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Form P7067
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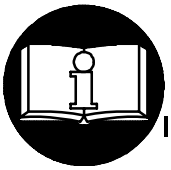
OPERATION AND MAINTENANCE MANUAL FOR SERIES 2945 AND 2950 SUPER DUTY IMPACTOOLS

NOTICE

Series 2945 and 2950 Impactools are designed for use in structural fabrication, machinery maintenance, railroad maintenance, pipe and valve flange applications and installation of lag screws.
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 3/4" (19 mm) inside diameter air supply hose.
- Always turn off the air supply and disconnect the air supply hose before installing, removing or adjusting any accessory on this tool, or before performing any maintenance on this tool.
- Do not use damaged, frayed or deteriorated air hoses and fittings.
- Be sure all hoses and fittings are the correct size and are tightly secured. See Dwg. TPD905-1 for a typical piping arrangement.
- Always use clean, dry air at 90 psig maximum air pressure. Dust, corrosive fumes and/or excessive moisture can ruin the motor of an air tool.
- Do not lubricate tools with flammable or volatile liquids such as kerosene, diesel or jet fuel.
- Do not remove any labels. Replace any damaged label.

USING THE TOOL

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

NOTICE

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

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

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

Printed in U.S.A.

INGERSOLL-RAND®
PROFESSIONAL TOOLS

WARNING LABEL IDENTIFICATION

⚠ WARNING

FAILURE TO OBSERVE THE FOLLOWING WARNINGS COULD RESULT IN INJURY.

⚠ WARNING

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

⚠ WARNING

Always wear hearing protection when operating this tool.

⚠ WARNING

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.

⚠ WARNING

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.

⚠ WARNING

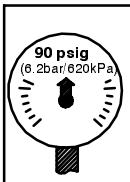
Do not carry the tool by the hose.

⚠ WARNING

Do not use damaged, frayed or deteriorated air hoses and fittings.

⚠ WARNING

Keep body stance balanced and firm. Do not overreach when operating this tool.



⚠ WARNING

Operate at 90 psig (6.2 bar/ 620 kPa) Maximum air pressure.

PLACING TOOL IN SERVICE

LUBRICATION

Ingersoll–Rand No. 50

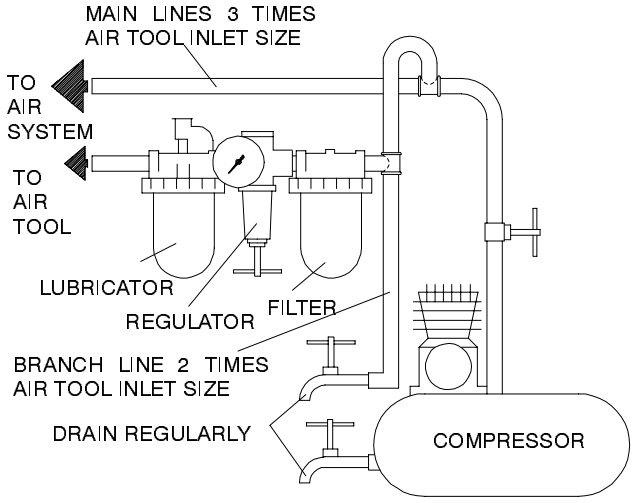
Ingersoll–Rand No. 100

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

For USA – No. C22–04–G00

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)

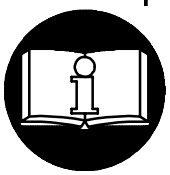
Model	Impacts/min.	Recommended Torque Range ft-lb	Nm
1-1/2" SQUARE DRIVE (Outside Trigger)			
2945A7	650	1 400 - 1 800	1 900 - 2 440
2950A7	650	1 600 - 2 500	2 170 - 3 390
1-1/2" SQUARE DRIVE (Inside Trigger)			
2945B7	650	1 400 - 1 800	1 900 - 2 440
2950B7	650	1 600 - 2 500	2 170 - 3 390
No. 5 SPLINE DRIVE (Inside Trigger)			
2945B1	650	1 400 - 1 800	1 900 - 2 440
2950B1	650	1 600 - 2 500	2 170 - 3 390

F

MANUEL D'EXPLOITATION ET D'ENTRETIEN
CLÉS À CHOCS À HAUTES PERFORMANCES
SÉRIES 2945 ET 2950

NOTE

Les clés à chocs des séries 2945 et 2950 sont conçues pour l'assemblage de structures métalliques, l'entretien des machines, l'entretien des chemins de fer, le montage des tuyauteries et vannes à bride et l'installation de tire–fonds.
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 19 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 de l'extrémité percutante 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 passe 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 et autorisés. Consultez votre Centre de Service Ingersoll–Rand le plus proche.

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

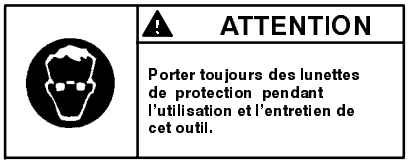
Imprimé aux É.U.

