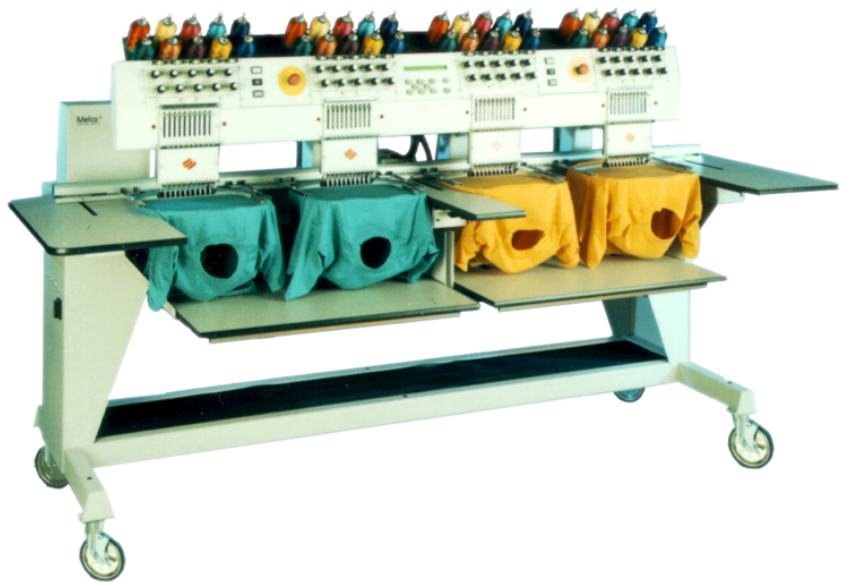


Illustrated Parts Manual for the EMT 10/4 embroidery peripheral



- A Complete Illustrated Parts Manual
- Trimmer and Non-Trimmer Machines
- Tubular
- CE

Melco 
Embroidery Systems

A Saurer Group Company

Part Number 110278-01, Revision E

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INTRODUCTION

Model and Serial Numbers

The contents of this manual must be understood by the user to ensure that the correct part for the correct machine model is selected.

Some equipment built by Melco containing the same "common" name may be identified by more than one model part number. In some cases, a different serial number sequence is also prevalent between two models of the same machine.

Determine the model number of your machine before you use this manual to order parts. The machine MODEL number is located on the label that is placed on the front of the frame, under the table and to right side of the machine.

Remember, although many parts are identical between the various embroidery peripheral models, this manual should only be used for identifying and ordering parts for the machines described above.

How To Use This Manual

The manual is divided into several sections, each containing a set of parts most common to each other, or to a function of the machine.

Figures

Accompanying each section is a figure showing the general area of the machine that is represented in that section. Parts are identified with letters and numbers in these figures. Letters contained in circles generally are used to refer the user to a different figure or section of the manual that identifies the assembly with more detail. Part numbers and part identifications of the numbers inside circles are found on the pages adjacent to the figure.

Item Numbers

All the numbers in circles on a diagram are listed in the first column of the parts listing accompanying that figure. Each item number in each figure is identified independently in hopes to help prevent any confusion that may occur by trying to "cross-reference" part numbers.

Part Numbers

The Melco part number is found in the second column of the parts list, directly in line with each item number from the first column.

Part Descriptions

Each part listed has a descriptive name in the third column of the parts listing. Hardware (such as screws, washers, etc.) are described by size in order to help the user to identify common hardware items that can be obtained by local sources if desired.

Special Parts Handling

If care is not taken in handling certain parts of the sewing head, there is a high probability that the sewing head will not function properly or the parts will fail prematurely.

These parts are to have special handling considerations from the vendor, through quality control inspection, into spare parts inventories, then on to packaging for shipping, and finally to installation.

Handling of these parts (and for that matter all parts), is not limited to the considerations below. Please use common sense, good judgement, and accepted handling practices in handling all parts. If you have any questions or concerns, please call your area service department.

General Considerations

- * Painted and coated surfaces need to be protected from dirt, other foreign matter, nicks, and scratches.
- * Non-painted and coated surfaces must not be touched by the human hand, to prevent corrosive body oils, dirt, and other foreign matter from contaminating the surfaces.
- * Protect all bearings, bushings, cams, rails, gears, rollers, needle bars, pins, studs, connecting rods, guide shafts, and other surface finishes from dirt, other foreign matter, marring, scratches, and nicks, etc.
- * Bearing surfaces and shaft bore surfaces need to be thoroughly cleaned and mating parts oiled before assembly.

Printed Circuit Boards

Printed circuit boards are packaged and shipped in anti static bags. The components of the printed circuit boards are sensitive to static electrical discharges. The use of standard anti static precautions is recommended.

Special Packaging

Several parts are packaged in specially sealed packages. These packages keep lubricant on the parts and protect them from contamination during shipment. To install these parts, clean your hands and place a small amount of sewing machine oil on your fingers to keep the integrity of the part intact.

Index

Hardware not listed can be found by identifying a related part and referring to that page.

CAUTION: When purchasing hardware from a source other than Melco, it is the user's responsibility to ensure that such hardware is of sufficient quality and grade to meet or exceed Melco's original equipment hardware. Melco assumes no liability for the use of inadequate hardware that was purchased by and/or installed by other than an authorized Melco factory representative.

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Covers/Table Top (1 of 4)

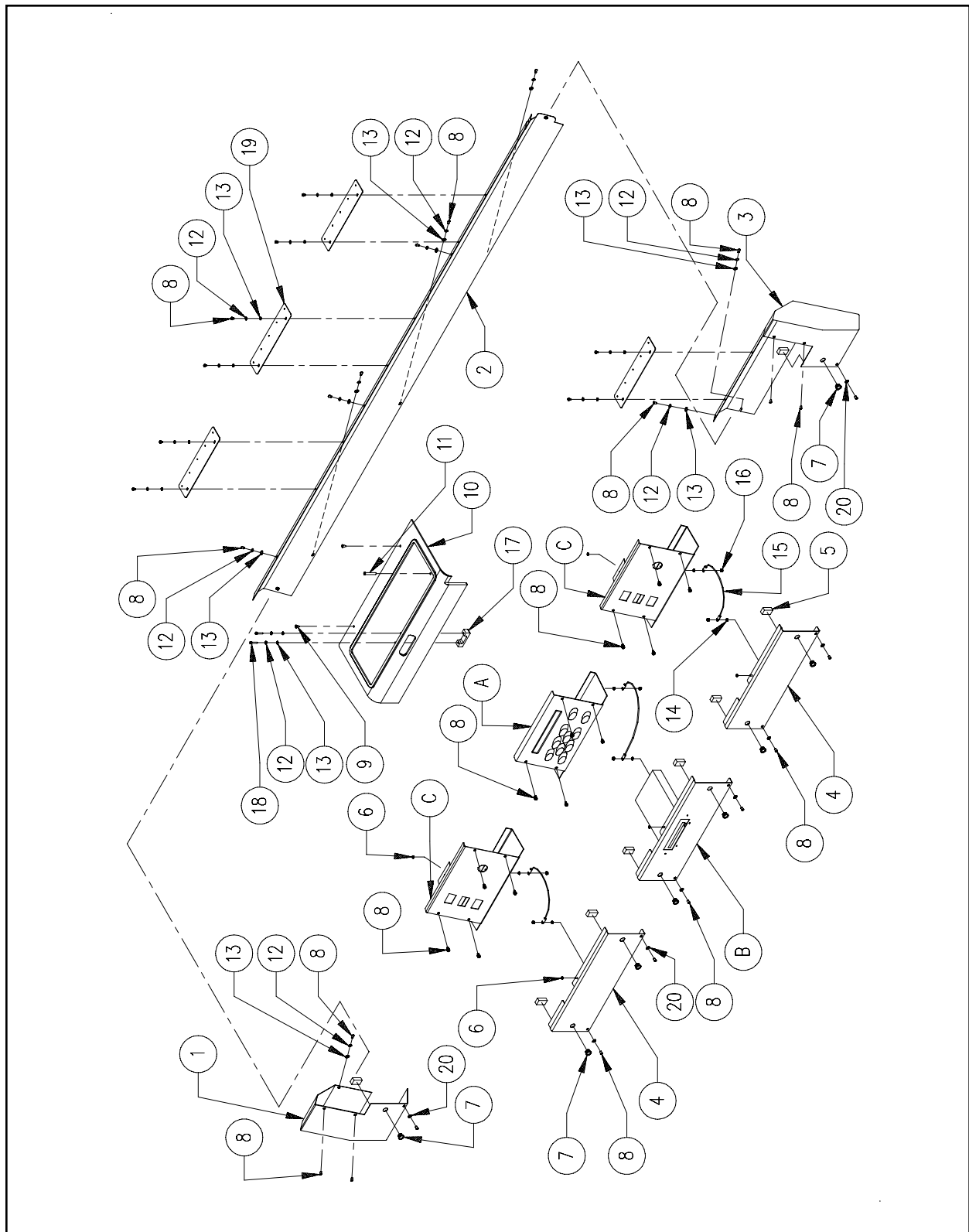


Figure 1

Covers/Table Top (1 of 4)**Reference Figure 1**

Item No.	Part Number	Item Description	Comments
A	010233-01	Keyboard	See Page 5-1
B	010229-01	Disk Drive	See Page 62-1
C	010258-01	Start/Stop Panel	See Page 6-1
1	010246-01	Cover, Tensioner Bracket, Left	
2	010244-03	Cover, Rear, Tensioner	
3	010245-02	Cover, Tensioner Bracket, Right	
4	009458-01	Cover, Spacer, Lower	
5	006802-01	Damper, Spacer Cover	
6	343109-01	Grommet, Rubber	
7	008495-01	Bushing, Insulating, Miniature	
8	010171-08	Screw, Socket Head Cap, M4 x 0.7 x 8mm, Zinc Plate	
9	003197-01	Screw, Thread Form, #8 x 1/2 "	
10	010912-01	Cover, Grabber	
11	010171-30	Screw, Socket Head Cap, M4 x 0.7 x 30mm, Zinc Plate	
12	690427-04	Washer, Lock, Split, M4	
13	690439-04	Washer, Flat, M4	
14	010167-04	Washer, External Star, M4	
15	011111-01	Cable, Ground, 4.75", #8	
16	009561-04	Nut, Kep, M4	
17	10835	Clamp, Cable, X-Axis	
18	010171-20	Screw, Socket Head Cap, M4 x 0.7 x 20mm, Zinc Plate	
19	010622-02	Bracket, Tube, Thread	
20	690811-38	Washer, Lock, Internal Star, #8	

Covers/Table Top (2 of 4)

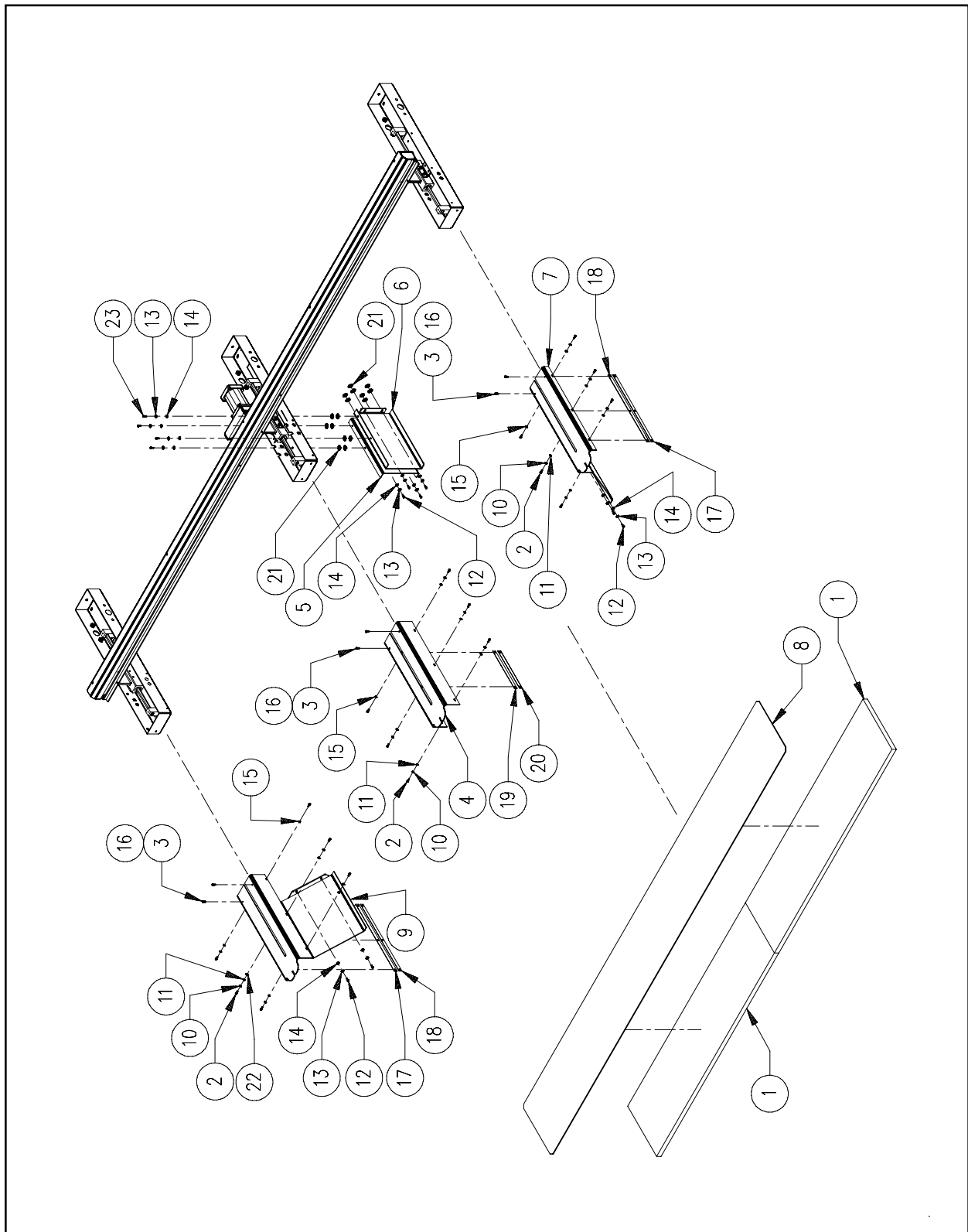


Figure 2

Covers/Table Top (2 of 4)**Reference Figure 2**

Item No.	Part Number	Item Description	Comments
1	006848-01	Shelf, Half, Frame, Black	
2	010171-12	Screw, Socket Head Cap, M4 x 0.7 x 12mm, Zinc Plate	
3	011148-01	Screw, Shoulder, 10-32, Modified	
4	009167-03	Cover, X-Drive Mounting, Center	
5	009859-03	Brace, Table, Left	
6	009860-03	Brace, Table, Right	
7	009166-04	Cover, Y-Drive Mounting, Right	
8	006863-01	Mat, Rubber	
9	010604-03	Cover, Y-Drive Mounting, Left	
10	690427-04	Washer, Lock, Split, M4	
11	010572-04	Washer, Flat, M4	
12	010172-16	Screw, Socket Head Cap, M5 x 0.8 x 16mm, Zinc Plate	
13	690427-05	Washer, Lock, Split, M5	
14	690439-05	Washer, Flat, M5	
15	010167-04	Washer, External Star, #4	
16	001955-17	Ring, Retainer, External, .25" ID	
17*	010954-01	Shim, .020" Thick, End Y-Drive Cover	
18*	010955-01	Shim, .032" Thick, End Y-Drive Cover	
19*	010956-01	Shim, .020" Thick, Center Y-Drive Cover	
20*	010957-01	Shim, .032" Thick, Center Y-Drive Cover	
21*	006672-01	Spacer, .401" ID x .75" OD x .015" Thick, Stainless Steel	
22	010572-05	Washer, Flat, M5	
23	010172-12	Screw, Socket Head Cap, M5 x 0.8 x 12mm, Zinc Plate	

Note:

*Items 17-21 are used as needed

Covers/Table Top (3 of 4)

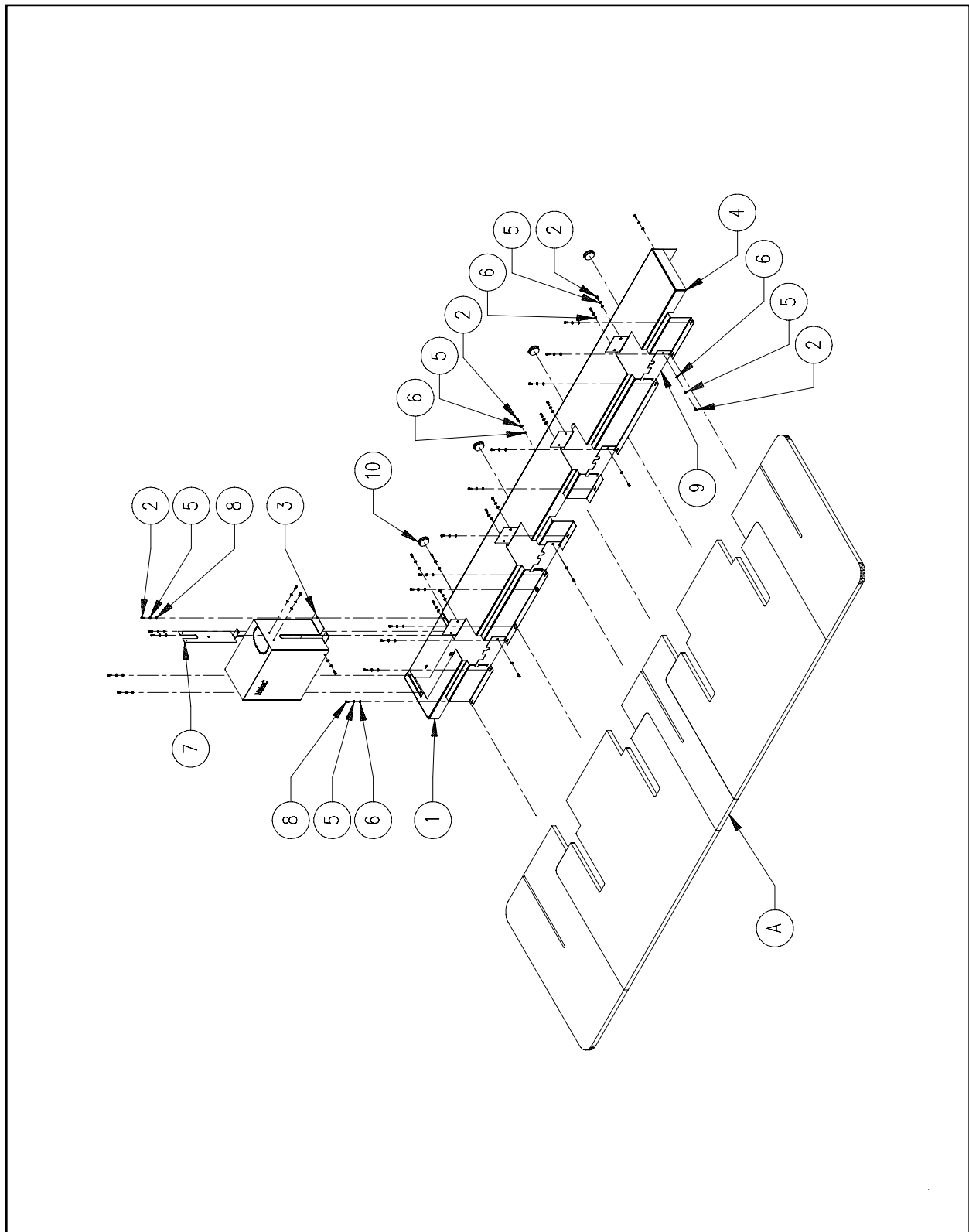


Figure 3

Covers/Table Top (3 of 4)**Reference Figure 3**

Item No.	Part Number	Item Description	Comments
A	010185-02	Table Tops	See Page 4-1
1	010008-02	Cover, Left Rear Channel	
2	010171-12	Screw, Socket Head Cap, M4 x 0.7 x 12mm, Zinc Plate	
3	010007-03	Cover, Z-Drive Motor	
4	010006-03	Cover, Right Rear Channel	
5	690427-04	Washer, Lock, Split, M4	
6	690439-04	Washer, Flat, M4	
7	010019-01	Guard, Z-Drive	
8	010171-08	Screw, Socket Head Cap, M4 x 0.7 x 8mm, Zinc Plate	
9	010496-04	Cover, Under Bed	
10	010235-20	Plug, Hole, 1.5"	

Covers/Table Top (4 of 4)

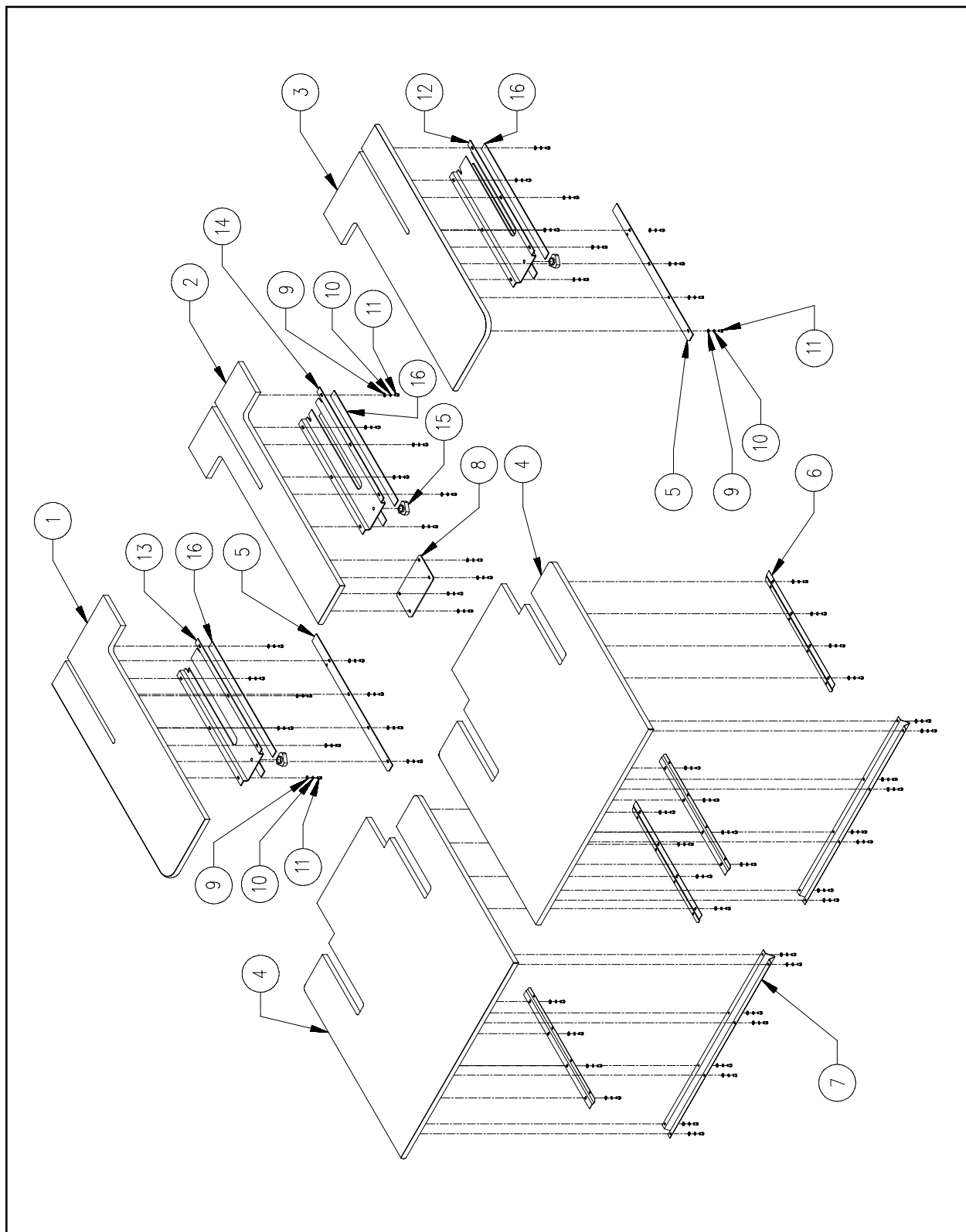


Figure 4

Covers/Table Top (4 of 4)**Reference Figure 4**

Item No.	Part Number	Item Description	Comments
1	10327	Table Top, Left, Front	
2	009271-01	Table Top, Center, Drive	
3	10328	Table Top, Right, Front	
4	010009-01	Insert, Table	
5	006840-01	Guide, Table, Insert	
6	006839-01	Retainer, Table Insert	
7	005340-01	Stiffener, Insert, Table Top	
8	006841-01	Guide, Table Insert	
9	690034-03	Washer, Flat, #10	
10	690033-03	Washer, Lock, Split, #10	
11	670038-08	Screw, Socket Head Cap, 10-32 x 1/2"	
12	009255-03	Support, Right Y-Drive Table	
13	010616-03	Support, Left Y-Drive Table	
14	009256-01	Support, Center X-Drive Table	
15	009157-01	Knob, Locking, 1/4-20	
16	010408-03	Tape, Adhesive, 18-7/8"	

Keyboard Panel

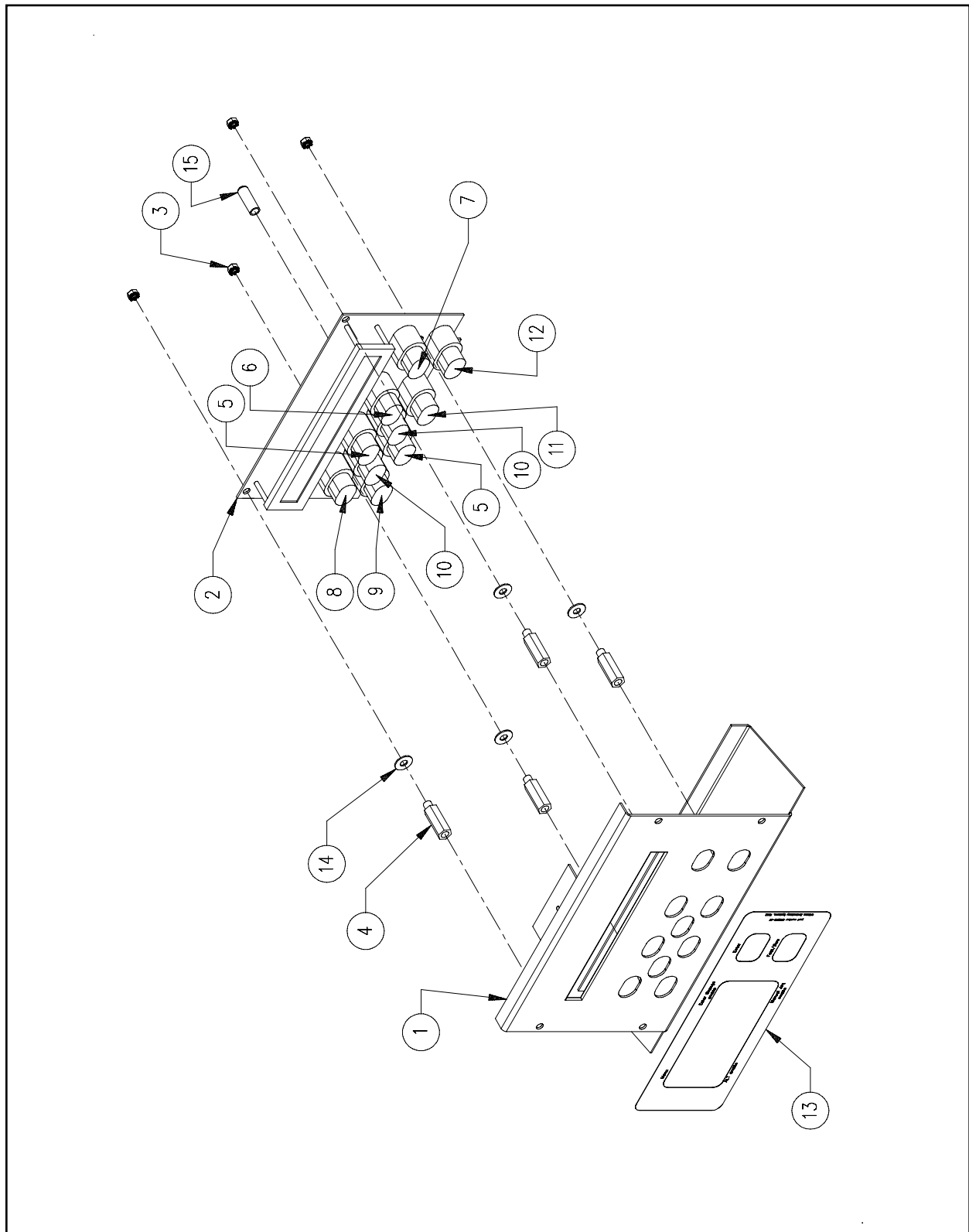


Figure 5

Keyboard Panel Reference Figure 5

Item No.	Part Number	Item Description	Comments
1*	009309-02	Panel, Keyboard	
2*	009448-04	PCB, Keyboard, Assembly	
3	009561-04	Nut, Kep, M4	
4	010484-25	Standoff, M/F, M3 x 25mm	
5*	009017-02	Keycap, Vertical Arrow	
6*	009017-06	Keycap, Color Change	
7*	009017-08	Keycap, Enter	
8*	009017-03	Keycap, Menu	
9*	009017-04	Keycap, Alt	
10*	009017-01	Keycap, Horizontal Arrow	
11*	009017-05	Keycap, Jog	
12*	009017-07	Keycap, Fast/Slow	
13	010920-01	Template, Panel	(domestic only)
14	004648-01	Washer, Flat, #10, .203" ID x .443" OD x .06" Thick	
15	11223	Knob, Extension Pot	

Note: The following can be replaced as a factory built assembly:

*010233-01 Keypad, Panel, Assembly

Start/Stop Panel

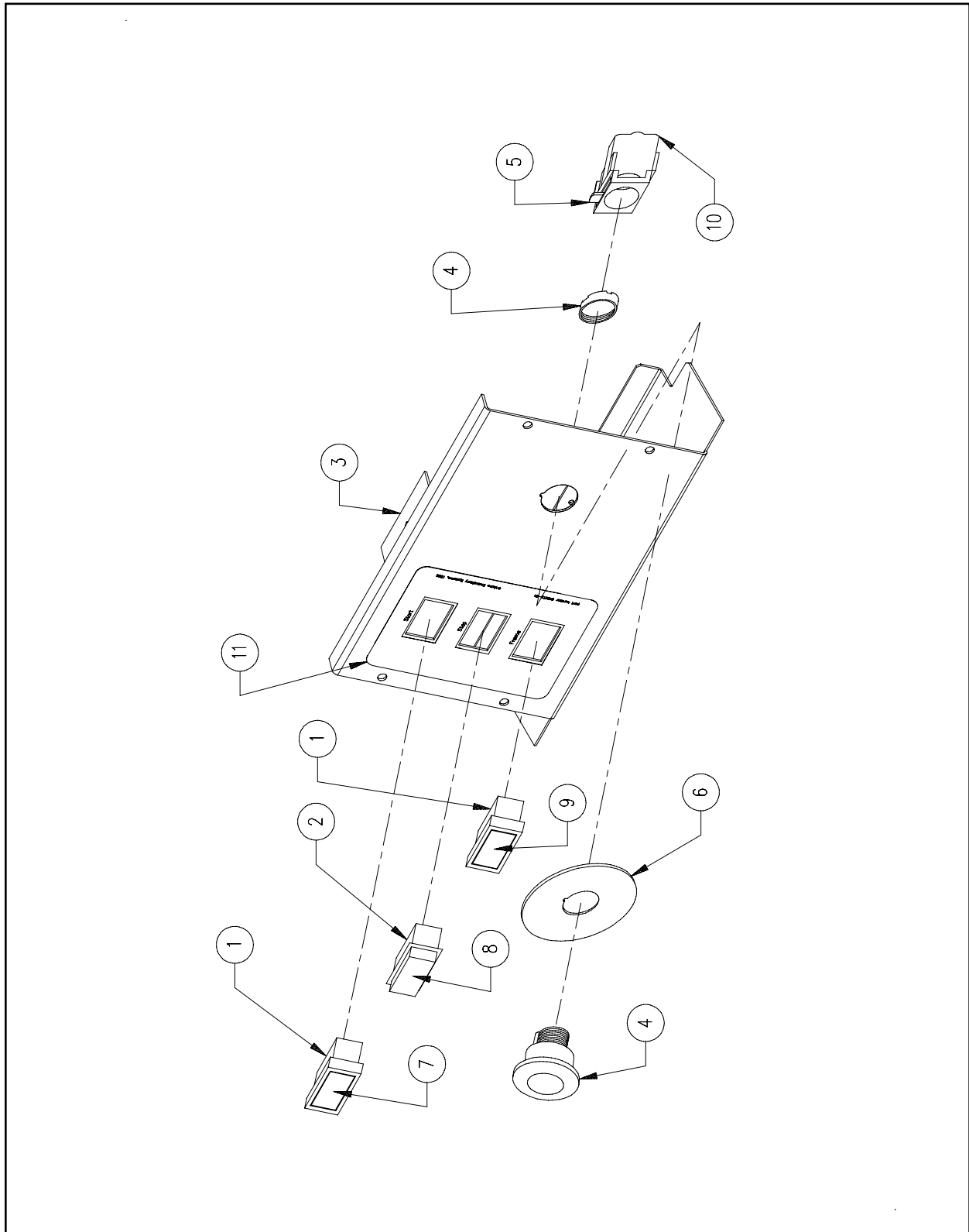


Figure 6

Start/Stop Panel **Reference Figure 6**

Item No.	Part Number	Item Description	Comments
1*	010339-01	Switch, Momentary, w/Full Guard	
2*	010338-01	Switch, Pushbutton, Momentary	
3*	010257-01	Cover, Spacer, Tensioner Bracket	
4*	009144-01	Pushbutton, Emergency Stop	
5*	009145-01	Block, Contact, Emergency Stop	
6*	009143-01	Plate, Emergency Stop	
7*	009081-01	Lens, Push Button, White, Start	
8*	009081-02	Lens, Push Button, Black, Stop	
9*	009081-03	Lens, Push Button, Gray, Frame	
10*	010159-01	Switch, Contact Block	
11	010919-01	Template, Panel, Start/Stop	(domestic only)

Note: The following can be replaced as a factory built assembly:

*010258-01 Panel, Start/Stop, Assembly

Fluorescent Lights

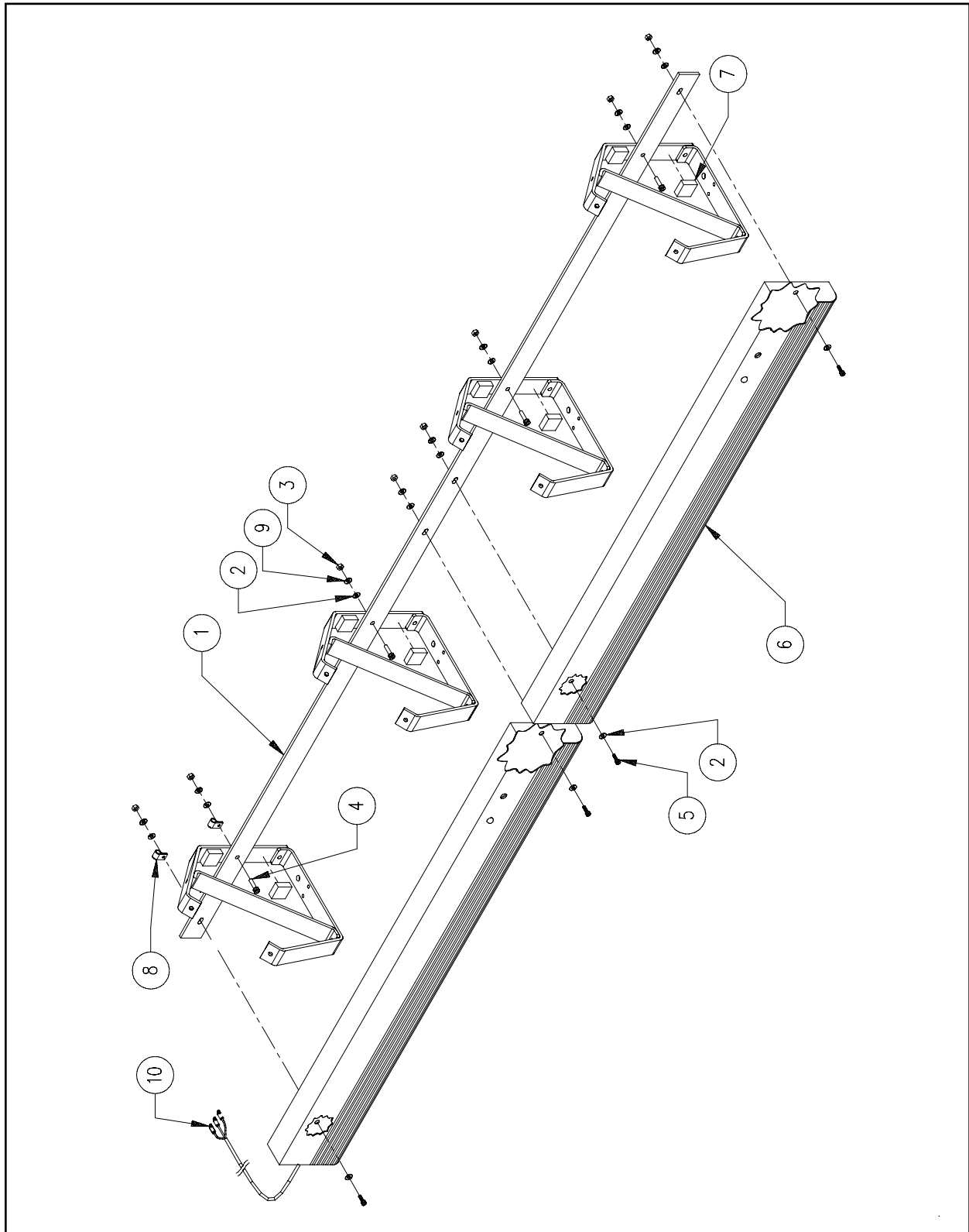


Figure 7

Fluorescent Lights**Reference Figure 7**

Item No.	Part Number	Item Description	Comments
1	006799-01	Bracket, Support, Light	
2	690439-05	Washer, Flat, M5	
3	003573-05	Nut, Hex, M5	
4	011198-12	Screw, Flat Head Socket, M5 x 0.8 x 12mm, Zinc Plate	
5	010172-16	Screw, Socket Head Cap, M5 x 0.8 x 16mm, Zinc Plate	
6*	010267-01	Fixture, Set, Light, Fluorescent	
7	007059-01	Bumper, Light	
8	340743-03	Cable Clamp, 1/4"	
9	690427-05	Washer, Lock, Split, M5	
10	007068-01	Cable, Cord, Fluorescent Lights	

Note:

The following can be replaced as a seperate item:

11171 Bulb, Fluorescent, 3 Ft.

Sewing Head (Head 1)

