

### **Instruction Manual**

### **BP-T Series Battery Oil Pulse Tools**







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#### CONTENTS

Safety Precautions	
Warranty	8
Handling Method	
Battery and Charger	
Troubleshooting	
Maintenance	
Exploded View & Parts List	
Fill, Draw, & Torque Sheet	

Failure to follow all the instructions is dangerous. Read this manual before installation, operation, maintenance, or inspection of this system. Use this system only after you master knowledge of BP-T safety information and warnings. Keep this handbook at hand always.

This handbook uses two safety notifications: DANGER and WARNING



**DANGER:** Improper operation will very likely result in a fatality and/or heavy personal injury. Use the tool properly to avoid accidents.



**WARNING:** Improper operation could result in a hazardous situation and personal injury and/or property damage. Always follow instructions.

#### For Safe Operation

Basic design of this tool is a lithium ion battery-powered motor rotating a
pulse unit, which converts the rotation into repeated hydraulic pulsing for
tightening or loosening the fastener. Never use or modify this tool for
other purposes for safety and product longevity reasons. Keep hands
clear of all rotating assemblies to avoid injury.



- Follow all instructions to prevent fire, shock, and personal injury.
- Operators should be trained using this manual and have access to it.
- When transferring this tool to new personnel, ensure that this manual remains with it.

#### **DANGER**

- Wear ear protection if the noise level is higher than 85dB(A) at the worksite. Wear impactresistant eye protector during operation.
- Do not overwork the tool. Doing so can result in personal injury, smoke or fire from the motor, motor damage, or damage to the tool anvil.
- For operator safety, hold tool body firmly during operation to maintain control.
- Do not allow unauthorized persons at the worksite. Tool should be used by trained adult personnel and kept away from children.
- 5. Use correct charger, power cord, and battery with this tool. Do not charge the battery using another manufacturer's battery charger. Do not use this tool's charger for other manufacturer's batteries. Do not use modified battery packs. Doing so could result in battery explosion resulting in property damage or injuries.
- Read this manual carefully, and charge the battery properly. Improper usage could result in the charger or battery pack catching fire.
  - Use the charger with the specified rated power supply. Do not plug the charger into direct current, generators, or an external transformer. This can cause abnormal heat resulting in damage or injury.

- Do not charge the battery below 0 °C (32 °F) or above 40 °C (104 °F).
- Use charger and recharge batteries in a well ventilated area. Do not cover the charger with any fabric or enclosure.
- Unplug charger when not in use.
- 7. Do not touch power plug with wet hands. Doing so can result in electric shock.
- Maintain a safe work environment.
  - Do not use the tool, charger, battery in any area subject to rain or moisture.
     No portion of the tool, battery, or charger should be exposed to water.
  - Maintain proper lighting in the workplace.
  - Do not use the tool or charge the battery pack where combustible gases or liquids are present.
- Immediately stop outdoor battery charging and disconnect power cord from socket if thunder or lightning is present.
- 10. Do not expose or dispose of the battery in fire. Do not heat battery pack with a hot plate or microwave. Doing so dissolves insulations, damages protective systems, and can cause explosion or fire.

- Do not drive a nail into the battery pack. Avoid forceful impact of the battery. Do not disassemble and modify battery pack.
- 12. Do not short battery terminals with metal pieces.
- Do not carry or store battery pack and metal pieces together.
- 14. Do not charge, use, or leave battery pack in hot areas, such as in the sun or near a fire. Doing so could cause the battery to catch fire or explode.
- Do not use a battery whose running time per charge becomes short.
- Attach pack cover to battery pack immediately after it is removed from charger to avoid terminal exposure.
- 17. If battery is leaking fluid, do not touch fluid with bare hands.
  - Getting battery fluid in your eyes can result in blindness. If battery fluid gets in your eyes, do not rub with your hands. Wash your eyes with clean water and have your eyes examined and medically treated by an eye doctor immediately.

