



Irrigation Specialties



ENGINEERING GUIDE

Contact Spears® for any Information not found.

Filters

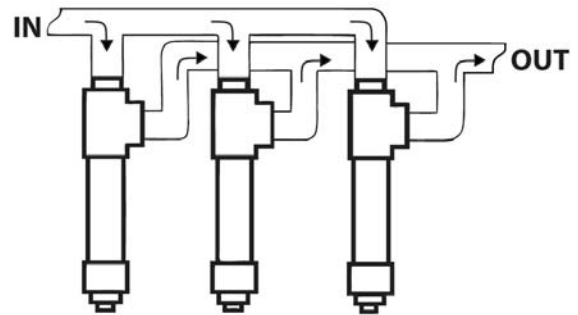
Specially designed for agricultural and irrigation applications. Suitable for any application where cool, filtered water is required. Standard units utilize an internal-to-external filter cartridge. See following page for reverse flow (external to internal) filters.



- 200 psi Working Pressure Non-Shock @ 73°F (23°C)
- Filter Body is made from NSF®-PW Approved PVC Material
- Optional Screen Meshes
- Compact Design, Easy to Clean
- Lightweight, Easy to Install

- Filter Screens are designed using a standard perforated Stainless Steel Screen
- Mesh Sizes include an inner Stainless Steel Cloth with Spring Support (external cloth on reverse flow filters)
- Pressure loss: 100 GPM - 3 psi 50 GPM - 1.25 psi
- May be bushed to required pipe size

- When more than 100 gpm is required, filters may be installed in parallel
- When installing filter, allow space for removing filter screen for cleaning
- Remove stainless steel filter screen before solvent welding filter to pipe manifold
- When filters are installed in the direct sun, it is suggested the filter body be coated with a water-base latex paint having a high reflectance
- Installation in a shaded area is preferred



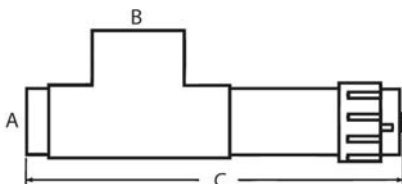
-CAUTION-

- WATER HAMMER MAY CAUSE SEVERE DAMAGE TO THE FILTER ASSEMBLY.
- BACK FLUSHING IS NOT RECOMMENDED.
- QUALITY GRADE THREAD SEALANT IS RECOMMENDED FOR ALL THREADED PVC CONNECTIONS.

Mesh Size	Hole Size (in.)	Part Number Extension
1/16" Holes	.0625	-16
1/32" Holes	.0312	-32
50 Mesh	.0117	-50
76 Mesh	.0095	-76
100 Mesh	.0059	-100
150 Mesh	.0041	-150
200 Mesh	.0029	-200

Additional Mesh Sizes available on request.
Example: TF-50 = 50 Mesh

Filter Dimensions & Weights



Series	A Inlet		B Outlet	C Overall Length	Screen Length
	Socket	Spigot			
FLR	2-1/2	3	4	28	24
MFLR	2-1/2	3	4	16	12



Reverse Flow Filters



100 GPM



50 GPM

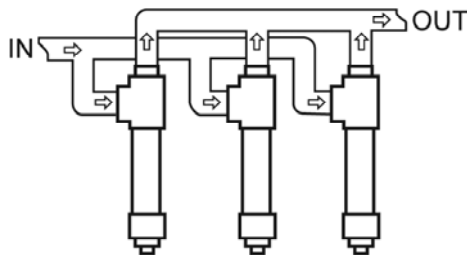
- Filter cartridge specially designed for external-to-internal filtration
- Traps sediment and debris on outside of filter (standard filters use internal-to-external flow)
- 100 GPM and 50 GPM styles available

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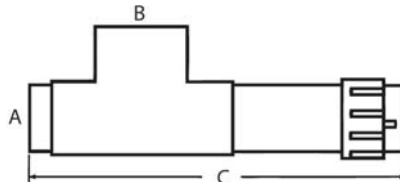
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Typical Reverse Flow Application



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**In-line Tee Style Filters and Reverse In-line Tee Style Filters
100 GPM and 50 GPM • PVC White • Buna O-ring Seal**



- In-line Design Simplifies Installation.
- Allows Easy Parallel Filter Configuration for Increased Flow and Filtration.
- Removable Type 304 Stainless Steel Filter Cartridges in Assorted Perforations and Screen Mesh.
- Standard Flow Filter (Internal-to-External) Traps Sediment on Inside of Cartridge, Reverse Flow Filter (External-to-Internal) Traps Sediment on Outside of Cartridge.
- Convenient Bottom Drain with 1-1/4" NPT Stainless Steel Reinforced Plastic Thread and Plug. Optional Cap with 1/4" Outlet Available.
- 200 psi Working Pressure for Water @ 73°F (23°C).
- Manufactured from NSF® Certified PVC Material.

