



PN 16
DN 80...200



System features

- Absolutely tension-proof thanks to form and non-positive connection
- Boltless connection
- High level of corrosion protection
- Short assembly times
- Low material needs
- Tension-free installation
- Variable use for cast iron and plastic pipes, thanks to simple exchange of the sealing rings

Materials

- Form parts made of ductile iron EN - JS 1030 (GGG-40)

Corrosion protection

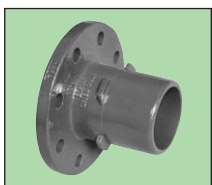
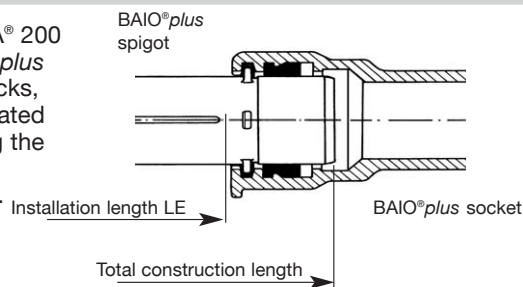
- Form parts epoxy coated, in acc. with GSK guidelines

Field of application

- Max. operating temperature for neutral liquids: 50°C
- Water pipe network

Total construction length "L" / installation length "LE"

- For spigot form pieces and BETA® 200 with spigots: when joining BAIO®plus system parts using inside interlocks, the installation length "LE" is created as the real length for determining the total space requirements of the respective construction measure.





Product features

- Resilient seated, based on EN 1171 (DIN 3352, part 13)
- Boltless, self-sealing bonnet connection
- With insert socket connection on both sides for cast iron or plastic pipes
- With insert socket on one side and spigot on the other for inside interlocking
- With flange on the one side and spigot on the other
- Low torque thanks to plastic sliding block on the wedge
- DVGW tested and registered
- Elastomere approved in acc. with W 270
- Final inspection test to EN 12266 (DIN 3230, part 4)

Materials

- Body, wedge and bonnet made of ductile iron GGG-40 EN - JS 1030 (GGG-40)
- Wedge fully rubber lined with EDPM

Corrosion protection

- Inside and outside epoxy coating, acc. to GSK guidelines



Field of application

- zulässige Betriebstemperatur für Wasser: 50°C
- Water supply lines
- Socket form and spigot suitable for tight connection with **VAG-BAIO®plus system parts** and with cast iron or plastic pipes

Alternatives

- Double function socket on both sides
 - with TYTON sealing rings
 - with GKS sealing rings
- Double function socket on one side, on the other side spigot
 - with TYTON sealing ring
 - with GKS sealing ring
- Flanged on one side, on the other side spigot



Accessories

- Operating key
- Assembly fittings
- Surface box plastic
- Surface box, plastic, adjustable
- Supporting plate, plastic
- Surface box, cast iron

For information about installation, commissioning, operating and maintenance we kindly refer to our **“Installation and Operating Instructions - Valves”**.

Field of application

Final Inspection Tests in acc. with EN 12266

DN	PN	Max. operating pressure	Max. operating temperature for neutral liquids	Test pressure with water in bar	
mm	bar	bar	°C	in body	in seat
80...300	16	16	50	24	17.6

We reserve the right to make technical changes and use similar or higher-quality materials. Drawings are non-binding

