



Schedule 80 PVC Technical Schedule 80 Tank Adapters

Tank Adapters (Bulkhead Fittings)

Designed to facilitate connections through tank or bulkhead walls. Available in PVC or CPVC with socket x socket, socket x thread or SR thread, thread x thread or thread x SR thread, and spigot end connections. Plus, special Self-Aligning style.

New Style Tank Adapters are designed with Spears® patented Special Reinforced (SR) Female Plastic threads for improved adapter connection strength, even when transitioned to metal pipe (Patent No. 5,582,439). In addition, these Tank Adapters in sizes through 4" are designed for use with Nut & Body Spanner Wrench Sets (purchased separately) on the outside connection to aid both installation and in make-up of external threaded connections. Pressure rated to 150 psi @ 73°F (23°C).

Easy Assembly to Tank:

1. Locate and cut designated hole size in tank (see Minimum Hole Size in appropriate chart below).
2. Remove the nut and insert Tank Adapter through hole from inside; leave gasket in place. **Note: Body and Gasket must be installed on the inside of the tank. (except spigot style in which gasket goes on outside of tank).**
3. Tighten Nut clockwise while holding body from inside tank or on outside with use of spanner wrench.

NOTE: A sound, leak-tight seal can be made on curved surfaces providing the curve on the surface will allow for full and equal 360° pressure contact of the sealing gasket against the tank wall surface. (Refer to Minimum Tank Radius below).

Tank Adapters, PVC New Style Standard with Neoprene Gaskets

Socket x Socket
150 psi Maximum Internal Pressure Rating @ 73°
F (23°C)

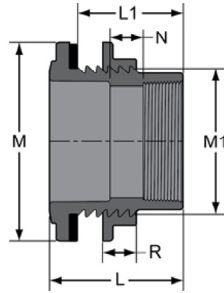
Dimensions Also Applicable to
8170E-XXX & 8170V-XXX

Part Number	Size	L	L1	M	M1	N	R	Min Hole Size	Approx. Wt. (Lbs.)
8170-002	1/4	2- 1/2	1-13/16	1- 1/2	1- 1/16	1- 3/16	1/2	1-1/16	.11
8170-003	3/8	2- 1/2	1-27/32	1- 5/8	31/32	7/8	1/2	1-3/16	.11
8170-005	1/2	2-15/16	2- 3/16	2- 1/16	1-15/32	1- 1/8	5/8	1-1/2	.20
8170-007	3/4	2-15/16	2- 3/16	2- 1/4	1- 5/8	15/16	5/8	1-3/4	.23
8170-010	1	3- 5/16	2- 9/16	2- 5/8	2	1- 1/16	5/8	2	.36
8170-012	1-1/4	3- 7/16	2- 5/8	3- 1/8	2- 5/16	15/16	5/8	2-3/8	.45
8170-015	1-1/2	3- 5/8	2-13/16	3- 5/8	2-11/16	13/16	5/8	2-3/4	.64
8170-020	2	4- 1/8	3- 1/4	4- 7/8	3- 1/4	1- 1/16	3/4	3-3/8	1.22
8170-025	2-1/2	4-27/32	3- 7/8	5- 1/4	3- 9/16	29/32	1	3-7/8	2.13
8170-030	3	5- 1/2	4- 1/2	6	4- 9/16	1-11/16	1	4-5/8	2.50
8170-040	4	5	4	7- 1/2	5- 1/2	7/16	1- 1/4	5-1/2	3.12
8170-060	6	5	4	10-3/32	8	1/8	1-1/4	8	5.59
8170-080	8	8- 5/8	7	12-15/16	10- 1/4	1/2	1- 1/2	10-3/8	16.24

Schedule 80 PVC Technical
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**Tank Adapters, PVC New Style
 Standard with Neoprene
 Gaskets**

