



INDEX

INTRODUCTION	2
DUCTILE IRON PROPERTIES	
NORMATIVE REFERENCE AND LIMIT DEVIATIONS	4
COATING	5
VARIOUS JOINTS	
DUCTILE IRON PIPES WITH TYTON JOINT (T-TYPE)	
DUCTILE IRON FITTINGS	8-23
INSTALLATION INSTRUCTION	24-26



K-TOP INTRODUCTION

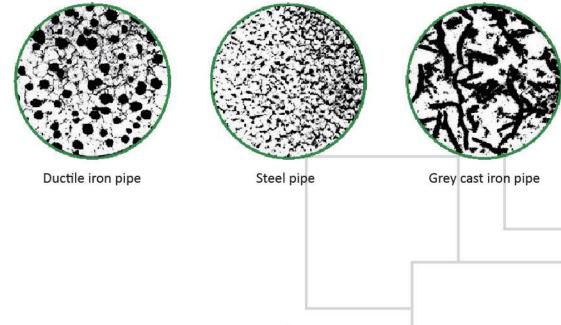
K-TOP ductile iron pipe, fittings and accessories are used for the transmission of potable water and across a number of areas such as sewerage water and flushing water systems.



BSEN 598

Ductile Iron Introduction

Ductile iron, also called ductile cast iron, spheroidal graphite iron, or nodular cast iron, is a type of cast iron invented in 1943. While most varieties of cast iron are brittle, ductile iron is much more flexible and elastic, due to its nodular graphite inclusions.



Ductile Iron Properties

Ductile iron are robust, can withstand mechanical stress and physical abuse, can be laid in unfavorable terrain and operating conditions and work without failure offering a long service life.

Mashaniaal Duanantiaa	C 1 1	11	Value		
Mechanical Properties	Symbol	Unit	Pipe	Fittings	
Minimum tensile strength	Rm	MPa	420	420	
Minimum yield strength	Rp0.2	MPa	300*	300	
Minimum elongation at break	A	(%)	10	5	
Maximum hardness		HBW	230	250	

* 270MPa are allowed with an elongation at break is greater than 12% for DN40 to DN1000 or greater than 10% for DN greater than DN1000.

Advantage of Ductile Iron Pipes and Fittings

- High tensile strength, good elastic module and excellent ductility, making it suitable for high stress
 applications and where pressure surge may be experienced.
- High corrosion resistance.
- Excellent hydraulic flow.
- High working pressure compared to other types of pipes.
- Ease of installation.
- Long lifetime.
- Can accommodate ground movement.

Normative Reference

The following specifications contain provisions which constitute provisions of K-TOP Ductile Iron Pipes and Fittings.

BS EN 598	Ductile iron pipes, fittings, accessories and their joints for sewerage applications.
BS EN 681-1	Elastomeric seals. Material requirement for pipe joint seals used in water and drainage application.
BS EN 1092-2	Circular flanges for pipes, valves, fittings and accessories, PN designated – Part 2: Cast iron flanges.
BS EN 197-1	Cement Part1: Composition, specifications and conformity criteria for common cements.
ISO 4633	Rubber seals joint rings for water supply, drainage and sewerage pipelines (Specification for materials).
ISO 8179-1	Ductile iron pipes, fittings, accessories and their joints. External zinc-based coating. – Part 1: Metallic zinc with finishing layer.
ISO 8179-2	Ductile iron pipes, fittings, accessories and their joints. External zinc-based coating. – Part 2: Zinc-rich paint.
ISO 6708	Pipe works components – definition and selection of DN (size).
ISO 4179	Ductile iron pipes for pressure and non-pressure pipelines – centrifugal cement mortar lining general requirements.

Limit Deviations of Pipes and Fittings

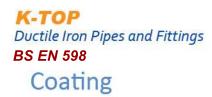
According to BS EN598- 2007, the limit deviations of socketed joints fittings and flanged joints fittings are +/-20mm and +/-10mm on length respectively. The details requirement are as follows: -

Type of castings	Limit deviations on length
	mm
Socket and spigot pipes (full length or shortened)	- 30/ + 70
Fittings for socketed joints	± 20
Pipes and fittings for flanged joints	± 10 *

Remarks:

^{1.} All drawings shown are for reference only (not in scale), the final size would be subject to mill production certificate according to manufacturer recommendations.

The list of products in this catalogue represent but not limited to all K-TOP ductile iron products, non-standard and design length items (those items do not mentioned at BS EN 598 standard) may be supplied upon request. Please contact your representative for assistance.



EXTERNAL COATING PROTECTION

The external coating of K-TOP ductile pipes and fittings comprise with:

BS EN 598 Pipes - Zinc rich paint coating having a minimum of 150g/m2, with red epoxy finishing layer.

BS EN 598 Fittings - Zinc coating with finishing layer.

INTERNAL COATING PROTECTION

The internal coating of K-TOP ductile pipes and fittings comprise a cement mortar lining of:

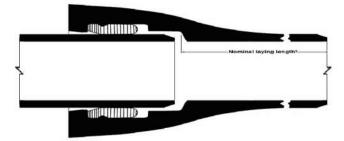
BS EN 598 Pipes and Fitting - High alumina cement mortar lining.

Various Joints

TYTON JOINT

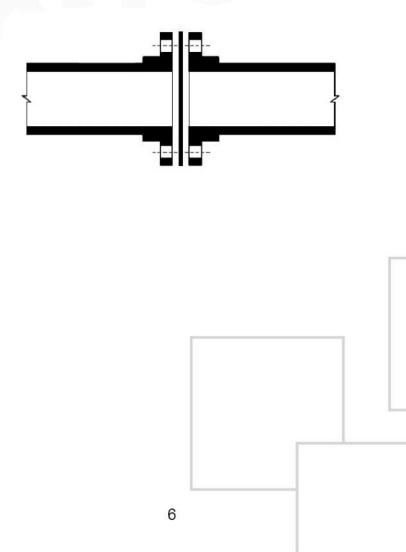
Tyton joint is simplicity itself. A single rubber sealing type joint that employs a circular rubber gasket assures a tight, permanent seal. This "push-on" type joint is simple to assemble and fast to install. Eliminates the needs for bolts, nuts and glands. The rubber gasket fits the inside contour of the bell which seats the gasket. The plain end of pipe is beveled to further ease assembly.

