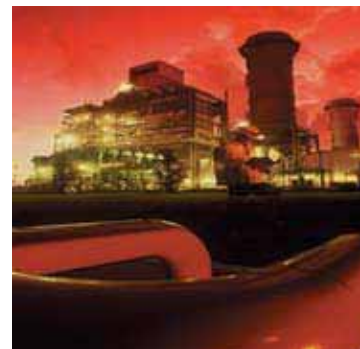


# Sinclair Collins® High Pressure Valves

Electronic Catalog



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#### **WARNING!**

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

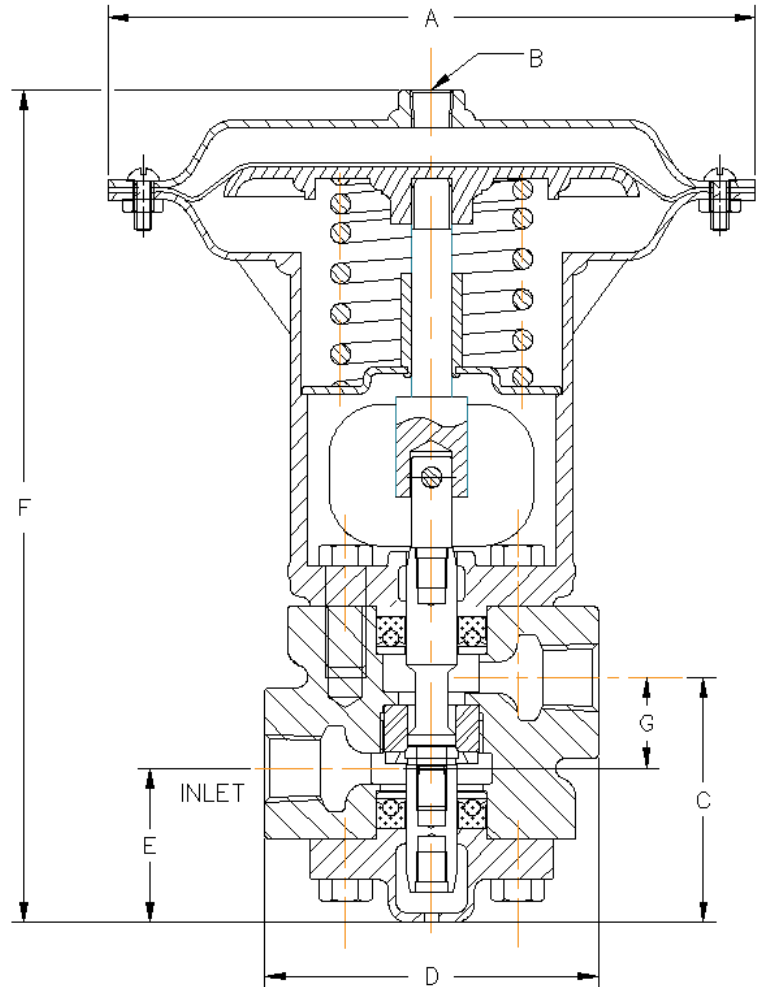
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# HP Series High Pressure Process Control Valves 2 Way Normally Closed 1/2" to 1 1/4"

## Features and Benefits

- Operating pressure 4000 psi (275 bar), Pilot pressure 35 to 40 psi (2.4 to 2.8 bar)
- Media – Raw Water, Oil, Water and Soluble oil
- Maximum temperature 160°F (71°C)
- ASTM B-61 Bronze bodies
- Hardened Stainless Steel Stem and Seats
- U-Cup style stem seals



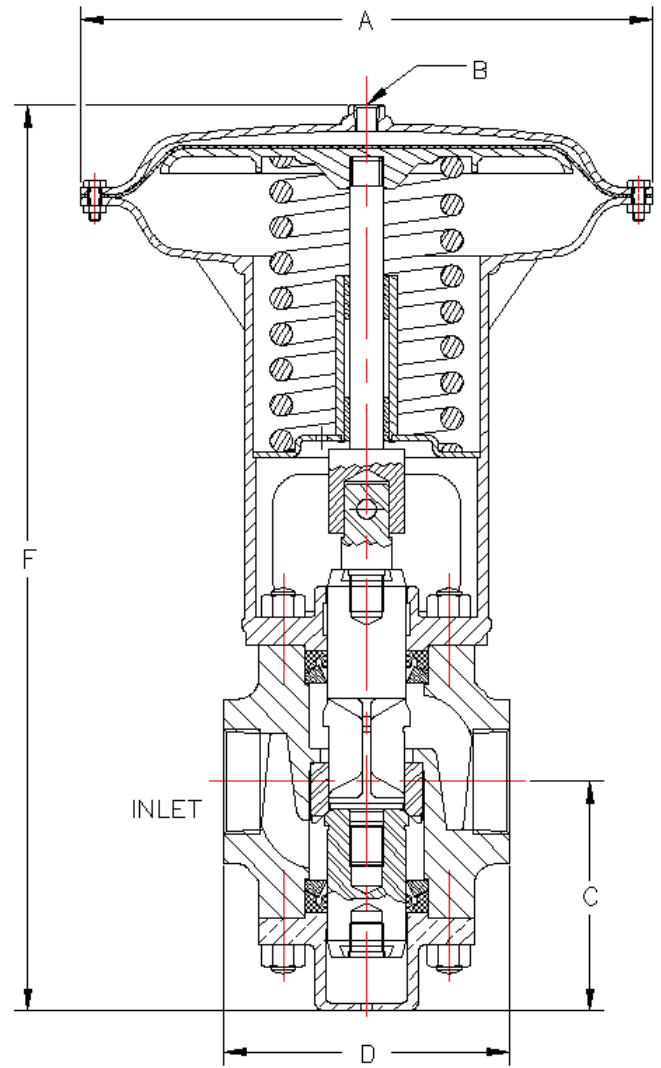
## Basic Dimensions

Catalog Number	Port Size (NPTF)	Flow Coefficient		Dimensions of 2-Way Normally Closed Valves							
		Cv	Kv (m <sup>3</sup> /hr)	UNITS	A	B (NPTF)	C	D	E	F	G
HP204-2001	1/2"	4.3	3.7	English	8"	1/4"	3"	4-1/8"	1-7/8"	10-3/8"	1-1/8"
				Metric (mm)	203.2						
HP204-3001	3/4"	4.5	3.9	English	8"	1/4"	3"	4-1/8"	1-7/8"	10-3/8"	1-1/8"
				Metric (mm)	203.2						
HP204-4001	1"	12	10.4	English	11"	1/4"	5-1/8"	5-1/2"	4"	18-3/8"	1-1/8"
				Metric (mm)	279.4						
HP204-5001	1-1/4"	13	11.3	English	11"	1/4"	5-1/8"	5-1/2"	4"	18-3/8"	1-1/8"
				Metric (mm)	279.4						

