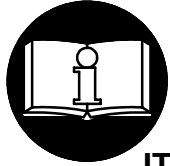


OPERATION AND MAINTENANCE FOR MODEL 44SMA REVERSIBLE MULTI-VANE DRILL

NOTICE

Model 44SMA Drill is designed for heavy drilling and reaming in shipbuilding, railroad car shops, fabricated metal and construction applications. 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 accessories 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.
- This tool is not designed for working in explosive atmospheres.
- This tool is not insulated against electric shock.
- This tool is designed to be operated by two persons.

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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PROFESSIONAL TOOLS

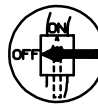
WARNING LABEL IDENTIFICATION

! 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>
---	--


	<p>! WARNING</p> <p>Always wear hearing protection when operating this tool.</p>
---	---

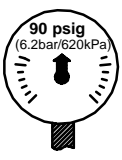
	<p>! WARNING</p> <p>Always turn off the air supply and disconnect the air supply hose before installing, removing or adjusting any accessory on this tool, or before performing any maintenance on this tool.</p>
---	--

	<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>
---	---

	<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>
---	---

ADJUSTMENTS

— FORWARD/REVERSE OPERATION —

The Model 44SMA Drill is capable of operating in a Forward/Reverse or Forward Only mode of operation. Make the mode selection prior to starting the tool. Look at the arrows on the Throttle Sleeve (123). These arrows indicate the direction in which the Throttle Sleeve must be rotated to activate either **forward** or **reverse** rotation of the Drill.

Hold the Drill in the normal operating position with the Throttle Sleeve pointing towards the operator's right hand. With the Throttle Sleeve in the operator's right hand, pivot

the Reverse Stop Lever (95) away from the operator. With the Reverse Stop Lever in this position, the Drill can be operated in either the **forward** (clockwise) rotation mode or **reverse** (counterclockwise) rotation mode.

! WARNING

Inadvertent movement of the Throttle Sleeve could cause a sudden change in the direction of rotation of the Drill.

Pivoting the Reverse Stop Lever toward the operator prevents the **reverse** rotation of the Drill and permits the Drill to be operated in the **forward** rotation mode only.

PLACING TOOL IN SERVICE

LUBRICATION



Ingersoll-Rand No. 50



Ingersoll-Rand No. 28

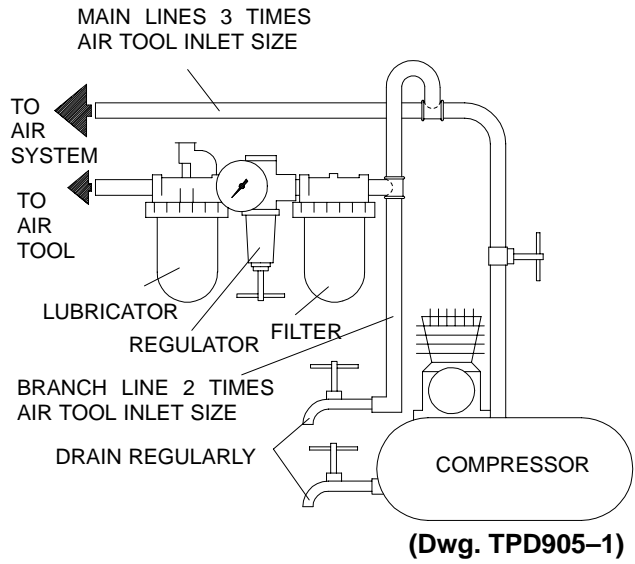
Always use an air line lubricator with this tool.
We recommend the following Filter-Lubricator-Regulator Unit:

USA N°. C31-06-G00

After each four hours of operation, unscrew the Oil Chamber Plug and fill the Backhead with Ingersoll-Rand No. 50 Oil.

Occasionally, squirt 2 or 3 drops of Ingersoll-Rand No. 50 Oil into the hole in the Throttle Sleeve.

Weekly, or as experience indicates, inject 2 or 3 strokes (1 to 2 cc) of Ingersoll-Rand No. 28 Grease from the No. P25-228 Grease Gun into each of the Grease Fittings.



HOW TO ORDER A LARGE DRILL

REVERSIBLE ROLL THROTTLE

Model	Free Speed, rpm	Capacity in Steel				Morse Taper Socket
		Drilling		Reaming		
		in.	mm	in.	mm	
44SMA	155	2	51	2	51	No. 4 Morse Taper

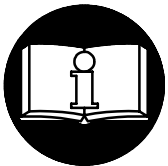
MANUEL D'EXPLOITATION ET D'ENTRETIEN LA PERCEUSE RÉVERSIBLE MULTI-VANE[®] MODÈLE 44SMA

F

NOTE

La perceuse Modèle 44SMA est destinée aux grosses opérations de perçage et d'alésage dans les constructions navales, les ateliers de chemin de fer, la mécanosoudure et les fabrications mécaniques.

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 19 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 volatiles tels que le kérosène, le gasoil ou le carburant d'aviation.
- Ne retirer aucune étiquette. Remplacer toute étiquette endommagée.
- Porter toujours une protection acoustique pendant l'utilisation de cet outil.
- Tenir les mains, les vêtements flous et les cheveux longs, éloignés de l'extrémité rotative de l'outil.
- Noter la position du levier d'inversion avant de mettre l'outil en marche de manière à savoir dans quel sens il va tourner lorsque la commande est actionnée.
- Prévoir, et ne pas oublier, que tout outil motorisé est susceptible d'à-coups brusques lors de sa mise en marche et pendant son utilisation.
- Garder une position équilibrée et ferme. Ne pas se pencher trop en avant pendant l'utilisation de cet outil. Des couples de réaction élevés peuvent se produire à, ou en dessous de, la pression d'air recommandée.
- La rotation des accessoires de l'outil peut continuer pendant un certain temps après le relâchement de la gâchette.
- Les outils pneumatiques peuvent vibrer pendant l'exploitation. Les vibrations, les mouvements répétitifs et les positions inconfortables peuvent causer des douleurs dans les mains et les bras. N'utiliser plus d'outils en cas d'inconfort, de picotements ou de douleurs. Consulter un médecin avant de recommencer à utiliser l'outil.
- Utiliser les accessoires recommandés par Ingersoll-Rand.
- Cet outil n'est pas conçu pour fonctionner dans des atmosphères explosives.
- Cet outil n'est pas isolé contre les chocs électriques.
- Cet outil est conçu pour être actionné par deux personnes.

