03531761
Form P6584
Edition 10
June, 1998

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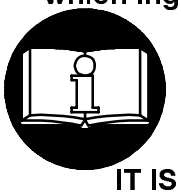
OPERATION AND MAINTENANCE MANUAL FOR SERIES 2902P AND 2902SB SUPER DUTY IMPACTOOLS

NOTICE

Series 2902P and 2902SB Super Duty Impactool is 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 5/16" (8 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 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.

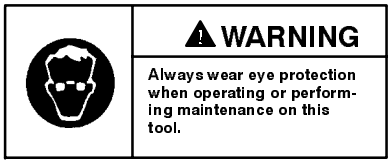
Printed in U.S.A.

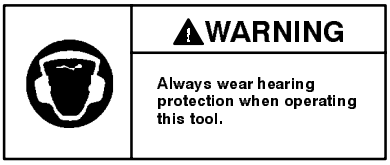
INGERSOLL-RAND®
PROFESSIONAL TOOLS

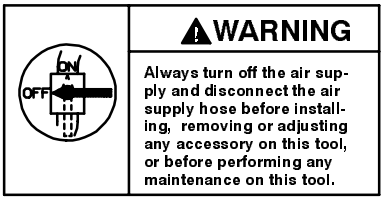
WARNING LABEL IDENTIFICATION

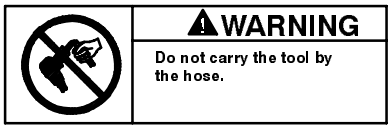
⚠ WARNING

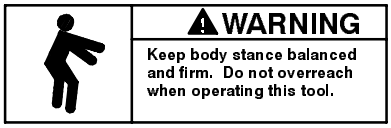
FAILURE TO OBSERVE THE FOLLOWING WARNINGS COULD RESULT IN INJURY.

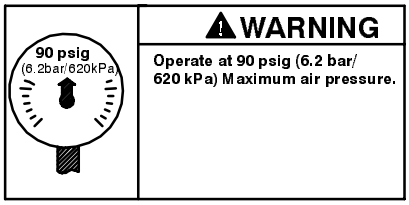












ADJUSTMENTS

SETTING THE POWER REGULATOR

⚠ WARNING

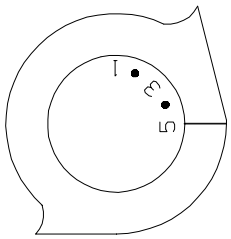
Impact wrenches are not torque control devices. Fasteners with specific torque requirements must be checked with suitable torque measuring devices after installation with an impact wrench.

Model 2902P Impactool incorporates 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.

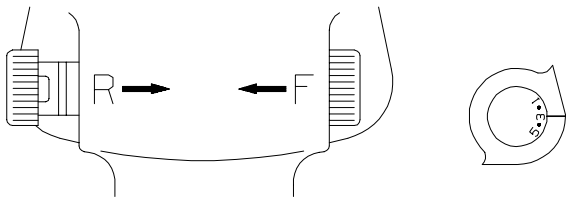
NOTICE

The numbers 1 thru 5 on the housing are only for reference and DO NOT denote a specific power output. Zero (1) designates the lowest power output while five (5) denotes the highest.



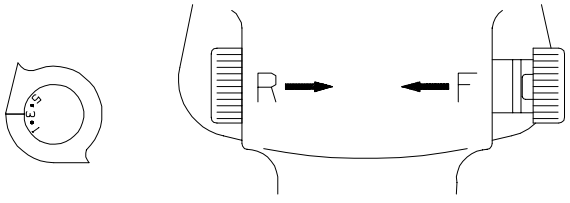
(Dwg. TPD1325)

For reduced power in the forward direction and full power in the reverse direction, push the Reverse Valve inward on the side of the tool and rotate the Reverse Valve until the notch on the 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. TPD1343.



(Dwg. TPD1343)

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. TPD1344.



(Dwg. TPD1344)

ADJUSTMENTS

Power Adjustment for the 2902SB

Model 2902SB Impactool is equipped with a regulator that proportions power in both directions simultaneously and equally. The power output is calibrated by stamped numbers "1" through "5".

1. Rotate the Power Regulator so that one of the numbers on the Power Regulator aligns with the indicator mark on the rim of the Swivel Inlet Body.
2. The power of the 2902SB is now adjusted for both directions. This adjustment will not change regardless of how many times you shift the Reverse Lever as long as you do not change the power selection.

PLACING TOOL IN SERVICE

LUBRICATION

Ingersoll-Rand No. 50

Ingersoll-Rand No. 100

Always use an air line lubricator with these tools.
We recommend the following Filter-Lubricator-Regulator Unit:

For USA - No. C22-04-G00

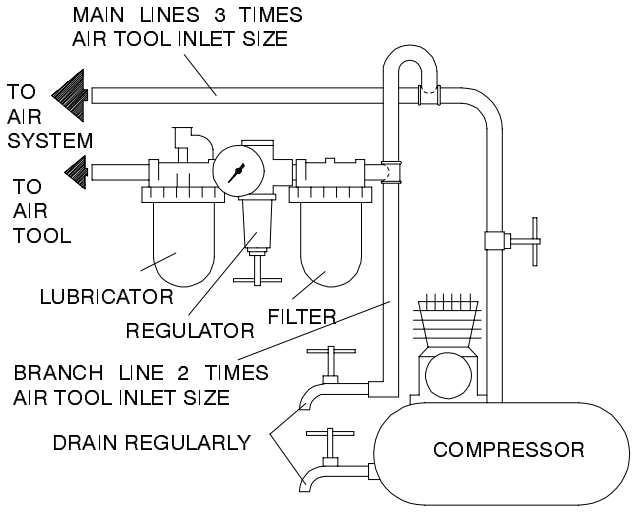
For Model 2902P

After eight hours of operation, unless an air line lubricator is used, remove the Oil Chamber Plug and fill the oil chamber with Ingersoll-Rand Oil No. 50.
After forty-eight hours, or as experience indicates, inject 3 cc of Ingersoll-Rand Grease No. 100 into the Grease Fitting.

For Model 2902SB

After each eight hours of operation, unless an air line lubricator is used, inject 1.5 cc of Ingersoll-Rand Oil No. 50 into the inlet of the tool and run the tool briefly.

After each forty-eight hours of operation, or as experience indicates, inject about 3 cc of the recommended grease into the Grease Fitting.



(Dwg. TPD905-1)

HOW TO ORDER AN IMPULSE WRENCH

Model	Impacts/min.	Recommended Torque Range ft-lb	Nm
PISTOL HANDLE with 3/8" SQUARE DRIVE			
2902P1	1 500	20 – 120	27 – 163
PISTOL HANDLE WITH 1/4" HEX QC			
2902P4	1 500	20 – 105	27 – 142
PISTOL HANDLE with 7/16" HEX QC			
2902P7	1 500	20 – 105	27 – 142
STRAIGHT HANDLE with 3/4" SQUARE DRIVE			
2902SB1	1 500	17 – 100	23 – 136
STRAIGHT HANDLE with 1/4" HEX QC			
2902SB4	1 500	17 – 90	23 – 122

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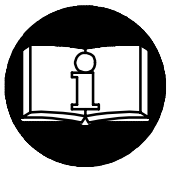
MANUAL D'EXPLOITATION ET D'ENTRETIEN DES CLÉS À CHOCS À HAUTE PERFORMANCE DES SÉRIES 2902P ET 2902SB

NOTE

Les clés à chocs des séries 2902P et 2902SB sont destinées aux travaux de montage léger et à l'entretien des machines.
Ingersoll–Rand ne pt 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'EMPLOYR EST TENU DE COMMUNIQUER LES INFORMATIONS DE CE MANUEL AUX EMPLOYÉS UTILISANT CET OUTIL.
LE NON RESPECT DES AVERTISSEMENTS SUIVANTS PT CAUSER DES BLESSURES.