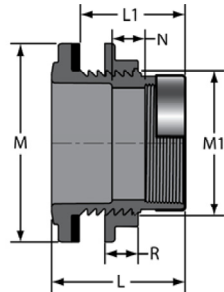


Socket x Fipt
 150 psi Maximum Internal Pressure Rating @ 73°
 F (23°C)

Dimensions Also Applicable to
 8171E-XXX & 8171V-XXX

Part Number	Size	L	L1	M	M1	N	R	Min Hole Size	Approx. Wt. (Lbs.)
8171-002	1/4	2- 1/2	1-13/16	1- 1/2	1- 1/16	1- 1/4	1/2	1-1/16	.11
8171-003	3/8	2- 1/2	1-13/16	1- 5/8	1- 3/16	1- 3/16	1/2	1-3/16	.11
8171-005	1/2	2-15/16	2- 3/16	2- 1/16	1-15/32	1- 1/4	5/8	1-1/2	.21
8171-007	3/4	2-15/16	2-15/32	2- 1/4	1- 5/8	1- 3/16	5/8	1-3/4	.24
8171-010	1	3- 5/16	2-13/16	2- 5/8	1-31/32	1- 1/4	5/8	2	.36
8171-012	1-1/4	3-13/32	2-27/32	3- 3/32	2- 5/16	1-17/32	5/8	2-3/8	.48
8171-015	1-1/2	3- 5/8	2-13/16	3- 5/8	2-11/16	1- 1/4	5/8	2-3/4	.68
8171-020	2	4- 1/8	3- 1/4	4- 7/8	3- 1/4	1- 5/8	3/4	3-3/8	1.26
8171-025	2-1/2	4- 7/8	7/8	5- 1/4	3-13/16	1-13/16	1	3-7/8	2.22
8171-030	3	5- 1/2	4- 1/2	6	4- 9/16	2- 3/16	1	4-5/8	2.64
8171-040	4	5	4	7- 1/2	5- 1/2	1- 1/4	1- 1/4	5-1/2	3.24
8171-060	6	4-31/32	4- 1/16	10- 1/16	7-11/16	1/16	1- 1/4	8	5.59

**Tank Adapters, PVC New Style
 Special Reinforced (SR)
 Threaded with Neoprene
 Gaskets**



Socket x SR Fipt - Stainless Steel Collar
 150 psi Maximum Internal Pressure Rating @ 73°
 F (23°C)

Dimensions Also Applicable to
 8171E-XXXSR & 8171V-XXXSR

Part Number	Size	L	L1	M	M1	N	R	Min Hole Size	Approx. Wt. (Lbs.)
8171-002SR	1/4	2- 1/2	1-13/16	1- 1/2	1- 1/16	1- 1/4	1/2	1-1/16	.11
8171-003SR	3/8	2- 1/2	1-13/16	1- 5/8	1- 3/16	1- 3/16	1/2	1-3/16	.12
8171-005SR	1/2	2-15/16	2- 1/4	2- 1/16	1-15/32	1- 9/32	5/8	1-1/2	.22
8171-007SR	3/4	2-15/16	2- 3/16	2- 1/4	1- 5/8	1- 1/4	5/8	1-3/4	.25
8171-010SR	1	3- 5/16	2-13/16	2- 5/8	1-31/32	1- 1/4	5/8	2	.38
8171-012SR	1-1/4	3-13/32	2- 5/8	3- 3/32	2- 5/16	1-17/32	5/8	2-3/8	.51
8171-015SR	1-1/2	3- 5/8	2-13/16	3- 5/8	2-11/16	1- 1/4	5/8	2-3/4	.69
8171-020SR	2	4- 1/8	3- 1/4	4- 7/8	3- 1/4	1- 5/8	3/4	3-3/8	1.31
8171-025SR	2-1/2	4- 7/8	3- 7/8	5- 1/4	3-13/16	1-11/16	1	3-7/8	2.26
8171-030SR	3	5- 1/2	4- 1/2	6	4- 9/16	2- 3/16	1	4-5/8	2.70
8171-040SR	4	5	4	7- 1/2	5- 1/2	1- 1/4	1- 1/4	5-1/2	3.36
8171-060SR	6	4-31/32	4- 1/16	10- 1/16	7-11/16	1/16	1- 1/4	8	9.11

