



EverTUFF® TURF™ Swing Joint



ENGINEERING GUIDE

Contact Spears® for any Information not found.



SWING JOINT TECHNICAL DATA



• Temperature / Pressure Rating

Spears® Swing Joint Riser Assemblies carry a rated working pressure of 315 psi at 73° F and are pressure tested to Schedule 80 specifications per ASTM D 1599, long term (1000 hours) and pressure tested to Class 315 specifications per ASTM D 1598.*

• Schedule 80+ Wall Thickness

The wall thickness of these assemblies is Schedule 80+ which is substantially thicker than other PVC swing joints manufactured to Schedule 40 or Class 200 specifications. This provides more material in critical areas that are more susceptible to stress. Spears® assemblies have been cyclic pressure tested from 0 - 600 psi at the rate of ten cycles per minute.*

• Variety of Inlet/Outlet Configurations

Spears® offers the broadest selection of inlet and outlet connections including a specially designed inlet tee, a female brass thread outlet adapter and a male acme thread O-ring seal outlet adapter.

• Double O-ring Seal

Spears® Manufacturing Company uses two O-rings in its swing joint assembly. The larger, inner O-ring provides a leak-free pressure seal. The outer O-ring prevents dirt, dust, sand, etc., from entering the threads and causing damage to the swing joint components. The swing joint components are manufactured with no mold parting lines in critical areas. The Swing Joint assemblies are leak tested to Class 315 specifications per ASTM D 3139, with only the primary O-rings installed.*

• Strong Buttress Style Threads

Spears® uses a buttress style form of thread in its assembly. This thread has the advantage in applications involving high stresses along the thread axis in one direction. Due to the design, the buttress thread offers a greater degree of safety from surge type failures and allows free movement of the joints without restriction.

• Sweep Style Fittings

The medium sweep style fitting design offers less friction loss than conventional block or square elbow patterns. The Cv factors are: 1" = 13 gpm; 1-1/4" = 24 gpm and 1-1/2" = 35 gpm.* Large finger knurls are provided for ease of installation or adjustments eliminating the need for wrenches or other tools.

• Lifetime Warranty

Spears® Swing Joint Riser Assemblies have a Limited Lifetime Warranty against any defects in materials or workmanship.



STANDARDS AND TESTING CRITERIA FOR SPEARS® EverTUFF® TURF™ SWING JOINT RISER ASSEMBLIES

Spears® Swing Joint Riser Assemblies are tested to the following specifications and standards.

Test	Reference Standard	Requirement
HYDROSTATIC BURST Test per ASTM D 1599, 60-70 seconds	ASTM D 1785 / D 2464 / D 2467 (Schedule 80 Pipe & Fittings)	1" = 2020 psi, minimum 1-1/4" = 1660 psi, minimum 1-1/2" = 1510 psi, minimum
SUSTAINED PRESSURE Test per ASTM D 1598, 1000 hours	ASTM D 2241, SDR 13.5 (315 psi Pressure Rating)	All sizes = 670 psi, minimum
HYDROSTATIC LEAK* Test per ASTM D 3139, 1 hour @ 2.5 x Pressure Rating	ASTM D 3139	No Pressure Loss
VACUUM* Test per ASTM D 3139, 1 hour @ 22 in. Hg	ASTM D 3139	No Leakage
DIMENSIONS Measured per ASTM D 2122	ASTM D 2464 / D 2467	Sockets = Schedule 80 Wall = Exceeds Schedule 80
O-RING TYPE (Dimensions per AS 568A)	ASTM D 2464 / D 2467	Nitrile (Buna-N)

SPEARS® SWING JOINT ASSEMBLY Cv FACTORS**

Cv factors are based on assemblies using 12" riser and 6" inlet nipples

1"	=	13 gpm
1-1/4"	=	24 gpm
1-1/2"	=	35 gpm

SWING JOINT ASSEMBLY CYCLIC PRESSURE TEST**

0 - 600 psi, 10 cpm @ 73°F

1" avg	=	29,500 cycles
1-1/2" avg	=	13,000 cycles

* Test conducted with primary O-ring only on each assembly joint (secondary O-ring is to protect joint-threads from external debris)
 ** Friction loss and cyclic pressure testing was conducted by the Agricultural Engineering Department of CAL Poly University, Pomona, California.

SWING JOINT TECHNICAL DATA



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The medium sweep style fitting design offers less friction loss than conventional block or square elbow patterns. The Cv factors are: 1" = 13 gpm; 1-1/4" = 24 gpm and 1-1/2" = 35 gpm.* Large finger knurls are provided for ease of installation or adjustments eliminating the need for wrenches or other tools.

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STANDARDS AND TESTING CRITERIA FOR SPEARS® EverTUFF® TURF™ SWING JOINT RISER ASSEMBLIES

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Test	Reference Standard	Requirement
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SUSTAINED PRESSURE Test per ASTM D 1598, 1000 hours	ASTM D 2241, SDR 13.5 (315 psi Pressure Rating)	All sizes = 670 psi, minimum
HYDROSTATIC LEAK* Test per ASTM D 3139, 1 hour @ 2.5 x Pressure Rating	ASTM D 3139	No Pressure Loss
VACUUM* Test per ASTM D 3139, 1 hour @ 22 in. Hg	ASTM D 3139	No Leakage
DIMENSIONS Measured per ASTM D 2122	ASTM D 2464 / D 2467	Sockets = Schedule 80 Wall = Exceeds Schedule 80
O-RING TYPE (Dimensions per AS 568A)	ASTM D 2464 / D 2467	Nitrile (Buna-N)

SPEARS® SWING JOINT ASSEMBLY Cv FACTORS**

Cv factors are based on assemblies using 12" riser and 6" inlet nipples

1"	=	13 gpm
1-1/4"	=	24 gpm
1-1/2"	=	35 gpm

SWING JOINT ASSEMBLY CYCLIC PRESSURE TEST**

0 - 600 psi, 10 cpm @ 73°F

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1-1/2" avg	=	13,000 cycles

* Test conducted with primary O-ring only on each assembly joint (secondary O-ring is to protect joint-threads from external debris)
 ** Friction loss and cyclic pressure testing was conducted by the Agricultural Engineering Department of CAL Poly University, Pomona, California.

SWING JOINT RISER SPECIALTY OUTLETS

Male ACME Thread 90° Street EII Outlet with O-ring



Designed for use with female acme thread O-ring seal style rotors. Provides faster installation and positive O-ring seal. Reduces the risk of overtightening and eliminates the need for thread sealants. Available as an individual component.

Size	Part Number
1"	591-010-7AR
1-1/4"	591-012-7AR
1-1/2"	591-015-7AR
1" x 1-1/4"	591-132-7AR

May also be purchased as part of Swing Joint Riser Assembly. Male Buttress Thread Riser Nipple Style is available with 8" through 24" Risers. Solvent Cemented Riser Nipple Style Kit is available without riser nipple or with choice of 6" through 24" nipple lengths. Both styles are available with choice of Socket, Spigot, Socket Tee, Male Iron Pipe Thread, BSP Thread, DIN Spigot or JIS Spigot Inlets.

Special Reinforced Female 90° EII Outlet



Designed for use where overtightening of threads is a problem. This unique precompression design compensates for expansion forces generated from tapered pipe thread joint makeup. Radial stress is reduced in normal installations and contained in severe overtightening situations. Available as an individual component.

Size	Part Number
1"	591-010-8SRA
1-1/4"	591-012-8SRA
1-1/2"	591-015-8SRA

May also be purchased as part of Swing Joint Riser Assembly. Male Buttress Thread Riser Nipple Style is available with 8" through 24" Risers. Solvent Cemented Riser Nipple Style Kit is available without riser nipple or with choice of 6" through 24" nipple lengths. Both styles are available with choice of Socket, Spigot, Socket Tee, Male Iron Pipe Thread, BSP Thread, DIN Spigot or JIS Spigot Inlets.

Metal Female Thread 90° EII Outlet



Designed for use with quick coupler valves. Spears® patented threaded Metal Insert is molded-in-place as an integral part of each fitting for superior strength. Secondary O-ring seal compensates for expansion and contraction variations between materials. Available as an individual component.

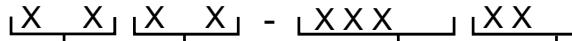
Size	Part Number
1"	591-010-8BRA
1-1/4"	591-012-8BRA
1-1/2"	591-015-8BRA

May also be purchased as part of Swing Joint Riser Assembly. Male Buttress Thread Riser Nipple Style is available with 8" through 24" Risers. Solvent Cemented Riser Nipple Style Kit is available without riser nipple or with choice of 6" through 24" nipple lengths. Both styles are available with choice of Socket, Spigot, Socket Tee, Male Iron Pipe Thread, BSP Thread, DIN Spigot or JIS Spigot Inlets.



Irrigation & Turf Technical
EverTUFF® TURF™ Swing Joint Specialty Outlets

Many Configurations may be created and furnished by using the following Swing Joint Riser Numbering System.