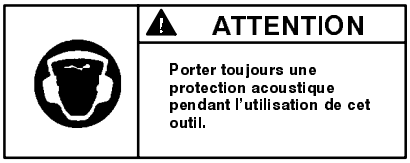
INGERSOLL-RAND®
PROFESSIONAL TOOLS

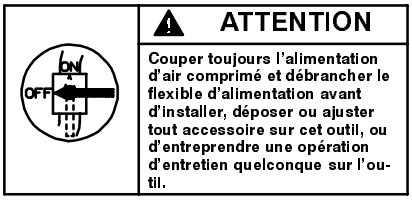
SIGNIFICATION DES ETIQUETTES D'AVERTISSEMENT

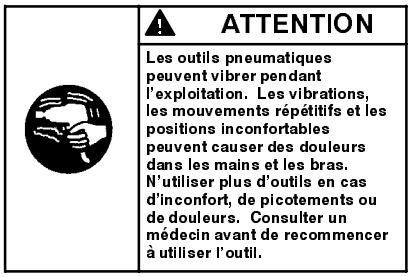
⚠ ATTENTION

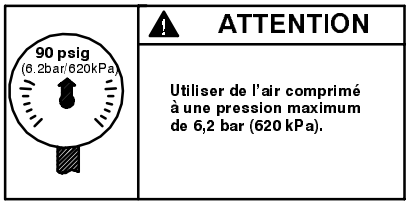
LE NON RESPECT DES AVERTISSEMENTS SUIVANTS PEUT CAUSER DES BLESSURES











MISE EN SERVICE DE L'OUTIL

LUBRIFICATION

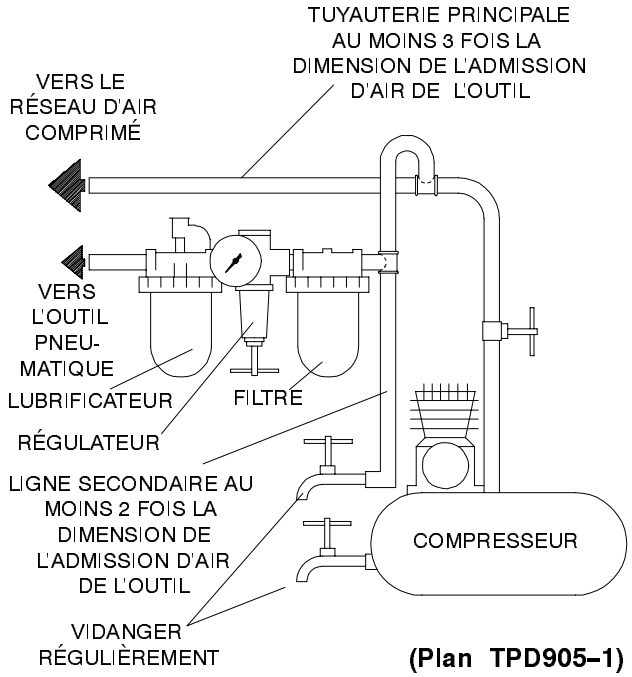
Ingersoll-Rand No . 50 **Ingersoll-Rand No . 100**

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

For USA - No. C22-04-G00

Toutes les huit heures de fonctionnement, si un lubrificateur de ligne d'air comprimé n'est pas utilisé, déposer le bouchon de la chambre à 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 4 cm^3 de graisse Ingersoll-Rand Nº. 100 dans le raccord de graissage.



(Plan TPD905-1)

SPÉCIFICATIONS

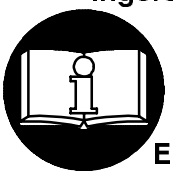
Modèle	Type de poignée	Entraînement	Coups par minute	Gamme de Couple' recommandée	
		in.		ft-lbs	(Nm)
2945A7	gâchette extérieure	1–1/2" carré	650	1400–1800	1900–2440
2950A7	gâchette extérieure	1–1/2" carré	650	1600–2500	2170–3390
2945B7	gâchette intérieure	1–1/2" carré	650	1400–1800	1900–2440
2950B7	gâchette intérieure	1–1/2" carré	650	1600–2500	2170–3390
2945B1	gâchette intérieure	No.5	650	1400–1800	1900–2440
2950B1	gâchette intérieure	No.5	650	1600–2500	2170–3390

E

MANUAL DE FUNCIONAMIENTO Y MANTENIMIENTO PARA IMPACTO INDUSTRIALES MODELOS 2945 Y 2950

NOTA

Las Llaves de Impacto Modelos 2945 y 2950 están diseñadas para usar en la fabricación de estructuras, mantenimiento de maquinaria, mantenimiento de ferrocarriles, aplicaciones de bridas de tubos y válvulas, y para instalación de tirafondos.
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 mayor seguridad y para obtener los mejores resultados y la máxima vida de servicio de las piezas, maneje esta herramienta a una presión de aire máxima de 90 psig (6,2 bar/620 kPa) con una manguera de suministro de aire con un diámetro interior de 19 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 maneje, o realice operaciones de mantenimiento a, 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 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.

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PROFESSIONAL TOOLS

ETIQUETAS DE AVISO

⚠ AVISO

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

⚠ ADVERTENCIA

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

⚠ ADVERTENCIA

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

⚠ ADVERTENCIA

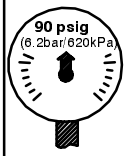
Mantener una postura del cuerpo equilibrada y firme. No estirar demasiado los brazos al manejar la herramienta.

⚠ ADVERTENCIA

Usar siempre protección para los oidos al manejar esta herriamenta.

