batuVALVE

Burak Type Monoblock Ball Valve

Your Solution Partner

1978 - ∞

batuVALVE

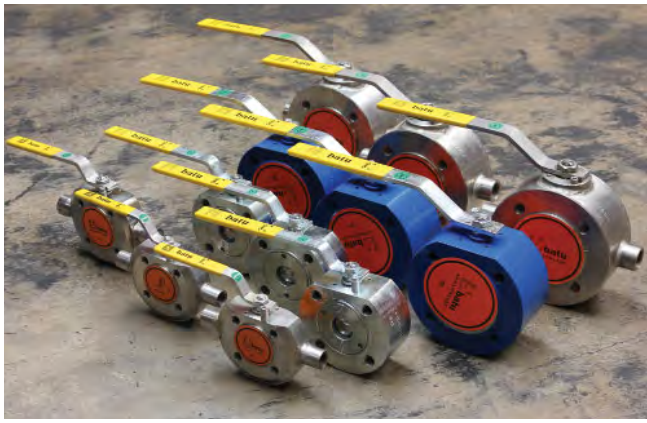
Batusan, with the trademark BatuValve started manufacturing Ball Valves in 1978. Since then, continues to serve the industry with dedication to quality, product innovation and commitment to customer service. We manufacture all our products %100 in our production facility in Turkey. We use European originated raw materials. Our trust in our products allows us to provide 2 year unlimited warranty.

Our main product line is Ball Valves. We also produce Check valves, Strainers and Flow Indicators. Being a leader manufacturer in Turkey for 43 years. Apart from the Turkish industry, we export our products with pride to Germany, Bulgaria, Serbia, Poland, Croatia, Bosnia-Herzegovina, Greece, Lebanon, Saudi Arabia, Russia, Iran, Egypt, Yemen, Afghanistan, Austria, TRNC, Ukraine, France, Algeria, Morocco, Tunisia, Gabon and so on. We also produce OEM products for some of the most known global brands from Italy, Germany, Austria, etc.

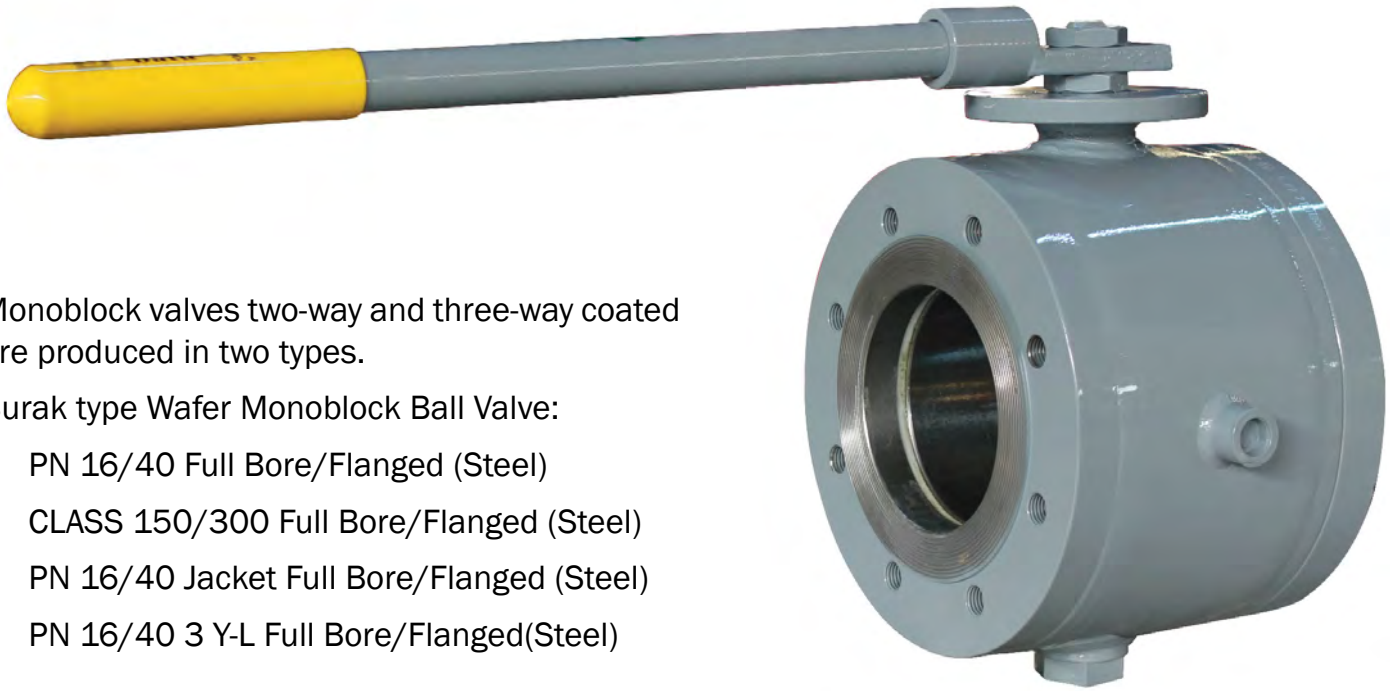
Our products have been installed throughout the world, handling a wide variety of applications in the Gas, Oil, Refining, Chemical, Food, Power Generation and Pipeline Transmission industries.

We have been emphasizing R&D department and always expanding our product line serving the needs of our customers. We have most of the Industrial valve manufacturing certificates, including;

ISO 9001: 2015, API 6D “0695”, TSE, TS 9809, TSE EN 331, TSE 3148, TSE TS 16767, TSE TS 11494, TOV SOD CE 0036, TOV iT 18 ATEX 056 AR, TA LUFT, EN 14432, API 6FA FIRE SAFE, API 607, FIRE SAFE, ISO 10497 FIRE SAFE, EAC-1, EAC-2, ROS TEKHNADZOR, TH 02, HYGIENE, GAS, GAZMER, EGAS, BELARUS



Batu monoblock valve, easy to install, pressure has low loss, high sealing property, such as reasonable prices, light weight and doesn't cover much place provides great advantage with its properties.



Monoblock valves two-way and three-way coated are produced in two types.

Burak type Wafer Monoblock Ball Valve:

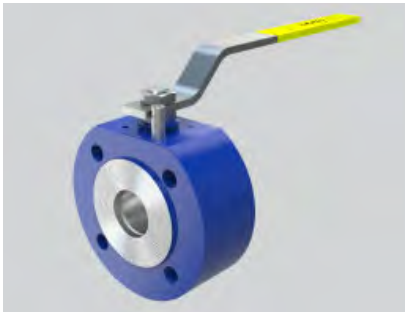
- PN 16/40 Full Bore/Flanged (Steel)
- CLASS 150/300 Full Bore/Flanged (Steel)
- PN 16/40 Jacket Full Bore/Flanged (Steel)
- PN 16/40 3 Y-L Full Bore/Flanged(Steel)

FEATURES	
DIMENSIONS	BATU SPECIAL
CONNECTIONS TYPES	RF / RTJ
WORKING PRESSURE	PN 16 - 40, CLASS 150(PN 20), CLASS 300(PN 50)
WORKING TEMPERATURE	-46 °C / +210 °C
OPERATİON	LEVER / ACTUATOR

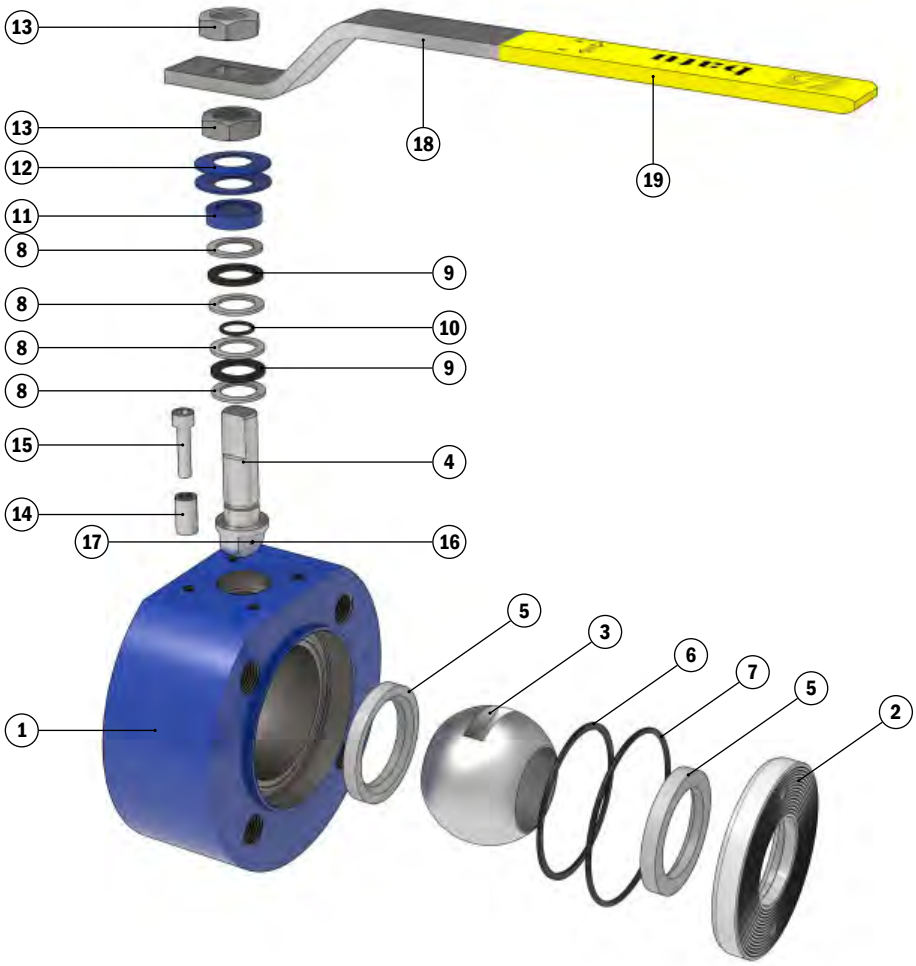
STANDARDS	
VALVES DESİNG	ASME B 16.34 / EN 12516-1 / PED 2014/68/EU
DIMENSIONS	EN 558-1 SERIE 100
CONNECTIONS	ASME B 16.5 / DIN EN 1092-1
FIRE-SAFE	API 6FA / API 607 / ISO 10497
TESTING	API 6D / API 598 / ISO 14313

