

ANEXA 9

ÎMPUTERNICIRE PRODUCĂTOR

Data: **15 septembrie 2020**

Ref. Licitatie: „Aprovizionarea cu apă potabilă a localităților, Sîrma, Tochile-Răducani și Tomai din raionul Leova”

Către: **Agencia de Dezvoltare Regională SUD**

Noi **Ekoval İth.İhr.San.ve Tic.Ltd.Şti.**, reprezentată legal prin Şahin Sağlam, în calitate de Regional Manager si Umut Çalışır in calitate de General Manager având facilitățile de producție în

Anadolu Organize Sanayi Bölgesi 1. Cadde No:5 Malıköy Sincan/ANKARA ca producători de vane, tevi, fittinguri si conexiuni din fonta, împuternicim pe **SRL "Izodromgaz"** cu sediul în **R. Moldova, or. Ialoveni str. Ialoveni 2**, să depună o ofertă completă al cărei scop este furnizarea următoarelor produse, al căror producători suntem: vane, tevi, fittinguri si conexiuni din fonta. De asemenea suntem de acord că **SRL "Izodromgaz"** să prezinte la prezenta licitație documentația tehnică, certificările și avizările sanitare, agrementările și avizările tehnice specifice și să pună în opera produsele menționate mai sus.

Semnat de: Şahin Sağlam

În calitate de: Regional Manager

Semnătura:

Ştampila:





CERTIFICATE

This is to Certify that the
Quality Management System
of

Ekoyal İthalat İhracat Sanayi ve Ticaret Limited Şirketi

Malıköy Anadolu Osb Mahallesi Anadolu Osb 1 Cad. No: 5
Sincan Ankara Turkey

has been independently assessed and is compliant
with the requirements of

ISO 9001:2015

This Certificate is applicable to the following product or service ranges:
Design, Production and Sales of Industrial Valves, Pipes and Pipe Fittings

Certificate No.: TR83528A

Date of initial registration	18 September 2018
Date of this Certificate	20 September 2018
Surveillance audit on or before	17 September 2019
Recertification Due / Certificate expiry	17 September 2021

This Certificate is property of LMS Certifications and remains valid
subject to satisfactory surveillance audits.

Director



LMS Certifications Private Limited
1 Anand Dhaam, Opp. to Kukrail Picnic Spot Gate, Farid Nagar, Lucknow - 226015, India
Phone : +91-9554645484 | Mobile : +91-9839960011
Fax : +91-8957101005 | Email: info@lmscert.com | Visit :- www.lmscert.com

For precise and updated information concerning the present certificate mail to info@lmscert.com

This Certificate is the property of LMS Certification Private Limited and shall be returned
immediately when demanded.



LMS/F 1090/17/REV02



SERTİFİKA CERTIFICATE

ÇEVRE YÖNETİM SİSTEMİ ENVIRONMENTAL MANAGEMENT SYSTEM

Bu Çevre Yönetim Sistemi aşağıda bilgileri bulunan kuruluş için
This is to Certify that the Environmental Management System of



EKOVAL İTHALAT İHRACAT SAN. VE TİC. LTD. ŞTİ.

Maliköy Anadolu O.S.B. 1.Cad. No:5 Sincan- ANKARA/TÜRKİYE

Bağımsız olarak değerlendirilmiş ve aşağıda yazılı standardın gereksinimlerine
uyumlu olduğu tespit edilmiştir.
has been independently assessed and is compliant with the requirements of

ISO 14001:2015

Bu sertifika, aşağıdaki ürün veya hizmet aralıkları için geçerlidir.
This certificate is applicable to the following product or service ranges

Endüstriyel Vana, Boru ve Fittingslerin Tasarım, İmalat ve Satışı

Desing, Production and Sales on Industrial Valves, Pipes and Pipe Fittings



Sertifika No : T4119022701
İlk Yayın Tarihi : 27.02.2019
Yayın Tarihi : 27.02.2020
Geçerlilik Tarihi : 27.02.2021

Sistem etkin bir şekilde sürdürüldükçe ve gözetim denetimleri her yıl yapıldığı müddetçe bu belge üç yıl boyunca geçerlidir.
This certificate is valid for three years as long as the system is effectively maintained and surveillance audits are carried out.



SERTİfika CERTIFICATE

İş Sağlığı ve Güvenliği Yönetim Sistemi OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT SYSTEM

Bu İş Sağlığı ve Güvenliği Yönetim Sistemi aşağıda bilgileri bulunan kuruluş için
This is to Certify that the Occupational Health ve Safety Management System of



EKOVAL İTHALAT İHRACAT SAN. VE TİC. LTD. ŞTİ.
Maliköy Anadolu O.S.B. 1.Cad. No:5 Sincan- ANKARA/TÜRKİYE

Bağımsız olarak değerlendirilmiş ve aşağıda yazılı standardın gereksinimlerine
uyumlu olduğu tespit edilmiştir.
has been independently assessed and is compliant with the requirements of

ISO 45001:2018

Bu sertifika, aşağıdaki ürün veya hizmet aralıkları için geçerlidir.
This certificate is applicable to the following product or service ranges

Endüstriyel Vana, Boru ve Fittingslerin Tasarım, İmalat ve Satışı
Desing, Production and Sales on Industrial Valves, Pipes and Pipe Fittings



Sertifika No	Certificate No	: T4519121601
İlk Yayın Tarihi	Date Frist Registered	: 16.12.2019
Yayın Tarihi	Date Certificate Issued	: 16.12.2019
Geçerlilik Tarihi	Date Certificate Expires	: 16.12.2020

Sistem etkin bir şekilde sürdürüldükçe ve gözetim denetimleri her yıl yapıldığı müddetçe bu belge üç yıl boyunca geçerlidir.
This certificate is valid for three years as long as the system is effectively maintained and surveillance audits are caried out.

BILGEM

Belgelendirme, Eğitim, Gözetim Hizmetleri

Sımpaşa Mah. Çavdar Cad. Gökdemir Sok. No:2 Kt.1
Derince / KOCAELİ / TR
Tel: +90 262 239 59 59 www.tufcert.com



TÜV
AUSTRIA

CERTIFICATE

Certificate registration number: ZSTS / SZWE / 2133

The notified body
TÜV AUSTRIA SERVICES GMBH (identification number 0408)
certifies, that the manufacturer

EKOVAL İTH.İHR.SAN. ve TİC.LTD.ŞTİ.
Malıköy Anadolu OSB Mah. 1. cad No.8, Sincan/Ankara - Türkiye

performs final assessments of pressure equipment and assemblies within the scope of this certificate in accordance with the requirements of the pressure equipment directive 2014/68/EU.

The notified body performs monitoring of the final assessment by means of unexpected visits.
The manufacturer fulfils the relevant requirements for applying the following conformity assessment procedures according pressure equipment directive 2014/68/EU:
Modules A2, C2

Scope: Electromagnetic Flowmeter,
Wafer-Lug Butterfly valve, Gate valve, Check valve, Flexible joint, Flanged Butterfly valve, Ball,-
Globe,- and Air valves, Strainers, Balancing valve, Plunger needle, Control valve, Flange adaptor,
Couplings which are max. in category II acc. 2014/68/EU

Based on the inspection done on 20.12.2017 in accordance with annex III of the pressure equipment directive 2014/68/EU we certify compliance with the relevant requirements.

The results of the inspection are recorded in inspection report 17-IS-1727-PED-IR-01, dated 21.12.2017.

Pressure equipment and assemblies within the scope of this certificate shall carry the marking as illustrated:

CE 0408

This certificate is valid from 09.01.2018 to 08.01.2021, provided that the terms and conditions of the agreement with the notified body are met.

Vienn, 09.01.2018



[Signature]

DI Martin Schwarz
Notified body 0408

FM-INE-PE-PED-0103en
Certificate_A2_C2
Revision: 04 vom 01.01.2017
Seite 1/2

TÜV AUSTRIA SERVICES GMBH
Auszugsweise Vervielfältigung nur mit Genehmigung der TÜV AUSTRIA SERVICES GMBH gestattet.
Alle Prüf-, Inspektions- und Überwachungsleistungen erfolgen gemäß QM System der
TÜV AUSTRIA SERVICES GMBH

Deutschstraße 10
1230 Wien / Österreich
Tel: +43 (0)5 0454
E-Mail: me-austria@tuv.at





This certifies that

EKOVAL ITH.IHR SAN. TIC LTD STI

*has had the undermentioned product examined, tested and found,
when correctly installed, to comply with the requirements of the
United Kingdom Water Supply (Water Fittings) Regulations and
Scottish Water Byelaws.*

EK02100 & EK02150 RANGE OF GATE VALVES

*The certificate by itself is not evidence of a valid WRAS Approval. Confirmation of the current
status of an approval must be obtained from the WRAS Directory (www.wras.co.uk/directory)*

The product so mentioned will be valid until the end of:

February 2023

1802106

Certificate No.

A handwritten signature in black ink, appearing to read 'J. Furnival'.

Secretary

A handwritten signature in black ink, consisting of several vertical strokes followed by a horizontal line.

Chairman, Product Assessment Group



This certifies that

EKOVAL ITH.IHR SAN. TIC LTD STI

*has had the undermentioned product examined, tested and found,
when correctly installed, to comply with the requirements of the
United Kingdom Water Supply (Water Fittings) Regulations and
Scottish Water Byelaws.*

'EKO5' SERIES OF NON RETURN VALVES

*The certificate by itself is not evidence of a valid WRAS Approval. Confirmation of the current
status of an approval must be obtained from the WRAS Directory (www.wras.co.uk/directory)*

The product so mentioned will be valid until the end of:

September 2022

1709397

Certificate No.

A handwritten signature in black ink, appearing to read 'J. Furnival'.

Secretary

A handwritten signature in black ink, consisting of several vertical strokes followed by a horizontal line.

Chairman, Product Assessment Group



This certifies that

EKOVAL ITH.IHR SAN. TIC LTD STI

*has had the undermentioned product examined, tested and found,
when correctly installed, to comply with the requirements of the
United Kingdom Water Supply (Water Fittings) Regulations and
Scottish Water Byelaws.*

'EKO7' SERIES OF AIR RELEASE VALVES

*The certificate by itself is not evidence of a valid WRAS Approval. Confirmation of the current
status of an approval must be obtained from the WRAS Directory (www.wras.co.uk/directory)*

The product so mentioned will be valid until the end of:

July 2022

1707407

Certificate No.

A handwritten signature in black ink, appearing to read 'J. Furnival'.

Secretary

A handwritten signature in black ink, consisting of several vertical strokes followed by a horizontal line.

Chairman, Product Assessment Group



CERTIFICATION MARK

This certifies that

EKOVAL ITH.IHR SAN. TIC LTD STI

*has had the undermentioned product examined, tested and found,
when correctly installed, to comply with the requirements of the
United Kingdom Water Supply (Water Fittings) Regulations and
Scottish Water Byelaws.*

EKO 1200 SERIES OF BUTTERFLY VALVES

*The certificate by itself is not evidence of a valid WRAS Approval. Confirmation of the current
status of an approval must be obtained from the WRAS Directory (www.wras.co.uk/directory)*

The product so mentioned will be valid until the end of:

July 2021

1607389

Certificate No.

A handwritten signature in black ink, appearing to read 'J. Furnival'.

Secretary

A handwritten signature in black ink, appearing to read 'K. Husbey'.

Chairman, Product Assessment Group



This certifies that

EKOVAL ITHALAT IHRACAT SANAYI VE TICARET LTD. STI.

*has had the undermentioned product examined, tested and found,
when correctly installed, to comply with the requirements of the
United Kingdom Water Supply (Water Fittings) Regulations and
Scottish Water Byelaws.*

**EKO7600 FLANGE ADAPTORS & EKO7700 COUPLINGS BOTH FOR USE WITH DUCTILE
IRON OR STEEL PIPE: DN50 - 600**

*The certificate by itself is not evidence of a valid WRAS Approval. Confirmation of the current
status of an approval must be obtained from the WRAS Directory (www.wras.co.uk/directory)*

The product so mentioned will be valid until the end of:

June 2019

1406908

Certificate No.

A handwritten signature in black ink, appearing to read "J. Furnival".

Secretary

A handwritten signature in black ink, consisting of several vertical strokes followed by a horizontal line.

Chairman, Product Assessment Group



Flange Adaptors & Coupling



www.ekoval.com



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Preface

Ekoval is a high-tech Turkish valve manufacturing company with the headquarters located in the capital, Ankara. All the manufacturing processes are carried out with the most advanced technologies and procedures are prepared strictly according to the relevant European standards.

With the help of our international certifications ISO, CE, WRAS and GOST-R, we are able to reach markets in all 5 continents. We have a very wide range of valves covering water, oil, and gas applications like plumbing, sewage, HVAC, waterworks, fire-fighting, pumps stations, pipeline projects, drinking water lines, irrigation projects etc... With our mission “Global Company Global care” we would like to be your local valve supplier in the globe.

Wide Product Range...

Our long field experience reaching more than 40 countries in all over the world allows us to better understand the needs of our customers and offer them high quality and competitive solutions. Investing on flexible manufacturing facilities and high technology, Ekoval targets to offer shorter delivery times and wider product range to its partners.

Having environmental care and energy saving as the prior guides, Ekoval aims to offer the highest environmental standard valves to the customers with minimum energy and material consumption allowing a globally competitive price level.

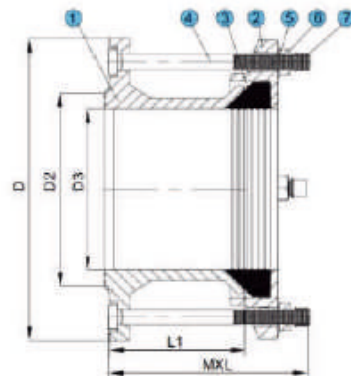
Fast & Clever Solutions...

Our products for Hot Water and Steam Installations provide minimum energy loss with less material consumption as well as low service costs. Millions of valves installed long years in different climates and working conditions in all over the world are the best proof of our product quality and reliability.

Water Works line offers a range with high environmental standards for the health care of our future generations. Our durable products serve securely above and underground for long years managing potable water, our most precious natural resources.

Our Pipeline Valves range according to API standards provides high safety standards as well as clever environmental solutions. Material quality and precise test procedures are used to ensure the safety and efficiency of big energy investments.

Universal Flange Adaptor - EKV.FA10



Material Specification

Item No:	Item Name	Material	Specification
1	Body	Ductile Iron	GGG50
2	End Ring	Ductile Iron	GGG50
3	Rubber Seal	Rubber	EPDM
4	Bolt	Galvanized Steel	ISO898-1:1999
5	Washer	Galvanized Steel	
6	Nut	Galvanized Steel	ISO898-2:1992
7	Cap	Plastic	

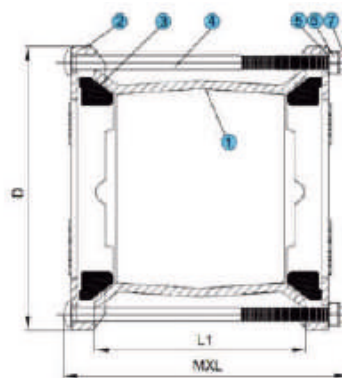
Features

- Ductile Iron GGG50 material with FBE coated.
- PN10,PN16 working pressure.
- Equipped with Galvanized Steel bolts, nuts.
- EPDM or NBR rubber seals.
- High Tolerance Mechanical Pipe Fittings.
- Angular deflection $\pm 3^\circ$.

