

PETOL™ RIG WRENCH

PRWA01
PRWA01-D

Operating Manual



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PETOL™ Rig Wrench Description

The PETOL™ RIG WRENCH is designed for making up or breaking out drill pipe on water well and blast hole drilling rigs with a diameter range of 3-1/2 to 5 inches and up to 16,000ft-lbs of torque. The wrench is self-adjusting with non-jamming ratchet action. Specially designed hand grips enable the operator to apply and remove the wrench with ease.

The PRWA01 is designed to fit many water well and blast hole rigs. The PRWA01-D is optimized for installation on Drilltech water well and blast hole drilling rigs.

PETOL™ Limited Warranty

What Is Covered

PETOL™ tools are expressly warranted to you, the purchaser, to be free of defects in material and workmanship.

How Long Coverage Lasts

This express warranty lasts for the lifetime of the PETOL tool. Warranty coverage ends when the tool becomes unusable for reasons other than defects in workmanship or material.

How Can You Get Warranty Service

To obtain the benefit of this warranty, contact a PETOL sales representative in Clifton, Texas.

PETOL · 4450 S. Highway 6 · P.O. Box 192 · Clifton, TX 76634

What Will We Do To Correct Problems

Warranted products will be repaired or replaced, at PETOL's option, and returned at no charge to you, the original purchaser; or, if after three attempts at repair or replacement during the warranty period, the product defect in material or workmanship persists, you can elect to receive a full refund of your original purchase price for the product.

What Is Not Covered

Defects, failures or conditions that are due to normal wear and tear, abuse or misuse, are not covered by this limited warranty. In addition, this limited warranty is in lieu of all other warranties, express or implied, verbal or written. To the maximum extent allowed by law PETOL disclaims all implied warranties, including implied warranties of merchantability and/or fitness for a particular purpose. PETOL also specifically denies any liability for any incidental damages and/or consequential damages, including but not limited to property damage to property other than the product itself, loss of sales profits, down time, costs or any other damages measurable in money, whether or not included in the foregoing enumeration.

Please be advised that some states do not allow the exclusion or limitation of incidental or consequential damages, so this limitation or exclusion may not apply to you. This warranty gives you specific rights, and you may also have other rights, which vary from state to state, province to province, or country to country.

Are Personal Injuries Covered

In the event you, someone working for you, or any other person sustain a personal injury as a result of using the PETOL tool, PETOL limits its potential liability for such a claim or injury to the fullest extent allowed by law, and disclaims and denies any liability for such personal injury.

Please be advised that some states do not allow the exclusion or limitation of liability for personal injuries, so the above limitation or exclusion may not apply to you, or the individual claiming injury.

No Other Express Warranty Applies

This PETOL LIMITED WARRANTY is the sole and exclusive warranty, express or implied for PETOL products. No employee, agent, dealer or other person is authorized to alter, modify, expand or reduce the terms of this warranty or to make any other warranty on behalf of PETOL.

Law Applicable

All matters related to the sale and/or use of the PETOL tool that is the subject of this limited warranty, along with the construction and enforcement of the terms of this limited warranty itself, shall be subject to the substantive and procedural laws of the state of Texas, not the conflicts of laws provisions of Texas, but rather the laws of Texas themselves.

Forum Selection Clause

Any dispute arising out of the sale and/or use of the PETOL tool that is the subject of this limited warranty shall be presented in the form of a claim or lawsuit to the offices of PETOL in Clifton, Bosque

County, Texas. No claim or suit may be brought against PETOL™, arising out of the sale and/or use of the tool, or arising out of the terms of this warranty, except in such forum. Purchase and/or use of the PETOL tool makes you subject to the benefits and limitations of this limited warranty. Accordingly, any writ, judgment or other enforcement, obtained from a jurisdiction, county, parish, state or federal court or other country, other than from the forum identified above, shall be void and unenforceable against PETOL.

