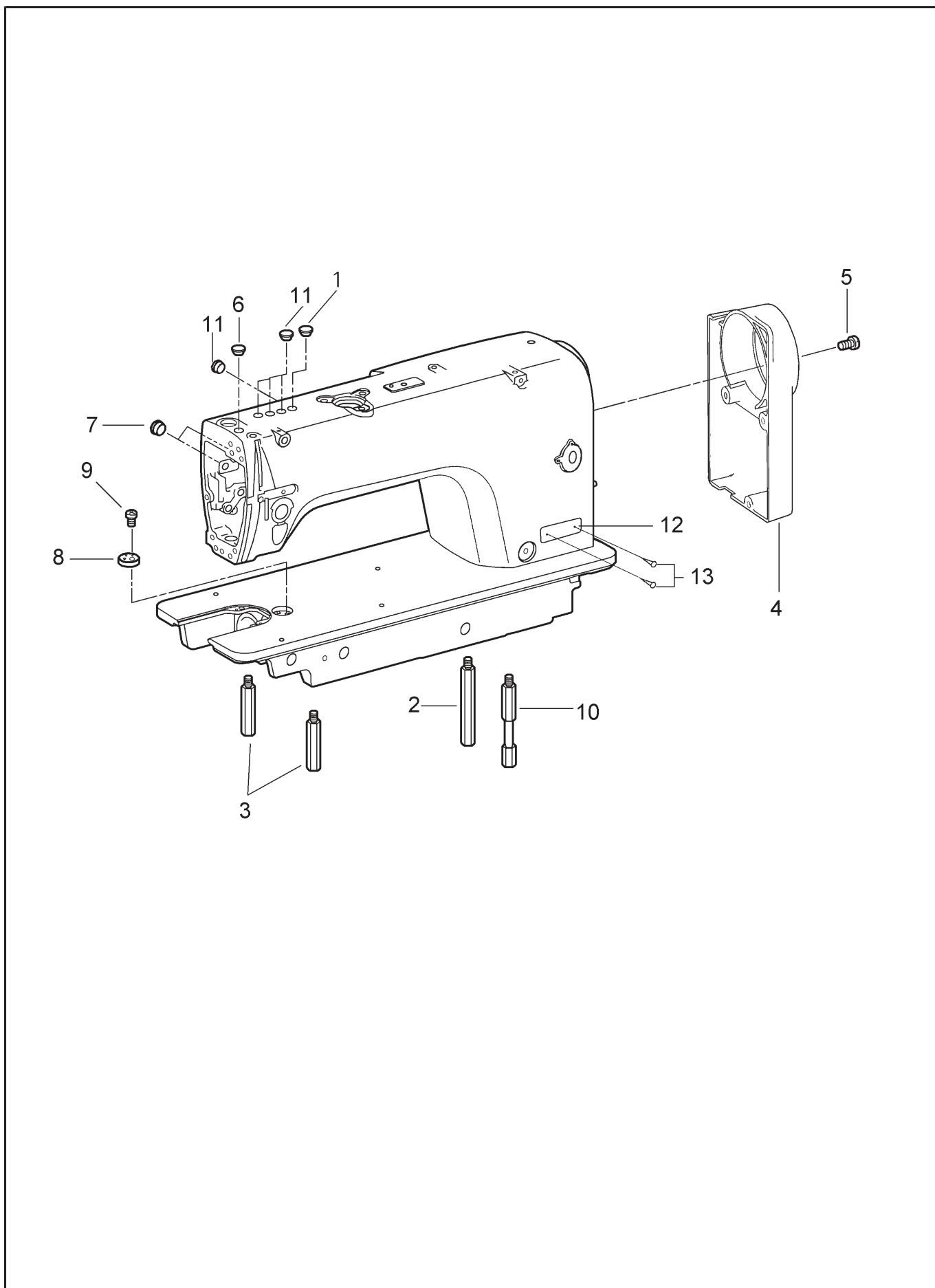


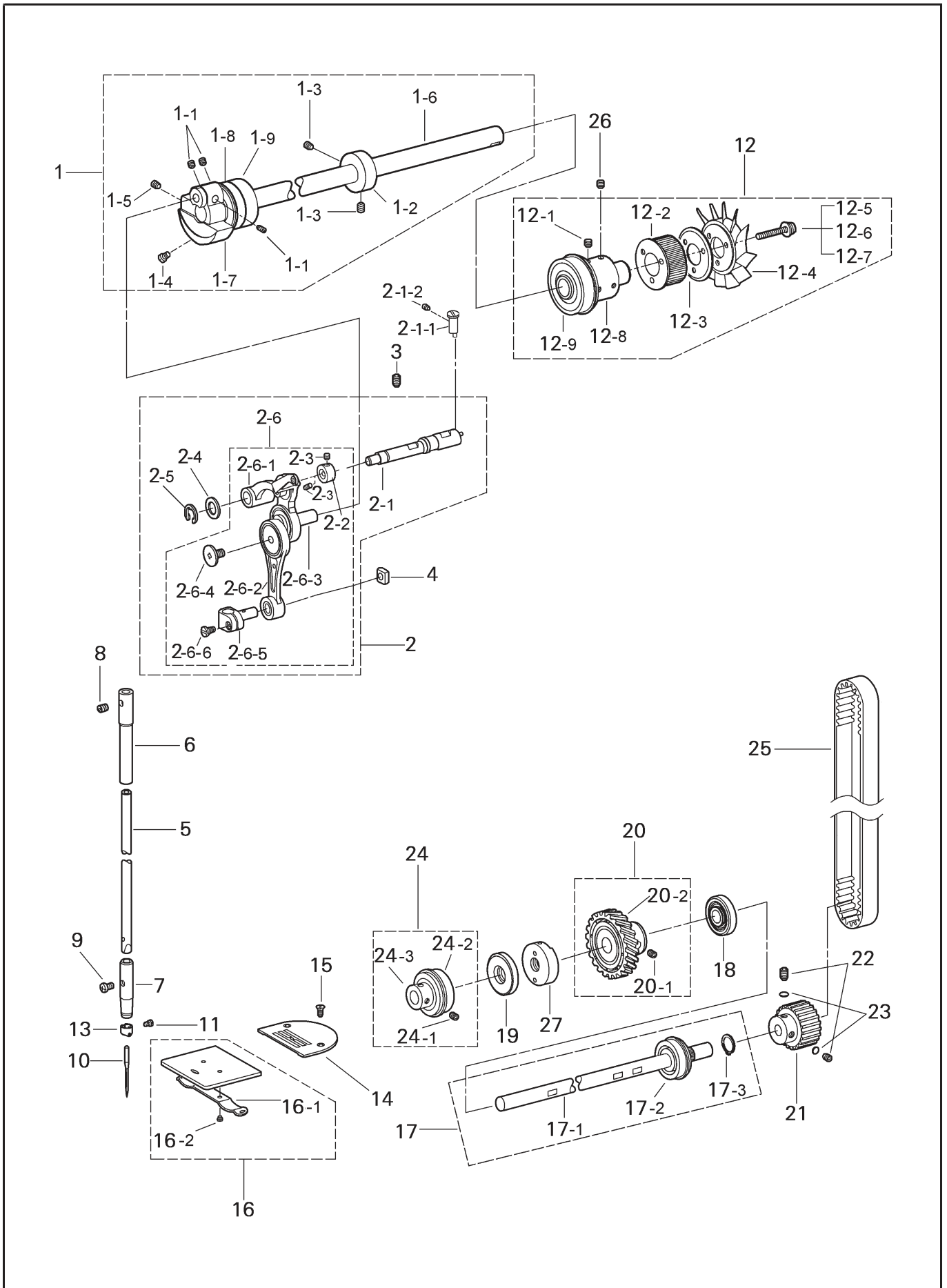
1. MACHINE BODY



1. MACHINE BODY

| No. | Ref.No. | Description | Qt | Note |
|-----|------------|-----------------------|----|------|
| 1 | BX78847009 | Rubber cap Φ 8.5 | 1 | |
| 2 | BXF9904009 | Stand,R | 1 | |
| 3 | BXF9903009 | Stand,L | 2 | |
| 4 | 260120008 | Motor cover | 1 | |
| 5 | B048509894 | Screw M5x12 | 3 | |
| 6 | 022200011 | Rubber cap Φ 8.8 | 1 | |
| 7 | 230100019 | Rubber cap 15.5 | 2 | |
| 8 | BX01489959 | Ruler plate | 1 | |
| 9 | B048600494 | Screw M4x6 | 1 | |
| 10 | BXF8930009 | Stand, RF | 1 | |
| 11 | B906650909 | Rubber cap 8 | 4 | |
| 12 | 198000020 | Model plate | 1 | |
| 13 | BXF8899009 | Rivet | 2 | |

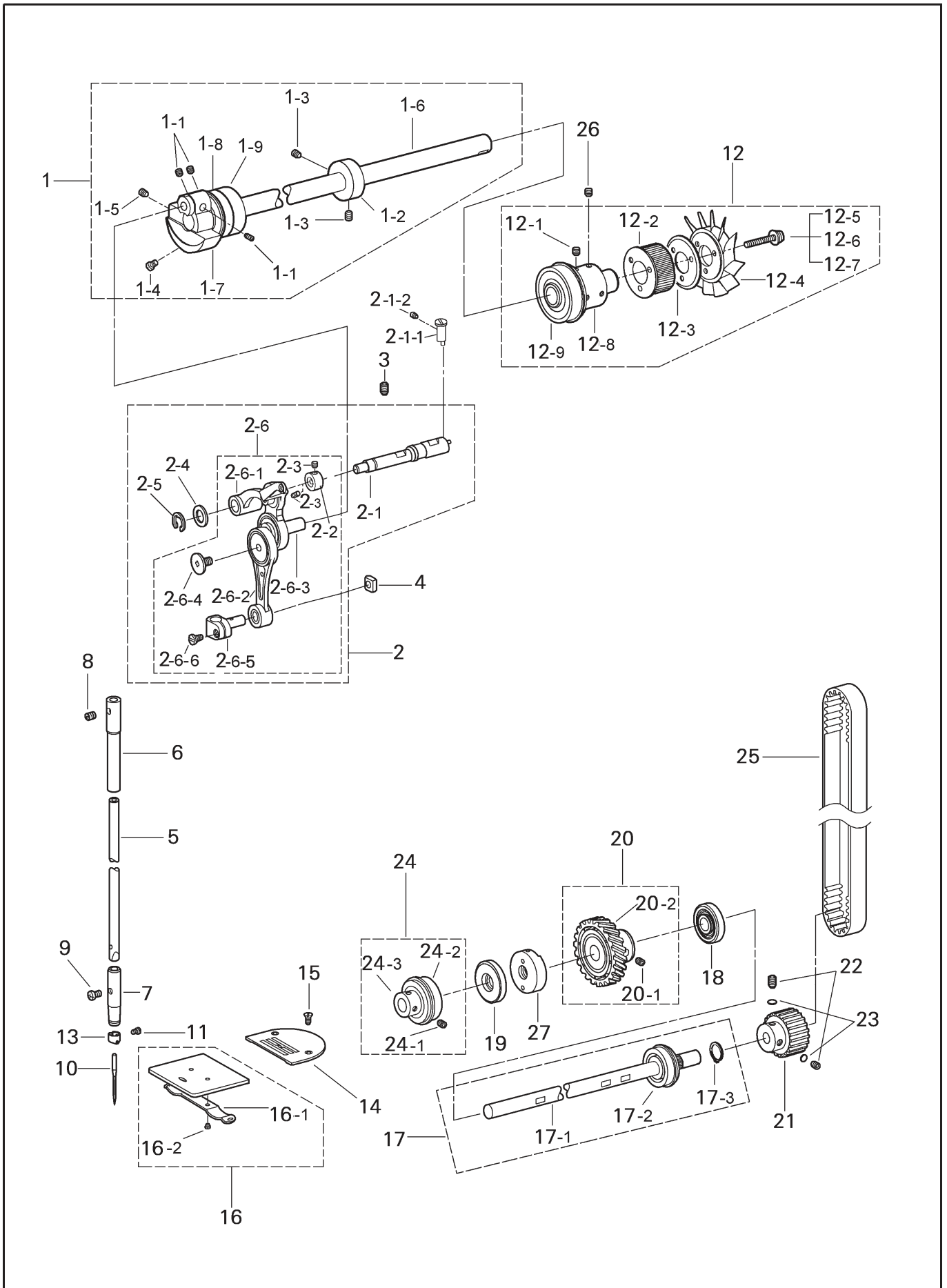
2. NEEDLE BAR AND THREAD TAKE-UP MECHANISM



2. NEEDLE BAR AND THREAD TAKE-UP MECHANISM

| No. | Ref.No. | Description | Qt | Note |
|-------|------------|---------------------------------|----|------|
| 1 | 230210000 | Upper shaft assy | 1 | |
| 1-1 | BX87459009 | Set screw M6x6 | 3 | |
| 1-2 | BXF9980009 | Bobbin winder driving wheel | 1 | |
| 1-3 | BX87459009 | Set screw M6x6 | 2 | |
| 1-4 | BX85875009 | Screw M8 | 1 | |
| 1-5 | BX85874009 | Set screw M6x10 | 1 | |
| 1-6 | 217100012 | Upper shaft | 1 | |
| 1-7 | 230100015 | Needle bar crank | 1 | |
| 1-8 | S150801008 | Bearing 6004 2ZNR | 1 | |
| 1-9 | S150801006 | Bearing 6004 2Z | 1 | |
| 2 | | Needle bar connecting rod unit | 1 | M |
| 2 | | Needle bar connecting rod unit | 1 | H |
| 2-1 | 217N00002 | Thread take-up support shaft | 1 | |
| 2-1-1 | BXF3871909 | Positioning pin | 1 | |
| 2-1-2 | B098500574 | Screw M5x5 | 1 | |
| 2-2 | BXF9985009 | Tighten ring | 1 | |
| 2-3 | B098600674 | Screw M4x4 | 2 | |
| 2-4 | BXF8949009 | Washer | 1 | |
| 2-5 | B062040768 | Retaining ring E6 | 1 | |
| 2-6 | 230221100 | Thread take-up lever assy | 1 | M |
| 2-6 | 230221200 | Thread take-up lever assy | 1 | H |
| 2-6-1 | BXF9970009 | Thread take-up small lever assy | 1 | M |
| 2-6-1 | BXF9983009 | Thread take-up small lever assy | 1 | H |
| 2-6-2 | BXF8914009 | Needle bar connecting rod set | 1 | M |
| 2-6-2 | BXF8913009 | Needle bar connecting rod set | 1 | H |
| 2-6-3 | 230100016 | Thread take-up crank | 1 | M |
| 2-6-3 | 230100017 | Thread take-up crank | 1 | H |
| 2-6-4 | BXF8688009 | Screw SM3.57-40x6L | 1 | |
| 2-6-5 | BX85863009 | Needle bar guide | 1 | |
| 2-6-6 | B960006009 | Screw SM3.57-40x7 | 1 | |
| 3 | B098049074 | Screw M6x10 | 2 | |
| 4 | B908470009 | Needle bar guide slide block | 1 | |
| 5 | BXF9977009 | Needle bar | 1 | M |
| 5 | BXF9973009 | Needle bar | 1 | H |
| 6 | BXF8916909 | Needle bar bush, U | 1 | |
| 7 | BXF9972009 | Needle bar bush, D | 1 | M |
| 7 | BXF9971009 | Needle bar bush, D | 1 | H |
| 8 | B098500574 | Screw M5x5 | 1 | |
| 9 | B048500494 | Screw M5x6 | 1 | |
| 10 | S150901001 | Needle DBx1 14# | 1 | M |
| 10 | S150901002 | Needle DPx5 18# | 1 | H |
| 11 | B960557908 | Screw SM3.18 | 1 | |

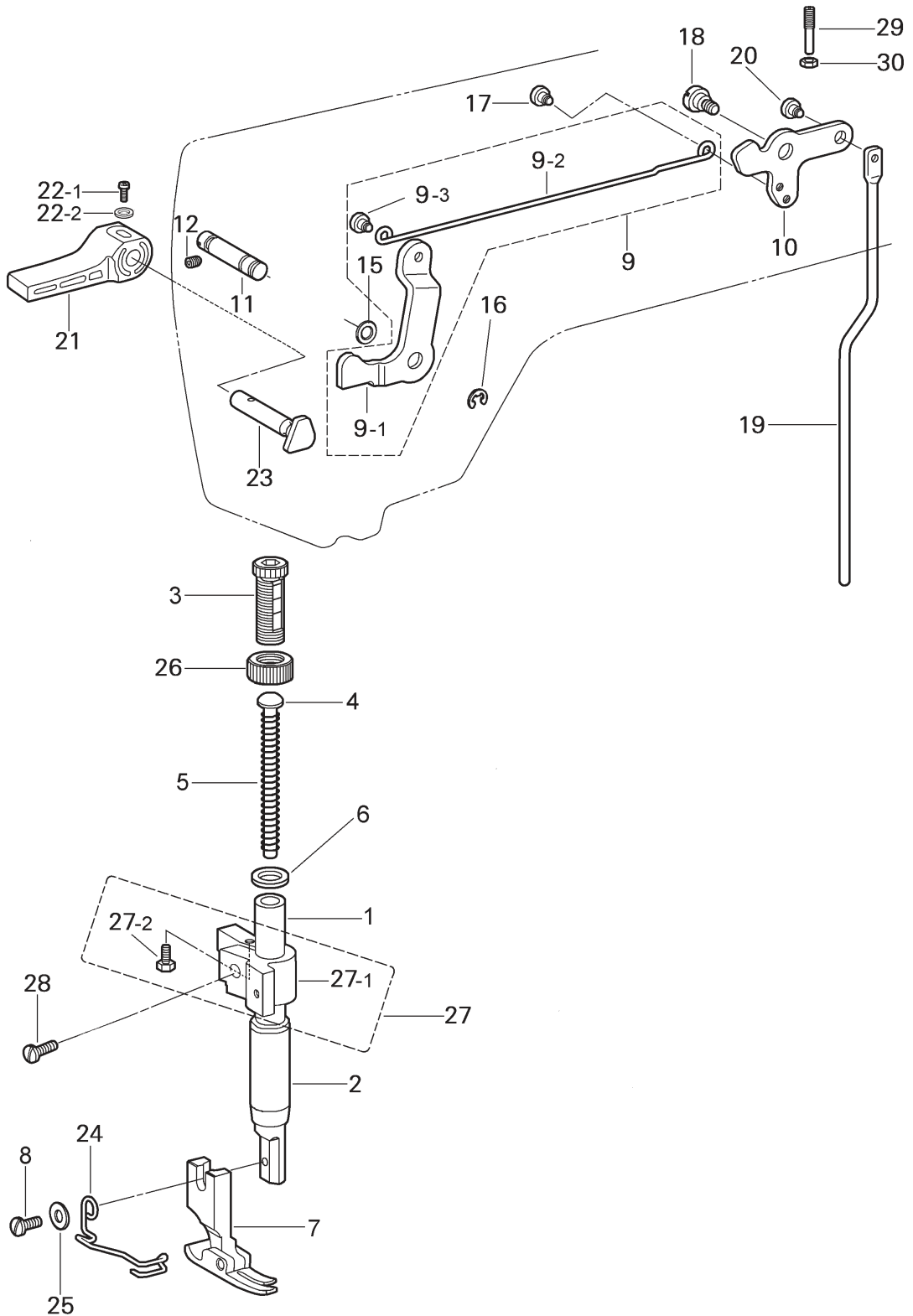
2. NEEDLE BAR AND THREAD TAKE-UP MECHANISM



2. NEEDLE BAR AND THREAD TAKE-UP MECHANISM

| No. | Ref.No. | Description | Qt | Note |
|------|------------|-------------------------|----|------|
| 12 | | Joint unit | 1 | |
| 12-1 | BX87459009 | Set screw M6x6 | 2 | |
| 12-2 | BXF8850009 | Timing pulley,U | 1 | |
| 12-3 | BX72398009 | Flange | 1 | |
| 12-4 | BX72397900 | Fan | 1 | |
| 12-5 | B048607598 | screw M4x35 | 3 | |
| 12-6 | S150602005 | Spring washer 4 | 3 | |
| 12-7 | B085060878 | Washer M4 | 3 | |
| 12-8 | BXF9969009 | Power transmission | 1 | |
| 12-9 | S150801016 | Bearing 6204 2ZNR | 1 | |
| 13 | B959516009 | Needle bar thread guide | 1 | |
| 14 | 153100002 | Needle plate | 1 | M |
| 14 | 153100004 | Needle plate | 1 | H |
| 15 | 022100020 | Screw SM4.37-40x8 | 2 | |
| 16 | B920092959 | Slide plate assy | 1 | |
| 16-1 | B996549059 | Spring,plate | 1 | |
| 16-2 | B988339059 | Screw SM2.38 | 2 | |
| 17 | BXF9967009 | Lower shaft assy | 1 | |
| 17-1 | BXF9966009 | Lower shaft | 1 | |
| 17-2 | S150801020 | Bearing 6301 2ZNR | 1 | |
| 17-3 | B062980968 | Retaining ring C12 | 1 | |
| 18 | BX85609900 | Oil seal,NOK BC4907E | 1 | |
| 19 | BXF9793009 | Oil seal,NOK XC0028E | 1 | |
| 20 | BXF9944009 | Lower shaft gear assy | 1 | |
| 20-1 | BX87459009 | Set screw M6x6 | 2 | |
| 20-2 | BXF9943009 | Gear | 1 | |
| 21 | BXF8859009 | Timing pulley,D | 1 | |
| 22 | BX87459009 | Set screw M6x6 | 2 | |
| 23 | BXF8732009 | Washer 4.8 | 2 | |
| 24 | BXF9950009 | Bearing bush assy | 1 | |
| 24-1 | BX87459009 | Set screw M6x6 | 2 | |
| 24-2 | S150801008 | Bearing 6004 2ZNR | 1 | |
| 24-3 | BXF9959009 | Bearing bush R | 1 | |
| 25 | BXF8858009 | Timing belt 570-3GT-15 | 1 | |
| 26 | BX87459009 | Set screw M6x6 | 2 | |
| 27 | BXF8856909 | Lower shaft bush | 1 | |

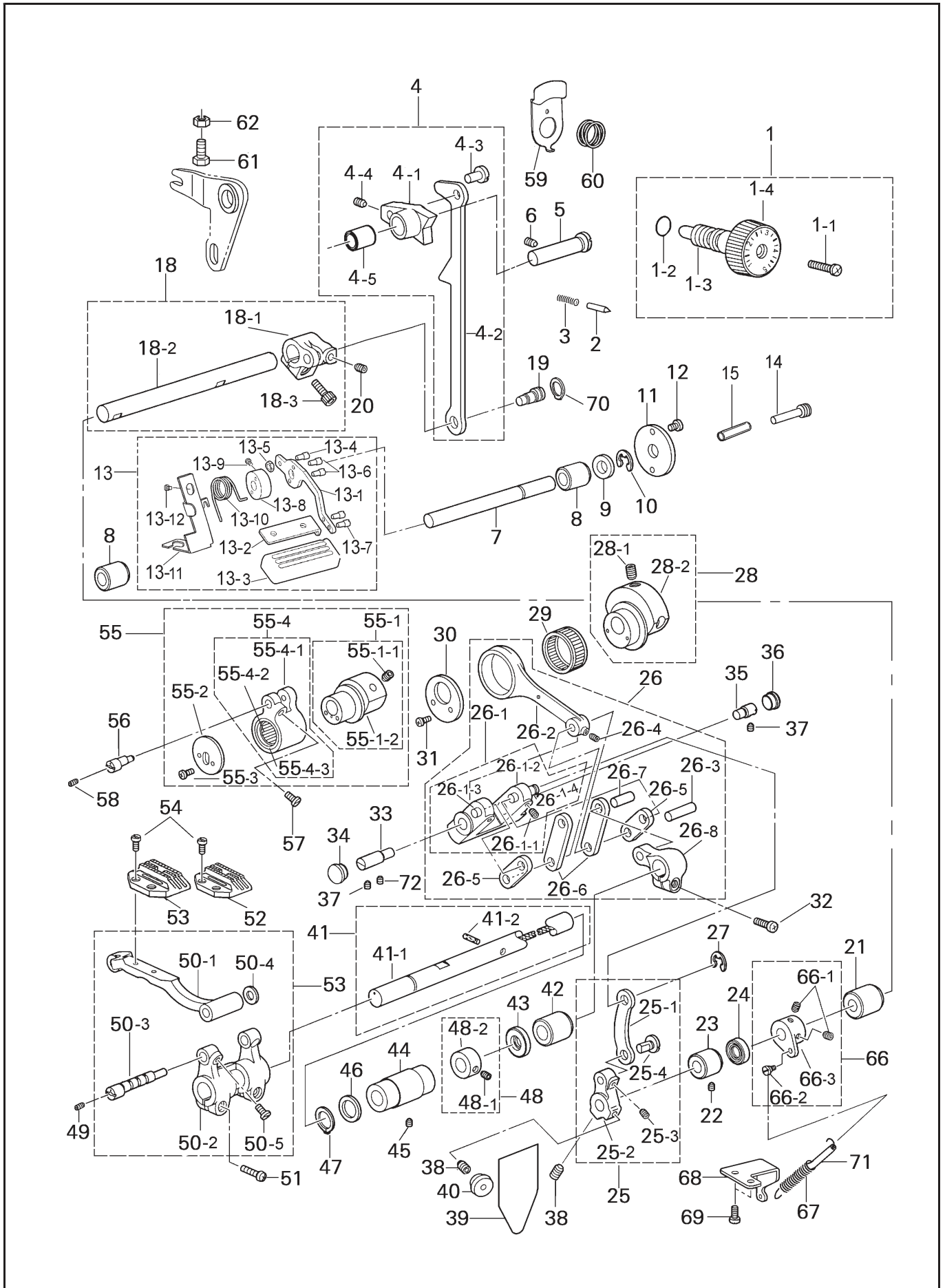
3. PRESSER FOOT MECHANISM



3. PRESSER FOOT MECHANISM

| No. | Ref.No. | Description | Qt | Note |
|------|------------|--------------------------------|----|------|
| 1 | BXF9939009 | Presser bar | 1 | |
| 2 | BXF3868009 | Presser bar bush | 1 | |
| 3 | BXF9936009 | Presser adjusting screw M14 | 1 | |
| 4 | B969802089 | Spring guide | 1 | |
| 5 | 230100021 | Presser bar spring | 1 | M |
| 5 | BX97549909 | Presser bar spring | 1 | H |
| 6 | B960603009 | Washer | 1 | |
| 7 | 02276 | Presser foot assy | 1 | M |
| 7 | 153720000 | Presser foot assy | 1 | H |
| 8 | 022700015 | Screw SM3.57-40x11 | 1 | |
| 9 | | Presser bar lifter lever assy | 1 | |
| 9-1 | 260140010 | Presser bar lifter lever | 1 | |
| 9-2 | 260150002 | nee lifter connecting rod | 1 | |
| 9-3 | BXF9931009 | Shoulder screw M5 | 1 | |
| 10 | BXF7120009 | Knee lifter lever | 1 | |
| 11 | 260140011 | Presser bar lifter lever shaft | 1 | |
| 12 | B098500574 | Set screw M5x5 | 1 | |
| 15 | 260140012 | Washer | 1 | |
| 16 | B062050768 | Retaining ring E5 | 1 | |
| 17 | BXF9931009 | Shoulder screw M5 | 1 | |
| 18 | BXF8945009 | Shoulder screw M6 | 1 | |
| 19 | BXF9910009 | Knee lifter bar | 1 | |
| 20 | BXF9931009 | Screw M5 | 1 | |
| 21 | BX79004089 | Lifting lever | 1 | |
| 22-1 | B048759894 | Screw M3.5x12 | 1 | |
| 22-2 | S150607008 | Washer 4 | 1 | |
| 23 | 260140013 | Presser bar lifter crank | 1 | |
| 24 | 057700002 | Finger guard | 1 | |
| 25 | B085750978 | Washer S3.5 | 1 | |
| 26 | BXF9935009 | Adjust screw nut M14 | 1 | |
| 27 | | Presser bar guide bracket assy | 1 | |
| 27-1 | BXF2006009 | Presser bar guide bracket | 1 | |
| 27-2 | BXF9917009 | Bolt M3x7.5 | 1 | |
| 28 | 230100020 | Screw M4x12 | 1 | |
| 29 | BXF9921009 | Adjust screw M6 | 1 | |
| 30 | B089040704 | Nut M6 | 1 | |