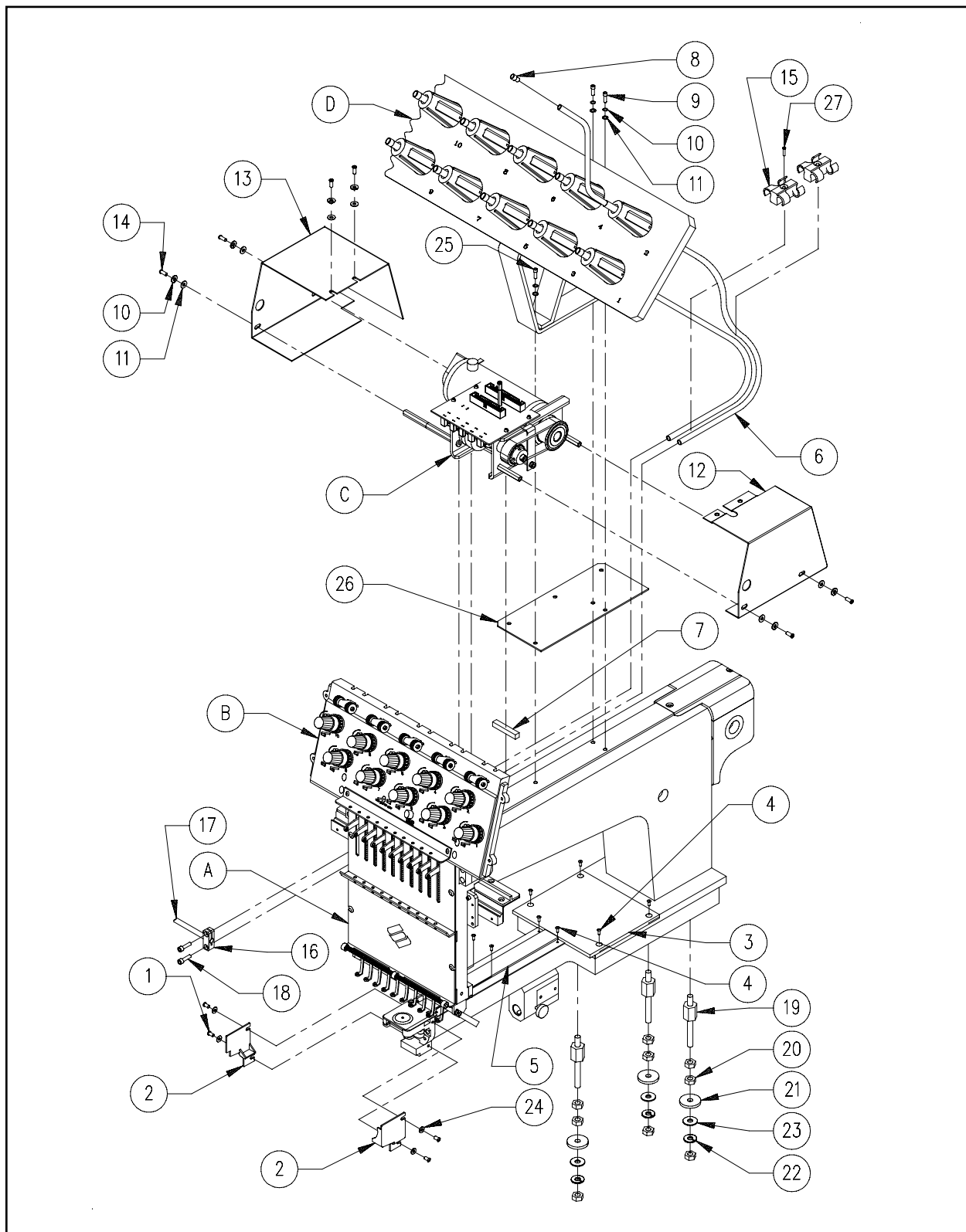


Figure 8

Sewing Head (Head 1)**Reference Figure 8**

Item No.	Part Number	Item Description	Comments
A	-----	Needle Case	See Pages 13-1 & 14-1
B	010261-02	Thread Tensioner	See Page 16-1
C	010234-01	Color Change	See Page 10-1
D	010231-01	Thread Tree	See Page 11-1
1	003136-06	Screw, Button Head Socket, M3 x 0.5 x 6mm	
2	006529-01	Set, Cover, Rotary Hook	
3	006034-21	Cover, Bed, Rear	
4	003509-08	Screw, Button Head Socket, M4 x 0.7 x 8mm	
5	007526-01	Cover, Bed, Front	
6*	005704-01	Tubing, .125" ID x .187" OD	
7	004779-01	Key, Color Change Mount	
8*	005702-01	Guide, Thread, Thread Tree	
9	010171-20	Screw, Socket Head Cap, M4 x 0.7 x 20mm, Zinc Plate	
10	690427-04	Washer, Lock, Split, M4	
11	690439-04	Washer, Flat, M4	
12	10320	Cover, Drive, Color Change, Right	
13	10322	Cover, Drive, Color Change, Left	
14	010171-08	Screw, Socket Head Cap, M4 x 0.7 x 8mm, Zinc Plate	
15	005707-01	Clip, Tubing	
16	009801-01	Clamp, Needle Case Linkage	
17	009800-01	Shaft, Needle Case Linkage	
18	010171-14	Screw, Socket Head Cap, M4 x 0.7 x 14mm, Zinc Plate	
19*	009802-01	Pillar, Head Support	
20*	010178-08	Nut, Hex, M8	
21	10547-08	Washer, Head	
22	690427-08	Washer, Lock, Split, M8	
23	690439-08	Washer, Flat, M8	
24	690439-03	Washer, Flat, M3	
25	010171-20	Screw, Socket Head Cap, M4 x 0.7 x 20mm, Zinc Plate	
26	010448-01	Bracket, Wire Loom	(position for heads 1&3)
27	001935-10	Screw, Flat Head Phillips, M3 x 0.5 x 10mm	

Note:

The following can be replaced as a factory built assembly:

*006937-01 Tubing, Thread Tree, 24", Assembly

Sewing Head (Heads 2-4)

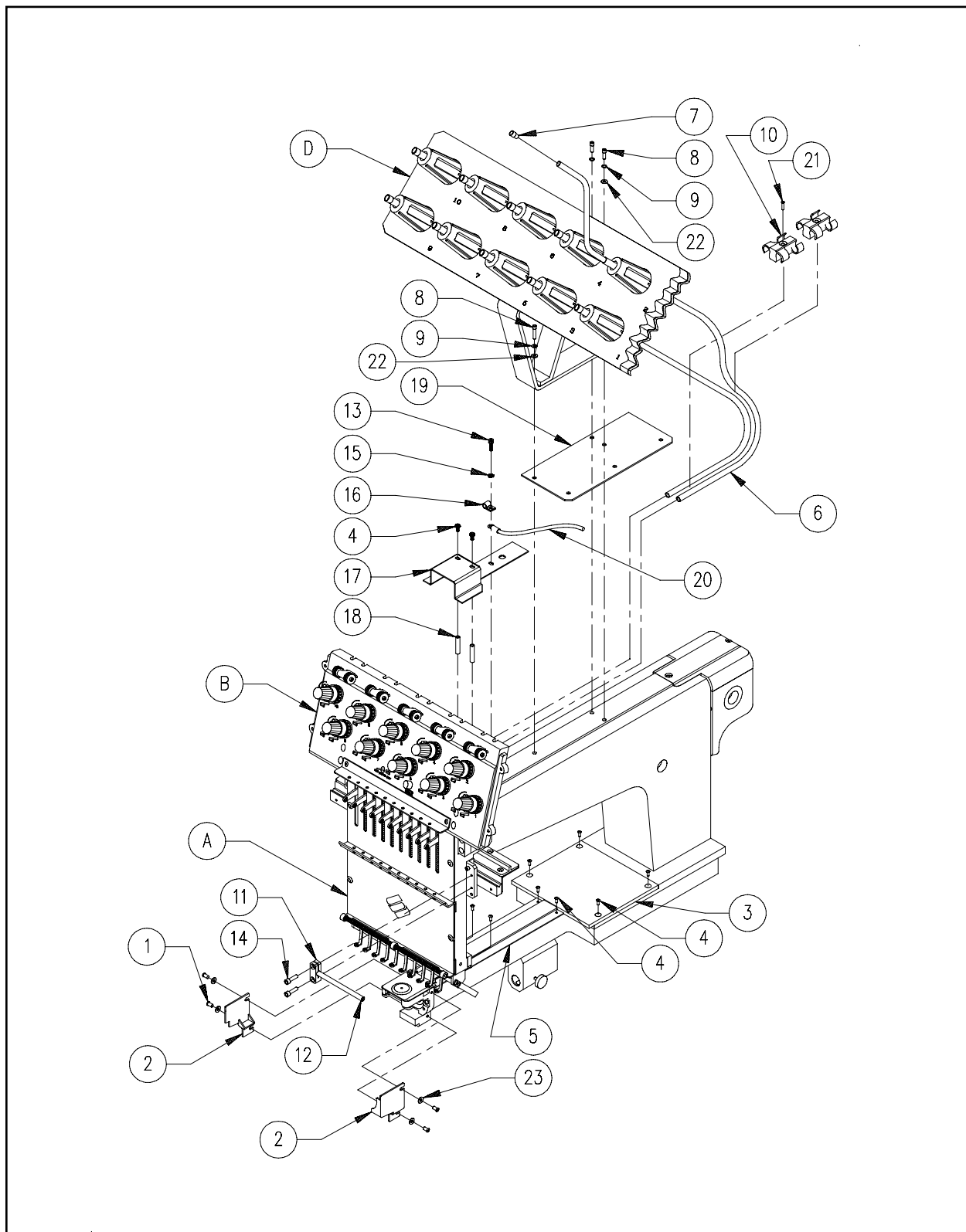


Figure 9

Sewing Head (Heads 2-4)**Reference Figure 9**

Item No.	Part Number	Item Description	Comments
A	-----	Needle Case	See Pages 13-1 & 14-1
B	010261-02	Thread Tensioner	See Page 16-1
C	010234-01	Color Change	See Page 10-1
D	010231-01	Thread Tree	See Page 11-1
1	003136-06	Screw, Button Head Socket, M3 x 0.5 x 6mm	
2	006529-01	Set, Cover, Rotary Hook	
3	006034-21	Cover, Bed, Rear	
4	003509-08	Screw, Button Head Socket, M4 x 0.7 x 8mm	
5	007526-01	Cover, Bed, Front	
6*	005704-01	Tubing, .125" ID x .187" OD	
7*	005702-01	Guide, Thread, Thread Tree	
8	010171-20	Screw, Socket Head Cap, M4 x 0.7 x 20mm, Zinc Plate	
9	690427-04	Washer, Lock, Split, M4	
10	005707-01	Clip, Tubing	
11	009801-01	Clamp, Needle Case Linkage	
12	009800-01	Shaft, Needle Case Linkage	
13	010171-10	Screw, Socket Head Cap, M4 x 0.7 x 10mm, Zinc Plate	
14	010171-14	Screw, Socket Head Cap, M4 x 0.7 x 14mm, Zinc Plate	
15	010167-04	Washer, External Star, M4	
16	340743-02	Clamp, Cable, Nylon, 3/16" ID, Black	
17	011137-02	Cover, Rear Take-up Lever	
18	008129-30	Standoff, M/F, M4 x 0.7 x 30mm	
19	010448-01	Bracket, Wire Loom	(direction for heads 2&4)
20	011141-01	Cable, Ground, Braided	
21	001935-10	Screw, Flat Head Phillips, M3 x 0.5 x 10mm	
22	690439-04	Washer, Flat, M4	
23	690439-03	Washer, Flat, M3	

Note:

The following can be replaced as a factory built assembly:

*006937-01 Tubing, Thread Tree, 24", Assembly

Color Change

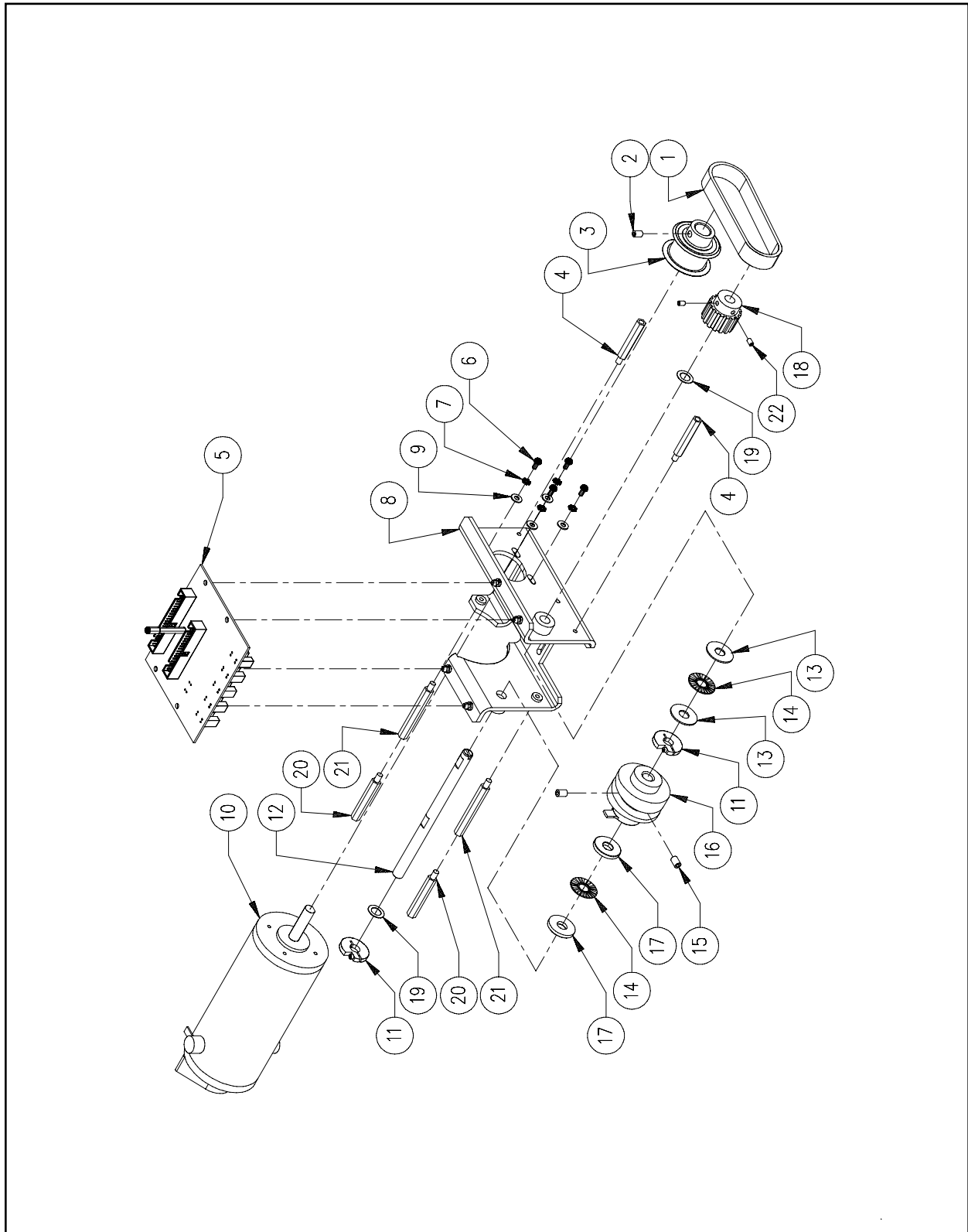


Figure 10

Color Change Reference Figure 10

Item No.	Part Number	Item Description	Comments
1*	003504-01	Belt, Timing, 39T, 1/5P	
2	005034-02	Screw, Set, Cup Point, M4 x 0.7 x 4mm	
3*	008059-01	Pulley, Timing, 5.08mmP, 12 Groove	
4	008129-35	Standoff, Hex, M-F, M4 x 0.7 x 35mm	
5*	009411-02	PCB, EMT, Color Change, Assembly	
6	670174-08	Screw, Pan Head Phillips, 6-32 x 1/2 "	
7	690033-36	Washer, External Star, #6	
8*	010243-01	Housing, Drive, Color Change	
9	690034-36	Washer, Flat, #6	
10*	000465-01	Motor, X-Y Servo	
11	008062-01	Clamp, Split-Hub, 8mm ID	
12*	006485-01	Shaft, Cam, Color Change	
13*	007574-01	Washer, Thrust, 1.00mm Thick	
14*	008061-01	Bearing, Thrust, 8mm	
15	001927-08	Screw, Set, Socket, Flat Point, M5 x 0.8 x 8mm	
16*	008056-01	Cam, Color Change	
17*	007573-01	Washer, Thrust, 2.75mm Thick	
18*	008060-01	Pulley, Timing, 5.08mmP, 16 Groove	
19	702876-08	Spacer, Shaft, 5/16" ID x .016" Thick	
20	008129-38	Standoff, Hex, M-F, M4 x 0.7 x 38mm	
21	008129-48	Standoff, Hex, M-F, M4 x 0.7 x 48mm	
22	005034-01	Screw, Set, Cup Point, M4 x 0.7 x 6mm	

Note: The following can be replaced as a factory built assembly:

*010234-01 Color Change, Assembly

Thread Tree

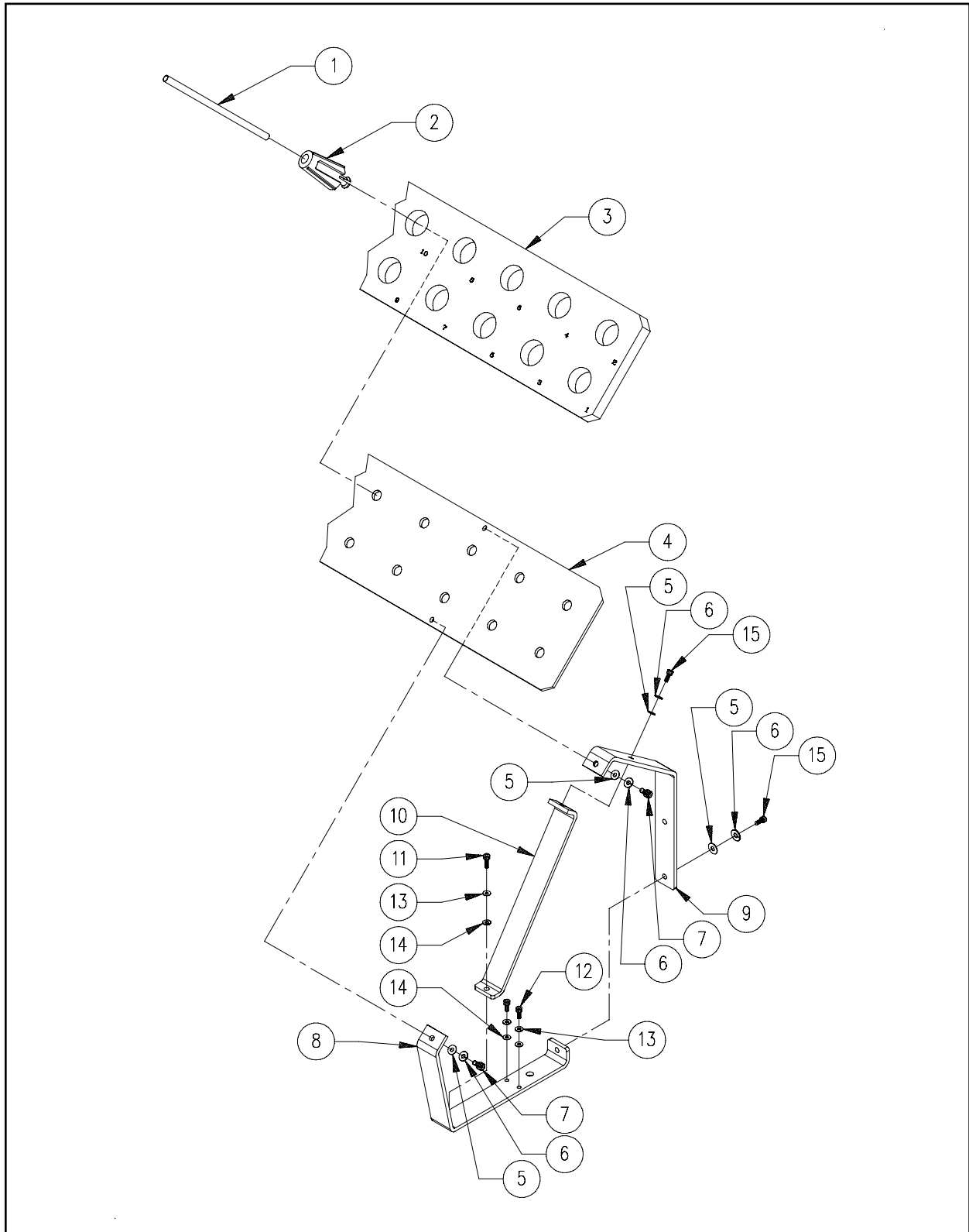


Figure 11

Thread Tree**Reference Figure 11**

Item No.	Part Number	Item Description	Comments
1	005703-02	Tube, Guide, Thread, Thread Tree, 9.7"	
2	005701-01	Seat, Cone, Thread, Thread Tree	
3	006349-01	Pad, Thread Tree	
4	006348-01	Plate, Thread Spool	
5	690439-05	Washer, Flat, M5	
6	690427-05	Washer, Lock, Split, M5	
7	010172-12	Screw, Socket Head Cap, M5 x 0.8 x 12mm, Zinc Plate	
8	006798-02	Bracket, Front, Thread Tree	
9	010603-01	Bracket, Rear, Thread Tree	
10	010571-01	Brace, Thread Tree	
11	010171-20	Screw, Socket Head Cap, M4 x 0.7 x 20mm, Zinc Plate	
12	010171-16	Screw, Socket Head Cap, M4 x 0.7 x 16mm, Zinc Plate	
13	690427-04	Washer, Lock, Split, M4	
14	690439-04	Washer, Flat, M4	
15	010172-12	Screw, Socket Head Cap, M5 x 0.8 x 12mm, Zinc Plate	

Gearbox

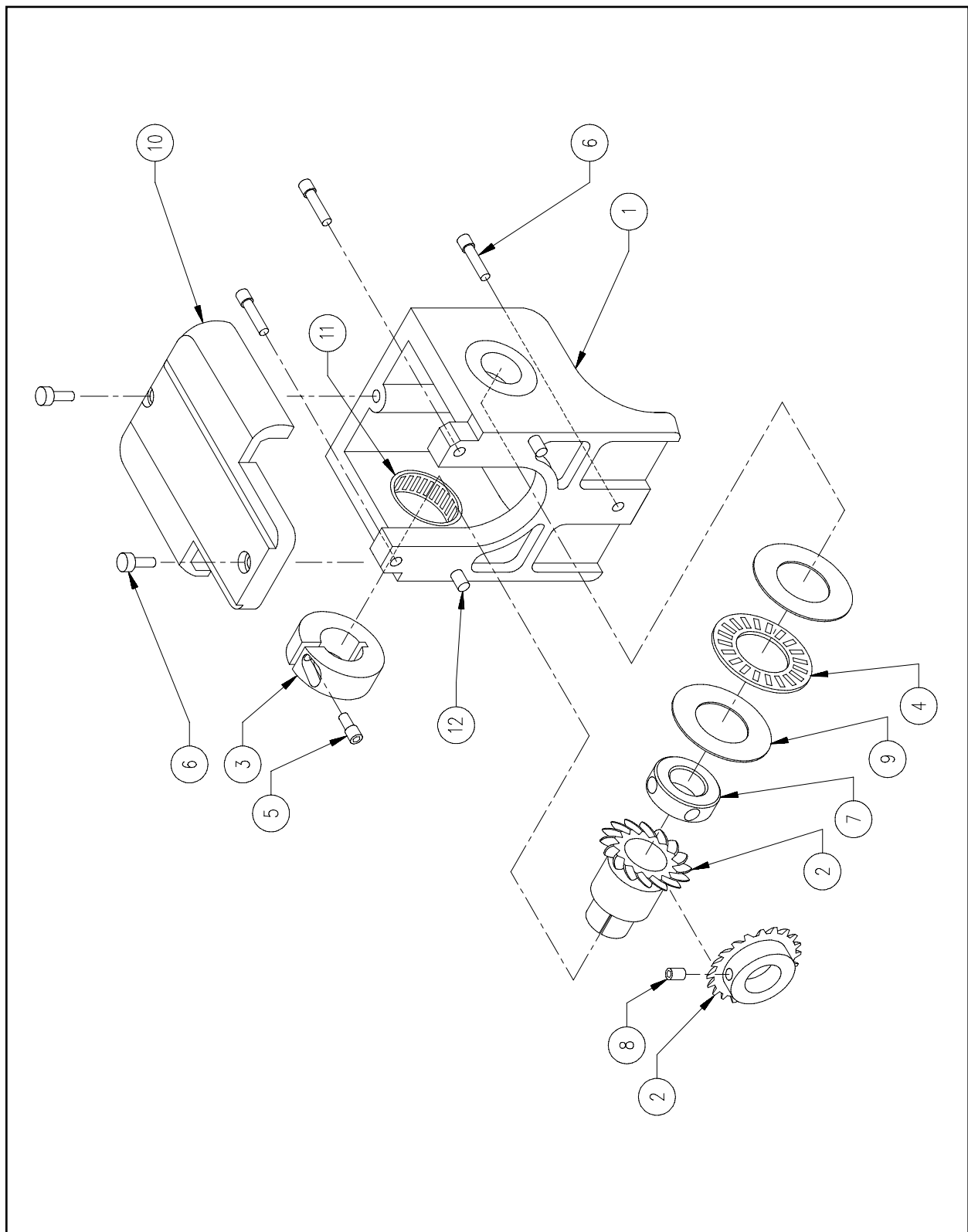


Figure 12

Gearbox Reference Figure 12

Item No.	Part Number	Item Description	Comments
1*	004234-21	Gearbox, Assembly, PHII, Grey	
2*	003195-01	Assembly, Gears, Bevel	
3*	002668-01	Collar, Support, Gear	
4	004945-01	Bearing, Thrust, 15mm	
5	670038-10	Screw, Socket Head Cap, 10-32 x 5/8"	
6	010171-16	Screw, Socket Head Cap, M4 x 0.7 x 16mm, Zinc Plate	
7	342630-01	Collar, Shaft, 15mm ID	
8	001971-06	Screw, Set, Flat Point, M6 x 1.00 x 6mm	
9	693155-15	Washer, Thrust, 15mm	
10	004263-21	Cover, Gearbox	
11	003199-01	Bearing, Gear, Main Shaft	
12	004258-12	Pin, Dowel, .1875" OD x .75"	

Note: The following can be replaced as a factory built assembly:

*006043-21 Gear, Case, Assembly, Grey

Needle Case (1 of 2)

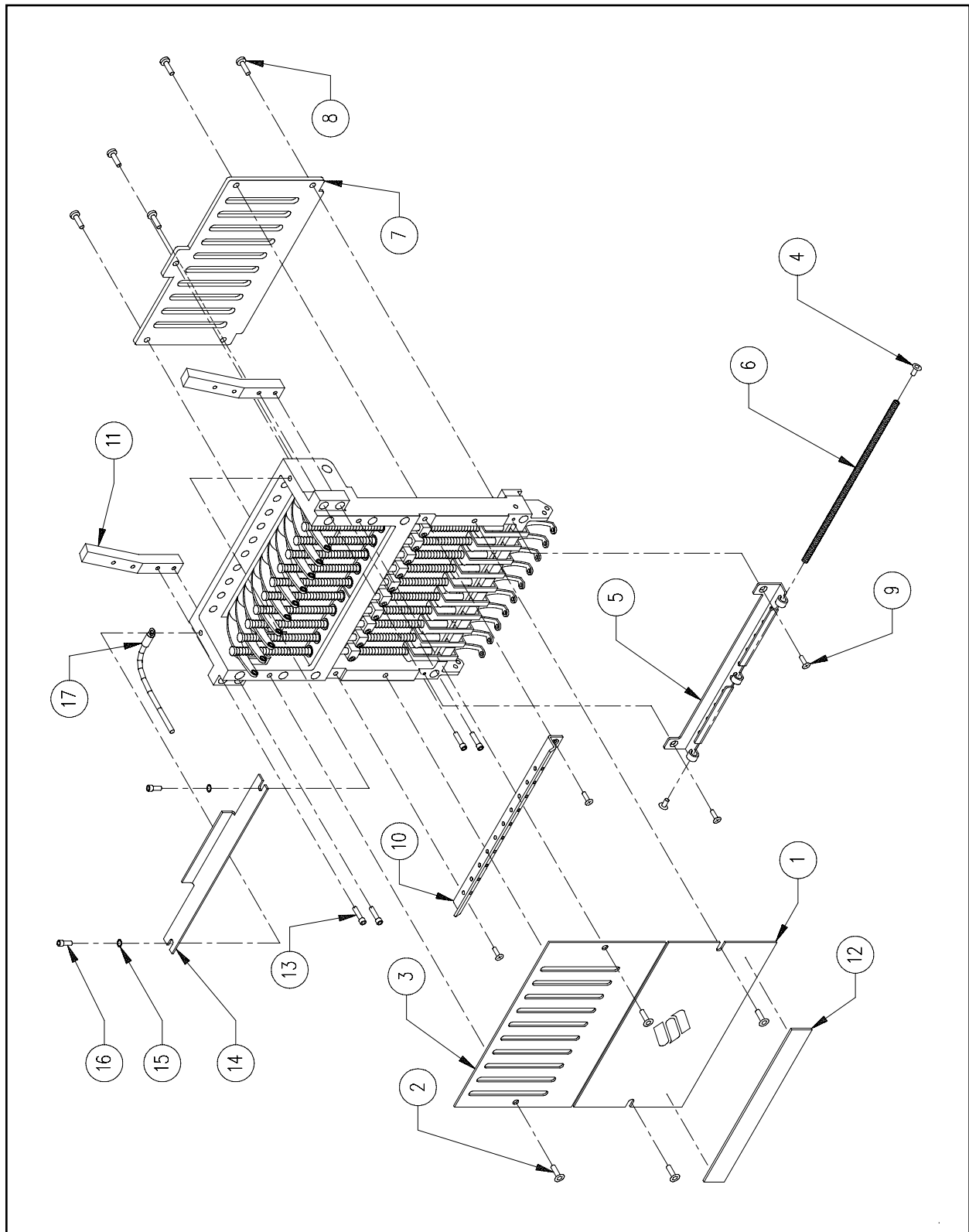


Figure 13

Needle Case (1 of 2)**Reference Figure 13**

Item No.	Part Number	Item Description	Comments
1	007511-01	Cover, Needle Case, Lower	
2	010171-06	Screw, Socket Head Cap, M4 x 0.7 x 6mm, Zinc Plate	
3	007510-02	Cover, Needle Case, Upper	
4	011162-08	Screw, Button Head Cap, M4 x 0.7 x 8mm, Zinc Plate	
5*	008483-01	Guide, Thread, Lower, w/Eyelet, Assembly	
6	007519-01	Spring, Thread, Retaining	
7	007503-01	Plate, Guide, Needle Bar	
8	001924-06	Screw, Cheese Head, Slotted, M4 x 0.7 x 6mm	
9	001935-06	Screw, Flat Head Phillips, M3 x 0.5 x 6mm	
10	008482-01	Guide, Thread, Middle, w/Eyelet, Assembly	
11	007528-01	Support, Tensioner Bracket	
12	007527-01	Magnet, Thread, Retaining	
13	010171-16	Screw, Socket Head Cap, M4 x 0.7 x 16mm, Zinc Plate	
14	006347-01	Blade, Sensor, Interruptor	(Head 4 Only)
15	010167-04	Washer, Lock, External Star, M4	
16	010171-06	Screw, Socket Head Cap, M4 x 0.7 x 6mm, Zinc Plate	
17	011141-01	Cable, Ground, Braided	(Head 2 only)

Note: *Includes items 4 and 6

Needle Case (2 of 2)

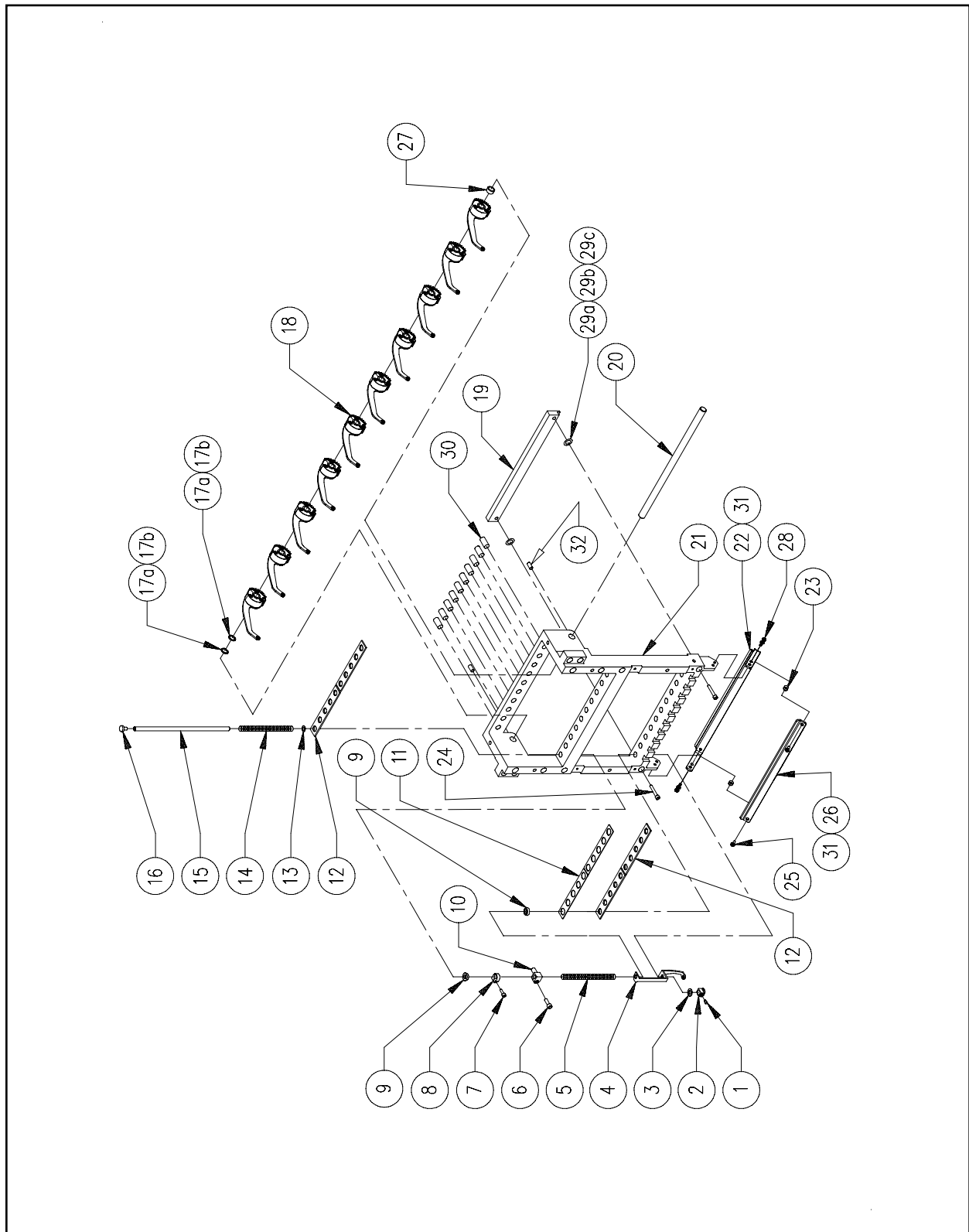


Figure 14

Needle Case (2 of 2)**Reference Figure 14**

Item No.	Part Number	Item Description	Comments
1	001828-01	Screw, Set, Needle Clamp	
2	001528-01	Clamp, Needle	
3	007591-01	Damper, Needle Clamp	
4	007924-01	Foot, Presser, Assembly	
5	001535-01	Spring, Presser Foot	
6	010170-08	Screw, Socket Head Cap, M3 x 0.5 x 8mm, Zinc Plate	
7	010170-10	Screw, Socket Head Cap, M3 x 0.5 x 10mm, Zinc Plate	
8	001840-01	Clamp, Stop, Needle Bar	
9	005577-01	Damper, Needle Case	
10	007408-01	Stud, Connecting, Needle Bar	
11	007505-01	Shim, Needle Case	
12	007506-01	Felt, Needle Case	
13	005009-01	Washer, Flat, .260" ID x .420" OD x .03" Thick	
14	001537-01	Spring, Holding, Needle Bar	
15	001532-01	Bar, Needle	
16	002637-08	Screw, Socket Head Cap, Low Head, M5 x 0.8 x 8mm	
17a	702876-05	Spacer, Precision, .313" ID x .010" Thick	(Use as Required)
17b	702876-08	Spacer, Precision, .313" ID x .016" Thick	(Use as Required)
18	010360-01	Lever, Take-Up, Assembly	
19	10207	Rail, Guide, Lower	
20	007504-01	Shaft, Take-Up Lever	
21	007501-01	Case, 10 Needle	
22•	008474-01	Bracket, Grabber, Lower, Flared	
23	002884-01	Spacer, Support, Velcro	
24	010171-20	Screw, Socket Head Cap, M4 x 0.7 x 20mm, Zinc Plate	
25	671855-08	Screw, Pan Head Slotted, M3 x 0.5 x 8mm	
26*	008472-01	Bar, Grabber	
27	007518-01	Spacer, Shaft, Take-Up Lever	
28	010171-06	Screw, Socket Head Cap, M3 x 0.5 x 6mm, Zinc Plate	
29a	700837-01	Spacer, Shaft, 1/4" ID x .002" Thick	(Use as Required)
29b	700837-02	Spacer, Shaft, 1/4" ID x .004" Thick	(Use as Required)
29c	700837-03	Spacer, Shaft, 1/4" ID x .006" Thick	(Use as Required)
30	662744-08	Pin, Dowel, .25" OD x .50"	
31*•	008471-01	Velcro, Wiper, Pile, Flared	
32	001960-06	Screw, Set, Flat Point, M4 x 0.7 x 6mm	

Note:

The following can be replaced as a factory built assembly:

*008470-01 Grabber Bar, Upper, Flared, Assembly

•008473-01 Grabber Bracket, Lower, Flared, Assembly

Needle Case Linear Drive

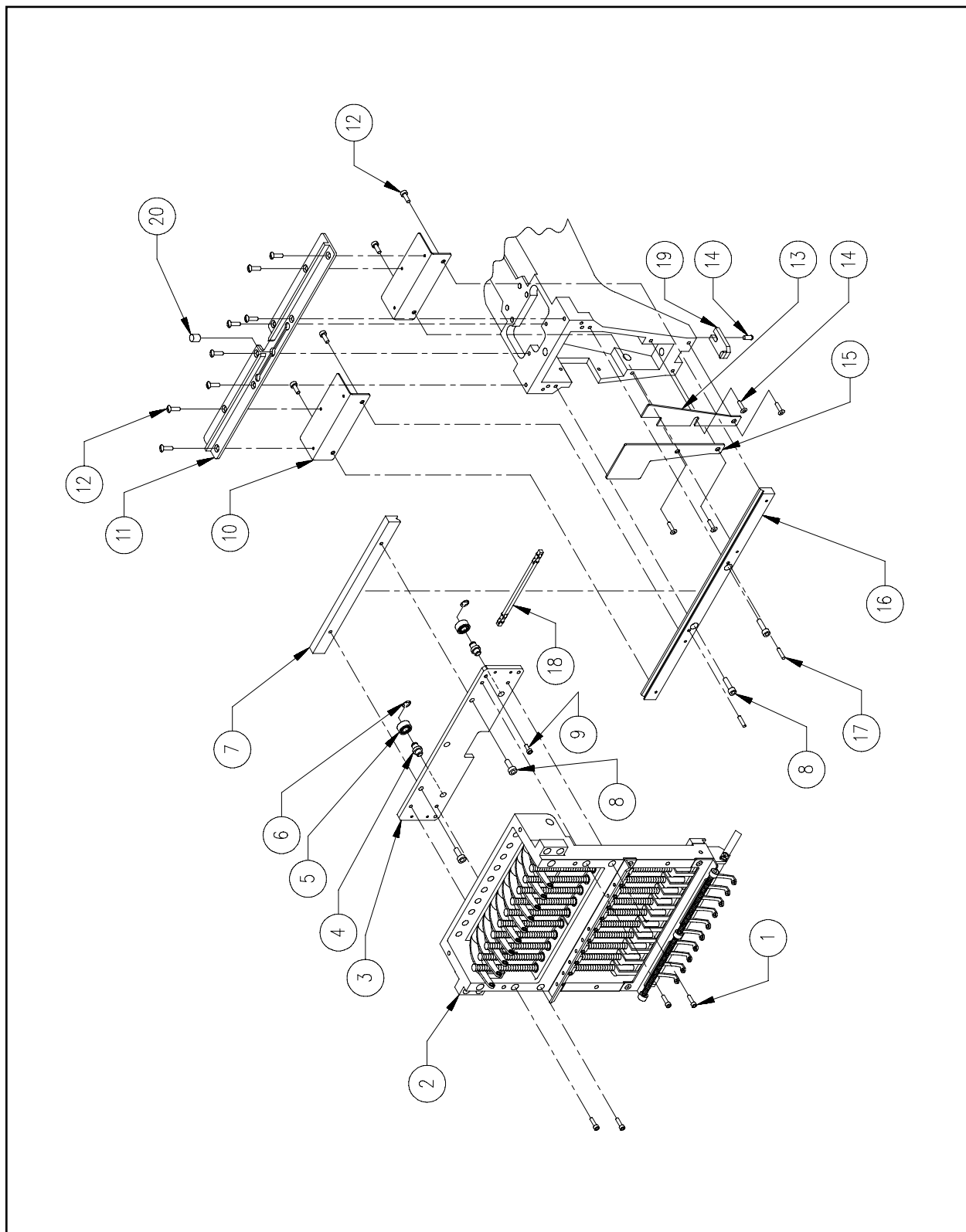


Figure 15

Needle Case Linear Drive**Reference Figure 15**

Item No.	Part Number	Item Description	Comments
1	010171-16	Screw, Socket Head Cap, M4 x 0.7 x 16mm, Zinc Plate	
2	-----	Needle Case	See Pages 13-1 & 14-1
3*	010700-01	Plate, Bearing, Retainer	
4*	007516-01	Stud, Retainer	
5	007517-01	Bearing, Radial, 4mm ID x 9mm OD	
6	007562-06	Ring, Retaining	
7	007520-01	V-Rail, Needle Case	
8	010171-12	Screw, Socket Head Cap, M4 x 0.7 x 12mm, Zinc Plate	
9	010171-06	Screw, Socket Head Cap, M4 x 0.7 x 6mm, Zinc Plate	
10	007546-01	Bracket, Support, Take-Up Lever Guide	
11	007507-01	Rail, Guide, Take-Up Lever	
12	671855-06	Screw, Pan Head Slotted, M3 x 0.5 x 6mm	
13	007473-01	Cover, Front, Arm, Right	
14	003509-08	Screw, Button Head Socket, M4 x 0.7 x 8mm	
15	007514-01	Cover, Front, Arm, Left	
16	007521-01	V-Rail, Arm	
17	002610-14	Pin, Spring, 3mm	
18	007522-01	Bearing, Cross Roller	
19	001942-01	Plate, Position, Machined	
20	002821-01	Pad, Reservoir, Felt	

