



GVK(GRC/RM/RX) AUTO-RECIRCULATION VALVE

Total Engineering Solution Service

Mission

기초에 근거하여 원천 기술을 살리고 원천 기술을
극대화하여 세계 중심에 서는 것

To stand at the centre of the world by
utilizing original technology based on the
foundation and maximizing original technology

Vision

우리는 옳은 일과 가치 있는 일에 주저함이 없이
최선을 다하고 실천하여 세계의 중심에 서자

Let us put ourselves at the center of the world by
doing our best and not hesitating to stand up for
what is right and worthy



GLOBAL VISION KOREA

VMV[®]
Value MFG Valve

 **ACEFLOW**
Valve Engineering



Valve Product Service



GVK Limited, founded in June 2020 by a leader with 38 years of experience, focuses on R&D while ensuring quality, price, and functionality through domestic production. The company offers Process Valves, Valve Equipment, and Total Engineering services for industries such as Gas, Refining, Petroleum, Power generation, Environment, and Water treatment.

With a management team possessing 30-40 years of experience, GVK has developed numerous patents and adheres to quality standards like ISO 9001, 14001, 45001, and CE. Recognized for its advanced automatic control valves, GVK also supplies a range of Control Valves globally through OEM and ODM partnerships.

Although still in the early design and manufacturing stages, GVK has emerged as a leading company in Korea, equipped with skilled personnel and testing capabilities. The company aims to lower production costs, enhance efficiency, and improve quality while accumulating Hyper-Intelligence Valve Engineering (HIVE) technology. GVK Limited is committed to meeting customer needs with competitive pricing and high value-added services.

The Professional Provider of Automatic valve Actuators



Mutually Beneficial Relationships



To Be Your Best Partner



Twenty years experience "one stop" goods and services





GRC/RM/RX SERIES
Auto-Recirculation Valve

Total Engineering Solution Service



GVK / GRC/RM/RX Series Auto-Recirculation Valve

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Series GRC/RM/RX

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- 05
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GENERAL / 3-way Self-regulating Recirculation Check Valve System

The “**RC/RM/RX-series**” provides reliable, economical protection for centrifugal pumps against the serious damage from overheating and instability that can result from even a few minutes of low flow, By providing recirculation flow to the inlet of the pump, the RC-series helps ensure a minimum flow for stable pump operation.

The modulating RC/RM-series creates operating economies in several ways. The RC/RM-series recirculates only the flow required to help ensure a minimum flow through the pump at all times. Under full process main flow demand, recirculation flow is not required. But as the process main flow demand decreases, recirculation becomes necessary. Unlike continuous recirculation, the RC/RM-series responds directly to this need. The use of on RC/RM-series valve eliminates the need to oversize the pump and prime mover. Such over-sizing adds significantly to the capital cost of the pump and prime mover as well as to the cost of energy needed for operation.

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MODEL NUMBERING SYSTEM

Body Type	Body Size	Press. Rating	Body Materials	Connection Type
RC- Conventional	01-1”(25A)	HF -150#	CB -A216-WCB	FF -Flat Flange
trim	02-1.5”(40A)	TH -300#	8M -A351-CF8M”	RF -Rajied flange
RM -Multi-Stage	03-2”(50A)	SH -600#	8X -A351-CF8.	RTJ -Ring type joint
Trim	04-2.5” (65A)	NH -900#	XX -Option	SW -socket weld
RX -X[iks]-trim	05-3”(80A)	TF -1500#		BW -butt. weld
Disk Stack Type	06-4”(100A)	TT -2500#		SC -screwed
(Option)	07-5”(125A)	XX -Option		XX -Option
	08-6”(150A)			I
	09-8”(200A)			
	10-10”(250A)			
	11-12”(300A)			

Features & Benefits

Feature

Self-Regulating valve function as integral check valve, flow sensing element, bypass control valve, bypass actuator and multi-step pressure let-down valve.

