INSTRUCTION BOOK & PARTS BOOK

MODEL 181L-2
181L-20

1本針本縫上下送り

Single Needle, Lockstitch, Upper & Lower Feed Sewing Machine
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### OUTLINE

This is a single needle, lock stitch, link type take-up, rotary hook and upper and lower feed industrial sewing machine designed for sewing of medium and heavy duty materials.

1. Rationally designed upper feed mechanism performs perfectly in linkage with the feed dog to obtain smooth and clean stitching without puckering or wrinkle on various kinds of sewing materials, which results in increasing quality of sewn products.

2. Adjustable widely the length of stitch between 0 - 9 mm by the graduation dial and this is especially suitable for the sewing on tents, seats, canvas, etc., required long stitch finish. Big adjustment of the presser feet lift between 0 - 15 mm by the knee lifter indispensable the piping or cording works repuired on the materials such as sponge, pled leathers, etc.

3. In order to meet various sewing purposes, our prepared "sub-class" model machines, presser feet, feed dogs, binders and so on will assist your sewing requirements very much.

### SPECIFICATIONS

<table>
<thead>
<tr>
<th>MODEL</th>
<th>181L-2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Application</strong></td>
<td>Medium-heavy and heavy weight materials</td>
</tr>
<tr>
<td><strong>Thread to be used</strong></td>
<td>#8 ~ #50</td>
</tr>
<tr>
<td><strong>Sewing speed (MAX)</strong></td>
<td>2000spm</td>
</tr>
<tr>
<td><strong>Stitch length</strong></td>
<td>0 - 9 mm</td>
</tr>
<tr>
<td><strong>Needle bar stroke</strong></td>
<td>35mm</td>
</tr>
<tr>
<td><strong>Presser feet lift</strong></td>
<td></td>
</tr>
<tr>
<td>7mm by hand lever 15mm by knee lifter</td>
<td></td>
</tr>
<tr>
<td><strong>Needle</strong></td>
<td>DB×1 #21 (DP×17 #21)</td>
</tr>
<tr>
<td><strong>Sewing hook</strong></td>
<td>Large rotary hook automatically lubricated</td>
</tr>
<tr>
<td><strong>Lubrication</strong></td>
<td>Hand oiling (Hook part lubricated automatically)</td>
</tr>
</tbody>
</table>

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2. PREPARATION BEFORE OPERATING THE MACHINE
2-1 Setting up the machine

POSITION OF KNEE LIFTER AND DRIP PAN

Fig 1

Fig 2

2-2 SEWING SPEED

<table>
<thead>
<tr>
<th>機種 MODEL</th>
<th>機種回転数(針/分) Sewing speed</th>
<th>モーターパルプル取 (mm) Motor pulley size (outer diameter)</th>
<th>Vベルトサイズ V belt size</th>
</tr>
</thead>
<tbody>
<tr>
<td>181L-2</td>
<td>2,000 1,600</td>
<td>50Hz 2P 4P 60Hz 2P 4P</td>
<td>2P 4P</td>
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<tr>
<td></td>
<td></td>
<td>70 70 60 60 115 115</td>
<td>M39 M42</td>
</tr>
<tr>
<td></td>
<td></td>
<td>55 55 45 45 90 90</td>
<td></td>
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</table>
3. 操作上的注意

3-1 注油
- 在起始前必须使用符合标准的油。
- 使用过程中，如果油量低于1/2，应补充。
（图5）

3-2 カマの給油調節
- 根据材料的不同，调整给油量。
- 右侧（+侧）拧紧。
- 左侧（-侧）拧松。

4. ミシンの使い方

4-1 針の取り付け
- 将针插入针孔至右，逆时针旋转。

4. HOW TO SET THE MACHINE

4-1 SETTING THE NEEDLE
- 将针插入针孔至右，逆时针旋转。
4-2 下卷の準備
○下卷の巻き方
1) 糸巻車とベルトがスリップしないように木ネジで取付けて下さい。
2) ①〜④の順に糸を通しボビンに巻きます。
3) 片巻きするときは、巻き取る少ない方へ糸巻子盤を移動させます。
4) 糸が8分目位巻けるように、糸巻見調節ねじで調節します。