- Battery fluid can cause inflammation or injury if it contacts skin. Wash off battery fluid with clean water and see a doctor.
- Keep fluid-leaking battery pack away from fire after withdrawal of use and immediately consult the distributor who sold it to you.
- Avoid accidental start of the tool. Do not carry the tool with your finger touching the trigger.
- 19. Release the trigger and remove battery pack from tool whenever performing the following:
  - When adjusting torque
  - When replacing accessories such as socket or driver bit
  - When replacing battery pack
  - When tool is not in use or under repair
  - When operation is dangerous
- Use genuine and original accessories and/or attachments.

### **MARNING**

#### 1. Proper fastening time

- Give BP-T a break occasionally. Operating tool for a long time raises temperature of motor and pulse unit.
- Overload or long hours of operation raises motor temperature. A heat protection feature will stop the tool when excessive duty cycle causes the motor to heat. Use the tool only for applications whose load does not trigger heat protection.

#### 2. Operation at low temperatures

The tool operates using a pulse unit containing hydraulic fluid. Should tool be left for extended periods at temperatures below 5 °C (41 °F), the tool may not deliver tightening force initially. This can be remedied by cycling the tool on a test fixture 1 or 2 times (10 seconds), which will preheat the pulsing unit to operating range.

#### 3. Caution for operation

- Do not use the tool in an awkward posture. Keep solid footing and maintain a balanced position. Keep clothing and body parts away from rotating parts.
- Do not wear loose-fitting clothes or dangling jewelry when tool is in use. Keep

- long hair away from tool during operation.
- Hold BP-T securely during operation to enable a quick response in the event of unexpected behavior.
- Unless otherwise required, do not rev the tool.
- Do not carry BP-T with your finger on trigger to avoid accidental start.
- Take a break occasionally when working with the tool to eliminate potential injury from fatigue. Stop operation at once if you sense health problems, such as pain.
   See a doctor and follow treatment.
- Confirm rotating direction before you start the tool.
- Do not impact the tool by dropping or throwing.
   Reckless handing will result in accidents or breakage.
- When working outdoors, wear insulating gloves and a pair of non-skid shoes.

#### 4. Operating instructions

- Confirm that no person interferes with the work environment or is in a hazardous position.
- Stop operation at once, and request service if abnormalities are found with the tool's operation.

#### 5. Check for damaged parts

- Confirm that tool functions normally before operation by visually checking the appearance of the battery connection.
- Do not use charger if power plug or cord has been damaged by dropping. Use of such a charger can cause electric shock or fire.

#### Do not mishandle charger's power cord.

- Do not pull cord to unplug power plug from socket.
- Do not carry charger by its power cord.
- Keep power cord away from heat, oil, or pointed objects.
- Arrange power cord so it will not be stepped on, caught, or stressed. These situations can cause early breakage, and possibly cause charger to catch fire or short circuit.

#### 7. Always keep workplace clean.

 A cluttered workplace or workbench can cause accidents.

# 8. Keep children away from workplace.

- Do not allow unauthorized operators to touch the tool, charger, or power cord.
   Personal injury is possible otherwise.
- Keep unauthorized persons away from workplace.

# 9. Store tool and charger properly when not in use.

· Keep the tool and charger

in a dry, locked, safe place out of the reach of children.

# 10. Make sure tool is free of oil and debris.

 Foreign matter can cause accidents due to dropping, or can cause the tool to overheat or catch fire.

#### 11. Do not strain to use BP-T.

 Operate BP-T at the right speed corresponding to tool's capacity for safe and effective operation.

## 12. Motor's overload protection function

 This function will activate and stop motor rotation when the anvil becomes locked for 1 second with the trigger depressed.

# 13. Perform regular maintenance inspections.

- Check power cord for damages periodically and request replacement if damage is observed.
- Inspect extension cords on a regular basis. If damage is found, request a replacement.
- Keep handle grips dry and clean. Avoid oil or grease.

# 14. Use appropriate extension cord for outdoor charging

 When operating outdoors, use only an extension cord rated for outdoor use, such as a cabtyre cord.

#### 15. Stay alert and pay attention.

 Be aware of surroundings, tool handling methods, and workplace environment.

