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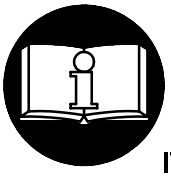
OPERATIONS AND MAINTENANCE MANUAL FOR SERIES 2903P SUPER DUTY IMPACTOOLS

NOTICE

Series 2903P 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 3/8" (10 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.

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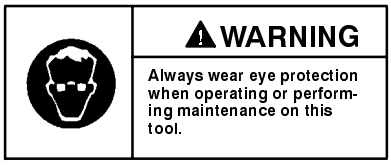
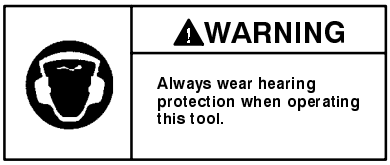
INGERSOLL-RAND®
PROFESSIONAL TOOLS

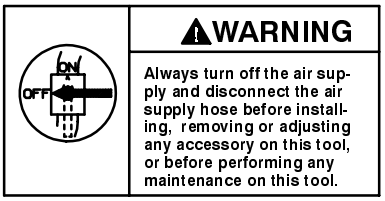
WARNING LABEL IDENTIFICATION

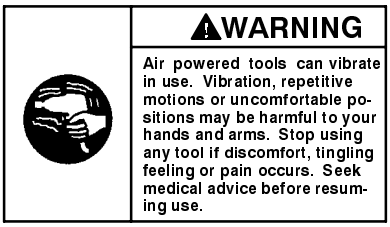
⚠ WARNING

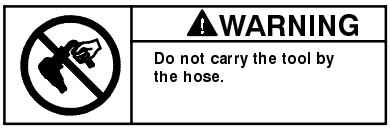
FAILURE TO OBSERVE THE FOLLOWING WARNINGS COULD RESULT IN INJURY.

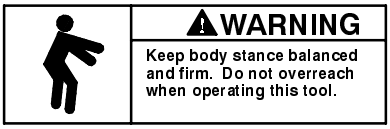


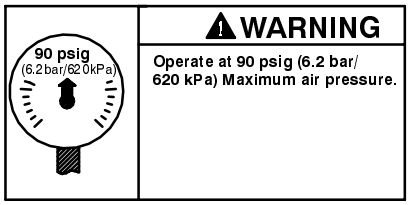












ADJUSTMENTS

SETTING THE POWER REGULATOR

⚠ WARNING

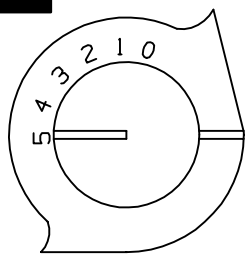
Impact wrenches are not torque control devices. Fasteners with specific torque requirements must be checked with suitable torque measuring devices after installation with an impact wrench.

Series 2903P–EU 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

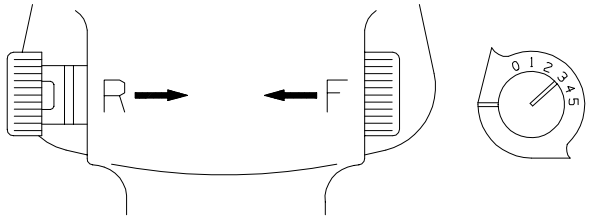
The numbers 0 thru 5 on the housing are only for reference and DO NOT denote a specific power output. Zero (0) designates the lowest power output while five (5) denotes the highest.



(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.



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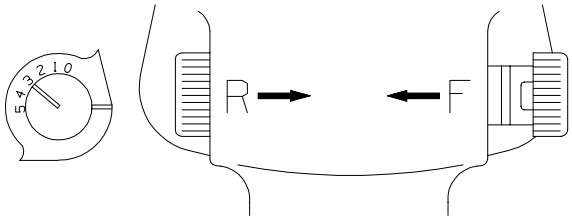


(Dwg. TPD1249)

PLACING TOOL IN SERVICE

LUBRICATION

Ingersoll–Rand No. 50

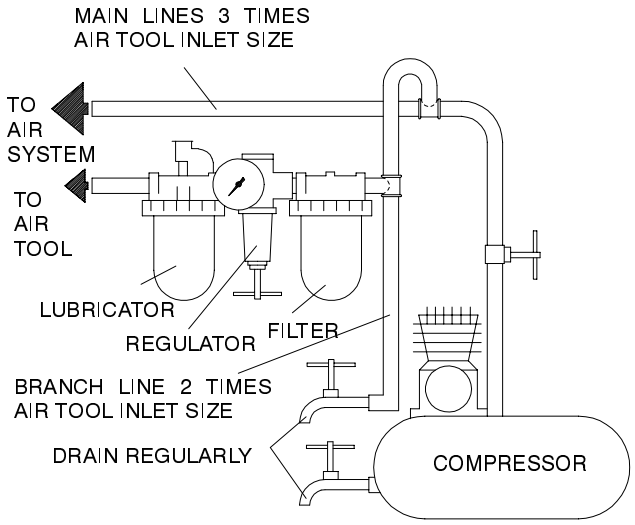
Ingersoll–Rand No. 100

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

For USA – No. C11–03–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 1/2" SQUARE DRIVE			
		Recommended Torque Range	
Model	Impacts/min.	ft–lb	Nm
2903P1	1 200	30 – 185	41 – 250
PISTOL GRIP WITH 3/8" SQUARE DRIVE			
2903P2	1 200	30 – 170	41 – 230

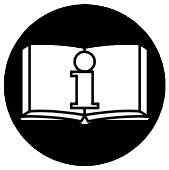
F

MANUEL D'EXPLOITATION ET D'ENTRETIEN
PERFORMANCE DE LA SÉRIE 2903P

NOTE

Les clés à chocs de la série 2903P sont destinées 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 DE 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).**
- **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. 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 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 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 effectuées 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.

