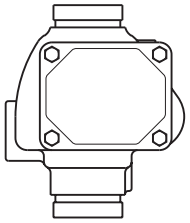
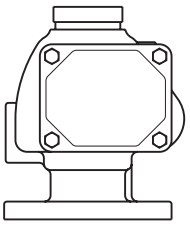
Hydrus™ Alarm Check Valves, S30 (Groove x Groove) S3001 (Flange x Groove)

S30
2-1/2 Inch: #4915



S3001
2-1/2 Inch: #4910



GENERAL DESCRIPTION

The Star Hydrus S30/S3001 Alarm Check Valves are divided seat ring, rubber faced clapper, waterflow alarm check valves which are intended for use in wet pipe (automatic sprinkler) fire protection systems. They are designed to automatically actuate electric and/or hydraulic alarms when there is a steady flow of water into the system which is equivalent to the discharge rate of one or more sprinklers.

The Star Hydrus Alarm Check Valves are designed for vertical installations. Flanged connections are per ANSI Standard B16.1. Grooved connections are suitable for use with grooved end couplings that are listed or approved for fire protection service.

A separately ordered, Star Model S310 Retard Chamber is required for installations subject to variable pressures. It is used to help prevent false alarms associated with variable pressure public water supplies.

The Star Alarm Check Valve Trim includes pressure gauges to monitor system pressure conditions, a by-pass check valve, a main drain valve, an alarm control valve, and an alarm test valve. The bypass check valve serves to reduce the possibility of false alarms by permitting slow as well as small transient increases in water supply pressure to be passed through to the system without opening of the waterway clapper.

WARNING

The Hydrus S30/S3001 Alarm Check Valves described herein must be installed and maintained in compliance with this document, as well as with the applicable standards of any authorities having jurisdiction. Failure to do so may impair the integrity of these devices.

The owner is responsible for maintaining his fire protection system and devices in proper operating condition. The installing contractor or sprinkler manufacturer should be contacted relative to any questions.

TECHNICAL DATA

Approvals
UL and ULC Listed. FM Approved.

Working Water Pressure Range
20 to 175 psi (1.4 to 12.1 bar).

Friction Loss
Refer to Figure 2.

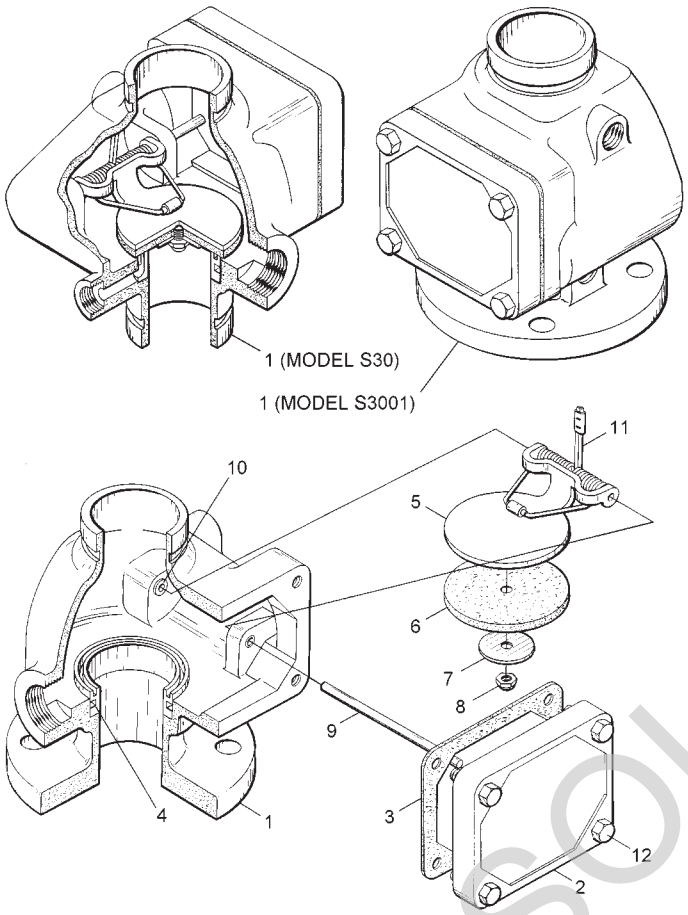
Physical Characteristics
The body and handhole cover are cast iron, the seat ring is bronze, and the clapper is stainless steel with an EPDM clapper facing.

OPERATION

When the fire protection system is initially being pressurized, water will flow into the system until the water supply and system pressure become equalized and the torsion Spring closes the Clapper. Once the pressures have stabilized, the Alarm Check Valve is ready to be placed in service and the Alarm Control Valve must be opened.

In the case of variable pressure systems, slow as well as small transient increases in water supply pressure may continue to be built up in the system (via the bypass check valve) without opening the Clapper. A transient surge in supply pressure which is sufficient to only momentarily open the Clapper will not cause a false alarm, and a portion of the increase in pressure will be trapped within the system, thus reducing the possibility of another opening. Any water in the alarm line is automatically drained, which helps to further reduce the possibility of a false alarm due to a successive transient surge in supply pressure.

