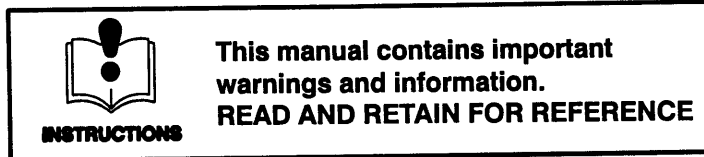


INSTRUCTIONS—PARTS LIST



307-460

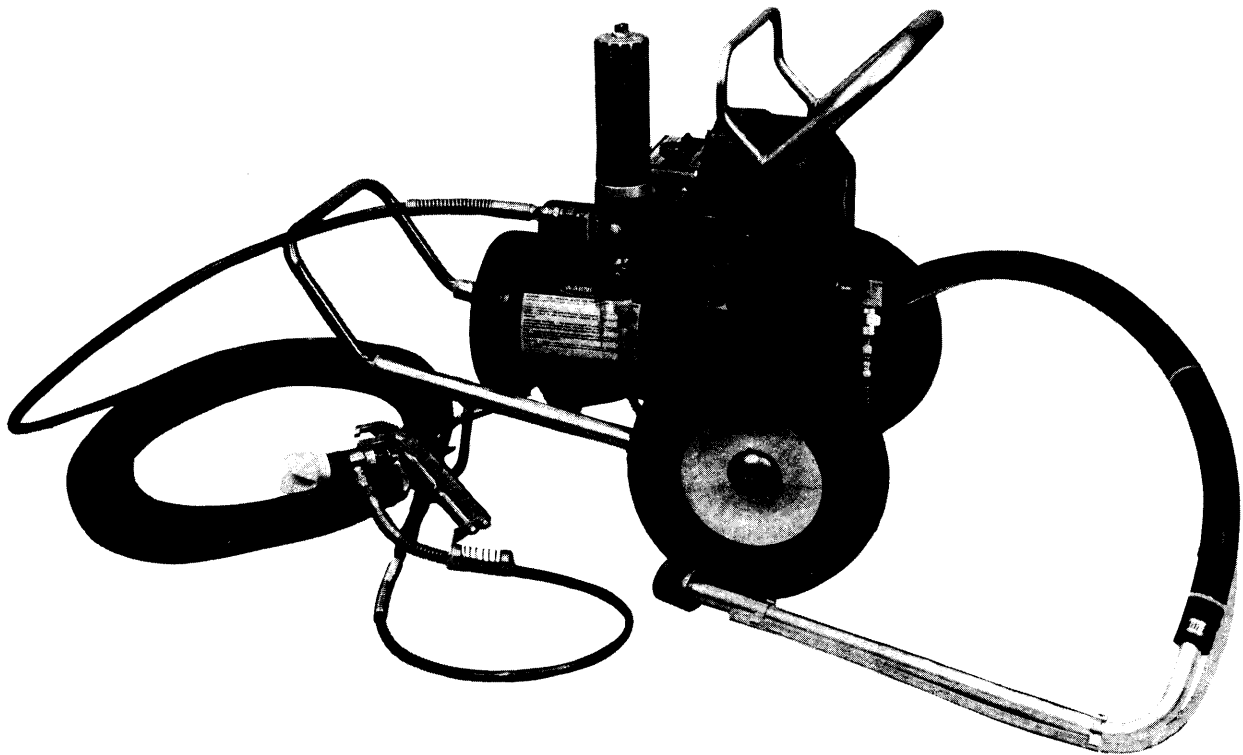
Rev. F
Supersedes D



PORTABLE, ELECTRIC, AIRLESS PAINT SPRAYER **EM 480 Hydra-Spray**®

2750 psi (190 bar) Maximum Working Pressure

Model No. 217-480, Series C



WARNING

Hazard of Using Halogenated Hydrocarbon Solvents

Do not use 1,1,1-trichloroethane, methylene chloride, other halogenated hydrocarbon solvents or fluids containing such solvents in this equipment, which contains aluminum and/or zinc parts. Such use could result in a serious chemical reaction, with the possibility of explosion, which could cause death, serious bodily injury and/or substantial property damage.

Consult your material suppliers to ensure that the materials being used are compatible with aluminum and zinc parts.

WARNING

**HIGH PRESSURE SPRAY CAN CAUSE SERIOUS INJURY.
FOR PROFESSIONAL USE ONLY. OBSERVE ALL WARNINGS.**

Read and understand all instruction manuals before operating equipment.

FLUID INJECTION HAZARD

General Safety

This equipment generates very high fluid pressure. Spray from the gun, leaks or ruptured components can inject fluid through your skin and into your body and cause extremely serious bodily injury, including the need for amputation. Also, fluid injected or splashed into the eyes can cause serious damage.

NEVER point the spray gun at anyone or at any part of the body. NEVER put hand or fingers over the spray tip. NEVER try to "blow back" paint; this is NOT an air spray system.

ALWAYS have the tip guard in place on the spray gun when spraying.

ALWAYS follow the Pressure Relief Procedure, below, before cleaning or removing the spray tip or servicing any system equipment.

NEVER try to stop or deflect leaks with your hand or body.

Be sure equipment safety devices are operating properly before each use.

Medical Treatment

If any fluid appears to penetrate your skin, get **EMERGENCY MEDICAL CARE AT ONCE. DO NOT TREAT AS A SIMPLE CUT.**

Tell the doctor exactly what fluid was injected. For treatment instructions, have your doctor call the **NATIONAL POISON CENTER NETWORK (412)681-6669.**

Spray Gun Safety Devices

Be sure all gun safety devices are operating properly before each use. Do not remove or modify any part of the gun; this can cause a malfunction and result in serious bodily injury.

Safety Latch

Whenever you stop spraying, even for a moment, always set the gun safety latch in the closed or "safe" position, making the gun inoperative. Failure to set the safety latch can result in accidental triggering of the gun.

Diffuser

The gun diffuser breaks up spray and reduces the risk of injection when the tip is not installed. Check diffuser operation regularly. Follow the Pressure Relief Procedure, below, then remove the spray tip. Aim the gun into a metal pail, holding the gun firmly to the pail. Using the lowest possible pressure, trigger the gun. If the fluid emitted is not diffused into an irregular stream, replace the diffuser immediately.

Tip Guard

ALWAYS have the tip guard in place on the spray gun while spraying. The tip guard alerts you to the injection hazard and helps prevent accidentally placing your fingers or any part of your body close to the spray tip.

Spray Tip Safety

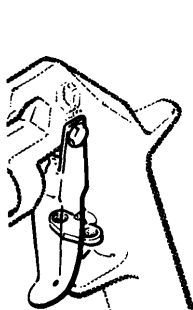
Use extreme caution when cleaning or changing spray tips. If the spray tip clogs while spraying, engage the gun safety latch immediately. ALWAYS follow the Pressure Relief Procedure and then remove the spray tip to clean it.

NEVER wipe off build up around the spray tip until pressure is fully relieved and the gun safety latch is engaged.

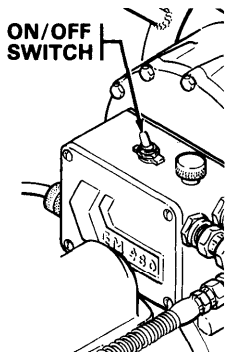
Pressure Relief Procedure

To reduce the risk of serious bodily injury, including injection or injury from moving parts or electric shock, always follow this procedure whenever you shut off the sprayer, when checking or servicing any part of the spray system, when installing, cleaning or changing spray tips, and whenever you stop spraying. (1) Engage the gun safety latch. (2) Turn the ON/OFF switch to OFF. (3) Unplug the power supply cord. (4) Disengage the gun safety latch. (5) Hold a metal part of the gun firmly to the side of a metal pail, and trigger the gun to relieve pressure. (6) Engage the gun safety latch. (7) Open the drain valve, having a container ready to catch the drainage. (8) Leave the drain valve open until you are ready to spray again.

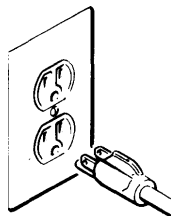
If you suspect that the spray tip or hose is completely clogged, or that pressure has not been fully relieved after following the steps above, VERY SLOWLY loosen the tip guard retaining nut or hose end coupling and relieve pressure gradually, then loosen completely. Now clear the tip or hose.



ENGAGE SAFETY



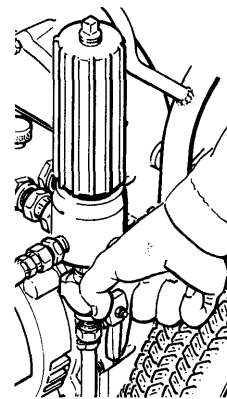
TURN SWITCH TO OFF



UNPLUG CORD



DISENGAGE SAFETY AND TRIGGER GUN; ENGAGE SAFETY AGAIN



OPEN DRAIN VALVE

EQUIPMENT MISUSE HAZARD

General Safety

Any misuse of the spray equipment or accessories, such as overpressurizing, modifying parts, using incompatible chemicals and materials, or using worn or damaged parts, can cause them to rupture and result in injection or other serious bodily injury, fire, explosion or property damage.

NEVER alter or modify any part of this equipment; doing so could cause it to malfunction.

CHECK all spray equipment regularly and repair or replace worn or damaged parts immediately.

System Pressure

This sprayer can develop 2750 psi (190 bar) MAXIMUM WORKING PRESSURE. Be sure that all spray equipment and accessories are rated to withstand the maximum working pressure of this sprayer. DO NOT exceed the maximum working pressure of any component or accessory used in the system.

Material Compatibility

BE SURE that all materials and solvents used are chemically compatible with the wetted parts shown in the Technical Data on the back cover. Always read the material and solvent manufacturer's literature before using them in this sprayer.

HOSE SAFETY

High pressure fluid in the hoses can be very dangerous. If the hose develops a pinhole leak, split or rupture due to any kind of wear, damage or misuse, the high pressure spray emitted from it can cause an injection injury or other serious bodily injury or property damage.

ALL FLUID HOSES MUST HAVE SPRING GUARDS! The spring guards help protect the hose from kinks or bends at or close to the coupling which can result in hose rupture.

TIGHTEN all fluid connections securely before each use. High pressure fluid can dislodge a loose coupling or allow high pressure spray to be emitted from the coupling.

NEVER use a damaged hose. Before each use, check entire hose for cuts, leaks, abrasion, bulging cover, or damage or movement of the hose couplings. If any of these conditions exist, replace the hose immediately. DO NOT try to recouple high pressure hose or mend it with tape or any other device. A repaired hose cannot contain the high pressure fluid.

HANDLE AND ROUTE HOSES CAREFULLY. Do not pull on hoses to move equipment. Do not use materials or solvents which are not compatible with the inner tube and cover of the hose. DO NOT expose the hose to temperatures above 180°F (82°C) or below -40°F (-40°C).

Hose Grounding Continuity

The fluid hoses provided with this sprayer have electrically conductive material on the surface of the center core of the hose. Other hoses on the market may have a ground wire extending the length of the hose. The ground wire can break in use which will destroy the electrical grounding of the hose.

To be sure of continuity, check electrical resistance at least once a week. Check overall resistance when using multiple hose assemblies. If the resistance exceeds 29 megohms, replace it immediately. Ground wire hose may have different resistance; check supplier.

FIRE OR EXPLOSION HAZARD.

Static electricity is created by the high velocity flow of fluid through the pump and hose. If every part of the spray equipment is not properly grounded, sparking may occur, and the system may become hazardous. Sparking may also occur when plugging in or unplugging a power supply cord. Sparks can ignite fumes from solvents and the fluid being sprayed, dust particles and other flammable substances, whether you are spraying indoors or outdoors, and can cause a fire or explosion and serious bodily injury and property damage. Always plug the sprayer into an outlet at least 20 feet (6 m) away from the sprayer and the spray area. Do not plug in or unplug any power supply cords in the spray area when there is any chance of igniting fumes still in the air.

Grounding

To reduce the risk of static sparking, ground the sprayer and all other spray equipment used or located in the spray area. CHECK your local electrical code for detailed grounding instructions for your area and type of equipment. BE SURE to ground all of this spray equipment:

1. *Sprayer*: plug the power supply cord, or extension cord, each equipped with an undamaged three-prong plug, into a properly grounded outlet. Do not use an adapter. All extension cords must have three wires and be rated for 15 amps.
2. *Fluid hoses*: use only grounded hoses with a maximum of 500 feet (150 m) combined hose length to ensure grounding continuity. Refer to Hose Grounding Continuity.
3. *Spray gun*: obtain grounding through connection to a properly grounded fluid hose and sprayer.
4. *Object being sprayed*: according to local code.
5. *All solvent pails* used when flushing, according to local code. Use only *metal pails*, which are conductive. Do not place the pail on a non-conductive surface, such as paper or cardboard, which interrupts the grounding continuity.
6. *To maintain grounding continuity when flushing or relieving pressure*, always hold a metal part of the gun firmly to the side of a *metal pail*, then trigger the gun.

Flushing Safety

Reduce the risk of injection injury, static sparking, or splashing by following the specific flushing procedure given on page 9 of this manual. Follow the Pressure Relief Procedure on page 2, and remove the spray tip before flushing. Hold a metal part of the gun firmly to the side of a *metal pail* and use the lowest possible fluid pressure during flushing.

MOVING PARTS HAZARD

Moving parts can pinch or amputate your fingers or other body parts. KEEP CLEAR of moving parts when starting or operating the sprayer. Unplug the sprayer and relieve pressure before checking or servicing the sprayer to prevent it from starting accidentally.

IMPORTANT

United States Government safety standards have been adopted under the Occupational Safety and Health Act. These standards—particularly the General Standards, Part 1910, and the Construction Standards, Part 1926—should be consulted.

AVERTISSEMENT

La pulvérisation à haute pression peut causer des blessures très graves.

Réservé exclusivement à l'usage professionnel. Observer toutes les consignes de sécurité.

Bien lire et bien comprendre tous les manuels d'instructions avant d'utiliser le matériel.

RISQUES D'INJECTION

Consignes générales de sécurité

Cet appareil produit un fluide à très haute pression. Le fluide pulvérisé par le pistolet ou le fluide sous pression provenant de fuites ou de ruptures peut pénétrer sous la peau ou à l'intérieur du corps et entraîner des blessures très graves, voir même une amputation. Même sans être sous pression, le fluide éclaboussant ou entrant dans les yeux peut aussi entraîner des blessures graves.