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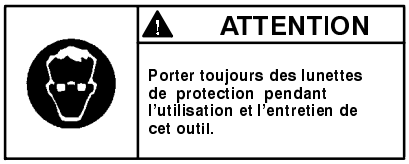
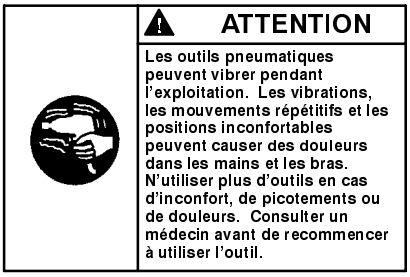
PROFESSIONAL TOOLS

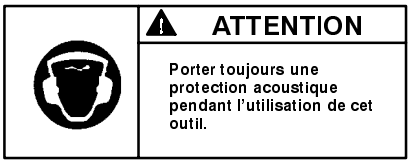
SIGNIFICATION DES ETIQUETTES D'AVERTISSEMENT

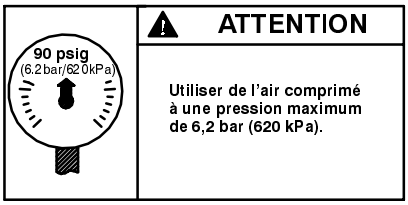
⚠ ATTENTION

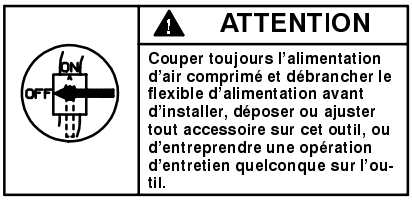
LE NON RESPECT DES AVERTISSEMENTS SUIVANTS PEUT CAUSER DES BLESSURES











RÉGLAGES

REGLAGE DU REGULATEUR DE PUISSANCE

⚠ ATTENTION

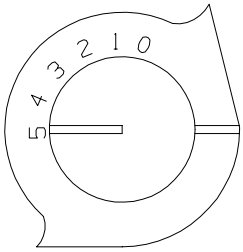
Les clés à chocs ne sont pas des appareils dynamométriques. Les fixations nécessitant un couple de serrage spécifique doivent être vérifiées avec des appareils de mesure de couple appropriés après avoir été assemblées avec une clé à chocs.

Les clés à chocs de la série 2903P–EU 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

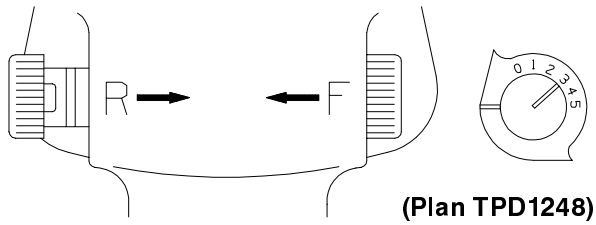
Les numéros 0 à 5 du carter ne sont donnés qu'à titre de guide et NE dénotent PAS une puissance spécifique. Zéro (0) indique la puissance la plus faible tandis que cinq (5) indique la puissance la plus élevée.



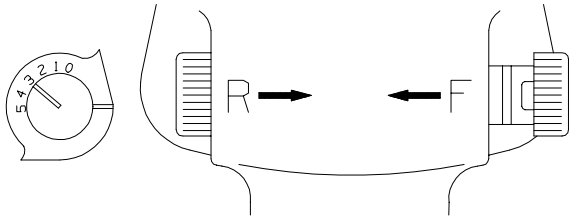
(Plan TPD1247)

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

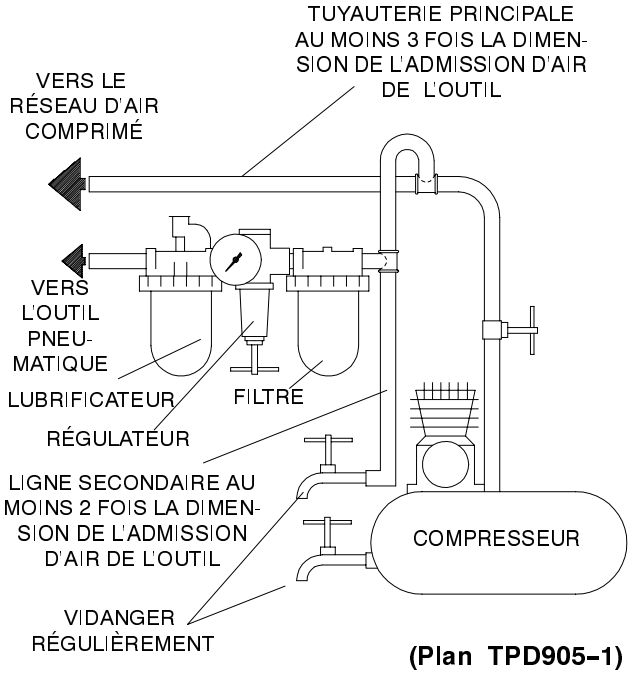
Ingersoll–Rand No. 50 **Ingersoll–Rand No. 100**