Tyton joint pipe is highly recommended wherever there is a need for an easily assembled tight joint for ductile iron pressure pipe. It is particularly well suited for water or other liquid services.



FLANGE JOINT

Over ground and specialized applications require retrained joints where flange joint would be recommended to use. Flange joint would be acted as rigid and self-restrained joint reducing the requirement of thrust blocks. Flanged pipe is ideal for over-ground, exposed installations, and vertical pipelines. It is widely used in industrial piping systems, water treatment plants, and sewerage treatment plants, and for other interior piping. Normally 3 types of flanged pipes would be manufactured: integrally cast-on flanged pipes, screwed-on flanged pipes and welded-on flanged pipes.



Ductile Iron Pipes with Tyton Joint (T-TYPE)

DETAILS

- For K9 and K12 class ductile iron pipes, the standard effective length should be 6m.
- All the K-Top pipes are stricity compliance with BS EN598 standard, the requirement shows as following table:-

Nominal Size Mean		Pressure Class		K12 Standard Requirment			K9 Standard Requirment		
DN	External - Diameter	Class	Minimum Wall Thickness	Nominal Wall Thickness	Minimum Wall Thickness	Total Weight Approximation	Nominal Wall Thickness	Minimum Wall Thickness	Total Weight Approximation
(mm)	(mm)		(mm)	(mm)	(mm)	(kg)	(mm)	(mm)	(kg)
80	98	100	4.70	6.96	5.58	88	5.22	3.92	77
100	118	100	4.70	7.20	5.80	110	5.40	4.10	95
150	170	100	5.90	7.80	6.35	175	5.85	4.55	144
200	222	64	5.00	8.40	6.90	249	6.30	4.80	194
250	274	64	6.10	9.00	7.45	331	6.75	5.20	255
300	326	64	7.30	9.60	8.00	422	7.20	5.60	323
350	378	64	8.50	10.20	8.55	522	7.65	6.00	403
400	429	50	7.50	10.80	9.10	630	8.10	6.40	482
450	480	50	8.40	11.40	9.65	748	8.55	6.80	575
500	532	50	9.30	12.00	10.20	872	9.00	7.20	669
600	635	50	11.10	13.20	11.30	1150	9.90	8.00	882
700	738	40	10.40	14.40	12.40	1464	10.80	8.80	1123
800	842	40	11.90	15.60	13.50	1816	11.70	9.60	1394
900	945	40	13.30	16.80	14.60	2202	12.60	10.40	1691
1000	1048	40	14.80	18.00	15.70	2625	13.50	11.20	2017
1100	1152	40	16.20	19.20	16.80	3085	14.40	12.00	2372
1200	1255	40	17.70	20.40	17.90	3585	15.30	12.80	2758
1400	1462	30	15.50	22.80	20.1	4746	17.10	14.40	3669
1500	1565	30	16.60	24.00	21.2	5389	18.00	15.20	4175
1600	1668	30	17.70	25.20	22.3	6027	18.90	16.00	4668

1. The mass shall be indicated for ductile iron layer of pipe only.

2. Flanged joints pipes are available upon request.

PIPE FLEXIBLE JOINTS ALLOWABLE ANGULAR DEFLECTION

The allowable angular deflection declared by K-TOP shall not be less than following data according to BS EN 598

- DN 80 to DN 300 : 3°30'
- DN 350 to DN 600 : 2°30'
- DN 700 or above : 1°30′

PIPE MARKING

K9 Pipe Body Marking: K-TOP DUCTILE IRON PIPE BSEN598 K9 DN(size)x6M K12 Pipe Body Marking: K-TOP DUCTILE IRON PIPE BSEN598 K12 DN(size)x6M

K-TOP DUCTILE IRON PIPE BSEN598 K9 DN400×6M

In general, ductile iron fittings are of designs similar to those of grey iron fittings and their ends are flanged or preferably, socket.

The greater mechanical strength of ductile iron has made it possible to improve the design of fittings and to reduce their dimensions. This makes easier to lay mains in congested urban areas of large towns, and resets in a reduction in the size of valve chambers, the dimensions of which depend mainly on the space occupied by the fittings.

Flanged socket pieces and straight collars have an internal diameter enlarged sufficiently to allow the adjacent pipes to slide through, facilitating and the longitudinal adjustment of pipeline sections.

The double-socket bends have lengths increasing in proportion to their angle of deviation, their bearing surface on the thrust blocks thus being adjusted to the size of the lateral forces which they exert on these thrust blocks.

The use of reducing flanges and double-flanged tapers has made it possible to simplify the range of flanged-branch tees the use of a combination of these fittings makes it possible to provide users with the greatest number of possibilities with the smallest number of types of castings.

The effect of this arrangement based on market statistics is to reduce stores both at the manufacture's works and at the customer's premises and also to make supply easier.

Double-socket tapers, used mainly for a reduction in diameter, have the shortest practicable lengths.

This catalogue is only for the reference, not for the base of any examination.



BSEN 598 TEE

K-TOP Ductile Iron Pipes and Fittings BS EN 598 Ductile Iron Fittings

WALL THICKNESS

The thickness of fittings (e) can be calculated as a function of nominal size DN by using the formula with a constant value for K as below:

e = K (0.5 + 0.001 DN)

e = nominal wall thickness K = class coefficient

DN = nominal size

Nominal Size DN	Mean External	Bai	rrel
DIN	Diameter	K12	K14
(mm)	(mm)	Nominal Wall Thickness (mm)	Nominal Wall Thickness (mm)
80	98	6.96	8.12
100	118	7.20	8.40
150	170	7.80	9.10
200	222	8.40	9.80
250	274	9.00	10.50
300	326	9.60	11.20
350	378	10.20	11.90
400	429	10.80	12.60
450	480	11.40	13.30
500	532	12.00	14.00

The minimum thickness of fittings is limited to 6.96mm.

Above 600mm fittings would upon request by confirmation

13.20

15.40

635

600

The K-Top fittings are compliance with BS EN 598 Class K12 and Class K14 standard:-All the fittings except Tee fittings comply to K12 class, specific Tee fittings comply to K14 class.