VAG BAIO®plus-System

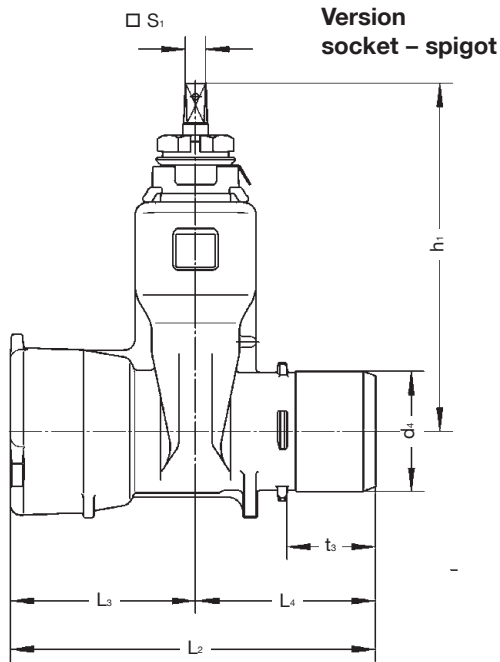
BETA® 200 Gate valve socket / socket

BETA® 200 Gate valve socket/spigot

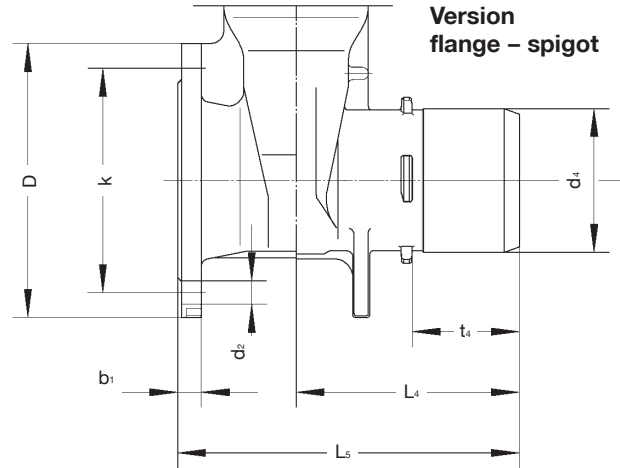
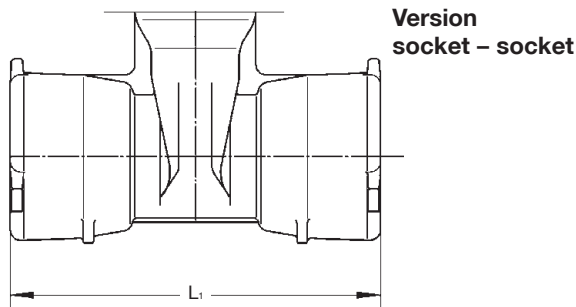
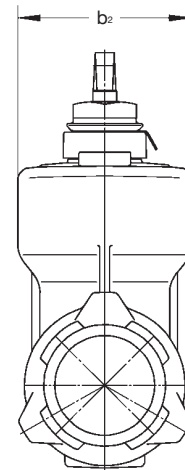
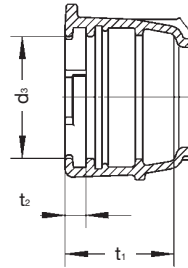
BETA® 200 Gate valve flange/spigot



Water



**Cross-section
BAIO® socket**



Dimensions in mm								
	DN	80	100	125	150	200	250	300
Construction dimensions	h ₁ approx.	280	334	379	417	523	633	713
	b ₂	160	174	220	245	320	396	471
Face to face	□ S ₁	17	19	19	24	24	27	27
	socket/spigot L ₁	333	355	374	387	420	–	–
	socket/socket L ₂	330	350	370	388	430	–	–
	L ₃	166.5	177.5	187	193.5	210	–	–
	L ₄	163.5	172.5	183	194.5	220	285	310
	flange/spigot L ₅	263	274	294	309	339	410	445
Socket and spigot end dimensions	t ₁	104.7	109	115	117	129.4	–	–
	t ₂	20	21	23	23	25	–	–
	t ₃	70	85	90	90	94	–	–
	t ₄	80	86	91	91.5	95	140	150
	d ₃	102.5	122	147.5	173.5	228.5	–	–
	d ₄	95.3	115.2	141.2	167.1	219	273	324.5
Flange connection dimensions acc. EN 1092-2 PN 16 (GGG-...)	D	200	220	250	285	340	400	455
	k	160	180	210	240	295	355	410
	No. of holes	8	8	8	8	12	12	12
	d ₂	19	19	19	23	23	28	28
	b ₁	19	19	19	19	20	22	24,5
Rev./stroke		20	20	25	30	34	43	51
Weight	socket/socket kg approx.	16.5	23	28.5	40	58	–	–
	socket/spigot kg approx.	16	22	28.5	39	58	–	–
	flange/spigot m³ approx..	16.8	21	33.5	43.5	60.2	102.4	140.5
Volume req.	socket/socket kg approx.	0.020	0.030	0.040	0.050	0.090	–	–
	socket/spigot kg approx.	0.020	0.030	0.040	0.050	0.090	–	–
	flange/spigot m³ approx.	0.022	0.029	0.044	0.059	0.088	0.164	0.230