Dimensions (mm)

Size	Pipe OD (mm)	D	D2	D3	L1	MXL	Bolt No.	Weight (kg)	Flange Designation			
									PN10/PN16	ANSI 125/150	Table D	Table E
DN40	48-60	150	84	64	82	M12X125	2	3,2	•	•	•	•
DN50	59-72	165	99	77	82	M12X125	2	3,3	•	•	•	•
DN65	72-85	185	108	90	82	M12X125	2	3,8	•	•	•	•
DN80	88-103	200	132	108	82	M12X125	4	4,9	•	•	•	•
DN100	109-128	220	156	133	82	M12X125	4	5,4	•	•	•	•
DN125	132-153	250	184	158	82	M12X140	4	7,0	•	•		•
DN150	159-182	285	211	187	82	M12X140	4	7,4	•	•		•
DN175	192-210	340	266	215	82	M12X140	4	10,8	•	•		•
DN200	218-235	340	266	241	82	M12X140	4	10,2	•	•		•
DN225	242-267	405	319	272	82	M12X140	4	14,9	•	•		
DN250	272-289	405	319	295	90	M12X140	6	13,8	•	•		
DN300	315-332	460	370	338	90	M12X150	6	18,6	•	•		
DN300	322-339	460	370	345	90	M12X150	6	18,7	•			•
DN350	351-378	520	425	382	115	M14X180	8	31,1	•			
DN350	374-391	520	425	393	115	M14X180	8	35,9	•			
DN400	400-429	580	477	432	115	M14X180	8	36,9	•			
DN400	425-442	580	477	444	115	M14X180	8	36,4	•			
DN450	476-493	640	550	498	115	M14X180	10	41,5	•			
DN500	527-544	715	585	548	115	M14X180	10	53,5	•			
DN600	630-647	840	682	650	115	M14X180	10	69,9	•			

Universal Coupling - EKV.FC10



Material Specification

Item No:	Item Name	Material	Specification
1	Center Sleeve	Carbon Steel	S235JR
2	End Ring	Ductile Iron	GGG50
3	Rubber Seal	Rubber	EPDM
4	Bolt	Galvanized Steel	ISO898-1:1999
5	Washer	Galvanized Steel	
6	Nut	Galvanized Steel	ISO898-2:1992
7	Cap	Plastic	

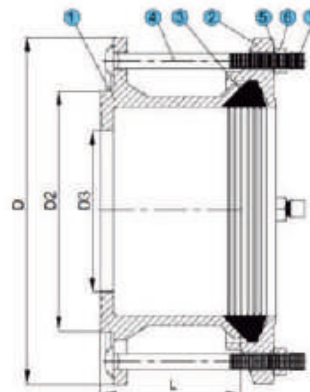
Features

- Mild Steel S235JR with FBE coated.
- PN10,PN16 working pressure.
- Equipped with Galvanized Steel bolts, nuts.
- EPDM or NBR rubber seals.
- High Tolerance Mechanical Pipe Fittings.
- Angular deflection $\pm 6^\circ$.

Dimensions (mm)

Size	Pipe OD(mm)	D	L1		Bolt No. - MXL		Weight (kg)	
			S	L	S	L	S	L
Dn40	48-60	155	95	190	2-M12X170	2-M12X260	2,3	2,8
DN50	59-72	165	95	190	2-M12X170	2-M12X260	2,4	2,8
DN65	72-85	180	95	190	2-M12X170	2-M12X260	2,7	3,2
DN80	88,103	185	95	190	4-M12X180	4-M12X280	3,7	4,5
DN100	109-128	225	95	190	4-M12X180	4-M12X280	4,3	5,2
DN125	132-153	250	95	190	4-M12X180	4-M12X280	5,8	7,0
DN150	159-182	275	110	190	4-M12X210	4-M12X280	6,4	7,5
DN175	192-210	305	130	190	4-M12X220	4-M12X280	7,7	8,7
DN200	218-235	315	130	190	4-M12X220	4-M12X280	9,4	10,8
DN225	242-267	350	130	245	4-M12X220	4-M12X350	12,3	15,4
DN250	272-289	395	130	245	6-M12X220	6-M12X350	13,3	16,8
DN300	315-332	450	130	245	6-M12X220	6-M12X350	16,2	20,2
DN300	322-339	460	130	245	6-M12X220	6-M12X350	16,3	20,3
DN350	351-378	510	130	245	8-M14X235	8-M14X350	23,7	28,3
DN350	374-391	520	130	245	8-M14X235	8-M14X350	27,3	34,6
DN400	398-429	550	130	245	8-M14X235	8-M14X350	28,8	37,2
DN400	425-442	565	130	245	8-M14X235	8-M14X350	29,1	37,1
DN450	476-493	615	130	245	10-M14X235	10-M14X350	33,1	42,2
DN500	527-544	665	130	245	10-M14X235	10-M14X350	39,3	49,4
DN600	630-647	770	130	245	10-M14X235	10-M14X350	47,6	60,0

Universal Flange Adaptor - EKV.FA10-A



Material Specification

Item No:	Item Name	Material	Specification
1	Body	Ductile Iron	GGG50
2	End Ring	Ductile Iron	GGG50
3	Rubber Seal	Rubber	EPDM
4	Bolt	Galvanized Steel	ISO898-1:1999
5	Washer	Galvanized Steel	
6	Nut	Galvanized Steel	ISO898-2:1992
7	Cap	Plastic	

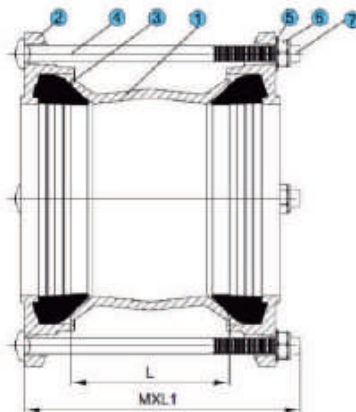
Features

- Ductile Iron GGG50 material with FBE coated.
- PN10,PN16 working pressure.
- Equipped with Galvanized Steel bolts, nuts.
- EPDM or NBR rubber seals.
- High Tolerance Mechanical Pipe Fittings.
- Angular deflection $\pm 3^\circ$.

Dimensions (mm)

Size	Pipe OD(mm)	D	D2	D3	L	MXL1	Bolt No	Weight (kg)	Flange Designation			
									PN10/PN16	ANSI 125/150	Table D	Table E
DN50	58-74	166	110	50	100	M12X150	4	4,2	•	•	•	•
DN60	68-84	187	125	65	100	M12X150	4	5,0	•	•	•	•
DN80	84-105	200	140	80	100	M12X150	4	6,3	•	•	•	•
DN100	99-118	235	155	100	100	M12X150	4	6,8	•	•	•	•
DN100	109-133	235	155	100	105	M12X150	4	7,8	•	•	•	•
DN125	133-157	285	185	133	110	M12X170	4	11,0	•	•	•	•
DN150	157-182	285	215	150	110	M12X170	4	12,5	•	•	•	•
DN200	194-215	345	265	200	120	M12X170	4	15,5	•	•	•	•
DN200	218-242	245	265	200	120	M12X170	4	17,5	•	•	•	•
DN250	242-268	410	320	245	120	M12X170	6	20,5	•	•	•	•
DN250	266-291	410	320	250	120	M12X170	6	21,0	•	•	•	•
DN250	280-305	410	320	250	120	M12X170	6	25,5	•	•	•	•
DN300	302-327	490	370	300	120	M12X170	6	27,0	•	•	•	•
DN300	324-350	455	410	310	140	M12X190	6	24,0	•	•	•	•
DN350	352-378	520	470	350	120	M14X170	8	25,4	•	•	•	•
DN350	384-410	520	470	360	140	M14X190	8	29,2	•	•	•	•
DN400	384-410	580	525	400	160	M14X210	8	29,2	•	•	•	•
DN400	410-436	580	525	400	160	M14X210	8	34,5	•	•	•	•
DN400	436-462	580	525	410	160	M14X210	8	36,8	•	•	•	•

Universal Coupling - EKV.FC10-A



Material Specification

Item No:	Item Name	Material	Specification
1	Center Sleeve	Ductile Iron	GGG50
2	End Ring	Ductile Iron	GGG50
3	Rubber Seal	Rubber	EPDM
4	Bolt	Galvanized Steel	ISO898-1:1999
5	Washer	Galvanized Steel	
6	Nut	Galvanized Steel	ISO898-2:1992
7	Cap	Plastic	

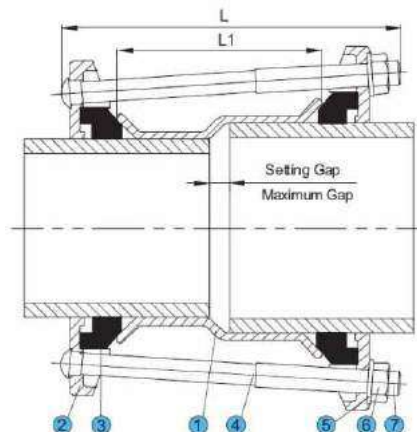
Features

- Ductile Iron GGG50 material with FBE coated.
- PN10,PN16 working pressure.
- Equipped with Galvanized Steel bolts, nuts.
- EPDM or NBR rubber seals.
- High Tolerance Mechanical Pipe Fittings.
- Angular deflection $\pm 6^\circ$.

Dimensions (mm)

Size	Pipe OD (mm)	L	MXL1	Bolt No.	Weight (kg)
dn50	58-74	100	M12X190	4	2,6
dn65	68-84	100	M12X190	4	3,9
dn80	84-105	100	M12X190	4	5,2
dn100	99-118	100	M12X190	4	5,5
dn100	109-133	100	M12X190	4	6,8
dn125	133-157	100	M12X190	4	6,8
dn150	157-182	115	M12X210	4	9,4
dn150	177-201	115	M12X210	4	9,8
dn200	194-215	115	M12X210	4	9,9
dn200	218-242	160	M12X230	6	14,4
dn225	242-268	160	M12X230	6	18,5
dn250	266-291	160	M12X250	6	18,6
dn250	280-305	160	M12X250	6	20,5
dn300	302-327	160	M12X250	6	22,0
dn300	324-350	160	M14X260	6	16,5
dn350	352-378	160	M14X260	8	19,9
dn350	384-410	160	M14X260	8	21,1
dn400	410-462	160	M14X260	8	21,8
dn400	436-462	160	M14X260	8	23,5

Stepped Coupling - EKV.FC20



Material Specification

Item No:	Item Name	Material	Specification
1	Center Sleeve	Carbon Steel	S235JR
2	End Ring	Ductile Iron	GGG50
3	Rubber Seal	Rubber	EPDM
4	Bolt	Galvanized Steel	ISO898-1:1999
5	Washer	Galvanized Steel	
6	Nut	Galvanized Steel	ISO898-2:1992
7	Cap	Plastic	

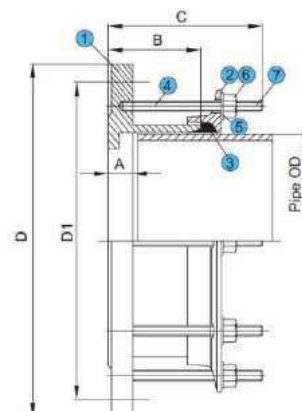
Features

- Mild Steel S235JR with FBE coated.
- PN10,PN16 working pressure.
- Equipped with Galvanized Steel bolts, nuts.
- EPDM or NBR rubber seals.
- High Tolerance Mechanical Pipe Fittings.
- Angular deflection $\pm 6^\circ$.

Dimensions (mm)

Size Range				Overall Length	Sleeve Length	Setting Gap	Max Gap	Bolts No. & Size	Weight (kg)
Small Pipe OD		Large Pipe OD							
Min	Max	Min	Max	L	L1				
59	72	68	84	210	115	20	40	4-M12X190	2,5
59	72	88	103	210	115	20	40	4-M12X190	3,9
68	84	88	103	210	115	20	40	4-M12X190	4,0
88	103	107	128	210	115	20	40	4-M12X190	5,1
107	128	132	153	220	115	20	40	4-M12X210	6,8
132	153	159	182	220	125	20	40	4-M12X220	8,2
159	182	192	210	230	125	25	50	4-M12X220	9,2
192	210	218	235	230	135	25	50	4-M12X230	10,1
218	235	242	266	230	135	25	50	4-M12X230	14,0
242	266	272	289	230	135	25	50	4-M12X230	15,5
272	289	315	332	230	135	25	50	4-M12X230	20,3

Dedicated Flange Adaptor- EKV.FA20



Material Specification

Item No:	Item Name	Material	Specification
1	Body	Ductile Iron	GGG50
2	End Ring	Ductile Iron	GGG50
3	Rubber Seal	Rubber	EPDM
4	Bolt	Galvanized Steel	ISO898-1:1999
5	Washer	Galvanized Steel	
6	Nut	Galvanized Steel	ISO898-2:1992
7	Cap	Plastic	

Features

- Ductile Iron GGG50 material with FBE coated.
- PN10,PN16 working pressure.
- Equipped with Galvanized Steel bolts, nuts.
- EPDM or NBR rubber seals.
- Suitable for Ductile Iron Pipes.