# HP Series High Pressure Process Control Valves 2 Way Normally Closed 1 1/2" to 3"

## Features and Benefits

- Operating pressure 4000 psi (275 bar), Pilot pressure 35 to 40 psi (2.4 to 2.8 bar)
- Media – Raw Water, Oil, Water and Soluble oil
- Maximum temperature 160°F (71°C)
- ASTM B-61 Bronze bodies
- Hardened Stainless Steel Stem and Seats
- U-Cup style stem seals
- Strong steel cylinder tube actuator with powder coating



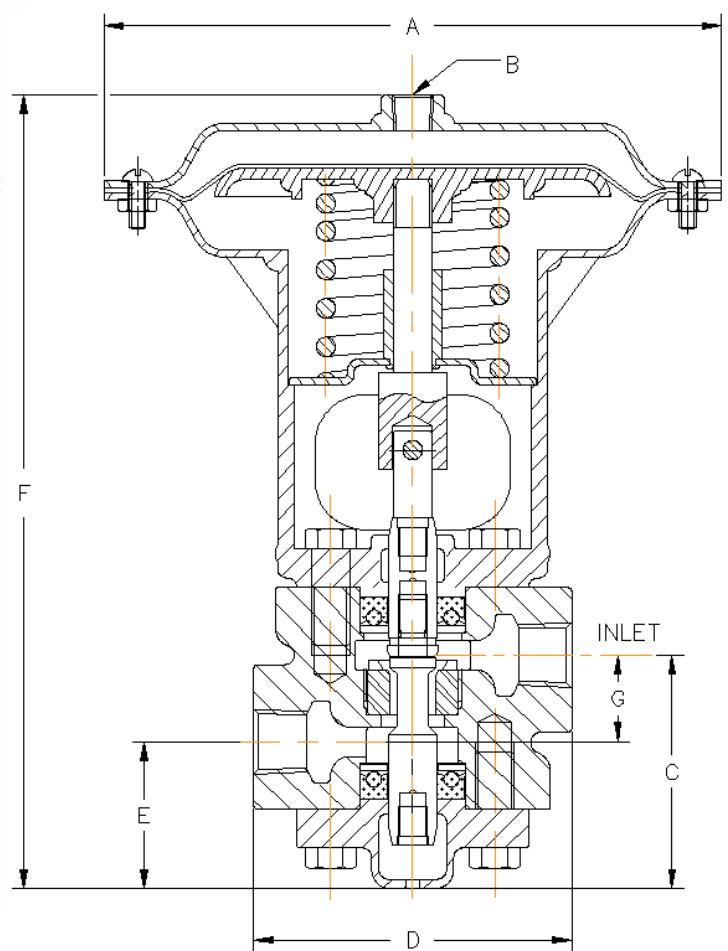
## Basic Dimensions

Catalog Number	Port Size (NPTF)	Flow Coefficient		Dimensions of 2-Way Normally Closed Valves					
		Cv	Kv (m <sup>3</sup> /hr)	UNITS	A	B (NPTF)	C	D	F
HP204-6001	1-1/2"	19.9	17.3	English	13"	1/4"	5-1/4"	6-1/2"	20-3/4"
				Metric (mm)	330.2		133.3	165.1	527.1
HP204-7001	2"	24	20.9	English	13"	1/4"	5-1/4"	6-1/2"	20-3/4"
				Metric (mm)	330.2		133.3	165.1	527.1
HP204-9001	3"	58	50.5	English	20"	1/2"	7-1/4"	9-1/2"	30"
				Metric (mm)	508.0		184.2	241.3	762.0

# HP Series High Pressure Process Control Valves 2 Way Normally Open 1/2" to 1 1/4"

## Features and Benefits

- Operating pressure 4000 psi (275 bar), Pilot pressure 35 to 40 psi (2.4 to 2.8 bar)
- Media – Raw Water, Oil, Water and Soluble oil
- Maximum temperature 160°F (71°C)
- ASTM B-61 Bronze bodies
- Hardened Stainless Steel Stem and Seats
- U-Cup style stem seals