⚠ 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

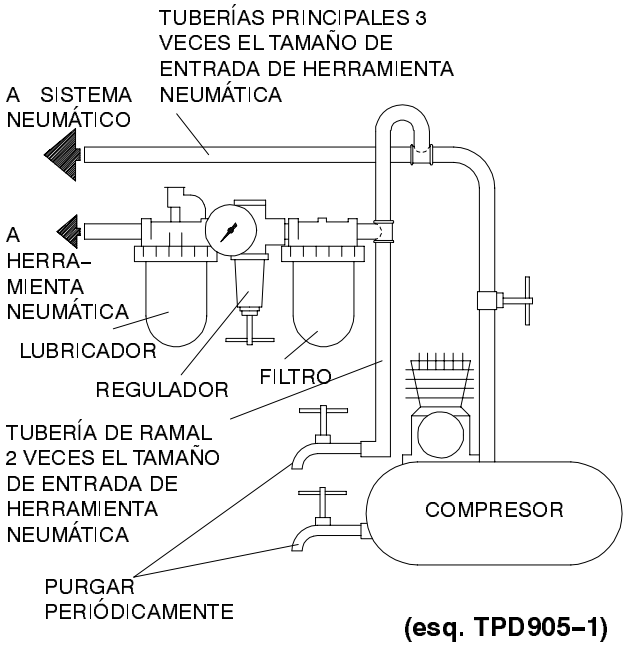
Ingersoll–Rand Nº 100

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

For USA – No. C22–04–G00

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

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



(esq. TPD905–1)

ESPECIFICACIONES

Modelo	Tipo de Empuñadura	Accionamiento	Impactos por minuto	Gama de par recommendada	
		pulg.		ft-lbs	(Nm)
2945A7	gatillo externo	1,5" cuadradillo	650	1400–1800	1900–2440
2950A7	gatillo externo	1,5" cuadradillo	650	1600–2500	2170–3390
2945B7	gatillo interno	1,5" cuadradillo	650	1400–1800	1900–2440
2950B7	gatillo interno	1,5" cuadradillo	650	1600–2500	2170–3390
2945B1	gatillo interno	Nº 5	650	1400–1800	1900–2440
2950B1	gatillo interno	Nº 5	650	1600–2500	2170–3390

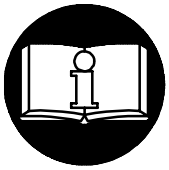
P

MANUAL DE FUNCIONAMENTO E MANUTENÇÃO PARA TRABALHO SUPER PESADO SÉRIE 2945 E 2950

AVISO

As Ferramentas de Percussão Séries 2945 e 2950 são concebidas para utilização em moldagem estrutural, manutenção de maquinaria, manutenção de caminhos de ferro, aplicações de tubagem e flanges de válvula e instalação de saca–fundos.
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 3/4 pol. (19 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

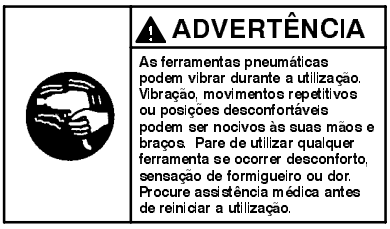
Impresso nos E.U.A.

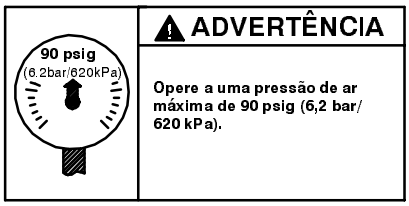
INGERSOLL-RAND®
PROFESSIONAL TOOLS

IDENTIFICAÇÃO DAS ETIQUETAS DE ADVERTÊNCIA

⚠ ADVERTÊNCIA

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





COLOCAÇÃO DA FERRAMENTA EM SERVIÇO

LUBRIFICAÇÃO

Ingersoll–Rand Nº 50

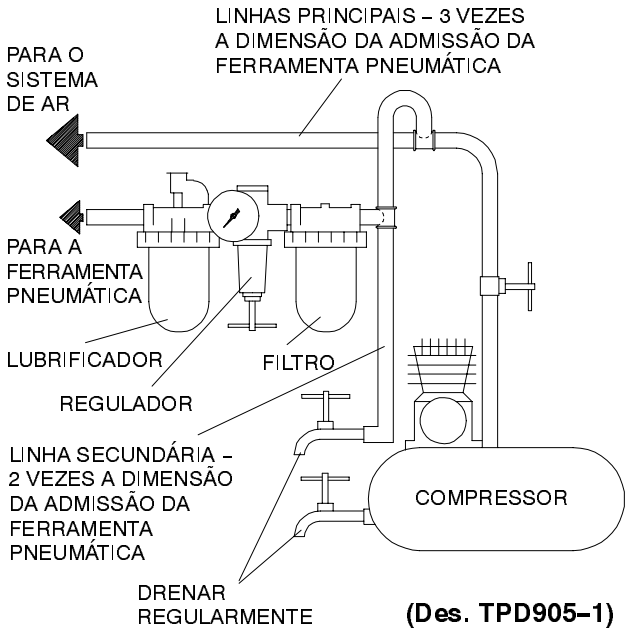
Ingersoll–Rand Nº 100

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

For USA – No. C22–04–G00

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.