HYDROSTATIC PRESSURE TEST

The internal hydrostatic pressure shall be raised steadily until the requirement, which is maintained for a sufficient time to allow visual inspection of pipe barrel. The total duration of the pressure cycle shall be not less than 15 seconds.

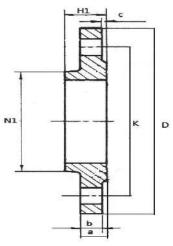
Nominal Diameter	HYDROSTATIC TEST PRESSURE (bar)
DN	Pipes and Fittings not centrifugally cast
80 ≤ DN ≤ 300	25
350 ≤ DN ≤ 600	16
700 ≤ DN	10

Remarks:

All drawings shown are for reference only (not in scale), the final size would be subject to mill production certificate according to manufacturer recommendations.
 The list of products in this catalogue represent but not limited to all K-TOP ductile iron products, non-standard and design length items (those items do not mentioned at BS EN 598 standard) may be supplied upon request. Please contact your representative for assistance.

Ductile Iron Fittings

FLANGE (SHORT NECK) - FOR SCREW ON



Sectional drawing of fitting

Dimension in mm **PN16** Nominal Diameter Bolt DN D b N1 H1 К Size а с No. 80 200 19.0 16.0 3 108 30 160 M16 8 100 220 19.0 16.0 3 134 30 180 M16 8 150 285 19.0 16.0 3 179 35 240 M20 8 200 340 20.0 17.0 3 238 38 295 M20 12 250 400 22.0 19.0 3 290 45 355 M24 12 20.5 300 455 24.5 4 342 50 410 M24 12 350 520 26.5 22.5 4 398 54 470 M24 16 400 580 28.0 24.0 4 445 57 525 M27 16 450 640 30.0 26.0 4 500 61 585 M27 20 500 31.5 556 64 650 20 715 27.5 4 M30 600 840 36.0 31.0 5 659 71 770 M33 20

*Dimensional measurement complied with BS EN 1092-2.

								Dimens	ion in r		
Nominal Diameter				PN25				Bolt			
DN	D	а	b	c	N1	H1	K	Size	No.		
80	200	19.0	16.0	3	108	30	160	M16	8		
100	235	19.0	16.0	3	134	30	190	M20	8		
150	300	20.0	17.0	3	179	35	250	M24	8		
200	350	22.0	19.0	3	238	38	310	M24	12		
250	425	24.5	21.5	3	290	45	370	M27	12		
300	485	27.5	23.5	4	342	50	430	M27	12		
350	555	30.0	26.0	4	398	54	490	M30	16		
400	620	32.0	28.0	4	445	57	550	M33	16		
450	670	34.5	30.5	4	500	61	600	M33	20		
500	730	36.5	32.5	4	556	64	660	M33	20		
600	845	42.0	37.0	5	659	71	770	M36	20		

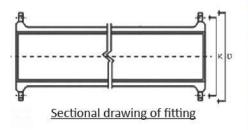
*Dimensional measurement complied with BS EN 1092-2.

Remarks:

1. All drawings shown are for reference only (not in scale), the final size would be subject to mill production certificate according to manufacturer recommendations.

2. The list of products in this catalogue represent but not limited to all K-TOP ductile iron products, non-standard and design length items (those items do not mentioned at BS EN 598 standard) may be supplied upon request. Please contact your representative for assistance.

CAST-ON DOUBLE FLANGE PIPE, PN16 (K12)



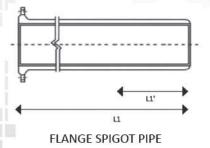
			Dimension in mr		
Nominal Diameter		PN16			
DN	D	K	Maximum Length		
80	200	160	1000		
100	220	180	1000		
150	285	240	1200		
200	340	295	1200		
250	400	355	2000		
300	455	410	2000		
350	520	470	2000		
400	580	525	2400		
450	640	585	2400		
500	715	650	2400		
600	840	770	2400		

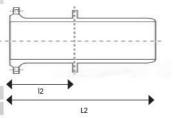
Above 600mm fittings would upon request by confirmation

FLANGE SPIGOT PIPE/FLANGE SPIGOT PIPE WITH PUDDLE, PN16 (K12)

Dimension in mm

PN16





Nominal Diameter **Flanged Spigot Flanged Spigot Pipe** DN Pipe with Puddle L1 L1' L2

Above 600mm fittings would upon request by confirmation

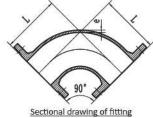
FLANGE SPIGOT PIPE WITH PUDDLE

Remarks:

All drawings shown are for reference only (not in scale), the final size would be subject to mill production certificate according to manufacturer recommendations.
 The list of products in this catalogue represent but not limited to all K-TOP ductile iron products, non-standard and design length items (those items do not mentioned at BS EN 598 standard) may be supplied upon request. Please contact your representative for assistance.

DOUBLE FLANGE BEND

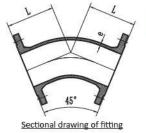
Double Flanged 90° Bend, PN16 (K12)



DN	e	L	
(mm)	(mm)	(mm)	
80	6.96	165	
100	7.20	180	
150	7.80	220	
200	8.40	260	
250	9.00	350	
300	9.60	400	
350	10.20	450	
400	10.80	500	
450	11.40	550	
500	12.00	600	
600	13.20	700	

Above 600mm fittings would upon request by confirmation

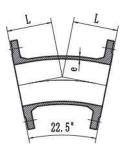
Double Flanged 45° Bend, PN16 (K12)



DN	e	L
(mm)	(mm)	(mm)
80	6.96	130
100	7.20	140
150	7.80	160
200	8.40	180
250	9.00	350
300	9.60	400
350	10.20	298
400	10.80	324
450	11.40	350
500	12.00	375
600	13.20	426

Above 600mm fittings would upon request by confirmation

Double Flanged 22.5° Bend, PN16 (K12)

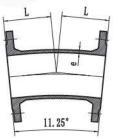


Sectional drawing of fitting

DN	e	L
(mm)	(mm)	(mm)
80	6.96	105
100	7.20	110
150	7.80	109
200	8.40	131
250	9.00	190
300	9.60	210
350	10.20	210
400	10.80	239
450	11.40	349
500	12.00	375
600	13.20	426

Above 600mm fittings would upon request by confirmation

Double Flanged 11.25° Bend, PN16 (K12)



Sectional drawing of fitting

DN	e	L
(mm)	(mm)	(mm)
80	6.96	113
100	7.20	115
150	7.80	113
200	8.40	132
250	9.00	165
300	9.60	175
350	10.20	191
400	10.80	205
450	11.40	349
500	12.00	375
600	13.20	426

Above 600mm fittings would upon request by confirmation

Remarks:

1. All drawings shown are for reference only (not in scale), the final size would be subject to mill production certificate according to manufacturer recommendations.

