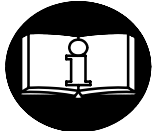


OPERATION AND MAINTENANCE MANUAL FOR MODEL 3RANT3 TAPPER

NOTICE

Model 3RANT3 Tapper is designed for tapping operations in the aerospace, automotive, appliance, electronic, machining and furniture industries. 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 1/4" (6 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.
- The Throttle Valve Cap is under pressure from the Throttle Valve Spring. Use care when removing the Throttle Valve Cap. (*On tools where applicable.*)
- This tool is not designed for working in explosive atmospheres.
- This tool is not insulated against electric shock.

NOTICE

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

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

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

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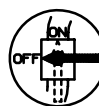
WARNING LABEL IDENTIFICATION


! WARNING


FAILURE TO OBSERVE THE FOLLOWING WARNINGS COULD RESULT IN INJURY.


	<p>! WARNING</p> <p>Always wear eye protection when operating or performing maintenance on this tool.</p>
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	<p>! WARNING</p> <p>Always wear hearing protection when operating this tool.</p>
---	---

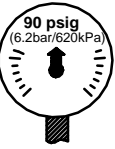
	<p>! WARNING</p> <p>Always turn off the air supply and disconnect the air supply hose before installing, removing or adjusting any accessory on this tool, or before performing any maintenance on this tool.</p>
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	<p>! WARNING</p> <p>Air powered tools 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.</p>
---	---

	<p>! WARNING</p> <p>Do not carry the tool by the hose.</p>
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	<p>! WARNING</p> <p>Do not use damaged, frayed or deteriorated air hoses and fittings.</p>
---	---

	<p>! WARNING</p> <p>Keep body stance balanced and firm. Do not overreach when operating this tool.</p>
---	---

	<p>! WARNING</p> <p>Operate at 90 psig (6.2 bar/ 620 kPa) Maximum air pressure.</p>
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PLACING TOOL IN SERVICE

LUBRICATION

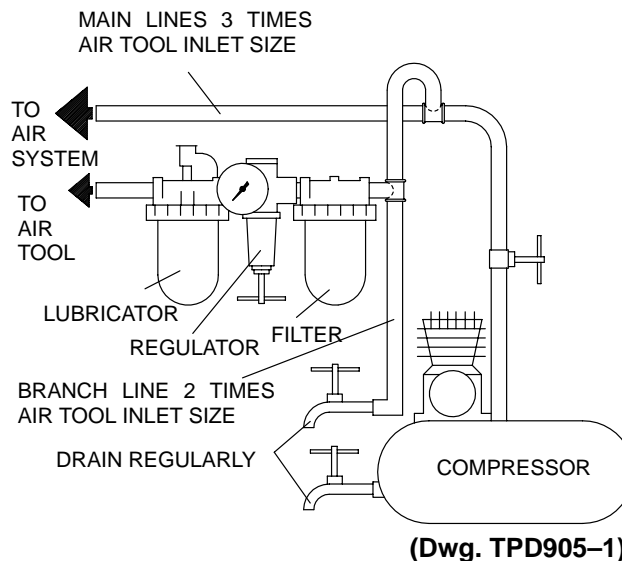


Ingersoll-Rand No. 10 Ingersoll-Rand No. 28

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

USA – No. C05-02-G00

After each 40,000 cycles or each month, whichever occurs first, lubricate the gear train with Ingersoll-Rand No. 28 Grease.



HOW TO ORDER A TAPPER

PISTOL GRIP HANDLE

Free Speed		Tapping Capacity	
Model	rpm	in	mm
3RANT3	1,000	1/4	6

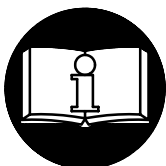
MANUEL D'EXPLOITATION ET D'ENTRETIEN DES TARAUDEUSES DE LA SÉRIE 3RANT3

NOTE

La taraudeuse Modèle 3RANT3 est destinée aux opérations de taraudage dans les industries de l'aérospatiale, de l'automobile, des appareils ménagers, de l'électronique, de l'usinage et des meubles.

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 SÉCURITÉ SONT JOINTES.
LIRE CE MANUEL AVANT D'UTILISER L'OUTIL.
L'EMPLOYEUR EST TENU DE COMMUNIQUER LES INFORMATIONS
DE CE MANUEL AUX EMPLOYÉS UTILISANT CET OUTIL.**

LE NON RESPECT DES AVERTISSEMENTS SUIVANTS PEUT CAUSER DES BLESSURES.

MISE EN SERVICE DE L'OUTIL

- Toujours exploiter, inspecter et entretenir cet outil conformément au Code de sécurité des outils pneumatiques portatifs de l'American National Standards Institute (ANSI B186.1).
- Pour la sécurité, les performances optimales et la durabilité maximale des pièces, cet outil doit être connecté à une alimentation d'air comprimé de 6,2 bar (620 kPa) maximum à l'entrée, avec un flexible de 6 mm de diamètre intérieur.
- Couper toujours l'alimentation d'air comprimé et débrancher le flexible d'alimentation avant d'installer, déposer ou ajuster tout accessoire sur cet outil, ou d'entreprendre une opération d'entretien quelconque sur l'outil.
- Ne pas utiliser des flexibles ou des raccords endommagés, effilochés ou détériorés.
- S'assurer que tous les flexibles et les raccords sont correctement dimensionnés et bien serrés. Voir Plan TPD905-1 pour un exemple type d'agencement des tuyauteries.
- Utiliser toujours de l'air sec et propre à une pression maximum de 6,2 bar. 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 volatils tels que le kérosène, le gasoil 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 fous et les cheveux longs, éloignés de l'extrémité rotative de l'outil.
- Noter la position du levier d'inversion avant de mettre l'outil en marche de manière à savoir dans quel sens il va tourner lorsque la commande est actionnée.
- Prévoir, et ne pas oublier, que tout outil motorisé est susceptible d'à-coups brusques lors de sa mise en marche et pendant son utilisation.
- Garder une position équilibrée et ferme. Ne pas se pencher trop en avant pendant l'utilisation de cet outil. Des couples de réaction élevés peuvent se produire à, ou en dessous, de la pression d'air recommandée.
- La rotation des accessoires de l'outil peut continuer pendant un certain temps après le relâchement de la gâchette.
- Les outils pneumatiques peuvent vibrer pendant l'exploitation. Les vibrations, les mouvements répétitifs et les positions inconfortables peuvent causer des douleurs dans les mains et les bras. N'utiliser plus d'outils en cas d'inconfort, de picotements ou de douleurs. Consulter un médecin avant de recommencer à utiliser l'outil.
- Utiliser les accessoires recommandés par Ingersoll-Rand.
- Le chapeau de la soupape de commande est soumis à la pression du ressort de soupape. Prendre les soins nécessaires lors de la dépose du chapeau de soupape de commande. (Sur les outils concernés).
- Cet outil n'est pas conçu pour fonctionner dans des atmosphères explosives.
- Cet outil n'est pas isolé contre les chocs électriques.

