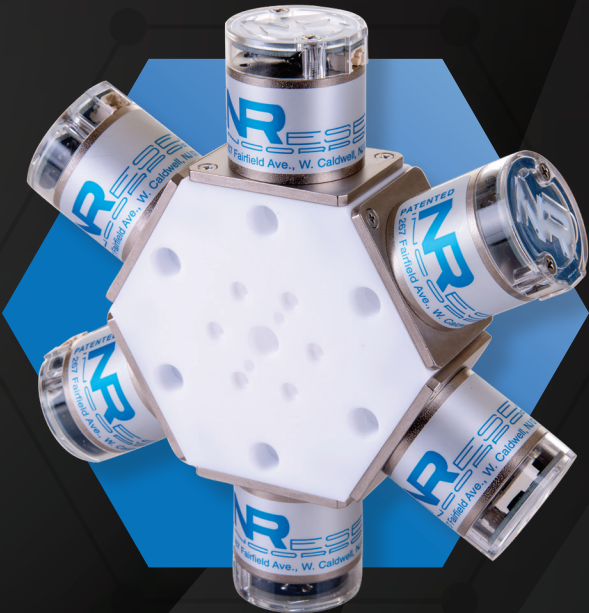
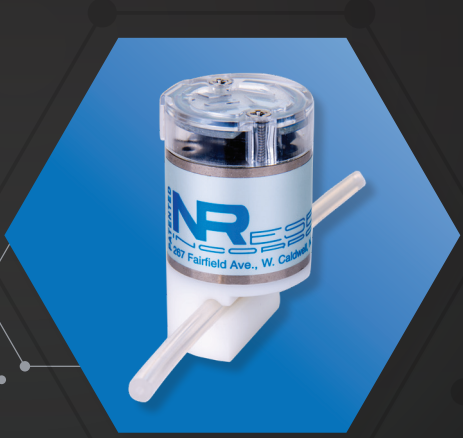




# SCIENTIFIC GRADE SOLENOID VALVES

TECHNOLOGY NOW INCLUDED



Solenoid Valves and Accessories Catalog  
[nrvalve.com](http://nrvalve.com)

Our new Integrated Control Solenoids are designed to bring added functionality to our already great products. These IC Solenoids can be provided in any of our existing scientific solenoid operated pinch and inert isolation valve configurations.

"IC Solenoid" optioned valves have several advantages over standard solenoid valves. Many of these advantages lead to a product that is easier to implement, accelerates the R&D process and simplifies the final production planning process saving you valuable time, money and resources while providing you with a product that materially adds valuable improvements in solenoid operating technology and controllability.



## FEATURES

- Fully Integrated Logic Level Controller
- Integrated Hit and Hold Circuit
- Integrated Connector/Terminal

	Typical Solenoid Valves	NEW "IC Solenoid" Option
<b>EMF Protection</b>	No	YES
<b>Visual State Indicator</b>	No	YES
<b>Direct Logic Control</b>	No	YES
<b>Hit and Hold Circuit</b>	No	YES
<b>Integrated Connector/Terminal</b>	No	YES
<b>Lowered Power Consumption</b>	No	YES
<b>Low Valve Operating Temp.</b>	No	YES

## TRIGGER

- Active Low Input
- Pin Floats at 5V With Nothing Connected To It

## PROTECTION

- Back EMF Protection
- Momentary Trigger Overvoltage Protection

## SPECIAL CONSIDERATIONS

- Do not apply power to the valve until all the connections are made.
- Ensure that driving equipment will not be affected by the 5v floating on the trigger.

Note: NRResearch Inc. provides two configurations:

IC (integrated control as described above)

DC (Direct Connect) with just a protection Circuit and visual indicator LED



### VALVE ELECTRICAL INTERFACE

Manufacturer: JST  
 Type: 3 Pin  
 Receptacle Part Number: ZER-03V-S  
 Pin Part Number: SZE-002T-P0.3



### AVAILABLE STOCK WIRE HARNESS

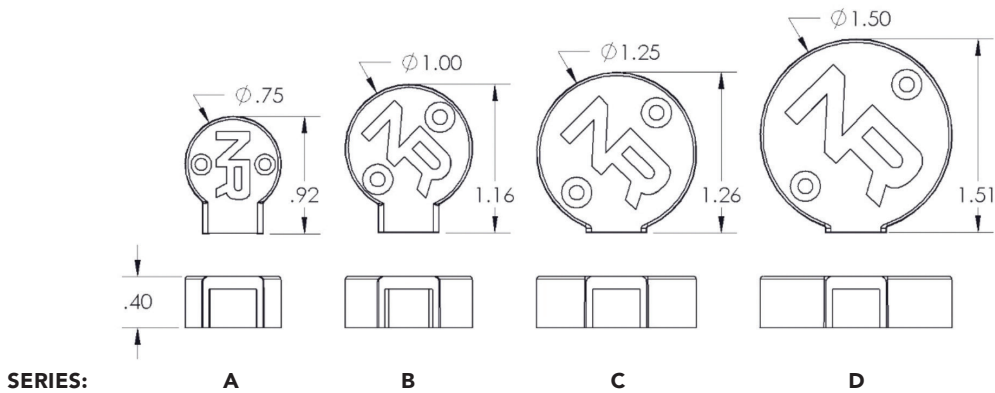
P/N: CONM997

Wire Harness 18" UL 1213 twisted Red Black Yellow with JST ZER-03V-S terminal.

*Notice: Several Patents Pending*

## PHYSICAL PROPERTIES

All of NResearch Inc. Solenoid Valves can be supplied with IC Solenoid's. The additional height of IC Solenoids is just 0.40" to any existing valve. IC Top (additional to standard valves) Dimensions below for each series valve.



