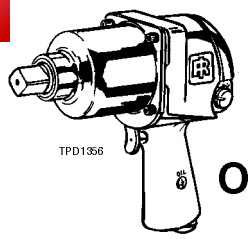


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Form P6539
Edition 9
January, 1998

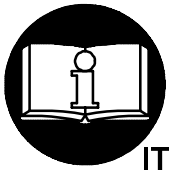
F E P

# OPERATION AND MAINTENANCE MANUAL FOR SERIES 2908P SUPER DUTY IMPACTOOLS

**NOTICE**

Series 2908P Impactools are designed for use in light assembly work and machinery maintenance.

Ingersoll–Rand is not responsible for customer modification of tools for applications on which Ingersoll–Rand was not consulted.



**⚠ WARNING**

**IMPORTANT SAFETY INFORMATION ENCLOSED.**
**READ THIS MANUAL BEFORE OPERATING TOOL.**
**IT IS THE RESPONSIBILITY OF THE EMPLOYER TO PLACE THE INFORMATION IN THIS MANUAL INTO THE HANDS OF THE OPERATOR.**
**FAILURE TO OBSERVE THE FOLLOWING WARNINGS COULD RESULT IN INJURY.**

## PLACING TOOL IN SERVICE

- Always operate, inspect and maintain this tool in accordance with American National Standards Institute Safety Code for Portable Air Tools (ANSI B186.1).
- For safety, top performance, and maximum durability of parts, operate this tool at 90 psig (6.2 bar/620 kPa) maximum air pressure at the inlet with 1/2" (13 mm) inside diameter air supply hose.
- Always turn off the air supply and disconnect the air supply hose before installing, removing or adjusting any accessory on this tool, or before performing any maintenance on this tool.
- Do not use damaged, frayed or deteriorated air hoses and fittings.
- Be sure all hoses and fittings are the correct size and are tightly secured. See Dwg. TPD905–1 for a typical piping arrangement.
- Always use clean, dry air at 90 psig (6.2 bar/620 kPa) maximum air pressure. Dust, corrosive fumes and/or excessive moisture can ruin the motor of an air tool.
- Do not lubricate tools with flammable or volatile liquids such as kerosene, diesel or jet fuel.
- Do not remove any labels. Replace any damaged label.

## USING THE TOOL

- Always wear eye protection when operating or performing maintenance on this tool.
- Always wear hearing protection when operating this tool.
- Keep hands, loose clothing and long hair away from rotating end of tool.
- Note the position of the reversing lever before operating the tool so as to be aware of the direction of rotation when operating the throttle.
- Anticipate and be alert for sudden changes in motion during start up and operation of any power tool.
- Keep body stance balanced and firm. Do not overreach when operating this tool. High reaction torques can occur at or below the recommended air pressure.
- Tool shaft may continue to rotate briefly after throttle is released.
- Air powered tools can vibrate in use. Vibration, repetitive motions or uncomfortable positions may be harmful to your hands and arms. Stop using any tool if discomfort, tingling feeling or pain occurs. Seek medical advice before resuming use.
- Use accessories recommended by Ingersoll–Rand.
- Use only impact sockets and accessories. Do not use hand (chrome) sockets or accessories.
- Impact wrenches are not torque wrenches. Connections requiring specific torque must be checked with a torque meter after fitting with an impact wrench.
- This tool is not designed for working in explosive atmospheres.
- This tool is not insulated against electric shock.

**NOTICE**

The use of other than genuine Ingersoll–Rand replacement parts may result in safety hazards, decreased tool performance, and increased maintenance, and may invalidate all warranties.

Repairs should be made only by authorized trained personnel. Consult your nearest Ingersoll–Rand Authorized Servicenter.

Refer All Communications to the Nearest Ingersoll–Rand Office or Distributor.



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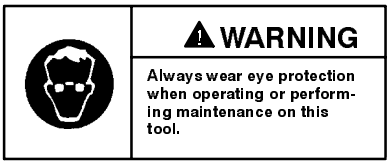
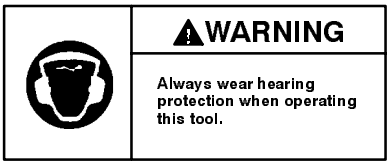
INGERSOLL-RAND®
PROFESSIONAL TOOLS

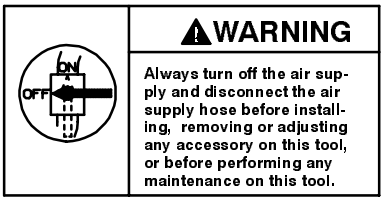
## *WARNING LABEL IDENTIFICATION*

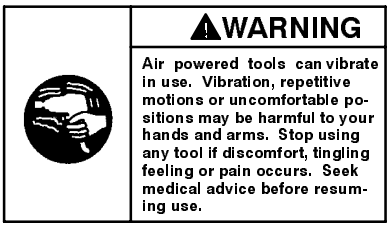
**⚠ WARNING**

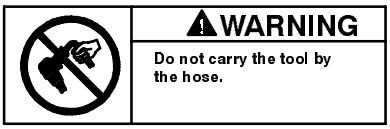
**FAILURE TO OBSERVE THE FOLLOWING WARNINGS COULD RESULT IN INJURY.**



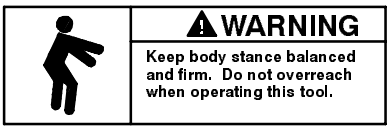



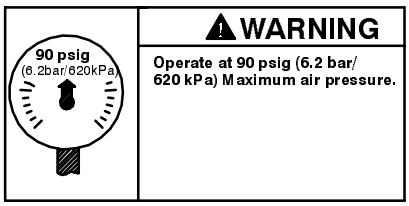








## *ADJUSTMENTS*

### SETTING THE POWER REGULATOR

**⚠ WARNING**

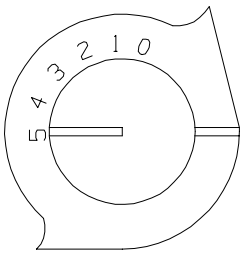
**Impact wrenches are not torque control devices. Fasteners with specific torque requirements must be checked with suitable torque measuring devices after installation with an impact wrench.**

Series 2908P Impactools incorporate a power regulator into the reverse mechanism that allows the operator to have either full power output in one direction and reduced power output in the other direction or full power output in both directions. To adjust the power, proceed as follows:

**For full power in both directions**, rotate the reverse valve until the notch on each end of the reverse valve aligns with the number 5 on each side of the housing.

**NOTICE**

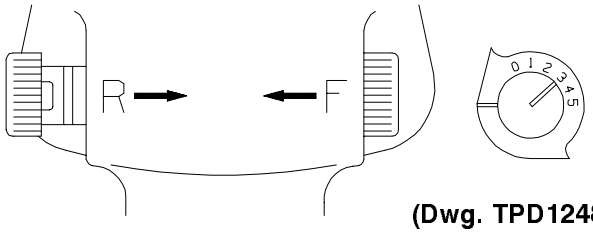
**The numbers 0 thru 5 on the housing are only for reference and DO NOT denote a specific power output. Zero (0) designates the lowest power output while five (5) denotes the highest.**



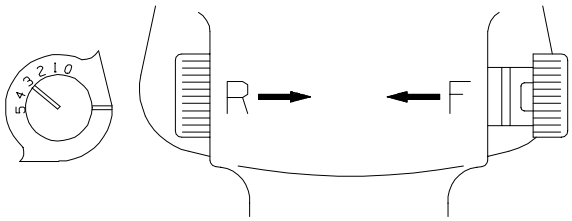

**(Dwg. TPD1247)**

**For reduced power in the forward direction and full power in the reverse direction,** push the reverse valve inward on the right side of the tool and rotate the reverse valve until the notch on the right side aligns with the desired number on the right side. This provides reduced power in forward but full power in reverse when the reverse valve is pushed in the opposite direction.
See Dwg. TPD1248.

**For reduced power in the reverse direction and full power in the forward direction,** push the reverse valve inward on the left side of the tool and rotate the reverse valve until the notch on the left side aligns with the desired number on the left side. This provides full power in forward but reduced power in reverse when the reverse valve is pushed the opposite direction. See Dwg. TPD1249.




**(Dwg. TPD1248)**




**(Dwg. TPD1249)**

# *PLACING TOOL IN SERVICE*

## LUBRICATION

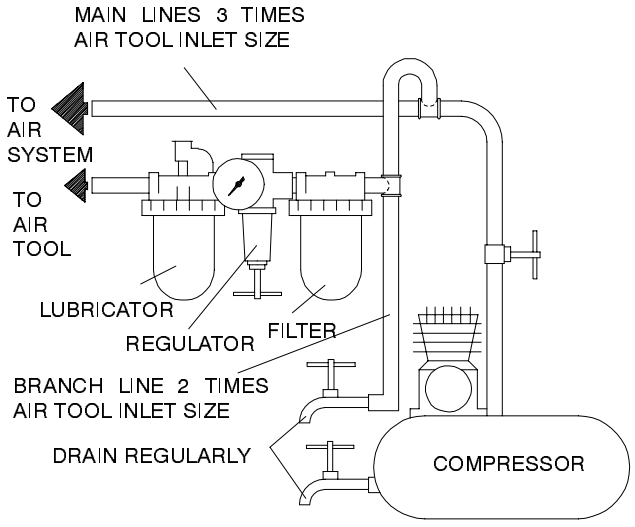
**Ingersoll–Rand No. 50** **Ingersoll–Rand No. 100**

Always use an air line lubricator. We recommend the following Filter–Lubricator–Regulator Unit:

**For USA – No. C22–04–G00**

**After each eight hours of operation,** unless an air line lubricator is used, remove the Oil Chamber Plug and fill the oil chamber with Ingersoll–Rand No. 50 Oil.