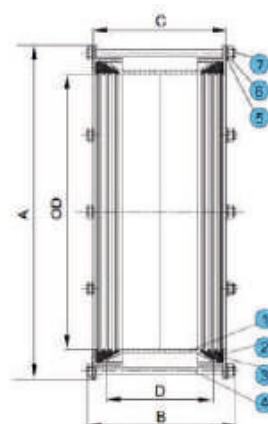
Dimensions (mm)

Size	Pipe OD	B	C	A	PN10 Flange Drilling			PN16 Flange Drilling			Bolts No.	Bolts Size (M x L)
					D	D1	N-Ød	D	D1	N-Ød		
DN40	56	73	105	19	150	110	4-19	150	110	4-19	4	M12X100
DN50	66	73	105	19	165	125	4-19	165	125	4-19	4	M12X100
DN60	77	73	105	19	175	135	4-19	175	135	4-19	4	M12X100
DN65	82	73	105	19	185	145	4-19	185	145	4-19	4	M12X100
DN80	98	73	105	19	200	160	8-19	200	160	8-19	4	M12X100
DN100	118	73	105	19	220	180	8-19	220	180	8-19	4	M12X100
DN125	144	76	115	19	250	210	8-19	250	210	8-19	4	M12X100
DN150	170	76	115	19	285	240	8-23	285	240	8-23	4	M12X110
DN200	222	76	115	20	340	295	8-23	340	395	12-23	4	M12X110
DN250	274	90	130	22	400	350	12-23	400	355	12-28	6	M12X120
DN300	326	90	130	24,5	455	400	12-23	455	410	12-28	6	M12X120
DN350	378	110	180	24,5	505	460	16,23	520	470	16,28	8	M16X170
DN400	429	110	180	24,5	565	515	16-28	580	525	16-31	8	M16X170
DN450	480	110	190	24,5	615	565	20-28	640	585	20-31	10	M16X170
DN500	532	115	190	26,5	670	620	20,28	715	650	20-34	10	M16X180
DN600	635	115	190	30	780	725	20-31	840	770	20-37	10	M16X180
DN700	738	115	190	32,5	895	840	24-31	910	840	24-37	12	M16X180
DN800	842	115	190	35	1015	950	24-34	1025	950	24-40	12	M16X180
DN900	942	120	190	37,5	1115	1050	28-34	1125	1050	28-40	14	M16X180
DN1000	1048	120	190	40	1230	1160	28-37	1255	1170	28-43	14	M16X180
DN1200	1255	130	190	45	1455	1380	32-40	1485	1390	32-49	16	M16X180
DN1400	1462	130	190	46	1675	1590	36-43	1685	1590	36-49	18	M20X200
DN1600	1668	190	275	49	1915	1820	40-49	1930	1820	40-56	20	M20X240
DN1800	1875	190	275	52	2115	2020	44-49	2130	2020	44-56	22	M20X240
DN2000	2082	190	275	55	2325	2230	48-49	2345	2230	48-62	24	M20X240

Dedicated Couplin- EKV.FC30

Material Specification

Item No:	Item Name	Material	Specification
1	Center Sleeve	Ductile Iron	GGG50
2	End Ring	Ductile Iron	GGG50
3	Rubber Seal	Rubber	EPDM
4	Bolt	Galvanized Steel	ISO898-1:1999
5	Washer	Galvanized Steel	
6	Nut	Galvanized Steel	ISO898-2:1992
7	Cap	Plastic	



Dimensions (mm)

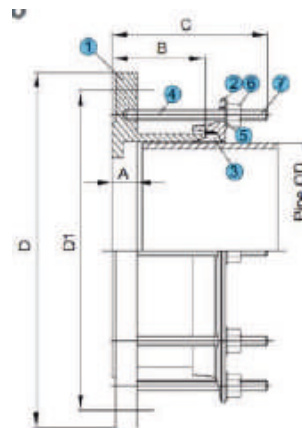
Size	Pipe OD	A	B	C	D	Bolts No.	Bolts Size (M x L)
DN40	56	120	166	125	102	2	M12X158
DN50	66	126	166	125	102	2	M12X158
DN60	77	135	166	125	102	2	M12X158
DN65	82	156	166	125	102	2	M12X158
DN80	98	184	166	130	102	4	M12X158
DN100	118	205	166	130	102	4	M12X158
DN125	144	232	166	130	102	4	M12X158
DN150	170	264	173	133	102	4	M12X165
DN200	222	315	173	133	102	6	M12X165
DN250	274	374	173	136	102	6	M12X165
DN300	326	426	173	136	102	6	M12X165
DN350	378	494	254	200	152	8	M16X240
DN400	429	544	254	200	152	8	M16X240
DN450	480	595	254	200	152	10	M16X240
DN500	532	650	254	210	152	10	M16X240
DN600	635	753	254	210	152	12	M16X240
DN700	738	858	254	210	152	12	M16X240
DN800	842	962	254	210	152	12	M16X240
DN900	945	1070	280	238	178	14	M16X280
DN1000	1048	1173	280	238	178	14	M16X280
DN1100	1152	1282	280	240	178	16	M16X280
DN1200	1255	1385	280	240	178	18	M16X280
DN1400	1462	1592	295	250	178	20	M20X280
DN1600	1668	1798	295	250	178	24	M20X280
DN1800	1875	2015	375	320	254	32	M20X360
DN2000	2082	2222	375	320	254	36	M20X360



Features

- Ductile Iron GGG50 material with FBE coated.
- PN10,PN16 working pressure.
- Equipped with Galvanized Steel bolts, nuts.
- EPDM or NBR rubber seals.
- Suitable for Ductile Iron Pipes.

Dedicated Flange Adaptor- EKV.FA30



Material Specification

Item No:	Item Name	Material	Specification
1	Body	Ductile Iron	GJS500-7
2	End Ring	Ductile Iron	GJS500-7
3	Rubber Seal	Rubber	EPDM
4	Bolt	Galvanized Steel	ISO898-1:1999
5	Washer	Galvanized Steel	
6	Nut	Galvanized Steel	ISO898-2:1992
7	Cap	Plastic	

Features

- Ductile Iron GGG50 material with FBE coated.
- PN10,PN16 working pressure.
- Equipped with Galvanized Steel bolts, nuts.
- EPDM or NBR rubber seals.
- Suitable for Ductile Iron Pipes.

Dimensions (mm)

Size	Pipe OD	B	C	A		PN10 Flange Drilling			PN16 Flange Drilling			Bolts No.	Bolts Size (MXL)
				PN10	PN16	D	D1	N-Ød	D	PCD	N-Ød		
Dn50	60,5	73	105	19	19	165	125	4-19	165	125	4-19	4	M12X100
DN65	76,3	73	105	19	19	185	145	4-19	185	145	4-19	4	M12X100
DN80	89,1	73	105	19	19	200	160	8-19	200	160	8-19	4	M12X100
DN100	114,3	73	105	19	19	220	180	8-19	220	180	8-19	4	M12X100
DN125	139,8	76	115	19	19	250	210	8-19	250	210	8-19	4	M12X110
DN150	168,3	76	115	19	19	285	240	8-23	285	240	8-23	4	M12x110
DN200	219,1	76	115	20	20	340	295	8-23	340	295	12-23	4/6	M12X110
DN250	273,1	90	130	22	24	400	350	12,23	400	355	12,28	6	M12X120
DN300	323,9	90	130	24	24	455	400	12,23	455	410	12,28	6	M12X120
DN350	355,6	110	180	24	26	505	460	16-23	520	470	16,28	8	M16X170
DN400	406,4	110	180	24	28	565	515	16-28	580	525	16-31	8	M16X170
DN450	457,2	110	190	25	30	615	565	20-28	640	585	20-31	10	M16X170
DN500	508	115	190	26	31	670	620	20-28	718	650	20-34	10	M16X180
DN600	609,6	115	190	30	36	780	725	20-31	840	770	20-37	10	M16X180
DN700	711,2	115	190	32	39	895	840	24-31	910	840	24-37	12	M16X180
DN800	812,8	115	190	35	43	1015	950	23-34	1025	950	24-40	12	M16X180
DN900	914,4	115	190	37	46	1115	1050	20-34	1125	1050	28-40	14	M16X180
DN1000	1016	115	190	40	50	1230	1160	28-37	1255	1170	2843	14	M16X180
DN1200	1219,2	130	190	45	57	1455	1380	32-40	1485	1390	32-49	16	M16X180

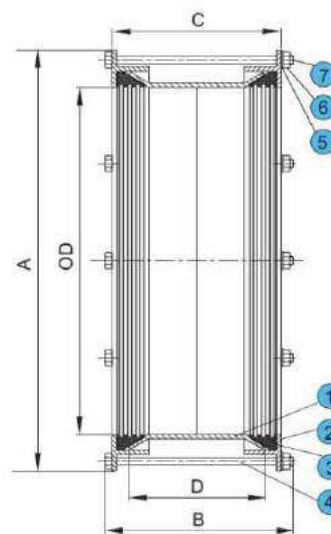
Dedicated Coupling- EKV.FC40

Material Specification

Item No:	Item Name	Material	Specification
1	Center Sleeve	Ductile Iron	GGG50
2	End Ring	Ductile Iron	GGG50
3	Rubber Seal	Rubber	EPDM
4	Bolt	Galvanized Steel	ISO898-1:1999
5	Washer	Galvanized Steel	
6	Nut	Galvanized Steel	ISO898-2:1992
7	Cap	Plastic	

Dimensions (mm)

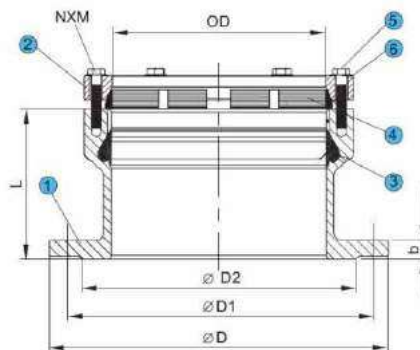
Size	Pipe OD	A	B	C	D	Bolts No.	Bolts Size (M x L)
DN15	21,3	98	150	112	83	2	M12X140
DN20	26,9	102	150	112	83	2	M12X140
DN25	33,7	115	150	112	83	2	M12X140
DN32	42,4	120	150	112	83	2	M12X140
DN40	48,3	125	150	112	83	2	M12X140
DN50	60,3	138	150	112	83	2	M12X140
DN65	76,1	160	160	118	102	2	M12X152
DN80	88,9	172	160	125	102	3	M12X152
DN90	101,6	184	160	125	102	4	M12X152
DN100	114,3	200	160	125	102	4	M12X152
DN125	139,7	232	173	125	102	4	M12X152
DN150	165,2	258	173	125	102	4	M12X152
DN150	168,3	260	173	125	102	4	M12X152
DN200	216,3	310	173	125	102	6	M12X152
DN200	219,1	313	173	125	102	6	M12X152
DN250	267,4	366	173	127	102	6	M12X152
DN250	273,1	373	173	127	102	6	M12X152
DN300	318,5	420	173	129	102	6	M12X152
DN300	323,9	424	173	129	102	6	M12X152
DN350	355,6	471	254	200	152	8	M16X240
DN400	406,4	521	254	200	152	8	M16X240
DN450	457,2	572	254	200	152	8	M16X240
DN500	508	628	254	210	152	10	M16X240
DN550	558,8	679	254	210	152	10	M16X240
DN600	609,6	730	254	210	152	10	M16X240
DN650	660,4	780	254	210	152	12	M16X240
DN700	711,2	831	254	210	152	12	M16X240
DN750	762	882	254	210	152	12	M16X240
DN800	812,8	932	254	210	152	12	M16X240
DN850	863,6	983	254	210	152	12	M16X240
DN900	914,4	1040	254	210	152	14	M16X240
DN1000	1016	1141	280	238	178	14	M16X280
DN1050	1066,8	1197	280	240	178	16	M16X280
DN1100	1117,6	1248	280	240	178	16	M16X280
DN1200	1219,2	1350	280	240	178	16	M16X280



Features

- Ductile Iron GGG50 material with FBE coated.
- PN10,PN16 working pressure.
- Equipped with Galvanized Steel bolts, nuts.
- EPDM or NBR rubber seals.
- Suitable for Ductile Iron Pipes.

Tensile Restrained Flange Adaptor for HDPE Pipe EKV.FA801



Material Specification

Item No:	Item Name	Material	Specification
1	Body	Ductile Iron	GGG50
2	End Ring	Ductile Iron	GGG50
3	Rubber Seal	Rubber	EPDM
4	Grip Ring	Brass	
5	Bolt	Galvanized Steel	ISO898-1-1999
6	Washer	Galvanized Steel	

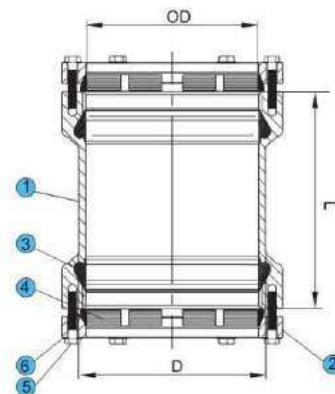
Features

- Ductile Iron GGG50 material with FBE coated.
- PN10,PN16 working pressure.
- Equipped with Galvanized Steel bolts, nuts.
- EPDM or NBR rubber seals.
- High Tolerance Mechanical Pipe Fittings

Dimensions (mm)

Size	Pipe OD	PN	D	D1	D2	b	L	NXM	DIN EN PN10/PN16	Weight Kg
DN50	63	10/16	165	125	99	19	73	2XM10	•	4
DN65	75	10/16	185	145	118	19	74	2XM10	•	5,2
DN80	90	10/16	200	160	132	19	75	4XM10	•	6,4
DN100	110	10/16	220	180	156	19	76	4XM10	•	7,3
DN100	125	10/16	220	180	156	19	77	4XM10	•	11
DN125	125	10/16	250	210	184	19	76	4XM10	•	11,5
DN125	140	10/16	250	210	184	19	76,5	4XM10	•	13
DN150	160	10/16	285	240	211	19	96	4XM10	•	14,5
DN150	180	10/16	285	240	211	19	96	4XM10	•	14,5
DN200	200	16	340	295	266	20	112	4XM10	•	18,5
DN200	225	16	340	295	266	20	113	4XM10	•	19,5
DN250	250	16	400	350	319	22	128	6XM10	•	28
DN250	280	16	400	355	319	22	136	6XM10	•	30
DN300	315	16	455	410	370	24	158	6XM10	•	41

Tensile Restrained Coupling for HDPE Pipe EKV.FA801



Material Specification

Item No:	Item Name	Material	Specification
1	Center Sleeve	Ductile Iron	GGG50
2	End Ring	Ductile Iron	GGG50
3	Rubber Seal	Rubber	EPDM
4	Grip Ring	Brass	
5	Bolt	Galvanized Steel	ISO898-1-1999
6	Washer	Galvanized Steel	

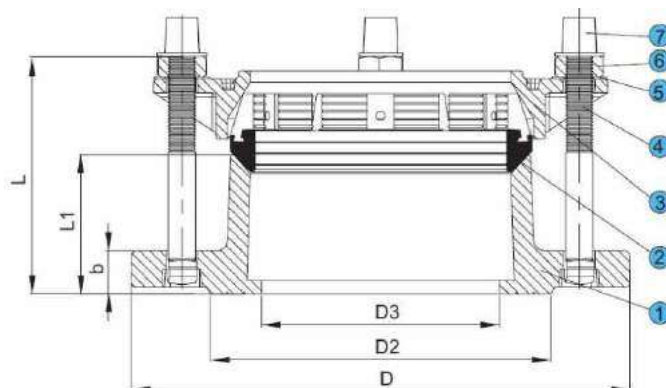
Features

- Ductile Iron GGG50 material with FBE coated.
- PN10,PN16 working pressure.
- Equipped with Galvanized Steel bolts, nuts.
- EPDM or NBR rubber seals.
- High Tolerance Mechanical Pipe Fittings

Dimensions (mm)

Pipe OD	D	L mm	NXM mm	Weight kg
63	130	125	2XM10	4
75	146	126	4XM10	5,8
90	159	128	4XM10	6,5
110	182	130	4XM10	8
125	195	134	4XM10	9,5
140	212	145	4XM10	11
160	235	170	4XM10	13
180	256	185	4XM10	15,5
200	275	210	4XM10	18
225	302	215	4XM10	18,5
250	325	240	6XM10	31,5
280	359	250	6XM10	36
315	394	300	6XM10	48

Tensile Restrained Flange Adaptor for HDPE Pipe EKV.FA802



Material Specification

Item No:	Item Name	Material	Specification
1	Body	Ductile Iron	GGG50
2	Sealing Ring	Rubber+Brass	EPDM+Brass
3	End Ring	Ductile Iron	GGG50
4	Bolts	Galvanized Steel	ISO898-1-1999
5	Washer	Galvanized Steel	
6	Nuts	Galvanized Steel	ISO898-2-1992
7	Cap	Plastic	

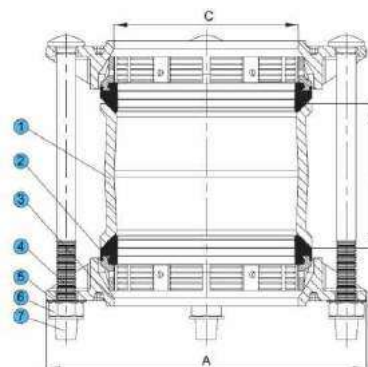
Features

- Ductile Iron GGG50 material with FBE coated.
- PN10,PN16 working pressure.
- Equipped with Galvanized Steel bolts, nuts.
- EPDM or NBR rubber seals.
- High Tolerance Mechanical Pipe Fittings

Dimensions (mm)