MISE EN SERVICE DE L'OUTIL

- **Toujours exploiter, inspecter et entretenir cet outil conformément au Code de sécurité des outils pnmatiques 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 8 mm de diamètre intérir.**
- **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 pvent endommager le motr d'un outil pnmatique.**
- **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 chevx 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 pvent se produire à, ou en dessous, de la pression d'air recommandée.**
- **La rotation des accessoires de l'outil pt continuer pendant un certain temps après le relâchement de la gâchette.**
- **Les outils pnmatiques pvent vibrer pendant l'exploitation. Les vibrations, les mouvements répétitifs et les positions inconfortables pvent causer des doulrs dans les mains et les bras. N'utiliser plus d'outils en cas d'inconfort, de picotements ou de doulrs. 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 mesurr de couple après avoir été assemblées avec une 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 pt causer des risques d'insécurité, réduire les performances de l'outil et augmenter l'entretien, et pt annuler toutes les garanties.
Les réparations ne doivent être effectuées que par des réparatrs 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

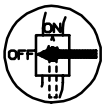
LE NON RESPECT DES AVERTISSEMENTS SUIVANTS PT CAUSER DES BLESSURES

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

⚠ ATTENTION

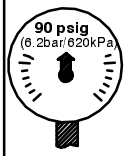
Ne pas transporter l'outil par son flexible.

⚠ ATTENTION

Ne pas utiliser des flexibles ou des raccords endommagés, 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 REGULATR DE PUISSANCE

⚠ ATTENTION

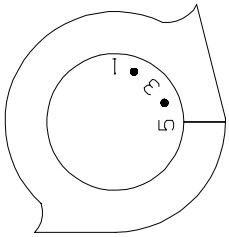
Les clés à chocs ne sont pas des appareils dynamométriques. Les fixations nécessitant un couple de serrage spécifique doivent être vérifiées avec des appareils de mesure de couple appropriés après avoir été assemblées avec une clé à chocs.

Les clés à chocs de la série 2902P comportent un régulatr de puissance dans lr mécanisme d'inversion de manière à ce que l'opératr puisse avoir soit une pleine puissance dans une direction et une puissance réduite dans l'autre, soit une pleine puissance dans les dx directions. Pour ajuster la puissance, procéder comme suit :

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

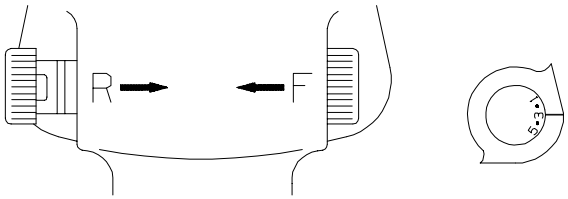
NOTE

Les numéros 1 à 5 du carter ne sont donnés qu'à titre de guide et NE dénotent PAS une puissance spécifique. Le numéro un (1) indique la puissance la plus faible tandis que le numéro cinq (5) indique la puissance la plus élevée.



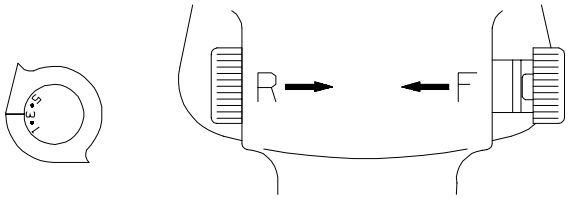
(Plan TPD1325)

Pour obtenir une puissance réduite dans le sens avant et la pleine puissance dans le sens arrière, pousser la soupape d'inversion vers l'intérir 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 TPD1343.



(Plan TPD1343)

Pour obtenir une puissance réduite dans le sens arrière et la pleine puissance dans le sens avant, pousser la soupape d'inversion vers l'intérir 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 TPD1344.



(Plan TPD1344)

RÉGLAGES

Réglage de la puissance du Modèle 2902SB

La clé à chocs Modèle 2902SB– est équipée d'un régulatr qui répartit la puissance également et simultanément dans les dx directions. La puissance fournie est indiquée par des numéros poinçonnés de 1" à 5".

1. Faire tourner le régulatr de puissance de façon à ce qu'un des numéros du régulatr s'alignent sur la marque de repérage située sur le rebord du corps de raccord tournant.
2. La puissance de la 2902SB– est maintenant réglée dans les dx sens de rotation. La sélection du levier d'inversion ne modifie pas ce réglage, pour autant que la sélection de puissance ne soit pas modifiée.

MISE EN SERVICE DE L'OUTIL

LUBRIFICATION

Ingersoll–Rand No. 50

Ingersoll–Rand No. 100

Utiliser toujours un lubrificatr avec ces outils. Nous recommandons l'emploi du filtre–régulatr–lubrificatr suivant :

For USA – No. C22–04–G00

Pour Modèle 2902P

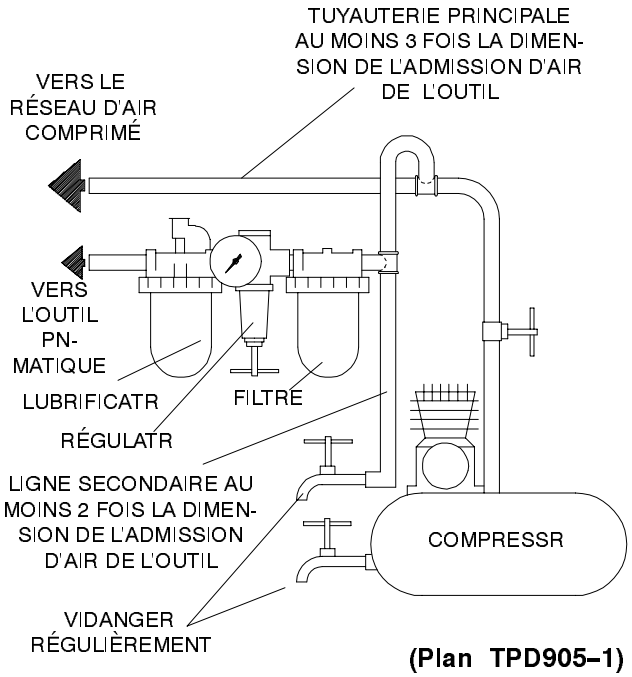
Toutes les huit hres de fonctionnement, si un lubrificatr de ligne n'est pas utilisé, déposer le bouchon de la chambre d'huile et remplir cette dernière avec de l'huile Ingersoll–Rand No. 50.

Toutes les quarante–huit hres de fonctionnement, ou en fonction de l'expérience, injecter environ 3cm^3 de graisse Ingersoll–Rand No. 100 dans le raccord de graissage.

Pour Modèle 2902SB

Toutes les huit hres de fonctionnement, si un lubrificatr de ligne n'est pas utilisé, injecter 1,5 cm^3 d'huile Ingersoll–Rand No. 50 dans l'admission d'air de l'outil, et faire tourner l'outil brièvement.

Toutes les quarante–huit hres de fonctionnement, ou en fonction de l'expérience, injecter environ 3 cm^3 de graisse recommandée dans le raccord de graissage.



(Plan TPD905–1)

SPÉCIFICATIONS

Modèle	Poignée à levier	Entraînement	Coups par minute	Gamme de couples recommandée
		pouces		ft–lbs (Nm)
2902P1	pistolet	3/8" carré	1500	20–120 (27–163)
2902P4	pistolet	1/4" hex	1500	20–105 (27–142)
2902P7	pistolet	7/16" hex	1500	20–105 (27–142)
2902SB1	droite	3/8" carré	1500	17–100 (23–136)
2902SB4	droite	1/4" hex	1500	17–90 (23–122)

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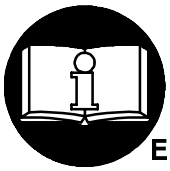
MANUAL DE FUNCIONAMIENTO Y MANTENIMIENTO PARA INDUSTRIALES MODELOS 2902P Y 2902SB

NOTA

Las Llaves de Impacto Industriales Modelos 2902P y 2902SB 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 en la entrada de 90 psig (6,2 bar/620 kPa) con una manguera de suministro de aire con diámetro interno de 8 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 racores dañados, desgastados ni deteriorados.**
- **Asegúrese que todas las mangueras y racores 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 máxima presión de (6,2 bar/620 kPa)90 psig. 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 mando.**
- **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.