When there is a steady flow of water into the sprinkler system due to an alarm test, a sprinkler operation, or a sustained surge in supply pressure which is sufficient to maintain the Clapper open, the water motor alarm and/or the pressure alarm switch will be actuated. The alarms will continue to be actuated as long as the Clapper remains opened. They may be silenced by closing the Alarm Control Valve. Water in the alarm lines will automatically drain out through the 1/8" (3.2 mm) drain orifice in the Restriction Assembly (Figure 4) once the Alarm Control Valve is shut or the waterway Clapper closes (due to



NO.	DESCRIPTION	QTY.	PART
1	Valve Body	1	NR
2	Handhole Cover	1	923001212
3	Handhole Cover Gasket	1	922001213
4	Seat Ring	1	NR
5	Clapper	1	922001223
6	Clapper Facing	1	922001203
7	Clapper Washer	1	922001205
8	Lock Nut	1	925141420
9	Hinge Pin	1	922001214
10	Bushing	2	NR
11	Spring	1	922001215
12	Cap Screw	4	626341108

NR: Not Replaceable

FIGURE 1
HYDRUS S30/S3001
ALARM CHECK VALVES
(S3001 Flange x Groove Shown)

a discontinuation in the flow of water into the sprinkler system).

NOTE

The Alarm Check Valve does not have to be re-set after an operation. However, if the alarms were silenced during operation, the Alarm Control Valve must be re-opened after the fire protection system is restored to service.

DESIGN CRITERIA

In planning the installation, consideration must be given to the disposal of the large quantities of water which may be associated with the draining the system or performing a flow test.

The sprinkler system designer must be aware that the configuration of the piping network and its tendency to trap pockets of air (such as in the case of a peaked-roof gridded system) can affect the performance of the alarm system. Although a slight amount of trapped air is desirable to prevent significant pressure increases due to thermally induced expansion of the water, a large quantity of trapped air in a system may result in the possibility of an intermittent alarm.

The possibility of an intermittent alarm condition is a consequence of the fact that the flow out of the system through the test valve or a single sprinkler is very small relative to the flow which can be passed through the valve. This difference increases with valve size. If there was no trapped air within the system, flow in would equal flow out and the waterway Clapper would always stabilize at some open position (as needed to accommodate the required flow). With trapped air in the system, however, the waterway Clapper first opens wider since the system initially demands greater flow until the air pockets are compressed (back to nearly the supply pressure) and then it will tend to return closer to the Seat Ring. If the volume of the air pockets are excessive, flow into the system can be momentarily reduced to nearly zero (once the air pockets are compressed) and the waterway Clapper may close, causing flow to the alarms to be shutoff.

Once the Clapper has closed, sufficient water must flow out of the system before the Clapper will again open. A repetition of the above described condition is termed an intermittent alarm.

Using a vent (which can also serve as an end-of-line Inspector's Test Connection) piped from the top of a cross main or end of a branch line at the point most remote from the alarm valve, and filling the system slowly in accordance with the steps described in the Setting Procedure section, can prevent an excessive amount of air from being trapped.

