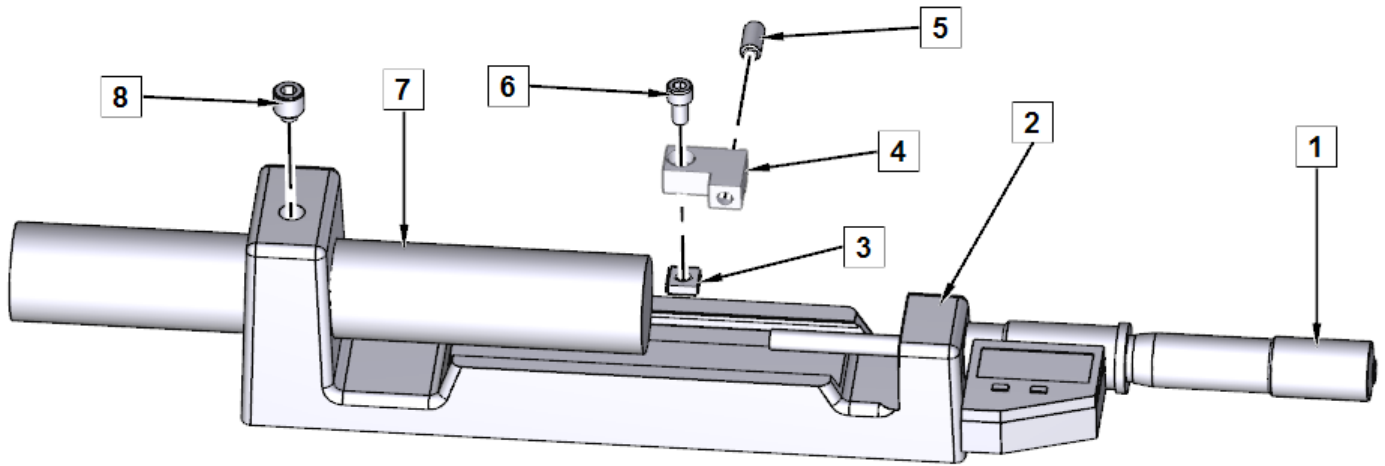


10103A Cutterhead Parts



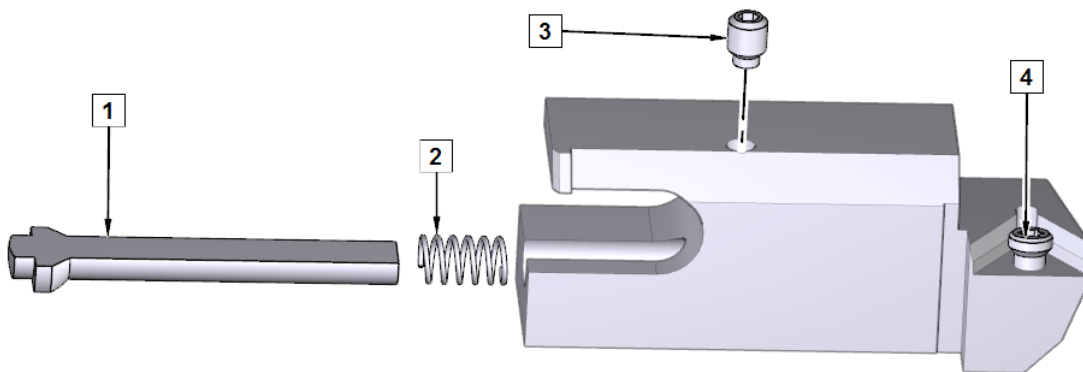
10103A BLIND HOLE SPINDLE/CUTTERHEAD ASSEMBLY - F109			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	6770F	MOUNTING HUB, H.D. OFFSET R.A.D - F100
2	1	502-9-32	Bearing, Ball MRC 5203SBKFF
3	1	6772A	Nut, Bearing Line Bore Head
4	3	6116E	Bearing (set of 3)
5	1	6116F	Shoelock Nut
6	1	6305D	Throwback Ring
7	1	6752Q	KEY, PINION 90 DEG. HEAD
8	1	6776	Key, Diver Adapter, F80, F90 Line Bore Head
9	1	MF-186	1/2-13 Nylock Nut
10	1	MF-3D	8-32UNC x 3/8" LG. S.H.C.S.
11	1	100-19	Washer
12	1	6181A	Drive Key
13	1	MF-5	10-24UNC x 5/8" LG. S.H.C.S.
14	1	600-20-11	Counter Weight
15	1	6256N	Cap, Cutterhead 4.50" (No Centering)
16	1	6256L	BODY, CUTTERHEAD 4.50" (NO CENTERING)
17	1	502-2-45B	BUSHING - UPPER CENTERING FINGER RETAINER
18	4	MF-82B	1/4-20UNC x 3/8" LG. SOCKET FLAT HEAD SCREW
19	1	10103B	BODY, BLIND HOLE SPINDLE/CUTTERHEAD ASSEMBLY - F109
20	1	10103C	INNER SPINDLE, BLIND HOLE SPINDLE/CUTTERHEAD - F109
21	1	10103D	ADAPTER, CUTTERHEAD, SPINDLE/CUTTERHEAD ASSEMBLY - F109
22	1	10103E	MOUNTING BOLT, CUTTERHEAD ADAPTER - BLIND HOLE SPINDLE/CUTTERHEAD - F109
23	1	10103F	DRIVE PLATE, BLIND HOLE SPINDLE/CUTTERHEAD ASSEMBLY - F109
24	4	MF-22	5/16-18UNC x 3/4" LG. S.H.C.S.
25	4	MF-31	3/8-16UNC x 1" LG. S.H.C.S.
26	2	MF-92	1/4-20UNC x 3/4" LG. SOCKET BUTTON HEAD SCREW
27	2	MF-59	1/4-20UNC x 3/8" SOCKET FLAT POINT SET SCREW
28	1	100-82-2A	Brass tipped 10-24 Socket Set Screw
29	1	6750K	Key, Location 90 Degree Head
30	4	MF-15	1/4-20UNC x 1" LG. S.H.C.S.
31	1	501-70	Tool Holder lock Screw ass'y
32	1	502-2-85B	Index Screw
33	1	100-1E	Tool Lock Spring
34	1	6263B	Clamp Shoe (Tool Holder)
35	1	MF-193	1/8" x 1/2" LG. DOWEL PIN
36	1	6172E	SPACER (SET) - PRECISION BEARING SPINDLE
37	1	502-9-68B	Flush Grease Fitting