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

For USA – No. C11–03–G00

Toutes les huit heures de fonctionnement, si un lubrificateur de ligne n'est pas utilisé, retirer 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 fonctionnement, 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
		pouces		ft–lbs (Nm)
2903P1	pistolet	1/2" entr. carré	1200	30–185 (41–250)
2903P2	pistolet	3/8" entr. carré	1200	30–170 (41–230)

E

MANUAL DE FUNCIONAMIENTO Y MANTENIMIENTO
LLAVES DE IMPACTO INDUSTRIALES DE LA SERIE 2903P

NOTA

La Llave de Impacto Modelo 2903P está diseñada para usar en trabajos ligeros de montaje 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 10 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 de 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 presión máxima de 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–Randpodría poner en peligro la seguridad, reducir el rendimiento de laherramienta y aumentar los cuidados de mantenimiento necesarios, así comoinvalidar 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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ETIQUETAS DE AVISO

⚠ AVISO

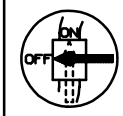
EL HACER CASO OMISO DE LOS AVISOS SIGUIENTES PODRÍA OCASIONAR LESIONES.

⚠ ADVERTENCIA

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

⚠ ADVERTENCIA

Usar siempre protección para los oídos al manejar esta herramienta.



⚠ 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

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

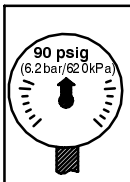
No coger la herramienta por la manguera para levantarla.

⚠ ADVERTENCIA

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

⚠ ADVERTENCIA

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



⚠ ADVERTENCIA

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

AJUSTES

COLOCACIÓN DEL REGULADOR DE POTENCIA

⚠ AVISO

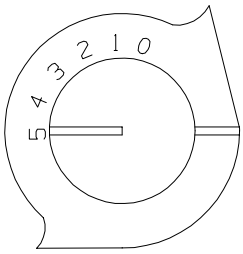
Las llaves de impacto no son llaves de par. Las fijaciones de específico requerimiento de par deberán ser comprobadas con un torsiómetro adecuado después de su fijación con una llave de impacto.

Las Llaves de Impacto Modelo 2903P–EU incorporan un regulador de potencia en el mecanismo de inversión, que permite al operario obtener potencia completa en una dirección y reducida en la dirección opuesta, o potencia completa en ambas direcciones. Para ajustar la potencia, proceda como sigue:

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

NOTA

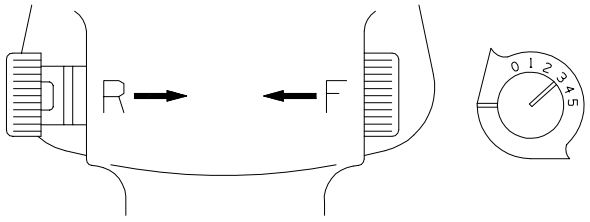
Los números del 0 al 5 que hay en la carcasa son sólo de referencia y NO indican una potencia específica. Cero (0) indica la potencia menor mientras que cinco (5) indica la mayor.



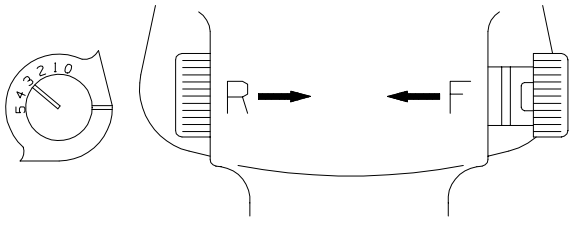
(Esq. TPD1247)

Para potencia reducida en dirección hacia delante y completa en la inversa, empuje hacia adentro la válvula de inversión situada en el lateral derecho de la herramienta y gire dicha 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 hacia atrás y completa en dirección hacia delante, 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 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. TPD1249.



(Esq. TPD1248)



(Esq. TPD1249)

PARA PONER LA HERRAMIENTA EN SERVICIO

LUBRICACIÓN

Ingersoll–Rand N° 50

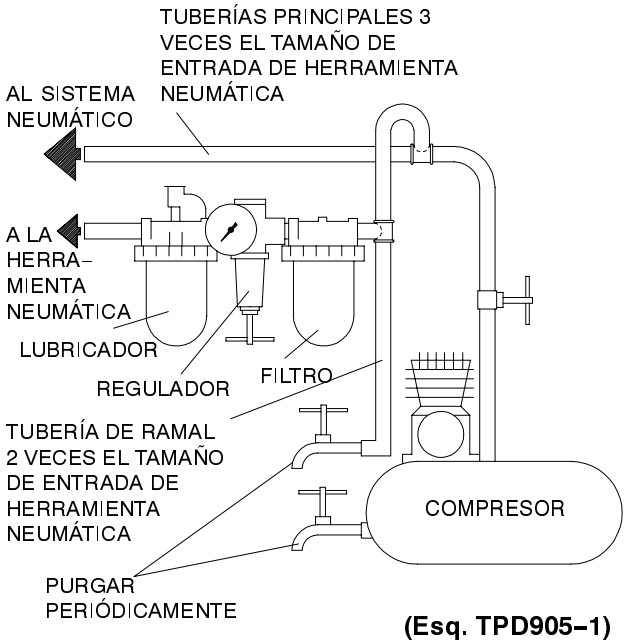
Ingersoll–Rand N° 100

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

For USA – No. C11–03–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 N° 50.

