Service - Guide 2008
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Easy and fast to service
Simple design
Phillips s. driver fits for most screws and is attached with the tool box
No special tools are needed
Very easy to replace wear parts even by operator
All parts documented in the manual and available as spare parts out of the Orgapack KANBAN system.
Technical details

1 Motor system with 2 drive direction (1)
Belt drive unit for welding drive (2)
Separate cover for pc-board (3)
Touch panel for adjustments without mechanical components (4)
Strap on strap insertion
No adjustment for strap thickness or cutter
Components

- Friction welding unit
- Planetary gear
- Welding pressure spring
- Cutter
- MAXON Motor drive
- Belt drive welding
- Gear wheels tensioning
- Micro switch welding
Components

- Welding pressure screw
- Position marking
- Welding lever
- Rocker lever
- Spring for rocker lever
- Spring for cutting pressure
- Bearing cover
- Welding plate positioning screw
- Serial No.
Since manufacturing year 2007, all screws have a factory coating as thread-locker. This thread-locker has no effect after the screw was removed once. It's strongly recommended to use Loctite or a similar thread locking glue to lock all screws at the tool after removing (Exception: Plastic housing screws).
Strap width adjustment: 12-13mm (1/2“) or 15-16mm (5/8“)

> Front side strap guide (A) and rear strap guide (B) have to be changed

- 12-13mm Tool > Strap guide parts (1) have to be assembled (A)
  Both pins (2) have to be on position „13“ (B)

- 15-16mm Tool > No strap guide parts are needed at the front (A)
  Both pins (2) have to be on position „16“ (B)

The tool works without an additional strap thickness adjustment
Adjustments

Tension force

Adjustment +

Adjustment -

Welding time

Battery power

Indicator LED

Touch panel: Aluminium panel with micro touch switches
Function by pressure (No sensor)
## Adjustments

### A. Standard-Anzeige
**Standard display**

<table>
<thead>
<tr>
<th>Eingestellte Spannkraft</th>
<th>max.</th>
<th>min.</th>
</tr>
</thead>
<tbody>
<tr>
<td>grün / green / vert</td>
<td></td>
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<table>
<thead>
<tr>
<th>Keine Geräte-Funktion</th>
<th>max.</th>
<th>min.</th>
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<tbody>
<tr>
<td>rot / red / rouge</td>
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### B. Anzeige-Akku leer
**Display of empty battery**

<table>
<thead>
<tr>
<th>Kurz betätigen</th>
<th>max.</th>
<th>LED flashes</th>
<th>min.</th>
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### 1. Akkuladezustand prüfen
**Check battery capacity**

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<thead>
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<th>Appuyer brièvement</th>
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### 2. Spannkraft einstellen
**Adjust strap tension**

<table>
<thead>
<tr>
<th>Betätigen Push Appuyer</th>
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### 3. Schweisszeit einstellen
**Adjust welding time**

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<th>min.</th>
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Tension range setting

- 2 Tension ranges are available: Standart range (A) and low range (B)

- For range setting: Depress and hold „-“ in addition depress „strap tension“. Adjustment A or B is indicated through flashing LED. Change with „-“ or „+“
Reading out the strapping cycles

- Press and hold „+“, then press the „clock“.
  = LED 2 / 3 / 4 / . . . . starts flashing one by one.
  Count and note the flashes:

  LED 2 = 5 x  LED 3 = 6 x  LED 4 = 2 x  >>  2 6 5 0 cycles
Battery power indication

When the battery symbol is pushed, the LED displays the actual battery power:

LED 1 - 7 red > Battery is fully charged or minimum 30 – 50 cycles can be done
LED 1 – 6 red > Battery capacity get‘s lower, but still 25 + cycles can be done
LED 1 – 5 red > About 15 + cycles can be done. Battery charging possible
LED 1 - 4 red > About 10 + cycles can be done. Battery charging possible.
LED 1 - 3 red > Less than 10 cycles possible. Battery charging recommended

In general

- It‘s not recommended to charge the battery at display 1-7 or 1-6 !
- The battery recovers itselfe after heavy usage. It‘s possible, when
  the tool is not used for 15min. or longer, the display shows a different
  value.
Motor connection
Software port
Tension switch
Welding switch
Battery Connection
Serial no. Pc-board
Connection for touch panel flatcable

In cases of damaged touch pads, we recommend to use the optional available rubber cover > 2179.880
Important rules for best battery lifetime and capacity:

- New battery: Minimum charging time for the very first battery charge: 5 hours
- Do NOT charge batteries which are kept in the stock (self discharging)
- Empty the battery always in the strapping tool up to the last cycle
- Keep spare batteries in the charging unit. Use all batteries alternately.
- Do NOT charge the battery below 5°C (41°F) or higher 40°C (104°F) battery temperature
- Keep the charging unit in an environment with between 15°C (59°F) to 25°C (77°F)

For disposal of the batteries, the government instructions must be observed. Used or defective batteries must be recycled according to regulation 91/157/EC.
Battery details

Battery age: The BOSCH manufacturing code displays the battery age

Worn out batteries: After a certain amount of charging cycles, the battery capacity power is lowering. The battery can be refreshed, when it's discharged manually to nearly 100%. This can be done with a 12V car lamp for example, which is connected directly to the battery as long as the lamp is nearly off.

Attention: This should only be done after about 100 charging cycles the first time, and only after every 100 charging cycles.
Welding time + pressure adjustment

- **Time:** When all parts are in good condition, welding time on the display for a good seal and proper cutting is between 2 and 4.

- **Pressure:** The pre-pressure setting of the spring for proper sealing + cutting has to be as shown. To test: When moving the welding lever down-side with no strap in the tool, the lever has to move noticeably strong in the last 1/3 up to the end stop. If not, tighten the nut ¼ or ½ round more!
Adjustable welding point

The point of time the welding operation starts when the welding lever is moved down, is adjustable (all tools with series-no. 71500 and higher).

Correct setting: Place a distance-plate of 2.5mm thickness between lower and upper welding plate and move the welding lever down. There has to appear a piep-sound when the lever is at the end-position. Should the piep-sound appear much earlier or non, open the screw of the curve pos. 130 and reposition the curve on the axle. (Ensure you have NOT pushed the tension button before !)

Under regular circumstances, the original manufacturer setting has never to be changed!
Drive System

2 direction Maxon motor

Drive end welding

Drive end tensioning

Drive output welding

Drive output tensioning

Drive belt welding

Welding unit

Planetary gear unit
**Drive System**

**Freewheel, one direction bearings:**
Rotation direction is marked on the abutting face of the bearings! Pay attention to the assembling direction as marked!

**Ffreewheel one direction bearing**
>> tensioning  
(Marking on left side, as pictured)

**Ffreewheel one direction bearing**
>> welding  
(Marking on right side, as pictured)

**Attention: Lubrication + dirt**

DO NOT use grease for the freewheel bearings or any other part of the welding system. Use a high quality oil spray for high frequent rotating parts.

Ensure that the freewheel bearings are free of any kind of dirt.
Welding + cutting unit

- Cutting: The upper side strap is moved through the welding shoe beyond the cutter knife. Through the cutter spring pressure the strap is cutted during the welding process.

- Problems: Check the teeths of the cutter and the cutter spring (pressure)
Motor-311313 / Motor-brushes - Old version

BXT19 up to series-no.: 3/74299
BXT up to series-no.: 2/8490

Manufacturing of the old version motor (311313) has been stopped. The brush cover-set is still available.

The motor-brushes are wear parts and can be replaced separately. All other motor parts are with very low wear; The brushes can be replaced 3-4 times without negative impact of the motor performance.

For this a brush-cover set which includes the complete end-cover with new brushes is available.

**Indication of worn brushes:**

- Motor does not turn in one of the both directions
- Motor has no rpm or power in one or both direction.

**Brushes are manufactured from special material which is not available in the free market!**

DO NOT replace the single brushes only.

Read and understand the service guide!
1) Mark the position of the original brush cover exactly on the motor – IMPORTANT!
   > Brush-cover, middle of cut-out for red-cable to the motor-housing.

2) Remove the 2 screws, the lock washer and the washers.

3) Remove the end-cap from the motor housing.
   If not possible, rotate the motor so the lock-nut move to the inner side.

4) Worn our brushes: Spring is in end position on brush guide.

5) Take the new brush cover and place the 2 lock-nuts in it's position.

6) Move the brush cover (with the white plastic pin still in) on the motor axle.
   Remove the white plastic pin.
   Assemble first the black plastic disc (flat side upper side) on the axle, than the bearing.

7) Adjust the brush-cover (cut-out red cable) to the marked position of the motor housing
   Tight the screws and assemble the washers and the lock washer.

8) Push the bearing in it's position: 3-4 light strokes with the back side of the screw driver on the motor axle.
   Check the axle play, point 9!