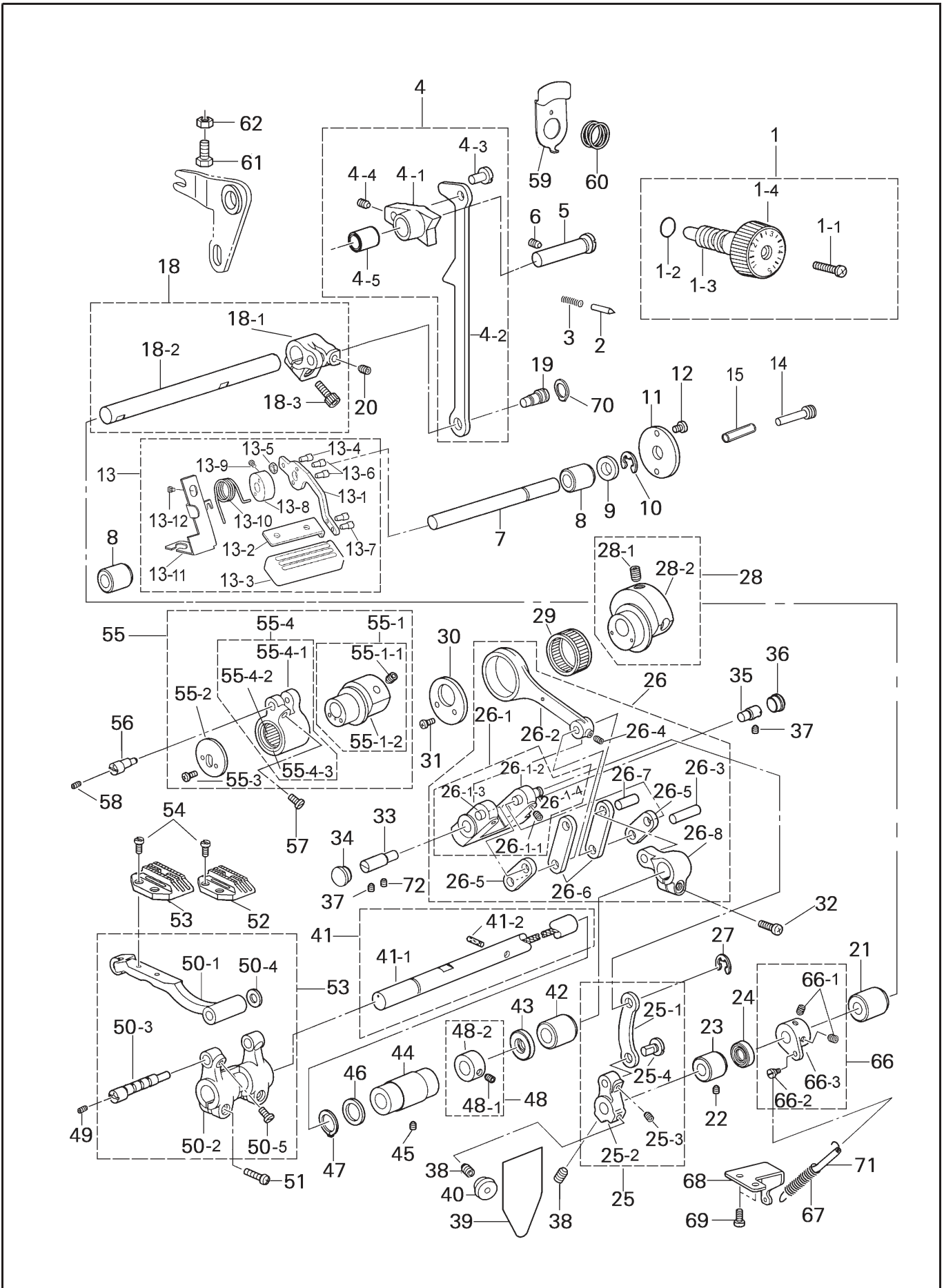
4. FEED MECHANISM



4. FEED MECHANISM

| No. | Ref.No. | Description | Qt | Note |
|--------|------------|----------------------------------|----|------|
| 1 | | Stitch length dial assy | 1 | |
| 1-1 | BXF6616009 | Screw SM4.76 | 1 | |
| 1-2 | 124510003 | O Ring | 1 | |
| 1-3 | 217N00021 | Feed regulating supporter | 1 | |
| 1-4 | 230100010 | Dial for stitch length regulator | 1 | |
| 2 | 036500012 | Positioning pin | 1 | |
| 3 | 022500009 | Spring | 1 | |
| 4 | | Feed regulator assy | 1 | |
| 4-1 | 217N00023 | Feed regulator | 1 | |
| 4-2 | BXF9806009 | F- regulator connecting rod | 1 | |
| 4-3 | 217100043 | Connecting stud | 1 | |
| 4-4 | B098500574 | Set screw 5x5 | 1 | |
| 4-5 | B968736900 | Bush | 1 | |
| 5 | BXF3475009 | Feed regulator shaft | 1 | |
| 6 | B098049074 | Set Screw M6x5 | 2 | |
| 7 | 260130001 | Reverse sewing shaft | 1 | |
| 8 | BX85641900 | Bush L=12 | 2 | |
| 9 | B085900978 | Washer S10 | 1 | |
| 10 | B062020768 | Retaining ring E8 | 1 | |
| 11 | BXF9803009 | Spacer | 1 | |
| 12 | B048500294 | Screw M5x8 | 2 | |
| 13 | | Reverse lever assy | 1 | |
| 13-1 | 260130004 | Reverse lever | 1 | |
| 13-2 | 260130005 | Wrench stents | 1 | |
| 13-3 | 260130006 | Wrench handle | 1 | |
| 13-4 | 260130008 | Screw M5 | 1 | |
| 13-5 | B089500794 | Nut M5 | 1 | |
| 13-6 | S150299001 | Screw M4 x 12 | 2 | |
| 13-7 | S150209023 | Screw M4 x 8 | 2 | |
| 13-8 | 260130002 | Set collar | 1 | |
| 13-9 | 260130003 | Screw | 1 | |
| 13-10 | 260130010 | Cam lever spring | 1 | |
| 13-11 | 260130011 | Vinyl tube arm | 1 | |
| 13-12 | B048500294 | Screw M5 x 8 | 1 | |
| 14 | 260130009 | Retaining shaft | 1 | |
| 15 | | Nylon tube 6 x 8 L=35 | 1 | |
| 18 | | Feed regulator shaft assy | 1 | |
| 18-1 | BXF8250909 | Feed regulator shaft arm | 1 | |
| 18-2 | BXF9896009 | Feed regulator shaft | 1 | |
| 18-3 | S150299025 | Bolt M6x16 | 1 | |
| 19 | BXF8259009 | Eccentric pin | 1 | |
| 20 | B098500574 | Set screw M5x5 | 1 | |
| 21 | BXF9895009 | Feed regulator shaft bush R | 1 | |
| 22 | B098040574 | Set screw M6x5 | 1 | |
| 23 | BXF9894009 | Feed regulator shaft bush L | 1 | |
| 24 | BXF9841009 | Oil seal AC0371E | 1 | |
| 25 | BXF9893009 | Connecting rod S assy | 1 | |
| 25-1 | BX79211959 | F-regulator connecting rod | 1 | |
| 25-2 | BXF9892009 | Feed regulator shaft joint | 1 | |
| 25-3 | B098500574 | Set screw M5x5 | 1 | |
| 25-4 | 217100043 | Connect pin | 1 | |
| 26 | | Feed regulator unit | 1 | |
| 26-1 | | Feed regulator assy | 1 | |
| 26-1-1 | B098500574 | Set screw M5x5 | 2 | |
| 26-1-2 | BXF3785009 | Feed regulator | 1 | |
| 26-1-3 | B954159089 | Crank short connecting pin | 1 | |
| 26-1-4 | 217100010 | Crank length connecting pin | 1 | |
| 26-2 | BXF9887009 | Level feed connecting rod | 1 | |
| 26-3 | BXF9886009 | Link shaft | 1 | |
| 26-4 | B098500574 | Set screw M5x5 | 2 | |
| 26-5 | BX94774009 | Level feed link assy | 2 | |
| 26-6 | BX94772009 | Feed rocker arm link assy | 2 | |
| 26-7 | BX58105009 | F-rocker arm stud | 1 | |
| 26-8 | BXF9885009 | Feed rock arm | 1 | |
| 27 | B062060768 | Retaining ring E4 | 1 | |
| 28 | | Eccentric wheel unit | 1 | |
| 28-1 | BX85874009 | Set screw M6x10 | 2 | |

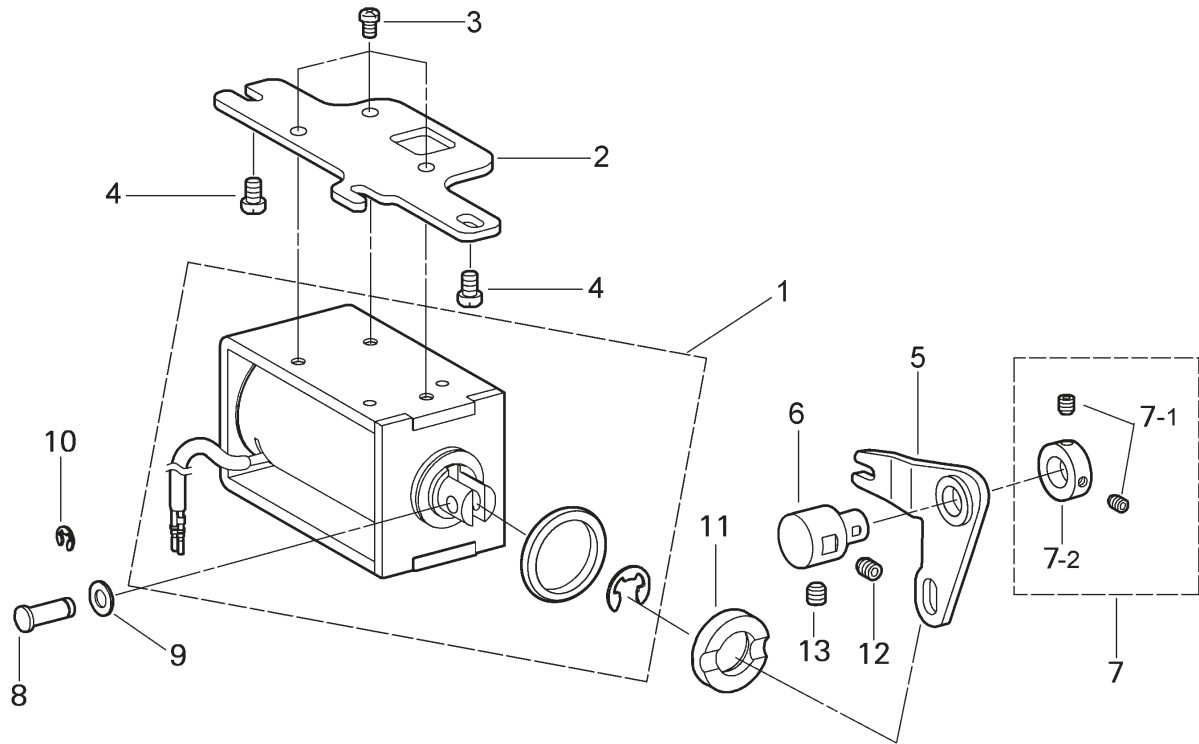
4. FEED MECHANISM



4. FEED MECHANISM

| No. | Ref.No. | Description | Qt | Note |
|--------|------------|--------------------------------|----|------|
| 28-2 | BXF9846009 | Eccentric wheel | 1 | |
| 29 | S150801039 | Roller bearing K25x29x10 | 1 | |
| 30 | BX85789009 | Guardrail splint | 1 | |
| 31 | B048750494 | Screw M3,5x6 | 2 | |
| 32 | B048509694 | Screw M5x14 | 1 | |
| 33 | BXF9884009 | Feed regulator shaft L | 1 | |
| 34 | B906661009 | Rubber cap 15.5 | 1 | |
| 35 | BXF9883009 | Feed regulator support shaft | 1 | |
| 36 | BXF9882009 | Rubber cap 14.5 | 1 | |
| 37 | B098040574 | Set screw M6x5 | 2 | |
| 38 | BX87459009 | Set screw M6x6 | 2 | |
| 39 | 001C10010 | Rubber cap label | 1 | |
| | 001C10011 | Rubber cap label | 1 | |
| 40 | BX76758909 | Rubber cap 13.5 | 1 | |
| 41 | | Feed rock shaft assy | 1 | |
| 41-1 | BXF9879009 | Feed rock shaft | 1 | |
| 41-2 | BXF8948009 | Felt | 1 | |
| 42 | BXF9874009 | Feed shaft bush R | 1 | |
| 43 | BXF9873009 | Oil seal XC0029E | 1 | |
| 44 | BXF9877009 | Feed shaft bush L | 1 | |
| 45 | B098040574 | Set screw M6x5 | 1 | |
| 46 | B954867089 | Thrust ring 2x15x22ST | 1 | |
| 47 | B062950968 | Retaining ring external C15 | 1 | |
| 48 | | Set screw collar | 1 | |
| 48-1 | BX87459009 | Set screw M6x6 | 2 | |
| 48-2 | BXF9875009 | Tighten ring | 1 | |
| 49 | B096700678 | Set screw M3x4 | 1 | |
| 50 | | Feed bar assy | 1 | |
| 50-1 | BXF9871809 | Feed bar | 1 | |
| 50-2 | BXF3770009 | Feed lifting rock shaft crank | 1 | |
| 50-3 | 217100016 | Feed bar shaft | 1 | |
| 50-4 | B952388089 | Washer 4.2 | 1 | |
| 50-5 | BXF9868009 | Set screw M5x7 | 1 | |
| 51 | BXF3853009 | Set screw M5x14 | 2 | |
| 52 | BXF8765009 | Feed dog | 1 | M |
| 53 | 153600001 | Feed dog | 1 | H |
| 54 | 022610004 | Screw SM3.18-44x6 | 2 | |
| 55 | | F-lifting eccentric wheel assy | 1 | M |
| 55 | | F-lifting eccentric wheel assy | 1 | H |
| 55-1 | | Eccentric wheel assy | 1 | M |
| 55-1 | | Eccentric wheel assy | 1 | H |
| 55-1-1 | BX85874009 | Set screw M6x10 | 2 | |
| 55-1-2 | BXF9862009 | Eccentric wheel | 1 | M |
| 55-1-2 | BXF9858009 | Eccentric wheel | 1 | H |
| 55-2 | BX85771909 | Feed bracket arm presser | 1 | |
| 55-3 | S150299030 | Screw M3x6 | 2 | |
| 55-4 | | Crank assy | 1 | |
| 55-4-1 | 217101001 | Feed lifting rock shaft crank | 1 | |
| 55-4-2 | S150801034 | Needle bearing K20x24x13 | 1 | |
| 55-4-3 | 217101002 | retaining ring | 2 | |
| 56 | 217100017 | Feed bar shaft | 1 | |
| 57 | BXF9868009 | Set screw M5x7 | 1 | |
| 58 | B096700678 | Set screw M3x4 | 1 | |
| 59 | 230100023 | Lock lever | 1 | |
| 60 | 036500011 | Spring | 1 | |
| 61 | BXF8763009 | Bolt M5x16 | 1 | |
| 62 | B089500794 | Nut M5 | 2 | |
| 66 | | Spring hook arm assy | 1 | |
| 66-1 | BX87459009 | Screw M6x6 | 1 | |
| 66-2 | BX85683909 | Shoulder screw M4 | 1 | |
| 66-3 | BXF8818009 | Spring setting plate | 1 | |
| 67 | BXF8816009 | Spring | 2 | |
| 68 | BXF8817009 | Spring pull plate | 1 | |
| 69 | B048500294 | Set screw M5x8 | 1 | |
| 70 | B062900968 | Retaining ring C10 | 1 | |
| 71 | BXF7996009 | Vinyl tube 3x5 L=70 | 1 | |
| 72 | S150299016 | Screw M6x8 | 1 | |

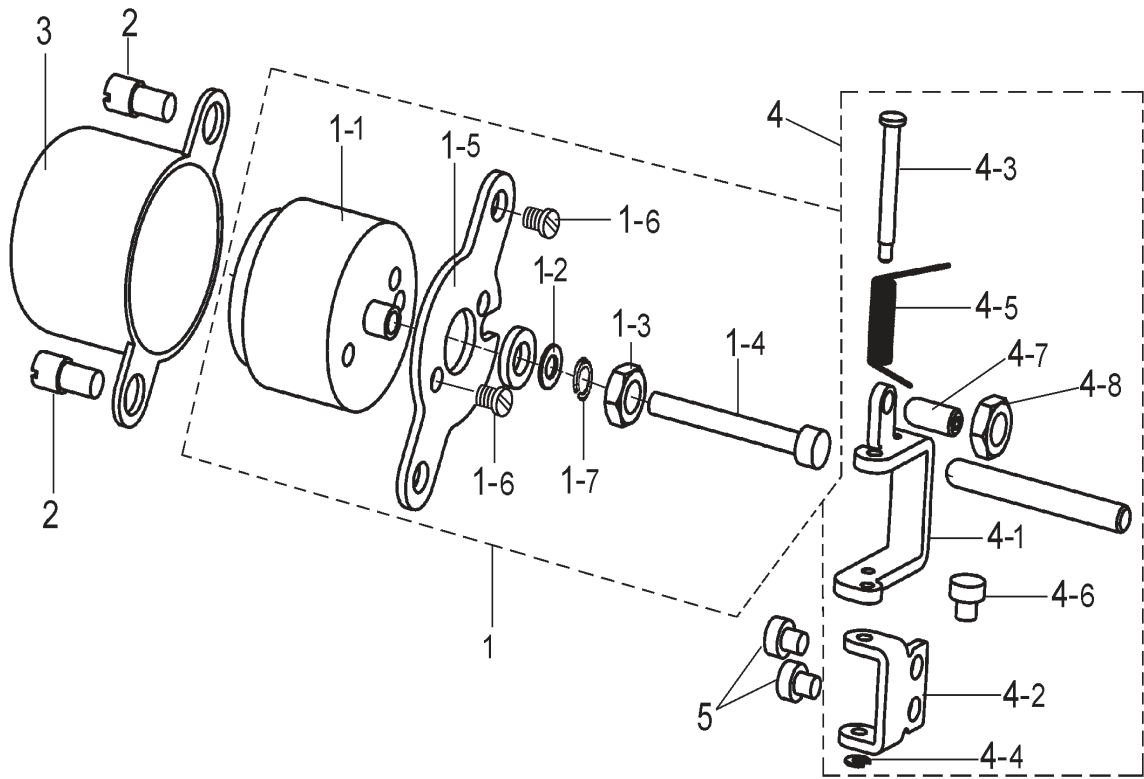
5. QUICK REVERSE MECHANISM



5. QUICK REVERSE MECHANISM

| No. | Ref.No. | Description | Qt | Note |
|-----|------------|--------------------------|----|------|
| 1 | 260190002 | Backstitch solenoid assy | 1 | |
| 2 | BXF9852009 | Solenoid base | 1 | |
| 3 | B048500294 | Screw M5x8 | 3 | |
| 4 | B048049094 | Screw M6x10 | 2 | |
| 5 | BXF8258009 | Solenoid lever | 1 | |
| 6 | BXF8266009 | Solenoid lever shaft | 1 | |
| 7 | | Set collar assy | 1 | |
| 7-1 | B098500574 | Set screw M5x5 | 2 | |
| 7-2 | 217100006 | Set collar | 1 | |
| 8 | BXF8118009 | Connect pin | 1 | |
| 9 | 217100045 | Washer 6.5 | 1 | |
| 10 | S150617001 | Retaining ring C6 | 1 | |
| 11 | BXF8824009 | Rubber cushion | 1 | |
| 12 | B098040574 | Set screw M6x5 | 1 | |
| 13 | B098500574 | Set screw M5x5 | 1 | |

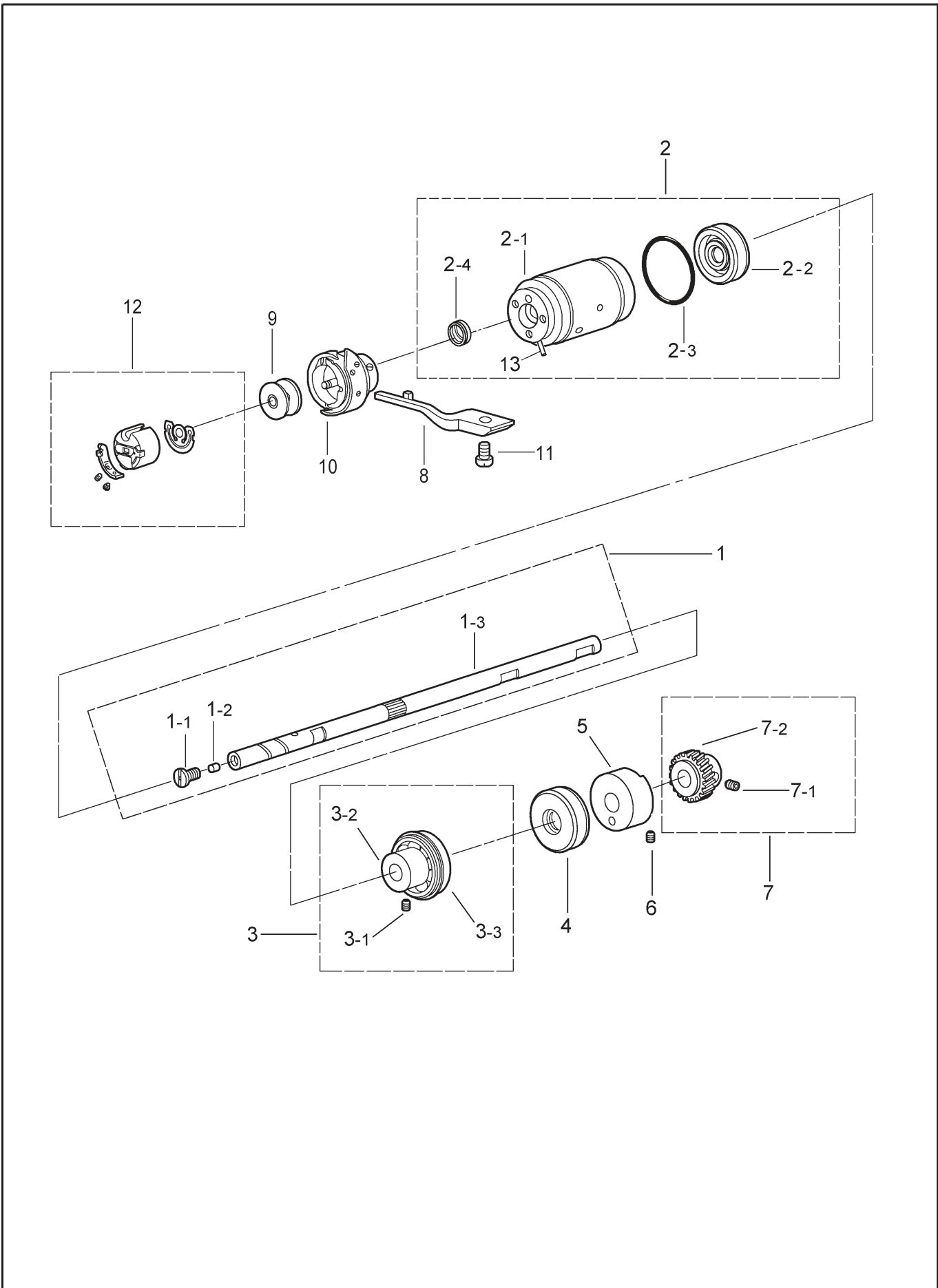
6. TENSION RELEASE MECHANISM



6. TENSION RELEASE MECHANISM

| No. | Ref.No. | Description | Qt | Note |
|-----|------------|-------------------------------|----|------|
| 1 | | Tension release solenoid assy | 1 | |
| 1-1 | 260140001 | Tension release solenoid | 1 | |
| 1-2 | S150613003 | Washer 4 | 1 | |
| 1-3 | S150503003 | Nut M4 | 1 | |
| 1-4 | S150209098 | Screw M4x40 | 1 | |
| 1-5 | 260140002 | Installation board | 1 | |
| 1-6 | S150216017 | Screw M4 × 5 | 2 | |
| 1-7 | S150602005 | Washer spring | 1 | |
| 2 | S150209028 | Screw M5 × 8 | 2 | |
| 3 | 260140003 | Cover | 1 | |
| 4 | | Loose line hinge assy | 1 | |
| 4-1 | 260140004 | Loose line hinge | 1 | |
| 4-2 | 260140005 | Loose line hinge stents | 1 | |
| 4-3 | 260140006 | Hinge pin | 1 | |
| 4-4 | S150620008 | Collar 2 | 1 | |
| 4-5 | 260140007 | Hinge spring | 1 | |
| 4-6 | S150209018 | Screw M3 × 5 | 1 | |
| 4-7 | 260140009 | Screw | 1 | |
| 4-8 | S150504002 | Nut M4 | 1 | |
| 5 | S150209023 | Screw M4 × 8 | 2 | |

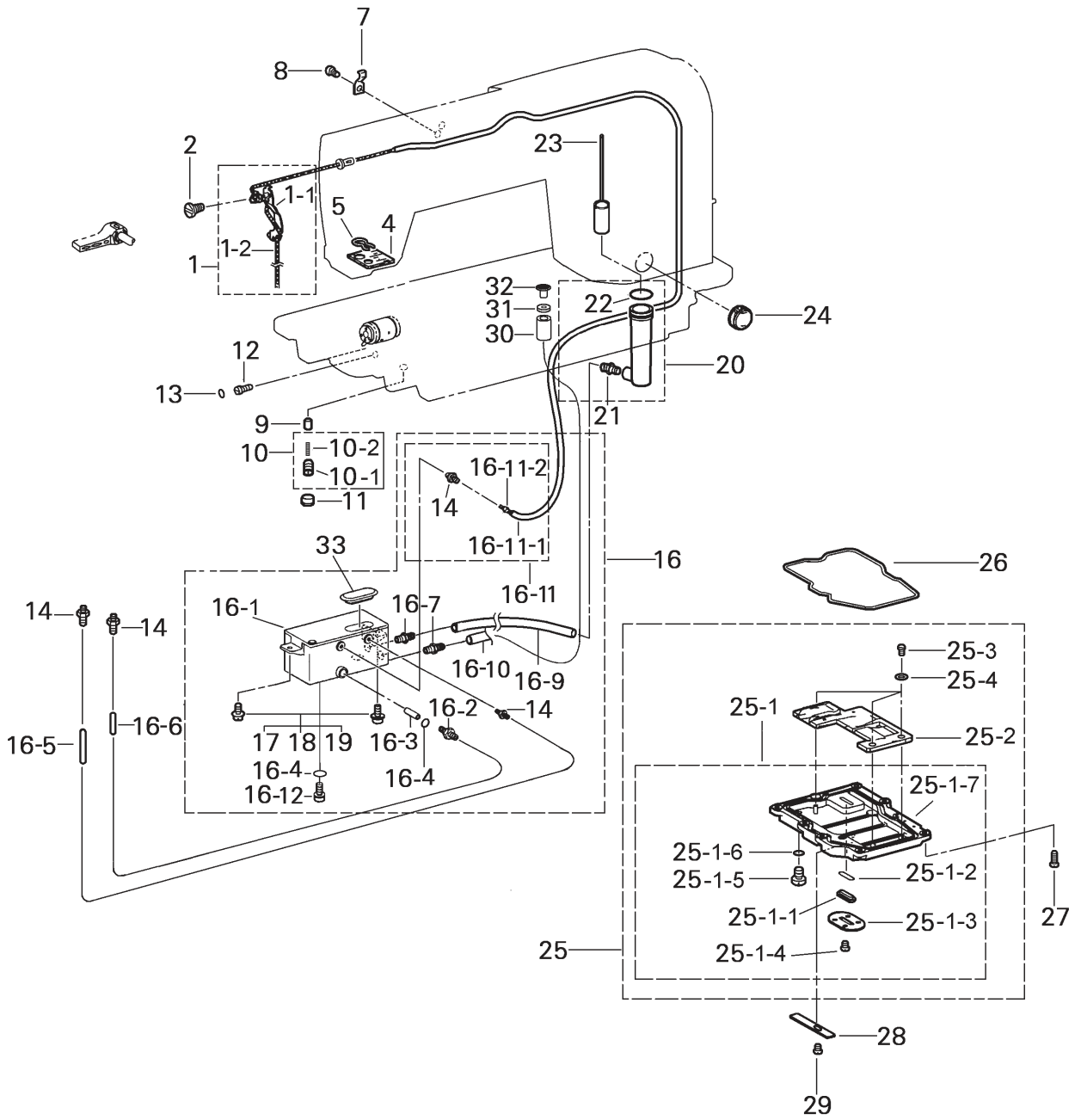
7. ROTARY HOOK MECHANISM



7. ROTARY HOOK MECHANISM

| No. | Ref.No. | Description | Qt | Note |
|-----|------------|-----------------------------|----|------|
| 1 | | Rotary hook shaft assy | 1 | |
| 1-1 | BXF3962009 | Screw M5-0.8 | 1 | |
| 1-2 | 217100036 | Oil stopper | 1 | |
| 1-3 | BXF3848909 | Rotary hook shaft | 1 | |
| 2 | | Pump bush unit | 1 | |
| 2-1 | BXF3846009 | Pump bush | 1 | |
| 2-2 | BX85608000 | Oil seal | 1 | |
| 2-3 | B029085230 | O ring S25 | 1 | |
| 2-4 | BXF3780009 | Oil seal | 1 | |
| 3 | | Bearing bush assy | 1 | |
| 3-1 | BX87459009 | Set screw M6x6 | 2 | |
| 3-2 | BXF9828009 | Bearing bush | 1 | |
| 3-3 | S150801023 | Bearing NSK 6901 2ZNR | 1 | |
| 4 | BXF9826009 | Oil seal | 1 | |
| 5 | BXF9825009 | Rotary hook shaft gear bush | 1 | |
| 6 | B098040574 | Set screw M6x5 | 1 | |
| 7 | | Rotary hook shaft gear assy | 1 | |
| 7-1 | BX87459009 | Set screw M6x6 | 2 | |
| 7-2 | BXF9823009 | Rotary hook shaft gear | 1 | |
| 8 | BX08408089 | Hook stopper | 1 | M |
| 8 | B951786089 | Hook stopper | 1 | H |
| 9 | 036400006 | Bobbin | 1 | M |
| 9 | 048400003 | Bobbin | 1 | H |
| 10 | BXF3424008 | Rotary hook | 1 | M |
| 10 | 217C00001 | Rotary hook | 1 | H |
| 11 | 217100030 | Screw M4x12 | 1 | |
| 12 | 03642 | Bobbin case assy | 1 | |
| 13 | BXF3249009 | Pin | 1 | |

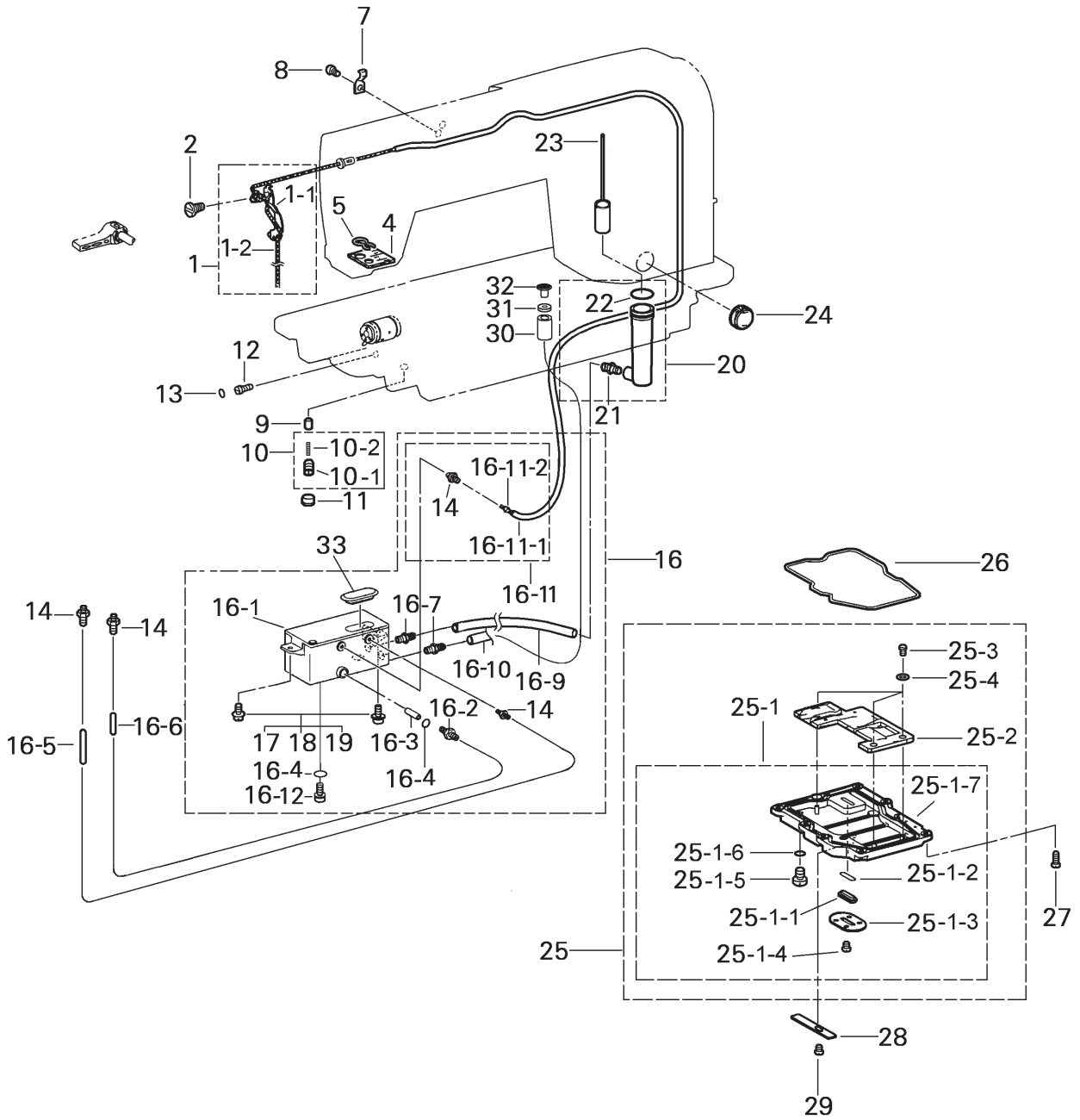
8. LUBRICATION MECHANISM



8. LUBRICATION MECHANISM

| No. | Ref.No. | Description | Qt | Note |
|---------|------------|----------------------|----|------|
| 1 | | Wick holder assy | 1 | |
| 1-1 | 230100018 | Wick holder | 1 | |
| 1-2 | | Wick | 1 | |
| 2 | BXF9868009 | Screw M5x7 | 1 | |
| 4 | BX72341000 | Felt | 1 | |
| 5 | B965373089 | Felt support | 1 | |
| 7 | BXF9815009 | Cord holder T2 | 1 | |
| 8 | B048500294 | Screw M5x8 | 1 | |
| 9 | 036400015 | Plunger | 1 | |
| 10 | | Pump cap screw assy | 1 | |
| 10-1 | BX85720609 | Screw | 1 | |
| 10-2 | B966234009 | Spring compression | 1 | |
| 11 | B906289009 | Rubber cap 10.5 | 1 | |
| 12 | BX85729009 | Adjusting screw | 1 | |
| 13 | B029006230 | O ring S4 | 1 | |
| 14 | BX85728009 | Oil feeding pipe | 4 | |
| 16 | 230121000 | Oil tank set | 1 | |
| 16-1 | 230121100 | Oil tank assy | 1 | |
| 16-2 | 230121002 | Oil feeding pipe M8 | 1 | |
| 16-3 | 230100014 | FeltΦ6x15 | 1 | |
| 16-4 | B029002030 | O ring P8 | 2 | |
| 16-5 | BXF9700009 | Vinyl tube 3x5 L=140 | 1 | |
| 16-6 | BXF9700009 | Vinyl tube 3x5 L=100 | 1 | |
| 16-7 | BXF7060009 | Oil feeding pipe | 2 | |
| 16-9 | BXF9700009 | Vinyl tube 6x8 L=190 | 1 | |
| 16-10 | BXF7940009 | Vinyl tube 6x8 L=250 | 1 | |
| 16-11 | BXF8767009 | Vitta assy | 1 | |
| 16-11-1 | BXF9706009 | Vinyl tube 3x5 L=900 | 1 | |
| 16-11-2 | W180103099 | Nylon wick | 1 | |
| 16-12 | BXF9707009 | Screw M8 | 1 | |
| 17 | B048509894 | Screw M5x12 | 2 | |
| 18 | B082050864 | Spring washer 2-5 | 2 | |
| 19 | B085050874 | Washer 5 | 2 | |

