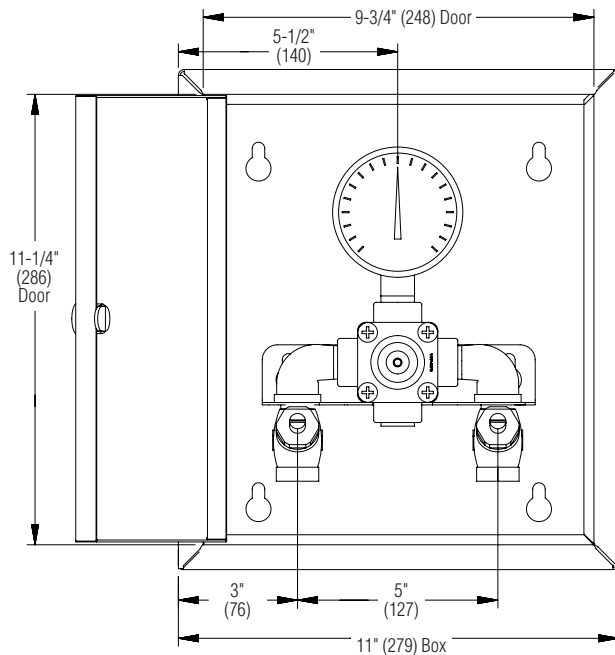
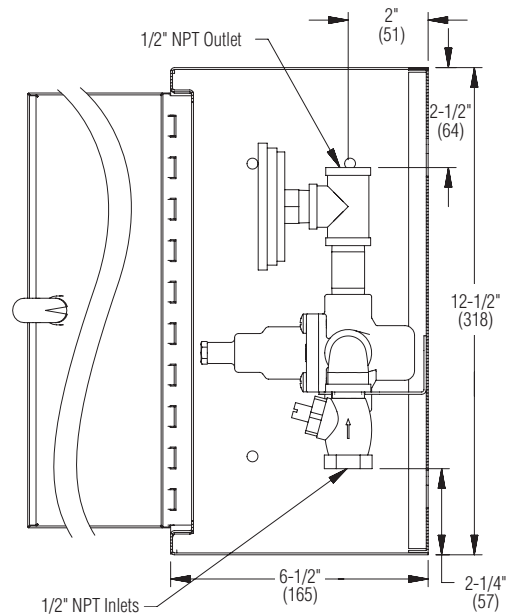


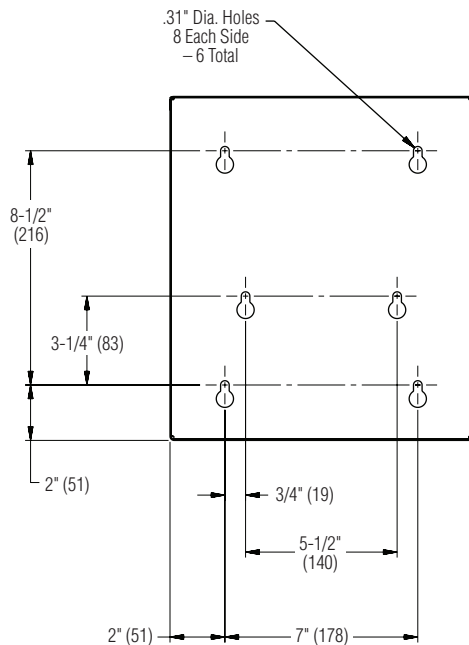
Front View



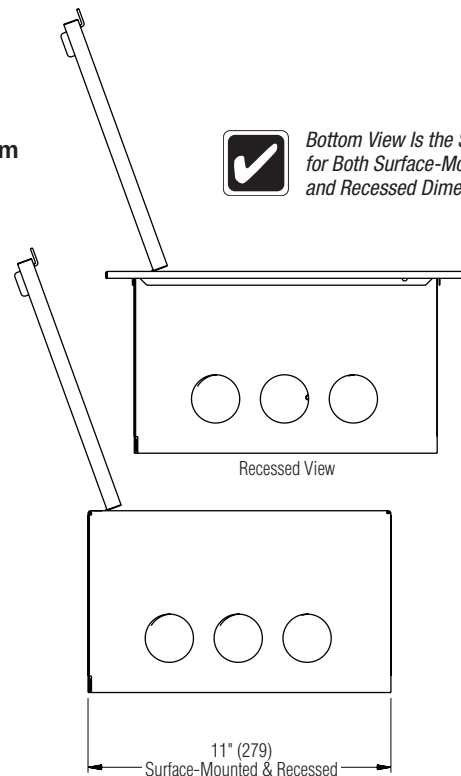
Side View



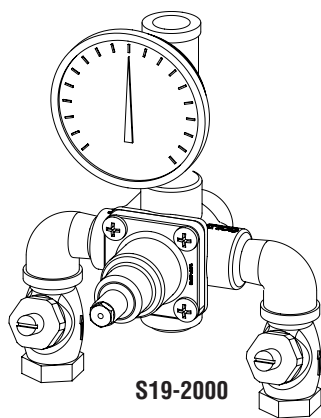
Back View



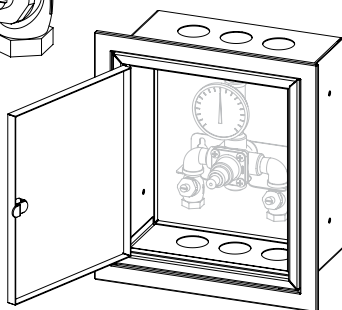
Bottom View



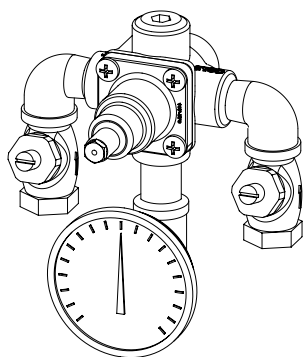
*Bottom View Is the Same
for Both Surface-Mounted
and Recessed Dimensions.*



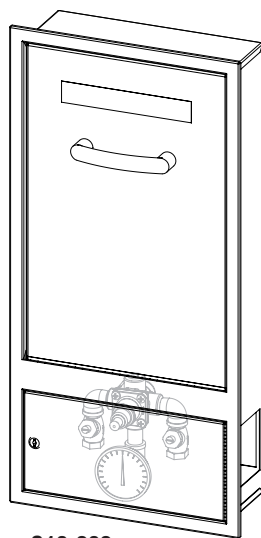
S19-2000



**S86-066
(Cabinet Only)**



S19-2000EFX



**S19-292
(Cabinet Only)**

ASSE 1071 & cUPC Certified



Inlet Connections: 1/2" NPT
 Outlet Connection: 1/2" NPT
 Temperature Range: 65° – 90° F
 Maximum Pressure: 125 PSI
 Inlet Temperature Hot: 120° – 180° F
 Inlet Temperature Cold: 33° – 80° F
 Minimum Temperature Differential
 (from valve set point): 20° F

Raccords d'arrivée : 1/2 po NPT
 Raccord de sortie : 1/2 po NPT
 Plage de température : 65 – 90 °F
 Pression maximum : 125 lb/po²
 Température d'arrivée, eau chaude : 120 – 180 °F
 Température d'arrivée, eau froide : 33 – 80 °F
 Différence de température minimum
 (à partir de valeur de consigne de robinet) : 20 °F

Conexiones de entrada: NPT de 1/2 pulg.
 Conexión de salida: NPT de 1/2 pulg.
 Rango de temperaturas: 65 – 90 °F
 Presión máxima: 125 PSI
 Temperatura de entrada, caliente: 120 – 180 °F
 Temperatura de entrada, fría: 33 – 80 °F
 Diferencial de temperatura mínima
 (desde el punto de ajuste de la válvula): 20 °F

Installation

S19-2000, S19-2000EFX Series

**Thermostatic Mixing Valve
with Optional Cabinet**

**Robinet
thermostatique
mélangeur
avec cabinet facultatif**

**Válvula mezcladora termostática
con armario opcional**

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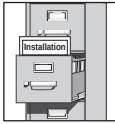
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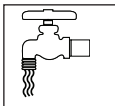
IMPORTANT!



Read this entire installation manual to ensure proper installation. When finished with the installation, file this manual with the owner or maintenance department. Compliance and conformity to local codes and ordinances is the responsibility of the installer.



Separate parts from packaging and make sure all parts are accounted for before discarding packaging material. If any parts are missing, do not begin installation until you obtain the missing parts.



Valve should be accessible for testing, adjusting and maintenance in the installed position.



Make sure that all water supply lines have been flushed and then completely turned off before beginning installation. Debris in supply lines can cause valves to malfunction.

Product warranties may be found under "Products" on our web site at bradleycorp.com.

Supplies recommended for installation

- Lockable shut-off on the outlet if tempered water is supplied to one or more emergency fixtures
- Lockable shut-off on the inlets/supplies
- (6) 1/4" wall anchors and fasteners for surface-mounted cabinet
- (4) 1/4" fasteners (and wall anchors, if necessary) for recess-mounted cabinet
- Unions on all connections to facilitate removal of valve

Tools required for temperature adjustment

- 5/64" Allen wrench
- Blade screwdriver

1 Install Optional Cabinet (If not installing cabinet, skip to Step 2)



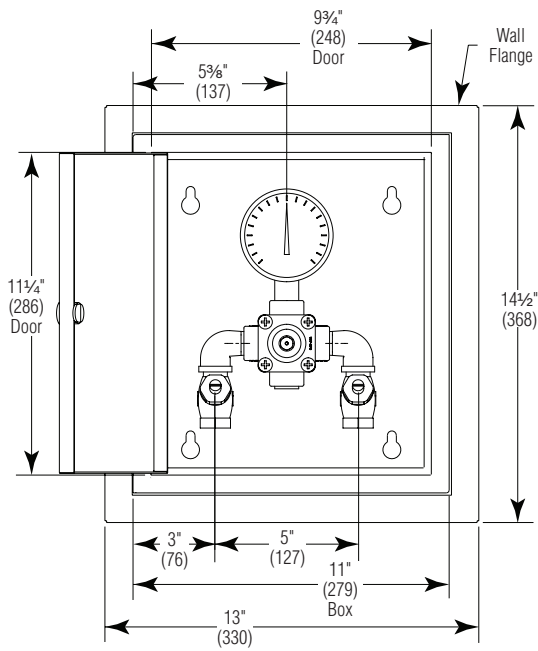
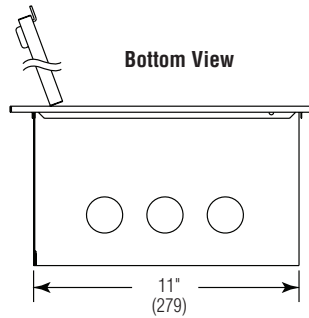
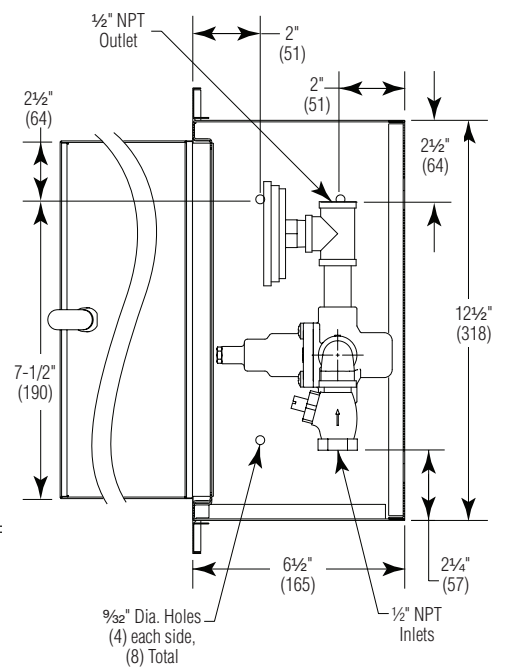
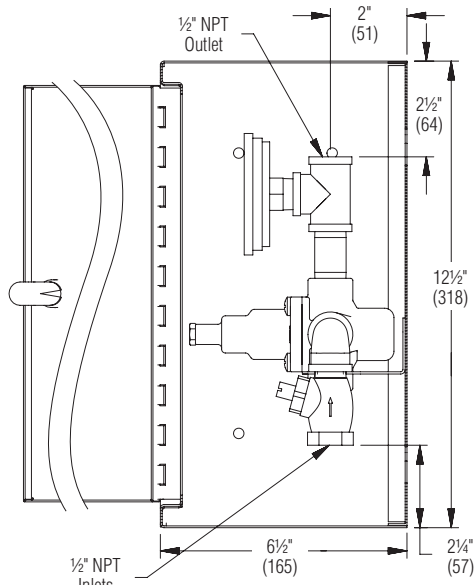
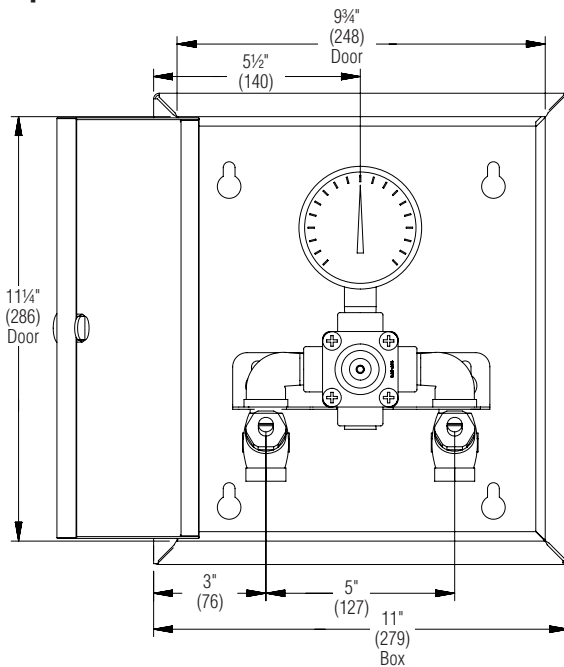
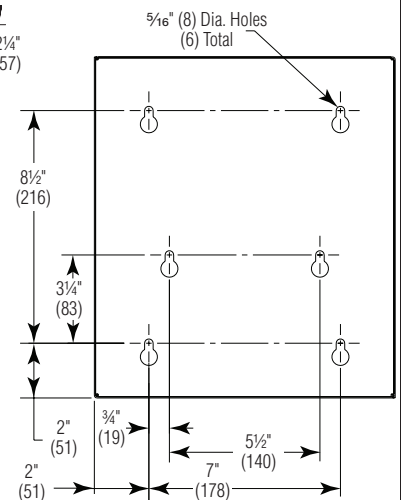
If installing S19-2000EFX into Dropdown Eyewash Cabinet S19-292, please see mounting instructions supplied with cabinet.

Recessed Cabinet:

1. Rough-in wall opening 11-1/2" W x 13" H.
2. Insert the cabinet and secure to wall with four 1/4" fasteners properly anchored (supplied by installer.)
3. Install two anchors and screws through the valve bracket in back of the cabinet into a secure brace (supplied by installer) or into wall. This will support the valve.
4. Install the valve nipples and one-half of the union ball valve using pipe sealant or teflon tape. Install the other half of the union ball valve onto inlet and outlet pipe.
5. Insert the valve into the bracket in the cabinet (right side goes in first). Continue with the valve installation procedure.
6. Position the wall flange tight to the wall and caulk in place.

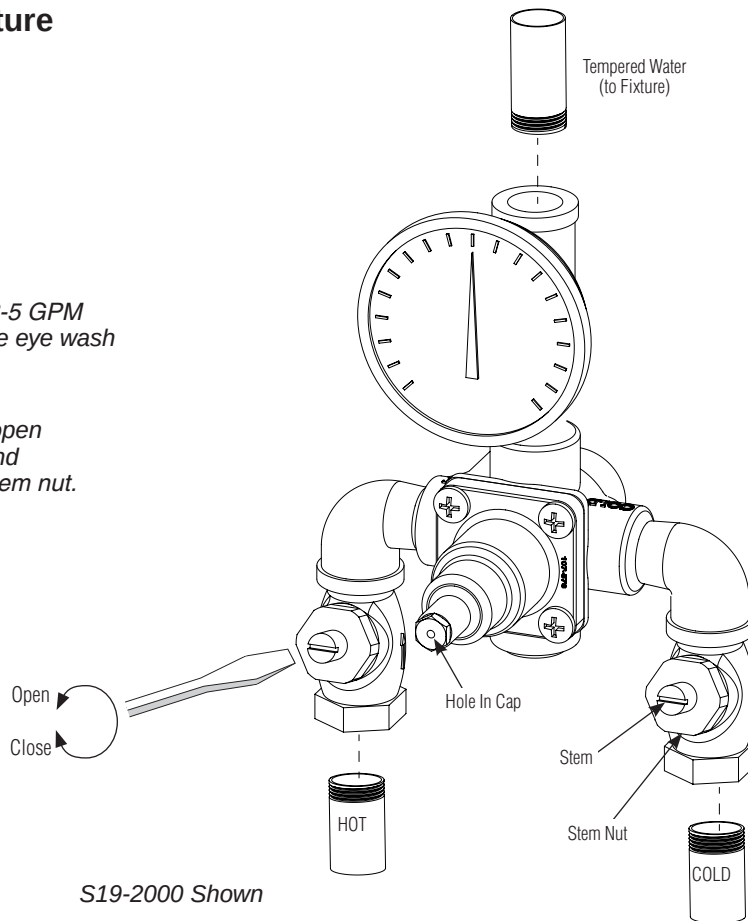
Surface-Mounted Cabinet:

1. Measure and mark the cabinet mounting hole locations at the dimensions shown on next page. Install six 3/8" wall anchors (supplied by installer).
2. Position the cabinet onto the wall and secure into place with six 3/8" wall fasteners (supplied by installer).
3. Install the valve nipples and one-half of the union ball valve using pipe sealant or teflon tape. Then install the other half of the union ball valve onto the inlet and outlet piping.
4. Insert the valve into the bracket in the cabinet (right side of the valve goes in first). Continue with the valve installation procedure.

Optional Recessed Cabinet**Front View****Bottom View****Side View****Optional Surface-Mounted Cabinet****Mounting Hole Locations**

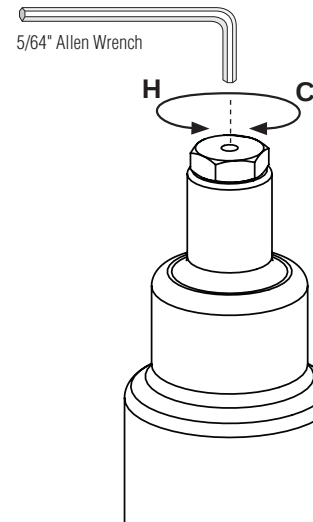
2 Connect Supply Lines and Fixture

-  Check for leaks by pressurizing unit **SLOWLY**.
-  Check the temperature when approx. 3-5 GPM water flow is reached (equivalent to one eye wash or face wash) and adjust if necessary.
-  When the check stops are in the fully open (operating) position, the stem will extend approximately 1/2" (13mm) from the stem nut.



3 Adjust Temperature with Water Running

-  Check the temperature when approximately 3 – 5 GPM water flow is reached (equivalent to one eye wash).
-  This device must be checked for final temperature and adjusted as necessary. The standard preset factory temperature setting is 85°F (29°C) [the range of the valve is 65°F–90°F (18°C–32°C)]. Insert Allen Wrench through the hole in the cap and into the set screw to adjust. Consult proper medical and/or safety authorities for the optimum temperature recommended for your particular application.



4 Test Unit DO NOT SKIP THIS STEP!!!

Shut the hot water supply off by closing hot water inlet valve or supply check valve. While the hot water supply is turned off, check to make sure the cold water continues to flow. If the cold water is flowing properly, reopen the hot water supply.

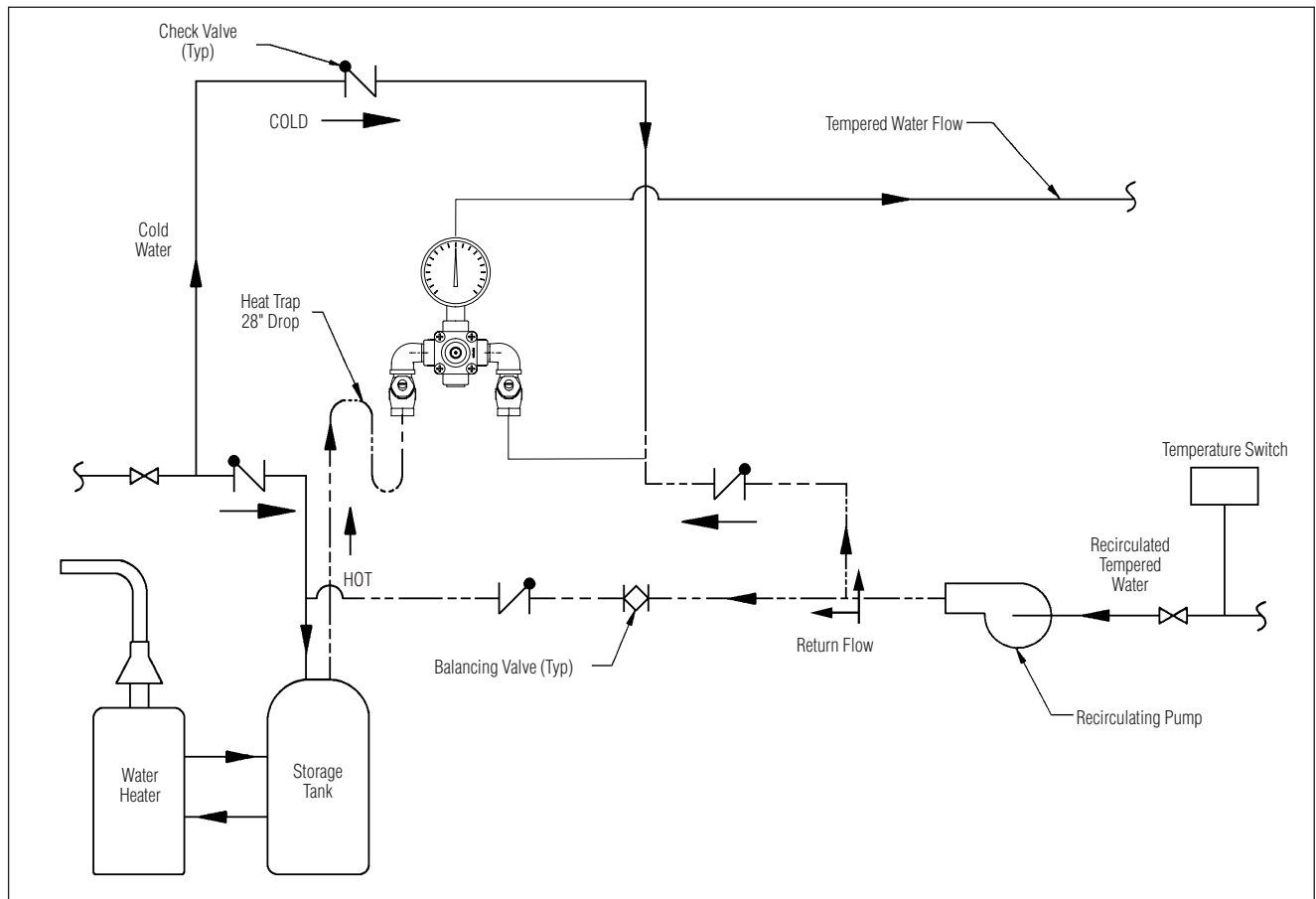
Shut the cold water supply off by closing the cold water inlet valve or supply check valve. While the cold water supply is off, check to make sure that the hot water flow has shut down to less than 0.5gpm. If hot water is shut down, fully reopen cold water supply.

-  Test the system weekly (turn on the water supply and check for constant control of the desired set temperature).

5 Optional Water Recirculation Setup



Recirculating the water in the system provides constant regulation of the water temperature. Flush the supply lines thoroughly after completing installation. Close off all fixtures and label them as not available for use during the recirculating process.



1. Turn off the recirculating pump and turn on the water supply at emergency fixture (a water flow rate of 3 – 5 GPM is required).
2. Let the water run through the system until a consistent temperature is obtained. If you do not obtain the required temperature, refer to step #3 on previous page for temperature readjustment.
3. As soon as the water reaches the proper temperature, turn on the recirculating pump (make certain the proper system temperature has been achieved before proceeding).
4. Check the water temperature at the return pump. If the temperature exceeds the appropriate level by 2°F, adjust the temperature high-limit switch (this will turn off the pump). Wait until the return water temperature is 5°F below the appropriate level and adjust the low-limit switch (this will turn the pump back on).
5. Open the balancing valve completely.
6. Turn off all fixtures and make sure there is no water running through the system (the cold inlet pipe should feel warm to the touch).
7. Let the system run for 30 minutes or longer without water. If, after thirty minutes, the water temperature increases, you may readjust the temperature by slowly closing the balancing valve until the appropriate temperature is reached.

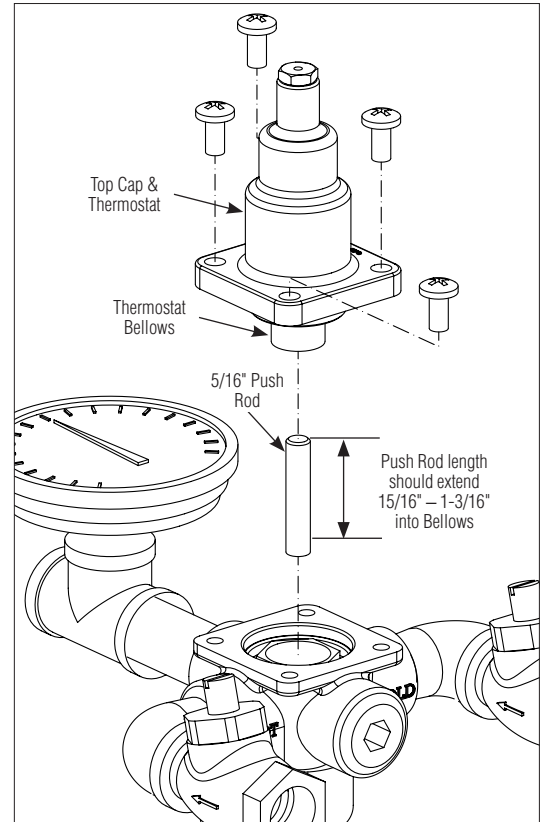
Troubleshooting Thermostatic Mixing Valve



Before attempting to troubleshoot the valve or disassemble the components, check for the following:

- Stop/check valves are fully open (the slotted stem extends approximately 1/2" from the stem nut) and that all inlet and outlet shut-off valves are open.
- Hot and cold inlet pipes are connected properly, and that there are no cross-connections or leaking stop/check valves.
- Water heater output is at least 20° F above the set temperature.

Be sure to close the appropriate shut-off valves prior to disassembly of the valve and reopen the valves after inspection and repair is complete.

