



## Pro-Tester SE



**Model: T-0100SE**  
**Field Tensiometer**

# Operator's Manual

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**Scope of Manual:** This manual contains procedures for general unpacking, installation, setup and operation of your DEMTECH Services, Inc. tensiometer.

**Revision: A**



Rev A: December 2006

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## *Safety Precautions*

Safety precautions for operating personnel:

**WARNING 1:** Operating personnel should perform only the procedures described and recommended in this manual. Only qualified service personnel familiar with electrical shock hazards and mechanical entanglement hazards present inside the equipment should perform disassembly or corrective maintenance of the equipment.

**WARNING 2:** To avoid shock hazards, the equipment must be grounded with an adequate earth ground in accordance with local and national electrical codes.

**WARNING 3:** The locations of potentially dangerous voltages and other hazards are identified and labeled on the equipment. Be careful to observe these warnings when installing, operating, maintaining or servicing the equipment. Observe all warnings in this manual.

**WARNING 4:** Make sure to turn off the equipment power and remove the ~ (AC) line cord from the power outlet before attempting to service the equipment. Do not perform service unless you are qualified and trained to do so.

**CAUTION 1:** Observe the precautions given on the equipment and within this manual to prevent damage to the equipment.

**CAUTION 2:** Before connecting the equipment to its electrical source, check that the ~ (AC) voltage, frequency and current to be supplied to the equipment are correct and match the serial plate affixed to the system.

**CAUTION 3:** Use proper handling and packaging procedures for Electro-Static Discharge (ESD) sensitive circuit boards. Assume that all circuit boards are sensitive to potential damage from ESD.

**CAUTION 4:** Unauthorized personnel should not remove from the equipment those panels that are provided for protection and/or require a tool to remove.



## 1. General Product Data

The DEMTECH Services, Inc. Pro-Tester SE™ Field Tensiometer, hereinafter referred to as the Pro-Tester SE™, is a tool which provides fast and effective field testing of welded seam samples. State-of-the-art electrical and electronics controls and an easy to use User Interface (UI) make the task of performing field sample tests much more efficient. The highly integrated and automated operation of the Pro-Tester SE™ eliminates cumbersome setup and speeds up process time while providing a very rugged and reliable system. The one button operation combined with automatic return saves time. The enclosed controller system is easy to maintain. You can be assured the Pro-Tester SE™ has been built using the highest quality materials available which include Billet Aluminum and ground and hardened steel. DEMTECH Services, Inc. strives to make our systems easy to use and built to last. Just like all other DEMTECH Services, Inc. products, even a first time user will be productive in minutes. With easy adjustments and a one touch operation, you will be getting test results within minutes of installation.

To operate and navigate the various features of the Pro-Tester SE™ simply follow the text prompts at the bottom of the Liquid Crystal Display (LCD) screen. Significant development was spent making the system very easy to operate by even a novice operator by simply following the screen prompts.

For additional product information please refer to the product data sheet located in Appendix A of this manual.

## 2. Site Preparation

Before proceeding with the installation instructions in the following section(s) make sure the work site is prepared and ready to install the Pro-Tester SE™. You should have an adequate power source capable of provided clean Alternating Current (AC) power at 110 or 220 Volts at the rated current. Refer to the system serial plate affixed to the rear of the system for the voltage and current requirements of your system. The install area should be clean, dry and free of debris and provide adequate working area to allow efficient and effective use of the system.

Follow the detailed installation introductions carefully.

### 3. Installation Instructions

This section contains instructions for the unpacking, placement and installation of the Pro-Tester SE™. Carefully review the following information, sub-sections and each procedure before beginning unpacking and installation of the system.

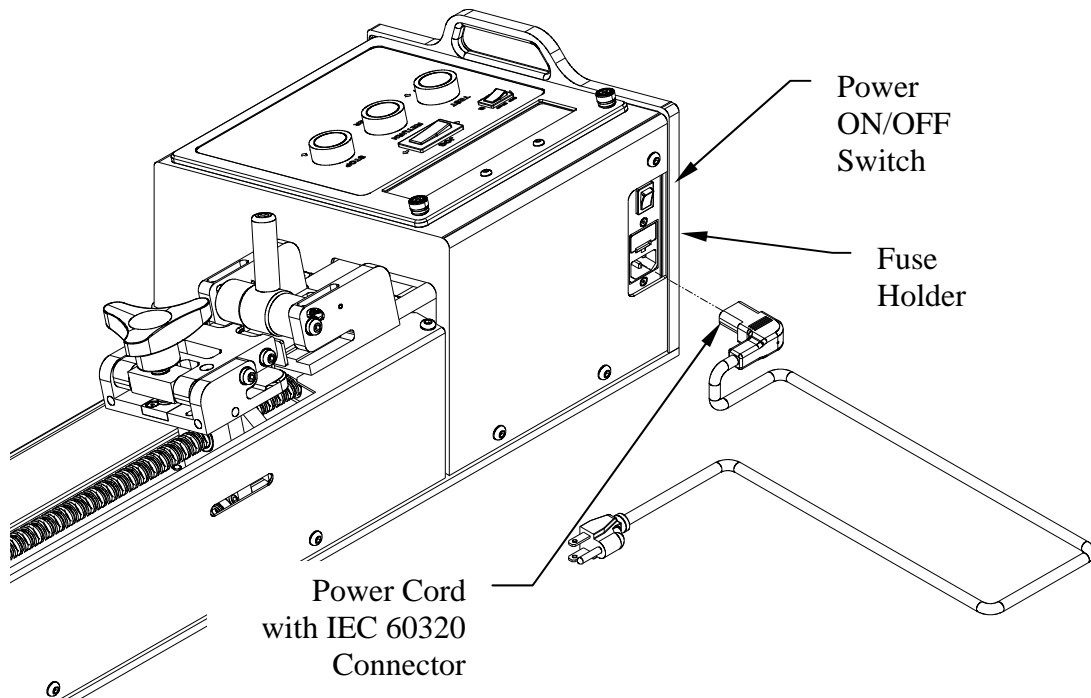
The Pro-Tester SE™ comes complete in a reusable portable shipping/transport container. The system can be operated from within the container or removed and placed onto a work bench or appropriate platform for use. When not in use the Pro-Tester SE™ should always be stored in the shipping/transport container to protect it from the elements and potential damage.

**Note: The system illustrated in this manual shows ALL available features for the Pro-Tester SE™, therefore, your system may vary slightly in appearance from that depicted.**

#### *3.1. Unpacking and Preparation*

1. Before opening the shipping/transport container and unpacking the system, inspect the outside of the container thoroughly for any signs of mishandling or damage during shipping. Report any damage to the shipping carrier immediately and **do not proceed with unpacking**. Since the shipment is made FOB factory, you should consult your administration concerning claims for shipping damage. Please notify DEMTECH Services, Inc. immediately in writing of any shipping damage.
2. Unlatch and open the shipping/transport container lid and inspect inside the container and equipment thoroughly for any signs of mishandling or damage during shipping. Report any damage to the shipping carrier immediately and **do not proceed with unpacking**. Since the shipment is made FOB factory, you should consult your administration concerning claims for shipping damage. Please notify DEMTECH Services, Inc. immediately in writing of any shipping damage.
3. Make note of the orientation of the equipment and packing foam inserts inside the shipping container to facilitate any repackaging requirements in the future.

4. To avoid injury and/or damage to the system, be sure to use adequate care when lifting, removing or replacing the system into the shipping/transport container.
5. You may operate the system from within the shipping/transport container or remove it and place it in an appropriate location suitable for the testing you intend to perform.
6. Verify proper operation of the Pro-Tester SE™ before proceeding with the remainder of the installation. The Pro-Tester SE™ is equipped with a “soft-start” feature. This feature utilizes a toggle power switch on the rear of the system. Toggle the switch up to turn the system ON. Toggle the switch down to turn the system OFF. This feature provides a built in safety to protect the system during connection to a field generator by automatically turning the power off to the system any time AC power is disconnected either by turning off the generator or unplugging the power cord. Upon startup generators can produce significant power surges which can be harmful to the Pro-Tester SE™. This soft-start feature eliminates ill effects from this phenomenon. Find the Power Cord included with your system and plug one end into the appropriate connector at the rear of the system (refer to Figure 1). Plug the other end into an electrical outlet supplying the proper ~(AC) power. Toggle the Power Switch to the ON position (refer to Figure 1).

**Figure 1**

7. The system LCD should light up, go through a self-diagnostic test and then prompt the user to press ENTER to initiate the initialization/calibration sequence. Press ENTER to perform the initialization/calibration procedure. For proper operation of the Pro-Tester SE™ do not HALT or skip this procedure.

The system will first move the grip heads in (left) to find the home position, then out (right) to calibrate travel speed. After a short pause the grips will then move back in (left) and stop at the A or B grip separation position depending on which is selected on the Control Panel. This procedure verifies the Pro-Tester SE™ is in good working condition. If the system performs as described you are now ready to operate the system. If the system does not perform any of the functions described above please contact DEMTECH Services, Inc.

### ***3.2. Control Panel***

The User Interface Control Panel is the main operator interface device for operating the Pro-Tester SE™. Each component of the Control Panel is identified below (refer to Figure 2).

1. Liquid Crystal Display (LCD): The LCD is a 40 Character by 4 Line display device which provides main system operation information for the Control Panel. It provides all key operating information and allows the user to input various system settings.
2. JOG ⇄: This switch allows the user to jog (move) the movable sample grips at an accelerated rate in and out during setup and operation of the system and is used to change various settings during Menu Mode operation (refer to Section 3.4).
3. Grip Start Position Toggle Switch A/B: This switch allows the user to select between one of two grip separation settings. This allows quick transition from one separation length to another. Grip separations A and B can be set through the Menu Mode (refer to Section 3.4).
4. Test/Yes/⤴: This button is used to initiate a Test or in Menu Mode to navigate the screen tree.
5. Return Enter: This button is used to return the grips after a test or in Menu Mode to navigate the screen tree.

