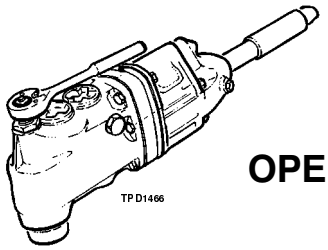

03522869
Form P5622
Edition 14
August, 1998

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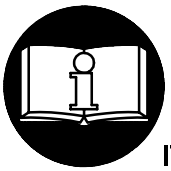
E
P

OPERATION AND MAINTENANCE MANUAL FOR MODELS 30, R44 and R44SE REVERSIBLE MULTI–VANE CLOSE QUARTER DRILLS

NOTICE

Models 30, R44 and R44SE Reversible Multi–Vane, Close Quarter Drills are designed for heavy steel fabrication and maintenance.

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



⚠ WARNING

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

PLACING TOOL IN SERVICE

- Always operate, inspect and maintain this tool in accordance with American National Standards Institute Safety Code for Portable Air Tools (ANSI B186.1).
- For safety, top performance, and maximum durability of parts, operate this tool at 90 psig (6.2 bar/620 kPa) maximum air pressure at the inlet with 3/4” (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.
- This tool can exert strong forces on the operator. Use proper support to control these forces.
- 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.

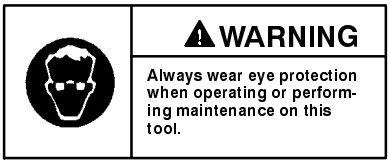
Printed in U.S.A.

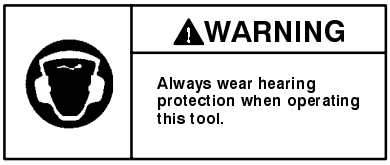
**INGERSOLL-RAND®
PROFESSIONAL TOOLS**

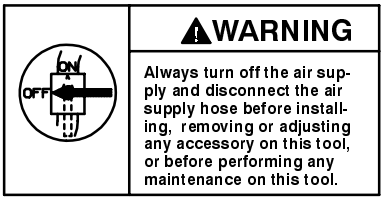
WARNING LABEL IDENTIFICATION

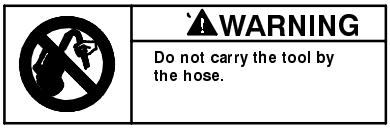
⚠ WARNING

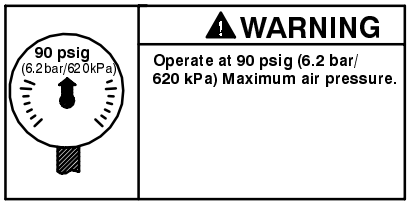
FAILURE TO OBSERVE THE FOLLOWING WARNINGS COULD RESULT IN INJURY.







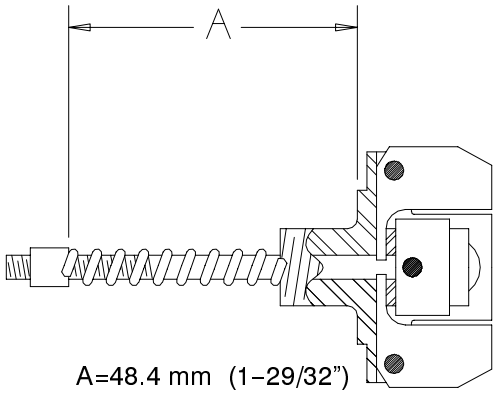




PLACING TOOL IN SERVICE

GOVERNOR ADJUSTMENT

When installing a new Governor Assembly, screw the Adjusting Nut onto the Stem to **dimension "A"** shown in Dwg. TPD497. This will usually result in the proper governed free speed of the Spindle. However, this is only an approximate setting and, after checking with a tachometer, further adjustment may be necessary. Screw the nut farther onto the Stem to increase the speed; back it off to decrease the speed.



(Dwg. TPD497)

The correct governed free speed for the various Models at the Spindle is:

Model	Speed, rpm
30	185
R44	165
R44SE	95

PLACING TOOL IN SERVICE

LUBRICATION

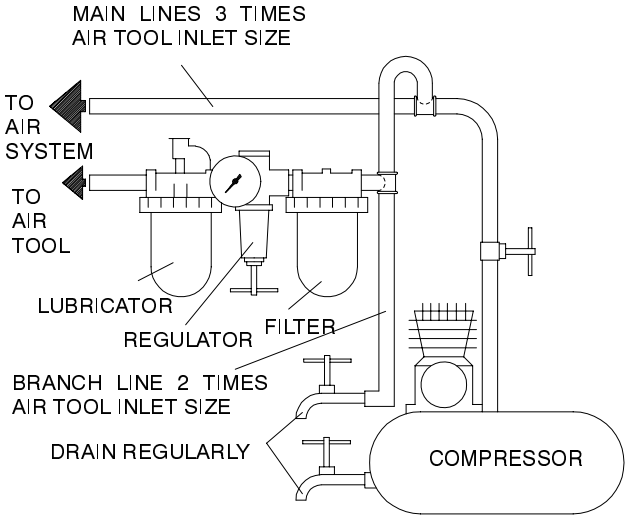
Ingersoll–Rand No. 50 **Ingersoll–Rand No. 28**

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

No. C31–06–G00

Before starting the tool and after each shift, unless the air line lubricator is used, fill the oil chamber with Ingersoll–Rand No. 50 Oil.

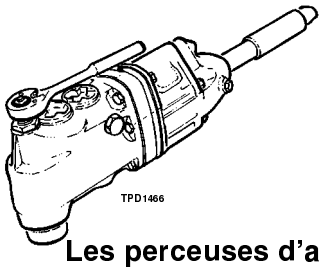
On a weekly basis, or as experience indicates, inject 2 or 3 strokes of the Ingersoll–Rand No. 28 Grease from the No. P25–228 Grease Gun into each Grease Fitting. Remove the Grease Plug in the Gear Case and check the grease content. Add grease as required to lubricate gears.



(Dwg. TPD905–1)

SPECIFICATIONS

Model	Type of Throttle	Free Speed	Capacity in Steel		Taper Socket
		rpm	Drilling in (mm)	Reaming in (mm)	
30	Nonreversible, Lever	185	1.25 (32)	1.25 (32)	No. 3 Morse
R44	Reversible, Roll	165	2 (51)	2 (51)	No. 4 Morse
R44SE	Reversible, Lever	95	Extra Heavy		No. 5 Morse



F

MODE D'EMPLOI DES PERCEUSES D'ANGLE RÉVERSIBLES MODÈLES 30, R44 ET R44SE

NOTE

Les perceuses d'angle réversibles Modèles 30, R44 et R44SE sont destinées aux grosses fabrications mécano–soudées et à l'entretien.

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 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 gasol ou le carburant d'aviation.
- Ne retirer aucune étiquette. Remplacer toute étiquette endommagée.

UTILISATION DE L'OUTIL

- Porter toujours des lunettes de protection pendant l'utilisation et l'entretien de cet outil.
- Porter toujours une protection acoustique pendant l'utilisation de cet outil.
- Tenir les mains, les vêtements flous et les cheveux longs, éloignés de l'extrémité rotative de l'outil.
- Noter la position du levier d'inversion avant de mettre l'outil en marche de manière à savoir dans quel sens il va tourner lorsque la commande est actionnée.
- Prévoir, et ne pas oublier, que tout outil motorisé est susceptible d'à–coups brusques lors de sa mise en marche et pendant son utilisation.
- Garder une position équilibrée et ferme. Ne pas se pencher trop en avant pendant l'utilisation de cet outil. Des couples de réaction élevés peuvent se produire à, ou en dessous, de la pression d'air recommandée.
- La rotation des accessoires de l'outil peut continuer pendant un certain temps après le relâchement de la gâchette.
- Les outils pneumatiques peuvent vibrer pendant l'exploitation. Les vibrations, les mouvements répétitifs et les positions inconfortables peuvent causer des douleurs dans les mains et les bras. N'utiliser plus d'outils en cas d'inconfort, de picotements ou de douleurs. Consulter un médecin avant de recommencer à utiliser l'outil.
- Utiliser les accessoires recommandés par Ingersoll-Rand.
- N'utiliser que les douilles et les accessoires pour clés à chocs. Ne pas utiliser les douilles et accessoires (chromés) de clés manuelles.
- Cet outil peut exercer des forces importantes sur l'opérateur. Utiliser un support correct pour contrôler ces forces.
- Cet outil n'est pas conçu pour fonctionner dans des atmosphères explosives.
- Cet outil n'est pas isolé contre les chocs électriques.

