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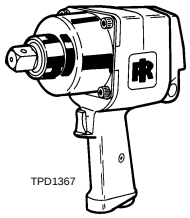
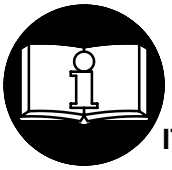


OPERATION AND MAINTENANCE MANUAL FOR SERIES 2920B AND 2920B9 SUPER DUTY IMPACTOOLS

NOTICE

Series 2920B and 2920B9 Impactools are designed for use in heavy assembly work and machinery maintenance.

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



⚠ WARNING

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

PLACING TOOL IN SERVICE

- **Always operate, inspect and maintain this tool in accordance with American National Standards Institute Safety Code for Portable Air Tools (ANSI B186.1).**
- **For safety, top performance, and maximum durability of parts, operate this tool at 90 psig (6.2 bar/620 kPa) maximum air pressure at the inlet with 1/2" (13 mm) inside diameter air supply hose.**
- **Always turn off the air supply and disconnect the air supply hose before installing, removing or adjusting any accessory on this tool, or before performing any maintenance on this tool.**
- **Do not use damaged, frayed or deteriorated air hoses and fittings.**
- **Be sure all hoses and fittings are the correct size and are tightly secured. See Dwg. TPD905–1 for a typical piping arrangement.**
- **Always use clean, dry air at 90 psig 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.

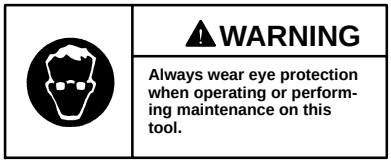
Printed in U.S.A.

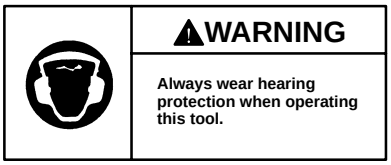
Ingersoll-Rand®

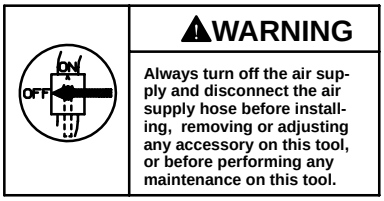
WARNING LABEL IDENTIFICATION

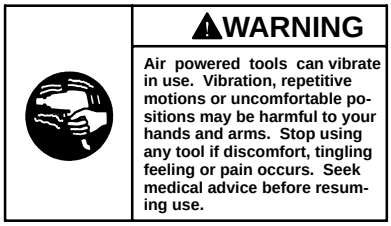
⚠ WARNING

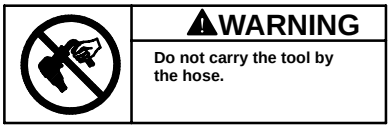
FAILURE TO OBSERVE THE FOLLOWING WARNINGS COULD RESULT IN INJURY.

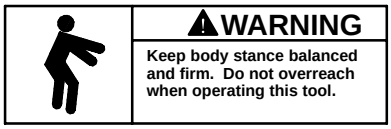


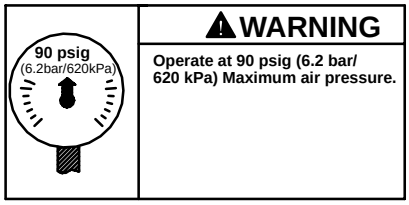












PLACING TOOL IN SERVICE

LUBRICATION

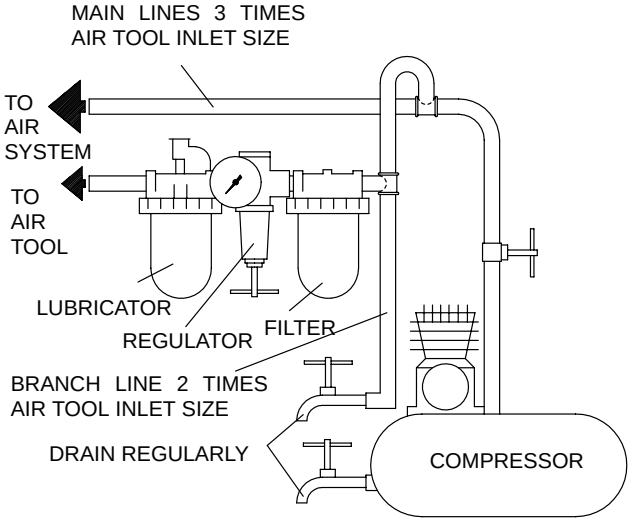
Ingersoll–Rand No. 50 **Ingersoll–Rand No. 100**

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

For USA – No. C28–04–FKG0–28

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.

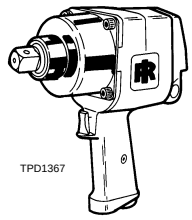
After each forty–eight hours of operation, or as experience indicates, inject about 4 cc of Ingersoll–Rand No. 100 Grease into the Grease Fitting.



(Dwg. TPD905–1)

SPECIFICATIONS

Model	Type of Grip	Drive	Impacts per min.	Recommended Torque Range
		in.		ft–lbs (Nm)
2920B1	inline	3/4” sq. dr.	950	250–800 (339–1085)
2920B3	inline	1” sq. dr.	950	250–800 (339–1085)
2920B9	inline	3/4” sq. dr. at 90°	950	150–500 (203–678)



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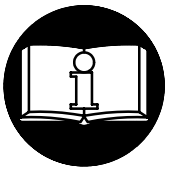
MANUEL D'EXPLOITATION ET D'ENTRETIEN DES CLÉS À CHOCS HAUTES PERFORMANCE SÉRIES 2920B ET 2920B9

NOTE

Les clés à chocs des séries 2920B et 2920B9 sont destinées aux travaux de montage lourd et à l'entretien des machines.
Ingersoll–Rand ne peut être tenu responsable de la modification des outils par le client pour les adapter à des applications qui n'ont pas été approuvées par Ingersoll–Rand.



⚠ ATTENTION

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

MISE EN SERVICE DE L'OUTIL

- **Toujours exploiter, inspecter et entretenir cet outil conformément au Code de sécurité des outils pneumatiques portatifs de l'American National Standards Institute (ANSI B186.1).**
- **Pour des raisons de sécurité, et pour obtenir les performances et la durabilité maximales des pièces, cet outil doit être alimenté avec de l'air comprimé à une pression maximum de 6,2 bar (620 kPa), et un tuyau flexible ayant un diamètre intérieur de 13 mm.**
- **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 des parties tournantes 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 de l'arbre de l'outil peut continuer brièvement 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 clés dynamométriques. Les connexions nécessitant un couple de serrage spécifique doivent être vérifiées avec un mesureur de couple après avoir été assemblées avec un clé à chocs.**
- **Cet outil n'est pas conçu pour fonctionner dans des atmosphères explosives.**
- **Cet outil n'est pas isolé contre les chocs électriques.**

NOTE

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

Les réparations ne doivent être 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.

Imprimé aux É.U.

