

SCOTT

SignGraver

Instructions & Parts

SM300

SM500

K025S3

K005

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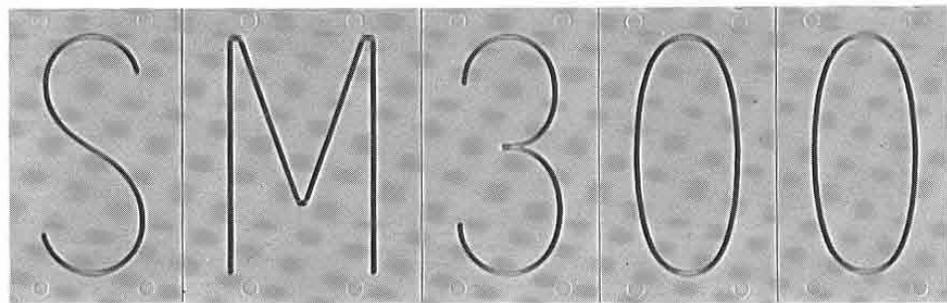
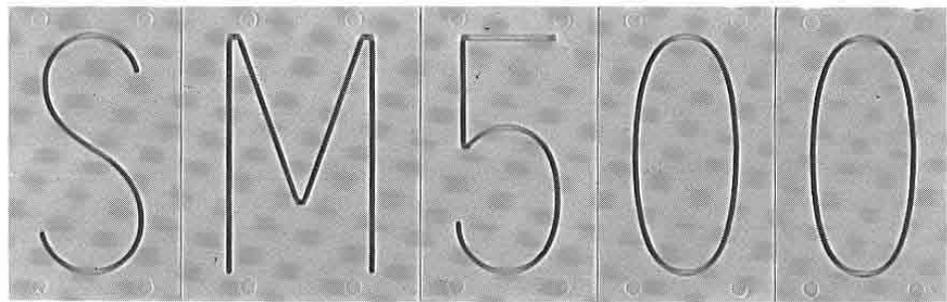


Scott Machine Development Corp.

200 Prospect Ave., Walton, NY 13856
Tel: 607/865-6511 8:30-5:00 ET M-F
www.scottmachinecorp.com

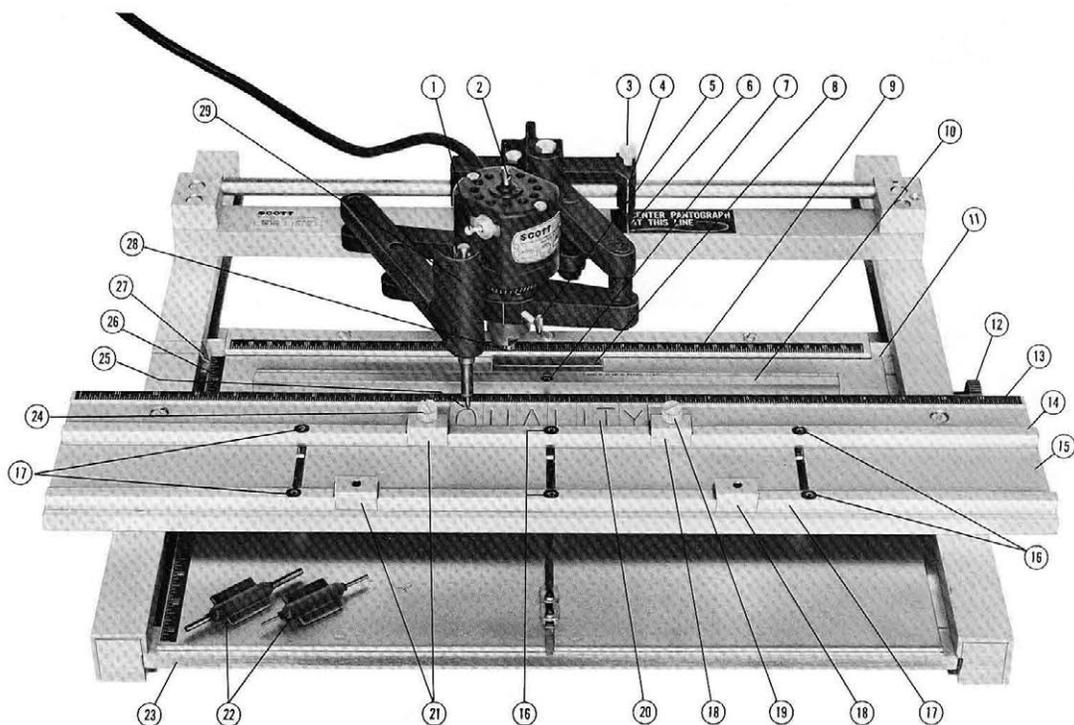
300-500-Instructions-&-Parts-June2016

Signgraver[®] / Operating Instructions



[®] Scott Machine Development Corporation

**LOCATE & IDENTIFY THE OPERATIVE PARTS
OF YOUR SCOTT MODEL SM300/SM500 SIGNGRAVER**



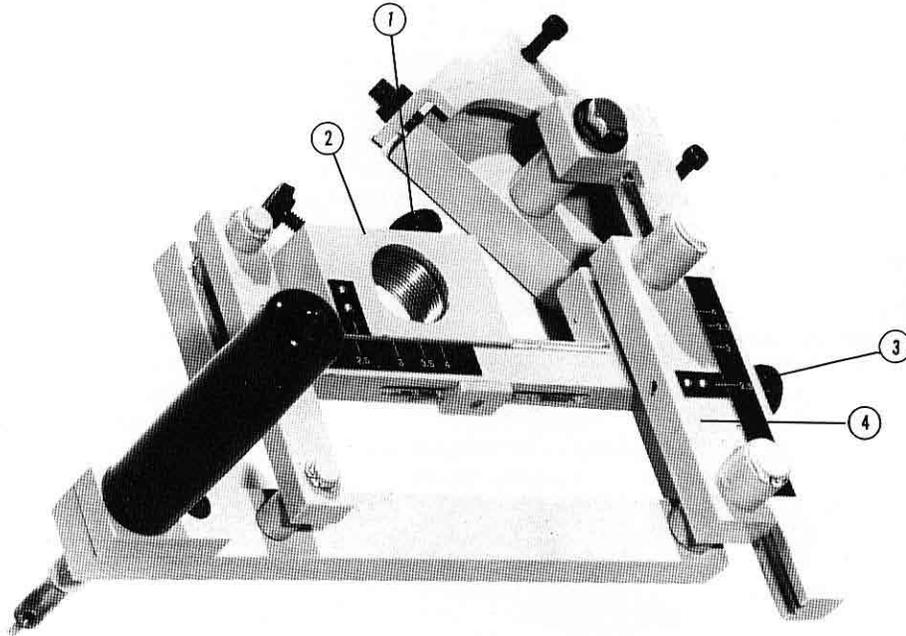
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2

This Signgraver has been shipped with a 1/16" cutter installed, ready to engrave. Read through the following pages, studying the photos, before making adjustments to your machine. Set up your Signgraver in an area that provides adequate lighting and work space.