- Careless operation can lead to accidents and personal injury.
- Avoid operating the tool when you are tired.
- Tools and chargers should be repaired only by an authorized service center.
  - If tool or charger needs repair, contact the distributor who sold it to you. Repair by nonauthorized personnel can destroy the tool, as well as result in accidents and personal injuries.
  - Do not disassemble, repair, or modify tool or charger.
     Fire or personal injury is

- possible. Modification of tool or charger destroys conformity with corresponding safety standards.
- Send battery pack and charger together for repair if charger overheats.
- 17. Make sure this manual stays with tool and charger when lent to others.
  - Read this handbook carefully before operation.
     Misuse results in accidents and personal injuries.
- 18. Do not stare directly at LED for long periods of time.
  Doing so will injure your eyes.

**DISCLAIMER** 

Contents of this book are subject to change without notice.

#### **NEW TOOL AND ACCESSORY WARRANTY**

Any new tool or accessory branded with the AIMCO, Uryu, AcraDyne or Eagle Industries name, and purchased from AIMCO, or through one of its authorized distributors or agents, is warranted to the original buyer against defects in materials and workmanship for a period of one (1) year\* from date of delivery. Under the terms of this warranty, AIMCO will repair or replace any product or accessory warranted hereunder and returned freight prepaid proving to AIMCO's satisfaction to be defective as a result of workmanship or materials. In order to qualify for this warranty, written notice to AIMCO must be given immediately upon discovery of such defect, at which time AIMCO will issue an authorization to return the tool. The defective item must be promptly returned to an authorized AIMCO service center with all freight charges prepaid.

#### REPAIRED TOOL WARRANTY

Once a tool is beyond the new product warranty period as detailed above, AIMCO repairs are subject to the following warranty periods: pneumatic tools: 90 days\*; electric tools and Acra-Feed: 90 days; battery tools: 30 days\*; DC Electric tools: 90 days\*

#### **EXCLUSION FROM WARRANTY**

This warranty is valid only on products purchased from AIMCO, or thru its authorized distributors or agents. AIMCO shall have no obligation pursuant to the AIMCO Warranty with respect to any tools or accessories which in AIMCO's sole judgment have been altered, damaged, misused, abused, badly worn, lost or improperly maintained. This Warranty is null and void if the customer, or any other person other than an authorized representative of AIMCO, has made any attempt to service or modify the tool or accessory prior to its return to AIMCO under this Warranty.

The warranty provision with respect to each such product may be amended by AIMCO from time to time in its sole discretion. The liability of AIMCO hereunder shall be limited to replacing or repairing, at its option, any products which are returned freight prepaid to AIMCO and which AIMCO determines to be defective as described above or, at AIMCO's option, refunding the purchase price of such products.

AIMCO reserves the right to make periodic changes in construction or tool design at any time. AIMCO specifically reserves the right to make these changes without incurring any obligation or incorporating such changes or updates in tools or parts previously distributed.

THE AIMCO WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, AND AIMCO EXPRESSLY DISCLAIMS ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. THIS WARRANTY SETS FORTH THE SOLE AND EXCLUSIVE REMEDY IN CONTRACT, TORT, STRICT LIABILITY, OR OTHERWISE.

THIS WARRANTY IS THE ONLY WARRANTY MADE BY AIMCO WITH RESPECT TO THE GOODS DELIVERED HEREUNDER, AND MAY BE MODIFIED OR AMENDED ONLY BY A WRITTEN INSTRUMENT SIGNED BY A DULY AUTHORIZED OFFICER OF AIMCO.

#### LIMITATION OF LIABILITY

AIMCO'S LIABILITY PURSUANT TO WARRANTY OF THE PRODUCTS COVERED HEREUNDER IS LIMITED TO REFUND OF THE PURCHASE PRICE. IN NO EVENT SHALL AIMCO BE LIABLE FOR COSTS OF PROCUREMENT OF SUBSTITUTE GOODS BY THE BUYER. IN NO EVENT SHALL AIMCO BE LIABLE FOR ANY SPECIAL, CONSEQUENTIAL, INCIDENTAL OR OTHER DAMAGES (INCLUDING WITHOUT LIMITATION, LOSS OF PROFIT) WHETHER OR NOT AIMCO HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH LOSS, HOWEVER CAUSED, WHETHER FOR BREACH OR REPUDIATION OF CONTRACT, BREACH OF WARRANTY, NEGLIGENCE OR OTHERWISE. THIS EXCLUSION ALSO INCLUDES ANY LIABILITY WHICH MAY ARISE OUT OF THIRD PARTY CLAIMS AGAINST BUYER. THE ESSENTIAL PURPOSE OF THIS PROVISION IS TO LIMIT THE POTENTIAL LIABILITY OF AIMCO ARISING OUT OF THIS AGREEMENT AND/OR SALE.