Saves installation and maintenance costs

- Needs no electrical wiring, plant or instrument air.
- Eliminates other components of a conventional system.

Reduced Down Time

- Minimizes the problems of high-velocity wiredrawing and cavitation erosion common to high pressure drop service.

Benefits

- Eliminates high cost of installation and maintenance of complex conventional flow control loops.
- Eliminates cavitation in the valve and piping.
- Only three pipe connections.
- Eliminates any power source or instrument signal.

Valve Sizes & Connection

- 1" to 12" Main discharge feed.
- 1" to 3" Recirculation discharge.
- Flanged or Welding end connection.

Valve Pressure Ratings

- ANSI 150/300/600/900/1500/2500.

Temperature Limitations

- 500deg.F (260deg.C)

RC/RM-series for Pump Protection

3-way Automatic Recirculation Check Valve.

During critical low load periods, centrifugal feed pumps need a reliable recirculation system prevent pump instability and overheating. Because many such systems are constructed of a number of components, the system can become both complex and costly, requiring, substantial outlays for design, installation and maintenance.

BFS's RC/RM-series, on the other hand, is a complete system within itself. It actually performs four separate functions within the pumping circuit-all with on compact body. Essentially, the RC/RM-series is a check valve installed in the main line. But it also acts as the sensing and powering Element which pilots the operation of the recirculation control Valve. The sensing system responds to changes in flow rather than pressure.

The Control valve incorporates a pressure reducing device that divides recirculation flow and guides the resulting streams through successive 90deg. turns to dissipate the destructive of high pressure while controlling fluid velocity.



MATERIALS

Carbon Steel or Stainless Steel Body

Part No.	Name of Part	Temperature Range		
		-196deg.C.	-20deg.C	350deg.C 425deg.C 450deg.C
1	Lower Body	A351-CF8M	A216-WCB or A105	A351-CF8M
2	Upper Body	A351-CF8M	A216-WCB or A105	A351-CF8M
3	Disc	316SS+STF	420 SS	316SS+STF
4	Guide	316SS+STF	420 SS	316SS+STF
5	Stem	17-4PH / 630 SS		
6	Branch	316 SS	A216-WCB or A105	316 SS
7	Control Head	316 SS	420 SS	316 SS
8	Muti-Step-Nozzle	316SS+STF	420 SS	316SS+STF
9	Throat	316SS+STF	420 SS	316SS+STF
10	Relief Bush	316 SS	420 SS	316 SS
11	Nut	316 SS		
12	Piston-Ring	Teflon	Viton	Karlez
13	Lever	316 SS	420 SS	316 SS
14	Orifice	316 SS	420 SS	316 SS
15	Spring	304 SS		
16	Orifice-O-Ring	Teflon	Viton	Karlez
17	Bolt & Nut	316 SS	Steel	316 SS

Other Materials are available.

VALVE SIZE SELECTION GUIDE

Main Size	1.5" (40A)	2" (50A)	2.5" (65A)	3" (80A)	4" (100A)	5" (125A)	6"(150A)	8"(200A)
Main Flow	35m3/hr	50m3/hr	85m3/hr	130m3/hr	200m3/hr	300m3/hr	450m3/hr	800m3/hr
Disch. Size	1" (25A)	1" (25A)	1.5" (40A)	1.5" (40A)	2" (50A)	2" (50A0)	2.5" (65A0)	3" (80A)
Disch. Flow	15m3/hr	20m3/hr	40m3/hr	45m3/hr	60m3/hr	70m3/hr	125m3/hr	200m3/hr

- This table is only for your reference.

