

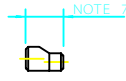
PIPE



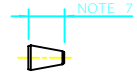
90° ELL.



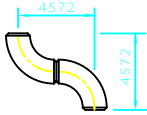
45° ELL.



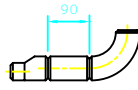
ECC. RED.



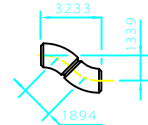
CON. RED.



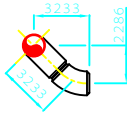
90° ELL. 90° RED.



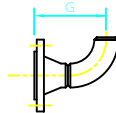
SHORT PIPE



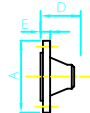
45° ELL. 45° ELL.



90° ELL. 45° ELL.



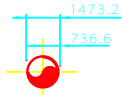
WN. 90° ELL.



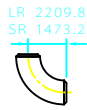
WN FLG.

RATING MARK	A P I				M S S		
	75#	150#	300#	600#	150#	300#	600#
A	1676.4	1725.7	1878.1	1993.9	1854.2	1810.0	1993.9
D	144.5	179.3	271.5	395.2	239.8	273.1	395.2
E	55.6	76.2	150.8	239.8	131.8	163.6	239.8
G	2431	2465	2558	2681	2526	2559	2681
DIA. OF BOLTS	M27	M33	M56	M90	M45	M56	M90
No. OF BOLTS	44	52	40	28	52	32	28
RING No.	-	-	-	-	-	-	-

3			IRANIAN PETROLEUM STANDARD			
2			NO REVISION PERMITTED UNLESS APPROVED BY STANDARD ORGANIZATION			
1			60°(DN1500) VALVES & FITTINGS DIMENSION	DATE	DRAWING No.	SHT REV.
REV	DESCRIPTION	DATE			IPS - D - PI - 106	39/39



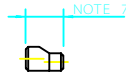
PIPE



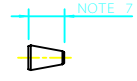
90° ELL.



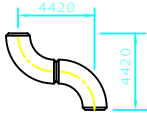
45° ELL.



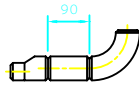
ECC. RED.



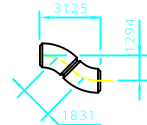
CON. RED.



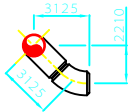
90° ELL. 90° RED.



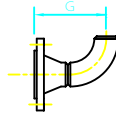
SHORT PIPE



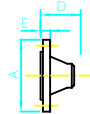
45° ELL. 45° ELL.



90° ELL. 45° ELL.




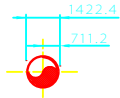
WN. 90° ELL.



WN FLG.

RATING MARK	A P I				M S S		
	75#	150#	300#	600#	150#	300#	600#
A	1625.6	1674.9	1827.3	1905.0	1803.4	1759.0	1905.0
D	138.2	174.8	274.6	376.2	235.0	266.7	376.2
E	52.3	74.7	153.9	228.6	128.5	158.8	228.6
G	2348	2385	2484	2586	2445	2477	2586
DIA. OF BOLTS	M27	M33	M56	M85	M45	M56	M85
No. OF BOLTS	44	48	40	32	48	32	32
RING No.	-	-	-	-	-	-	-

3			<b>IRANIAN PETROLEUM STANDARD</b>  NO REVISION PERMITTED UNLESS APPROVED BY STANDARD ORGANIZATION			
2						
1						
REV	DESCRIPTION	DATE		58°(DN1450) VALVES & FITTINGS DIMENSION	DATE	DRAWING No. IPS - D - PI - 106



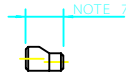
PIPE



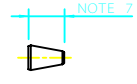
90° ELL.



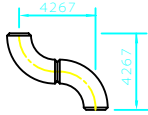
45° ELL.



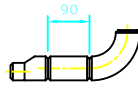
ECC. RED.



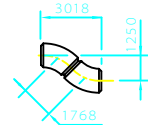
CON. RED.



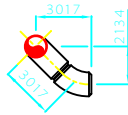
90° ELL. 90° RED.



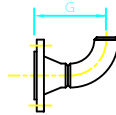
SHORT PIPE



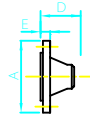
45° ELL. 45° ELL.



90° ELL. 45° ELL.



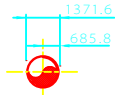
WN. 90° ELL.



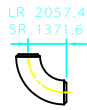
WN FLG.

RATING MARK	A P I				M S S		
	75#	150#	300#	600#	150#	300#	600#
A	1574.8	1600.2	1765.3	1854.2	1746.3	1708.2	1854.2
D	134.9	166.6	268.2	368.3	228.6	260.4	368.3
E	50.8	73.2	153.9	223.8	124.0	153.9	223.8
G	2268	2299	2401	2501	2362	2394	2502
DIA. OF BOLTS	M27	M30	M56	M85	M45	M56	M85
No. OF BOLTS	40	60	36	32	48	28	32
RING No.	-	-	-	-	-	-	-

3			IRANIAN PETROLEUM STANDARD			
2			NO REVISION PERMITTED UNLESS APPROVED BY STANDARD ORGANIZATION			
1			56°(DN1400) VALVES & FITTINGS DIMENSION	DATE	DRAWING No.	SHT REV.
REV	DESCRIPTION	DATE			IPS - D - PI - 106	37



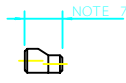
PIPE



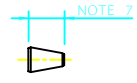
90° ELL.



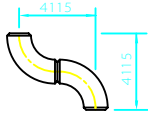
45° ELL.



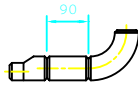
ECC. RED.



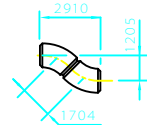
CON. RED.



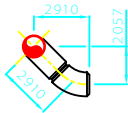
90° ELL. 90° RED.



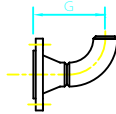
SHORT PIPE



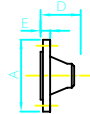
45° ELL. 45° ELL.



90° ELL. 45° ELL.



WN. 90° ELL.



WN FLG.

RATING MARK	A P I				M S S		
	75#	150#	300#	600#	150#	300#	600#
A	1508.3	1549.4	1673.4	1778.0	1682.8	1657.4	1778.0
D	125.5	162.1	239.8	355.6	215.9	252.5	355.6
E	49.3	71.1	136.7	216.0	120.7	152.4	215.9
G	2183	2220	2297	2413	2273	2310	2413
DIA. OF BOLTS	M24	M30	M48	M76	M45	M56	M76
No. OF BOLTS	48	56	48	32	44	28	32
RING No.	-	-	-	-	-	-	-

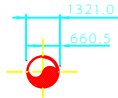
3		
2		
1		
REV	DESCRIPTION	DATE

IRANIAN PETROLEUM STANDARD 

NO REVISION PERMITTED UNLESS APPROVED BY STANDARD ORGANIZATION

54°(DN1350) VALVES & FITTINGS DIMENSION

DATE	DRAWING No.	SHT REV.
	IPS - D - PI - 106	36 / 39



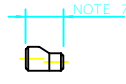
PIPE



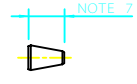
90° ELL.



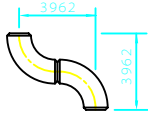
45° ELL.



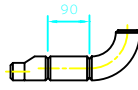
ECC. RED.



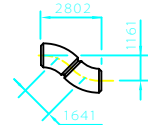
CON. RED.



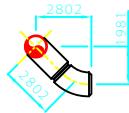
90° ELL. 90° RED.



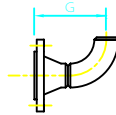
SHORT PIPE



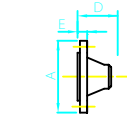
45° ELL. 45° ELL.



90° ELL. 45° ELL.




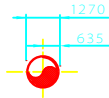
WN. 90° ELL.



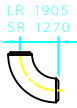
WN FLG.

RATING MARK	A P I				M S S		
	75#	150#	300#	600#	150#	300#	600#
A	1457.5	1493.8	1612.9	1720.9	1625.6	1581.2	1720.9
D	120.7	157.2	242.8	342.9	209.6	238.3	342.9
E	47.8	69.9	142.8	209.6	115.8	144.5	209.6
G	2102	2139	2224	2324	2191	2220	2324
DIA. OF BOLTS	M24	M30	M48	M76	M45	M52	M76
No. OF BOLTS	48	52	48	32	44	32	32
RING No.	-	-	-	-	-	-	-

3			<b>IRANIAN PETROLEUM STANDARD</b>  NO REVISION PERMITTED UNLESS APPROVED BY STANDARD ORGANIZATION			
2						
1						
REV	DESCRIPTION	DATE	52°(DN1300) VALVES & FITTINGS DIMENSION	DATE	DRAWING No.	SHT REV.
					IPS - D - PI - 106	35 / 39



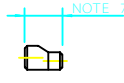
PIPE



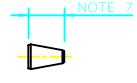
90° ELL.



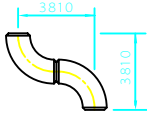
45° ELL.



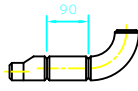
ECC. RED.



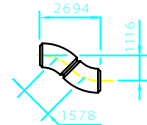
CON. RED.



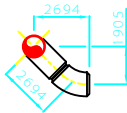
90° ELL. 90° RED.



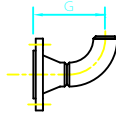
SHORT PIPE



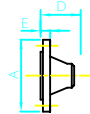
45° ELL. 45° ELL.



90° ELL. 45° ELL.




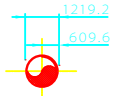
WN. 90° ELL.



WN FLG.

RATING MARK	A P I				M S S		
	75#	150#	300#	600#	150#	300#	600#
A	1403.4	1443.0	1562.1		1568.5	1530.4	1670.1
D	115.8	153.9	235.0	335.0	203.2	231.6	335.0
E	47.8	68.3	138.2	203.2	111.3	139.7	203.2
G	2021	2059	2140	2240	2108	2137	2240
DIA. OF BOLTS	M24	M30	M48	M76	M45	M52	M76
No. OF BOLTS	44	48	44	28	44	32	28
RING No.	-	-	-	-	-	-	-

3			<b>IRANIAN PETROLEUM STANDARD</b>  NO REVISION PERMITTED UNLESS APPROVED BY STANDARD ORGANIZATION			
2						
1						
REV	DESCRIPTION	DATE		50°(DN1250) VALVES & FITTINGS DIMENSION	DATE	DRAWING No. IPS - D - PI - 106



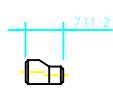
PIPE



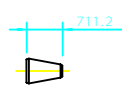
90° ELL.



45° ELL.



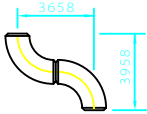
ECC. RED.



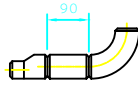
CON. RED.



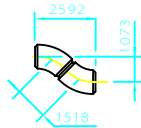
CAP



90° ELL. 90° RED.



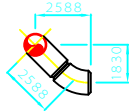
SHORT PIPE



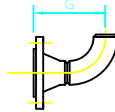
45° ELL. 45° ELL.

REDUCING TEE

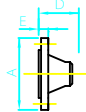
DN	M
x1150	838.2
x1100	838.2
x1050	812.8
x1000	812.8
x950	812.8
x900	787.4
x850	787.4
x800	787.4
x750	762.0
x700	762.0
x650	762.0
x600	736.6



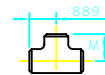
90° ELL. 45° ELL.



WN. 90° ELL.



WN FLG.

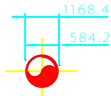


TEE

RATING MARK	A P I					M S S			
	75#	150#	300#	600#	900#	150#	300#	600#	900#
A	1352.6	1392.2 1511.3*	1511.3	1593.9	1784.4	1511.3	1466.9	1593.9	1784.4
D	111.3	149.4 146*	223.8	322.3	425.5	192.0	223.8	322.3	425.5
E	46.0	65.0 69.8*	128.5	195.3	239.8	108.0	133.4	195.3	239.8
G	1940	1978 1974.8*	2053	2151	2254	2021	2053	2151	2254
DIA. OF BOLTS	M24	M30	M48	M72	M105	M39	M48	M72	M105
No. OF BOLTS	44	44	40	32	24	44	32	32	24
RING No.	-	-	-	-	-	-	-	-	-

NOTE: DIMENSIONS MARKED WITH \* ARE BS STANDARD

3			IRANIAN PETROLEUM STANDARD			
2			NO REVISION PERMITTED UNLESS APPROVED BY STANDARD ORGANIZATION			
1			48°(DN1200) VALVES & FITTINGS DIMENSION	DATE	DRAWING No.	SHT REV.
REV	DESCRIPTION	DATE			IPS - D - PI - 106	33 / 39



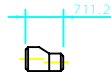
PIPE



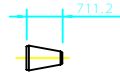
90° ELL.



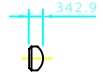
45° ELL.



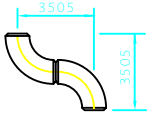
ECC. RED.



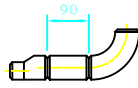
CON. RED.



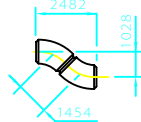
CAP



90° ELL. 90° RED.



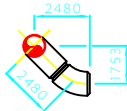
SHORT PIPE



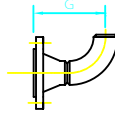
45° ELL. 45° ELL.

REDUCING TEE

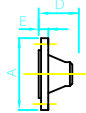
DN	M
x1100	800.1
x1050	787.4
x1000	774.7
x950	762.0
x900	762.0
x850	749.3
x800	749.3
x750	736.6
x700	736.6
x650	736.6
x600	723.9



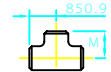
90° ELL. 45° ELL.



WN. 90° ELL.



WN FLG.



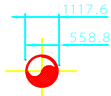
TEE

RATING MARK	A P I					M S S			
	75#	150#	300#	600#	900#	150#	300#	600#	900#
A	1301.8	1341.4 1454.1*	1460.5	1511.3	1733.6	1454.2	1416.1	1511.3	1733.6
D	108	144.5 144.5*	222.3	306.3	417.6	185.7	215.9	306.3	417.3
E	44.5	62.0 68.3*	128.5	185.7	231.9	103.1	128.5	185.7	231.9
G	1861	1897 1897.1*	1975	2059	2170	1938	1969	2059	2170
DIA. OF BOLTS	M24	M30	M48	M64	M105	M39	M48	M64	M105
No. OF BOLTS	40	40	36	32	24	40	28	32	24
RING No.	-	-	-	-	-	-	-	-	-

NOTE: DIMENSIONS MARKED WITH \* ARE BS STANDARD

3			IRANIAN PETROLEUM STANDARD			
2			NO REVISION PERMITTED UNLESS APPROVED BY STANDARD ORGANIZATION			
1			46°(DN1150) VALVES & FITTINGS DIMENSION	DATE	DRAWING No.	SHT/REV.
REV	DESCRIPTION	DATE			IPS - D - PI - 106	32/39





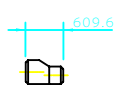
PIPE



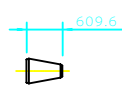
90° ELL.