UTILISATION DE L'OUTIL

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

NOTE

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

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

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

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PROFESSIONAL TOOLS

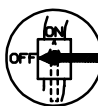
SIGNIFICATION DES ÉTIQUETTES D'AVERTISSEMENT


▲ ATTENTION


LE NON RESPECT DES AVERTISSEMENTS SUIVANTS PEUT CAUSER DES BLESSURES.


	<p>▲ ATTENTION</p> <p>Porter toujours des lunettes de protection pendant l'utilisation et l'entretien de cet outil.</p>
---	--

	<p>▲ ATTENTION</p> <p>Porter toujours une protection acoustique pendant l'utilisation de cet outil.</p>
---	--


	<p>▲ ATTENTION</p> <p>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.</p>
---	--

	<p>▲ ATTENTION</p> <p>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.</p>
---	---

	<p>▲ ATTENTION</p> <p>Ne pas transporter l'outil par son flexible.</p>
---	---

	<p>▲ ATTENTION</p> <p>Ne pas utiliser des flexibles ou des raccords endommagés, effilochés ou détériorés.</p>
---	--

	<p>▲ ATTENTION</p> <p>Garder une position équilibrée et ferme. Ne pas se pencher trop en avant pendant l'utilisation de cet outil.</p>
---	---

	<p>▲ ATTENTION</p> <p>Utiliser de l'air comprimé à une pression maximum de 6,2 bar (620 kPa).</p>
---	--

RÉGLAGES

— MARCHE AVANT/MARCHE ARRIERE —

La perceuse Modèle 44SMA peut fonctionner dans le mode Marche avant/Marche arrière ou Marche avant seulement. Le mode de fonctionnement doit être sélectionné avant de mettre l'outil en marche.

Observez les flèches sur le manchon de commande (123). Ces flèches indiquent la direction dans laquelle le manchon de commande doit être tourné pour activer la rotation de la perceuse **en marche avant** et **en marche arrière**.

Tenir la perceuse en position normale d'utilisation, le manchon de commande étant dirigé vers la main droite de l'opérateur. Tenir le manchon de commande dans la main droite et pivoter le levier d'arrêt de marche arrière (95) pour l'éloigner de l'opérateur. Lorsque le levier d'arrêt de

marche arrière est dans cette position, la perceuse peut être actionnée dans le mode de rotation de **marche avant** (sens des aiguilles d'une montre) ou de **marche arrière** (sens inverse des aiguilles d'une montre).

▲ ATTENTION

Tout mouvement par inadvertance du manchon de commande peut causer un changement soudain du sens de rotation de la perceuse.

Le pivotement du levier d'arrêt de marche arrière vers l'opérateur empêche **la marche arrière** de la perceuse et cette dernière ne peut être exploitée que dans le mode de **marche avant**.

MISE EN SERVICE DE L'OUTIL

LUBRIFICATION



Ingersoll-Rand No. 50



Ingersoll-Rand No. 28

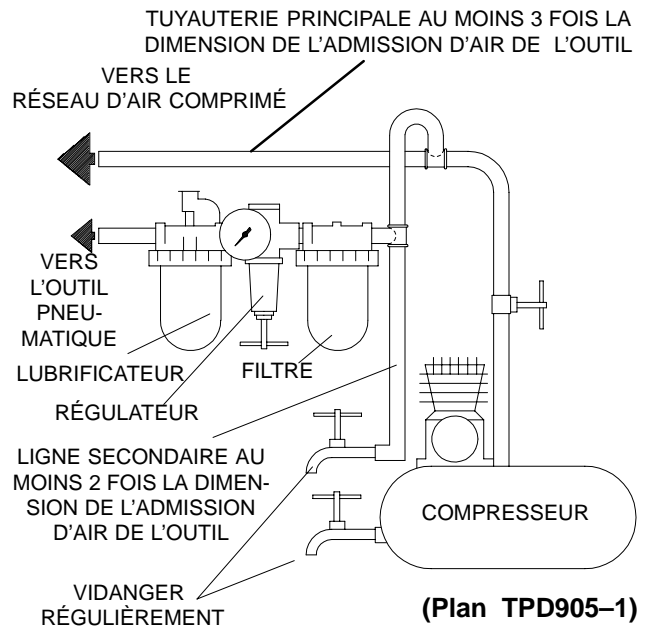
Utiliser toujours un lubrificateur avec cet outil.
Nous recommandons l'emploi du
filtre-régulateur-lubrificateur suivant :

USA N°. C31-06-G00

Toutes les quatre heures de fonctionnement dévisser le bouchon de la chambre d'huile et remplir la tête arrière avec de l'huile Ingersoll-Rand No. 50.

De temps à autre, verser 2 à 3 gouttes d'huile Ingersoll-Rand No. 50 dans le trou du fourreau de commande.

Une fois par semaine, ou en fonction de l'expérience, injecter environ 1 à 2 cm³ de graisse Ingersoll-Rand No. 28 à l'aide du pistolet à graisse P25-228 dans les raccords de graissage.