- Valve Friction Loss (Differential Pressure)

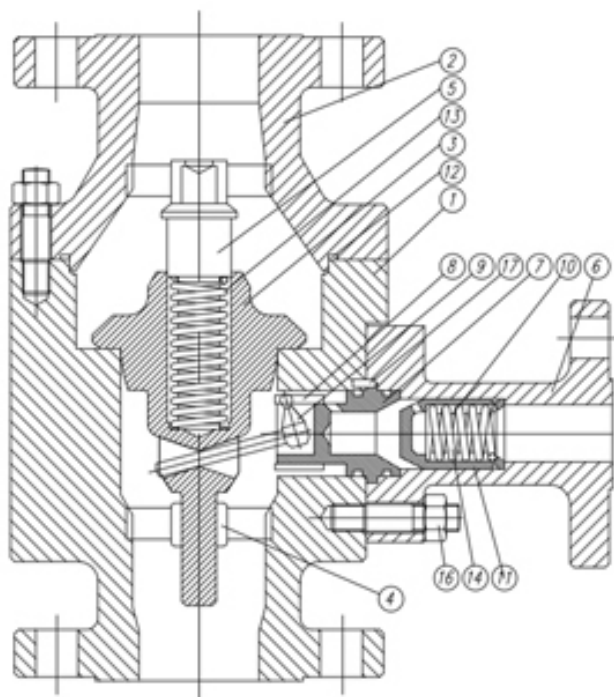
$$\Delta P = (\text{Actual Main Flow} / \text{Max. Main Floe})^2 \times 0.8 \times \text{S.G} \quad (\text{unit}/\text{bar})$$

X-trim for HIGH DELTA-P SERVICE

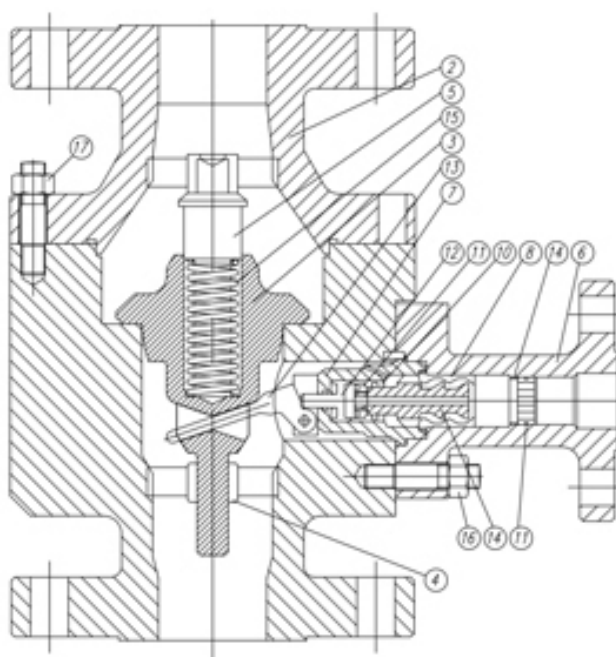
X-trim application instead of multi-step Trim is highly suitable for high differential pressure service.

This pressure reduction device is for preventing from noise and vibration by controlling speed. Flow path with maze shape of X-trim is highly effective for preventing from pipe damage caused by cavitations, noise and vibration. This is customized engineered design based on service condition. And discharge side dimension of standard main pipe connection is a bit bigger than standard discharge pipe connection

BODY CONSTRUCTION



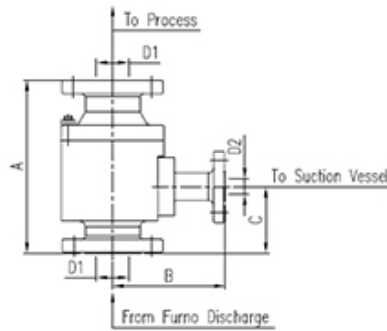
RC-series / Automatic Recirculation Conventional Check Valve