Después de cada cuarenta y ocho horas de funcionamiento o según indique la experiencia, inyecte unos 4 cc de Grasa Ingersoll–Rand N° 100 en el Engrasador.



(Esq. TPD905–1)

ESPECIFICACIONES

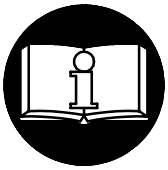
Modelo	Tipo de empuñadura	Accionamiento	Impactos por minuto	Gama de par recomendada
		pulg.		**ft–lbs (Nm)**
2903P1	pistola	1/2 pulg. cuadradillo	1200	30–185 (41–250)
2903P2	pistola	3/8 pulg. cuadradillo	1200	30–170 (41–230)

P

MANUAL DE FUNCIONAMENTO E MANUTENÇÃO FERRAMENTAS PNEUMÁTICAS DE IMPACTO PARA TRABALHOS SUPER SÉRIE 2903P

AVISO

As Ferramentas de Impacto Série 2903P 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 10 mm (3/8 pol).**
- **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 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.

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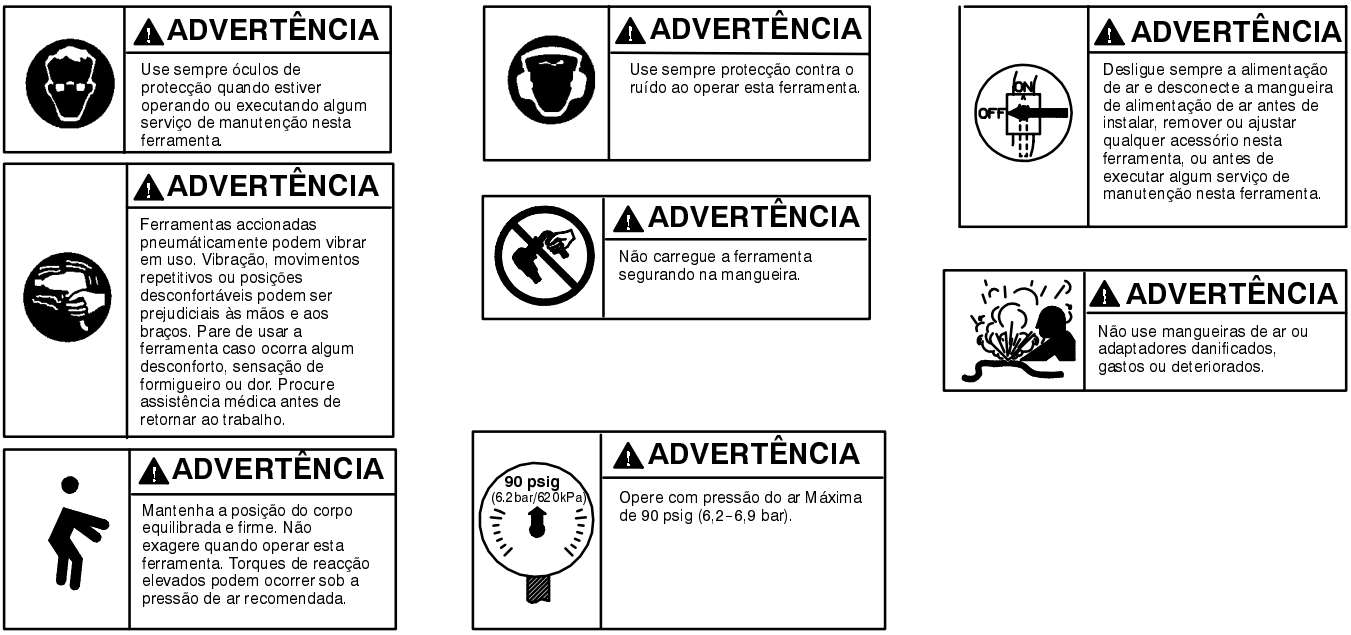
⚠ ADVERTÊNCIA

O NÃO CUMPRIMENTO DAS SEGUINTES ADVERTÊNCIAS PODE RESULTAR EM FERIMENTOS.



AJUSTES

AJUSTANDO O REGULADOR DE POTÊNCIA

⚠ ADVERTÊNCIA

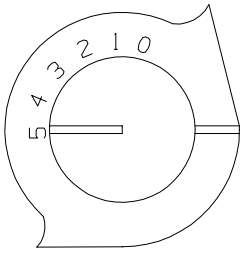
As Ferramentas Pneumáticas de Impacto não são aparelhos de controlo de torque. Apertos com requisitos de torque específicos devem ser verificados com aparelhos de medição de torque adequados depois da instalação de uma chave dinamométrica.

As Ferramentas Pneumáticas de Impacto Série 2903P incorporam um mecanismo regulador de potência no mecanismo de inversão 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 máxima em ambas os sentidos, gire a válvula de inversão até que a ranhura em cada extremidade da válvula reversa alinhe–se com o número 5 em cada lado do corpo.

