

SAFETY & CONTROL VALVE

# TOTAL SOLUTION FOR MARINE CONTROL SYSTEM

Temperature Control Valve / Pressure Control Valve

Safety Relief Valve / Shut Off Valve

Hydraulic Actuator / Hydraulic Transmitter



TAEIL M-TECH CO.,LTD

[www.taeilmtech.com](http://www.taeilmtech.com)



# Professional Valve Manufacture

Through long development of shipbuilding industry,

Taeil M-Tech has supplied huge amount of valves for new building and conversion projects. Control valves in ship have great role for operating ship in safe and proper way as they control all kind of fluid which is critical factor of ship life cycle. Marine control valves can be divided by pressure, temperature and flow regulating type based on fluid's requirements on ships operation.

Pressure control valves are applied for fluid of air, steam, water and oil through several types of control valves and pressure reducing valve, primary pressure regulating valve, differential pressure regulating valve and pressure control valves are those control valves in ship.

Temperature regulating valves are applied to water, steam and oil for proper engine operation and utility purpose. Temperature regulating valve with heat sensor, 3way thermostatic regulating valve, 3way rotary valve and temperature control valves are those valves.

Flow regulating valves' roles are to on/off fluid and change direction of fluid on the pipe line to equipment or target destinations. 3Way change over valve, CW shut off valve, emergency shut off valve, back flow prevent valve and flow regulating valves are servicing for flow regulating mainly.

Also, marine control valve can be separated by their operation principal such as direct acting type and actuation acting type. Direct acting type valves are operated mainly inner spring loaded setting without any support from valve outside. the later type of control valves are mainly operated through actuator and accessory support. There are mainly three types of actuator for valve control such as Pneumatic actuator, Electric Motorized Actuator and Hydraulic Actuator. They also works properly with accessories supports. Main accessories are controller, positioner, sensors, air regulator, Solenoid Valves, Limit Switch, I/P converter and etc.

These marine control valves are mostly critical parts of ships machinery parts, they are usually requested for class certification such as ABS, BV, CCS, DNV/GL, Lina, KR, NK and LR. As a leading marine control valve provider, Taeil M-Tech offers a variety of marine control valves with class certificates as well as marine general valves for marine and offshore application.





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# Brief History

- 2000. 04 태일 엔지니어링 설립
- 2008. 11 ISO 9001 : 2000 인증
- 2009. 03 부품, 소재 전문기업 지정 (지식경제부)
- 2009. 08 Clean 사업장 지정 (노동부)
- 2014. 08 기업부설연구소 설립
- 2015. 02 기술혁신형 중소기업(Inno-Biz) 인증
- 2015. 09 코리아밸브 인수
- 2015. 12 ISO 14001 : 2004 인증
- 2016. 12 공장 확장이전
- 2016. 12 (주)태일엠텍 상호변경
- 2017. 12 벤처기업 인증

- 2000. 04 Taeil Engineering Co. is established
- 2008. 11 ISO 9001 : 2000 Certified
- 2009. 03 Material and Part Special Company Approval
- 2009. 08 Clean Working Place certified by Ministry of Labor
- 2014. 08 R & D Center established
- 2015. 02 Inno-Biz Certified
- 2015. 09 Korea Valve Aquisition
- 2015. 12 ISO 14001 : 2004 Certified
- 2016. 12 Factory Expansion and Relocation
- 2016. 12 Taeil M-Tech Co.,Ltd established from Taeil Engineering Co.
- 2017. 12 Venture Company Cetified





T2C-DP

## Pneumatic Control Valve

It is designed to use to convert flow rate fluids and/or keep available temperature and/or control the capacity of fluid in system. Also the trim is part designed proportion control case type. So it is proportion control valve. The actuator part use "Pneumatic Diaphragm type" so the actuator is great in ability of control the valve.

### • FEATURE

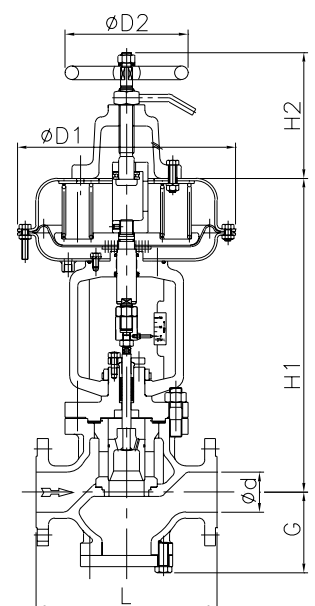
1. Precision control is possible
2. Emergency operating is possible with emergency handle devices.
3. It is not influenced by change of differential pressure because it is balance type.
4. It can manufacture and/or supply the trim part as the specific of control.
5. The stellite processing on the Trim part makes a valve strongly.

## Specification

Model		T2C-DP
Type		Pneumatic Diaphragm
Applicable Fluids		Steam, Water, Oil
Applicable Press./Temp.		20 kgf/cm <sup>2</sup> / 220°C
Material	Body	Ductile Cast Iron, Bronze, Cast Steel
	Trim	Stainless Steel
Flow characteristics		Equal Percentage, Linear, Quick opening
Rangeability		30 : 1 / 50 : 1
Size		15 ~ 350 mm
Operating pressure		0.2 ~ 1.0 kgf/cm <sup>2</sup> / 0.4~2.0 kgf/cm <sup>2</sup>
Accessories (Option)		<ul style="list-style-type: none"> <li>• Controller(E/P, P/P)</li> <li>• Positioner(E/P, P/P)</li> <li>• Sensor(Pr., Temp.)</li> <li>• Air set</li> </ul>

## Dimensions

									(mm)
Size mm(inch)	d	L	D1	D2	H1	H2	G	Weight Abt(Kg)	
15(1/2")	15	136	271	160	372	172	58	17	
20(3/4")	20	140	271	160	372	172	58	19	
25(1")	25	150	271	160	384	172	63	21	
32(1.1/4")	32	190	271	160	417	172	79	27	
40(1.1/2")	40	190	271	160	417	172	79	39	
50(2")	50	222	355	200	512	195	106	48	
65(2.1/2")	65	290	355	200	514	195	123	65	
80(3")	80	310	355	200	546	195	141	78	
100(4")	100	350	465	200	676	195	162	110	
125(5")	125	390	465	200	683	195	176	150	
150(6")	150	451	465	200	731	195	213	185	
200(8")	200	543	520	280	895	303	253	232	
250(10")	250	688	520	280	925	303	270	270	
300(12")	300	737	520	280	960	303	290	350	
350(14")	350	889	520	315	1050	345	320	410	



- Notes : 1. Also available in JIS, DIN and ANSI. For all other standards please consult factory.  
 2. Weights(Ductile Cast Iron) are approximate and applied JIS 10K.  
 3. The Flanges shall conform by JIS B2220



T3C-DP

## 3Way Pneumatic Control Valve

This valve's function is the operating of change the direction of flow and/or keep a Available temperature in a system. The Dividing and mixing type is available by a Installation condition. The operation actuator part operated by "Pneumatic diaphragm type" So it can control the flow and/or temperature accuracy and we can division the way to establishment. It is best to control a temperature.