Code	Swing Arm Riser Style
58	Male Buttress Threaded Riser Style
59	Cut & Solvent Cemented Riser Style

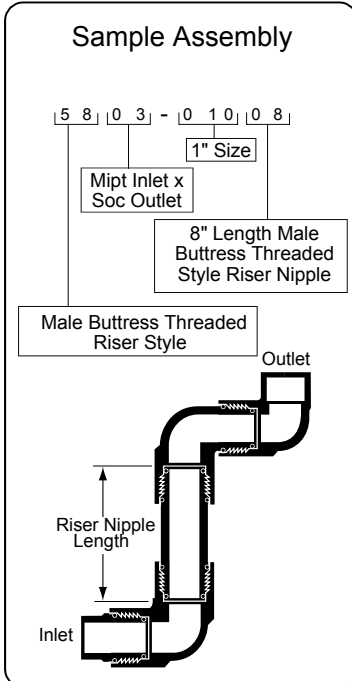
Code	Inlet x Outlet Style Combination
01	Soc x Soc
02	Spig x Soc
03	Mipt x Soc
04	Tee x Soc
05	Soc x Mipt
06	Spig x Mipt
07	Mipt x Mipt
08	Tee x Mipt
09	Soc x Mat
10	Spig x Mat
11	Mipt x Mat
12	Tee x Mat
13	Soc x Fipt
14	Spig x Fipt
15	Mipt x Fipt
16	Tee x Fipt
17	Soc x SR Fipt
18	Spig x SR Fipt
19	Mipt x SR Fipt
20	Tee x SR Fipt
21†	Gmpt 2-1/2" Npl x Mat
22	Mat x Mat
23	Mat x Mpt
24	Mat x Fipt
25	Mat x SR Fipt
26	Spig x Fbt
27	Spig x Fat
28	Extended Spig x Fipt
29	Extended Spig x Mipt
30	Open
31†	Mipt x Gmpt 2-1/2" Npl
32†	Gmpt 2-1/2" Npl x Fipt
33†	Gmpt 2-1/2" Npl x Soc
34†	Gmpt 2-1/2" Npl x SR Fipt
35†	Soc x Gmpt 2-1/2" Npl
36†	Spig x Gmpt 2-1/2" Npl
37†	Gmpt x Gmpt 2-1/2" Npl
38†	Tee x Gmpt 2-1/2" Npl
39†	Gmpt 2-1/2" Npl x Mipt
40†	Open
41†	Mipt x Gmpt 3" Npl
42†	Gmpt 3" Npl x Fipt
43†	Gmpt 3" Npl x Soc
44†	Gmpt 3" Npl x SR Fipt
45†	Soc x Gmpt 3" Npl
46†	Spig x Gmpt 3" Npl
47†	Gmpt x Gmpt 3" Npl
48†	Tee x Gmpt 3" Npl
49†	Gmpt 3" Npl x Mipt
50†	Gmpt 3" Npl x Mat

Code	Inlet x Outlet Style Combination
51‡	Soc x Soc Multi-Ell
52‡	Spig x Soc Multi-Ell
53‡	Mipt x Soc Multi-Ell
54‡	Tee x Soc Multi-Ell
55‡	Soc x Mipt Multi-Ell
56‡	Spig x Mipt Multi-Ell
57‡	Mipt x Mipt Multi-Ell
58‡	Tee x Mipt Multi-Ell
59‡	Soc x Mat Multi-Ell
60‡	Spig x Mat Multi-Ell
61‡	Mipt x Mat Multi-Ell
62‡	Tee x Mat Multi-Ell
63‡	Soc x Fipt Multi-Ell
64‡	Spig x Fipt Multi-Ell
65‡	Mipt x Fipt Multi-Ell
66‡	Tee x Fipt Multi-Ell
67‡	Soc x SR Fipt Multi-Ell
68‡	Spig x SR Fipt Multi-Ell
69‡	Mipt x SR Fipt Multi-Ell
70‡	Tee x SR Fipt Multi-Ell
71†‡	Soc x Gmpt 2-1/2" Npl Multi-Ell
72†‡	Spig x Gmpt 2-1/2" Npl Multi-Ell
73†‡	Mipt x Gmpt 2-1/2" Npl Multi-Ell
74†‡	Tee x Gmpt 2-1/2" Npl Multi-Ell
75†‡	Soc x Gmpt 3" Npl Multi-Ell
76†‡	Spig x Gmpt 3" Npl Multi-Ell
77†‡	Mipt x Gmpt 3" Npl Multi-Ell
78†‡	Tee x Gmpt 3" Npl Multi-Ell
79†‡	Gmpt 3" Npl x Mipt Multi-Ell
80†‡	Gmpt 3" Npl x Soc Multi-Ell
81†‡	Gmpt 3" Npl x Gmpt 3" Npl Multi-Ell
82‡	Mat x Mat Multi-Ell
83	Mipt x Mat Top Mount
84	Open
85	Open
86	Open
87	Open
88	Bsp x Bsp Multi-Ell
89	Bsp x Bsp Top Mount
90	Bsp x Mat
91	Bsp x Mipt
92	Mipt x Bsp
93	Bsp x Bsp
94	Astm Soc x Bsp
95	Astm Spig x Bsp
96	Din Spig x Bsp
97	Din Spig x Mipt
98	Jis Spig x Jis Mipt
99	Jis Spig x Mipt

Code	Size
010	1"
132	1" x 1-1/4"
133	1" x 1-1/2"
012	1-1/4"
015	1-1/2"
168	1-1/4" x 1"
169	1-1/4" x 1-1/2"
211	1-1/2" x 1"
212	1-1/2" x 1-1/4"
249	2" x 1" (Tee)
250	2" x 1-1/4" (Tee)
251	2" x 1-1/2" (Tee)

* Buttress Threaded Riser Lengths may be extended with the use of Riser Extension Couplings.
 ** Additional Nipple lengths are available. Please contact your servicing Spears® Regional Distribution Center.

Riser Nipple Length	
Code	Size
5800 Series` Male Buttress Threaded Style	
08	8"
10	10"
12	12"
14	14"
16	16"
18	18"
20	20"
24	24"
5900 Series`` Cut & Solvent Cemented Style	
00	(No Nipple)
06	6"
07	7"
08	8"
10	10"
11	11"
12	12"
13	13"
14	14"
15	15"
16	16"
17	17"
18	18"
19	19"
20	20"
21	21"
22	22"
23	23"
24	24"



†Gmpt - A2-1/2" Toe Nipple is solvent cemented in place. If a 3" Nipple is required, change the first digit from a "3" to a "4".

EXAMPLE:
 38 = Tee x 2-1/2" Gmpt
 48 = Tee x 3" Gmpt

‡Multi-Ell - Two additional Elbows are located at the outlet of the Swing Joint Riser to allow 360° adjustment.



Lasco, Dura & Rain Bird Part Numbers Cross-Referenced to Spears® Part Numbers.

Cross-Referenced to Spears® Part Numbers

This cross-reference is intended as an aid in determining the closest approximation of an "equal" when ordering Spears® Buttress Thread Riser Swing Joint Assemblies as an alternative to Lasco, Dura, or Rain Bird products. Because of critical differences in the way each manufacturer engineers their product, no true exact equal can be determined for any manufacturer's product. The following considerations should be noted when using this cross-reference.

The length as called out by the part number is determined by Spears® as the length of the buttress thread riser nipple. The length as called out by the Lasco, Rain Bird and Dura part number are determined by the "Lay Length" which is described as the "Centerline to Centerline" measurement on the Spears® assemblies. A Spears® 8" riser is longer than a Lasco, Rain Bird or Dura 8" riser. A Spears® 10" riser is 'roughly equivalent' to a Lasco or Dura 12" riser. A Spears® 12" riser is slightly longer than a Lasco, Rain Bird or Dura 14" riser, and a Spears® 16" Riser is 'roughly equivalent' to a Dura, Lasco, and Rain Bird 18" Riser. For exact "overall length" and "centerline to centerline" measurements, consult Turf & Irrigation product section, EverTUFF® TURF™ Swing Joint Riser Assemblies.

Spears® metal insert FIPT outlet risers are designed for use with 'quick coupler valves'. Spears® outlet elbows do not incorporate the "ears" or "retaining lugs" for rebar stabilizing rods. This method of stabilization defeats the intended purpose of the swing joint assembly. Rebar driven perpendicular to the supply line can be driven through the pipeline.

**In all cases the Spears® products meet and exceed
the minimum Specifications for Dura 'Unibody'
Lasco 'Unitized', and Rain Bird swing joint assemblies.**

Allegations regarding PVC thread styles, specifically with regards to PVC ACME vs. Buttress style threads are misleading and inaccurate at best. Contact the Spears® Technical Services Department for more information regarding ACME vs. Buttress style thermoplastic threads.

Spears®, Rain Bird, Lasco and Dura swing joints are rated at 315 psi @ 73°F when tested in accordance with ASTM 3139. Additionally, Spears® swing joints are fully tested for the most demanding applications through ASTM D 1599 hydrostatic burst test, and ASTM D 1598 sustained pressure tests.

Test	Reference Standard	Spears®	Lasco	Dura	Rain Bird
Hydrostatic Burst-Test per ASTM D 1599, 60-70 secs.	ASTM D 1785 / D 2467	1" = 1020 psi	Not Available	Not Available	Not Available
		1-1/4" = 1660 psi			
		1-1/2" = 1510 psi			
Sustained Pressure Test per ASTM D 1598, 1000 hrs.	ASTM D 2241, SDR 13.5 (315 psi Pressure rating)	All sizes = 670 psi, min.	Not Available	Not Available	Not Available
Hydrostatic Leak - Test 1 hr. @ 2.5 x Pressure Rating	ASTM D 3139	No Pressure Loss	Not Available	Not Available	No Pressure Loss
Vacuum* - Test per ASTM D 3139	ASTM D 3139	No Leakage	Not Available	Not Available	Not Available
Dimensions - measured per ASTM D 2122	ASTM D 2467	Sockets = Sch 80	Schedule 80	Schedule 80	Schedule 80
		Wall = Exceed Sch 80			
O-ring Type and Dimensions	AS 568A	Nitrile (Buna-N)	Not Available	Not Available	Not Available
Warranty		Lifetime Limited Warranty	5 Years	5 Years	5 Years

"Lay Length" measurements are determined from the same point of the assemblies. Lasco, Rain Bird and Dura "Lay Length" is measured from the points determined as the Spears® "Centerline to Centerline". Due to differences in product engineering, it is difficult to arrive at an 'exact' equivalent. This cross reference represents the most commonly accepted 'equals.'