Arbitration Clause

In the event of dispute or claim arises out of the sale and/or use of the PETOL tool that is the subject of this limited warranty, or arises out of the interpretation or enforcement of the terms and conditions of this limited warranty, such dispute shall be submitted to binding arbitration pursuant to the rules of the American Arbitration Association. If required to accomplish the purpose of this Arbitration clause, the purchaser hereby expressly waives any right to demand trial by jury.

Complete Agreement

This express limited warranty contains the entire agreement regarding express or implied warranties related to the PETOL tool that is the subject of it. No writing or language contained in the purchase order or any other document of the purchaser, or invoice of PETOL or any intermediate seller, shall be construed as modifying, in any way, the rights and liabilities contained in this limited warranty. PETOL expressly disclaims any obligations expressed in any customer purchase order or document that are contrary to the terms and limitations of this warranty.

Severability

If any term or limitation contained in this limited warranty is deemed unenforceable by law, then the term shall be severed from the remaining portions of the limited warranty which shall remain enforceable.

All communications to PETOL regarding the use of the tool and any aspect of the sale of the tool of this limited warranty should be addressed to PETOL.

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Safe Practices and Procedures

Responsibility

It is the responsibility of the employer to train the employee in the proper selection and use of tools, and to ensure that they are selected and used in that manner. A part of the job instruction program should therefore be detailed training in the proper use of PETOL™ Rig Wrench.

"Employers are responsible for the safe condition of tools and equipment used by employees, including tools and equipment which may be furnished by employees." - (Source: OSHA 1910.242A)

Replacement Parts

Use only PETOL™ replacement parts - no other parts are of comparable strength, quality and interchangeability.

Safety

While we pride ourselves on the quality and dependability we build into PETOL™ tools and products, we caution users that it is only prudent to know and follow the simple rules of safety when using our products, or anyone else's.

Always follow safe practices and procedures in accordance with the recommendations of OSHA, The National Safety Council (NSC), The Hand Tools Institute (HTI), The International Association of Drilling Contractors (IADC), Etc. All applicable Governmental rules, regulations or restrictions, now in effect or which may be promulgated, take precedence over the suggestions in this publication. The information in this publication is designed to supplement standard safe practices and procedures, not in lieu of, or replacement thereof.

Safe Practices

(Source: The National Safety Council)

Failure to observe one or more of the following five safe practices accounts for most hand and powered tool accidents:

1. ALWAYS WEAR SAFETY GOGGLES TO PROTECT EYES
2. SELECT THE RIGHT TOOL FOR THE JOB
3. KEEP TOOLS IN GOOD CONDITION
4. USE TOOLS CORRECTLY
5. KEEP TOOLS IN A SAFE PLACE

Safety Goggles must always be worn by persons in any area where hand and powered tools are being used.

Never apply excess leverage to a wrench or tool by means of a "Cheater Bar". Never strike wrenches and tools with hammers or other objects.

All tools should be kept clean, inspected on a regular basis, and replaced when they show signs of wear.

Be especially careful not to place yourself in a position that could result in bodily injury in the event of a failure. Brace yourself firmly and pull rather than push when wrenching. (If necessary to push, do so with the flat of the hand rather than gripping around the wrench.)

Never stand under or near loads being hoisted off the ground.

READ SAFE PRACTICES AND PROCEDURES MANUAL, CATALOG INFORMATION AND PRODUCT LABELING PRIOR TO OPERATION.

Safety Sources and Publications

In the interest of Safety the following sources of Safety information is furnished:

The Hand Tools Institute (HTI)
25 North Broadway
Tarrytown, New York 10591
(914) 332-0040
www.hti.org

The National Safety Council (NSC)
1121 Spring Lake Drive
Itasca, Illinois 60143-3201
(630) 285-1121
www.nsc.org

International Safety Council
1121 Spring Lake Drive
Itasca, Illinois 60143-3201
(630) 285-1121

Responsibility of Distributors

IT IS THE RESPONSIBILITY OF THE PURCHASERS OF PETOL™ PRODUCTS TO CONVEY THE INFORMATION IN THIS PUBLICATION AND ANY OTHER INFORMATION RELATING TO THE INDIVIDUAL PRODUCT, THROUGH THE CHANNELS OF DISTRIBUTION, DOWN TO AND INCLUDING THE INDIVIDUAL USING THE PRODUCT

NOTE:

In view of the fact that the actual use determines whether safety requirements have been met, the ultimate responsibility to comply rests with the end user.