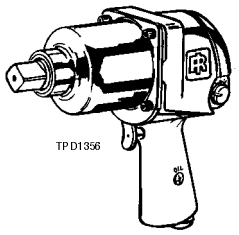
**After each forty–eight hours of operation,** or as experience indicates, inject about 4 cc of Ingersoll–Rand No. 100 Grease into the Grease Fitting.




**(Dwg. TPD905–1)**

## HOW TO ORDER AN IMPACTOOL

| PISTOL GRIP WITH 5/8" SQUARE DRIVE | | | |
|---|---|---|---|
| | | Recommended Torque Range | |
| Model | Impacts/min. | ft–lb | Nm |
| 2908P1 | 1 050 | 100 – 450 | 136 – 610 |
| **PISTOL GRIP WITH 3/4" SQUARE DRIVE** | | | |
| 2908P2 | 1 050 | 100 – 450 | 136 – 610 |

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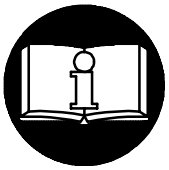
# MANUEL D'EXPLOITATION ET D'ENTRETIEN DES CLÉS À CHOCS À SÉRIE EXTRA FORTE 2908P

**NOTE**

**Les clés à chocs de la série 2908 sont destinés aux travaux de montage léger et à l'entretien des machines.**
**Ingersoll–Rand ne peut être tenu responsable de la modification des outils par le client pour les adapter à des applications qui n'ont pas été approuvées par Ingersoll–Rand.**

**⚠ ATTENTION**



**D'IMPORTANTES INFORMATIONS DE SECURITÉ SONT JOINTES.**
**LIRE CE MANUEL AVANT D'UTILISER L'OUTIL.**
**L'EMPLOYEUR EST TENU À COMMUNIQUER LES INFORMATIONS DE CE MANUEL AUX EMPLOYÉS UTILISANT CET OUTIL.**
**LE NON RESPECT DES AVERTISSEMENTS SUIVANTS PEUT CAUSER DES BLESSURES.**

## MISE EN SERVICE DE L'OUTIL

- **Toujours exploiter, inspecter et entretenir cet outil conformément au Code de sécurité des outils pneumatiques portatifs de l'American National Standards Institute (ANSI B186.1).**
- **Pour la sécurité, les performances optimales et la durabilité maximale des pièces, cet outil doit être connecté à une alimentation d'air comprimé de 6,2 bar (620 kPa) maximum à l'entrée, avec un flexible de 13 mm de diamètre intérieur.**
- **Couper toujours l'alimentation d'air comprimé et débrancher le flexible d'alimentation avant d'installer, déposer ou ajuster tout accessoire sur cet outil, ou d'entreprendre une opération d'entretien quelconque sur l'outil.**
- **Ne pas utiliser des flexibles ou des raccords endommagés, effilochés ou détériorés.**
- **S'assurer que tous les flexibles et les raccords sont correctement dimensionnés et bien serrés. Voir Plan TPD905–1 pour un exemple type d'agencement des tuyauteries.**
- **Utiliser toujours de l'air sec et propre à une pression maximum de 6,2 bar (620 kPa). La poussière, les fumées corrosives et/ou une humidité excessive peuvent endommager le moteur d'un outil pneumatique.**
- **Ne jamais lubrifier les outils avec des liquides inflammables ou volatiles tels que le kérosène, le gasol ou le carburant d'aviation.**
- **Ne retirer aucune étiquette. Remplacer toute étiquette endommagée.**

## UTILISATION DE L'OUTIL

- **Porter toujours des lunettes de protection pendant l'utilisation et l'entretien de cet outil.**
- **Porter toujours une protection acoustique pendant l'utilisation de cet outil.**
- **Tenir les mains, les vêtements flous et les cheveux longs, éloignés de l'extrémité rotative de l'outil.**
- **Noter la position du levier d'inversion avant de mettre l'outil en marche de manière à savoir dans quel sens il va tourner lorsque la commande est actionnée.**
- **Prévoir, et ne pas oublier, que tout outil motorisé est susceptible d'à–coups brusques lors de sa mise en marche et pendant son utilisation.**
- **Garder une position équilibrée et ferme. Ne pas se pencher trop en avant pendant l'utilisation de cet outil. Des couples de réaction élevés peuvent se produire à, ou en dessous, de la pression d'air recommandée.**
- **La rotation des accessoires de l'outil peut continuer pendant un certain temps après le relâchement de la gâchette.**
- **Les outils pneumatiques peuvent vibrer pendant l'exploitation. Les vibrations, les mouvements répétitifs et les positions inconfortables peuvent causer des douleurs dans les mains et les bras. N'utiliser plus d'outils en cas d'inconfort, de picotements ou de douleurs. Consulter un médecin avant de recommencer à utiliser l'outil.**
- **Utiliser les accessoires recommandés par Ingersoll-Rand.**
- **N'utiliser que les douilles et les accessoires pour clés à chocs. Ne pas utiliser les douilles et accessoires (chromés) de clés manuelles.**
- **Les clés à chocs ne sont pas des appareils dynamométriques. Les connexions nécessitant un couple de serrage spécifique doivent être vérifiées avec un mesureur de couple après avoir été assemblées avec un clé à chocs.**
- **Cet outil n'est pas conçu pour fonctionner dans des atmosphères explosives.**
- **Cet outil n'est pas isolé contre les chocs électriques.**

**NOTE**

**L'utilisation de rechanges autres que les pièces d'origine Ingersoll-Rand peut causer des risques d'insécurité, réduire les performances de l'outil et augmenter l'entretien, et peut annuler toutes les garanties.**

**Les réparations ne doivent être effectues que par des réparateurs qualifiés autorisés. Consultez votre Centre de Service Ingersoll–Rand le plus proche.**

**Adressez toutes vos communications au Bureau Ingersoll–Rand ou distributeur le plus proche.**



**Imprimé aux É.U.**

**INGERSOLL-RAND®**
**PROFESSIONAL TOOLS**

## *SIGNIFICATION DES ETIQUETTES D'AVERTISSEMENT*

**⚠ ATTENTION**

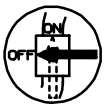
**LE NON RESPECT DES AVERTISSEMENTS SUIVANTS PEUT CAUSER DES BLESSURES**

**⚠ ATTENTION**

Porter toujours des lunettes de protection pendant l'utilisation et l'entretien de cet outil.

**⚠ ATTENTION**

Porter toujours une protection acoustique pendant l'utilisation de cet outil.




**⚠ ATTENTION**

Couper toujours l'alimentation d'air comprimé et débrancher le flexible d'alimentation avant d'installer, déposer ou ajuster tout accessoire sur cet outil, ou d'entreprendre une opération d'entretien quelconque sur l'outil.

**⚠ ATTENTION**

Les outils pneumatiques peuvent vibrer pendant l'exploitation. Les vibrations, les mouvements répétitifs et les positions inconfortables peuvent causer des douleurs dans les mains et les bras. N'utiliser plus d'outils en cas d'inconfort, de picotements ou de douleurs. Consulter un médecin avant de recommencer à utiliser l'outil.

**⚠ ATTENTION**

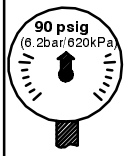
Ne pas transporter l'outil par son flexible.

**⚠ ATTENTION**

Ne pas utiliser des flexibles ou des raccords endommageés, effilochés ou détériorés.

**⚠ ATTENTION**

Garder une position équilibrée et ferme. Ne pas se pencher trop en avant pendant l'utilisation de cet outil.




**⚠ ATTENTION**

Utiliser de l'air comprimé à une pression maximum de 6,2 bar (620 kPa).

## *RÉGLAGES*

### REGLAGE DU REGULATEUR DE PUISSANCE

**⚠ ATTENTION**

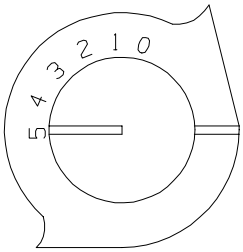
**Les clés à chocs ne sont pas des appareils dynamométriques. Les fixations nécessitant un couple de serrage spécifique doivent être vérifiées avec des appareils de mesure de couple appropriés après avoir été assemblées avec une clé à chocs.**

Les clés à chocs de la série 2908 comportent un régulateur de puissance dans leur mécanisme d'inversion de manière à ce que l'opérateur puisse avoir soit une pleine puissance dans une direction et une puissance réduite dans l'autre, soit une pleine puissance dans les deux directions. Pour ajuster la puissance, procéder comme suit :

**Pour obtenir la pleine puissance dans les deux directions,** tourner la soupape d'inversion jusqu'à ce que l'encoche aux deux extrémités de la soupape d'inversion soient alignées par rapport au numéro 5 de chaque côté du carter.