Ingersoll-Rand®

SIGNIFICATION DES ETIQUETTES D'AVERTISSEMENT

⚠ ATTENTION

LE NON RESPECT DES AVERTISSEMENTS SUIVANTS PEUT CAUSER DES BLESSURES

⚠ ATTENTION

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

⚠ ATTENTION

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

⚠ ATTENTION

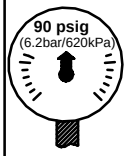
Garder une position équilibrée et ferme. Ne pas se pencher trop en avant pendant l'utilisation de cet outil.

⚠ ATTENTION

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

⚠ ATTENTION

Ne pas transporter l'outil par son flexible.



⚠ ATTENTION

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

⚠ 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

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

MISE EN SERVICE DE L'OUTIL

LUBRIFICATION

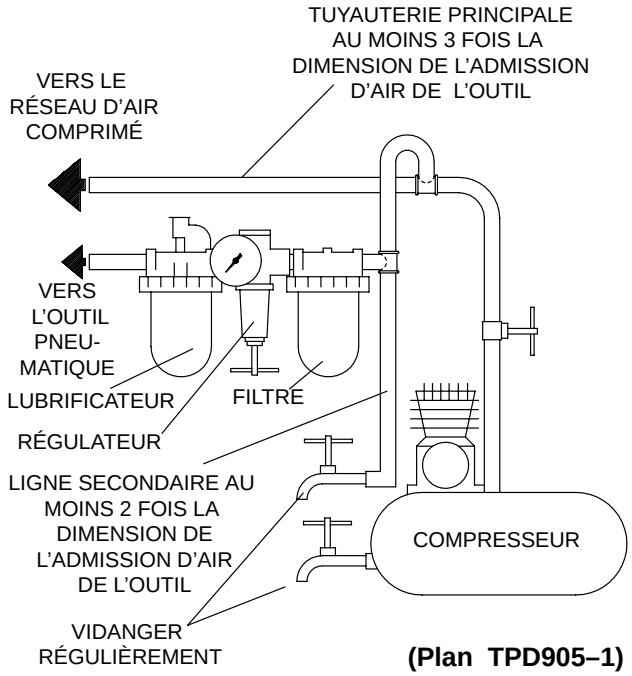
Ingersoll–Rand Nº. 50 **Ingersoll–Rand Nº. 100**

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

É.U. – Nº. C28–04–FKG0–28

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

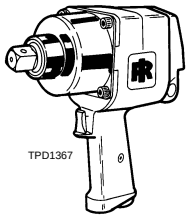
Toutes les quarante–huit heures de fonctionnement, ou en fonction de l'expérience, injecter environ 4cm^3 de graisse Ingersoll–Rand No. 100 dans le raccord de graissage.



(Plan TPD905–1)

SPÉCIFICATIONS

Modèle	Type de poignée	Entraînement	Coups par minute	Gamme de couples recommandée
		in.		**ft–lbs (Nm)**
2920B1	en ligne	3/4” entr. carré	950	250–800 (339–1085)
2920B3	en ligne	1” entr. carré	950	250–800 (339–1085)
2920B9	en ligne	3/4” entr. carré à 90º	950	150–500 (203–678)



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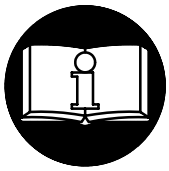
MANUAL DE USO Y MANTENIMIENTO PARA LLAVES DE IMPACTO INDUSTRIALES MODELOS 2920B Y 2920B9

NOTA

Las llaves de Impacto Modelos 2920B y 2920B9 está diseñadas para uso en trabajos de montaje pesados 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 INFORMACION IMPORTANTE DE SEGURIDAD.
LEA ESTE MANUAL ANTES DE USAR LA HERRAMIENTA.
ES RESPONSABILIDAD DE LA EMPRESA ASEGURARSE DE QUE EL OPERARIO ESTE AL TANTO DE LA INFORMACION QUE CONTIENE ESTE MANUAL.
EL HACER CASO OMISO DE LOS AVISOS SIGUIENTES PODRIA 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 durabilidad de piezas, use esta herramienta a una máxima presión de aire de 90 psig (6,2 bar/620kPa) en la admisión de manguera de suministro de aire de diámetro interno de 13 mm.**
- **Corte siempre el suministro de aire y desconecte la manguera de suministro de aire antes de instalar, desmontar o ajustar cualquier accesorio de esta herramienta, o antes de realizar cualquier operación de mantenimiento de la misma.**
- **No utilice mangueras de aire y accesorios dañados, desgastados ni deteriorados.**
- **Asegúrese de que todas las mangueras y los accesorios sean del tamaño correcto y estén bien apretados. Vea Esq. TPD905–1 para un típico arreglo de tuberías.**
- **Use siempre aire limpio y seco a una máxima presión 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 HERRAMIENTA

- **Use siempre protección ocular cuando utilice esta herramienta o realice operaciones de mantenimiento en la misma.**
- **Use siempre protección para los oídos cuando utilice 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 funcionar la herramienta para estar consciente de su dirección giratoria cuando funcione el estrangulador.**
- **Anticipe y esté alerta a 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 menos de, la recomendada presión de aire.**
- **El eje de la herramienta podría seguir girando brevemente después de haber soltado la palanca de estrangulación.**
- **Las herramientas neumáticas pueden vibrar durante el uso. La vibración, repetición o posiciones incomodas pueden dañarle los brazos y manos. En caso de incomodidad, sensación de hormigueo o dolor, deje de usar la herramienta. Consulte a un médico antes de volver a usarla otra vez.**
- **Utilice únicamente los accesorios Ingersoll–Rand recomendados.**
- **Utilice únicamente bocas y accesorios para llaves de impacto. No utilice bocas o accessorios manuales (cromados).**
- **Las llaves de impacto no son llaves de par. Las uniones que requieran pares específicos deberán ser comprobadas con un torsiómetro después de haberlas fijado con una llave de impacto.**
- **Esta herramienta no ha sido diseñada para trabajar en ambientes explosivos.**
- **Esta herramienta no está aislada contra descargas eléctricas.**

NOTA

El uso de piezas de recambio que no sean las auténticas piezas Ingersoll–Rand podría poner en peligro la seguridad, reducir el rendimiento de la herramienta y aumentar los cuidados de mantenimiento necesarios, así como invalidar toda garantía. Las reparaciones sólo serán realizadas por personal cualificado y autorizado. Consulte con el centro de servicio Ingersoll–Rand autorizado más próximo.

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

Impreso en EE. UU.

Ingersoll-Rand®

ETIQUETAS DE AVISO

⚠ AVISO

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

⚠ ADVERTENCIA

Use siempre protección ocular cuando utilice esta herramienta o realice operaciones de mantenimiento en 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

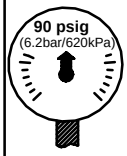
Mantener una postura del cuerpo equilibrada y firme. No estirar demasiado los brazos al manejar la herramienta.