NOTE

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

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

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

Imprimé aux É.U.

INGERSOLL-RAND®
PROFESSIONAL TOOLS

SIGNIFICATION DES ETIQUETTES D'AVERTISSEMENT

⚠ ATTENTION

LE NON RESPECT DES AVERTISSEMENTS SUIVANTS PEUT CAUSER DES BLESSURES

⚠ ATTENTION

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

⚠ ATTENTION

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

⚠ ATTENTION

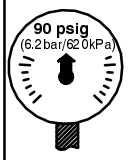
Garder une position équilibrée et ferme. Ne pas se pencher trop en avant pendant l'utilisation de cet outil.

⚠ ATTENTION

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

⚠ ATTENTION

Ne pas transporter l'outil par son flexible.



⚠ ATTENTION

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

⚠ ATTENTION

Couper toujours l'alimentation d'air comprimé et débrancher le flexible d'alimentation avant d'installer, déposer ou ajuster tout accessoire sur cet outil, ou d'entreprendre une opération d'entretien quelconque sur l'outil.

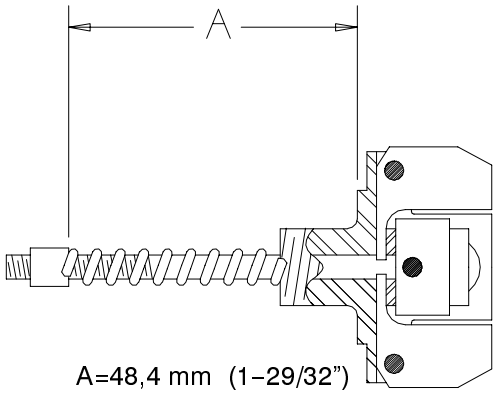
⚠ ATTENTION

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

MISE EN SERVICE DE L'OUTIL

RÉGLAGE DU RÉGULATEUR

Lors du montage d'un nouveau régulateur, visser l'écrou de réglage sur la tige à la dimension "A" indiqueé sur le plan TPD497. Ceci produira normalement la vitesse à vide régulée correcte de la broche. Cependant, ce n'est qu'un réglage approximatif et, après vérification avec un tachymètre, un ajustement supplémentaire sera peut–être nécessaire. Visser l'écrou sur la tige pour augmenter la vitesse, le dévisser pour réduire la vitesse.



(Plan TPD497)

La vitesse à vide régulée correcte de la broche des divers modèles est la suivante:

Modèle	Vitesse tr/mn
30	185
R44	165
R44SE	95

MISE EN SERVICE DE L'OUTIL

LUBRIFICATION

Ingersoll–Rand No. 50

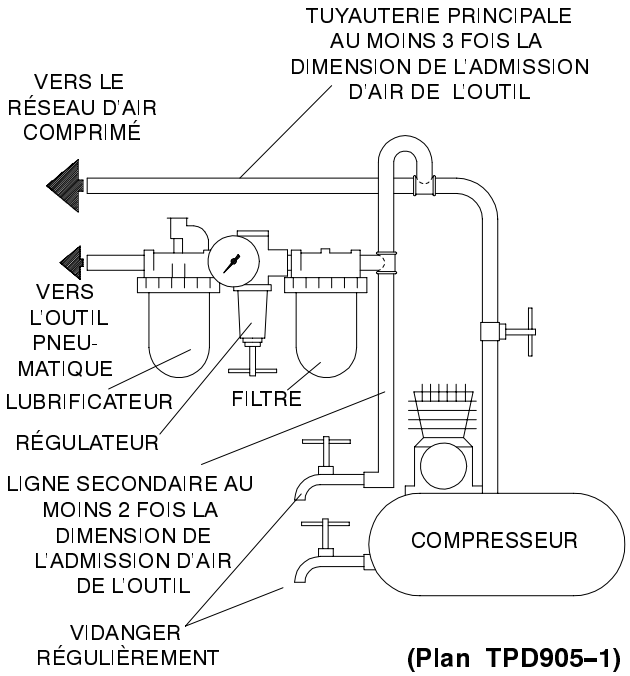
Ingersoll–Rand No. 28

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

No. C31–06–G00

Avant de mettre l'outil en marche et après chaque poste de travail, si un lubrificateur de ligne n'est pas utilisé, remplir la chambre d'huile avec de l'huile Ingersoll–Rand Nº. 50.

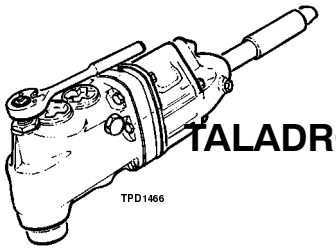
Toutes les semaines, ou en fonction de l'expérience, injecter 2 à 3 coups du pistolet de graissage Nº. P25–228 rempli de la graisse Ingersoll–Rand Nº. 28, dans chaque raccord de graissage. Déposer le bouchon de graissage du boîtier d'engrenages et vérifier la quantité de graisse. Faire l'appoint si nécessaire pour lubrifier les pignons.



(Plan TPD905–1)

SPÉCIFICATIONS

Modèle	Type de commande	Vitesse à vide	Capacité dans l'acier		Douille conique
		tr/mn	Perçage in (mm)	Alésage in (mm)	
30	Levier non réversible	185	1,25 (32)	1,25 (32)	Morse Nº. 3
R44	Bague tournante réversible	165	2 (51)	2 (51)	Morse Nº. 4
R44SE	Levier réversible	95	Extra forte		Morse Nº. 5



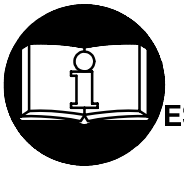
E

INSTRUCCIONES PARA TALADROS PLURIPALAS REVERSIBLES DE DISTANCIA MÍNIMA MODELOS 30, R44 Y R44SE

NOTA

Los Taladros Pluripalas Reversibles de Distancia Mínima Modelos 30, R44 y R44SE están diseñados para la fabricación de acero pesado y mantenimiento.
Ingersoll–Rand no aceptará responsabilidad alguna por la modificación de las herramientas efectuada por el cliente para las aplicaciones que no hayan sido consultadas con Ingersoll–Rand.

⚠ AVISO



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

PARA PONER LA HERRAMIENTA EN SERVICIO

- **Utilice, examine y mantenga siempre esta herramienta conforme al código de seguridad para herramientas neumáticas portátiles de la American National Standards Institute (ANSI B186.1).**
- **Para seguridad, máximo rendimiento y vida de servicio de las piezas, use esta herramienta a una presión de aire máxima de 90 psig (6,2 bar/620 kPa) en la 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 accesorios dañados, desgastados ni deteriorados.**
- **Asegúrese de que todas las mangueras y 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 presión máxima de 90 psig. El polvo, los gases corrosivos y/o el exceso de humedad podrían estropear el motor de una herramienta neumática.**
- **No lubrique las herramientas con líquidos inflamables o volátiles tales como queroseno, gasoil o combustible para motores a reacción.**
- **No saque ninguna etiqueta. Sustituya toda etiqueta dañada.**

USO DE LA HERRAMIENTA

- **Use siempre protección ocular cuando maneje, o realice operaciones de mantenimiento en esta herramienta.**
- **Use siempre protección para los oídos cuando maneje esta herramienta.**
- **Mantenga las manos, la ropa suelta y el cabello largo alejados del extremo giratorio de la herramienta.**
- **Note la posición de la palanca de inversión antes de hacer funcionar la herramienta para ser consciente de su dirección giratoria cuando funcione el estrangulador.**
- **Anticipe y esté alerta sobre los cambios repentinos en el movimiento durante la puesta en marcha y el manejo de toda herramienta motorizada.**
- **Mantenga una postura de cuerpo equilibrada y firme. No estire demasiado los brazos al manejar la herramienta. Pueden ocurrir reacciones de alto par a, o a menos de, la recomendada presión de aire.**
- **El eje de la herramienta podría seguir girando brevemente después de haber soltado la palanca de estrangulación.**
- **Las herramientas neumáticas pueden vibrar durante el uso. La vibración, repetición o posiciones incómodas pueden dañarle los brazos y manos. En caso de incomodidad, sensación de hormigueo o dolor, deje de usar la herramienta. Consulte a un médico antes de volver a usarla otra vez.**
- **Utilice únicamente los accesorios Ingersoll–Rand recomendados.**
- **Utilice únicamente bocas y accesorios para llaves de impacto. No utilice bocas o accessorios manuales (cromados).**
- **Esta herramienta puede ejercer mucha fuerza sobre el operario. Use un soporte apropiado para controlar esta fuerza.**
- **Esta herramienta no ha sido diseñada para trabajar en ambientes explosivos.**
- **Esta herramienta no está aislada contra descargas eléctricas.**

NOTA

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

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

Impreso en EE.UU.

