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# PIPE FITTINGS

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ISO 9001:2015 · 400+ SKUs · 50+ Countries  
ASME B16.9 · B16.11 · DIN 2605–2617 · MSS SP-43

### Butt Weld Fittings

Elbow · Tee · Reducer · Cap · BW

### Forged SW Fittings

Socket Weld · Class 3000/6000

### Threaded Fittings

NPT / BSP · Class 3000/6000/9000

### Stub Ends / Lap Joints

Short/Long pattern · All schedules

### Pipe Nipples

Hexagon · Barrel · Close nipples

### Unions & Couplings

SW / THD · Half / Full coupling

### Flanged Fittings

BW Outlet · Reducing flange

### Specialty Fittings

Swage · Insert · Orifice tee

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All fittings manufactured per applicable ASME / DIN / EN / MSS standard. Dimensions are indicative — confirm before procurement. Custom sizes, exotic alloy materials and third-party certifications available on request. EN 10204 3.1/3.2 MTRs on all orders.

# Butt Weld Elbows — 90° Long Radius, Short Radius & 45°

ASME B16.9 · DIN 2605 (90° LR) / DIN 2606 (90° SR) / DIN 2607 (45°) · ½" to 48" · All Schedules

Long Radius (LR) 90° elbow: Centre-to-face dimension = 1.5 × NPS (nominal pipe size). Most common — used for standard piping.

Short Radius (SR) 90° elbow: Centre-to-face = 1.0 × NPS. Used where space is restricted. Higher pressure drop than LR.

45° Elbow: Centre-to-face = 0.625 × NPS. Used to change direction at 45 degrees — lower pressure drop vs 90° elbows.

## A · 90° LONG RADIUS ELBOW — ASME B16.9 / DIN 2605 (Centre-to-Face A = 1.5 × NPS) All dims mm

NPS / DN	OD (mm)	Wall Thk Sch 40 (mm)	Centre-Face A (mm)	Sch 80 Wall (mm)	Sch 160 Wall (mm)	XXS Wall (mm)	ASTM Material	Weight (kg approx)
1/2" / DN15	21.3	2.77	38	3.73	4.78	7.47	A234 WPB / WP3	0.06
3/4" / DN20	26.7	2.87	48	3.91	5.56	7.82	A234 WPB / WP3	0.10
1" / DN25	33.4	3.38	57	4.55	6.35	9.09	A234 WPB / WP3	0.17
1-1/4" / DN32	42.2	3.56	73	4.85	6.35	9.70	A234 WPB / WP3	0.26
1-1/2" / DN40	48.3	3.68	86	5.08	7.14	9.53	A234 WPB / WP3	0.36
2" / DN50	60.3	3.91	108	5.54	8.74	11.07	A234 WPB / WP3	0.64
2-1/2" / DN65	73.0	5.16	133	7.01	9.53	14.02	A234 WPB	1.10
3" / DN80	88.9	5.49	152	7.62	11.13	15.24	A234 WPB	1.70
4" / DN100	114.3	6.02	190	8.56	13.49	17.12	A234 WPB	3.50
5" / DN125	141.3	6.55	241	9.53	15.88	19.05	A234 WPB	5.90
6" / DN150	168.3	7.11	267	10.97	18.26	21.95	A234 WPB	8.50
8" / DN200	219.1	8.18	343	12.70	23.01	22.23	A234 WPB	18.0
10" / DN250	273.1	9.27	419	15.09	28.58	25.40	A234 WPB	34.0
12" / DN300	323.9	9.53	508	17.48	33.32	25.40	A234 WPB	55.0
14" / DN350	355.6	9.53	559	19.05	35.71	—	A234 WPB	76.0
16" / DN400	406.4	9.53	610	21.44	40.49	—	A234 WPB	107
18" / DN450	457.2	9.53	711	23.83	45.24	—	A234 WPB	146
20" / DN500	508.0	9.53	762	26.19	50.01	—	A234 WPB	190
24" / DN600	609.6	9.53	914	30.96	59.54	—	A234 WPB	305

# Butt Weld Tees — Equal & Reducing (ASME B16.9 / DIN 2615)

Equal Tee: all three outlets same NPS · Reducing Tee: branch outlet smaller than run · ½" to 48"