 The list of products in this catalogue represent but not limited to all K-TOP ductile iron products, non-standard and design length items (those items do not mentioned at BS EN 598 standard) may be supplied upon request. Please contact your representative for assistance.

K-TOP Ductile Iron Pipes and Fittings **BS EN 598 Ductile Iron Fittings**

DOUBLE FLANGE BEND

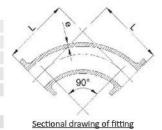
Double Flanged 90° Ductfoot Bend, PN16 (K12)



DN	e	L	c	d
(mm)	(mm)	(mm)	(mm)	(mm)
80	6.96	165	110	180
100	7.20	180	125	200
150	7.80	220	160	250
200	8.40	260	190	300
250	9.00	350	225	350
300	9.60	400	255	400
350	10.20	450	290	450
400	10.80	500	320	500
450	11.40	550	355	550
500	12.00	600	385	600
600	13.20	700	450	700

Above 600mm fittings would upon request by confirmation

Double Flanged Long Radius 90° Bend, PN16 (K12)



DN	e	L
(mm)	(mm)	(mm)
80	6.96	380
100	7.20	400
150	7.80	450
200	8.40	500
250	9.00	550
300	9.60	600
350	10.20	650
400	10.80	700
450	11.40	750
500	12.00	800
600	13.20	900

Above 600mm fittings would upon request by confirmation

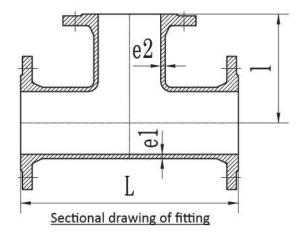
Remarks:

a. 1

1. All drawings shown are for reference only (not in scale), the final size would be subject to mill production certificate according to manufacturer recommendations. 2. The list of products in this catalogue represent but not limited to all K-TOP ductile iron products, non-standard and design length items (those items do not mentioned at BS EN 598 standard) may be supplied upon request. Please contact your representative for assistance.

Ductile Iron Fittings

ALL FLANGED TEE, PN16 (K14)



DN	e1	L	e2	1
(mm)	(mm)	(mm)	(mm)	(mm)
80 x 50	8.12	330	8.12	165
80 x 80	8.12	330	8.12	165
100 x 50	8.40	360	8.12	170
100 x 80	8.40	360	8.12	175
100 x 100	8.40	360	8.40	180
150 x 50	9.10	440	8.12	200
150 x 80	9.10	440	8.12	205
150 x 100	9.10	440	8.40	210
150 x 150	9.10	440	9.10	220
200 x 80	9.80	520	8.12	235
200 x 100	9.80	520	8.40	240
200 x 150	9.80	520	9.10	250
200 x 200	9.80	520	9.80	260
250 x 80	10.50	700	8.12	265
250 x 100	10.50	700	8.40	275
250 x 150	10.50	700	9.10	300
250 x 200	10.50	700	9.80	325
250 x 250	10.50	700	10.50	350
300 x 100	11.20	800	8.40	300
300 x 150	11.20	800	9.10	325
300 x 200	11.20	800	9.80	350
300 x 250	11.20	800	10.50	375
300 x 300	11.20	800	11.20	400
350 x 300	11.90	850	11.20	425
350 x 350	11.90	850	11.90	425
400 x 350	12.60	900	11.90	450
400 x 400	12.60	900	12.60	450
450 x 400	13.30	950	12.60	475
450 x 450	13.30	950	13.30	475
500 x 450	14.00	1000	13.30	500
500 x 500	14.00	1000	14.00	500
600 x 500	15.40	1100	14.00	550
600 x 600	15.40	1100	15.40	550

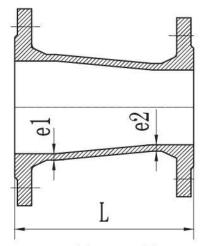
Above 600mm fittings would upon request by confirmation

Remarks:

1. All drawings shown are for reference only (not in scale), the final size would be subject to mill production certificate according to manufacturer recommendations.

 The list of products in this catalogue represent but not limited to all K-TOP ductile iron products, non-standard and design length items (those items do not mentioned at BS EN 598 standard) may be supplied upon request. Please contact your representative for assistance.

DOUBLE FLANGED TAPER, PN16 (K12)



Sectional drawing of fitting

DN	e1	e2	L
(mm)	(mm)	(mm)	(mm)
80 x 50	6.96	6.96	150
80 x 65	6.96	6.96	200
100 x 50	7.20	6.96	150
100 x 65	7.20	6.96	150
100 x 80	7.20	6.96	200
150 x 80	7.80	6.96	400
150 x 100	7.80	7.20	300
200 x 80	8.40	6.96	600
200 x 100	8.40	7.20	600
200 x 150	8.40	7.80	300
250 x 100	9.00	7.20	600
250 x 150	9.00	7.80	600
250 x 200	9.00	8.40	300
300 x 100	9.60	7.20	600
300 x 150	9.60	7.80	600
300 x 200	9.60	8.40	600
300 x 250	9.60	9.00	300
350 x 300	10.20	9.60	300
400 x 350	10.80	10.20	300
450 x 400	11.40	10.80	300
500 x 450	12.00	11.40	300
600 x 500	13.20	12.00	600

Above 600mm fittings would upon request by confirmation

Remarks:

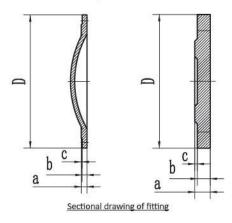
in the second

1

1. All drawings shown are for reference only (not in scale), the final size would be subject to mill production certificate according to manufacturer recommendations. The list of products in this catalogue represent but not limited to all K-TOP ductile iron products, non-standard and design length items (those items do not mentioned at RS EN sea standard) much seven list ways and all K-TOP ductile iron products. mentioned at BS EN 598 standard) may be supplied upon request. Please contact your representative for assistance.

