

BLOCK MANIFOLD FITTINGS

BLOCK MANIFOLD DIMENSIONS inches (mm)

Size ins (mm)	A	B	D	E	F	G	H	I	J	K
2" (50)	5.00 (127.0)	2.50 (63.5)	-	-	2.38 (60.4)	-	-	2.50 (63.54)	5.25 (133.3)	-
3" (80)	6.75 (171.4)	3.38 (85.6)	13.00 (330.2)	8.50 (215.9)	3.41 (86.6)	13.25 (336.5)	5.00 (127.0)	4.00 (101.6)	7.00 (177.8)	4.50 (114.3)
4" (100)	8.25 (209.5)	4.13 (104.9)	13.00 (330.2)	8.50 (215.9)	4.25 (107.9)	13.25 (336.5)	5.00 (127.0)	5.00 (127.0)	8.50 (215.9)	4.50 (114.3)
5" (125)	9.75 (247.6)	4.88 (123.9)	15.75 (400.0)	11.00 (279.4)	5.31 (134.8)	16.00 (406.4)	5.75 (146.0)	5.75 (146.0)	10.00 (254.0)	4.75 (120.6)
6" (150)	11.25 (285.7)	5.63 (143.0)	17.75 (450.8)	12.50 (317.5)	6.41 (162.8)	18.00 (457.2)	7.00 (177.8)	7.00 (177.8)	11.50 (292.1)	5.25 (133.3)

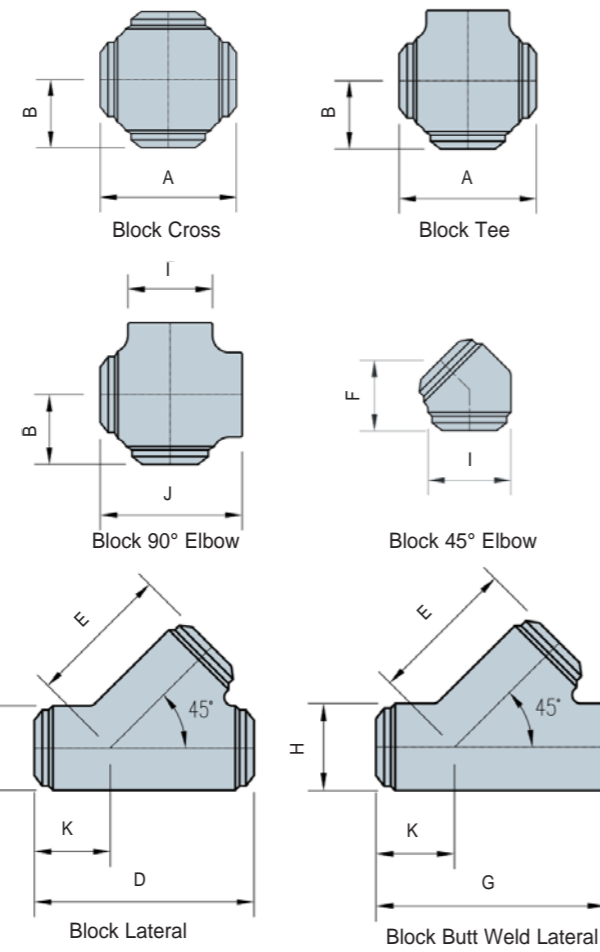
BLOCK MANIFOLD WEIGHTS lbs (kg)

Description	2" (50 mm)	3" (80 mm)	4" (100 mm)	5" (125 mm)	6" (150 mm)
Block Tee	13.22 (6.0)	26.44 (12.0)	44.06 (20.0)	57.30 (26.0)	85.95 (39.0)
Block Cross	8.81 (4.0)	17.63 (8.0)	37.46 (17.0)	66.12 (30.0)	85.95 (39.0)
Block 45° Elbow	13.22 (6.0)	30.85 (14.0)	41.87 (19.0)	68.32 (31.0)	121.22 (55.0)
Block Butt Weld Lateral	-	70.52 (32.0)	66.12 (30.0)	81.54 (37.0)	132.24 (60.0)
Block 90° Elbow	6.61 (3.0)	30.85 (14.0)	44.06 (20.0)	70.52 (32.0)	110.20 (50.0)