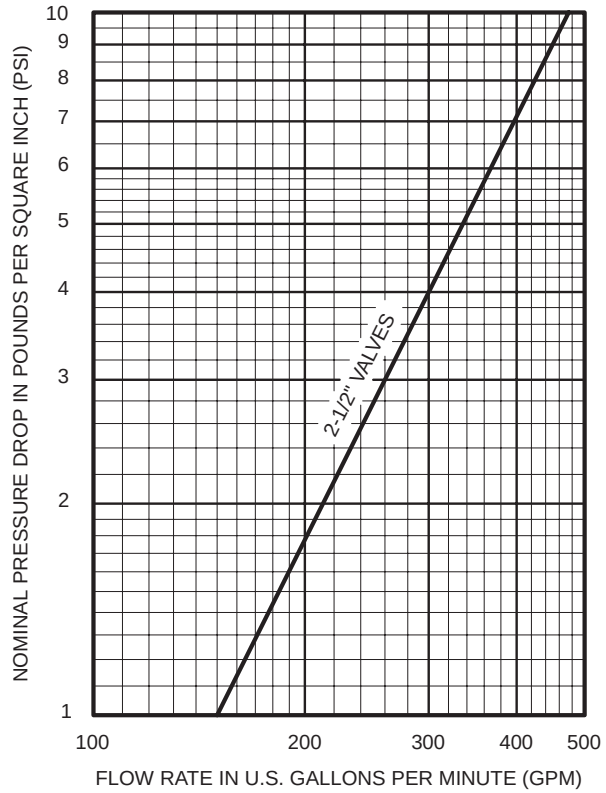


FIGURE 2
NOMINAL PRESSURE LOSS VERSUS FLOW

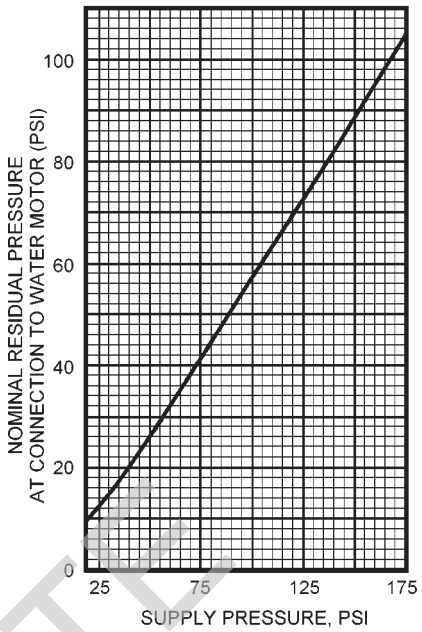


FIGURE 3
PRESSURE AT THE
WATER MOTOR ALARM CONNECTION

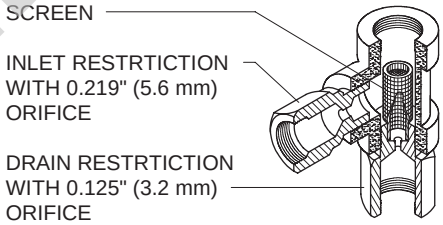


FIGURE 4
RESTRICTION ASSEMBLY

INSTALLATION

The Hydrus S30/S3001 Alarm Check Valves must be installed in accordance with the following instructions:

NOTES

Proper operation of the Alarm Check Valves depends upon the trim described in this data sheet being installed in accordance with the following instructions. Failure to follow the appropriate trim installation instructions may prevent the device from functioning properly as well as void Listings/Approvals, and the manufacturer's warranties.

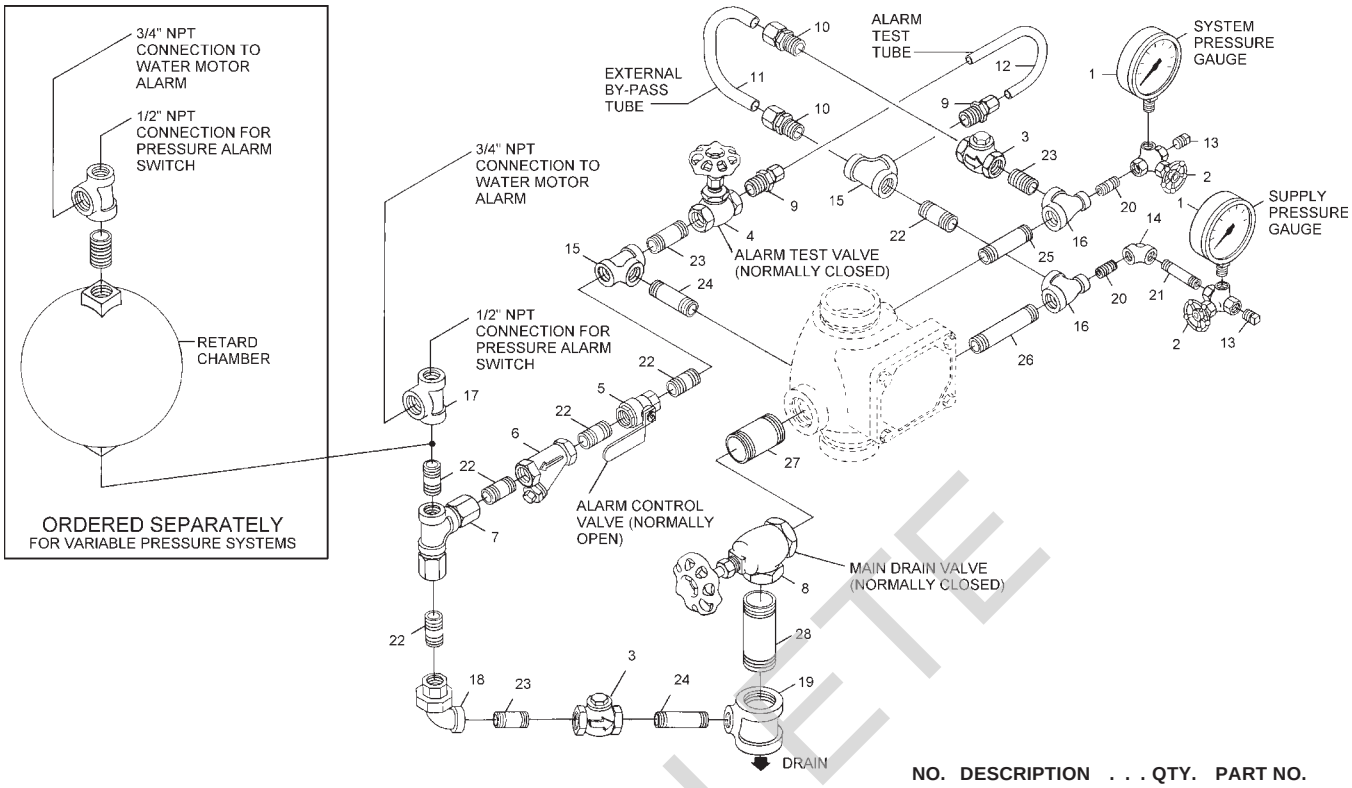
The Alarm Check Valves must be installed in readily visible and accessible locations.