6. Stop/No/↓: This button is used to stop a Test or in Menu Mode to navigate the screen tree.

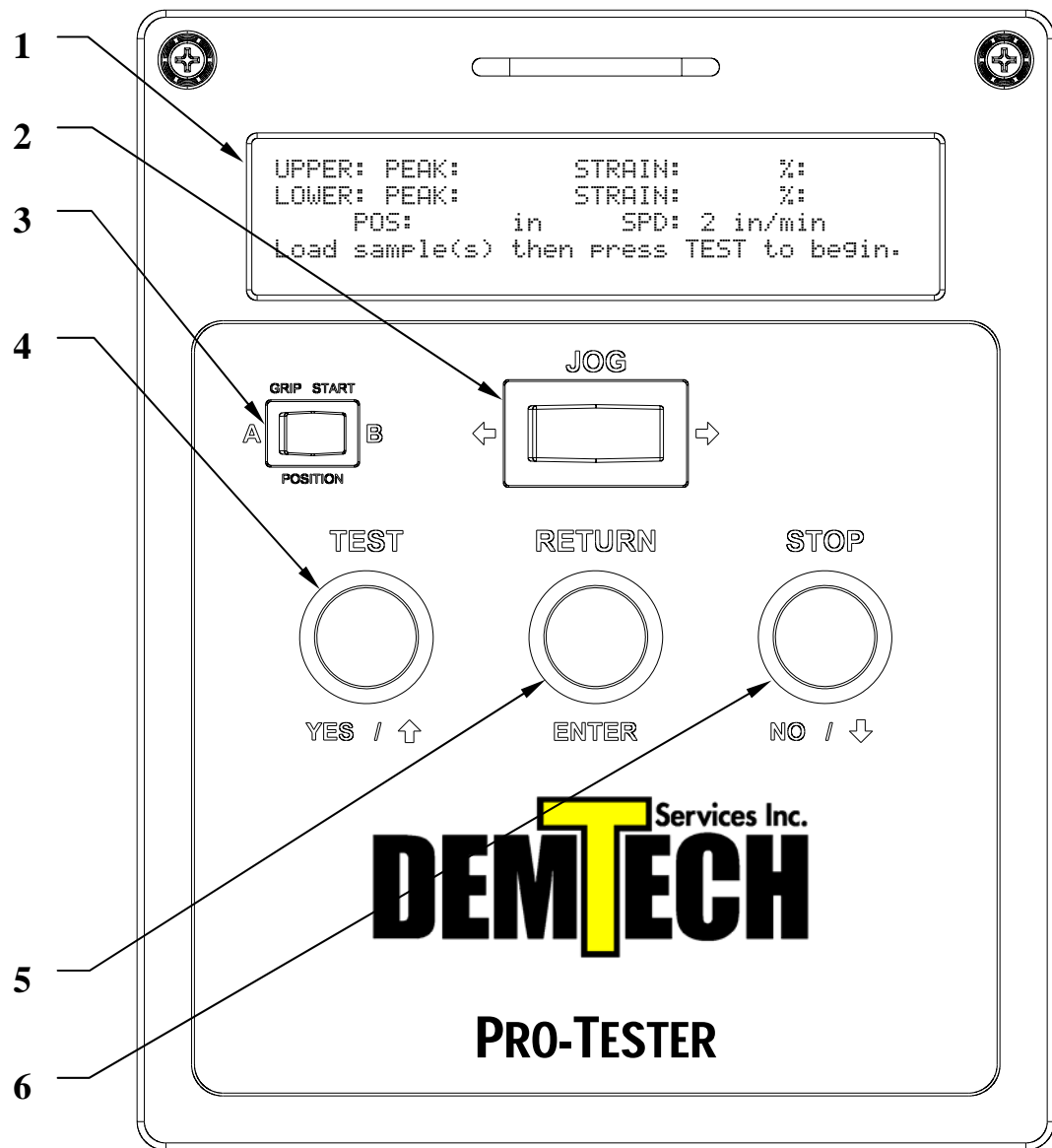
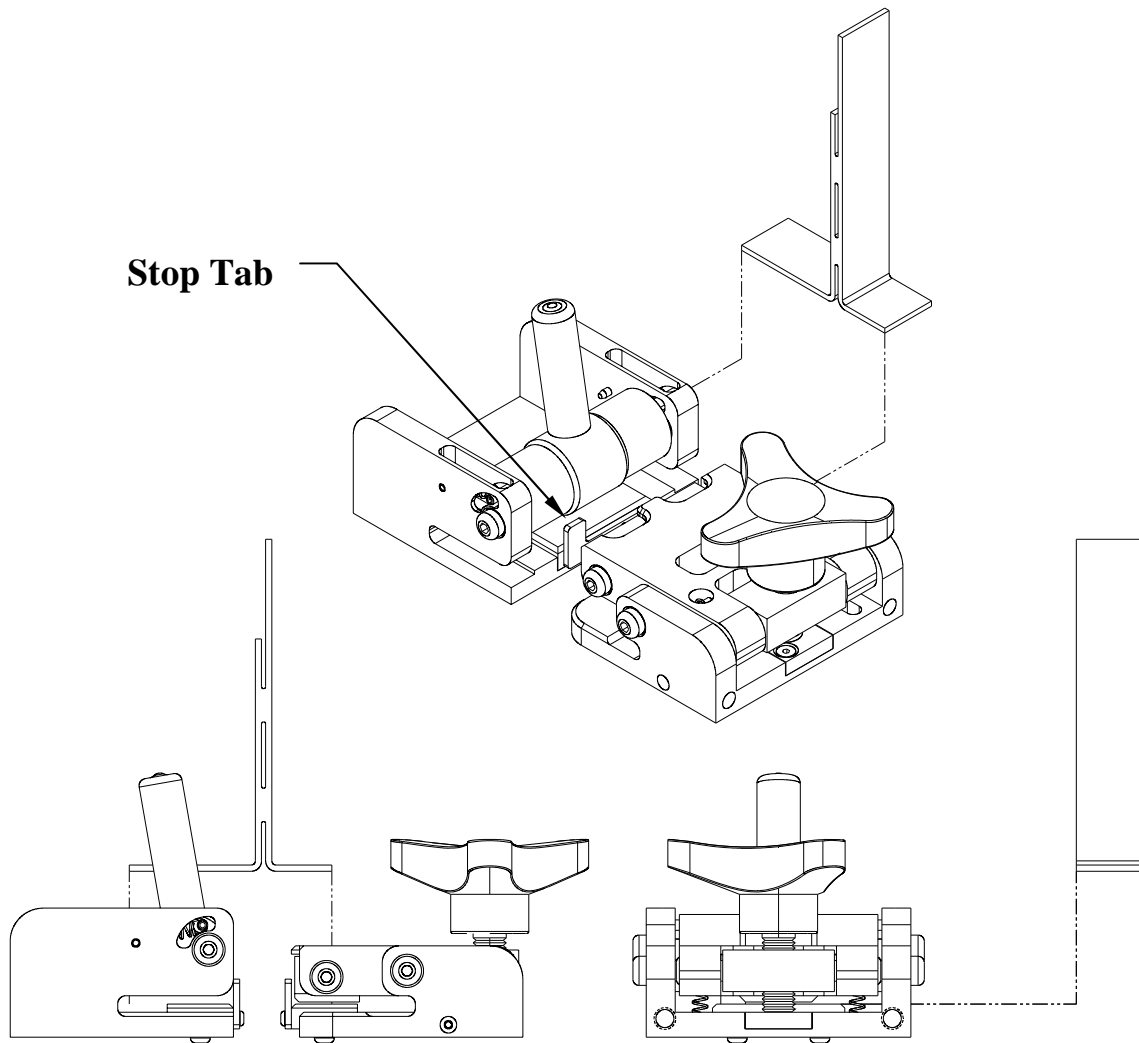


Figure 2

### ***3.3. Loading Samples***

Loading samples is very simple with the Pro-Tester SE™. To load a sample open both jaws of the sample grip assemblies. The left grip is a cam clamp and is opened by toggling the cam handle to the right (open). The right grip is a screw clamp and is opened by unscrewing the tri-handle counter-clockwise (open). The sample is prepared by bending the ends to be clamped so they can be easily loaded into the grips. Load the sample from the top of the grip until the sample rests against the stop tabs then apply the left and right grip clamps (refer to Figure 3).



**Figure 3**

### ***3.4. Settings***

The Pro-Tester SE™ requires various settings for proper operation. These settings are easily accessed via the Menu Mode of operation. To enter the Menu Mode make sure the Pro-Tester SE™ is on and at the main operating screen (Refer to Appendix B). Simultaneously press and hold the YES and NO buttons on the Control Panel for several seconds. This procedure puts the system into Menu Mode. This mode of operation allows the user the set various system parameters. For a complete listing of all of the features refer to Appendix B located at the back of this manual.

All of the settings required to operate the Pro-Tester SE™ come factory set for most users and should not need setting. However, if your particular installation requires setting any parameters enter the Menu Mode and follow the screen prompts to navigate the screen menu.

Appendix B is a Menu Tree drawing. This drawing can be very helpful if you are trying to find a particular function or setting you wish to access. Use the drawing to locate the particular item you want to access. Once located, follow the tree back to the top level. Next, utilizing the user interface on the Pro-Tester SE™, proceed back down through the menu structure using the drawing as a guide to access the particular screen you want.



## 4. Elongation Definition

If you intend to use the strain (elongation) feature of the Pro-Tester SE™ tensiometer it is important to understand both the definition of this feature/function and how it is intended to be used. Proper understanding requires the definition of some basic terms. These terms are defined below.

**Grip Separation (GS):** The distance between the grip point on each of the left and right sample grip assemblies (refer to Figure 4). There are two user settable distances, A or B, which have been factory set for 1.7 and 3.5 inches respectively. The operator must be aware of these values and change the settings if necessary (refer to Section 3.4) to accommodate the particular sample to be tested.

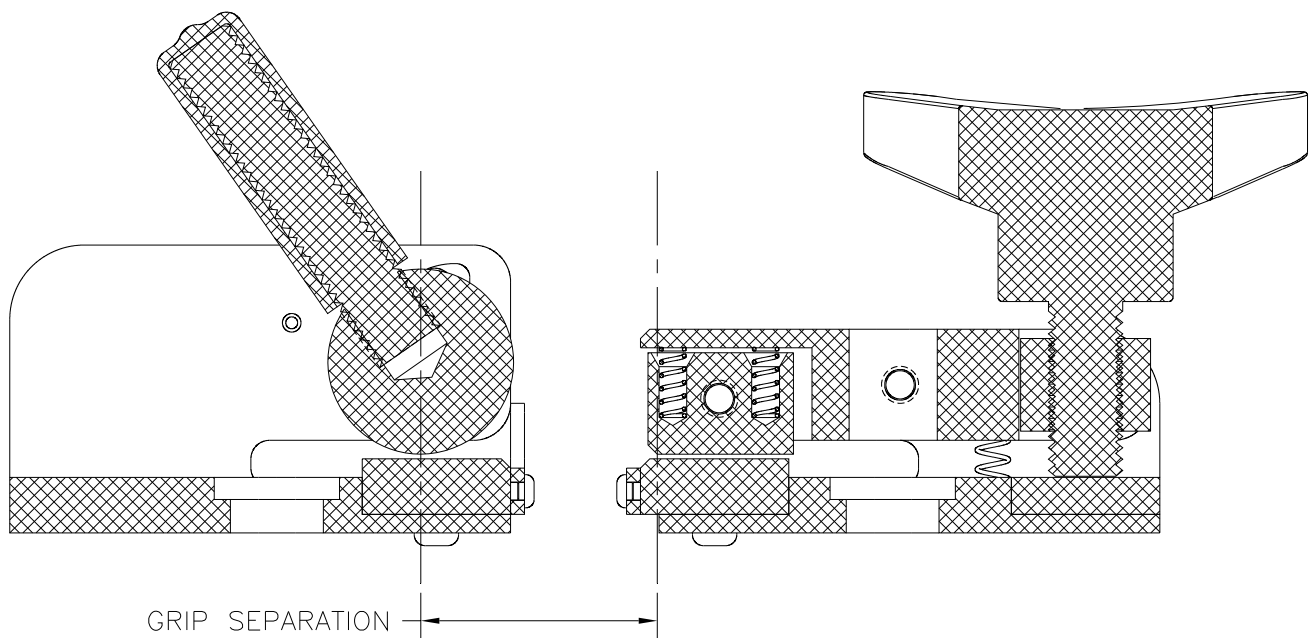
**Weld Extrusion (Squeeze-out):** The area of a weld whereupon becoming molten the parent material extrudes (is squeezed) out from between the pressure zone of the welding tool and then cools. This extruded material does not usually provide an acceptable bond of the parent material and should not be considered part of the weld (refer to Figure 5C).

**Weld Width (WW):** The center-to-center distance between the two welds of a dual-track weld (refer to Figure 5A) or the edge-to-edge distance on a solid weld (refer to Figure 5B). It is important when measuring/calculating these distances that the operator only include the actual width of the weld. The width of the weld is defined as only that area where the two sheets of parent material have been appropriately bonded by both heat and pressure. During this process some parent material may extrude beyond the pressure zone of the welding tool (refer to Weld Extrusion definition). This extruded material does not usually provide an acceptable bond of the parent material and should therefore be excluded from any measurements made for this test.