SPÉCIFICATIONS

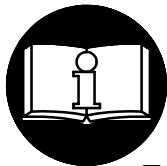
Modèle	Vitesse à vide	Capacité dans l'acier		Douille à Cône Morse
	tr/mn	Perçage pouces mm	Alésage pouces mm	
44SMA	155	2 51	2 51	Cône morse No. 4

MANUAL DE FUNCIONAMIENTO Y MANTENIMIENTO PARA TALADRO MULTI-VANE® REVERSIBLE MODELO 44SMA

NOTA

El taladro modelo 44SMA está diseñado para taladrado pesado y escariado en astilleros, talleres de vagones de ferrocarril, y aplicaciones en metales soldados y en construcción.

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 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 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.
- 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.


	<p>⚠ ADVERTENCIA</p> <p>Usar siempre protección ocular al manejar o realizar operaciones de mantenimiento en esta herramienta.</p>
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	<p>⚠ ADVERTENCIA</p> <p>Usar siempre protección para los oídos al manejar esta herramienta.</p>
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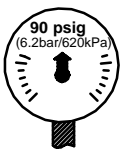
	<p>⚠ ADVERTENCIA</p> <p>Cortar siempre el suministro de aire y desconectar la manguera de suministro de aire antes de instalar, retirar o ajustar cualquier accesorio de esta herramienta, o antes de realizar cualquier operación de mantenimiento de la misma.</p>
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	<p>⚠ ADVERTENCIA</p> <p>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.</p>
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	<p>⚠ ADVERTENCIA</p> <p>No coger la herramienta por la manguera para levantarla.</p>
---	---

	<p>⚠ ADVERTENCIA</p> <p>No utilizar mangueras de aire y accesorios dañados, desgastados ni deteriorados.</p>
---	---

	<p>⚠ ADVERTENCIA</p> <p>Mantener una postura del cuerpo equilibrada y firme. No estirar demasiado los brazos al manejar la herramienta.</p>
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	<p>⚠ ADVERTENCIA</p> <p>Manejar la herramienta a una presión de aire máxima de 90 psig (6,2 bar/620 kPa).</p>
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AJUSTES

FUNCIONAMIENTO HACIA DELANTE/INVERSO

El taladro modelo 44SMA es capaz de funcionar en dos modalidades: funcionamiento hacia delante/inverso o solamente hacia delante. Seleccione la modalidad de funcionamiento antes de arrancar la herramienta. Mire las flechas situadas en el manguito del estrangulador (123). Estas flechas indican la dirección en la que se debe girar el manguito del estrangulador para activar la rotación del taladro **hacia delante** o a la **inversa**.

Mantenga el taladro en la posición normal de funcionamiento con el manguito del estrangulador apuntando hacia la mano derecha del operario. Con el manguito del estrangulador en la mano derecha del operario, haga pivotar la palanca de parada de inversión (95) en dirección opuesta al operario. Con la palanca de parada de inversión en esta posición, se puede utilizar el taladro en la modalidad de rotación **hacia delante** (hacia la derecha) o en la de rotación hacia la dirección **inversa** (hacia la izquierda).

⚠ AVISO

El movimiento involuntario del manguito del estrangulador podría causar un cambio repentino en la dirección de rotación del taladro.

Al hacer pivotar la palanca de parada de inversión hacia el operario, se evita que el taladro gire en la dirección **inversa**, y permite que se utilice el taladro en la modalidad de rotación únicamente **hacia delante**.

PARA PONER LA HERRAMIENTA EN SERVICIO

LUBRICACIÓN



Ingersoll-Rand N° 50



Ingersoll-Rand N° 28

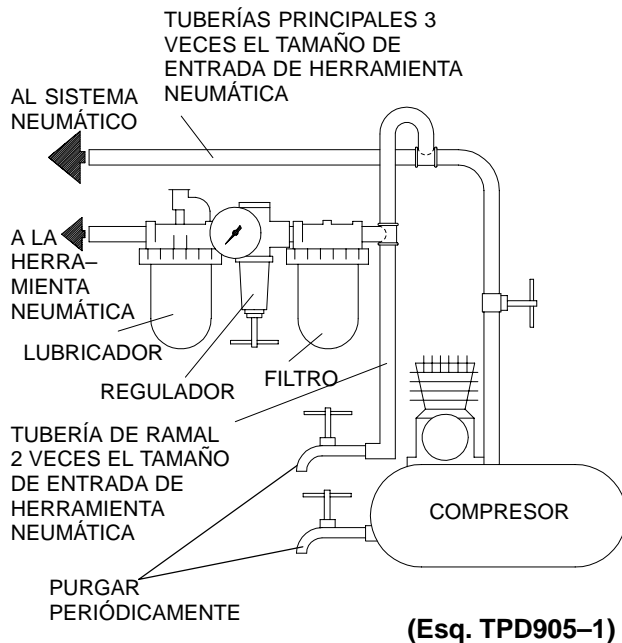
Use siempre un lubricante de aire con esta herramienta.
Recomendamos la siguiente unidad de Filtro-Lubricador-Regulador:

USA N° C31-06-G00

Después de cada cuatro horas de funcionamiento, desatornille el tapón de la cámara de aceite y llene la cubierta trasera de aceite Ingersoll-Rand N° 50.

De vez en cuando, inyecte 2 o 3 gotas de aceite Ingersoll-Rand N° 50 en el orificio situado en el manguito del estrangulador.

Cada semana, o según indique la experiencia, inyecte 2 o 3 disparos (1 a 2 cc) de grasa Ingersoll-Rand N° 28 en el engrasador con la pistola de grasa P25-228.



ESPECIFICACIONES

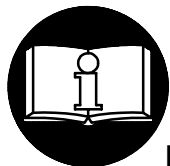
Modelo	Velocidad en vacío	Capacidad en acero		Boca cónica Morse
	rpm	Taladrado pulg. mm	Escariado pulg. mm	
44SMA	155	2 51	2 51	cono Morse N°. 4

MANUAL DE FUNCIONAMENTO E MANUTENÇÃO PARA BERBEQUIM MULTI-VANE REVERSÍVEL MODELO 44SMA

AVISO

O Berbequim 44SMA é concebido para aplicações de perfuração pesada e mandrilagem em estaleiros, oficinas ferroviárias, indústrias de metais e construção em geral.