INGERSOLL-RAND®
PROFESSIONAL TOOLS

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

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

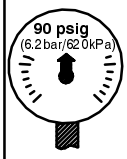
Mantener una postura del cuerpo equilibrada y firme. No estirar demasiado los brazos al manejar la herramienta.

⚠ ADVERTENCIA

Usar siempre protección para los oídos al manejar esta herramienta.

⚠ ADVERTENCIA

No coger la herramienta por la manguera para levantarla.



⚠ ADVERTENCIA

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

⚠ ADVERTENCIA

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

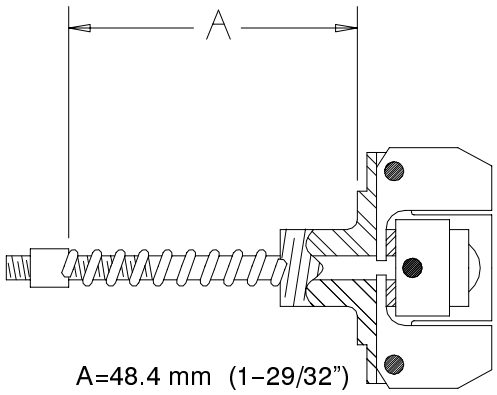
⚠ ADVERTENCIA

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

PARA PONER LA HERRAMIENTA EN SERVICIO

AJUSTE DE REGULADOR

Cuando instale un nuevo Conjunto Regulador, atornille la Tuerca Ajustable en la espiga a en la **dimensión "A"** indicada en Esq. TPD497. Normalmente ésto tendrá como resultado la velocidad libre regulada de husillo. Sin embargo, éste es sólo un ajuste aproximado y, después de comprobarlo con un tacómetro, puede necesitar un ajuste más. Enrosque la tuerca en la Espiga para incrementar la velocidad; desenrosque para disminuirla.



(Esq. TPD497)

La velocidad libre correcta de husillo para los varios Modelos es:

Modelo	Velocidad rpm
30	185
R44	165
R44SE	95

PARA PONER LA HERRAMIENTA EN SERVICIO

LUBRICACIÓN

Ingersoll–Rand Nº 50

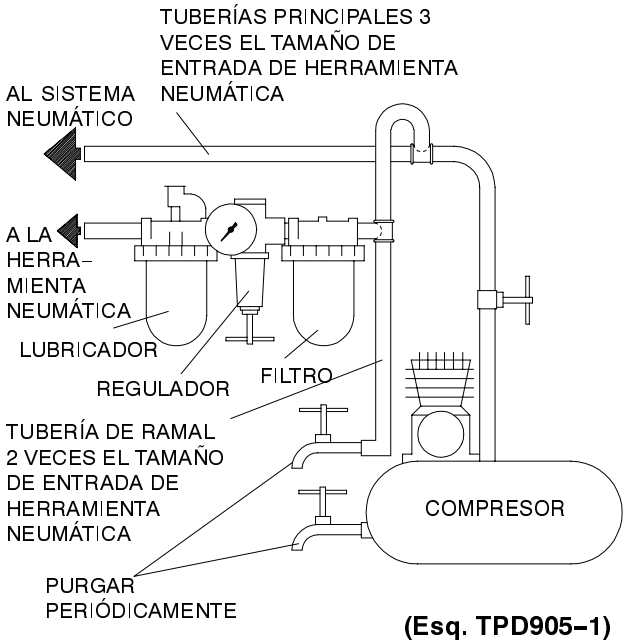
Ingersoll–Rand Nº 28

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

Nº. C31–06–G00

Antes de poner en marcha la herramienta y después de cada jornada de trabajo, a menos que se use un lubricador de aire comprimido, llene la cámara de aceite de Aceite Ingersoll–Rand Nº 50.

Cada semana, o como indique la experiencia, inyecte 2 ó 3 disparos de Grasa Ingersoll–Rand Nº 28 con la Pistola Engrasadora Nº P25–228 en cada Engrasador. Saque el Tapón de Grasa situado en la funda de Engranajes y compruebe el contenido de grasa. Añada la grasa requerida para lubricar los engranajes.



(Esq. TPD905–1)

ESPECIFICACIONES

Modelo	Tipo de Estrangulador	Velocidad Libre	Capacidad en Barrena		Cono
		rpm	Taladrado pulg. (mm)	Escariado pulg. (mm)	
30	Palanca, No–Reversible	185	1.25 (32)	1.25 (32)	Nº. 3 Morse
R44	Reversible, Accionamiento Giratorio	165	2 (51)	2 (51)	Nº. 4 Morse
R44SE	Palanca, Reversible	95	Extra Pesado		Nº. 5 Morse

P

MANUAL DE FUNCIONAMENTO E MANUTENÇÃO MARTELOS PARA BERBEQUIMS MULTI–VANE REVERSÍVEL MODELOS 30, R44 E R44SE

AVISO

Os Berbequins de Ângulo Modelos 30, R44 e R44SE são concebido para aplicações de perfuração e pesado e mandrilagem em contrução de navios, oficinas de vagões ferroviários, fabricação de metais e construção.

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

⚠ ADVERTÊNCIA

INFORMAÇÃO DE SEGURANÇA IMPORTANTE EM ANEXO.
LEIA ESTE MANUAL ANTES DE OPERAR A FERRAMENTA.
É DA RESPONSABILIDADE DO EMPREGADOR COLOCAR A INFORMAÇÃO DESTE MANUAL NAS MÃOS DO OPERADOR.
O NÃO CUMPRIMENTO DAS SEGUINTES ADVERTÊNCIAS PODE RESULTAR EM FERIMENTOS.

COLOCANDO A FERRAMENTA EM FUNCIONAMENTO

- **Sempre opere, inspeccione e mantenha esta ferramenta de acordo com o Código de Segurança do Instituto Americano de Padrões Nacionais para Ferramentas Pneumáticas Portáteis (ANSI B186.1).**
- **Para segurança, máximo desempenho e máxima durabilidade das peças, opere esta ferramenta com uma pressão de ar máxima de 6,2 bar/620 kPa (90 psig) na entrada da mangueira de alimentação de ar com diâmetro interno de 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.**
- **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.**
- **Esta Ferramenta não está isolada contra choques eléctricos.**
- **Esta Ferramenta não foi concebida para trabalhos em atmosferas explosivas.**

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.

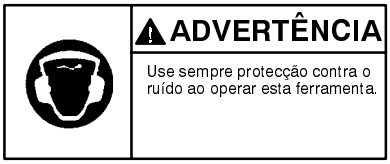
Impresso nos E.U.A.

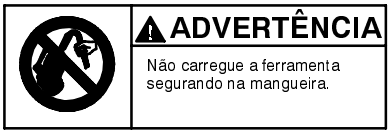
INGERSOLL-RAND®
PROFESSIONAL TOOLS

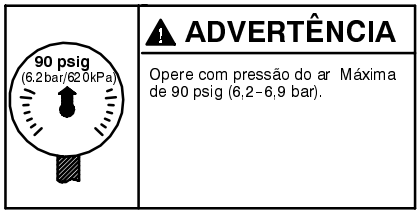
IDENTIFICAÇÃO DO RÓTULO DE ADVERTÊNCIA

⚠ ADVERTÊNCIA

O NÃO CUMPRIMENTO DAS SEGUINTES ADVERTÊNCIAS PODE RESULTAR EM FERIMENTOS.