Others Lay Length	Spears® Riser Nipple Length	Spears® C/L Dimension 1"	Spears® C/L Dimension 1-1/4"	Spears® C/L Dimension 1-1/2"
6"	N/A	N/A	N/A	N/A
8"	N/A	N/A	N/A	N/A
10"	8"	9-11/16"	10-3/16"	10-7/16"
12"	10"	11-11/16"	12-3/16"	12-7/16"
14"	12"	13-11/16"	14-3/16"	14-7/16"
16"	14"	15-11/16"	16-3/16"	16-7/16"
18"	16"	17-11/16"	18-3/16"	18-7/16"



Irrigation & Turf Technical
EverTUFF® TURF™ Swing Joint Cross Reference

DESCRIPTION	SPEARS®	LASCO	DURA	RAIN BIRD
1" Soc Inlet x Mipt Outlet			1-A4-3-1-6	
1" Soc Inlet x Mipt Outlet		G112-208	1-A4-3-1-8	SJ-8-100-61
1" Soc Inlet x Mipt Outlet	5805-01008		1-A4-3-1-10	
1" Soc Inlet x Mipt Outlet	5805-01010	G112-212	1-A4-3-1-12	SJ-12-100-61
1" Soc Inlet x Mipt Outlet	5805-01012		1-A4-3-1-14	
1" Soc Inlet x Mipt Outlet	5805-01014		1-A4-3-1-16	
1" Soc Inlet x Mipt Outlet	5805-01016	G112-218	1-A4-3-1-18	SJ-18-100-61
1" Soc Inlet x Mipt Outlet	5805-01024			
1-1/4" Soc Inlet x Mipt Outlet			2-A4-3-1-6	
1-1/4" Soc Inlet x Mipt Outlet		G212-208	2-A4-3-1-8	SJ-8-125-61
1-1/4" Soc Inlet x Mipt Outlet	5805-01208		2-A4-3-1-10	
1-1/4" Soc Inlet x Mipt Outlet	5805-01210	G212-212	2-A4-3-1-12	SJ-12-125-61
1-1/4" Soc Inlet x Mipt Outlet	5805-01212		2-A4-3-1-14	
1-1/4" Soc Inlet x Mipt Outlet	5805-01214		2-A4-3-1-16	
1-1/4" Soc Inlet x Mipt Outlet	5805-01216	G212-218	2-A4-3-1-18	SJ-18-125-61
1-1/2" Soc Inlet x Mipt Outlet			3-A4-3-1-6	
1-1/2" Soc Inlet x Mipt Outlet		G312-208	3-A4-3-1-8	SJ-8-150-61
1-1/2" Soc Inlet x Mipt Outlet	5805-01508		3-A4-3-1-10	
1-1/2" Soc Inlet x Mipt Outlet	5805-01510	G312-212	3-A4-3-1-12	SJ-12-150-61
1-1/2" Soc Inlet x Mipt Outlet	5805-01512		3-A4-3-1-14	
1-1/2" Soc Inlet x Mipt Outlet	5805-01514		3-A4-3-1-16	
1-1/2" Soc Inlet x Mipt Outlet	5805-01516	G312-218	3-A4-3-1-18	SJ-18-150-61
1-1/2" Soc Inlet x Mipt Outlet	5805-01518			
1" Soc Inlet x 1-1/4" Mipt Outlet			1-A4-4-1-6	
1" Soc Inlet x 1-1/4" Mipt Outlet		G114-208	1-A4-4-1-8	SJ-8-100-64
1" Soc Inlet x 1-1/4" Mipt Outlet	5805-13208		1-A4-4-1-10	
1" Soc Inlet x 1-1/4" Mipt Outlet	5805-13210	G114-212	1-A4-4-1-12	SJ-10-100-64
1" Soc Inlet x 1-1/4" Mipt Outlet	5805-13212		1-A4-4-1-14	
1" Soc Inlet x 1-1/4" Mipt Outlet	5805-13214		1-A4-4-1-16	
1" Soc Inlet x 1-1/4" Mipt Outlet	5805-13216	G114-218	1-A4-4-1-18	SJ-18-100-64
1" Soc Inlet x 1-1/2" Mipt Outlet			1-A4-5-1-6	
1" Soc Inlet x 1-1/2" Mipt Outlet		G113-208	1-A4-5-1-8	
1" Soc Inlet x 1-1/2" Mipt Outlet	5805-13308		1-A4-5-1-10	
1" Soc Inlet x 1-1/2" Mipt Outlet	5805-13310	G113-212	1-A4-5-1-12	
1" Soc Inlet x 1-1/2" Mipt Outlet	5805-13312		1-A4-5-1-14	
1" Soc Inlet x 1-1/2" Mipt Outlet	5805-13314		1-A4-5-1-16	
1" Soc Inlet x 1-1/2" Mipt Outlet	5805-13316	G113-218	1-A4-5-1-18	
1-1/4" Soc Inlet x 1" Mipt Outlet			2-A4-7-1-6	
1-1/4" Soc Inlet x 1" Mipt Outlet		G217-208	2-A4-7-1-8	
1-1/4" Soc Inlet x 1" Mipt Outlet	5805-16808		2-A4-7-1-10	
1-1/4" Soc Inlet x 1" Mipt Outlet	5805-16810	G217-212	2-A4-7-1-12	
1-1/4" Soc Inlet x 1" Mipt Outlet	5805-16812		2-A4-7-1-14	
1-1/4" Soc Inlet x 1" Mipt Outlet	5805-16814		2-A4-7-1-16	
1-1/4" Soc Inlet x 1" Mipt Outlet	5805-16816	G113-218	2-A4-7-1-18	
1-1/4" Soc Inlet x 1-1/2" Mipt Outlet			2-A4-6-1-6	
1-1/4" Soc Inlet x 1-1/2" Mipt Outlet			2-A4-6-1-8	SJ-8-125-64
1-1/4" Soc Inlet x 1-1/2" Mipt Outlet	5805-16908		2-A4-6-1-10	
1-1/4" Soc Inlet x 1-1/2" Mipt Outlet	5805-16910		2-A4-6-1-12	SJ-12-125-64

Irrigation & Turf Technical
EverTUFF® TURF™ Swing Joint Cross Reference



DESCRIPTION	SPEARS®	LASCO	DURA	RAIN BIRD
1-1/4" Soc Inlet x 1-1/2" Mipt Outlet	5805-16912		2-A4-6-1-14	
1-1/4" Soc Inlet x 1-1/2" Mipt Outlet	5805-16914		2-A4-6-1-16	
1-1/4" Soc Inlet x 1-1/2" Mipt Outlet	5805-16916	G213-218	2-A4-6-1-18	SJ-18-125-64
1-1/2" Soc Inlet x 1" Mipt Outlet			3-A4-8-1-6	
1-1/2" Soc Inlet x 1" Mipt Outlet		G317-208	3-A4-8-1-8	
1-1/2" Soc Inlet x 1" Mipt Outlet	5805-21108		3-A4-8-1-10	
1-1/2" Soc Inlet x 1" Mipt Outlet	5805-21110	G317-212	3-A4-8-1-12	
1-1/2" Soc Inlet x 1" Mipt Outlet	5805-21112		3-A4-8-1-14	
1-1/2" Soc Inlet x 1" Mipt Outlet	5805-21114		3-A4-8-1-16	
1-1/2" Soc Inlet x 1" Mipt Outlet	5805-21116	G317-218	3-A4-8-1-18	
1-1/2" Soc Inlet x 1-1/4" Mipt Outlet			3-A4-9-1-6	
1-1/2" Soc Inlet x 1-1/4" Mipt Outlet		G314-208	3-A4-9-1-8	
1-1/2" Soc Inlet x 1-1/4" Mipt Outlet	5805-21208		3-A4-9-1-10	
1-1/2" Soc Inlet x 1-1/4" Mipt Outlet	5805-21210	G314-212	3-A4-9-1-12	
1-1/2" Soc Inlet x 1-1/4" Mipt Outlet	5805-21212		3-A4-9-1-14	
1-1/2" Soc Inlet x 1-1/4" Mipt Outlet	5805-21214		3-A4-9-1-16	
1-1/2" Soc Inlet x 1-1/4" Mipt Outlet	5805-21216	G314-218	3-A4-9-1-18	
1" Spig Inlet x Mipt Outlet			1-A2-3-1-6	
1" Spig Inlet x Mipt Outlet		G122-208	1-A2-3-1-8	SJ-8-100-41
1" Spig Inlet x Mipt Outlet	5806-01008		1-A2-3-1-10	
1" Spig Inlet x Mipt Outlet	5806-01010	G122-212	1-A2-3-1-12	SJ-12-100-41
1" Spig Inlet x Mipt Outlet	5806-01012		1-A2-3-1-14	
1" Spig Inlet x Mipt Outlet	5806-01014		1-A2-3-1-16	
1" Spig Inlet x Mipt Outlet	5806-01016	G122-218	1-A2-3-1-18	SJ-18-100-41
1" Spig Inlet x Mipt Outlet	5806-01018			
1-1/4" Spig Inlet x Mipt Outlet			2-A2-3-1-6	
1-1/4" Spig Inlet x Mipt Outlet		G222-208	2-A2-3-1-8	SJ-8-125-41
1-1/4" Spig Inlet x Mipt Outlet	5806-01208		2-A2-3-1-10	
1-1/4" Spig Inlet x Mipt Outlet	5806-01210	G222-212	2-A2-3-1-12	SJ-12-125-41
1-1/4" Spig Inlet x Mipt Outlet	5806-01212		2-A2-3-1-14	
1-1/4" Spig Inlet x Mipt Outlet	5806-01214		2-A2-3-1-16	
1-1/4" Spig Inlet x Mipt Outlet	5806-01216	G222-218	2-A2-3-1-18	SJ-18-125-41
1-1/2" Spig Inlet x Mipt Outlet			3-A2-3-1-6	
1-1/2" Spig Inlet x Mipt Outlet		G322-208	3-A2-3-1-8	SJ-8-150-41
1-1/2" Spig Inlet x Mipt Outlet	5806-01508	/td>	3-A2-3-1-10	
1-1/2" Spig Inlet x Mipt Outlet	5806-01510	G322-212	3-A2-3-1-12	SJ-12-150-41
1-1/2" Spig Inlet x Mipt Outlet	5806-01512		3-A2-3-1-14	
1-1/2" Spig Inlet x Mipt Outlet	5806-01514		3-A2-3-1-16	
1-1/2" Spig Inlet x Mipt Outlet	5806-01516	G322-218	3-A2-3-1-18	SJ-18-150-41
1" Spig Inlet x 1-1/4" Mipt Outlet			1-A2-4-1-6	
1" Spig Inlet x 1-1/4" Mipt Outlet		G124-208	1-A2-4-1-8	SJ-8-100-44
1" Spig Inlet x 1-1/4" Mipt Outlet	5806-13208		1-A2-4-1-10	
1" Spig Inlet x 1-1/4" Mipt Outlet	5806-13210	G124-212	1-A2-4-1-12	SJ-12-100-44
1" Spig Inlet x 1-1/4" Mipt Outlet	5806-13212		1-A2-4-1-14	
1" Spig Inlet x 1-1/4" Mipt Outlet	5806-13214		1-A2-4-1-16	
1" Spig Inlet x 1-1/4" Mipt Outlet	5806-13216	G124-218	1-A2-4-1-18	SJ-18-100-44



