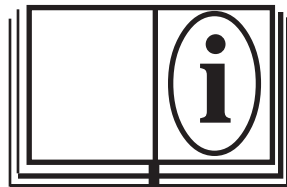




# Tube Squaring Machine

Model TSE 1.0



|  |   |           |
|--|---|-----------|
|  | <b>TUBE &amp; PIPE</b>  | <b>CE</b> |
| SQUARING MACHINES  |   |           |
| Mod. TSE   | Ser.No. <input style="width: 15px; height: 15px;" type="text"/> <input style="width: 15px; height: 15px;" type="text"/> <input style="width: 15px; height: 15px;" type="text"/> <input style="width: 15px; height: 15px;" type="text"/> <input style="width: 15px; height: 15px;" type="text"/> <input style="width: 15px; height: 15px;" type="text"/> |           |
| E.H. WACHS COMPANIES<br>100 Shepard St. Wheeling Il. 60090<br>——— Patent Pending ——— |   |           |

Part Number: 18-MAN-01

Revision No: 5

**PRODUCT OBSOLETE JAN. 2017**



Revised  
January 2017

# TSE TUBE SQUARING MACHINE

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# TSE TUBE SQUARING MACHINE

## SECTION I

## TSE STANDARD EQUIPMENT



- TSE 1.0 with drive motor and cord
- "T" handle allen wrench
- 1 Tool bit
- Operating Instruction Manual
- Shipping Case

# TSE TUBE SQUARING MACHINE

## SECTION II

## TSE 1.0 SAFETY INSTRUCTIONS

Since 1883, EH Wachs has built a reputation for quality and a commitment to consumer satisfaction. In accordance with this, Wachs must take on the added responsibility of doing our best to assure the safest use of our equipment.

We have assembled a list of safety reminders to aid in creating the safest possible working environment. We recommend that the precautionary steps listed there be closely observed.

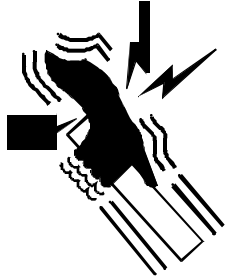


**Read the Following thoroughly  
before proceeding**

ALWAYS WEAR PROTECTIVE EQUIPMENT:

|  |   |
|--|---|
|  | <b>WARNING</b><br>Impact resistant eye protection must be worn while operating or working near this tool. |
|--|---|

|   |  |
|---|--|
|  | <b>CAUTION</b><br>Personal hearing protection is required at all times when operating or working near this tool. |
|---|--|

|  |   |
|--|---|
|  | <b>CAUTION</b><br>Some individuals are susceptible to disorders of the hands and arms when exposed to tasks which involve highly repetitive motions and/or vibration. Disorders such as Carpal tunnel syndrome and tendonitis can be caused or aggravated by repetitious, forceful exertions of the hands and arms. |
|--|---|

**1. READ THE OPERATING MANUAL!!**

Reading the setup and operating instructions prior to beginning the setup procedures can save valuable time and help prevent injury to operators or damage to machines.

**2. INSPECT MACHINE & ACCESSORIES!**

Prior to machine setup physically inspect the machine and it's accessories. Look for worn tool slides, loose bolts or nuts, lubricant leakage, excessive rust, etc. A properly maintained machine can greatly decrease the chances for injury.

**3. ALWAYS READ PLACARDS & LABELS!**

All placards, labels and stickers must be clearly legible and in good condition. Replacement labels can be purchased from the manufacturer.

**4. KEEP CLEAR OF ROTATING PARTS!**

Keep hands, arms and fingers clear of all rotating or moving parts. Always turn machine off before attempting any adjustments requiring contact with the machine or it's accessories.

**5. SECURE LOOSE CLOTHING & JEWELRY!**

Loose fitting clothing, jewelry; long, unbound hair can get caught in the rotating parts on machines. By keeping these things secure or removing them you can greatly reduce the chance for injury.

**6. KEEP WORK AREA CLEAR!**

Be sure to keep the work area free of clutter and nonessential materials. Only allow those personnel directly associated with the work being performed to have access to the area if possible.

## SICHERHEITSVORSCHRIFTEN

D

Seit 1883 hat EH Wachs seinen Ruf für Qualität und Zufriedenstellung seiner Kunden aufgebaut. Wachs übernimmt demgemäß die zusätzliche Verantwortung, sein Bestes zu tun, einen möglichst sicheren Umgang mit seiner Ausrüstung zu gewährleisten, und hat daher eine Liste von Sicherheits-Gedächtnisstützen zusammengestellt, die den Kunden in der Erschaffung einer möglichst sicheren Arbeitsumgebung zu unterstützen. Wir empfehlen, die aufgeführten Vorsichtsmaßnahmen genau zu beachten.



### BITTE NACHFOLGENDES SORGFÄLTIG VOR DEM FORTFAHREN DURCHLESEN !

#### 1. DIE BETRIEBSANLEITUNG LESEN!

Bedienungsmänner können wertvolle Zeit einsparen und Verletzungen und Beschädigungen der Maschine vermeiden, wenn Sie die Aufbau- und Betriebsanleitungen vor dem Aufbau durchlesen.

#### 2. MASCHINE UND ZUSATZGERÄTE ÜBERPRÜFEN!

Vor dem Aufbau der Maschine sollte diese und die Zusatzgeräte physisch überprüft werden. Prüfen Sie, ob abgenutzte Werkzeugschlitzen, lockere Bolzen und Schraubenmütter, Schmiermittelabgänge, übermäßiger Rost, usw. bestehen. Mit einer ordnungsgemäß gewarteten Maschine kann die Wahrscheinlichkeit eines Unfall stark verringert werden.

#### 3. IMMER INFORMATIONEN UND ETIKETTEN LESEN!

Alle Informationen, Etiketten und Aufkleber müssen gut lesbar und in gutem Zustand sein. Vom Hersteller können Ersatzetiketten angefordert werden.

#### 4. BLEIBEN SIE ROTIERENDEN TEILEN FERN!

Die Hände, Arme und Finger sollten von allen sich drehenden Teilen ferngehalten werden. Vor der Durchführung von Nachstellungen, die Sie in Berührung mit der Maschine oder deren Zusatzgeräte bringen, die Maschine stets abschalten!

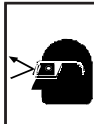
#### 5. WEITE KLEIDUNG UND SCHMUCK BEFESTIGEN!

Weite Kleidung, Schmuck und lange, nicht gelöstes Haar können in den rotierenden Teilen der Maschine hängenbleiben. Die Wahrscheinlichkeit einer Verletzung kann stark herabgesetzt werden, wenn Sie diese Dinge befestigen bzw. abnehmen.

#### 6. ARBEITSBEREICH FREIHALTEN!

Stets darauf achten, daß sich keine unnötigen Materialien, usw. im Arbeitsbereich befinden. Nur dem direkt mit der zu leistenden Arbeit in Zusammenhang stehenden Personal Zugang zum Arbeitsbereich gestatten!

STETS SCHUTZAUSRÜSTUNG TRAGEN!



#### WARNUNG!

Schlagbiegegeste Augenschutzbrillen müssen stets bei Betrieb dieses Werkzeugs oder in der Nähe dieses Werkzeugs getragen werden.



#### ACHTUNG!

Ein Ohrenschutz muß stets bei Betrieb dieses Werkzeugs oder in der Nähe dieses Werkzeugs getragen werden.



#### ACHTUNG!

Manche Personen leiden an Funktionsstörungen der Hände und Arme, wenn sie sich dauernd wiederholende Aufgaben auszuführen haben, die andauernde Bewegungen und/oder Schwingungen mit sich führen. Funktionsstörungen, wie beispielsweise Handwurzels- und Sehnenentzündungen, können durch eine sich wiederholende und mit viel Kraft ausgeübte Anwendung der Hände und Arme entweder hervorgerufen oder verschlimmert werden.

## CONSIGNE DE SÉCURITÉ

F

Depuis 1883, la société EH Wachs a bâti sa réputation sur la qualité de ses produits et son engagement à satisfaire la clientèle. Conformément à ces principes, Wachs se doit également d'être aussi responsable pour faire de son mieux afin d'assurer l'utilisation la plus sûre de son matériel. Nous avons réuni une liste de rappels de sécurité pour aider à créer un cadre de travail aussi sûr que possible. Nous vous recommandons d'observer scrupuleusement les vérifications préalables indiquées ci-dessous.



### Lisez ce qui suit avant d'aller plus avant

#### 1. LIRE LE MANUEL D'UTILISATION !!

En lisant les instructions de réglage et de fonctionnement avant de commencer les procédures de réglage, vous pourrez économiser un temps précieux et vous éviterez aux machinistes de se blesser et d'abîmer les machines.