We reserve the right to make technical changes and use similar or higher-quality materials. Drawings are non-binding



PN 16
DN 80...200

Product features

- MMB-form piece with assembled Beta[®] 200 gate valve for branches with 3 socket connections and shut-off branches
- Sockets designed as double function sockets for inside and outside interlocking,
- Final inspection test to EN 12266 (DIN 3230, part 4)

Gate Valve:

- DVGW tested and registered
- Elastomere approved in acc. with W 270

Materials

- Form parts, gate valve body and wedge made of ductile iron EN - JS 1030 (GGG-40)
- Wedge fully rubber lined with EDPM

Corrosion protection

- Inside and outside epoxy coating, acc. to GSK guidelines



Field of application

- Water supply lines
- Socket form and spigot suitable for tight connection with **VAG-BAIO[®]plus system parts** and with cast iron or plastic pipes

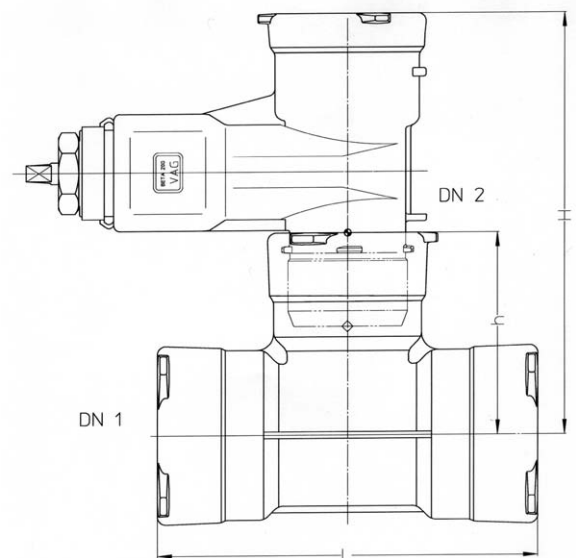
Alternatives

- Diameters of the passage socket and the branches are the same
- Diameter of the branch socket is reduced



Dimensions in mm					
DN 1	DN 2	L	h	H	Net weight kg
80	80	380	190	436	33
100	80	410	200	446	34
100	100	420	215	461	44
125	80	410	210	456	37
125	100	435	230	476	46
125	125	465	230	489	56
150	80	415	225	471	41
150	100	495	235	481	53
150	125	450	240	499	58
150	150	500	250	527	77
200	80	460	250	496	51
200	100	485	265	511	61
200	125	510	280	539	70
200	150	540	275	552	88
200	200	600	300	613	111

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Product features

- Positive locking, exterior interlock between the spigot pipe end and the BAIO®-socket
- Screwless
- 2-piece design
 - Tension ring of cast iron
 - Clamping ring of plastic and/or elastomer as separate part for cast iron, PVC and PE-HD pipes
- Can be easily disconnected
- Correct seat of seal can be verified while pipe is inserted

Materials

- Tension ring made of ductile cast iron EN - JS 1030 (GGG-40)
- Clamping rings made of plastic and/or elastomer