Overloading / Shock Loads / Side Loading

Damage to the tong is possible if the following conditions are present. Users are cautioned to be aware that these practices could result in premature breaking of the tong.

Attempting to “inch” loads which are beyond the rated capacity of the tool.

Striking the tool with a hammer or other object while force is being exerted in an attempt to loosen a "frozen" joint.

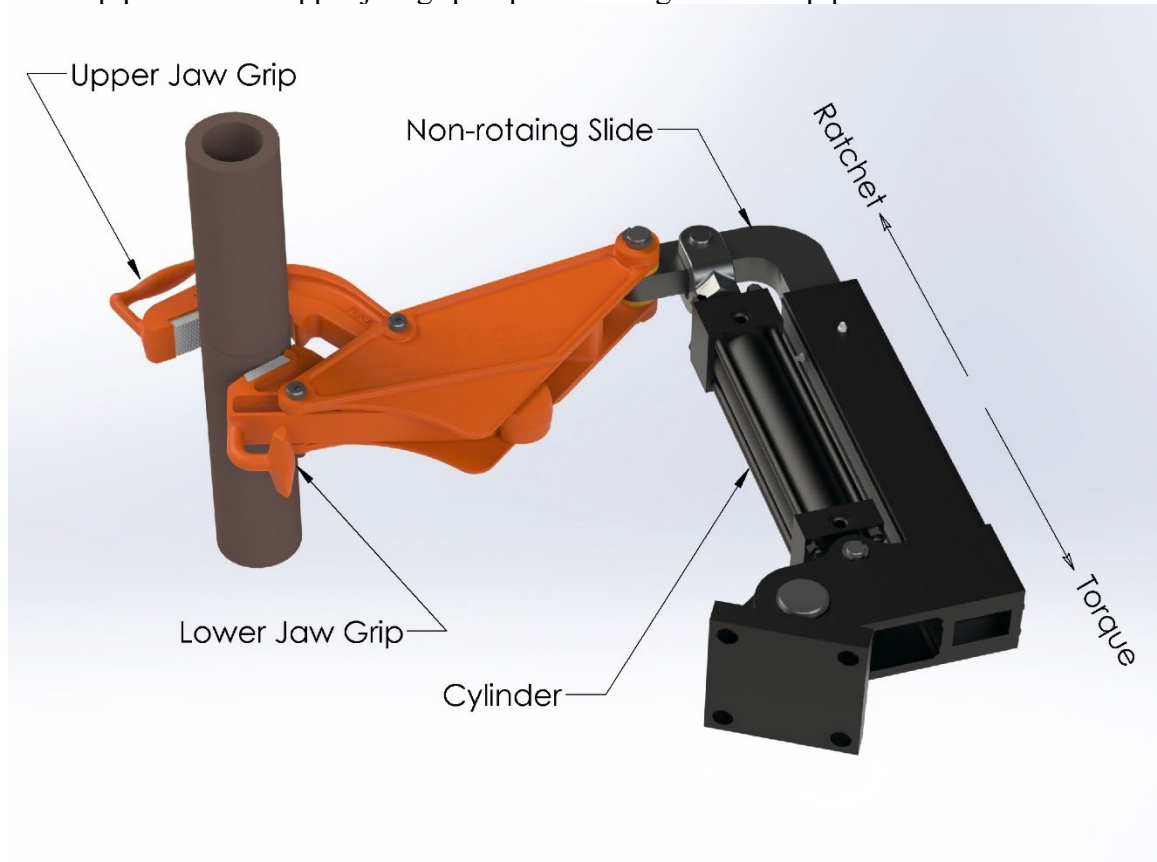
Side pull on the tong. Side pull can be caused by pulling or pushing on the tong in a direction that is not along a perpendicular plane, inadequate support of the part being broken out, and improper seating of the part being broken out in the tong. Improper seating will occur when the OD of the part is not consistent within the width of the tong jaws.

