



**INSTALLATION, COMMISSIONING, USE AND MAINTENANCE
MANUAL**

**MANUEL D'INSTALLATION, DE MISE EN SERVICE, D'UTILISATION ET
D'ENTRETIEN**

SIMPLEX/DUPLEX OIL TRANSFER PUMPING UNIT
POMPES DE TRANSFERT D'HUILE SIMPLEX/DUPLEX

*INSTALLATION INSTRUCTIONS FOR THE
CONTRACTOR-INSTALLER*

This installation, commissioning, use and maintenance manual (the « Manual ») serves two purposes. First, it provides recommendations and requirements to the contractor installer for the proper installation and commissioning as well as compliance with the mandatory initial inspection. Secondly, it provides information on the use, safety guidelines and preventive maintenance of the oil transfer unit.

The reference in this Manual to the “owner-user” includes any person who is either the owner, or lessee or who has otherwise been assigned the care and responsibility of the oil transfer unit in any manner whatsoever.

The contractor-installer shall consult with the applicable authority having jurisdiction to ensure that the requirements of all applicable Federal, Provincial and Local Codes are met prior to installation in order to proceed safely and to avoid any damage to the environment, the pumping system, its installation, other equipment and other surrounding materials, as well as any physical damages, including serious injury or even death.

The owner-user shall operate and maintain the oil transfer unit in accordance with the applicable Federal, Provincial and Local Codes as well as the regulations of the applicable authority having jurisdiction.

Many provinces and other public authorities have adopted laws, rules, codes and standards governing the installation, commissioning, use and maintenance of oil transfer unit (herein thereafter referred to as the “Applicable Local Regulation”). The applicable local regulation MUST be complied with and supersedes the recommendations contained in this Manual. Verification with the applicable authority having jurisdiction must be confirmed in all cases.

**DIRECTIVES D'INSTALLATION POUR
L'ENTREPRENEUR-INSTALLATEUR**

Le manuel d'installation, de mise en service, d'utilisation et d'entretien a deux objectifs. Premièrement, il fournit les recommandations et exigences à l'entrepreneur installateur pour la bonne installation, la mise-en-service et pour la conformité des inspections initiales obligatoires. Ensuite, il prévoit des informations sur l'usage sécuritaire, sur les directives de sécurité et sur l'entretien préventif du système de transfert d'huile.

L'expression utilisée au présent Manuel de « propriétaire-utilisateur » s'adresse à toute personne qui est soit propriétaire, locataire ou autre usager du système de pompage ou en a autrement la garde ou la responsabilité, de quelque manière que ce soit.

L'entrepreneur-installateur doit consulter l'autorité compétente pour s'assurer que les exigences de tous les codes fédéraux, provinciaux et locaux applicables sont respectées avant l'installation afin de procéder en toute sécurité et d'éviter tout dommage à l'équipement, l'environnement, le système de pompage, son installation, d'autres équipements et autres matériaux environnants, ainsi que tout dommage physique, y compris des blessures graves, voire mortelles.

Le propriétaire-utilisateur doit utiliser et entretenir le système de pompage conformément aux Codes Fédéraux, Provinciaux et Locaux applicables, ainsi qu'aux règlements de l'autorité compétente

De nombreuses provinces et autres autorités publiques ont adopté des lois, règles, codes et normes régissant l'installation, la mise en service, l'utilisation et la maintenance des systèmes de pompage (ci-après dénommés « Réglementation Locale Applicable »). La réglementation locale applicable DOIT être respectée et remplace les recommandations contenues dans ce manuel. La vérification auprès de l'autorité compétente doit être confirmée dans tous les cas.

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1 General Safety Instructions – Directives de sécurité générales

WARNING

The contractor-installer shall read and completely understand this Manual in its entirety before attempting to install, commission, use or maintain the oil-transfer unit. The safety measures outlined in this Manual **MUST** be followed without exception. In addition, only qualified and trained personnel shall use and maintain the oil transfer unit. Failure to comply with the guidelines, directives, instructions and recommendations contained in this Manual, including failure to comply with the precautionary “DANGER”, “WARNING”, and “CAUTION” statements may cause damage to the environment, the oil transfer unit, its installation, other equipment and other surrounding materials, including serious injury or even death.



The four safety messages presented below and used throughout this Manual informs the owner-user and the contractor-installer regarding potential hazards that could cause serious injury and even death.

DANGER: The “DANGER” advisory is used to draw attention to a constant dangerous threat that could lead to serious injury and even death.

WARNING: The “WARNING” advisory is used to draw attention to a condition, a practice, a statement, an installation method, commissioning, use or maintenance whose omission could cause damages to the environment, to the oil transfer unit, facilities, other equipment and properties nearby, or even severe physical injury including death.

CAUTION: The “CAUTION” advisory is used to draw attention to a condition, a practice, a statement, an installation method, commissioning, use or maintenance whose omission could cause damage(s) to the environment, to the oil transfer unit, facilities, other equipment and properties nearby, or severe physical injury.

NOTE: The “NOTE” is used to draw attention to a condition, a practice, a statement or process that *Les Industries Desjardins Ltée* considers desirable to emphasize.

ATTENTION

L'entrepreneur-installateur doit lire et comprendre parfaitement le présent manuel dans son intégralité avant de tenter d'installer, de mettre en service, d'utiliser ou de maintenir le système de pompes de transfert d'huile. Les mesures de sécurité décrites dans ce manuel **DOIVENT** être suivies sans exception. De plus, seul le personnel qualifié et formé doit utiliser et entretenir le **système de pompes de transfert d'huile**. Le non-respect des directives, instructions et recommandations contenues dans ce manuel, y compris le non-respect des instructions de précaution «DANGER», «AVERTISSEMENT» et «ATTENTION» peut endommager l'environnement, le système de pompe de transfert, son **installation, d'autres équipements et autres matériaux environnants**, y compris des blessures graves, voire mortelles.



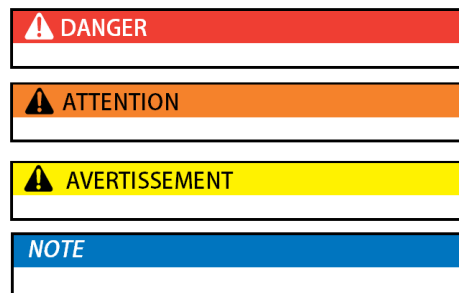
Les quatre messages de sécurité présentés ci-dessous et utilisés tout au long de ce manuel informent le propriétaire-utilisateur et l'entrepreneur-installateur des dangers potentiels pouvant entraîner des blessures graves, voire mortelles.

DANGER : L'avis « DANGER » est utilisé pour identifier une menace dangereuse constante qui peut causer des blessures graves, voire mortelles.

ATTENTION : L'avis « ATTENTION » est utilisé pour attirer l'attention sur une condition, une pratique, un énoncé, un procédé d'installation, de mise en service, d'utilisation ou de maintenance dont l'omission peut causer des dommages à l'environnement, au système de pompes de transfert d'huile, aux installations, équipements et autres biens à proximité, ou corporels dont des blessures graves, voire mortelles.

AVERTISSEMENT : L'avis « AVERTISSEMENT » est utilisé pour attirer l'attention sur une condition, une pratique, un énoncé, un procédé d'installation, de mise en service, d'utilisation ou de maintenance dont l'omission peut causer des dommages à l'environnement, au système de pompes de transfert d'huile, aux installations, équipements et autres biens à proximité, ou des blessures graves.

NOTE : La « NOTE » est utilisée pour attirer l'attention sur une condition, une pratique, un énoncé ou un procédé que *Les Industries Desjardins Ltée* estime désirable de souligner.



DANGER

DANGER: Oil transfer unit may contain a certain amount of flammable and combustible liquids.

These units shall be installed, commissioned, used and maintained in accordance with this Manual.

DANGER

DANGER : Les systèmes **de pompes de transfert d'huile** peuvent contenir une certaine quantité de produits inflammables et combustibles sous forme liquide.

Ces systèmes sont destinés à être installé, mis en service, utilisés et entretenus selon les standards listés dans le présent Manuel.

The oil transfer unit must be installed, commissioned, used and maintained in compliance with *Les Industries Desjardins Ltée's* Manual and the applicable local regulation.

Les systèmes **de pompes de transfert d'huile** doivent être installés, mis en service, utilisés et entretenus en conformité avec le présent manuel de *Les Industries Desjardins Ltée* et la réglementation locale applicable.

 **WARNING**

Installation and commissioning **MUST** be done by a qualified contractor-installer with qualified personnel having prior experience and knowledge. It is the contractor-**installer's and the owner-user's** responsibility to verify the applicable local regulation, depending on the final location of the system. If the installation, commissioning, use or maintenance are not conducted in accordance with this Manual and the applicable local regulation, *Les Industries Desjardins Ltée* is not responsible for any liability for any damage(s) whatsoever that may be incurred and the warranty shall become null and void.

 **ATTENTION**

L'**installation et la mise en service DOIVENT** être effectuées par un entrepreneur-installateur qualifié avec un personnel qualifié et ayant l'**expérience et** les connaissances nécessaires. Il incombe à l'**entrepreneur-installateur** et au propriétaire-utilisateur de vérifier la **réglementation locale applicable, en fonction de l'emplacement** finale prévue du système. **Si l'installation, la mise en service, l'utilisation ou la maintenance** ne sont pas conformes au présent manuel et à la réglementation locale applicable, *Les Industries Desjardins Ltée* ne peut être tenu responsable des dommages, de quelque nature que ce soit, qui pourraient survenir et la garantie devient nulle et non applicable.

⚠ DANGER

All personnel likely to use or maintain the oil transfer unit MUST have training in the control and confinement of leaks and spills in order to act swiftly and safely when one occurs. The owner-user MUST also be in possession of the necessary equipment to control minor leaks and spills upstream of the oil transfer unit, in order to intervene without delay. *Les Industries Desjardins Ltée* will not be liable for any damage to the environment, oil transfer unit, its installation, other equipment or other surrounding materials, or physical damage(s) including serious injury or death, which would result from, or otherwise be related to, in whole or in part, to the inaction, negligence, deficient training or knowledge of the personnel in charge of the use, inspection and maintenance of the oil transfer unit including the control and confinement of leaks and spills.

⚠ DANGER

It is the owner-user's responsibility to establish, implement and ensure the enforcement of a preventive plan or the control and countermeasures regarding any leakage and spills of flammable and combustible liquids. The preventive plan MUST contain, as a minimum, without limitation and in addition to all items required or recommended by the applicable local regulation(s):

- Procedure(s) for the prevention of leakage and spills;
- Leakage and spillage control measures to prevent discharge into the water or ground; and
- Confinement and cleaning measures to reduce the consequences of any leakage and spills.

It is the owner-user's responsibility to verify the applicable local regulation(s) regarding the control of flammable and combustible liquid leakage and spills.

⚠ DANGER

Tout le personnel susceptible d'utiliser ou d'entretenir le système **de pompes de transfert d'huile** DOIT être formé au contrôle et au confinement des fuites et des déversements afin de pouvoir agir rapidement et en toute sécurité, le cas échéant. Le propriétaire-utilisateur DOIT également être en possession du matériel nécessaire pour contrôler les fuites et déversements mineurs en amont du **système de pompes de transfert d'huile**, afin d'intervenir sans délai. *Les Industries Desjardins Ltée* ne saurait être tenu **responsable des dommages causés à l'environnement**, au système de pompage, **à son installation, à d'autres équipements ou à d'autres matériaux environnants, ni aux dommages matériels, y** compris des blessures graves ou la mort, qui en résulteraient, ou seraient liés à, en tout ou en partie, à l'inaction, à la négligence, à une formation insuffisante ou à une connaissance insuffisante du personnel chargé de l'utilisation, de l'inspection et de la maintenance du **système de pompes de transfert d'huile**, y compris du contrôle et du confinement des fuites et des déversements.

⚠ DANGER

Il incombe au propriétaire-utilisateur **d'établir, de mettre en œuvre et de veiller à l'application d'un plan de prévention ou de contrôle** et de prévention des fuites et des déversements de liquides inflammables et combustibles. Le plan préventif DOIT contenir, au minimum, sans limitation et en plus de tous les éléments requis ou recommandés par la(les) réglementation(s) locale(s) applicable(s):

- Procédures de prévention de fuites et déversements;
- Mesures de contrôle de fuites et déversements pour empêcher la propagation dans les eaux ou dans le sol; et
- Mesures de confinement et de nettoyage visant à réduire les conséquences des fuites et déversements.

Il incombe au propriétaire-utilisateur de vérifier la(les) réglementation(s) locale(s) applicable(s) en matière de contrôle des fuites et des déversements de liquides inflammables et combustibles

⚠ DANGER

All personnel likely to use or maintain the oil transfer unit MUST have training in the control and handling of hazardous material. The owner-user MUST also be in possession of the necessary equipment to control major and minor fires. *Les Industries Desjardins Ltée* will not be liable for any damage to the environment, oil transfer unit, its installation, other equipment and surrounding materials, including serious injury or death, resulting from a fire related to, in whole or in part, the inaction, negligence, or deficient training or knowledge of the personnel in charge of the use, inspection and maintenance of the oil transfer unit including the control and confinement of fires.

⚠ DANGER

Tout le personnel susceptible d'utiliser ou d'entretenir le système **de pompes de transfert d'huile** DOIT être formé au contrôle et à la manipulation des matières dangereuses. Le propriétaire-utilisateur DOIT également être en possession du matériel nécessaire pour contrôler les incendies majeurs et mineurs. *Les Industries Desjardins Ltée* ne saurait être tenue responsable des dommages **causés à l'environnement, au système de pompes de transfert d'huile, à son installation, à d'autres équipements et aux matériaux** environnants, y compris les blessures graves ou la mort, résultant **d'un incendie associé, en tout ou en partie, à l'inaction, à la négligence, ou une formation ou des connaissances insuffisantes** du personnel chargé de l'utilisation, de l'inspection et de la maintenance du **système de pompes de transfert d'huile**, notamment du contrôle et du confinement des incendies.

⚠ DANGER

It is the owner-user's responsibility to establish, implement and ensure the enforcement of a preventive plan of control and countermeasures for major and minor fires. The nearest location of fire extinguishers, fire blankets and other fire control equipment should be known. These items must be kept in good working condition and available at all times.

It is the owner-user's responsibility to verify the applicable local regulation regarding the handling and control of flammable and combustible product fires.

⚠ DANGER

Il incombe au propriétaire-**utilisateur d'établir, de mettre en œuvre et de veiller à l'application d'un plan préventif de** contrôle et de lutte contre les incendies majeurs et mineurs. L'emplacement le plus proche des extincteurs, couvertures anti-feu et autres équipements de lutte contre l'incendie doit être connu. Ces articles doivent être maintenus en bon état de fonctionnement et disponibles à tout moment.

Il appartient au propriétaire-utilisateur de vérifier la réglementation locale applicable concernant la manipulation et le contrôle des incendies de produits inflammables et combustibles.

2 Installation and commissioning – Installation et mise en service

Before installation and commissioning of the oil-transfer unit, the qualified contractor-installer MUST read the General safety section of this Manual including all applicable local laws, regulations, codes and standards. The safety measures outlined in this Manual MUST be followed without exception and only a qualified contractor-installer may proceed with the installation and commissioning of the oil-transfer unit, otherwise, the warranty will be null and void.

Avant l'**installation** et la mise en service du système de pompes de **transfert d'huile**, l'**entrepreneur**-installateur qualifié DOIT lire attentivement la section Directives de sécurité générales. Vous DEVEZ également vérifier la Réglementation locale applicable **avant** l'installation et la mise en service. Les mesures de sécurité décrites dans ce manuel DOIVENT être respectées sans exception. Seul un entrepreneur-installateur qualifié peut procéder à l'installation et à la mise en service du **système de pompes de transfert d'huile**. Dans le cas contraire, la garantie sera nulle et non avenue.

WARNING

Prior to installation and commissioning, the owner-user including the contractor-installer MUST complete the «Oil-transfer unit installation and commissioning inspection sheet - *Feuille d'inspection à l'installation et la mise en service du système de transfert d'huile*» form. Completion of the Forms ensure that the required detailed visual inspection was conducted by a qualified contractor-installer prior to the installation and commissioning of the oil-transfer unit. It also ensures that the base of the unit was free of any dents, scratches, rust, damages or obstructions that may lead to leakage or spillage. It also ensures that a leak detection test was performed at the time of installation of the oil-transfer unit and that commissioning has been performed correctly. Once the Forms are completed, dated and signed by the qualified contractor-installer, the owner-user shall keep them in a secure location as proof of inspection and commissioning. *Les Industries Desjardins Ltée* reserves the right to request copies of the Forms, in the case of a warranty or liability claim. In the event that the inspection shows any problem whatsoever, DO NOT install the oil-transfer unit without *Les Industries Desjardins Ltée's* written consent. A pressure test of the piping IS MANDATORY on ALL oil-transfer unit prior to use.

ATTENTION

Avant l'installation et la mise en service, le propriétaire-utilisateur, y compris l'entrepreneur-installateur, DOIT compléter le formulaire «Oil-transfer unit installation and commissioning inspection sheet - *Feuille d'inspection à l'installation et la mise en service du système de transfert d'huile*». En remplissant les formulaires, vous vous assurez que l'inspection visuelle détaillée requise a été effectuée par un entrepreneur-installateur qualifié avant l'installation et la mise en service du **système de transfert d'huile**. Cela garantit également que **la base du système de transfert d'huile** est exempt de bosses, rayures, rouille, dommages ou obstructions pouvant entraîner des fuites ou des déversements. Cela garantit également qu'un test de détection de fuite a été effectué au moment de l'installation du système et que la mise en service a été effectuée correctement. Une fois que le formulaire est rempli, **daté et signé par l'entrepreneur-installateur qualifié**, le propriétaire-utilisateur **doit le conserver dans un lieu sûr en tant que preuve de l'inspection et de la mise en service**. Les Industries Desjardins Ltée se réserve le droit de demander des copies des formulaires, dans le cas d'une réclamation en **garantie ou en responsabilité**. Si l'inspection révèle un problème, **N'INSTALLEZ PAS le système de transfert d'huile** sans le consentement écrit de Les Industries Desjardins Ltée. Un test de pression de la plomberie EST OBLIGATOIRE sur TOUS les **systèmes de transfert d'huile** avant utilisation.

Leak detection tests – Tests pour détection de fuites

EVERY OIL-TRANSFER UNIT MUST BE TESTED AND CHECKED FOR LEAKAGE BEFORE BEING INSTALLED. A LEAK DETECTION PRESSURE TEST IS MANDATORY. DETAILS OF THE TESTS AND CHECKS ARE DESCRIBED BELOW.

TOUS LES **SYSTÈMES DE TRANSFERT D'HUILE** DOIVENT ÊTRE TESTER ET VÉRIFIER POUR LA DÉTECTION DE FUITES AVANT **D'ÊTRE INSTALLER**. UN TEST DE PRESSION EST OBLIGATOIRE. LES DÉTAILS DE CE TEST ET DE CES VÉRIFICATIONS SONT DÉCRITS CI-DESSOUS.

! DANGER

NEVER leave a pressurized piping unattended.

! DANGER

Ne laissez JAMAIS la plomberie sous pression sans surveillance.

! DANGER

Testing the oil **transfer unit's piping** with air pressure does present risks of serious injury or death. *Les Industries Desjardins Ltée* will not be held responsible for any injury whatsoever. Personnel responsible for leakage testing shall take all precautions during pressure testing. A pressure regulator and pressure relief valve **MUST** be used to reduce the risk of overpressurization. Calibrated pressure gauges in working condition with 0-100 psig (0-690 kPa) range is recommended.

! DANGER

Tester **la plomberie du système de transfert d'huile** avec de l'air comprimé présente des risques de blessures graves, voire mortelles. *Les Industries Desjardins Ltée* ne pourra être tenu responsable d'aucune blessure que ce soit. Le personnel responsable des tests d'étanchéité doit prendre toutes les précautions nécessaires lors des tests de pression. Un régulateur de pression et une soupape de surpression **DOIVENT** être utilisés pour réduire le risque de surpression. Des manomètres étalonnés en état de fonctionnement avec une plage de 0-100 psig (0-690 kPa) sont recommandés.

2.1.1 Piping pressurization procedure – Procédure test de pression de la plomberie

! WARNING

- 1) Install the test piping as in figure 1. Close the valve A. Temporarily seal the remaining openings to maintain the pressure. Make sure the compressed air is closed.
- 2) Close the valves of the system pressure indicators, if applicable. Open the inlet and outlet valves of the pumps.
- 3) Set the pressure regulator to 90 PSI.
- 4) Set the pressure relief valve to 100 PSI.
- 5) Make sure valves A and B are closed.
- 6) Open the compressed air.
- 7) Gradually open valve A.
- 8) Carefully read the pressure on the indicator.
- 9) When the pressure has reached the recommended pressure, close valve A.
- 10) Perform the leak detection test by spraying specially designed leak detection liquid on all connections. **NO LEAKS ARE ALLOWED.** If there is a leak, tighten the plumbing until there is no more leak.
- 11) Once the leak detection test has been passed, depressurize the plumbing by gently opening valve B.

! ATTENTION

- 1) Installer la tuyauterie de test tel que la figure 1. Fermer la valve A. Sceller temporairement les ouvertures restantes pour maintenir la pression. **Assurez-vous que l'air comprimé est fermé.**
- 2) Fermer les valves des indicateurs de pression du système, si applicable. **Ouvrir les valves d'entrée et de sortie des pompes.**
- 3) Réglez le régulateur de pression à 90 PSI.
- 4) Réglez la vanne de surpression à 100 PSI.
- 5) Assurez-vous que les valves A et B sont fermées.
- 6) **Ouvrir l'air comprimé.**
- 7) Ouvrir graduellement la valve A.
- 8) Lire attentivement la pression **sur l'indicateur.**
- 9) Lorsque la pression a atteint la pression recommandée, fermez la valve A.
- 10) Procédez au test de détection de fuites en aspergeant du liquide de détection de fuites spécifiquement conçu à cette fin sur toutes les connexions. **AUCUNE FUITE N'EST PERMISE.** En cas de fuite, **resserrez la plomberie jusqu'à ce qu'il n'y ait plus de fuite.**
- 11) Une fois que le test de détection de fuite est passé, dépressurisez la plomberie en ouvrant doucement la valve B.

The authorized representative of the qualified installation contractor who conducted the pressure test **MUST** complete the «*Oil-transfer unit installation and commissioning inspection sheet - Feuille d'inspection à l'installation et la mise en service du système de transfert d'huile*» as proof of completion of the oil-transfer unit inspection and leakage test compliance.

Le représentant de l'entrepreneur installateur qualifié ayant procédé à l'inspection DOIT compléter, dater et signer le formulaire «*Oil-transfer unit installation and commissioning inspection sheet - Feuille d'inspection à l'installation et la mise en service du système de transfert d'huile*» comme preuve d'inspection complétée et de conformité du système de transfert d'huile.

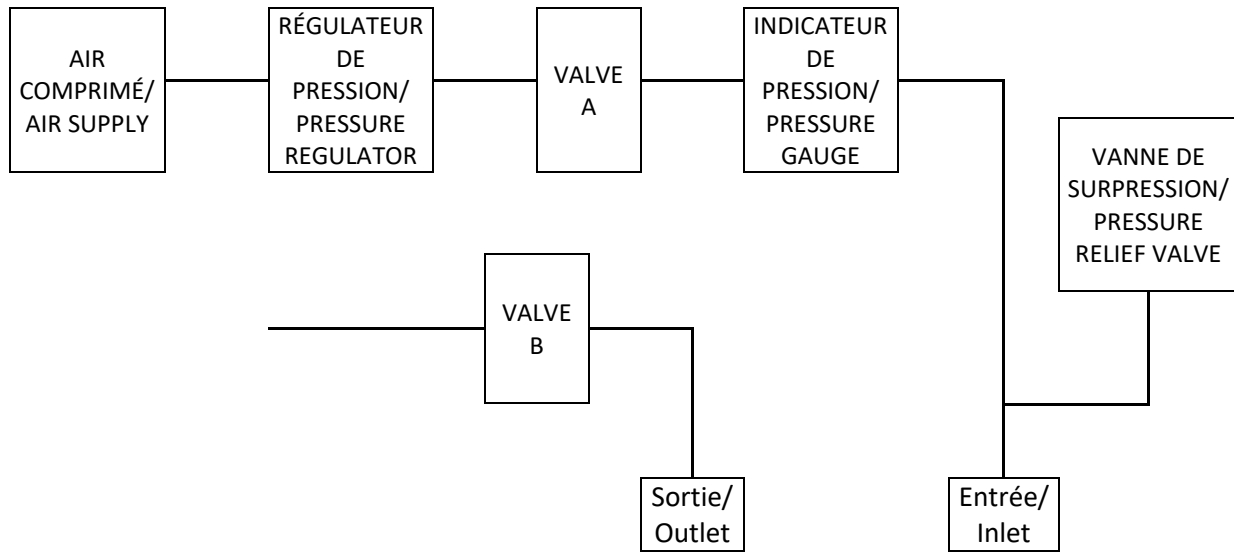


Figure 1 Piping of oil-transfer unit pressurization procedure - Procédure test de pression pour plomberie des systèmes de transfert d'huile

Figure 1 shows a suggested piping configuration; the final test set up may differ from the one shown in Figure 1. Figure 1 setup and pressurization procedure described are only for the piping of the oil-transfer unit.

La figure 1 illustre une configuration de tuyauterie suggérée. La configuration finale de l'essai peut différer de celle illustrée à la Figure 1. La configuration et la procédure de pressurisation décrites à la Figure 1 ne concernent que **la plomberie des systèmes de transfert d'huile.**

2.2 Oil-transfer unit installation and commissioning inspection sheet - Feuille **d'inspection à l'installation** et la mise en service **du système de transfert d'huile**



Feuille d'inspection à l'installation et la mise en service du système de transfert d'huile / Oil-transfer unit installation and commissioning inspection sheet

Informations générales / General informations			
Numéro de projet Desjardins/ Desjardins project number		Responsable/ Responsible	Date
Client de Desjardins/ Desjardins's Customer			
Projet (Utilisateur)/ Project (User)			

Informations sur les pompes / Pumps informations			
Type de montage/ Type of installation	<input type="checkbox"/> Simplex	<input type="checkbox"/> Duplex	
Marque/ Manufacturer		Modèle/ Model	No série/ Serial number
HP		RPM	Voltage-Amperage

Liste de vérifications / Verifications list		
Verification	Pompe 1/ Pump 1	Pompe 2/ Pump 2
Le test de pression de la plomberie tel que 2.1.1 du manuel d'installation, de mise en service, d'utilisation et de maintenance a été fait/ The piping pressurization test has been done according to 2.1.1 of the installation, commissioning, use and maintenance manual		
Vérifier le montage général/ Check the general installation		
Vérifier l'alignement/ Check the alignment		
Vérifier l'alimentation/ Check the alimentation		
Vérifier qu'il n'y a pas d'air dans la pompe/ Check that there is no air in the pump		
Vérifier que la pompe tourne facilement sans restriction / Check that the pump turns easily without restriction		
Vérifier le sens de rotation des pompes/ Check the orientations of the pumps		
Vérifier les connexions électriques/ Check the electrical connection		
Vérifier le panneau électrique/ Check the electrical pannel		
Vérifier les alarmes/ Check the alarms		
Vérifier l'ajustement des vannes de surpression/ Check the adjustment of the pressure relief valves		
Vérifier l'ajustement de l'interrupteur de débit/ Check the adjustment of the flow switch		
Vérifier l'ajustement de l'interrupteur de pression/ Check the adjustment of the pressure switch		
Vérifier la pression à l'entrée de la pompe/ Check the pressure at the inlet of the pump		
Vérifier la pression à la sortie de la pompe/ Check the pressure at the outlet of the pump		

Notes:

⚠ DANGER

DO NOT proceed to the installation or commissioning of an oil-transfer unit by personnel other than a qualified contractor-installer with knowledgeable and experienced staff in the proper and safe installation of an oil-transfer unit. The use of unqualified and inexperienced contractor-installers may cause damage to the environment, the unit, its installation, other equipment and surrounding materials, which could result in serious injury or death. *Les Industries Desjardins Ltée* is not liable for any damages incurred due to the use of unqualified and inexperienced contractor-installers and the warranty will be null and void.

The owner-user MUST contact a qualified contractor-installer for the installation and commissioning of the unit. *Les Industries Desjardins Ltée* reserves the right to request a copy of the signed and completed Forms and the owner-user is required to retain a copy. The completed and signed Forms are proof that inspections, installation and commissioning were conducted by a qualified contractor-installer.

⚠ DANGER

NE PAS procéder à l'installation et à la mise en service d'un **système de transfert d'huile** par du personnel autre qu'un entrepreneur-installateur qualifié doté d'un personnel compétent et expérimenté dans l'installation correcte et sûre d'un système de **transfert d'huile**. Le recours à des entrepreneurs-installateurs non qualifiés et inexpérimentés peut causer des dommages à l'environnement, au système, à son installation, à d'autres équipements et aux matériaux environnants, ce qui peut entraîner des blessures graves, voire la mort. *Les Industries Desjardins Ltée* ne peut être tenu responsable des dommages résultant de **l'utilisation d'installateurs**-entrepreneurs non-qualifiés et inexpérimentés, et la garantie sera nulle et non avenue.

Le propriétaire-utilisateur DOIT contacter un entrepreneur-installateur qualifié pour l'installation et la mise en service du **système de transfert d'huile**. *Les Industries Desjardins Ltée* se réserve le droit de demander une copie des formulaires signés et remplis et le propriétaire-utilisateur est tenu de conserver une copie. Les formulaires remplis et signés sont la preuve que les **inspections, l'installation et la mise en service ont été effectuées** par un entrepreneur-installateur qualifié

3 Operation – Fonctionnement

Before operating the oil-transfer unit, the contractor-installer **MUST** read the General safety section of this Manual including all applicable local laws, regulations, codes and standards. The safety measures outlined in this Manual **MUST** be followed without exception.

Avant d'utiliser le **système de transfert d'huile**, l'entrepreneur-installateur **DOIT** lire la section Sécurité générale de ce manuel, y compris toutes les lois, les réglementations, les codes et les normes en vigueur. Les mesures de sécurité décrites dans ce manuel **DOIVENT** être suivies sans exception.

The "Operation" section of this Manual outlines the operating conditions and inspections to be performed periodically. It is **MANDATORY** to conduct the inspections described below to extend the useful life of the oil-transfer unit and to ensure a safe operation.

La section "Fonctionnement" de ce manuel décrit les conditions de fonctionnement et les inspections à effectuer périodiquement. Il est **OBLIGATOIRE** de procéder aux inspections décrites ci-dessous afin de prolonger la durée de vie utile du système de transfert **d'huile** et d'assurer un fonctionnement en toute sécurité.

Summary list

Item	Inspection/entretien
Equipment integrity	Complete the «Oil-transfer unit periodic inspection sheet – Feuille d'inspection périodique du système de transfert d'huile » form.
Safety	<p>Locate the nearest fire extinguisher and confirm its condition and accessibility.</p> <p>Locate the nearest fire blanket and confirm its condition and accessibility.</p> <p>Locate the nearest spill control kit and confirm its condition and accessibility.</p> <p>Review your spill and leak control procedure.</p>
Piping and accessories	Perform pre-use checks of each component on the oil-transfer unit.

Liste sommaire

Item	Inspection/entretien
Intégrité de l'équipement	Remplir la fiche «Oil-transfer unit periodic inspection sheet – Feuille d'inspection périodique du système de transfert d'huile ».
Sécurité	<p>Localisez l'extincteur le plus près et confirmez son état et son accessibilité.</p> <p>Localisez la couverture anti-feu la plus près et confirmez son état et son accessibilité.</p> <p>Localisez la trousse anti-déversement la plus proche et confirmez son état et son accessibilité.</p> <p>Révisez votre procédure de contrôle de déversement et fuites.</p>
Plomberie et accessoires	Procédez aux vérifications avant utilisation de chaque composante équipée sur le système de transfert d'huile .

WARNING

If leakage or spillage is observed, the contents of the oil-transfer unit shall be immediately emptied into a suitable container. The owner-**user's** spillage and leakage procedure shall be performed.

ATTENTION

Si vous apercevez une fuite ou un déversement, videz le système de pompage immédiatement dans un contenant approprié, puis entreprenez votre procédure de contrôle des fuites et déversements.

4 Maintenance – Entretien

Before performing maintenance on the oil-transfer unit, the owner-user including all personnel responsible for **unit's** maintenance, MUST carefully read the section « General safety directives ». The owner-user MUST verify the applicable local regulation with the applicable authorities, prior to maintenance.

DANGER

The applicable local regulation may provide frequency requirements or recommendations regarding the maintenance of oil-transfer unit. The local regulation maintenance frequency takes precedence over the maintenance frequency indicated by *Les Industries Desjardins Ltée* in this Manual. If the owner-user does not have qualified or knowledgeable staff to conduct inspection and maintenance, it will be MANDATORY that the owner-user contact a specialized inspector to conduct the required inspections and maintenance of the oil-transfer unit. Inspection and maintenance of the oil-transfer unit MUST BE conducted by qualified and knowledgeable personnel to avoid damage to the environment, the oil-transfer unit, its installation, other equipment and other surrounding materials including serious injury or even death.

The «Oil-transfer unit periodic inspection sheet – *Feuille d'inspection périodique du système de transfert d'huile*» form shall be completed in accordance with the frequency indicated by the applicable local regulation frequency obligation or recommendation.

The signed and completed Forms are proof that the inspections were conducted by qualified personnel and the oil-transfer unit can be used safely. *Les Industries Desjardins Ltée* reserves the right to request a copy of the Forms, in case of warranty or liability claims being sought. The owner-user is required to keep copies of the signed and completed Inspection Forms.

Avant d'effectuer la maintenance du **système de transfert d'huile**, le propriétaire-utilisateur, y compris tout le personnel chargé de la maintenance du système, DOIT lire attentivement le chapitre « Consignes de sécurité générales ». Le propriétaire-utilisateur DOIT vérifier la réglementation locale applicable auprès des autorités compétentes avant de procéder à la maintenance.

DANGER

La réglementation locale applicable peut prévoir des exigences en matière de fréquence ou des recommandations concernant la maintenance des **systèmes de transfert d'huile**. La fréquence d'entretien de la réglementation locale a préséance sur la fréquence d'entretien indiquée par *Les Industries Desjardins Ltée* dans ce manuel. Si le propriétaire-utilisateur ne dispose pas de personnel qualifié ou compétent pour effectuer l'inspection et la maintenance, il sera OBLIGATOIRE qu'il contacte un inspecteur spécialisé pour effectuer les inspections et la maintenance requises du **système de transfert d'huile**. L'inspection et la maintenance du **système de transfert d'huile** DOIVENT ÊTRE effectuées par du personnel qualifié et expérimenté afin d'éviter toute atteinte à l'environnement, au **système de transfert d'huile et** à son installation, à d'autres équipements et autres matériaux environnants, y compris des blessures graves, voire mortelles.

Remplir la fiche d'inspection «Oil-transfer unit periodic inspection sheet – *Feuille d'inspection périodique du système de transfert d'huile*» selon la fréquence requise par la Réglementation locale applicable.

Les formulaires signés et remplis prouvent que les inspections ont été effectuées par du personnel qualifié et que le système de transfert d'huile peut être utilisé en toute sécurité. *Les Industries Desjardins Ltée* se réserve le droit de demander une copie des formulaires en cas de réclamation de garantie ou de responsabilité. Le propriétaire-utilisateur est tenu de conserver des copies des formulaires d'inspection signés et remplis.

Annexes

4.1 Oil-transfer unit periodic inspection sheet – **Feuille d’inspection périodique du système de transfert d’huile**



**Feuille d’inspection périodique du système de transfert d’huile/
Oil-transfer unit periodic inspection sheet**

Informations générales / General informations

Numero de projet Desjardins/ Desjardins project number	Responsable/ Responsible	Date
Client de Desjardins/ Desjardins's Customer		
Projet (Utilisateur)/ Project (User)		

Informations sur les pompes / Pumps informations

Type de montage/ Type of installation	Modèle/ Model	No série/ Serial number
Marque/ Manufacturer	RPM	Voltage-Ampérage

Liste de vérifications / Verifications list

Verification	Pompe 1/ Pump 1	Pompe 2/ Pump 2
Vérifier le montage général (inspection visuelle)/ Check the general installation (visual inspection)		
Vérifier l'alignement/ Check the alignment		
Vérifier l'alimentation/ Check the alimentation		
Vérifier que la pompe tourne facilement sans restriction / Check that the pump turns easily without restriction		
Vérifier les connexions électriques/ Check the electrical connection		
Vérifier le panneau électrique/ Check the electrical pannel		
Vérifier les alarmes/ Check the alarms		
Vérifier l'ajustement des vannes de surpression/ Check the adjustment of the pressure relief valves		
Vérifier l'ajustement de l'interrupteur de débit/ Check the adjustment of the flow switch		
Vérifier l'ajustement de l'interrupteur de pression/ Check the adjustment of the pressure switch		
Vérifier la pression à l'entrée de la pompe/ Check the pressure at the inlet of the pump		
Vérifier la pression à la sortie de la pompe/ Check the pressure at the outlet of the pump		

Notes:

⚠ DANGER

Inspection and maintenance of the oil-transfer unit **MUST BE** conducted by personnel having the required qualification and necessary knowledge for such inspections and maintenance to avoid any damage to the environment, the oil-transfer unit, its installation, other equipment and surrounding material. If the owner-user does not have staff with the required qualification and knowledge, the owner-user **SHALL** contact a specialized inspector to conduct the required inspection and maintenance of the oil-transfer unit. Inspection records history shall be retained. The inspection records are proof that the inspections were conducted by qualified personnel and provides confirmation that the oil-transfer unit can be used safely. *Les Industries Desjardins Ltée.* reserves the right to request a copy of the inspection records history, especially if warranty and/or liability claims are being sought.