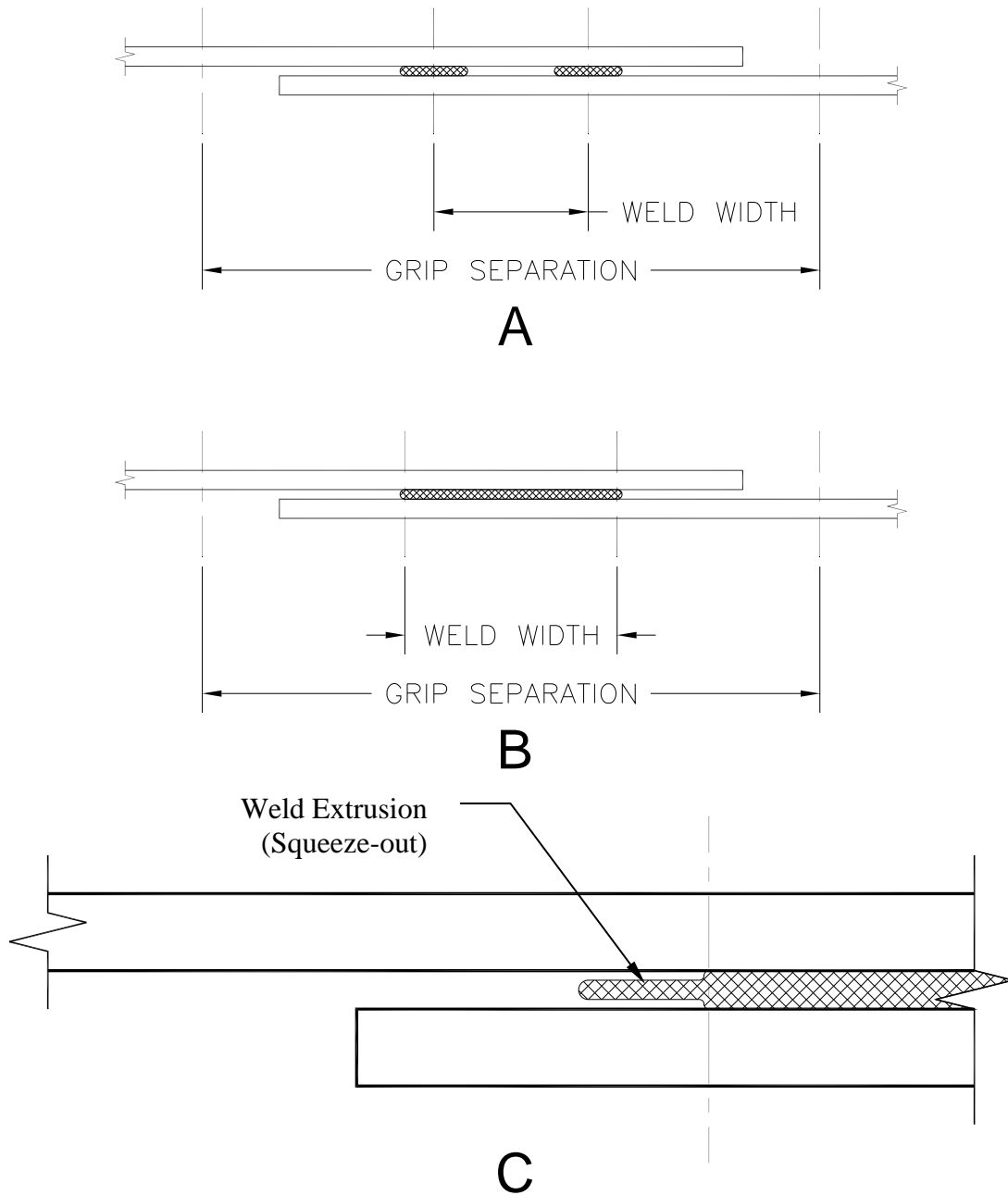
**Gauge Length (GL):** This is the base value used by the Pro-Tester SE™ for determining elongation percentage. It is the Grip Separation once the initial tension value has been reached minus the Weld Width ( $GS - WW = GL$ ). For example if your Grip Separation was 4 inches and your Weld Width was 1 1/2 inches then your Gauge Length would be 2 1/2 inches ( $4 - 1.5 = 2.5$ ). It is this value that is used to determine elongation. Elongation is calculated as the percentage of change (increase) of the Grip Separation related to Gauge Length. For example if your Gauge Length is 2 1/2 inches and the grips had separated 1 1/4 inches at the completion of your test then the elongation would be 50% ( $1.25 / 2.5 = .50$ ). If

your Gauge Length is 2 1/2 inches and the grips had separated 2 1/2 inches at the completion of your test then the elongation would be 100% ( $2.5 / 2.5 = 1.00$ ).

It is on this basis that the Pro-Tester SE™ has been designed and programmed to operate when performing elongation testing.



**Figure 4**



**Figure 5**

## 5. Factory Servicing

In the event your Pro-Tester SE™ should require factory service, the entire system needs to be returned to the factory. Refer to the following step for preparing the Pro-Tester SE™ for return.

Carefully pack the Pro-Tester SE™ in the shipping/transport container provided with the system for return to DEMTECH Services, Inc.'s factory for service. Unless previous arrangements are made shipping charges and insurance are your responsibility. Ship the Pro-Tester SE™ to DEMTECH Services, Inc. at:

6414 Capitol Avenue  
Diamond Springs, CA 95619  
U.S.A.

## 6. Appendix A, Product Brochure

Refer to Appendix A for the Pro-Tester SE™ Product Brochure.

## 7. Appendix B, Menu Tree

Refer to Appendix B for the Pro-Tester SE™ Menu Tree drawing. This drawing can be very helpful if you are trying to find a particular function or setting you wish to access. Use the drawing to locate the particular item you want to access. Once located, follow the tree back to the top level. Next, utilizing the user interface on the Pro-Tester SE™, proceed back down through the menu structure using the drawing as a guide to access the particular screen you want. To enter the Menu Mode make sure the Pro-Tester SE™ is on and at the main operating screen (Refer to Appendix B). Simultaneously press and hold the YES and No buttons on the Control Panel for several seconds.

## **8. Appendix C, Parts ID**

Refer to Appendix C for the Pro-Tester SE™ Parts ID drawing. This drawing can be very helpful in identifying components and sub-assemblies of the Pro-Tester SE™ should you ever need to replace these items.

## **9. Appendix D, System Wire Diagram**

Refer to Appendix D for the Pro-Tester SE™ System Wire Diagram. This drawing can be very helpful in identifying and/or troubleshooting basic wiring or interconnection issues related to the Pro-Tester SE™.

## **10. Appendix E, Warranty**

Refer to Appendix E for the Pro-Tester SE™ Product Warranty.

**END OF MANUAL**

# Introducing the next generation in destructive seam testers

## The **Pro-Tester SE**

The ultimate Tensiometer for peel, shear, and tensile testing of geosynthetic materials.



Just a few of the many awesome features:

- ◆ **Lifetime calibration on microprocessor, GUARANTEED!**
- ◆ **Simple to operate.** Large push-button controls and on-screen instructions.
- ◆ **Fast.** Two preset grip return positions, fast “jog” switch, auto stop/return.
- ◆ **Versatile.** Unique grip design for 1 inch (25mm) coupons and 4 inch (100mm) “grab” tensile.
- ◆ **Accurate.** Test results for peak and elongation shown on backlit LCD display.
- ◆ **Cost effective.** Cuts pre-weld and destructive sample testing time in half!
- ◆ **Affordable.** The SE (single edition) is competitively priced but in a league of its own.

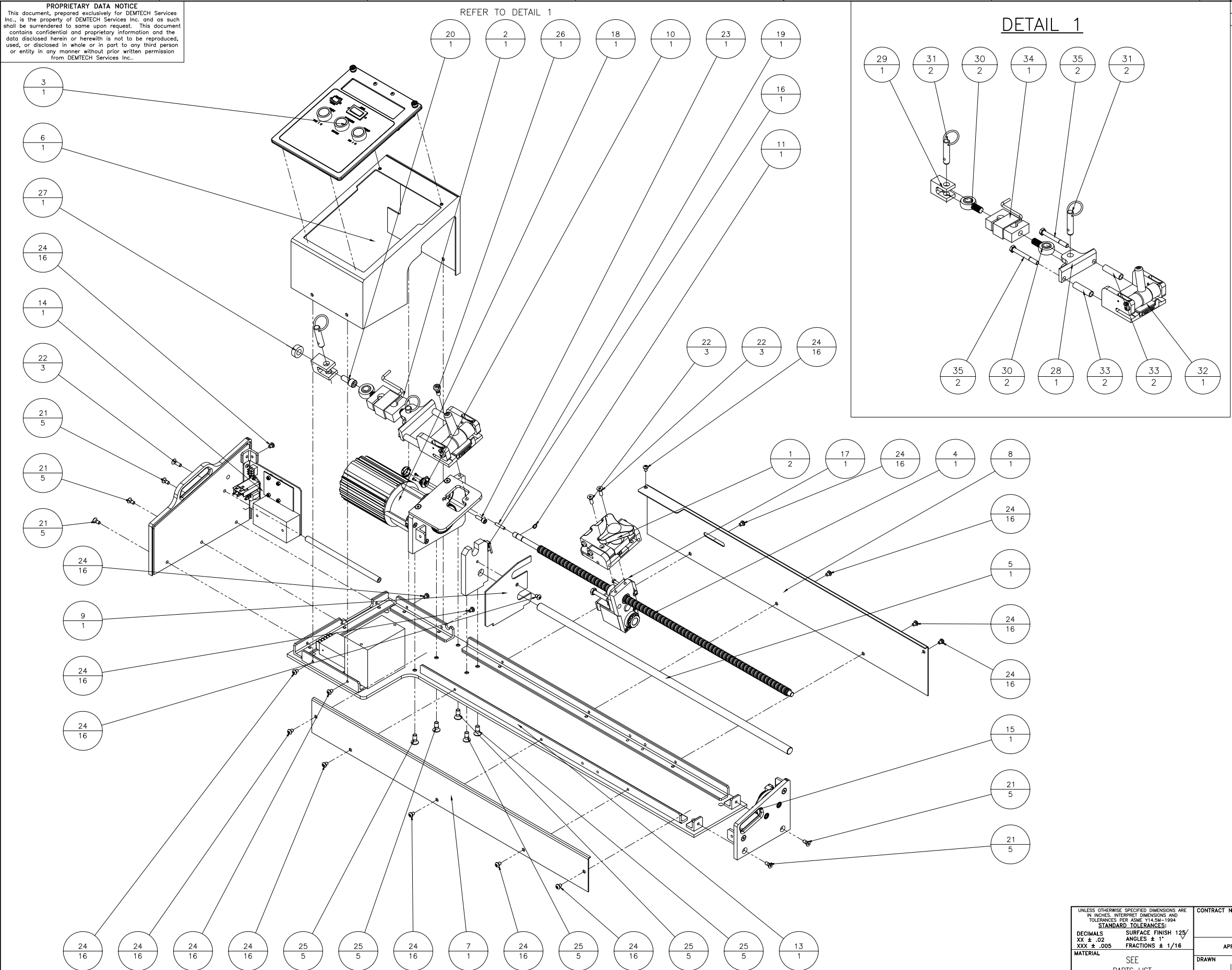
**Another quality product proudly  
Designed and manufactured in  
the USA by:**



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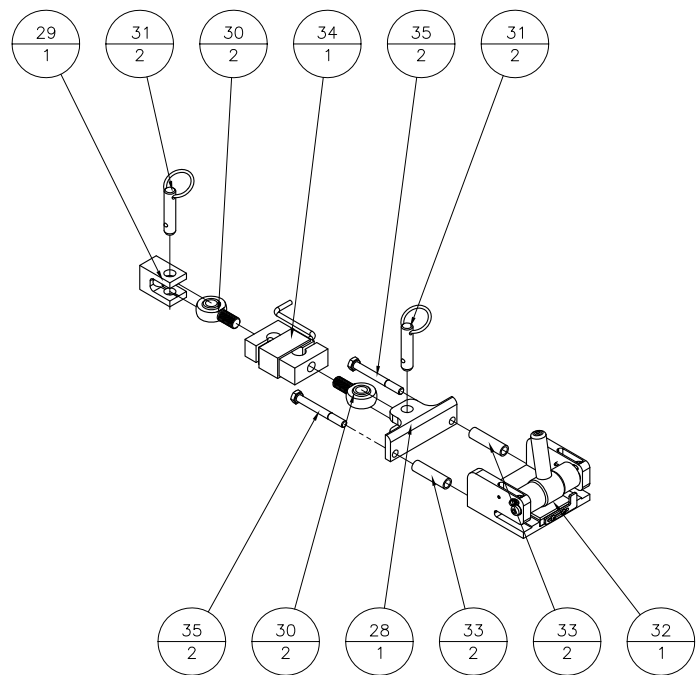
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1. SYMBOL DESIGNATES ITEM/QUANTITY BALLOON. UPPER DIGIT IS ITEM NUMBER, LOWER DIGIT IS QUANTITY REQUIRED PER ASSEMBLY.