BURAK TYPE MONOBLOCK BALL VALVE

DIMENSIONS	BATU SPECIAL
CONNECTIONS	EN 1092
WORKING PRESSURE	PN 16 - 40
WORKING TEMPERATURE	-46 °C / +210 °C
USAGE AREAS	Natural Gas, LPG-LNG, Fuel-Oil, Pressurized Air and Other Gases



TİP: BBTKV-FS	DN 15 - DN 250	PN 16 / 40	FULL BORE / FIRE SAFE



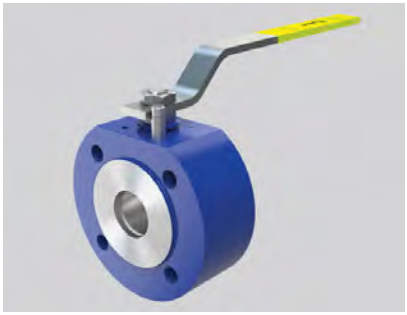
ITEM NO	ITEM DISCRIPTION	MATERIAL	
1	BODY	ASTM A 105	1.4301.-1.4401.
2	COVER	ASTM A 105	1.4301.-1.4401.
3	BALL	1.4301 / 1.4086	1.4301.- 1.4401.
4	ACTION SPINDLE	1,4021	1.4301.-1.4401.
5	BALL TIGHTNESS ELEMENT	PTFE-Teflon	PTFE-Teflon
6	BODY TIGHTNESS ELEMENT	PTFE-Teflon	PTFE-Teflon
7	BODY O-RING	VİTON	VİTON
8	NECK TIGHTNESS ELEMENT	PTFE-Teflon	PTFE-Teflon
9	BURGMAN GRAPHITE O-RING	EN 1514-1	EN 1514-1
10	SPINDLE O-RING	VİTON	VİTON

ITEM NO	ITEM DISCRIPTION	MATERIAL	
11	PRESSURE RING	MS 58	1.4301.-1.4401.
12	BOWL WASHER	50 Cr V 4	1.4301.
13	COUNTER NUT	5,6 Gal.	1.4301.
14	STOPPING PIM	ST 42 Gal.	1.4301.
15	BOLT	ST 42 Gal.	1.4301.-1.4401.
16	ANTISTATIC SPRING	1.4301.	1.4301.-1.4401.
17	ANTISTATIC BALL	1.4301.	1.4301.-1.4401.
18	BALL ACTION HANDLE	st 37	1.4301.
19	PLASTIC COVERING	PVC	PVC

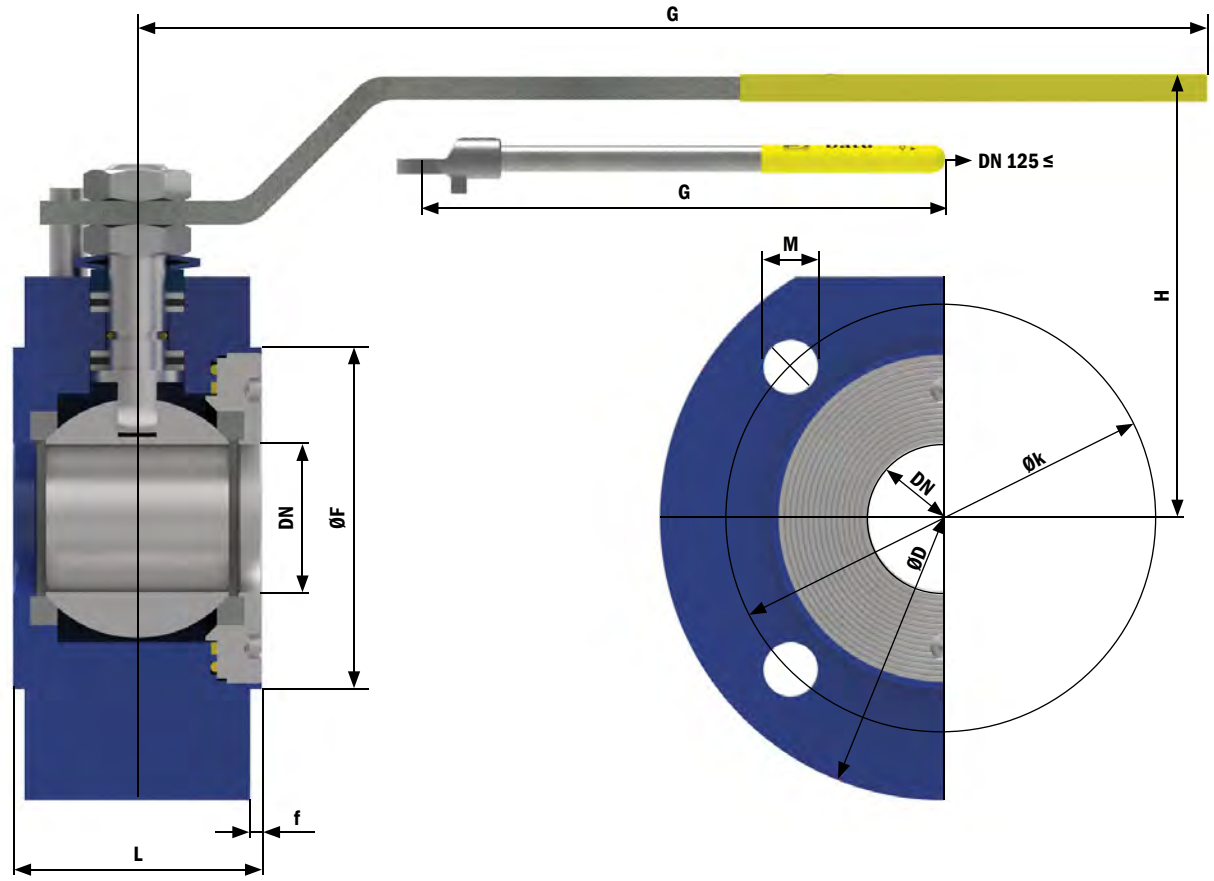
* BATUSAN has rights to change for desing, construction and material of it's products with respect to standards.

BURAK TYPE MONOBLOCK BALL VALVE

DIMENSIONS	BATU SPECIAL
CONNECTIONS	EN 1092
WORKING PRESSURE	PN 16 - 40
WORKING TEMPERATURE	-46 °C / +210 °C
USAGE AREAS	Natural Gas, LPG-LNG, Fuel-Oil, Pressurized Air and Other Gases



TİP: BBTKV-FS	DN 15 - DN 250	PN 16 / 40	FULL BORE / FIRE SAFE



DIMENSIONS AND CONNECTION SIZES

							PN 16				PN 40				
DN	INC	L	G	H	f	D	k	H.Unit	M	F	k	H.Unit	M	F	Kg.
DN 15	1/2"	38	150	75	2	87	65	4	M 12	50	65	4	M 12	50	1,52
DN 20	3/4"	40	150	83	2	97	75	4	M 12	60	75	4	M 12	60	2
DN 25	1"	45	180	90	2	107	85	4	M 12	68	85	4	M 12	68	2,66
DN 32	1 1/4"	58	230	95	2	135	100	4	M 16	78	100	4	M 16	78	5,23
DN 40	1 1/2"	64	275	115	3	145	110	4	M 16	88	110	4	M 16	88	6,82
DN 50	2"	82	275	120	3	165	125	4	M 16	105	125	4	M 16	105	11,06
DN 65	2 1/2"	103	350	135	3	177	145	4	M 16	125	145	8	M 16	125	15,58
DN 80	3"	122	350	150	3	197	160	8	M 16	132	160	8	M 16	132	22,28
DN 100	4"	150	450	170	3	232	180	8	M 16	158	190	8	M 20	162	37,28
DN 125	5"	200	600	200	3	270	210	8	M 16	188	220	8	M 20	188	69
DN 150	6"	235	650	235	3	305	240	8	M 20	212	250	8	M 22	218	96
DN 200	8"	310	780	270	3	400	295	12	M 20	268	320	12	M 27	285	215
DN 250	10"	470	950	370	3	500	355	12	M 24	320	385	12	M 27	345	475