## LOOKING FOR MORE DETAIL?

### Logic signal able to activate solenoid

Our IC Solenoids have drivers built right into them that can be activated by a simple logic signal. The circuit utilizes a current sinking trigger which allows the driver to interface with a broad range of devices. It can be activated with a logic level Zero from a microcontroller or computer or even activated with a simple switch by sinking the trigger to ground.

### Back EMF protection

When solenoids are turned off the collapsing magnetic field induces a reverse voltage spike that can damage sensitive electronics. Every one of our drivers are built with Back EMF protection that prevents that voltage spike from getting to any sensitive electronics. The built-in protection means that a designer no longer needs to build their own protective circuitry. The valve can simply be fed power, ground and a trigger signal to function.

### LED indication

Every IC Solenoid has a built in LED to display its state. The LED lights bright to show that the valve has activated and then dims to indicate that it has dropped to its holding level. We made it easy to see exactly which valves are activating and when.

### Internally Cool Hit and Hold Circuit

This type of driver turns on for a short period at its full power rating and then drops to a holding power that is much lower. This allows a valve to activate reliably while at the same time keeping the solenoid from heating up. In addition to increasing the life of the solenoid, this function allows designers to use solenoid valves where they traditionally would not have been able to because of sensitivity to heat.

### Integrated Connection

The new IC Solenoids come with a 3 pin plug rather than flying leads. This allows the valve to be easily changed out should the design of the parent device ever need to be updated.

Valves no longer need to be hardwired into a system or have separate termination applied reducing the number of system connections.

Ideal for use where space is at a premium and where high purity is an absolute necessity.

**MODELS:  
AT | AP**



## FEATURES

- All PTFE Wetted Parts
- High Cycle Life
- Low Internal Volume
- Fast Response Time
- Small Size
- Low Power Consumption
- Zero Dead Volume
- Exceptionally Lightweight

## SPECIFICATIONS

MODEL	VOLT/AMPS	POWER WATTS (Approx.)	EQUIV. ORIFICE DIA.	PORT SIZE
AT AP	12VDC/.08 Amps 24VDC/.04 Amps	1.0	1/32	10-32

### ENGINEERING SPECIFICATIONS

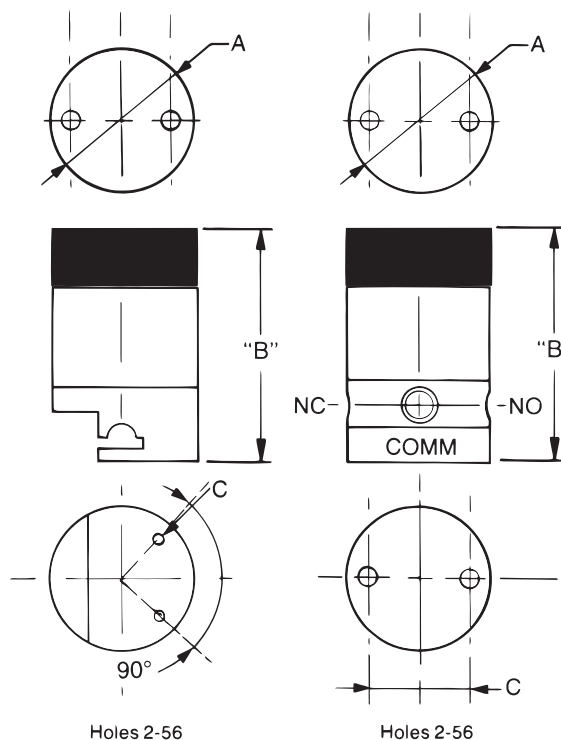
Operating Pressure: Vacuum-30PSI

### DIMENSIONS (Metric Dimensions in Parenthesis)

MODEL	A	B Max.	C (Basic Circle)
AT AP	0.750 (19.0)	1.55 (39.37)	0.500 (12.7)

Note: IC or DC cap dimensions found on Page 3

Subminiature Valves available in other configurations. Consult factory.

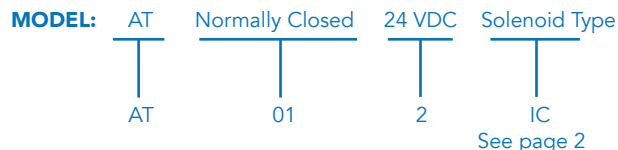


## ORDERING INFORMATION

MODEL	TYPE	VOLTAGE
AT	2 Way, Normally Closed = 01 2 Way, Normally Open = 02 3 Way = 01	12VDC = 1 24VDC = 2
AP**	1 Tube, Normally Closed = 01 1 Tube, Normally Open = 02	

\*\*AP-Pmch Valve available w/1h standard .030" ID x .065" OD Tubing

TO ORDER / i.e.: AT021(IC)



Specify Sub-Miniature

# PFTE ISOLATION VALVES

Ideal for use with corrosive fluids and where high purity is required.

## FEATURES

- All PTFE Wetted Parts
- Low Internal Volume
- High Cycle Life
- Fast Response Time
- Small Size
- Low Power Consumption
- Zero Dead Volume
- Exceptionally Lightweight

## SPECIFICATIONS

MODEL	VOLT/AMPS	POWER WATTS (Approx.)	EQUIV. ORIFICE DIA.	PORT SIZE
BT	12VDC/.13 Amps 24VDC/.06 Amps	1.5	1/16	1/4-28 Flat Bottom
CT	12VDC/.4 Amps 24VDC/.18 Amps	4.2	3/32	1/4-28 Flat Bottom
DT	12VDC/.6 Amps 24VDC/.3 Amps	7.2	5/32	1/8 NPT