NOTE

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

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

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

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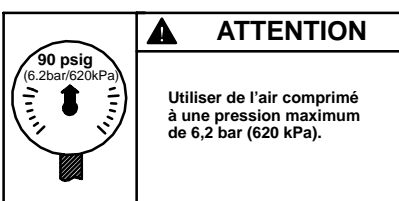
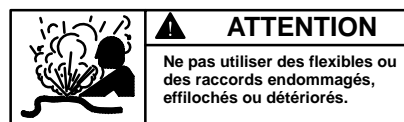
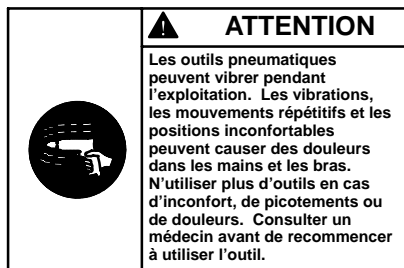
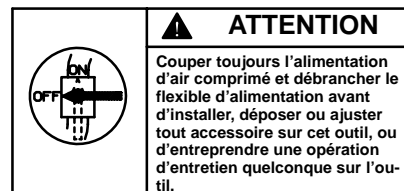
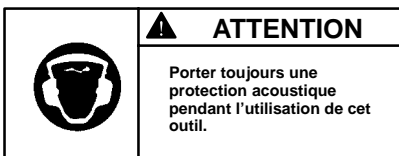
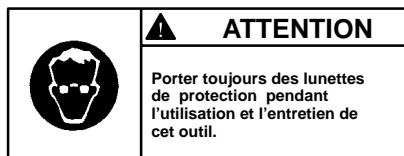
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SIGNIFICATION DES ÉTIQUETTES D'AVERTISSEMENT

ATTENTION

LE NON RESPECT DES AVERTISSEMENTS SUIVANTS PEUT CAUSER DES BLESSURES.



MISE EN SERVICE DE L'OUTIL

LUBRIFICATION

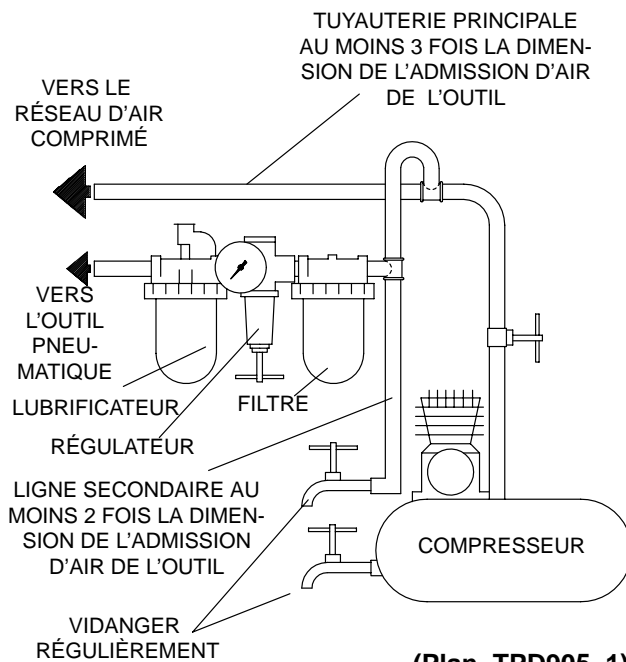


Ingersoll-Rand No. 10 Ingersoll-Rand No. 28

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

USA – No. C05-02-G00

Tous les 40.000 cycles ou au moins tous les mois, selon le cas, lubrifier le train d'engrenages avec de la graisse Ingersoll-Rand No. 28.



(Plan TPD905-1)

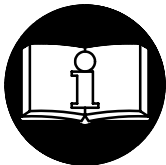
SPÉCIFICATIONS

Modèle	Type de Poignée	Vitesse à vide tr/mn	Capacité de Taraudage	
			pouces	mm
3RANT3	pistolet	1.000	1/4	6

MANUAL DE FUNCIONAMIENTO Y MANTENIMIENTO ROSCADORA DE LA SERIE 3RANT3

NOTA

La roscadora modelo 3RANT3 está diseñada para las operaciones de roscado en las industrias aeroespacial, del automóvil, de electrodomésticos, electrónica, mecánica y del mueble. Ingersoll-Rand no aceptará responsabilidad alguna por la modificación de las herramientas efectuada por el cliente para las aplicaciones que no hayan sido consultadas con Ingersoll-Rand.