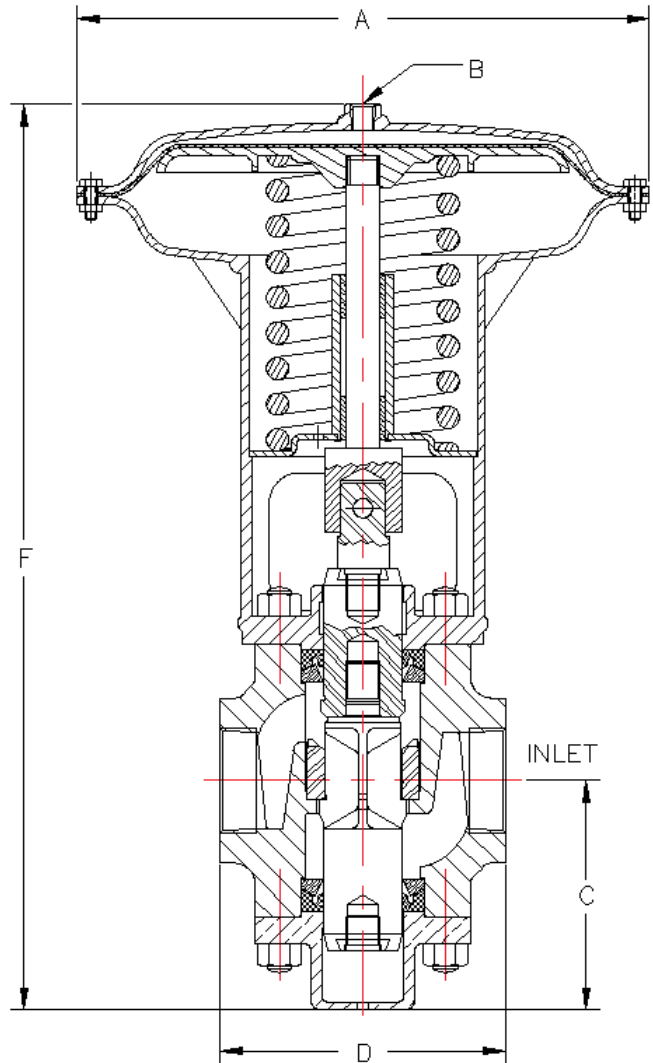
## Basic Dimensions

Catalog Number	Port Size (NPTF)	Flow Coefficient		Dimensions of 2-Way Normally Open Valves							
		Cv	Kv (m <sup>3</sup> /hr)	UNITS	A	B (NPTF)	C	D	E	F	G
HP204-2002	1/2"	4.3	3.7	English	8"	1/4"	3"	4-1/8"	1-7/8"	10-3/8"	1-1/8"
				Metric (mm)	203.2		76.2	104.8	47.6	263.5	28.6
HP204-3002	3/4"	4.5	3.9	English	8"	1/4"	3"	4-1/8"	1-7/8"	10-3/8"	1-1/8"
				Metric (mm)	203.2		76.2	104.8	47.6	263.5	28.6
HP204-4002	1"	12	10.4	English	11"	1/4"	5-1/8"	5-1/2"	4"	18-3/8"	1-1/8"
				Metric (mm)	279.4		130.2	139.7	101.6	466.7	28.6
HP204-5002	1-1/4"	13	11.3	English	11"	1/4"	5-1/8"	5-1/2"	4"	18-3/8"	1-1/8"
				Metric (mm)	279.4		130.2	139.7	101.6	466.7	28.6

# HP Series High Pressure Process Control Valves 2 Way Normally Open 1 1/2" to 3"

## Features and Benefits

- Operating pressure 4000 psi (275 bar), Pilot pressure 35 to 40 psi (2.4 to 2.8 bar)
- Media – Raw Water, Oil, Water and Soluble oil
- Maximum temperature 160°F (71°C)
- ASTM B-61 Bronze bodies
- Hardened Stainless Steel Stem and Seats
- U-Cup style stem seals
- Strong steel cylinder tube actuator with powder coating



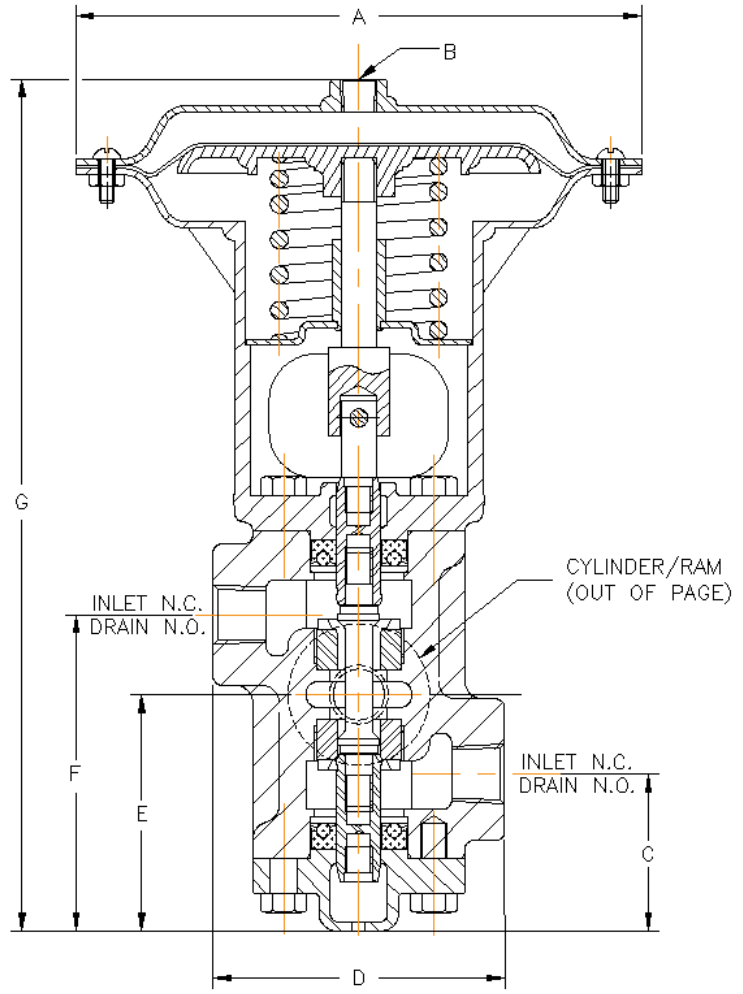
## Basic Dimensions

Catalog Number	Port Size (NPTF)	Flow Coefficient		Dimensions of 2-Way Normally Open Valves					
		Cv	Kv (m <sup>3</sup> /hr)	UNITS	A	B (NPTF)	C	D	F
HP204-6002	1-1/2"	19.9	17.3	English	13"	1/4"	5-1/4"	6-1/2"	20-3/4"
				Metric (mm)	330.2		133.3	165.1	527.1
HP204-7002	2"	24	20.9	English	13"	1/4"	5-1/4"	6-1/2"	20-3/4"
				Metric (mm)	330.2		133.3	165.1	527.1
HP204-9002	3"	58	50.5	English	20"	1/2"	7-1/4"	9-1/2"	30"
				Metric (mm)	508.0		184.2	241.3	762.0

# HP Series High Pressure Process Control Valves 3 WAY 1/2" to 1 1/4"

## Features and Benefits

- Operating pressure 4000 psi (275 bar), Pilot pressure 35 to 40 psi (2.4 to 2.8 bar)
- Media – Raw Water, Oil, Water and Soluble oil
- Maximum temperature 160°F (71°C)
- ASTM B-61 Bronze bodies
- Hardened Stainless Steel Stem and Seats
- U-Cup style stem seals
- Strong steel cylinder tube actuator with powder coating