AVISO

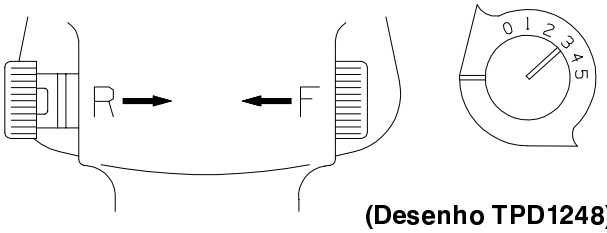
Os números de 0 a 5 no corpo são apenas uma referência e NÃO indicam uma potência de saída específica. Zero (0) designa a potência mais baixa enquanto quatro (5) indica a mais alta.



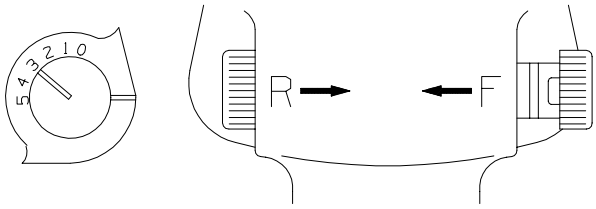
(Desenho TPD1247)

Para uso da Potência Mínima no sentido para frente e potência máxima no sentido contrário, empurre a válvula reversa para dentro no lado direito da ferramenta e gira a válvula reversa 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 inversão estiver sendo empurrada no sentido contrário. Veja o Desenho TPD1247.

Para uso da Potência Mínima no sentido inverso e potência máxima para frente, empurre a válvula de inversão para dentro no lado esquerdo da ferramenta e gira a válvula de inversão 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 estiver sendo empurrada no sentido contrário. Veja o Desenho TPD1249.



(Desenho TPD1248)



(Desenho TPD1249)

COLOCANDO A FERRAMENTA EM FUNCIONAMENTO

LUBRIFICAÇÃO

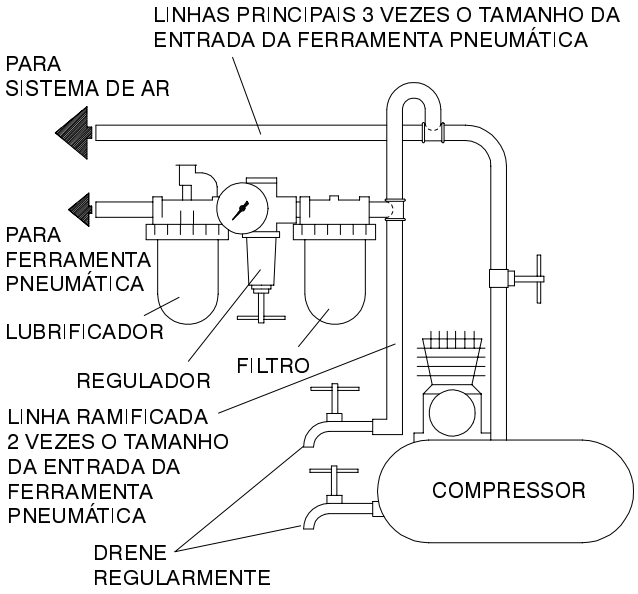
Ingersoll–Rand No. 50 **Ingersoll–Rand No. 100**

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

For USA – No. No. C11–03–G00

Depois de cada oito 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.