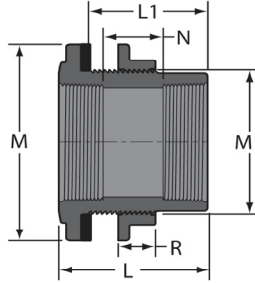


Schedule 80 PVC Technical
Schedule 80 Tank Adapters

**Tank Adapters, PVC New Style
Standard with Neoprene
Gaskets**

Fipt x Fipt
150 psi Maximum Internal Pressure Rating @ 73°
F (23°C)

Dimensions Also Applicable to
8172E-XXX & 8172V-XXX

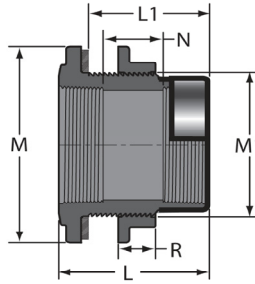


Part Number	Size	L	L1	M	M1	N	R	Min Hole Size	Approx. Wt. (Lbs.)
8172-002	1/4	2- 1/2	1-13/16	1- 1/2	1- 1/16	1- 5/16	1/2	1-1/16	.11
8172-003	3/8	2- 1/2	1-13/16	1- 5/8	1- 3/16	1- 3/8	1/2	1-3/16	.13
8172-005	1/2	2-15/16	2- 3/16	2- 1/16	1-15/32	1-13/32	5/8	1-1/2	.22
8172-007	3/4	2-15/16	2-15/32	2- 1/4	1- 5/8	1- 1/2	5/8	1-3/4	.25
8172-010	1	3- 5/16	2-13/16	2- 5/8	1-31/32	1- 1/4	5/8	2	.37
8172-012	1-1/4	3-13/32	2-27/32	3- 3/32	2- 5/16	1-17/32	5/8	2-3/8	.50
8172-015	1-1/2	3-19/32	3- 1/16	3-19/32	2-21/32	1-11/16	5/8	2-3/4	.69
8172-020	2	4- 1/8	3- 1/4	4- 7/8	3- 1/4	2- 3/16	3/4	3-3/8	1.30
8172-025	2-1/2	4- 7/8	3- 7/8	5- 1/4	3-13/16	2- 1/4	1	3-7/8	2.27
8172-030	3	5- 1/2	4- 1/2	6	4- 9/16	2-11/16	1	4-5/8	2.77
8172-040	4	5	4	7- 1/2	5- 1/2	2	1- 1/4	5-1/2	3.53
8172-060	6	5	4- 3/16	9- 7/8	7-31/32	1- 5/32	1- 1/4	8	5.94

**Tank Adapters, PVC New Style
Special Reinforced (SR)
Threaded with Neoprene
Gaskets**

Fipt x SR Fipt - Stainless Steel Collar
150 psi Maximum Internal Pressure Rating @ 73°
F (23°C)