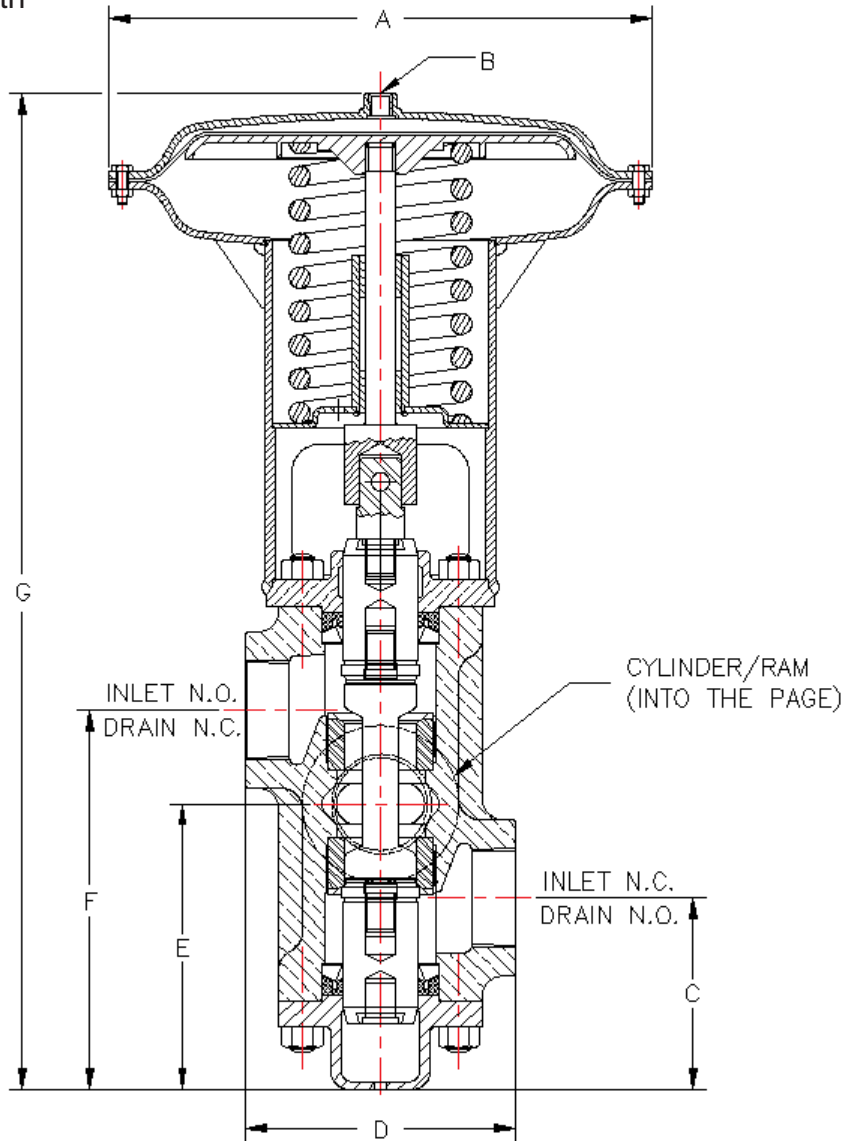
## Basic Dimensions

Catalog Number	Port Size (NPTF)	Flow Coefficient		Dimensions of 3-Way Valves							
		Cv	Kv (m <sup>3</sup> /hr)	UNITS	A	B (NPTF)	C	D	E	F	G
HP204-2003	1/2"	4.3	3.7	English	8"	1/4"	2-1/4"	4-1/8"	3-3/8"	4-1/2"	12-1/8"
				Metric (mm)	203.2		57.2	104.8	85.7	114.3	308.0
HP204-3003	3/4"	4.5	3.9	English	8"	1/4"	2-1/4"	4-1/8"	3-3/8"	4-1/2"	12-1/8"
				Metric (mm)	203.2		57.2	104.8	85.7	114.3	308.0
HP204-4003	1"	12	10.4	English	11"	1/4"	4-3/16"	5-1/2"	5-11/16"	7-3/16"	20-3/4"
				Metric (mm)	279.4		106.4	139.7	142.9	187.3	527.0
HP204-5003	1-1/4"	13	11.3	English	11"	1/4"	4-3/16"	5-1/2"	5-11/16"	7-3/16"	20-3/4"
				Metric (mm)	279.4		106.4	139.7	142.9	187.3	527.0

# HP Series High Pressure Process Control Valves 3 WAY 1 1/2" to 3"

## Features and Benefits

- Operating pressure 4000 psi (275 bar), Pilot pressure 35 to 40 psi (2.4 to 2.8 bar)
- Media – Raw Water, Oil, Water and Soluble oil
- Maximum temperature 160°F (71°C)
- ASTM B-61 Bronze bodies
- Hardened Stainless Steel Stem and Seats
- U-Cup style stem seals
- Strong steel cylinder tube actuator with powder coating