It is recommended that provision be made for viewing of the alarm line drain water by locating the main drain outlet in a readily visible area.

Wet pipe fire protection systems must be maintained at a minimum temperature of 40°F/4°C.

1. Tighten all flange mounting fasteners uniformly, using a cross-draw sequence. The required torque for 2-1/2 inch flange fasteners is 40 to 50 ft.lbs. (54 to 68 Nm).
2. Trim the Alarm Check Valve in accordance with Figure 5 or 6, as applicable. Apply pipe thread sealant sparingly to male threads only.
3. The Alarm Vent Trim illustrated in Figure 7 must be installed if a water motor alarm is not to be used.
4. Plug unused alarm connections.
5. Suitable provision must be made for disposal of alarm line and system drainage water. Drainage water must be directed such that it will not cause damage or result in dangerous conditions.
6. The alarm line drain must be arranged so that there will be no danger of freezing.
7. The check valve in the externally mounted bypass around the waterway Clapper must be installed with its arrow pointed up and the drain check valve must be installed with its arrow pointing towards the drain.
8. It is recommended that a vent connection (which may also be used as an end-of-line Inspector's Test Connection), be piped from a cross main or branch line at the point most remote from the alarm valve. The vent line should be connected to the top of a cross main or to the end of a branch line and be located at the highest level of a multi-level installation.

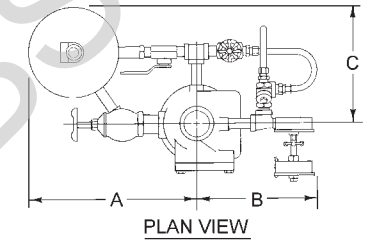
   The vent connection can be used to bleed excessive air from the system and, therefore, minimize the possibility of a false alarm due to a transient surge in supply pressure. The contraction/expansion associated with an excessive amount of trapped air could also cause the waterway Clapper to cycle open and shut during an inspector's test or during a discharge by a single sprinkler.



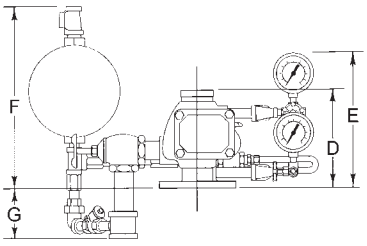
DIMENSIONS IN INCHES AND (mm)

	W/ S310	W/O S310
A	14-3/4 (375)	12 (305)
B	10-1/2 (267)	10-1/2 (267)
C	10-1/2 (267)	10 (254)
D*	8-7/8 (225)	8-7/8 (225)
E	12-1/4 (311)	12-1/4 (311)
F	16-1/2 (419)	N/A
G	4 (102)	4 (102)