Dimensions Also Applicable to
8172E-XXXSR & 8172V-XXXSR



Part Number	Size	L	L1	M	M1	N	R	Min Hole Size	Approx. Wt. (Lbs.)
8172-002SR	1/4	2- 1/2	1- 7/8	1- 9/16	1- 1/16	1- 5/16	1/2	1-1/16	.12
8172-003SR	3/8	2- 1/2	1-13/16	1- 5/8	1- 3/16	1- 3/8	1/2	1-3/16	.12
8172-005SR	1/2	2-15/16	2- 3/16	2- 1/16	1-15/32	1-13/32	5/8	1-1/2	.22
8172-007SR	3/4	2-15/16	2-15/32	2- 1/4	1- 5/8	1- 3/16	5/8	1-3/4	.26
8172-010SR	1	3-15/16	2-19/32	2- 5/8	1-31/32	1- 1/4	5/8	2	.39
8172-012SR	1-1/4	3-13/32	2-27/32	3- 3/32	2- 5/16	1-17/32	5/8	2-3/8	.52
8172-015SR	1-1/2	3- 5/8	2-13/16	3- 5/8	2-11/16	1- 3/4	5/8	2-3/4	.72
8172-020SR	2	4- 1/8	3- 1/4	4-27/32	3- 1/32	2- 1/8	3/4	3-3/8	1.33
8172-025SR	2-1/2	4- 7/8	3- 7/8	5- 1/4	3-13/16	2- 1/4	1	3-7/8	2.38
8172-030SR	3	5-15/32	4-17/32	5-31/32	4-17/32	2-21/32	1	4-5/8	2.84
8172-040SR	4	5	4	7- 1/2	5- 1/2	2	1- 1/4	5-1/2	3.60
8172-060SR	6	5	4-3/16	9-7/8	7-31/32	1-5/32	1-1/4	8	9.46

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TANK ADAPTER GASKET SECTION	SIZE	O.D.*	I.D.*	T
	1/4	1.49	0.99	1/4
	3/8	1.62	1.12	1/4
	1/2	1.98	1.41	1/4
	3/4	2.20	1.57	1/4
	1	2.60	1.90	1/4
	1-1/4	3.04	2.23	1/4
	1-1/2	3.54	2.57	1/4
	2	4.763	3.15	1/4
	2-1/2	5.13	3.70	1/4
	3	5.86	4.39	1/4
	4	7.34	5.31	1/4
	6	9.85	7.95	3/16
	8	12.70	9.94	3-8

New Style Tank Adapter Gasket & Hole Size Requirements			
Tank Adapter Size	Recommended Minimum Hole Size	Minimum Inside Curvature Radius (inches)	Maximum Tank Wall Thickness (inches)
1/4	1-1/16	2.50	.50
3/8	1-3/16	3.00	.50
1/2	1-1/2	4.00	.75
3/4	1-3/4	5.00	.75
1	2	7.00	.86
1-1/4	2-3/8	9.50	.86
1-1/2	2-3/4	12.00	.86
2	3-3/8	18.50	1.19
2-1/2	3-7/8	23.50	1.50
3	4-5/8	32.50	2.00
4	5-1/2	43.50	1.25
6	8	79.50	2.06
8	10-3/8	98.00	4.25

* Both outside and inside dimensions are +/- .01 to .03 shore hardness 50-60

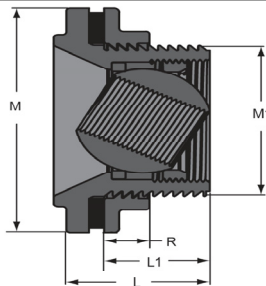
**New Style Tank Adapters
 Optional Wrench Sets
 (Nut & Body Wrench)**

Part No.	TA Size	Part No.	TA Size
TAW-002	1/4	TAW-012	1-1/4
TAW-003	3-8	TAW-015	1-1/2
TAW-005	1/2	TAW-020	2
TAW-007	3/4	TAW-030	3
TAW-010	1	TAW-040	4

**Tank Adapter, PVC Self
 Aligning with Neoprene Gasket**

Fipt
 75 psi Maximum Internal Pressure Rating @ 73°F
 (23°C)

Dimensions Also Applicable to
 8172ESA-XXX & 8172VSA-XXX



Part Number	Size	L	L1	M	M1	R	Approx. Wt. (Lbs.)
8172SA-010	1	2- 9/16	1- 3/4	4- 7/8	3- 1/4	3/4	1.64
8172SA-020	2	2-11/16	1- 3/4	6	4- 9/16	1	1.71
8172SA-030	3	3- 1/4	2- 1/4	7- 1/2	5- 1/2	1- 1/4	3.07

