

**Section 3**

# **PPro-Seal™ Natural PP Piping System**



# PPro-Seal™ Natural – System Specification

<b>Material</b>	Polypropylene Random Copolymer
Color	Unpigmented, translucent
Specific gravity	0.905
Tensile strength	4,000 psi @ 72°F
Flexural modulus	1.5 × 10 <sup>5</sup> psi
Izod impact strength	8.0 ft-lbs/inch notch @ 72°F
Coefficient of thermal expansion	6.1 × 10 <sup>-5</sup>
Hardness	87 Rockwell R Scale
<b>Dimension</b>	½" – 2" Schedule 80 IPS
<b>Pressure Rating</b>	Pipes/Fittings/Diaphragm valves: up to 150 psi @ 23°C (72°F) (Electrofusion only)
<b>Temperature Rating</b>	from 0 °C to 80 °C (< 60 °C for valves) (32 °F–176 °F)
<b>Production</b>	Fittings/valves: injection molded Pipes: extruded
<b>Marking</b>	Size Lot No. (pipe only) Material Dimension Pressure Rating (pipe only)
<b>Testing and Inspection</b>	Inclusions Visual inspection Dimension Pressure testing
<b>Approvals/Conformance</b>	FDA CFR 21 177.1520 USP 25 class VI (physiological non-toxic) ASTM D4101 ASTM F1290
<b>Joining Technology</b>	Electrofusion Threaded (NPT)
<b>Documentation</b>	Certificate of Compliance to FDA & USP
<b>Packing</b>	Pipes: Bulk bagged; quantities vary Fittings/valves: Bulk bagged; quantities vary
<b>Labeling</b>	Brand Name Product Description Code Number Material Dimension
<b>Main Applications</b>	Uses include cost effective, pure distribution of DI-water and critical biological fluids where chemical sanitization is needed.



PPro-Seal Pipe

160



PPro-Seal Electrofusion Fittings

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PPro-Seal Valves

165



PPro-Seal Fusion Accessories

166

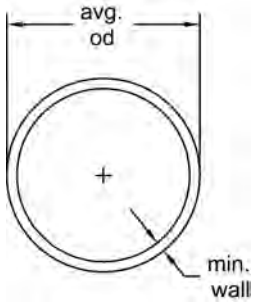


PPro-Seal Threaded Fittings

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# PPro-Seal Pipe

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## Pipe - Schedule 80 PPn

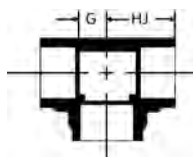
20' lengths available upon request

All pipe must be ordered in lift quantities to maintain cleanliness.

Size (inch)	lengths (ft)	Part No.	USD / ft	Lift Qty (ft)	avg. od (inch)	min. wall (inch)
1/2	10	* 37K011005	2.59	250	0.840	0.147
3/4	10	* 37K011007	3.73	150	1.050	0.154
1	10	* 37K011010	4.87	100	1.315	0.179
1 1/2	10	* 37K011015	9.84	40	1.900	0.200
2	10	* 37K011020	13.47	30	2.375	0.218

# PPro-Seal Electrofusion Fittings

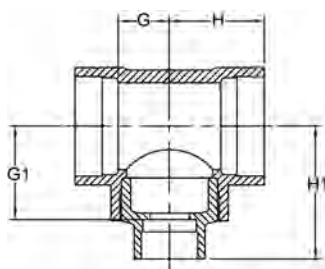
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## Tee (S x S x S)

Size (inch)	Part No.	USD	Pack Qty	G (inch)	HJ (inch)
1/2	801-005F	23.32	5	0.51	1.22
3/4	801-007F	26.94	5	0.58	1.36
1	801-010F	30.67	5	0.70	1.67
1 1/2	801-015F	45.39	2	1.00	2.03
2	801-020F	61.24	2	1.26	2.32