NE JAMAIS pointer le pistolet vers quelqu'un ou vers une partie quelconque du corps. NE JAMAIS mettre la main ou les doigts sur l'ajutage du pulvérisateur. NE JAMAIS essayer de "refouler" la peinture. Cet appareil N'est PAS un compresseur pneumatique.

TOUJOURS garder la protection de l'ajutage en place sur le pistolet pendant la pulvérisation.

TOUJOURS observer la **Marche à Suivre pour Détendre la Pression** donnée plus loin, avant de nettoyer ou d'enlever l'ajutage du pulvérisateur, ou d'effectuer un travail quelconque sur une partie de l'appareil.

NE JAMAIS essayer d'arrêter ou de dévier les fuites avec la main ou le corps.

Avant chaque utilisation, bien s'assurer que les dispositifs de sécurité fonctionnent correctement.

Soins médicaux

En cas de pénétration de fluide sous la peau:

**DEMANDER IMMEDIATEMENT DES SOINS
MEDICAUX D'URGENCE.
NE PAS SOIGNER CETTE BLESSURE COMME
UNE SIMPLE COUPURE.**

Dire exactement au médecin quel type de liquide a été injecté. Pour avoir des instructions concernant le traitement approprié, dire au médecin d'appeler le

**CENTRE ANTI-POISON SUIVANT:
NATIONAL POISON CENTER NETWORK
(412)681-6669**

Avant chaque utilisation, bien s'assurer que tous les dispositifs de sécurité du pistolet fonctionnent correctement. Ne pas

enlever ni modifier une partie quelconque du pistolet; ceci risquerait d'entraîner un mauvais fonctionnement et des blessures graves.

Verrou de sécurité

A chaque fois que l'on s'arrête de pulvériser, même s'il s'agit d'un court instant, toujours mettre le verrou de sécurité du pistolet sur la position "fermée" ou "sécurité" ("safe") pour empêcher le pistolet de fonctionner. Si le verrou de sécurité n'est pas mis, le pistolet peut se déclencher accidentellement.

Diffuser

Le diffuseur du pistolet sert à diviser le jet et à réduire les risques d'injection accidentelle quand l'ajutage n'est pas en place. Vérifier le fonctionnement du diffuseur régulièrement. Pour cette vérification, détendre la pression en observant la **Marche à Suivre pour Détendre la Pression** donnée plus loin puis enlever l'ajutage du pulvérisateur. Pointer le pistolet dans un seau en métal, en le maintenant fermement contre le seau. Puis, en utilisant la pression la plus faible possible, appuyer sur la gachette du pistolet. Si le fluide projeté n'est pas diffusé sous forme de jet irrégulier, remplacer immédiatement le diffuseur.

Protection de l'ajutage

TOUJOURS maintenir la protection de l'ajutage en place sur le pistolet du pulvérisateur pendant la pulvérisation. La protection de l'ajutage attire l'attention sur les risques d'injection et contribue à éviter que les doigts ou une partie quelconque du corps ne passe accidentellement à proximité immédiate de l'ajutage du pulvérisateur.

Consignes de sécurité concernant l'ajutage du pulvérisateur

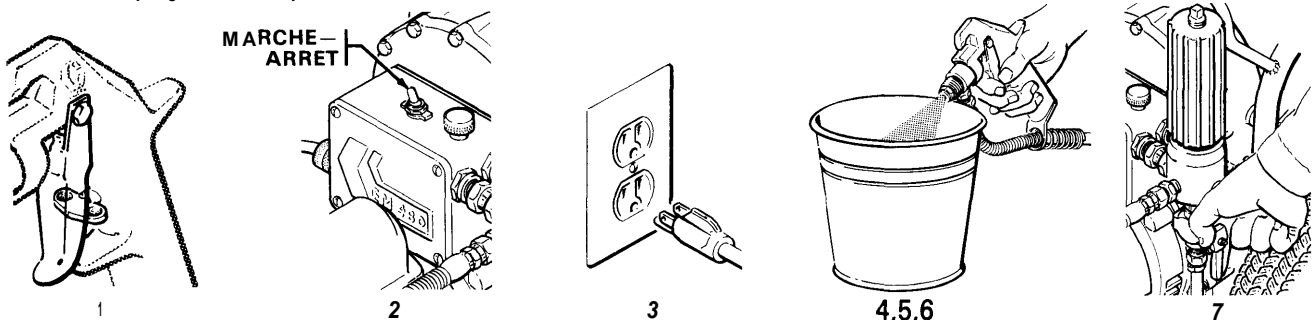
Faire extrêmement attention à l'occasion du nettoyage ou du remplacement des ajutages du pulvérisateur. Si l'ajutage se bouche pendant la pulvérisation, mettre immédiatement le verrou de sécurité du pistolet. TOUJOURS bien observer la **Marche à Suivre pour Détendre la Pression** puis enlever l'ajutage du pulvérisateur pour le nettoyer.

NE JAMAIS essayer ce qui s'est accumulé autour de l'ajutage du pulvérisateur avant que la pression ne soit complètement tombée et que le verrou de sécurité du pistolet ne soit engagé.

Marche à Suivre pour Détendre la Pression

Pour réduire les risques de blessures graves, y compris les blessures par injection de fluide ou celles causées par des pièces en mouvement ou par électrocution, toujours bien observer cette marche à suivre à chaque fois que l'on arrête le pulvérisateur, à l'occasion de la vérification ou de la réparation d'une pièce de l'appareil de pulvérisation, à l'occasion de l'installation, du nettoyage ou du remplacement des ajutages et d'une manière générale à chaque arrêt. 1) Engager le verrou de sécurité du pistolet. 2) Mettre l'interrupteur Marche-Arrêt sur ARRET ("OFF"). 3) Débrancher le cordon d'alimentation. 4) Désengager le verrou de sécurité du pistolet. 5) En maintenant une partie métallique du pistolet fermement appuyée contre le côté d'un seau en métal, appuyer sur la gachette du pistolet pour libérer la pression. 6) Engager le verrou de sécurité du pistolet. 7) Ouvrir le robinet de purge en prenant soin d'avoir un récipient prêt à récupérer le liquide. 8) Laisser le robinet de purge ouvert jusqu'à ce que le pulvérisateur soit de nouveau prêt à être utilisé.

Si l'on soupçonne que l'ajutage du pulvérisateur ou le tuyau est complètement bouché, ou que la pression n'a pas été complètement libérée après avoir procédé aux opérations ci-dessus, desserrer TRES LENTEMENT l'écrou de retenue de la protection de l'ajutage ou le raccord du bout du tuyau et libérer progressivement la pression, puis terminer le desserrage. On peut maintenant déboucher l'ajutage ou le tuyau.



RISQUES EN CAS DE MAUVAISE UTILISATION DU MATERIEL

Consignes générales de sécurité

Toute utilisation anormale de l'appareil de pulvérisation ou des accessoires comme, par exemple, la mise **sous** une **pression** excessive, les modifications de pièces, l'utilisation de produits chimiques et de **matières** incompatibles et l'utilisation de pièces **usées** ou **abîmées** peut causer des **dégâts** à l'appareil ou des ruptures de pièces et entraîner une injection de liquide ou d'autres blessures **sérieuses**, un incendie, une explosion ou d'autres **dégâts**.

NE JAMAIS **altérer** ou modifier une pièce de cet appareil; ceci risquerait d'entraîner son mauvais fonctionnement.

VERIFIER **régulièrement** tout l'appareil de pulvérisation et ses équipements et **réparer** ou remplacer immédiatement les pièces **usées** ou abîmées.

MESURES DE SECURITE CONCERNANT LES TUYAUX FLEXIBLES

Le fluide à haute **pression** circulant dans les tuyaux peut être **très** dangereux. En cas de fuite sur le tuyau, **même** minuscule, de fissure, **déchirure** ou rupture à la suite de l'usure, de **dégâts** ou d'une mauvaise utilisation, les projections de fluide haute **pression** qui en proviennent peuvent entraîner des blessures graves par pénétration **sous** la peau ou par contact, ainsi que des **dégâts** matériels.

TOUS LES TUYAUX FLEXIBLES DOIVENT AVOIR DES RESSORTS SPIRALE DE PROTECTION! Les spirales de protection contribuent à **éviter** la formation de pliures, de boucles ou de noeuds sur les tuyaux qui pourraient entraîner la rupture du tuyau à l'endroit du **raccord** ou à son **voisinage**.

SERRER FERMEMENT tous les **raccords** avant chaque utilisation. Le fluide **sous pression** peut faire sauter un **raccord desserré** ou produire un jet à haute **pression** s'échappant par le **raccord**.

NE JAMAIS utiliser un tuyau **endommagé**. Avant chaque utilisation, vérifier entièrement chaque tuyau pour **déceler** les coupures, fuites, abrasions, boursoufflures de l'enveloppe ou toute autre détérioration ou jeu des **raccords**. Si l'on constate l'une de ces détériorations, il faut remplacer le tuyau **immédiatement**. NE PAS essayer de refaire le **raccord** d'un tuyau haute **pression** ni de **réparer** le tuyau avec du ruban adhésif ou

RISQUES D'INCENDIE OU D'EXPLOSION

De l'électricité statique est produite par le passage du fluide à grande vitesse dans la pompe et dans les tuyaux. Si toutes les pièces de l'appareil de pulvérisation ne sont pas **convenablement reliées** à la masse ou à la terre, des **étincelles** peuvent se produire et l'appareil risque d'être dangereux. Des **étincelles** peuvent également se produire à l'occasion du branchement ou du débranchement du cordon d'alimentation. Les **étincelles** sont suffisantes pour allumer les vapeurs de solvants et le fluide **pulvérisé**, les fines **particules de poussière** ainsi que d'autres substances inflammables, quand on **pulvérise** à l'intérieur ou à l'extérieur, et elles peuvent causer un incendie ou une explosion, ainsi que des blessures graves et des **dégâts** matériels. Toujours **brancher** le **pulvérisateur** dans une prise se trouvant à au moins 6 m (20 pieds) de l'appareil et de l'endroit où se fait la pulvérisation. Ne pas **brancher** ou débrancher un cordon d'alimentation quel qu'il soit dans la zone où se fait la pulvérisation quand il y a le moindre risque que des vapeurs encore **présentes** dans l'air prennent feu.

Mise à la terre ou à la masse

Pour **réduire** les risques de production d'étincelles d'électricité statique, le **pulvérisateur** et tous les équipements **utilisés** ou se trouvant dans la zone de pulvérisation doivent être reliés à la terre ou à la masse. Pour connaître le détail des instructions de mise à la terre dans la région et le type particulier d'équipement, **CONSULTER** le code ou les **réglementations électriques** locales. S'ASSURER que **tous** les équipements de pulvérisation suivants sont bien reliés à la terre:

1. **Pulvérisateur:** Brancher le cordon d'alimentation ou la rallonge qui doivent être équipés d'une prise à 3 fiches en bon état, dans une prise de courant convenablement mise à la terre. Ne pas utiliser d'adaptateur. Toutes les rallonges doivent avoir 3 fils et être prévues pour 15 ampères.

Pression

Ce pulvérisateur peut produire une **PRESS/ON MAXIMUM DE TRAVAIL 190 bar (12750 lb/po.2)**. S'assurer que **tous** les éléments du **pulvérisateur** et ses accessoires sont **conçus** pour résister à la **pression** maximum de travail de ce **pulvérisateur**. NE PAS dépasser la **pression** maximum de travail d'aucun des éléments ou accessoires **utilisés** avec cet appareil.

Compatibilité chimique des corps

BIEN S'ASSURER que **tous** les corps des solvants **utilisés** sont chimiquement compatibles avec les parties **mouillées indiquées** dans les "Données techniques", au dos de la **couverture**. Toujours lire soigneusement les documents et brochures du fabricant des **matières** et solvants **utilisés** avant de s'en servir dans ce **pulvérisateur**.

par tout autre moyen. Un tuyau **réparé** ne peut pas résister au fluide **sous** pression.

MANIPULER LES TUYAUX AVEC PRECAUTION ET CHOISIR SOIGNEUSEMENT LEUR CHEMIN. Ne pas **déplacer** le matériel en tirant sur le tuyau. Ne pas utiliser de **matières** ou de solvants qui ne sont pas compatibles avec l'enveloppe **intérieure** ou **extérieure** du tuyau. NE PAS exposer le tuyau à des températures **supérieures** à 82°C (180°F) ou **inférieures** à -40°C (-40°F).

Continuité du circuit de mise à la terre des tuyaux

Les tuyaux flexibles fournis avec ce pulvérisateur ont une surface conductrice continue au cœur du tuyau. D'autres tuyaux **vendus** dans le commerce comportent un fil de mise à la terre allant tout au long du tuyau. Ce fil de mise à la terre peut se rompre à l'usage, ce qui **supprime** la mise à la terre du tuyau.

Pour être certain de la **continuité** de la mise à la terre, il faut vérifier la résistance électrique des tuyaux au moins une fois par semaine. Vérifier aussi la résistance d'ensemble quand il y a plusieurs tuyaux **assemblés**. Si la résistance **dépasse** 29 mégohms, remplacer immédiatement le tuyau. La résistance des tuyaux mis à la terre par un fil peut être **différente**; se renseigner **auprès** du fournisseur.

2. **Tuyaux flexibles:** Afin d'assurer la **continuité** de la mise à la terre, n'utiliser que des tuyaux comportant une mise à la terre et ayant une longueur maximum combinée de 150 m (1500 pieds). Se reporter également au paragraphe "**Continuité du circuit de mise à la terre des tuyaux**".

3. **Pistolet:** Réaliser la mise à la terre en le **raccordant** à un tuyau flexible et à un **pulvérisateur déjà** convenablement reliés à la terre.

4. **Objets, matériel ou surfaces recevant la pulvérisation:** observer le code ou les réglementations locales.

5. **Tous les seaux de solvants utilisés** pour le **rincage:** observer le code ou les réglementations locales. **N'utiliser que des seaux métalliques** conducteurs de l'électricité. Ne pas mettre le seau sur une surface non conductrice comme sur du **papier** ou du carton car cela interromprait la **continuité** de la mise à la terre.