#### 2. INSPECTER LA MACHINE ET LES ACCESSOIRES !

Avant de régler la machine, inspectez-la à l'oeil nu ainsi que ses accessoires. Recherchez les outils couillants usagés, les boulons ou les écrous desserrés, les fuites de lubrifiant, les dépôts de rouille excessifs, etc. Avec une maintenance adéquate, vous diminuerez sensiblement les risques d'accidents.

#### 3. LIRE SYSTÉMATIQUEMENT LES AFFICHES ET ÉTIQUETTES !

Toutes les affiches, étiquettes et autocollants doivent être parfaitement lisibles et en bon état. Vous pouvez acheter de nouvelles étiquettes auprès du fabricant.

#### 4. SE TENIR À DISTANCE DES PIÈCES ROTATIVES !

Tenez vos mains, bras et doigts éloignés de toutes pièces rotatives ou mobiles. Arrêtez toujours la machine avant de tenter de procéder au moindre réglage nécessitant un contact avec la machine ou ses accessoires.

#### 5. PRENDRE GARDE AUX VÊTEMENTS AMPLES ET AUX BIJOUX !

Les vêtements amples, les bijoux, et les cheveux longs qui ne sont pas attachés peuvent être pris dans les pièces rotatives des machines. Enlevez ou attachez ce qui gêne de façon à réduire au maximum les risques d'accident.

#### 6. CONSERVER UNE AIRE DE TRAVAIL DÉGAGÉE !

Ayez bien soin d'enlever les débris et les matériaux qui ne sont pas indispensables. N'autorisez que la présence des employés chargés du travail en cours d'exécution pour dégager au mieux l'aire de travail.

PORTER TOUJOURS UN ÉQUIPEMENT DE PROTECTION



#### AVERTISSEMENT

Protégez vos yeux avec des lunettes de sécurité antichoc lorsque cet outil est en marche ou si vous travaillez à proximité.



#### ATTENTION

Il est absolument indispensable de vous protéger lorsque cet outil est en marche ou si vous travaillez à proximité.



#### ATTENTION

Certaines personnes sont particulièrement sujettes aux troubles articulaires des mains et des bras lorsqu'elles sont soumises à des tâches nécessitant des gestes très répétitifs ou lorsqu'elles sont exposées à des vibrations. Le syndrome du canal carpien et les tendinites peuvent résulter ou être aggravés par des efforts rigoureux des bras et des mains.

## INSTRUCCIONES DE SEGURIDAD

E

Desde 1883, EH Wachs ha ido forjando una reputación de calidad y compromiso hacia la satisfacción del cliente. De acuerdo con esto, Wachs debe aceptar la responsabilidad adicional de hacer todo lo posible para asegurar el uso seguro de nuestros equipos. Hemos reunido una lista de recordatorios de seguridad para ayudarle a crear el ambiente de trabajo más seguro posible. Recomendamos que observen cuidadosamente los pasos de precaución enumerados en la misma.



### Lea lo siguiente detenidamente antes de proceder

#### 1. ¡ LEA EL MANUAL DE OPERACIONES!

La lectura de las instrucciones de instalación y operación antes de comenzar los procedimientos de instalación puede ahorrarle tiempo valioso y ayudarle a evitar daños a operarios o daño a las máquinas.

#### 2. ¡ INSPECCIONE LA MÁQUINA Y LOS ACCESORIOS!

Antes de la instalación de la máquina inspeccione físicamente la máquina y sus accesorios. Busque muescas de herramientas usadas, pernos o tuercas flojas, fugas de lubricante, excesiva corrosión, etc. Una máquina mantenida adecuadamente puede disminuir grandemente las ocasiones de daños.

#### 3. ¡ LEA SIEMPRE LOS LETREROS Y ETIQUETAS!

Todos los letreros, etiquetas y adhesivos deben ser claramente legibles y estar en buenas condiciones. Pueden comprarse etiquetas de repuesto del fabricante.

#### 4. ¡ MANTENGASE ALEJADO DE PIEZAS GIRATORIAS!

Mantenga las manos, brazos y dedos alejados de todas las piezas rotatorias o en movimiento. Desconecte siempre la máquina antes de intentar ningún ajuste que requiera entrar en contacto con la máquina o sus accesorios.

#### 5. ¡ ASEGURE LA ROPA SUELTA Y JOYERÍA!

La ropa suelta, joyería, pelo largo y sin atar pueden engancharse en las partes rotatorias de las máquinas. Usted puede reducir grandemente las oportunidades de un accidente asegurando estas cosas o despojándose de ellas.

#### 6. ¡ MANTENGA LIMPIA EL ÁREA DE TRABAJO!

Asegúrese de mantener el área de trabajo libre de obstáculos y materiales no esenciales. Si es posible permita solamente el acceso al área a aquellas personas directamente asociadas con el trabajo que se está realizando.

USE SIEMPRE EQUIPO PROTECTOR:



#### AVISO

Debe usarse protección ocular resistente al impacto mientras se opere o trabaje cerca de esta herramienta.



#### PRECAUCION

Se requiere en todo momento protección auditiva personal cuando opere o trabaje cerca de esta herramienta.



#### PRECAUCION

Algunos individuos son susceptibles a desórdenes de brazos y manos cuando son sometidos a tareas que llevan consigo movimientos alta-mente repetitivos y/o vib-ración. Desórdenes tales como el síndrome del túnel carpiano y ten-donitis pueden ser causados o agravados por esfuerzos repetitivos y enérgicos de las manos y brazos.

## INDICAZIONI PER LA SICUREZZA D'USO

I

Fin dal 1883, la EH Wachs si è guadagnata una reputazione per quanto riguarda qualità e impegno nella soddisfazione dei clienti. In questa ottica, alla Wachs dobbiamo anche assumerci la responsabilità di fare del nostro meglio per garantire la massima sicurezza d'uso dei nostri apparecchi. Abbiamo preparato un elenco di avvisi di sicurezza come ausilio nel creare il più sicuro ambiente di lavoro possibile. Raccomandiamo di seguire attentamente le precauzioni elencate.



### Leggere attentamente quanto segue prima di proseguire.

INDOSSARE SEMPRE INDUMENTI PROTETTIVI:

#### 1. LEGGERE IL MANUALE D'USO!!

Leggere le istruzioni per la messa a punto e l'uso prima di iniziare la messa a punto per risparmiare tempo prezioso e prevenire lesioni e danni al macchinario.

#### 2. CONTROLLARE LA MACCHINA E GLI ACCESSORI!

Prima di mettere a punto la macchina, controllare sia la macchina che gli accessori. Verificare che le slitte portautensili non siano consumate, che i bulloni e i dadi non siano allentati, che non vi siano perdite di lubrificante, ruggine eccessiva, ecc. Una macchina ben mantenuta può ridurre notevolmente le possibilità di danni.

#### 3. LEGGERE SEMPRE TARGHETTE ED ETICHETTE!

Tutte le targhette, le etichette e gli adesivi devono essere chiaramente leggibili e in buone condizioni. Si possono acquistare etichette di ricambio presso il produttore.

#### 4. NON AVVICINARSI A PARTI IN MOVIMENTO!

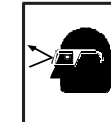
Tenere mani, braccia e dita ben lontane da tutte le parti in movimento. Spegner sempre la macchina prima di effettuare regolazioni che richiedono il contatto con la macchina o i suoi accessori.

#### 5. FISSARE INDUMENTI E GIOIELLERIA!

Indumenti larghi, gioielli pendenti o lunghi; capelli lunghi sciolti possono rimanere incastrati nelle parti rotanti sulle macchine. Fissandoli o rimuovendoli si può ridurre notevolmente il rischio di lesioni.

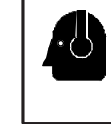
#### 6. MANTENERE L'AREA DI LAVORO SGOMBRA!

Mantenere l'area di lavoro sgombra da materiale non essenziale. Se possibile, consentire l'accesso solamente al personale direttamente interessato nel lavoro svolto.



#### ATTENZIONE

Indossare occhiali di sicurezza resistenti all'urto durante l'uso di questo strumento o quando si lavora in sua prossimità.



#### AVVERTENZA

Indossare sempre protezione auricolare durante l'uso di questo strumento o quando si lavora in sua prossimità.



#### AVVERTENZA

Alcuni individui possono soffrire disturbi alle mani e alle braccia nell'esecuzione di mansioni che comportino movimenti alta-mente ripetitivi e/o vibrazione. Disturbi quali la sindrome del tunnel carpale e tendiniti possono essere causati o aggravati da sforzi ripetuti delle mani e delle braccia.



Siden 1883 har EH Wachs haft ry for deres kvalitet og varetagelse af kundtilfredshed og vil også gøre vort bedste for at sikre, at vore maskiner benyttes på en sikker og forsvarlig måde.

Vi har lavet en liste over påmindelser, der skal bidrage til at skabe det sikrest mulige arbejdsmiljø. Vi anbefaler, at sikkerhedsforanstaltningerne på listen omhyggeligt overholdes.