*** S20 & S3001**



PLAN VIEW



ELEVATION VIEW

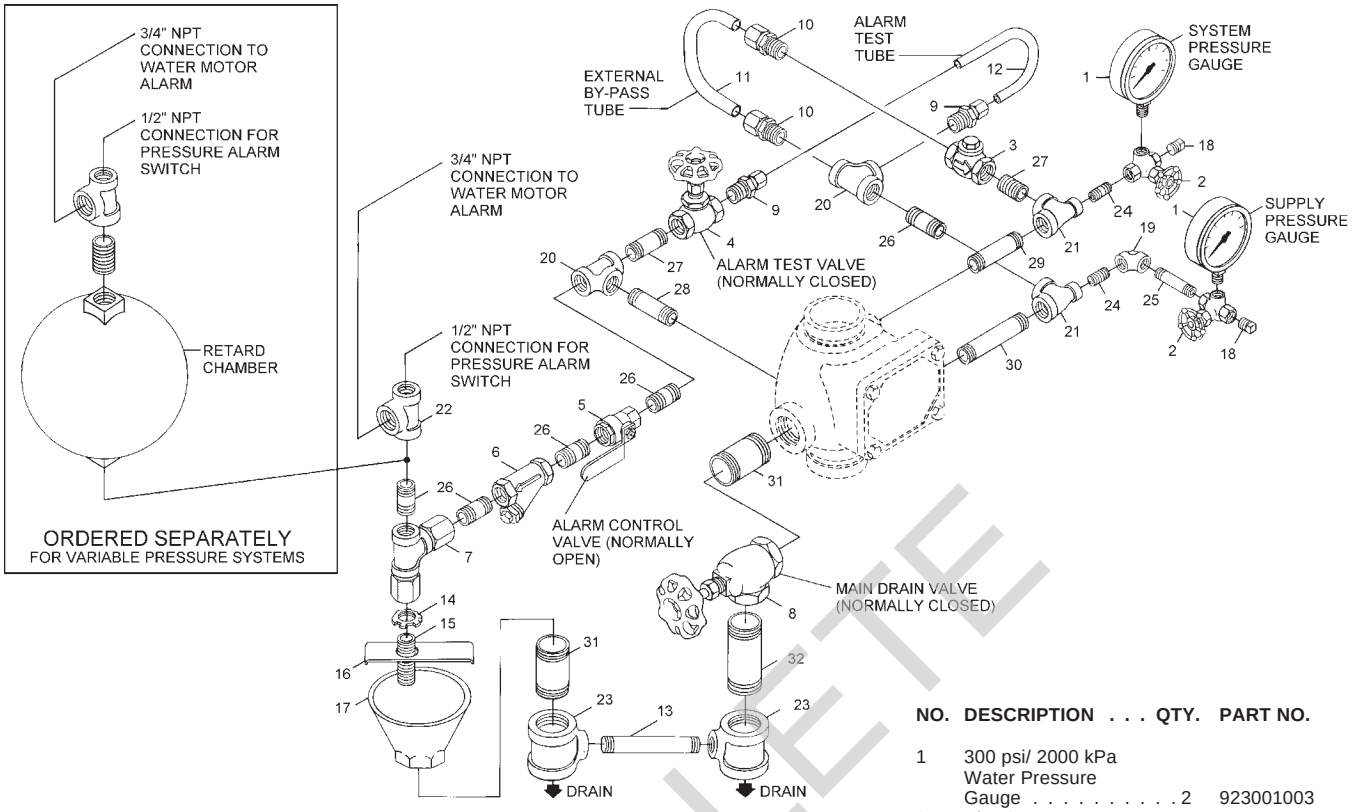
NO.	DESCRIPTION . . .	QTY.	PART NO.
1	300 psi/ 2000 kPa Water Pressure Gauge	2	923001003
2	1/4" Gauge Test Valve	2	460051002
3	1/2" Swing Check Valve	2	460491004
4	1/2" Globe Valve	1	460471004
5	1/2" Ball Valve	1	923001002
6	1/2" Y-Strainer	1	523531005
7	Restriction Assembly .	1	922101005
8	1-1/4" Angle Valve . . .	1	460481007
9	1/2" NPT x 1/2" Tube Connector	2	CH
10	1/2" NPT x 5/8" Tube Connector	2	CH
11	External By Pass Tube	1	923041017
12	Alarm Test Tube	1	923041047
13	1/4" Plug	2	CH
14	1/4" 90° Elbow	1	CH
15	1/2" Tee	2	CH
16	1/2" x 1/4" x 1/2" Tee .	2	CH
17	1/2" x 1/2" x 3/4" Tee .	1	CH
18	1/2" 90° Union Elbow .	1	CH
19	1-1/4" x 1-1/4 x 1/2" Tee	1	CH
20	1/4" x 1" Nipple	2	CH
21	1/4" x 2-1/2" Nipple . .	1	CH
22	1/2" x 1-1/2" Nipple . .	6	CH
23	1/2" x 2" Nipple	3	CH
24	1/2" x 2-1/2" Nipple . .	2	CH
25	1/2" x 3" Nipple	1	CH
26	1/2" x 4" Nipple	1	CH
27	1-1/4" x 2-1/2" Nipple .	1	CH
28	1-1/4" x 4-1/2" Nipple .	1	CH

NOTES

CH: Common Hardware

The nipples are Schedule 40 steel per ASTM A53 or A135. The fittings are either malleable iron per ANSI B16.3 or cast iron per ANSI B16.4. All threaded connections are NPT per ANSI B1.20.1.

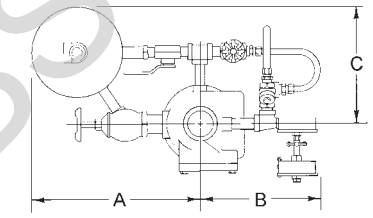
FIGURE 5
VERTICAL CLOSED DRAIN TRIM FOR 2-1/2 INCH ALARM CHECK VALVES



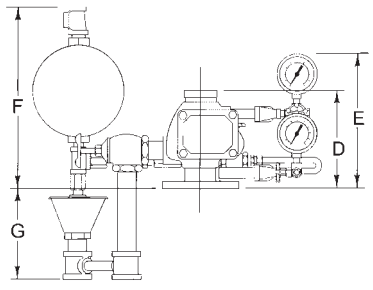
DIMENSIONS IN INCHES AND (mm)

	W/ S310	W/O S310
A	14-3/4 (375)	12 (305)
B	10-1/2 (267)	10-1/2 (267)
C	10-1/2 (267)	10 (254)
D*	8-7/8 (225)	8-7/8 (225)
E	12-1/4 (311)	12-1/4 (311)
F	16-1/2 (419)	N/A
G	8 (203)	8 (203)