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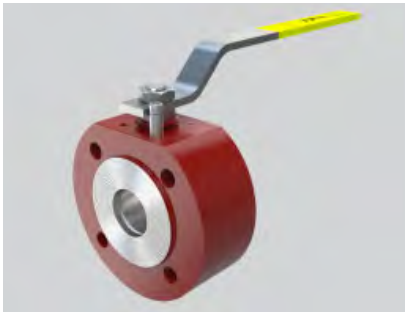
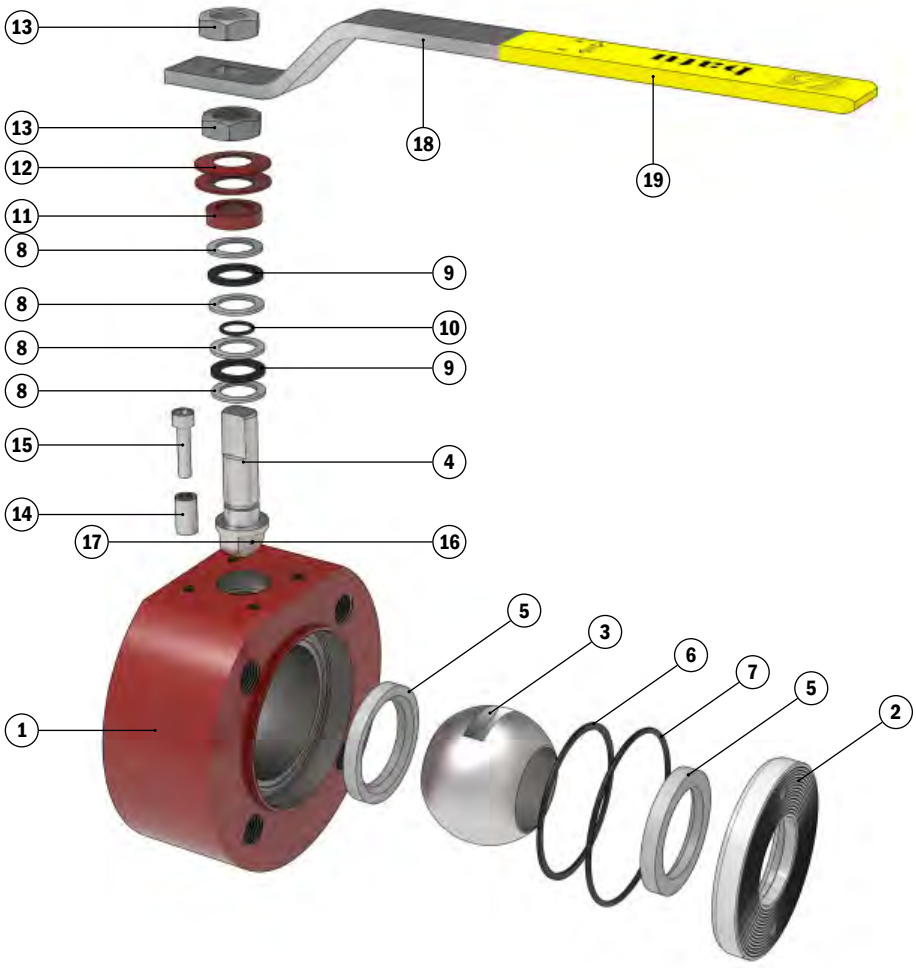
BURAK TYPE MONOBLOCK BALL VALVE CLASS

DIMENSIONS	BATU SPECIAL
CONNECTIONS	ASME B 16.5
WORKING PRESSURE	CLASS 150 (PN 20) - CLASS 300 (PN 50)
WORKING TEMPERATURE	-46 °C / +210 °C
USAGE AREAS	Natural Gas, LPG-LNG, Fuel-Oil, Pressurized Air and Other Gases



TİP: BBTKV-FS	DN 15 - DN 250	CLASS 150(PN 20) CLASS 300(PN 50)	FULL BORE / FIRE SAFE

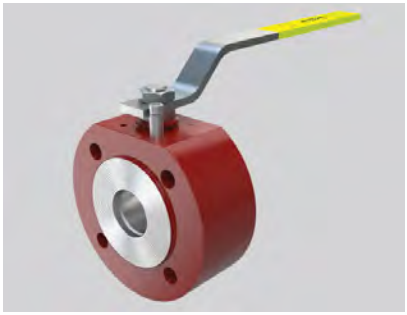


ITEM NO	ITEM DISCRIPTION	MATERIAL	
1	BODY	ASTM A 105	1.4301.-1.4401.
2	COVER	ASTM A 105	1.4301.-1.4401.
3	BALL	1.4301 / 1.4086	1.4301.- 1.4401.
4	ACTION SPINDLE	1,4021	1.4301.-1.4401.
5	BALL TIGHTNESS ELEMENT	PTFE-Teflon	PTFE-Teflon
6	BODY TIGHTNESS ELEMENT	PTFE-Teflon	PTFE-Teflon
7	BODY O-RING	VİTON	VİTON
8	NECK TIGHTNESS ELEMENT	PTFE-Teflon	PTFE-Teflon
9	BURGMAN GRAPHITE O-RING	EN 1514-1	EN 1514-1
10	SPINDLE O-RING	VİTON	VİTON

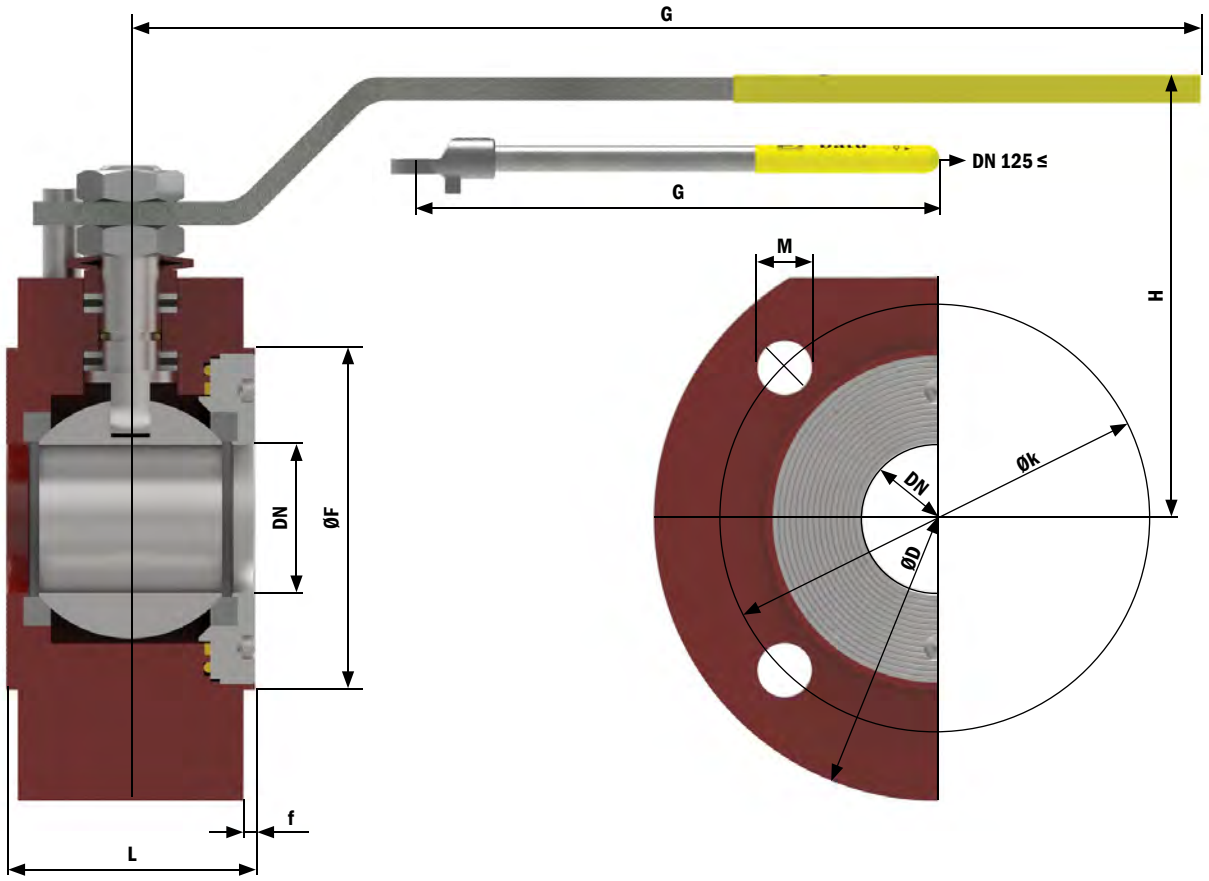
ITEM NO	ITEM DISCRIPTION	MATERIAL	
11	PRESSURE RING	MS 58	1.4301.-1.4401.
12	BOWL WASHER	50 Cr V 4	1.4301.
13	COUNTER NUT	5,6 Gal.	1.4301.
14	STOPPING PIM	ST 42 Gal.	1.4301.
15	BOLT	ST 42 Gal.	1.4301.-1.4401.
16	ANTISTATIC SPRING	1.4301.	1.4301.-1.4401.
17	ANTISTATIC BALL	1.4301.	1.4301.-1.4401.
18	BALL ACTION HANDLE	st 37	1.4301.
19	PLASTIC COVERING	PVC	PVC