Læs følgende grundigt, inden der foretages andet

**1. LÆS BRUGSANVISNINGEN!!**

Hvis man læser anvisningerne i klargøring og drift, inden man begynder at gøre maskinen klar, kan man spare tid og forhindre person- og maskinskade.

**2. INSPICÉR MASKINE OG UdstYr!**

Inden maskinen gøres klar, skal man inspicere maskinen og udstyret. Se efter slidte fittings, løse bolte og møtrikker, olierækager, rust osv. Når maskinen holdes i god stand, er der langt mindre risiko for personskade.

**3. LÆS ALTID SKILTE OG ETIKETTER!**

Alle skilte og etiketter skal være letlæselige og i god stand. Nye skilte og etiketter fås hos forhandleren.

**4. HOLD AFSTAND TIL BEVÆGELIGE DELE!**

Hold hænder, arme og fingre væk fra alle roterende og bevægelige dele. Man skal altid slukke for maskinen, inden man påbegynder justering, hvor man kommer i kontakt med maskinen eller udstyret.

**5. BRUG IKKE LØSTHÆNGENDE TØJ OG SMYKKER!**

Løststående tøj, smykker og langt, løststående hår kan blive fanget i maskinens bevægelige dele. Man kan i høj grad nedsætte risikoen for personskade ved ikke at bruge løststående tøj og smykker og ved at samle langt hår oppe på hovedet.


**6. HOLD ARBEJDSSTEDET RYDDET!**

Arbejdsstedet skal holdes ryddeligt og fri for materialer, der ikke hører til. Uvedkommende personer bør ikke have adgang til arbejdsstedet, hvis det er muligt.

BRUG ALTID BESKYTTELSESDYSTYR:

|   |  |
|---|--|
|  | <b>ADVARSEL</b><br>Man skal bruge slag-resistente sikkerhedsbriller, når man arbejder med eller i nærheden af denne maskine. |
|---|--|

|   |  |
|---|--|
|  | <b>FORSIGTIG</b><br>Man skal altid bruge høreværn, når man arbejder med eller i nærheden af denne maskine. |
|---|--|

|   |   |
|---|---|
|  | <b>HUOMAA</b><br>Nogle mennesker er disponeret for lidelser i hænder og arme, når de udsættes for opgaver, der involverer stærkt repetitiv bevægelse og/eller vibration. Sygdomme, såsom karpaltunnelsyndrom og ten-dinitis, kan forårsages eller forværres af repetitiv, kraftig brug af hænder og arme. |
|---|---|

Από το 1883, η EH Wachs έχει δημιουργήσει μια φήμη ποιότητας και δέσμευσης στην καινοποίηση του πελάτη. Συνεπώς, η Wachs πρέπει να αναλάβει την προοδευτική υποχρέωση να κάνουμε το καλύτερο για να εξασφαλίσουμε την ασφαλέστερη χρήση του εξοπλισμού μας.

Έχουμε καταρτίσει έναν κατάλογο υπομνήσεων ασφαλείας που βοηθούν στη δημιουργία του ασφαλέστερου δυνατού χώρου εργασίας. Συστάουμε την πιστή εφαρμογή των προληπτικών μέτρων που αναγράφονται παρακάτω.

Πριν προχωρήσετε διαβάστε όλες τις παρακάτω υποδείξεις

**1. ΔΙΑΒΑΣΤΕ ΤΟ ΒΙΒΛΙΟ ΟΔΗΓΩΝ!**

Η ενόνηση των οδηγίων εγκατάστασης και χειρισμού πριν αρχίσετε τις διαδικασίες εγκατάστασης μπορούν να σας εξοικονομήσουν πολύτιμο χρόνο και να βοηθήσουν στην αποτροπή τραυματισμού των χειριστών ή βλάβης των μηχανών.

**2. ΕΠΙΘΕΩΡΗΣΤΕ ΤΗ ΜΗΧΑΝΗ ΚΑΙ ΤΑ ΕΞΑΡΤΗΜΑΤΑ!**

Πριν από την εγκατάσταση της μηχανής επιθεωρήστε τη φυσική κατάσταση της μηχανής και των εξαρτημάτων. Κοιτάξτε για τυχόν φθορά στις γλίστρες των καναλιών, λασκαρισμένα μπουλόνια ή παξιμάδια, διαρροή λιπαντικού, υπερβολική σκουριά κτλ. Η μηχανή που συντηρείται κανονικά μπορεί να μειώσει σημαντικά τις πιθανότητες τραυματισμού.

**3. ΠΑΝΤΑ ΔΙΑΒΑΣΤΕ ΤΙΣ ΠΙΝΑΚΙΔΕΣ & ΤΙΣ ΕΤΙΚΕΤΕΣ!**

Όλες οι πινακίδες, ετικέτες και αυτοκόλλητα πρέπει να διαβάζονται καθαρά και να βρίσκονται σε καλή κατάσταση. Εφεδρικές ετικέτες μπορείτε να αγοράσετε από τον κατασκευαστή.

**4. ΑΠΟΜΑΚΡΥΝΘΕΙΤΕ ΑΠΟ ΤΑ ΠΕΡΙΣΤΡΕΦΟΜΕΝΑ ΕΞΑΡΤΗΜΑΤΑ!**

Κρατήστε χέρια, βραχίονες, και δάχτυλα μακριά από όλα τα περιστρεφόμενα ή κινούμενα εξαρτήματα. Πάντοτε σβήνετε τη μηχανή πριν επιχειρήσετε οποιαδήποτε ρύθμιση που απαιτεί επαφή με τη μηχανή ή τα εξαρτήματά της.


**5. ΜΑΖΕΨΤΕ ΤΑ ΛΥΤΑ ΡΟΥΧΑ & ΚΟΣΜΗΜΑΤΑ!**


Τα ρούχα που δεν έχουν καλή εφαρμογή, τα κοσμήματα, τα μακριά, λυτά μαλλιά μπορεί να προστούν στα περιστρεφόμενα εξαρτήματα της μηχανής. Στερεώνοντας ή βγαζόντας τα μπορείτε να μειώσετε σημαντικά την πιθανότητα τραυματισμού.


**6. ΔΙΑΤΗΡΕΙΤΕ ΕΛΕΥΘΕΡΟ ΤΟ ΧΩΡΟ ΕΡΓΑΣΙΑΣ!**

Φροντίστε να διατηρείτε το χώρο εργασίας ελεύθερο από ακαταστάσια και εμπορικά υλικά. Επιτρέψτε την είσοδο μόνο στους έχοντες άμεση σχέση με την εκτελούμενη εργασία αν είναι δυνατό.

ΝΑ ΦΟΡΑΤΕ ΠΑΝΤΟΤΕ ΠΡΟΣΤΑΤΕΥΤΙΚΑ ΕΙΔΗ:

|   |  |
|---|--|
|  | <b>ΠΡΟΕΙΔΟΠΟΙΗΣΗ</b><br>Να φοράτε ειδή προστασίας των ματιών κατά της πρόσκρουσης όταν χειρίζεστε ή εργαζέστε κοντά στο εργαλείο αυτό. |
|---|--|

|   |  |
|---|--|
|  | <b>ΠΡΟΣΟΧΗ</b><br>Χρειάζεται πάντοτε ατομική προστασία των αυτιών όταν χειρίζεστε ή εργαζέστε κοντά στο εργαλείο αυτό. |
|---|--|

|   |   |
|---|---|
|  | <b>ΠΡΟΣΟΧΗ</b><br>Μερικά άτομα είναι ευαίσθητα στις διαταραχές των χεριών και των βραχιόνων όταν εκτελούνται σε εργασίες που συνεπάγονται εξαιρετικά επαναληπτικές κινήσεις και/ή κραδασμούς. Οι διαταραχές όπως το σύνδρομο καρπικής σπράγγας και η τενοντίτιδα μπορεί να προκληθούν ή να επιδεινωθούν από τις επαναληπτικές, ισχυρές εκτάσεις των χεριών και των βραχιόνων. |
|---|---|

# TSE TUBE SQUARING MACHINE

## SECTION III

### EC Declaration of Conformity

Name and address of manufacturer (if different) E.H. Wachs Company  
100 Shepard St.  
Wheeling, Il. 60090 USA

Distributed in the EC by: \_\_\_\_\_  
Business address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

We declare that the machine described below conforms with the EHSR of the machinery directive 89/392/EEC and amendments 91/368/EEC, 93/44/EEC and 93/68/EEC

Machine Title Tube and Fitting Squaring Machines

Model Number TSE / FSE 18-000-01 thru 18-000-08  
TFS 19-000-01 thru 19-000-26

Machine Description Portable machinery to face / square tube &  
pipe ends for weld preparation


Serial Number \_\_\_\_\_

Harmonized Standards Used EN 50144, EN 55014, HD 400, EN 292, EN  
292-2, EN 294, EN 394

Other Safety Standards Used PR: EN 982, PR: EN 983, 10/95  
PR: EN 792-1, PR: EN 1050

Name of person authorized to sign on behalf of the E.H. Wachs Companies Rodger P. Soeldner

Position Vice President / CFO

Signature 

Date July 15, 1997



# TSE TUBE SQUARING MACHINE

## SECTION IV

## TSE SPECIFICATIONS

The new **Wachs TSE 1.0** is a light-weight, hand held, portable tool for precision cutting of square, burr-free faces on tubing from 1/8" through 1" O.D.