- | | | |
|--|---|---|
| <p>1. Off/On Switch.</p> <p>2. Place Hex Wrench through this hole to prevent shaft from rotating while changing cutters — page 10.</p> <p>3. Pantograph Position Clamping Screw: Use to clamp the Pantograph in position on the pivot rod — page 12.</p> <p>4. Pantograph Centering Pointer — page 12.</p> <p>5. Motor Clamping Screw: Use this thumb-screw to clamp the motor after adjusting depth of cut — page 11.</p> <p>6. Pantograph Centering Line: Align Pantograph Centering Pointer with this line to center engraving on Sign Blank — page 12.</p> <p>7. Sign Blank Clamping Screw: Use to clamp Sign Blank — page 7.</p> <p>8. Sign Blank — page 7.</p> <p>9. Sign Blank Centering Scale: Use to center Sign Blank — page 7.</p> <p>10. Sign Blank Clamping Bar: Holds Sign Blank securely during engraving operation — page 7.</p> <p>11. Location where Sign Blank Plate is identified, (as #1 or #2 side, #2 side is stamped with a 2, #1 side has no marking) — page 13.</p> | <p>12. Engraving Position Clamping Knob: Use for vertical positioning of engraving on Sign Blank — page 7.</p> <p>13. Master Type Centering Scale: Use to center Master Type — page 6.</p> <p>14. Upper Type Holding Bar — page 7 and 9.</p> <p>15. Master Type Plate: Master Type sets on this plate during engraving operation — page 6.</p> <p>16. Type Bar Clamping Screw: Use to clamp Master Type vertically (three places). Always clamp center first — page 6.</p> <p>17. Lower Type Holding Bar — page 9.</p> <p>18. Horizontal Letterlock — Master Type — page 6.</p> <p>19. Letterlock Clamping Screw — Master Type: Use to clamp Master Type horizontally. Always clamp this side first — page 6.</p> <p>20. Master Type — page 6.</p> <p>21. Horizontal Letterlock — Master Type — pages 6 and 9.</p> <p>22. Hex Wrenches.</p> <p>23. Sign Blank Plate — page 7.</p> <p>24. Letterlock Clamping Screw — Master Type: Always clamp this second. Push</p> | <p>bottom of clamp toward Master Type as you tighten — page 6.</p> <p>25. Stylus Tip: Traces the Master Type — page 8.</p> <p>26. Engraving Position Scale: Used when moving the Sign Blank Holder Plate any desired amount, or to return it to a particular location.</p> <p>27. Engraving Position Pointer: Use with Engraving Position Scale — page 7.</p> <p>28. Motor Mounted Depth Control: Use for most applications — page 10. This surface "rides" on the Sign Blank during the engraving operation. The amount the Cutter projects below this surface is the cutting depth.</p> <p>29. Finger Grip — page 8.</p> <p>IMPORTANT: Depth of cut should be only enough to cut away surface color. Always start "shallow" and set "deeper" if necessary. See page 11 for details.</p> |
|--|---|---|

OPERATION of Selectable Ratio Pantograph (K025S3)



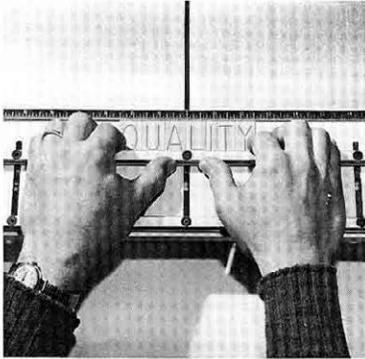
OPERATION of Selectable Ratio Pantograph (K025S3)

1. Loosen motor link lock screw.
 2. Slide motor mounting block to desired ratio, align marks and tighten screw.*
 3. Loosen pivot link lock screw.
 4. Slide pivot link to desired ratio, align marks and tighten screw.*
- Proceed with use of pantograph as outlined in Signgraver (SM100B or SM300) operating instructions.

***Please Note:** These marks MUST be properly aligned to ensure the best engraving.

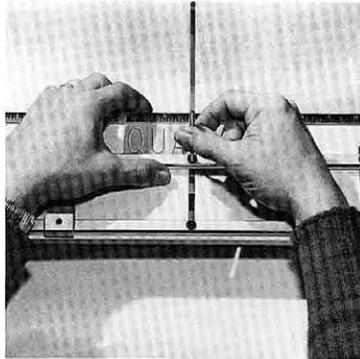
SPECIAL NOTE: With smaller fonts and greater reductions (eg. ML212, 4:1) use stylus mounted depth control (K002B). (See page 11, item 17 in SM300/500 Operating Instructions.

SETTING-UP & CLAMPING MASTER TYPE

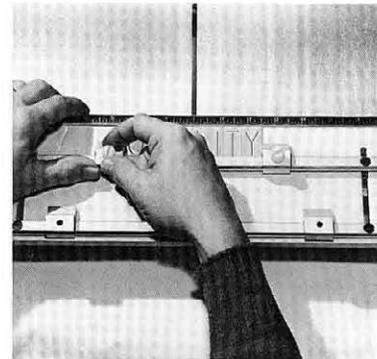


1. Select the Master Type required. For demonstration purposes, we show the word QUALITY. The overall height of the finished engraved letters will be one-half the Master Type height plus the cutter width. Using 1" Master Type, our engraved letters will be one-half inch plus the 1/16" cutter width, or approximately 9/16" overall capital height.

Place the Master Type between the top edge of the Master Type Plate and the Upper Master Type Holding Bar, center, using the scale on the Master Type Plate.



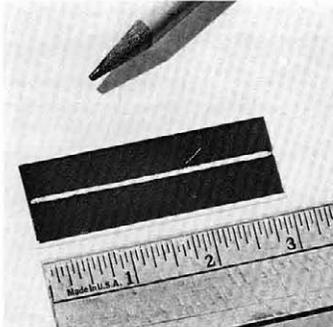
2. Squeeze the Master Type Bar against the Master Type as you tighten the three clamping screws, tighten the center screw first.



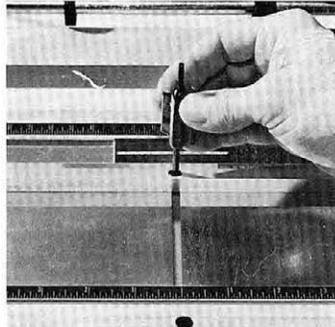
3. Tighten the right Letterlock Clamping Screw first. Push the bottom of the left Letterlock toward Master Type as the screw is tightened. **Note:** Spacers may be required between Letterlocks and Master Type to insure free travel of Tracing Stylus. **Do not over-tighten Letterlocks.**

6

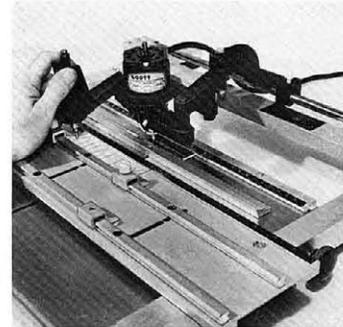
LAYOUT, POSITIONING & CLAMPING SIGN BLANK



4. The scale in photo (1) shows the Master Type for "QUALITY" to be five inches long, (2-1/2" either side of center). Your 2 to 1 ratio machine will reproduce these letters in an engraved line 2-1/2" long. We have selected a 1" by 3" Sign Blank for the sign to be engraved. Measure and mark the center-line on the protective coating of the Sign Blank with a soft pencil.

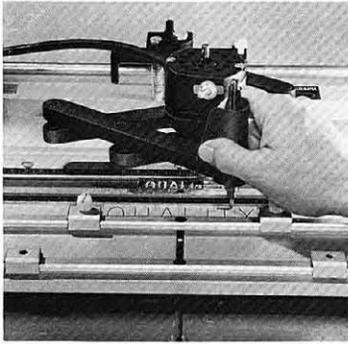


5. Center the Sign Blank using the Centering Scale. Clamp the Sign Blank making sure the edge of the Clamp is on top of the Sign Blank for proper clamping.

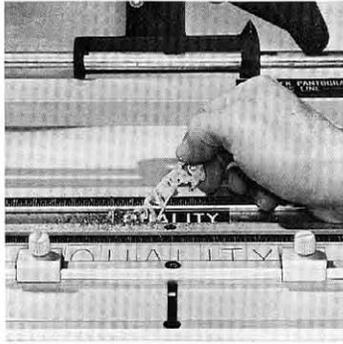


6. With the Motor Mounted Depth Control removed, place the Stylus Tip in the center groove of a 'B, E, F, G, H, P or R' Master Type Letter, or in the center vertically of a 'D, I, K, L, M, N or T.' (Measure and mark the center if necessary.) Loosen the Engraving Position Clamping Knob and slide the Sign Blank Plate until the Cutter point lines up with your pencil center line on the Sign Blank. Tighten the Clamping Knob and replace the Depth Control.