⚠ ADVERTENCIA

Use siempre protección para los oídos cuando utilice esta herramienta.

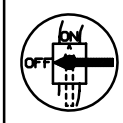
⚠ ADVERTENCIA

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.

PARA PONER LA HERRAMIENTA EN SERVICIO

LUBRICACION

Ingersoll–Rand Nº 50

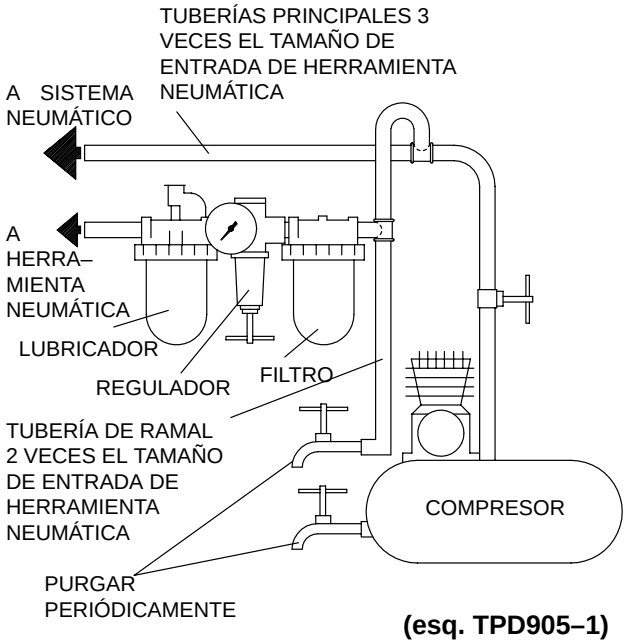
Ingersoll–Rand Nº 100

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

EE. UU. – Nº. C28–04–FKG0–28

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

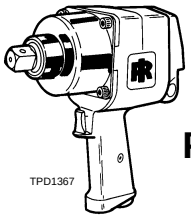
Después de cada cuarenta y ocho horas de funcionamiento, o según indique la experiencia, inyecte unos 4 cc de Grasa Ingersoll–Rand Nº 100 en el Engrasador.



(esq. TPD905–1)

ESPECIFICACIONES

Modelo	Tipo de Empuñadura	Accionamiento	Impactos por-minuto	Gama de par recomendada
		pulg.		**ft–lbs (Nm)**
2920B1	en línea	3/4” cuadradillo	950	250–800 (339–1085)
2920B3	en línea	1” cuadradillo	950	250–800 (339–1085)
2920B9	en línea	3/4” cuadradillo – 90°	950	150–500 (203–678)



P

MANUAL DE FUNCIONAMENTO E MANUTENÇÃO PARA FERRAMENTAS DE PERCUSSÃO PARA SERVIÇO SUPER PESADO SÉRIE 2920B E 2920B9

AVISO

As Ferramentas de Percussão Série 2920B e 2920B9 são concebidas para utilização em trabalho pesado de montagem e manutenção de maquinaria.

A Ingersoll–Rand não pode ser responsabilizada pela modificação de ferramentas para aplicações para as quais não tenha sido consultada.

⚠ ADVERTÊNCIA

IMPORTANTES INFORMAÇÕES DE SEGURANÇA EM ANEXO.
LEIA ESTE MANUAL ANTES DE OPERAR A FERRAMENTA.

É RESPONSABILIDADE DA ENTIDADE PATRONAL PÔR AS INFORMAÇÕES CONTIDAS NESTE MANUAL À DISPOSIÇÃO DOS UTILIZADORES.

A NÃO OBEDIÊNCIA ÀS ADVERTÊNCIAS SEGUINTES PODERÁ RESULTAR EM LESÕES PESSOAIS.

COLOCAÇÃO DA FERRAMENTA EM SERVIÇO

- **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, desempenho superior e durabilidade máxima das peças, opere esta ferramenta a uma pressão de ar máxima de 90 psig (6,2 bar/620 kPa) na admissão com uma mangueira de alimentação de ar com diâmetro interno de 1/2 pol. (13 mm).**
- **Desligue sempre a alimentação de ar e a mangueira de alimentação de ar antes de instalar, retirar ou ajustar qualquer acessório desta ferramenta, ou antes de fazer manutenção na mesma.**
- **Não utilize mangueiras de ar e acessórios danificados, puídos ou deteriorados.**
- **Certifique–se de que todas as mangueiras e acessórios são da dimensão correcta e que estão seguros firmemente. Consulte o Des. TPD905–1 para uma disposição de tubos típica.**
- **Utilize sempre ar limpo e seco a uma pressão máxima de 90 psig. Poeira, fumos corrosivos e/ou humidade excessiva podem destruir o motor de uma ferramenta pneumática.**
- **Não lubrifique a ferramenta com líquidos inflamáveis ou voláteis como querosene, gasóleo ou combustível para jactos.**
- **Não retire nenhum rótulo. Substitua os rótulos danificados.**

UTILIZAÇÃO DA FERRAMENTA

- **Use sempre protecção para os olhos ao operar ou fazer manutenção nesta ferramenta.**
- **Use sempre protecção auricular ao operar esta ferramenta.**
- **Mantenha as mãos, roupas soltas e cabelos longos afastados da extremidade rotativa da ferramenta.**
- **Note a posição da alavanca de inversão antes de operar a ferramenta de forma a estar ciente da direcção de rotação ao operar o regulador.**
- **Esteja preparado e alerta para mudanças súbitas no movimento durante o arranque e o funcionamento de qualquer ferramenta mecânica.**
- **Mantenha o corpo numa posição equilibrada e firme. Não estique o corpo ao operar esta ferramenta. Podem ocorrer binários de reacção elevados à ou abaixo da pressão do ar recomendada.**
- **O veio da ferramenta pode continuar a rodar por um curto período de tempo depois de soltar o regulador.**
- **A ferramentas pneumáticas podem vibrar durante a utilização. Vibração, movimentos repetitivos ou posições desconfortáveis podem ser nocivos às suas mãos e braços. Pare de utilizar qualquer ferramenta se ocorrer desconforto, sensação de formigueiro ou dor. Procure assistência médica antes de reiniciar a utilização.**
- **Use os acessórios recomendados pela Ingersoll–Rand.**
- **Use apenas caixas e acessórios de percussão. Não use caixas e acessórios manuais (cromo).**
- **As chaves de percussão não são chaves dinamométricas. As ligações que precisem de um valor específico de binário devem ser verificadas com um dinamómetro após serem montadas com uma chave de percussão.**
- **Esta ferramenta não é concebida para funcionar em atmosferas explosivas.**
- **Esta ferramenta não é isolada contra choque eléctrico.**

AVISO

A utilização de qualquer peça sobresselente que não seja Ingersoll–Rand genuína pode resultar em riscos para a segurança, em desempenho reduzido da ferramenta e mais necessidade de manutenção, e pode invalidar todas as garantias.