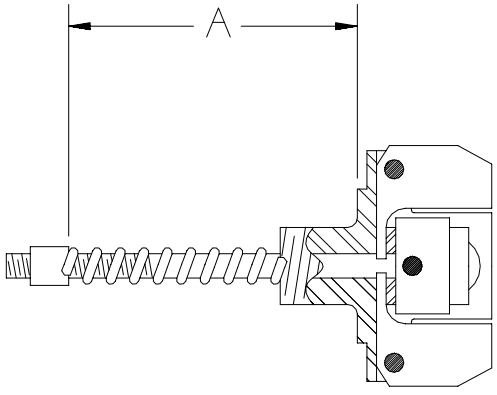




AJUSTES

AJUSTE DO MESTRE

Quando instalar um novo Conjunto de Mestre, parafuse a Porca de Ajuste para dentro da Haste com **dimensão "A"** mostrada no Desenho TPD497. Isto resultará geralmente numa velocidade livre governada apropriada do Fuso. Porém, isto é somente um ajuste aproximado e, depois de aferir com um tacómetro, outros ajustes podem ser necessários. Aperte a porca para dentro da Haste para aumentar a velocidade, e desaparafuse para diminuir a velocidade.



A = 1–31/32" para Berbequins com Regulador de Pressão Padrão
A = 1–7/8" para Motores equipados com Controle Remoto

(Desenho TPD497)

A velocidade livre regulada correcta no Fuso para vários Modelos no qual o Fuso é:

Modelo	Velocidade, rpm
30	185
R44	165
R44SE	95

COLOCANDO A FERRAMENTA EM FUNCIONAMENTO

LUBRIFICAÇÃO

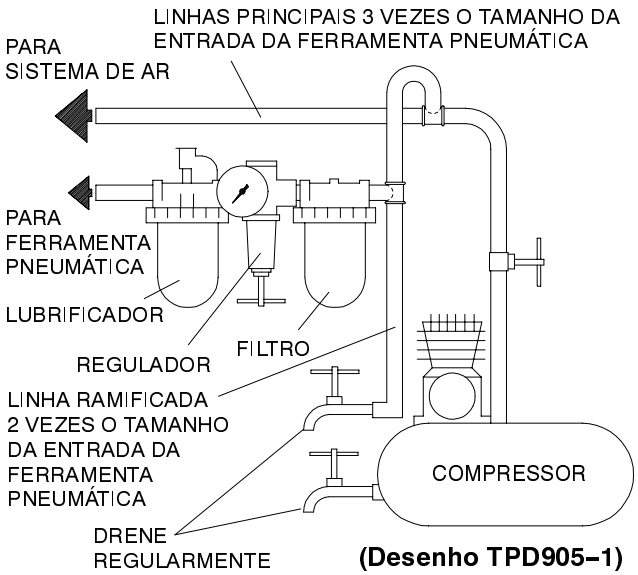
Ingersoll–Rand No. 50 **Ingersoll–Rand No. 28**

Use sempre um lubrificador de linha com estas ferramentas. Nós recomendamos a seguinte Unidade Filtradora–Lubrificadora–Reguladora.

Para USA – No. C31–06–G00

Antes de operar a Ferramenta e depois de cada 8 horas de operação, desparafuse o Bujão da Câmara de Óleo e encha a câmara com Óleo Ingersoll–Rand No. 50.

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.

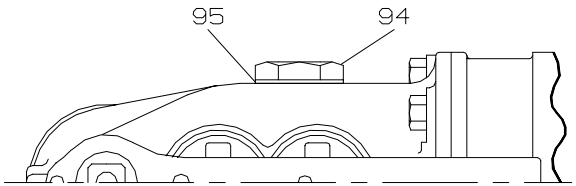


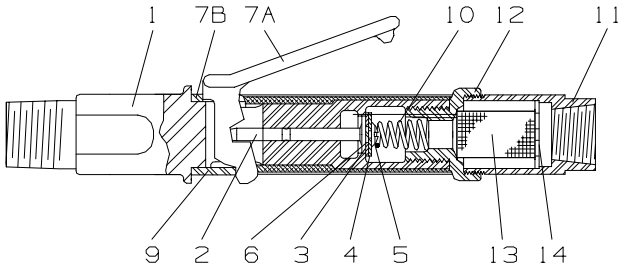
(Desenho TPD905–1)

ESPECIFICAÇÕES

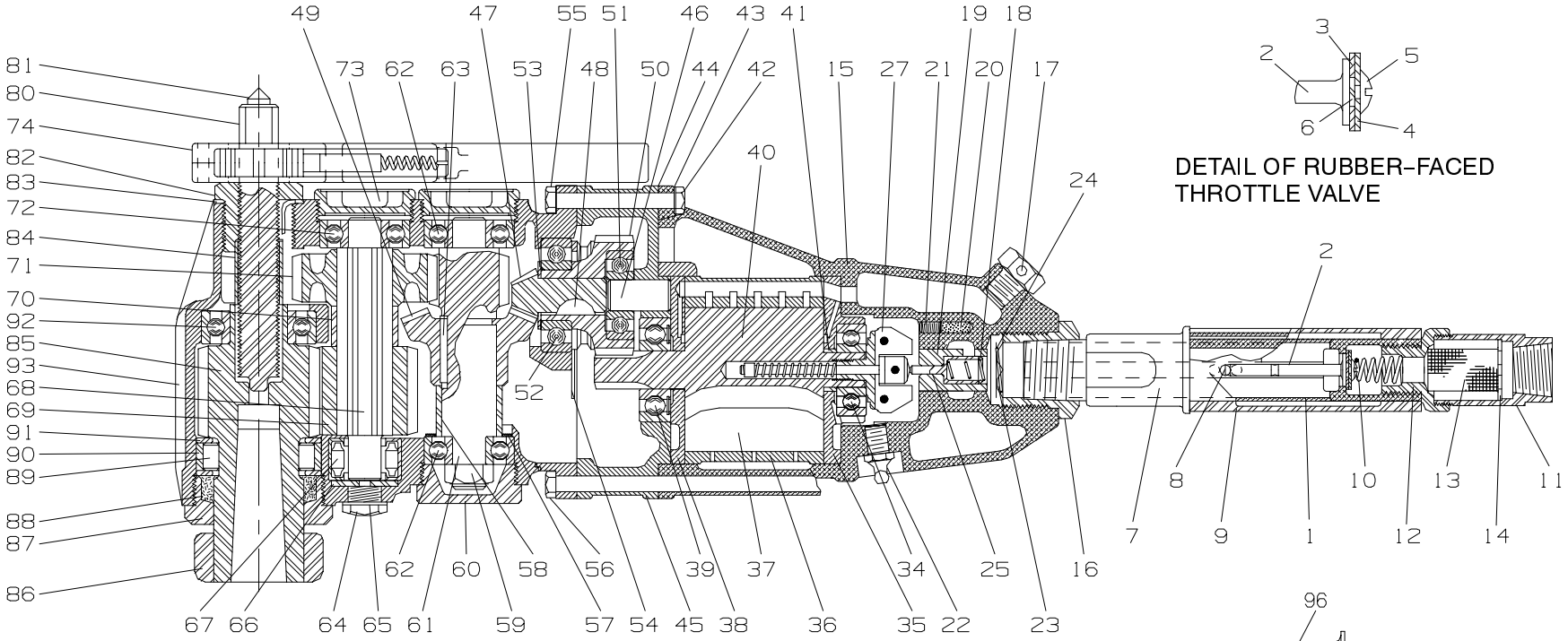
Modelo	Tipo de Punho	Velocidade Livre	Capacidade na Barrena		Cone Morse
		rpm	Perfurando mm (pol.)	Mandrilando mm (pol.)	
30	Palanca, Não reversível	185	32 (1.25)	32 (1.25)	Número 3
R44	Rolo, Não reversível	165	51 (2)	51 (2)	Número 4
R44SE	Palanca, Reversível	95	Extra Pesado		Número 5