Corrosion protection

- Tension ring epoxy coated to GSK guidelines



RAL GÜTEZEICHEN

Alternatives

- For cast-iron pipes: Clamping ring made of blue plastic with integrated stainless steel hooks on the inside
 - For PVC pipes: Clamping ring made of grey plastic, with corundum coating
 - For PE-HD pipes: Clamping ring made of white plastic with circular milled inside
- Supporting sleeves are available to protect the PE-HD pipe against deformation by exterior forces

Note

To protect the PE-HD pipe against deformation by exterior forces, we recommend using supporting sleeves in the PE-HD pipe. When PE 100 is used, a supporting sleeve is mandatory.

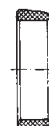
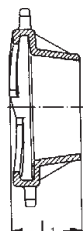
BAIO® stop-tension protection

Tension ring for
Cast iron pipe
PVC pipe
PE-HD pipe

Clamping ring, colour:
blue, PVC, inside with
NIRO hooks for cast
iron pipe

Clamping ring, colour:
grau PVC, inside with
NIRO hooks for PVC
pipe

Clamping ring, colour:
white, PVC, inside
circular milled for PE-HD
pipe



Dimensions	BAIO® STOP	
DN	L ₁	Net weight
80	88	3.5
100	91	4.0
125	91	5.0
150	96	5.5
200	107	9.0



Product features

- Positive locking interior interlock between weld-in end and BAIO® socket
- Weld-in end made of PE 100 with integrated interlocking ring and screwed on protection collar with twist protection
- Sealing of weld-in ends by commercially available TYTON rings
- Detachable connections

Materials

- Weld-in end made of PE 100
- Locking ring made of ductile cast iron EN - JS 1030 (GGG-40)
- Protection sleeve made of EPDM

Corrosion protection

- BAIO®PEi-cast iron parts epoxy coated to GSK guidelines



Alternatives

RAL GÜTEZEICHEN

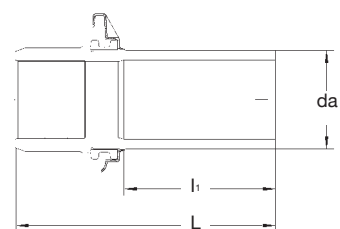
PE-HD weld-in end made of PE 100 (SDR 11 / PN 16) for welding to PE-HD pipes with all common welding methods (welding factor 005...010 MFI); with integrated supporting sleeve made of stainless steel; pipe wall strength SDR 11 / PE 100 / PN 16

On request

- SDR 17



Dimensions PEi set				
DN	da	L	I ₁	Net weight kg
80	40	240	100	0.90
80	50	250	110	1.00
80	63	255	120	1.00
80	90	266	150	1.20
100	110	293	170	1.70
100	125	320	190	1.90
125	140	339	200	2.80
150	160	354	210	3.50
150	180	402	250	4.30
200	200	385	240	7.00
200	225	406	250	8.50





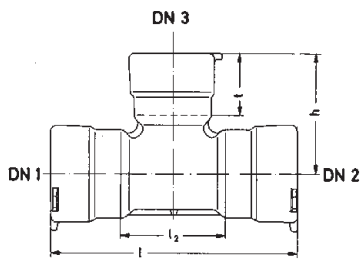
MMB-piece

Product feature

- Form piece for branches with 3 socket connections
- Sockets designed as double-function sockets for interior and exterior interlocking

Alternatives

- With identical diameters of passage sockets and branch socket
- With reduced diameter of the branch socket