Featuring a unique hand twist clamping system, utilizing spring loaded plastic Delrin<sup>®</sup> collets which grip the tube firmly yet do not mar the tubing wall!

The TSE 1.0 utilizes a trigger activated variable speed electric motor. The cutting tool is conveniently infed by rotating the cutter spindle knob. It is equipped with an infeed "Micrometer" index gauge for precise machining operations, giving the operator excellent control when material removal is critical to maintain tubing lengths.

The TSE 1.0 offers fast production operation plus easy handling, improved finishes and consistent cuts. It's ideal for contractors, fabricators and maintenance departments, especially where automatic welding is employed.



|                      |  |
|----------------------|--|
| Machining Capacity:  | 1/8" thru 1" O.D.  |
| Machining Function:  | Burr-free squaring/facing  |
| Machining Materials: | Stainless steel/High alloy   |
| Wall Thickness:      | .015" thru .120"   |
| Clamping System:     | Stainless steel collets with hand locking nut                                  |
| Clearance Radius:    | 1-1/2" From Centerline   |
| Tool Advance:        | Hand advanceable & retractable spindle with index gauge (.245" per revolution) |
| Controls:            | ON/OFF Variable speed trigger switch.  |
| Tooling:             | Titanium Nitrate coated form tools   |
| Tool RPM:            | 0-600 Variable.  |
| Feed System:         | Manual advance with index gauge  |
| Drive Motors:        | Milwaukee or Metabo, 110 volt or 220 volt                                      |
| Axial Feed:          | .400" max  |
| Weight:              | 8 lbs.   |
| Finish:              | Hard anodized and Stainless steel  |

| Machine Model | Average Sound Level(Decibels) | Maximum Sound Level(Decibels) |
|---------------|-------------------------------|-------------------------------|
| TSE           | 80dBA                         | 90dBA                         |

# **TSE TUBE SQUARING MACHINE**

## **SECTION V**

# **SET UP & OPERATING INSTRUCTIONS**

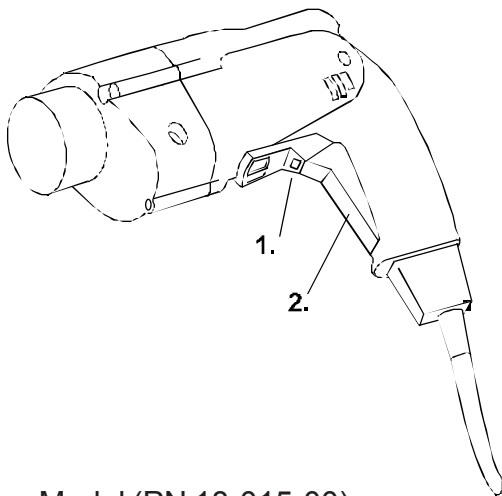
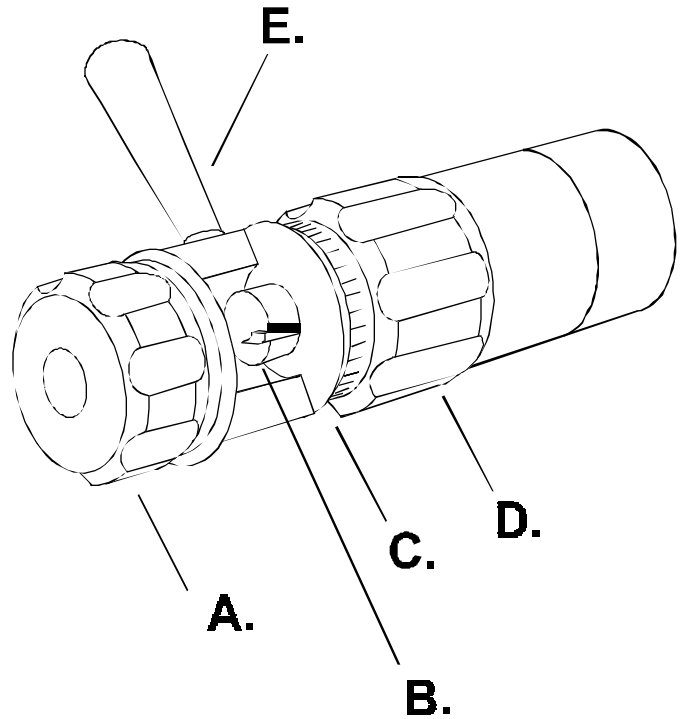
# TSE TUBE SQUARING MACHINE

## SECTION V

## TSE SET UP & OPERATING PROCEDURES

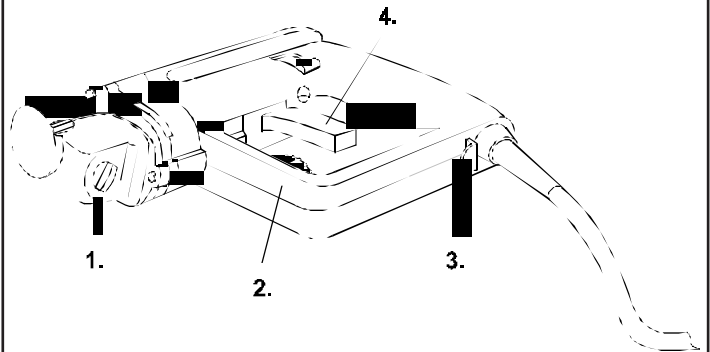
### General Tool Components:

- A. **COLLET NUT**-Used for locking workpiece.
- B. **TOOL SPINDLE**-Holds tool bit.
- C. **MICROMETER GAUGE**-Used to determine length and depth of cut.
- D. **FEED NUT**- Turn this knob to advance tool.
- E. **HANDLE**- Use to gain better leverage while tensioning Collet Nut



Milwaukee Model (PN 18-015-00)

- 1. **THROTTLE LOCK**-Locking mechanism for motor.
- 2. **THROTTLE**- Squeeze trigger to release throttle lock.



Metabo Model (PN 30-031-00)

- 1. **SPEED RANGE SELECTOR**-High or low speed.
- 2. **DIAL SPEED CONTROLLER**-Dial in chosen motor speed.
- 3. **THROTTLE LOCK**-lock "ON" mechanism for motor.
- 4. **THROTTLE TRIGGER**-Squeeze to release throttle lock.

**NOTE:** Please refer to your Operator Manual for further details regarding the operation of your Milwaukee or Metabo drill.

# TSE TUBE SQUARING MACHINE

## SECTION V

## TSE SET UP & OPERATING PROCEDURES (cont.)

### A. Collet Selection and Installation / Removal

1. Select collet set, reference selection chart on page 10.
2. Remove collet lock nut. Rotate counter clockwise (Figure 1).



Fig. 1

3. Place collet assembly into tapered bore. (Fig. 2)



Fig. 2

4. Reinstall lock nut. Rotate clockwise until retaining groove on collet snaps over inner dia. lip of lock nut. (Fig. 3)



Fig. 3

5. To remove collet, tighten lock nut fully. Press collet sections in and toward center. Remove lock nut and collet assembly.

### B. Workpiece Clamping

1. Loosen lock nut and collet by turning counter clockwise.
2. Slide workpiece through collet. Do not damage tool if installed.
3. Tighten lock nut. Turn clockwise until workpiece is held firmly.
4. Remove workpiece by turning lock nut counter clockwise roughly 1/3 to 1/2 turn.

### C. Tool Bit Installation



**CAUTION: Unplug machine from power source before installing or changing tool bits.**

1. Place tool bit into tool slot. Position for desired work dia. Check tool bit alignment with end of tube. Tool should be as far from center as possible. (Fig.4 )
2. Tension locking screws with 1/8" allen key.

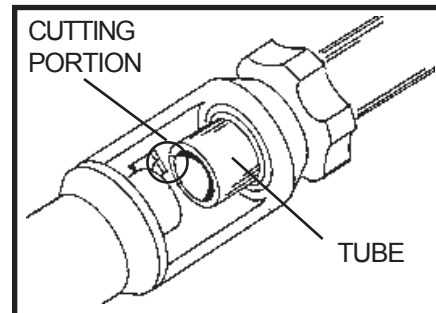


Fig. 4

### D. Drive Motors for the TSE

1. Motors for TSE: Milwaukee has simple variable speed trigger. Metabo has variable speed trigger, "ON" position lock, dial speed control; electronic load sensing speed stabilization (please refer to illustrations on preceding page for exact location of components).