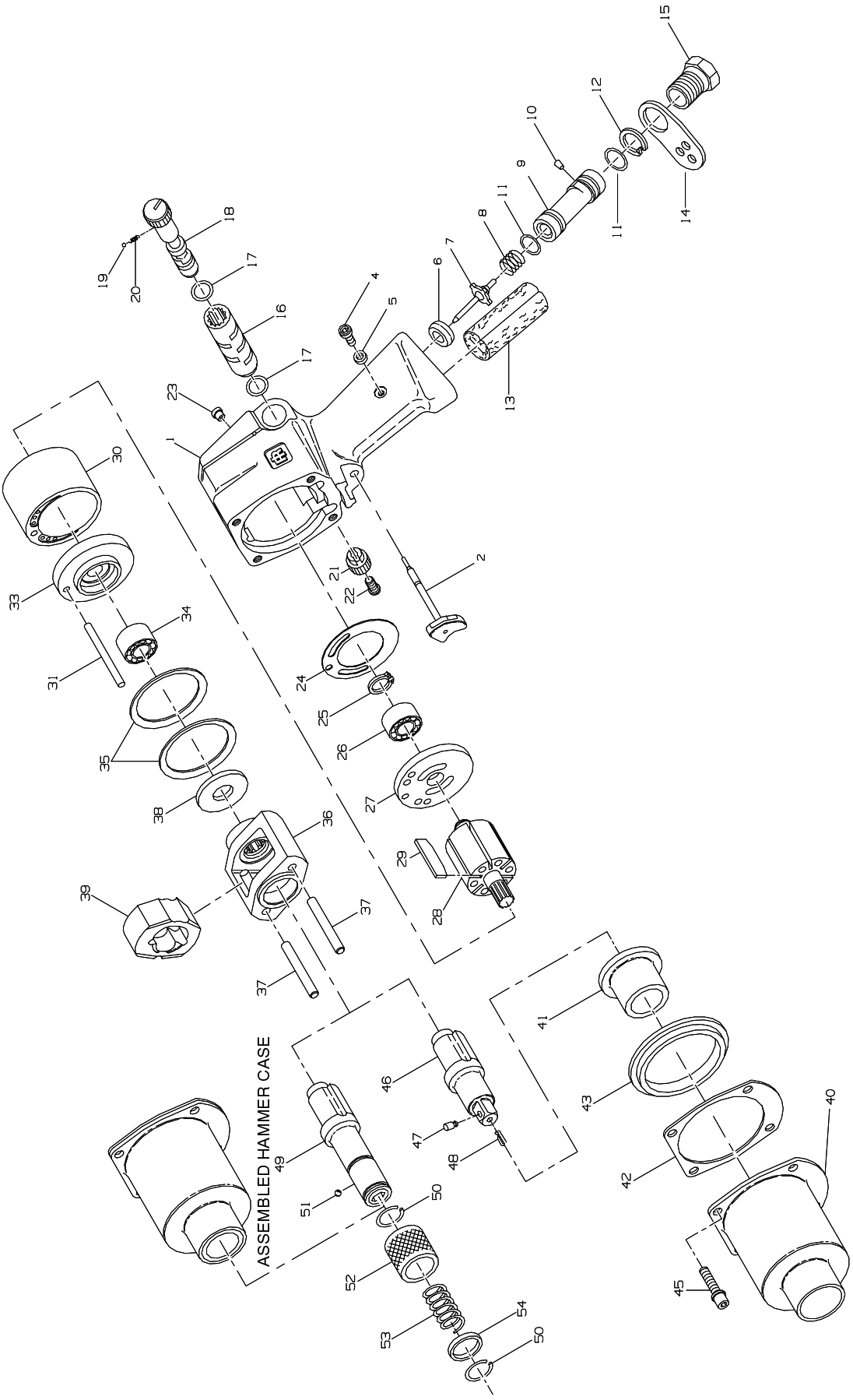
Depois de cada quarenta e oito horas de operação, ou conforme a experiência indica, injecte aproximadamente 4 cc de Massa Lubrificadora Ingersoll–Rand No. 100 no Adaptador de Massa Lubrificadora.



(Desenho TPD905–1)

ESPECIFICAÇÕES

Modelo	Tipo de Punho	Comando	Impactos por Minuto	Intervalo de Torque Recomendado
		pol.	rpm	Nm (pés–lbs.)
2903P1	pistola	1/2” quadrada	1 200	41–250 (30–185)
2903P2	pistola	3/8” quadrada	1 200	41–230 (30–170)



(Dwg. TPA890–3)

		PART NUMBER FOR ORDERING	
	1	Motor Housing Assembly	2903P–A40
	2	Trigger Assembly	7AH–A93
	4	Oil Chamber Plug	D92–227
♦•	5	Oil Chamber Plug Seal	R3–92A
♦	6	Throttle Valve Seat	2908–303
♦	7	Throttle Valve	LG2–302
♦	8	Throttle Valve Spring	2908–51
	9	Oiler Body Assembly	2905P–A198
	10	Oiler Plug	77H–75
♦•	11	Oiler Body Seal (2)	AF120–290
	12	Oiler Retaining Ring	2908–304
♦	13	Exhaust Silencer	2940P–311
	14	Exhaust Deflector	2905P–23
	15	Air Inlet	402–565
	16	Reverse Valve Bushing Assembly	231–A330
♦•	17	Reverse Valve Bushing Seal (2)	PS3–67
	18	Reverse Valve	231–329A
♦	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	231–283
♦	25	Rear Rotor Bearing Retainer	402–118

		PART NUMBER FOR ORDERING	
♦	26	Rear Rotor Bearing	402–22
	27	Rear End Plate	231–12
	28	Rotor	2903P–53
♦	29	Vane Packet (Set of 6 Vanes)	402–42–6
	30	Cylinder	2903P–3
	31	Cylinder Dowel	402–98
	33	Front End Plate	231–11
♦	34	Front Rotor Bearing	4U–97
	35	Motor Clamp Washer (2)	227–207
	36	Hammer Frame Assembly	2903P–A703A
	37	Hammer Pin (2)	2903P–704
	38	Rear Hammer Frame Washer	231–706
	39	Hammer	2903P–724
	40	Hammer Case Assembly	
		for all models ending in –EU	2903P–EU–A727
		for all other models	2903P–A727
	41	Hammer Case Bushing	705–941
♦	42	Hammer Case Gasket	2905P–36
	*	Hammer Case Label	
		for all models ending in –EU	EU–99
		for all other models	WARNING–2–99
	43	Hammer Case Pilot	405–800
	45	Hammer Case Cap Screw (4)	231–638

* 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.