NOTES (UNLESS OTHERWISE SPECIFIED):

### DETAIL 1



DWG. NO.  
T-000SE, APPENDIX C

SH.  
1

REV.  
B

1

REVISION HISTORY

ZONE	REV.	DESCRIPTION	DATE	APPROVED
ALL	A	OPERATOR'S MANUAL, APPENDIX C	12/28/06	ISD
ALL	B	ADD T-027, GRIP TO STRAIN GAGE ASSEMBLY DETAIL	01/22/07	ISD

35	STOCK	BOLT, M8 X 1.25 X 70mm LONG, HEX HEAD CAP, SS
34	T-096A	LOAD CELL, TENSION/COMPRESSION, 500 LB
33	T-065	STANDOFF, STRAIN GAUGE BRACKET
32	T-035	SAMPLE GRIP ASSEMBLY, CAM STYLE
31	T-026	PIN, QUICK RELEASE, 1/2" DIA X 1.3" GRIP LENGTH, ZINC PLATED STEEL
30	T-025	ROD END, STRAIN GAGE, MODIFIED
29	T-024	BRACKET, STRAIN GAGE, MOUNT
28	T-023	BRACKET, STRAIN GAGE, GRIP ASSY
27	STOCK	SPACER, .505" ID X 1.00" OD X .375" LONG, ALUMINUM
26	STOCK	SCREW, SHOULDER, 3/8" OD X 1/4" LONG, SS
25	STOCK	SCREW, M8 X 1.25 X 20mm LONG, FLAT HEAD CAP, SS
24	STOCK	SCREW, M6 X 1 X 8mm LONG, BOTTON HEAD CAP, SS
23	STOCK	SCREW, M6 X 1 X 20mm LONG, SOCKET HEAD CAP, SS
22	STOCK	SCREW, M6 X 1 X 20mm LONG, FLAT HEAD CAP, SS
21	STOCK	SCREW, M6 X 1 X 14mm LONG, FLAT HEAD CAP, SS
20	STOCK	SCREW, M10 X 1.5 X 25mm LONG, SOCKET HEAD CAP, SS
19	STOCK	DOWEL PIN, 3/16" X 1" LONG, HARDENED, SS
18	T-109SE	MOTOR SUPPORT PLATE ASSEMBLY, SE
17	T-107SE	SHAFT CARRIAGE PLATE ASSEMBLY, SE
16	T-106SE	GUIDE SHAFT SUPPORT ASSEMBLY, SE
15	T-105SE	RIGHT SIDE PLATE ASSEMBLY, SE
14	T-103SE	LEFT SIDE PLATE ASSEMBLY, SE
13	T-101SE	MAIN BASE PLATE ASSEMBLY, SE
12	T-100SE	SHAFT, STIFFENER, SE
11	T-097	SNAP RING, 10mm EXTERNAL, HEAVY DUTY
10	T-095SE	ROTARY ENCODER, 100 PPR, 3/16" BORE
9	T-088SE	COVER, BELT DRIVE, INSIDE, SE
8	T-087SE	COVER, REAR, SE
7	T-086SE	COVER, FRONT, SE
6	T-072SE	HOUSING, MAIN CONTROL PANEL, SE
5	T-066+12	SHAFT, GUIDE, LINEAR BEARING +12
4	T-057+12	SCREW, 5/8" X .20" LEAD, GRIP DRIVE +12
3	T-028	MAIN CONTROL PANEL ASSEMBLY
2	T-027	GRIP TO STRAIN GAGE ASSY
1	T-022	SAMPLE GRIP ASSEMBLY, TENSIO METER

Item	Part Number	Title/Description
Parts List		

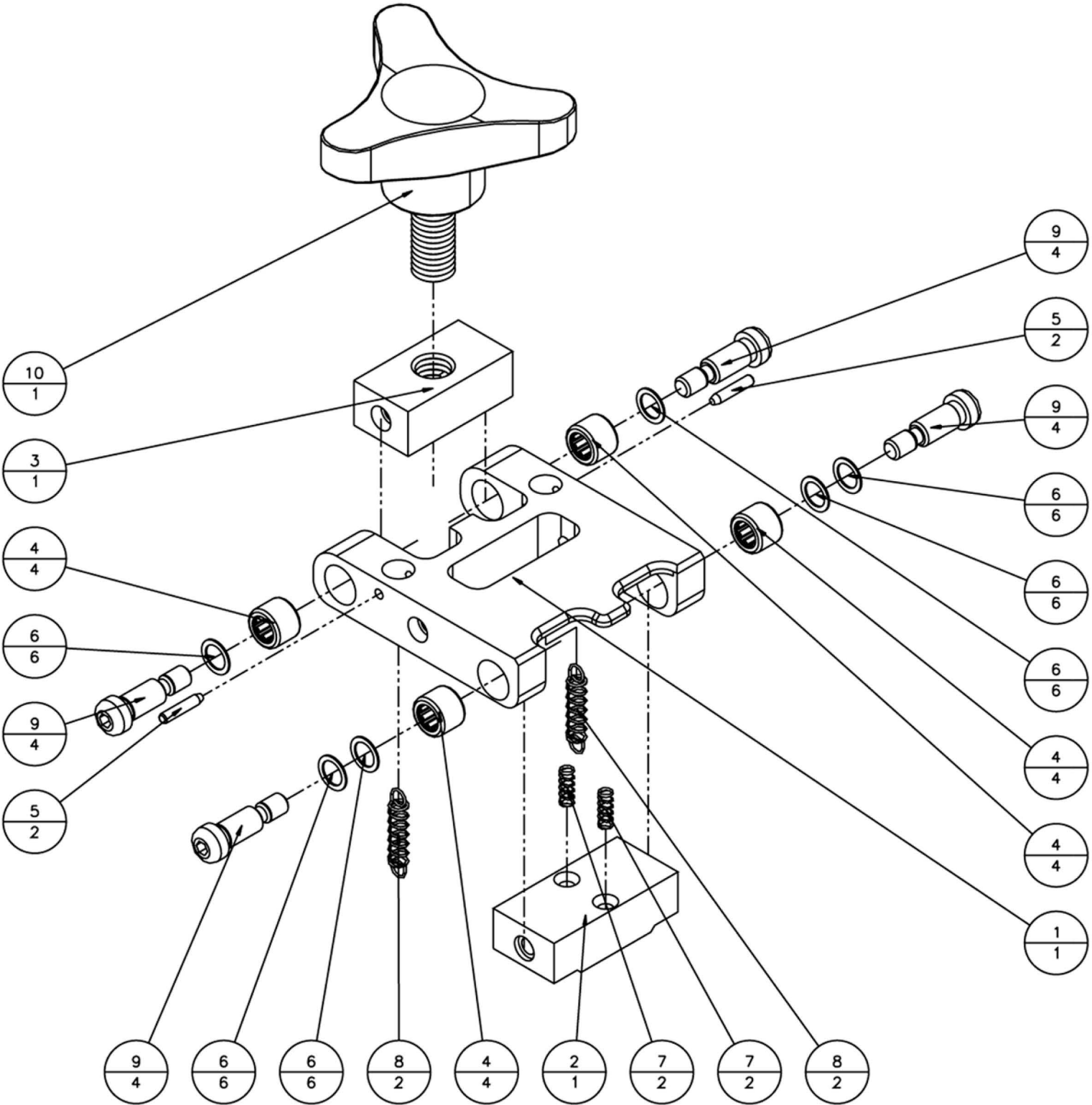
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. INTERPRET DIMENSIONS AND TOLERANCES PER ASME Y14.5M-1994. STANDARD TOLERANCES: DECIMALS XX ± .02 XXX ± .005 MATERIAL SEE PARTS LIST FINISH N/A DO NOT SCALE DRAWING		CONTRACT NO. N/A APPROVALS DRAWN ISD CHECKED ISSUED DESIGN ISD		DATE 12/28/06 DATE 12/28/06 DATE 12/28/06 DATE 12/28/06 DATE 12/28/06		TITLE PRO-TESTER SE TENSIO METER PARTS ID SIZE D CAGE CODE N/A DWG. NO. T-000SE, APPENDIX C REV. B		DEMTech Services Inc. Placerville, California SHEET 1 OF 1	
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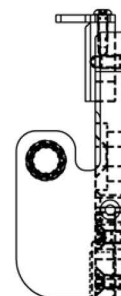
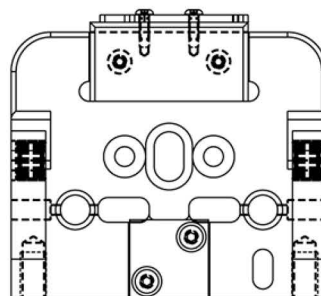
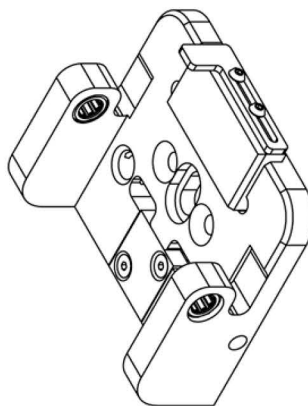
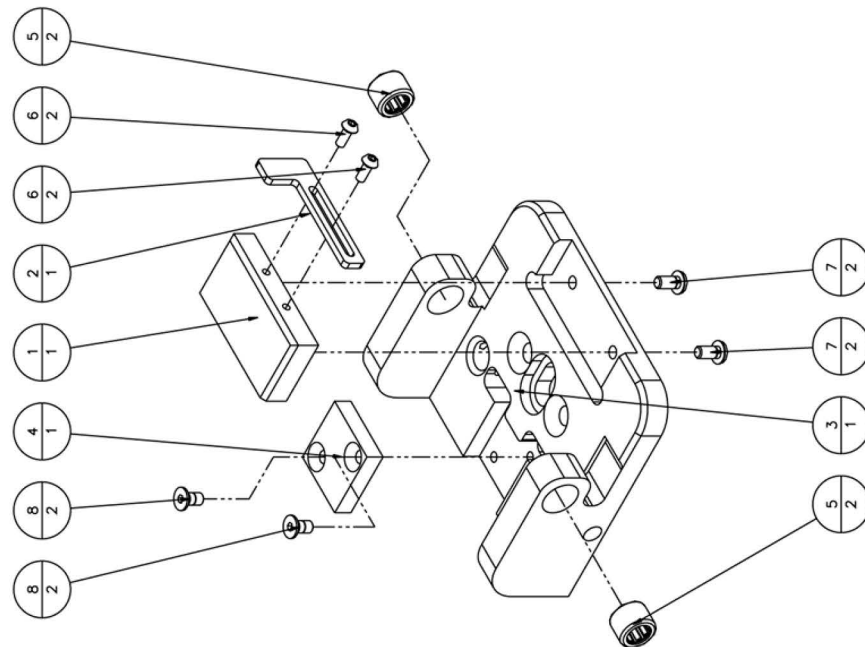