**NOTE**

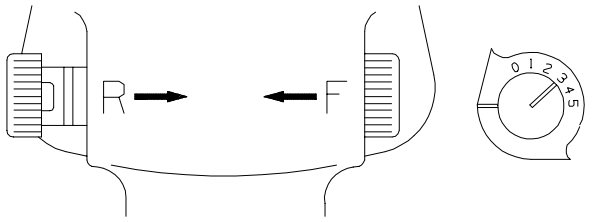
**Les numéros 5 à 0 du carter ne sont donnés qu'à titre de guide et NE dénotent PAS une puissance spécifique. Zéro (0) indique la puissance la plus faible tandis que cinq (5) indique la puissance la plus élevée.**



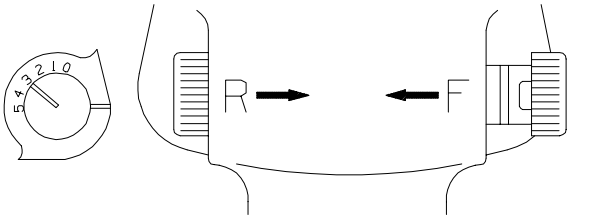

**(Plan TPD1247)**

**Pour obtenir une puissance réduite dans le sens avant et la pleine puissance dans le sens arrière,** pousser la soupape d'inversion vers l'intérieur sur le côté droit de l'outil et tourner la soupape d'inversion, jusqu'à ce que l'encoche du côté droit de la soupape soit alignée par rapport au numéro désiré sur le côté droit. Ce réglage fournit une puissance réduite dans le sens avant, mais une pleine puissance dans le sens arrière lorsque la soupape d'inversion est poussée dans la direction opposée. Voir Plan TPD1248.

**Pour obtenir une puissance réduite dans le sens arrière et la pleine puissance dans le sens avant,** pousser la soupape d'inversion vers l'intérieur sur le côté gauche de l'outil et tourner la soupape d'inversion, jusqu'à ce que l'encoche du côté gauche de la soupape soit alignée par rapport au numéro désiré sur le côté gauche. Ce réglage fournit la pleine puissance dans le sens avant, mais une puissance réduite dans le sens arrière lorsque la soupape d'inversion est poussée dans la direction opposée. Voir Plan TPD1249.




**(Plan TPD1248)**




**(Plan TPD1249)**

# *MISE EN SERVICE DE L'OUTIL*

## LUBRIFICATION

**Ingersoll–Rand N°. 50**

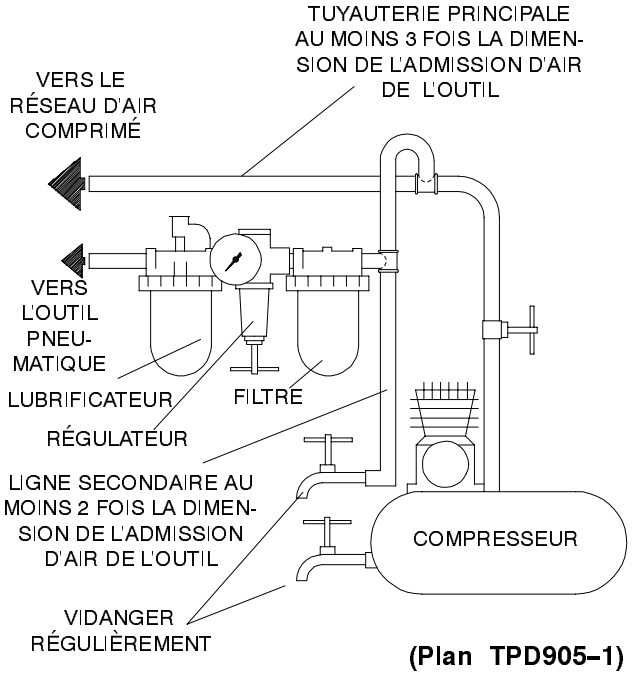
**Ingersoll–Rand N°. 100**

Utiliser toujours un lubrificateur. Nous recommandons l'emploi du filtre–régulateur–lubrificateur suivant :

**USA – No. C22–04–G00**

**Toutes les huit heures de fonctionnemen**t, si un lubrificateur de ligne n'est pas utilisé, déposer le bouchon de la chambre d'huile et remplir cette dernière avec de l'huile Ingersoll–Rand No. 50.

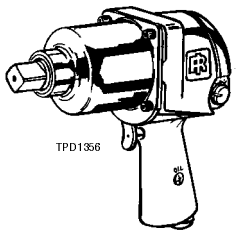
**Toutes les quarante–huit heures de fonctionnemen**t, ou en fonction de l'expérience, injecter environ 4cm$^3$ de graisse Ingersoll–Rand No. 100 dans le raccord de graissage.




**(Plan TPD905–1)**

## SPÉCIFICATIONS

| Modèle | Type de poignée | Entraînement | Coups par minute | Gamme de couples recommandée |
|---|---|---|---|---|
| | | **in.** | | **ft–lbs (Nm)** |
| 2908P1 | pistolet | 5/8" carré | 1050 | 100–450 (136–610) |
| 2908P2 | pistolet | 3/4" carré | 1050 | 100–450 (136–610) |

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# MANUAL DE USO Y MANTENIMIENTO PARA LLAVES DE IMPACTO DE LA SERIE 2908P PARA SERVICO SUPER PESADO

**NOTA**

**Las Llaves de Impacto 2908P están diseñadas para usar en trabajo de ensamblaje ligero y mantenimiento de maquinaria.**
**Ingersoll–Rand no aceptará responsabilidad alguna por la modificación de las herramientas efectuada por el cliente para las aplicaciones que no hayan sido consultadas con Ingersoll–Rand.**

**⚠ AVISO**

**SE ADJUNTA INFORMACIÓN IMPORTANTE DE SEGURIDAD.**
**LEA ESTE MANUAL ANTES DE USAR LA HERRAMIENTA.**
**ES RESPONSABILIDAD DE LA EMPRESA ASEGURARSE DE QUE EL OPERARIO ESTÉ AL TANTO DE LA INFORMACIÓN QUE CONTIENE ESTE MANUAL.**
**EL HACER CASO OMISO DE LOS AVISOS SIGUIENTES PODRÍA OCASIONAR LESIONES.**

## PARA PONER LA HERRAMIENTA EN SERVICIO

- **Utilice, examine y mantenga siempre esta herramienta conforme al código de seguridad para herramientas neumáticas portátiles de la American National Standards Institute (ANSI B186.1).**
- **Para seguridad, máximo rendimiento y vida de servicio de las piezas, use esta herramienta a una presión de aire máxima de 90 psig (6,2 bar/620 kPa) en la manguera de suministro de aire con diámetro interno de 13 mm.**
- **Corte siempre el suministro de aire y desconecte la manguera de suministro de aire antes de instalar, desmontar o ajustar cualquier accesorio de esta herramienta, o antes de realizar cualquier operación de mantenimiento de la misma.**
- **No utilice mangueras de aire y accesorios dañados, desgastados ni deteriorados.**
- **Asegúrese que todas las mangueras y accesorios sean del tamaño correcto y estén bien apretados. Vea Esq. TPD905–1 para un típico arreglo de tuberías.**
- **Use siempre aire limpio y seco a una presión máxima de 90 psig (6,2 bar/620 kPa). El polvo, los gases corrosivos y/o el exceso de humedad podrían estropear el motor de una herramienta neumática.**
- **No lubrique las herramientas con líquidos inflamables o volátiles tales como queroseno, gasoil o combustible para motores a reacción.**
- **No saque ninguna etiqueta. Sustituya toda etiqueta dañada.**

## USO DE LA HERRAMIENTA

- **Use siempre protección ocular cuando maneje, o realice operaciones de mantenimiento en esta herramienta.**
- **Use siempre protección para los oídos cuando maneje esta herramienta.**
- **Mantenga las manos, la ropa suelta y el cabello largo alejados del extremo giratorio de la herramienta.**
- **Note la posición de la palanca de inversión antes de hacer funcionar la herramienta para ser consciente de su dirección giratoria cuando funcione el estrangulador.**
- **Anticipe y esté alerta sobre los cambios repentinos en el movimiento durante la puesta en marcha y el manejo de toda herramienta motorizada.**
- **Mantenga una postura de cuerpo equilibrada y firme. No estire demasiado los brazos al manejar la herramienta. Pueden ocurrir reacciones de alto par a, o a menos de, la recomendada presión de aire.**
- **El eje de la herramienta podría seguir girando brevemente después de haber soltado la palanca de estrangulación.**
- **Las herramientas neumáticas pueden vibrar durante el uso. La vibración, repetición o posiciones incómodas pueden dañarle los brazos y manos. En caso de incomodidad, sensación de hormigueo o dolor, deje de usar la herramienta. Consulte a un médico antes de volver a usarla otra vez.**
- **Utilice únicamente los accesorios Ingersoll–Rand recomendados.**
- **Utilice únicamente bocas y accesorios para llaves de impacto. No utilice bocas o accessorios manuales (cromados).**
- **Las llaves de impacto no son llaves de par. Las uniones que requieran pares específicos deberán ser comprobadas con un torsiómetro después de haberlas fijado con una llave de impacto.**
- **Esta herramienta no ha sido diseñada para trabajar en ambientes explosivos.**
- **Esta herramienta no está aislada contra descargas eléctricas.**

**NOTA**

**El uso de piezas de recambio que no sean las auténticas piezas Ingersoll–Rand podría poner en peligro la seguridad, reducir el rendimiento de la herramienta y aumentar los cuidados de mantenimiento necesarios, así como invalidar toda garantía.**

**Las reparaciones sólo serán realizadas por personal cualificado y autorizado. Consulte con el centro de servicio Ingersoll–Rand autorizado más próximo.**

**Toda comunicación se deberá dirigir a la oficina o al distribuidor Ingersoll–Rand más próximo.**



**Impreso en EE. UU.**

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# *ETIQUETAS DE AVISO*

**⚠ AVISO**

**EL HACER CASO OMISO DE LOS AVISOS SIGUIENTES PODRÍA OCASIONAR LESIONES.**

**⚠ ADVERTENCIA**

Usar siempre protección ocular al manejar o realizar operaciones de mantenimiento en esta herramienta.