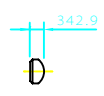
45° ELL.



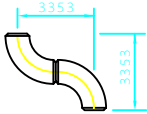
ECC. RED.



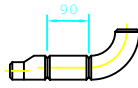
CON. RED.



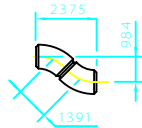
CAP



90° ELL. 90° RED.



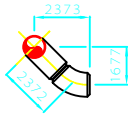
SHORT PIPE



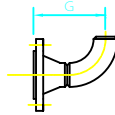
45° ELL. 45° ELL.

REDUCING TEE

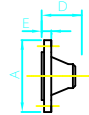
DN	M
x1050	762.0
x1000	749.3
x950	736.6
x900	723.9
x850	723.9
x800	711.2
x750	711.2
x700	698.5
x650	698.5
x600	698.5
x500	685.8



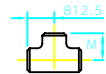
90° ELL. 45° ELL.



WN. 90° ELL.



WN FLG.

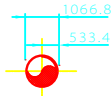


TEE

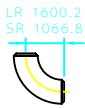
RATING MARK	A P I					M S S			
	75#	150#	300#	600#	900#	150#	300#	600#	900#
A	1251.0	1276.4 1403.3*	1384.3	1454.2	1648.0	1403.4	1352.6	1454.2	1648.0
D	104.6	136.7 142.9*	214.4	295.4	397.0	177.8	206.2	295.4	397.0
E	42.9	60.5 66.7*	127.0	179.3	220.7	101.6	124.0	179.3	220.7
G	1781	1813 1819.3*	1891	1972	2073	1854	1883	1972	2073
DIA. OF BOLTS	M24	M27	M45	M64	M85	M39	M45	M64	M85
No. OF BOLTS	36	52	40	32	24	40	32	32	24
RING No.	-	-	-	-	-	-	-	-	-

NOTE: DIMENSIONS MARKED WITH \* ARE BS STANDARD

3			IRANIAN PETROLEUM STANDARD				
2			NO REVISION PERMITTED UNLESS APPROVED BY STANDARD ORGANIZATION				
1			44°(DN1100) VALVES & FITTINGS DIMENSION		DATE	DRAWING No.	SHT/REV.
REV	DESCRIPTION	DATE				IPS - D - PI - 106	31/39



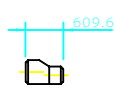
PIPE



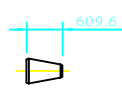
90° ELL.



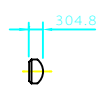
45° ELL.



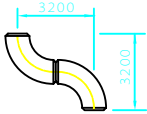
ECC. RED.



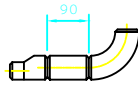
CON. RED.



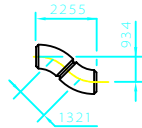
CAP



90° ELL. 90° RED.



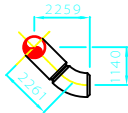
SHORT PIPE



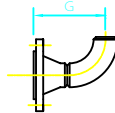
45° ELL. 45° ELL.

REDUCING TEE

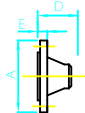
DN	M
x1000	711.2
x950	711.2
x900	711.2
x850	711.2
x800	711.2
x750	711.2
x700	698.5
x650	698.5
x600	660.4
x500	660.4
x450	647.7
x400	635.0



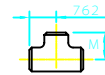
90° ELL. 45° ELL.



WN. 90° ELL.



WN FLG.

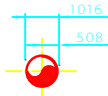


TEE

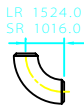
RATING MARK	A P I					M S S			
	75#	150#	300#	600#	900#	150#	300#	600#	900#
A	1185.9	1225.6 1346.2*	1333.5	1403.4	1562.1	1346.2	1289.1	1403.4	1562.1
D	95.3	133.5 142.9*	204.7	285.8	377.7	171.5	200.2	285.8	377.7
E	39.6	58.7 66.7*	119.1	174.5	212.6	96.8	119.1	174.5	212.6
G	1696	1734 1742.9*	1805	1886	1978	1772	1800	1886	1978
DIA. OF BOLTS	M20	M27	M45	M64	M90	M39	M42	M64	M90
No. OF BOLTS	48	48	36	28	24	36	32	28	24
RING No.	-	-	-	-	-	-	-	-	-

NOTE: DIMENSIONS MARKED WITH \* ARE BS STANDARD

3			<p style="text-align: center;"><b>IRANIAN PETROLEUM STANDARD</b> </p> <p style="text-align: center;">NO REVISION PERMITTED UNLESS APPROVED BY STANDARD ORGANIZATION</p>			
2				DATE	DRAWING No.	SHT REV.
1						
REV	DESCRIPTION	DATE		42°(DN1050) VALVES & FITTINGS DIMENSION	IPS - D - PI - 106	30 39



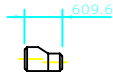
PIPE



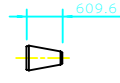
90° ELL.



45° ELL.



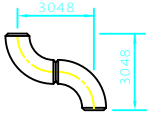
ECC. RED.



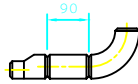
CON. RED.



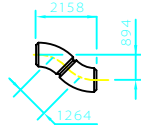
CAP



90° ELL. 90° RED.



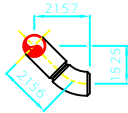
SHORT PIPE



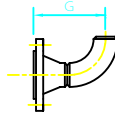
45° ELL. 45° ELL.

REDUCING TEE

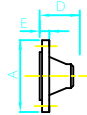
DN	M
x950	749.3
x900	736.6
x850	723.9
x800	711.2
x750	698.5
x700	673.1
x650	673.1
x600	660.4
x500	635.0
x450	622.3



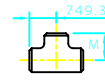
90° ELL. 45° ELL.



WN. 90° ELL.



WN FLG.

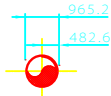


TEE

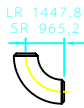
RATING MARK	A P I					M S S			
	75#	150#	300#	600#	900#	150#	300#	600#	900#
A	1135.1	1174.8 1289*	1273.0	1320.8	1511.3	1289.1	1238.3	1320.8	1511.3
D	91.9	128.5 139.7*	198.4	270.0	369.8	163.6	193.5	270.0	369.8
E	38.1	55.6 63.5*	115.8	165.1	203.2	90.4	114.3	165.1	203.2
G	1616	1653 1663.7*	1722	1794	1894	1688	1718	1794	1894
DIA. OF BOLTS	M20	M27	M42	M56	M90	M39	M42	M56	M90
No. OF BOLTS	44	44	40	32	24	36	32	32	24
RING No.	-	-	-	-	-	-	-	-	-

NOTE: DIMENSIONS MARKED WITH \* ARE BS STANDARD

3			IRANIAN PETROLEUM STANDARD 			
2			NO REVISION PERMITTED UNLESS APPROVED BY STANDARD ORGANIZATION			
1			40°(DN1000) VALVES & FITTINGS DIMENSION	DATE	DRAWING No.	SHT/REV.
REV	DESCRIPTION	DATE			IPS - D - PI - 106	29/39



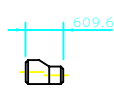
PIPE



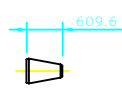
90° ELL.



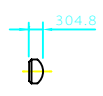
45° ELL.



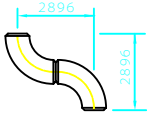
ECC. RED.



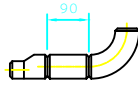
CON. RED.



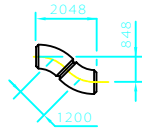
CAP



90° ELL. 90° RED.



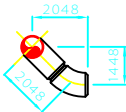
SHORT PIPE



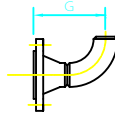
45° ELL. 45° ELL.

REDUCING TEE

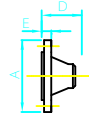
DN	M
x900	711.2
x850	698.5
x800	685.8
x750	673.1
x700	647.7
x650	647.7
x600	635.0
x500	609.6
x450	596.9



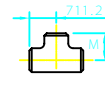
90° ELL. 45° ELL.



WN. 90° ELL.



WN FLG.

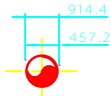


TEE

RATING MARK	A P I					M S S			
	75#	150#	300#	600#	900#	150#	300#	600#	900#
A	1084.3	1124.0 1238.2*	1222.2	1270.0	1460.5	1238.3	1168.4	1270.0	1460.5
D	88.9	124.0 136.5*	192.0	260.4	358.9	157.2	180.8	260.4	358.9
E	38.1	53.8 60.3*	111.3	158.8	196.9	87.4	108.0	158.8	196.9
G	1537	1572 1584.3*	1640	1708	1807	1605	1629	1708	1807
DIA. OF BOLTS	M20	M27	M42	M56	M90	M39	M39	M56	M90
No. OF BOLTS	40	40	36	28	20	32	32	28	20
RING No.	-	-	-	-	-	-	-	-	-

NOTE: DIMENSIONS MARKED WITH \* ARE BS STANDARD

3			IRANIAN PETROLEUM STANDARD			
2			NO REVISION PERMITTED UNLESS APPROVED BY STANDARD ORGANIZATION			
1				DATE	DRAWING No.	SHT REV.
REV	DESCRIPTION	DATE	38"(DN950) VALVES & FITTINGS DIMENSION		IPS - D - PI - 106	28/39



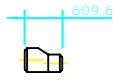
PIPE



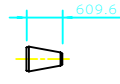
90° ELL.



45° ELL.



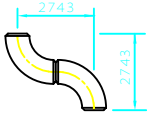
ECC. RED.



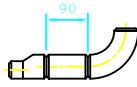
CON. RED.



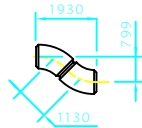
CAP



90° ELL. 90° RED.



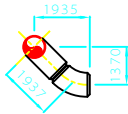
SHORT PIPE



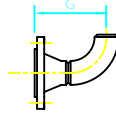
45° ELL. 45° ELL.

REDUCING TEE

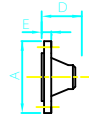
DN	M
x850	660.4
x800	647.7
x750	635.0
x700	622.3
x650	622.3
x600	609.6
x500	584.2
x450	571.5
x400	558.8



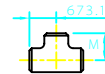
90° ELL. 45° ELL.



WN. 90° ELL.



WN FLG.

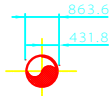


TEE

RATING MARK	A P I					M S S			
	75#	150#	300#	600#	900#	150#	300#	600#	900#
A	1033.5	1057.1 1168.4*	1171.4 1270*	1212.9 1314.4*	1346.2	1168.4	1270.0	1314.5	1460.5
D	85.9	117.3 136.5*	180.8 241.3*	249.2 282.6*	331.7	157.2	241.3 (255.6)	288.8 (296.7)	368.3 (382.6)
E	36.6	52.3 60.3*	103.1 104.8*	152.4 123.8*	179.3	90.4	104.6 (118.9)	130.3 (138.2)	177.8 (192.1)
G	1458	1489 1508.5*	1552 1613.3*	1621 1654.6*	1703	1529	1613 (1627)	1660 (1668)	1740 (1754)
DIA. OF BOLTS	M20	M24	M42	M56	M76	M39	M52	M64	M90
No. OF BOLTS	40	44	32	28	24	32	32	28	20
RING No.	-	-	-	-	-	-	R98	R98	R105

NOTE: DIMENSIONS IN ( ) ARE FOR RING JOINT FLANGES  
DIMENSIONS MARKED WITH \* ARE BS STANDARD

3			IRANIAN PETROLEUM STANDARD			
2			NO REVISION PERMITTED UNLESS APPROVED BY STANDARD ORGANIZATION			
1				DATE	DRAWING No.	SHT REV.
REV	DESCRIPTION	DATE	36"(DN900) VALVES & FITTINGS DIMENSION		IPS - D - PI - 106	27/39



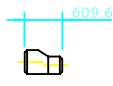
PIPE



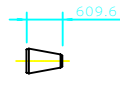
90° ELL.



45° ELL.



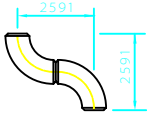
ECC. RED.



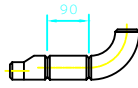
CON. RED.



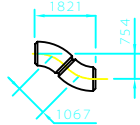
CAP



90° ELL. 90° RED.



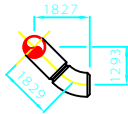
SHORT PIPE



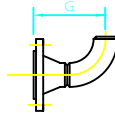
45° ELL. 45° ELL.

REDUCING TEE

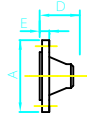
DN	M
x800	622.3
x750	609.6
x700	596.9
x650	596.9
x600	584.2
x500	558.8
x450	546.1
x400	533.4



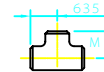
90° ELL. 45° ELL.



WN. 90° ELL.



WN FLG.

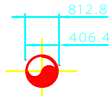


TEE

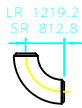
RATING MARK	A P I					M S S			
	75#	150#	300#	600#	900#	150#	300#	600#	900#
A	965.2	1004.8 1111.2*	1107.9 1206.5*	1162.1 1244.6*	1314.5	1111.3	1206.5	1244.6	1397.0
D	73.2	110.2 134.9*	173.0 231.8*	239.8 269.9*	325.4	149.4	231.6 (245.9)	276.1 (284.0)	355.6 (369.9)
E	35.1	49.3 58.7*	103.1 101.6*	147.6 120.7*	177.8	82.6	101.6 (115.9)	127.0 (134.9)	171.5 (185.7)
G	1369	1406 1429.9*	1468 1526.8*	1535.2 1564.9*	1621	1445	1527 (1541)	1572 (1579)	1651 (1665)
DIA. OF BOLTS	M18	M24	M39	M56	M85	M39	M48	M56	M90
No. OF BOLTS	52	40	36	24	20	32	28	28	20
RING No.	-	-	-	-	-	-	R97	R97	R104

NOTE: DIMENSIONS IN ( ) ARE FOR RING JOINT FLANGES  
DIMENSIONS MARKED WITH \* ARE BS STANDARD

3			<p style="text-align: center;"><b>IRANIAN PETROLEUM STANDARD</b></p> <p style="text-align: center;">NO REVISION PERMITTED UNLESS APPROVED BY STANDARD ORGANIZATION</p>			
2						
1						
REV	DESCRIPTION	DATE		44" (DN850) VALVES & FITTINGS DIMENSION	DATE	DRAWING No. IPS - D - PI - 106



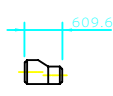
PIPE



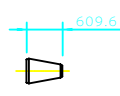
90° ELL.