Note:

The following can be replaced as a factory built assembly:

*007558-01 Plate, Retainer, Bearing, Assembly

Thread Tensioner

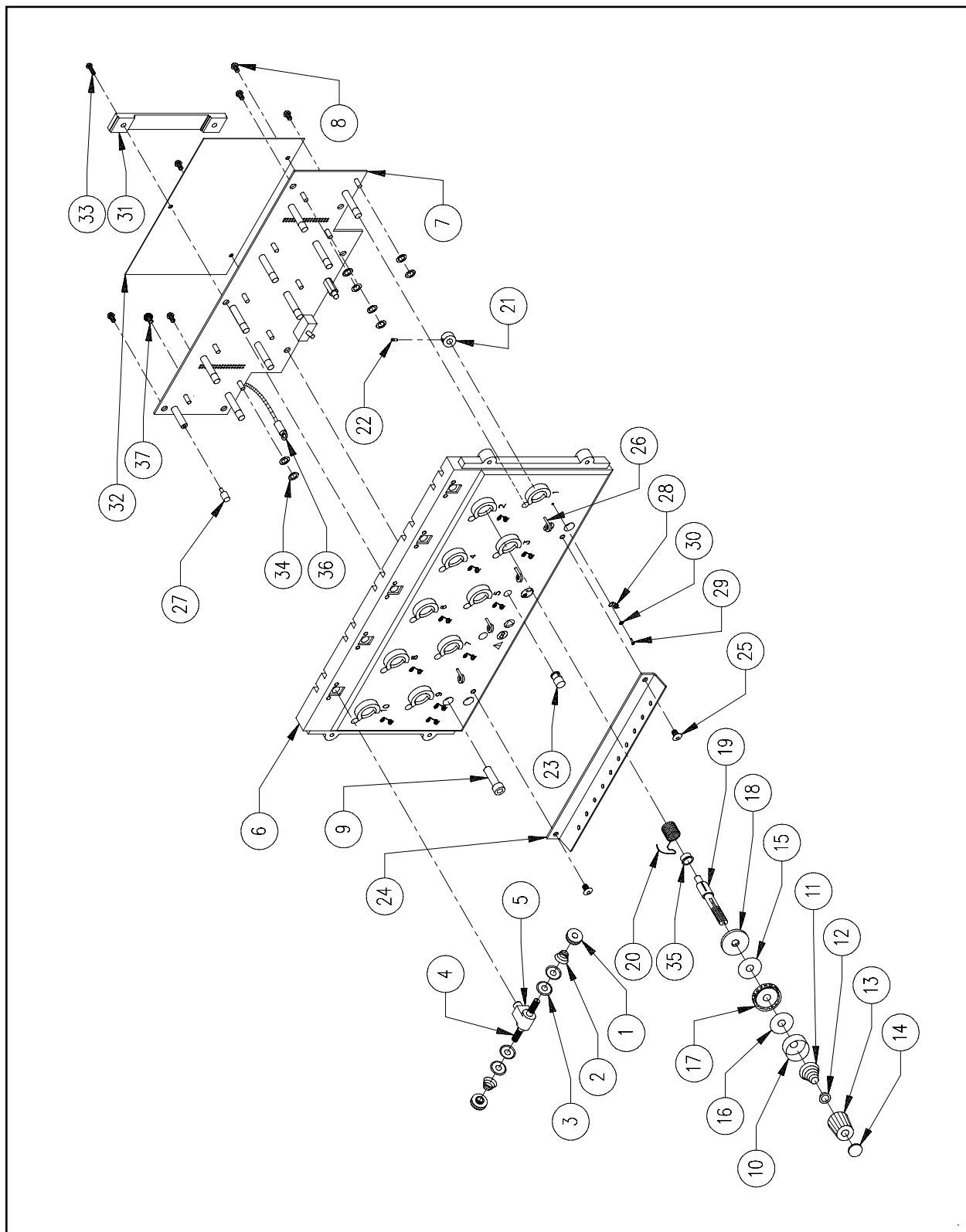


Figure 16

Thread Tensioner Reference Figure 16

Item No.	Part Number	Item Description	Comments
1•	007080-01	Knob, Adjust, Pretensioner, Plastic	
2•	003654-01	Spring, Pretensioner	
3•	005137-01	Disk, Pretensioner	
4•	007531-01	Post, Pretensioner	
5#	007524-01	Bracket, Pretensioner	
6#	009401-01	Bracket, Tensioner	
7#	009415-04	PCB, Thread Break, Assembly	
8#	001924-06	Screw, Cheese Head, Slotted, M4 x 0.7 x 6mm	
9	010171-20	Screw, Socket Head Cap, M4 x 0.7 x 20mm, Zinc Plate	
10*	005196-01	Base, Tensioner	
11*	004854-01	Spring, Tensioner, Thread	
12*	005422-01	Cap, Spring	
13*	005197-01	Knob, Tensioner, Black, Assembly	
14#	003560-01	Tab, Tensioner	
15*	005198-02	Pad, Felt, .095" Thick	
16*	005198-01	Pad, Felt, .065" Thick	
17*	006474-01	Disk, Tensioner, Thread, Assembly	
18*	004908-01	Disk, Plastic	
19*	004897-01	Post, Tensioner	
20*	007559-01	Spring, Check, Tensioner, Thread	
21#	007529-01	Collar, Tensioner, Assembly	
22#	001922-10	Screw, Socket Head Cap, M3 x 0.5 x 10mm, Zinc Plate	
23#	010373-01	Cover, LED, Yellow	
24#	008481-01	Guide, Thread, Upper, Assembly	
25#	003509-06	Screw, Button Head Cap, M4 x 0.7 x 6mm	
26#	002897-01	Post, Guide	
27	007659-02	Standoff, M-F, 3/16" Round	
28#	008468-01	Pigtail	
29#	010568-01	Screw, Plastifast, 2-32 x 1/4"	
30#	690034-32	Washer, Flat #2	
31#	010577-02	Clamp, Ribbon Cable, 3.31"	
32#	010620-01	Insulator, Thread Break	
33	001924-10	Screw, Cheese Head Slotted, M4 x 0.7 x 10mm	
34	010917-01	Re-inforcement, Self-Adhesive	
35	011351-01	Bushing, Tensioner	
36#	009317-01	Cable, Ground, Pan, 4.75"	
37#	009863-10	Screw, Pan Head Phillips, w/Star, M4 x 0.7 x 10mm	

Note:

The following can be replaced as a factory built assembly:

- *007547-01 Tensioner, Thread, Main, Black, Assembly
- 007530-01 Pretensioner, Assembly
- #10869 Tensioner, w/Insulator, Assembly
(includes 007547-01 and 007530-01)

Arm and Bed

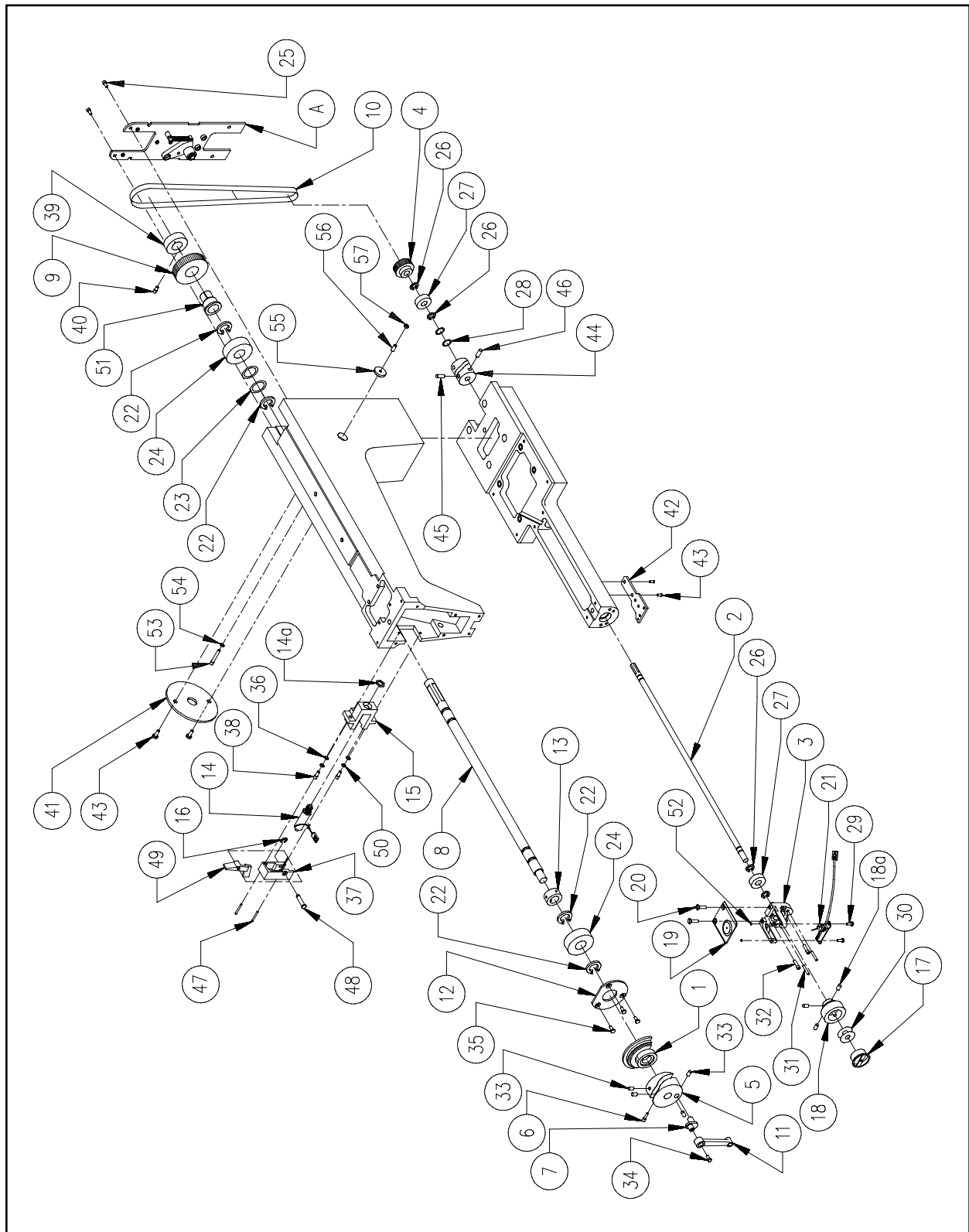


Figure 17

Arm and Bed Reference Figure 17

Item No.	Part Number	Item Description	Comments
A	004504-01S	Bobbin Idler	See Page 19-1
1	003539-01	Counterweight, Phase I	
2	003535-01	Shaft, Bobbin, Phase II	
3a	005601-01	Bracket, Needle Plate	(Trimmer Only)
3b	006576-01	Bracket, Needle Plate	(Non-Trimmer Only)
4	001522-01	Pulley, Drive, Bobbin, Bottom, 16T, 1/5P	
5	003545-01	Cam, Drive, Lever, Take-Up	
6	003546-01	Screw, Set, Cam	
7	002698-01	Rod, Crank, 90 Deg	
8	003532-01	Shaft, Arm	
9*	005332-01	Pulley, Adjustable, Top, 32T, 1/5P	
10	002809-01	Belt, Timing, 1/5P, 104 Groove, 3/8" Wide	
11	001939-01	Rod, Connecting	
12	003531-01	Plate, Retainer, Bearing, Arm Shaft	
13	004261-01	Collar, Shaft, Headup	
14	008395-01	Solenoid, Jump Stitch	
14a	-----	Nut, Panel	Included in Item #14
15	006561-01	Bracket, Solenoid	
16•	001955-14	Ring, Retaining, External, .188"	
17	004267-01	Case, Bobbin, ^{wo} /Spring	
18	009000-01	Hook, Rotary, Small Bobbin	
18a	-----	Screw, Rotary Hook	Included in Item #18
19	10246	Plate, Needle, Pocketed	
19a	006579-01	Plate, Needle, Raised	(not shown)
20	004643-01	Screw, Needle Plate	
21	010107-01	Sensor, Under Thread Control, Assembly	
22	003533-05	Ring, Retainer, External, Arm Shaft	
23	002697-09	Washer, Wave, 35mm OD	
24	002696-15	Bearing, Ball, Radial, 15mm ID	
25	001926-12	Screw, Flat Head Socket, M4 x 0.7 x 12 Lg	
26	003534-10	Ring, Retaining, External, Bobbin Shaft	
27	002696-08	Bearing, Ball, Radial, 8mm ID	
28	002697-03	Washer, Wave, 22mm OD	
29	671855-06	Screw, Pan Head Slotted, M3 x 0.5 x 6 Lg	
30	761002-11	Thread, Bobbin, White	
31	002610-14	Pin, Spring, 3mm x 14mm Lg	
32	010171-16	Screw, Socket Head Cap, M4 x 0.7 x 16mm	
33	001971-06	Screw, Set, Flat Point, M6 UNF x 6mm	
34	002637-10	Screw, Socket Head Cap, Low Head, M5 x 0.8 x 10mm	
35	001926-12	Screw, Flat Head Socket, M4 x 0.7 x 12mm	
36	702946-30	Spacer, Shaft, .187" ID x .312" OD x .03" Thick	
37•	006560-01	Bracket, Latch	
38	010171-12	Screw, Socket Head Cap, M4 x 0.7 x 12mm, Zinc Plate	

Arm and Bed			Reference Figure 17
Item No.	Part Number	Item Description	Comments
39	002668-01	Collar, Support, Gear	
40	670038-10	Screw, Socket Head Cap, 10-32 x 5/8"	
41a	002893-21	Cover, Grabber	(Trimmer Only)
41b	003622-21	Cover, Solenoid	(Non-Trimmer Only)
42	006526-01	Bracket, Picker	
43	010171-10	Screw, Socket Head Cap, M4 x 0.7 x 10mm, Zinc Plate	
44	007257-01	Cam, Trimmer	(#up to s/n 17033)
	10183	Cam, Trimmer	(#s/n 17034 and above)
45	001927-10	Screw, Set, Flat Point, M5 x 0.8 x 10mm	
46	007272-10	Screw, Set, Cone Point, M5 x 0.8 x 10mm	
47	010170-20	Screw, Socket Head Cap, M3 x 0.5 x 20mm, Zinc Plate	
48•	006559-01	Pin, Latch	
49•	002876-21	Latch, Jump Stitch	
50	690427-04	Washer, Lock, Split, M4	
51*	005331-01	Pulley, Hub, Adjustable	
52	006549-03	O-Ring, .187" ID x .06" Thick	
53	010170-30	Screw, Socket Head Cap, M3 x 0.5 x 30mm, ZP (Non-Trimmer Only)	
54	690439-03	Washer, Flat, M3	(Non-Trimmer Only)
55	011133-01	Washer, Shoulder, .75" OD	(Non-Trimmer Only)
56	700134-06	Spacer, Nylon, .140" ID x .250" OD x .375" (Non-Trimmer Only)	
57	003573-03	Nut, Nylock, M3	(Non-Trimmer Only)

Note: The following can be replaced as a factory built assembly:

- *005191-01 Pulley, Adjustable, Assembly
- 007340-01 Bracket, Latch, Jump Stitch, Assembly
- #These serial numbers are for the head only, not the machine

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Reciprocator

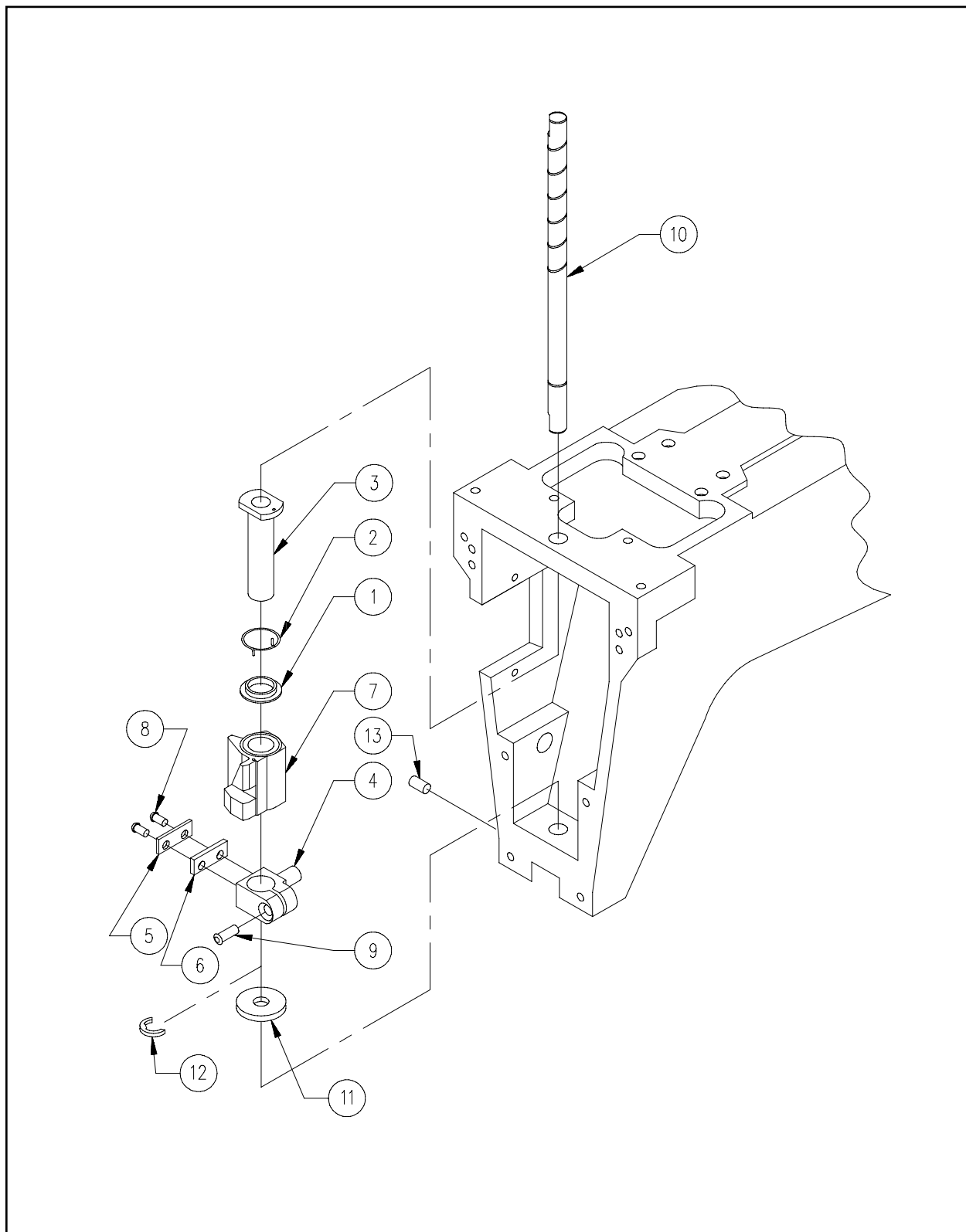


Figure 18

Reciprocator **Reference Figure 18**

Item No.	Part Number	Item Description	Comments
1*	007449-01	Bushing, Cradle, Spring	
2*	007448-01	Spring, Jump, Reciprocator	
3*	001865-01	Bushing, Shaft, Needle Bar	
4*	002807-01	Stud, Connecting, Reciprocator, Machined	
5*	001842-01	Bracket, Stopper, Steel	
6*	004676-01	Bracket, Stopper, Delrin	
7*	004878-01	Reciprocator	
8	671855-06	Screw, Pan Head Slotted, M3 x 0.5 x 6mm	
9	010171-10	Screw, Socket Head Cap, M4 x 0.7 x 10mm, Zinc Plate	
10	001858-01	Shaft, Guide, Needle Bar	
11	001875-01	Bearing, Shaft, Guide	
12	001955-18	Ring, Retainer, External, 5/16" ID	
13	004264-08	Screw, Set, Cone Point, M4 x 0.7 x 8mm	

Note:

The following can be replaced as a factory built assembly:

*001990-015 Assembly, Reciprocator

Bobbin Idler

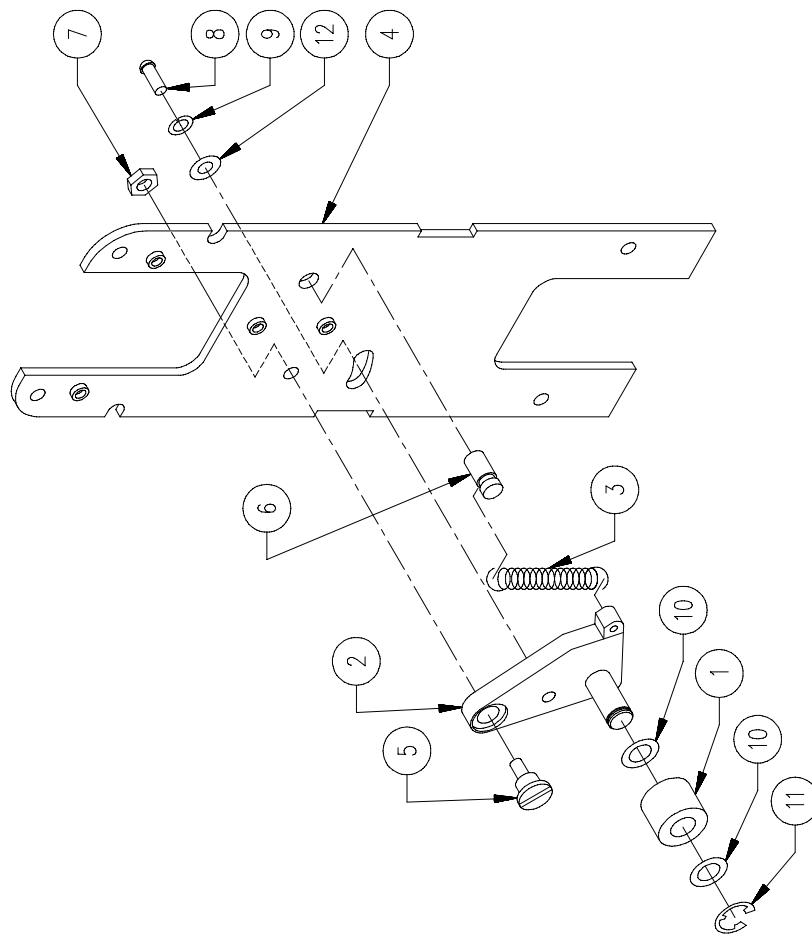


Figure 19

Bobbin Idler**Reference Figure 19**

Item No.	Part Number	Item Description	Comments
1	003593-01	Roller, Idler	
2	002817-01	Bar, Idler, Assembly	
3	002816-06	Spring, Idler	
4	003668-01	Cover, Head, Rear	
5	003188-01	Screw, Shoulder, 7mm OD, M5 x 0.8 x 5mm	
6	660278-01	Stud, Press, 1/4" x 1/2"	
7	003543-05	Nut, Jam, Hex, M5	
8	672036-10	Screw, Button Head Cap, M5 x 0.8 x 10mm	
9	690427-05	Washer, Lock, Split, M5	
10	702876-08	Spacer, Shaft, 5/16" ID x .016" Thick	
11	001955-18	Ring, Retainer, External, 5/16" ID	
12	690439-05	Washer, Flat, M5	

Take-Up Drive Lever

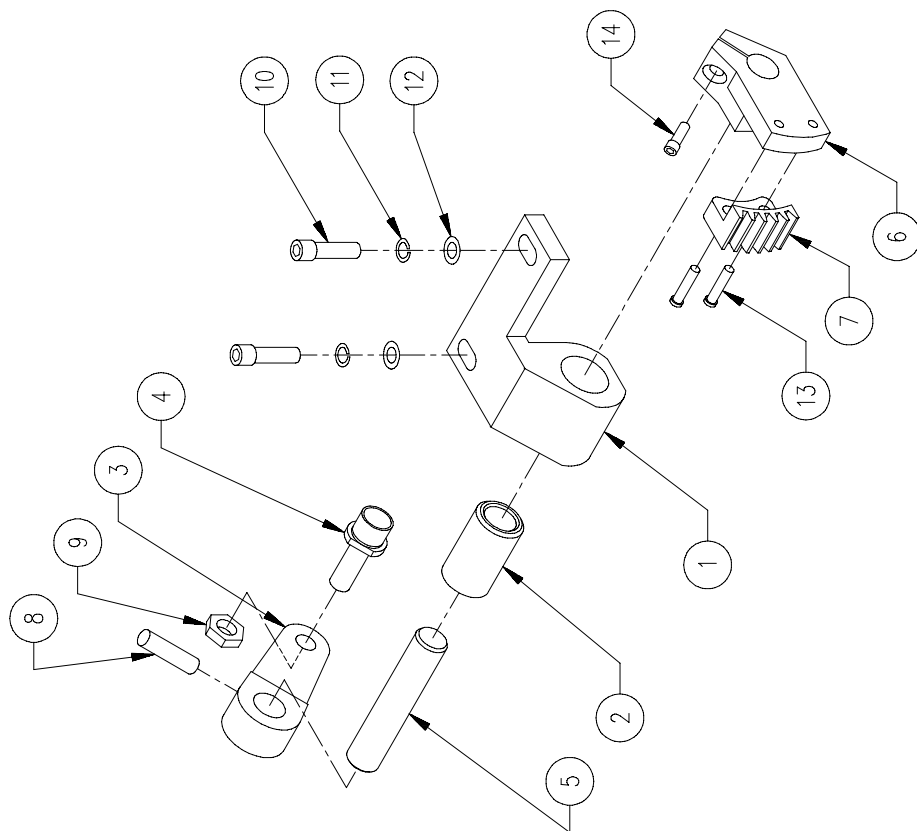


Figure 20

Take-Up Drive Lever**Reference Figure 20**

Item No.	Part Number	Item Description	Comments
1*	003567-01	Base, Drive, Lever, Take-Up, PHS II	
2*	001947-01	Bushing, Base, Drive, Lever, Take-Up	
3•	004821-01	Lever, Drive, Lever, Take-Up	
4	001983-01	Follower, Assembly	
5•	004820-01	Shaft, Drive, Lever, Take-Up	
6	001893-01	Case, Gear, Drive, Lever, Take-Up	
7	001894-01	Gear, Drive, Lever, Take-Up	
8•	660830-10	Pin, Groove, 1/8" OD x 5/8"	
9	003543-05	Nut, Jam, Hex, M5	
10	010171-16	Screw, Socket Head Cap, M4 x 0.7 x 16mm, Zinc Plate	
11	690427-04	Washer, Lock, Split, M4	
12	690439-04	Washer, Flat, M4	
13	671855-08	Screw, Pan Head Slotted, M3 x 0.5 x 8mm	
14	010171-10	Screw, Socket Head Cap, M4 x 0.7 x 10mm, Zinc Plate	

Note:

The following can be replaced as a factory built assembly:

- *005362-01 Assembly, Bushing, Take-Up Lever
- 004768-01 Lever, Drive, Lever, Take-up, Assembly

Grabber Blade

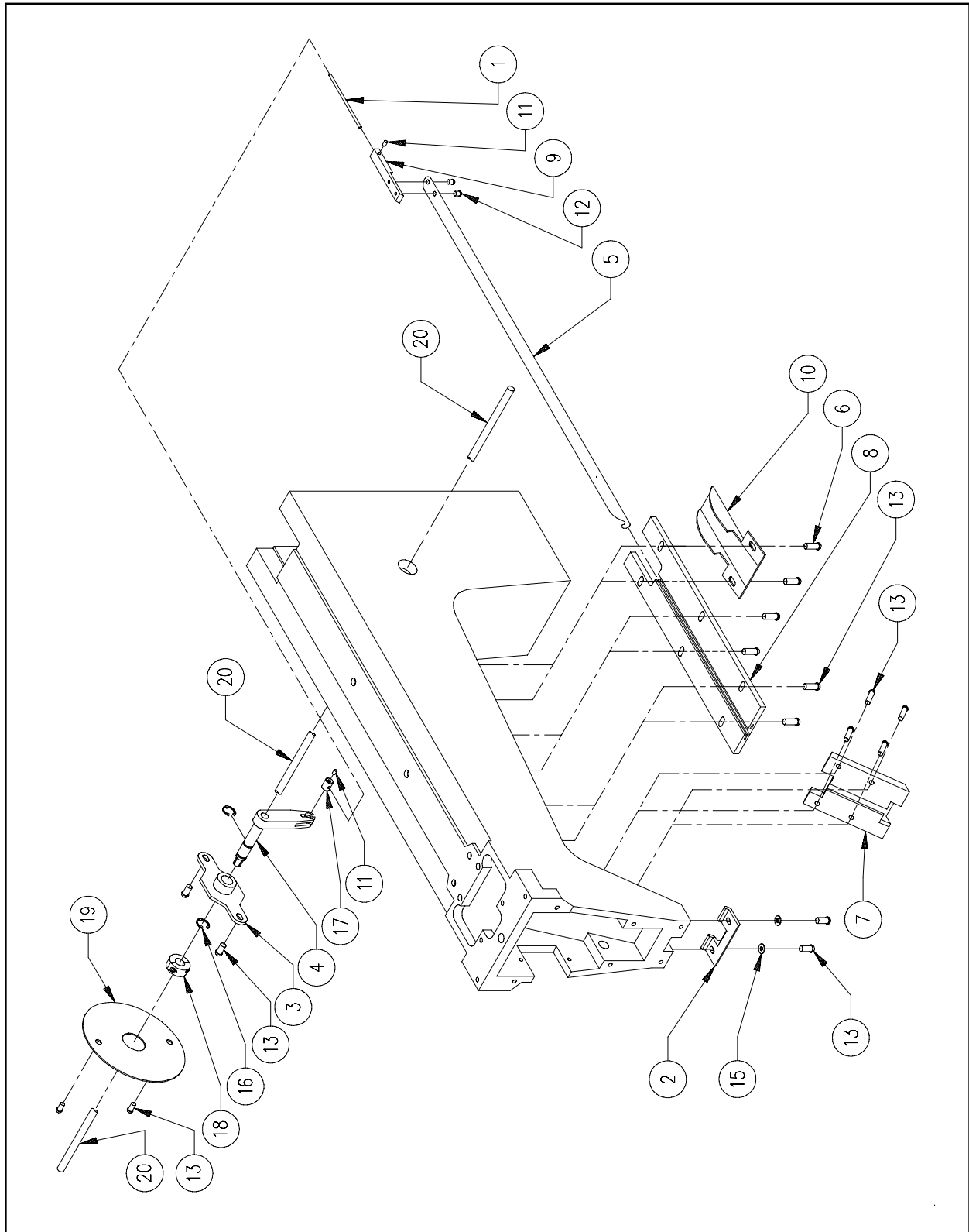


Figure 21

Grabber Blade**Reference Figure 21**

Item No.	Part Number	Item Description	Comments
1	003185-01	Rod, Guide	
2	10156	Guide, Grabber	
3	003168-01	Mount, w/Bearing	
4	003166-01	Arm, Actuator	
5	003586-01	Blade, Grabber	
6	003509-12	Screw, Button Head Socket, M4 x 0.7 x 12mm	
7	10157	Cover, Blade, Front	
8	003589-02	Cover, Blade, Top	
9	003590-01	Bracket, Transition	
10	003592-21	Cover, Blade, Rear	
11	001962-03	Screw, Set, Flat Point, M3 x 0.5 x 3mm	
12	670406-02	Screw, Button Head Cap, 4-40 x 1/8"	
13	003509-08	Screw, Button Head Socket, M4 x 0.7 x 8mm	
14	010171-10	Screw, Socket Head Cap, M4 x 0.7 x 10mm, Zinc Plate	
15	690439-04	Washer, Flat, M4	
16	003157-06	Ring, Retainer, Crescent	
17	003155-01	Swivel, Wire	
18	007139-01	Collar, Clamp	
19	002893-21	Cover, Grabber	
20	003178-01	Shaft, Pivot, Grabber	

Grabber Motor

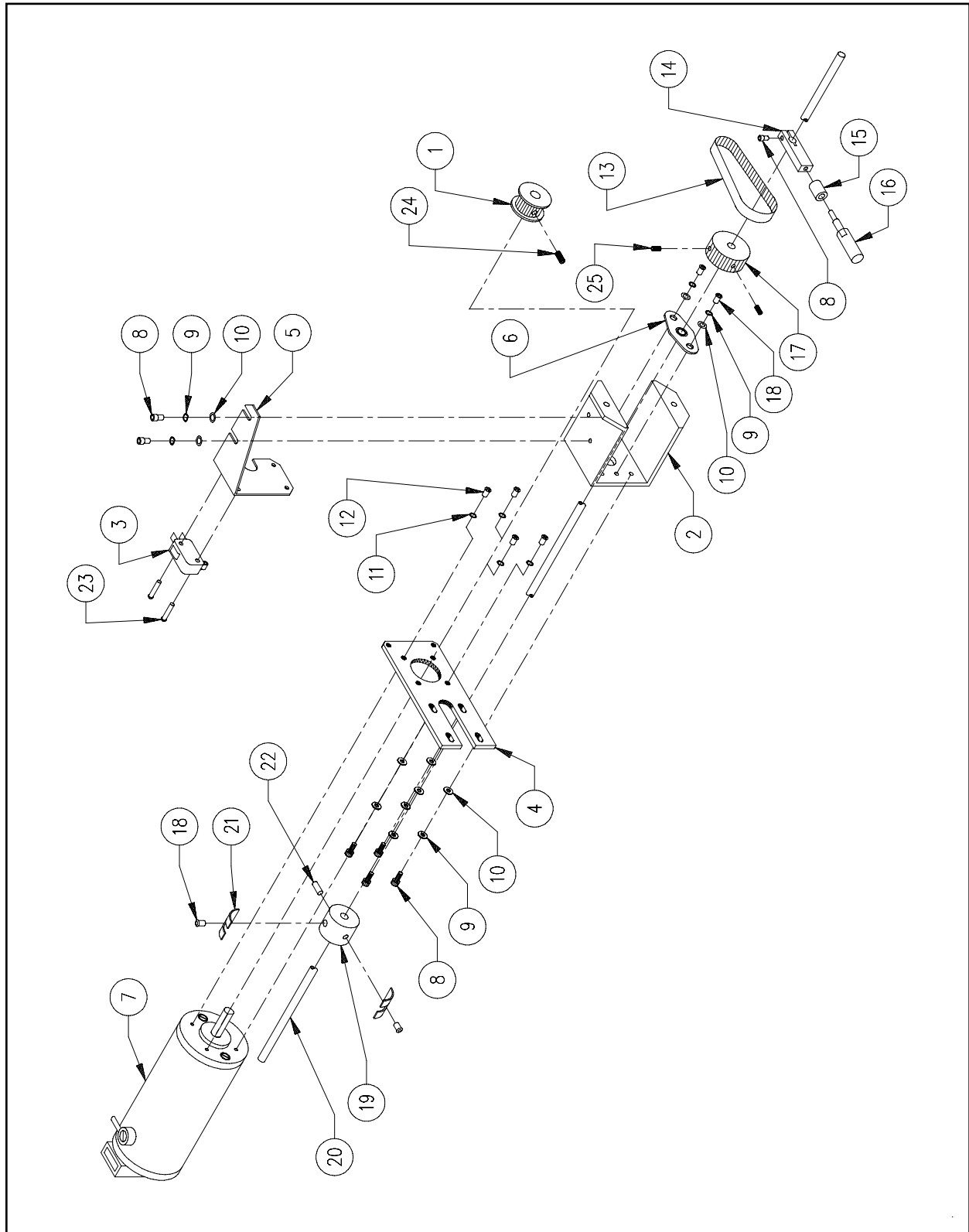


Figure 22

Grabber Motor Reference Figure 22

Item No.	Part Number	Item Description	Comments
1*	000363-05	Sprocket, 1/5P, 13T, .562" x .281"	
2*•	003170-01	Mount, Motor, Grabber, Threaded	
3*	282911-01	Switch, Limit, Roller	
4*	010451-01	Mount, Motor, Grabber	
5*	003502-01	Mount, Limit Switch	
6*	003525-01	Bearing, Flange, 6mm	
7*	000465-01	Motor, Grabber	
8	010171-10	Screw, Socket Head Cap, M4 x 0.7 x 10mm, Zinc Plate	
9	690427-04	Washer, Lock, Split, M4	
10	690439-04	Washer, Flat, M4	
11	690713-36	Washer, External Star, #6	
12	670174-10	Screw, Pan Head Phillips, 6-32 x 5/8"	
13*	003504-01	Belt, Timing, 39T, 1/5P	
14*	003180-01	Arm, Motor Stop	
15	003176-01	Bumper, Motor Stop	
16*	003156-01	Handle, Stop, Motor	
17*	003503-01	Sprocket, 1/5P, 20T	
18	011162-08	Screw, Button Head Socket, M4 x 0.7 x 8mm, Zinc Plate	
19*	003537-01	Mount, Limit Switch Stop	
20*	003178-01	Shaft, Pivot, Grabber	
21*	003538-01	Stop, Limit Switch	
22	001960-08	Screw, Set, Socket Head, M4 x 0.7 x 8mm	
23	009862-12	Screw, Pan Head Phillips, w/Star, M3 x 0.5 x 12mm	
24	670050-03	Screw, Set, Knurled Cup, 8-32 x 3/16"	
25	001960-08	Screw, Set, Flat Point, M4 x 0.7 x 8mm	

Note:

The following can be replaced as a factory built assembly:

*010232-01 Grabber, Motor, Assembly

•Non-trimmer machines use item 2 only

Cutter/Picker

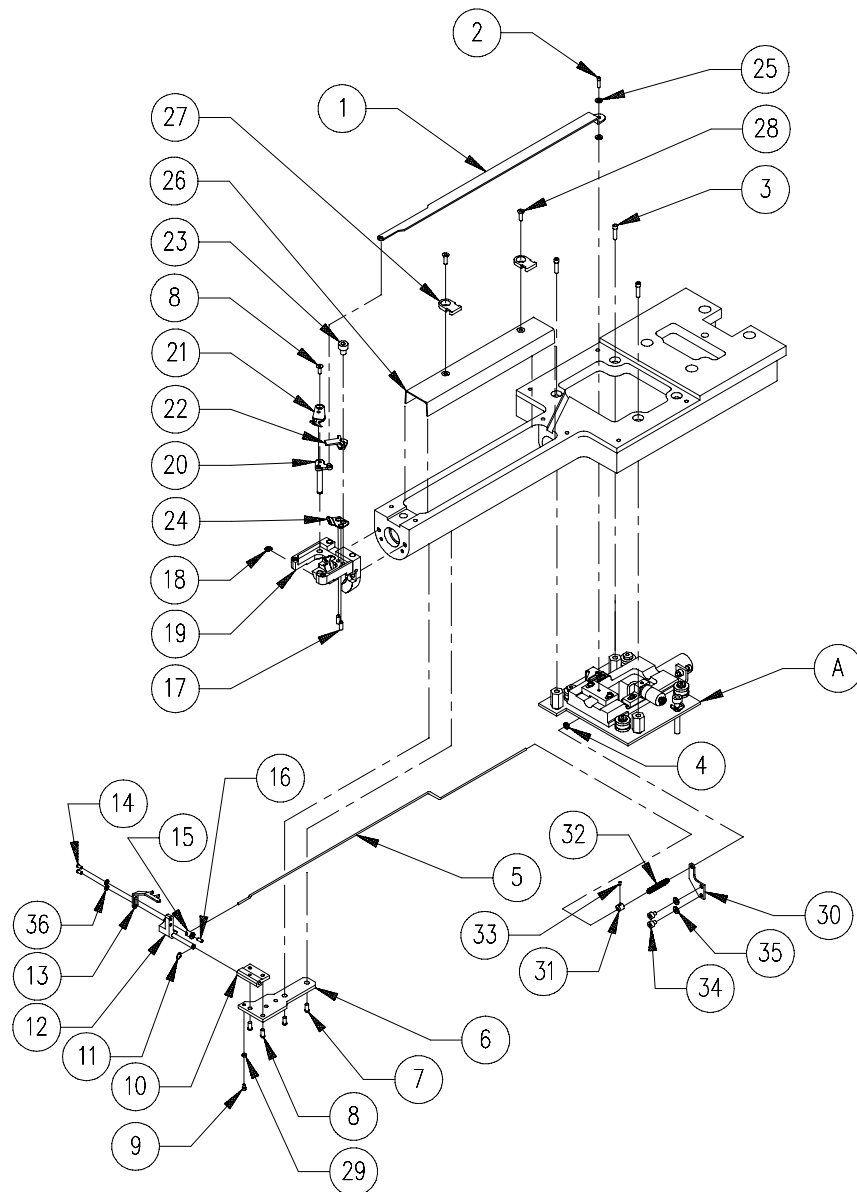


Figure 23

Cutter/Picker **Reference Figure 23**

Item No.	Part Number	Item Description	Comments
A	007265-01	Trimmer Drive	See Page 24-1
1	010609-01	Link, Connecting	
2	003679-01	Screw, Shoulder, 4-40 x 1/8" OD x 1/8"	
3	010172-16	Screw, Socket Head Cap, M5 x 0.8 x 16mm, Zinc Plate	
4	690364-32	Washer, Flat, #2, .032" Thick	
5	010355-01	Link, Connecting, Picker	
6	006526-01	Bracket, Picker	
7	003509-08	Screw, Button Head Socket, M4 x 0.7 x 8mm	
8	007443-06	Screw, Flat Head Socket, M3 x 0.5 x 6mm	
9	010170-10	Screw, Socket Head Cap, M3 x 0.5 x 10mm, Zinc Plate	
10	003511-01	Mount, Picker	
11	001955-08	Ring, Retainer, External, .125"	
12	003141-01	Base, Picker	
13	005615-01	Picker	
14	010170-06	Screw, Socket Head Cap, M3 x 0.5 x 6mm, Zinc Plate	
15	003131-01	Pin, Swivel, Front	
16	001962-03	Screw, Set, Flat Point, M3 x 0.5 x 3mm	
17	010188-01	Screw, Set, Cone Point, M3 x 0.5 x 6mm	
18	001955-15	Clip, Retaining, External, .188"	
19	10181	Bracket, Needle Plate	
20	10185	Arm, Drive, Movable Knife	
21	10186	Knife, Movable	
22	10187	Knife, Spring, Fixed	
23	001922-08	Screw, Socket Head Cap, M3 x 0.5 x 8mm	
24	10184	Presser, Under Thread	
25	005098-01	Spacer, Shaft, .128" ID x .317" OD x .03" Thick	
26	006387-01	Bracket, Bed, Cable	
27	004550-01	Mount, Cable Tie	
28	001926-10	Screw, Flat Head Socket, M4 x 0.7 x 10mm	
29	010178-03	Nut, Hex, M3	
30	008465-01	Bracket, Spring, Mount	
31	008467-01	Collar, Picker	
32	010892-01	Spring, Picker, Front	
33	003123-03	Screw, Set, Cup Point, M3 x 0.5 x 3mm	
34	010170-06	Screw, Socket Head Cap, M3 x 0.5 x 6mm, Zinc Plate	
35	690427-03	Washer, Lock, Split, M3	
36	690811-34	Washer, Internal Star, #4	