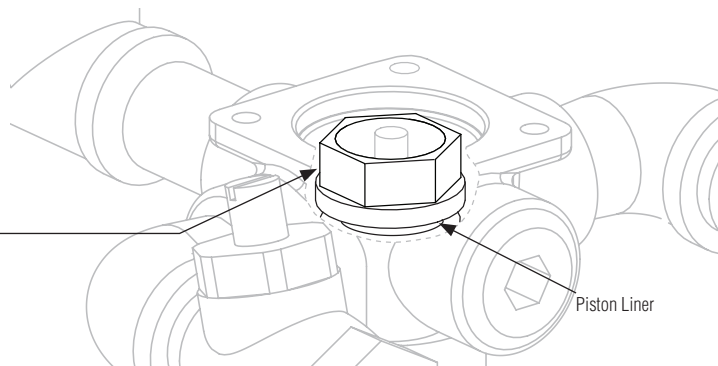


Problem	Cause	Solution
External leaks in the system	Either the NPT joints or the o-rings have been damaged.	Replace the NPT joints and/or o-rings where necessary. For replacement of o-rings, contact your Bradley representative and ask for O-Ring Seal Kit (S65-170).
No hot water flow (cold water flow only)	The thermostat has failed and, subsequently, the safety shut-off has engaged.	Inspect Thermostat: 1. Remove the top cap and thermostat. 2. Insert the 5/16" dia. push rod into the thermostat bellows. 3. Mark the length the push rod extends into the bellows (at room temperature, with 10 lb. of force, the length should be approx. 15/16" – 1-3/16"). 4. If the push rod length is not in the proper range, the thermostat must be replaced (it cannot be repaired). Contact your Bradley representative and ask for Thermostat Kit (S65-171).
Limited water flow	The inlet shut-off valve may be partially closed or there has been a significant decrease in water pressure.	
	Dirt and debris have collected on the check screen or seat, limiting the movement of the stop and checks.	Clean Stop and check Valves: Remove the stop and checks, clean the seat and reassemble the valve. Do not remove the seat. The components may be brushed with a small wire brush to remove debris. A pair of tweezers works well for pulling debris out from the seat. If the stop and checks need to be replaced, contact your Bradley representative and ask for Check/Stop Kit (S27-102-Rough Brass, or S27-292A-Chrome).
Temperature fluctuation or improper Temperature	The stop and check sections of the valve do not move freely.	Clean Stop and Check Valves as described above.
	Thermostat is slowly failing.	Check Thermostat as described above, or replace.
	Inlet supply line to the mixing valve is being shared by other pieces of equipment that are used only periodically, such as laundry appliances or washdown stations. It may reduce the inlet pressure to the mixing valve to less than 3 PSI. The supply line size may not be large enough to supply both the valve and the other appliances.	Enlarge the supply line size, reconfigure the supply line or regulate the supply usage.
	Recirculation is not balanced.	Review recirculation set up on page 5.
	Piston does not move freely and must be cleaned.	See next page for piston disassembly and cleaning directions.

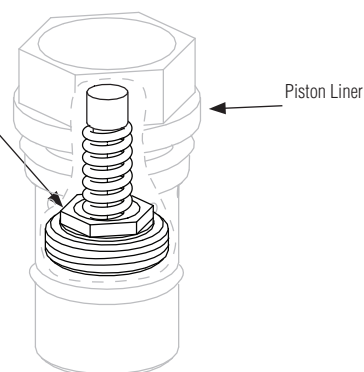
Troubleshooting: Piston Disassembly and Cleaning

- A** Remove the Top Cap and Thermostat Assembly as shown on Page 6. Set the 5/8" Push Rod aside.

- B** Using a 15/16" socket wrench, loosen the piston liner from the valve body and lift out with a needle-nose pliers.

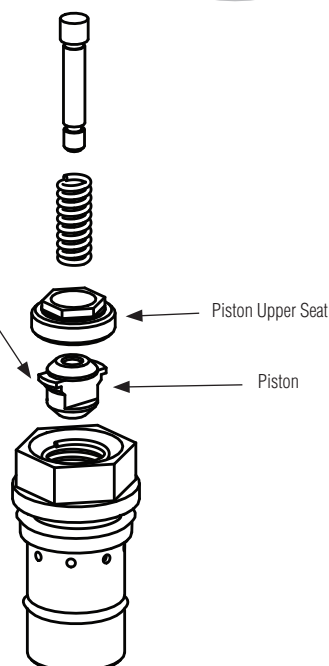


- C** Using a 1/2" deep socket wrench, loosen the piston upper seat from the piston liner and lift out parts with a needle-nose pliers.

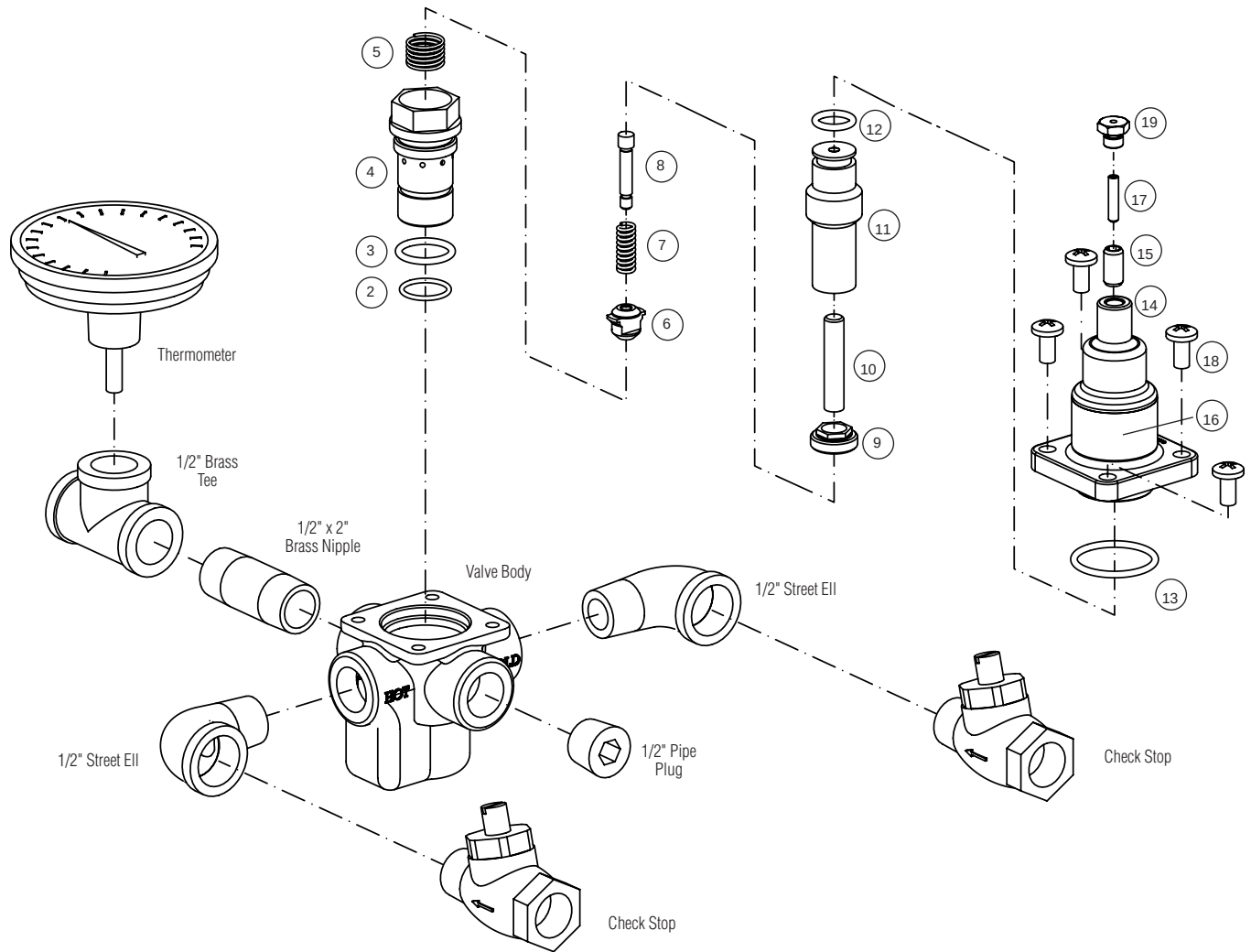


- D** Dissamble and clean the piston assembly parts with any cleaner suitable for brass and stainless steel. (if necessary, use a 400-grit sandpaper to polish and hone the piston and liner.)

- E** Re-assemble the piston assembly. Push the mechanism up and down several times to make sure the piston moves smoothly and consistently. If it is not consistent, repeat Procedure D until it moves freely, or replace. Contact your Bradley representative and ask for Piston/Liner Kit (part number S65-172).



Parts Breakdown



Thermostat Kit S65-171

Item	Qty.	Description
11	1	Thermostat
12	1	O-Ring
13	1	O-Ring

Piston & Liner Kit S65-172

Item	Qty.	Description
2	1	O-Ring
3	1	O-Ring
4	1	Liner
5	1	Spring
6	1	Piston
7	1	Spring
8	1	Overheat Screw
9	1	Upper Seat

O-Ring Kit S65-170

Item	Qty.	Description
2	1	O-Ring
3	1	O-Ring
12	1	O-Ring
13	1	O-Ring

Center Section Kit S65-303

Item	Qty.	Description
2	1	O-Ring
3	1	O-Ring
4	1	Liner
5	1	Spring
6	1	Piston
7	1	Spring
8	1	Overheat Screw
9	1	Upper Seat
10	1	Push Rod
11	1	Thermostat
12	1	O-Ring
13	1	O-Ring
14	1	Control Cap
15	1	Set Screw
16	1	Label
17	1	Set Screw
18	4	1/4 Screw
19	1	Cap

Flexible Connection Lines for S19-2000EFX

When used with S19-292, order Part No. 269-653 (3 supplied with unit).



Kit numbers for rough brass finish. Contact Bradley for other configurations.



As of November 2001, the piston (Item 7) has replaced the seal holder and seal as a direct replacement.



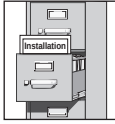
As of June 2008, the brass control cap (item 15) has been replaced by a plastic cap. All internal components are identical.



As of July 2012, the Temperature Adjustment Control (items 15, 17 and 19) have been updated and are compatible with all units using the plastic Control Cap (June 2008 to present).



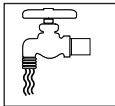
IMPORTANT!



Lire ce manuel d'installation dans son intégralité pour garantir une installation appropriée. Une fois celle-ci terminée, classer ce manuel auprès du service à la clientèle ou d'entretien. L'installateur est responsable de respecter la conformité aux codes et ordonnances locaux.



Séparer les pièces de l'emballage et veiller à bien avoir toutes les pièces avant de jeter le matériau d'emballage. Le cas échéant, ne pas commencer l'installation avant d'avoir obtenu les pièces manquantes.



La vanne doit être accessible en position installée pour les essais, les réglages et l'entretien.



Veiller à bien vidanger et fermer toutes les conduites d'eau avant de commencer l'installation. Tout débris dans les conduites d'alimentation peut provoquer un mauvais fonctionnement des vannes.

Les garanties du produit se trouvent sous la rubrique « Products » (Produits) sur notre site Web à bradleycorp.com

Fournitures requises pour l'installation :

- Robinet d'arrêt verrouillable sur la sortie en cas d'alimentation d'eau tempérée vers un ou plusieurs appareils d'urgence
- Robinet d'arrêt verrouillable sur les arrivées/alimentations
- (6) Ancrages muraux et fixations 3/8 po pour armoire montée en surface
- (4) Fixations 1/4 po (et ancrages muraux, si nécessaire) pour armoire encastrée
- Raccords sur toutes les connexions pour faciliter la dépose du robinet

Outils requis pour réglage de température

- Clé Allen 5/64 po
- Tournevis à lame

1 Poser l'armoire en option (si l'installation est sans armoire, passer à l'étape 2).



En cas de pose du S19-2000EFX dans l'armoire de douche oculaire escamotable S19-292, voir les instructions de montage fournies avec l'armoire.

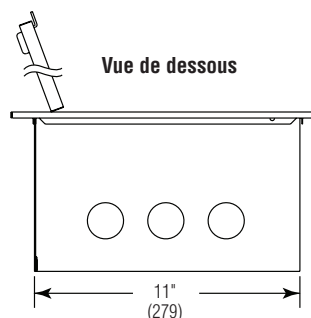
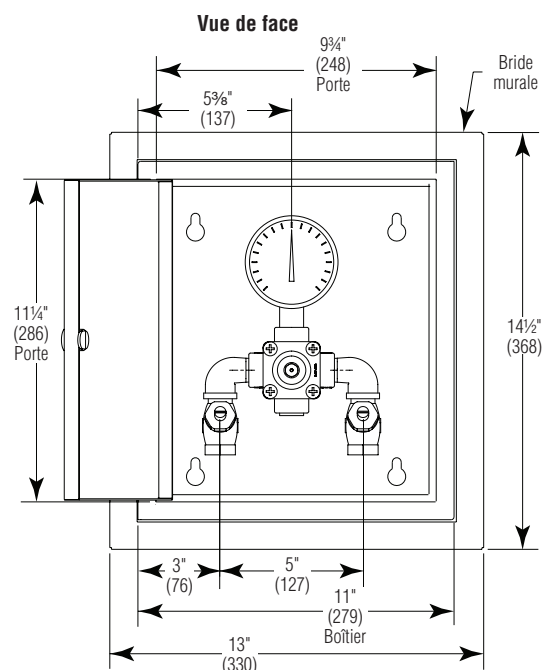
Armoire encastrée :

1. Ouverture murale pour plomberie brute 292 mm L x 330 mm H (11-1/2 po L x 13 po H).
2. Insérer l'armoire et la fixer au mur avec quatre fixations 1/4 po adéquatement ancrées (fournies par l'installateur).
3. Installer deux ancrages et vis à travers le support de robinet à l'arrière de l'armoire et dans un contrevent sécuritaire (fourni par l'installateur) ou dans un mur. Cela soutiendra le robinet.
4. Installer les raccords filetés du robinet et la moitié du clapet à bille du raccord en utilisant un produit d'étanchéité pour tuyaux ou du ruban téflon. Installer l'autre moitié du clapet à bille du raccord sur le tuyau d'entrée et de sortie.
5. Insérer le robinet dans le support dans l'armoire (le côté droit entre en premier). Continuer avec la procédure d'installation du robinet.
6. Positionner la rosace murale tout contre le mur et colmater en place.

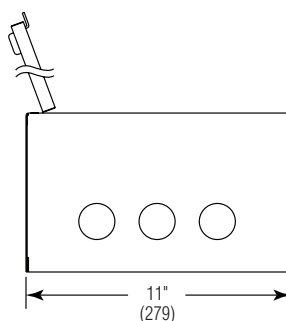
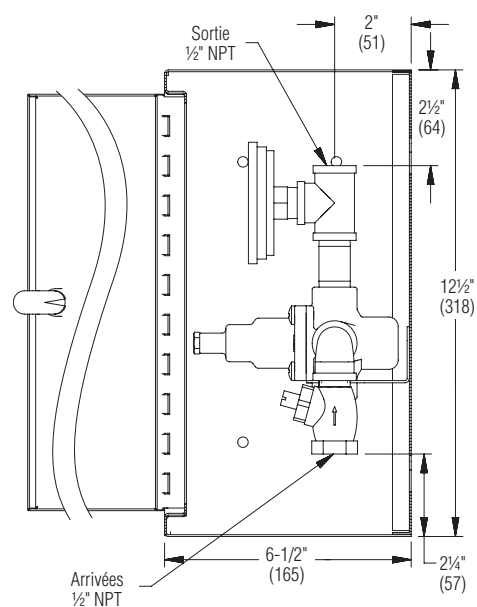
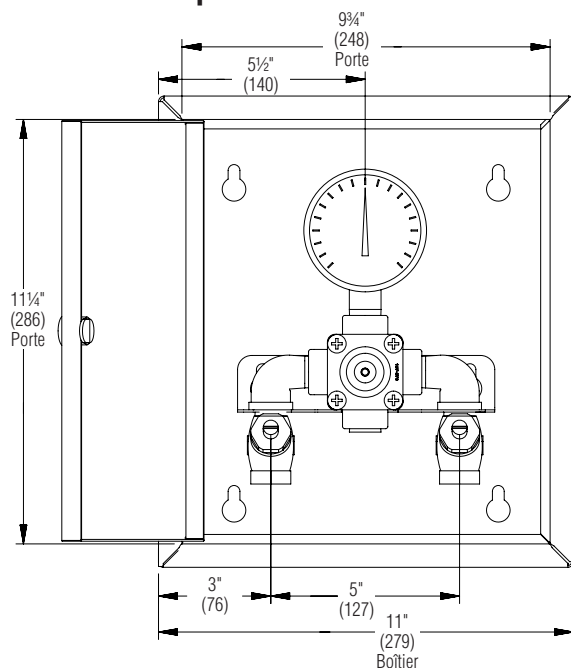
Armoire montée en surface :

1. Mesurer et marquer les emplacements des trous de montage de l'armoire selon les dimensions indiquées à la page suivante. Installer six ancrages muraux de 3/8 po (fournis par l'installateur).
2. Positionner l'armoire dans le mur et fixer en place avec six fixations murales de 3/8 po (fournies par l'installateur).
3. Installer les raccords filetés du robinet et la moitié du clapet à bille du raccord en utilisant un produit d'étanchéité pour tuyaux ou du ruban téflon. Puis installer l'autre moitié du clapet à bille du raccord sur le tuyau d'entrée et de sortie.
4. Insérer le robinet dans le support dans l'armoire (le côté droit du robinet entre en premier). Continuer avec la procédure d'installation du robinet.

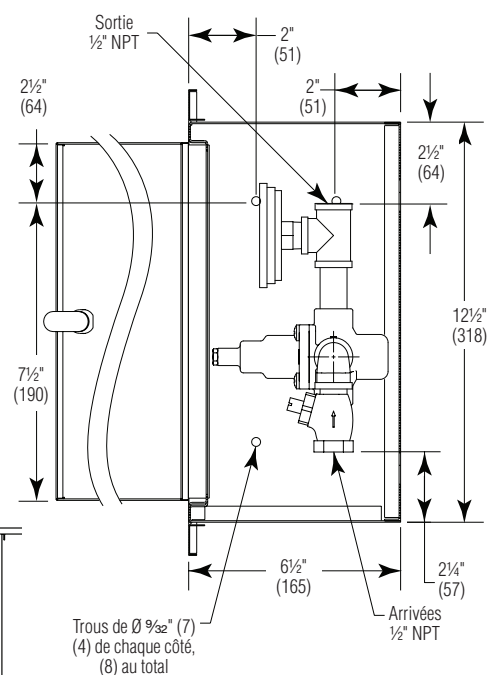
Armoire encastrée en option



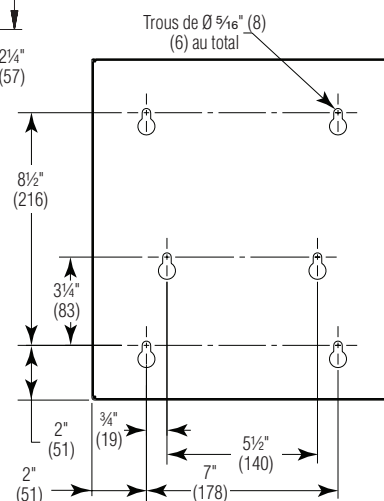
Armoire en option montée en surface



Vue latérale (mm)

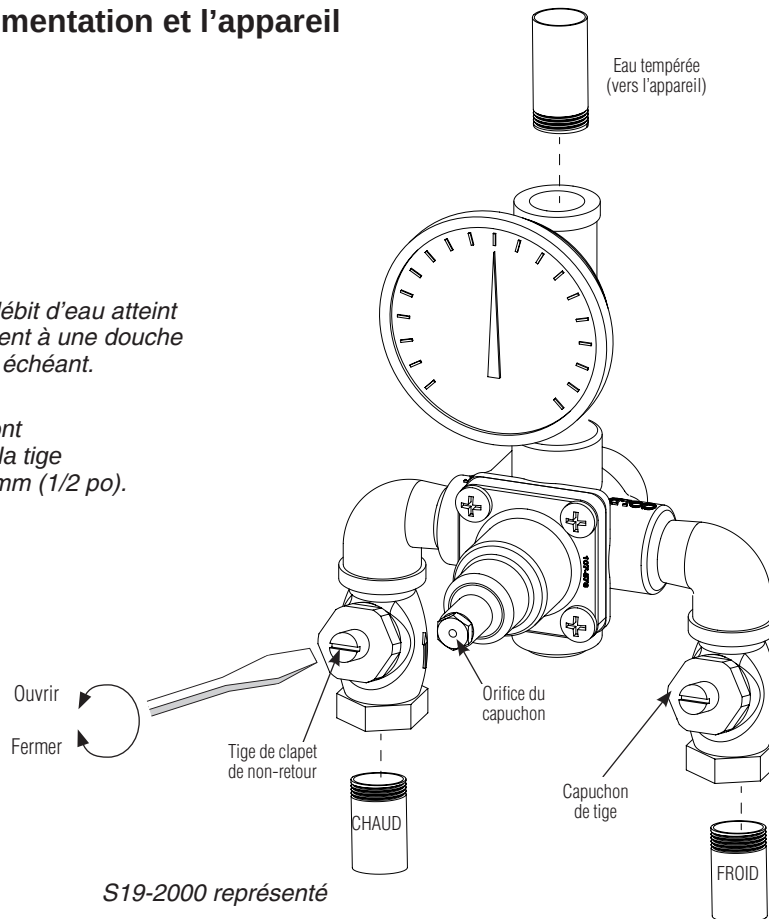


Emplacements de trous de montage



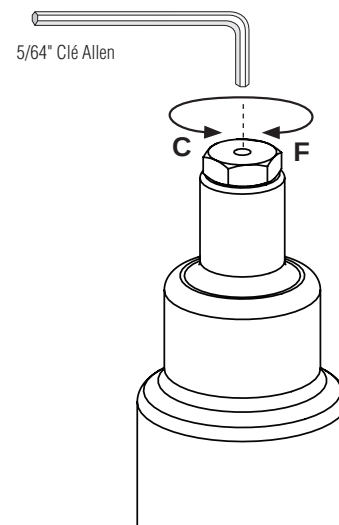
2 Raccorder les conduites d'alimentation et l'appareil

- ✓ Mettre **LENTEMENT** sous pression pour vérifier l'étanchéité.
- ✓ Contrôler la température lorsque le débit d'eau atteint 11 à 19 l/min (3 à 5 gal/min) (équivalent à une douche oculaire ou faciale) et l'ajuster le cas échéant.
- ✓ Lorsque les clapets de non-retour sont complètement ouverts (en marche), la tige dépasse du capuchon d'environ 13 mm (1/2 po).



3 Régler la température pendant que l'eau coule

- ✓ Contrôler la température lorsque le débit d'eau atteint 11 à 19 l/min (3 à 5 gal/min) (équivalent à une douche oculaire).
- ✓ Contrôler la température finale du dispositif et l'ajuster le cas échéant. La température de consigne standard pré réglée à l'usine est de 29 °C (85 °F) [la plage du robinet est de 18 à 32 °C (65 à 90 °F)]. Insérez la clé Allen à travers l'orifice du capuchon et dans la vis de calage pour régler. Consulter les autorités médicales et/ou de sécurité appropriées pour connaître la température optimale recommandée pour l'application en question.



4 Tester le robinet NE PAS SAUTER CETTE ÉTAPE!!!

Fermer l'alimentation d'eau chaude en fermant le clapet ou le robinet d'arrivée d'eau chaude. Pendant que l'alimentation d'eau chaude est coupée, vérifier que l'eau froide continue de s'écouler. Si l'eau froide s'écoule correctement, rouvrir l'alimentation d'eau chaude.

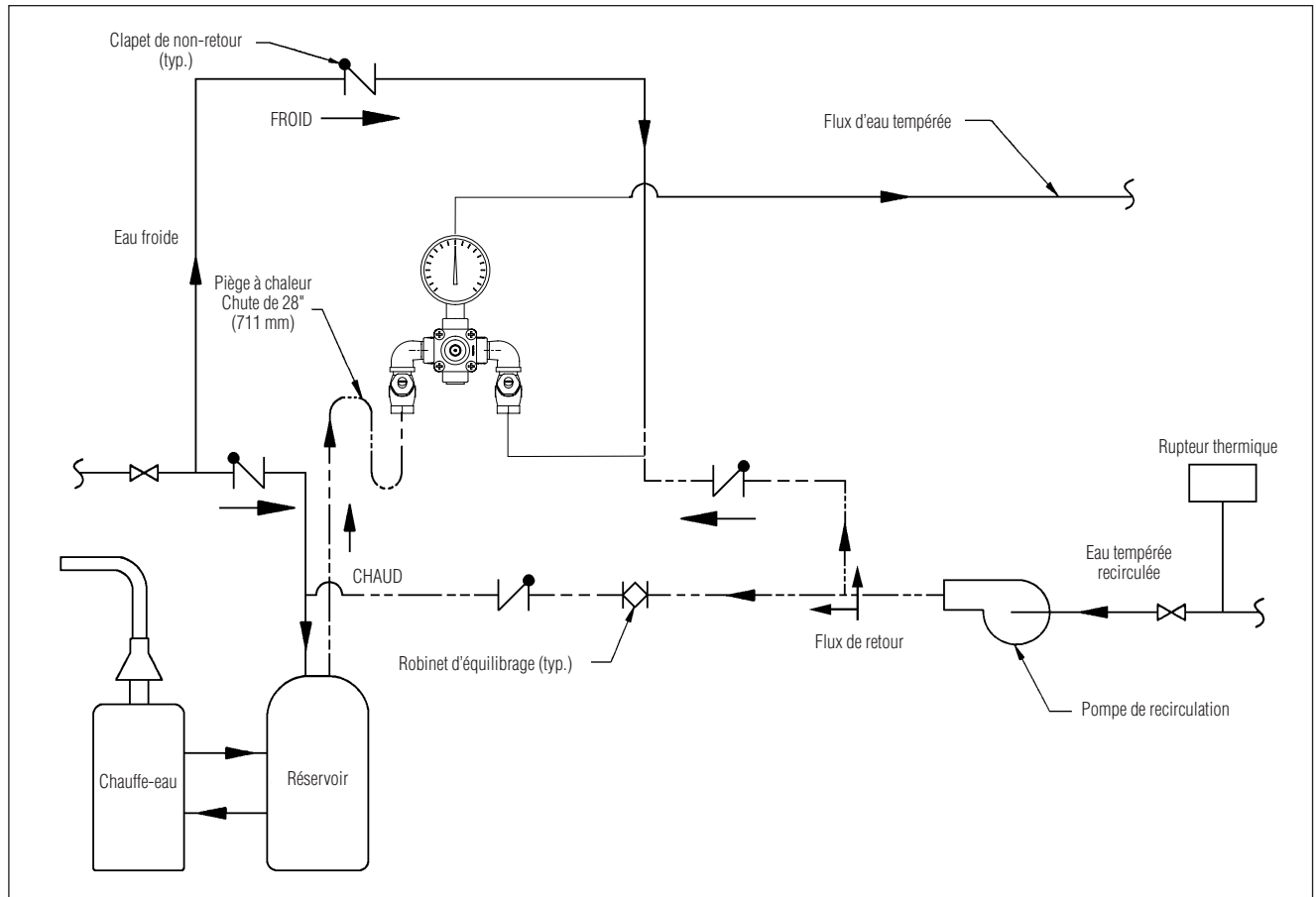
Fermer l'alimentation d'eau froide en fermant le clapet ou le robinet d'arrivée d'eau froide. L'arrivée d'eau froide étant coupée, s'assurer que le débit d'eau chaude a été réduit jusqu'à moins de 0,5 gal/min (1,9 l/min). Si l'eau chaude est coupée, rouvrir complètement l'arrivée d'eau froide.

- ✓ Effectuer un essai du système chaque semaine (ouvrir l'arrivée d'eau et vérifier la bonne régulation à la température de consigne souhaitée).

5 Configuration de recirculation en option



La recirculation de l'eau dans le circuit assure une régulation constante de la température de l'eau. Purger les conduites d'alimentation avec soin après avoir terminé l'installation. Fermer tous les appareils et les condamner provisoirement durant le processus de recirculation.