SIZE 30 NONREVERSIBLE MULTI–VANE CLOSE–QUARTER DRILL





LEVER THROTTLE ASSEMBLY



DETAIL OF RUBBER–FACED
THROTTLE VALVE

ALL STEEL THROTTLE VALVE

(Dwg. TPA320–3)

			PART NUMBER FOR ORDERING
		Self–Closing Roll Throttle Assembly	R3H–A417
	*	Rotation Label	R2H–100
★	1	Throttle Body	R3H–401
+	2	Rubber–Faced Throttle Valve	R3H–402
•	3	Throttle Valve Face	8000–159A
	4	Throttle Valve Face Cap	8000–157
	5	Throttle Valve Face Retaining Screw	R4–158
	6	Retaining Screw Lock Washer	H54U–352
	7	Throttle Cam	T01–317A
	8	Throttle Valve Lift Pin	TCC–306A
	9	Throttle Sleeve	TCL–305
	10	Throttle Valve Spring	TAA–418
		Air Strainer Assembly	R3H–A565
	11	Air Strainer Body	R3H–565
	12	Air Strainer Cap	R3H–566
	13	Air Strainer Screen	R3H–61
	14	Air Strainer Screen Support	R3H–567
	15	Motor Housing	
		for models ending in –EU	R30–EU–40
		for all other models	R30–40
	16	Inlet Bushing	R30–644A
	17	Oil Chamber Plug	P25–227
	18	Governor Valve Retaining Spring	R2–281A
	19	Governor Valve Bushing	503–429
	20	Oiler Felt (4)	JA4–75
	21	Oiler Felt Retaining Screw	R40–72
	22	Grease Fitting	23–188
	*	Oiler Adjusting Screw	JA4–71
	23	Inlet Screen	D02–889
	24	Governor Valve Spring	R2–431A
	25	Governor Valve	R2–425A

			PART NUMBER FOR ORDERING
	*	Nameplate	
		for models ending in –EU	R2H–EU–99
		for all other models	R2H–99
	*	Warning Label	
		for models ending in –EU	EU–99
		for all other models	WARNING–8–99
	27	Governor Assembly	R3H–A424
•	34	Rear Rotor Bearing	R3H–22
•	35	Rear End Plate	R30–12
•	36	Cylinder	R3H–3
•	37	Vane Packet (Set of 4)	R3H–42–4
•	38	Front End Plate	R30–11
•	39	Front Rotor Bearing	R3H–24
	*	Cylinder Dowel	R3H–98
	40	Rotor	R30–53A
	41	Rotor Bearing Spacer	R3H–65
	42	Housing Bolt Nut (6)	G7–139
	43	Housing Bolt Lock Washer (6)	T11–58
•	44	Housing Gasket	R30–641
	45	Gear Case Cover	R30–640
	46	Intermediate Gear Bearing Stud	R3H–502
	47	Bevel Pinion	R30–205A
	48	Bevel Pinion Key	TB–18
	49	Bevel Gear	R30–206A
	50	Intermediate Gear	R30–82
•	51	Intermediate Gear Bearing	TB–394
•	52	Bevel Pinion Bearing	G7–24
	53	Bevel Pinion Spacer	R30–645
	54	Bevel Pinion Bearing Retainer	R30–628
	55	Housing Short Bolt (2)	R30–638

* Not illustrated.

\+ Cannot be used as a replacement for the All Steel Throttle Valve (96).

★ If ordered as a replacement for a Throttle Body equipped with an All Steel Throttle Valve also order the Rubber–Faced Throttle Valve (2). The ThrottleBody for use with the All Steel Throttle Valve is discontinued.

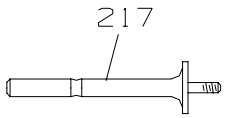
• To keep downtime to a minimum, it is desirable to have on hand certain repair parts. We recommend that you stock one (pair or set) of each part indicated by a bullet (•) for every four tools in service.

		PART NUMBER FOR ORDERING
56	Housing Long Bolt (4)	R30-636
57	Bevel Gear Bearing Shim	R30-627
58	Bevel Gear Shaft Bearing Spacer	R30-528
59	Bevel Gear Shaft Nut	D02-418A
60	Bevel Gear Lower Bearing Cap	R30-531
61	Bevel Gear Shaft	R30-525
62	Bevel Gear Shaft Bearing (2)	TB-394
63	Bevel Gear Key	J5-754
64	Drive Shaft Cap	R40-629
65	Drive Shaft Cap Washer	R40-630
66	Drive Shaft Lower Bearing Bottom Plate	R30-523
• 67	Drive Shaft Lower Bearing (Pitchlign Bearing No. ES17173 or its equivalent)	R30-521
68	Drive Shaft	R30-516
69	Drive Shaft Pinion	W80-524
70	Drive Shaft Gear Spacer	R30-520
71	Drive Shaft Gear	R30-519
• 72	Drive Shaft Upper Bearing	TB-394
73	Upper Bearing Cap (2)	R30-518
74	Ratchet Handle	R30-48

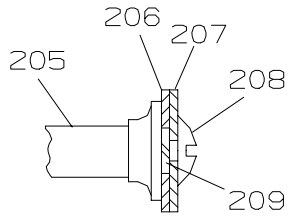
		PART NUMBER FOR ORDERING
	Feed Screw Assembly	W80-A502
80	Feed Screw	W80-502
81	Feed Screw Center	W9-244
82	Feed Screw Nut	W80-503
83	Spring Washer	W80-504
84	Feed Screw Sleeve	W80-505
85	Spindle	W80-508A
86	Spindle Ring	W80-515
87	Spindle Packing Nut	W80-514
• 88	Spindle Packing	W80-513
89	Spindle Lower Bearing Roller	W9-512
90	Spindle Lower Bearing Race	W80-510A
91	Spindle Lower Bearing Retaining Plate (2)	W80-511
92	Spindle Upper Bearing	G7-24
93	Gear Case	R30-500
94	Grease Plug	R40-95
95	Grease Plug Gasket	D01-946
96	All Steel Throttle Valve	T01-302

• 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.

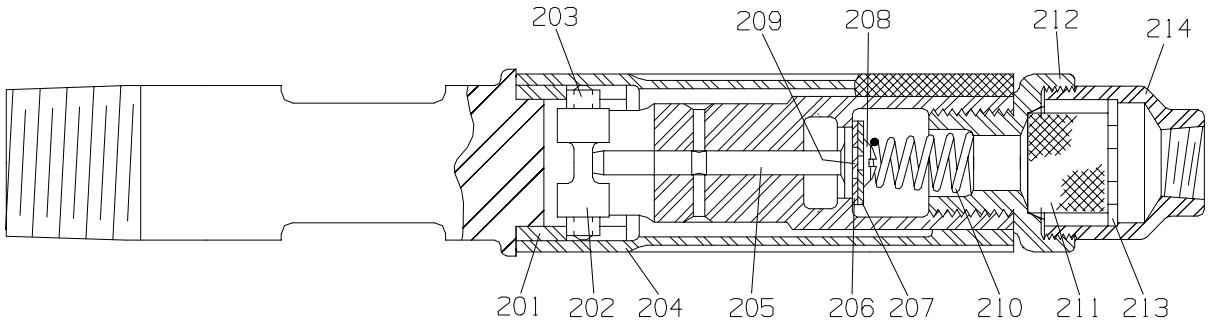
THROTTLE ASSEMBLIES



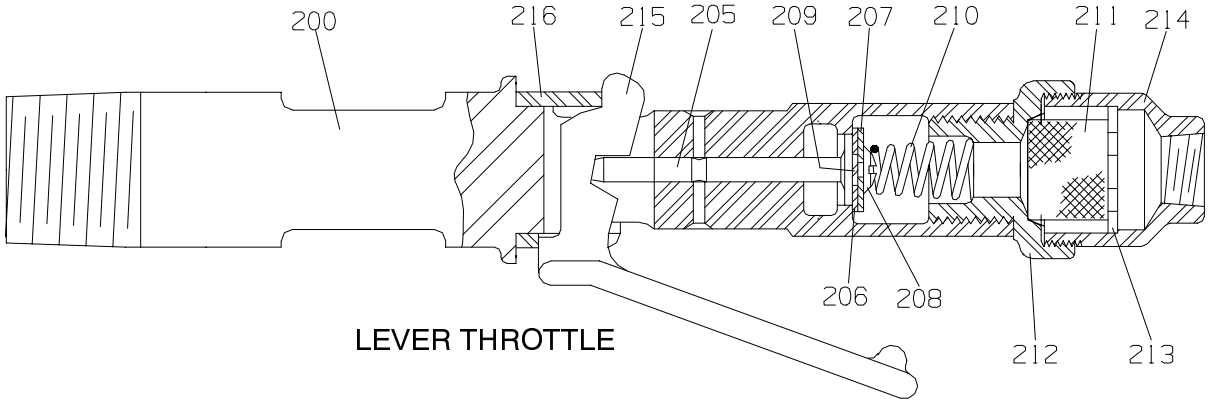
ALL STEEL THROTTLE VALVE



ENLARGED DETAIL
OF RUBBER-FACED
THROTTLE VALVE



ROLL THROTTLE ASSEMBLY



LEVER THROTTLE

(Dwg. TPC226)