⚠ AVISO

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

PARA PONER LA HERRAMIENTA EN SERVICIO

- Utilice, examine y mantenga siempre esta herramienta conforme al código de seguridad para herramientas neumáticas portátiles de la American National Standards Institute (ANSI B186.1).
- Para mayor seguridad, rendimiento óptimo y larga vida útil de las piezas, utilice esta herramienta a una presión de aire máxima de 90 psig (6,2 bar/620 kPa) con una manguera de suministro de aire con diámetro interno de 6 mm.
- Corte siempre el suministro de aire y desconecte la manguera de suministro de aire antes de instalar, desmontar o ajustar cualquier accesorio de esta herramienta, o antes de realizar cualquier operación de mantenimiento de la misma.
- No utilice mangueras de aire y racores dañados, desgastados o deteriorados.
- Asegúrese de que todos los racores y mangueras sean del tamaño correcto y estén bien apretados. El Esq. TPD905-1 muestra una disposición característica de las tuberías.
- Use siempre aire limpio y seco a una presión máxima de 90 psig (6,2 bar/620 kPa). El polvo, los gases corrosivos y el exceso de humedad pueden 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.

UTILIZACIÓN DE LA HERRAMIENTA

- Lleve siempre protección ocular cuando utilice esta herramienta o realice operaciones de mantenimiento en la misma.

- Lleve 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.
- Tome nota de la posición de la palanca de inversión antes de hacer funcionar la herramienta para tener en cuenta el sentido de rotación al accionar el estrangulador.
- Anticipe y esté atento a los cambios repentinos en el movimiento durante la puesta en marcha y utilización de toda herramienta motorizada.
- Mantenga una postura del cuerpo equilibrada y firme. No estire demasiado los brazos al manejar la herramienta. Pueden darse elevados pares de reacción a la presión de aire recomendada, e incluso a presiones inferiores.
- Los accesorios de la herramienta podrían seguir girando brevemente después de haberse soltado la palanca de mando.
- Las herramientas neumáticas pueden vibrar durante el uso. La vibración, los movimientos repetitivos o las posiciones incómodas pueden dañarle los brazos y manos. En caso de incomodidad, sensación de hormigueo o dolor, deje de usar la herramienta. Consulte con el médico antes de volver a utilizarla.
- Utilice únicamente los accesorios Ingersoll-Rand recomendados.
- El muelle de la válvula reguladora ejerce presión contra la tapa de dicha válvula. Tenga cuidado al sacar la tapa. (Si procede, según la herramienta).
- 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 puede 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 se deben encomendar a personal debidamente cualificado y autorizado. Consulte con el centro de servicio autorizado Ingersoll-Rand más próximo.

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

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ETIQUETAS DE AVISO

⚠ AVISO

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




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



⚠ ADVERTENCIA
Usar siempre protección para los oídos al manejar esta herramienta.



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




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




⚠ ADVERTENCIA
No coger la herramienta por la manguera para levantarla.



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



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



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

PARA PONER LA HERRAMIENTA EN SERVICIO

LUBRICACIÓN



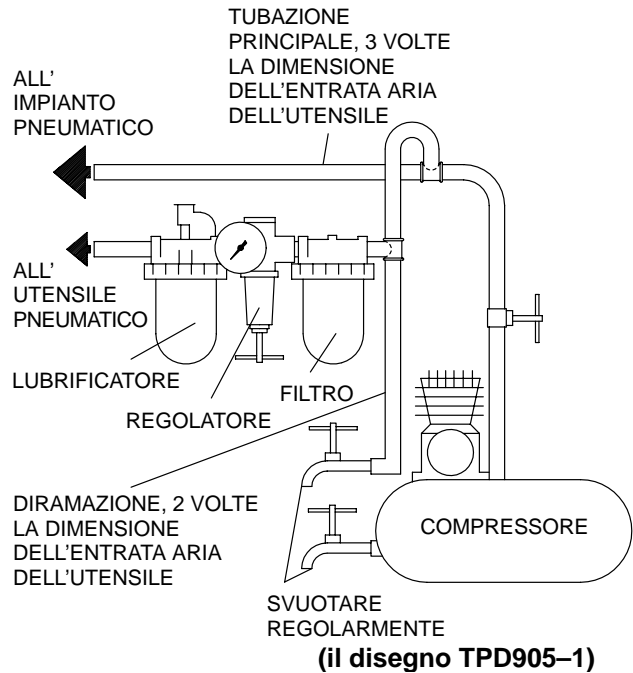
Ingersoll-Rand N° 10

Ingersoll-Rand N° 28

Utilice siempre un lubricador de aire comprimido con estas herramientas. Recomendamos utilizar el siguiente conjunto de filtro-lubricador-regulador:

USA – N° C05-02-G00

Después de cada 40.000 ciclos o mensualmente (lo que ocurra primero), lubrique el tren de engranajes con grasa Ingersoll-Rand N° 28.



ESPECIFICACIONES

Modelo	Tipo de empuñadura	Velocidad en vacío	Capacidad de roscado	
		rpm	pulg.	mm
3RANT3	pistola	1.000	1/4	6

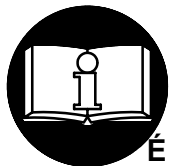
MANUAL DE FUNCIONAMENTO E MANUTENÇÃO PARA ATARRAXADOR MODELO 3RANT3

P

AVISO

O Atarraxador Modelo 3RANT3–EU é concebido para operações de atarraxo em indústrias aeroespaciais, automóvel, de equipamentos, electrónica, de maquinaria e de mobiliário.

A Ingersoll–Rand não é responsável por modificações, feitas pelo cliente em ferramentas, nas quais a Ingersoll–Rand não tenha sido consultada.



⚠️ ADVERTÊNCIA

**INFORMAÇÃO DE SEGURANÇA IMPORTANTE EM ANEXO.
LEIA ESTE MANUAL ANTES DE OPERAR A FERRAMENTA.**

**É DA RESPONSABILIDADE DO EMPREGADOR COLOCAR A INFORMAÇÃO
DESTE MANUAL NAS MÃOS DO OPERADOR.**

O NÃO CUMPRIMENTO DAS SEGUINTE ADVERTÊNCIAS PODE RESULTAR EM FERIMENTOS.