45° ELL.



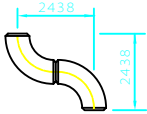
ECC. RED.



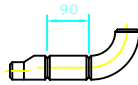
CON. RED.



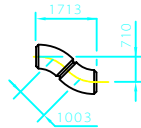
CAP



90° ELL. 90° RED.



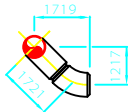
SHORT PIPE



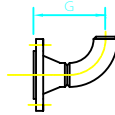
45° ELL. 45° ELL.

REDUCING TEE

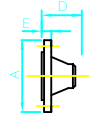
DN	M
x750	584.2
x700	571.5
x650	571.5
x600	558.8
x500	533.4
x450	520.7
x400	508.0
x350	508.0



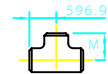
90° ELL. 45° ELL.



WN. 90° ELL.



WN FLG.

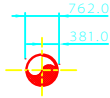


TEE

RATING MARK	A P I					M S S			
	75#	150#	300#	600#	900#	150#	300#	600#	900#
A	914.4	941.3 1060.4*	1054.1 1149.3*	1085.9 1193.8*	1238.3	1060.5	1149.4	1193.8	1314.5
D	69.9	108.0 133.3*	168.1 222.2*	222.3 260.3*	309.6	144.5	222.3 (236.5)	266.7 (274.6)	336.6 (347.7)
E	35.1	46.0 57.1*	103.1 98.4*	136.4 117.5*	166.6	80.8	98.6 (112.8)	123.7 (131.6)	165.1 (176.2)
G	1289	1327 1352.3*	1387 1441.2*	1442 1479.3*	1529	1364	1442 (1456)	1486 (1494)	1556 (1567)
DIA. OF BOLTS	M18	M20	M39	M52	M76	M39	M48	M56	M85
No. OF BOLTS	48	48	32	28	20	28	28	28	20
RING No.	-	-	-	-	-	-	R96	R96	R103

NOTE: DIMENSIONS IN ( ) ARE FOR RING JOINT FLANGES  
DIMENSIONS MARKED WITH \* ARE BS STANDARD

3			IRANIAN PETROLEUM STANDARD 			
2			NO REVISION PERMITTED UNLESS APPROVED BY STANDARD ORGANIZATION			
1			DATE	DRAWING No.	SHT	REV.
REV	DESCRIPTION	DATE	42°(DN800) VALVES & FITTINGS DIMENSION	IPS - D - PI - 106	25	39



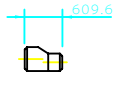
PIPE



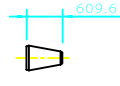
90° ELL.



45° ELL.



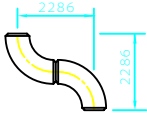
ECC. RED.



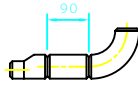
CON. RED.



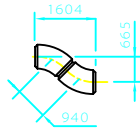
CAP



90° ELL. 90° RED.



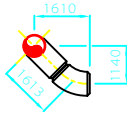
SHORT PIPE



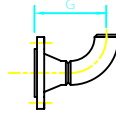
45° ELL. 45° ELL.

REDUCING TEE

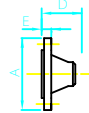
DN	M
x700	546.1
x650	546.1
x600	533.4
x500	508.0
x450	495.3
x400	482.6
x350	482.6
x300	472.9
x250	460.2



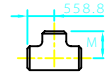
90° ELL. 45° ELL.



WN. 90° ELL.



WN FLG.



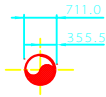
TEE

RATING MARK	A P I					M S S			
	75#	150#	300#	600#	900#	150#	300#	600#	900#
A	863.6	887.5 984.2*	990.6 1092.2*	1022.4 1130.3*	1181.1	984.3	1092.2	1130.3	1231.9
D	65.0	100.1 130.2*	158.0 209.5*	211.1 247.6*	295.4	136.7	209.6 (222.3)	254.0 (260.4)	317.5 (328.6)
E	33.3	44.5 54*	93.7 92.1*	131.8 114.3*	161.8	74.7	91.9 (104.6)	120.7 (127.0)	155.7 (166.8)
G	1208	1243 1273.2*	1301 1352.5*	1354 1390.6*	1438	1280	1353	1397 (1403)	1461 (1472)
DIA. OF BOLTS	M18	M20	M36	M48	M76	M33	M45	M52	M76
No. OF BOLTS	44	44	36	28	20	28	28	28	20
RING No.	-	-	-	-	-	-	R95	R95	R102

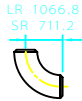
NOTE: DIMENSIONS IN ( ) ARE FOR RING JOINT FLANGES  
DIMENSIONS MARKED WITH \* ARE BS STANDARD

3			IRANIAN PETROLEUM STANDARD			
2			NO REVISION PERMITTED UNLESS APPROVED BY STANDARD ORGANIZATION			
1			30"(DN750) VALVES & FITTINGS DIMENSION	DATE	DRAWING No.	SHT REV.
REV	DESCRIPTION	DATE			IPS - D - PI - 106	24





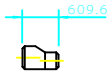
PIPE



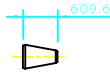
90° ELL.



45° ELL.



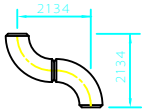
ECC. RED.



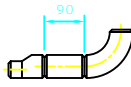
CON. RED.



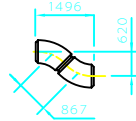
CAP



90° ELL. 90° RED.



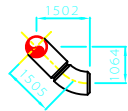
SHORT PIPE



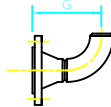
45° ELL. 45° ELL.

REDUCING TEE

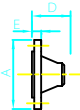
DN	M
x650	520.7
x600	508.0
x500	482.6
x450	469.9
x400	457.2
x350	457.2
x300	447.5



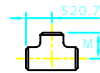
90° ELL. 45° ELL.



WN. 90° ELL.



WN FLG.

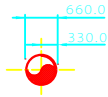


TEE

RATING MARK	A P I					M S S			
	75#	150#	300#	600#	900#	150#	300#	600#	900#
A	812.9	836.7 927.1*	920.8 1035*	952.5 1073.1*	1104.9	927.1	1035.1	1073.2	1168.4
D	62.0	95.3 128.6*	149.4 196.8*	196.9 234.9*	282.7	125.5	196.9 (209.6)	241.3 (247.7)	304.8 (315.9)
E	33.3	44.5 52.4*	88.9 85.7*	122.2 111.1*	153.9	71.4	85.9 (98.6)	117.6 (124.0)	149.1 (160.2)
G	1129	1162 1195.6*	1216 1263.8*	1263 1301.9*	1350	1192	1264	1308 (1315)	1372 (1383)
DIA. OF BOLTS	M18	M20	M33	M45	M72	M33	M42	M52	M76
No. OF BOLTS	40	40	36	28	20	28	28	28	20
RING No.	-	-	-	-	-	-	R94	R94	R101

NOTE: DIMENSIONS IN ( ) ARE FOR RING JOINT FLANGES  
DIMENSIONS MARKED WITH \* ARE BS STANDARD

3			IRANIAN PETROLEUM STANDARD			
2			NO REVISION PERMITTED UNLESS APPROVED BY STANDARD ORGANIZATION			
1			28*(DN700) VALVES & FITTINGS DIMENSION	DATE	DRAWING No.	SHT/REV.
REV.	DESCRIPTION	DATE			IPS - D - PI - 106	23/39



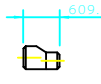
PIPE



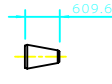
90° ELL.



45° ELL.



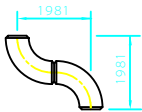
ECC. RED.



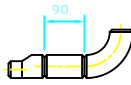
CON. RED.



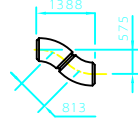
CAP



90° ELL. 90° RED.



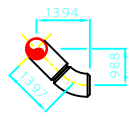
SHORT PIPE



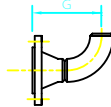
45° ELL. 45° ELL.

REDUCING TEE

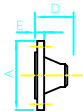
DN	M
x600	482.6
x500	457.2
x450	444.5
x400	431.8
x350	431.8
x300	422



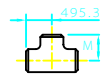
90° ELL. 45° ELL.



WN. 90° ELL.




WN FLG.

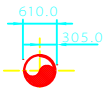


TEE

RATING MARK	A P I					M S S			
	75#	150#	300#	600#	900#	150#	300#	600#	900#
A	762.0	785.9 869.9*	866.6 971.5*	889.0 1016*	1022.4	870.0	971.6	1016.0	1085.9
D	58.7	88.9 127*	144.5 184.1*	187.2 222.2*	265.2	120.7	184.2 (196.9)	228.6 (235.0)	292.1 (303.2)
E	33.3	41.1 50.8*	88.9 79.4*	117.6 108*	141.2	68.3	79.2 (91.9)	114.3 (120.7)	146.1 (157.2)
G	1049	1080 1117.6*	1135 1175.1*	1178 1213.2*	1256	1111	1175 (1188)	1219 (1226)	1283 (1294)
DIA. OF BOLTS	M18	M20	M33	M42	M64	M33	M42	M48	M72
No. OF BOLTS	36	36	32	28	20	24	28	28	20
RING No.	-	-	-	-	-	-	R93	R93	R100

NOTE: DIMENSIONS IN ( ) ARE FOR RING JOINT FLANGES  
DIMENSIONS MARKED WITH \* ARE BS STANDARD

3			IRANIAN PETROLEUM STANDARD 			
2			NO REVISION PERMITTED UNLESS APPROVED BY STANDARD ORGANIZATION			
1			26*(DN650) VALVES & FITTINGS DIMENSION	DATE	DRAWING No.	SHT/REV.
REV.	DESCRIPTION	DATE			IPS - D - PI - 106	22/39



PIPE  
90° ELL. 90° ELL.



90° ELL.



45° ELL.



RED.



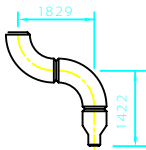
CAP



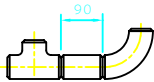
TEE

REDUCING TEE

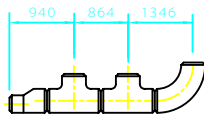
DN	M
x500	431.8
x450	419.1
x400	406.4
x350	406.4
x300	396.7
x250	384.0



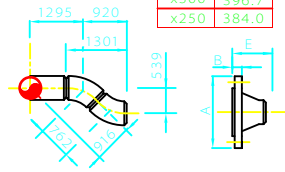
90° ELL. RED.



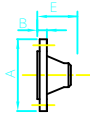
SHORT PIPE



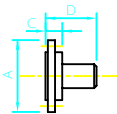
RED. TEE .TEE .90° ELL.



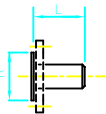
90° ELL. 45° ELL. 45° ELL.



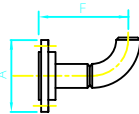
WN FLG.



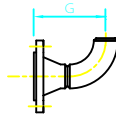
SO.SHORT PIPE



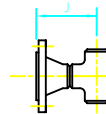
STUBEND



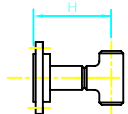
SO. SHORT PIPE  
90° ELBOW



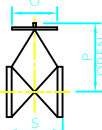
WN. 90° ELL.



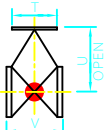
WN.EQ.TEE



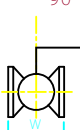
SO.SHORT PIPE  
EQUAL TEE



GATE



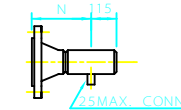
GLOBE



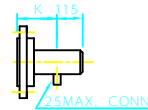
BALL



CHECK



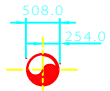
WN. SHORT PIPE



SO. SHORT PIPE

MARK	RATING		150#	300#	600#	300#	600#	900#	1500#	2500#
	FF	RF	RF	RF	RJ	RJ	RJ	RJ	RJ	RJ
A	812.8		914.4	939.8	914.4	939.8	1041.4	1168.4	-	-
B	47.8		69.9	108.0	81.0	112.7	155.6	223.8	-	-
C	82.6		106.4	146.1	116	150.8	219	-	-	-
D	173		196	236	-	-	-	-	-	-
E	152.4		168.1	209.6	179.3	214.3	308.0	427.0	-	-
F	1087		1110	1150	-	-	-	-	-	-
G	1067		1083	1124	1094	1129	1222	1341	-	-
H	605		628	668	-	-	-	-	-	-
J	584		600	641	611	646	740	859	-	-
K	200		220	265	-	-	-	-	-	-
N	270		285	325	295	330	425	545	-	-
L	304.8		304.8	304.8	315.9	315.9	320.7	325.4	-	-
O	762		864	1067	864	1067	1067	-	-	-
P	2737		3105	3124	3105	3124	3198	-	-	-
R	699.2		699.2	699.2	-	-	-	-	-	-
S	508		1143	1397	1165	1407	1568	1972	-	-
T	-		-	-	-	-	-	-	-	-
U	-		-	-	-	-	-	-	-	-
V	-		-	-	-	-	-	-	-	-
W	1067		1143	1397	1165	1407	1568	-	-	-
X	1295		1346	1397	1369	1407	1568	1972	-	-
DIA. OF BOLTS	M33		M39	M48	M39	M48	M68	M90	-	-
No. OF BOLTS	20		24	24	24	24	20	16	-	-
RING No.	-		-	-	R77	R77	R78	R79	-	-
FLG. CLEARANCE	-		-	-	6	6	6	11	-	-

3			IRANIAN PETROLEUM STANDARD		
2			NO REVISION PERMITTED UNLESS APPROVED BY STANDARD ORGANIZATION		
1			24"(DN600) VALVES & FITTINGS DIMENSION	DATE	DRAWING No. SHT/REV.
REV	DESCRIPTION	DATE	IPS - D - PI - 106	21	39



PIPE  
90° ELL. 90° ELL.