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INGERSOLL-RAND®
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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

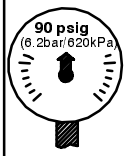
Mantener una postura del cuerpo equilibrada y firme. No estirar demasiado los brazos al manejar la herramienta.

⚠ ADVERTENCIA

Usar siempre protección para los oídos al manejar esta herramienta.

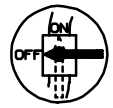
⚠ ADVERTENCIA

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 DEL REGULADOR DE POTENCIA

⚠ AVISO

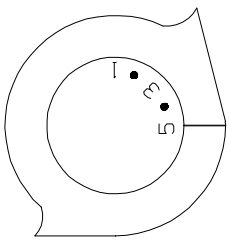
Las llaves de impacto no son llaves de par. Las fijaciones de específico requerimiento de par deberán ser comprobadas con un torsiómetro adecuado después de su fijación con una llave de impacto.

La Llave de Impacto Modelo 2902 incorpora un Regulador de Potencia en el mecanismo de inversión que permite al operario tener potencia completa en una dirección y reducida en la otra dirección, o potencia completa en ambas direcciones. Para ajustar la potencia, proceda como sigue:

Para potencia completa en ambas direcciones, gire la Válvula de Inversión (11) hasta que la muesca en cada extremo de Válvula de Inversión esté alineada con el número 5 en cada lado de la carcasa.

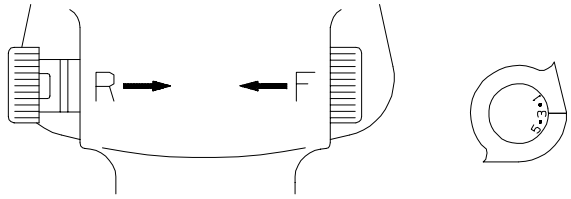
NOTA

Los números del 1 al 5 que hay en la carcasa son sólo de referencia y NO indican una potencia específica. Cero (1) indica la potencia menor mientras que cinco (5) indica la mayor.



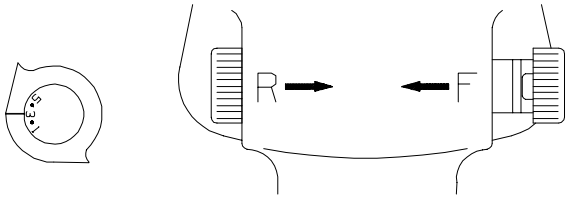
(Esq. TPD1325)

Para potencia reducida en dirección hacia delante y completa en la dirección inversa, empuje hacia adentro la Válvula de Inversión situada en el lateral de la herramienta y gire dicha Válvula de Inversión hasta que la muesca lateral se alinee 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. TPD1343.



(Esq. TPD1343)

Para potencia reducida en dirección hacia atrás y potencia completa en dirección hacia delante, empuje hacia adentro la Válvula de Inversión en el lateral de la herramienta y gire la Válvula de Inversión hasta que la muesca lateral izquierda se alinee con el número deseado en la izquierda. Esto proporciona potencia completa en dirección hacia delante y reducida en la inversa cuando la válvula de inversión sea empujada hacia el lado opuesto. Vea Esq. TPD1344.



(Esq. TPD1344)

AJUSTES

Ajuste de potencia para el modelo 2902SB

La Llave de Impacto Modelo 2902SB está equipada con un regulador que proporciona potencia en ambas direcciones simultánea e igualmente. La potencia se calibra con los números estampados 1" al 5".

1. Gire el Regulador de Potencia (23) hasta que uno de los números situados en el Regulador de Potencia se alinee con la marca indicadora del borde del Cuerpo de Admisión Giratorio(20).
2. La potencia de la 2902SB está ahora ajustada para ambas direcciones. Este ajuste no cambiará, independientemente de las veces se mueva la Palanca de Inversión, siempre que no se cambie la selección de potencia.

PARA PONER LA HERRAMIENTA EN SERVICIO

LUBRICACIÓN

Ingersoll–Rand Nº. 50

Ingersoll Rand Nº. 100

Utilice siempre un lubricador de aire comprimido con estas herramientas. Recomendamos la siguiente unidad de Filtro–Lubricador–Regulador:

For USA – No. C22–04–G00

Para Modelo 2902P

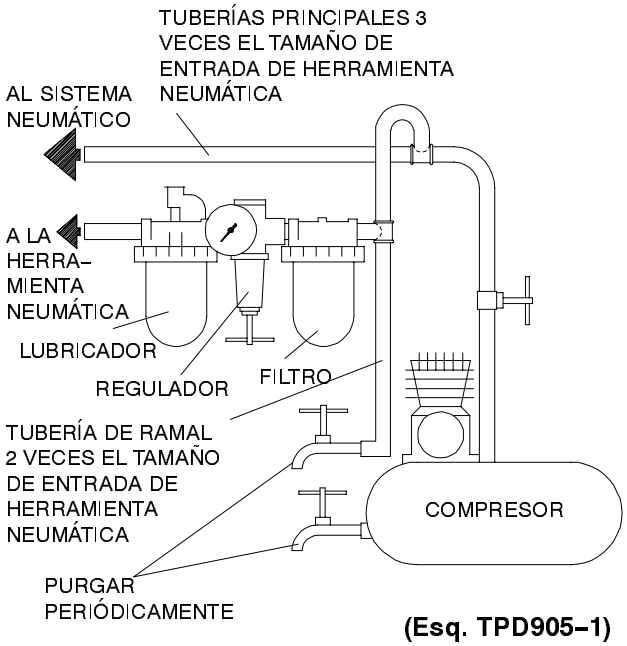
Después de ocho horas de uso, a menos que se use un lubricante de línea de aire, saque el Tapón de Cámara de Aceite y llene dicha cámara de Aceite Ingersoll–Rand N°. 50.

Después de cuarenta y ocho horas de uso, o como indique la experiencia, inyecte unos 3 cc de Grasa Ingersoll–Rand N°. 100 en el Engrasador.

Para Modelo 2902SB

Después de cada cuarenta y ocho horas de operación, a menos que se use un lubricador de línea de aire, inyecte 1,5 cc de Aceite Ingersoll–Rand Nº 50 en la admisión de la herramienta y haga funcionar dicha herramienta brevemente.

Después de cada cuarenta y ocho horas de uso, o como indique la experiencia, inyecte así unos 3 cc de la grasa recomendada en el Engrasador.