Trimmer Drive

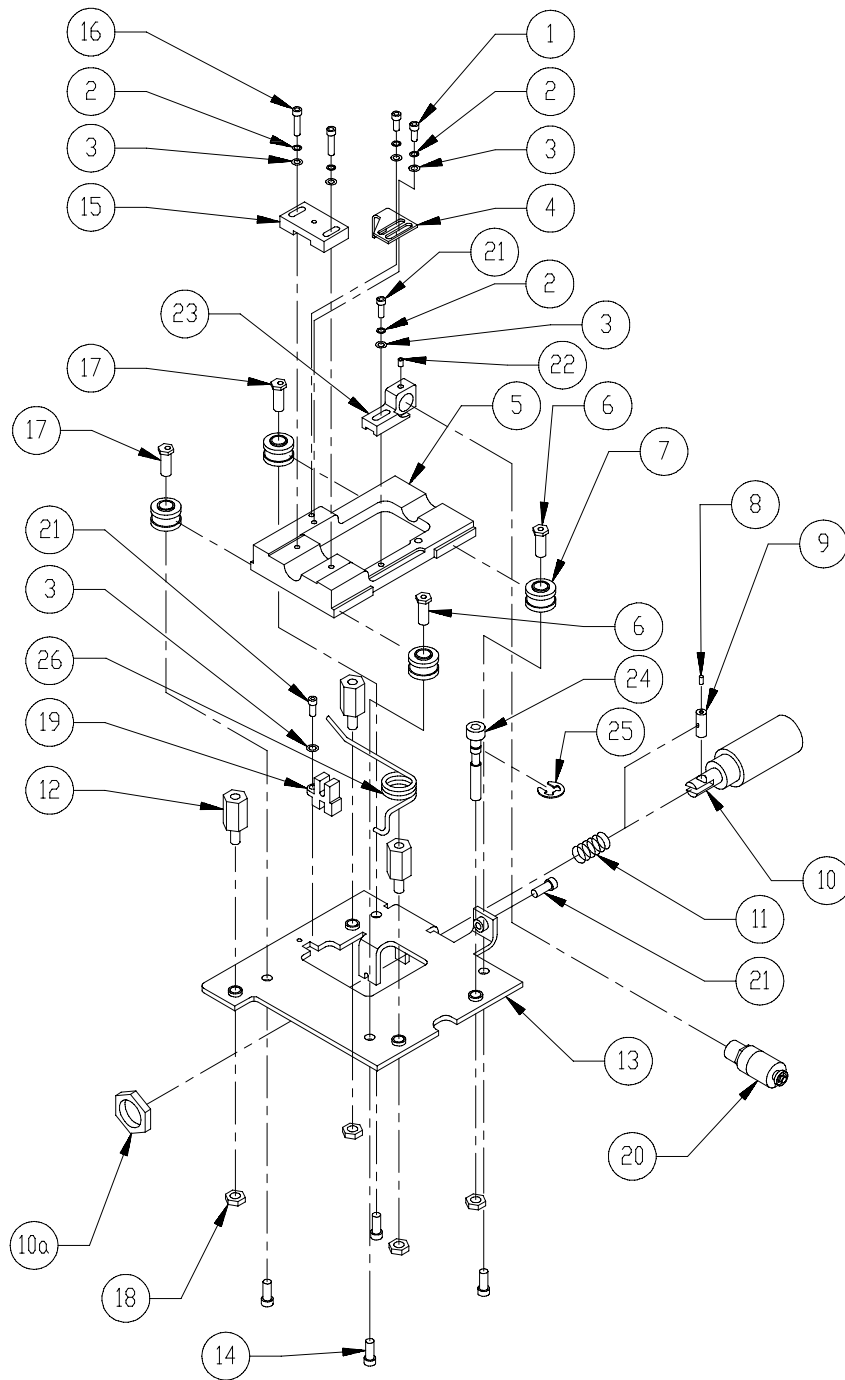


Figure 24

Trimmer Drive Reference Figure 24

Item No.	Part Number	Item Description	Comments
1	010170-06	Screw, Socket Head Cap, M3 x 0.5 x 6mm, Zinc Plate	
2	690427-03	Washer, Lock, Split, M3	
3	690439-03	Washer, Flat, M3	
4	005611-01	Bracket, Switch, Adjusting	
5	007258-01	Frame, Movable, Machined	
6	005661-01	Shaft, Roller, Movable Frame	
7	005669-01	Roller, Movable, Frame	
8	001962-06	Screw, Set, Flat Point, M3 x 0.5 x 6mm	
9	003627-01	Clamp, Swivel, Picker	
10*	007273-01	Picker, Solenoid, Assembly	
10a	-----	Nut, Panel, Solenoid	(Included with Item 10)
11	003686-01	Spring, Return, Solenoid	
12	004746-01	Standoff, 10mm Hex, M-F, M5 x 0.8 x 16mm	
13	007259-01	Bracket, Solenoid, Mounting	
14	670174-08	Screw, Pan Head Phillips, 6-32 x 1/2 "	
15	005609-01	Plate, Link Adjusting	
16	010170-14	Screw, Socket Head Cap, M3 x 0.5 x 14mm, Zinc Plate	
17	005661-02	Shaft, Roller, Movable Frame	
18	010178-05	Nut, Hex, M5	
19*	007264-01	Switch, Optical, Assembly	
20*	007262-01	Solenoid, Trimmer, Assembly	
21	010170-10	Screw, Socket Head Cap, M3 x 0.5 x 10mm, Zinc Plate	
22	001962-03	Screw, Set, Flat Point, M3 x 0.5 x 3mm	
23	007255-01	Mount, Solenoid, Trimmer	
24	007256-01	Bolt, Adjuster, Trimmer	
25	001955-15	Ring, Retaining, External, .188 "	
26	009202-01	Spring, Trimmer Home	

Note: The following can be replaced as a factory built assembly:

*007261-01 Trimmer, Picker, Solenoid, Opto, Assembly

X-Beam (1 of 3)

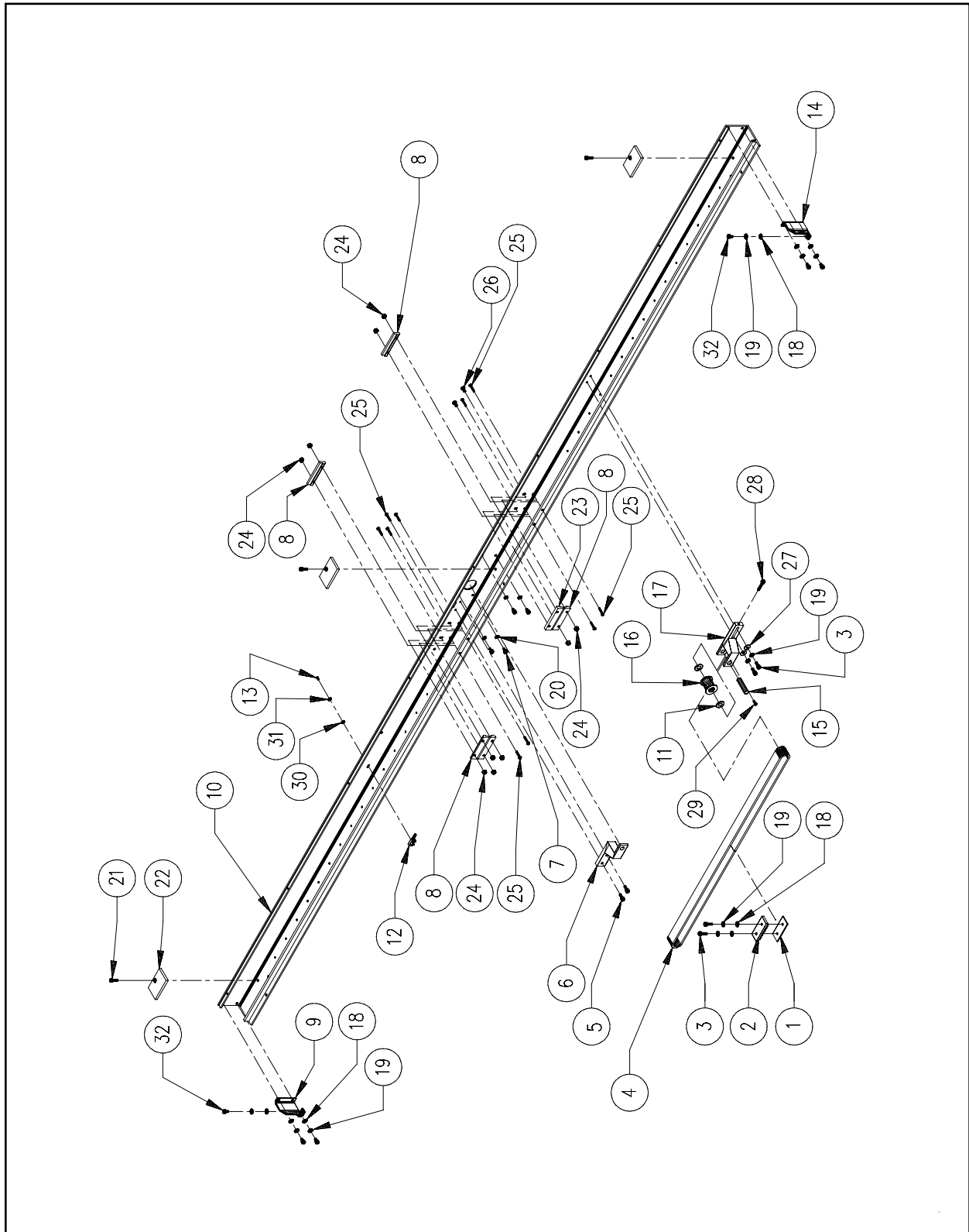


Figure 25

X-Beam (1 of 3)**Reference Figure 25**

Item No.	Part Number	Item Description	Comments
1	009930-01	Spacer, X-Belt	
2	011071-01	Clamp, X-Belt	
3	010171-16	Screw, Socket Head Cap, M4 x 0.7 x 16mm, Zinc Plate	
4	010997-02	Belt, Drive	
5	010171-12	Screw, Socket Head Cap, M4 x 0.7 x 12mm, Zinc Plate	
6	009939-01	Block, Drive Pulley	
7	010171-06	Screw, Socket Head Cap, M4 x 0.7 x 6mm, Zinc Plate	
8	011122-01	Guide, Long Carriage Block	
9	009936-01	Bracket, Left End	
10	009932-03	Base, X-Axis	
11	009465-01	Washer, AIN, Drive and Return	
12	011072-01	Sensor, Optical Switch, Assembly	
13	011162-12	Screw, Button Head Socket, M4 x 0.7 x 12mm, Zinc Plate	
14	009937-01	Bracket, Right End	
15	009935-01	Shaft, X-Return	
16	10160	Pulley, Return, X-Axis, Assembly	
17	009938-01	Block, Return Pulley	
18	690439-04	Washer, Flat, M4	
19	690427-04	Washer, Lock, Split M4	
20	010167-04	Washer, Lock, External Star, M4	
21	010171-12	Screw, Socket Head Cap, M4 x 0.7 x 12mm, Zinc Plate	
22	010960-01	Stiffener, Rear, Rail	
23	011132-01	Guide, Long Carriage Block, Threaded	
24	009561-03	Nut, Kep, M3	
25	011161-14	Screw, Button Head Socket, M3 x 0.5 x 14mm, Zinc Plate	
26	011162-08	Screw, Button Head Socket, M4 x 0.7 x 8mm, Zinc Plate	
27	010572-05	Washer, Flat, Large Pattern	
28	010171-20	Screw, Socket Head Cap, M4 x 0.7 x 20mm, Zinc Plate	
29	011161-06	Screw, Button Head Socket, M3 x 0.5 x 6mm, Zinc Plate	
30	690034-34	Washer, Flat, #4	
31	690033-34	Washer, Lock, Split, #4	
32	010171-08	Screw, Socket Head Cap, M4 x 0.7 x 8mm, Zinc Plate	

X-Beam (2 of 3)

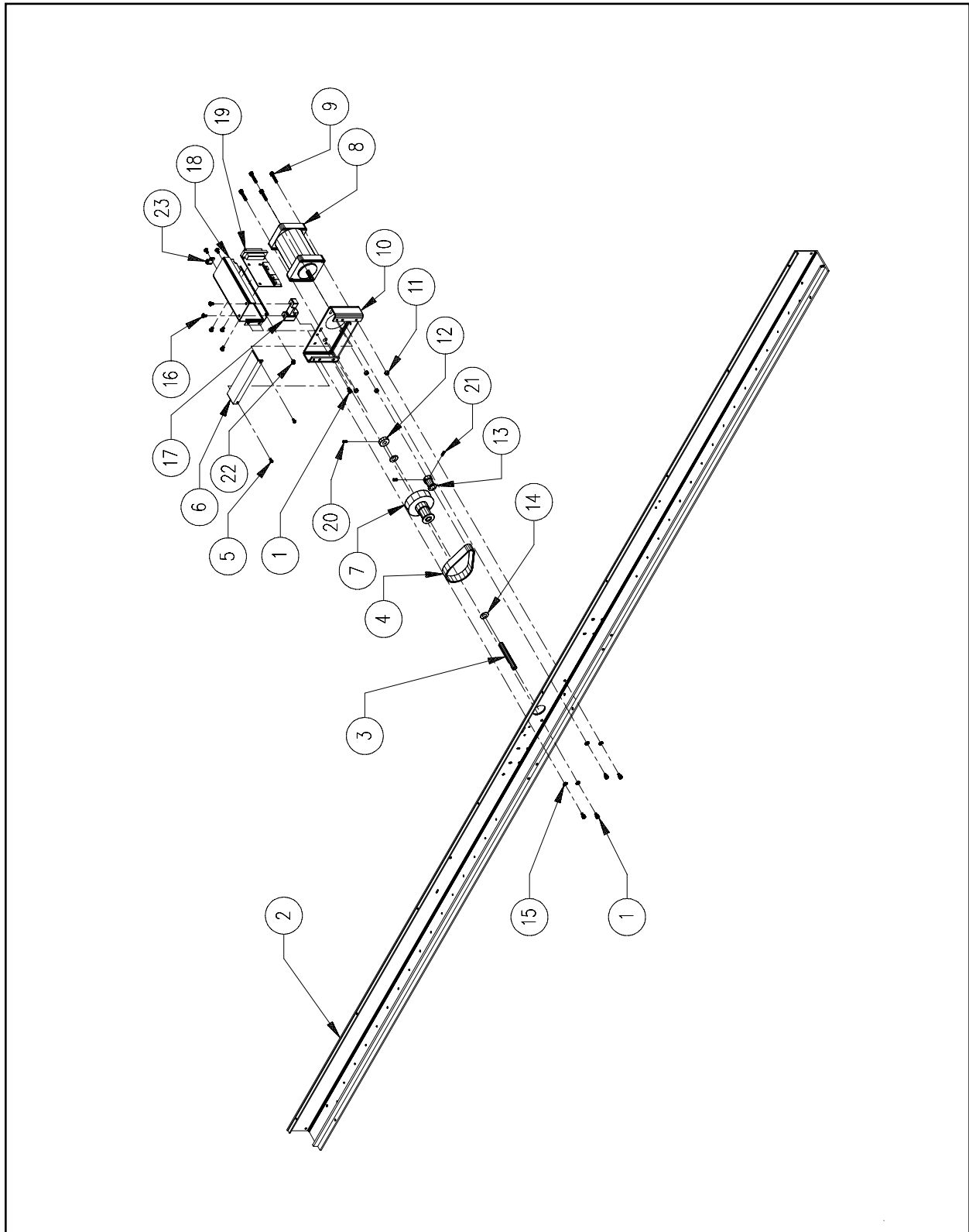


Figure 26

X-Beam (2 of 3)**Reference Figure 26**

Item No.	Part Number	Item Description	Comments
1	010171-06	Screw, Socket Head Cap, M4 x 0.7 x 6mm, Zinc Plate	
2	009932-03	Base, X-Axis	
3	009934-01	Shaft, X-Axis	
4	010998-03	Belt, X-Drive Motor	
5	009862-06	Screw, Pan Head Phillips, w/Star, M3 x 0.5 x 6mm	
6	009945-01	Cover, X-Motor	
7	011100-01	Pulley, Drive, X-Axis, Assembly	
8	009946-01	Motor, X-Drive	
9	010171-16	Screw, Socket Head Cap, M4 x 0.7 x 16mm, Zinc Plate	
10	009942-05	Bracket, Motor Mount	
11	009561-04	Nut, Kep, M4	
12	010011-01	Spacer, Drive	
13	010999-03	Pulley, Motor	
14	009465-01	Washer, AIN, Drive and Return	
15	010167-04	Washer, Lock, External Star, M4	
16	010171-06	Screw, Socket Head Cap, M4 x 0.7 x 6mm, Zinc Plate (x7)	
17	010911-02	Clamp, Cable, X-PCB Rack	
18	010389-03	Cover, PCB, X-Beam	
19	010387-03	PCB, X-Beam, X-Rack, Assembly	
20	001962-03	Screw, Set, Socket, Flat Point, M3 x 0.5 x 3mm	
21	001960-03	Screw, Set, Socket, Flat Point, M4 x 0.7 x 3mm	
22	10066-01	Grommet, Round, .125" ID x .343" OD x 1/16" Groove	
23	340743-01	Clamp, Cable, Nylon, 1/8" ID, Black	

X-Beam (3 of 3)

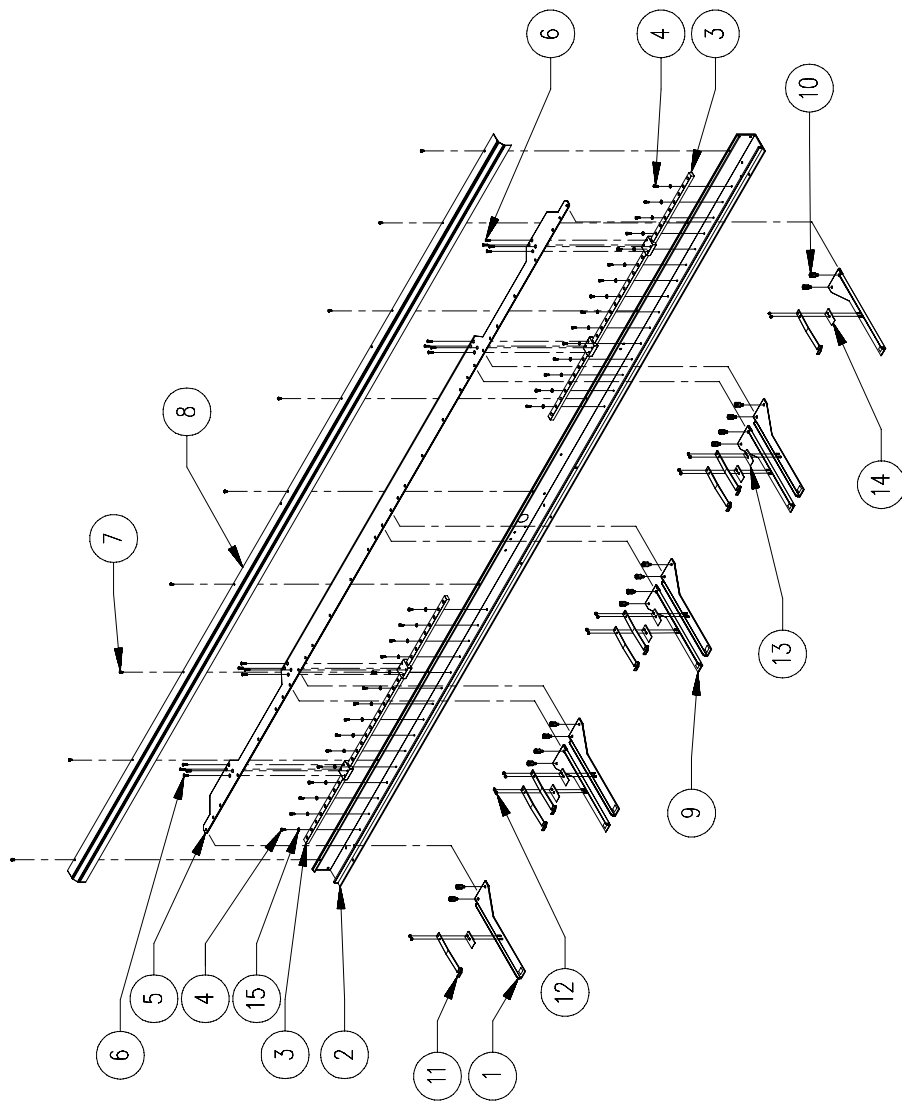


Figure 27

X-Beam (3 of 3)**Reference Figure 27**

Item No.	Part Number	Item Description	Comments
1*	010618-01	Bracket, Tubular Frame, Left	
2	009932-03	Base, X-Axis	
3	009464-01	Bearing, Linear	
4	010170-08	Screw, Socket Head Cap, M3 x 0.5 x 8mm, Zinc Plate	
5	009931-03	Carriage, Rack	
6	001935-10	Screw, Flat Head Phillips, M3 x 0.5 x 10mm	
7	010170-06	Screw, Socket Head Cap, M3 x 0.5 x 6mm, Zinc Plate	
8	009933-02	Cover, X-Axis	
9•	009395-01	Bracket, Tubular Frame, Right	
10	010410-03	Screw, Thumb, Assembly	
11*•	010256-02	Clip, Spring, Tubular	
12*•	003573-03	Nut, Nylock, M3	
13*	008214-01	Locator, Left	
14•	008213-01	Locator, Right	
15	690427-03	Washer, Lock, Split, M3	

Note:

The following can be replaced as a factory built assembly:

- *010305-01 Bracket, Tubular, Left, Assembly
- 010306-01 Bracket, Tubular, Right, Assembly

Y-Drive Motor

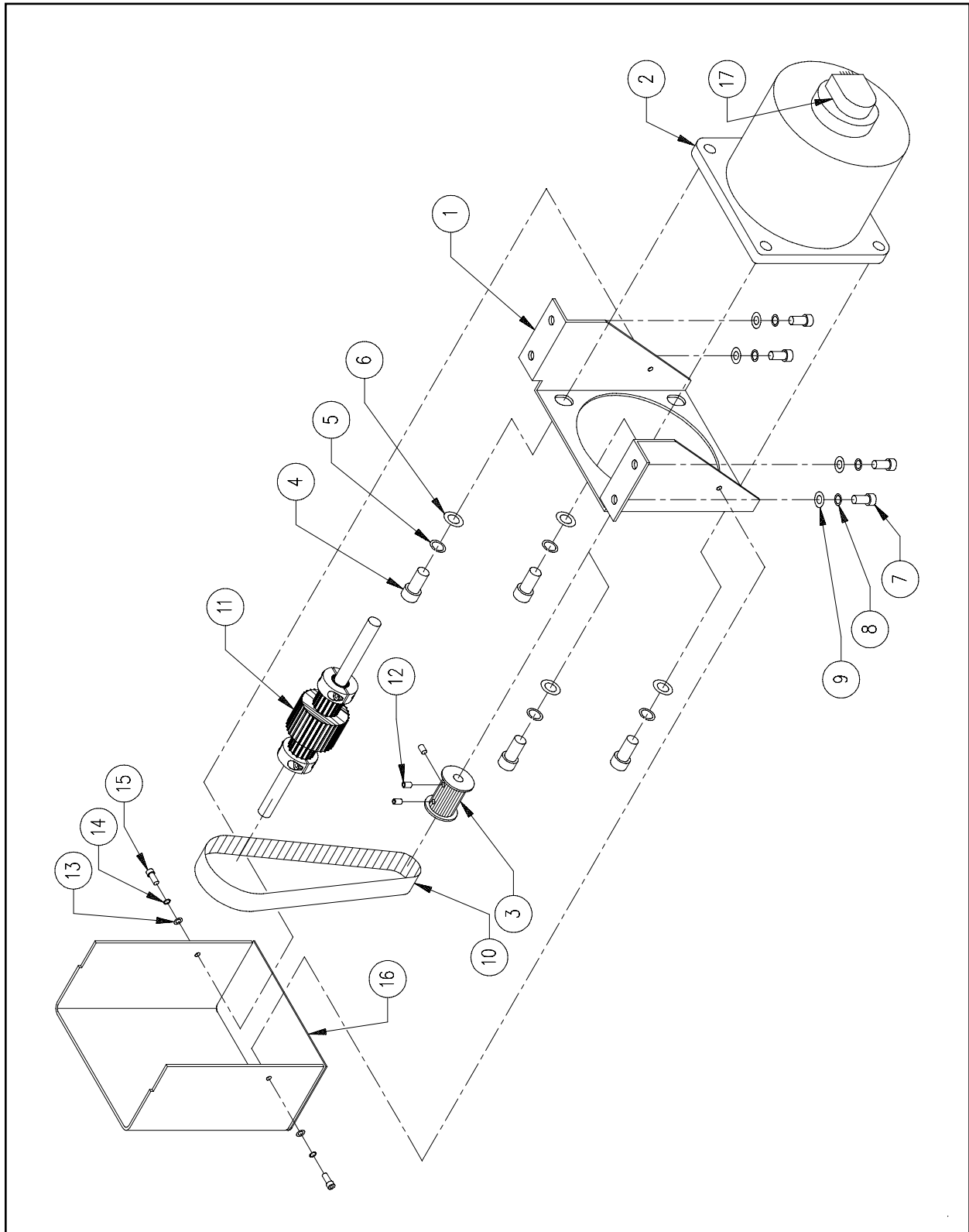


Figure 28

Y-Drive Motor**Reference Figure 28**

Item No.	Part Number	Item Description	Comments
1	011055-02	Mount, Y-Drive Motor	
2•	010590-02	Motor, Y-Rack	
3•	010977-02	Pulley, Motor, Y-Axis	
4	011145-10	Screw, Socket Head Cap, 3/8-16 x 5/8", Zinc Plate	
5	690033-06	Washer, Lock, Split, 3/8"	
6	690034-06	Washer, Flat, 3/8"	
7	010174-16	Screw, Socket Head Cap, M8 x 1.25 x 16mm, Zinc Plate	
8	690427-08	Washer, Lock, Split, M8	
9	690439-08	Washer, Flat, M8	
10	010980-03	Belt, Timing, 1/5P, 72T	
11	010984-03	Pulley, Y-Drive	(reference only)
12	001960-03	Screw, Set, Flat Point, M4 x 0.7 x 3mm	
13	690034-38	Washer, Flat, #8	
14	690033-38	Washer, Lock, Split, #8	
15	010171-08	Screw, Socket Head Cap, M4 x 0.7 x 8mm, Zinc Plate	
16	007041-01	Cover, Motor, X-Y Drive	
17*	006306-01	Encoder, Motor, 1000 Line	

Note:

The following can be replaced as a factory built assembly:

•011103-01 Pulley, Motor, Y-Axis, Assembly

*Item 17 can be replaced by a service technician only using Kit Number 009028-01 Kit, Encoder Replace, X & Y Motor and Part Replacement Instruction 110262-01 Instruct, Encoder Replacement

Y-Drive

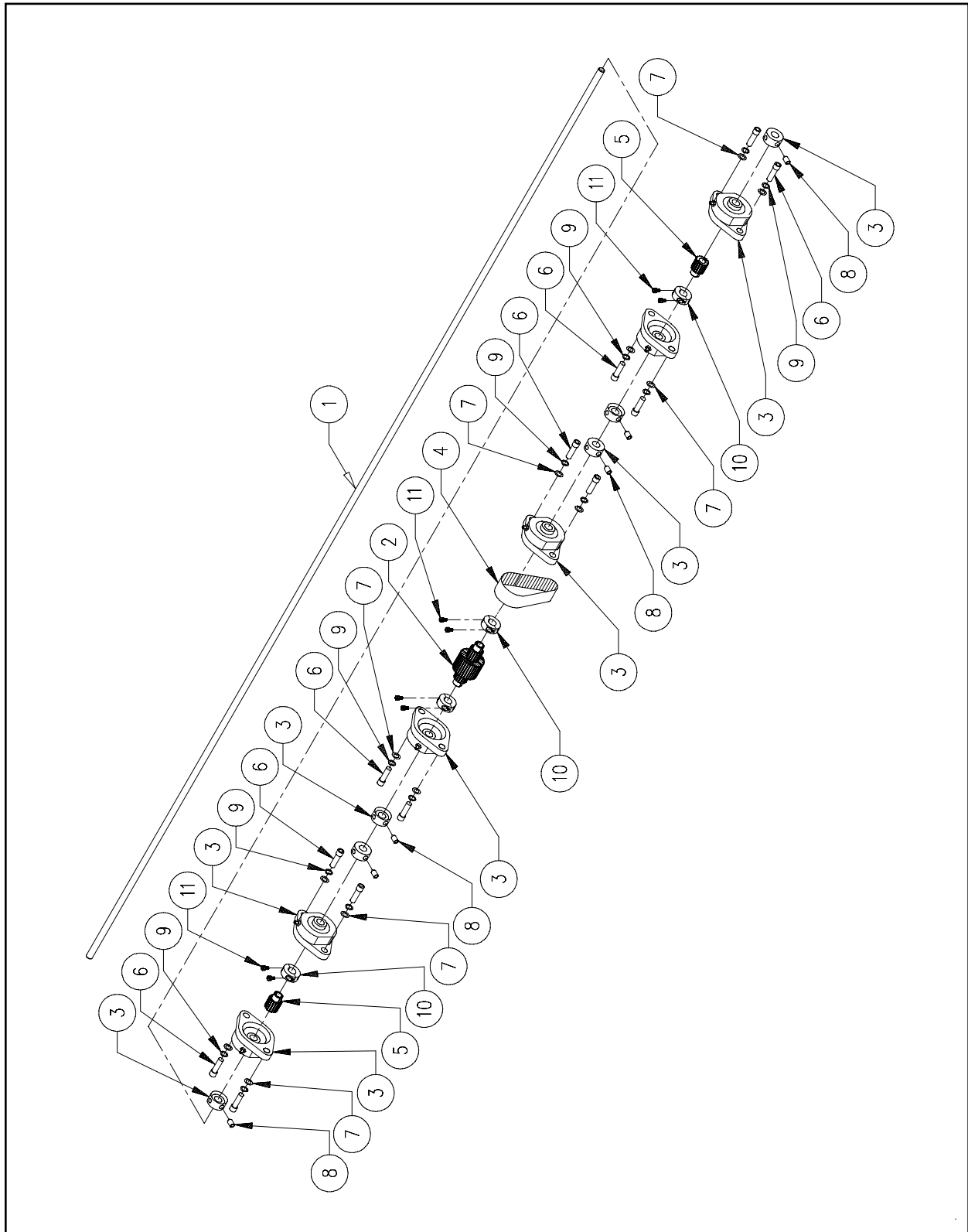


Figure 29

Y-Drive			Reference Figure 29
Item No.	Part Number	Item Description	Comments
1	010986-02	Shaft, Drive, Y-Axis	
2	010984-03	Pulley, Y-Drive	
3	343054-08	Bearing, Centering, Flange, 1/2 "	
4	010980-03	Belt, Timing, 72T, 1/5P	
5	010985-05	Pulley, Motor, Y-Drive, Assembly	
6	010174-25	Screw, Socket Head Cap, M8 x 1.25 x 25mm, Zinc Plate	
7	690439-08	Washer, Flat, M8	
8	672929-11	Screw, Set, Silver Tip, 1/4-20 x 1/4 "	
9	690427-08	Washer, Split, Lock, M8	
10	010996-01	Clamp, 2-Piece, 18mm Bore	
11	010172-08	Screw, Socket Head Cap, M5 x 0.8 x 8mm	(Part of Item 10)

Z-Drive (1 of 2)

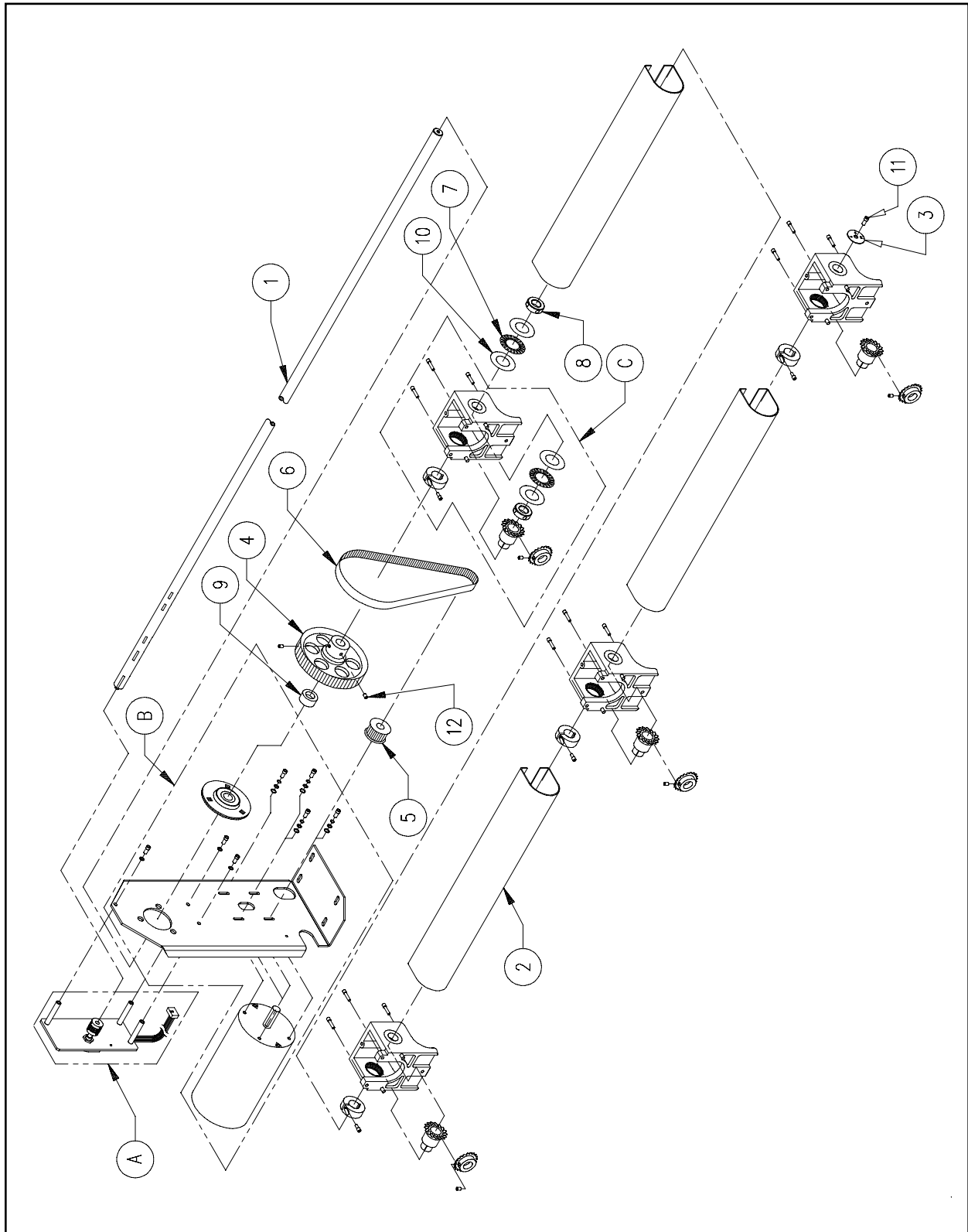


Figure 30

Z-Drive (1 of 2)**Reference Figure 30**

Item No.	Part Number	Item Description	Comments
A	-----	Encoder Plate	See Page 33-1
B	-----	Z-Drive Mount	See Page 32-1
C	-----	Gearbox	See Page 12-1
1	003225-01	Shaft, Drive, Z-Axis	
2	006676-01	Cover, Z-Shaft, 16.69"	
3	003237-01	Disk, Indicator, Headup	
4	000381-01	Sprocket, 5mmP, 72T	
5	000382-01	Sprocket, 5mmP, 20T	
6	342751-13	Belt, Timing, 5mmP	
7	004945-01	Bearing, Thrust, 15mm	
8	342630-01	Collar, Shaft, 15mm ID	
9	005435-01	Spacer, Z-Shaft	
10	693155-15	Washer, Thrust, 15mm ID	
11	010173-12	Screw, Socket Head Cap, M6 x 1.0 x 12mm, Zinc Plate	
12	670872-04	Screw, Set, Knurled Cup, 1/4-20 x .25"	

Z-Drive (2 of 2)