90° ELL.



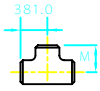
45° ELL.



RED.

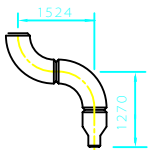


CAP

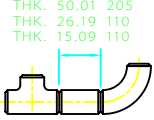


TEE

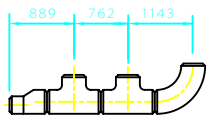
REDUCING TEE	
DN	M
x450	368.0
x400	355.6
x350	355.6
x300	345.9
x250	333.2
x200	323.9



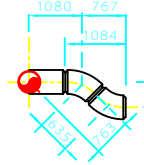
90° ELL. RED.



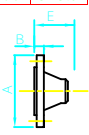
SHORT PIPE



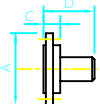
RED. TEE .TEE .90° ELL.



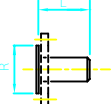
90° ELL. 45° ELL. 45° ELL.



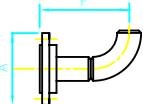
WN FLG.



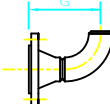
SO.SHORT PIPE



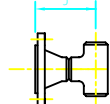
STUBEND



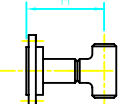
SO. SHORT PIPE 90° ELBOW



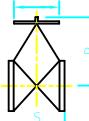
WN. 90° ELL.



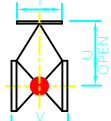
WN.EQ.TEE



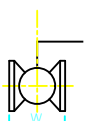
SO.SHORT PIPE EQUAL TEE



GATE



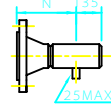
GLOBE



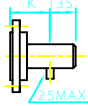
BALL



CHECK



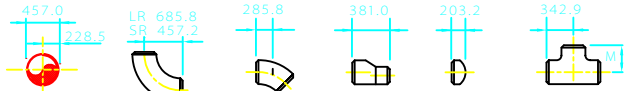
WN. SHORT PIPE



SO. SHORT PIPE

MARK	RATING		150#	300#	600#	300#	600#	900#	1500#	2500#
	FF	RF	RF	RF	RJ	RJ	RJ	RJ	RJ	RJ
A	698.5	774.7	812.8	774.7	812.8	857.3	984.3	-	-	-
B	42.9	63.5	95.3	73.0	98.4	120.7	195.3	-	-	-
C	73.2	95.3	133.4	103.3	136.5	171.4	-	-	-	-
D	183	205	243	-	-	-	-	-	-	-
E	144.5	162.1	196.9	171.6	200.0	260.4	373.1	-	-	-
F	945	967	1005	-	-	-	-	-	-	-
G	907	925	959	934	962	1022	1135	-	-	-
H	564	586	624	-	-	-	-	-	-	-
J	526	544	578	553	581	641	754	-	-	-
K	210	230	270	-	-	-	-	-	-	-
N	280	300	335	310	335	395	510	-	-	-
L	304.8	304.8	304.8	314.3	314.3	317.5	322.3	-	-	-
O	660	762	914	762	914	914	-	-	-	-
P	2348	2534	2851	2534	2851	2743	-	-	-	-
R	584.2	584.2	584.2	-	-	-	-	-	-	-
S	457	991	1194	1010	1200	1334	1686	-	-	-
T	-	-	-	-	-	-	-	-	-	-
U	-	-	-	-	-	-	-	-	-	-
V	-	-	-	-	-	-	-	-	-	-
W	914	991	1194	1010	1200	1334	-	-	-	-
X	978	1016	1194	1035	1200	1334	1686	-	-	-
DIA. OF BOLTS	M30	M33	M42	M33	M42	M52	M76	-	-	-
No. OF BOLTS	20	24	24	24	24	20	16	-	-	-
RING No.	-	-	-	R73	R73	R74	R75	-	-	-
FLG. CLEARANCE	-	-	-	6	5	5	10	-	-	-

3			IRANIAN PETROLEUM STANDARD			
2			NO REVISION PERMITTED UNLESS APPROVED BY STANDARD ORGANIZATION			
1			20"(DN500) VALVES & FITTINGS DIMENSION	DATE	DRAWING No.	SHT/REV.
REV	DESCRIPTION	DATE			IPS - D - PI - 106	20/39



REDUCING TEE	
DN	M
x400	330.2
x350	330.2
x300	320.5
x250	307.8
x200	298.5

PIPE  
90° ELL. 90° ELL.

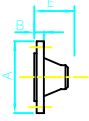
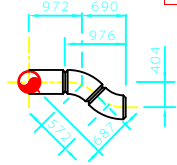
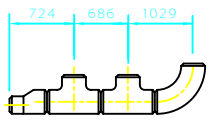
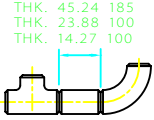
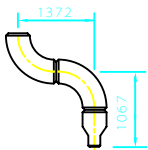
90° ELL.

45° ELL.

RED.

CAP

TEE



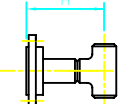
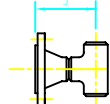
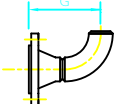
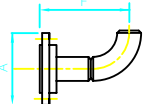
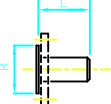
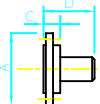
90° ELL. RED.

SHORT PIPE

RED. TEE .TEE .90° ELL.

90° ELL. 45° ELL. 45° ELL.

WN FLG.



SO.SHORT PIPE

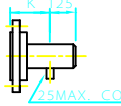
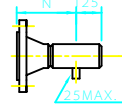
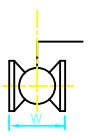
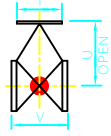
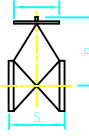
STUBEND

SO. SHORT PIPE 90° ELBOW

WN. 90° ELL.

WN.EQ.TEE

SO.SHORT PIPE EQUAL TEE



GATE

GLOBE

BALL

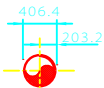
CHECK

WN. SHORT PIPE

SO. SHORT PIPE

MARK	RATING		150#	300#	600#	300#	600#	900#	1500#	2500#
	FF	RF	RF	RF	RJ	RJ	RJ	RJ	RJ	RJ
A	635.0	711.2	743.0	711.2	743.0	787.4	914.4	-	-	-
B	39.6	60.5	88.9	68.4	90.5	114.3	179.5	-	-	-
C	68.3	88.9	123.7	95.3	125.3	165.1	-	-	-	-
D	168	189	224	-	-	-	-	-	-	-
E	139.7	158.8	190.5	166.7	192.1	241.3	344.6	-	-	-
F	854	875	910	-	-	-	-	-	-	-
G	826	845	876	853	878	927	1030	-	-	-
H	511	532	567	-	-	-	-	-	-	-
J	483	502	533	510	535	584	688	-	-	-
K	195	215	250	-	-	-	-	-	-	-
N	265	285	315	295	320	370	470	-	-	-
L	304.8	304.8	304.8	312.7	312.7	317.5	322.3	-	-	-
O	700	740	960	800	960	1200	965	-	-	-
P	2150	2300	2400	2300	2400	2500	2600	-	-	-
R	533.0	533.0	533.0	-	-	-	-	-	-	-
S	432	914	1092	930	1095	1232	1559	-	-	-
T	-	-	-	-	-	-	-	-	-	-
U	-	-	-	-	-	-	-	-	-	-
V	-	-	-	-	-	-	-	-	-	-
W	864	914	1092	930	1095	1232	-	-	-	-
X	978	978	1092	994	1095	1232	1559	-	-	-
DIA. OF BOLTS	M30	M33	M42	M33	M42	M48	M72	-	-	-
No. OF BOLTS	16	24	20	24	20	20	16	-	-	-
RING No.	-	-	-	R69	R69	R70	R71	-	-	-
FLG. CLEARANCE	-	-	-	6	5	5	8	-	-	-

3			<p style="text-align: center;"><b>IRANIAN PETROLEUM STANDARD</b></p> <p style="text-align: center;">NO REVISION PERMITTED UNLESS APPROVED BY STANDARD ORGANIZATION</p>								
2											
1											
REV	DESCRIPTION	DATE	<table border="1" style="width: 100%;"> <tr> <td>18"(DN450) VALVES &amp; FITTINGS DIMENSION</td> <td>DATE</td> <td>DRAWING No.</td> <td>SHT/REV.</td> </tr> <tr> <td></td> <td></td> <td>IPS - D - PI - 106</td> <td>19/39</td> </tr> </table>	18"(DN450) VALVES & FITTINGS DIMENSION	DATE	DRAWING No.	SHT/REV.			IPS - D - PI - 106	19/39
18"(DN450) VALVES & FITTINGS DIMENSION	DATE	DRAWING No.	SHT/REV.								
		IPS - D - PI - 106	19/39								



PIPE  
90° ELL. 90° ELL.



90° ELL.



45° ELL.



RED.

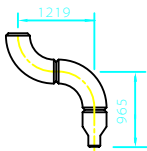


CAP

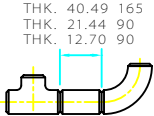


TEE

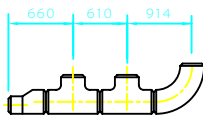
REDUCING TEE	
DN	M
x350	304.8
x300	295.1
x250	282.4
x200	273.1
x150	263.7



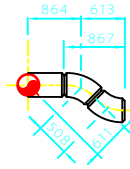
90° ELL. RED.



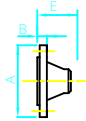
SHORT PIPE



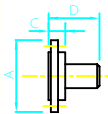
RED. TEE .TEE .90° ELL.



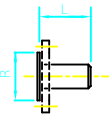
90° ELL. 45° ELL. 45° ELL.



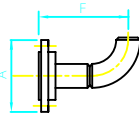
WN FLG.



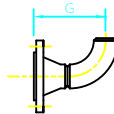
SO.SHORT PIPE



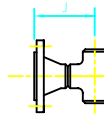
STUBEND



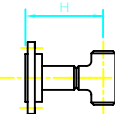
SO. SHORT PIPE  
90° ELBOW



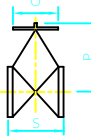
WN. 90° ELL.



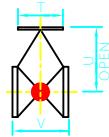
WN.EQ.TEE



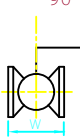
SO.SHORT PIPE  
EQUAL TEE



GATE



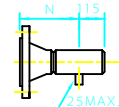
GLOBE



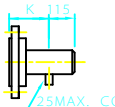
BALL



CHECK



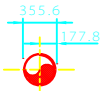
WN. SHORT PIPE



SO. SHORT PIPE

RATING MARK	150#		300#	600#	300#	600#	900#	1500#	2500#
	FF	RF	RF	RF	RJ	RJ	RJ	RJ	RJ
A	596.9		647.7	685.8	647.7	685.8	704.9	825.5	-
B	36.6		57.2	82.6	65.1	84.1	100.0	163.5	-
C	63.5		82.6	112.8	89	114.4	144.5	-	-
D	154		173	203	-	-	-	-	-
E	127.0		146.1	184.2	154.0	185.7	227.0	328.6	-
F	764		783	813	-	-	-	-	-
G	737		756	794	764	795	837	938	-
H	459		478	508	-	-	-	-	-
J	432		451	489	459	491	532	633	-
K	180		200	230	-	-	-	-	-
N	254		260	300	270	300	345	445	-
L	304.8		304.8	304.8	312.7	312.7	315.9	322.3	-
O	660		660	914	660	914	914	-	-
P	1919		1972	2305	1972	2305	2130	-	-
S	406		838	991	854	994	1140	1407	-
T	-		-	-	-	-	-	-	-
U	-		-	-	-	-	-	-	-
V	914		-	-	-	-	1102	-	-
W	762		838	991	854	994	1140	1407	-
X	864		864	991	879	994	1102	1407	-
DIA. OF BOLTS	M27		M33	M39	M33	M39	M42	M64	-
No. OF BOLTS	16		20	20	20	20	20	16	-
RING No.	-		-	-	R65	R65	R66	R67	-
FLG. CLEARANCE	-		-	-	6	5	4	8	-

3			IRANIAN PETROLEUM STANDARD			
2			NO REVISION PERMITTED UNLESS APPROVED BY STANDARD ORGANIZATION			
1			16"(DN400) VALVES & FITTINGS DIMENSION	DATE	DRAWING No.	SHT REV.
REV	DESCRIPTION	DATE			IPS - D - PI - 106	18/39



PIPE  
90° ELL. 90° ELL.



90° ELL.



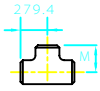
45° ELL.



RED.

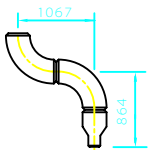


CAP

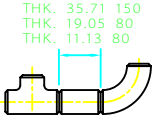


TEE

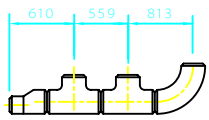
REDUCING TEE	
DN	M
x300	269.7
x250	257.0
x200	247.7
x150	238.3



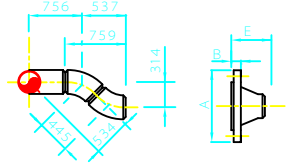
90° ELL. RED.



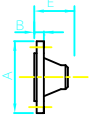
SHORT PIPE



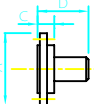
RED. TEE .TEE .90° ELL.



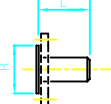
90° ELL. 45° ELL. 45° ELL.



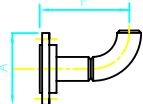
WN FLG.



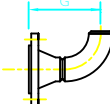
SO.SHORT PIPE



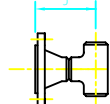
STUBEND



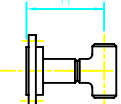
SO. SHORT PIPE  
90° ELBOW



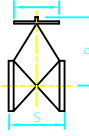
WN. 90° ELL.