(Esq. TPD905–1)

ESPECIFICACIONES

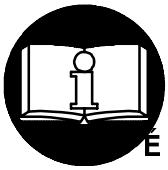
Modelo	Tipo de Mango	Accionamiento	Impactos por minuto	Gama de par recomendada
		pulg.		ft–lbs (Nm)
2902P1	pistola	3/8 pulg. cuadradillo	1500	20–120 (27–163)
2902P4	pistola	1/4 pulg. hexagonal	1500	20–105 (27–142)
2902P7	pistola	7/16 pulg. hexagonal	1500	20–105 (27–142)
2902SB1	recto	3/8 pulg. cuadradillo	1500	17–100 (23–136)
2902SB4	recto	1/4 pulg. hexagonal	1500	17–90 (23–122)

P

MANUAL DE FUNCIONAMENTO E MANUTENÇÃ FERRAMENTAS PNEUMÁTICAS DE IMPACTO PARA TRABALHOS SUPER SÉRIES 2902P E 2902SB

AVISO

As Ferramentas Pneumáticas de Impacto Séries 2902P e 2902SB são concebidas para uso em trabalhos montagem leve 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 8mm (5/16")).**
- **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 com 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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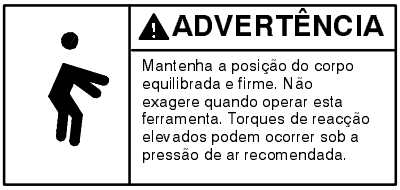
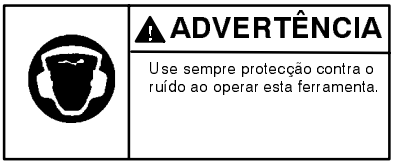
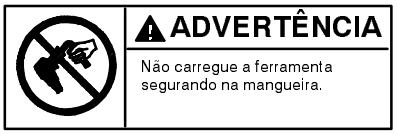
IDENTIFICAÇÃO DO RÓTULO DE ADVERTÊNCIA

⚠ ADVERTÊNCIA

O NÃO CUMPRIMENTO DAS SEGUINTES ADVERTÊNCIAS PODE RESULTAR EM FERIMENTO.







AJUSTES

AJUSTANDO O REGULADOR DE POTÊNCIA

⚠ ADVERTÊNCIA

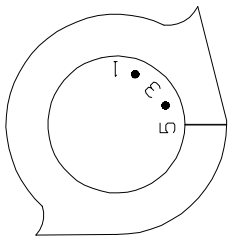
As Ferramentas Pneumáticas não são aparelhos de controlo de torque. Apertos com requisitos de torque específicos devem ser verificados com aparelhos de medição de torque adequados depois da instalação de uma chave dinamométrica.

As Ferramentas Pneumáticas de Impacto Série 2902P incorporam um mecanismo regulador de potência no mecanismo de reversão que permite ao operador regular a potência de saída máxima em um sentido e a potência mínima 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 os sentidos, gire a válvula de reversão até que a ranhura em cada extremidade da Válvula (11) esteja alinhada com o número 5 em cada lado do corpo.

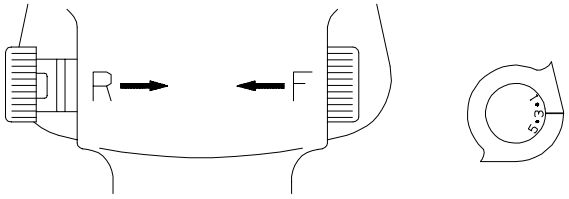
AVISO

Os números de 0 a 5 no corpo são apenas uma referência e NÃO indicam uma potência de saída específica. Zero (0) designa a potência mais baixa enquanto quatro (5) indica a mais alta.



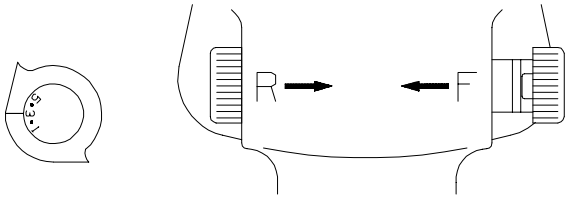
(Desenho TPD1325)

Para uso da Potência Mínima no sentido para frente e potência máxima no sentido contrário, empurre a Válvula de Reversão para dentro no lado direito da ferramenta e gire–a até que a ranhura no lado direito esteja alinhada com o número desejado no mesmo lado. Isto fornece uma potência reduzida para frente, mas potência total para trás quando a Válvula de Reversão estiver sendo empurrada no sentido contrário. Veja o Desenho TPD1343.



(Desenho TPD1343)

Para uso da Potência Reduzida no sentido reverso e potência total para frente, empurre a Válvula Reversa para dentro no lado esquerdo da ferramenta e gira a Válvula Reversa até que a ranhura lado esquerdo esteja alinhada com o número desejado no mesmo lado. Isto fornece uma potência total para frente, mas potência reduzida para trás quando a Válvula Reversa estiver sendo empurrada no sentido contrário. Veja o Desenho TPD1344.



(Desenho TPD1344)

AJUSTES

Ajuste de Potência para o 2902SB

As Ferramentas Pneumáticas de Impacto Modelos 2902SB são equipadas com uma combinação de válvulas de reversão/reguladora de potência projectadas para fornecer ajuste de potência em ambos os sentidos simultaneamente. A saída de potência é calibrada pelos números "1" a "5" impressos.

1. Gire o Regulador de Potência (23) de modo que um dos números no Regulador de Potência se alinhe com a marca indicadora na borda da do Corpo da Entrada (20).
2. A potência da ferramenta está ajustada agora para o sentido para ambos os sentidos. Este ajuste não mudará não importando o número de vezes que você mude a Alavanca Reversa enquanto você não mudar a seleção de potência.

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

Para o Modelo 2902P

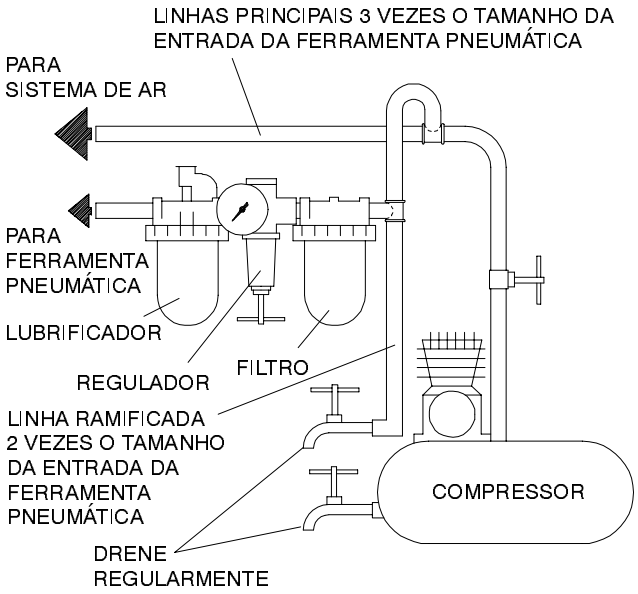
Depois de cada 8 horas de operação, a menos que esteja usando um lubrificador de ar de linha, remova o Bujão da Câmara de Óleo e encha a câmara de óleo com Óleo Ingersoll–Rand No. 50.

Depois de quarenta e oito horas de operação, ou como indicar a experiência, injecte 3 cc de Massa Lubrificadora Ingersoll–Rand No. 100 no Adaptador de Massa Lubrificadora.

Para o Modelo 2902SB

Depois de cada 8 horas de operação, a menos que esteja usando um lubrificador de ar de linha, injecte 1,5 cc de Óleo Ingersoll–Rand No. 50 na entrada de ar e coloque a ferramenta e funcionamento brevemente.

Depois de quarenta e oito horas de operação, ou como indicar a experiência, injecte cerca de 3 cc de Massa Lubrificadora Ingersoll–Rand No. 100 no Adaptador de Massa Lubrificadora.