1. Couper la pompe de recirculation et ouvrir l'alimentation d'eau au niveau de l'appareil d'urgence (un débit d'eau de 11 à 19 l/min [3 à 5 gal/min] est requis).
2. Laisser l'eau s'écouler à travers le système jusqu'à obtenir une température constante. Si la température souhaitée n'est pas obtenue, réajuster la température comme indiqué à l'étape 3 à la page précédente.
3. Dès que l'eau atteint la bonne température, activer la pompe de recirculation (vérifier que la température correcte a été obtenue dans le système avant de poursuivre).
4. Contrôler la température de l'eau au niveau de la pompe de retour. Si la température dépasse le niveau approprié de 1 °C (2 °F), ajuster le rupteur thermique haut (pour arrêter la pompe). Attendre que la température de retour de l'eau soit de 3 °C (5 °F) en dessous du niveau approprié puis ajuster le rupteur thermique bas (pour remettre la pompe en marche).
5. Ouvrir complètement le robinet d'équilibrage.
6. Couper tous les appareils et vérifier qu'aucune eau ne circule à travers le système (le tuyau d'arrivée d'eau froide doit être tiède au toucher).
7. Laisser le système fonctionner pendant 30 minutes ou plus sans eau. Si, au bout de trente minutes, la température de l'eau augmente, elle peut être réajustée en fermant lentement le robinet d'équilibrage jusqu'à atteindre la température qui convient.

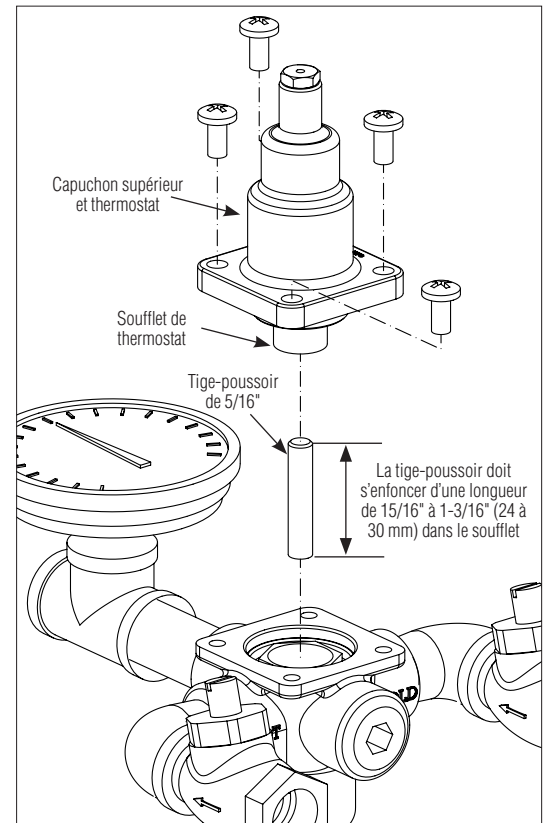
Dépannage du robinet mélangeur thermostatique



Avant d'essayer de dépanner le robinet ou de démonter les composantes, vérifier ce qui suit :

- Les clapets de non-retour sont totalement ouverts (la tige fendue dépasse d'environ 13 mm (1/2 po) du capuchon et tous les robinets d'arrêt d'arrivée et de sortie sont ouverts.
- Les conduites d'arrivée d'eau chaude et froide sont correctement raccordées et il n'existe ni de raccords croisés ni de fuite des clapets de non-retour.
- La sortie du chauffe-eau est d'au moins 11 °C (20 °F) au-dessus de la température de consigne.

Veiller à bien fermer les robinets d'arrêt adéquats avant de démonter le robinet et de les rouvrir après inspection et une fois la réparation terminée.

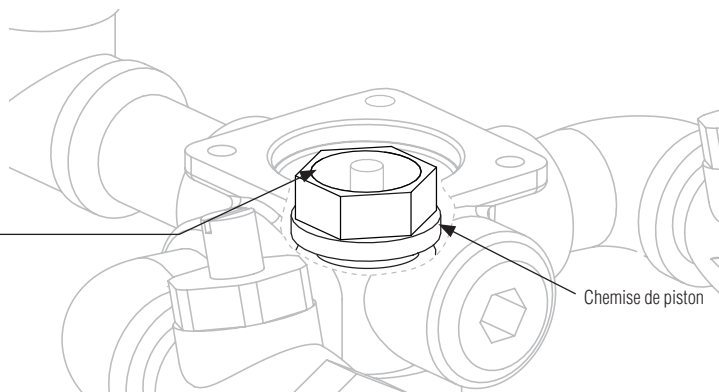


Problème	Cause	Solution
Fuites externes dans le système	Les joints NPT ou les joints toriques sont endommagés.	Remplacer les joints NPT et/ou joints toriques le cas échéant. Pour tout remplacement de joints toriques, contacter le représentant Bradley et lui demander un Kit de joint torique (S65-170).
Pas de circulation d'eau chaude (eau froide seulement)	Défaillance du thermostat suivie de l'activation de la vanne d'arrêt de sécurité.	Contrôler le thermostat : 1. Déposer le capuchon supérieur et le thermostat. 2. Enfiler la tige-poussoir de Ø 5/16 po dans le soufflet de thermostat. 3. Marquer la longueur dont la tige s'enfonce dans le soufflet (à température ambiante, sous une force de 45 N [10 lb], cette longueur doit être d'environ 24 à 30 mm [15/16 à 1-3/16 po]). 4. Si la longueur de tige-poussoir n'est pas dans l'intervalle correct, le thermostat doit être changé (il n'est pas réparable). Contacter le représentant Bradley et lui demander un Kit de thermostat (S65-171).
Débit d'eau limité	Le robinet d'arrêt d'arrivée est partiellement fermé ou la pression d'eau a fortement chuté.	Nettoyer les clapets de non-retour : démonter les clapets de non-retour, nettoyer le siège et remonter. Ne pas déposer le siège. Brosser les pièces avec une petite brosse métallique pour éliminer les débris. Utiliser une pince à épiler pour extraire les débris du siège. Si le clapet de non-retour doit être changé, contacter le représentant Bradley et lui demander un Kit de clapet de non-retour (S27-102 - Laiton brut ou S27-292A - Chrome).
	Accumulation de saleté et de débris sur le tamis ou le siège de clapet, ce qui limite le mouvement des clapets de non-retour.	
Fluctuation de température ou température incorrecte	Les sections de clapet de non-retour du robinet ne bougent pas librement.	Nettoyer les clapets de non-retour comme décrit ci-dessus.
	Lente défaillance du thermostat.	Contrôler le thermostat comme décrit plus haut ou le changer.
	La conduite d'alimentation d'arrivée vers le robinet mélangeur est partagée avec d'autres machines qui ne sont utilisées que périodiquement, telles que des machines à laver ou des stations à grand débit. Cela peut réduire la pression d'arrivée au robinet mélangeur à moins de 3 PSI. La section de la conduite d'alimentation peut être insuffisante pour alimenter à la fois le robinet et les autres appareils.	Augmenter la section de la conduite d'alimentation, reconfigurer l'alimentation ou réguler l'usage de l'alimentation.
	La recirculation est déséquilibrée.	Examiner la configuration de recirculation à la page 12.
	Le piston ne bouge pas librement et doit être nettoyé.	Voir les instructions de démontage et de nettoyage du piston à la page suivante.

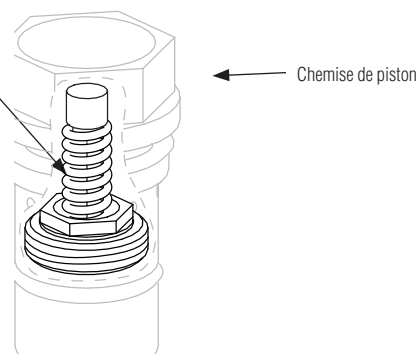
Dépannage : Démontage et nettoyage du piston

- A** Déposer le capuchon supérieur et le thermostat comme indiqué à la page 13. Mettre la tige-poussoir de 5/8 po de côté.

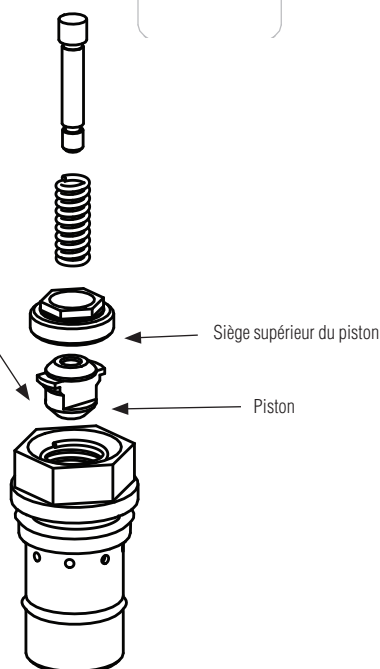
- B** À l'aide d'une clé à douille de 15/16 po, desserrer la chemise de piston du corps de robinet et l'extraire avec une pince à becs fins.



- C** À l'aide d'une clé à douille longue de 1/2 po, desserrer le siège supérieur du piston de la chemise de piston et extraire les pièces avec une pince à becs fins.

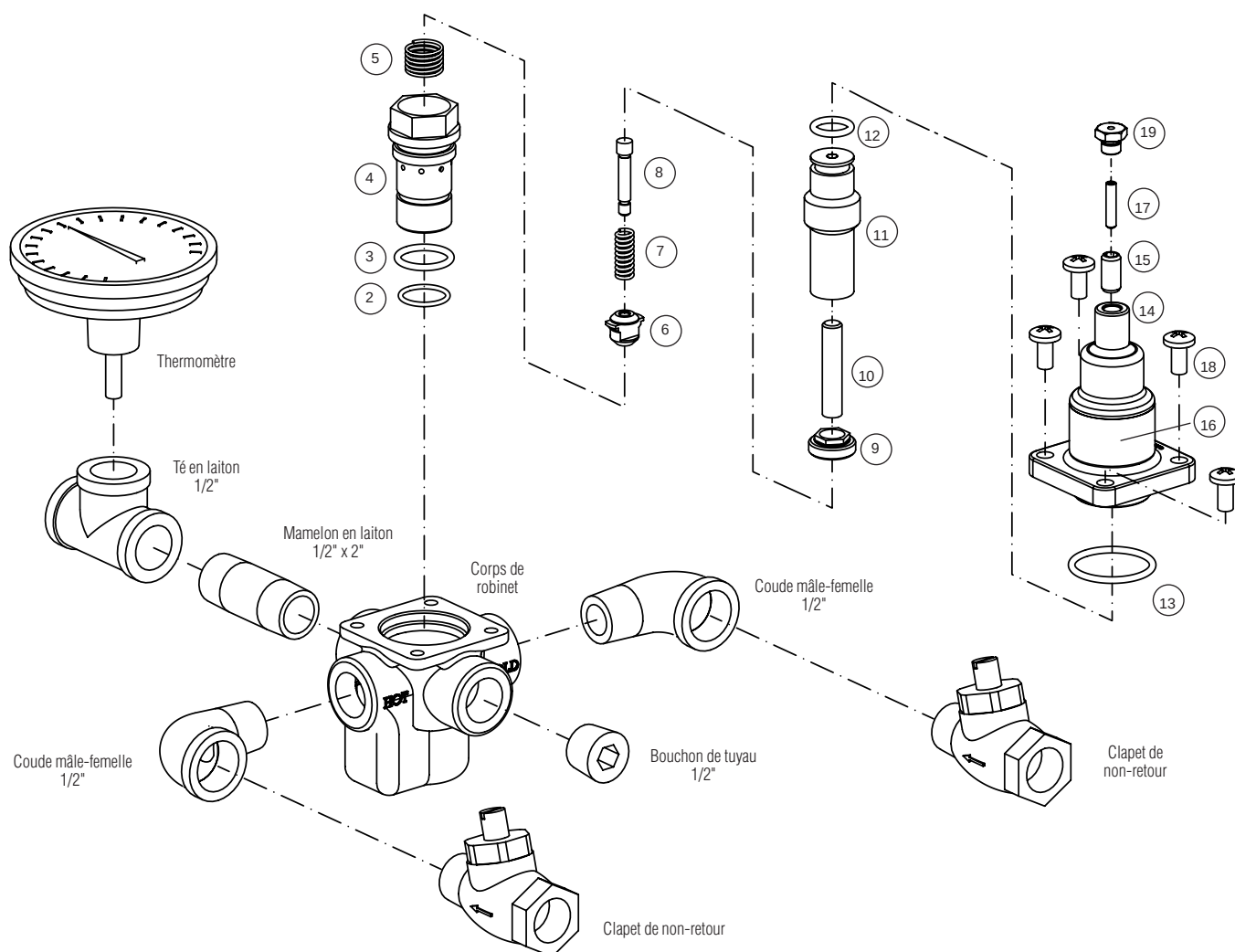


- D** Démontez et nettoyez les pièces du piston avec tout produit nettoyant convenant pour le laiton et l'acier inoxydable (le cas échéant, utiliser du papier de verre 400 grains pour polir et rectifier le piston et la chemise).



- E** Remonter le piston. Pousser le mécanisme vers le haut et la bas à plusieurs reprises pour vérifier que le piston bouge régulièrement et sans grippage. Si le mouvement n'est pas régulier, répéter la procédure D jusqu'à ce qu'il bouge librement ou le changer. Contacter le représentant Bradley et lui demander un Kit de piston/chemise (réf. S65-172).

Liste des pièces



Kit Portion centrale S65-303

Repère	Qté	Désignation
2	1	Joint torique
3	1	Joint torique
4	1	Chemise
5	1	Ressort
6	1	Piston
7	1	Ressort
8	1	Vis de surchauffe
9	1	Siège supérieur
10	1	Tige-poussoir
11	1	Thermostat
12	1	Joint torique
13	1	Joint torique
14	1	Capuchon de commande
15	1	Vis calante
16	1	Étiquette
17	1	Vis calante
18	4	Vis 1/4
19	1	Capuchon

Conduites de raccordement flexibles pour S19-2000EFX

Pour une utilisation avec S19-292, commander réf. 269-653 (3 fournis avec le robinet).

Kit Thermostat S65-171

Repère	Qté	Désignation
11	1	Thermostat
12	1	Joint torique
13	1	Joint torique

Kit Piston et chemise S65-172

Repère	Qté	Désignation
2	1	Joint torique
3	1	Joint torique
4	1	Chemise
5	1	Ressort
6	1	Piston
7	1	Ressort
8	1	Vis de surchauffe
9	1	Siège supérieur

Kit Joint torique S65-170

Repère	Qté	Désignation
2	1	Joint torique
3	1	Joint torique
12	1	Joint torique
13	1	Joint torique

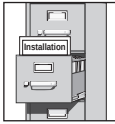
☒ Numéros de kit pour la finition en laiton brut. Contacter Bradley pour toute autre configuration.

☒ À compter de novembre 2001, le piston (repère 7) remplace directement le support de joint et le joint.

☒ À compter de juin 2008, le capuchon de commande en laiton (repère 15) est remplacé par un capuchon en plastique. Toutes les pièces internes sont identiques.

☒ À compter d'juillet 2012, la commande de réglage de température (repères 15, 17 et 19) est reconfigurée et compatible avec tous les modèles à capuchon de commande en plastique (juin 2008 à actuel).

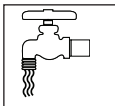
! ¡IMPORTANTE! !



Lea en su totalidad este manual de instalación para garantizar una instalación adecuada. Al completar la instalación, entregue este manual al propietario o al Departamento de Mantenimiento. Es responsabilidad del instalador cumplir cabalmente los códigos y las ordenanzas locales.



Saque las piezas del embalaje y asegúrese de haberlas sacado todas antes de desecharlo. Si falta alguna pieza, no comience la instalación hasta obtenerla.



Debe ser posible acceder a la válvula para realizar pruebas, ajustes y mantenimiento en la posición instalada.



Asegúrese de purgar todas las tuberías de suministro de agua y que estén completamente cerradas antes de comenzar la instalación. Los desechos acumulados en las tuberías de suministro pueden provocar defectos en el funcionamiento de las válvulas.

Las garantías de los productos se pueden encontrar en la sección "Products" (Productos) del sitio web, bradleycorp.com.

Materiales recomendados para la instalación

- Cierre bloqueable en la salida si se suministra agua temperada a uno o más accesorios de emergencia.
- Cierre bloqueable de las entradas o de los suministros.
- (6) anclajes y sujetadores de pared de 1/4 pulg. para el gabinete montado en la superficie.
- (4) sujetadores de 1/4 pulg. (y anclajes de pared, si fuera necesario) para el gabinete empotrado.
- Uniones en todas las conexiones para facilitar el retiro de la válvula.

Herramientas necesarias para el ajuste de temperatura

- Llave Allen de 5/64 pulg.
- Destornillador de paleta.

1 Instale el gabinete opcional (si no va a instalar el gabinete, siga con el Paso 2)



Si se instala el modelo S19-2000EFX en el gabinete lavajos desplegable S19-292, consulte las instrucciones de montaje que se suministran con el gabinete.

Gabinete empotrado:

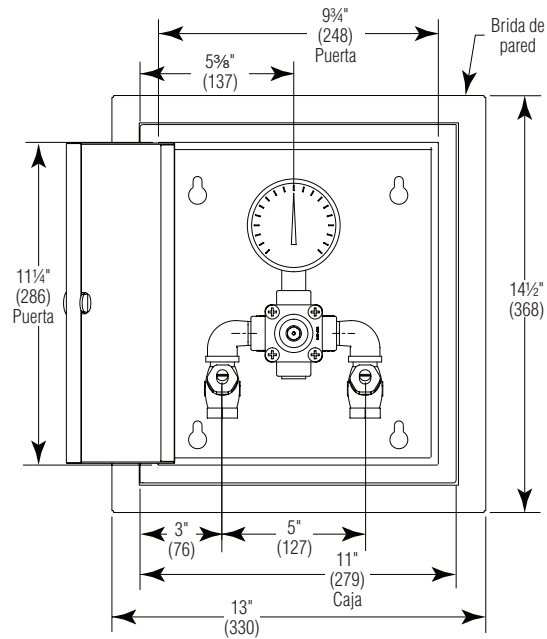
1. Orificio de colocación en la pared de 292 mm (11-1/2 pulg.) de ancho x 330 mm (13 pulg.) de alto.
2. Inserte y fije el gabinete con cuatro sujetadores de 1/4 pulg. (proporcionado por el instalador) anclados apropiadamente a la pared.
3. Instale los dos anclajes y tornillos a través del soporte de la válvula en la parte trasera del gabinete en una abrazadera firme (proporcionada por el instalador) o en la pared. Esto servirá de apoyo a la válvula.
4. Instale los niples de la válvula y la mitad de la válvula de bolas de la unión, usando sellador para tubos o cinta de teflón. Instale la otra mitad de la válvula de bolas de la unión en el tubo de entrada y salida.
5. Inserte la válvula en el soporte del gabinete (primero el lado derecho). Continúe con el procedimiento de instalación de la válvula.
6. Ponga firmemente la brida de pared en la pared y aplique masilla para fijarla en su lugar.

Gabinete montado en la superficie:

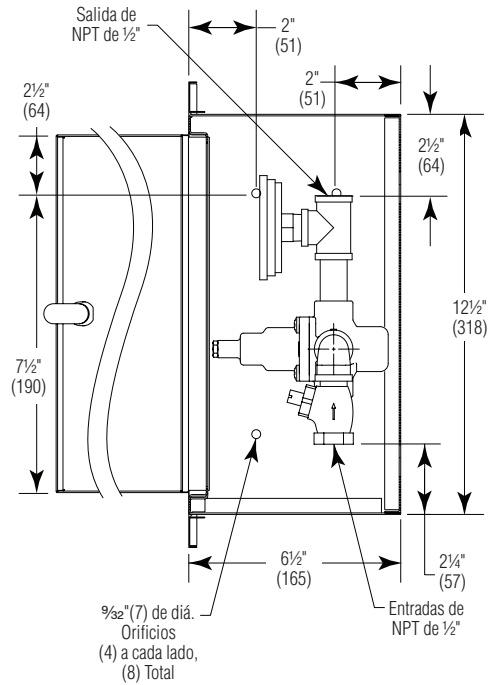
1. Mida y marque la ubicación de los orificios de montaje del gabinete en las dimensiones que se muestran en la siguiente página. Instale seis anclajes de pared de 3/8 pulg. (proporcionados por el instalador).
2. Ponga el gabinete en la pared y fíjelo en su lugar con seis sujetadores de pared de 3/8 pulg. (proporcionados por el instalador).
3. Instale los niples de la válvula y la mitad de la válvula de bolas de la unión, usando sellador para tubos o cinta de teflón. Luego, instale la otra mitad de la válvula de bolas de la unión en el tubo de entrada y salida.
4. Inserte la válvula en el soporte del gabinete (primero el lado derecho de la válvula). Continúe con el procedimiento de instalación de la válvula.

Gabinete empotrado opcional

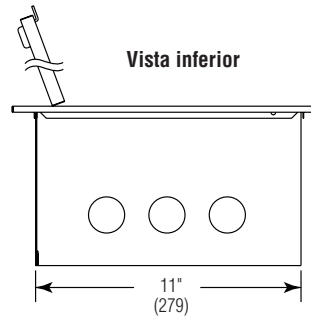
Vista frontal



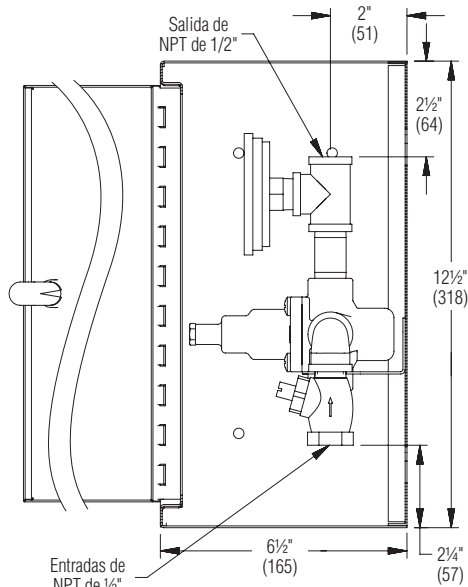
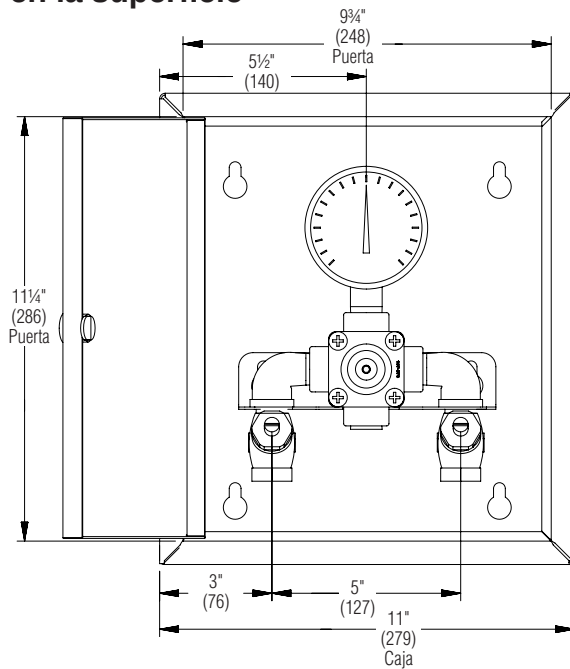
Vista lateral



Vista inferior

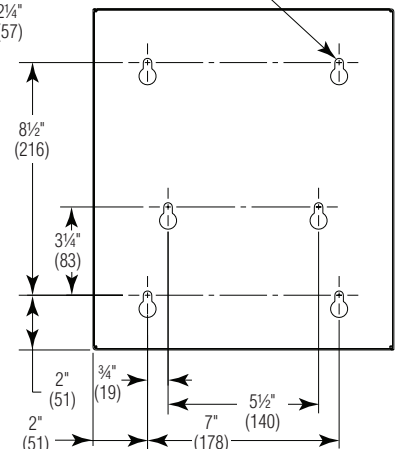


Gabinete opcional montado en la superficie



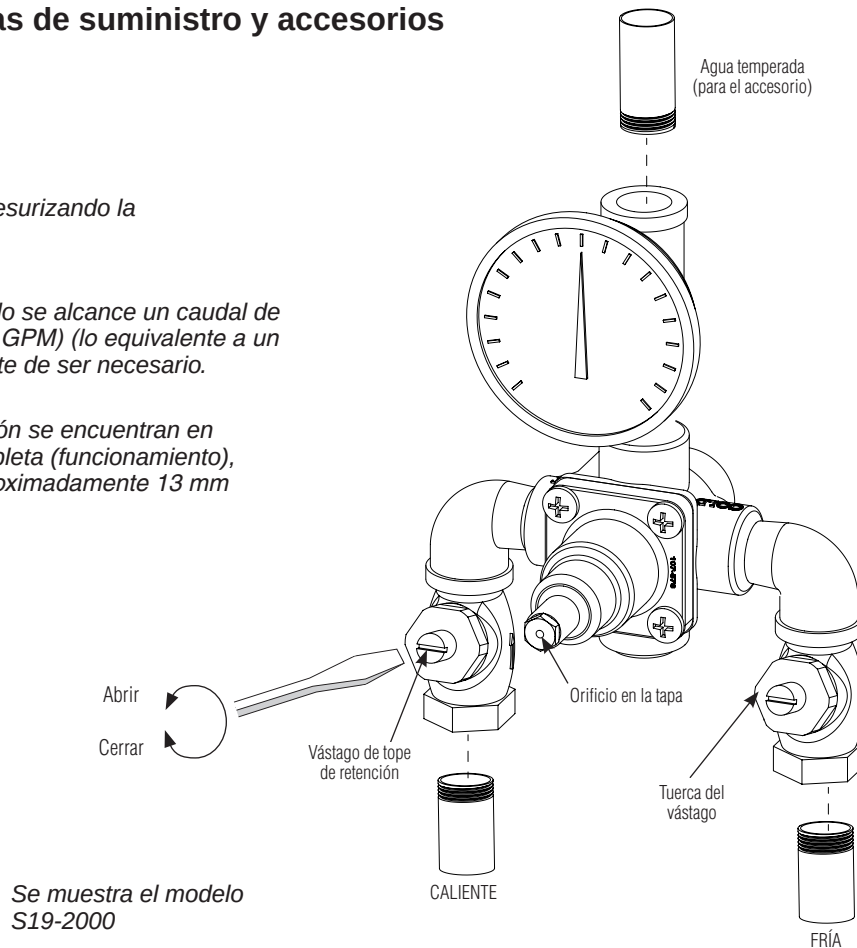
Ubicación de los orificios de montaje

5/16" (8) de diámetro. Orificios (6) en total



2 Conexión de las tuberías de suministro y accesorios

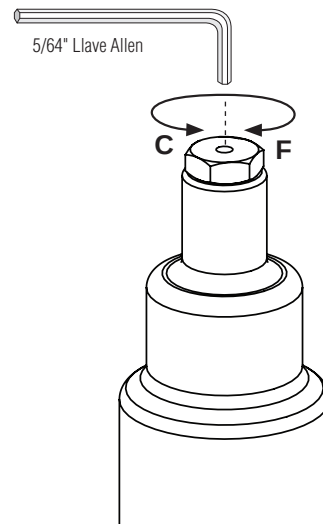
- ✓ Revise si hay filtraciones, presurizando la unidad LENTAMENTE.
- ✓ Revise la temperatura cuando se alcance un caudal de agua de 11 a 19 LPM (3 a 5 GPM) (lo equivalente a un lavado ocular o facial) y ajuste de ser necesario.
- ✓ Cuando los topes de retención se encuentran en la posición de abertura completa (funcionamiento), el vástago se extenderá aproximadamente 13 mm (1/2 pulg.) desde la tuerca.



Se muestra el modelo S19-2000

3 Ajuste la temperatura con el agua corriendo

- ✓ Revise la temperatura cuando se alcance aproximadamente un caudal de agua de 11 a 19 LPM (3 a 5 GPM) (lo equivalente a un lavado ocular).
- ✓ Se debe revisar la temperatura final de este dispositivo y ajustarla, según sea necesario. La configuración estándar de la temperatura predeterminada de fábrica es de 29 °C (85 °F) (el rango de la válvula es de 18 °C a 32 °C [65 °F a 90 °F]). Para ajustar, inserte la llave Allen a través del orificio en la tapa, en el tornillo de ajuste. Consulte a las autoridades médicas o de seguridad correspondientes sobre la temperatura óptima recomendada para la aplicación en particular.