BURAK TYPE MONOBLOCK BALL VALVE CLASS

DIMENSIONS	BATU SPECIAL
CONNECTIONS	ASME B 16.5
WORKING PRESSURE	CLASS 150 (PN 20) - CLASS 300 (PN 50)
WORKING TEMPERATURE	-46 °C / +210 °C
USAGE AREAS	Natural Gas, LPG-LNG, Fuel-Oil, Pressurized Air and Other Gases



TİP: BBTKV-FS | **DN 15 - DN 250** | **CLASS 150(PN 20) CLASS 300(PN 50)** | **FULL BORE / FIRE SAFE**



DIMENSIONS AND CONNECTION SIZES

							CLASS 150 (PN 20)				CLASS 300 (PN50)				
DN	INC	L	G	H	f	D	k	H.Unit	M	F	k	H.Unit	M	F	Kg.
DN 15	1/2"	38	150	75	2	90	60,0	4	M 12	35,1	66,7	4	M 12	35,1	--
DN 20	3/4"	40	150	83	2	97	70,0	4	M 12	42,9	82,6	4	M 16	42,9	--
DN 25	1"	45	180	90	2	107	79,4	4	M 12	50,8	88,9	4	M 16	50,8	--
DN 32	1 1/4"	58	230	95	2	118	89,0	4	M 12	63,5	98,4	4	M 16	63,5	--
DN 40	1 1/2"	64	275	115	2	128	98,4	4	M 12	73,2	114,3	4	M 20	73,2	--
DN 50	2"	82	275	120	2	158	120,6	4	M 16	91,9	127,0	8	M 16	91,9	--
DN 65	2 1/2"	103	350	135	2	177	139,7	4	M 16	104,6	149,2	8	M 20	104,6	--
DN 80	3"	122	350	150	2	188	152,4	4	M 16	127,0	168,3	8	M 20	127,0	--
DN 100	4"	150	450	170	2	227	190,5	8	M 16	157,2	200,0	8	M 20	157,2	--
DN 125	5"	200	600	200	2	270	216,0	8	M 20	185,7	235,0	8	M 20	185,7	--
DN 150	6"	235	650	235	2	305	241,3	8	M 20	215,9	269,9	12	M 20	215,9	--
DN 200	8"	310	780	270	2	400	298,4	8	M 20	269,7	330,2	12	M 22	269,7	--

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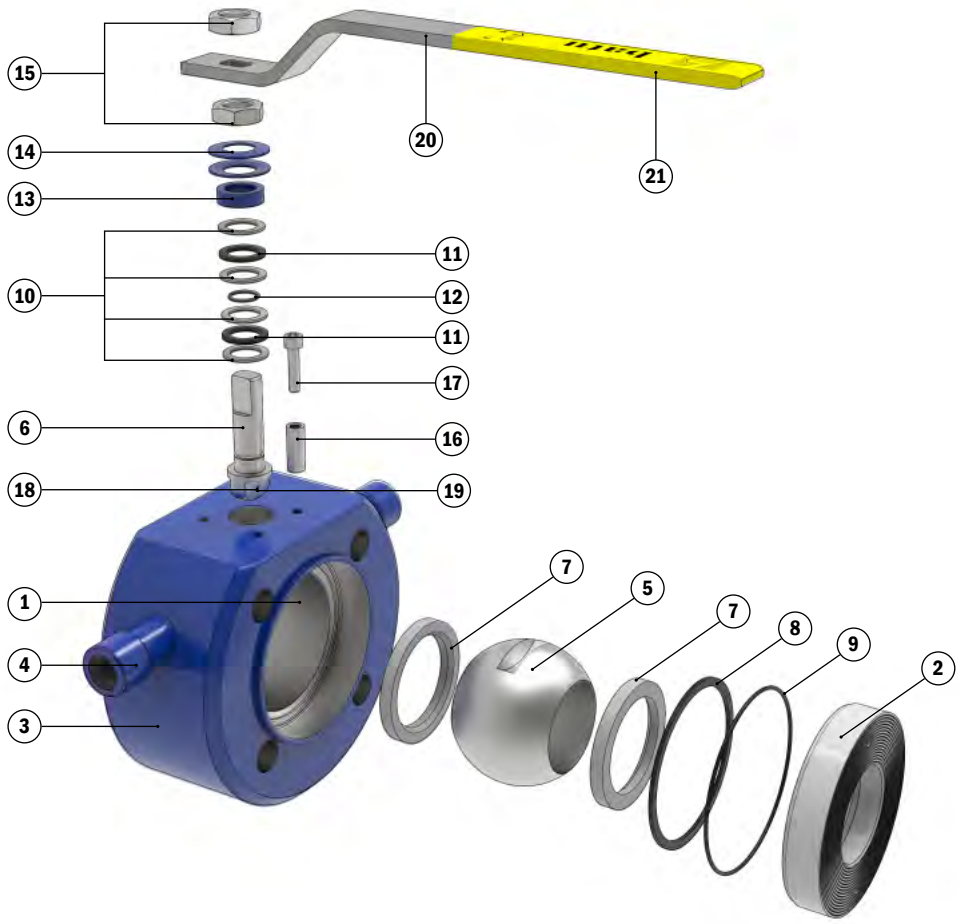
BURAK TYPE MONOBLOCK BALL VALVE JACKET

DIMENSIONS	BATU SPECIAL
CONNECTIONS	EN 1092
WORKING PRESSURE	PN 16 - 40
WORKING TEMPERATURE	-46 °C / +210 °C
USAGE AREAS	Asphalt, Food and Chemical Ind.

TİP: BBTKV-CK	DN 15 - DN 150	PN 16 / 40	FULL BORE / FIRE SAFE



ITEM NO	ITEM DISCRIPTION	MATERIAL	
1	BODY	ASTM A 105	1.4301.-1.4401.
2	COVER	ASTM A 105	1.4301.-1.4401.
3	JACKET	ST 37-2	1.4301.-1.4401.
4	MUFF	ST 37-2	1.4301.-1.4401.
5	BALL	1.4301/1.4086	1.4305.-1.4401.
6	ACTION SPINDLE	1,4021	1.4301.-1.4401.
7	BALL TIGHTNESS ELEMENT	PTFE-Teflon	PTFE-Teflon
8	BODY TIGHTNESS ELEMENT	PTFE-Teflon	PTFE-Teflon
9	BODY O-RING	VİTON	VİTON
10	NECK TIGHTNESS ELEMENT	PTFE-Teflon	PTFE-Teflon
11	BURGMAN GRAPHITE O-RING	EN 1514-1	EN 1514-1

ITEM NO	ITEM DISCRIPTION	MATERIAL	
12	SPINDLE O-RING	VİTON	VİTON
13	PRESSURE RING	MS 58	1.4301.-1.4401.
14	BOWL WASHER	50 Cr V 4	1.4301.
15	COUNTER NUT	5,6 Gal.	1.4301.
16	STOPPING PIM	ST 42 Gal.	1.4301.
17	BOLT	ST 42 Gal.	1.4301/1.4086
18	ANTISTATIC SPRING	1.4301.	1.4301/1.4086
19	ANTISTATIC BALL	1.4301.	1.4301/1.4086
20	BALL ACTION HANDLE	st 37	1.4301.
21	PLASTIC COVERING	PVC	PVC

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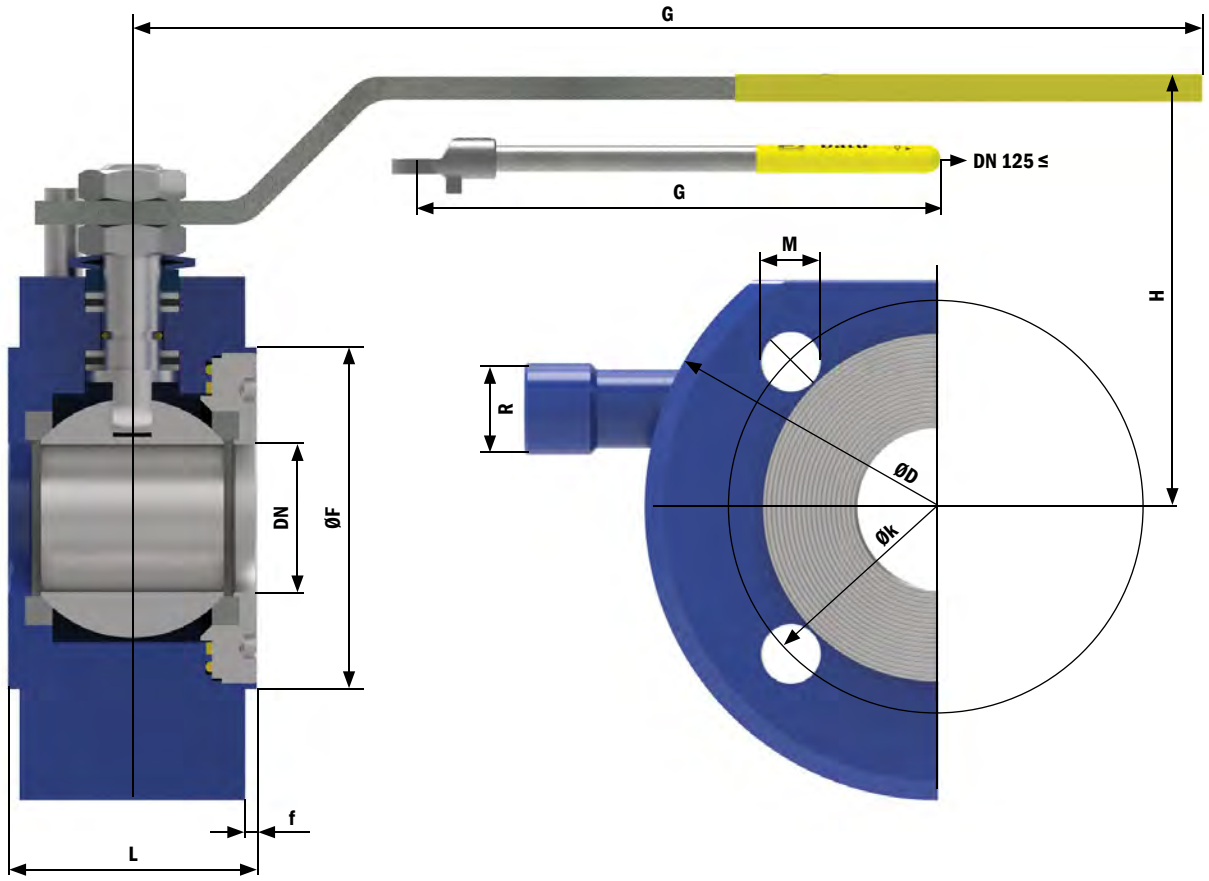
BURAK TYPE MONOBLOCK BALL VALVE JACKET