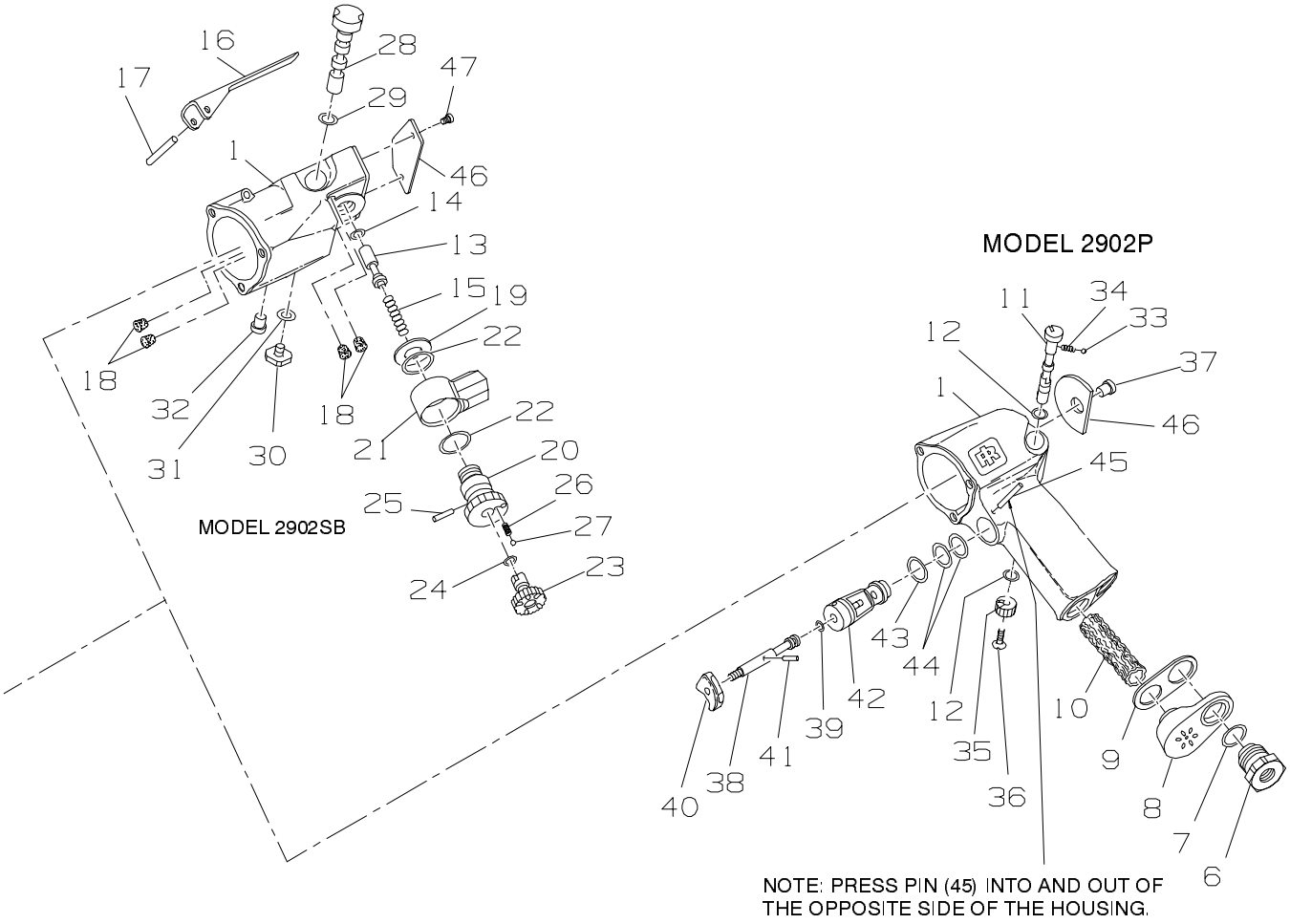


(Desenho TPD905–1)

ESPECIFICAÇÕES

Modelo	Tipo de Punho	Encabadouro Quadrado	Impactos por minuto	Intervalo de Torque Recomendado
		pol.		Nm (pés–lbs)
2902P1	pistola	3/8"	1 500	27–163 (20–120)
2902P4	pistola	1/4" hexagonal	1 500	27–142 (20–105)
2902P7	pistola	7/16" hexagonal	1 500	27–142 (20–105)
2902SB1	recto	3/8"	1 500	23–136 (17–100)
2902SB4	recto	1/4" hexagonal	1 500	23–122 (17–90)

HOUSING ASSEMBLY FOR MODELS 2902P AND 2902SB



(Dwg. TPB958–1)

PART NUMBER FOR ORDERING

			2902P	2902SB
	1	Motor Housing Assembly	2902P–A40	2902SB–A40
	6	Inlet Bushing Assembly	402–565	---
♦•	7	Bushing O–Ring	202–103	---
	8	Exhaust Deflector	2902P–23	---

• 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.

♦ Indicates Tune–up Kit part.

PART NUMBER FOR ORDERING

			2902P	2902SB
♦•	9	Deflector Gasket	202–223	---
♦•	10	Long Exhaust Silencer	728–310	---
	11	Reverse Valve	1702P–329	---
♦•	12	Reverse Valve O–Ring (2)	CE110–210	---
	13	Throttle Valve	---	R000B2–302
♦•	14	Throttle Valve Face	---	401–159
♦	15	Throttle Valve Spring	---	5081T–151
	16	Throttle Lever	---	201–273
	17	Throttle Lever Pin	---	502B–120
♦	18	Silencer (4)	---	1702B–311
	19	Inlet Assembly Spacer	---	R00–35A
		Air Inlet Assembly	---	2902B–A166
	20	Swivel Inlet Body	---	2902B–165
	21	Swivel Inlet Assembly	---	1702B–B166
♦	22	Swivel Inlet Seal (2)	---	R18LF–21
	23	Power Regulator Assembly	---	1702B–A249
♦•	24	Power Regulator Seal	---	R00B1–159
	25	Regulator Retainer	---	201–250
♦•	26	Detent Spring	---	201–251
♦	27	Detent Ball	---	R000B–263
	28	Reverse Valve Assembly	---	1702B–A329
♦•	29	Reverse Valve Seal	---	R0BR1C–283
	30	Reverse Valve Stop	---	401–665
♦	31	Bushing Seal	---	CE110–210
	32	Grease Fitting	---	130SR–188
	*	Vertical Hanger	---	1901–365
♦	33	Detent Ball	R000B–263	---
♦	34	Detent Ball Spring	202–664	---
	35	Reverse Valve Knob	1702P–666	---
	36	Knob Screw	WWA100–77	---
	37	Grease Fitting	130SR–188	---

* Not illustrated.

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♦ Indicates Tune–up Kit part.

			PART NUMBER FOR ORDERING 2902P	2902SB
		Throttle Valve Assembly	202–A302	---
	38	Throttle Valve	202–302	---
♦•	39	Throttle Valve Face	R000BR1C–283	---
	40	Trigger	5RA–93	---
	41	Throttle Valve Retaining Pin	AF120–322	---
	42	Throttle Valve Bushing	202–503	---
♦•	43	Large Bushing O–Ring	410–283	---
♦•	44	Small Bushing O–Ring (2)	202–290	---
	45	Bushing Retaining Pin	R100B–120	---
	46	Nameplate		
		for models ending in	2902P–301	2902SB–301
		for all other models	2902P–301	2902SB–301
	47	Nameplate Screws (3)	---	BN403–302
♦•	48	End Plate Gasket	202–739	401–739
	*	Tune–up Kit (Includes illustrated items: 7, 9, 10, 12, 33, 34, 39, 43, 44, 48, 49, 50, 53, 57, 64, 67 and 68)	1702P–TK2	---
	*	Tune–up Kit (Includes illustrated items: 14, 15, 18 [4], 22 [2], 24, 26, 27, 28, 31, 37, 48, 49, 50, 53, 64, 67, and 68)	---	1702SB–TK2

* Not illustrated.