### • FEATURE

1. Precision control is possible
2. It is not influenced by change of differential pressure because it is balance type.
3. Emergency operating is possible by the emergency handle devices.
4. This valve has two different function (different ability).
5. Superior to durability and semi-permanent.

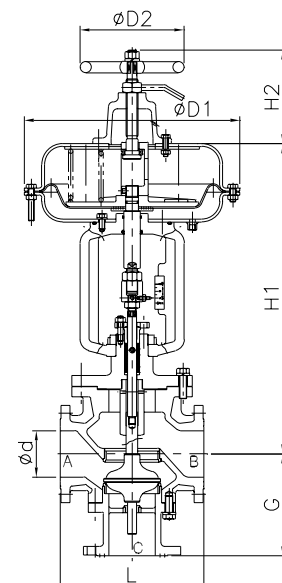
## Specification

Model		T3C-DP
Type		Pneumatic Diaphragm
Applicable Fluids		Water, Oil
Applicable Press./Temp.		16 kgf/cm <sup>2</sup> / 180°C
Differential Press.		2.0 kgf/cm <sup>2</sup>
Operation	Dividing	Air less (A→B) / Air supply (A→C)
	Mixing	Air less (B→A) / Air supply (C→A)
Flw characteristics		Linear, On-Off
Rangeability		30 : 1
Size		15~200 mm
Air supply press.		0.2 ~ 1.0 kgf/cm <sup>2</sup> / 0.4~2.0 kgf/cm <sup>2</sup>
Material	Body	Ductile Cast Iron, Bronze, Cast Steel
	Trim	Stainless Steel
Accessories(Optional)		<ul style="list-style-type: none"> <li>• Controller(E/P, P/P)</li> <li>• Positioner(E/P, P/P)</li> <li>• Sensor(Pr., Temp.)</li> <li>• Air set</li> </ul>

## Dimensions

Size mm(inch)	d	L	D1	D2	H1	H2	G	Weight Abt(Kg)
15(1/2")	25	142	271	160	384	172	128	21
32(3/4")	32	185	271	160	417	172	163	27
40(1.1/2")	40	185	271	160	417	172	163	30
50(2")	50	196	355	200	512	195	173	45
65(2.1/2")	65	282	355	200	540	200	200	57
80(3")	80	302	355	200	550	200	209	62
100(4")	100	346	465	200	680	202	232	88
125(5")	125	382	465	200	690	202	256	175
150(6")	150	443	465	200	740	202	298	220
200(8")	200	539	520	280	895	303	340	245
150(6")	150	451	465	200	731	195	213	185
200(8")	200	543	520	280	895	303	253	232

- Notes : 1. Also available in JIS, DIN and ANSI. For all other standards please consult factory.  
 2. Weights(Ductile Cast Iron) are approximate and applied JIS 10K.  
 3. The Flanges shall conform by JIS B2220







T2C-MT

## Electric Motorized Control Valve

It is designed to use to convert flow rate fluids and/or keep available temperature and/or control the capacity of fluid in system. The actuator of operation part used Electric Motor type. So the installation is easy. The trim part is designed proportion control case type. Also it is balance type. So it is proportion control type valve. That's why it can control accuracy.

### • FEATURE

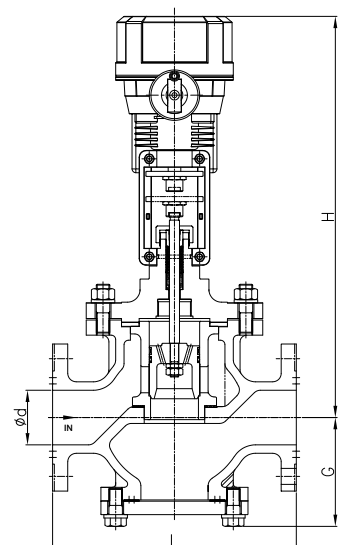
1. Installation is easy at operation only electric supply is required.
2. Size is small because of balance construction of trim parts.
3. The capacity is large.
4. Emergency operating is possible to use emergency handle devices.
5. Precision control is possible because it is proportion control type.

## Specification

Model		T2C-MT
Type		Electric Motor
Applicable Fluids		Steam, Water, Oil
Applicable Press./Temp.		16 kgf/cm <sup>2</sup> / 220°C
Power supply / Input Signal		220V, 110V / 4~20mA
Material	Body	Ductile Cast Iron, Bronze, Cast Steel
	Trim	Stainless Steel
Flow characteristics		Equal Percentage, Linear, Quick opening
Rangeability		30 : 1 / 50 : 1
Size		15~300 mm
Accessories (Option)		• Controller(P.I.D) • Sensor(Press., Temp.) • Control Box

## Dimensions

Size mm(inch)	d	L	H	G	Weight Abt(Kg)
15(1/2")	15	136	450	58	18
20(3/4")	20	140	450	58	20
25(1")	25	150	460	63	23
32(1.1/4")	32	190	470	69	25
40(1.1/2")	40	190	470	69	26
50(2")	50	200	475	82	29
65(2.1/2")	65	230	485	92	46
80(3")	80	262	505	125	53
100(4")	100	350	1050	350	75
125(5")	125	390	1050	350	102
150(6")	150	451	1200	400	125
200(8")	200	543	1450	550	158
250(10")	250	661	1450	550	185
300(12")	300	737	1450	550	240



Notes : 1. Also available in JIS, DIN and ANSI. For all other standards please consult factory.  
 2. Weights(Cast Steel) are approximate and applied JIS 10K.  
 3. The Flanges shall conform by JIS B2220





T3C-MT

## 3Way Electric Motorized Control Valve

3way motor control valve distinguish dividing and mixing type. It is used to convert flow rate fluids or keep available temperature in system. Operation Part of actuator operated detail acting to valve with electric-motor so it can control accuracy. It can divide to way to establishment.