Safety Precautions

1. Always wear safety goggles to protect eyes.
2. Select the right tool for the job.
3. Keep tools in good condition.
4. Use tools correctly.
5. Keep tools in a safe place.
6. Wear protective clothing, gloves and safety shoes as appropriate.
7. Use only PETOL™ replacement parts to ensure proper strength.

Operation

The typical application of the PETOL™ Rig Wrench is shown in the figure below. The tong will exert torque when the cylinder is retracted as shown. The tong will ratchet when the tong is extended as shown. Ratcheting is used when the tong must be pulled more than once to completely makeup or breakout the connection. Use the lower jaw grip to pull the tong fully onto the pipe. Use the upper jaw grip to pull the tong off of the pipe.



Suspension

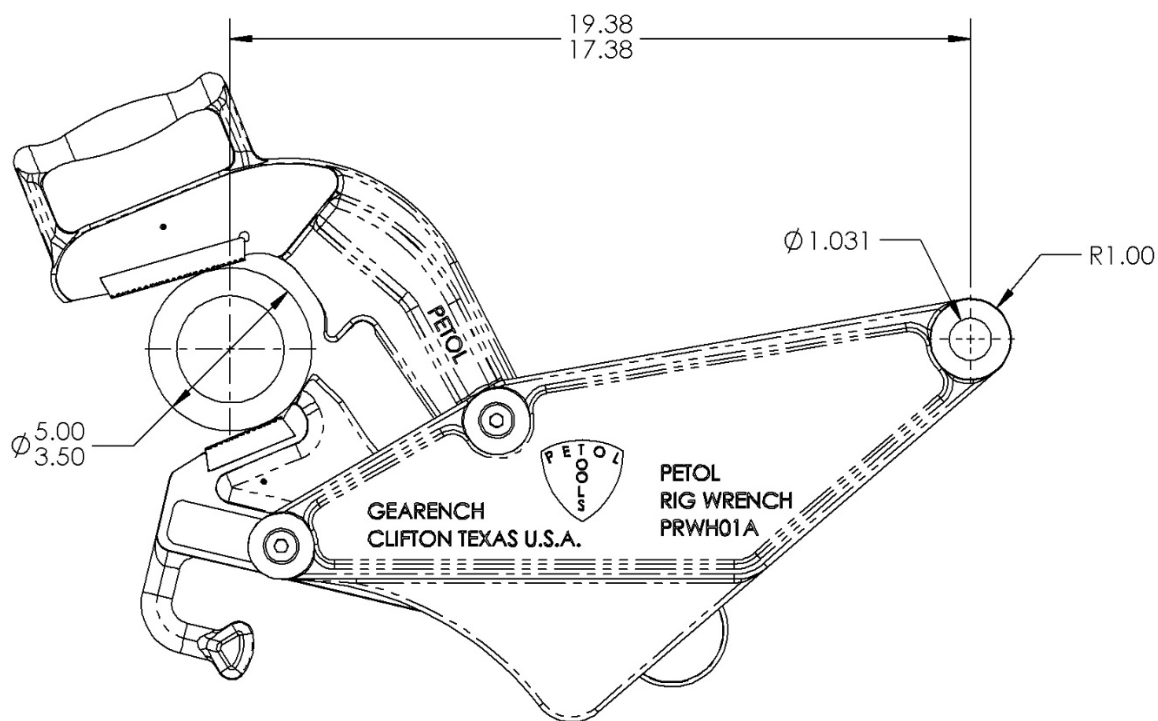
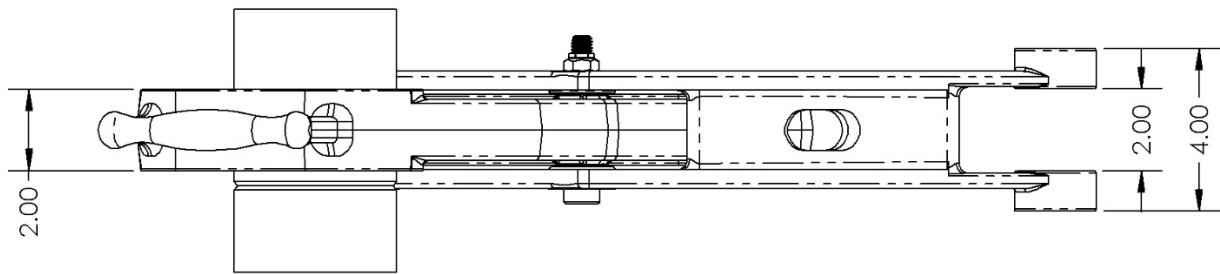
The tong is typically suspended by utilizing a cylinder coupled with a non-rotating slide. If a non-rotating slide is not used, secondary suspension of the tong should be utilized. Always use a suspension method of adequate capacity to safely hold up the tong during operation.