**⚠ ADVERTENCIA**

Las herramientas neumáticas pueden vibrar durante el uso. La vibración, los movimientos repetitivos o las posiciones incómodas podrían dañarle los brazos y las manos. En caso de incomodidad, sensación de hormigueo o dolor, dejar de usar la herramienta. Consultar al médico antes de volver a utilizarla.

**⚠ ADVERTENCIA**

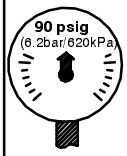
Mantener una postura del cuerpo equilibrada y firme. No estirar demasiado los brazos al manejar la herramienta.

**⚠ ADVERTENCIA**

Usar siempre protección para los oídos al manejar esta herramienta.

**⚠ ADVERTENCIA**

No coger la herramienta por la manguera para levantarla.




**⚠ ADVERTENCIA**

Manejar la herramienta a una presión de aire máxima de 90 psig (6,2 bar/620 kPa).


**⚠ ADVERTENCIA**

Cortar siempre el suministro de aire y desconectar la manguera de suministro de aire antes de instalar, retirar o ajustar cualquier accesorio de esta herramienta, o antes de realizar cualquier operación de mantenimiento de la misma.

**⚠ ADVERTENCIA**

No utilizar mangueras de aire y accesorios dañados, desgastados ni deteriorados.

# *AJUSTES*

## COLOCACIÓN DE REGULADOR DE POTENCIA

**⚠ AVISO**

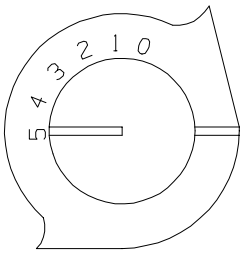
**Las llaves de impacto no son llaves de par. Las fijaciones de específico requerimiento de par deberán ser comprobadas con un torsiómetro adecuado después de su fijación con una llave de impacto.**

La Llave de Impacto Serie 2908P incorpora un Regulador de Potencia en el mecanismo de inversión que permite al operario tener potencia completa en una dirección y potencia reducida en la otra dirección, o potencia completa en ambas direcciones. Para ajuste de potencia, proceda como sigue:

**Para potencia completa en ambas direcciones,** gire la válvula de inversión hasta que la marca en cada extremo de válvula esté alineada con el número 5 en cada lateral de carcasa.

**NOTA**

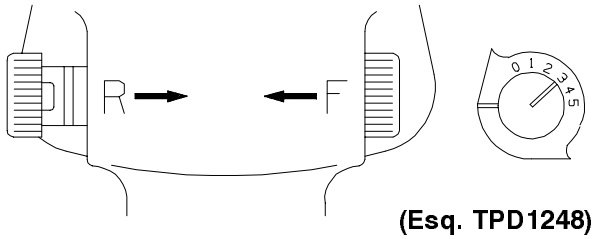
**Los números del 0 al 5 que hay en la carcasa son sólo de referencia y NO indican una potencia específica. Cero (0) indica la potencia menor mientras que cinco (5) indica la mayor.**



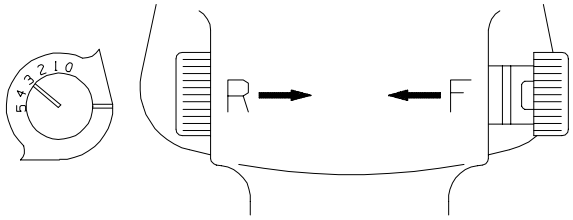

**(Esq. TPD1247)**

**Para potencia reducida en dirección hacia delante y potencia completa en la inversa,** empuje hacia dentro la válvula de inversión en el lateral derecho de la herramienta y gire la válvula de inversión hasta que la marca en el lateral derecho esté alineada con el número deseado en la derecha. Esto ofrece potencia reducida en dirección hacia delante y potencia completa en la inversa cuando la válvula de inversión sea empujada hacia el lado opuesto. Vea Esq. TPD1248.

**Para potencia reducida en dirección inversa y completa en la dirección hacia delante,** empuje hacia dentro la válvula de inversión en el lateral derecho de la herramienta y gire la válvula de inversión hasta que la marca en el lateral izquierdo esté alineada con el número deseado en la izquierda. Esto ofrece potencia completa en dirección hacia delante y potencia reducida en la inversa cuando la válvula de inversión sea empujada hacia el lado opuesto. Vea Esq. TPD1249.




**(Esq. TPD1248)**




**(Esq. TPD1249)**

# *PARA PONER LA HERRAMIENTA EN SERVICIO*

## LUBRICACION

**Ingersoll–Rand Nº 50**

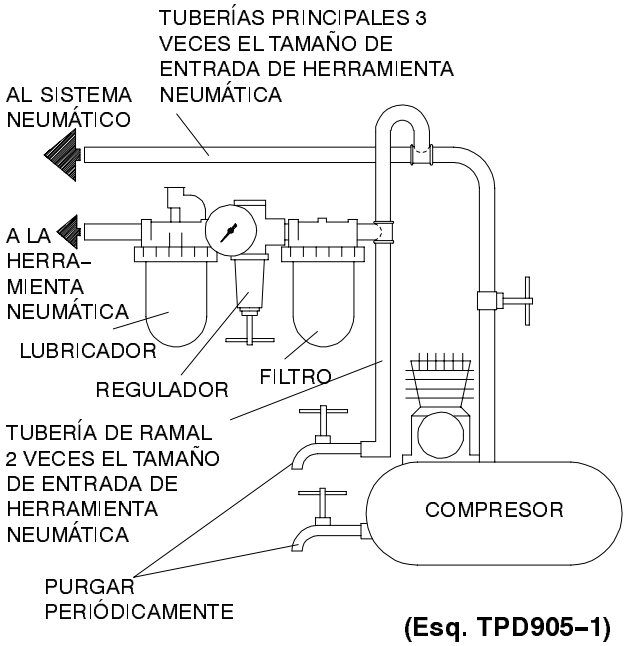
**Ingersoll–Rand Nº 100**

Utilice siempre un lubricante de aire comprimido. Recomendamos la siguiente unidad de Filtro–Lubricador–Regulador:

**USA – No. C22–04–G00**

**Después de cada ocho horas de funcionamiento,** salvo que se utilice un lubricador de aire comprimido, quite el tapón de la cámara de aceite y llene ésta con el Aceite Ingersoll–Rand Nº 50.

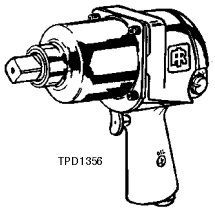
**Después de cada cuarenta y ocho horas de funcionamiento,** o según indique la experiencia, inyecte unos 4 cc de Grasa Ingersoll–Rand Nº 100 en el Engrasador.