4 Pruebe la unidad ¡NO SE SALTE ESTE PASO!

Cierre la válvula de entrada de agua caliente o la válvula de retención de suministro para cortar el suministro de agua caliente. Con el suministro de agua caliente cerrado, verifique que siga fluyendo agua fría. Si el agua fría fluye correctamente, vuelva a abrir el suministro de agua caliente.

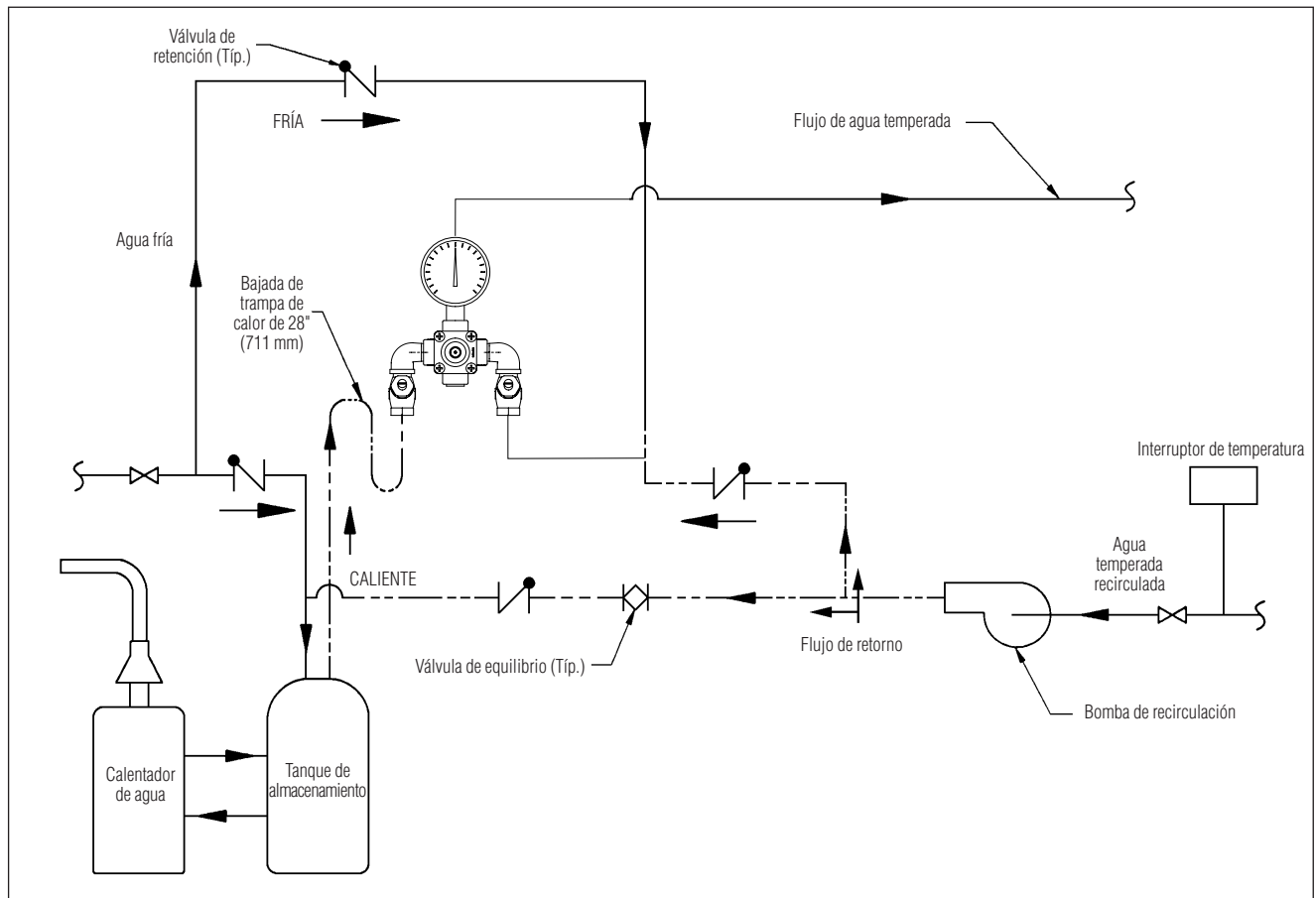
Cierre la válvula de entrada de agua fría o la válvula de retención de suministro para cortar el suministro de agua fría. Con el suministro de agua fría cerrado, verifique que se haya detenido el flujo de agua caliente a menos de 1,9 LPM (0,5 gpm). Si se detiene el agua caliente, vuelva a abrir completamente el suministro de agua fría.

- ✓ Pruebe el sistema semanalmente (abra el suministro de agua y verifique que el control de la temperatura establecida que se desea sea constante).

5 Instalación de recirculación opcional de agua



La recirculación del agua en el sistema proporciona regulación constante de la temperatura del agua. Purgue las tuberías de suministro completamente antes de terminar la instalación. Cierre todos los accesorios y etiquételos como no disponibles para usarse durante el proceso de recirculación.



1. Apague la bomba de recirculación y abra el suministro de agua en los accesorios de emergencia (se requiere un caudal de agua de 11 a 19 LPM [3 – 5 GPM]).
2. Deje que el agua corra a través del sistema hasta que alcance una temperatura constante. Si no obtiene la temperatura necesaria, consulte el paso n.º 3 en la página anterior para volver a ajustar la temperatura.
3. Tan pronto como el agua alcance la temperatura apropiada, encienda la bomba de recirculación (antes de proceder, asegúrese de que se haya alcanzado la temperatura adecuada en el sistema).
4. Revise la temperatura del agua en la bomba de retorno. Si la temperatura excede el nivel apropiado en 1 °C (2 °F), ajuste el interruptor del límite superior de temperatura (esto apagará la bomba). Espere hasta que la temperatura del agua de retorno esté a 3 °C (5 °F) por debajo del nivel apropiado y ajuste el interruptor del límite inferior (esto volverá a encender la bomba).
5. Abra completamente la válvula de equilibrio.
6. Desconecte todos los accesorios y asegúrese de que no fluya agua por el sistema (el tubo de entrada de agua fría debe sentirse tibio al tacto).
7. Deje que el sistema funcione sin agua durante 30 minutos o más. Si, después de treinta minutos, aumenta la temperatura del agua, puede volver a ajustar la temperatura cerrando lentamente la válvula de equilibrio hasta que se alcance la temperatura adecuada.

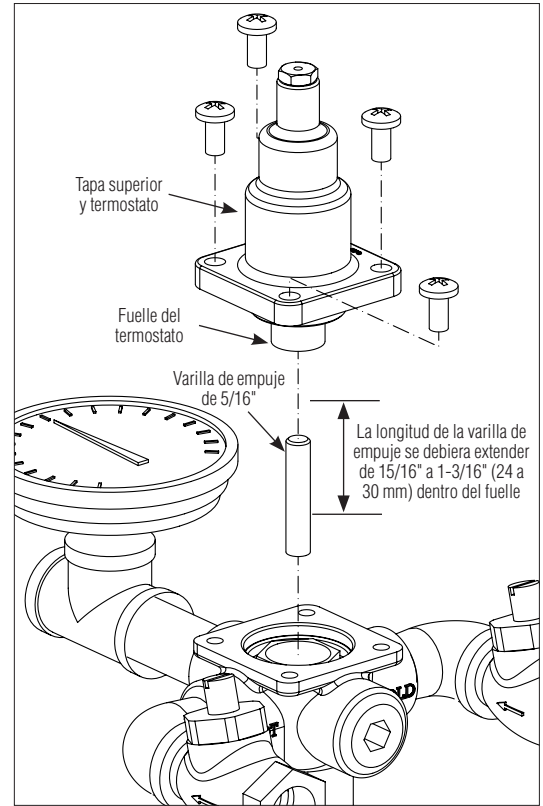
Solución de problemas de la válvula mezcladora termostática



Antes de intentar solucionar problemas de la válvula o desensamblar los componentes, revise lo siguiente:

- Que las válvulas de cierre o retención estén completamente abiertas (el vástago ranurado se extienda aproximadamente 13 mm (1/2 pulg.) a partir de la tuerca del vástago) y que estén abiertas todas las válvulas de retención de entrada y salida
- Que los tubos de entrada de agua caliente y fría estén conectados correctamente y que no existan conexiones cruzadas ni válvulas de cierre o retención con filtraciones.
- La salida del calentador de agua esté al menos a 11 °C (20 °F) por sobre la temperatura establecida.

Asegúrese de cerrar las válvulas de retención correspondientes antes de desensamblar la válvula, y vuelva a abrir las válvulas después de completar la inspección y la reparación.



Problema	Causa	Solución
Filtraciones externas en el sistema	Es posible que se hayan dañado las juntas NPT o las juntas tóricas.	Remplace las juntas NPT o las juntas tóricas, donde sea necesario. Para el reemplazo de las juntas tóricas, comuníquese con el representante local de Bradley y consulte por el kit (S65-170) de sellos de juntas tóricas.
No fluye agua caliente (fluye solamente agua fría)	Falló el termostato y, en consecuencia, se activó la retención de seguridad.	Inspección del termostato: 1. Retire el termostato y la tapa superior. 2. Inserte una varilla de empuje de 5/16 pulg. de diá. en el fuelle del termostato. 3. Marque la distancia en que la varilla de empuje se extiende dentro del fuelle (a temperatura ambiente, con 45 N [10 lb] de fuerza, la distancia debiera ser aproximadamente de 24 a 30 mm [15/16 pulg. a 1-3/16 pulg.]). 4. Si la longitud de la varilla de empuje no está en el rango apropiado, se debe reemplazar el termostato (no se puede reparar). Comuníquese con el representante local de Bradley y consulte por el Kit (S65-171) del termostato.
Flujo limitado de agua	Es posible que la entrada de la válvula de retención esté parcialmente cerrada o haya disminuido significativamente la presión de agua.	
	Se acumuló suciedad y desechos en la rejilla o asiento de retención, limitando el movimiento de cierre y retenciones.	Limpie las válvulas de cierre y retención: Retire el cierre y las retenciones, limpie el asiento y vuelva a ensamblar la válvula. No retire el asiento. Los componentes se pueden cepillar con un cepillo de alambre de tamaño pequeño para eliminar los desechos. Un par de pinzas funciona bien para sacar los desechos del asiento. Si es necesario reemplazar el cierre y las retenciones, comuníquese con el representante local de Bradley y consulte por el kit (S27-102: Bronce áspero o S27-292A: Cromo) de retención/cierre.
Fluctuación de la temperatura o temperatura incorrecta	Las secciones de cierre y retención de la válvula no se mueven libremente.	Limpie las válvulas de cierre y retención como se describe anteriormente.
	El termostato lentamente comienza a fallar.	Revise el termostato como se describe anteriormente o reemplácelo.
	La tubería de suministro de entrada hacia la válvula mezcladora se comparte con otras piezas del equipo que se usan solamente en forma periódica, tales como aparatos de lavandería o estaciones de flujo. Esto puede reducir la presión de entrada hacia la válvula mezcladora a menos de 3 PSI. Es posible que el tamaño de la tubería de suministro no sea lo suficientemente grande para dar suministro a la válvula y a los otros aparatos.	Aumente el tamaño de la tubería de suministro, vuelva a configurar la tubería de suministro o regule el uso del suministro.
	La recirculación no está equilibrada.	Revise la instalación de la recirculación en la página 19.
	El pistón no se mueve libremente y se debe limpiar.	Consulte la página siguiente para ver las instrucciones de desensamble y limpieza.

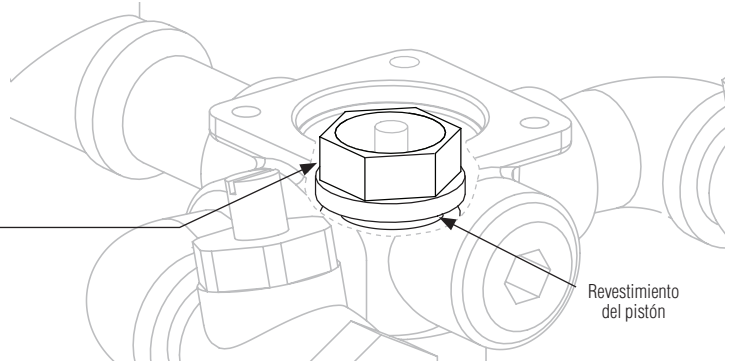
Solución de problemas: Desensamble y limpieza del pistón

A

Retire la tapa superior y el conjunto del termostato según se muestra en la Página 20. Ponga la varilla de empuje de 5/8 pulg. a un costado.

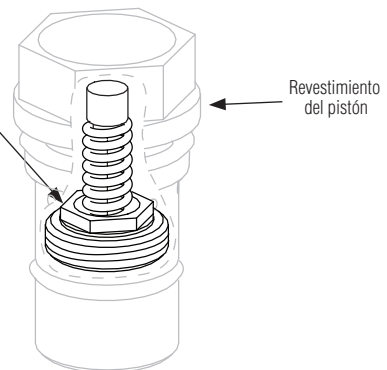
B

Con una llave de cubo de 15/16 pulg., afloje el revestimiento del pistón del cuerpo de la válvula y saque las piezas con un alicate de punta de aguja.



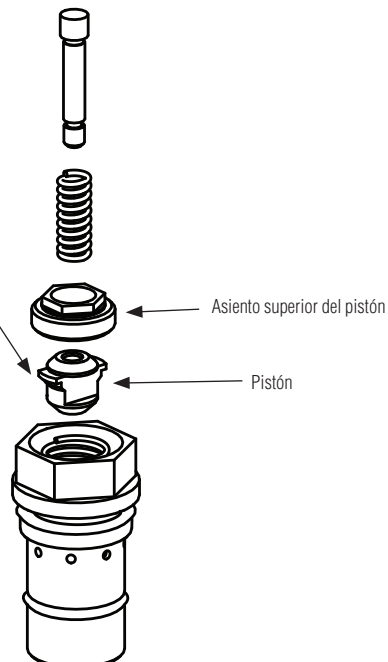
C

Con una llave de cubo de 1/2 pulg., afloje el asiento superior del pistón del revestimiento del pistón y saque las piezas con un alicate de punta de aguja.



D

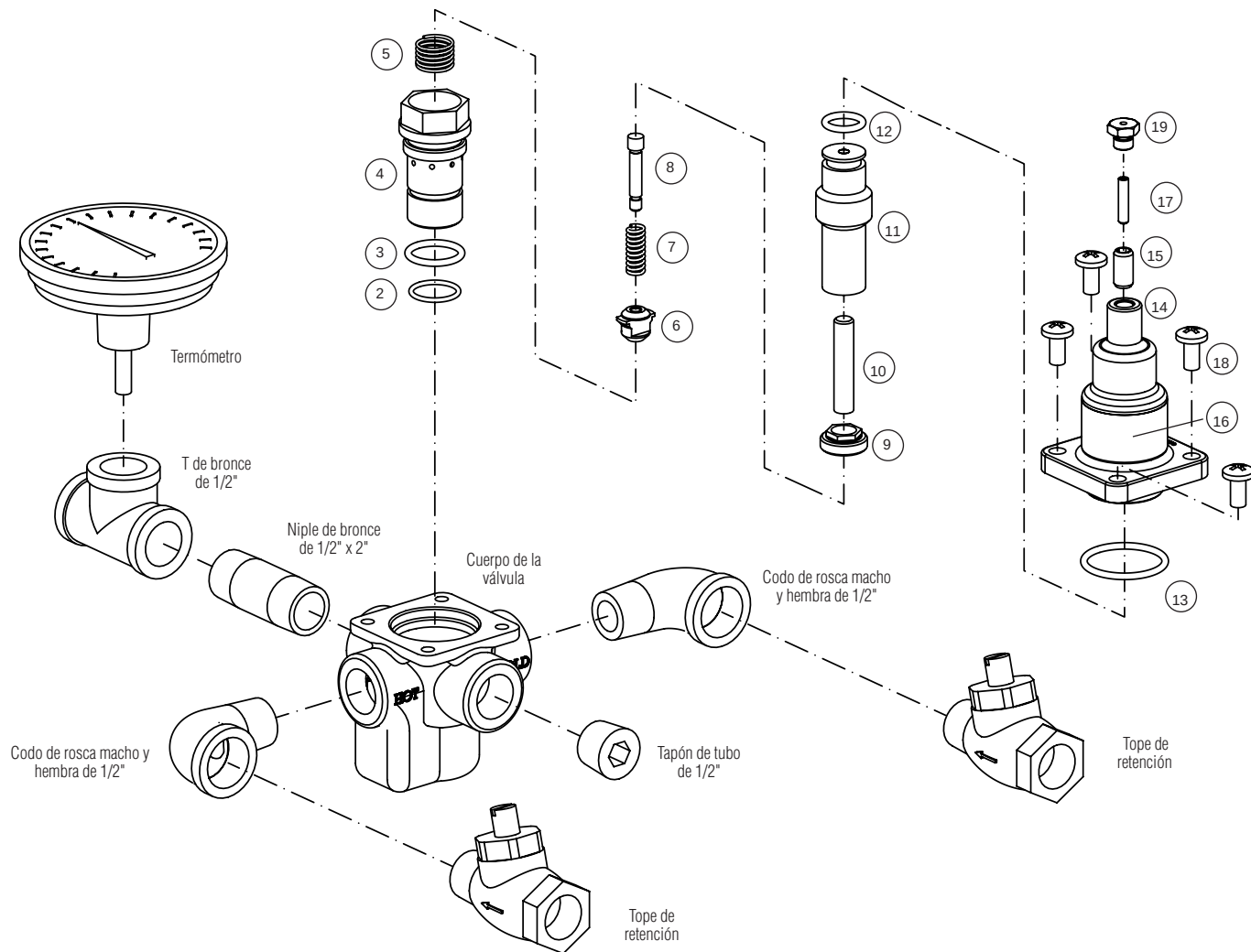
Desmonte y limpie las piezas del conjunto del pistón con cualquier limpiador adecuado para la limpieza de bronce y acero inoxidable (de ser necesario, use una lija de grano 400 para pulir y afinar tanto el pistón como el revestimiento).



E

Vuelva a ensamblar el conjunto del pistón. Empuje el mecanismo hacia arriba y hacia abajo varias veces para asegurarse de que el pistón se mueva suave y constantemente. Si es constante, repita el Procedimiento D hasta que se mueva libremente o cámbielo. Comuníquese con el representante local de Bradley y consulte por el Kit del pistón y revestimientos (número de pieza S65-172).

Desglose de piezas



Kit S65-171 del termostato

Artículo	Cantidad	Descripción
11	1	Termostato
12	1	Junta tórica
13	1	Junta tórica

Kit S65-172 del pistón y revestimientos

Artículo	Cantidad	Descripción
2	1	Junta tórica
3	1	Junta tórica
4	1	Revestimiento
5	1	Resorte
6	1	Pistón
7	1	Resorte
8	1	Tornillo de sobre- calentamiento
9	1	Asiento superior

Kit S65-170 de juntas tóricas

Artículo	Cantidad	Descripción
2	1	Junta tórica
3	1	Junta tórica
12	1	Junta tórica
13	1	Junta tórica

Kit S65-303 de la sección central

Artículo	Cantidad	Descripción
2	1	Junta tórica
3	1	Junta tórica
4	1	Revestimiento
5	1	Resorte
6	1	Pistón
7	1	Resorte
8	1	Tornillo de sobre- calentamiento
9	1	Asiento superior
10	1	Varilla de empuje
11	1	Termostato
12	1	Junta tórica
13	1	Junta tórica
14	1	Tapa de control
15	1	Tornillo de ajuste
16	1	Etiqueta
17	1	Tornillo de ajuste
18	4	Tornillo de 1/4
19	1	Tapa

Tuberías flexibles de conexión para el modelo S19-2000EFX

Cuando se usa con el modelo S19-292, el n.º de solicitud de pieza es 269-653 (se suministran 3 con la unidad).



Números de kit para acabado de bronce áspero. Comuníquese con Bradley para consultar por otras configuraciones.



A partir de noviembre de 2001, el pistón (artículo 7) reemplaza al soporte del sello y al sello como un repuesto directo.



A partir de junio de 2008, la tapa de control de bronce (artículo 15) se reemplazó por una tapa de plástico. Todos los componentes internos son idénticos.



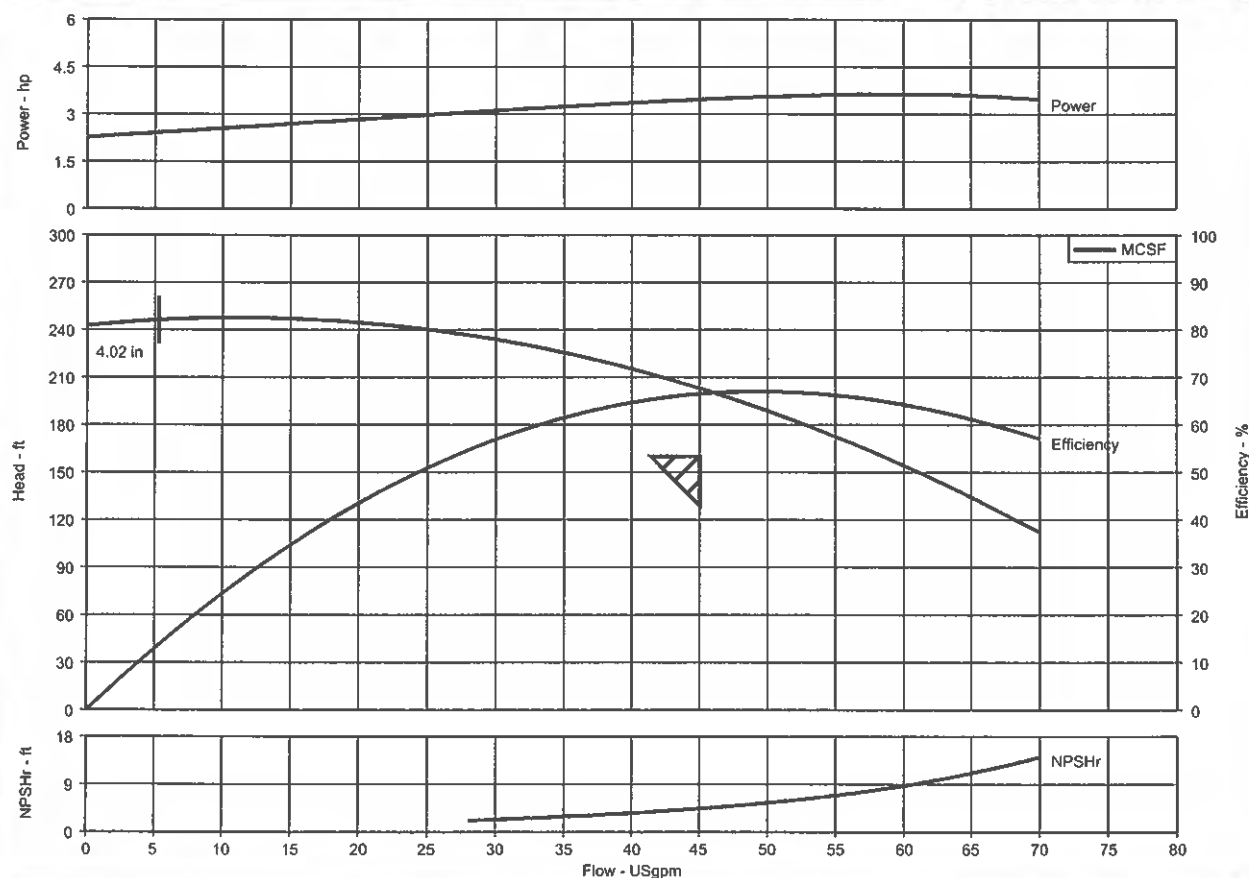
A partir de julio de 2012, se ha actualizado el control de ajuste de temperatura (artículos 15, 17 y 19) y con compatibles con todas las unidades que usen la tapa de control plástica (junio de 2008 hasta la actualidad).