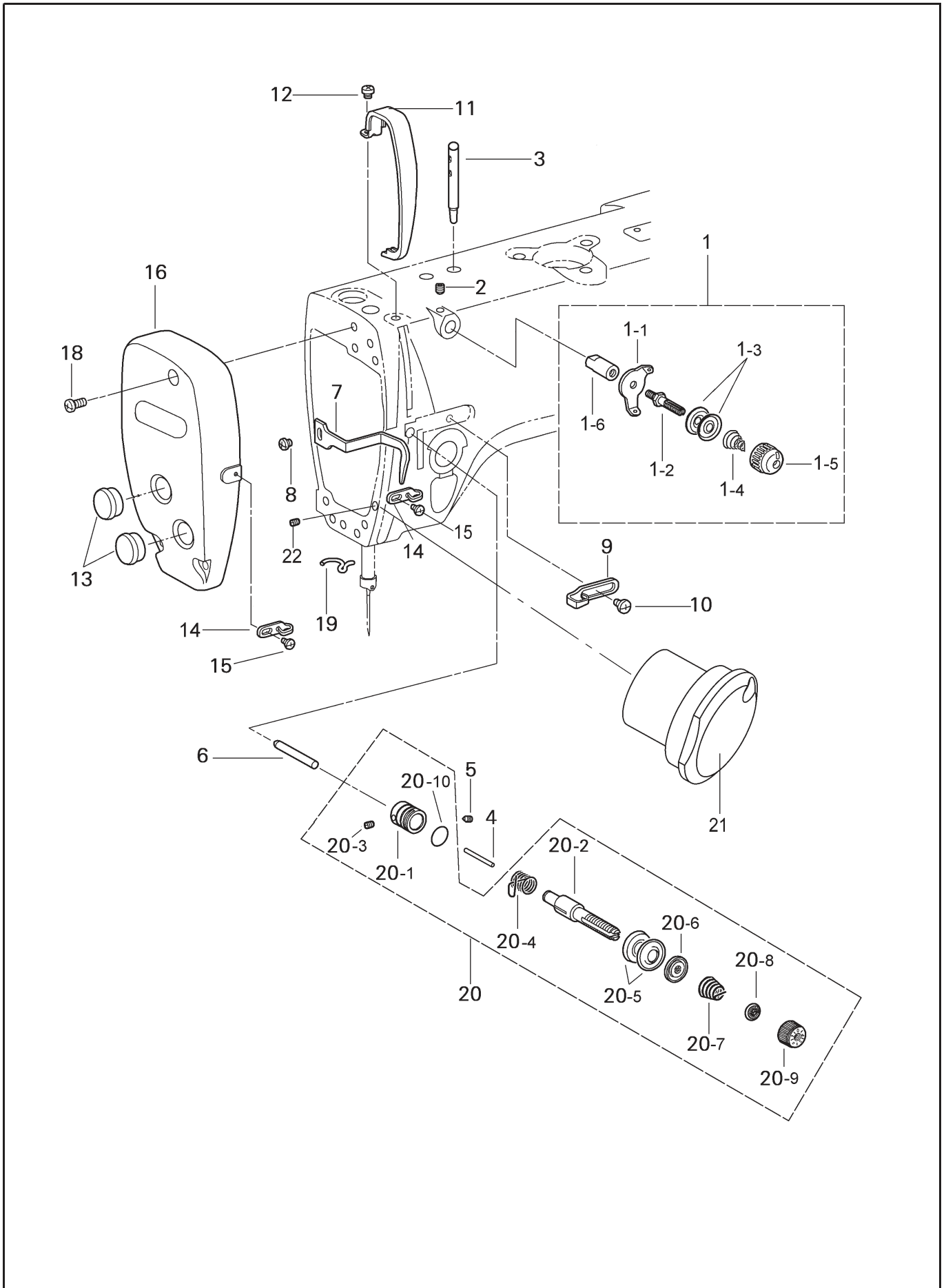
8. LUBRICATION MECHANISM



8. LUBRICATION MECHANISM

| No. | Ref.No. | Description | Qt | Note |
|--------|------------|-----------------------|----|------|
| 20 | | Sub tank assy | 1 | |
| 21 | 230120001 | Oil feeding pipe | 1 | |
| 22 | B029088230 | O ring S22 | 1 | |
| 23 | 230122000 | Float assy | 1 | |
| 24 | BX63501009 | Oil gauge window | 1 | |
| 25 | | Bed bottom cover unit | 1 | |
| 25-1 | | Bed bottom cover assy | 1 | |
| 25-1-1 | BX59838000 | Oil window B-cover | 1 | |
| 25-1-2 | B029095230 | O ring S15 | 1 | |
| 25-1-3 | BXF9797009 | Window cover | 1 | |
| 25-1-4 | B048500494 | Screw M5x6 | 4 | |
| 25-1-5 | BXF9707009 | Screw M8 | 1 | |
| 25-1-6 | B029002030 | O ring P8 | 1 | |
| 25-1-7 | 217100014 | Bed bottom cover | 1 | |
| 25-2 | BXF9795709 | Bottom cover felt | 1 | |
| 25-3 | B048600494 | Screw M4x6 | 3 | |
| 25-4 | S150610003 | Washer plain L4 | 3 | |
| 26 | BXF9796009 | Bottom cover packing | 1 | |
| 27 | B048509894 | Screw M5x12 | 9 | |
| 28 | BXF9794009 | Cord holder plate | 1 | |
| 29 | B048500494 | Screw M5x6 | 1 | |
| 30 | 230121003 | Oil feeding pocket | 1 | |
| 31 | 230121004 | Rubber tube | 1 | |
| 32 | 230121005 | Rubber cap | 1 | |
| 33 | 230121001 | | | |

9. THREADING MECHANISM



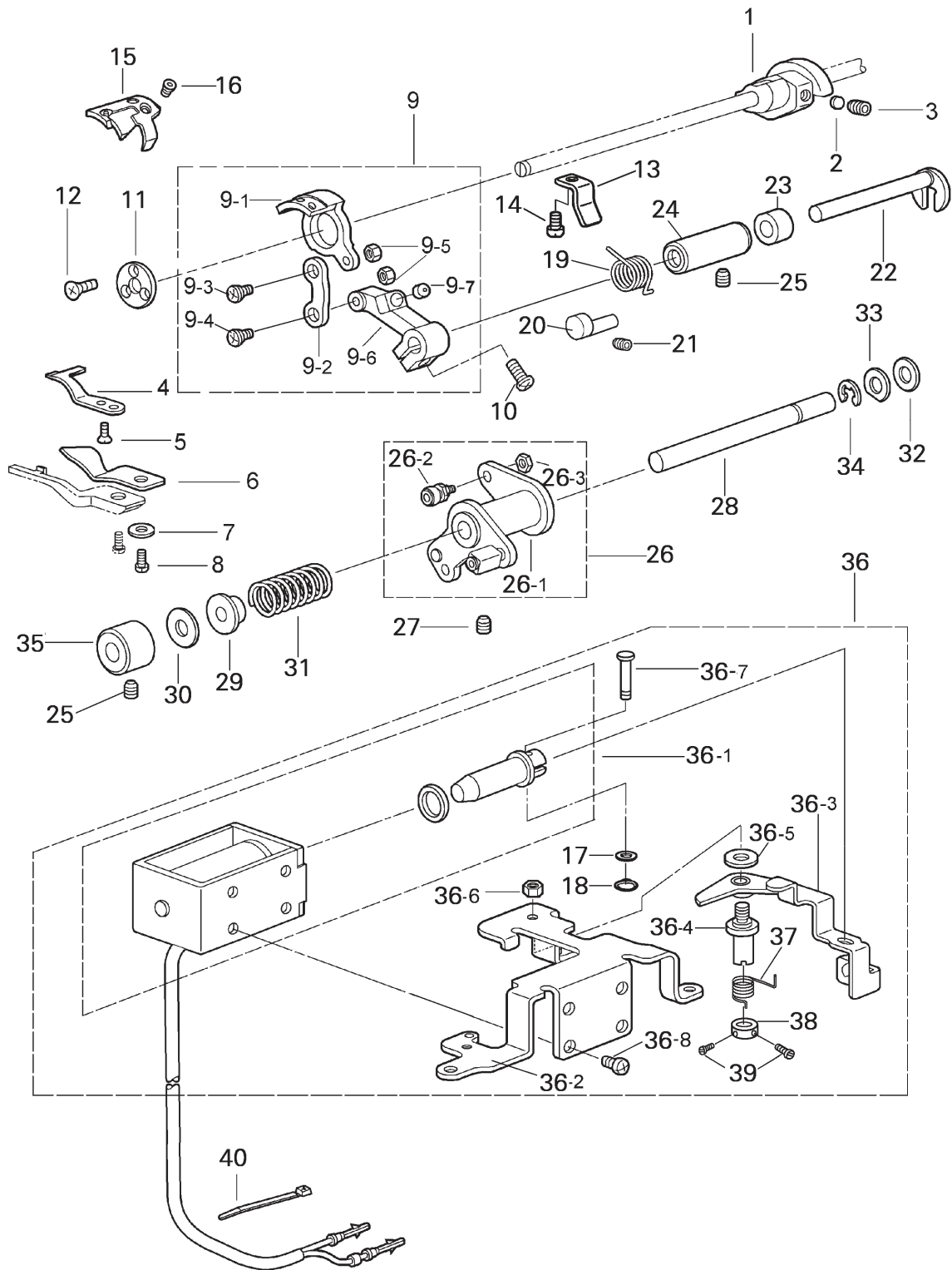
9. THREADING MECHANISM

| No. | Ref.No. | Description | Qt | Note |
|-------|------------|-----------------------------|----|------|
| 1 | BXF8758909 | Pre-tension assy B | 1 | |
| 1-1 | BXF8748009 | Thread guide | 1 | |
| 1-2 | BX65547009 | Thread guide tension stud | 1 | |
| 1-3 | B966506009 | Thread guide disc | 2 | |
| 1-4 | BXF8752909 | Pre-tension spring | 1 | |
| 1-5 | BXF4943009 | Thread tension nut | 1 | |
| 1-6 | BXF8747009 | Pre-tension base | 1 | |
| 2 | B098500574 | Set screw M5x5 | 1 | |
| 3 | BXF9751009 | Spool pin | 1 | |
| 4 | BX09691000 | Tension release pin | 1 | |
| 5 | BXF9881909 | Set screw M6x6 | 1 | |
| 6 | 260140008 | Tension release stud | 1 | |
| 7 | BXF8693009 | Thread guide P-bar bracket | 1 | |
| 8 | B048600294 | Screw M4x8 | 1 | |
| 9 | BXF9765009 | Arm thread guide R | 1 | |
| 10 | B040500494 | Screw M5x6 | 1 | |
| 11 | 001100005 | Thread take-up lever cover | 1 | |
| 12 | B048500494 | Screw M5x6 | 1 | |
| 13 | 230100019 | Rubber cap 15.5 | 2 | |
| 14 | BXF3839009 | Face plate thread guide | 2 | |
| 15 | B040750494 | Screw M3.5x6 | 2 | |
| 16 | 230100005 | Faceplate | 1 | |
| 18 | B048509694 | Screw M5x14 | 3 | |
| 19 | B900537009 | Thread guide D | 1 | |
| 20 | BXF3837009 | Thread tension bracket assy | 1 | M |
| 20 | BX55455809 | Thread tension bracket assy | 1 | H |
| 20-1 | BX60172009 | Thread tension bracket | 1 | |
| 20-2 | B994188009 | Tension stud | 1 | |
| 20-3 | B900608006 | Set screw SM3.57 | 1 | |
| 20-4 | BX08480809 | Thread take-up spring | 1 | |
| 20-5 | B965664009 | Tension disc | 2 | |
| 20-6 | B951205009 | Tension disc presser | 1 | |
| 20-7 | BXF3835009 | Tension spring | 1 | M |
| 20-7 | BX06478909 | Tension spring | 1 | H |
| 20-8 | BX98669009 | Washer | 1 | |
| 20-9 | BX79078009 | Tension nut | 1 | |
| 20-10 | B996816009 | O ring | 1 | |
| 21 | 260180000 | Clip line solenoid assy | 1 | |
| 22 | S150212027 | Screw M3 x 4 | 1 | |

10. BOBBIN WINDER MECHANISM

| No. | Ref.No. | Description | Qt | Note |
|--------|------------|-----------------------------|----|------|
| 1 | BXF9139909 | Bobbin winder unit | 1 | |
| 1-1 | B062060768 | Retaining ring E4 | 1 | |
| 1-2 | BXF9135009 | B-winder shaft support assy | 1 | |
| 1-3 | BXF9132009 | Bobbin winder shaft | 1 | |
| 1-4 | 217102002 | O ring | 1 | |
| 1-5 | 217102001 | Bobbin fixed spring | 1 | |
| 1-6 | BXF9120009 | Bobbin winder wheel | 1 | |
| 1-7 | S150224025 | Set screw M4x6 | 2 | |
| 1-8 | BX85321000 | Rubber ring | 1 | |
| 1-9 | BXF9129909 | Bobbin presser cam assy | 1 | |
| 1-9-1 | BXF9128909 | Bobbin presser cam | 1 | |
| 1-9-2 | BXF9127009 | Bobbin winder arm shaft | 1 | |
| 1-9-3 | S150224026 | Set screw M5x5 | 1 | |
| 1-10 | B062060768 | Retaining ring E4 | 1 | |
| 1-11 | B085040974 | Washer plain S6 | 2 | |
| 1-12 | 217100042 | Bobbin presser arm | 1 | |
| 1-13 | S150237044 | Screw M4x12 | 1 | |
| 1-14 | 142A11004 | Bobbin presser | 1 | |
| 1-15 | S150217018 | Screw M4x5 | 1 | |
| 1-16 | 217100033 | Bobbin support | 1 | |
| 1-17 | BXF9121009 | Bobbin winder lever | 1 | |
| 1-18 | BXF9110909 | Spring | 1 | |
| 1-19 | BXF9119009 | Bobbin winder base spring | 1 | |
| 1-20 | BXF9138009 | Bobbin winder support assy | 1 | |
| 1-20-1 | BXF9136009 | Bobbin winder support shaft | 1 | |
| 1-20-2 | BXF9137009 | Bobbin winder support | 1 | |
| 2 | BXF9118909 | Bobbin winder fixed screw | 3 | |
| 3 | BXF9751009 | Spool pin | 1 | |
| 4 | BXF9116009 | Bobbin winder tension assy | 1 | |
| 5 | B098500574 | Set screw M5x5 | 1 | |

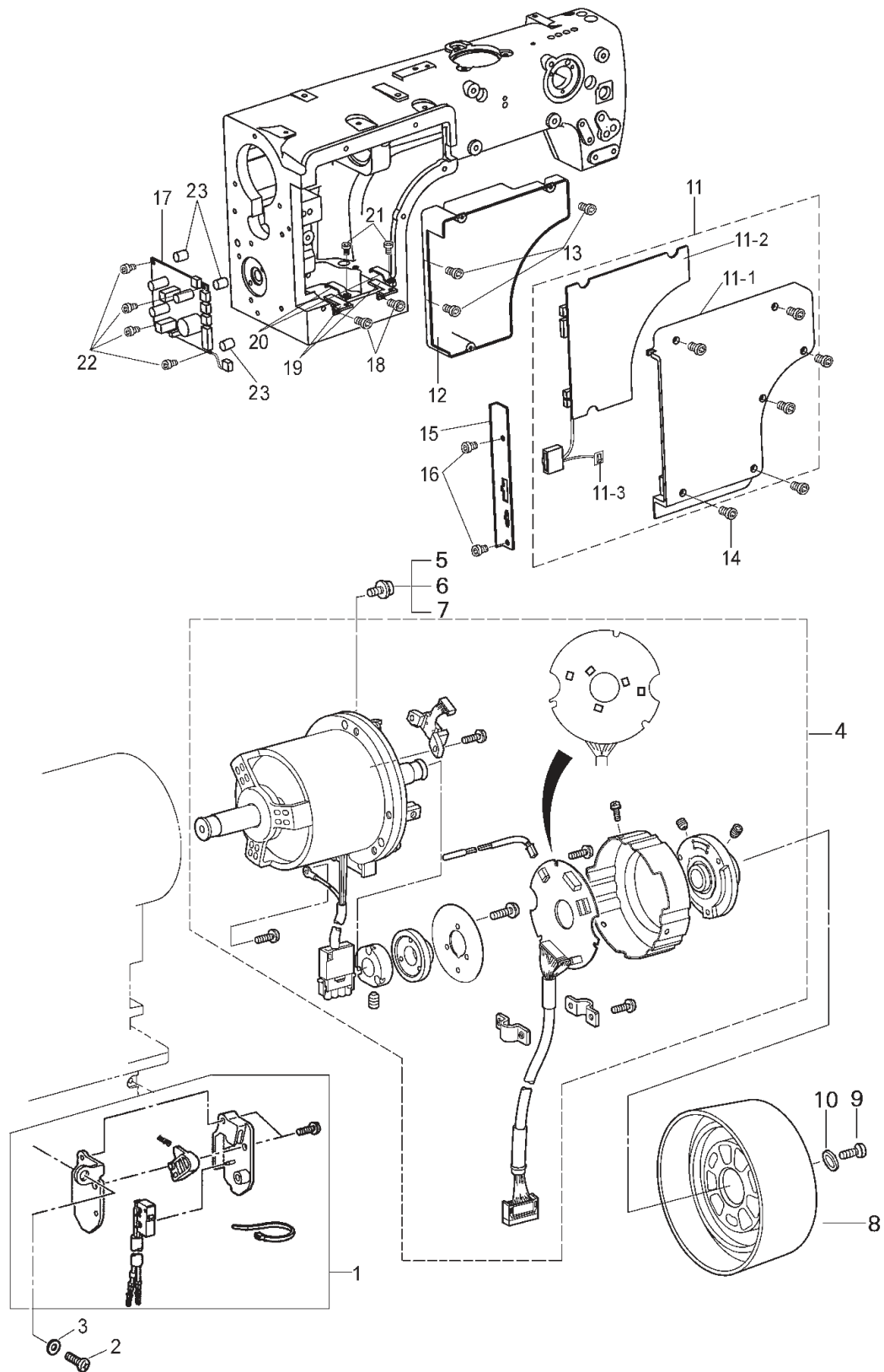
11. THREAD TRIMMER MECHANISM



11. THREAD TRIMMER MECHANISM

| No. | Ref.No. | Description | Qt | Note |
|------|------------|--------------------------------|----|------|
| 1 | BXF3558009 | Thread trimmer cam | 1 | |
| 2 | 165400001 | Spacer 5.3 | 2 | |
| 3 | B096339088 | Set screw SM 6.35 | 2 | |
| 4 | BX08473009 | Fixed knife | 1 | |
| 5 | B908267006 | Screw SM 3.57 | 1 | |
| 6 | BX08467009 | Lower thread finger | 1 | |
| 7 | B084060874 | Washer M 4 | 1 | |
| 8 | B048600494 | Screw M4x6 | 1 | |
| 9 | | Thread trimmer holder assy | 1 | |
| 9-1 | BXF3827009 | Holder M-knife | 1 | |
| 9-2 | BX85684009 | Thread trimmer connecting rod | 1 | |
| 9-3 | 217100046 | Shoulder screw M4 | 1 | |
| 9-4 | 217100047 | Shoulder screw M4 | 1 | |
| 9-5 | B089600704 | Nut M4 | 2 | |
| 9-6 | BXF3826809 | Thread trimmer lever | 1 | |
| 9-7 | BXF3825009 | Lever stopper | 1 | |
| 10 | B048509694 | Screw M5x14 | 1 | |
| 11 | BXF3823009 | Knife holder presser plate | 1 | |
| 12 | B006709094 | Screw M3x10 | 3 | |
| 13 | BXF3769909 | Thread trimmer stopper base | 1 | |
| 14 | B048600494 | Screw M4x6 | 1 | |
| 15 | BX08465009 | Movable knife | 1 | |
| 16 | 036720003 | Screw SM4.37 | 2 | |
| 17 | B085060878 | Washer plain 4 | 1 | |
| 18 | B062060968 | Retaining ring C4 | 1 | |
| 19 | 230100011 | Thread trimmer lever spring | 1 | |
| 20 | 230100012 | Pin | 1 | |
| 21 | B098500574 | Screw M5x5 | 1 | |
| 22 | BX08463089 | Forked shaft | 1 | |
| 23 | BX08462089 | Collar | 1 | |
| 24 | B956529089 | Forked shaft bush | 1 | |
| 25 | B098040574 | Screw M6x5 | 2 | |
| 26 | BXF9748009 | Thread trimmer lever unit | 1 | |
| 26-1 | BXF9747009 | Thread trimmer lever assy | 1 | |
| 26-2 | BXF8852009 | Roller shaft C assy | 1 | |
| 26-3 | B905876007 | Nut SM4.37 | 1 | |
| 27 | BX87459009 | Screw M6x6 | 1 | |
| 28 | B956517889 | Thread trimmer cam lever shaft | 1 | |
| 29 | B956516080 | Collar | 1 | |
| 30 | BX85676000 | Rubber cushion | 1 | |
| 31 | 217100034 | Spring extension | 1 | |
| 32 | B956514000 | Cushion | 1 | |
| 33 | B990743009 | Washer plain special E8 | 1 | |
| 34 | B062040768 | Retaining ring E6 | 1 | |
| 35 | BXF9744009 | Cam lever shaft bush | 1 | |
| 36 | | Thread trimmer solenoid assy | 1 | |
| 36-1 | 260190001 | Thread trimmer solenoid | 1 | |
| 36-2 | BXF9743009 | Thread trimmer solenoid base | 1 | |
| 36-3 | BXF3212809 | Solenoid lever | 1 | |
| 36-4 | BXF3211009 | Shoulder screw M6 | 1 | |
| 36-5 | BXF3100009 | Washer | 1 | |
| 36-6 | B089040704 | Nut M6 | 1 | |
| 36-7 | BXF3822009 | Pin | 4 | |
| 36-8 | B048600294 | Screw M4x8 | 1 | |
| 37 | 217N00027 | Cam lever spring | 1 | |
| 38 | 036710010 | Set collar | 2 | |
| 39 | 036550008 | Screw | 1 | |
| 40 | W060402029 | Band | 1 | |

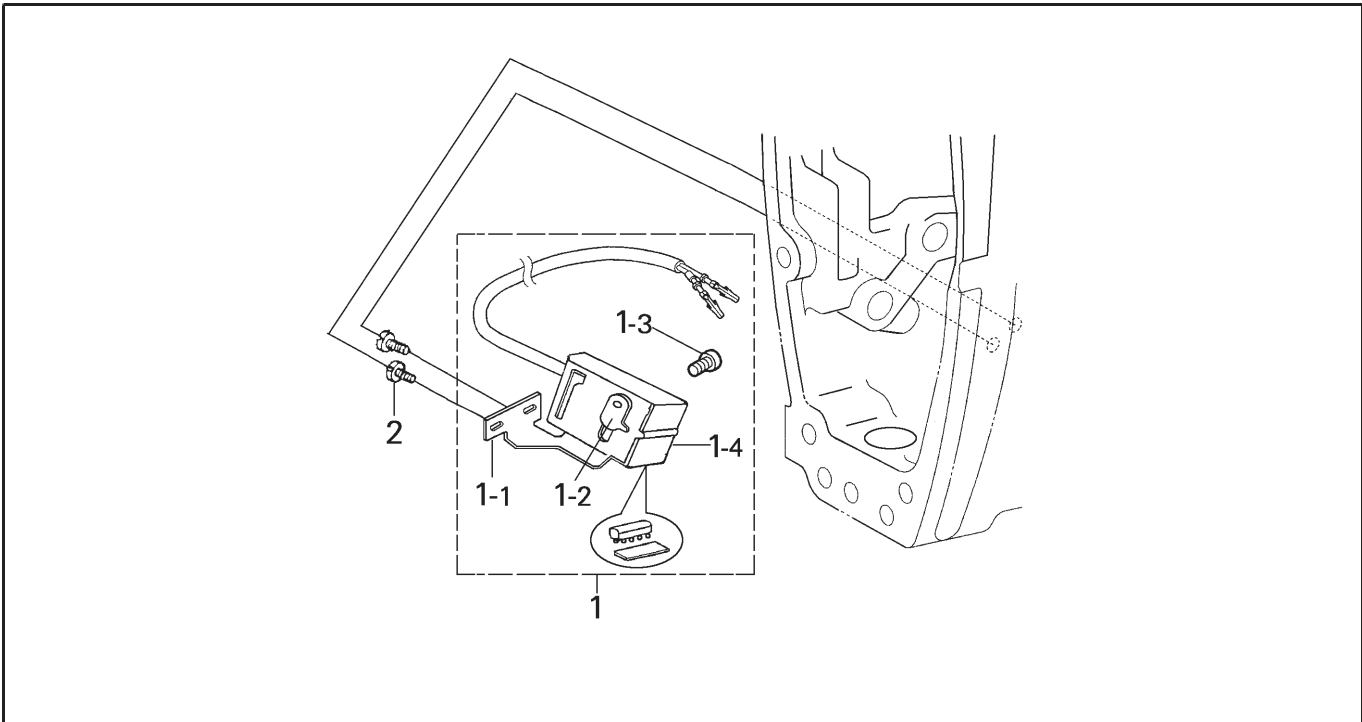
12. Control mechanism



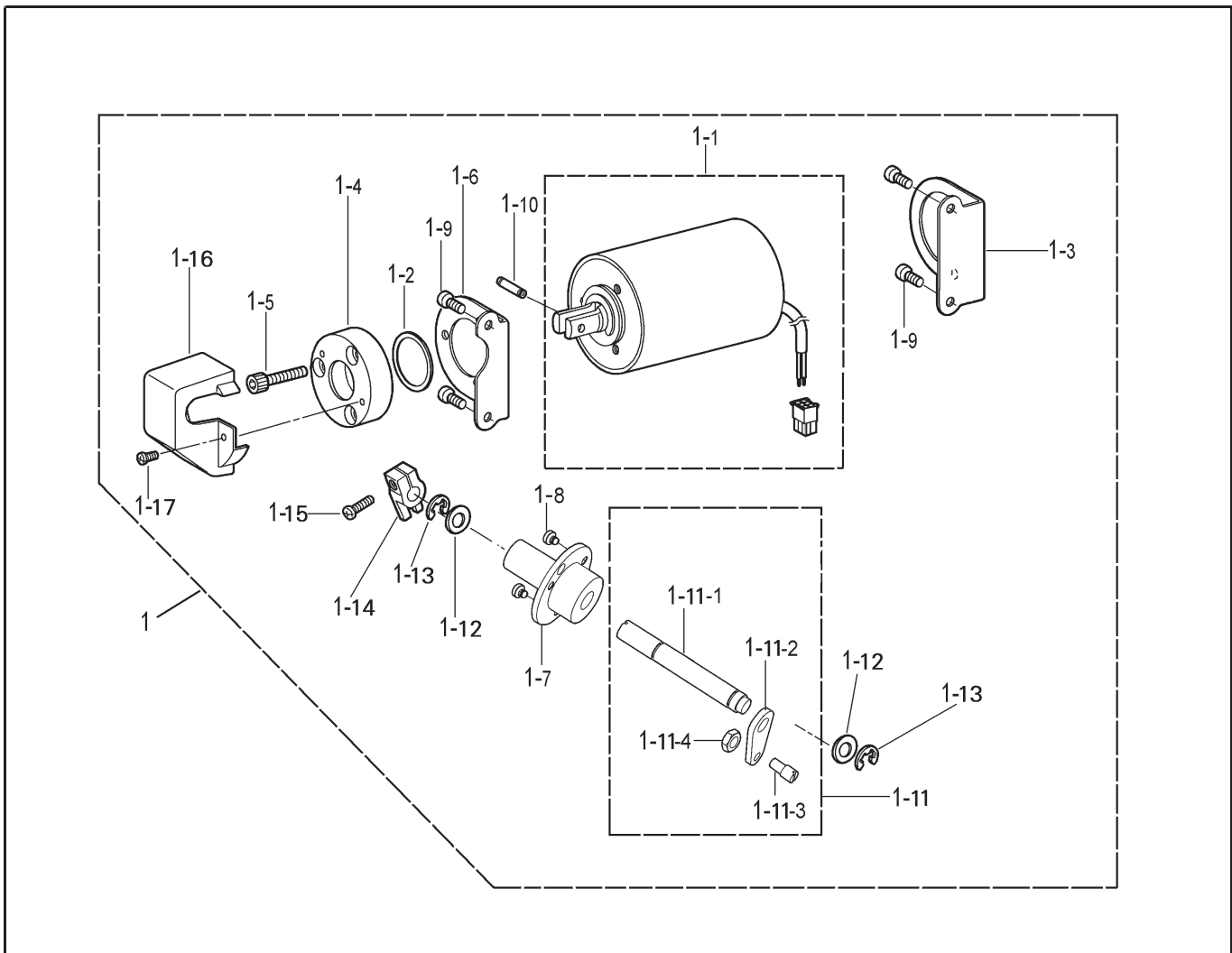
12. CONTROL MECHANISM

| No. | Ref.No. | Description | Qt | Note |
|------|------------|-------------------------|----|------|
| 1 | BXF3819909 | Safety switch assy | 1 | |
| 2 | B048040204 | Screw M6x8 | 1 | |
| 3 | B085040974 | Washer S6 | 1 | |
| 4 | 260120010 | Motor | 1 | |
| 5 | BXF8756009 | Screw M5x25 | 3 | |
| 6 | B082050864 | Washer spring 2-5 | 3 | |
| 7 | B084050974 | Washer S5 | 3 | |
| 8 | 230100007 | Pulley | 1 | |
| 9 | B040609094 | Screw M4x10 | 3 | |
| 10 | 230100013 | Pulley washer | 3 | |
| 11 | 260120000 | Side plate assy | 1 | |
| 11-1 | 260120001 | Side plate | 1 | |
| 11-2 | 260120002 | Power circuit board | 1 | |
| 11-3 | S151099223 | Power supply switch | 1 | |
| 12 | 260120003 | Cover | 1 | |
| 13 | S150209138 | Screw M3 × 6 | 3 | |
| 14 | S150205117 | Screw M4 × 25 | 6 | |
| 15 | 260120005 | Plug installation board | 1 | |
| 16 | S150209028 | Screw M5 × 8 | 2 | |
| 17 | 260120004 | Control circuit board | 1 | M |
| | 260171200 | Control circuit board | 1 | H |
| 18 | S150209009 | Screw M3 × 10 | 2 | |
| 19 | 260120006 | D Wire frame | 2 | |
| 20 | 260120007 | Cord holder | 2 | |
| 21 | S150209137 | Screw M4 × 6 | 2 | |
| 22 | S150209145 | Screw M3 × 12 | 4 | |
| 23 | 260120012 | Block | 4 | |