Size	Pipe OD	D3	D	b	L1	L	Bolts Qty	DIN EN PN10/PN16	Weight kg
DN50	50	50	165	19	63	115	2XM12	•	3,61
DN50/DN60DN65	63	55	180	19	63	115	2XM12	•	4,29
DN60/DN65	75	66	180	19	63	115	2XM12	•	4,39
DN80	90	84	180	19	63	115	4XM12	•	4,58
DN100	110	105	200	19	63	115	4XM12	•	6,44
DN125	125	135	220	19	63	115	4XM12	•	6,63
DN150	160	154	285	19	63	115	4XM12	•	8,39
DN200	200	210	340	19	63	140	4XM14	•	13,75
DN200	225	210	340	20	88	160	4XM14	•	14,72
DN250	250	260	400	22	88	160	6XM16	•	23,89
DN250	280	275	400	22	88	160	6XM16	•	24,38
DN300	315	302	455	24	88	160	6XM16	•	27,89

Tensile Restrained Coupling for HDPE Pipe EKV.FC802



Material Specification

Item No:	Item Name	Material	Specification
1	Center Sleeve	Ductile Iron	GGG50
2	Sealing Ring	Rubber+Brass	EPDM+Brass
3	End Ring	Ductile Iron	GGG50
4	Bolts	Galvanized Steel	ISO898-1-1999
5	Washer	Galvanized Steel	
6	Nuts	Galvanized Steel	ISO898-2-1992
7	Cap	Plastic	

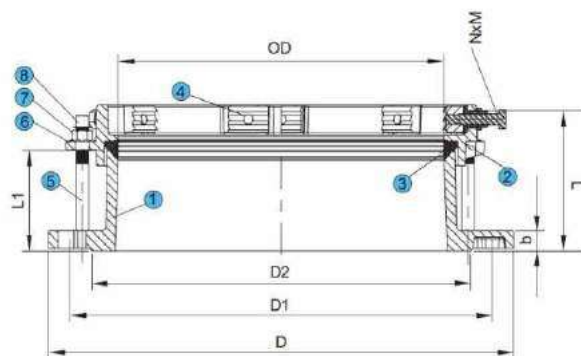
Features

- Ductile Iron GGG50 material with FBE coated.
- PN10,PN16 working pressure.
- Equipped with Galvanized Steel bolts, nuts.
- EPDM or NBR rubber seals.
- High Tolerance Mechanical Pipe Fittings

Dimensions (mm)

Pipe OD	ID	A	L	Bolts Qty	Weight (kg)
50	55	140	95	2XM12	2,73
63	67	150	95	2XM12	3,41
75	80	150	95	4XM12	4,10
90	95	180	95	4XM12	4,58
110	115	200	95	4XM12	6,34
125	130	240	95	4XM12	7,80
160	165	270	95	4XM14	9,56
200	205	325	110	4XM14	15,11
225	230	325	135	4XM14	19,01
250	255	380	135	6XM16	27,30
280	285	380	135	6XM16	29,25
315	320	420	170	6XM16	43,88

Tensile Restrained Flange Adaptor for HDPE Pipe EKV.FA802-B



Material Specification

Item No:	Item Name	Material	Specification
1	Body	Ductile Iron	GGG50
2	End Ring	Ductile Iron	GGG50
3	Rubber Seal	Rubber	EPDM
4	Grip Tooth	Brass	
5	Bolt	Galvanized Steel	ISO898-1:1999
6	Washer	Galvanized Steel	
7	Nut	Galvanized Steel	ISO898-1:1992
8	Cap	Plastic	

Features

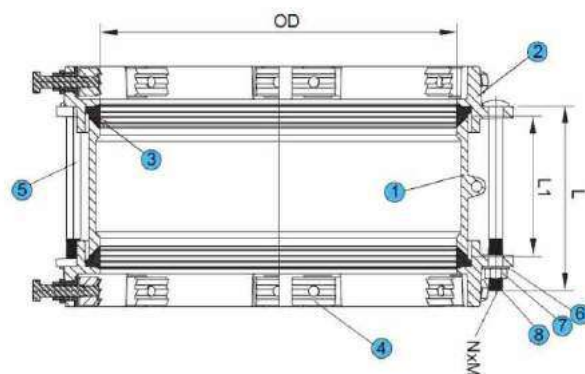
- Ductile Iron GGG50 material with FBE coated.
- PN10,PN16 working pressure.
- Equipped with Galvanized Steel bolts, nuts.
- EPDM or NBR rubber seals.
- High Tolerance Mechanical Pipe Fittings

Dimensions (mm)

Size	Pipe OD	D	D2	b	L	L1	NxM	DIN EN PN10/PN16	Weight kg
DN400	400	580	480	26,5	160	110	8XM16	•	68
DN500	500	715	609	28	180	115	10XM16	•	85
DN500	560	715	609	31	200	115	10XM16	•	93
DN600	630	840	720	26,5	180	120	10XM16	•	110



Tensile Restrained Coupling for HDPE Pipe EKV.FC802-B



Material Specification

Item No:	Item Name	Material	Specification
1	Center Sleeve	Carbon Steel	S235JR
2	End Ring	Ductile Iron	GGG50
3	Rubber Seal	Rubber	EPDM
4	Grip Tooth	Brass	
5	Bolt	Galvanized Steel	ISO898-1:1999
6	Washer	Galvanized Steel	
7	Nut	Galvanized Steel	ISO898-1:1992
8	Cap	Plastic	

Features

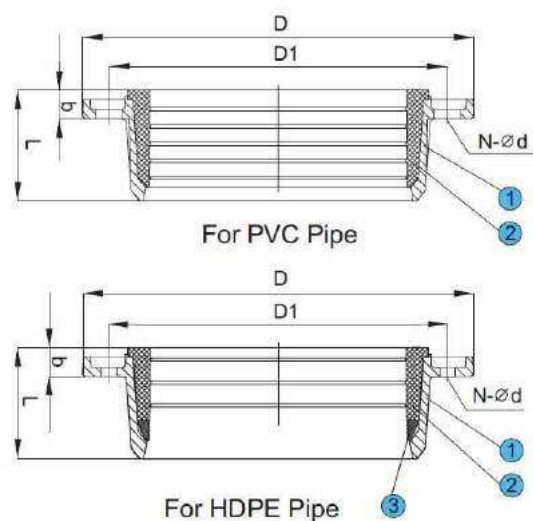
- Ductile Iron GGG50 material with FBE coated.
- PN10,PN16 working pressure.
- Equipped with Galvanized Steel bolts, nuts.
- EPDM or NBR rubber seals.
- High Tolerance Mechanical Pipe Fittings

Dimensions (mm)

Pipe OD	L	L2	NxM	Weight kg
OD400	240	152	8XM16	50
OD500	250	152	10XM16	72
OD560	250	152	10XM16	66
OD630	250	152	10XM16	90



Quick Flange Adaptor for PCV/HDPE Pipes EKV.FA40



Material Specification

Item No:	Item Name	Material	Specification
1	Body	Ductile Iron	GGG50
2	Seal Ring	Rubber	EPDM
3	Grip Ring	Brass	

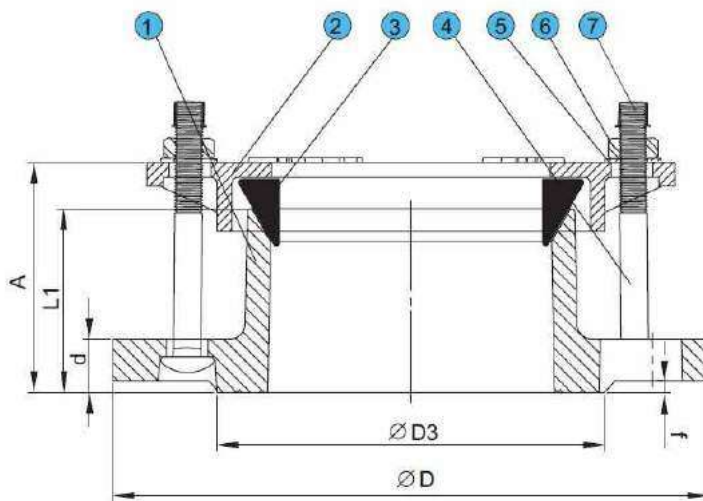
Features

- Ductile Iron GGG50 material with FBE coated.
- PN10,PN16 working pressure.
- Equipped with Galvanized Steel bolts, nuts.
- EPDM or EPDM+Brass Seal Ring.
- Flange Drilling to ISO PN10/PN16

Dimensions (mm)

Size	Pipe OD	D	b	L	PN10		PN16		Weight (kg)	
					D1	N-Ød	D1	N-Ød	PVC	HDPE
DN40	50	165	19	48	110	4-19	110	4-19	1,74	1,79
DN50/DN65	63	165	19	53	125	4-19	125	4-19	1,84	1,90
DN60/DN65	63	185	19	53	135/145	4-19	135/145	4-19	1,72	1,78
DN60/DN65	75	185	19	57	135/145	4-19	135/145	4-19	1,89	1,96
DN80	75	200	19	57	160	8-19	160	8-19	2,46	2,54
DN80	90	200	19	63	160	8-19	160	8-19	2,46	2,57
DN100	110	220	19	63	180	8-19	180	8-19	3,09	3,24
DN125	125	250	19	72	210	8-19	210	8-19	4,14	4,46
DN125	140	250	19	72	210	8-19	210	8-19	4,32	4,83
DN150	160	285	19	87,5	240	8-23	240	8-23	5,45	6,07
DN200	200	340	20	93,5	295	8-23	295	12-23	6,25	7,14
DN200	225	340	20	93,5	295	8-23	295	12-23	7,18	8,11
DN250	250	400	22	98	350	12-23	355	12-28	9,73	10,93
DN300	315	455	24,5	115	400	12-23	410	12-28	14,04	15,44
DN350	355	520	26,5	115	460	16-23	470	16-28	25,00	26,80
DN400	400	580	28	128	515	16-28	525	16-31	21,80	23,54

Flange Adaptor for PCV/HDPE Pipe EKV.FA50



Material Specification

Item No:	Item Name	Material	Specification
1	Body	Ductile Iron	GGG50
2	End Ring	Ductile Iron	GGG50
3	Rubber Seal	Rubber	EPDM
4	Bolt	Galvanized Steel	ISO898-1:1999
5	Washer	Galvanized Steel	
6	Nut	Galvanized Steel	ISO898-1:1992
7	Cap	Plastic	

Features

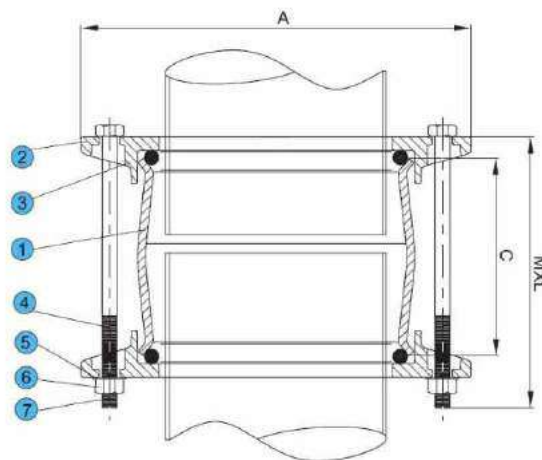
- Ductile Iron GGG50 material with FBE coated.
- PN10,PN16 working pressure.
- Equipped with Galvanized Steel bolts, nuts.
- EPDM or NBR rubber seals.
- High Tolerance Mechanical Pipe Fittings.

Dimensions (mm)

Pipe OD	D	D3	A	L1	d	f	Bolt & Qty	Weight (kg)
63	175	99	155	63	18	3	4-M12	3
75	175	99	168	63	18	3	4-M12	3,4
90	190	131	185	68	18	3	4-M12	3,75
110	210	153	205	68	18	3	4-M12	4,5
160	275	201	260	68	18	3	4-M12	6,2
200	330	266	310	68	19	3	4-*M12	9
225	330	266	325	68	19	3	4-M12	11,3
250	405	319	355	68	19	3	6-M12	15,5
315	455	370	425	88	20	4	6-M12	18,2



Gibault Joint for PCV Pipe EKV.FC50



Material Specification

Item No:	Item Name	Material	Specification
1	Center Sleeve	Ductile Iron	GGG50
2	End Ring	Ductile Iron	GGG50
3	Rubber Seal	Rubber	EPDM
4	Bolt	Galvanized Steel	ISO898-1:1999
5	Washer	Galvanized Steel	
6	Nut	Galvanized Steel	ISO898-1:1992
7	Cap	Plastic	

Features

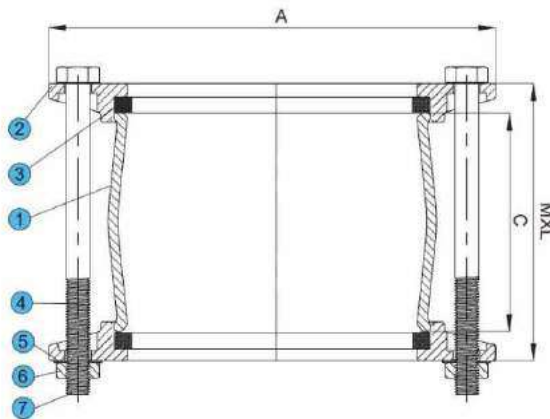
- Ductile Iron GGG50 material with FBE coated.
- PN10,PN16 working pressure.
- Equipped with Galvanized Steel bolts, nuts.
- EPDM or NBR rubber seals.

Dimensions (mm)

PVC Pipe OD	A(mm)	C(mm)	Bolts No.	MXL	Weight (kg)
63	136	125	2	M12X180	1,70
75	150	125	2	M12X180	2,12
90	164	125	3	M12X180	2,48
110	185	145	3	M12X200	3,31
125	205	145	3	M12X200	3,69
140	224	153	4	M12X200	4,66
160	240	185	4	M12X240	6,57
180	275	181	4	M12X240	7,50
200	288	185	6	M12X240	8,02
250	339,5	202	6	M12X260	13,90
315	412	202	6	M12X260	17,14
400	495	202	8	M12X260	21,79
500	592	202	10	M12x260	26,76



Gibault Joint for PCV Pipe EKV.FC60



Material Specification

Item No:	Item Name	Material	Specification
1	Center Sleeve	Cast Iron / Ductile Iron	GG20/GGG50
2	End Ring	Cast Iron / Ductile Iron	GG20/GGG50
3	Seal Ring	Rubber	EPDM
4	Bolt	Galvanized Steel	
5	Washer	Galvanized Steel	
6	Nut	Galvanized Steel	
7	Cap	Plastic	

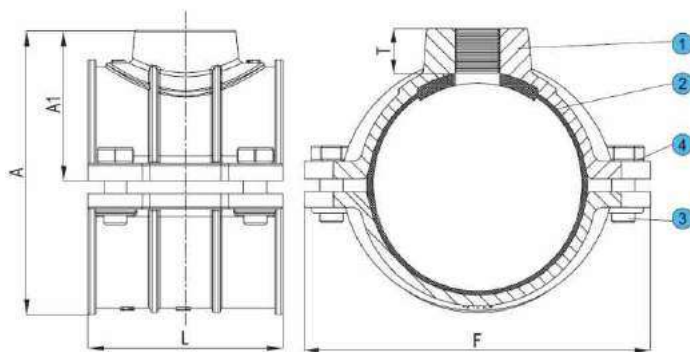
Features

- Ductile Iron GGG50 material with FBE coated.
- PN10,PN16 working pressure.
- Equipped with Galvanized Steel bolts, nuts.
- EPDM or NBR rubber seals.

