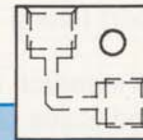
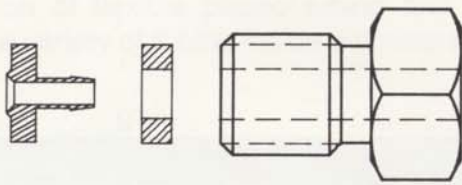


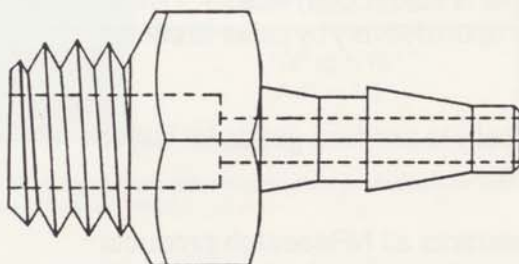
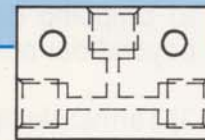
#NRF788B

Effective Date: July '98

# NR RESEARCH<sup>®</sup> INCORPORATED



## Accessory Bulletin



- \* Barbed Fittings
- \* Teflon<sup>®</sup>/Silicone Tubing
- \* Teflon<sup>®</sup> Piping Manifolds
- \* Teflon<sup>®</sup> Connectors
- \* Inert Fitting Sets

NResearch accessory products are manufactured to the highest standards of quality at our facility in West Caldwell, New Jersey.

Use NResearch accessories with NResearch valve products to insure zero dead volume and trouble free fluidic systems.

NResearch has substantial machine shop capabilities and we encourage customers to call with special requirements.

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### Terms And Conditions

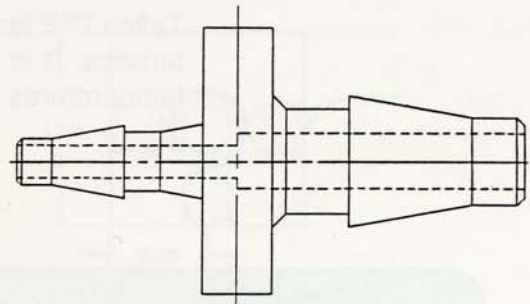
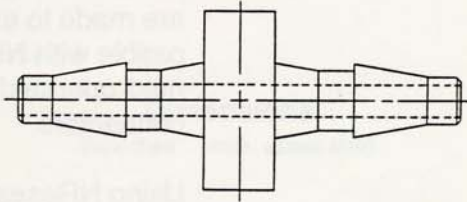
- 1) Prices and specifications are subject to change without notice.
- 2) Shipping dates are approximate and are subject to delays beyond our control.
- 3) Terms: Net 30 days to companies with established credit rating.
- 4) F.O.B. Point and Title: All material is sold F.O.B. factory. Title to all material 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.
- 6) Limited Warranty: The seller warrants all NResearch 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.



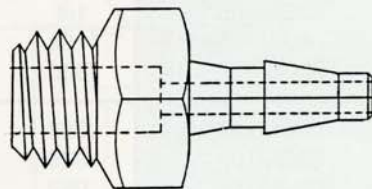
**Polypropylene Barb Fittings**

NResearch 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 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 TUBING I.D.	FOR VALVE SERIES
FITM080 FITM081 FITM082	10-32	1/16" 3/32" 1/8"	161T...
FITM083 FITM084 FITM085 FITM086	1/4-28	1/16" 3/32" 1/8" 3/16"	225T... 360T...
FITM087 FITM088 FITM089 FITM090 FITM091	1/8-27 NPT	1/16" 3/32" 1/8" 3/16" 1/4"	648T...



TUBE CONNECTORS AND REDUCING UNIONS	
PART NUMBER	FOR TUBE I.D.'s
FITM158 FITM164	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.