Equal Tee (Run x Run x Branch all same NPS): C-to-C run dimension M = 1.5 x NPS for NPS ≤ 6". Larger sizes per ASME B16.9 Table.  
 Reducing Tee: Run dimensions same as equal tee for run NPS. Branch outlet (C-to-face) per branch NPS. Specify as run NPS x run NPS x br

**A · EQUAL TEE — ASME B16.9 / DIN 2615 · All dimensions in mm · C = C-to-C run · M = C-to-face branch**

NPS / DN	OD (mm)	C Run C-to-C (mm)	M Branch C-to-Face	Sch 40 Wall (mm)	Sch 80 Wall (mm)	Sch 160 Wall (mm)	Material	Weight (kg)
1/2" / DN15	21.3	57	29	2.77	3.73	4.78	A234 WPB / WP304	0.09
3/4" / DN20	26.7	64	38	2.87	3.91	5.56	A234 WPB / WP304	0.15
1" / DN25	33.4	76	48	3.38	4.55	6.35	A234 WPB / WP304	0.24
1-1/4" / DN35	42.2	95	57	3.56	4.85	6.35	A234 WPB	0.40
1-1/2" / DN40	48.3	111	67	3.68	5.08	7.14	A234 WPB	0.55
2" / DN50	60.3	140	86	3.91	5.54	8.74	A234 WPB	1.00
2-1/2" / DN65	73.0	178	105	5.16	7.01	9.53	A234 WPB	1.90
3" / DN80	88.9	203	124	5.49	7.62	11.13	A234 WPB	2.80
4" / DN100	114.3	254	152	6.02	8.56	13.49	A234 WPB	5.30
5" / DN125	141.3	305	190	6.55	9.53	15.88	A234 WPB	8.90
6" / DN150	168.3	356	210	7.11	10.97	18.26	A234 WPB	13.0
8" / DN200	219.1	457	279	8.18	12.70	23.01	A234 WPB	27.0
10" / DN250	273.1	559	343	9.27	15.09	28.58	A234 WPB	52.0
12" / DN300	323.9	660	406	9.53	17.48	33.32	A234 WPB	83.0
14" / DN350	355.6	762	451	9.53	19.05	35.71	A234 WPB	112
16" / DN400	406.4	864	508	9.53	21.44	40.49	A234 WPB	158
18" / DN450	457.2	965	572	9.53	23.83	45.24	A234 WPB	207
20" / DN500	508.0	1067	635	9.53	26.19	50.01	A234 WPB	268
24" / DN600	609.6	1270	762	9.53	30.96	59.54	A234 WPB	438

REDUCING TEE specification format: Run NPS x Run NPS x Branch NPS e.g. 4" x 4" x 2" Reducing Tee ASME B16.9 A234 WPB Sch 40  
 Reducing Tee run dimensions follow the full-size (run) table above. Branch C-to-Face dimension follows branch NPS from the M column above.

# Butt Weld Reducers & End Caps (ASME B16.9 / DIN 2617)

Concentric Reducer · Eccentric Reducer · End Cap · 1/2" x 1/4" to 24" x 20" · All Schedules

**CONCENTRIC REDUCER:** Both ends aligned on the same axis (centreline). Used in vertical piping and where turbulent flow is acceptable.  
**ECCENTRIC REDUCER:** One side (flat) is aligned, the other tapers. Used in horizontal piping for draining — flat side UP to avoid air pockets, etc.  
**END CAP:** Closes the end of a pipe. Hemispherical or toriconical design per ASME B16.9. Same schedule as connecting pipe.