Torque capacity

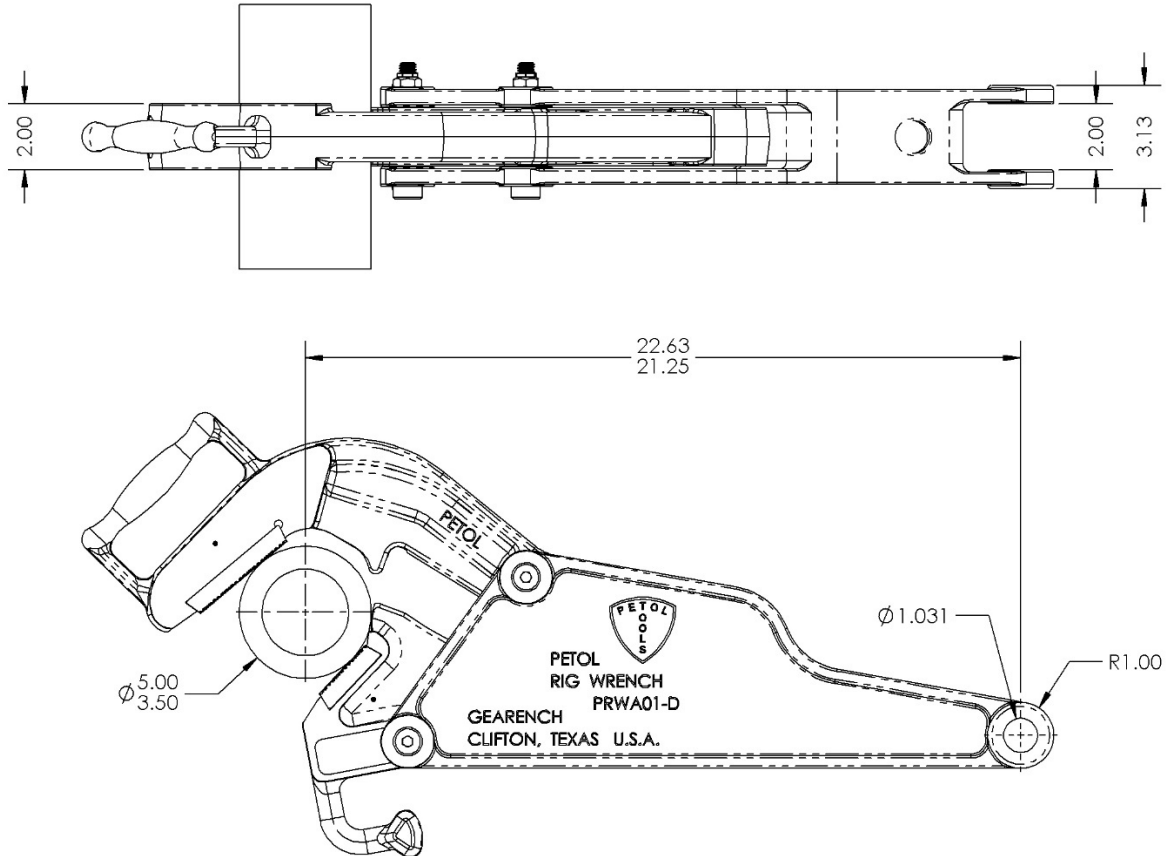
The PRWA01 and PRWA01-D Petol Rig Wrenches are rated at 16,000 ft-lbs maximum on all diameters.