COLOCANDO A FERRAMENTA EM FUNCIONAMENTO

- Sempre opere, inspecione e mantenha esta ferramenta de acordo com o Código de Segurança do Instituto Americano de Padrões Nacionais para Ferramentas Pneumáticas Portáteis (ANSI B186.1).
- Para segurança, máximo desempenho e máxima durabilidade das peças, opere esta ferramenta com uma pressão de ar máxima de 6,2 bar/620 kPa (90 psig) na entrada da mangueira de alimentação de ar com diâmetro interno de 6 mm (1/4”).
- Desligue sempre a alimentação de ar e desconecte a mangueira de alimentação de ar antes de instalar, remover ou ajustar qualquer acessório nesta ferramenta, ou antes de executar qualquer serviço de manutenção nesta ferramenta.
- Não use mangueiras de ar ou adaptadores danificados, gastos ou deteriorados.
- Certifique-se de que todas as mangueiras e adaptadores sejam do tamanho correcto e estejam apertados com firmeza. Veja o Desenho TPD905–1 para um arranjo típico de tubagem.
- Use sempre ar seco e limpo com pressão máxima de 90 psig. Pó, fumos corrosivos e/ou humidade excessiva podem arruinar o motor de uma ferramenta pneumática.
- Não lubrifique as ferramentas com líquidos inflamáveis ou voláteis tais como querosene, diesel ou combustível de jactos.
- Não remova nenhum rótulo. Reponha qualquer rótulo danificado.

USANDO A FERRAMENTA

- Use sempre óculos de protecção quando estiver

operando ou executando serviço de manutenção nesta ferramenta.

- Use sempre protecção contra ruído ao operar esta ferramenta.
- Mantenha as mãos, partes do vestuário soltas e cabelos compridos afastados da extremidade em rotação.
- Observe qual é a posição da alavanca que reverte o sentido de rotação antes de operar esta ferramenta de modo a estar atento ao sentido de rotação quando operar o regulador de pressão.
- Antecipe e esteja alerta a mudanças repentinas no movimento quando ligar e operar qualquer ferramenta motorizada.
- Mantenha a posição do corpo equilibrada e firme. Não exagere quando operar esta ferramenta. Torques de reacção elevados podem ocorrer na ou abaixo da pressão de ar recomendada.
- O eixo da ferramenta pode continuar a girar brevemente após a pressão tenha sido aliviada.
- Ferramentas accionadas pneumáticamente podem vibrar em uso. Vibração, movimentos repetitivos ou posições desconfortáveis podem ser prejudiciais às mãos e aos braços. Pare de usar a ferramenta caso ocorra algum desconforto, sensação de formigueiro ou dor. Procure assistência médica antes de retornar ao trabalho.
- Use acessórios recomendados pela Ingersoll–Rand.
- O Tampo da Válvula Reguladora de Pressão está sob pressão da Mola da Válvula Reguladora de pressão. Tenha cuidado ao remover o Tampo da Válvula Reguladora de Pressão. *(Em ferramentas onde aplicável)*
- Esta Ferramenta não foi concebida para trabalhos em atmosferas explosivas.
- Esta Ferramenta não está isolada contra choques eléctricos.

AVISO

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

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

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

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IDENTIFICAÇÃO DO RÓTULO DE ADVERTÊNCIA

⚠ ADVERTÊNCIA

O NÃO CUMPRIMENTO DAS SEGUINTE ADVERTÊNCIAS PODE RESULTAR EM FERIMENTOS.



⚠ ADVERTÊNCIA
Use sempre óculos de protecção quando estiver operando ou executando algum serviço de manutenção nesta ferramenta.




⚠ ADVERTÊNCIA
Use sempre protecção contra o ruído ao operar esta ferramenta.




⚠ ADVERTÊNCIA
Desligue sempre a alimentação de ar e desconecte a mangueira de alimentação de ar antes de instalar, remover ou ajustar qualquer acessório nesta ferramenta, ou antes de executar algum serviço de manutenção nesta ferramenta.



⚠ ADVERTÊNCIA
Ferramentas accionadas pneumáticamente podem vibrar em uso. Vibração, movimentos repetitivos ou posições desconfortáveis podem ser prejudiciais às mãos e aos braços. Pare de usar a ferramenta caso ocorra algum desconforto, sensação de formiguento ou dor. Procure assistência médica antes de retornar ao trabalho.




⚠ ADVERTÊNCIA
Não carregue a ferramenta segurando na mangueira.



⚠ ADVERTÊNCIA
Não use mangueiras de ar ou adaptadores danificados, gastos ou deteriorados.



⚠ ADVERTÊNCIA
Mantenha a posição do corpo equilibrada e firme. Não exagere quando operar esta ferramenta. Torques de reacção elevados podem ocorrer sob a pressão de ar recomendada.



⚠ ADVERTÊNCIA
Opere com pressão do ar Máxima de 90-100 psig (6,2-6,9 bar).