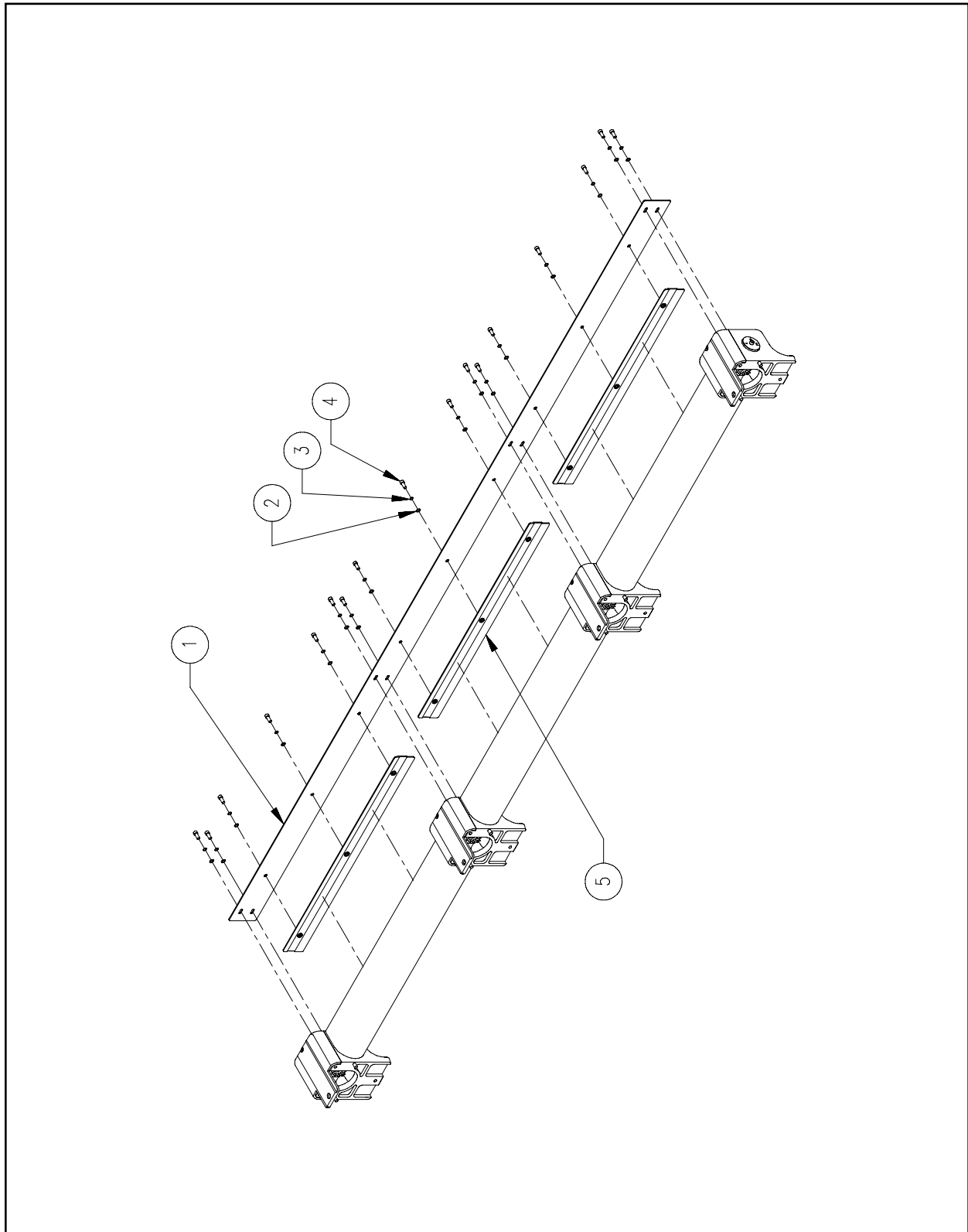


Figure 31

Z-Drive (2 of 2)**Reference Figure 31**

Item No.	Part Number	Item Description	Comments
1	006661-01	Plate, Cover, Z-Shaft	
2	690439-04	Washer, Flat, M4	
3	690427-04	Washer, Lock, Split, M4	
4	010171-10	Screw, Socket Head Cap, M4 x 0.7 x 10mm, Zinc Plate	
5	006660-01	Plate, Clamp, Z-Shaft	

Z-Drive Mount

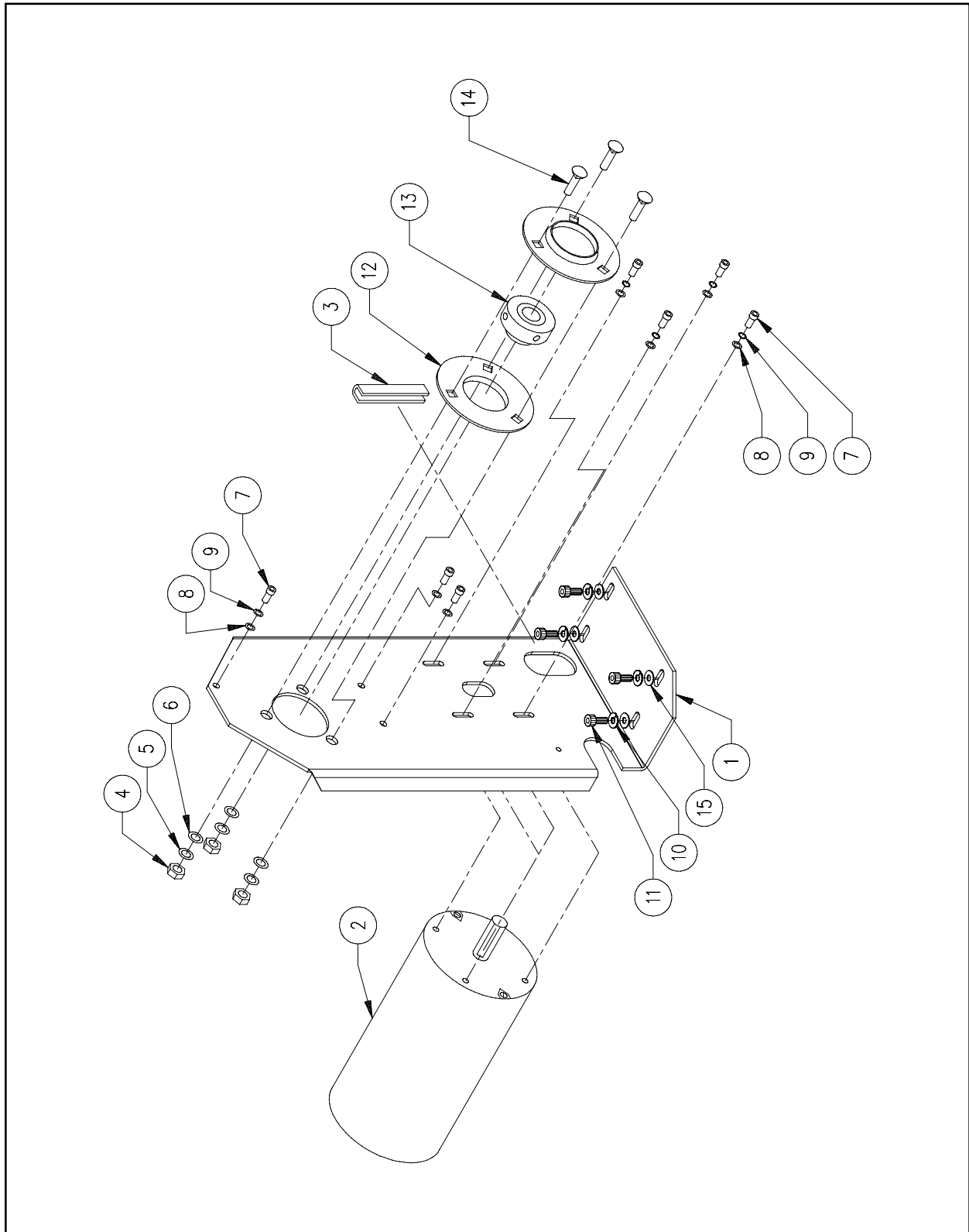


Figure 32

Z-Drive Mount**Reference Figure 32**

Item No.	Part Number	Item Description	Comments
1	009095-04	Bracket, Z-Drive Motor	
2	010495-02	Motor, Z-Axis, Assembly	
3	862294-01	Protector, Edge, Rubber, 3/32 " x 5/16 "	
4	680032-04	Nut, Hex, 1/4-20	
5	690033-04	Washer, Lock, Split, 1/4 "	
6	690034-04	Washer, Flat, 1/4 "	
7	010183-04	Screw, Socket Head Cap, 8-32 x 1/2 "	
8	690034-38	Washer, Flat, #8	
9	690033-38	Washer, Lock, Split, #8	
10	690427-05	Washer, Lock, Split, M5	
11	010172-12	Screw, Socket Head Cap, M5 x 0.8 x 12mm, Zinc Plate	
12	005437-01	Flange, Pair, Bearing, Z-Drive	
13	005436-01	Bearing, Spherical, 15mm ID	
14	005438-12	Bolt, Carriage, 1/4-20 x 3/4 "	
15	690439-05	Washer, Flat, M5	

Encoder Plate

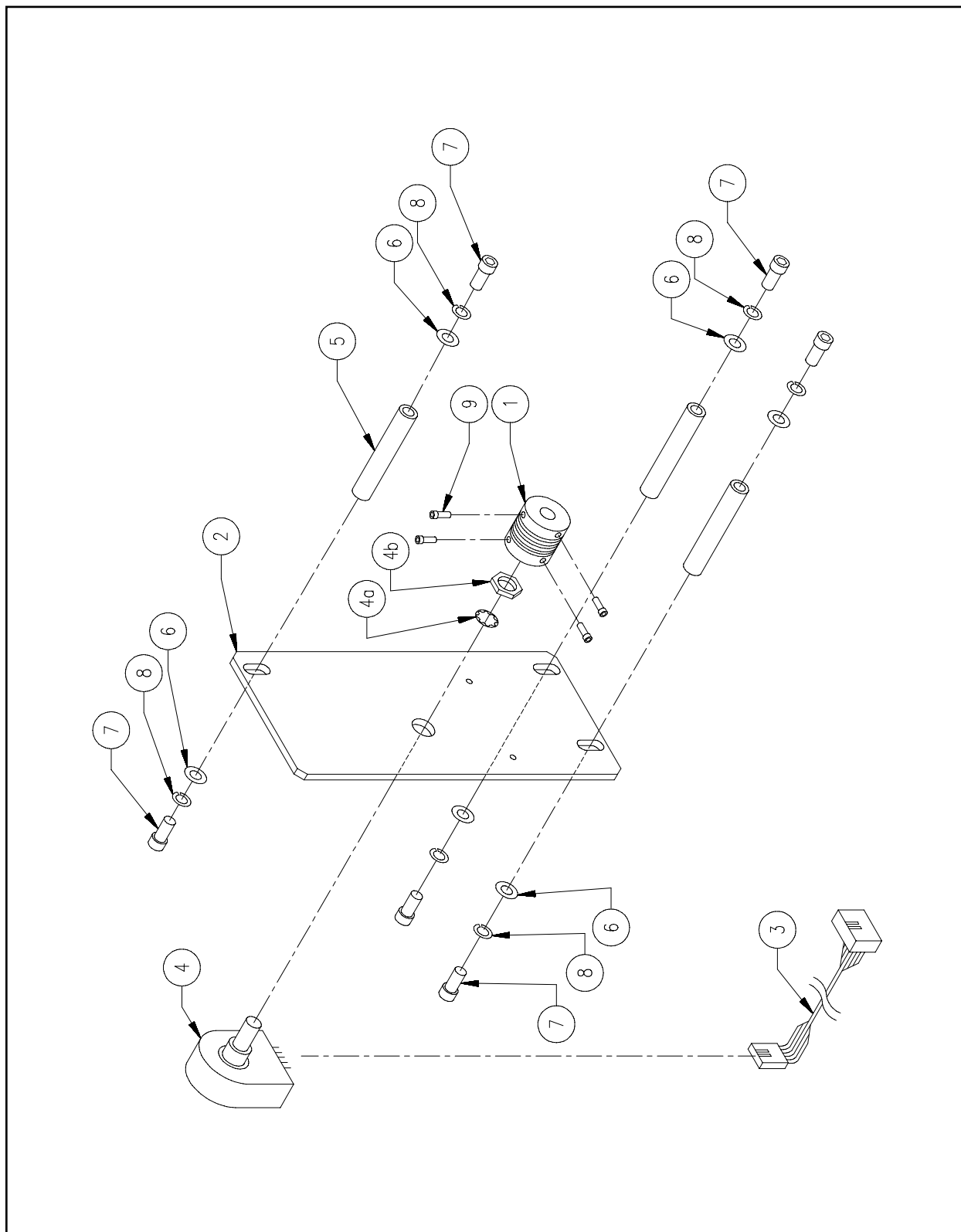


Figure 33

Encoder Plate			Reference Figure 33
Item No.	Part Number	Item Description	Comments
1	003553-01	Coupler, Shaft, Helical, 1/4" x 1/4"	
2	004790-01	Plate, Mounting, Encoder	
3	010933-01	Harness, YZ Axis	
4	004729-01	Encoder, Z-Axis	
4a	-----	Washer, Lock	(Included in Item #4)
4b	-----	Nut, Panel	(Included in Item #4)
5	712934-28	Standoff, Round, Female, 8-32 x 1.75"	
6	690034-38	Washer, Flat, #8	
7	010183-04	Screw, Socket Head Cap, 8-32 x 1/2", Zinc Plate	
8	690033-38	Washer, Split, Lock, #8	
9	011143-03	Screw, Socket Head Cap, 6-32 x 3/8", Zinc Plate	

Left Y-Carriage

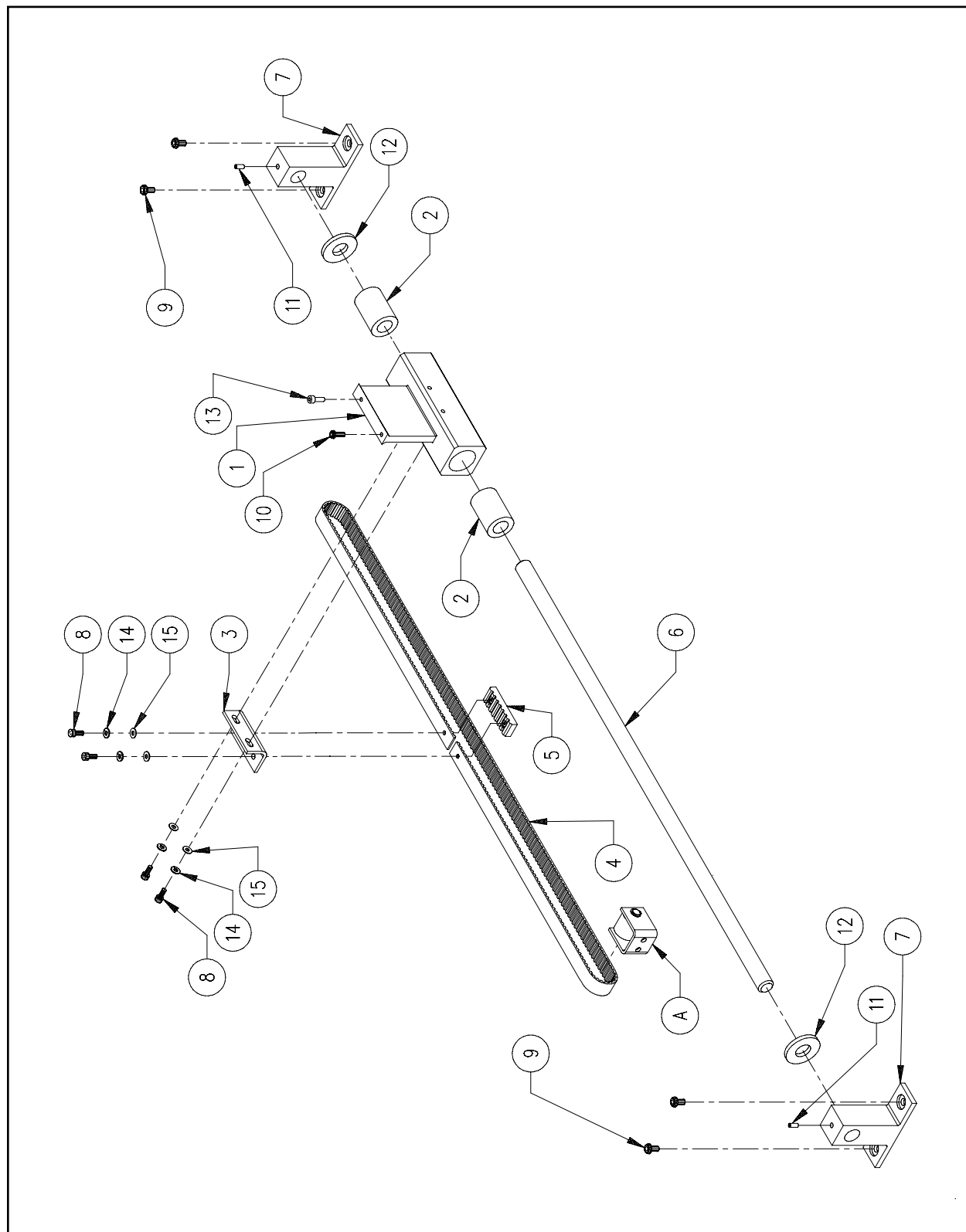


Figure 34

Left Y-Carriage**Reference Figure 34**

Item No.	Part Number	Item Description	Comments
A	011015-02	Pulley, Y-Idler, Y-Axis, Assembly	See Page 35-1
1*	011151-01	Carriage, Y-Axis, End	
2*	005342-08	Bearing, Sleeve, Frelon	
3	010982-02	Bracket, Clamp, Belt	
4	010981-02	Belt, Y-Drive	
5	010983-01	Clamp, Belt	
6	452749-01	Rail, Y-Axis	
7	009140-01	Support, Rail, Y-Axis	
8	010171-12	Screw, Socket Head Cap, M4 x 0.7 x 12mm, Zinc Plate	
9	011163-10	Screw, Button Head Socket, M5 x 0.8 x 10mm, Zinc Plate	
10	011162-12	Screw, Button Head Cap, M4 x 0.7 x 12mm	
11	010184-06	Screw, Set, Socket, Brass Tip, M4 x 0.7 x 6mm	
12	342910-01	Washer, Rubber, 1/2" ID	
13	010171-12	Screw, Socket Head Cap, M4 x 0.7 x 12mm, Zinc Plate	
14	690427-04	Washer, Lock, Split, M4	
15	690439-04	Washer, Flat, M4	

Note:

The following can be replaced as a factory built assembly:

*010181-02 Carriage, Y-Axis, Right/Left, Assembly

Y-Idler Pulley

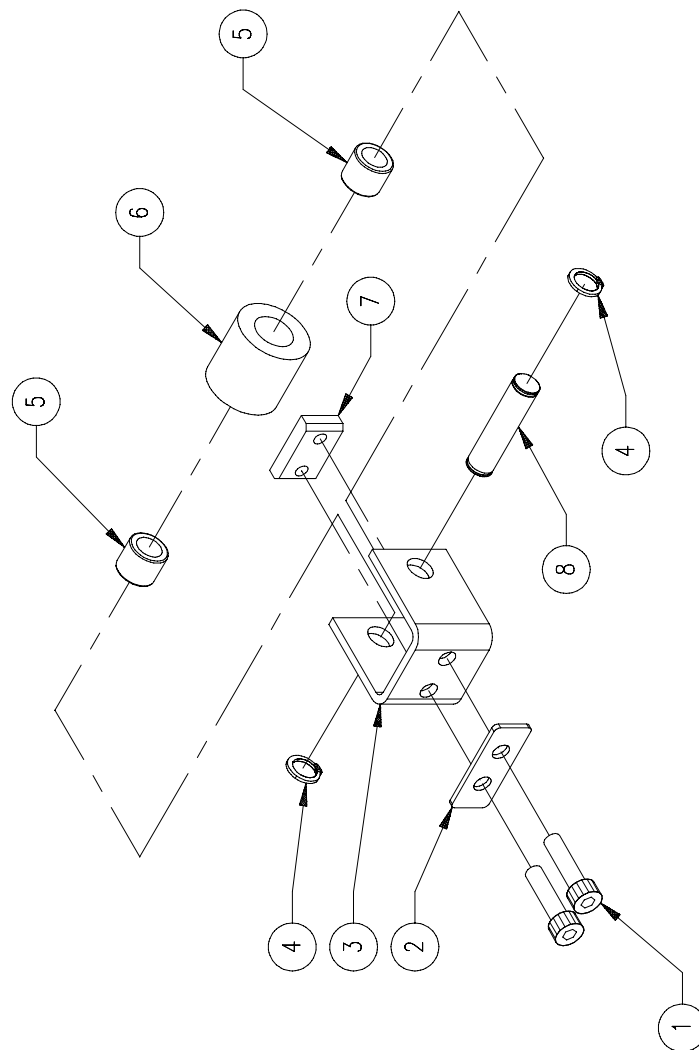


Figure 35

Y-Idler Pulley**Reference Figure 35**

Item No.	Part Number	Item Description	Comments
1	010172-20	Screw, Socket Head Cap, M5 x 0.8 x 20mm, Zinc Plate	
2	010994-01	Plate, Washer, Idler	
3*	010978-02	Bracket, Idler, Y-Axis	
4*	010991-01	Ring, Retaining, 7.4mm	
5*	009947-01	Bearing, Needle	
6*	10159	Pulley, Idler	
7	010990-01	Plate, Nut, Y-Idler	
8*	010975-01	Shaft, Idler, Y-Axis	

Note:

The following can be replaced as a factory built assembly:

*011015-02 Pulley, Y-Idler, Y-axis, Assembly

Right Y-Carriage

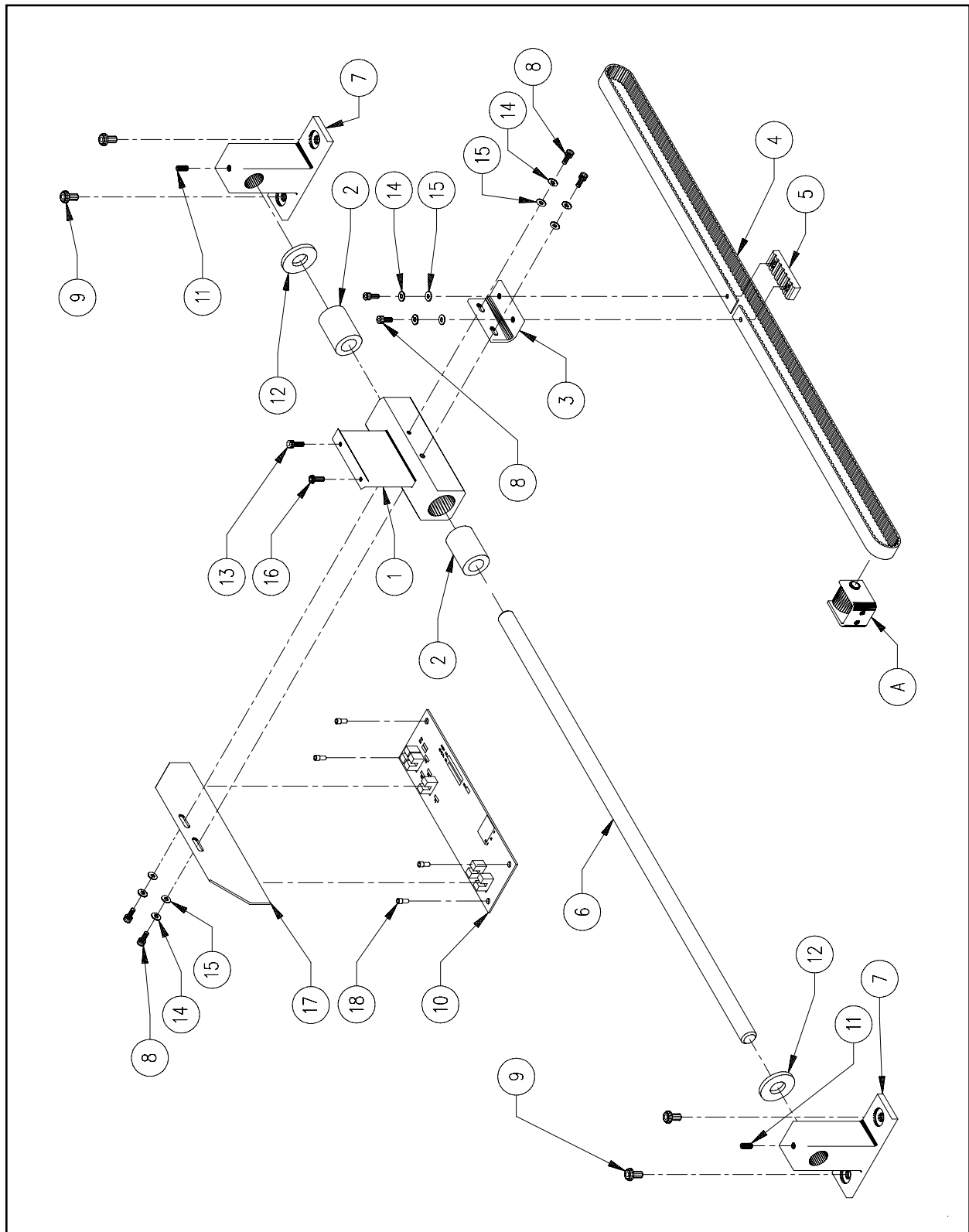


Figure 36

Right Y-Carriage**Reference Figure 36**

Item No.	Part Number	Item Description	Comments
A	011015-02	Pulley, Y-Idler, Y-Axis, Assembly	See Page 35-1
1*	011151-01	Carriage, Y-Axis, End	
2*	005342-08	Bearing, Sleeve, Frelon	
3	010982-02	Bracket, Clamp, Belt	
4	010981-02	Belt, Y-Drive	
5	010983-01	Clamp, Belt	
6	452749-01	Rail, Y-Axis	
7	009140-01	Support, Rail, Y-Axis	
8	010171-12	Screw, Socket Head Cap, M4 x 0.7 x 12mm, Zinc Plate	
9	011163-10	Screw, Button Head Socket, M5 x 0.8 x 10mm, Zinc Plate	
10	010280-03	PCB, Y-Home Limit, Assembly	
11	010184-06	Screw, Set, Socket, Brass Tip, M4 x 0.7 x 6mm	
12	342910-01	Washer, Rubber, 1/2" ID	
13	010171-16	Screw, Socket Head Cap, M4 x 0.7 x 16mm, Zinc Plate	
14	690427-04	Washer, Lock, Split, M4	
15	690439-04	Washer, Flat, M4	
16	011162-12	Screw, Button Head Socket, M4 x 0.7 x 12mm, Zinc Plate	
17	010177-02	Flag, Y-Home Limit	
18	009863-08	Screw, Pan Head Phillips, M4 x 0.7 x 8mm	

Note:

The following can be replaced as a factory built assembly:

*010181-01 Carriage, Y-Axis, Right/Left, Assembly

Center Y-Carriage

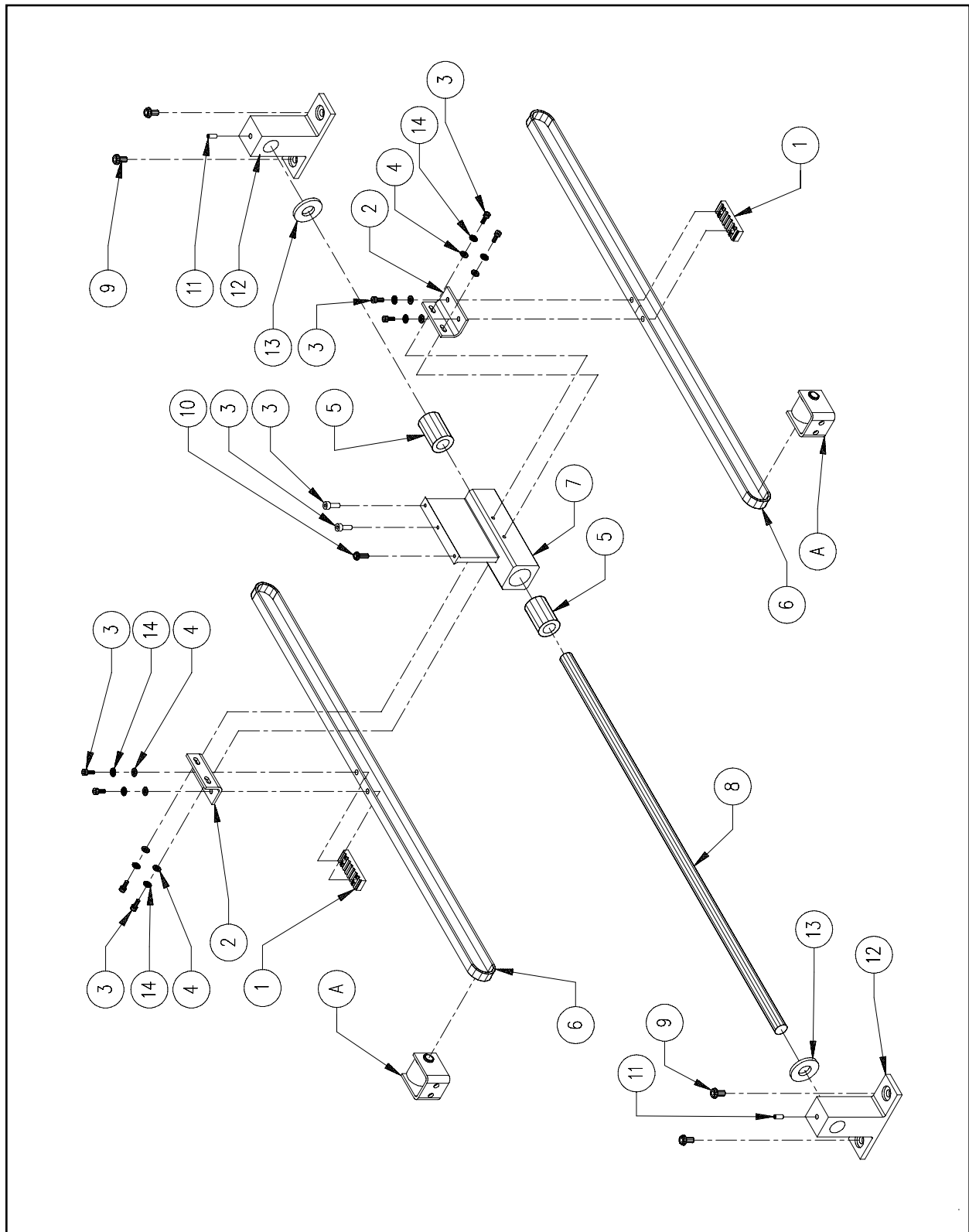


Figure 37

Center Y-Carriage**Reference Figure 37**

Item No.	Part Number	Item Description	Comments
A	011015-02	Pulley, Y-Idler, Y-Axis, Assembly	See Page 35-1
1	010983-01	Clamp, Belt	
2	010995-01	Bracket, Clamp, Belt	
3	010171-12	Screw, Socket Head Cap, M4 x 0.7 x 12mm, Zinc Plate	
4	690439-04	Washer, Flat, M4	
5*	005342-08	Bearing, Sleeve, Frelon	
6	010981-02	Belt, Y-Drive	
7*	011150-01	Carriage, Y-Axis, Center	
8	452749-01	Rail, Y-Axis	
9	011163-10	Screw, Button Head Socket, M5 x 0.8 x 10mm, Zinc Plate	
10	011162-12	Screw, Button Head Socket, M4 x 0.7 x 12mm	
11	010184-06	Screw, Set, Socket, Brass Tip, M4 x 0.7 x 6mm	
12	009140-01	Support, Rail, Y-Axis	
13	342910-01	Washer, Rubber, 1/2" ID	
14	690427-04	Washer, Lock, Split, M4	

Note:

The following can be replaced as a factory built assembly:

*010182-02 Carriage, Y-Axis, Center, Assembly

Electronics Cage (1 of 2)

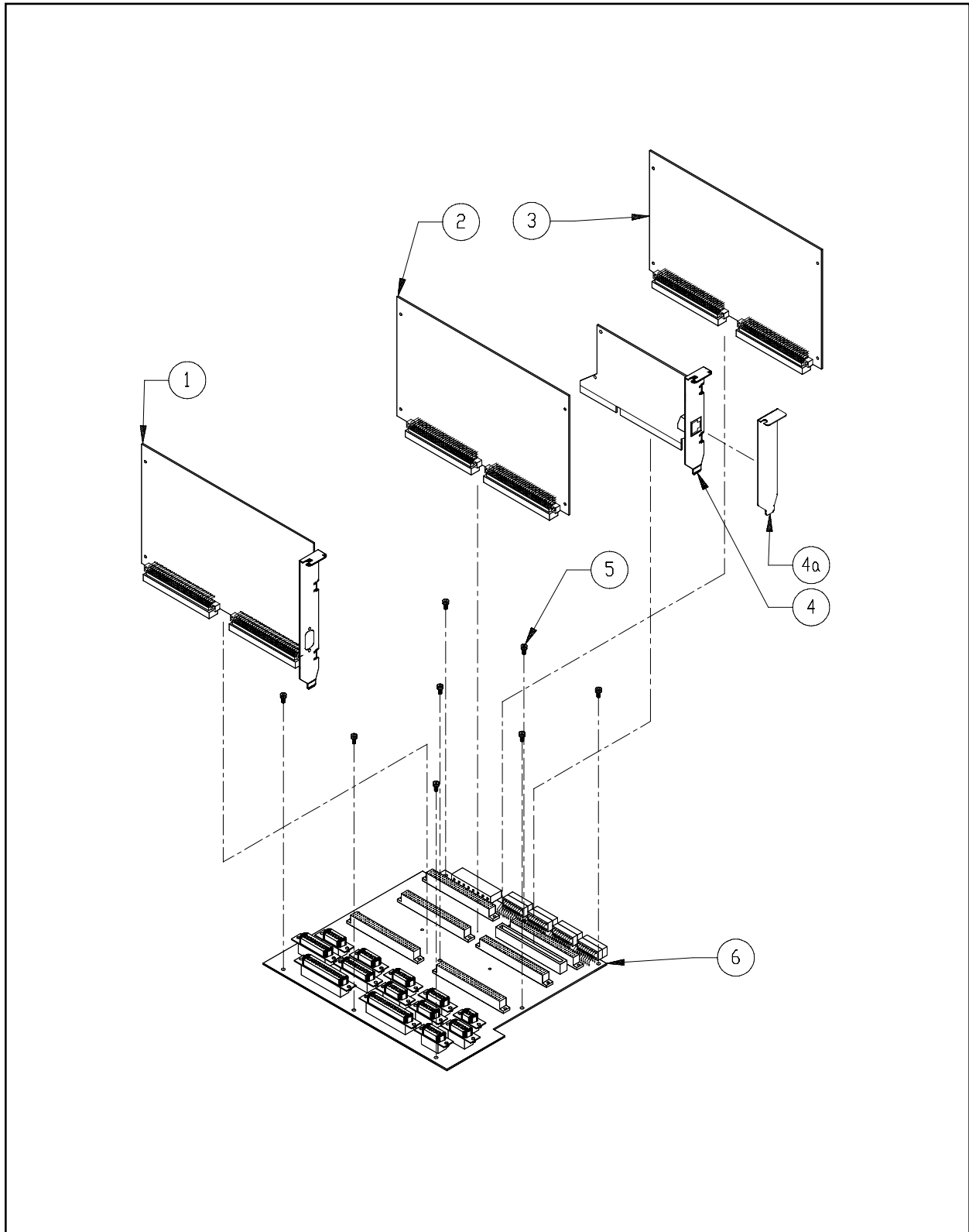


Figure 38

Electronics Cage (1 of 2)**Reference Figure 38**

Item No.	Part Number	Item Description	Comments
1	009578-05	PCB, LV Driver, Assembly	
2	009407-06	PCB, Interface, Assembly	
3	10711	PCB, CPU, Assembly	
4	010192-01	PCB, Network, Intel, Pro 10	(Option)
4a	010657-01	Bracket, Blank, PC	(used if item 4 not installed)
5	009862-12	Screw, Pan Head Phillips, ^w /Star, M4 x 0.7 x 12mm	
6	10707	PCB, Backplane, Assembly	

Electronics Cage (2 of 2)

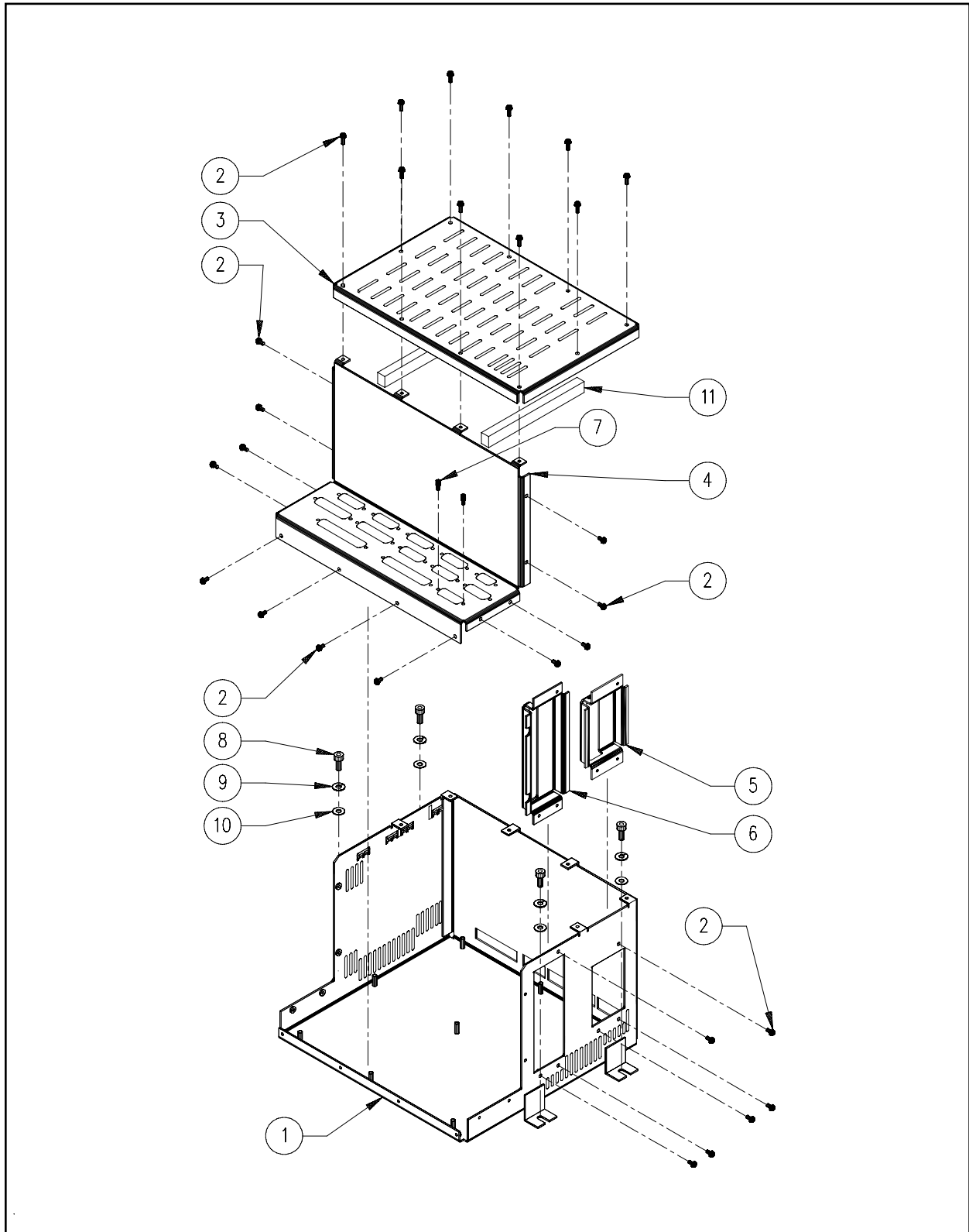


Figure 39

Electronics Cage (2 of 2)**Reference Figure 39**

Item No.	Part Number	Item Description	Comments
1	10230	Card Cage, Bottom Cover	
2	009862-06	Screw, Pan Head Phillips, w/Star, M3 x 0.5 x 6mm	
3	009833-01	Card Cage, Top Cover	
4	009834-01	Card Cage, Front Cover	
5	009837-01	Bracket, Ethernet Card Connector	
6	009836-01	Bracket, Motor Board Connector	
7	000609-03	Standoff, Screw Lock, 4-40 x .188"	(x26)
8	010172-12	Screw, Socket Head Cap, M5 x 0.8 x 12mm, Zinc Plate	
9	690427-05	Washer, Lock, Split, M5	
10	690439-05	Washer, Flat, M5	
11	010545-01	Seal, Rubber, 3/8" x 1/2"	