## ENGINEERING SPECIFICATIONS

Operating Pressure: Vacuum-30PSI

## DIMENSIONS (Metric Dimensions in Parenthesis)

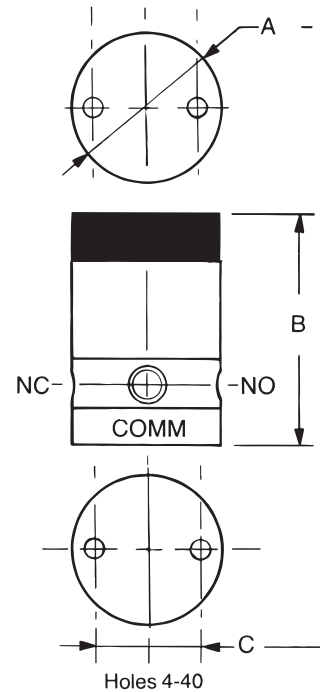
MODEL	A	B Max.	C
BT	1.00 (25.5)	1.9 (48.26)	0.687 (17.44)
CT	1.25 (31.75)	2.18 (55.38)	0.884 (22.45)
DT	1.50 (38.1)	2.5 (63.5)	1.125 (28.58)

Note: IC or DC cap dimensions found on Page 3

## ORDERING INFORMATION

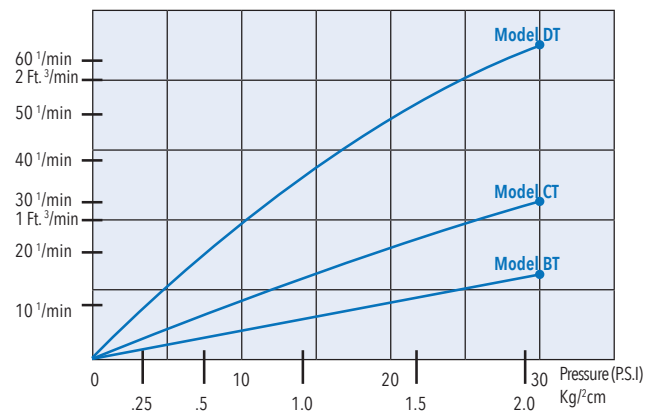
MODEL	TYPE	VOLTAGE
BT	2 Way, Normally Closed = 01	12VDC = 1
CT	2 Way, Normally Open = 02	24VDC = 2
DT	3 Way = 01	

## MODELS: BT | CT | DT



## FLOW RATE

(Cu. Ft./min or Liters/min... AIR) 2.5 Ft. 3/min Comm > n.c.



## TO ORDER / i.e.: BT023(IC)

MODEL: BT Normally Open 24 VDC Solenoid Type  
 BT 02 2 IC  
 See page 2

# PTFE ISOLATION VALVES

## DOUBLE 3-WAY & TRIPLE 3-WAY

The double 3-Way Valve can be used to replace two 3-Way Valves. It operates with one solenoid and consequently is suitable in systems where two valves would operate simultaneously. The Triple 3-Way also operates with one solenoid and would be the equivalent of three 3-Way Valves.

### FEATURES

- All PTFE Wetted Parts
- High Cycle Life
- Low Power Consumption
- Zero Dead Volume
- Fast Response Time

### SPECIFICATIONS

MODEL	VOLT/AMPS	POWER WATTS (Approx.)	EQUIV. ORIFICE DIA.	PORT SIZE
CT	12VDC/.40 Amps 24VDC/.18 Amps	4.2	1/16	1/4-28 Flat Bottom
DT	12VDC/.60 Amps 24VDC/.30 Amps	7.2	3/32	1/4-28 Flat Bottom

### ENGINEERING SPECIFICATIONS

Operating Pressure: Vacuum-30PSI

### DIMENSIONS (Metric Dimensions in Parenthesis)

MODEL	A	B	BC	D	H Max.	HP	K	L
CT04	1.80 (45.72)	1.25 (31.75)	0.88 (22.35)	1.25 (31.75)	2.3 (58.42)	0.45 (11.4)	0.81 (20.57)	1.38 (35.05)
CT05	-	1.15 (29.17)	0.88 (22.35)	1.25 (31.75)	2.3 (58.42)	0.45 (11.4)	-	1.25 (31.75)
DT04	2.30 (58.42)	1.50 (38.1)	1.125 (28.58)	1.50 (38.1)	2.52 (64.01)	0.50 (12.7)	1.00 (25.4)	0.500 (12.7)
DT04	-	2.00 (50.8)	1.125 (28.58)	1.50 (38.1)	2.52 (64.01)	0.50 (12.7)	-	1.50 (38.1)