**(Esq. TPD905–1)**

## ESPECIFICACIONES

| Modelo | Tipo de Empuñadura | Accionamiento | Impactos por minuto | Gama de par recomendada |
|---|---|---|---|---|
| | | pulg. | | ft–lbs (Nm) |
| 2908P1 | pistola | 5/8" cuadradillo | 1050 | 100–450 (136–610) |
| 2908P2 | pistola | 3/4" cuadradillo | 1050 | 100–450 (136–610) |




P

# MANUAL DE FUNCIONAMENTO E MANUTENÇÃO PARA AS FERRAMENTAS DE PERCUSSÃO PARA TRABALHO SUPER PESADO SÉRIE 2908P

## AVISO

**As Ferramentas de Impacto Séries 2908P são concebidas trabalhos de montagem ligeira e manutenção de maquinaria.**
**A Ingersoll–Rand não é responsável por modificações, feitas pelo cliente em ferramentas, nas quais a Ingersoll–Rand não tenha sido consultada.**

## ⚠ ADVERTÊNCIA

**INFORMAÇÃO DE SEGURANÇA IMPORTANTE EM ANEXO.**
**LEIA ESTE MANUAL ANTES DE OPERAR A FERRAMENTA.**
**É DA RESPONSABILIDADE DO EMPREGADOR COLOCAR A INFORMAÇÃO DESTE MANUAL NAS MÃOS DO OPERADOR.**
**O NÃO CUMPRIMENTO DAS SEGUINTES ADVERTÊNCIAS PODE RESULTAR EM FERIMENTOS.**

### COLOCANDO A FERRAMENTA EM FUNCIONAMENTO

- **Sempre opere, inspeccione e mantenha esta ferramenta de acordo com o Código de Segurança do Instituto Americano de Padrões Nacionais para Ferramentas Pneumáticas Portáteis (ANSI B186.1).**
- **Para segurança, máximo desempenho e máxima durabilidade das peças, opere esta ferramenta com uma pressão de ar máxima de 6,2 bar/620 kPa (90 psig) na entrada da mangueira de alimentação de ar com diâmetro interno de 13 mm (1/2").**
- **Desligue sempre a alimentação de ar e desconecte a mangueira de alimentação de ar antes de instalar, remover ou ajustar qualquer acessório nesta ferramenta, ou antes de executar qualquer serviço de manutenção nesta ferramenta.**
- **Não use mangueiras de ar ou adaptadores danificados, gastos ou deteriorados.**
- **Certifique–se de que todas as mangueiras e adaptadores sejam do tamanho correcto e estejam apertados com firmeza. Veja o Desenho TPD905–1 para um arranjo típico de tubagem.**
- **Use sempre ar seco e limpo com pressão máxima de 6,2 bar/620 kPa (90 psig). Pó, fumos corrosivos e/ou humidade excessiva podem arruinar o motor de uma ferramenta pneumática.**
- **Não lubrifique as ferramentas com líquidos inflamáveis ou voláteis tais como querosene, diesel ou combustível de jactos.**
- **Não remova nenhum rótulo. Reponha qualquer rótulo danificado.**

### USANDO A FERRAMENTA

- **Use sempre óculos de protecção quando estiver operando ou executando serviço de manutenção nesta ferramenta.**
- **Use sempre protecção contra ruído ao operar esta ferramenta.**
- **Mantenha as mãos, partes do vestuário soltas e cabelos compridos afastados da extremidade em rotação.**
- **Observe qual é a posição da alavanca que reverte o sentido de rotação antes de operar esta ferramenta de modo a estar atento ao sentido de rotação quando operar o regulador de pressão.**
- **Antecipe e esteja alerta a mudanças repentinas no movimento quando ligar e operar qualquer ferramenta motorizada.**
- **Mantenha a posição do corpo equilibrada e firme. Não exagere quando operar esta ferramenta. Torques de reacção elevados podem ocorrer na ou abaixo da pressão de ar recomendada.**
- **O eixo da ferramenta pode continuar a girar brevemente após a pressão tenha sido aliviada.**
- **Ferramentas accionadas pneumáticamente podem vibrar em uso. Vibração, movimentos repetitivos ou posições desconfortáveis podem ser prejudiciais às mãos e aos braços. Pare de usar a ferramenta caso ocorra algum desconforto, sensação de formigueiro ou dor. Procure assistência médica antes de retornar ao trabalho.**
- **Use acessórios recomendados pela Ingersoll–Rand.**
- **Use somente soquetes e acessórios de impacto. Não use soquetes ou acessórios de mão (cromo).**
- **Ferramentas Pneumáticas de impacto não são chaves dinamométricas de torque. As conexões que requerem um torque específico devem ser verificadas com um torquímetro depois de adaptadas a uma chave dinamométrica de impacto.**
- **Esta Ferramenta não foi concebida para trabalhos em atmosferas explosivas.**
- **Esta Ferramenta não está isolada contra choques eléctricos.**

## AVISO

**O uso de peças de substituição que não sejam genuinamente da Ingersoll–Rand podem resultar em riscos de segurança, diminuição do desempenho da ferramenta, aumento da necessidade de manutenção e pode invalidar todas as garantias.**

**As reparações devem ser feitas somente por pessoal treinado autorizado. Consulte o Centro de Serviços da Ingersoll–Rand mais próximo.**

**Envie Todos os Comunicados Para o Distribuidor ou Escritório da Ingersoll–Rand Mais Próximo.**



**Impresso nos E.U.A.**

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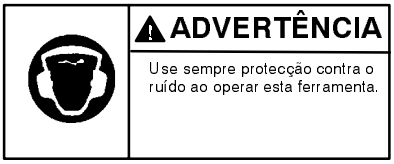
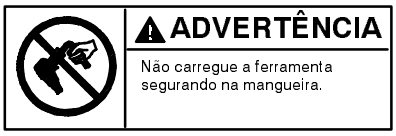
# *IDENTIFICAÇÃO DO RÓTULO DE ADVERTÊNCIA*

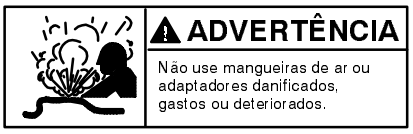
**⚠ ADVERTÊNCIA**

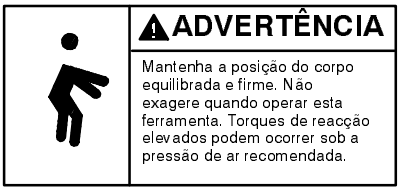
**O NÃO CUMPRIMENTO DAS SEGUINTES ADVERTÊNCIAS PODE RESULTAR EM FERIMENTO.**

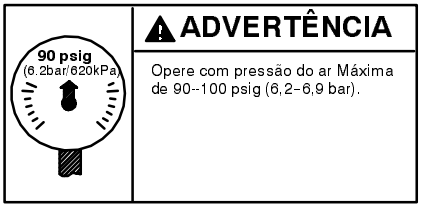






# *AJUSTES*

## AJUSTANDO O REGULADOR DE POTÊNCIA

**⚠ ADVERTÊNCIA**

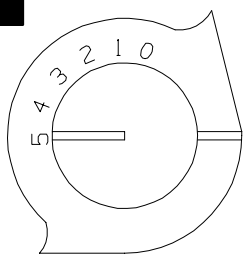
**Ferramentas Pneumáticas de impacto não são aparelhos de controlo de torque. Apertos com requisitos de torque específicos devem ser verificados com aparelhos de medição de torque adequados depois da instalação de uma chave dinamométrica.**

As Ferramentas de Impacto Séries 2908P incorporam um mecanismo regulador de potência no mecanismo de reversão que permite ao operador regular a potência de saída total num sentido e a potência reduzina no outro sentido ou potência de saída total em ambos os sentidos. Para ajustar a potência, proceda da seguinte forma:

**Para potência total em ambas as direcções,** gire a válvula de reversão até que a ranhura em cada extremidade da válvula fique alinhada com o número 5 em cada lado do corpo da máquina..

**AVISO**

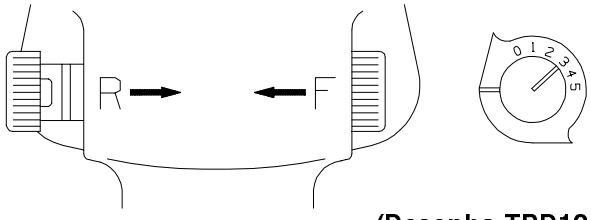
**Os números de 0 a 5 no corpo da máquina são somente uma referência e NÃO indicam uma potência de saída específica. Zero (0) não designa a potência mais baixa enquanto quatro (5) não designa a mais alta.**



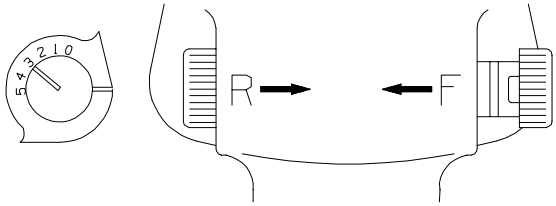

**(Desenho TPD1247)**

**Para uso da Potência Mínima no sentido frontal e potência máxima no sentido contrário, empurre a válvula de reversão para dentro,** no lado direito da ferramenta, e gire a válvula até que a ranhura lado direito fique alinhada com o número desejado no lado direito. Isto fornece uma potência reduzida para frente e potência máxima, para trás quando a válvula de reversão estiver a ser empurrada no sentido contrário. Veja Desenho TPD1248

**Para uso da Potência Mínima no sentido inverso e potência máxima para a frente, empurre a válvula de reversão para dentro,** no lado esquerdo da ferramenta, e gire-a até que a ranhura no lado esquerdo fique alinhada com o número desejado no lado esquerdo. Isto fornece potência total para a frente e potência reduzida para trás, quando a válvula de reversão estiver a ser empurrada no sentido contrário. Veja Desenho TPD1249.