Ductile Iron Fittings

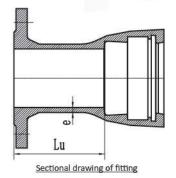
BLANK FLANGE, PN16



DN	D	а	b	C
(mm)	(mm)	(mm)	(mm)	(mm)
80	200	19.0	16.0	3
100	220	19.0	16.0	3
150	285	19.0	16.0	3
200	340	20.0	17.0	3
250	400	22.0	19.0	3
300	455	24.5	20.5	4
350 (Dome Shape)	520	26.5	22.5	4
400 (Dome Shape)	580	28.0	24.0	4
450 (Dome Shape)	640	30.0	26.0	4
500 (Dome Shape)	715	31.5	27.5	4
600 (Dome Shape)	840	36.0	31.0	5
700 (Dome Shape)	910	39.5	34.5	5
800 (Dome Shape)	1025	43.0	38.0	5
900 (Dome Shape)	1125	46.5	41.5	5
1000 (Dome Shape)	1255	50.0	45.0	5

Above 600mm fittings would upon request by confirmation

FLANGED SOCKET, PN16 (K12)



DN	e	Lu
(mm)	(mm)	(mm)
80	6.96	130
100	7.20	130
150	7.80	135
200	8.40	140
250	9.00	145
300	9.60	150
350	10.20	155
400	10.80	160
450	11.40	165
500	12.00	170
600	13.20	180

Above 600mm fittings would upon request by confirmation

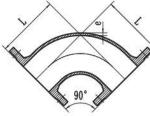
Remarks:

1. All drawings shown are for reference only (not in scale), the final size would be subject to mill production certificate according to manufacturer recommendations.

2. The list of products in this catalogue represent but not limited to all K-TOP ductile iron products, non-standard and design length items (those items do not mentioned at BS EN 598 standard) may be supplied upon request. Please contact your representative for assistance.

Ductile Iron Fittings

Double Flanged 90° Bend, PN25 (K12)

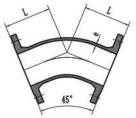


ectional	drawing	of fitting	

DN	e	L
(mm)	(mm)	(mm)
80	6.96	165
100	7.20	180
150	7.80	220
200	8.40	260
250	9.00	350
300	9.60	400
350	10.20	450
400	10.80	500
450	11.40	550
500	12.00	600
600	13.20	700

Above 600mm fittings would upon request by confirmation

Double Flanged 45° Bend, PN25 (K12)

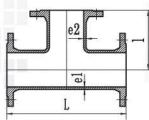


Sectional drawing of fitting

DN	e	L
(mm)	(mm)	(mm)
80	6.96	130
100	7.20	140
150	7.80	160
200	8.40	180
250	9.00	350
300	9.60	400
350	10.20	298
400	10.80	324
450	11.40	350
500	12.00	375
600	13.20	426

Above 600mm fittings would upon request by confirmation

All Flanged Tee, PN25 (K14)



Sectional drawing of fitting

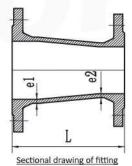
DN	e1	L	e2	1
(mm)	(mm)	(mm)	(mm)	(mm)
80 x 50	8.12	330	8.12	165
80 x 80	8.12	330	8.12	165
100 x 50	8.40	360	8.12	170
100 x 80	8.40	360	8.12	175
100 x 100	8.40	360	8.40	180
150 x 50	9.10	440	8.12	200
150 x 80	9.10	440	8.12	205
150 x 100	9.10	440	8.40	210
150 x 150	9.10	440	9.10	220
200 x 80	9.80	520	8.12	235
200 x 100	9.80	520	8.40	240
200 x 150	9.80	520	9.10	250
200 x 200	9.80	520	9.80	260
250 x 80	10.50	700	8.12	265
250 x 100	10.50	700	8.40	275
250 x 150	10.50	700	9.10	300
250 x 200	10.50	700	9.80	325
250 x 250	10.50	700	10.50	350
300 x 100	11.20	800	8.40	300
300 x 150	11.20	800	9.10	325
300 x 200	11.20	800	9.80	350
300 x 250	11.20	800	10.50	375
300 x 300	11.20	800	11.20	400
350 x 300	11.90	850	11.20	425
350 x 350	11.90	850	11.90	425
400 x 350	12.60	900	11.90	450
400 x 400	12.60	900	12.60	450
450 x 400	13.30	950	12.60	475
450 x 450	13.30	950	13.30	475
500 x 450	14.00	1000	13.30	500
500 x 500	14.00	1000	14.00	500
600 x 500	15.40	1100	14.00	550
600 x 600	15.40	1100	15.40	550

by confirmation

Double Flanged Taper, PN25 (K12)

DN

(mm)



80 x 50 6.96 6.96 150 80 x 65 6.96 6.96 200 100 x 50 7.20 6.96 150 7.20 150 100 x 65 6.96 100 x 80 7.20 6.96 200 6.96 7.80 150 x 80 400 150 x 100 7.80 7.20 300 8.40 200 x 80 6.96 600 200 x 100 8.40 7.20 600 200 x 150 8.40 7.80 300 9.00 7.20 600 250 x 100 250 x 150 9.00 7.80 600 9.00 300 250 x 200 8.40 300 x 100 9.60 7.20 600 300 x 150 9.60 7.80 600 300 x 200 9.60 8.40 600 300 x 250 9.60 9.00 300 350 x 300 10.20 9.60 300 400 x 350 10.80 10.20 300 450 x 400 11.40 10.80 300 500 x 450 12.00 11.40 300 600 x 500 13.20 12.00 600

e1

(mm)

e2

(mm)

L

(mm)

Above 600mm fittings would upon request by confirmation

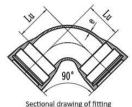
Remarks:

11

1. All drawings shown are for reference only (not in scale), the final size would be subject to mill production certificate according to manufacturer recommendations. 2. The list of products in this catalogue represent but not limited to all K-TOP ductile iron products, non-standard and design length items (those items do not mentioned at BS EN 598 standard) may be supplied upon request. Please contact your representative for assistance.