13. QUICK REVERSE SWITCH MECHANISM



14. PRESSER FOOT LIFTING SET MECHANISM



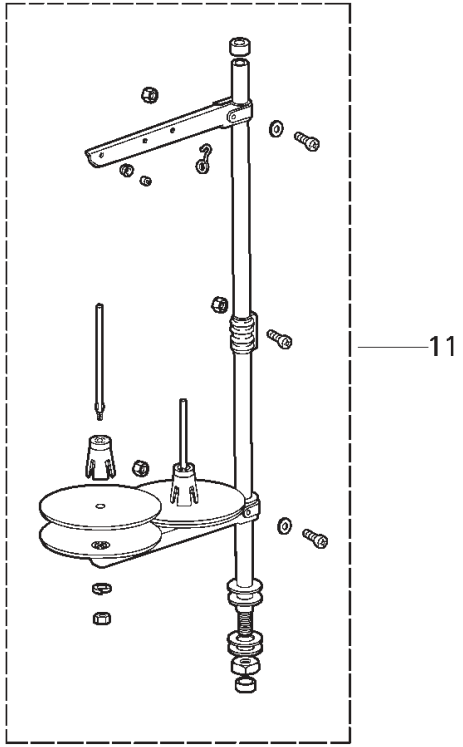
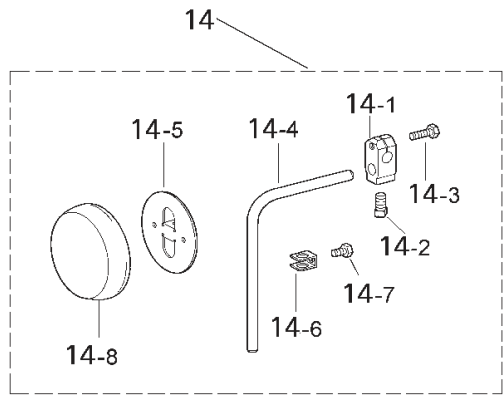
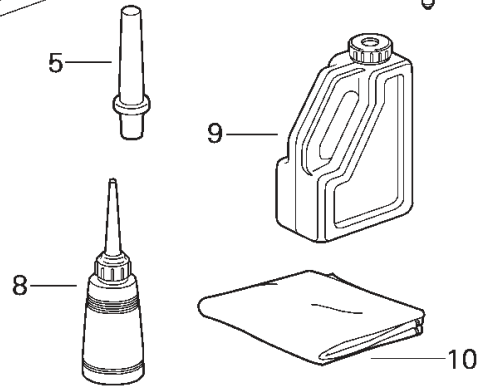
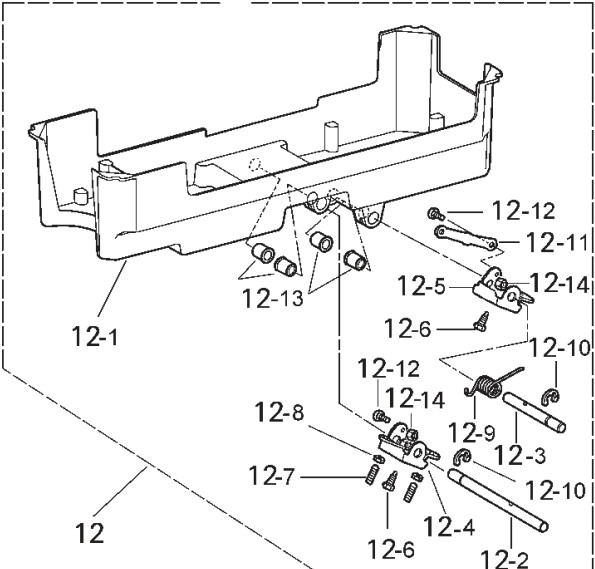
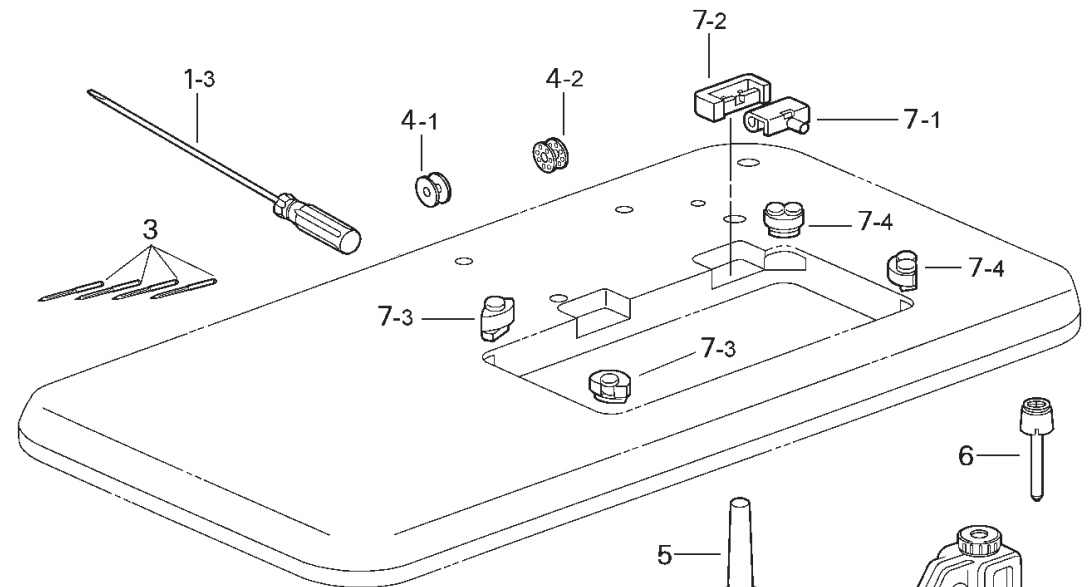
13. QUICK REVERSE SWITCH MECHANISM

| No. | Ref.No. | Description | Qt | Note |
|-----|------------|------------------|----|------|
| 1 | | R-actuator assy | 1 | |
| 1-1 | 230123001 | R-switch support | 1 | |
| 1-2 | 230123002 | Splint | 1 | |
| 1-3 | B048600494 | Screw M4x6 | 1 | |
| 1-4 | 260167000 | R-actuator assy | 1 | |
| 2 | B048500294 | Screw M5x8 | 2 | |

14. PRESSER FOOT LIFTING SET MECHANISM

| No. | Ref.No. | Description | Qt | Note |
|--------|------------|-----------------------------|----|------|
| 1 | | Solenoid P-foot lifter assy | 1 | |
| 1-1 | 260190006 | P-foot lifter solenoid assy | 1 | |
| 1-2 | BX94485050 | Rubber stopper | 1 | |
| 1-3 | BXF9775009 | Solenoid base R | 1 | |
| 1-4 | BX94481959 | Solenoid stopper | 1 | |
| 1-5 | B092349272 | Bolt SM5.95x18 | 3 | |
| 1-6 | BXF9774009 | Solenoid base L | 1 | |
| 1-7 | 260150001 | Shaft sleeve | 1 | |
| 1-8 | S150211022 | Screw M4x12 | 3 | |
| 1-9 | S150106003 | Bolt M6x12 | 4 | |
| 1-10 | BX94470059 | Pin | 1 | |
| 1-11 | 260151000 | Knee lifter shaft assy | 1 | |
| 1-11-1 | 260151001 | Knee lifter shaft | 1 | |
| 1-11-2 | 260151002 | Connection board | 1 | |
| 1-11-3 | 260151003 | Screw M5 | 1 | |
| 1-11-4 | B089500794 | Nut M5 | 1 | |
| 1-12 | BX80754009 | Washer 10 | 2 | |
| 1-13 | B062020768 | Retaining ring E8 | 2 | |
| 1-14 | BXF9772009 | Presser foot lifter arm | 1 | |
| 1-15 | B048509694 | Screw M5x14 | 1 | |
| 1-16 | BX94467001 | Cover | 1 | |
| 1-17 | B048430498 | Screw SM3.57-40x6 | 2 | |

15. ACCESSORIES



15. ACCESSORIES

| No. | Ref.No. | Description | Qt | Note |
|-------|------------|-------------------------------|----|------|
| 1-3 | W050102050 | Screw-driver | 1 | |
| 3 | S150901001 | Needle | 4 | M |
| 3 | S150901002 | Needle | 4 | H |
| 4-1 | 036400006 | Bobbin | 3 | M |
| 4-2 | 048400003 | Bobbin | 3 | H |
| 5 | BX04055001 | Head rest | 1 | |
| 6 | BX01476080 | Knee lifter complying bar | 1 | |
| 7-1 | B967228009 | Head hinge | 2 | |
| 7-2 | B967190001 | Rubber cushion | 2 | |
| 7-3 | BXF9148009 | Head cushion< for left side> | 2 | |
| 7-4 | BXF9147009 | Head cushion< for right side> | 2 | |
| 8 | W050202013 | Oiler assy | 4 | |
| 9 | W050202009 | Oil tank assy | 1 | |
| 10 | W060302076 | Head cover | 1 | |
| 11 | 006F00030 | Cotton stand assy 2DR | 1 | |
| 12 | BXF9789909 | Oil pan assy | 1 | |
| 12-1 | BXF9788809 | Oil pan | 1 | |
| 12-2 | BXF9787009 | Knee lifter shaft L | 1 | |
| 12-3 | BXF9786009 | Knee lifter shaft R | 1 | |
| 12-4 | BXF9785009 | Knee lifter limit support | 1 | |
| 12-5 | BXF9784009 | Knee lifter R | 1 | |
| 12-6 | BX85766009 | Bolt M6 | 1 | |
| 12-7 | BX85635009 | Set screw M6x19 | 2 | |
| 12-8 | B089040704 | Nut M6 | 2 | |
| 12-9 | B7F7502009 | Twist spring | 2 | |
| 12-10 | B964817009 | Retaining ring E10 | 1 | |
| 12-11 | BXF9783009 | Knee lifter connecting rod | 1 | |
| 12-12 | 217100037 | Shoulder screw M5 | 1 | |
| 12-13 | B961532080 | Bush | 2 | |
| 12-14 | S150503004 | Nut M5 | 4 | |
| 14 | BX75289089 | Knee lifter assy | 1 | |
| 14-1 | B964071089 | Knee lifter bracket | 1 | |
| 14-2 | B900647009 | Bolt square SM7.94 | 1 | |
| 14-3 | BX75280089 | Bolt SM5.95x20 | 1 | |
| 14-4 | 230100022 | Knee lifter bar | 1 | |
| 14-5 | 022920009 | Knee lifter plate | 1 | |
| 14-6 | B996143009 | Knee lifter plate stopper | 1 | |
| 14-7 | B990023009 | Bolt SM5.95-28x8 | 1 | |
| 14-8 | W210105006 | Knee lifter plate cover | 1 | |

Thank you very much for buying our company's sewing machine. Before using your new machine, please read the safety instructions below and the explanations given in the instruction manual.

With industrial sewing machines, it is normal to carry out work while positioned directly in front of moving parts such as the needle and thread take-up lever, and consequently there is always a danger of injury that can be caused by these parts. Follow the instructions from training personnel and instructors regarding safe and correct operation before operating the machine so that you will know how to use it correctly.

SAFETY INSTRUCTIONS

1. Safety indications and their meanings

This instruction manual and the indications and symbols that are used on the machine itself are provided in order to ensure safe operation of this machine and to prevent accidents and injury to yourself or other people.

The meanings of these indications and symbols are given below.

Indications



CAUTION

The instructions which follow this term indicate situations where failure to follow the instructions could cause injury when using the machine or physical damage to equipment and surroundings.

Symbols



..... This symbol (△) indicates something that you should be careful of. The picture inside the triangle indicates the nature of the caution that must be taken.



..... (For example, ⊘ the symbol at left means "beware of injury".)



..... This symbol (⊘) indicates something that you must not do.
This symbol (●) indicates something that you must do. The picture inside the circle indicates the nature of the thing that must be done.
(For example, the symbol at left means "you must make the ground connection".)

2. Notes on safety

DANGER



Wait at least 5 minutes after turning off the power switch and disconnecting the power cord from the wall outlet before opening the face plate of the control box. Touching areas where high voltages are present can result in severe injury.

CAUTION

Environmental requirements



Use the sewing machine in an area which is free from sources of strong electrical noise such as high – frequency welders. Sources of strong electrical noise may cause problems with correct operation.



Any fluctuations in the power supply voltage should be within $\pm 10\%$ of the rated voltage for the machine. Voltage fluctuations which are greater than this may cause problems with correct operation.



The power supply capacity should be greater than the requirements for the sewing machine's electrical consumption. Insufficient power supply capacity may cause problems with correct operation.



The ambient temperature should be within the range of 5°C to 35°C during use. Temperatures which are lower or higher than this may cause problems with correct operation.



The relative humidity should be within the range of 45% to 85% during use, and no dew formation should occur in any devices. Excessively dry or humid environments and dew formation may cause problems with correct operation.



Avoid exposure to direct sunlight during use. Exposure to direct sunlight may cause problems with correct operation.



In the event of an electrical storm, turn off the power and disconnect the power cord from the wall outlet. Lightning may cause problems with correct operation.

Installation



Machine installation should only be carried out by a qualified technician.



Contact your dealer or a qualified electrician for any electrical work that may need to be done.



The sewing machine weighs more than 44 kg. The installation should be carried out by two or more people.



Do not connect the power cord until installation is complete. The machine may operate if the treadle is depressed by mistake, which could result in injury.



Turn off the power switch before inserting or removing the plug, otherwise damage to the control box could result.



Be sure to connect the ground. If the ground connection is not secure, you run a high risk of receiving a serious electric shock, and problems with correct operation may also occur.



When securing the cords, do not bend the cords excessively or fasten them too hard with staples, otherwise there is the danger that fire or electric shocks could occur.



If using a work table which has casters, the casters should be secured in such a way so that they cannot move.



Use both hands to hold the machine head when tilting it back or returning it to its original position. If only one hand is used, the weight of the machine head may cause your hand to slip, and your hand may get caught.



Be sure to wear protective goggles and gloves when handling the lubricating oil and grease, so that they do not get into your eyes or onto your skin, otherwise inflammation can result.

Furthermore, do not drink the oil or eat the grease under any circumstances, as they can cause vomiting and diarrhea.

Keep the oil out of the reach of children.



CAUTION

Sewing



This sewing machine should only be used by operators who have received the necessary training in safe use beforehand.



Attach all safety device before using the sewing machine.

If the machine is used without these devices attached, injury may result.



The sewing machine should not be used for any applications other than sewing.



Do not touch any of the moving parts or press any objects against the machine while sewing, as this may result in personal injury or damage to the machine.



Be sure to wear protective goggles when using the machine.

If goggles are not worn, there is the danger that if a needle breaks, parts of the broken needle may enter your eyes and injury may result.



Use both hands to hold the machine head when tilting it back or returning it to its original position. If only one hand is used, the weight of the machine head may cause your hand to slip, and your hand may get caught.



Turn off the power switch at the following times.

The machine may operate if the treadle is depressed by mistake, which could result in injury.

- When threading the needle
- When replacing the bobbin and needle
- When not using the machine and when leaving the machine unattended.



If an error occurs in machine, or if abnormal noises or smells are noticed, immediately turn off the power switch. Then contact your nearest dealer or a qualified technician.



If using a work table which has casters, the casters should be secured in such a way so that they cannot move.



If the machine develops a problem, contact your nearest dealer or a qualified technician.

Cleaning



Turn off the power switch before carrying out cleaning. The machine may operate if the treadle is depressed by mistake, which could result in injury.



Be sure to wear protective goggles and gloves when handling the lubricating oil and grease, so that they do not get into your eyes or onto your skin, otherwise inflammation can result.



Use both hands to hold the machine head when tilting it back or returning it to its original position. If only one hand is used, the weight of the machine head may cause your hand to slip, and your hand may get caught.

Furthermore, do not drink the oil or eat the grease under any circumstances, as they can cause vomiting and diarrhea.

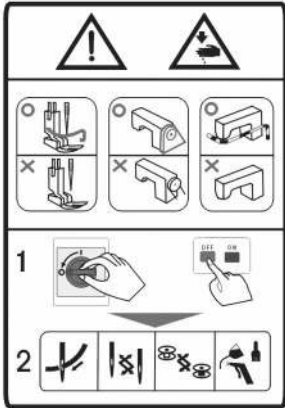
Keep the oil out of the reach of children.

3.Warning labels.

The following warning labels appear on the sewing machine.

Please follow the instructions on the labels at all times when using the machine. If the labels have been removed or are difficult to read, please contact your nearest dealer.

1



2



Be sure to connect the ground. If the ground connection is not secure, you run a high risk of receiving a serious electric shock, and problems with correct operation may also occur.

3

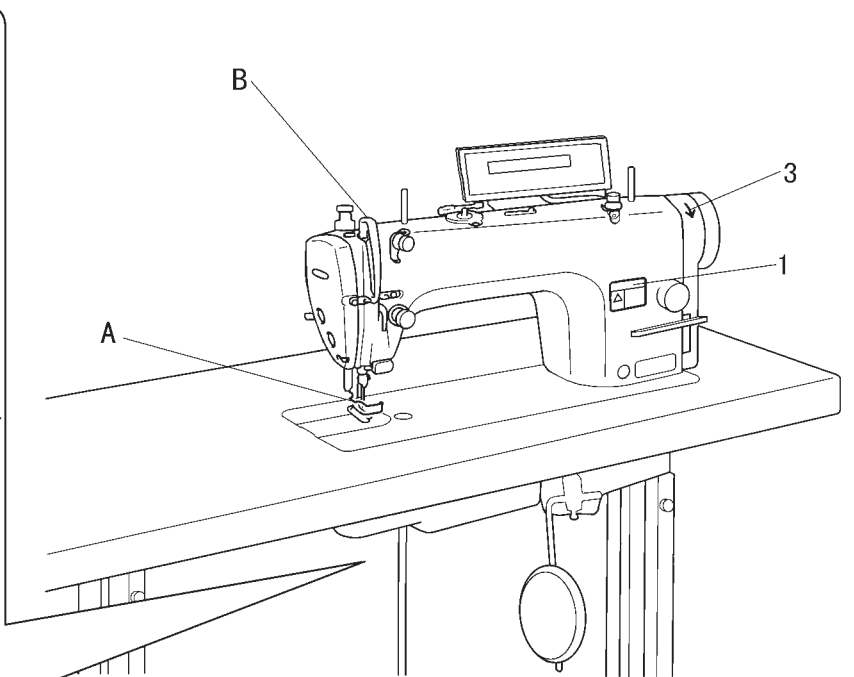
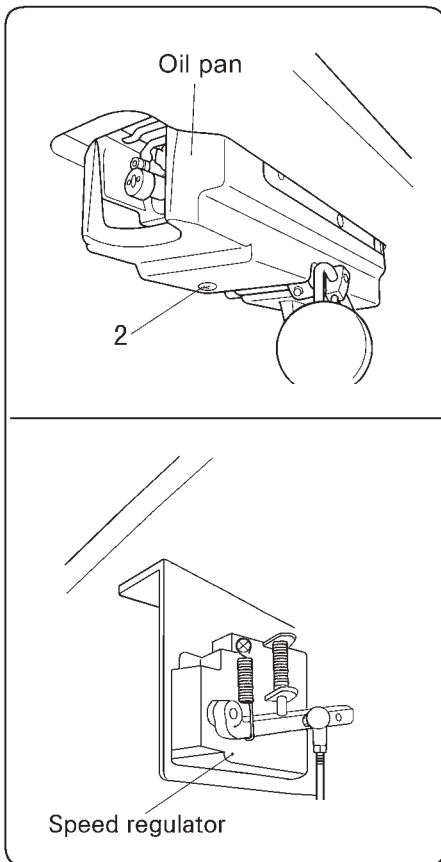


Direction of operation

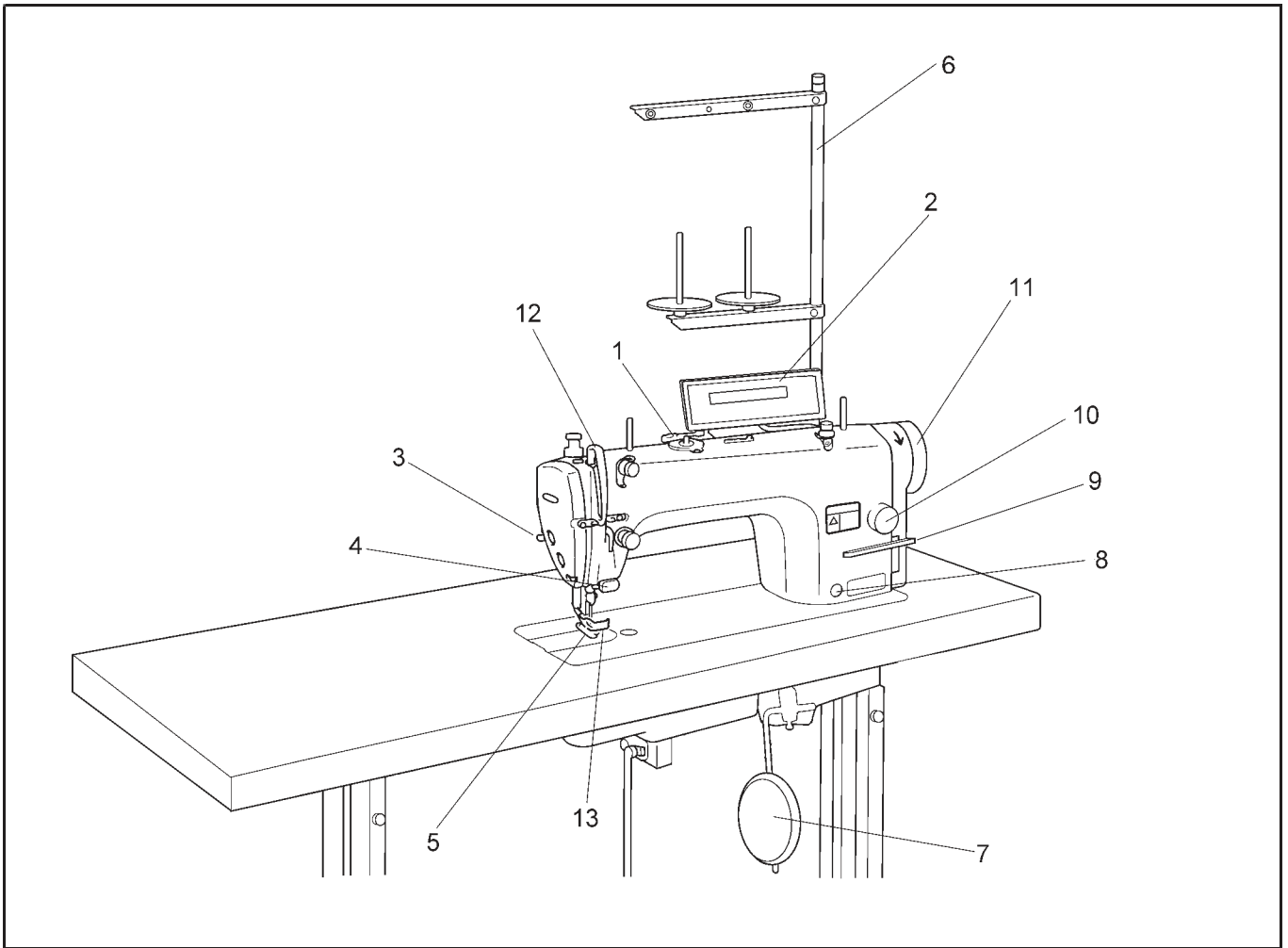
safety devices:

(A) Finger guard

(B) Thread take-up cover



1. NAMES OF MAJOR PARTS



1. Bobbin winder

3. Lifting lever

5. Presser foot

7. Knee lifter assembly

9. Reverse lever

11. Machine pulley

2. Operation panel

4. Quick reverse(Actuator)

6. Cotton stand

8. Oil gauge window

10. Stitch length dial






Safety devices

12. Thread take-up cover

13. Finger guard

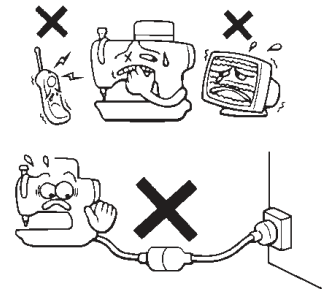
2.INSTALLATION

CAUTION

-  Machine installation should only be carried out by a qualified technician.
-  Do not connect the power cord until installation is complete. The machine may operate if the treadle is depressed by mistake, which could result in injury.
-  Contact your dealer or a qualified electrician for any electrical work that may need to be done.
-  Use both hands to hold the machine head when tilting it back or returning it to its original position. If only one hand is used, the weight of the machine head may cause your hand to slip, and your hand may get caught.
-  The sewing machine weighs more than 44kg. The installation should be carried out by two or more people.

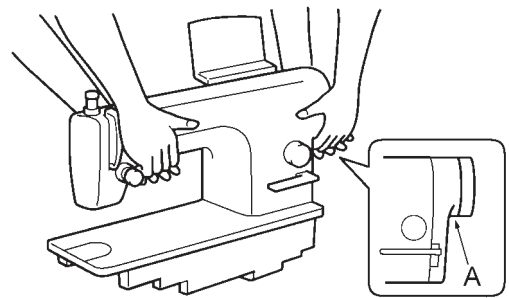
About the machine set-up location

- Do not set up this sewing machine near other equipment such as televisions, radios or cordless telephones, otherwise such equipment may be affected by electronic interference from the sewing machine.
- The sewing machine should be plugged directly into an AC wall outlet. Operation problems may result if extension cords are used.



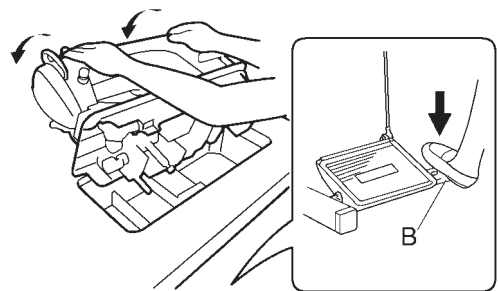
Carrying the machine

- The machine should be carried by the arm by two people as shown in the illustration.
- * Hold the motor cover (A) by hand also so that the pulley does not rotate.



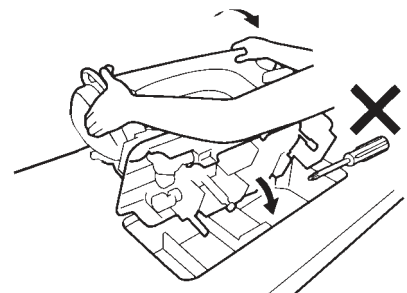
Tilting back the machine head

- Hold section (B) with your foot so that the table does not move, and then push the arm with both hands to tilt back the machine head.



Returning the machine head to the upright position

1. clear away any tools, etc. which may be near the table holes.
2. While holding the face plate with your left hand, gently return the machine head to the upright position with your right hand.

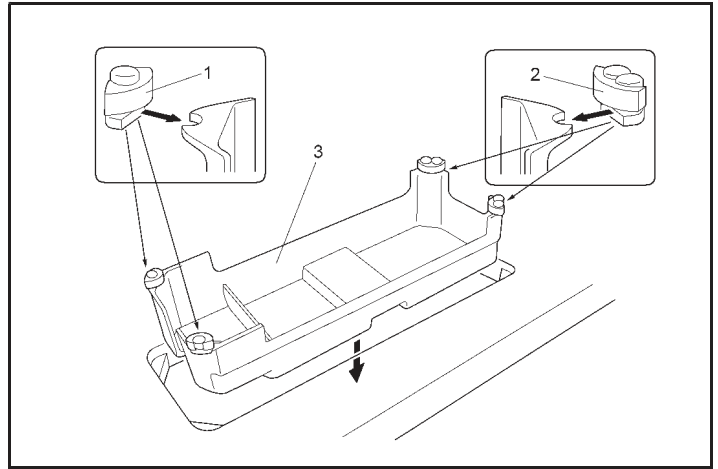


2.Oil pan

(1) Head cushions (left) [2 pcs]

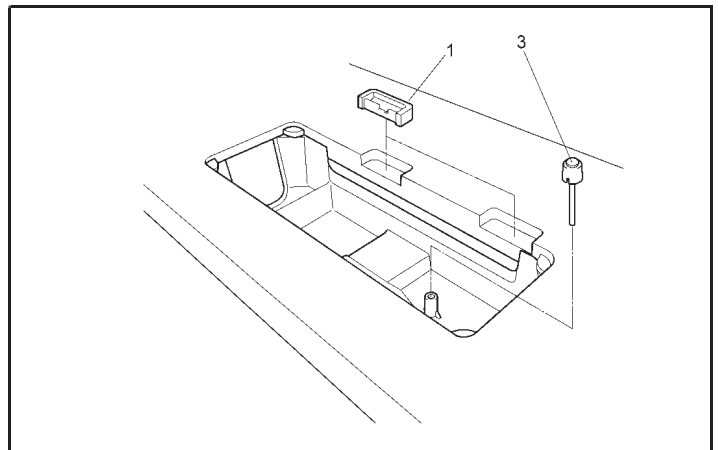
(2)Head cushions (right) [2 pcs]

(3) Oil pan.



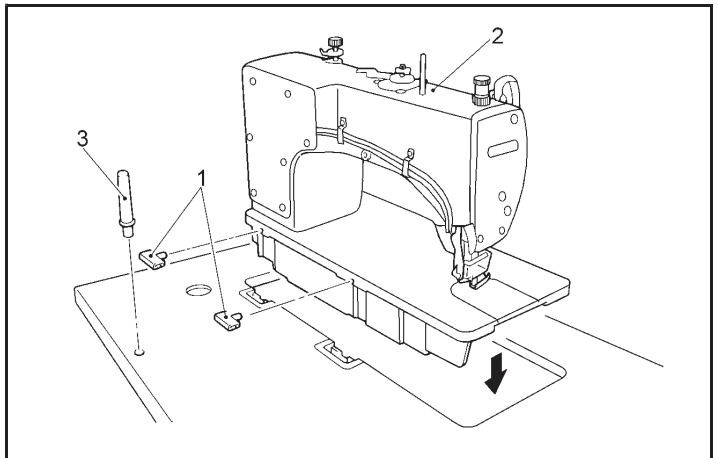
3.Rubber cushions

(1)Rubber cushions[2 pcs]



4.Knee lifter complying bar

(3) Knee lifter complying bar



5.Machine head

(1) Hinges [2 pcs]

(2) Machine head

(3) Head rest

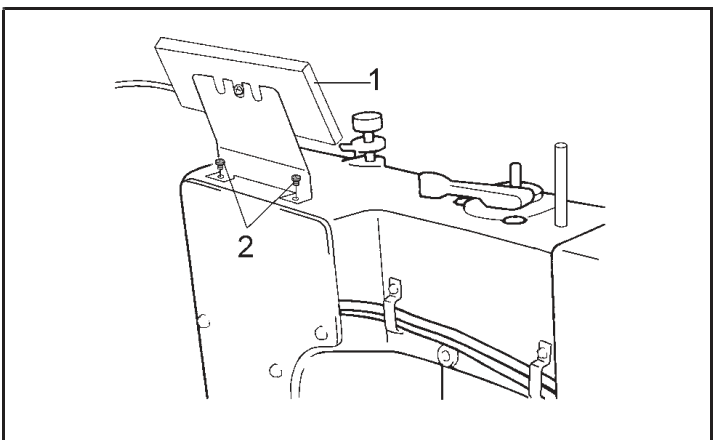
NOTE:

Tap the head rest (3) securely into the table hole. If the head rest (3) is not pushed in as far as it will go, the machine head will not be sufficiently stable when it is tilted back.

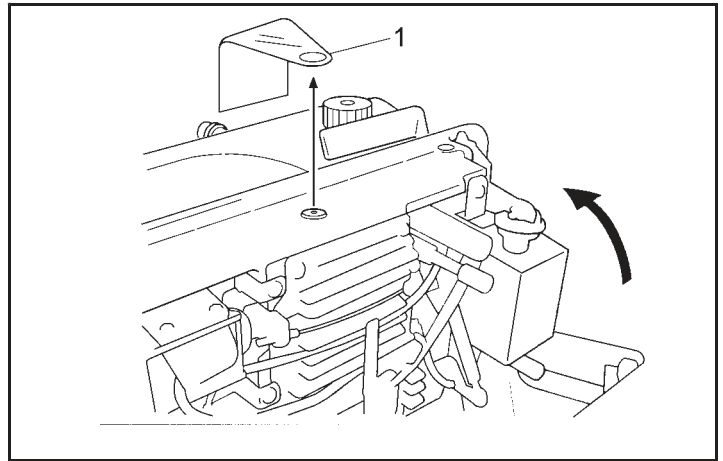
6. Operation panel

(1) Operation panel

(2) Screws [2 pcs]



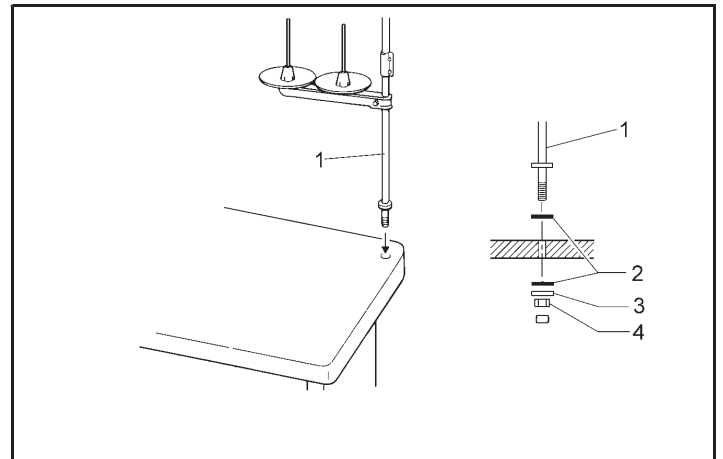
- 7. Sticker (Remove)
- (1) sticker



- 8. Cotton stand
- (1) cotton stand

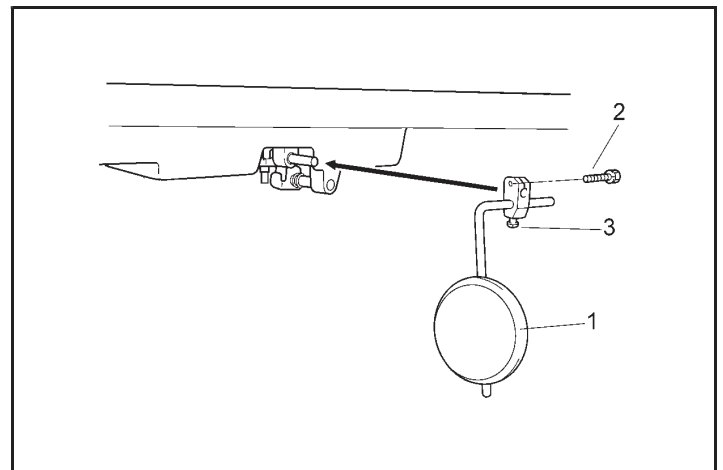
NOTE:

Securely tighten the nut (4) so that the two rubber gasket (2) and the washer (3) are securely clamped and so that the cotton stand (1) does not move.