Dimensions (mm)

PVC Pipe OD	A	C	Bolts No.	MXL	Weight (kg)
50	130	80	2	M10X160	2,2
63	137	100	2	M10X160	2,2
75	149	100	2	M12X160	2,7
90	164	120	2	M12X180	3
110	184	120	3	M12X180	4,5
125	199	120	3	M12X190	6,5
140	214	120	3	M12X190	7
160	234	140	3	M12X210	8
180	254	140	3	M12X210	10
200	274	140	3	M12X210	12
250	341	160	4	M14X240	19
315	406	160	4	M14X240	25
400	495	160	6	M14X240	30
500	600	160	6	M14X240	40

Saddle Clamp for PVC Pipe - EKV.T501



Material Specification

Item No:	Item Name	Material	Specification
1	Body	Ductile Iron	GGG50
2	Gasket	Rubber	EPDM
3	Bolt	Galvanized Steel	ISO898-1:1999
4	Washer	Galvanized Steel	

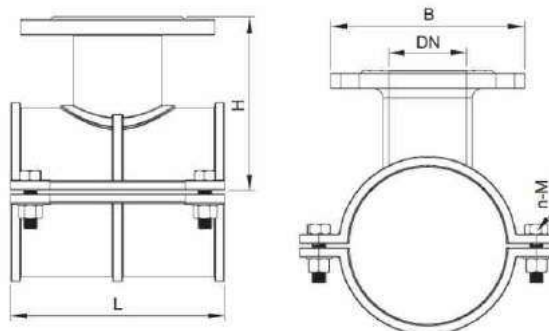
Features

- Ductile Iron GGG50 material with FBE coated.
- PN10,PN16 working pressure.
- Equipped with Galvanized Steel bolts, nuts.
- EPDM or NBR rubber seals.

Dimensions (mm)

Pipe OD	D	L	A	A1	F	T	Bolt Size	Weight (kg)
40	3/4"-1"	70	74	43	100	18	M8X30	1,1
50	3/4"-1"	80	84	48	114	18	M10x35	1,7
63	3/4"-2"	90	97	54	127	18	M12X35	1,8
75	3/4"-2"	100	110	61	144	18	M10X35	2,2
90	3/4"-2"	100	124	70	156	20	M10X35	2,5
110	3/4"-2"	100	144	80	178	20	M10X35	3
125	3/4"-2"	110	160	90	197	20	M12X35	3,3
140	3/4"-2"	125	176	97	212	20	M12X35	4,5
160	3/4"-2"	125	198	109	233	20	M12X35	5,2
200	3/4"-3"	140	240	131	282	20	M14X40	6,6
225	3/4"-2"	125	266	144	307	20	M14X40	9,5
250	3/4"-3"	140	291	156	334	20	M14X40	10,5
315	3/4"-3"	140	356	189	400	20	M14X40	14,5

Tapping Saddle for PVC Pipe - EKV.T502



Material Specification

Item No:	Item Name	Material	Specification
1	Body	Ductile Iron	GGG50
2	Gasket	Rubber	EPDM
3	Bolt	Galvanized Steel	ISO898-1:1999
4	Washer	Galvanized Steel	
5	Nut	Galvanized Steel	ISO898-1:1992

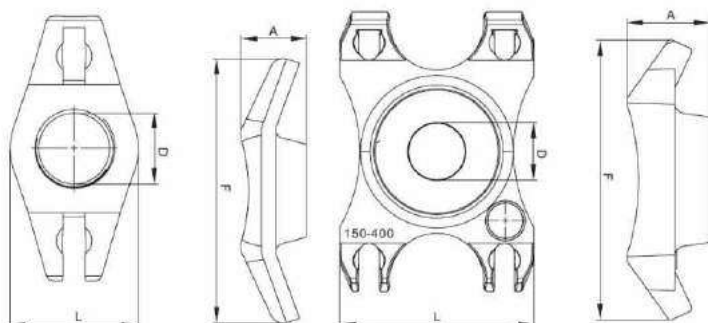
Features

- Ductile Iron GGG50 material with FBE coated.
- PN10,PN16 working pressure.
- Equipped with Galvanized Steel bolts, nuts.
- EPDM or NBR rubber seals.

Dimensions (mm)

Pipe OD	D	L	H	B	n-M
OD90	DN50	180	130	165	2-M14
OD90	DN60/DN65	180	130	185	2-M14
OD110	DN50	200	130	165	2-M14
OD110	DN60/DN65	200	130	185	2-M14
OD110	DN80	200	140	200	2-M14
OD110	DN100	220	150	220	2-M14
OD160	DN50	185	170	165	2-M16
OD160	DN60/DN65	185	180	185	2-M16
OD160	DN80	185	190	200	2-M16
OD160	DN100	185	200	220	2-M16
OD200	DN50	220	195	165	2-M16
OD200	DN60/DN65	220	215	185	2-M16
OD200	DN80	220	225	200	2-M16
OD200	DN100	220	230	220	2-M16
OD200	DN150	295	250	285	3-M16
OD225	DN50	220	195	165	2-M16
OD225	DN60/DN65	220	215	185	2-M16
OD225	DN80	220	225	200	2-M16
OD225	DN100	220	230	220	2-M16
OD250	DN50	200	250	165	2-M16
OD250	DN60/DN65	200	250	185	2-M16
OD250	DN80	200	255	200	2-M16
OD250	DN100	220	265	220	2-M16
OD315	DN50	200	290	165	2-M16
OD315	DN60/DN65	200	295	185	2-M16
OD315	DN80	200	300	200	2-M16
OD315	DN100	220	310	220	2-M16
OD400	DN50	225	340	165	2-M16
OD400	DN60/DN65	225	350	185	2-M16
OD400	DN80	225	360	200	2-M16
OD400	DN100	225	370	220	2-M16

Universal Tapping Saddle-Thread Outlet - EKV.T503



Material Specification

Item No:	Item Name	Material	Specification
1	Headstock	Ductile Iron	GGG50
2	Gasket	Rubber	EPDM
3	Band	Stainless Steel+Rubber	ISO898-1:1999
4	Washer	Stainless Steel	
5	Nut	Stainless Steel	ISO898-1:1992

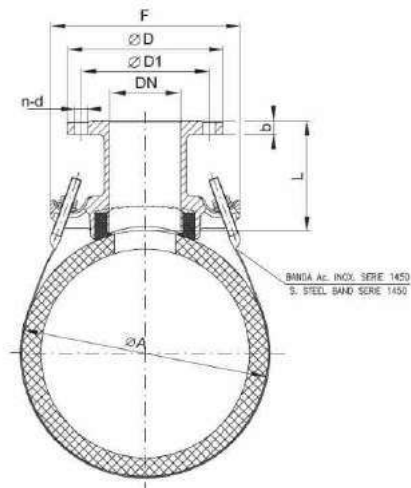
Features

- Ductile Iron GGG50 material with FBE coated.
- PN10,PN16 working pressure.
- Equipped with Galvanized Steel bolts, nuts.
- EPDM or NBR rubber seals.

Dimensions (mm)

Headstock	D	A	F	L	Weight (kg)
50-200	3/4"	45	150	70	1,1
50-200	1"	45	150	70	1,1
50-200	1 1/4"	45	150	70	1,1
50-200	1 1/2"	45	150	70	1,1
100-300	1"	45	195	92	2,7
100-300	1 1/4"	45	195	92	2,7
100-300	1 1/2"	45	195	92	2,7
100-300	2"	45	195	92	2,7
150-400*	2"	65	216	157	5,9
150-400*	2 1/2"	65	216	157	5,9
150-400*	3"	65	216+	157	5,9

Universal Tapping Saddle-Flanged Outlet - EKV.T504



Material Specification

Item No:	Item Name	Material	Specification
1	Body	Ductile Iron	GGG50
2	Gasket	Rubber	EPDM
3	Bolt	Galvanized Steel	ISO898-1:1999
4	Washer	Galvanized Steel	
5	Nut	Galvanized Steel	ISO898-1:1992
6	Band	Stainless Steel	AISI304

Features

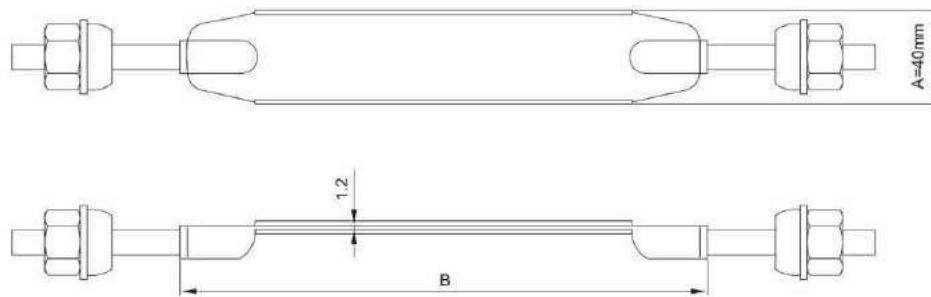
- Ductile Iron GGG50 material with FBE coated.
- PN10,PN16 working pressure.
- Equipped with Galvanized Steel bolts, nuts.
- EPDM or NBR rubber seals.
- High Tolerance Mechanical Pipe Fittings.

Dimensions (mm)

DN	PN	Pipe OD		D	b	D1	n-d	L	F	SS Band Qty	Weight (kg)
DN50	10/16	80	700	165	18	125	4X18	155	217	2	5,5
DN80	10	125	700	200	20	160	4X18	167	247	2	8,5
DN80	16	125	700	200	20	160	8X18	167	247	2	8,5
DN100	10/16	150	500	220	20	180	8X18	163	267	2	10,5
DN150	10/16	500	900	285	22	240	8X25	177	378	3	21
DN150	10/16	300	500	285	22	240	8X23	171	378	3	21
DN200	10	450	1300	540	24	295	8X23	185	432	4	35
DN200	16	450	1300	540	24	295	12X25	185	432	4	35



Staninless Steel Band



Technical Specification

- Stainles Steel AISI304 with 40mm Width 1,25mm thickness
- Stainles Steel Studs & Nuts
- With supporting hemispheres and studs
- Protecting gasket for tube of EPDM
- Recommended for cast iron pipes and pipes of fibre cement

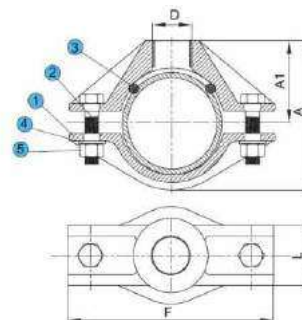


Dimensions (mm)

Belt Length <i>B</i>	OD Range	Headstock			Weight (kg)
		50-200	100-300	150-400	
160	60-77	•			0,32
200	77-95	•			0,34
270	98-119	•			0,39
295	125-135	•	•		0,44
368	139-160	•	•		0,48
392	150-180	•	•		0,50450
450	170-195	•	•		0,53
530	200-230		•	•	0,57
610	230-250		•	•	0,61
675	250-280		•	•	0,66
770	285-315		•	•	0,72
860	315-340		•	•	0,78
965	355-380		•	•	0,85
1060	385-410			•	0,91
1135	410-432			•	0,93



Saddle Clamp for DI Pipe- EKV.T505



Material Specification

Item No:	Item Name	Material	Specification
1	Body	Ductile Iron	GGG50
2	Bolt	Rubber	EPDM
3	O Ring	Galvanized Steel	ISO898-1:1999
4	Washer	Galvanized Steel	
5	Nut	Galvanized Steel	ISO898-1:1992

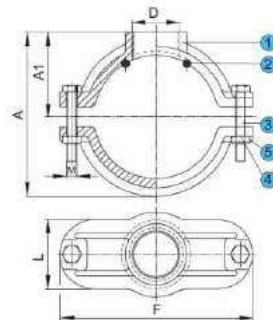
Features

- Ductile Iron GGG50 material with FBE coated.
- PN10,PN16 working pressure.
- Equipped with Galvanized Steel bolts, nuts.
- EPDM or NBR rubber seals.
- High Tolerance Mechanical Pipe Fittings.

Dimensions (mm)

Pipe OD	D	L	A	A1	F	Bolt Size	Weight (kg)
66	3/4"	80	118	65	155	M12X90	2,50
	1"	80	118	65	155	M12X90	2,50
	1 1/4"	80	118	65	155	M12X90	2,50
	1 1/2"	80	118	65	155	M12X90	2,50
98	3/4"	80	138,5	75	175	M12X90	2,70
	1"	80	138,5	75	175	M12X90	2,70
	1 1/4"	80	138,5	75	175	M12X90	2,70
	1 1/2"	80	138,5	75	175	M12X90	2,70
118	1"	92	165	91	195	M12X90	2,90
	1 1/4"	92	165	91	195	M12X90	2,90
	1 1/2"	92	165	91	195	M12X90	2,90
	2"	92	165	91	195	M12X90	2,90
144	1"	92	193	104	220	M12X90	3,10
	1 1/4"	92	193	104	220	M12X90	3,10
	1 1/2"	92	193	104	220	M12X90	3,10
	2"	92	193	104	220	M12X90	3,10
170	1"	92	209	107	245	M12X100	3,20
	1 1/4"	92	209	107	245	M12X100	3,20
	1 1/2"	92	209	107	245	M12X100	3,20
	2"	92	209	107	245	M12X100	3,20
222	1"	92	276	143	276	M12XM40	3,70
	1 1/4"	92	276	143	276	M12XM40	3,70
	1 1/2"	92	276	143	276	M12XM40	3,70
	2"	92	276	143	276	M12XM40	3,70
274	1 1/4"	122	333	174	330	M12X160	6,10
	1 1/2"	122	333	174	330	M12X160	6,10
	2"	122	333	174	330	M12X160	6,10
	2 1/2"	122	333	174	330	M12X160	6,10
	3"	122	333	174	330	M12X160	6,10
326	1 1/4"	122	385	200	330	M12X160	6,30
	1 1/2"	122	385	200	330	M12X160	6,30
	2"	122	385	200	330	M12X160	6,30
	2 1/2"	122	385	200	330	M12X160	6,30
	3"	122	385	200	330	M12X160	6,30

Saddle Clamp for PVC- EKV.T506



Material Specification

Item No:	Item Name	Material	Specification
1	Body	Cast Iron	Gg20
2	Gasket	Rubber	EPDM
3	Bolt	Galvanized Steel	ISO898-1:1999
4	Washer	Galvanized Steel	
5	Nut	Galvanized Steel	ISO898-1:1992

Features

- Ductile Iron GGG50 material with FBE coated.
- PN10,PN16 working pressure.
- Equipped with Galvanized Steel bolts, nuts.
- EPDM or NBR rubber seals.