Dimensions in mm						
Nominal diameter			h	l	l ₁	t Net weight
DN 1/2	DN 3					kg
80	80	190	380	170	105	14.0
100	80	200	410	200	105	15.5
100	100	215	420	180	120	18.0
125	80	210	410	200	105	18.5
125	100	230	435	195	120	19.5
125	125	230	465	215	125	22.5
150	80	225	415	205	105	22.0
150	100	235	430	190	120	26.5
150	125	240	450	200	125	25.0
150	150	250	500	250	125	28.0
200	80	250	460	250	105	32.5
200	100	265	485	245	120	35.0
200	125	280	510	260	125	37.0
200	150	275	540	290	125	39.0
200	200	300	600	310	145	47.0
250	80	280	550	220	105	48.0
250	100	305	570	240	120	49.0
250	250	375	750	415	165	73.0
300	80	330	615	250	165	65.0
300	100	330	615	250	120	65.0
300	300	425	845	480	180	101.0

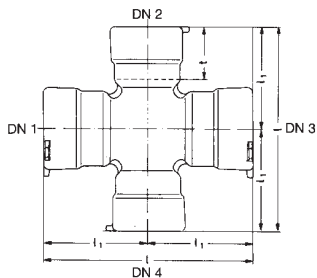
MTT-piece

Product feature

- Form piece for branches with 4 socket connections (cross joint)
- With 4 socket connections (cross joint)
- Sockets designed as double-function sockets for interior and exterior interlocking

Alternatives

- With identical diameters of all 4 branch sockets

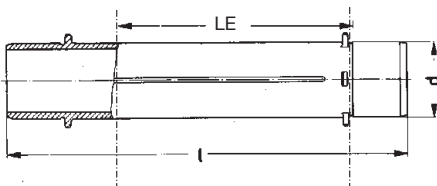


Dimensions in mm				
DN 1/2/3/4	l	l ₁	t socket depth	Net weight kg
80	390	195	105	16.5
100	420	210	120	19.5
125	465	232,5	125	27.0
150	500	250	125	33.0
200	600	300	145	57.0

S-piece

Product feature

- Connection form piece with spigot ends on either side - Spigot end with interlocking cams



Dimensions in mm				
Nominal diameter DN	d	l	LE	Net weight kg
80	98	215	45	4.0
80	98	500	330	8.0
100	118	255	45	5.5
100	118	500	290	10.5
125	144	270	50	7.0
150	170	270	50	8.5
200	222	270	50	14.0

We reserve the right to make technical changes and use similar or higher-quality materials. Drawings are non-binding



SM-piece

Product features

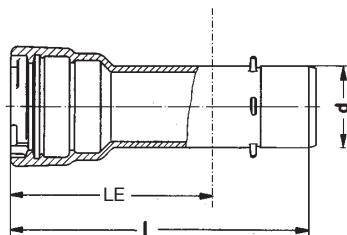
- Spigot-socket form piece
- Socket designed for interior and exterior interlocking
- Spigot end with interlocking cams for interior interlocking
- Used for hydrant extensions as a transition piece to PE-HD pipes with other diameters and to other extensions in the VAG BAIO[®]plus-System

Alternatives

- DN 80 in 3 different construction lengths for the extension of hydrants
- Other DN available as general extensions for connection to the VAG BAIO[®]plus system
- DN 100 / da 125 and DN 150 / da 180 as transition piece for PE-HD pipes with corresponding outer diameters

Attention

When used as extension piece for underfloor hydrants and venting assemblies DN 80, the dirt protection and distortion protection are included



Dimensions in mm				
Nominal diameter DN	d	l	LE	Net weight kg
80	98	230	150	5.0
80	98	280	200	6.0
80	98	380	300	7.0
100	118	465	360	10.5
100 (PE-Rohr DA 125)	118	290	195	8.5
125	144	480	380	14.0
150	170	480	370	16.0
150 (PE-Rohr DA 180)	170	300	190	10.5
200	222	510	395	20.0

MMN-piece (hydrant quarter bend)

Product features

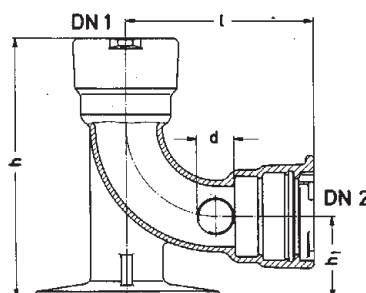
- With socket connection on the side for connection with VAG BAIO[®]plus-system parts or pipe spigot
- With socket connection on the top for connection with a BAIO[®] spigot-end hydrant
- Sockets designed for interior and exterior interlocking
- Also available with side outlets for house connections

Alternatives

- Without threaded outlet on the side
- With G1½" threaded outlet on both sides

Attention

In case only one threaded side outlet is used, the other side needs to be closed using a commercially available plug.



