



# Insert Fittings



## ENGINEERING GUIDE

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## Insert Fittings Technical Barbed Insert Fittings Overview

### The PVC Barbed-Insert Fitting of Choice



Engineered to provide positive grip and ease of installation. High quality and reliability have made Spears® insert fittings the preferred choice for irrigation and O.E.M. applications. A wide variety of PVC insert configurations and adapters are available for use with polyethylene pipe sizes 1/2" through 4", plus 6" & 8" Couplings and Adapters for lay-flat type irrigation hose. Special 3/8" barbed configurations in PVC and PP allow clamp-free connection to 1/2" I.D. polyethylene irrigation hose.

#### Superior Choice for Use with Polyethylene Pipe

Spears® PVC Insert Fittings are designed for use with either ASTM D 2104 Schedule 40 or D 2239 SDR pressure rated polyethylene pipe. Chemical and corrosion resistant, rigid PVC barbed inserts provide excellent grip with polyethylene materials.

#### Conform to ASTM D 2609

Spears® Insert Fittings are manufactured from high quality PVC materials to meet or exceed the applicable requirements of ASTM D 2609, Standard Specification for Plastic Insert Fittings for Polyethylene (PE) Plastic Pipe.

#### Full Assortment of Configurations and Adapters

Spears® broad line of gray PVC Insert Fittings includes popular configurations of elbows, tees, couplings and crosses. Numerous male and female NPT threaded adapters, elbows and tees plus white PVC Schedule 40 solvent cement socket and spigot adapters allow easy connection of insert fittings to supply or distribution systems.

#### Twist Lock Insert Adapter with Built-in Clamping

Special Insert Fittings design uses built-in lock ring for easy connection without clamps to Polyethylene (PE) Plastic Pipe used with standard Insert Fittings.

#### Clamp-Free Spiral Barb Irrigation Hose Insert Adapters

Specially designed nominal 3/8" barb configurations allow connection of pipe Insert Fittings to conventional 1/2" polyethylene irrigation hose. Special spiral barb allows "twist-on" connection of hose without need for clamping in open end irrigation applications.

#### NSF® Certified for Use with Potable Water

Spears® Insert Fittings are tested and Certified by the NSF International for use in potable water systems.

Suitable for Oil-Free air handling to 25 psi, not for distribution of compressed air or gas  
See Spears® Product Sourcebook for product offerings

Insert Fittings Technical  
**Barbed Insert Fittings Installation Information**



The information contained in this publication is based on current information and Product design at the time of publication and is subject to change without notification. Our ongoing commitment to product improvement may result in some variation. No representations, guarantees or warranties of any kind are made as to its accuracy, suitability for particular applications or results to be obtained therefrom. For verification of technical data or additional information not contained herein, please contact Spears® Technical Services Department [West Coast:(818) 364-1611 - East Coast: (678) 985-1263].

## Installation Information

### RECOMMENDATIONS FOR INSTALLERS AND USERS:

Plastic piping systems should be **ENGINEERED, INSTALLED, and OPERATED** in accordance with **ESTABLISHED DESIGN AND ENGINEERING STANDARDS AND PROCEDURES** for plastic piping systems. Suitability for the intended service application should be determined by the installer and/or user prior to installation of a plastic piping system. **PRIOR TO ASSEMBLY, all piping system components should be inspected for damage or irregularities. Mating components should be checked to assure that tolerances and engagements are compatible. Do not use any components that appear irregular or do not fit properly. Contact the appropriate manufacturer of the component product in question to determine usability. Consult all applicable codes and regulations for compliance prior to installation.**

**SOLVENT WELD CONNECTIONS** - Use quality solvent cements and primers formulated for the intended service application, pipe size and type of joint. While the pipe and fitting materials may be compatible with the intended medium, the solvent cement may not be. Consult the manufacturer for suitability of use. Read and follow the cement and primer manufacturers' applications and cure time instructions thoroughly. Be sure to use the correct size applicator.

**THREADED CONNECTIONS** - Use a quality grade thread sealant. **WARNING: SOME PIPE JOINT COMPOUNDS OR PTFE PASTES MAY CONTAIN SUBSTANCES THAT COULD CAUSE STRESS CRACKING TO PLASTIC.** Spears® Manufacturing Company recommends the use of Spears® which has been tested for compatibility with Spears® products. Please follow the sealant manufacturers' application/ installation instructions. Choice of an appropriate thread sealant other than those listed above is at the discretion of the installer. 1 to 2 turns beyond **FINGER TIGHT** is generally all that is required to make a sound plastic threaded connection. Unnecessary **OVERTIGHTENING** will cause **DAMAGE TO BOTH PIPE AND FITTING**.

**INSERT FITTING INSTALLATION** - Pipe is cut to length with handsaw or knife. When installing flexible lines: (a) Snake line one foot or more per 100 lineal feet. (b) Cold water should be run through lines prior to backfilling to permit pipe to contract. (c) Care should be taken to prevent large and sharp-edged rocks from being in position to crush pipe. Insert fittings are used to join lengths of flexible pipe. Stainless steel clamps are first slipped over ends of pipe; fitting is inserted and steel clamps are tightened securely over barbs on fittings. **DO NOT** use oil or detergent on any fittings. Use plain water or soapy water as lubricant on fitting. For attachment to previously installed metallic systems or threaded fixtures, the insert adapter is utilized. Apply thread sealant to the threaded end of adapter and tighten into female connection. Steel clamp is then slipped over pipe end and pipe slipped over serrated end of insert adapter. Steel clamp is then positioned over serrations on insert adapter and securely tightened with a screwdriver.

**TWIST LOCK INSERT INSTALLATION** - Twist Lock Fittings with built in lock ring are installed the same as regular Insert Fittings, but do not require steel clamps. Check that lock ring component is fully threaded onto fitting. Slip pipe over serrated end of insert adapter. Twist lock ring back over pipe and barb to seal.

**SPIRAL BARB FITTING INSTALLATION** - Spiral Barb fittings are designed for use with 1/2" (.490) polyethylene irrigation hose and do not require steel clamps. Install with a twisting motion to fully engage barbs.

"Lead Free" low lead certification - unless otherwise specified, all Spears® PVC & PP Insert Fittings specified here-in are certified by NSF International to ANSI/NSF® Standard 61, Annex G and is in compliance with California's Health & Safety Code Section 116825 (commonly known as AB1953) and Vermont Act 193. Weighted average lead content <=0.25%.

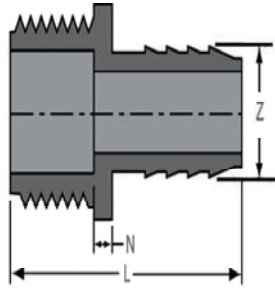


## Insert Fittings Technical Barbed Insert Fittings Weights & Dimensions

### Male Adapter - PVC

Mipt x Insert

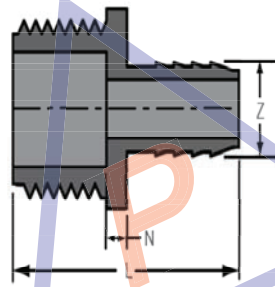
Dimensions Also Applicable to  
1436-XXXX CPVC Inserts



Part Number	Size	L	N	Z	Approx. Wt. (Lbs.)
1436-002	1/4	1-19/32	5/32	15/32	.00
1436-005	1/2	2-7/16	1/4	21/32	.02
1436-007	3/4	2- 7/16	1/4	27/32	.03
1436-010	1	2- 5/8	1/4	1-3/32	.06
1436-012	1-1/4	2-21/32	1/4	1-13/32	.08
1436-015	1-1/2	2-31/32	5/16	1-21/32	.11
1436-020	2	3-1/16	3/8	2-3/32	.16
1436-025	2-1/2	4-1/16	3/8	2-1/2	.32
1436-030	3	4-9/32	3/8	3-3/32	.46
1436-040	4	5-7/16	3/8	4-1/16	.82

### Male Adapter, Reducing - PVC

Mipt x Insert



Part Number	Size	L	N	Z	Approx. Wt. (Lbs.)
1436-074	1/2X3/4	2- 5/16	1/8	27/32	.02
1436-075	1/2X1	2- 5/8	1/4	1-3/32	.04
1436-101	3/4X1/2	2- 5/16	1/8	21/32	.02
1436-102	3/4X1	2- 9/16	1/4		.03
1436-131	1X3/4	2- 9/16	3/16	27/32	.04
1436-132	1X1-1/4	2- 5/8	1/4	1-13/32	.07
1436-133	1X1-1/2	3	9/32	1-21/32	.10
1436-167	1-1/4X3/4	2-11/16	9/32	27/32	.07
1436-168	1-1/4X1	2-25/32	9/32	1-3/32	.08
1436-169	1-1/4X1-1/2	3-1/32	9/32	1-21/32	.10
1436-211	1-1/2X1	2-13/16	5/16	1-3/32	.11
1436-212	1-1/2X1-1/4	2-27/32	11/32	1-13/32	.11
1436-213	1-1/2X2	3- 3/32	5/16	2-3/32	.13
1436-251	2X1-1/2	3-3/16	3/8	1-21/32	.17

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