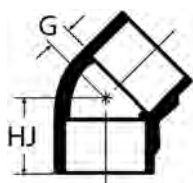
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## Tee - Reducing (S x S x S)

Size (inch)	Part No.	USD	Pack Qty	G (inch)	G1 (inch)	H (inch)	H1 (inch)
1 x 1/2	801-130F	67.36	2	0.89	0.91	1.86	1.63
1 1/2 x 1/2	801-209F	90.67	2	0.88	1.35	1.91	1.88
1 1/2 x 1	* 801-211FFB	90.67	2	1.00	2.03	2.03	3.00
2 x 1/2	801-247F	121.24	2	0.86	1.62	2.02	2.16
2 x 1	* 801-249FFB	121.24	2	1.26	2.29	2.32	3.26

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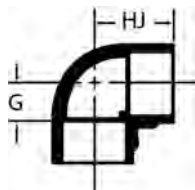


## 45° Ell (S x S)

Size (inch)	Part No.	USD	Pack Qty	G (inch)	HJ (inch)
1/2	817-005F	26.94	5	0.31	1.02
3/4	817-007F	28.19	5	0.33	1.11
1	817-010F	34.30	5	0.39	1.36
1 1/2	817-015F	53.89	2	0.52	1.55
2	817-020F	73.47	2	0.64	1.70

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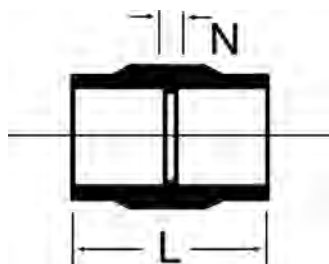
## 90° Ell (S x S)



Size (inch)	Part No.	USD	Pack Qty	G (inch)	HJ (inch)
1/2	806-005F	19.69	5	0.51	1.22
3/4	806-007F	23.32	5	0.58	1.36
1	806-010F	29.43	5	0.70	1.67
1 1/2	806-015F	39.27	2	1.00	2.03
2	806-020F	53.89	2	1.26	2.32

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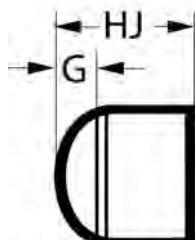
## Coupling (S x S)



Size (inch)	Part No.	USD	Pack Qty	L (inch)	N (inch)
1/2	829-005F	17.20	5	1.56	0.12
3/4	829-007F	22.07	5	1.68	0.12
1	829-010F	23.32	5	2.06	0.12
1 1/2	829-015F	30.67	2	2.25	0.18
2	829-020F	41.66	2	2.26	0.13

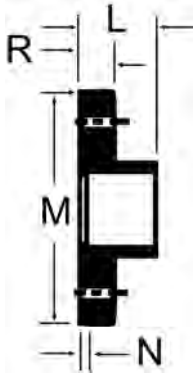
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## Cap (S)



Size (inch)	Part No.	USD	Pack Qty	G (inch)	HJ (inch)
1/2	847-005F	23.32	5	0.42	1.14
3/4	847-007F	39.27	5	0.45	1.23
1	847-010F	45.39	5	0.53	1.50
1 1/2	847-015F	53.89	2	0.63	1.71
2	847-020F	73.47	2	0.75	1.84

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### Flange (S) without Backing Ring

Flange Backing Ring recommended for assembly

Size (inch)	Part No.	USD	# holes	bolt hole dia. (inch)	bolt cir. dia. (inch)	L (inch)	M (inch)	N (inch)	R (inch)
1/2	859-005F	45.39	4	0.50	2.38	0.86	3.50	0.14	0.41
3/4	859-007F	53.89	4	0.50	2.75	0.97	3.88	0.19	0.47
1	859-010F	64.97	4	0.50	3.13	1.16	4.25	0.19	0.53
1 1/2	859-015F	73.47	4	0.50	3.88	1.24	5.00	0.21	0.66
2	859-020F	82.07	4	0.63	4.75	1.34	6.00	0.28	0.71