### • FEATURE

1. Installation is easy only electric supply.
2. Actuator size is small and it is balance type of trim parts.
3. Emergency operating is possible with emergency handle devices.
4. Precision is high by proportion control.

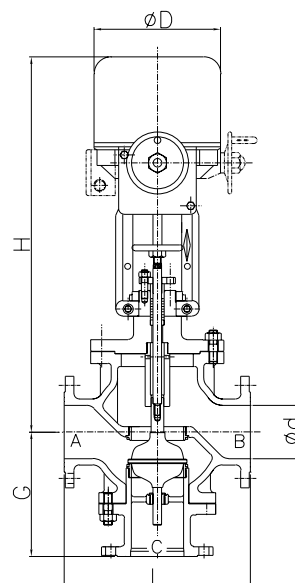
## Specification

Model		T3C-MT
Type		Electric Motor
Applicable Fluids		Water, Oil
Applicable Press. / Temp.		10 kgf/cm <sup>2</sup> / 150°C
Power Supply / Input Signal		110V, 220 V / 4~20mA
Differential Press.		2.0 kgf/cm <sup>2</sup>
Operation	Dividing	Signal Less (A→B) / Signal Supply (A→C)
	Mixing	Signal Less (B→A) / Signal Supply (C→A)
Material	Body	Ductile Cast Iron, Cast Steel
	Trim	Stainless Steel
Rangeability		30 : 1
Flow characteristics		Linear, On-Off
Size		25~200 mm
Accessories (Option)		• Controller(P.I.D) • Sensor(Pr., Temp.) • Control Box

## Dimensions

Size mm(inch)	d	L	D	H	G	Weight Abt(Kg)
25(1")	25	152	140	385	115	27
32(1.1/4")	32	182	160	450	150	28
40(1.1/2")	40	182	160	470	150	29
50(2")	50	216	160	490	158	32
65(2.1/2")	65	282	160	520	200	50
80(3")	80	301	160	520	209	57
100(4")	100	346	160	572	232	76
125(5")	125	382	180	809	256	142
150(6")	150	443	180	857	292	195
200(8")	200	539	180	900	340	250
150(6")	150	451	465	200	731	185
200(8")	200	543	520	280	895	232

- Notes : 1. Also available in JIS, DIN and ANSI. For all other standards please consult factory.  
 2. Weights(Ductile Cast Iron) are approximate and applied JIS 10K.  
 3. The Flanges shall conform by JIS B2220





T3R-PN

## 3Way Rotary Valve

It is available use to temperature control for freezing and heating system. Operation part's actuator operated detail acting to valve with pneumatic Electric cylinder operating. So it can control accuracy. And it is economical. It can divide to way to establishment.

### • FEATURE

1. Large capacity has compared with equal size.
2. Size small and easy Installation.
3. Emergency operating is possible with emergency handle devices.
4. Correctness temperature maintenance.

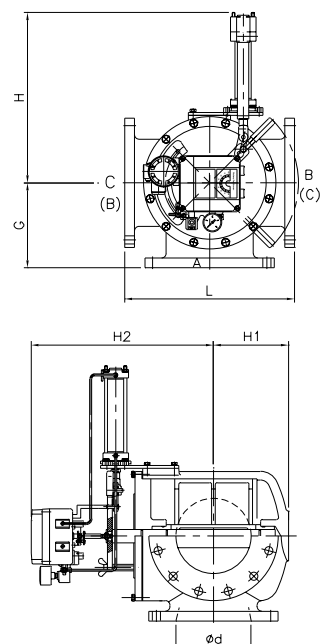
## Specification

Model		T3R-PN
Type		Pneumatic Cylinder Positioner
Applicable Fluids		Water, Oil
Applicable Press. / Temp.		Max. 10 kgf/cm <sup>2</sup> / 80°C
Operation	Dividing	(A) Inlet / (B) By-Pass / (C) Cooler
	Mixing	(A) Outlet / (B) By-Pass / (C) Cooler
Material	Body	Ductile Cast Iron, Bronze
	Trim	Bronze, SS400, SUS316
Air supply press.		1.4 kgf/cm <sup>2</sup>
Rangeability		30 : 1
Flow characteristics		Linear, On-Off
Size		80 ~ 600mm
Accessories		<ul style="list-style-type: none"> <li>• Controller(E/P, P/P)</li> <li>• Positioner(E/P, P/P)</li> <li>• Sensor(Temp.)</li> <li>• Air Set</li> </ul>

## Dimensions

							(mm)
Size mm(inch)	d	L	G	H1	H2	H	Weight Abt(Kg)
80(3")	80	292	146	418	140	330	70
100(4")	100	296	148	418	145	340	75
125(5")	125	332	166	418	170	365	105
150(6")	150	362	181	418	180	395	121
200(8")	200	450	225	522	190	485	155
250(10")	250	516	258	547	205	510	252
300(12")	300	660	330	590	300	545	384
350(14")	350	706	353	625	310	560	432
400(16")	400	820	410	647	388	635	495
450(18")	450	960	480	647	425	670	650
500(20")	500	1024	512	722	435	685	695
550(22")	550	1090	545	866	540	840	1100
600(24")	600	1200	600	1021	650	1010	1250

Notes : 1. Also available in JIS, DIN and ANSI. For all other standards please consult factory.  
 2. Weights(Ductile Cast Iron) are approximate and applied JIS 10K.  
 3. The Flanges shall conform by JIS B2220







T3R-MT

## 3Way Electric Motorized Rotary Valve

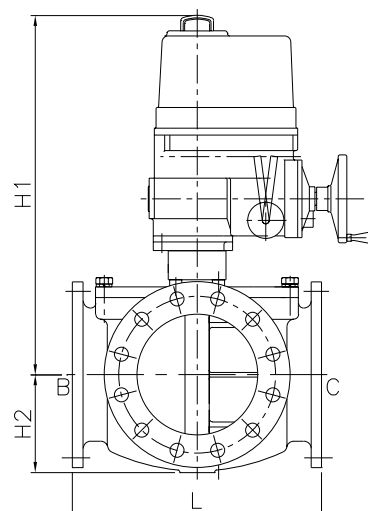
It is available to use to temperature control for freezing and heating system. Operation part's actuator operated detail acting to valve with electric motor type so it can controlled accuracy. It can divide to way to establishment.