DIMENSIONS	BATU SPECIAL
CONNECTIONS	EN 1092
WORKING PRESSURE	PN 16 - 40
WORKING TEMPERATURE	-46 °C / +210 °C
USAGE AREAS	Asphalt, Food and Chemical Ind.

TİP: BBTKV-CK	DN 15 - DN 150	PN 16 / 40	FULL BORE / FIRE SAFE



DIMENSIONS AND CONNECTION SIZES

								PN 16				PN 40			
DN	INC	L	G	H	f	R	D	k	H.Unit	M	F	k	H.Unit	M	F
DN 15	1/2"	38	150	75	2	1/2”	105	65	4	M 12	50	65	4	M 12	50
DN 20	3/4"	40	150	83	2	1/2”	115	75	4	M 12	60	75	4	M 12	60
DN 25	1"	45	180	90	2	1/2”	130	85	4	M 12	68	85	4	M 12	68
DN 32	1 1/4"	58	230	95	2	1/2”	157	100	4	M 16	78	100	4	M 16	78
DN 40	1 1/2"	64	275	115	3	3/4”	157	110	4	M 16	88	110	4	M 16	88
DN 50	2"	82	275	120	3	3/4”	177	125	4	M 16	105	125	4	M 16	105
DN 65	2 1/2"	103	350	135	3	3/4”	190	145	4	M 16	125	145	8	M 16	125
DN 80	3"	122	350	150	3	3/4”	210	160	8	M 16	132	160	8	M 16	132
DN 100	4"	150	450	170	3	1”	250	180	8	M 16	158	190	8	M 20	162
DN 125	5"	200	600	200	3	1”	270	210	8	M 16	188	220	8	M 20	188
DN 150	6"	235	650	235	3	1”	305	240	8	M 20	212	250	8	M 22	218

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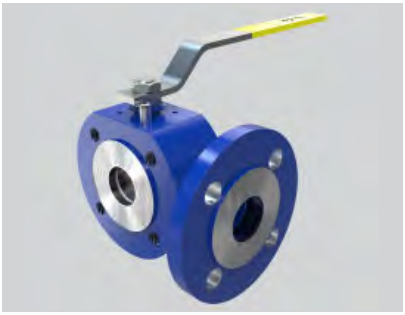
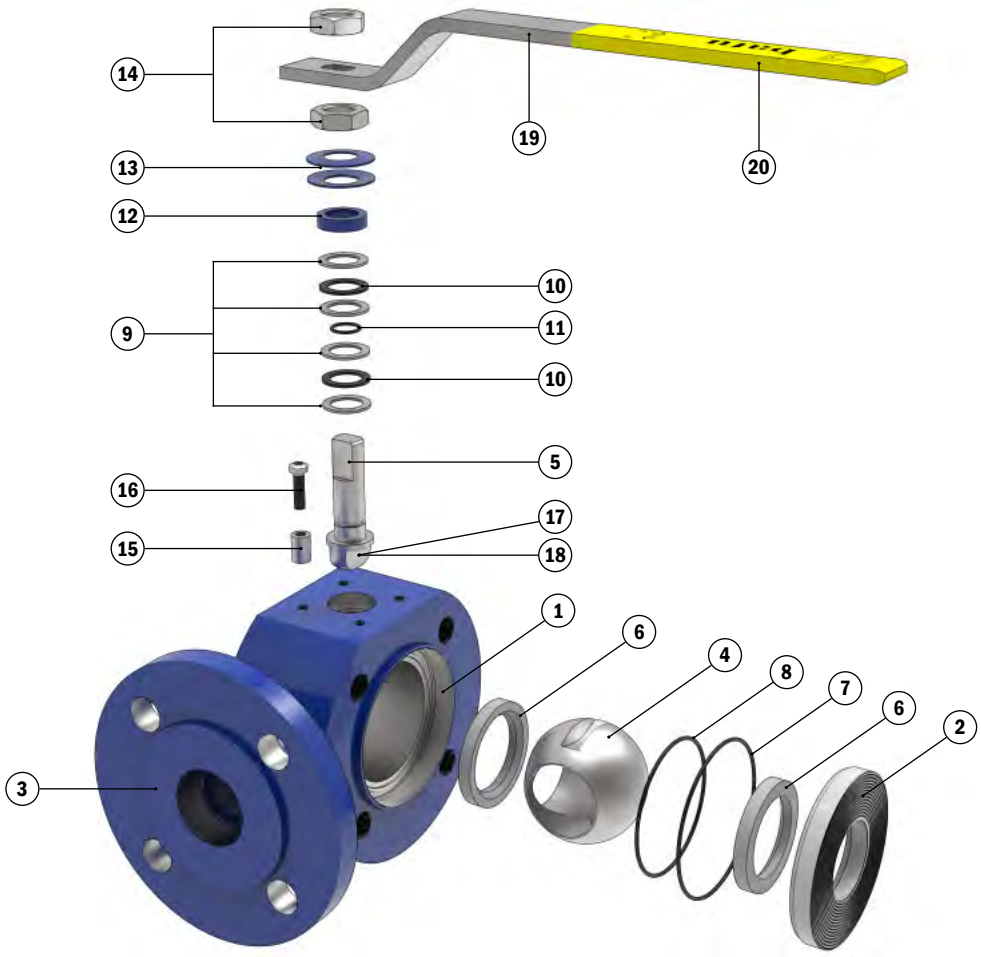
BURAK TYPE MONOBLOCK BALL VALVE 3 WAYS

DIMENSIONS	BATU SPECIAL
CONNECTIONS	EN 1092
WORKING PRESSURE	PN 16 - 40
WORKING TEMPERATURE	-46 °C / +210 °C
USAGE AREAS	Natural Gas, LPG-LNG, Fuel-Oil, Pressurized Air and Other Gases



TİP: BBTKV-3Y	DN 15 - DN 100	PN 16 / 40	FULL BORE / FIRE SAFE



ITEM NO	ITEM DISCRIPTION	MATERIAL	
1	BODY	ASTM A 105	1.4301.-1.4401.
2	COVER	ASTM A 105	1.4301.-1.4401.
3	3 WAY COVER	ST 37-2	1.4301.-1.4401.
4	BALL	1.4301 / 1.4086	1.4305.-1.4401.
5	ACTION SPINDLE	1,4021	1.4301.-1.4401.
6	BALL TIGHTNESS ELEMENT	PTFE-Teflon	PTFE-Teflon
7	BODY TIGHTNESS ELEMENT	PTFE-Teflon	PTFE-Teflon
8	BODY O-RING	VİTON	VİTON
9	NECK TIGHTNESS ELEMENT	PTFE-Teflon	PTFE-Teflon
10	BURGMAN GRAPHITE O-RING	EN 1514-1	EN 1514-1

ITEM NO	ITEM DISCRIPTION	MATERIAL	
11	SPINDLE O-RING	VİTON	VİTON
12	PRESSURE RING	MS 58	1.4301.-1.4401.
13	BOWL WASHER	50 Cr V 4	1.4301.
14	COUNTER NUT	5,6 Gal.	1.4301.
15	STOPPING PIM	ST 42 Gal.	1.4301.
16	BOLT	ST 42 Gal.	1.4301 / 1.4086
17	ANTISTATIC SPRING	1.4301.	1.4301 / 1.4086
18	ANTISTATIC BALL	1.4301.	1.4301 / 1.4086
19	BALL ACTION HANDLE	st 37	1.4301.
20	PLASTIC COVERING	PVC	PVC

