### LUBRICATORS

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Visit [www.pdnplu.com](http://www.pdnplu.com) for additional instruction sheets.
Pneumatic Division
Richland, Michigan 49083
269-629-5000

Installation & Service Instructions
1L002C
In-Line Lubricator Model 02L
ISSUED: February, 2006
Supersedes: December, 2005
Doc.# 1L002, ECN# 060042, Rev. 6

- WARNING
To avoid unpredictable system behavior that can cause personal injury and property damage:
  - Disconnect electrical supply (when necessary) before installation, servicing, or conversion.
  - Disconnect air supply and depressurize all air lines connected to this product before installation, servicing, or conversion.
  - Operate within the manufacturer’s specified pressure, temperature, and other conditions listed in these instructions.
  - Medium must be moisture-free if ambient temperature is below freezing.
  - Service according to procedures listed in these instructions.
  - Installation, service, and conversion of these products must be performed by knowledgeable personnel who understand how pneumatic products are to be applied.
  - After installation, servicing, or conversion, air and electrical supplies (when necessary) should be connected and the product tested for proper function and leakage. If audible leakage is present, or the product does not operate properly, do not put into use.
  - Warnings and specifications on the product should not be covered by paint, etc. If masking is not possible, contact your local representative for replacement labels.

- WARNING
FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.
This document and other information from The Company, its subsidiaries and authorized distributors provide product and/or system options for further investigation by users having technical expertise. It is important that you analyze all aspects of your application, including consequences of any failure and review the information concerning the product or systems in the current product catalog. Due to the variety of operating conditions and applications for these products or systems, the user, through its own analysis and testing, is solely responsible for making the final selection of the products and systems and assuring that all performance, safety and warning requirements of the application are met. The products described herein, including without limitation, product features, specifications, designs, availability and pricing, are subject to change by The Company and its subsidiaries at any time without notice.

EXTRA COPIES OF THESE INSTRUCTIONS ARE AVAILABLE FOR INCLUSION IN EQUIPMENT / MAINTENANCE MANUALS THAT UTILIZE THESE PRODUCTS. CONTACT YOUR LOCAL REPRESENTATIVE.

Installation
1. Refer to Warnings.
   CAUTION! Depressurize Before Servicing!
2. Install at air inlet or tool if possible. Unit will operate in any position, allowing it to be mounted on air hose.
3. Install the unit with the air flowing in direction of arrow on body.
4. MAKE SURE AIR SUPPLY IS TURNED OFF AND DEPRESSURIZED BEFORE REMOVING FILL PLUG. Remove fill plug and fill unit. Use only clean oil, SAE 10 or lighter is best.
5. Unit must be moved periodically or it will not feed oil. DO NOT install on rigid, non-moving air lines.

Maintenance

Repair Kits and Replacement Parts
   O-Ring Kit ...............................................................PS435
   Brass Fill Plug Kit ..................................................PS434

![Diagram of installation and parts]
Instructions d’installation et Service
1L002C (French Canadian)
Lubrificateur an ligne Modèle 02L
DISTRIBUE: Février, 2006
Supplantent: Décembre, 2005
Doc.# 1L002, ECN# 060042, Rev. 6

Pneumatic Division
Richland, Michigan 49083
269-629-5000

AVERTISSEMENT

Afin d’éviter un fonctionnement imprévu du système pouvant occasionner des blessures aux personnes et des dommages matériels :

• Débrancher l’alimentation électrique (si nécessaire) avant toute installation, entretien ou conversion.
• Débrancher l’alimentation en air et dépressuriser toutes les canalisations d’air connectées à cet appareil avant installation, entretien ou conversion.
• Utiliser l’appareil conformément aux normes de pression, température, et autres conditions spécifiées par le fabricant dans ces instructions.
• Le médium doit être exempt d’humidité si la température descend en dessous de 0°C.
• L’entretien doit se faire conformément aux procédures décrites ici.
• L’installation, l’entretien, et la conversion de ces appareils doivent être effectuées par des personnels qualifiés, au fait des techniques pneumatiques.
• Après installation, entretien ou conversion, les alimentations en air et en électricité (si nécessaire) seront connectées et l’appareil testé pour vérifier son fonctionnement correct et l’absence de fuites. Si l’appareil présente une fuite audible ou ne fonctionne pas correctement, ne pas l’utiliser.
• Les inscriptions concernant les avertissements et spécifications sur l’appareil ne devront pas être recouvertes de peinture, etc. Si le masquage est impossible, contactez votre représentant local pour des étiquettes de remplacement.

AVERTISSEMENT

LA DéFAILLANCE, LE CHOIX ERRONE OU L’USAGE NON CONFORME DES PRODUITS ET/OU SYSTEMES ICI DÉCRITS, OU PRODUITS Y AFFERANT, PEUVENT ENTRAINER LA MORT, DES BLESSURES AUX PERSONNES ET DES DOMMAGES MATÉRIELS.

Ce document et autres informations de « The Company », ses filiales et distributeurs autorisés offre des options complémentaires d’utilisation du produit et/ou système pour des utilisateurs ayant l’expertise technique requise. Il est important que vous analysez tous les aspects de l’usage prévu, y compris les conséquences de toute défaillance, et que vous passiez en revue les informations concernant les produits et systèmes dans le catalogue actuel des produits. En raison de la diversité des conditions de fonctionnement et d’utilisation de ces produits ou systèmes, l’utilisateur, et lui seul, selon ses propres analyses et tests, porte la responsabilité du choix final des produits et systèmes. Il est aussi de sa responsabilité pleine et entière de s’assurer que les produits soient utilisés conformément aux normes de sécurité et avertissements d’usage.

Les produits décrits ici, y compris, mais non exclusivement, les caractéristiques des produits, spécifications, aspects, disponibilité et prix, sont susceptibles de modification à tout moment et sans préavis par « The Company » et ses filiales.

DES EXEMPLAIRES SUPPLEMENTAIRES DE CES INSTRUCTIONS SONT DISPONIBLES POUR ACCOMPAGNER LES APPAREILS/MANUELS D’ENTRETIEN CORRESPONDANT A CES PRODUITS. CONTACTEZ VOTRE REPRÉSENTANT LOCAL.

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Installation

1. Lire l’avertissements. ATTENTION! DÉTENDRE LA PRESSION AVANT TOUTE INTERVENTION!
2. Installer à l’entrée d’air ou sur l’outil si possible. Le dispositif fonctionne dans n’importe quelle position, ce qui permet de le monter sur le tuyau flexible d’air comprimé.
3. Monter le dispositif de manière à ce que l’air s’écoule dans la direction de la flèche.
5. Le dispositif doit être déplacé de temps à autre pour délivrer l’huile.

Ne pas le monter sur des conduites d’air rigides et fixes.

Entretien

1. Démonter de temps en temps le tube d’huilage et nettoyer l’intérieur du corps. Souffler dans le tube d’huilage au pistolet à air. S’assurer que la goupille d’huilage se déplace librement.

TROUSSE DE RÉPARATION ET PIÈCES DE RECHANGE

Jeu de joints toriques ........................................................ PS435
Ensemble de bouchon de remplissage en laiton ................ PS434

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Instructions d’installation et Service
1L002C (French Canadian)
Lubrificateur an ligne Modèle 02L
DISTRIBUE: Février, 2006
Supplantent: Décembre, 2005
Doc.# 1L002, ECN# 060042, Rev. 6

Pneumatic Division
Richland, Michigan 49083
269-629-5000

AVERTISSEMENT

La défaillance, le choix erroné ou l’usage non conforme des produits et/ou systèmes ici décrits, ou produits y afférent, peuvent entraîner la mort, des blessures aux personnes et des dommages matériels.

Ce document et autres informations de « The Company », ses filiales et distributeurs autorisés offrent des options complémentaires d’utilisation du produit et/ou système pour des utilisateurs ayant l’expertise technique requise. Il est important que vous analysez tous les aspects de l’usage prévu, y compris les conséquences de toute défaillance, et que vous passiez en revue les informations concernant les produits et systèmes dans le catalogue actuel des produits. En raison de la diversité des conditions de fonctionnement et d’utilisation de ces produits ou systèmes, l’utilisateur, et lui seul, selon ses propres analyses et tests, porte la responsabilité du choix final des produits et systèmes. Il est aussi de sa responsabilité pleine et entière de s’assurer que les produits soient utilisés conformément aux normes de sécurité et avertissements d’usage.

Les produits décrits ici, y compris, mais non exclusivement, les caractéristiques des produits, spécifications, aspects, disponibilité et prix, sont susceptibles de modification à tout moment et sans préavis par « The Company » et ses filiales.

Des exemplaires supplémentaires de ces instructions sont disponibles pour accompagner les appareils/manuels d’entretien correspondant à ces produits. Contactez votre représentant local.

Installation

1. Lire l’avertissements. ATTENTION! DÉTENDRE LA PRESSION AVANT TOUTE INTERVENTION!
2. Installer à l’entrée d’air ou sur l’outil si possible. Le dispositif fonctionne dans n’importe quelle position, ce qui permet de le monter sur le tuyau flexible d’air comprimé.
3. Monter le dispositif de manière à ce que l’air s’écoule dans la direction de la flèche.
5. Le dispositif doit être déplacé de temps à autre pour délivrer l’huile.

Ne pas le monter sur des conduites d’air rigides et fixes.

Entretien

1. Démonter de temps en temps le tube d’huilage et nettoyer l’intérieur du corps. Souffler dans le tube d’huilage au pistolet à air. S’assurer que la goupille d’huilage se déplace librement.

TROUSSE DE RÉPARATION ET PIÈCES DE RECHANGE

Jeu de joints toriques ........................................................ PS435
Ensemble de bouchon de remplissage en laiton ................ PS434
ADVERTENCIAS

Para evitar un comportamiento impredecible del sistema que pueda ocasionar lesiones personales y daños a la propiedad:

- Antes de instalar, reparar o convertir, desconecte el suministro eléctrico (cuando sea necesario).
- Antes de instalar, reparar o convertir, desconecte el suministro de aire y despresurice todas las líneas de aire que están conectadas a este producto.
- Haga funcionar dentro de la presión, temperatura y demás condiciones especificadas por el fabricante y que se incluyen en estas instrucciones.
- El medio debe estar libre de humedad si la temperatura ambiente se encuentra por debajo del punto de congelación.
- Repare de acuerdo con los procedimientos que se incluyen en estas instrucciones.
- La instalación, reparación y conversión de estos productos debe ser realizada por personal competente que entienda la manera en que se deben aplicar los productos neumáticos.
- Después de la instalación, reparación y conversión, se debe conectar los suministros eléctricos y de aire (cuando sea necesario), y el producto se debe poner a prueba para determinar que funciona correctamente y no tiene pérdidas. Si se detecta una pérdida audible, o si el producto no funciona correctamente, no lo ponga en funcionamiento.
- Las advertencias y especificaciones que aparecen en el producto no deben estar cubiertas por pintura, etc. Si no resulta posible colocarlo con cinta adhesiva, póngase en contacto con su representante local para obtener etiquetas de repuesto.

ADVERTENCIA

EL FALLO O LA SELECCIÓN INCORRECTA O EL USO INCORRECTO DE LOS PRODUCTOS Y/O SISTEMAS AQUÍ DESCritos U OTROS ARTÍCULOS RELACIONADOS PUEDE RESULTAR EN MUERTE, LESIONES PERSONALES Y DAÑO A LA PROPIEDAD.

Este documento y demás información de la compañía, sus subsidiarias y distribuidores autorizados ofrecen opciones de productos y sistemas para mayor investigación por parte de los usuarios que cuenten con conocimientos técnicos. Es importante que analice todos los aspectos de su aplicación, incluyendo las consecuencias de cualquier fallo y que revise la información concerniente al producto o los sistemas que se encuentran en el catálogo actual de productos. Debido a la variedad de condiciones de funcionamiento y aplicaciones para estos productos o sistemas, el usuario, mediante su propio análisis y pruebas, es únicamente responsable por la selección final de los productos y sistemas, y por garantizar que se cumpla con todos los requisitos de funcionamiento, seguridad y advertencia de la aplicación.

Los productos aquí descritos, incluyendo pero sin limitarse, a las características del producto, las especificaciones, los diseños, la disponibilidad y los precios, están sujetos a cambios por parte de la compañía y de sus subsidiarias en cualquier momento sin aviso.

SE PUEDE OBTENER COPIAS ADICIONALES DE ESTAS INSTRUCCIONES PARA INCLUIR CON EL EQUIPO / LOS MANUALES DE MANTENIMIENTO QUE UTILIZAN ESTOS PRODUCTOS. COMUNíQUESE CON SU REPRESENTANTE LOCAL.

INSTALACION

1. Remítase a la Advertencias. PRECAUCION DESPRESURIZAR ANTES DEL SERVICIO DE MANTENIMIENTO!
2. Instale en la entrada de aire o herramienta si fuera posible. La unidad operará en cualquier posición, permitiendo que se pueda montar en la manguera de aire.
3. Instale la unidad de manera que el aire fluya en dirección de la flecha en el cuerpo de la misma.
4. ASEGURARSE DE QUE EL SUMINISTRO DE AIRE ESTÉ DESCONECTADO Y DESPRESURIZADO ANTES DE RETIRAR EL TAPÓN. Retire el tapón y llene la unidad. Utilice solamente aceite limpio, SAE 10 o más liviano es lo mejor.
5. La unidad se debe mover periódicamente o no alimentará aceite. NO instalarla en conductos de aire rígidos no movibles.

MANTENIMIENTO

1. Retire el tubo alimentador ocasionalmente y límpie el interior del cuerpo. Limpie el tubo alimentador con el chorro de aire de una escopeta de aire comprimido. Asegúrese de que el perno de alimentación de aceite se mueva libremente.

JUEGOS DE REPARACION Y REPUESTOS

Juego de juntas tóricas .......................................................... PS435
Juego de tapones de bronce .................................................. PS434
Introduction

Follow these instructions when installing, operating, or servicing the product.

Application Limits

These products are intended for use in general purpose compressed air systems only.

Operating Pressure Range:

- Lubricators w/ Plastic Bowls
  - Maximum: 1034 kPa (150 PSIG, 10.34 bar)
- Lubricators w/ Metal Bowls
  - Maximum: 1724 kPa (250 PSIG, 17.24 bar)

Minimum Flow for Lubrication: 1.0 SCFM at 100 PSIG

Operating Temperature Range:

- Lubricators w/ Plastic Bowls: -29°C * to 49°C (-20°F to 120°F)
- Lubricators w/ Metal Bowls: -29°C * to 74°C (-20°F to 165°F)

* Temperatures below 0°C (32°F) require moisture free air.

Suggested Lubricant: F442 Oil

Petroleum based oil of 100 to 200 SUS viscosity at 100°F and an aniline point greater than 200°F.

(DO NOT USE OILS WITH ADDITIVES, COMPOUNDED OILS CONTAINING SOLVENTS, GRAPHITE, DETERGENTS, OR SYNTHETIC OILS.)

Installation:

1. Lubricator should be installed with reasonable accessibility for service whenever possible — repair service kits are available. Keep pipe or tubing lengths to a minimum with inside clean and free of dirt and chips. Pipe joint compound should be used sparingly and applied only to the male pipe — never into the female port. Do not use PTFE tape to seal pipe joints — pieces have a tendency to break off and lodge inside the unit, possibly causing malfunction. Also new pipe or hose should be installed between the lubricator and equipment being protected.

2. Install lubricator so that air flows from “IN” to “OUT” as marked on the lubricator.

3. Installation should be downstream of the filter and regulator but upstream of the device it is to lubricate (valve, cylinders, tool, etc.).

4. Install lubricator vertically with bowl drain mechanism at the bottom. Free moisture will thus drain into the sump (“quiet zone”) at the bottom of the bowl.

5. Verify that lock ring is installed properly. If it is not, install lock ring and turn clockwise until it clicks into place. (See Bowl Replacement for more details.)

ANSI Symbol:

![ANSI Symbol]

Operation

Air flowing through the unit goes through two paths. At low flow rates the majority of the air flows through the venturi section (A). The rest of the air opens the flapper (C). The velocity of the air flowing through the venturi section (A) creates a pressure drop. This lower pressure allows the oil to be forced from the reservoir through the pickup tube (B) and travels up to the metering screw (D). The rate of oil delivery is then controlled by adjusting the metering screw (D). Oil flows past the metering screw (D) and forms a drop in the nozzle tube (E). As the oil drops through the dome (F) and back into the venturi section (A), it is broken up into fine particles. It is then mixed with the air flowing past the flapper (C) and is carried downstream. As the air flow increases, the flapper (C) will open more fully. The additional flow will assure that the oil delivery rate will increase linearly with the increase of air flow.

To fill lubricator with oil without turning the line pressure off, first remove the fill plug (G) to relieve pressure from the bowl (H), then either pour oil through fill plug hole or remove bowl (H) and pour oil directly into the bowl.

