INSTRUCTIONS AND PARTS LIST

MOUNTING ACCESSORIES AND PROTECTIVE ENCLOSURES FOR WIRE SPOOLS AND REELS ON Linde SIGMA WELDING MACHINES

I. INTRODUCTION

This booklet describes the manner in which 9 and 12-in. disposable spools of welding wire are mounted on LINDE sigma welding machines. It also covers the installation of plastic protective enclosures for disposable wire spools and for the spoke-type wire reel.

II. EQUIPMENT REQUIRED FOR MOUNTING AND ENCLOSING 9 or 12-IN. DISPOSABLE WELDING WIRE SPOOLS (See Table I.)

A. SPINDLE ASSEMBLY

To use welding wire on spools, machines must be equipped with a spindle assembly, which serves the same purpose for spools that the spoke-type wire reel does for mounting wire wound on 12-in. cardboard rims. On all machines purchased initially for use with wire on disposable spools, the complete Spindle Assembly (Part No. 38V66) is used. On all machines converted from the spoke-type wire reel, certain parts of the original wire reel can be combined with the parts in the Spindle Conversion Kit (Part No. 38V68) to provide the equivalent of the complete spindle assembly. (See Sec. VII.)

D. BRACKET ADAPTOR

Depending upon the machine, spool size, and whether a protective enclosure is used, a Bracket Adaptor (Part No. 07N94) may or may not be required to permit mounting the spindle assembly in a position in which the wire can be fed into the feed roll assembly from about the same angle at which the spoke-type wire reel would feed wire. Table I indicates just which combinations will require this adaptor.

C. PROTECTIVE ENCLOSURES (OPTIONAL)

A protective enclosure can be mounted if desired to protect personnel from shock caused by contact with the spindle or wire spool. The enclosure also prevents dust, grease, paint, and other foreign material from adhering to the welding wire, thus minimizing the possibility of contaminating the weld and fouling the equipment. Table I lists the correct enclosures for the various combinations of machine and spool size.

III. MOUNTING and ENCLOSING THE SPINDLE ASSEMBLY ON THE FSM-2 (ALL SERIES) and SWM-2 (SERIES 1) SIGMA WELDERS (SEE FIGS. 1 and 2)

IV. MOUNTING and ENCLOSING THE SPINDLE ASSEMBLY ON THE SWM-2 (SERIES 2, 3 and 4) SIGMA WELDERS (SEE FIGS. 3 and 4)

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TABLE I - Equipment Required for Mounting and Enclosing 9 and 12 in. Disposable Welding Wire Spools on LINDE Sigma Welding Machines

<table>
<thead>
<tr>
<th>Machine</th>
<th>Wire Spool size, in.</th>
<th>Spindle</th>
<th>Bracket adaptor (07N94) Required</th>
<th>Mounting Bracket (SWM-3 only)</th>
<th>Protective enclosure (optional)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FSM-2 (All Series) and SWM-2 (Series 1)</td>
<td>9</td>
<td>38V66 for all machines purchased initially for use with spools.</td>
<td>Yes*</td>
<td>39V45 (9-in.)</td>
<td>39V44 (12-in.)</td>
</tr>
<tr>
<td>SWM-2 (Series 2, 3 and 4)</td>
<td>9</td>
<td>38V68 for all conversions from spoketype reel.</td>
<td>Yes*</td>
<td>39V41 (9-in.)</td>
<td></td>
</tr>
<tr>
<td>SWM-3</td>
<td>9 or 12</td>
<td></td>
<td>No</td>
<td>06N12</td>
<td>39V40 (12-in.)</td>
</tr>
</tbody>
</table>

† Protective enclosure 39V56 is used on machines equipped with the spoketype wire reel (See Sec. IX.)
* 07N94 is not required if 9-in. spool is mounted in enclosure specified for 12-in. spool.
◊ 07N94 is only required if wire straightener attachment is used, and enclosure is not used.
▲ 9-in. spool can also be mounted in enclosure specified for 12-in. spool.