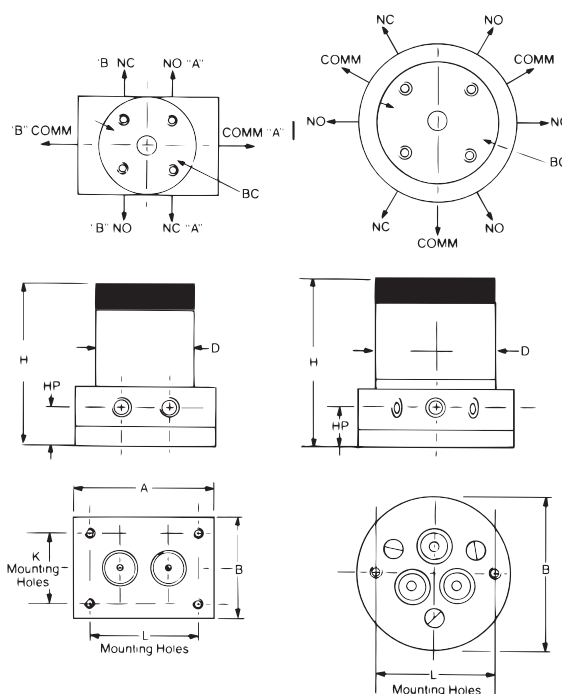
All mounting holes are #4-40

Note: IC or DC cap dimensions found on Page 3

### ORDERING INFORMATION

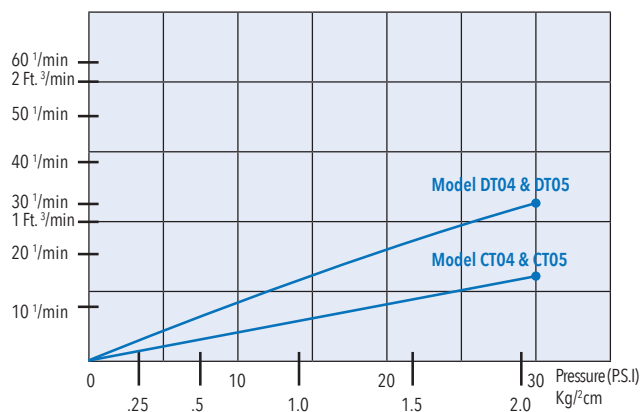
MODEL	TYPE	VOLTAGE
CT DT	Double 3-Way = 04 Triple 3-Way = 05	12VDC = 1 24VDC = 2

### MODELS: CT04 | CT05 | DT04 | DT05



### FLOW RATE

(Cu. Ft./min or Liters/min... AIR) 2.5 Ft. 3/min Comm > n.c.



### TO ORDER / i.e.: DT042 (IC)

MODEL: DT Double 3-Way 24VDC Solenoid Type  
DT 04 2 IC  
See page 2



# SOLENOID PINCH VALVES

Suitable for application where fluid must be isolated from the valve parts. The tubing can be easily changed. The valves are available 2-Way, Normally Closed and 2-Way, Normally Open. They are offered with single or double tubes.

## FEATURES

- High Cycle Life
- Low Power Consumption
- Zero Dead Volume
- Small Size
- Fast Response Time

## SPECIFICATIONS

MODEL	VOLT/AMPS	POWER WATTS (Approx.)	TUBE WALL
BP	12VDC/.13 Amps 24VDC/.06 Amps	1.5	1/32
CP	12VDC/.40 Amps 24VDC/.18 Amps	4.2	1/32 1/16
DP	12VDC/.60 Amps 24VDC/.30 Amps	7.2	1/32 1/16

## ENGINEERING SPECIFICATIONS

Standard Tube Material: Silicone

## DIMENSIONS (Metric Dimensions in Parenthesis)

MODEL	A	B Max.	C (Basic Circle)
BP	1.00 (24.4)	1.8 (45.72)	.687 (17.46)
CP	1.25 (31.75)	2.4 (60.96)	0.875 (22.23)
DP	1.50 (38.1)	2.74 (69.60)	1.125 (28.58)

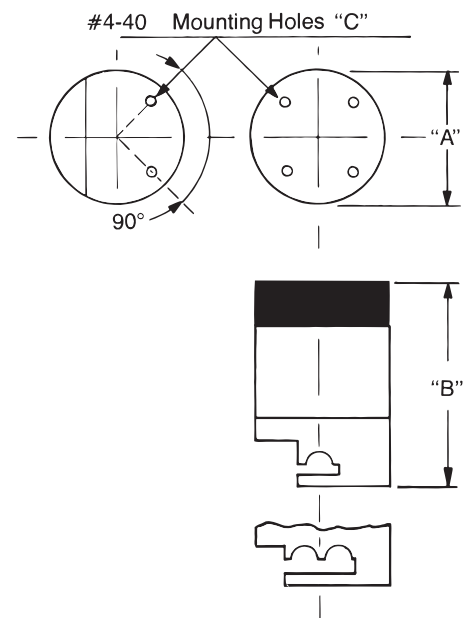
Note: IC or DC cap dimensions found on Page 3

## ORDERING INFORMATION

MODEL	TYPE	VOLTAGE
BP	1 Tube, Normally Closed = 01	12VDC = 1
CP	1 Tube, Normally Open = 02	24VDC = 2
DP	2 Tube, Normally Closed = 03	
	2 Tube, Normally Open = 04	

Not all configurations are available in all tube sizes-contact factory

**MODELS:**  
BP | CP | DP



TUBING NUMBER	TUBING I.D.	TUBING WALL	TUBING O.D.
BP {	-11	1/32"	3/32"
	-21	1/16"	1/8"
CP {	-22	1/16"	3/16"
	-42	1/8"	1/4"
DP {	-82	1/4"	3/8"

Indicated Tube Sizes are for reference only. Consult factory. Other Tubing Sizes Available on Customer Request.

TO ORDER / i.e.: BP031-11(IC)

MODEL: BP 2 Tube, N.C. 12VDC Tube Solenoid Type  
BP 03 1 -11 IC  
See page 2

# SOLENOID OPERATED MULTIPLE TUBE PINCH VALVES

These valves are offered with a variety of tubing combinations. They are available with 2 tubes, 4 tubes and 8 tubes. Each valve is operated with a single solenoid.

## Available with

- (a) 1 Tube, Normally Open and 1 Tube, Normally Closed
- (b) 4 Tube, Normally Closed
- (c) 4 Tube, Normally Open
- (d) 2 Tube, Normally Closed and 2 Tube, Normally Open
- (e) 4 Tube, Normally Closed and 4 Tube, Normally Open

## FEATURES

- High Cycle Life
- Low Power Consumption
- Zero Dead Volume
- Fast Response Time

## SPECIFICATIONS

MODEL	VOLT/AMPS	POWER WATTS (Approx.)	TUBE WALL
BP	12VDC/.13 Amps 24VDC/.06 Amps	1.5	1/32
CP	12VDC/.40 Amps 24VDC/.18 Amps	4.2	1/32 1/16
DP	12VDC/.60 Amps 24VDC/.30 Amps	7.2	1/32 1/16