<b>ORDERING INFORMATION</b>	Fittings are sold in packages of 10,25,50 and 100 pieces. <b>PLEASE ORDER BY PART NUMBER AND SPECIFY NUMBER OF PIECES.</b>
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NResearch tight tolerance Silicone and Teflon tubings are made to exacting standards and to be fully compatible with NResearch's line of Teflon valves, solenoid operated pinch valves, fittings, manifolds and connectors.

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

Teflon TFE 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		
TBGM100	1/32	3/32	1/32	Medical grade tight tolerance  SILICONE	± .005
TBGM101	1/16	1/8	1/32		± .005
TBGM102	1/16	3/16	1/16		± .006
TBGM103	1/8	1/4	1/16		± .006
TBGM104	3/16	5/16	1/16		± .006
TBGM105	1/4	3/8	1/16		± .006
TBGM106	.104	.192	.044		± .005
TBGM107	.030	.065	.017	± .005	
TBGM108	.062	.105	.0215	TFE	
TBGM109	.036	.062	.013		
TBGM110	.062	.125	.0315		

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.



NResearch piping manifolds are made of Teflon and offer the purity and corrosion resistance required of demanding chemistry applications. Used with NResearch 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: Teflon

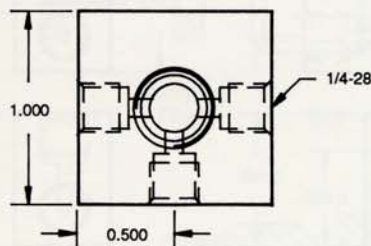
**Dimensions**

(in inches scale: actual size)

Shown is FITM214. The manifolds differ only in length.

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

PLEASE ORDER BY PART NUMBER

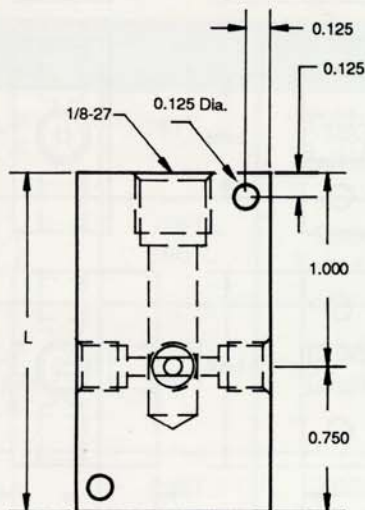


Use these plugs if you do not need to use all the ports on a manifold and/or you desire having reserve extra ports to be used at later time. NResearch plugs may also be used on other NResearch products.

**PLUGS**

PART NUMBER	PORT SIZE	MATERIAL
FITM127	10-32	KEL-F
FITM128	1/4-28	TEFLON
FITM129	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.



Teflon is Du Pont's registered trademark  
 Kel-F is 3M's registered trademark

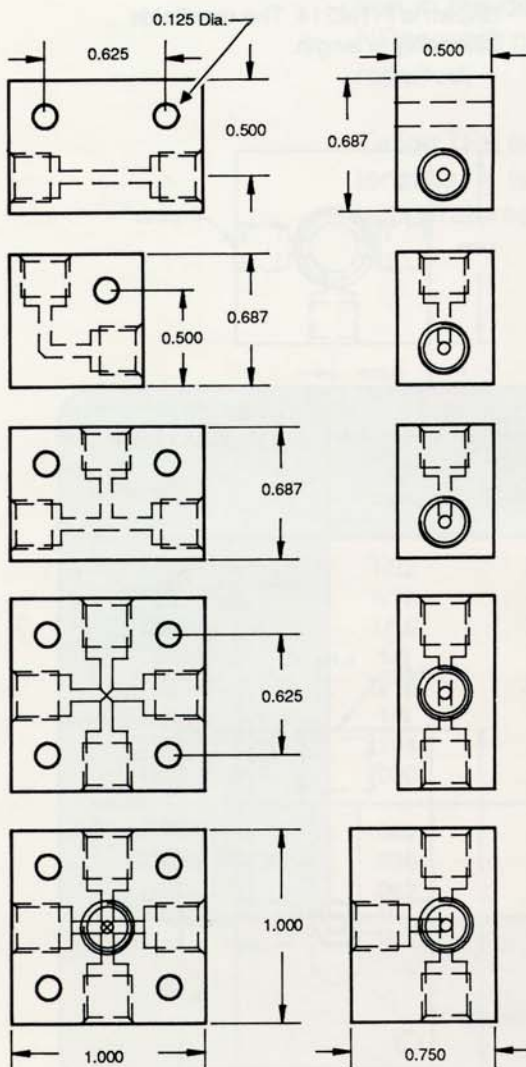
**Dimensions**

(In Inches scale: actual size)