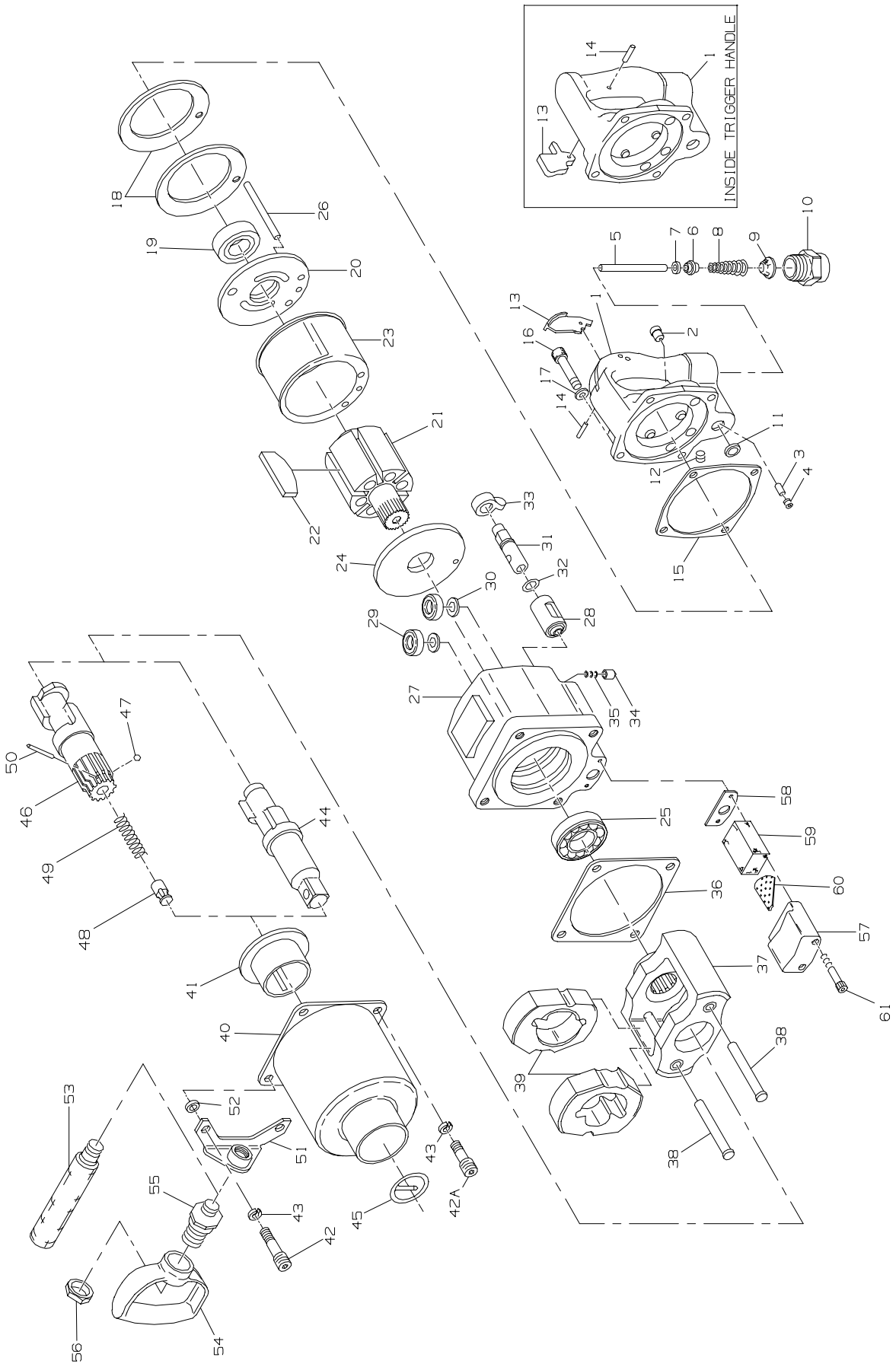
Após cada quarenta–e–oito horas de funcionamento, ou conforme a experiência indicar, injecte cerca de 4 cc de Massa Ingersoll–Rand Nº 100 no Copo de Massa.



(Des. TPD905–1)

ESPECIFICAÇÕES

Model	Tipo de Pega	Accionamento	Impactos por min.	Intervalo de Torque recomendado	
		pol.		Nm	pés-lbs
2945A7	gatilho externo	1-1/2 pol. quadr.	650	1900–2440	1400–1800
2950A7	gatilho externo	1-1/2 pol. quadr.	650	2170–3390	1600–2500
2945B7	gatilho interno	1-1/2 pol. quadr.	850	1900–2440	1400–1800
2950B7	gatilho interno	1-1/2 pol. quadr.	650	2170–3390	1600–2500
2945B1	gatilho interno	Nº 5.	650	1900–2440	1400–1800
2950B1	gatilho interno	Nº 5.	650	2170–3390	1600–2500



(Dwg. TPA1335)

			PART NUMBER FOR ORDERING
	1	Throttle Handle Assembly	
		with Outside Trigger	2950–A1
		with Inside Trigger	2950–A92
	2	Grease Fitting	130SR–188
♦	3	Oiler Felt	R2–75
	4	Oiler Adjusting Screw	R2–71
	5	Throttle Valve Plunger	2950–302
	6	Throttle Valve Assembly	2934–A50
♦•	7	Throttle Valve Face	2934–159
	8	Throttle Valve Spring	834–51
♦•	9	Air Strainer Screen	434–61
	10	Straight Inlet	845–565
♦•	11	Reverse Valve Seal	R00BR–210
#	12	Oil Chamber Plug (2)	R0H–377
	13	Trigger	
		Outside–type	844–78
		Inside–type	834–93A
	14	Trigger Pin	
		for Outside Trigger	F02–15
		for Inside Trigger	534–265
♦•	15	Handle Gasket	850–283
	16	Handle Cap Screw (5/16”– 18 thread x 1–1/4” long Socket Head) (4)	834–638
	17	Handle Cap Screw Washer (4)	588–140
	18	Motor Clamp Washer (2)	MR–207
♦	19	Rear Rotor Bearing	834–24
	20	Rear End Plate	2950–12
	21	Rotor	
		for 2945	2945–53
		for 2950	2950–53