Dimensions (mm)

Pipe OD	F	D	L	A	A1	Bolt Size	Weight (kg)
32	90	1/2"-3/4"	44	57	32	M8X40	0,43
40	95	3/4"	48	65	35	M8X40	0,50
		1"	48	65	42		0,62
50	120	3/4"-1"	62	77	42	M10X50	0,94
63	132	3/4"-1"	62	89,5	47,5	M10X50	1,10
75	146	3/4"-1"	62	106	55	M10X50	1,25
		1 1/4"-1 1/2"	68	107	56		1,32
90	158	3/4"-1"	62	121	62	M10X50	1,50
		1 1/4"-1 1/2"	68	123	64	M10X70	1,70
110	180	3/4"-1 1/2"	70	151	80	M10X70	2,00
	196	2"-3"	70	151	80		3,00
125	194	3/4"-1 1/2"	70	166	86	M10X70	2,40
		2"-3"	70	168	88	M10X70	3,00
140	215	3/4"-1 1/2"	70	186	98	M10X70	2,70
		2"-3"	70	186	100		3,00
160	235	3/4"-1 1/2"	70	194	106	M10X70	3,00
		2"-3"	70	198	110		4,00
180	255	1"-» 1/2"	70	223	115	M10X50	3,50
		2"-3"	70	223	115		4,00
200	275	3/4"-1 1/2"	70	241	123	M10X70	4,00
		2"-3"	70	243	125		5,00
250	340	1"-1 1/2"	70	297	150	M10X50	6,00
		2"-3"	80	297	150		7,50
315	415	2"3"	75	382,5	195	M12X90	10,50



DESIGN STANDARDS	
Valve Design	BS EN 1171
Connection	Flanged, acc to EN 1092-2
Face to Face Dimensions	EN 558-1 Basic Series 14 (F4)
Valve Test	EN 12266-1
Marking	EN 19

TECHNICAL ADVANTAGES

- GGG50 Ductile Iron Body & Bonnet. EPDM vulcanized GGG50 DI wedge.
- Stainless Steel Stem & Brass Stem nut with 3 Orings.
- Soft seated. Suitable for sewage & water applications.
- Better flow values with smaller upper body space
- Inner and outer surface of the valve is powder epoxy coated for all sizes
- Can be supplied with multi-turn electrical actuators

REMARKS

- eko2101 Series resilient gate valves can be used as ISOLATION VALVES.
- NBR coated wedge can be used for nonflammable oil applications.
- Resilient Seat Gate valves are all non-rising stem type.
- Electrical actuator connection is succeeded with an intermediary top flange

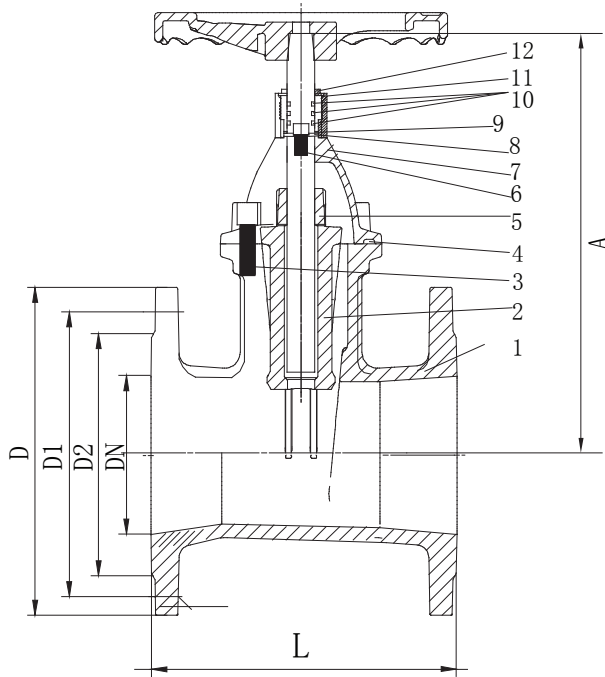
APPLICATIONS

Application fields and temperatures of eko2101 Series valves vary according to the selection of the seat.

Please choose and order the seat material considering the requirements of application.



TECHNICAL DRAWING



MATERIAL OF PARTS

No.	Part Name	Material
1	Body	GGG50
2	Gate	GGG50+EPDM
3	Bonnet Bolts	Steel 8.8 + Wax
4	Bonnet Gasket	NBR / EPDM
5	Stem Nuts	Brass
6	Stem	2Cr13
7	Bonnet	GGG50
8	Splint Collar	Iron+Electroplate
9	Gasket	Nylon
10	"O" Ring	NBR / EPDM
11	"O" Ring	NBR / EPDM
12	Gland	Brass

DIMENSIONS TABLE

DN	L (mm)	A (mm)	Flange Dimensions to DIN2501 (mm)										Weight
			D		D1		D2		f	b	n-d		KG/PCS
			1.0 MPa	1.6 MPa	1.0 MPa	1.6 MPa	1.0 MPa	1.6 MPa			1.0 MPa	1.6 MPa	F4
50	150	230	160		125		99		2	15	4-19		8
65	170	230	179		145		118		2	15	4-19		9
80	180	240	194		160		132		2	16	8-19		11
100	190	260	220		180		156		2	16	8-19		14
125	200	330	250		210		184		2	18	8-19		22
150	210	360	276		240		211		2	18	8-23		27
200	230	450	330		295		266		3	20	8-23	12-23	50
250	250	550	385	395	350	355	319		3	22	12-23	12-28	75
300	270	670	435	450	400	410	370		3	24	12-23	12-28	94
350	290	870	505	520	460	470	429		4	24,5	16-23	16-28	165
400	310	1010	565	580	515	525	480	489	4	24,5	16-28	16-31	230



DESIGN STANDARDS	
Valve Design	EN 12516-4
Connection	Flanged, acc to EN 1092-2
Face to Face Dimensions	EN 558-1, F1
Valve Test	EN 12266-1
Marking	EN 19

GENERAL FEATURES

- Body & Cover: EN GJL 250 Cast Iron, *Ductile Iron*
- Filter: Stainless Steel 304
- Filters are according to 20 mesh by default
- Inner and outer surface of the valve is powder epoxy coated

TECHNICAL ADVANTAGES

- eko6000 Y-Strainer is perfectly suitable for potable water
- Easy to clean the filter with discharge hole
- Each strainer has one stainless steel net and one perforated screen

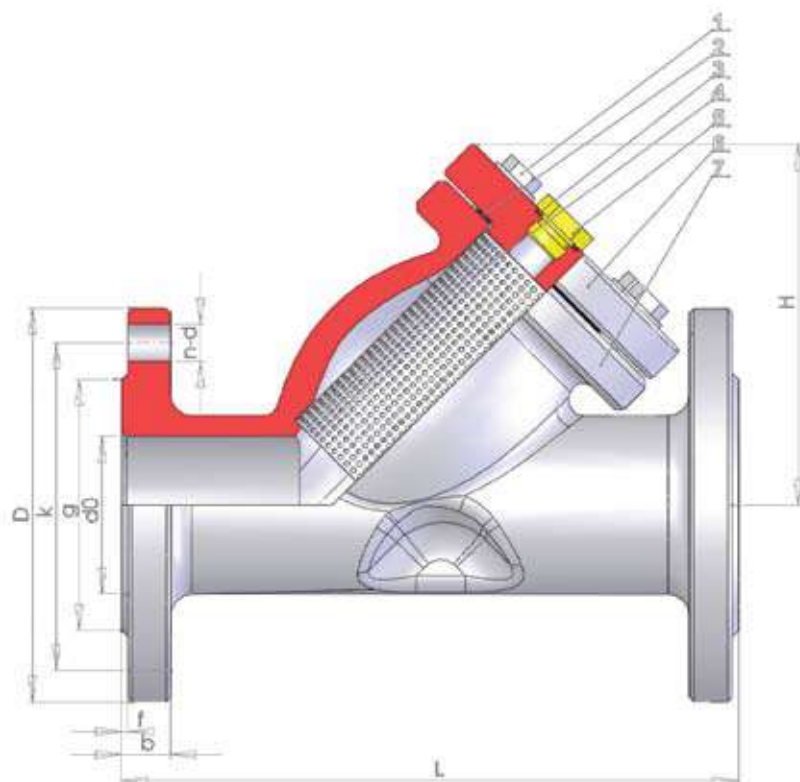
REMARKS

- Different mesh options are available on request
- For temperatures greater than 100°C EKOVAL recommends liquid paint

PLEASE NOTE: Items written in *grey* are optional and can be supplied upon request.



DIMENSIONS AND PRODUCT DATA



DIMENSION TABLE

DN	DIMENSIONS									PRODUCT DATA	
mm	L	d	g	k	D	l	b	f	Number of Holes	KV M3/H	Weight Kg
15	130	15	46	65	95	14	14	2	4	3.00	2.00
20	150	20	56	75	105	14	16	2	4	3.80	3.15
25	160	25	65	85	115	14	16	3	4	4.90	3.75
32	180	32	76	100	140	19	18	3	4	7.40	6.12
40	200	40	84	110	150	19	18	3	4	8.00	7.32
50	230	50	99	125	165	19	20	3	4	10.89	9.75
65	290	65	118	145	185	19	20	3	4	14.60	14.20
80	310	80	132	160	200	19	22	3	8	19.80	18.00
100	350	100	156	180	220	19	24	3	8	28.50	25.86
125	400	125	184	210	250	19	26	3	8	41.00	37.60
150	480	150	211	240	285	23	26	3	8	58.00	50.60
200	600	200	266	295	340	23	30	3	12	101.50	90.40
250	730	250	319	355	405	28	32	3	12	188.00	176.00
300	850	300	370	410	460	28	32	4	12	233.00	217.00
350	980	350	429	470	520	28	36	4	16	375.00	394.40
400	1100	400	480	525	580	31	38	4	16	580.00	540.00
450	1200	450	548	585	640	31	40	4	20	-	233.00
500	1250	500	609	650	715	34	42	4	20	-	375.00
600	1450	600	720	770	840	37	48	5	20	-	580.00



● GENERAL DEFINITION

10000 Series automatic hydraulic control valves are designed in the "Y" body model type so as to show maximum resistance to cavitation under minimum head loss in high flow rates.

10000 Series automatic hydraulic control valves are double-chamber diaphragm actuated and disc closed type. Valve has a standard double control chamber. However, if required, it may be used as a single control valve without using an extra control chamber. In addition, if required, the valve operates easily controlledly even in very low flows by means of an extra port added to the disc. Valves performing various functions may be obtained by adding different control equipment to the basic valve body.

● ADVANTAGES & BENEFITS

- The "Y" type valve body designed hydrodynamically provides 25 % more flow compared to standard globe bodies and has a lower head loss.
- Double-chamber diaphragm actuator provides quicker and non-impact opening/closing thanks to disc-closing valve design compared to diaphragm-actuator, diaphragm-closing valves and prevents blockage by showing less sensitivity against solid substances within fluid.
- Ensures maximum flow thanks to its "Y"- type body.
- Is effected minimally from cavitation damages thanks to its broad "Y"- type body design.
- Has easy use and maintenance due to simple design.
- Makes opening and closing without causing and surges.
- Ensures smooth control thanks to its standard dual control chambers.
- Provides full tightness thanks to its stem bedded rigidly and stainless steel spring.
- It operates controlledly and smoothly and closes drip-tight by means of valve stem embedded rigidly on valve body.
- Closing disc provides tightness by means of elastic rubber in the disc, sitting in the replaceable body bush.
- Does not require maintenance in operation for a long time due to its corrosion resistant components.
- Has a long working life in operation since coating has been made with phosphorization and over-dried epoxy powder paint.
- Performs perfect modulation in variable flows and even too low flow rates close to zero.
- Has a wide range of application with use of different pilot valves.

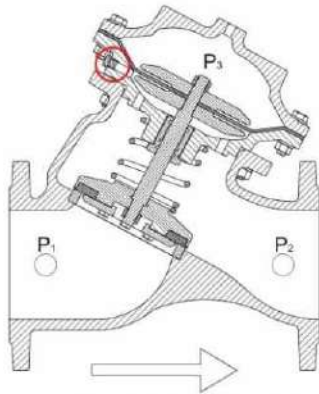


● USING WITH SINGLE/DOUBLE CHAMBER ACTUATOR

10000 Series automatic hydraulic control valves are designed with double-chamber actuator as a standard. Valve can be easily used with single or double-chamber actuator without need for any additional parts.

● USING WITH SINGLE CHAMBER ACTUATOR

When using the valve with single-chamber actuator, the plugs under the middle bonnet are removed and a plug is inserted into the middle bonnet inlet port and thus, the valve actuator is made with single chamber. In such a case, the pressures to be compared are P_1 , P_2 , P_3 .



Using With Single Chamber Actuator

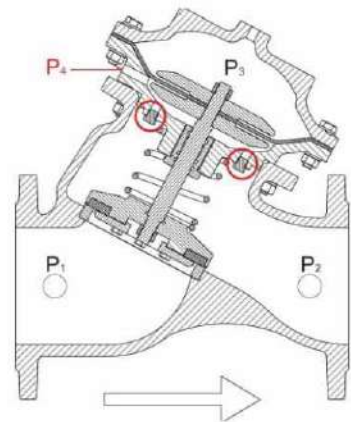
P_1 : Upstream Pressure
 P_2 : Downstream Pressure
 P_3 : Actuator Pressure

● USING WITH DOUBLE CHAMBER ACTUATOR

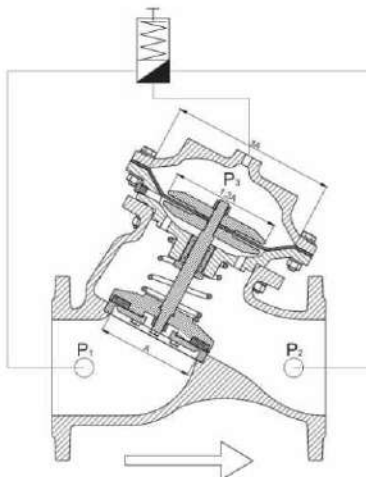
When using the valve with double-chamber actuator, the port holes under the middle bonnet for an extra P_4 comparison pressure are closed with plugs and the P_4 comparison pressure is given through the middle bonnet port. With P_4 comparison pressure, valve controls may be further arranged with the aid of an extra pressure.

Using With Double Chamber Actuator

P_1 : Upstream Pressure
 P_2 : Downstream Pressure
 P_3 : Actuator Pressure
 P_4 : External Effect Pressure



● WORKING PRINCIPLES



10000 Series automatic hydraulic control valves are designed with double-chamber actuator as a standard. Valve can be easily used with single or double-chamber actuator without need for any additional parts.

Valve Impact Pressures and Impact Areas

P_1 : Upstream Pressure
 P_2 : Downstream Pressure
 P_3 : Actuator Pressure
 P_{spring} : Spring Force
 A : Disc Impact Area



Valve Closing Mode

The control valve ensure that the valve closes drip-tight with the valve disc's sitting on the body bush by means of the force imposed by the upstream pressure on the diaphragm in the actuator by the pilot valve. When examining the forces on the valve with the aid of impact pressures and impact areas causing the valve to close, the following inequality will be obtained:

$$P_3 \times 3A + P_{spring} > P_1 \times A$$

With the pilot valve or manual intervention causing the valve to close, without hydraulic intervention in the section shown with P_3 pressure out of installations, P_3 pressure will be equal to the maximum P_1 pressure. The force $P_3 \times 3A + P_{spring}$ will prevail over the force $P_1 \times A$. Thus, the inequality in proved including the force P_{spring} and the valve closes drip-tight with the force obtained. The geometric properties of the Armaş 800 series automatic hydraulic control valves determined at the design level and the pressure P_3 are not affected by head losses due to pilot valve and head losses in hydraulic systems thanks to the impact area ratio and the valve closes drip-tight.



