

nepros CONCEPT BOOK

nepros

BRAND STORY

NEW PROFESSIONAL SATISFACTION

NEPROS

To develop the best tools in the world, KTC created nepros, born by reviewing all materials, design, and production facilities.

Beginning in 1990, KTC set out to offer automotive maintenance professionals the best tools in the world. During the next five years KTC created nepros line with new original material/ new production method, overcoming normal tool standard.

KTC's aim in developing these tools was very simple: To create ideal tools by thorough examining all other top-quality tools from the world as well as interviewing of 300 professional mechanics. The nepros are ideal tools which are superior than other top-quality products.

The nepros is named after "NEw PROfessional Satisfaction." Satisfies mechanics' demands for thinner/longer tools usable in complicated/narrow spaces.

Not only shiny beauty but also handiness grasps the heart of all mechanics.

The nepros continues to develop in order to satisfy professional mechanics all over the world.

Warranty

Only if the nepros is not functional due to production/material problem, we will replace/repair the product. This warranty does not cover abnormal use by customers, abrasion case, consumable products such as screwdriver and so forth.



ABOUT KTC

COMPANY CREDO

"Serve society through creating Tools that are Light, Strong and Easy to use"

KTC occupies No.1 position in Japanese tool market.

Top manufacturer of hand tools in Japan for about 70 years.

Serving prime companies such as Toyota and other car manufactures as well as railways, airplanes, constructions, machine tools etc. with more than 10000 items.

Best quality Hand Tools for all customers.

CONCEPT



"Strength" "Handiness" and "Beauty"!
The shape shows KTC technology.

The essential principles of KTC tools:
"Strength, Handiness and , Beauty"

Strength

Unique designs and advanced heat processing with high-strength and high-toughness material.

Handiness

Unique Design for handy and beautiful tool.

Beauty

An elegant style and a beautiful hard chrome plating.

SPONSORSHIP



TOYOTA GAZOO Racing WRT
FIA World Rally Championship (WRC)



Kawasaki Team GREEN
Suzuka 8 Hours Road Race
(All-Japan Road Race Championship)

KTC's passion "Fight together aiming for the top in an extreme environment".

KTC supports in a variety of motor sports such as TOYOTA GAZOO Racing WRT in the FIA World Rally Championship (WRC), Kawasaki Team GREEN in the Suzuka 8 Hours Road Race (All-Japan Road Race Championship).

KTC nepros are admired with professional mechanics who fight in extreme races.



The "nepros" Analysis

The nepros is ultimate tool to stimulate the sensibility of professional mechanics.
This section explains nepros function in detail.

RATCHET HANDLE



Excellent handy style

Gear that even takes into account the sound during use

Spin the nepros gear and you will hear a clicking sound. This beautiful sound is composed by a precision mechanism with a feed angle of 4°, a 7-step claw, and a 90-tooth gear. The nepros has created an innovative structure for the drive mechanism. Increasing the number of gear teeth leads to a strength decrease. The KTC solution is to achieved an equivalent level of strength by increasing the number claws which catch on gears to 7 and thereby distributing the force. Furthermore, designing the claw and changer as separate parts makes it possible to perform detailed adjustment for each spring. This achieves the gears' fine engagement with claws, light spinning torque, and smooth movement.



Reliable switch lever

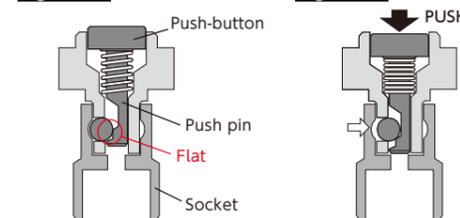
The swing of the switch lever is big to ensure reliable operation.



Union Mechanism

Thanks to the Union system, the ball is held by a surface that is not tapered but flat. Therefore, even if the user attempts to remove the socket without the push button, the ball is not pushed in and the socket cannot be removed (Figure 2-A). By pushing the button, the push pin lowers and the ball drops down by one stage, and the socket can be easily removed (Figure 2-B). This structure prevents the socket from being removed from the ratchet handle. It prevents the socket from falling when working in high places, etc.

Figure 2-A ● Hold a socket Figure 2-B ● Desorp a socket



The flat surface prevents from inserting balls.

Push button preventing operational mistakes

Reducing projection of the release button for the Union Mechanism will prevent useless release. A large button is used for easy pushing.

Compact head

The compact head shape increases operational efficiency.



Replaceable gear and claw

A repair kit is available as well.