## ENGINEERING SPECIFICATIONS

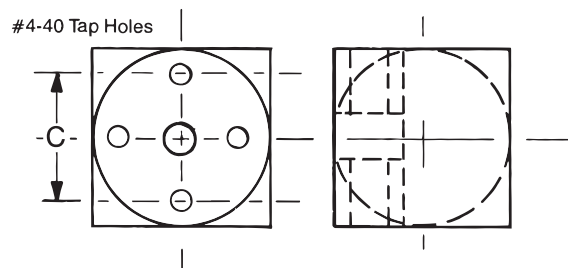
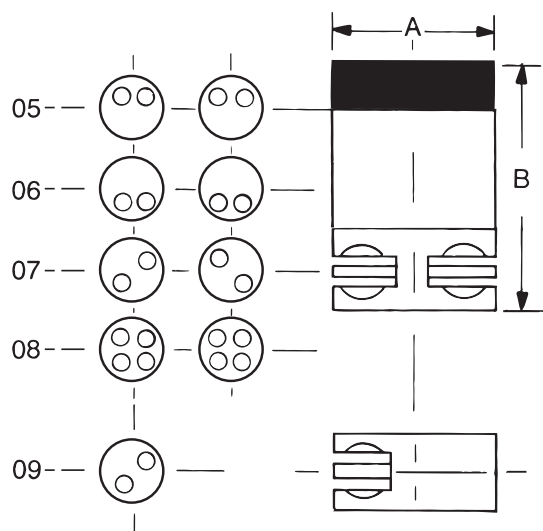
Standard Tube Material: Silicone

## DIMENSIONS (Metric Dimensions in Parenthesis)

MODEL	A	B Max.	C (Basic Circle)
BP	1.00 (24.4)	2.2 (55.88)	.687 (17.44)
CP	1.25 (31.75)	2.65 (67.31)	0.875 (22.23)
DP	1.50 (38.1)	3.0 (76.2)	1.125 (28.58)

Note: IC or DC cap dimensions found on Page 3

## MODELS: BP | CP | DP



## ORDERING INFORMATION

MODEL	TYPE	VOLTAGE
BP	4 Tube, Normally Closed = 05	12VDC = 1 24VDC = 2
CP	4 Tube, Normally Open = 06	
DP	2 Tube, N.C., 2 Tube, N.O. = 07	
	4 Tube, N.C., 4 Tube, N.O. = 08	
	1 Tube, N.C., 1 Tube, N.O. = 09	

## TO ORDER / i.e.: CP051-42 (IC)

MODEL: CP / CP    4 Tube, N.C. / 05    12VDC / 1    Tube / -42    Solenoid Type / IC  
See page 2

Not all configurations are available in all tube sizes-contact factory



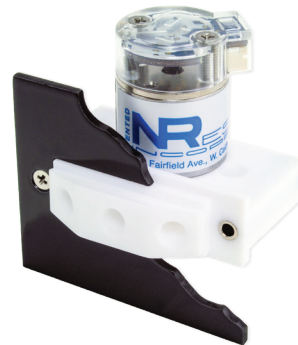
## MANIFOLD MOUNT VALVES

NResearch Inc. has developed Manifold Mount Isolation Valves to provide O-Ring Seal connections to state of the art prefabricated manifolds, facilitating simplification of instrument design. Product design can now include all the features and benefits of modular construction. Various orifice configurations available allow for flexibility in your product design.



## PANEL MOUNT VALVES

Panel Mount Isolation Valves enable client access to port connections while isolating the Instruments electronics from the effects of accidental exposure to working fluids. This state of the art design introduces a Drip Lip feature to divert accidental spillage away from the instrument panel. This standard feature assures user-friendly access to port connections, while providing added safety and integrity to your system.



## INLINE MANIFOLDS

NResearch Inc. inline manifold valves give a common flow to all valves with individual outputs in the normally closed mode. All manifolds are made up from individual valves, three, four, five and six valves ported together in a combining box. Commonly known as a "Quick Flush Manifolds". While these valves are usually Normally Closed NResearch Inc. does offer some Normally open versions.

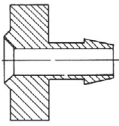


## GRADIENT MANIFOLDS

NResearch Inc. gradient manifolds incorporate two, three, four and six separate isolation valves integral to a single block. The valves have independent inlets and one common outlet or conversely, one common inlet and two, three, four or six independent outlets. These gradient manifolds are useful for solvent selection, steam splitting, flushing and other automated applications.



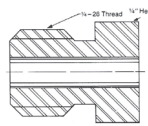
**PCTFE-SEAL**  
KS-1



**CLAMP RING**  
CR-1



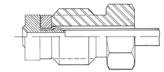
**TFE NUT**  
TN-1



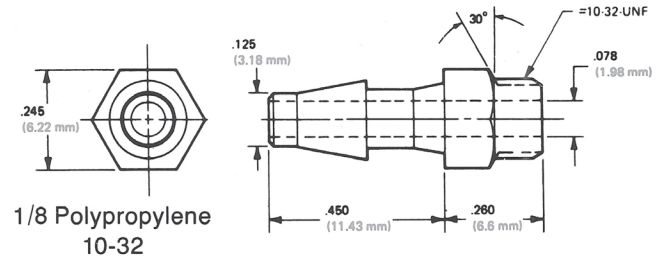
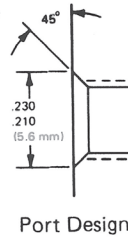
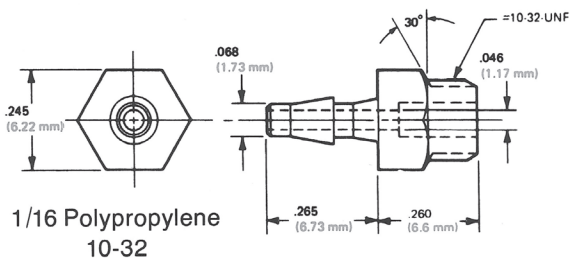
**TUBING**  
TT-1