COLOCANDO A FERRAMENTA EM FUNCIONAMENTO

LUBRIFICAÇÃO

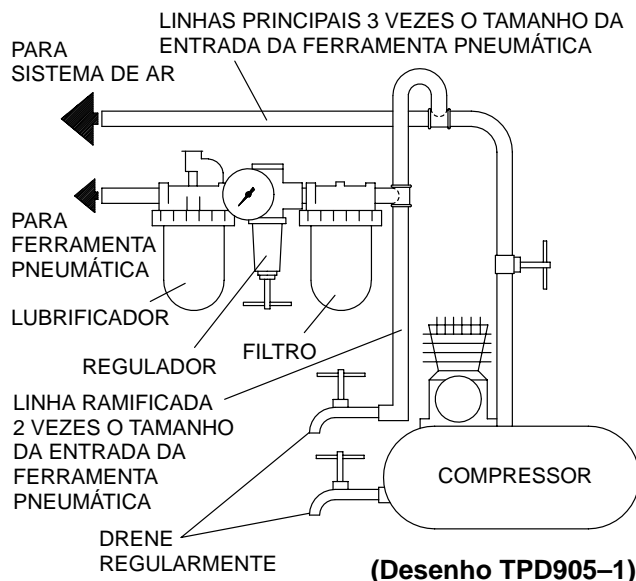


Ingersoll-Rand No. 10 Ingersoll-Rand No. 28

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

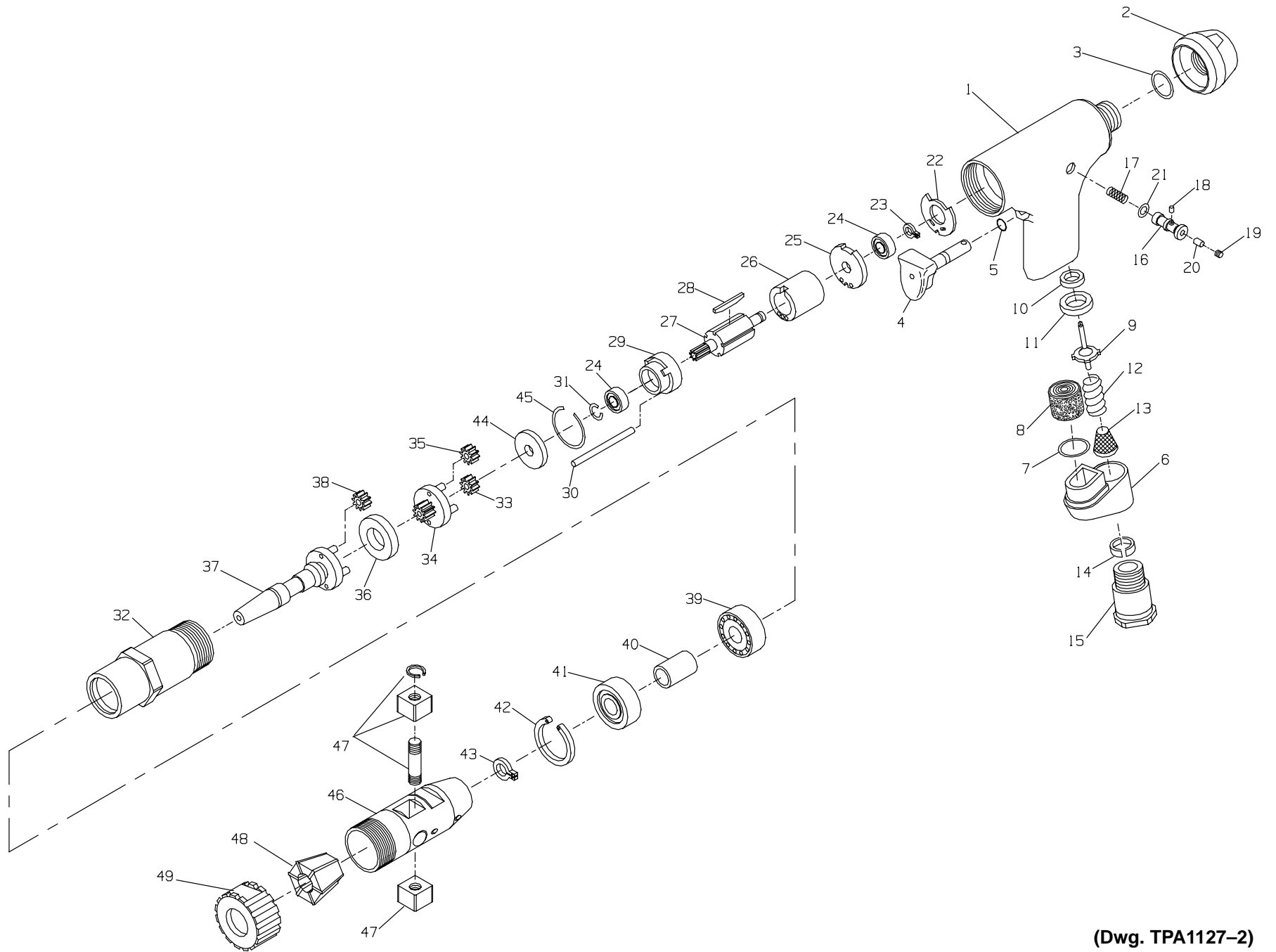
For USA – No. C05-02-G00

Depois de cada 40.000 ciclos ou cada mês, o que ocorrer primeiro, lubrifique o trem de engrenagem com Massa Ingersoll-Rand No. 28



ESPECIFICAÇÕES

Modelo	Tipo de Punho	Velocidade Livre	Capacidade do Atarraxador
		pol.	mm (pol.)
3RANT3	pistola	475	13 (1/2)



MAINTENANCE SECTION

(Dwg. TPA1127-2)