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 19 mm (3/4").
- 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.
- Os acessórios da ferramenta podem continuar a girar brevemente após a pressão ter 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.
- Esta Ferramenta não foi concebida para trabalhos em atmosferas explosivas.
- Esta Ferramenta não está isolada contra choques eléctricos.
- Esta Ferramenta foi concebida para ser operada por duas pessoas.

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 SEGUINTES ADVERTÊNCIAS PODE RESULTAR EM FERIMENTOS.


	⚠ ADVERTÊNCIA Use sempre óculos de protecção quando estiver operando ou executando algum serviço de manutenção nesta ferramenta.
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	⚠ ADVERTÊNCIA Use sempre protecção contra o ruído ao operar esta ferramenta.
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	⚠ 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.
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	⚠ 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 formigameiro ou dor. Procure assistência médica antes de retornar ao trabalho.
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	⚠ ADVERTÊNCIA Não carregue a ferramenta segurando na mangueira.
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	⚠ 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.
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	⚠ ADVERTÊNCIA Opere com pressão do ar Máxima de 90–100 psig (6,2–6,9 bar).
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AJUSTES

OPERAÇÃO PARA FRENTE/INVERSO

O Berbequim Modelo 44SMA é capaz de operar em modo de operação Para Frente/Inverso ou somente o modo Para Frente. Certifique-se qual modo está a ser utilizado antes de operar a ferramenta. Observe as setas na Camisa de Regulagem (123). Estas setas indicam o sentido no qual a Camisa de Regulagem deve ser girada para ativar os modos de rotação **para frente** ou **inverso** no Berbequim.

Segure o Berbequim na posição normal de operação com a Camisa de regulagem apontada para a direita do operador. Com a Camisa de Regulagem empurre a Alavanca de

Paragem de Inversão (95). Com a Alavanca de Paragem de Inversão nesta posição, o Berbequim pode ser operado no sentido **horário** ou no sentido **contrário ao dos ponteiros do relógio**.

⚠ ADVERTÊNCIA

O movimento acidental da Camisa de regulagem pode causar uma mudança repentina no sentido de rotação do Berbequim.

O pivotamento da Alavanca de Paragem de Inversão em direção ao operador previne a operação no modo **inverso** e permite a operação somente no modo **para frente**.

COLOCANDO A FERRAMENTA EM FUNCIONAMENTO

LUBRIFICAÇÃO



Ingersoll-Rand No. 50



Ingersoll-Rand No. 28

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

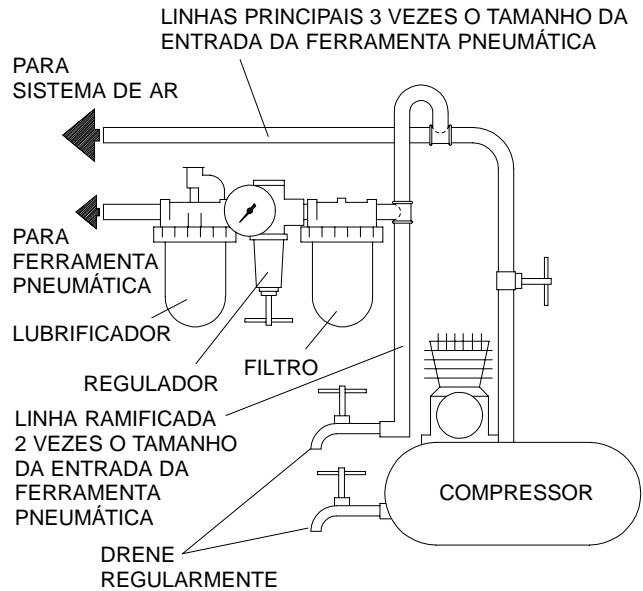
USA N° C31-06-G00

Depois de quatro horas de operação, a menos que um lubrificador de ar de linha esteja a ser usado, desligue a mangueira de ar, remova o Bujão da Câmara de Óleo e encha a câmara no Cabeçote Traseiro com Óleo Ingersoll-Rand No. 50.

Ocasionalmente, injecte de 2 a 3 gotas de Óleo Ingersoll-Rand No. 50 no orifício de óleo na Camisa da Válvula Reguladora de Pressão.

Semanalmente, ou conforme a experiência indicar, injecte de 1 a 2 cc de Massa Lubrificadora Ingersoll-Rand No. 28

do Canhão de Massa Lubrificadora P25-228 em cada um dos Adaptadores de Massa Lubrificadora.