V. MOUNTING THE SPINDLE ASSEMBLY ON THE SWM-3 SIGMA WELDER

A. For 12-in. spools, mount the spindle in the same position on Mounting Bracket (06N13) in which the spoketype wire reel would be mounted, but omit the spacer which is used behind the spoketype wire reel.

B. For 9-in. spools, the somewhat shorter, similarly shaped Mounting Bracket (06N12) is used instead of 06N13, but the method of mounting is identical to that used for 12-in. spools.

VI. MOUNTING THE SPINDLE ASSEMBLY ON THE FSM-1 SIGMA WELDER

Mount the spindle in the same position in which the spoketype wire reel would be mounted, No bracket adaptor is required, and the same mounting can be used for either 9 or 12-in. spools.

VII. TO CONVERT A SPEKTYPE WIRE REEL INTO A SPINDLE ASSEMBLY (SEE FIG. 5)

A. Remove the wire reel from its shaft. To do this, first unscrew the cap screw at the reel hub, and remove the spring guide and brake spring. Then remove the keyed washer from the shaft and pull off the reel.

B. Install the new spindle on the shaft assembly. (Fig. 5 shows the proper relationship of the parts.)

C. A keyed washer (Part No. 06N18) is supplied with the conversion assembly. Place this washer on the shaft, and seat it in the spindle socket so that its key enters the slot in the shaft.

D. Assemble the original cap screw and brake spring (removed in Step "A") and the new Guide (Part No. 06N18, supplied with the conversion spindle assembly) as shown in Fig. 5. Place the guide on the screw, with the smaller diameter of the guide toward the threaded end of the screw, and seat the spring on the smaller diameter of the guide.

E. Insert the cap screw into the threaded hole in the shaft, and screw it in until the brake spring applies pressure to the keyed washer. Make sure that the washer key is not displaced from the shaft slot during this step.

F. The spindle assembly should now be identical to the one shown in Fig. 5.

VIII. HOW TO MOUNT THE WELDING WIRE SPOOL ON THE SPINDLE

To install a spool of welding wire, simply slip the spool onto the spindle and engage the spindle lug in the hole in the spool. When the spool is fully seated, the spindle spring will engage the lip of the spool bore, to hold the spool in position.

Adjustment of brake tension is the same as for the spoketype wire reel. The cap screw should be tightened until brake spring pressure is sufficient to prevent coating of the reel, but not enough to cause binding of the wire coil.

(Continued on page 8)

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FIG. 1 - Installation of Spindle Assembly on FSM-2 (All Series) and SWM-2 (Series 1) Sigma Welders
For Use With 9-in. Spools (Enclosed or Unenclosed) or 12-in. Spools (Unenclosed only)
FIG. 3 - Installation of Spindle Assembly on SWM-2 (Series 2, 3, 4) Sigma Welders For Use With 9-in. Spools (Enclosed or Unenclosed) or 12-in. Spools (Unenclosed Only)

Important:
Note that for 9-in. spool mounting (shown), spindle is attached through lower hole pattern in bracket adaptor. For 12-in. spool mounting (unenclosed only), spindle is attached through intermediate hole pattern so that the top two holes in spindle flange coincide with the lower two holes in the bracket adaptor mounting pattern.

Enclosure base plate is mounted so that cover hinge is at left side, and pull down catch is at right.

Insulating gasket

Attach bracket adaptor (076994) to machine frame, using (4) 5/16 hex head cap screws, lockwashers, and hex nuts.

Attach spindle to bracket adaptor and machine frame using 5/16-in. socket head cap screws, lockwashers, and hex nuts.

For 9-in. spool mounting (enclosed only):
- Large central hole in base plate of 9-in. enclosure (39V411) fits around hub of flange and shaft assembly of disassembled spindle and rests against flange. Socket head cap screws are passed through enclosure base plate, spindle flange, and then into bracket adaptor and machine frame, as shown in unenclosed 9-in. spool mounting at right. Remaining spindle parts are then assembled on spindle flange and shaft assembly.