Power Supply

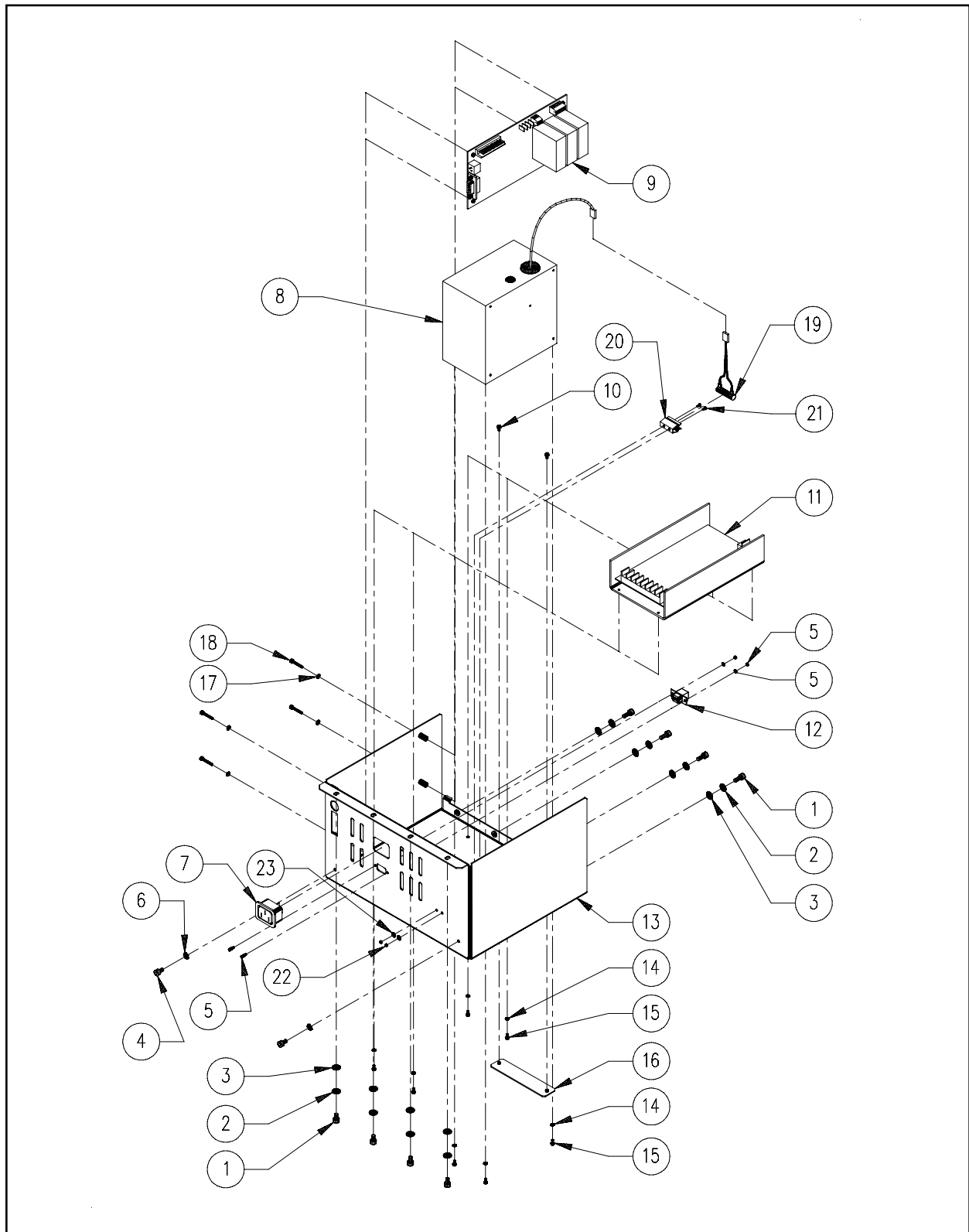


Figure 40

Power Supply		Reference Figure 40	
Item No.	Part Number	Item Description	Comments
1	010172-10	Screw, Socket Head Cap, M5 x 0.8 x 10mm, Zinc Plate	
2	690427-05	Washer, Lock, Split, M5	
3	690439-05	Washer, Flat, M5	
4	010172-06	Screw, Socket Head Cap, M5 x 0.8 x 6mm, Zinc Plate	
5	010146-01	Screwlock, Female, 4-40, w/hardware	
6	010167-05	Washer, External Star, M5	
7	009979-01	Connector, IEC 320 Receptacle	
8	009978-01	Power Supply, 200W, Computer	
9	010027-01	PCB, PCA, E-Stop	
10	009862-06	Screw, Pan Head Phillips, M3 x 0.5 x 6mm	
11	009882-01	Power Supply, 300W, 24V	
12	009912-01	Cable, Low Voltage	(Reference Only)
13	009952-05	Enclosure, Power Supply	
14	690713-36	Washer, External Star, #6	
15	670174-06	Screw, Pan Head Phillips, 6-32 x 3/8"	
16	009954-01	Cover, Outlet, Power Supply	
17	010167-03	Washer, External Star, M3	
18	010170-20	Screw, Socket Head Cap, M3 x 0.5 x 20mm, Zinc Plate	
19	10035	Resistor, Load, Computer Power Supply	
20	10040	Bracket, Load Resistor, Computer Power Supply	
21	670131-04	Screw, Pan Head Phillips, 4-40 x 1/4", Zinc Plate	
22	680032-34	Nut, Hex, 4-40	
23	690811-34	Washer, Internal Star, #4	

Motor Amplifier

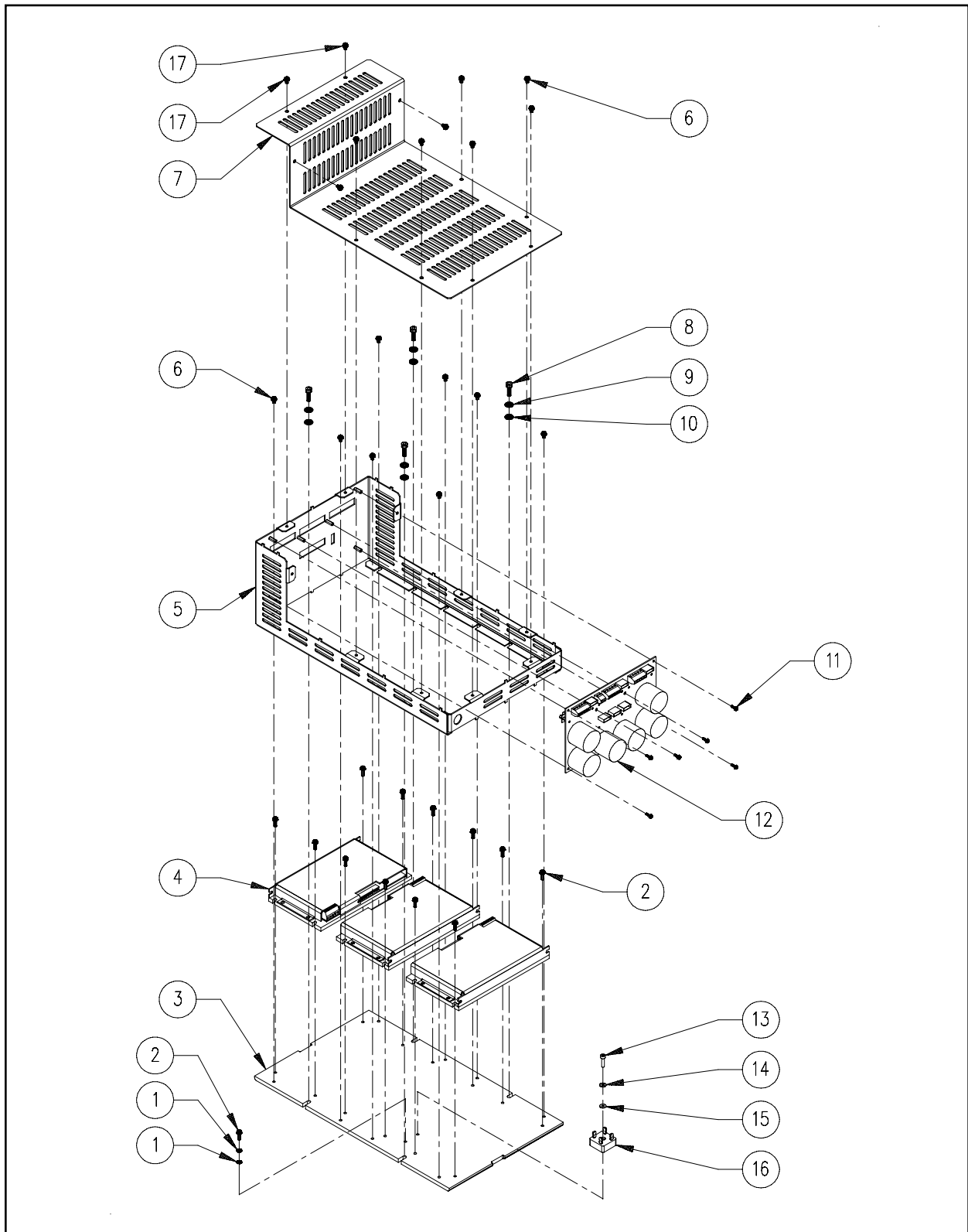


Figure 41

Motor Amplifier		Reference Figure 41	
Item No.	Part Number	Item Description	Comments
1	010167-04	Washer, External Star, M4	
2	009863-12	Screw, Pan Head Phillips, w/Star, M4 x 0.7 x 12mm	
3	010737-02	Plate, Motor Amplifier Module	
4	010424-01	Amplifier, Servo, UL	
5	010738-02	Panel, Motor Amplifier Module	
6	009863-06	Screw, Pan Head Phillips, w/Star, M4 x 0.7 x 6mm	
7	010739-03	Cover, Motor Amplifier Module	
8	010172-12	Screw, Socket Head Cap, M5 x 0.8 x 12mm, Zinc Plate	
9	690427-05	Washer, Lock, Split, M5	
10	690439-05	Washer, Flat, M5	
11	009862-10	Screw, Pan Head Phillips, w/Star, M3 x 0.5 x 10mm	
12	010023-01	PCB, Motor Amp Interface	
13	010171-16	Screw, Socket Head Cap, M4 x 0.7 x 16mm, Zinc Plate	
14	690427-04	Washer, Lock, Split, M4	
15	690439-04	Washer, Flat, M4	
16	007686-01	Diode, Bridge	
17	003509-08	Screw, Button Head Socket, M4 x 0.7 x 8mm	

AC Power Distribution

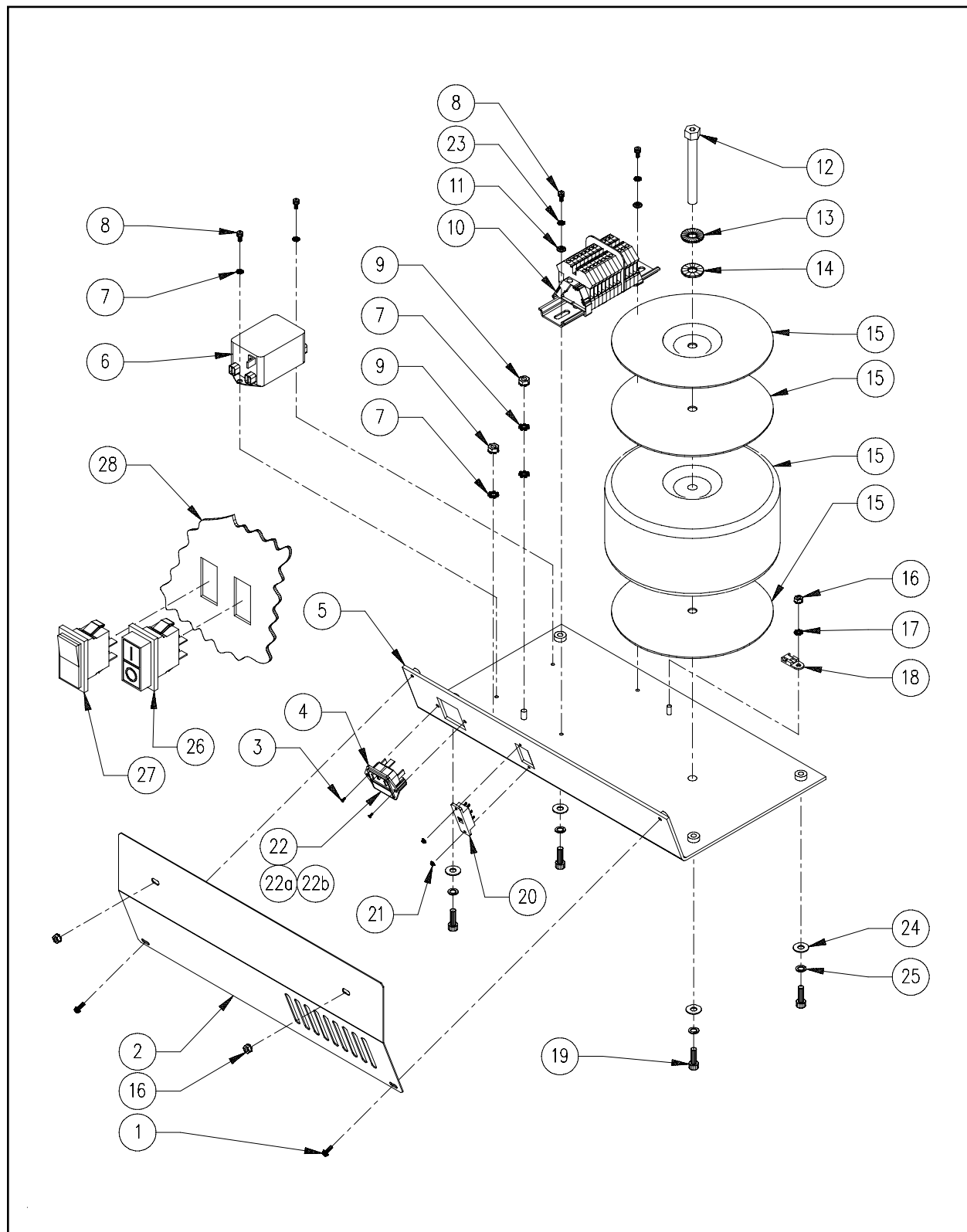


Figure 42

AC Power Distribution**Reference Figure 42**

Item No.	Part Number	Item Description	Comments
1	009863-08	Screw, Pan Head Phillips, w/Star, M4 x 0.7 x 8mm	
2	009974-03	Cover, Power Input	
3	001935-06	Screw, Flat Head Phillips, M3 x 0.5 x 6mm	
4	009089-01	Module, Power Entry, 500W	
5	009953-02	Plate, Mounting, Transformer	
6	010937-01	Filter, Line, 10A	
7	010167-05	Washer, Lock, External Star, M5	
8	010172-10	Screw, Socket Head Cap, M5 x 0.8 x 10mm, Zinc Plate	
9	009561-05	Nut, Kep, M5	
10	009977-01	Terminal Block, Assembly	
11	690439-05	Washer, Flat, M5	
12	010175-01	Screw, Socket Head Cap, M10 x 0.8 x 100mm, Zinc Plate	
13	690427-10	Washer, Lock, Split, M10	
14	690439-10	Washer, Flat, M10	
15	008526-01	Transformer, Power, 1200VA, 110VAC	
16	009561-04	Nut, Kep, M4	
17	010167-04	Washer, Lock, External Star, M4	
18	010336-01	Mount, Cable Tie, #8	
19	010173-16	Screw, Socket Head Cap, M6 x 1.0 x 16mm, Zinc Plate	
20	005696-01	Switch, Voltage, Selector	
21	009862-08	Screw Pan Head Phillips, w/Star, M3 x 0.5 x 8mm	
22	009090-01	Holder, Fuse	
22a	010162-05	Fuse, 5A, 125V, 5mm x 20mm	(220V Input)
22b	010162-10	Fuse, 10A, 125V, 5mm x 20mm	(110V Input)
23	690427-05	Washer, Lock, Split, M5	
24	690439-06	Washer, Flat, M6	
25	690427-06	Washer, Lock, Split, M6	
26	009879-08	Circuit Breaker, On/Off, 8A	
27	009880-01	Circuit Breaker, Lights	
28	009903-02	Frame, Base, w/Castors, Assembly	(reference only)

Cap Frame Mounts

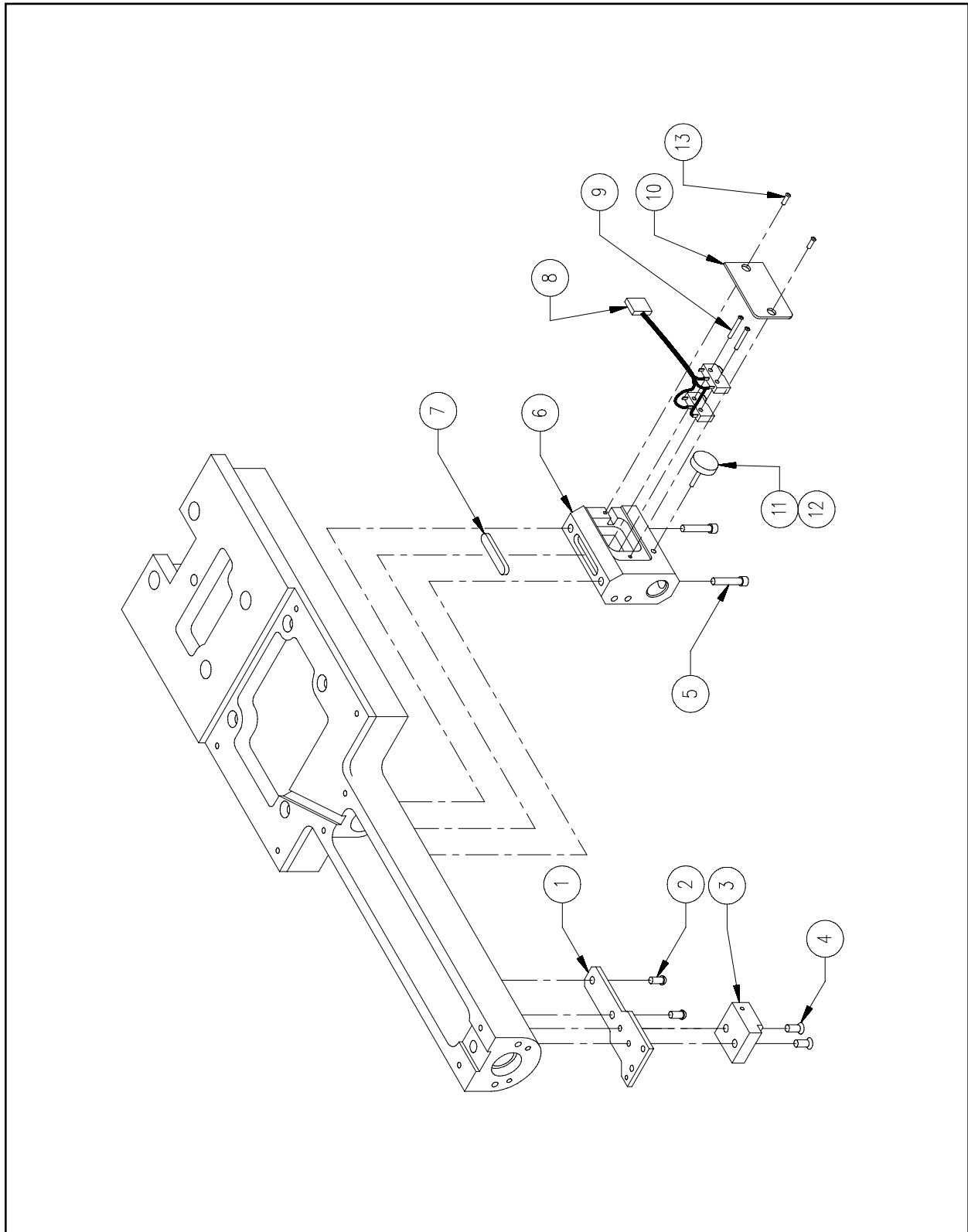


Figure 43

Cap Frame Mounts**Reference Figure 43**

Item No.	Part Number	Item Description	Comments
1	006526-01	Bracket, Picker	
2	010171-10	Screw, Socket Head Cap, M4 x 0.7 x 10mm, Zinc Plate	
3	006523-02	Mount, Dove Tail, Cap Frame	
4	001926-12	Screw, Flat Head Socket, M4 x 0.7 x 12mm	
5	010171-20	Screw, Socket Head Cap, M4 x 0.7 x 20mm, Zinc Plate	
6*	009861-01	Connector, Dual Cap Frame	
7*	006525-01	Key, Shaft, 6mm x 6mm x 32mm	
8*	010393-02	Switch, Cap Frame, Dual	
9*	003122-16	Screw, Pan Head Phillips, M2 x 0.4 x 16mm	
10*	009014-01	Cover, Cap Frame Bracket	
11•	010172-10	Screw, Socket Head Cap, M5 x 0.8 x 10mm, Zinc Plate	
12•	006538-01	Knob, Knurled, M5, Black	
13*	003136-06	Screw, Button Head Socket, M3 x 0.5 x 6mm	

Note:

The following can be replaced as a factory built assembly:

- *010186-02 Bracket, Cap Frame, Assembly (includes 006714-01)
- 006714-01 Screw, Thumb, M5 x 0.8 x 8mm

Harnesses (1 of 5)

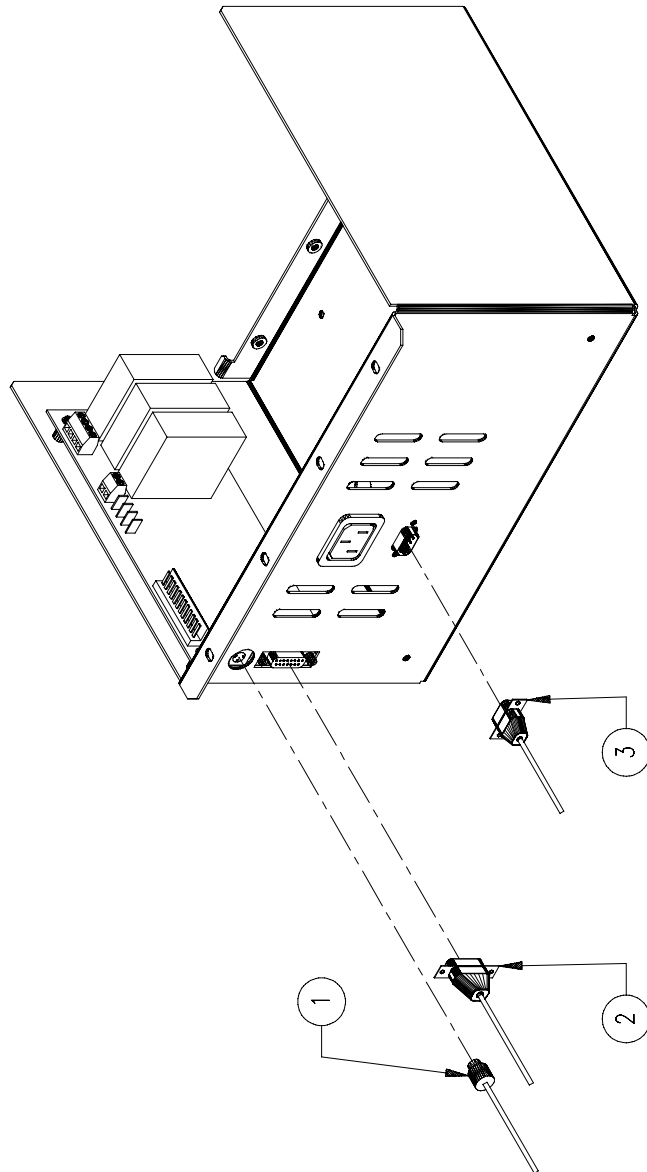


Figure 44

Harnesses (1 of 5)**Reference Figure 44**

Item No.	Part Number	Item Description	Comments
1	009923-02	Cable, E-Stop, Interface	
2	10083	Harness, Power, Backplane	
3	009912-01	Cable, Low Voltage	

Harnesses (2 of 5)

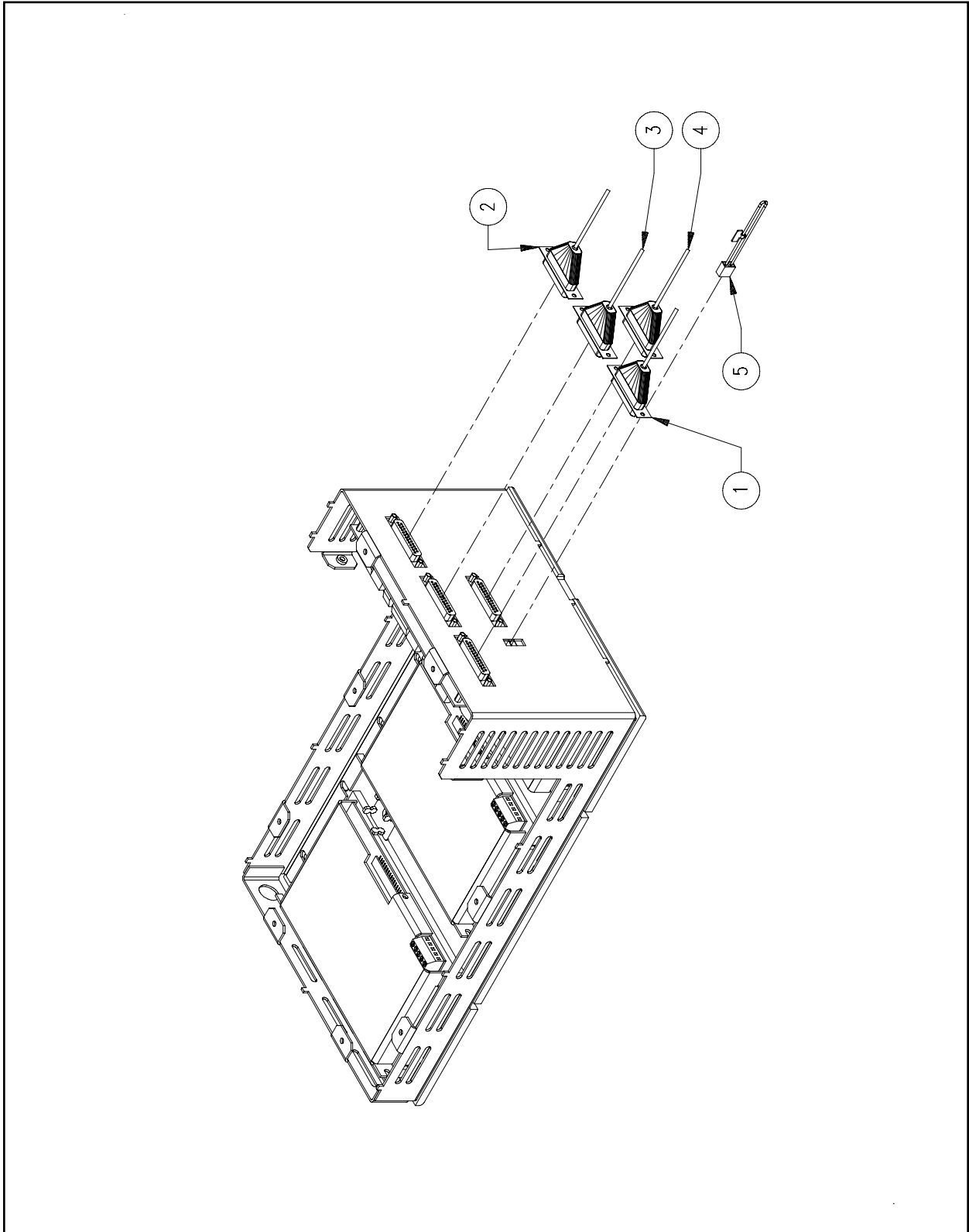


Figure 45

Harnesses (2 of 5)**Reference Figure 45**

Item No.	Part Number	Item Description	Comments
1	010495-02	Motor, Z-Axis, Assembly	
2	010936-02	Harness, X-Axis Collector	
3	010249-02	Motor, Y-Rack, Assembly	
4	009920-01	Cable, X Y Z Command	
5	10084	Cable, EMT10/4, Amplifier Assembly, Jumper	

Harnesses (3 of 5)

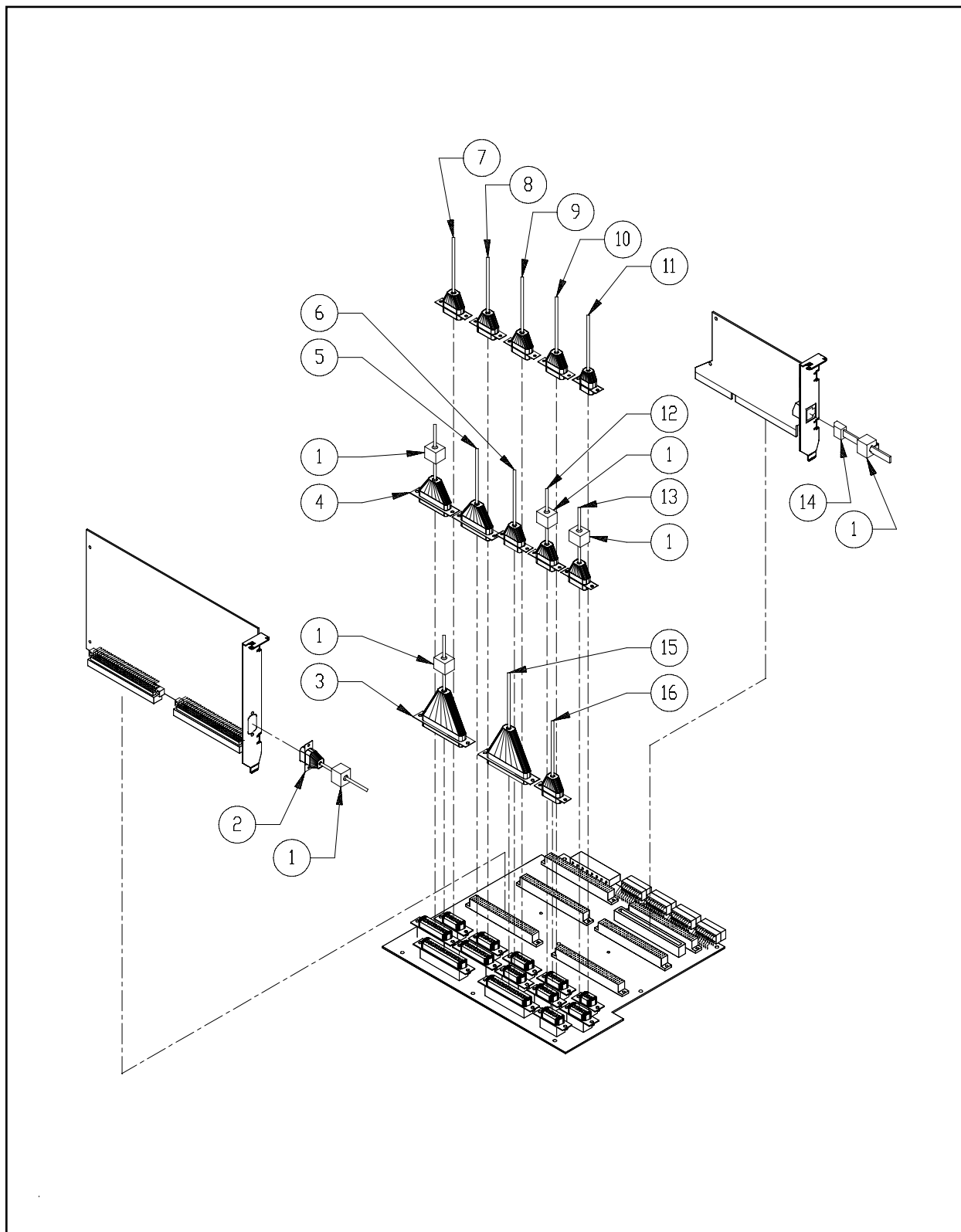


Figure 46

Harnesses (3 of 5)**Reference Figure 46**

Item No.	Part Number	Item Description	Comments
1	009311-01	Ferrite, Split, Large	
2	009912-01	Cable, Low Voltage	
3	010935-01	Cable, Floppy Drive	
4	009918-01	Harness, Keyboard/Display	
5	009920-01	Cable, XYZ Command	
6	010936-02	Harness, X-Axis Collector	
7	009910-04	Harness, Head 4	
8	009910-03	Harness, Head 3	
9	009910-02	Harness, Head 2	
10	009910-01	Harness, Head 1	
11	009921-01	Harness, Jump Stitch	
12	010932-01	Harness, Color/Grabber-Encoder/Motor	
13	010933-01	Harness, YZ Axis	
14	010369-01	Cable, Ethernet, Network, Interface	
15	011093-01	Cable, Thread/Color Change	
16	10083	Harness, Power, Backplane	

Harnesses (4 of 5)

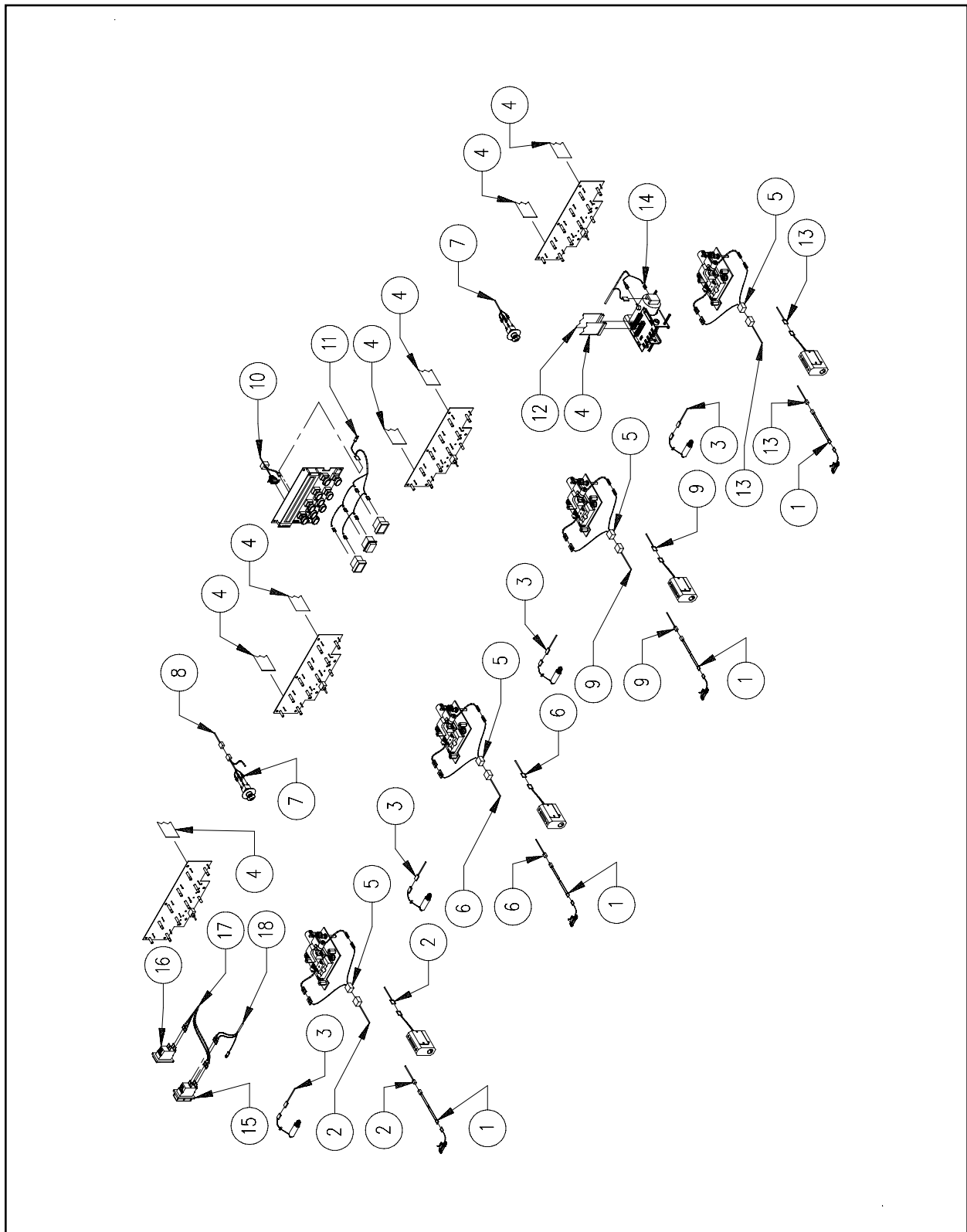


Figure 47

Harnesses (4 of 5)**Reference Figure 47**

Item No.	Part Number	Item Description	Comments
1	009972-01	Harness, Thread, Under Thread Control	
2	009910-04	Harness, Head 4	
3	009921-01	Harness, Jump Stitch	
4	009915-01	Cable, Thread Break Jumper	
5	007261-01	Trimmer, Picker, Solenoid, Opto, Assembly	
6	009910-03	Harness, Head 3	
7	009907-01	Harness, Jumper, E-Stop	
8	009923-02	Cable, E-Stop, Interface	
9	009910-02	Harness, Head 2	
10	009918-01	Harness, Keyboard/Display	
11	009913-01	Harness, Start/Stop/Frame	
12	011093-01	Cable, Thread/Color Change	
13	009910-01	Harness, Head 1	
14	010932-01	Harness, Color/Grabber-Encoder/Motor	
15	009879-08	Circuit Breaker, On/Off, 8A	
16	009880-01	Circuit Breaker, Lights	
17	10807	Harness, Power Switch	
18	10808	Cable, Input Power	

Harnesses (5 of 5)

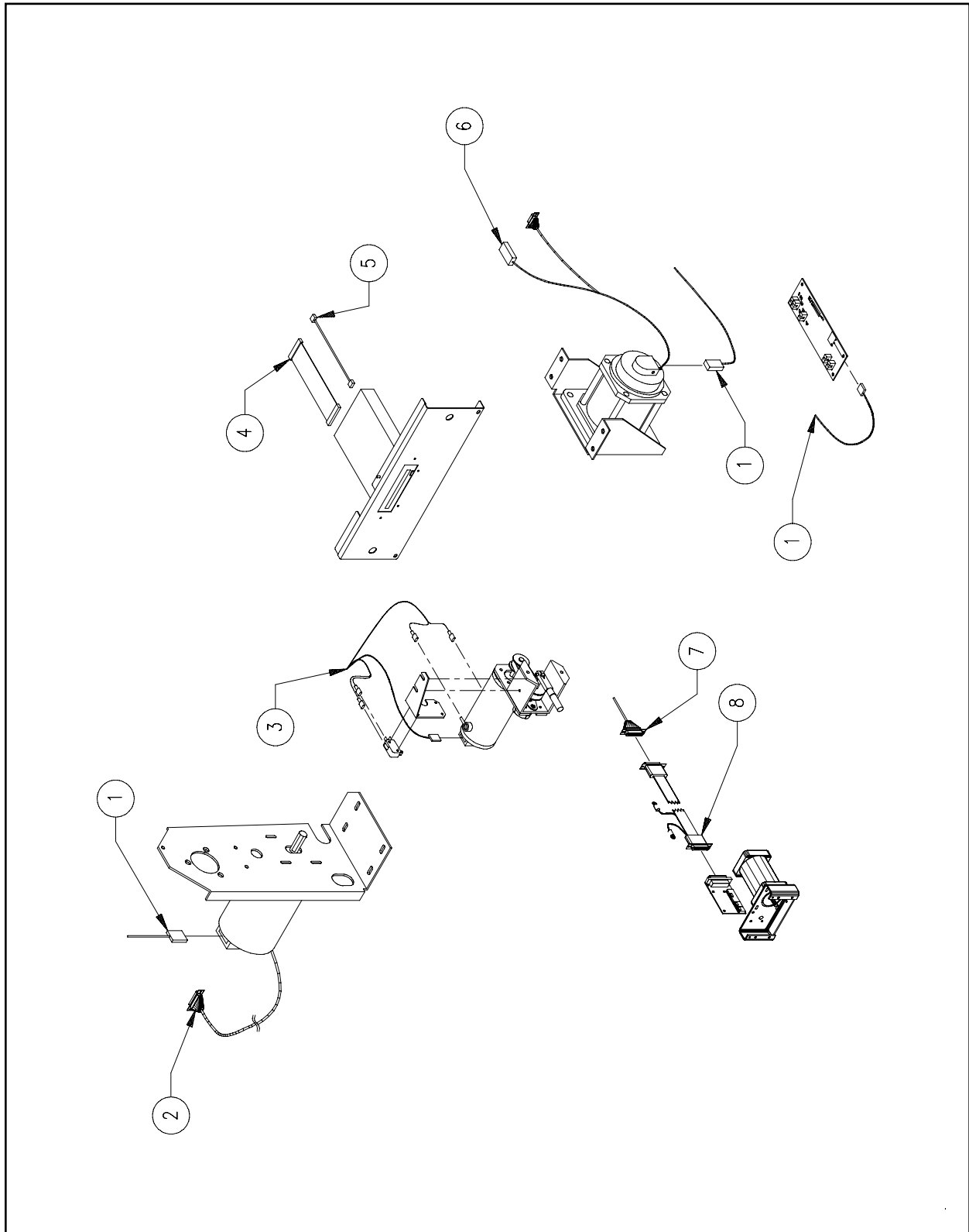


Figure 48

Harnesses (5 of 5)**Reference Figure 48**

Item No.	Part Number	Item Description	Comments
1	010933-01	Harness, YZ Axis	
2	010495-02	Motor, Z-Axis, Assembly	
3	010932-01	Harness, Color/Grabber-Encoder/Motor	
4	010935-01	Cable, Floppy Drive	
5	009918-01	Harness, Keyboard/Display	
6	010249-02	Motor, Y-Rack, Assembly	
7	010936-02	Harness, X-Axis Collector	
8	010913-01	Cable, X-Axis, Flex	