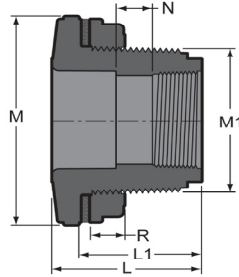


Schedule 80 PVC Technical
Schedule 80 Tank Adapters

Tank Adapter, PVC Old Style with Neoprene Gasket

Socket x Fipt
 150 psi Maximum Internal Pressure Rating @ 73° F (23°C)

Dimensions Also Applicable to 871E-XXX EPDM Gasket

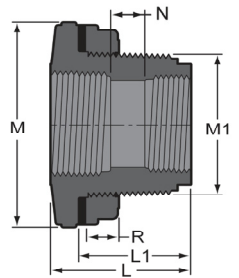


Part Number	Size	L	L1	M	M1	N	R	Approx. Wt. (Lbs.)
871-005	1/2	2-27/32	2-11/32	2- 9/32	1- 9/32	1- 3/8	5/8	.24
871-007	3/4	2-23/32	2- 7/32	2- 1/2	1- 5/8	29/32	5/8	.29
871-010	1	2-25/32	2- 1/8	2-13/16	1- 7/8	25/32	21/32	.33
871-012	1-1/4	3- 1/8	2- 7/16	3-29/32	2-11/32	27/32	5/8	.65
871-015	1-1/2	3- 5/32	2-21/32	3-29/32	2-11/32	3/4	5/8	.54
871-020	2	3- 3/16	2-17/32	4-31/32	3-15/32	13/16	3/4	1.33
871-030	3	4-19/32	3-13/16	6- 7/16	4-15/32	31/32	1- 3/16	2.46
871-040	4	4- 7/16	3-23/32	7- 7/16	5- 1/2	1/2	1- 1/4	3.16

Tank Adapter, PVC Old Style with Neoprene Gasket

Fipt x Fipt
 150 psi Maximum Internal Pressure Rating @ 73° F (23°C)

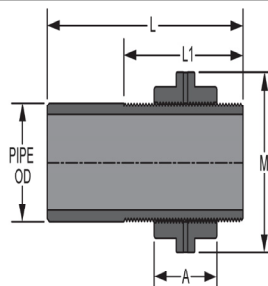
Dimensions Also Applicable to 872E-XXX EPDM Gasket



Part Number	Size	L	L1	M	M1	N	R	Approx. Wt. (Lbs.)
872-005	1/2	2-27/32	2-11/32	2- 9/32	1- 9/32	1-13/32	5/8	.24
872-007	3/4	2-23/32	2- 1/4	2- 1/2	1- 5/8	1- 5/32	5/8	.30
872-010	1	2-25/32	2- 5/16	2-13/16	1- 7/8	25/32	5/8	.34
872-012	1-1/4	3- 1/8	2- 5/8	3-27/32	2-11/32	1- 1/8	5/8	.66
872-015	1-1/2	3- 1/8	2- 5/8	3-29/32	2-11/32	1- 1/16	5/8	.57
872-020	2	3- 5/32	2- 3/8	5- 1/16	3- 7/16	1- 5/32	3/4	1.37
872-030	3	4-19/32	3-13/16	6- 7/16	4-15/32	1-11/32	1- 3/16	2.55
872-040	4	4- 7/16	3- 1/2	7- 1/2	5- 1/2	15/16	1- 1/4	3.34

Tank Adapter, Spigot PVC with EPDM Gasket

Spigot
 150 psi Maximum Internal Pressure Rating @ 73° F (23°C)



Part Number	Size	A	L	L1	M	Approx. Wt. (Lbs.)
8173E-005	1/2	1-3/16	3	1-3/4	1-1/2	.11
8173E-007	3/4	1-1/4	3	2	1-11/16	.14

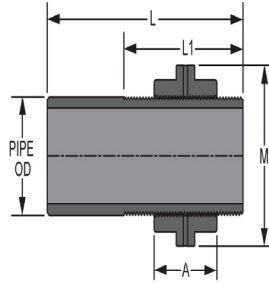
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Tank Adapter, Spigot PVC with EPDM Gasket