### • FEATURE

1. Large capacity have compared with equal size.
2. Size small and easy Installation.
3. Emergency operating is possible with emergency handle devices.
4. Correctness temperature maintenance.
5. Installation is easy at operation only electric supply.

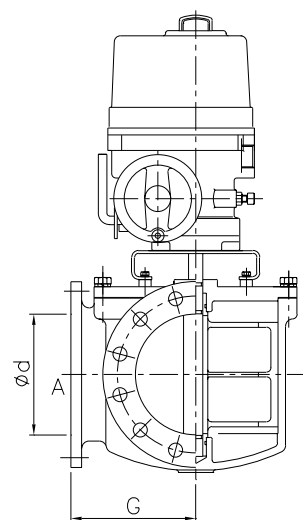
## Specification

Model		T3R-MT
Type		Electric Motor
Applicable Fluids		Water, Oil
Applicable Press. / Temp.		Max. 10 kgf/cm <sup>2</sup> / 80°C
Power Supply / Input Signal		110V, 220 V / 4~20mA
Operation	Dividing	(A) Inlet / (B) By-Pass / (C) Cooler
	Mixing	(A) Outlet / (B) By-Pass / (C) Cooler
Material	Body	Ductile Cast Iron, Bronze
	Trim	Bronze, SS400, SUS316
Rangeability		30 : 1
Flow characteristics		Linear
Size		80 ~ 600mm
Accessories		E/P Controller(P.I , P.I.D) Sensor(Temp.)



## Dimensions

(mm)						
Size mm(inch)	d	L	G	H1	H2	Weight Abt(Kg)
80(3")	80	292	146	470	145	50
100(4")	100	296	148	483	145	58
125(5")	125	332	166	483	170	84
150(6")	150	362	181	497	180	108
200(8")	200	450	225	530	220	148
250(10")	250	516	258	550	260	204
300(12")	300	660	330	571	272	292
350(14")	350	706	353	600	285	358
400(16")	400	820	410	710	388	495
450(18")	450	960	480	760	388	615
500(20")	500	1024	512	800	470	730
550(22")	550	1090	545	1000	590	1150
600(24")	600	1200	600	1250	690	1310



- Notes : 1. Also available in JIS, DIN and ANSI. For all other standards please consult factory.  
 2. Weights(Ductile Cast Iron) are approximate and applied JIS 10K.  
 3. The Flanges shall conform by JIS B2220



TC3-ST

## 3Way Change Over Valve

Dividing type and mixing by flow direction of fluid in a system.  
Valve which is spring return type is operation by air pressure existence or nonexistence at actuator. As this opening.  
The main valve will be operated "Open/Close" and type is division installed direction.

### • FEATURE

1. Emergency operating is possible with emergency handle devices.
2. No leakage and strongly.
3. One valves has two kind of ability.
4. Various function is possible with accessories hydraulic.

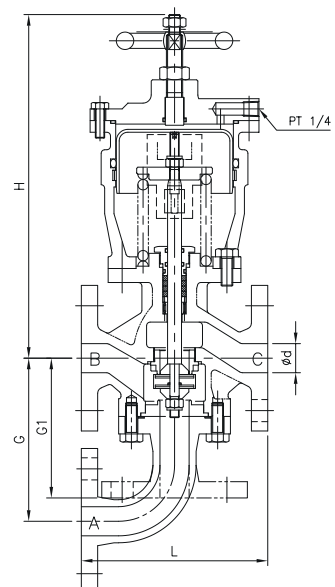
## Specification

Model		TC3-ST, EB
Type (Single Return)		Cylinder (Straight, Elbow)
Applicable Fluid		Water, Steam, Oil
Applicable Press. / Temp.		Max. 7kgf/cm <sup>2</sup> / 160°C
Air Supply Press.		5~7 kgf/cm <sup>2</sup>
Operation	Dividing	Air Supply (B→C) / Air less (B→A)
	Mixing	Air Supply (C→B) / Air less (A→B)
Material	Body	Ductile Cast Iron, Bronze, Cast Steel
	Trim	Stainless Steel
Size		15~80 mm
Accessories (Option)		Solenoid Valve / Limit Switch / Air Set

## Dimensions

Size mm(inch)	d	L	G1	G	H	Weight Abt(Kg)
15(1/2")	15	154	110	135	295	16
20(3/4")	20	158	110	135	295	22
25(1")	25	160	115	140	295	25
32(1.1/4")	32	190	150	160	295	29
40(1.1/2")	40	190	150	160	295	32
50(2")	50	220	158	178	295	43
65(2.1/2")	65	230	210	230	373	55
80(3")	80	254	228	248	400	60

Notes : 1. Also available in JIS, DIN and ANSI. For all other standards please  
2. Weight (Ductile Cast Iron) are approximate and applied JIS 5K.  
3. The Flange shall conform by JIS B2220





## 3Way Cylinder Valve

Dividing type and mixing by flow direction of fluid in a system. Valve which is spring return type is operation by air pressure existence or nonexistence at actuator. As this opening. The main valve will be operated "Open/Close" and type is division installed direction.

### ● FEATURE

1. Emergency operating is possible with emergency handle devices.
2. No leakage and strongly.
3. One valves has two kind of ability.
4. Various function is possible with accessories hydraulic.

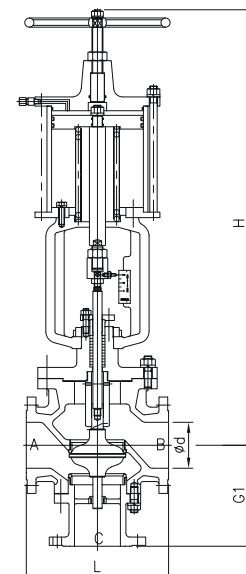
## Specification

Model		TC3-YK
Type (Single Return)		Cylinder (Straight), Yoke
Applicable Fluid		Water, Steam, Oil
Applicable Press. / Temp.		Max. 7kgf/cm <sup>2</sup> / 180°C
Air Supply Press.		5~7 kgf/cm <sup>2</sup>
Operation	Dividing	Air Supply (B→C) / Air less (B→A)
	Mixing	Air Supply (C→B) / Air less (A→B)
Material	Body	Ductile Cast Iron, Bronze, Cast Steel
	Trim	Stainless Steel
Size		65~200 mm
Accessories (Option)		Solenoid Valve / Limit Switch / Air Set

## Dimensions

Size mm(inch)	d	L	G1	H	Weight Abt(Kg)
65(2.1/2")	65	290	202	830	47
80(3")	80	310	213	862	62
100(4")	100	350	234	960	70
125(5")	125	390	260	994	86
150(6")	150	451	296	1043	115
200(8")	200	543	296	1043	135

- Notes : 1. Also available in JIS, DIN and ANSI. For all other standards please  
 2. Weight (Ductile Cast Iron) are approximate and applied JIS 5K.  
 3. The Flange shall conform by JIS B2220





## Temperature Regulating Valve

These models are consist of valve and sensor, It is proportion control valve and it is operated by set temperature for the fluid temperature regulating.