ENGRAVING

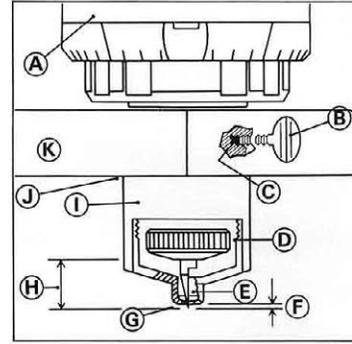


7. Plug in and switch the motor on, grasp the Finger Grip and place the Stylus Tracing Point in the first Master Type Letter to be engraved. Press down on the Finger Grip until the Depth Control contacts the Sign Blank. Each Master Type Letter should be traced twice, once with the Stylus pressed slightly to the bottom, or right edge of the Master Type groove, and again with the Stylus pressed to upper or left edge of the Master. This assures good quality engraved letters. When all the Masters have been traced in this manner, switch off the motor, raise the pantograph up and out of the way and check each letter to see that it is completely engraved. A small brush will aid in removing chips for inspection. If any areas are not deep enough or have been missed, engrave them again before anything is moved.



8. Remove the protective skin of the Sign Blank at this time to aid in your final inspection. Once the Sign Blank has been removed it is extremely difficult to re-align it to engrave a missed section. Before removing it, check and inspect thoroughly.

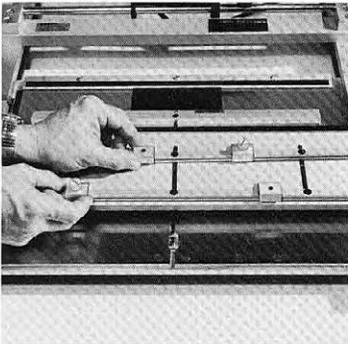
Cutter, Depth Control & Motor Relationship



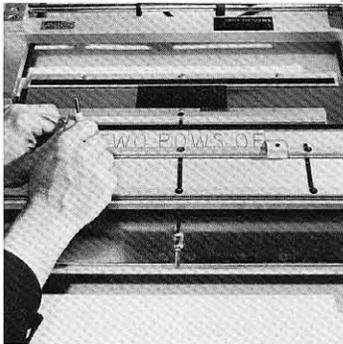
- A. Motor
- B. Motor Clamping Screw
- C. Nylon Plug — protects motor threads
- D. Collet Nut
- E. Cutter
- F. Depth of cut, (exaggerated).
- G. This surface rides on the material being engraved.
- H. Point of Cutter 3/8" to base of Collet with Collet Nut snug
- I. Depth Control
- J. Depth Control locks against Motor Link
- K. Motor Link

8

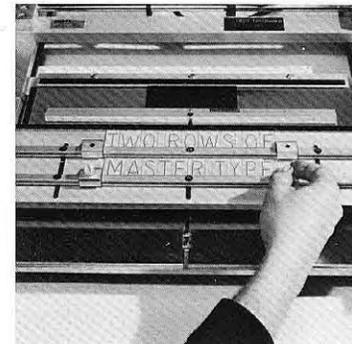
ENGRAVING TWO ROWS OF MASTER TYPE



9. The machine is equipped with two Type Holding Bars and four Horizontal Letterlocks (two containing nylon screws and two containing socket screws). This allows two rows of Master Type to be clamped at one time for engraving. The Horizontal Letterlocks with nylon screws are on the Upper Type Holder Bar for engraving with a single row of Type because they are more convenient to use. When using two rows of type at one time, the Letterlocks should be interchanged so those with the socket screws will be on the Upper Type Holder Bar. This prevents interference of the Pantograph with the Nylon Letterlock Clamping Screws while engraving the second row of type.



10. The upper row of type is centered and clamped first.

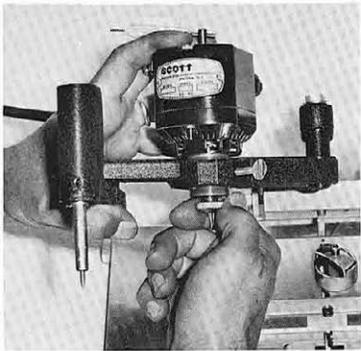


11. The lower row of type is centered either by eye or by using a scale to position it equidistant from the Letterlocks holding the upper row of type. (see photograph)

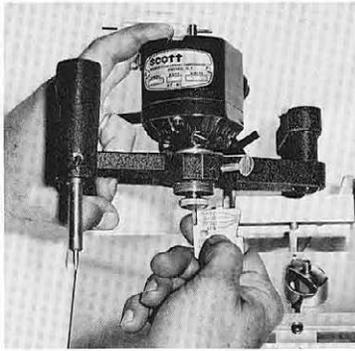
Caution: Two rows of Master Type can be clamped at one time only if their overall combined blank heights do not exceed 3-3/4 inches.

When using large masters (i.e.: ML17) it may be necessary to remove the lower Type Holder Bar from the Master Type Plate.

CHANGING CUTTERS

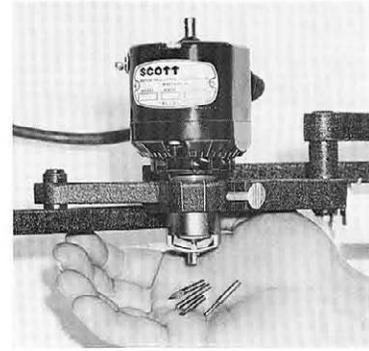


12. Scott Signgravers are shipped from the factory with 1/16" Cutter installed, ready to engrave. To change cutter, first remove the Motor Mounted Depth Control. Place a hex wrench through the hole in the top of the motor shaft to prevent rotation and loosen the Collet Nut. Remove cutter and replace with one of your choice.



13. Loosen the Collet Nut just enough to position the Cutter. Use the Scott Cutter Gauge to adjust the Cutter so that it projects 3/8" from the bottom of the Collet Nut to the tip of the Cutter. Tighten the Collet Nut and remove hex wrench.

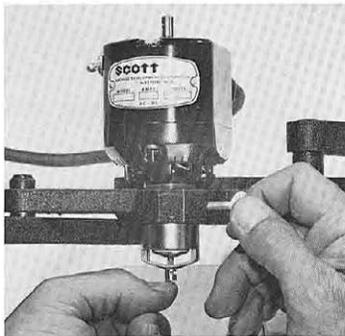
Motor should be elevated from the motor link (note arrow) the width of the Cutter Gauge for proper adjustment.



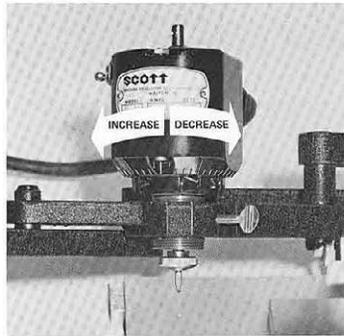
14. Replace the Motor Mounted Depth Control on the Threaded Motor Housing until it locks against the Motor Link of the Pantograph. The Depth Control rides on the surface of the Sign Blank. The amount of cutter that is exposed is the depth of cut. Engrave just deep enough to cut away the surface color. A cut that is too deep can ruin the sign material. It is best to start with a shallow cut, then increase to required depth.