## A · CONCENTRIC & ECCENTRIC REDUCER — ASME B16.9 (H = overall length in mm) Sch 40 wall shown

Large End NPS x DN	Small End NPS x DN	Large OD (mm)	Small OD (mm)	H Length (mm)	Sch 40 Wall (mm)	Conc. Wt (kg)	Ecc. Wt (kg)	Material
3/4" x DN20	1/2" x DN15	26.7	21.3	38	2.87	0.04	0.04	A234 WPB / WP304
1" x DN25	3/4" x DN20	33.4	26.7	51	3.38	0.07	0.07	A234 WPB / WP304
1-1/4" x DN32	1" x DN25	42.2	33.4	51	3.56	0.12	0.13	A234 WPB
1-1/2" x DN40	1" x DN25	48.3	33.4	64	3.68	0.16	0.17	A234 WPB
2" x DN50	1-1/2" x DN40	60.3	48.3	76	3.91	0.25	0.27	A234 WPB
2" x DN50	1" x DN25	60.3	33.4	76	3.91	0.22	0.24	A234 WPB
3" x DN80	2" x DN50	88.9	60.3	89	5.49	0.70	0.74	A234 WPB
3" x DN80	1-1/2" x DN40	88.9	48.3	89	5.49	0.65	0.68	A234 WPB
4" x DN100	3" x DN80	114.3	88.9	102	6.02	1.40	1.48	A234 WPB
4" x DN100	2" x DN50	114.3	60.3	102	6.02	1.20	1.26	A234 WPB
6" x DN150	4" x DN100	168.3	114.3	127	7.11	3.80	4.00	A234 WPB
8" x DN200	6" x DN150	219.1	168.3	152	8.18	9.00	9.50	A234 WPB
10" x DN250	8" x DN200	273.1	219.1	178	9.27	17.0	17.9	A234 WPB
12" x DN300	10" x DN250	323.9	273.1	203	9.53	26.0	27.4	A234 WPB
14" x DN350	12" x DN300	355.6	323.9	330	9.53	41.0	43.0	A234 WPB
16" x DN400	14" x DN350	406.4	355.6	356	9.53	58.0	61.0	A234 WPB
18" x DN450	16" x DN400	457.2	406.4	381	9.53	79.0	83.0	A234 WPB
20" x DN500	18" x DN450	508.0	457.2	381	9.53	100	105	A234 WPB
24" x DN600	20" x DN500	609.6	508.0	508	9.53	183	192	A234 WPB

## B · END CAP — ASME B16.9 / DIN 2617 (Hemispherical & Toriconical) Selected sizes

NPS / DN	OD (mm)	Depth (mm)	Sch 40 Wall	Sch 80 Wall	XXS Wall	Weight Sch40 (kg)	Material
1/2" / DN15	21.3	22	2.77	3.73	7.47	0.02	A234 WPB / WP304/316
1" / DN25	33.4	30	3.38	4.55	9.09	0.05	A234 WPB / WP304/316
2" / DN50	60.3	38	3.91	5.54	11.07	0.17	A234 WPB / WP304/316
3" / DN80	88.9	51	5.49	7.62	15.24	0.55	A234 WPB
4" / DN100	114.3	64	6.02	8.56	17.12	1.20	A234 WPB
6" / DN150	168.3	83	7.11	10.97	21.95	4.10	A234 WPB
8" / DN200	219.1	102	8.18	12.70	22.23	8.50	A234 WPB

# Forged Socket Weld (SW) Fittings — ASME B16.11

Class 3000 · Class 6000 · Class 9000 · ½" to 4" NPS · ASTM A105 / A182 F304/316/F11/F22

Socket Weld fittings have an internal socket bore that accepts the pipe end. The pipe is inserted and fillet welded externally. Used for small bore ASME B16.11 covers dimensions. Class 3000 ≈ Sch 40/80 pipe. Class 6000 ≈ Sch 80/160. Class 9000 ≈ Sch XXS. All socket weld fittings require

## A · SOCKET WELD ELBOW 90° & 45° — ASME B16.11 (Centre-to-Face dimension A in mm)

NPS / DN	Class 3000 90° C-F A	Class 6000 90° C-F A	Class 9000 90° C-F A	Class 3000 45° C-F A	Class 6000 45° C-F A	Socket Bore ID (mm)	Wall Thk (mm)	Material
1/2" / DN15	27	27	32	20	20	18.0	5.1	A105 / A182 F304/316
3/4" / DN20	30	30	38	22	22	23.6	6.4	A105 / A182 F304/316
1" / DN25	38	38	51	25	29	30.2	6.4	A105 / A182 F304/316
1-1/4" / DN32	41	44	60	29	32	38.9	8.1	A105 / A182 F304
1-1/2" / DN40	51	54	67	35	41	45.0	8.1	A105 / A182 F304
2" / DN50	57	64	86	44	51	57.2	10.2	A105 / A182 F304
2-1/2" / DN63	70	76	102	51	60	69.0	11.2	A105 / A182
3" / DN80	83	92	127	60	70	83.8	12.7	A105 / A182
4" / DN100	108	121	—	73	86	108.0	15.2	A105 / A182