Valve Opening Mode

The force imposed by the upstream pressure trying to open the control valve, under the valve disc, ensures that the valve opens with prevailing over the pressure force on the diaphragm by means of the spring force and the pilot valve assisting in closing operation. When examining the forces on the valve with the aid of impact pressures and impact areas causing the valve to open, the following inequality will be obtained:

$$P_1 \times A > P_{spring} + P_3 \times 3A$$

With the pilot valve or manual intervention causing the valve to open, the section shown with pressure P_3 in put in discharge mode. In this case, the P_3 difference pressure opened to atmosphere will be 0 (zero) and when the force $P_1 \times A$ overcomes (the spring force) P_{spring} , the valve will open. The minimum opening pressure of the valve will be determined by P_{spring} , because of overcoming the minimum P_{spring} force to open the valve.



Modulation Mode

Pilot valves connected to the main valve actuator ensure that the main valve operates in modulated mode. They ensure that it operates in modulated mode by continuously controlling the pressure of fluid in the main valve actuator according to the flow rate or pressure conditions required to be adjusted when examining the force equations in the valve modulation valve with the aid of impact pressures and impact areas, the equation

$$P_1 \times A + P_2 \times 3A = P_3 \times 3A + P_{spring} + P_2 \times A$$

is obtained. The pilot valve used in the modulation of the valve ensures the modulation of the valve and keeps force equation by regulating the pressures P_3 ve P_2 .





A port ensures that the valve operates more sensitively, more smoothly and more silently for flow and pressure regulation and prevents vibration and provides high pressure decrease compared to flat disc.

● SUGGESTED USE APPLICATIONS

- Pressure reducing valves
- Pressure sustaining valves
- Deep well pump control valves
- Float valves
- High pressure reducing and pressure sustaining applications.

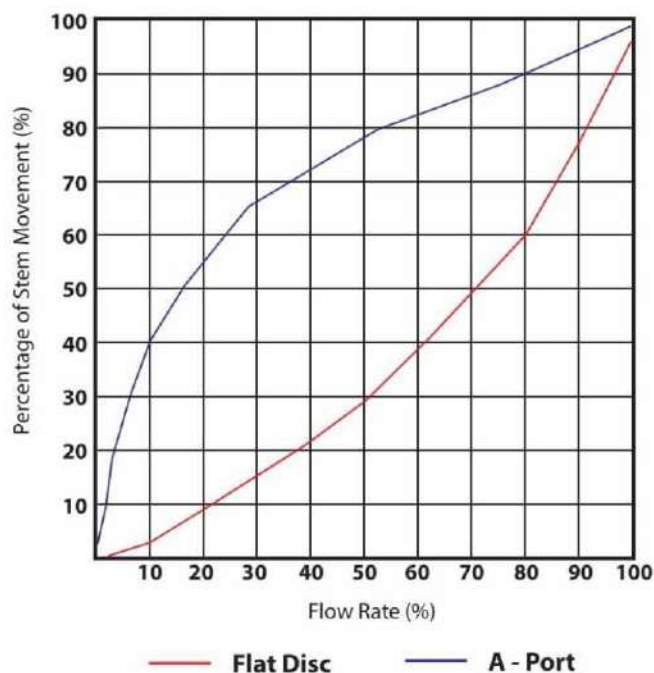
● NON-SUGGESTED USE APPLICATIONS

- Booster Pump Control Valves
- Applications that require minimum head loss.
- In a condition to have low pressure difference between upstream-downstream.

● INSTALLATION

Remove the screws of disc press washer under the disc and demount the disc press washer which is a flat disc and install A port in the place of flat press washer with the same screws.

● A PORT GRAPHIC



Opening Mode With A Port

Closing Mode With A Port



Modulation Mode With A Port



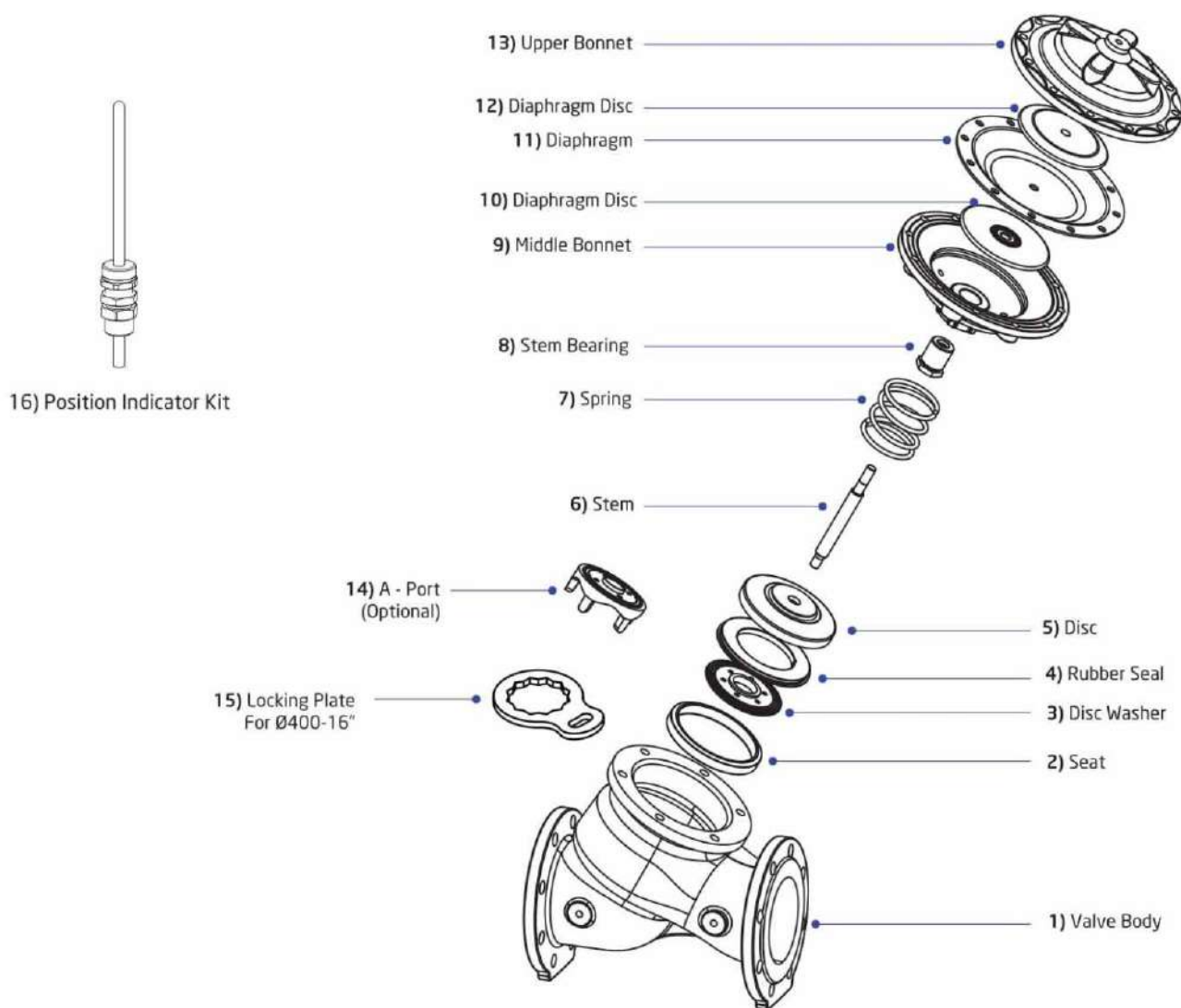
High Flow



Average Flow



Low Flow



MAIN PARTS	NO	PART NAME	MATERIAL (STANDARD)	MATERIAL (OPTIONAL)
	1	Valve Body	GGG50/GGG40 (Ductile Iron)	-
	2	Seat	Stainless Steel	Brass/Bronze
	3	Disc Washer	Stainless Steel (2"-6")	-
			GGG50/GGG40 (8"-14")	-
	4	Rubber Seal	Buna-N	NBR
	5	Disc	Stainless Steel (2"-6")	-
			GGG50/GGG40 (8"-14")	-
	6	Stem	Stainless Steel	-
	7	Spring	Stainless Steel	-
	8	Stem Bearing	Brass	Bronze
	9	Middle Bonnet	GGG50/GGG40 (Ductile Iron)	-
	10	Diaphragm Disc	Stainless Steel (2"-6")	-
			GGG50/GGG40 (8"-14")	-
	11	Diaphragm	Neoprene (Nylon Reinforced)	EPDM, Nitrile
	12	Diaphragm Disc	Stainless Steel (2"-6")	-
			GGG50/GGG40 (8"-14")	-
	13	Upper Bonnet	GGG50/GGG40 (Ductile Iron)	-
	14	A-Port (Optional)	Brass	Bronze
	15	Locking Plate	Stainless Steel	-
	16	Position Indicator Kit (Optional)	Stainless Steel+Brass	-



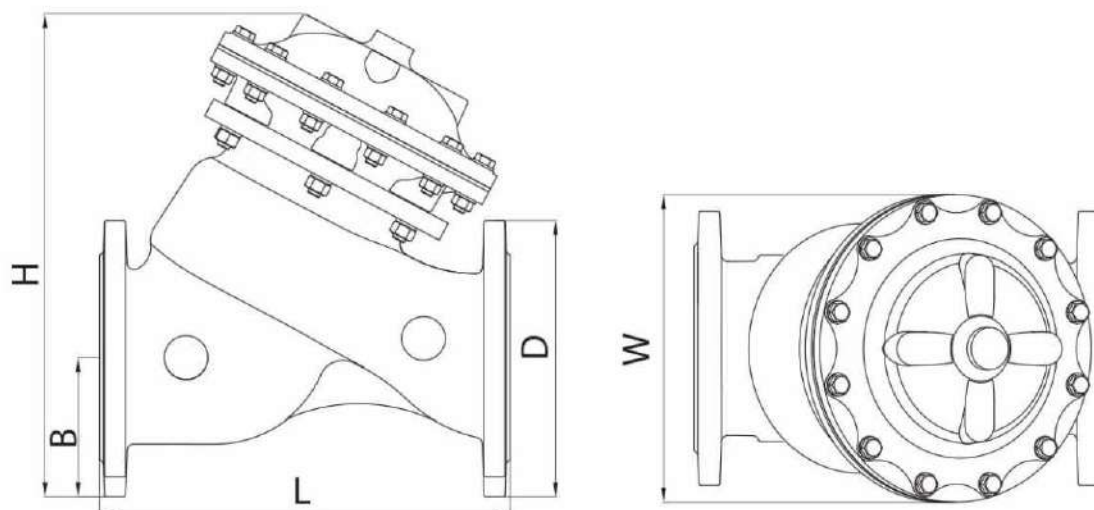
TECHNICAL SPECIFICATIONS	PRESSURE RATING	Standard	0.5 - 16 bar (7.5 - 240 psi)
		High Pressure Range	0.5 - 25 bar (7.5 - 360 psi)
	TEMPERATURE	Min. Operating Temperature	- 10 °C (14 °F) DIN 2401 / 2
		Max. Operating Temperature	80 °C (176 °F) DIN 2401 / 2
	CONNECTION	Flanged	Standard: EN 1092/2 Optional: ANSI, BS 10-E
	COATING	Standard	Epoxy
		Optional	Polyester
	HYDRAULIC CONNECTIONS	Standard	Copper
		Optional	SST, Reinforced Nylon (Air Brake) • Hydraulic Pipe • SAE J 844
	ACTUATOR TYPE	Disc Closing Type with Double Control Chamber and Diaphragm Actuator	

● AVAILABLE MODELS



Basic Valve

MODEL	87	
Connection	Flanged	
Material	GGG50 (Ductile Iron)	
Body Type	Y Type	
Operating Pressure	16 bar (240psi) - 25 bar (360 psi)	
Available sizes	INCH	MM
	2	50
	2½	65
	3	80
	4	100
	5	125
	6	150
	8	200
	10	250
	12	300
	14	350
	16	400



DN		H		B		L		D		W		Weight	
inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	Lbs.	kg.
2	50	10,2	259	3,3	83	8,3	210	6,5	165	5,5	139	28,7	13
2½	65	10,8	274	3,7	93	8,7	222	7,3	185	5,5	139	35,3	16
3	80	13	330	4	100	10,6	270	7,9	200	6,7	170	55,1	25
4	100	14,6	372	4,4	111	13	330	8,7	220	7,9	201	81,6	37
5	125	15,4	391	5,1	130	13	330	9,8	250	7,9	201	86	39
6	150	19,8	502	5,7	145	16,8	427	11,2	285	12,6	320	172	78
8	200	25,1	638	6,7	170	20,9	530	13,4	340	15,4	390	308,6	140
10	250	29,8	756	8	203	24,4	620	15,9	405	19,3	490	507,1	230
12	300	35	890	9,2	233	28,5	725	18,1	460	21,3	540	815,7	370
14	350	37,6	955	10,6	270	28,5	725	20,5	520	21,3	540	848,8	385
16	400	46,4	1178	12	305	39	990	22,8	580	29,1	740	1830	830



FLAT DISC	Valve Size	mm	50	65	80	100	125	150	200	250	300	350	400
		inch	2"	2½"	3"	4"	5"	6"	8"	10"	12"	14"	16"
	Kv	m³/h @ 1 bar	50	65	115	200	310	460	815	1250	1850	1990	3300
	Cv	gpm @ 1 psi	60	75	135	230	360	530	945	1445	2135	2300	3810
	K	dimensionless	3,9	6,6	4,9	3,9	4	3,8	3,8	3,9	3,7	5,9	3,7
A PORT	Vol. Control Chamber	lt	0,185	0,185	0,403	0,629	0,629	2,542	5,536	11,215	13,560	13,560	39,241
	Valve Size	mm	50	65	80	100	125	150	200	250	300	350	400
		inch	2"	2½"	3"	4"	5"	6"	8"	10"	12"	14"	16"
	Kv	m³/h @ 1 bar	40	55	100	170	260	390	695	1065	1575	1695	2800
	Cv	gpm @ 1 psi	47	64	115	196	300	450	805	1230	1820	1960	3240
A PORT	K	dimensionless	6,1	9,3	6,4	5,4	5,7	5,2	5,2	5,4	5,1	8,2	5,1
	Vol. Control Chamber	lt	0,185	0,185	0,403	0,629	0,629	2,542	5,536	11,215	13,560	13,560	39,241

Valve Flow Coefficient (Kv, Cv)

Kv :Valve flow coefficient (flow in m³/h at 1bar Diff. Press.)

