

Orbital Welding System

Accessories



Features

- Saves money and reduces downtime
- Eliminates guesswork and promotes repeatability
- Expands system versatility

Contents

Collets

Standard Tube Collets 2
 Micro-Fit® Fitting Collets 3
 Tube Collets 3
 Pipe Collets—20 Series 4
 Thin Collets—20 Series 4



Collets

Standard Tube Collets

Swagelok® stainless steel tube collets rigidly hold components for welding and are easily changed for varying outside diameters, from 1/8 to 4 in. (3 to 104 mm). Two collet halves are required per side plate.

Collet Size in.	Tube Collet Half Ordering Number
For Series 5 Weld Head	
1/8	CWS-5UCI-02
3/16	CWS-5UCI-03
1/4	CWS-5UCI-04
3/8	CWS-5UCI-06
1/2	CWS-5UCI-08
5/8	CWS-5UCI-10
For Series 10 Weld Head	
1/4	CWS-10UCI-04
3/8	CWS-10UCI-06
1/2	CWS-10UCI-08
5/8	CWS-10UCI-10
3/4	CWS-10UCI-12
7/8	CWS-10UCI-14
1	CWS-10UCI-16
For Series 20 Weld Head	
1/2	CWS-20UCI-08
5/8	CWS-20UCI-10
3/4	CWS-20UCI-12
7/8	CWS-20UCI-14
1	CWS-20UCI-16
1 1/8	CWS-20UCI-18
1 1/4	CWS-20UCI-20
1 1/2	CWS-20UCI-24
2	CWS-20UCI-32
For Series 40 Weld Head	
1 1/2	SWS-40UCI-24
2	SWS-40UCI-32
2 1/2	SWS-40UCI-40
3	SWS-40UCI-48
3 1/2	SWS-40UCI-56
4	SWS-40UCI-64

Additional Accessories

Tool Package 4
 Micro Fixture Tool 4
 Remote Pendant 4
 Weld Head Extension Cables 5
 Cooling Plate 5
 Bench Mounting Bracket 5
 Centering Gauge 5
 Internal Purge Pressure Kit 5
 Carrying Cases 6
 Arc Gap Gauges 6
 Power Cords for the M100 Power Supply 6
 Tungsten Electrodes 7

Collet Size mm	Tube Collet Half Ordering Number
For Series 5 Weld Head	
3	CWS-5UCI-03MM
6	CWS-5UCI-06MM
8	CWS-5UCI-08MM
10	CWS-5UCI-10MM
12	CWS-5UCI-12MM
14	CWS-5UCI-14MM
16	CWS-5UCI-16MM
For Series 10 Weld Head	
6	CWS-10UCI-06MM
8	CWS-10UCI-08MM
10	CWS-10UCI-10MM
12	CWS-10UCI-12MM
14	CWS-10UCI-14MM
16	CWS-10UCI-16MM
18	CWS-10UCI-18MM
20	CWS-10UCI-20MM
22	CWS-10UCI-22MM
25	CWS-10UCI-25MM
For Series 20 Weld Head	
12	CWS-20UCI-12MM
14	CWS-20UCI-14MM
16	CWS-20UCI-16MM
18	CWS-20UCI-18MM
20	CWS-20UCI-20MM
22	CWS-20UCI-22MM
25	CWS-20UCI-25MM
28	CWS-20UCI-28MM
35	CWS-20UCI-35MM
40	CWS-20UCI-40MM
52	CWS-20UCI-52MM
For Series 40 Weld Head	
42.4	SWS-40UCI-42.4MM
44.5	SWS-40UCI-44.5MM
48.3	SWS-40UCI-48.3MM
54	SWS-40UCI-54MM
60.3	SWS-40UCI-60.3MM
104	SWS-40UCI-104MM

Micro-Fit® Fitting Collets

(for use with Series 5 fitting side plate 2)

Swagelok stainless steel collets provide rigid holding of components for welding. They are easily changed for varying outside diameters. Two collet halves are required per side plate.