			PART NUMBER FOR ORDERING
♦•	22	Vane Packet (set of 6 Vanes)	
		for 2945	2945–42–6
		for 2950	2950–42–6
	23	Cylinder	
		for 2945	2945–3
		for 2950	2950–3
	24	Front End Plate	2950–11
♦	25	Front Rotor Bearing	TA–22A
	26	Cylinder Dowel	
		for 2945	844–98
		for 2950	2950–98
	27	Motor Housing Assembly	
		for 2945	2945–A40
		for 2950	2950–A40
	28	Reverse Valve Bushing	2934–330S
♦•	29	Air Port Gasket (2)	R44H–210A
♦	30	Gasket Retainer (2)	2940–200
	31	Reverse Valve Assembly	2934–A329
♦	32	Reverse Valve Bushing Seal	85H–167
	33	Reverse Lever	2934–658A
♦	34	Reverse Lock Plunger	4U–663B
♦	35	Plunger Spring	4U–664
♦	36	Hammer Case Gasket	845–36
	37	Hammer Frame Assembly	
		for 2945	2945–A703
		for 2950	2950–A703
	38	Hammer Pin (2)	
		for 2945	2945–704
		for 2950	2950–704

♦ Indicates a 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.

Some tools have a single oil chamber plug. For these tools, order one Oil Chamber Plug, Part Number R2–227.

			PART NUMBER FOR ORDERING
	39	Hammer (2)	
		for 2945	2945-724
		for 2950	2950-724
	40	Hammer Case Assembly	
		for 2945A7, 2945B7 and 2945B1	2945-A627
		for 2945A7-EU and 2945B7-EU	2945-EU-A627
		for 2950A7 and 2950B7	2950-A727
		for 2950A7-EU and 2950B7-EU	2950-EU-A727
++	41	Hammer Case Bushing	2950-541
	*	Hammer Case Label	
		for models ending in -EU	EU-99
		for all other models	WARNING-2-99
	42	Hammer Case Cap Screw (3/8"-16 thread x 1-3/4") Socket Head (Long) (2)	2945-638
	42A	Hammer Case Cap Screw (3/8"-16 x 1-1/2") Socket Head (Short) (2)	844-638
	43	Lock Washer (4)	845-58
	44	1-1/2" Square Drive Anvil	
		for 2945	2945-726
		for 2950	2950-726
	45	Socket Retaining Ring (for use with 1-1/2" Square Drive Anvil)	RR10020S
	46	Spline Drive Anvil Assembly (No. 5 Spline)	
		for 2945B1	2945-A526A
		for 2950B1	VW-1030
	47	Socket Retaining Ball	D04-280
	48	Retaining Ball Plunger	845-230
	49	Plunger Spring	2940-231
	50	Plunger Retaining Pin	845-128
	51	Dead Handle Bracket	845-364

			PART NUMBER FOR ORDERING
	52	Dead Handle Bracket Spacer	845-140
	53	Dead Handle (interchanges with Side Spade Handle Assembly)	834-48
		Side Spade Handle Assembly (interchanges with Dead Handle)	534-A41
	54	Side Spade Handle	T15-41
	55	Spade Handle Stud	534-448
	56	Stud Nut	107-73A
		Exhaust Deflector Kit	2934-K23
	57	Exhaust Deflector	2934-23A
♦	58	Gasket	2934-223
♦	59	Silencer	2940P-311
	60	Exhaust Baffle	2934-124
	61	Exhaust Deflector Screw (2)	R43F-104
	*	Nameplate	
		for 2945A7, 2945B7 and 2945B1	2945-301
		for 2945A7-EU and 2945B7-EU	2945-EU-301
		for 2950A7 and 2950B7	2950-301
		for 2950-EU and 2950B7-EU	2950-EU-301
	*	Nameplate Screw (4)	C32-302
	*	Wooden Box	2945-96
	*	Grease Gun	R000A2-228
	*	Tune-up Kit	
		for 2945 (includes illustrated parts 3, 7, 9, 11, 15, 19, 22, 25, 29 [2], 30 [2], 32, 34, 35, 36, 58 and 59	2945-TK2
		for 2950 (includes illustrated parts 3, 7, 9, 11, 15, 19, 22, 25, 29 [2] 30 [2], 32, 34, 35 and 36)	2950-TK2

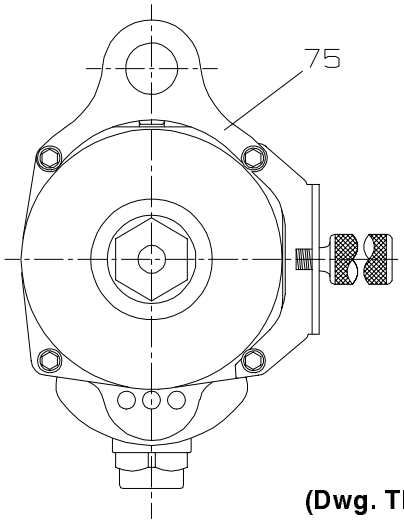
* Not illustrated.

♦ Indicates a 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.