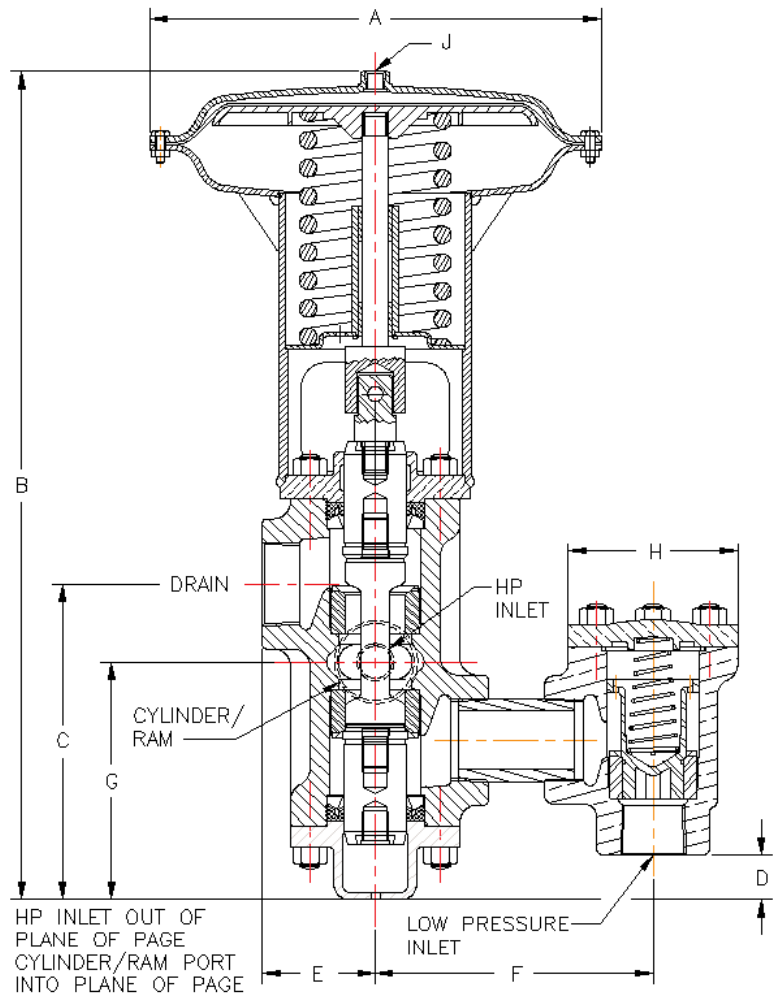
## Basic Dimensions

Catalog Number	Port Size (NPTF)	Flow Coefficient		Dimensions of 3-Way Valves							
		Cv	Kv (m <sup>3</sup> /hr)	UNITS	A	B (NPTF)	C	D	E	F	G
HP204-6003	1-1/2"	30	26.1	English	13"	1/4"	4-5/8"	6-1/4"	6-7/8"	9-1/8"	24.0
				Metric (mm)	330.2		117.5	158.8	174.6	231.8	609.6
HP204-7003	2"	40	34.8	English	13"	1/4"	4-5/8"	6-1/2"	6-7/8"	9-1/8"	24.0
				Metric (mm)	330.2		117.5	165.1	174.6	231.8	609.6
HP204-9003	3"	83.5	72.6	English	20"	1/2"	6"	9"	9.25	12-1/2"	34"
				Metric (mm)	508.0		152.4	228.6	235	317.5	863.6

# HP Series High Pressure 3 Way 2 Pressure Control Valve

## Features and Benefits

- Operating pressure 3500 psi (241 bar), Pilot pressure 35 to 40 psi (2.4 to 2.8 bar)
- Media – Raw Water, Oil, Water and Soluble oil
- Maximum temperature 160°F (71°C)
- ASTM B-61 Bronze bodies
- Hardened Stainless Steel Stem and Seats
- Assembled from standard 3 Way valve and check valve
- U-Cup style stem seals



## Basic Dimensions

Catalog Number	Port Size (NPT)				Flow Coefficient LP Inlet to Ram		Flow Coefficient Ram to Drain		Dimensions of Two Pressure Valve									
	H. P. Inlet	Low Pressure	Cylinder/Ram	Drain	Cv	Kv (m <sup>3</sup> /hr)	Cv	Kv (m <sup>3</sup> /hr)	UNITS	A	B	C	D	E	F	G	H (dia.)	J (NPT)
HP014-3002	3/4"	1"	1-1/4"	1-1/4"	11	9.6	16	13.9	English	11"	20-3/4"	7-1/2"	1-1/4"	2-3/4"	6-7/8"	5-3/4"	4"	1/4"
									Metric (mm)	279.4	527	190.5	31.8	69.9	174.6	146	101.6	
HP014-4002	3/4"	1-1/4"	1-1/2"	1-1/2"	19	16.5	30	26.1	English	13"	24"	9-1/8"	1-5/8"	3-1/8"	7-5/8"	6-7/8"	4-7/8"	1/4"
									Metric (mm)	330.2	609.6	231.8	41.9	79.4	193.7	174.6	123.8	
HP014-6002	3/4"	1-1/2"	2"	2"	20	17.4	40	34.8	English	13"	24"	9-1/8"	1-3/8"	3-1/4"	8"	6-7/8"	4-7/8"	1/4"
									Metric (mm)	330.2	609.6	231.8	34.9	82.6	203.2	174.6	123.8	
HP014-7002	3/4"	2-1/2"	3"	3"	54	47.0	83	72.2	English	20"	34"	12.5	1-1/4"	4-1/2"	10-1/4"	9-1/4"	7"	1/2"
									Metric (mm)	508.0	863.6	317.5	31.8	114.3	260.4	235	177.8	

# HP Series High Pressure 3 Way 2 Pressure Control Valve: How it Works

Sinclair Collins® 3-Way Two-Pressure Hydraulic Control Valves are widely used in press operations or in other similar applications where low and high operating pressures are employed. Diaphragm-operated, they may be actuated by manually, electrically or mechanically operated air valves. They are designed to control two pressure systems where the low pressures range from 50 to 2000 psi and high pressures up to 3500 psi.

The "low pressure" range of a Two-Pressure Valve depends upon the High Pressure Automatic Inlet Valve ordered for the assembly. High Pressure Automatic Inlet Valves are available for "low pressure" ranges of 50 to 150, 150 to 400, and 400 to 2000 psi. An adjustment screw on the High Pressure Automatic Inlet Valve provides accurate adjustment of the low pressure point (within the operating range) at which the high pressure "kicks in".

In most press operations, low-pressure is used to close the ram the majority of the stroke. As the ram closes and meets increasing resistance, the resulting low-pressure build-up lifts the plunger of the High Pressure Automatic Inlet Valve admitting high pressure fluid into the ram to close/clamp. The "kick-in" stage of the process can also be manually controlled by substituting a standard 2-way normally closed valve in

place of the High Pressure Automatic Inlet Valve. Our model HP204-3001, a 3/4" 4000 psi normally closed valve, is recommended. This type of installation might be used where the first phase of a cure is run under low-pressure and the cure completed under high pressure.

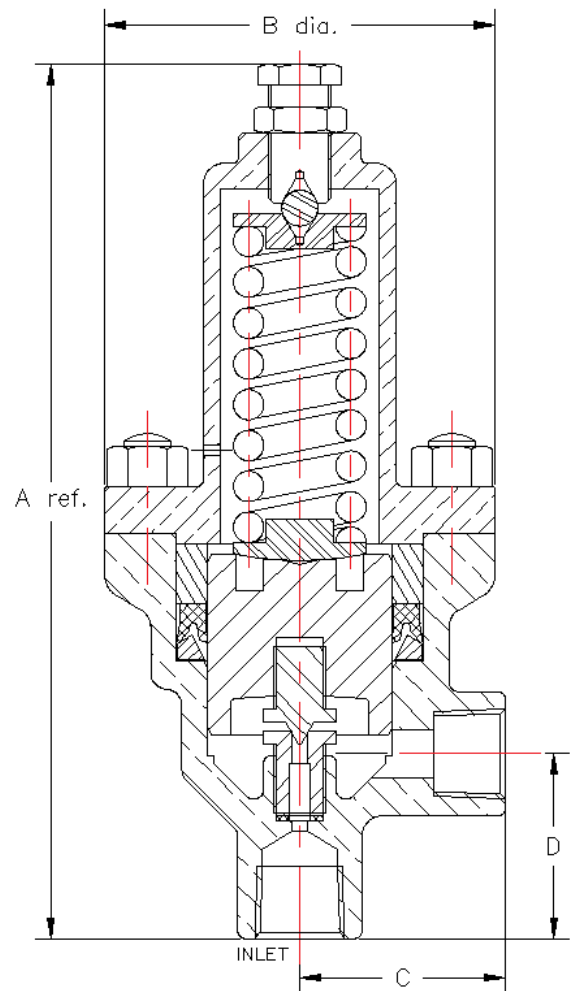
By the addition of a reverse-acting valve in the low pressure inlet line during the closing stroke, the press ram can be held in any position desired; or the ram can be allowed to close the mold to the point where the ram pressure will increase a few psi. This slight back pressure is used to close an inlet valve which bypasses the inlet pressure through a smaller orifice so the ram will close slowly before the high pressure automatically "kicks in".