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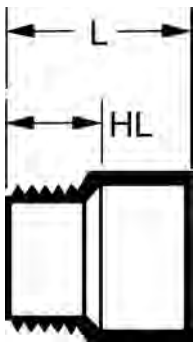


### Flange Backing Ring

Flange Ring Material: 304SS

Size (inch)	Part No.	USD
1/2	*855-005F	82.07
3/4	*855-007F	90.67
1	*855-010F	100.41
1 1/2	*855-015F	110.88
2	*855-020F	139.90

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### Male Adapter (MPT x S)

Threaded fittings not recommended for pressure applications

Size (inch)	Part No.	USD	Pack Qty	HL (inch)	L (inch)
1/2	836-005F	23.32	5	1.02	1.73
3/4	836-007F	28.19	5	1.05	1.83
1	836-010F	30.67	5	1.28	2.25
1 1/2	836-015F	38.03	2	1.32	2.35
2	836-020F	60.10	2	1.37	2.43

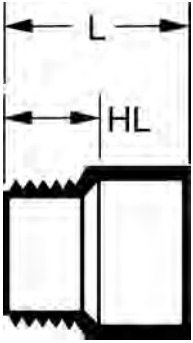
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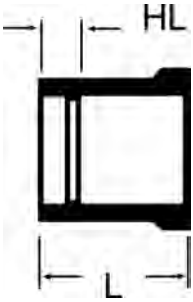
### Male Adapter - Reducing (S x MPT)

Threaded fittings not recommended for pressure applications

Size (inch)	Part No.	USD	Pack Qty	HL (inch)	L (inch)
½ x ¼	<b>836-036F</b>	<b>24.56</b>	5	0.79	2.00



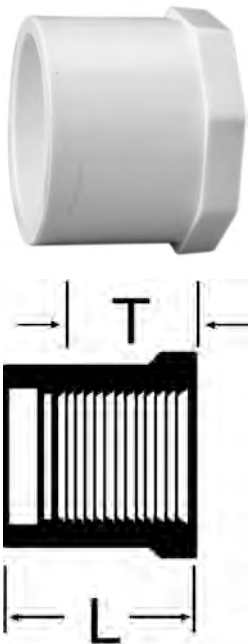
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### Reducer Bushing (Spg x S)

Size (inch)	Part No.	USD	Pack Qty	HL (inch)	L (inch)
¾ x ½	<b>837-101F</b>	<b>24.56</b>	5	1.14	1.86
1 x ½	<b>837-130F</b>	<b>36.79</b>	5	1.03	1.75
1 x ¾	<b>837-131F</b>	<b>36.79</b>	5	1.10	1.88
1 ½ x ¾	<b>837-210F</b>	<b>46.63</b>	2	0.95	1.67
1 ½ x 1	<b>837-211F</b>	<b>46.63</b>	2	1.03	2.00
2 x 1	<b>837-249F</b>	<b>58.86</b>	2	1.03	2.00
2 x 1 ½	<b>837-251F</b>	<b>58.86</b>	2	0.81	1.84

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### Reducer Bushing (Spg x FPT)

Threaded fittings not recommended for pressure applications

Size (inch)	Part No.	USD	Pack Qty	L (inch)	T min. (inch)	Style
¾ x ½	<b>^ 838-101F</b>	<b>24.56</b>	5	1.13	0.53	Flush
1 x ½	<b>^ 838-130F</b>	<b>36.79</b>	5	1.75	0.53	Extended
1 x ¾	<b>^ 838-131F</b>	<b>36.79</b>	5	1.31	0.55	Flush
1 ½ x ¾	<b>^ 838-210F</b>	<b>46.63</b>	2	1.67	0.55	Flush
1 ½ x 1	<b>^ 838-211F</b>	<b>46.63</b>	2	1.67	0.68	Flush
2 x 1	<b>^ 838-249F</b>	<b>58.86</b>	2	2.00	0.68	Extended
2 x 1 ½	<b>^ 838-251F</b>	<b>58.86</b>	2	1.81	0.72	Flush