Mesh Size	Hole Size (in.)	Part Number Extension
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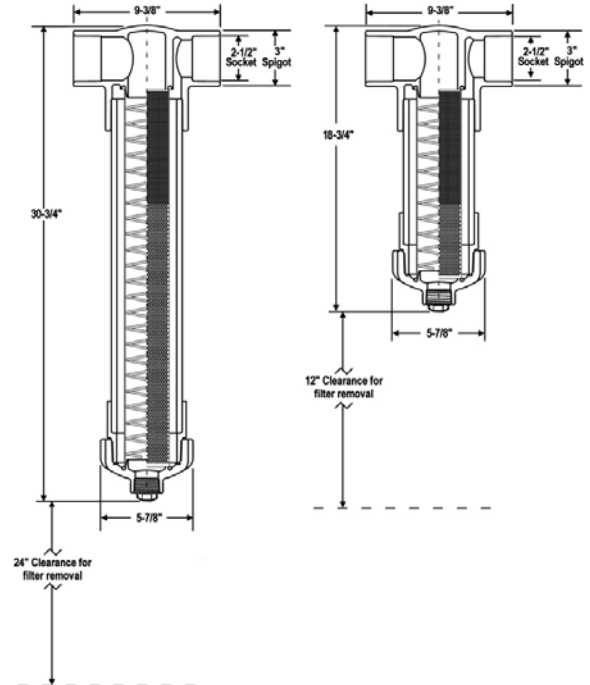
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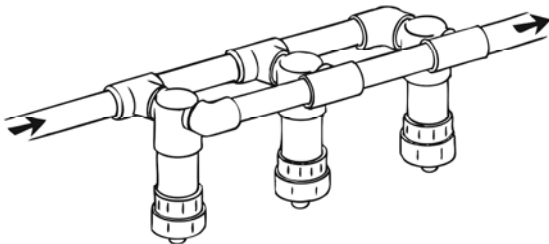
In-line Tee Style Filters and Reverse In-line Tee Style Filters
IN-LINE TECHNICAL INFORMATION

Dimensions



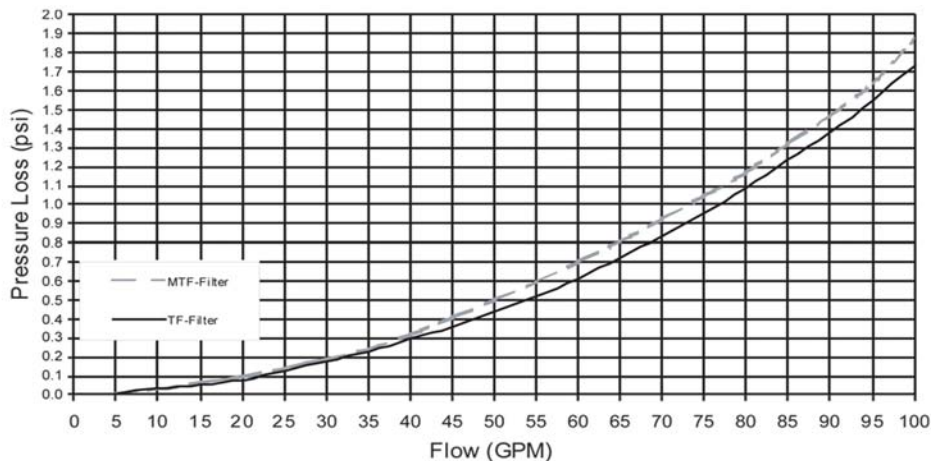
Filter includes drain plug for 1-1/4" NPT outlet. Optional valve for blow-out or filter cap with 1/4" NPT outlet can be purchased separately.