**Pro-Tester SE Assemblies:**  
Exploded-View Drawings and Parts Lists



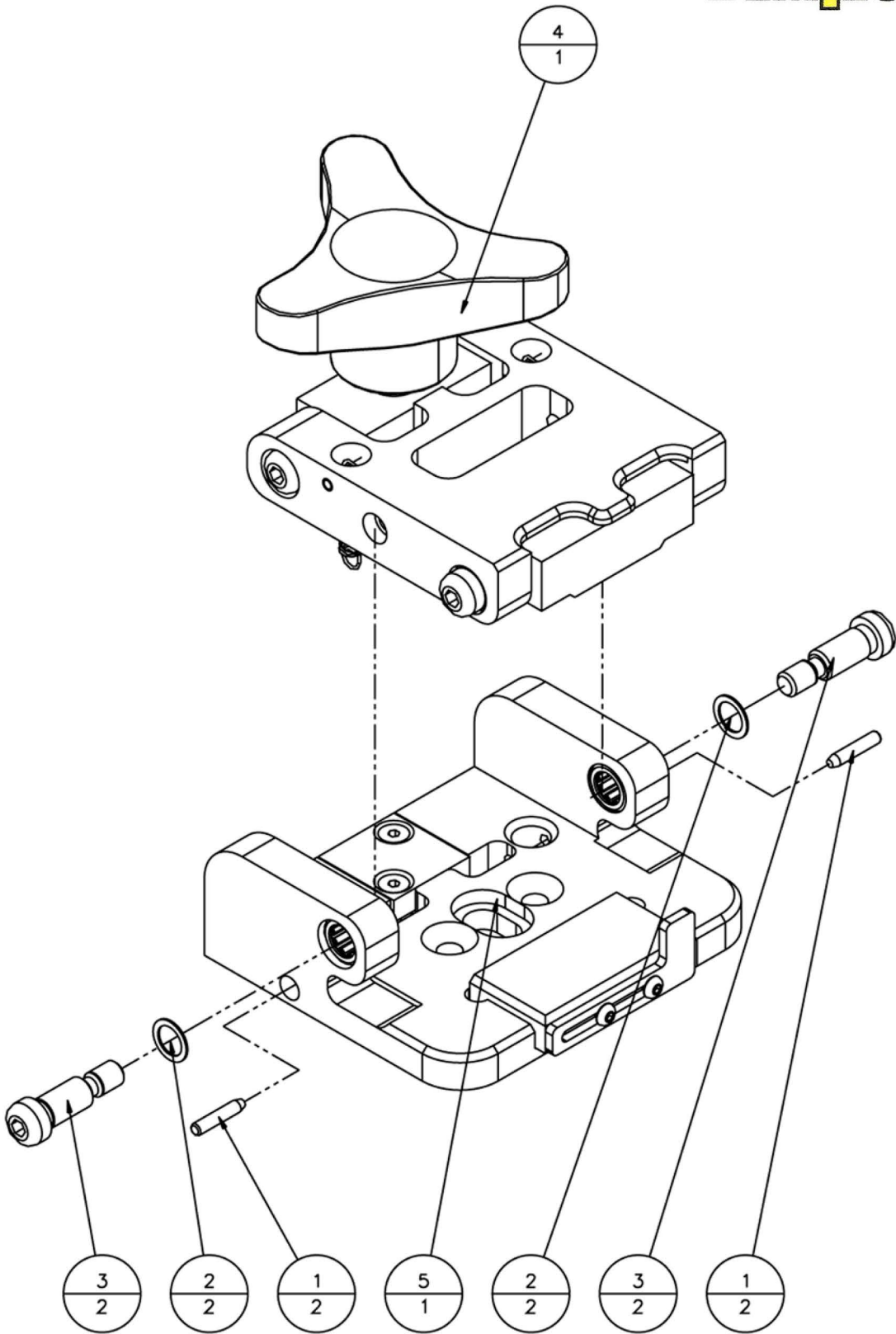
10	T-019	KNOB, THREE PRONG BLACK PLASTIC, 1/2-13 X 1.18" LONG STUD	1
9	T-018	SCREW, SHOULDER, 5/16" OD X 5/8" LONG, HARDENED ALLOY STEEL	4
8	T-017	SPRING, EXTENSION, .029" WIRE DIA X .240" OD X .750" LONG, MUSIC WIRE	2
7	T-016	SPRING, COMPRESSION, .025" WIRE DIA X .180" OD X .563" LONG, MUSIC WIRE	2
6	T-015	SHIM, .314" ID X .438" OD X .020" THICK, SS	6
5	T-014	PIN, DOWEL 1/8" OD X 5/8" LONG, HARDENED, SS	2
4	T-013	BEARING, GRIP ASSY, 5/16" ID X 1/2" OD X 1/2" LONG	4
3	T-011	NUT, 1/2-13, UPPER JAW, SWIVEL	1
2	T-008B	BLOCK, GRIPPER MOUNT, UPPER	1
1	T-005	JAW, SAMPLE GRIP, UPPER	1
<b>ITEM</b>	<b>PART NUMBER</b>	<b>DESCRIPTION</b>	<b>QTY</b>
<b>Parts List</b>			

*T-020, Upper Jaw Assembly, Pro-Tester*



8	STOCK	SCREW, M4 X .7 X 8mm LONG, FLAT HEAD SOCKET, SS	2
7	STOCK	SCREW, M4 X .7 X 8mm LONG, BUTTON HEAD SOCKET, SS	2
6	STOCK	SCREW, M3 X .5 X 8mm LONG, BUTTON HEAD SOCKET, SS	2
5	T-013	BEARING, GRIP ASSY, 5/16" ID X 1/2" OD X 1/2" LONG	2
4	T-010	PAD, CLAMP SCREW, STRIKER	1
3	T-009	JAW, SAMPLE GRIP, LOWER	1
2	T-007	STOP, SAMPLE SIDE, ADJUSTABLE	1
1	T-006	GRIP, SAMPLE, LOWER	1
ITEM	PART NUMBER	DESCRIPTION	QTY
Parts List			

*T-021, Lower Jaw Assembly, Pro-Tester*

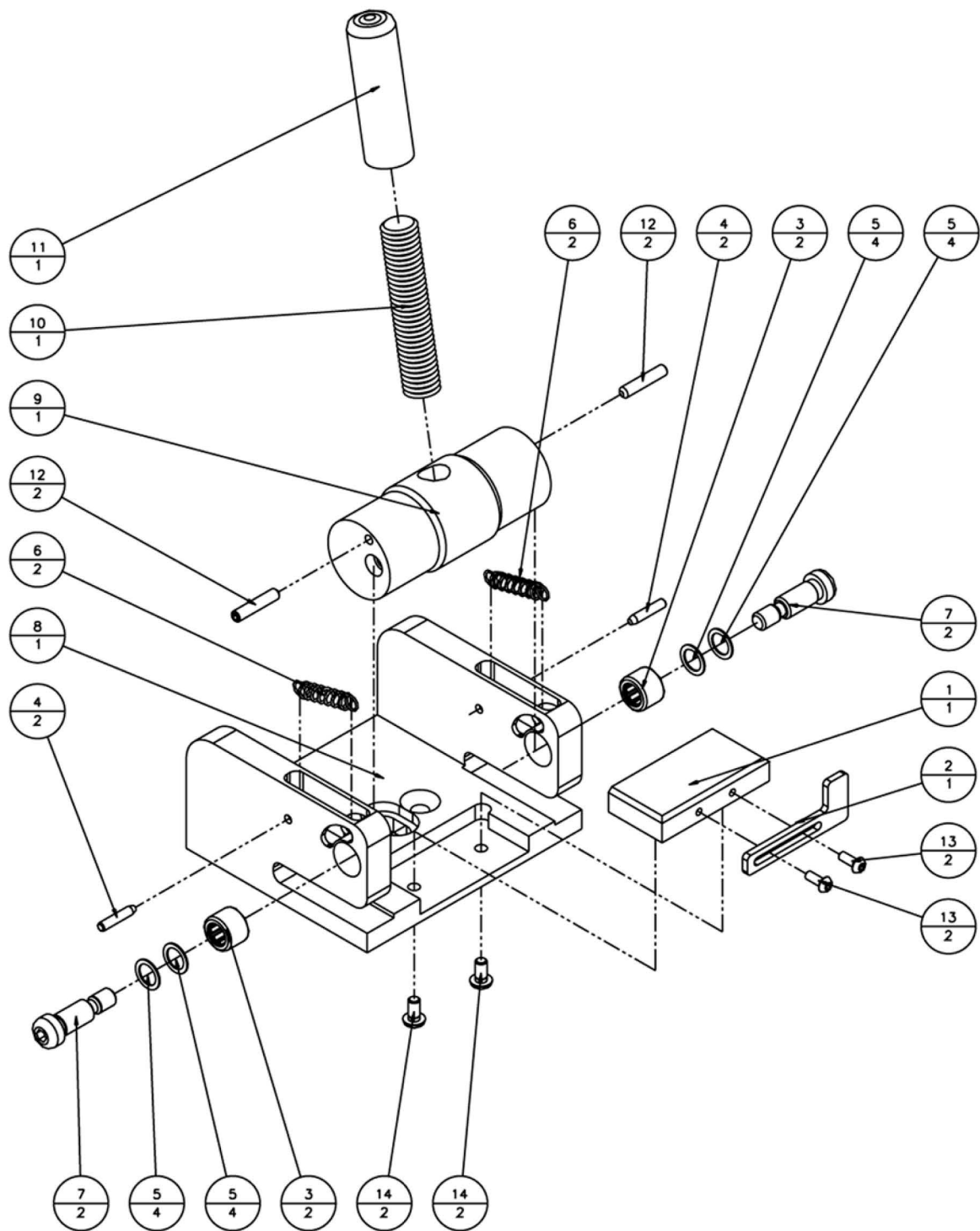




5	T-021	LOWER JAW ASSEMBLY, TENSIO METER	1
4	T-020	UPPER JAW ASSEMBLY, TENSIO METER	1
3	T-018	SCREW, SHOULDER, 5/16" OD X 5/8" LONG, HARDENED ALLOY STEEL	2
2	T-015	SHIM, .314" ID X .438" OD X .020" THICK, SS	2
1	T-014	PIN, DOWEL, 1/8" OD X 5/8" LONG, HARDENED, SS	2
<b>ITEM</b>	<b>PART NUMBER</b>	<b>DESCRIPTION</b>	<b>QTY</b>
<b>Parts List</b>			

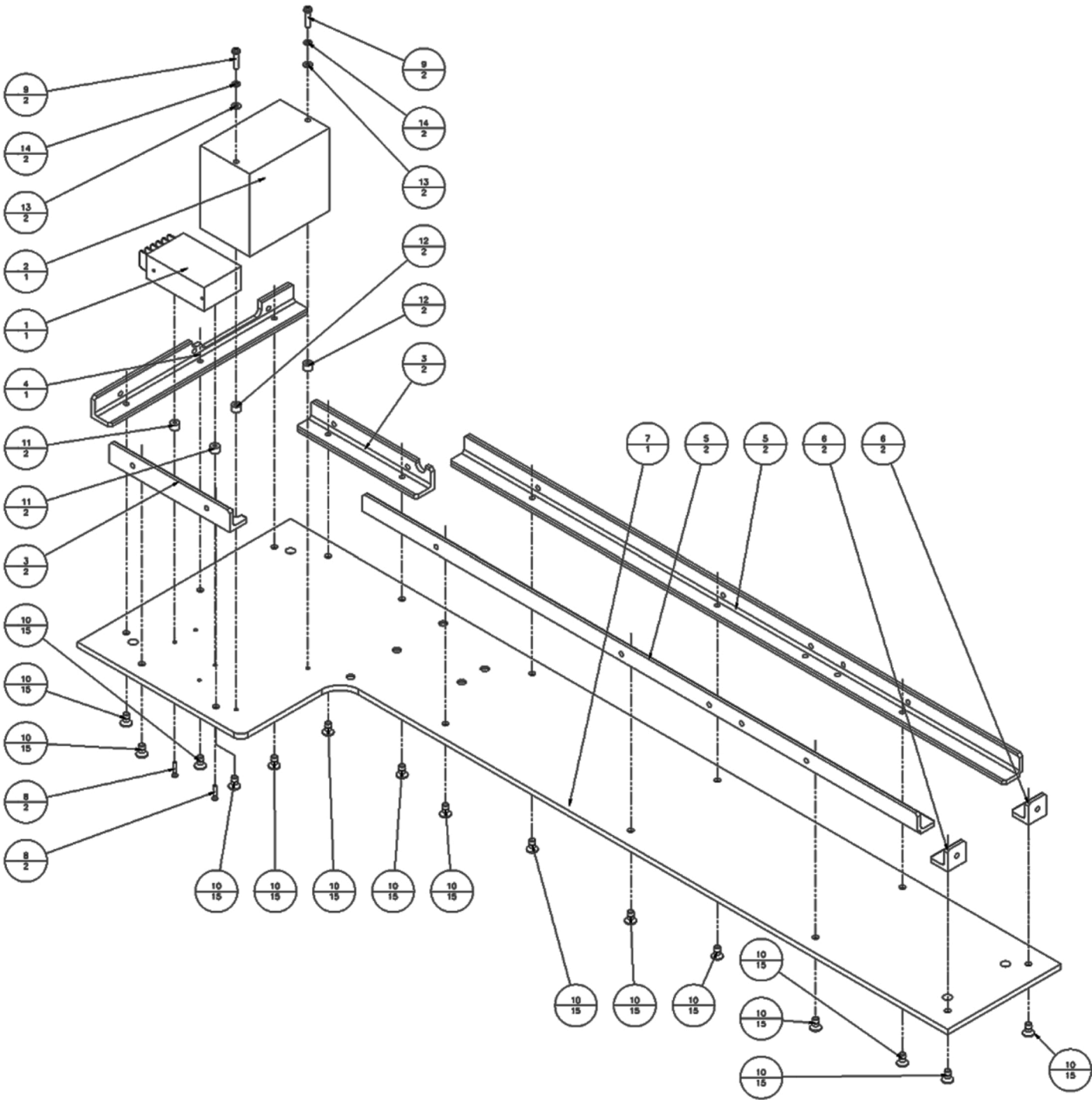
***T-022, Sample Grip Assembly, Pro-Tester***