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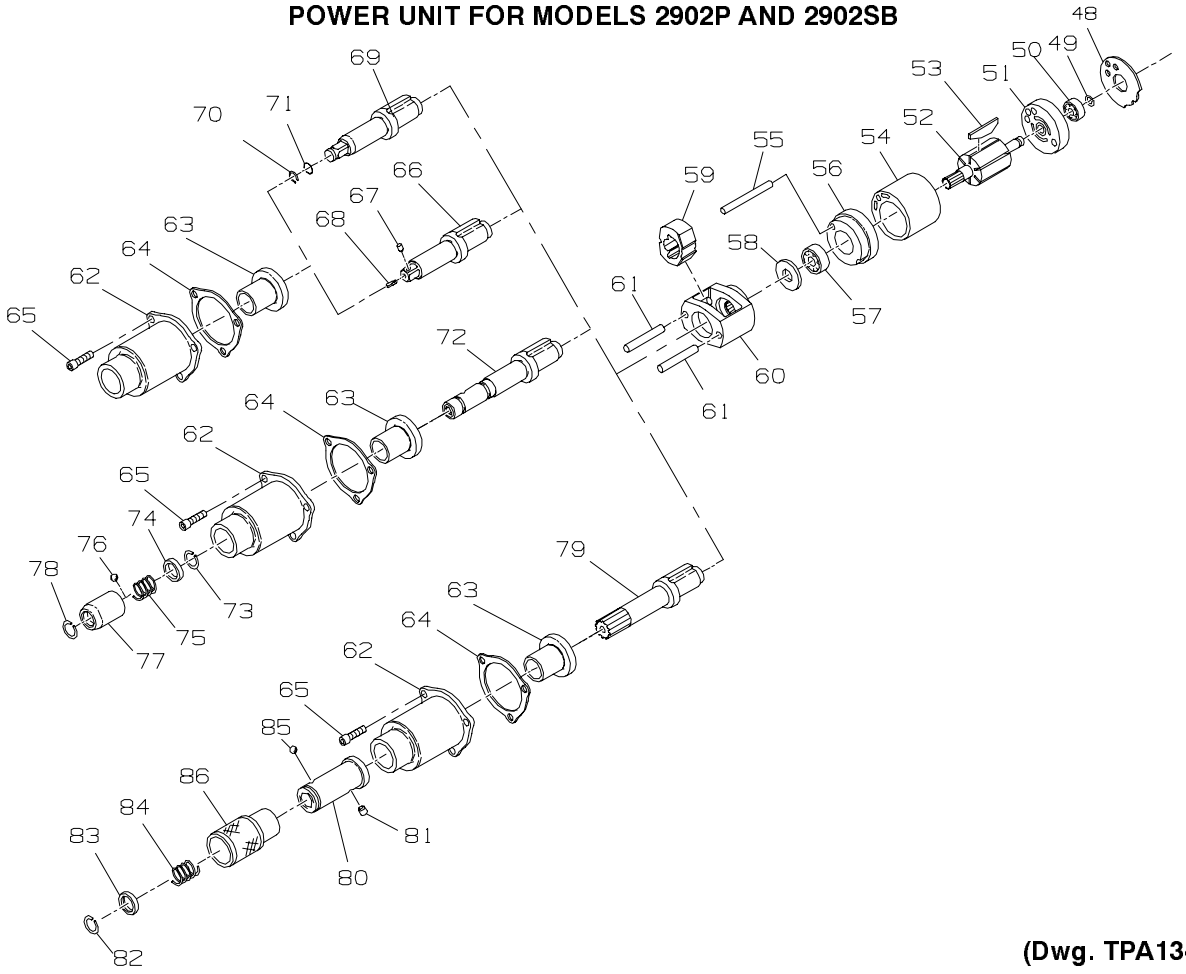
POWER UNIT FOR MODELS 2902P AND 2902SB



(Dwg. TPA1343)

PART NUMBER FOR ORDERING					PART NUMBER FOR ORDERING		
♦	49	Rear Rotor Bearing Retainer	MF–18		60	Hammer Frame Assembly	1702–A703A
♦	50	Rear Rotor Bearing	401–22		61	Hammer Pins (2)	1702–704
•	51	Rear End Plate	201–12		62	Hammer Case Assembly for models ending	
	52	Rotor	401–53			in –EU	2902–A727
♦	53	Vane Packet (Set of 6 Vanes)	401–42A–6			for all other models	2902–A727
	54	Cylinder	401–3		63	Hammer Case Bushing	401–641
	55	Cylinder Dowel	HH92–74		*	Hammer Case Label for 2902–A727	EU–99
•	56	Front End Plate	201–11			for 2902–A727	WARNING–2–99
♦	57	Front Rotor Bearing	R00H–97	♦	64	Hammer Case Gasket	2902–36
	58	Hammer Frame Washer	1702–706		65	Hammer Case Cap Screw (3)	1702–638
	59	Hammer	1702–724A				

* Not illustrated.

♦ Indicates Tune–up Kit part.

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		PART NUMBER FOR ORDERING				PART NUMBER FOR ORDERING
	66	3/8" Square Drive Anvil Assembly (with Pin-Type Retainer)	1702-P726		80	Quick-Change Anvil Body (7/16" hex recess)	I0A902A5-925
					81	Body Lock Pin	I0A902A5-936
♦•	67	Socket Retaining Plunger	2902-716	•	82	Thrust Ring Lock	4U-933-7
					83	Thrust Ring	4U-932-7
♦•	68	Retaining Plunger Spring	401-718		84	Retaining Sleeve Spring	4U-931-7
					85	Retaining Ball (7/32" diameter steel ball)	2U-722
	69	3/8" Square Drive Anvil Assembly (with Ring-Type Retainer)	1702-A626		86	Retaining Sleeve	I0A902A5-930
				*		Horizontal Hanger	1901-366
•	70	Socket Retaining Ring	1702-425	*		Vertical Hanger (for 2902P)	1901-365
•	71	Retainer Support Ring	1702-426	*		Socket Adapter (3/8" to 1/2")	2U-215
		Quick-Change Anvil Assembly	1702-A926-4	*		Lube Injector	230-228
	72	Quick-Change Anvil (1/4" hex recess)	1702-926-4	*		Bottle of Oil	405-M01
				*		Tube of Grease	201-MG1
	73	Thrust Ring Lock	5C1-853	*		Quick-Change Chuck for 1/4" hex shank accessories	2U-A925-4
	74	Thrust Ring	I0A902A2-932-4				
•	75	Retaining Sleeve Spring	2U-931-4				
	76	Retaining Ball (5/32" diameter steel ball)	2U-696			for 7/16" hex shank accessories	502-A925-7
	77	Retaining Sleeve	2U-930-4				
•	78	Retaining Sleeve Stop	2U-933-4				
		Quick-Change Anvil Assembly	1702-A926-7				
	79	Quick-Change Anvil	1702-926-7				

* 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.

♦ Indicates Tune-up Kit part.

⚠ 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, or adjusting any accessory on this tool, or before performing any maintenance on this tool. Failure to do so could result in injury.

LUBRICATION

Each time a Series 2902 Impactool is disassembled for maintenance and repair or replacement of parts, lubricate tool as follows:

1. Work approximately 8 cc of Ingersoll-Rand Impactool Grease No. 100 into the impact mechanism. Coat the Anvil (66, 69, 72 or 79) lightly with grease. Also, coat the inside of the Hammer Case Bushing (62) with grease. Inject approximately 2 to 4 cc of grease into the Grease Fitting (37, 32).
2. Use Ingersoll-Rand No. 50 Oil for lubricating the motor. Inject approximately 1 to 2 cc of oil into the Inlet (6, 21) before attaching the air hose. Remove the Oil Chamber Plug (2) 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. When grasping a tool or part in a vise, always use leather-covered or copper-covered vise jaws to protect the surface of the part or tool 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

For the 3/8" Square Drive Anvil Assembly (69)

1. Clamp the handle of the Impactool in a leather or copper-covered vise, square drive upward.
2. Remove the four Hammer Case Capscrews (65).
3. While tapping lightly on the end of the Anvil with a plastic hammer, lift off the Hammer Case (62)

NOTICE

The Hammer Pins (61) are loose within the Hammer Frame (60) and will be able to fall from the mechanism when the Hammer Case is removed.