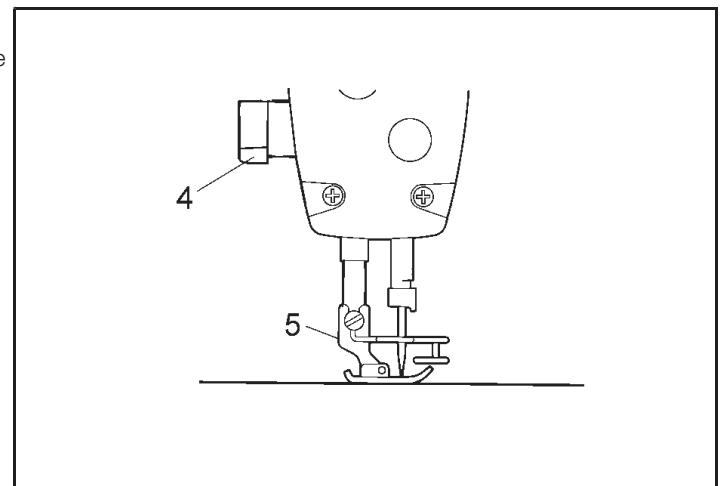
- 9. Knee lifter plate
- (1) Knee lifter plate
- (2) Bolt

* Loosen the bolt (3) and move the knee lifter plate (1) to a position where it is easy to use.

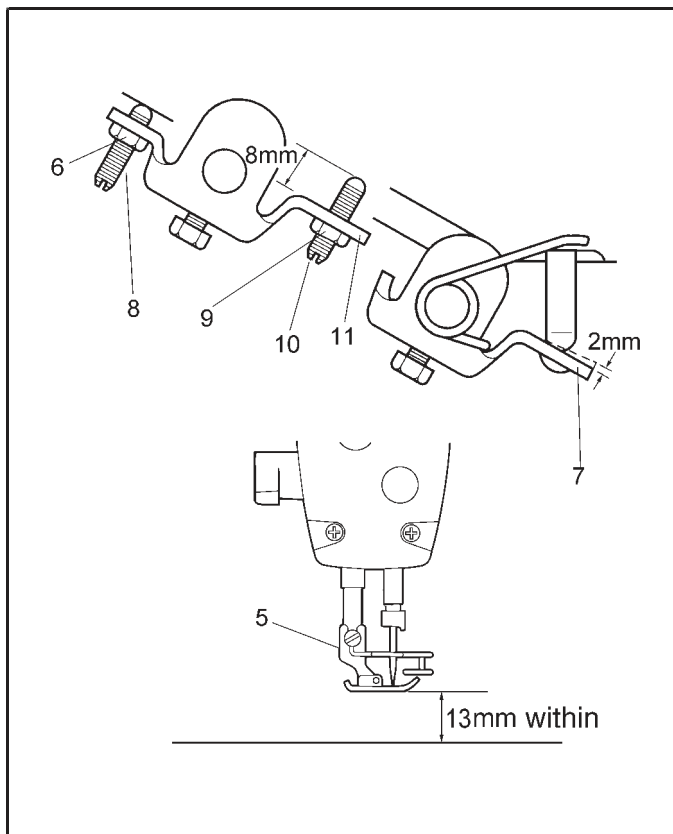


<Knee lifter adjustment>

1. Turn the machine pulley so that the feed dog is below the top of the needle plate.
2. Lower the presser foot (5) by using the lifting lever (4).



3. Loosen the nut(6).
4. Turn the screw (8) to adjust so that the amount of play in the knee lifter (7) is approximately 2 mm when the knee lifer plate (1) is gently pressed.
5. Securely tighten the nut (6)
6. loosen the nut (9)
7. Turn the screw (10) until the distance between the end of the screw (10) and the knee lifter (11) is approximately 8 mm.
8. Turn the adjusting screw (10) to adjust so that the presser foot (5) is at the desired position within a distance of 16 mm of the needle plate when the knee lifter plate (1) is fully pressed.
9. After adjustment is completed, securely tighten the nut (9).



2-3. Lubrication



CAUTION



Do not connect the power cord until lubrication has been completed, otherwise the machine may operate if the treadle is depressed by mistake, which could result in injury.



Be sure to wear protective goggles and gloves when handling the lubricating oil and grease, so that they do not get into your eyes or onto your skin, otherwise inflammation can result.

Furthermore, do not drink the oil or eat the grease under any circumstances, as they can cause vomiting and diarrhea.

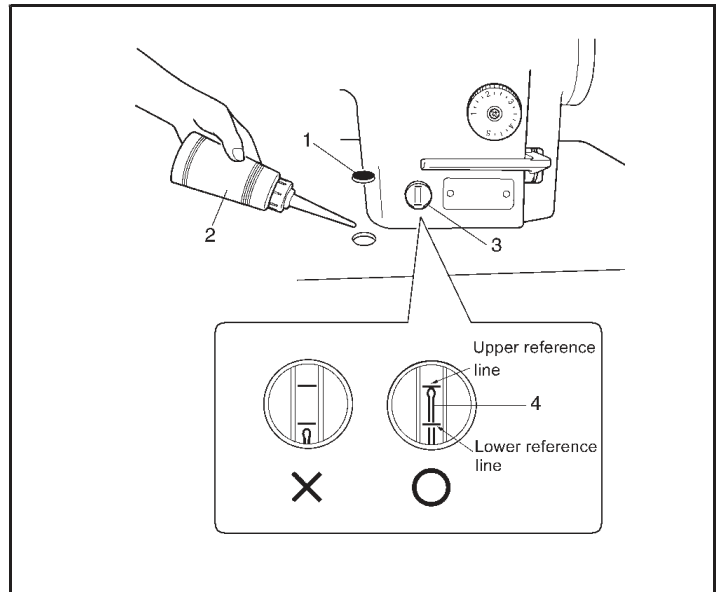
Keep the oil out of the reach of children.

● The sewing machine should always be lubricated and the oil supply replenished before it is used for the first time, and also after long periods of non-use.

● Use only the lubricating oil our company.

1. Remove the rubber cap (1), and pour 130 ml of lubricating oil from the accessory oil bottle (2) into the oil tank (3)
(Use the reference line (4) as a guide when pouring)

2. Replace the rubber cap (1)



2-4 Test operation (Operating the treadle)



CAUTION



Do not touch any of the moving parts or press any objects against the machine while sewing, as this may result in personal injury or damage to the machine.

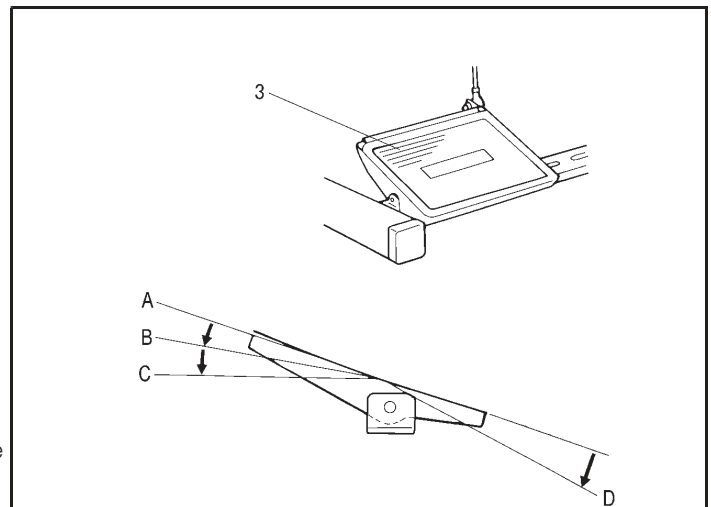
<Turning on the power>

Press the ON power switch(1)

The power indicator(2)will illuminate.

<Test operation >

1. Check that the machine sews at low speed when the treadle (3) is gently pressed to position (B).
2. Then check that it sews at high speed when the treadle (3) is gently pressed to position (C).
3. After pressing the treadle (3) forward, check that the needle is lowered to the needle plat when the treadle (3) is returned to the neutral position (A).
(when needle down stopping has been set.)
4. If the treadle (3) is pressed to position (D), thread trimming is carried out and the needle then rises above the needle plate and stops.



3. PREPARATION BEFORE SEWING

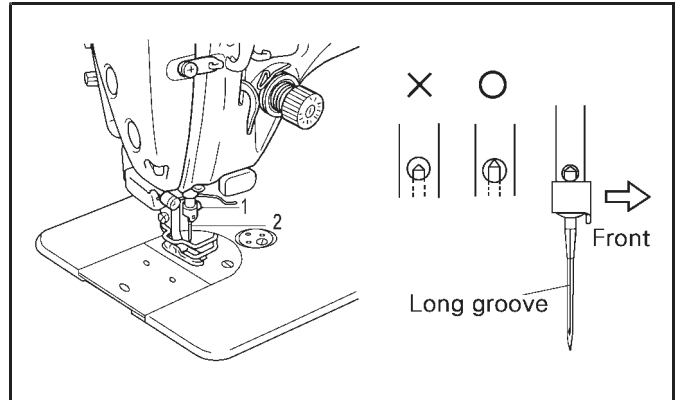
3-1.Installing the needle

 CAUTION



Turn off the power switch before installing the needle.
The machine may operate if the treadle is depressed by mistake, which could result in injury .

1. turn the machine pulley to move the needle bar to its highest position.
2. Loosen the screw (1).
3. Insert the needle (2) in a straight line as far as it will go, making sure that the long groove on the needle is at the left, and then securely tighten the screw(1).



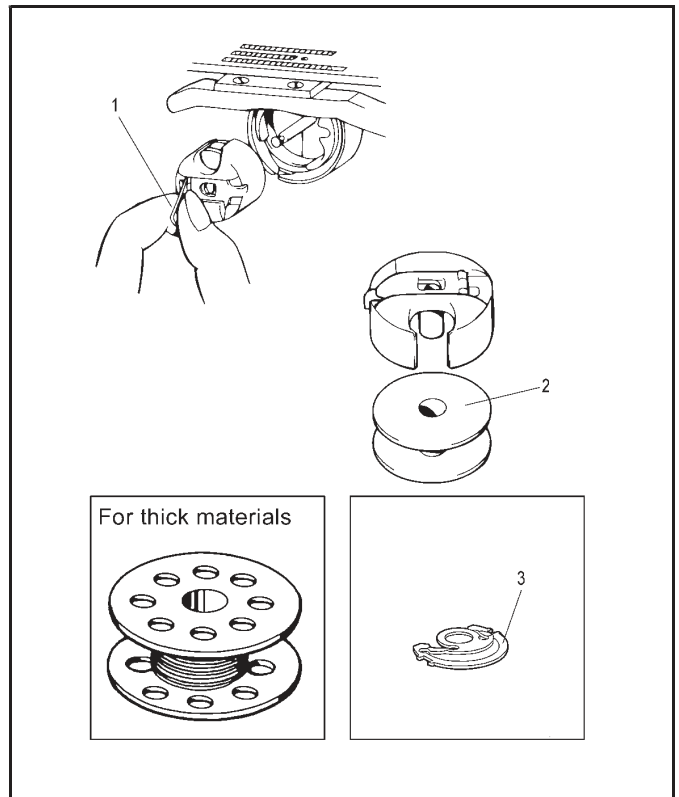
3-2.Removing the bobbin case

 CAUTION



Turn off the power switch before removing the bobbin case.
The machine may operate if the treadle is depressed by mistake, which could result in injury .

1. Turn the machine pulley to raise the needle until it is above the needle plate.
 2. Pull the latch (1)of the bobbin case upward and then remove the bobbin case.
 3. The bobbin (2) will come out when the latch (1) is released .
- * There is an anti-spin spring(3) inside the bobbin case . the anti-spin spring(3) prevents the bobbin from racing at times such as during thread trimming.



3-3. Winding the lower thread



CAUTION

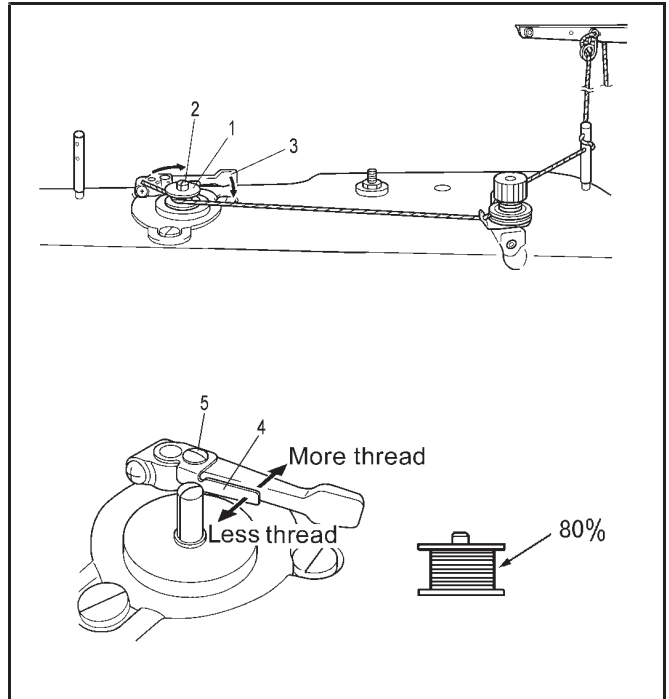


Do not touch any of the moving parts or press any objects against the machine while the lower thread, as this may result in personal injury or damage to the machine.

1. Turn on the power switch.
 2. Place the bobbin (1) onto the bobbin winder shaft(2).
 3. Wind the thread several times around the bobbin(1) in the direction indicated by the arrow.
 4. Push the bobbin presser arm(3) toward the bobbin (1).
 5. Raise the presser foot with the lifting lever .
 6. Depress the treadle. Lower thread winding will then start.
 7. Once winding of the lower thread is completed, the bobbin presser arm (3) will return automatically.
 8. After the thread has been wound on , remove the bobbin and cut the thread with the thread cutter(4).
- * Loosen the screw (5) and mover the thread cutter (4) to adjust the amount of thread wound onto the bobbin.

NOTE:

The amount of thread wound onto the bobbin should be a maximum of 80% of the bobbin capacity.



3-4 Installing the bobbin case



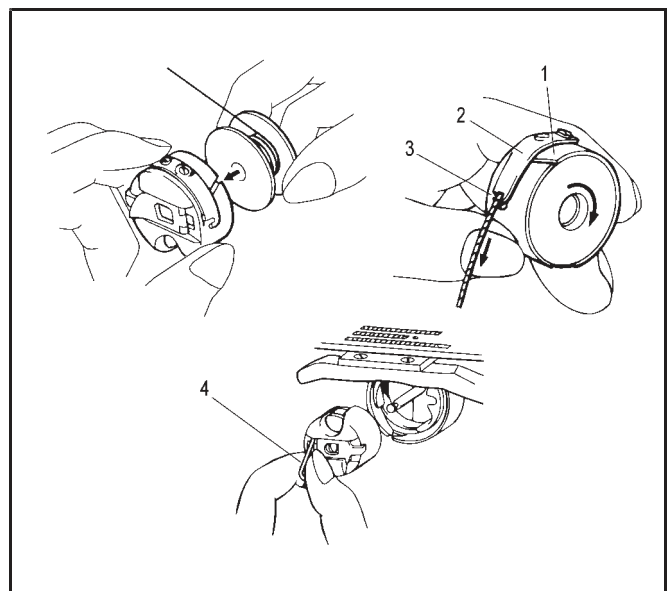
CAUTION



Turn off power switch before installing the bobbin case.

The machine may operate if the treadle is depressed by mistake , which could result in injury.

1. Turn the machine pulley to raise the needle until it is above the needle plate.
2. While holding the bobbin so that the thread winds to the right, insert the bobbin into the bobbin case.
3. Pass the thread through the slot (1) and under the tension spring (2), and then pull it out from the thread guide(3).
4. Check that bobbin turns clockwise when the thread is pulled.
5. Hold the latch (4) on the bobbin case and insert the bobbin case into the rotary hook..



3-5 Threading the upper thread



CAUTION

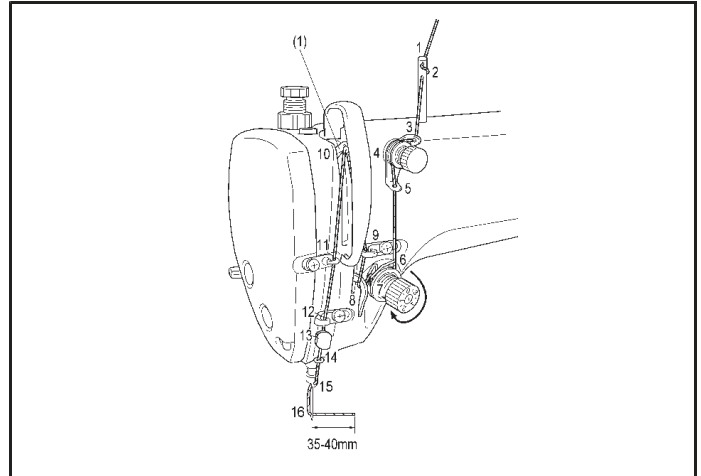


Turn off the power switch before threading the upper thread.

The machine may operate if the treadle is depressed by mistake. Which could result in injury.

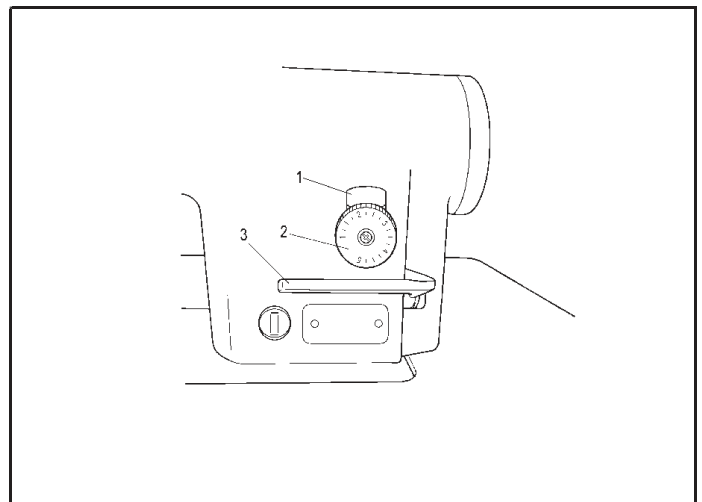
Turn the machine pulley and raise the thread take-up (1) before threading the upper thread.

This will make threading easier and it will prevent the thread from coming out at the sewing start.



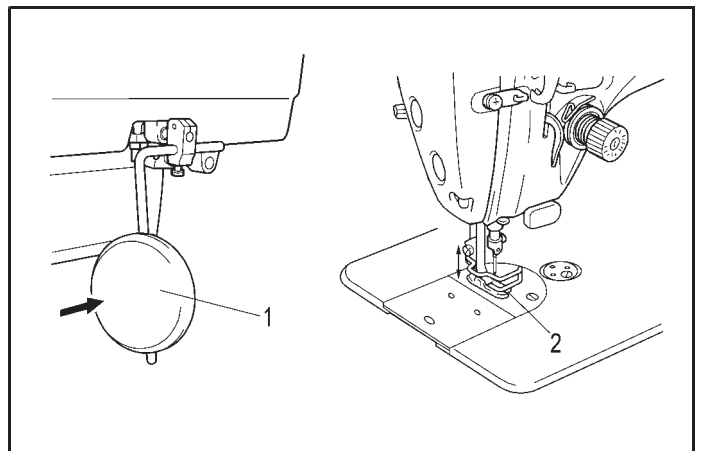
3-6 Adjusting the stitch length

1. Press the stitch button (1) .
 2. Turn the stitch length dial (2) clockwise or counter clockwise so that the desired stitch length is at the upper most position on the dial.
- The larger the number , the longer the stitch length will be .(The numbers on the dial are for use as a guide. The length of the finished stitches may vary depending on the type and thickness of material being sewn . Adjust while looking at the finished stitches.)
 - When turning the stitch length dial(2) from a larger setting to a smaller setting, it will be easier to turn the dial if the reverse lever(3) is pushed to the halfway-down position.
3. Release the stitch button (1) .
- Check that the stitch length dial (2) dose not rotate.



3-7 Using the knee lifter

The presser foot (2) can be raised by pressing the knee lifter plate(1).



4. SEWING

CAUTION



Attach all safety devices before using the sewing machine. If the machine is used without these devices attached, injury may result.



Turn off power switch at the following times.

The machine may operate if the treadle is depressed by mistake, which could result in injury.

- When threading the needle.
- When replacing the bobbin and needle
- When not using the machine and when leaving the machine unattended.



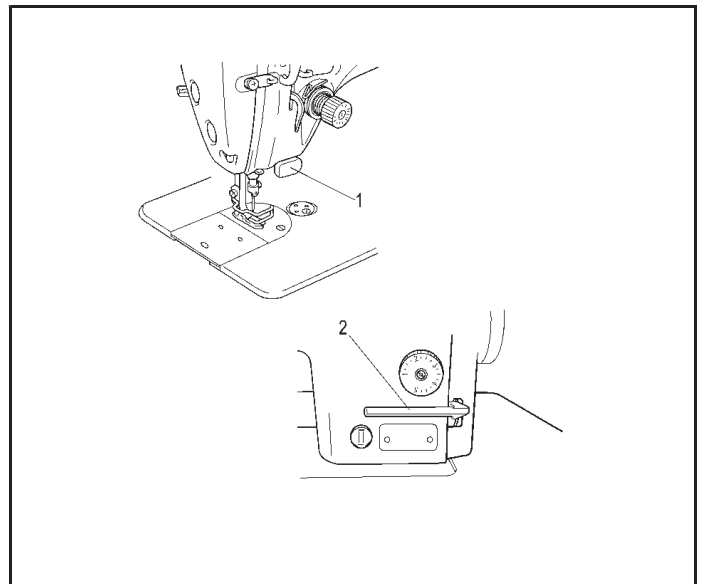
Do not touch any of the moving parts or press any objects against the machine while sewing, as this may result in personal injury or damage to the machine.



Use both hands to hold the machine head when tilting it back or returning it to its original position. If only one hand is used, the weight of the machine head may cause your hand to slip, and your hand may get caught.

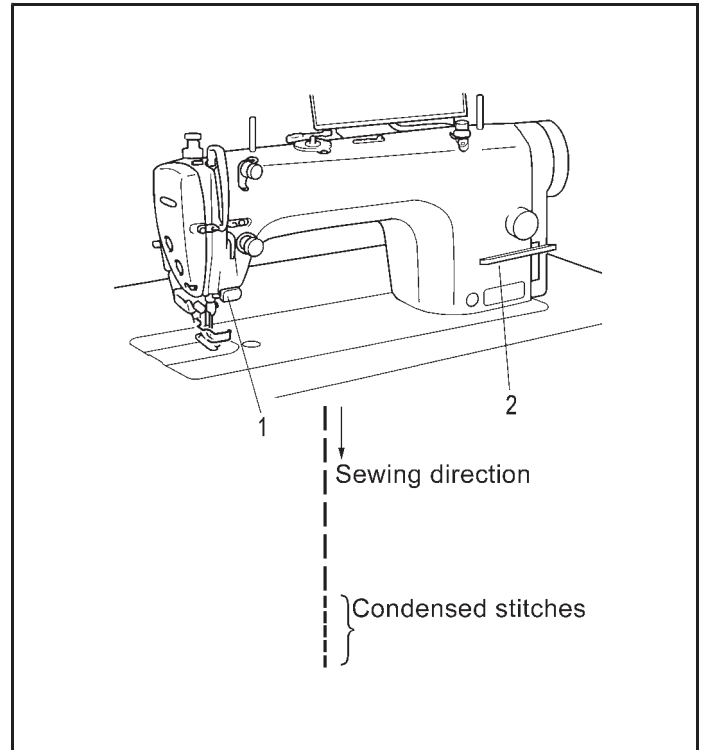
4-1. Backtacking

When the actuator (1) or the reverse lever (2) is pressed during sewing, the feed direction will be reversed. When it is released, the feed direction will return to normal.



4-2. Sewing condensed stitches

- If you press the actuator (1) or the reverse lever (2) while sewing is in progress, you can sew stitches (forward direction) with small stitch lengths.
- Before carrying out sewing, set the stitch length for condensed stitches as follows.



<Setting>

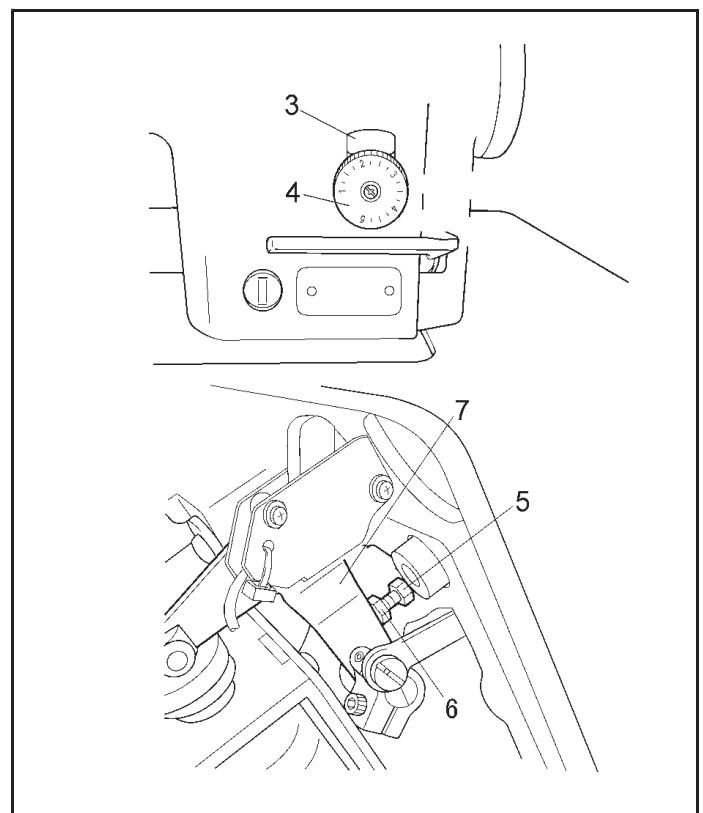
1. Press the stitch button (3).
2. Turn the stitch length dial (4) to the stitch length to be used for condensed stitches.
3. Release the stitch button (3), tilt back the machine head.
4. Loosen the nut (5) and then turn the bolt (6) until its head is touching the solenoid lever (7).
5. Tighten the nut (5) to secure the bolt(6).
6. Return the machine head to its normal position.

<Sewing>

1. Press the stitch button (3), return the stitch length dial (4) to the stitch length for normal sewing.
2. Release the stitch button (3).
3. Start sewing.
4. At the position where you would like to start sewing condensed stitches, press the actuator (1) or the reverse lever(2)

(Condensed stitches are sewn while the actuator (1) or reverse lever (2) is being pressed.)

* To stop sewing condensed stitches, tighten the bolt (6) so that its head is not touching the solenoid lever(7).



5. THREAD TENSION

5-1. Adjusting the thread tension



Turn off the power switch before removing or inserting the bobbin case.
The machine may operate if the treadle is depressed by mistake, which could result in injury.

Good even stitches.




← Upper thread
← Lower thread



Upper thread tension too weak or lower thread tension too strong.

Increase the upper thread tension.
Decrease the lower thread tension.

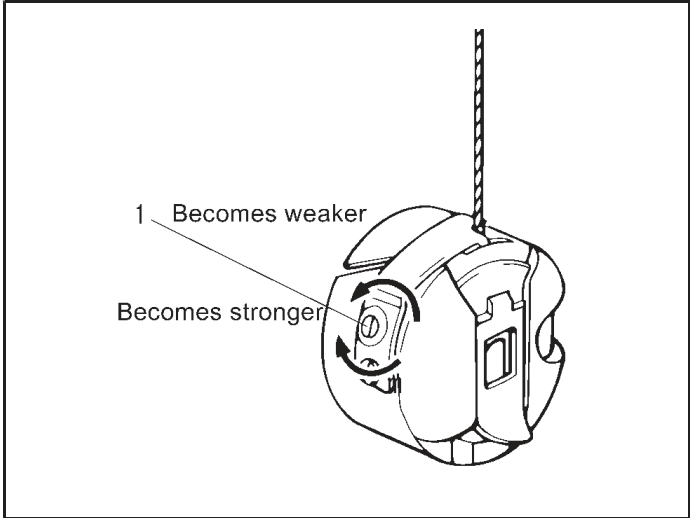


Upper thread tension too strong or lower thread tension too weak.

Decrease the upper thread tension.
Increase the lower thread tension.

< Lower thread tension >

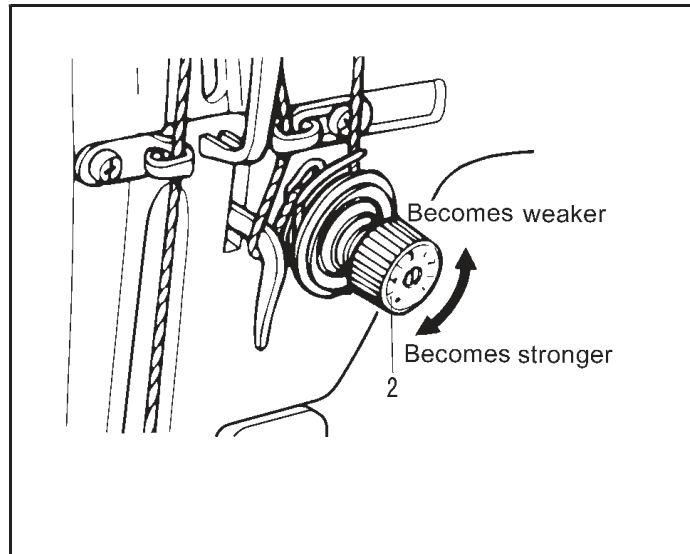
Adjust by turning the adjustment screw (1) until the bobbin case drops gently by its own weight while the thread end coming out of the bobbin case is held.



< Upper thread tension >

After the lower thread tension has adjusted, adjust the upper thread tension so that a good, even stitch is obtained.


1. Lower the presser foot,
2. Adjust by turning the tension nut(2).



5-2. Adjusting the presser foot pressure

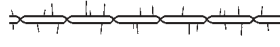
Correct stitches

 ← Upper thread

 Skipped stitches occur

 Uneven stitch length

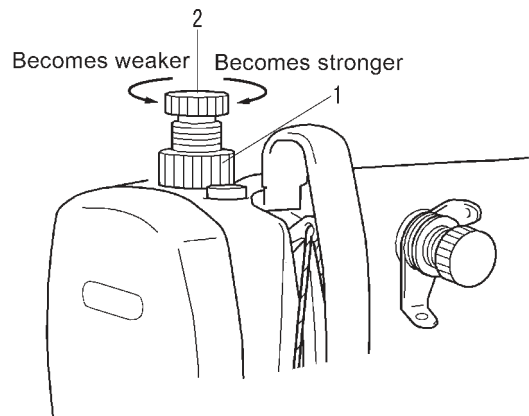
→ Increase the pressure.

 Stitches are puckered

→ Decrease the pressure.

The presser foot pressure should be as weak as possible, but strong enough so that the material does not slip.

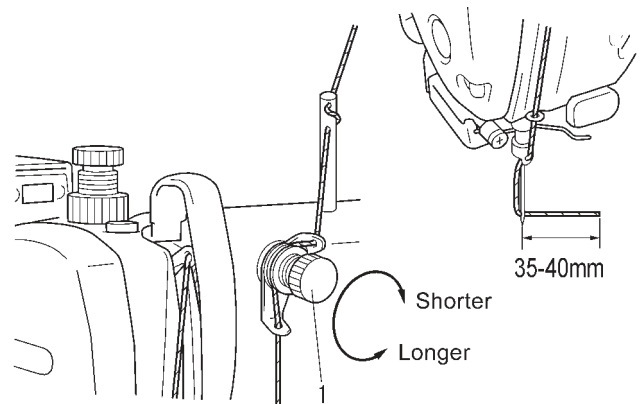
1. Loosen the adjusting nut (1).
2. Turn the presser adjusting screw (2) to adjust the presser foot pressure.
3. Tighten the adjusting nut (1).