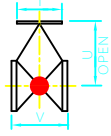
WN.EQ.TEE



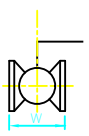
SO.SHORT PIPE  
EQUAL TEE



GATE



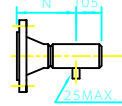
GLOBE



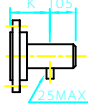
BALL



CHECK



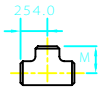
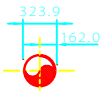
WN. SHORT PIPE



SO. SHORT PIPE

MARK	RATING		150#	300#	600#	300#	600#	900#	1500#	2500#
	FF	RF	RF	RF	RF	RJ	RJ	RJ	RJ	RJ
A	533.4		584.2	603.3	584.2	603.3	641.4	749.3	-	-
B	35.1		53.8	76.2	61.8	77.8	97.0	149.2	-	-
C	57.2		76.2	100.1	82.6	101.7	141.2	-	-	-
D	137		156	180	-	-	-	-	-	-
E	127.0		142.7	171.5	150.7	173.0	224.0	314.3	-	-
F	670		689	713	-	-	-	-	-	-
G	660		676	705	684	706	757	848	-	-
H	416		435	459	-	-	-	-	-	-
J	406		422	451	430	452	503	594	-	-
K	165		180	205	-	-	-	-	-	-
N	235		250	280	255	280	330	420	-	-
L	304.8		304.8	304.8	312.7	312.7	315.9	320.7	-	-
O	559		660	762	660	762	812	914	-	-
P	1667		1799	1892	1799	1892	2040	2337	-	-
R	425.5		457.2	457.2	457.2	457.2	466.9	489.0	-	-
S	381		762	889	778	892	1038	1276	-	-
T	-		-	-	-	-	-	-	-	-
U	-		-	-	-	-	-	-	-	-
V	787		-	-	-	-	1038	1276	-	-
W	686		762	889	778	892	1038	1276	-	-
X	787		838	889	854	892	1038	1276	-	-
DIA. OF BOLTS	M27		M30	M36	M30	M36	M39	M56	-	-
No. OF BOLTS	12		20	20	20	20	20	16	-	-
RING No.	-		-	-	R61	R61	R62	R63	-	-
FLG. CLEARANCE	-		-	-	6	5	4	6	-	-

3			<b>IRANIAN PETROLEUM STANDARD</b>			
2			NO REVISION PERMITTED UNLESS APPROVED BY STANDARD ORGANIZATION			
1			<b>14"(DN350) VALVES &amp; FITTINGS DIMENSION</b>	DATE	DRAWING No.	SHT/REV.
REV	DESCRIPTION	DATE			IPS - D - PI - 106	17/39



REDUCING TEE	
DN	M
x250	241.3
x200	228.6
x150	218.9
x125	215.9

PIPE  
90° ELL. 90° ELL.

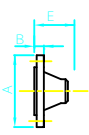
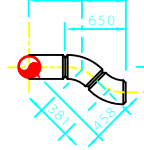
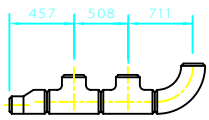
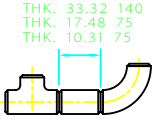
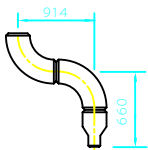
90° ELL.

45° ELL.

RED.

CAP

TEE



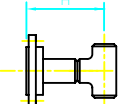
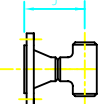
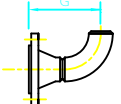
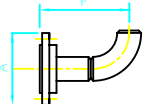
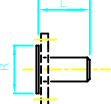
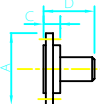
90° ELL. RED.

SHORT PIPE

RED. TEE .TEE .90° ELL.

90° ELL. 45° ELL. 45° ELL.

WN FLG.



SO.SHORT PIPE

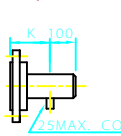
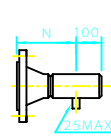
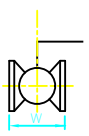
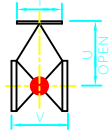
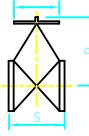
STUBEND

SO. SHORT PIPE 90° ELBOW

WN. 90° ELL.

WN.EQ.TEE

SO.SHORT PIPE EQUAL TEE



GATE

GLOBE

BALL

CHECK

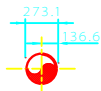
WN. SHORT PIPE

SO. SHORT PIPE

MARK	RATING 150#		300#	600#	300#	600#	900#	1500#	2500#
	FF	RF	RF	RF	RJ	RJ	RJ	RJ	RJ
A	482.6		520.7	558.8	520.7	558.8	609.6	673.1	762.0
B	31.8		50.8	72.9	58.7	74.5	87.2	138.2	201.6
C	55.6		73.2	98.3	79.5	99.9	125.3	195.1	271.5
D	131		148	173	-	-	-	-	-
E	114.3		130.0	161.8	138.0	163.4	208.1	296.7	481.0
F	588		605	630	-	-	-	-	-
G	572		587	619	595	621	665	754	938
H	385		402	427	-	-	-	-	-
J	368		384	416	392	417	462	551	735
K	155		175	200	-	-	-	-	-
N	215		230	265	240	265	310	400	585
L	254.0		254.0	254.0	261.9	261.9	261.9	268.3	271.5
O	457		559	762	559	762	762	914	-
P	1489		1614	1800	1614	1800	1865	2184	-
R	406.4		412.8	412.8	412.8	412.8	419.1	438.2	495.3
S	356		502	838	517	841	968	1146	1445
T	559		762	660	762	660	914	-	-
U	832		-	-	-	-	-	-	-
V	698		711	838	727	841	968	1146	1445
W	610		648	838	663	841	968	1146	1445
X	698		711	838	727	841	968	1146	1445
DIA. OF BOLTS		M24	M30	M33	M30	M33	M36	M52	M72
No. OF BOLTS		12	16	20	16	20	20	16	12
RING No.		-	-	-	R57	R57	R57	R58	R60
FLG. CLEARANCE		-	-	-	6	5	4	5	8

3			IRANIAN PETROLEUM STANDARD			
2			NO REVISION PERMITTED UNLESS APPROVED BY STANDARD ORGANIZATION			
1			12"(DN300) VALVES & FITTINGS DIMENSION	DATE	DRAWING No.	SHT/REV.
REV	DESCRIPTION	DATE			IPS - D - PI - 106	16/39





PIPE  
90° ELL. 90° ELL.



90° ELL.



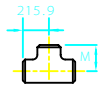
45° ELL.



RED.

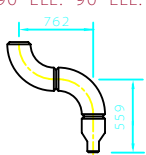


CAP

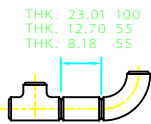


TEE

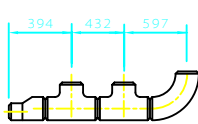
REDUCING TEE	
DN	M
X200	203.2
X150	193.6
X125	190.5
X100	184.2



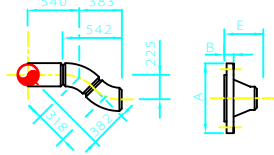
90° ELL. RED.



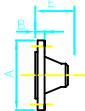
SHORT PIPE



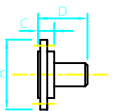
RED. TEE .90° ELL.



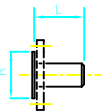
90° ELL. 45° ELL. 45° ELL.



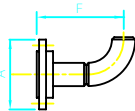
WN FLG.



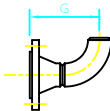
SO.SHORT PIPE STUBEND



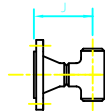
SO. SHORT PIPE 90° ELBOW



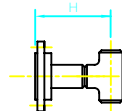
WN. 90° ELL.



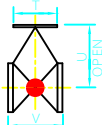
WN.EQ.TEE



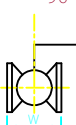
SO.SHORT PIPE EQUAL TEE



GATE



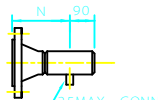
GLOBE



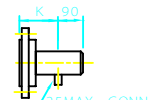
BALL



CHECK




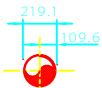
WN. SHORT PIPE



SO. SHORT PIPE

RATING MARK	150#		300#	600#	300#	600#	900#	1500#	2500#
	FF	RF	RF	RF	RJ	RJ	RJ	RJ	RJ
A	406.4	444.5	508.0	444.5	508.0	546.1	584.2	673.1	
B	30.2	47.8	69.9	55.7	71.4	77.8	119.1	182.6	
C	49.3	66.5	92.2	72.9	93.8	115.9	169.9	246	
D	114	132	157	-	-	-	-	-	
E	101.6	117.3	158.8	125.3	160.3	192.1	265.1	436.6	
F	495	513	538	-	-	-	-	-	
G	483	498	540	506	541	573	646	818	
H	330	348	373	-	-	-	-	-	
J	318	333	375	341	376	408	481	653	
K	140	160	185	-	-	-	-	-	
N	195	210	250	215	250	285	355	530	
L	254.0	254.0	254.0	261.9	261.9	261.9	265.1	271.5	
O	406	559	1320	559	1320	762	914	-	
P	1287	1413	1549	1413	1549	1624	1953	-	
R	330.2	355.6	355.6	355.6	355.6	362.0	371.3	425.4	
S	330	457	787	473	790	841	1000	1292	
T	457	660	914	660	914	914	914	-	
U	745	-	-	-	-	-	-	-	
V	622	622	787	638	790	841	1000	1292	
W	533	568	787	584	790	741	1000	1292	
X	622	622	787	638	790	841	1000	1292	
DIA. OF BOLTS	M24	M27	M33	M27	M33	M36	M48	M64	
No. OF BOLTS	12	16	16	16	16	16	12	12	
RING No.	-	-	-	R53	R53	R53	R54	R55	
FLG. CLEARANCE	-	-	-	6	5	4	4	6	

3			IRANIAN PETROLEUM STANDARD 		
2			NO REVISION PERMITTED UNLESS APPROVED BY STANDARD ORGANIZATION		
1			10" (DN250) VALVES & FITTINGS DIMENSION	DATE	DRAWING No. SHT/REV.
REV.	DESCRIPTION	DATE			IPS - D - PI - 106 15/39



REDUCING TEE	
DN	M
x150	168.1
x125	162.1
x100	155.4

PIPE  
90° ELL. 90° ELL.

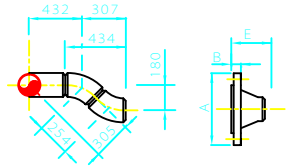
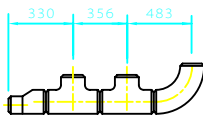
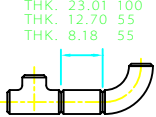
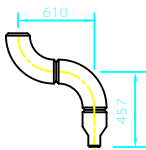
90° ELL.

45° ELL.

RED.

CAP

TEE

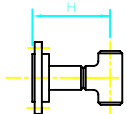
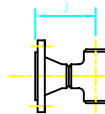
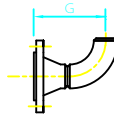
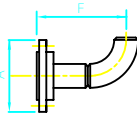
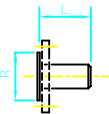
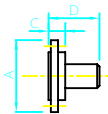


90° ELL. RED.

SHORT PIPE

RED. TEE .TEE .90° ELL.

90° ELL. 45° ELL. 45° ELL. WN FLG.



SO.SHORT PIPE

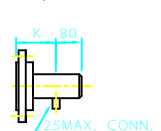
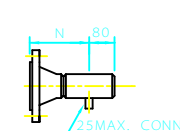
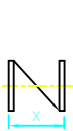
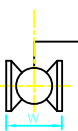
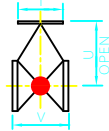
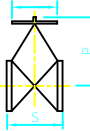
STUBEND

SO. SHORT PIPE  
90° ELBOW

WN. 90° ELL.

WN.EQ.TEE

SO.SHORT PIPE  
EQUAL TEE



GATE

GLOBE

BALL

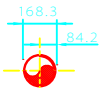
CHECK

WN. SHORT PIPE

SO. SHORT PIPE

RATING MARK	150#		300#	600#	300#	600#	900#	1500#	2500#
	FF	RF	RF	RF	RJ	RJ	RJ	RJ	RJ
A	342.9		381.0	419.1	381.0	419.1	469.9	482.6	552.5
B	28.4		41.1	62.0	49.1	63.6	71.4	103.1	141.3
C	44.5		62.0	82.6	68.8	84.1	109.5	153.9	192
D	100		117	138	-	-	-	-	-
E	101.6		111.2	139.7	119.2	141.3	170.0	224.0	331.8
F	405		422	443	-	-	-	-	-
G	406		416	445	424	446	475	529	637
H	278		295	316	-	-	-	-	-
J	279		289	318	297	319	348	402	510
K	125		145	165	-	-	-	-	-
N	185		195	220	200	225	250	305	415
L	203.2		203.2	203.2	211.1	211.1	211.1	214.3	217.5
O	356		432	559	432	559	660	762	-
P	1106		1190	1322	1190	1322	1295	1441	-
R	276.3		302.0	302.0	302.0	302.0	307.8	317.5	339.9
S	292		419	660	435	663	740	842	1038
T	406		559	508	559	508	762	762	-
U	618		967	1099	967	1099	1250	-	-
V	495		559	660	575	663	740	842	1038
W	457		502	660	517	663	740	842	1038
X	495		533	660	549	663	740	842	1038
DIA. OF BOLTS	M20		M24	M30	M24	M30	M36	M42	M52
No. OF BOLTS	8		12	12	12	12	12	12	12
RING No.	-		-	R49	R49	R49	R49	R50	R51
FLG. CLEARANCE	-		-	-	6	5	4	4	5

3			IRANIAN PETROLEUM STANDARD					
2			NO REVISION PERMITTED UNLESS APPROVED BY STANDARD ORGANIZATION					
1			8"(DN200) VALVES & FITTINGS DIMENSION		DATE	DRAWING No.	SHT	REV.
REV	DESCRIPTION	DATE				IPS - D - PI - 106	14	39



PIPE



90° ELL.



45° ELL.



RED.



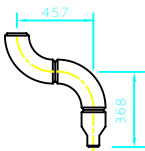
CAP



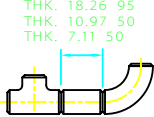
TEE

REDUCING TEE	
DN	M
x125	136.7
x100	130.0
x80	124.0
x65	120.7

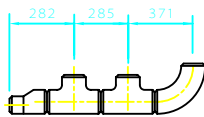
90° ELL. 90° ELL.



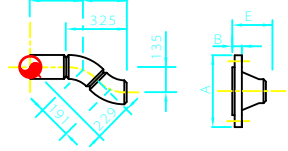
90° ELL. RED.



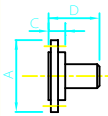
SHORT PIPE



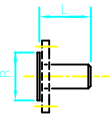
RED. TEE .TEE .90° ELL.



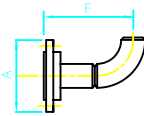
90° ELL. 45° ELL. 45° ELL. WN FLG.



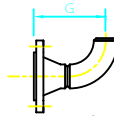
SO.SHORT PIPE



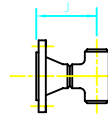
STUBEND



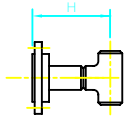
SO. SHORT PIPE 90° ELBOW



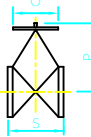
WN. 90° ELL.