WARNING

To avoid unpredictable system behavior that can cause personal injury and property damage:

- Disconnect electrical supply (when necessary) before installation, servicing, or conversion.
- Disconnect air supply and depressurize all air lines connected to this product before installation, servicing, or conversion.
- Operate within the manufacturer’s specified pressure, temperature, and other conditions listed in these instructions.
- Medium must be moisture-free if ambient temperature is below freezing.
- Service according to procedures listed in these instructions.
- Installation, service, and conversion of these products must be performed by knowledgeable personnel who understand how pneumatic products are to be applied.
- After installation, servicing, or conversion, air and electrical supplies (when necessary) should be connected and the product tested for proper function and leakage. If audible leakage is present, or the product does not operate properly, do not put into use.
- Warnings and specifications on the product should not be covered by paint, etc. If masking is not possible, contact your local representative for replacement labels.

Failure or improper selection or improper use of the products and/or systems described herein or related items can cause death, personal injury and property damage.

This document and other information from The Company, its subsidiaries and authorized distributors provide product and/or system options for further investigation by users having technical expertise. It is important that you analyze all aspects of your application, including consequences of any failure and review the information concerning the product or systems in the current product catalog. Due to the variety of operating conditions and applications for these products or systems, the user, through its own analysis and testing, is solely responsible for making the final selection of the products and systems and assuring that all performance, safety and warning requirements of the application are met.

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Maintenance:
1. Periodically fill lubricator, do not allow oil level to drop below end of suction tube.
2. Keep oil and air clean to prevent clogging of oil passages. A filter installed upstream of the lubricator is recommended.

Cleaning:
1. Depress button on lock ring, turn counterclockwise and remove along with bowl assembly.
2. Clean the lubricator element and bowl assembly with MILD SOAP AND WATER ONLY! See CAUTION above.
3. Reinstall the bowl assembly and lock ring. Turn lock ring clockwise until it clicks into place.

Bowl Replacement:
1. Depress button on lock ring, turn counterclockwise and remove along with bowl assembly.
2. Install new bowl assembly and lock ring. Turn lock ring clockwise until it clicks into place.

WARNING: Conversion or replacement of an old metal bowl with a new plastic bowl will reduce the product pressure / temperature rating. Be certain that the circuit and environment does not exceed the lower ratings; and that rating labels elsewhere on the product are replaced with one describing the lower rating. Failure to do so may cause property damage, injury or death.

Bowl Guard Installation:
1. Depress button on lock ring, turn counterclockwise and remove.
2. Slip guard over bowl.
3. Reinstall the bowl assembly and lock ring. Turn lock ring clockwise until it clicks into place.

Pressure Fill Adapter Installation:
Remove fill plug (G) and discard. Install pressure fill adapter in its place.

Service:
1. Remove fill plug (G), replace o-ring (J) on fill plug with new one from kit and reinstall fill plug.
2. Remove sight dome (F), replace o-ring (K) under sight dome, o-ring (R) under drip tube, & small o-ring (S) for adjusting needle with new ones from kit, if necessary, and reinstall sight dome.
3. Remove lock ring assembly (L) and bowl assembly.
4. Remove (4) screws (M), plate, gasket (N) and servo-vane (C).
5. Proceed using a, b, or c, depending on construction of your lubricator.
   a. 1/4” through 1/2” lubricators with old style servo-vane (C) (ears on top) - discard old servo-vane and strap (P). Install new strap onto new servo-vane making sure chamfered corner on servo-vane and strap line up with each other. NOTE: If your unit falls in this group, be sure to read step 11 at right.
   b. 1/4” through 1/2” lubricators with new style servo-vane (C) (flat topped). Discard old servo-vane and strap (P). Install new strap onto new servo-vane making sure chamfered corner on servo-vane and strap line up with each other.
   c. 3/4” and 1” lubricators - discard old servo-vane (C) and strap (P). Install new strap onto new servo-vane making sure chamfered corner on servo-vane and strap line up with each other.
6. Install servo-vane (C) and strap (P) into body making sure chamfered corners on servo-vane and strap line up with chamfer in body.
7. Install new gasket (N).
8. Reinstall cover plate and screws (M) on compact, tighten screws 0.5 to 0.9 Nm (6 to 8 in-lbs); on standard and full size models, tighten screws 1.4 to 1.7 Nm (12 to 15 in-lbs).
9. Replace bowl o-ring (Q) with new one.
10. Reinstall bowl assembly (H) and lock ring assembly (L).

11. If your lubricator is the type mentioned in step 5.a. and your flow requirements are below 16 SCFM at 100 PSIG, this retrofit may not perform satisfactorily to fulfill your lubrication needs. Test your unit and, if this occurs, contact the Technical Service Department.

Service Kits / Parts:
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<th>Item</th>
<th>Description</th>
<th>Compact</th>
<th>Standard</th>
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<td>L</td>
<td>Lock Ring Assembly</td>
<td>—</td>
<td>03582 7502B</td>
<td>03586 7501B</td>
</tr>
<tr>
<td>Q</td>
<td>O-Ring *</td>
<td>02709 7202B</td>
<td>03454 7240B</td>
<td>03454 7247B</td>
</tr>
</tbody>
</table>

* Furnished in Service Kit.

Accessories:
<table>
<thead>
<tr>
<th>Item</th>
<th>Compact Lubricator</th>
<th>Standard Lubricator</th>
<th>Full Size Lubricator</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>Bowls Guards</td>
<td>03530 0100B</td>
<td>03532 0100B</td>
</tr>
<tr>
<td>B</td>
<td>Bowl Kits</td>
<td>03530 0500B</td>
<td>03532 0500B</td>
</tr>
<tr>
<td></td>
<td>Polycarbonate</td>
<td>03530 0400B</td>
<td>03532 0400B</td>
</tr>
<tr>
<td></td>
<td>Metal</td>
<td>03530 0500B</td>
<td>03532 0500B</td>
</tr>
<tr>
<td></td>
<td>Manual Drain</td>
<td>PS512P</td>
<td>PS512P</td>
</tr>
<tr>
<td></td>
<td>Pipe Mounting Bracket</td>
<td>00902 0400B</td>
<td>00902 0400B</td>
</tr>
<tr>
<td></td>
<td>Oil</td>
<td>0422002</td>
<td>0422002</td>
</tr>
<tr>
<td></td>
<td>1 Gallon</td>
<td>0422002</td>
<td>0422002</td>
</tr>
<tr>
<td></td>
<td>12 Quart Case</td>
<td>0422003</td>
<td>0422003</td>
</tr>
<tr>
<td></td>
<td>4 Gallon Case</td>
<td>0422005</td>
<td>0422005</td>
</tr>
</tbody>
</table>
Installation Instructions:

#035820500 Tamperproof Option for Use with 3500 Series Lubricators.

A. TO INSTALL
   1. Drop metal insert into cavity over the adjusting screw so that the convex or dome side of the insert is facing upwards.
   2. Use a blunt instrument, such as a pencil eraser, and flatten the metal insert thereby causing it to become firmly wedged in place over the adjusting screw.

B. TO REMOVE
   1. Use a pointed tool to dislodge the insert which then becomes easy to remove and allows adjustment of the lubricator.

NOTE: Any attempt to tamper with the lubricator setting will be evidenced by a severely damaged metal insert.
Application Limits

These products are intended for use in general purpose compressed air systems only.

With Polycarbonate Bowl

<table>
<thead>
<tr>
<th>Operating Pressure Maximum</th>
<th>1030</th>
<th>150</th>
<th>10.3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Temperature Maximum</td>
<td>52°C (125°F)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

With Metal Bowl

<table>
<thead>
<tr>
<th>Operating Pressure Maximum</th>
<th>1720</th>
<th>250</th>
<th>17.2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Temperature Maximum</td>
<td>80°C (175°F)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Instructions

1. Turn off air supply and depressurize the lubricator before removing any parts.
2. For sight gauge and restrictor kits, remove the bowl.
3. Follow the individual kit instructions below for the kit replacement involved.
4. After the completion of sight gauge or body service kit installation, replace the bowl o-ring with a new one, cleaning the areas where the o-ring seals. (NOTE: Use only mineral based oils or grease; do not use silicone.) Screw bowl completely back into body.
5. Repressurize the assembled unit and check for possible leaks.

Operation and Service

1. Filling — The Lubricator may be refilled by pouring oil through the fill hole at the top after removing the plug.

CAUTION: Micro-Mist Lubricators require the air supply to be shut-off and the pressure in the bowl released before removing the fill plug. Standard Mist type unit do not require this shut-off. If the type of unit cannot be determined, turn the fill plug one

<table>
<thead>
<tr>
<th>WARNING</th>
</tr>
</thead>
</table>

Bowl guards are recommended for added protection of polycarbonate bowls where chemical attack may occasionally occur.

Introduction

Follow these instructions when installing, operating, or servicing the product.

![WARNING]

To avoid unpredictable system behavior that can cause personal injury and property damage:
- Disconnect electrical supply (when necessary) before installation, servicing, or conversion.
- Disconnect air supply and depressurize all air lines connected to this product before installation, servicing, or conversion.
- Operate within the manufacturer’s specified pressure, temperature, and other conditions listed in these instructions.
- Medium must be moisture-free if ambient temperature is below freezing.
- Service according to procedures listed in these instructions.
- Installation, service, and conversion of these products must be performed by knowledgeable personnel who understand how pneumatic products are to be applied.
- After installation, servicing, or conversion, air and electrical supplies (when necessary) should be connected and the product tested for proper function and leakage. If audible leakage is present, or the product does not operate properly, do not put into use.
- Warnings and specifications on the product should not be covered by paint, etc. If masking is not possible, contact your local representative for replacement labels.

![CAUTION]

Polycarbonate bowls, being transparent and tough, are ideal for use with Filters and Lubricators. They are suitable for use in normal industrial environments, but should not be located in areas where they could be subjected to direct sunlight, an impact blow, nor temperatures outside of the rated range. As with most plastics, some chemicals can cause damage. Polycarbonate bowls should not be exposed to chlorinated hydrocarbons, ketones, esters and certain alcohols. They should not be used in air systems where compressors are lubricated with fire-resistant fluids such as phosphate ester and diester types.

Metal bowls are recommended where ambient and/or media conditions are not compatible with polycarbonate bowls. Metal bowls resist the action of most such solvents, but should not be used where strong acids or bases are present or in salt laden atmospheres. Consult the factory for specific recommendations where these conditions exist.

TO CLEAN POLYCARBONATE BOWLS USE MILD SOAP AND WATER ONLY! DO NOT use cleansing agents such as acetone, benzene, carbon tetrachloride, gasoline, toluene, etc., which are damaging to this plastic.

Bowl guards are recommended for added protection of polycarbonate bowls where chemical attack may occasionally occur.

Introduction

Follow these instructions when installing, operating, or servicing the product.
type of unit, make adjustments while air is flowing and oil drops are visible in the sight dome. Use a blade screwdriver to turn the adjusting screw in the top of the lubricator.

Leaner — Clockwise
Richer — Counterclockwise
The rate of oil drops in the sight dome should be used to judge the requirements for the application.

Individual Kit Instructions

A. Sight Dome & Fill Cap Kit
After step 1, remove the old parts. Clean the exposed sealing surfaces on the body. Install the new seals. Fit the domes together, install and torque 25-30 inches. Install the new cap, seal, and hand tighten. Check for sight dome and fill cap leaks in step 5.

B. Sight Gauge Kit
After step 2, remove the old parts and clean the sight gauge sealing surfaces on the bowl. Fit the large o-ring into the sight gauge groove (note the gripping nibs). Place the sight gauge in position, add the screws and o-rings and secure with 12-16 lb-inches torque. Follow step 4 next.

C. Restrictor Kit
After step 2, remove the two screws in the body holding the plastic base. Remove the base and pull out the restrictor, injector, cone, o-ring, pickup tube, and metering block. The return tube can remain in the base. Remove the o-rings from the injector and base and replace with the new kit o-rings. (NOTE: Kit PS231B has two base o-rings — select the correct size. Also new Micro-Mist lubricators do not require base o-rings — series 16L, 17L, 18L). Place the new restrictor onto the cone (center rib facing the bowl interior on Hi-flow size units) and install into the body, making certain the injector with o-ring is properly centered and engaged into the body. Carefully replace the plastic base, engaging the cone and tighten the holding screws 10-15 lb-inches for Standard and Compact Series size units, and 30-40 lb-inches for Hi-flow Series size units. Follow step 4 next.

D. Pressure Fill Adaptor Kit
After step 1, remove the fill cap and clean the sealing surface on the body. Place the kit o-ring into the adaptor's groove and thread the adaptor unit into the body with 20-30 lb-inches torque. Follow step 5 before making any hydraulic fitting connections.

Kits Available

<table>
<thead>
<tr>
<th>Description</th>
<th>Kit No.</th>
<th>Series</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sight Dome/ Fill Cap Kit</td>
<td>PS508P (Black)</td>
<td>06L, 07L, 08L</td>
</tr>
<tr>
<td></td>
<td>PS509P (Yellow)</td>
<td>16L, 17L, 18L</td>
</tr>
<tr>
<td>Sight Gauge Kit</td>
<td>PS117P</td>
<td>06L, 16L</td>
</tr>
<tr>
<td></td>
<td>PS217P</td>
<td>07L, 17L</td>
</tr>
<tr>
<td></td>
<td>PS317P</td>
<td>08L, 17L</td>
</tr>
<tr>
<td>Body Service Kit</td>
<td>PS131BP</td>
<td>06L, 16L</td>
</tr>
<tr>
<td></td>
<td>PS231BP</td>
<td>07L, 17L</td>
</tr>
<tr>
<td></td>
<td>PS331CP</td>
<td>08L, 18L</td>
</tr>
<tr>
<td>Pressure Fill Adaptor Kit</td>
<td>PS122P</td>
<td>06L, 07L, 08L</td>
</tr>
<tr>
<td></td>
<td></td>
<td>16L, 17L, 18L</td>
</tr>
</tbody>
</table>
Introduction
Follow these instructions when installing, operating, or servicing the product.

Application Limits
These products are intended for use in general purpose compressed air systems only.

Maximum Operating Pressure:

<table>
<thead>
<tr>
<th>kPa</th>
<th>PSIG</th>
<th>bar</th>
</tr>
</thead>
<tbody>
<tr>
<td>1380</td>
<td>200</td>
<td>13.8</td>
</tr>
</tbody>
</table>

Maximum Ambient Temperature: 80°C (175°F)

ANSI Symbol

Installation & Service Instructions:
1L800B
2" Basic Lubricator

ISSUED: November, 2003
Supersedes: September, 2000
Doc.# 1L800, ECN# 030539, Rev. 4

WARNING
To avoid unpredictable system behavior that can cause personal injury and property damage:
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- Medium must be moisture-free if ambient temperature is below freezing.
- Service according to procedures listed in these instructions.
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- Warnings and specifications on the product should not be covered by paint, etc. If masking is not possible, contact your local representative for replacement labels.

Operation & Service
1. FILLING - Removal of the oil fill plug vents the bowl pressure and allows the unit to be filled without shutting down the air supply line. (Line pressure is blocked by the action of a check valve.) Fill bowl (standard capacity 32 fluid ounces) with oil having 150 to 200 SUS viscosity at 38°C (100°F) - this is the same as SAE number 10; (petroleum based hydraulic oils or spindle oils are good examples). DO NOT USE OILS WITH ADHESIVES OR TACKY ADDITIVES. COMPOUND OILS CONTAINING SOLVENTS, GRAPHITE, SOAP OR DETERGENTS (automotive oils generally contain detergents), ARE NOT RECOMMENDED. Suggested Lubricant: F442 oil.
2. Replace the fill plug and seat it firmly. Avoid excessive torque. Check to insure that the lubricator is pressurized. The lubricator is now ready for setting.
3. OIL DELIVERY ADJUSTMENT - To adjust the oil delivery, use a flat blade screwdriver to turn the adjusting screw in the top of the lubricator. Turn the screw clockwise to obtain a leaner mixture and counterclockwise for a richer mixture.

By counting the number of drops per minute in the sight dome, you can adjust to your requirements. Generally, one drop per minute for every 10-15 SCFM (280-420 std. liters/min) flow is satisfactory. Twenty-five (25) drops per minute equals about 1 oz/hr (0.8 ml/min) - volume of oil passing through Sight Dome.

NOTE: This is a constant density type lubricator which delivers a constant ratio of oil to air flow. Therefore, if air flow increases or decreases, oil delivery will be adjusted proportionately. ONLY IF A DIFFERENT RATIO IS DESIRED NEED YOUR METERING SCREW SETTING BE CHANGED AFTER YOUR INITIAL SETTING.

Repairs & Adding Options to Lubricator
Service kits are available for routine maintenance. Note how unit was assembled when making repairs. Consult Figure on back for visual guidance. If you have questions concerning how to service this unit, contact your local authorized dealer or your customer service representative.

![Lubricator w/ Manual Drain]

WARNING
FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

This document and other information from The Company, its subsidiaries and authorized distributors provide product and/or system options for further investigation by users having technical expertise. It is important that you analyze all aspects of your application, including consequences of any failure and review the information concerning the product or systems in the current product catalog. Due to the variety of operating conditions and applications for these products or systems, the user, through its own analysis and testing, is solely responsible for making the final selection of the products and systems and assuring that all performance, safety and warning requirements of the application are met.