PART NUMBER FOR ORDERING

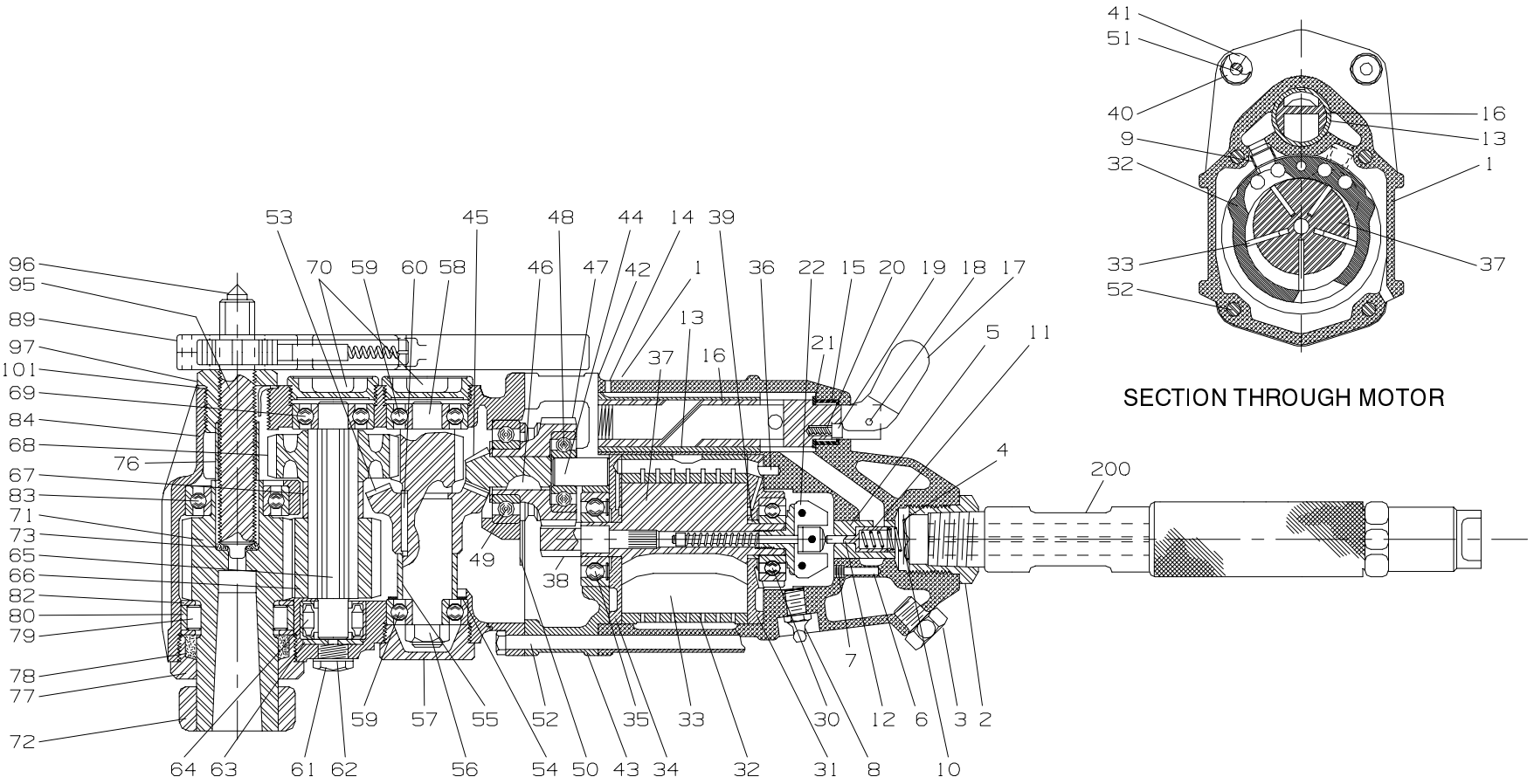
			Manual-Closing Roll Throttle▲	Self-Closing Roll Throttle	Lever Throttle
		Throttle Assembly	R4H-A401▲	R4H-A417	R4H-AL401
★	200	Throttle Body	R4H-401	R4H-401	R4H-401
	201	Throttle Cam	R4H-307▲	R4H-317	---
	202	Throttle Valve Lift Pin	R4H-306	R4H-306	---
	203	Lift Pin Roller (2)	TAA-426	TAA-426	---
	204	Throttle Sleeve	R4H-305	R4H-305	---
+	205	Rubber-Faced Throttle Valve	R4H-402	R4H-402	R411-402
	206	Throttle Valve Face	R4H-159	R4H-159	R4H-159
	207	Throttle Valve Face Cap	R4H-157	R4H-157	R4H-157
	208	Throttle Valve Face Retaining Screw	R4-158	R4-158	R4-158
	209	Retaining Screw Lock Washer	H54U-352	H54U-352	H54U-352
	210	Throttle Valve Spring	T01-308	TAA-418	T01-308
		Air Strainer Assembly	R3H-A565	R3H-A565	R54H-A565
	211	Air Strainer Screen	R3H-61	R3H-61	R3H-61
	212	Air Strainer Cap	R4H-566	R4H-566	R4H-566
	213	Air Strainer Screen Support	R3H-567	R3H-567	R3H-567
	214	Air Strainer Body	R3H-565	R3H-565	R3H-565
	215	Throttle Lever	---	---	R4H-273
	216	Throttle Lever Spacer	---	---	R4H-270
	217	All Steel Throttle Valve	R4H-302	R4H-302	R4H-302

★ If ordered as a replacement for a Throttle Body equipped with an All Steel Throttle Valve also order the Rubber-Faced Throttle Valve (205). The Throttle Body for use with the All Steel Valve is discontinued.

\+ Cannot be used as a replacement for the All Steel Throttle Valve (217).

▲ In compliance with the Williams-Steiger Occupational Safety and Health Act. Manual-Closing Throttle Assemblies and parts used exclusively for Manual-Closing Throttles will be furnished only on international orders.