**(Desenho TPD1248)**




**(Desenho TPD1249)**

# *COLOCANDO A FERRAMENTA EM FUNCIONAMENTO*

## LUBRIFICAÇÃO

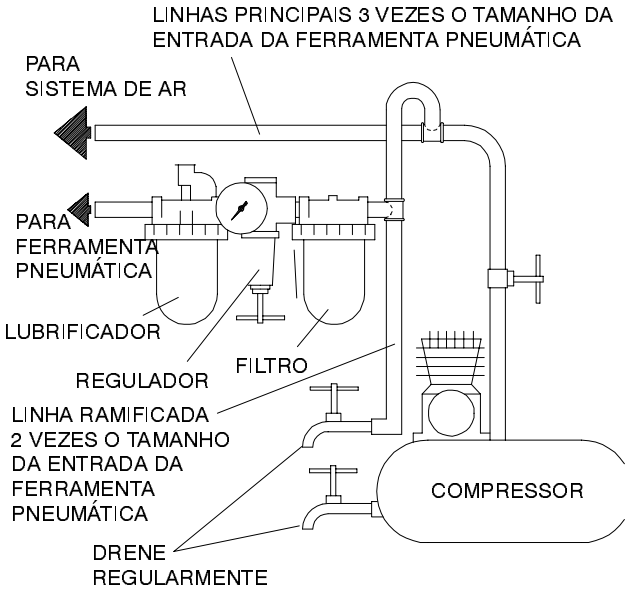
**Ingersoll-Rand No. 50** **Ingersoll-Rand No. 100**

Use sempre um lubrificador de ar de linha com estas ferramentas. Nós recomendamos a seguinte Unidade Filtro–Lubrificador–Regulador:

**For USA – No. C22-04-G00**

**Depois de cada 8 horas de operação**, a menos que esteja usando um lubrificador de ar de linha, remova o Bujão da Câmara de Óleo e encha a câmara de óleo com Óleo Ingersoll–Rand No. 50.

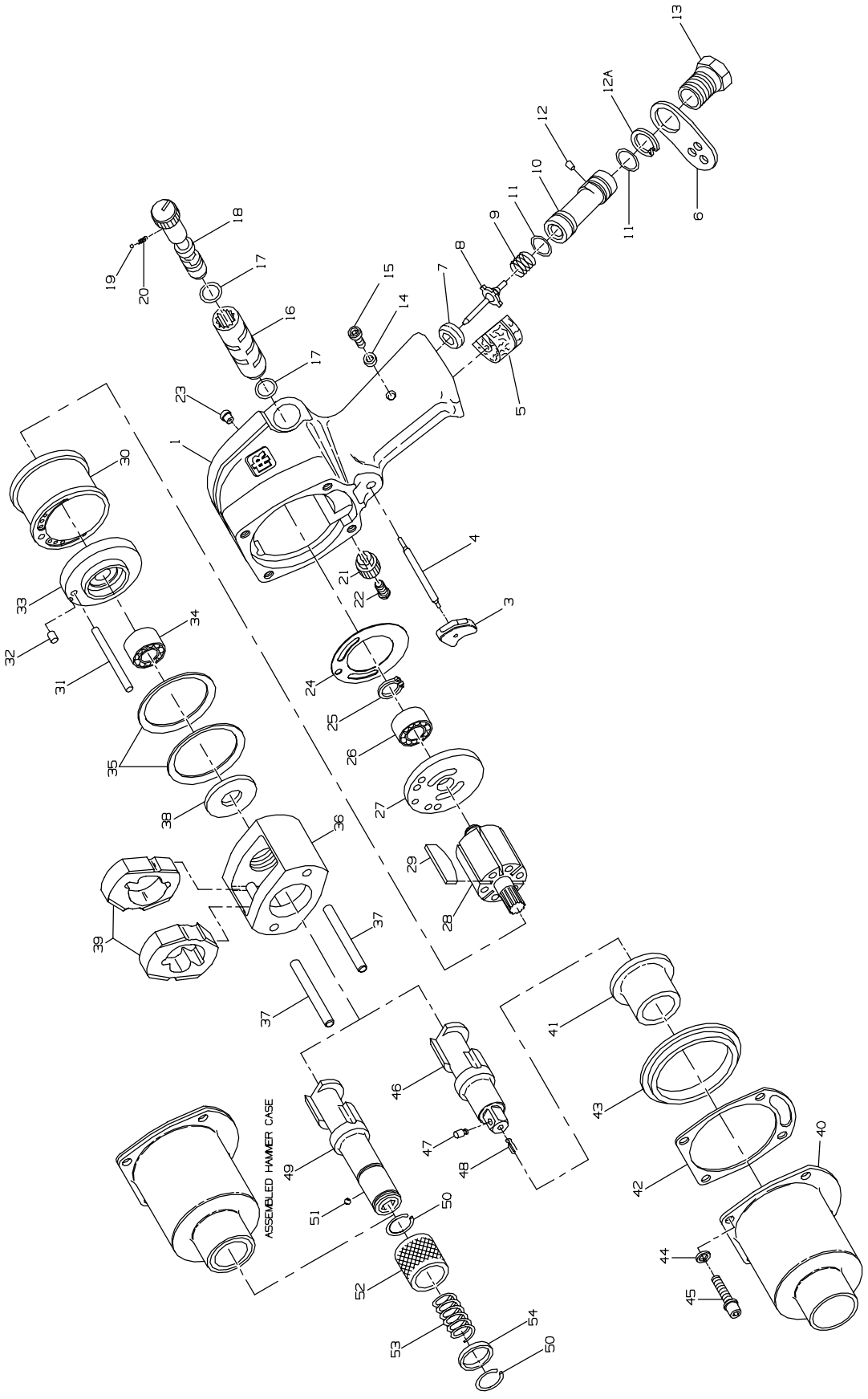
**Depois de cada 48 horas de operação**, ou conforme a experiência indica, injecte aproximadamente 4 cc de Massa Lubrificante Ingersoll–Rand No. 100 no Adaptador de Massa Lubrificante.




**(Desenho TPD905–1)**

## ESPECIFICAÇÕES

| Modelo | Tipo de Punho | Encabadouro | Impactos por min. | Intervalo de Torque Recomendado |
|---|---|---|---|---|
| | | pol. | | Nm (pés-lbs) |
| 2908P1 | pistola | 5/8" quadrado | 1 050 | 136–610 (100–450) |
| 2908P2 | pistola | 3/4" quadrado | 1 050 | 136–610 (100–450) |




(Dwg. TPA811–3)

| | | PART NUMBER FOR ORDERING | |
|---|---|---|---|
| | 1 | Motor Housing Assembly | 2908-A40 |
| | | Trigger Assembly | 7AH-A93 |
| | 3 | Trigger | 5RA-93 |
| | 4 | Trigger Pin | 7AH-94 |
| ♦ | 5 | Exhaust Silencer | 2908-311 |
| | 6 | Exhaust Deflector | 2908-23 |
| ♦ | 7 | Throttle Valve Seat | 2908-303 |
| | 8 | Throttle Valve | 2908-302A |
| ♦ | 9 | Throttle Valve Spring | 2908-51 |
| | 10 | Oiler Body Assembly | 2908-A198 |
| • | 11 | Oiler Body Seal (2) | AF120-290 |
| | 12 | Oiler Plug | 77H-75 |
| | 12A | Oiler Retaining Ring | 2908-304 |
| | 13 | Air Strainer Assembly | 804-465 |
| ♦ • | 14 | Oil Chamber Plug Seal | R3-92A |
| | 15 | Oil Chamber Plug | D92-227 |
| | 16 | Reverse Valve Bushing Assembly | 2908-A330 |
| ♦ | 17 | Reverse Valve Bushing Seal (2) | AF120-290 |
| | 18 | Reverse Valve | 2908-329 |
| ♦ | 19 | Reverse Valve Detent Ball | AV1-255 |
| ♦ | 20 | Reverse Valve Detent Spring | 231-664 |
| | 21 | Reverse Valve Knob | 231-666 |
| | 22 | Reverse Valve Knob Screw | 231-665 |
| | 23 | Grease Fitting | 130SR-188 |
| ♦ • | 24 | End Plate Gasket | 2908-283 |
| ♦ | 25 | Rear Rotor Bearing Retainer | R4800-119 |
| ♦ | 26 | Rear Rotor Bearing | R1A-510 |

| | | PART NUMBER FOR ORDERING | |
|---|---|---|---|
| ♦ | 27 | Rear End Plate | 2908-12 |
| | 28 | Rotor | 2908-53 |
| ♦ • | 29 | Vane Packet (set of 6 Vanes) | 2908-42-6 |
| | 30 | Cylinder | 908-3 |
| | 31 | Cylinder Dowel | 403-98A |
| | 32 | Front End Plate Dowel | 230-74 |
| | 33 | Front End Plate | 2908-11 |
| ♦ • | 34 | Front Rotor Bearing | R38P-606 |
| | 35 | Motor Clamp Washer (2) | 2908-207 |
| | 36 | Hammer Frame Assembly | 2908-A703 |
| | 37 | Hammer Pin (2) | 2908-704 |
| | 38 | Rear Hammer Frame Washer | 2908-706 |
| | 39 | Hammer (2) | 2908-724 |
| | 40 | Hammer Case Assembly | |
| | | for 2908P1 and 2908P2 | 2908-A727 |
| | | for 2908P1-EU and 2908P2-EU | 2908-EU-727 |
| | * | Hammer Case Label | |
| | | for 2908P1 and 2908P2 | WARNING-2-99 |
| | | for 2908P1-EU and 2908P2-EU | EU-99 |
| | 41 | Hammer Case Bushing | 2908-641 |
| ♦ • | 42 | Hammer Case Gasket | 1709-36 |
| | 43 | Hammer Case Pilot | 2908-800 |
| | 44 | Hammer Case Lock Washer (4) | 8U-58 |
| | 45 | Hammer Case Cap Screw (4) | R0H-354 |
| | 46 | Anvil Assembly | |
| | | 5/8" square drive | 2908-P726 |
| | | 3/4" square drive | 2908-P826 |

* Not illustrated.

