

# High-Volume Swaging Unit (HVSU)

## Features

The Swagelok® high-volume swaging unit (HVSU) is designed to easily preswage Swagelok nut-ferrule sets onto stainless steel tubing. The pneumatically driven and electronically controlled semiautomatic unit uses sensors to start and stop the process for consistent preswaging results.

- Preswages Swagelok tube fitting ferrules onto tubing prior to assembly
- Reduces assembly and installation time
- Improves process controls
  - Starts automatically when tubing is inserted and properly bottomed
  - Prevents over swaging with stroke-limiting tooling
  - Optional gauge kits for 1/4 in. and 6 mm sizes
- High cycle life
- Easy to switch from one tube fitting size to another—no tools are needed to change sizes
- Cycle counter facilitates preventive maintenance

## Technical Data

### Tubing

ASTM A269, EN ISO 1127, or equivalent stainless steel tubing as described in Swagelok *Tubing Data*, MS-01-107:

Tube OD in.	Tube Wall in.	Tube OD mm	Tube Wall mm
1/4	0.028 to 0.065	6	0.8 to 1.5
3/8	0.035 to 0.083	8	1.0 to 1.5
1/2	0.035 to 0.083	10	1.0 to 2.0
		12	1.0 to 2.0

### Cycle Time

3 seconds (preswage process only)

### Electrical

12 V (dc) 3.33 A max via 120 to 240 V (ac) adapter, provided

### Air

125 psig (8.6 bar) max filtered, dry compressed air supply

### Dimensions

8.3 W by 11.0 H by 26 L in. (21.1 W by 27.9 H by 66.0 L cm)

### Weight

70 lb (31.8 kg); 100 lb (45.4 kg) with shipping case



Patent pending

## Operation

The nut-ferrule assembly is loaded onto the die and secured with the retainer. Tubing is inserted into the assembly and preswaged automatically.



- Uses Swagelok nut-ferrule sets.
- The tube bottoming sensor ensures proper tube bottoming to start the preswage process.
- The nut bottoming sensor ensures the proper preswage stroke has been reached and stops the process.

For more information about the HVSU, see the *High Volume Swaging Unit (HVSU) User's Manual*, MS-13-223.

## Ordering Information

Each HVSU is shipped in a durable case for ease of storage and transport. The case includes space for user's manual, tooling, power supply and power cord.



To order, add a power cord designator to the basic ordering number: **MS-HVSU-**

Example: MS-HVSU-1

### Included Items

- HVSU
- Power supply: **MS-HVSU-PS-12V**
- Shipping case: **MS-HVSU-CASE-SHIP**
- Quick-Connect stem, with shutoff: **SS-QC6-D-600**
- Hex driver 0.050 in. (1.27 mm): **MS-HD-050**
- User's manual: **MS-13-223**

**Tooling is sold and shipped separately to enable ordering only the size(s) needed.**

## Power Cord

Region	Voltage	Plug Type	Designator
Australia, China, New Zealand	230 V 50/60 Hz	AS 3112	8
Continental Europe, Korea	230 V 50/60 Hz	CEE 7/7	7
Japan, Taiwan	100/115 V 50/60 Hz	NEMA 5-15	3
	200/230 V 50/60 Hz	NEMA L6-20	4
India	230 V 50/60 Hz	BS 546	9
North America	115 V 50/60 Hz	NEMA 5-15	1
	230 V 50/60 Hz	NEMA 6-15	2
United Kingdom	115 V 50/60 Hz	IEC 309	5
	230 V 50/60 Hz	BS 1363	6

## Tooling

Tool kits are ordered separately according to size.

Each kit contains a puck assembly, a die assembly, and a spacer to match the size of tubing to be used.

Tooling Size	Kit Ordering Number
1/4 in.	MS-HVSU-TLG-KIT-400
3/8 in.	MS-HVSU-TLG-KIT-600
1/2 in.	MS-HVSU-TLG-KIT-810
6 mm	MS-HVSU-TLG-KIT-6M
8 mm	MS-HVSU-TLG-KIT-8M
10 mm	MS-HVSU-TLG-KIT-10M
12 mm	MS-HVSU-TLG-KIT-12M

## Replacement Die Assemblies

Die assemblies are consumable and can be reordered individually for replacement as needed.

Die Size	Die Assembly Ordering Number
1/4 in.	MS-HVSU-TLG-ASM-400
3/8 in.	MS-HVSU-TLG-ASM-600
1/2 in.	MS-HVSU-TLG-ASM-810
6 mm	MS-HVSU-TLG-ASM-6M
8 mm	MS-HVSU-TLG-ASM-8M
10 mm	MS-HVSU-TLG-ASM-10M
12 mm	MS-HVSU-TLG-ASM-12M

## Accessories



For quality-control requirements, an optional gauge kit for 1/4 in. or 6 mm sizes is available to verify ferrule position and preswage stroke.

The kit includes two gauges, gauge masters, gauge stands, carrying case, and user's manual.

Gauge Size	Gauge Kit Ordering Number
1/4 in.	MS-IG-NGTL-400-KIT
6 mm	MS-IG-NGTL-6M-KIT

### Safe Product Selection

**When selecting a product, the total system design must be considered to ensure safe, trouble-free performance. Function, material compatibility, adequate ratings, proper installation, operation, and maintenance are the responsibilities of the system designer and user.**

**Caution: Do not mix or interchange parts with those of other manufacturers.**

## Warranty Information

Swagelok products are backed by The Swagelok Limited Lifetime Warranty. For a copy, visit [swagelok.com](http://swagelok.com) or contact your authorized Swagelok representative.