**TUBING ASSEMBLY**  
TA-  
1 (Single End Fitting)  
2 (Double End Fitting)



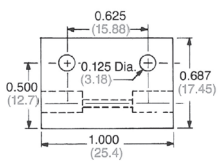
**BARB FITTINGS**



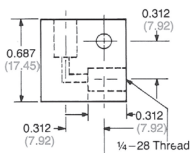
(Metric Dimensions in Parenthesis)

**CONNECTION FITTINGS**

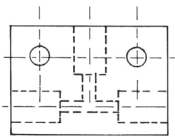
**STRAIGHT**  
SC001



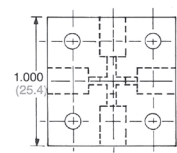
**ELBOW**  
LC002



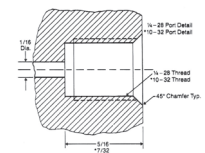
**TEE**  
TC003



**CROSS**  
CR004



**PORT DETAIL**



**COMPONENT CLIPS**

A complete selection of clips available for various diameters. Many standard materials and finishes are carried in our inventory. Visit [nrvalve.com](http://nrvalve.com) for specific options.

# POLYPROPYLENE BARB FITTINGS

NResearch Inc. polypropylene fittings offer excellent chemical and heat resistance. The fittings are molded with mold tooling designed to eliminate parting lines on the critical sealing surface of the barbs. The product does not contain regrind and is made from certified materials.

NResearch Inc. barbed fittings are designed for convenient connection of flexible plastic tubing and are available for a variety of tubing inside diameters.

PART NUMBER	FOR USE WITH PORT SIZE	FOR TUBE I.D.	FOR VALVE SERIES
<b>FITM080</b> <b>FITM081</b> <b>FITM082</b>	10-32	1/16" 3/32" 1/8"	AT...
<b>FITM083</b> <b>FITM084</b> <b>FITM085</b> <b>FITM086</b>	1/4-28	1/16" 3/32" 1/8" 3/16"	BT... CT...
<b>FITM087</b> <b>FITM088</b> <b>FITM089</b> <b>FITM090</b> <b>FITM091</b>	1/8-27 NPT	1/16" 3/32" 1/8" 3/16" 1/4"	DT...

## TUBE CONNECTORS AND REDUCING UNIONS

PART NUMBER	FOR TUBE I.D.'S
<b>FITM158</b> <b>FITM164</b>	1/16" to 1/16" 1/16" to 1/8"

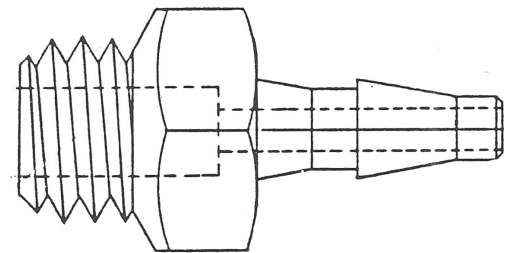
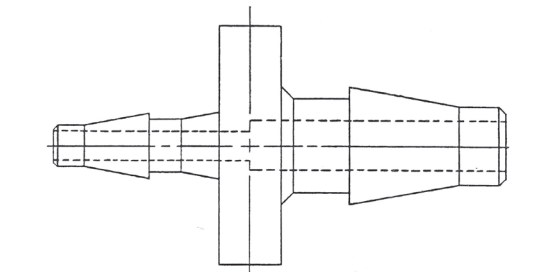
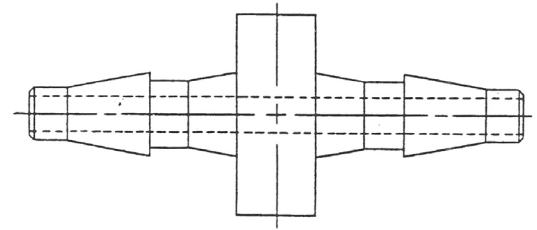
A complete selection of tube connectors and reducing unions are available for your specific needs. Please contact our factory.

▶ Polypropylene fittings are not recommended for use with polyethylene tubing.

## ORDERING INFORMATION

Fittings are sold in packages of 10, 25, 50 and 100 pieces.

**PLEASE ORDER BY PART NUMBER AND SPECIFY NUMBER OF PIECES.**



NResearch Inc. tight tolerance Silicone and PTFE tubings are made to exacting standards and to be fully compatible with NResearch Inc.'s line of PTFE valves, solenoid operated pinch valves, fittings, manifolds and connectors.

Using NResearch Inc. Tubing insures complete satisfaction in the design of fluidic systems involving other NResearch Inc. product or where tight tolerance tubing is required.

PTFE features many unique and useful characteristics. It is resistant to corrosive chemicals and temperatures up to 260°C (500°F).

TUBING PART NUMBER	TUBING DIMENSIONS			MATERIAL	WALL TOLERANCE Inches
	I.D Inches	O.D. Inches	WALL Inches		
<b>TBGM100</b>	1/32	3/32	1/32	Medical grade tight tolerance  SILICONE	± .005
<b>TBGM101</b>	1/16	1/8	1/32		± .005
<b>TBGM102</b>	1/16	3/16	1/16		± .006
<b>TBGM103</b>	1/8	1/4	1/16		± .006
<b>TBGM104</b>	3/16	5/16	1/16		± .006
<b>TBGM105</b>	1/4	3/8	1/16		± .006
<b>TBGM106</b>	.104	.192	.044		± .005
<b>TBGM107</b>	.030	.065	.017		± .005
<b>TBGM108 TBGM109 TBGM110</b>	.062 .036 .062	.105 .062 .125	.0215 .013 .0315	PTFE	

Minimum order is 10 feet. To order select Part Number and specify length.