Pull-backs can be supplied through a 3-way valve and the pressure removed from the pull-back cylinders while the ram is stroking and also for curing time; at end of cure, the pressure can be restored to pull-back.

# HP Series High Pressure Automatic Inlet Valve

## Features and Benefits

- Operating pressure 3500 psi (241 bar)
- Media – Raw Water, Oil, Water and Soluble oil
- Maximum temperature 160°F (71°C)
- Variety of low pressure ranges
- Adjustment screw permits accurate regulation of low pressure point
- ASTM B-61 Bronze bodies
- Hardened Stainless Steel Stem and Seats
- U-Cup style stem seals



## Basic Dimensions

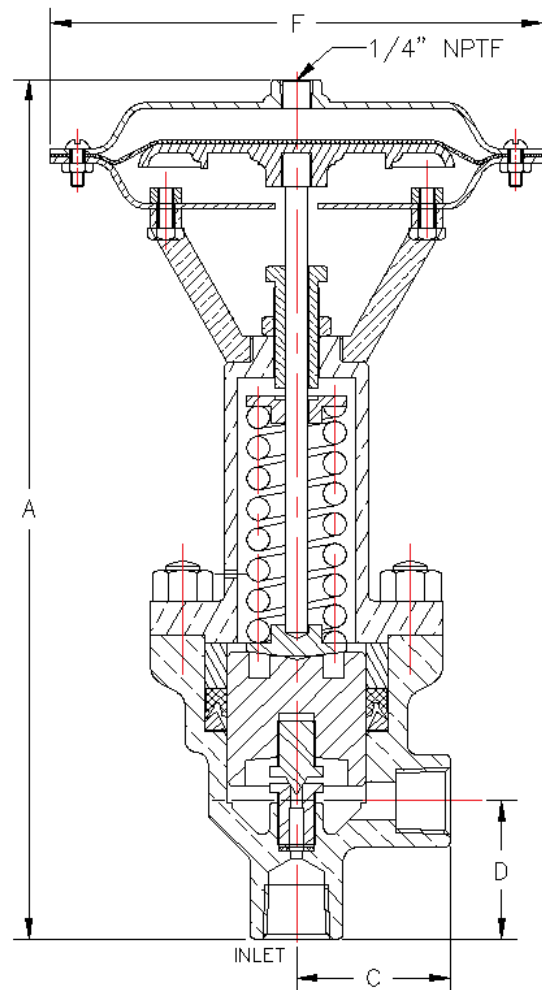
Catalog Number	Range	Inlet Port (NPT)	Outlet Port (NPT)	Dimensions of 3-Way Valves				
				UNITS	A	B (dia)	C	D
HP344-2001	50 - 150 psi	3/4"	3/4"	English	10-3/4"	4-1/4"	2-1/2"	2-1/4"
				Metric (mm)	273.1	108	63.5	57.2
HP344-2003	150 - 400 psi	3/4"	3/4"	English	10-3/4"	4-1/4"	2-1/2"	2-1/4"
				Metric (mm)	273.1	108	63.5	57.2
HP344-2008	400 - 2000 psi	3/4"	3/4"	English	10-3/4"	4-1/4"	2-1/2"	2-1/4"
				Metric (mm)	273.1	108	63.5	57.2

\* An adjustment screw on the valve permits the high-pressure "kick-in" to be set at any pressure within this range. It is very important that the valves be adjusted to open after the low-pressure has raised the ram and is near its ultimate pressure in the ram. **Under no circumstances should the automatic high-pressure valve be opened during the full-stroke of the ram.** These valves are designed only to finish the closing of the ram and should not be used for long sustained flows.

# HP Series High Pressure Automatic Inlet Valve-Diaphragm Operated

## Features and Benefits

- Operating pressure 3500 psi (241 bar), Pilot pressure 35 to 40 psi (2.4 to 2.8 bar)
- Media – Raw Water, Oil, Water and Soluble oil
- Maximum temperature 160°F (71°C)
- Variety of low pressure ranges
- Adjustment screw permits accurate regulation of low pressure point
- Diaphragm actuator designed as a pneumatic override to hold the valve closed, allowing the high pressure “kick in” function to be omitted or delayed until a later part of the process
- ASTM B-61 Bronze bodies
- Hardened Stainless Steel Stem and Seats
- U-Cup style stem seals



## Basic Dimensions

Catalog Number	Range	Inlet Port (NPT)	Outlet Port (NPT)	Dimensions of 3-Way Valves				
				UNITS	A	F (dia)	C	D
HP344-2002	50 - 150 psi	3/4"	3/4"	English	13-7/8"	8"	2-1/2"	2-1/4"
				Metric (mm)	352.4	203.2	63.5	57.2
HP344-2004	150 - 400 psi	3/4"	3/4"	English	13-7/8"	8"	2-1/2"	2-1/4"
				Metric (mm)	352.4	203.2	63.5	57.2
HP344-2009	400 - 2000 psi	3/4"	3/4"	English	13-7/8"	8"	2-1/2"	2-1/4"
				Metric (mm)	352.4	203.2	63.5	57.2