14	STOCK	SCREW, M4 X .7 X 8mm LONG, BUTTON HEAD SOCKET, SS	2
13	STOCK	SCREW, M3 X .5 X 8mm LONG, BUTTON HEAD SOCKET, SS	2
12	T-034	SCREW, SET, M4 X .7 X 20mm LONG, ALLEN CUP POINT, SS	2
11	T-033	CAP, 1/2" ID X 2" LONG, VINYL, BLACK	1
10	T-032	STUD, 1/2-13 X 2-1/2" LONG, FULLY THREADED, SS	1
9	T-031	CAM, SAMPLE GRIP, PIVOT	1
8	T-030	JAW, SAMPLE GRIP, LOWER, CAM	1
7	T-018	SCREW, SHOULDER, 5/16" OD X 5/8" LONG, HARDENED ALLOY STEEL	2
6	T-017	SPRING, EXTENSION, .029" WIRE DIA X .240" OD X .750" LONG, MUSIC WIRE	2
5	T-015	SHIM, .314" ID X .438" OD X .020" THICK, SS	4
4	T-014	PIN, DOWEL, 1/8" OD X 5/8" LONG, HARDENED, SS	2
3	T-013	BEARING, GRIP ASSY, 5/16" ID X 1/2" OD X 1/2" LONG	2
2	T-007	STOP, SAMPLE SIDE, ADJUSTABLE	1
1	T-006	GRIP, SAMPLE, LOWER	1
<b>ITEM</b>	<b>PART NUMBER</b>	<b>DESCRIPTION</b>	<b>QTY</b>
<b>Parts List</b>			

*T-035, Assembly, Cam Style Assembly, Pro-Tester*



14	STOCK	WASHER, M4 SPLIT-LOCK, STAINLESS STEEL	2
13	STOCK	WASHER, M4 FLAT, STAINLESS STEEL	2
12	STOCK	SPACER, .166" ID X .375" OD X .250" LONG, NATURAL NYLON	2
11	STOCK	SPACER, .140" ID X .375" OD X .250" LONG, NATURAL NYLON	2
10	STOCK	SCREW, M6 X 1 X 12mm LONG, FLAT HEAD CAP, SS	15
9	STOCK	SCREW, M4 X .7 X 20mm LONG, PAN HEAD PHILLIPS, STAINLESS STEEL	2
8	STOCK	SCREW, M3 X .5 X 16mm LONG, FLAT HEAD CAP, SS	2
7	T-073SE	PLATE, MAIN BASE, SUPPORT, SE	1
6	T-071	ANGLE, MOUNTING, 1" X 1" X 1" LONG	2
5	T-070+12	ANGLE, MOUNTING, 1" X 1" X 30" LONG + 12	2
4	T-069SE	ANGLE, MOUNTING, 1" X 1" X 10-3/4" LONG, SE	1
3	T-068	ANGLE, MOUNTING, 1" X 1" X 6-1/2" LONG	2
2	T-056	CONTROLLER, 1/2 HP, INVERTER DUTY	1
1	T-044	POWER SUPPLY, 5VDC @ 5A, SINGLE OUTPUT	1
<b>ITEM</b>	<b>PART NUMBER</b>	<b>DESCRIPTION</b>	<b>QTY</b>
<b>Parts List</b>			

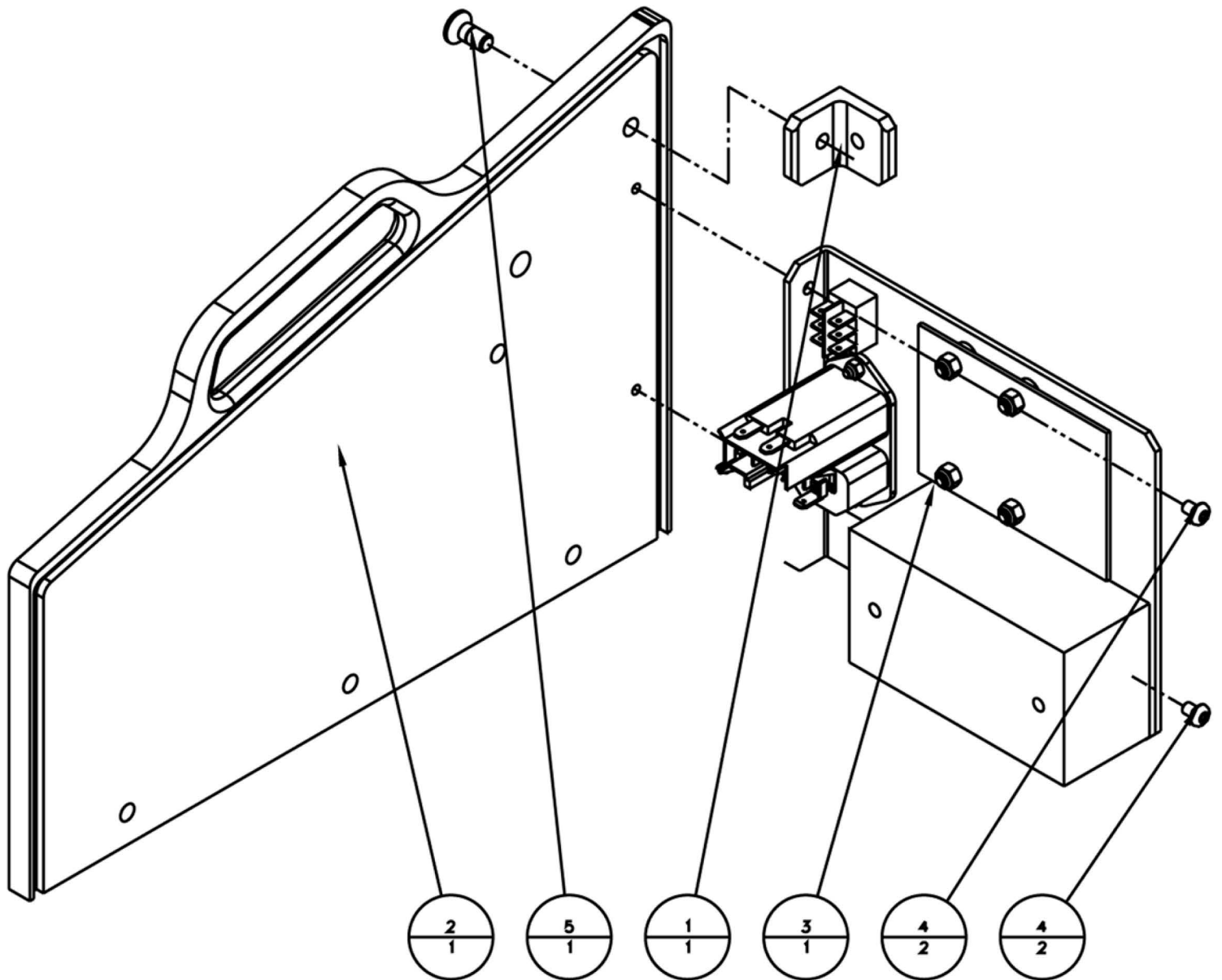
***T-101SE, Main Base Plate Assembly, Pro-Tester SE***





10	STOCK	SPACER, .166' ID X .375" OD X .187" LONG, NATURAL NYLON	4
9	STOCK	SCREW, M3 X .5 X 10mm LONG, FLAT HEAD CAP, SS	2
8	STOCK	NUT, M4 X .7 HEX, NYLON INSERT LOCKING, ZINC PLATED STEEL	6
7	STOCK	NUT, M3 X .5 HEX, NYLON INSERT LOCKING, ZINC PLATED STEEL	2
6	T-111	PRINTED CIRCUIT BOARD, INTERCONNECT, PROTESTER	1
5	T-093	FILTER, MAIN AC POWER INPUT	1
4	T-092	POWER SWITCH, DPDT, 12A, MOM/OFF/MOM, ROCKER, BLACK	1
3	T-091	FUSE DRAWER, POWER ENTRY MODULE	1
2	T-090	POWER ENTRY MODULE, PANEL MOUNT	1
1	T-089SE	BRACKET, POWER INPUT MODULE, SE	1
<b>ITEM</b>	<b>PART NUMBER</b>	<b>DESCRIPTION</b>	<b>QTY</b>
<b>Parts List</b>			

***T-102SE, Power Input Bracket Assembly, Pro-Tester SE***

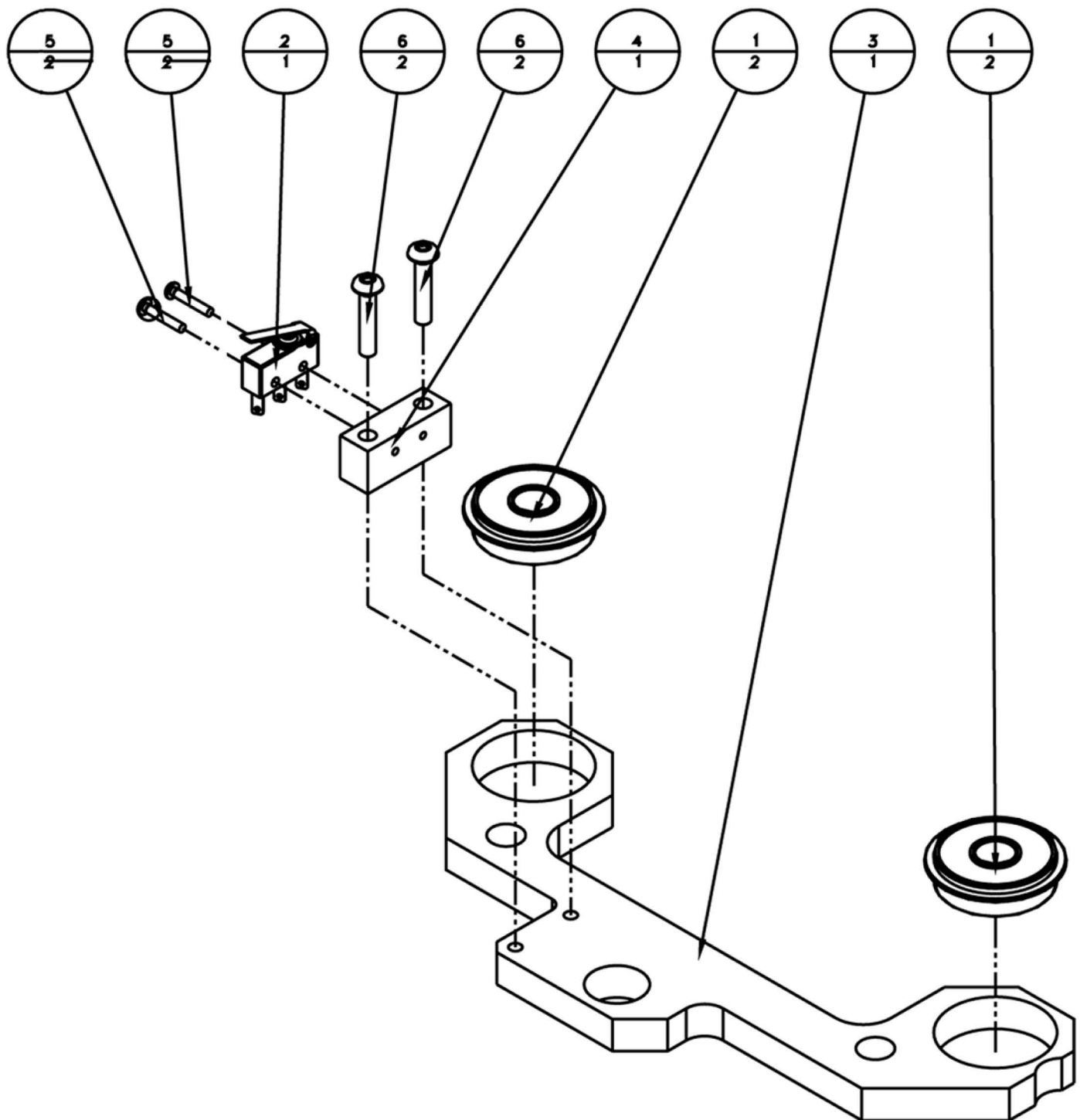


5	STOCK	SCREW, M6 X 1 X 14mm LONG, FLAT HEAD CAP, SS	1
4	STOCK	SCREW, M4 X .7 X 6mm LONG, BOTTOM HEAD CAP, SS	2
3	T-102SE	POWER INPUT BRACKET ASSEMBLY, SE	1
2	T-074SE	PLATE, LEFT SIDE, END, SE	1
1	T-071	ANGLE, MOUNTING, 1" X 1" X 1" LONG	1
ITEM	PART NUMBER	DESCRIPTION	QTY
<b>Parts List</b>			