Parallel Filter Installation



- When more than 100 gpm is required, filters may be installed in parallel.
- When installing filter, allow space for removing filter screen for cleaning.
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- When filters are installed in the direct sun, it is suggested the filter body be coated with a water-base latex paint having a high reflectance.
- Installation in a shaded area is preferred.

Pressure Loss



Hose Filters



7 GPM
Steel



7 GPM
Plastic/Nylon

NOTE: It is recommended to connect the inlet of the Hose Filter to the system with a swivel adapter such as Spears® AP Series, to facilitate servicing of the filter element (refer to Hose Fittings).

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Filters

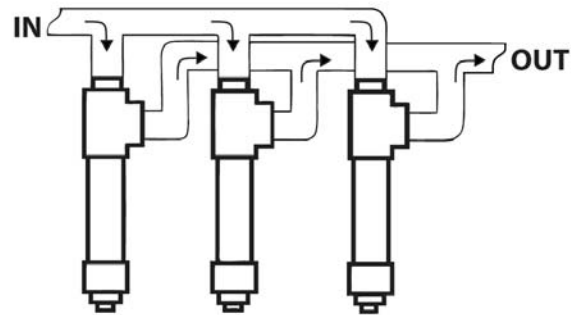
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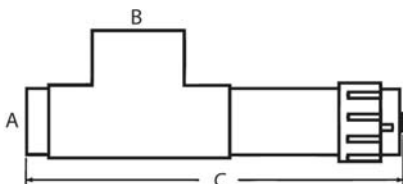
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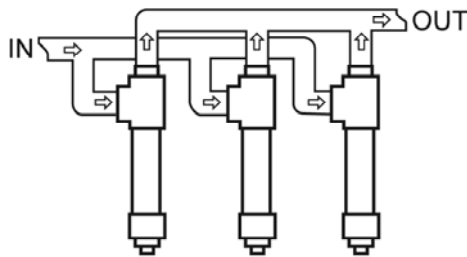
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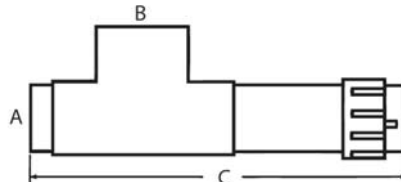
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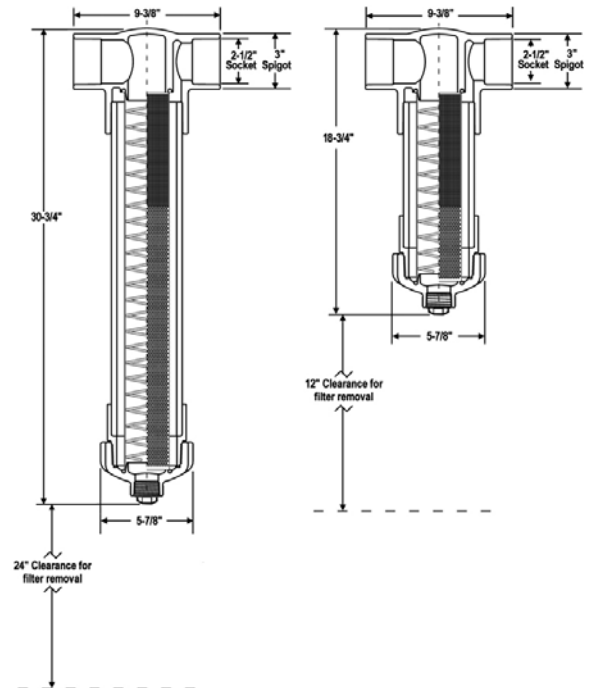
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In-line Tee Style Filters and Reverse In-line Tee Style Filters

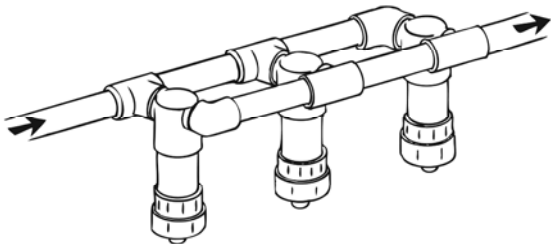
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Dimensions