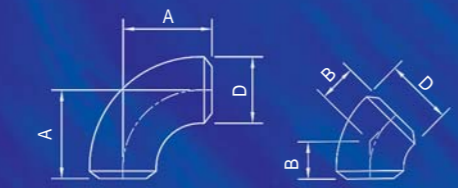
BLOCK SPECIFICATIONS

Max. Cold Working Pressure	10,000psi	15,000psi
Max. Test Pressure	15,000psi	22,500psi
Max. Operating Temp.	400° F (204° C)	400° F (204° C)
Min. Operating Temp.	-50° F (-46° C)	-50° F (-46° C)
Nominal Sizes	2" - 6" (50-150mm)	2" - 6" (50-150mm)
Min. Yield Stress	85,000psi	85,000psi
Material	Low Alloy Steel	Low Alloy Steel



NOV ANSON high quality, high pressure butt weld pipe fittings

In recognition of the difficulties encountered when attempting to produce high-quality, high-pressure pipe fittings, NOV makes available a unique range of standard butt weld fittings manufactured to the requirements of ANSI B16.9 from AISI 4130. These fittings are heat treated to give minimum yield strength of 75,000psi. Long radius elbows 2", 3" and 4" (NPS) are available ex-stock in pipe Sch. XXS.



LONG RADIUS ELBOW DIMENSIONS inches (mm)

Nominal Pipe Size (NPS)	Outside Diameter at bevel D	Center-to-End	
		90° elbows A	45° elbows B
2" (50mm)	2.38 (60.3)	3.00 (76.2)	1.38 (35.0)
3" (80mm)	3.50 (88.9)	4.50 (114.3)	2.00 (50.8)
4" (100mm)	4.50 (114.3)	6.00 (152.4)	2.50 (63.5)

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ANSON® FORGED MANIFOLD FITTINGS



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NOV® ANSON QUALITY SYSTEMS

NOV's line of ANSON products are ISO 9001:2008 certified and API 6A approved. NOV thoroughly researches all products and ensures that they adhere to the highest quality and safety standards.

In addition, NOV ANSON is an active member of:

API American Petroleum Institute

ASTM American Society for Testing of Materials (Organizational Member)

NACE National Association of Corrosion Engineers (Corporate Bronze Member)

BSI British Standards Institution

AWHEM Association of Wellhead Equipment Manufacturers (Member North Sea Chapter)



To ensure the continuation of these high standards, NOV is regularly audited by accredited certifying authorities.

NOV ANSON quality assurance and management systems achievements, past and present, include:

BS.5750 Part 1 British Standards Specification for Design/Development, Production, Installation, and Servicing. Original qualification date 1986.

NS.5801 Norske Standard Specification for Design/Development, Production, Installation, and Servicing. Original qualification date 1986.

ISO.9001 1987 International Standards Organization. Model for Quality Assurance in Design/Development, Production, Installation, and Servicing. Original qualification date 1988.

NS ISO.9001 1988 Norske Standard as ISO.9001-1987. Original qualification date 1989.

BS.EN.ISO.9001:2008 New Specification covering ISO.9001 became effective in December 2003. NOV ANSON reassessed and qualified July 2003.

API.Q1 American Petroleum Institute, Specification for Quality Programs. Original qualification date 1992.

RAAD VOOR DE CERTIFICATIE (RVC) Since July 1986 all BS, ISO, NS and EN Certificates have been endorsed with the Netherlands Certification Councils RVC Accreditation Mark.

PED NOV ANSON qualified to CE mark Pressure Equipment in accordance with EU Directives.

NOV ANSON manifold fittings have been designed to meet all of the following international standards:

MSS-SP-75 Specifications for High Test Wrought Butt Weld Fittings

ANSI B31.3 Chemical Plant and Petroleum Refinery Piping

ANSI B16.9 Factory Made Wrought Steel Butt Weld Fittings

NACE MR-01-75 Sulfide Stress Cracking Resistant Metallic Materials for Oilfield Equipment

ASME VIII Division 1 Section 13.10 Boiler and Pressure Vessel Code

API 6A Specifications for Wellhead and Christmas Tree Equipment

Health, Safety and Environment

NOV recognizes the importance of health, safety and environment in its activities as well as the activities of its customers and has established detailed manuals for each discipline. The safety manual encompasses risk assessments, safe working procedures, and extensive training programs.

The environmental manual includes the necessary procedures, including measurable objectives and targets, to comply with current legislation and codes of practice.

FORGED MANIFOLD FITTINGS

DESIGNED for high performance under arduous conditions NOV ANSON manifold fittings have been designed to address a number of factors which are vital in achieving high performance in arduous oilfield service.

Erosion and Corrosion All fittings have wall thicknesses designed with ample erosion and corrosion allowances.

Stress Concentration NOV ANSON's design removes all stress inducing sharp changes in sections.

Weldability Materials have been selected with particular emphasis on their weldability and compatibility with common piping materials.