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DESCRIPTION	SPEARS®	LASCO	DURA	RAIN BIRD
1" Spig Inlet x 1-1/2" Mipt Outlet			1-A2-5-1-6	
1" Spig Inlet x 1-1/2" Mipt Outlet		G123-208	1-A2-5-1-8	
1" Spig Inlet x 1-1/2" Mipt Outlet	5806-13308		1-A2-5-1-10	
1" Spig Inlet x 1-1/2" Mipt Outlet	5806-13310	G123-212	1-A2-5-1-12	
1" Spig Inlet x 1-1/2" Mipt Outlet	5806-13312		1-A2-5-1-14	
1" Spig Inlet x 1-1/2" Mipt Outlet	5806-13314		1-A2-5-1-16	
1" Spig Inlet x 1-1/2" Mipt Outlet	5806-13316	G123-218	1-A2-5-1-18	
1-1/4" Spig Inlet x 1" Mipt Outlet			2-A2-7-1-6	
1-1/4" Spig Inlet x 1" Mipt Outlet		G227-208	2-A2-7-1-8	
1-1/4" Spig Inlet x 1" Mipt Outlet	5806-16808		2-A2-7-1-10	
1-1/4" Spig Inlet x 1" Mipt Outlet	5806-16810	G227-212	2-A2-7-1-12	
1-1/4" Spig Inlet x 1" Mipt Outlet	5806-16812		2-A2-7-1-14	
1-1/4" Spig Inlet x 1" Mipt Outlet	5806-16814		2-A2-7-1-16	
1-1/4" Spig Inlet x 1" Mipt Outlet	5805-16816	G227-218	2-A2-7-1-18	
1-1/4" Spig Inlet x 1-1/2" Mipt Outlet			2-A2-6-1-6	
1-1/4" Spig Inlet x 1-1/2" Mipt Outlet		G223-208	2-A2-6-1-8	SJ-8-125-44
1-1/4" Spig Inlet x 1-1/2" Mipt Outlet	5806-16908		2-A2-6-1-10	
1-1/4" Spig Inlet x 1-1/2" Mipt Outlet	5806-16910	G223-212	2-A2-6-1-12	SJ-12-125-44
1-1/4" Spig Inlet x 1-1/2" Mipt Outlet	5806-16912		2-A2-6-1-14	
1-1/4" Spig Inlet x 1-1/2" Mipt Outlet	5806-16914		2-A2-6-1-16	
1-1/4" Spig Inlet x 1-1/2" Mipt Outlet	5806-16916	G223-218	2-A2-6-1-18	SJ-18-125-44
1-1/2" Spig Inlet x 1" Mipt Outlet			3-A2-8-1-6	
1-1/2" Spig Inlet x 1" Mipt Outlet		G327-208	3-A2-8-1-8	
1-1/2" Spig Inlet x 1" Mipt Outlet	5806-21108		3-A2-8-1-10	
1-1/2" Spig Inlet x 1" Mipt Outlet	5806-21110	G327-212	3-A2-8-1-12	
1-1/2" Spig Inlet x 1" Mipt Outlet	5806-21112		3-A2-8-1-14	
1-1/2" Spig Inlet x 1" Mipt Outlet	5806-21114		3-A2-8-1-16	
1-1/2" Spig Inlet x 1" Mipt Outlet	5806-21116	G327-218	3-A2-8-1-18	
1-1/2" Spig Inlet x 1-1/4" Mipt Outlet			3-A2-9-1-6	
1-1/2" Spig Inlet x 1-1/4" Mipt Outlet		G324-208	3-A2-9-1-8	
1-1/2" Spig Inlet x 1-1/4" Mipt Outlet	5806-21208		3-A2-9-1-10	
1-1/2" Spig Inlet x 1-1/4" Mipt Outlet	5806-21210	G324-212	3-A2-9-1-12	
1-1/2" Spig Inlet x 1-1/4" Mipt Outlet	5806-21212		3-A2-9-1-14	
1-1/2" Spig Inlet x 1-1/4" Mipt Outlet	5806-21214		3-A2-9-1-16	
1-1/2" Spig Inlet x 1-1/4" Mipt Outlet	5806-21216	G324-218	3-A2-9-1-18	
1" Mipt Inlet x Mipt Outlet			1-A1-3-1-6	
1" Mipt Inlet x Mipt Outlet		G132-208	1-A1-3-1-8	SJ-8-100-11
1" Mipt Inlet x Mipt Outlet	5807-01008		1-A1-3-1-10	
1" Mipt Inlet x Mipt Outlet	5807-01010	G132-212	1-A1-3-1-12	SJ-12-100-11
1" Mipt Inlet x Mipt Outlet	5807-01012		1-A1-3-1-14	
1" Mipt Inlet x Mipt Outlet	5807-01014		1-A1-3-1-16	
1" Mipt Inlet x Mipt Outlet	5807-01016	G132-218	1-A1-3-1-18	SJ-18-100-11
1-1/4" Mipt Inlet x Mipt Outlet			2-A4-3-1-6	
1-1/4" Mipt Inlet x Mipt Outlet		G232-208	2-A4-3-1-8	SJ-8-125-11
1-1/4" Mipt Inlet x Mipt Outlet	5807-01208		2-A4-3-1-10	
1-1/4" Mipt Inlet x Mipt Outlet	5807-01210	G232-212	2-A4-3-1-12	SJ-12-125-11

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DESCRIPTION	SPEARS®	LASCO	DURA	RAIN BIRD
1-1/4" Mipt Inlet x Mipt Outlet	5807-01212		2-A1-3-1-14	
1-1/4" Mipt Inlet x Mipt Outlet	5807-01214		2-A1-3-1-16	
1-1/4" Mipt Inlet x Mipt Outlet	5807-01216	G232-218	2-A1-3-1-18	SJ-18-125-11
1-1/2" Mipt Inlet x Mipt Outlet			3-A1-3-1-6	
1-1/2" Mipt Inlet x Mipt Outlet		G332-208	3-A1-3-1-8	SJ-8-150-11
1-1/2" Mipt Inlet x Mipt Outlet	5807-01508		3-A1-3-1-10	
1-1/2" Mipt Inlet x Mipt Outlet	5807-01510	G332-212	3-A1-3-1-12	SJ-12-150-11
1-1/2" Mipt Inlet x Mipt Outlet	5807-01512		3-A1-3-1-14	
1-1/2" Mipt Inlet x Mipt Outlet	5807-01514		3-A1-3-1-16	
1-1/2" Mipt Inlet x Mipt Outlet	5807-01516	G332-218	3-A1-3-1-18	SJ-18-150-11
1" Mipt Inlet x 1-1/4" Mipt Outlet			1-A1-4-1-6	
1" Mipt Inlet x 1-1/4" Mipt Outlet		G134-208	1-A1-4-1-8	SJ-8-100-14
1" Mipt Inlet x 1-1/4" Mipt Outlet	5807-13208		1-A1-4-1-10	
1" Mipt Inlet x 1-1/4" Mipt Outlet	5807-13210	G134-212	1-A1-4-1-12	SJ-12-100-14
1" Mipt Inlet x 1-1/4" Mipt Outlet	5807-13212		1-A1-4-1-14	
1" Mipt Inlet x 1-1/4" Mipt Outlet	5807-13214		1-A1-4-1-16	
1" Mipt Inlet x 1-1/4" Mipt Outlet	5807-13216	G134-218	1-A1-4-1-18	SJ-18-100-14
1" Mipt Inlet x 1-1/2" Mipt Outlet			1-A1-5-1-6	
1" Mipt Inlet x 1-1/2" Mipt Outlet		G133-208	1-A1-5-1-8	
1" Mipt Inlet x 1-1/2" Mipt Outlet	5807-13308		1-A1-5-1-10	
1" Mipt Inlet x 1-1/2" Mipt Outlet	5807-13310	G133-212	1-A1-5-1-12	
1" Mipt Inlet x 1-1/2" Mipt Outlet	5807-13312		1-A1-5-1-14	
1" Mipt Inlet x 1-1/2" Mipt Outlet	5807-13314		1-A1-5-1-16	
1" Mipt Inlet x 1-1/2" Mipt Outlet	5807-13316	G133-218	1-A1-5-1-18	
1-1/4" Mipt Inlet x 1" Mipt Outlet			2-A1-7-1-6	
1-1/4" Mipt Inlet x 1" Mipt Outlet		G237-208	2-A1-7-1-8	
1-1/4" Mipt Inlet x 1" Mipt Outlet	5807-16808		2-A1-7-1-10	
1-1/4" Mipt Inlet x 1" Mipt Outlet	5807-16810	G237-212	2-A1-7-1-12	
1-1/4" Mipt Inlet x 1" Mipt Outlet	5807-16812		2-A1-7-1-14	
1-1/4" Mipt Inlet x 1" Mipt Outlet	5807-16814		2-A1-7-1-16	
1-1/4" Mipt Inlet x 1" Mipt Outlet	5807-16816	G237-218	2-A1-7-1-18	
1-1/4" Mipt Inlet x 1-1/2" Mipt Outlet			2-A1-6-1-6	
1-1/4" Mipt Inlet x 1-1/2" Mipt Outlet		G233-208	2-A1-6-1-8	SJ-8-125-14
1-1/4" Mipt Inlet x 1-1/2" Mipt Outlet	5807-16908		2-A1-6-1-10	
1-1/4" Mipt Inlet x 1-1/2" Mipt Outlet	5807-16910	G233-212	2-A1-6-1-12	SJ-12-125-14
1-1/4" Mipt Inlet x 1-1/2" Mipt Outlet	5807-16912		2-A1-6-1-14	
1-1/4" Mipt Inlet x 1-1/2" Mipt Outlet	5807-16914		2-A1-6-1-16	
1-1/4" Mipt Inlet x 1-1/2" Mipt Outlet	5807-16916	G233-218	2-A1-6-1-18	SJ-18-125-14
1-1/2" Mipt Inlet x 1" Mipt Outlet			3-A1-8-1-6	
1-1/2" Mipt Inlet x 1" Mipt Outlet		G327-208	3-A1-8-1-8	
1-1/2" Mipt Inlet x 1" Mipt Outlet	5807-21108		3-A1-8-1-10	
1-1/2" Mipt Inlet x 1" Mipt Outlet	5807-21110	G327-212	3-A1-8-1-12	
1-1/2" Mipt Inlet x 1" Mipt Outlet	5807-21112		3-A1-8-1-14	
1-1/2" Mipt Inlet x 1" Mipt Outlet	5807-21114		3-A1-8-1-16	
1-1/2" Mipt Inlet x 1" Mipt Outlet	5807-21116	G327-218	3-A1-8-1-18	