(Continued)

Spigot
 150 psi Maximum Internal Pressure Rating @ 73° F (23°C)



Part Number	Size	A	L	L1	M	Approx. Wt. (Lbs.)
8173E-010	1	1-3/8	4-1/16	2-3/8	2-3/16	.28
8173E-015	1-1/2	1-5/8	5-1/16	3-1/8	2-7/8	.53
8173E-020	2	1-7/8	5-3/4	3-1/2	3-5/8	.89

Install with threaded end, gasket and one nut inside tank. Use thread sealant on internal nut.

Size	A-MAX	Minimum Inside Curvature Radius (inches)	Hole Saw Size
1-2	9-16	4-1/2	7/8
3/4	3/4	6	1-1/16
1	1	9-1/2	1-3/8
1-1/2	10-1/2	16	2
2	1-5/8	26	2-1/2





Schedule 80 PVC Technical
Schedule 80 Tank Adapters

TANK ADAPTER GASKET SECTION	SIZE	O.D.*	I.D.*	T
	1/2	2.25	1.33	3/16
	3/4	2.49	1.69	3/16
	1	2.79	1.94	3/16
	1-1/4	3.81	2.39	3/16
	1-1/2	3.81	2.39	3/16
	2	4.89	3.51	3/16
	3	6.30	4.49	3/16
	4	7.33	5.50	3/16

Old Style Tank Adapter Gasket & Hole Size Requirements			
Tank Adapter Size	Recommended Minimum Hole Size	Minimum Inside Curvature Radius (inches)	Maximum Tank Wall Thickness (inches)
1/2	1-3/8	3.88	1.06
3/4	1-3/4	5.00	1.06
1	2	6.12	1.06
1-1/4	2-7/16	10.75	1.34
1-1/2	2-7/16	10.75	1.34
2	3-9/16	18.50	1.16
3	4-9/16	31.00	1.75
4	5-9/16	42.75	1.81

* Both outside and inside dimensions are +/- .03 shore hardness 65-70

Self-Aligning Tank Adapters

Swivel Ball design permits straight-pipe connections with up to a 27° angle off vertical pipe centerline in any direction. Aids installation in domed top tanks and provides easy adjustment to compensate for tank curvature in making system connections. The self-aligning tank adapter is not suitable for use on tank sidewalls or tank bottoms. Pressure rated to 75 psi @ 73°F (23°C)

Easy Installation

1. Locate and cut designated hole size in tank
2. Remove Nut and insert Self-Aligning Tank Adapter through hole from inside. **Note: Body and Gasket must be installed on the inside of tank.**
3. Tighten Nut (clockwise) while holding body from inside tank.
4. Install threaded pipe into ball.
5. Position angular offset as desired and tighten lock ring (clockwise) against ball.

Self Aligning Tank Adapter Installation Requirements			
Tank Adapter Size	Minimum Hole Size	Minimum Tank Inside Curvature-Radius (in.)	Maximum Tank Wall Thickness
1	3-3/8	18.5	1-5/16
2	4-5/8	32.5	1-5/16
3	5-1/2	43.5	1-11/16

Nut Wrenches

While not required for installation, Self-Aligning Tank Adapters can use certain nut wrenches produced for use on Spears® regular Tank Adapters (New Style). While designated wrench sizes do not directly correspond, the following chart shows specific regular Tank Adapter Nut Wrench to use with each Self-Aligning size. Body wrenches are not currently available.

Self-Aligning Tank Adapter Size	Regular Tank Adapter Nut Wrench to Use	
	Part Number	Comment
1"	TAW2-020	Regular 2" wrench fits Self-Aligning 1" nut
2"	TAW2-030	Regular 3" wrench fits Self-Aligning 2" nut
3"	TAW2-040	Regular 4" wrench Self-Aligning 3" nut