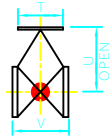
WN.EQ.TEE



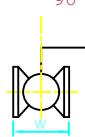
SO.SHORT PIPE EQUAL TEE



GATE



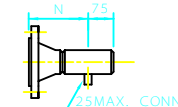
GLOBE



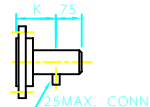
BALL



CHECK



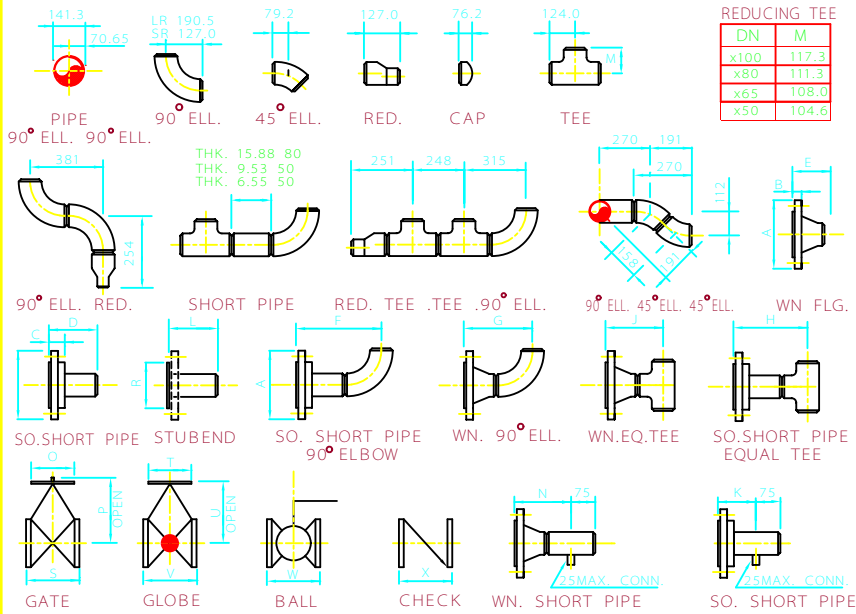
WN. SHORT PIPE



SO. SHORT PIPE

RATING MARK	150#		300#	600#	300#	600#	900#	1500#	2500#
	FF	RF	RF	RF	RJ	RJ	RJ	RJ	RJ
A	279.4		317.5	355.6	317.5	355.6	381.0	393.7	482.6
B	25.4		36.6	54.1	44.5	55.7	63.6	92.1	120.7
C	39.6		52.3	72.9	58.7	74.5	93.8	128.7	165.1
D	90		102	123	-	-	-	-	-
E	88.9		98.6	123.7	106.5	125.3	147.6	181.0	285.8
F	319		331	352	-	-	-	-	-
G	318		327	352	335	354	376	410	514
H	233		245	266	-	-	-	-	-
J	232		241	266	249	268	290	324	429
K	115		130	150	-	-	-	-	-
N	165		175	200	185	200	225	255	360
L	203.2		203.2	203.2	211.1	211.1	211.1	212.7	215.9
O	305		381	559	381	559	559	660	-
P	883		954	1083	954	1083	1175	1194	-
R	218.9		241.3	241.3	241.3	241.3	241.3	247.7	279.4
S	267		403	559	419	562	613	711	927
T	305		457	559	457	559	660	762	-
U	542		803	940	803	940	1029	1270	-
V	406		445	559	460	562	613	711	927
W	394		403	559	419	562	613	711	927
X	356		445	599	460	562	613	711	927
DI.A. OF BOLTS	M20		M20	M27	M20	M27	M30	M36	M52
No. OF BOLTS	8		12	12	12	12	12	12	8
RING No.	-		-	-	R45	R45	R45	R46	R47
FLG. CLEARANCE	-		-	-	6	5	4	3	4

3				<b>IRANIAN PETROLEUM STANDARD</b>			
2				NO REVISION PERMITTED UNLESS APPROVED BY STANDARD ORGANIZATION			
1				<b>6"(DN150) VALVES &amp; FITTINGS DIMENSION</b>	DATE	DRAWING No.	SHT/REV.
REV	DESCRIPTION	DATE				IPS - D - PI - 106	13/39

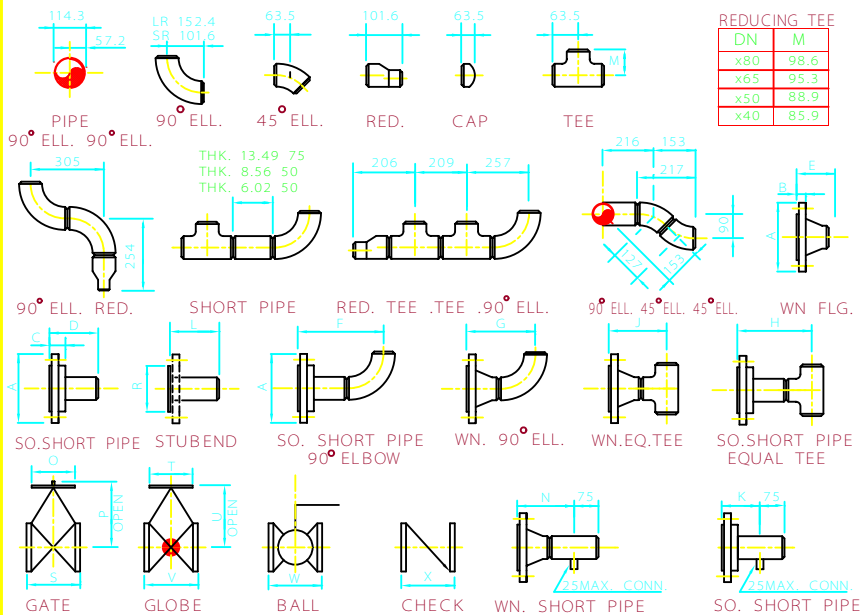


**REDUCING TEE**

DN	M
x100	117.3
x80	111.3
x65	108.0
x50	104.6

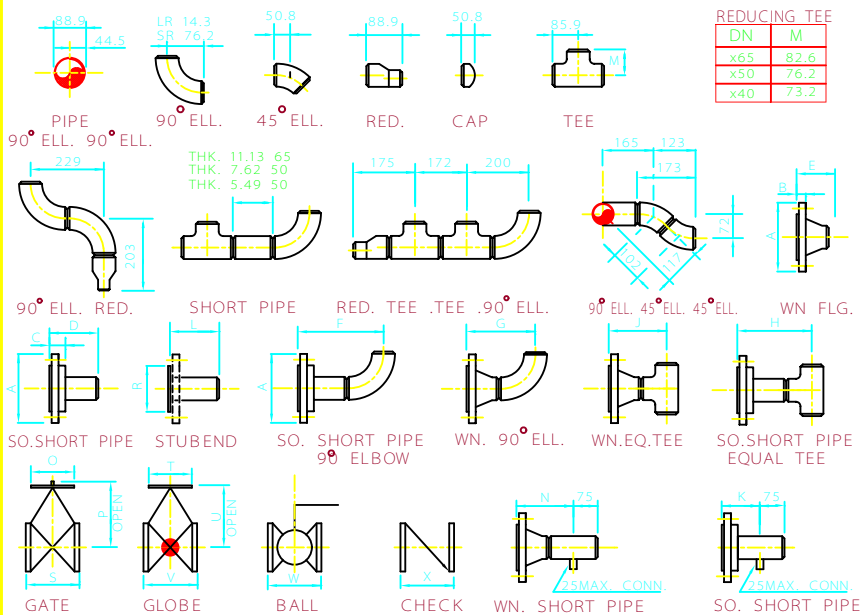
MARK	RATING		150#	300#	600#	300#	600#	900#	1500#	2500#
	FF	RF	RF	RF	RF	RJ	RJ	RJ	RJ	RJ
A	254.0	279.4	330.2	279.4	330.2	349.3	374.7	419.1	-	-
B	23.9	35.1	50.8	43.0	52.4	58.7	81.1	104.6	-	-
C	36.6	50.8	66.8	57.2	68.4	87.2	112.6	142.7	-	-
D	86	101	117	-	-	-	-	-	-	-
E	88.9	98.6	120.7	106.5	122.2	134.9	168.2	241.3	-	-
F	277	292	308	-	-	-	-	-	-	-
G	279	289	311	297	313	325	354	432	-	-
H	210	225	241	-	-	-	-	-	-	-
J	213	223	245	231	246	259	287	365	-	-
K	110	125	145	-	-	-	-	-	-	-
N	165	175	195	185	200	210	240	320	-	-
L	203.2	203.2	203.2	211.1	211.1	211.1	211.1	215.9	-	-
O	279	356	457	356	457	559	559	-	-	-
P	786	845	929	845	929	984	1060	-	-	-
R	185.0	185.0	185.0	209.6	209.6	215.9	228.6	241.3	-	-
S	254	381	508	397	511	562	676	806	-	-
T	279	406	559	406	559	559	559	-	-	-
U	529	705	810	705	810	829	936	-	-	-
V	356	400	508	416	511	562	676	806	-	-
W	-	-	-	-	-	-	-	-	-	-
X	330	400	508	416	511	562	676	806	-	-
DIA. OF BOLTS	M20	M20	M20	M20	M20	M27	M33	M39	M45	-
No. OF BOLTS	8	8	8	8	8	8	8	8	8	-
RING No.	-	-	-	R41	R41	R41	R44	R44	R42	-
FLG. CLEARANCE	-	-	-	6	5	4	3	4	-	-

3			<b>IRANIAN PETROLEUM STANDARD</b> NO REVISION PERMITTED UNLESS APPROVED BY STANDARD ORGANIZATION								
2											
1											
REV.	DESCRIPTION	DATE	<table border="1" style="width: 100%;"> <tr> <td>5" (DN125) VALVES &amp; FITTINGS DIMENSION</td> <td>DATE</td> <td>DRAWING No.</td> <td>SHT/REV.</td> </tr> <tr> <td></td> <td></td> <td>IPS - D - PI - 106</td> <td>12/39</td> </tr> </table>	5" (DN125) VALVES & FITTINGS DIMENSION	DATE	DRAWING No.	SHT/REV.			IPS - D - PI - 106	12/39
5" (DN125) VALVES & FITTINGS DIMENSION	DATE	DRAWING No.	SHT/REV.								
		IPS - D - PI - 106	12/39								



RATING MARK	150#		300#	600#	300#	600#	900#	1500#	2500#
	FF	RF	RF	RF	RJ	RJ	RJ	RJ	RJ
A	228.6	254.0	273.1	254.0	273.1	292.1	311.2	355.6	
B	23.9	31.8	44.5	39.7	46.0	52.4	61.8	87.3	
C	33.3	47.8	60.2	54.2	61.8	77.8	98.3	119.0	
D	83	98	110	-	-	-	-	-	-
E	76.2	85.9	108.0	93.8	109.5	122.2	131.9	201.6	
F	235	250	262	-	-	-	-	-	-
G	229	238	260	246	262	275	284	354	
H	188	203	215	-	-	-	-	-	-
J	181	190	213	198	214	227	237	306	
K	110	125	135	-	-	-	-	-	-
N	155	160	185	170	185	200	210	280	
L	152.4	152.4	152.4	160.3	160.3	160.3	160.3	163.5	
O	254	305	356	305	356	432	508	-	-
P	473	713	779	779	779	827	905	-	-
R	157.0	157.0	157.0	174.8	174.8	180.8	193.5	203.2	
S	229	305	432	321	435	460	549	683	
T	254	330	406	330	406	457	559	-	-
U	473	621	697	621	697	778	916	-	-
V	292	356	432	371	435	460	549	683	
W	229	305	432	321	435	460	549	683	
X	292	356	432	371	435	460	549	683	
DIA. OF BOLTS	M18	M20	M24	M20	M24	M30	M33	M39	
No. OF BOLTS	8	8	8	8	8	8	8	8	
RING No.	-	-	-	R37	R37	R37	R39	R38	
FLG. CLEARANCE	-	-	-	6	5	4	3	4	

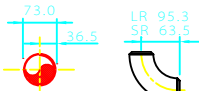
3			IRANIAN PETROLEUM STANDARD		
2			NO REVISION PERMITTED UNLESS APPROVED BY STANDARD ORGANIZATION		
1			4" (DN100) VALVES & FITTINGS DIMENSION		
REV	DESCRIPTION	DATE	DATE	DRAWING No.	SHT/REV.
				IPS - D - PI - 106	11/39



REDUCING TEE	
DN	M
x65	82.6
x50	76.2
x40	73.2

RATING MARK	150#		300#	600#	300#	600#	900#	1500#	2500#
	FF	RF	RF	RF	RJ	RJ	RJ	RJ	RJ
A	190.5	210.0	210.0	210.0	210.0	241.3	266.7	304.8	
B	23.9	28.4	38.1	36.4	39.7	46.0	55.7	76.1	
C	30.2	42.9	52.3	49.3	53.9	61.8	81.0	101.5	
D	80	93	102	-	-	-	-	-	
E	69.9	79.2	88.9	87.2	90.5	109.5	125.3	177.7	
F	194	207	216	-	-	-	-	-	
G	184	194	203	202	205	224	240	292	
H	166	179	188	-	-	-	-	-	
J	156	165	175	173	176	195	211	264	
K	105	120	130	-	-	-	-	-	
N	145	155	165	165	165	185	200	255	
L	152.4	152.4	152.4	160.3	160.3	160.3	162.0	160.3	
O	229	254	305	254	305	356	406	-	
P	522	638	672	638	672	716	775	-	
R	127.0	127.0	127.0	146.0	146.0	155.4	168.1	168.1	
S	203	282.4	356	298	359	384	473	584	
T	229	254	305	254	305	356	406	-	
U	397	521	573	521	573	678	705	-	
V	241	318	356	333	359	384	473	584	
W	203	282.4	356	298	359	384	473	584	
X	241	318	356	333	359	384	473	584	
DIA. OF BOLTS	M18	M20	M20	M20	M20	M24	M30	M33	
No. OF BOLTS	4	8	8	8	8	8	8	8	
RING No.	-	-	-	R31	R31	R31	R35	R32	
FLG. CLEARANCE	-	-	-	6	5	4	3	3	

3			IRANIAN PETROLEUM STANDARD		
2			NO REVISION PERMITTED UNLESS APPROVED BY STANDARD ORGANIZATION		
1			3" (DN80) VALVES & FITTINGS DIMENSION		
REV	DESCRIPTION	DATE	DATE	DRAWING No.	SHT/REV.
				IPS - D - PI - 106	10/39



PIPE



90° ELL.