Flow Characteristics The internal bores of NOV ANSON forged fittings are machined on sophisticated computer controlled machining centers to ensure smooth uninterrupted transitions from bore to bore. Flow characteristics are enhanced to their maximum potential.

Dependability Forged from billet in closed dies negates most, if not all, problems associated with hidden flaws inherent in castings and plate. Consistently sound wall sections are present throughout the working lives of NOV ANSON manifold fittings.

MANUFACTURED with state of the art techniques

Whether it be the induction heating used to heat billet and tube or the 5 and 6 axis multi-pallet machining centers used to internally bore, contour and weld prep, consistently accurate high-quality fittings are produced in the most cost effective manner.



MANUFACTURED from wrought steel forgings NOV ANSON manifold fittings are manufactured from steel forgings *not* castings or steel plate.

Long sweep crosses and tees, as well as block crosses, tees, elbows, and laterals are closed die forged to ensure they have a well defined and correctly contoured grain flow, high integrity and uniformity of shape. NOV is unique in adopting this manufacturing process. Long sweep elbows (90 and 45 degree) are produced from tubulars or hollow bored bar, hot formed on purpose made bending machines.

STOCKED for fast customer response

Large quantities of forgings in both low alloy and carbon manganese steel are held in stock allowing for quick response to requests for customized specials.

Fully machined fittings are stocked in Sch. XXS or, where there is a proven demand, in heavier wall sections. As with all products manufactured by NOV, ANSON manifold fittings are fully certified and traceable.

AVAILABLE WITH

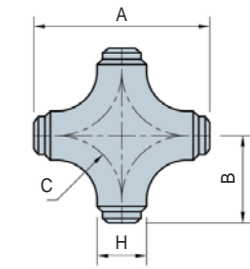
- Butt weld ends (as standard)
- Flanged end connections (fabricated to customer requirements)
- Hammer union end connections (fabricated to customer requirements)
- Hub end connections (fabricated to customer requirements)
- Blind 'dead legs'
- Full certification



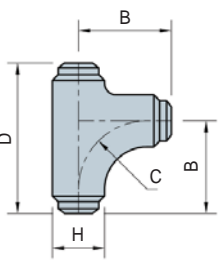
LONG SWEEP MANIFOLD FITTINGS

LONG SWEEP DIMENSIONS inches (mm)

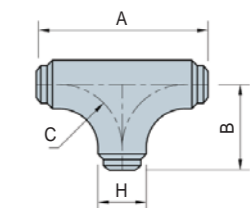
Size ins (mm)	A	B	C	D	E	F	G	H	I
2" (50)	16.00 (406.4)	8.00 (203.2)	6.00 (152.4)	13.00 (330.2)	12.00 (304.8)	8.00 (203.2)	15.20 (386.0)	4.50 (114.3)	3.50 (88.9)
3" (80)	16.00 (406.4)	8.00 (203.2)	6.00 (152.4)	13.00 (330.2)	12.00 (304.8)	8.00 (203.2)	15.20 (386.0)	4.50 (114.3)	4.50 (114.3)
4" (100)	22.00 (558.8)	11.00 (279.4)	8.25 (209.5)	16.00 (406.4)	14.00 (355.6)	11.00 (279.4)	19.50 (495.3)	5.56 (141.2)	5.50 (139.7)
5" (125)	24.00 (609.6)	12.00 (304.8)	9.50 (241.3)	19.00 (482.6)	16.00 (406.4)	11.50 (292.2)	23.00 (584.2)	6.63 (168.4)	6.63 (168.4)
6" (150)	30.00 (762.0)	15.00 (381.0)	12.00 (304.8)	27.00 (685.8)	24.00 (609.6)	13.69 (347.7)	29.00 (736.6)	7.75 (196.8)	8.00 (203.2)