WARNING: Under no circumstances should the maximum working load be exceeded. Always use a load cell or other calibrated indicating device to monitor the line pull on the tong to avoid an overload.

PRWA01 Dimensions



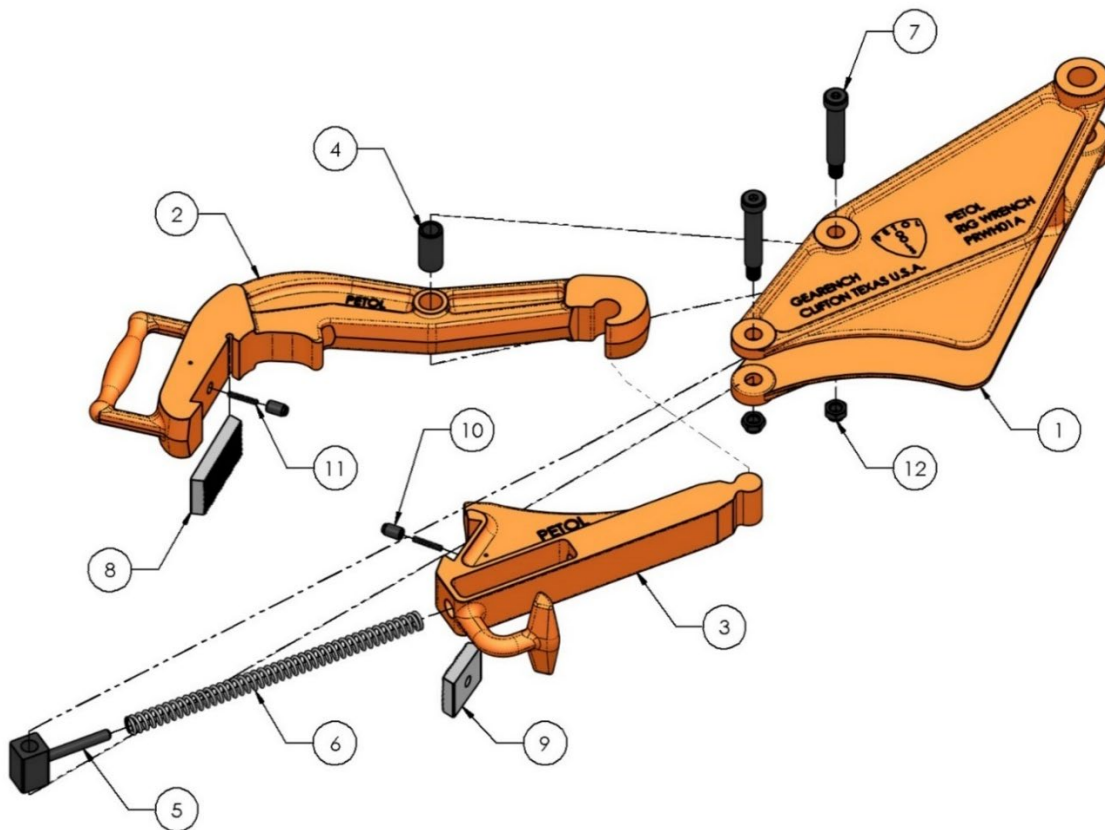
PRWA01-D Dimensions



Parts List

The following drawings, diagrams, and parts lists describe all parts, which may be needed as replacement items.