⚠ DANGER

L'inspection et la maintenance du **système de transfert d'huile** **DOIVENT ÊTRE** effectuées par du personnel possédant les qualifications et connaissances requises pour effectuer cette inspection et cette maintenance afin d'éviter tout dommage à l'environnement, **au système de transfert d'huile**, à son installation, à d'autres équipements et aux matériaux environnants. Si le propriétaire-utilisateur ne dispose pas du personnel possédant les qualifications et les connaissances requises, il **DOIT** contacter un inspecteur spécialisé afin de procéder à l'inspection et à la maintenance requises du **système de transfert d'huile**. L'historique des enregistrements d'inspection doit être conservé. Les registres d'inspection prouvent que les inspections ont été effectuées par du personnel qualifié et confirment que le système de transfert **d'huile** peut être utilisé en toute sécurité. *Les Industries Desjardins Ltée* se réserve le droit de demander une copie de l'historique des dossiers d'inspection, en particulier si des réclamations en garantie et/ou en responsabilité sont en cours.

5 Warranty – Garantie

LES INDUSTRIES DESJARDINS LIMITED PRODUCT WARRANTY

The oil-transfer unit manufactured by *Les Industries Desjardins Ltée* (hereinafter “Desjardins”) are covered by a three (3) years limited warranty, determined from the date of purchase. The Limited Warranty covers manufacturing defects in materials and workmanship only (hereinafter “Manufacturing Defect”).

In the event of a Manufacturing Defect occurring during the warranty period, as a precondition to Desjardins honoring this Limited Warranty, a claim shall be forwarded by the owner of the unit, in writing, during that same period by the owner to Desjardins, at its head office in Canada, via post, fax or email. Claims must be sent to Desjardins as follows:

- Les Industries Desjardins Ltée
79, rue Principale
Saint-André de Kamouraska (Québec)
G0L 2H0, Canada
418-493-2114
Service@industriesdesjardins.com

In order for this Limited Warranty to be valid, the owner of the oil-transfer unit under limited warranty must also provide proof of the installation and inspection made prior to commissioning, as well as of all periodic in-service inspection performed since commissioning, in accordance with **Desjardins’ Installation, Commissioning, Use and Maintenance Guide**. Such proof must be submitted with the warranty claim, as outlined above.

Desjardins will in all cases have the right, at its sole discretion, to inspect the oil-transfer unit suspected of presenting a Manufacturing Defect. The owner, and all other persons and entities in charge of or having control over the access to the oil-transfer unit, shall grant full and immediate access to Desjardins and its representatives, designated subcontractors or agents to be able to perform said inspection.

Desjardins may require the client to provide digital pictures of the unit, part or component suspected of presenting a Manufacturing Defect, as well as request the return of the unit, parts or components. In such a case, **Desjardins will issue a return authorization number (“RAN”) to be stated on the shipping documentation, prior to any shipping.** Desjardins reserves its right to refuse the delivery of any equipment, part or component returned without this RAN.

GARANTIE LIMITÉE DE PRODUIT LES INDUSTRIES DESJARDINS

Les **systèmes de transfert d’huile** produits par *Les Industries Desjardins Ltée* (ci-après “Desjardins”) sont couverts par une **garantie limitée de trois (3) ans** déterminés **à partir de la date d’achat.** La **Garantie Limitée** couvre seulement les défauts de fabrication sur les pièces et la main-d’œuvre (ci-après “Défaut de fabrication”).

Dans l’éventualité d’un Défaut de fabrication se présentant durant la période de garantie et en tant que condition préalable afin que Desjardins honore cette Garantie Limitée, une réclamation écrite devra être envoyée par le propriétaire du système, durant cette même période, au siège de Desjardins au Canada, par la poste, par fax ou par courriel. Les réclamations doivent être envoyées à Desjardins aux coordonnées suivantes :

- Les Industries Desjardins Ltée
79, rue Principale
Saint-André de Kamouraska (Québec)
G0L 2H0, Canada
418-493-2114
Service@industriesdesjardins.com

Pour que cette Garantie Limitée soit valide, le propriétaire du système **de transfert d’huile faisant l’objet de la garantie limitée devra également fournir une preuve de l’installation et de l’inspection faites avant la mise en service, ainsi que tous les rapports d’inspections en service produits** depuis la mise en service, en conformité avec le **Manuel d’installation, de mise en service, d’utilisation et d’entretien de Desjardins.** Une telle preuve devra être fournie avec la réclamation de garantie, tel que décrit ci-haut.

Desjardins aura le droit dans tous les cas, à sa seule discrétion, **d’inspecter le système de transfert d’huile** soupçonné de présenter un défaut de fabrication. Le propriétaire, ainsi que toutes les autres **personnes et entités en charge du ou ayant un contrôle sur l’accès au système de transfert d’huile,** devront accorder à Desjardins, ses représentants, **sous-traitants désignés ou agents l’accès complet et immédiat au système de transfert d’huile afin qu’ils puissent procéder à une telle inspection.**

Desjardins pourra requérir du client des photos digitales **de l’unité,** ses pièces ou sous-composantes soupçonnés de présenter un défaut de **fabrication, ainsi que d’exiger un retour de l’unité,** ses pièces ou sous-composantes. Dans un tel cas, Desjardins émettra un numéro **d’autorisation de retour RAN (“Return Authorization Number”) à être** indiqué sur les documents de transport avant toute expédition. Desjardins se réserve le droit de refuser la livraison de tout équipement, pièce ou composantes retourné sans RAN.

Warranty-Garantie

In particular, the Owner acknowledges and agrees that it shall be deemed to have waived the warranty if it has failed to notify Desjardins of the alleged Manufacturing Defect within thirty (30) days from its discovery during the warranty period. The client will bear all removal, installation, transportation costs and expenses of the unit, part or **component thereof for which inspection at Desjardins' plant in Canada** has been requested, as well as if Desjardins elects to repair said oil-transfer unit, part or **component at Desjardins' plant in Canada** or replace it, all transportation back to the initial installation site, installation and commissioning costs and expenses.

Whenever Desjardins determines, at its sole discretion, that an oil-transfer unit presents a Manufacturing Defect, it will have sole discretion, according to the circumstances, to either:

- repair or have the oil-transfer unit or the defective part(s) or **component(s) repaired, either at Desjardins' plant in Canada, on-site** at the initial installation site or at any designated Desjardins' subcontractor facilities;
- provide a similar dimension oil-transfer unit or replacement part or component to the owner, either new or refurbished, which replacement oil-transfer unit, part or component shall remain covered by the limited warranty until the expiration of the duration of the warranty applicable on the original tank.
- reimburse to the owner the price originally paid for the defective oil-transfer unit to Desjardins or issue a credit for such amount.

Unless otherwise stated herein, no warranty whatsoever shall apply to the oil-transfer unit or parts and components thereof for which payment of the purchase price has not been received in full by Desjardins.

Desjardins expressly disclaims any liability for whatever damages, costs, expenses, losses or any other amount whatsoever in relation with or derived from a cause other than a Manufacturing Defect, and no warranty whatsoever shall apply nor recourses exist, all of which are specifically disclaimed in such cases. In other words, THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF. Without limiting the generality of the foregoing, no liability or recourses shall exist and no Limited Warranty coverage shall apply in any of the following cases:

- Improper or faulty installation, commissioning, use or **maintenance, including failure to comply with Desjardins' Installation, Commissioning, Use and Maintenance Guide;**
- Non-compliance with any danger, warning or other notice regarding the oil-transfer unit, its installation, commissioning, use or maintenance appearing on the oil-transfer unit itself or **in Desjardins' Installation, Commissioning, Use and Maintenance Guide;**

En particulier, le Propriétaire reconnaît et consent qu'il sera présumé avoir renoncé à la garantie s'il a fait défaut d'aviser Desjardins du défaut de fabrication allégué à l'intérieur d'un délai de trente (30) jours, calculé à partir du moment de sa découverte durant la période de garantie. En cas de requête d'inspection par Desjardins à son établissement du Canada, tous les coûts et frais d'enlèvement, d'installation et de transport de l'unité, ses pièces ou composantes seront à la charge du client. De même, si Desjardins décide de réparer l'unité, ses pièces ou composantes à son établissement du Canada, ou de remplacer ces derniers, tous les frais de transport, d'installation et de mise en service au lieu d'installation initial seront à la charge du client.

Lorsque Desjardins détermine, à sa seule discrétion, qu'un système de transfert d'huile présente un défaut de fabrication, il aura seule discrétion de décider, selon les circonstances, soit de :

- réparer ou faire réparer le **système de transfert d'huile** ou la(les) pièce(s) ou composante(s) défectueux(es), soit à l'établissement de Desjardins au Canada, au site d'installation initial ou à tout autre établissement d'un sous-traitant désigné par Desjardins;
- fournir un **système de transfert d'huile** de dimension similaire ou les pièces ou composantes de rechange au propriétaire, à l'état neuf ou reconditionné. Tel **système de transfert d'huile**, pièces ou composantes de rechange demeurera couvert par la garantie limitée jusqu'à l'expiration de la garantie applicable au réservoir original;
- rembourser au propriétaire le **prix payé à l'origine à Desjardins** pour le **système de transfert d'huile** défectueux ou émettre une note de crédit au même montant.

Sauf mention contraire aux présentes, aucune garantie quelle qu'elle soit ne sera applicable à un **système de transfert d'huile** ou ses pièces et composantes pour lequel le plein paiement du prix d'achat n'aurait pas été reçu par Desjardins.

Desjardins décline expressément de toute responsabilité pour quelque **dommage, coûts, frais, pertes ou tout autre montant quel qu'il soit en relation avec ou découlant d'une cause autre qu'un défaut de fabrication et aucune garantie quelle qu'elle soit ne sera applicable, ni aucun recours ne seront disponibles dans de tels cas faisant ici l'objet d'une exclusion expresse. En d'autres mots, IL N'Y A AUCUNE GARANTIE S'APPLIQUANT AU-DELÀ DE CE QUI EST DECRIT À LA FACE MÊME DES PRÉSENTES.** Sans limiter la généralité de ce qui précède, aucune responsabilité ni aucun recours n'existeront ni aucune couverture en vertu la Garantie Limités ne sera applicables advenant l'un des cas suivants :

- Installation, mise en service, utilisation ou entretien inadéquat ou fautif, incluant le défaut de se conformer au Manuel d'installation, de mise en service, d'utilisation et d'entretien;
- Défaut de conformité avec tout avis de danger, avertissement ou autre notification concernant le **système de transfert d'huile**, son installation, mise en service, utilisation ou entretien, apparaissant sur le **système de transfert d'huile** lui-même ou

Warranty-Garantie

- Any damage or loss incurred after delivery of the oil-transfer unit by Desjardins (unless Desjardins has specifically agreed to be responsible for such damages or losses as per the terms and conditions of the sales documents of the oil-transfer unit), as well as any damage or loss incurred during or caused by improper or faulty storage, handling, installation, commissioning, use or maintenance;
 - Any negligence, abusive or rough usage, deliberate or intentional action, vandalism or damage caused by any other person, animal, object, vehicle, machine or equipment, or any accessory, part or component not originally sold by Desjardins with the oil-transfer unit;
 - Any damage or loss caused by or resulting in all or in part from an accident, fire, explosion, sand, flood/water, lightning, incorrect or insufficient voltage or power surge or other related electrical abnormalities or fluctuations, acts of God and similar events;
 - Any damage or loss caused by modifications, repairs or other work performed by persons other than Desjardins, its personnel or its designated authorized subcontractors, including but not limited, those persons that may have affected the oil-transfer unit's **stability or performances, or the impossibility for Desjardins to carry out an inspection due to such a situation;**
 - Normal wear and tear;
 - Costs and other expenses arising from the necessity to remove the oil-transfer unit, parts or components thereof, as well as all shipping costs, re-installation or commissioning of the repaired or replacement oil-transfer unit, part or component;
 - Any damage or loss caused by any corrosive fumes, vapours, liquids or other substances; and
 - Similar events.
- dans le Manuel d'installation, de mise en service, d'utilisation et d'entretien de Desjardins;**
- Tout dommage ou perte encourue après la livraison du **système de transfert d'huile** par Desjardins (sauf si Desjardins a expressément consenti à être responsable pour tel dommage ou perte dans les termes et conditions des documents de vente du **système de transfert d'huile**), ainsi que tout dommage ou perte encourue durant ou causé par **l'entreposage, la manipulation, l'installation, la mise en service ou l'entretien inadéquat ou fautif;**
 - Toute négligence, usage abusif ou brutal, action délibérée ou intentionnelle, vandalisme ou dommage causé par toute autre personne, animal, objet, véhicule, machine ou équipement, ou **tout accessoire, pièce ou composante n'ayant pas été vendue à l'origine par Desjardins avec le système de transfert d'huile;**
 - Tout dommage ou perte causée par ou résultant, en tout ou en partie, **d'un accident, incendie, explosion, sable, inondation/eau, éclair, voltage incorrect ou insuffisant, surtension ou autre anomalie ou fluctuation d'origine électrique, force majeure et autre événements similaires;**
 - Tout dommage ou perte causée par des modifications, réparations ou autre travaux réalisés par des personnes autre que Desjardins, son personnel ou les sous-traitants autorisés et désignés incluant, sans limitation, les personnes pouvant avoir affecté la stabilité ou les performances du système de **transfert d'huile, ainsi que dans les cas d'impossibilité pour Desjardins de procéder à une inspection en raison d'une telle situation;**
 - Usure normale;
 - Coûts et autre frais résultant de la nécessité **d'enlever le système de transfert d'huile**, ses pièces ou composantes, ainsi que tous les frais **d'expédition, réinstallation ou mise en service du système de transfert d'huile**, ses pièces ou composantes réparés ou de remplacement;
 - Tout dommage ou perte causée par des fumées, vapeurs, liquides ou autres substances corrosives; et
 - Cas similaires.

Desjardins' liability under this Limited Warranty is limited, in all cases, to an amount equal to the purchase price of the tank found to be defective. IN ALL CASES, NO WARRANTY SHALL APPLY IF THE PURCHASE PRICE OF THE OIL-TRANSFER UNIT HAS NOT BEEN PAID IN FULL TO DESJARDINS.

La responsabilité de Desjardins en vertu de cette Garantie Limitée est **limitée, dans tous les cas, à un montant égal au prix d'achat du système de transfert d'huile** ayant été trouvé défectueux. **DANS TOUS LES CAS, AUCUNE GARANTIE NE SERA APPLICABLE SI LE PRIX D'ACHAT DU SYSTÈME DE TRANSFERT D'HUILE N'A PAS ÉTÉ PLEINEMENT PAYÉ À DESJARDINS.**

Warranty-Garantie

THIS LIMITED WARRANTY CONSTITUTES THE SOLE AND EXCLUSIVE WARRANTY OF DESJARDINS ON ITS OIL-TRANSFER UNIT AND, TO THE EXTENT PERMITTED BY APPLICABLE LAW, IS IN LIEU OF ANY OTHER ORAL, WRITTEN, EXPRESS, IMPLICIT, LEGAL, OR ANY OTHER WARRANTY OR REPRESENTATION WHATSOEVER. ALL OTHER IMPLIED WARRANTIES ARE EXCLUDED, INCLUDED THE WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. IN THE EVENT DESJARDINS SHOULD BE DEEMED TO HAVE MADE ANY SUCH WARRANTIES DESPITE THIS SPECIFIC EXCLUSION OF SUCH WARRANTIES, SUCH WARRANTIES SHALL NOT BE EXTENDED BEYOND THE DURATION OF THE LIMITED EXPRESS WARRANTY HEREIN. Desjardins, its directors, officers, employees, agents, subcontractors and affiliated entities, shall in no event be held liable towards the owner or towards any other person for any indirect, incidental, consequential, special or punitive damage, or for any damage or cause not expressly stated in this Limited Warranty, including for loss of income, profits, goodwill and other tangible or non-tangible assets, for environmental damages, for bodily injury, other physical lesion or death, no matter if based on contract, tort, negligence or any other cause of action. Where limitation for incidental or consequential damages or on the duration of an implied warranty is not permitted by law, additional recourses may be available. The foregoing shall apply even if Desjardins has been advised of the possibility of such damages.

In the event that a court of law finds Desjardins liable under this Limited Warranty, notwithstanding Desjardins' above stated disclaimers, exclusions and limitations of liability provisions, it is expressly agreed that Desjardins cannot be held liable for the payment of any sum exceeding the total amount it has received the purchase of the oil-transfer unit presenting a Manufacturing Defect, and the duration of any warranty cannot be extended beyond the above mentioned Warranty Period, regardless of the cause of action.

This Limited Warranty is transferable to the subsequent owner of the oil-transfer unit until expiration of the warranty period based on the original purchase date and upon the limited terms, conditions, limitations, disclaimers and exclusions contained herein.

CETTE GARANTIE LIMITÉE CONSTITUE LA SEULE ET UNIQUE GARANTIE DE DESJARDINS SUR SES SYSTÈME DE TRANSFERT D'HUILE ET, DANS LA MESURE PERMISE PAR LA LOI APPLICABLE, REMPLACE TOUTE AUTRE GARANTIE ORALE, ÉCRITE, EXPRESSE, IMPLICITE, LÉGALE OU TOUTE AUTRE GARANTIE OU REPRÉSENTATION QUELLES QU'ELLES SOIENT. TOUTES LES AUTRES GARANTIES IMPLICITES SONT EXCLUSES, Y COMPRIS LA GARANTIE DE COMMERCIALITÉ ET D'ADAPTATION À UNE USAGE PARTICULIER. ADVENANT QUE DESJARDINS SOIT PRESUME AVOIR FAIT DE TELLES GARANTIES MALGRÉ L'EXCLUSION SPÉCIFIQUE DE TELLES GARANTIES, CES GARANTIES NE POURRONT ÊTRE EXTENSIONNÉES AU-DELÀ DE LA DURÉE DE LA GARANTIE LIMITEE EXPRESSE PRÉVUE AUX PRÉSENTES. Desjardins, ses administrateurs, dirigeants, employés, agents, sous-traitants et entités affiliées ne pourront en aucun cas être tenus responsable envers le propriétaire ou envers toute autre personne pour tout dommage indirect, accessoire, consécutif, spécial ou punitif ou pour tout autre dommage ou cause n'étant pas expressément prévue dans cette Garantie Limitée, incluant pour perte de revenus, de profits, d'achalandage et autres actifs corporels et incorporels, dommages environnementaux, blessures physiques, autres lésions physiques ou décès, qu'ils soient basé sur un contrat, un délit, une négligence ou toute autre cause d'action. Lorsque des limitations pour dommages indirects ou consécutifs ou concernant la durée de la garantie ne sont pas permis par la loi, des recours additionnels pourraient être disponible. Ce qui précède sera applicable même si Desjardins a été informé de la possibilité de tels dommages.

Dans l'éventualité qu'une cour de justice retiendrait la responsabilité de Desjardins aux termes de la présente Garantie Limités, ceci malgré les décharges, exclusion et limitations de responsabilités mentionnées ci-haut, il est expressément convenu que Desjardins ne peut être tenu responsable pour le paiement de toute somme excédant le montant total ayant été reçu pour l'achat du système de transfert d'huile présentant un Défaut de fabrication et la durée de toute garantie ne pourra être extensionnée au-delà de la durée de la Garantie Limitée susmentionnée, quelle que soit la cause d'action.

Cette Garantie Limitée est transférable au propriétaire subséquent du système de transfert d'huile jusqu'à l'expiration de la période de garantie basée sur la date d'achat originale et conformément aux termes limités, conditions, limitations, décharges et exclusions y étant mentionnés.

6 Annexes – Annexes

6.1 Annex A Technical specification sheets - Annexe A Fiches techniques



GENERAL DUTY G-SERIES GEAR PUMPS

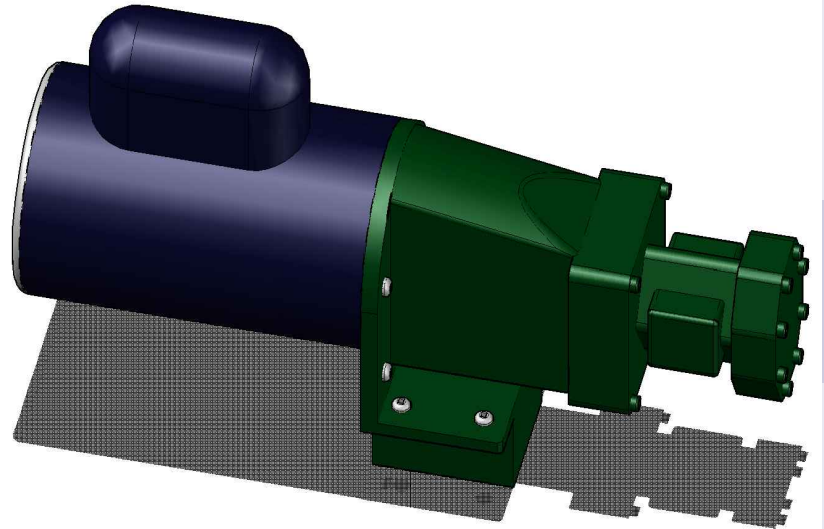
The G series General Gear Pumps are a close tolerance, medium flow, high pressure positive displacement pump. A standard in the industry since 1906.

APPLICATIONS

- Oil Transfer Pump
- Liquid Transfer/Circulation
- Small Booster Jockey Pump
- Spray Nozzles/Misting
- Hydraulic/Hydrostatic

FLOW: 0-3 GPM | 0-0.18 L/s | 0-0.68 m³/hr

PRESSURE: 0-250 PSI | 10.5 Bar | 0-346 Ft.



FEATURES

- Precision Spur Style Gears
- Self Priming due to close manufacturing tolerances
- Suction lift of up to 25 feet
- Pump housings are of Cast Iron
- Pump shafts are of stainless steel
- Mechanical seals of Buna or Viton
- Carbon graphite shaft bearings
- Bearings never need lubrication
- Easy maintenance and service

SPECIFICATIONS

PORTS	1/2" NPT / 12.5 mm
CAPACITY	3.0 USGPM / 0.18 L/s (Max.)
PRESSURE	250 PSI / 10.5 Bar (Max.)
INLET PRESSURE	50 PSI / 3.5 Bar (Max.) 225°
TEMPERATURE	F (100°C) (Buna Seal)

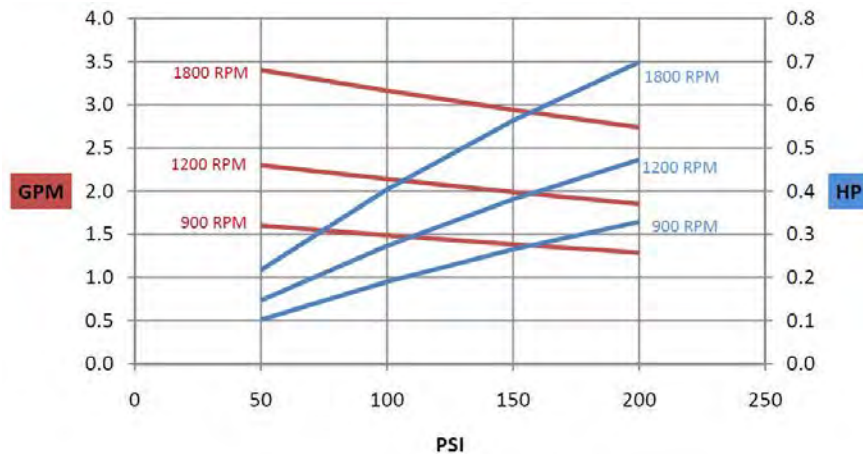
ROTATION

Standard rotation has the pump discharge on the right (facing the pump end). Standard Motors are uni-directional, so to change the rotation on the pumps simply loosen the bolt that holds the pump-end to the motor, and rotate the pump 180° so the discharge is on the left.

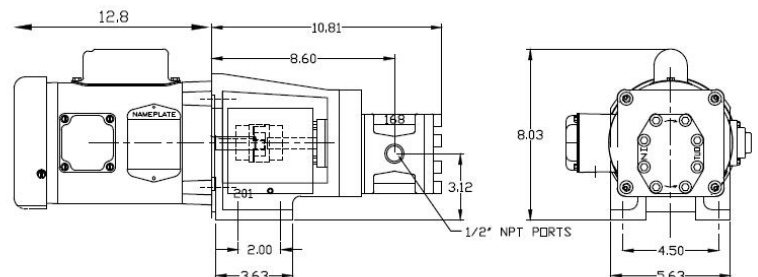
MAINTENANCE

To ensure a long life to this pump a strainer is always recommended in front of the pump inlet.

PERFORMANCE



DIMENSIONS



Note: Motor dimensions may vary.

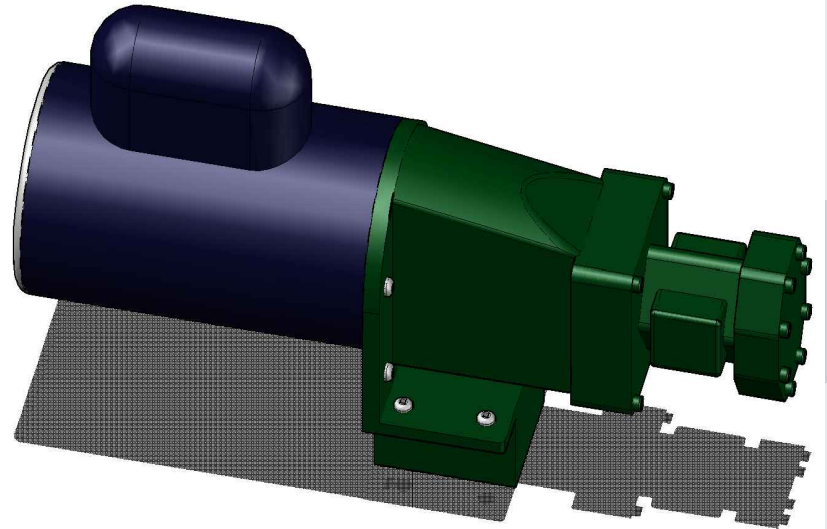
GENERAL DUTY G-SERIES GEAR PUMPS

The G series General Gear Pumps are a close tolerance, medium flow, high pressure positive displacement pump. A standard in the industry since 1906.

APPLICATIONS

- Oil Transfer Pump
- Liquid Transfer/Circulation
- Small Booster Jockey Pump
- Spray Nozzles/Misting
- Hydraulic/Hydrostatic

FLOW: 0-5 GPM | 0-0.32 L/s | 0-1.14 m³/hr
 PRESSURE: 0-250 PSI | 10.5 Bar | 0-346 Ft.



FEATURES

- Precision Spur Style Gears
- Self Priming due to close manufacturing tolerances
- Suction lift of up to 25 feet
- Pump housings are of Cast Iron
- Pump shafts are of stainless steel
- Mechanical seals of Buna or Viton
- Carbon graphite shaft bearings
- Bearings never need lubrication
- Easy maintenance and service

SPECIFICATIONS

PORTS	3/4" NPT / 19.1 mm
CAPACITY	5.0 USGPM / 0.32 L/s (Max.)
PRESSURE	250 PSI / 10.5 Bar (Max.)
INLET PRESSURE	50 PSI / 3.5 Bar (Max.) 225°
TEMPERATURE	F (100°C) (Buna Seal)

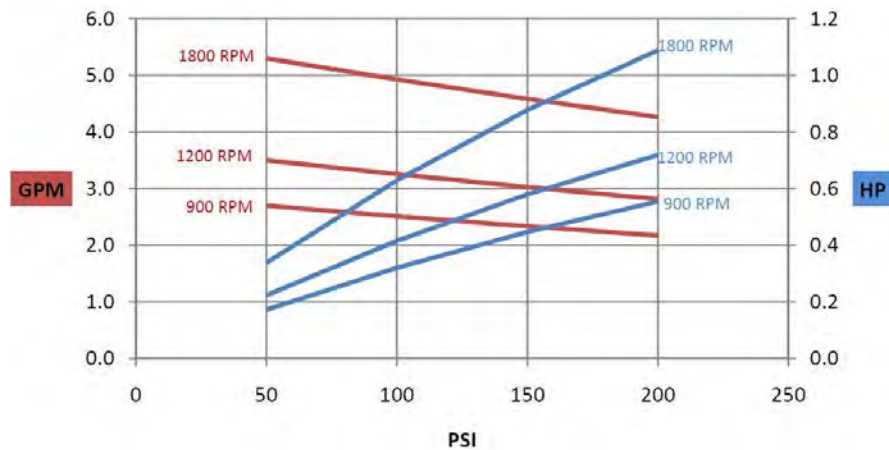
ROTATION

Standard rotation has the pump discharge on the right (facing the pump end). Standard Motors are uni-directional, so to change the rotation on the pumps simply loosen the bolt that holds the pump-end to the motor, and rotate the pump 180° so the discharge is on the left.

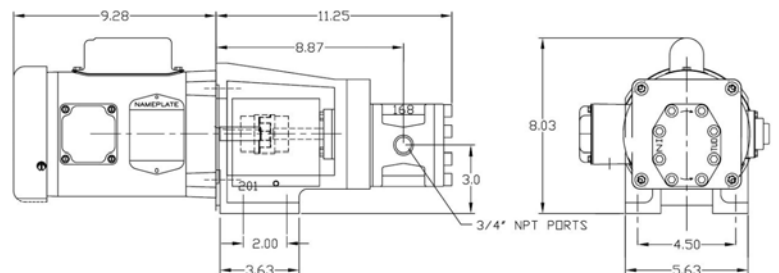
MAINTENANCE

To ensure a long life to this pump a strainer is always recommended in front of the pump inlet.

PERFORMANCE



DIMENSIONS



Note: Motor dimensions may vary.

GENERAL DUTY G-SERIES GEAR PUMPS



The G series General Gear Pumps are a close tolerance, medium flow, high pressure positive displacement pump. A standard in the industry since 1906.

APPLICATIONS

- Oil Transfer Pump
- Liquid Transfer/Circulation
- Small Booster Jockey Pump
- Spray Nozzles/Misting
- Hydraulic/Hydrostatic



FLOW: 0-10 GPM | 0-0.63 L/s | 0-2.27 m³/hr

PRESSURE: 0-250 PSI | 10.5 Bar | 0-346 Ft.

FEATURES

- Precision Spur Style Gears
- Self Priming due to close manufacturing tolerances
- Suction lift of up to 25 feet
- Pump housings are of Cast Iron
- Pump shafts are of stainless steel
- Mechanical seals of Buna or Viton
- Carbon graphite shaft bearings
- Bearings never need lubrication
- Easy maintenance and service

SPECIFICATIONS

PORTS	1" NPT / 25.4 mm
CAPACITY	10.0 USGPM / 0.63 L/s (Max.)
PRESSURE	250 PSI / 10.5 Bar (Max.)
INLET PRESSURE	50 PSI / 3.5 Bar (Max.)
TEMPERATURE	225° F (100°C) (Buna Seal)

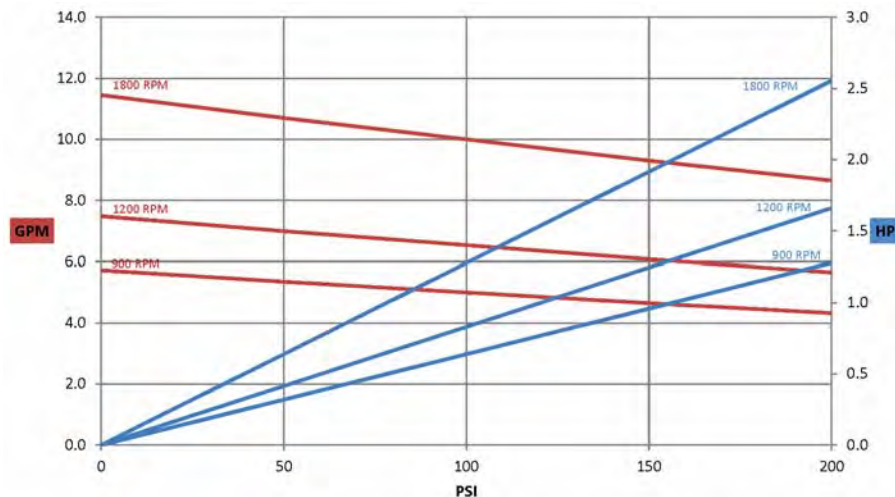
ROTATION

Standard rotation has the pump discharge on the right (facing the pump end). Standard Motors are uni-directional, so to change the rotation on the pumps simply loosen the bolt that holds the pump-end to the motor, and rotate the pump 180° so the discharge is on the left.

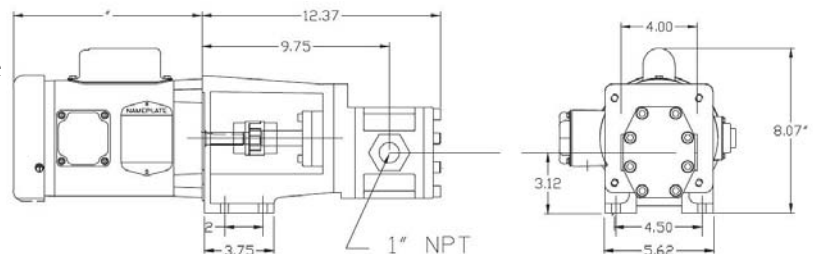
MAINTENANCE

To ensure a long life to this pump a strainer is always recommended in front of the pump inlet.

PERFORMANCE



DIMENSIONS



Note: Motor dimensions may vary.

Performance

G Series (0-250 PSI)

MODEL	MAX. CAPACITY @ 1750 RPM	MAX. DIFF. PRESS.	MAX. HP REQ'D
03G	3.4 US/gpm	250 psi	3/4 hp
05G	5.3 US/gpm	250 psi	1.5 hp
10G	10.5 US/gpm	250 psi	2.5 hp
18G	18.1 US/gpm	250 psi	5 hp
25G	26 US/gpm	250 psi	5 hp
35G	35 US/gpm	250 psi	7.5 hp

H Series (0-500 PSI)

MODEL	MAX. CAPACITY @ 1750 RPM	MAX. DIFF. PRESS.	MAX. HP REQ'D
03H	3.4 US/gpm	500 psi	1.5 hp
05H	5.6 US/gpm	500 psi	2.5 hp
10H	11.4 US/gpm	500 psi	5 hp
18H	18 US/gpm	500 psi	7.5 hp
25H	25 US/gpm	500 psi	10 hp
35H	37 US/gpm	500 psi	15 hp

ALBANY PUMP COMPANY LTD

(since 1906)

Phone (888) 334-3348 Fax (888) 335-3391

www.albanypump.com



ALBANY SBS SINGLE BASKET STRAINER & FILTER



SERVICE RECOMMENDATIONS

These strainers are used to remove foreign matter from pipe lines and provide inexpensive protection to pumps, meters, valves, etc. The SBS Series can be specified for Strainer applications from 20 mesh to 200 mesh, and can be specified for Filter applications to 5 Micron.

FEATURES

These strainers have been designed for applications where easy maintenance & large capacity straining are needed. Service time is minimal because the cover is secured with quick opening, non-yoke type knobs. Both the cover & the basket use O-ring seals, eliminating the need to replace gaskets each time the strainer is serviced. This, combined with the machined basket seat, eliminates particle bypass. With the appropriate wire mesh lining, these models can be used to strain particles as small as five microns.

CONSTRUCTION

Cast cover and body. All sizes feature an O-ring cover seal. Baskets and O-ring are sealed in machined seats. Quick release knobs are insert molded with metal threads. An NPT connection is provided. Coatings are available on application. Standard strainers basket 304 ss. Filter elements are available in 5, 10, 25, and 40 micron. Viton O-ring is standard.

CAPACITY: Minimum 6 to 1 open area ratio.

PRESSURE RATING: 150 PSI

RATING: Shell test pressure = 1.5 times working pressure.

CASING TEMPERATURE RATING: + 2000°F

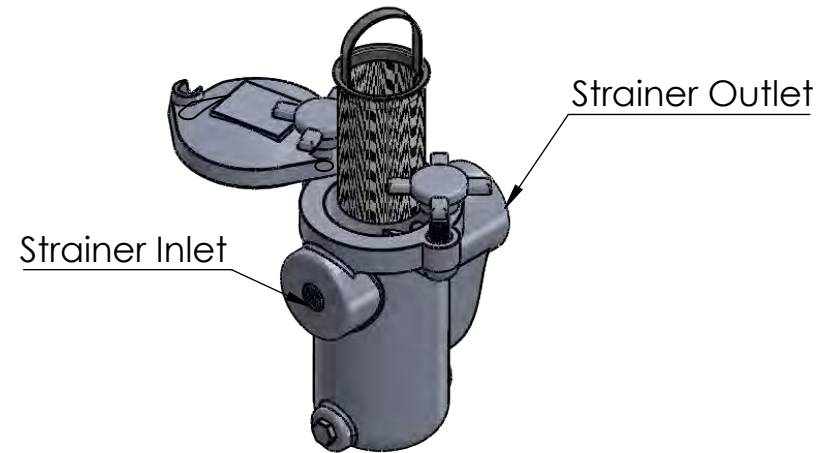
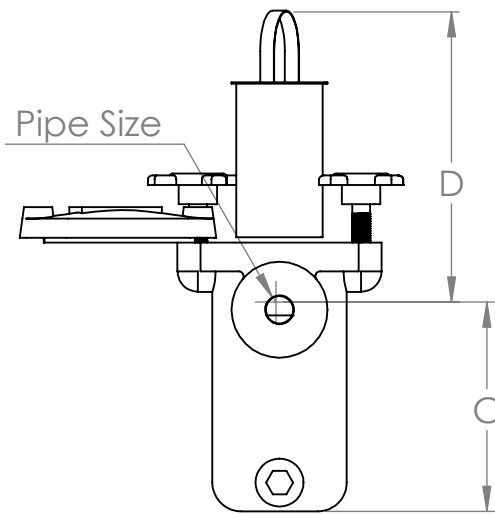
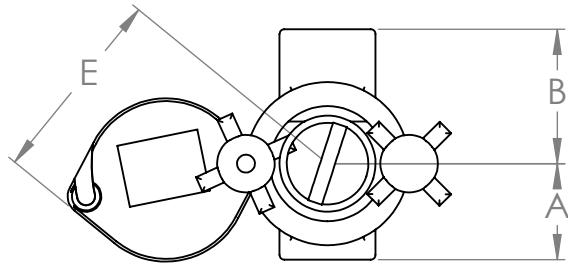
Available with Mesh Screens for Strainer

Available with Micron Elements for Filter



2

1



Equipment Adheres to CSAB139 Installation Code for Oil Burning Equipment (2006 & 2015), TSSA Liquid Fuels Handling Code, CSA C282, NFPA 30 Flammable and Combustible Liquids Code, NFPA 31 Standard for Installation of Oil Burning Equipment

Pipe Size	Weight	A	B	C	D	E
1/2"	8.5lbs	2.50"	3.50"	5.25"	7.00"	6.50"
3/4"	8.5lbs	2.50"	3.50"	5.25"	7.00"	6.50"
1"	8.5lbs	2.50"	3.50"	5.25"	7.00"	6.50"
1-1/4"	17lbs	2.75"	4.25"	8"	9.5"	N/A
1-1/2"	17lbs	2.75"	4.25"	8"	9.5"	N/A
2"	25lbs	4"	6"	9.5"	12.5"	N/A

ALBANY PUMP CO. LTD.

