CS A105N 3000 PSI UNION, SOCKET WELD

Three Piece Union · Forged Carbon Steel ASTM A105N · Socket Weld Ends to MSS SP-83

BRAND: BOTHWELL | SKU: SW-0198 | SIZE 1/8" TO 3" | CLASS 3000

FIG. 1 | CS A105N 3000 PSI UNION, SOCKET WELD

PRODUCT OVERVIEW

The Bothwell CS A105N 3000 PSI Socket Weld Union is a three piece fitting that allows a pipe run to be broken and remade without cutting. It is forged from ASTM A105N carbon steel, normalized, and made to MSS SP-83 Class 3000.

The male and female ends are fillet welded to the pipe, and the union nut draws them together on an integral metal to metal seat. This gives a leak tight joint that can be opened for maintenance of valves, pumps and instruments.

Fitting type	**Union, three piece, forged**
End connection	**Socket weld, both ends**
Material	**ASTM A105N forged carbon steel**
Pressure class	**Class 3000 (3000 lb)**
Seat	**Integral metal to metal**
Size range	**1/8" to 3" (DN6 to DN80)**

TECHNICAL SPECIFICATION

Design standard	**MSS SP-83**
Material	**ASTM A105N forged carbon steel**
Pressure class	**Class 3000**
End connection	**Socket weld, 2 ends**
Size range	**1/8" to 3" (DN6 to DN80)**
Socket dimensions	**MSS SP-83 / ASME B16.11**

Heat treatment	**Normalized (A105N)**
Marking	**MSS SP-25**
Surface finish	**Natural forged, machined ends**
Temperature range	**-29°C to +425°C**
Country of origin	**Taiwan**

BILL OF MATERIALS

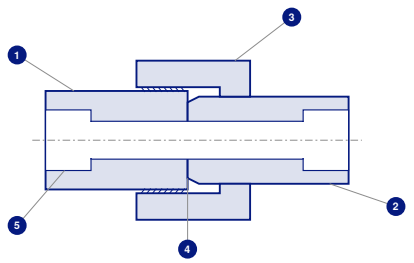

FIG. 2 | SECTIONAL ARRANGEMENT (SCHEMATIC)

#	COMPONENT	MATERIAL / DETAIL
1	Female end (thread end)	ASTM A105N forged carbon steel
2	Male end (seat end)	ASTM A105N forged carbon steel
3	Union nut	ASTM A105N forged carbon steel
4	Seat	Integral metal to metal, no gasket
5	Socket (2 nos.)	Bored to MSS SP-83 Class 3000

Three piece assembly. Items 4 and 5 are integral features of the end pieces. Nut thread engagement is a minimum of 4 full threads, class 2A/2B fit.

DIMENSIONS

SIZE	DN	SOCKET BORE B (MM)	SOCKET DEPTH K (MM)	BORE D (MM)	SOCKET WALL C (MM)	LAYING LENGTH E (MM)	LENGTH L (MM)	NUT CLEARANCE N (MM)
1/8"	6	10.9	10.5	6.9	3.18	20.70	41.4	50.8
1/4"	8	14.3	10.5	9.3	3.30	20.70	41.4	50.8
3/8"	10	17.7	10.5	12.6	3.51	23.75	46.0	55.9
1/2"	15	21.9	12.5	15.8	4.09	23.75	49.0	58.4
3/4"	20	27.3	14.0	21.0	4.27	28.60	56.9	66.0
1"	25	34.0	15.0	26.7	4.98	30.25	62.0	78.7
1.1/4"	32	42.8	17.0	35.1	5.28	36.55	71.1	94.0
1.1/2"	40	48.9	17.5	40.9	5.54	38.10	76.5	111.8
2"	50	61.3	22.0	52.5	6.05	41.40	86.1	132.1
2.1/2"	65	74.0	25.0	62.7	7.67	56.90	102.4	149.9
3"	80	90.0	25.0	78.0	8.31	58.70	109.0	175.3

B = socket bore, K = socket depth, D = waterway bore, C = socket wall, E = laying length between socket bottoms, L = assembled length (nominal), N = clearance diameter of assembled nut. Dimensions from the Bothwell manufacturer catalogue, in accordance with MSS SP-83. Dimensions are nominal. Weights and certified drawings are issued on request.

ORDERING INFORMATION

FIELD	OPTIONS
Product code	SW-0198
Size	1/8", 1/4", 3/8", 1/2", 3/4", 1", 1.1/4", 1.1/2", 2", 2.1/2", 3"
Class	Class 3000
End connection	Socket weld to MSS SP-83
Certification	EN 10204 3.1 on request
Order example	**SW-0198 / 1" / CL3000 / SW / A105N**

Stock held in Dubai for fast despatch across the UAE and GCC. Contact our sales desk for pricing, availability, project quantities and certification requirements.

PRESSURE AND TEMPERATURE

Pressure class	**Class 3000 to MSS SP-83**
Rating basis	**For use with Sch 80 pipe, same NPS**
Material group	**ASTM A105N, ASME B16.5 Gr. 1.1**
Temperature range	**-29°C to +425°C**

Class 3000 is a class designation, not a working pressure. The allowable pressure equals that of the matching pipe schedule, size and design temperature under ASME B31.3 or the governing code. Confirm duty with SWBM before use on media or temperatures outside normal service.

COMPLIANCE AND QUALITY

- Dimensions and testing to MSS SP-83, Class 3000
- Material to ASTM A105N, normalized
- Integral metal to metal seat, no gasket
- Marking to MSS SP-25: maker, material, class and size
- Material test certificate EN 10204 3.1 on request
- Third party inspection on request

TYPICAL APPLICATIONS

- Break points at pumps, valves and equipment
- Instrument and analyser connections
- Oil and gas production and process piping
- Steam, condensate and utility lines
- Skid packages needing removable spools
- Marine, offshore and shipyard piping

INSTALLATION AND OPERATION

- Remove the nut and separate the ends before welding
- Insert the pipe fully, then withdraw about 1.6 mm before fillet welding each end
- Weld to ASME B31.3 with a qualified procedure and let the ends cool fully
- Protect the seat faces from spatter and damage during welding
- Align the ends before tightening, never use the nut to pull pipe into line
- Tighten the nut with a spanner on the flats while holding the female end

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