Fitting	Collet Half Ordering Number
1/8 and 1/4 in., 6 mm Micro-Fit fittings	CWS-5MWCI-04
3/8 in., 8 and 10 mm Micro-Fit fittings	CWS-5MWCI-06
1/2 in. and 12 mm Micro-Fit fittings	CWS-5MWCI-08

Tube Collets

(for use with Series 5 fitting side plates 1 and 2 to hold tubing)

These collets eliminate the need to change fixture blocks/side plates depending on welding configuration.



Collet Size in.	Collet Half Ordering Number
1/8	CWS-5UFCI-02
3/16	CWS-5UFCI-03
1/4	CWS-5UFCI-04
3/8	CWS-5UFCI-06
1/2	CWS-5UFCI-08
5/8	CWS-5UFCI-10

Collet Size mm	Collet Half Ordering Number
3	CWS-5UFCI-03MM
6	CWS-5UFCI-06MM
8	CWS-5UFCI-08MM
10	CWS-5UFCI-10MM
12	CWS-5UFCI-12MM
14	CWS-5UFCI-14MM
16	CWS-5UFCI-16MM

Tube Collets

(for use with Series 5 fitting side plate 3)

No tools are required to insert or remove these collets.



Collet Size in.	Collet Half Ordering Number
1/8	SWS-5F3UCI-02
1/4	SWS-5F3UCI-04
3/8	SWS-5F3UCI-06
1/2	SWS-5F3UCI-08

Collet Size mm	Collet Half Ordering Number
3	SWS-5F3UCI-03MM
6	SWS-5F3UCI-06MM
8	SWS-5F3UCI-08MM
12	SWS-5F3UCI-12MM

Pipe Collets—Series 20

Pipe collets are available for use with the Series 20 weld head and fixtures. The cantilever design enables the collet to compensate for variations in nominal pipe diameter.



Collet Size in.	Ordering Number
1/4	CWS-20UCI-04P
1/2	CWS-20UCI-08P
3/4	CWS-20UCI-12P
1	CWS-20UCI-16P
1 1/4	CWS-20UCI-20P
1 1/2	CWS-20UCI-24P

Collet Size mm	Ordering Number
10.2	CWS-20UCI-10.2MMP
13.5	CWS-20UCI-13.5MMP
17.2	CWS-20UCI-17.2MMP
21.3	CWS-20UCI-21.3MMP
26.9	CWS-20UCI-26.9MMP
33.7	CWS-20UCI-33.7MMP
42.4	CWS-20UCI-42.4MMP
48.3	CWS-20UCI-48.3MMP

Add **J** for JIS pipe sizes as a suffix to the size designator.
Example: CWS-20UCI-04PJ

Welding of pipe is limited to a maximum wall thickness of 0.109 in. (2.8 mm).

Thin Collets—Series 20

Swagelok stainless steel thin collets for use with the Series 20 weld head and fixtures are specially designed for use with narrow side plates and are easily changed for varying outside diameters. Two collets are required per side plate.



Collet Size in.	Collet Half Ordering Number
1/2	SWS-20UCI-08TN
3/4	SWS-20UCI-12TN
1	SWS-20UCI-16TN
1 1/4	SWS-20UCI-20TN
1 1/2	SWS-20UCI-24TN
2	SWS-20UCI-32TN

Collet Size mm	Collet Half Ordering Number
12	SWS-20UCI-12MMTN
18	SWS-20UCI-18MMTN
20	SWS-20UCI-20MMTN
22	SWS-20UCI-22MMTN
25	SWS-20UCI-25MMTN
28	SWS-20UCI-28MMTN
35	SWS-20UCI-35MMTN
52	SWS-20UCI-52MMTN

Additional Accessories

Tool Package

Includes nylon brush, metal brush, tweezers, screwdriver, electrode cleaning tool, hex key set, and a jeweler's screwdriver.

Description	Ordering Number
Tool Package	CWS-WHTOOLPKG

Micro Fixture Tool

Engages the fixture latch for easy opening and closing of the micro weld head fixture.