4-2 WINDING THE BOBBIN THREAD
○How to wind the bobbin thread
1) Fasten the bobbin winder 1 with wood screws where the bobbin winding wheel contacts correctly with belt.
2) Pass thread in the order fi ① to ⑤ and wind the thread around the bobbin a few times.
3) When the thread is wound evenly on the bobbin, adjust sliding the thread tension base to the left or right.
4) Adjust to bobbin winder adjusting screw so that the thread wound around the bobbin by out 80%.

○Removing the bobbin case
Remove the bobbin case by raising its latch with fingers.

○Threading the bobbin thread
1) Lead the thread through the threading slot of bobbin case pull the thread, then the thread comes passing under the tension spring to the delivery eye the bobbin case.
2) Insert the bobbin case into hook by holding its latch with fingers.

4-3 上卷のかけ方
天秤を最高の位置にして、Fig10の順に通します。

4-3 THREADING THE UPPER THREAD
Turn the pulley until the thread take-up oves to its highest point and the lead upper thread in the order shown in Fig.
4-4 THREAD TENSION

WELL SEWN (Upper and lower thread well linkaged at the center of fabric)

NO GOOD (Upper thread tension too strong or lower thread tension too weak)

NO GOOD (Upper thread tension too weak or lower thread tension too strong)

○ The needle thread tension

The thread tension nut adjusts the tension of the needle thread as shown in figure.

1) To turn the nut right for more tension.
2) To turn the nut left for less tension.

○ Adjusting the bobbin thread tension

Adjustment is done by turning the thread tension screw toward right or left. Proper tension when the bobbin thread is pulled out from the bobbin case will be about 30-50g of which tension the bobbin case is not fallen by its weight.

4-5 THREAD TAKE-UP SPRING

Adjustment standard of take-up spring's moving range is between 8-10mm. Adjustment is done by loosening the tension bracket set screw and then turn the thread tension stud toward right or left. Adjustment standard of take-up spring strength is between 40-50g. When changing the strength of take-up spring, loosen the bolt of thread tension stud and with the driver turn the stud toward right or left.
4-6 撃工圧力の調整

縫着物に応じて、撃工足、送り足の圧力の調整ができます。

圧力は必要最小限の強さでご使用ください。

4-7 送り歯の高さ

送り歯の針板からの突出量は1.0mmに合わせてあります。

締付条件及び送り歯交換などをとり
送り歯の高さを調節するには
1）上下送り歯の固定ねじをゆるめ
2）送り歯を上げて動かして調整し
締付けをきる程度にします。

4-8 締い目調節と返し縫い

○締い目長さ

送り歯の針板を縫うとき
送り歯を押す向きで回して下さい。

○返し縫い

返し縫いを行うときは送りレバー
をいっぱい下げます。ダイヤル数
字の締い目長さで返し縫いできます。

4-6 ADJUSTING PRESSER FOOT PRESSURE

The pressure of presser foot and walking foot is adjusted according to the sewing materials.

* Use the machine with minimum necessary pressure.

4-7 FEED DOG HEIGHT

The feed dog height above the throat plate is set from 1.0mm. To adjust the feed dog height, loosen the clamping screw of the feed lifting rock shaft crank and move the bar up and down to necessary height.

Tighten firmly clamping screw after the adjustment.

4-8 ADJUSTING THE STITCH LENGTH AND REVERSE FEED

○ The stitch length can be adjusted by turning the stitch dial. To make the length small, turn the stitch dial toward right while the reverse feed lever is pressed down toward.