*T-103SE, Left Side Plate Assembly, Pro-Tester SE*

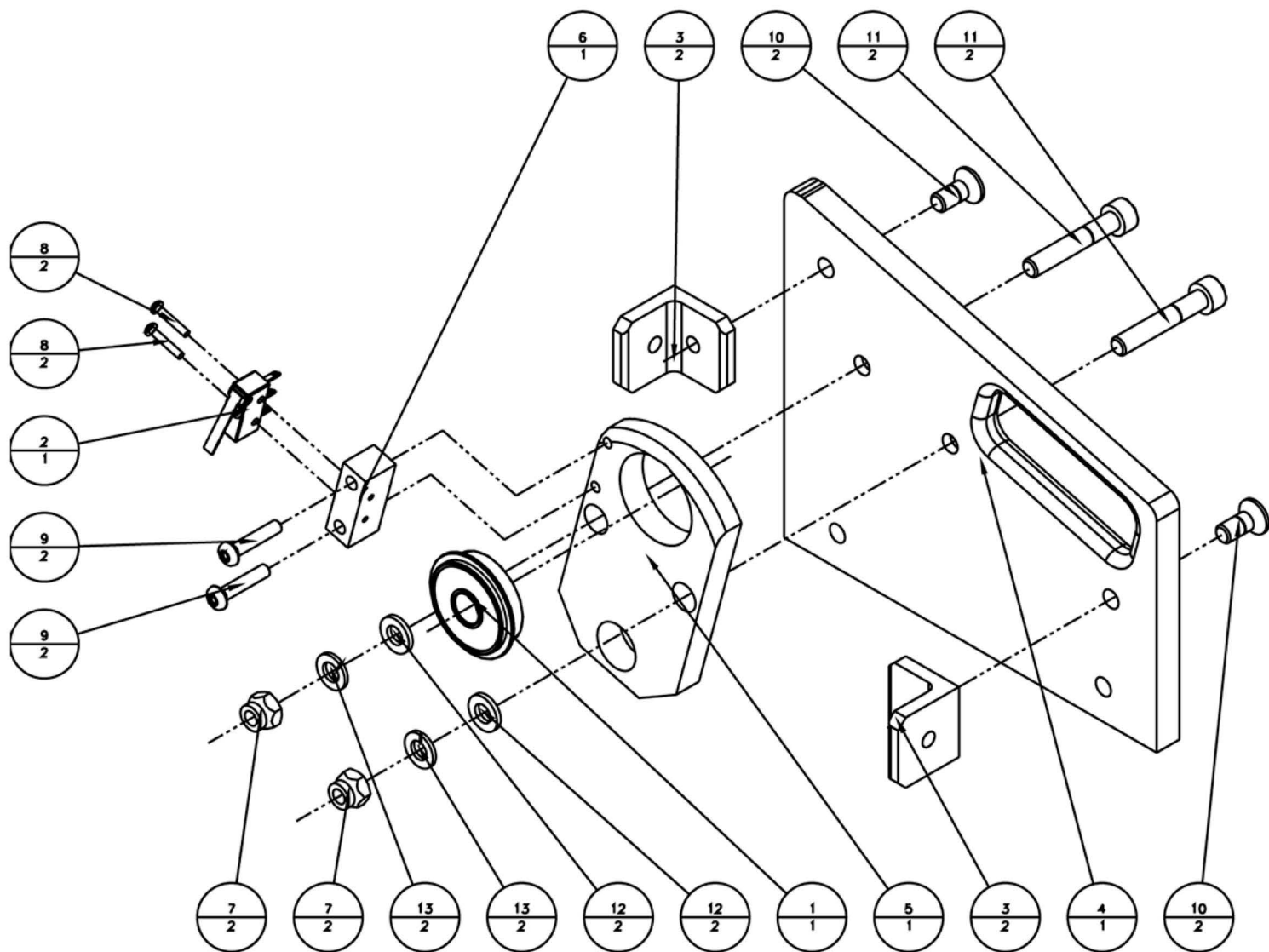


T-104, Bearing Support Plate Assembly, Pro-Tester



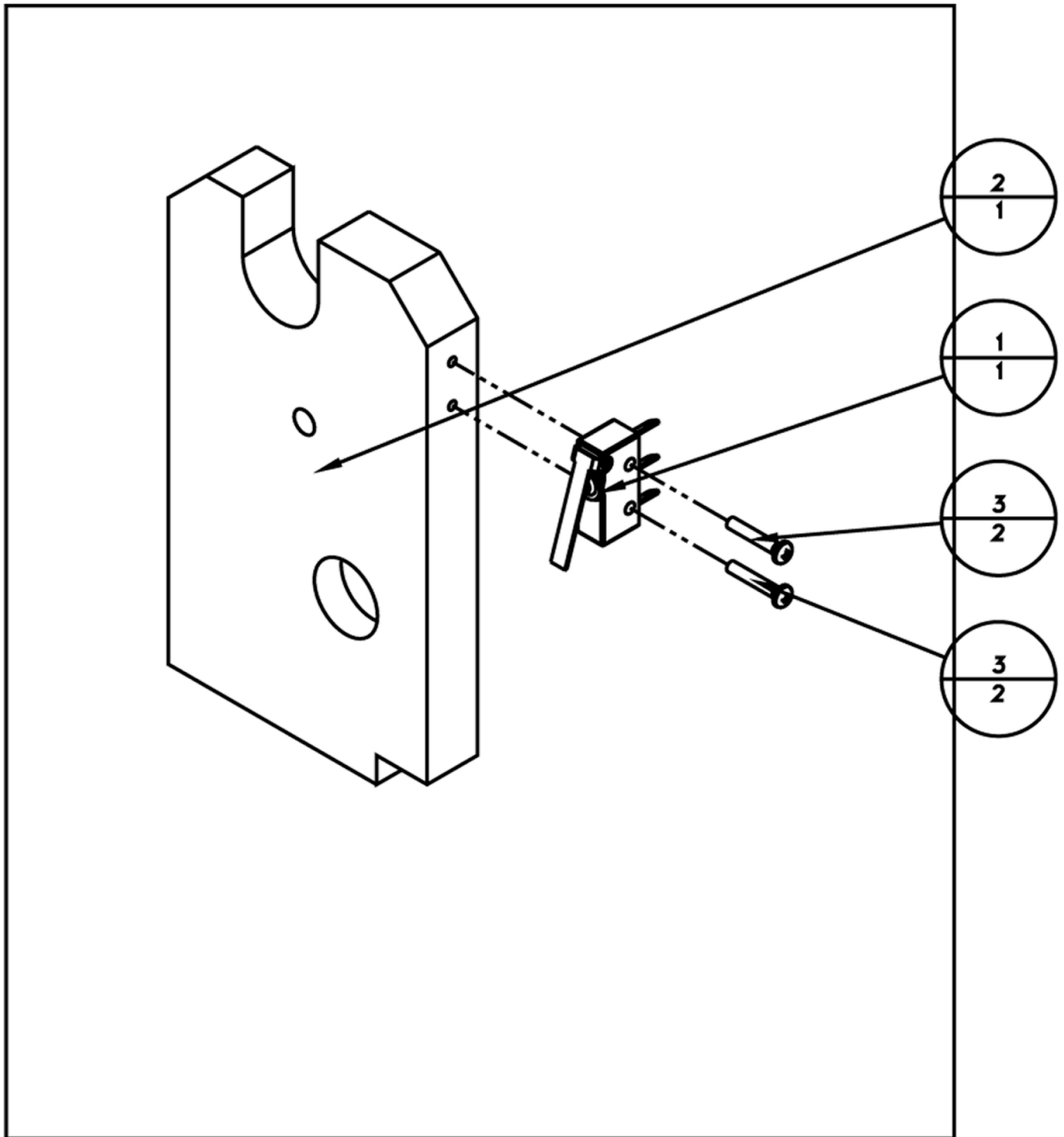
6	STOCK	SCREW, M4 X .7 X 20mm LONG, BOTTOM HEAD CAP, SS	2
5	STOCK	SCREW, 2-56 X 1/2" LONG, PHILLIPS PAN HEAD, SS	2
4	T-083	BRACKET, LIMIT SWITCH, EXTENDED	1
3	T-080	PLATE, BEARING SUPPORT, END	1
2	T-063	LIMIT SWITCH, SEALED, SPDT, 5A, .110 QC, LEVER	1
1	T-062	BEARING, 10mm ID X 30mm OD X 9mm W, SEALED, W/ SNAP RING	2
ITEM	PART NUMBER	DESCRIPTION	QTY
Parts List			

***T-104, Bearing Support Plate Assembly, Pro-Tester***



13	STOCK	WASHER, M6 SPLIT LOCK, SS	2
12	STOCK	WASHER, M6 FLAT, DIN 125, SS	2
11	STOCK	SCREW, M6 X 1 X 35mm LONG, SOCKET HEAD CAP, SS	2
10	STOCK	SCREW, M6 X 1 X 14mm LONG, FLAT HEAD CAP, SS	2
9	STOCK	SCREW, M4 X .7 X 20mm LONG, BOTTOM HEAD CAP, SS	2
8	STOCK	SCREW, 2-56 X 1/2" LONG, PHILLIPS PAN HEAD, SS	2
7	STOCK	NUT, M6 X 1 HEX, NYLON INSERT LOCKING, ZINC PLATED STEEL	2
6	T-083	BRACKET, LIMIT SWITCH, EXTENDED	1
5	T-080SE	PLATE, BEARING SUPPORT, END, SE	1
4	T-075SE	PLATE, RIGHT SIDE, END, SE	1
3	T-071	ANGLE, MOUNTING, 1" X 1" X 1" LONG	2
2	T-063	LIMIT SWITCH, SEALED, SPDT, 5A, .110 QC, LEVER	1
1	T-062	BEARING, 10mm ID X 30mm OD X 9mm W, SEALED, W/ SNAP RING	1
ITEM	PART NUMBER	DESCRIPTION	QTY
<b>Parts List</b>			