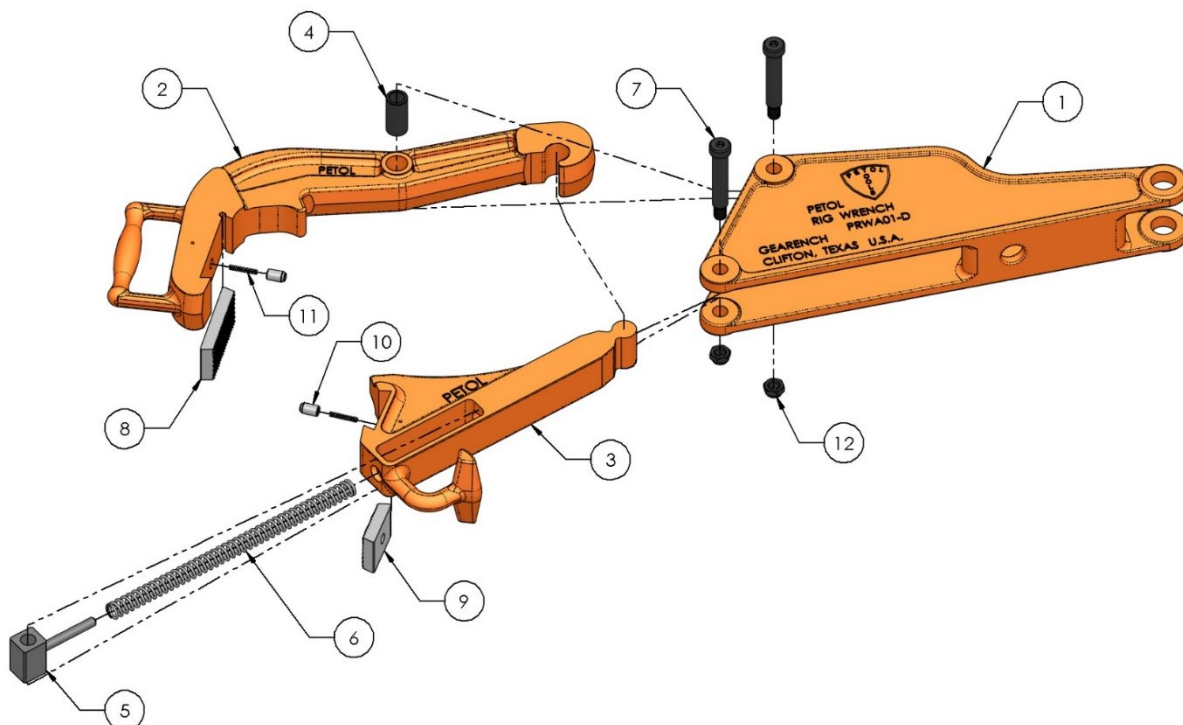
All tong components are manufactured only by PETOL™. DO NOT ATTEMPT TO SUBSTITUTE THESE COMPONENTS. The tong will not work properly unless these components are matched to the specific application. Consult our factory as your requirements change. Any non-PETOL substitutions of these components void all warranties and subject the user to assumption of liabilities resulting from subsequent use.



PRWA01 Parts List

Item	Qty	Part Number	Description
1	1	PRWH01	Handle
2	1	PRWU01	Upper jaw
3	1	PRWL01	Lower jaw
4	1	HU60	Upper jaw bushing
5	1	HU61	Lower jaw bushing
6	1	HS29	Spring
7	2	HB57	Jaw bolt with nut
8	1	HI09D*	Upper jaw diamond point insert
8	1	HI09T-4*	Upper jaw tooth insert (4 pitch)
8	1	HI09T-7*	Upper jaw tooth insert (7 pitch)
9	1	HI30D*	Lower jaw diamond point insert
9	1	HI30T-4*	Lower jaw tooth insert (4 pitch)
9	1	HI30T-7*	Lower jaw tooth insert (7 pitch)
10	2	HP903	Insert key
11	2	HS20S	Insert key spring
12	2	HXN016	Jaw bolt nut only

*T-4 or T-7 inserts MUST BE USED to work 3-1/2" O.D. – Diamond point or teeth inserts can be used to work ALL OTHER O.D.'s. See page 12.