5-3. Adjusting the trailing length after thread trimming

- At the time of thread trimming, the thread tension is loosened and tension is applied by the pretension (1) only.
- The standard trailing length for the upper thread is 35–40 mm.
- If the tension of the pretension (1) is increased, the lengths of the threads trailing from the needle tips will be reduced; if the tension is reduced, the lengths will be increased.

Adjust by turning the pretension (1).



6.CLEANING



CAUTION



Turn off the power switch before carrying out cleaning.

The machine may operate if the treadle is depressed by mistake, which could result in injury.



Be sure to wear protective goggles and gloves when handling the lubrication oil and grease, so that they do not get into your eyes or onto your skin, otherwise inflammation can result.

Furthermore, do not drink the oil or eat the grease under any circumstances, as they can cause vomiting and diarrhea.

Keep the oil out of the reach of children.



Use both hands to hold the machine head when tilting it back or returning it to its original position, if only one hand is used, the weight of the machine head may cause your hand to slip, and your hand may get caught.

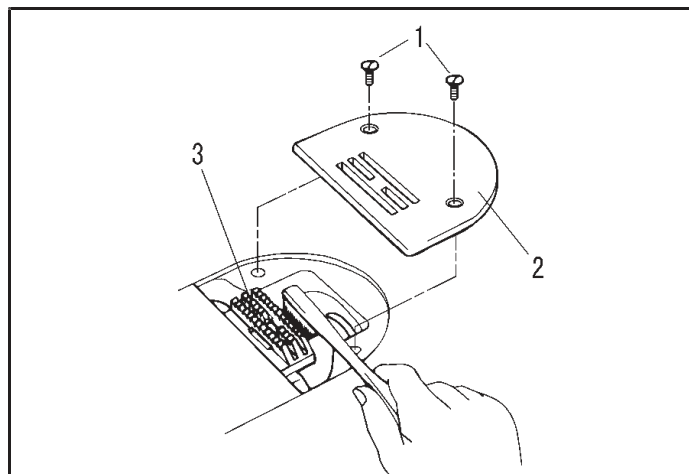
6-1.Daily cleaning procedures

the following cleaning operations should be carried out each day in order to maintain the performance of this machine and to ensure a long service life.

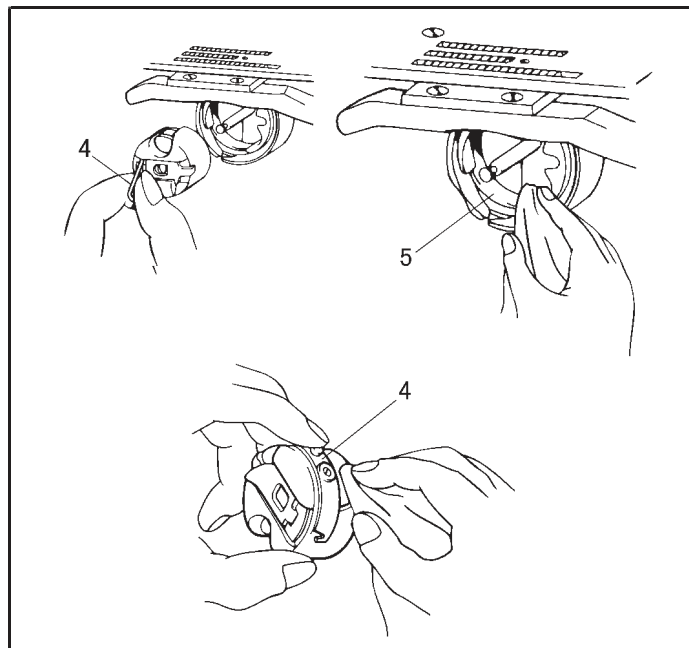
Furthermore, if the sewing machine has not been used for a long period of time, carry out the following cleaning procedures before using it again.

1. Cleaning

1. Raise the presser foot.
2. Remove the two screws (1), and then remove the needle plate(2).
3. Use a soft wire brush to clean any dust from the feed dog (3).
4. Install the needle plate(2) with the two screws (1).



5. Tilt back the machine head.
6. Remove the bobbin case (4).
7. Wipe off any dust from the rotary hook (5) with a soft cloth, and check that there is no damage to the rotary hook (5).
8. Remove the bobbin from the bobbin case (4) and clean the bobbin case (4) with a cloth.
9. Insert the bobbin into the bobbin case (4) and then place the bobbin case (4) back into the machine.



2. Lubrication

A. Gearbox oil quantity

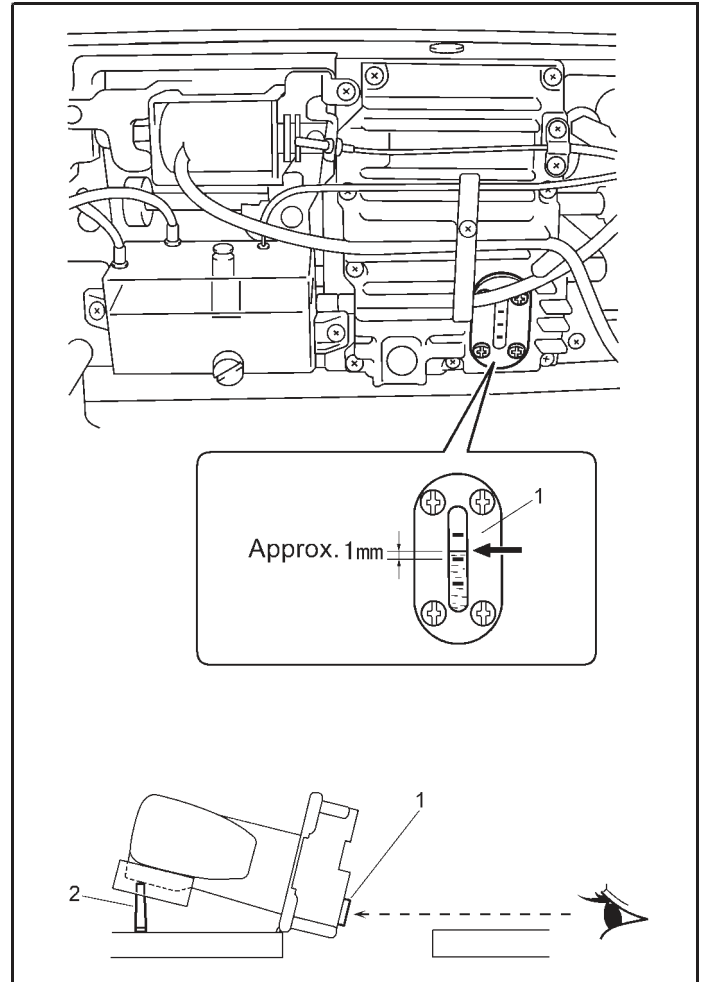
NOTE:

•Check the quantity of oil in the gearbox immediately after tilting back the machine head.

When the machine head is left for long periods in the tilted-back position, the amount of oil in the felt inside the gearbox drops and the oil level seen from the oil windows (1) rises, so that it becomes impossible to measure the actual oil level accurately.

•The position of the oil level in the oil window (1) will vary depending on the angle of the machine head.

Tilt back the machine head while the head rest (2) is installed in the correct position as shown in the table processing diagram .



<Checking the oil quantity>

The oil level should normally be approximately 1 mm above the center reference line in the oil window (1). (70 ml of lubricating oil is added to the gearbox at the time of shipment from the factory.)

1. Look at the oil window (1) from directly in front.
2. If the oil level is below the normal level, add more lubricating oil as described in the following procedure.

<Lubrication>

Use only the lubricating oil specified by our company.

1. Remove the rubber cap (3).
2. Add lubricating oil until the oil level is approximately 1 mm above the center reference line in the oil window (1).
Do not pour all of the lubricating oil in at once at this time.
Pour the lubricating oil 10 ml at a time while checking the oil window (1).

NOTE:

Do not pour too much lubricating oil into the specified location.

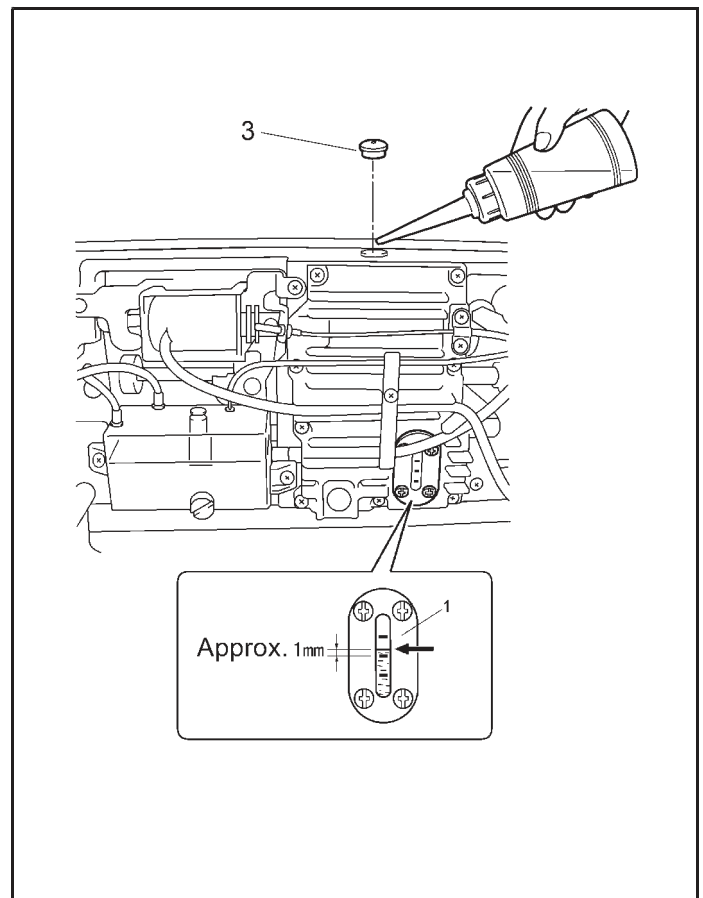
If too much oil is added oil leaks may result.

3. Insert the rubber cap (3) securely.
4. Return the machine head to its original position.

NOTE:

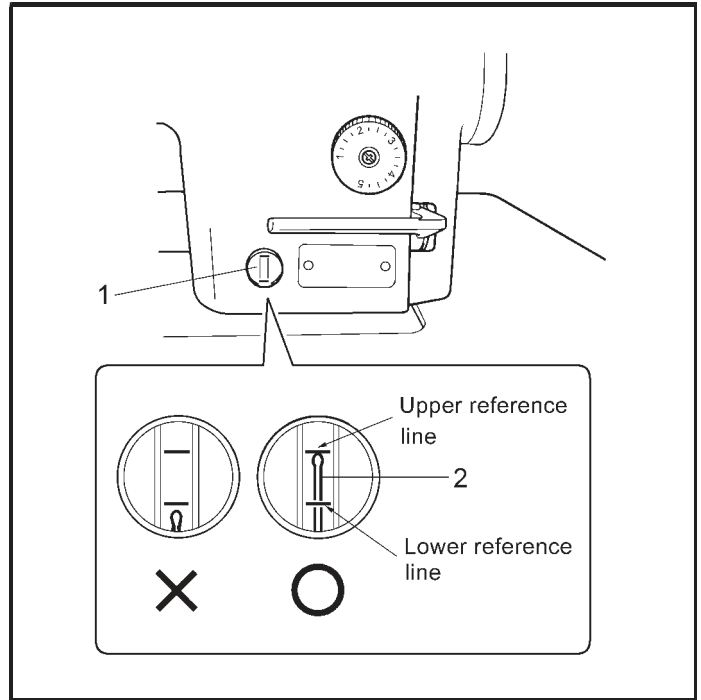
The rubber cap (3) has a hole in it for adjusting the air pressure.

When replacing the rubber cap (3) use only the replacement part specified by our company.



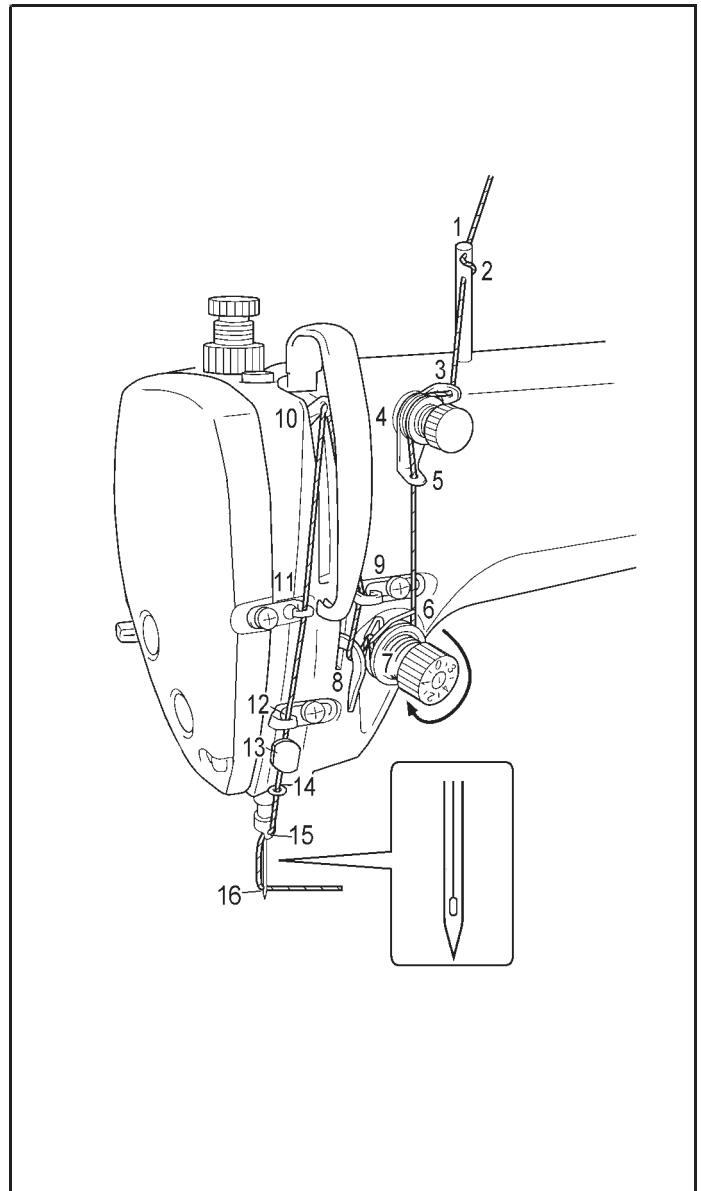
B. Oil tank oil quantity.

Check the oil gauge window (1), and add more oil if the oil gauge (2) is below the lower reference line.



3. Checking

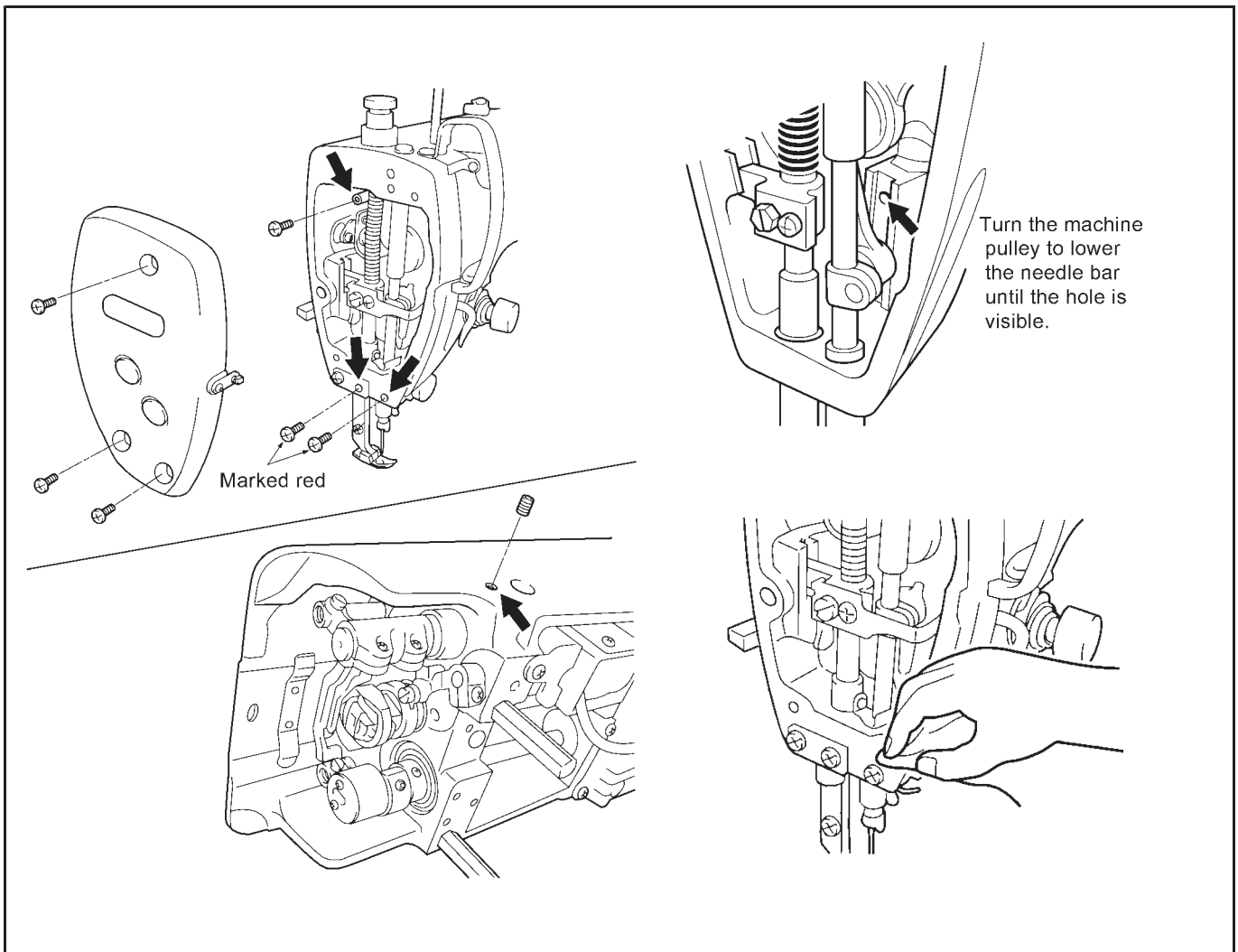
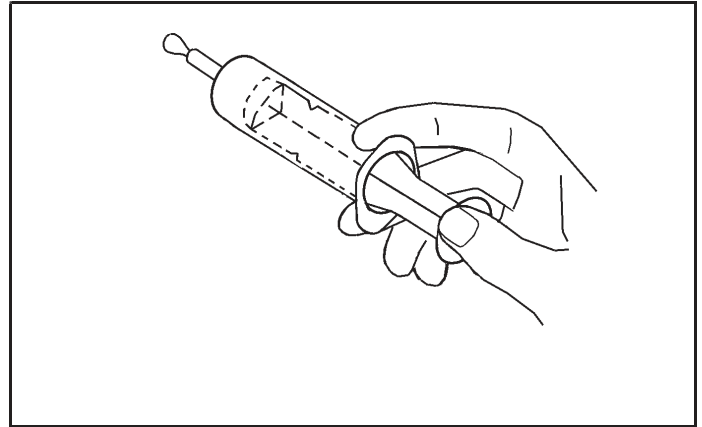
1. Replace the needle if it is bent or if the tip is broken.
2. Check that the upper threads have been threaded correctly.
3. Carry out a test sewing.



6-2. Applying grease

<Applying grease>

Use our company specified grease.



1. Turn the power switch to "OFF"
2. Remove the screws and the set screws.
3. Apply grease to each of the holes until the grease overflows slightly.
4. Tighten the screws and the set screws in order to push the grease in.
5. Turn the machine pulley by hand to move the needle bar up and down several times in order to disperse the grease.
6. Use a cloth to wipe away any excess grease from around the screws and set screws and from underneath needle bar bush D.
7. Carry out the reset procedure given below.

7. ADJUSTING THE ROTARY HOOK LUBRICATION AMOUNT



Be careful not to touch your fingers or the lubrication amount check sheet against moving parts such as the rotary hook or the feed mechanism when checking the amount of oil supplied to the rotary hook, otherwise injury may result.

Use the following procedure to check the amount of oil being supplied to the rotary hook when replacing the rotary hook or when changing the sewing speed.

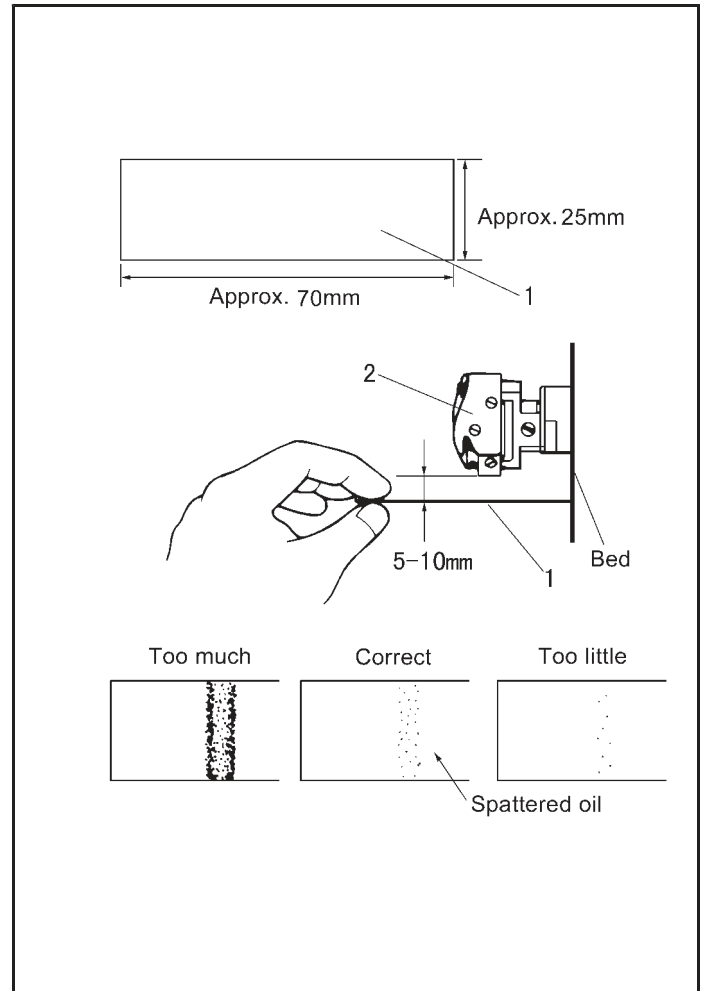
<Checking the lubrication amount>

1. Remove the thread from all points from the thread take-up to the needle.
2. Use the lifting lever to lift the presser foot.
3. Run the machine at the normal sewing speed for approximately 1 minute without sewing any material (following the same start/stop pattern as when actually sewing).
4. Place the lubrication amount check sheet (1) underneath the rotary hook (2) and hold it there. Then run the sewing machine at the normal sewing speed for 8 seconds. (Any type of paper can be used as the lubrication amount check sheet (1).)
5. Check the amount of oil which has spattered onto the sheet.

If adjustment is necessary, carry out the following operations in "Adjusting the lubrication amount".

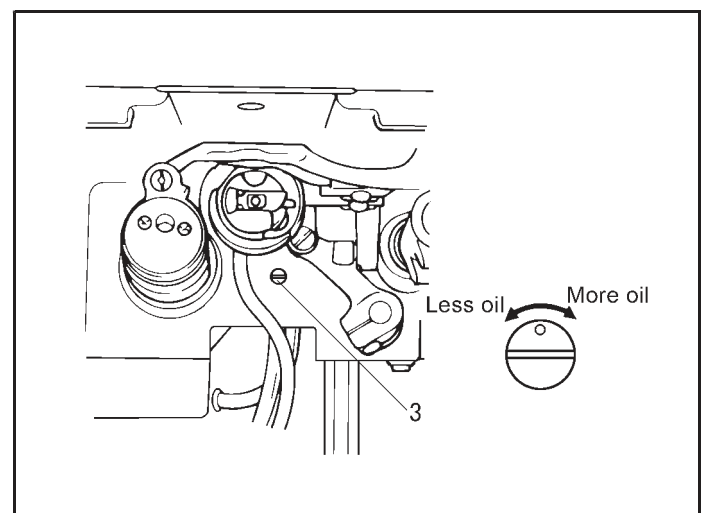
Note:

If the lubrication amount does not match the correct amount shown in the illustration at left (if the amount of spattered oil is too much or none at all), turn the adjusting screw (3) clockwise to fully tighten it, turn it back counterclockwise by 2 1/2 turns, and then carry out the following adjustment.



<Adjusting the lubrication amount>

1. Tilt back the machine head.
2. Turn the adjusting screw (3) to adjust the lubrication amount.
 - If the rotary hook adjusting screw (3) is turned clockwise, the lubrication amount becomes greater.
 - If the rotary hook adjusting screw (3) is turned counter clockwise, the lubrication amount becomes smaller.
3. Check the lubrication amount again according to the procedure given in "Checking the lubrication amount" above.
 - * Turn the adjusting screw (3) and check the lubrication amount repeatedly until the lubrication amount is correct.
4. Check the lubrication amount again after the sewing machine has been used for approximately two hours.



8. STANDARD ADJUSTMENTS

CAUTION



Maintenance and inspection of the sewing machine should only be carried out by a qualified technician.



Ask your dealer or a qualified electrician to carry out any maintenance and inspection of the electrical system.



If any safety devices have been removed, be absolutely sure to re-install them to their original positions and check that they operate correctly before using the machine.



Use both hands to hold the machine head when tilting it back or returning it to its original position. If only one hand is used, the weight of the machine head may cause your hand to slip, and your hand may get caught.



Turn off the power switch and disconnect the power cord from the wall outlet at the following times, otherwise the machine may operate if the treadle is depressed by mistake, which could result in injury.

- When carrying out inspection, adjustment and maintenance
- When replacing consumable parts such as the rotary hook and knife



If the power switch needs to be left on when carrying out some adjustment, be extremely careful to observe all safety precautions.

8-1. Adjusting the safety switch position

The safety switch (1) is normally installed as shown in figure [A].

However, if the processing method used for the table leaves too much space between the machine head and the table hole, it may adversely affect the operation of the safety switch (1)

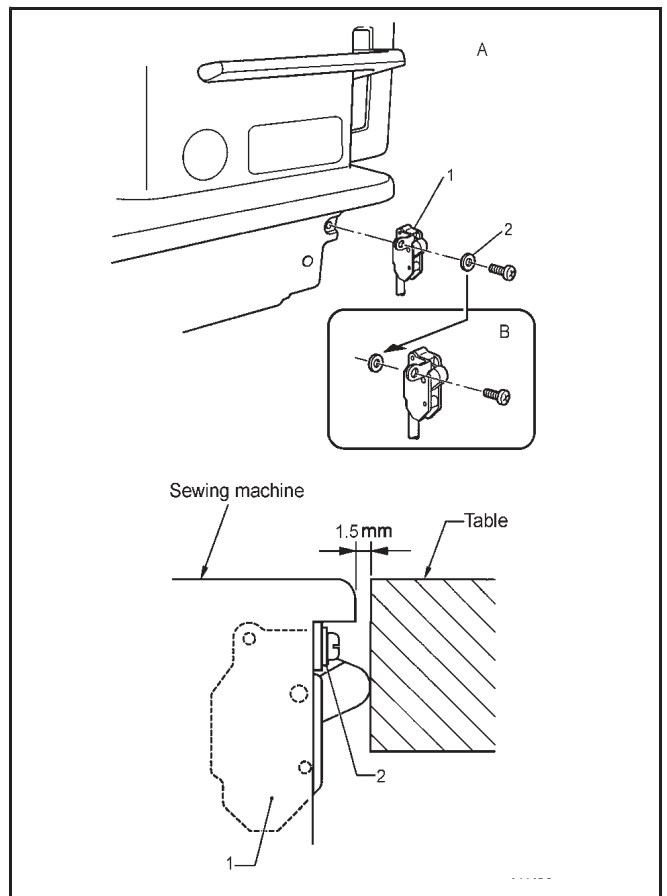
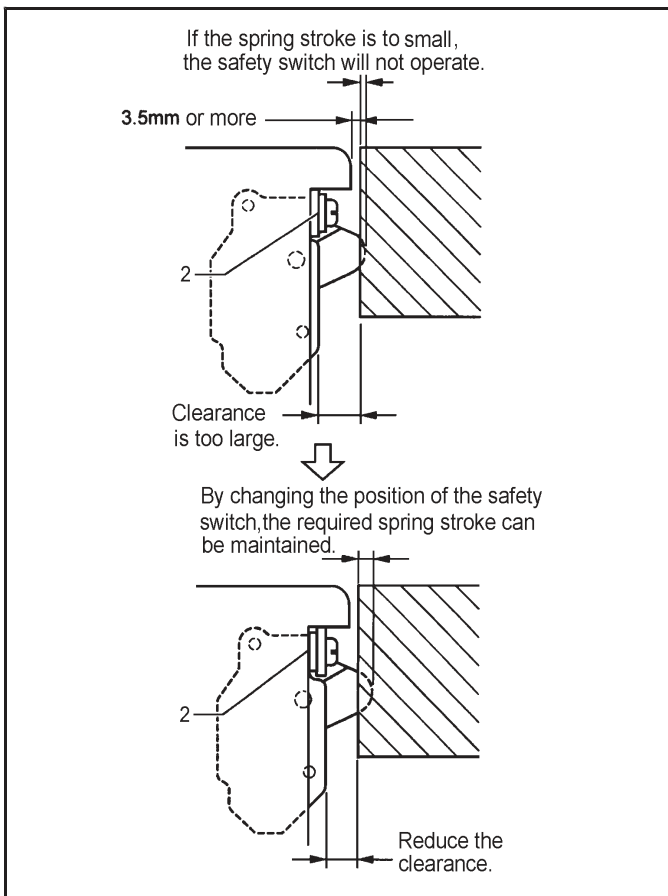
<Adjustment method>

The standard amount of clearance between the machine head and the table hole is 1.5mm.

If the clearance is 3.5mm or more, install the safety switch (1) so that the washer (2) is on the machine head side as shown in Figure [B].

If the position cannot be satisfactorily adjusted in this way, add more washers of the same thickness.

<Safety switch operation>

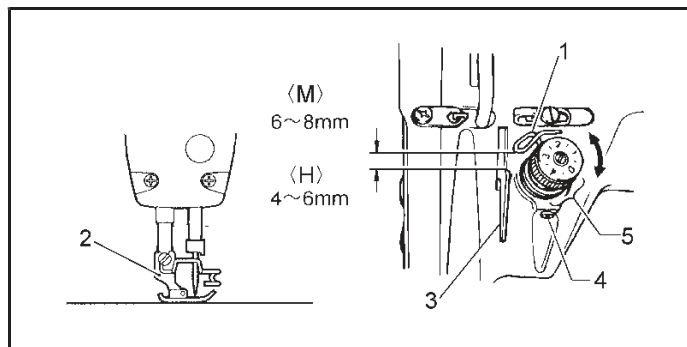


8-2. Adjusting the thread take-up spring

<Thread take-up spring position>

The standard position of the thread take-up spring (1) is 6-8mm [4-6mm for H specifications] above the surface of the thread guide (3) when the presser foot (2) is lowered.

1. Lower the presser foot (2).
2. Loosen the set screw (4).
3. Turn the thread tension bracket (5) to adjust the spring position.
4. Securely tighten the set screw (4).