This valve will install with our company's "Heat sensor (AHS series)."

This valves are for heating purpose and used on hot water tanks, heat exchangers and heavy oil heating on vessels.

### • FEATURE

1. The installation is very simple.
2. Simply construction and semi-permanent with less malfunction.
3. Being self-control type, so an auxiliary power is not required.
4. Operating can be used under the condition of high / differential pressure.
5. Pilot type has considerably large capacity. (TTR-PL)
6. The temperature variation is small, so it can be controlled precision.
7. This is proportion control type valve by temperature change.
8. The manual handle which is used for both Emergency handle and bypass is provided.



TTR-DT

## Specification

Model		TTR-DT	TTR-BL	TTR- PL
Type		Direct	Balance	Pilot
Applicable Fluids		Steam, Hot Water, Thermal Oil		
Applicable Press./Temp.		10 kgf/cm <sup>2</sup> / 220℃	16 kgf/cm <sup>2</sup> / 220℃	
Material	Body	Ductile Cast Iron, Bronze, Cast Steel		
	Trim	Stainless Steel		
Size		15~25mm	32~50mm	65~125mm
Accessories		• Heat sensor   • By-Pass Handle(Optional)		

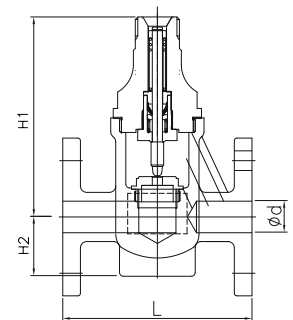
## Dimensions

(mm)						
Model	Size mm(inch)	d	L	H1	H2	Weight Abt(Kg)
TTR-DT	15(1/2")	15	136	140	58	8
	20(3/4")	20	140	140	58	10
	25(1")	25	150	152	63	13
TTR-BL	32(1.1/4")	32	190	185	79	17
	40(1.1/2")	40	190	185	79	19
	50(2")	50	200	200	82	23
TTR-PL	65(2.1/2")	65	230	280	92	26
	80(3")	80	310	235	150	43
	100(4")	100	350	268	171	53
	125(5")	125	390	273	183	65

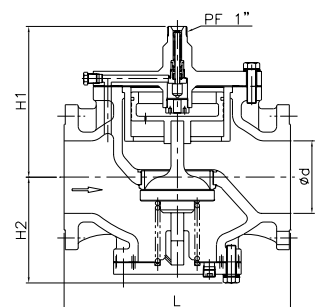
Notes : 1. Also available in JIS, DIN and ANSI. For all other standards please consult factory.

2. Weights(Ductile Cast Iron) are approximate and applied JIS 10K.

3. The Flanges shall conform by JIS B2220



TTR-DT, BL



TTR-PL



## Temperature Sensor

This sensor is temperature proportion type. The sensor part sense the temperature, and the liquid will expands or contracts by the temperature change. It can operate the main shaft stem in the sensor pocket and It'll make a valve open/close by this working. This item usually used to Temperature Regulating valve by Korval.

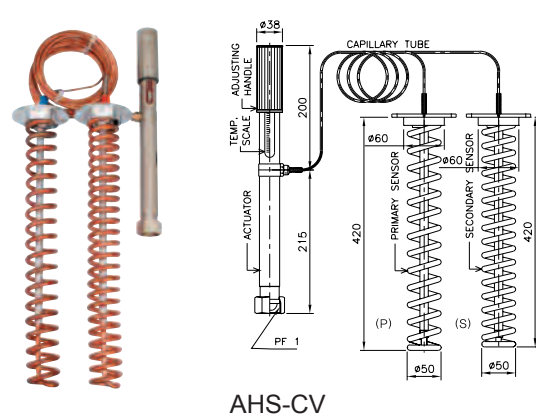
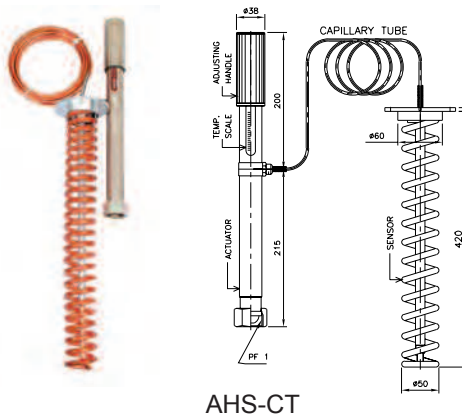
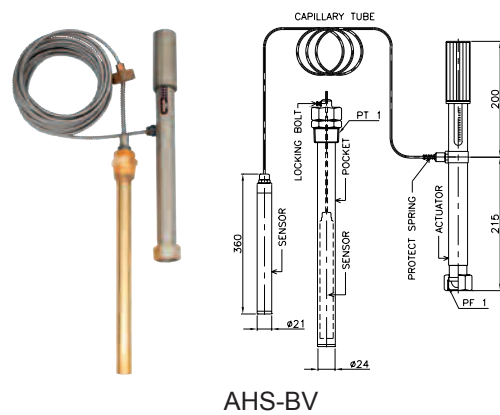
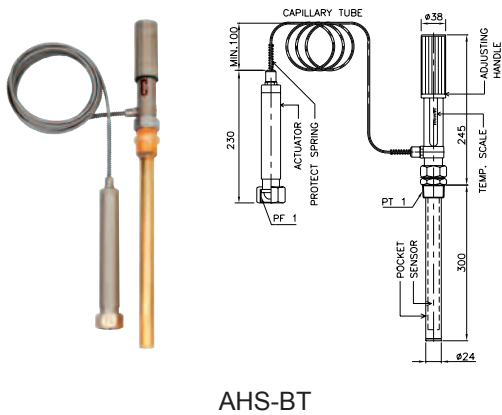
### • FEATURE

AHS-BT : This type is that the temperature control part is on the sensor part and only use liquid. Standard type.