Dimensions in mm						
Nominal diameter DN 1	Nominal diameter DN 2	d ^{*)}	h	h ₁	l	Net weight kg
80	80	1½"	330	120	215	16.0
80	100	1½"	330	280	260	17.0

^{*)} with side outlet



EN-piece (hydrant quarter bend)

Product feature

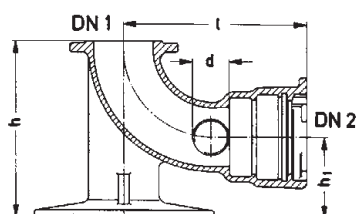
- With socket connection on the side for connection with VAG BAIO®plus-system parts or pipe spigot
 - Sockets designed for interior and exterior interlocking
- With flange connection on the top for connection with flange hydrants
- Also available with side outlets for house connections

Alternatives

- Without threaded outlet on the side
- With G1½" threaded outlet on both sides

Attention

In case only one threaded side outlet is used, the other side needs to be closed using a commercially available plug.



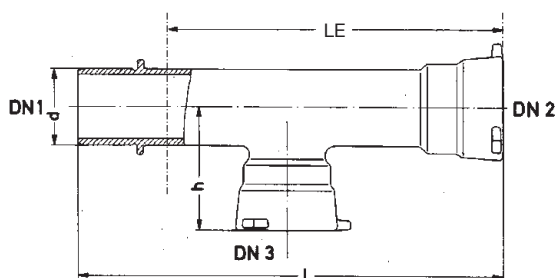
Dimensions in mm						
Nominal diameter		d *)	h	h ₁	l	Net weight kg
DN 1	DN 2					
80	80	1½"	260	120	215	16.5
80	100	1½"	305		275	18.0
100	100	1½"	305		260	19.5

*)with side outlet

B-piece

Product feature

- Form part for branches, mainly as a connection for hydrants directly mounted to the pipeline
 - In bore direction with socket - spigot connection DN 100...200
 - With DN 80 spigot connection in the branch
 - Socket designed as double-function socket for interior and exterior interlock
 - Spigot end with interlocking cams

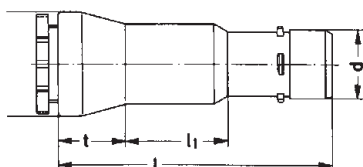


Dimensions in mm						
Nominal diameter		d	h	l	LE	Net weight kg
DN 1/2	DN 3					
100	80	118	200	850	745	25.5
150	80	170	225	850	745	35.0
200	80	222	250	850	745	53.0

EMS-piece

Product feature

- For repair / replacement or later extension of pipework parts
- With spigot connection with interlocking cams on one side for interior interlocking
- With UNION screw socket on the other side for connection to cast iron pipes; with green UNION sealing ring also suitable for use with plastic pipes
- Can be shifted on the spigot end of the pipe
- Tension protection available on request



Dimensions in mm					
DN	d	l	l ₁	t	Net weight kg
80	98	555	275	85	13.5
100	118	580	280	90	14.5
125	144	615	290	90	20.0
150	170	615	285	95	24.0
200	222	695	350	100	35.0
250	274	730	380	105	55.0
300	326	750	395	110	71.0

We reserve the right to make technical changes and use similar or higher-quality materials. Drawings are non-binding