The products described herein, including without limitation, product features, specifications, designs, availability and pricing, are subject to change by The Company and its subsidiaries at any time without notice.

EXTRA COPIES OF THESE INSTRUCTIONS ARE AVAILABLE FOR INCLUSION IN EQUIPMENT / MAINTENANCE MANUALS THAT UTILIZE THESE PRODUCTS. CONTACT YOUR LOCAL REPRESENTATIVE.
Maintenance Procedures

1. Given clean operating conditions, this unit will be trouble-free. Contaminants from dirty oil may collect on the siphon tube inlet filter, requiring the filter to be cleaned by tapping on a hard surface and blowing off with an air blow gun.

2. IF THE OIL DELIVERY RATE DROPS, the lubricator should be cleaned. Shut off the air supply and reduce the pressure in the unit to zero. Remove the adjusting screw and clean the needle and seat in the body. Inspect and clean the passage from the needle seat down into the siphon tube adapter. Remove the Flow-Guide® variable orifice screw and clean air passages with a small wire. Check the bore that the screw fits into for contaminants and clean if necessary. Be sure the passageway from the sight dome cavity downward is open. Remove and clean the valve seat and the valve bracket.

3. Drain off any contaminants which collect in the bottom of the bowl.

Kits and Parts Available

<table>
<thead>
<tr>
<th>Kit No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PS607</td>
<td>O-Ring Repair Kit</td>
</tr>
<tr>
<td>PS608</td>
<td>Bowl O-Ring Kit</td>
</tr>
<tr>
<td>PS609</td>
<td>Siphon Tube Assembly Kit</td>
</tr>
<tr>
<td>PS610</td>
<td>Fill Plug Kit</td>
</tr>
<tr>
<td>PS611</td>
<td>Flow-Guide® Variable Orifice Kit</td>
</tr>
<tr>
<td>PS612</td>
<td>Metal Bowl Kits (with sight gauge and petcock)</td>
</tr>
<tr>
<td>PS613</td>
<td>Sight Dome Kit</td>
</tr>
</tbody>
</table>

**CAUTION**

Certain compressor oils, chemicals, household cleaners, solvents, paints and fumes will attack plastic bowls and can cause bowl failure. Do not use near these materials. When bowl becomes dirty, replace bowl or wiping only with a clean, dry cloth. Reinstall metal bowl guard after cleaning or buy and install a metal bowl guard. Immediately replace any crazed, cracked, damaged or deteriorated plastic bowl with a metal bowl or a new plastic bowl and a metal bowl guard.

**SOME OF THE MATERIALS THAT WILL ATTACK POLYCARBONATE PLASTIC BOWLS**

- Acetaldehyde
- Acetic acid (conc.)
- Acetone
- Acrylic acid
- Ammonia
- Ammonium fluoride
- Ammonium hydroxide
- Ammonium sulfide
- Anaerobic adhesives
- & sealants
- Antifreeze
- Benzene
- Benzene alcohol
- Benzyl alcohol
- Brake fluids
- Bromobenzene
- Butyl alcohol
- Carbolic acid
- Carbon disulfide
- Carbon tetrachloride
- Caustic soda solution
- Caustic potash solution
- Caustic soda solution
- Chloroform
- Chloroform
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- Chloroform
- Chloroform
- Chloranil
- Chlorbenzenes
- Chloroethene
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- Chlorofo
Pneumatic Division
Richland, Michigan 49083
269-629-5000

Introduction
Follow these instructions when installing, operating, or servicing the product.

Application Limits
These products are intended for use in general purpose compressed air systems only.

Maximum Operating Pressure:

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<tr>
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<tbody>
<tr>
<td>1380</td>
<td>200</td>
<td>13.8</td>
</tr>
</tbody>
</table>

Maximum Ambient Temperature: 66°C (150°F)

ANSI Symbol
Lubricator w / Manual Drain

Installation
1. Lubricator unit should be installed with reasonable accessibility for service whenever possible - repair service kits are available. Keep pipe or tubing lengths to a minimum with inside clean and free of dirt and chips. Pipe joint compound should be used sparingly and applied only to the male pipe - never into the female port. Do not use PTFE tape to seal pipe joints - pieces could break off and lodge inside unit or devices which are located downstream of unit, possibly causing malfunction.

2. Install lubricator so that air flow is in direction of arrow on body.

3. Installation must be upstream from, and close as possible to the devices it is to service (valve, cylinder, tool, etc.). Whenever possible, avoid locations that require airborne oil to move in an upward direction to reach the device to be lubricated.

4. The installation of an individual lubricator for each air consuming device provides best assurance of proper lubrication.

5. In new installations, it is good practice to “wet down” the inside diameter of piping and/or hose with oil before making final connections. Although your Lubricator delivers oil to the line, precoating the inside diameter with oil helps insure that proper amounts of oil are delivered to the point of application.

Operation & Service
1. FILLING - Removal of the oil fill plug vents the bowl pressure and allows the unit to be filled without shutting down the air supply line. (Line pressure is blocked by the action of a check valve.) Fill bowl (standard capacity 32 fluid ounces) with oil having 150 to 200 SUS viscosity at 38°C (100°F) - this is the same as SAE Number 10; (petroleum based hydraulic oils or spindle oils are good examples). DO NOT USE OILS WITH ADHESIVES OR TACKY ADDITIVES. COMPOUND OILS CONTAINING SOLVENTS, GRAPHITE, SOAPS OR DETERGENTS (automotive oils generally contain detergents), ARE NOT RECOMMENDED. Suggested Lubricant: F442 oil.

2. Replace the fill plug and seat it firmly. Avoid excessive torque. Check to insure that the lubricator is pressurized. The lubricator is now ready for setting.

3. OIL DELIVERY ADJUSTMENT - To adjust the oil delivery, use a flat blade screwdriver to turn the adjusting screw in the top of the lubricator. Turn the screw clockwise to obtain a leaner mixture and counterclockwise for a richer mixture.

By counting the number of drops per minute in the sight dome, you can adjust to your requirements. Generally, one drop per minute for every 10-15 SCFM (280-420 std. liters/min) flow is satisfactory. Twenty-five (25) drops per minute equals about 1 oz/hr (0.8 ml/min) - volume of oil passing through Sight Dome.

NOTE: This is a constant density type lubricator which delivers a constant ratio of oil to air flow. Therefore, if air flow increases or decreases, oil delivery will be adjusted proportionately. ONLY IF A DIFFERENT RATIO IS DESIRED NEED YOUR METERING SCREW SETTING BE CHANGED AFTER YOUR INITIAL SETTING.

Repairs & Adding Options to Lubricator
Service kits are available for routine maintenance. Note how unit was assembled when making repairs. Consult Figure on back for visual guidance. If you have questions concerning how to service this unit, contact your local authorized dealer or your customer service representative.

Installation & Service Instructions:
1L801B
2” Basic Lubricator
(3 Quart Capacity)

ISSUED: November, 2003
Supersedes: January, 2002

Doc.# 1L801, ECN# 030539, Rev. 4

FAILURES OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

This document and other information from The Company, its subsidiaries and authorized distributors provide product and/or system options for further investigation by users having technical expertise. It is important that you analyze all aspects of your application, including consequences of any failure and review the information concerning the product or systems in the current product catalog. Due to the variety of operating conditions and applications for these products or systems, the user, through its own analysis and testing, is solely responsible for making the final selection of the products and systems and assuring that all performance, safety and warning requirements of the application are met.

The products described herein, including without limitation, product features, specifications, designs, availability and pricing, are subject to change by The Company and its subsidiaries at any time without notice.
Maintenance Procedures

1. Given clean operating conditions, this unit should be trouble-free. Contaminants from dirty oil may collect on the siphon tube inlet filter, requiring the filter to be cleaned by tapping on a hard surface and blowing off with an air blow gun.

2. IF THE OIL DELIVERY RATE DROPS, the lubricator should be cleaned. Shut off the air supply and reduce the pressure in the unit to zero. Remove the adjusting screw and clean the needle and seat in the body. Inspect and clean the passage from the needle seat down into the siphon tube adapter. Remove the Flow-Guide® variable orifice screw and clean air passages with a small wire. Check the bore that the screw fits into for contaminants and clean if necessary. Be sure the passageway from the sight dome cavity downward is open. Remove and clean the valve seat and the valve bracket.

3. Drain off any contaminants which collect in the bottom of the tank.

Kits and Parts Available

<table>
<thead>
<tr>
<th>Kit No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PS608</td>
<td>O-Ring Repair Kit</td>
</tr>
<tr>
<td>PS615</td>
<td>Siphon Tube Assembly Kit</td>
</tr>
<tr>
<td>PS610</td>
<td>Fill Plug Kit</td>
</tr>
<tr>
<td>PS611</td>
<td>Flow-Guide® Variable Orifice Kit</td>
</tr>
<tr>
<td>PS613</td>
<td>Sight Dome Kit</td>
</tr>
<tr>
<td>PS616</td>
<td>Sight Gauge Kit</td>
</tr>
</tbody>
</table>

TRADE NAMES OF SOME COMPRESSOR OILS, RUBBER COMPOUNDS AND OTHER MATERIALS THAT WILL ATTACK POLYCARBONATE PLASTIC BOWLS

<table>
<thead>
<tr>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atlas &quot;Perma-Guard&quot;</td>
</tr>
<tr>
<td>Buna N</td>
</tr>
<tr>
<td>Cellulose #150 and #220</td>
</tr>
<tr>
<td>Cryelex #5 cement</td>
</tr>
<tr>
<td>&quot;Eastman 910&quot;</td>
</tr>
<tr>
<td>Garlock 98403 (polyurethane)</td>
</tr>
<tr>
<td>Haskel 568-023</td>
</tr>
<tr>
<td>Houghton &amp; Co. oil #1120, #1130,</td>
</tr>
<tr>
<td>&quot;ILCO&quot;</td>
</tr>
<tr>
<td>Houton Safe 1000</td>
</tr>
<tr>
<td>Kano Kroi (polysulfone)</td>
</tr>
<tr>
<td>Keystone penetrator oil #2</td>
</tr>
<tr>
<td>&quot;Loctite&quot; 271</td>
</tr>
<tr>
<td>&quot;Loctite 290&quot;</td>
</tr>
<tr>
<td>&quot;Loctite 601&quot;</td>
</tr>
<tr>
<td>&quot;Loctite Teflon-Sealant&quot;</td>
</tr>
<tr>
<td>&quot;Marvel Mystery Oil&quot;</td>
</tr>
<tr>
<td>Minn Rubber 368Y</td>
</tr>
<tr>
<td>National compound #111</td>
</tr>
</tbody>
</table>

*When in raw liquid form.

WE CANNOT POSSIBLY LIST ALL HARMFUL SUBSTANCES, SO CHECK WITH A MOBAY CHEMICAL OR GENERAL ELECTRIC OFFICE FOR FURTHER INFORMATION ON POLYCARBONATE PLASTIC.

EXCEPT as otherwise specified by the manufacturer, this product is specifically designed for compressed air service, and use with any other fluid (liquid or gas) is a misapplication. For example, use with or injection of certain hazardous liquids or gases in the system (such as alcohol or liquid petroleum gas) could be harmful to the unit or result in a combustible condition or hazardous external leakage. Manufacturers warranties are void in the event of misapplication, and manufacturer assumes no responsibility for any resulting loss.

Before using with fluids other than air, or for nonindustrial applications, or for life support systems consult manufacturer for written approval.
Bowl guards are recommended for added protection of polycarbonate bowls where chemical attack may occasionally occur.

Introduction
Follow these instructions when installing, operating, or servicing the product.

Application Limits
These products are intended for use in general purpose compressed air systems only.

With Polycarbonate Bowl

<table>
<thead>
<tr>
<th>Pressure</th>
<th>kPa</th>
<th>PSIG</th>
<th>bar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum</td>
<td>830</td>
<td>120</td>
<td>8.3</td>
</tr>
</tbody>
</table>

Operating Temperature Maximum: 52°C (125°F)

Installation

1. The equipment to which the FILTER / REGULATOR is attached should be internally cleaned to remove all traces of accumulated oil and dirt. Also, new pipe or hose should be installed between the filter and equipment being protected.

2. Blow all upstream pipe work clear of accumulated dirt and liquids.

3. Select a filter / regulator location as close as possible to the equipment being protected.

4. Install filter / regulator so that air flows in the direction of arrow on body.

5. Install filter / regulator vertically with the bowl drain mechanism at the bottom. Free moisture will thus drain into the sump “quiet zone” at the bottom of the bowl.

6. Gauge ports are located on both sides of the REGULATOR body for your convenience. It is necessary to install a gauge or socket pipe plugs into each port during installation.

CAUTION

Polycarbonate bowls, being transparent and tough, are ideal for use with Filters and Lubricators. They are suitable for use in normal industrial environments, but should not be located in areas where they could be subjected to direct sunlight, an impact blow, nor temperatures outside of the rated range. As with most plastics, some chemicals can cause damage. Polycarbonate bowls should not be exposed to chlorinated hydrocarbons, ketones, esters and certain alcohols. They should not be used in air systems where compressors are lubricated with fire-resistant fluids such as phosphate ester and diester types.

Metal bowls are recommended where ambient and/or media conditions are not compatible with polycarbonate bowls. Metal bowls resist the action of most such solvents, but should not be used where strong acids or bases are present or in salt laden atmospheres. Consult the factory for specific recommendations where these conditions exist.

TO CLEAN POLYCARBONATE BOWLS USE MILD SOAP AND WATER ONLY! DO NOT use cleansing agents such as acetone, benzene, carbon tetrachloride, gasoline, toluene, etc., which are damaging to this plastic.

WARNING

To avoid unpredictable system behavior that can cause personal injury and property damage:

- Disconnect electrical supply (when necessary) before installation, servicing, or conversion.
- Disconnect air supply and depressurize all air lines connected to this product before installation, servicing, or conversion.
- Operate within the manufacturer’s specified pressure, temperature, and other conditions listed in these instructions.
- Medium must be moisture-free if ambient temperature is below freezing.
- Service according to procedures listed in these instructions.
- Installation, service, and conversion of these products must be performed by knowledgeable personnel who understand how pneumatic products are to be applied.
- After installation, servicing, or conversion, air and electrical supplies (when necessary) should be connected and the product tested for proper function and leakage. If audible leakage is present, or the product does not operate properly, do not put into use.
- Warnings and specifications on the product should not be covered by paint, etc. If masking is not possible, contact your local representative for replacement labels.

Failure or improper selection or improper use of the products and/or systems described herein or related items can cause death, personal injury and property damage.

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EXTRA COPIES OF THESE INSTRUCTIONS ARE AVAILABLE FOR INCLUSION IN EQUIPMENT / MAINTENANCE MANUALS THAT UTILIZE THESE PRODUCTS. CONTACT YOUR LOCAL REPRESENTATIVE.
Operation & Service

1. Both free moisture and solids are removed automatically by the FILTER / REGULATOR.

2. Drain whenever water level in sump “quiet zone” reaches the lower baffle. Install Automatic Drain if bowl draining is frequent.

3. The filter element should be removed and replaced when the pressure differential across the filter is 10 PSIG.

4. To remove the filter element: SHUT AIR LINE DOWN and exhaust the primary and secondary pressure.
   a. Unscrew threaded bowl.
   b. Unscrew element and remove.
   c. Clean bowl and internal parts before reassembling.
   d. Attach clean element assembly and tighten firmly.
   e. Replace bowl gasket; lubricate gasket to assist in retaining it in position. Use only mineral base oils or grease. Do NOT use synthetic oils such as esters, and do NOT use silicones.
   f. Screw bowl into body and tighten firmly.

5. The regulator may be serviced without removing it from the line. Before disassembling FILTER / REGULATOR, SHUT OFF AIR SUPPLY AND EXHAUST PRIMARY AND SECONDARY PRESSURE. Disengage the adjusting knob by pulling upward. Turn the adjusting knob counterclockwise until compression is released from pressure control spring. For servicing diaphragm, unscrew bonnet from body. For servicing the poppet, remove threaded bowl and filter element assembly.

6. BEFORE TURNING ON AIR SUPPLY, TURN ADJUSTING KNOB COUNTERCLOCKWISE UNTIL COMPRESSION IS RELEASED FROM PRESSURE CONTROL SPRING. Turn on air pressure. Then proceed to adjust the desired downstream pressure by turning adjusting knob clockwise. This permits pressure to build up slowly in the downstream line.

7. To decrease regulated pressure settings, always reset from a pressure lower than then final setting required. Example, lowering the secondary pressure from 80 PSI to 60 PSI is best accomplished by dropping the secondary pressure to 50 PSI, then adjusting upward to 60 PSI.