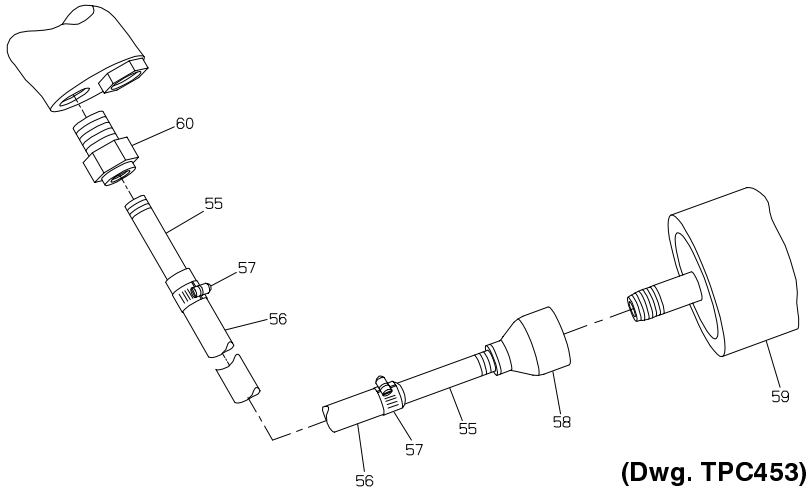
			PART NUMBER FOR ORDERING				PART NUMBER FOR ORDERING
	46	Anvil Assembly with Pin Type Retainer			50	Thrust Ring Lock (2)	4U-933-7
		1/2" Square Drive	2903P-A726		51	Retaining Ball (7/32" diameter)	2U-722
		3/8" Square Drive	2903P-A626		52	Retaining Sleeve	4U-930-7
♦•	47	Socket Retaining Plunger			53	Retaining Sleeve Spring	4U-931-7
		for 1/2" Square Drive	804-716		54	Thrust Ring	4U-932-7
		for 3/8" Square Drive	2902-716		*	Nameplate	2903P-301
♦•	48	Retaining Plunger Spring			*	Grease Gun	R000A2-228
		for 1/2" Square Drive	5UHD-718		*	Tune-up Kit (includes illustrated parts 5, 6, 7,	
		for 3/8" Square Drive	401-718		*	8, 11 [2], 13, 17 [2], 19, 20, 24, 25, 26, 29, 34,	
		Quick-Change Anvil Assembly with 7/16" Hex			*	42, 47 and 48)	2903P-TK2
		Recess	2903P-A926-7		*	Horizontal Hanger	904-366
	49	Quick-Change Anvil	2903P-926-7		*	Vertical Hanger	2908-368

* 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.

ACCESSORIES AND SPECIAL EQUIPMENT



(Dwg. TPC453)

		PART NUMBER FOR ORDERING
	Piped-Away Exhaust Kit	
	with Muffler	2905-KM184
	without Muffler	2905-K184
55	Hose Adapter (2)	2905-167
56	Exhaust Hose (10 ft long)	2905-184
57	Hose Clamp (2)	2905-185
58	Muffler Coupling	2905-186
59	Muffler	2905-674
60	Reducing Bushing	H80-82A

MAINTENANCE SECTION

⚠ WARNING

Always wear eye protection when operating or performing maintenance on this tool.
Always turn off air supply and disconnect hose before installing, removing or adjusting any accessory on this tool, or before performing any maintenance on this tool.

LUBRICATION

Each time a Series 2903P Impactool is disassembled for maintenance, and repair or replacement of parts, lubricate the tool as follows:

1. Work approximately 6 to 8 cc of Ingersoll-Rand No. 100 Grease into the impact mechanism. Coat the Anvil (46) or (49) 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 No. 50 Oil 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 (4) 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 the handle of the Impactool in a vise with the square drive upward.
2. Unscrew and remove the four Hammer Case Cap Screws (45).
3. While lightly tapping on the end of the Anvil (46 or 49) with a plastic hammer, lift off the Hammer Case (40).
4. Grasp the Hammer Frame (36) and carefully lift off the entire impact mechanism, making certain not to drop the two Hammer Pins (37).
5. Lift the Rear Hammer Frame Washer (38) and the two Motor Clamp Washers (35) from the front of the motor.
6. Grasp the splined end of the Rotor (28) and pull the assembled motor from the Motor Housing (1).

Disassembly of Impact Mechanism

1. With the Impact Mechanism on a workbench, driver end up, grasp the Anvil (46) or (49) and lift it from the mechanism.
2. Remove the two Hammer Pins (37).
3. Slide the Hammer (39) from the Hammer Frame (36).

Disassembly of the Motor

1. Lift the Front End Plate (33) and Front Rotor Bearing (34) from splined end of Rotor.
2. Remove Cylinder (30) and Vanes (29).
3. Remove Rear Rotor Bearing Retainer (25).
4. Lift the Rear End Plate (27) and Rear Rotor Bearing (26) from Rotor.

Disassembly of the Reverse Valve

NOTICE

The Reverse Valve Screw (22) is installed with a thread locking compound.

1. Unscrew the Reverse Valve Knob Screw and remove the Reverse Valve Knob (21).

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.

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

Disassembly of the Throttle

1. Unscrew and remove the Air Inlet (15).
2. Lift off the Exhaust Deflector (14) and withdraw the Exhaust Silencer (13).
3. Remove the Oiler Retaining Ring (12) from inside the handle.
4. Withdraw the Oiler Body Assembly (9), Throttle Valve Spring (8) and Throttle Valve (7).
5. Withdraw Trigger Assembly (2).

NOTICE

Do not remove the Throttle Valve Seat (6) unless you have a new Throttle Valve Seat on hand for installation.

6. If the Throttle Valve Seat (6) must be replaced, thread a long 3/8" cap screw into it and withdraw it from the handle.