6. **Pour conserver la continuité de la mise à la terre quand on rince le matériel ou quand on libère la pression,** toujours maintenir une **partie métallique** du pistolet fermement **appuyée** contre le **côté** d'un seau **en métal** puis appuyer sur la détente du pistolet.

Mesures de Sécurité concernant le Rincage

Pour **réduire** les risques de blessures par pénétration de la peau et les risques dus aux **étincelles d'électricité** statique ou aux **éclaboussures**, observer la **marque** à suivre pour le **rincage** donnée à la page 9 de ce manuel. Observer la "**Marche à Suivre pour Détendre la Pression**" donnée à la page 4 en **enlever l'ajutage du pulvérisateur avant le rincage**. Maintenir une **partie métallique** du pistolet fermement **appuyée** contre le **côté** d'un seau **en métal** et utiliser la **pression** la plus faible possible pendant le **rincage**.

ADVERTENCIA

**EL ROCIADO A ALTA PRESION PUEDE CAUSAR GRAVES LESIONES.
SOLO PARA USO PROFESIONAL. RESPETE LOS AVISOS DE ADVERTENCIA.**

Lea y entienda **todo el manual de instrucciones antes de manejar el equipo.**

PELIGRO DE INYECCION DE FLUIDO

Seguridad general

Este equipo genera un fluido a una presión muy alta. El rociado de la pistola, los escapes de fluido o roturas de los componentes pueden inyectar fluido en la piel y el cuerpo y causar lesiones extremadamente graves, incluyendo a veces la necesidad de amputación. También, el fluido inyectado o salpicado en los ojos puede causar graves daños.

NUNCA apuntar la pistola hacia alguien o alguna parte del cuerpo. NUNCA colocar la mano o los dedos encima de la boquilla. NUNCA tratar de "hacer retornar la pintura"; este NO es un sistema de rociado de aire.

SIEMPRE tener colocado el protector de la boquilla en la pistola mientras se está pulverizando.

SIEMPRE seguir el procedimiento de descarga de presión, dado más abajo, antes de limpiar o sacar la boquilla o de dar servicio a cualquier equipo del sistema.

NUNCA tratar de parar o desviar los escapes con la mano o el cuerpo.

Asegurar que todos los aparatos de seguridad del equipo están funcionando bien antes de cada uso.

Tratamiento médico

Si pareciera que un poco de fluido penetró la piel, conseguir **TRATAMIENTO MEDICO DE URGENCIA DE INMEDIATO.**

NO TRATAR LA HERIDA COMO UN SIMPLE CORTE.
Decir al medico exactamente cual fluido fue. Para instrucciones de tratamiento, pedir al medico que llame a la **CADENA DEL CENTRO NACIONAL DE ENVENAMAMIENTO**
(412)681-6669

Aparatos de seguridad de la pistola pulverizadora

Asegurar que todos los aparatos protectores de la pistola están funcionando bien antes de cada uso. No sacar ni modificar ninguna pieza de la pistola pues podría causar el malfuncionamiento de la misma con las consiguientes lesiones personales.

Pestillo de seguridad

Cada vez que se deje de pulverizar, aunque sea por un breve momento, siempre colocar el pestillo de seguridad en la posición "cerrada", lo que deja la pistola inoperante. El no hacerlo puede llevar al disparo imprevisto de la pistola.

Difusor

El difusor de la pistola dispersa el chorro pulverizado y reduce el riesgo de inyección cuando no está instalada la boquilla. Revisar con regularidad el funcionamiento del difusor. Seguir el procedimiento de descarga de presión, dado más abajo, y después sacar la boquilla. Apuntar la pistola a un balde metálico, sosteniéndola bien firme contra él. Utilizando la presión más bajo posible, disparar la pistola. Si el fluido emitido *no sale disperso* en un chorro irregular, reemplazar de inmediato el difusor.

Protector de la boquilla

SIEMPRE tener el protector de la boquilla colocado en la pistola mientras se está pulverizando. Este protector llama la atención contra el peligro de inyección y ayuda a prevenir la colocación accidental de los dedos o cualquier otra parte del cuerpo cerca de la boquilla.

Seguridad de la boquilla pulverizadora

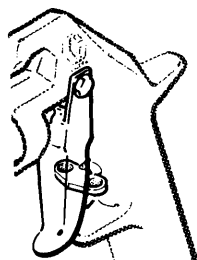
Tener mucho cuidado al limpiar o cambiar las boquillas. Si llegara a obstruirse mientras está pulverizando, enganchar el pestillo de la pistola de inmediato. SIEMPRE seguir el procedimiento de descarga de presión y después sacar la boquilla para limpiarla.

NUNCA limpiar la acumulación de pintura alrededor de la boquilla antes de que se haya descargado por completo la presión y el pestillo esté enganchado.

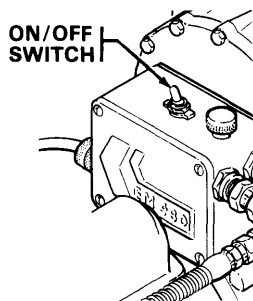
Procedimiento de descarga de presión

Para reducir el riesgo de sufrir graves lesiones corporales, incluyendo inyección o lesiones causadas por piezas en movimiento o choque eléctrico, siempre seguir este procedimiento al apagar la máquina pulverizadora, al revisar o dar servicio a cualquier parte del sistema de pulverización, al instalar, limpiar o cambiar las boquillas, y cada vez que se deja de pulverizar. (1) Enganchar el pestillo de la pistola. (2) Mover el interruptor eléctrico (ON/OFF) a la posición OFF (apagado). (3) Desenchufar el cordón eléctrico. (4) Desenganchar el pestillo de la pistola. (5) Sujetar una parte metálica de la pistola bien firme contra un balde de metal, y disparar la pistola para descargar la presión. (6) Enganchar el pestillo de la pistola. (7) Abrir la válvula de drenaje y tener listo un recipiente para recibir la pintura. (8) Dejar la válvula de drenaje abierta hasta que se esté nuevamente listo para pulverizar.

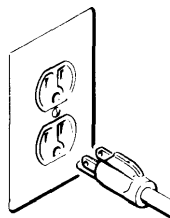
Si se sospecha que la boquilla o la manguera está completamente obstruida, o que no se ha descargado por completo la presión después de haber seguido el procedimiento anterior, aflojar MUY LENTAMENTE la tuerca de retención del protector de la boquilla o acoplamiento de la punta de la manguera y descargar gradualmente la presión, después, aflojarlo por completo. Luego, despejar la boquilla o la manguera.



1



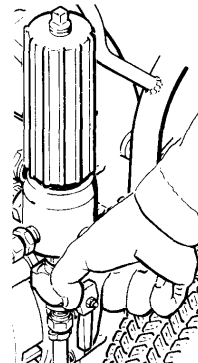
2



3



4,5,6



7

PELIGRO POR MAL USO DEL EQUIPO

Seguridad general

Cualquier mal uso del equipo pulverizador o los accesorios, tal como **sobrepresurización**, modificación de piezas, uso de materiales y **productos** químicos incompatibles, o **utilización** de piezas **dañadas** o desgastadas, puede **hacer** que se **rompan** y **causen** la inyección de **fluido** u otras lesiones corporales graves, incendio, explosión o **daño** a la propiedad.

NUNCA alterar o modificar ninguna pieza de este equipo; el hacerlo podría causar una avería.

REVISAR con regularidad el **equipo** pulverizador y reparar o reemplazar de inmediato las **piezas dañadas** o desgastadas.

Presión del sistema

Esta pulverizadora puede desarrollar 190 barías (2750 psi) de **PRESIÓN DE TRABAJO MÁXIMA**. Asegurar que **todo** el **equipo** pulverizador y sus accesorios tienen la capacidad para aguantar la **presión** máxima de trabajo de **esta** pulverizadora. NO exceder la **presión** máxima de trabajo de **ningún** componente o accesorio de este sistema.

Compatibilidad de material

ASEGURAR que todos los materiales y solventes **usados** son químicamente compatibles con las **piezas** mojadas ilustradas en la hoja de datos **técnicos** en la contratapa. Siempre leer las instrucciones del fabricante del material y solvente antes de usarlos en esta pulverizadora.

SEGURIDAD EN EL USO DE LAS MANGUERAS

El **fluido** que pasa a alta **presión** por las mangueras puede ser muy peligroso. Si en la manguera se desarrolla un escape **pequeño**, una rotura o rajadura debido a cualquier tipo de desgaste, **daño** o maltrato, el chorro a alta **presión** emitido por **allí** puede causar una lesión por inyección u otras lesiones corporales graves o **daño** a la propiedad.

¡TODAS LAS MANGUERAS PARA FLUIDOS TIENEN QUE TENER GUARDAS DE RESORTE! Estas protegen las mangueras contra dobleces o retorceduras en los **acoplamientos** o **cerca** de ellos, los que podrían traducirse en roturas de la manguera.

Antes de usarlas, APRETAR bien firmes todas las conexiones. El **fluido** a alta **presión** puede desalojar un acoplamiento suelto o dejar que por **él** escape un chorro a alta presión.

NUNCA usar una manguera que **está** dañada. Siempre, revisarla en **busca** de cortaduras, escapes, abrasión, cubierta abultada, o acoplamientos sueltos o **dañados**. Si llegara a **encontrarse** cualquiera de estas condiciones, reemplazar de **inmediato** la manguera. NO intentar reacoplar una manguera de alta **presión** o enmendarla con cinta adhesiva u otro material similar. Una manguera que ha sido remendada no aguante el **fluido** a alta **presión**.

MANEJAR Y PASAR CUIDADOSAMENTE LAS MANGUERAS. No tirar de las mangueras **para** mover el equipo. No usar materiales o solventes que **sean** incompatibles con el tubo **interno** y la cubierta de la manguera. NO exponer las mangueras a temperaturas sobre 82°C (180°F) o bajo -40°C (-40°F).

Continuidad a tierra de la manguera

Las mangueras **para** fluidos provistas con esta pulverizadora tienen material eléctricamente **conductor** en la superficie del **núcleo** central. Otras mangueras a la **venta** tienen a **veces** un alambre a tierra a **todo** el largo. Este alambre puede romperse con el uso, destruyéndose por lo **tanto**, la **conexión** a tierra de la manguera.

Como precaución, revisar por lo menos una vez a la semana la resistencia eléctrica. Revisar la resistencia general al usar **conjuntos** de mangueras múltiples. Si excede de 29 megaohmios, reemplazarla de inmediato. Las mangueras con alambre a tierra tienen diferentes resistencias; consultar con el proveedor.

PELIGRO DE INCENDIO O EXPLOSION

El **fluido** a alta velocidad del **fluido** al pasar por la **bomba** y manguera **crea** electricidad **estática**. Si todas las partes del **equipo** pulverizador no tienen buena tierra, pueden ocurrir chispas, convirtiendo al sistema en **algo** peligroso. **También**, pueden producirse chispas al enchufar o desenchufar el **cordón eléctrico**. Estas chispas pueden inflamar los vapores de los solventes y el chorro de **fluido** pulverizado, **partículas** de polvo y otras sustancias inflamables, sea al **aire** libre o bajo **techo**, lo que podría causar una explosión o incendio y graves lesiones corporales y **daños** a la propiedad. Enchufar siempre la pulverizadora a un tomacorriente que se encuentre a por lo menos 6 m (20 pies) de la **máquina** y del área que se va a rociar. No enchufar o desenchufar **ningún** **cordón eléctrico** en el lugar donde se **está** rociando cuando todavía **exista** la posibilidad de que queden vapores inflamables en el **aire**.

Puesta a tierra

Para reducir el riesgo de chispas **estáticas**, conectar a tierra la pulverizadora y **todo** el otro **equipo** de pulverizar que se use o se encuentre en el lugar que se va a rociar. CONSULTAR el **código eléctrico** de la localidad **para** las instrucciones sobre las conexiones a tierra exigidas **para** la zona y tipo de equipo. ASEGURAR de conectar a tierra **todo** este **equipo** pulverizador:

1. **Pulverizadora:** enchufar el **cordón eléctrico**, o cable extensor, **cada** uno con un enchuf de tres **patas** en buen estado, a un tomacorriente con puesta a tierra apropiado. No usar un adaptador. Todos los cables extensores tienen que tener tres hilos y una capacidad de 15 amperios.

2. **Mangueras para fluidos:** usar solamente mangueras con puesta a tierra de una longitud combinada de 150 m (500 pies), **para** asegurar buena continuidad a tierra. Referirse **también** al párrafo sobre **continuidad a tierra de la manguera**.

3. **Pistola:** hacer la puesta a tierra **conectándola** a una manguera de **fluido** y pulverizadora bien conectadas a tierra.

4. **Objeto que se está rociando:** de conformidad con el **código** local.

5. **Todos los baldes de solvente** usados durante el **lavado**, de conformidad con el **código** local. Usar **solamente baldes de metal**, que **sean** conductivos. No colocar el balde en una superficie no **conductiva**, como papel o cartón, que interrumpe la continuidad a tierra.

6. **Para mantener la continuidad a tierra durante el lavado o descarga de presión**, siempre apoyar una parte **metálica** de la pistola bien firme contra el costado del **balde de metal**, después apretar el gatillo.

Seguridad durante el lavado

Reducir el riesgo de lesiones por inyección, chispas eléctricas o salpicaduras, siguiendo el procedimiento de **lavado** específico dado en la **página** 9 de este manual. Seguir el **procedimiento de descarga de presión** en la **página** 6, y quitar la **boquilla rociadora antes de lavar**. Apoyar una parte **metálica** de la pistola bien firme contra el costado de un **balde de metal** y usar la **presión** más baja posible de **fluido** durante el **lavado**.

PELIGRO DE LAS PIEZAS MOVILES

Las piezas en movimiento pueden **pinchar** o amputar dedos u otras partes del cuerpo. MANTENERSE ALEJADO de las piezas en movimiento durante el arranque o funcionamiento de la pulverizadora. Desenchufar la pulverizadora y descargar la **presión** antes de revisarla o darle servicio, **para** impedir que arranque **inesperadamente**.