Description	Ordering Number
Micro Fixture Tool	CWS-MFP-FIXTL

Remote Pendant

The full functioning Swagelok pendant provides remote push-button operation of the power supply. The pendant, which has a standard cable length of 15 ft (4.6 m), can be lengthened with a 10 ft (3 m) or 35 ft (10.7 m) extension.



Description	Ordering Number
Remote Pendant	SWS-M-RPEND
10 ft (3 m) Pendant Extension	SWS-M-RPEND-10EXT
35 ft (10.7 m) pendant Extension	SWS-M-RPEND-35EXT

Weld Head Extension Cables

Swagelok weld head extension cables, when combined with the standard weld head, provide weld head operation of up to a maximum of 50 ft (15.2 m) away from the power supply.



Cable Length ft (m)	Ordering Number
12.5 (3.8)	SWS-WHEC-B-12.5FT
37.5 (11.4)	SWS-WHEC-B-37.5FT

Cooling Plate

The faster weld fixtures cool, the more efficient your production can be. Swagelok cooling plates quickly absorb heat away from the micro weld head fixture and components after welding, helping to speed your process.



Weld Head Series	Ordering Number
4	CWS-4MCP
8	CWS-8MCP

Bench Mounting Bracket

Swagelok bench mounting brackets attach rigid- or flexible-micro weld heads to a work bench. The Series 4 bracket features a quick-release mechanism for convenient operation.



Weld Head Series	Ordering Number
4	CWS-4MBB
8	CWS-8MBB

Centering Gauge

Swagelok centering gauges (Series 5, 10, and 20) provide accurate centering of weld components for high-quality welds. Its flexible wire lanyard makes it easy to attach the gauge to the fixture block.



The micro weld head centering gauge promotes accurate centering of weld components in the micro fixture.

Weld Head Series	Ordering Number
5	CWS-5CG
10	CWS-10CG
20	SWS-20CG-A

Micro Weld Head Series	Ordering Number
4	CWS-4MCG
8	CWS-8MCG

Internal Purge Pressure Kit

Proper internal purging plays a critical role in ensuring high-quality, uniform orbital welds, especially in ultrahigh-purity and sanitary applications. The Swagelok internal purge pressure kit contains the components needed to set the flow rate of purge gas so that sufficient internal pressure is created in the weld area.

Internal purge pressure kit for 1/4, 3/8, and 1/2 in. tubing



Description	Ordering Number
Internal purge pressure kit for 1/4, 3/8, and 1/2 in. tubing	SWS-PURGE-KIT
1/16 in. fitting package	SWS-PURGE-KIT-01
1/8 in. fitting package	SWS-PURGE-KIT-02
3/4 in. fitting package	SWS-PURGE-KIT-12
1 in. fitting package	SWS-PURGE-KIT-16

Carrying Cases



Description	Ordering Number
Purge Kit Case	SWS-CASE-3
Facing Tool Case	SWS-CASE-4
Cutting Inserts Case	SWS-CASE-5
Collet Case	SWS-CASE-6
Power Supply Case	SWS-CASE-7
Weld Head Case—Series 40	SWS-CASE-8
Weld Head Case—Generic	CWS-WH-CASE

Arc Gap Gauges

Swagelok arc gap gauges promote precise positioning of the electrode in the rotor to help ensure repeatable welds. The easy-to-use gauges eliminate errors associated with sight and feeler gauge adjustments.



Weld Head Series	Ordering Number
5	CWS-5AG-A
10	CWS-10AG
20	CWS-20AG

Micro Weld Head Series	Ordering Number
4	CWS-4MAG
8	CWS-8MAG

Power Cords for the M100 Power Supply^①

To order a power cord, add a Power Cord Designator as a suffix to the Ordering Number.