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

1. If the Throttle Valve Seat (6) was removed from the handle, install a new Throttle Valve Seat by pushing it into place with a 1/2" (13 mm) diameter dowel.
2. Wipe the trigger pin with some light grease and insert the Trigger Assembly (2) into the trigger bushing.
3. Insert the Throttle Valve (7), long stem end first, into the bottom of the handle so the end of the valve stem engages the hole in the Trigger Pin.
4. Install the Throttle Valve Spring (8), small end first, into the handle of the Motor Housing Assembly (1).
5. Make certain the two Oiler Body Seals (11) are positioned in the annular grooves on the Oiler (9) and install the Oiler counterbored end first into the handle. The large end of the Throttle Valve Spring should seat in the counterbore in the Oiler.
6. Install the Oiler Retaining Ring (12) in the groove in the handle.
7. Grasp the Exhaust Silencer (13) by the long edge and rolling it into a tight cylindrical shape, insert the Silencer into the handle flush with the recess.
8. Position the Exhaust Deflector (14) on the bottom of the handle and retain it with the Air Inlet (15). Tighten the Air Inlet to 30 to 50 ft–lb (40.5 to 47.5 Nm) torque.

Assembly of the Reverse Valve

1. Make certain the Reverse Valve Bushing Seals (17) are properly located in undercuts in the Reverse Valve Bushing (16).
2. Dampen the Reverse Valve (18) with light oil. Install the Reverse Valve Detent Spring (20) followed by the Reverse Valve Detent Ball (19) in the Hole in the Reverse Valve. With the Impactool in an upright position, and while facing the handle end of the Impactool, slowly rotate the Reverse Valve and insert it from left to right in the splined end of the Reverse Valve Bushing.
3. Attach the Reverse Valve Knob (21) to the Reverse Valve with the Reverse Valve Knob Screw (22) and tighten the Screw to 40 to 50 in–lbs (4.5 to 5.6 Nm) torque.

Assembly of the Motor

1. Using a sleeve that will contact only the outer ring of the bearing, press the Front Rotor Bearing (34) into the Front End Plate (33) and the Rear Rotor Bearing (26) into the Rear End Plate (27).
2. Slip the Front End Plate and Bearing over the splined hub of the Rotor.
3. Grasp the splined hub of the Rotor in leather–covered or copper–covered vise jaws so the Rotor is in a vertical position.
4. Dampen each Vane (29) with light oil and insert a Vane into each vane slot.
5. Set the Cylinder (30) over the Rotor and onto the Front End Plate.
6. Slide the Rear End Plate and Bearing onto the rotor hub and against the Cylinder.
7. Install the Rear Rotor Bearing Retainer (25) in the groove on the rotor hub.
8. Wipe a thin film of light grease on the End Plate Gasket (24) and press the Gasket firmly against the Rear End Plate.
9. Align the dowel hole in both End Plates with the one through the Cylinder and insert a guide rod 5/32" (4.0 mm) diameter x 6" (152 mm) long. Allow the rod to protrude from the Rear End Plate and End Plate Gasket.
10. Grasp the handle of the Motor Housing (1) in leather–covered or copper–covered vise jaws so the bore of the Motor Housing is horizontal.
11. Insert the protruding end of the guide rod into the dowel hole in the bore of the Motor Housing and slide the motor along the rod until it is completely seated.
12. Remove the guide rod and replace it with the Cylinder Dowel (31).
13. Reposition the Motor Housing in the vise so the open face of the Motor Housing is upward.
14. Place the two Motor Clamp Washers (35), convex side first, against the Front End Plate so the inner rim of the leading Washer contacts the End Plate and the outer rim of the trailing Washer contacts the Hammer Case Pilot (43).
15. Place the Rear Hammer Frame Washer (38) over the hub of the Rotor and against the Front Rotor Bearing.

Assembly of the Impact Mechanism

1. Coat the spline and the pin holes of the Hammer Frame (36) with a light film of Ingersoll–Rand No. 100 Grease. Position the Hammer Frame on a workbench, splined end down.
2. Coat the Hammer (39) with a light film of Ingersoll–Rand No. 100 Grease and slide the Hammer into the Hammer Frame.
3. Coat the two Hammer Pins (37) with a light film of Ingersoll–Rand No. 100 Grease and insert the Pins into the two pin holes of the Hammer Frame so they engage the notches on the Hammer.
4. Coat the Anvil (46) or (49) with a light film of Ingersoll–Rand No. 100 Grease. Slide the Anvil into the Hammer Frame and through the Hammer until it seats.
5. Set the assembled impact mechanism down over the splined hub of the Rotor.

Assembly of the Impactool

1. Position the Hammer Case Gasket (42) against the face of the Motor Housing.
2. Smear a thin film of Ingersoll–Rand No. 100 Grease on the inside surface of the Hammer Case Bushing (41) and place the Hammer Case (40) down over the Anvil (46) or (49) and against the Motor Housing.
3. Install the Hammer Case Cap Screws (45). Tighten the Hammer Case Cap Screws to 60 to 70 in–lb (7.0 to 8.0 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 Strainer Screen, Inlet Bushing and Exhaust Silencer.
	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.**

NOTICE

SAVE THESE INSTRUCTIONS. DO NOT DESTROY.