IMPORTANT

Se han **adoptado** las **normas** de seguridad del gobierno de los Estados Unidos de **Norteamérica** bajo el **Acta** de Seguridad y Salud Ocupacional. **Deberán** consultarse estas **normas**, en especial las **Generales**, Parte 1910, y las **Normas de Construcción**, Parte 1926.

INSTALLATION

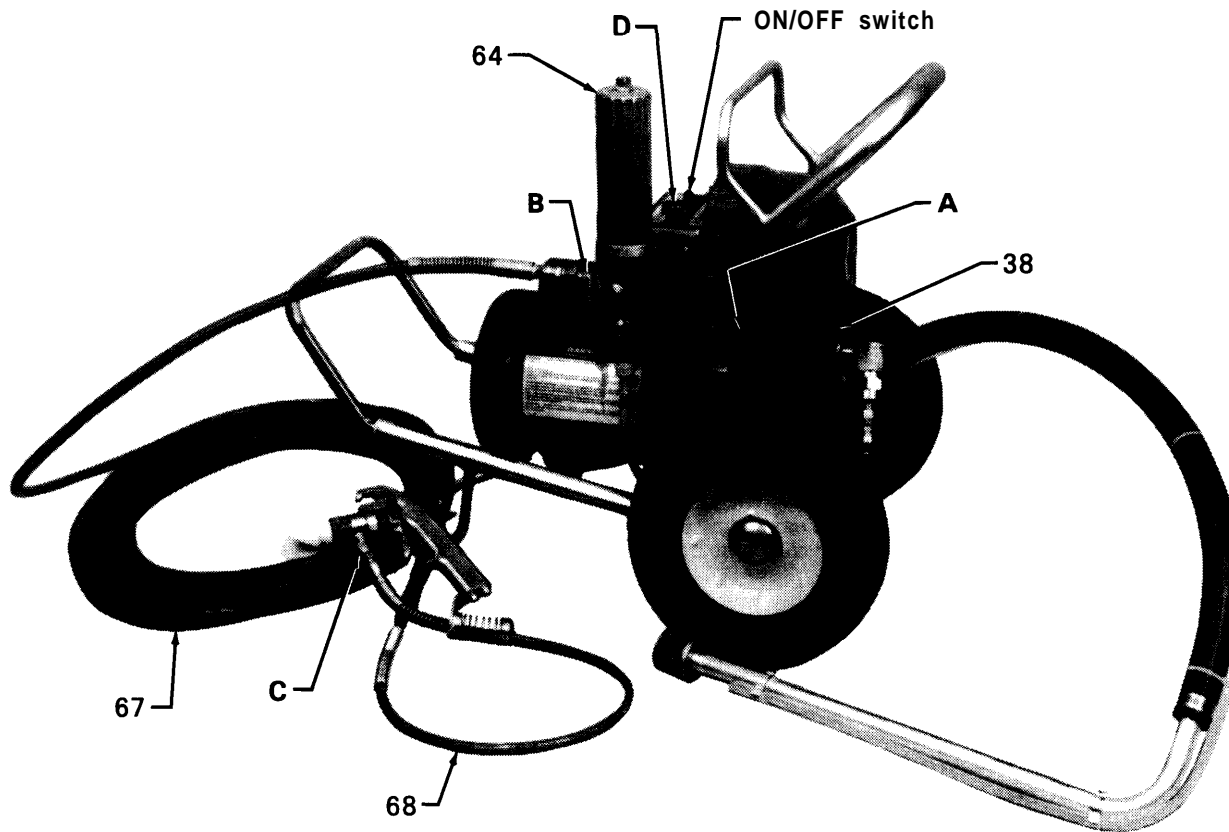


Fig 1

Check the Gearcase Oil

Remove the fill plug (A) and ensure that the oil level is up to the fill plug opening. See Fig 1.

CAUTION

Use only Graco Gear Oil No. 208-230. DO NOT use hypoid grease which could damage the gears. SAE 90 weight gear oil with oxidation and corrosion inhibitors added may be substituted. The gearcase holds 3 pints (1.4 liters).

Connect the Gun

Remove the plastic cap plug from the filter (64) and connect the 50 ft (15 m) spray hose (67) to the 1/4 npsm(m) filter outlet (B). Then connect the whip end hose (68) between the spray hose and the fluid inlet (C) of the gun. Do not use thread sealer. Do not install the spray tip yet; wait until after flushing the sprayer. The longer the spray hose, the lower the delivery rate.

CAUTION

To avoid damaging the pressure control, which may result in poor sprayer performance, follow these precautions:

1. Always use nylon spray hose at least 50 ft (15.2 m) long.
2. Never use wire braid hose as it is too rigid to act as a pulsation dampener.
3. Never install any shutoff device between the filter and the main hose. See Fig 1.
4. Never plug the main filter outlet while the sprayer is operating.

Fill Packing Nut/Wet Cup

Fill the packing nut/wet cup (38) 1/3 full with Graco Throat Seal Liquid (TSL) to help protect and prolong the life of the pump's throat packings.

Check Electrical Service and Plug In Power Supply Cord

Be sure the electrical service is 120 V, 60 HzAc, 15 Amp (minimum) and that the outlet you use is properly grounded. Use an extension cord which has 3 wires of 12 gauge (minimum) size and a maximum of 100 ft (30.3 m) long. Longer lengths may affect sprayer performance.

Plug in the Sprayer

Be sure the ON/OFF switch is OFF. Refer to Fig 1. Then plug the cord into a grounded electrical outlet at least 20 ft (6 m) away from the spray area.

WARNING

To reduce the risk of static sparking, be sure to read and follow the grounding instructions given on page 3 of this manual.

Set Pressure Control

Turn the pressure control knob (D) counterclockwise to the lowest setting each time before you start the sprayer to help prolong the pump life.

Flush the Pump

An important part of the care and maintenance of your EM 480 is proper flushing. See "Flushing Guidelines" on page 9 for "When to Flush" and "How to Flush".

When To Flush .

1. Before using your new sprayer. Your new EM 480 was factory tested in No. 10 motor oil and the oil was left in it to protect the parts.
Before using water-based paint: Flush out the oil with mineral spirits, then flush out the mineral spirits with soapy water followed by a clean water rinse.
Before using oil-based paint: Flush out the oil with mineral spirits only.
2. Whenever you change the color of your paint supply. Flush with a compatible solvent such as mineral spirits or water.
3. Whenever you change from water-based to oil-based paint. Flush with soapy water, then mineral spirits.

How To Flush

1. Follow the Pressure Relief Procedure Warning on page 2, then remove the spray tip.

WARNING

To reduce the risk of an injection injury, always remove the spray tip from the gun before flushing.

2. Remove the filter bowl and screen. See manual 307-273, supplied. If the bowl is tight, remove the filter assembly from the sprayer first. Install the bowl on the filter without the screen. Clean the screen separately.

CAUTION

Using excessive force to remove the filter bowl while still on the sprayer could rotate the pressure control fittings and damage the bourdon tube.

3. Pour 1/2 gallon (2 liters) of compatible solvent (see "When to Flush") into a bare metal pail. Put the pump suction tube in the pail.
4. Be sure the pressure control knob is set at minimum, then disengage the gun safety latch.

WARNING

When you are flushing or relieving pressure, ALWAYS hold a metal part of the gun firmly to a grounded metal pail or waste container to reduce the risk of static sparking, which can cause fire or explosion, and splashing.

5. Point the spray gun into the metal pail, squeeze the trigger, turn the sprayer to ON, and slowly turn the pressure control setting clockwise just until the sprayer starts. Always use the lowest possible pressure.
6. Keep the gun triggered until clean solvent comes from the nozzle. Release the trigger. Then open the filter drain valve, which is connected to a drain valve, and flush again to remove paint from the drain tube.
7. Release the trigger and engage the gun safety latch. Close the drain valve.

4. Whenever you change from oil-based to water-based paint. Flush with mineral spirits, then soapy water, followed by a clean water rinse.
5. Before you store your sprayer.
When using water-based paint: Flush with water, then mineral spirits and leave the pump, hose, and gun filled with mineral spirits.
When using oil-based paint: Flush with mineral spirits and leave the pump, hose, and gun filled with mineral spirits.
6. Before you use your sprayer after storage.
Before using water-based paint: Flush out mineral spirits with soapy water followed by a clean water rinse.
Before using oil-based paint: Flush the mineral spirits out and the unit is ready to use.

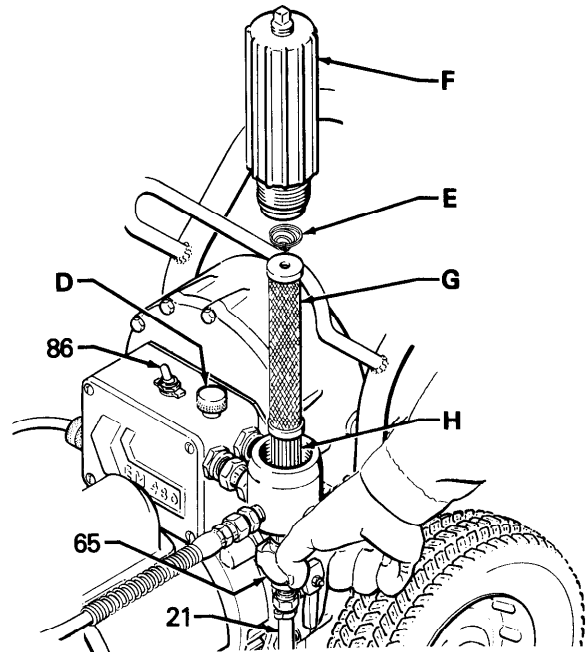


Fig 2

8. Check all fluid connections for leaks. If there are any leaks, follow the Pressure Relief Procedure Warning, above, then tighten the connections. Start the sprayer again and check to be sure the leaking has stopped.
9. Remove the suction tube from the pail. Disengage the gun safety latch and trigger the gun into a metal pail to force solvent from the hose. Do not let the pump run dry for more than 30 seconds to avoid damaging the pump packings!
10. Engage the gun safety latch, turn the sprayer to OFF, and unplug the sprayer. Open the drain valve.
11. Unscrew the filter bowl (F) and reinstall the screen (G) so the stud of the filter support (H) protrudes through the end of the screen. Install the spring (E) on the stud, and reinstall the bowl, hand tight only. Be careful not to rotate or jar the pressure control fittings.
12. If you flushed with mineral spirits and are going to use a water-based paint, you must flush again with soapy water, followed by a clean water rinse.

OPERATION

Prepare the Paint

Prepare the paint as instructed by the manufacturer. If the paint has been opened before, remove any skin that has formed. Stir the paint thoroughly to dissolve any hard pigments. Strain the paint through a fine nylon mesh bag (available at most paint dealers) to remove particles that might clog the filter or the spray tip. This is probably the most important step toward trouble-free spray painting.

Prime the Sprayer

Plug the power supply cord into a grounded, 3-prong outlet. Close the drain valve. Put the paint suction tube into the pail of paint. Don't install the spray tip in the gun yet! Disengage the gun safety latch and point the gun into a metal waste container. Squeeze the gun trigger, turn the ON-OFF switch to the ON position and let the sprayer operate until all air is forced out of the system. Engage the gun safety latch.

NOTE: If the pump is hard to prime, turn on the sprayer and open the drain valve. Let the sprayer run until paint has filled the drain tube (21). This method bleeds the air from the pump. Then release the gun safety latch and trigger the spray gun to prime the hose. Engage the gun safety latch.

Install the Spray Tip and Tip Guard

Follow the Pressure Relief Procedure Warning, below.

Unscrew the retaining nut from the gun. Install the Reverse-A-Clean III (90) spray housing with the tip installed (see instruction manual 307-321 or the instruction label with the Reverse-A-Clean). Then tighten the Reverse-A-Clean retaining nut by hand until snug. Finally, use a wrench and tighten the retaining nut 1/4 turn. This is essential to prevent leaking.

For information about your airless gun, see instruction manual 307633.

Adjust the Spray Pattern

Adjust the pressure control knob (D) so the fluid pressure completely atomizes the spray from the gun. Always use the lowest possible pressure to get the desired results. See Fig 3.

Now test the spray pattern on a piece of light colored paper. The tip position determines the direction of the pattern width. To adjust the pattern, engage the gun safety latch and loosen the retaining nut to position the tip so the groove is horizontal for a horizontal pattern or vertical for a vertical pattern. Once positioned, tighten the retaining nut.

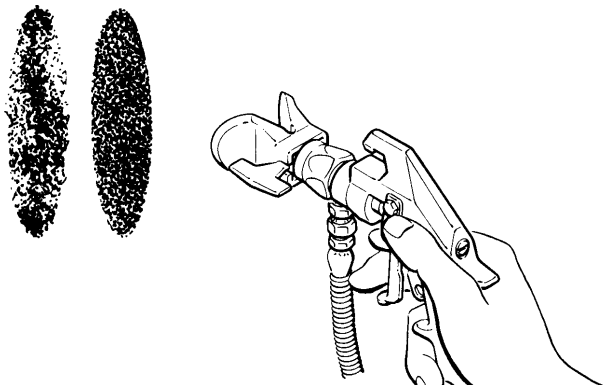


Fig 3

Cleaning and Clearing the Spray Tip

WARNING

To reduce the risk of an injection injury, DO NOT hold your hand, body, or a rag in front of the spray tip when cleaning or checking a clogged tip. Always point the gun toward the ground or into a waste container when checking to see if the tip is clear.

DO NOT try to "blow back" paint; this is NOT an air spray sprayer.

DO NOT wipe build up off of the gun or tip until pressure is relieved. See The Pressure Relief Procedure Warning, below.

Clean out the front of the spray tip frequently during the day's operation and at the end of the work day. Always relieve pressure according to the Pressure Relief Procedure Warning, below. Then use a solvent soaked brush to clean the spray tip and to keep material build up from drying and clogging the spray tip.

If the spray tip clogs while spraying, release the spray gun trigger, engage the gun safety latch, and turn the Reverse-A-Clean handle 180°. See Fig 4. Disengage the gun safety latch and trigger the gun. Fluid pressure should force the obstruction from the spray tip. Release the trigger, engage the gun safety latch, return the handle to the original position, and resume spraying.