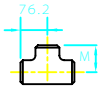
45° ELL.



RED.



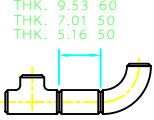
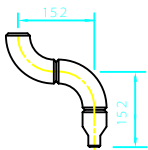
CAP



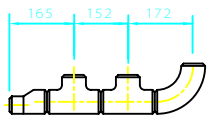
TEE

REDUCING TEE	
DN	M
x50	69.9
x40	66.5
x25	57.2

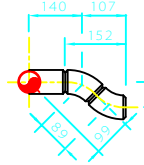
90° ELL. 90° ELL.



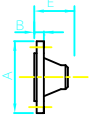
SHORT PIPE



RED. TEE . TEE .90° ELL.

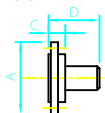


90° ELL. 45° ELL. 45° ELL.

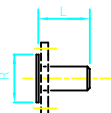


WN FLG.

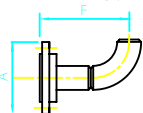
90° ELL. RED.



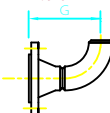
SO. SHORT PIPE



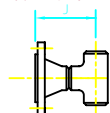
STUBEND



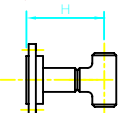
SO. SHORT PIPE 90° ELBOW



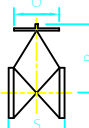
WN. 90° ELL.



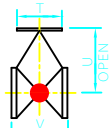
WN.EQ.TEE



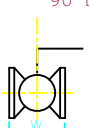
SO. SHORT PIPE EQUAL TEE



GATE



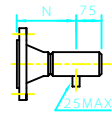
GLOBE



BALL



CHECK



WN. SHORT PIPE



SO. SHORT PIPE

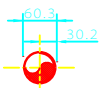
MARK	RATING		150#	300#	600#	300#	600#	900#	1500#	2500#
	FF	RF	RF	RF	RF	RJ	RJ	RJ	RJ	RJ
A	177.8		190.5	190.5	190.5	190.5	190.5	244.3	244.3	266.7
B	22.4		25.4	34.8	33.3	36.4	49.1	49.1	49.1	66.7
C	28.4		38.1	47.5	44.5	49.1	71.4	71.4	71.4	88.8
D	79		88	97	-	-	-	-	-	-
E	69.9		76.2	85.6	84.1	87.2	112.6	112.6	112.6	152.3
F	155		164	173	-	-	-	-	-	-
G	165		172	181	179	183	208	208	208	248
H	175		184	194	-	-	-	-	-	-
J	146		152	162	160	163	189	189	189	229
K	105		115	125	-	-	-	-	-	-
N	145		155	160	160	165	190	190	190	230
L	152.4		152.4	152.4	160.3	160.3	160.3	160.3	160.3	162
O	203		229	254	229	254	-	381	-	-
P	462		506	583	506	583	-	702	-	-
R	104.0		104.0	104.0	127.0	127.0	136.7	136.7	149.4	-
S	191		241	330	257	333	422	422	514	-
T	203		229	254	229	254	-	356	-	-
U	352.4		494	527	494	527	-	673	-	-
V	216		292	330	308	333	422	422	514	-
W	191		241	330	257	333	422	422	514	-
X	216		292	330	308	333	422	422	514	-
DIA. OF BOLTS	M18		M20	M20	M20	M20	M27	M27	M30	M30
No. OF BOLTS	4		8	8	8	8	8	8	8	8
RING No.	-		-	-	-	R26	R26	R27	R27	R28
FLG. CLEARANCE	-		-	-	-	6	5	3	3	3

3		
2		
1		
REV	DESCRIPTION	DATE

**IRANIAN PETROLEUM STANDARD**

NO REVISION PERMITTED UNLESS APPROVED BY STANDARD ORGANIZATION

2 1/2*(DN65) VALVES & FITTINGS DIMENSION	DATE	DRAWING No.	SHT/REV.
		IPS - D - PI - 106	9/39



PIPE  
90° ELL. 90° ELL.



90° ELL.



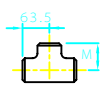
45° ELL.



RED.

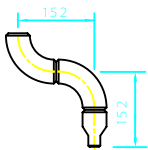


CAP

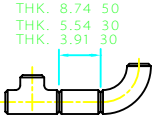


TEE

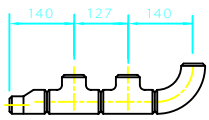
REDUCING TEE	
DN	M
x40	60.5
x25	50.8
x20	44.5



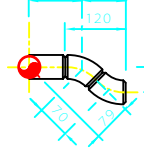
90° ELL. RED.



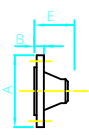
SHORT PIPE



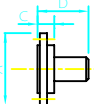
RED. TEE .TEE .90° ELL.



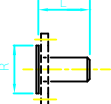
90° ELL. 45° ELL. 45° ELL.



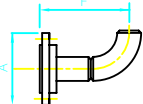
WN FLG.



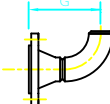
SO.SHORT PIPE



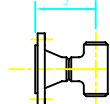
STUBEND



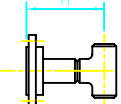
SO. SHORT PIPE  
90° ELBOW



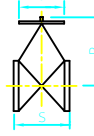
WN. 90° ELL.



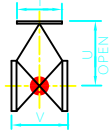
WN.EQ.TEE



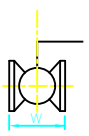
SO.SHORT PIPE  
EQUAL TEE



GATE



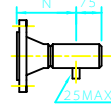
GLOBE



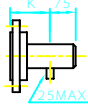
BALL



CHECK



WN. SHORT PIPE



SO. SHORT PIPE

RATING MARK	150#		300#		600#		300#		600#		900#		1500#		2500#	
	FF	RF	RF	RF	RF	RJ	RJ	RJ	RJ	RJ	RJ	RJ	RJ	RJ	RJ	
A	152.4	165.1	165.1	165.1	165.1	165.1	215.9	215.9	215.9	215.9	215.9	215.9	215.9	215.9	235	
B	19.1	22.4	31.8	30.3	33.3	46	46	46	46	46	46	46	46	46	58.7	
C	25.4	33.3	42.9	39.7	44.5	65	65	65	65	65	65	65	65	65	77.8	
D	55	63	73	-	-	-	-	-	-	-	-	-	-	-	-	
E	63.5	69.9	79.5	77.8	81.1	109.5	109.5	109.5	109.5	109.5	109.5	109.5	109.5	109.5	134.9	
F	131	139	149	-	-	-	-	-	-	-	-	-	-	-	-	
G	140	146	156	154	157	186	186	186	186	186	186	186	186	186	211	
H	139	147	157	-	-	-	-	-	-	-	-	-	-	-	-	
J	127	133	143	141	145	173	173	173	173	173	173	173	173	173	198	
K	80	90	100	-	-	-	-	-	-	-	-	-	-	-	-	
N	120	140	170	135	135	165	165	165	165	165	165	165	165	165	190	
L	152.4	152.4	152.4	160.3	160.3	160.3	160.3	160.3	160.3	160.3	160.3	160.3	160.3	160.3	160.3	
O	200	200	250	200	250	250	250	250	250	250	250	250	250	250	-	
P	388	413	435	413	435	562	562	562	562	562	562	562	562	562	-	
R	92.0	92.0	92.0	108.0	108.0	124.0	124.0	124.0	124.0	124.0	124.0	124.0	124.0	124.0	133.4	
S	178	216	292	232	295	371	371	371	371	371	371	371	371	371	454	
T	200	200	250	200	250	350	350	350	350	350	350	350	350	350	-	
U	342	327	505	327	505	500	500	500	500	500	500	500	500	500	-	
V	203	267	292	282	295	371	371	371	371	371	371	371	371	371	454	
W	178	216	292	232	295	371	371	371	371	371	371	371	371	371	454	
X	203	267	292	282	295	371	371	371	371	371	371	371	371	371	454	
DIA. OF BOLTS	M18	M18	M18	M18	M18	M18	M24	M24	M24	M24	M24	M24	M24	M24	M27	
No. OF BOLTS	4	8	8	8	8	8	8	8	8	8	8	8	8	8	8	
RING No.	-	-	-	-	R23	R23	R24	R24	R24	R24	R24	R24	R24	R24	R26	
FLG. CLEARANCE	-	-	-	-	6	5	3	3	3	3	3	3	3	3	3	

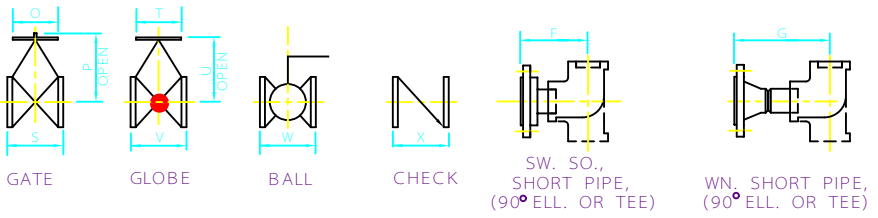
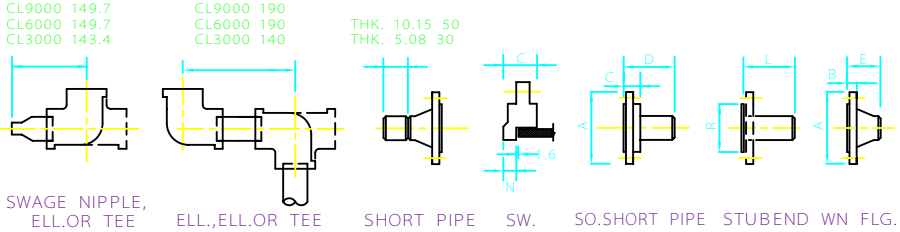
3		
2		
1		
REV	DESCRIPTION	DATE

**IRANIAN PETROLEUM STANDARD**

NO REVISION PERMITTED UNLESS APPROVED BY STANDARD ORGANIZATION

2" (DN50) VALVES & FITTINGS DIMENSION	DATE	DRAWING No.	SHT/REV.
		IPS - D - PI - 106	8/39

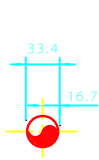




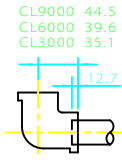
RATING MARK	150#		300#	600#	300#	600#	900#	1500#	2500#
	FF	RF	RF	RF	RJ	RJ	RJ	RJ	RJ
A	127	155.4	155.4	155.4	155.4	177.8	177.8	203.2	-
B	17.5	20.6	28.7	28.7	28.7	38.1	38.1	50.8	-
C	22.4	30.2	38.1	36.6	38.1	50.8	50.8	-	-
D	52	60	68	-	-	-	-	-	-
E	62	68.3	76.2	74.7	76.2	88.9	88.9	117.6	-
F	130	140	150	-	-	-	-	-	-
G	170	180	180	180	180	200	200	230	-
L	101.6	101.6	101.6	108.0	108.0	108.0	108.0	108.0	-
N	6.6	14.5	16.0	20.8	22.4	35.1	35.1	-	-
O	178	203	248	203	248	305	305	305	-
P	381	400	416	400	416	527	527	357	-
R	73.0	73.0	73.0	90.0	90.0	92.0	92.0	114.0	-
S	165	191*	241	204*	241	305	305	387	-
T	178	203	248	203	248	305	305	305	-
U	305	406	403	406	403	502	502	502	-
V	165*	229*	241	241*	241	305	305	387	-
W	165	191	241	203	241	305	-	-	-
X	165	229*	241	254*	241	305	305	387	-
DIA. OF BOLTS	M14	M20	M20	M20	M20	M27	M27	M30	-
NO. OF BOLTS	4	4	4	4	4	4	4	4	-
RING No.	-	-	-	R20	R20	R20	R20	R23	-
FLG. CLEARANCE	-	-	-	4	4	4	4	3	-

NOTE: DIMENSIONS MARKED WITH \* NOT RECORDED ON ANSI B16.10.

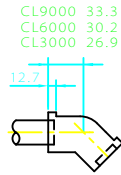
3			<b>IRANIAN PETROLEUM STANDARD</b>  NO REVISION PERMITTED UNLESS APPROVED BY STANDARD ORGANIZATION	DATE	DRAWING No.	SHT	REV.
2							
1							
REV	DESCRIPTION	DATE	1 1/2"(DN40) VALVES & FITTINGS DIMENSION		IPS - D - PI - 106	7	39



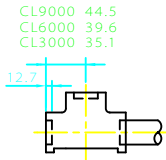
PIPE



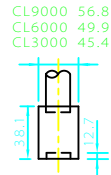
90° ELBOW



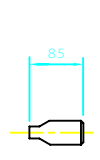
45° ELBOW



TEE



COUPLING

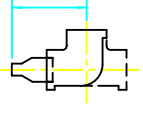


SWAGE NIPPLE

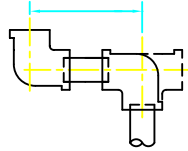
CL9000 118.4  
CL6000 113.5  
CL3000 109

CL9000 155  
CL6000 155  
CL3000 115

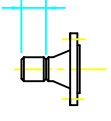
THK. 9.09 45  
THK. 4.55 30



SWAGE NIPPLE, ELL. OR TEE



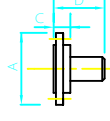
ELL., ELL. OR TEE



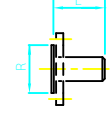
SHORT PIPE



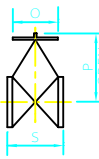
SW.



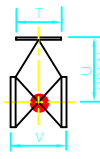
SO. SHORT PIPE



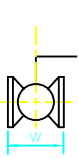
STUBEND WN. FLG.