U-piece

Product features

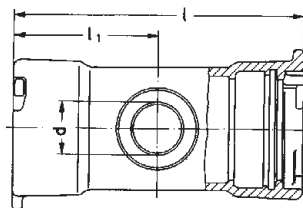
- Connection form piece with socket on both sides
- Sockets designed as double-function sockets for interior and exterior interlocking; equipped with a stop to prevent the pipe being pushed through

Alternatives

- Without threaded outlet on the side
- With G2" threaded outlet on one side

On request

- With G2" threaded outlet on both sides

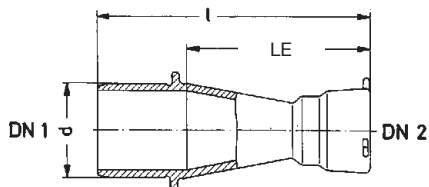


Dimensions in mm				
DN	d	l	l ₁	Net weight kg
DN 1/2/3/4				
80	IG 2"	290	145	8.5
100	IG 2"	300	150	10
125	IG 2"	315	157,5	12.5
150	IG 2"	310	105	14.0
200	IG 2"	330	165	22

R-/RU-piece (reducers)

Product features

- Reducer from the spigot to the socket side (R-piece)
- Reducer from the socket to the spigot side (RU-piece)
- Both form pieces with double-function socket for interior and exterior interlocking and spigot end with interlocking cams

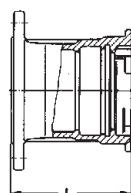


Dimensions in mm						
DN	d		l	LE	Net weight	kg
	DN 1	DN 2				
RU	80	125	98	420	335	10.0
RU	100	125	118	325	220	10.0
RU	100	150	118	395	290	13.0
	100	80	118	310	210	7.0
	125	80	144	370	260	9.0
	125	100	144	340	230	10.0
	150	80	170	420	305	12.0
	150	100	170	395	280	11.5
	150	125	170	335	220	12.0
	200	100	222	500	385	17.5
	200	125	222	435	320	17.5
	200	150	222	410	295	18.0
	250	200	274	475	310	30.5
	300	200	326	625	450	49.0
	300	250	326	525	350	40.0

EU-piece

Product features

- One side flange connection
- One the other side double-function socket for interior and exterior interlock



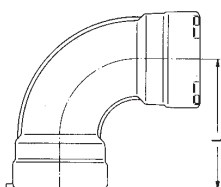
Dimensions in mm		
Nominal diameter	l	Net weight
80	170	8.0
100	175	9.0
125	180	11.5
150	180	13.0
200 PN 10, PN 16	185	19.0



MMQ-piece

Product feature

- Quarter bend (90°)
- With socket connection on both sides to DIN 28603
- For exterior interlocking with BAIO® tension protectors
- With double-function socket

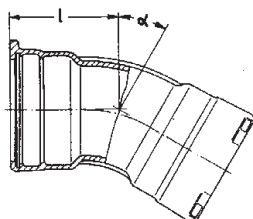


Dimensions in mm		
DN 1/2/3/4	l	Net weight kg
80	155	9.0
100	176	12.0
125	195	17.0
150	196	22.0
200	242	36.0

MMK-piece

Product feature

- Bend with bending angles of 11° / 22° / 30° / 45°
- With socket connections to DIN 28603 on both sides
- For exterior interlocking with BAIO® tension protectors
- With double-function socket

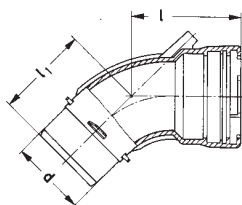


Dimensions in mm			
DN	α	l	Net weight kg
80	45°	155	8.0
100		175	11.0
125		195	14.0
150		195	18.0
200		240	30.0
80	30°	145	8.0
100		160	11.0
125		175	14.0
150		185	18.0
200		190	28.0
80	22°	140	8.0
100		155	11.0
125		170	13.0
150		175	17.0
200		195	26.0
80	11°	135	8.0
100		150	10.0
125		155	13.0
150		165	17.1
200		195	25.5