PART NUMBER FOR ORDERING →

PART NUMBER FOR ORDERING →

	Motor Housing Assembly		◆	23	Rear Rotor Bearing Retainer	8SL-305
	for 3RANT3	3RA-A40	◆ •	24	Rotor Bearing (2)	DG10-22
	for 3RANT3-EU	3RA-EU-A40		25	Rear End Plate	3RL-12
1	Motor Housing			26	Cylinder	3RL-3
	for 3RANT3	3RA-B40		27	Rotor	3RL-53
	for 3RANT3-EU	3RA-EU-B40	◆ •	28	Vane Packet (set of 5 Vanes)	3RL-42-5
2	Back Cap Assembly	3RA-202A		29	Front End Plate	3RL-11
◆ •	3 Back Cap O-ring	435-159		30	Cylinder Dowel	3RL-98
4	Trigger Assembly	3RA-A93		30	Cylinder Dowel	3RL-98
◆ •	Trigger Pin Seal	8SL-259	◆	31	Front Rotor Bearing Retainer	3RL-13
6	Muffler Assembly	3RA-A123			Gear Module	3RANT3-M37
◆ •	Muffler O-ring	85H-167		32	Gear Case	3AM-37
◆ •	8 Muffler Element	3RA-310		33	Rotor Pinion	3RLM-17
◆	9 Throttle Valve	7RAK-302		34	Gear Head	3RLN-216
10	Valve Seat Support	7RAK-304		35	Gear Head Planet Gear (3)	3RLM-10
◆ •	11 Throttle Valve Seat	7RAK-303		36	Gear Head Spacer	3RL-80
◆	12 Throttle Valve Spring	3RA-51		37	Tapper Chuck Spindle	3RANT3-8
◆	13 Inlet Screen	ROA2-61		38	Spindle Planet Gear (3)	3RLN-10
14	Inlet Bushing Spacer	3RA-68		39	Rear Spindle Bearing	R00H-97
15	Inlet Bushing	3RA-465		40	Spindle Bearing Spacer	3A-111A
16	Reverse Valve	3RL-329		41	Front Spindle Bearing	R00A-510
◆	17 Reverse Valve Spring	SPA102R-515		42	Spindle Bearing Retainer	3RANT2-28
18	Valve Lock Pin	SPA102R-667		43	Spindle Retaining Ring	120A4-588
19	Retainer Setscrew	SPA102R-669		44	Motor Clamp Washer	3RL-207
20	Lock Pin Retainer	3RL-668		45	Clamp Washer Retaining Ring	3RL-208
◆ •	21 Reverse Valve Seal	WFS182-307		46	Tap Chuck	R000AR2TM-199
*	Warning Label			47	Chuck Back Jaw Assembly (consists of one pair of jaws, adjusting screw and lock and lock ring)	2U-102
	for 3RANT3	WARNING-7-99				
	for 3RANT3-EU	EU-99				
◆ •	22 Rear End Plate Gasket	3RL-739				

MAINTENANCE SECTION

* Not illustrated.

◆ Indicates Tune-up Kit part.

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

PART NUMBER FOR ORDERING 

PART NUMBER FOR ORDERING 

48	Chuck Collet (1/4" capacity)	2U-103-1/4"	*	Hanger	3RA-365
49	Chuck Nut	2U-104	*	Tune-up Kit (includes illustrated parts 3, 5, 7, 8, 9, 11, 12, 13, 17, 21, 22, 23, 24 [2], 28 and 31)	3RA-TK2
*	Tapping Chuck Removal Wedge (3)	R000AR2TM-200			
*	Chuck Nut Wrench	7RAQT4-254			
*	Chuck Back Jaw Wrench	R2J-562			

* Not illustrated.

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 Model 3RANT3 is disassembled for maintenance and repair or replacement of parts, lubricate the tool as follows:

1. Coat the gears with 4 to 6 cc of Ingersoll–Rand No. 28 Grease.
2. Use Ingersoll–Rand No. 10 Oil for for lubricating the motor. Inject approximately 1 to 2 cc of oil into the air inlet before attaching the air hose.

DISASSEMBLY

General Instructions

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

Disassembly of the Gear Case

1. Using No. R000AR2TM–200 Tapping Chuck Removal Wedges, remove the Tap Chuck (46) from the Tapper Chuck Spindle (37).
2. Carefully grasp the handle of the Motor Housing (1) in copper–covered vise jaws, spindle facing upward.
3. Using a wrench on the flats of the Gear Case (32), unscrew and lift off the entire gear unit.

NOTICE

This is a right–hand thread; turn counterclockwise to remove.

4. Remove the Clamp Washer Retaining Ring (45).
5. Tap the motor end of the Gear Module against the top of a workbench to remove the Motor Clamp Washer (44), Gear Head (34), Gear Head Planet Gears (35), Rotor Pinion (33) and Gear Head Spacer (36).

6. Using a pair of snap ring pliers, remove the Spindle Retaining Ring (43) from the groove on the tapered end of the Tapper Chuck Spindle (37).
7. Lightly tap or press the Tapper Chuck Spindle and Spindle Planet Gears (38) from the Gear Case (32). Remove the Spindle Planet Gears.
8. Using a pair of snap ring pliers, remove the Spindle Bearing Retainer (42) from the groove in the front of the Gear Case.
9. Using a sleeve that contacts the outer and inner ring of the Rear Spindle Bearing (39) and working from the threaded end of the Gear Case, press the Rear Spindle Bearing, Spindle Bearing Spacer (40) and Front Spindle Bearing (41) from the Gear Case.

Disassembly of the Motor

1. Grasp the splined end of the Rotor (27) and pull the motor from the Motor Housing (1).
2. Withdraw the Rear End Plate Gasket (22) from the bottom of the housing bore.
3. While grasping the Cylinder (26) in one hand, lightly tap on the splined end of the Rotor to drive the Rotor from the bore of the Rotor Bearing (24), thus freeing the Front End Plate (29) and Bearing.
4. Using snap ring pliers, remove the Front Rotor Bearing Retainer (31) and remove the Front Rotor Bearing from the Front End Plate.
5. Slide the Cylinder off the Rotor, and withdraw the Vanes (28) from the vane slots.
6. Remove the Rear Rotor Bearing Retainer (23) from the groove in the hub of the Rotor.
7. Support the Rear End Plate (25) as close to the rotor body as possible on the table of an arbor press and press the Rotor from the Rotor Bearing (24).

Disassembly of the Reverse Valve

1. Using a 1/16" Allen Wrench, remove the Retainer Setscrew (19) from the Reverse Valve (16).
2. With the Reverse Valve facing downward, lightly tap the Motor Housing (1) on the workbench until the Lock Pin Retainer (20) falls out of the Reverse Valve.
3. Hold the Motor Housing horizontally with the Reverse Valve on your left as you face the rear of the tool. With slight inward pressure on the Reverse Valve, tap the Motor Housing on a workbench until the Valve Lock Pin (18) drops into the opening vacated by the Lock Pin Retainer.
4. Remove the Reverse Valve along with the Reverse Valve Spring (17), Reverse Valve Seal (21) and Valve Lock Pin from the Motor Housing.