10

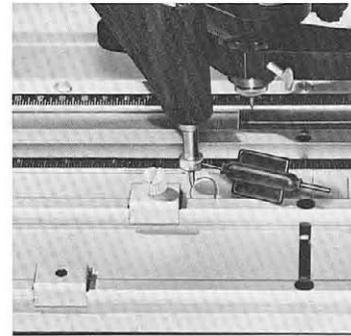
ADJUSTING DEPTH OF CUT



15. With the motor stopped, loosen the Clamping Screw and the Depth Control slightly, adjust the motor so the cutter can just be felt thru the Depth Control with the thumbnail. Tighten the Motor Clamping Screw and Depth Control. Place the Stylus Tip in one of the Master Type Letters and turn the motor on. Holding the Finger Grip, press down until the Depth Control rides on the Sign Blank and trace one letter. Turn motor off and lift back out of the way. Check the depth of cut. If it is too shallow (core not completely exposed) loosen the Motor Clamping Screw and advance the motor about 1/8 turn. Reclamp the motor and tighten the Depth Control.

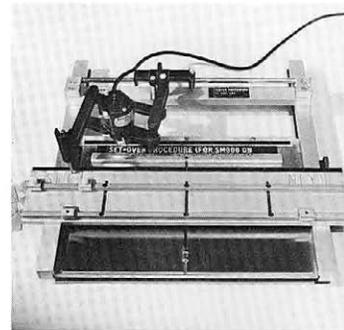
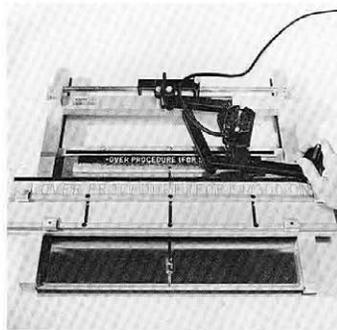
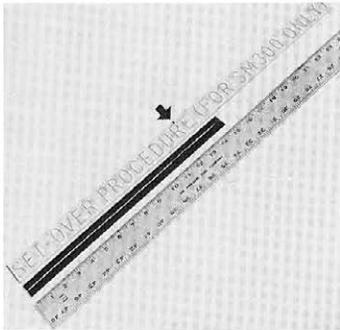


16. **Note:** The depth of the cut is decreased by rotating the motor counter-clockwise and increased by rotating the motor clockwise. When decreasing the cutter depth, the depth control must first be loosened. Engrave only deep enough to completely expose the core. Remember, if you cut too shallow at first you can always engrave deeper, but if your first cut is too deep, you can't put the material back.



17. When engraving close to the edge of a name tag, the Motor Mounted Depth Control may strike against the Sign Blank Clamp. In this case, the Stylus Mounted Depth Control should be used. Remove the Motor Mounted Depth Control and place the Stylus Mounted Depth Control on the Tracing Stylus. Lock it in place so it stops the Finger Grip when the cutter just contacts the surface of the Sign Blank. The cutting depth is adjusted by loosening the Motor Clamping Screw and rotating the motor as described in Step 16. The Stylus Mounted Depth Control should also be used if the Motor Mounted Depth Control is leaving marks on the engraved material. Always remove one Depth Control before installing the

SET-OVER PROCEDURE



18. A message which is too long to be engraved with the Pantograph centered, can be engraved by using the Set-Over Procedure.

For demonstration purposes we will use the message . . . "SET-OVER PROCEDURE (FOR SM300 ONLY)." With one inch Masters for 9/16" overall height finished letters. The overall length of our Master Type set-up is about 25-3/4". The engraved message will be one-half this length, about 13". Our Sign Blank size is 1" x 15". Select the Master Type, including spacers and arrange them on the work bench to spell the message. Measure the overall length (not to exceed 34"). Mark the center on the top edge of a Master. Place the marked Master on the center of the copy plate. Install as many Masters as possible either

side of the center leaving room for a Horizontal Letterlock at each end. Align the mark on the master with the center of the Master Type Centering Scale and clamp the Master Type in that position using the Type Holding Bar and Horizontal Letterlocks.

19. Engrave only the letters that can be completely engraved. Check and see if the Pantograph will reach the Masters at each end. Don't engrave them if you cannot reach them with the Pantograph arm.

After engraving, loosen the Horizontal Letterlocks and the Type Holding Bar. Remove all the Masters except the last one engraved on each end. Slide these Masters to the center and position the remaining Masters required to complete the message.

To complete the left side, position and clamp the Masters at the left side of the Master Type Plate.

20. Remove the Motor Mounted Depth Control, loosen the Pantograph Position Clamping Screw, insert the Stylus Tip in the master of the last letter engraved on the left and slide the pantograph to the left until the cutter drops exactly into the letter previously engraved from that master. Clamp the Pantograph in that position. Replace the Motor Mounted Depth Control. **Do Not Re-Engrave** the letter used to position the Pantograph. Engrave the remaining letters at the left end of the sign.

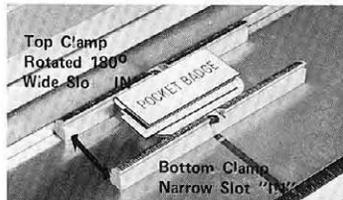
Position and clamp the Masters to complete the right end of the sign at the right end of the Master Type Plate. Re-

12

NAME TAGS OVER THE POCKET BADGES

move the Motor Mounted Depth control, loosen the Pantograph Position Clamping Screw, insert the Stylus Tip in the master of the last letter engraved on the right and slide the pantograph to the right until the cutter drops exactly into the letter previously engraved from that master. Clamp the Pantograph in that position. Replace the Motor Mounted Depth Control. **Do Not Re-Engrave** the letter used to position the Pantograph. Engrave the remaining letters at the right end of the sign.

Return the Pantograph assembly to the center position and clamp it there for the next engraving job.



21. To engrave Name Tags and Pocket Badges, the Sign Blank Plate is re-positioned as follows:

Loosen the Engraving Position Clamping Knob, pull the Sign Blank Plate all the way out. Turn it over and re-insert.

With the Sign Blank Plate in this, the Number 2 position, there are special clamping devices that hold Pocket Badges and Name Tags. The special slots support Name Tags so that they can be engraved with Pinbacks or Clutches attached.

Always insert a piece of 1/8" material (or two pieces of 1/16") into the Pocket Badge before engraving. This makes the surface level for distortion-free engraving.

SPECIAL SHAPED NAMETAGS

Nametags can be cut out in any desired shape as follows:

Clamp a template of the desired shape (twice as big as the finished nametag) on the master type plate.

Clamp a piece of scrap stock (larger than the finished nametag) on the Sign Blank Plate. (To prevent damage to Plate.)

Fasten a sign blank (from which the nametag is to be cut) to the piece of scrap stock using double sided tape.

Position the Sign Blank Plate to align the cutout on the sign blank.

Adjust the depth of cut so the cutter will cut completely thru the sign blank and slightly into the scrap stock.

Engrave completely around the template to cut the shaped nametag from the sign blank with a CA2 Cutter.

Set up and clamp the Master Type to spell the message on the nametag.

Adjust the depth of cut to cut only thru the surface color.

Move the Sign Blank Plate and the Pantograph as necessary to position the engraved message in the desired location on the nametag.

Engrave the message.

Large quantities of the same shaped cutout nametags can be produced faster by cutting out all the nametags first and then engraving the message.

ENGRAVING ACCESSORIES

Corner Rounder • Custom Master Templates • Cutter Gauge • Cutters: High Speed, Carbide and Diamond Drag • Depth Controls • Fabricating Table • Letter Trays • Master Type Fonts • Material Beveler • Order Form Pads • Paint Sticks • Scott Kool • Scott-Ply™ Laminated Plastic* • Sign Holders • Slide Rule • Stylus Tips

FINISHED ENGRAVED LETTER SIZES

For your reference here are actual size samples of Scott Standard Style finished engraved letters. Based on 2:1 Ratio

ML214

3/4" Letter, Cutter No. CA6
(3/32"). Yellow

MLI3

9/16" Letter, Cutter No. CA4
(1/16"). Blue.

ML212

5/16" Letter
Cutter No. CA2
(1/32"). Red.