Note: The AIMCO Warranty confers specific legal rights, however some states or jurisdictions may not allow certain exclusions or limitations within this warranty.

\* All warranty periods addressed herein are determined using a standard shift, eight-hour work day.

#### **Parts**



Ambient temperature:  $0 - 40 \, ^{\circ}\text{C} (32 - 104 \, ^{\circ}\text{F})$ .

Rotating speed change: 3-steps

Slow speed: 500 rpm – 1,000 rpm for socket-bolt entry or temporary

tightening

Model	Motor Voltage DC	Approx. Free Speed (rpm)	Bolt capacity (nominal size) (mm)	Approx. Torque Range* (Nm)	Weight with battery pack (kg)	Approx. Overall Length (mm)	Sq Dr/ Hex. size (mm)
BP-T40		2 200	M5	4.5~8		197	9.5 SQ
BP-T40D	10.8 V	3,300	CIVI	4.5~6	1.4	200	6.35 Hex
BP-T50		3,900	M6~M8	7~15	1.4	197	9.5 SQ
BP-T50D		3,900		6.5~13		200	6.35 Hex
BP-T60	14.4	4,800	M8	13~26	1.6	202	9.5 SQ
BP-T60D	17.4	<del>-</del> ,000	IVIÖ	13~20	1.0	205	6.35 Hex

<sup>\*</sup>Torque range for reference only

#### **Tool Operation**

1) Set rotation direction. Set reverse lever to R for Right or L for Left.



#### 2) Squeeze trigger

- Speed increases in 3 steps as you squeeze the trigger in both forward and reverse modes.
- Release finger from trigger and the brake will stop the rotation.

#### 3) Fasten

- · Keep trigger pressed until BP-T automatically stops.
- Fastening torque will not reach preset torque (NOK) if you release trigger prior to automatic shut-off.
- Do not cover exhaust hole. Doing so will restrict tool ventilation, and can elevate exhaust temperature to a dangerous level.

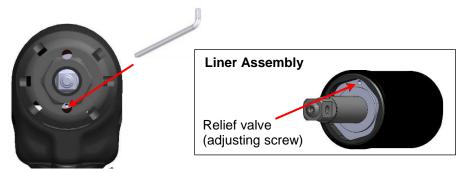


#### Number of fasteners per 1 full charge:

Model	Fastening condition	Number of fasteners
BP-T40 series	UFT-6 (M6) hard joint Fastening torque 7 Nm for 0.3 sec. per fastener	1,000 approx.
BP-T50 series	UFT-10 (M8) hard joint Fastening torque 12.5 Nm for 0.3 sec. per fastener	700 approx.
BP-T60 series	UFT-10 (M10) hard joint Fastening torque 21Nm for 0.4 sec. per fastener	600 approx.

Actual number of fasteners per charge depends on work conditions. Numbers in the table above do not cover time consumed per fastener, which increases as tool's temperature increases throughout job progression.

- 4 Adjust torque only when tool is operating in forward (CW) rotation.
  - Release finger from trigger and remove battery from tool before adjustment.
  - Insert an allen key through the front casing and firmly into the hexagonal relief valve hole. Adjust relief valve according to the torque ranges listed in the following table.



#### Torque Range

Model	Relief valve position
	Full relaxed to left ~ full fastened to right
BP-T40	4.5 Nm ~ 8 Nm
BP-T40D	4.5 Nm ~ 8 Nm
BP-T50	7 Nm ~ 15 Nm
BP-T50D	6.5 Nm ~ 13 Nm
BP-T60	13 Nm ~ 26 Nm
BP-T60D	13 Nm ~ 26 Nm

The above torque ranges were obtained using UFT testers set at hard joint. Torque observed in actual fastening applications depends on workplace conditions and bolt-seating surface.