8. When desired secondary pressure settings have been reached, push the adjusting knob down to lock.

Kits Available

<table>
<thead>
<tr>
<th>Kit No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>P3A-KA00RFN</td>
<td>Filter Repair Kit</td>
</tr>
<tr>
<td>P3A-KA00EEN</td>
<td>Element Kit (5 Micron)</td>
</tr>
<tr>
<td>P3A-KA00RRN</td>
<td>Relieving Diaphragm Kit</td>
</tr>
<tr>
<td>P3A-KA00RNN</td>
<td>Non-Relieving Diaphragm Kit</td>
</tr>
</tbody>
</table>
WARNING

To avoid unpredictable system behavior that can cause personal injury and property damage:

- Disconnect electrical supply (when necessary) before installation, servicing, or conversion.
- Disconnect air supply and depressurize all air lines connected to this product before installation, servicing, or conversion.
- Operate within the manufacturer’s specified pressure, temperature, and other conditions listed in these instructions.
- Medium must be moisture-free if ambient temperature is below freezing.
- Service according to procedures listed in these instructions.
- Installation, service, and conversion of these products must be performed by knowledgeable personnel who understand how pneumatic products are to be applied.
- After installation, servicing, or conversion, air and electrical supplies (when necessary) should be connected and the product tested for proper function and leakage. If audible leakage is present, or the product does not operate properly, do not put into use.
- Warnings and specifications on the product should not be covered by paint, etc. If masking is not possible, contact your local representative for replacement labels.

Introduction

Follow these instructions when installing, operating, or servicing the product.

Application Limits

These products are intended for use in general purpose compressed air systems only.

Operating Inlet Pressure: kPa  PSIG  bar
with Polycarbonate Bowl 1000  150  10.3
with Metal Bowl 1700  250  17.0

NOTE: The maximum recommended pressure drop for a particulate filter is 70 kPa (10 psig, 0.7 bar)

Ambient Temperature Range:
with Polycarbonate Bowl 0°C to 52°C (32°F to 125°F)
with Metal Bowl 0°C to 80°C (32°F to 175°F)

Symbols

Mist Lubricators (Figure 1)

Description

These mist lubricators are designed to deliver an atomized oil mist to air operated tools, motors, and other pneumatic equipment. Units are equipped with full-view sight glass for visual indication of oil drop rate, needle valve feed adjustment to regulate oil drop rate, and a venturi bypass disc to compensate for changes in air flow demands.

Installation of Lubricator

1. Lubricator should be installed with reasonable accessibility for service whenever possible - repair service kits are available. Keep pipe and tubing lengths to a minimum with inside clean and free of dirt and chips. Pipe joint compounds should be used sparingly and applied only to the male pipe – never into the female port. Do not use PTFE tape to seal pipe joints - pieces have a tendency to break off and lodge inside the unit, possibly causing malfunction.

2. Install lubricator so that air flow is in the direction of arrow on body.

3. Installation should be upstream from, and as close as possible, to the device it is to lubricate (valve, cylinder, tool, etc.). Whenever possible, avoid locations that require air-borne oil to move in an upward direction to reach the device to be lubricated.

4. The installation of an individual lubricator for each air consuming device provides best assurances of proper lubrication.

5. In new installations, it is good practice to “wet down” the inside diameter of piping and/hose with oil before making final connections. Although your lubricator delivers oil to the line, pre-coating the inside diameter with oil helps insure that proper amounts of oil are delivered to the point of application.

Operation & Service of Lubricator

! WARNING: Before filling, inlet pressure must be eliminated and then de-pressurize system pressure.

1. FILLING - After de-pressurizing system, remove bowl to refill lubricator. Fill bowl to fill line indicated on the bowl with oil of 150 to 200 SSU at 100°F viscosity - same as SAE No. 10 (petroleum based hydraulic oils or spindle oils are good examples). DO NOT USE OILS WITH TACKY ADDITIVES, COMPOUND OILS CONTAINING SOLVENTS, GRAPHITE, SOAPS OR DETERGENTS. (Automotive oils generally contain detergents and are not recommended.

2. Replace the bowl and seat firmly. Excessive torque is not necessary. The lubricator is now ready for setting.

3. OIL DELIVERY ADJUSTMENT - To adjust oil delivery, turn the adjusting needle on top of the lubricator.

Leak - Clockwise  Richer - Counterclockwise

By counting the number of drops per minute in the sight dome, you can adjust lubricator to your required setting.

Generally, one drop per minute downstream for every 10-15 SCFM flow is satisfactory. 25 drops per minute equals one ounce per hour - volume of oil passing through the sight dome.

NOTE: This is a constant density type lubricator which delivers a constant ratio of oil to air flow. Therefore, if air flow increases or decreases, oil delivery will be effected proportionately. ONLY IF DIFFERENT RATIO IS DESIRED SHOULD YOUR ADJUSTMENT KNOB SETTING BE CHANGED AFTER YOUR INITIAL SETTING.

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### Service Kits - Lubricator

<table>
<thead>
<tr>
<th>Kit#</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PS420</td>
<td>Polycarbonate Bowl with Manual Drain - consists of items: 18 (open bottom), 15, 16, 17 &amp; 32</td>
</tr>
<tr>
<td>PS421</td>
<td>Polycarbonate Bowl without Drain - consists of items: 18 (closed bottom) &amp; 15</td>
</tr>
<tr>
<td>PS474</td>
<td>Drip Control (Polycarbonate)</td>
</tr>
<tr>
<td>PS475</td>
<td>Drip Control (Nylon)</td>
</tr>
</tbody>
</table>

### Parts Identification List - Lubricator

<table>
<thead>
<tr>
<th>Item#</th>
<th>Description</th>
<th>Item#</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Knob</td>
<td>11</td>
<td>Spring</td>
</tr>
<tr>
<td>2</td>
<td>Drip Control Body</td>
<td>12</td>
<td>Ball, Check</td>
</tr>
<tr>
<td>3</td>
<td>Needle</td>
<td>13</td>
<td>Body</td>
</tr>
<tr>
<td>4</td>
<td>O-ring</td>
<td>14</td>
<td>Tube</td>
</tr>
<tr>
<td>5</td>
<td>Drip Tube</td>
<td>15</td>
<td>O-ring (Body to Bowl)</td>
</tr>
<tr>
<td>6</td>
<td>Seal Plate</td>
<td>16</td>
<td>Twist Drain</td>
</tr>
<tr>
<td>7</td>
<td>O-ring</td>
<td>17</td>
<td>O-ring (Drain)</td>
</tr>
<tr>
<td>8</td>
<td>By-pass Plate</td>
<td>18</td>
<td>Bowl</td>
</tr>
<tr>
<td>9</td>
<td>By-pass</td>
<td>32</td>
<td>Twist Drain Knob</td>
</tr>
<tr>
<td>10</td>
<td>Ball, Check</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Particulate Filter (Figure 2)

**Description**
These air line filters are heavy-duty units used to remove airborne impurities from air supply lines by means of centrifugal force and filter elements. Units are equipped with vane-type deflectors and drain valves. Deflector plate creates swirling action to the air stream assuring entrainments separation at all flow rates. Filter element with extra large surface assures fine filtration with low pressure drop. Turn manual drain clockwise to open and counterclockwise to close.

**Installation of Filter**
1. Filter should be installed with reasonable accessibility for service whenever possible - repair service kits are available. Keep pipe and tubing lengths to a minimum with inside clean and free of dirt and chips. Pipe joint compounds should be used sparingly and applied only to the male pipe - never into the female port. Do not use PTFE tape to seal pipe joints - pieces have a tendency to break off and lodge inside the unit, possibly causing malfunction.
2. Install unit so that air flow is in the direction of arrow. Installation must be upstream of and close to devices it is to service (valve, cylinder, tool, etc.). Position unit vertically with the bowl drain mechanism at the bottom. Free moisture will thus drain into the sump (“quiet zone”) at the bottom of the bowl.

**Operation of the Filter**
1. Both free moisture and solids are removed automatically by the filter.
2. Manual drain filters must be drained regularly before the separated moisture and oil reaches the bottom of the element holder. Automatic drain models (pulse drain) will collect and dump liquids automatically. They are actuated when a pressure drop occurs within the filter.
3. The filter element should be removed and replaced when the pressure differential across the filter exceeds 70 kPa (10 psig, 0.7 bar).

**Service**

**Caution: SHUT OFF AIR SUPPLY and exhaust the primary and secondary pressure before dis-assembling unit. Units may be serviced without removing them from the air line.)**

**Servicing Filter Element**
1. Unscrew threaded bowl and element holder. Then remove filter element, deflector, and gaskets.
2. Clean all internal parts, bowl, and body before re-assembling unit. See Polycarbonate bowl cleaning section.
3. Install deflector, filter element, and gaskets.
4. Attach element holder. Torque from 0.9 to 1.4 Nm (8 to 12 in-lbs).
5. To assist with retaining bowl’s o-ring while installing bowl, lubricate the o-ring (with a mineral based oil or grease). Then place on the bowl.
6. Screw bowl into the body until it is stopped by body; then back off bowl 1/8 turn.
7. Apply pressure to the system and check for leaks. If leaks occur, shut off the air supply, de-pressurize the system and make necessary adjustments to eliminate leakage.

---

If you have questions concerning how to service this unit, contact your local dealer or your customer service representative.

### Service Kits - Filter

<table>
<thead>
<tr>
<th>Kit#</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PS404</td>
<td>Polycarbonate Bowl with Manual Drain - consists of items: 19, 24, 26 &amp; 27</td>
</tr>
<tr>
<td>PS408</td>
<td>Polycarbonate Bowl with Automatic Drain - consists of items: 19, 24, 26, 28, 29, 30 &amp; 31</td>
</tr>
<tr>
<td>PS447B</td>
<td>Metal Bowl with Manual Drain - consists of items: 19, 24, 26 &amp; 27</td>
</tr>
<tr>
<td>PS451</td>
<td>Metal Bowl with Automatic Drain - consists of items: 19, 24, 26, 28, 29, 30 &amp; 31</td>
</tr>
<tr>
<td>PS403</td>
<td>5 Micrometer Element Kit - consists of items: 20, 21 &amp; 24</td>
</tr>
<tr>
<td>PS407</td>
<td>5 Micrometer Element Cartridge Kit - consists of items: 20, 21, 22, 23 &amp; 24</td>
</tr>
<tr>
<td>PS401</td>
<td>40 Micrometer Element Kit - consists of items: 20, 21 &amp; 24</td>
</tr>
</tbody>
</table>

### Parts Identification List - Filter Units

<table>
<thead>
<tr>
<th>Item#</th>
<th>Description</th>
<th>Item#</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>19</td>
<td>Bowl</td>
<td>27</td>
<td>Manual Drain (twist style)</td>
</tr>
<tr>
<td>20</td>
<td>Gasket</td>
<td>28</td>
<td>O-ring - pulse drain</td>
</tr>
<tr>
<td>21</td>
<td>Filter Element</td>
<td>29</td>
<td>Drain (body of pulse drain shown)</td>
</tr>
<tr>
<td>22</td>
<td>Filter Holder</td>
<td>30</td>
<td>Diaphragm</td>
</tr>
<tr>
<td>23</td>
<td>Deflector</td>
<td>31</td>
<td>Pin</td>
</tr>
<tr>
<td>24</td>
<td>O-ring (body to bowl)</td>
<td>32</td>
<td>Body</td>
</tr>
<tr>
<td>25</td>
<td>Body</td>
<td>33</td>
<td>Twist Drain Knob</td>
</tr>
<tr>
<td>26</td>
<td>O-ring (drain to bowl)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Safety: Transparent Bowls

**CAUTION**
Poly carbonate bowls, being transparent and tough, are ideal for use with Filters and Lubricators. They are suitable for use in normal industrial environments, but should not be located in areas where they could be subjected to direct sunlight, an impact blow, nor temperatures outside of the rated range. As with most plastics, some chemicals can cause damage. Polycarbonate bowls should not be exposed to chlorinated hydrocarbons, ketones, esters and certain alcohols. They should not be used in air systems where compressors are lubricated with fire-resistant fluids such as phosphate ester and diester types.

Metal bowls are recommended where ambient and/or media conditions are not compatible with polycarbonate bowls. Metal bowls resist the action of most such solvents, but should not be used where strong acids or bases are present or in salt laden atmospheres. Consult the factory for specific recommendations where these conditions exist.

**TO CLEAN POLYCARBONATE BOWLS USE MILD SOAP AND WATER ONLY! DO NOT USE cleansing agents such as acetone, benzene, carbon tetrachloride, gasoline, toluene, etc., which are damaging to this plastic.**

---

**WARNING**
To avoid polycarbonate bowl rupture that can cause personal injury or property damage, do not exceed bowl pressure or temperature ratings. Polycarbonate bowls have a 150 PSIG pressure rating and a maximum temperature rating of 125°F.
Introduction

Follow these instructions when installing, operating, or servicing the product.

Application Limits

These products are intended for use in general purpose compressed air systems only.

With Polycarbonate Bowl

<table>
<thead>
<tr>
<th></th>
<th>kPa</th>
<th>PSIG</th>
<th>bar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Pressure Maximum</td>
<td>1000</td>
<td>150</td>
<td>10.3</td>
</tr>
<tr>
<td>Operating Temperature Maximum</td>
<td>52°C (125°F)</td>
<td>0°C (32°F)</td>
<td></td>
</tr>
</tbody>
</table>

With Metal Bowl

<table>
<thead>
<tr>
<th></th>
<th>kPa</th>
<th>PSIG</th>
<th>bar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Pressure Maximum</td>
<td>1700</td>
<td>250</td>
<td>17.0</td>
</tr>
<tr>
<td>Operating Temperature Maximum</td>
<td>80°C (175°F)</td>
<td>0°C (32°F)</td>
<td></td>
</tr>
</tbody>
</table>

ANSI Symbol

![Lubricator](image)

**CAUTION**

Polycarbonate bowls, being transparent and tough, are ideal for use with Filters and Lubricators. They are suitable for use in normal industrial environments, but should not be located in areas where they could be subjected to direct sunlight, an impact blow, nor temperatures outside of the rated range. As with most plastics, some chemicals can cause damage. Polycarbonate bowls should not be exposed to chlorinated hydrocarbons, ketones, esters and certain alcohols. They should not be used in air systems where compressors are lubricated with fire-resistant fluids such as phosphate ester and diester types.

Metal bowls are recommended where ambient and/or media conditions are not compatible with polycarbonate bowls. Metal bowls resist the action of most such solvents, but should not be used where strong acids or bases are present or in salt laden atmospheres. Consult the factory for specific recommendations where these conditions exist.

**TO CLEAN POLYCARBONATE BOWLS USE MILD SOAP AND WATER ONLY! DO NOT use cleansing agents such as acetone, benzene, carbon tetrachloride, gasoline, toluene, etc., which are damaging to this plastic.**

Bowl guards are recommended for added protection of polycarbonate bowls where chemical attack may occasionally occur.

**WARNING**

To avoid unpredictable system behavior that can cause personal injury and property damage:

- Disconnect electrical supply (when necessary) before installation, servicing, or conversion.
- Disconnect air supply and depressurize all air lines connected to this product before installation, servicing, or conversion.
- Operate within the manufacturer’s specified pressure, temperature, and other conditions listed in these instructions.
- Medium must be moisture-free if ambient temperature is below freezing.
- Service according to procedures listed in these instructions.
- Installation, service, and conversion of these products must be performed by knowledgeable personnel who understand how pneumatic products are to be applied.
- After installation, servicing, or conversion, air and electrical supplies (when necessary) should be connected and the product tested for proper function and leakage. If audible leakage is present, or the product does not operate properly, do not put into use.
- Warnings and specifications on the product should not be covered by paint, etc. If masking is not possible, contact your local representative for replacement labels.

Installation

1. The lubricator should be installed with reasonable accessibility for service whenever possible. Keep pipe or tubing lengths to a minimum with inside clean and free of dirt and chips. Pipe joint compound should be used sparingly and applied only to the male pipe – never into the female port. Do not use PTFE tape to seal pipe joints – pieces have a tendency to break off and lodge inside the unit, possibly causing malfunction.
2. Install lubricator so air flows in the direction of arrow on body.
3. Installation should be upstream of the device it is to lubricate (valve, cylinders, tool, etc.).

**WARNING**

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

This document and other information from The Company, its subsidiaries and authorized distributors provide product and/or system options for further investigation by users having technical expertise. It is important that you analyze all aspects of your application, including consequences of any failure and review the information concerning the product or systems in the current product catalog. Due to the variety of operating conditions and applications for these products or systems, the user, through its own analysis and testing, is solely responsible for making the final selection of the products and systems and assuring that all performance, safety and warning requirements of the application are met.

The products described herein, including without limitation, product features, specifications, designs, availability and pricing, are subject to change by The Company and its subsidiaries at any time without notice.

Safety Guide

For more complete information on recommended application guidelines, see the Safety Guide section of Pneumatic Division catalogs or you can download the Pneumatic Division Safety Guide at: www.parker.com/safety

EXTRA COPIES OF THESE INSTRUCTIONS ARE AVAILABLE FOR INCLUSION IN EQUIPMENT / MAINTENANCE MANUALS THAT UTILIZE THESE PRODUCTS. CONTACT YOUR LOCAL REPRESENTATIVE.
Lightly grease with provided lubricant.

☑ Inspect for nicks, scratches, and surface imperfections. If present, reduced service life is probable and future replacement should be planned.

☐ Clean with lint-free cloth.