9) Final-Check: Check the axle play. This should be around 0.1mm. If more or less,
   remove or add aditional washers.
Motor-333618 / Motor-brushes – New version

BXT19 series-no.: 3/74300 and higher
BXT series-no.: 2/85000 and higher

BXR + BXT19 have been equipped with an updated motor with a new brush system > Product-Information 12-2007

The motor length changed; All tools manufactured before 03-2007 need a new motor-cover when the new motor is used with.

The new brush-cover does NOT fit to the older motor series!

Indication of worn brushes:
- Motor does not turn in one of the both directions
- Motor has no rpm or power in one or both direction.

New
> Motor 333618

Old
> Motor 311313
Assembly instructions

1) Mark the position of the original brush cover exactly on the motor – IMPORTANT!
   - Brush-cover, cut-out for red-cable to the motor-housing.

2) Remove the 2 screws, the lock washer and the washers.

3) Remove the end-cap from the motor housing.
   If not possible, rotate the motor so the square-nuts can move to the inner side.
   Take care of the cables, pull easily only.

4) Take the new brush cover and place the 2 lock-nuts in their position.

5) Place the brush cover (with the black plastic pin still in) over the motor axle all the way to
   the stop. The pin will be moved out. Remove the plastic pin.
   Turn in the screws but do not thight them completely. Assemble next the black plastic
   disc (side with the 2 rings up) on the axle, then the ball bearing. Make sure, the ball
   bearing is inserted all the way to the stop.

6) Adjust the brush-cover (cut-out red cable) to the marked position on the motor
   housing
   Tight the screws and assemble the washers and the lock washer.

7) Final-Check: Check the axle clearance. It should be around 0.1mm. If necessary,
   remove or add additional washers. Check the correct position of the Brush cover.
Tool Check und preventive Service (Enduser-Information)

Dayly:
Check Tension-wheel (38) and gripper plate (46) for strap abrasion. Clean them if soiled. 
**Open rocker when disassembling / assembling the tension wheel. Pay attention to the turning position.**

High Volume applications (more than 400 Cycles/day): 

Every 2-weeks:
Remove tension + welding side cover (100 + 146). Clean if soiled. Check tension wheel + gripper plate on wear (teeths).

Monthly:
Check seal and cutting performance. If welding time has to be adjusted on level 7 for proper welding / cutting, welding mechanics and or cutter are worn. Check welding parts (87, 82, 81) on play. Check cutter (95) on side gap. 
If cutter has play (+0.2mm) in part 75, replace 75 and or cutter 95.

Remove Motor-cover. Check movement of drive belt on easy movement in both directions.

Open rocker (40) with rocker lever (109): There has to be a counter-force when moving the rocker lever upside. Otherwise, the springs 124+126 are worn and have to be replaced.

At high volume applications with 800 – 1000 cycles a day, we recommend a frequent preventive tool service every 3 months latest (Service-Contract)!
Help guide – defective tool

No Tensioning / Welding possible:
Check the cable connections to the pcboard.
Check easy movement of drive belt in both directions. Welding mechanics has to move free and easy. If not, bearing Pos. 83 could be damaged.
Check pc board on defective (burned) or lost parts.
Check micro-switches Pos. 132 / 168 on function.
Test function of motor: Connect direct to the battery. Test both turning ways (+/- and -/+ connection) / worn brushes?
Motor: Tools used in high volume applications (500+ cycles a day) can have worn motor brushes after 6-8 months.
Check touch pad on surface damage. Check function of touch pad buttons.

Tool series-no. below 69999: Min. tension force for weldign release required > Push tension button until tool stops tensioning itselufe !
Tools manufactured after 12-2006 have the new pc-board design: Welding after 1 x push of the tension button possible;

Slipping strap or tension wheel
Check Tension wheel / gripper plate on wear, abrasion or broken teeths.
Check rocker (40) for cracks.
Check rocker lever on counter force when opening the rocker. If movement is very soft, Springs 124 / 126 are worn.
Help guide – defective tool

Low seal effiency, bad cutting:
Check if welding plate 93 has no play in welding shoe 87.
Check downside-welding-plate on free movement in both ways in base-plate.
Check cutter on no side play in part 75.
Check welding shoe 87 on no play between pin 82 and connection rod 81; When more than 0.1mm play is detected, parts 87 + 82 have to be replaced.
Check welding pressure by moving welding lever down without strap in the tool. There has to be a counter force in the last 1/3 of movement. If not, tight the pressure screw.
At room temperature, welding + cutting with all straps on welding time setting 3 to 5 has to be possible. If 6 or 7 has to be adjusted, parts of the welding unit are worn or wrong adjusted!