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TITLE:

SBS Strainer Dimensions

SIZE DWG. NO.

C

Strainer Assembly

SCALE: 1:5

SHEET 1 OF 1

2

1

ALBANY PUMP COMPANY LTD

(since 1906)

Phone (888) 334-3348 Fax (888) 335-3391

www.albanypump.com

ALBANY 'SBS' SERIES SINGLE BASKET STRAINERS **LISTED TO ULC/ORD-C331**

MODEL	DESCRIPTION
SBS-050	Cast Iron Body; size ½" NPT - includes Qty. (1) Filter or Strainer Element (specify Mesh or Micron size when ordering)
SBS-075	Cast Iron Body; size ¾" NPT - includes Qty. (1) Filter or Strainer Element (specify Mesh or Micron size when ordering)
SBS-100	Cast Iron Body; size 1" NPT - includes Qty. (1) Filter or Strainer Element (specify Mesh or Micron size when ordering)
SBS-125	Cast Iron Body; size 1-1/4" NPT - includes Qty. (1) Filter or Strainer Element (specify Mesh or Micron size when ordering)
SBS-150	Cast Iron Body; size 1-1/2" NPT - includes Qty. (1) Filter or Strainer Element (specify Mesh or Micron size when ordering)
SBS-200	Cast Iron Body; size 2" NPT - includes Qty. (1) Filter or Strainer Element (specify Mesh or Micron size when ordering)
SBS-250	Cast Iron Body; size 2-1/2" - includes Qty. (1) Filter or Strainer Element (specify Mesh or Micron size when ordering)

ACCESSORIES:

Differential Pressure Indicator (Part No. DPP)

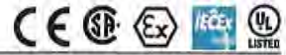
Differential Pressure Indicator w/ MA Output (Part No. DPP-RMB)

Replacement Baskets for ½" to 1" (specify Mesh or Micron Size)

Replacement Baskets for 1-1/4" to 1-1/2" (specify Mesh or Micron Size)

Replacement Baskets for 2" & 2-1/2" (specify Mesh or Micron Size)

Dwyer

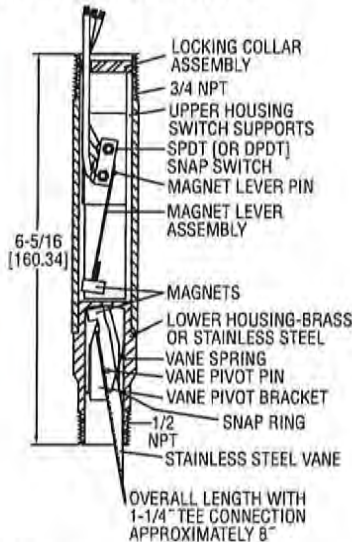


FLOTECT® MINI-SIZE FLOW SWITCHES

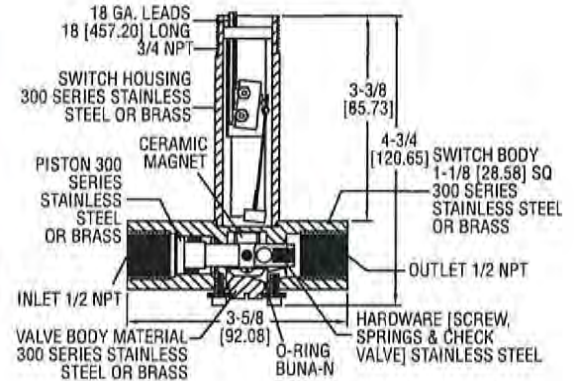
Monitor Flow in 1/2" to 2" Pipe, Explosion-Proof



V6 with Tee



V6 Low Flow



Scan here to watch product video

The **SERIES V6** FloTECT® Flow Switches is surprisingly compact, and specifically engineered to monitor liquid, gas, or air flows. Time tested in thousands of pipeline installations and processing plants around the world, this Series is Weatherproof, designed to meet NEMA 4 and Explosion-proof (listing included in specifications). Tees are available for installation in pipelines from 1/2" to 2". With bushings added the unit is easily adapted to 1/4" and 3/8" piping.

FEATURES/BENEFITS

- Unique magnetically actuated switching design gives superior performance
- Features a free-swinging vane which attracts a magnet within the solid metal switch body, actuating a snap switch by means of a simple lever arm with no bellows, springs, or seals to fail
- Leak proof body machined from bar stock
- Electrical assembly can be easily replaced without removing the unit from installation so that the process does not have to be shut down
- Choice of models in a tee with calibrated vane or field adjustable trimmable vane
- Easy installation with simple pipe insert via tee and simple electrical switch connections
- High pressure rating of 1000 psig (69 bar) with the brass body and 2000 psig (138 bar) with the 316 SS body
- Low flow model offers field adjustable set point

APPLICATIONS

- Protects pumps, motors and other equipment against low or no flow
- Controls sequential operation of pumps
- Automatically starts auxiliary pumps and engines
- Stops liquid cooled engines, machines and processing when coolant flow is interrupted
- Shuts down burner when air flow through heating coil fails
- Controls dampers according to flow
- Signals alarm when emergency shower or eyewash station in use

SPECIFICATIONS

Service: Gases or liquids compatible with wetted materials.

Wetted Materials: Standard V6 Models: Vane: 301 SS; Lower Body: brass or 303 SS; Magnet: Ceramic; Other: 301, 302 SS; Tee: Brass, iron, forged steel, or 304 SS. V6 Low Flow Models: Lower body: Brass or 303 SS; Tee: Brass or 304 SS; Magnet: Ceramic; O-ring: Buna-N standard, Fluoroelastomer optional; Other: 301, 302 SS.

Temperature Limits: -4 to 220°F (-20 to 105°C) Standard, MT high temperature option 400°F (205°C) (MT not UL, CSA, ATEX, IECEx or KC) ATEX Compliant AT, IECEx IEC Option and KC (KC Option), Ambient Temperature -4 to 167°F (-20 to 75°C) Process Temperature: -4 to 220°F (-20 to 105°C).

Pressure Limit: Brass lower body with no tee models 1000 psig (69 bar), 303 SS lower body with no tee models 2000 psig (138 bar). Brass tee models 250 psi (17.2 bar), iron tee models 1000 psi (69 bar), forged and stainless steel tee models 2000 psi (138 bar), low flow models 1450 psi (100 bar).

Enclosure Rating: Weatherproof and Explosion-proof. Listed with UL and CSA for Class I, Groups A, B, C and D; Class II, Groups E, F, and G. (Group A on stainless steel body models only).

ATEX CE 0344 Ex II 2 G Ex d IIC T6 Gb Process Temp ≤75°C Alternate Temperature Class T5 Process Temp ≤90°C, 115°C (T4) Process Temp ≤105°C consult factory. EC-type Certificate No.: KEMA 04ATEX2128.

ATEX Standards: EN 60079-0: 2009; EN 60079-1: 2007.

IECEx Certified: For Ex d IIC T6 Gb Process Temp ≤75°C Alternate Temperature Class T5 Process Temp ≤90°C, 115°C (T4) Process Temp ≤105°C consult factory. IECEx Certificate of Conformity: IECEx DEK 11.0039;

IECEx Standards: IEC 60079-0: 2007; IEC 60079-1: 2007;

Korean Certified (KC) for: Ex d IIC T6 Gb Process Temp ≤75°C;

KTL Certificate Number: 2012-2454-75.

Switch Type: SPDT snap switch standard, DPDT snap switch optional.

Electrical Rating: UL models: 5 A @ 125/250 VAC. CSA, ATEX and IECEx models: 5 A @ 125/250 VAC (V~); 5 A res., 3 A ind. @ 30 VDC (V-), MV option: .1 A @ 125 VAC (V~). MT option: 5 A @ 125/250 VAC (V~). [MT option not UL, CSA, ATEX or IECEx].

Electrical Connections: UL models: 18 AWG, 18" (460 mm) long. ATEX/CSA / IECEx models: terminal block.

Upper Body: Brass or 303 stainless steel.

Conduit Connections: 3/4" male NPT standard, 3/4" female NPT on junction box models.

Process Connection: 1/2" male NPT on models without a tee.

Mounting Orientation: Switch can be installed in any position but the actuation/deactuation flow rates in the charts are based on horizontal pipe runs and are nominal values.

Set Point Adjustment: Standard V6 models none. Without tee models vane is trimmable. Low flow models are field adjustable in the range shown. See set point charts.

Weight: 2 to 6 lb (.9 to 2.7 kg) depending on construction.

Options not Shown: Custom calibration, bushings, PVC tee, reinforced vane, DPDT relays.

Agency Approvals: ATEX, CE, CSA, IECEx, KTL, UL.

©Set Point Charts: See page 159 (Series V6)



FLOTECT® MINI-SIZE FLOW SWITCHES

Monitor Flow in 1/2" to 2" Pipe, Explosion-Proof

MODEL CHART										
Example	V6	EP	B-B	-S	-2	-B	-MT	V6EPB-B-S-2-B-MT		Price
Series	V6							Flow switch		-
Construction		EP						Explosion proof		-
Body			B-B S-S					Brass SS		+\$43.50
Circuit (Switch)				S D				SPDT DPDT		+\$33.00
Tee Connection Size					1 2 3 4 5 6 LF			1/2" NPT 3/4" NPT 1" NPT 1-1/4" NPT 1-1/2" NPT 2" NPT Low flow model (1/2" NPT connections)		-
Tee Material						MI FS B S O		Iron Forged steel Brass SS No tee, field trimmable vane** (For LF model no tee material chosen, tee material matches body choice)		-
Options							CSA AT IEC MV MT VIT	CSA approved construction with junction box* ATEX compliant construction with junction box IECEx certified construction with junction box Gold contacts on snap switch for dry circuits (see specifications for ratings) High temperature option rated 400°F (205°C) (see specifications for ratings)* Fluoroelastomer O-rings in place of Buna-N on low flow models		+\$55.00 +84.00 +84.00 +11.25 +33.25 +3.60

*Options that do not have ATEX.
**Vane will be trimmed to the connection size. If full field trimmable vane is desired, must select with tee connection size 6.

MODEL CHART			
Model	Size	Body	Tee
V6EPB-B-S-1-B	1/2"	Brass	Brass
V6EPB-B-S-2-B	3/4"	Brass	Brass
V6EPB-B-S-3-B	1"	Brass	Brass
V6EPB-B-S-4-B	1-1/4"	Brass	Brass
V6EPB-B-S-5-B	1-1/2"	Brass	Brass
V6EPB-B-S-6-B	2"	Brass	Brass
V6EPB-B-S-1-MI	1/2"	Brass	Iron
V6EPB-B-S-2-MI	3/4"	Brass	Iron
V6EPB-B-S-3-MI	1"	Brass	Iron
V6EPB-B-S-4-MI	1-1/4"	Brass	Iron
V6EPB-B-S-5-MI	1-1/2"	Brass	Iron
V6EPB-B-S-6-MI	2"	Brass	Iron
V6EPS-S-S-1-FS	1/2"	SS	FS
V6EPS-S-S-2-FS	3/4"	SS	FS
V6EPS-S-S-3-FS	1"	SS	FS
V6EPS-S-S-4-FS	1-1/4"	SS	FS
V6EPS-S-S-5-FS	1-1/2"	SS	FS
V6EPS-S-S-6-FS	2"	SS	FS
V6EPS-S-S-1-S	1/2"	SS	SS
V6EPS-S-S-2-S	3/4"	SS	SS
V6EPS-S-S-3-S	1"	SS	SS
V6EPS-S-S-4-S	1-1/4"	SS	SS
V6EPS-S-S-5-S	1-1/2"	SS	SS
V6EPS-S-S-6-S	2"	SS	SS
V6EPB-B-S-6-0	No tee	Brass	None
V6EPS-S-S-6-0	No tee	SS	None
V6EPB-B-S-LF	1/2"	Brass	LF, brass
V6EPS-S-S-LF	1/2"	SS	LF, SS

V6 SET POINT CHARTS - FACTORY INSTALLED TEE

APPROXIMATE ACTUATION/DEACTUATION FLOW RATES FOR AIR; SCFM (LPM)		
Pipe Size	Actuate	Deactuate
1/2"	6.50 (180)	5.00 (120)
3/4"	10.0 (300)	8.00 (240)
1"	14.0 (420)	12.0 (360)
1-1/4"	21.0 (600)	18.0 (540)
1-1/2"	33.0 (960)	30.0 (840)
2"	43.0 (1200)	36.0 (1020)

APPROXIMATE ACTUATION/DEACTUATION FLOW RATES FOR COLD WATER; GPM (LPM)		
Pipe Size	Actuate	Deactuate
1/2"	1.50 (5.667)	1.00 (3.83)
3/4"	2.00 (7.5)	1.25 (4.67)
1"	3.00 (11.33)	1.75 (6.67)
1-1/4"	4.00 (15.17)	3.00 (11.3)
1-1/2"	6.00 (22.67)	5.00 (18.9)
2"	10.00 (37.83)	8.50 (32.2)

V6 LOW FLOW SET POINT CHART

MIN-MAX FLOW RATES IN 1/2" PIPE		
Media	Actuate	Deactuate
GPM-water	.04-0.75	.03-0.60
LPM-water	.15-2.84	.11-2.27
SCFM-air	.18-2.70	.15-2.0
LPS-air	.09-1.3	.07-.95

Pressure drop (head loss) is a function of both set point and flow rate. Typically, pressure drop at actuation flow rate listed will be 5-10 psid (.34-.69 bar). Pressure drops at other flow rates will vary in proportion to the (change in flow).



FMP-UHS

UNIVERSAL HYDROSTATIC SENSOR

The FMP-UHS Universal Hydrostatic Sensor uses float switch technology to continuously monitor liquid filled double wall containment sumps. Normally submerged, the single float FMP-UHS will provide an indication if there is a loss of monitoring liquid.

HIGHLIGHTS

- Highly reliable float technology and closed output circuit ensures that leaks are detected.
- Chemical-resistant material

SPECIFICATIONS

Application

Typically used for hydrostatic monitoring of the liquid in a double wall sump interstice.

Installation

Each FMP-UHS comes with a 25' cable. The sensor can be installed into the reservoir of a liquid filled double wall containment sump. The sensor must be installed in a vertical position at a level where it is normally submerged. The FMP-UHS will alert if the liquid level drops below the bottom of the sensor.

ORDERING INFORMATION

Model	Description
FMP-UHS	Universal Hydrostatic Sensor
HM-KIT	Hydrostatic monitoring installation kit. Includes: flexible brine tube, sensor housing clamp, sensor housing, sensor cap and hardware

Note: This sensor communicates with the console using 2 wires.

SVB-SERIES VALVES (UL 842 Approved)



*Underwriter Listed
*ANSI, UL-842 Approved
"Valves for Flammable Fluids"

APPLICATION

The Fulflo SVB - Series, Underwriter Listed, range in size from 3/8" through 2" and operate efficiently with liquids of any viscosity at pressures from 3 through 500 P.S.I. The "SVB" valves are of brass construction with threaded connections.

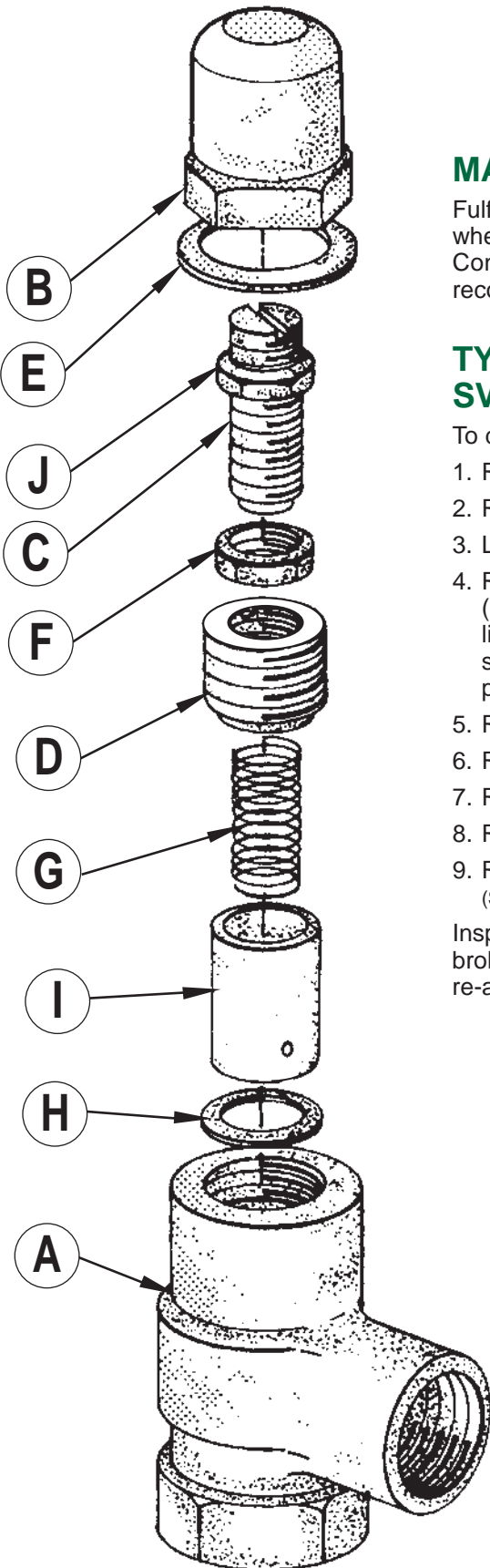
Primarily designed for use with fuel oils on oil burner service, the "SVB" valves may be used wherever Underwriter Listed valves are required. Each valve is pre-set to the specified pressure and is equipped with a limiting device to prevent over-adjustment.

INSTALLATION

Fulflo valves can be mounted in any position. A tee may be inserted in the pump discharge line to mount the valve. The correct size of valve should be installed, preferably matching the pump discharge line. Screw the valve into the nipple in the tee. When the valve is used for frequent bypassing of oil under pressure, its outlet should be piped back to the tank. Care

must be taken to have the discharge well below the oil level in the tank to prevent air entrainment and erratic operations.

Only if the valve is used as safety or overload relief and operates infrequently may its discharge be piped back into the pump suction line. Frequent or continuous operation under these conditions will cause excessive heating of the oil and possible damage.



MAINTENANCE

Fulflo valves provided reliable “chatter-free” operation when the system is free of abrasives and foreign matter. Continuous filtration of the liquid used is strongly recommended.

TYPICAL DISASSEMBLY OF SVB VALVES

To dismantle valve for inspection and cleaning:

1. Remove cap “B”
2. Remove gasket “E” (replace, if necessary)
3. Loosen lock nut “F”
4. Remove adjusting screw “C”
(Limit collar “J” is soldered to adjusting screw “C”, to limit the maximum pressure to which the valve may be subjected.) Limit collar is set at 25% above normal pressure setting.
5. Remove lock nut “F”
6. Remove retainer “D”
7. Remove spring “G”
8. Remove piston “I”
9. Remove stop ring “H” (Not Recommended)
(Special tooling is required to install new stop ring.)

Inspect valve bore and piston for wear or scoring. Replace broken or damaged parts. Clean all parts thoroughly and re-assemble by reversing the above procedure.

SVB-SERIES

ASSEMBLY NUMBER IDENTIFICATION CHART

Symbol Number	Designation	Code	Description
1	Style	S	Underwriter Listed
2	Series	V	—
3	Material	B	Brass
4 or 5	Size	-25 -35 -45 -55 -65 -75 -85	3/8" 1/2" 3/4" 1" 1 1/4" 1 1/2" 2
6	Spring	See Chart	See Spring Pressure Chart
7	Piston	0 1 2 3	Hardened Steel, deep groove Stainless Steel, deep groove Hardened Steel, shallow groove Stainless Steel, shallow groove

EXAMPLE:

SVB-55ZSO					
S	V	B	-55	ZS	O
Underwriter's Listed	Series	Brass	1"	Spring	Hardened Steel Piston, Deep Groove

HOW TO ORDER

Specify:

1. Valve Model Number
2. Spring Letter
3. Piston Number
4. Pressure Setting

NOTE: A definite pressure setting is required due to Underwriter restrictions. A limiting device is furnished to prevent over-adjustment more than 25% above set pressure.

SETTING VALVES

Valve may be set with a hand pump for cracking pressure. It will be noted that the maximum set pressure is limited by the collar "J" soldered to the adjusting screw "C".

If a test stand is available, valve should be connected to the discharge header with the pump bypass open, and the bypass gradually closed until the desired pressure registers on the gauge. Adjust valve adjusting screw until valve slightly bleeds at the set bypass pressure and lock adjusting screw.

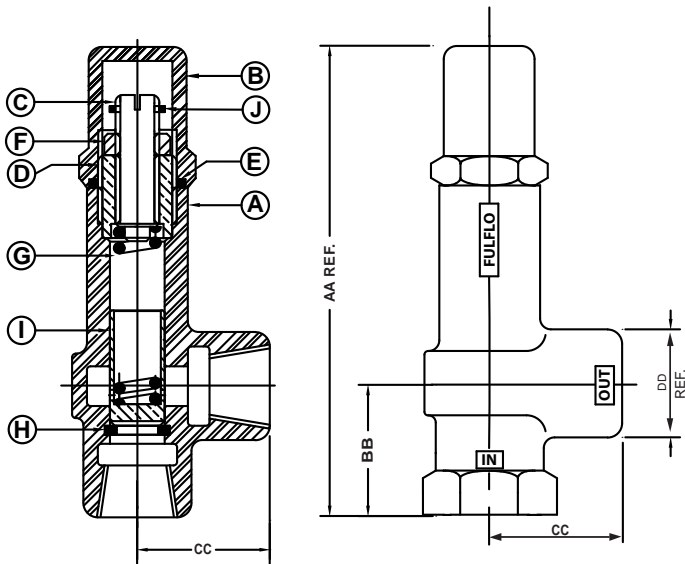
If valve is required to bypass a given amount of fluid at a given pressure, a test stand having a flow meter in the pump discharge line must be available. With valve adjusted for cracking pressure as above, continue closing bypass until the required flow registers on the flow meter and observe pressure. Re-adjust pressure, if necessary, to obtain desired pressure at desired flow.

UNDERWRITER VALVE PRESSURE RANGE CHART

Pipe Size	"U.L." Symbol	SPRING PRESSURE RANGE AND PART NO. SUFFIX											
		BLACK -AS		RED-US		GREEN-WS		YELLOW-XS		WHITE-YS		BLUE-ZS	
		Low	High	Low	High	Low	High	Low	High	Low	High	Low	High
3/8"	SVB-25	3	10	7	35	30	100	60	175	150	350	300	500
1/2"	SVB-35	3	10	7	35	30	100	60	175	150	350	300	500
3/4"	SVB-45	3	10	7	35	30	100	60	175	150	350	300	500
1"	SVB-55	3	10	7	35	30	100	60	175	150	350	300	500
1 1/4"	SVB-65	3	10	7	35	30	100	60	175	150	350	300	500
1 1/2"	SVB-75	3	10	7	35	30	100	60	175	150	350	300	500
2"	SVB-85	3	10	7	35	30	100	60	175	150	350	250	600

SVB-SERIES (Brass)

DIMENSIONS



Pipe Size	"U.L." Symbol	DIMENSIONS IN INCHES			
		AA	BB	CC	DD REF.
3/8"	SVB-25	5 ¹¹ / ₃₂	1 ³ / ₈	1 ³ / ₈	1 ³ / ₈
1/2"	SVB-35	6 ³ / ₁₆	1 ¹¹ / ₁₆	1 ⁷ / ₁₆	1 ⁷ / ₁₆
3/4"	SVB-45	6 ¹⁵ / ₁₆	1 ¹⁵ / ₁₆	1 ¹³ / ₁₆	1 ¹¹ / ₁₆
1"	SVB-55	8 ⁷ / ₃₂	2 ⁹ / ₃₂	2 ⁹ / ₃₂	2 ¹ / ₁₆
1 1/4"	SVB-65	9 ⁹ / ₁₆	2 ⁹ / ₁₆	2 ⁹ / ₁₆	2 ¹ / ₂
1 1/2"	SVB-75	11 ¹ / ₁₆	2 ¹¹ / ₁₆	2 ¹¹ / ₁₆	2 ⁷ / ₈
2"	SVB-85	13	3	3	3 ¹ / ₄

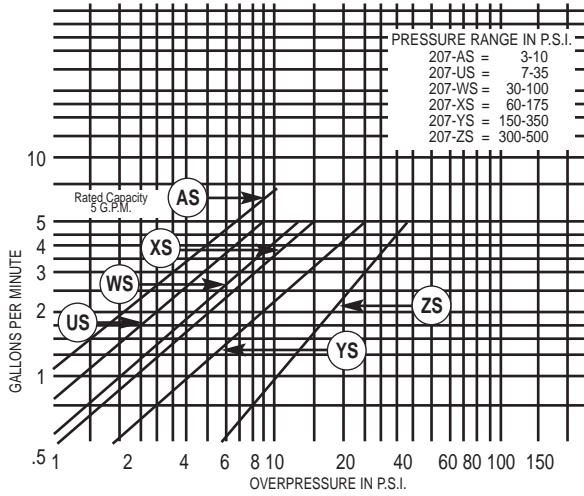
PARTS LIST

Symbol	NAME	VALVE SIZE						
		3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
A	Body	200-B	300-B	400-B	500-B	600-B	700-B	800-B
B	Cap	201-B	301-B	401-B	501-B	601-B	701-B	801-B
C	Adjusting Screw	202-B	302-B	402-B	502-B	602-B	702-B	802-B
D	Retainer	203-B	303-B	403-B	503-B	603-B	703-B	803-B
E	Gasket	204	304	404	504	604	704	804
F	Lock Nut	205-S	305-S	405-S	505-S	605-S	705-S	805-S
G	Spring	See Chart	See Chart	See Chart	See Chart	See Chart	See Chart	See Chart
H	Stop Ring	208-B	308-B	408-B	508-B	608-B	708-B	808-B
I	Piston H.S. Deep Groove S.S. Deep Groove H.S. Shallow Groove S.S. Shallow Groove	206-G 206-AG 206 206-A	306-G 306-AG 306 306-A	406-G 406-AG 406 406-A	506-G 506-AG 506 506-A	606-G 606-AG 606 606-A	706-G 706-AG 706 706-A	806-G 806-AG 806 806-A
J	Limit Collar	221-B	321-B	421-B	521-B	621-B	721-B	821-B

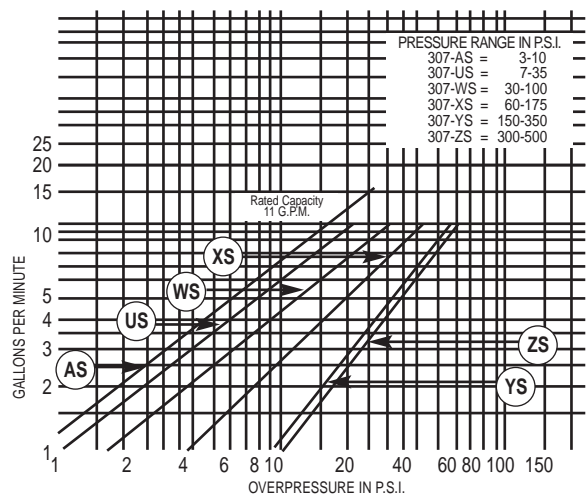
SVB-SERIES PERFORMANCE CHARTS

All valve tests 110°F. to 120°F. Oil Viscosity 150 S.S.U. at 100°F.
(Charts good from 30 to 500 S.S.U.)

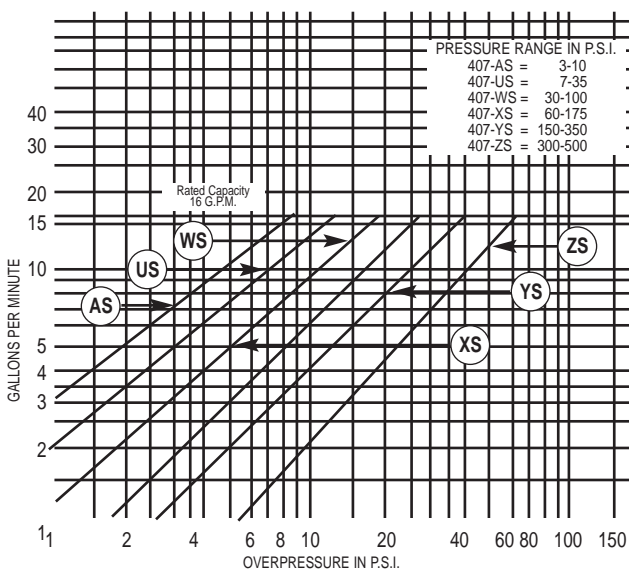
3/8" VALVE TESTS



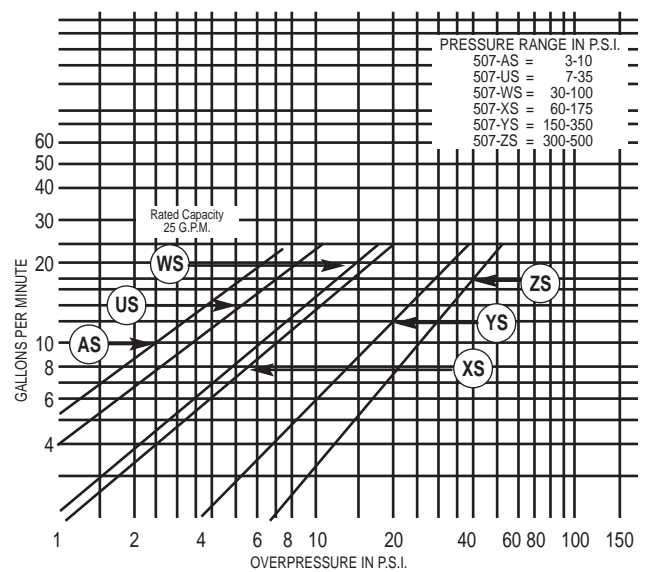
1/2" VALVE TESTS



3/4" VALVE TESTS



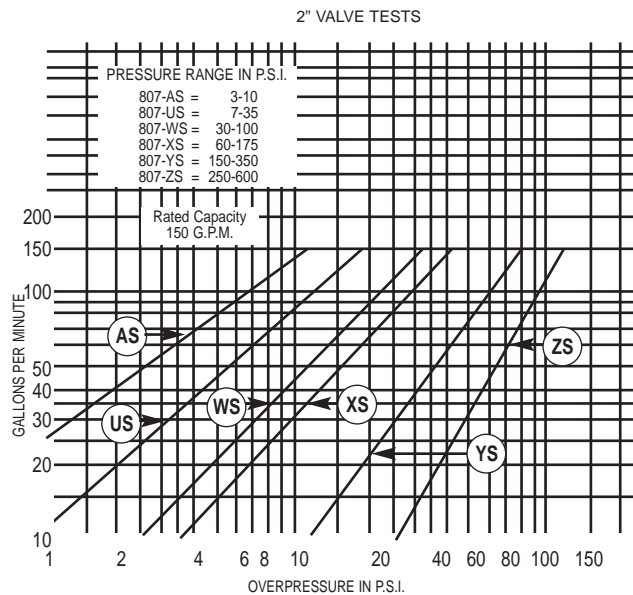
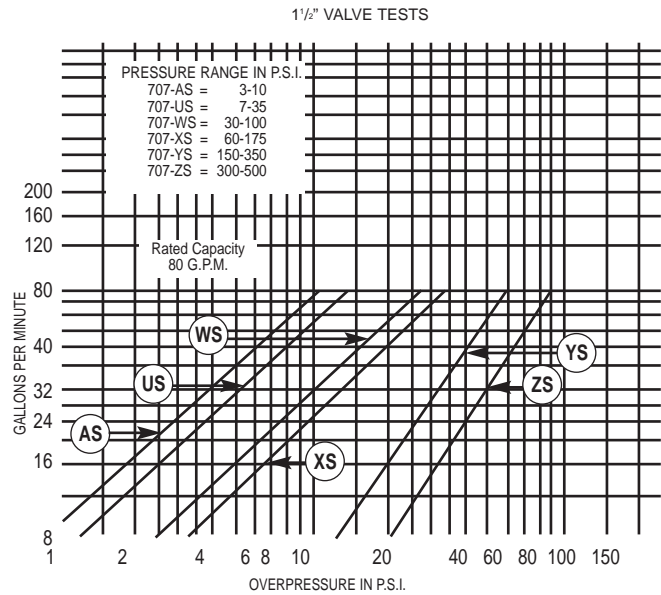
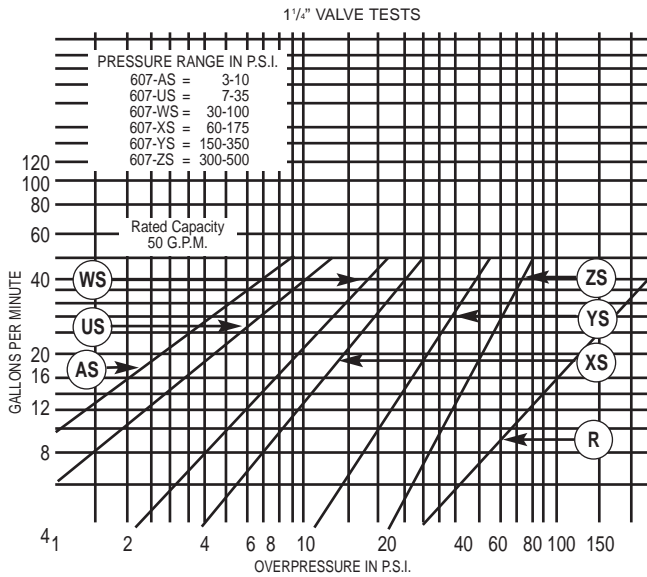
1" VALVE TESTS



Overpressure - The pressure increase or accumulation above the set pressure when the valve is discharging flow.

SVB-SERIES PERFORMANCE CHARTS

All valve tests 110°F. to 120°F. Oil Viscosity 150 S.S.U. at 100°F.
(Charts good from 30 to 500 S.S.U.)



Overpressure - The pressure increase or accumulation above the set pressure when the valve is discharging flow.

Brass Ball Valve

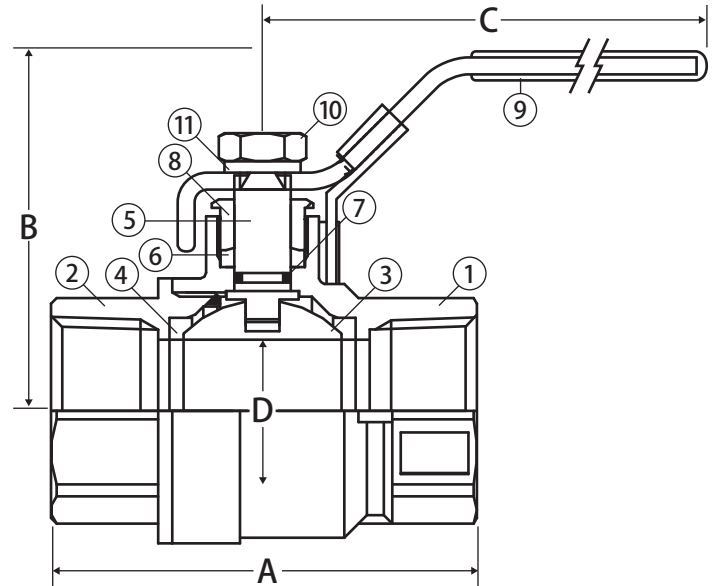


2 Piece • Full Port • Threaded Connection • 600 WOG •
with Latch Lock Handle



JF-100T-LH

CRN# OC16654.5



Features

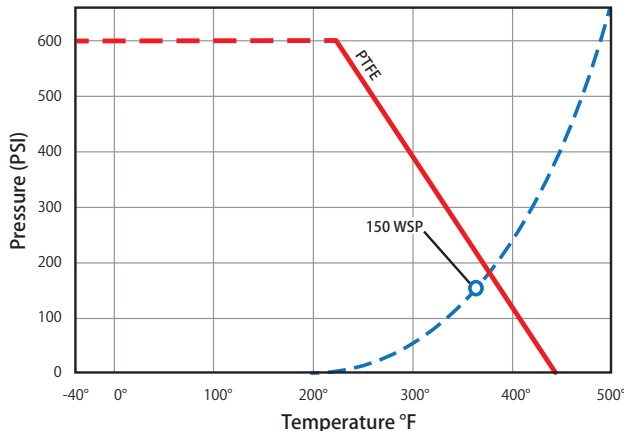
- Gland follower and single o-ring stem design
- Blow-out proof stem
- Latch lock handle
- 100% leak tested

Approvals



- UL Listed up to 175 PSI (1/4" - 2")
 - MHKZ - Manual valves
 - YRPV - Gas shut-off valves
- CSA Certified
 - CGA 3.16 (125 PSIG)
 - ANSI Z21.15 (.5 PSIG)
 - CGA CR91 (5 PSIG)
 - ASME B16.44 (5 PSIG)
 - ASME B16.33 (1/2" - 2")
 - ASME B16.38 (2-1/2" - 3")
- FM Approval (1/4" - 2")
- MSS SP-110
- ANSI B1.20.1

Valve Seat Rating 600 WOG - 150 WSP



Material Specifications

No.	Part	Materials
1	Body	Brass - C37700
2	End Connection	Brass - C37700
3	Ball	Chrome Plated Brass - C37700
4	Seat (2)	PTFE
5	Stem	Brass - C37700
6	Packing	PTFE
7	Stem O-ring	Buna-N
8	Packing Gland	Brass - C37700
9	Handle	Steel - Chrome Plated
10	Handle Nut	Steel - Chrome Plated
11	Lock Washer	Steel - Chrome Plated

Dimensions

Part No.	Size	A	B	C	D
100-101LH	1/4"	1.73	2.63	4.49	0.39
100-102LH	3/8"	1.73	2.63	4.49	0.39
100-103LH	1/2"	2.28	2.69	4.49	0.59
100-104LH	3/4"	2.52	2.91	4.86	0.75
100-105LH	1"	2.97	3.22	4.86	0.98
100-106LH	1-1/4"	3.44	3.45	5.59	1.26
100-107LH	1-1/2"	3.88	3.59	5.59	1.57
100-108LH	2"	4.29	3.97	5.59	1.97
100-109LH	2-1/2"	5.59	4.88	7.35	2.52
100-110LH	3"	6.34	5.25	7.35	2.95
100-111LH	4"	7.83	6.10	8.55	3.90

WARNING: This product can expose you to chemicals including lead, which is known to the State of California to cause cancer, and lead, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

CERTIFICATE OF COMPLIANCE

Certificate Number 20170818-MH15855
Report Reference MH15855-20110908
Issue Date 2017-AUGUST-18

Issued to: JOMAR INTERNATIONAL
7243 MILLER DR
WARREN MI 48092-4746

**This is to certify that
representative samples of**

GAS SHUTOFF VALVES; MANUAL VALVES;
COMPRESSED GAS SHUTOFF VALVES; FLAMMABLE
LIQUID SHUTOFF VALVES; LP-GAS SHUTOFF VALVES
See Addendum

Have been investigated by UL in accordance with the
Standard(s) indicated on this Certificate.