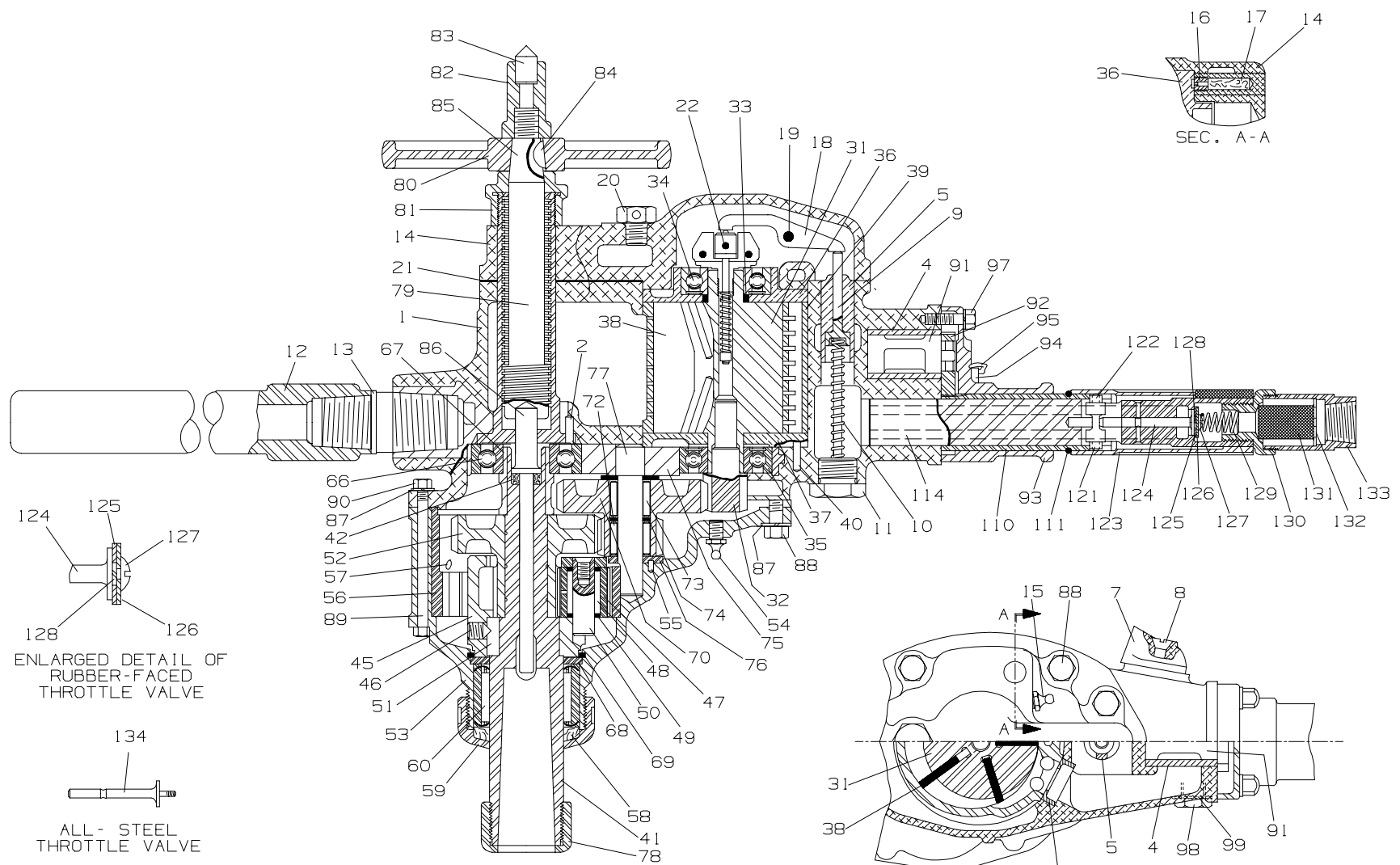


(Desenho TPD905-1)

ESPECIFICAÇÕES

Modelo	Velocidade Livre rpm	Capacidade na Barrena				Cone Morse
		Perfurando		Mandrilando		
		mm	(pol.)	mm	(pol.)	
44SMA	155	51	(2)	51	2	Número 4

13



MODEL 44SMA DRILL

(Dwg. TPA324-3)



PART NUMBER FOR ORDERING

PART NUMBER FOR ORDERING

1	Motor Housing				
	for models ending in -EU	R44SM-EU-40	• 36	Rear End Plate	R44H-12
	for all other models	R44SM-40	• 37	Front End Plate	R44H-11
*	Warning Label		• 38	Vane Packet (set of 5 Vanes)	555-42-5
	for models ending in -EU	EU-99	• 39	Cylinder	R44H-3
	for all other models	WARNING-8-99	40	Cylinder Dowel	R4H-98
*	Nameplate		41	Spindle Assembly	R4SM-B108
	for models ending in -EU	R2H-EU-99	42	Spindle	R4SM-108
	for all other models	R2H-99		Ejecting Pin Packing	R4H-408
2	Feed Screw Dowel	R3H-527	45	Planet Gear Frame Assembly	R4SM-A367
4	Reverse Valve Bushing	R44H-330	46	Planet Gear Frame	R4SM-367
5	Governor Valve Bushing	R3H-429	47	Planet Gear Frame Set Screw (3)	R4SM-574
6	Air Port Gasket (2)	R44H-210A	48	Planet Gear (3)	R4SM-10
7	Exhaust Deflector	R33H-23	49	Planet Gear Roller (45)	R4SM-152
8	Exhaust Deflector Screw	R44H-312	50	Roller Retaining Plate	R4SM-468
9	Governor Valve	R4H-425	51	Planet Gear Shaft (3)	R4SM-191
10	Governor Valve Spring	R4H-431		Planet Gear Frame Key	R4SM-410
11	Governor Valve Cap	R4H-433	52	Spindle Gear	R4SM-9
12	Dead Handle	TA-48A	53	Gear Case	R4SM-37
13	Dead Handle Stud	TB-364	54	Grease Fitting	23-188
14	Backhead	R4H-102	55	Thrust Plate Dowel	R3G-34
15	Grease Fitting	23-188	56	Internal Gear	R4SM-406
16	Oiler Adjusting Screw (2)	JA4-71	57	Internal Gear Rivet (5)	R4SM-407
17	Oiler Felt (6)	JA4-75	58	Spindle Packing	R3H4-14
18	Governor Lever	R4H-436	59	Spindle Packing Nut	R3H4-15
19	Governor Lever Pin	N00-15	• 60	Spindle Bearing	R3H4-510
20	Oil Chamber Plug	P25-227	• 66	Spindle Thrust Bearing	TB-105
• 21	Backhead Gasket	R4H-283	67	Spindle Thrust Bearing Spacer	R4SM-100
22	Governor Assembly	R5H-A424B	68	Spindle Thrust Ring	R4H-511
31	Rotor	R44H-53	69	Spindle Thrust Ring Retainer	R3SM-83
32	Rotor Pinion	R4J-17	70	Intermediate Gear	R4SM-82
33	Rotor Bearing Spacer	555-65	72	Intermediate Gear Front Bearing	R4SM-500
• 34	Rear Rotor Bearing	555-22	73	Intermediate Gear Rear Bearing	R4SM-501
• 35	Front Rotor Bearing	555-24	74	Intermediate Gear Bearing Spacer	R4SM-573
			75	Intermediate Gear Thrust Washer	R30-645

MAINTENANCE SECTION

* Not illustrated.
 • To keep downtime to a minimum, it is desirable to have on hand certain repair parts. We recommend that you stock one (pair or set) of each part indicated by a bullet (•) for every four tools in service.