Melco Cap Frame

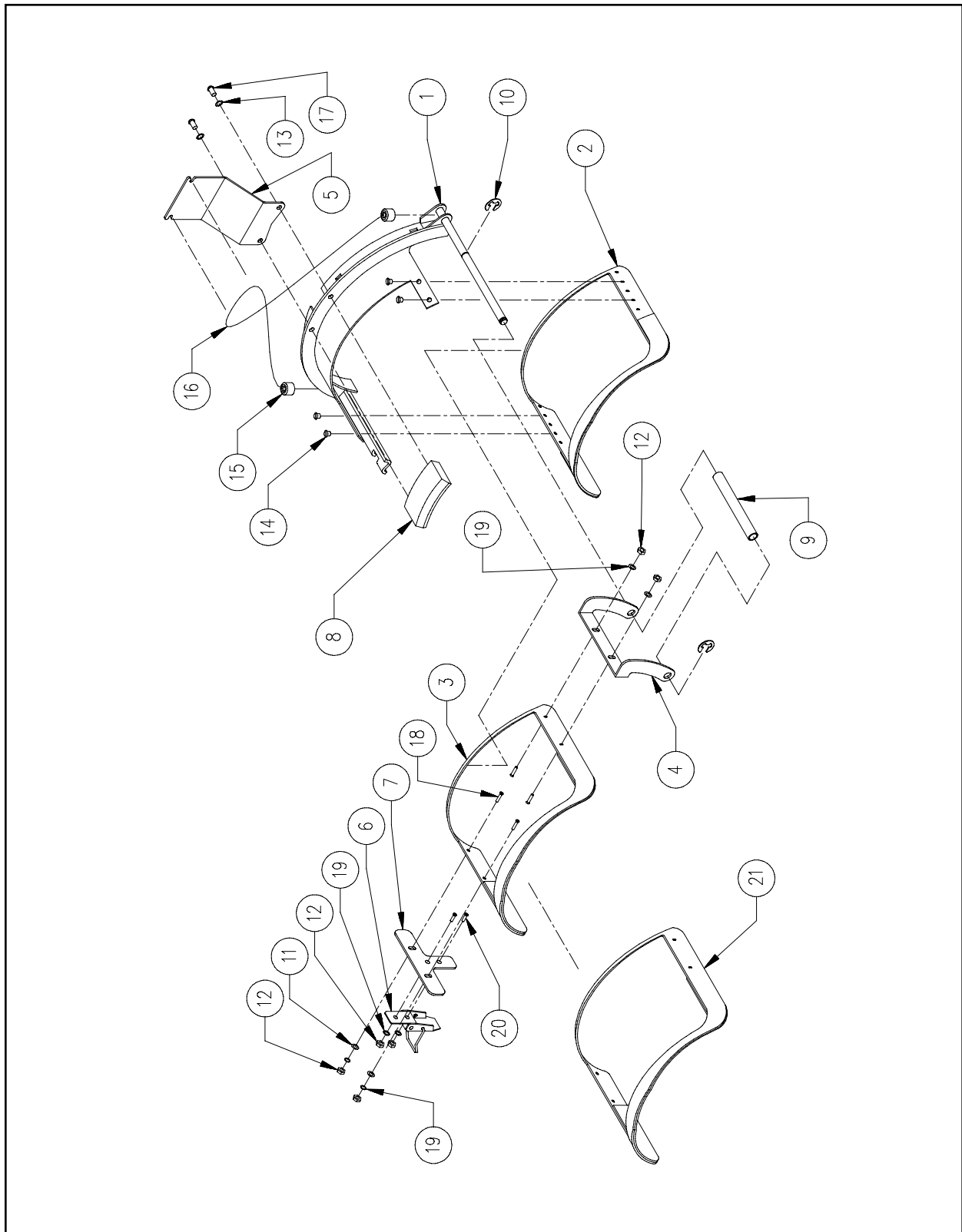


Figure 49

Melco Cap Frame**Reference Figure 49**

Item No.	Part Number	Item Description	Comments
1	004938-01	Base, Cap Frame, Assembly	
2#	006010-01	Frame, Lower, w/Rubber, 6-Panel	
3*	005949-01	Strap, Clamping, 72mm, 6-Panel	
4*•	002629-01	Bracket, Hinge	
5	005071-01	Holder, Cord, Visor Clamp	
6*•	005487-01	Catch, Pull	
7*•	005486-01	Bracket, Latch	
8	004904-01	Block, Locator, Brim	
9	002632-01	Spacer	
10	004240-01	Ring, Retainer, E-Style	
11*•	690439-03	Washer, Flat, M3	
12*•	010178-03	Nut, Hex, M3	
13	690033-36	Washer, Lock, Split, #6	
14	004963-01	Screw, Special, Cap Frame	
15	005068-01	Terminal, Shock Cord	
16	005073-01	Cord, Shock, Cap Frame	
17	670174-06	Screw, Pan Head, Phillips, 6-32 x 3/8"	
18*•	006019-01	Screw, Flat Head Phillips, M3 x 0.5 x 8mm	
19*•	690427-03	Washer, Lock, Split, M3	
20*•	005934-01	Screw, Flat Head Phillips, M3 x 0.5 x 6mm	
21•	005948-01	Strap, Clamping, 82mm, 6-Panel	

Note:

The following can be replaced as a factory built assembly:

- *007199-01 Strap, Clamping, 72mm, 6-Panel, Assembly
- 007198-01 Strap, Clamping, 82mm, 6-Panel, Assembly
- #006674-01 Capframe, Adjustable, 6-Panel
(includes 007198-01 and 007199-01)

Melco Cap Frame Drive

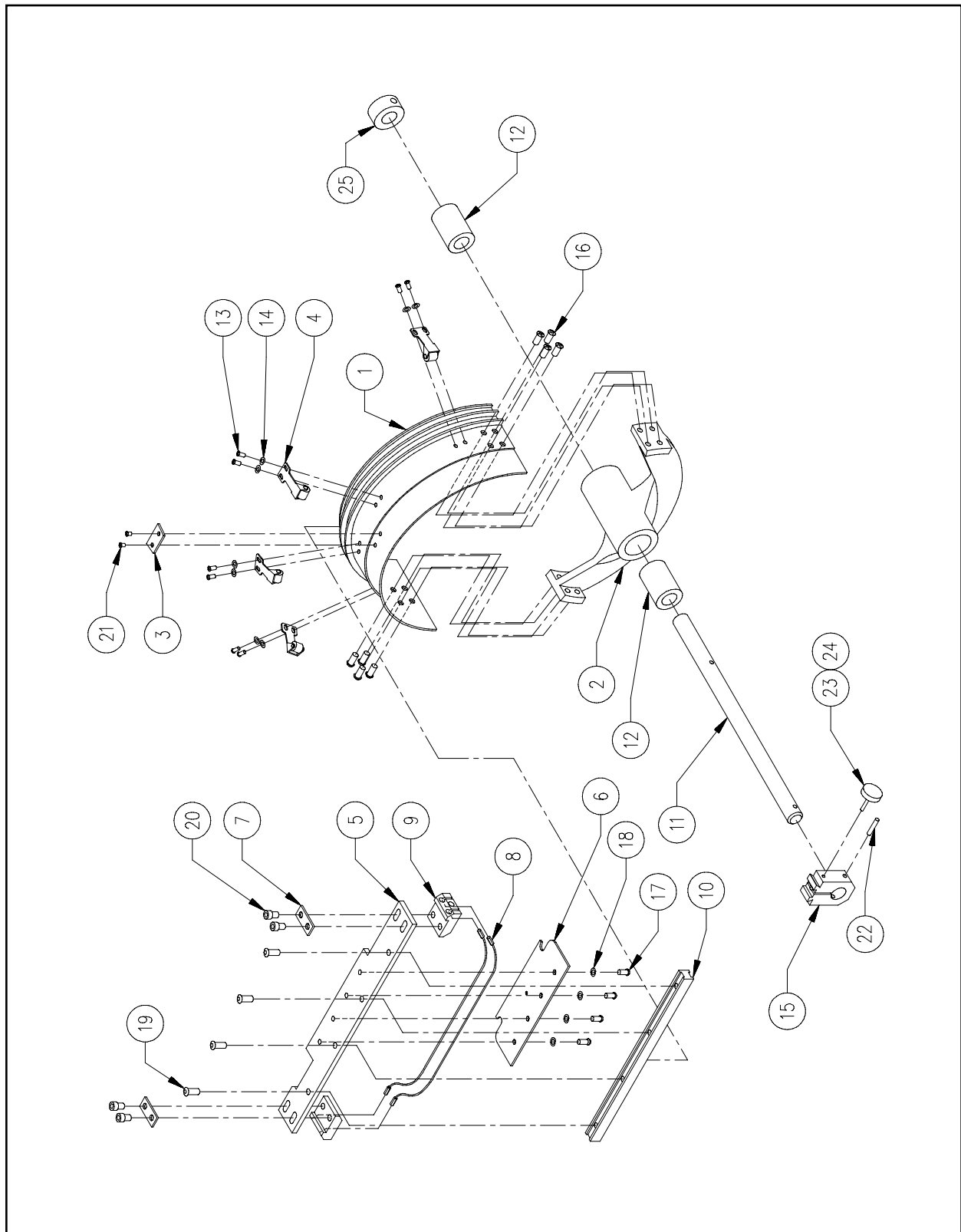


Figure 50

Melco Cap Frame Drive**Reference Figure 50**

Item No.	Part Number	Item Description	Comments
1*	452732-01	Ring, Drive, Cap Frame	
2*	006496-01	Hub, Cap Driver, Phase II	
3*	552912-01	Locator, Cap Frame	
4*	004229-01	Clip, Roller, Cap Frame Driver, Assembly	
5*	454861-01	Bracket, Drive	
6•	554862-01	Mount, Drive Ring	
7*	552915-01	Washer, Flat, Rectangle	
8*	402913-01	Cable, Drive Ring	
9*	452916-01	Bracket, Cable	
10*	442917-01	Bar, Guide	
11•	006522-01	Shaft, Cap Frame	
12*	005342-08	Bearing, Sleeve, Frelon	
13*	670131-03	Screw, Pan Head Phillips, 4-40 x 3/16"	
14*	690034-34	Washer, Flat, #4	
15•	006521-01	Mount, Male, Cap Frame	
16*	672982-06	Screw, Pan Head Phillips, 8-32 x 3/8"	
17	670174-04	Screw, Pan Head Phillips, 6-32 x 1/4"	
18	690033-36	Washer, Lock, Split, #6	
19*	670267-06	Screw, Button Head Cap, 8-32 x 3/8"	
20*	670149-06	Screw, Socket Head Cap, 8-32 x 3/8"	
21*	670131-02	Screw, Pan Head Phillips, 4-40 x 1/8"	
22	660830-10	Pin, Groove, 1/8" OD x 7/8"	
23#	671852-16	Screw, Socket Head Cap, M5 x 0.8 x 16mm	
24#	006538-01	Knob, Knurled, M5, Black	
25	342872-08	Collar, Shaft, 1/2" ID	

Note:

The following can be replaced as a factory built assembly:

- *006667-01 Ring, Drive, Sub-Assembly
- 006541-01 Ring, Drive, Assembly (includes 006667-01)
- #007401-01 Screw, Thumb, 16mm Lg, Assembly

Melco Cap Frame Gauge

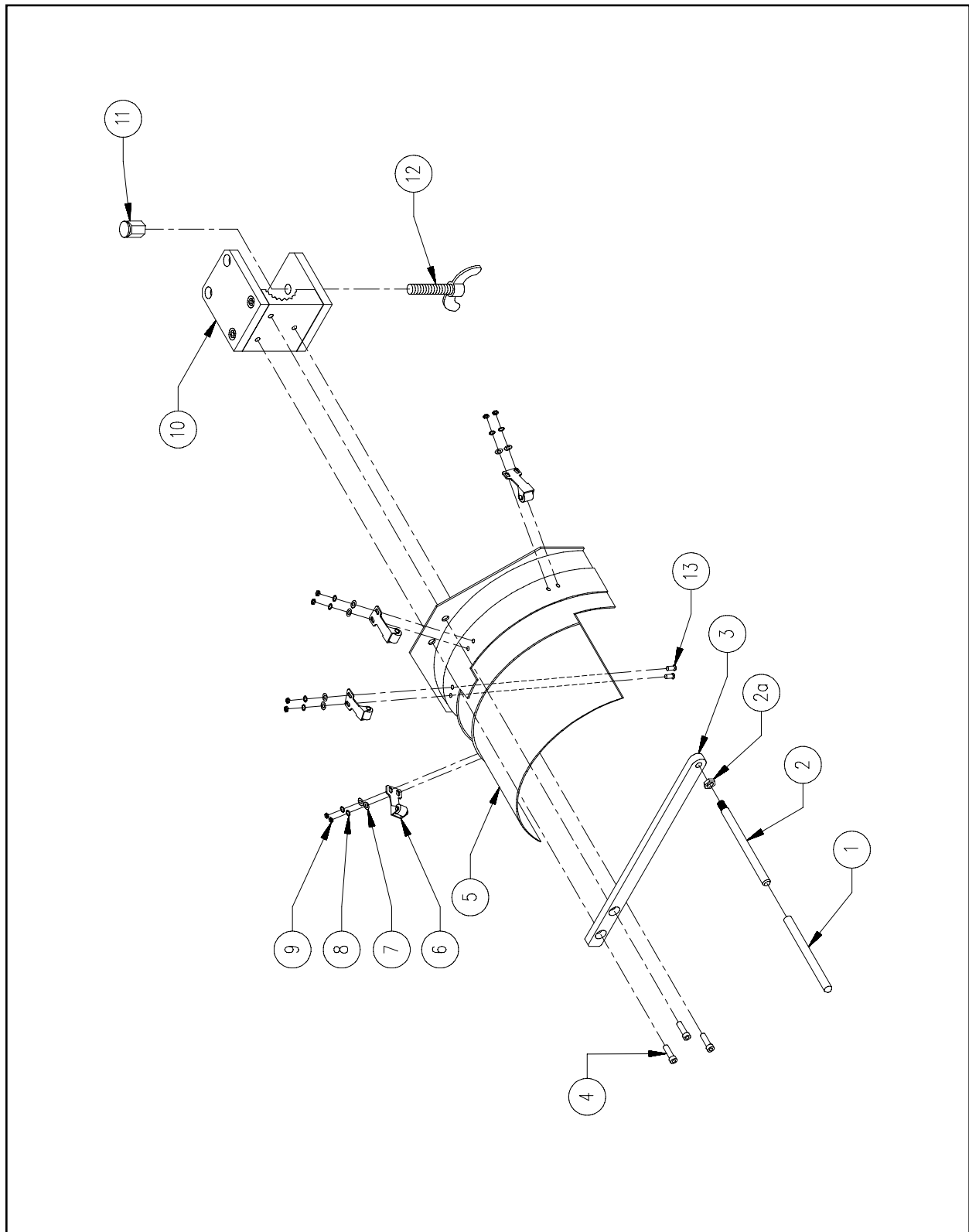


Figure 51

Melco Cap Frame Gauge**Reference Figure 51**

Item No.	Part Number	Item Description	Comments
1*	005100-01	Shaft Cover, Frame Holder	
2*	004958-01	Shaft, Frame Holder, Gauge Set	
2a*	680032-04	Nut, Hex, 1/4-20	
3*	004957-01	Bracket, Frame Holder, Gauge Set	
4#	670038-08	Screw, Socket Head Cap, 10-32 x 1/2"	
5#	005051-01	Gauge, Cap Frame, Weldment	
6#	004229-01	Clip, Roller, Cap Frame Driver, Assembly	
7#	690034-34	Washer, Flat, #4	
8#	690033-34	Washer, Lock, Split, #4	
9#	680032-34	Nut, Hex, 4-40	
10#	004949-01	Block, Mounting, Cap Gauge, Assembly	
11•	004952-01	Nut, Swivel, 3/8-16	
12•	004950-01	Screw, Thumb, Wing-Head, 3/8-16 x 1.5"	
13#	670828-06	Screw, Flat Head Socket, 4-40 x 3/8"	

Note:

The following can be replaced as a factory built assembly:

- *004956-01 Holder, Frame, Gauge Set, Assembly
- #005050-01 Gauge, Cap Frame, Assembly
- 004949-01 Block, Mounting, Cap Gauge, Assembly (part of item 10)

Wide Angle Cap Frame (1 of 7)

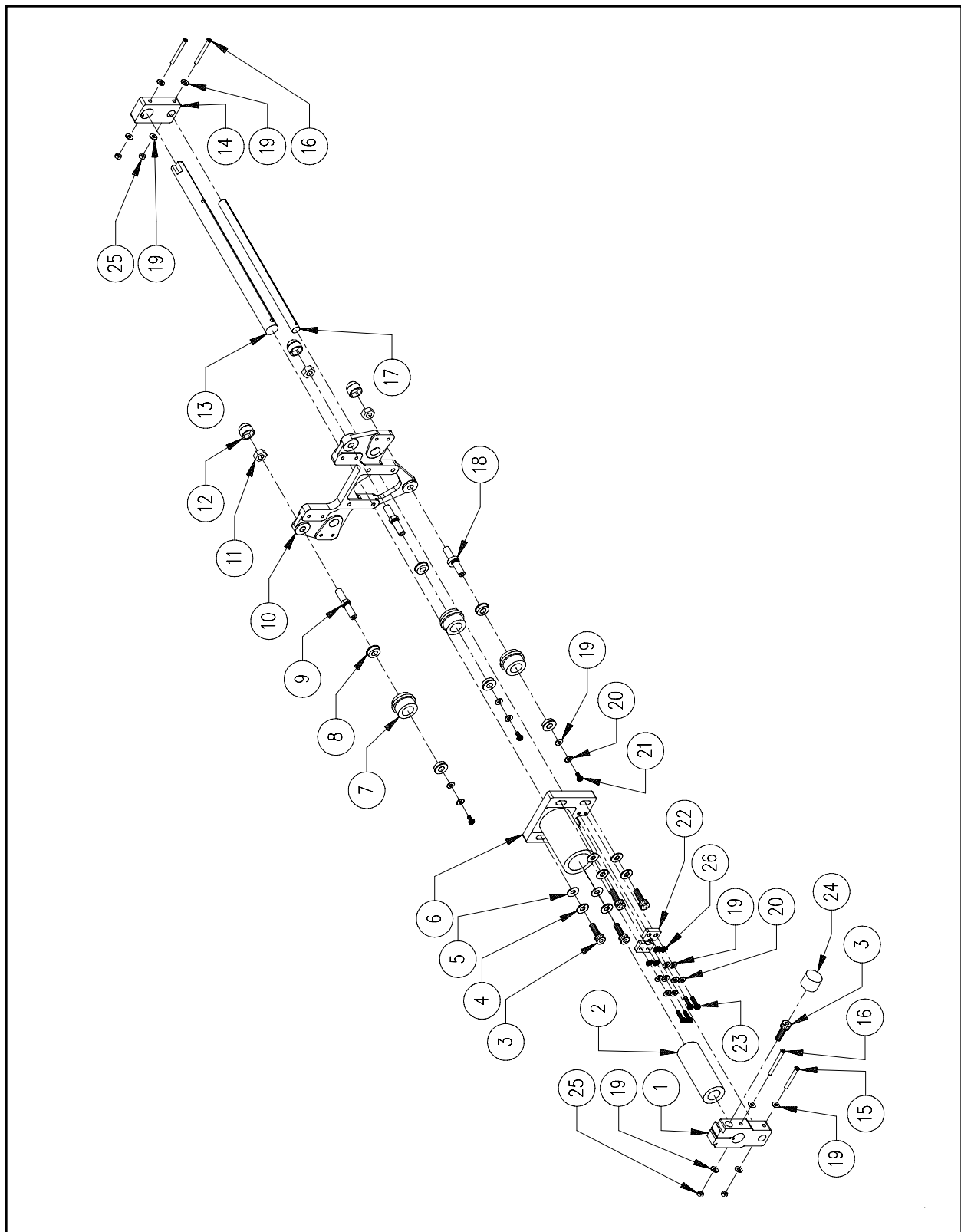


Figure 52

Wide-Angle Cap Frame (1 of 7)**Reference Figure 52**

Item No.	Part Number	Item Description	Comments
1	009602-03	Mount, Front, Drive Ring	
2	009618-01	Bearing, Linear	
3	010172-16	Screw, Socket Head Cap, M5 x 0.8 x 16mm, Zinc Plate	
3a*	010468-01	Wrench, Hex, 4mm	(see Note) (not shown)
4	690427-05	Washer, Lock, Split, M5	
5	690439-05	Washer, Flat, M5	
6	009594-01	Housing, Bearing	
7	009597-01	Roller, Drive Ring	
8	009623-01	Bearing, Flanged	
9	009599-02	Shaft, Roller	
10	009601-01	Base, Drive Ring	
11	680430-06	Nut, Hex, M6	
12	006913-06	Cover, Cap, Hex, M6	
13	010099-02	Shaft, Drive Ring	
14	009596-02	Support, Shaft, Rear	
15	006558-25	Screw, Pan Head Phillips, M3 x 0.5 x 25mm	
16	006558-30	Screw, Pan Head Phillips, M3 x 0.5 x 30mm	
17	009615-02	Shaft, Guide, Drive Ring	
18	009598-02	Shaft, Roller, Eccentric	
19	690439-03	Washer, Flat, M3	
20	690427-03	Washer, Lock, Split, M3	
21	675310-01	Screw, Pan Head Phillips, M3 x 0.5 x 6mm	
22	009595-02	Pad, Guide, Shaft	
23	010170-16	Screw, Socket Head Cap, M3 x 0.5 x 16mm, Zinc Plate	
24	006538-03	Knob, Knurled, Black, M5	
25	003573-03	Nut, M3, Locking	
26	010167-03	Washer, External Star, M3	

Note: *Used with Item 3 and supplied with the Wide-Angle Cap Frame Option

Wide Angle Cap Frame (2 of 7)

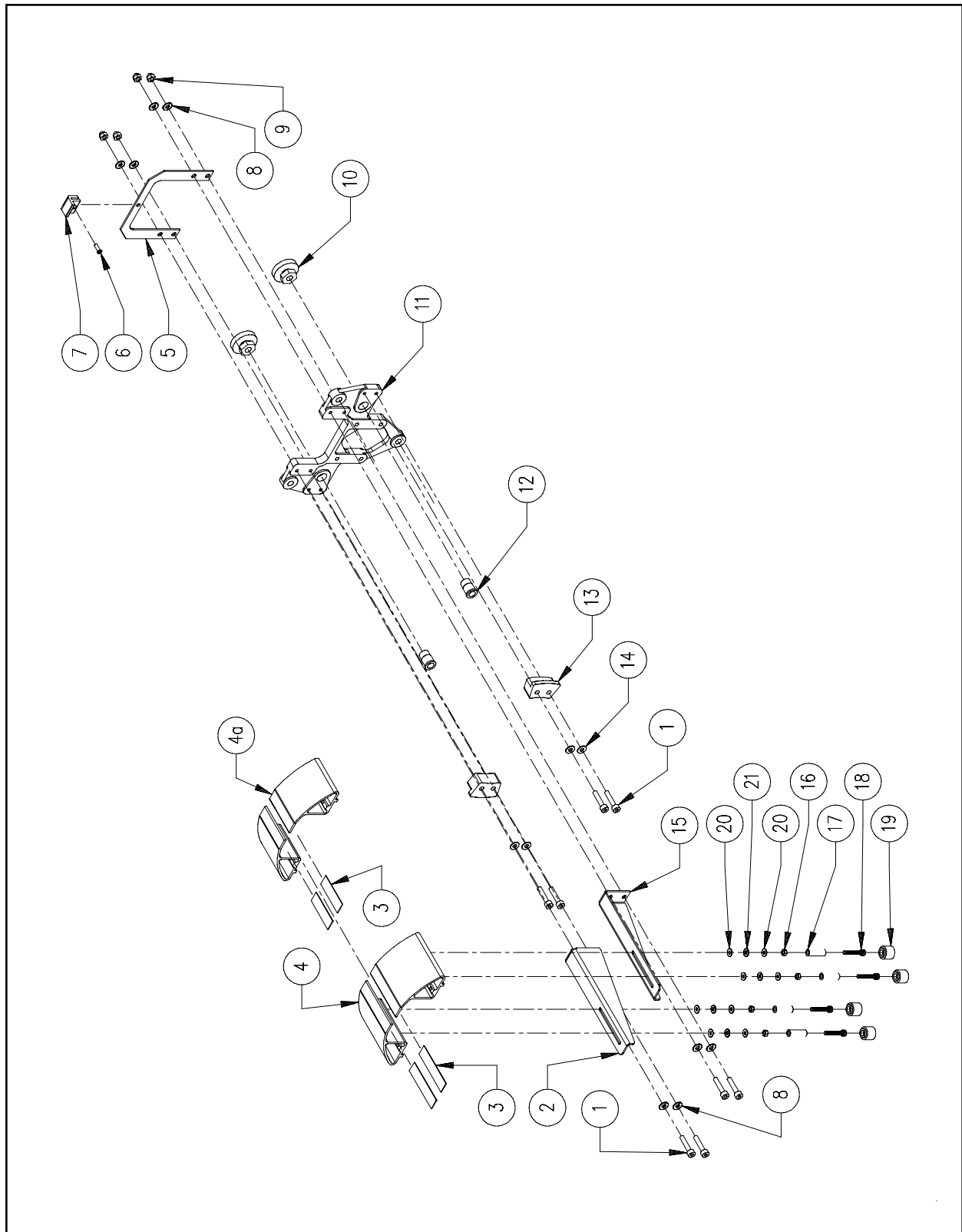


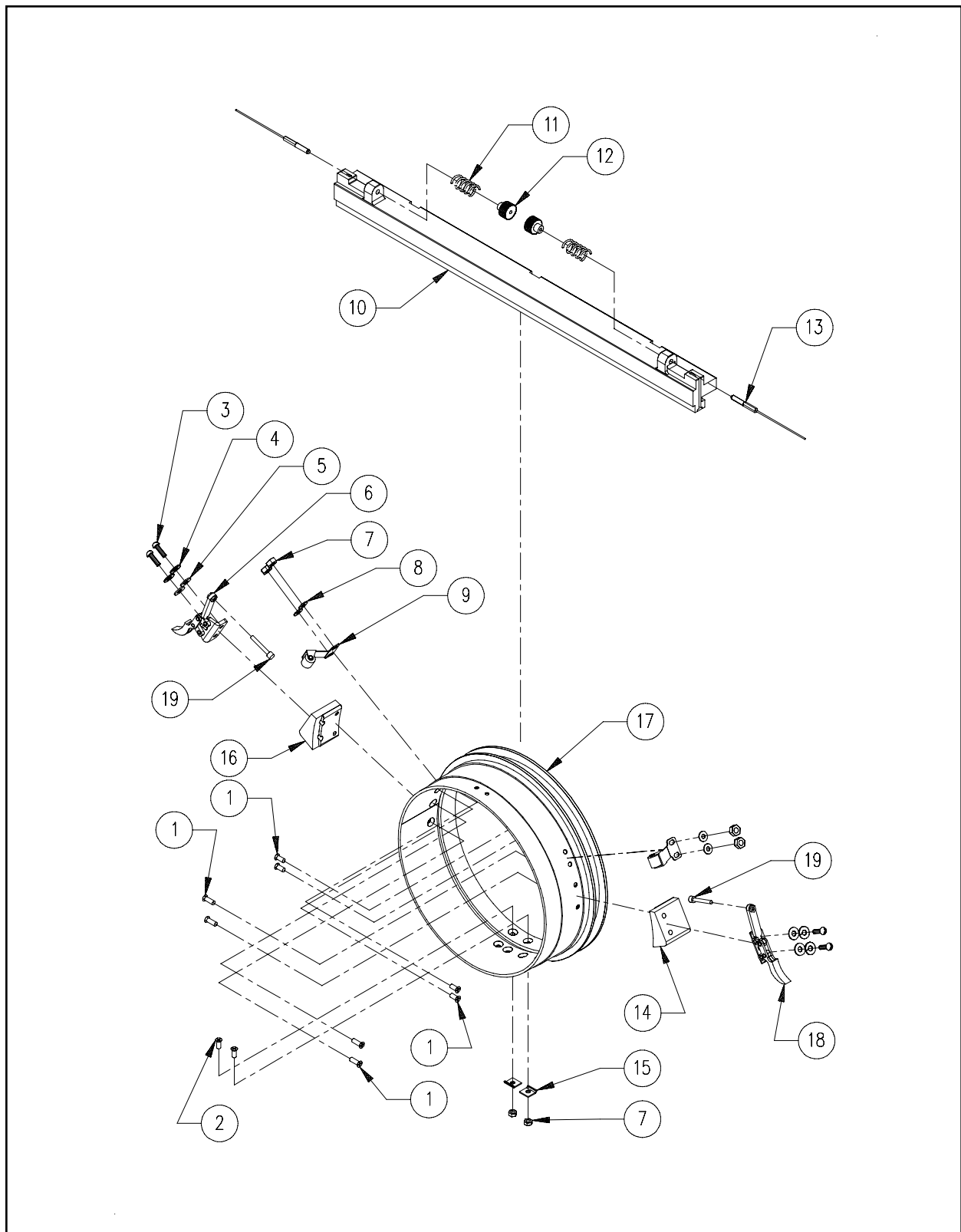
Figure 53

Wide-Angle Cap Frame (2 of 7)**Reference Figure 53**

Item No.	Part Number	Item Description	Comments
1	010171-20	Screw, Socket Head Cap, M4 x 0.7 x 20mm, Zinc Plate	
2	011057-01	Bracket, Support, Left Hand	
3	011062-01	Tape, Adhesive, 2.25"	
4*	009604-01	Support, Cap, Large, Machined	
4a*	10773	Support, Cap, Small, Machined	
5	009621-01	Bracket, Holder, Bar	
6	010406-08	Screw, Flat Head Phillips, M2.5 x 0.4 x 8mm	
7	009857-02	Pad, Holder, Bar	
8	690427-04	Washer, Lock, Split, M4	
9	010407-04	Nut, Acorn, M4	
10	009659-01	Lock, Shaft, .25" ID	
11	009601-01	Base, Drive Ring	
12	009616-01	Nipple, Support, Tensioner Disk	
13	009600-02	Pad, Support, Cylinder	
14	010668-01	Washer, Flat, Fender, M4	
15	011056-01	Bracket, Support, Right Hand	
16	680430-03	Nut, Hex, M3	
17	700134-12	Spacer, Nylon, .14" ID x .25" OD x .75"	
18	010170-30	Screw, Socket Head Cap, M3 x 0.5 x 30mm, Zinc Plate	
19	006538-03	Knob, Knurled, Black, M3	
20	006303-04	Washer, Plain, Type 3	
21	690427-03	Washer, Lock, Split, M3	

Note: *When replacing items 4 or 4a item 3 must also be replaced and trimmed to fit

Wide Angle Cap Frame (3 of 7)



Wide-Angle Cap Frame (3 of 7)**Reference Figure 54**

Item No.	Part Number	Item Description	Comments
1	005934-08	Screw, Flat Head Phillips, M3 x 0.5 x 8mm, Zinc Plate	
2	005934-01	Screw, Flat Head Phillips, M3 x 0.5 x 6mm, Zinc Plate	
3	001924-10	Screw, Cheese Head, Slotted, M4 x 0.7 x 10mm	
4	690427-04	Washer, Lock, Split, M4	
5	690439-04	Washer, Flat, M4	
6	009624-02	Clamp, Hold Down, Left Hand	
7	680430-03	Nut, Hex, M3	
8	690439-03	Washer, Flat, M3	
9	004229-01	Clip, Roller, Assembly	
10	009608-02	Bracket, Drive Ring	
11	009625-01	Spring, Compression	
12	009610-01	Nut, Tensioner, Drive Ring	
13	009626-01	Cable, Drive Ring, Assembly	
14	011058-01	Bracket, Clamp, Right Hand	
15	009811-01	Washer, Holder, Cable	
16	011059-01	Bracket, Clamp, Left Hand	
17	009619-02	Cylinder, Drive Ring	
18	009624-01	Clamp, Hold Down, Right Hand	
19	674900-10	Screw, Hex Head, 8-32 x 5/8"	

Wide Angle Cap Frame (4 of 7)

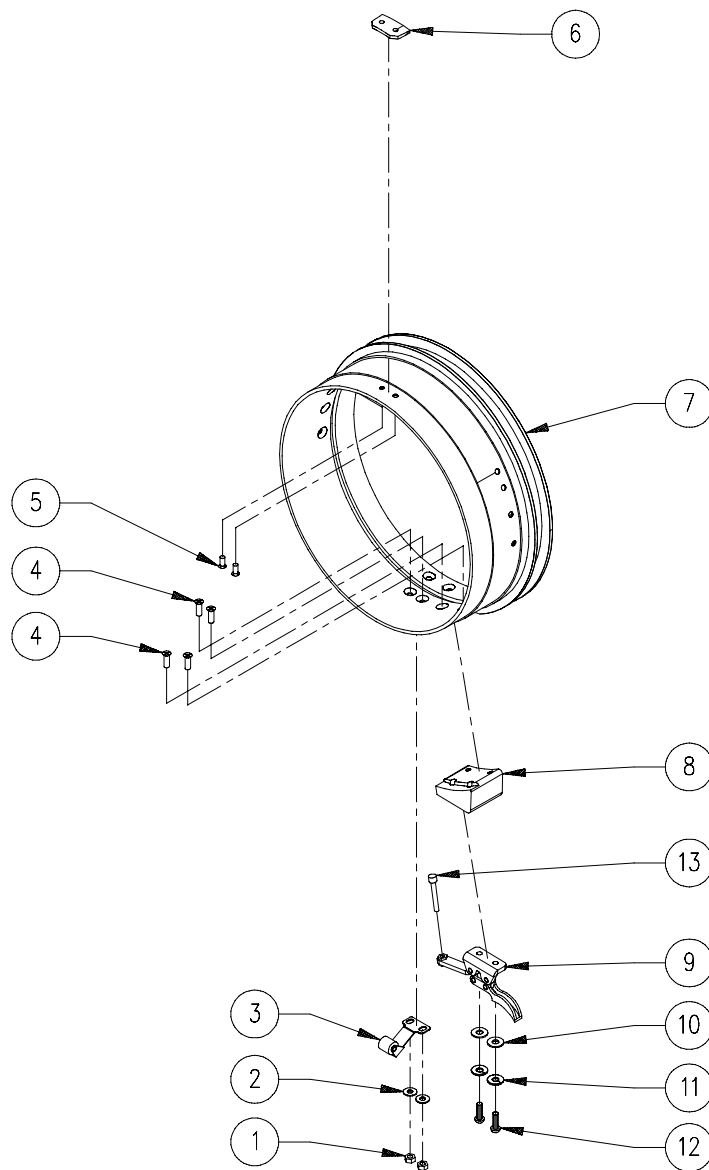


Figure 55

Wide-Angle Cap Frame (4 of 7)**Reference Figure 55**

Item No.	Part Number	Item Description	Comments
1	680430-03	Nut, Hex, M3	
2	690439-03	Washer, Flat, M3	
3	004229-01	Clip, Roller, Assembly	
4	005934-08	Screw, Flat Head Phillips, M3 x 0.5 x 8mm, Zinc Plate	
5	010406-04	Screw, Flat Head Socket, M2.5 x 0.4 x 4mm	
6	009620-01	Locator, Drive Ring	
7	009619-02	Cylinder, Drive Ring	
8	011059-01	Bracket, Clamp, Left Hand	
9	009624-02	Clamp, Hold Down, Left Hand	
10	690439-04	Washer, Flat, M4	
11	690427-04	Washer, Lock, Split, M4	
12	001924-10	Screw, Cheese Head, Slotted, M4 x 0.7 x 10mm	
13	674900-10	Screw, Hex Head, 8-32 x 5/8"	

Wide Angle Cap Frame (5 of 7)

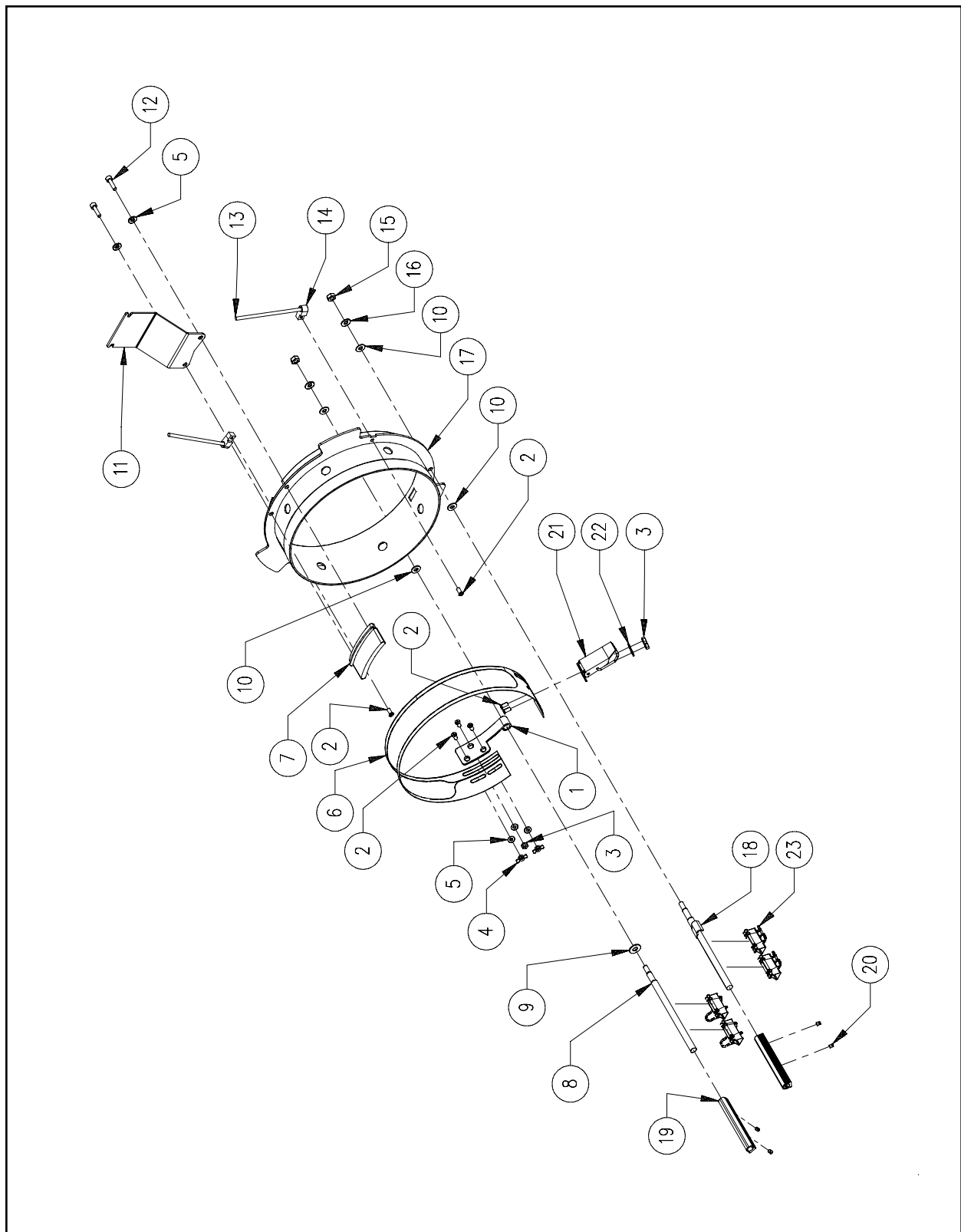


Figure 56

Wide-Angle Cap Frame (5 of 7)**Reference Figure 56**

Item No.	Part Number	Item Description	Comments
1•	010074-01	Hinge, Cap Frame	
2•*	010133-06	Screw, Small Flat Head, M3 x 0.5 x 6mm	
3*	680430-03	Nut, Hex, M3	
4*	006021-01	Nut, Wing, M3	
5•*	690439-03	Washer, Flat, M3	
6*	010151-01	Strap, Clamping, Cap Frame, w/Rubber	
7•	010191-02	Locator, Brim, Cap Frame	
8•	010075-01	Post, Cap Frame	
9•	690439-05	Washer, Flat, M5	
10•	690439-04	Washer, Flat, M4	
11•	005071-02	Holder, Visor	
12•	010170-10	Screw, Socket Head Cap, M3 x 0.5 x 10mm, Zinc Plate	
13*	005073-01	Cord, Shock, Cap Frame	
14•	010079-01	Bracket, Strap, Rubber	
15•	001963-05	Nut, Hex, M4	
16•	690427-04	Washer, Lock, Split, M4	
17*	010077-01	Weldment, Cap Frame, w/Rubber	
18•	010078-02	Post, Cap Frame, Weldment	
19•	010081-02	Holder, Clip	
20•	001960-03	Screw, Set, Flat Point, M4 x 0.7 x 3mm	
21*	005487-01	Latch, Takigen	
22*	690427-03	Washer, Lock, Split, M3	
23•	009682-02	Clip, Cap Frame	

Note:

The following can be replaced as a factory built assembly:

- *010093-01 Cap Frame, Wide-Angle, Melco, Assembly
- 010540-02 Cap Frame, Wide-Angle, Sub-Assembly

Wide Angle Cap Frame (6 of 7)