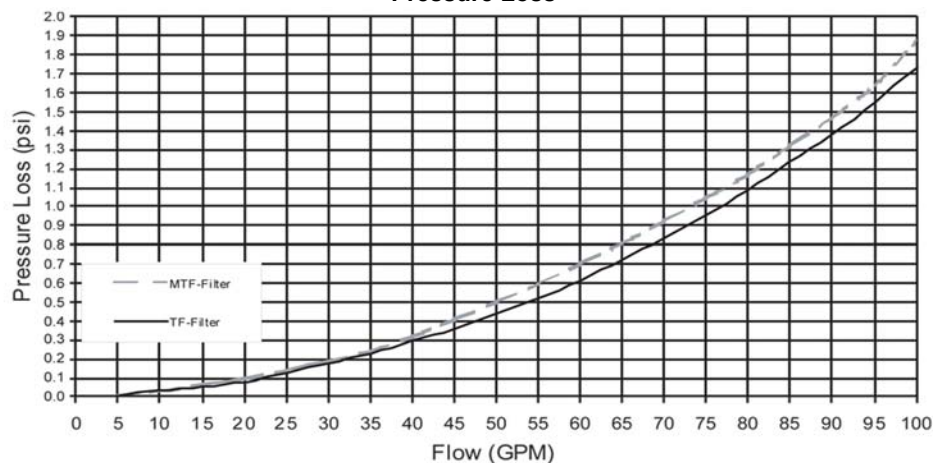
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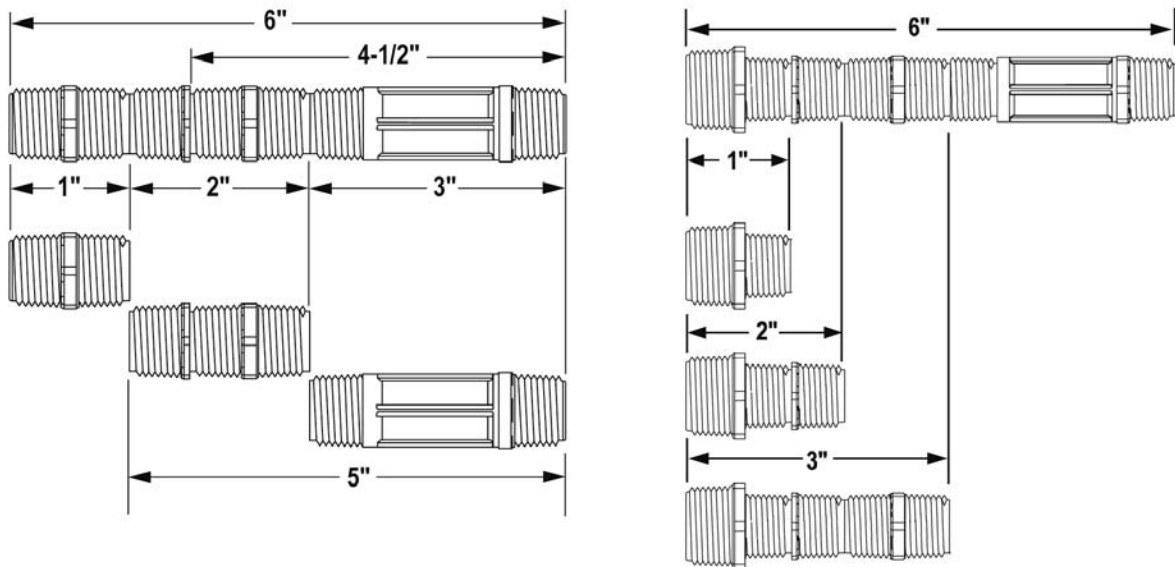
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Example: TF-50 = 50 Mesh

Four-In-One • Cut-Off Nipples

- High quality polyethylene construction
- Choice of sizes from just one nipple
- Reduces inventory
- Eliminates waste
- Reduces contractor downtime





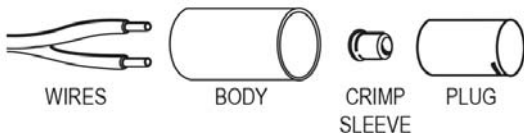
Irrigation & Turf Technical Dri-Splice Connectors

Dri-Splice Wire Connectors

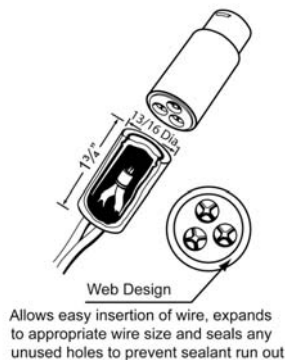
For use in electrical systems with 30v or less.