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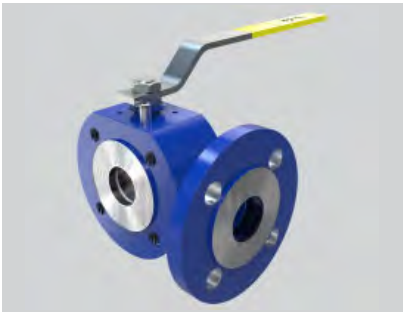
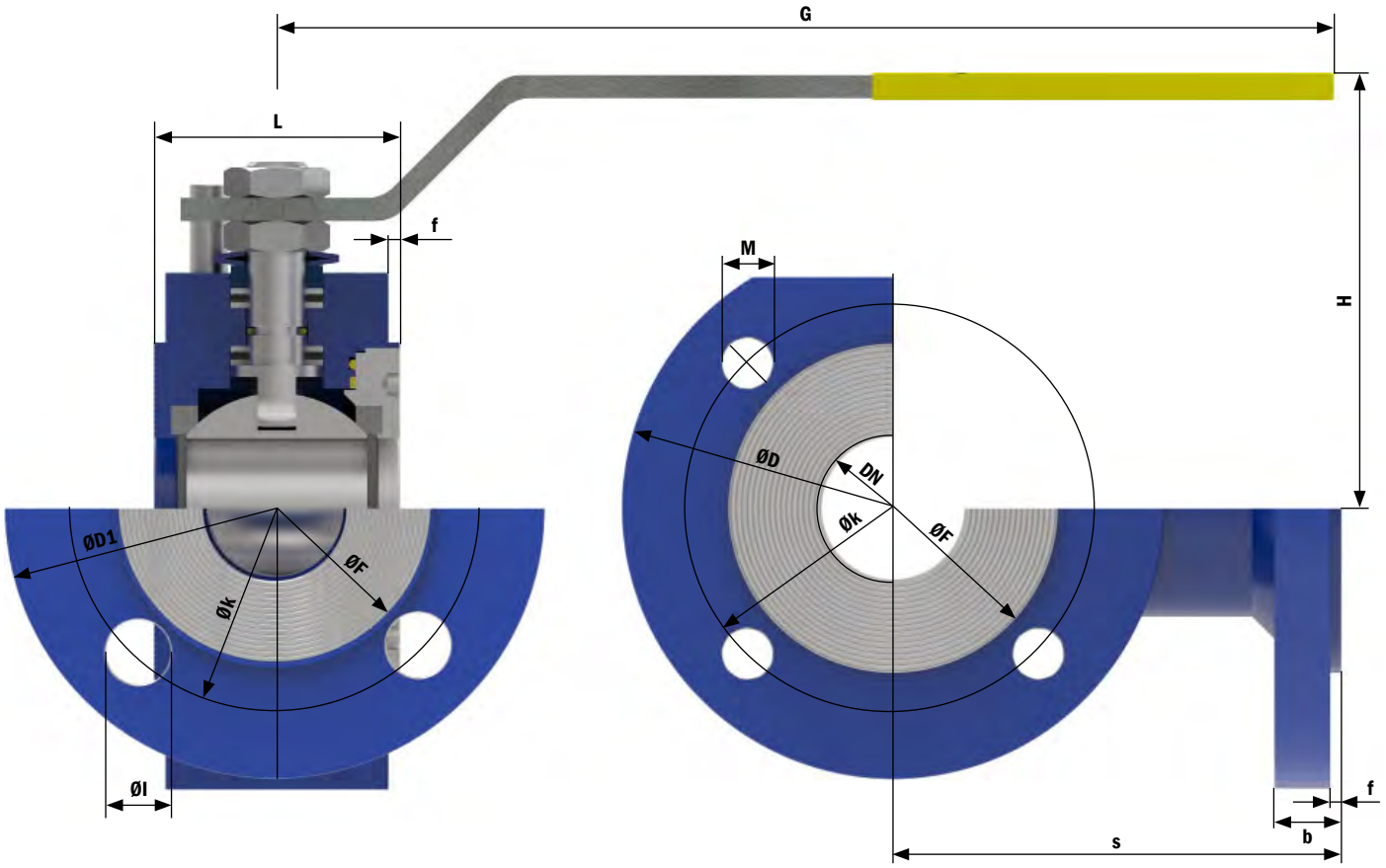
BURAK TYPE MONOBLOCK BALL VALVE 3 WAYS

DIMENSIONS	BATU SPECIAL
CONNECTIONS	EN 1092
WORKING PRESSURE	PN 16 - 40
WORKING TEMPERATURE	-46 °C / +210 °C
USAGE AREAS	Natural Gas, LPG-LNG, Fuel-Oil, Pressurized Air and Other Gases



TİP: BBTKV-3Y	DN 15 - DN 100	PN 16 / 40	FULL BORE / FIRE SAFE



DIMENSIONS AND CONNECTION SIZES																				
								PN 16							PN 40					
DN	INC	L	s	G	H	f	D	D1	b	k	H.Unit	M	I	F	D1	b	k	H.Unit	M	I	F
DN 15	1/2"	38	85	150	75	2	87	95	14	65	4	M 12	14	50	95	16	65	4	M 12	14	50
DN 20	3/4"	45	90	150	83	2	97	105	16	75	4	M 12	14	60	105	18	75	4	M 12	14	60
DN 25	1"	50	90	180	90	2	107	115	16	85	4	M 12	14	68	115	18	85	4	M 12	14	68
DN 32	1 1/4"	62	105	230	95	2	135	140	16	100	4	M 16	18	78	140	18	100	4	M 16	18	78
DN 40	1 1/2"	70	120	275	115	3	145	150	16	110	4	M 16	18	88	150	18	110	4	M 16	18	88
DN 50	2"	90	135	275	120	3	165	165	18	125	4	M 16	18	105	165	20	125	4	M 16	18	105
DN 65	2 1/2"	115	150	350	135	3	177	185	18	145	4	M 16	18	125	185	22	145	8	M 16	18	125
DN 80	3"	140	175	350	150	3	197	200	20	160	8	M 16	18	132	200	24	160	8	M 16	18	132
DN 100	4"	165	190	450	170	3	232	220	20	180	8	M 16	18	158	235	24	190	8	M 20	22	162

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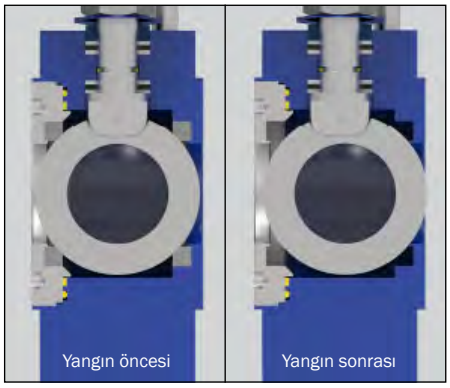
STANDARDS

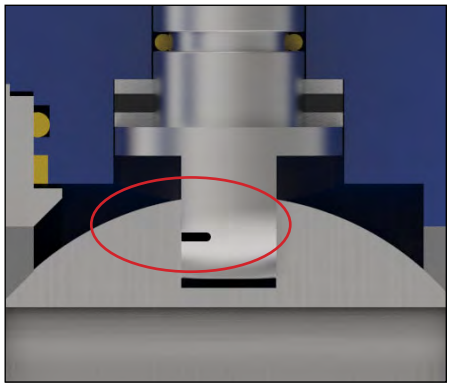
VALVES DESİNG	ASME B 16.34 / EN 12516-1 / PED 2014/68/EU
DIMENSIONS	EN 558-1 SERIE 100
CONNECTIONS	ASME B 16.5 / DIN EN 1092-1
FIRE-SAFE	API 6FA / API 607 / ISO 10497
TEST	API 6D / API 598 / ISO 14313

STANDARD EXECUTIONS



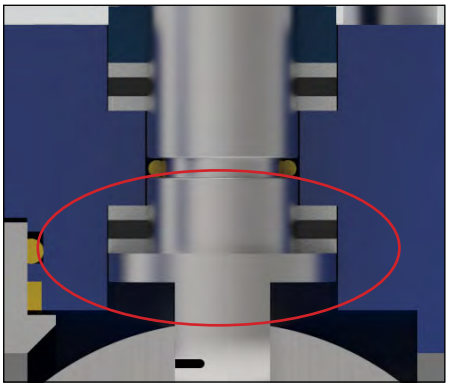
FIRE- SAFE DESIGN

BatuValve ball valves have been subjected to fire tests in accordance with API 6FA and ISO 10497 standards.



ANTI-STATIC DESIGN

The spring and ball used in the stem ensure that any static electricity that may occur is grounded to the pipeline.

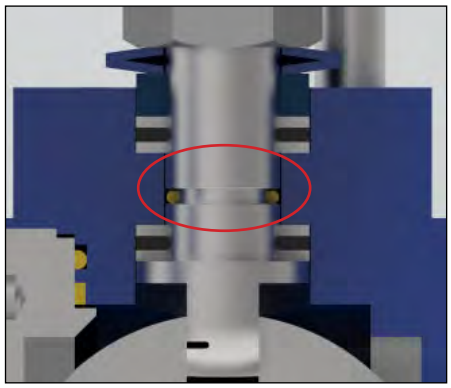


ANTI-BLOWOUT DESIGN

Movement shaft is designed not to come out, In case of excessive pressure that may occur in the valve.