Welding mechanics in downside-position – no strap insertion possible:
Spring 78 broken.
Help guide – defective tool

Worn tension-wheels / gripper plate:
About 75% of the claimed defective tension wheels have indications of manipulation and mishandling:
- Wrong cleaning
- Wrong assembling / dissasembling
- Wrong strap (steel strap !)
- Assembling without outer bearing

-Typical signs of wear / damage in relation with mishandling are pictured below; The tension wheel had contact to the gripper plate or an additional hard part (screwdriver eg.):

- Missing teeths and 3 rows ok: Side inverted assembling
- Missing teeths and ok. teeths: Contact to the gripper plate
- Cracked teeths; 1/3 of the top is missing: Contact to hard part.
Tension wheel – assembling / disassembling

Ensure the rocker is opened when the tension wheel is removed!

Ensure the gripper plate is placed without any shim or similar direct in the rocker.

Distance between tension wheel and gripper is only 0.1mm!

Take care all screws are mounted at the side cover and are tightened well;

A loose side-cover can damage the tension wheel teeths.
Help guide – defective tool

Reason for tension wheel contact with the gripper plate

- A 100% completely placed in tension wheel, and both bearings pos.36 assembled, can impossibly have contact to the gripper plate, as the rocker (pos. 40) ensures the distance between both parts!

- Rotating the tension wheel without side cover pos.100 or without the outer bearing pos.36 can cause contact with the gripper plate and can damage the teeths. Ensure tightened screws of the side-cover.

- Removing and assembling the tension wheel without opening the rocker before, can cause contact to the gripper plate and can damage the teeths.

- Side inverted assembling of the tension wheel will cause contact to the gripper plate and will damage the teeths when the wheel is rotating.

- Instruct the customer to read the manual for cleaning the tension wheels.
  In case of frequent needs of cleaning, the adjusted tension force should be reduced, and frequent tensioning in the jog-mode (several times pushing the tension button) should be avoided. Advice to adjust to the needed tension force and to push the tension button only once until the tool stops itself.

- Using BXT and PP strap, ensure, the lower tension setting range with „Soft-Tension mode“ is adjusted.
  (Only tools shipped 09-2007 (> 2/79204) and later); Soft-tension mode prevents slipping tension wheel and tensioning in the jogg-mode > less abrasion = less cleaning.

Older tools (< 2/79204): The latest pcboard version has to be used to have „Soft-tension-mode“.
All parts are exchangeable with older tool models
New: Material + hardness; Product-Information 10-2005
No need for exchange, when older design is ok.

New: Material and thickness; Product-Information 10-2005
Exchange old / new recommended (New = yellow colour)

New: Reinforced design; Product-Information 10-2005
Exchange recommended when high volume application

New: New design; Product-Information 11-2006
Exchange recommended when old moved out side tool-housing
Major Updates

New: New design; Product-Information 11-2006
Exchange recommended when high volume application

New: Quality / cover disc; In use since 11-2006
STB65 tools: Sapporo EZO 2RSR bearing with black cover disc

New: Hard + Software + protection coating; Product-Information 11-2006
No need for exchange when old design ok.
New: Soft-Tension-Mode at lower tension range setting (STB63 only)
Adjustment recommended for most PP strap applications.
All STB63 tools shipped since 09-2007 (2/79204) have this feature

Exchange with new pcboard recommended, when PP application and frequent
tension wheel problems.

New: All new bearing-design: Ball-cage, ball-runway; Grease
Used for all tools: 61/63/65 since 10-2007> 2/79776;3/73558;1/72031
New Part-no.: 1821.301.008 – lasered on bearing

Exchanged recommended, when cover disc of old bearing is missing

New: Reinforced Brush + Collector: Size + Material; Lifetime increase: +100%
New over all motor lenght; Exchangeable:Tools > 2/72000; 3/71500
Tools before 02-2007: Motor-cover has to be replaced!
Used for tools: 65 (12-2007) + 63 (02-2008)
New part-no.: 1821.140.066

Exchange recommended when brushes have to be replaced more often
than 1 x a year;
Control seal and cutting quality at every tool service, with the strap, the customer is using

Seal quality
- A high quality seal is welded over the complete welding area.