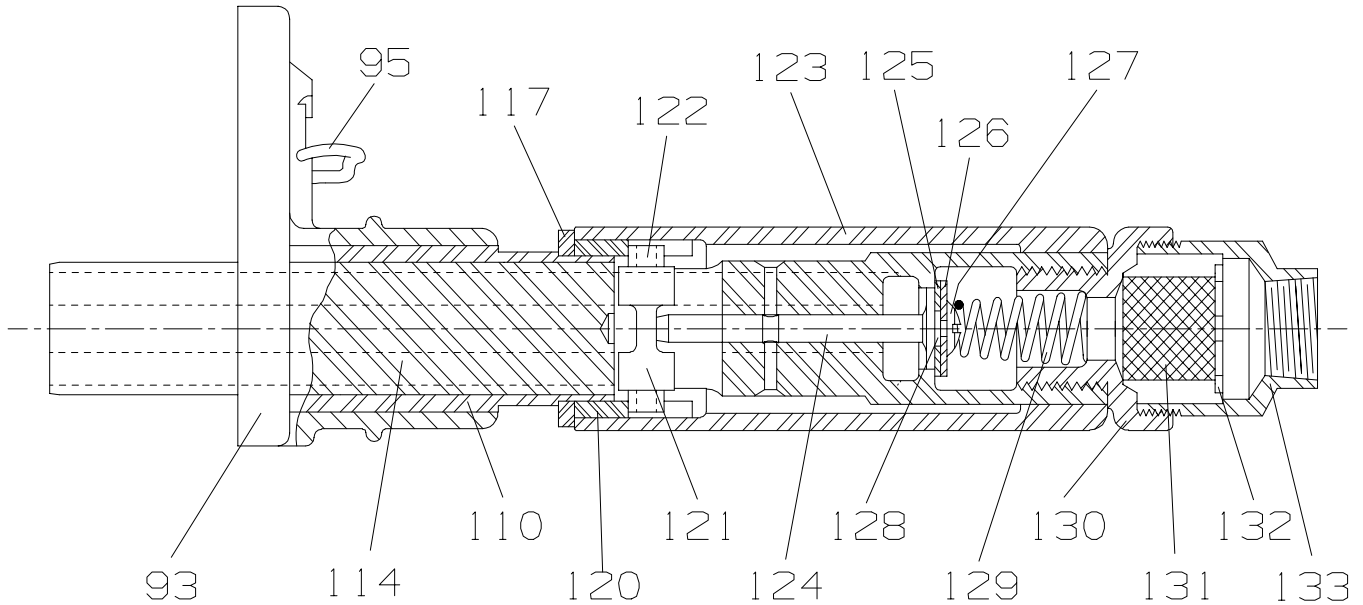
PART NUMBER FOR ORDERING

PART NUMBER FOR ORDERING

76	Intermediate Gear Thrust Plate	R4SM-570	89	Gear Case Bolt	
77	Intermediate Gear Shaft	R4SM-502		Long	R4SM-126
78	Protection Nut	T01-43A		Short (3)	R4SM-125
79	Outer Feed Screw	R4H-290	90	Gear Case Bolt Nut (1 for each Bolt)	D02-428
	Feed Screw Assembly	TB-A291	91	Reverse Valve	R44H-329
80	Feed Handle	TB-2	92	Reverse Valve Sector	R44H-488
81	Feed Screw Cap	TB-392	93	Sector Cover	R44H-489
82	Feed Handle Lock Nut	TB-388A	94	Reverse Stop	R44H-568
83	Feed Screw Center	TB-244	95	Reverse Stop Lever	R44H-569
84	Feed Handle Key	TC-18	*	Reverse Stop Washer	R44H-572
85	Inner Feed Screw	TB-291	97	Sector Cover Screw (5)	R44H-490A
86	Drill Ejecting Pin	R4SM-114	98	Throttle Body Set Screw	TCCW-433
87	Lock Washer (5/16") (17)	T11-58	99	Throttle Body Set Screw Lock Washer	D02-537
88	Cap Screw (8)	B8-240			

* Not illustrated.

MAINTENANCE SECTION



(Dwg. TPD1182-1)

PART NUMBER FOR ORDERING



	Throttle Assembly	R44H-A518
110	Throttle Sector	R44H-497
111	Throttle Sector Snap Ring	R44H-486
★ 114	Throttle Body	R44H-518
121	Throttle Valve Lift Pin	R4H-306
*	Rotational Label (reversible)	R22H-100
122	Lift Pin Roller (2)	TAA-426
123	Throttle Sleeve	R4H-305
+ 124	Rubber-Faced Throttle Valve	R4H-402
• 125	Throttle Valve Face	R4H-159
126	Throttle Valve Face Cap	4H-157
127	Throttle Valve Face Retaining Screw	R4-158
128	Retaining Screw Lock Washer	H54U-352
129	Throttle Valve Spring	TAA-418
	Air Strainer Assembly	R4H-A565
130	Air Strainer Cap	R4H-566
131	Air Strainer Screen	R3H-61
132	Air Strainer Screen Support	R3H-567
133	Air Strainer Body	R3H-565
134	All Steel Throttle Valve	R4H-302

* Not illustrated.