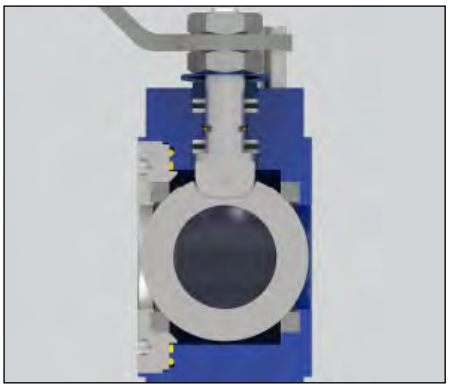
ISO 5211 ACTUATOR CONNECTION

The upper part of all valve bodies is designed in accordance to ISO 5211, suitable with actuator mounting.



HAREKET MİLİ O-RİNGİ

Through the o-ring in the action spindle is in all valves maximum tightness obtained.



VALVE BALL LENGTH

It is designed that the ball length not exceed the valve length, when all valves are in closed position.

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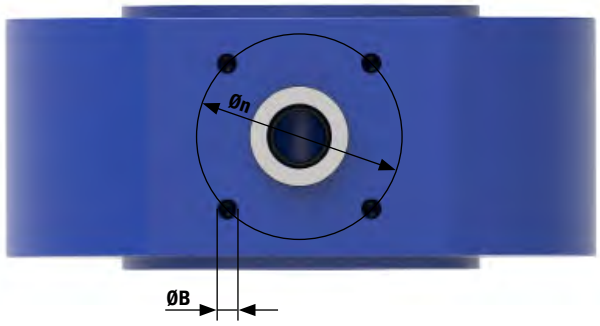
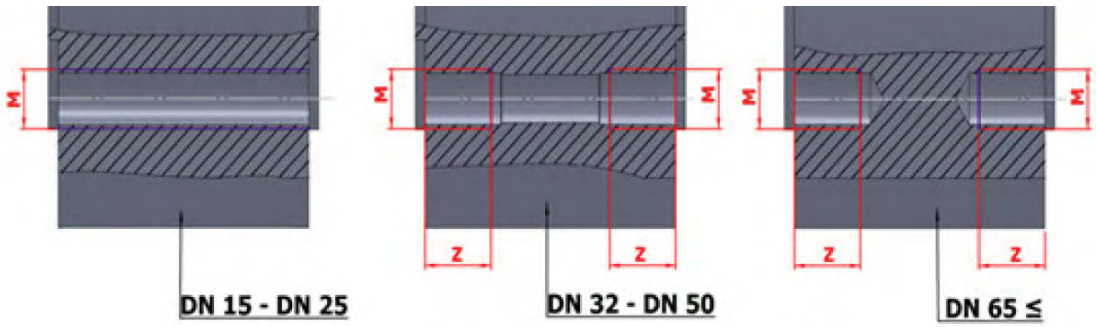
ISO 5211 ACTUATOR CONNECTION DIMENSIONS



ISO 5211		
VALVE	n	B
DN 15	36	M 5
DN 20	36	M 5
DN 25	42	M 5
DN 32	42	M 5
DN 40	50	M 6
DN 50	50	M 6
DN 65	70	M 8
DN 80	70	M 8
DN 100	102	M 10
DN 125	125	M 12
DN 150	125	M 12
DN 200	125	M 12
DN 250	140	M 16

INSTALLATION CONNECTION BOLT DIMENSIONS



VALVE	Z	PN 16	PN 40
DN 15	--	M12 x 30	M12 x 30
DN 20	--	M12 x 35	M12 x 35
DN 25	--	M12 x 35	M12 x 35
DN 32	25	M16 x 40	M16 x 40
DN 40	25	M16 x 40	M16 x 40

VALVE	Z	PN 16	PN 40
DN 50	25	M16 x 40	M16 x 40
DN 65	25	M16 x 40	M16 x 40
DN 80	25	M16 x 45	M16 x 45
DN 100	25	M16 x 45	M20 x 45
DN 125	25	M16 x 45	M20 x 50

VALVE	Z	PN 16	PN 40
DN 150	30	M20 x 50	M22 x 55
DN 200	35	M20 x 55	M27 x 65
DN 250	35	M24 x 65	M27 x 65

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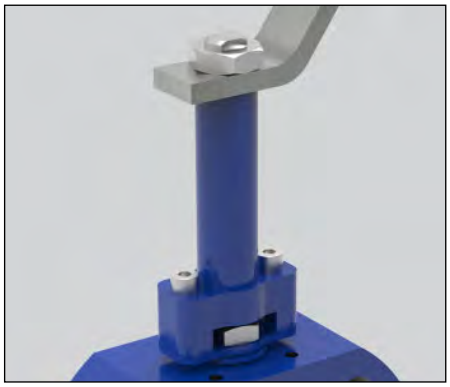
OPTIONAL EXECUTIONS

BALANCE HOLE

CRYOGENIC STEM EXTENSION

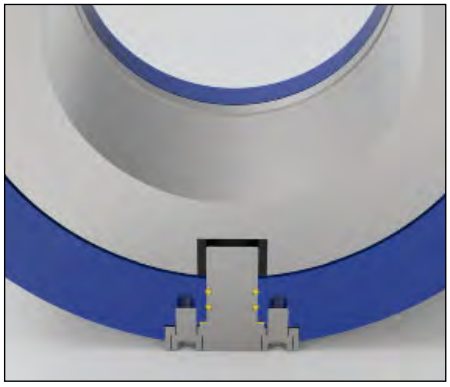
DOUBLE SEALING EXTENSION



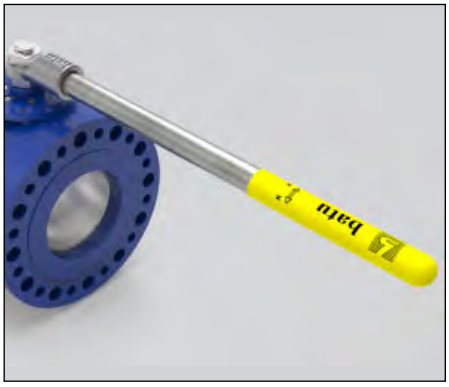
LEVER EXTENSION

LOCKING DEVICE

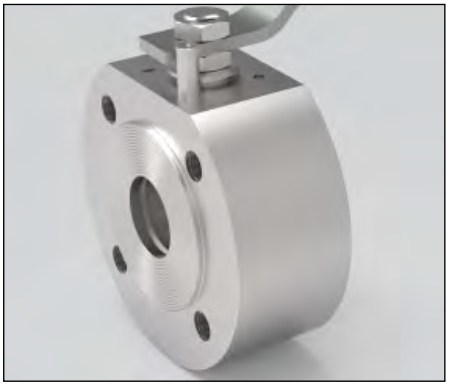
LOCKING DEVICE WITH EXTERION



TRUNNION DESIGN



LEVER TYPES



VALVE DEGREAS FOR OXYGEN SERVICE

* BATUSAN has rights to change for desing, construction and material of it's products with respect to standards.

CERTIFICATES *

Certificate of Authority to use the Official API Monogram

License Number: 6D-0995

BATUSAN MAKINA SANAYI VE TICARET A.S.
Dilovasi Org. San. Bolgesi
2. Kisim D-2015 Sok. No: 6 Dilovasi
Kocaeli
Turkey

Effective Date: APRIL 26, 2019
Expiration Date: APRIL 26, 2022

SERTİFİKA

TÜV SÜD Slovakia s.r.o.
Yönetim sistemleri sertifikasyon merkezi

BATUSAN MAK. SAN. VE TİC. A.Ş.

EN ISO 9001:2015

SERTİFİKA

Batusan Mak. San. ve Tic. A.Ş.

ISO 45001:2018

İş Sağlığı ve Güvenliği Yönetim Sistemi

SERTİFİKA

Batusan Mak. San. ve Tic. A.Ş.

ISO 14001:2015

Çevre Yönetim Sistemi

Sertifika
CERTIFICATE

BATUSAN MAK. SAN. ve TİC. A.Ş.

ISO/TS 29001

TÜRK STANDARDLARI ENSTİTÜSÜ
TÜRK STANDARDLARINA UYGUNLUK BELGESİ
TURKISH STANDARDS INSTITUTION
CERTIFICATE OF CONFORMITY TO TURKISH STANDARDS

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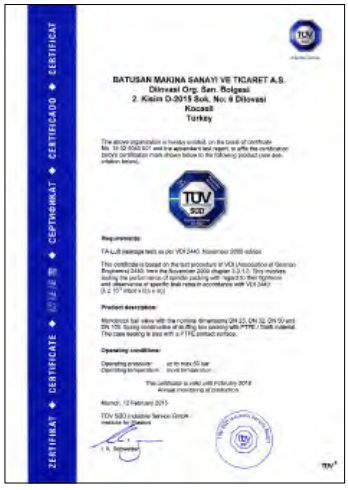
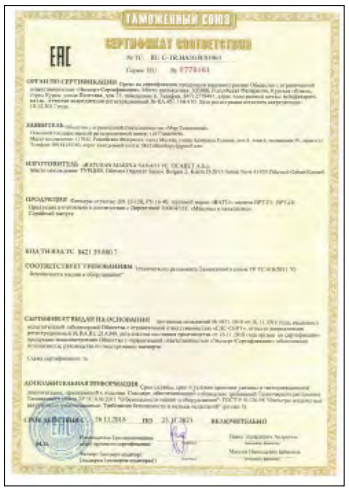
(*) You can access all the certificates we have on our website www.batuvalve.com/certificates.html

CERTIFICATES *





(*) You can access all the certificates we have on our website www.batuvalve.com/certificates.html

batuVALVE

6D 0995

ISO 9001

CE 0036

FIRE SAFE

ATEX

EAC

TÜVNORD

PT 2261

TS 9809

TS EN 331

TS 3148

TS 11494

TS EN 16767

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MAKİNA SANAYİ VE TİCARET A.Ş

Wafer monoblock valves advance industrial fluid control

Wafer type monoblock valves outperform traditional ball valves in industrial fluid control, offering superior space efficiency, cost-effectiveness, and performance in high-pressure environments while promoting sustainability and operational reliability across various industries.