AHS-BV : It is possible to set the temperature on the valve and it can free to use based on location of sensing system establishment. It is liquid only.

AHS-CT : It is possible to set the temperature on the valve and it react sensitive , only use air.

AHS-CV : It is possible to set the temperature on the valve, it can do accuracy set temperature because of dual sensor therefore it can cover the temperature change, only use air. Usually it used on place of wide temperature change.



## Specification

Model	AHS-BT	AHS-BV	AHS-CT	AHS-CV
Heated Fluids	Water, Oil		Air, Gas	
Adjust Temp. Range(°C)	0~60, 50~110, 80~140		-20~60, 20~80	
Capillary Tube Length(m)	3, 5, 7, 8 ~ 15(Option)			5(P)+7(S), 7(P)+10(S)
Accessories	• Sensor Pocket		-	



T3T-WH

## 3Way Temperature Regulating Valve

### T3T-WA/WH

It is consist of valve and sensor. This is "Internal" sensor type and it keep setting . Temperature with change to regulating flow rate. This valve use mixing/dividing type by Valve install status and if usually used on cooling system.

#### ● FEATURE

1. Being self –control type. No auxiliary power is required.
2. The installation is very easy because it is internal sensor type.
3. No malfunction and economical.
4. The heating/cooler is possible with both of mixing /dividing type by install change.
5. This is proportion control type valve by temperature change.

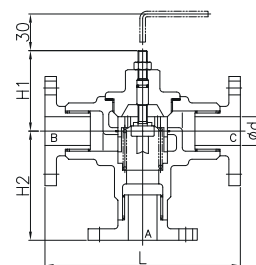
## Specification

Model		T3T-WA	T3T-WH
Type		Wax Type	
Applicable Fluid		Water, Oil	
Applicable Press./Temp.		Max. 7kgf/cm <sup>2</sup> / 160°C	
Operation	Dividing	Normal (A→B) / High Temp. (A→C)	
	Mixing	Normal (B→A) / High Temp. (C→A)	
Material	Body	Ductile Cast Iron, Bronze, Cast Steel	
	Trim	Stainless Steel	
Size		20~32 mm	40~150 mm

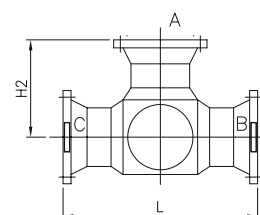
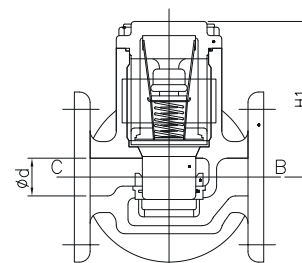
## Dimensions

Model		Size mm	d	L	H1	H2	Weight (Kg)
T3T-WA		20	20	167	70	95	13
		25	25	170	170	95	14
		32	32	170	170	95	16
T3T-WH		40	40	170	98	140	18
		50	50	221	148	140	22
		65	65	246	161	200	25.5
		80	80	259	167	200	28
		100	100	399	215	200	34
		125	125	481	237	365	40
		150	150	481	250	365	46

Notes : 1. Also available in JIS, DIN and ANSI. For all other standards please  
 2. Weight (Ductile Cast Iron) are approximate and applied JIS 5K.  
 3. The Flange shall conform by JIS B2220



T3T-WA



T3T-WH





TTM-WA

TTM-WB

## Thermostatic Element

It is used for maintaining the proper temperature of the system, the system is installed on the internal temperature sensor that is working.

### • FEATURE

1. Use a wide range of different temperatures.
2. Easy to install inside the sensor type.
3. Built-in relief did not break.
4. No corrosion.

## Specification

Model		TTM-WA	TTM-WB
Type		Wax Type	
Applicable Fluids		Water, Oil	
Applicable Press./Temp.		5 kgf/cm <sup>2</sup> / 32~96°C	
Material	Body	Stainless Steel, Cast Steel	
	Trim	Stainless Steel	
Size		ø58.5xø73x140L	ø58xø73x121L

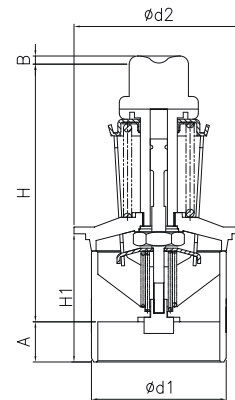
## Dimensions

(mm)

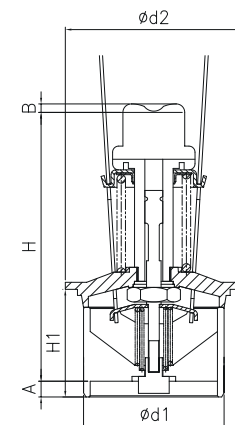
Size mm(inch)	d1	d2	H	H1	A	B	Weight Abt(Kg)
TTM-WA	58.5	73	140	60.9	9.5	4	0.65
TTM-WB	58	73	121	44.4	9.5	4	0.65

## Element Temperature Range(°C)

No.	Temp. Control Range	Nominal Temperature
01	27~35	32
02	29~41	35
03	34~42	38
04	35~45	41
05	38~47	43
06	40~50	46
07	43~54	49
08	51~60	54
09	54~63	57
10	57~66	60
11	60~69	63
12	63~72	66
13	66~74	68
14	68~78	71
15	71~80	74
16	74~83	77
17	77~85	79
18	79~88	82
19	82~91	85
20	87~98	91



TTM-WA



TTM-WB



## Safety Relief Valve

A safety relief valve is pressure relief characterized by rapid opening action or by opening generally proportional to the increase in pressure over the opening pressure. When the pressure increase in the line, this valve protect the system to discharge the pressure more than Over pressure. It can use on either compressible or incompressible fluids, depending on design, adjustment or application. The valve have variety of cap according to airtight of emergency handle lever part.

### TSR series

It designed to operate under high pressure/temperature. It is full bore type, so it has large capacity. The valve has a disc and a seat stellite and high durability against impacts and corrosion. It has variety of cap according to airtight of emergency handle lever part for sealing the leakage when it open.