DOUBLE SOCKET BENDS

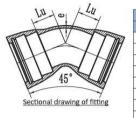
Double Socket 90° Bend (K12)



DN	e	Lu
(mm)	(mm)	(mm)
80	6.96	100
100	7.20	120
150	7.80	170
200	8.40	220
250	9.00	270
300	9.60	320
350	10.20	370
400	10.80	420
450	11.40	470
500	12.00	520
600	13.20	620

Above 600mm fittings would upon request by confirmation

Double Socket 45° Bend (K12)



DN	e	Lu
(mm)	(mm)	(mm)
80	6.96	55
100	7.20	65
150	7.80	85
200	8.40	110
250	9.00	130
300	9.60	150 170
350	10.20	
400	10.80	195
450	11.40	220
500	12.00	240
600	13.20	285

Above 600mm fittings would upon request by confirmation

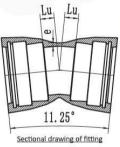
Double Socket 22.5° Bend (K12)



DN Lu e (mm) (mm) (mm) 6.96 80 40 100 7.20 40 150 7.80 55 200 8.40 65 250 9.00 75 300 9.60 85 10.20 350 95 10.80 400 110 11.40 450 120 500 12.00 130 600 13.20 150

Above 600mm fittings would upon request by confirmation

Double Socket 11.25° Bend (K12)



DN	e	Lu
(mm)	(mm)	(mm)
80	6.96	30
100	7.20	30
150	7.80	35
200	8.40	40
250	9.00	50 55
300	9.60	
350	10.20	60
400	10.80	65
450	11.40	70
500	12.00	75
600	13.20	85

Above 600mm fittings would upon request by confirmation

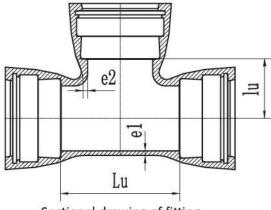
Remarks:

1. All drawings shown are for reference only (not in scale), the final size would be subject to mill production certificate according to manufacturer recommendations.

1. All drawings shown are for reference only (not in scale), the lima size would be subject to him production section as the standard and design length items (those items do not 2. The list of products in this catalogue represent but not limited to all K-TOP ductile iron products, non-standard and design length items (those items do not mentioned at BS EN 598 standard) may be supplied upon request. Please contact your representative for assistance.

Ductile Iron Fittings

ALL SOCKET TEE (K14)



Sectional drawing of fitting

DN	e1	Lü	e2	lu
(mm)	(mm)	(mm)	(mm)	(mm)
80 x 80	8.12	170	8.12	85
100 x 80	8.40	170	8.12	95
100 x 100	8.40	190	8.40	95
150 x 80	9.10	170	8.12	120
150 x 100	9.10	195	8.40	120
150 x 150	9.10	255	9.10	125
200 x 100	9.80	200	8.40	145
200 x 150	9.80	255	9.10	150
200 x 200	9.80	315	9.80	155
250 x 100	10.50	200	8.40	170
250 x 150	10.50	260	9.10	175
250 x 200	10.50	315	9.80	180
250 x 250	10.50	375	10.50	190
300 x 100	11.20	205	8.40	195
300 x 150	11.20	260	9.10	200
300 x 200	11.20	320	9.80	205
300 x 250	11.20	375	10.50	210
300 x 300	11.20	435	11.20	220
350 x 250	11.90	380	10.50	240
350 x 300	11.90	435	11.20	285
350 x 350	11.90	495	11.90	250
400 x 300	12.60	440	11.20	310
400 x 350	12.60	500	11.90	315
400 x 400	12.60	555	12.60	320
450 x 350	13.30	500	11.90	340
450 x 400	13.30	560	12.60	305
450 x 450	13.30	615	13.30	310
500 x 400	14.00	565	12.60	330
500 x 450	14.00	620	13.30	375
500 x 500	14.00	680	14.00	340
600 x 450	15.40	625	13.30	425
600 x 500	15.40	685	14.00	430
600 x 600	15.40	800	15.40	400

Above 600mm fittings would upon request by confirmation

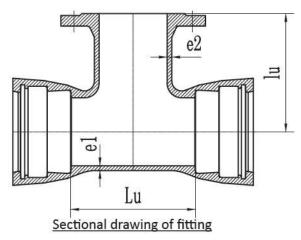
Remarks:

1

 All drawings shown are for reference only (not in scale), the final size would be subject to mill production certificate according to manufacturer recommendations.
 The list of products in this catalogue represent but not limited to all K-TOP ductile iron products, non-standard and design length items (those items do not mentioned at RS EN 598 standard) may be supplied upon request. Places context supersectation for each other interview. mentioned at BS EN 598 standard) may be supplied upon request. Please contact your representative for assistance.

Ductile Iron Fittings

DOUBLE SOCKET TEE WITH FLANGED BRANCH, PN16 (K14)



DN	e1	Lü	e2	lu
(mm)	(mm)	(mm)	(mm)	(mm)
80 x 80	8.12	170	8.12	160
100 x 80	8.40	170	8.12	175
100 x 100	8.40	190	8.40	180
150 x 100	9.10	195	8.40	210
150 x 150	9.10	255	9.10	220
200 x 100	9.80	200	8.40	240
200 x 150	9.80	255	9.10	250
200 x 200	9.80	315	9.80	260
250 x 150	10.50	260	9.10	280
250 x 200	10.50	315	9.80	290
250 x 250	10.50	375	10.50	300
300 x 200	11.20	320	9.80	320
300 x 250	11.20	375	10.50	330
300 x 300	11.20	435	11.20	340
350 x 250	11.90	380	10.50	360
350 x 300	11.90	435	11.20	370
350 x 350	11.90	495	11.90	380
400 x 300	12.60	440	11.20	400
400 x 350	12.60	500	11.90	410
400 x 400	12.60	555	12.60	420
450 x 350	13.30	500	11.90	440
450 x 400	13.30	560	12.60	450
450 x 450	13.30	615	13.30	460
500 x 400	14.00	565	12.60	480
500 x 450	14.00	620	13.30	490
500 x 500	14.00	680	14.00	500
600 x 450	15.40	625	13.30	550
600 x 500	15.40	685	14.00	560
600 x 600	15.40	800	15.40	580

Above 600mm fittings would upon request by confirmation

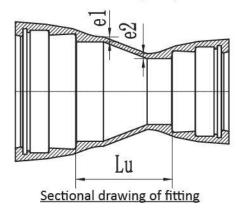
Remarks:

1. All drawings shown are for reference only (not in scale), the final size would be subject to mill production certificate according to manufacturer recommendations.