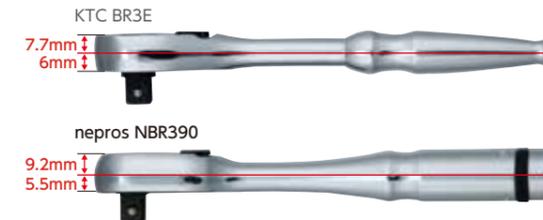
Balanced/Elegant Grip

To answer the poor weight balance problem, KTC's solution was the unprecedented idea of using a hollow structure for the grip. The grip seems to form by integrated molding; but KTC's unique processing technology made a hollow interior. The result is an outstanding balance between ratchet thick grip and ratchet head.



Special structure

The nepros has the grip center offset very close to the head. The nepros ratchet handle has the grip center offset towards the insertion point with the head. The force exerted on the grip closer to the socket transmits to the socket.



90-tooth gear

The required range for the 90-tooth gear nepros is about 12 mm. The 90-tooth gear contributes work efficiency. Working in an environment which has space for the grip end to only move by 50 mm is possible. Since nepros only requires 12 mm per 1 notch, it is possible to turn by 4 notches, or 16°.



RATCHET HANDLE LINEUP

Major lineup



NBR390H STUBBY RATCHET HANDLE
The nepros compact ratchet handle fits in the palm of your hand. This highly-convenient tool can be used in various combinations with inserting angles.

NBR390 COMPACT RATCHET HANDLE
The ratchet handle consists of 3/8"sq. drive mounted on 1/4"sq. ratchet handle. Five types available: Standard, Long, Short, Flex, and Short Flex.



SOCKET

3/8"sq.



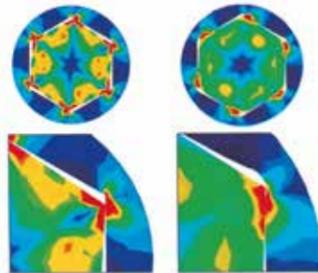
Small, thin, and compact form socket



- Compact design**
The compact tool has a shorter height and smaller external diameter made possible by an ideal design, tough materials, advanced processing technology, and optimal heat processing.
- Beautiful surface**
Hard chrome plating for anti-wear, anti-corrosion, and anti-peeling.
- Rubber ring preventing slippage**
The rubber ring greatly improves workability during hand-cranking.
- Clear engraving**
The beautifully-refined engravings are easy to see and increase the efficiency of work.
- Unique design for fitting with other drive tools**
Uses a larger ball in drive tools. Optimized socket ball groove prevents backlash and achieves superior fitting.

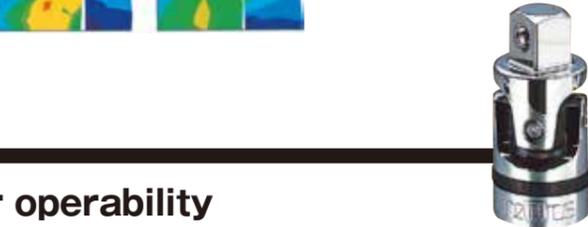
N-PowerFit shape

N-PowerFit shape distributes stress through a gentle arc in the bore by enlarging the contact surface. Ideal contact prevents damage to bolts and nuts and increases the strength of the socket. This shape contributes to compact size of the socket too.



Original dimensional standard

KTC's original dimensional standard reduces the fit gap with bolts and nuts to the absolute minimum, creating a superior fit feeling.



QUICK SPINNER

3/8"sq.



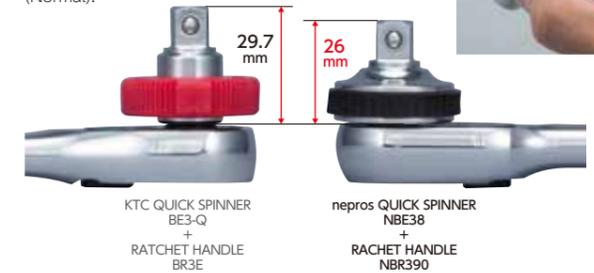
Perfect grip design for rapid turning



- Rubber ring for increased workability**
Together with rapid rotation and resistance to slippage, the rubber ring significantly increases workability at the time of pullout.
- Uses N-PowerFit shape**
- No rattling**
With a larger ball and unique settings for the ball groove, the spinner enables stable work without any shaking during usage.
- Compact design**
Thickness is reduced to realize a compact design.

Fast and comfortable

The nepros ratchet handles' excellent external diameter allows rapid rotation by grabbing & rotating with fingertips. Insertion angles: 1/4"sq. (Normal type), 3/8"sq. (Normal/Compact), 1/2"sq. (Normal).



T-SHAPED WRENCH

NHT-08-14



NBHT3



Ultimate T-shaped handle for outstanding balance and operability

Rubber rings for increased grip strength

Increasing grip strength by preventing slippage during work, the rubber rings attached to each end of the handle serve as contact surfaces for protection when the handle is placed on the floor.