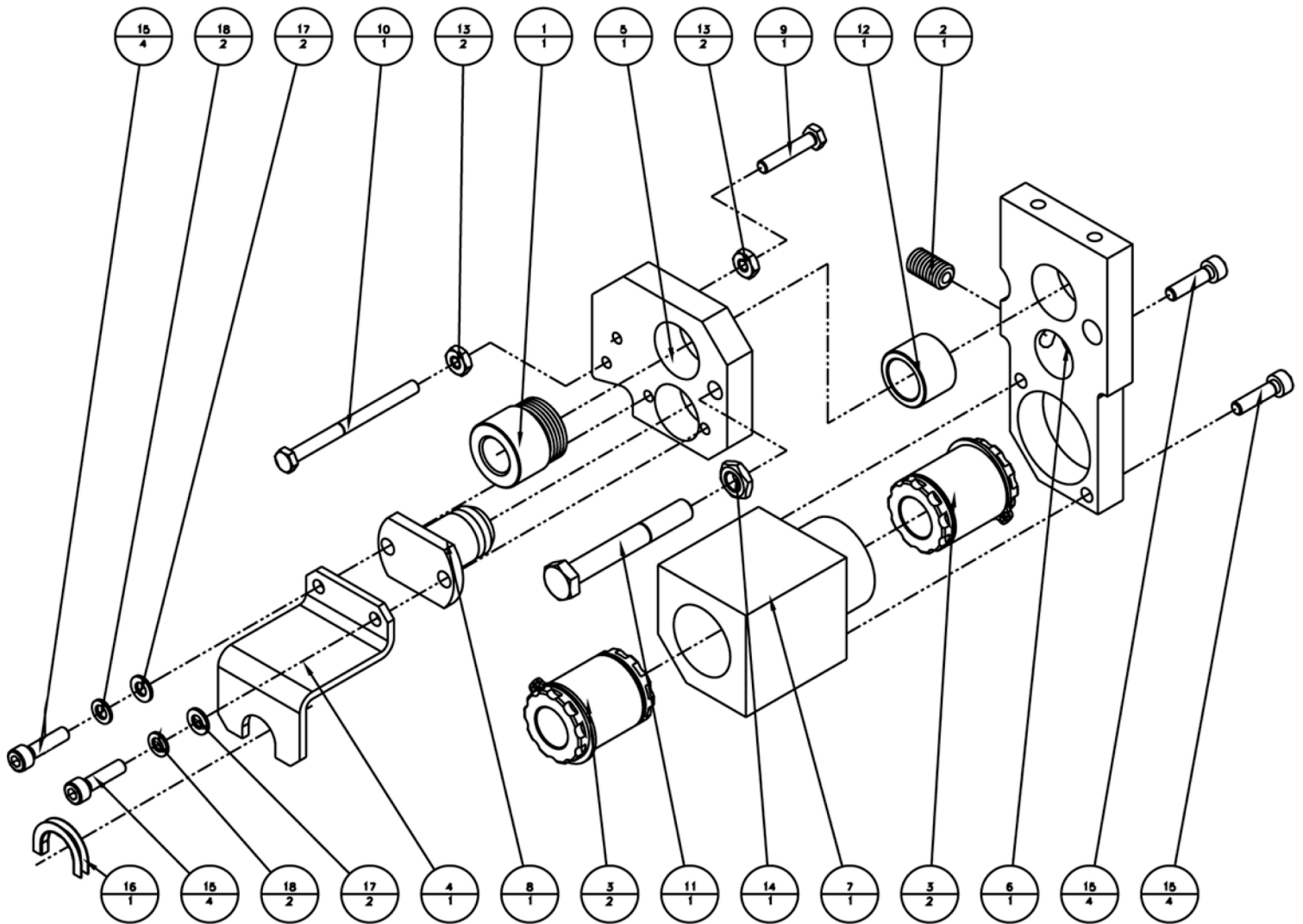
***T-105SE, Right Side Plate Assembly, Pro-Tester SE***





3	STOCK	SCREW, 2-56 X 1/2" LONG, PHILLIPS PAN HEAD, SS	2
2	T-081SE	SUPPORT, GUIDE SHAFT, END, SE	1
1	T-063	LIMIT SWITCH, SEALED, SPDT, 5A, .110 QC, LEVER	1
<b>ITEM</b>	<b>PART NUMBER</b>	<b>DESCRIPTION</b>	<b>QTY</b>
<b>Parts List</b>			

*T-106SE, Guide Shaft Support Assembly, Pro-Tester SE*

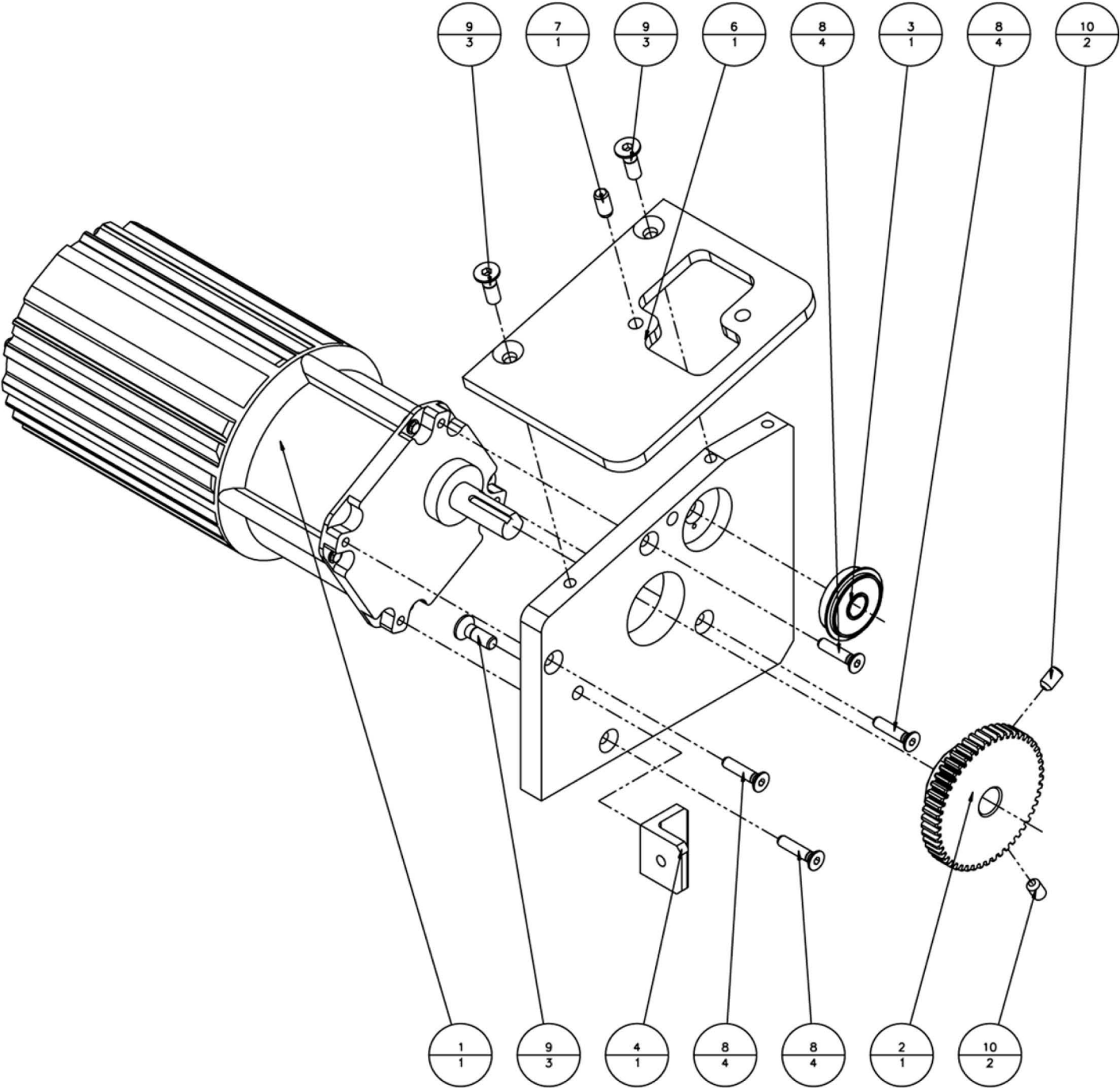




18	STOCK	WASHER, M5 SPLIT LOCK, SS	2
17	STOCK	WASHER, M5 FLAT, DIN 125, SS	2
16	STOCK	TAPE, UHMW POLYETHYLENE, .0115" THICK, ADHESIVE BACKED	1
15	STOCK	SCREW, M5 X .8 X 20mm LONG, SOCKET HEAD CAP, SS	4
14	STOCK	NUT, M8 X 1.25 HEX, JAM, SS	1
13	STOCK	NUT, 10-32 HEX, SMALL-PATTERN MACHINE, SS	2
12	STOCK	BUSHING, 5/8" ID X 7/8" OD X 5/8" LONG, SAE 841, BRONZE	1
11	STOCK	BOLT, M8 X 1.25 X 60mm LONG, HEX HEAD CAP, SS	1
10	STOCK	BOLT, 10-32 X 2-1/2" LONG, HEX HEAD MACHINE, SS	1
9	STOCK	BOLT, 10-32 X 1-1/4" LONG, HEX HEAD MACHINE, SS	1
8	T-084	POST, DRIVE, PLATE, DETENT	1
7	T-079	HOUSING, LINEAR BEARING, MOUNT	1
6	T-078SE	PLATE, CARRIAGE SLAVE, SHAFT, SE	1
5	T-077SE	PLATE, CARRIAGE DRIVE, SCREW, SE	1
4	T-077ASE	GUIDE, SCREW PLATE, SHAFT	1
3	T-067	BEARING, 5/8" ID LINEAR BALL, SELF-ALIGNING, CLOSED	2
2	T-064	PLUNGER, BALL, 3/8-16 X .625, SS, W/ LOCK	1
1	T-058	NUT, 5/8" X .20" LEAD, BRONZE, GRIP DRIVE	1
<b>ITEM</b>	<b>PART NUMBER</b>	<b>DESCRIPTION</b>	<b>QTY</b>
<b>Parts List</b>			

*T-107SE, Shaft Carriage Plate Assembly, Pro-Tester SE*





10	STOCK	SCREW, SET, M6 X 1 X 10mm LONG, CUP POINT ALLEN, SS	2
9	STOCK	SCREW, M6 X 1 X 18mm LONG, FLAT HEAD CAP, SS	3
8	STOCK	SCREW, 10-32 X 7/8" LONG, FLAT HEAD CAP, SS	4
7	STOCK	DOWEL PIN, 1/4" X 1/2" LONG, HARDENED, SS	1
6	T-085SE	SUPPORT, SAMPLE GRIP ASSY, SE	1
5	T-076SE	PLATE, MOTOR SUPPORT, STANDOFF, SE	1
4	T-071	ANGLE, MOUNTING, 1" X 1" X 1" LONG	1
3	T-062	BEARING, 10mm ID X 30mm OD X 9mm W, SEALED, W/ SNAP RING	1
2	T-060SE	GEAR, 50 TOOTH, 20 DP, 14-1/2 DEG, MOTOR, SE	1
1	T-055	MOTOR, 1/6 HP, VARIABLE SPEED, 60:1 GEAR RATIO, 230VAC	1
ITEM	PART NUMBER	DESCRIPTION	QTY
<b>Parts List</b>			

***T-109SE, Motor Support Plate Assembly, Pro-Tester SE***

# Warranty

DEMTECH Services, Inc. warrants all equipment of its manufacture to be free from defects in materials, workmanship, mechanical parts, and labor for a period of one year from the date of shipment to the original buyer and ninety days for electrical. This warranty excludes normal wear items such as gears, bearings and chains. The liability under this warranty is limited to replacement parts and labor on equipment when the equipment is returned prepaid to the factory or its authorized service center with prior authorization from DEMTECH Services, Inc., and upon examination by DEMTECH Services, Inc., is determined to be defective. At DEMTECH Services, Inc.'s option, a service representative may be dispatched to the equipment location.

As an additional protection, DEMTECH Services, Inc. warrants that for a period of 90 days from the date of shipment to the original buyer, pending prior authorization from DEMTECH Services, Inc., there will be no charge for service related shipping of parts and/or equipment or for authorized travel of a service representative to the equipment location. After 90 days, all costs incurred for shipping the equipment or parts thereof or for travel are the responsibility of the buyer. Our warranty for this equipment is rendered void if the unit has been repaired, taken apart or modified, or attempted to be, unless such actions have been taken in accordance with written instructions received from DEMTECH Services, Inc. The warranty is also void if the equipment has been subjected to abuse, accident or other abnormal conditions.

## IF ANY FAULT DEVELOPS, THE FOLLOWING STEPS SHOULD BE TAKEN:

1. Notify DEMTECH Services, Inc. by calling 1-888-324-9353. Overseas customers should contact the local DEMTECH authorized service center. Please be prepared with the model number, serial number and full details of the difficulty. Upon receipt of this information, service data or shipping instructions will be provided by DEMTECH Services, Inc. Do not return the unit for repair without first contacting the factory or its representative for instructions.
2. After the initial 90 day period, on receipt of shipping instructions, forward the equipment prepaid to the factory or its authorized service center as instructed. If requested, an estimate of the charges will be made before work begins, especially with those cases where the DEMTECH Services, Inc. product is not covered by the warranty.
3. If the original carton and packing are not available, the product should be packed in a container with a strong exterior and surrounded by a protective layer of shock-absorbing material. DEMTECH Services, Inc. advises returning the equipment at full value to the carrier.

DEMTECH Services, Inc. reserves the right to make changes in design at any time without incurring any obligation to install the same changes on units previously purchased.

This warranty states the essence of the obligations or liabilities on the part of DEMTECH Services, Inc. THE FORMAL, COMPLETE AND EXCLUSIVE STATEMENT OF DEMTECH SERVICES, INC.'S WARRANTY IS CONTAINED IN ITS QUOTATIONS, ACKNOWLEDGEMENTS AND INVOICES. DEMTECH Services, Inc. neither assumes, nor authorizes any person to assume for it, any liability in connection with the sale of its equipment other than those set forth herein.