Standard(s) for Safety:

UL 125, Flow Control Valves for Anhydrous Ammonia and
LP-Gas.

UL 1477, Outline of Investigation for Compressed Gas
Shutoff Valves

UL 842, Valves For Flammable Fluids


ULC/ORD-C842-84, Guide for the Investigation of Valves
for Flammable and Combustible Liquids

ULC/ORD-C125-1992, Valves for Anhydrous Ammonia and
Propane (other than Safety Relief).

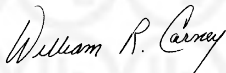
Additional Information:

See the UL Online Certifications Directory at
www.ul.com/database for additional information

Only those products bearing the UL Listing Mark should be considered as being covered by UL's
Listing and Follow-Up Service.

The UL Listing Mark generally includes the following elements: the symbol UL in a circle:  with the
word "LISTED"; a control number (may be alphanumeric) assigned by UL; and the product category
name (product identifier) as indicated in the appropriate UL Directory.

Look for the UL Listing Mark on the product.



William R. Carney, Director, North American Certification Programs

UL LLC

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contact a local UL Customer Service Representative at www.ul.com/contactus

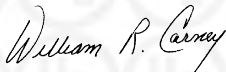


CERTIFICATE OF COMPLIANCE

Certificate Number 20170818-MH15855
Report Reference MH15855-20110908
Issue Date 2017-AUGUST-18

This is to certify that representative samples of the product as specified on this certificate were tested according to the current UL requirements.

Series TXN, TXSSN TXMN and TXSSMN, Models 1/4, 3/8, 1/2, 3/4, 1, 1-1/4, 1-1/2 and 2 in. and TXC and TXSSC Models 1/2, 3/4, 1, 1-1/4, 1-1/2 and 2 in. Models 100-101, 100-102, 100-103, 100-104, 100-105, 100-101LH, 100-102LH, 100-103LH, 100-104LH, 100-105LH, 100-101SSG, 100-102SSG, 100-103SSG, 100-104SSG, 100-105SSG, 100-101SSGLH, 100-102SSGLH, 100-103SSGLH, 100-104SSGLH, 100-105SSGLH, 100-131G, 100-132G, 100-133G, 100-134G, 100-135G, 100-131, 100-132, 100-133, 100-134, 100-135, 100-131TH, 100-132TH, 100-133TH, 100-134TH, 100-135TH, 100-106SSG, 100-107SSG, 100-108SSG, 100-106SSGLH, 100-107SSGLH, 100-108SSGLH, 100-106, 100-107, 100-108, 100-106LH, 100-107LH, 100-108LH, 100-106LH, 100-107LH, 100-108LH, 100-113SSG, 100-114SSG, 100-115SSG, 100-113SSGLH, 100-114SSGLH, 100-115SSGLH, 100-113, 100-114, 100-115, 100-113LH, 100-114LH, 100-115LH, 100-116SSG, 100-117SSG, 100-118SSG, 100-116SSGLH, 100-117SSGLH, 100-118SSGLH, 100-116, 100-117, 100-118, 100-116LH, 100-117LH, 100-118LH, 100-109SSG, 100-110SSG, 100-111SSG, 100-109SSGLH, 100-110SSGLH, 100-111SSGLH, 100-109, 100-110, 100-111, 100-109LH, 100-110LH, 100-111LH, 100-119SSG, 100-120SSG, 100-121SSG, 100-119SSGLH, 100-120SSGLH, 100-121SSGLH, 100-119, 100-120, 100-121, 100-119LH, 100-120LH, 100-121LH.



William R. Carney, Director, North American Certification Programs

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MANOMÈTRE INDUSTRIEL REMPLI DE GLYCÉRINE MODÈLE LFB

Modèle illustré : 250LFB10



Modèle illustré : 251LFB19



Schéma : LFB AU BAS 1,5, 2,5 ou 4 po

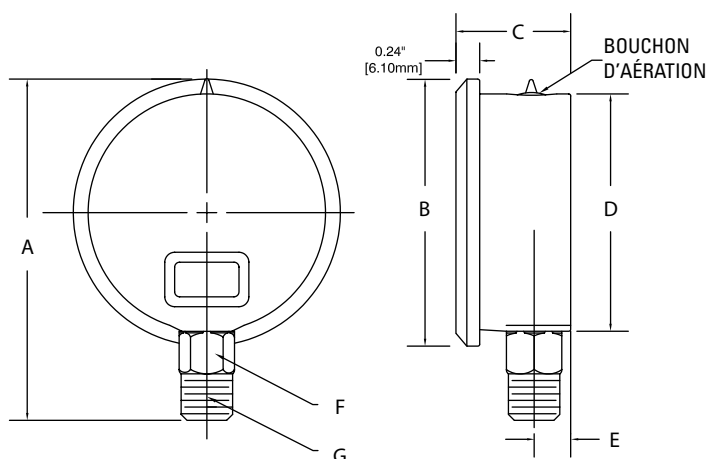
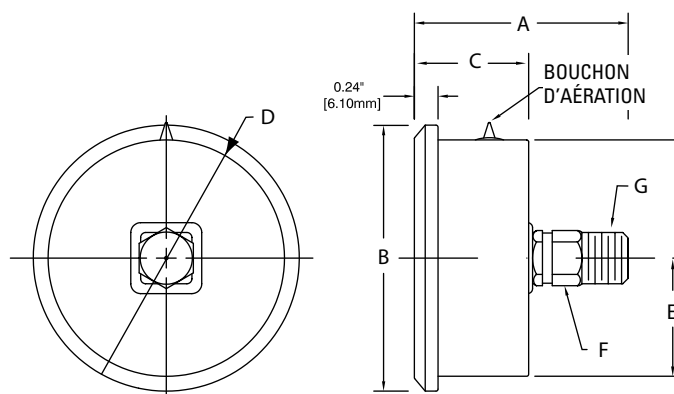


Schéma : LFB CENTRE ARRIÈRE 1,5 et 2,5 po



Spécifications

Boîtier :	Acier inoxydable 304
Cadran :	Aluminium fond blanc avec graduations psi en noir, kPa en bleu
Couvercle :	Acier inoxydable 304, hermétique ou baïonnette pour le modèle BAY
Vitre :	Polycarbonate
Aiguille :	Aluminium, noir anodisé
Raccordement :	1 ½ po (40 mm) ½ po nptm au bas ou centre arrière, 2 ½ po (63 mm) ¼ po nptm au bas ou centre arrière, 4 po (100 mm) ¼ po nptm au bas ou arrière bas
Pièce en contact avec le fluide :	Laiton
Tube bourdon :	Bronze phosphorique
Température maximum du procédé et température ambiante :	-40 à 150°F / -40 à 65°C à sec 32 à 160°F / 0 à 70°C rempli de glycérine
Pression recommandée :	Maximum 75% de la plage totale
Surpression limite :	25% au-dessus de la plage totale
Précision :	ASME B40.100(B40.1), Classe B ±2%

Applications

Manomètre à prix très compétitif à usage multiple: pneumatiques, hydrauliques, plomberies, CVCA, compresseurs, piscines etc.

MANOMÈTRE INDUSTRIEL REMPLI DE GLYCÉRINE (SUITE) MODÈLE LFB

Modèle illustré : 401LFB15



Modèle illustré : 250LFB14-BAY

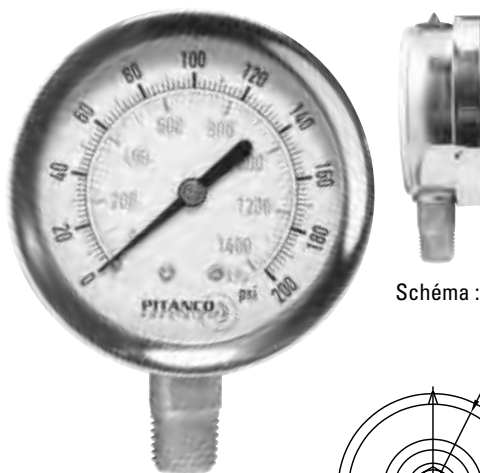


Schéma : 251LFB-BAY CENTRE ARRIÈRE

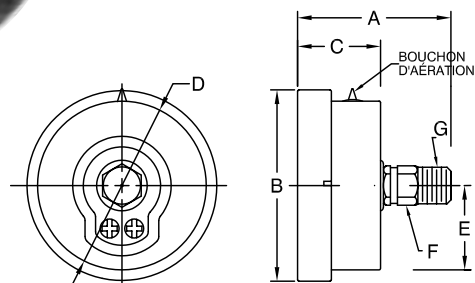


Schéma : LFB BAS ARRIÈRE 4 po

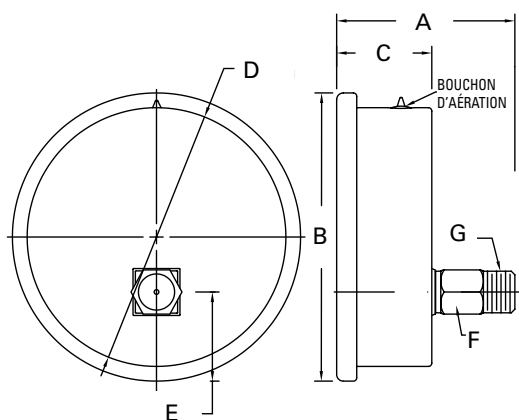
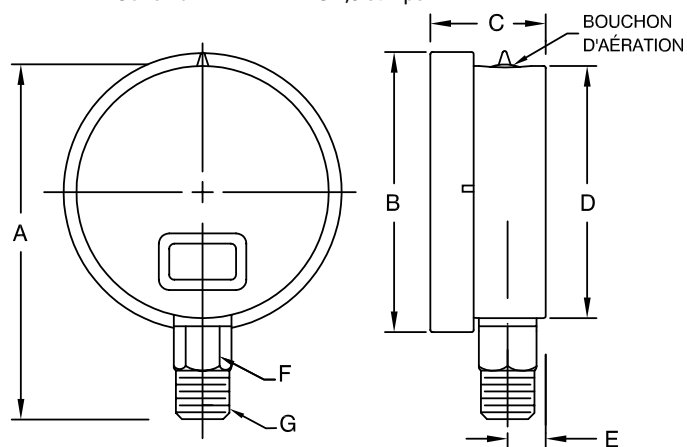


Schéma : LFB-BAY BAS 2,5 et 4 po



Dimensions selon le schéma

Ø	Raccordement	A	B	C	D	E	F	G
1,5 po (40 mm) hermétique	au bas	2,43 po (61,7 mm)	1,84 po (46,7 mm)	1 po (25,4 mm)	1,6 po (40,6 mm)	0,30 po (7,6 mm)	7/16 hex. (11 mm)	1/8 po nptm
	centre arrière	1,75 po (44,5 mm)	1,84 po (46,7 mm)	1 po (25,4 mm)	1,6 po (40,6 mm)	0,8 po (20,3 mm)	7/16 hex. (11 mm)	1/8 po nptm
2,5 po (63 mm) hermétique	au bas	3,45 po (87,6 mm)	2,7 po (68,5 mm)	1,16 po (29,4 mm)	2,4 po (60,9 mm)	0,37 po (9,4 mm)	9/16 hex. (14 mm)	1/4 po nptm
	centre arrière	2,16 po (54,9 mm)	2,7 po (68,5 mm)	1,16 po (29,4 mm)	2,4 po (60,9 mm)	1,2 po (31 mm)	9/16 hex. (14 mm)	1/4 po nptm
2,5 po (63 mm) baïonnette	au bas	3,45 po (87,6 mm)	2,74 po (69 mm)	1,18 po (30 mm)	2,4 po (60,9 mm)	0,37 po (9,4 mm)	9/16 hex. (14 mm)	1/4 po nptm
	centre arrière	2,12 po (54,9 mm)	2,74 po (69 mm)	1,18 po (30 mm)	2,4 po (60,9 mm)	1,22 po (31 mm)	9/16 hex. (14 mm)	1/4 po nptm
4 po (100 mm) hermétique	au bas	5,26 po (133,7 mm)	4,3 po (109,2 mm)	1,42 po (36 mm)	3,86 po (98 mm)	0,50 po (12,7 mm)	11/16 hex. (17 mm)	1/4 po nptm
	"	"	"	"	"	"	"	3/8 bspp
	arrière bas	2,66 po (67,5 mm)	4,3 po (109,2 mm)	1,42 po (36 mm)	3,86 po (98 mm)	1,33 po (33,8 mm)	11/16 hex. (17 mm)	1/4 po nptm
4 po (100 mm) baïonnette	au bas	5,31 po (109,2 mm)	4,3 po (109,2 mm)	1,53 po (38,9 mm)	3,90 po (99 mm)	0,50 po (12,7 mm)	11/16 hex. (17 mm)	1/4 po nptm
	arrière bas	2,66 po (67,5 mm)	4,3 po (109,2 mm)	1,53 po (38,9 mm)	3,90 po (99 mm)	1,33 po (33,8 mm)	11/16 hex. (17 mm)	1/4 po nptm

MANOMÈTRE INDUSTRIEL REMPLI DE GLYCÉRINE (SUITE)

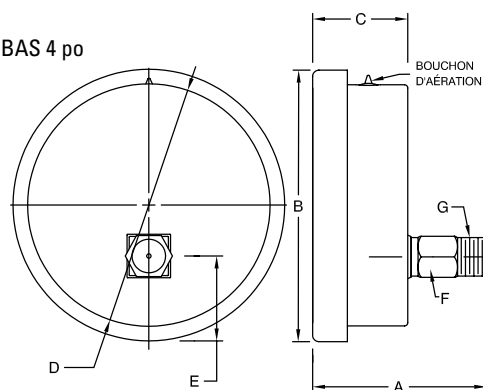
MODÈLE LFB

Pour commander, utiliser le code correspondant à la colonne

Modèle illustré : 401LFB19-BAY



Schéma : LFB ARRIÈRE BAS 4 po



Grandeur	1 1/2 po (40 mm)		2 1/2 po (63 mm)				4 po (100 mm)			
Boîtier	acier inoxydable 304									
Raccordement laiton	1/8 po nptm au bas	1/8 po nptm centre arrière	1/4 po nptm au bas	1/4 po nptm centre arrière	1/4 po nptm au bas	1/4 po nptm centre arrière	1/4 po nptm au bas	1/4 po nptm au bas arrière	1/4 po nptm au bas	1/4 po nptm au bas arrière
Couvercle	hermétique				baïonnette		hermétique		baïonnette	
Plage										
-30 po Hg à 0 vac/kPa	150LFB01	151LFB01	250LFB01	251LFB01	250LFB01-BAY	251LFB01-BAY	400LFB01	401LFB01	400LFB01-BAY	401LFB01-BAY
-30 po Hg à 15 psi/kPa			250LFB02	251LFB02	250LFB02-BAY	251LFB02-BAY	400LFB02	401LFB02		
-30 po Hg à 30 psi/kPa			250LFB03	251LFB03	250LFB03-BAY	251LFB03-BAY	400LFB03	401LFB03		
-30 po Hg à 60 psi/kPa			250LFB04	251LFB04	250LFB04-BAY	251LFB04-BAY	400LFB04	401LFB04		
-30 po Hg à 100 psi/kPa			250LFB05	251LFB05	250LFB05-BAY	251LFB05-BAY	400LFB05	401LFB05		
-30 po Hg à 160 psi/kPa			250LFB06	251LFB06	250LFB06-BAY	251LFB06-BAY	400LFB06	401LFB06		
-30 po Hg à 200 psi/kPa			250LFB07	251LFB07	250LFB07-BAY	251LFB07-BAY	400LFB07	401LFB07		
-30 po Hg à 300 psi/kPa			250LFB08	251LFB08	250LFB08-BAY	251LFB08-BAY	400LFB08	401LFB08		
0 à 15 psi/kPa	150LFB09	151LFB09	250LFB09	251LFB09	250LFB09-BAY	251LFB09-BAY	400LFB09	401LFB09	400LFB09-BAY	401LFB09-BAY
0 à 30 psi/kPa	150LFB10	151LFB10	250LFB10	251LFB10	250LFB10-BAY	251LFB10-BAY	400LFB10	401LFB10	400LFB10-BAY	401LFB10-BAY
0 à 60 psi/kPa	150LFB11	151LFB11	250LFB11	251LFB11	250LFB11-BAY	251LFB11-BAY	400LFB11	401LFB11	400LFB11-BAY	401LFB11-BAY
0 à 100 psi/kPa	150LFB12	151LFB12	250LFB12	251LFB12	250LFB12-BAY	251LFB12-BAY	400LFB12	401LFB12	400LFB12-BAY	401LFB12-BAY
0 à 160 psi/kPa	150LFB13	151LFB13	250LFB13	251LFB13	250LFB13-BAY	251LFB13-BAY	400LFB13	401LFB13	400LFB13-BAY	401LFB13-BAY
0 à 200 psi/kPa	150LFB14	151LFB14	250LFB14	251LFB14	250LFB14-BAY	251LFB14-BAY	400LFB14	401LFB14	400LFB14-BAY	401LFB14-BAY
0 à 300 psi/kPa	150LFB15	151LFB15	250LFB15	251LFB15	250LFB15-BAY	251LFB15-BAY	400LFB15	401LFB15	400LFB15-BAY	401LFB15-BAY
0 à 400 psi/kPa	150LFB23	151LFB23	250LFB23	251LFB23	250LFB23-BAY	251LFB23-BAY	400LFB23	401LFB23	400LFB23-BAY	401LFB23-BAY
0 à 600 psi/kPa	150LFB16	151LFB16	250LFB16	251LFB16	250LFB16-BAY	251LFB16-BAY	400LFB16	401LFB16	400LFB16-BAY	401LFB16-BAY
0 à 1 000 psi/kPa	150LFB17	151LFB17	250LFB17	251LFB17	250LFB17-BAY	251LFB17-BAY	400LFB17	401LFB17	400LFB17-BAY	401LFB17-BAY
0 à 1 500 psi/kPa			250LFB18	251LFB18	250LFB18-BAY	251LFB18-BAY	400LFB18	401LFB18	400LFB18-BAY	401LFB18-BAY
0 à 2 000 psi/kPa	150LFB22	151LFB22	250LFB22	251LFB22	250LFB22-BAY	251LFB22-BAY	400LFB22	401LFB22	400LFB22-BAY	401LFB22-BAY
0 à 3 000 psi/kPa	150LFB19	151LFB19	250LFB19	251LFB19	250LFB19-BAY	251LFB19-BAY	400LFB19	401LFB19	400LFB19-BAY	401LFB19-BAY
0 à 4 000 psi/kPa			250LFB28	251LFB28			400LFB28	401LFB28		
0 à 5 000 psi/kPa			250LFB20	251LFB20	250LFB20-BAY	251LFB20-BAY	400LFB20	401LFB20	400LFB20-BAY	401LFB20-BAY
0 à 6 000 psi/kPa			250LFB25	251LFB25			400LFB25	401LFB25		
0 à 10 000 psi/kPa			250LFB21	251LFB21	250LFB21-BAY	251LFB21-BAY	400LFB21	401LFB21	*400LFB21-BAY-50	*401LFB21-BAY-50
0 à 15 000 psi/kPa			250LFB26	251LFB26			400LFB26	401LFB26		

Option

* Offert avec un raccordement de 1/2 po nptm seulement

MANOMÈTRE INDUSTRIEL REMPLI DE GLYCÉRINE (SUITE)
MODÈLE LFB

Pour commander, utiliser le code correspondant à la colonne

Grandeur	2 1/2 po (63 mm)	
Boîtier	acier inoxydable 304	
Raccordement laiton	1/4 po nptm au bas	1/4 po nptm centre arrière
Couvercle	hermétique	
Plage	bar	
-30 po Hg à 0 vac/bar	250LFB01B	251LFB01B
-30 po Hg à 15 psi/bar		
-30 po Hg à 30 psi/bar		
-30 po Hg à 60 psi/bar		
-30 po Hg à 100 psi/bar		
-30 po Hg à 160 psi/bar		
-30 po Hg à 200 psi/bar		
-30 po Hg à 300 psi/bar		
0 à 15 psi/bar	250LFB09B	251LFB09B
0 à 30 psi/bar	250LFB10B	251LFB10B
0 à 40 psi/bar	250LFB24B	
0 à 60 psi/bar	250LFB11B	251LFB11B
0 à 100 psi/bar	250LFB12B	251LFB12B
0 à 12 bar/psi		251LFB29B
0 à 160 psi/bar	250LFB13B	251LFB13B
0 à 200 psi/bar	250LFB14B	251LFB14B
0 à 300 psi/bar	250LFB15B	251LFB15B
0 à 400 psi/bar	250LFB23B	251LFB23B
0 à 600 psi/bar	250LFB16B	251LFB16B
0 à 1 000 psi/bar	250LFB17B	251LFB17B
0 à 1 500 psi/bar	250LFB18B	251LFB18B
0 à 2 000 psi/bar	250LFB22B	251LFB22B
0 à 3 000 psi/bar	250LFB19B	251LFB19B
0 à 5 000 psi/bar	250LFB20B	251LFB20B
0 à 6 000 psi/bar		
0 à 10 000 psi/bar	250LFB21B	251LFB21B
0 à 15 000 psi/bar		

Grandeur	2 1/2 po (63 mm)	4 po (100 mm)
Boîtier	acier inoxydable 304	
Raccordement laiton	1/4 po bspp au bas	3/8 po bspp au bas
Couvercle	hermétique	
Plage	bar	
0 à 10 bar/psi	250LFB-BSPP10	
0 à 10 bar		400LFB10B-375BSPP
0 à 16 bar/psi	250LFB-BSPP16	
0 à 20 kg/cm ²		400LFB20K-375BSPP
0 à 25 bar/psi	250LFB-BSPP25	
0 à 30 bar		400LFB30B-375BSPP
0 à 40 bar/psi	250LFB-BSPP40	
0 à 50 bar		400LFB50B-375BSPP
0 à 100 bar/psi	250LFB-BSPP100	
0 à 160 bar/psi	250LFB-BSPP160	
0 à 250 bar/psi	250LFB-BSPP250	
0 à 320 bar/psi	250LFB-BSPP320	
0 à 400 bar/psi	250LFB-BSPP400	
0 à 600 bar/psi	250LFB-BSPP600	

Pour psi/Bar, ajouter la lettre « B » à la fin du code
 Pour psi/Kg/cm², ajouter la lettre « K » à la fin du code
 Pour à sec, ajouter la lettre « D » à la fin du code

xmlb010a2s13

pressure switch XMLB 10 bar - adjustable scale 2 thresholds - 1 C/O



Main

Range of product	OsiSense XM
Product or component type	Electromechanical pressure sensor
Pressure sensor type	Electromechanical pressure sensor
Device short name	XMLB
Pressure sensor size	10 bar
Controlled fluid	Air (0...70 °C) Fresh water (0...70 °C) Sea water (0...70 °C) Hydraulic oil (0...70 °C)
Fluid connection type	1/4" NPT (female)
Electrical connection	Screw-clamps terminals 1 x 0.2...2 x 2.5 mm ²
Cable entry	1 entry tapped for 1/2" NPT cable gland, cable outer diameter: 7...13 mm
Contacts type and composition	1 C/O
Product specific application	-
Pressure switch type of operation	Regulation between 2 thresholds
Electrical circuit type	Control circuit
Scale type	Adjustable differential
Local display	With
Adjustable range of switching point on rising pressure	0.7...10 bar
Adjustable range of switching point on falling pressure	0.13...9.15 bar
Possible differential maximum at 7.5 bar high setting	
Maximum permissible accidental pressure	22.5 bar
Destruction pressure	45 bar
Pressure actuator	Diaphragm
Materials in contact with fluid	FPM, FKM Zinc alloy
Enclosure material	Zinc alloy
[In] rated current	3 A, B300, AC-15 (Ue = 120 V) conforming to EN/IEC 60947-5-1 1.5 A, B300, AC-15 (Ue = 240 V) conforming to EN/IEC 60947-5-1 0.1 A, R300, DC-13 (Ue = 250 V) conforming to EN/IEC 60947-5-1

Complementary

Possible differential minimum at low setting	0.57 bar (+/- 0.05 bar)
Possible differential minimum at high setting	0.85 bar (- 0.1 bar, + 0.15 bar)
Maximum permissible pressure - per cycle	12.5 bar
Terminal block type	4 terminals
Operating rate	<= 120 cyc/mn at > 0 °C
Repeat accuracy	< 2 %
[Ui] rated insulation voltage	500 V conforming to EN/IEC 60947-1 300 V conforming to CSA C22-2 No 14 300 V conforming to UL 508
[Uimp] rated impulse withstand voltage	6 kV conforming to EN/IEC 60947-1

The information provided in this documentation contains general descriptions and/or technical characteristics of the products contained herein. This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications. It is the duty of any such user or integrator to perform the appropriate and complete risk analysis, evaluation and testing of the products with respect to the relevant specific application or use thereof. Neither Schneider Electric Industries SAS nor any of its affiliates or subsidiaries shall be responsible or liable for misuse of the information contained herein.

Auxiliary contacts operation	Snap action
Contacts material	Silver contacts
Resistance across terminals	< 25 mOhm conforming to IEC 255-7 category 3 < 25 mOhm conforming to NF C 93-050 method A
Short circuit protection	10 A cartridge fuse type gG (gl)
Mechanical durability	5000000 cycles
Setting	External
Height	75 mm
Depth	113 mm
Width	35 mm
Product weight	0.705 kg

Environment

Standards	CE CSA C22-2 No 14 EN/IEC 60947-5-1 UL 508
Product certifications	BV CCC CSA DNV GL LROS (Lloyds register of shipping) RINA UL VIT-SEPRO
Protective treatment	TC
Ambient air temperature for operation	-25...70 °C
Ambient air temperature for storage	-40...70 °C
Operating position	Any position
Vibration resistance	4 gn (f = 30...500 Hz) conforming to IEC 68-2-6
Shock resistance	50 gn conforming to IEC 68-2-27
Class of protection against electric shock	Class I conforming to IEC 1140 Class I conforming to IEC 536 Class I conforming to NF C 20-030
IP degree of protection	IP66 conforming to EN/IEC 60529

Offer Sustainability

Sustainable offer status	Green Premium product
RoHS	Compliant - since 0928 - Schneider Electric declaration of conformity
REACH	Reference not containing SVHC above the threshold
Product environmental profile	Available
Product end of life instructions	Need no specific recycling operations



Main

Range of product	OsiSense ATEX D
Pressure sensor type	Electromechanical pressure sensor
Product specific application	ATEX D
Pressure sensor name	XMLB
Electrical circuit type	Control circuit
Pressure switch type of operation	Regulation between 2 thresholds
Scale type	Adjustable differential
Pressure sensor size	35 Bar
Local display	With
Fluid connection type	G 1/4 (female) conforming to ISO 228
Adjustable range of switching point on falling pressure	1.8...32.45 Bar
Adjustable range of switching point on rising pressure	3.5...35 Bar
Possible differential maximum at high setting	20 Bar
Maximum permissible accidental pressure	80 Bar
Destruction pressure	160 Bar
Pressure actuator	Diaphragm
Controlled fluid	Water (0...70 °C) Hydraulic oil (0...70 °C) Air (0...70 °C)
Materials in contact with fluid	Zinc alloy Nitrile
Enclosure material	Zinc alloy

Complementary

Maximum permissible pressure - per cycle	45 Bar
Cable entry number	1 tapped entry for M20 x 1.5 cable gland (included)
Terminal block type	4 terminals
Repeat accuracy	2 %
Auxiliary contacts operation	Snap action
Contacts material	Silver contacts
Mechanical durability	5000000 Cycles
Setting	External
Terminals description ISO n°1	(13-14-11-12)OF
Height	113 Mm
Depth	75 Mm
Width	35 Mm

Environment

Standards	EN/IEC 60079-0 EN/IEC 60079-31
Directives	2014/34/EU - ATEX directive
Product certifications	INERIS 04ATEX0058 IEC-Ex INE 17.0019
Marking	II2 D-Ex tb IIIC T85°C Db IP66
Protective treatment	TC
Ambient air temperature for operation	-20...60 °C
Operating position	Any position

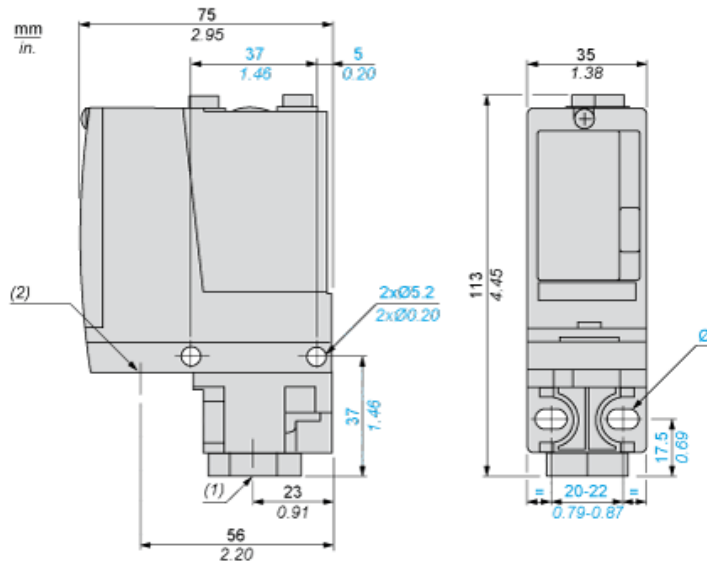
Offer Sustainability

Sustainable offer status	Green Premium product
REACH Regulation	REACH Declaration
EU RoHS Directive	Pro-active compliance (Product out of EU RoHS legal scope) EU RoHS Declaration
Mercury free	Yes
RoHS exemption information	Yes
Environmental Disclosure	Product Environmental Profile
Circularity Profile	No need of specific recycling operations

Contractual warranty

Warranty	18 months
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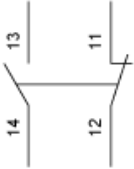
Dimensions



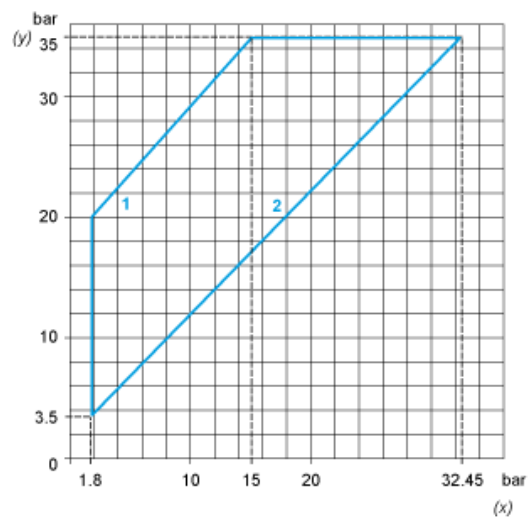
- (1) 1 fluid entry, tapped G1/4 (BSP female)
- (2) 1 electrical connections entry, tapped M20 x 1.5
- Ø : 2 elongated holes Ø 5.2 x 6.7

Wiring Diagram

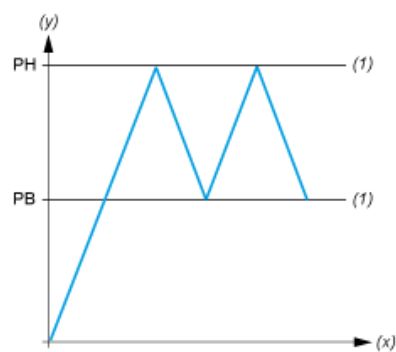
Terminal Model



Operating Curves



- (y) Rising pressure
- (x) Falling pressure
- 1 : Maximum differential
- 2 : Minimum differential

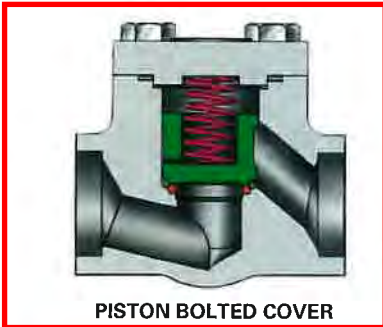


- (y) Pressure
- (x) Time
- (1) Adjustable value
- PH : High point
- PB : Below point

VELAN FORGED STEEL CHECK VALVES

CONVENTIONAL PORT OPENING, PISTON, BALL OR SWING

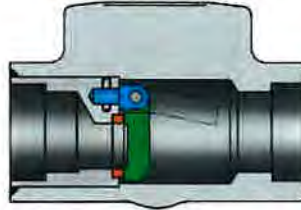
NPS ¼–2 (DN 8–50), ASME CLASSES 800, 1500
 THREADED OR SOCKET WELD FLANGED ASME CLASSES 150, 300, 600, 1500



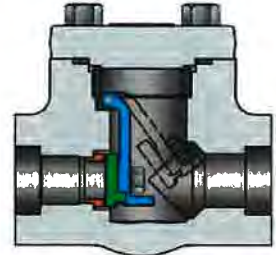
PISTON BOLTED COVER



BALL TYPE BOLTED COVER



COVERLESS SWING CHECK



SWING CHECK BOLTED COVER

SPECIFICATIONS

Type	Bolted cover	Coverless
Piston check	034B	—
Ball check	024B	—
Swing check	114B	114W

For other materials, trims, and engineering data, see pages 23–35.

PART	STANDARD MATERIALS
Body	A105
Cover	A105
Seat, integral	CoCr alloy
Disc ⁽⁴⁾	CA15HT or CoCr alloy ⁽⁶⁾
Ball ⁽¹⁾	Gr. 440C
Spring ⁽⁵⁾	Gr. 302
Cap screw ⁽³⁾	Gr. B7
Gasket ⁽³⁾	Gr. 304 (stainless and graphite)
Swing holder ⁽²⁾	CA15HT
Swing pin ⁽²⁾	Gr. 410

BOLTED COVER PISTON, BALL, AND SWING CHECK DIMENSIONS AND WEIGHTS

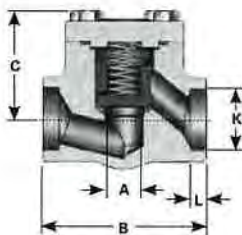
(1) Ball type only (2) Swing type only (3) Bolted bonnet only
 (4) Piston or swing type only (5) Piston or ball type only
 (6) Bolted bonnet swing check disc CoCr alloy Gr. 6 only.

Size NPS DN	A Port				B End-to-end				C Center-to-top, bolts				K Socket weld	L Socket weld	Weight lb/kg				Flanged Face-to-face			
	Piston & ball		Swing check		Piston & ball		Swing check		Piston & ball		Swing check		Piston, ball & swing check		Piston and ball		Swing check ⁽³⁾		Piston, ball & swing check			
	800	1500	800	1500	800	1500	800	1500	800	1500	800	1500	Bore	Depth	800	1500	800	1500	150 ⁽²⁾	300	600	1500
¼ 8	0.36 9.2	0.50 12.7	—	—	3.13 80	4.00 102	—	—	1.90 48	2.70 68	—	—	0.555 14.1	0.38 9.5	2.5 6.6	6.6 3.0	—	—	4.00 102	—	—	—
¾ 10	0.36 9.2	0.50 12.7	—	—	3.13 80	4.00 102	—	—	1.90 48	2.70 68	—	—	0.690 17.5	0.38 9.5	2.5 6.6	6.6 3.0	—	—	4.00 102	—	—	—
½ 15	0.36 9.2	0.50 12.7	0.50 12.7	0.50 12.7	3.13 80	4.00 102	3.50 89	6.00 152	1.90 48	2.70 68	2.50 64	3.70 94	0.855 21.7	0.38 9.5	2.5 6.6	6.6 3.0	4.6 2.1	4.4 2.0	4.25 108	6.00 152	6.50 165	8.50 216
¾ 20	0.50 12.7	0.50 12.7	0.50 12.7	0.50 12.7	3.25 83	5.00 127	3.50 89	8.00 152	2.30 58	2.90 74	2.50 64	3.70 94	1.085 27.1	0.50 12.7	3.9 1.8	6.8 3.0	4.8 2.1	6.6 3.0	4.82 117	7.00 178	7.50 191	9.00 229
1 25	0.75 19.1	0.75 19.1	0.75 19.1	0.75 19.1	3.50 89	6.00 152	5.00 127	6.00 152	2.60 66	3.50 89	3.50 89	3.70 94	1.330 33.8	0.50 12.7	4.8 2.2	17 8	12 5.4	12 5.4	5.00 127	8.50 216	8.50 216	10.00 254
1¼ 32	1.25 31.8	1.25 31.8	1.25 31.8	1.25 31.8	5.00 127	7.00 178	5.25 133	7.00 178	3.70 94	4.20 107	3.40 86	3.70 94	1.675 42.5	0.50 12.7	13 5.9	26 12	15 7	19 9	5.50 140	9.00 229	9.00 229	11.00 279
1½ 40	1.25 31.8	1.25 31.8	1.25 31.8	1.25 31.8	5.00 127	7.00 178	5.25 133	7.00 178	3.70 94	4.20 107	3.40 86	4.20 107	1.915 48.6	0.50 12.7	11 5.0	26 12	15 7	19 9	6.50 165	9.50 241	9.50 241	12.00 305
2 50	1.50 38.1	1.50 38.1	1.50 38.1	1.50 38.1	8.00 203	9.00 229	6.00 152	9.00 229	4.80 122	5.40 137	4.30 109	5.20 132	2.406 61.1	0.63 15.9	22 10.0	41 19	21 12	26 12	8.00 203	10.50 267	11.50 292	14.50 368

CLASS 800 1975 psi @ 100°F
 CLASS 1500 3705 psi @ 100°F

COVERLESS SWING CHECK DIMENSIONS AND WEIGHTS (CLASS 800)

- (1) For swing check valves Classes 300, 600 and 1500 face-to-face dimensions are the same as for piston and ball check valves, for Class 150 swing check valves contact the factory.
 (2) Standard face-to-face for welded flange only.
 (3) Welded cover also available.