++ The Hammer Case Bushing is a press fit in the Hammer Case. A .005" oversize Bushing is available and should be used if the nose of the Case has stretched to the extent that a new standard size Bushing fits loosely. The Part No. for a .005" oversize Bushing is 2950-541-S.

HORIZONTAL HANGER



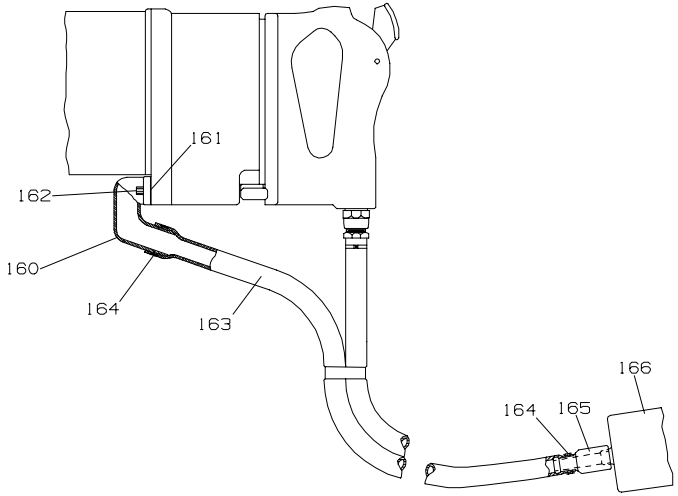
(Dwg. TPD316–1)

PART NUMBER FOR ORDERING

	Horizontal Hanger Kit	2950–K366
75	Horizontal Hanger	845–366
*	Horizontal Hanger Spacer	845–140

* Not illustrated.

PIPED–AWAY EXHAUST KIT AND MUFFLER



(Dwg. TPA559)

PART NUMBER FOR ORDERING

	Piped Away Exhaust Kit	
	with Muffler	2940–KM184
	without Muffler	2940–K184
160	Exhaust Adapter	2940–167
161	Exhaust Adapter Gasket	2940–30
162	Adapter Cap Screw (No. 10–24 thread x 5/8" Socket Head (2)	AL–638
163	Exhaust Hose	R21–230
164	Hose Clamp (2)	R21–31
165	Muffler Connector	R21–185
166	Muffler	R21–674

MAINTENANCE SECTION

⚠ WARNING

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

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

LUBRICATION

Each time a Series 2945 or 2950 Super Duty Impactool is disassembled for maintenance and repair or replacement of parts, lubricate the tool as follows:

1. Work approximately 12 cc of Ingersoll–Rand No. 100 Grease into the impact mechanism. Coat the Anvil (44) or (46) lightly with grease around the Hammer Case Bushing (41). Inject approximately 4 cc of grease into the Grease Fitting (2).
2. Use Ingersoll–Rand No. 50 Oil for lubricating the motor. Inject 2 cc of oil into the air inlet before attaching the air hose. Remove the Oil Chamber Plug (12) and fill the oil chamber.

OILER ADJUSTMENT

The built–in lubricator is adjusted prior to leaving the factory. At times, it may be desirable to increase or decrease the flow of oil to the tool. To make this adjustment, proceed as follows:

1. Remove four Handle Cap Screws (16) and without damaging Handle Gasket (15), pull the Handle (1) away from Motor Housing Assembly (27).
2. Using a small screwdriver, rotate Oiler Adjusting Screw (4) located inside reverse valve hole in the Handle. Rotating the Screw clockwise decreases oil flow rotating Screw counterclockwise increases oil flow. If oil flow does not increase when Screw is rotated counterclockwise, Oiler Felt (3) is clogged and should be replaced.
3. Reposition Handle and install the four Handle Cap Screws. Tighten Cap Screws between 10 and 12 ft–lb (13.5 and 16.3 Nm) torque.

DISASSEMBLY

General Instructions

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

Disassembly of the Impactool

1. Grasp tool in copper–covered or leather–covered vise jaws with square drive upward.
2. Using a hex wrench, unscrew and remove the two Deflector Screws (61). Remove Exhaust Deflector (57) and Exhaust Gasket (58) and, if necessary, pull Exhaust Baffle (60) and Exhaust Silencer (59) from Deflector.
3. Using a hex wrench, unscrew and remove the four Hammer Case Cap Screws (42) and (42A) and Lock Washers (43). Remove Dead Handle Bracket (51) and two Bracket Spacers (52).
4. While lightly tapping on end of Anvil (44) with a plastic hammer, lift off Hammer Case (40).
5. Remove Hammer Case Gasket (36).
6. Remove the Anvil by rotating it as it is lifted out of the assembly.
7. Lift the remaining hammer assembly off the rotor shaft.
8. Push the two Hammer Pins (38) out of the Hammer Frame Assembly (37) and slide the two Hammers (39) out of the Frame.

Disassembly of the Impact Mechanism

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

NOTICE

Note the twin hammers within the Hammer Frame. These are identical, but must 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 mechanism sitting upright on a workbench, slowly rotate Anvil in a clockwise direction until it comes up solid.

NOTICE

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

3. Hold Hammer Frame firmly and, without disturbing hammers, gently lift Anvil, simultaneously rotating it clockwise 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 are removed. Do not drop the Hammers.

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

Disassembly of the Reverse Valve

1. Lightly clamp Motor Housing Assembly (27) in copper-covered or leather-covered vise jaws with Trigger Handle Assembly (1) upward.