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DESCRIPTION	SPEARS®	LASCO	DURA	RAIN BIRD
1-1/2" Mipt Inlet x 1-1/4" Mipt Outlet			3-A1-9-1-6	
1-1/2" Mipt Inlet x 1-1/4" Mipt Outlet		G324-208	3-A1-9-1-8	
1-1/2" Mipt Inlet x 1-1/4" Mipt Outlet	5807-21208		3-A1-9-1-10	
1-1/2" Mipt Inlet x 1-1/4" Mipt Outlet	5807-21210	G324-212	3-A1-9-1-12	
1-1/2" Mipt Inlet x 1-1/4" Mipt Outlet	5807-21212		3-A1-9-1-14	
1-1/2" Mipt Inlet x 1-1/4" Mipt Outlet	5807-21214		3-A1-9-1-16	
1-1/2" Mipt Inlet x 1-1/4" Mipt Outlet	5807-21216	G324-218	3-A1-9-1-18	
1" Ext Spig Inlet x Mipt Outlet			1-A8-3-1-6	
1" Ext Spig Inlet x Mipt Outlet		G172-208	1-A8-3-1-8	
1" Ext Spig Inlet x Mipt Outlet	5829-01008		1-A8-3-1-10	
1" Ext Spig Inlet x Mipt Outlet	5829-01010	G172-212	1-A8-3-1-12	
1" Ext Spig Inlet x Mipt Outlet	5829-01012		1-A8-3-1-14	
1" Ext Spig Inlet x Mipt Outlet	5829-01014		1-A8-3-1-16	
1" Ext Spig Inlet x Mipt Outlet	5829-01016	G172-218	1-A8-3-1-18	
1-1/4" Ext Spig Inlet x Mipt Outlet			2-A8-3-1-6	
1-1/4" Ext Spig Inlet x Mipt Outlet		G272-208	2-A8-3-1-8	
1-1/4" Ext Spig Inlet x Mipt Outlet	5829-01208		2-A8-3-1-10	
1-1/4" Ext Spig Inlet x Mipt Outlet	5829-01210	G272-212	2-A8-3-1-12	
1-1/4" Ext Spig Inlet x Mipt Outlet	5829-01212		2-A8-3-1-14	
1-1/4" Ext Spig Inlet x Mipt Outlet	5829-01214		2-A8-3-1-16	
1-1/4" Ext Spig Inlet x Mipt Outlet	5829-01216	G272-218	2-A8-3-1-18	
1-1/2" Ext Spig Inlet x Mipt Outlet			3-A8-3-1-6	
1-1/2" Ext Spig Inlet x Mipt Outlet		G372-208	3-A8-3-1-8	
1-1/2" Ext Spig Inlet x Mipt Outlet	5829-01508		3-A8-3-1-10	
1-1/2" Ext Spig Inlet x Mipt Outlet	5829-01510	G372-212	3-A8-3-1-12	
1-1/2" Ext Spig Inlet x Mipt Outlet	5829-01512		3-A8-3-1-14	
1-1/2" Ext Spig Inlet x Mipt Outlet	5829-01514		3-A8-3-1-16	
1-1/2" Ext Spig Inlet x Mipt Outlet	5829-01516	G372-218	3-A8-3-1-18	
1" Ext Spig Inlet x 1-1/4" Mipt Outlet			1-A8-4-1-6	
1" Ext Spig Inlet x 1-1/4" Mipt Outlet		G174-208	1-A8-4-1-8	
1" Ext Spig Inlet x 1-1/4" Mipt Outlet	5829-13208		1-A8-4-1-10	
1" Ext Spig Inlet x 1-1/4" Mipt Outlet	5829-13210	G174-212	1-A8-4-1-12	
1" Ext Spig Inlet x 1-1/4" Mipt Outlet	5829-13212		1-A8-4-1-14	
1" Ext Spig Inlet x 1-1/4" Mipt Outlet	5829-13214		1-A8-4-1-16	
1" Ext Spig Inlet x 1-1/4" Mipt Outlet	5829-13216	G174-218	1-A8-4-1-18	
1" Ext Spig Inlet x 1-1/2" Mipt Outlet			1-A8-5-1-6	
1" Ext Spig Inlet x 1-1/2" Mipt Outlet		G173-208	1-A8-5-1-8	
1" Ext Spig Inlet x 1-1/2" Mipt Outlet	5829-13308		1-A8-5-1-10	
1" Ext Spig Inlet x 1-1/2" Mipt Outlet	5829-13310	G173-212	1-A8-5-1-12	
1" Ext Spig Inlet x 1-1/2" Mipt Outlet	5829-13312		1-A8-5-1-14	
1" Ext Spig Inlet x 1-1/2" Mipt Outlet	5829-13314		1-A8-5-1-16	
1" Ext Spig Inlet x 1-1/2" Mipt Outlet	5829-13316	G173-218	1-A8-5-1-18	
1-1/4" Ext Spig Inlet x 1" Mipt Outlet			2-A8-7-1-6	
1-1/4" Ext Spig Inlet x 1" Mipt Outlet		G277-208	2-A8-7-1-8	
1-1/4" Ext Spig Inlet x 1" Mipt Outlet	5829-16808		2-A8-7-1-10	
1-1/4" Ext Spig Inlet x 1" Mipt Outlet	5829-16810	G277-212	2-A8-7-1-12	

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DESCRIPTION	SPEARS®	LASCO	DURA	RAIN BIRD
1-1/4" Ext Spig Inlet x 1" Mipt Outlet	5829-16812		2-A8-7-1-14	
1-1/4" Ext Spig Inlet x 1" Mipt Outlet	5829-16814		2-A8-7-1-16	
1-1/4" Ext Spig Inlet x 1" Mipt Outlet	5829-16816	G277-218	2-A8-3-1-18	
1-1/4" Ext Spig Inlet x 1-1/2" Mipt Outlet			2-A8-6-1-6	
1-1/4" Ext Spig Inlet x 1-1/2" Mipt Outlet		G273-208	2-A8-6-1-8	
1-1/4" Ext Spig Inlet x 1-1/2" Mipt Outlet	5829-16908		2-A8-6-1-10	
1-1/4" Ext Spig Inlet x 1-1/2" Mipt Outlet	5829-16910	G273-212	2-A8-6-1-12	
1-1/4" Ext Spig Inlet x 1-1/2" Mipt Outlet	5829-16912		2-A8-6-1-14	
1-1/4" Ext Spig Inlet x 1-1/2" Mipt Outlet	5829-16914		2-A8-6-1-16	
1-1/4" Ext Spig Inlet x 1-1/2" Mipt Outlet	5829-16916	G273-218	2-A8-6-1-18	
1-1/2" Ext Spig Inlet x 1" Mipt Outlet			3-A8-8-1-6	
1-1/2" Ext Spig Inlet x 1" Mipt Outlet		G377-208	3-A8-8-1-8	
1-1/2" Ext Spig Inlet x 1" Mipt Outlet	5829-21108		3-A8-8-1-10	
1-1/2" Ext Spig Inlet x 1" Mipt Outlet	5829-21110	G377-212	3-A8-8-1-12	
1-1/2" Ext Spig Inlet x 1" Mipt Outlet	5829-21112		3-A8-8-1-14	
1-1/2" Ext Spig Inlet x 1" Mipt Outlet	5829-21114		3-A8-8-1-16	
1-1/2" Ext Spig Inlet x 1" Mipt Outlet	5829-21116	G377-218	3-A8-8-1-18	
1-1/2" Ext Spig Inlet x 1-1/4" Mipt Outlet			3-A8-20-1-6	
1-1/2" Ext Spig Inlet x 1-1/4" Mipt Outlet		G374-208	3-A8-20-1-8	
1-1/2" Ext Spig Inlet x 1-1/4" Mipt Outlet	5829-21208		3-A8-20-1-10	
1-1/2" Ext Spig Inlet x 1-1/4" Mipt Outlet	5829-21210	G374-212	3-A8-20-1-12	
1-1/2" Ext Spig Inlet x 1-1/4" Mipt Outlet	5829-21212		3-A8-20-1-14	
1-1/2" Ext Spig Inlet x 1-1/4" Mipt Outlet	5829-21214		3-A8-20-1-16	
1-1/2" Ext Spig Inlet x 1-1/4" Mipt Outlet	5829-21216	G374-218	3-A8-20-1-18	
2" Tee Inlet x 1" Mipt Outlet			1-A1-3-5-6	
2" Tee Inlet x 1" Mipt Outlet			1-A1-3-5-8	SJ-8-100-G1
2" Tee Inlet x 1" Mipt Outlet	5808-24908		1-A1-3-5-10	
2" Tee Inlet x 1" Mipt Outlet	5808-24910		1-A1-3-5-12	SJ-12-100-G1
2" Tee Inlet x 1" Mipt Outlet	5808-24912		1-A1-3-5-14	
2" Tee Inlet x 1" Mipt Outlet	5808-24914		1-A1-3-5-16	
2" Tee Inlet x 1" Mipt Outlet	5808-24916		1-A1-3-5-18	SJ-18-100-G1
2" Tee Inlet x 1-1/4" Mipt Outlet			2-A2-3-5-6	
2" Tee Inlet x 1-1/4" Mipt Outlet			2-A2-3-5-8	SJ-8-125-G1
2" Tee Inlet x 1-1/4" Mipt Outlet	5808-25008		2-A2-3-5-10	
2" Tee Inlet x 1-1/4" Mipt Outlet	5808-25010		2-A2-3-5-12	SJ-12-125-G1
2" Tee Inlet x 1-1/4" Mipt Outlet	5808-25012		2-A2-3-5-14	
2" Tee Inlet x 1-1/4" Mipt Outlet	5808-25014		2-A2-3-5-16	
2" Tee Inlet x 1-1/4" Mipt Outlet	5808-25016		2-A2-3-5-18	SJ-18-125-G1
2" Tee Inlet x 1-1/2" Mipt Outlet			3-A3-3-5-6	
2" Tee Inlet x 1-1/2" Mipt Outlet			3-A3-3-5-8	SJ-8-150-G1
2" Tee Inlet x 1-1/2" Mipt Outlet	5808-25108		3-A3-3-5-10	
2" Tee Inlet x 1-1/2" Mipt Outlet	5808-25110		3-A3-3-5-12	SJ-12-150-G1
2" Tee Inlet x 1-1/2" Mipt Outlet	5808-25112		3-A3-3-5-14	
2" Tee Inlet x 1-1/2" Mipt Outlet	5808-25114		3-A3-3-5-16	
2" Tee Inlet x 1-1/2" Mipt Outlet	5808-25116		3-A3-3-5-18	SJ-18-150-G1