Size NPS/DN	A Port	B End-to-end	C Center-to-top, body	K Socket weld bore	L Socket weld	Weight lb/kg
¼ 8	0.50 13	3.25 83	1.65 42	0.555 14.1	0.38 9.5	3.5 1.6
¾ 10	0.50 13	3.25 83	1.65 42	0.690 17.5	0.38 9.5	3.5 1.6
½ 15	0.50 13	3.25 83	1.65 42	0.855 21.7	0.38 9.5	3.5 1.6
¾ 20	0.50 13	3.25 83	1.65 42	1.065 27.1	0.50 12.7	3.5 1.6
1 25	0.75 19	3.50 89	1.70 43	1.330 33.8	0.50 12.7	3.0 1.4
1¼ 32	1.25 32	5.00 127	2.56 65	1.675 42.5	0.50 12.7	11.0 5.0
1½ 40	1.25 32	5.00 127	2.56 65	1.915 48.6	0.50 12.7	11.0 5.0
2 50	1.50 38	5.25 133	2.56 65	2.406 61.1	0.63 15.9	10 4.5

HOW TO ORDER

Type of connection	Size of connection	Pressure rating	Valve type	Body/bonnet style	Body material	Trim material
A	B	C	D	E	F	G
F	0 8	— 2	0 7	4 B	— 1 3	M S

Example: is a NPS 2 (DN 50) 600 Class stainless steel bolted bonnet globe valve with MS trim.

A TYPE OF CONNECTION			
B Butt weld	S Thread NPT		
C Combination (socket weld/threaded)	U Undrilled flanges		
F Flanged B16.5 (B16.47 series A)	W Socket weld		
R Flanged ring joint	X Butt weld (intermediate class)		

B SIZE OF CONNECTION			
Customers have the choice of specifying valve size as part of the valve figure number (B) using the numbers below, or indicating valve size separately. Sizes shown in NPS (DN)			
EXAMPLES:			
F08-2054B-13MS (valve size is part of figure number)			
2F-2054B-13MS (valve size is shown separately)			
01 ¼ (8)	04 ¾ (20)	07 1½ (40)	10 3 (80)
02 ⅜ (10)	05 1 (25)	08 2 (50)	11 3½ (90)
03 ½ (15)	06 1¼ (32)	09 2½ (65)	12 4 (100)

C PRESSURE RATING			
0 150	4 2500	8 1690	
1 300	5 4500	9 2680	
2 600 or 800 API 602	6 400		
3 1500	7 900		

D VALVE TYPE			
01 Flow control	11 Swing check		
02 Ball check	14 Parallel slide		
03 Piston check	15 Instrument		
05 Conventional port gate	17 IREB gate		
06 Full port gate	18 Extended body gate		
07 Stop globe	21 Boiler blowoff		
08 Stop check	22 Pressure relief		
09 Needle	23 Double disc gate		
10 Continuous blowdown	34 Tilting disc check valve		

E BODY/BONNET STYLE			
4 Vertical	B Bolted bonnet (forced)		
5 Angle	D Diaphragm		
6 Inclined y-pattern	E Extended bonnet (cryogenic)		
7 Inclined y-pattern bonnetless 45°	R Forged bolted bonnet bellows seal		
8 Elbow down	S Y-pattern bellows seal (non-rotating stem)		
	T All welded bellows seal		
	W Welded bonnet		
	Y Bonnetless (rotating stem)		
	Z Bonnetless (non-rotating stem)		

Note: Velan valves for **NACE** service (as indicated by figure number and/or description) comply with the metallurgical requirements of the current NACE MR0103 and MR0175 / ISO 15156. Material selection is dependent on the actual environment and it is therefore the equipment End User's responsibility to ensure that the materials are suitable for the intended service. Please contact Velan for any questions regarding the application of our products for NACE service.

F BODY MATERIAL			
02 A105	15 S/S F347	25 LCB	
04 CHR. MOLY F5	16 S/S F304H	26 LF2	
05 CHR. MOLY F11	18 S/S F321	27 LF3/LC3	
06 CHR. MOLY F22	19 Monel M35	31 LCC	
09 CHR. MOLY F9	20 Inconel 625 ⁽¹⁾	32 S/S F51	
10 S/S F316H ⁽²⁾⁽⁴⁾	21 Hastelloy C ⁽¹⁾	34 F91	
11 S/S F304	22 Titanium Gr. 5	35 S/S F44 (254SMO)	
12 S/S F304L	23 Alloy 20 (CN7M)	36 S/S F321H	
13 S/S F316 ⁽³⁾⁽⁴⁾	24 LF1	37 Incoloy 825 ⁽¹⁾	
14 S/S F316L ⁽⁴⁾			

- (1) Must specify grade
- (2) Material Code "10" (F316H) has a minimum carbon content of 0.04% must be used when temperatures are above 1000°F (538°C).
- (3) Material Code "13" (F316) is not suitable for temperatures above 1000°F (538°C).
- (4) Material Codes "10" (F316H), "13" (F316), and "14" (F316L) are dual certified. If dual certification is required, F316 should be procured with a note that the valves should be dual certified with F316L. If this is specified on the order, then the MTR will state that the F316 valve will meet the chemical and mechanical properties of Dual Certified F316L.

G TRIM (standard trims)					
Code	Wedge/disc surface ⁽¹⁾	Seat surface ⁽¹⁾	Stem	Bellows ⁽²⁾ (if applicable)	API Number
MS	CoCr alloy ⁽³⁾	CoCr alloy ⁽³⁾	316/316L	321	
MY	CF8M or 316	CoCr alloy ⁽³⁾	316/316L	321	12
TS	CoCr alloy ⁽³⁾	CoCr alloy ⁽³⁾	13 CR (410)	321	5
TY	13 CR (410 or CA15)	CoCr alloy ⁽³⁾	13 CR (410)	321	8
NA	13 CR (410 or CA15) HRC 22 max.	CoCr alloy ⁽³⁾	13 CR 410 HRC 22 max.		8 ⁽⁵⁾
NB	CF8M or 316	CoCr alloy ⁽³⁾	316/316L	321	12 ⁽⁵⁾
NC	Monel	CoCr alloy ⁽³⁾	Monel	Hastelloy C	11 ⁽⁵⁾
NE	CoCr alloy ⁽³⁾	CoCr alloy ⁽³⁾	13 CR 410 HRC 22 max.	Inconel 625	5 ⁽⁵⁾
NF	CoCr alloy ⁽³⁾	CoCr alloy ⁽³⁾	Same as body		
AS	CoCr alloy ⁽³⁾	CoCr alloy ⁽³⁾	321	321	
CS	Alloy 20	CoCr alloy ⁽³⁾	Alloy 20		
HC	Hastelloy C	CoCr alloy ⁽³⁾	Hastelloy C	Hastelloy C	
HM	HF-acid trim	HF-acid trim	HF-acid trim		
MC	CF8M or 316 with CTFE insert ⁽⁴⁾	CoCr alloy ⁽³⁾	316		
PA	NOREM	NOREM	630	Inconel 625	
US	CoCr alloy ⁽³⁾	CoCr alloy ⁽³⁾	S/S 616HT		
UY	13 CR (410 or CA15)	CoCr alloy ⁽³⁾	S/S 616HT		
XX	Monel	Monel	Monel		9
XY	Monel	CoCr alloy ⁽³⁾	Monel		11

- (1) Base material is either the same as the body or solid trim at manufacturer's option.
- (2) Bellows material shown as standard, Inconel can be used in lieu of 321 and Hastelloy C in lieu of Inconel, where design and/or pressure class applicable.
- (3) CoCr alloy (Grade 6 or 21) based on material or application at manufacturer's option.
- (4) Inserts may be in seat or wedge at manufacturer's option.
- (5) NACE service valves are supplied with all materials conforming to NACE MR0175. (Including bolting with max. hardness of RC22).

Note: CoCr alloy as used throughout this catalog refers to cobalt chrome hardfacing alloys as supplied by Kennametal Stellite™, and other approved manufacturers.

Consult Velan's website at www.velan.com, for diagnostic troubleshooting and available trim materials.

6.2 Annex B Installation manuals - Annexe B Manuels d'installation



ALBANY

CAST IRON POSITIVE DISPLACEMENT HELICAL GEAR PUMPS

GENERAL INSTRUCTIONS

INDEX

SECTION 1 — Pages 1 and 2

PRINCIPAL OF OPERATION • MOUNTING BASES •
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ROTATION WITH RELIEF VALVE

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TEMPERATURE • STARTING

SECTION 4 — Page 4

GENERAL MAINTENANCE • STUFFING BOXES

SECTION 5 — Page 5

CLOSE COUPLED MODELS

INSTALLATION, OPERATION, REPAIR AND MAINTENANCE INSTRUCTIONS

SECTION I – INSTALLATION

PRINCIPAL OF OPERATION —

All Albany Gear pumps are of the positive displacement type. A definite amount of liquid is displaced with each revolution of the pump. The displacement capacity will vary directly with the pump speed within specified limitations. These pumps will produce a discharge pressure equivalent to the conditions of the particular installation. If these conditions are in excess of the design capability of the pump, the discharge pressure may rise to a point where the pump will be damaged and/or the driver overloaded.

INSPECTION — Upon receipt of any pump or pump unit check carefully for possible damage or shortages. Be sure that the shaft has not been bent or damaged. Rotate the pump by hand to be sure it is free and without tight spots. If the pump is to be stored, it should be kept in a dry location and those parts subject to rust should be protected with a suitable coating.

MOUNTING BASES — Pump units should be mounted on either a concrete or metal foundation of sufficient weight and strength to properly support the entire pump unit. It should be located as close to the liquid source as is practical, while allowing for accessibility for normal pump maintenance. The foundation should be made flat and smooth to ensure correct alignment of the pump. Provisions should be made to bolt the unit securely in place.

Do not locate the pump unit in a pit unless provisions have been made for proper drainage and ventilation.

ALIGNMENT: Correct alignment is absolutely essential for satisfactory pump life. Complete pump units are set and aligned at the factory on a flat surface plate and shims are inserted where necessary to provide perfect alignment. However, all baseplates are somewhat elastic and as a result we cannot assume responsibility for mechanical operation unless the shop alignment is reproduced when the unit is secured to its foundation. Since no foundation is perfectly flat or level, it is therefore necessary to shim the baseplate until the pump and motor shafts are level and parallel.

The setting of pump units which incorporate V-belt drives is not as critical as with those units which are direct connected. However, it is important to ensure that the pump and motor shafts are parallel and in line. Recheck the alignment after the piping has been connected to the pump.

After the unit has been completely set and piped, check that the pump rotates freely by hand before activating the driver.

When pumps only are supplied for field mounting, it is important that the proper alignment between pump and driver is maintained. The baseplate should be secured to a flat surface plate and the driver and pump set so that the shafts are level and parallel.

The use of a flexible coupling will not compensate for poor

MOUNTING BASES (CONT'D)

alignment. **PARALLEL ALIGNMENT** can be determined by use of a straight edge across the rim of both coupling halves at four positions ninety degrees apart. Couplings aligned in this manner should be true to within .005" at any position. **ANGULAR ALIGNMENT** can be checked by gauging the coupling gap at several points. (See Fig. # 1, page 1.)

NEVER exert pressure or force on the exposed pump drive shaft end. **NEVER** force a coupling or pulley on the pump shaft by pounding or pressing. Damage can result to internal parts. Seal components and retaining rings can be forced out of normal operating positions. Malfunctioning and seal leakage can result.

It is particularly important that pumps driven through a flexible coupling be mounted in such a manner as to ensure sufficient gap between the coupling components to allow for any end play in the driver.

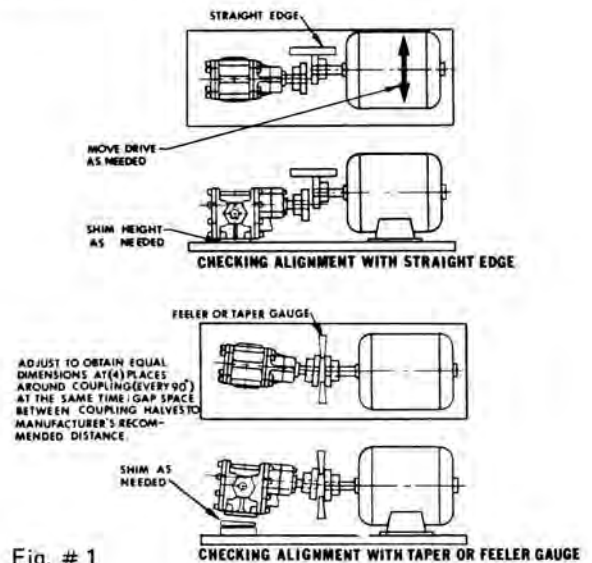


Fig. # 1

SUCTION PIPING —

Albany Gear pumps are capable of operating up to 25 ft. suction lift based on fuel oil 70°F. If the static lift plus pipe friction losses combine to exceed this figure, pump operation will be erratic or no pumping at all will be realized.

The most desirable pump installations are those with the shortest suction lines. It is therefore important to locate the pump as close to the liquid source as is practical. Suction piping should never be less in diameter than the pump suction opening. When handling thick liquids with appreciable viscosity, the suction pipe should be increased to a greater size than the pump opening.

It is particularly important that the suction line be air tight. Use a good pipe joint compound or tape at all joints. If the suction line is not tight and air is allowed to enter the pump capacity will be noticeably reduced or it may not pump at all.

SUCTION PIPING (CONT'D)

Be sure that the suction line is completely clean and free of any foreign matter. Avoid high spots in piping which will tend to trap air. It is good practice to install either a foot valve or check valve in the suction line to ensure that the pump will prime quickly when started.

When handling highly volatile liquids, it is necessary to reduce the suction lift to a point where vaporization will not occur. In some instances a positive suction head will be required. **THE PUMPING OF LIQUIFIED PETROLEUM (PROPANE, BUTANE) IS NOT RECOMMENDED.**

SUCTION STRAINERS — Gear pumps are designed and fitted with very close internal clearances. The entry of foreign material or abrasives will cause rapid wear or extensive damage to the pump. It is therefore necessary to install a strainer at the pump suction.

Select a strainer of proper size with as fine a mesh as is practical, being careful that the pressure drop through the strainer will not add to the suction lift to exceed the suction capability of the pump. Install the strainer as near the pump suction as is practical and in such a manner that it can be easily opened and cleaned. Be sure to arrange a regular inspection on the strainer basket to avoid clogging.

DISCHARGE — Select pipe of sufficient size to ensure that the resulting friction loss does not add to the discharge head an amount that will exceed the design capability of the pump or motor. It is advisable to install a fitting in the discharge line adjacent to the pump to allow for priming or venting and installation of a pressure gage for both system and pump performance evaluation. To avoid excessive pressure build-up due to a closed or blocked discharge line, or due to an increase in liquid viscosity, it is often necessary to install a relief valve in the pumping system.

ALL Albany Gear pumps are available with an optional integral relief valve built onto the pump. However, it is sometimes more desirable that the relief valve be installed in the discharge piping and piped back to the source of supply. Heat is better dissipated over large surface areas. The relief valve should be set at a pressure of approximately 10 P.S.I. in excess of the designed operating pressure, but not so high as to overload the drive or the pump itself.

PRODUCT CONTAMINATION — All pumps are assembled and tested using a suitable grade of machinery oil. Unless specified this oil is left in the pump during shipment to protect against corrosion and to ensure some lubrication during start up. If this oil will be detrimental to the system it will be necessary to dismantle the pump and clean all parts thoroughly. Before starting, be sure to fill the pump with a compatible liquid.

SECTION II — OPERATION

PRIMING — Before starting the pump make sure that it is thoroughly primed. If at all possible, use a good grade of light lubricating oil. Failure to properly prime the pump could cause immediate damage to the working parts.

RELIEF VALVE ADJUSTMENT — Optional relief valves furnished with pumps are not pre-set at the factory and must therefore be set to the required pressure on the job. Before starting the pump, adjust the integral or in-line relief valve so that it is set at its lowest pressure. This is done by removing the bonnet or cap nut and rotating the adjusting screw counter-clockwise until it is completely off the spring.

LUBRICATION — The internal bearings in all Albany Gear pumps are either lubricated by the liquid being pumped or are self-lubricating. Outboard shaft bearings are sealed and greased for life. Therefore, lubrication is not required for the pump itself. Motor or driver bearings should be lubricated as covered by the manufacturer's instructions.

DIRECTION OF ROTATION — Standard direction of rotation is clockwise when facing shaft end of pump. When rotated in this manner the pump must be installed so that the suction line is connected to the port on the left hand side of the pump. If the right hand port is to be the inlet or suction, the rotation must be counter clockwise when facing the pump from the shaft end.

When this is done the rear cover must be rotated 180° to ensure proper lubrication of bearings. Be sure the rear cover is positioned to correspond with arrows indicating in and out. Albany Gear pumps are designed to operate in either direction of rotation. See Diagram Fig. # 2.

The relief valve adjusting screw must always be located adjacent to the pump inlet port. When changing the direction of rotation it will be necessary to change the position of the integral relief valve. Be sure that the relief valve cover is set to correspond with arrows indicating in and out. Failure to ensure the proper position will render the valve useless. The relocation of the valve cover is accomplished by rotating the complete relief valve pump cover 180°.

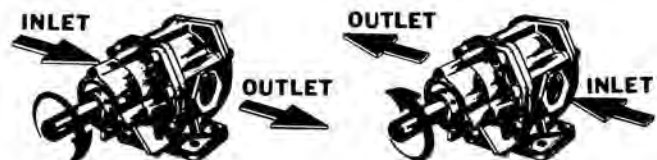


Fig. # 2.

SECTION III – REPAIR

DISASSEMBLING PUMP – Repair kits are available for all Albany Gear pump models. Each repair kit includes replacement gaskets, seal, gears, shafts and bearings. Remove rear cover. Using fingers or hook tool, remove rear bearings. Slide out idler gear assembly. Grasp drive gear, slide off drive shaft and carefully remove key from shaft.

Remove 3 screws from bearing retainer and pull shaft assembly from pump.

Remove screws from front cover. Remove cover by light tapping; to ease off dowel pins, while pulling from body. Front bearings can now be removed.

Loosen 2 set screws in outboard bearing and slide retainer off shaft.

For 03 Models only: Remove snap ring from shaft in front of outboard bearing and push shaft through retainer pushing out wearface and seal seat at same time. Remove snap ring from shaft behind bearing.

To remove rotating seal head from shaft it is necessary to protect the rubber bellows from grooves and keyway. This can be accomplished by covering them with scotch tape. Lubricate shaft and slide seal head off shaft.

To remove wearface and seal seat, remove snap ring from outboard bearing. Pull out bearing and then push out wearface and seal seat.

Replace any parts where wear is evident before re-assembling pump.

RE-ASSEMBLING PUMP – Carefully clean all parts and lubricate lightly. Make sure pump body faces are clean and free of nicks or scratches. If new bearings are used try in body and on shafts before re-assembling pump.

Insert front bearings. Replace gasket, install front cover using dowel pins for alignment. Tighten eight screws finger tight. Slide rotating seal head on shaft using caution not to cut rubber bellows or scratch seal wearfaces until spring washer is against snap ring. Press wearface and seal seat in bearing retainer; taking care not to nick the seal seat, and make sure wearface is seated squarely on back face. Press sealed ball bearing in retainer and inset snap ring. Slide this assembly over shaft after cleaning and lubricating seal faces. Remove one set screw from ball bearing, push retainer until screw hole lines up with locking groove on shaft and tighten other set screw. Insert other screw and tighten both set screws until allen wrench flexes approximately 15°.

For 03 Models only: After installing front cover as previously, slide rotating seal head on shaft using caution not to cut rubber bellows or scratch seal wearfaces until spring washer is against snap ring. Press wearface and seal seat in bearing retainer taking care not to nick the seal seat, and make sure

RE-ASSEMBLING PUMP (CONT'D)

the wearface is seated squarely on its back face. Slide bearing retainer on shaft and place middle snap ring on shaft. Push ball bearing on shaft and press into retainer until snap ring can be inserted to hold bearing in retainer. NOW place outer snap ring on shaft to complete retainer, seal and shaft assembly.

Insert retainer, seal and shaft assembly in front cover making sure drain hole is pointing down and replace screws.

Insert key in drive shaft and slide drive gear against front bearing. Insert idler gear assembly and insert rear bearings. Replace gasket and rear cover. Tighten all screws while rotating drive shaft by hand.

REPAIR

DISASSEMBLING PUMP – Repair kits are available for all Albany Gear pump models. Each repair kit includes replacement gaskets, seal, gears, shafts and bearings. Remove rear cover. Using fingers or hook tool, remove rear bearings. Slide out idler gear assembly.

Remove screws from seal retainer and remove seal retainer from pump.

IMPORTANT -

Do not remove screws fastening front cover to body - keep pump body and front cover assembly together as a unit in order to preserve relative positions and alignment. In the event body and front cover are separated, it will be necessary to tap body and cover lightly at pump reassembly while tightening screws in order to insure alignment and free turning.

Remove drive shaft and gear assembly from cover and body assembly by pushing on drive shaft end while supporting on body flange.

For pumps equipped with mechanical seals and lip seals, it is necessary to protect the rubber lip or bellows from shaft grooves and keyway. This can be accomplished by covering them with scotch tape. Lubricate shaft before pushing drive shaft and gear assembly from cover.

To remove wearface and seal seat, push out wearface and seal seat from seal retainer.

Replace any parts where wear is evident before re-assembling pump.

RE-ASSEMBLING PUMP – Carefully clean all parts and lubricate lightly. Make sure pump body faces are clean and free of nicks or scratches. If new bearings are used try in body and on shafts before re-assembling pump.

Place internal pump parts into front cover and body unit. Suggested sequence includes front bearings, drive and idle gear assemblies, and rear bearings.

RE-ASSEMBLING PUMP (CONT'D)

Replace gasket and install rear cover to body.

Tighten body to cover screws while tapping lightly to insure alignment and free turning.

For mechanical seals, install seal retaining ring, (snap ring) on shaft. Slide rotating seal head on shaft using caution not to cut rubber bellows or scratch seal wearfaces until spring washer is against snap ring (seal retaining ring). Press wearface and seal seat in seal retainer; taking care not to nick the seal seat, and make sure wearface is seated squarely on back face. Slide this assembly over shaft after cleaning and lubricating seal faces. Fasten seal retainer to pump cover making sure gasket or "O" ring is in place.

For lip seals, pryout old lip seal from lip seal retainer. Remove lip seal spacer and discard. Press new lip seal into lip seal retainer until bottomed in its chamber. *NOTE:* By bottoming the new lip seal it assumes the position previously occupied by the discarded spacer presenting a new and unblemished shaft surface for the new lip seal to ride on. (See Fig. # 3.)

Slide the lip seal and retainer onto the shaft using caution not to cut or gouge the seal lip. Use tape to protect against sharp shaft groove and keyslot edges by wrapping around the shaft and lubricate prior to lip seal retainer insertion. Fasten the lip seal retainer to the pump cover making sure the gasket or "O" ring is in place.

OPERATING TEMPERATURE — Standard pumps when fitted with a mechanical seal or lip seal are limited to a maximum temperature of 175°F. Pumps fitted with standard packing are suitable for temperatures to 250°F. Albany Gear pumps, when specified can be specially fitted for temperatures to 400°F. When handling products with temperatures in excess of 200°F, care should be taken to avoid sudden temperature shock by introduction of high temperature to a cold pump or reverse. It is advisable to bring the temperature up gradually.

STARTING — Never start or run the pump dry. This will inevitably cause galling or seizing of the internal parts. Always prime the pump with a clean, light lubricating oil or with liquid to be pumped.

Before starting, rotate the pump by hand. It should rotate freely without tight spots. Check that all suction and discharge valves are open and that any relief valves have been "backed off". After priming, start the driver and allow pump to operate at a reduced load while observing for unreasonable noise, heat or vibration. Check to be sure pump is delivering liquid. If not, shutdown immediately and review foregoing instructions.

Gradually bring pump up to operating pressure by tightening relief valve adjustment until the pressure gauge indicates that the system design pressure has been reached. Again check pump for excessive noise, heat or vibration. Check that the pump is delivering the required capacity and that the vacuum is not in excess of design conditions. If it is determined that the pump is meeting the required conditions, it is important to check that the driver is not overloaded. Be sure that the overload protection for electric motor is properly sized. Check that the electric motor is operating within the nameplate amperage limitation.

SECTION IV – MAINTENANCE

GENERAL — Standard Albany Gear pumps are designed to be lubricated by the liquid being pumped and therefore do not require lubrication maintenance. Pumps to handle liquids with little or no lubrication quality should be fitted with self-lubricating carbon bearings. Ball bearings are sealed and lubricated for life.

Lubrication for reduction gear drives and electric motors should be maintained as specified in the manufacturer's instructions furnished with the shipment.

STUFFING BOXES — Pumps equipped with packings will require adjustment periodically to avoid excessive leakage. The packing gland should be tightened as needed, but only when the shaft is rotating. Do not attempt to tighten gland to the point where leakage is completely stopped. Allow for a small continuous leakage of approximately one drop per minute to ensure lubrication and cooling at the packing area. Eventually all the packing in the pump will become deteriorated and will have to be replaced.

Pumps equipped with mechanical seals and lip seals require no adjustment.

LIP SEALS — Lip seals are positive in their sealing action with zero liquid leakage.

No mechanical adjustments are required.

Some common causes of lip seal leakage include:

Scouring of shaft at lip contact area due to contaminated liquids (abrasives).

Excessive seal lip contact pressure on pump shaft due to excessive pump pressure or incorrect pump direction of rotation.

NOTE: It is important to insure correct direction of pump rotation as the seal cavity is internally vented to pump suction side (low pressure side) - see page 2 "Direction of Rotation".

Lip seals are replaceable by pressing out the old seal and pressing in a new replacement seal. *DO NOT* replace the original seal spacer Item 1. Be sure to press and bottom the new seal into the position which the space, Item 1, had occupied. This insures the new seal will be in contact with a new area of the pump shaft. (Fig. 3)

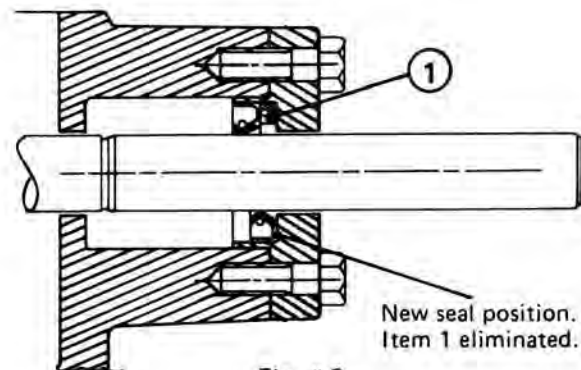
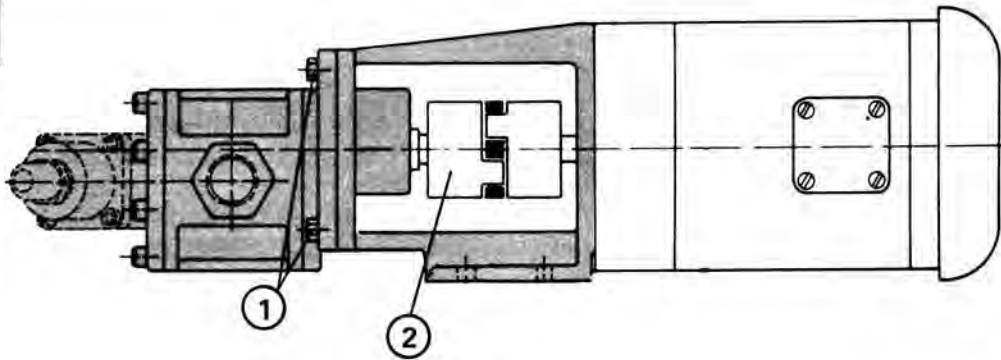


Fig. # 3

SECTION V – CLOSE COUPLED MODELS

- Remove pump from motor mounting bracket by removing four (4) mounting bolts Item 1.
- Remove flexible coupling half Item 2 from the pump shaft. Except for mounting features, pedestal pumps and close coupled pumps are very similar. Although close coupled pumps do not have mounting feet as found on pedestal models, all procedures and instructions contained in this manual are applicable and usable. However, individual part number identification can vary. Refer to individual model parts lists for specific part numbers and repair kit numbers.

MANUFACTURED AND GUARANTEED BY

ALBANY PUMP COMPANY LIMITED

420 Harry Walker Parkway, Newmarket, Ontario L3Y 8P5

SVB-SERIES VALVES (UL 842 Approved)



*Underwriter Listed
*ANSI, UL-842 Approved
"Valves for Flammable Fluids"

APPLICATION

The Fulflo SVB - Series, Underwriter Listed, range in size from 3/8" through 2" and operate efficiently with liquids of any viscosity at pressures from 3 through 500 P.S.I. The "SVB" valves are of brass construction with threaded connections.

Primarily designed for use with fuel oils on oil burner service, the "SVB" valves may be used wherever Underwriter Listed valves are required. Each valve is pre-set to the specified pressure and is equipped with a limiting device to prevent over-adjustment.

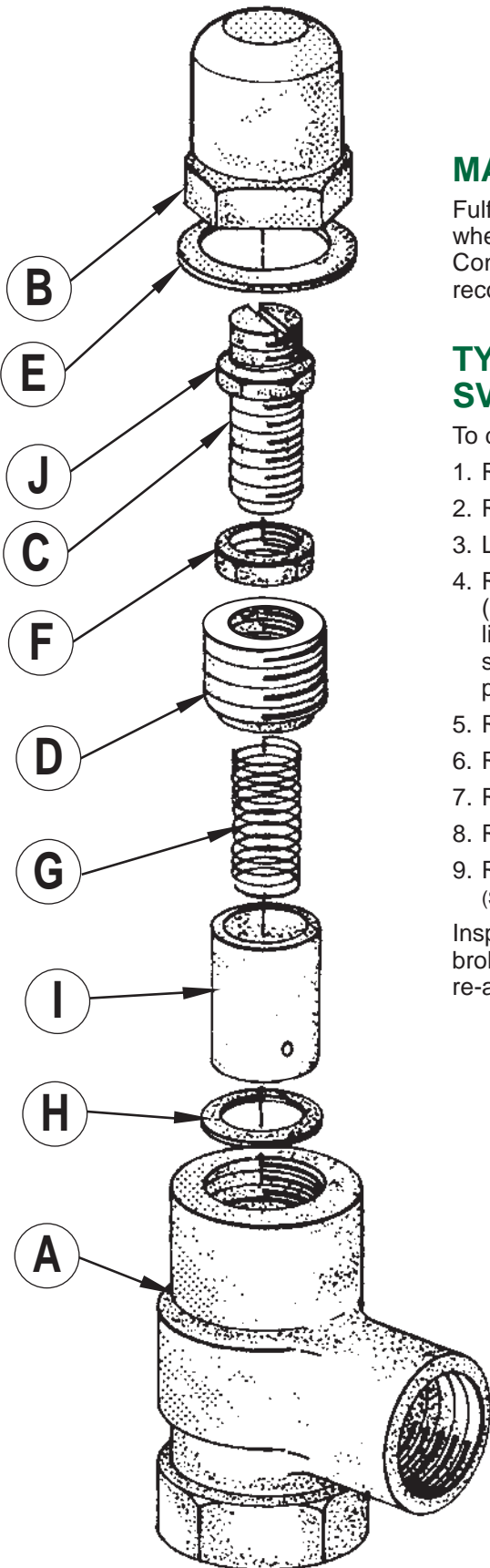
INSTALLATION

Fulflo valves can be mounted in any position. A tee may be inserted in the pump discharge line to mount the valve. The correct size of valve should be installed, preferably matching the pump discharge line. Screw the valve into the nipple in the tee. When the valve is used for frequent bypassing of oil under pressure, its outlet should be piped back to the tank. Care

must be taken to have the discharge well below the oil level in the tank to prevent air entrainment and erratic operations.

Only if the valve is used as safety or overload relief and operates infrequently may its discharge be piped back into the pump suction line. Frequent or continuous operation under these conditions will cause excessive heating of the oil and possible damage.

SVB-SERIES



MAINTENANCE

Fulflo valves provided reliable “chatter-free” operation when the system is free of abrasives and foreign matter. Continuous filtration of the liquid used is strongly recommended.

TYPICAL DISASSEMBLY OF SVB VALVES

To dismantle valve for inspection and cleaning:

1. Remove cap “B”
2. Remove gasket “E” (replace, if necessary)
3. Loosen lock nut “F”
4. Remove adjusting screw “C”
(Limit collar “J” is soldered to adjusting screw “C”, to limit the maximum pressure to which the valve may be subjected.) Limit collar is set at 25% above normal pressure setting.
5. Remove lock nut “F”
6. Remove retainer “D”
7. Remove spring “G”
8. Remove piston “I”
9. Remove stop ring “H” (Not Recommended)
(Special tooling is required to install new stop ring.)

Inspect valve bore and piston for wear or scoring. Replace broken or damaged parts. Clean all parts thoroughly and re-assemble by reversing the above procedure.

SVB-SERIES

ASSEMBLY NUMBER IDENTIFICATION CHART

Symbol Number	Designation	Code	Description
1	Style	S	Underwriter Listed
2	Series	V	—
3	Material	B	Brass
4 or 5	Size	-25 -35 -45 -55 -65 -75 -85	3/8" 1/2" 3/4" 1" 1 1/4" 1 1/2" 2
6	Spring	See Chart	See Spring Pressure Chart
7	Piston	0 1 2 3	Hardened Steel, deep groove Stainless Steel, deep groove Hardened Steel, shallow groove Stainless Steel, shallow groove

EXAMPLE:

SVB-55ZSO					
S	V	B	-55	ZS	O
Underwriter's Listed	Series	Brass	1"	Spring	Hardened Steel Piston, Deep Groove

HOW TO ORDER

Specify:

1. Valve Model Number
2. Spring Letter
3. Piston Number
4. Pressure Setting

NOTE: A definite pressure setting is required due to Underwriter restrictions. A limiting device is furnished to prevent over-adjustment more than 25% above set pressure.

SETTING VALVES

Valve may be set with a hand pump for cracking pressure. It will be noted that the maximum set pressure is limited by the collar "J" soldered to the adjusting screw "C".

If a test stand is available, valve should be connected to the discharge header with the pump bypass open, and the bypass gradually closed until the desired pressure registers on the gauge. Adjust valve adjusting screw until valve slightly bleeds at the set bypass pressure and lock adjusting screw.

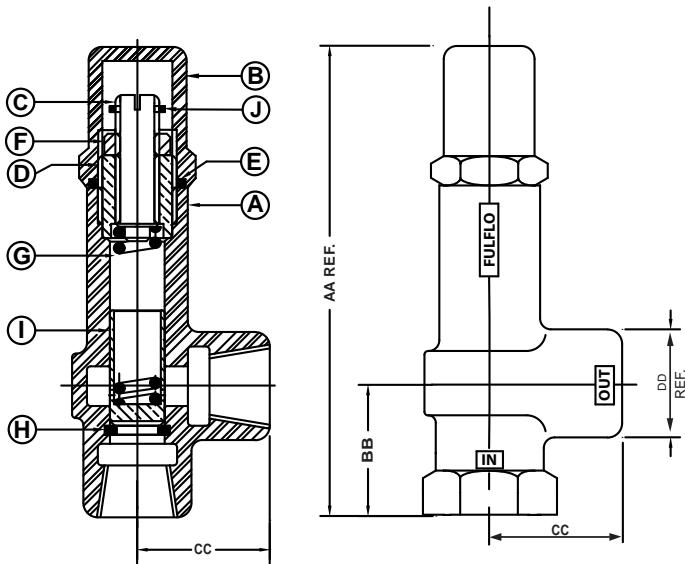
If valve is required to bypass a given amount of fluid at a given pressure, a test stand having a flow meter in the pump discharge line must be available. With valve adjusted for cracking pressure as above, continue closing bypass until the required flow registers on the flow meter and observe pressure. Re-adjust pressure, if necessary, to obtain desired pressure at desired flow.