GATE



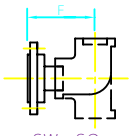
GLOBE



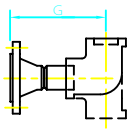
BALL



CHECK



SW. SO., SHORT PIPE, (90° ELL. OR TEE)

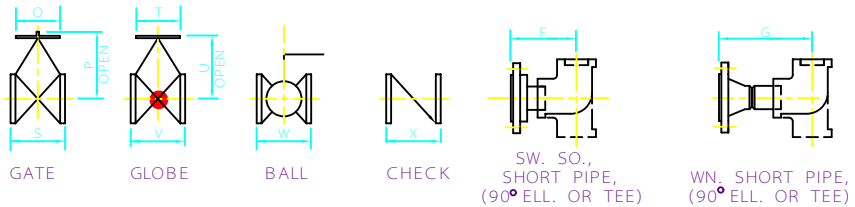
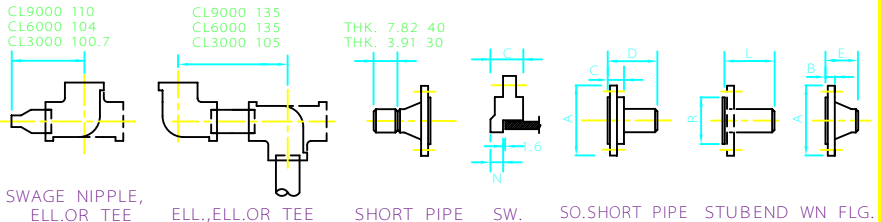
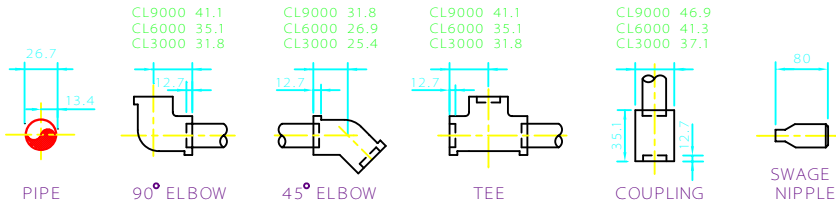


WN. SHORT PIPE, (90° ELL. OR TEE)

MARK	150#		300#	600#	300#	600#	900#	1500#	2500#
	FF	RF	RF	RF	RJ	RJ	RJ	RJ	RJ
A	108	124	124	124	124	124	149.4	149.4	158.8
B	14.2	17.5	23.9	23.9	23.9	23.9	34.8	34.8	41.4
C	17.5	26.9	33.3	33.3	33.3	33.3	47.5	47.5	-
D	48	57	63	-	-	-	-	-	-
E	55.6	62	68.3	68.3	68.3	68.3	79.5	79.5	95.3
F	110	120	130	-	-	-	-	-	-
G	150	160	160	160	160	160	180	180	190
L	101.6	101.6	101.6	108.0	108.0	108.0	108.0	108.0	108.0
N	4.8	14.2	14.2	20.6	20.6	20.6	34.8	34.8	-
O	127	152	178	152	178	178	203	203	203
P	267	294	319	294	319	319	397	397	279
R	51.0	51.0	51.0	70.0	70.0	70.0	71.3	71.3	83.0
S	127	165*	216	178*	216	216	254	254	308
T	121	127	178	127	178	178	203	203	248
U	229	254	329	254	329	329	410	410	278
V	127*	203*	216	216*	216	216	254	254	308
W	127	165	216	178	216	216	254	-	-
X	127	203*	216	229*	216	216	254	254	308
DIA. OF BOLTS	M14		M18	M18	M18	M18	M24	M24	M24
NO. OF BOLTS	4		4	4	4	4	4	4	4
RING No.	-		-	-	R16	R16	R16	R16	R18
FLG. CLEARANCE	-		-	-	4	4	4	4	4

NOTE: DIMENSIONS MARKED WITH \* NOT RECORDED ON ANSI B16.10.

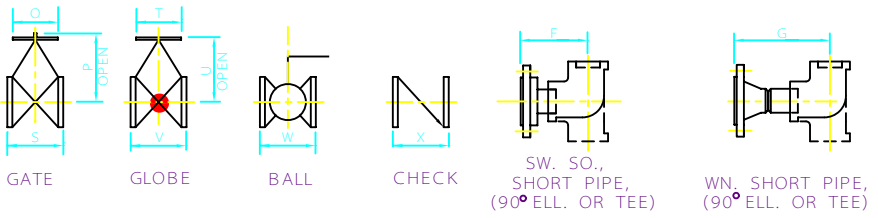
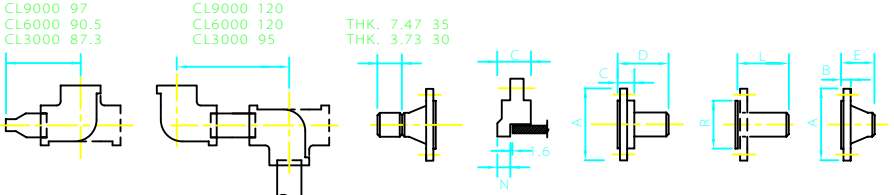
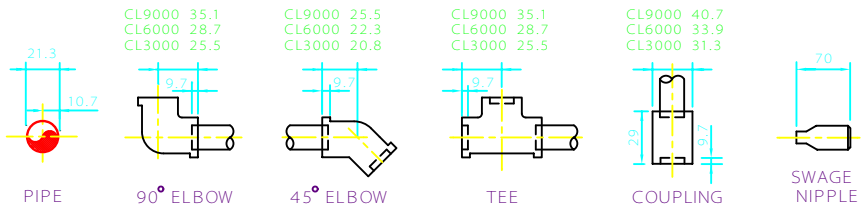
3			<p style="text-align: center;"><b>IRANIAN PETROLEUM STANDARD</b></p> <p style="text-align: center;">NO REVISION PERMITTED UNLESS APPROVED BY STANDARD ORGANIZATION</p>			
2				DATE	DRAWING No.	SHT/REV.
1						
REV	DESCRIPTION	DATE	1" (DN25) VALVES & FITTINGS DIMENSION	IPS - D - PI - 106	6/39	



RATING MARK	150#		300#	600#	300#	600#	900#	1500#	2500#
	FF	RF	RF	RF	RJ	RJ	RJ	RJ	RJ
A	98.6	117.3	117.3	117.3	117.3	130	130	139.7	
B	12.7	15.7	22.1	22.1	22.1	31.8	31.8	38.1	
C	15.7	25.4	31.8	31.8	31.8	41.4	41.4	-	
D	46	55	62	-	-	-	-	-	
E	52.3	57.2	63.5	63.5	63.5	76.2	76.2	85.6	
F	110	120	120	-	-	-	-	-	
G	140	150	160	160	160	170	170	180	
L	76.2	76.2	76.2	82.0	82.0	83.0	83.0	83.0	
N	4.6	14.2	14.2	20.6	20.6	30.2	30.2	-	
O	127	127	146	127	146	146	178	203	
P	241	267	289	267	289	190	360	279	
R	43.0	43.0	43.0	63.5	63.5	66.5	66.5	73.2	
S	117	152*	191	165*	191	229*	229*	273	
T	102	102	146	102	146	178	178	248	
U	191	216	297	216	297	381	381	278	
V	117*	178*	191	191*	191	229	229	273	
W	117	152	191	165	191	-	-	-	
X	117	178*	191	-	191	229	229	273	
DIA. OF BOLTS	M14	M18	M18	M18	M18	M20	M20	M20	
NO. OF BOLTS	4	4	4	4	4	4	4	4	
RING No.	-	-	-	R13	R13	R14	R14	R16	
FLG. CLEARANCE	-	-	-	4	4	4	4	4	

NOTE: DIMENSIONS MARKED WITH \* NOT RECORDED ON ANSI B16.10.

3			IRANIAN PETROLEUM STANDARD			
2			NO REVISION PERMITTED UNLESS APPROVED BY STANDARD ORGANIZATION			
1			3/4"(DN20) VALVES & FITTINGS DIMENSION	DATE	DRAWING No.	SHT/REV.
REV.	DESCRIPTION	DATE			IPS - D - PI - 106	5/39



RATING MARK	150#		300#	600#	300#	600#	900#	1500#	2500#
	FF	RF	RF	RF	RJ	RJ	RJ	RJ	RJ
A	88.9	95.3	95.3	95.3	95.3	95.3	120.7	120.7	133.3
B	11.2	14.2	20.6	20.6	19.8	19.8	28.7	28.7	36.6
C	15.7	22.4	28.7	28.7	27.9	27.9	38.1	38.1	-
D	46	52	59	59	-	-	-	-	-
E	47.8	52.3	58.7	58.7	57.9	57.9	66.0	66.0	79.0
F	100	110	110	110	-	-	-	-	-
G	130	140	140	140	140	140	150	150	160
L	76.2	76.2	76.2	76.2	82.0	82.0	83.0	83.0	83.0
N	6.1	12.7	12.7	12.7	18.3	18.3	28.4	28.4	-
O	102	114	121	121	114	121	-	178	-
P	203	241	267	267	241	267	-	310	-
R	35.0	35.0	35.0	35.0	50.8	50.8	50.8	60.4	-
S	108	140*	165	165	151*	305	-	-	264
T	102	102	121	121	102	121	178	178	178
U	168	203	268	268	203	268	289	333	230
V	108*	152*	165	165	163*	163.5	-	216	264
W	108	140	165	165	151	163.5	-	-	-
X	108	152*	165	165	163*	163.5	-	216	264
DIA. OF BOLTS	M14	M14	M14	M14	M14	M14	M20	M20	M20
NO. OF BOLTS	4	4	4	4	4	4	4	4	4
RING No.	-	-	-	-	R11	R11	R12	R12	R13
FLG. CLEARANCE	-	-	-	-	3	3	4	4	4

NOTE: DIMENSIONS MARKED WITH \* NOT RECORDED ON ANSI B16.10.

3			IRANIAN PETROLEUM STANDARD			
2			NO REVISION PERMITTED UNLESS APPROVED BY STANDARD ORGANIZATION			
1			1/2"(DN15) VALVES & FITTINGS DIMENSION	DATE	DRAWING No.	SHT/REV.
REV	DESCRIPTION	DATE			IPS - D - PI - 106	4/39

## GENERAL NOTES (CONTINUATION)

- 10- END TO END DIMENSIONS OF THE FOLLOWING VALVES SHALL BE OBTAINED FROM THE VALVE MANUFACTURER'S STANDARD SPECIFICATIONS.
- a) SOCKET WELDING END AND THREADED END VALVES WITH PRESSURE TEMPERATURE RATING OF CL 800 AND 1500.
  - b) BUTTWELDING END VALVES WITH PRESSURE TEMPERATURE RATING OF CL 800.
- 11- DIMENSIONS GIVEN FOR "O", "P", "T" AND "U" IN THESE STANDARD DRAWINGS SERVE AS A GUIDANCE.

C			IRANIAN PETROLEUM STANDARD			
B			NO REVISION PERMITTED UNLESS APPROVED BY STANDARD ORGANIZATION			
A			VALVES &	DATE	DRAWING No.	SHT/REV.
REV.	DESCRIPTION	DATE	FITTINGS DIMENSION		IPS - D - PI - 106	3/39

## GENERAL NOTES

- 1 - DIMENSIONS SHOWN ON THESE DRAWINGS AND TABLES FOR PARTS AND ASSEMBLES ARE BASED ON PROVEN STANDARDS SUCH AS ANSI, API & MSS.
- 2 - ALL THICKNESS VALUES AND DIMENSIONS ARE IN mm.
- 3 - DESIGNATION DN IN "SI" UNIT IS USED FOR NOMINAL DIAMETER.
- 4 - DIMENSIONS GIVEN FOR FITTING PLUS SPOOL PIECE OF PIPE ARE BASED ON THE FOLLOWING THICKNESS VALUES.
  - a) THICKNESS VALUES CORRESPONDING TO XXS AND LESS FOR NOMINAL SIZES 1/2"(DN 15) ~ 20"(DN 500).
  - b) THICKNESS OF 21 mm. OR LESS FOR NOMINAL SIZES 24"(DN 600) AND LARGER.  
FOR WALL THICKNESS EXCEEDING THE ABOVE MENTIONED VALUES CALCULATION SHALL BE MADE FOR EACH SPECIFIC CASE.
- 5 - GAP BETWEEN THE ABUTTING ENDS IN BUTT WELDING SHALL BE ADDED HOWEVER, IN THESE STANDARD DRAWINGS NO SPACE HAS BEEN ALLOWED BETWEEN THE ABUTTING ENDS.
- 6 - DIMENSIONS GIVEN IN THE TABLES ARE RELATED TO LONG RADIUS ELBOWS.  
WHEN SHORT RADIUS ELBOWS ARE USED CALCULATION SHALL BE MADE FOR THE DIMENSIONS IN EACH SPECIFIC CASE.
- 7 - DIMENSIONS FOR REDUCERS OF NOMINAL SIZES 50"(DN 1250) AND LARGER SHALL BE IN ACCORDANCE WITH SPECIFICATIONS OF THE PROJECT CONCERNED.
- 8 - ASSEMBLED DIMENSIONS SHOWN AS "H" AND "J" ARE LIMITED TO FLANGES AND TEES WITH NOMINAL SIZES 2"(DN 50) TO 24"(DN 600) THESE DIMENSIONS ARE APPLICABLE ONLY TO CASES WHERE EQUAL TEES ARE USED.  
WHEN USING REDUCING TEES CALCULATION SHALL BE MADE CONSIDERING DIMENSIONS "M" AND "D" OR "E". FURTHER, AN ADDITIONAL 20 mm. SHALL BE ALLOWED TO FACILITATE REMOVAL OF BELTS WHEN SLIP-ON FLANGE WITH NOMINAL SIZE 2 1/2"(DN 65) OR SMALLER ARE INVOLVED.
- 9 - IN CONVERTING FROM INCH TO MILLIMETER FOR PREPARATION OF THE TABLES, CORRECTION HAS BEEN MADE TO NEAREST FIRST DECIMAL POINT (i.e. SECOND DECIMAL POINT BELOW 5 IS OMITTED AND ABOVE THIS FIGURE IS ROUNDED UP TO THE NEXT FIGURE).

3			<b>IRANIAN PETROLEUM STANDARD</b>			
2			NO REVISION PERMITTED UNLESS APPROVED BY STANDARD ORGANIZATION			
1			VALVES & FITTINGS DIMENSION	DATE	DRAWING No.	SHT/REV.
REV.	DESCRIPTION	DATE			IPS - D - PI - 106	2/39

# VALVES & FITTINGS DIMENSION FOR PIPING DESIGN

THIS DWG. SUPERSEDES DWG. No. A-O-5033  
A-O-5034 , A-O-5036 & A-O-5038

3			IRANIAN PETROLEUM STANDARDS 			
2			NO REVISION PERMITTED UNLESS APPROVED BY STANDARD ORGANIZATION			
1			VALVES &	DATE	DRAWING No.	SHT/REV.
REV	DESCRIPTION	DATE	FITTINGS DIMENSION		IPS - D - PI - 106	1/39