2. The list of products in this catalogue represent but not limited to all K-TOP ductile iron products, non-standard and design length items (those items do notmentioned at BS EN 598 standard) may be supplied upon request. Please contact your representative for assistance.

K-TOP Ductile Iron Pipes and Fittings **BS EN 598 Ductile Iron Fittings**

DOUBLE SOCKET TAPER (K12)



DN	e1	e2	Lu
(mm)	(mm)	(mm)	(mm)
100 x 80	7.20	6.96	90
150 x 80	7.80	6.96	190
150 x 100	7.80	7.20	150
200 x 80	8.40	6.96	250
200 x 100	8.40	7.20	250
200 x 150	8.40	7.80	150
250 x 100	9.00	7.20	250
250 x 150	9.00	7.80	250
250 x 200	9.00	8.40	150
300 x 100	9.60	7.20	450
300 x 150	9.60	7.80	350
300 x 200	9.60	8.40	250
300 x 250	9.60	9.00	150
350 x 200	10.20	8.40	360
350 x 250	10.20	9.00	260
350 x 300	10.20	9.60	160
400 x 250	10.80	9.00	360
400 x 300	10.80	9.60	260
400 x 350	10.80	10.20	160
450 x 300	11.40	9.60	360
450 x 350	11.40	10.20	260
450 x 400	11.40	10.80	160
500 x 350	12.00	10.20	360
500 x 400	12.00	10.80	260
500 x 450	12.00	11.40	160
600 x 400	13.20	10.80	460
600 x 450	13.20	11.40	360
600 x 500	13.20	12.00	260

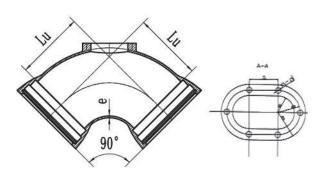
Above 600mm fittings would upon request by confirmation

Remarks:

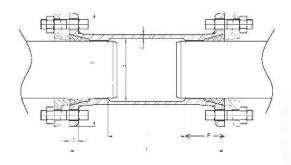
 All drawings shown are for reference only (not in scale), the final size would be subject to mill production certificate according to manufacturer recommendations.
 The list of products in this catalogue represent but not limited to all K-TOP ductile iron products, non-standard and design length items (those items do not mentioned at RS EN 598 standard) may be supplied upon request. Places context supervised for each of the supplied upon request. mentioned at BS EN 598 standard) may be supplied upon request. Please contact your representative for assistance.

OPTIONAL FITTINGS

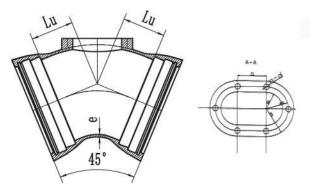
Double Socket Bend 90° With Access Door



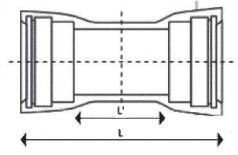
Mechanical Joint Collar



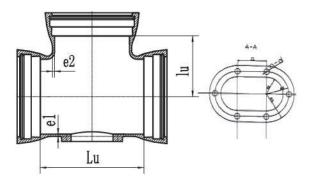
Double Socket Bend 45° With Access Door



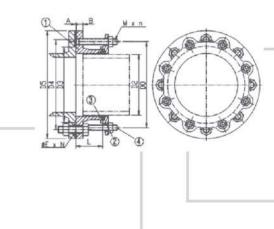
Double Socket Collar



All Socket Tee 90° With Access Door



Flange Adaptor



Remarks:

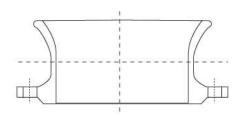
1. All drawings shown are for reference only (not in scale), the final size would be subject to mill production certificate according to manufacturer recommendations.

2. The list of products in this catalogue represent but not limited to all K-TOP ductile iron products, non-standard and design length items (those items do not mentioned at BS EN 598 standard) may be supplied upon request. Please contact your representative for assistance.

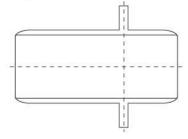
Ductile Iron Fittings

OPTIONAL FITTINGS

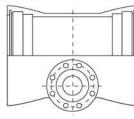
Bellmouth



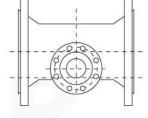




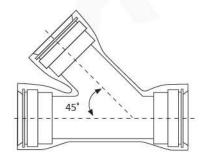
Level Invert Tee With Flange Branch

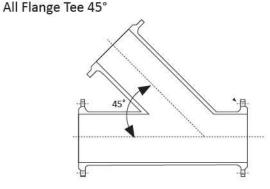


All Flange Level Invert Tee

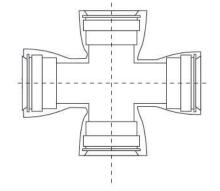




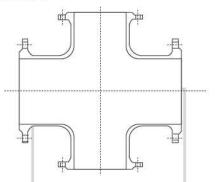




Cross Tee (Socket)



Cross Tee (Flange)



Remarks:

1. All drawings shown are for reference only (not in scale), the final size would be subject to mill production certificate according to manufacturer recommendations. 2. The list of products in this catalogue represent but not limited to all K-TOP ductile iron products, non-standard and design length items (those items do not mentioned at BS EN 500 standard) must be superlived and the standard and design length items (those items do not mentioned at BS EN 598 standard) may be supplied upon request. Please contact your representative for assistance.