<Thread take-up spring tension>

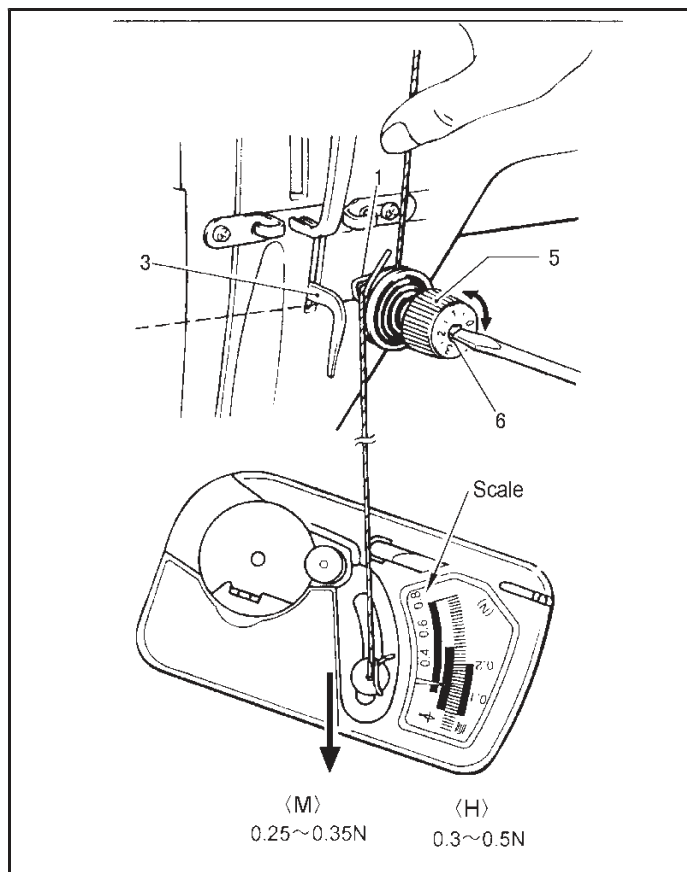
The standard tension of the thread take-up spring (1) varies in accordance with the machine specifications as shown in the table.

| | |
|---|------------|
| M | 0.25~0.35N |
| H | 0.30~0.5N |

1. Push the needle thread with your finger until it is slightly higher than the thread tension bracket (5) and so that the upper thread is not pulled out.
2. Pull the upper thread down until the thread take-up spring (1) is at the same height as the base of the thread guide (3), and then measure the tension of the thread take-up spring (1).
3. Insert a screwdriver into the slot of the tension stud (6), and turn the screwdriver to adjust the tension of the thread take-up spring (1).

NOTE:

If using the tension gauge (7) (sold separately) to measure the tension, take the reading from the scale on the side of the red line.

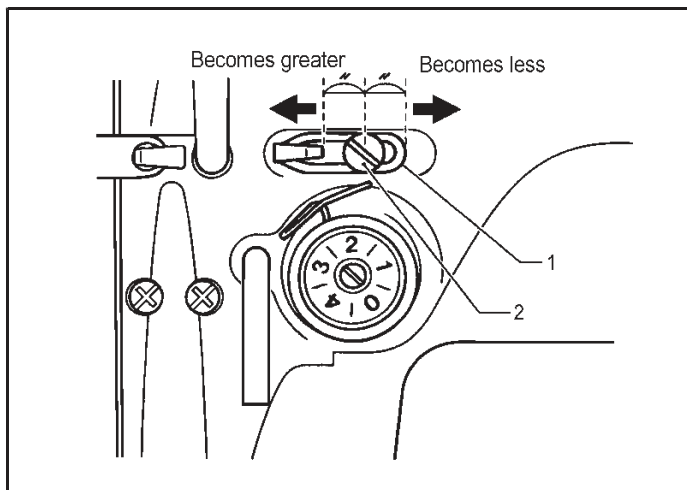


8-3. Adjusting arm thread guide R

The standard position of arm thread guide R (1) is the position where the screw (2) is in the center of the adjustable range for arm thread guide R(1).

To adjust the position, loosen the screw (2) and then move arm thread guide R(1).

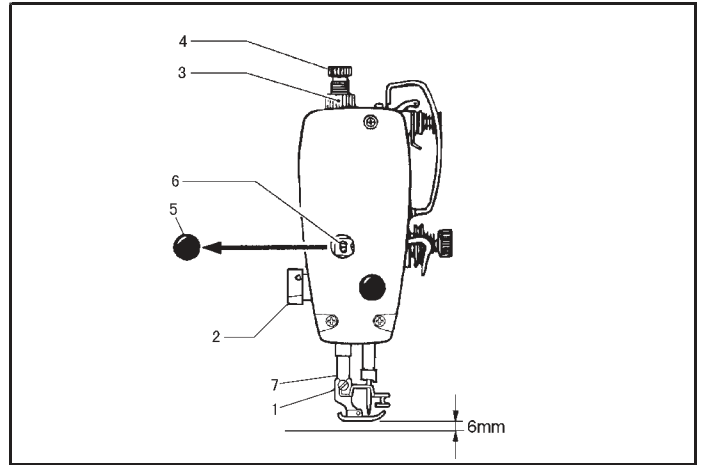
- When sewing thick material, move arm thread guide R(1) to the left. (The thread take-up amount will become greater.)
- When sewing thin material, move arm thread guide R(1) to the right. (The thread take-up amount will become less.)



8-4. Adjusting the presser foot height

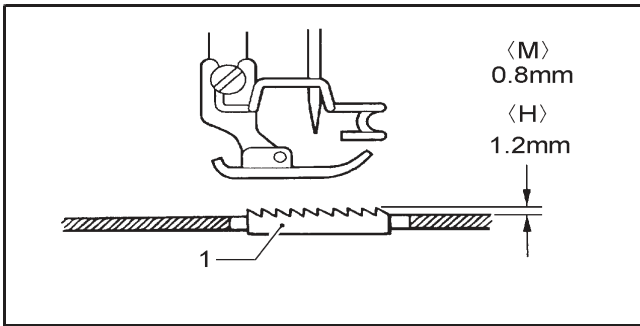
The standard height of the presser foot (1) is 6mm when the presser foot (1) is raised by means of the lifting lever (2).

1. Loosen the nut (3) of the adjustment screw (4), and then turn the adjustment screw (4) so that there is no pressure applied to the presser foot.
2. Raise the lifting lever (2). The presser foot (1) will also rise.
3. Remove the oil cap (5).
4. Loosen the bolt (6) and then move the presser bar (7) up or down until the presser foot (1) is at the standard height of 6 mm.
5. Tighten the bolt (6).
6. Replace the oil cap (5).
7. Adjust the presser foot pressure using the adjustment screw (4), and then tighten the nut (3).



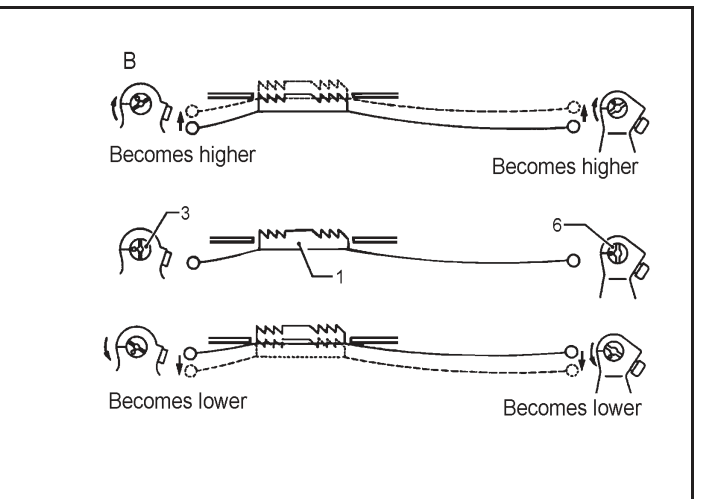
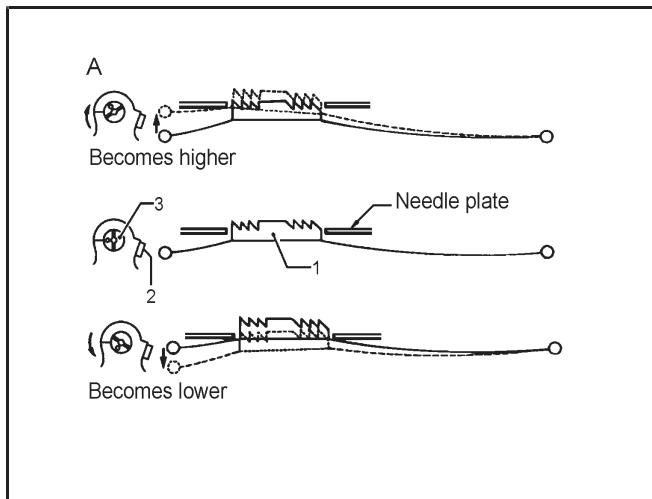
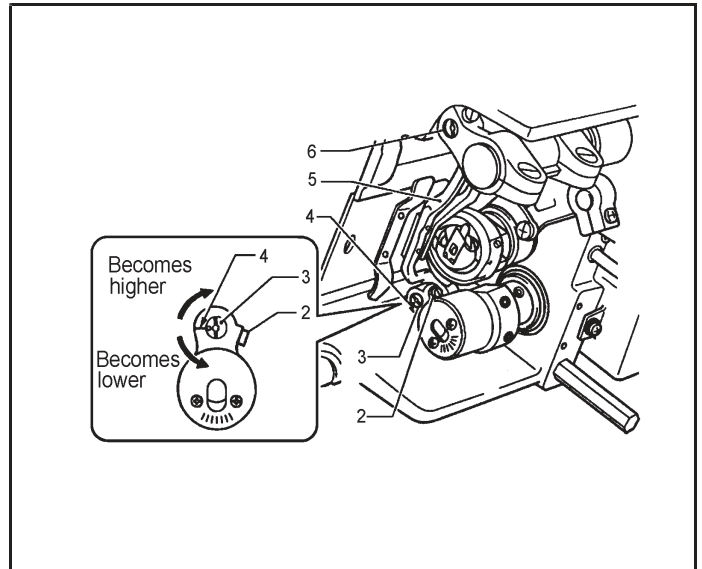
8-5 . Adjusting of the feed dog height

The standard height of the feed dog (1) when it is at its maximum height above the top of the needle plate is 1.0 mm for M specifications, and 1.2mm for H specifications.



1. Turn the pulley until the feed dog (1) rises to the highest position.
2. Tilt back the machine head.
3. Loosen the screw (2).
4. Turn the feed lifting rock bracket stud (3) within a range of 90° from the reference line (4) to adjust the vertical height of the feed bar (5) (Fig. [A]).
5. Tighten the screw (2).

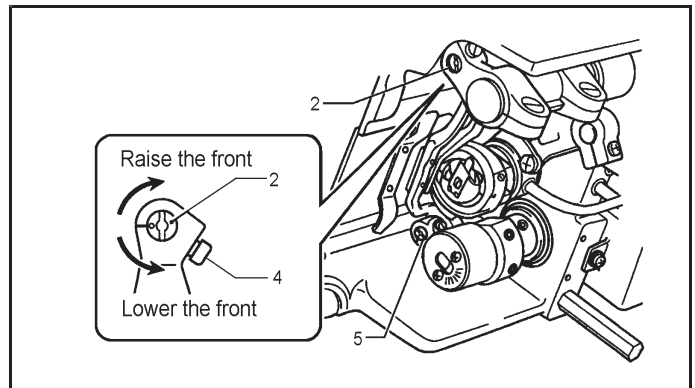
If you are worried about the angle of the feed dog (1), turn the shaft (6) while carrying out the above adjustment, (Fig. [B]).



8-6 .Adjusting the feed dog angle

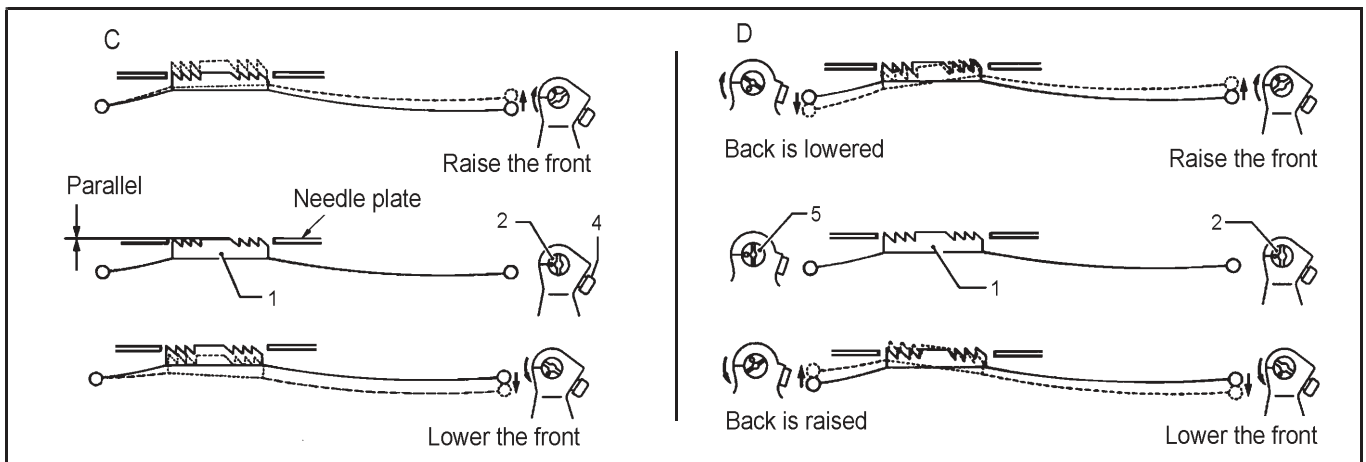
The standard angle of the feed dog (1) on the top of needle plate is subject to the ○ mark (or V mark) on the cloth feeding short-axis (2) coincidence with the mark on parallel cloth feeding bracket, the feed dog(1) is paralleling with the needle plate

1. Turn the machine pulley forward to raise the feed dog (1) from its lowest position until it is flush with the top of the needle plate ,and stop turning the pulley at that point.
 2. Tilt back the machine head.
 3. Loosen the two set screws(4).
 4. Turn the shaft (2) in the direction of the arrow within a range of 90°with respect to the standard position (Fig.[C])
- * In order to prevent puckering , lower the front of the feed dog(1)
 - * In order to prevent puckering the material from slipping, raise the front of the feed dog(1)
5. Securely tighten the set screws(4).



* If you would like to tilt the feed dog (1) further, turn the feed lifting rock bracket stud (5) while carrying out the above adjustment.(Fig.[D])

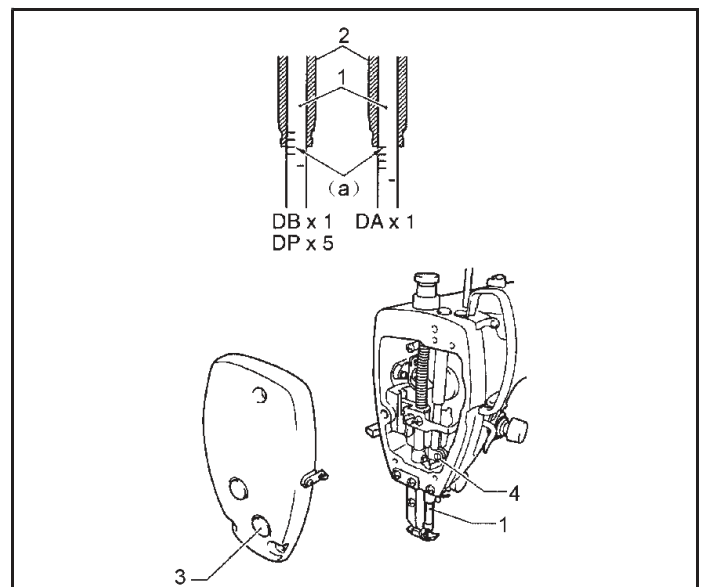
* The height of the feed dog (1) will change after the angle has been adjusted, so it will be necessary to readjust the height of the feed dog(1).



8-7 Adjusting the needle bat height

Adjust so that the distance from needle bar mounting surface A to the bottom edge of needle bar bushing (2) is the same as the height of surface B on the <1> side of the accessory timing gauge (2) when the needle bar (1) is at its lowest position as shown in the illustration.

1. Turn the machine pulley to set the needle bar (1) to its lowest position.
2. Remove the rubber cap (3) from the face plate.
3. Loosen screw (4) to adjust the needle bar(1) .
4. Securely tighten the screw(4).
5. Install the rubber cap (3).



8-8 .Adjusting the needle and feed mechanism timing

The standard timing is for the tip of the needle to be in the position given below when the machine pulley is turned forward to raise the feed dog (1) from its lowest position until it is flush with the top of the needle plate (2).

(At this time, the "-" mark on the lower shaft will be aligned with the center of the scale (4) ("O" mark) on the vertical cam (3).

<M> There is gap of approximately 1mm between the tip of the needle and the top of the needle plate(2).

<H> There is gap of approximately 3mm between the tip of the needle and the top of the needle plate(2).

1. Tilt back the machine head.

2. Loosen the two set screws (5), and then turn the vertical cam(3) slightly to adjust the timing.

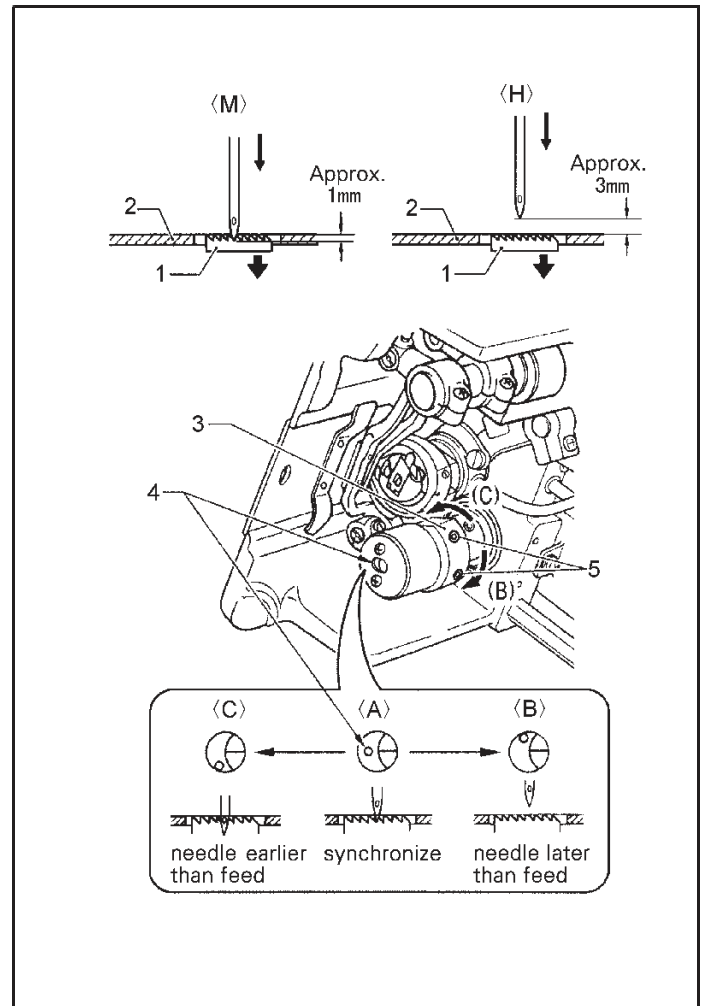
* If transferred to standard, rotating the eccentric (3) to make the mark (O) with the mark (-). (Fig.[A])

* In order to prevent overlapping stitching when the fabric is inconsistent [suture sub], the machine needle timing adjustment later. (Upper and lower eccentric (3) to (B) the direction of rotation Fig [B])

* In order to close good stitch, can be adjusted earlier machine needle. (Upper and lower eccentric(3) to (C) the direction of rotation Fig [C])

NOTE: The upper and lower eccentric (3) to (C) over the direction of rotation, is caused by Broken Needle reasons.

3. After adjustment is completed, securely tighten the two screws(5).



8-9. Adjusting the needle and rotary hook timing

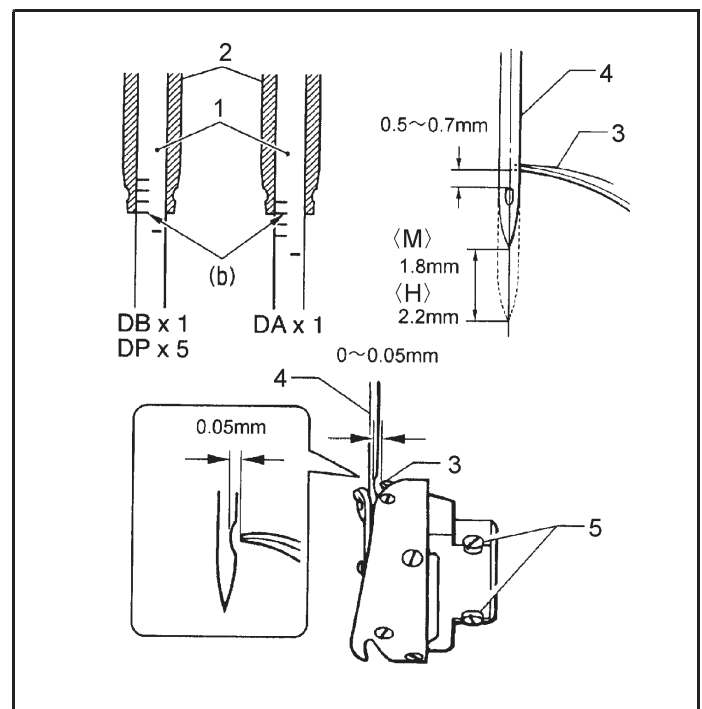
When the needle bar (1) rose from the lowest position of 1.8mm (-4 [] 5 specification is 2.2mm), as shown, baseline (b) with the needle bar bushings (2) to maintain alignment of the lower end, the hook tip (3) and the center of the needle (4) must be consistent.

(At this time, the gap between the upper edge of the needle hole and the rotary hook tip (3) will be 0.5-0.7mm)

1. Turning sewing machine handwheel, so that the needle bar (1) from the lowest up to, as shown in the baseline fig, baseline (b) with the needle bar bushings (2) to maintain alignment of the lower end.

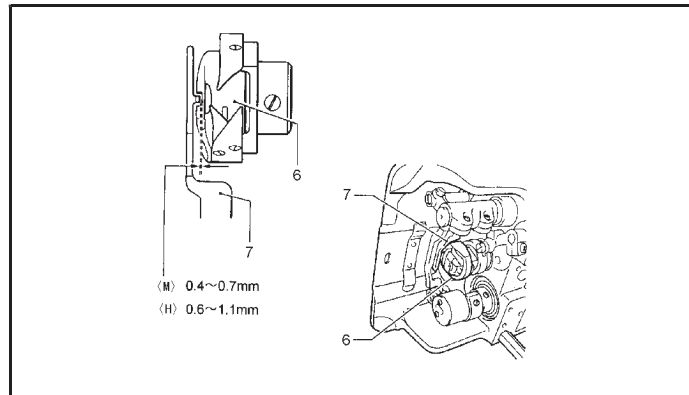
2. Loosen the remaining set screw(5), and align the rotary hook tip(3) with the center of the needle(4). There should be a gap of 0-0.5mm between the rotary hook tip (3) and the needle (4) at the time.

3. Securely tighten the screw(5).



<Checking the clearance between the rotary hook and bobbin case holder position bracket >

Check that the clearance between the rotary hook (8) and the bobbin case holder position bracket (10) is enough to allow the thread being used to pass through smoothly. The clearance should be 0.4–0.7mm for M models, and 0.6–1.1 mm for H models.



8–10. Adjusting the treadle

<Forward depression sensitivity adjustment >

If the machine starts running at low speed when your foot is simply resting on the treadle, or if the treadle pressure is felt to be too weak, adjust the position (a to c) at which the treadle spring (1) is hooked onto the treadle lever (2).

a is the weakest position and it becomes gradually stronger at b and c respectively.

<Backward depression sensitivity adjustment >

1. Loosen the nut (3) and the bolt (4).

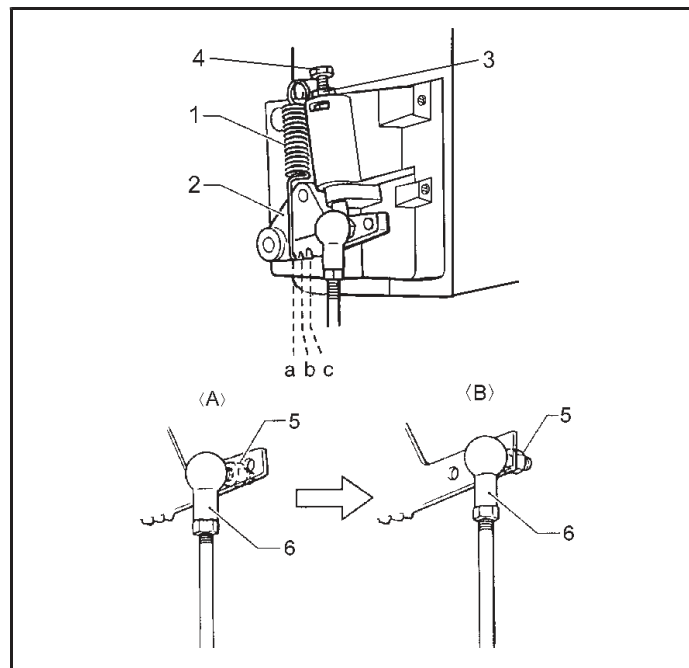
When the bolt (4) is tightened, the treadle operation becomes heavier, and when it is loosened, the operation becomes lighter.

2. Tighten the nut (3).

<Adjusting the treadle stroke>

Remove the nut (5), and then move the connecting rod joint (6) from the position in figure A to the position in figure B. The treadle stroke will then be increased by approximately 27%.

At this time, the treadle forward and backward depression sensitivity will change, so readjust if necessary.



8–11. Adjusting the presser foot floating amount (minute lifting amount)

When sewing stretch materials and materials with long pile, you can make minute adjustments to the floating amount for the presser foot (1) in accordance with the material.

1. Turn the sewing machine pulley by hand to move the feed dog (2) below the needle plate (3).
2. Use the lifting lever to lower the presser foot (1).
3. Loosen the nut (4).
4. Use a screwdriver to turn the adjustment screw (5) to adjust the floating amount.

● To raise the presser foot (1)

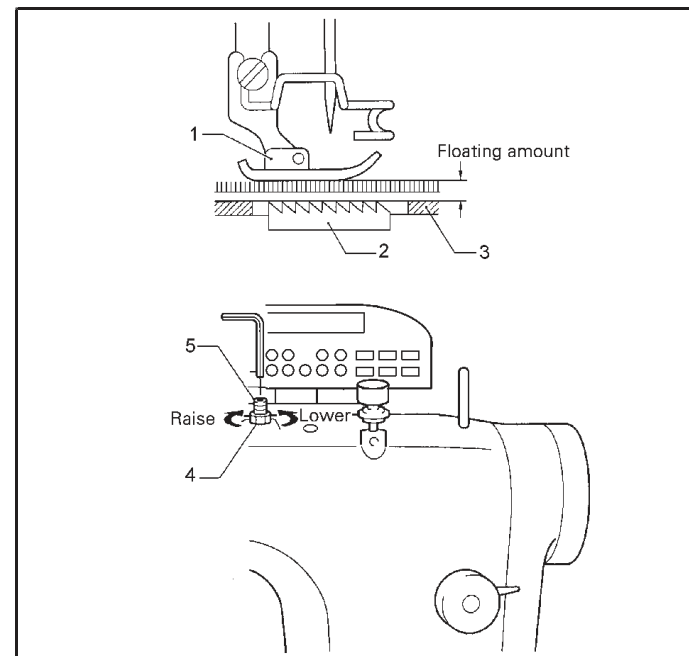
Turn the adjusting screw (5) clockwise.

● To lower the presser foot (1)

Turn the adjusting screw (5) counterclockwise.

5. Tighten the nut (4).

After making the adjustment, sew a piece of material to check the floating amount.



8-12. Adjusting the tangent timing

1. The position of the tangent cam adjustment

Turn the handwheel of sewing machine, when the needle bar from the bottom up 5 mm, hand on a tangent electromagnet (4), Make roller shaft and the cam tangent (1) of the gap in contact, Then use fastening screw (2) to temporary fixation.

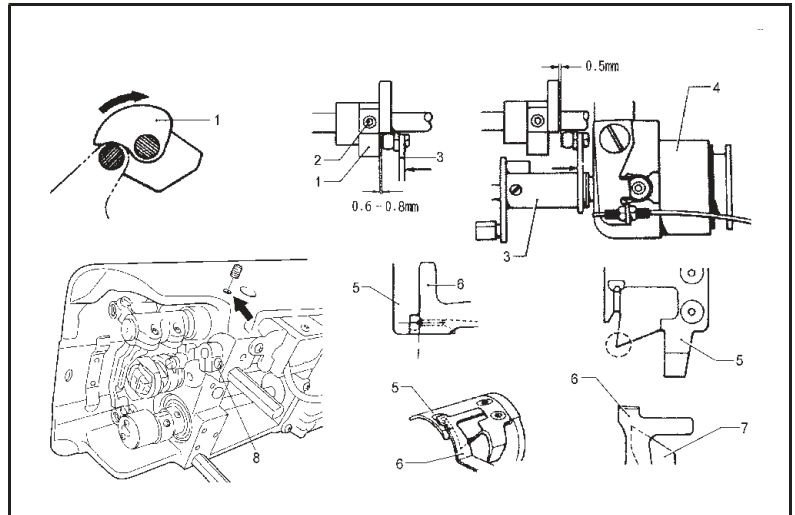
Will the tangent electromagnet (4) return to its original position (leave position), loosen the screw move (2), Adjustment tangent cam (1), the space of cam head face and roller shaft head face is 0.6-0.8mm , Tighten lock screw (2).

【With about 40 kg/cm torque force tightened the screw】

2. Sword and fixed knife position adjustment

Adjust the tangent cam roller (3) and hook side of crank shaft at about 3 mm outside, To tighten the screws (8), Use a hand to mesh electromagnet, Make sure that the maximum amount engagement, The fixed knife (6) front moving across the blade (5) is not more than mouth raised portion .If the mesh is appropriate, should be loosen screws (8), Adjust the tangent cam roller (3) and crank shaft of the hook on the right outside the gap and makes dynamic meshing quantity requirements for the sword of the position, and then screw (8).

【With about 40 kg/cm torque force to tighten the screws】



8-13. Adjusting pick the thread take up the amount

Note:

in addition to M type beyond, do not use this function.

When sewing thick object, if will pick for a large number of thread take up set numerical, the line will be easier to adjust the tension.

1. Dismantling the panel.
2. Remove rubber stopple (1).
3. Use hex wrench (3), Will screw (2) and (3) to loosen 2 weeks.

4. Adjust the amount pick the thread take up line.

< When to increase the pick of the thread take up line >

Will pick the thread take up hinge axis (4) clockwise rotation, make slot (5) just up.

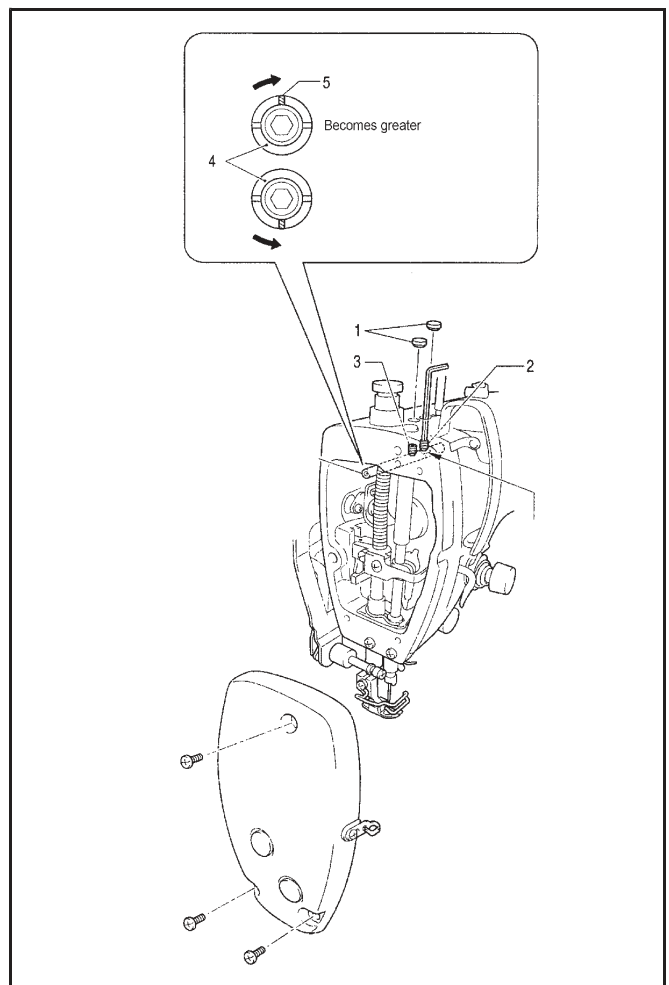
<When need to pick the thread take up line returned to the amount of the standard>

Will pick the thread take up hinge axis (4) according to counterclockwise rotation, make slot (5) just down..