**Operation and Service**
(Refer to Above Pictorial)

1. **Filling** — The Mist lubricator can be filled without turning off the upstream pressure. Slowly remove the fill plug (black) by turning counterclockwise. This allows the bowl pressure to vent.

The inlet pressure of the Micromist lubricator must be turned off and depressurized before the fill plug (yellow) is removed. Turn counterclockwise to remove. Fill to oil level line.

Suggested lubricant: F442

Petroleum based oil of 100 to 200 SUS viscosity at 100°F and an aniline point greater than 200°F. (Mobil DTE24 and Sun Company Surviv 932 are good examples). Do not use oils with adhesives, compound oils containing solvents, graphite, detergents or synthetic oils.

2. Replace the fill plug (by turning clockwise) and seat firmly. Excessive torque is not required. Turn on air supply for Micromist type. If leakage occurs, DO NOT OPERATE — conduct repairs again. The lubricator is now ready for setting.

3. Oil delivery adjustment — To adjust oil delivery, turn adjustment knob on top of the lubricator.

   - Leaner — Clockwise
   - Richer — Counterclockwise

By counting the number of drops per minute in the sight dome, you can adjust to your requirements.

Mist lubricator — Every drop visible in the sight dome goes downstream.

Micromist lubricator — Approximately 3% of the droplets visible in the sight dome go downstream; adjust drip rate accordingly. Consult oil delivery conversion chart.

Generally, one drop per minute downstream for every 10 - 15 SCFM flow is satisfactory.

25 drops per minute equals one (1) ounce per hour - volume of oil passing through the sight dome.

NOTE: This is a constant density type lubricator which delivers a constant ratio of oil air flow. Therefore, if air flow increases or decreases, oil delivery will be adjusted proportionately. ONLY IF A DIFFERENT RATIO IS DESIRED SHOULD YOUR ADJUSTMENT KNOB SETTING BE CHANGED AFTER YOUR INITIAL SETTING.

**Oil Delivery Conversion**

3% of Drip Rate to Downstream

4. To replace fill plug, drip control, & service lubricator:
   A. Turn off air supply and depressurize the unit.
   B. Refer to pictorial for servicing and torque values.
   C. Turn on air supply and check lubricator for leakage. If leakage occurs, DO NOT OPERATE — conduct repairs again.

**Kits Available**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Lubricator Repair Kit</td>
<td>PS918</td>
<td>PS718</td>
<td>PS748</td>
</tr>
<tr>
<td>Drip Control (Polycarbonate)</td>
<td>PS938</td>
<td>PS738</td>
<td>PS739</td>
</tr>
<tr>
<td>and Fill Plug Kit</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drip Control (Nylon)</td>
<td>PS938N</td>
<td>PS738N</td>
<td>PS739N</td>
</tr>
<tr>
<td>and Fill Plug Kit</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note:** Sixth character in model number denotes drip control material. For B or F use the polycarbonate kit, and for C or G use the nylon kit.
Operating Pressure Maximum

<table>
<thead>
<tr>
<th>kPa</th>
<th>PSIG</th>
<th>bar</th>
</tr>
</thead>
<tbody>
<tr>
<td>1700</td>
<td>250</td>
<td>17.0</td>
</tr>
</tbody>
</table>

WARNING

To avoid unpredictable system behavior that can cause personal injury and property damage:
- Disconnect electrical supply (when necessary) before installation, servicing, or conversion.
- Disconnect air supply and depressurize all air lines connected to this product before installation, servicing, or conversion.
- Operate within the manufacturer’s specified pressure, temperature, and other conditions listed in these instructions.
- Medium must be moisture-free if ambient temperature is below freezing.
- Service according to procedures listed in these instructions.
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CAUTION

Polycarbonate bowls, being transparent and tough, are ideal for use with Filters and Lubricators. They are suitable for use in normal industrial environments, but should not be located in areas where they could be subjected to an impact blow, nor temperatures outside of the rated range. As with most plastics, some chemicals can cause damage. Polycarbonate bowls should not be exposed to chlorinated hydro-carbons, ketones, esters, and certain alcohols. They should not be used in air systems where compressors are lubricated with fire resistant fluids such as phosphate esters and di-esters types. In areas where polycarbonate bowls are exposed to high temperatures or atmospheres containing vapors or fluids, which are damaging to plastic, use metal bowls. Metal bowls resist the action of most such solvents but should not be used where strong acids or bases are present or in salt laden atmospheres. Consult the factory for specific recommendations where these conditions exist.

TO CLEAN POLYCARBONATE BOWLS USE MILD SOAP AND WATER ONLY! DO NOT use cleaning agents such as acetone, benzene, carbon tetrachloride, gasoline, toluene, etc., which are damaging to this plastic.

Bowl guards are recommended for added protection of polycarbonate bowls where chemical attack may occasionally occur.

Safety Guide

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Introduction

Follow these instructions when installing, operating, or servicing the product.

Application Limits

These products are intended for use in general purpose compressed air systems only.

Operating Temperature Maximum 80°C (175°F)
Operating Temperature Minimum 0°C (32°F)

ANSI Symbol

Installation

1. The lubricator should be installed with reasonable accessibility for service whenever possible. Keep pipe or tubing lengths to a minimum with inside clean and free of dirt and chips. Pipe joint compound should be used sparingly and applied only to the male pipe – never into the female port. Do not use PTFE tape to seal pipe joints – pieces have a tendency to break off and lodge inside the unit, possibly causing malfunction.
2. Install lubricator so air flows in the direction of arrow on body.
3. Installation should be upstream of the device it is to lubricate (valve, cylinders, tool, etc.).

Operation and Service

(Refer to Pictorial on Following Page)

1. Filling — The Mist lubricator can be filled without turning off the upstream pressure. Slowly remove the fill plug by turning counterclockwise. This allows the bowl pressure to vent.

Suggested lubricant: F442

Petroleum based oil of 100 to 200 SUS viscosity at 100°F and an aniline point greater than 200°F. (Mobil DTE24 and Sun Company Sunvis 932 are good examples). Do not use oils with adhesives, compound oils containing solvents, graphite, detergents or synthetic oils.

2. Replace the fill plug (by turning clockwise) and seat firmly. Excessive torque is not required. If leakage occurs, DO NOT OPERATE — conduct repairs again. The lubricator is now ready for setting.
3. Oil delivery adjustment — To adjust oil delivery, turn adjustment knob on top of the lubricator.

WARNING

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**OIL**

Torque value for assembling units together, port blocks, and mounting brackets: 5 to 6 Nm (48 to 52 in.lb.)

**M8 x 90 Bolt** (4 Places)

**M8 x 15 Bolt** (4 Places)

**M8 x 20 Bolt** (4 Places)

**Note:** If both mating faces have an o-ring groove, units may need to be assembled with two seals. (One square and one round seal.)

---

**Leaner — Clockwise**

**Richer — Counterclockwise**

By counting the number of drops per minute in the sight dome, you can adjust to your requirements.

Mist lubricator — Every drop visible in the sight dome goes downstream.

Generally, one drop per minute downstream for every 10 - 15 SCFM flow is satisfactory.

25 drops per minute equals one (1) ounce per hour - volume of oil passing through the sight dome.

**Bowl Seal**

**O Ring**

**Fill Plug**

**Hand Tighten**

**Drip Control**

**Flapper**

**Insert**

**Assembly**

**Body**

**O Ring**

**Seal Plate**

**Seal**

**Seal Plate**

**Seal Torque:**

Flapper

**Insert**

**Assembly**

**Screws**

**1.5 to 2 Nm**

(13 to 18 in.lb.)

---

**Leaner — Clockwise**

**Richer — Counterclockwise**

By counting the number of drops per minute in the sight dome, you can adjust to your requirements.

Mist lubricator — Every drop visible in the sight dome goes downstream.

Generally, one drop per minute downstream for every 10 - 15 SCFM flow is satisfactory.

25 drops per minute equals one (1) ounce per hour - volume of oil passing through the sight dome.

---

**Lightly grease with provided lubricant.**

**Inspect for nicks, scratches, and surface imperfections. If present, reduced service life is probable and future replacement should be planned.**

**Clean with lint-free cloth.**

---

**NOTE:** This is a constant density type lubricator which delivers a constant ratio of oil air flow. Therefore, if air flow increases or decreases, oil delivery will be adjusted proportionately. ONLY IF A DIFFERENT RATIO IS DESIRED SHOULD YOUR ADJUSTMENT KNOB SETTING BE CHANGED AFTER YOUR INITIAL SETTING.

---

4. To replace fill plug, drip control, & service lubricator:

A. Turn off air supply and depressurize the unit.

B. Refer to pictorial for servicing and torque values.

C. Turn on air supply and check lubricator for leakage. If leakage occurs, DO NOT OPERATE — conduct repairs again.

---

**Service Kits Available**

<table>
<thead>
<tr>
<th>Description</th>
<th>Kit Number</th>
<th>Contains Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lubricator Repair Kit</td>
<td>P3NKA00RL</td>
<td>(1) Seal, (2) O-Ring, (3) Seal (Not Shown), (4) Screws, (5) Insert Assembly (Including Flapper), and (6) Tube</td>
</tr>
<tr>
<td>Sight Dome / Drip Control (Polycarbonate)</td>
<td>PS740</td>
<td>(7) Drip Control, (8) Seal Plate</td>
</tr>
<tr>
<td>Sight Dome / Drip Control (Polyamide / Nylon)</td>
<td>PS740N</td>
<td></td>
</tr>
</tbody>
</table>
Introduction

Follow these instructions when installing, operating, or servicing the product.

Application Limits

These products are intended for use in general purpose compressed air systems only.

Operating Pressure Range:

<table>
<thead>
<tr>
<th>Lubricators w/ Plastic Bowls</th>
<th>kPa</th>
<th>PSIG</th>
<th>bar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum</td>
<td>1034</td>
<td>150</td>
<td>10.34</td>
</tr>
</tbody>
</table>

| Lubricators w/ Metal Bowls   | Maximum | 1724 | 250 | 17.24 |

20 PSI minimum bowl (inlet) pressure. Oil inlet pressure must be at least 20 PSI above system air pressure and may be up to 300 PSIG maximum.

General Safety Information

Always SHUT OFF AIR SUPPLY and DEPRESSURIZE UNITS when servicing, modifying or converting pneumatic equipment.

Conversion Instructions

1. Remove bowl from lubricator.
2. Remove the manual drain-cock assembly from bowl.
3. Clean bowl with mild soap and water (do not use other cleaners or degreasers), before reassembling Remote Auto-Fill to bowl.

NOTE: See polycarbonate bowl cleaning section.

4. Place o-ring seal on auto-fill assembly bottom threaded projection and insert assembly into the bowl drain opening, from within the bowl.

5. Secure Auto-Fill unit to bowl with Jam Nut by pressing against float inside the bowl and running the nut against the bowl boss outside the bowl; finger tighten. Hold Jam Nut with fingers and complete assembly with 1/2” open end wrench. A maximum of one (1) full turn will secure the nut.

6. Install body-to-bowl o-ring and bowl into body. Tighten 06 collar to 28 to 32 in lbs (3.2 to 3.6 Nm) torque. Tighten 07 collar to 48 to 52 in lbs (5.4 to 5.9 Nm) torque.

Pneumatic Division
Richland, Michigan 49083
269-629-5000

Installation & Service Instructions:
2L301B
1/4”, 3/8” & 1/2” Compact
1/2” & 3/4” Standard
Remote Auto-Fill Device
ISSUED: September, 2012
Supersedes: November, 2003
Doc.# 2L301, EN# 120039, Rev. 4

⚠️ WARNING

To avoid unpredictable system behavior that can cause personal injury and property damage:

- Disconnect electrical supply (when necessary) before installation, servicing, or conversion.
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TO CLEAN POLYCARBONATE BOWLS USE MILD SOAP AND WATER ONLY! DO NOT use cleaning agents such as acetone, benzene, carbon tetrachloride, gasoline, toluene, etc., which are damaging to this plastic.

Bowl guards are recommended for added protection of polycarbonate bowls where chemical attack may occasionally occur.

Failure or improper selection or improper use of the products and/or systems described herein or related items can cause death, personal injury and property damage.

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Extra copies of these instructions are available for inclusion in equipment / maintenance manuals that utilize these products. Contact your local representative.
Remote Auto-Fill Device

Installation

1. Connect oil supply feeder line to the Remote Auto Fill 1/8-27 NPT female thread fitting. Flexible tubing is recommended between lubricator and oil supply main header line. Also attach a shut-off valve, which may be necessary should servicing be required.

⚠️ CAUTION: Rigid pipe should be avoided to prevent possible lubricator bowl damage due to stress and machine vibration.

2. Connect opposite end of flexible tube feeder line to main oil supply line.

**NOTE:** Oil supply source and main supply line should be pressurized at least 20 PSI above system air pressure, and may be up to 300 PSIG maximum. Oil supply line should be pressurized for 2 to 15 minutes, one or more times a day. Frequency should be based on maintaining oil in lubricator at its highest level.

**NOTE:** Oil supply pressure should be shut off after the refill period is completed. Lubricators will not permit additional oil to be admitted until supply system pressure has first dropped below air system pressure.

Suggested Lubricant

Petroleum based oil of 100 to 200 SSU viscosity at 100°F. (DO NOT USE OILS WITH ADDITIVES, COMPOUNDED OILS CONTAINING SOLVENTS, GRAPHITE, DETERGENTS OR SYNTHETIC OILS.)
Application Limits

These products are intended for use in general purpose compressed air systems only.

With Polycarbonate Bowl

<table>
<thead>
<tr>
<th>Operating Pressure Maximum</th>
<th>kPa</th>
<th>PSIG</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>1000</td>
<td>150</td>
<td>10.3</td>
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<table>
<thead>
<tr>
<th>Operating Temperature Maximum</th>
<th>°C (°F)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>52°C (125°F)</td>
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<table>
<thead>
<tr>
<th>Operating Temperature Minimum</th>
<th>°C (°F)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0°C (32°F)</td>
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</table>

With Metal Bowl

<table>
<thead>
<tr>
<th>Operating Pressure Maximum</th>
<th>kPa</th>
<th>PSIG</th>
<th>bar</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1700</td>
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</table>

<table>
<thead>
<tr>
<th>Operating Temperature Maximum</th>
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</tr>
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<tbody>
<tr>
<td></td>
<td>80°C (175°F)</td>
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</table>

<table>
<thead>
<tr>
<th>Operating Temperature Minimum</th>
<th>°C (°F)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0°C (32°F)</td>
</tr>
</tbody>
</table>

Electrical Specifications

1. Voltage:
   - 200VDC Max.
   - 240/60 - 220/50 VAC Max.

2. Maximum Current:
   - DC - 10W
   - AC - 5VA

Note: 5VA current rating for AC is based on a resistive load, or inductive load with external surge suppression. For unprotected inductive loads, the maximum current rating is 0.5VA.

Introduction

Follow these instructions when installing, operating, or servicing the product.
General Safety Information
Always SHUT OFF AIR SUPPLY and DEPRESSURIZE UNITS when servicing, modifying or converting pneumatic equipment.

Conversion Instructions
1. Remove bowl from lubricator.
2. Remove the manual drain-cock assembly from bowl.
3. If Necessary, clean bowl with mild soap and water (do not use other cleaners or degreasers), before assembling Sensor to bowl.

NOTE: See polycarbonate bowl cleaning section on front.

4. Place o-ring seal on Liquid Level Sensor assembly bottom threaded projection and insert assembly into the bowl drain opening, from within the bowl.

5. Secure Sensor unit to bowl with Jam Nut by pressing against float inside the bowl and running the nut against the bowl boss outside the bowl; finger tighten. Hold Jam Nut with fingers and complete assembly with open end wrench. A maximum of one (1) full turn will secure the nut.


7. Turn on air supply and check for external leakage at the top and bottom of the bowl assembly.

8. If leakage is present, do not put into service. Perform assembly again.

9. Unit is now ready for operation.

Electrical Contacts

As Shipped (Magnets Up)
Float Down Pins 1 - 3 Connected

With Float Inverted (Magnets Down)
Float Up Pins 1 - 3 Connected
Introduction:
Follow these instructions when installing, operating, or servicing the product.

Application Limits
These products are intended for use in general purpose compressed air systems only.

Operating Pressure:

<table>
<thead>
<tr>
<th>Maximum Inlet Pressure</th>
<th>kPa</th>
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<th>bar</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>1700</td>
<td>250</td>
<td>17</td>
</tr>
</tbody>
</table>

Operating Temperature:

| Maximum Temperature | 80°C (175°F) |
| Minimum Temperature | 0°C (32°F)   |

Right Angle Bracket Dimensions

<table>
<thead>
<tr>
<th>Series</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
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<td>6.4 mm</td>
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</table>

Installation
The right angle bracket can be installed using the two methods outlined on reverse side. Keep pipe or tubing lengths to a minimum with inside clean and free of dirt and chips. Pipe joint compound should be used sparingly and applied only to the male pipe - never the female port. Do not use PTFE tape to seal pipe joints - pieces have a tendency to break off and lodge inside the unit, possibly causing malfunction.