RM-series / Automatic Recirculation Multi-stage Check Valve

DIMENSIONS

RC/RM/RX-series



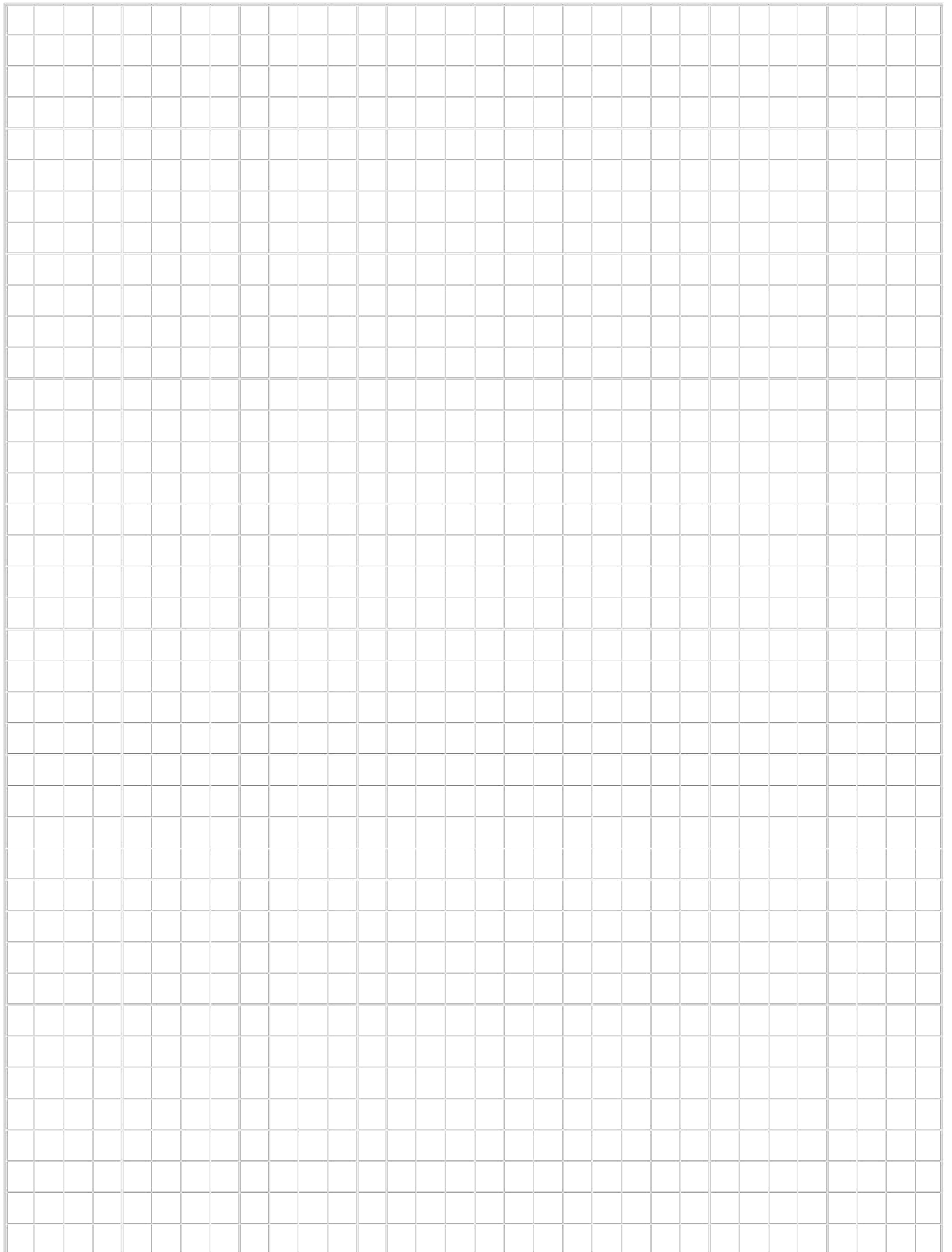
No	Size (inch/mm)		Press Rating		Dimension / mm			Remarks
	in x out	discharge	☼	ANSI	A	B	C	
1	1.5" (40A)	1" (25A)	10K	150#	200	155	75	
2			20K	300#	260	190	90	
3			40K	600#	260	190	90	
4			63K	900#	300	200	110	
5			100K	1500#	310	215	120	
6	2" (50A)	1" (25A)	10K	150#	230	160	90	
7			20K	300#	300	185	110	
8			40K	600#	300	190	110	
9			63K	900#	340	200	130	
10			100K	1500#	350	230	130	
11	2.5" (65A)	1.5" (40A)	10K	150#	290	175	110	
12			20K	300#	340	200	125	
13			40K	600#	340	220	125	
14			63K	900#	380	230	140	
15			100K	1500#	400	250	145	
16	3" (80A)	1.5" (40A)	10K	150#	310	190	115	
17			20K	300#	380	220	140	
18			40K	600#	380	240	140	
19			63K	900#	410	250	150	
20			100K	1500#	450	275	165	
21	4" (100A)	2" (50A)	10K	150#	350	210	125	
22			20K	300#	430	240	155	
23			40K	600#	430	265	155	
24			63K	900#	450	280	160	
25			100K	1500#	520	300	190	
26	5" (125A)	2" (50A)	10K	150#	400	265	135	
27			20K	300#	500	290	175	
28			40K	600#	500	300	175	
29			63K	900#	525	310	185	
30								
31	6" (150A)	2.5" (65A)	10K	150#	480	295	165	
32			20K	300#	550	320	190	
33			40K	600#	550	335	190	
34			63K	900#	585	350	200	
35			100K	1500#	700	370	250	
36	8" (200A)	3" (80A)	10K	150#	600	360	200	
37								
38			40K	600#	650	400	215	
39			63K	900#	675	400	225	
40			100K	1500#	850	450	295	