Example: CWS-CORD-1 (115 V [ac] North America)

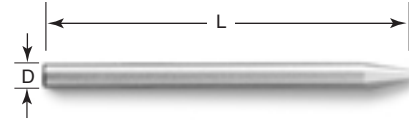


Geographic Region	Voltage	Plug Type	Wire Type	Designator
North America	110/120 V (ac) 50/60 Hz	NEMA 5-15	AWG/SJT	1
		NEMA 5-20		9
	220/240 V (ac) 50/60 Hz	NEMA 6-15		2
Japan or Taiwan	110/120 V (ac) 50/60 Hz	NEMA 5-15	Harmonized	3
	220/240 V (ac) 50/60 Hz	NEMA L6-20		4
United Kingdom	110/120 V (ac) 50/60 Hz	IEC-309		5
	220/240 V (ac) 50/60 Hz	BS 1363		6
Continental Europe	220/240 V (ac) 50/60 Hz	CEE 717		7
Australia or New Zealand	220/240 V (ac) 50/60 Hz	AS 3112		8

^① For more information, see the *Power Supply Power Cord Information* catalog. For any power plug/service not listed, please contact an independent Swagelok sales and service representative.

Tungsten Electrodes

Swagelok electrodes, available in packages of ten, provide consistent, repeatable welds. Electrodes consist of 2 % ceriated tungsten, axially ground to rigid specifications.



Nominal Outside Diameter		Diameter (D) in. (mm)	Length (L) in. (mm)	Ordering Number
in.	mm			
For Series 4 Weld Head				
1/16, 1/8, 3/16	2, 3, 4	0.040 (1.0)	0.405 (10.3)	CWS-C.040-.405-P
1/4	6		0.325 (8.26)	CWS-C.040-.325-P
For Series 5 Weld Head				
1/8, 3/16	3	0.040 (1.0)	0.705 (17.9)	CWS-C.040-.705-P
1/4, 5/16	6, 8		0.605 (15.4)	CWS-C.040-.605-P
3/8, 1/2	10, 12		0.555 (14.1)	CWS-C.040-.555-P
5/8	14, 15		0.450 (11.4)	CWS-C.040-.450-P
—	16		0.405 (10.3)	CWS-C.040-.405-P
For Series 8 Weld Head				
1/8	3, 5	0.040 (1.0)	0.450 (11.4)	CWS-C.040-.450-P
1/4	6, 8, 9		0.405 (10.3)	CWS-C.040-.405-P
3/8	10, 11		0.325 (8.26)	CWS-C.040-.325-P
1/2	12		0.281 (7.14)	CWS-C.040-.281-P
For Series 10 Weld Head				
1/4, 5/16, 3/8, 1/2, 5/8	6, 8, 10, 12, 14, 15	0.062 (1.5)	1.105 (28.1)	CWS-C.062-1.105-P
3/4, 7/8, 1	18, 19, 20, 22, 23, 25		0.855 (21.7)	CWS-C.062-.855-P
For Series 20 Weld Head				
1/2, 5/8, 3/4, 7/8	12, 14, 16, 18, 20, 22	0.062 (1.5)	1.630 (41.4)	CWS-C.062-1.630-P
1, 1 1/8, 1 1/4	23, 25, 28		1.380 (35.1)	CWS-C.062-1.380-P
1 1/2	35		1.105 (28.1)	CWS-C.062-1.105-P
1 3/4, 2	40, 52		0.855 (21.7)	CWS-C.062-.855-P
For Series 40 Weld Head				
1 1/2	38.1	0.094 (2.29)	2.615 (66.4)	SWS-C.094-2.615-P
—	42.4		2.530 (64.3)	SWS-C.094-2.530-P
—	44.5		2.489 (63.2)	SWS-C.094-2.489-P
—	48.3		2.414 (61.3)	SWS-C.094-2.414-P
2	50.8		2.365 (60.1)	SWS-C.094-2.365-P
—	54		2.302 (58.5)	SWS-C.094-2.302-P
—	60.3		2.178 (55.3)	SWS-C.094-2.178-P
2 1/2	63.5		2.115 (53.7)	SWS-C.094-2.115-P
3	76.2		1.865 (47.4)	SWS-C.094-1.865-P
3 1/2	88.9		1.615 (41.0)	SWS-C.094-1.615-P
4	101.6		1.365 (34.7)	SWS-C.094-1.365-P
—	104		1.318 (33.5)	SWS-C.094-1.318-P

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.