Cv :Valve flow coefficient (flow in gpm at Diff. Press. 1psi)

Q :Flow rate (m³/h ; gpm)

ΔP :Differential pressure (bar ; psi)

G :Liquid specific gravity

$$Kv, (Cv)=Q \cdot \sqrt{\frac{G}{\Delta P}} \quad Cv=1,155 Kv$$

Flow Resistance - Head Loss Coefficient

K :Flow resistance or Head loss coefficient (dimensionless)

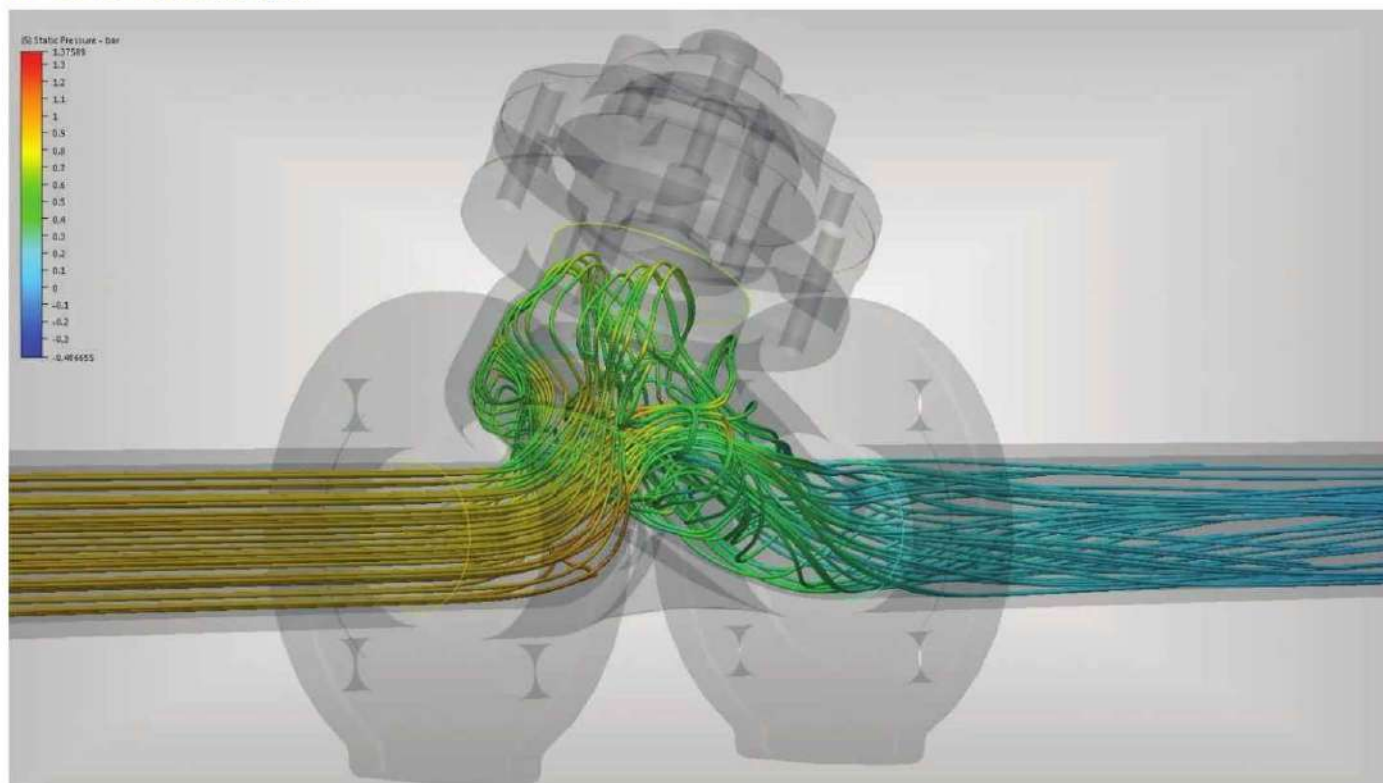
ΔH :Head loss (m ; feet)

V :Nominal size flow velocity (m/s ; feet/s)

g :Acceleration of gravity (9.81 m/s² ; 32.18 feet/s²)

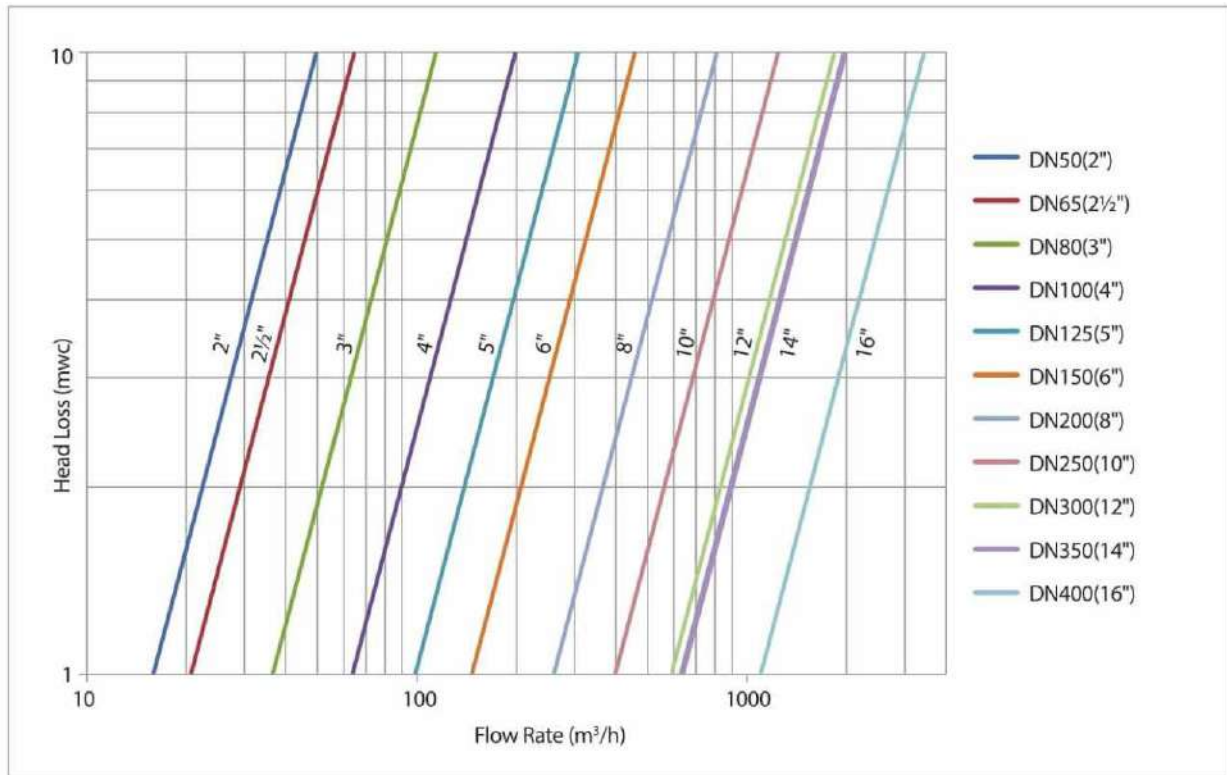
$$K=\Delta H \frac{2g}{V^2}$$

Flow Rate Analysis

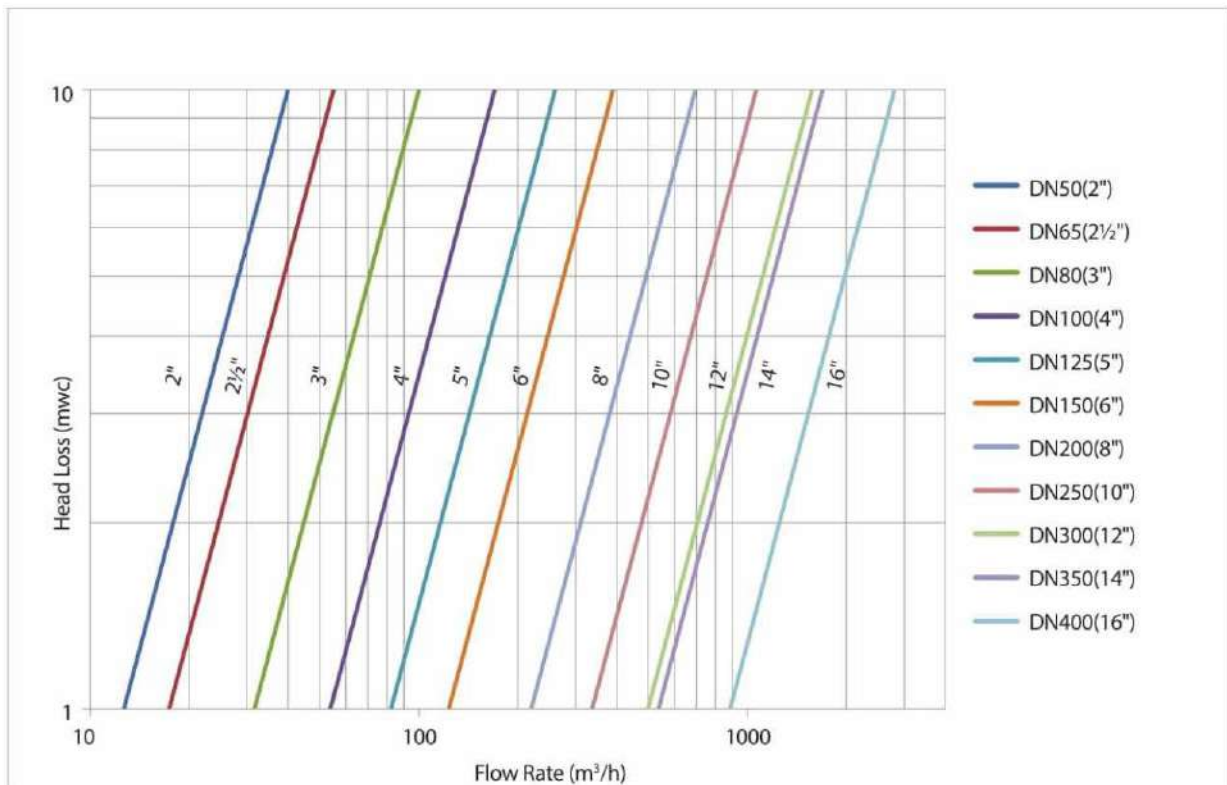




● HEAD LOSS CHART (FLAT DISC)



● HEAD LOSS CHART (A PORT)





● CAVITATION

Cavitation occurs in hydraulic control valves when they are not used under proper pressure values. When fluid passes through the closing area of the hydraulic valve, its value will increase due to extreme choking and its static pressure will drop under the evaporation pressure of the fluid. The fluid evaporates and steam bubbles occur in the fluid. Such steam bubbles explode in the outlet side of the valve under the downstream pressure. Such sudden expositions produce intensive shock waves and temperature increases. Extreme reduction in the valve causes water jets. Shock waves and water jets break particles from valve body material and cause the valve to be worn out, to be pierced and to decrease its life due to such a use. Cavitation causes also damage to installation and thus noise and vibration.

● PREVENTING CAVITATION

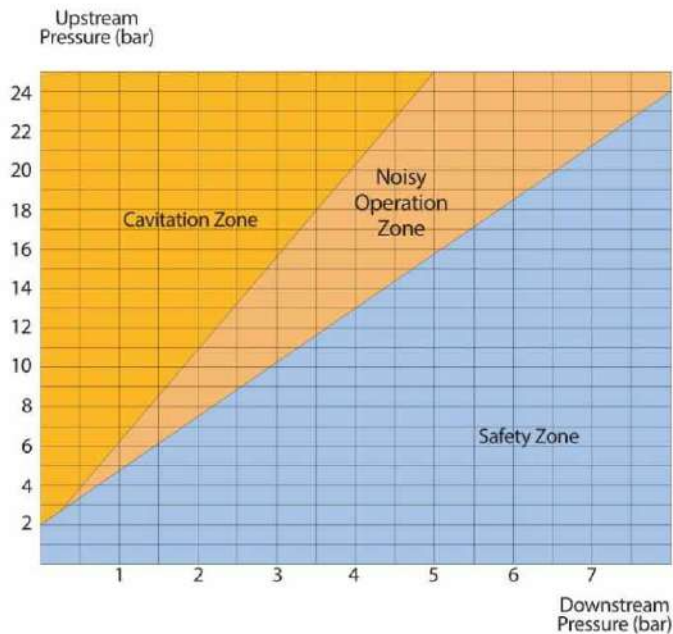
- Increase the downstream pressure if the system allows to do so.
 - If downstream pressure can not be handled, increase valve diameter and thus decrease water speed, if possible.
 - Increase the number of pressure decrease points using multiple valves or use multiple valves at the same point to decrease pressure.
- Besides, decrease the pressure proportionally including the **10000 Series** proportional pressure reducing control valve in the system at certain points.

● CAVITATION CHART

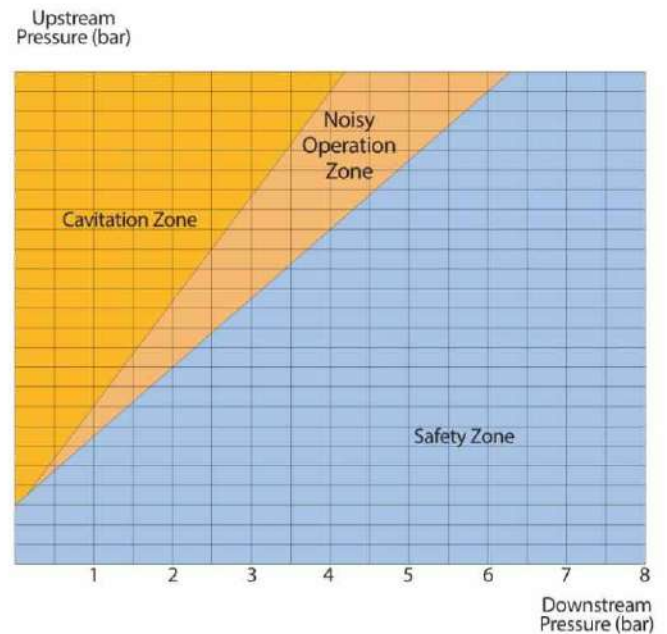
For the purpose of using cavitation charts:

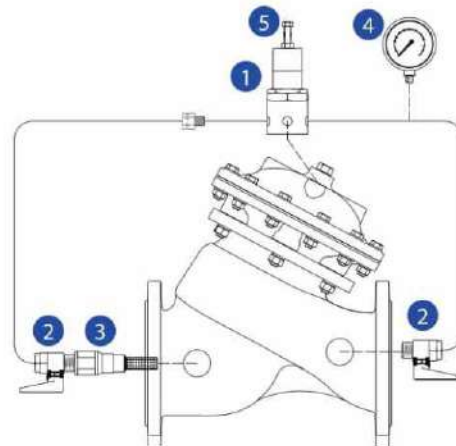
- Determine the valve upstream pressure specified in the system on the charts.
- Make the required downstream pressure intersect the determined downstream pressure.
- Determine the cavitation condition of the valve based on 3 areas whose intersections are shown on the charts.

● FLAT DISC



● A PORT





DESCRIPTION

10000 Series pressure reducing control valve is the hydraulic control valve which reduces high upstream pressure value into desired lower pressure value by means of built-in pressure reducing pilot valves. Pressure reducer control valve controls downstream pressure value continuously and maintains it constant without being affected from flow rate and upstream pressure values. When no flow exists in the system, it is closer by itself automatically. When valve upstream pressure value decreases below adjusted downstream pressure value, it is opened fully by itself.

PURCHASE SPECIFICATIONS

The valve will be diaphragm actuated disc closing automatic hydraulic control valve which works with line pressure. Double-chamber diaphragm actuator provides quicker and non-impact opening/closing thanks to disc-closing valve design and prevents blockage by showing less sensitivity against solid substances within fluid.

ORDER INFORMATION

Please submit following information to our sales department while ordering.

Maximum flow rate	: m ³ /h
Maximum network/line pressure	: bar
Main line size	: mm
Valve connection type	: ---
Maximum upstream pressure	: bar
Minimum upstream pressure	: bar
Desired downstream pressure	: bar

CONTROL SYSTEM COMPONENTS

- 1 Pressure Reducing Pilot Valve
- 2 Ball Valves
- 3 In-line Finger Filter
- 4 Pressure Gauge
- 5 Adjustment Bolt

QUICK SIZING

Valve size same as main line or one size smaller.
Maximum flow speed for continuous operation 5.5 m/sec (18 ft/sec)

3-WAY PILOT OPERATING

3-way pilots are recommended to use at the application which has very close values between upstream and set pressure because of 3-way pilots provide less head loss.

TYPICAL APPLICATION