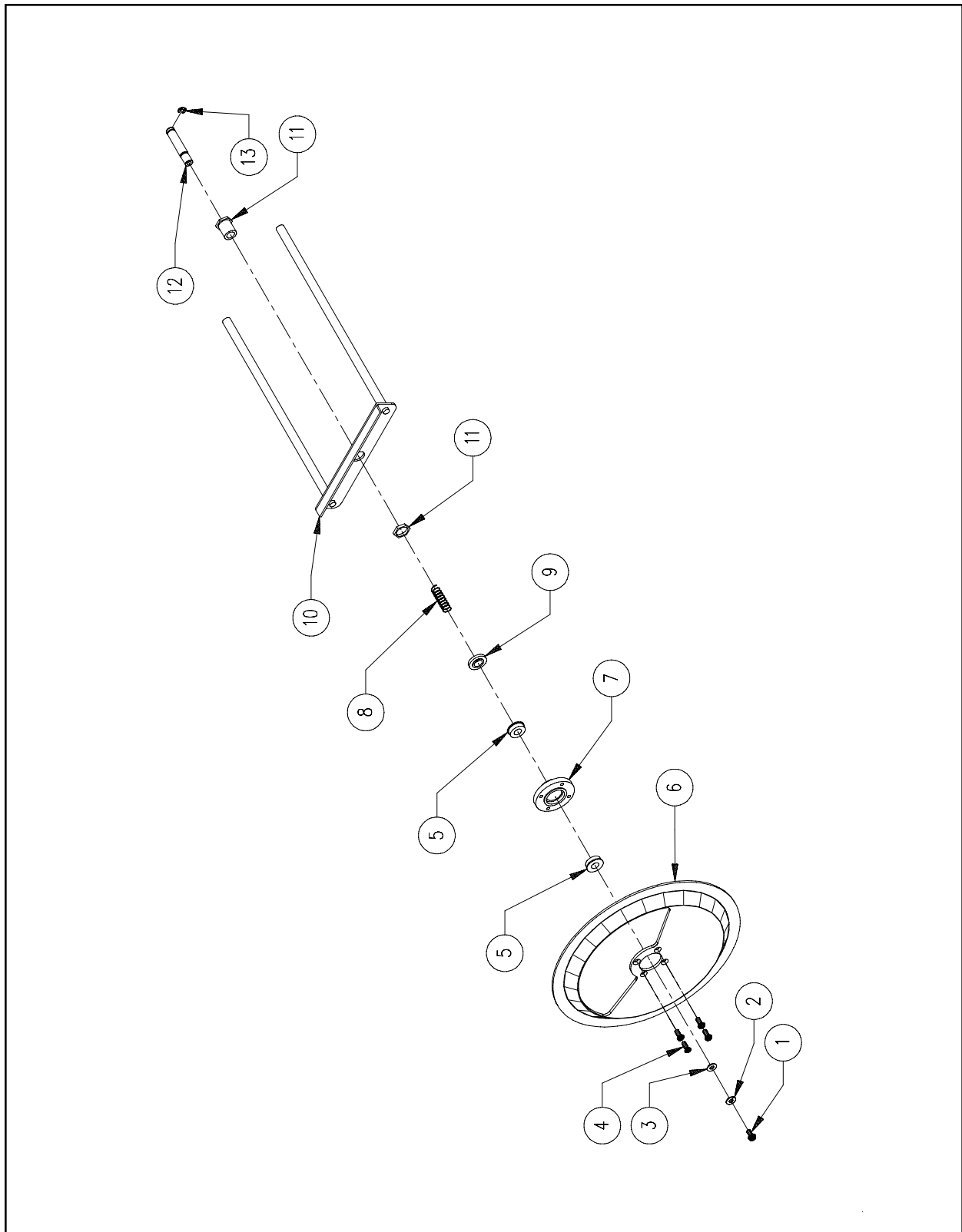


Figure 57

Wide-Angle Cap Frame (6 of 7)**Reference Figure 57**

Item No.	Part Number	Item Description	Comments
1*	675310-01	Screw, Pan Head Phillips, M3 x 0.5 x 6mm	
2*	690427-03	Washer, Lock, Split M3	
3*	690439-03	Washer, Flat, M3	
4*	010133-06	Screw, Flat Head Phillips, M3 x 0.5 x 6mm	
5*	009623-01	Bearing, Flanged, 6mm ID x 12mm OD	
6*	009613-01	Tensioner Disk	
7*	010096-02	Tensioner Disk Hub	
8*	009622-01	Spring, Compression	
9*	009812-02	Washer, Support, Spring	
10*	009606-01	Tensioner Disk Support	
11	009658-01	Bearing, Panel, 1/4" ID	
12*	009614-01	Tensioner Disk Shaft	
13*	001955-17	Retainer Ring	

Note:

The following can be replaced as a factory built assembly:

*010094-01 Tensioner, Disk, Assembly

Wide Angle Cap Frame (7 of 7)

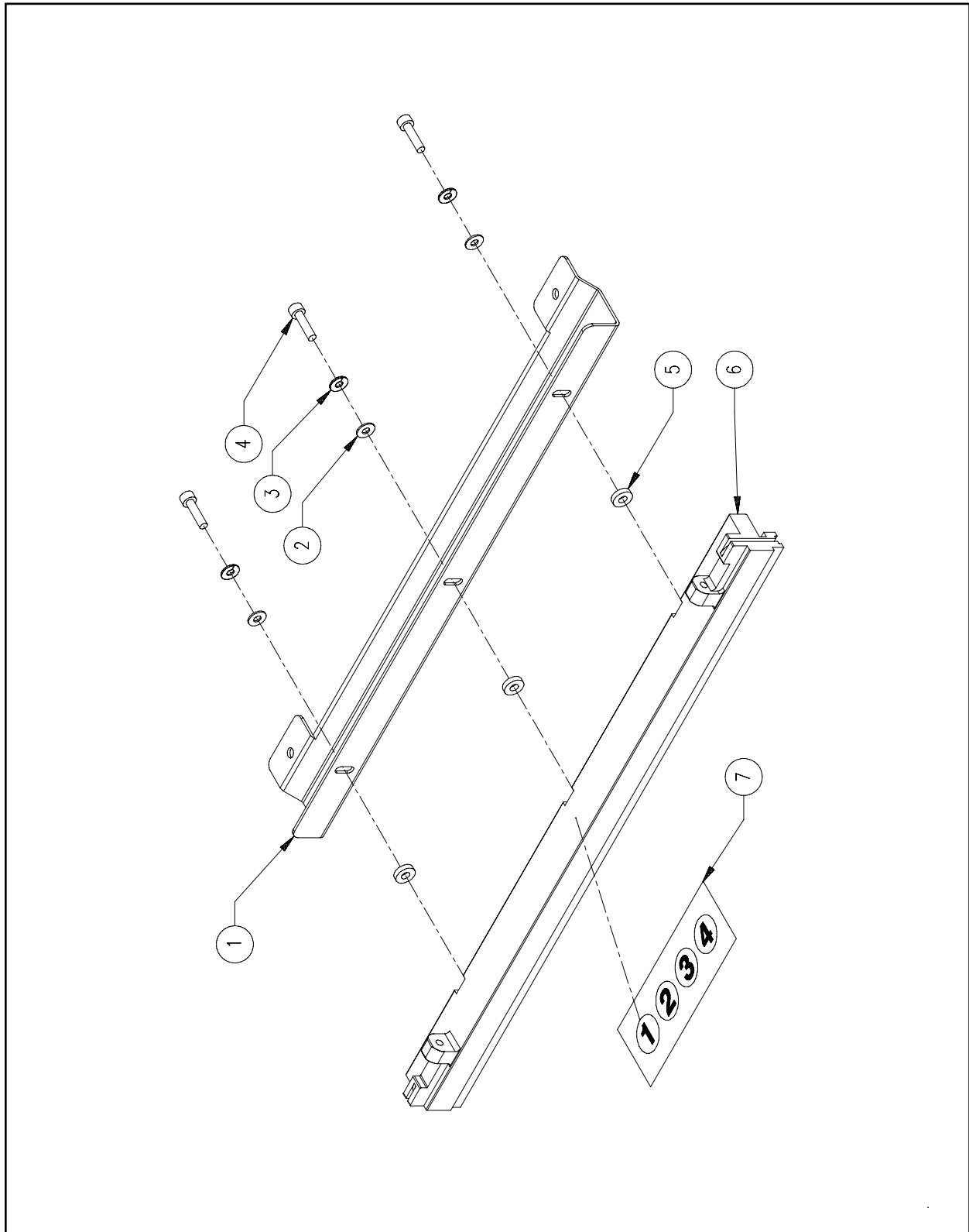


Figure 58

Wide-Angle Cap Frame (7 of 7)**Reference Figure 58**

Item No.	Part Number	Item Description	Comments
1	010097-02	Bracket, Interface, Cap Frame	
2	690439-04	Washer, Flat, M4	
3	690427-04	Washer, Lock, Split, M4	
4	010171-12	Screw, Socket Head Cap, M4 x 0.7 x 12mm, Zinc Plate	
4a*	010701-02	Wrench, L-Hex, 3mm, Short Arm	(see Note) (not shown)
5	010658-01	Spacer, Interface, Wide Angle Cap Frame	
6	009608-02	Bar, Drive Ring	
7	010475-01	Label, ID, Head/Cap Driver	

Note:

*Used with Item 4 and supplied with the Wide-Angle Cap Frame Option

Wide Angle Cap Frame Gauge

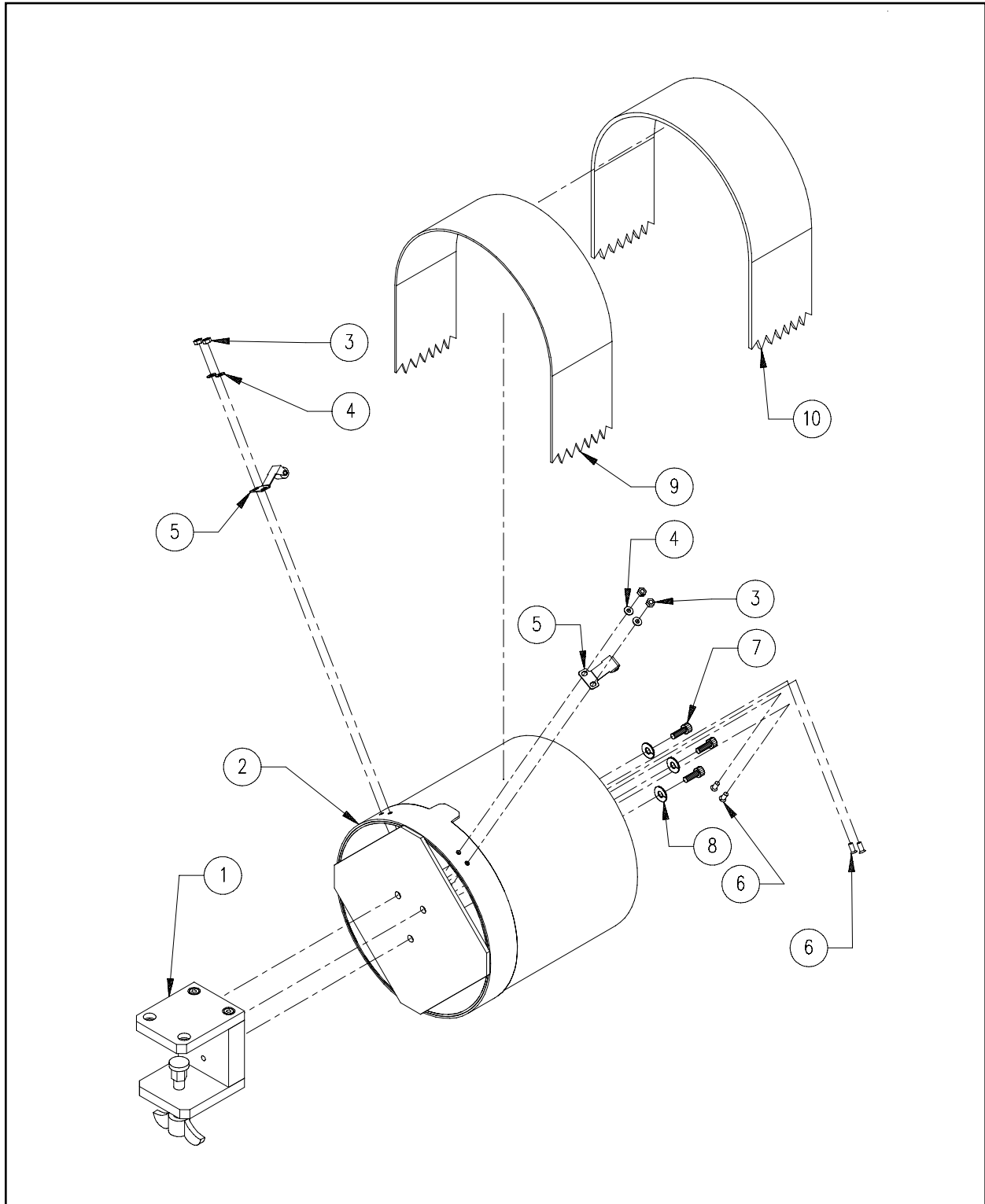


Figure 59

Wide-Angle Cap Frame Gauge**Reference Figure 59**

Item No.	Part Number	Item Description	Comments
1*	004949-01	Block, Mount, Cap Gauge	
2*	010196-01	Cylinder, Gauge	
3*	680430-03	Nut, Hex, M3	
4*	690439-03	Washer, Flat, M3	
5*	004229-01	Clip, Roller, Assembly	
6*	006558-08	Screw, Pan Head, Slotted, M3 x 0.5 x 8mm	
7*	670038-06	Screw, Socket Head Cap, 10-32 x 3/8"	
8*	690033-03	Washer, Lock, Split, #10	
9	010467-01	Strap, Rubber, Gauge, 2.38" x 18.00" x .0625" Thick	
10	010973-01	Strap, Rubber, Gauge, 2.38" x 18.00" x .125" Thick	

Note: The following can be replaced as a factory built assembly:

*010195-01 Gauge, Cap Frame, Wide-Angle

Sash Frame

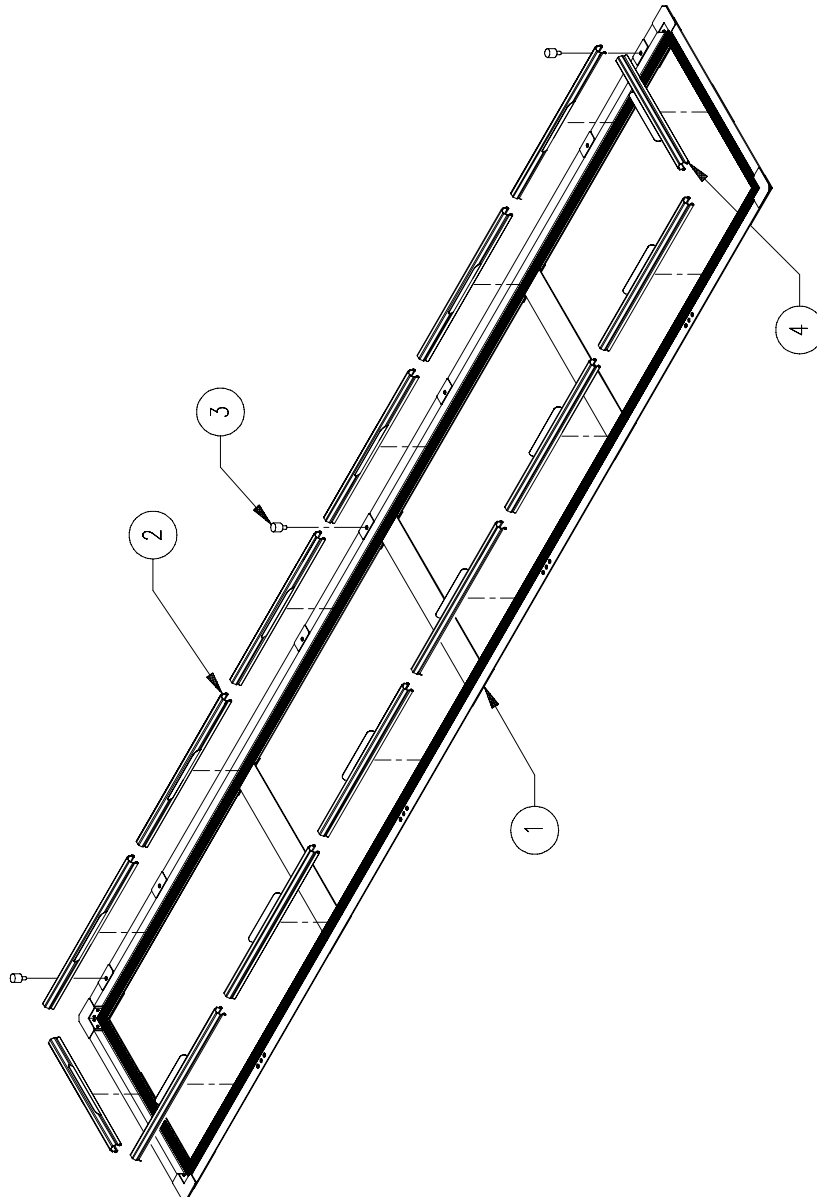


Figure 60

Sash Frame**Reference Figure 60**

Item No.	Part Number	Item Description	Comments
1	010653-02	Sash Frame, Assembly	
2	008177-01	Clip, Border Frame, 300mm	
3	010410-02	Screw, Thumb, Assembly	
4	007598-01	Clip Border Frame, 220mm	

Sash Hoops (21cm, 25cm)

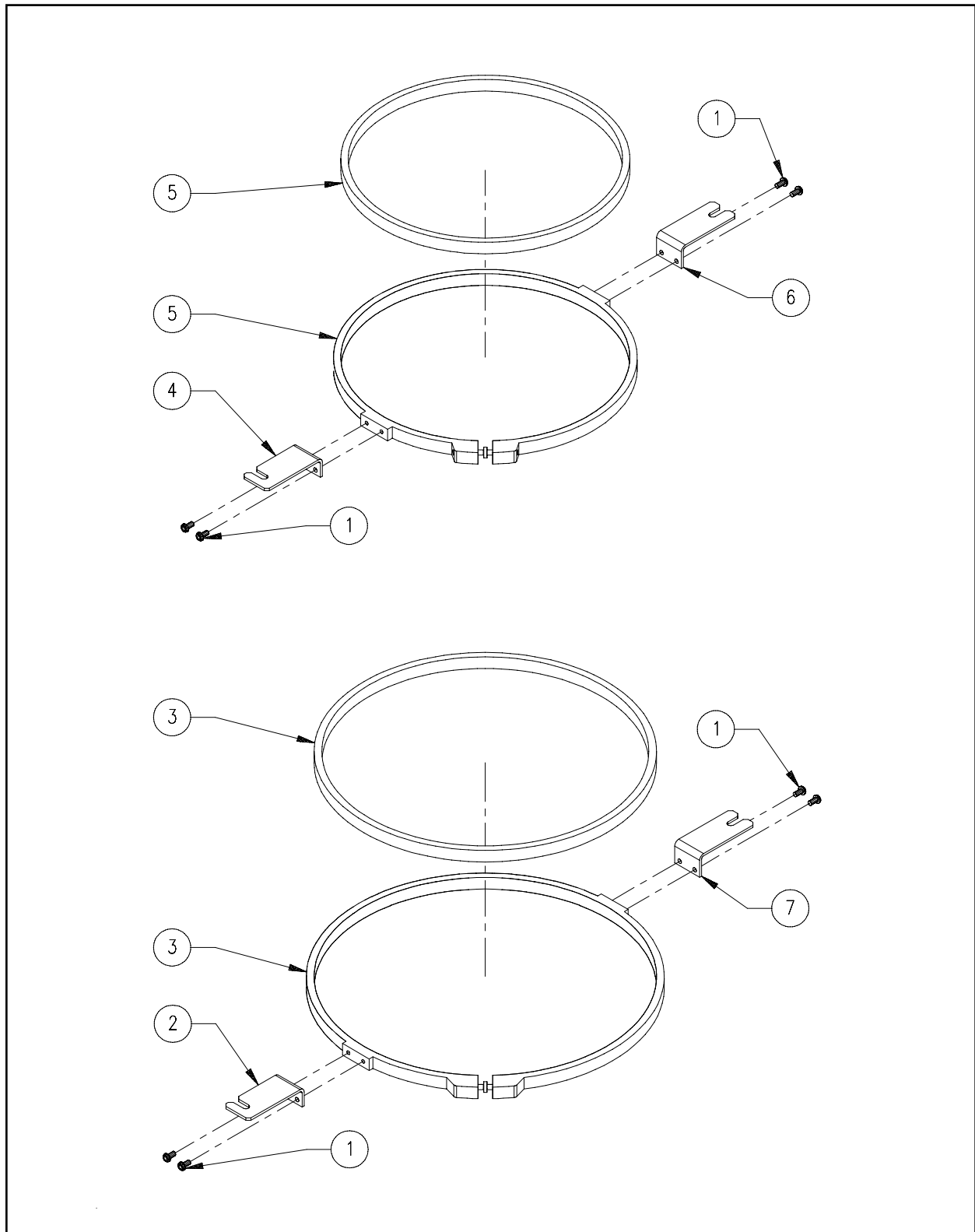


Figure 61

Sash Hoops (21cm, 25cm)**Reference Figure 61**

Item No.	Part Number	Item Description	Comments
1*•	003136-06	Screw, Button Head Socket, M3 x 0.5 x 6mm	
2*	010756-02	Bracket, Front, 25cm Hoop	
3*	007592-01	Hoop, 25cm, w/Arms	
4•	010759-02	Bracket, Front, 21cm Hoop	
5•	005404-01	Hoop, 21cm, w/Arms	
6•	010758-02	Bracket, Rear, 21cm Hoop	
7*	010755-02	Bracket, Rear, 25cm Hoop	

Note: The following can be replaced as a factory built assembly:

- *010757-01 Hoop, Sash, Round, 25cm
- 010760-01 Hoop, Sash, Round, 21cm

Disk Drive

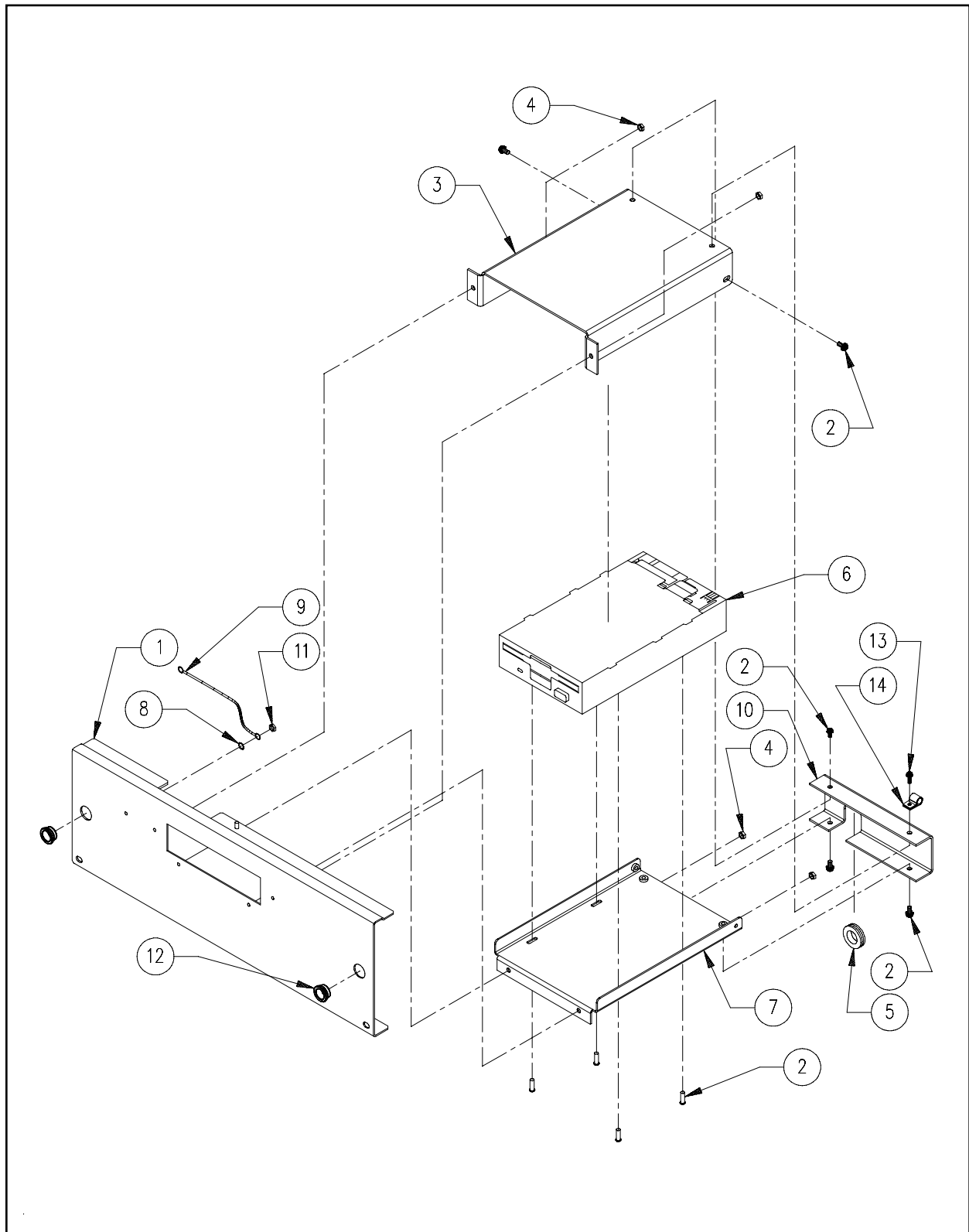


Figure 62

Disk Drive			Reference Figure 62
Item No.	Part Number	Item Description	Comments
1	009900-01	Cover, Spacer, Lower, Disk Drive	
2	009862-06	Screw, Pan Head Phillips, w/Star, M3 x 0.5 x 6mm	
3	010486-01	Cover, Disk Drive, Top	
4	009561-03	Nut, Kep, M3	
5	009154-01	Grommet, 7/16"	
6	004243-01	Disk Drive, Floppy, 1.44MB	
7	010485-01	Support, Disk Drive	
8	010167-04	Washer, External Star, M4	
9	009160-01	Jumper, Ground	
10	010487-01	Cover, Disk Drive Connectors	
11	009561-04	Nut, Kep, M4	
12	008495-01	Bushing, Mini, Red	
13	009862-10	Screw, Pan Head Phillips, w/Star, M3 x 0.5 x 10mm	
14	340743-07	Clamp, Cable, Nylon, Black, 1/2" ID	

Hoop Interface

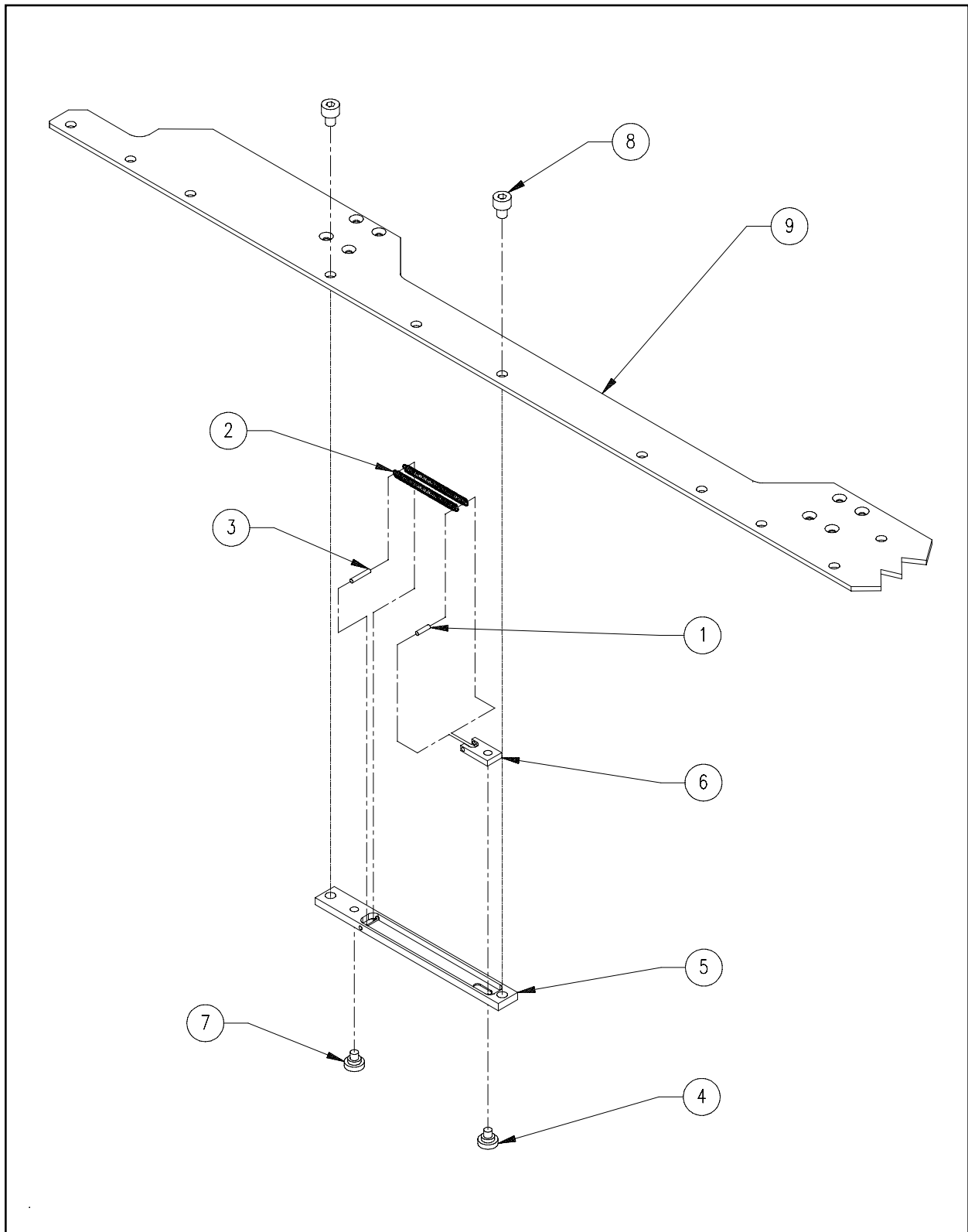


Figure 63

Hoop Interface **Reference Figure 63**

Item No.	Part Number	Item Description	Comments
1*	010378-08	Pin, Roll, 2mm x .315"	
2*	010379-01	Spring, Extension, .125" OD x 1.75"	
3*	010378-12	Pin, Roll, 2mm x .472"	
4*	010376-01	Locator, Movable Interface, Pin Type	
5*	010374-01	Block Interface, Pin Type	
6*	010375-01	Slide Interface, Pin Type	
7*	010377-01	Locator, Fixed Interface, Pin Type	
8*	010172-08	Screw, Socket Head Cap, M5 x 0.8 x 8mm, Zinc Plate	
9	009931-02	Carriage, Rack	(reference only)

Note: The following can be replaced as a factory built assembly:

*010395-01 Interface, Hoop, Pin Type, Assembly

Tubular Hoops (44cm x 30cm)

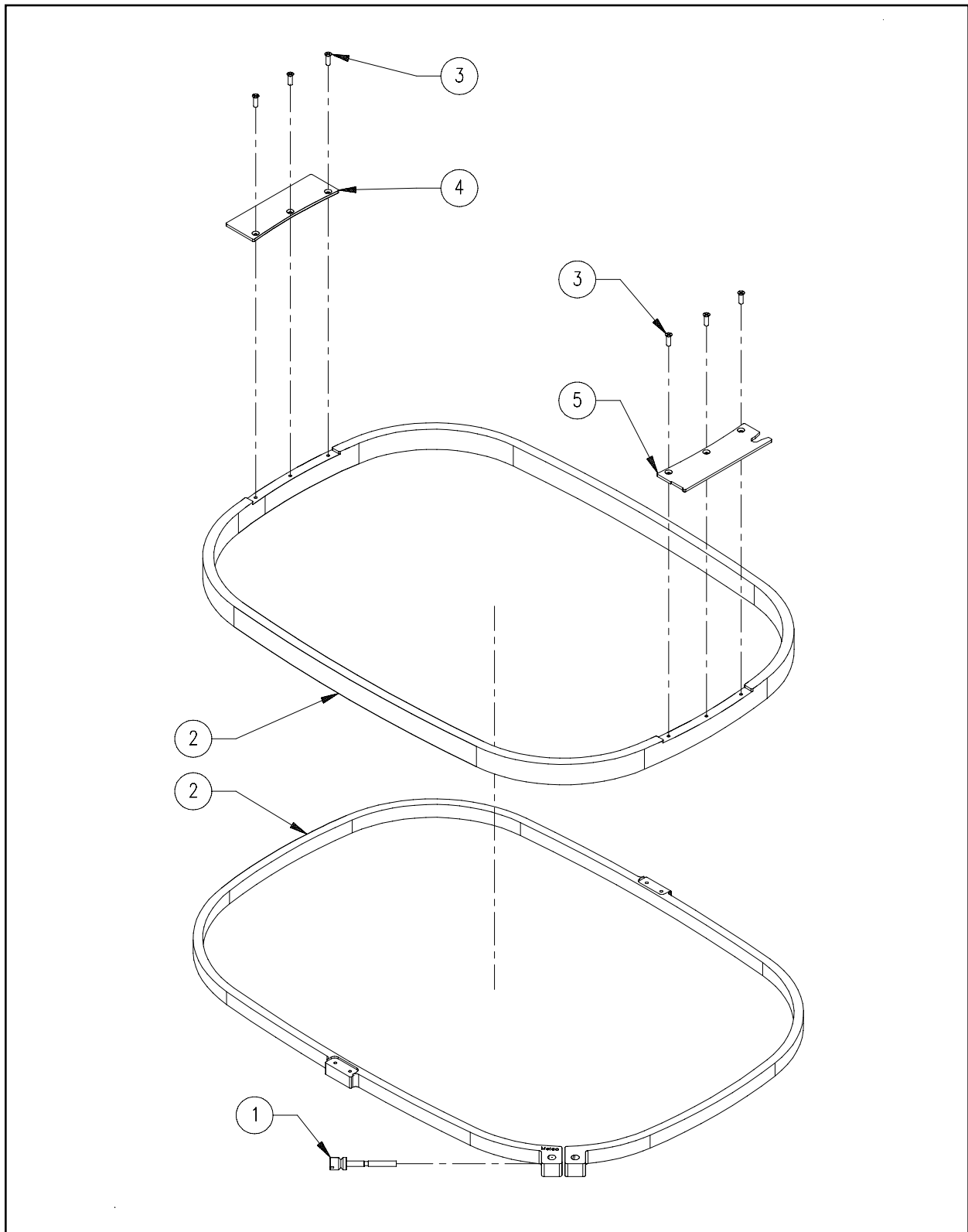


Figure 64

Tubular Hoops (44cm x 30cm)**Reference Figure 64**

Item No.	Part Number	Item Description	Comments
1*	005576-01	Screw/Barrel Nut, Hoop, Assembly	
2*	010194-03	Hoop, Oval, 44cm x 30cm	
3*	001935-08	Screw, Flat Head Phillips, M3 x 0.5 x 8mm	
4*	010447-02	Bracket, Tubular Hoop, Left	
5*	010446-02	Bracket, Tubular Hoop, Right	

Note:

The following can be replaced as a factory built assembly:

*010204-01 Hoop, Tubular, Oval, 44cm x 30cm, Assembly

A

Amplifier, Servo, UL	41-2
Arm, Actuator	21-2
Arm, Drive, Movable Knife	23-2
Arm, Motor Stop	22-2
Assembly, Gears, Bevel	12-2

B

Bar, Drive Ring	58-2
Bar, Grabber	14-2
Bar, Guide	50-2
Bar, Idler, Assembly	19-2
Bar, Needle	14-2
Base, Cap Frame, Assembly	49-2
Base, Drive Ring	52-2, 53-2
Base, Drive, Lever, Take-Up, PHS II	20-2
Base, Picker	23-2
Base, Tensioner	16-2
Base, X-Axis	25-2, 26-2, 27-2
Bearing, Ball, Radial, 15mm ID	17-2
Bearing, Ball, Radial, 8mm ID	17-2
Bearing, Centering, Flange, 1/2 "	29-2
Bearing, Cross Roller	15-2
Bearing, Flange, 6mm	22-2
Bearing, Flanged	52-2
Bearing, Flanged, 6mm ID x 12mm OD	57-2
Bearing, Gear, Main Shaft	12-2
Bearing, Linear	27-2, 52-2

Bearing, Needle	35-2
Bearing, Panel, 1/4" ID	57-2
Bearing, Radial, 4mm ID x 9mm OD	15-2
Bearing, Shaft, Guide	18-2
Bearing, Sleeve, Frelon	34-2, 36-2, 37-2, 50-2
Bearing, Spherical, 15mm ID	32-2
Bearing, Thrust, 15mm	12-2, 30-2
Bearing, Thrust, 8mm	10-2
Belt, Drive	25-2
Belt, Timing, 1/5P, 104 Groove, 3/8" Wide	17-2
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Belt, Y-Drive	34-2, 36-2, 37-2
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Blade, Sensor, Interruptor	13-2
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Block, Contact, Emergency Stop.....	6-2
Block, Drive Pulley	25-2
Block, Locator, Brim	49-2
Block, Mount, Cap Gauge	59-2
Block, Mounting, Cap Gauge, Assembly	51-2
Block, Return Pulley	25-2
Bolt, Adjuster, Trimmer	24-2

Bolt, Carriage, 1/4-20 x 3/4"	32-2	Bracket, Needle Plate	17-2, 23-2
Brace, Table, Left	2-2	Bracket, Picker	17-3, 23-2, 43-2
Brace, Table, Right	2-2	Bracket, Pretensioner	16-2
Brace, Thread Tree	11-2	Bracket, Rear, 21cm Hoop	61-2
Bracket, Bed, Cable	23-2	Bracket, Rear, 25cm Hoop	61-2
Bracket, Blank, PC	38-2	Bracket, Rear, Thread Tree	11-2
Bracket, Cable	50-2	Bracket, Right End	25-2
Bracket, Clamp, Belt	34-2, 36-2, 37-2	Bracket, Solenoid	17-2
Bracket, Clamp, Left Hand	54-2, 55-2	Bracket, Solenoid, Mounting	24-2
Bracket, Clamp, Right Hand	54-2	Bracket, Spring, Mount	23-2
Bracket, Drive	50-2	Bracket, Stopper, Delrin	18-2
Bracket, Drive Ring	54-2	Bracket, Stopper, Steel	18-2
Bracket, Ethernet Card Connector	39-2	Bracket, Strap, Rubber	56-2
Bracket, Frame Holder, Gauge Set	51-2	Bracket, Support, Left Hand.....	53-2
Bracket, Front, 21cm Hoop.....	61-2	Bracket, Support, Light	7-2
Bracket, Front, 25cm Hoop	61-2	Bracket, Support, Right Hand	53-2
Bracket, Front, Thread Tree	11-2	Bracket, Support, Take-Up Lever Guide	15-2
Bracket, Grabber, Lower, Flared	14-2	Bracket, Switch, Adjusting	24-2
Bracket, Hinge	49-2	Bracket, Tensioner	16-2
Bracket, Holder, Bar	53-2	Bracket, Transition	21-2
Bracket, Idler, Y-Axis	35-2	Bracket, Tube, Thread	1-2
Bracket, Interface, Cap Frame	58-2	Bracket, Tubular Frame, Left	27-2
Bracket, Latch 17-2,	49-2	Bracket, Tubular Frame, Right	27-2
Bracket, Left End	25-2	Bracket, Tubular Hoop, Left	64-2
Bracket, Load Resistor, Computer Power Supply	40-2	Bracket, Tubular Hoop, Right	64-2
Bracket, Motor Board Connector	39-2	Bracket, Wire Loom	8-2, 9-2
Bracket, Motor Mount	26-2	Bracket, Z-Drive Motor	32-2

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Bumper, Motor Stop	22-2	Cam, Drive, Lever, Take-Up	17-2
Bushing, Base, Drive, Lever, Take-Up	20-2	Cam, Trimmer	17-3
Bushing, Cradle, Spring	18-2	Cap, Spring	16-2
Bushing, Insulating, Miniature	1-2	Card Cage, Bottom Cover	39-2
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Cable, Drive Ring	50-2	Case, Bobbin, ^{WO} /Spring	17-2
Cable, Drive Ring, Assembly	54-2	Case, Gear, Drive, Lever, Take-Up	20-2
Cable, EMT10/4, Amplifier Assembly, Jumper	45-2	Catch, Pull	49-2
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Clamp, Split-Hub, 8mm ID	10-2	Cover, Blade, Rear	21-2
Clamp, Stop, Needle Bar	14-2	Cover, Blade, Top	21-2
Clamp, Swivel, Picker	24-2	Cover, Cap Frame Bracket	43-2
Clamp, X-Belt	25-2	Cover, Disk Drive Connectors	62-2
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Pad, Reservoir, Felt	15-2	Pin, Spring, 3mm	15-2
Pad, Support, Cylinder	53-2	Pin, Spring, 3mm x 14mm Lg	17-2
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