# TSE TUBE SQUARING MACHINE

## SECTION V

## TSE SET UP & OPERATING PROCEDURES (cont.)

### E Machining Instructions



**CAUTION:** Keep hands clear of cutting tool during operation.

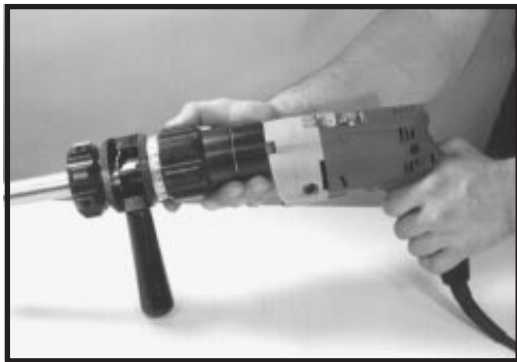
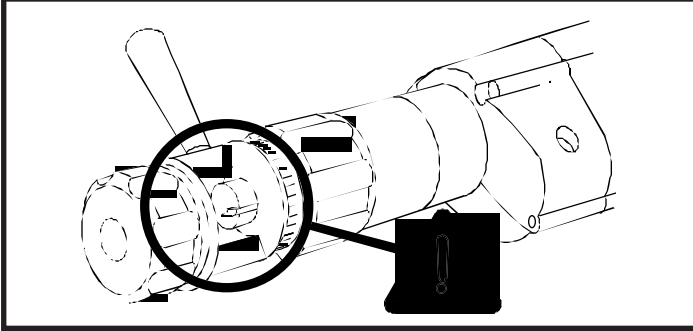


Figure 5

1. Begin rotation. Squeeze trigger to obtain desired speed.
2. Feed is controlled by rotating feed knob. (Figure 5)
3. Index marks on feed knob indicate tool advance.

### F. Machining Tips

1. For precision machined lengths leave motor off. Rotate feed knob until tool touches end of work. Note location on index gauge. Retract feed knob. Add required measurement to observed number on feed knob. With power on, monitor index gauge. Length accuracy: to  $\pm .002$ ".
2. Be careful of cutting edge of tool bit. Edge is sharp and can be damaged.
3. Check tool bit often. If work edge develops burr, tool bit may be worn.
4. Keep consistent pressure on feed knob.
5. To break off long chips, retract feed knob for a moment and return to feeding.



**CAUTION:** Metal residue created by blade is very sharp. Use caution when handling.

6. "Chatter" can be controlled by changing feed rate of tool. Increasing feed and reducing speed will solve this problem.

### G. Bench Stand Removal & Setup

1. To remove stand, loosen 1/2-13 x 2-1/2" FHCS. To reinstall stand, slide FHCS through base plate and support. Thread FHCS into TSE main housing and tighten.

## SECTION VI

## TSE MAINTENANCE



**CAUTION:** Unplug machine from power source before performing any service.

TSE maintenance consists of cleaning and inspection for damage and wear. No grease required for clamping system. Cutter head bushing should be checked for looseness. Feed nut and thrust bearing should be checked for end float. Check power cord for wear.

**SECTION VI**

**OPERATIONAL  
CHARTS  
&  
GRAPHS**

# TSE TUBE SQUARING MACHINE

## SECTION VII

## TSE CHARTS & GRAPHS

| TSE COLLET SELECTION CHART |                |
|----------------------------|----------------|
| *Standard American Sizes   |                |
| Part No.                   | Workpiece O.D. |
| 18-404-00                  | .125"          |
| 18-404-01                  | .188"          |
| 18-404-02                  | .250"          |
| 18-404-04                  | .375"          |
| 18-404-06                  | .500"          |
| 18-404-08                  | .625"          |
| 18-404-10                  | .750"          |
| 18-404-14                  | 1.00"          |

| TSE COLLET SELECTION CHART |                |
|----------------------------|----------------|
| *Standard Metric Sizes     |                |
| Part No.                   | Workpiece O.D. |
| 18-404-36                  | 6 mm           |
| 18-404-38                  | 8 mm           |
| 18-404-40                  | 10 mm          |
| 18-404-42                  | 12 mm          |
| 18-404-44                  | 14 mm          |
| 18-404-46                  | 16 mm          |
| 18-404-48                  | 18 mm          |
| 18-404-50                  | 20 mm          |
| 18-404-55                  | 25 mm          |

\* Standard sizes in stock. Other sizes made on special order.

\*\* All collets are marked with workpiece O.D. sizes.

### TOOLING SELECTION CHART

| Part No.  | Work Material          | Finish            | Packaged as:   |
|-----------|------------------------|-------------------|----------------|
| 18-701-00 | 300 Stainless Steel    | Uncoated          | Individual     |
| 18-701-01 | 300 Stainless Steel    | Zirconium Nitrite | Box of 10 pcs. |
| 18-701-02 | 300 Stainless Steel    | Titanium Nitrite  | Box of 10 pcs. |
| 18-701-03 | 300 Stainless Steel    | Uncoated          | Box of 10 pcs. |
| 18-701-04 | *Exotic hard Material* | Uncoated          | Individual     |

\* Exotic Hard Material: Inconel, Hastelloy, etc.

\*\* Custom Tool Bits Available as special Order

# TSE TUBE SQUARING MACHINE

## SECTION VIII

## TSE TROUBLE SHOOTING

| <b>Trouble</b>                             | <b>Possible Cause</b>               | <b>Remedy</b>  |
|--|-------------------------------------|--|
| Machine Won't Run .....                    | Power Unit Not Connected .....      | Check Power Cord & Connection  |
| Work Piece Shifts Under Cutting Load ..... | Loose Collet Lock Nut .....         | Tension Collet Lock Nut  |
| Poor Workpiece End Quality .....           | Dull or Chipped Tool Bit .....      | Replace Tool Bit   |
| Machine Chatters During Cut .....          | RPM Speed of Tool Head .....        | Refer to Section on Machining Tips<br>is Set Too Fast or Feed Rate<br>is Too Light |
| Chip Runs Up Workpiece I.D. ....           | Improper Tool Bit Installation .... | Refer to Tool Bit Installation Procedure ( Section 5 )                             |