The Spears® Dri-Splice Seal designed into each wire hole enables you to stock one connector for all applications. The Dri-Splice Seal features an interference webbing which expands to accommodate #18 through #6 gauge wire sizes. In the event only two holes are used, the Dri-Splice Seal prevents sealant from leaking out through the third hole.

SOLD IN STANDARD PACK QUANTITIES ONLY DS-100/DS-150 & DS-400/DS-450 Dri-Splice Wire Connector Installation Information



1. Insert wires through holes in base of body.
2. Twist stripped wires together and apply crimp sleeve with an indent type crimping tool. Trim excess bare wire.
3. DS-100 & DS-150 ONLY - Fill Plug to brim with DS-300 sealant.
4. Invert body and insert plug into body until it snaps tight.
5. Push wires all the way into the plug to completely seal the crimp sleeve.
6. DS-100 & DS-150 ONLY - Be certain sealant has formed into all holes in body.

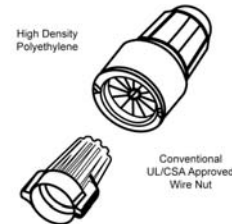


DS-100 & DS-150 Dri-Splice

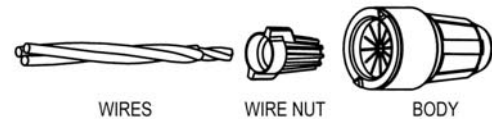
- DS-100 fits AWG #18, #14, #12, or #10
- DS-150 fits AWG #14, #12, #10, #8, or #6
- Designed to ensure waterproof connections
- Easily installed in the field without special tools
- Permanent protection for underground wire splices
- Requires the use of DS-300 Sealant

DS-400 & DS-450 Pre-Filled Dri-Splice

- All the features of the DS-100 or DS-150, plus the added benefit of being pre-filled with Dielectric Silicone Sealant
- Reduced inventory requirements
- Ensures proper amount and type of Sealant every time
- Eliminates costly waste and clean-up
- Makes installations quick, clean and efficient



DS-500 Dri-Splice Wire Connector Installation Information



1. Strip wires and install wire nut.
2. Wire nut wings with arrows and insert fully into body.

Sealant:

Dri-Splice Wire Connector General Information
DS-300 Sealant* (for DS-100 & DS-150) - MSDS available upon request.

DS-400 & DS-450 Dielectric Silicone Sealant* - defined as an Article, per OSHA 29 CFR 1910, 1200, which does not require an MSDS.

DS-500 Dielectric Silicone Sealant* - defined as an Article, per OSHA 29 CFR 1910, 1200, which does not require an MSDS.

Shelf Life:

DS-300 (unopened tube) - One Year* **DS-400 & DS-450** - Indefinite at 73°F (23°C)* **DS-500** - Indefinite at 73°F (23°C)*

Electrical Systems:

For use in electrical systems with 30v or less. UL Listing NOT required in most areas.

DS-100/DS-150 &

DS-400/DS-450

Components:

Plug - PVC

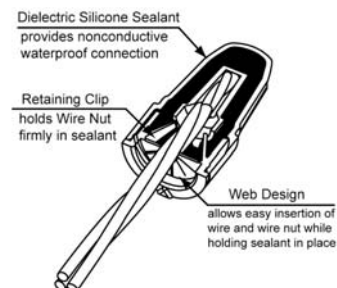
Body - PVC

Crimp Sleeve - UL and CSA Listed for 18 - 10 awg solid or stranded copper conductors.

DS-500 Components:

Body - Polyethylene

Wire Nut - Twist-On Spring Type - UL/CSA Listed for 22 - 10 awg



DS-500 Dri-Splice Wire Connector

For use in electrical systems with 30v or less.

Spears® NEW DS-500 Dri Splice Wire Connector is the fast, reliable and clean way of making positive, waterproof connections you can depend on. Simply twist Wire Nut on and insert into Dielectric Silicone Sealant Cartridge. The DS-500 is specially designed for irrigation systems and low voltage lighting, marine and security systems and suitable for direct burial.

- Allows full assembly and check of connection prior to sealing
- Accepts wire combinations from 3 #22 to 3 #10 AWG solid or stranded copper wire
- Special "No-Mess" cartridge design fully encloses sealant
- Internal interlock prevents disengagement of wire nut from sealant cartridge