UNDERWRITER VALVE PRESSURE RANGE CHART

Pipe Size	"U.L." Symbol	SPRING PRESSURE RANGE AND PART NO. SUFFIX											
		BLACK -AS		RED-US		GREEN-WS		YELLOW-XS		WHITE-YS		BLUE-ZS	
		Low	High	Low	High	Low	High	Low	High	Low	High	Low	High
3/8"	SVB-25	3	10	7	35	30	100	60	175	150	350	300	500
1/2"	SVB-35	3	10	7	35	30	100	60	175	150	350	300	500
3/4"	SVB-45	3	10	7	35	30	100	60	175	150	350	300	500
1"	SVB-55	3	10	7	35	30	100	60	175	150	350	300	500
1 1/4"	SVB-65	3	10	7	35	30	100	60	175	150	350	300	500
1 1/2"	SVB-75	3	10	7	35	30	100	60	175	150	350	300	500
2"	SVB-85	3	10	7	35	30	100	60	175	150	350	250	600

SVB-SERIES (Brass)

DIMENSIONS



Pipe Size	"U.L." Symbol	DIMENSIONS IN INCHES			
		AA	BB	CC	DD REF.
3/8"	SVB-25	5 ¹¹ / ₃₂	1 ³ / ₈	1 ³ / ₈	1 ³ / ₈
1/2"	SVB-35	6 ³ / ₁₆	1 ¹¹ / ₁₆	1 ⁷ / ₁₆	1 ⁷ / ₁₆
3/4"	SVB-45	6 ¹⁵ / ₁₆	1 ¹⁵ / ₁₆	1 ¹³ / ₁₆	1 ¹¹ / ₁₆
1"	SVB-55	8 ⁷ / ₃₂	2 ⁹ / ₃₂	2 ⁹ / ₃₂	2 ¹ / ₁₆
1 1/4"	SVB-65	9 ⁹ / ₁₆	2 ⁹ / ₁₆	2 ⁹ / ₁₆	2 ¹ / ₂
1 1/2"	SVB-75	11 ¹ / ₁₆	2 ¹¹ / ₁₆	2 ¹¹ / ₁₆	2 ⁷ / ₈
2"	SVB-85	13	3	3	3 ¹ / ₄

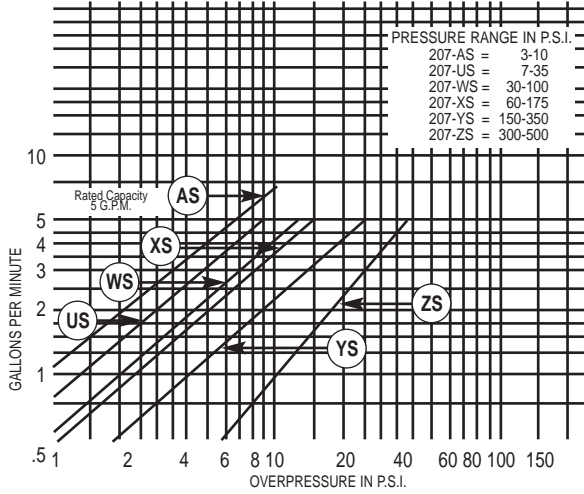
PARTS LIST

Symbol	NAME	VALVE SIZE						
		3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
A	Body	200-B	300-B	400-B	500-B	600-B	700-B	800-B
B	Cap	201-B	301-B	401-B	501-B	601-B	701-B	801-B
C	Adjusting Screw	202-B	302-B	402-B	502-B	602-B	702-B	802-B
D	Retainer	203-B	303-B	403-B	503-B	603-B	703-B	803-B
E	Gasket	204	304	404	504	604	704	804
F	Lock Nut	205-S	305-S	405-S	505-S	605-S	705-S	805-S
G	Spring	See Chart	See Chart	See Chart	See Chart	See Chart	See Chart	See Chart
H	Stop Ring	208-B	308-B	408-B	508-B	608-B	708-B	808-B
I	Piston H.S. Deep Groove S.S. Deep Groove H.S. Shallow Groove S.S. Shallow Groove	206-G 206-AG 206 206-A	306-G 306-AG 306 306-A	406-G 406-AG 406 406-A	506-G 506-AG 506 506-A	606-G 606-AG 606 606-A	706-G 706-AG 706 706-A	806-G 806-AG 806 806-A
J	Limit Collar	221-B	321-B	421-B	521-B	621-B	721-B	821-B

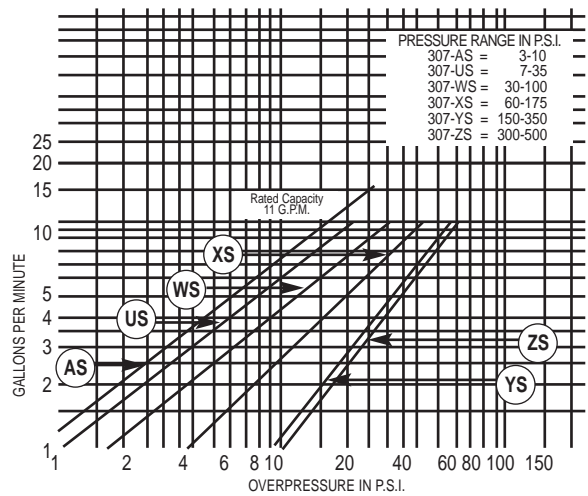
SVB-SERIES PERFORMANCE CHARTS

All valve tests 110°F. to 120°F. Oil Viscosity 150 S.S.U. at 100°F.
(Charts good from 30 to 500 S.S.U.)

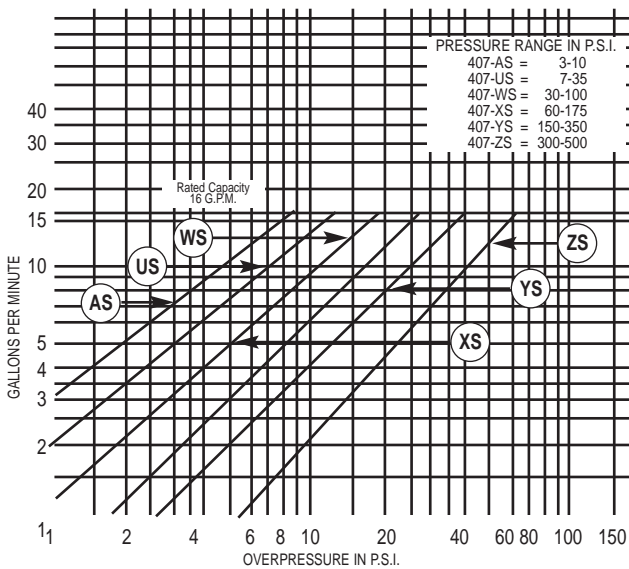
3/8" VALVE TESTS



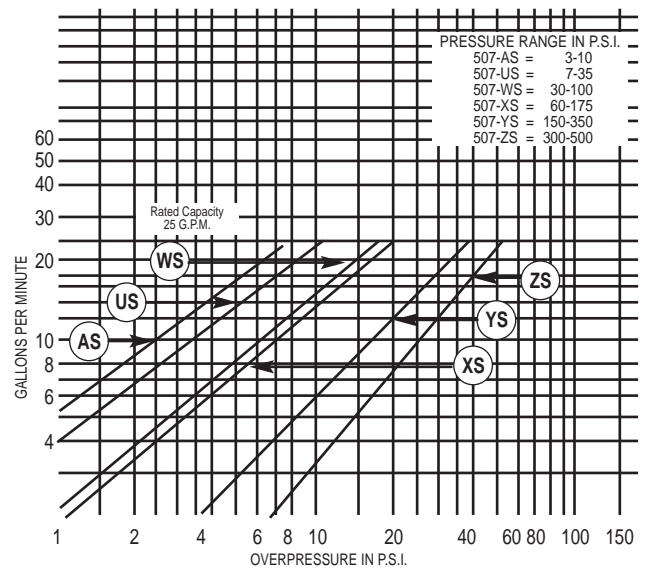
1/2" VALVE TESTS



3/4" VALVE TESTS



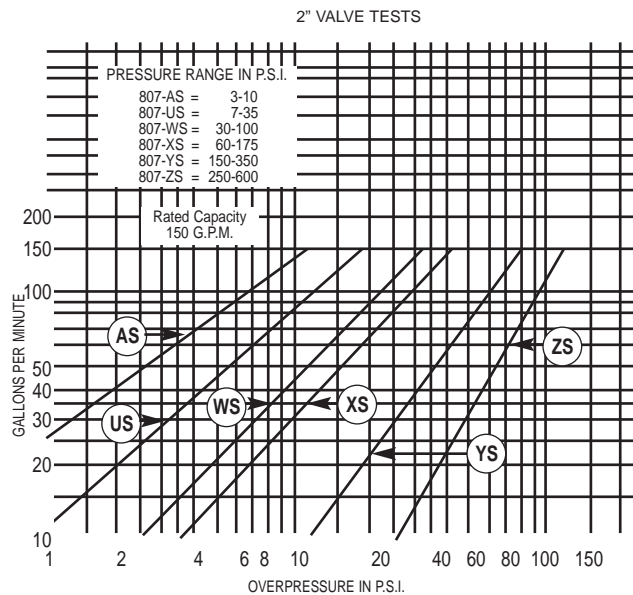
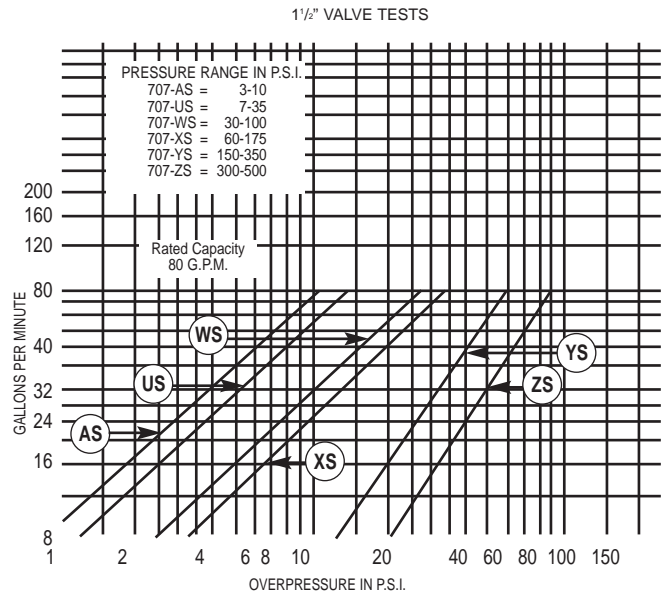
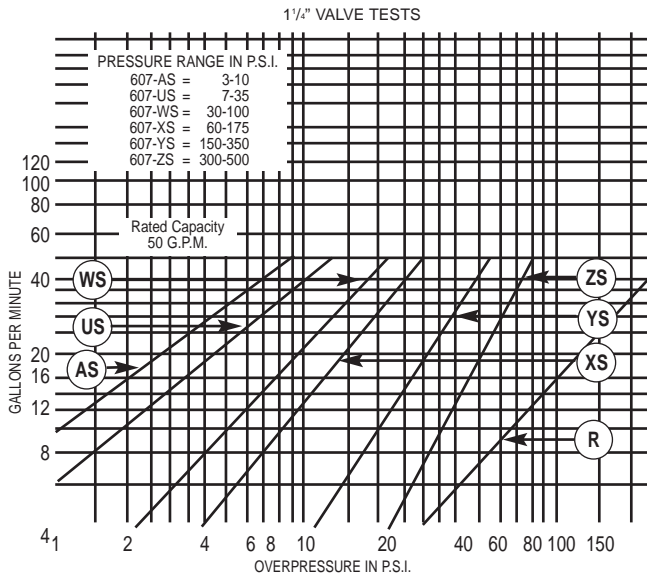
1" VALVE TESTS



Overpressure - The pressure increase or accumulation above the set pressure when the valve is discharging flow.

SVB-SERIES PERFORMANCE CHARTS

All valve tests 110°F. to 120°F. Oil Viscosity 150 S.S.U. at 100°F.
(Charts good from 30 to 500 S.S.U.)



Overpressure - The pressure increase or accumulation above the set pressure when the valve is discharging flow.



Series V6 FLOTECT® Flow Switch

Specifications - Installation and Operating Instructions



The Series V6 FLOTECT® Flow Switch is an inexpensive, explosion-proof flow switch for use on air, water or other compatible gases and liquids. Three configurations are available - 1. Factory installed in a tee. 2. With a trimmable vane for field adjustment and installation in a suitable tee. 3. Low flow models with an integral tee and adjustable valve. All are available with an optional enclosure which is UL and CSA listed, or Directive 2014/34/EU (ATEX) compliant for $\text{CE} \text{ II 2 G Ex db IIC T6 Gb}$ Process Temp $\leq 75^{\circ}\text{C}$ or IECEx compliant for Ex db IIC T6 Gb Process Temp $\leq 75^{\circ}\text{C}$.

INSTALLATION

Unpack and remove any packing material found inside lower housing or tee.

Switch can be installed in any position but the actuation/deactuation flow rates in the charts are based on horizontal pipe runs and are nominal values. For more precise settings, units can be factory calibrated to specific flow rates.

V6 Models with Tee are supplied in 1/2" - 2" NPT sizes. Install in piping with arrow pointing in direction of flow.

V6 Low Flow Models have 1/2" NPT connections and are field adjustable. Install in piping with arrow pointing in direction of flow. To adjust, loosen the four socket head cap screws on bottom. The adjustment valve rotates 90° between "O" (open) and "C" (closed). See flow charts for approximate ranges. Tighten screws once the required flow rate has been set.

V6 with Field Trimmable Vane. These models enable the installer to choose approximate actuation/deactuation points by trimming the full size vane at appropriate letter-designated marks on a removable template. Flows are defined in the following charts. Note that the charts are based on either brass or cast iron reducing tees or stainless or forged steel straight tees with bushings where necessary. Install in piping with arrow pointing in direction of flow.

When bushings are used, they must be back drilled to allow proper clearance for unrestricted vane travel. Bore the I.D. to 13/16" (20 mm) on 1/2" x 3/4" bushings or 1" (25 mm) on larger bushings. The depth of the bore must leave internal threads 9/16" (14 mm) high for proper engagement between the lower housing of the switch and the bushing. Check for proper vane travel and switch operation after installation.

SPECIFICATIONS

Service: Gases or liquids compatible with wetted materials.

Wetted Materials: Standard V6 Models: Vane: 301 SS; Lower Body: brass or 303 SS; Magnet: ceramic; Other: 301, 302 SS; Tee: brass, iron, forged steel, or 304 SS. V6 Low Flow Models: Lower Body: brass or 303 SS; Tee: brass or 304 SS; Magnet: ceramic; O-ring: Buna-N standard, Fluoroelastomer optional; Other: 301, 302 SS.

Temperature Limits: -4 to 220°F (-20 to 105°C) Standard, MT high temperature option 400°F (205°C) (MT not UL, CSA, ATEX, IECEx or KC) ATEX Compliant AT, IECEx IEC Option and KC (KC Option), Ambient Temperature -4 to 167°F (-20 to 75°C) Process Temperature: -4 to 220°F (-20 to 105°C).

Pressure Limit: Brass lower body with no tee models 1000 psig (69 bar), 303 SS lower body with no tee models 2000 psig (138 bar). Brass tee models 250 psi (17.2 bar), iron tee models 1000 psi (69 bar), forged and stainless steel tee models 2000 psi (138 bar), low flow models 1450 psi (100 bar).

Enclosure Rating: Weatherproof and Explosion-proof. Listed with UL and CSA for Class I, Groups A, B, C and D; Class II, Groups E, F, and G. (Group A on stainless steel body models only).

$\text{CE} \text{ 0518} \text{ II 2 G Ex db IIC T6 Gb}$ Process Temp $\leq 75^{\circ}\text{C}$ Alternate Temperature Class T5 Process Temp $\leq 90^{\circ}\text{C}$, 115°C (T4) Process Temp $\leq 105^{\circ}\text{C}$ consult factory. EC-type Certificate No.: KEMA 04ATEX2128.

ATEX Standards: EN60079-0:2012 +A11: 2013; EN60079-1: 2014.

IECEx Certified: For Ex db IIC T6 Gb Process Temp $\leq 75^{\circ}\text{C}$ Alternate Temperature Class T5 Process Temp $\leq 90^{\circ}\text{C}$, 115°C (T4) Process Temp $\leq 105^{\circ}\text{C}$ consult factory.

IECEx Certificate of Conformity: IECEx DEK 11.0039; IECEx Standards: IEC 60079-0: 2011; IEC 60079-1: 2014; Korean Certified (KC) for: Ex d IIC T6 Gb Process Temp $\leq 75^{\circ}\text{C}$; KTL Certificate Number: 12-KB4BO-0091.

Switch Type: SPDT snap switch standard, DPDT snap switch optional.

Electrical Rating: UL models: 5A @125/250 VAC. CSA, ATEX and IECEx models: 5A @ 125/250 VAC (V~); 5A res., 3A ind. @ 30 VDC (V). MV option: .1A @ 125 VAC (V~). MT option: 5A @125/250 VAC (V~). [MT option not UL, CSA, ATEX or IECEx].

Electrical Connections: UL models: 18 AWG, 18" (460 mm) long. ATEX/CSA /IECEx models: terminal block.

Upper Body: Brass or 303 stainless steel.

Conduit Connections: 3/4" male NPT standard, 3/4" female NPT on junction box models. M25 x 1.5 with -BSPT option.

Process Connection: 1/2" male NPT on models without a tee.

Mounting Orientation: Switch can be installed in any position but the actuation/deactuation flow rates in the charts are based on horizontal pipe runs and are nominal values.

Set Point Adjustment: Standard V6 models none. Without tee models vane is trimmable. Low flow models are field adjustable in the range shown. See set point charts on opposite page.

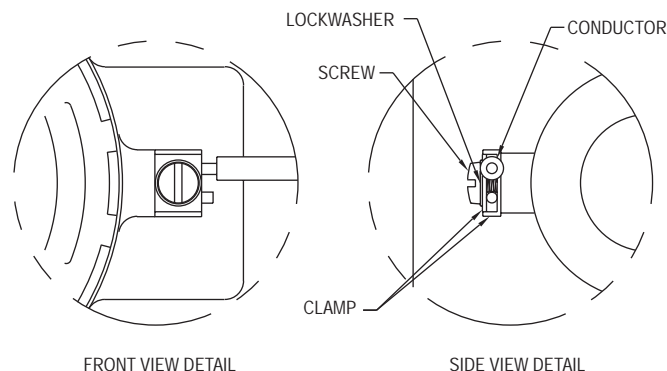
Weight: 2 to 6 lb (.9 to 2.7 kg) depending on construction.

Options not Shown: Custom calibration, bushings, PVC tee, reinforced vane, DPDT T5 relays.

ELECTRICAL CONNECTIONS

Connect wire leads in accordance with local electrical codes and switch action required. N.O. contacts will close and N.C. contacts will open when flow increases to the actuation point. They will return to "normal" condition when flow decreases to the deactuation point. Black = Common, Blue = Normally Open and Red = Normally Closed.

For units supplied with both internal ground and external bonding terminals, the ground screw inside the housing must be used to ground the control. The external bonding screw is for supplementary bonding when allowed or required by local code. When external bonding conductor is required, conductor must be wrapped a minimum of 180° about the external bonding screw. See below. Some CSA listed models are furnished with a separate green ground wire. Such units must be equipped with a junction box, not supplied but available on special order.



EC-Type Certificate, IECEx and KC Installation Instructions:

Cable Connection

The cable entry device shall be certified in type of explosion protection flameproof enclosure "d", suitable for conditions of use and correctly installed. For Ta ≥ 65°C cable and cable gland rated ≥ 90°C shall be used.

Conduit Connection

An Ex d certified sealing device such as a conduit seal with setting compound shall be provided immediately to the entrance of the valve housing. For Ta ≥ 65°C wiring and setting compound, in the conduit seal, rated ≥ 90°C shall be used.

Note: ATEX, IECEx and KC units only: The temperature class is determined by the maximum ambient and or process temperature. Units are intended to be used in ambient of -20°C ≤ Tamb ≤ 75°C. Units may be used in process temperatures up to 105°C providing the enclosure and switch body temperature do not exceed 75°C. The standard Temperature Class is T6 Process Temp ≤ 75°C. Alternate Temperature Class of T5 Process Temp ≤ 90°C and 115°C (T4) Process Temp ≤ 105°C are available consult factory.

Refer to Certificate No: IECEx DEK 11.0039 for conditions of safe use for IECEx compliant units.

All wiring, conduit and enclosures must meet applicable codes for hazardous areas. Conduits and enclosures must be properly sealed. For outdoor or other locations where temperatures vary widely, precautions should be taken to prevent condensation inside switch or enclosure. Electrical components must be kept dry at all times.

CAUTION: To prevent ignition of hazardous atmospheres, disconnect the device from the supply circuit before opening. Keep assembly tightly closed when in use.

MAINTENANCE

Inspect and clean wetted parts at regular intervals. The cover should be in place at all times to protect, the internal components from dirt, dust and weather and to maintain hazardous location ratings. Disconnect device from the supply circuit before opening to prevent ignition of hazardous atmosphere. Repairs to be conducted by Dwyer Instruments, Inc. Units in need of repair should be returned to the factory prepaid.

Example	V6	EP	BB	D	1	B	AT	Series V6EPB-B-D-1-B-AT Flotect® Mini-Size Flow Switch, brass body, DPDT, 1/2" brass tee, with ATEX approval.
Series	V6							Flotect® Mini-Size Flow Switch
Construction		EP						Explosion Proof
Body			BB SS					Brass Stainless Steel
Switch Type				D S				DPDT SPDT
Tee Connection Size					1 2 3 4 5 6 LF 1E 2E 3E 4E 5E 6E LFE			1/2" NPT 3/4" NPT 1" NPT 1-1/4" NPT 1-1/2" NPT 2" NPT Low Flow with 1/2" NPT Inlet and Outlet 1/2" BSPT ++ 3/4" BSPT ++ 1" BSPT ++ 1-1/4" BSPT ++ 1-1/2" BSPT ++ 2" BSPT ++ Low Flow with 1/2" BSPT Inlet and Outlet ++
Tee Type and Material						B S O		Brass Stainless Steel NO Tee with Field Trimmable Vane
Options							18 20 22 022A 31 AT BUSH2 BUSH3 BUSH4 BUSH5 BUSH6 BUSH7 BUSH8 BUSH9 BUSH10 BUSH11 CSA CV FTR GL ID IEC JCTLH KC MT MV NN ORFB ORFS PT RV ST TBC VIT	0.018 Spring for Low Flow .020 Spring for Low Flow .022 Spring for Low Flow .022 Spring for Low Flow with Alnico Magnet .031 Spring for Low Flow ATEX Approval 1/2" NPT x 3/4" NPT Bushing 1/2" NPT x 1" NPT Bushing 1/2" NPT x 1-1/4" NPT Bushing 1/2" NPT x 1-1/2" NPT Bushing 1/2" NPT x 2" NPT Bushing 1/2" BSPT x 3/4" BSPT Bushing, M25 X 1.5 Conduit Connection ++ 1/2" BSPT x 1" BSPT Bushing, M25 X 1.5 Conduit Connection ++ 1/2" BSPT x 1-1/4" BSPT Bushing, M25 X 1.5 Conduit Connection ++ 1/2" BSPT x 1-1/2" BSPT Bushing, M25 X 1.5 Conduit Connection ++ 1/2" BSPT x 2" BSPT Bushing, M25 X 1.5 Conduit Connection ++ CSA* Custom Vane Flow Test Report Ground Lead* Custom Nameplate IECEx Approval Junction Box with Left Side Conduit Korean Certified* High Temperature* Gold Contacts No Nameplate* Brass Orifice Stainless Steel Orifice Paper Tag Reinforced Vane Stainless Steel Tag Terminal Block Connector* Flouroelstomer Seals

*Options that do not have ATEX or IECEx ++ BSPT options not compatible with KC option

V6 With Tee

Cold Water - Factory Installed Tee

Approximate actuation/deactuation low Rates

GPM upper, M³/HR lower

1/2" NPT	3/4" NPT	1" NPT	1-1/4" NPT	1-1/2" NPT	2" NPT
1.5 1.0	2.0 1.25	3.0 1.75	4.0 3.0	6.0 5.0	10.0 8.5
0.34 0.23	0.45 0.28	0.68 0.40	0.91 0.68	1.36 1.14	2.27 1.93

Air-Factory Installed Tee

Approximate actuation/deactuation flow rates

SCFM upper, NM³/M lower

1/2" NPT	3/4" NPT	1" NPT	1-1/4" NPT	1-1/2" NPT	2" NPT
6.5 5.0	10.0 8.0	14 12	21 18	33 30	43 36
.18 .14	.28 .23	.40 .34	.59 .51	.93 .85	1.19 1.02

V6 Low Flow, Field Adjustable

Cold Water - Low Flow Models

Approximate actuation/deactuation flow rates

GPM upper, M³/HR lower

Minimum	Maximum
.04 .03	.75 0.60
.009 .007	0.17 0.14

Air - Low Flow Models

Approximate actuation/deactuation flow rates

SCFM upper, NM³/M lower

Minimum	Maximum
.18 .15	2.70 2.0
.005 .004	.08 .06

Attention: Units without the "AT" suffix are not Directive 2014/34/EU (ATEX) compliant. These units are not intended for use in potentially hazardous atmospheres in the EU. These units may be CE marked for other Directives of the EU.

V6 With Field Trimmable Vane
Cold Water - Brass or Cast Iron Reducing Tee
 Approximate actuation/deactuation flow rates
GPM upper, **M³/HR** lower

Air - Brass or Cast Iron Reducing Tee
 Approximate actuation/deactuation flow rates
SCFM upper, **NM³/M** lower

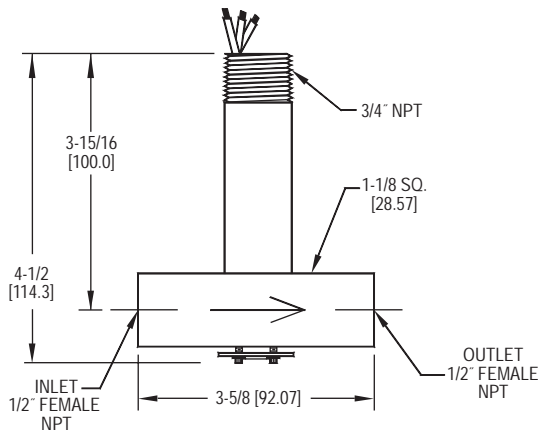
Vane	1/2" NPT	3/4" NPT	1" NPT	1-1/4" NPT	1-1/2" NPT	2" NPT	1/2" NPT	3/4" NPT	1" NPT	1-1/4" NPT	1-1/2" NPT	2" NPT
Full Size						9.0 8.5						39.0 37.0
a						2.0 1.9						1.10 1.05
b						9.5 9.0						40.0 38.0
c						2.2 2.0						1.13 1.08
d						10.0 9.3						42.0 40.0
e						2.3 2.1						1.19 1.13
f						11.0 10.0						50.0 44.0
g						2.5 2.3						1.42 1.25
h					6.2 5.5	12.0 10.0					27.0 25.0	55.0 46.0
i					1.4 1.2	2.7 2.3					0.76 0.71	1.56 1.30
j					7.0 6.5	13.0 11.0						30.0 28.0
k					1.6 1.5	3.0 2.5						0.85 0.79
l				4.3 3.9	7.6 7.1	14.0 12.0				20.0 18.0	32.0 30.0	
m				1.0 0.9	1.7 1.6	3.2 2.7				0.57 0.51	0.91 0.85	
n				4.9 4.4	8.0 7.3					21.0 19.0	34.0 32.0	
o				1.1 1.0	1.8 1.7					0.59 0.54	0.96 0.91	
p				5.5 5.0	9.0 8.2					23.0 21.0	37.0 34.0	
q				1.2 1.1	2.0 1.9					0.65 0.59	1.05 0.96	
r			3.5 3.1	6.0 5.6	10.0 9.0			16.0 15.0	24.0 22.0	39.0 36.0		
s			0.8 0.7	1.4 1.3	2.3 2.0			0.45 0.42	0.68 0.62	1.10 1.02		
t			4.0 3.5	7.0 6.6	13.0 11.0			18.0 16.0	28.0 25.0	51.0 45.0		
u			0.9 0.8	1.6 1.5	3.0 2.5			0.51 0.45	0.79 0.71	1.44 1.27		
v			4.6 4.2	8.0 7.6	15.0 13.0			19.0 17.0	33.0 30.0	69.0 57.0		
w			1.04 0.95	1.8 1.7	3.4 3.0			0.54 0.48	0.93 0.85	1.95 1.61		
x		2.6 2.3	5.6 5.2	10.0 9.0				13.0 12.0	22.0 20.0	38.0 35.0		
y		0.6 0.5	1.3 1.2	2.3 2.0				0.37 0.34	0.62 0.57	1.08 0.99		
z	1.6 1.3	3.5 3.1	6.3 6.1	12.0 10.0			6.4 3.8	15.0 14.0	25.0 23.0	45.0 42.0		
aa	0.4 0.3	0.8 0.7	1.43 1.39	2.7 2.3			0.18 0.11	0.42 0.40	0.71 0.65	1.27 1.19		
ab	2.2 1.8	4.3 3.8	8.0 7.5				10.0 7.0	20.0 16.0	32.0 28.0			
ac	0.5 0.4	1.0 0.9	1.8 1.7				0.28 0.20	0.57 0.45	0.91 0.79			
ad	3.0 2.4						12.0 9.0					
ae	0.7 0.5						0.34 0.25					

Cold Water - Stainless or Forged Steel Straight Tee and Bushing
 Approximate actuation/deactuation flow rates
GPM upper, **M³/HR** lower

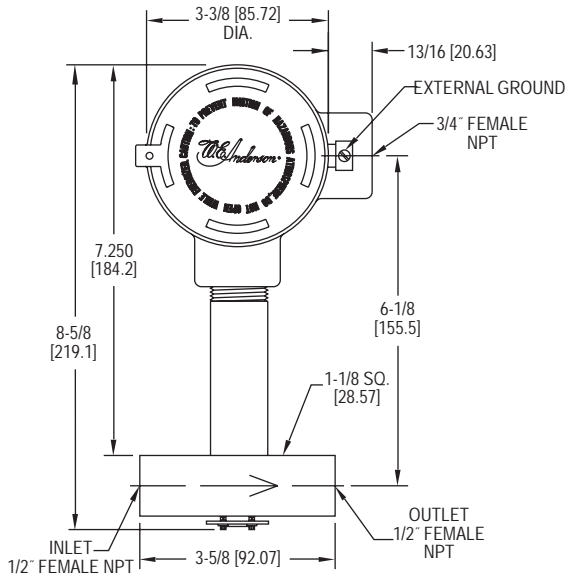
Air - Stainless or Forged Steel Straight Tee and Bushing
 Approximate actuation/deactuation flow rates
SCFM upper, **NM³/M** lower

Vane	1/2" NPT	3/4" NPT	1" NPT	1-1/4" NPT	1-1/2" NPT	2" NPT	1/2" NPT	3/4" NPT	1" NPT	1-1/4" NPT	1-1/2" NPT	2" NPT
Full Size				5.0 4.5	8.5 7.8					21.0 18.0	33.0 30.0	
a				1.1 1.0	1.9 1.8					0.59 0.51	0.93 0.85	
b				5.5 5.0	9.2 8.6					22.0 20.0	39.0 36.0	
c				1.2 1.1	2.1 2.0					0.62 0.57	1.10 1.02	
d				6.2 5.7	9.8 9.0					24.0 22.0	42.0 38.0	
e				1.4 1.3	2.2 2.0					0.68 0.62	1.19 1.08	
f				6.8 6.3	12.0 10.0					28.0 26.0	51.0 46.0	
g				1.5 1.4	2.7 2.3					0.79 0.74	1.44 1.30	
h			2.8 2.4	8.5 7.8	13.0 11.0			12.0 10.0	33.0 30.0	55.0 50.0		
i			0.6 0.5	1.9 1.8	3.0 2.5			0.34 0.28	0.93 0.85	1.56 1.42		
j			3.4 3.0	10.0 9.2				14.0 12.0	37.0 34.0			
k			0.8 0.7	2.3 2.1				0.40 0.34	1.05 0.96			
l			4.0 3.6	12.0 10.0				16.0 14.0	43.0 40.0			
m			0.91 0.82	2.7 2.3				0.45 0.40	1.22 1.13			
n	2.0 1.5	5.0 4.5						8.0 6.5	19.0 17.0			
o	0.5 0.3	1.1 1.0						0.23 0.18	0.54 0.48			
p	2.5 2.0	6.5 6.1						11.0 10.0	26.0 24.0			
q	0.6 0.5	1.48 1.39						0.31 0.28	0.74 0.68			
r	3.5 3.0	9.0 8.2						14.0 13.0	32.0 30.0			
s	0.8 0.7	2.0 1.9						0.40 0.37	0.91 0.85			
t	7.0 5.5							27.0 24.0				
u	1.6 1.2							0.76 0.68				
v	10.0 8.0							39.0 36.0				
w	2.3 1.8							1.10 1.02				

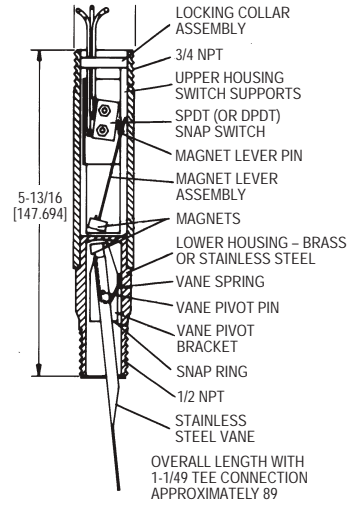
DIMENSIONS
Series V6 FLOTECT® Flow Switch



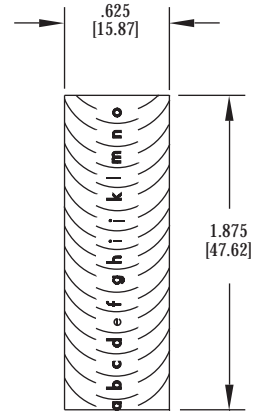
V6 Low Flow



V6 Low Flow with CSA, ATEX Conduit Enclosure

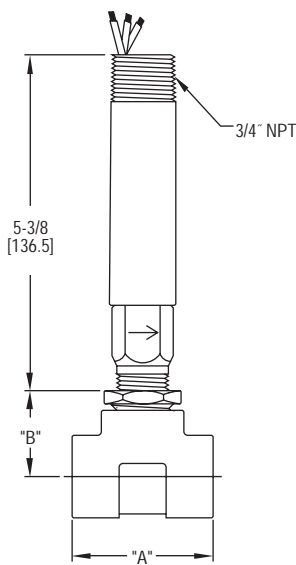


V6 with Field Trimmable Vane

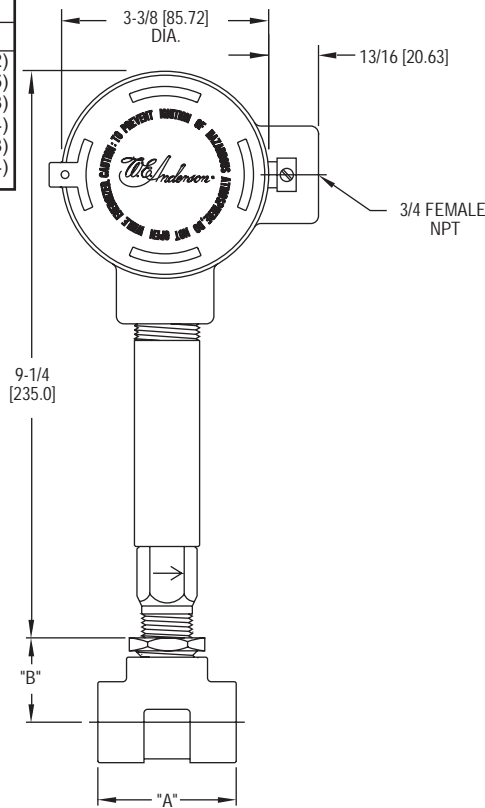


Trimmable Vane

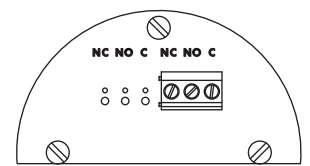
Pipe Size	Brass/Ductile Iron		Forged/Stainless Steel		Malleable Iron	
	Dim. A	Dim. B	Dim. A	Dim. B	Dim. A	Dim. B
1/2"	2-1/4 (57)	1-1/8 (29)	2-1/4 (57)	1-1/8 (29)	2-1/2 (64)	1-1/4 (32)
3/4"	2-3/8 (60)	1-1/4 (32)	2-5/8 (67)	1-7/8 (47)	2-5/8 (67)	1-3/8 (35)
1"	2-1/2 (64)	1-3/8 (35)	3 (76)	2-1/8 (54)	2-7/8 (73)	1-1/2 (38)
1-1/4"	2-5/8 (67)	1-1/2 (38)	3-1/2 (89)	2-1/2 (64)	3 (76)	1-3/4 (44)
1-1/2"	2-7/8 (73)	1-5/8 (41)	4 (102)	2-3/4 (70)	3-1/4 (83)	1-7/8 (48)
2"	3 (76)	1-7/8 (48)	4-3/4 (121)	3-1/8 (79)	3-1/2 (89)	2-1/8 (54)



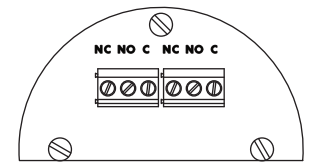
V6 with Tee



V6 with Tee and CSA, ATEX Conduit Enclosure



SPDT



DPDT

**Terminal Connections
 CSA, ATEX Enclosures**



Flussostat FLOTECT® Série V6

Spécifications - Installation et mode d'emploi



Le fluxostat FLOTECT® série V6 est un fluxostat antidéflagration économique qui s'utilise avec l'air, l'eau ou autres gaz et liquides compatibles. Trois configurations sont disponibles - 1. en té installé en usine. 2. avec une palette éboutable pour le réglage du champ et installation dans un té adapté. 3. modèles faible débit avec un té intégré et valve réglable. Tous les modèles sont disponibles avec un boîtier optionnel listé dans les normes UL et CSA ou conformément à la Directive 2014/34/EU (ATEX) pour CE II 2 G Ex db IIC T6 Gb Temp. de fonctionnement $\leq 75^{\circ}\text{C}$ ou conformément à la norme IECEx pour Ex db IIC T6 Gb Temp. de fonctionnement $\leq 75^{\circ}\text{C}$.

INSTALLATION

Déballer et retirer tout emballage se trouvant à l'intérieur du corps inférieur ou du té.

Le fluxostat peut être installé dans n'importe quelle position mais les débits d'activation/désactivation indiqués sur les tableaux sont basés sur une position horizontale du tuyau et sont des valeurs nominales. Pour une installation plus précise, les unités peuvent être calibrées en usine à des débits spécifiques.

Les modèles V6 avec té sont fournis en 1/2" - 2" NPT. Installer dans le tuyaux avec la flèche pointant dans la direction du débit.

Les modèles V6 faible débit sont équipés de raccords 1/2" NPT et leur champ est réglable. Installer dans le tuyaux avec la flèche pointant dans la direction du débit. Pour régler, dévisser les quatre vis à tête cylindrique situées en bas. Les valves de réglage tournent à 90° entre « O » (ouvert) et « F » (fermé). Voir les tableaux de débit pour les plages approximatives. Resserrer les vis une fois que le débit désiré a été réglé.