WARNING
Failure or improper selection or improper use of the products and/or systems described herein or related items can cause death, personal injury and property damage.

This document and other information from The Company, its subsidiaries and authorized distributors provide product and/or system options for further investigation by users having technical expertise. It is important that you analyze all aspects of your application, including consequences of any failure and review the information concerning the product or systems in the current product catalog. Due to the variety of operating conditions and applications for these products or systems, the user, through its own analysis and testing, is solely responsible for making the final selection of the products and systems and assuring that all performance, safety and warning requirements of the application are met.

The products described herein, including without limitation, product features, specifications, designs, availability and pricing, are subject to change by The Company and its subsidiaries at any time without notice.

EXTRA COPIES OF THESE INSTRUCTIONS ARE AVAILABLE FOR INCLUSION IN EQUIPMENT / MAINTENANCE MANUALS THAT UTILIZE THESE PRODUCTS. CONTACT YOUR LOCAL REPRESENTATIVE.
Right Angle Bracket

**Direct Piped Method**

The direct piped method is used when the right angle bracket is bolted to the user's machine and the inlet and outlet pipe is screwed directly into the back of the ninety degree bracket. A through hole must be provided in the user's machine to allow access for the inlet and outlet pipe.

**Manifold Method**

This method is used when the right angle bracket is mounted to the user's manifold. The inlet and outlet pipe is screwed into the manifold. An o-ring is used to seal between the bracket and manifold.

### Direct Pipe Ported Method

<table>
<thead>
<tr>
<th>Series</th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>05</td>
<td>1.142 29.0 mm</td>
<td>2.383 58.0 mm</td>
<td>.88 Dia. 22.4 mm</td>
</tr>
<tr>
<td>06</td>
<td>1.055 26.8 mm</td>
<td>2.110 53.6 mm</td>
<td>.88 Dia. 22.4 mm</td>
</tr>
<tr>
<td>07</td>
<td>2.375 60.3 mm</td>
<td>1.173 29.8 mm</td>
<td>1.00 Dia. 25.4 mm</td>
</tr>
</tbody>
</table>

### Manifold Mounting Method

<table>
<thead>
<tr>
<th>Series</th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>05</td>
<td>1.142 29.0 mm</td>
<td>2.383 58.0 mm</td>
<td>.50 Dia. 12.7 mm</td>
</tr>
<tr>
<td>06</td>
<td>1.055 26.8 mm</td>
<td>2.110 53.6 mm</td>
<td>.50 Dia. 12.7 mm</td>
</tr>
<tr>
<td>07</td>
<td>2.375 60.3 mm</td>
<td>1.173 29.8 mm</td>
<td>.63 Dia. 16.0 mm</td>
</tr>
</tbody>
</table>

### O-Ring Details

<table>
<thead>
<tr>
<th>Series</th>
<th>I.D. (Inch)</th>
<th>W (Inch)</th>
</tr>
</thead>
<tbody>
<tr>
<td>05 &amp; 06</td>
<td>.737</td>
<td>.103</td>
</tr>
<tr>
<td>07</td>
<td>.862</td>
<td>.103</td>
</tr>
</tbody>
</table>
Introduction
Follow these instructions when installing, operating, or servicing the product.

Application Limits
These products are intended for use in general purpose compressed air systems only.

With Metal Bowl

<table>
<thead>
<tr>
<th>Operating Pressure Maximum</th>
<th>kPa</th>
<th>PSIG</th>
<th>bar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Without Drain or Sight Gauge</td>
<td>2068</td>
<td>300</td>
<td>20.7</td>
</tr>
<tr>
<td>With Manual Drain</td>
<td>2068</td>
<td>300</td>
<td>20.7</td>
</tr>
<tr>
<td>With Sight Gauge</td>
<td>1034</td>
<td>150</td>
<td>10.3</td>
</tr>
</tbody>
</table>

Operating Temperature Range

- No Drain: 0°C to 82°C (32°F to 180°F)
- Manual Drain: 0°C to 82°C (32°F to 180°F)
- Manual Drain & Sight Gauge: 0°C to 49°C (32°F to 120°F)

Symbol

![Lubricator w/Manual Drain](symbol1)

![Lubricator less Drain](symbol2)

Installation
1. The lubricator should be installed with reasonable accessibility for service whenever possible. Keep pipe or tubing lengths to a minimum with inside clean and free of dirt and chips. Pipe joint compound should be used sparingly and applied only to the male pipe – never into the female port. Do not use PTFE tape to seal pipe joints – pieces have a tendency to break off and lodge inside the unit, possibly causing malfunction.

2. Install lubricator so air flows in the direction of arrow on body.

3. Installation should be upstream of the device it is to lubricate (valve, cylinders, tool, etc.).

Service Kits Available

<table>
<thead>
<tr>
<th>Description</th>
<th>Kit Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Needle Valve</td>
<td>RK606Y/N</td>
</tr>
<tr>
<td>Sight Dome</td>
<td>RK606SY/N</td>
</tr>
<tr>
<td>Drip Tube</td>
<td>PDTK606</td>
</tr>
<tr>
<td>Sight Glass 64 oz. Bowl</td>
<td>PRKB605X30B</td>
</tr>
<tr>
<td>Bowl - Aluminum</td>
<td>BK603B/N</td>
</tr>
<tr>
<td>Bowl &amp; Sight Glass 64 oz.</td>
<td>PBK606X30B</td>
</tr>
<tr>
<td>Button Head Fill Fitting</td>
<td>SAA606C109-1</td>
</tr>
<tr>
<td>Fill Plug</td>
<td>SA606B4</td>
</tr>
</tbody>
</table>

Operation
1. Oil delivery adjustment — To adjust oil delivery, turn adjustment knob on top of the lubricator.
   - Leaner — Clockwise
   - Richer — Counterclockwise

   By counting the number of drops per minute in the sight dome, you can adjust to your requirements.

   Mist lubricator — Every drop visible in the sight dome goes downstream.

   25 drops per minute equals one (1) ounce per hour - volume of oil passing through the sight dome.

   NOTE: This is a constant density type lubricator which delivers a constant ratio of oil air flow. Therefore, if air flow increases or decreases, oil delivery will be adjusted proportionately. ONLY IF A DIFFERENT RATIO IS DESIRED SHOULD YOUR ADJUSTMENT KNOB SETTING BE CHANGED AFTER YOUR INITIAL SETTING.

Warnings and specifications on the product should not be covered by paint, etc. If masking is not possible, contact your local representative for replacement labels.

Pneumatic Division
Richland, Michigan 49083
269-629-5000

Installation & Service Instructions:
3L101
PL606 Mist Lubricators
ISSUED: February, 2004
Supersedes: August, 2002
Doc.# 3L101, EPN# 030539, Rev. 1
PL606 Series Lubricators

Service Procedure

⚠️ Caution: Shut off air supply and exhaust the pressure trapped within the lubricator bowl before servicing unit.

1. Filling — The Mist lubricator can be filled without turning off the upstream pressure. Slowly remove the fill plug (gold) by turning counterclockwise. This allows the bowl pressure to vent.
   - Suggested lubricant: F442
   - Petroleum based oil of 100 to 200 SSU viscosity at 100°F and an aniline point greater than 200°F. (Mobil DTE24 and Sun Company Sunvis 932 are good examples). Do not use oils with adhesives, compound oils containing solvents, graphite, detergents or synthetic oils.

2. Replace the fill plug (by turning clockwise) and seat firmly. Excessive torque is not required.

3. To replace fill plug, drip control, & service lubricator:
   - A. Turn off air supply and depressurize the unit.
   - B. Refer to pictorial for servicing and torque values.
   - C. Turn on air supply and check lubricator for leakage.
     If leakage occurs, DO NOT OPERATE — conduct repairs again.

4. To install sight glass (32 oz. bowl):
   - Step 1 - Install elbow fittings as shown, use pipe sealant on 1/8” NPT male threads.
     - Install ferrules and nuts as shown.
     - Position elbow fittings as shown.
     - Insert sight glass into bottom elbow fitting as shown (Do not thread lower nut to elbow until Step 3).
   - Step 2 - Flex sight glass and position top elbow fitting to allow sight glass to slip into top fitting.
     - Be careful not to flex sight glass too much.
   - Step 3 - Carefully position elbow fitting as shown.
     - Tighten ferrule nuts after positioning elbows vertically as shown. (Snug nut to ferrule then turn 1/4 turn more).

Lightly grease with provided lubricant.

Inspect for nicks, scratches, and surface imperfections. If present, reduced service life is probable and future replacement should be planned.

Clean with lint-free cloth.

Torque: Nm (In.-Lb.)

- Hand Tight
- Snug plus 1/4 turn
- 1.1 to 2.3 Nm (10 to 20 in. lb.)
- 6.8 to 7.9 Nm (60 to 70 in. lb.)
- 14.1 to 16.9 Nm (125 to 150 in. lb.)
Global Air Preparation System

**WARNING**

To avoid unpredictable system behaviour that can cause personal injury and property damage:

- Disconnect electrical supply when necessary before installation, servicing or conversion.
- Disconnect air supply and depressurize all lines connected to this product before installation, servicing or conversion.
- Operate within the manufacturer's specified pressure, temperature and other conditions listed in these instructions.
- Medium must be moisture-free at all times.
- Avoid installation, servicing or conversion of these products when necessary and the product is present, or do not perform it.
- Warning and specifications on the product should not be covered by paint, etc. If painting is not possible, contact your local representative for replacement labels.

**MISE EN GARDE**

À fin de prévenir tout comportement imprévisible du système pouvant entraîner des accidents et des dommages matériels :

- Débrancher l'alimentation électrique (si nécessaire) avant de procéder à l'installation, à l'entretien ou à la transformation.
- Faire fonctionner dans les conditions de pression, de température et autres qui sont indiquées dans ces instructions.
- Si la température ambiante est inférieure au point de congélation, le medium doit être déshydraté.
- Le produit ne doit pas être recouvert de peinture, etc. Si le masquage n’est pas possible, contacter le représentant local pour obtenir des étiquettes de remplacement.

**FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.**

**CAUTION**

Pneumatic bowls, being transparent and rough, are ideal for use with filters and lubricators. They are suitable for use in normal industrial environments, but should not be located in areas where they could be subjected to direct sunlight, an impact blow, or temperatures outside of the rated range. As with most plastics, some chemicals can cause damage. Polycarbonate bowls should not be used with chlorinated hydrocarbons, ketones, esters and certain alcohols. They should not be used in air systems where condensation is fabricated with the resistant fluids such as phosphate ester and diester types.

Metal bowls are recommended wherever ambient and media conditions are not compatible with polycarbonate bowls. Metal bowls resist the action of most such solvents but should not be used where strong acids or bases are present or in salt laden atmospheres. Consult the factory for specific recommendations where these conditions exist.

**SILICONED BOWLS USE MODERATELY SOAP AND WATER ONLY! DO NOT use cleansing agents such as acetone, benzene, carbon tetrachloride, gasoline, toluene, etc., which are damaging to this plastic.**

**ATTENTION**

Les produits décrits aux présentes, y compris et sans limitation, les caractéristiques, les spécifications, les designs, l'availability and pricing, are subject to modifications by the manufacturer and its affiliates, at any time and without notice.

**Guide de sécurité**

Pour obtenir de plus amples informations sur les directives à appliquer recommandées, prière de vous reporter à la section Guide de sécurité des catégories de la Pneumatic Division ou de télécharger le Guide de sécurité de la Pneumatic Division sur le site : www.parker.com/safety
ATTENZIONE
Per evitare comportamenti irresponsabili dei systemi che possono provocare infortuni personali o danni alla proprietà.
- Scollegare l'alimentazione elettrica (se necessario) prima di installazione, manutenzione o conversione.
- Per evitare infortuni personali, non toccare il sistema sotto tensione.
- Non aprire il sistema sotto tensione.
- Evitare contatti con parti termiche calde.
- Utilizzare il prodotto alla pressione, alla temperatura e a tutte le altre specifiche descritte in questo manuale.
- Non utilizzare l'elemento di filtrazione nella manutenzione e nella conversione.

Le avvertenze e le specifiche sul prodotto non devono essere copiati da versione a versione. Qua e quante contattare il proprio rappresentante locale per le specifiche di questo modello.

ATTENZIONE
La SCelta OPPure L'Utilizzo errato DEGLI Articoli correlati Può PRovocare GRAVI Lesioni PERSONALI, Morte E DANNI ALLE COSE.

Sono fornite inoltre informazioni fornite dall'azienda, relative affiliati e distributori autorizzati propongono opzioni di prodotti e/o sistema di filtraggio e/od in sistemi integrati che possono essere utilizzati per garantire la sicurezza e la qualità dell'aria.

Le specifiche e le informazioni fornite includono, ma non si limitano a, le caratteristiche dei prodotti, le specifiche, le promozioni e il prezzo. Le modifiche sono soggette a cambiamenti senza preavviso.

Per evitare comportamenti irresponsabili dei sistemi che possono provocare infortuni personali o danni alla proprietà, è consigliato seguire attentamente le istruzioni fornite.

ATTENZIONE
La SCELTA OPPURE L'Utilizzo ERRATO DEGLI ARTICOLI CORRELATI PUÒ PROVOCARE GRAVI LESIONI PERSONALI, MORTE E DANNI ALLE COSE.

IT

ATTENZIONE
La SCELTA OPPURE L'Utilizzo ERRATO DEGLI ARTICOLI CORRELATI Può STRAPPARE GRAVI LESIONI PERSONALI, MORTE E DANNI ALLE COSE.

DE

WARNING
Es gibt keine unbedenklichen Stoffkombinationen, die zu Schäden führen. Die Kombinationen sind zu vermeiden.

ATTENZIONE
Per evitare comportamenti irresponsabili dei sistemi che possono provocare infortuni personali o danni alla proprietà.
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ATTENZIONE
La SCELTA OPPURE L'Utilizzo ERRATO DEGLI ARTICOLI CORRELATI Può PROFONDI LESIONI PERSONALI, MORTE E DANNI ALLE COSE.

FR

WARNING

ITALIANO ATTENZIONE
Per evitare comportamenti irresponsabili dei systemi che possono provocare infortuni personali o danni alla proprietà.
- Scollegare l'alimentazione elettrica (se necessario) prima di installazione, manutenzione o conversione.
- Utilizzare il prodotto alla pressione, alla temperatura e a tutte le altre specifiche descritte in questo manuale.
- Non utilizzare l'elemento di filtrazione nella manutenzione e nella conversione.

Le avvertenze e le specifiche sul prodotto non devono essere copiati da versione a versione. Qua e quante contattare il proprio rappresentante locale per le specifiche di questo modello.

ITALIANO ATTENZIONE
Per evitare comportamenti irresponsabili dei systemi che possono provocare infortuni personali o danni alla proprietà.
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- Utilizzare il prodotto alla pressione, alla temperatura e a tutte le altre specifiche descritte in questo manuale.
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ATTENZIONE
La SCELTA OPPURE L'Utilizzo ERRATO DEGLI ARTICOLI CORRELATI Può STRAPPARE GRAVI LESIONI PERSONALI, MORTE E DANNI ALLE COSE.

IT
Non utilizzare oli con additivi, oli composti contenenti solventi, du graphite, detergenti oppure oli sintetici.

Koppela ut strömförsörjningen innan installations-, service- eller ombyggnadsarbete på ett produktet.

Koppla av kraftfordonssjukvård och utlitna alla lufthuslör som är avlastade till den här produkten innan installations-, service- eller ombyggnadsarbete på produkten.

Se till att tillverkarens föreskrivna tryck, temperatur och andra förhållanden som definieras i de här instruktionerna följs.

Medlet måste vara färdigt på en omgivningstemperatur som är lägre än noll grader.

Oli n°32 som används frodda vi rekommenderar att man valfritt de pressor som används. Oli n°32 som används frodda vi rekommenderar att man valfritt de pressor som används.

ANVÄND BARA MILD TVÅLLÖSNING MED VATTEN VID RENGÖRING

PARA ADJUNTAR AL EQUIPO Y/O MANUALES DE MANTENIMIENTO QUE UTILIZAN ESTOS PRODUCTOS. TOME CONTACTO CON EL REPRESENTANTE LOCAL.

ADVERTENCIA

Definiera deadditivi, additivi compositi contenenti solventi, du graphite, detergenti oppure oli sintetici.

Koppela ut strömförsörjningen innan installations-, service- eller ombyggnadsarbete på ett produktet.

Koppla av kraftfordonssjukvård och utlitna alla lufthuslör som är avlastade till den här produkten innan installations-, service- eller ombyggnadsarbete på produkten.

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Koppela ut strömförsörjningen innan installations-, service- eller ombyggnadsarbete på ett produktet.

Koppla av kraftfordonssjukvård och utlitna alla lufthuslör som är avlastade till den här produkten innan installations-, service- eller ombyggnadsarbete på produkten.

Se till att tillverkarens föreskrivna tryck, temperatur och andra förhållanden som definieras i de här instruktionerna följs.

Medlet måste vara färdigt på en omgivningstemperatur som är lägre än noll grader.