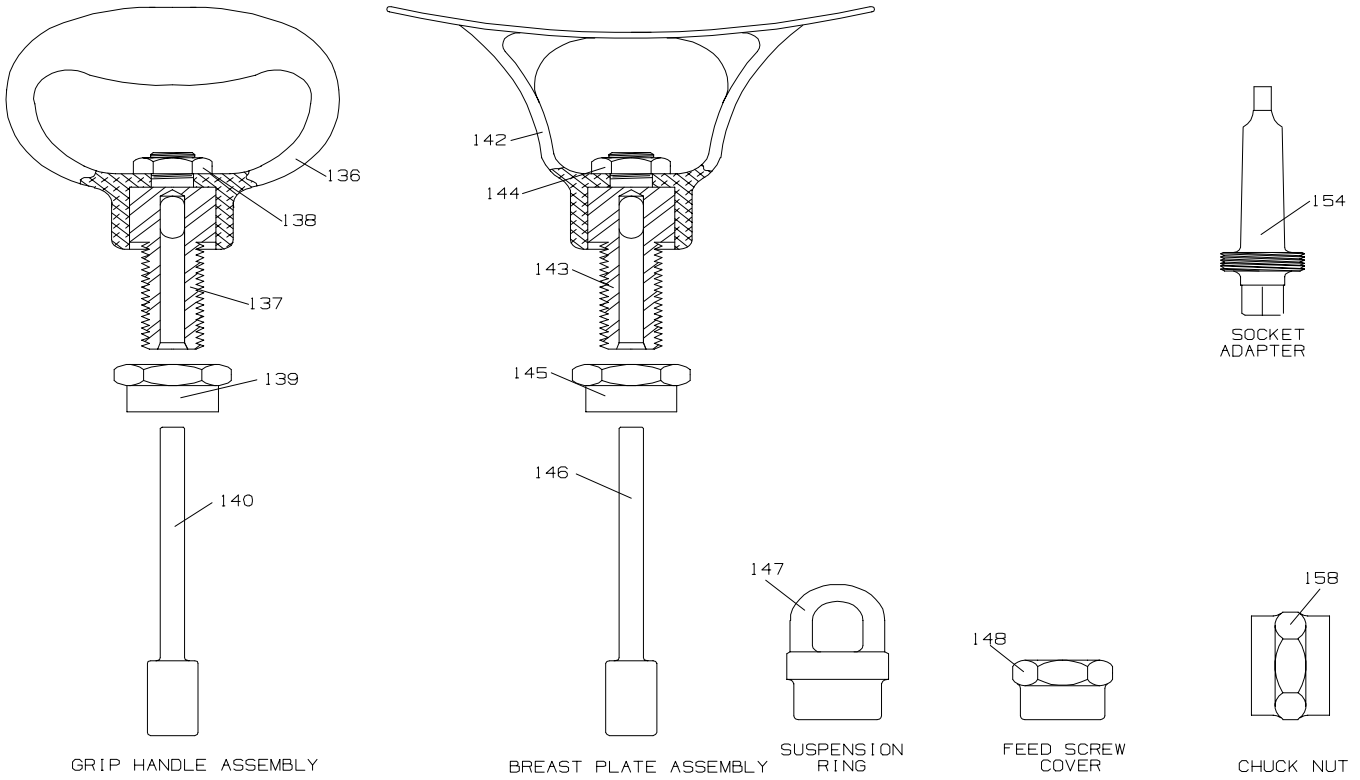
★ If ordered as a replacement for a Throttle Body Equipped with an All Steel Throttle Valve, also order the Rubber-Faced Throttle Valve (124). The body for use with the All Steel Throttle Valve is discontinued.

+ Cannot be used as a replacement for the All Steel Throttle Valve

• 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.

MAINTENANCE SECTION

SPECIAL EQUIPMENT



(Dwg. TPB10-3)

PART NUMBER FOR ORDERING

	Grip Handle Assembly	TB-A41
136	Grip Handle	A-41
137	Grip Handle Stud	TB-448
138	Grip Handle Stud Nut	B12-249
139	Grip Handle Nut	TB-447
140	Grip Handle Ejecting Pin	TB-50
	Breast Plate Assembly	TB-A79
142	Breast Plate	TC-79
143	Breast Plate Stud	TB-448
144	Breast Plate Stud Nut	B12-249
145	Breast Plate Nut	TB-447
146	Breast Plate Ejecting Pin	TB-50
147	Suspension Ring	TB-365
148	Feed Screw Cover	TB-461
154	Socket Adapter (No. 4 Morse Taper to 1" square drive)	R40-214
158	Chuck Nut	T01-347
*	Male Hose Nipple (3/4" hose to 1/2" male pipe)	A03-46

* Not illustrated.

MAINTENANCE SECTION

WARNING

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

Always turn off air supply and disconnect 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 44SMA is disassembled for maintenance, repair or replacement of parts, lubricate the tool as follows:

1. Work 1 – 2 cc of Ingersoll–Rand No. 28 Grease through the Grease Fitting (15 and 54).
2. Remove the Oil Chamber Plug (20) and fill the chamber in the Backhead (14) with Ingersoll–Rand No. 50 Oil.
3. Inject 2 or 3 drops of light oil into the oil hole in the Throttle Sleeve (123).

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 Maintenance Instructions

1. Keep the Air Strainer Screen (131) clean. Periodically, as experience indicates, unscrew the Air Strainer Body (133) from the Air Strainer Cap (130) and wash the Air Strainer Screen in a suitable cleaning solution. Push the prongs on the Screen Support (132) into one end of the Screen and insert the Screen end first, into the Body when assembling the strainer.