○ Reverse feed can be done by pressing down the reverse feed lever to its lowest position. Reverse feed stitch length is obtained by turning the stitch dial.
4-9 送り足と押え足の調節
○送り足の前後位置の調節 (Fig18)
1）縫い目を大きくしてはずみを回し、送り足がもっとも前進した
位置で中轆がだましをゆるめます。
2）押え足の背面に当らぬ位置まで
送り足を回すか。
3）中轆がだましをきつく締めます。

○送り足と押え足の交互上下運動量 (Fig18)
交互運動量は均等が標準です。現
製物によっては、やや押え足の方
の上下運動を少なくすることもあります。
1）送りダルマねじをゆるめます。
2）天秤を最高位置にし、押え上げを
降ろします。
上送りダルマを
右に寄せる→ 均等になる。
左に寄せる→ 押え足の運動が少なく
なる。

○送り足と押え足の作動高さ (Fig20)
作動高さは標準状態で最小となっ
ています。縫製物によっては作動
高さを変えると有効です。
ナットをゆるめて、カムロッドポ
ス位置を変えます。
上位置→ 作動高さ最大 (5mm)
下位置→ 作動高さ最小 (2mm)

○送り足の送り量調節 (Fig21)
下送り量に対して上送り量は 1:1
に調整していますが、縫製条件に
よって下送り量に対し、上送り量を
変えることが出来ます。
ナットをゆるめて角駆動の位置を上下
に調節します。
上位置→ 送りピッチ小
下位置→ 送りピッチ大

4-9 ADJUSTMENT OF THE OUTSIDE FOOT AND INSIDE FOOT
○Adjustment of the forward and backward position of the outside foot. (Fig18)
1） Setting the stitch dial at the longest stitch position, turn the balance wheel until the outside foot is reached to its most advanced position. Then loosen also the screw of the upper feed driving rock shaft crank.
2） Move the outside foot toward you until it reaches close, but not in contact, to the back of the inside foot.
3） And, tighten the screw of the upper feed driving crank.

○Alternating up-and-down amount of outside(walking)foot and inside( presser) foot. (Fig19)

Standard adjustment is to be equal up-and-down amount of alternation. Depending on the kind of material, there may be the case that the up and down amount of the inside foot is smaller than the amount of outer side foot.
1） Loosen the clamp screw of the lifting rock shaft crank.
2） Lower the presser foot lifting lever at the position where the take-up is its highest position. As the lifting rock shaft crank is moved;
To the right→ equal alternation
To the left→ the up-and-down amount of inside foot becomes smaller.

○ Working height of outside (Walking) foot and inside ( presser) foot. (Fig20)
Working height under standard condition is minimised and it is effective to change the working height according to the materials.
By loosening the nut, change the position of the cam rod protrude part.

▲ Upper position→ Max. working height (5mm)
Lower position→ Min. working height (2mm)

○ Adjusting feeding amount of upper feed (outside foot). (Fig21)

The feeding amount ratio of upper feed and lower feed so adjusted to 1:1 in the factory before delivery, but can change the feeding amount of upper feed against lower feed depending on the sewing conditions.

○ Loosen the nut and adjust the position of upper feed driving crank slide block up and down.
Upper position→ the feeding amount of upper feed becomes smaller.
Lower position→ the feeding amount of upper feed becomes larger.
4-10 針とカマの関係
針棒の下端にて、針棒の下から4番目の刻線と針棒下メタルが一致します。
※ 上2本刻線 DB×1用 (下2本刻線 DP×17用)

○ カマの位置
針棒が上昇する時、下から3番目の刻線と針棒下メタルを合わせます。
この際、針とカマはFig 22の関係となります。

4-10 TIMING BETWEEN NEEDLE AND ROTARY HOOK
○ At the position where the needle bar is at its lowest point, the 4th marking line of needle bar from its lower part coincides with the needle bar lower bushing.
※ Upper tow marking lines
→ For needle DB×1
Lower tow marking lines
→ For needle DP×17

○ Position of rotary hook
By turning the hand pulley, raise the needle bar from its lowest position until the marking line being positioned in the third from the bottom marking line meets at the bottom edge of the needle bar lower bushing. In this position needle and hook's position will be as shown in Fig 22.