# PPro-Seal Valves

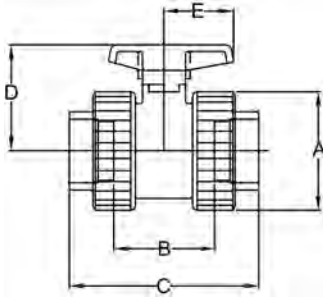
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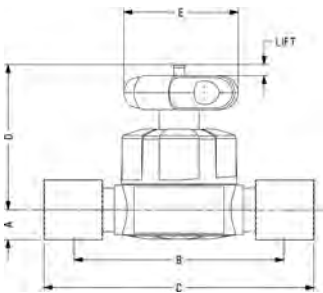
## Type 375 Ball Valve (S x S) and (FPT x FPT)

O-Ring Material: FKM

Size (inch)	FKM Part No.	USD	A (inch)	B (inch)	C (inch)	D (inch)	E (inch)
1/2	1088375005F	110.88	1.88	1.84	3.86	2.31	1.44
3/4	1088375007F	139.90	2.27	2.08	4.37	2.50	1.44
1	1088375010F	173.06	2.63	2.34	4.86	3.05	1.85
1 1/2	1088375015F	278.76	3.67	3.13	5.87	3.60	2.41
2	1088375020F	327.46	4.48	3.68	6.73	3.95	2.41



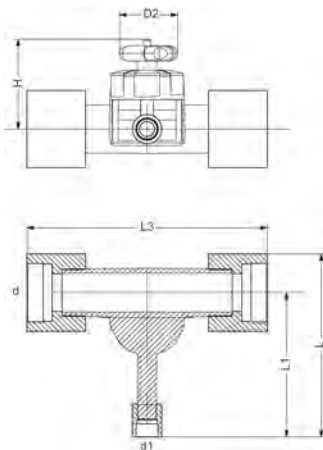
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## Type 515 Diaphragm Valve (S x S)

Valve is metric size with IPS size PPro-Seal electrofusion ends

EPDM Part No.	USD	Size (inch)	A (inch)	B (inch)	C (inch)	D (inch)	E (inch)
150 901 005	501.55	1/2	0.55	5.12	6.54	3.54	3.15
150 901 007	552.33	3/4	0.69	5.82	7.50	4.02	3.15
150 901 010	641.45	1	0.83	6.06	8.00	4.67	3.70
150 901 015	773.06	1 1/2	1.28	8.27	10.33	10.33	4.61
150 901 020	905.70	2	1.53	9.10	11.22	11.22	5.98



## Type 519 Zero Static Diaphragm Valve (S x S)

Valve is metric size with IPS size PPro-Seal electrofusion ends

Part No.	USD	Size d (inch)	Size d1 (inch)	Valve Size d (mm)	H (inch)	D2 (inch)	L (inch)	L1 (inch)	L3 (inch)
150 519 011	995.00	1/2	1/2	20	3.0	2.6	5.3	4.6	8.0
150 519 000	1,020.00	3/4	1/2	25	3.1	2.6	6.0	5.0	8.0
150 519 001	1,045.00	3/4	3/4	25	3.1	2.6	6.1	5.1	8.0
150 519 002	1,055.00	1	1/2	25	3.3	2.6	6.3	5.4	8.5
150 519 003	1,060.00	1	3/4	25	3.3	2.6	6.4	5.5	8.5
150 519 004	1,068.00	1	1	32	4.2	3.4	6.6	5.6	8.5
150 519 005	1,268.00	1 1/2	1/2	25	3.8	2.6	7.1	6.0	9.8
150 519 006	1,378.00	1 1/2	3/4	32	4.7	3.4	7.3	6.1	9.8
150 519 007	1,434.00	1 1/2	1	32	4.7	3.4	7.5	6.3	9.8
150 519 008	1,488.00	2	1/2	25	4.2	2.6	7.7	6.4	10.0
150 519 009	1,488.00	2	3/4	32	5.0	3.4	7.9	6.5	10.0
150 519 010	1,515.00	2	1	32	5.0	3.4	8.3	7.0	10.0