By Zahra Farrokhi, Batu Valve Türkiye

A range of wafer monoblock and ball valves

Valve selection is crucial in optimising industrial fluid control systems, directly impacting operational efficiency, cost and safety. While ball valves have long been an industry standard, wafer type monoblock valves are emerging as a superior alternative in many applications. This article explores the advantages of wafer type monoblock valves, focusing on their space efficiency, cost-effectiveness and high-pressure performance. Through industry data and case studies, we'll demonstrate how these innovative valves are reshaping fluid control across various sectors.

Wafer type monoblock valves

Wafer type monoblock valves feature a compact, lightweight design for installation between flanges. Their single-piece body construction minimizes potential leak paths, making them advantageous in high-pressure and high-temperature environments. The simple design reduces installation complexity and maintenance requirements.

Table 1: Typical specifications of wafer type monoblock valves

Specification	Wafer type monoblock valve
Design	One-piece body
Installation	Between flanges
Pressure Rating	Up to 3000 PSI
Temperature Range	-50°C to 400°C
Size Range	1/2" to 24"
Material Options	Stainless steel, carbon steel, etc.

Table 2: Typical specifications of ball valves

Specification	Ball valve
Design	Two-piece or three-piece body
Installation	Flanged, threaded, welded
Pressure Rating	Up to 1500 PSI
Temperature Range	-20°C to 200°C
Size Range	1/4" to 36"
Material Options	Stainless steel, brass, PVC, etc.

Ball valves

Ball valves are known for quick shut-off capabilities and ease of operation. They consist of a spherical ball with a hole through the center, controlling fluid flow by rotation. While versatile, ball valves generally require more space for installation compared to wafer type monoblock valves.

Comparative analysis

- ***Space efficiency***

Wafer type monoblock valves excel in applications where space is limited. Their compact design typically requires 30-50% less space than equivalent ball valves, making them ideal for tight piping systems and confined industrial spaces.

- ***Installation and maintenance costs***

The single-piece design of wafer type monoblock valves simplifies installation, reducing alignment issues and the need for multiple components. This design also leads to lower transportation and handling costs. Maintenance is less frequent and

Table 3: Space requirements for wafer type monoblock valve vs. ball valve

Valve size (inches)	Wafer type monoblock valve (cm)	Ball valve (cm)	Space savings (%)
2	15	22	31%
4	18	30	40%
6	22	35	37%

Table 4: Comparative installation and maintenance costs

Cost category	Wafer type monoblock valve	Ball valve
Installation Cost	$200 - $400 per valve	$300 - $600 per valve
Maintenance Frequency	1-2 times/year	2-4 times/year
Maintenance Cost	$100 - $200 per service	$150 - $300 per service

Table 5: Pressure handling comparison

Application	Pressure Requirement (PSI)	Wafer Type Monoblock valve	Ball valve
Oil & Gas	2500	Suitable	Not Suitable
Chemical Processing	2000	Suitable	Suitable
Water Treatment	1000	Suitable	Suitable

Table 6: Material and construction comparison (Same material: Stainless steel 316)

Aspect	Wafer type monoblock valve	Ball valve
Body Construction	Single-piece body, fewer joints	Multi-piece body, multiple joints
Potential Leak Points	Minimal	Higher (due to multiple seals and joints)
Maintenance Requirements	Lower (fewer parts to maintain)	Higher (more seals and moving parts)
Structural Integrity	Higher (single-piece, robust construction)	Moderate (dependent on assembly quality)

less costly compared to ball valves, which often require more complex disassembly and part replacement.

- ***Performance in high-pressure environments***

Wafer type monoblock valves are engineered to withstand higher pressures, often up to 3000 PSI, compared to ball valves' typical 1500 PSI limit. This makes them more suitable for applications in oil and gas, chemical processing, and other industries with high-pressure conditions.

- ***Material and construction***

Material selection and construction quality significantly affect valve durability, corrosion resistance, and overall performance. Wafer type monoblock valves, often constructed from high-grade stainless steel and other alloys, provide superior corrosion resistance and mechanical strength. Their simpler construction with fewer parts reduces the risk of wear and leakage compared to the more complex ball valve design.

- ***Performance metrics***

Flow coefficient (Cv) and pressure drop are crucial metrics in evaluating valve efficiency.

Figure 1. A compact, lightweight wafer monoblock valve designed for tight industrial spaces.

Wafer type monoblock valves generally exhibit higher Cv values and lower pressure drops compared to ball valves, resulting in more precise flow control and improved system efficiency.

- ***Lifetime and durability***

The robust, one-piece design of wafer type monoblock valves contributes to a longer operational life by reducing potential failure points. This design advantage often results in less frequent replacement and maintenance compared to ball valves with more moving parts and seals.

Figure 2. Wafer monoblock and ball valve design

- ***Environmental impact***

Environmental considerations are increasingly important in valve selection. Wafer type monoblock valves, often constructed from recyclable materials, have a lower environmental footprint compared to ball valves. Their simpler construction requires less energy during manufacturing and generates less waste.

- ***Sustainability***

Sustainability is a critical factor in modern industrial design. Wafer type monoblock valves offer better sustainability metrics due to their longer lifespan and higher recyclability. This makes them a more

Table 7: Flow coefficient (Cv) values and pressure drop

Valve Size (inches)	Wafer type nonoblock valve (Cv)	Ball calve (Cv)	Pressure drop (psi)
2	40	30	10
4	120	85	15
6	250	180	20

Table 8: Expected lifespan and failure rates

Valve type	Expected lifespan (years)	Annual failure rate (%)
Wafer Type Monoblock	20	1.5
Ball Valve	15	3.5

Table 9: Emissions and waste generated during manufacturing

Valve type	CO2 emissions (kg per unit)	Waste material (kg)
Wafer Type Monoblock	25	5
Ball Valve	40	10

Table 10: Material recyclability and energy consumption

Valve type	Recyclability (%)	Energy consumption (kWh/year)
Wafer Type Monoblock	85	120
Ball Valve	60	150

Figure 3. High-pressure wafer monoblock valves, suitable for challenging environments like oil and gas processing.

environmentally friendly choice for industries aiming to reduce their carbon footprint and improve overall sustainability.

Case studies

- **Case study 1: Oil & gas industry application**

In a recent project within the oil and gas industry, the use of wafer type monoblock valves led to a 25% reduction in installation costs and a 15% increase in system reliability due to fewer leak points and lower maintenance requirements. This project demonstrated the valves' superiority in high-pressure environments where traditional ball valves were previously used (Brown and Green, *Journal of Industrial Valve Design*, 2017).

- **Case study 2: Chemical processing plant**

A chemical processing plant replaced ball valves with wafer type monoblock valves in its high-temperature pipeline system. The result was a 20% decrease in operational downtime and a 30% reduction in maintenance costs over a two-year period (Martinez and Rivera, *Journal of Pressure Valve Technology*, 2016).

Figure 4. Installation of wafer type monoblock valves in an industrial fluid control system.

Future trends and innovations

Ongoing advancements in materials and design are expected to further enhance the advantages of wafer type monoblock valves. Future developments may include:

- Integration of smart technologies for real-time monitoring and predictive maintenance
- Use of advanced composite materials for improved performance in extreme conditions
- Focus on eco-friendly materials and energy-efficient manufacturing processes

These innovations are likely to strengthen the position of wafer type monoblock valves as a leading choice in sustainable industrial practices.

Conclusion

Wafer type monoblock valves offer significant advantages over ball valves in terms of space efficiency, cost-effectiveness, operational efficiency, durability, and environmental impact. Their robust design and superior performance in high-pressure environments make them valuable across various industries. As demand grows for reliable, sustainable, and easy-to-maintain valve solutions, wafer type monoblock valves are poised to play a crucial role in modern fluid control systems. Industries adopting these valves can expect benefits including reduced operational costs, improved system reliability and a smaller environmental footprint. ■

About the company

Batu Valve Türkiye is a manufacturer specialising in innovative valve solutions for the energy, oil, gas and petrochemical industries. With a focus on LPG applications, the company offers a range of valves designed to meet the demands of high-pressure and high-temperature environments, ensuring safe and efficient operation in LPG stations and other gas infrastructure projects.