V6 avec palette graduée éboutable. Ces modèles permettent à l'installateur de choisir les points d'activation/désactivation en coupant la palette au niveau voulu, marqué d'une lettre sur un gabarit amovible. Les débits sont définis dans les tableaux suivants. Les données des tableaux sont basées soit sur des té réducteurs en laiton ou en acier inox, soit sur des té droits en acier inox ou forgé, avec bagues quand nécessaire. Installer dans le tuyaux avec la flèche pointant dans la direction du débit.

Quand l'emploi de bagues est nécessaire, il faut qu'elles soient percées afin de permettre le passage sans accrochage de la palette. Aller jusqu'à obtenir un diamètre intérieur de 20 mm pour les bagues de 1/2" x 3/4" ou un diamètre interne de 25 mm pour les bagues plus grandes. L'épaisseur de l'alésage doit laisser un filetage interne de 14 mm de hauteur afin de permettre le passage entre l'emplacement inférieur du dispositif et la bague. Vérifier que la palette passe sans accrochage et que le fluxostat fonctionne correctement après installation.

SPÉCIFICATIONS

Utilisation : Gaz ou liquides compatibles avec les matériaux mouillés.

Matériaux mouillés : modèles V6 standards : palette : inox 301, corps inférieur : laiton ou inox 303, aimant : céramique, autres : inox 301, 302, té : laiton, fer, acier forgé ou inox 304. Modèles V6 faible débit : partie inférieure : laiton ou inox 303 ; té : laiton ou inox 304 ; aimant : laiton ou inox 303 ; aimant : céramique ; joint torique : buna-N standard, fluorélastomère optionnel ; autres : acier inox 301, 302.

Températures limites : de -20 à 105° C (-4 à 220° F) en standard, Option MT haute température à 205° C (400° F) (MT non homologuée UL, CSA, ATEX, IECEx ou KC) AT conforme à la directive ATEX et options IECEx de la CEI et KC (option KC), température ambiante de -20 à 75° C (-4 à 167° F), température de fonctionnement : de -20 à 105° C (-4 à 220° F).

Pression limite : Modèles avec corps inférieur en laiton sans té 1000 psig (69 bar), modèles avec corps inférieur en acier inox 303 sans té 2000 psig (138 bar), modèles avec té en laiton 250 psi (17.2 bar), modèles avec té en fer 1000 psi (69 bar), modèles avec té en acier forgé et inoxydable 2000 psi (138 bar), modèles à faible débit 1450 psi (100 bar).

Indice de protection : étanche et antidéflagrant. Normes UL et CSA : classe I, groupes A, B, C et D ; classe II, groupes E, F et G (groupe A pour les modèles avec corps en acier inoxydable uniquement).

CE 0518 II 2 G Ex db IIC T6 Gb Température de fonctionnement $\leq 75^{\circ}\text{C}$ température intermédiaire classe T5 Temp. de fonctionnement $\leq 90^{\circ}\text{C}$, 115° C (T4) Temp. de fonctionnement $\leq 105^{\circ}\text{C}$ consulter l'usine. Certificat CE n° : KEMA 04ATEX2128.

Normes ATEX : EN60079-0:2012 +A11: 2013; EN60079-1: 2014.

Certifié IECEx : pour Ex db IIC T6 Gb Température de fonctionnement $\leq 75^{\circ}\text{C}$ température intermédiaire classe T5 Temp. de fonctionnement $\leq 90^{\circ}\text{C}$, 115° C (T4) Temp. de fonctionnement $\leq 105^{\circ}\text{C}$ consulter l'usine.

Certificat de conformité IECEx : IECEx DEK 11.0039 ; Normes IECEx : IEC 60079-0:2011 ; IEC 60079-1: 2014 ; Certification coréenne (KC) pour : Ex d IIC T6 Gb Température de fonctionnement $\leq 75^{\circ}\text{C}$ (167° F) ; Numéro de certificat KTL : 12-KB4BO-0091.

Type d'interrupteur électrique : interrupteur à action rapide SPDT en standard, interrupteur à action rapide en option.

Caractéristiques électriques : modèles UL : 5A @125/250 Vca. Modèles CSA, ATEX et IECEx : 5A @ 125/250 Vca (V~); 5A résistif., 3A inductif. @ 30 VDC (V=). Option MV : .1A @ 125 Vca (V~). Option MT : 5A @125/250 Vca (V~). (Option MT non homologuée UL, CSA, ATEX ou IECEx).

Raccordements électriques : modèles UL : 1 mm², 460 mm. Modèles CSA, ATEX et IECEx : bornier.

Partie supérieure : Laiton ou acier inox 303.

Conduit Connections : mâle NPT 3/4" standard, femelle NPT 3/4" sur les modèles boîtier de jonction ou M25 x 1,5 avec BSPT en option.

Type de raccord : mâle NPT 1/2" sur modèles sans té.

Orientation de montage : Le fluxostat peut être installé dans n'importe quelle position mais les débits d'activation/désactivation indiqués sur les tableaux sont basés sur une position horizontale du tuyau et sont des valeurs nominales.

Réglage de l'index de consigne : Aucun pour les modèles V6 standard. Sauf pour les modèles avec té, la palette peut être éboutée. Le champ des modèles à faible débit peut être réglé à l'intérieur de la plage indiquée. Voir tableaux de l'index de consigne sur la page ci-contre.

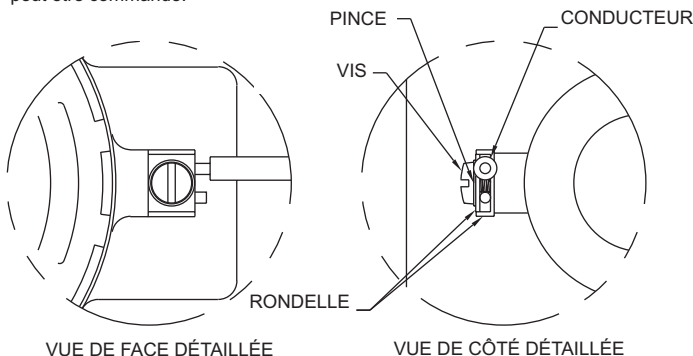
Poids : de 9 à 2.7 kg selon le type de fabrication.

Options non indiquées : calibration personnalisée, bagues, té en PVC, palette renforcée, relais DPDT.

RACCORDEMENTS ÉLECTRIQUES

Connecter les câbles électriques en suivant les codes électriques locaux et activer l'action requise. Les contacts N.O ferment et les contacts N.F. s'ouvrent quand le débit augmente jusqu'à son point d'intervention. Ils retournent à un statut « normale » quand le débit baisse jusqu'au point de désactivation. Noir = commun, Bleu = normalement ouvert et Rouge = normalement fermé.

Pour les unités fournies avec, à la fois, des bornes de terre internes et des bornes de raccordement externes, la vis de terre, située dans le boîtier, doit être utilisée pour relier le contrôle à la terre. La borne à vis externe permet un raccordement supplémentaire quand cela est possible ou quand cela est exigé par le code local. Quand un conducteur d'équipotentialité est requis, le conducteur doit être enroulé à 180° autour de la borne à vis externe. Voir ci-dessous. Quelques uns des modèles homologués par le CSA sont fournis avec un câble de terre séparé. Ces unités doivent être équipées d'un boîtier de jonction, qui n'est pas fourni mais peut être commandé.



Instructions d'installation conformes aux exigences du certificat type CE, IECEx et KC:

Branchement des câbles

Le dispositif d'entrée du câble doit être équipé d'un boîtier de protection certifié type « d » en ce qui concerne la protection contre les explosions et les flammes. Il doit être adapté aux conditions d'utilisation et installé correctement. Utiliser un câble et un passe-câbles de cote $\geq 90^{\circ}\text{C}$ pour une $T_a \geq 65^{\circ}\text{C}$.

Raccord des conduits

Un dispositif de scellement certifié Ex d, comme par exemple un joint avec composé durcissable, doit immédiatement être posé à l'entrée de l'emplacement de la palette. Pour une $T_a \geq 65^{\circ}\text{C}$, à l'intérieur du dispositif de scellement, utiliser un câblage et un composé durcissable de cote $\geq 90^{\circ}\text{C}$.

Remarque : unités ATEX, IECEx et KC uniquement: la classe de température est déterminée par la température maximale ambiante ou par la température de fonctionnement. Les unités sont conçues pour être utilisées à des températures ambiantes correspondant à $-20^{\circ}\text{C} \leq T_{amb} \leq 75^{\circ}\text{C}$. Les unités peuvent être utilisées à des températures de fonctionnement allant jusqu'à 105°C à condition que la température du corps du boîtier et du flussostat ne dépasse pas 75°C . La classe de température standard est la T6 Temp. de fonctionnement $\leq 75^{\circ}\text{C}$. Les classes intermédiaires de température T5 Temp. de fonctionnement $\leq 90^{\circ}\text{C}$ et 115°C (T4) Temp. de fonctionnement $\leq 105^{\circ}\text{C}$ sont disponibles, consulter l'usine. Se référer au n° de certificat : IECEx DEK 11.0039 pour les conditions de sécurité concernant les unités conformes aux exigences IECEx.

Tous les câbles, conduites et boîtiers doivent être conformes aux codes en vigueur en matière de zones dangereuses. Les conduites et les boîtiers doivent être correctement scellés. Pour les installations en extérieur ou emplacements où les températures varient largement, des précautions doivent être prises afin d'éviter la condensation à l'intérieur du flussostat ou du boîtier. Les composants électriques doivent être maintenus secs en toute circonstance.

AVERTISSEMENT : Pour éviter toute ignition en atmosphère dangereuse, débrancher le dispositif de l'alimentation électrique avant de l'ouvrir. Maintenir l'assemblage bien fermé lors de l'utilisation.

ENTRETIEN

Vérifier et nettoyer les parties mouillées à intervalles réguliers. Le couvercle doit être maintenu en place afin de protéger les composants internes de la saleté, de la poussière et des intempéries mais aussi pour maintenir les caractéristiques relatives aux emplacements dangereux. Pour éviter toute ignition en atmosphère dangereuse, débrancher le dispositif de l'alimentation électrique avant de l'ouvrir. Les réparations doivent être réalisées par Dwyer Instruments, Inc. Les unités qui ont besoin d'être réparées doivent être renvoyées aux ateliers de l'usine.

Exemple	V6	EP	BB	D	1	B	AT	Série V6EPB-B-D-1-B-AT Flotect® Mini-Taille Flussostat, corps en laiton, DPDT, té en laiton avec raccord 1/2" NPT, avec approuvée par ATEX.
Série	V6							Flotect® Mini-Taille Flussostat
Fabrication		EP						Antidéflagration
Matériau du corps			BB					Laiton
Type Circuit (interrupteur)			SS					Acier inox
Taille de connexion de té				D				DPDT
				S				SPDT
					1			1/2" NPT
					2			3/4" NPT
					3			1" NPT
					4			1-1/4" NPT
					5			1-1/2" NPT
					6			2" NPT
					LF			Faible débit avec 1/2" NPT entrée et sortie
					1E			1/2" BSPT ++
					2E			3/4" BSPT ++
					3E			1" BSPT ++
					4E			1-1/4" BSPT ++
					5E			1-1/2" BSPT ++
					6E			2" BSPT ++
					LFE			Faible débit avec 1/2" BSPT entrée et sortie ++
Type de Té et Matériel						B		Laiton
						S		Acier inox
						O		Sans Té avec palette graduée éboutable
Options							18	Ressort 0,46mm pour faible débit
							20	Ressort 0,51mm pour faible débit
							22	Ressort 0,56mm pour faible débit
							022A	Ressort 0,56mm pour faible débit avec aimant Alnico
							31	Ressort 0,79mm pour faible débit
							AT	Approuvée par ATEX
							BUSH2	1/2" NPT x 3/4" NPT Bague
							BUSH3	1/2" NPT x 1" NPT Bague
							BUSH4	1/2" NPT x 1-1/4" NPT Bague
							BUSH5	1/2" NPT x 1-1/2" NPT Bague
							BUSH6	1/2" NPT x 2" NPT Bague
							BUSH7	1/2" BSPT x 3/4" BSPT Bague, M25 X 1.5 raccord conduit ++
							BUSH8	1/2" BSPT x 1" BSPT Bague, M25 X 1.5 raccord conduit ++
							BUSH9	1/2" BSPT x 1-1/4" BSPT Bague, M25 X 1.5 raccord conduit ++
							BUSH10	1/2" BSPT x 1-1/2" BSPT Bague, M25 X 1.5 raccord conduit ++
							BUSH11	1/2" BSPT x 2" BSPT Bague, M25 X 1.5 raccord conduit ++
							CSA	Approuvée par CSA*
							CV	Palette personnalisée
							FTR	Rapport de test de débit
							GL	Câble de mise à la terre*
							ID	Information client sur plaque standard
							IEC	Approuvée par IECEx
							JCTLH	Boîtier de jonction avec côté gauche conduit
							KC	Certification Coréenne
							MT	Haute Température*
							MV	Contacts en or
							NN	Sans Information client sur plaque standard*
							ORFB	Orifice en laiton
							ORFS	Orifice en acier inox
							PT	étiquette en papier
							RV	Palette renforcée
							ST	étiquette en acier inox
							TBC	Connecteur bloc à bornes*
							VIT	Joints en élastomère fluoré

*Options que ne sont pas homologuées ATEX et IECEx. ++ BSPT options ne sont pas compatible avec KC option

V6 avec té

Eau froide - té installé en usine

Débits approximatifs d'Activation/désactivation

GPM en haut, M³/HR en bas

1/2" NPT	3/4" NPT	1" NPT	1-1/4" NPT	1-1/2" NPT	2" NPT
1,5 1,0	2,0 1,25	3,0 1,75	4,0 3,0	6,0 5,0	10,0 8,5
0,34 0,23	0,45 0,28	0,68 0,40	0,91 0,68	1,36 1,14	2,27 1,93

Air-Té installé en usine

Débits approximatifs d'Activation/désactivation

SCFM en haut, NM³/M en bas

1/2" NPT	3/4" NPT	1" NPT	1-1/4" NPT	1-1/2" NPT	2" NPT
6,5 5,0	10,0 8,0	14 12	21 18	33 30	43 36
0,18 0,14	0,28 0,23	0,40 0,34	0,59 0,51	0,93 0,85	1,19 1,02

V6 faible débit champ réglable

Eau froide - Modèles faible débit

Débits approximatifs d'Activation/désactivation

GPM en haut, M³/HR en bas

Minimum	Maximum
0,04 0,03	0,75 0,60
0,009 0,007	0,17 0,14

Air - Modèles faible débit

Débits approximatifs d'Activation/désactivation

SCFM en haut, NM³/M en bas

Minimum	Maximum
0,18 0,15	2,70 2,0
0,005 0,004	0,08 0,06

Attention : Les unités qui ne comportent pas le marquage « AT » ne satisfont pas aux exigences de la Directive 2014/34/EU (ATEX). Ces unités ne sont pas conçues pour une utilisation en atmosphères potentiellement dangereuses au sein de l'Union Européenne. Ces unités peuvent être estampillées CE pour d'autres Directives de l'Union Européenne.

V6 avec palette graduée ébutable
Eau froide - Té réducteur en laiton ou en fonte
Débits approximatifs d'Activation/désactivation
GPM en haut, M³/HR en bas

Air - Té réducteur en laiton ou en fonte
Débits approximatifs d'Activation/désactivation
SCFM en haut, NM³/M en bas

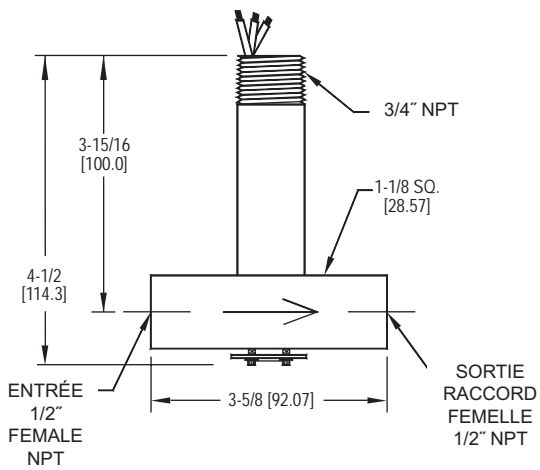
palette	1/2" NPT	3/4" NPT	1" NPT	1-1/4" NPT	1-1/2" NPT	2" NPT	1/2" NPT	3/4" NPT	1" NPT	1-1/4" NPT	1-1/2" NPT	2" NPT
Taille maximale						9,0 8,5 2,0 1,9						39,0 37,0 1,10 1,05
a						9,5 9,0 2,2 2,0						40,0 38,0 1,13 1,08
b						10,0 9,3 2,3 2,1						42,0 40,0 1,19 1,13
c						11,0 10,0 2,5 2,3						50,0 44,0 1,42 1,25
d					6,2 5,5 1,4 1,2	12,0 10,0 2,7 2,3					27,0 25,0 0,76 0,71	55,0 46,0 1,56 1,30
e					7,0 6,5 1,6 1,5	13,0 11,0 3,0 2,5						30,0 28,0 0,85 0,79
f				4,3 3,9 1,0 0,9	7,6 7,1 1,7 1,6	14,0 12,0 3,2 2,7				20,0 18,0 0,57 0,51	32,0 30,0 0,91 0,85	
g				4,9 4,4 1,1 1,0	8,0 7,3 1,8 1,7					21,0 19,0 0,59 0,54	34,0 32,0 0,96 0,91	
h				5,5 5,0 1,2 1,1	9,0 8,2 2,0 1,9					23,0 21,0 0,65 0,59	37,0 34,0 1,05 0,96	
i			3,5 3,1 0,8 0,7	6,0 5,6 1,4 1,3	10,0 9,0 2,3 2,0			16,0 15,0 0,45 0,42	24,0 22,0 0,68 0,62	39,0 36,0 1,10 1,02		
j			4,0 3,5 0,9 0,8	7,0 6,6 1,6 1,5	13,0 11,0 3,0 2,5			18,0 16,0 0,51 0,45	28,0 25,0 0,79 0,71	51,0 45,0 1,44 1,27		
k			4,6 4,2 1,04 0,95	8,0 7,6 1,8 1,7	15,0 13,0 3,4 3,0			19,0 17,0 0,54 0,48	33,0 30,0 0,93 0,85	69,0 57,0 1,95 1,61		
l		2,6 2,3 0,6 0,5	5,6 5,2 1,3 1,2	10,0 9,0 2,3 2,0				13,0 12,0 0,37 0,34	22,0 20,0 0,62 0,57	38,0 35,0 1,08 0,99		
m	1,6 1,3 0,4 0,3	3,5 3,1 0,8 0,7	6,3 6,1 1,43 1,39	12,0 10,0 2,7 2,3			6,4 3,8 0,18 0,11	15,0 14,0 0,42 0,40	25,0 23,0 0,71 0,65	45,0 42,0 1,27 1,19		
n	2,2 1,8 0,5 0,4	4,3 3,8 1,0 0,9	8,0 7,5 1,8 1,7					10,0 7,0 0,28 0,20	20,0 16,0 0,57 0,45	32,0 28,0 0,91 0,79		
o	3,0 2,4 0,7 0,5							12,0 9,0 0,34 0,25				

Eau froide - Té et bague en acier inox ou forgé
Débits approximatifs d'Activation/désactivation
GPM en haut, M³/HR en bas

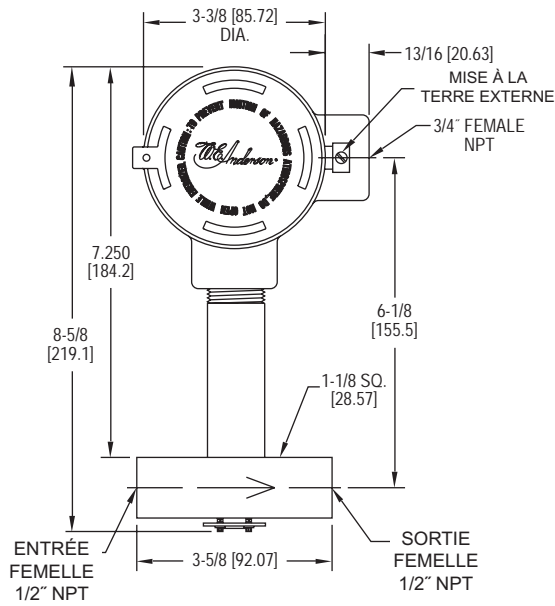
Air - Té et bague en acier inox ou forgé
Débits approximatifs d'Activation/désactivation
SCFM en haut, NM³/M en bas

palette	1/2" NPT	3/4" NPT	1" NPT	1-1/4" NPT	1-1/2" NPT	2" NPT	1/2" NPT	3/4" NPT	1" NPT	1-1/4" NPT	1-1/2" NPT	2" NPT
Taille maximale				5,0 4,5 1,1 1,0	8,5 7,8 1,9 1,8					21,0 18,0 0,59 0,51	33,0 30,0 0,93 0,85	
a				5,5 5,0 1,2 1,1	9,2 8,6 2,1 2,0					22,0 20,0 0,62 0,57	39,0 36,0 1,10 1,02	
b				6,2 5,7 1,4 1,3	9,8 9,0 2,2 2,0					24,0 22,0 0,68 0,62	42,0 38,0 1,19 1,08	
c				6,8 6,3 1,5 1,4	12,0 10,0 2,7 2,3					28,0 26,0 0,79 0,74	51,0 46,0 1,44 1,30	
d			2,8 2,4 0,6 0,5	8,5 7,8 1,9 1,8	13,0 11,0 3,0 2,5				12,0 10,0 0,34 0,28	33,0 30,0 0,93 0,85	55,0 50,0 1,56 1,42	
e			3,4 3,0 0,8 0,7	10,0 9,2 2,3 2,1					14,0 12,0 0,40 0,34	37,0 34,0 1,05 0,96		
f			4,0 3,6 0,91 0,82	12,0 10,0 2,7 2,3					16,0 14,0 0,45 0,40	43,0 40,0 1,22 1,13		
g		2,0 1,5 0,5 0,3	5,0 4,5 1,1 1,0					8,0 6,5 0,23 0,18	19,0 17,0 0,54 0,48			
h		2,5 2,0 0,6 0,5	6,5 6,1 1,48 1,39					11,0 10,0 0,31 0,28	26,0 24,0 0,74 0,68			
i		3,5 3,0 0,8 0,7	9,0 8,2 2,0 1,9					14,0 13,0 0,40 0,37	32,0 30,0 0,91 0,85			
j		7,0 5,5 1,6 1,2						27,0 24,0 0,76 0,68				
k		10,0 8,0 2,3 1,8						39,0 36,0 1,10 1,02				

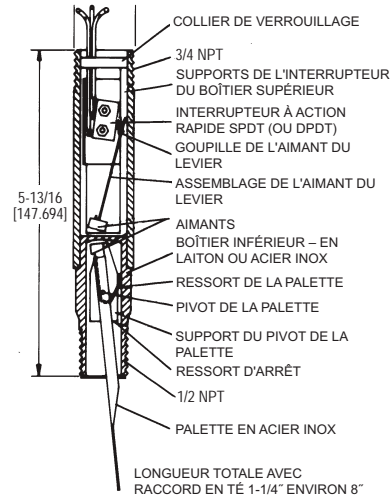
DIMENSIONS
Flussostat FLOTECT® Série V6



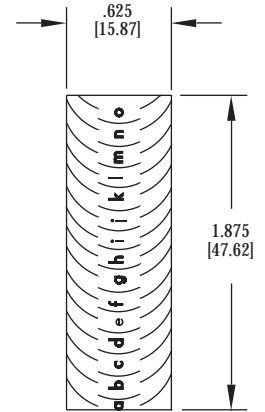
V6 faible débit



V6 faible débit avec boîtier CSA, ATEX

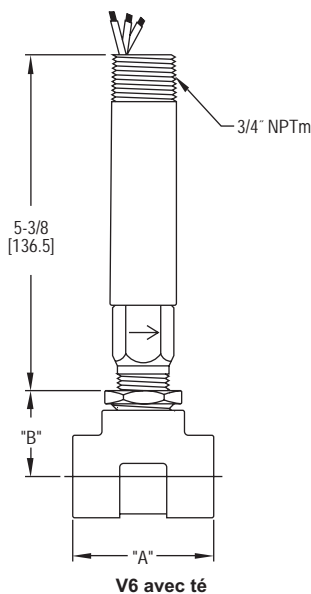


V6 avec Palette graduée éboutable

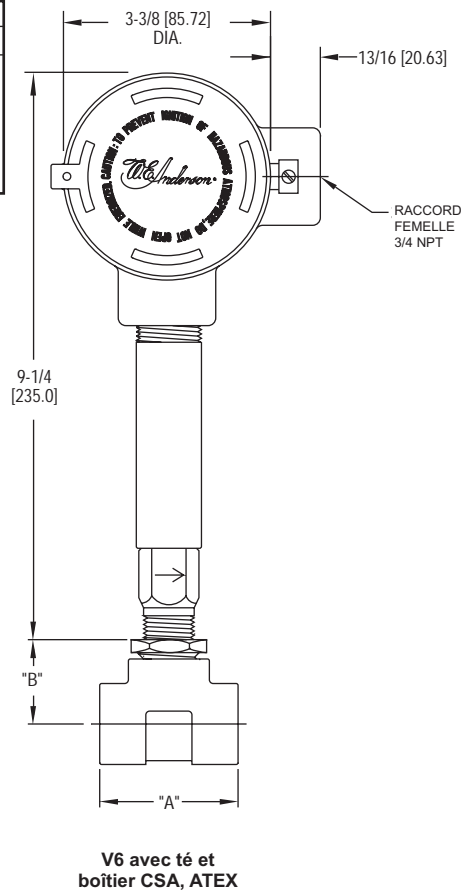


palette graduée éboutable

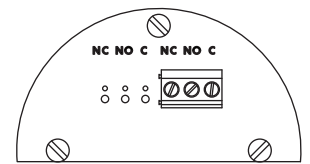
Taille tuyau	Laiton/fonte ductile		Acier forgé/inox		Fonte malléable	
	Dim. A	Dim. B	Dim. A	Dim. B	Dim. A	Dim. B
1/2"	2-1/4 (57)	1-1/8 (29)	2-1/4 (57)	1-1/8 (29)	2-1/2 (64)	1-1/4 (32)
3/4"	2-3/8 (60)	1-1/4 (32)	2-5/8 (67)	1-7/8 (47)	2-5/8 (67)	1-3/8 (35)
1"	2-1/2 (64)	1-3/8 (35)	3 (76)	2-1/8 (54)	2-7/8 (73)	1-1/2 (38)
1-1/4"	2-5/8 (67)	1-1/2 (89)	3-1/2 (38)	2-1/2 (64)	3 (76)	1-3/4 (44)
1-1/2"	2-7/8 (73)	1-5/8 (102)	4 (41)	2-3/4 (70)	3-1/4 (83)	1-7/8 (48)
2"	3 (76)	1-7/8 (121)	4-3/4 (48)	3-1/8 (79)	3-1/2 (89)	2-1/8 (54)



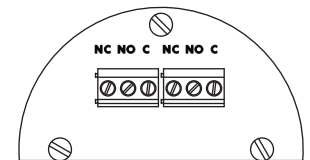
V6 avec té



V6 avec té et boîtier CSA, ATEX



SPDT

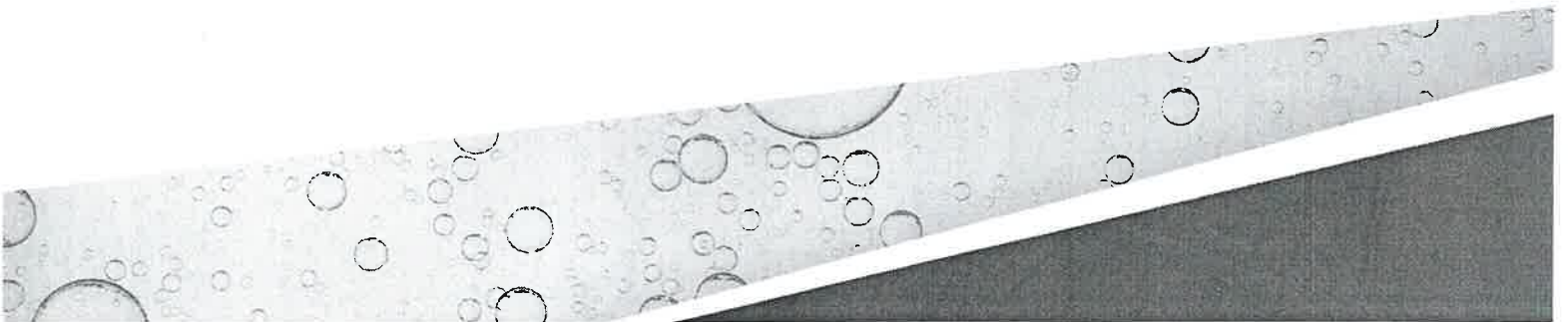


DPDT

Bornes de raccordement Boîtiers CSA, ATEX

FMP-UHS UNIVERSAL HYDROSTATIC SENSOR

INSTALLATION GUIDE



The information in this publication is provided for reference only. While every effort has been made to ensure the reliability and accuracy of the information contained in this manual at the time of printing, we recommend that you refer to "franklinfueling.com" for the most current version of this manual. All product specifications, as well as the information contained in this publication, are subject to change without notice. Franklin Fueling Systems does not assume responsibility and expressly disclaims liability for loss, damage, or expense arising out of, or in any way connected with, installation, operation, use, or maintenance by using this manual. Franklin Fueling Systems assumes no responsibility for any infringement of patents or other rights of third parties that may result from use of this manual or the products. We make no warranty of any kind with regard to this material, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose.

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Conventions used in this manual

This manual includes safety precautions and other important information presented in the following format:

NOTE: This provides helpful supplementary information.

IMPORTANT: This provides instructions to avoid damaging hardware or a potential hazard to the environment, for example: fuel leakage from equipment that could harm the environment.

▲ CAUTION: This indicates a potentially hazardous situation that could result in minor or moderate injury if not avoided. This may also be used to alert against unsafe practices.

▲ WARNING: This indicates a potentially hazardous situation that could result in severe injury or death if not avoided.

▲ DANGER: This indicates an imminently hazardous situation that will result in death if not avoided.

Operating precautions

Franklin Fueling Systems (FFS) equipment is designed to be installed in areas where volatile liquids such as gasoline and diesel fuel are present. Working in such a hazardous environment presents a risk of severe injury or death if you do not follow standard industry practices and the instructions in this manual. Before you work with or install the equipment covered in this manual, or any related equipment, read this entire manual, particularly the following precautions:

IMPORTANT: To help prevent spillage from an underground storage tank, make sure the delivery equipment is well-maintained, that there is a proper connection, and that the fill adaptor is tight. Delivery personnel should inspect delivery elbows and hoses for damage and missing parts.

▲ CAUTION: Use only original FFS parts. Substituting non-FFS parts could cause the device to fail, which could create a hazardous condition and/or harm the environment.

▲ WARNING: Follow all codes that govern how you install and service this product and the entire system. Always lock out and tag electrical circuit breakers while installing or servicing this equipment and related equipment. A potentially lethal electrical shock hazard and the possibility of an explosion or fire from a spark can result if the electrical circuit breakers are accidentally turned on while you are installing or servicing this product. Refer to this manual (and documentation for related equipment) for complete installation and safety information.

▲ WARNING: Before you enter a containment sump, check for the presence of hydrocarbon vapors. Inhaling these vapors can make you dizzy or unconscious, and if ignited, they can explode and cause serious injury or death. Containment sumps are designed to trap hazardous liquid spills and prevent environmental contamination, so they can accumulate dangerous amounts of hydrocarbon vapors. Check the atmosphere in the sump regularly while you are working in it. If vapors reach unsafe levels, exit the sump and ventilate it with fresh air before you resume working. Always have another person standing by for assistance.

▲ WARNING: Follow all federal, state, and local laws governing the installation of this product and its associated systems. When no other regulations apply, follow NFPA codes 30, 30A, and 70 from the National Fire Protection Association. Failure to follow these codes could result in severe injury, death, serious property damage, and/or environmental contamination.

▲ WARNING: Always secure the work area from moving vehicles. The equipment in this manual is usually mounted underground, so reduced visibility puts service personnel working on it in danger from moving vehicles that enter the work area. To help prevent this safety hazard, secure the area by using a service truck (or some other vehicle) to block access to the work area.

▲ DANGER: Make sure you check the installation location for potential ignition sources such as flames, sparks, radio waves, ionizing radiation, and ultrasound sonic waves. If you identify any potential ignition sources, you must make sure safety measures are implemented.

Installation

The FMP-UHS is a standard sensor that is used to detect the loss of a liquid in the normally solution-filled sensor reservoir connected to the interstitial areas of double-wall sumps. The sensor is supplied with electrical connectors, 25 feet of cable, and a cord-grip fitting. The FMP-UHS uses magnetic-float/reed-switch technology. (The sensor must be suspended vertically, so the float can freely follow the level of a liquid.)

When the float drops more than 3/4 of an inch, the magnetically sensitive reed switch opens. An open circuit is recognized as an alarm-condition at the intrinsically safe (IS) leak detection circuits of the Franklin Fueling Systems (FFS) automatic tank gauge (ATG) console.

Equipment required

- 1/2 or 3/4 inch NPT (National Pipe Thread, tapered), Rigid Metal Conduit (RMC) or nonmetallic (PVC) conduit if allowed by local code.
- EYS Seal fittings and epoxy to fill the fitting after operational testing is completed (as required).
- Weatherproof junction box, gasket, and cover, plus a 3/4 to 1/2 inch NPT reducing bushing if 1/2 inch RMC is used. Refer to the ATG Installation Guide for recommended electrical junction boxes.
- Wire: THHN, TFFN or THWN, 18 AWG, White & Black, or Alpha Cable # 58411, 0.114 O.D., 1,500 feet (457 meters) maximum length. If you are using nonmetallic (PVC) conduit, Alpha Wire P/N 58411 (2.8 mm) 0.112" O.D. must be used (INCON P/N 600-0062).
- Slip joint pliers to seat the no-strip, self-sealing wire connectors. (Connectors are supplied with the sensor.)
- UL-classified thread sealant or pipe dope.
- Optional: FMP-DB1 Epoxy Seal kit for no-strip electrical connectors. This is recommended for sites in flood zones, with high groundwater tables, with poor drainage, or where junction boxes are not used.

Installing the FMP-UHS sensor

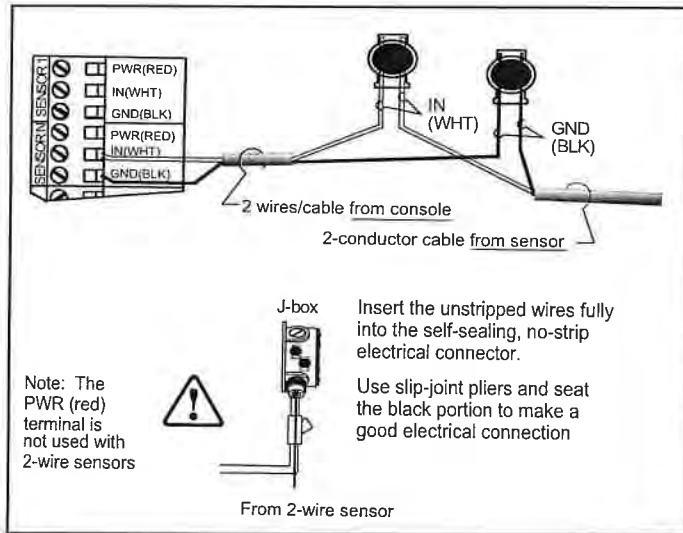
NOTE: Plan your conduit routing. Dig trenches as necessary to install conduit from each manhole junction box to the Intrinsically Safe (IS) knockouts at the ATG console. Make sure there is a junction box inside the building you can use as a pull box to combine several sensor cables. If this is the case, you use only one IS conduit knockout.

NOTE: If you are installing in a Phil-Tite double-wall dispenser sump, please see the *Fiberglass Dispenser Sump Single Wall and Double Wall Installation Instructions* (part number 602019026).

IMPORTANT: It is the installer's responsibility to comply with all applicable federal, state and local codes. Failure to do so may create an environmental hazard.

▲ WARNING: Conduits must have EYS seal fittings installed in accordance with NFPA 70 (National Electric Code) and NFPA 30A (Automotive and Marine Service Station Code). If conduits do not have these seal fittings, flammable vapors could travel through the conduit in the ATG console, and an explosion could result causing property loss, serious injury, or death.

▲ WARNING: You must install a weatherproof, electrical junction box inside each manhole. The junction box should be installed high on the manhole wall to prevent it from being submerged during heavy rains. Seal all threaded fittings and conduit threads to produce a weatherproof seal during installation and maintenance.



Mechanical installation

▲ WARNING: Make sure all power to the ATG console is turned off, tagged, and locked-out at the power panel before doing any maintenance or installation work at the ATG console.

1. Install Conduit, EYS fittings, and a weatherproof junction box.
2. Pull the sensor cable through the cord-grip fitting at the junction box and tighten all remaining cord-grip fittings.
3. Trim wires and cables to a 6 or 8 inch (15 or 20 cm) service-loop, and splice the sensor and console cables and wires together.
4. Turn on power to the console.
5. Test the sensor. (For more information, see the "Testing the FMP-UHS" section of this manual.)
6. Check the ATG console for an alarm. If there is an alarm, seal the EYS seal fittings and electrical connectors with epoxy.
7. If you are going to install other devices, turn off power to the console.
8. Reinstall all safety covers and guards, as well as the junction box gasket and covers. Use pipe-dope to seal all fitting threads.
9. Record the location where you installed the sensor.
10. Turn on power and program the ATG. Refer to all sections relating to sensors in the Setup/ Programming Guide: Service Technician setup.

Electrical wiring

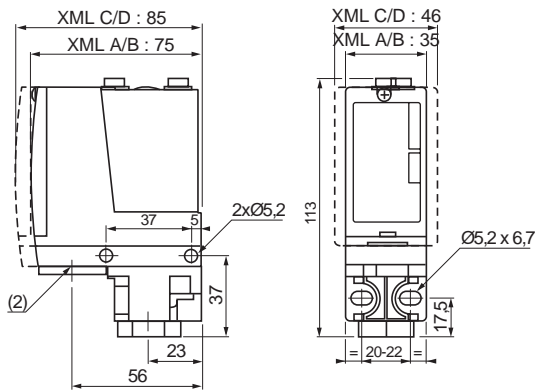
The two-wire FMP-UHS sensor does not have a red (power) conductor, so if there is a PWR (red) interface terminal at the console, it is not used. When a 3-conductor alpha cable is used, the red conductor can be clipped or taped back on both ends.