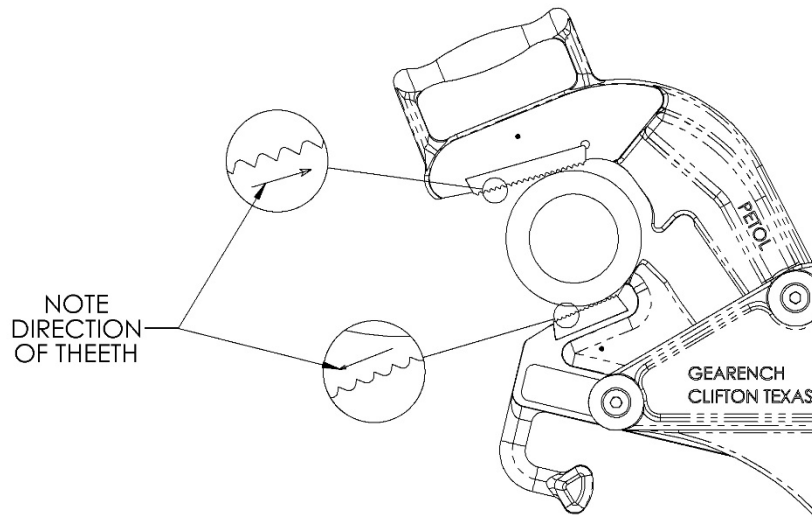


PRWA01-D Parts List

Item	Qty	Part Number	Description
1	1	PRWH01-D	Handle
2	1	PRWU01	Upper jaw
3	1	PRWL01	Lower jaw
4	1	HU60	Upper jaw bushing
5	1	HU61	Lower jaw bushing
6	1	HS29	Spring
7	2	HB57	Jaw bolt with nut
8	1	HI09D*	Upper jaw diamond point insert
8	1	HI09T-4*	Upper jaw tooth insert (4 pitch)
8	1	HI09T-7*	Upper jaw tooth insert (7 pitch)
9	1	HI30D*	Lower jaw diamond point insert
9	1	HI30T-4*	Lower jaw tooth insert (4 pitch)
9	1	HI30T-7*	Lower jaw tooth insert (7 pitch)
10	2	HP903	Insert key
11	2	HS20S	Insert key spring
12	2	HXN016	Jaw bolt nut only

*T-4 or T-7 inserts MUST BE USED to work 3-1/2" O.D. – Diamond point or teeth inserts can be used to work ALL OTHER O.D.'s. See page 12.

Teeth Insert Installation



Note: Always install teeth inserts as shown in this diagram. Failure to do so could result in improper gripping.

Tong Inspection

It is recommended that the tong be visually inspected on a daily basis for signs of damaged components. It is recommended that the tong be periodically removed and disassembled to measure wear on all components.

Wear Limits

The following table indicates limiting diameters on the components of the PRWA01 and PRWA01-D. When localized wear is beyond any one of the limits indicated, the component must be replaced.

Part Number	Description	Location	Limit diameter
PRWH01	Handle	Upper jaw bolt hole	0.640 (max)
PRWH01	Handle	Lower jaw bolt hole	0.640 (max)
PRWH01	Handle	Load loop	1.051 (max)
PRWH01-D	Handle	Upper jaw bolt hole	0.640 (max)
PRWH01-D	Handle	Lower jaw bolt hole	0.640 (max)
PRWH01-D	Handle	Load loop	1.051 (max)
PRWU01	Upper jaw	Handle bushing hole	0.896 (max)
PRWU01	Upper jaw	Lower jaw pivot hole	1.018 (max)
PRWL01	Lower jaw	Upper jaw pivot body	0.977 (min)
HU60	Upper jaw bushing	Outside diameter	0.852 (min)
HU60	Upper jaw bushing	Inside diameter	0.645 (max)
HU61	Lower jaw bushing	Inside diameter	0.637 (max)
HB57	Jaw bolt	Body diameter	0.612 (min)

Weld Repairs

There are no weld repairable components on the PETOL™ Rig Wrench. All damaged or excessively worn components MUST be replaced.