Precise and accurate press-fit processing

The joint between the handle and shaft uses accurate press-fit processing. Precise processing technology is required in order to open a hole in the center of the handle and press-fit the shaft. This process produces the handle and shaft at a 90° angle and makes rotation extremely smooth. Unlike welding, no protuberances are formed on the joint area.



KTC T-SHAPED WRENCH TH-8

nepros T-SHAPED WRENCH NHT-08

Clear engraving

Size is displayed in large engraving on the handle top and in the socket hole. The Handle/Body press-fit portion is processed into a hexagonal shape for T-shape wrenches/a square shape for T-shape handles. This makes recognition easy.

Available for various tool tip attachments

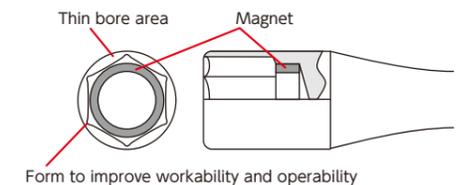


Unique form for fast-rotation performance

Handle top & bottom are shaved down into equal weight. During rapid rotation, this design creates inertia which produces smooth rotation. Moreover, the handle length is different for each size. Tools with ultimate length for rapid rotation exert required torque on bolts and nuts of all sizes.

Thin design and magnets for tiny space

The bore uses N-Power Fit shape for distributing stress. Minimizing the gap between the handle and bolts/nuts with a thin design improves workability. A magnet creates holding bolts/nuts and access to recessed spaces.



UNIVERSAL JOINT

3/8"sq.



Smooth power transfer and superior operability

Extra smoothness: Grand Cross mechanism

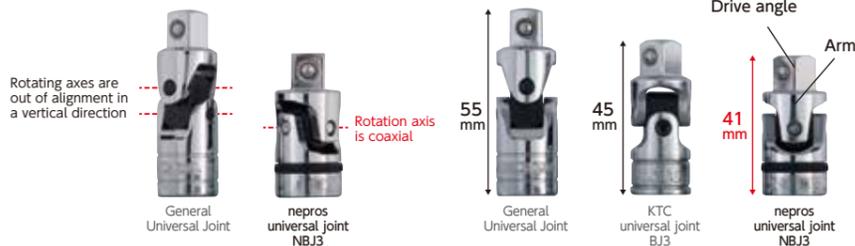
Universal joint has two rotating axes which are out of alignment in a vertical direction. Consequently, movement becomes jittery as the angle becomes greater. The nepros solution: comfortable work does not bend past an angle where it is possible to rotate and transmit torque, unlike usual versions.

Compact body

Strength was increased by shifting the drive angle by 45° together with achieving a thinner body.

Smooth access with firm holding

The nepros universal joint with spring force provides smooth access to bolts. Universal joint with socket will shake if holding force is not sufficient, and accessing bolt gets difficult.



The nepros universal joint NBJ3 does not shake and provides firm hold even with a 24 mm socket NB3-24 (weight: 90 g).

EXTENSION BAR

Magnificent form for excellent torque transfer



Elegant form for superior torque transfer

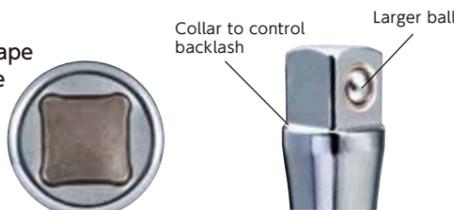
Elegant form was created by stress analysis. This form prevents twisting stress from being focusing on one particular point. This achieves excellent torque transfer and smooth feeling during use.

Ball and shape to prevent backlash

A larger ball is used to improve fit with the socket. Installing a collar on the fitting area decreases backlash.

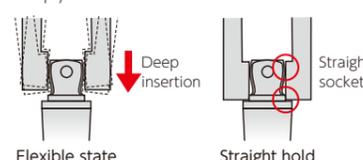
Inserting angle uses N-PowerFit shape which transfers force at the surface

Product strength was improved by N-PowerFit for the insertion angle. N-PowerFit distributes stress by expanding the contact surface.



Straight hold mechanism's other use

The nepros wobble extension bar has a flexible joint area and can be used as a swing head extension bar. Using the straight hold mechanism makes it possible to hold the socket straight by inserting the socket more deeply.



COMBINATION WRENCH



Form to improve workability and operability

Compact head
This new spear-shaped head was born from stress analysis. Shaving away extra thickness while maintaining thickness in areas exposed to stress allowed us to achieve an even slimmer tip shape.

15° rise angle with compact box end area for both sides
The rise angle on the box end side has a 15° angle for common use. The step between the handle and joint makes it possible to use both the front and back sides. The compact external diameter is among the smallest in the world and is ideal for work in tight spaces.