Pump Performance Datasheet

Customer	:		Quote number	:	
Customer reference	:		Size	:	BVM(I/X)8-50
Item number	:	Default	Stages	:	5
Service	:		Based on curve number	:	BVM(I/X)8-50
Quantity	:	1	Date last saved	:	05 Jul 2013 8:48 AM

Operating Conditions		Liquid	
Flow, rated	: 45.00 USgpm	Liquid type	: -Water
Differential head / pressure, rated (requested)	: 160.0 ft	Additional liquid description	:
Differential head / pressure, rated (actual)	: 203.0 ft	Solids diameter, max	: 0.00 in
Suction pressure, rated / max	: 0.00 / 0.00 psi.g	Solids concentration, by volume	: 0.00 %
NPSH available, rated	: Ample	Temperature, max	: 68.00 deg F
Frequency	: 60 Hz	Fluid density, rated / max	: 1.000 / 1.000 SG

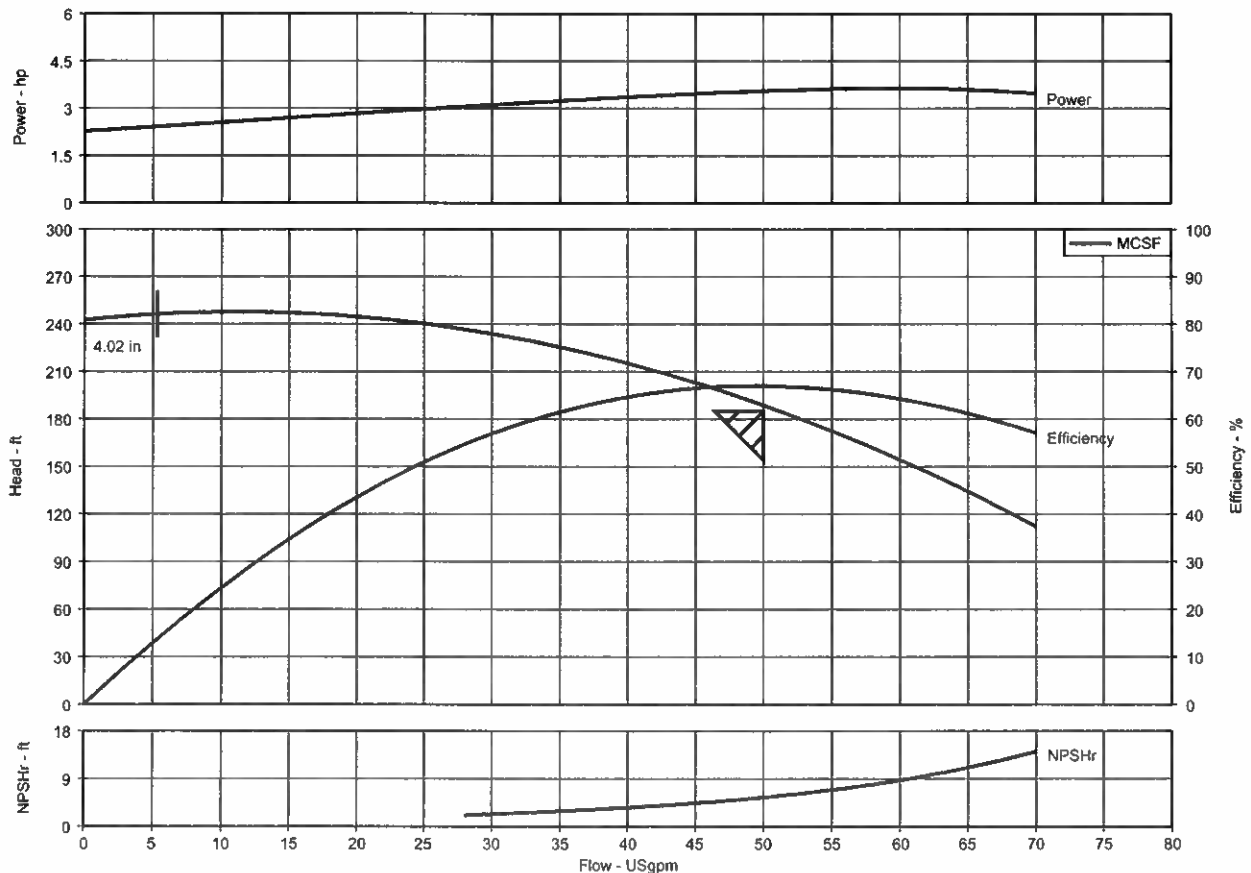
Performance		Material	
Speed, rated	: 3,450 rpm	Material selected	: Not specified
Impeller diameter, rated	: 4.02 in	Pressure Data	
Impeller diameter, maximum	: 4.02 in	Maximum working pressure	: 107.2 psi.g
Impeller diameter, minimum	: 4.02 in	Maximum allowable working pressure	: 292.0 psi.g
Efficiency	: 66.50 %	Maximum allowable suction pressure	: N/A
NPSH required / margin required	: 4.43 / 0.00 ft	Hydrostatic test pressure	: N/A
nq (imp. eye flow) / S (imp. eye flow)	: 31 / 133 Metric units	Driver & Power Data	
MCSF	: 5.30 USgpm	Driver sizing specification	: Rated power
Head, maximum, rated diameter	: 247.7 ft	Margin over specification	: 0.00 %
Head rise to shutoff	: 19.57 %	Service factor	: 1.15 (used)
Flow, best eff. point (BEP)	: 49.44 USgpm	Power, hydraulic	: 2.31 hp
Flow ratio (rated / BEP)	: 91.02 %	Power, rated	: 3.47 hp
Diameter ratio (rated / max)	: 100.00 %	Power, maximum, rated diameter	: 3.64 hp
Head ratio (rated dia / max dia)	: 100.00 %	Minimum recommended motor rating	: 5.00 hp / 3.73 kW (Fixed)
Cq/Ch/Ce [ANSI/HI 9.6.7-2010]	: 1.00 / 1.00 / 1.00		
Selection status	: Acceptable		



Pump Performance Datasheet

Customer	:		Quote number	:	
Customer reference	:		Size	:	BVM(I/X)8-50
Item number	:	Default	Stages	:	5
Service	:		Based on curve number	:	BVM(I/X)8-50
Quantity	:	1	Date last saved	:	05 Jul 2013 8:48 AM

Operating Conditions		Liquid	
Flow, rated	: 50.00 USgpm	Liquid type	: --Water
Differential head / pressure, rated (requested)	: 185.0 ft	Additional liquid description	:
Differential head / pressure, rated (actual)	: 188.7 ft	Solids diameter, max	: 0.00 in
Suction pressure, rated / max	: 0.00 / 0.00 psi.g	Solids concentration, by volume	: 0.00 %
NPSH available, rated	: Ample	Temperature, max	: 68.00 deg F
Frequency	: 60 Hz	Fluid density, rated / max	: 1.000 / 1.000 SG
Performance		Viscosity, rated	: 1.00 cP
Speed, rated	: 3,450 rpm	Vapor pressure, rated	: 0.00 psi.a
Impeller diameter, rated	: 4.02 in	Material	
Impeller diameter, maximum	: 4.02 in	Material selected	: Not specified
Impeller diameter, minimum	: 4.02 in	Pressure Data	
Efficiency	: 66.99 %	Maximum working pressure	: 107.2 psi.g
NPSH required / margin required	: 5.51 / 0.00 ft	Maximum allowable working pressure	: 292.0 psi.g
nq (imp. eye flow) / S (imp. eye flow)	: 31 / 133 Metric units	Maximum allowable suction pressure	: N/A
MCSF	: 5.30 USgpm	Hydrostatic test pressure	: N/A
Head, maximum, rated diameter	: 247.7 ft	Driver & Power Data	
Head rise to shutoff	: 28.60 %	Driver sizing specification	: Rated power
Flow, best eff. point (BEP)	: 49.44 USgpm	Margin over specification	: 0.00 %
Flow ratio (rated / BEP)	: 101.13 %	Service factor	: 1.15 (used)
Diameter ratio (rated / max)	: 100.00 %	Power, hydraulic	: 2.38 hp
Head ratio (rated dia / max dia)	: 100.00 %	Power, rated	: 3.56 hp
Cq/Ch/Ce [ANSI/HI 9.6.7-2010]	: 1.00 / 1.00 / 1.00	Power, maximum, rated diameter	: 3.64 hp
Selection status	: Acceptable	Minimum recommended motor rating	: 5.00 hp / 3.73 kW (Fixed)





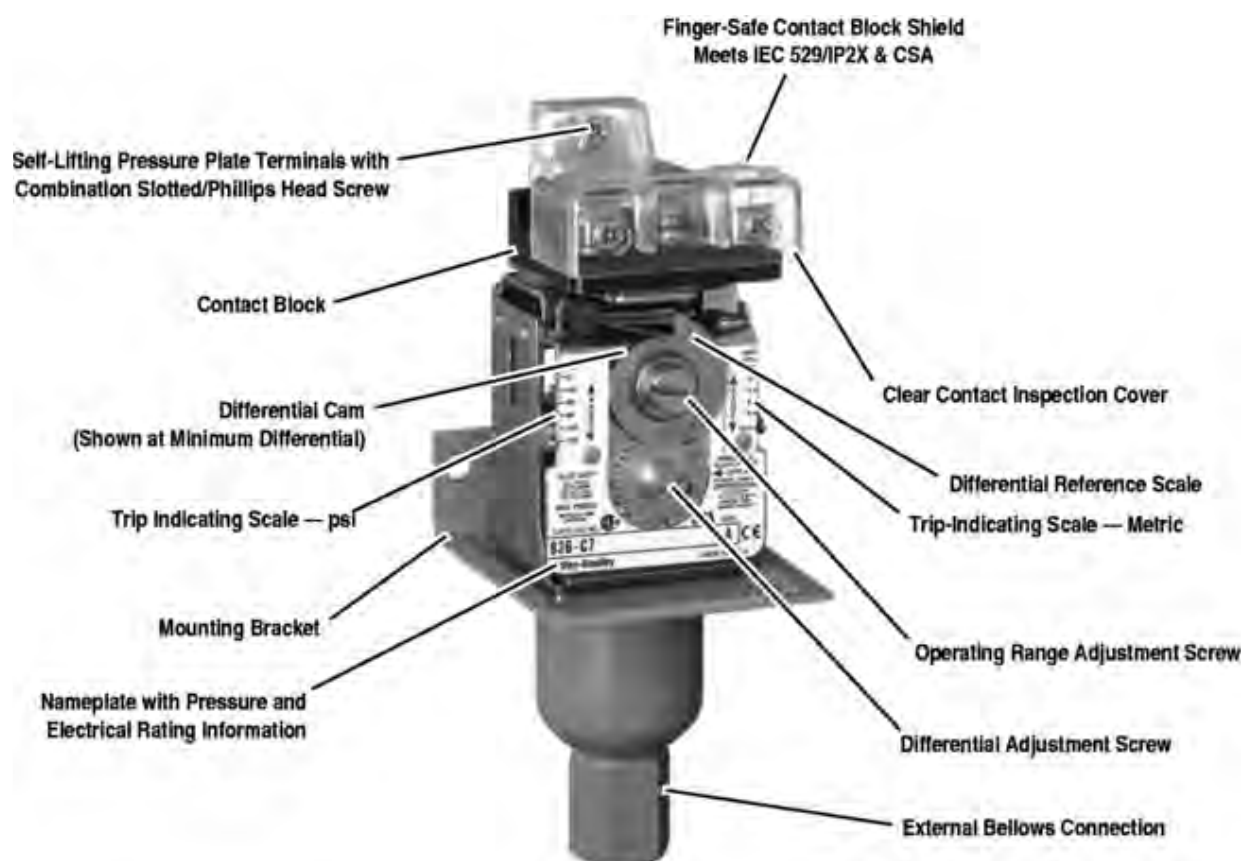
Bulletin 836 Pressure Controls, General Industrial

[Product Overview](#)

Bulletin 836 Pressure Controls

- Operating ranges from 30 in. Hg vacuum...900 psi
- Independently adjustable range and differential
- Copper alloy and stainless steel bellows
- 7/16-20 S.A.E. and 1/4 in. N.P.T.F. connections
- Variety of contact blocks available
- Open Type, Type 1, Type 4&13, Type 4X and Type 7&9 and 4&13 combination enclosures





Description

Bulletin 836 Pressure Controls are designed for general industrial use to control and detect pressure. Allen-Bradley Bulletin 836 Pressure Controls can be used in pneumatic and hydraulic systems. Pressure controls use copper alloy or stainless steel bellows. The design and high-quality components provide long life operation with air, water, oil, non-corrosive liquids, vapors, gases, and some corrosive liquids and gases.

Pressure controls feature snap-action precision switches equipped with silver contacts. The straight in-line and relatively friction-free construction provides accurate and consistent operation regardless of the angle at which the controls are mounted. Pressure controls are designed for easy adjustment of both trip and reset pressures.

Allen-Bradley Bulletin 836 Pressure Controls are used in many types of industries and applications. They can be used to control pneumatic systems, maintaining preset pressures between two values. Pressure controls can be used to detect overpressures of gases or liquids to protect machines, processes, and personnel. They can also be used to detect low pressures to protect equipment from loss of coolants and lubrication.

Bulletin 836 Pressure Controls are offered in a variety of styles to meet a wide range of applications. The devices are available in Type 1, 4 & 13, 4X, 7 & 9, and 4 & 13 combined and open type without enclosure for panel mounting. Pressure controls have a wide variety of contact modifications to meet most control circuit requirements. The controls have adjustable pressure ranges from 30 in. Hg vacuum...900 psi with corresponding differentials. Accessories and modifications are available to tailor the device to meet most application requirements.

Applications

- Air compressors
- Compressed air monitor systems
- Liquid level control
- Vacuum transfer systems
- High pressure alert
- Low pressure alert
- Monitor low and high Pressure

Style A — Small Size, Internal Copper Alloy Bellows

Style A

- Independently adjustable range and differential
- 7/16-20 SAE flare for 1/4 in. copper tubing connection
- Adjustable operating range — 30 in. Hg vacuum...375 psi
- Maximum line pressure — up to 750 psi
- Occasional surge pressure — up to 850 psi



Style C — Wider Ranges, External Bellows

Style C

- Independently adjustable range and differential
- 1/4 in N.P.T.F. internal pipe connection
- 3/8 in N.P.S.F. internal pipe connection (836-C1 and 836-C1A only)



Copper Alloy Bellows

- Adjustable operating range — 30 in. Hg vacuum...900 psi
- Maximum line pressure — up to 1300 psi
- Occasional surge pressure — up to 1600 psi

Type 316 Stainless Steel Bellows

- Adjustable operating range — 30 in. Hg vacuum...375 psi
- Maximum line pressure — up to 650 psi
- Occasional surge pressure — up to 650 psi

Refrigeration Controls - See Refrigeration Controls

Style H

- High-pressure refrigeration controls

Style L

- Low-pressure refrigeration controls

Style P

- High-pressure definite purpose controls



Standards Compliance

UL 508

UL 698 (Haz. Loc.)

UL 1604 (Haz. Loc.)

CSA 22.2 No. 14

NEMA ICS-2

IEC 529/IP2X

Certifications



File and Guide Numbers

UL		CSA	
File Number	Guide Number	File Number	Class

Bulletin 836	E14842	NKPZ	LR1234	3211-03
	E53048 (Haz. Loc.)	NOWT	LR11924 (Haz. Loc.)	3218-05
	Hazardous Location Enclosure not CE compliant. All other enclosed devices are CE compliant			

Technical Data

Technical Terms

Adjustable operating range — Total span within which the contacts can be adjusted to trip and reset.

Trip setting — Higher pressure setting at which value the contacts transfer from their normal state to a changed state.

Reset setting — Lower pressure setting at which value the contacts return to their normal state.

Adjustable differential — Difference between the trip and reset values.

Minimum differential — When the differential is set to the lowest pressure difference between trip and reset.

Maximum differential — When the differential is set to the widest pressure difference between trip and reset.

Maximum occasional surge pressure — Maximum surge pressure that can be applied to the actuator. Surges or transients can occur during startup and shutdown of a machine or system. Expressed in milliseconds, complex electronic instrumentation is required to measure the varying amplitude, frequency, and duration of this wave form. Extreme surges that occur approximately eight times in a 24-hour period are negligible.

Maximum line pressure — Maximum sustained pressure that can be applied to the bellows without permanent damage. The control should not be cycled at this pressure.

Positive pressure — Any pressure more than 0 psi. See Figure 2.

Trip setting — Increasing pressure setting when contacts change state.

Reset setting — Decreasing pressure setting when contacts return to their normal state.

Vacuum (negative pressure) — Any pressure less than 0 psi, inches of Hg vacuum. See Figure 2.

Trip setting — Decreasing vacuum setting when contacts change state.

Reset setting — Increasing vacuum setting when contacts return to their normal state.

psi — Pounds per square inch. Devices listed are in gauge pressure units which use atmospheric pressure as a

reference. Atmospheric pressure at sea level is approximately 14.7 psi or 30 in. Hg.

Operating range adjustment screw – This screw is used to adjust the trip setting by varying the force of the main spring.

Differential adjustment screw – This screw is used to adjust reset setting by varying the force of the differential blade spring.

Pressure media – There are many types of pressure media that are controlled. Examples include air, water, hydraulic fluids and other types of gases and liquids. The type of media and maximum system pressure will determine the type of actuator used for the pressure control application. See Pressure Control Selection.

Pressure connection – Common types of pressure connections used in control systems are 1/4 in. and 3/8 in. internal pipe threads, and 7/16 in. – 20 SAE copper tubing.

Contact configuration – There are many types of contact configurations available. Bulletin 836 Style A and C pressure controls offer a wide variety of contact configurations for both automatic operation and manual reset. See Modifications.

Figure 1
Graphics to illustrate technical terms

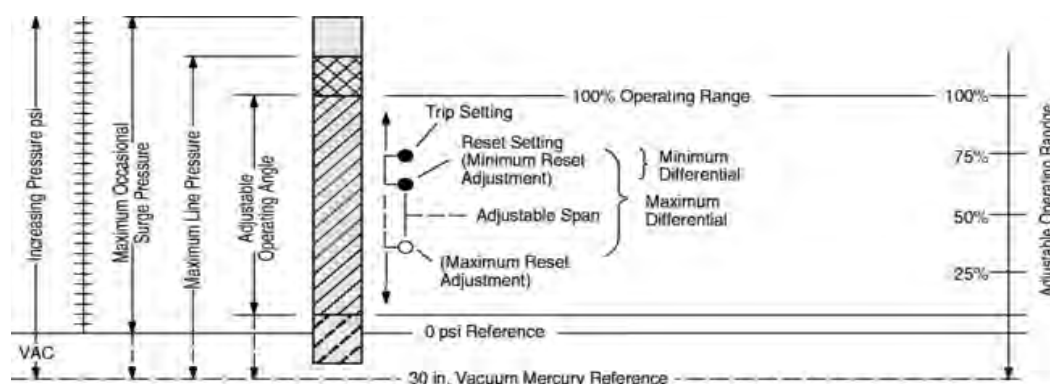
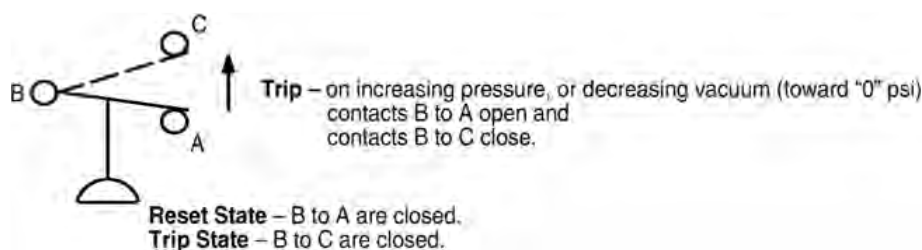


Figure 2
Positive pressure or vacuum



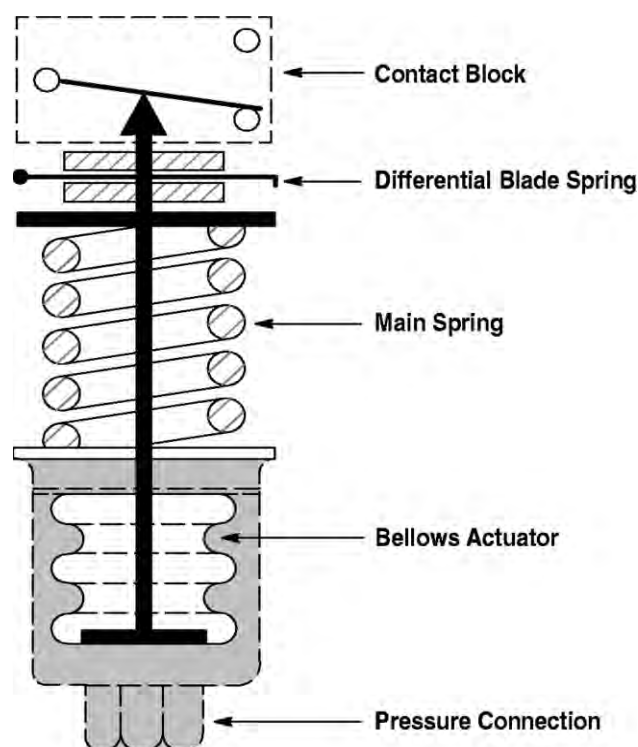
Theory of Operation

Bulletin 836 Pressure Controls are designed to open or close electrical circuits in response to changes in pneumatic (air or gas) or hydraulic (water or oil) pressure. Figure 3 is a simplified drawing of a pressure control.

The system pressure is connected to the control at the pressure connection. The system pressure is applied directly to the bellows. As pressure rises, the bellows exerts force on the main spring. When the threshold force of the main spring is overcome, it transfers the motion to the contact block, causing the contacts to actuate – this is referred to as the trip setting. As pressure decreases, the main spring will retract, causing the secondary differential blade spring to activate and return the contacts to their normal state – this is referred to as reset setting.

Varying the force of the main spring (by turning the operating range adjustment screw) determines where the contacts will trip. Varying the force of the secondary differential blade spring (by turning the differential adjustment screw) determines where the contacts will reset.

Figure 3
Basic mechanical structure



Applications for Control

Pressure controls can be used to either control or monitor a machine or process. Figure 4 shows a typical

control application. Here, pressure is controlled within predetermined high and low values. Figure 5 shows a typical monitoring application. Here, pressure is monitored between a high and low value, signaling when a preset limit has been exceeded.

Figure 4
Typical control application

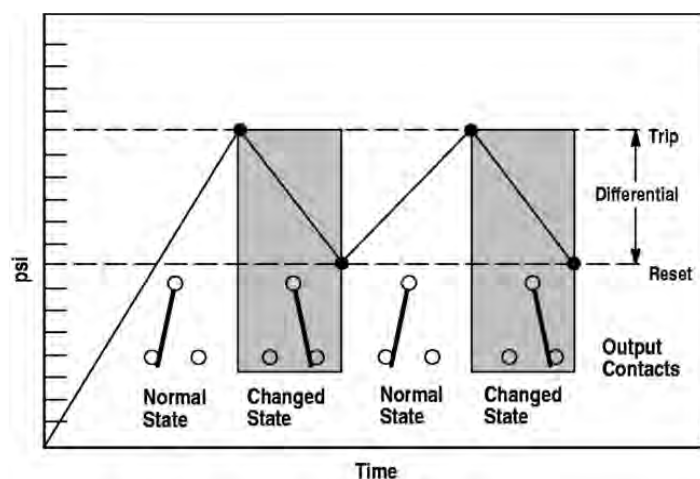
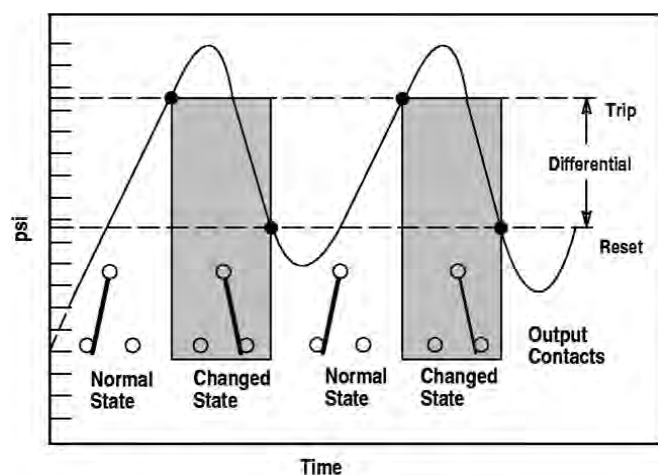


Figure 5
Typical monitoring application



Control Settings

Allen-Bradley controls are designed for ease of setting to help minimize installation time. Standard controls shipped from the factory are set at the maximum operating range and minimum differential. By following this simple two-step process, the control can be set to the specific requirements for each application. See Figure 6.

Step 1 – Adjust trip setting

The trip setting is achieved by turning the operating range adjustment screw. Turn the range screw counterclockwise to lower the trip setting, or clockwise to raise the trip setting. The approximate trip setting is shown on the indicating scale.

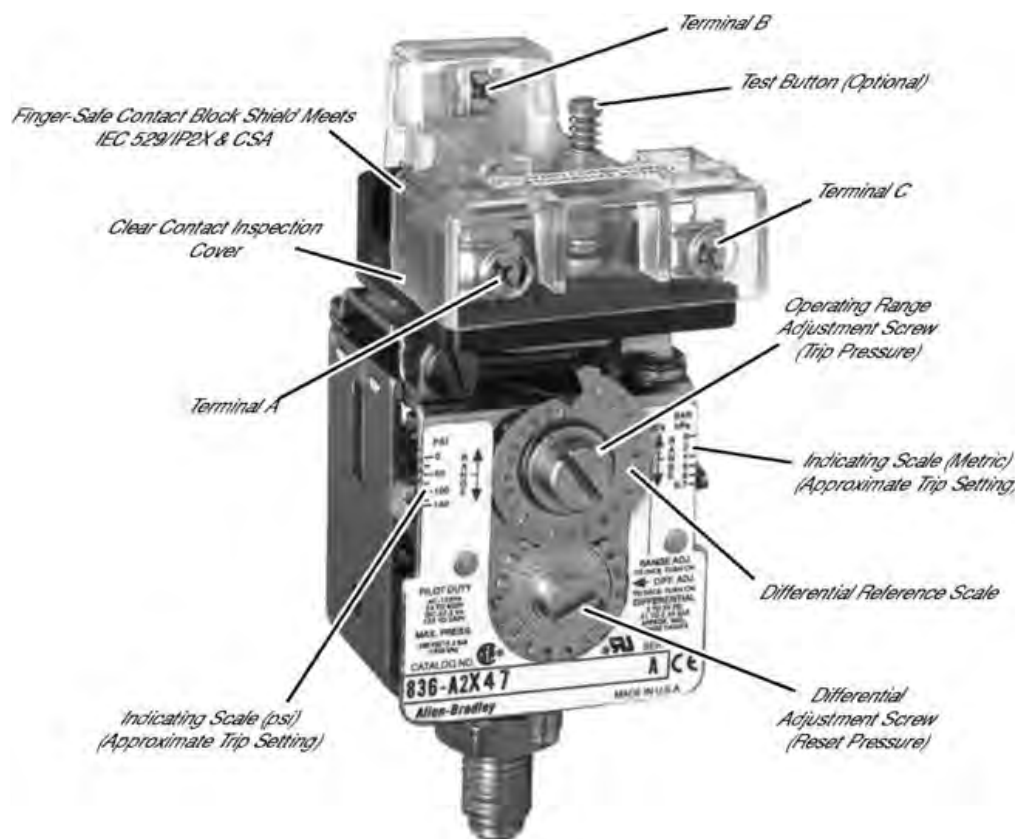
Note: Turning the operating range adjustment screw will change both the trip and reset settings in virtually equal increments.

Step 2 – Adjust reset setting

The reset setting is achieved by turning the differential adjustment screw counterclockwise to increase the differential, or clockwise to decrease the differential.

Note: Adjusting the differential has little or no affect upon the trip setting.

Figure 6
Trip and reset adjustment

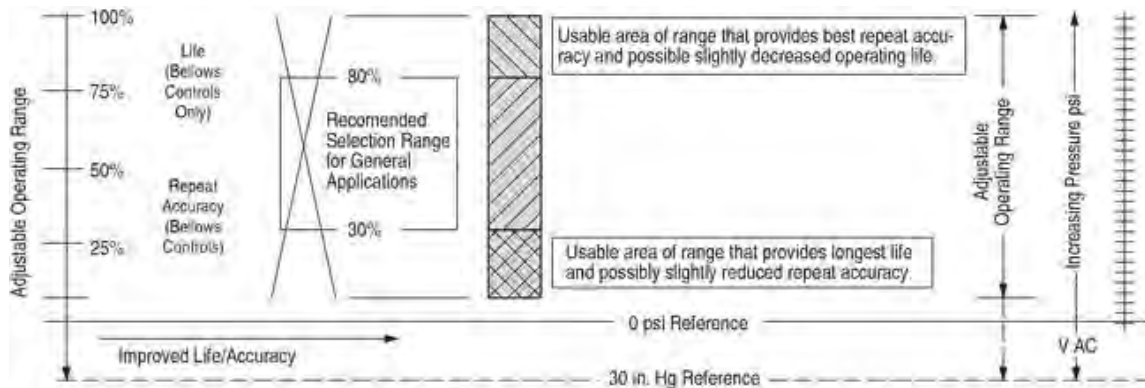
**Repeat Accuracy and Mechanical Life**

The design and construction of Bulletin 836 Styles A and C controls provide a typical repeat accuracy of + 0.5% or better. Repeat accuracy is based on percent of maximum range, evaluated from test data and calculated using the formula per ICS 2-225 standards.

Repeat accuracy and mechanical life of bellows type controls is graphically illustrated in Figure 7. For general

applications, controls selected where the contacts operate between 30...80% of the operating range and where the maximum line and surge pressures do not exceed the specified values will provide excellent life and repeat accuracy. For more specific applications, it is important to note that the controls are designed to operate **below** or **above** these values. However, there may be a small trade-off between the factors of repeat accuracy and mechanical life.

Figure 7
Repeat accuracy versus mechanical life graph



Standard Contacts

Snap-action contact operation

Contact blocks are single-pole, double-throw and can be wired to open or close on increasing or decreasing pressures.

Non-inductive ratings

5 A, 240V

3 A, 600V

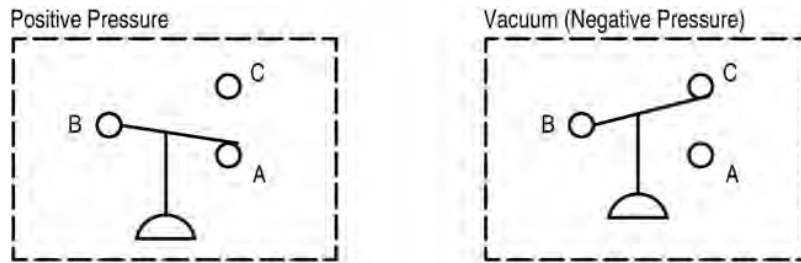
Control circuit ratings

AC - 125 VA, 24...600V

DC - 57.5 VA, 115...230V

Standard Contact Wiring Configurations

Single-pole double throw



Note: NEMA does not rate contacts to switch low voltage and current.

Bulletin 836 Styles A and C Pressure Controls are supplied with silver contacts. The devices are designed to deliver high-force snap action to the contacts. This provides exceptional contact fidelity at 24V DC I/O card current level entry when the control is protected in a suitable enclosure for the surrounding environment.

Special Controls

A large number of unlisted catalog modifications and complete devices are available for specific and OEM applications.

Special controls and modification service is available to meet many applications unique to the OEM market.