4. Grasp the Hammer Frame and carefully lift off the entire impact mechanism, making certain not to drop the two Hammer Pins.
5. If disassembly of the Impact Mechanism is not required, set the mechanism aside intact.
6. Remove the Hammer Frame Washer (58) from the end of the Rotor (52) shaft. Remove the Impactool from the vise.

For the 1/4" Quick-Change Anvil Assembly

1. Clamp the handle of the Impactool in a leather or copper-covered vise, square drive upward.
2. Remove the four Hammer Case Cap Screws (65).
3. Remove the Retaining Sleeve Stop (78).

NOTICE

The Retaining Ball (76) will fall free when the Retaining Sleeve (77) is removed.

4. Remove the Retaining Sleeve, Retaining Ball, Retaining Sleeve Spring (75), Thrust Ring (74), and Thrust Ring Lock (73).
5. Remove the Hammer Case Assembly (62).
6. Grasp the Hammer Frame (60) and carefully lift off the entire impact mechanism, making certain not to drop the two Hammer Pins (61).
7. If disassembly of the Impact Mechanism is not required, set the mechanism aside.
8. Remove the Hammer Frame Washer (58) from the end of the Rotor (52) shaft. Remove the Impactool from the vise.

For the 7/16" Quick-Change Anvil Assembly

1. Clamp the handle of the Impactool in a leather or copper-covered vise, square drive upward.
2. Unscrew and remove the four Hammer Case Cap Screws (65).
3. Remove the Thrust Ring Lock (82), Thrust Ring (83), and Retaining Sleeve Spring (84).

NOTICE

The Retaining Ball (85) will fall free when the Retaining Sleeve (86) is removed.

4. Remove the Retaining Sleeve, Retaining Ball, and remove the Hammer Case Assembly (62).

NOTICE

The Body Lock Pin (81) will fall free when the Quick-Change Anvil Body (80) is removed.

5. Remove the Quick-Change Anvil Body, the Body Lock Pin.
6. Grasp the Hammer Frame (60) and carefully lift off the entire impact mechanism, making certain not to drop the two Hammer Pins (61).

7. If disassembly of the Impact Mechanism is not required, set the mechanism aside.
8. Remove the Hammer Frame Washer (58) from the end of the Rotor (52) shaft. Remove the Impactool from the vise.

Disassembly of the Impact Mechanism

1. Set the mechanism on a workbench, driver end up.
2. Grasp the Anvil (66, 67, 72, or 79) and lift it from the impact mechanism.
3. Remove the two Hammer Pins (61) and the Hammer (59).

Disassembly of the Motor

1. Grasp the splined end of the Rotor (52) and pull the entire motor from the Housing (1).
2. Lift off the Hammer Frame Washer (58).
3. Lift off the Front End Plate (56). If the Front Rotor Bearing (57) needs to be replaced, press it from the Front End Plate.
4. Remove the Cylinder (54) and the Vanes (53).
5. Remove the Rear Rotor Bearing Retainer (49) and slide the Bearing (50) and the Rear End Plate (51) off the short hub of the Rotor.
6. Remove the End Plate Gasket (48) from the Motor Housing.
7. **For Model 2902SB only,** remove the Silencers (18) from the Motor Housing.

Disassembly of the Reverse Valve

For Model 2902P

NOTICE

The Knob Screw (36) is installed with Loctite®*.

1. Unscrew and remove the Knob Screw. Remove the Reverse Valve Knob (35).
2. Slowly rotate the Reverse Valve (11) back and forth while withdrawing it from the reverse valve bushing.

NOTICE

Be careful not to lose the Detent Ball (33) and Detent Ball Spring (34) from the hole in the side of the Reverse Valve.

3. Remove the two Reverse Valve O-ring (12) from the undercut at each end of the reverse valve bushing.

For the 2902SB

NOTICE

The Reverse Valve Stop (30) is secured with Loctite®.

* Registered trademark of Loctite Corporation.

1. Unscrew the Reverse Valve Stop (30) from the Reverse Valve (28).
2. Slowly rotate the Reverse Valve back and forth while withdrawing it from the reverse valve bushing. Remove the Reverse Valve Seal (29) from the Reverse Valve; and the Bushing Seal (31) from the undercut inside the reverse valve bushing.

Disassembly of the Throttle

For Model 2902P

1. Using a Pin punch, tap out the Bushing Retaining Pin (45) from left to right while facing the back of the tool. Remove the entire Throttle Valve Assembly.
2. If it is necessary to replace the Trigger (40), pull it off the Throttle Valve (38).
3. Remove the Large Bushing O-ring (43) and one Small Bushing O-ring (44) from the Throttle Valve Bushing (42). Remove the other Small Bushing O-ring (44) seated in the recess of the handle.
4. Using a pin punch, tap out the Throttle Valve Retaining Pin (41) to release the Throttle Valve from the Throttle Valve Bushing.
5. Remove the Throttle Valve Face (39) from the annular groove at the end of the Throttle Valve.
6. Unscrew and remove the Inlet Bushing (6).
7. Lift off the Exhaust Deflector (8) and Deflector Gasket (9). Using an awl, remove the Exhaust Silencer (10) from the handle.

For Model 2902SB

1. Using a punch, carefully drive the Throttle Lever Pin (17) from the Motor Housing and remove the Throttle Lever (16).
2. Hold the Motor Housing firmly in a vise, taking care not to distort the motor bore. Using a wrench on the machined flats and turning counterclockwise, remove the Swivel Inlet Body (20).
3. Remove the Swivel Inlet Assembly (21), Seals (22), and Inlet Assembly Spacer (19) from the Swivel Inlet Body.

NOTICE

The Detent Ball (27) and Detent Spring (26) will come lose when the Power Regulator Assembly (23) is removed from the Swivel Inlet Body.

4. Push the Regulator Retainer (25) through the Swivel Inlet Body and remove the Power Regulator Assembly, Detent Ball, and Detent Spring.
5. Withdraw the Throttle Valve Spring (15) and Throttle Valve (13). Remove the Throttle Valve Face (14) from the Throttle 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 pressing the bearing into a bearing recess.
3. Whenever grasping a tool or part in a vise, always use leather–covered or copper–covered vise jaws. Take extra care with threaded parts and housings.
4. Always clean every part and wipe every part with a thin film of oil before installation.
5. Apply a film of O–ring lubricant to all O–rings before final assembly.

Assembly of the Throttle Mechanism

For the 2902P

1. Install a new Throttle Valve Face (39) in the annular groove at the end of the Throttle Valve (38).
2. Install a new large Bushing O–ring (43) and a new Small Bushing O–ring (44) into their respective grooves of the Throttle Valve Bushing (42). Seat the other new Small Bushing O–ring (44) into the recess of the Motor Housing.
3. Insert the Throttle Valve into the Throttle Valve Bushing, taking care to line up the retaining pin holes in the Throttle Valve Bushing and the Throttle Valve. Drive the Throttle Valve Retaining Pin (41) into the Throttle Valve Retaining Pin hole.
4. If the Trigger (40) was removed, press it onto the end of the Throttle Valve.
5. Install the Throttle Valve Assembly into the Housing (1), taking care to line up the cross hole in the Throttle Valve Bushing with the retaining pin hole in the Housing. Drive in the Bushing Retaining Pin (45) from right to left when facing the rear of the tool. Work the Trigger a few times to assure a good sliding fit.
6. Install the Exhaust Silencers (10) in the Housing. Make sure the Silencer is rolled tightly for easy installation.
7. Install the Deflector Gasket (9) and Exhaust Deflector (8).
8. Install the Inlet Bushing (6) and Bushing O–ring (7). Tighten the Bushing to 20 to 25 ft–lb (27 to 34 Nm) torque.