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ANVÄND BARA MILD TVÅLLÖSNING MED VATTEN VID RENGÖRING

PARA ADJUNTAR AL EQUIPO Y/O MANUALES DE MANTENIMIENTO QUE UTILIZAN ESTOS PRODUCTOS. TOME CONTACTO CON EL REPRESENTANTE LOCAL.

ADVERTENCIA
Introduction
Follow these instructions when installing, operating, or servicing the product.

Application Limits
These products are intended for use in general purpose compressed air systems only.

<table>
<thead>
<tr>
<th>With Polycarbonate Bowl</th>
<th>kPa</th>
<th>PSIG</th>
<th>bar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Pressure Maximum</td>
<td>1034</td>
<td>150</td>
<td>10</td>
</tr>
<tr>
<td>Operating Temperature Range</td>
<td>40°F to 125°F</td>
<td>(4°C to 52°C)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>With Zinc Bowl with Sight Gauge</th>
<th>kPa</th>
<th>PSIG</th>
<th>bar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Pressure Maximum</td>
<td>1723</td>
<td>250</td>
<td>17.0</td>
</tr>
<tr>
<td>Operating Temperature Range</td>
<td>40°F to 150°F</td>
<td>(4°C to 66°C)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>With Aluminum Bowl</th>
<th>kPa</th>
<th>PSIG</th>
<th>bar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Pressure Maximum</td>
<td>2068</td>
<td>300</td>
<td>21</td>
</tr>
<tr>
<td>Operating Temperature Range</td>
<td>40°F to 180°F</td>
<td>(4°C to 82°C)</td>
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</tr>
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</table>

<table>
<thead>
<tr>
<th>With Aluminum Bowl with Sight Gauge</th>
<th>kPa</th>
<th>PSIG</th>
<th>bar</th>
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<td>Operating Pressure Maximum</td>
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<td></td>
</tr>
</tbody>
</table>

ANSI Symbols

Safety Guide
For more complete information on recommended application guidelines, see the Safety Guide section of Pneumatic Division catalogs or you can download the Pneumatic Division Safety Guide at: www.wattsfluidair.com

WARNING
To avoid unpredictable system behavior that can cause personal injury and property damage:
- Disconnect electrical supply (when necessary) before installation, servicing, or conversion.
- Disconnect air supply and depressurize all air lines connected to this product before installation, servicing, or conversion.
- Operate within the manufacturer’s specified pressure, temperature, and other conditions listed in these instructions.
- Medium must be moisture-free if ambient temperature is below freezing.
- Service according to procedures listed in these instructions.
- Installation, service, and conversion of these products must be performed by knowledgeable personnel who understand how pneumatic products are to be applied.
- After installation, servicing, or conversion, air and electrical supplies (when necessary) should be connected and the product tested for proper function and leakage. If audible leakage is present, or the product does not operate properly, do not put into use.
- Warnings and specifications on the product should not be covered by paint, etc. If masking is not possible, contact your local representative for replacement labels.

CAUTION
Polyurethane bowls, being transparent and tough, are ideal for use with Filters and Lubricators. They are suitable for use in normal industrial environments, but should not be located in areas where they could be subjected to direct sunlight, an impact blow, nor temperatures outside of the rated range. As with most plastics, some chemicals can cause damage. Polyurethane bowls should not be exposed to chlorinated hydrocarbons, ketones, esters and certain alcohols. They should not be used in air systems where compressors are lubricated with fire-resistant fluids such as phosphate ester and di-ester types.

Metal bowls are recommended where ambient and/or media conditions are not compatible with polyurethane bowls. Metal bowls resist the action of most such solvents, but should not be used where strong acids or bases are present or in salt laden atmospheres. Consult the factory for specific recommendations where these conditions exist.

TO CLEAN POLYURETHANE BOWLS USE MILD SOAP AND WATER ONLY! DO NOT use cleansing agents such as acetone, benzene, carbon tetrachloride, gasoline, toluene, etc., which are damaging to this plastic.

Bowl guards are recommended for added protection of polyurethane bowls where chemical attack may occur.
L606 Lubricator

Installation

1. The lubricator should be installed with reasonable accessibility for service whenever possible – repair service kits are available. Keep pipe or tubing lengths to a minimum with inside clean and free of dirt and chips. Pipe joint compound should be used sparingly and applied only to the male pipe – never into the female port. Do not use PTFE tape to seal pipe joints – pieces have a tendency to break off and lodge inside the unit, possibly causing malfunction. Also, new pipe or hose should be installed between the lubricator and equipment being lubricated.

2. The upstream pipe work must be clear of accumulated dirt and liquids.

3. Select a lubricator location as close as possible to the equipment being lubricated and downstream of any pressure regulator.

4. Install lubricator so that air flows in the direction of arrow on body.

5. Install lubricator vertically with bowl drain mechanism (if supplied) at the bottom.

Operation and Service

1. Filling — Lubricators can be filled while under pressure and without shutting down equipment. Slowly remove either fill plug and fill to 1/4” to top of bowl using correct oil. For proper automatic fill operation, the oil inlet pressure to lubricator must be maintained between 10 and 200 PSI above air pressure to lubricator.

Suggested Lubricant: F442

Petroleum based oil of 100 to 200 SSU viscosity at 100°F and an aniline point greater than 200°F. (Mobil DTE24 and Sun Company Survis 932 are good examples). Do not use oils with adhesives, compound oils containing solvents, graphite, detergents or synthetic oils.

2. Replace the Fill Plug (by turning clockwise) and seat firmly. Excessive torque is not required. Turn on air supply, if leakage occurs. **DO NOT OPERATE** — conduct repairs again. The lubricator is now ready for setting.

3. Oil Delivery Adjustment — To adjust oil delivery, turn Adjustment Knob on top of the lubricator.

Leaver — Clockwise
Richer — Counterclockwise

By counting the number of drops per minute in the Sight Dome, you can adjust to your requirements. Generally, one drop per minute downstream for every 10 - 15 SCFM flow is satisfactory. 25 drops per minute equals one (1) ounce per hour - volume of oil passing through the Sight Dome.

**NOTE:** This is a constant density type lubricator which delivers a constant ratio of oil air flow. Therefore, if air flow increases, oil delivery will be adjusted proportionately. **ONLY IF A DIFFERENT RATIO IS DESIRED SHOULD YOUR ADJUSTMENT KNOB SETTING BE CHANGED AFTER YOUR INITIAL SETTING.**

4. Cleaning — Erratic lubricator operation or loss of lubrication is almost always due to dirt (rust, pipe tape, etc.) in the needle valve or venturi area. To clean, shut off and vent all air line pressure to the unit being cleaned. In most cases cleaning is needed only in the oil metering area. Pull off Adjusting Knob and remove Needle Valve Assembly by turning out large hex nut. Remove Needle Valve Seat and clean removed parts with alcohol making sure hole in seat is clear. With a #57 drill, make sure hole in bottom of sight gauge area is open. Remove Bowl. Clean parts with soapy water or denatured alcohol **but do not use denatured alcohol on plastic bowl, sight dome or sight gauge.** If using compressed air to blow dry, be sure to wear appropriate eye protection.

5. After servicing, apply system pressure and check for air leaks. If leakage occurs, **Do Not Operate** — conduct servicing again.

Kits Available

<table>
<thead>
<tr>
<th>Description</th>
<th>Product Number</th>
<th>Bowl Type</th>
<th>Port Size</th>
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<tbody>
<tr>
<td>Bowl</td>
<td>BK606Y</td>
<td>B</td>
<td>1/4&quot;, 3/8&quot;</td>
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<tr>
<td>Polycarbonate</td>
<td>BK605WY</td>
<td>W</td>
<td>1/4&quot;, 3/8&quot;</td>
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<td>Zinc with Sight Gauge</td>
<td>BK606A</td>
<td>B</td>
<td>1/2&quot;</td>
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<td>Aluminum</td>
<td>BK603A</td>
<td>E</td>
<td>1/2&quot;</td>
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<td>1/2&quot;</td>
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<td>BK605B</td>
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<td>3/4&quot; thru 1-1/2&quot;</td>
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Repair Kit

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<td>Dip Tube Replacement Kit</td>
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<tr>
<td>Needle Valve Assembly</td>
<td>RK606Y</td>
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<td>Sight Dome Repair Kit</td>
<td>RK606SY</td>
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<tr>
<td>Sight Gauge Bowl Repair Kit</td>
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<td>RK606WB</td>
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<tr>
<td>Sight Gauge Bowl Repair Kit</td>
<td>RK606X30B</td>
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</tbody>
</table>

Button Head Fill Fitting (3/4 Hex.) | SAA606C109-1 |
| Button Head Fill Fitting (11/16 Hex.) | L606C14 |
| Fill Plug (Brass)                | SA0684        |
| Fill Plug (Plastic)              | SAP04113      |
Installation
The PL50 Multi-Point Injection Lubricator is specifically designed to lubricate intermittently operated air rotary tools, cylinders and valves. If equipment operates continuously, the PL50 must be triggered by a separate signal such as from a timer and solenoid valve arrangement or a Pulse Generator (see Fig. 10). Unlike conventional mist type lubricators, the PL50 delivers, via capillary tubes, small, precisely controlled amounts of lubricant right to the end lubrication points in the system every time the equipment is cycle (operated). The PL50 consists of a pressure plate (pilot), one to ten injector modules, support plate as described below, and oil reservoir (see Fig. 1).

Sensor:
The pressure plate is a pilot sensor (Fig. 1). The pilot sensor receives a pressure pulse (signal) from an external source and transmits it to all the injector modules in the stack. The pilot sensor is normally used on multiple spindle rotary air tools. As shown in Typical Installation (A), the pilot signal is tapped off at a point downstream of the control valve so that injector is fired during the “ON” cycle. Also, it is essential that the pilot signal be removed (vented to atmosphere through the tool) during the “OFF” cycle. The pilot sensor is also used on cylinder and valve circuits by taking the pilot signal from the downstream side of the valve. A separate three-way solenoid operated or air pilot operated valve may be used if it is not convenient or possible to obtain pilot signal directly from the operating circuit. It is desirable to lubricate one group of point during one portion of the machine (circuit) operating cycle, and another group at a different time, two PL50’s must be used. (see Fig. 2).

Note: Install filter and regulator, upstream of PL50.
Injector Modules

The injector modules are basically air operated, positive displacement, adjustable delivery oil pumps. The oil feed rate is adjustable from 0-1 drop (0-03 cc’s) per pulse. Air signal and oil supply passes through each injector module to the next one in the stack. Sight glass, tamperproof oil feed adjustment and manual override pump are provided for ease of operation. (see Fig. 3)

Reservoir

Any reservoir may be used to store and supply oil to the PL50 injector module stack. It can be gravity fed or pressurized (up to 100 PSI)*. Normally, the 9 ounce (BLK50A)**, one quart (BKL50B)** or two quart (BKL50C)** reservoir is used. Where there are many PL50’s, oil can be supplied from a central fill system which is supplied by a 55-gallon drum as the reservoir.

*With “R” option only 30 PSI

**Must be remote mount, and can not be pressurized

Installation

Install PL50 Injector Module stack in a convenient location on or close to operating equipment. It is preferable that machine operator can observe movement of red indicator inside sight glass (see Fig. 3) and be able to make changes to oil feed adjustment as may be desired.

Normally the stack is installed in a vertical position primarily so that air bubbles in the oil will rise to the top. Mount PL50 rigidly to equipment or to separate support via two mounting holes in pilot sensor (see Fig. 1). Connect oil feed capillary tubing to each injector sight glass outlet, utilizing 1/8” NPT male to 1/8” O.D. tube compression fitting adapter (Part No. SAL50Y139). Grip wrench flats on outer sight glass housing to prevent it from rotating when installing tubing adapter (see Fig. 4).

Next, run capillary tubing to point of use, appropriately securing tubing to supporting member (pipeline, column, machine frame, etc.) along the way. Since the injector is a positive displacement device, capillary may be run for hundreds of feet, uphill, downhill without jeopardizing PL50’s performance. Do not pass tubing next to extremely hot (steam lines) or cold (refrigeration units) points for it will impair capillary’s strength and change oil’s viscosity. At point of use, which is as close to inlet port of air operated equipment as possible, cut capillary and install ball check connector (Part No. SA606Y107) on one of the oil supply ports in the support plate or pressure plate. Open vent on reservoir, then, with the aid of a bucket pump, pump oil back up into the reservoir (see Fig. 6). Once reservoir is full, close vent and continue to pump. (If reservoir is not pressure type, close shut off valve in supply line.) The bucket pump will overcome check valve in injector and oil will be forced down each injector’s capillary tube. Once longest tube is filled, disconnect bucket pump and open reservoir vent (open oil supply shut-off valve if previously closed).

Manual filling is more time-consuming. Reservoir is first filled, and air is purged from stack by removing lower-most plug. Then, each injector is adjusted to maximum setting (see “Oil Feed Adjustment”) and cycled manually be repeatedly pushing and releasing manual pump or automatically by cycling equipment. Approximately 50 cycles are required to purge each foot of capillary tube.

Oil Feed Adjustment

Push in red adjustment knob (see Fig. 7) to unlock. Turn knob clockwise to stop. The injector is now adjusted for maximum oil output - approximately 1 drop per cycle (.03 cc).

Operate downstream equipment until all wetted surfaces are coated with oil and excessive oil mist is discharging from operating equipment exhaust ports. Next, reduce oil adjustment by turning red knob counterclockwise. Each counter-clockwise turn reduces oil rate by 0.1 drop/ cycle. A normal setting is 2-1/2 to 3-1/2 turns counter-clockwise (i.e. 0.3-0.2 drops/cycle). Operate equipment for a few cycles and re-adjust to a higher (clockwise) or lower (counter-clockwise) oil delivery setting as may be required. When set, pull knob out one click to lock setting.
Multi-Point Injection Lubricator

Remove knob to make tamper resistant. To completely shut off oil feed, turn knob 6-8 turns counter-clockwise. Repeat procedures for each injector in the stack.

1. Push in to adjust oil delivery
2. Pull out to lock position
3. Completely remove knob to make setting tamper resistant

Figure 7

Troubleshooting

First indication of malfunction is the red indicator in the sight glass (see Fig. 3) is not moving when injector is cycled and all other parts, such as manual pump, sensor, etc. function normally. To correct the problem, first re-adjust oil feed setting to maximum by turning red oil feed adjustment knob all the way clockwise and observing number of turns and location of arrow on the end of the knob. If the red indicator now moves when injector is cycled, it is functioning properly and can be re-adjusted back to lower setting. However, continue to observe if red indicator does move as knob is turned counter-clockwise. Normally motion will not be noticeable below 3-1/2 to 4 turns back and lubricator will be completely shut off at 5-1/2 to 6 turns back. If indicator still does not move after oil delivery is at maximum, the malfunction may be caused by an air pocket in injector oil passages. To remedy, purge the injector module stack by removing the 1/8" pipe oil plug in plate (see Fig. 9). Recycle injector. If injector was air-bound, normally a few small air bubbles will now emerge in the sight glass and be purged out through capillary tubing. Prevent the formation of air pockets by not allowing reservoir to run out of oil.

If neither of the above simple procedures correct problem, it is normally good practice to replace the malfunctioning module with a new one and put equipment back into operation. Then, the malfunctioning module can be disassembled, cleaned and repaired at leisure (see Fig. 8).

If manual pump is not moving when equipment is cycled, the air signal is not reaching injector(s), or is too weak.

First determine if signal is being delivered to modules. If not, check air circuit and/or control valve for proper operation.

Maintenance

With clean, dry air and with clean oil (free of air bubbles), the PL50 will operate indefinitely for millions of cycles with only a minimum of maintenance. Normal maintenance consists of disassembling the stack of modules and periodically cleaning air and oil passages with solvents on metal parts, but only use household soap or detergent on plastic parts. Reassemble using (Fig. 9) as a guide.