Please contact your local Rockwell Automation sales office or Allen-Bradley distributor for assistance with specific modified controls and accessories.

Temperature Range

Temperature range at +32 °F (0 °C) or below is based on the absence of freezing moisture, water, or other fluids that may solidify and impede operation of the control. Temperature ratings are as follows:

Operating:	-22... +150 °F (-30...+66 °C)
Storage:	-22...+200 °F (-30...+93 °C)

Factory-Set Pressure Controls

Rockwell Automation will factory set pressure controls to customer-specified values. Unspecified pressure controls shipped from the factory are set at the maximum operating range and minimum differential. See Factory Options.

Pressure Control Selection

The selection table below is an overview of the three types of Allen-Bradley Bulletin 836 Pressure Controls. Each type of control is suitable for use on many types of applications. Pressure ranges, pressure connections, enclosure types, and the compatibility of the actuator with different types of pressure media are given to

assist in the selection of which type of control to use.

	836 Style A	836 Style C	836 Style C
Actuator Type	Internal Bellows, Copper Alloy	External Bellows, Copper Alloy	External Bellows, Stainless Steel Type 316
Adjustable Operating Ranges	30 in. Hg Vacuum...375 psi	30 in. Hg Vacuum...900 psi	30 in. Hg Vacuum...375 psi
Adjustable Differentials	2...95 psi	0.2...125 psi	0.4...80 psi
Maximum Line Pressures	up to 750 psi	up to 1300 psi	up to 650 psi
Occasional Surge Pressures	up to 850 psi	up to 1600 psi	up to 650 psi
Pressure Media			
Air	•	•	•
Water	•	•	•
Hydraulic Fluids	•	•	•
Liquids: Corrosive ☐			•
Non-Corrosive	•	•	•
Gases: Corrosive ☐			•
Non-Corrosive	•	•	•
Enclosures			
Open Type	•	•	•
Type 1	•	•	•
Type 4 & 13	•	•	•
Type 4X		•	•
Type 7 & 9 and 4 & 13	•	•	•
Pipe Connections			
Pressure Connection	7/16 in.-20 SAE Flare for 1/4 in. Copper Tubing	1/4 in. N.P.T.F. Internal Pipe Thread or 3/8 in. N.P.S.F. Internal Pipe connection (836-C1 and 836-C1A only)	1/4 in. N.P.T.F. Internal Pipe Thread

☐ Corrosive liquids and gases compatible with Type 316 Stainless Steel.

Ordering Information

Ordering Bulletin 836 Pressure Controls

When ordering Bulletin 836 Pressure Controls, consider the following:

- Device style
- Occasional surge pressure
- Adjustable operating range

- Pressure media
- Adjustable differential
- Enclosure type
- Maximum line pressure
- Pressure connection

How to Order

Step 1: Basic Device

Select a catalog number for the basic device.

See Product Selection.

Step 2: Modifications

If required, add the appropriate modification suffix code(s) to the catalog number of the basic device.

See Modifications.

Step 3: Accessories

If required, select appropriate accessories.

See Accessories.

Step 4: Factory Options

Factory-set pressure controls.

See Factory Options.

Catalog Number Explanation

Note: Catalog numbers must not include blank spaces.

836 – A 1 A X9

a b c d

a	
Style of Device	
Code	Description
A	Internal Bellows
C	External Bellows

b	
Pressure Specifications	
See "Pressure Specifications" Style H High Pressure—Copper Alloy Bellows□ .	

c	
Enclosure Type	
Code	Description
A	Type 1
E	Type 7 & 9 and 4 & 13 Combined Metallic (Aluminum)
J	Type 4 & 13 Metallic (Aluminum)
S	Type 4X Non-Metallic
None	Without Enclosure

d	
Modification	
Code	Description
X_	Add suffix codes in descending order whenever possible (see Modifications).

Conversion Factors

Conversion Factors (Rounded)	
	psi x 703.1 = mm/H ₂ O psi x 27.68 = in. H ₂ O psi x 51.71 = mm/Hg psi x 2.036 = in. Hg psi x 0.0703 = kg/cm ² psi x 0.0689 = bar psi x 68.95 = mbar psi x 6895 = Pa psi x 6.895 = kPa
Note: psi — pounds per square inch (gauge) H ₂ O at 39.2 °F/Hg at 32 °F	

Product Selection

Style A Internal Bellows — Copper Alloy Bellows ☐ With 7/16 in. — 20 SAE Flare for 1/4 in. Copper Tubing Connection

Standard pressure controls shipped from the factory are set at the maximum operating range and minimum differential.



*Style A Internal Bellows —
Copper Alloy, Type 1*



*Style A Internal Bellows —
Copper Alloy, Type 4 & 13*

Pressure Specifications				Enclosure Type	
Adjustable Operating Range [in. Hg Vacuum...psi]‡	Adjustable Differential [psi] (Approximate Mid-Range Values)	Maximum psi		Open Type (Without Enclosure)	Type 1
		Line Pressure	Occasional Surge Pressure§	Cat. No.	Cat. No.
30 in. Vacuum...75	2...20♣	160	160	836-A1	836-A1A
6...140	3...35	280	340	836-A2	836-A2A
12...250	6...65	500	600	836-A3	836-A3A
16...375	8...95	750	850	836-A4	836-A4A

Style A Internal Bellows — Copper Alloy Bellows □ With 7/16 in. — 20 SAE Flare for 1/4 in. Copper Tubing Connection

Standard pressure controls shipped from the factory are set at the maximum operating range and minimum differential.

Pressure Specifications				Enclosure Type	
Adjustable Operating Range [in. Hg Vacuum...psi]‡	Adjustable Differential [psi] (Approximate Mid-Range Values)	Maximum psi		Type 4 & 13	Type 7 & 9 and 4 & 13Δ
		Line Pressure	Occasional Surge Pressure§	Cat. No.	Cat. No.
30 Vacuum...75	2...20♣	160	160	836-A1J	836-A1E
6...140	3...35	280	340	836-A2J	836-A2E
12...250	6...65	500	600	836-A3J	836-A3E
16...375	8...95	750	850	836-A4J	836-A4E

□ Copper alloy bellows may be used on water or air, and other liquids or gases not corrosive to this alloy.

‡ For applications where settings approach 0 psi, select a control that has an adjustable range that goes into vacuum.

§ Transients (pulses) can occur in a system prior to reaching a steady-state condition. Surge pressures within published values generated during startup or shutdown of a machine or system, not exceeding eight times in a 24-hour period, are negligible.

♣ To determine differential in inches of mercury vacuum multiply value in table by 2.036 (or approximately 2).

Δ The combined Type 7 & 9 and 4 & 13 Hazardous Gas and Dust service enclosure is supplied with special gasket and O-ring seal to diminish/exclude moisture, fluids, and dust from entering the enclosure. Enclosures rated 7 & 9 only are not designed to restrict moisture from entering the enclosure, which is common to outdoor service. Enclosure is rated for the following environments:

CLASS I Groups C,D

CLASS II Groups E,F,G

CLASS III

Style C External Bellows — Copper Alloy Bellows □ With 1/4 in. N.P.T.F. Internal Pipe Connection

Standard pressure controls shipped from the factory are set at the maximum operating range and minimum differential.



*Style C External Bellows —
Copper Alloy, Type 1 With Pilot Light Option*



*Style C External Bellows —
Copper Alloy, Type 4 & 13*

Pressure Specifications				Enclosure Type		
Adjustable Operating Range [in. Hg Vacuum...psi]‡	Adjustable Differential [psi] (Approximate Mid-Range Values)	Maximum psi		Open Type (Without Enclosure)	Type 1	Type 4 & 13
		Line Pressure	Occasional Surge Pressure§	Cat. No.	Cat. No.	Cat. No.
12 in. Vacuum...8♣	0.2...2.5♣	25	30	836-C1	836-C1A	—
30 in. Vacuum...10	0.4...6♣	65	75	836-C2	836-C2A	836-C2J
0.8...30	0.5...6	80	80	836-C3	836-C3A	836-C3J
30 in. Vacuum...45	1...12♣	175	190	836-C4	836-C4A	836-C4J
2...80	1...12	190	210	836-C5	836-C5A	836-C5J
30 in. Vacuum...100	2...25♣	300	375	836-C6	836-C6A	836-C6J
4...150	2.5...25	300	375	836-C7	836-C7A	836-C7J
6...250	4...45	500	650	836-C8	836-C8A	836-C8J
35...375	6...80	900	1200	836-C9	836-C9A	836-C9J
50...500	12...115	1300	1600	836-C10	836-C10A	836-C10J
50...650	16...115	1300	1600	836-C11	836-C11A	836-C11J
200...900	25...115	1300	1600	836-C12	836-C12A	836-C12J

Style C External Bellows — Copper Alloy Bellows □ With 1/4 in. N.P.T.F. Internal Pipe Connection

Standard pressure controls shipped from the factory are set at the maximum operating range and minimum differential.

Pressure Specifications				Enclosure Type	
Adjustable Operating Range [in. Hg Vacuum...psi]‡	Adjustable Differential [psi] (Approximate Mid-Range Values)	Maximum psi		Type 4X	Type 7 & 9 and 4 & 13Δ
		Line Pressure	Occasional Surge Pressure§	Cat. No.	Cat. No.
12 in. Vacuum...8♦	0.2...2.5♣	25	30	—	—
30 in. Vacuum...10	0.4...6♣	65	75	836-C2S	836-C2E
0.8...30	0.5...6	80	80	836-C3S	836-C3E
30 in. Vacuum...45	1...12♣	175	190	836-C4S	836-C4E
2...80	1...12	190	210	836-C5S	836-C5E
30 in. Vacuum...100	2...25♣	300	375	836-C6S	836-C6E
4...150	2.5...25	300	375	836-C7S	836-C7E
6...250	4...45	500	650	836-C8S	836-C8E
35...375	6...80	900	1200	836-C9S	836-C9E
50...500	12...115	1300	1600	836-C10S	836-C10E
50...650	16...115	1300	1600	836-C11S	836-C11E
200...900	25...115	1300	1600	836-C12S	836-C12E

□ Copper alloy bellows may be used on water or air, and other liquids or gases not corrosive to this alloy.

‡ For applications where settings approach 0 psi, select a control that has an adjustable range that goes into vacuum.

§ Transients (pulses) can occur in a system prior to reaching a steady-state condition. Surge pressures within published values generated during startup or shutdown of a machine or system, not exceeding eight times in a 24-hour period, are negligible.

♣ To determine differential in. Hg vacuum, multiply value in table by 2.036 (or approximately 2).

Δ The combined Type 7 & 9 and 4 & 13 Hazardous Gas and Dust service enclosure is supplied with special gasket and O-ring seal to diminish/exclude moisture, fluids, and dust from entering the enclosure. Enclosures rated 7 & 9 only are not designed to restrict moisture from entering the enclosure, which is common to outdoor service. Enclosure is rated for the following environments:

CLASS I Groups C,D
CLASS II Groups E,F,G
CLASS III

♦ With 3/8 in. N.P.S.F. internal pipe connection.

Style C External Bellows — Type 316 Stainless Steel Bellows □ With 1/4 in. N.P.T.F. Internal Pipe Connection

Standard pressure controls shipped from the factory are set at the maximum operating range and minimum

differential.



*Style C External Bellows —
Type 4X Glass Reinforced Polyester Enclosure*



*Style C External Bellows —
Stainless Steel, Type 7 & 9 and 4 & 13 Combined*

Pressure Specifications				Enclosure Type				
Adjustable Operating Range [in. Hg Vacuum... psi]‡	Adjustable Differential [psi] (Approximate Mid-Range Values)	Maximum psi		Open Type (Without Enclosure)	Type 1	Type 4 & 13	Type 4X	Type 7 & 9 and 4 & 13Δ
		Line Pressure	Occasional Surge Pressure§	Cat. No.	Cat. No.	Cat. No.	Cat. No.	Cat. No.
30 in. Vacuum... 10	0.4...6♣	65	65	836-C60	836-C60A	836-C60J	836-C60S	836-C60E
0.8...30	0.4...6	65	65	836-C61	836-C61A	836-C61J	836-C61S	836-C61E
30 in. Vacuum... 100	2...25♣	270	270	836-C62	836-C62A	836-C62J	836-C62S	836-C62E
4...150	2.5...25	270	270	836-C63	836-C63A	836-C63J	836-C63S	836-C63E
6...250	4...45	450	450	836-C64	836-C64A	836-C64J	836-C64S	836-C64E
35...375	8...80	650	650	836-C65	836-C65A	836-C65J	836-C65S	836-C65E

□ Type 316 stainless steel bellows are available for more corrosive liquids or gases.

‡ For applications where settings approach 0 psi, select a control that has an adjustable range that goes into vacuum.

§ Transients (pulses) can occur in a system prior to reaching a steady-state condition. Surge pressures within published values generated during startup or shutdown of a machine or system, not exceeding eight times in a 24-hour period, are negligible.

♣ To determine differential in. Hg vacuum, multiply value in table by 2.036 (or approximately 2).

Δ The combined Type 7 & 9 and 4 & 13 Hazardous Gas and Dust service enclosure is supplied with special gasket and O-ring seal to diminish/exclude moisture, fluids, and dust from entering the enclosure. Enclosures rated 7 & 9 only are not designed to restrict moisture from entering the enclosure, which is common to outdoor service. Enclosure is rated for the following environments:

CLASS I Groups C,D
CLASS II Groups E,F,G
CLASS III

Ordering Modifications

Modifications are ordered by adding the appropriate modification suffix code to the catalog number of the basic device. Add suffix codes to the catalog number in descending order (highest number first).

Modifications

Contact Blocks — Trip pressure-indicating scales are supplied on controls with standard contact block.

Description	Rating	Symbol	Suffix Code	
Automatic Operation				
Standard Contact Block – Single-pole, double-throw, snap-action. Supplied when a contact block suffix is not added to the catalog number.	Control Circuit Rating: See Specifications on Standard Contacts		–	
Single-pole double-throw – slow-acting contact with no snap action. Contacts close on rise and close on fall with an open circuit between contact closures.	Control Circuit Rating: AC-125VA, 24...250V		□ ‡	X171
Single-pole single-throw, normally open – closes on rise.	0.5 Hp, 115V AC 1 HP, 230V AC Control Circuit Rating: AC-125 VA, 24...110V		□ ‡	X221
Single-pole single-throw, normally closed – opens on rise.	AC-345 VA, 110...600V DC-57.5 VA, 110...250V		□ ‡	X231
Single-pole single-throw, normally open – closes on rise.	1 Hp, 115V AC 1.5 Hp, 230V AC Control Circuit Rating: AC-600 VA, 110...600V		□ ‡	X321
Single-pole single-throw, normally closed – opens on rise.	DC-57.5 VA, 110...250V		□ ‡	X331
External Manual Reset (Not available in Type 4X Enclosures)§ ♣				
Single-pole single-throw, normally open – contacts open at a predetermined setting on fall and remain open until system is restored to normal run conditions, at which time contacts can be manually reset.	Non-inductive: 5 A, 240V 3 A, 600V Control Circuit Rating: AC-125 VA, 24...600V		□ § ♣ Δ	X140
Single-pole single-throw, normally closed – contacts open on rise and remain open until system is restored to normal run conditions, at which time contacts can be manually reset.	DC-57.5 VA, 115...230V		□ § ♣ Δ	X150
Single-pole double-throw, one contact normally closed – contact opens on rise and remains open until system is restored to normal run conditions, at which time contact can be manually reset. A second contact closes when the first contact opens.			□ § ♣ Δ	X15A

□ Contact blocks not available for field conversion or replacement.

‡ Minimum specified differential value approximately doubles.

§ Manual reset devices cannot be supplied with an adjustable differential. Inherent differential is approximately three times the differential of the corresponding adjustable differential control.

♣ Available only for replacement of complete open type control in an existing Type 1 or 4 & 13 enclosure. Replacement in a Type 7 & 9 enclosure is not available because it would void UL and CSA.

Δ Type 7 & 9 enclosures for manual reset devices are not also rated Type 4 & 13.

Note: NEMA does not rate contacts to switch low voltage and current. Bulletin 836 Styles A and C Pressure Controls are supplied with silver contacts. The devices are designed to deliver high force snap action to the

contacts. This provides exceptional contact fidelity at 24V DC I/O card current level entry when the control is protected in a suitable enclosure for the surrounding environment.

Modifications are ordered by adding the appropriate modification suffix code to the catalog number of the basic device. Add suffix codes to the catalog number in descending order (highest number first).

Modification	Description	Suffix Code
Oxygen/Nitrous Oxide Service	Bellows and fittings are specially prepared for oxygen and nitrous oxide service. The devices are tested with pure oxygen, bellows are plugged for protection from contamination, and a tag warning against contamination is applied.	X2
Tamper-Resistant Adjustment	Range and differential adjustment screws are designed so that after a setting has been applied to the control, the adjustment screws can be broken off with a pliers. Note: The “break-off” adjustment screw(s) will not be broken off unless a factory setting is given and the order specifies “Break-off Adjustment Screw(s)”. See Ordering Factory-Set Pressure Controls.	X4
Neon Pilot Light, 120V AC	A high intensity neon pilot light is available for 120V AC, 60 Hz applications and can be wired for ON or OFF operation. The current rating is 1.0 m A. □	X9
Red LED Pilot Light, 24V DC	A high intensity LED 24V DC pilot light is available to meet the requirements of the automotive, machine tool builders and other industries. The current rating is 22 mA and can be wired for ON or OFF operation. □	X15
Green LED Pilot Light, 24V DC	A high intensity LED 24V DC pilot light is available to meet the requirements of the automotive, machine tool builders and other industries. The current rating is 22 mA and can be wired for ON or OFF operation. □	X18

□ Not available on combined Type 7 & 9 and 4 & 13, Type 4X, and manual reset devices.

Ordering Accessories

Accessories are ordered as separate catalog numbers. Select the required accessories from the tables below.

Accessories

Pipe Adapter

Description	Cat. No.
1/4 in. male pipe adapter with copper seating washer for Style A only.	836-N1

Contact Block Replacement Kit

Description	Cat. No.
Kit consists of a standard contact block and instructions.	836-N2

Finger Safe Contact Block Cover

Description	Cat. No.
Clear contact block cover provides IP2X Finger-Safe protection.	41162-908-01

Hardware Kits for Mounting Open Type Controls in Special Enclosures

Description	Type	Material	Cat. No.
Hardware kits for mounting open type controls in special enclosures allow ease of connecting pressure lines to the enclosure. For use with Type 1 and Type 4 & 13 enclosures with wall thickness up to 0.25 in. (6.35 mm).	Style A Controls		
	Open type controls	Plated steel	836-N5
	Style C Controls		
	Open type controls	Brass	836-N8
		Stainless steel	836-N10

Angle Mounting Brackets

Description	Bracket Type	Cat. No.
For mounting one or two open type Bulletin 836 Style A Pressure Controls or Bulletin 837 Temperature Controls on an enclosure mounting plate.	Single bracket	836-N11
	Dual mounting bracket	836-N12

Steam and/or Corrosive Media Applications — Isolation Traps

Description	Type	Cat. No.
An isolation trap is available for high-temperature media applications from 150...600 °F or corrosive applications compatible with Type 316 stainless steel tubing and fittings. The isolation coil is inserted between the bellows of the pressure control and the elevated temperature line of the system. The isolation trap will fill with condensed water or can be filled with water or suitable fluid when installed. A silicone buffer fluid is available in a convenient dispenser. Copper alloy lower and higher pressure range bellows can be applied to many applications using the isolation trap. The silicone buffer fluid is used to isolate many corrosive substances from coming in contact with the bellows. The isolation trap is rated at 3000 psi working pressure. Not available for piston-type controls.	Isolation trap with two 1/4 in. male pipe fittings	836-N25
	Isolation trap with one 1/4 in. male and one 1/4 in. female pipe fitting	836-N26
	2 oz. of buffer fluid to fill bellows and tubing	836-N27



Isolation Trap and Silicone Buffer Fluid

Accessories are ordered as separate catalog numbers. Select the required accessories from the tables below.

External Fixed Pulsation Snubbers

Description	Type	Cat. No.
Controls are supplied as standard with an internal pulsation snubber. However, a control properly selected and used within the adjustable range values yet having a short bellows life is a good indication of the presence of extreme surge pressures. External fixed pulsation snubbers are available to provide additional dampening when extreme pulsations or surges are present. Recommended if more than eight line surges occur in a 24 hr. time period.	Snubber for Style A Controls	836-N6
	Snubber for Style C Controls	836-N7

Selectable Element Pulsation Snubbers

Description	Type	Cat. No.
Controls are supplied as standard with an internal pulsation snubber. However, a control properly selected and used within the adjustable range values, yet having a short bellows life, is a good indication of the presence of extreme surge pressures. Selectable element pulsation snubbers are supplied with five different elements to provide a selectable balance between maximizing pressure control life and minimizing control response time. Pulsation snubbers are supplied with the mid-range element already mounted and four other color-coded porosity elements included in the package.	Snubber for Style C Controls	836-N40

Selectable Pulsation Snubber Porosity Elements

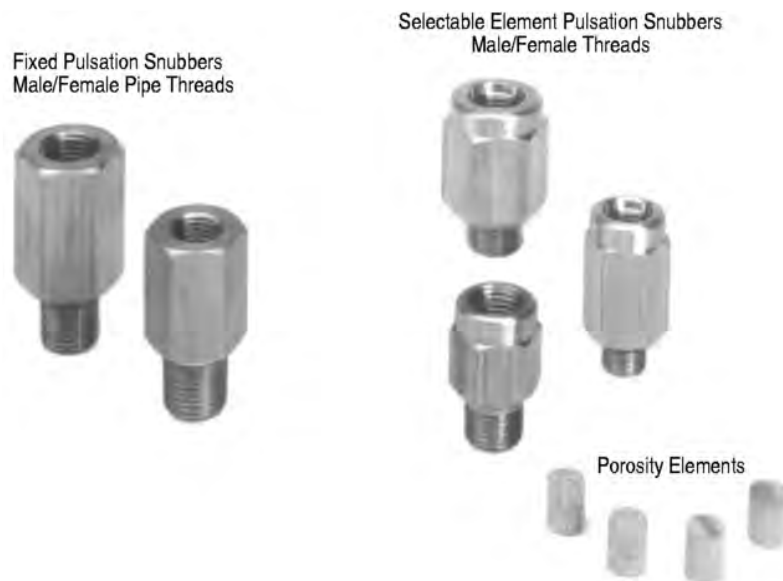
Description	Recommended Type of Service	Color Code	Porosity
Elements are color-coded for easy identification. Elements are available in five different porosities for a wide range of applications.	Viscous fluids (over 500 SSU) ☐	None	Coarser

Medium type oils (225...500 SSU)□	Black	↕
Water and light oils (30...225 SSU)□	Brown	
Low viscosity fluids (under 30 SSU)□	Green	
Air and other gases	Red	Finer
One of each of the above	—	Assorted

□ SSU Saybolt Seconds Universal — units of viscosity measurement.

Note:Color code is located on end of element.

Pulsation Snubbers



Factory Options

Ordering Factory-Set Pressure Controls

When a specific factory setting is requested, the specific terminal connections must be specified — e.g., N.O. or N.C. It must also be specified whether the contact operation is occurring on either increasing or decreasing pressure. For example:

Normally Closed (N.C.) contacts to open at □ psi increasing pressure and close at □ psi decreasing pressure.

—OR—

Normally Open (N.O.) contacts to close at ☐ psi increasing pressure and open at ☐ psi decreasing pressure.

If minimum differential is not critical and the inherent minimum differential satisfies the application, specify the factory setting as follows:

Normally Closed (N.C.) contacts to open at ☐ psi increasing pressure. Minimum differential.

—OR—

Normally Open (N.O.) contacts to close at ☐ psi increasing pressure. Minimum differential.

☐ Specify psi (pounds per square inch) or, in. Hg vacuum (inches of mercury vacuum)

‡ Per ANSI B40.1 Grade 2A (0.5% accuracy full scale), Grade 3A (0.25% accuracy full scale).

If not specified, settings tolerances will be as shown in table below.

Pressure Range	Tolerance
30 in. Hg Vac....0 psi	+/- 1 in. Hg Vac.
> 0...100 psi	+/- 1 psi
> 100...300 psi	+/- 2 psi
> 300...500 psi	+/- 5 psi
> 500...1000 psi	+/- 10 psi
> 1000...5000 psi	+/- 50 psi

Quality analog “Test”‡ gauges are used when applying requested factory settings to these rugged industrial-grade pressure controls. (Gauges are calibrated and the accuracy is traceable to National Bureau of Standards.)

The actual requested setting is applied to the control by reading the set point directly from the test gauge being used. However, traceable gauge tolerance variance between source and user, and possible severe shock during shipping and installation, may contribute to the factory settings deviating slightly from the specified values. Slight recalibration can easily be accomplished upon final installation to meet specific requirements for the more demanding applications. When installed, the controls will perform with a repeat accuracy as established in the paragraph on Repeat Accuracy and Mechanical Life entitled “Repeat Accuracy and Mechanical Life”.

Special service is available to factory set controls on Digital Laboratory Instruments, up to 600 psi, when required for the more critical applications. An additional charge may be added for this service contingent upon setting tolerance and quantity.

Consult your local Rockwell Automation sales office or Allen-Bradley distributor.

Two Style A Controls In One Enclosure Bulletin 836 Style pressure controls which function independently may be mounted side by side in a single Type 1 enclosure. This design is ideal for installations where two controls would ordinarily be mounted. Each dual unit can be a combination of a Style A pressure control and a bulb and

capillary type temperature control. See respective product tables.

To order this arrangement, specify the two desired catalog numbers in their mounted position within the dual enclosure to form a single catalog number. The list price is the sum of the two Type 1 enclosed devices.

For more information on special controls, please contact your local Rockwell Automation sales office or Allen-Bradley distributor.

Refrigeration Controls



Description

Bulletin 836 Refrigeration Controls are similar to Bulletin 836 Style A Pressure Controls. However, refrigeration controls are constructed with additional pulsation dampening to filter out the severe pulsations generated by reciprocating refrigeration compressors. Pressure controls not supplied with the added snubber function may result in reduced bellows life. The reduced life results from pulsations severe enough to cause the bellows to "squeal" at the pump frequency or at the harmonic wave generated at specific pump loading demands. Refrigeration controls are supplied as standard with the pulsation snubber built into the stem of the bellows.

Allen-Bradley heavy-duty refrigeration controls have copper alloy bellows for use with noncorrosive refrigerants. The devices can be supplied as single Open Type devices or mounted in a Type 1 enclosure. Standard controls have 7/16 in. - 20 SAE male threads for a 45° flare fuel and lubricant fitting. Optionally, the refrigeration controls can be supplied with capillary tubing. The capillary terminates with 1/4 in. tubing, which is flared and supplied with a 7/16 in. - 20 female nut. To modify the standard pressure connection, add suffix "-36" (denotes 36 in.) to the catalog number. There is no price addition for changing to a capillary-type pressure connection. Example: Cat. No. **836-H11-XHC**, modified for a 36 in. capillary connection, is Cat. No. **836-H11-XHC-36**.