N-Power Fit protection for bolts/nuts and bore with minimized taper
Features N-Power Fit shape, which increases the contact surfaces with bolts and nuts, as well as a bore section with minimized taper. Gripping from the bottom of the bolt/ nut prevents sliding.

Various sizes
Three lengths: short, standard, long. Possible to select the best length to use for your work environment.

Side surface shape is ideal for hands
The side of the handle is wide and easy to grip. The shape prevents hand pain.

Clear engravings
Large and easy-to-see engravings are used on the front and back. Visibility as well as workability are improved.

ADJUSTABLE WRENCH



Unique grip shape born for of easy gripping.

Handy spear-shaped head
The head features a spear shape for tight spaces.

Width-across-flat scale
Features an easy-to-see width-across-flat dimension scale.

Well-balanced & Handy Grip
The grip features an elliptical shape. Grip gets thicker in order to improve the weight balance.

15°-type to use with hexagon bolts
Normal adjustable wrenches have an angle of 23°. However, nepros adjustable wrenches have an angle of 15° for use with hexagon bolts. This improves workability in tight spaces.

WOODEN GRIP SCREWDRIVER



Beautiful and functional form; special tip shape for perfect fit with screws

Magnetic tip shape for less gap/slippage
Conventional screwdriver: Gap between screw and screwdriver tip. Fits all the way in. nepros: Minimizes gap between screw and screwdriver tip. Tip hits the bottom of the screw head. Since the tip does not contact the bottom of the screw head, the screwdriver tip fits securely into the groove.

Bolster corresponding to hard screw
Push the screwdriver with one hand, and use a box end wrench to turn the bolster and apply even stronger torque.

Beautiful elegant grip for force control
The grip is elegant for a beautiful and original form. High-quality maple wood is used in the grip. The hexagonal shape is easy to grip with the warmth of the wooden material. Furthermore, the center part has a depression which makes it easier to push and turn.

Different color of cross (plus) and flat (minus)
Cross (plus) has a red (cherry red) finish while flat (minus) has a green (forest green) finish.

KTC original steel
Considering cross (plus) and flat (minus) driver, KTC uses original steel of chromium vanadium of different hardness.

BOX END WRENCHES



Basic functions and variations for reliable use

Bore area/N-Power Fit shape prevent damage to bolts/nuts
The N-Power Fit shape increases the contact surface with bolts and nuts. The bore area minimizes taper to ensure contact of the bolt bottom with the nut head.

Side surface shape: ideal size for hands and easy to put in force
Handle is wide and easy to grip.

Asymmetrical design: Expanding the range of use
The nepros half-moon wrenches have a unique asymmetrical design with different radius from left/right sides. The different radius enlarges the range of use and provides support for a variety of situations. Combination with a same-sized S-shape box end wrench with a different radius satisfies various demands.

Improving workability: Adding an angle to box end wrench
KTC added a 15° angle to the bore of the straight standard hexagonal box end wrench and a 7°30' angle to the straight standard box end wrench. Using both the front and back of the tools enables work in a range of 30° for the hexagonal type and 15° for the dodecagon type. *The dodecagon type fixed at an angle of 7°30' is only available for the straight standard box end wrench.

Thickness controlled according to direction of work
A thin design is used for the straight type, which is often used to access in vertical directions. On the other hand, a smaller external diameter is used for the normal box end wrench, which is often used to access in a horizontal direction. This realizes excellent design for the work situation.

Clear engravings
Clear engravings are used on the front and back. Visibility is enhanced and workability is improved.

Rise angles of 45° and 6°
Rise angles of 45° and 6° are used to bring the center of the bolt closer to an imaginary line extending straight from the handle. This design reduces stripping and transfers torque directly.

Ultimate torque transfer and workability
Torque transference is further improved by special design with the center of the bolt closer to an imaginary line extending straight from the handle. The protruding shape on one side enables usage even when there is spot facing around the bolt or nut. The rise angle is designed to start straight and then reach 15° ideal for tiny spaces.

Length and protruding bore area for excellent workability
This wrench is 1.5 times longer than standard wrenches and has a bore area which protrudes largely to one side. This ensures secure fit with offset bolts, thus increasing the range of work.

Comparison of head
Round type: FLAT TYPE STANDARD BOX END WRENCH
Straight type: 15° OFFSET WRENCH



URUSHI Ratchet Handle



Ergonomic Beauty × Japanese Artistic Beauty

The nepros URUSHI(Lacquered) Ratchet Handle is the ultimate masterpiece combining the techniques of Kyoto craftsmanship and Kyoto aesthetics.

The nepros, the world's finest tool has been recreated as the Urushi series, with Japanese aesthetics to create a lacquered tool.

Simplicity and fortitude of functional beauty, and traditional beauty's gorgeous appearance. Experience an ultimate masterpiece born from the fusion of Kyoto craftsmanship.