#### Shut-off information LED

LED color	Tool status
Green	Fastening OK
Red and Green alternating	Battery level is less than 5% or battery error
Red and Orange alternating	Tool is protected from overload, over discharge, or excessive battery pack temperature.
Red	Tool is protected from excessive motor heat.



#### WARNING

A heat protection feature stops the tool when the motor gets too hot, regardless of relief valve shut-off presets. Refer to the following instructions regarding heat protection.

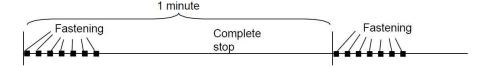
#### **Heat protection**

When the tool gets hot, the LED lights red and the tool stops rotation. Avoid use for at least 30 minutes. Once the tool has cooled to room temperature, and the LED is off, it is safe to restart operation.

#### Work interval guideline

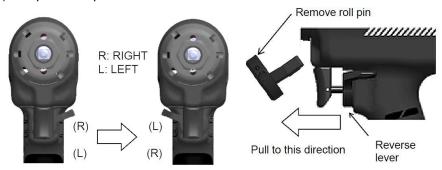
Following the fastening conditions shown in the table on the previous page, a BP-T50 / BP-T60 will be able to fasten at least 7 fasteners a minute, with no downtime, before the heat protection feature will trigger. Only the BP-T40 can cover 11 fasteners a minute.

Avoid continuous work or heavy load, which overburdens the motor.



#### **Change Reverse Lever Direction**

- 1) Remove battery pack from BP-T.
- 2) Remove roll pin.
- 3) Pull reverse lever forward to remove it.
- 4) Change the setting and reattach reverse lever to tool.
- 5) Replace roll pin.



#### LED Battery Level Indicator

Squeeze trigger, and battery level LED will indicate battery level by its color. BP-T stalls when battery level is less than 5%. During pulsing, the LED color can change from green to orange.



#### LED battery-level indicator colors

LED color	Battery level (%)
RED light appears immediately	Less than 5%
after stalling, then goes out.	
ORANGE	6~10%
GREEN	11~100%
RED	Battery error



When LED lights RED, BP-T will stop fastening even before reaching the preset target torque. Replace the depleted battery with a fully charged one.

Charge a brand-new battery completely before first use. Ending battery charging prematurely can cause the LED to incorrectly display remaining capacity. If this happens, charge the battery fully a few times, and the LED should display correct information.

#### Factors that can affect fastening torque

#### 1 Work conditions

Fastening torque can vary even for bolts of the same diameter. The transmitted torque can change depending on bolt grade, length, coefficient determined by bolt quality/work condition, condition of bolt seating, and distance between fasteners. Torque transmission can also be affected if the bolt and nut rotate together even after fastening.

2 Engagement gap among socket, BP-T anvil, and fastener Ensure that fit of the tool anvil to the driving socket and the socket engagement to the fastener are tightly toleranced. Poor fit of the tool anvil to the socket and/or poor fit of the socket to the fastener will result in inaccurate torque delivery to the tightened joint.

#### 3 Trigger

Keep trigger fully squeezed until the tool automatically shuts off. Early release of the trigger can cause automatic shut-off to fail.

4 Low torque posed by inclusion between BP-T and socket A universal joint, connector, or long socket that increases the distance from the tool to the fastener can reduce torque transmission.

### Battery and Charger

BP-T is driven by the following Lithium-ion battery packs.

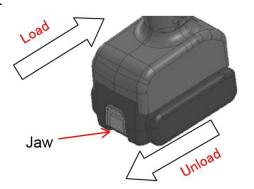
### Specifications

Tool	Battery	Voltage / Capacity	Charging time	Weight
BP-T40 BP-T50	EYFB32 PANASONIC	DC 10.8 V 2.0 Ah	Approx. 40 minutes	Approx. 0.29 kg.
BP-T60	EYFB41 PANASONIC	DC 14.4 V 2.0 Ah	Approx. 40 minutes	Approx. 0.35 kg.

#### Attaching and removing battery

Attach: Align barbs of tool (3 on each side) to barbs on battery and push battery toward BP-T until it makes a click sound.

**Remove:** Hold spring-loaded jaw down and slide battery forward to unload. Attach pack cover to battery's terminals to protect it from dust.



