SWING CHECK VALVES & COMBINATION BALL/SWING CHECK VALVES

INSTALLATION TIPS: SUMP PUMP SYSTEM COMPONENTS

BOSHART INDUSTRIES

OPERATION, MAINTENANCE AND INSTALLATION MANUAL

Following the installations tips below can greatly reduce the risk of property damage due to a compo-nent in your sump pump system failing. How long sump pumps, check valves and other components will last is almost impossible to answer. It's much like asking how long your fridge, your lawn mower, or your car will last. It simply depends too much on how often the pump has to run. If you have a small sump basin (pit), and you have a lot of ground water in your area, the pump may have to run several times per hour. Naturally, that pump is not going to last as long as the same pump in the home of someone with a large sump pit and very little ground water where the pump only has to run a few times a month or even a year.

Choosing a pump, check valve and piping that is properly sized to your ground water conditions, along with an appropriate float switch for your sump pit, and has good reliable electrical supply will ensure the longest possible life for your sump pump system. It is not a matter of if, but rather when one of the critical component will fail. Therefore the proper precautions must be considered when designing a system to ensure that an adequate back up system is in place. In addition the system must be regularly checked to ensure all components are working properly.

Having a backup or secondary pump is like having insurance on your car or home. It's only needed when it's NEEDED. A backup pump can be standing by and operate when your main pump cannot. This may be because of a power outage, an extreme amount of incoming water, or even main pump failure. Having a second AC-powered sump pump in the pit can protect you in case the main pump simply can't keep up, or if the main pump fails, but it cannot help you if the power goes out.

Boshart No. 17SPCV-1215
with both
1-1/4" and 1-1/2"
Compression Gasket Sets

Boshart No. 17SCC-20
2" Compression
Swing Check Valve

Boshart No. 17SCBV-20
2" Slip Union x 2" Slip
Combination Ball Valve / Swing
Check Valve

Boshart No. 17SCBV-20TU
2" Slip Union x 2" Slip Union
(True Union)
Combination Ball Valve /
Swing Check Valve

Boshart No. 17SCBV-20UC
2" Compression x 2" Compression
Combination Ball Valve /
Swing Check Valve

Boshart No. 860D-120 -15
Pump Down 120 Volt
Pump Float Switch with
15 Ft. Cord / Piggy Back Plug

Boshart No. 890-CTR14BK
14" 50# Button Release
UV Black Cable Tie

Boshart No. 890-CC516BK
Nylon Cable Clip

Boshart No. 850H-10
High Level Alarm

Boshart No. 850-AD
Auto Dialer

TIPS:

When using compression type check valves such as the Series 17SPCV or 17SCC swing check valves and or 17SCBV Combination ball and check valves "End Blocking" or "Thrust Blocking" is required to firmly secure discharge pipe! When done properly the risk of joint separation (pipe blow-out) due to hydraulic shock is completely eliminated. (See #7 & 16)

Each electrical component of a sump pump system MUST be wired directly to a dedicated circuit to prevent cata-strophic system failure if one circuit were to fail. The installation of an Anti-Free Device is highly recommended in all systems to prevent backups in the sump pump caused by either blockage of the discharge pipe by foreign debris and in Northern regions where discharge lines can freeze.

Outdoor drain piping should discharge water past the back-fill zone, at least 10 feet from foundation wall. CAUTION: Codes may vary - Always make sure sump pump discharge is in compliance with local plumbing codes and regulations!

A high level alarm, connected to an auto dialer is a great investment, advising of a pending system failure when no one is home (be assured failure will occur at the most unexpected time) so getting alerted wherever you are allows for corrective actions can be taken before serious property damage occurs.

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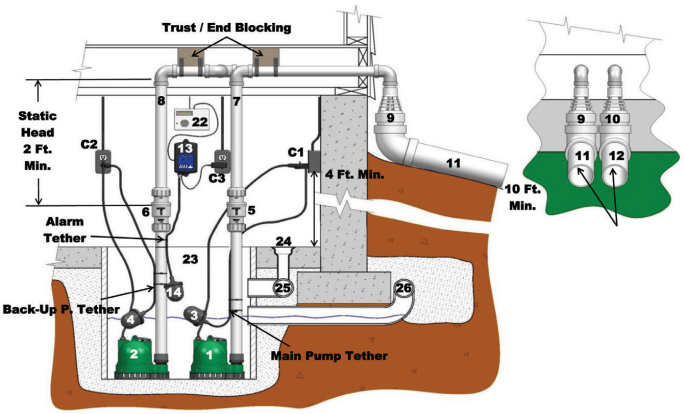

#1 - Main Sump Pump (120VAC or 240VAC Electric)

#2 - Back-Up Sump Pump 120VAC or 240VAC Electric connected to automatic standee generator in case of power failure and or an additional 12V Battery Back Up System is recommended wherever pump failure could result in property damage.