MODEL 44 MULTI–VANE CLOSE QUARTER DRILL



(Dwg. TPA319–2)

		PART NUMBER FOR ORDERING
	Housing Assembly	
	for models ending in –EU	R440–EU–A40
	for all other models	R440–A40
1	Housing	R440–40
2	Inlet Bushing	R440–644
3	Oil Chamber Plug	P25–227
4	Governor Valve Retaining Spring	RC5–281
5	Governor Valve Bushing	P35–429
6	Oiler Felt (4)	JA4–75
7	Oiler Felt Retaining Screw	R40–72
8	Grease Fitting	23–188
*	Oiler Adjusting Screw	JA4–71
9	Cylinder Gasket (2)	R44H–210A
10	Inlet Screen	D02–889
11	Governor Valve Spring	R2–431A
12	Governor Valve	P35–425
13	Reverse Valve Bushing	R440–330
14	Reverse Valve Bushing Dowel	J–221A
15	Reverse Valve Gasket	3/4HC–4
16	Reverse Valve	R440–329
17	Reverse Valve Latch	R440–591
18	Reverse Valve Latch Pin	555–667
19	Reverse Valve Stop Pin	R440–491
20	Reverse Valve Stop Pin Spring	R440–492
21	Reverse Valve Thrust Washer	R440–642
*	Rotation Label	R22H–100
*	Nameplate	
	for R440–EU–A40	R2H–EU–99
	for R440–A40	R2H–99
*	Warning Label	
	for R440–EU–A40	EU–99
	for R440–A40	WARNING–8–99
22	Governor Assembly	R3H–A424
• 30	Rear Rotor Bearing	555–22
• 31	Rear End Plate	R440–12

		PART NUMBER FOR ORDERING
• 32	Cylinder	R440–3
• 33	Vane Packet (set of 5)	555–42–5
• 34	Front End Plate	R440–11
• 35	Front Rotor Bearing	555–24
36	Cylinder Dowel	R4H–98
37	Rotor	R44H–53
38	Rotor Pinion	R4J–17
39	Rotor Bearing Spacer	555–65
40	Housing Bolt Nut (6)	23–697
41	Housing Bolt Lock Washer (6)	D02–321
• 42	Housing Gasket	R440–641
43	Gear Case Cover	R440–640
44	Intermediate Gear Bearing Stud	R4H–502
45	Bevel Pinion	R40–205B
46	Bevel Pinion Key	TB–18
*	Bevel Pinion Shim	R40–662
47	Intermediate Gear	R40–82
48	Intermediate Gear Bearing	DU–589
49	Bevel Pinion Bearing	W9–509
50	Bevel Pinion Bearing Retainer	R40–628
51	Housing Short Bolt (2)	R440–638
52	Housing Long Bolt (4)	R440–636
53	Bevel Gear	R40–206B
54	Bevel Gear Bearing Shim	R40–627
55	Bevel Gear Shaft Bearing Spacer	R40–528
56	Bevel Gear Shaft Nut	B12–249
57	Bevel Gear Lower Bearing Cap	R40–531
58	Bevel Gear Shaft	R40–525A
59	Bevel Gear Shaft Bearing (2)	DU–589
60	Bevel Gear Key	R40–610
61	Drive Shaft Cap	R40–629
62	Drive Shaft Cap Washer	R40–630

* 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 bullet (•) for every four tools in service.

		PART NUMBER FOR ORDERING
63	Drive Shaft Lower Bearing Bottom Plate	R40-523
64	Drive Shaft Lower Bearing	R40-521
65	Drive Shaft	R40-516
66	Drive Shaft Pinion	
	for R44 or R44-EU	W9-524
	for R44SE or R44SE-EU	W99E-524
67	Drive Shaft Gear Spacer	R40-520
68	Drive Shaft Gear	R40-519
69	Drive Shaft Upper Bearing	DU-589
70	Upper Bearing Cap (2)	R40-518
	Spindle Assembly	
	for R44 or R44-EU	W9-A508A
	for R44SE or R44SE-EU	W90SC-A508
71	Spindle	
	for R44 or R44-EU (No. 4 Morse Taper Socket)	W9-508A
	for R44SE or R44SE-EU (No. 5 Morse Taper Socket)	W90SC-508A
72	Spindle Ring	
	for R44 or R44-EU	W9-85
	for R44SE or R44SE-EU	W90SC-515
73	Feed Screw Packing (for R44SE or R44SE-EU)	W90SC-506
74	Spindle Gear (for R44SE or R44SE-EU)	W90SC-584
75	Spindle Gear Key (for R44SE or R44SE-EU)	W90SC-223
76	Feed Screw Sleeve (for R44 or R44-EU)	W9-505A
77	Spindle Packing Nut	
	for R44 on R44-EU	W9-514
	for R44SE on R44SE-EU	W90C-514

		PART NUMBER FOR ORDERING
78	Spindle Packing	
	for R44 or R44-EU	W9-513
	for R44SE or R44SE-EU	W90C-513
79	Spindle Lower Bearing Roller (22 for R44 or R44-EU and 28 for R44SE or R44SE-EU)	W9-512
80	Spindle Lower Bearing Race (for R44 or R44-EU)	W9-510
81	Spindle Lower Bearing Holder (for R44SE or R44SE-EU)	W90C-588
82	Spindle Lower Bearing Retaining Plate (2)	
	for R44 or R44-EU	W9-511
	for R44SE or R44SE-EU	W90C-511
83	Spindle Upper Bearing	
	for R44 or R44-EU	W9-509
	for R44SE or R44SE-EU	W90C-509
84	Gear Case	
	for R44 or R44-EU	R40-500
	for R44SE or R44SE-EU	R40SE-500
85	Grease Plug	R40-95
*	Grease Plug Gasket	D01-946
89	Ratchet Handle	R30-48
	Feed Screw Assembly	
	for R44 or R44-EU	W9-A502B
	for R44SE or R44SE-EU	W90SC-A1
95	Feed Screw	
	for R44 or R44-EU	W9-502B
	for R44SE or R44SE-EU	W90SC-1
96	Feed Screw Center	W9-244

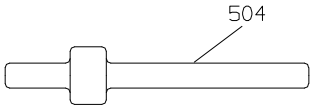
* Not illustrated.

		PART NUMBER FOR ORDERING			PART NUMBER FOR ORDERING
97	Feed Screw Nut		101	Spring Washer (for R44 or R44-EU)	W9-504
	for R44 or R44-EU	W9-503B	*	Protection Nut (for R44 or R44-EU)	T01-43A
	for R44SE or R44SE-EU	W90SC-503			
98	Feed Screw Stop Pin (for R44SE or R44SE-EU) . .	502-669			
99	Outer Feed Screw (for R44SE or R44SE-EU)	W9-3			
100	Feed Screw Stop Ring (for R44SE or R44SE-EU) .	W90SC-586			

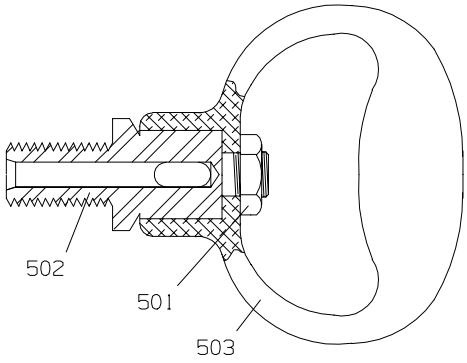
* Not illustrated.

MAINTENACE SECTION

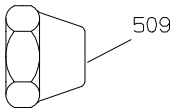
MODELS 30, R44 AND R44SE DRILL ACCESSORIES



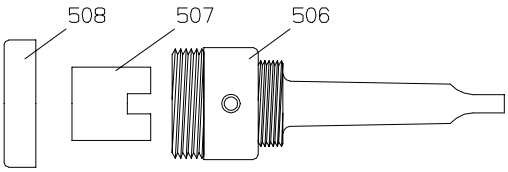
GRIP HANDLE EJECTING PIN



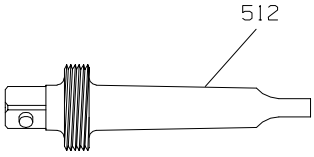
GRIP HANDLE ASSEMBLY



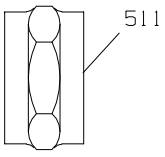
THREADED REAMER CHUCK



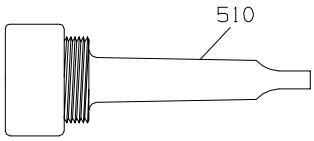
INTERCHANGEABLE REAMER
CHUCK ASSEMBLY



SOCKET ADAPTER



CHUCK NUT



SOLID TAPER SHANK
REAMER CHUCK

(Dwg. TPB968–1)