As reparações só devem ser feitas por pessoal autorizado e com formação adequada. Consulte o Representante Autorizado Ingersoll–Rand mais próximo.

Envie toda a correspondência ao Escritório ou Distribuidor Ingersoll–Rand mais próximo.

Impresso nos E.U.A.

Ingersoll-Rand®

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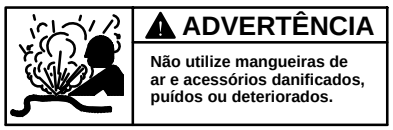
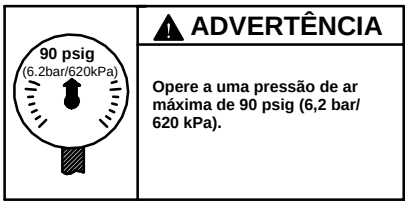




COLOCAÇÃO DA FERRAMENTA EM SERVIÇO

LUBRIFICAÇÃO

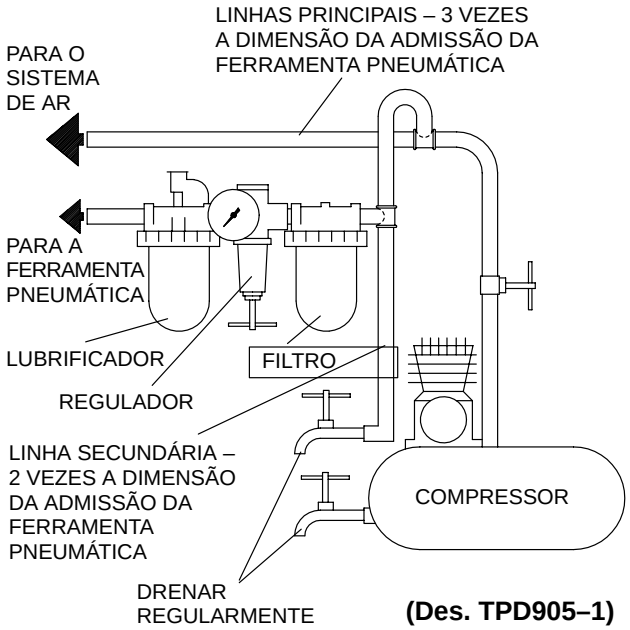
Ingersoll–Rand Nº 50 **Ingersoll–Rand Nº 100**

Utilize sempre um lubrificador de linha de ar com estas ferramentas.
Recomendamos a seguinte Unidade Filtro–Lubrificador–Regulador:

E.U.A. – Nº. C28–04–FKG0–28

Após cada oito horas de funcionamento, a menos que esteja a ser utilizado um lubrificador de linha de ar, retire o Bujão da Câmara de Óleo e encha esta câmara com Óleo Ingersoll–Rand Nº 50.

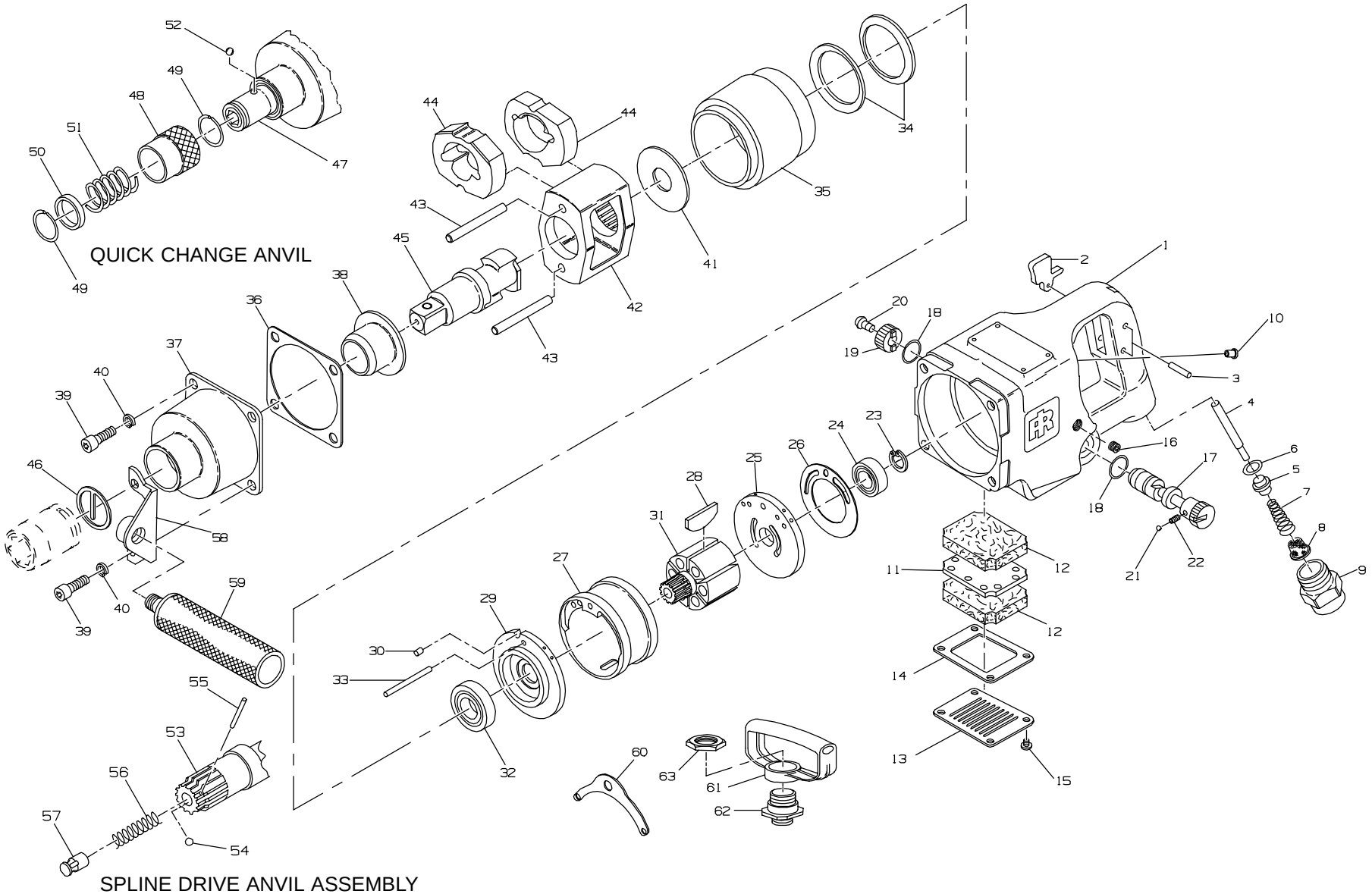
Após cada quarenta–e–oito horas de funcionamento, ou conforme a experiência indicar, injecte cerca de 4 cc de Massa Ingersoll–Rand Nº 100 no Copo de Massa.