## B · SOCKET WELD TEE, COUPLING, HALF COUPLING & REDUCER INSERT — ASME B16.11

NPS / DN	SW Tee C-to-C (mm)	SW Tee C-to-Face (mm)	Full Coupling Length (mm)	Half Coupling Length (mm)	Reducer Insert (available)	Class 3000 Weight (kg)	Material
1/2" / DN15	29	19	32	19	Yes	0.12	A105 / A182 F304/316
3/4" / DN20	32	22	38	22	Yes	0.20	A105 / A182 F304/316
1" / DN25	38	25	51	26	Yes	0.38	A105 / A182 F304/316
1-1/4" / DN32	44	29	57	29	Yes	0.64	A105 / A182
1-1/2" / DN40	54	35	64	32	Yes	0.90	A105 / A182
2" / DN50	67	44	76	38	Yes	1.60	A105 / A182
2-1/2" / DN63	79	51	89	44	Yes	2.80	A105 / A182
3" / DN80	95	60	102	51	Yes	4.50	A105 / A182
4" / DN100	127	73	127	64	Yes	8.80	A105 / A182

# Forged Threaded (THD) Fittings — ASME B16.11 / BS 1587

Class 3000 · Class 6000 · NPT / BSP · 1/2" to 4" · ASTM A105 Carbon Steel · A182 SS / Alloy

Threaded fittings have female NPT (National Pipe Taper) or BSPT/BSPP threads. No welding required — connection by screwing. Used where ASME B16.11 Class 3000 ≈ Sch 80 pipe ratings. Class 6000 ≈ Sch 160. Thread form: NPT per ASME B1.20.1 or BSPT/BSPP per ISO 7-1 / BS 1587.

## A · THREADED ELBOW 90°, 45° & EQUAL TEE — ASME B16.11 / DIN 2950 (Centre-to-Face mm)

NPS / DN	THD 90° Elbow Class 3000 C-F (mm)	THD 90° Elbow Class 6000 C-F (mm)	THD 45° Elbow Class 3000 C-F (mm)	Equal Tee Class 3000 C-F (mm)	Equal Tee Class 6000 C-F (mm)	Thread Form	Material
1/2" / DN15	25	27	19	19	20	NPT / BSP'	A105 / A182 F304/316
3/4" / DN20	29	32	22	22	24	NPT / BSP'	A105 / A182 F304/316
1" / DN25	38	41	25	25	29	NPT / BSP'	A105 / A182 F304/316
1-1/4" / DN3	44	48	29	29	35	NPT / BSP'	A105 / A182
1-1/2" / DN4	51	57	35	35	41	NPT / BSP'	A105 / A182
2" / DN50	64	70	44	44	51	NPT / BSP'	A105 / A182
2-1/2" / DN6	76	83	51	51	60	NPT / BSP'	A105 / A182
3" / DN80	86	95	60	60	70	NPT / BSP'	A105 / A182
4" / DN100	108	121	73	73	86	NPT / BSP'	A105 / A182

## B · THREADED CROSS, COUPLING, HALF COUPLING, BUSHINGS & PLUGS — ASME B16.11

NPS / DN	4-Way Cross C-to-Face (mm)	Full Coupling Length (mm)	Half Coupling Length (mm)	Hex Bushing Length (mm)	Hex Plug Hex AF (mm)	Sq Head Plug AF (mm)	Material
1/2" / DN15	19	32	19	26	14	14	A105 / A182 F304/316
3/4" / DN20	22	38	22	29	19	17	A105 / A182 F304/316
1" / DN25	25	51	26	35	24	21	A105 / A182 F304/316
1-1/4" / DN3	29	57	29	41	30	27	A105 / A182
1-1/2" / DN4	35	64	32	44	35	32	A105 / A182
2" / DN50	44	76	38	51	41	41	A105 / A182
2-1/2" / DN6	51	89	44	60	51	51	A105 / A182
3" / DN80	60	102	51	70	60	57	A105 / A182
4" / DN100	73	127	64	86	76	73	A105 / A182

# Stub Ends (Lap Joint) & Pipe Nipples

ASME B16.9 Short/Long Pattern · MSS SP-43 SS Fittings · ASME B16.11 Nipples · 1/2" to 24"

**STUB END:** A butt-welded fitting with a backing flange (Lap Joint Flange). The stub end is welded to the pipe; the loose backing flange rotates.
   