ML211

3/16" and 1/8" Letter
Cutter No. CA1
(1/64"). White.

ML210

ML217

2" Letter
Cutter No. CA16
(1/4"). Black.

ML216

1-9/16" Letter
Cutter No. CA12
(3/16"). Gold.

MLI5

1" Letter
Cutter No. CA8
(1/8"). Green.

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ENGRAVING MATERIALS

Materials that can be engraved on the Scott Signgraving Machine are: plastics (laminated and solid color), plexiglass, metals and wood.

Laminated Plastics

The laminated plastics materials are made up of a thin surface layer and a backing material called the "core" that is a contrasting color. They are used in most engraved sign applications. Engraving removes the surface layer so the letters or pattern shows the core color.

Laminated plastic materials are made in 2 and 3 ply and in two kinds of materials, flexible and rigid. Two-ply has the thin surface layer on one side of the core and is used where only one side of the sign is to be seen, (i.e. fastened on a wall or held in an extrusion). Three-ply has the colored surface layer on both sides of the core. It has no strength advantage over two-ply and is used only when both sides of the sign are engraved and visible, (i.e., projecting corridor signs).

Scott-Ply laminated plastic is available in both 1/16th and 1/8th inch thicknesses. 1/16th is used in most 2-ply applications where it is attached to a surface, held in an extrusion or used as small signs. 1/8th is used in most 3-ply applications as in projecting corridor signs.

Scott-Ply (flexible) is usually used for most engraved signs and may be sawed, sheared, beveled, drilled, and engraved with standard wood-working tools. It

GENERAL INFORMATION

mounted on curved surfaces because it is flexible. It has film on the surface to protect the surface color while it is being cut and engraved. The protective film is removed AFTER engraving.

Rigid material is similar to Formica counter top material. It is used where signs are subjected to high temperatures, chemical solvents or exposed to rough usage. Carbide tools must be used to saw, bevel or engrave it.

Solid Color Plastics

Solid color plastics are the same color all the way thru. They are engraved and then the engraved letters or pattern can be filled with a paint stick or liquid paint of a contrasting color.

Plexiglas

Clear plexiglas may be engraved on either the front or back surface. Engraving on the back surface protects the letters and gives an attractive three-dimensional affect, but requires the use of special Reverse Masters (mirror image) to make the lettering legible from the front. The letters may be filled with a paint stick or enamel paints as desired. Interesting affects can be achieved by placing lights near the edge of the pieces. A small cutter with a deep cut (at least half way thru the material) is recommended, if special lighting is to be used.

Metals and Wood

The High Speed Steel Cutters are used

Light cuts are made and depth increased several times until the required depth is reached. Free-machining alloys of brass or aluminum are required for engraving. A diamond drag can be used on the metals for fine line engraving such as trophy plates. (Do not switch motor on when diamond drag engraving.)

Wood may be engraved with High Speed Steel or Carbide cutters. The engraved area may be filled to provide a contrasting color.

Master Type Fonts

Scott Master Type may be purchased individually or in a complete assortment. This assortment of pre-packaged Master Type is called a Font. Scott Signgraver^R Fonts are made of Delrin^R, or hard Phenolic for exceptional durability. Phenolic Master Type requires light oil lubrication for best results.

Certain Master Types could be incorrectly used (6 or 9, or an S). To prevent this the Master Type have either a dot on the bottom or a small notch at the top. Care should be taken when using the letter "O" and number (zero). They are nearly the same but the "zero" is narrower than the letter "O".

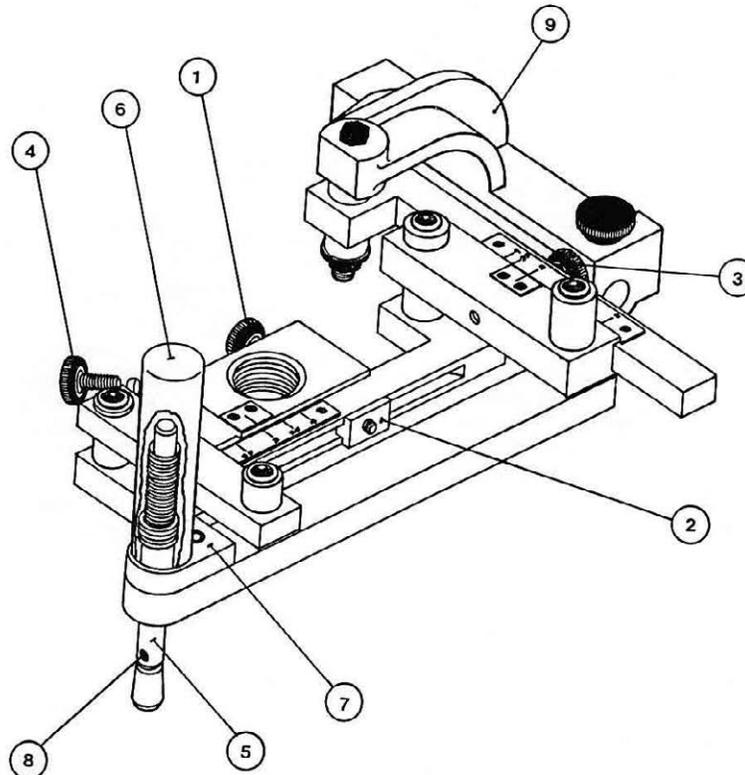
In each font there are Master Type for the high ^c in (MC) and low C and A, as in "MAC". Some fonts have a low R and S for (MR. and MRS.). Arrows and many Organization Symbol Templates are also available. (Templates or logos made to your design are available on

PARTS FOR SELECTABLE ARM – K025S3
for use with SM300 & SM500

	Order No.
1. Motor Link Lock Screw assembly (washer)	KS001
2. T-Slot Nut	KS002
3. Pivot Link Lock Screw Assembly (Washer)	KS003
4. Motor Thumb Screw Assembly (Nylon Plug)	KS004
5. Pantograph Stylus Holder	KTSB3
6. Pantograph Grip Cover – Black	K044
7. Pantograph Grip Assembly	K045
8. Set Screw only for Stylus Shaft	K046
UPGRADE COLLAR/SPRING KIT:	
9. Pivot Shaft Collar – Set Screw (2 required)	K026305
10. Hinge Spring	K026306

Use with K005* (117 volt) motor (NOT INCLUDED).
*K006 (230 volt) for export.

PARTS FOR SELECTABLE ARM – K025S3
for use with SM300 & SM500



SPARE PARTS FOR SM300 SIGNGRAVER

Order No.	Order No.	Order No.	Order No.
1. Complete Panto Assembly (less Motor and Mounting Bracket) K025	13. Master Type Centering Scale K008	25. Stylus Tip 1/32 flat end K013	
2. Motor, 115V AC K005 230V AC K006	14. Master Type Plate SM300 K300006	.02 flat end K014	
3. Pantograph Mounting Bracket (Casting only) K026	15. Type Bar Clamping Screw (6 req'd.) K034	90° included angle K015	
4. Pantograph Centering Decal K027	16. Tongue Nut (not shown, (6 req'd.) K010	26. Engraving Position Pointer K035	
5. Pivot Shaft SM300 K300002	17. Letterlock Clamping Screw, Socket (Screw only) K030	27. Engraving Position Scale K017	
6. Sign Blank Clamping Screw K012	18. Horizontal Letterlock, w/Socket Screw K031	28. Motor Mounted Depth Control use with Cutters up to and including 1/8" use with Cutters over 1/8" K002	
7. Sign Blank Clamping Bar Nut (not shown) K033	19. Letterlock Clamping Screw, Nylon (Screw only) K020	29. Stylus Mounted Depth Control (not shown) K002B	
8. Pivot Block K028	20. Horizontal Letterlock, w/Nylon Screw K019	30. #2 Side Clamping Bars w/Scales & Mounting Hardware (not shown, 2 req'd.) K037	
9. Sign Blank Clamping Bar (top) SM300 K300003	21. Type Holding Bar Ass'y., w/Screws & Tongue Nuts (2 req'd.) K032	31. #2 Side Clamping Bar Scales (not shown, 2 req'd.) K038	
10. Sign Blank Centering Scale (Scale only) SM300 K300004	22. Small Hex Wrench K003	32. #2 Side Clamping Bar Screws (not shown, 2 req'd.) K034	
11. Sign Blank Clamping Bar (bottom) SM300 K300005	23. Large Hex Wrench K004	33. #2 Side Clamping Bar Nuts (not shown, 2 req'd.) K010	
12. Engraving Position Clamping Knob K029	24. Sign Blank Plate SM300 K300007		