(Des. TPD905–1)

ESPECIFICAÇÕES

Modelo	Tipo de Pega	Accionamento	Impactos por min.	Gama de Binário Recomendada
		pol.		ft–lbs (Nm)
2920B1	em linha	acc. quadr. de 3/4 pol.	950	250–800 (339–1.085)
2920B3	em linha	acc. quadr. de 1 pol.	950	250–800 (339–1.085)
2920B9	em linha	acc. quadr. de 3/4 pol. a 90°	950	150–500 (203–678)



(Dwg. TPA960–2)

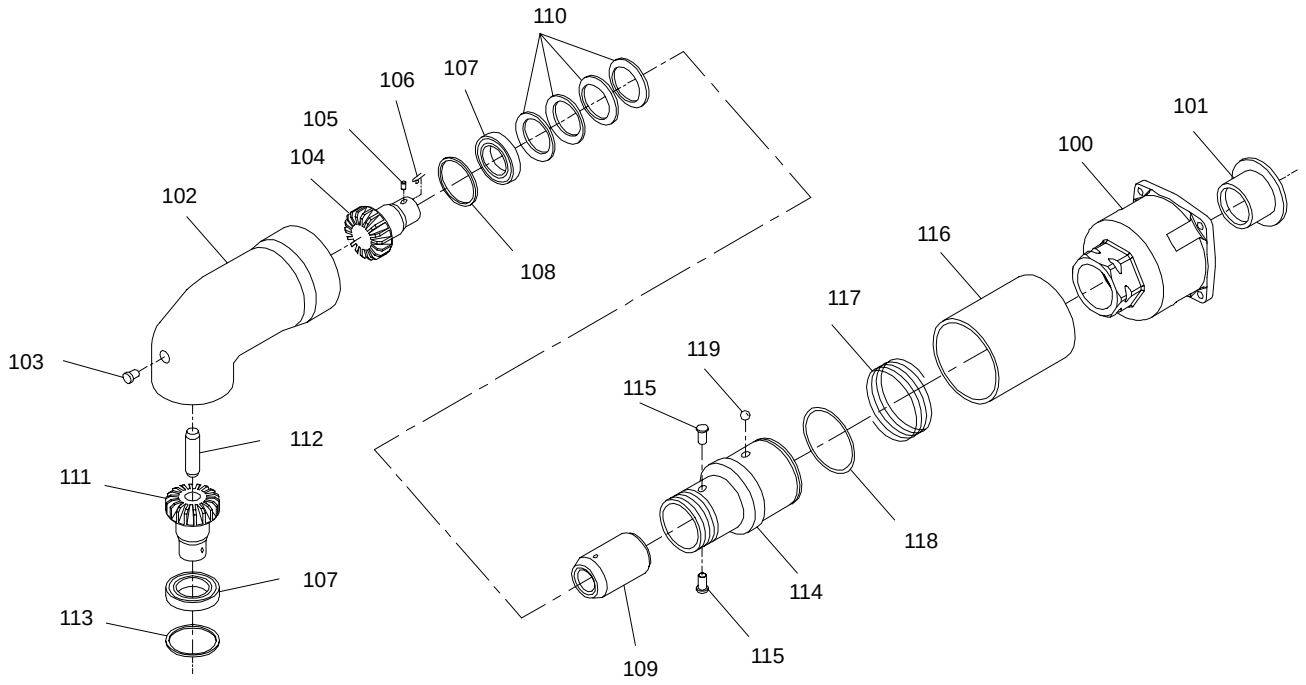
		PART NUMBER FOR ORDERING				PART NUMBER FOR ORDERING
	1	Motor Housing Assembly			27	Cylinder 2920–3
		for 2920B	2920B–A40	•	28	Vane Packet (set of 6 Vanes) 2910–42–6
		for 2920B–EU	2920B–EU–A40		29	Front End Plate 2921HP–11
	2	Trigger	834–93A		30	End Plate Dowel 2920–74
	3	Trigger Pin (2)	534–265		31	Rotor 2910B–53
	4	Throttle Valve Plunger	2920B–302		32	Front Rotor Bearing 834–24
	5	Throttle Valve Assembly	834–50		33	Cylinder Dowel 910–98
•	6	Throttle Valve Face	435–159		34	Motor Clamp Washer (2) 2920–207
	7	Throttle Valve Spring	834–51		35	Motor Retainer 2920B–800
•	8	Air Strainer Screen	434–61		36	Hammer Case Gasket 910–36
	9	Air Inlet Bushing	834–565		37	Hammer Case Assembly 2920B–A727
	10	Grease Fitting	130SR–188		38	Hammer Case Bushing 2920–641
	11	Exhaust Baffle	2920B–124		39	Hammer Case Cap Screw (4) 34U–103
	12	Exhaust Silencer (2)	2920B–311		40	Cap Screw Lock Washer (4) 34U–58
	13	Exhaust Deflector	2910B–23		41	Rear Hammer Frame Washer 910–706
	14	Exhaust Deflector Gasket	2910B–223		42	Hammer Frame Assembly 2910–A703
	15	Exhaust Deflector Screw (4)	H54U–667		43	Hammer Pin (2) 2910–704
	16	Oil Chamber Plug	R2–227		44	Hammer (2) 2910–724
	17	Reverse Valve	1710B–329		45	Anvil
•	18	Reverse Valve Seal(2)	261–283			3/4” square drive 2910–726
	19	Reverse Valve Knob	231–666			1” square drive 2910–826
	20	Reverse Valve Knob Screw	231–665		46	Socket Retainer
	21	Reverse Valve Detent Ball	AV1–255			for 3/4” square drive RR10034S
	22	Reverse Valve Detent Spring	231–664			for 1” square drive RR100l5S
	*	Housing Label				Quick Change Anvil Assembly 2910B–A926–l0
		for 2920B	WARNING–2–99		47	Quick–Change Anvil 2910B–926–l0
		for 2920B–EU	EU–99		48	Retaining Sleeve W54–930–10
	23	Rear Rotor Bearing Retainer	MVA008–218		49	Thrust Ring Lock (2) W54–933–10
	24	Rear Rotor Bearing	4E–510		50	Thrust Ring W54–932–10
	25	Rear End Plate	2921HP–12		51	Retaining Sleeve Spring W54–931–10
•	26	Rear End Plate Gasket	2920B–283		52	Retaining Ball 8U–722

* 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.

		PART NUMBER FOR ORDERING			PART NUMBER FOR ORDERING
53	No. 4 Spline Drive Anvil Assembly	2910–A526	62	Side Spade Handle Stud	534–448
54	Socket Retaining Ball	G601–65	63	Side Spade Handle Stud Nut	107–73A
55	Retaining Ball Plunger	910–230	*	Nameplate	
56	Ball Plunger Spring	12SR–262		for 2920B	2920B–301
57	Plunger Retaining Pin	502B–120		for 2920B–EU	2920B–EU–301
58	Dead Handle Bracket	2910B–364	*	Nameplate Screw (4)	C32–302
59	Dead Handle	834–48	*	Tune–up Kit (includes illustrated parts 6,	
60	Horizontal Hanger	910–366		7, 8, 12 [2], 14, 18 [2], 21, 22, 23, 24, 26,	
61	Side Spade Handle	T15–41		28, 32 and 36)	2920B–TK2

* Not illustrated.