MSK-piece

Product feature

- 45°- bend
- Possible by means of interlocking several pipe cross-overs
- Spigot end with interlocking cams on one side
- Double-function socket for interior and exterior interlocking



Dimensions in mm				
Nominal diameter DN 1	d	l ₁	l	Net weight kg
80	98	185	135	6.0
100	118	205	165	10.0
125	144	215	175	12.5
150	170	230	190	15.0
200	222	355	330	25.0

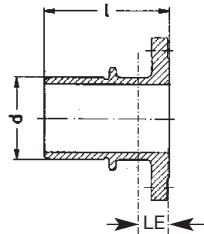
We reserve the right to make technical changes and use similar or higher-quality materials. Drawings are non-binding



F-piece

Product features

- Flanged on the one side
- On the other side spigot



Dimensions in mm				
Nominal diameter DN 1/2	d	l	LE	Net weight kg
80	98	145	55	6.0
100	118	150	55	7.0
150	170	155	55	10.0
200 PN 10, PN 16	222	160	55	16.0

P-piece (Spigot end cap)

Product features

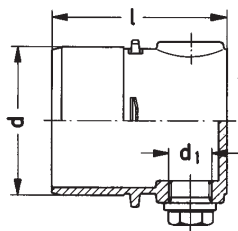
- To close BAIO® double-function sockets (e.g. during pressure tests)
- Spigot with interlocking cams
- With test and vent plug

Alternatives

- With G1" malleable cast-iron plug
- With G1½" malleable cast-iron plug

On request

- With G2" malleable cast-iron plug
- With G1¼" malleable cast-iron plug
- With female thread at end



Dimensions in mm				
Nominal diameter DN	d	IG-extraction d1 *)	l	Net weight kg
80	98	1" / 1 1/2"	185	4.5
100	118	1" / 1 1/2"	205	5.5
125	144	1" / 1 1/2"	195	7.5
150	170	1" / 1 1/2"	195	8.5
200	222	1" / 1 1/2"	205	13.0
250	274	1" / 1 1/2"	260	20.0
300	326	1" / 1 1/2"	275	29.0

*) IG-extraction also acc. 1 1/4" and 2" available

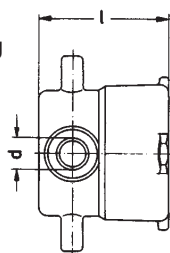
X-piece (socket end cap)

Product features

- To close the spigot end of cast-iron, PVC and PE-HD pipes (e.g. during pressure tests)
- Longitudinal non-positive lock by means of the BAIO® tension protectors suitable for the respective pipe materials used
- With test and vent plug

Alternatives

- With G1" malleable cast-iron plug
- With G1½" malleable cast-iron plug



Dimensions in mm			
Nominal diameter DN	IG-extraction d1	l	Net weight kg
80	1" / 1 1/2"	140	5.5
100	1" / 1 1/2"	145	6.0
125	1" / 1 1/2"	145	8.0
150	1" / 1 1/2"	150	9.5
200	1" / 1 1/2"	165	14.5



Cast-iron pipe seal

Product feature

- To DIN 28603 made of EPDM for water applications
- Made of NBR for gas applications



Dimensions in mm		
Nominal diameter DN	cast iron pipes	Net weight kg
80	98	0.10
100	118	0.15
125	144	0.15
150	170	0.20
200	222	0.30
250	274	0.50
300	326	0.70

GKS-cast-iron plastic sealing ring

Product feature

- For PVC/PE-HD pipes, made of NBR for water applications



Dimensions in mm		
Nominal diameter DN	PVC-pipe PE-HD-pipe	Net weight kg
80	90	0.15
100	110	0.20
125	125	0.20
125*	140	0.25
150	160	0.30
200*	200	0.35
200	225	0.40
* Sealing with backup rings		