#### **Battery Charger**

BP-T batteries are charged with the Panasonic slide-loading type Lithiumlon battery charger model EY0L82B



Input voltage: 120 VAC

Battery Capacity: 3.0 – 4.2 Ah

Weight: 2.0 lb (0.93 kg)

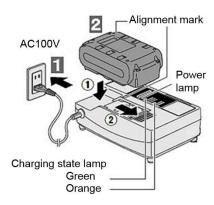
Dimensions: 9.3" D x 7.1" W x 3.6" H Use dedicated power plug only.

Strictly follow the above rated power source when using the charger. Download charger's manual from Panasonic home page.

#### Loading and unloading batteries on to battery changer

Charging the battery:

- 1 Plug charger power plug into a socket. The power lamp should light.
- 2 Load battery pack into charger.
  - ① Align battery in charger using alignment marks and place battery onto charger dock.
  - ② Slide battery pack forward in the direction of the arrow.
- 3 Unload battery pack after charging, and unplug charger from socket.



#### When to replace the battery pack

Depending on work conditions, the battery pack will perform approximately 500 charge/discharge cycles. It is time to replace the battery pack with a new one when the length of charge life decreases to half despite an initial full charge.

#### **Battery pack storage**

Store lithium-ion battery packs without charge after use. Remove any foreign matter from terminals. Cover battery using pack cover, which helps avoid short circuits and protects terminals from debris. Do not store batteries in a hot or humid place.

#### Battery pack recycling

The Lithium-ion battery pack is recyclable, and should not be mixed with general household waste. Return used battery packs to the distributor who sold them to you. Cover terminals of the battery pack with insulating tape to avoid short circuit for return shipment.

#### Troubleshooting

Confirm the following before you place an order for repair.

Symptom	Possible cause	Remedy
Tool does not run	Battery level is below 5%	Charge battery
Tool gets hot	Tool has been overworked	Allow tool to cool to room temperature. Lessen the load of the job or use a larger BP-T tool.
Tool makes "growling" sound at slow speed	Internal magnet reaction causes noise at motor/pulse connection	This is a normal condition inherent to the tool design.
Anvil stops rotating at slow speed	Motor heat protection has been activated	Release trigger. Fully depress trigger, and tool will not start even if the anvil is fixed again.
Torque delivered is lower than preset torque	Bit or socket has worn out	Replace bit and socket with a new one.
Number of fasteners per full charge has decreased	Battery charge low or battery is at end of lifespan	Recharge battery or replace with a new one.

Immediately stop operation if the above steps fail to remedy a problem with the tool. Deliver tool to an authorized service center for evaluation.

#### Maintenance



#### **DANGER**

1. Check for any loose parts, breakage, or wear of all parts prior to each use



#### WARNING

- Tool casing is made of plastic. Wipe it with a soft dry cloth. Do not use volatile liquids or wet cloths because doing so will cause deterioration/discoloration of the materials.
- 2. Store the tool in a place that remains between 0-40 °C (32-104 °F), is moisture free, dust free, and free from direct rays of the sun.
- Periodic inspection:
   It is recommended that a trained service center disassemble and adjust the tool every 100,000 cycles, or every 3 months, whichever comes earlier.

#### Overhaul, Adjustment, Inspection, and Repair



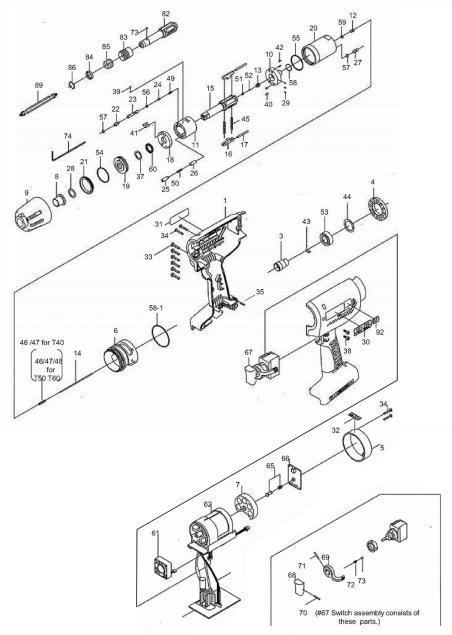
#### **DANGER**

A battery pulse tool is a precision tool. Disassembly, assembly, and adjustment require exclusive JIGS plus testers, and trained techniques. Incorrect disassembly, re-assembly, or adjustment can cause not only insufficient power but also accidents. Ask for these services from an authorized service center. The maker or supplier will not be held liable for any damages caused by factors found to be the cause of faulty use or repair by users or unauthorized service providers.