**Advantage:** Costly alloy stub end (SS/Duplex/Inconel) with inexpensive CS backing flange — significant cost saving on alloy piping systems.
   
 Short Pattern (Type A): L = 38mm nominal. Long Pattern (Type B): L = 76mm nominal. MSS SP-43 covers lightweight SS stub ends.

## A · STUB END — ASME B16.9 / MSS SP-43 · Short Pattern (A) & Long Pattern (B) (All dims mm)

NPS / DN	OD (mm)	Short Patt. Length A	Long Patt. Length B	Lap Dia D (mm)	Lap Face Thk h (mm)	Sch 40 Wall (mm)	MSS SP-43 Available	Material
1/2" / DN15	21.3	38	76	42	4.8	2.77	Yes	A403 WP304/316 / A234 WPB
3/4" / DN20	26.7	38	76	52	4.8	2.87	Yes	A403 WP304/316 / A234 WPB
1" / DN25	33.4	38	76	63	4.8	3.38	Yes	A403 WP304/316 / A234 WPB
1-1/2" / DN4	48.3	38	76	90	6.4	3.68	Yes	A403 WP304/316
2" / DN50	60.3	38	76	108	6.4	3.91	Yes	A403 WP304/316
3" / DN80	88.9	51	76	146	7.9	5.49	Yes	A403 WP304/316
4" / DN100	114.3	51	102	178	7.9	6.02	Yes	A403 WP304/316
6" / DN150	168.3	64	102	254	9.5	7.11	Yes	A403 WP304/316
8" / DN200	219.1	64	127	318	9.5	8.18	Yes	A403 WP304/316
10" / DN250	273.1	76	127	384	9.5	9.27	Yes	A403 WP304/316
12" / DN300	323.9	76	152	449	9.5	9.53	Yes	A403 WP304/316

## B · PIPE NIPPLES — HEX, BARREL, CLOSE & SWAGE — ASME B16.11 / ISO 49 (Thread: NPT or BSP)

NPS / DN	Thread	Form	Hex Nipple Length (mm)	Barrel Nipple Length (mm)	Close Nipple (length ~ 2T)	Hex AF (mm)	Swage Nipple Available	Material
1/2" / DN15	NPT / BSP		60	76	Short	22	Yes	A105 / A182 F304/316
3/4" / DN20	NPT / BSP		64	89	Short	27	Yes	A105 / A182 F304/316
1" / DN25	NPT / BSP		76	102	Short	36	Yes	A105 / A182 F304/316
1-1/4" / DN3	NPT / BSP		83	114	Short	46	Yes	A105 / A182
1-1/2" / DN4	NPT / BSP		89	127	Short	50	Yes	A105 / A182
2" / DN50	NPT / BSP		102	152	Short	60	Yes	A105 / A182
3" / DN80	NPT / BSP		127	178	Short	76	Yes	A105 / A182
4" / DN100	NPT / BSP		152	203	—	95	On req.	A105 / A182

# Unions, Couplings & Specialty Fittings — ASME B16.1

SW &amp; THD Unions · Full / Half Coupling · Reducer Insert · Swage Nipple · Bull Plug · Round Plug

Union: Three-piece fitting (female end + male end + union nut) that allows future disconnection without cutting pipe — Class 3000/6000 SW or THD.  
 Reducer Insert: Inserted inside a coupling to reduce bore size. Combined Fitting: Dual-purpose SW/THD reducing to smaller size on one end.