For Model 2902SB

1. Install a new Power Regulator Seal (24) in the groove closest to the Knurled Knob on the Power Regulator Assembly (23).
2. Place the Detent Spring (26) and the Detent Ball (27) in the shallow hole in the hexagonal flange of the Swivel Inlet Body (20). Capture the Spring/Ball combination with the Power Regulator Assembly reinstalled in the Swivel Inlet Body.
3. Align the groove on the end of the Power Regulator shaft with the thru hole in the Swivel Inlet Body and insert the Regulator Retainer (25). The Regulator will turn firmly but freely within the Body when properly assembled.
4. Place a new Swivel Inlet Seal (22) in each counterbore in the Swivel Inlet (21), place the Inlet Assembly Spacer (19) on the top of the Swivel Inlet so that it aligns with the hole in the Swivel Inlet and slide the Inlet over the threaded end of the Swivel Inlet Body.
5. Install a new Throttle Valve Face (14) in the groove on the Throttle Valve (13) and insert the assembled Throttle Valve, stem first into the tapped hole in the Motor Housing (1).
6. Next, insert the Throttle Valve Spring (15) into the tapped hole in the Housing and retain the Throttle parts with the Swivel Inlet. Thread the Inlet into the tapped hole clockwise and tighten to 23 to 27 ft–lb (31 to 37 Nm) torque.
7. Align the holes in the Throttle Lever (16) with the holes in the boss on top of the Motor Housing and press the Throttle Lever Pin (17) into the through hole. Press the Throttle Lever several times checking that the mechanism does not bind.
8. If the Nameplate (46) has become disfigured, replace it after transferring the proper serial number.

Assembly of the Reverse Valve

For Model 2902P

1. Install two Reverse Valve O–rings (12) in the undercut at each end of the reverse valve bushing.

NOTICE

Install the Reverse Valve (11) from left to right while facing the rear of the tool.

2. Install the Detent Ball Spring (34) and Detent Ball (33) in the Reverse Valve, while sliding the Reverse Valve into the reverse valve bushing, compress the Spring and Ball until they are seated in the bushing.
3. Insert the Knob Screw (36) through the Reverse Valve Knob (35). Apply Loctite No. 242 to the first two or three threads of the Screw and thread the Screw into the tapped end of the Reverse Valve. While holding the serrated end of the Reverse Valve with pliers, tighten the Screw to 4 to 7 in–lb (0.45 to 0.80 Nm) torque.

For Model 2902SB

1. Insert a new Bushing Seal (31) into the undercut inside the reverse valve bushing, making certain it is firmly seated.
2. Install a new Reverse Valve Seal (29) in the groove closest to the hexagonal end on the Reverse Valve (28). Coat the Reverse Valve with a small amount of the recommended oil and insert the tapered end of the Valve into the housing bushing from left to right when facing the rear of the tool until the tapered end of the Valve protrudes from the right side of the Housing.

CAUTION

Rotate the Valve back and forth slowly, being careful not to damage the Seals when inserting the Valve in the bushing.

3. Apply Loctite No. 242 to the first two or three threads of the Reverse Valve Stop (30) and thread the Stop into the tapped end of the Reverse Valve. Tighten the Stop to 4 to 7 in-lb (.45 to .80 Nm) torque.

Assembly of the Motor

1. Install a new End Plate Gasket (48) into the motor bore of the Motor Housing (1), making sure the holes in the Gasket align with those in the bottom of the Housing.
2. Slide the Rear End Plate (51) onto the short hub of the Rotor (52), with the bearing recess trailing.
3. Slide the Rear Rotor Bearing (50) onto the short hub of the Rotor against the Rear End Plate.
4. Install the Rear Rotor Bearing Retainer (49).
5. With the splined end of the Rotor upright, place the Cylinder (54), pocket end first, over the Rotor with the dowel hole and ports aligned with the holes in the Rear End Plate.
6. Apply a light film of oil to the Vanes (53) and insert them into the vane slots in the Rotor.
7. If the Front Rotor Bearing (57) was removed, press a new Bearing into the recess of the Front End Plate (56).
8. Slide the assembled Front End Plate over the splined hub of the Rotor, Bearing trailing, with the dowel hole and ports of the Front End Plate aligning with like holes in the Cylinder and Rear End Plate.
9. Insert a 6" x 1/8" (150 mm x 302 mm) rod through the aligned dowel holes in the two End Plates and Cylinder. Use the rod as a guide to insert the motor into the Motor Housing with the dowel hole and ports of the motor and End Plate Gasket aligned.
10. Grasp the Motor Housing in a vise, motor upward. Withdraw the rod and replace it with the Cylinder Dowel (55).
11. For the 2902SB only, install new Silencers (18) in the Motor Housing (1).

Assembly of the Impact Mechanism

1. Place the Hammer Frame Washer (58) over the splined hub of the Rotor and against the Front Rotor Bearing (57).
2. Coat the spline and the pin holes of the Hammer Frame (60) with a light film of Ingersoll-Rand Grease No. 100.
3. Install the Hammer Frame on the splined hub of the Rotor.
4. Coat the Hammer (59) with a light film of Ingersoll-Rand Grease No. 100 and slide the Hammer inside the Hammer Frame.
5. Coat the two Hammer Pins (61) with a light film of Ingersoll-Rand Grease No. 100 and insert the Pins in the two holes of the Hammer Frame so that they engage the notches on the Hammer.
6. Coat the Anvil (66, 69, 72, and 79) with a light film of Ingersoll-Rand Grease No. 100. Place the Anvil into the front of the Hammer Frame and through the Hammer until it seats in the rear of the Hammer Frame.

Assembly of the Impactool

For the 1/4" Quick-Change Anvil Assembly

1. Reinstall the Hammer Case (62) and secure with the Cap Screws (65).
2. Follow the Hammer Case with the Thrust Lock Ring (73), Thrust Ring (74), Retaining Sleeve Spring (75), Retaining Ball (76), Retaining Sleeve (77), and the Retaining Sleeve Stop (78).

For the 7/16" Quick-Change Anvil Assembly

1. Reinstall the Hammer Case (62) and secure with the Cap Screws (65).
2. Use a spot of grease to place the Body Lock Pin (81) and the Retaining Ball (85) in the Quick-Change Body Anvil (80).
3. Slide the Retaining Sleeve (86) over the Body Anvil followed by the Retaining Sleeve Spring (84) and Thrust Ring (83).
4. Secure with the Thrust Ring Lock (82).

For the 3/8" Square Drive Anvil

1. If the Hammer Case Bushing (63) was removed, smear a thin film of Ingersoll-Rand Grease No. 100 on the surface of the Bushing and press the Bushing into the Hammer Case (62) from the large open end until the bushing flange contacts the Hammer Case.
2. Place the Hammer Case Gasket (64) over the front end of the Motor Housing with the Holes in the Gasket and Housing aligned.
3. Slide the Hammer Case Assembly over the Impact Mechanism and install the Hammer Case Cap Screws (65). Tighten the Cap Screws to 45 in-lb (5 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 Air Stainer Screen, Inlet Bushing and Exhaust Silencer. Blow dry with compressed air.
	Worn or broken Vanes	Replace **complete** set of Vanes.
	Worn or broken Cylinder and/or scored End Plates	Examine Cylinder and replace it if it is worn or broken or if bore is scored or wavy. Replace End Plates if they are scored.
	Dirty motor parts	Disassemble tool and clean all parts with a suitable cleaning solution, in a well-ventilated area. Reassemble tool as instructed in this manual.
	Improper positioning of Reverse Valve	Make certain that Reverse Valve is **fully** engaged to the left or right.
Motor will not run	Incorrect assembly of motor	Disassemble motor and replace worn or broken parts and reassemble as instructed.
	Insufficient lubricant in the impact mechanism	Remove Hammer Case Assembly and lubricate impact mechanism.
Tool will not impact	Broken or worn impact mechanism parts	Remove Hammer Case and examine impact mechanism parts. Replace any worn or broken parts.
	Impact mechanism not assembled correctly	Refer to **Assembly of the Impact Mechanism.**

NOTES