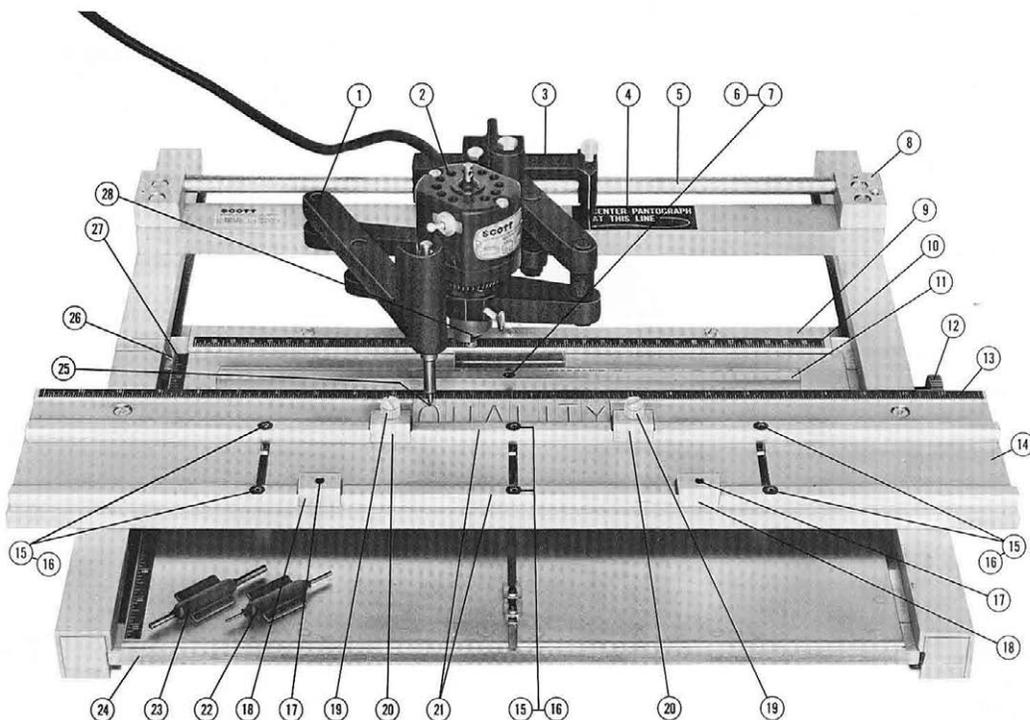
MAINTENANCE

The only maintenance which is required on your Scott Signgraver is an occasional drop of oil. Twice a year, remove the motor from the machine. Invert it and remove the collet nut. Let a few drops fall on the snap ring and allow it to

stand a few minutes. Turn the motor over and apply a few drops of oil thru the hole in the end plate. This will allow oil to impregnate the felt gasket around motor shaft. Vacuum the dust and plastic residue out of the motor.

18

SPARE PARTS FOR SM300 SIGNGRAVER



SIGN LAYOUT . . . VISUAL CONSIDERATIONS

Making signs is not a difficult operation. The following guidelines provide all the information you require for making attractive and functional signs.

Effectiveness of signs is determined by their ability to communicate the message. The ability to attract attention is a result of the contrast between the mounting surface and the sign color. The higher the contrast, the more attention the sign will attract.

In addition to color, you must also consider letter style, letter size and viewing distance, length of message, sign size and placement of sign.

Consider them, one at a time.

Color

Contrast between the surface color and the engraved letters increases legibility. A black surface with white letters or a white surface with black letters represent maximums.

Color influences. Colors relay emotional messages. Warm colors (reds, oranges) excite and stimulate. Cool colors (blues, greens) are quiet and subdued.

Color coding of signs by departments, personnel functions, products, etc., is very effective. Standardization of specific colors for constant meanings

increases effectiveness when it is carried out in a systematic manner.

Another example of this would be the use of the same color combination in a specific area or condition. All door signs, for example, one color, all directional signs another color.

It's easy to see that signs can be bright and conspicuous or quiet and subdued. It's up to you and your needs.

Letter Style

Scott Standard and Helvetican type styles have maximum legibility. Script and other artistic styles lend interesting variations but tend to reduce legibility somewhat.

Letter Size and Viewing Distance

A general rule with good lighting conditions and legible type style is: use a minimum of one inch of letter height for each 35 feet of viewing distance. Standards may be set up for letter height in specific applications. Door signs should have 1" finished letter height, desk signs should have 9/16" finished letter height, name tags are usually finished in a 3/16" or 5/16" letter. Distances indicated in the chart can be followed for most installations.

Length of Message

The name or message should be spaced properly on the Sign Blank not pinched or squeezed. Multi-line messages require additional consideration. Don't be afraid to use extra space between lines, it can add emphasis and increase legibility.

Scott offers a simple, but unique Slide Rule Guide, designed to assist you in planning length of message and Sign Blank size.

Sign Size and Placement

Using standardized sign sizes will assist message transfer, not just by word alone, but, just as importantly, by size.

Signs are best read at eye level, on a plain background. A confusing background will diminish visibility.

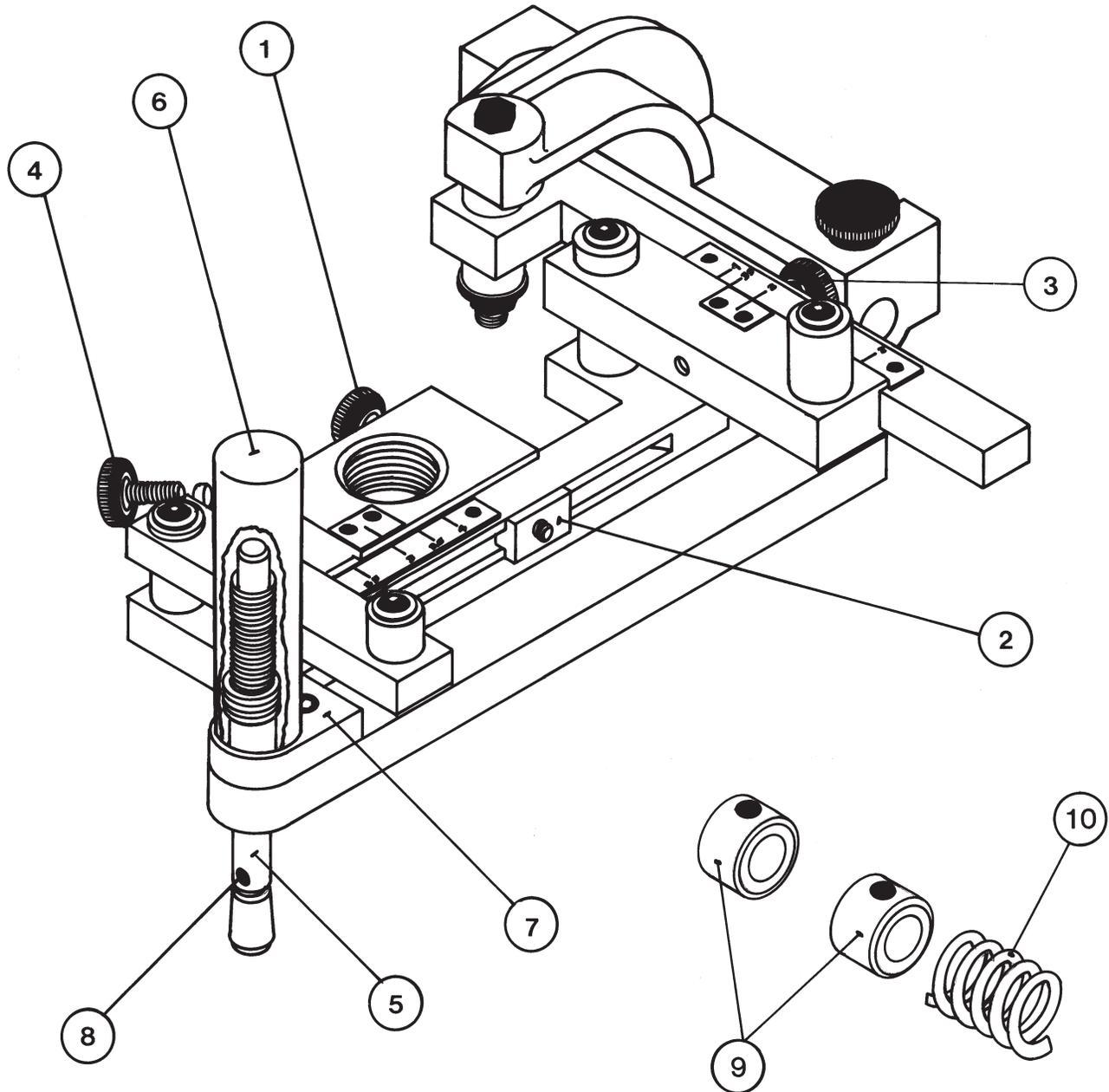
Letter Height	Average Viewing Distance	Maximum Viewing Distance
3/16"—5/16"	6 feet	10 feet
9/16"	12 feet	18 feet
1"	24 feet	36 feet
1-9/16"	36 feet	54 feet
2"	48 feet	72 feet