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DESCRIPTION	SPEARS®	LASCO	DURA	RAIN BIRD
1" Soc Inlet x MAT Outlet			1-A4-13-1-6	
1" Soc Inlet x MAT Outlet		G110-208	1-A4-13-1-8	SJ-8-100-63
1" Soc Inlet x MAT Outlet	5809-01008		1-A4-13-1-10	
1" Soc Inlet x MAT Outlet	5809-01010	G110-212	1-A4-13-1-12	SJ-12-100-63
1" Soc Inlet x MAT Outlet	5809-01012		1-A4-13-1-14	
1" Soc Inlet x MAT Outlet	5809-01014		1-A4-13-1-16	
1" Soc Inlet x MAT Outlet	5809-01016	G110-218	1-A4-13-1-18	SJ-18-100-63
1-1/4" Soc Inlet x MAT Outlet			2-A4-17-1-6	
1-1/4" Soc Inlet x MAT Outlet		G210-208	2-A4-17-1-8	SJ-8-125-63
1-1/4" Soc Inlet x MAT Outlet	5809-01208		2-A4-17-1-10	
1-1/4" Soc Inlet x MAT Outlet	5809-01210	G210-212	2-A4-17-1-12	SJ-12-125-63
1-1/4" Soc Inlet x MAT Outlet	5809-01212		2-A4-17-1-14	
1-1/4" Soc Inlet x MAT Outlet	5809-01214		2-A4-17-1-16	
1-1/4" Soc Inlet x MAT Outlet	5809-01216	G210-218	2-A4-17-1-18	SJ-18-125-63
1-1/2" Soc Inlet x MAT Outlet			3-A4-21-1-6	
1-1/2" Soc Inlet x MAT Outlet		G310-208	3-A4-21-1-8	SJ-8-150-63
1-1/2" Soc Inlet x MAT Outlet	5809-01508		3-A4-21-1-10	
1-1/2" Soc Inlet x MAT Outlet	5809-01510	G310-212	3-A4-21-1-12	SJ-12-150-63
1-1/2" Soc Inlet x MAT Outlet	5809-01512		3-A4-21-1-14	
1-1/2" Soc Inlet x MAT Outlet	5809-01514		3-A4-21-1-16	
1-1/2" Soc Inlet x MAT Outlet	5809-01516	G310-218	3-A4-21-1-18	SJ-18-150-63
1" Soc Inlet x 1-1/4" MAT Outlet			1-A4-14-1-6	
1" Soc Inlet x 1-1/4" MAT Outlet		G11A-208	1-A4-14-1-8	SJ-8-100-66
1" Soc Inlet x 1-1/4" MAT Outlet	5809-13208		1-A4-14-1-10	
1" Soc Inlet x 1-1/4" MAT Outlet	5809-13210	G11A-212	1-A4-14-1-12	SJ-12-100-66
1" Soc Inlet x 1-1/4" MAT Outlet	5809-13212		1-A4-14-1-14	
1" Soc Inlet x 1-1/4" MAT Outlet	5809-13214		1-A4-14-1-16	
1" Soc Inlet x 1-1/4" MAT Outlet	5809-13216	G11A-218	1-A4-14-1-18	SJ-18-100-66
1" Soc Inlet x 1-1/2" MAT Outlet			1-A4-15-1-6	
1" Soc Inlet x 1-1/2" MAT Outlet		G118-208	1-A4-15-1-8	
1" Soc Inlet x 1-1/2" MAT Outlet	5809-13308		1-A4-15-1-10	
1" Soc Inlet x 1-1/2" MAT Outlet	5809-13310	G118-212	1-A4-15-1-12	
1" Soc Inlet x 1-1/2" MAT Outlet	5809-13312		1-A4-15-1-14	
1" Soc Inlet x 1-1/2" MAT Outlet	5809-13314		1-A4-15-1-16	
1" Soc Inlet x 1-1/2" MAT Outlet	5809-13316	G118-218	1-A4-15-1-18	
1-1/4" Soc Inlet x 1" MAT Outlet			2-A4-16-1-6	
1-1/4" Soc Inlet x 1" MAT Outlet		G21C-208	2-A4-16-1-8	
1-1/4" Soc Inlet x 1" MAT Outlet	5809-16808		2-A4-16-1-10	
1-1/4" Soc Inlet x 1" MAT Outlet	5809-16810	G21C-212	2-A4-16-1-12	
1-1/4" Soc Inlet x 1" MAT Outlet	5809-16812		2-A4-16-1-14	
1-1/4" Soc Inlet x 1" MAT Outlet	5809-16814		2-A4-16-1-16	
1-1/4" Soc Inlet x 1" MAT Outlet	5809-16816	G21C-218	2-A4-16-1-18	
1-1/4" Soc Inlet x 1-1/2" MAT Outlet			2-A4-18-1-6	
1-1/4" Soc Inlet x 1-1/2" MAT Outlet		G218-208	2-A4-18-1-8	SJ-8-125-66
1-1/4" Soc Inlet x 1-1/2" MAT Outlet	5809-16908		2-A4-18-1-10	
1-1/4" Soc Inlet x 1-1/2" MAT Outlet	5809-16910	G218-212	2-A4-18-1-12	SJ-12-125-66

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DESCRIPTION	SPEARS®	LASCO	DURA	RAIN BIRD
1-1/4" Soc Inlet x 1-1/2" MAT Outlet	5809-16912		2-A4-18-1-14	
1-1/4" Soc Inlet x 1-1/2" MAT Outlet	5809-16914		2-A4-18-1-16	
1-1/4" Soc Inlet x 1-1/2" MAT Outlet	5809-16916	G218-218	2-A4-18-1-18	SJ-18-125-66
1-1/2" Soc Inlet x 1" MAT Outlet				
1-1/2" Soc Inlet x 1" MAT Outlet		G31C-208		
1-1/2" Soc Inlet x 1" MAT Outlet	5809-21108			
1-1/2" Soc Inlet x 1" MAT Outlet	5809-21110	G31C-212		
1-1/2" Soc Inlet x 1" MAT Outlet	5809-21112			
1-1/2" Soc Inlet x 1" MAT Outlet	5809-21114			
1-1/2" Soc Inlet x 1" MAT Outlet	5809-21116	G31C-218		
1-1/2" Soc Inlet x 1-1/4" MAT Outlet			3-A4-20-1-6	
1-1/2" Soc Inlet x 1-1/4" MAT Outlet		G31A-208	3-A4-20-1-8	
1-1/2" Soc Inlet x 1-1/4" MAT Outlet	5809-21208		3-A4-20-1-10	
1-1/2" Soc Inlet x 1-1/4" MAT Outlet	5809-21210	G31A-212	3-A4-20-1-12	
1-1/2" Soc Inlet x 1-1/4" MAT Outlet	5809-21212		3-A4-20-1-14	
1-1/2" Soc Inlet x 1-1/4" MAT Outlet	5809-21214		3-A4-20-1-16	
1-1/2" Soc Inlet x 1-1/4" MAT Outlet	5809-21216	G31A-218	3-A4-20-1-18	
1" Spig Inlet x MAT Outlet			1-A2-13-1-6	
1" Spig Inlet x MAT Outlet		G120-208	1-A2-13-1-8	SJ-8-100-43
1" Spig Inlet x MAT Outlet	5810-01008		1-A2-13-1-10	
1" Spig Inlet x MAT Outlet	5810-01010	G120-212	1-A2-13-1-12	SJ-12-100-43
1" Spig Inlet x MAT Outlet	5810-01012		1-A2-13-1-14	
1" Spig Inlet x MAT Outlet	5810-01014		1-A2-13-1-16	
1" Spig Inlet x MAT Outlet	5810-01016	G120-218	1-A2-13-1-18	SJ-18-100-43
1-1/4" Spig Inlet x MAT Outlet			2-A2-17-1-6	
1-1/4" Spig Inlet x MAT Outlet		G220-208	2-A2-17-1-8	SJ-8-125-43
1-1/4" Spig Inlet x MAT Outlet	5810-01208		2-A2-17-1-10	
1-1/4" Spig Inlet x MAT Outlet	5810-01210	G220-212	2-A2-17-1-12	SJ-12-125-43
1-1/4" Spig Inlet x MAT Outlet	5810-01212		2-A2-17-1-14	
1-1/4" Spig Inlet x MAT Outlet	5810-01214		2-A2-17-1-16	
1-1/4" Spig Inlet x MAT Outlet	5810-01216	G220-218	2-A2-17-1-18	SJ-18-125-43
1-1/2" Spig Inlet x MAT Outlet			3-A2-21-1-6	
1-1/2" Spig Inlet x MAT Outlet		G320-208	3-A2-21-1-8	SJ-8-150-43
1-1/2" Spig Inlet x MAT Outlet	5810-01508		3-A2-21-1-10	
1-1/2" Spig Inlet x MAT Outlet	5810-01510	G320-212	3-A2-21-1-12	SJ-12-150-43
1-1/2" Spig Inlet x MAT Outlet	5810-01512		3-A2-21-1-14	
1-1/2" Spig Inlet x MAT Outlet	5810-01514		3-A2-21-1-16	
1-1/2" Spig Inlet x MAT Outlet	5810-01516	G320-218	3-A2-21-1-18	SJ-18-150-43
1" Spig Inlet x 1-1/4" MAT Outlet			1-A2-14-1-6	
1" Spig Inlet x 1-1/4" MAT Outlet		G12A-208	1-A2-14-1-8	SJ-8-100-46
1" Spig Inlet x 1-1/4" MAT Outlet	5810-13208		1-A2-14-1-10	
1" Spig Inlet x 1-1/4" MAT Outlet	5810-13210	G12A-212	1-A2-14-1-12	SJ-12-100-46
1" Spig Inlet x 1-1/4" MAT Outlet	5810-13212		1-A2-14-1-14	
1" Spig Inlet x 1-1/4" MAT Outlet	5810-13214		1-A2-14-1-16	
1" Spig Inlet x 1-1/4" MAT Outlet	5810-13216	G12A-218	1-A2-14-1-18	SJ-18-100-46