#### Inquiries

Contact your distributor with inquiries regarding the BP-T tool.

### Exploded View & Parts



	Part #	Description	Qty				
CO	MMON PART	S FOR BP-T40, T40D, T50,	T50D,				
	T60 & T60D						
3	10E-079-1	Connector	1				
5	10E-065-1 10E-012-1	Handle Front Cover Handle Cover	1				
6	10E-036-1	Hammer Casing Connector	1				
8	190-328-6	Anvil Bushing	1				
12	145-546-6	Piston	1				
13	145-929-6	Check Valve Cover	1				
14	10E-130-1	Operating Rod (1.4 x 81.5)	1				
18	18C-973-8	Liner Casing Spacer	1				
19	18E-904-1	Front Liner Plate	1				
21	10E-906-1	Liner Casing Cover	1				
22	145-907-6	Relief Valve Spindle	1				
24	144-270-0	Pressure Regulator Valve	1				
26	080-274-6	Pressure Valve Spring Collar	1				
27	194-742-0	Oil Plug	1				
28	145-327-7	Anvil Front Spacer	1				
29	150-064-5	Plug	3				
30	10A-924-1	Name Plate for BP-T40	1				
	10A-924-0	Name Plate for BP-T40D	1				
	10C-924-1	Name Plate for BP-T50	1				
	10C-924-0	Name Plate for BP-T50D	1				
	10E-924-1	Name Plate for BP-T60	1				
	10E-924-0	Name Plate for BP-T60D	1				
31	094-997-4	Plate (Address & Others)	1				
32	094-996-4	Plate (Warning)	1				
33	963-253-0	Tapping Screw (3 x 16)	6				
34	861-181-1	Tapping Screw	4				
35	910-404-0	Battery Level Display Cover	1				
37	944-213-0	Supporting Ring (12 x 16 x 1)	1•∎▲				
38	945-024-0	Allen Head Screw (M3 x 8)	2				
39	970-013-0	Pin (H) (1.5 x 4)	1				
40	970-130-0	Pin (H) (2.45 x 4.5)	2				
41 42	970-131-0	Pin (H) (2.45 x 9.5)	2				
42	973-040-0	Roll Pin (1.5 x 5)	1				
43	974-952-0	Woodruf Key 3 x 12 (3)	1				
46	975-798-0 976-989-0	Adjusting Spacer 24 x 18 x t	ı				
47	976-969-0	Spring (3.3 x 17.5) (Standard)	1				
52	981-001-0	Spring (3.3 x 18) (Weak)	1				
53	982-902-0	Ball (3/32)	1				
54	990-329-0	Ball Bearing (6901) O-Ring (JW1530-19)	1●■▲				
55	990-329-0	O-Ring (3W 1330-19)	1004				
56	990-621-0	O-Ring (3.8 x 1.8 x 1.0)	10=4				
57	990-900-0	O-Ring (SNS-2)	10=4				
58	990-906-0	O-Ring (SNS-8)	10=4				
58-1	990-933-0	O-Ring (SNS-39)	1				
59	991-025-0	X-Ring (4.7 x 2.2 x 1.25)	1•∎▲				
60	991-030-0	X-Ring (X12)	1•■▲				
61	911-033-0	Fan Assembly	1				
65	861-173-1	Slide Base Assembly	1				
66	863-972-1	Control Board and LED	1				
67	09B-174-4	Switch Assembly	1				
68	147-107-2	Valve Lever	1				
69	09B-212-5	Reverse Lever	1				
	973-014-0	Roll Pin (2 x 14)	1				
70	313-014-0						
70 71	973-014-0		1				
		Roll Pin (2 x 18) Spring (3 x 5)	1				
71	973-018-0	Roll Pin (2 x 18)	_				