900-2-20 Micrometer Parts



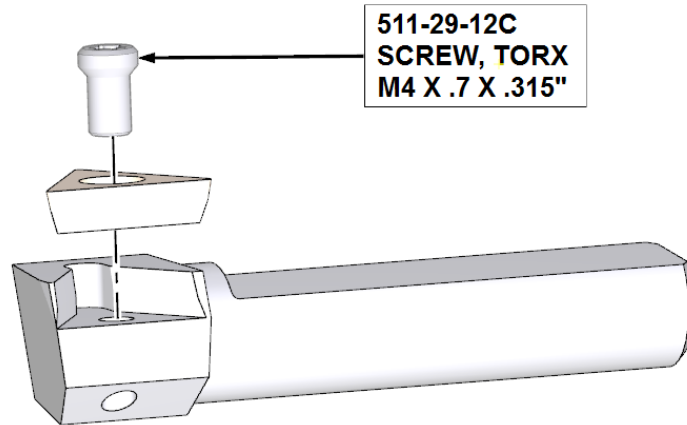
ITEM	PART #	DESCRIPTION
1	501-34-2R	HEAD, MICROMETER UNIVERSAL MIC HEAD DIGITAL READING INCH AND METRIC
2	502-30-10C	FRAME, MICROMETER
3	502-30-10J	SQUARE NUT-#10-24 MICROMETER FRAME
4	502-30-10M	CLAMP, MICROMETER
5	502-30-10K	BALL PLUNGER, 1/4-20 MICROMETER FRAME
6	MF-9A	SOCKET HEAD CAPSCREW 10-32 X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

6593 Series Insert Holder Parts

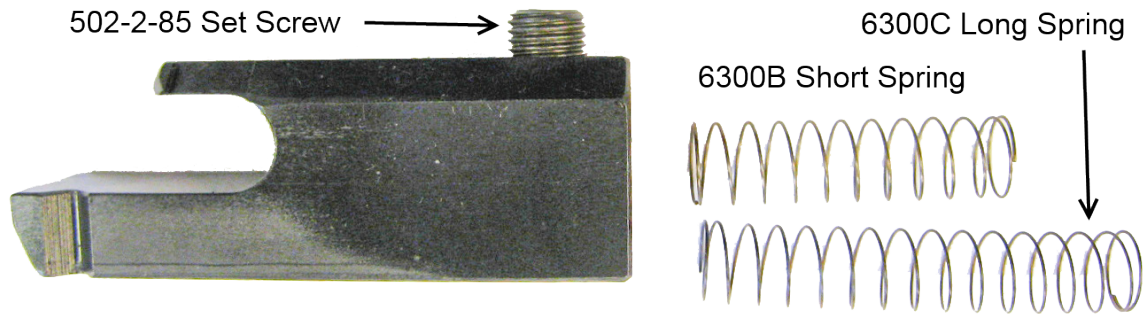


ITEM	PART #	DESCRIPTION
1	6593Q	PIN, ADJUSTING - TOOLHOLDER #6593C AND D ONLY
2	100-82-4	SPRING, ADJUSTING PIN
3	100-82-2	SCREW,SET-BRASS GIB - 3/16" LONG
4	511-29-12C	SCREW, TORX M4 X .7 X .315" LONG

6598 Series Insert Cartridge Parts



6520 Series Toolholder Parts





Enclosure Parts

Assembly Image and Parts List are unavailable at this time.

Please visit the service tab of our web page www.rottlermfg.com and Send a Service Request. Or contact the Rottler Factory Service at service@rottlermfg.com for assistance.

You may also call Rottler at 1-800-452-0534 or 1-253-872-7050

Please ensure you have the Machine Model and Serial Number available when contacting Rottler for Service

Vertical Turning Lathe Assembly

10361 Vertical Lathe Parts

Assembly Image and Parts List are unavailable at this time.

Please visit the service tab of our web page www.rottlermfg.com and Send a Service Request. Or contact the Rottler Factory Service at service@rottlermfg.com for assistance.

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