## A · UNION (SOCKET WELD & THREADED) — ASME B16.11 (Overall Length L in mm)

NPS / DN	SW Union Class 3000 L (m)	SW Union Class 6000 L (m)	THD Union Class 3000 L (m)	THD Union Class 6000 L (m)	Hex AF (mm)	Bore (mm)	Material	Weight Cl 3000 (kg)
1/2" / DN15	57	76	57	64	27	15.8	A105 / A182 F304/	0.20
3/4" / DN20	67	89	64	76	32	21.8	A105 / A182 F304/	0.34
1" / DN25	86	108	76	89	41	26.8	A105 / A182 F304/	0.63
1-1/4" / DN3	102	121	89	102	50	35.1	A105 / A182	1.05
1-1/2" / DN4	114	140	102	114	57	40.9	A105 / A182	1.50
2" / DN50	140	165	114	140	70	52.5	A105 / A182	2.60
2-1/2" / DN6	165	191	127	165	86	62.7	A105 / A182	4.20
3" / DN80	191	229	152	191	100	77.9	A105 / A182	6.80
4" / DN100	229	279	178	229	127	102.3	A105 / A182	12.5

## B · REDUCER INSERT, BULL PLUG, ROUND PLUG & HEX PLUG — ASME B16.11

Item / NPS	Thread Form	Class / Rating	A or L (mm)	Hex AF (mm)	Material	Application
Reducer Insert 2" x 1"	SW or THD	Class 3000	29	—	A105 / A182	Inside coupling to reduce bore
Reducer Insert 3" x 2"	SW or THD	Class 3000	35	—	A105 / A182	Inside coupling to reduce bore
Bull Plug 1/2" NPT	NPT female	Class 3000	19	22	A105 / A182	Close open pipe end — female thread
Bull Plug 1" NPT	NPT female	Class 3000	25	36	A105 / A182	Close open pipe end — female thread
Hex Plug 1/2" NPT	NPT male	Class 3000	19	22	A105 / A182	Close female fitting — hex drive
Hex Plug 1" NPT	NPT male	Class 3000	25	36	A105 / A182	Close female fitting — hex drive
Round Head Plug 1" NP	NPT male	Class 3000	25	—	A105 / A182	Flush-head pipe plug
Square Head Plug 2" NP	NPT male	Class 3000	35	57	A105 / A182	Easy removal pipe closure

# Material Specifications & Pipe Schedule Reference

ASTM material grades · Schedule wall thickness comparison · All pressure classes

## A · PIPE FITTING MATERIAL GRADES (ASTM / ASME Specifications)

Material / ASTM Grade	Form	Property	Tensile (MPa)	Yield (MPa)	Max Temp	Key Application
ASTM A234 WPB (Carbon Steel)	BW Fittings	SMLS / Seam	415	240	425°C	General process — ambient to moderate temp
ASTM A234 WP11 (1.25Cr-0.5Mn)	BW Fittings	SMLS	415	205	550°C	Refineries, power — elevated temperature
ASTM A234 WP22 (2.25Cr-1Mn)	BW Fittings	SMLS	415	205	600°C	Refinery hydrotreaters — high temp H2 service
ASTM A234 WP91 (9Cr-1Mo-V)	BW Fittings	SMLS	585	415	650°C	Power plant — P91 steam piping
ASTM A403 WP304/304L	BW Fittings SS	SMLS	485	170	870°C	Food, pharma, chemical — austenitic SS
ASTM A403 WP316/316L	BW Fittings SS	SMLS	485	170	870°C	Marine, chemical, offshore — SS 316
ASTM A403 WP316H	BW Fittings SS	SMLS	515	205	980°C	High-temp SS — stabilised carbon
ASTM A182 F304/316	Forged Fittings	Forged	485	170	870°C	SW/THD — stainless steel small bore
ASTM A182 F11/F22	Forged Fittings	Forged	415	205	600°C	SW/THD — alloy steel high-temperature
ASTM A182 F51 (Duplex 2205)	Forged Fittings	Forged	620	450	350°C	Offshore SW/THD — duplex SS
ASTM A182 F53 (S.Duplex 2507)	Forged Fittings	Forged	800	550	300°C	Offshore/subsea — super duplex SS
ASTM A420 WPL6	BW Fittings LT	SMLS	415	240	-46°C min	Low-temperature service — cryogenic