4-11 正逆縫い目ピッチ
○ 調整方法
1）送り調整メタル上下ネジ（4) 2本）をゆるめます。
2）逆送りネジを中立状態にします。
3）偏心ブッシュの切欠きを小さいドライバー等で締めます。
4）定規で測定し、調整後はねじを締めます。

4-11 FORWARD AND REVERSE STITCH LENGTH
○ Adjusting the forward and reverse, stitch length.
1) Loosen the set screw of feed regulator screw base.
2) Set the reverse feed control lever in neutral position.
3) Adjust the feed pitch of both directions with moving the groove of the eccentric bushing by using small screwdriver.
4) Measure stitch length of both feed directions.
After adjusting the length, tighten the set screws of feed regulator screw base.
### Optional parts

<table>
<thead>
<tr>
<th>Note</th>
<th>Code</th>
<th>Description</th>
<th>Remark</th>
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<tr>
<td>01</td>
<td>U-192Y</td>
<td>Hinged Outside foot</td>
<td></td>
</tr>
<tr>
<td></td>
<td>U-193Y</td>
<td>Hinged Inside foot</td>
<td></td>
</tr>
<tr>
<td></td>
<td>U-192</td>
<td>Outside foot</td>
<td></td>
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<tr>
<td></td>
<td>U-193</td>
<td>Inside foot</td>
<td></td>
</tr>
<tr>
<td></td>
<td>U-192H</td>
<td>Grooved Outside foot</td>
<td>コードパイピング</td>
</tr>
<tr>
<td></td>
<td>U-193K</td>
<td>Grooved Inside foot</td>
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</tr>
<tr>
<td></td>
<td>U-192C</td>
<td>Backcut Groover Outside foot</td>
<td>コードパイピング (カープ)</td>
</tr>
<tr>
<td></td>
<td>U-193K</td>
<td>Backcut Groover Inside foot</td>
<td></td>
</tr>
<tr>
<td></td>
<td>U-192P</td>
<td>Outside foot</td>
<td></td>
</tr>
<tr>
<td></td>
<td>U-193P</td>
<td>Inside foot</td>
<td></td>
</tr>
<tr>
<td></td>
<td>U-192Q</td>
<td>Left Outside</td>
<td>副線 (左)</td>
</tr>
<tr>
<td></td>
<td>U-193Q</td>
<td>Left Inside foot</td>
<td></td>
</tr>
<tr>
<td></td>
<td>U-192R</td>
<td>Right Outside foot</td>
<td>副線 (右)</td>
</tr>
<tr>
<td></td>
<td>U-193R</td>
<td>Right Inside foot</td>
<td></td>
</tr>
<tr>
<td></td>
<td>U-192T</td>
<td>Outside foot</td>
<td></td>
</tr>
<tr>
<td></td>
<td>U-193T</td>
<td>Inside foot</td>
<td></td>
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</tbody>
</table>

**Note (Not) 01**

![Diagram](attachment:image.png)

**Mark**

<table>
<thead>
<tr>
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<th>Mark</th>
<th>H</th>
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<td>A2m</td>
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<td>4</td>
<td>4.8</td>
<td>5.6</td>
<td>6.4</td>
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<td>9.5</td>
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6. CONPONENT PARTS

Exclusive parts for 181L-20 are marked as ※
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<th>Amount</th>
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<td>101096001</td>
<td>No. 1 Lifting lever</td>
<td>1</td>
</tr>
<tr>
<td>101869000</td>
<td>No. 2 Lifting lever</td>
<td>1</td>
</tr>
<tr>
<td>101866000</td>
<td>No. 3 Lifting lever</td>
<td>1</td>
</tr>
<tr>
<td>101808000</td>
<td>No. 4 Lifting lever</td>
<td>1</td>
</tr>
<tr>
<td>101847000</td>
<td>No. 5 Lifting lever</td>
<td>1</td>
</tr>
<tr>
<td>101806000</td>
<td>No. 6 Lifting lever</td>
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<td>101802000</td>
<td>No. 7 Lifting lever</td>
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</tr>
<tr>
<td>101216000</td>
<td>No. 8 Lifting lever</td>
<td>1</td>
</tr>
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**Note:** The table contains descriptions of various parts, likely for a sewing machine. The amounts are indicated as 1 for each part.
### 181L-20 専用部品