**Note:** Pre-assembled Tubing Sets cut to length and with fittings attached are available on request from the factory. Consult factory with special tubing size requirements.

# PTFE PIPING MANIFOLDS

NResearch Inc. piping manifolds are made of PTFE and offer the purity and corrosion resistance required of demanding chemistry applications. Used with NResearch Inc. unique inert three piece fitting sets, connectors, valves and tubing totally inert fluidic systems void of dead volume can quickly and easily be designed and built.

## PHYSICAL:

**Inlet Port Size:** 1/4-28 thread

**Outlet:** common outlet with 1/8-27 thread Number of inlets offered: 3, 6, 9, 12, 15 and 18

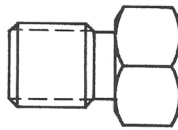
**Material:** PTFE

PART NUMBER	DESIGNED WITH	L Inches
<b>FITM214</b>	3 PORTS	1.75
<b>FITM215</b>	6 PORTS	2.50
<b>FITM216</b>	9 PORTS	3.25
<b>FITM217</b>	12 PORTS	4.00
<b>FITM218</b>	15 PORTS	4.75
<b>FITM219</b>	18 PORTS	5.50

Please order by Part Number.

## PLUGS

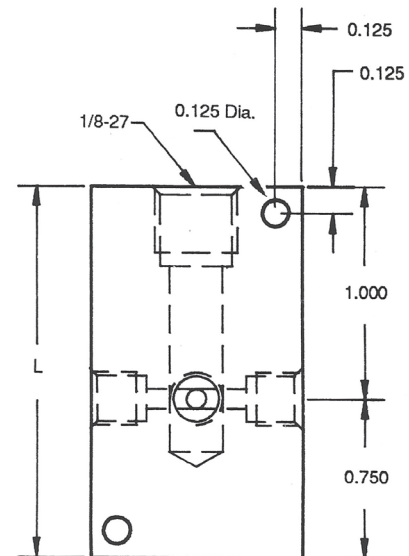
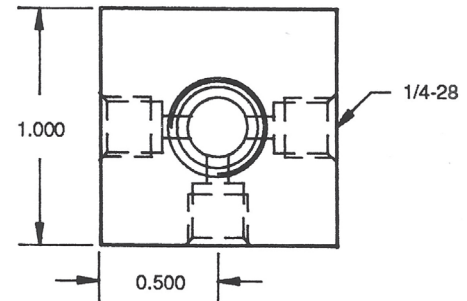
Use these plugs if you do not need to use all the ports on a manifold and/or you desire having reserve extra ports to be used at later time. NResearch Inc. plugs may also be used on other NResearch Inc. products.



PART NUMBER	PORT SIZE	MATERIAL
<b>FITM127</b>	10-32	PCTFE
<b>FITM128</b>	1/4-28	PTFE
<b>FITM129</b>	1/8-27 NPT	POLYPROPYLENE

Plugs are sold in packages of 10, 25, 50 and 100 pieces. Please order by Part Number and specify number of pieces.

**Dimensions** (in inches scale: actual size)  
Shown is FITM214. The manifolds differ only in length.



NResearch Inc. PTFE connectors are chemically inert and offer the purity and corrosion resistance required of demanding chemistry applications. They are designed with female threads and are available for both 10-32 and 1/4-28 port sizes.

Use NResearch Inc. PTFE connectors with other NResearch Inc. fittings, tubing, manifolds and valves to design an easy to assemble, chemically inert, free of dead volume fluidic system.

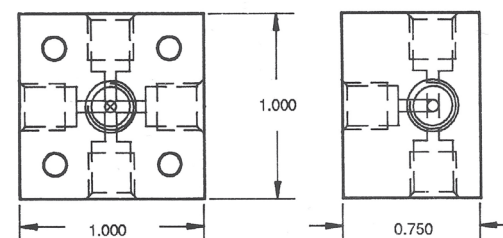
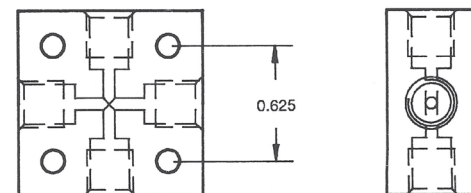
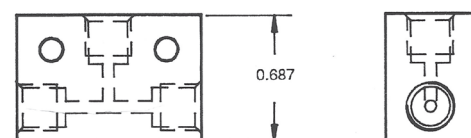
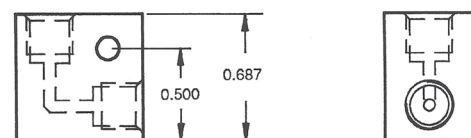
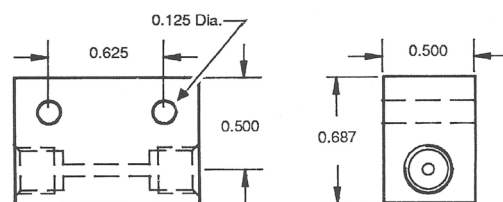
**Dimensions** (in inches scale: actual size)

Starting with straight connector

## CONNECTORS WITH PORT SIZE 10-32

For use with AT valve series

PART NUMBER	CONNECTOR TYPE
<b>FITM121</b>	Straight
<b>FITM122</b>	Elbow
<b>FITM123</b>	Tee
<b>FITM124</b>	Cross
<b>FITM125</b>	Five Port



## CONNECTORS WITH PORT SIZE 1/4-28

For use with both BT and CT valve series

PART NUMBER	CONNECTOR TYPE
<b>FITM131</b>	Straight
<b>FITM132</b>	Elbow
<b>FITM133</b>	Tee
<b>FITM134</b>	Cross
<b>FITM135</b>	Five Port