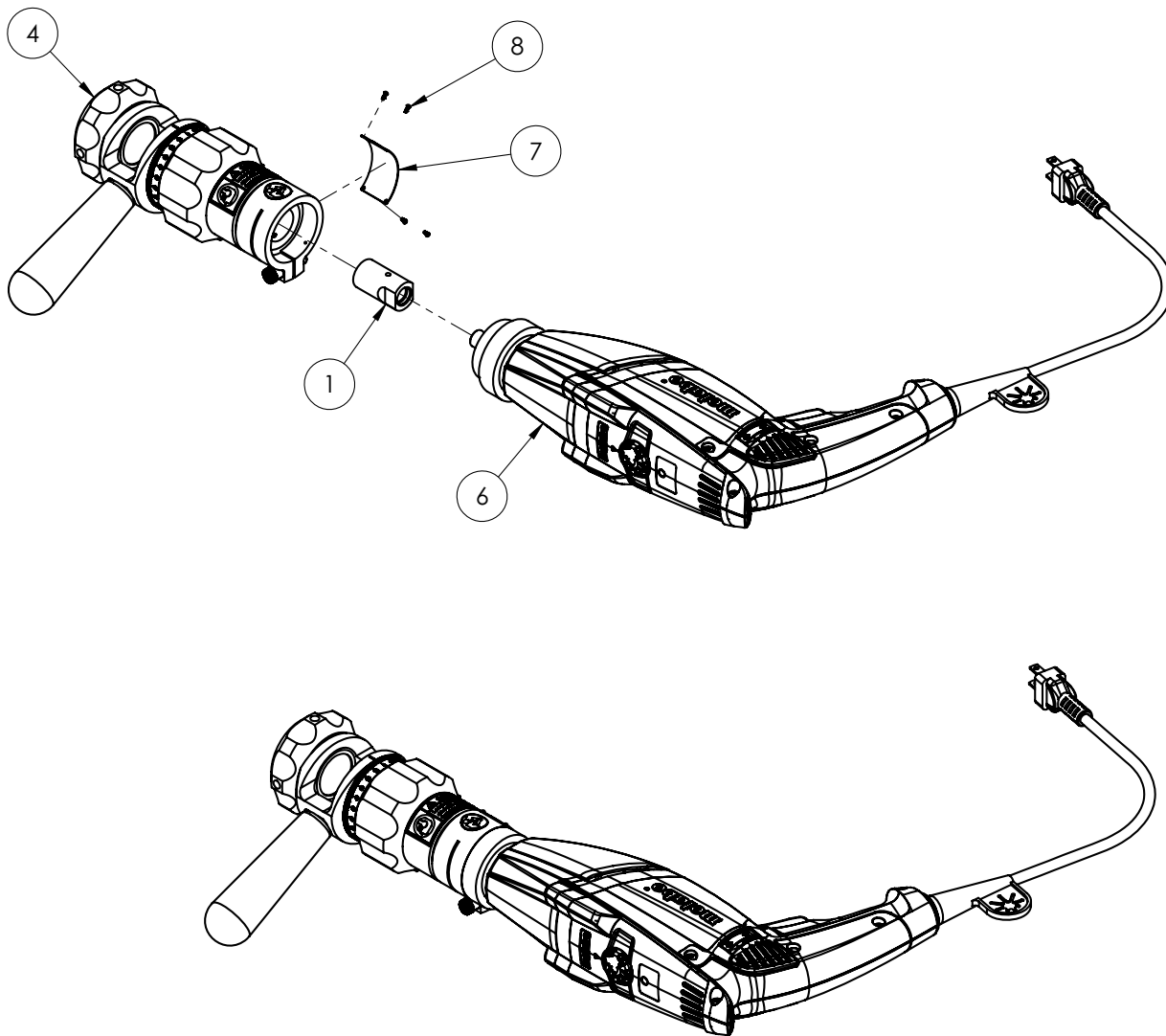
# **TSE TUBE SQUARING MACHINE**

## **SECTION IX**

# **PARTS LISTS & EXPLODED VIEW DRAWINGS**

**110 V Electric TSE, 18-000-05**

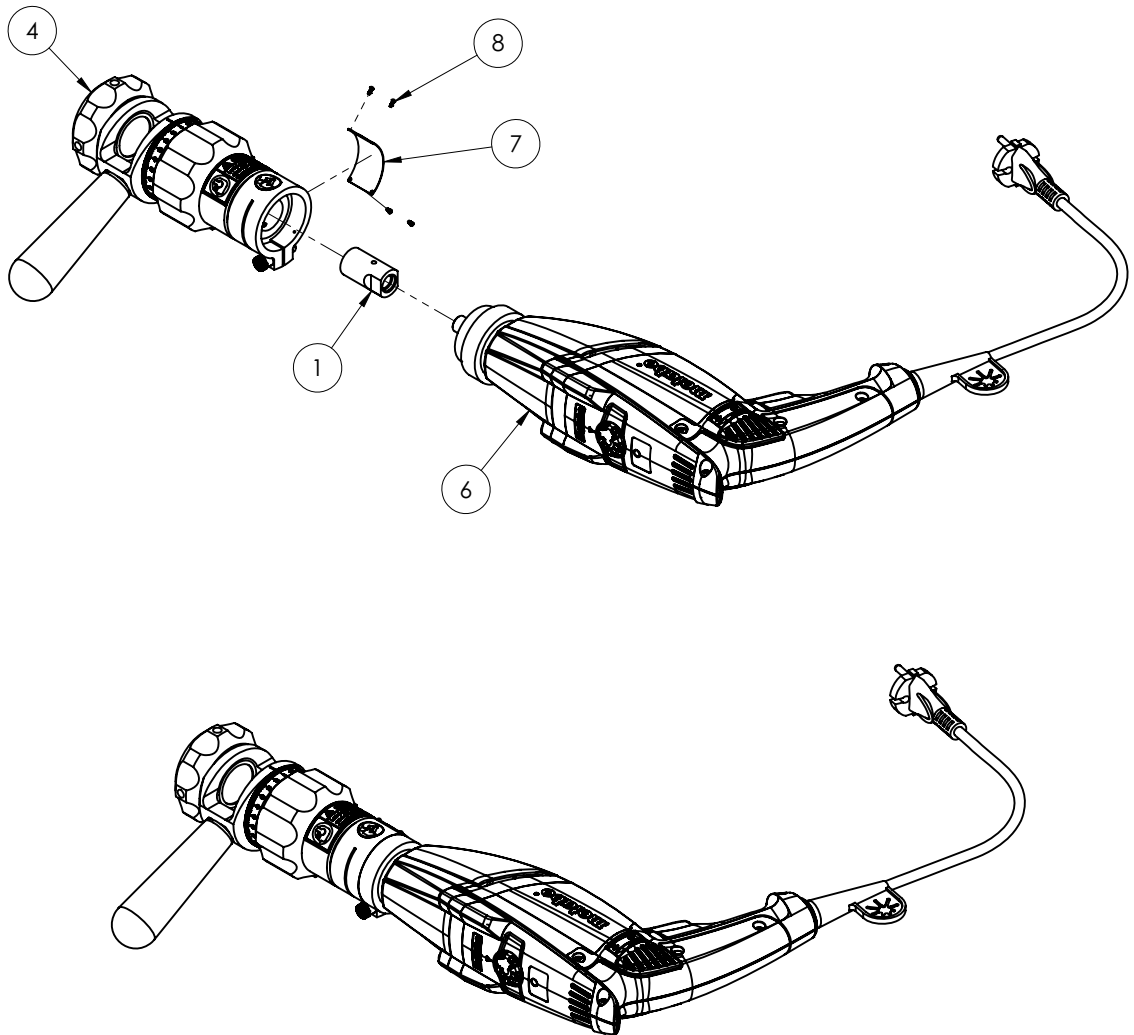
| ITEM | PART NUMBER | QTY. | DESCRIPTION                    |
|------|-------------|------|--------------------------------|
| 1    | 18-006-00   | 1    | COUPLING, DRIVE                |
| 2    | 18-012-00   | 1    | TOOL, COLLET (NOT SHOWN)       |
| 3    | 18-013-01   | 1    | LABEL, FEED-METRIC (NOT SHOWN) |
| 4    | 18-301-00   | 1    | TSE HOUSING ASSEMBLY           |
| 5    | 18-MAN-01   | 1    | MANUAL (NOT SHOWN)             |
| 6    | 19-408-00   | 1    | DRIVE, 110V METABO             |
| 7    | 21-014-00   | 1    | NAME PLATE                     |
| 8    | 90-049-01   | 4    | SCREW, 3/16 U-DRIVE            |



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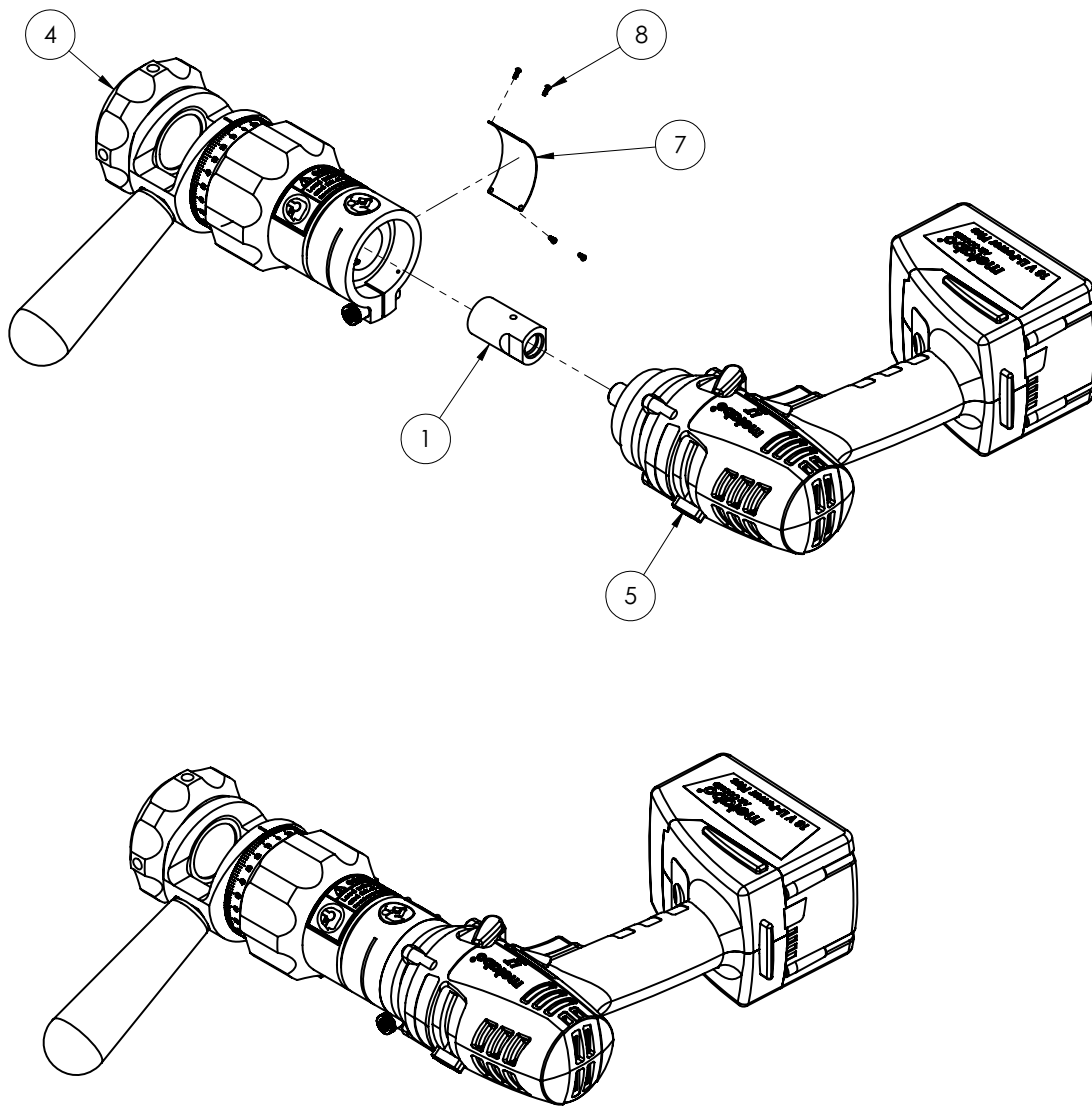
## 220 V Electric TSE, 18-000-06