Scott Machine Development Corporation
Route 206, P.O. Box 88, Walton, New York 13856-0088
Tel: 607/865-6511 Fax: 607/865-7269 Telex: 646827

K025S3 - Selectable Arm for SM300

Installation & Operating Instructions



Scott Machine Development Corp.

Ship: 200 Prospect Ave. Mail: PO Box 88, Walton, NY 13856-088

Tel: 607.865.6511 Fax: 607.865.7269

Web: www.scottmachinecorp.com

K025S3 - Selectable Arm for use with SM300 & SM500

Spare Parts - List Price Minimum Order \$25.00

	CATALOG NO.	DESCRIPTION	PRICE
①	KS001	Motor link lock screw assembly (washer)	\$ 6.60
②	KS002	T-slot nut	10.40
③	KS003	Pivot link lock screw assembly (washer)	7.80
④	KS004	Motor thumb screw assembly (nylon plug)	3.10
⑤	KTSB3	Pantograph stylus holder	18.40
⑥	K044	Pantograph grip cover - black	5.80
⑦	K045	Pantograph grip assembly	25.50
⑧	K046	Set screw only for stylus shaft	1.60
UPGRADE COLLAR/SPRING KIT:			
⑨	K026305	Pivot shaft collar - set screw (2 required)	4.60
⑩	K026306	Hinge spring	2.50

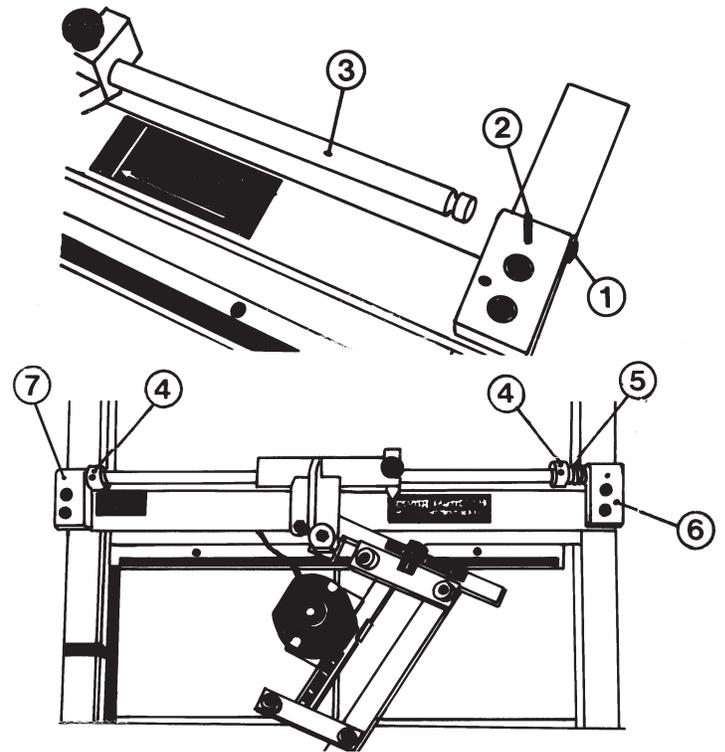
Use with K005* (117 volt) motor (NOT INCLUDED).

* K007 (Power Converter) for export.

INSTALLATION of Selectable Arm (K025S3) and Pantograph Mounting Bracket (K026S3) onto SM300

- Remove end caps① from both sides.
- Remove pivot shaft pin② by driving out with punch.
- Slide pivot shaft③ to left.
- Remove 2:1 mounting kit (K300013). Slide one collar④, selectable arm and Pantograph mounting bracket (K025S3/K026S3), second collar④, and then spring⑤ onto shaft.
- Slide pivot shaft back into right pivot block⑥. Check to be sure the shaft is positioned in both pivot blocks evenly.
- Position collar against left pivot block⑦ and tighten set screw with $\frac{1}{8}$ " hex wrench (K004). Keep first collar against left block, move 2nd collar and spring against right block—compressing spring to $\frac{3}{4}$ ". Tighten set screw in collar.
- Install end caps. Discard pivot shaft pin.

Note: If your pivot shaft is equipped with two snap rings and a spring, do not use the upgrade collar/spring kit. Follow the same procedure as above using the parts already on your machine.

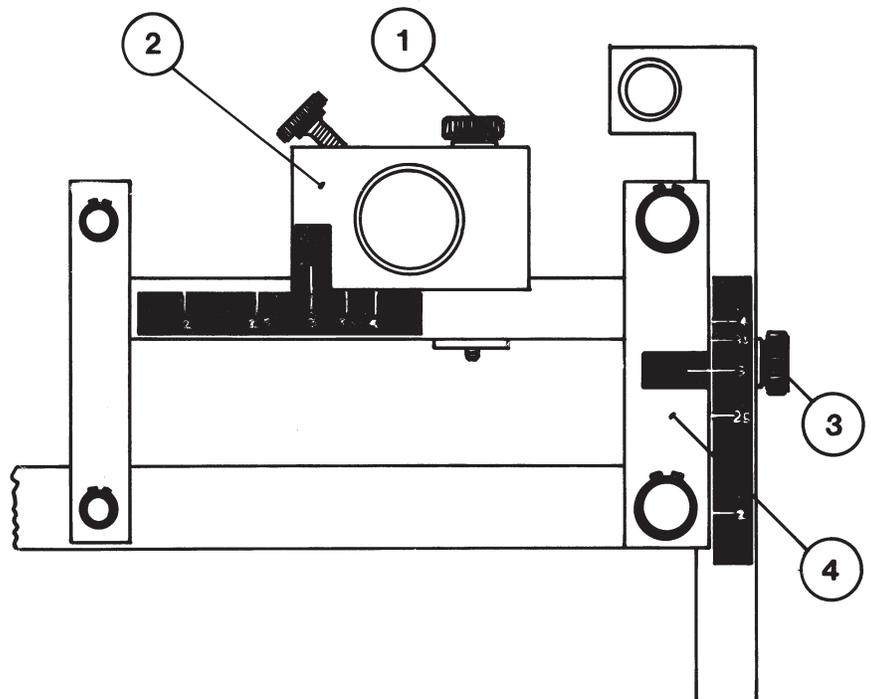


OPERATION of Selectable Ratio Pantograph (K025S3)

- Loosen motor link lock screw①.
- Slide motor mounting block② to desired ratio, align marks and tighten screw.*
- Loosen pivot link lock screw③.
- Slide pivot link④ to desired ratio, align marks and tighten screw.*
- Proceed with use of pantograph as outlined in Signgraver (SM300 or SM500) operating instructions.