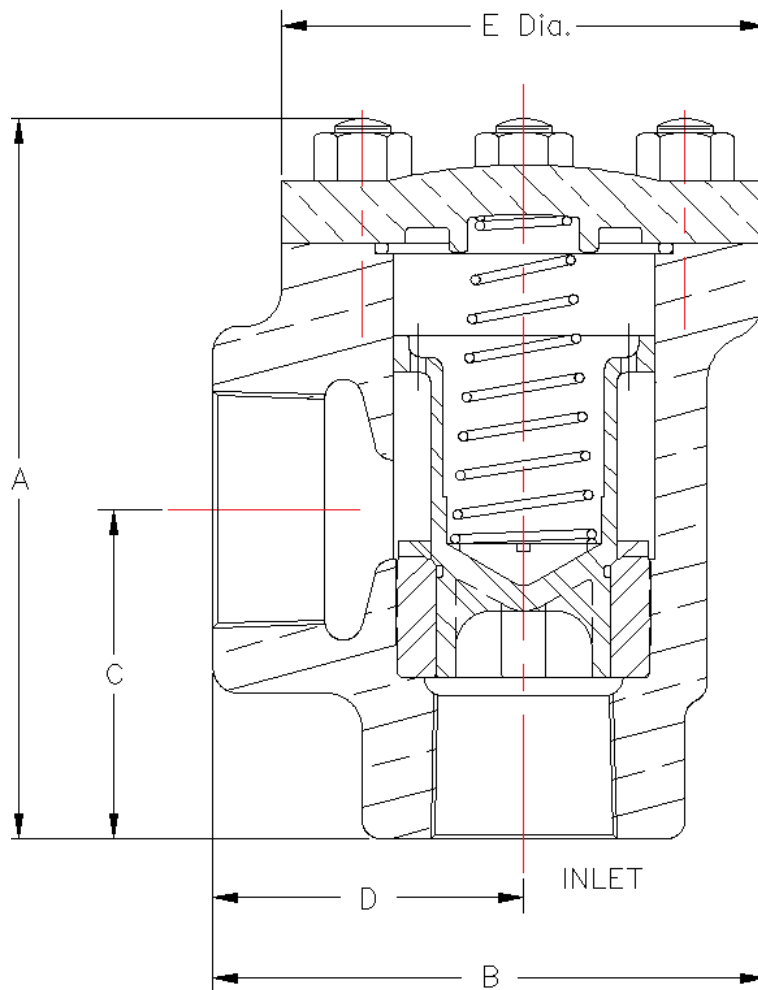
\* An adjustment screw on the valve permits the high-pressure "kick-in" to be set at any pressure within this range. It is very important that the valves be adjusted to open after the low-pressure has raised the ram and is near its ultimate pressure in the ram. Under no circumstances should the automatic high-pressure valve be opened during the full-stroke of the ram. These valves are designed only to finish the closing of the ram and should not be used for long sustained flows.

# HP Series High Pressure Check Valves

## 3/4" to 3"

### Features and Benefits

- Operating pressure 3500 psi (241 bar),
- Media – Raw Water, Oil, Water and Soluble oil
- Maximum temperature 160°F (71°C)
- ASTM B-61 Bronze bodies
- Hardened Stainless Steel Stem and Seats
- Same check valve used in the Two Pressure Valve
- High Flow
- Low cracking pressure
- Angle port design



### Basic Dimensions

Catalog Number	Port Size (NPTF)	Flow Coefficient		Minimum Opening Pressure		Check Valve Basic Dimensions					
		Cv	Kv (m <sup>3</sup> /hr)	Psi	Bar	UNITS	A	B	C	D	E
HP194-3001	3/4"	5	4.4	6	5.2	English	4-1/2"	3-3/4"	2-1/4"	2-1/4"	3"
						Metric (mm)	114.3	95.25	57.2	57.2	76.2
HP194-4001	1"	12	10.4	5	4.4	English	5-1/2"	4-1/2"	2-1/2"	2-1/2"	4"
						Metric (mm)	139.7	114.3	63.5	63.5	101.6
HP194-5001	1-1/4"	17	14.8	5	4.4	English	5-3/4"	4-3/4"	2-5/8"	2-3/4"	4"
						Metric (mm)	146.1	120.6	66.7	69.85	101.6
HP194-6001	1-1/2"	27	23.5	5	4.4	English	6-3/4"	5-7/16"	3"	3"	4-7/8"
						Metric (mm)	171.5	138.1	76.2	76.2	123.8
HP194-7001	2"	32	27.8	5	4.4	English	7-3/8"	5-11/16"	3-1/4"	3-1/4"	4-7/8"
						Metric (mm)	187.3	144.5	82.6	82.6	123.8
HP194-9001	3"	65	56.6	4	3.5	English	11"	8-1/4"	4-3/4"	4-3/4"	7"
						Metric (mm)	279.4	209.6	120.7	120.7	177.8

Note: Values are given at a maximum rating with the check fully open. In practice, Cv ratings will vary, due to the spring and the ability to maintain pressure under flow conditions.

## Offer Of Sale

The items described in this document are hereby offered for sale at prices to be established by Parker Hannifin Corporation, its subsidiaries and its authorized distributors. This offer and its acceptance by any customer ("Buyer") shall be governed by all of the following Terms and Conditions. Buyer's order for any item described in its document, when communicated to Parker Hannifin Corporation, its subsidiary or an authorized distributor ("Seller") verbally or in writing, shall constitute acceptance of this offer.

1. **Terms and Conditions of Sale:** All descriptions, quotations, proposals, offers, acknowledgments, acceptances and sales of Seller's products are subject to and shall be governed exclusively by the terms and conditions stated herein. Buyer's acceptance of any offer to sell is limited to these terms and conditions. Any terms or conditions in addition to, or inconsistent with those stated herein, proposed by Buyer in any acceptance of an offer by Seller, are hereby objected to. No such additional, different or inconsistent terms and conditions shall become part of the contract between Buyer and Seller unless expressly accepted in writing by Seller. Seller's acceptance of any offer to purchase by Buyer is expressly conditional upon Buyer's assent to all the terms and conditions stated herein, including any terms in addition to, or inconsistent with those contained in Buyer's offer. Acceptance of Seller's products shall in all events constitute such assent.

2. **Payment:** Payment shall be made by Buyer net 30 days from the date of delivery of the items purchased hereunder. Any claims by Buyer for omissions or shortages in a shipment shall be waived unless Seller receives notice thereof within 30 days after Buyer's receipt of the shipment. The minimum order amount is \$125.00 net, unless otherwise noted on the quotation.

3. **Delivery:** Unless otherwise provided on the face hereof, delivery shall be made F.O.B. Seller's plant. Regardless of the method of delivery, however, risk of loss shall pass to Buyer upon Seller's delivery to a carrier. Any delivery dates shown are approximate only and Seller shall have no liability for any delays in delivery. Shipments are made by common carrier. Any premium freight must be requested and paid for by the Buyer.