ROTATE
HANDLE
180°

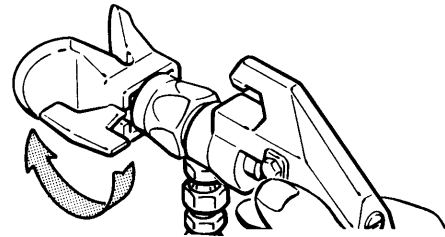


Fig 4

Shutdown and Care of the Sprayer

WARNING

Pressure Relief Procedure

To reduce the risk of serious bodily injury, including injection or injury from moving parts or electric shock, always follow this procedure whenever you shut off the sprayer, when checking or servicing any part of the spray system, when installing, cleaning or changing spray tips, and whenever you stop spraying.

1. Engage the gun safety latch.
2. Turn the ON/OFF switch to OFF.
3. Unplug the power supply cord.
4. Disengage the gun safety latch.
5. Hold a metal part of the gun firmly to the side of a metal pail, and trigger the gun to relieve pressure.
6. Engage the gun safety latch.
7. Open the drain valve, having a container ready to catch the drainage.
8. Leave the drain valve open until you are ready to spray again.

If you suspect that the spray tip or hose is completely clogged, or that pressure has not been fully relieved after following the steps above, VERY SLOWLY loosen the tip guard retaining nut or hose end coupling and relieve pressure gradually, then loosen completely. Now clear the tip or hose obstruction.

Before each use, squirt one drop of oil onto the lower pivot point (J) of the pump (33). See Fig 5.

For very short shutoff periods, relieve pressure, leave the suction tube in the paint and clean the front of the spray tip.

Check the packing nut/wet cup (38) before each use and periodically when in use. Follow the Pressure Relief Procedure Warning before checking or tightening. The packing nut should only be tight enough to stop leakage. Do not over tighten. Overtightening may cause binding and excessive wear on the packings.

Clean the outlet filter often and whenever the sprayer is stored. On the last workday of the week, flush all the paint out of the sprayer. See "Flushing Guidelines," on page 9. If you are using a paint that will dry overnight, flush the sprayer daily at shutdown.

Always push the suction tube onto the clip (13) on the side of the frame (6) and wrap the hose around the sprayer when storing it, even if only overnight, to help protect the hose from damage.

Do not store the sprayer with water in it. Even for overnight storage, you should fill the sprayer with mineral spirits. This prevents rust and greatly extends the life of the sprayer.

CAUTION

Do not let water freeze in the pressure control or pump in cold weather. Freezing could cause a change in the pressure control calibration or stripping of gears, resulting in loss of pressure or stallina.

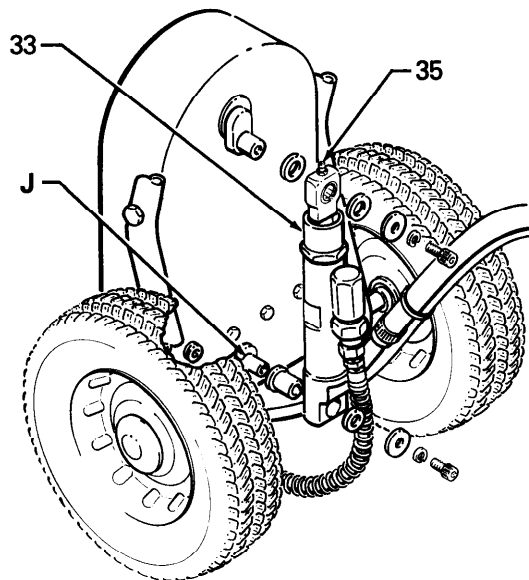


Fig 5

Once a month, lubricate the needle bearing (36) in the displacement rod (34); use a grease gun to apply the grease to the grease fitting (35). See Fig 5.

Periodically, or if the motor overheats, unplug the power supply cord, follow the Pressure Relief Procedure Warning on page 10, and clean all paint and dirt off the motor. Change the gearcase oil at least once a year, using Graco Gear Oil no. 208-230. The gearcase holds 3 pints (1.4 liters). Don't use hypoid grease.

TROUBLESHOOTING GUIDE

This guide will help you identify the causes and solutions to sprayer problems. If you cannot identify and resolve the problem, or if "Return for repair" is indicated, contact your nearest authorized service agency for instructions on where and how to return the sprayer for repair.

NOTE: Reference letters in parentheses in the Troubleshooting Guide refer to the notes on page 13.

WARNING

Pressure Relief Procedure

To reduce the risk of serious bodily injury, including injection or injury from moving parts or electric shock, always follow this procedure whenever you shut off the sprayer, when checking or servicing any part of the spray system, when installing, cleaning or changing spray tips, and whenever you stop spraying.

1. Engage the gun safety latch.
2. Turn the ON/OFF switch to OFF.
3. Unplug the power supply cord.
4. Disengage the gun safety latch.
5. Hold a metal part of the gun firmly to the side of a metal pail, and trigger the gun to relieve pressure.
6. Engage the gun safety latch.
7. Open the drain valve, having a container ready to catch the drainage.
8. Leave the drain valve open until you are ready to spray again.

If you suspect that the spray tip or hose is completely clogged, or that pressure has not been fully relieved after following the steps above, VERY SLOWLY loosen the tip guard retaining nut or hose end coupling and relieve pressure gradually, then loosen completely. Now clear the tip or hose obstruction.

PROBLEM	CAUSE	SOLUTION
I. Electric motor won't operate	<ol style="list-style-type: none"> 1. Power cord unplugged or damaged, or building circuit fuse blown 2. Motor thermal overload switch has opened. 3. Pressure setting too low 4. Damaged extension cord 5. Motor capacitor failure (b) 6. Pressure control damaged by freezing (c) or overpressurizing (d) 7. Material or water hardened in sprayer (c). 8. Electric motor burned out 9. ON/OFF switch failure 10. Triac failure 	<ol style="list-style-type: none"> 1. Check, reset or replace. 2. Unplug sprayer; cool (a). 3. Increase. 4. Replace. 5. Replace. See page 15. 6. Replace. See page 16. 7. Thaw, try to start; return for repair if needed. 8. Replace. See page 15. 9. Replace. 10. Replace.
II. Electric motor stops while spraying	<ol style="list-style-type: none"> 1. Power cord unplugged, or building circuit fuse blown 2. Pressure setting too low 3. Tip or filter plugged 4. Pressure control, motor capacitor (a), or motor failure 	<ol style="list-style-type: none"> 1. Check, reset or replace. 2. Increase. 3. Remove and clean. 4. Repair or replace.
II. Electric motor runs, but output low (See Problem VII also)	<ol style="list-style-type: none"> 1. Piston ball check not seating 2. Piston packings worn or damaged 3. Intake valve ball check not seating 4. Displacement pump frozen (c) or drive assembly damaged 5. Pressure control frozen (c) or damaged by over-pressurization (d) 	<ol style="list-style-type: none"> 1. Repair. See page 14. 2. Replace. See page 14. 3. Repair. See page 14. 4. Thaw; restart; return for repair if needed. 5. Thaw; restart; return for repair if needed.

PROBLEM	CAUSE	SOLUTION
IV. Electric motor runs, but no output and pump not stroking	1. Drive assembly damaged	1. Repair or replace.
V. Paint leaks into wet-cup	1. Packing nut too loose 2. Throat packings worn or damaged 3. Damaged or worn piston rod	1. Tighten just enough to stop leakage. 2. Replace (e). See page 14. 3. Replace (e). See page 14.
VI. Excessive surge (pulsing) at spray gun	1. Filter partially clogged 2. Spray tip too big or worn 3. Paint too thick 4. Wrong type hose 5. Displacement pump check balls dirty or sticking 6. Displacement pump check balls and packings worn or damaged 7. Pressure control or motor damaged or pressure control out of adjustment	1. Remove and clean. 2. Change tip. 3. Thin per paint manufacturer's recommendations. 4. Use minimum 50 ft (15.2 m) grounded nylon hose; do not use wire braid hose. 5. Flush, then remove and clean if needed. 6. Replace. See page 14. 7. Check pressure control calibration, repair or replace.
VII. Not enough paint pressure (See Problem III also)	1. Pressure setting too low 2. Spray tip too big or worn 3. Pressure control or motor damaged	1. Increase. 2. Change tip; see manual 307-321. 3. Return for repair.
VIII. Poor spray pattern.	1. Clogged spray tip 2. Pressure setting too low 3. Outlet filter or hose partially clogged 4. Spray tip too big or worn 5. Paint supply low or pail empty 6. Paint too thick	1. Clean. See manual 307-321. 2. Increase. 3. Clean; see manual 367-273. 4. Change tip; see manual 367-321. 5. Fill; reprime to remove air. 6. Thin per paint manufacturer's recommendations.
IX. Spitting from spray gun	1. Paint supply low or pail empty 2. Sprayer sucking air or gun needle not seating	1. Fill, reprime to remove air. 2. Tighten fittings; repair gun; see manual 307633.
X. Static sparking from gun	1. Sprayer or work not grounded	1. Check hose continuity and electrical ground connection.

- (a) When a capacitor fails, the motor hums for about one minute, then shuts off the sprayer.
- (b) The motor will not operate when the motor thermal switch has opened. Engage the gun safety latch, allow the sprayer to cool. If the sprayer continues to shut off, try reducing the spraying pressure, use a larger spray tip or add an additional 50 ft (15.2 m) of spray hose. If the problem is not corrected, return the sprayer for repair.
- (c) Never leave water or water-based material in the sprayer to prevent damage caused by freezing if the air temperature is below freezing, and to help prevent corrosion. Always leave the sprayer filled with mineral spirits or a compatible oil-based solvent.
- (d) The pressure control can be over-pressurized by: (1) using less than 50 ft (15.2 m) of nylon spray hose; (2) using wire braid hose; (3) adding a shutoff device between the pump outlet and spray gun; (4) plugging the main fluid outlet of the filter; (5) using the drain valve as a shutoff device; (6) clogged or incorrectly assembled fluid filter.

WARNING

Always follow the Pressure Relief Procedure Warning on page 12 before checking or repairing any parts.

Displacement Pump Removal and Replacement
 Flush the pump if possible. Follow the Pressure Relief Procedure Warning, on page 12. Be sure to unplug the power supply cord.

Disconnect the suction (20) and fluid line (1) hoses and open the pump shield (16). See Fig 6 and Parts Drawing. Remove the socket head screws (32), lockwashers (31), and flat washer (29) and spacer (63) from the pivot shaft, and the flat washer (30) and thrust washer (28) from the crank. Be very careful to hold the pump as you slide it off the shafts to avoid damaging the needle bearings. See Fig 6.

Repair Kit No. 208940 is available to repair the pump. Use all of the new parts in the kit, even if the old parts look good. Old parts wear faster and result in more frequent packing replacement.

Intake Valve Removal and Replacement

Screw the intake valve (51) housing out of the displacement cylinder (54). Remove the ball stop pin (53), guide (47), and ball (52). Clean and inspect for wear or damage. Reassemble, using new parts from the repair kit. Torque the intake valve housing to 50-150 ft-lb (68-205 N·m). See Fig 7.

NOTE: You can test the intake valve by filling it with solvent and seeing if any leaks past the ball. It should not leak. The valve must be clean for this test; any dirt will hold the ball off the seat and let solvent leak past.

Throat Packings, Displacement Rod and Piston Removal and Replacement

Screw the packing nut (38) out of the displacement cylinder (54). Carefully pull the displacement rod assembly (34) and piston housing (45) out of the cylinder. Wrap the rod end with tape to protect the bearing (36) and clamp securely in a vise. Screw the piston off the rod using a wrench on the hex of the piston (if it's too tight, heat it in boiling water to soften the locking compound). Remove the ball (46), glands (41, 44) and packings (42, 43). Slide the throat packings (61, 62) and glands (39) off the rod. Clean and inspect. Install the repair kit parts. Be sure to install the PTFE and leather packings in the order shown. See Fig 7 and the Parts Drawing.

Thoroughly clean and degrease the piston housing (45) and displacement rod (37). Using locking compound, screw the piston housing onto the displacement rod and torque to 400-425 in-lb (45-48 N·m). If the packing bulge makes it hard to insert the piston housing into the displacement cylinder, loosen the piston housing, insert it into the cylinder and torque again from the intake end of the cylinder using a hex socket.

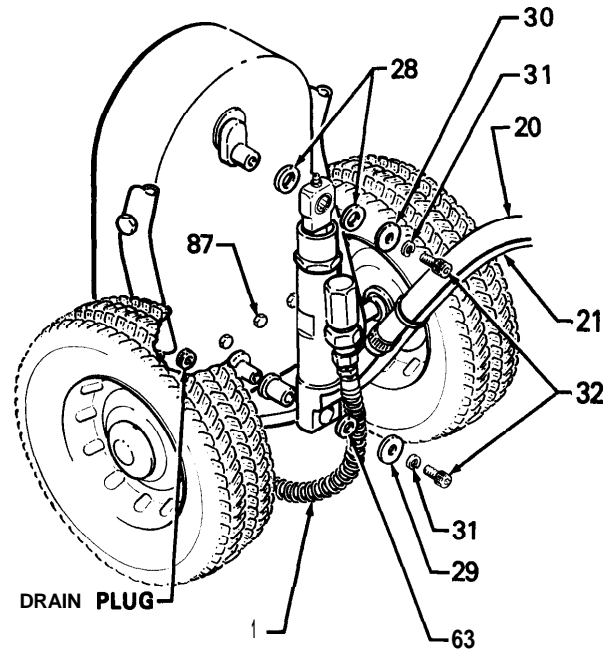


Fig 6

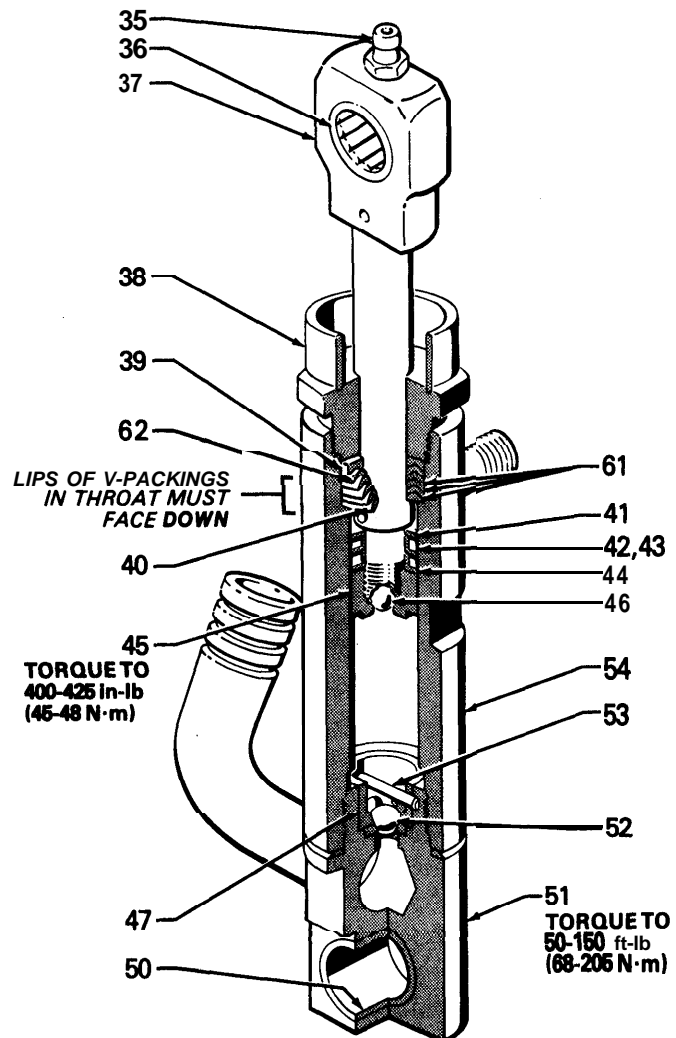


Fig 7

WARNING

Always follow the Pressure Relief Procedure Warning on page 12 before checking or repairing any parts.