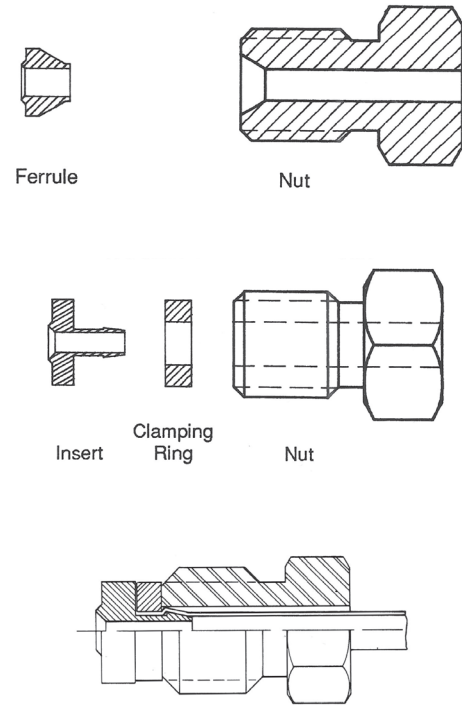
Please order by Part Number.

# INERT FITTING SETS

NResearch Inc. Model Series 2P and 3P chemically inert two and three piece fitting sets offer positive sealing without troubling dead space and are for use with NResearch Inc. PTFE and Silicone tubing.

**Model 2P Series** (two piece fitting set) incorporates a unique nut and ferrule arrangement. The nut has a cone shaped inside its leading end which serves to compress the specially shaped matching ferrule securely around the outside diameter of the PTFE tubing. The leading end of the ferrule has a raised edge which seats in the flat PTFE port of NResearch Inc. valves, manifolds and connectors with the result of a leak tight seal with zero dead volume. No flanging tool required.

**The Model 3P Series** (three piece fitting set) is composed of a PTFE nut, clamping ring and Kel-F® PCTFE seal. The seal is designed with a raised surface at its leading edge which forms to the PTFE at the base of NResearch Inc. valve ports, manifolds, and connector parts. PTFE or Silicone tubing connections are made quickly, securely and with zero dead volume using model 3P. No flanging tool required.



MODEL	FOR USE WITH PORT SIZE	INCLUDED PART NUMBERS	NAME	WETTED MATERIAL	FOR VALVE SERIES	RECOMMENDED TUBING
<b>102P109</b>	10-32	FITM149 FITM156	Ferrule Nut	PCTFE PCTFE	AT...	TBGM109 PTFE Tubing
<b>252P109</b>	1/4-28	FITM149 FITM141	Ferrule Nut	PCTFE PCTFE	BT... CT...	TBGM109 PTFE Tubing
<b>253P108</b>	1/4-28	FITM140 FITM176 FITM167	Insert Nut Clamping Ring	PCTFE PTFE PCTFE	BT... CT...	TBGM108 PTFE Tubing
<b>253P110</b>	1/4-28	FITM140 FITM168 FITM196	Insert Nut Clamping Ring	PCTFE PTFE PCTFE	BT... CT...	TBGM110 PTFE Tubing

Please order by Part Number.



## RECENT DEVELOPMENTS

Modern computer technology has brought about a demand for greater miniaturization with commensurate lower power consuming solenoid operated valves. This is primarily a result of total computerization of laboratory, analytical and medical processes.

Presently accepted competitive solenoid and valve design principles are fast becoming obsolete as they are unable to meet the requirements of rapidly growing technologies in our field. Our research division has developed new and innovative valve designs which we are proud to present in this catalog.

## RESEARCH AND DEVELOPMENT

Our on-going research permits us to assist our customers in meeting their unique requirements in a prompt and economical manner. We welcome being able to help with your special valve design problems.

## QUALITY CONTROL

We utilize only the highest available quality for our raw materials. All our component parts are manufactured by us, enabling end production to be the ultimate in high standards of quality control. All of our valves are 100% tested.

## DELIVERY

We are proud to offer industry's best delivery. Many standard items are available for off-the-shelf shipment. We are extremely proud of our "On Schedule" delivery of custom-made valves.

## PRICING

While we feel that our products are superior to any competitive units, we constantly attempt to make our overall pricing the most attractive in our market place.

## WARRANTY

All units warranted for 1 year from date of shipment. Improper use or mishandling of the units, in the opinion of the manufacturer, voids this warranty!

# YOUR PRIMARY SOURCE OF SUPPLY

NResearch Inc. has become a leader in the development of Solenoid Operated PTFE Isolation Valves, Pinch Valves, and Sub-Miniature Valves. Our valves feature small size, low power consumption, high cycle life and fast response time.

### TERMS AND CONDITIONS

- 1) Prices and specifications are subject to change without notice.
- 2) Shipping dates are approximate and are subject to delays beyond our control.
- 3) Terms: Net 30 days to companies with established credit rating.
- 4) F.O.B. Point and Title: All material is sold F.O.B. factory. Title to all material sold shall pass to buyer upon delivery by seller to carrier at shipping point.
- 5) Special tooling acquired specifically to produce goods for buyer remain the property of NResearch Inc..
- 6) Limited Warranty: The seller warrants all NResearch Inc. products to be free from defects in workmanship or material under normal use and service for a period of one year from date of shipment. Liability under this warranty is limited to repair or replacement F.O.B. factory of any parts which prove to be defective providing goods have been returned within one year from date of purchase.

The products in this catalog are covered by one or more of the following patents: United States Patent Nos. Re. 34,261; 4,711,269; 5,143,188; 4,496,133; 4,993,456; 5,190,071; 5,433,244; 5,546,987; and other United States Patents pending. European Patent No. 0 319 618 in Switzerland, Germany, France, Great Britain, Liechtenstein and Sweden and other patents pending.

All specifications subject to change without notice.



### MANUFACTURING PLANT & SALES OFFICE

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