♦ Indicates Tune-up Kit part.

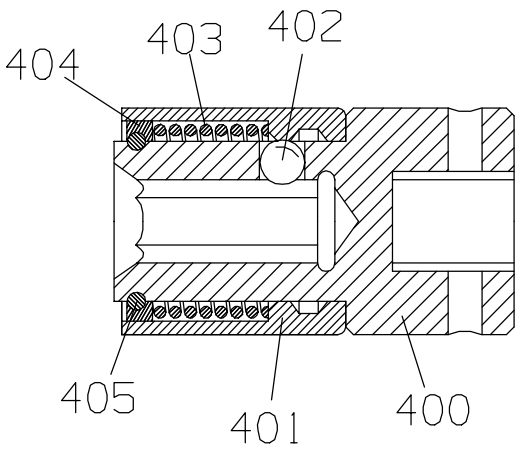
• To keep downtime to a minimum, it is desirable to have on hand certain repair parts. We recommend that you stock one (pair or set) of each part indicated by a bullet (•) for every four tools in service.

| | | | PART NUMBER FOR ORDERING | | | | PART NUMBER FOR ORDERING |
|---|---|---|---|---|---|---|---|
| • | 47 | Socket Retaining Pin | | | 54 | Thrust Ring | 908–932–10 |
| | | for 5/8" square drive | 808–716 | * | | Nameplate | |
| | | for 3/4" square drive | 2908–716 | | | for 2908P1 and 2908P2 | 2908–301 |
| | 48 | Socket Retaining Pin Spring | 5UHD–718 | | | for 2908P1–EU and 2908P2–EU | 2908–EU–301 |
| | | Quick–Change Anvil Assembly | | * | | Vertical Hanger | 2908–365 |
| | | (5/8" hex recess) | 2908–A926–10 | * | | Grease Gun | R000A2–228 |
| | 49 | Quick Change Anvil | 2908–926–10 | * | | Tune–up Kit (includes illustrated parts | |
| | 50 | Thrust Ring Lock (2) | 908–933–10 | | | 5, 7, 9, 14, 17 [2], 19, 20, 24, 25, 26, 27, 29, | |
| | 51 | Retaining Ball (7/32" diameter) | 2U–722 | | | 34 and 42) | 2908P–TK2 |
| | 52 | Retaining Sleeve | 908–930–10 | | | | |
| | 53 | Retaining Sleeve Spring | 908–931–10 | | | | |

* Not illustrated.

• To keep downtime to a minimum, it is desirable to have on hand certain repair parts. We recommend that you stock one (pair or set) of each part indicated by a bullet (•) for every four tools in service.

## QUICK–CHANGE CHUCK
**(For use on 5/8” square drive Anvil.)**

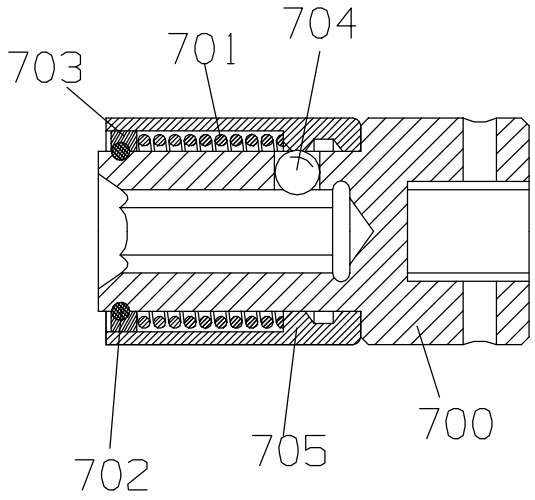



**(Dwg. TPD13)**

**PART NUMBER FOR ORDERING**

| | | 7/16” HEXAGON RECESS | 5/8” HEXAGON RECESS |
|---|---|---|---|
| | Quick–Change Chuck Assembly | 8U–A925–7 | 508–A925A–10 |
| 400 | Quick–Change Chuck Body | 8U–925–7 | 508–925A–10 |
| 401 | Retaining Sleeve | 4U–930–7 | W54–930–10 |
| 402 | Retaining Ball | 2U–722 | 8U–722 |
| 403 | Retaining Sleeve Spring | 4U–931–7 | W54–931–10 |
| 404 | Thrust Ring | 4U–932–7 | W54–932–10 |
| 405 | Thrust Ring Lock | 4U–933–7 | W54–933–10 |

## QUICK–CHANGE CHUCK
**(For use on 3/4” square drive Anvil.**
**Accomodates 5/8” hexagon shank Socket Drivers.)**




**(Dwg. TPD543)**

**PART NUMBER FOR ORDERING**

| | | 5/8” HEXAGON RECESS |
|---|---|---|
| | Quick–Change Chuck Assembly | 510–A925–10 |
| 700 | Quick–Change Chuck Body | 510–925–10 |
| 701 | Retaining Sleeve Spring | W54–931–10 |
| 702 | Thrust Ring Lock | W54–933–10 |
| 703 | Thrust Ring | W54–932–10 |
| 704 | Retaining Ball (9/32” diameter steel ball) | 8U–722 |
| 705 | Retaining Sleeve | W54–930–10 |

# MAINTENANCE SECTION

**⚠ WARNING**

**Always wear eye protection when operating or performing maintenance on this tool.**

**Always turn off the air supply and disconnect the air supply hose before installing, removing accessory on this tool, or before performing any maintenance on this tool.**

## LUBRICATION

Each time a Series 2908P Impactool is disassembled for maintenance and repair or replacement of parts, lubricate as follows:

1. Work approximately 6 to 8 cc of Ingersoll–Rand Impactool Grease No. 100 into the impact mechanism. Coat Anvil (46) lightly with grease around the Hammer Case Bushing (41). Inject approximately 1 to 2 cc of grease into the Grease Fitting (23).
2. Use Ingersoll–Rand Medium Oil No. 50 for lubricating the motor. Inject approximately 1 to 2 cc of oil into the air inlet before attaching the air hose. Remove the Oil Chamber Plug (15) and fill the oil chamber.

## DISASSEMBLY

### General Instructions

1. Do not disassemble the tool any further than necessary to replace or repair damaged parts.
2. Whenever grasping a tool or part in a vise, always use leather–covered or copper–covered vise jaws to protect the surface of the part and help prevent distortion. This is particularly true of threaded members and housings.
3. Do not remove any part which is a press fit in or on a subassembly unless the removal of that part is necessary for repairs or replacement.
4. Do not disassemble the tool unless you have a complete set of new gaskets and O–rings for replacement.

### Disassembly of the Impactool

1. Clamp handle of Impactool in a vise with square driver upward.
2. Unscrew and remove the four Hammer Case Cap Screws (45).
3. While lightly tapping on end of Anvil (46) with a plastic hammer, lift off the Hammer Case (40).
4. Grasp Hammer Frame (36) and carefully lift off entire impact mechanism, making certain not to drop the two Hammer Pins (37). If it is necessary to disassemble the impact mechanism, refer to **Disassembly of the Impact Mechanism** on this page. If it is unnecessary to disassemble the impact mechanism, set it aside intact.

### Disassembly of the Impact Mechanism

1. Set mechanism, driver end up, on a workbench.

**NOTICE**

**Note the twin hammers within the Hammer Frame. These are identical but must he placed in the Hammer Frame in a certain relationship. Using a felt tipped pen, mark the top hammer "T↑" and the bottom hammer "B↑" with the arrows pointing upward. Mark both Hammers on the same end.**

2. With mechanism sitting upright on workbench, slowly rotate Anvil in a clockwise direction until it comes up solid.

**NOTICE**

**If you continue to rotate the Anvil, it will cam the Hammers out of engagement. Do not allow this to happen; merely rotate the Anvil until it comes up solid.**

3. Hold Hammer Frame firmly and, without disturbing the hammers, gently lift Anvil, simultaneously rotating it clockwise about 1/8 of a turn, from Hammer Frame.

**NOTICE**

**The twin hammers will be free to slide from the Hammer Frame when the Hammer Pins are removed. Do not drop the Hammers.**

4. With Anvil removed, lift out the two Hammer Pins.
5. Remove the Hammers.

### Dissassembly of the Motor

1. Lift Rear Hammer Frame Washer (38) and two Motor Clamp Washers (35) from front of motor.
2. Grasp splined end of Rotor (28) and pull assembled motor from Motor Housing (1).

**NOTICE**

**Be careful not to lose the small End Plate Dowel (32).**

3. Lift Front End Plate (33) and Front Rotor Bearing (34) from splined end of the Rotor (28).
4. Remove Cylinder and Vanes (29).
5. Remove Rear Rotor Bearing Retainer (25).
6. Lift Rear End Plate and Rear Rotor Bearing (26) from Rotor.
7. Remove Oiler Retaining Ring (12A).
8. Unscrew and remove Air Strainer (13).
9. Withdraw Exhaust Deflector (6), Oiler Assembly (10), Throttle Valve Spring (9) and Throttle Valve (8).
10. Withdraw Trigger Assembly (3).