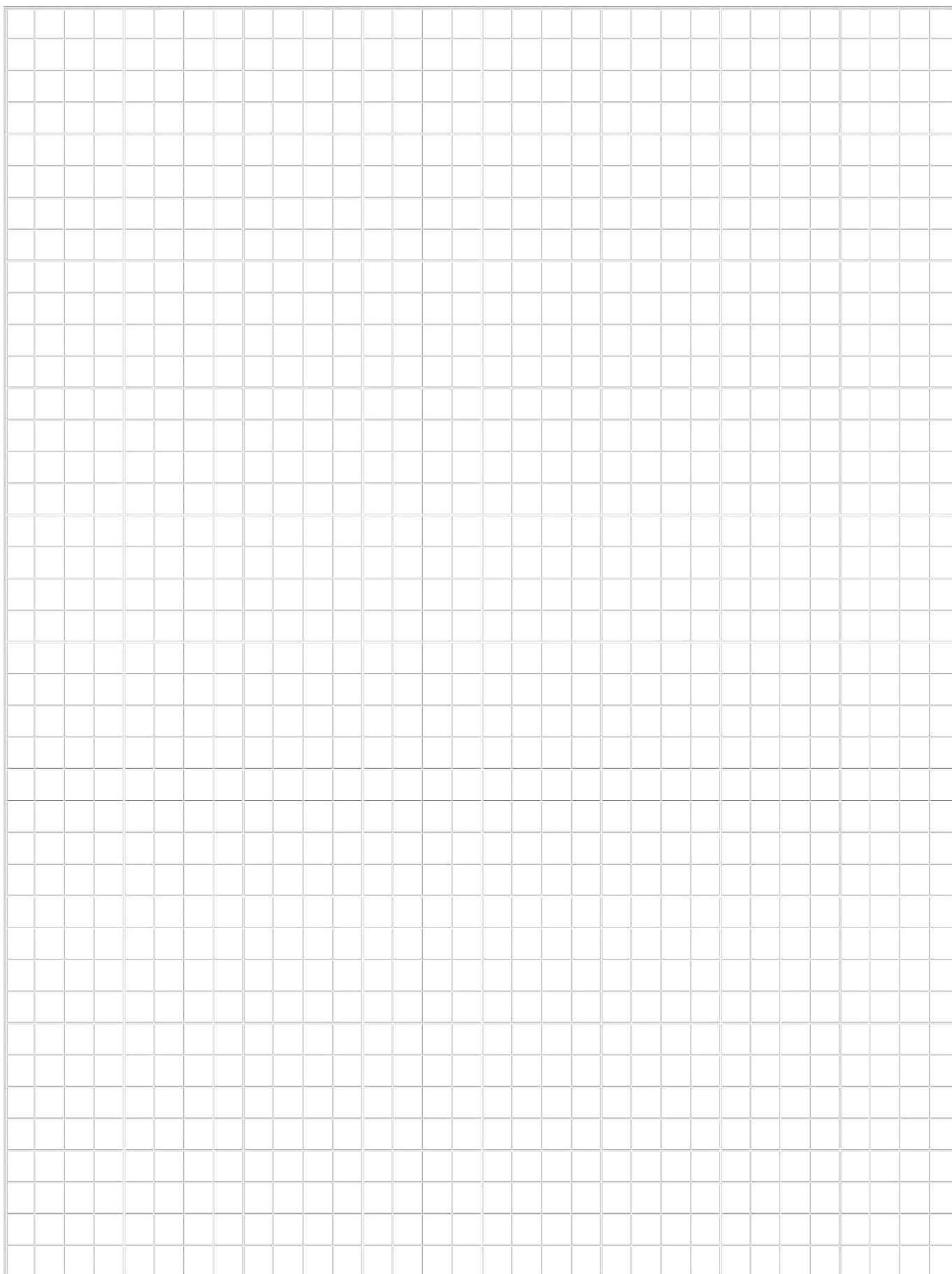
SPECIFICATION SHEET of RC-Series

Our sales representatives will help you select the correct valve for your application.

Please complete this form before contacting the sales office to help ensure all necessary information is provided.

		SPECIFICATION SHEET <i>Automatic Recirculation Control Check Valve</i>					
1	Project				Tag. No		
2	Customer				Qty	Item No	
3	Location				Model No		
4	Ref. No.				Serial No.		
5	Fluid				Date		
6	Service						
7	Pump Flow						
8		Unit	Max.	Nor	Min		
9	Flow	LPM					
10	Inlet Press	BarG					
11	Outlet Press	BarG					
12	Diff. Press	Bar					
13	Tdeg. C	deg.C					
14	Spec. Gravity	S.G					
15	Vapor Pressure	Bar					
16	Viscosity	CP					
	Pump pressure at minimum pump protection flow						
18	RC-Series valve bypass line pressure						
19	Pump Discharge Pressure						
20	Pump pressure at Shut-off (zero flow)						
21	Pump pressure at Normal-process-flow						
22	Pump pressure at minimum pump protection flow						
23	RC-Series valve bypass line pressure						
24	General Specification						
25	Orientation of RC-Series Valve						
26	Type of End Connection						
27	Pressure Rating						
28	Body Material						
29	Trim Material						
30	Seal Material						
31	Pump Drive Type						
32	Nace Materials Required						
33	Etc. Required						
Note							
34							
35							
36							
37							
38	Prepared		Approved		Rev.		
39	Prepared		Approved		Rev.	0	