#3 - Main Pump Float Switch with Piggy Back Plug - Boshart Series No. 860D / 862D NOTE: Sump Pumps must be powered by a dedicated power circuit (See "C1")

#4 - Back Up Pump Float Switch with Piggy Back Plug - Boshart Series No. 860D / 862DNOTE: This switch is typically installed at a slightly higher "pump -on" level and will provide added pumping capacity in the event the main pump cannot handle the incoming water volume, and or will provide back up in the event the main pump fails or the C1 breaker trips (fuse blows). The back up pump must also be powered by a dedicated power circuit "C2".

TETHER POINTS: The tether points can easily be made and adjusted using a cable tie - Boshart No. 890-CTR14BK refer to the float switch tether length chart for desired pumping range.

DEDICATED POWER CIRCUITS: Dedicated Power Circuits from Breaker Panel for each component are curtail in preventing catastrophic system failure. NOTE: Building codes will require a ground fault circuit interruption (GFCI) outlet at a minimum of 4 feet from floor on a dedicated circuit as the power source for a sump pump.

SECURE PLUG: The Piggy Back Plugs must be secured to ensure they do not accidently come disconnected from the outlet. Secure plug / cord with Boshart No. 890-CC516BK Nylon cable Clip

#5 & #6 - Swing Check Valves (Main & Back Up Pumps)Boshart Series No. 17SPCV / 17SCC / 17SCTU

NOTE: Swing Check Valves perform best when installed in vertical position, in the event the valve must be installed horizontally it is critical to install the valve in the proper orientation as marked on the valve body to ensure the flapper operates properly.

NOTE: A minimum of 2 feet of static head above the valve is required, the installation of the check valve just above the sump basin cover (with in 1-2 ft.) will provide 5-7 feet of head depending on the height to discharge to the outside, this is ideal for swing check valve operation.

#7 & #8 - Discharge Piping (Main & Back Up Sump Pumps) - When using compression type check valves such as the Series 17SPCV or 17SCC swing check valves and or 17SCBV Combination ball and check valves "End Blocking" or "Thrust Blocking" must be installed to firmly secure discharge pipe. When done properly the risk of joint separation (pipe blow-out) due to hydraulic shock is completely eliminated. Never join discharge pipes into one single discharge pipe through the wall to the outside.

#9 & #10 - Ice Guards for main and back up discharge pipes.
NOTE: An "Ice Guard System" is a fitting that attaches to the top of your discharge pipe on the outside of your home one is required for each sump pump installed in your home. Slotted openings along the outer facing side of the fitting, provides an alternative (second way) for the water to escape out in the event the discharge pipe becomes clogged with ice or debris.

#11 & #12 - Out-Door Discharge Pipes for Main & Back up Sump Pump Discharge Pipes should discharge water past the back - fill zone, at least 10 feet from foundation wall.

#13 - High Level Alarm with 9 Volt Battery Back Up - Boshart Series No. 850H-XX C3 - The alarm must be on a dedicated circuit from breaker panel "C3"
NOTE: Building codes will require a ground fault circuit inter-ruption (GFCI) outlet at a minimum of 4 feet from floor on a dedicated circuit as the power source for an alarm system.

#14 - Control Float Switch for High Level Alarm (Included with 850H series alarm) Replacement control switch BII No. 88888888#22 - Auto Dialer - Boshart No. 850-AD

#23 - Sump Pump Basin (Pit)
NOTE: depending on the size of the sump basin there may not be enough room for multiple float switches without the risk of entanglement, the alarm circuit can be equipped with a probe type water sensor Boshart No. 850-WSP for basin high water detection.

#24 - Floor Drain

#25 - Interior Drain Tile at Perimeter

#26 - Weeping Tile