MAINTENANCE SECTION

Disassembly of the Throttle Mechanism

1. Lightly grasp the handle of the Motor Housing (1) in copper-covered vise jaws so that the Inlet Bushing (15) is upward. Unscrew the Bushing and remove the Inlet Bushing Spacer (14), Muffler Assembly (6), Muffler Element (8), Inlet Screen (13), Throttle Valve Spring (12), Throttle Valve (9) and Trigger Assembly (4). Remove the Trigger Seal (5) from the Trigger Assembly. If the Throttle Valve Seat (11) needs to be replaced, use a stiff wire hook and insert it through the Valve Seat and Valve Seat Support (10) to grasp the underside of the Valve Seat Support. Withdraw the Valve Seat and Valve Seat Support from the handle.
2. Using an adjustable wrench on the flats of the Back Cap Assembly (2), unscrew and remove the Cap Assembly from the Motor Housing. Remove the Back Cap O-ring (3).

ASSEMBLY

General Instructions

1. Always press on the **inner** ring of a ball-type bearing when installing the bearing on a shaft.
2. Always press on the **outer** ring of a ball-type bearing when pressing the bearing into a bearing recess.
3. Whenever grasping a tool or part in a vise, always use leather-covered or copper-covered vise jaws. Take extra care with threaded parts and housings.
4. Always clean every part and wipe every part with a thin film of oil before installation.
5. Apply a film of O-ring lubricant to all O-rings before final assembly.
6. Check every bearing for roughness. If an open bearing must be cleaned, wash it thoroughly in a suitable cleaning solution and dry with a clean cloth. **Sealed or shielded bearings should never be cleaned.** Work grease thoroughly into every open bearing before installation.

Assembly of the Reverse Valve

1. Install the Reverse Valve Seal (21) into the groove of the Reverse Valve (16).
2. Insert the Reverse Valve Spring (17) into the plain end of the Reverse Valve.
3. Insert the Valve Lock Pin (18) into the small hole in the side of the Reverse Valve.
4. Start the Reverse Valve into the bushing, aligning the Valve Lock Pin with the timing notch on the bushing.
5. Holding the tool with the lock pin hole in the Reverse Valve facing downward, push the Reverse Valve into the bushing against the compression of the Reverse Valve Spring.

6. Using a small diameter rod inserted into the end of the Reverse Valve and while maintaining valve pressure on the Spring, use the rod to force the Valve Lock Pin into the slot in the wall of the bushing.
7. After the Valve Lock Pin has engaged the slot in the bushing, slowly release the Reverse Valve and it will stay in position.
8. Insert the Lock Pin Retainer (20) in the tapped end of the Reverse Valve and install the Retainer Setscrew (19).

Assembly of the Throttle Valve

1. Lightly grasp the handle of the Motor Housing (1) in copper-covered vise jaws so that the inlet end of the Housing is upward.
2. If the Throttle Valve Seat Support (10) was removed, use a flat-faced rod 1/2" (13 mm) in diameter and about 6" (150 mm) long to press a new Throttle Valve Seat Support into the handle.
3. Install a new Throttle Valve Seat (11).
4. Insert the Trigger Assembly (4) into the trigger bushing.
5. Installation of the Throttle Valve (9) is sometimes a bit tricky due to the smallness of the Valve and the depth of the bore in which it is located. The difficult part is in holding the Valve while inserting the long end of the valve stem through the hole in the trigger stem. Although the Valve can be held with a push-button mechanical drafting pencil or a wooden dowel, one of the easiest ways to hold it is by using a common wooden pencil with rubber eraser. Insert the short end of the valve stem into the rubber eraser full depth, then back it out far enough so that the Valve is just nicely supported. Insert the Valve into the bore of the handle so that the long end of the stem enters the hole in the Trigger Stem. Pull outward on the Trigger to hold the Valve while removing the pencil.
6. Place the Inlet Screen (13), closed end first, inside the large end coil of the Throttle Valve Spring (12). Insert the Throttle Valve Spring and Screen, small coil first, into the handle so that the Spring encircles the end of the Throttle Valve.
7. Work the Muffler Element (8) into the exhaust cavity in the handle of the Motor Housing until the trailing end of the Muffler Element is approximately 1/4" (6 mm) into the Housing.
8. Lubricate the Muffler O-ring (7) with O-ring lubricant and place it over the exhaust port of the Muffler.
9. Place the Muffler Assembly (6) on the face of the handle so that the exhaust port extends into the handle.

MAINTENANCE SECTION

- Slide the Inlet Bushing Spacer (4) over the threaded end of the Inlet Bushing (15), and install the Inlet Bushing in the handle. Tighten it to a minimum of 26 ft–lb (35 Nm) torque.

NOTICE

The Inlet Bushing must securely clamp the Exhaust Deflector.

- Lubricate the Back Cap O–ring (3) with O–ring lubricant and place it in the recess of the Back Cap (2).
- Install the Back Cap Assembly (2) on the Motor Housing and tighten to 15 to 18 ft–lb (20 to 25 Nm) of torque.

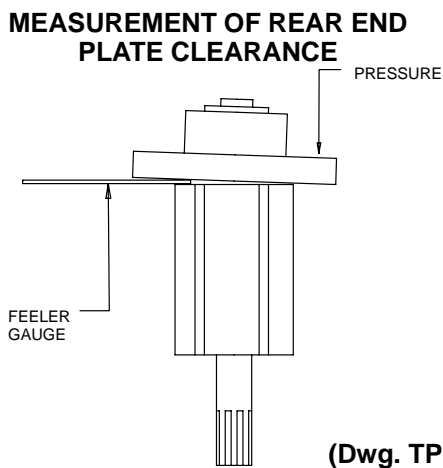
Assembly of the Motor

- Place the Rear End Plate (25) on the short, unsplined shaft of the Rotor (27) with the counterbore away from the body of the Rotor.
- Using a sleeve that contacts the inner ring of the Rotor Bearing (24), press the Bearing onto the shaft until the Rear End Plate just contacts the rotor body.
- The clearance between the Rear End Plate and Rotor is critical. **While pressing down** with your finger on the outer edge of the End Plate on the Bearing side, insert a .002" (.05 mm) feeler gauge between the face of the Rotor and End Plate directly opposite the point where pressure is applied.