NO. 2920A90 ANGLE ATTACHMENT (Dwg. TPC357)

PART NUMBER FOR ORDERING

100	Hammer Case Assembly	2920B–A827
101	Hammer Case Bushing	2920–641
	Angle Attachment Assembly	2920A90
102	Angle Housing Assembly	2920A90–A600
103	Grease Fitting	130SR–188
104	Bevel Pinion Assembly	2920A90–A602
105	Retainer Plunger	8U–715
106	Retainer Plunger Spring	5UHD–718
107	Bevel Pinion Bearing or Bevel Gear Bearing (2)	2920A90–593
108	Bevel Pinion Spacer	2920A90–608
109	Bevel Pinion Driver	2920A90–563
110	Bevel Pinion Washer Clamp (2)	2920A90–207
111	Bevel Gear	2920A90–601
112	Bevel Gear Spindle	2920A90–607
113	Bevel Gear Bearing Retainer	WBT380N–118
114	Angle Housing Connector	2920A90–680
115	Connector Lock Pin (2)	436A90–609
116	Connector Retaining Sleeve	2920A90–681
117	Retaining Sleeve Spring	2920A90–682
118	Connector Retaining Sleeve Stop	2920A90–303
119	Connector Retaining Ball (3)	8U–722
*	Socket Retainer	RR10034S

* Not illustrated.

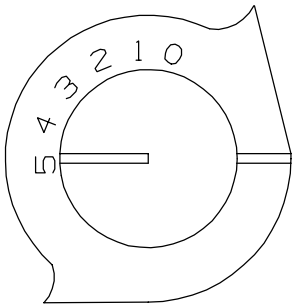
SETTING THE POWER REGULATOR

An optional Power Regulator (Part No. 2920–K329) is available at extra cost for Series 2920B and 2920B9 Impactools. This Power Regulator can be added to the tool's reversing mechanism and 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 (17, 19) until the notch on each end of the Reverse Valve aligns with the number 5 on each side of the housing.

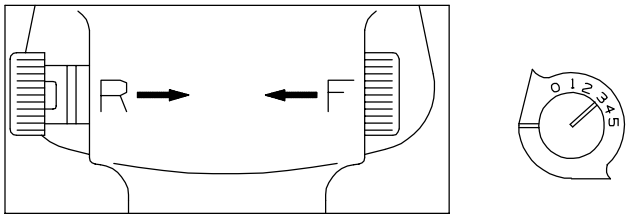
NOTICE

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.



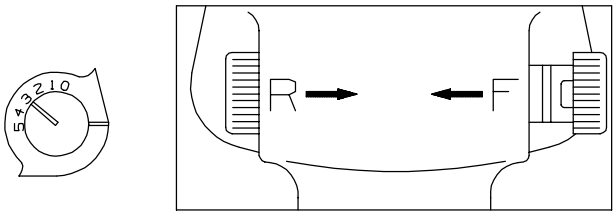
(Dwg. TPD1247)

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.



(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.



(Dwg. TPD1249)

⚠ 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.

LUBRICATION

Each time a Model 2920B and 2920B9 Impactool is disassembled for maintenance and repair or replacement of parts, lubricate the tool as follows:

1. Work 12 to 15 cc of Ingersoll–Rand No. 100 Grease into the impact mechanism. Coat the Anvil (45, 47, 48, 50, 53 or 56) lightly with grease around the Hammer Case Bushing (38 or 41). Inject 2 to 4 cc of grease into the Grease Fitting (10 or 18).
2. Use Ingersoll–Rand Oil No. 50 for lubricating the motor. Inject 1 to 2 cc of oil into the air inlet before attaching the air hose. Remove the Oil Chamber Plug (16 or 10) 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 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.

Model 2920B

Disassembly of the Square Drive Anvil and Spline Drive Anvil

1. Clamp the handle of the Impactool in leather–covered or copper–covered vise jaws with the square drive Anvil upward.
2. Unscrew and remove the four Hammer Case Cap Screws (39).
3. While lightly tapping on the end of the Anvil (45 or 53) with a plastic hammer. Lift off the Hammer Case (37).
4. Remove and discard the Hammer Case Gasket (36).
5. Grasp the Hammer Frame (42) and carefully lift off the entire impact mechanism, making certain not to drop the two Hammer Pins (43). If it is necessary to disassemble the impact mechanism, refer to Disassembly of the Impact Mechanism. If it is unnecessary to disassemble the impact mechanism, set it aside intact.

Disassembly of the Quick–Change Anvil

1. Clamp the handle of the Impactool in leather–covered or copper–covered vise jaws with the Quick–Change Anvil upward.
2. Remove the front Thrust Ring Lock (49) and Thrust Ring (50).

NOTICE

The Retaining Ball (52) is held in the hole in the Anvil (47) by the Retaining Sleeve. Once the Retaining Sleeve is removed, the Retaining Ball will fall free.

3. Remove the Retaining Sleeve Spring (51), Retaining Sleeve, Retaining Ball, and the rear Thrust Ring Lock (49).
4. While lightly tapping on the end of the Anvil with a plastic hammer, lift off the Hammer Case (37) and remove the Hammer Case Gasket (36).
5. Grasp the Hammer Frame (42) and carefully lift off the entire impact mechanism, making certain not to drop the two Hammer Pins (43). If it is necessary to disassemble the impact mechanism, refer to Disassembly of the Impact Mechanism. If it is unnecessary to disassemble the impact mechanism, set it aside intact.

Disassembly of the Impact Mechanism

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

NOTICE

Note the twin Hammers (44) within the Hammer Frame (42). These are identical but must be placed in the Hammer Frame in a certain relationship. Using a felt–tipped pen, mark the top Hammer "T↑" and the bottom Hammer "B↑" with the arrows pointing upward. Mark both Hammers on the same end.

2. With the mechanism sitting upright on the workbench, slowly rotate the Anvil (45 or 47) in a clockwise direction until it comes up solid.

NOTICE

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

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

NOTICE

The twin Hammers will be free to slide from the Hammer Frame when the Hammer Pins (43) are removed. Do not drop the Hammers.

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

Disassembly of the Reverse Valve

NOTICE

The Reverse Valve Knob Screw (20) is installed with a thread locking compound. You may have to heat the Screw slightly to loosen it.

1. Unscrew the Reverse Valve Knob Screw and remove the Reverse Valve Knob (19).

NOTICE

For models with optional Power Regulator Part No. 2920–K329 only, be careful not to lose the Reverse Valve Detent Ball (21) and Reverse Valve Detent Ball Spring (22) from the hole in the side of the Reverse Valve (17).