| ITEM | PART NUMBER | QTY. | DESCRIPTION                    |
|------|-------------|------|--------------------------------|
| 1    | 18-006-00   | 1    | COUPLING, DRIVE                |
| 2    | 18-012-00   | 1    | TOOL, COLLET (NOT SHOWN)       |
| 3    | 18-013-01   | 1    | LABEL, FEED-METRIC (NOT SHOWN) |
| 4    | 18-301-00   | 1    | TSE HOUSING ASSEMBLY           |
| 5    | 18-MAN-01   | 1    | MANUAL (NOT SHOWN)             |
| 6    | 19-409-00   | 1    | DRIVE, 220V METABO             |
| 7    | 21-014-00   | 1    | NAME PLATE                     |
| 8    | 90-049-01   | 4    | SCREW, 3/16 U-DRIVE            |



**110 V Cordless Electric TSE, 18-000-10**

| ITEM | PART NUMBER | QTY. | DESCRIPTION                    |
|------|-------------|------|--------------------------------|
| 1    | 18-006-00   | 1    | COUPLING, DRIVE                |
| 2    | 18-012-00   | 1    | TOOL, COLLET (NOT SHOWN)       |
| 3    | 18-013-01   | 1    | LABEL, FEED-METRIC (NOT SHOWN) |
| 4    | 18-301-00   | 1    | TSE HOUSING ASSEMBLY           |
| 5    | 18-408-00   | 1    | DRIVE, CORDLESS 110V METABO    |
| 6    | 18-MAN-01   | 1    | MANUAL (NOT SHOWN)             |
| 7    | 21-014-00   | 1    | NAME PLATE                     |
| 8    | 90-049-01   | 4    | SCREW, 3/16 U-DRIVE            |

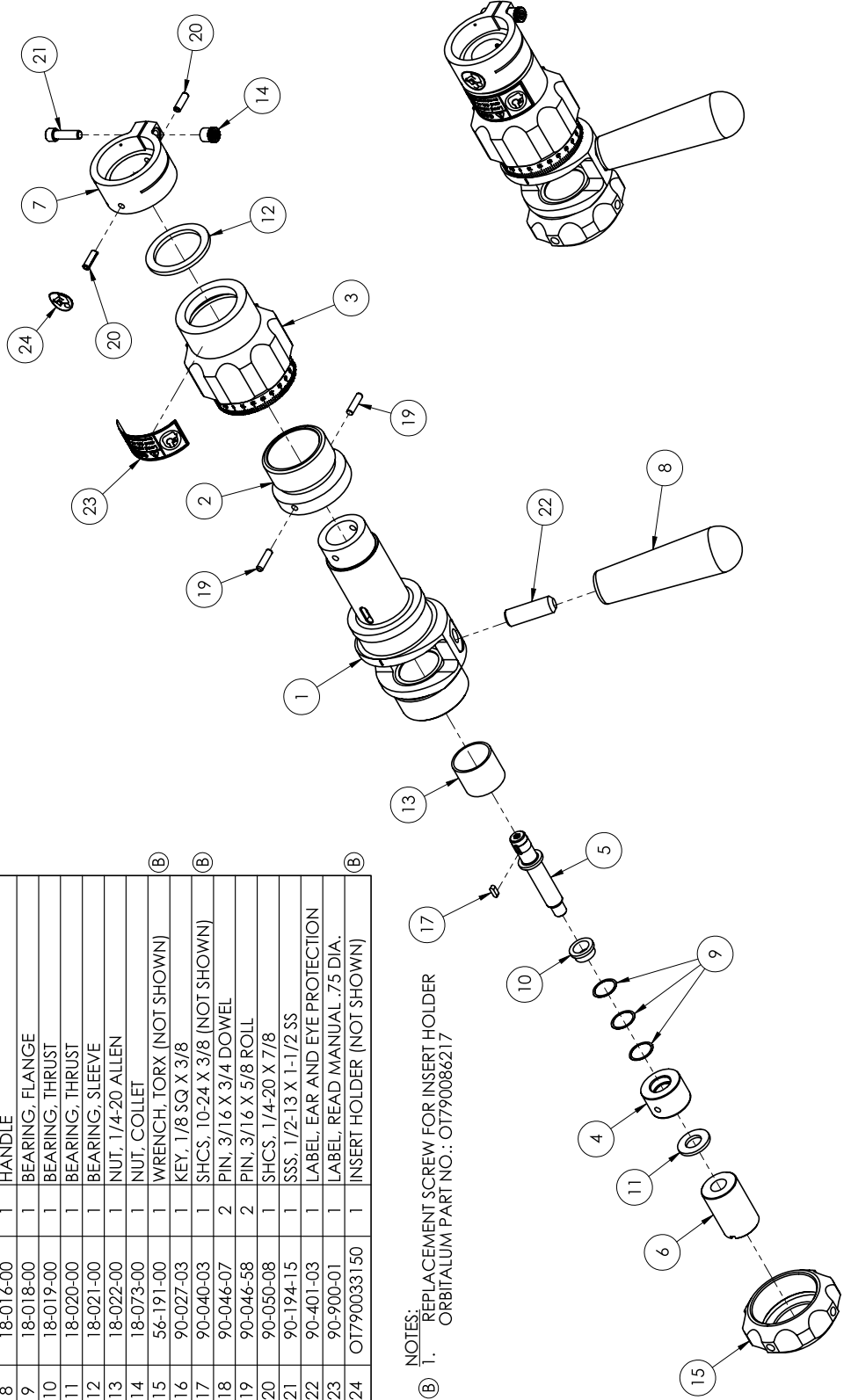


# TSE Housing Assembly, 18-301-00

Rev. C

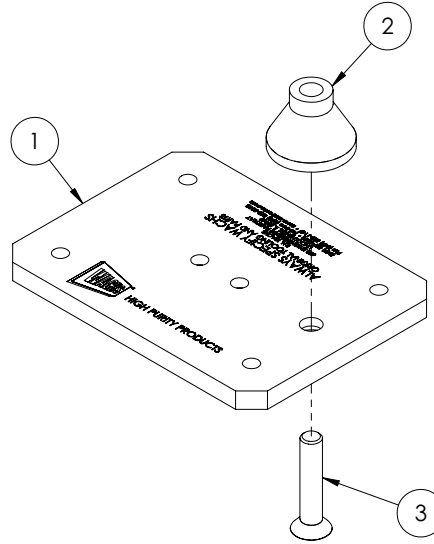
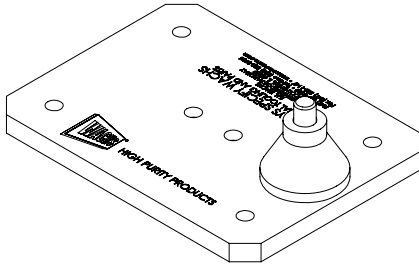
| ITEM | PART NUMBER | QTY. | DESCRIPTION                   |
|------|-------------|------|-------------------------------|
| 1    | 18-001-00   | 1    | MAIN HOUSING                  |
| 2    | 18-002-00   | 1    | RING, FEED                    |
| 3    | 18-003-00   | 1    | NUT, FEED                     |
| 4    | 18-005-00   | 1    | BUSHING, FEED                 |
| 5    | 18-007-00   | 1    | SHAFT, DRIVE                  |
| 6    | 18-008-01   | 1    | SPINDLE, TOOL                 |
| 7    | 18-009-00   | 1    | COUPLER                       |
| 8    | 18-016-00   | 1    | HANDLE                        |
| 9    | 18-018-00   | 1    | BEARING, FLANGE               |
| 10   | 18-019-00   | 1    | BEARING, THRUST               |
| 11   | 18-020-00   | 1    | BEARING, THRUST               |
| 12   | 18-021-00   | 1    | BEARING, SLEEVE               |
| 13   | 18-022-00   | 1    | NUT, 1/4-20 ALLEN             |
| 14   | 18-073-00   | 1    | NUT, COLLET                   |
| 15   | 56-191-00   | 1    | WRENCH, TORX (NOT SHOWN)      |
| 16   | 90-027-03   | 1    | KEY, 1/8 SQ X 3/8             |
| 17   | 90-040-03   | 1    | SHCS, 10-24 X 3/8 (NOT SHOWN) |
| 18   | 90-046-07   | 2    | PIN, 3/16 X 3/4 DOWEL         |
| 19   | 90-046-58   | 2    | PIN, 3/16 X 5/8 ROLL          |
| 20   | 90-050-08   | 1    | SHCS, 1/4-20 X 7/8            |
| 21   | 90-194-15   | 1    | SSS, 1/2-13 X 1-1/2 SS        |
| 22   | 90-401-03   | 1    | LABEL, EAR AND EYE PROTECTION |
| 23   | 90-900-01   | 1    | LABEL, READ MANUAL .75 DIA.   |
| 24   | O1790033150 | 1    | INSERT HOLDER (NOT SHOWN)     |