NOTICE

The external thread on the Outer Feed Screw (79) is left–hand; rotate the Feed Screw Cap (81) clockwise to remove.

2. Do not pry the Backhead (14) from the Motor Housing (1). Grasp the Oil Chamber Plug (20) in a copper–covered or leather–covered vise jaws and pull on the Housing if the Backhead can not be lifted off with the fingers.

NOTICE

The Governor Assembly (22) has left–hand threads.

3. Rotate the Governor Assembly clockwise to remove it.
4. Never clamp the Cylinder (39) in a vise. When disassembling the Motor:
 - a. Grasp the Cylinder in one hand.
 - b. Insert a small rod into the rotor bore and drive the hub on the Rotor out of the Rear Rotor Bearing (34).
 - c. Support the Front End Plate (37) and press the rotor front hub out of the Front Rotor Bearing (35).
5. Unscrew the three Planet Gear Frame Set Screws (46) from the Planet Gear Frame (45) before attempting to press the Spindle out of the Planet Gear Frame.

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. Unless otherwise noted, always press on the stamped end of a needle bearing when installing the needle bearing in a recess.
4. 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.
5. Always clean every part and wipe every part with a thin film of oil before installation.
6. Apply a film of O–ring lubricant to all O–rings before final assembly.
7. 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 bearing should never be cleaned.** Work grease thoroughly into every open bearing before installation.

MAINTENANCE SECTION

Assembly Maintenance Instructions

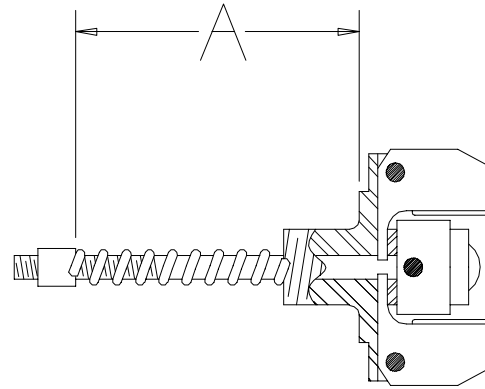
1. Press the Rear Rotor Bearing (34), shielded side first, into the recess in the Rear End Plate (36) with an arbor that will contact only the bearing outer race. Press on the bearing inner race when installing the assembly on the hub of the Rotor (31).
2. Press the Front Rotor Bearing (35), shielded side first, onto the front hub of the Rotor with a sleeve that will clear the pinion and contact only the bearing inner race.
3. After installing one End Plate and Rotor Bearing on the rotor hub, insert a Vane (38) into each slot in the Rotor. Place the Cylinder (39) over the Rotor and against the installed End Plate being sure the Cylinder is positioned with its flattened rim toward the pinion end of the Rotor so that the flats will coincide with those on the Front End Plate when the motor is assembled.

NOTICE

The Governor Assembly (22) has left-hand threads.

4. When installing a new Governor Assembly, screw the Adjusting Nut onto the governor stem until the proper dimension "A" is 1-27/32" (47 mm). This will usually result in the proper governed free speed. However, **this is only an approximate setting** and further adjustment may be necessary. Screw the nut farther onto the stem **to increase** the speed; back it off to **decrease** the speed. The correct governed free speeds for Model 44SMA Drills is 155 rpm.

GOVERNOR ADJUSTMENT



(Dwg. TPD497)

5. Be sure both rubber Air Port Gaskets (6) are in good condition and are positioned, lip side first, in the air ports in the Motor Housing (1) before installing the Multi-Vane motor in the Motor Housing.
6. Draw the Backhead (14) evenly against the Backhead Gasket (21) on the face of the Motor Housing by turning each Backhead Cap Screw (88) a little at a time until all are tight.
7. Note the stamping "THRUST HERE" on one side of the Spindle Thrust Bearing (66). Install the Bearing **unstamped** side first on the spindle hub.
8. Assemble the Spindle (41) and gearing in the Gear Case (53). Install this assembly as a unit on the Motor Housing.

MAINTENANCE TOOLS

TOOL NAME	OPERATION	TOOL NUMBER FOR ORDERING
Grease Gun	Lubrication	P25-228
Spindle Packing Nut Spanner Wrench	Removing and installing the Spindle Packing Nut (59) on the Gear Case (53).	T1SE-26
Gear Frame Set Screw Wrench (3/16" hexagon key)	Removing or installing the Gear Frame Set Screws (46) in the Planet Gear Frame (45).	JA4-478

MAINTENANCE SECTION

TROUBLESHOOTING GUIDE

Trouble	Probable Cause	Solution
Low power or low free speed	Dirty inlet or Air Strainer Screen	Using a clean, suitable cleaning solution in a well-ventilated area, clean the Air Strainer Screen. Allow to air dry.
	Worn or broken Vanes	Replace the 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 clean, suitable cleaning solution in a well-ventilated area. Reassemble the tool as instructed in this manual.
	Improper positioning of the Reverse Valve	Make certain the Reverse Valve is fully engaged.
Motor will not run	Incorrect assembly of the motor	Disassemble the motor, replace worn or broken parts and reassemble as instructed.
Rough operation	Worn or broken Rear Rotor Bearing or Front Rotor Bearing	Examine each bearing. Replace if worn or damaged.
	Worn or broken gear teeth	Check for worn or broken gearing. Replace any damaged or worn gears.
Air leaks	Worn Throttle Valve Face or Throttle Valve Face Cap	Replace worn parts.
	Oil Chamber Plug worn or not tight	Tighten the Plug. If the problem persists, replace the Plug.
Gear Case gets hot	Insufficient grease	Clean and inspect the Gear Case gearing parts and lubricate as instructed in LUBRICATION .
	Worn or damaged parts	Clean and inspect the Gear Case and gearing. Replace worn or broken components.

NOTICE

SAVE THESE INSTRUCTIONS. DO NOT DESTROY.