## B · PIPE SCHEDULE WALL THICKNESS COMPARISON — NPS 2" to NPS 12" (mm)

NPS / DN	Sch 5S	Sch 10S	Sch 20	Sch 40 Std	Sch 80 XH	Sch 120	Sch 160	XXS
2" / DN50	1.65	2.77	—	3.91	5.54	7.01	8.74	11.07
3" / DN80	1.65	3.05	—	5.49	7.62	8.89	11.13	15.24
4" / DN100	1.65	3.05	—	6.02	8.56	11.13	13.49	17.12
6" / DN150	1.65	3.40	—	7.11	10.97	14.27	18.26	21.95
8" / DN200	1.65	3.76	6.35	8.18	12.70	18.26	23.01	22.23
10" / DN250	1.65	4.19	6.35	9.27	15.09	21.44	28.58	25.40
12" / DN300	1.65	4.57	6.35	9.53	17.48	28.58	33.32	25.40

# Standards, Applications & Industries Served

ASME · DIN · EN · MSS · API · Oil &amp; Gas · Chemical · Power · Marine · Pharma

## A · KEY STANDARDS — PIPE FITTINGS

Standard	Scope	Fitting Types Covered	Pressure Class / Rating
ASME B16.9	Factory-made wrought BW fittings	Elbows, Tees, Reducers, Caps, Stub Ends	½" to 48" — all schedules
ASME B16.11	Forged socket weld & threaded fitting	Elbows, Tees, Couplings, Unions, Plugs	Class 3000, 6000, 9000
ASME B16.28	Short radius elbows & returns	90° SR, 180° LR & SR elbows	½" to 24" — all schedules
MSS SP-43	Wrought SS BW fittings (lightweight)	Elbows, Tees, Reducers — SS only	Sch 5S, 10S — SS 304/316
MSS SP-79	Socket weld reducer inserts	Reducer inserts for SW couplings	Class 3000, 6000
MSS SP-83	Unions — socket weld & threaded	Unions Class 3000 & 6000	½" to 4"
DIN 2605/2606	German BW elbows 90° LR/SR	90° LR and SR elbows	DN15 to DN1000
DIN 2615/2616	German BW tees & reducers	Equal tees and reducers	DN15 to DN1000
EN 10253-2	European BW fittings (seamless)	Elbows, Tees, Reducers	DN10 to DN800
API 5L	Line pipe for pipelines	Pipe grades X42 to X80	Full range pipe schedules
ASME B31.3	Process piping design code	Governs material selection + stress	All sizes and schedules

## B · INDUSTRIES SERVED & TYPICAL APPLICATIONS

### Oil & Gas

**CS A234 WPB / A105 · SS316 / Duplex 2205**

Process piping, flowlines, manifolds, wellhead piping — ASME B31.3 / NACE MR0175

### Petrochemical

**A234 WP11/WP22/WP91 · SS316L**

High-temp refinery piping, hydrotreaters, steam reforming — ASME B31.3 Sec II

### Power Generation

**A234 WP91/P91 · A403 WP316H**

Main steam, hot reheat, feedwater — ASME B31.1 / ASME Sec VIII

### Chemical Plant

**SS 316L / Duplex 2205 / Hastelloy**

Corrosive process lines, acid piping, chemical reactors — ASME B31.3

### Marine & Offshore

**Super Duplex 2507 / SS 316 / Monel**

Subsea piping, offshore topside — NORSOK M-630 / NACE MR0175

### Pharmaceutical

**SS 316L Electropolished (Ra ≤ 0.8 μm)**

Hygienic process piping — ASME BPE / 3-A Sanitary



# CONTACT & ORDERING

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## HOW TO SPECIFY:

BW Elbow: 4" 90° LR Elbow A234 WPB Sch 40 ASME B16.9 Qty: 10

BW Tee: 6" x 6" x 4" Reducing Tee A403 WP316L Sch 10S ASME B16.9 Qty: 5

SW Fitting: 2" SW Elbow 90° Class 3000 A182 F316 ASME B16.11 Qty: 20

## HOW TO ORDER

**01**

**Send BOM/Enquiry**

Email or WhatsApp your BOM or specification



**02**

**Get Quote**

Competitive quote within 24 hours



**03**

**Confirm**

Approve quote, provide PO



**04**

**Dispatch**

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