Starting with  
straight connector

Front View

End View



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

CONNECTORS WITH PORT SIZE 10-32 For use with 161T valve series	
PART NUMBER	CONNECTOR TYPE
FITM121 FITM122 FITM123 FITM124 FITM125	Straight Elbow Tee Cross Five port

PLEASE ORDER BY PART NUMBER

CONNECTORS WITH PORT SIZE 1/4-28 For use with both 225T and 360T valve series	
PART NUMBER	CONNECTOR TYPE
FITM131 FITM132 FITM133 FITM134 FITM135	Straight Elbow Tee Cross Five port

Teflon is Du Pont's registered trademark



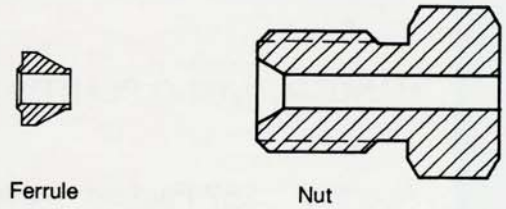
**Inert Fitting Sets**

NResearch 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 Teflon and Silicone tubing.

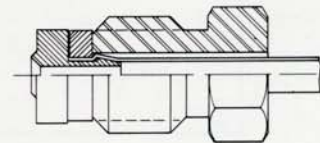
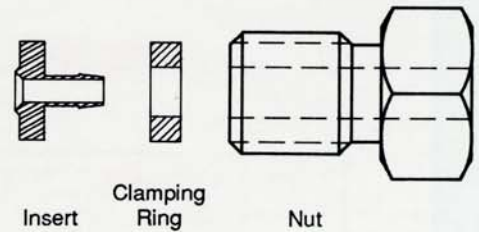
Model 2P series (two piece fitting set) incorporates a unique nut and ferrule arrangement. The nut has a cone shaped inside its leading end which serves to compress the specially shaped matching ferrule securely around the outside diameter of the Teflon tubing. The leading end of the ferrule has a raised edge which seats in the flat Teflon port of NResearch 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 Teflon nut, clamping ring and Kel-F seal. The seal is designed with a raised surface at its leading edge which forms to the Teflon at the base of NResearch valve ports, manifolds and connector parts. Teflon or Silicone tubing connections are made quickly, securely and with zero dead volume using model 3P. No flanging tool required.

**TWO PIECE FITTING SET**



**THREE PIECE FITTING SET**



MODEL	FOR USE W/ PORT SIZE	INCLUDED PART NUMBERS	NAME	WETTED MATERIAL	FOR VALVE SERIES	RECOMMENDED TUBING
102P109	10-32	FITM149 FITM156	Ferrule Nut	KEL-F KEL-F	161T...	TBGM109 Teflon Tubing
252P109	1/4-28	FITM149 FITM141	Ferrule Nut	KEL-F KEL-F	225T... 360T...	TBGM109 Teflon Tubing
253P108	1/4-28	FITM140 FITM176 FITM167	Insert Nut Clamping Ring	KEL-F TEFLON KEL-F	225T... 360T...	TBGM108 Teflon Tubing
253P110	1/4-28	FITM140 FITM168 FITM196	Insert Nut Clamping Ring	KEL-F TEFLON KEL-F	225T... 360T...	TBGM110 Teflon Tubing
<b>PLEASE ORDER BY PART NUMBER</b>						

Teflon is Du Pont's registered trademark  
Kel-F is 3M's registered trademark

**MANUFACTURING PLANT & SALES OFFICE:**

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