Style H — High Pressure Refrigeration Controls



Style H

- Copper alloy bellows with built-in pulsation snubber
- 7/16 in. — 20 SAE male thread for 45° flare fitting
- Adjustable operating range — 30...120 psi
- Maximum line pressure — 450 psi
- Occasional surge pressure — 800 psi
- With capillary and flare connection

Style L — Low Pressure Refrigeration Controls



Style L

- Copper alloy bellows with built-in pulsation snubber
- With capillary and tubing connection
- Adjustable operating range — 20 in. Hg vacuum...120 psi
- Maximum line pressure — 220 psi

Style P — High Pressure Definite-Purpose Refrigeration Controls



Style P

- Copper alloy bellows with built-in pulsation snubber
- 7/16 in. — 20 SAE male thread for 45° flare fitting
- Operating range — 30...700 psi
- Line and occasional surge pressure — 800 psi
- Fixed differential — 30 psi



*Style H High Pressure —
Copper Alloy, Open Type With Capillary
Adjustable Differential*



*Style L Low Pressure —
Copper Alloy, Open Type with capillary
Adjustable Differential*



*Style P High Pressure —
Copper Alloy, Open Type
Fixed Differential*

Style H High Pressure—Copper Alloy Bellows□

Pressure Specifications				Enclosure Type		Contact Reference Number (See table below)
Adjustable Operating Range [psi]	Adjustable Differential [psi] (Approximate Mid-Range Values)	Maximum Line Pressure [psi]	Limited Maximum Stop [psi]	Open Type Without Enclosure	Type 1	
				Cat. No.	Cat. No.	
30...270	30...80	600	—	836-H11-XHCS	836-H11-XHC	1
50...450	40...100	800	—	836-H11-BLCS	836-H11-BLC	1
100...285	40...90	600	285	836-H33-XKKS	836-H33-XKK	3
200...425	40...90	800	425	836-H33-BLKS	836-H33-BLK	3
125...280	60...120	800	280	836-H33-BKKS	836-H33-BKK	3

Customer Specified, Factory Locked Operating Range With Fixed Differential of 30 psi						
75...350	35	800	—	836-H33-XNAS	836-H33-XNA	3

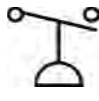
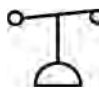
Style L Low Pressure—Copper Alloy Bellows □

Pressure Specifications			Enclosure Type		Contact Reference Number (See table below)
Adjustable Operating Range [in. Hg Vacuum...psi]	Adjustable Differential [psi] (Approximate Mid-Range Values)	Maximum Line Pressure [psi]	Open Type (Without Enclosure)	Type 1	
			Cat. No.	Cat. No.	
20 in. Hg Vacuum...120 psi	5...30‡	220	836-AL11-NKCS	836-AL11-NKC	1
20 in. Hg Vacuum...120 psi	9...50‡	220	836-AL32-NKCHS	836-AL32-NKCH	2

Style P High Pressure Definite Purpose—Copper Alloy Bellows □

Pressure Specifications				Enclosure Type		Contact Reference Number (See table below)
Adjustable Operating Range [psi]	Fixed Differential [psi]	Maximum Line Pressure [psi]	Limited Maximum Stop [psi]	Open Type (Without Enclosure)	Type 1	
				Cat. No.	Cat. No.	
30...700	30	800	—	836-P11-ARBS	836-P11-ARB	1

Contact Reference Number Table

Reference Number	Description	Symbol	Rating
1	Single pole double throw — automatically opens or closes on rise or fall.		Non-inductive: 5 A, 240V ... 3 A, 600V Control Circuit Rating: AC-125VA, 24...600V DC-57.5VA, 115...230V
2	Single pole single throw, normally open — closes on rise.		1 Hp, 115V AC 1.5 Hp, 230V AC Control Circuit Rating: AC-600VA, 110...600V DC-57.5VA, 110...250V
3	Single pole single throw, normally closed — opens on rise.		

□ Copper alloy bellows may be used on water or air, and other liquids not corrosive to this alloy.

‡ To determine differential in in. Hg vacuum, multiply the value in the table by 2.036 (or approximately 2).

Factory Options for Refrigeration Controls

Two Controls In One Enclosure

It is common in the industry to supply a low-pressure **Style L** and a high-pressure **Style H** mounted in a common, dual Type 1 enclosure. This factory option can be supplied with the low-pressure control on the left and the high-pressure control on the right. To order, combine the two desired Type 1 catalog numbers into a single number. Example: Low-pressure control **836-AL11-NKC-36**, plus high-pressure control **836-H11-BLC-36**, becomes an **836-AL11-NKC-36/836-H11-BLC-36**.

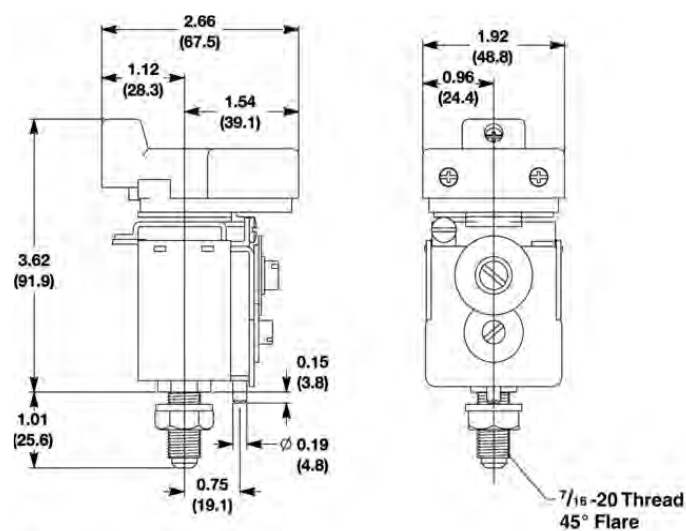


Two Style A Pressure Controls in One Type 1 Enclosure

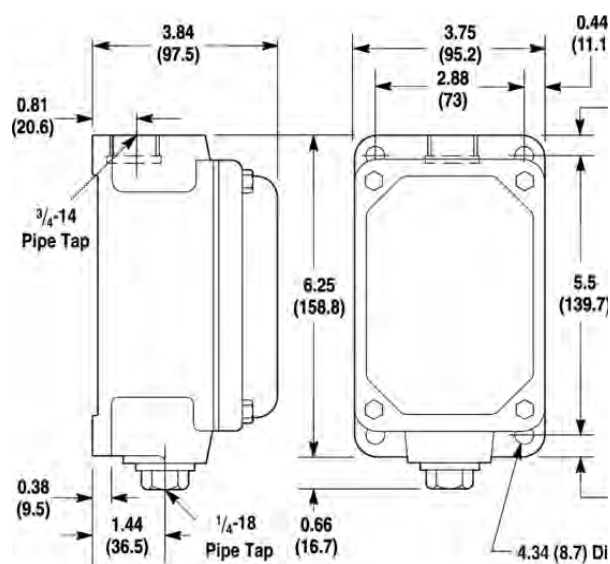
Approximate Dimensions and Shipping Weights

Dimensions in inches (millimeters). Dimensions are not intended to be used for manufacturing purposes.

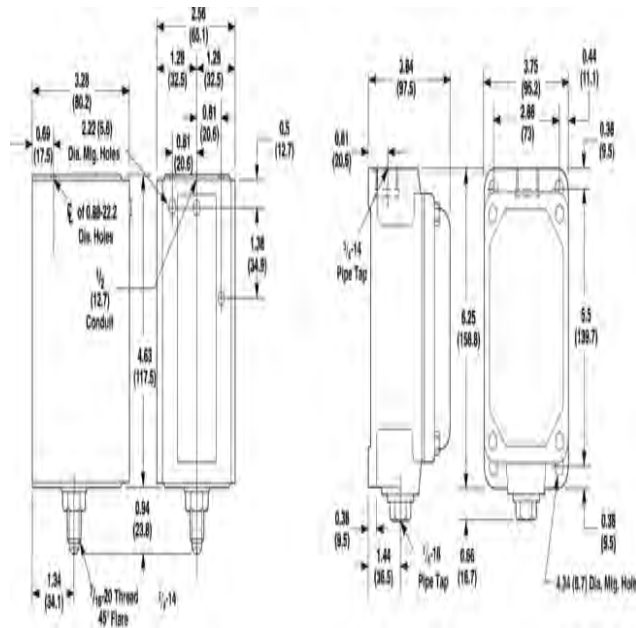
Style A



*Open Type
Approximate Shipping Weight 1 lb. (0.45 kg)*

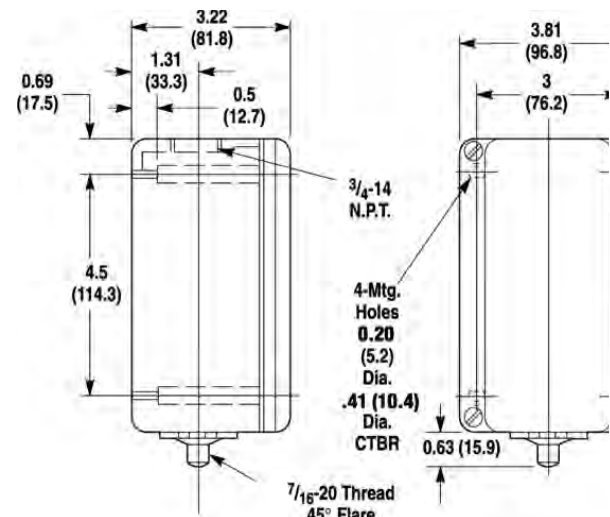


*Type 7 & 9 and 4 & 13
Approximate Shipping Weight 9 lbs (4.1 kg)*



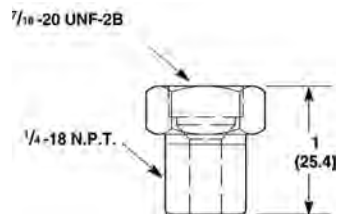
Type 1

Approximate Shipping Weight 2 lbs (0.91 kg)



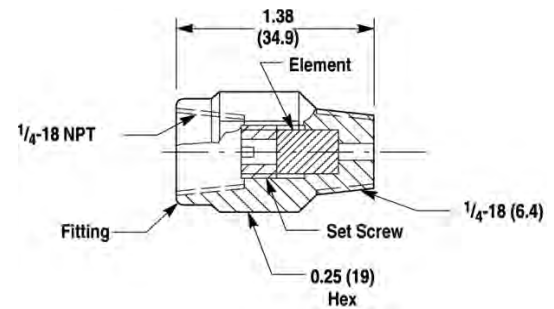
Type 4 & 13

Approximate Shipping Weight 3 lbs (1.4 kg)



Cat. No. 836-N1

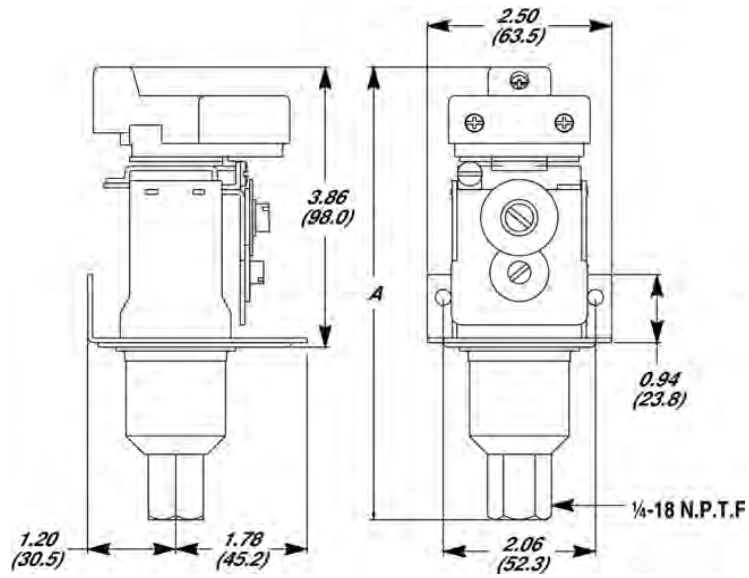
Approximate Shipping Weight 1/4 lb (0.1 kg)



Cat. No. 836-N40

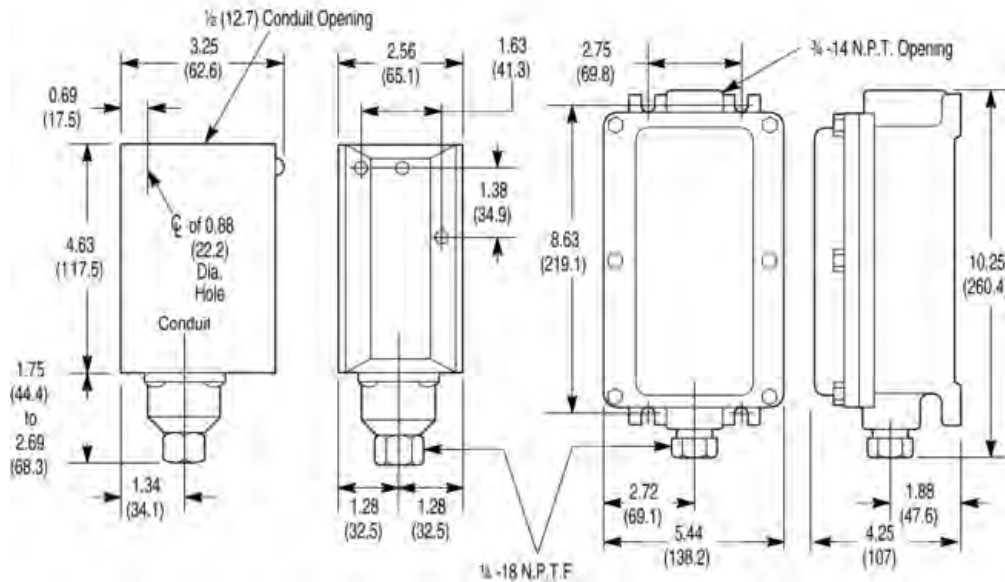
Approximate Shipping Weight 1/4 lb (0.1 kg)

Style C

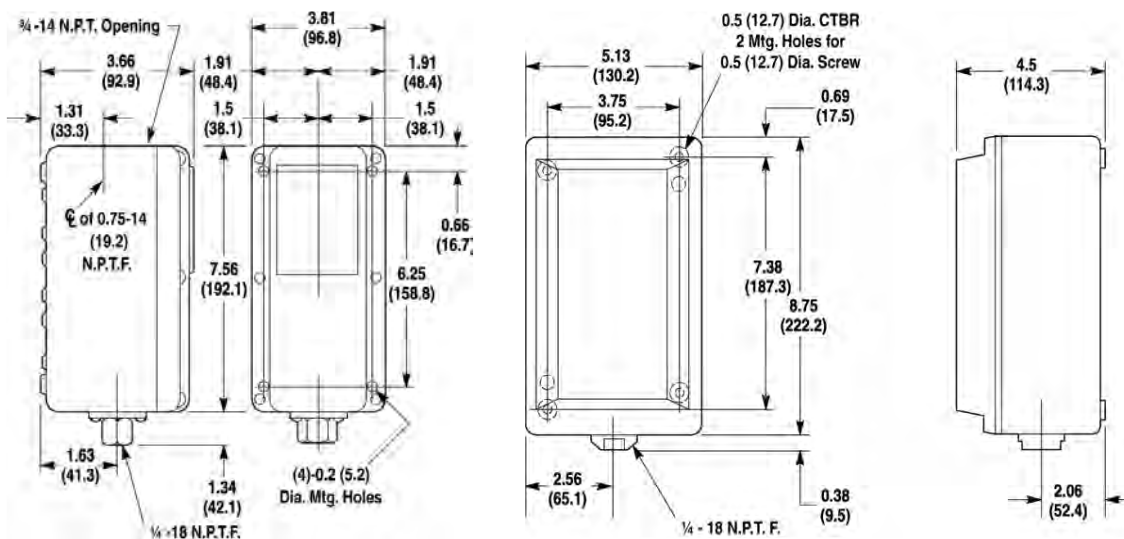


Open Type Approximate Shipping Weight 1.3 lbs. (.60 kg) □

Cat. No.	Dimension A
C2, C3, C60, C61	6.11 (155)
C4	5.99 (152)
C5, C64	5.94 (151)
C6, C62	6.29 (160)
C7, C63	6.24 (158)
C8, C9	5.56 (141)
C10, C11, C12, C65	5.78 (147)



Type 1
Approximate Shipping Weight 2.0 (.9 kg)
Type 7&9 and 4&13
Approximate Shipping Weight 10 lbs. (4.5 kg)

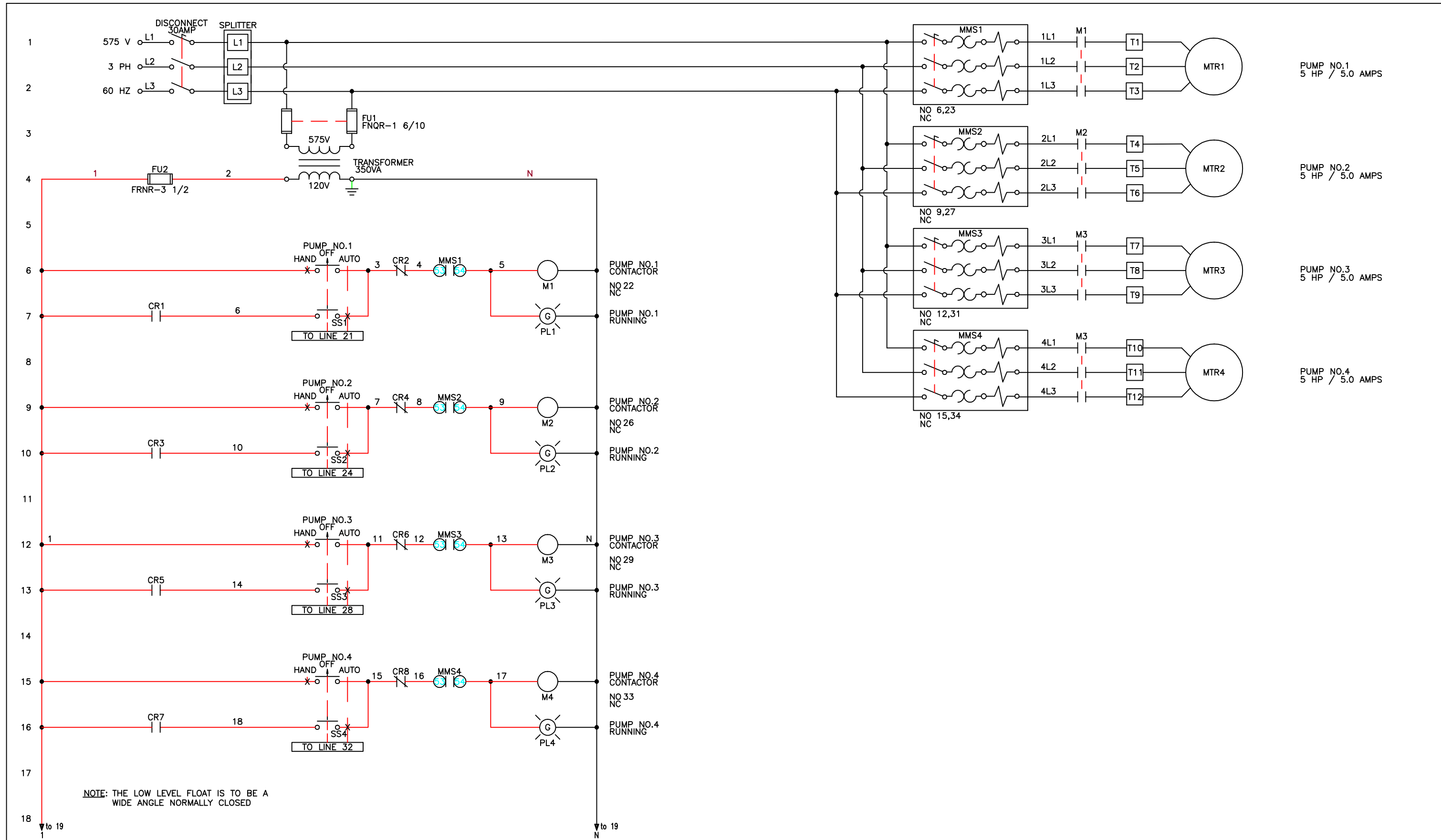


Type 4 & 13
Approximate Shipping Weight 5 lbs (2.3 kg)

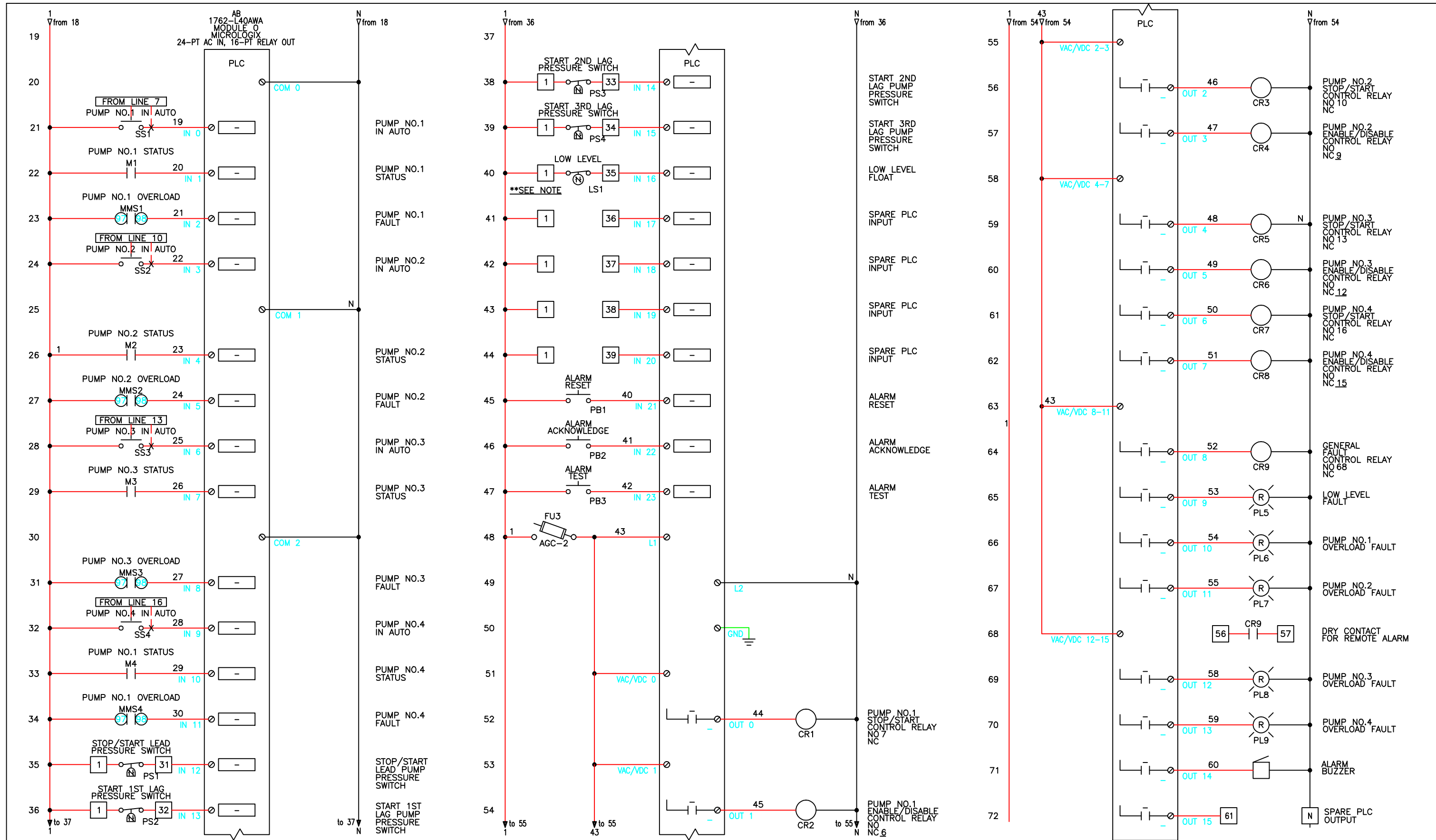
Type 4X
Approximate Shipping Weight 6 lbs (2.7 kg)

□ Cat. No.s **836-C1** and **836-C1A**:

Require a 2 in. swing radius from centerline of pressure connection. Mount control on 7/8 in. minimum spacers
Have a 3/8-18 N.P.S.F. internal pipe connection



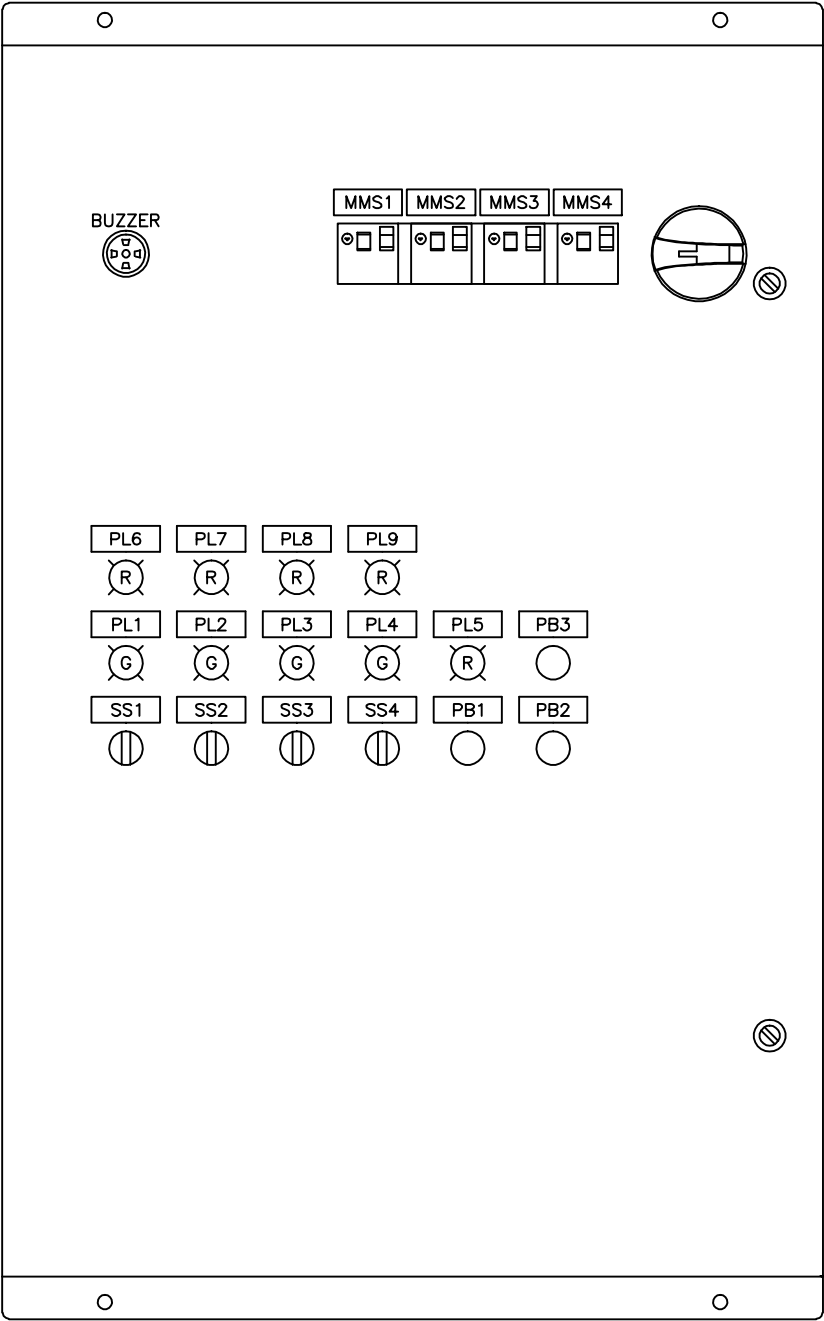
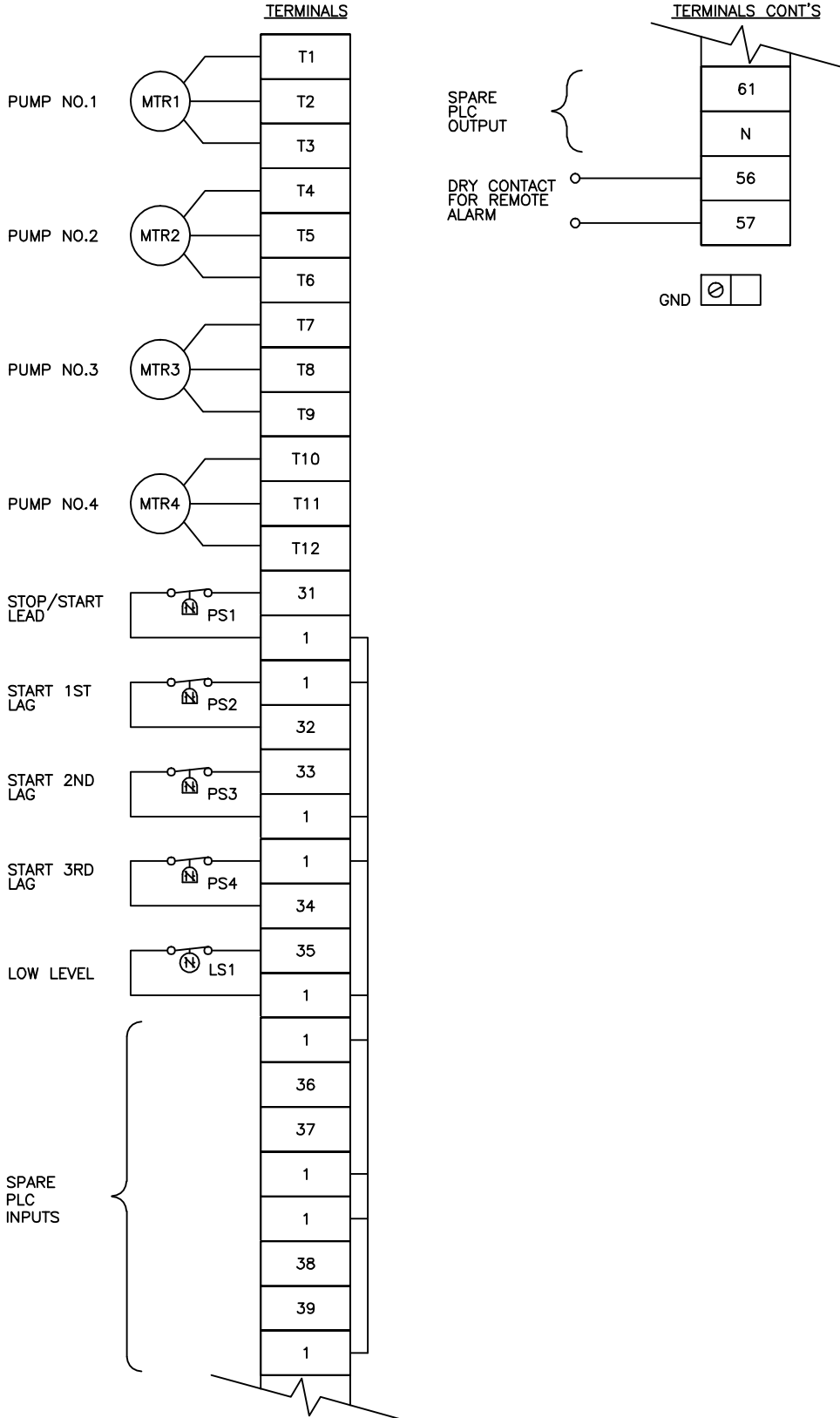
Pentair Canada Inc 269 Trillium Drive KITCHENER, ONTARIO N2G 4W5 CANADA							REV'D	REF BAFFIN ISLAND		TITLE							
							DESIGNED	P. RATIU		SCALE	N.T.S.						
							DRAWN	P. RATIU		CAD REF.	PEN33566-4						
	REV	DESCRIPTION		BY	DATE	REV	DESCRIPTION		BY	DATE	DATE	JULY 08, 2013	SHT NO.	1 OF 3	DWG NO.	PE1249B-33566	REV