# PPro-Seal Fusion Accessories

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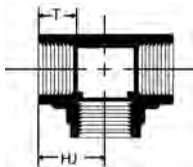
## Loose Coil

Size (inch)	Part No.	USD	Pack Qty
1/2	* 37K164005	5.91	10
3/4	* 37K164007	6.22	10
1	* 37K164010	6.63	10
1 1/2	* 37K164015	7.36	10
2	* 37K164020	7.77	10

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# PPro-Seal Threaded Fittings

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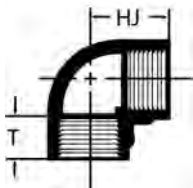


## Tee (FPT x FPT x FPT)

Threaded fittings not recommended for pressure applications

Size (inch)	Part No.	USD	Pack Qty	HJ (inch)	T min. (inch)
1/2	<b>805-005F</b>	<b>17.20</b>	5	1.22	0.53
3/4	<b>805-007F</b>	<b>19.69</b>	5	1.36	0.55
1	<b>805-010F</b>	<b>24.56</b>	5	1.67	0.68
1 1/2	<b>805-015F</b>	<b>36.79</b>	2	2.03	0.72
2	<b>805-020F</b>	<b>45.39</b>	2	2.32	0.76

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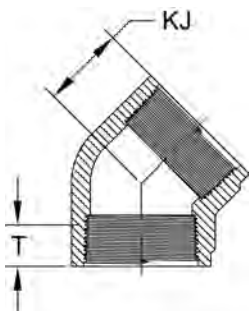


## 90° Ell (FPT x FPT)

Threaded fittings not recommended for pressure applications

Size (inch)	Part No.	USD	Pack Qty	HJ (inch)	T min. (inch)
1/2	<b>808-005F</b>	<b>13.47</b>	5	1.22	0.53
3/4	<b>808-007F</b>	<b>17.20</b>	5	1.36	0.55
1	<b>808-010F</b>	<b>20.83</b>	5	1.67	0.68
1 1/2	<b>808-015F</b>	<b>26.94</b>	2	2.03	0.72
2	<b>808-020F</b>	<b>36.79</b>	2	2.32	0.76

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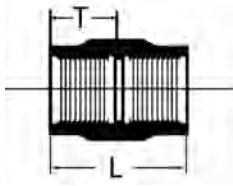


## 45° Ell (FPT x FPT)

Threaded fittings not recommended for pressure applications

Size (inch)	Part No.	USD	Pack Qty	KJ (inch)	T min. (inch)
1/2	<b>819-005F</b>	<b>26.94</b>	5	1.02	0.53
3/4	<b>819-007F</b>	<b>28.19</b>	5	1.11	0.55
1	<b>819-010F</b>	<b>34.30</b>	5	1.36	0.68
1 1/2	<b>819-015F</b>	<b>53.89</b>	2	1.55	0.72
2	<b>819-020F</b>	<b>73.47</b>	2	1.70	0.76

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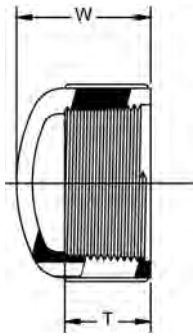


### Coupling (FPT x FPT)

Threaded fittings not recommended for pressure applications

Size (inch)	Part No.	USD	Pack Qty	L (inch)	T min. (inch)
1/2	<b>830-005F</b>	<b>12.33</b>	5	1.56	0.53
3/4	<b>830-007F</b>	<b>15.96</b>	5	1.68	0.55
1	<b>830-010F</b>	<b>17.20</b>	5	2.06	0.68
1 1/2	<b>830-015F</b>	<b>23.32</b>	2	2.25	0.72
2	<b>830-020F</b>	<b>28.19</b>	2	2.26	0.76