Bearings Removal and Replacement

Use an arbor press to remove and install bearings (36, 50) in the displacement rod (37) end and in the intake valve (51) housing. See Fig 7. When replacing the displacement rod bearing, be sure the hole in the bearing lines up with the lubrication hole at the top of the rod. See Fig 7. Soak the valve bearings in oil before installing. Grease the displacement rod bearing whenever the pump is removed.

Motor Removal and Replacement

Disconnect hoses (1, 20) from the displacement pump (33). Disconnect the hose (1) from the pressure control (74). Disconnect hoses (21, 67) from the fluid filter (64). See Fig 8. Disconnect the conduit and wires (K) from the motor. See Fig 9.

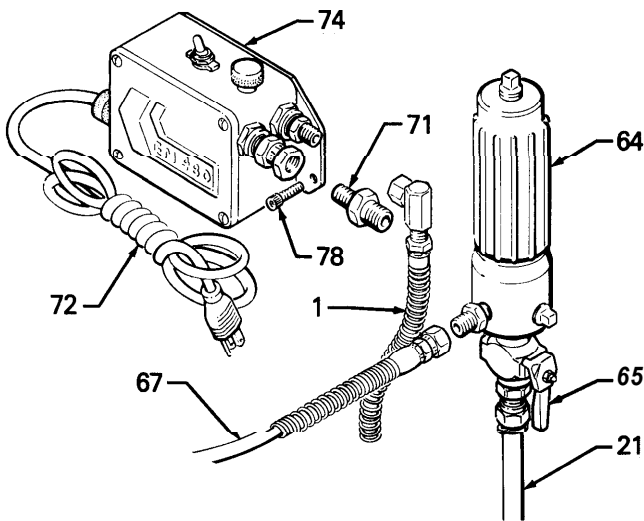


Fig 8

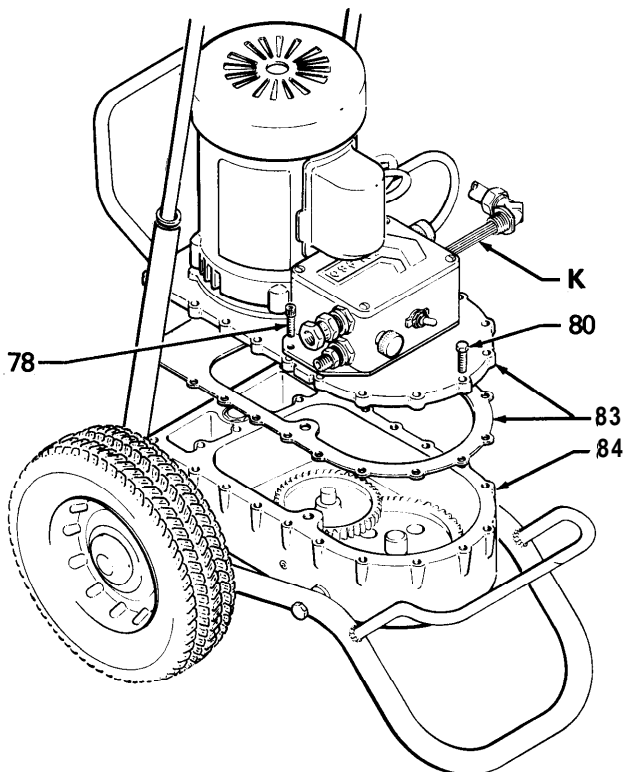


Fig 9

Remove the fluid pump from the gearcase. See Displacement Pump Service on page (7). Remove the four cap screws (87) along the bottom of the pump side of the gearcase. Tip the sprayer forward onto the frame handle so the gearcase is in a horizontal position. See Fig 9. The gearcase must be kept horizontal as the cover is removed to avoid spilling the gearcase oil.

Remove the three cap screws (78) holding the pressure control to the gearcase cover, and remove the control. Remove the remaining cap screws from the gearcase cover. Then carefully lift the motor and cover assembly straight up, off the gearcase. See Fig 9.

NOTE: The motor is sold only as an assembly, installed on a gearcase cover with bearings in place, and a new gasket. Don't try to remove the gearcase cover. Order part number 217-086 for the replacement assembly. Terminals (96, 97) are not included with a new motor. Order these separately and crimp to motor leads as shown in Fig 11.

To install the new motor assembly, clean all the cap screws and the area around the screw holes on the gearcase cover with the primer provided with the replacement assembly. Then apply sealant (also provided) to the bottom side of the screw heads. These two steps are very important in preventing the gearcase oil from leaking.

Secure the cover to the gearcase with the cap screws (80), then put the pressure control in place and secure with the three cap screws (78). Connect the conduit and wires to the motor. Tip the sprayer back to its normal position and install the cap screws (87) and tighten. Connect the displacement pump and all the hoses. Refer to Fig 6.

Motor Capacitor Removal and Replacement

If the motor won't start, unplug the power supply cord, check and/or replace the motor starting capacitor (105) located under the capacitor cover (L). Remove the screws holding the cover to the motor. Lift the cover enough to turn it over, and use the tip of a screwdriver, if necessary, to gently pry the capacitor out of the cover. The wires and resistor are connected with quick disconnect terminals. Unsnap the wires and resistor and discard the old capacitor and resistor. Snap the wires and resistor onto the new capacitor, making sure the wires are located properly. See Fig 10. Install the capacitor in the cover and screw the assembly onto the motor.

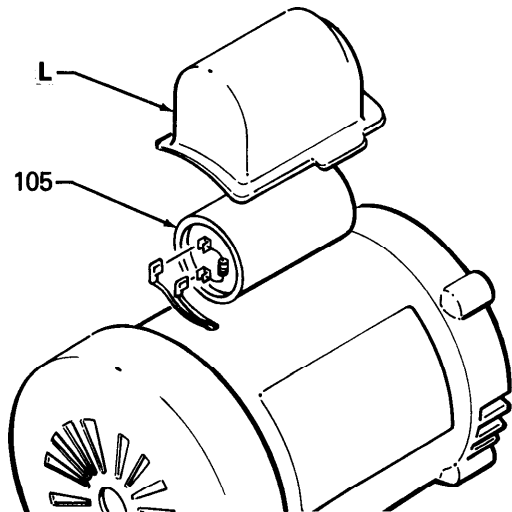


Fig 10

WARNING

Always follow the Pressure Relief Procedure Warning on page 12 before checking or repairing any parts.

Pressure Control Removal and Replacement

WARNING

Do not alter the factory adjusted pressure switch (M). Changing the setting may cause unsafe high pressure or poor performance.

CAUTION

Never attempt to remove the swivel adapter (N) or nipple (P) from the pressure control. Any twisting or jarring of the pressure control fitting could alter the factory setting of the control, or permanently damage the control. When removing the fluid filter (64) or fluid hose (1), hold the swivel adapter (N) or nipple (P) secure with a wrench.

Remove the fluid hose (1) from the pressure control (74). Disconnect the conduit (98) and wires (K) from the motor (Q). Refer to Fig 11. Then remove the three capscrews (78) holding the control to the gearcase.

Unless the cover plate (73) or mounting bracket (75) is damaged, only the pressure control switch assembly (74) needs to be replaced. In that case, remove the filter and covers from the old assembly.

Use screws (76) to install the mounting bracket onto the switch assembly, and use screws (79) to install the front cover. Position the assembly onto the gearcase cover, and use screws (78) to secure it. Connect the conduit and wires to the motor, install the fluid filter, and reconnect the hoses. Calibrate the pressure control before operating the sprayer. See page 15.

Circuit Board Removal and Replacement

If the circuit board (85) is all that needs to be replaced in the pressure control, remove the screws (79) and the front cover (73). See Fig 11. Pull the board out carefully, just far enough to reach the wire terminals. Unsnap the wires and finish removing the board.

Position the new card at the control so the wire connectors are at the top. Following the color coded diagram in Fig 11, snap the wires onto the board. Carefully guide the wires back into the control, making sure they don't get caught on anything, then slide the new board into place. Calibrate the pressure control before operating the sprayer. See page 15.

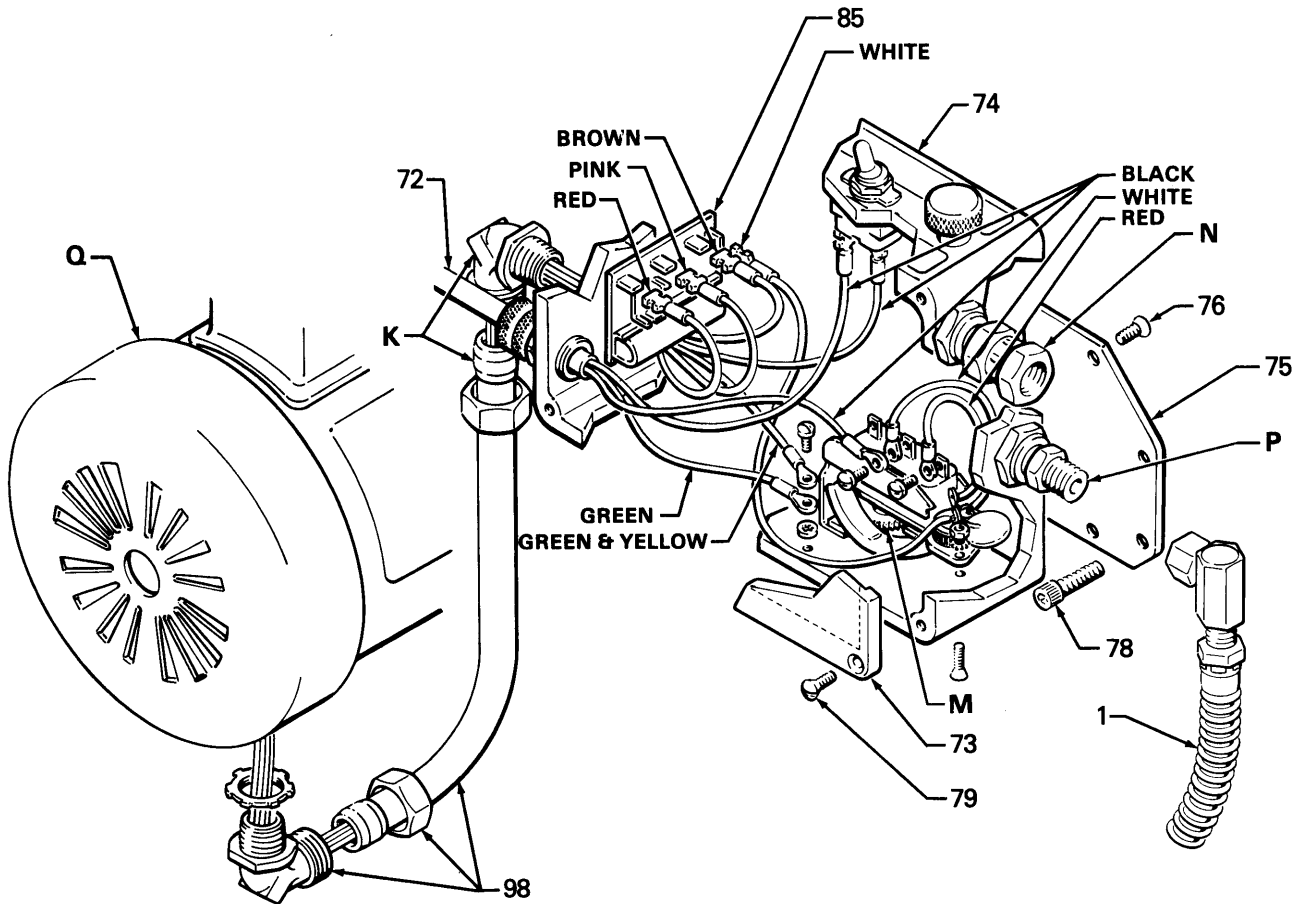


Fig 11

WARNING

USE EXTREME CAUTION WHEN PERFORMING THIS CALIBRATION PROCEDURE to reduce the risk of an injection injury or other serious bodily injury which can result from component rupture, electric shock, fire, explosion, or moving parts.

This procedure sets the sprayer to 2750 psi (190 bar) **MAXIMUM WORKING PRESSURE**.

This procedure must be performed whenever a new or used circuit board, microswitch, or pressure control assembly is removed and reinstalled or replaced to be sure the sprayer is properly calibrated.

Improper calibration can cause the sprayer to over-pressurize and result in component rupture, fire or explosion. It may also prevent the sprayer from obtaining the maximum working pressure which would result in poor sprayer performance.