### TSR-LL

It designed to operate under low pressure/temperature. It is, low lift type, and it use on often open the valve in a line. Small size & right and easy handling.



TSR-CC



TSR-LL

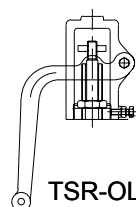
## Specification

Model		TSR-OL, CL, CC		TSR-LL
Type		Full Bore		Low Lift
Applicable Fluids		Air, Water, Liquid, Steam		
Applicable Press. / Temp.		40 kgf/cm <sup>2</sup> / 220°C	20 kgf/cm <sup>2</sup> / 220°C	15 kgf/cm <sup>2</sup> / 150°C
Material	Body	Ductile Cast Iron, Bronze, Cast Steel		
	Trim	Stainless Steel		
Size		15~40 mm	15~200 mm	15~25 mm

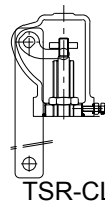
## Dimensions

Model	Size mm(inch)	d1	d2	L	G	H	Weight Abt(Kg)
TSR-CC	15x25 (1/2"x1")	15	25	90	85	202	8.8
	20x25 (3/4"x1")	20	25	90	85	202	15
	25x40 (1"x1.1/2")	25	40	116	105	223	16
	25x50 (1"x2")	25	50	116	105	223	22
	40x65 (1.1/2"x2.1/2")	40	65	130	127	321	27
	-CL 50x80 (2"x3")	50	80	138	137	353	45
	-OL 65x100 (2.1/2"x4")	65	100	162	156	490	65
	80x125 (3"x5")	80	125	175	170	535	93
	100x150 (4"x6")	100	150	212	195	590	120
TSR-LL	125x200 (5"x8")	125	200	230	227	725	235
	150x200 (6"x8")	150	200	230	227	725	260
	15(1/2")	PT 3/4"	1/2"	40	51	145	1.2
	20(3/4")	PT 1"	3/4"	40	54	145	1.5
	25(1")	PT 1~3/4"	1"	45	60	145	1.8

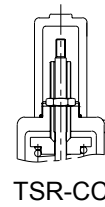
- Notes : 1. Also available in JIS, DIN and ANSI. For all other standards please consult factory.  
 2. Weights(Ductile Cast Iron) are approximate and applied JIS 10K.  
 3. The Flanges shall conform by JIS B2220



TSR-OL

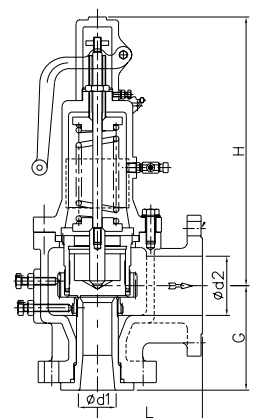


TSR-CL

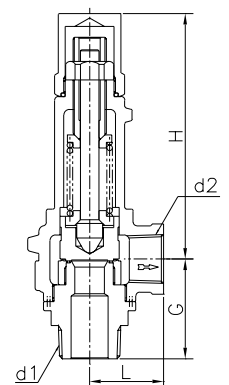


TSR-CC

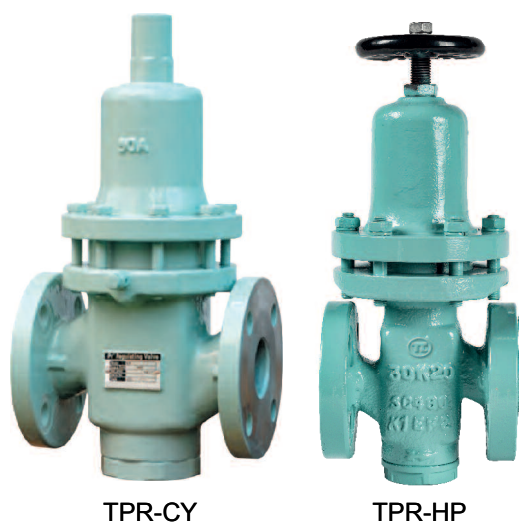
(mm)



Full Bore Type



Low Lift Type



## Pressure Reducing Valve

This valve reduce from inlet high pressure to outlet low se pressure.  
So it can keep the system's required pressure.  
The valve is self-acting type.

### TPR-CY

It is available on both fluid & gas. It is external sensor type.  
It is and optimum of valve type to use under liquid of high viscosity the maximum reducing rate is large and Simply construction and semi-permanent.

### TPR-HP

It's Air only. Designed to use under high pressure by pilot control Type operating.  
So the off-set is small and Simply construction and semi-permanent with as malfunction

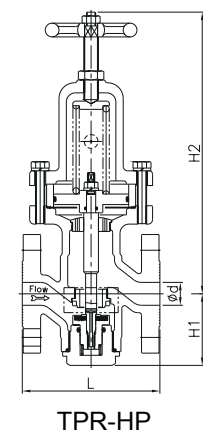
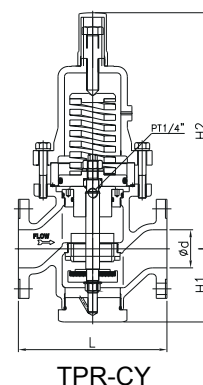
## Specification

Model		TPR-CY	TPR-HP
Type		Cylinder	
Applicable Fluids		Air, Water, Oil	Air
Applicable Press. / Temp.		Max. 20 kgf/cm <sup>2</sup> / 150°C	Max. 40 kgf/cm <sup>2</sup> / 80°C
Max. Reducing Ratio		10 : 1	10 : 1
Material	Body	Ductile Cast Iron, Bronze, Cast Steel	
	Trim	Stainless Steel	
Size		15~80mm	15~50mm

## Dimensions

(mm)						
Model	Size mm(inch)	d	L	H1	H2	Weight Abt(Kg)
TPR-CY	15(1/2")	15	136	220	60	7
	20(3/4")	20	140	220	60	8
	25(1")	25	150	255	65	14
	32(1.1/4")	25	190	285	79	19
	40(1.1/2")	40	190	285	79	21
	50(2")	50	200	303	86	23
	65(2.1/2")	65	230	410	92	38
TPR-HP	80(3")	80	262	415	125	49
	15(1/2")	15	145	360	75	12
	20(3/4")	20	145	360	75	13
	25(1")	25	150	370	78	14
	32(1.1/4")	32	182	400	96	15
	40(1.1/2")	40	182	400	96	17
	50(2")	50	210	410	110	18

Notes : 1. Also available in JIS, DIN and ANSI. For all other standards please.  
2. Weight (Ductile Cast Iron) are approximate and applied JIS 10K.  
3. The Flange shall conform by JIS B2220.