* Please Note: These marks *must* be properly aligned to ensure the best engraving.

Special Note: With smaller fonts and greater reductions (eg. ML212, 4:1) use stylus mounted depth control (K002B). See pg 9, item 17 in SM300/500 operating instructions.



FONT TEMPLATES Sizing Chart

Font Cat.No.	Blank Size	Master Letter Size	Finished Letter Size 2:1		Finished Letter Size 2.5:1		Finished Letter Size 3:1		Finished Letter Size 3.5:1		Finished Letter Size 4:1		Font Compo- sition	Price per Font	(2) Price per Char
			Recom. Cutter	Recom. Cutter	Recom. Cutter	Recom. Cutter	Recom. Cutter	Recom. Cutter	Recom. Cutter	Recom. Cutter					
SCOTT Standard Style															
ML210	1 1/4"	1/4"	1/8"	1/64"	3/32"	1/64"	---	---	---	---	---	---	4A	91.20	1.70
ML211	1 1/4"	3/8"	3/16"	1/64"	5/32"	1/64"	1/8"	1/64"	1/8"	1/64"	3/32"	1/64"	4A	107.50	1.70
ML212	1 1/4"	5/8"	5/16"	1/32"	1/4"	1/32"	7/32"	1/32"	3/16"	1/64"	5/32"	1/64"	4A	111.30	1.70
ML13*	1 1/2"	1"	9/16"	1/16"	7/16"	1/16"	3/8"	1/32"	5/16"	1/32"	9/32"	1/32"	4A	121.30	1.70
ML214	1 3/4"	1 5/16"	3/4"	3/32"	19/32"	3/32"	1/2"	1/16"	7/16"	1/16"	3/8"	1/16"	4A	171.30	2.30
ML15*	2 1/4"	1 3/4"	1"	1/8"	13/16"	1/8"	11/16"	3/32"	9/16"	3/32"	1/2"	1/16"	4A	216.30	2.80
ML216	3 1/4"	2 3/4"	1 9/16"	3/16"	1 1/4"	3/16"	1"	1/8"	7/8"	1/8"	3/4"	1/8"	3A	268.80	3.20
ML217	4"	3 1/2"	2"	1/4"	1 5/8"	3/16"	1 5/16"	3/16"	1 5/32"	3/16"	---	---	2A	288.90	4.20
SCOTT Roman Style															
ML263	2 1/4"	1"	1/2"	1/32"	3/8"	1/32"	5/16"	1/64"	9/32"	1/64"	1/4"	1/64"	4A	308.80	2.80
ML265	2 1/4"	1 7/8"	1"	1/16"	13/16"	1/16"	11/16"	1/32"	9/16"	1/32"	1/2"	1/32"	4A	340.10	4.70
ML266	3 1/4"	2 3/4"	1 1/2"	3/32"	1 1/32"	3/32"	1"	1/16"	7/8"	1/16"	3/4"	1/16"	3A	403.80	6.00
<i>Scott</i> Script Style															
ML290	1 1/4"	1/2"	1/4"	1/64"	7/32"	1/64"	3/16"	1/64"	5/32"	1/64"	1/8"	1/64"	5A	273.80	3.00
ML291	2 1/4"	1"	1/2"	1/32"	7/16"	1/32"	3/8"	1/32"	5/16"	1/32"	1/4"	1/32"	5A	295.10	3.70
ML292	3 1/4"	1 1/2"	3/4"	1/32"	5/8"	1/32"	9/16"	1/32"	7/16"	1/32"	3/8"	1/32"	5A	361.30	4.00
ML293	4"	2"	1"	1/32"	13/16"	1/32"	11/16"	1/32"	9/16"	1/32"	1/2"	1/32"	5A	407.60	5.10
Scott Architectural Helvetica															
ML280	2 1/4"	1"	1/2"	1/32"	3/8"	1/32"	11/32"	1/32"	9/32"	1/64"	1/4"	1/64"	5A	337.60	2.90
ML281	2 1/4"	1 1/2"	3/4"	1/16"	5/8"	1/16"	1/2"	1/16"	7/16"	1/32"	3/8"	1/32"	5A	400.10	4.00
ML282	3 1/4"	1 7/8"	1"	1/16"	13/16"	1/16"	11/16"	1/16"	9/16"	1/32"	1/2"	1/32"	5A	546.30	4.70
ML283	4"	2 3/4"	1 1/2"	3/32"	1 7/32"	3/32"	1"	3/32"	7/8"	1/16"	3/4"	1/16"	5A	552.60	5.80
<i>Connecting Script</i> Connecting Script															
ML311*	1 1/4"	7/8"	7/16"	1/32"	11/32"	1/64"	9/32"	1/64"	1/4"	1/64"	7/32"	1/64"	5A	273.80	3.70
Optima Optima															
ML321	2 3/4"	1 1/4"	5/8"	1/32"	1/2"	1/32"	7/16"	1/32"	3/8"	1/32"	5/16"	1/32"	5A	301.40	2.90
ML322	2 3/4"	1 3/4"	7/8"	1/32"	3/4"	1/32"	5/8"	1/32"	1/2"	1/32"	7/16"	1/32"	5A	372.50	3.90
Condensed Block Condensed Block 3/4															
ML332	1 1/4"	3/4"	3/8"	1/32"	5/16"	1/32"	1/4"	1/32"	7/32"	1/32"	3/16"	1/64"	5A	180.10	2.20
ML333	2 3/4"	1 1/2"	3/4"	1/16"	5/8"	1/6"	9/16"	1/6"	7/16"	1/16"	3/8"	1/32"	5A	247.60	2.40
ML334	4"	2 3/4"	1 1/16"	1/8"	1 1/4"	1/8"	1"	1/8"	7/8"	1/16"	3/4"	1/16"	5A	318.80	3.00



Scott Machine Development Corporation
 200 Prospect Ave PO Box 88 Walton, NY 13856
 Phone: 607-865-6511 Fax: 607-865-7269
 www.scottmachinecorp.com

K005 Engraver & Beveler Motor

INSTALLING CUTTERS

Always unplug Motor before changing cutter

- ① Remove Motor Mounted Depth Control
- ② Press the Shaft Lock Button and loosen the Collet Nut.
- ③ Remove the cutter and replace with the one of your choice
- ④ Tighten Collet Nut just enough so cutter can still move freely. Replace the Motor Mounted Depth Control on the motor until it locks against the Motor Link .
- ⑤ The Cutter tip should be protruding from the Motor Mounted Depth Control. Press a flat piece of engraving material against the cutter tip so it is flush with the end of the Motor Mounted Depth Control.
- ⑥ Press the Shaft Lock Button and tighten the Collet Nut.
- ⑦ Loosen the Motor Clamping Screw and turn the motor clockwise 1/8 of a turn. Tighten the Motor Clamping Screw. Tighten the Motor Mounted Depth Control. The tip of the cutter should be exposed slightly. The amount it is exposed will be the depth of the cut. Always start with a shallow cut, then increase to the required depth.

MOTOR SPEED SWITCH

Low - Use for Engraving
 High - Use for Beveling