5. The thread take up the challenges hinge axis (4) pushed to the most inside of the state, the first screws (2) twist to pick

the thread take up hinge axis (4) of the screw installation on the plane.


6. And then, turn screws (3).
7. Put on rubber stopple (1).
8. Installation on the panel.




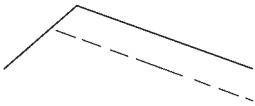



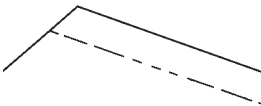

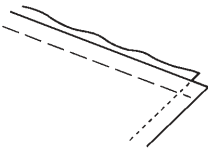
9. TROUBLESHOOTING

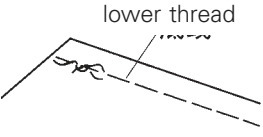
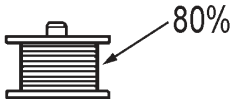
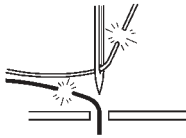
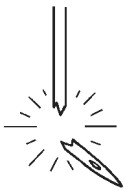
- Please check the following points before calling for repairs or service.
- If the following remedies do not fix the problem, turn off the power switch and consult a qualified technician or the place of purchase.

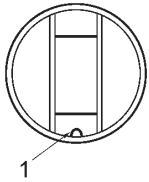
| |
|---|
| ⚠ DANGER |
|  <p>Wait at least 5 minutes after turning off the power switch and disconnecting the power cord from the wall outlet before opening the face plate of the control box. Touching areas where high voltages are present can result in severe injury.</p> |

| |
|---|
| ⚠ CAUTION |
|  <p>Turn off the power switch and disconnect the power cord before carrying out troubleshooting. The machine may operate if the treadle is depressed by mistake, which could result in injury.</p> |

| Problem | Possible cause |
|--|---|
| <p>1.Upper thread is not tight.</p>  | <ul style="list-style-type: none"> ● Is the upper thread tension too weak, or is the lower thread tension too strong? Adjust the upper thread tension or lower thread tension. |
| <p>2.Lower thread is not tight.</p>  | <ul style="list-style-type: none"> ● Is the lower thread tension too weak, or is the upper thread tension too strong? Adjust the lower thread tension or upper thread tension. |
| <p>3.Loops appear in seam.</p>  | <ul style="list-style-type: none"> ● Is the thread path not smooth enough? Use a file with a fine grain or sandpaper to polish smooth the thread path. ● Is the bobbin not turning smoothly? Pull out the lower thread to check that there is no slackness in the thread tension, or replace the bobbin or bobbin case. |
| <p>4.Skipped stitches occur while sewing</p>  | <ul style="list-style-type: none"> ● Is the needle tip bent? Is the needle tip blunt? If the needle tip is bent or broken, replace the needle. ● Is the needle properly installed? If it is incorrect, install the needle correctly. ● Is the machine properly threaded? If it is incorrect, thread the thread correctly. ● Is the presser foot pressure too weak? Adjust the presser foot pressure. ● Is the needle too thin? Replace the needle with a needle that is one rank thicker. ● Is the presser foot too high? Adjust the height of the presser foot. ● Is the thread take-up spring too weak? Adjust the tension of the thread take-up spring. |

| Problem | Possible cause |
|---|---|
| <p>5. Skipped stitches at sewing start Thread unravelling at sewing start</p>  | <ul style="list-style-type: none"> ● Is the thread take-up spring tension too strong? Reduce the tension of the thread take-up spring. ● Is the thread take-up spring operating range too large? Lower the position of the thread take-up spring. ● Are the trailing lengths of the upper threads too short after thread trimming? Adjust the pretension. ● Are the threads not being trimmed cleanly? Sharpen the fixed knives, or replace the fixed and movable knives if necessary. ● Is the needle too wide? Try using a needle with a count that is one lower than the current needle. ● Is the length of thread trailing out from the bobbin case after thread trimming too short? If the bobbin is spinning loosely, replace the anti-spin spring in the bobbin case. ● Is the sewing speed too fast at the sewing start? Use the slow start feature. |
| <p>6. Uneven seam</p>  | <ul style="list-style-type: none"> ● Is the presser foot pressure too weak? Adjust the presser foot pressure. ● Is the feed dog too low? Adjust the feed dog height. ● Is the bobbin scratched? If the bobbin is damaged, smooth it with an oiled grindstone or replace it. |
| <p>7. Large degree of puckering (excess tension)</p>  | <ul style="list-style-type: none"> ● Is the upper thread tension too strong? Make the upper thread tension as weak as possible. ● Is the lower thread tension too strong? Make the lower thread tension as weak as possible. ● Are the thread take-up spring tensions too strong? Make the thread take-up spring tension as weak as possible. ● Is the thread take-up spring operating range too large? Lower the position of the thread take-up spring to as low a position as possible. ● Is the presser foot pressure too strong? Adjust the presser foot pressure. ● Is the sewing speed too fast? Use the sewing speed control keys to gradually reduce the sewing |
| <p>8. Material slippage</p>  | <ul style="list-style-type: none"> ● Is the presser foot pressure too strong? Adjust the presser foot pressure. |

| Problem | Possible cause |
|--|--|
| <p>9. Lower thread is tangled at the sewing start. Spinning of bobbin during thread trimming</p>  | <ul style="list-style-type: none"> ● Is the bobbin spinning direction correct when the lower thread is being pulled? Set the bobbin so that it turns in the opposite direction to the rotary hook. ● Is there too much thread wound onto the bobbin? The bobbin winding amount should not be more than 80%. ● Is the anti-spin spring attached? Attach the anti-spin spring. ● Is the bobbin turning smoothly? If the bobbin is not turning smoothly, replace the bobbin  |
| <p>10. Upper and lower threads are breaking.</p>  | <ul style="list-style-type: none"> ● Is the needle bent or is the needle tip broken? Replace the needle if it is bent or broken. ● Is the needle properly installed? If it is incorrect, install the needle correctly. ● Is the machine properly threaded? If it is incorrect, thread the thread correctly. ● Is the rotary hook sufficiently lubricated? If the oil gauge is down to the lower reference line in the oil gauge window, add more oil. ● Is the upper or lower thread tension too weak or too strong? ● Adjust the upper thread or lower thread tension. Is the upper thread may be loose because the thread take-up spring operating range is too small? ● Adjust the position of the thread take-up spring. Is the rotary hook, feed dog or other part damaged? ● If they are damaged, smooth them with an oiled grindstone or replace the damaged parts. ● Is the thread path damaged? If the thread path is damaged, smooth it with sandpaper or replace the damaged part. |
| <p>11. Incorrect thread trimming (Upper and lower threads are both not being trimmed)</p> | <ul style="list-style-type: none"> ● Is the fixed knife or movable knife damaged or worn? Replace the fixed knife or the movable knife. |
| <p>12. Incorrect thread trimming (upper thread or lower thread is not being trimmed)</p> | <ul style="list-style-type: none"> ● Is the needle properly installed? If it is incorrect, install the needle correctly. ● Is the fixed knife or movable knife blunt? Replace the fixed knife or the movable knife. |
| <p>13. Broken needles</p>  | <ul style="list-style-type: none"> ● Is the material being pushed or pulled with excessive force during sewing? ● Is the needle properly installed? If it is incorrect, install the needle correctly. ● Is the needle bent, is the needle tip broken, or is the needle hole blocked? Replace the needle. <p>Caution</p> <div style="border: 1px dashed black; padding: 5px;"> <ul style="list-style-type: none"> • It is extremely dangerous to leave any pieces of broken needle sticking in the material • If the needle breaks, search for all pieces until the whole of the needle is found again. • Furthermore, we recommend we recommend that through steps be taken to account for such needles to comply with product liability regulations. </div> |

| Problem | Possible cause |
|---|---|
| <p>14.Oil gauge (1)is not risible in oil gauge win – dow.</p>  | <ul style="list-style-type: none"> ● Is the oil tank empty? Fill the oil tank with oil. |
| <p>15.Machine does not op– erate when power is turned on and treadle is pressed.</p> | <ul style="list-style-type: none"> ● Is the power supply connector disconnected from the control box? Insert the connector securely. |
| <p>16. Machine does not op– er–ate at high speed.</p> | <ul style="list-style-type: none"> ● Is the sewing speed setting or backtack speed setting incorrect? Use the sewing speed control keys to set the high speed. |
| <p>17. Machine stops during sewing</p> | <ul style="list-style-type: none"> ● Is the fixed stitch key turned on? Press the fixed stitch key so that the indicator turns off. ● Is the power supply voltage too low? Check the power supply. (If the power cord is too long or too many appliances are being run from a single outlet, this may cause voltage drops which will in turn cause the reset function to activate and stop the machine, even if the power supply itself is normal.) |
| <p>18 .Nothing appears on the operation panel dis– play.</p> | <ul style="list-style-type: none"> ● Is the power supply connector disconnected from the control box? Insert the connector securely. ● Is the operation panel connector inside the control box disconnected? Insert the connector securely. |

10.ADJUSTING THE ELECTRONIC CONTROL

10-1. Contents

It is used in system of industry sewing machine. For perfect operation and safety, installation and operation must be supervised by professional.

1. Work environment

- ▲ Please use 220V AC in $\pm 10\%$ ranges.
- ▲ To avoid the false operate, please keep the product away from the high electromagnetic interference.
- ▲ Please operate in the area which temperature is $5^{\circ}\text{C}\sim 45^{\circ}\text{C}$.
- ▲ Please keep the product away from the flammability and exploder.

2. Notice of installation

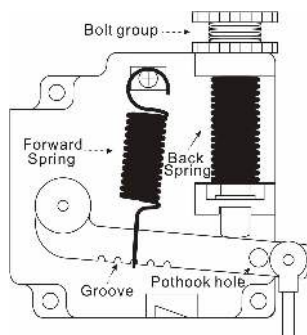
- ▲ The wire must not set to be near the wheel and other movable parts.
- ▲ To avoid the static interference and current leakage, all grounding must be done.

3. Notice of safety

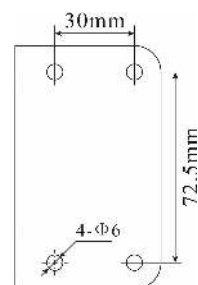
- ▲ Turn off the power before maintenance and repairs or raising the machine arms, or changing needle, or threading needle.
- ▲ Please don't open the box except the professional.
- ▲ When turn on the machine in the first time, use low speed to operate and check the correct rotation direction.
- ▲ During machine operation, don't touch any moving parts.
- ▲ All moving parts must use the protective device to avoid the body contact and objects insertion.
- ▲ When there is water or other liquid, or caustic material on box or motor, you must stop operation and turn off the power.
- ▲ All connector shouldn't be plug and unplug when power on.
- ▲ The connector should be plug and unplug in the correct method.

10-2. Installation and Adjustment

1. Speed controller



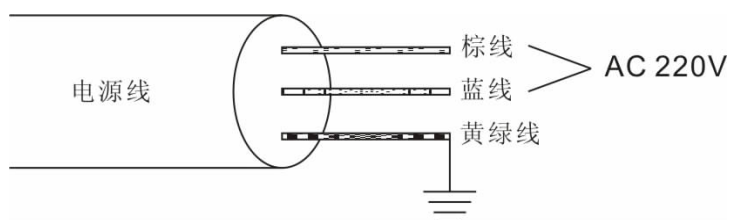
2. Dimension of speed controller bracket



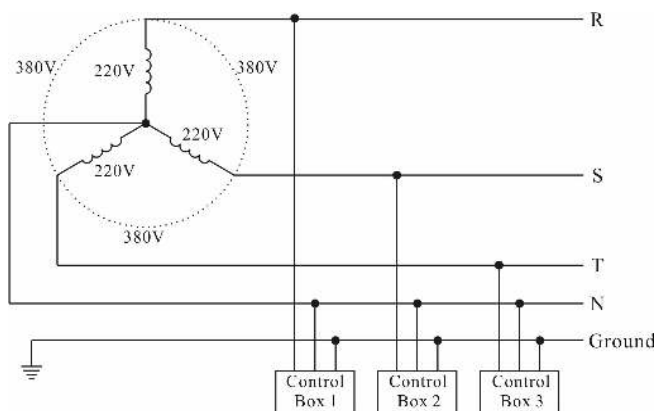
10-3. Power Connection

1. Single phase 220V power connection

Ground wire (green & yellow) must be grounding.

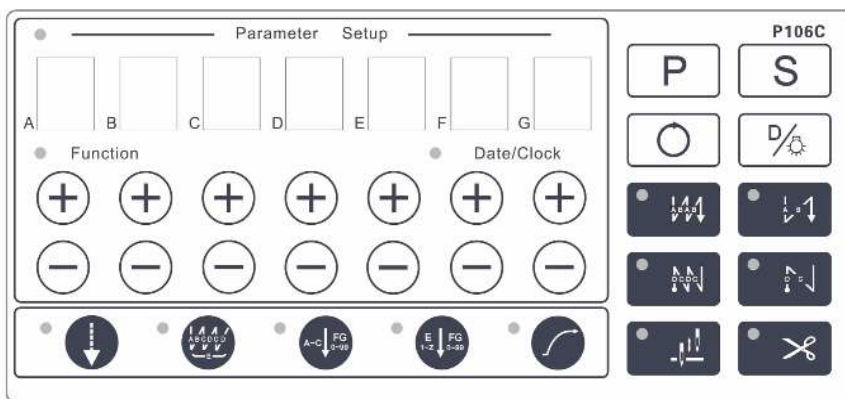


2 .Three phase 380V power connection



10-4. Function of Operation Box

P106C operation box diagram



| Function | Key | Operation |
|-------------------------|-----|---|
| Start Tacking Selection | | Double start tacking, A is the stitches of forth sewing; B is the stitches of back sewing. They are both in range 1~15. |
| | | Single start tacking, A is the stitches of forth sewing; B is the stitches of back sewing. They are both in range 1~15. |
| End Tacking Selection | | Double end tacking, C is the stitches of back sewing; D is the stitches of forth sewing. They are both in range 1~15. |
| | | Single end tacking, C is the stitches of back sewing; D is the stitches of forth sewing. They are both in range 1~15. |
| Free Sewing | | <ul style="list-style-type: none"> ▲ As the pedal is stepped forward, the start tacking(if selected) will be done automatically, then machine will start normal sewing. Once the pedal returned to balance, machine will stop immediately. ▲ As the pedal stepped backward, the end tacking, trimming and wiping(if selected) will be done automatically. |
| Bar Tacking Sewing | | <ul style="list-style-type: none"> ▲ Once the pedal is stepped forward, all the seams of bar tacking, A, B, C, D sections will be completed with E times, and the trimming will be done automatically. ▲ The pedal must be returned to balance for next sewing. |


| | | |
|-------------------------------|--|---|
| Single Constant-Stitch Sewing | | <ul style="list-style-type: none"> ▲ Once the pedal is stepped forward, F, G stitches will be completed. ▲ Three mode (A, B or C) could be selected. |
| Multi Constant-Stitch Sewing | | <ul style="list-style-type: none"> ▲ Once the pedal is stepped forward, F, G stitches will be completed with E times. ▲ Constant-Stitch Sewing will perform the number of segments and times as setting, when the stitches are zero, machine will stop immediately. |
| Slow Start | | Slow start switch, see 5.6 |
| Needle Up / Needle Down | | Select the stop position of needle. |
| Trimming Enable | | Enable or disable the trimming. |
| Parameter Function | | Enter or exit parameter function interface. |
| Setup Function | | Confirm and save current value of parameter. |
| Interface Selection | | Switch current interface to another. |
| Default /Lighting LED | | See 5.3 and 5.9. |
| Increase | | Value increase. |
| Decrease | | Value decrease. |

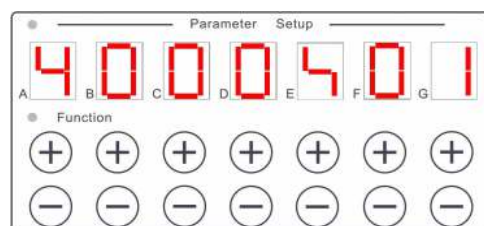
10-5. Operation of the Normal Function Interface




The following operation could be valuable if normal function interface LED is on, other interface could be entered though .

● ————— Parameter Setup —————

1. Parameter setup

Press  will be into parameter interface, using **E+** and **E-** to select parameter type, using **F+**, **F-**, **G+** and **G-** to select parameter index, value of current parameter will be displayed on bar A~D, using increase and decrease key can modify the value, as follow:



For example, the value of **S01** is 4000. The bar will be twinkling if modified, use  to confirm or  repeal change. After modifying, use  to back to sewing interface.

2. Parameter solidifying

If users want to change some parameter's default value, then select the parameter, press **[O]** maintain a moment, after "SD OK" displaying, the default value has been changed.

3. Resume parameter through One-Key Default

Select any parameter in parameter interface, **[%]** can be used to recall the default value. The bar will be twinkling if modified, use **[S]** to confirm or **[P]** repeal change.

4. Access the special function parameter interface

Without any operation during power up, only S, T and A type parameter can be select. Press **[P]** during power up will display "O EN", and then O type parameter can be accessed.

5. Adjust the tacking

1) Adjusting of RVE, SOL, action time

For start/end tacking or bar tacking, if unbalanced situation is appeared during natural direction to reverse direction, please correct it as below:



2) Adjusting of RVE, SOL, release time

For start/end tacking or bar tacking, if unbalanced situation is appeared during reverse direction to natural direction, please correct it as below:



6. Slow start function

If **[●]** be effective, every new operation after trimming will run by slow speed for several stitches firstly, speed is relative with parameter **S08**, stitch is relative with parameter **O01**.

7. Resume the default value of all parameters

Set parameter **O17** to "ON", turn on the power again, after twinkling of "INIT" finished, all parameters have been default value themselves.

8. Encrypt the parameter interface

First change parameter **O27** for user's password, then set parameter **O15** "ON" to enable password, after this, accessing to parameter interface will be in password interface firstly, set the correct password and use **[S]** to confirm.

9. Function of Machine LED

The lightness of LED can be set by **[%]** in sewing interface, the lightness increase 20% each press, if 100% already, turn to 0%, and so on.

10-6. Operation of the Special Function Interface

Press **[O]** could be access special function interface from normal function interface, showed as below:



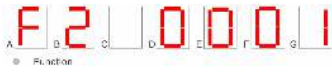
Bar A and B according to SN of function, bar D~G display parameter, press **B+** and **B-** to select function:

1. Dynamic speed limitation



SN F1, display current speed up limitation, could be change during running.

2. Counting the product quantity



SN F2, display the product quantity, increase for 1 after trimming.

3. Reserved

4. Reserved

5. Actual speed display



SN F5, display the actual speed.

6. Stitches statistic



SN F6, display the stitches statistic of each working procedure.

7. Current time of power-on



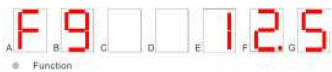
SN F7, for example, current time of power-on is 6 hours and 13 minutes.

8. Total time of power-on



SN F8, for example, total time of power-on is 130.8 day.

9. Total idle time



SN F9, for example, total idle time of power-on is 12.5 day.

10. Total working time



SN FA, for example, total working time of power-on is 118.3 day.

11. Using efficiency



SN FB, for example, current using efficiency is 90.4%.

10-7. General Parameter Table (part)

1. Speed parameter

| SN | Name | Range | Description |
|------------|-----------------------------|----------------|----------------------------------|
| S01 | Max speed | 500~5000 (s/m) | Maximum speed. |
| S02 | Min speed | 150~500 (s/m) | Minimum speed. |
| S03 | Speed of start tacking | 500~2500 (s/m) | Speed of start tacking. |
| S04 | Speed of end tacking | 500~2500 (s/m) | Speed of end tacking. |
| S05 | Speed of bar tacking sewing | 500~2500 (s/m) | Speed of bar tacking sewing. |
| S06 | Speed of C-S sewing | 500~4500 (s/m) | Speed of constant-stitch sewing. |
| S07 | Trimming speed | 150~300 (s/m) | Speed of trimming. |
| S08 | Slow sewing speed | 200~500 (s/m) | Slow sewing speed when start. |

2. Time parameter

| SN | Name | Range | Description |
|------------|----------------------------------|------------|---|
| T01 | RVS action time | 1~200 (ms) | Action time of the REV SOL. |
| T02 | RVS release time | 1~200 (ms) | Release time of the REV SOL. |
| T03 | Delay time of wiper | 1~200 (ms) | Timing before the wiper solenoid act. |
| T04 | Action time of wiper | 1~200 (ms) | Timing for the wiper solenoid action. |
| T05 | Delay time of foot lifter | 1~500 (ms) | Timing before the foot lifter solenoid is act. |
| T06 | Release time of foot lifter | 1~500 (ms) | Timing before the foot lifter solenoid is released. |
| T07 | Time of foot lifter whole output | 1~999 (ms) | Timing of the foot lifter solenoid is act with whole output. |
| T08 | Time of RVS whole output | 1~999 (ms) | Timing of the reverse solenoid is act with whole output. |
| T10 | Time of remove shake | 1~500 (ms) | The speed controller will be greater sensitive when the value is smaller. |

3. Enable parameter

| SN | Name | Range | Description |
|------------|--|--------|---|
| A01 | Up position | ON~OFF | ON: the stop position is up OFF: the stop position is down |
| A02 | Automatically sewing | ON~OFF | Valid only in constant–stitch sewing, when set to “ON” , enable the automatic sewing. |
| A03 | mode of stitch correction | ON~OFF | ON: continual OFF: half needle |
| A04 | Stitch correction with single button | ON~OFF | For free sewing, if there is single switch on machine arms, when set to “OFF” the switch is reverse switch always. When set to “ON”, the switch is reverse switch at sewing and is stitch correction switch at stop. |
| A05 | Stitch correction with double button | ON~OFF | When set to “ON” , enable the reverse and stitch correction switch both are valid. When set to “OFF” , disable the double key be valid at the same time, and in this mode, the function of the single switch is determined by A04 . |
| A06 | Trimming | ON~OFF | When it is “ON” , enable the trimming. |
| A07 | Wiping | ON~OFF | When it is “ON” , enable the wiping. When A06 is “OFF” , A07 is invalid. |
| A08 | Foot lift | ON~OFF | When it is “ON” , enable foot lift. Whether the foot SOL to be connected is detected during power on automatically. |
| A09 | clamp | ON~OFF | “ON” to enable clamp, only for GC6280. |
| A14 | Trimming protection | ON~OFF | When it is “ON” , the pedal must be back to the balance position to do next operation after trimming, “OFF” to be no required. |
| A15 | Foot lift after trimming | ON~OFF | When A08 is “ON” , if A15 is set to “ON” , the foot lifter will lift automatically after trimming. |
| A16 | The first segment keep on with the start tacking of C–S sewing | ON~OFF | It is valid only for constant–stitch sewing. If enable automatic sewing mode and set the start tacking, the next segment of constant–stitch sewing will do automatically after the start tacking is finished when it is “ON” . When it is “OFF” or disable the automatic sewing mode, machine will stop automatically after the start tacking is finished. |
| A17 | The end tacking keep on with the last segment of C–S sewing | ON~OFF | It is valid only for constant–stitch sewing. If enable automatic sewing mode, the end tacking and trimming will do automatically after the last segment of constant–stitch sewing is finished when it is “ON” . When it is “OFF” or disable the automatic sewing mode, machine will stop automatically after the last segment of constant–stitch sewing is finished. The end tacking and trimming will do until step forward the pedal again. |
| A18 | Move to up position after power on | ON~OFF | When it is “ON” , the machine will move to up position and stop automatically as power on. |
| A19 | Foot lifer acting in foot lift position | ON~OFF | When the pedal is half back toe down, if it is “ON” , the position is foot lift. If it is “OFF” , the position is to be balance. |
| A20 | Trimmer acting in foot lift position | ON~OFF | When it is “ON” , the trimming will at the foot lifter position. |
| A21 | Soft start | ON~OFF | When it is “ON” , it will do a soft start after trimming. |

4. Degree parameter (can be accessed by press **P** during power on)

| SN | Name | Range | Descriptions |
|-----|-----------------|----------------|----------------------------------|
| D01 | Up lever | 0 ~ 359 (°) | Up lever degree. |
| D02 | Down lever | 0 ~ 359 (°) | Needle bar down degree. |
| D03 | Trimmer act | 0 ~ 359 (°) | Trimmer act degree. |
| D04 | Trimmer release | 0 ~ 359 (°) | Trimmer release degree. |
| D05 | Reverse act | 0 ~ 359 (°) | Reverse SOL. act degree. |
| D06 | Reverse release | 0 ~ 359 (°) | Reverse SOL. act release degree. |
| D07 | Clamp act | 0 ~ 359 (°) | Clamp act degree. |
| D08 | Clamp release | 0 ~ 359 (°) | Clamp release degree. |
| D09 | Puller start | 0 ~ 359 (°) | Puller starts degree per round. |
| D10 | Puller end | 0 ~ 359 (°) | Puller stops degree per round. |

5. Special function parameter (can be accessed by press **P** during power on)

| SN | Name | Range | Descriptions |
|-----|----------------------------------|------------------|---|
| O01 | Stitches of slow sewing at start | 0~10 (needle) | The stitches of slow sewing at start when trimming is finished. The speed of slow sewing is set in S08 . |
| O05 | Voltage of foot lifter output | 5~30V | The voltage of foot lifter solenoid. The power will be greater if this value is bigger, at the same time, the heat is more. |
| O06 | Foot lifter release timed | ON~OFF | When it is "ON", the foot lifter solenoid will be released automatically after the time desired. |
| O10 | RVS release timed | ON~OFF | When it is "ON", the RVS solenoid will be released automatically after the time desired. |
| O15 | Parameter encrypt | ON~OFF | See 5.8 |
| O17 | Initialization of parameters | ON~OFF | See 5.7 |
| O23 | Running time of aging test | 1~60(s) | The running time of aging test. |
| O24 | Idle time of aging test | 1~60(s) | The idle time of aging test. |
| O25 | Total time of aging test | 1~255 (h) | The total time of aging test. It will be stopped when reached the time. |
| O26 | Aging test enable | ON~OFF | "ON" to active the aging test. |
| O27 | User's password | 0~9999 | See 5.8 |
| O31 | Safety SW. enable | ON~OFF | "ON" to enable the safety switch function. |
| O32 | Safety SW. mode | 0~1 | 0: Normal close, 1: Normal open. |

10-8. Measurement of Error and Warning

| Error code | Causation | Measurement |
|------------|--------------------------------|--|
| E06 | Load is too heavy | Check the load. |
| E10 | Position check error | Check synchronizer. |
| E11 | Encoder error | Check encoder. |
| PEdL | Pedal warning | Release the pedal to balance position. |
| CR-E | Safety SW warning | Check Safety SW., or set O32 to match the machine type. |
| 9 | Inspector disconnected warning | All automatic functions will be no effective. |

10-9. Signal Checking

Press **[S]** during power on, it will display "TEST" and then enter the mode of Measurement of Input Signal. Bar A show the SN.

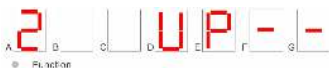
1. Speed controller



Display of the different pedal position as below:

| Display code | Meanings | Descriptions |
|--------------|-------------|--|
| FS02~FS99 | High speed | The second segment forward, pull is 02~99. |
| LS01 | Low speed | The first segment forward, pull is 01. |
| BL-- | Balance | Default. |
| FP-- | Foot lifter | The first segment backward. |
| TM-- | Trimming | The second segment of backward. |
| ERRO | Fault | Speed controller fault or disconnected. |

2. Synchronizer



Bar D and E denote the up position, bar C and D denote the down position. Turn the hand wheel by hand equably,

3. Switch



E REV. SW. F COR. SW. G -- Safety SW.

4. Hall & Encoder signal of motor



Turn the hand wheel by hand equably, display the hall signal of motor, range is 0~7. If the fault state appeared, then display "E". Turn the hand wheel by hand equably, display the encode count of motor, the error is ± 5 normally.

5. Encoder signal of motor



Through **C+**, **D+**, **E+** and **F+** to select the SOL, use **G+** to test, as below:

| Display code | SOL | Display code | SOL |
|--------------|--------------|--------------|-----------------|
| T | Trimmer SOL | R | REV SOL |
| W | Wiper SOL | F | Foot Lifter SOL |
| U | Unfasten SOL | | |

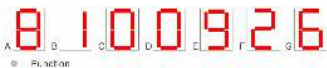
6. Reserved

7. Version of software



For example, the version is v 2.00.

8. Data of software



9. Version of Hardware



10. Version of Panel software



11. Reserved

12. AC power & DC power



13. Reserved

14. Reserved

15. SOL. DC power



Display the current SOL. DC power is 31V

16. Reserved

17. Machine degree



First to setup zero point, use **C+** or **C-** to change degree type, turn hand wheel equally, display the current degree.

- Zero point (display "ZO")

Turn hand wheel to top dead center, and then press **S** to set zero degree point.

- Up lever (display "UP")

Turn hand wheel to up lever, press **S** to save current degree to up lever position. If display is equal to existent parameter, a twinkling "O" will be displayed in bar D.

The setup of other degree parameters are same with above.

- Down lever (display “DW”)
- Trimmer act (display “TA”)
- Trimmer release (display “TR”)
- Reverse act (display “RA”)
- Reverse release (display “RR”)
- Clamp act (display “CA”)
- Clamp release (display “CR”)
- Puller start (display “PS”)
- Puller stop (display “PE”)

Appendix I: 7-segment Display Characters Compare Table

Arabic Number

| | | | | | | | | | | |
|---------|---|---|---|---|---|---|---|---|---|---|
| Actual | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Display | | | | | | | | | | |

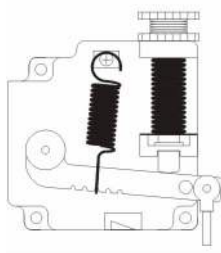
English Alphabet

| | | | | | | | | | | |
|---------|---|---|---|---|---|---|---|---|---|---|
| Actual | A | B | C | D | E | F | G | H | I | J |
| Display | | | | | | | | | | |
| Actual | K | L | M | N | O | P | Q | R | S | T |
| Display | | | | | | | | | | |
| Actual | U | V | W | X | Y | Z | | | | |
| Display | | | | | | | | | | |

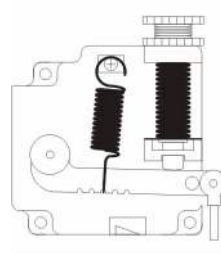
Appendix II: How to adjust the speed controller

If the magnet in speed controller has been replaced, or installation position of PCB has been changed, new adjustment should be performed.

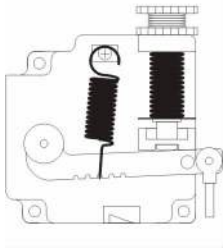
Each position showed as below:



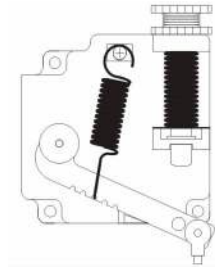
Balance position



Foot lifter position



Farthest position backward



Farthest position forward

Steps of adjustment showed as below:

- Push the switch on PCB of speed controller during the power on;
- Release the switch, after setting the speed controller to balance position, press the switch once;
- After setting the speed controller to the farthest position forward, press the switch once again;
- After setting the speed controller to the foot lifter position, press the switch once again;
- After setting the speed controller to the farthest position backward, press the switch once again;
- After all, the adjustment is accomplished, all function would be normal after power on again.



TYPICAL

GC6730A SERIES

SINGLE NEEDLE DIRECT DRIVE LOCK
STITCHER WITH THREAD TRIMMER
INSTRUCTION BOOK
PARTS CATALOGUE

XI'AN TYPICAL INDUSTRIES CO.,LTD.

Machine specifications

GC6730A-□ D3

□ M-Medium-weight materials
 □ H- Heavy-weight materials

Machine's main technical data

| | | GC6730A-MD3 | GC6730A-HD3 |
|--|---------------|--------------|--------------|
| Max.sewing speed | | 5000rpm | 4500rpm |
| Start backtacking and continuous backtacking speed | | 220-3000rpm | |
| End backtacking speed | | 1800rpm | |
| Max. stitch length | | 5mm | |
| Presser foot height | Lifting lever | 6mm | |
| | knee lifter | 13mm | |
| Feed dog height | | 0.8mm | 1.2mm |
| Needle | | DBx1 #11-#16 | DPx5 #18-#22 |

When sewing at speeds of 4000 rpm or higher, set the stitch length to 4.2 mm or less.

- Besides adjusting stitch, please laypeople don't debug or maintain.
- Parts are subject to changes in design without prior notice.

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