Repair Kits (see Fig. 8)

Module Kit - Visable Indicator................................. KPL50MV
Consists of:
- RKL50MA
- RKL50MD
- Module Body Sub-Assembly

Adjustment End Only..............................................RKL50MA
Consists of:
- Oil Piston Spring
- Oil Piston
- Adjustment Knob
- Adjustment Assembly

Visable Indicator End Repair Kit................................RKL50MD
Consists of:
- Indicator Cylinder
- Indicator Cylinder O-ring
- Indicator Piston
- Indicator Piston Spring
- Check Ball
- Check Ball Spring
- Housing Retainer
- Sight Glass Housing
- Sight Glass Housing O-ring

Module Kit - Non-Visable Indicator............................KPL50M
Consists of:
- RKL50MA
- Check Ball
- Check Ball Spring
- Standard End Feed Plug
- Standard End Feed Plug O-Ring
- Module Body Sub-Assembly

KPL50MV

(Kit)

RKL50MA

(Kit)

RKL50MD

(Kit)

This End Supplied with KPL50M Kit

Spring

Indicator Cylinder

O’ring

Indicator Piston

Sight Glass Housing

Check Ball

O’ring

Check Ball Spring

Standard End Feed Plug

Standard End Feed Plug O-Ring

Module Body Sub-Assembly

Page 3
Field Assembly

PL50 can be obtained with the desired number of modules (1 - 10) completely assembled to sensor. They also can be assembled in the field from kits. Use (Fig. 9) as a guide and proceed as follows:

1. Unpack pressure plate and first module kit.
2. Screw two spacer stud tie bolts in place - note drawing. (Use spacer stud tie bolts supplied with module kit.)
3. Install one set of multi-lobed seals in sensor recesses.
4. Slip module into position making sure oil and air holes line up with corresponding holes in plate.
6. Repeat for 3 through 10 modules.
7. Install set of multi-lobed seals in support plate and place on top of module stack and insert two retainer screws. Hand tighten screws and the PL50 is ready for installation.
**WARNING**

To avoid unpredictable system behavior that can cause personal injury and property damage:
- Disconnect electrical supply (when necessary) before installation, servicing, or conversion.
- Disconnect air supply and depressurize all air lines connected to this product before installation, servicing, or conversion.
- Operate within the manufacturer’s specified pressure, temperature, and other conditions listed in these instructions.
- Medium must be moisture-free if ambient temperature is below freezing.
- Service according to procedures listed in these instructions.
- Installation, service, and conversion of these products must be performed by knowledgeable personnel who understand how pneumatic products are to be applied.
- After installation, servicing, or conversion, air and electrical supplies (when necessary) should be connected and the product tested for proper function and leakage. If audible leakage is present, or the product does not operate properly, do not put into use.
- Warnings and specifications on the product should not be covered by paint, etc. If masking is not possible, contact your local representative for replacement labels.

---

**PL50**

1. Remove Retaining Screws, Support Plate, Injection Module and Short Spacer Studs, (Option is to leave short spacer studs in plate and add long studs to top of short ones).
2. Install long studs then short ones on top.
3. Make sure 2 Quad Rings are in place on Pressure Plate and install Pulse Generator.
4. Place 2 Quad Rings on top of Pulse Generator.
5. Reinstall Injection Module, Existing Seals, Support Plate and Screws and torque screws to 35 in./lb.

---

**L50**

1. Remove Retaining Screws, Support Plate, Injection Module and Short Spacer Studs, (Option is to leave short spacer studs in plate and add long studs to top of short ones).
2. Install long studs then short ones on top.
3. Make sure 3 Quad Rings are in place on Sensor Module and install Pulse Generator.
4. Place 3 Quad Rings on top of Pulse Generator.
5. Reinstall Injection Module, Existing Seals, Support Plate and Screws and torque screws to 35 in./lb.

---

**WARNING**

Failure or improper selection or improper use of the products and/or systems described herein or related items can cause death, personal injury and property damage.

This document and other information from The Company, its subsidiaries and authorized distributors provide product and/or system options for further investigation by users having technical expertise. It is important that you analyze all aspects of your application, including consequences of any failure and review the information concerning the product or systems in the current product catalog. Due to the variety of operating conditions and applications for these products or systems, the user, through its own analysis and testing, is solely responsible for making the final selection of the products and systems and assuring that all performance, safety and warning requirements of the application are met.

The products described herein, including without limitation, product features, specifications, designs, availability and pricing, are subject to change by The Company and its subsidiaries at any time without notice.

Extra copies of these instructions are available for inclusion in equipment / maintenance manuals that utilize these products. Contact your local representative.
Fixation - Mounting - Befestigung - Fijacion - Fissaggio

**UK** Disconnect air & electrical supplies before attempting repair or maintenance. See ISO4414 for safety requirements covering the installation and use of pneumatic equipment.

**FR** Débrancher les connexions pneumatiques et électriques avant réparation ou maintenance. Voir ISO4414 pour les règles de sécurité des installations et utilisation des équipements pneumatiques.


**ES** Desconectar las conexiones neumáticas y eléctricas antes de efectuar cualquier reparación o mantenimiento. Vea ISO4414 para reglas de seguridad de las instalaciones y utilización de equipos neumáticos.

**IT** Prima di eseguire interventi di manutenzione verificare che sia l’alimentazione elettrica che pneumatica siano disattivate. Attenersi alla normativa ISO4414 che regola l’installazione e l’uso di componenti pneumatici.

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**WARNING**
To avoid unpredictable system behavior that can cause personal injury and property damage:
- Disconnect air & electrical supplies before installation.
- Installation, servicing or conversion of these products must be performed by knowledgeable personnel who understand how to safely perform these tasks.
- Always install, service or convert these products in accordance with the instructions provided by the manufacturer. A failure to follow instructions on the part of users having technical expertise must be performed by knowledgeable personnel who understand how to safely perform these tasks.
- Disconnect air & electrical supplies before installation, servicing or conversion of these products.
- Service according to procedures listed in these instructions.
- Do not exceed maximum primary pressure rating.

**WARNING**
Product rupture can cause serious injury. Do not connect regulator to bottled gas.
Do not exceed maximum primary pressure rating.

**WARNING**
Failure or improper selection or improper use of the products and/or systems described herein or related items can cause death, personal injury and property damage.

This document and the other information from the Company, its subsidiaries and authorized distributors regarding product, installation, and maintenance procedures for the equipment covered herein are subject to change by the Company and its subsidiaries at any time without notice.

---

**Réglage - Adjustment - Steuerung - Regulación - Regolazione**

**Service kits**
- Diaphragm kit - relieving type = P3YKA00RR
- Diaphragm kit - non-relieving type = P3YKA00RN

**Coupling Kit**
- Kupplungssatz

**Connector M12 x 1**
- Power supply: +24 V DC ± 10%
- Residual ripple 10%
- Power supply 0 V
- Reference and mass capacity

**Analog voltage**
- 0-10 V
- Reference and actual value output
- With a single potentiometer

**PLC in connection with several potentiometers**

The resistance of the potentiometer should range between 500 Ω and 100 Ω.

---

**Association - Combination - Verbindung - Asociacion - Assembleggi**
### Condensate Drainage / Purge / Condensatentleerung / Suavamento condensat / Vaciado del condensado / odpouštění kondenzátu / Spust kondensátu

<table>
<thead>
<tr>
<th>OFF</th>
<th>ON</th>
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<tbody>
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<td>0.2 bar</td>
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The automatic fully automatic system ensures that the condensate is removed, after which full pressure is achieved.

Le débit est réglable par la clé Allen, jusqu’à la valeur consignée qui déclenche le plein passage.

Mjukstartsflödet kan justeras med insexnyckel. Vid uppnått omställningstryck öppnar sedan släppventilen för fält flöde.

Utilize la Llave Allen para regular el caudal del condensado hasta lograr la presión tarada - de esta forma se proporciona el flujo máximo de aire.

La chiave Allen regola il flusso attraverso la valvola fino al raggiungimento del valore impostato, quindi viene inserita la pressione totale.

### Lubricator Adjustment - Réglage du lubrificateur - Steuerung Regulacion - Regolazione

- Oil adjusting screw
- Oil refilling plug

---

**Recommended Lubricants / Lubrifiants recommandés / Empfohlene Ölsorten**

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<tr>
<th>Oil Company</th>
<th>ISO Grade</th>
<th>Grade</th>
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<td>Kluberol</td>
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* For food industry applications - approved oil USDA-H1

High speed tools and systems

Outils et systèmes rapides

Utensili ad alta velocità e sistemi

Högväsentverktyg och system

Équipements à haute vitesse

Vérins et distributeurs pneumatiques

Pneumatik-Zylinder und Ventile

Colchile pneumatici e valvole

Sistemas neumáticos y válvulas

Pneumatische cilinder en ventielen

Do not use oils with additives, compounds oils containing solvents, graphite, detergents. The use of synthetic oils and antifreeze with a Glycol concentration of 100% can be used.

---

**Filter Maintenance - Maintenance du filtre - Wartung - Mantenimiento - Manutenzione**

- DPI Assembly Kit
- Bowl kit - No drain
- Bowl kit - Combined manual/semi auto drain
- Bowl kit - Auto drain

**Condensate Drainage / Purge / Condensatentleerung / Suavamento condensat / Vaciado del condensado / odpouštění kondenzátu / Spust kondensátu**

**Lubrication of airplanes**

**Combined Soft Start & Dump Valve / Soft Start Valve / Vannes de mise en pression progressive et de purge / Sanftanlauf + Abschalt-Ventile / Mjukstartventiler / Válvulas de arranque progresivo / Valvole Avviamento Progressivo**

- Combined start/stop function
- Combined start/stop function with acknowledgement

**Ball Valve**

- 3-way valve
- Ball Valve

---

**Air Cylinders and Valves**

- Cilindros y válvulas neumáticos


Safety Guide For Selecting And Using Pneumatic Division Products And Related Accessories

**WARNING:**

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF PNEUMATIC DIVISION PRODUCTS, ASSEMBLIES OR RELATED ITEMS (“PRODUCTS”) CAN CAUSE DEATH, PERSONAL INJURY, AND PROPERTY DAMAGE. POSSIBLE CONSEQUENCES OF FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THESE PRODUCTS INCLUDE BUT ARE NOT LIMITED TO:

- Unintended or mistimed cycling or motion of machine members or failure to cycle
- Work pieces or component parts being thrown off at high speeds.
- Failure of a device to function properly for example, failure to clamp or unclamp an associated item or device.
- Explosion
- Suddenly moving or falling objects.
- Release of toxic or otherwise injurious liquids or gasses.

Before selecting or using any of these Products, it is important that you read and follow the instructions below.

1. GENERAL INSTRUCTIONS

1.1. Scope: This safety guide is designed to cover general guidelines on the installation, use, and maintenance of Pneumatic Division Valves, FRLs (Filters, Pressure Regulators, and Lubricators), Vacuum products and related accessory components.

1.2. Fail-Safe: Valves, FRLs. Vacuum products and their related components can and do fail without warning for many reasons. Design all systems and equipment in a fail-safe mode, so that failure of associated valves, FRLs or Vacuum products will not endanger persons or property.


1.4. Distribution: Provide a copy of this safety guide to each person that is responsible for selection, installation, or use of Valves, FRLs or Vacuum products. Do not select, or use Parker valves, FRLs or vacuum products without thoroughly reading and understanding this safety guide as well as the specific Parker publications for the products considered or selected.

1.5. User Responsibility: Due to the wide variety of operating conditions and applications for valves, FRLs, and vacuum products Parker and its distributors do not warrant that any particular valve, FRL or vacuum product is suitable for any specific end use system. This safety guide does not analyze all technical parameters that must be considered in selecting a product. The user, through its own analysis and testing, is solely responsible for:

- Making the final selection of the appropriate valve, FRL, Vacuum component, or accessory.
- Assuring that all user’s performance, endurance, maintenance, safety, and warning requirements are met and that the application presents no health or safety hazards.
- Complying with all existing warning labels and / or providing all appropriate health and safety warnings on the equipment on which the valves, FRLs or Vacuum products are used; and,
- Assuring compliance with all applicable government and industry standards.

1.6. Safety Devices: Safety devices should not be removed, or defeated.

1.7. Warning Labels: Warning labels should not be removed, painted over or otherwise obscured.

1.8. Additional Questions: Call the appropriate Parker technical service department if you have any questions or require any additional information. See the Parker publication for the product being considered or used, or call 1-800-CPARKER, or go to www.parker.com, for telephone numbers of the appropriate technical service department.

2. PRODUCT SELECTION INSTRUCTIONS

2.1. Flow Rate: The flow rate requirements of a system are frequently the primary consideration when designing any pneumatic system. System components need to be able to provide adequate flow and pressure for the desired application.

2.2. Pressure Rating: Never exceed the rated pressure of a product. Consult product labeling, Pneumatic Division catalogs or the instruction sheets supplied for maximum pressure ratings.

2.3. Temperature Rating: Never exceed the temperature rating of a product. Excessive heat can shorten the life expectancy of a product and result in complete product failure.

2.4. Environment: Many environmental conditions can affect the integrity and suitability of a product for a given application. Pneumatic Division products are designed for use in general purpose industrial applications. If these products are to be used in unusual circumstances such as direct sunlight and/or corrosive or caustic environments, such use can shorten the useful life and lead to premature failure of a product.

2.5. Lubrication and Compressor Carryover: Some modern synthetic oil s can and will attack nitrile seals. If there is any possibility of synthetic oils or greases migrating into the pneumatic components check for compatibility with the seal materials used. Consult the factory or product literature for materials of construction.

2.6. Polycarbonate Bowls and Sight Glasses: To avoid potential polycarbonate bowl failures:

- Do not locate polycarbonate bowls or sight glasses in areas where they could be subject to direct sunlight, impact blow, or temperatures outside of the rated range.
- Do not expose or clean polycarbonate bowls with detergents, chlorinated hydro-carbons, ketones, esters or certain alcohols.
- Do not use polycarbonate bowls or sight glasses in air systems where compressors are lubricated with fire resistant fluids such as phosphate ester and di-ester lubricants.

PDNSG-1

PDNSG-1
2.7. Chemical Compatibility: For more information on plastic component chemical compatibility see Pneumatic Division technical bulletins Tec-3, Tec-4, and Tec-5.

2.8. Product Rupture: Product rupture can cause death, serious personal injury, and property damage.
   - Do not connect pressure regulators or other Pneumatic Division products to bottled gas cylinders.
   - Do not exceed the maximum primary pressure rating of any pressure regulator or any system component.
   - Consult product labeling or product literature for pressure rating limitations.

3. PRODUCT ASSEMBLY AND INSTALLATION INSTRUCTIONS

3.1. Component Inspection: Prior to assembly or installation a careful examination of the valves, FRLs or vacuum products must be performed. All components must be checked for correct style, size, and catalog number. DO NOT use any component that displays any signs of nonconformance.

3.2. Installation Instructions: Parker published Installation Instructions must be followed for installation of Parker valves, FRLs and vacuum components. These instructions are provided with every Parker valve or FRL sold, or by calling 1-800-CPARKER, or at www.parker.com.

3.3. Air Supply: The air supply or control medium supplied to Valves, FRLs and Vacuum components must be moisture-free if ambient temperature can drop below freezing.

4. VALVE AND FRL MAINTENANCE AND REPLACEMENT INSTRUCTIONS

4.1. Maintenance: Even with proper selection and installation, valve, FRL and vacuum products service life may be significantly reduced without a continuing maintenance program. The severity of the application, risk potential from a component failure, and experience with any known failures in the application or in similar applications should determine the frequency of inspections and the servicing or replacement of Pneumatic Division products so that products are replaced before any failure occurs. A maintenance program must be established and followed by the user and, at minimum, must include instructions 4.2 through 4.10.

4.2. Installation and Service Instructions: Before attempting to service or replace any worn or damaged parts consult the appropriate Service Bulletin for the valve or FRL in question for the appropriate practices to service the unit in question. These Service and Installation Instructions are provided with every Parker valve and FRL sold, or are available by calling 1-800-CPARKER, or by accessing the Parker web site at www.parker.com.


4.4. Visual Inspection: Any of the following conditions requires immediate system shut down and replacement of worn or damaged components:
   - Air leakage: Look and listen to see if there are any signs of visual damage to any of the components in the system. Leakage is an indication of worn or damaged components.
   - Damaged or degraded components: Look to see if there are any visible signs of wear or component degradation.
   - Kinked, crushed, or damaged hoses. Kinked hoses can result in restricted air flow and lead to unpredictable system behavior.
   - Any observed improper system or component function: Immediately shut down the system and correct malfunction.
   - Excessive dirt build-up: Dirt and clutter can mask potentially hazardous situations.

   Caution: Leak detection solutions should be rinsed off after use.

4.5. Routine Maintenance Issues:
   - Remove excessive dirt, grime and clutter from work areas.
   - Make sure all required guards and shields are in place.

4.6. Functional Test: Before initiating automatic operation, operate the system manually to make sure all required functions operate properly and safely.

4.7. Service or Replacement Intervals: It is the user’s responsibility to establish appropriate service intervals. Valves, FRLs and vacuum products contain components that age, harden, wear, and otherwise deteriorate over time. Environmental conditions can significantly accelerate this process. Valves, FRLs and vacuum components need to be serviced or replaced on routine intervals. Service intervals need to be established based on:
   - Previous performance experiences.
   - Government and / or industrial standards.
   - When failures could result in unacceptable down time, equipment damage or personal injury risk.

4.8. Servicing or Replacing of any Worn or Damaged Parts: To avoid unpredictable system behavior that can cause death, personal injury and property damage:
   - Disconnect electrical supply (when necessary) before installation, servicing, or conversion.
   - Disconnect air supply and depressurize all air lines connected to system and Pneumatic Division products before installation, service, or conversion.
   - Installation, servicing, and / or conversion of these products must be performed by knowledgeable personnel who understand how pneumatic products are to be applied.
   - After installation, servicing, or conversions air and electrical supplies (when necessary) should be connected and the product tested for proper function and leakage. If audible leakage is present, or if the product does not operate properly, do not put product or system into use.
   - Warnings and specifications on the product should not be covered or painted over. If masking is not possible, contact your local representative for replacement labels.

4.9. Putting Serviced System Back into Operation: Follow the guidelines above and all relevant Installation and Maintenance Instructions supplied with the valve FRL or vacuum component to insure proper function of the system.