4. **Warranty:** Seller warrants that the items sold hereunder shall be free from defects in material or workmanship for a period of 2 years from the date of shipment to Buyer, or 2,000 hours of use, whichever expires first. Exception to this is the Angle Body Valve line has a 1 year warranty. THIS WARRANTY COMPRISES THE SOLE AND ENTIRE WARRANTY PERTAINING TO ITEMS PROVIDED HEREUNDER. SELLER MAKES NO OTHER WARRANTY, GUARANTEE, OR REPRESENTATION OF ANY KIND WHATSOEVER. ALL OTHER WARRANTIES, INCLUDING BUT NOT LIMITED TO, MERCHANTABILITY AND FITNESS FOR PURPOSE, WHETHER EXPRESS, IMPLIED, OR ARISING BY OPERATION OF LAW, TRADE USAGE, OR COURSE OF DEALING ARE HEREBY DISCLAIMED. NOTWITHSTANDING THE FOREGOING, THERE ARE NO WARRANTIES WHATSOEVER ON ITEMS BUILT OR ACQUIRED WHOLLY OR PARTIALLY, TO BUYER'S DESIGNS OR SPECIFICATIONS.

5. **Limitation Of Remedy:** SELLER'S LIABILITY ARISING FROM OR IN ANY WAY CONNECTED WITH THE ITEMS SOLD OR THIS CONTRACT SHALL BE LIMITED EXCLUSIVELY TO REPAIR OR REPLACEMENT OF THE ITEMS SOLD OR REFUND OF THE PURCHASE PRICE PAID BY BUYER, AT SELLER'S SOLE OPTION. IN NO EVENT SHALL SELLER BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES OF ANY KIND OR NATURE WHATSOEVER, INCLUDING BUT NOT LIMITED TO LOST PROFITS ARISING FROM OR IN ANY WAY CONNECTED WITH THIS AGREEMENT OR ITEMS SOLD HEREUNDER, WHETHER ALLEGED TO ARISE FROM BREACH OF CONTRACT, EXPRESS OR IMPLIED WARRANTY, OR IN TORT, INCLUDING WITHOUT LIMITATION, NEGLIGENCE, FAILURE TO WARN OR STRICT LIABILITY.

6. **Changes, Reschedules and Cancellations:** Buyer may request to modify the designs or specifications for the items sold hereunder as well as the quantities and delivery dates thereof, or may request to cancel all or part of this order, however, no such requested modification or cancellation shall become part of the contract between Buyer and Seller unless accepted by Seller in a written amendment to this Agreement. Acceptance of any such requested modification or cancellation shall be at Seller's discretion, and shall be upon such terms and conditions as Seller may require.

7. **Special Tooling:** A tooling charge may be imposed for any special tooling, including without limitation, dies, fixtures, molds and patterns, acquired to manufacture items sold pursuant to this contract. Such special tooling shall be and remain Seller's property notwithstanding payment of any charges by

Buyer. In no event will Buyer acquire any interest in apparatus belonging to Seller which is utilized in the manufacture of the items sold hereunder, even if such apparatus has been specially converted or adapted for such manufacture and notwithstanding any charges paid by Buyer. Unless otherwise agreed, Seller shall have the right to alter, discard or otherwise dispose of any special tooling or other property in its sole discretion at any time.

8. **Buyer's Property:** Any designs, tools, patterns, materials, drawings, confidential information or equipment furnished by Buyer or any other items which become Buyer's property, may be considered obsolete and may be destroyed by Seller after two (2) consecutive years have elapsed without Buyer placing an order for the items which are manufactured using such property. Seller shall not be responsible for any loss or damage to such property while it is in Seller's possession or control.

9. **Taxes:** Unless otherwise indicated on the face hereof, all prices and charges are exclusive of excise, sales, use, property, occupational or like taxes which may be imposed by any taxing authority upon the manufacture, sale or delivery of the items sold hereunder. If any such taxes must be paid by Seller or if Seller is liable for the collection of such tax, the amount thereof shall be in addition to the amounts for the items sold. Buyer agrees to pay all such taxes or to reimburse Seller therefore upon receipt of its invoice. If Buyer claims exemption from any sales, use or other tax imposed by any taxing authority, Buyer shall save Seller harmless from and against any such tax, together with any interest or penalties thereon which may be assessed if the items are held to be taxable.

10. **Indemnity For Infringement of Intellectual Property Rights:** Seller shall have no liability for infringement of any patents, trademarks, copyrights, trade dress, trade secrets or similar rights except as provided in this Part 10. Seller will defend and indemnify Buyer against allegations of infringement of U.S. patents, U.S. trademarks, copyrights, trade dress and trade secrets (hereinafter "Intellectual Property Rights"). Seller will defend at its expense and will pay the cost of any settlement or damages awarded in an action brought against Buyer based on an allegation that an item sold pursuant to this contract infringes the Intellectual Property Rights of a third party. Seller's obligation to defend and indemnify Buyer is contingent on Buyer notifying Seller within ten (10) days after Buyer becomes aware of such allegations of infringement, and Seller having sole control over the defense of any allegations or actions including all negotiations for settlement or compromise. If an item sold hereunder is subject to a claim that it infringes the Intellectual Property Rights of a third party, Seller may, at its sole expense and option, procure for Buyer the right to continue using said item, replace or modify said item so as to make it non-infringing, or offer to accept return of said item and return the purchase price less a reasonable allowance for depreciation. Notwithstanding the foregoing, Seller shall have no liability for claims of infringement based on information provided by Buyer, or directed to items delivered hereunder for which the designs are specified in whole or part by Buyer, or infringements resulting from the modification, combination or use in a system of any item sold hereunder. The foregoing provisions of this Part 10 shall constitute Seller's sole and exclusive liability and Buyer's sole and exclusive remedy for infringement of Intellectual Property Rights.

If a claim is based on information provided by Buyer or if the design for an item delivered hereunder is specified in whole or in part by Buyer, Buyer shall defend and indemnify Seller for all costs, expenses or judgments resulting from any claim that such item infringes any patent, trademark, copyright, trade dress, trade secret or any similar right.

11. **Force Majeure:** Seller does not assume the risk of and shall not be liable for delay or failure to perform any of Seller's obligations by reason of circumstances beyond the reasonable control of Seller (hereinafter "events of Force Majeure"). Events of Force Majeure shall include without limitation, accidents, acts of God, strikes or labor disputes, acts, laws, rules or regulations of any government or government agency, fires, floods, delays or failures in delivery of carriers or suppliers, shortages of materials and any other cause beyond Seller's control.

12. **Entire Agreement/Governing Law:** The terms and conditions set forth herein, together with any amendments, modifications and any different terms or conditions expressly accepted by Seller in writing, shall constitute the entire Agreement concerning the items sold, and there are no oral or other representations or agreements which pertain thereto. This Agreement shall be governed in all respects by the law of the State of Ohio. No actions arising out of the sale of the items sold hereunder or this Agreement may be brought by either party more than two (2) years after the cause of action accrues.

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