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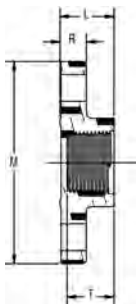


### Cap (FPT)

Threaded fittings not recommended for pressure applications

Size (inch)	Part No.	USD	Pack Qty	W (inch)	T min. (inch)
1/2	<b>848-005F</b>	<b>22.07</b>	5	1.14	0.53
3/4	<b>848-007F</b>	<b>39.27</b>	5	1.23	0.55
1	<b>848-010F</b>	<b>46.63</b>	5	1.50	0.68
1 1/2	<b>848-015F</b>	<b>53.89</b>	2	1.71	0.72
2	<b>848-020F</b>	<b>73.47</b>	2	1.84	0.76

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### Flange (FPT) without Backing Ring

Flange Backing Ring recommended for assembly  
Threaded fittings not recommended for pressure applications

Size (inch)	Part No.	USD	# holes	bolt hole dia. (inch)	bolt cir. dia. (inch)	L (inch)	M (inch)	R (inch)	T min. (inch)
1/2	<b>852-005F</b>	<b>46.63</b>	4	0.50	2.38	0.86	3.50	0.41	0.69
3/4	<b>852-007F</b>	<b>53.89</b>	4	0.50	2.75	0.97	3.88	0.47	0.69
1	<b>852-010F</b>	<b>64.97</b>	4	0.50	3.13	1.16	4.25	0.53	0.81
1 1/2	<b>852-015F</b>	<b>74.72</b>	4	0.50	3.88	1.24	5.00	0.66	0.88
2	<b>852-020F</b>	<b>82.07</b>	4	0.63	4.75	1.34	6.00	0.71	0.94

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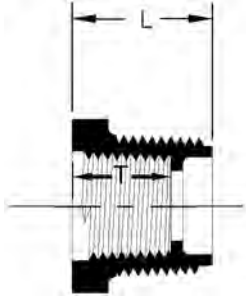


### Flange Backing Ring

Flange Ring Material: 304SS

Size (inch)	Part No.	USD
1/2	* 855-005F	82.07
3/4	* 855-007F	90.67
1	* 855-010F	100.41
1 1/2	* 855-015F	110.88
2	* 855-020F	139.90

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### Reducer Bushing (MPT x FPT)

Threaded fittings not recommended for pressure applications

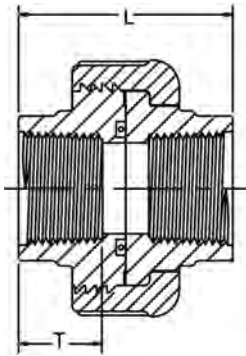
Size (inch)	Part No.	USD	Pack Qty	L (inch)	T min. (inch)
3/4 x 1/2	839-101F	24.56	5	1.70	0.53
1 x 1/2	839-130F	36.79	5	1.77	0.53
1 x 3/4	839-131F	36.79	5	1.89	0.55
1 1/2 x 1	839-211F	46.63	2	2.00	0.68
2 x 1	839-249F	58.86	2	2.00	0.68
2 x 1 1/2	839-251F	58.86	2	1.81	0.72

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### Union (FPT x FPT)

Threaded fittings not recommended for pressure applications  
O-Ring Material: FKM



Size (inch)	Part No.	USD	Pack Qty	L (inch)	T min. (inch)
1/2	898-005F	57.62	5	2.00	0.53
3/4	898-007F	61.24	5	2.08	0.55
1	898-010F	75.96	5	2.50	0.68
1 1/2	898-015F	116.06	2	2.69	0.72
2	898-020F	167.88	2	2.88	0.76