Product Service Qualified Certificate

ISO 9001:2015

ISO 14001:2015

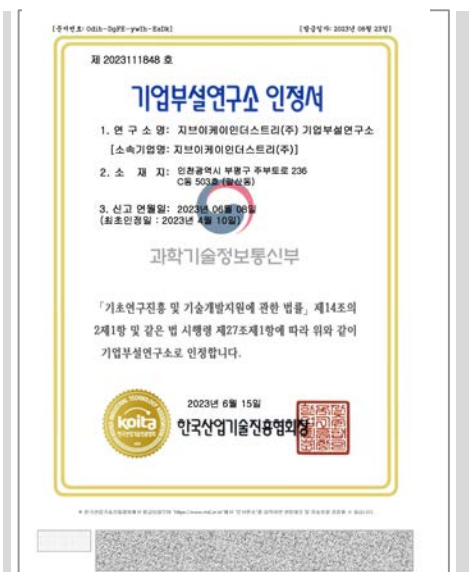
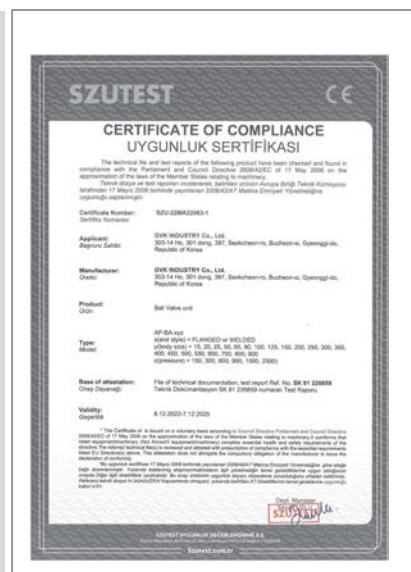
ISO 45001:2018



CE: Globe Control Valve

CE : Ball Valve

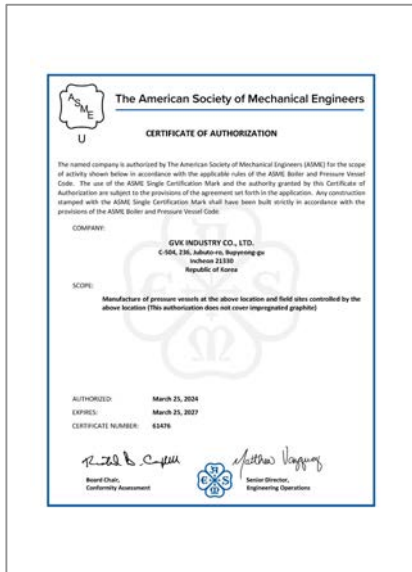
Research Institute



ASME U, PP Stemp

EAC : RUSSIA TRCU

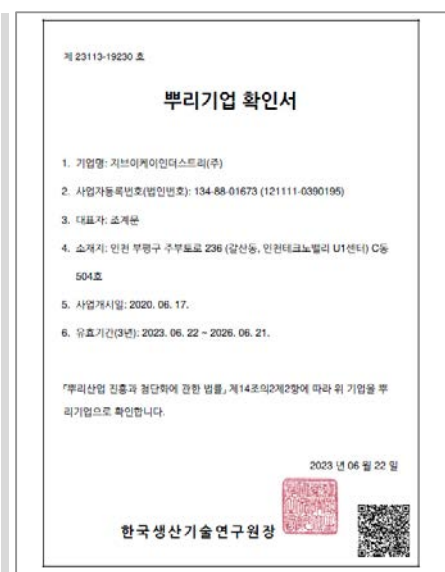
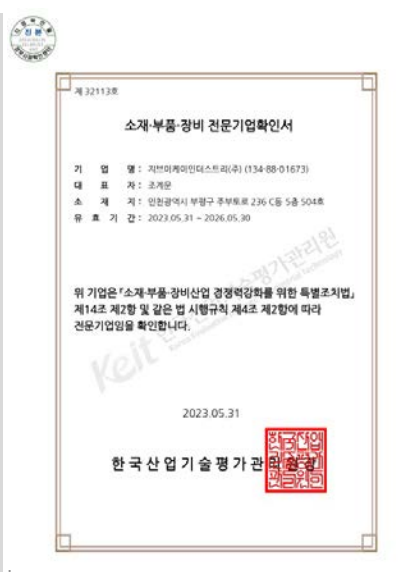
API 6D / 600 By KSM



Venture company

Material · Part · Equipment

Rooting Enterprise





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