TPR-PL

## Pressure Reducing Valve

The product designed in consideration of stable operation displays its superior performance under the severe condition of fluid change. It severe pressure reducing from inlet's high pressure to outlet's low pressure. And it is self-acting type valve.

### TPR-PL

It usually use in steam and/or gas. The operating is pilot type so the capacity of valve is large. And the outlet pressure change with inlet Pressure change is small.

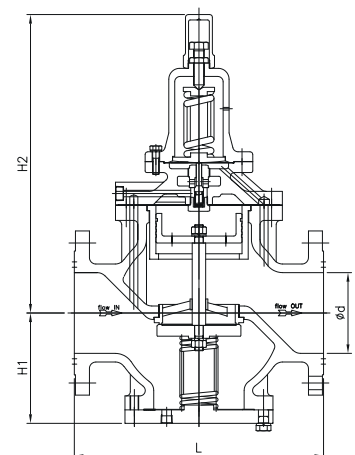
## Specification

Model		TPR-PL
Type		Pilot
Applicable Fluids		Steam, Air
Applicable Press. / Temp.		Max. 20 kgf/cm <sup>2</sup> / 220°C
Max. Reducing Ratio		10 : 1
Material	Body	Ductile Cast Iron, Bronze, Cast Steel
	Trim	Stainless Steel
Size		15~150mm

## Dimensions

(mm)

Model	Size mm(inch)	d	L	H1	H2	Weight Abt(Kg)
TPR-PL	15(1/2")	15	166	68	275	8
	20(3/4")	20	170	68	275	9
	25(1")	25	170	68	275	12
	32(1.1/4")	32	192	82	282	17
	40(1.1/2")	40	192	82	282	18
	50(2")	50	210	82	290	22
	65(2.1/2")	65	290	116	347	30
	80(3")	80	310	132	373	41
	100(4")	100	350	153	382	71
	125(5")	125	390	168	511	86
	150(6")	150	451	204	555	108
	200(8")	200	543	260	640	159
	250(10")	250	673	296	643	250



- Notes : 1. Also available in JIS, DIN and ANSI. For all other standards please.  
 2. Weight (Ductile Cast Iron) are approximate and applied JIS 10K.  
 3. The Flange shall conform by JIS B2220



TPP-CY

## Primary Pressure Regulating Valve

When the over press occurred in the line by load change. This valve operate to keep the pressure in the line and/or protect the piping line from the damage and/or operate By-pass function to keep the primary pressure in the main line. It is external type, and an auxiliary power is not required and it can operate under high temperature / pressure an/or liquid of high viscosity.

### TPP-CY

The operate part is balance type. So the influence of back pressure is small and it can control precision by sensitive acting.

## Specification

Model		TPP-CY
Type		Cylinder
Applicable Fluids		Water, Liquid, Oil
Applicable Press. / Temp.		16 kgf/cm <sup>2</sup> / 150°C
Material	Body	Ductile Cast Iron, Bronze, Cast Steel
	Trim	Stainless Steel
Size		15~100mm
Accessories (Option)		• Glycerin port

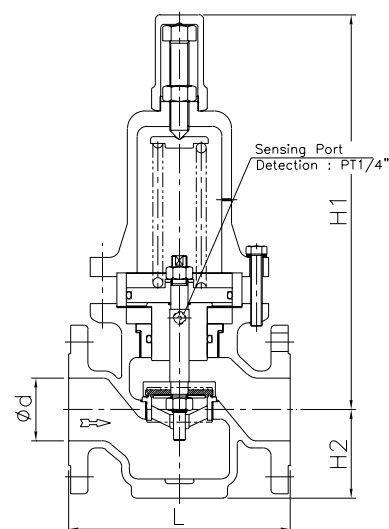
## Dimensions

(mm)						
Model	Size mm(inch)	d	L	H1	H2	Weight Abt(Kg)
TPP-CY	15(1/2")	15	136	220	60	7
	20(3/4")	20	140	220	60	8
	25(1")	25	150	255	65	14
	32(1.1/4")	32	190	285	79	19
	40(1.1/2")	40	190	285	79	21
	50(2")	50	200	303	86	23
	65(2.1/2")	65	230	410	92	38
	80(3")	80	262	415	125	49
	100(4")	100	350	538	163	73

Notes : 1. Also available in JIS, DIN and ANSI. For all other standards please consult factory.

2. Weights(Ductile Cast Iron) are approximate and applied JIS 10K.

3. The Flanges shall conform by JIS B2220





TCY-HA

## 2Way Pneumatic Cylinder Valve

The valve is emergency check/supply to flow of fluid in the system. Main valve is open/close as the air pressure supply/check at actuator. It's spring return type and it has various function with accessories.

### • FEATURE

1. Simply construction and easy Installation.
2. No leakage and strongly.
3. Emergency operating is possible with emergency handle devices.
4. Valve has large capacity.

## Specification

Model		TCY-HA
Type		Cylinder
Applicable Fluids		Steam, Water, Oil
Applicable Press. / Temp.		5 kgf/cm <sup>2</sup> / 160°C
Air supply Pressure		5~7 kgf/cm <sup>2</sup>
Operation (Air fail)		Closed
Material	Body	Ductile Cast Iron, Bronze
	Trim	Stainless Steel
Size		15~80mm
Accessories		Solenoid Valve / Limit Switch / Air Set

## Dimensions

(mm)

Model	Size mm(inch)	d	L	H1	H2	Weight Abt(Kg)
TCY-HA	15(1/2")	15	154	60	295	16
	20(3/4")	20	158	83	295	22
	25(1")	25	160	64	295	25
	32(1.1/4")	32	190	83	295	29
	40(1.1/2")	40	190	83	295	32
	50(2")	50	220	85	295	43
	65(2.1/2")	65	230	134	373	55
	80(3")	80	254	152	400	60

Notes : 1. Also available in JIS, DIN and ANSI. For all other standards please consult factory.

2. Weights(Ductile Cast Iron) are approximate and applied JIS 5K.

3. The Flanges shall conform by JIS B2220