Testing the FMP-UHS

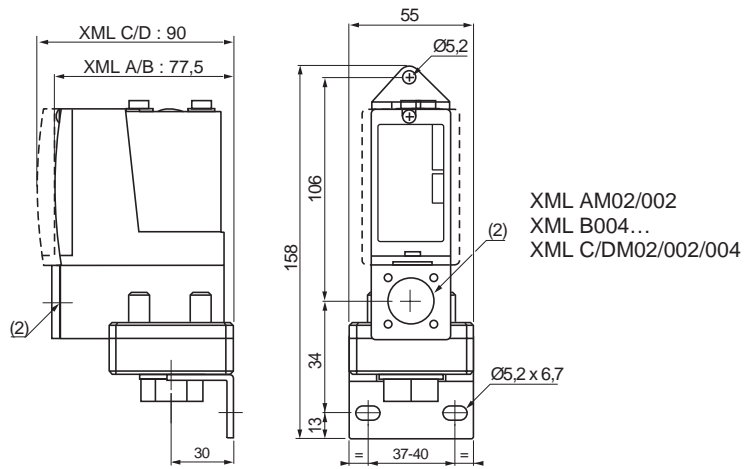
To test this device, lift the sensor from the sensor reservoir. This causes an alarm at the ATG console. Test the sensor for proper operation on a yearly basis, or more frequently, according to local code.

Dimensions - Encombraments - Abmessungen - Dimensiones - Dimensioni - Atravancamentos
 Mounting details - Fixations - Befestigung - Fijación - Quote di fissaggio - montagem

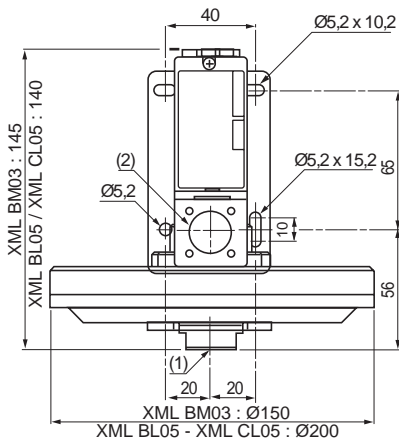
1mm = 0.0394in.



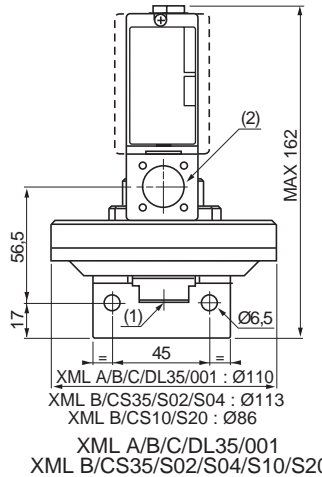
XML A/BM01/M05/010/020/035/070/160/300/500 - XML A004
 XML C/D010/020/035/070/160/300/500



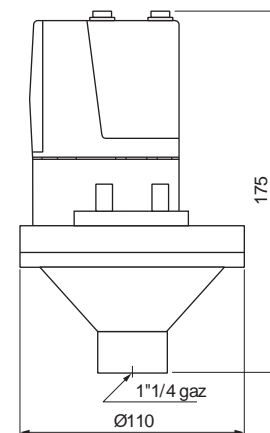
XML AM02/002
 XML B004...
 XML C/DM02/002/004



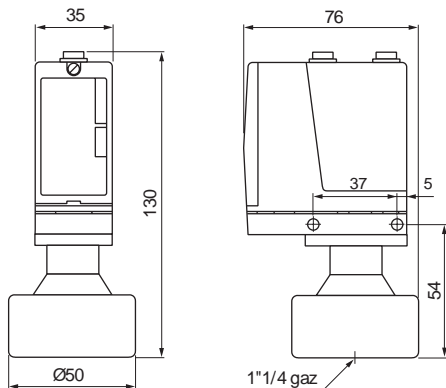
XML BM03/BL05/CL05



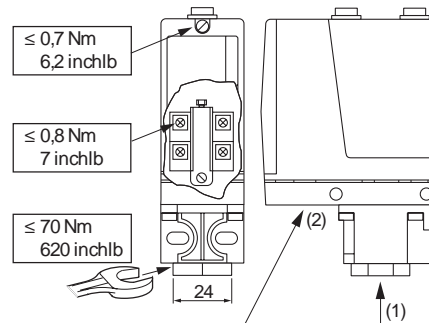
XML A/B/C/DL35/001
 XML B/CS35/S02/S04/S10/S20



XML BL35P



XML-A004/010/020/035P
 XML-BM05



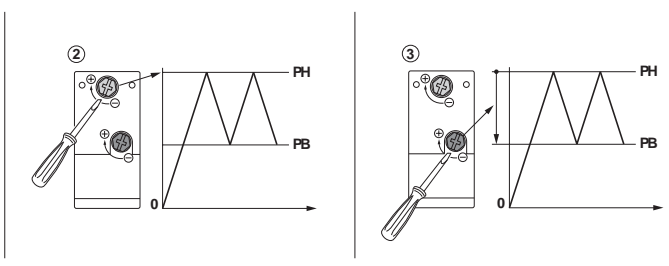
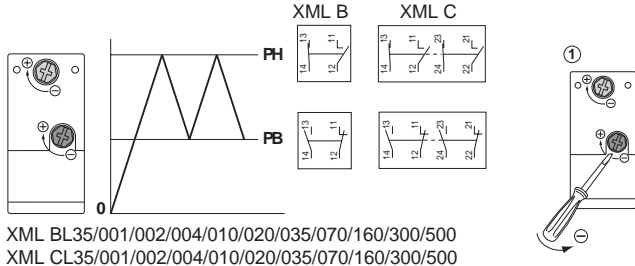
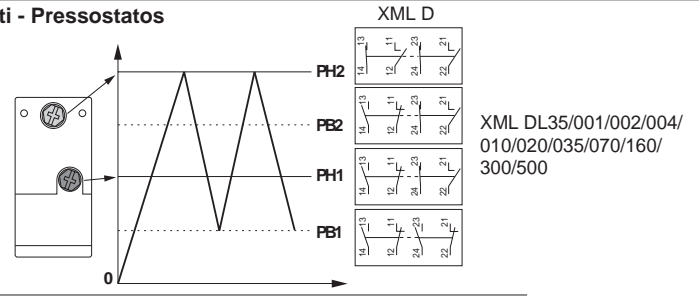
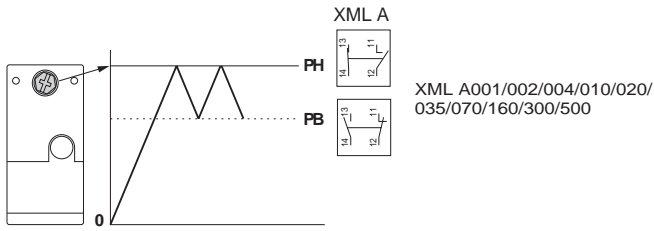
XML1	PG13.5 DIN46255	1/4" Gaz ISO228
XML2	M20 BS4568	G 1/4" ISO228 BS2779
XML3	1/2"-14 NPT ANSI B2-1	1/4"-18NPTF ANSIB1.20.3
XML4	1/2" PF JIS B0202	1/4" PT JIS B0203

CAUTION / ATTENTION / VORSICHT / AVISO / ATTENZIONE

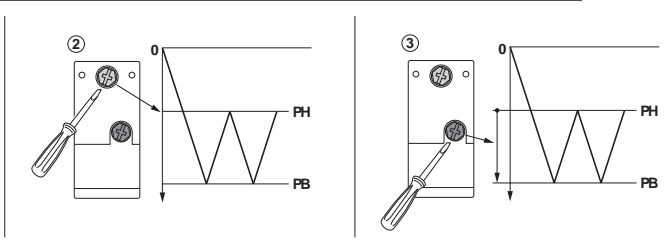
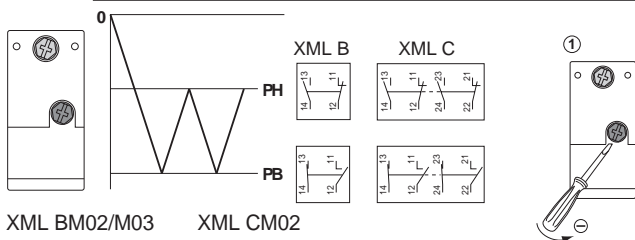
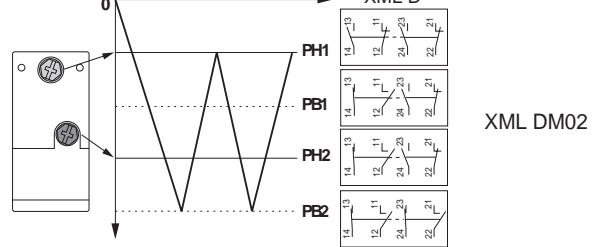
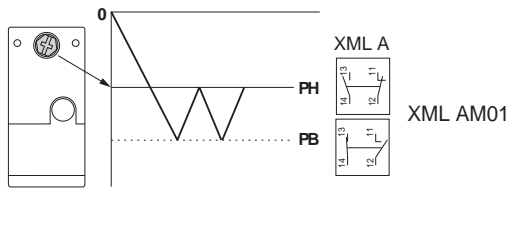
<p>Equipment damaged Use the equipment within the characteristics mentioned in catalogue Failure to follow these instructions can result equipment damage.</p>	<p>Equipement endommagé Utilisez l'équipement en respectant les caractéristiques mentionnées dans le catalogue. Le non-respect de ces instructions peut provoquer des dommages matériels.</p>	<p>Gerät beschädigt Verwenden Sie das Gerät innerhalb der im Katalog aufgeführten Kenndaten Die Nichtbeachtung dieser Anweisungen kann zu Materialschäden führen.</p>
<p>Equipo dañado Utilice el equipo dentro de los límites de las características que se mencionan en el catálogo Si no se siguen estas instrucciones pueden producirse daños en el equipo.</p>	<p>Apparecchiatura danneggiata Utilizzare l'apparecchiatura secondo le caratteristiche citate nel catalogo Il mancato rispetto di queste istruzioni può danni alle apparecchiature.</p>	

- EN Electrical equipment should be installed, operated, serviced, and maintained only by qualified personnel. No responsibility is assumed by Schneider Electric for any consequences arising out of the use of this material.
- FR Les équipements électriques doivent être installés, exploités et entretenus par un personnel qualifié. Schneider Electric n'assume aucune responsabilité des conséquences éventuelles découlant de l'utilisation de cette documentation.
- DE Elektrische Geräte dürfen nur von Fachpersonal installiert, betrieben, gewartet und instand gesetzt werden. Schneider Electric haftet nicht für Schäden, die aufgrund der Verwendung dieses Materials entstehen.
- ES Sólo el personal de servicio cualificado podrá instalar, utilizar, reparar y mantener el equipo eléctrico. Schneider Electric no asume las responsabilidades que pudieran surgir como consecuencia de la utilización de este material.
- IT Le apparecchiature elettriche devono essere installate, usate e riparate solo da personale qualificato. Schneider Electric non assume nessuna responsabilità per qualunque conseguenza derivante dall'uso di questo materiale.

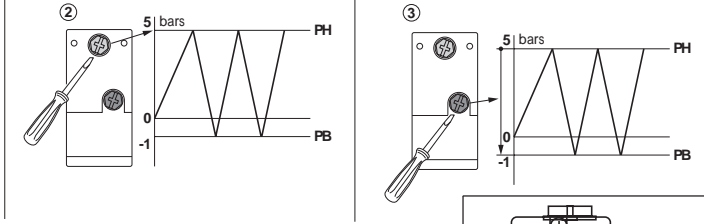
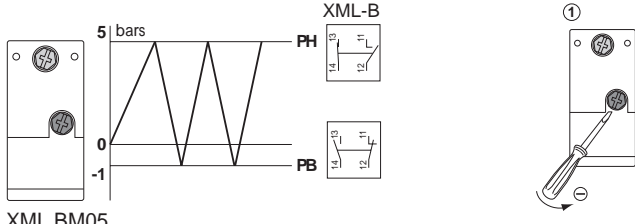
Pressure switches - Pressostats - Druckwächter - Presostatos - Pressostati - Pressostatos



Vacuum switches - Vacuostats - Vakuumschalter - Vacuostatos - Vacuostati - Vacuostatos



Vacuum pressure switches - Vacuopressostats - Vakuum Druckwächter - Vacuo Presostatos - Vacuo Pressostati - Vacuo Pressostatos

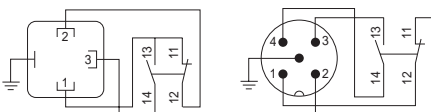


XML A/B Wiring diagram - Schémas de raccordement - Anschlußpläne - Esquemas - Schema di cablaggio - Esquemas de ligação

Connector - Connecteur - Steckverbinder - Conector - connettore - Ligador

DIN 43650

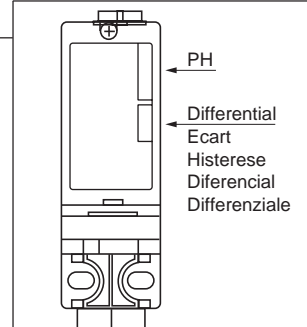
M12



PH High setting point - Point haut - Oberer Schalterpunkt - Punto de disparo superior - Punto di scatto superiore

PB Low setting point - Point bas - Unterer Schalterpunkt - Punto de disparo inferior - Punto di scatto inferiore

Adjustable / Réglable / Einstellbar Regulable / Regolabile	Not adjustable / Non réglable / Nicht einstellbar / No regulable / Non regolabile
---	---



⚠ DANGER / DANGER / GEFAHR / PELIGRO / PERICOLO

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

Disconnect all power before servicing equipment.
Failure to follow these instructions will result in death or serious injury.

RIESGO DE ELECTROCUCIÓN, EXPLOSIÓN O ARCO ELÉCTRICO

Desconecte toda alimentación antes de realizar el servicio.
Si no se siguen estas instrucciones provocará lesiones graves o incluso la muerte.

RISQUE D'ELECTROCUTION, D'EXPLOSION OU D'ARC ELECTRIQUE

Couper l'alimentation avant de travailler sur cet appareil.
Le non-respect de ces instructions provoquera la mort ou des blessures graves.

RISCHIO DI SCOSSA ELETTRICA, DI ESPLOSIONE O DI OFTALMIA DA FLASH

Scollegare l'apparecchio dalla presa di corrente prima di qualsiasi intervento.
Il mancato rispetto di queste istruzioni provocherà morte o gravi infortuni.

STROMSCHLAG-, EXPLOSIONS- ODER LICHTBOGENGEFAHR

Vor dem Arbeiten an dem Gerät dessen Stromversorgung abschalten.
Die Nichtbeachtung dieser Anweisungen führt zu Tod oder schwerer Körperverletzung.

Operation

- Before startup, check that the product has not been damaged (do not use a device if it is damaged).
- Check that the product's labeling specifications are compatible with the conditions permitted for the Ex zone at the site where it is being used: (**Group II**: Surface industries - **Category 2**: high protection level - **D**: Dust - **IPxx**: degree of protection (protection against solids and liquids) - **T85°C**: max. surface temperature)
- Store products in their original packaging, in a dry place, T: -40° to +70°C (-40 to 158°F)
- On startup:
 - Clamp screws tightening torque: 0.8 N.m
 - Tighten the cable (Ø6 to 12 mm) in the fitted ISO M20 x 1.5 cable gland
 - Assemble and adjust the product: see section A

A Assembly, dimensions		③ Unit's earth connection
(1) 1 1/4 G threaded hole (gas, female)	(3) 2 elongated holes Ø 10.2 x 5.2	Ø: 2 elongated holes 5.2 x 6.7
(2) Fitted ISO M20 x 1.5 cable gland	(4) 1 elongated hole Ø 15.2 x 5.2	

Servicing and maintenance

The intervals for carrying out servicing and maintenance must be set according to the environment and climatic variations.

- Do not open the devices when on
- Ensure that the device does not become covered in layers of dust: please vacuum regularly using equipment appropriate to the zone
- Do not open when the device is on
- The following items must be checked at least once a year or following a lengthy stoppage period:
 - All external parts must be undamaged
 - If the vacuum controller or pressure controller is damaged, it must be replaced.

If any of the items checked is defective, it must be replaced immediately. If the devices are used at the limits of the temperature (-20° C to +60° C / -4 to 140° F) and humidity (50 to 95 %) ranges, check the integrity of the connecting devices at regular intervals.

Mise en service :

- Avant la mise en service, vérifier que le produit n'a pas été endommagé (ne pas mettre en service un appareil endommagé).
- Vérifier que les indications de marquage du produit sont compatibles avec les conditions admissibles pour la zone Ex du site d'utilisation : (**Groupe II** : Industries de surface - **Catégorie 2** : haut niveau de protection - **D** : Poussières - **IPxx** : degré de protection (étanchéité aux solides et aux liquides) - **T85°C** : température max. de surface).
- Stocker les produits dans leur emballage d'origine, dans un endroit sec, T : -40°... +70°C
- A la mise en service :
 - Couple de serrage des vis étriers : 0,8 N.m
 - Serrer le câble (Ø6...12 mm) dans le presse-étoupe ISO M20 x 1,5 monté.
 - Montage et réglage du produit : voir chapitre A.

A Montage, encombrements		③ Raccordement à la terre du boîtier
(1) 1 trou taraudé G 1/4 (gaz femelle)	(3) 2 trous oblongs Ø 10,2 x 5,2	Ø : 2 trous oblongs 5,2 x 6,7
(2) Presse étoupe ISO M20 x 1,5 monté	(4) 1 trou oblong Ø 15,2 x 5,2	

Maintenance et entretien :

La périodicité des phases de maintenance et d'entretien doit être définie suivant l'environnement et les variations climatiques.

- Ne pas ouvrir les appareils sous tension.
 - Eviter toute formation de couche de poussières : effectuer un nettoyage périodique par aspiration avec des moyens appropriés à la zone.
 - Ne pas ouvrir lorsque l'appareil est sous tension.
 - La vérification des points suivants doit être effectuée au moins une fois par an ou en cas d'arrêt prolongé :
 - l'ensemble des parties externes ne doit pas être endommagé.
 - Si le vacuostat ou le pressostat est endommagé, il devra être remplacé.
- Si l'un des éléments vérifié est défaillant, procéder impérativement à son remplacement. Dans le cas d'un fonctionnement aux limites de température (-20° C...+60° C) et d'humidité (50 et 95 % humidité relative), vérifier régulièrement l'étanchéité des organes de connexion.

Inbetriebnahme

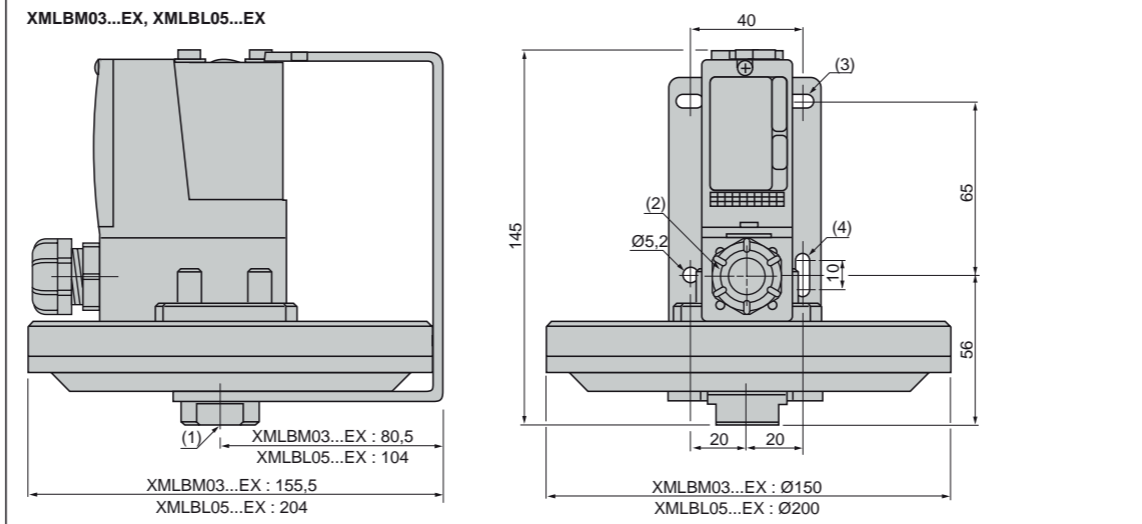
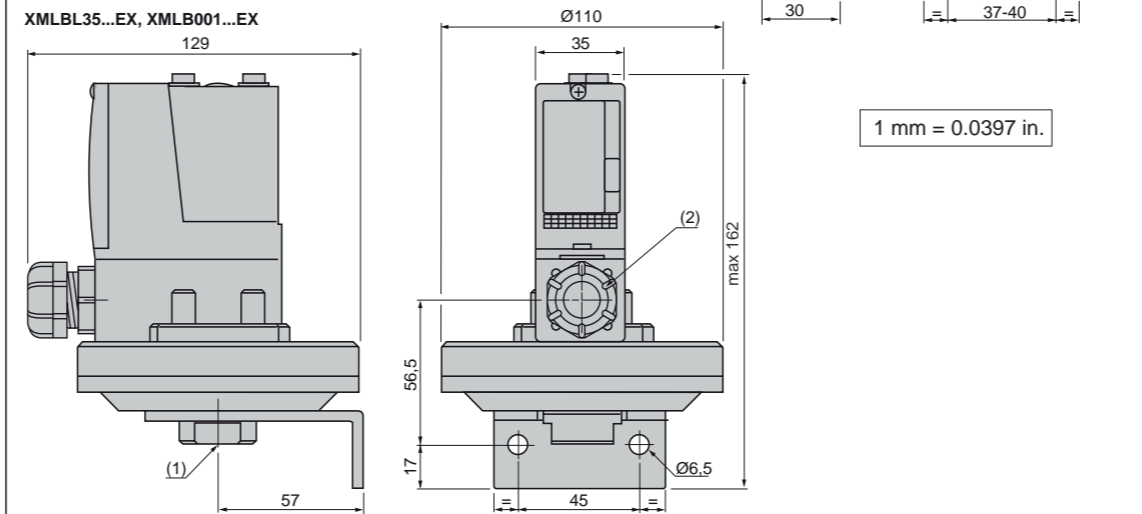
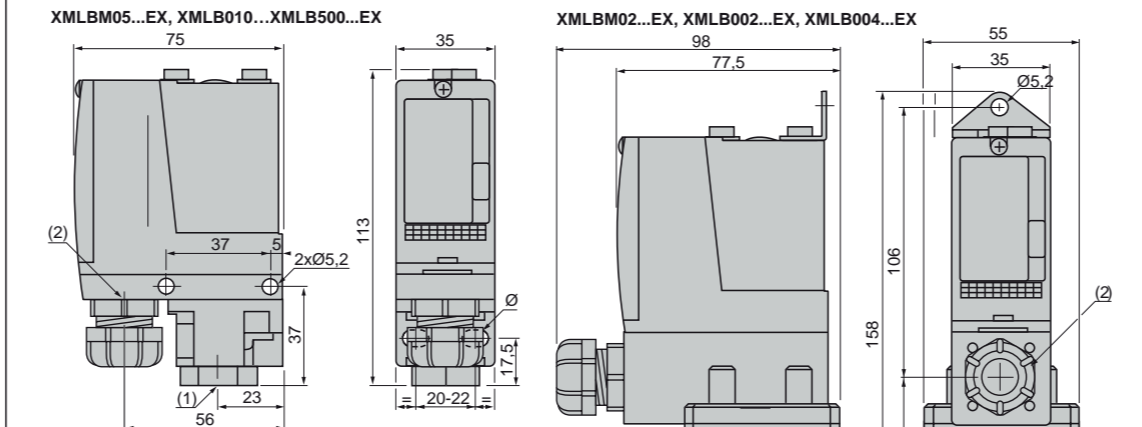
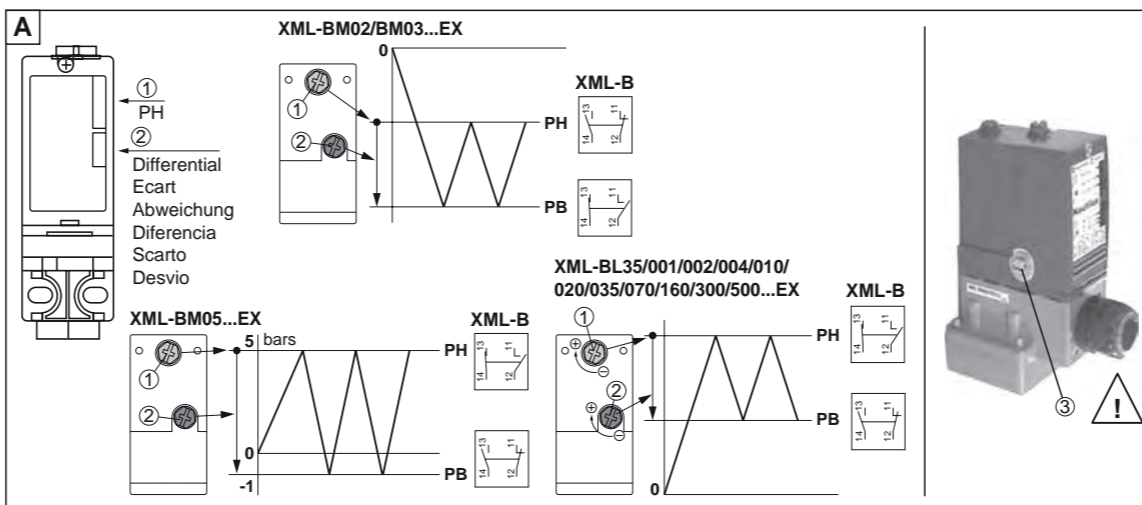
- Vor der Inbetriebnahme überprüfen, ob das Gerät nicht beschädigt ist (nie ein beschädigtes Gerät in Betrieb nehmen).
- Prüfen, ob die Angaben der Produktkennzeichnung mit den für die explosionsgefährdeten Zonen des Einsatzortes gültigen Bedingungen kompatibel sind. (**Gruppe II**: Oberflächen-Industrie - **Kategorie 2**: hohes Schutzniveau - **D**: Stäube - **IPxx**: Schutzart (Dichtigkeit gegenüber festen und flüssigen Stoffen) - **T 85 °C**: max. Oberflächentemperatur).
- Produkte in ihrer Originalverpackung an einem trockenen Ort aufbewahren, T: -40°... +70 °C.
- Bei der Inbetriebnahme:
 - Anzugsmoment der Befestigungsschrauben: 0,8 Nm.
 - Kabel (Ø 6...12 mm) in der montierten Kabeleinführung ISO M20 x 1,5 anziehen.
 - Montage und Einstellung des Produkts: siehe Kapitel A.

A Einbau, Abmessungen		③ Anschluss an die Gehäuseerde
(1) 1 Gewindebohrung G 1/4 (Gas, Buchse)	(3) 2 Langlochbohrungen Ø 10,2 x 5,2	Ø: 2 Langlochbohrungen 5,2 x 6,7
(2) Montierte Kabeleinführung ISO M20 x 1,5	(4) 1 Langlochbohrung Ø 15,2 x 5,2	

Wartung und Instandhaltung

Die Häufigkeit der Wartungs- und Instandhaltungsarbeiten ist entsprechend der Umgebung und der klimatischen Bedingungen festzulegen.

- Geräte nie im eingeschalteten Zustand öffnen.
 - Jegliche Bildung von Staubschichten vermeiden: Periodische Reinigungsarbeiten durch Absaugung mit den für diesen Bereich geeigneten Mitteln durchführen.
 - Das Gerät nicht öffnen, wenn es unter Spannung steht.
 - Die Überprüfung folgender Punkte ist mindestens einmal pro Jahr oder im Falle eines längeren Stillstands durchzuführen:
 - Keines der externen Teile darf beschädigt sein.
 - Wenn der Vakuumschalter oder der Druckschalter beschädigt ist, muss er ersetzt werden.
- Wenn eines der geprüften Komponenten ausfällt, ersetzen Sie dieses sofort. Erfolgt der Betrieb in der Höhe der Temperatur (-20 °C...+60 °C) und Luftfeuchtigkeits-Grenzwerte (50 und 95 % relative Luftfeuchte), ist regelmäßig die Dichtigkeit der Verbindungsteile zu überprüfen.



Puesta en servicio

- Antes de la puesta en servicio, verifique que el producto no esté dañado (no ponga en servicio un aparato dañado).
- Compruebe que las indicaciones de las marcas del producto sean compatibles con las condiciones permisibles en el área Ex del lugar de utilización: (**Grupo II**: industrias de superficie - **Categoría 2**: alto nivel de protección - **D**: polvo - **IPxx**: grado de protección (estanqueidad de sólidos y líquidos) - **T 85 °C**: temperatura máxima de superficie).
- El producto debe almacenarse en su embalaje original en un lugar seco a una temperatura de -40° a +70 °C
- Durante la puesta en servicio:
 - Par de apriete de los tornillos de estribo: 0,8 Nm.
 - Apriete del cable (Ø de 6 a 12 mm) en el prensaestopas ISO M20 x 1,5 montado.
 - Montaje y ajuste del producto: véase el capítulo A.

A Montaje y dimensiones		③ Conexión a tierra de la caja
(1) 1 orificio con rosca G 1/4 (gas hembra)	(3) 2 orificios apaisados Ø 10,2 x 5,2	Ø: 2 orificios apaisados 5,2 x 6,7
(2) Prensaestopas ISO M20 x 1,5 montado	(4) 1 orificio apaisado Ø 15,2 x 5,2	

Mantenimiento

La frecuencia del servicio de mantenimiento debe definirse en función del ambiente y las variaciones climáticas.

- No abra los aparatos mientras reciban tensión.
- Debe evitarse la formación de capas de polvo: aspire el aparato periódicamente con los medios adecuados para el área correspondiente.
- El aparato no debe abrirse mientras está conectado.
- Las siguientes comprobaciones deben realizarse anualmente o en el caso de un paro prolongado del aparato:
 - El conjunto de las piezas externas no debe estar dañado.
 - Si el vacuostato o el presostato están dañados, deben sustituirse.

Si uno de los elementos verificados es defectuoso, debe sustituirse. En el caso de un funcionamiento con límites de temperatura (de -20° a +60 °C) y humedad (entre 50 y 95 % de humedad relativa), compruebe regularmente la estanqueidad de los componentes de conexión.

Avviamento

- Prima dell'avviamento verificare che il prodotto non sia danneggiato (non avviare un dispositivo danneggiato).
- Verificare che le indicazioni della marcatura del prodotto siano con le condizioni ammissibili per la zona Ex del sito di utilizzo: (**Gruppo II**: Industrie di superficie - **Categoria 2**: alto livello di protezione - : Polveri - **IPxx**: grado di protezione (tenuta ai solidi e ai liquidi) - **T85°C**: temperatura max. in superficie).
- Conservare i prodotti nell'imballaggio originale, in un ambiente asciutto, T : -40°... +70°C
- All'avviamento:
 - Coppia di serraggio delle viti ad anello: 0,8 N.m;
 - fermare il cavo (Ø6...12 mm) nel pressacavo ISO M20 x 1,5 montato;
 - montaggio e regolazione del prodotto: cfr. Capitolo A.

A Montaggio, ingombro		③ Messa a terra della custodia
(1) 1 foro filettato G 1/4 (gas femmina)	(3) 2 fori oblunghi Ø 10,2 x 5,2	Ø : 2 fori oblunghi 5,2 x 6,7
(2) Pressacavo ISO M20 x 1,5 montato	(4) 1 foro oblungo Ø 15,2 x 5,2	

Manutenzione

Definire la periodicità delle fasi di manutenzione in base all'ambiente e alle variazioni climatiche.

- Non aprire gli apparecchi sotto tensione.
 - Evitare la formazione di strati di polvere: effettuare una pulizia periodica mediante aspirazione con mezzi adatti alla zona.
 - Non aprire quando l'apparecchio è sotto tensione.
 - Verificare i seguenti punti almeno una volta all'anno o dopo un arresto prolungato:
 - l'insieme delle parti esterne non deve essere danneggiato ;
 - se il vacuostato o il pressostato è danneggiato, sostituirlo.
- Se uno degli elementi controllati risulta difettoso, procedere in modo tassativo alla sua sostituzione. In caso di funzionamento ai limiti della temperatura (-20° C... +60° C) e dell'umidità (50 e 95 % di umidità relativa), controllare regolarmente la tenuta degli organi di collegamento.

Ligação

- Antes de ligar, verificar se o produto não está danificado (não ligar um aparelho danificado).
- Verificar se as indicações de marcação do produto são compatíveis com as condições admissíveis para a zona Ex do local de utilização: (**Grupo II**: Indústrias de superfície - **Categoria 2**: nível de proteção elevado - **D**: Poeiras - **IPxx**: grau de proteção (estanqueidade aos sólidos e aos líquidos) - **T 85 °C**: temperatura máxima à superfície).
- Armazenar os produtos na embalagem de origem, em local seco, T: -40°... +70° C
- Durante a ligação:
 - Binário de aperto dos parafusos de estribo: 0,8 N.m.
 - Apertar o cabo (Ø6...12 mm) na caixa de empanque ISO M20 x 1,5 montado.
 - Montagem e regulação do produto: consultar a secção A.

A Montagem, dimensões		③ Ligação à terra da caixa
(1) 1 furo roscado G de ¼ " (fêmea gás)	(3) 2 furos compridos de Ø 10,2 x 5,2	Ø : 2 furos compridos de 5,2 x 6,7
(2) Caixa de empanque ISO M20 x 1,5 montado	(4) 1 furo comprido de Ø 15,2 x 5,2	

Manutenção

A frequência das ações de manutenção deve ser estabelecida consoante o ambiente e as variações climáticas.

- Não abrir os aparelhos em tensão.
 - Evitar a formação de camadas de poeira : efectuar uma limpeza periódica por aspiração com os meios próprios da zona.
 - Não abrir o aparelho quando estiver em tensão.
 - A verificação dos pontos que se seguem deve ser efectuada pelo menos uma vez por ano ou no caso de paragem prolongada:
 - o conjunto das partes externas não deve estar danificado.
 - Se o vacuostato ou o pressostato estiver deteriorado, deverá ser substituído.
- Se um dos elementos verificados estiver defeituoso, é imperativo substituí-lo. Em caso de funcionamento nos limites de temperatura (-20° C...+60° C) e de humidade (50 e 95 % de humidade relativa), verificar com regularidade a estanqueidade dos órgãos de ligação.



**Feuille d'inspection à l'installation et la mise en service du système de transfert d'huile /
Oil-transfer unit installation and commissioning inspection sheet**

Informations générales / General informations

Numéro de projet Desjardins/ Desjardins project number	Responsable/ Responsible	Date
Client de Desjardins/ Desjardins's Customer		
Projet (Utilisateur)/ Project (User)		

Informations sur les pompes / Pumps informations

Type de montage/ Type of installation	<input type="checkbox"/> Simplex	<input type="checkbox"/> Duplex	
Marque/ Manufacturer	Modèle/ Model	No série/ Serial number	
HP	RPM	Voltage-Amperage	

Liste de vérifications / Verifications list

Verification	Pompe 1/ Pump 1	Pompe 2/ Pump 2
Le test de pression de la plomberie tel que 2.1.1 du manuel d'installation, de mise en service, d'utilisation et de maintenance a été fait/ The piping pressurization test has been done according to 2.1.1 of the installation, commissioning, use and maintenance manuel		
Vérifier le montage général/ Check the general installation		
Vérifier l'alignement/ Check the alignment		
Vérifier l'alimentation/ Check the alimentation		
Vérifier qu'il n'y a pas d'air dans la pompe/ Check that there is no air in the pump		
Vérifier que la pompe tourne facilement sans restriction / Check that the pump turns easily without restriction		
Vérifier le sens de rotation des pompes/ Check the orientations of the pumps		
Vérifier les connexions électriques/ Check the electrical connection		
Vérifier le panneau électrique/ Check the electrical pannel		
Vérifier les alarmes/ Check the alarms		
Vérifier l'ajustement des valves de surpression/ Check the adjustment of the presssure relief valves		
Vérifier l'ajustement de l'interrupteur de débit/ Check the adjustment of the flow switch		
Vérifier l'ajustement de l'interrupteur de pression/ Check the adjustment of the presssure switch		
Vérifier la pression à l'entrée de la pompe/ Check the pressure at the inlet of the pump		
Vérifier la pression à la sortie de la pompe/ Check the pressure at the outlet of the pump		

Notes:



**Feuille d'inspection périodique du système de transfert d'huile/
Oil-transfer unit periodic inspection sheet**

Informations générales / General informations

Numéro de projet Desjardins/ Desjardins project number	Responsable/ Responsible	Date
Client de Desjardins/ Desjardins's Customer		
Projet (Utilisateur)/ Project (User)		

Informations sur les pompes / Pumps informations

Type de montage/ Type of installation			
Marque/ Manufacturer	Modèle/ Model	No série/ Serial number	
HP	RPM	Voltage-Amperage	

Liste de vérifications / Verifications list

Verification	Pompe 1/ Pump 1	Pompe 2/ Pump 2
Vérifier le montage général (inspection visuelle)/ Check the general installation (visual inspection)		
Vérifier l'alignement/ Check the alignment		
Vérifier l'alimentation/ Check the alimentation		
Vérifier que la pompe tourne facilement sans restriction / Check that the pump turns easily without restriction		
Vérifier les connexions électriques/ Check the electrical connection		
Vérifier le panneau électrique/ Check the electrical pannel		
Vérifier les alarmes/ Check the alarms		
Vérifier l'ajustement des valves de surpression/ Check the ajustment of the pressurre relief valves		
Vérifier l'ajustement de l'interrupteur de débit/ Check the ajustment of the flow switch		
Vérifier l'ajustement de l'interrupteur de pression/ Check the ajustment of the pressurre switch		
Vérifier la pression à l'entrée de la pompe/ Check the pressure at the inlet of the pump		
Vérifier la pression à la sortie de la pompe/ Check the pressure at the outlet of the pump		

Notes: