

PRECAUTIONS AND WARNINGS

PVC and CPVC piping systems must be engineered, installed, operated and maintained in accordance with accepted standards and procedures for thermoplastic piping systems. It is absolutely necessary that all personnel associated with the above be properly trained in these procedures before starting.

CAUTION: The system must be designed and installed so that all stress loads associated with bending or shifting are avoided. All system joints must be supported and thrust blocked.

CAUTION: BEFORE THE SYSTEM IS CYCLED, all dirt, sand, grit or other material must be wiped externally from the swivel joints and internally flushed from the system. This is to prevent scarring of internal components.

WARNING: Systems must not be operated or flushed out at flow velocities greater than 5 feet per second.

LUBRICATION WARNING: Some Lubricants, including vegetable oils, are known to cause stress cracking in thermoplastic materials. Lubricants are not required for installation of Spears® Expansion Joints.

NOT FOR DISTRIBUTION OF COMPRESSED AIR OR GAS

All air must be bled from the system during initial fluid fill. Pressure testing of the system must not be made until all solvent cement joints have properly cured. Initial pressure testing must be made at approximately 10% of the system hydrostatic pressure rating to identify potential problems, prior to testing at higher pressures.



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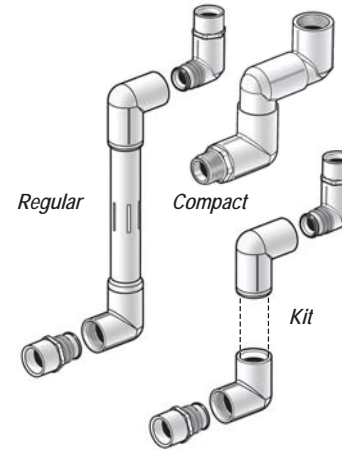
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TURF SWIVEL JOINT ASSEMBLIES Installation Instructions

TSJ-3A-0506

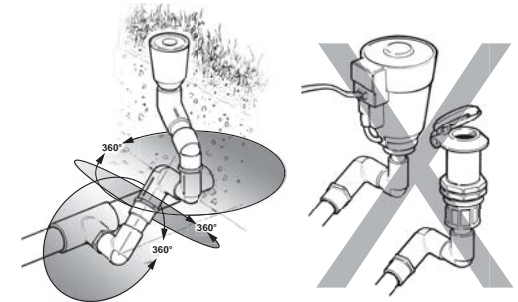


Spears® Turf Swivel Joints, Compact Turf Swivel Joints and Turf Swivel Joint Kits are designed for use in residential and commercial open discharge irrigation systems. Swivel Joint Kits are designed for solvent cement assembly with user supplied PVC pipe. Spears® Turf Swivel Joints allow the greatest degree of flexibility and adjustment during installation and maintenance. Proper installation of these components is essential for reliable performance. Illustrations are "typical" since many variations and configurations can be made.

Read all applicable instructions and procedures thoroughly before starting.

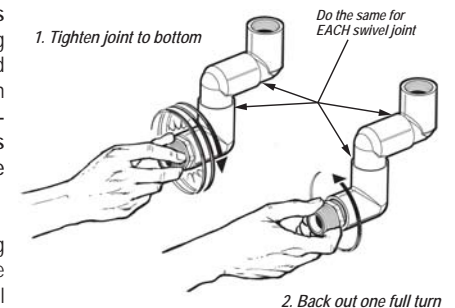
FEATURES AND RESTRICTIONS

- Provides 360° adjustment in multiple planes to place sprinklers at desired locations.
- Can be used with bottom or side discharge sprinklers.
- Are designed for open discharge systems and are *not to be used with valve-in-head sprinklers or quick coupler valves.*



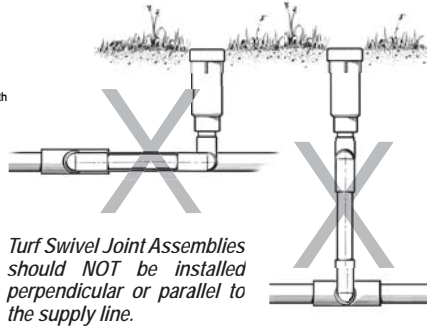
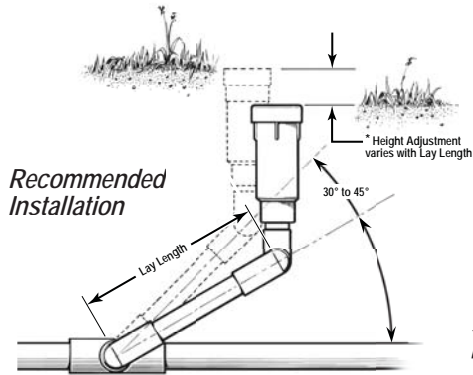
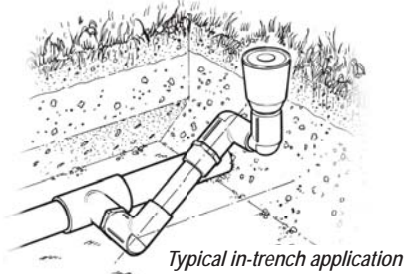
INSTALLATION GUIDELINES

- I. Turf Swivel Joints and Compact Turf Swivel Joints are pre-assembled from the factory with O-ring threaded joints. Turf Swivel Joint Kits are provided as two assemblies for use with user supplied pipe in solvent welded field assembly. These joints are pre-lubricated and should not be disassembled, as dirt, sand or other foreign objects could damage the O-ring or threads and cause leakage.
- II. Prior to beginning installation, tighten each O-ring swivel joint until it bottoms out, and then back out the male part one full turn to allow the joint to swivel a full 360°.



III. Trench Installations:

Spears® Manufacturing Company recommends installing our Turf Swivel Joint Assemblies in a 30° to 45° orientation to the lateral piping to which they are attached. Installing Swing Joint Riser Assemblies in a perpendicular or parallel fashion to the lateral is not recommended. Trenching must be deep enough to accommodate the height of the sprinkler and riser to allow for proper surface grading while providing adequate protection of the piping system.



IV. For Threaded Inlets Or Outlets:

WARNING: SOME PIPE JOINT COMPOUNDS OR PTFE PASTES MAY CONTAIN SUBSTANCES THAT COULD CAUSE STRESS CRACKING TO PLASTIC. TRANSITIONS TO METAL PIPE REQUIRE THOROUGH CLEANING AND DEGREASING TO REMOVE ANY PIPE THREAD CUTTING OIL. Spears® Manufacturing Company recommends the use of Spears® **BLUE 75™** thread sealant which has been tested for compatibility with Spears® products. Check with application/installation instructions. Choice of an appropriate thread sealant other than those listed above is at the discretion of the installer.

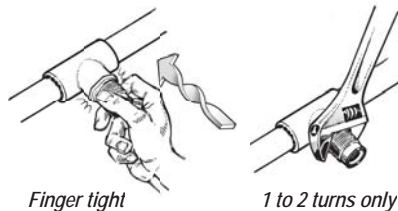


Apply thread sealant

DO NOT APPLY SEALANTS TO O-RING SWIVEL THREADS.

V. Tighten Threaded Fittings.

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. Do not use pipe wrenches on plastic fittings. An adjustable wrench on wrench flats or a commercial strap wrench on fittings is recommended.



SOLVENT CEMENT WELDING PROCEDURES

VI. For Solvent Cemented Joints: Read and follow all solvent cement and primer manufacturer's application/ installation instructions and safety precautions thoroughly. It is absolutely necessary that the installer become familiar with the proper solvent cementing procedures before performing this step. Incorrect solvent cementing procedures will produce unsound connections. Cut or order the riser nipple and inlet/outlet nipples to desired lengths, as required, and solvent cement them to the Swing Joint Riser Assembly. Care must be taken to prevent solvent cement or primer from coming in contact with the O-rings or threads. Since Turf Swivel Joint components have interference fit sockets, a Medium Bodied Cement may be used.

INSTALL TEMPERATURE C 43 110 F 5 40	ACCLIMATE PARTS	USE CORRECT CUTTING TOOLS	DEBURR ALL CUT EDGES	
CHECK 90° SQUARE PIPE CUT	BEVEL PIPE END 10° TO 15°	DRY CHECK PIPE-TO-SOCKET FIT		
		FULL INTERFERENCE FIT	NET FIT	
USE CORRECT APPLICATOR SIZE	APPLY PRIMER: SOCKET	APPLY PRIMER: PIPE	QUICKLY APPLY CEMENT: SOCKET	QUICKLY APPLY CEMENT: PIPE
IMMEDIATELY JOIN PARTS	PUSH IN: TWIST 90°	HOLD 30 SECONDS	WIPE EXCESS CEMENT	