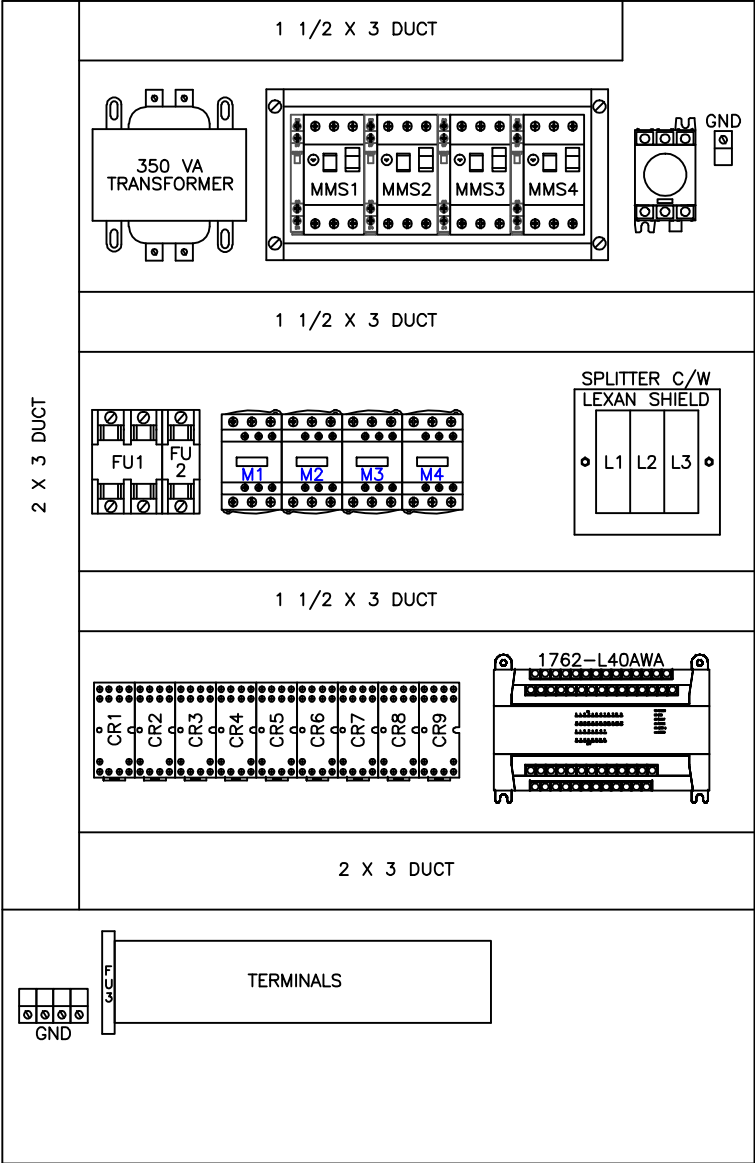
Pentair Canada Inc

269 Trillium Drive
KITCHENER, ONTARIO N2G 4W5
CANADA

REV	DESCRIPTION	BY	DATE	REV	DESCRIPTION	BY	DATE	REV'D	REF	SCALE	TITLE
									BAFFIN ISLAND	N.T.S.	QUADPLEX PUMP CONTROL SYSTEM
								DESIGNED	P. RATIU	CAD REF. PEN33566-5	DWG NO. PE1249B-33566
								DRAWN	P. RATIU	SHT NO. 2 OF 3	REV 0
								DATE	JULY 08, 2013		

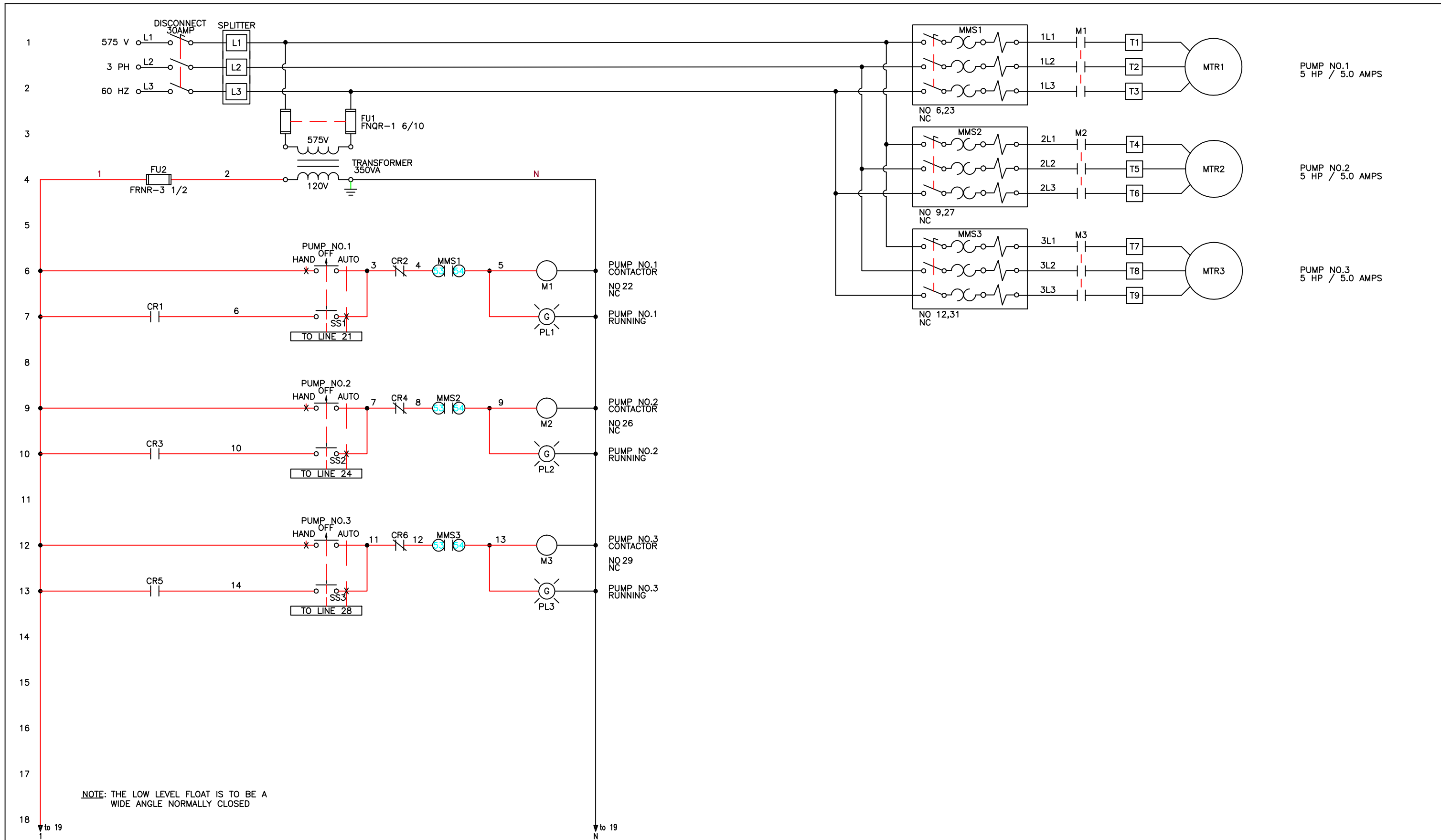


EEMAC 1 ENCLOSURE 36" X 24" X 9"



PANEL LAYOUT

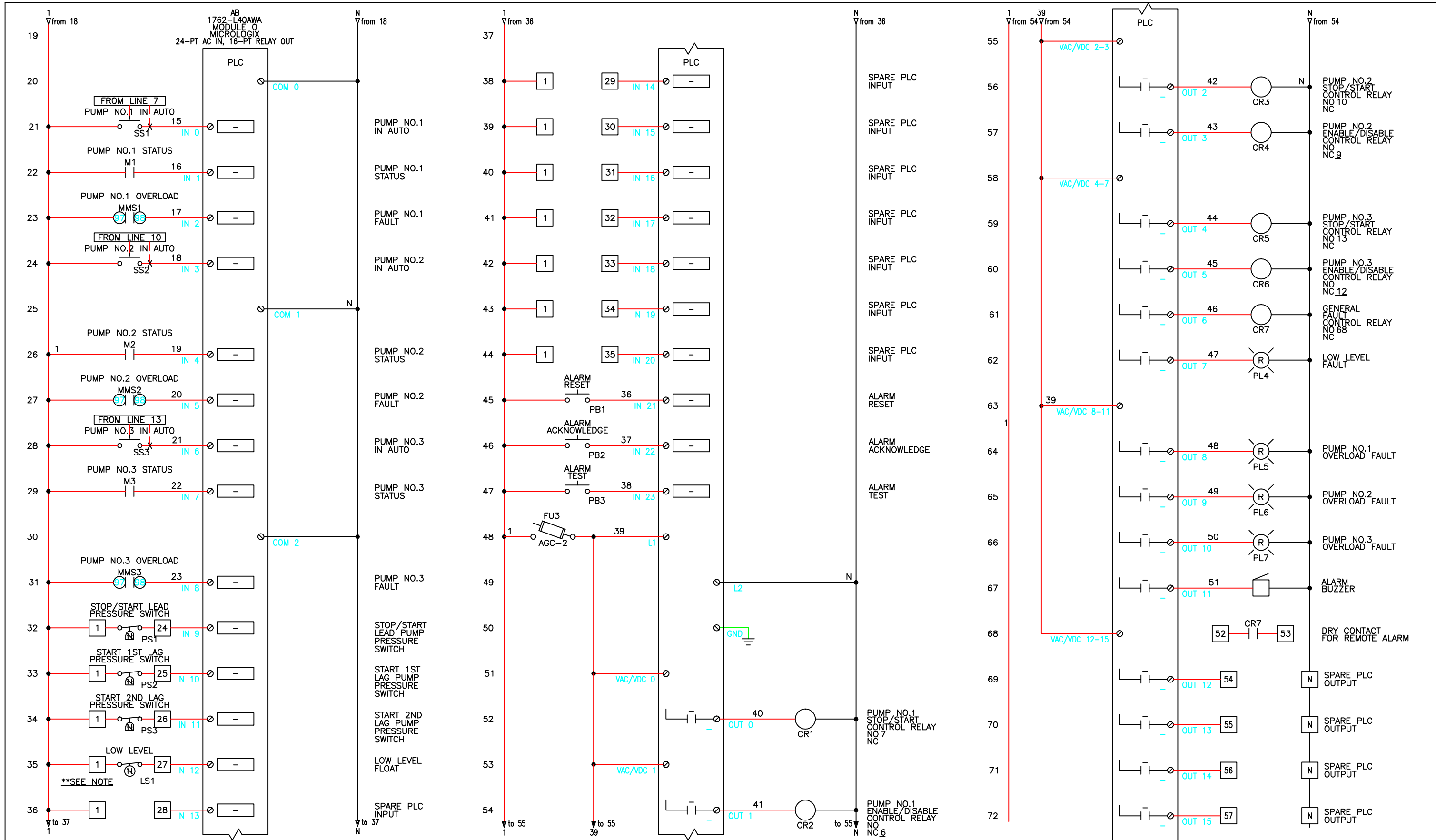
Pentair Canada Inc 269 Trillium Drive KITCHENER, ONTARIO N2G 4W5 CANADA								REV'D	REF BAFFIN ISLAND			TITLE								
								DESIGNED	P. RATIU			SCALE	3/16"=1"							
								DRAWN	P. RATIU			CAD REF.	PEN33566-6							
	REV	DESCRIPTION			BY	DATE	REV	DESCRIPTION			BY	DATE	DATE	JULY 08, 2013						
												SHT NO.	3	OF	3	DWG NO.	PE1249B-33566		REV	0



Pentair Canada Inc

269 Trillium Drive
KITCHENER, ONTARIO N2G 4W5
CANADA

REV	DESCRIPTION	BY	DATE	REV	DESCRIPTION	BY	DATE	REV'D	REF BAFFIN ISLAND	DESIGNED	P. RATIU	SCALE	N.T.S.	TITLE	TRIPLEX PUMP CONTROL SYSTEM
								DRAWN	P. RATIU			CAD REF.	PEN33566-1	DWG NO.	PE1249A-33566
								DATE	JULY 05, 2013			SHT NO.	1 OF 3	REV	0



Pentair Canada Inc

269 Trillium Drive
KITCHENER, ONTARIO N2G 4W5
CANADA

REV		DESCRIPTION	BY	DATE	REV		DESCRIPTION	BY	DATE	REV'D	REF BAFFIN ISLAND	SCALE	N.T.S.	TITLE	
										DESIGNED	P. RATIU	CAD REF.	PEN33566-2	TRIPLEX PUMP CONTROL SYSTEM	
										DRAWN	P. RATIU	SHT NO.	2 OF 3	DWG NO. PE1249A-33566	
										DATE	JULY 05, 2013			REV 0	

WATER PRESSURE TANKS



WellMate™ premium steel pressurized water system tanks

- **Stainless Steel Service Connection** – “The Professional’s Choice”
- **Metal Air Valve Assembly** – “Field-Serviceable”
- **125 PSI Maximum Operating Pressure** – Four Sizes: SSWM14, SSWM20, SSWM25, and SSWM35

application

- Residential Water Systems
- Industrial, Commercial and Agricultural

specifications

Shell – Heavy gauge steel

Base – High-impact composite, ABS

Finish – Electrostatically applied, baked-on polyester paint

Water Cell – One piece seamless PVC, made from FDA listed material

Flange – 304SS

Service Connection – NPT threads, integral to flange

Air Valve – Nickel-plated brass, threaded for ease of service

certification



UL Classified to ANSI/NSF 61, Drinking Water System Components – Health Effects



- ▶ **Service Connection** – 304 stainless steel
- ▶ **Air Valve** – Nickel-plated brass
- ▶ **Maximum Operating Pressure** – 100 PSI on 16" and 20" tanks; 125 PSI on 24" tanks
- ▶ **Heavy Gauge Metal Construction** – Sturdy “welded wrapper and head design.” Built to last.
- ▶ **Polyester Paint Finish** – Electrostatically powder painted, then oven baked for a smooth high-gloss, appliance-quality finish. Resists corrosion.
- ▶ **Elongated, Seamless Water Cell** –
 - Controlled 2-dimensional cell expansion

- Rugged, seamless “water cell” prevents the most common cause of pump failure – “waterlogging”
- Water never touches the steel tank material
- Translucent bag material facilitates manufacturing quality control inspection
- ▶ **NEW Stainless Service Connection** –
 - Corrosion-resistant
 - Stainless steel – the professional’s choice
- ▶ **Integral Stand Pipe** – Promotes complete flushing of the water entering/exiting the tank

- ▶ **Nitrogen-Rich Precharge** – Decreases air permeation three to four times over straight air precharge
- ▶ **40 PSI Precharge** – Ready for use with 40/60 pressure range systems. Enables installer to reduce pressure depending on pressure switch setting
- ▶ **Sturdy Base** – Tested-tough composite construction
- ▶ **Five Year Warranty** – Managed and provided by Pentair Water, the only U.S. pump manufacturer to design and manufacture fibrewound and steel tanks!

WellMate™ is a trademark of Pentair, Inc.

Myers

WATER PRESSURE TANKS



WellMate™ premium steel pressurized water system tanks

ordering information

Catalog Number	Maximum Capacity gal/liter	Diameter* inch/cm	Height* inch/cm	Precharge PSI/kPa	Connection Size Female	Drawdown in Gallons/Liter			Weight lbs/kg	Maximum Operating PSI
						20-40	30-50	40-60		
SSWM4	14 / 53	16 / 40.6	23 / 54.4	40 / 276	1" NPT	4.8 / 18.2	4.1 / 15.5	3.6 / 13.6	37 / 16.8	100
SSWM6SQ	19 / 72	20 / 51	21 / 53.3	40 / 276	1" NPT	6.9 / 26.1	5.8 / 21.9	5.0 / 18.9	49 / 22.2	100
SSWM6	19 / 72	16 / 40.6	27.5 / 70	40 / 276	1" NPT	6.9 / 26.1	5.8 / 21.9	5.0 / 18.9	44 / 20.0	100
SSWM9	32 / 121	16 / 40.6	43 / 109	40 / 276	1" NPT	11.6 / 43.9	9.8 / 37.1	8.5 / 32.2	60 / 27.2	100
SSWM10SQ	35 / 133	20 / 51	33 / 84	40 / 276	1" NPT	12.7 / 48.1	10.7 / 40.5	9.3 / 35.2	70 / 31.8	100
SSWM14	50 / 189	24 / 61	32.5 / 83	40 / 276	1-1/4" NPT	18.3 / 69.3	15.5 / 58.7	13.4 / 50.7	88 / 39.9	125
SSWM20	62 / 235	24 / 61	39.5 / 100	40 / 276	1-1/4" NPT	21.4 / 81.0	18.3 / 69.3	16.0 / 60.6	116 / 52.6	125
SSWM25	85 / 322	24 / 61	51 / 130	40 / 276	1-1/4" NPT	30 / 113.6	26 / 98.4	22 / 83.3	128 / 58.1	125
SSWM35	119 / 450	24 / 61	68 / 173	40 / 276	1-1/4" NPT	41.3 / 156.3	35.4 / 134.0	31.0 / 117.3	140 / 63.5	125

*Subject to change without notice.

Maximum Liquid Temperature: 120°F (49°C)

Maximum External (Ambient) Temperature: 125°F (52°C)

tank selection chart

Pump GPM	System Pressure Switch Setting – PSI					
	20-40		30-50		40-60	
	Run Times					
	1 Minute	2 Minute	1 Minute	2 Minute	1 Minute	2 Minute
5	SSWM6	SSWM9	SSWM6	SSWM10SQ	SSWM6	SSWM10SQ
7-1/2	SSWM9	SSWM10SQ	SSWM9	SSWM14	SSWM9	SSWM20
10	SSWM9	SSWM20	SSWM10SQ	SSWM20	SSWM10SQ	SSWM25
12-1/2	SSWM10SQ	SSWM20	SSWM14	SSWM25	SSWM14	SSWM25
15	SSWM14	SSWM25	SSWM14	SSWM14 (2)	SSWM20	SSWM20 (2)
20	SSWM20	SSWM20 (2)	SSWM20	SSWM20 (2)	SSWM25	SSWM25 (2)
30	SSWM25	SSWM25 (2)	SSWM14 (2)	SSWM25 (2)	SSWM20 (2)	SSWM25 (3)
50	SSWM20 + SSWM25	SSWM25 (3)	SSWM25 (2)	SSWM25 (4)	SSWM25 (2)	SSWM25 (5)
50	-	SSWM35 (2) +SSWM20	-	SSWM35 (3)	SSWM35 (2)	SSWM35 (4)

NOTE: Drawdown will be affected by operating temperature of the system, accuracy of the pressure switch and gauge, the actual precharge pressure, and rate of fill.

Pumps installed with a WellMate™ tank require a relief valve equal to the tank's maximum operating pressure. Relief valve must be capable of relieving entire flow of pump at relief pressure.

drawdown volume multiplier* (approx.)

Pump Off Pressure PSI	Pump Start Pressure – PSI							
	10	20	30	40	50	60	70	80
20	0.26							
30	0.41	0.22						
40		0.37	0.18					
50		0.46	0.31	0.15				
60			0.40	0.27	0.13			
70			0.47	0.35	0.24	0.12		
80				0.42	0.32	0.21	0.11	
90				0.48	0.38	0.29	0.19	0.10
100					0.44	0.35	0.26	0.17

*Utilize this chart if proper selection cannot be made using tank selection chart. Drawdown based on Boyle's Law.

tank sizing rule

Size tank for one gallon of draw-down for each gallon per minute at pump capacity.

EXAMPLE: For a 1 HP, 20 GPM unit pumping 25 gallons per minute on a 30-50 pressure switch setting, the properly sized WellMate™ tank is a SSWM25, which has a 26 gallon drawdown.

PROCEDURE:

1. Identify drawdown multiplier relating to specific application.
2. Insert multiplier (X) into the following formula:

$$\frac{\text{Pump GPM} \times \text{Minute Run Time}}{\text{Multiplier (X)}}$$

= Min. Tank Capacity Required

EXAMPLE:

An example of a 20 GPM pump with a minimum run time of 1 minute, installed on a 50-70 PSIG system pressure range:

$$\frac{20 \text{ GPM} \times 1 \text{ Minute}}{.24 \text{ (factor) from Drawdown Volume Multiplier chart}}$$

= 83.3 Minimum U.S. Gallon Tank Capacity Required

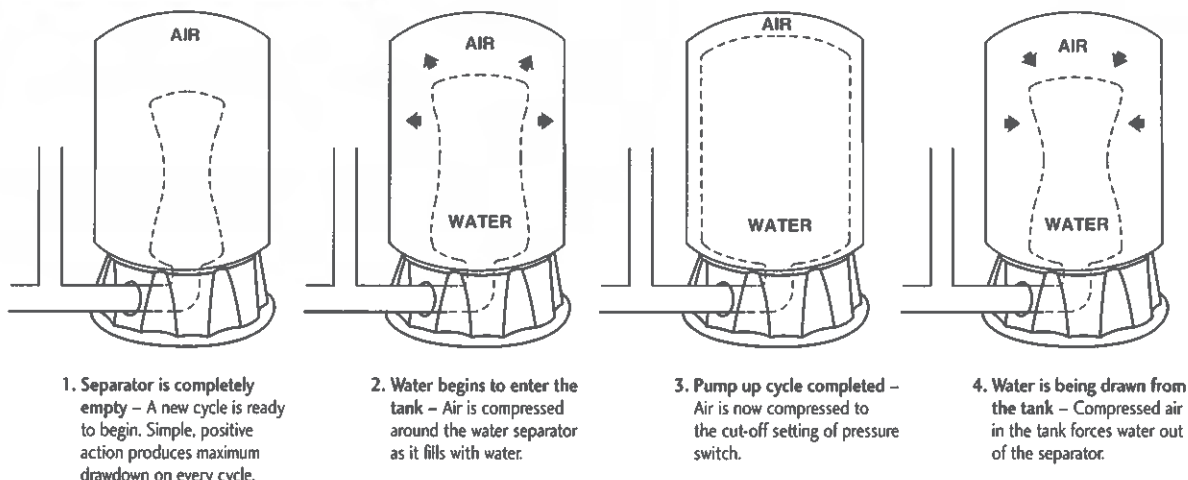
Referring to "Ordering Information" chart, the model SSWM25 has the closest U.S. gallon capacity that is greater or equal to the minimum volume requirement of 83.3 U.S. gallons.

WATER PRESSURE TANKS

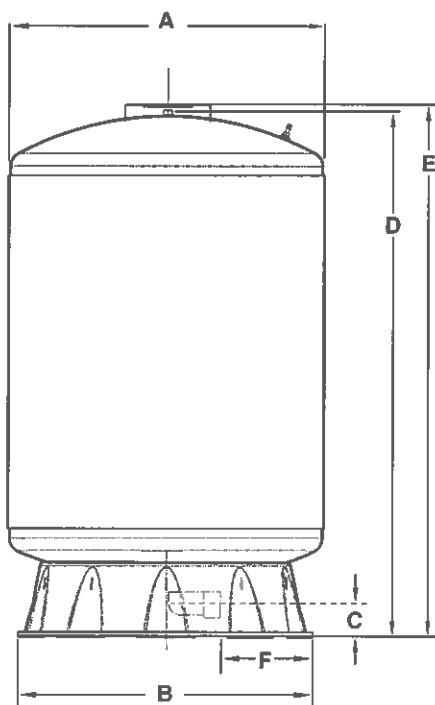


WellMate™ premium steel pressurized water system tanks

operating cycle



outline dimensions



dimensional data

Catalog Number	Discharge NPT	A	B	C	D	E	F
SSWM4	1"	16.1	15.5	2.0	23.0	-	4.0
SSWM6	1"	16.1	15.5	2.0	27.8	-	4.0
SSWM9	1"	16.1	15.5	2.0	43.0	-	4.0
SSWM6SQ	1"	20.1	15.5	2.0	-	21.5	4.0
SSWM10SQ	1"	20.1	15.5	2.0	33.0	-	4.0
SSWM14	1-1/4"	24.1	22.7	2.5	33.2	-	7.2
SSWM20	1-1/4"	24.1	22.7	2.5	40.1	-	7.2
SSWM25	1-1/4"	24.1	22.7	2.5	51.5	-	7.2
SSWM35	1-1/4"	24.1	22.7	2.5	68.6	-	7.2

Dimensions (in inches) are for estimating purposes only.

Myers