NOTICE

This measurement must be made at the outside diameter of the rotor body.

Supporting the End Plate, lightly tap the shaft with a plastic hammer to increase the space. Press the Bearing farther onto the shaft if the space is too wide. When the proper clearance is obtained, install the Rear Rotor Bearing Retainer (23) on the shaft.



- Place the Rotor, with the splined end up, in a block which has clearance for the Rotor Bearing and supports the End Plate.
- Wipe each Vane (28) with a light film of Ingersoll–Rand No. 10 oil and place a Vane in each slot in the Rotor.
- Note that the Cylinder (26) has a notch in one end. Place the Cylinder, notched end up, down over the Rotor and against the Rear End Plate, aligning the dowel hole in the Cylinder with the U–shaped notch in the rim of the End Plate.
- Install the Front Rotor Bearing in the Front End Plate (29) and retain it with the Front Rotor Bearing Retainer (31).
- Using a sleeve that contacts the inner ring of the bearing, press the assembled Front End Plate, flat side first, on the splined end of the Rotor until the End Plate just contacts the Cylinder.
- Install the Rear End Plate Gasket (22) in the Motor Housing, aligning the small notch in the Gasket with the dowel pin hole in the Housing.
- Insert a thin, rigid wire into the dowel pin hole at the bottom of the motor recess in the Motor Housing. Grasping the assembled motor by the spline on the Rotor and with the dowel pin holes of the Front End Plate and Cylinder aligned with the U–shaped notch in the Rear End Plate. Install the assembled motor in the Motor Housing. Maintain alignment between the motor and Motor Housing by passing the aligned dowel holes in the assembled motor over the wire positioned in the Motor Housing. Withdraw the wire and install the Cylinder Dowel (30), making certain the Cylinder Dowel is flush with or below the Front End Plate.

Assembly of the Gear Case

- Set the Gear Case (32) on the table of an arbor press with the threaded end downward.
- Using a sleeve that will contact the outer and inner ring of the bearing, press the Rear Spindle Bearing (39), open side facing upward, into the bearing recess until it seats.
- Work some grease into the teeth of the Spindle Planet Gears (38) and onto the planet gear shafts on the Spindle (37).
- Slide the Spindle into the Gear Case so that the tapered spindle shaft passes through the bore of the Rear Spindle Bearing and the teeth of the Spindle Planet Gears mesh with the teeth in the Gear Case.
- Install the Spindle Bearing Spacer (40) onto the tapered end of the Spindle until it butts against the Rear Spindle Bearing.

MAINTENANCE SECTION

6. Using a sleeve that will contact the outer and inner rim of the bearing, press the Front Spindle Bearing (41), open side facing downward, into the Gear Case until it butts against the Spindle Bearing Spacer.
7. Using snap ring pliers, install the Spindle Retaining Ring (43) into the groove of the Spindle and against the inner ring of the Front Spindle Bearing.
8. Using snap ring pliers, install the Spindle Bearing Retainer (42) into the internal groove of the Gear Case and against the outer ring of the Front Spindle Bearing.
9. Coat the Gear Head Spacer (36) with grease and place it in the Gear Case against the Spindle Planet Gears.
10. Work some grease into the teeth of the Gear Head Planet Gears (35) and onto the planet gear shafts on the Gear Head (34). Slide the Gear Head into the Gear Case so that the teeth on the gear head shaft mesh with the Spindle Planet Gears. Slide the Gear Head Planet

Gear onto the gear head shafts, making certain the teeth of the Gears mesh with the teeth of the Gear Case. Work some grease into the teeth of the Rotor Pinion (33) and place the Rotor Pinion in the Gear Head so that it meshes with the Gear Head Planet Gears.

11. Place the Motor Clamp Washer (44) in the Gear Case against the internal gear. Install the Clamp Washer Retaining Ring (45).
12. Thread the Gear Case with its assembled gearing into the Motor Housing (1) and tighten it to 15 to 18 ft-lb (20 to 25 Nm) of torque.

NOTICE

This is a right-hand thread.

13. Install the Tap Chuck (46) onto the Tapper Chuck Spindle.

MAINTENANCE SECTION

TROUBLESHOOTING GUIDE

Trouble	Probable Cause	Solution
Loss of Power	Low air pressure	Check air supply. For top performance, the air pressure must be 90 psig (6.2 bar/620 kPa) at the inlet.
	Plugged Air Strainer Screen or Inlet Screen	Clean the Air Strainer or screen in a clean, suitable, cleaning solution. If the Screen cannot be cleaned, replace it.
	Clogged Muffler or Exhaust Silencer	Clean the Muffler Element in a clean, suitable cleaning solution. If it cannot be cleaned, replace it.
	Worn or broken Vanes	Replace the complete set of Vanes.
	Damaged Rear End Plate Gasket	Install a new Rear End Plate Gasket.
	Worn or broken Cylinder	Replace the Cylinder if it is cracked or if the bore appears wavy or scored.
	Improper lubrication or dirt build-up	Clean the Motor Unit parts and lubricate as instructed.
Leaky Throttle Valve	Worn Throttle Valve and/or Throttle Valve Seat	Install a new Throttle Valve and/or a Throttle Valve Seat.
	Dirt accumulation on Throttle Valve and/or Throttle Valve Seat	Pour about 3 cc of a clean, suitable, cleaning solution in the air inlet and operate the tool for about 30 seconds. Immediately pour 3 cc of light oil in the air inlet and operate the tool for 30 seconds to lubricate all the cleaned parts.
Gear Case gets hot	Excessive grease	Clean and inspect the Gear Case and gearing parts and lubricate as instructed.
	Worn or damaged parts	Clean and inspect the Gear Case and gearing. Replace worn or broken components.

NOTICE

SAVE THESE INSTRUCTIONS. DO NOT DESTROY.