NEVER attempt to increase the fluid outlet pressure by performing these calibrations in any other way. NEVER EXCEED 2756 psi (190 bar) **MAXIMUM WORKING PRESSURE**. Normal operation of the sprayer at higher pressures could result in component rupture, fire or explosion.

ALWAYS use a **new** 50 foot (15.2 m) spray hose rated for **3000** psi (210 bar) **MAXIMUM WORKING PRESSURE** when performing this procedure. A used, under-rated hose could develop a high pressure leak or rupture.

AVOID touching the wire in the pressure control assembly when the control box cover is removed to reduce the risk of electric shock.

Tools Needed:

- NEW 50 ft (15.2 m) 3000 psi (210 bar) airless spray hose, Part No. 210541
- Needle Valve, Part No. 102-715 or 103-067
- 3/8" open end wrench
- Fluid-Filled Pressure Gauge, Part No. 102-814
- 5 gallon pail and water
- Mineral Spirits (for flushing after test)

1. Follow the Pressure Relief Procedure Warning on page 12. Install a new 50 ft (15.2 m) spray hose to the sprayer outlet, On the other end of the hose install a needle valve. Install a fluid-filled pressure gauge in the top port of the fluid filter.
2. Open the needle valve *slightly*. Turn the pressure control knob (D) to the minimum setting. Plug in the sprayer and turn the switch ON. Increase the pressure setting just enough to start the sprayer. Prime the hose and pump with water, being sure to eliminate all air from the system.
3. Open the needle valve a little more-enough to allow the pump to run continuously-and turn the pressure control knob to maximum. Now, *very slowly* start to close the needle valve, but don't close it all the way. Observe the pressure at which the pump stalls, which should be approximately 2756 psi (190 bar).

NOTE: The slower the pressure is brought up, the easier it is to note the exact stall pressure. Closing the needle valve quickly causes the pressure to rise too fast which gives a false reading.

If the pressure is lower: unplug the sprayer and relieve pressure. Use a 3/8" open end wrench to turn the pressure adjustment nut, at the bottom of the pressure control knob shaft (R), *counterclockwise* 1/8 turn or less, then repeat steps 2 and 3.

If the pressure is higher: unplug the sprayer and relieve pressure. Turn the pressure adjustment nut clockwise 1/8 turn or less and repeat steps 2 and 3. Repeat until the proper stall pressure is obtained.

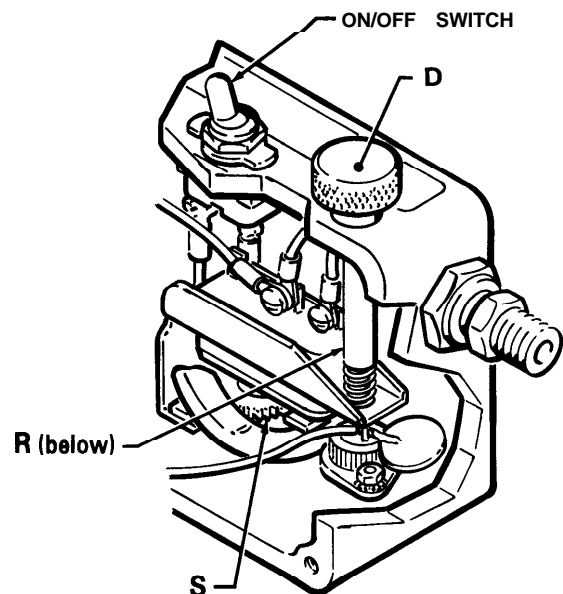


Fig 12

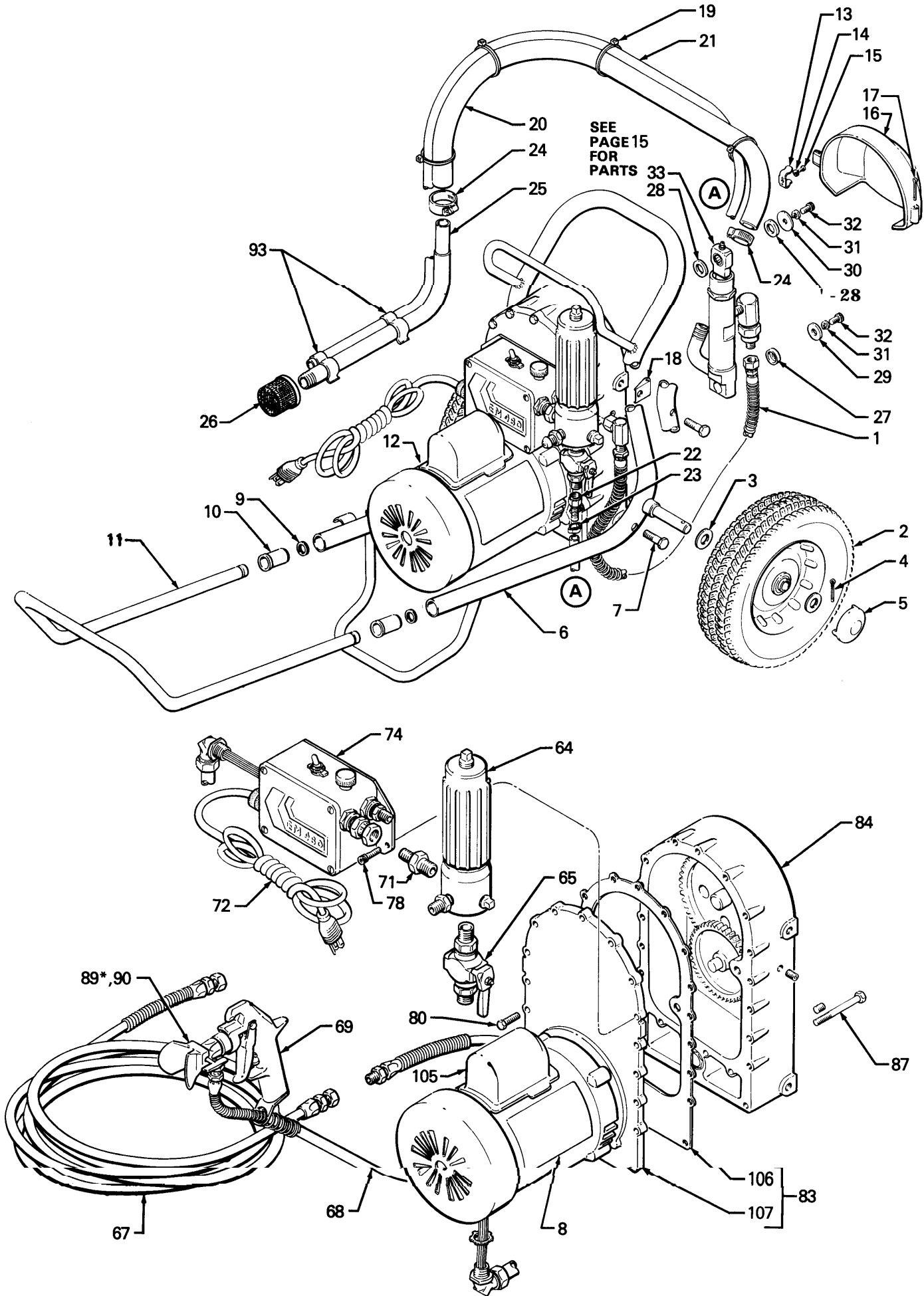
4. Now check to see at what pressure the sprayer starts to run again after stalling. Plug in the sprayer, turn it on, close the needle valve, and set the pressure at maximum. Allow the sprayer to run until it stalls.
5. Now open the needle valve very slowly while observing the pressure gauge. Check to see if the pressure drops to approximately 2356 psi (164 bar) before starting again.

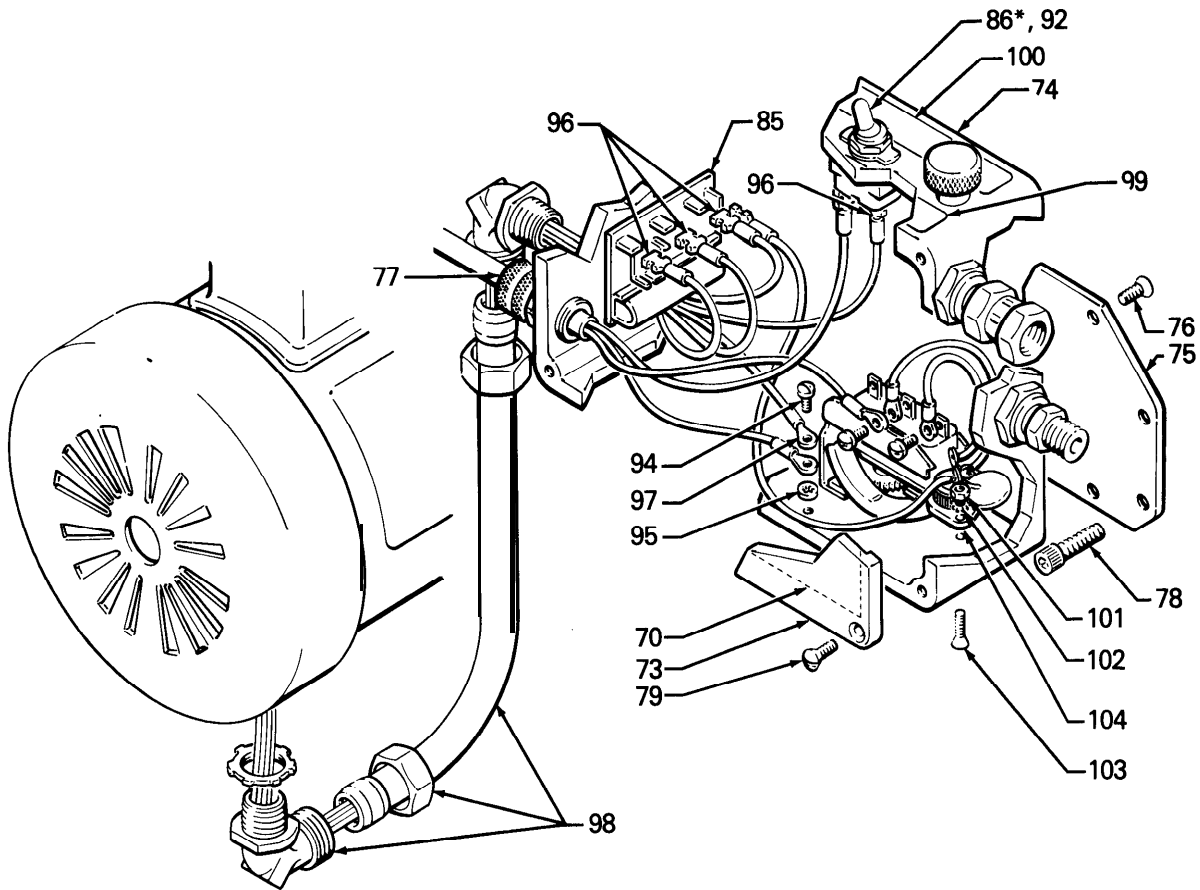
If the pressure is lower: shut off and unplug the sprayer, but do not relieve pressure. Turn the differential wheel (S) *counterclockwise* just one notch and repeat Steps 4 and 5. Check the pressure drop again, and repeat if necessary.

NOTE: If you adjust the differential wheel, recheck the stall pressure (steps 2 and 3) to be sure the stall pressure has not changed.

6. Follow the Pressure Relief Procedure, flush the water out with mineral spirits, relieve pressure again, then remove the test hose, needle valve and pressure gauge.

PARTS DRAWING





PARTS LIST

REF NO.	PART NO.	DESCRIPTION	QTY	REF NO.	PART NO.	DESCRIPTION	QTY
1	216-126	HOSE, nylon cpd 1/4 npsm(fbe); swivel one end; 21.75" (554 mm) lg, spring guard	1	64	214-570	FILTER, fluid; see 307-273 for parts	
2	106-062	WHEEL, semi-pneumatic	2	65	21 0-657	VALVE, ball; see 306861 for parts	
3	154-636	WASHER, flat	4	67	21 o-541	HOSE, spray, cpd 1/4 npsm(fbe) swivel one end; 1/4" ID; 50 ft (15 m) lg; spring guard one end; static free	
4	178-392	CLIP, spring	2	68	214-701	HOSE, whip end; 3/16" ID; cpd 1/4 npt(m) x 1/4 npsm(f); static free; 36" (914 mm) lg	1
5	104-811	CAP. hub	2	89	218-132	SPRAY GUN, see 307633 for parts	1
6	217-506	FRAME, sprayer	1	70	177-762	LABEL, warning	
7	102637	CAPSCREW, hex hd; 3/8-16; 1-1/2" (38 mm)	4	71	157-350	ADAPTER, 3/8 npt x 1/4 npt(mbe)	
8	**172-981	LABEL, WARNING	1	72	217-492	CORD, power supply; includes ref. no. 96(1) and 97(2)	1
9	103-1 17	RING, retaining	2	73	177668	COVER, pressure control	1
10	178-566	SLEEVE, handle	2	74	217-085	SWITCH ASSEMBLY, pressure control; includes ref. no. 72. 77. 94-96. 99-104, and nipple and straight union	1
11	169-377	HANDLE, frame	1	75	177-569	BRACKET, mounting	
12	**176-250	LABEL, WARNING	1	76	106-078	SCREW, thd rolling; flat hd; 10-24 x 3/8" (9 mm)	4
13	106-101	CLIP, component; suction tube	1	77	106-170	BUSHING, strain relief	
14	100-272	LOCKWASHER, shakeproof	1	78	100643	CAPSCREW, soc hd; 1/4-20 x 1" (25 mm)	8
15	loo-032	SCREW, mach, pnh; 6-32 x 1/4" (6 mm)	1	79	106-075	SCREW, thd rolling; oval hd; 10-24 x 1/2" (13 mm)	4
16	177669	SHEILD, hinged	1	80	loo-021	CAPSCREW, hex hd; 1/4-20 x 1" (25 mm)	10
17	101-946	PIN, cotter	1	81	172-412	PLATE, designation	
18	177-716	BRACKET, hinge	1	82	loo-055	SCREW	2
19	103-473	TIE, plastic	4	83	217-086	MOTOR Assy; includes Ref Nos. 106, 107	
20	176-920	HOSE, suction, nylon; 3/4" ID; 30" (762 mm) lg	1	84	217-084	GEARCASE Assy	
21	177-787	TUBE, drain; polyethylene; 68" (1.7 m)	1	85	106-076	BOARD, circuit	
22	106-140	STUD, hose	1	86	"105-679	SWITCH, toggle	
23	106-142	CLAMP, hose	1	87	102-876	CAPSCREW, hex hd; 1/4-20 x 3" (76 mm)	4
24	103-927	CLAMP, hose	2	88	100-721	PLUG, pipe; hdls; 1/4 npt	2
25	170-1 13	TUBE, suction	1	89	"216-xxx	SPRAY TIP of choice, see 307-321	1
26	102-952	STRAINER, inlet	1	90	216-001	Reverse-A-Clean III	1
28	168-521	WASHER, thrust	2				
29	164-055	WASHER, spacer	1				
30	159-346	WASHER, flat	1				
31	100-016	LOCKWASHER, spring; 1/4" screw size	2				
32	101-550	CAPSCREW, soc hd; 1/4-20 x 1/2" (13 mm)	1				
33	208-372	DISPLACEMENT PUMP Includes items 34-63. See page 21.	1				

Part List continued on page 20.