For 12-in. spool mounting (unenclosed only):
- On machines converted from spoke-type wire reel, drill (1 1/3) 1/32-in. holes through machine frame after bracket adaptor has been attached to it. Using holes in bracket adaptor as guides, to permit insertion of spindle mounting screws. The hex nut which fastens the upper left hand screw will not clear the machine frame. Either omit this screw entirely, or use a heavy flat washer under the hex nut.

Alternate 12-in. spool mounting (unenclosed):
- If wire straightener attachment is not used, spindle can be mounted in this pattern and bracket adaptor 076994 is not required.

For all spindle mountings on machines converted from spoke-type wire reel, omit spacer (05N88) which was formerly mounted behind the spoke-type wire reel.
FIG. 4 - Installation of Spindle Assembly on SWK-2 (Series 2, 3, 4) Sigma Welders For Use With 12-in. Spools (Enclosed) or 9-in. Spools in Enclosure Specified for 12-in. Spools.
FIG. 5 - Complete Spindle Assembly (Spool Type) - 38V66
Conversion Kit Assembly (Spoke Type to Spool Type) - 38V68
IX. INSTALLING PROTECTIVE ENCLOSURE (39V56) ON SWM-2 (SERIES 2, 3 AND 4) SIGMA WELDERS EQUIPPED WITH SPOKE-TYPE WIRE REEL

NOTE: Omit Spacer (05N88) which would ordinarily be inserted between the machine frame and the mounting flange of the spoke-type wire reel if the enclosure were not used.

A. Place the enclosure in a horizontal position, and open the plastic cover.

b. Place the spoke-type wire reel (mounting flange down) inside the enclosure, positioning it so that the four holes in the reel mounting flange coincide with the four centrally located tapped holes in the enclosure base plate.

C. Slip a lock washer onto each of the four 1 1/4-in. long hex head cap screws (supplied with the enclosure) and insert the screws through the mounting flange and into the enclosure base plate. Tighten each screw securely.

D. Close the plastic cover and place the entire assembly against the front of the machine frame so that the four off-centered tapped holes in the spider-shaped adaptor on the back of the enclosure base plate coincide with the holes in the upper mounting pattern of the machine frame. As viewed from the front of the machine, the cover hinge on the enclosure should be on the left, and the pull down catch on the right.

E. Slip a lock washer onto each of the 3/4-in. long hex head cap screws (supplied with the enclosure), and insert the screws from the back through the machine frame holes and into the tapped holes in the enclosure. Tighten each screw securely.

F. Install the welding wire coil on the reel, as described in the booklet furnished with the SWM-2, and close the cover. Make sure that the wire does not bind against the plastic cover.

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**HARDWARE LIST FOR SPINDLE ASSEMBLY**

<table>
<thead>
<tr>
<th>SYMBOL</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>N-H-40</td>
<td>5/16-in. - 1/8 Hex Nut</td>
</tr>
<tr>
<td>P-R-72</td>
<td>Roll Pin - Elastic Stop Nut Corp. #250 - .250 x 2 in. Lg.</td>
</tr>
<tr>
<td>P-R-36</td>
<td>Roll Pin - Elastic Stop Nut Corp. #59-.040-187-.500 (2 used)</td>
</tr>
<tr>
<td>S-B-B-43</td>
<td>#4-40 x 1/4 in. Straightside Bind. Hd. Brass Machine Screw (2 used)</td>
</tr>
<tr>
<td>S-C-232</td>
<td>1/2 in. - 20 x 2 in. Lg. Hex Head Steel Cap Screw</td>
</tr>
<tr>
<td>S-C-95</td>
<td>5/16 in. - 18 x 7/8 in. Socket Head Cap Screw (4 used)</td>
</tr>
<tr>
<td>W-L-4</td>
<td>5/16 in. x 1/8 in. x 1/16 in. Steel Lock Washer (4 used)</td>
</tr>
</tbody>
</table>

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F-9392-B IMD J-3006-54