PART NUMBER FOR ORDERING

		MODEL 30, 30-EU	MODEL R44, R44-EU	MODEL R44SE, R44SE-EU
	Grip Handle Assembly	W80-A41	W90-A41	W90SC-A4l
501	Grip Handle	TA-41	TA-41	TA-41
502	Grip Handle Stud	W80-448	W9-448	W90SC-448
503	Grip Handle Stud Nut	B12-249	B12-249	B12-249
504	Grip Handle Ejecting Pin	W80-450	W9-450	W90SC-450
	Interchangeable Reamer Chuck Assembly with Bushing having 5/8" sq drive hole	T02-A45A-5/8	T01-A45A-5/8	---
	with Bushing having 11/16" sq drive hole	T02-A45A-11/16	T01-A45A-11/16	---
	with Bushing having 3/4" sq drive hole	T02-A45A-3/4	T01-A45A-3/4	T1SE-A45A-3/4
	with Bushing having 13/16" sq drive hole	T02-A45A-13/16	---	---
	with Bushing having 7/8" sq drive hole	T02-A45A-7/8	T01-A45A-7/8	---
	with Bushing having 1" sq drive hole	T02-A45A-1	T01-A45A-1	T1SE-A45A-1
	with Bushing having 1-1/16" sq drive hole	---	---	T1SE-A45A-1 1/16
	with Bushing having 1-1/8" sq drive hole	---	---	T1SE-A45A-1 1/8
	with Bushing having 1-3/16" sq drive hole	---	---	T1SE-A45A-1 3/16
	with Bushing having 1-1/4" sq drive hole	---	---	T1SE-A45A-1 1/4
506	Taper Shank Reamer Chuck for Interchangeable Bushings	T02-45A	T01-45A	T1SE-45A-5
507	Interchangeable Reamer Chuck Bushing			
	with 5/8" sq drive hole	T01-38-5/8	T01-38-5/8	---
	with 11/16" sq drive hole	T01-38-11/16	T01-38-11/16	---
	with 3/4" sq drive hole	T01-38-3/4	T01-38-3/4	T1SE-38-3/4
	with 7/8" sq drive hole	T01-38-7/8	T01-38-7/8	---
	with 1" sq drive hole	T01-38-1	T01-38-1	T1SE-38-1
	with 1-1/16" sq drive hole	---	---	T1SE-38-1 1/16
	with 1-1/8" sq drive hole	---	---	T1SE-38-1 1/8
	with 1-3/16" sq drive hole	---	---	T1SE-38-1 3/16
	with 1-1/4" sq drive hole	---	---	T1SE-38-1 1/4
508	Interchangeable Ram Chuck Cap	T01-54	T01-54	T1SE-54

PART NUMBER FOR ORDERING

		MODEL 30, 30-EU	MODEL R44, R44-EU	MODEL R44SE, R44SE-EU
509	Threaded Reamer Chuck (for use on threaded Spindle)			
	with 5/8" sq drive hole	---	T01-342-5/8	---
	with 3/4" sq drive hole	---	T02-342-3/4	---
	with 7/8" sq drive hole	---	T01-342-7/8	---
	with 1" sq drive hole	---	T01-342-1	---
510	Solid Taper Shank Reamer Chuck			
	with 5/8" sq drive hole	T02-255A-5/8	T01-255A-5/8	---
	with 3/4" sq drive hole	T02-255A-3/4	T01-255A-3/4	T1SE-255A-3/4
	with 7/8" sq drive hole	T02-255A-7/8	T01-255A-7/8	T1SE-255A-7/8
	with 13/16" sq drive hole	T02-255A-13/16	---	---
	with 15/16" sq drive hole	T02-255A-15/16	---	---
	with 1" sq drive hole	T02-255A-1	T01-255A-1	T1SE-255A-1
	with 1-1/16" sq drive hole	T02-255A-1 1/16	T01-255A-1 1/16	---
	with 1-1/8" sq drive hole	T02-255A-1 1/8	---	---
	with 1-3/16" sq drive hole	---	---	T1SE-255A-1 3/16
	with 1-1/4" sq drive hole	---	T01-255A-1 1/4	---
	with 1-3/8" sq drive hole	---	T01-255A-1 3/8	---
512	Socket Adapter			
	No. 4 Morse Taper to 1" sq drive . .	---	R40-214	---
*	Hose Nipple			
	(3/4" hose to 1/2" male pipe)	A03-46	A03-46	A03-46

* Not illustrated.

MAINTENANCE TOOLS

TOOL NAME	OPERATION	TOOL NUMBER FOR ORDERING
Grease Gun	Lubrication.	P25–228
Upper Bearing Cap Wrench (for model 30)	Removing or installing the Upper Bearing Cap.	TC–442
Upper Bearing Cap Wrench (for R44 or R44SE)	Removing or installing the Upper Bearing Cap.	TA–442

⚠ 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 the Models 30, R44, and R44SE are disassembled for maintenance, repair or replacement of parts, lubricate the tool as follows:

1. Inject 2 or 3 strokes (1 – 2 cc) of Ingersoll–Rand No. 28 Grease from No. P225–228 Grease Gun into each Grease Fitting (8 or 22).
2. Fill the oil reservoir with Ingersoll–Rand No. 50 Oil, daily.

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.

Maintenance Procedures

NOTICE

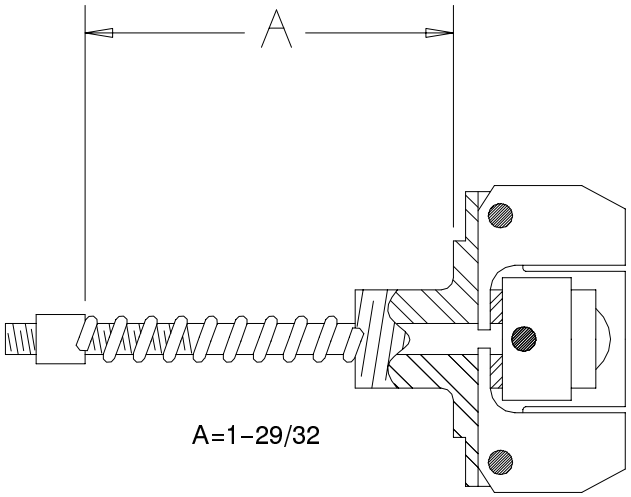
Install the Rotor Bearings, shielded side first, on the Rotor.
The Governor Assembly has left–hand threads, turn clockwise to remove.
The Spindle Packing Nuts (77 and 87) have left–hand threads, turn clockwise to remove.

When assembling the Multi–Vane motor, be sure to properly install the Cylinder (32 or 36) For **nonreversible** tools, it must be possible to align the air ports and dowel hole in the Cylinder with those in the End Plate installed on the rotor hub. For **reversible** tools, note that there is a 3/4" hole in each longitudinal flat on the Cylinder. Install the Cylinder so that these holes are closer to the governor end of the motor.

After assembling the gearing in the Gear Case, check the clearance between the Bevel Pinion (47 or 45) and the Bevel Gear (53 or 49) by rotating the Pinion. Add or remove Bevel Gear Bearing Shims (57 or 54) as required to produce only a slight backlash.

GOVERNOR ADJUSTMENT

When installing a new Governor Assembly, screw the Adjusting Nut onto the Stem to **dimension "A"** shown in Dwg. TPD497. This will usually result in the proper governed free speed of the Spindle. However, this is only an approximate setting and, after checking with a tachometer, further adjustment may be necessary. Screw the nut farther onto the Stem to increase the speed; back it off to decrease the speed.



(Dwg. TPD497)

The correct governed free speed for the various Models at the Spindle is:

Model	Speed, rpm
30	185
R44	165
R44SE	95

TROUBLESHOOTING GUIDE

Trouble	Probable Cause	Solution
Low power or low free speed	Dirty Inlet Bushing or Air Strainer Screen and/or Exhaust Silencer	Using a clean, suitable, cleaning solution in a well–ventilated area, clean the Air Strainer Screen, Inlet Bushing and Exhaust Silencer. Allow to air dry.
	Worn or broken Vanes	Replace **complete** set of Vanes.
	Worn or broken Cylinder and/or scored End Plates.	Examine Cylinder and replace it if it is worn or broken or if bore is scored or wavy. Replace End Plates if they are scored.
	Dirty motor parts.	Disassemble the tool and clean all parts with a clean, suitable, cleaning solution, in a well–ventilated area. Reassemble the tool.
	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.
Rough operation	Worn or broken Rear Rotor Bearing Assembly or Front Rotor Bearing	Examine each bearing. Replace if worn or damaged.
	Worn or broken Bevel Gear or Bevel Pinion	Examine the Bevel Gear and Bevel Pinion. If either is worn or damaged, replace both the Gear and the Pinion because they are a matched set and must not be used separately.
Air leaks	Worn Valve Face or 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.