#	Part #	Description	Qty
COM	MON PARTS	FOR BP-T40, T40D, T50 &	T50D
1	10C-025-1	Handle	1
7	10C-013-2	Handle Rear Cover	1
9	10C-439-1	Front Casing	1
10	10C-901-1	Rear Liner Plate	1
11	10C-902-1	Liner	1
16	145-440-0	Driving Blade	2
17	145-974-0	Roller Pin (2.5 x 21)	2
20	10C-905-1	Liner Casing	1
45	976-791-0	Spring (3.3 x 21) WPC	2 •■
50	976-777-0	Spring (3.0 x 13.5)	1 •∎
		FOR BP-T50, T50D, T60 8	
48	976-985-0	Spring (3.3 x 18) (Strong)	1
51	976-847-0	Spring (2.4 x 5.3)	1 ■ ▲
		FOR BP-T40 & T50	
15	145-319-0	Anvil	1
74	891-300-1	Socket Pin Assembly	1
75	891-554-1	Anvil Assembly	1
_		FOR BP-T40D & T50D	•
82	145-350-2	Driver Anvil	1
_		FOR BP-T40 & T40D	•
23	092-970-8	Relief Valve	1
25	17C-276-4	Pressure Valve Body	1
49	976-756-0	Spring (2.8 x 6.9)	1 •
51	976-653-0	Spring (2.4 x 5.3)	1 •
62	911-030-0	Motor Assembly	1
		FOR BP-T50 & T50D	
23	093-970-8	Relief Valve	1
25	078-276-7	Pressure Valve Body	1
49	976-826-0	Spring (2.9 x 7.6)	1 ■
62	911-031-0	Motor Assembly	1
	MON PARTS		
9	10E-439-1	Front Casing	1
10	10E-901-1	Rear Liner Plate	1
11	10E-902-1	Liner	1
16	145-440-6	Driving Blade	2
17	145-974-6	Roller Pin (2.5 x 26)	2
20	10E-905-1	Liner Casing	1
23	094-970-4	Relief Valve	1
25	080-276-6	Pressure Valve Body	1
45	976-805-0	Spring (3.5 x 25.2) WPC	1 🛦
49	976-883-0	Spring (2.8 x 7.6)	1 🛦
50	976-999-0	Spring (3 x 12)	1 🛦
62	911-032-0	Motor Assembly	1
		TS FOR BP-T60	
15	145-319-6	Anvil	1
74	891-300-1	Socket Pin Assembly	1
75	891-552-1	Anvil Assembly	1
		FOR BP-T40D, T50D, & T	
73	981-002-0		1
83	011-351-1	Ball (1/8) Bit Sleeve	1
84	011-351-1		1
85	976-327-0	Bit Spacer	1
		Spring (13.5 x 11)	1
86	978-117-0	Snap Ring (11.7 x 1.0)	1
	ESSORIES 020,004,0	Allen Wrongh /4 E) /00 :: 00)	4
74	939-091-0	Allen Wrench (1.5) (80 x 20)	1
89	916-810-0	Double Bit (No.2 x 75) for	1
	1	drivers	
_ 14.	main Dule : 5	Denois IVIA TADADA DOM	
• Ite	ms in Pulse F	Repair Kit T40(D)-PRK	
■ Ite	ms in Pulse F	Repair Kit T40(D)-PRK Repair Kit T50(D)-PRK Repair Kit T60(D)-PRK	

### BP-T Series Fill, Draw, & Torque Sheet

Key Model of this Tool Group	Full Volume of Liner Oil in Pulse Unit (approx.)	Volume to be Removed from the Full Volume (approx.)	Torque to Tighten Liner Casing Setter (approx.)	Torque to Tighten Liner Casing Setter (approx.)	Load to Press on Rear Liner Plate	Load to Press on Rear Liner Plate
					Hydraulic Press	P.T.R.F.
Model	cc's	cc's	NM	Ft-Lbs	Tons	Ft-Lbs/ Nm
BP-T40 & BP-T50	5.6	0.30+/-0.01	85+/-5	63+/-4	1	20/27
BP-T60	6.2	0.41+/-0.01	85+/-5	63+/-4	1	20/27



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