*** S20 & S3001**



PLAN VIEW



ELEVATION VIEW

NO.	DESCRIPTION . . . QTY.	PART NO.
1	300 psi/ 2000 kPa Water Pressure Gauge 2	923001003
2	1/4" Gauge Test Valve 2	460051002
3	1/2" Swing Check Valve 1	460491004
4	1/2" Globe Valve 1	460471004
5	1/2" Ball Valve 1	923001002
6	1/2" Y-Strainer 1	523531005
7	Restriction Assembly . . 1	922101005
8	1-1/4" Angle Valve . . . 1	460481007
9	1/2" NPT x 1/2" Tube Connector 2	CH
10	1/2" NPT x 5/8" Tube Connector 2	CH
11	External By Pass Tube . 1	923041017
12	Alarm Test Tube 1	923041047
13	Support Bar 1	923431014
14	Jam Nut 1	926401037
15	PVC Nipple 1	926401009
16	Support Bracket 1	923431006
17	Drip Funnel 1	923431007
18	1/4" Plug 2	CH
19	1/4" 90° Elbow 1	CH
20	1/2" Tee 2	CH
21	1/2" x 1/4" x 1/2" Tee . . 2	CH
22	1/2" x 1/2" x 3/4" Tee . . 1	CH
23	1-1/4" x 1-1/4 x 1/2" Tee 2	CH
24	1/4" x 1" Nipple 2	CH
25	1/4" x 2-1/2" Nipple . . . 1	CH
26	1/2" x 1-1/2" Nipple . . . 5	CH
27	1/2" x 2" Nipple 2	CH
28	1/2" x 2-1/2" Nipple . . . 1	CH
29	1/2" x 3" Nipple 1	CH
30	1/2" x 4" Nipple 1	CH
31	1-1/4" x 2-1/2" Nipple . . 2	CH
32	1-1/4" x 8-1/2" Nipple . . 1	CH

NOTES

CH: Common Hardware

The nipples are Schedule 40 steel per ASTM A53 or A135. The fittings are either malleable iron per ANSI B16.3 or cast iron per ANSI B16.4. All threaded connections are NPT per ANSI B1.20.1.

FIGURE 6
VERTICAL OPEN DRAIN TRIM FOR 2-1/2 INCH ALARM CHECK VALVES

SETTING PROCEDURE

Steps 1 through 12 are to be performed when initially setting the Hydrus S30/S3001 Alarm Check Valves or after system operation due to a fire.

1. Open the 1/4 inch Gauge Test Valves for the Supply and System Pressure Gauges.
2. Check to see that the Handhole Cover bolts are tight. If not, cross-tighten them.
3. Close the Alarm Control Valve and the Alarm Test Valve.
4. Open the remote cross main or branch line vent connection (Ref. Step 8 in the Installation section).
5. Slowly open the main control valve until the sound of flowing water just begins and then open the valve one more turn.
6. Close the remote branch line vent connection after the discharge of aerated water ceases and the outlet has flowed full for at least 15 seconds.
7. Fully open the main control valve.
8. After the Supply and System Pressure Gauge readings have stabilized (i.e., the waterway Clapper has closed), open the Alarm Control Valve.
9. Open the end-of-line Inspector's Test Connection (or Alarm Test Valve, if acceptable to the authority having jurisdiction) and verify that the system alarms operate in accordance with the requirements of the authority having jurisdiction.

   NOTE

   Notify the proper authorities and all personnel who may be affected that an alarm test is to be performed.

10. Close the the end-of-line Inspector's Test Connection (or Alarm Test Valve).
11. Verify that water ceases to flow from the alarm line drain. If water continues to flow, follow the corrective procedure described in the Maintenance and Service section.

    NOTE

    The Restriction Assembly has a 1/8" (3.2 mm) diameter drain orifice. Sufficient time must be allowed for drainage of the Retard Chamber and the piping to the water motor alarm.

12. Once it has been verified that the flow of water out of the alarm line drain has stopped, the alarm valve is set and is ready for service.

    It is recommended that the Alarm Control Valve be wire sealed in the open position with a No. 16 twisted wire, the ends of which are secured by a lead seal. The wire seal should be looped through the large hole in the handle and be tightly twisted around the pipe nipple at the outlet of the Alarm Control Valve.

    NOTE

    After placing a fire protection system in service, notify the proper authorities and advise those responsible for monitoring proprietary and/or central station alarms.

MAINTENANCE AND SERVICE

The Hydrus S30/S3001 Alarm Check Valves do not require any regularly scheduled maintenance. It is recommended, however, that proper operation of the alarms be periodically verified in accordance with a procedure which is acceptable to the Authority Having Jurisdiction (AHJ). Any impairment must be immediately corrected.

NOTES

Before closing a fire protection system main control valve for maintenance work on the fire protection systems which it controls, permission to shut down the affected fire protection systems must first be obtained from the proper authorities and all personnel who may be affected by this decision must be notified.

If the alarms are silenced during operation, the Alarm Control Valve must be re-opened immediately after the fire protection system is restored to service. It is recommended that the Alarm Control Valve be wire sealed in the open position as described in Step 12 of the Setting Procedure section.