2. While slowly rotating the Reverse Valve, withdraw it from the reverse valve bushing in the Motor Housing.

Disassembly of the Motor

1. Grasp the Motor Retainer (35) and remove it from the Motor Housing (1).
2. Remove the Rear Hammer Frame Washer (41) and the Motor Clamp Washers (34) from the front of the Motor.

NOTICE

The End Plate Dowel (30) will fall free when the Front End Plate (29) clears the Housing. Do not lose the Dowel.

3. Grasping the splined end of the Rotor (31), carefully lift the assembled motor from the Motor Housing.
4. Remove the Rear End Plate Gasket (26).
5. Remove the Motor Housing from the vise.
6. Slide the Front End Plate (29) with the Front Rotor Bearing (32) from the Rotor.
7. Remove the Cylinder Dowel (33), Cylinder (27) and Vanes (28) from the Rotor.
8. Using snap ring pliers, remove the Rear Rotor Bearing Retainer (23) and slide the Rear End Plate (25) with the Rear Rotor Bearing (24) from the Rotor.
9. If the Front or Rear Rotor Bearing requires replacement, press it from the End Plate.

Disassembly of the Throttle Mechanism

1. Unscrew the Air Inlet Bushing (9) and remove the Air Strainer Screen (8), Throttle Valve Spring (7), Throttle Valve Assembly (5) and Throttle Valve Plunger(4).
2. If the Throttle Valve Seat (6) needs replacement, insert a hooked tool through the center of the Valve Seat. Catch the backside of the Seat with the hook and pull the Seat from the Housing.
3. Unscrew the four Exhaust Deflector Screws (15) and remove the Exhaust Deflector (13) Exhaust Deflector Gasket (14) and the Exhaust Silencer/Exhaust Baffle (12, 11) combination.

Model 2920B9

Dissasembly of the Angle Attachment

1. Slide the Connector Retaining Sleeve (116) toward the square drive anvil and pull the Angle Housing Assembly (102) off the tool.

NOTICE

Be careful not to lose the three Connector Retaining Balls (119) as they are free to fall out when the Connector Retaining Sleeve is removed.

2. Grasp the Angle Housing Assembly in leather–covered or copper–covered vise jaws, bevel pinion end facing upward. Slide the Connector Retaining Sleeve (116) toward the square drive anvil and remove the Connector Retaining Sleeve Stop (118) from the Angle Housing Connector (114).

3. Working over a workbench, carefully slide the Connector Retaining Sleeve off the Angle Housing Connector.
4. Slide the Retaining Sleeve Spring (117) off the Angle Housing Connector.
5. Using a thin blade screwdriver, pry the two Connector Lock Pins (115) from the Housing.
6. Using a spanner wrench in one of connector lock pin holes, unscrew and remove the Angle Housing Connector (114).
7. Pull the Bevel Pinion Driver (109) off the Bevel Pinion Assembly (104).
8. Slide the Bevel Pinion Assembly, four Bevel Pinion Clamp Washers (110), Bevel Pinion Bearing (107) and Bevel Pinion Spacer (108) from the Angle Housing Assembly. Remove the Angle Housing from the vise.
9. Grasp the Angle Housing in leather–covered or copper–covered vise jaws, Bevel Gear (111) facing upward.
10. Using snap ring pliers, remove the Bevel Gear Bearing Retainer (113).
11. Slide the Bevel Gear Bearing (107), Bevel Gear, and Bevel Gear Spindle (112) from the Angle Housing. Remove the Angle Housing from the vise.

NOTICE

Further disassembly of the Model 2920B9 Impactool is identical to Model 2920B.

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 the recommended oil before installation.
5. Apply a film of o–ring lubricant to all O–rings before final assembly.

Assembly of the Throttle Mechanism

1. Sandwich the Exhaust Baffle (11) between the two Exhaust Silencers (12) and install them in the rectangular opening in the bottom of the Motor Housing (1).
2. Install the Exhaust Deflector Gasket (14) on the rim of the opening.
3. Place the Exhaust Deflector (13) over the Gasket and after applying a thread locking compound to the four Exhaust Deflector Screws (15), secure the Deflector with the Screws. Tighten each Screw to 20 to 25 in–lb (2 to 3 Nm) torque.
4. Apply a thin coat of O–ring lubricant to the Throttle Valve Face (6). Using a dowel, seat the Valve securely and without damage.
5. Install the Throttle Valve on the small end of the Throttle Valve Plunger (4) and insert the Plunger and Valve, Plunger first, into the air inlet chamber of the housing.
6. Put the small end of the Throttle Valve Spring (7) over the trailing end of the Throttle Valve. Place the Air Strainer Screen (8) so that it sits within the coils of the Spring and install the Air Inlet Bushing (9). Tighten the Inlet Bushing to 50 to 60 ft–lb (68 to 81 Nm) torque.

Assembly of the Motor

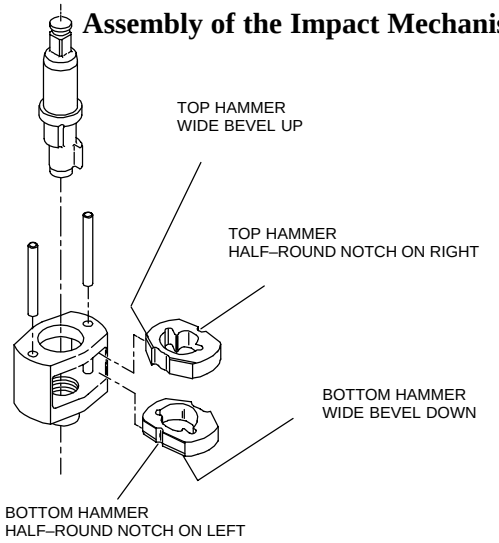
1. Using a sleeve that will contact only the outer ring of the bearing. press the Front Rotor Bearing (32) into the Front End Plate (29) and the Rear Rotor Bearing (24) into the Rear End Plate (25).
2. Slip the Front End Plate and Bearing over the splined hub of the Rotor (31).
3. Grasp the splined end of the Rotor in leather–covered or copper–covered vise jaws with the Rotor in a vertical position.
4. Dampen each Vane (28) with light oil and insert a Vane into each vane slot in the Rotor.
5. Set the Cylinder (27) 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. Using snap ring pliers, install the Rear Rotor Bearing Retainer (23) in the groove on the rotor hub.
8. Align the dowel hole in both End Plates with the one through the Cylinder, and insert a guide rod 3/16” x 8” (4.7 mm x 203 mm) through the holes. Allow the rod to protrude about 3–1/2” (89 mm) from the Rear End Plate.
9. While holding the assembled motor intact, remove it from the vise.
10. Insert the protruding end of the guide rod into the cast slot at the bottom of the Motor Housing bore and slide the assembled motor along the rod until it is completely seated in the housing.
11. Remove the guide rod and install the Cylinder Dowel (33).
12. Install the End Plate Dowel (30).
13. Grasp the handle of the Motor Housing in leather–covered or copper–covered vise jaws with the open end of the Motor Housing upward.