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DESCRIPTION	SPEARS®	LASCO	DURA	RAIN BIRD
1" Spig Inlet x 1-1/2" MAT Outlet			1-A2-15-1-6	
1" Spig Inlet x 1-1/2" MAT Outlet		G128-208	1-A2-15-1-8	
1" Spig Inlet x 1-1/2" MAT Outlet	5810-13308		1-A2-15-1-10	
1" Spig Inlet x 1-1/2" MAT Outlet	5810-13310	G128-212	1-A2-15-1-12	
1" Spig Inlet x 1-1/2" MAT Outlet	5810-13312		1-A2-15-1-14	
1" Spig Inlet x 1-1/2" MAT Outlet	5810-13314		1-A2-15-1-16	
1" Spig Inlet x 1-1/2" MAT Outlet	5810-13316	G128-218	1-A2-15-1-18	
1-1/4" Spig Inlet x 1" MAT Outlet				
1-1/4" Spig Inlet x 1" MAT Outlet		G22C-208		
1-1/4" Spig Inlet x 1" MAT Outlet	5810-16808			
1-1/4" Spig Inlet x 1" MAT Outlet	5810-16810	G22C-212	2-A8-16-1-12	
1-1/4" Spig Inlet x 1" MAT Outlet	5810-16812			
1-1/4" Spig Inlet x 1" MAT Outlet	5810-16814			
1-1/4" Spig Inlet x 1" MAT Outlet	5810-16816	G22C-218		
1-1/4" Spig Inlet x 1-1/2" MAT Outlet			2-A2-18-1-6	
1-1/4" Spig Inlet x 1-1/2" MAT Outlet		G228-208	2-A2-18-1-8	SJ-8-125-46
1-1/4" Spig Inlet x 1-1/2" MAT Outlet	5810-16908		2-A2-18-1-10	
1-1/4" Spig Inlet x 1-1/2" MAT Outlet	5810-16910	G228-212	2-A2-18-1-12	SJ-12-125-46
1-1/4" Spig Inlet x 1-1/2" MAT Outlet	5810-16912		2-A2-18-1-14	
1-1/4" Spig Inlet x 1-1/2" MAT Outlet	5810-16914		2-A2-18-1-16	
1-1/4" Spig Inlet x 1-1/2" MAT Outlet	5810-16916	G228-218	2-A2-18-1-18	SJ-18-125-46
1-1/2" Spig Inlet x 1" MAT Outlet				
1-1/2" Spig Inlet x 1" MAT Outlet		G32C-208		
1-1/2" Spig Inlet x 1" MAT Outlet	5810-21108			
1-1/2" Spig Inlet x 1" MAT Outlet	5810-21110	G32C-212		
1-1/2" Spig Inlet x 1" MAT Outlet	5810-21112			
1-1/2" Spig Inlet x 1" MAT Outlet	5810-21114			
1-1/2" Spig Inlet x 1" MAT Outlet	5810-21116	G32C-218		
1-1/2" Spig Inlet x 1-1/4" MAT Outlet			3-A2-20-1-6	
1-1/2" Spig Inlet x 1-1/4" MAT Outlet		G32A-208	3-A2-20-1-8	
1-1/2" Spig Inlet x 1-1/4" MAT Outlet	5810-21208		3-A2-20-1-10	
1-1/2" Spig Inlet x 1-1/4" MAT Outlet	5810-21210	G32A-212	3-A2-20-1-12	
1-1/2" Spig Inlet x 1-1/4" MAT Outlet	5810-21212		3-A2-20-1-14	
1-1/2" Spig Inlet x 1-1/4" MAT Outlet	5810-21214		3-A2-20-1-16	
1-1/2" Spig Inlet x 1-1/4" MAT Outlet	5810-21216	G32A-218	3-A2-20-1-18	
1" Mipt Inlet x MAT Outlet			1-A1-13-1-6	
1" Mipt Inlet x MAT Outlet		G130-208	1-A1-13-1-8	SJ-8-100-13
1" Mipt Inlet x MAT Outlet	5811-01008		1-A1-13-1-10	
1" Mipt Inlet x MAT Outlet	5811-01010	G130-212	1-A1-13-1-12	SJ-12-100-13
1" Mipt Inlet x MAT Outlet	5811-01012		1-A1-13-1-14	
1" Mipt Inlet x MAT Outlet	5811-01014		1-A1-13-1-16	
1" Mipt Inlet x MAT Outlet	5811-01016	G130-218	1-A1-13-1-18	SJ-18-100-13
1-1/4" Mipt Inlet x MAT Outlet			2-A1-17-1-6	
1-1/4" Mipt Inlet x MAT Outlet		G230-208	2-A1-17-1-8	SJ-8-125-13
1-1/4" Mipt Inlet x MAT Outlet	5811-01208		2-A1-17-1-10	
1-1/4" Mipt Inlet x MAT Outlet	5811-01210	G230-212	2-A1-17-1-12	SJ-12-125-13

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DESCRIPTION	SPEARS®	LASCO	DURA	RAIN BIRD
1-1/4" Mipt Inlet x MAT Outlet	5811-01212		2-A1-17-1-14	
1-1/4" Mipt Inlet x MAT Outlet	5811-01214		2-A1-17-1-16	
1-1/4" Mipt Inlet x MAT Outlet	5811-01216	G230-218	2-A1-17-1-18	SJ-18-125-13
1-1/2" Mipt Inlet x MAT Outlet			3-A1-21-1-6	
1-1/2" Mipt Inlet x MAT Outlet		G330-208	3-A1-21-1-8	SJ-8-150-13
1-1/2" Mipt Inlet x MAT Outlet	5811-01508		3-A1-21-1-10	
1-1/2" Mipt Inlet x MAT Outlet	5811-01510	G330-212	3-A1-21-1-12	SJ-12-150-13
1-1/2" Mipt Inlet x MAT Outlet	5811-01512		3-A1-21-1-14	
1-1/2" Mipt Inlet x MAT Outlet	5811-01514		3-A1-21-1-16	
1-1/2" Mipt Inlet x MAT Outlet	5811-01516	G330-218	3-A1-21-1-18	SJ-18-150-13
1" Mipt Inlet x 1-1/4" MAT Outlet			1-A1-14-1-6	
1" Mipt Inlet x 1-1/4" MAT Outlet		G13A-208	1-A1-14-1-8	SJ-8-100-16
1" Mipt Inlet x 1-1/4" MAT Outlet	5811-13208		1-A1-14-1-10	
1" Mipt Inlet x 1-1/4" MAT Outlet	5811-13210	G13A-212	1-A1-14-1-12	SJ-12-100-16
1" Mipt Inlet x 1-1/4" MAT Outlet	5811-13212		1-A1-14-1-14	
1" Mipt Inlet x 1-1/4" MAT Outlet	5811-13214		1-A1-14-1-16	
1" Mipt Inlet x 1-1/4" MAT Outlet	5811-13216	G13A-218	1-A1-14-1-18	SJ-18-100-16
1" Mipt Inlet x 1-1/2" MAT Outlet			1-A1-15-1-6	
1" Mipt Inlet x 1-1/2" MAT Outlet		G138-208	1-A1-15-1-8	
1" Mipt Inlet x 1-1/2" MAT Outlet	5811-13308		1-A1-15-1-10	
1" Mipt Inlet x 1-1/2" MAT Outlet	5811-13310	G138-212	1-A1-15-1-12	
1" Mipt Inlet x 1-1/2" MAT Outlet	5811-13312		1-A1-15-1-14	
1" Mipt Inlet x 1-1/2" MAT Outlet	5811-13314		1-A1-15-1-16	
1" Mipt Inlet x 1-1/2" MAT Outlet	5811-13316	G138-218	1-A1-15-1-18	
1-1/4" Mipt Inlet x 1" MAT Outlet			1-A1-16-1-6	
1-1/4" Mipt Inlet x 1" MAT Outlet		G23C-208	1-A1-16-1-8	
1-1/4" Mipt Inlet x 1" MAT Outlet	5811-16808		1-A1-16-1-10	
1-1/4" Mipt Inlet x 1" MAT Outlet	5811-16810	G23C-212	1-A1-16-1-12	
1-1/4" Mipt Inlet x 1" MAT Outlet	5811-16812		1-A1-16-1-14	
1-1/4" Mipt Inlet x 1" MAT Outlet	5811-16814		1-A1-16-1-16	
1-1/4" Mipt Inlet x 1" MAT Outlet	5811-16816	G23C-218	1-A1-16-1-18	
1-1/4" Mipt Inlet x 1-1/2" MAT Outlet			2-A1-18-1-6	
1-1/4" Mipt Inlet x 1-1/2" MAT Outlet		G238-208	2-A1-18-1-8	SJ-8-125-16
1-1/4" Mipt Inlet x 1-1/2" MAT Outlet	5811-16908		2-A1-18-1-10	
1-1/4" Mipt Inlet x 1-1/2" MAT Outlet	5811-16910	G238-212	2-A1-18-1-12	SJ-12-125-16
1-1/4" Mipt Inlet x 1-1/2" MAT Outlet	5811-16912		2-A1-18-1-14	
1-1/4" Mipt Inlet x 1-1/2" MAT Outlet	5811-16914		2-A1-18-1-16	
1-1/4" Mipt Inlet x 1-1/2" MAT Outlet	5811-16916	G238-218	2-A1-18-1-18	SJ-18-125-16
1-1/2" Mipt Inlet x 1" MAT Outlet				
1-1/2" Mipt Inlet x 1" MAT Outlet		G33C-208		
1-1/2" Mipt Inlet x 1" MAT Outlet	5811-21108		3-A1-19-1-12	
1-1/2" Mipt Inlet x 1" MAT Outlet	5811-21110	G33C-212		
1-1/2" Mipt Inlet x 1" MAT Outlet	5811-21112		3-A1-19-1-14	
1-1/2" Mipt Inlet x 1" MAT Outlet	5811-21114			
1-1/2" Mipt Inlet x 1" MAT Outlet	5811-21116	G33C-218		