- NOTES:  
 (B) 1. REPLACEMENT SCREW FOR INSERT HOLDER  
 ORBITALUM PART NO.: O1790086217



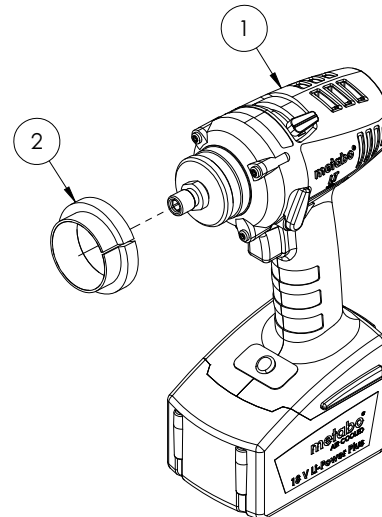
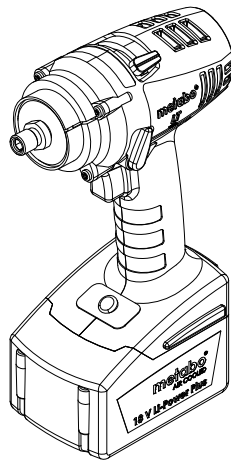
**TSE and FSE Stand, 18-402-00**

| ITEM | PART NUMBER | QTY. | DESCRIPTION          |
|------|-------------|------|----------------------|
| 1    | 18-035-00   | 1    | BASE, STAND          |
| 2    | 18-036-00   | 1    | SUPPORT, STAND       |
| 3    | 90-093-13   | 1    | FHCS, 1/2-13 X 2-1/2 |



**110 V Cordless Electric Drive, 18-408-00**

| ITEM | PART NUMBER | QTY. | DESCRIPTION                             |
|------|-------------|------|---|
| 1    | 18-059-01   | 1    | 18V CORDLESS MOTOR (110V, 2-BAT. PACKS) |
| 2    | 19-034-01   | 1    | ADAPTER, MOTOR                          |

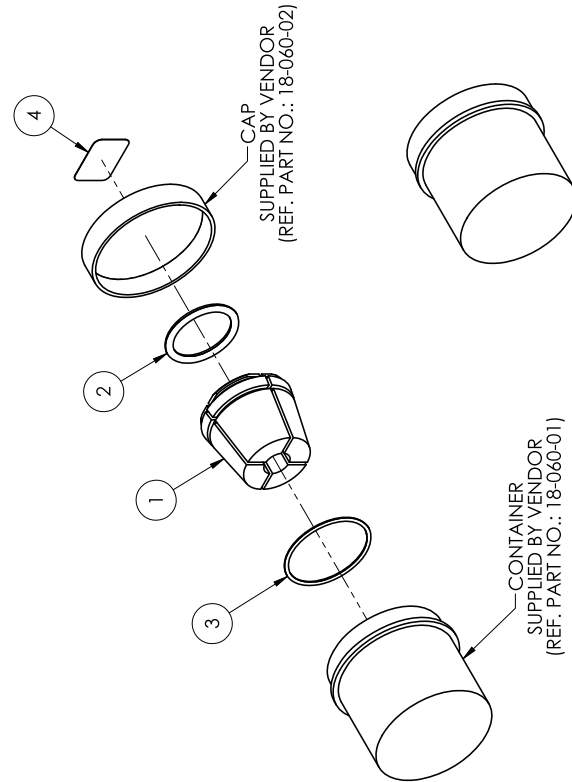


# Collet Assembly, 18-404-XX

| ASSEMBLY PART NO. | DESCRIPTION                      |
|-------------------|----------------------------------|
| 18-404-00         | COLLET ASSEMBLY .250 [6.35 mm]   |
| 18-404-01         | COLLET ASSEMBLY .188 [4.78 mm]   |
| 18-404-02         | COLLET ASSEMBLY .250 [6.35 mm]   |
| 18-404-03         | COLLET ASSEMBLY .312 [7.92 mm]   |
| 18-404-04         | COLLET ASSEMBLY .375 [9.35 mm]   |
| 18-404-05         | COLLET ASSEMBLY .437 [11.10 mm]  |
| 18-404-06         | COLLET ASSEMBLY .500 [12.70 mm]  |
| 18-404-07         | COLLET ASSEMBLY .562 [14.27 mm]  |
| 18-404-08         | COLLET ASSEMBLY .625 [15.88 mm]  |
| 18-404-09         | COLLET ASSEMBLY .687 [17.45 mm]  |
| 18-404-10         | COLLET ASSEMBLY .750 [19.05 mm]  |
| 18-404-11         | COLLET ASSEMBLY .812 [20.62 mm]  |
| 18-404-12         | COLLET ASSEMBLY .875 [22.23 mm]  |
| 18-404-13         | COLLET ASSEMBLY .937 [23.80 mm]  |
| 18-404-14         | COLLET ASSEMBLY 1.000 [25.40 mm] |
| 18-404-36         | COLLET ASSEMBLY .236 [6.00 mm]   |
| 18-404-38         | COLLET ASSEMBLY .315 [8.00 mm]   |
| 18-404-40         | COLLET ASSEMBLY .394 [10.00 mm]  |
| 18-404-42         | COLLET ASSEMBLY .472 [12.00 mm]  |
| 18-404-44         | COLLET ASSEMBLY .551 [14.00 mm]  |
| 18-404-46         | COLLET ASSEMBLY .630 [16.00 mm]  |
| 18-404-48         | COLLET ASSEMBLY .709 [18.00 mm]  |
| 18-404-50         | COLLET ASSEMBLY .787 [20.00 mm]  |
| 18-404-55         | COLLET ASSEMBLY .984 [25.00 mm]  |
| 18-404-0602       | COLLET ASSEMBLY .602 [15.29 mm]  |
| 18-404-1050       | COLLET ASSEMBLY 1.050 [26.67 mm] |

| -TABLE- |           |      |               |                   |
|---------|-----------|------|---------------|-------------------|
| ITEM    | PART NO.  | QTY. | DESCRIPTION   | ASSEMBLY PART NO. |
| 1       | 18-070-XX | 1    | COLLET        |                   |
| 2       | 18-071-00 | 1    | O-RING (-218) |                   |
| 3       | 18-072-00 | 1    | O-RING (-029) |                   |
| 4       | 18-081-XX | 1    | LABEL         | SEE LIST          |

NOTES:  
 1. PART NUMBERS ENDING IN XX TO BE MATCHED WITH LAST TWO DIGITS IN ASSEMBLY PART NUMBER.







# TSE TUBE SQUARING MACHINE

## SECTION X

## TSE ORDERING INFORMATION

To place an order or to get more detailed information on any E.H. Wachs products, call us at:  
1-800-323-8185.

### ORDERING REPLACEMENT PARTS

Please use parts list provided in manual. Have part description and part number of required replacement part or parts to help expedite order and insure proper parts are being ordered.

### REPAIR INFORMATION

Please call E.H. Wachs Company prior to returning any equipment for repair. We will advise you of shipping and handling. Please enclose with equipment to be repaired your name, address, phone number and a brief description of problem or work to be done or estimated.

All repair work done at our plant will be estimated and the customer advised of cost and time required to complete repair.

### WARRANTY INFORMATION

Enclosed with the manual is a warranty card. Please fill out the registration card and return to E.H. Wachs. Retain the owners registration record and warranty card for your information.

### RETURN GOODS ADDRESS

E.H. Wachs Company  
100 Shepard Street  
Wheeling, Illinois 60090


#### Call or Write:

E.H. Wachs Company  
P.O. Box A  
100 Shepard Street  
Wheeling, Illinois 60090

847-537-8800

FAX: 847-520-1147 • 847-520-1168

Toll-Free: 1-800-323-8185

|  |  |         |                      |                      |                      |                      |                      |                      |                      |
|--|--|---------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
|  | Mod. TSE   | Ser.No. | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
|  | Enter Your Machines Serial Number Here For Proper Record Keeping and Ordering Reference. |         |                      |                      |                      |                      |                      |                      |                      |



600 Knightsbridge Parkway • Lincolnshire, IL 60069  
847-537-8800 • [www.ehwachs.com](http://www.ehwachs.com)