<table>
<thead>
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<th>品名 Name</th>
<th>Description Description</th>
<th>数量 Quantity</th>
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<tbody>
<tr>
<td>31079100</td>
<td>スプラインピン</td>
<td>Sprung pin</td>
<td>1</td>
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<tr>
<td>41120800</td>
<td>ネジ</td>
<td>Screw</td>
<td>1</td>
</tr>
<tr>
<td>41120801</td>
<td>ネジ</td>
<td>Screw</td>
<td>1</td>
</tr>
<tr>
<td>41120802</td>
<td>ネジ</td>
<td>Screw</td>
<td>2</td>
</tr>
<tr>
<td>41120803</td>
<td>ネジ</td>
<td>Screw</td>
<td>1</td>
</tr>
<tr>
<td>41120804</td>
<td>ネジ</td>
<td>Screw</td>
<td>2</td>
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</tbody>
</table>

1. **Description**

   - **Description**
     - **Description**
   - **Description**
   - **Description**
   - **Description**
   - **Description**
   - **Description**
   - **Description**
   - **Description**
   - **Description**
   - **Description**
   - **Description**
   - **Description**
   - **Description**
   - **Description**
   - **Description**
   - **Description**
   - **Description**
   - **Description**
   - **Description**
   - **Description**

2. **Quantity**

   - **Quantity**
     - **Quantity**
   - **Quantity**
   - **Quantity**
   - **Quantity**
   - **Quantity**
   - **Quantity**
   - **Quantity**
   - **Quantity**
   - **Quantity**
   - **Quantity**
   - **Quantity**
   - **Quantity**
   - **Quantity**
   - **Quantity**
   - **Quantity**
   - **Quantity**
   - **Quantity**
   - **Quantity**

### Notes

- **Notes**
  - **Notes**
  - **Notes**
  - **Notes**
  - **Notes**
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  - **Notes**
  - **Notes**
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  - **Notes**
  - **Notes**
  - **Notes**

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### Accessories List

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<thead>
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<th>Description</th>
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<td>Bobbin</td>
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<tr>
<td>201872008</td>
<td>Cushion</td>
<td>4</td>
</tr>
<tr>
<td>201872011</td>
<td>Cushion A</td>
<td>2</td>
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<tr>
<td>201872020</td>
<td>Cushion B</td>
<td>2</td>
</tr>
<tr>
<td>201873000</td>
<td>Rubber cushion</td>
<td>4</td>
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<tr>
<td>304097000</td>
<td>Thread guide pin</td>
<td>1</td>
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<tr>
<td>304156000</td>
<td>Frame support bar</td>
<td>1</td>
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<tr>
<td>211530000</td>
<td>Nail</td>
<td>4</td>
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<tr>
<td>211530000</td>
<td>Nail</td>
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<td>211303000</td>
<td>Bobbin rubber stopper</td>
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<td>411611040</td>
<td>Belt cover (wide)</td>
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<td>411611060</td>
<td>Belt cover (narrow)</td>
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<tr>
<td>411711031</td>
<td>Belt cover (large)</td>
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<tr>
<td>411711070</td>
<td>Belt cover (small)</td>
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<tr>
<td>441250101</td>
<td>Washer</td>
<td>2</td>
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<tr>
<td>441342100</td>
<td>Belt cover (narrow)</td>
<td>2</td>
</tr>
<tr>
<td>471800000</td>
<td>Vinyl pipe</td>
<td>0.8</td>
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<tr>
<td>513445300</td>
<td>Wood screw</td>
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<td>Spanner (small)</td>
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**NAKAJIMA SEISAKUSHO CO., LTD.**

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