Inspection Procedure

It is recommended that the following inspection procedure be performed at least quarterly by a qualified Inspection Service:

1. Notify the proper authorities and all personnel who may be affected that an alarm test is to be performed.
2. Open the end-of-line Inspector's Test Connection (or Alarm Test Valve, if acceptable to the authority having jurisdiction) and verify that the system alarms operate in accordance with the requirements of the authority having jurisdiction. Verify that the water motor alarm and/or the pressure alarm switch properly actuate and within the elapsed time required by the authority having jurisdiction.
3. Verify that water is flowing from out of the alarm line drain at a rate consistent with the 1/8" (3.2 mm) diameter drain orifice in the Restriction Assembly.
4. Close the end-of-line Inspector's Test Connection (or Alarm Test Valve).
5. Verify that water ceases to flow from the alarm line drain.
6. Clean the 1/2 inch Strainer (located at the outlet of the Alarm Control Valve) as well as the 3/4 inch Strainer (located at the connection to the water motor alarm, as applicable). Be sure to replace the strainer baskets and tighten the caps securely.

   NOTE

   Cleaning of the Strainers after each operation of the alarms is especially important in the case of water supplies (such as lakes and rivers) having a large quantity of suspended matter. A clogged alarm line can prevent operation of the alarms.

7. Notify all authorities responsible for monitoring the installation that the fire protection system has been returned to service.

Sprinkler System Drain-Down

Draining down of the sprinkler system must be done in accordance with the following procedure:

1. Close the main control valve, if this has not already been done.
2. Open the remote cross main or branch line vent connection (Ref. Step 8 in the Installation section).

3. Open the Main Drain Valve. Check to see that the drainage water will not cause damage or result in dangerous conditions.
4. Wait until the Supply Pressure Gauge reads zero pressure and the sound of draining water has stopped before performing any maintenance work on the fire protection system.

Leakage from Alarm Line Drain

Follow the steps indicated below until water ceases to flow from the alarm line drain. Check for the discontinuation of the leakage after each step is complete.

1. Close the Alarm Control Valve and then open the Main Drain Valve. Let the water flow for about 5 seconds and then close the Main Drain Valve. This should flush any loose debris that may have become trapped between the Clapper Facing and the Seat Ring or in the seating area of the Main Drain Valve. Re-open the Alarm Control Valve.
2. Repeat Step No. 1 if the rate of continued flow out of the drain was noticeably reduced.
3. Open the Alarm Test Valve and allow water to flow for about 5 seconds before re-closing the valve. This should flush any loose debris that may have become trapped in the seating area of the Alarm Test Valve.
4. Repeat Step No. 3 if the rate of continued flow out of the drain was noticeably reduced.
5. Close the main control valve and open the Alarm Test Valve to relieve the supply pressure. Temporarily remove the Alarm Test Tube and tube fittings, and replace with two 1/2 inch NPT plugs. Open the main control valve two full turns.

   If the alarm line leakage is no longer present, the Alarm Test Valve must be replaced or repaired before reinstalling the Alarm Test Tube. If the alarm line leakage is still present, then the water is likely leaking from the “Alarm Connection”, refer to Step No. 6.
6. If it appears that the leakage noted in Step No. 5 is from the Alarm Connection, drain the system in accordance with the prescribed procedure. After the system has been drained, remove the Handhole Cover.

   While holding the Spring down by the coils, remove the Hinge Pin. Remove the Spring and Clapper Assembly (Items 5, 6, 7, and 8 in Figure 1).
7. Using a light, check for and remove any debris that may have become lodged within the Seat Ring groove. Inspect the Seat Ring seat for any damage. If the Seat Ring has become dented across the seat then the Alarm Check Valve will have to be replaced. It is impractical to re-face a Seat Ring in the field.
8. Check for and remove any debris which may have become lodged in the Clapper Facing. If a minor imperfection remains in the Clapper Facing, then turn it over after thoroughly cleaning both surfaces with a clean cloth. Replace the Clapper Facing if necessary. Be sure to securely re-tighten the retaining screw for the Clapper Washer.
9. Replace the Spring and Clapper Assembly as shown in Figure 1. Then while holding the coils of the Spring down, re-insert the Hinge Pin. Be sure that the Hinge Pin is pushed all the way to the rear of the valve.
10. Replace the Handhole Cover and Alarm Test Tube. Return the Alarm Valve to operation in accordance with the steps described in the Setting Procedure section.

Clogged Alarm Line Drain

If water either does not flow or only dribbles out of the alarm line drain during an alarm test, then it is likely that the screen protecting the Restriction Assembly drain orifice (Ref. Figure 4) has become clogged.

NOTE

A clogged alarm line drain will increase the likelihood of a false alarm in a variable pressure system.

If the installation has a closed alarm line drain, first open the union below the Drain Restriction and then remove the Drain Restriction for cleaning by back-flushing the screen. Re-install the Drain Restriction and re-assemble the drain line.

If the installation has an open alarm line drain unscrew the Drain Restriction from the Restriction Assembly and clean the screen by back-flushing.