PARTS LIST

REF PART NO. NO.	DESCRIPTION	QTY	REF PART NO. NO.	DESCRIPTION	QTY
91	206994 THROAT SEAL LIQUID; 1 pt (0.47 liters) (not shown)	1	105	*106-077 CAPACITOR, start, motor	1
92	"105659 BOOT, toggle	1	106		1
93	CLIP, spring	2	107	168-531 GASKET, COVER housing	1
94	100-035 SCREW, mach, pnh; 832 x 5/16" (8 mm)	1	108	**107-034 TAG, WARNING	1
95	157-021 LOCKWASHER, int, No. 8	1	109	106-032 CAPSCREW, hex hd button; 3/8" size x 1"	4
96	TERMINAL, wire; female snap-on	4	<i>306 & 307 numbers in descriptions refer to separate instruction manuals.</i>		
98	506-421 102709 TERMINAL, cable	1	<i>*Recommended "tool box" spare parts. Keep on hand to reduce down time.</i>		
99	216-137 CONDUIT Assy	1	<i>** Warning labels and tags supplied at no charge.</i>		
100	**178-035 LABEL, WARNING	1	<i>Order parts by name and series letter of the assembly for which you are ordering.</i>		
101	*100-072 26797 LABEL, WARNING	1			
	NUT, hex, mscr; 632	2			
102	103-181 LOCKWASHER, No. 6	2			
103	107-070 SCREW, mach, flat hd; 6-32 x 5/8" (16 mm)	2			
104	217-491 TRIAC; includes ref. no. 96(1) and 97(1)	1			

ACCESSORIES (Must be purchased separately)

SELECT-A-FAN (with tips) 206-310
3000 psi (210 bar) MAXIMUM WORKING PRESSURE

Fits the fan pattern to both wide and narrow surfaces and clears tip stoppages.

GEAR OIL 208-230

1 quart (0.95 liter) lube oil for reduction gear drive. Gear-case capacity is 3 pints (1.4 liters).

THROAT SEAL LIQUID (TSL)
 Non-evaporating liquid for wet-cup

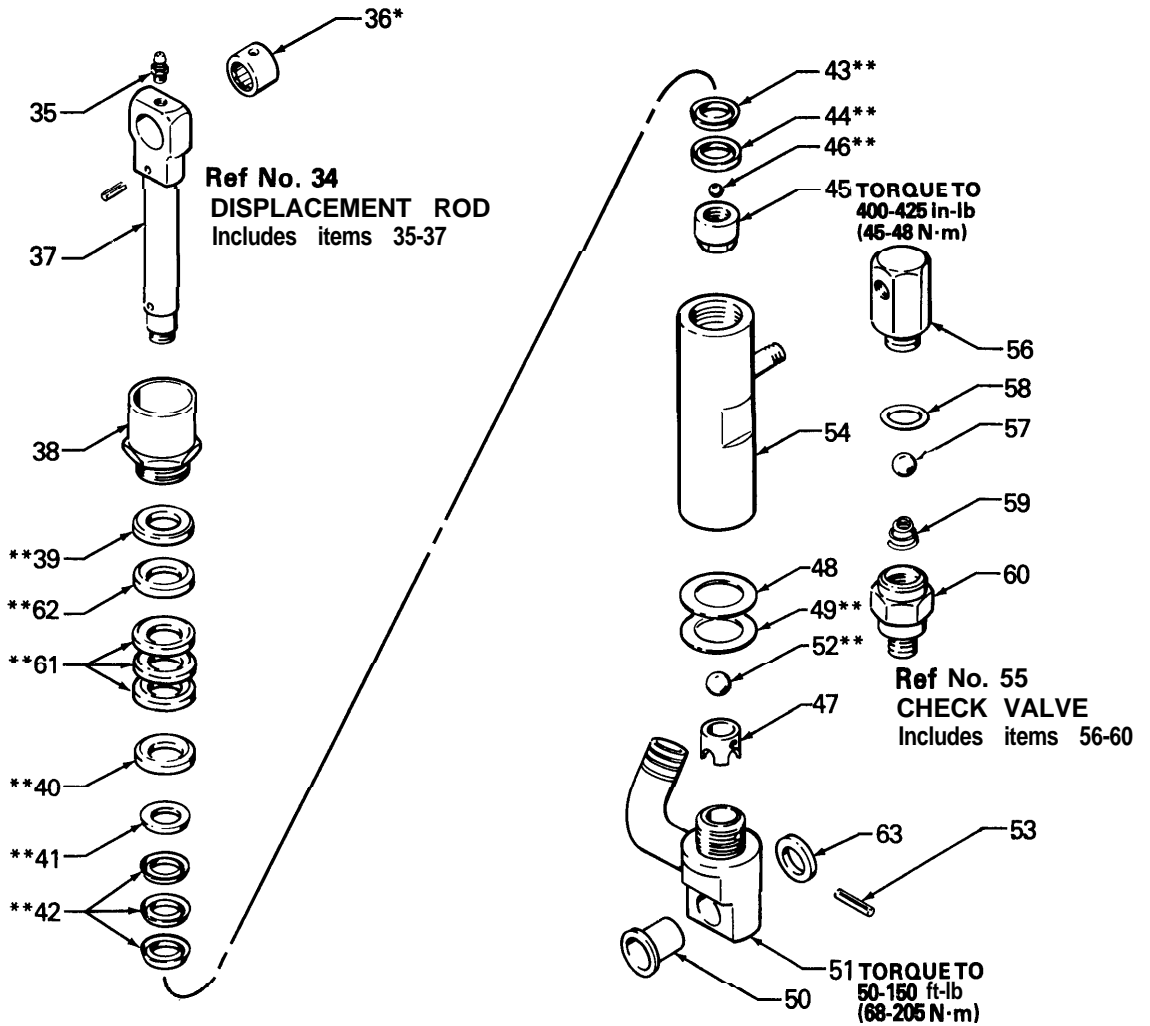
206-995 1 quart (0.95 liter) size
206-996 1 gallon (3.8 liter) size

STATIC FREE NYLON HOSE
3000 psi (210 bar) MAXIMUM WORKING PRESSURE

Part No.	ID	Length	Thd. Size
210540	1/4" (6.4 mm)	25 ft (7.6 m)	1/4 npsm(f)
210541	1/4" (6.4 mm)	50 ft (15.2 m)	1/4 npsm(f)
214-703	3/8" (9.5 mm)	25 ft (7.6 m)	3/8 npt(m)
214-705	3/8" (9.5 mm)	50 ft (15.2 m)	3/8 npt(m)
214-920	3/8" (9.5 mm)	100 ft (30.3 m)	3/8 npt(m)

(Use only in addition to the standard 50 ft (15.2 m) hose).

Ref No. 33 DISPLACEMENT PUMP ASSY.
Includes items 34-63



PARTS LIST

REF NO.	PART NO.	DESCRIPTION	QTY	REF NO.	PART NO.	DESCRIPTION	QTY	REF NO.	PART NO.	DESCRIPTION	QTY
33	208-372	DISPLACEMENT PUMP Assy	1	60	168935	. ADAPTER, housing	1				
		Series E Includes items 34-63		61	**172-846	.V-PACKING, leather	3				
34	*208-574	DISPLACEMENT ROD Assy	1	62	**172-871	.V-PACKING, PTFE	1				
		includes items 35-37		63	170-259	.SPACER	1				
35	100-846	. FITTING, lubrication	1	<i>*Recommended "tool box" spare parts. Keep on hand to reduce down time.</i>							
36	*105-520	..BEARING, needle	1	<i>**Supplied in repair kit 208-940.</i>							
37	208-576	. ROD, displacement	1	<i>Order parts by name and series letter of the assembly for which you are ordering.</i>							
38	169604	.NUT, packing with wet cup	1	Pump Repair Kit 208-940							
39	****172-424	.GLAND, female	1	Must be ordered separately.							
40	* * 172-423	.GLAND, male	1	Consists of:							
41	**169-606	.GLAND, male	1	Ref No.	Qty.	Ref No.	Qty				
42	**169-607	1V-PACKING, leather	1	40	1	45	4				
43	**169-608	3V-PACKING PTFE	1	41	1		1				
44	**169-605	.GLAND, female	1	42	3	52 61	3				
45	208567	.HOUSING, piston valve	1	43	1	62	1				
46	****101-956	.BALL, steel; 1/4" dia.	1	44	1		1				
47	170-1 12	.GUIDE, ball	1								
48	*170-109	.WASHER, flat; aluminum	4								
49	****170-1 10	.WASHER, flat; aluminum	4								
50	168-659	.BEARING, flanged sleeve	1								
51	208-568	.HOUSING, valve, intake	1								
52	****101-874	.BALL, steel; 1/2" dia.	1								
53	170-111	.PIN, ball stop	1								
54	208-371	.CYLINDER, pump, displacement	1								
55	208-109	.CHECK VALVE; includes items 56-60	1								
56	208-108	..HOUSING, valve	1								
57	101-874	..BALL, stainless steel; 1/2" dia.	1								
58	166-702	..O-RING, nitrile rubber	1								
59	168-923	..SPRING	1								

Technical Data

Power requirements **120V, 60 HzAC,**
1 phase, fused for 15 Amps
Electric motor . . . 0.75 HP (**6 kW**), 60 Cycle, 1725 RPM
with thermal overload **proection**
and automatic reset switch
Max. recommended
speed (continuous) 100 cycles/minute
Cycles per gallon (per liter) 230 (53)
Max. paint operating pressure 2750 psi (190 bar)
Recommended
operating range **1000-2200** psi (70-150 bar)
Max. delivery (continuous duty) 0.44 gpm
(1.7 liter/min)
Intake paint strainer 16 mesh (1190 micron)
stainless steel screen, reusable
Outlet paint filter 60 mesh (250 micron)
stainless steel screen, reusable
Gearcase capacity 3 pint (1.4 liter)
Use only **Graco** approved oil, P/N 208-230
Wetted parts Aluminum, Nitralloy, Nylon,
Rubber-impregnated Leather, Stainless steel,PTFE
Delrin,
Tungsten carbide, Zinc-plated steel

Manual Change Summary

This manual has been reactivated since it provides necessary information for some repair kits which are still available for the EM480 sprayer.

The Graco Warranty and Disclaimers

WARRANTY

Graco warrants all equipment manufactured by it and bearing its name to be free from defects in material and workmanship on the date of sale by an authorized **Graco** distributor to the original purchaser for use. As purchaser's sole remedy for breach of this warranty, **Graco** will, for a period of twelve months from the date of sale, repair or replace any part of the equipment proven defective, with the exception of defects in parts on the drive train/gear box on EM and GM sprayers or power train on EH and GH sprayers, which will be repaired or replaced for twenty-four months from the date of sale for Gas-Hydraulic (GH) and Gas-Mechanical (GM) sprayers and for thirty-six months from the date of sale for Electric-Mechanical (EM), Electric-Hydraulic (EH), 390st and 490st sprayers, This warranty applies only when the equipment is installed, operated and maintained in accordance with **Graco's** written recommendations.

This warranty does not cover, and **Graco** shall not be liable for, any malfunction, damage or wear caused by faulty installation, mis-application, abrasion, corrosion, inadequate or improper maintenance, negligence, accident, tampering, or substitution of **non-Graco** component parts. Nor shall **Graco** be liable for malfunction, damage or wear caused by the incompatibility with **Graco** equipment of structures, accessories, equipment or materials not supplied by **Graco**, or the improper design, manufacture, installation, operation or maintenance of structures, accessories, equipment or materials not supplied by **Graco**.

This warranty is conditioned upon the prepaid return of the equipment claimed to be defective to an authorized **Graco** distributor for verification of the claim. If the claimed defect is verified, **Graco** will repair or replace free of charge any defective parts. The equipment will be returned to the original purchaser transportation prepaid. If inspection of the equipment does not disclose any defect in material or workmanship, repairs will be made at a reasonable charge, which charges may include the costs of parts, labor and transportation.

DISCLAIMERS AND LIMITATIONS

The terms of this warranty constitute purchaser's sole and exclusive remedy and are in lieu of any other warranties (express or implied), **Including warranty of merchantability or warranty of fitness for a particular purpose**, and of any non-contractual liabilities, including product liabilities, based on negligence or strict liability. Every form of liability for direct, special or consequential damages or loss is expressly excluded and denied. In no case shall **Graco's** liability exceed the amount of the purchase price. Any action for breach of warranty must be brought within two (2) years of the date of sale.

EQUIPMENT NOT COVERED BY GRACO WARRANTY

Graco makes no warranty, and disclaims all implied **warranties of merchantability and fitness for a particular purpose**, with respect to accessories, equipment, materials, or components sold but not manufactured by **Graco**. These items sold, but not manufactured by **Graco** (such as electric motor, switches, hose, etc.) are subject to the warranty, if any, of their manufacturer. **Graco** will provide purchaser with reasonable assistance in making any claim for breach of these warranties.

Sales Offices: Atlanta, Chicago, Dallas, Detroit, Los Angeles, Mt. Arlington (N.J.)
Foreign Offices: Canada; England; Korea; Switzerland; France; Germany; Hong Kong; Japan

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