11. If the Throttle Valve Seat (7) must be replaced, thread a long 3/8" cap screw into it and withdraw it from the handle.

**NOTICE**

**Do not remove the Throttle Valve Seat unless you have a new Throttle Valve Seat on hand for installation.**

12. Unscrew Reverse Valve Knob Screw (22) and remove Reverse Valve Knob (21).

**NOTICE**

**This Screw is installed with Loctite®***

13. While slowly rotating Reverse Valve (18), withdraw it from Reverse Valve Bushing (16).

**NOTICE**

**Be careful you do not lose the Reverse Valve Detent Ball (19) and Spring (20) from the hole in the side of the Reverse Valve.**

## ASSEMBLY

### General Instructions

1. Always press on the **inner** ring of a ball-type bearing when installing the bearing on a shaft.
2. Always press on the **outer** ring of a ball-type bearing when installing the bearing in a bearing recess.
3. Whenever grasping a tool or part in a vise, always use leather-covered or copper-covered vise jaws to protect the surface of the part and help prevent distortion. This is particularly true of threaded members and housings.
4. Always clean every part and wipe every part with a thin film of oil before installation.
5. Apply o-ring lubricant to every O-ring before assembly.
6. Check every bearing for roughness. If an open bearing must he cleaned, wash it thoroughly in **clean** solvent and dry it with a clean cloth. **Sealed or shielded bearings should never he cleaned.** Work grease thoroughly into every open bearing before installation.

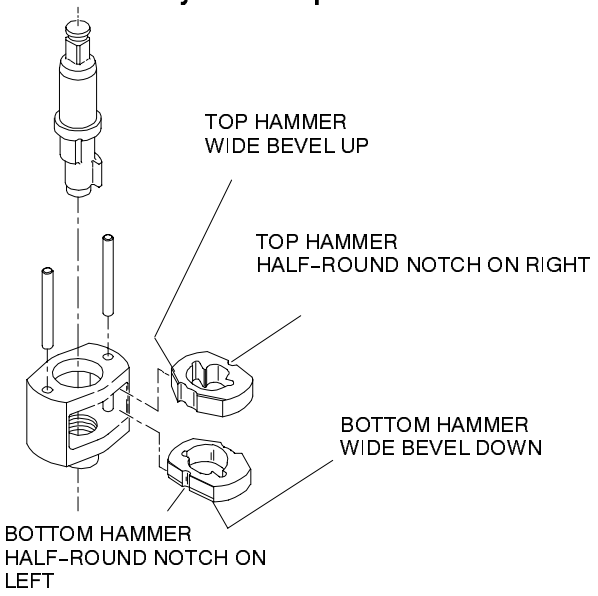
### Assembly of the Motor

1. Make certain Reverse Valve Bushing Seals (17) are properly located in undercuts in Reverse Valve Bushing (16).
2. Dampen Reverse Valve (18) with light oil. Install Reverse Valve Detent Spring (20) followed by Reverse Valve Detent Ball (19) in hole in Reverse Valve. With Impactool in an upright horizontal position, and while facing handle end of Impactool, slowly rotate Reverse Valve and insert it from left to right in splined end of Reverse Valve Bushing.
3. Attach Reverse Valve Knob (21) to Reverse Valve with Reverse Valve Knob Screw (22), and tighten Screw to 60 to 70 in-lb (6.75 to 8.15 Nm) torque.
4. If Throttle Valve Seat (7) was removed from handle, install a new Throttle Valve Seat by pushing it into place with a 1/2" (13 mm) diameter dowel.
5. Insert Trigger Assembly (3) into Trigger Bushing (2).
6. Insert Throttle Valve (8), long stem end first, into the bottom of handle so that the valve stem engages the hole in the Trigger Pin (4).
7. Install Throttle Valve Spring (9), small end first.
8. Make certain two Oiler Body Seals (11) are positioned in annular grooves on Oiler Body (10), and install Oiler Body counterbored end first into handle. The large end of Throttle Valve Spring should seat in the counterbore in Oiler Body. Install the Oiler Retaining Ring (12A).
9. Position Exhaust Deflector (6) on bottom of handle, and retain it with Air Strainer (13). Tighten Air Strainer to 40 to 45 it-lb (61 to 67.8 Nm) torque.
10. Using a sleeve that will contact only the outer ring of the bearing, press the Front Rotor Bearing (34) into Front End Plate (33) and Rear Rotor Bearing (26) into Rear End Plate (27).
11. Slip Front End Plate and Bearing over splined hub of the Rotor (28).
12. Grasp splined hub of Rotor in copper-covered vise jaws so that Rotor is in a vertical position.
13. Dampen each Vane (29) with light oil and insert a Vane into each vane slot.
14. Set Cylinder (30) over Rotor and onto Front End Plate.
15. Slide Rear End Plate and Bearing onto rotor hub and against Cylinder.
16. Install Rear Rotor Bearing Retainer (25) in groove on rotor hub.
17. Align dowel hole in both End Plates with the one through the Cylinder, and insert a guide rod 3/16" (4.7 mm) diameter x 6" (152 mm) long. Allow rod to protrude from Rear End Plate.
18. Grasp handle of Motor Housing in copper-covered vise jaws so that bore of the Motor Housing is horizontal.
19. Wipe a thin film of light grease on End Plate Gasket (24) and press Gasket firmly against Rear End Plate.
20. Insert protruding end of guide rod into dowel hole in bore of Motor Housing, and slide motor along rod until it is completely seated.

* Registered trademark of Loctite Corporation.

21. Remove guide rod and replace it with the Cylinder Dowel (31). Install End Plate Dowel (32) in the matching notches of Front End Plate and Motor Housing.
22. Re-position Motor Housing in the vise so that the open face of the Motor Housing is upward.
23. Place two Motor Clamp Washers (35), convex side first against Front End Plate so that the inner rim of leadingWasher contacts the End Plate, and outer rim of trailing Washer contacts Hammer Case Pilot (43).
24. Place Rear Hammer Frame Washer (38) over hub of Rotor and against Front Rotor Bearing.

**Assembly of the Impact Mechanism**




**(Dwg. TPD652)**

1. Coat Hammers with a light film of Ingersoll-Rand Impactool Grease No. 100.
2. Replace Hammers in the Hammer Frame exactly as they were when you marked them prior to disassembly.

**NOTICE**

**If you are installing new Hammers, or want to change the location of the existing Hammers to utilize both impacting surfaces, slide the Hammers in the Hammer Frame so that the half-round notch on one Hammer is located on one side of the Frame and the half-round notch on the other Hammer is located on the other side of the Frame.**

3. Replace them Hammer Pins.
4. Examine base of Anvil and note its contour. While looking down through Hammer Frame, swing top Hammer to its full extreme one way or another until you can match contour of the Anvil. Enter Anvil into Hammer Frame and through the first Hammer. Swing bottom Hammer in opposite direction from top Hammer and maneuver the Anvil slightly until it drops into bottom Hammer.

### Assembly of the Impactool

1. Set assembled impact mechanism down over splined hub of Rotor.
2. Smear a thin film of Ingersoll-Rand Impactool Grease No. 100 on inside surface of the Hammer Case Bushing (41), and place Hammer Case (40) down over the Anvil (46) and against Motor Housing.
3. Install Hammer Case Cap Screws (45) and Lock Washers (44). Tighten Hammer Case Cap Screws to 14 to 17 ft-lb (19 to 23 Nm) torque.

## TROUBLESHOOTING GUIDE

| Trouble | Probable Cause | Solution |
|---|---|---|
| Low power | Dirty Inlet Bushing or Air Strainer Screen and/or Exhaust Silencer | Using a clean, suitable, cleaning solution in a well ventilated area, clean the Air Stainer Screen, Inlet Bushing and Exhaust Silencer. |
| | Worn or broken Vanes | Replace the **complete** set of Vanes. |
| | Worn or broken Cylinder and/or scored End Plates | Examine the Cylinder and replace it if it is worn or broken or if the bore is scored or wavy. Replace the End Plates if they are scored. |
| | Dirty motor parts | Disassemble the tool and clean all parts with a suitable cleaning solution, in a well ventilated area. Reassemble the tool as instructed in this manual. |
| | Improper positioning of the Reverse Valve | Make certain that the Reverse Valve is **fully** engaged to the left or right. |
| Motor will not run | Incorrect assembly of the motor | Disassemble the motor and replace worn or broken parts and reassemble as instructed. |
| | Insufficient lubricant in the impact mechanism | Remove the Hammer Case Assembly and lubricate the impact mechanism. |
| Tool will not impact | Broken or worn impact mechanism parts | Remove the Hammer Case and examine the impact mechanism parts. Replace any worn or broken parts. |
| | Impact mechanism not assembled correctly | Refer to **Assembly of the Impact Mechanism.** |

**NOTICE**

**SAVE THESE INSTRUCTIONS. DO NOT DESTROY.**