Loss of Excess System Pressure

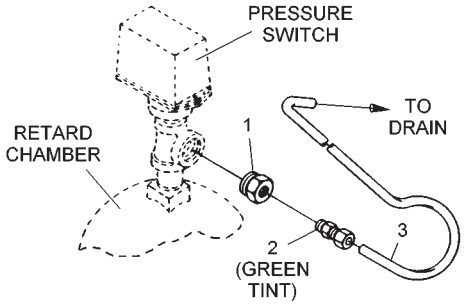
In a variable pressure system, the System Pressure Gauge should normally indicate a pressure greater than that shown by the Supply Pressure Gauge. Also, the value should be close to that of the peak supply pressure which has occurred after the system was placed in service.

NOTE

Loss of excess system pressure will increase the likelihood of a false alarm in the case of a variable pressure system.

Follow the procedure indicated below to correct a loss of excess system pressure condition.

1. Check for signs of continued leakage from the alarm line drain. If rust stains and/or water deposits indicate that continued leakage has been taking place, take corrective action according to the procedure described in the sub-section entitled “Leakage From Alarm Line Drain”.
2. If there are no signs of continued leakage from the alarm line drain, close the main control valve, open the



NO.	DESCRIPTION . . .	QTY.	PART NO.
1	3/4" x 1/4" Bushing . . .	1	CH
2	3/32" (2.4 mm) Vent Fitting	1	920321002
3	1/4" Tube, 5 ft. long . .	1	CH

CH: Common Hardware

FIGURE 7
ALARM VENT TRIM
(Ordered separately for use when a Water Motor Alarm is not installed)

Alarm Test Valve to relieve supply pressure, and then slowly loosen the External By Pass Tube from the By-pass Check Valve.

Remove the External By Pass Tube and check for leakage past the By Pass Check Valve. If there is leakage, debris may have become lodged between its clapper and seat. Drain the system in accordance with the prescribed procedure and then check or replace the By-pass Check Valve as required.

Reassemble the External By Pass Tube and return the Alarm Valve to operation in accordance with the steps described in the Operating Procedure section.

3. If there are no signs of leakage past either the Alarm Check Valve Clapper per Step 1 or the Bypass Check Valve per Step 2, inspect the sprinkler system for leakage.

System Pressure More Than 175 psi (12.1 Bar)

The maximum rated service pressure of the Alarm Check Valves is 175 psi (12.1 bar). Wet pipe sprinkler systems subject to ambient temperatures in excess of 100°F/38°C can experience significant increases in system pressure due to the thermal expansion of the water. In particular, a gridded wet-pipe system with a relatively small air pocket and no relief valve can be subjected to an increase of more than 100 psi (6.9 bar), due to an increase in ambient temperature of approximately 50°F/28°C.

As necessary, install a pressure relief valve in accordance with the requirements of the authority having jurisdiction, to automatically relieve the over pressure which could otherwise be created in wet-pipe systems which are exposed to significant increases in ambient temperature.

False Alarms

If repeated false alarms occur in a variable pressure system:

1. Check for and correct the cause of continued leakage out the alarm line drain.
2. Check for and clean a clogged alarm line drain.
3. Check for and correct the cause of a loss in excess system pressure.
4. Drain the sprinkler system and re-fill it in accordance with the steps described in the Setting Procedure section.

Intermittent Alarms

If the pressure alarm switch gives a steady signal but the water motor generates an intermittent alarm, check for binding in the water motor alarm drive shaft.

If the water motor alarm and/or the pressure alarm switch provide an intermittent alarm, it is likely the consequence of an excessive amount of air being trapped within the sprinkler system. Drain the sprinkler system and re-fill it in accordance with the steps described in the Setting Procedure section.

A discontinuance of an alarm may also be caused by the Clapper closing due to a sudden drop in supply pressure or the shut-off of a pump in the supply line. These types of problems can only be corrected by maintaining a steady supply pressure.

ORDERING PROCEDURE

Please Specify:

1 Hydrus S30 (Groove x Groove) Alarm Check Valve, 2-1/2 Inch (DN65): #4915

Hydrus S3001 (Flange x Groove) Alarm Check Valve, 2-1/2 Inch (DN65): #4910

2. Model S310 Retard Chamber, #6420
3. Alarm Check Valve Trim for 2-1/2 Inch Valves,
   Vertical Closed Drain (Ref. Fig. 5), #4961
   Vertical Open Drain (Ref. Fig. 6), #4966
4. Alarm Vent Trim (Ref. Fig. 7), #4962-02

Refer to Price List for for complete listing of Part Numbers with respect to sizes, replacement parts, etc.

AVAILABILITY AND SERVICE

Star Sprinkler inc. products and devices are available worldwide through a network of independent distributors. Please contact Star Sprinkler Inc. for information and the name and address of the Star distributor in your area.

LIMITED WARRANTY

Seller warrants for a period of one year from date of shipment (warranty period) that the products furnished hereunder will be free of defects in material and workmanship.

For further details on Warranty, contact Star Sprinkler Inc.