NOTICE

Excessive clamping pressure will distort the Motor Housing and make motor removal extremely difficult. Do not insert the hammer case end of the Motor Housing more than 1" (25 mm) into the vise jaws.

2. Using a hex wrench, unscrew and remove the four Handle Cap Screws (16) and Lock Washers (17). Lift assembled handle and Handle Gasket (15) off Motor Housing and set them aside.
3. Lift Motor Clamp Washers (18) off Housing.
4. Move Reverse Lever (33) to the center position and using a drift pin to push from below, grasp Lever and lift Reverse Valve Assembly (31) out of Housing.

NOTICE

Make certain the Lever is in the center position to avoid jamming the Reverse Lock Plunger (34) when the Reverse Valve Assembly is removed.

5. Pull Lever off Reverse Valve and remove Reverse Valve Bushing Seal (32) from groove on Valve.
6. Using needle nose pliers, remove Reverse Lock Plunger and Reverse Lock Plunger Spring (35) from Motor Housing.

Disassembly of the Motor

1. Remove assembled motor from vise jaws and using a plastic hammer, tap splined shaft of Rotor (21) to dislodge Rotor from Front Rotor Bearing (25).
2. Lift Motor Housing (27) off Rotor, Rear End Plate (20) and Rear Rotor Bearing (19) which will remain together as a unit.
3. Remove the six Vanes (22) from Rotor.
4. Pull Rear End Plate off Rotor.
5. Open a set of vise jaws wide enough to clear the hub of Rear End Plate and sharply rap hub end of end plate on top of jaws to dislodge Rear Rotor Bearing.
6. Remove Cylinder Dowel (26) and lay Motor Housing on top of vise jaws with the Front Rotor Bearing (25) downward between the jaws. Using a soft drift pin, tap Bearing out of Housing.
7. To remove Cylinder (23) and Front End Plate (24), thread four 1/4"-20 thread socket head cap screws that are at least 3" (75 mm) long into handle end of Housing. Grasping Housing with installed screws downward, sharply strike heads of screws on a sturdy table to dislodge Cylinder. Cylinder should drop out of Housing after a few impacts. If it does not, carefully heat alternate sides of Housing until it is very warm. Using thick, heavy gloves to avoid being burned, grasp Housing and repeat the attempt to dislodge the Cylinder.
8. Remove the two Air Port Gaskets (29) and Air port Gasket Retainers (30) from Housing.

Disassembly of the Handle

1. Clamp Trigger Handle Assembly in copper-covered or leather-covered vise jaws with Straight Inlet (10) upward.
2. Using a wrench, unscrew and remove the Inlet as well as the Air Strainer Screen (19) and Throttle Valve Spring (8).
3. Remove Throttle Valve Assembly (6) and Throttle Valve Plunger (5) from Handle.
4. If Trigger (13) must be removed, use an arbor press to push Trigger Pin (14) from Handle and slide Trigger out of the slot in 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 installing the bearing in a bearing recess.
3. Whenever grasping a tool or part in a vise, always use copper-covered or leather-covered vise jaws to protect the surface of the part and help prevent distortion. This is particularly true of threaded members and housings.
4. Always clean every part and wipe every part with a thin film of oil before installation.
5. Apply O-ring lubricant to every O-ring before assembly.
6. Check every bearing for roughness. If an open bearing must he cleaned, wash it thoroughly in clean solution and dry it with a clean cloth. **Sealed or shielded bearings should never he cleaned**. Work grease thoroughly into every open bearing before installation.

Assembly of the Handle

1. Position Trigger (13) in Handle (1) and using an arbor press, push Trigger Pin (6) full length into Handle so that it captures the Trigger.
2. Clamp Handle in copper-covered or leather-covered vise jaws with air inlet opening upward.
3. Remove Oil Chamber Plug (12) and fill reservoir with recommended oil and replace the Plug.
4. Coat Throttle Valve Plunger (5) with oil and insert it, rounded end leading, into the inlet hole in Handle.
5. Install a new Throttle Valve Face (7) on Throttle Valve (6) and insert assembly, Valve Face leading, into inlet hole in Handle.
6. Encircle the cone end of the Air Strainer Screen (9) with large end of Throttle Valve Spring (8) and insert both parts, Spring leading, into inlet hole in Handle.
7. Install Straight Inlet (10) over Strainer Screen in Handle and tighten Inlet between 20 and 25 ft-lb (27 and 34 Nm) torque.
8. Remove Handle from vise and test Trigger. If Trigger functions properly, place assembled Handle aside. If it does not function properly, disassemble Handle to determine cause of problem.

Assembly of the Motor

1. Lightly clamp Motor Housing (27) in copper-covered or leather-covered vise jaws with handle end upward.

NOTICE

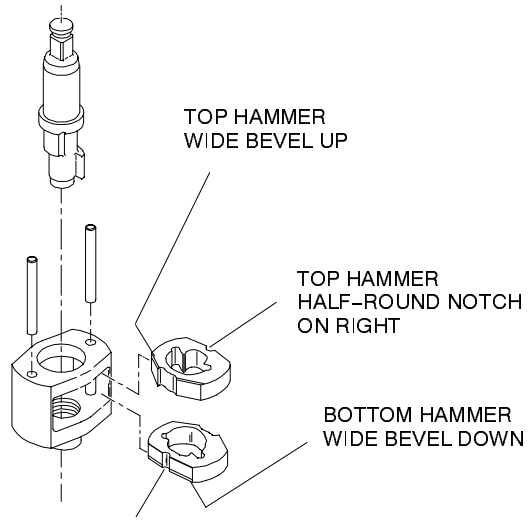
Excessive clamping pressure will distort the Motor Housing and make motor installation extremely difficult. Do not insert the hammer case end of the Motor Housing more than 1" (25 mm) into the vise jaws.