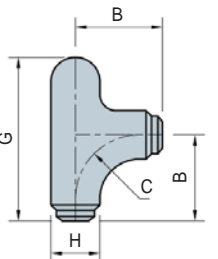
Full Flow Cross



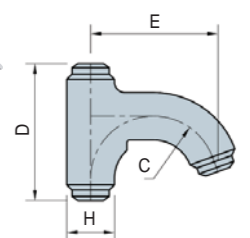
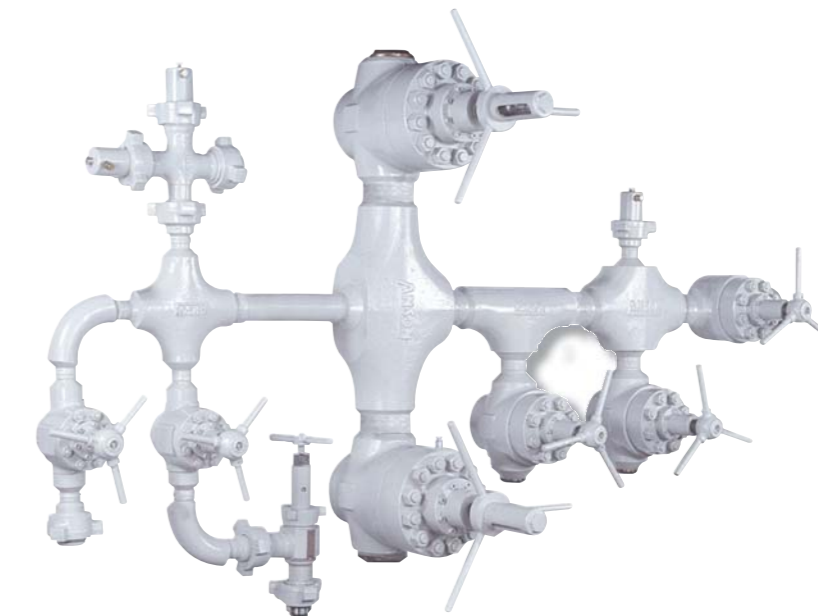
Long Sweep Tee



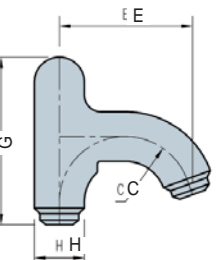
Long Sweep Full Flow Tee



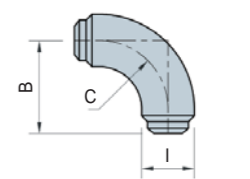
Long Sweep Tee with top integral bull plug



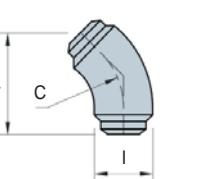
Standpipe Gooseneck 160° with top outlet



Standpipe Gooseneck with top integral bull plug



Long Sweep 90° Elbow



Long Sweep 45° Elbow

LONG SWEEP MANIFOLD WEIGHTS lbs (kg)

Description	2" (50mm)	3" (80mm)	4" (100mm)	5" (125mm)	6" (150mm)
Full Flow Cross	130.03 (59.0)	132.24 (60.0)	178.52 (81.0)	244.64 (111.0)	535.57 (243.0)
Long Sweep 90° Elbow	30.85 (14.0)	48.48 (22.0)	92.56 (42.0)	125.62 (57.0)	207.17 (94.0)
Long Sweep Tee	79.34 (36.0)	68.32 (31.0)	114.60 (52.0)	165.30 (75.0)	319.58 (145.0)
Long Sweep Full Flow Tee	96.97 (44.0)	82.65 (37.5)	138.85 (63.0)	193.95 (88.0)	374.68 (170.0)
Long Sweep 45° Elbow	19.83 (9.0)	33.06 (15.0)	63.91 (29.0)	83.75 (38.0)	158.68 (72.0)
Long Sweep Tee with integral bull plug	88.16 (40.0)	74.93 (34.0)	130.03 (59.0)	189.54 (86.0)	352.64 (160.0)
Long Sweep 90° Elbow reinforced double back	24.24 (11.0)	66.12 (30.0)	103.58 (47.0)	165.30 (75.0)	337.21 (153.0)
Long Sweep 45° Elbow reinforced double back	22.04 (10.0)	44.08 (20.0)	61.71 (28.0)	99.18 (45.0)	207.17 (94.0)
Standpipe Gooseneck with top outlet	88.16 (40.0)	92.56 (42.0)	165.30 (75.0)	235.00 (107.0)	462.84 (210.0)
Standpipe Gooseneck with top integral bull plug	99.18 (45.0)	103.59 (47.0)	178.52 (81.0)	257.87 (117.0)	495.90 (225.0)

LONG SWEEP SPECIFICATIONS

Max. Cold Working Pressure	5,000psi	10,000psi	15,000psi
Max. Test Pressure	10,000psi	15,000psi	22,500psi
Max. Operating Temp.	400° F (204° C)	400° F (204° C)	400° F (204° C)
Min. Operating Temp.	-50° F (-46° C)	-50° F (-46° C)	-50° F (-46° C)
Nominal Sizes	2" - 6" (50-150mm)	2" - 6" (50-150mm)	2" - 6" (50-150mm)
Min. Yield Stress	52,000psi	85,000psi	85,000psi
Material	Carbon Manganese Steel	Low Alloy Steel	Low Alloy Steel