14. Place a Motor Clamp Washer (34), concave side first, down over the hub of the Front End Plate so that the outer rim of the Washer contacts the Front End Plate. Place the second Motor Clamp Washer, convex side first, down over the hub of the Front End Plate so that the inner rims of both Washers are in contact but the outer rims are separated.
15. Place the Motor Retainer (35), small bore first, down over the hub of the Front End Plate and against the outer rim of the second Motor Clamp Washer.

Assembly of the Reverse Valve

1. After applying o–ring lubricant to the Reverse Valve Seals (18), install them in the undercuts in the reverse valve bushing. Make certain they are properly seated.
2. Dampen the Reverse Valve (17) with light oil. **For models with optional Power Regulator Part No. 2920–K329 only**, install the Detent Spring (22) followed by the Reverse Valve Detent Ball (21) in the hole in the Reverse Valve. With the Impactool in an upright horizontal position, and while facing the handle end of the Impactool, insert the Reverse Valve from left to right into the reverse valve bushing.
3. **For models with optional Power Regulator Part No. 2920–K329 only,** position the Reverse Valve with the indicator slot on the end of the Valve pointing to the number 5 on the Housing. Position the Reverse Valve Knob (19) on the opposite end of the Valve with the small notch pointing, as near as possible, to the number 5 on that side of the Housing. Apply a thread locking compound to the Reverse Valve Knob Screw (20) and fasten the Knob to the Valve with the Screw. Tighten the Knob Screw to 5 to 6 ft–lb (6.75 to 8.15 Nm) torque.

Assembly of the Impact Mechanism



(Dwg. TPD652)

1. Coat the Hammers (44) with a light film of Ingersoll–Rand No. 100 Grease.
2. Replace the Hammers in the Hammer Frame (42) exactly as they were when you marked them prior to disassembly.

NOTICE

If you are installing new Hammers, or want to change the location of the existing Hammers to utilize both impacting surfaces, slide the Hammers in the Hammer Frame so that the half–round notch on one Hammer is located on one side of the Frame and the half–round notch on the other Hammer is located on the other side of the Frame. These Hammers must be installed with the wide bevels facing the web of the Hammer Frame as illustrated.

3. Replace the Hammer Pins (43).
4. Examine the base of the Anvil and note its contour. While looking down through the Hammer Frame, swing the top Hammer to its full extreme one way or another until you can match the contour of the Anvil. Enter the Anvil into the Hammer Frame and through the first Hammer. Swing the bottom Hammer in the opposite direction from the top Hammer and maneuver the Anvil slightly until it drops into the bottom Hammer.

Model 2920B

Assembly of the Square Drive Anvil and Spline Drive Anvil

1. Place the Rear Hammer Frame Washer (41) or (44), hub side first, over the hub of the Rotor and against the Front Rotor Bearing.
2. Set the assembled impact mechanism down over the splined hub of the Rotor. If the impact mechanism was disassembled, refer to Assembly of the Impact Mechanism.
3. Position the new Hammer Case Gasket (36) or (39) on the Housing.
4. Work approximately 12 to 15 cc of Ingersoll–Rand No. 100 Grease into the impact mechanism.
5. Smear a thin film of Ingersoll–Rand No. 100 Grease on the inside surface of the Hammer Case Bushing (38) or (41) and place the Hammer Case (37) or (40) down over the Anvil (45 or 53) or (48 or 56) and against the Motor Retainer.
6. Install the Hammer Case Cap Screws (39) or (42) and Cap Screw Lock Washers (40) or (43) and tighten them to 20 to 25 ft–lb (27 to 34 Nm) torque.
7. Remove the Impactool from the vise and inject 2 to 4 cc of the recommended grease into the Grease Fitting (10) or (18).

Assembly of the Quick–Change Anvil

1. Place the Rear Hammer Frame Washer (41) or (44), hub side first, over the hub of the Rotor and against the Front Rotor Bearing.
2. Set the assembled impact mechanism down over the splined hub of the Rotor. If the impact mechanism was disassembled, refer to Assembly of the Impact Mechanism.
3. Position the new Hammer Case Gasket (36) or (39) on the Housing.
4. Work approximately 12 to 15 cc of Ingersoll–Rand No. 100 Grease into the impact mechanism.
5. Smear a thin film of Ingersoll–Rand No. 100 Grease on the inside surface of the Hammer Case Bushing (38) or (41) and place the Hammer Case (37) or (40) down over the Anvil and against the Motor Retainer.
6. Reinstall the rear Thrust Ring Lock (49) or (52) on the Quick Change Anvil (47) or (50).
7. Place a dab of grease into the hole in the Quick Change Anvil to temporarily hold the Retaining Ball (52) or (55).
8. Slide the Retaining Sleeve (48) or (51), Retaining Sleeve Spring (51) or (54), Thrust Ring (50) or (53), and front Thrust Ring Lock (49) or (52) onto the Anvil.

Model 2920B9

NOTICE

Reassembly of the 2920B9 is exactly the same as the 2920B with the exception of the 90 degree Square Drive Assembly. The following instructions pertain to that assembly:

1. Grasp the Angle Housing (102) in leather–covered or copper–covered vise jaws, bevel gear end facing upward.
2. Coat the Bevel Gear Spindle (112) with Ingersoll–Rand No. 100 Grease and insert the Spindle into the bushing of the angle head.
3. Install the Bevel Gear (111) and Bevel Gear Bearing (107).
4. Using snap ring pliers install the Bevel Gear Bearing Retainer (113) into the groove in the angle head. Remove the Angle Housing from the vise.
5. Grasp the Angle Housing in a vise, bevel pinion end facing upward.
6. Insert the bevel pinion into the Angle Housing until it meshes with the Bevel Gear. Install the Bevel Pinion Spacer (108), Bevel Pinion Bearing (107) and four Bevel Pinion Clamp Washers (110).
7. Screw the Angle Housing Connector (114) into the Angle Housing and tighten the Connector using a spanner wrench inserted into one of the connector lock pin holes.
8. Install the Bevel Pinion Driver (109) onto the Bevel Pinion.
9. Install the two Connector Lock Pins into the two corresponding holes in the Angle Housing Connector.
10. Install the Retaining Sleeve Spring (117) onto the Angle Housing until it butts against the Connector Lock Pins.
11. Insert the three Connector Retaining Balls (119) into their respective holes in the Angle Housing Connector.
12. Slide the Connector Retaining Sleeve (116) over the Angle Housing Connector and while pushing the Sleeve toward the square drive anvil, install the Connector Retaining Sleeve Stop (118). Remove the Angle Housing Assembly from the vise.
13. Grasp the Angle Attachment and slide the Connector Retaining Sleeve toward the square drive anvil. Install the Angle Attachment on the tool in one of six different positions relative to the in–line handle. Release the Connector Retaining Sleeve to lock the Angle Attachment onto the tool.
14. Inject approximately 9 cc of Ingersoll–Rand No. 100 Grease into the Grease Fitting on the Angle Housing.

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 clean, 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.