2. Coat inside surface of Housing and outer edge of Front End Plate (24) with a light film of oil.
3. Using along tee hex wrench as an alignment pin, insert Front End Plate, copper face trailing, into Motor Housing. Align dowel hole in End Plate with dowel hole at the bottom of motor bore.
4. Lubricate and insert a new fiber Air Port Gasket Retainer (30) in one of the air ports inside Motor Housing.
5. Install an Air Port Gasket (29) in air port against Gasket Retainer with flat end of Gasket away from Retainer.
6. Repeat Steps 4 and 5 to install remaining Gasket and Retainer in other air port.
7. Coat outside of Cylinder (23) with a light film of oil and using the long tee hex wrench as an alignment pin to align holes in Cylinder with holes in Front End Plate and Housing, insert Cylinder into Housing.
8. Coat inside of Cylinder and Rotor (20) with a light film of oil and insert the splined hub of the Rotor through Cylinder into Front End Plate.
9. Coat each Vane (22) with a light film of oil and insert a Vane into each slot in the Rotor. Vanes are to be installed with curved edge toward center of Rotor. Spin Rotor to settle Vanes in position.
10. Using the long tee hex wrench to align the hole in Rear End Plate (20) with hole in Cylinder, insert Rear End Plate, bronze face leading, into Motor Housing against Cylinder. End Plate is properly seated when large trailing face of End Plate is slightly below face of Motor Housing.
11. Grease Rear Rotor Bearing (19) and install it in recess of Rear End Plate.
12. Remove alignment pin from assembled motor and install Cylinder Dowel (26). Dowel is properly seated when end of Dowel does not protrude above End Plate.
13. Install Motor Clamp Washers (18) against Rear End Plate so that large outer edge of the Washer contacts End Plate.

Assembly of the Reverse Valve

1. Inject a small amount of grease into hole in Motor Housing where Reverse Lock Plunger (34) will be installed. With the grease to hold them in position, install the Reverse Lock Plunger Spring (35) and Lock Plunger.
2. Install a new Reverse Valve Bushing Seal (32) in the annular groove on the Reverse Valve (31).
3. Coat Reverse Valve with a light film of oil and install it in Motor Housing with the side hole nearest to Seal pointed toward Rotor (21).
4. Position Reverse Lever (33) on Reverse Valve and while using a thin blade screwdriver to depress Reverse Lock Plunger, push Lever onto Reverse Valve.
5. Place a new Handle Gasket (15) on Motor Housing.
6. Examine Reverse Valve Seal (11) located inside Handle and if it is nicked, deformed or worn, remove it and install a new Seal.
7. Fill rotor cavity in Handle with recommended grease and position Handle on Motor Housing.
8. Install the four Handle Cap Screws (16) and Lock Washers (17) and using an alternate tightening pattern, tighten Screws to between 10 and 12 ft-lb (13.5 and 16.3 Nm) torque.
9. Move Reverse Lever through the forward and reverse positions to make certain that lever locks in position.
10. Turn assembly in the vise jaws and clamp on Handle with rotor shaft upward.
11. Grease Front Rotor Bearing (25) and place it over the rotor shaft.
12. Select a socket or piece of tubing that will fit over the outside race of the Bearing and tap it with a hammer to seat Bearing into Housing.
13. Pack Bearing with additional grease and rotate the rotor shaft. If shaft does not rotate smoothly, rap end of rotor shaft with a soft hammer to set motor and try to rotate shaft again.

Assembly of the Impact Mechanism



(Dwg. TPD652)

1. Coat Hammers (39) with a light film of Ingersoll–Rand Impactool Grease No. 100.
2. Replace Hammers in Hammer Frame (37) exactly as they were when you marked them prior to disassembly.

NOTICE

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

3. Replace Hammer Pins (38).
4. Examine base of Anvil (44) and note its contour. While looking down through 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 opposite direction from the top Hammer and maneuver Anvil slightly until it drops into bottom Hammer.

Assembly of the Impactool

1. Set assembled hammer mechanism onto the rotor shaft spline.
2. Place Hammer Case Gasket (36) over the mechanism and against face of Motor Housing.
3. Grease Anvil and top of Hammer Frame.
4. Place Hammer Case (40) over mechanism assembly against Gasket.
5. Assemble Dead Handle (53) to Dead Handle Bracket (51). Insert two Hammer Case Cap Screws (42) and (42A) with Lock Washers (43) through Bracket and install two Dead Handle Bracket Spacers (52) on the Screws. Position the assembly against Hammer Case and thread Screws into Housing.
6. Thread remaining two Cap Screws and Lock Washers into Housing and using an alternating pattern for all four fasteners, tighten Screws to between 20 and 25 ft–lb (27 and 34 Nm) torque.
7. Install a new Exhaust Silencer (59) in Exhaust Deflector (57) and then install the Exhaust Baffle (60) in Deflector.
8. Position a new Exhaust Gasket (58) against face of Motor Housing. Position the assembled Deflector against Gasket and secure it by tightening the two Deflector Screws (61).

TROUBLESHOOTING GUIDE

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