Installation Instruction

TYTON JOINT PIPE

Assembly Instruction (1)

- 1. All foreign matter in the socket must be removed, i.e., mud, sand, cinders, gravel, pebbles, trash, frozen material, etc. The gasket seat should be thoroughly inspected to be certain it is clean. Foreign matter in the gasket seat may cause a leak. Do not lubricate the inside of the bell.
- 2. The gasket must be wiped clean with a clean cloth, flexed, and then placed into the socket with the rounded bulb end entering first. Looping the gasket in the initial insertion will facilitate seating the gasket heel evenly around the retainer seat. Smaller sizes require only one loop. With larger sizes it will be helpful to loop the gasket at the 12 o'clock and 6 o'clock positions. When installing TYTON JOINT pipe in subfreezing weather, the gaskets, prior to their use, must be kept at a temperature of at least 4°C by suitable means, such as storing in a heated area or keeping immersed in a tank of warm water. If the gaskets are kept in warm water, they should be dried before placing in the pipe socket.
- The seating of the gasket may be facilitated by flexing the gasket on one or two points depending on size and then pressing the bulge or bulges out.
- 4. The inner edge of the retaining heel must not protrude from the retaining bead of the socket.

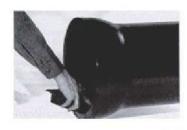
5. A thin film of pipe joint lubricant should be applied to the inside surface of gasket which will come in contact with plain end of the pipe.

(The WRAS approved lubricant OR BS 6920 lubricant should be used according to factory recommendation)

Remarks:

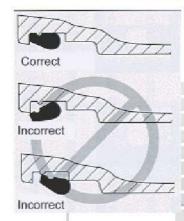
24

The list of products in this catalogue represent but not limited to all K-TOP ductile iron products, non-standard and design length items (those items do not mentioned at BS EN 598 standard) may be supplied upon request. Please contact your representative for assistance.











^{1.} All drawings shown are for reference only (not in scale), the final size would be subject to mill production certificate according to manufacturer recommendations.

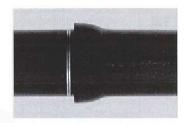
K-TOP Ductile Iron Pipes and Fittings BS EN 598 Installation Instruction

TYTON JOINT PIPE

Assembly Instruction (2)

- 6. Be sure that the plain end is beveled; square or sharp edges may damage or dislodge the gasket and cause a leak. The plain end of the pipe must be cleaned of all foreign matter on the outside from the end to the stripes. Frozen materials may cling to the pipe in cold weather and must be removed. In all cases, it is desirable to apply a thin film of lubricant to the outside of the plain end for about 3" back from the end. Do not allow the plain end to touch the ground or trench side after lubricating since foreign matter may adhere to the plain end and cause a leak. Lubricant other than that furnished with the pipe should not be used.
- 7. The plain end of the pipe should be in reasonably straight alignment and carefully entered into the socket until it just makes contact with the gasket. This is the starting position for the final assembly of the joint. Note the two painted stripes near plain end.
- 8. Joint assembly should then be completed by forcing the plain end of the entering pipe past the gasket (which is thereby compressed) until the plain end makes contact with the bottom of the socket. Note that the first painted stripe will have disappeared into the socket and the front edge of the second stripe will be approximately flush with the bell face. If assembly is not accomplished with the application of reasonable force by the methods indicated, the plain end of the pipe should be removed to check for the proper positioning of the gasket, adequate lubrication, and removal of foreign matter in the joint.
- 9. For joint assemblies 8" and smaller, socketing of the plain end may be accomplished in some cases by pushing against the face of the bell of the entering pipe with a crowbar or spade. Large sizes require a more powerful means.











The plain end of TYTON JOINT pipe is furnished beveled to ease its "sliding fit" with the gasket when the joint is assembled. When necessary to field-cut pipe, the cut end may be easily conditioned to readily accept the next joint.

Simply taper the outside cut-end of TYTON JOINT pipe at least 1/4" back, at an angle approximately 30 degrees with the center line of pipe. This can be done with a coarse file or portable grinder. The operation removes sharp or rough edges which could injure the gasket, and assures proper assembly.



Remarks:

All drawings shown are for reference only (not in scale), the final size would be subject to mill production certificate according to manufacturer recommendations.
 The list of products in this catalogue represent but not limited to all K-TOP ductile iron products, non-standard and design length items (those items do not mentioned at BS EN 598 standard) may be supplied upon request. Please contact your representative for assistance.

1. All drawings shown are for reference only (not in scale), the final size would be subject to mill production certificate according to manufacturer recommendations. 2. The list of products in this catalogue represent but not limited to all K-TOP ductile iron products, non-standard and design length items (those items do not

K-TOP Ductile Iron Pipes and Fittings **BS EN 598**

Installation Instruction

FLANGE JOINT PIPE AND FITTINGS

For quick reference, the highlights of the best installation practices are highlighted below:

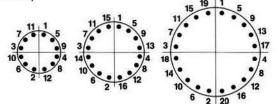
- 1. Make sure that the sealing surfaces are clean, dry and free of grease.
 - Check the quality of flange and gasket, ensure to remove any dust and grime.
 - Line up the flange pipes.
 - Leave a space between two flanges for placing gasket.
- 2. Position the gasket so that it is centered on the flange.
 - Slide the gasket into the gap between flanges, place all bolts, and fit its position with a rubber bend.
 - The gasket should be aligned and centered between the raised faces.
- 3. Lubricate the cable ties. Be sure to lubricate bolts, nuts and washers of all bearing surfaces.

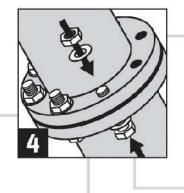
bolts follow one direction and as below position. Preferably using a torque wrench for requited torque. (Tightening torque vary for different type of bolt and nut used)

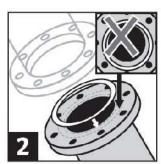
Assemble bolts, washers and nuts on the flange. Tightening

4.

Remarks:











Global Sole Distributor:

KEMBLA (HK) LIMITED

Office:

5/F., HENAN BUILDING, 90 JAFFE ROAD, WAN CHAI, HONG KONG TEL.: +852 2528 0999 FAX.: +852 2528 3113 E-mail: info@kembla.com.hk Website: www.kembla.com.hk