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DESCRIPTION	SPEARS®	LASCO	DURA	RAIN BIRD
1-1/2" Mipt Inlet x 1-1/4" MAT Outlet			3-A1-20-1-6	
1-1/2" Mipt Inlet x 1-1/4" MAT Outlet		G338-208	3-A1-20-1-8	
1-1/2" Mipt Inlet x 1-1/4" MAT Outlet	5811-21208		3-A1-20-1-10	
1-1/2" Mipt Inlet x 1-1/4" MAT Outlet	5811-21210	G338-212	3-A1-20-1-12	
1-1/2" Mipt Inlet x 1-1/4" MAT Outlet	5811-21212		3-A1-20-1-14	
1-1/2" Mipt Inlet x 1-1/4" MAT Outlet	5811-21214		3-A1-20-1-16	
1-1/2" Mipt Inlet x 1-1/4" MAT Outlet	5811-21216	G338-218	3-A1-20-1-18	
1" Soc Inlet x Metal Fipt Outlet			1-A4-1-11-6	
1" Soc Inlet x Metal Fipt Outlet		G11S-208/td>	1-A4-1-11-8	
1" Soc Inlet x Metal Fipt Outlet	5813-01008		1-A4-1-11-10	
1" Soc Inlet x Metal Fipt Outlet	5813-01010	G11S-212	1-A4-1-11-12	
1" Soc Inlet x Metal Fipt Outlet	5813-01012		1-A4-1-11-14	
1" Soc Inlet x Metal Fipt Outlet	5813-01014		1-A4-1-11-16	
1" Soc Inlet x Metal Fipt Outlet	5813-01016	G11S-218	1-A4-1-11-18	
1" Spig Inlet x Metal Fipt Outlet			1-A2-1-11-6	
1" Spig Inlet x Metal Fipt Outlet			1-A2-1-11-8	
1" Spig Inlet x Metal Fipt Outlet	5814-01008		1-A2-1-11-10	
1" Spig Inlet x Metal Fipt Outlet	5814-01010		1-A2-1-11-12	
1" Spig Inlet x Metal Fipt Outlet	5814-01012		1-A2-1-11-14	
1" Spig Inlet x Metal Fipt Outlet	5814-01014		1-A2-1-11-16	
1" Spig Inlet x Metal Fipt Outlet	5814-01016		1-A2-1-11-18	
1" Mipt Inlet x Metal Fipt Outlet			1-A1-1-11-6	
1" Mipt Inlet x Metal Fipt Outlet			1-A1-1-11-8	
1" Mipt Inlet x Metal Fipt Outlet	5815-01008		1-A1-1-11-10	
1" Mipt Inlet x Metal Fipt Outlet	5815-01010		1-A1-1-11-12	
1" Mipt Inlet x Metal Fipt Outlet	5815-01012		1-A1-1-11-14	
1" Mipt Inlet x Metal Fipt Outlet	5815-01014		1-A1-1-11-16	
1" Mipt Inlet x Metal Fipt Outlet	5815-01016		1-A1-1-11-18	
1" Matt Inlet x Mat Outlet	5822-01008			
1" Matt Inlet x Mat Outlet	5822-01010			
1" Matt Inlet x Mat Outlet	5822-01012		1-13-13-1-12	
1" Matt Inlet x Mat Outlet	5822-01016			
1" Matt Inlet x Mat Outlet	5822-01018		1-13-13-1-18	
1" Matt Inlet x Mat Outlet	5822-01024			

• Spears® also carries Metal reinforced outlet elbows in 1-1/4" and 1-1/2", as well as Steel Reinforced outlet elbows in 1", 1-1/4" and 1-1/2".

* Lasco Brass Threaded Outlet Elbows are molded with "Stabilizer" retaining lugs.

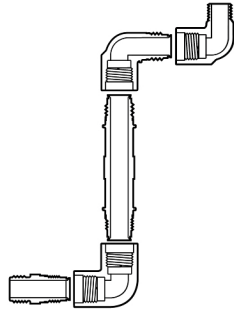
"Lay Length" measurements are determined from the same points of the assemblies. Lasco, Rain Bird and Dura "Lay Length" is measured from the points determined as the Spears® "Centerline to Centerline." Due to differences in product engineering, it is difficult to arrive at an 'exact' equivalent. This cross-reference represents the most commonly accepted 'equals'.

Triple Top-Out (Lasco, Rain Bird), Ultra (Dura), or Multi-Ell (Spears®) Swing Joint Riser Assemblies are available. It should be noted that the Spears® Buttress style thread nipple provides an extra plane of rotation that is not available in the standard Lasco Unitized, Dura 'Unibody', or Rain Bird type of swing joint.

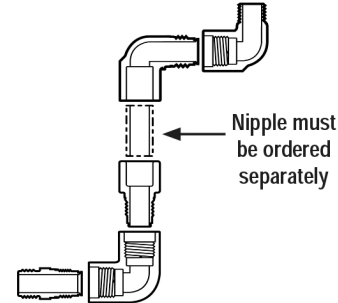
Spears® Manufacturing Company believes this information to be accurate at the time of printing. Verification of the above information is recommended.

INSTALLATION INFORMATION

5800 Series MALE BUTTRESS THREAD RISER NIPPLE STYLE

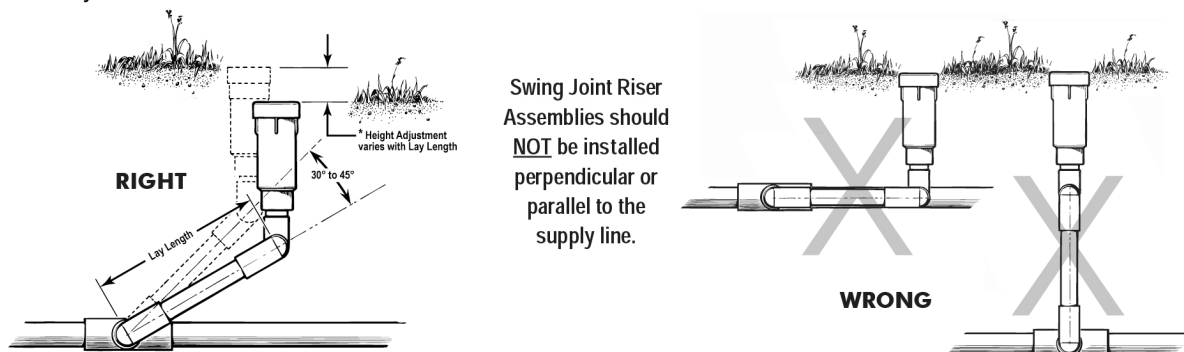


5900 Series SOLVENT CEMENT RISER NIPPLE STYLE



RECOMMENDATIONS FOR INSTALLERS AND USERS:

Plastic piping systems should be **ENGINEERED, INSTALLED, and OPERATED** in accordance with **ESTABLISHED DESIGN AND ENGINEERING STANDARDS AND PROCEDURES**. Suitability for the intended service application should be determined by the installer and/or user prior to installation. **PRIOR TO ASSEMBLY**, all piping 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.



Swing Joint Riser Assemblies should **NOT** be installed perpendicular or parallel to the supply line.

- I. **The 5800 and 5900 Style Swing Joint Riser Assemblies** are pre-assembled from the factory with O-ring threaded joints. **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 thread joint completely, 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 Swing Joint Riser 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:**
 When making up the threaded connection to the service line, or the sprinkler head, Spears® Manufacturing Company recommends the use of 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® **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. 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.



Irrigation & Turf Technical
EverTUFF® TURF™ Swing Joint Installation

V. **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 buttress threads. Since Spears® Schedule 80 "Plus" Swing Joint Riser components have interference fit sockets, a Medium Bodied Cement may be used.

• CAUTION •

- **WATER HAMMER** - Spears® Manufacturing Company recommends that all PVC and CPVC plastic piping systems be designed and constructed to **AVOID EXCESSIVE WATER HAMMER**. Water hammer can cause damage and failure to pipe, valves, and fittings within the piping system.
- Spears® Manufacturing Company **DOES NOT RECOMMEND** the use of thermoplastic piping products for systems to transport or store compressed air or gases, or the testing of thermoplastic piping systems with compressed air or gases in above and below ground locations. The use of Spears® products in exposed, compressed air or gas systems automatically voids Spears® warranty for such products, and their use against our recommendation is entirely the responsibility and liability of the installer.
- Spears® Manufacturing Company **WILL NOT ACCEPT RESPONSIBILITY** for damage or impairment of its products, or other consequential or incidental damages caused by misapplication, incorrect assembly, and/or exposure to harmful substances or conditions.
- **SYSTEM DAMAGE AND SERIOUS OR FATAL BODILY INJURIES MAY RESULT FROM IMPROPER DESIGN, INSTALLATION, OPERATION AND USE OF COMPRESSED AIR OR GAS FOR TESTING PURPOSES.**
- **BEFORE APPLYING PRIMER AND CEMENT**, appropriate safety precautions should be taken. **Read and follow all Spears® solvent cement and primer application/installation instructions and safety precautions thoroughly.** Primer and Cement should be stored in the shade between 40°F and 110°F. Solvent cement and primer are flammable. Eliminate all ignition sources. Avoid breathing of vapors. Use only with adequate ventilation; explosion-proof general mechanical ventilation or local exhaust is recommended to maintain vapor concentrations below recommended exposure limits. In confined or partially enclosed areas, a NIOSH-approved organic vapor cartridge respirator with full-face piece is recommended. Containers should be kept tightly closed when not in use, and covered as much as possible when in use. Avoid frequent contact with skin; wearing PVA coated protective gloves and impervious apron are recommended. Avoid any contact with eyes; splash-proof chemical goggles are recommended.

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 variations. No representations, guarantees or warranties of any kind are made as to its accuracy, suitability for particular application or results to be obtained therefrom. For information not contained herein, please contact Spears® Technical Services Department - West Coast: (818)364-1611 - East Coast: (717) 938-9006.