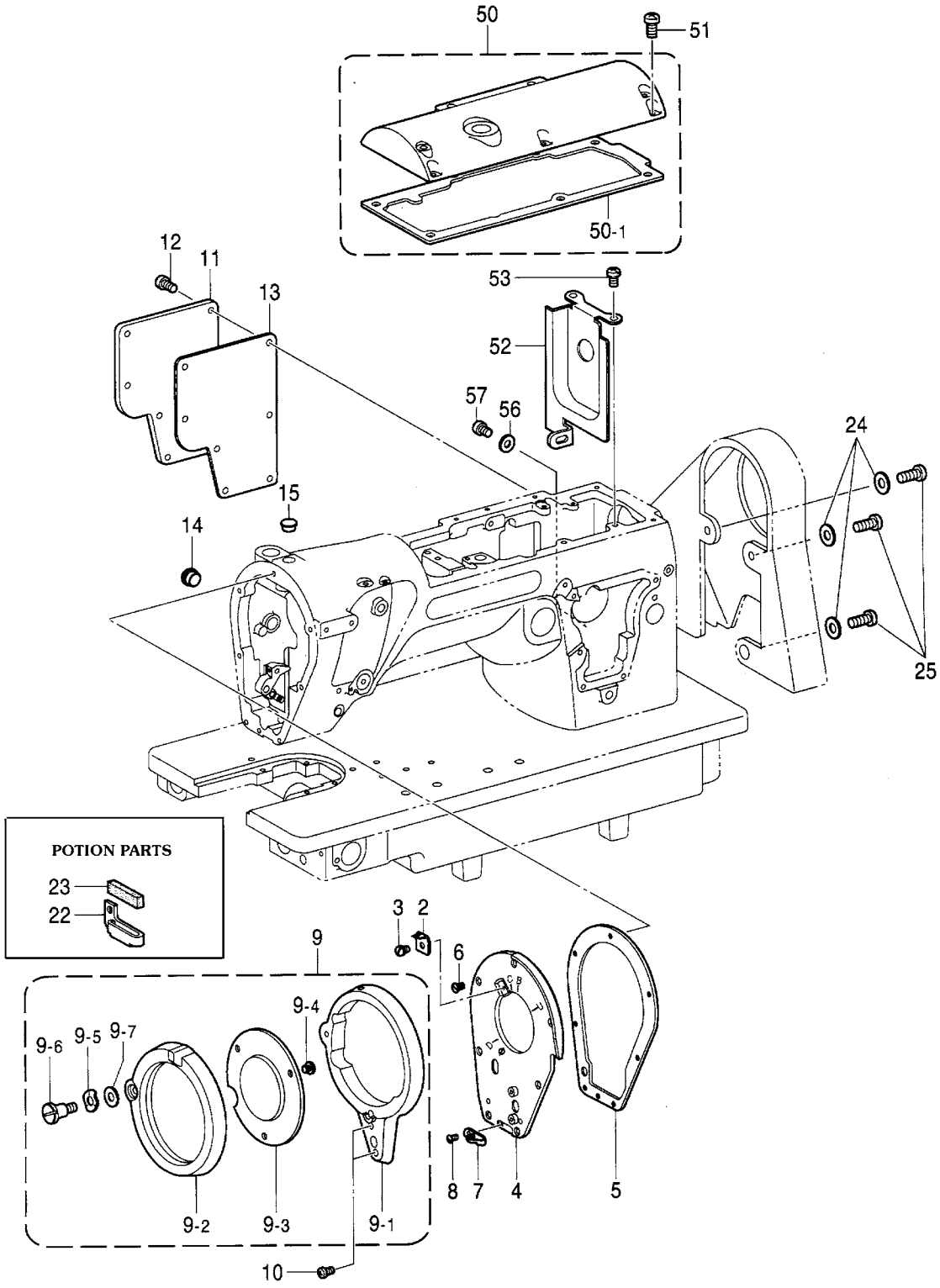
TYPICAL

GT 655
GT 656

SINGLE NEEDLE ZIGZAG LOOK STITCHER

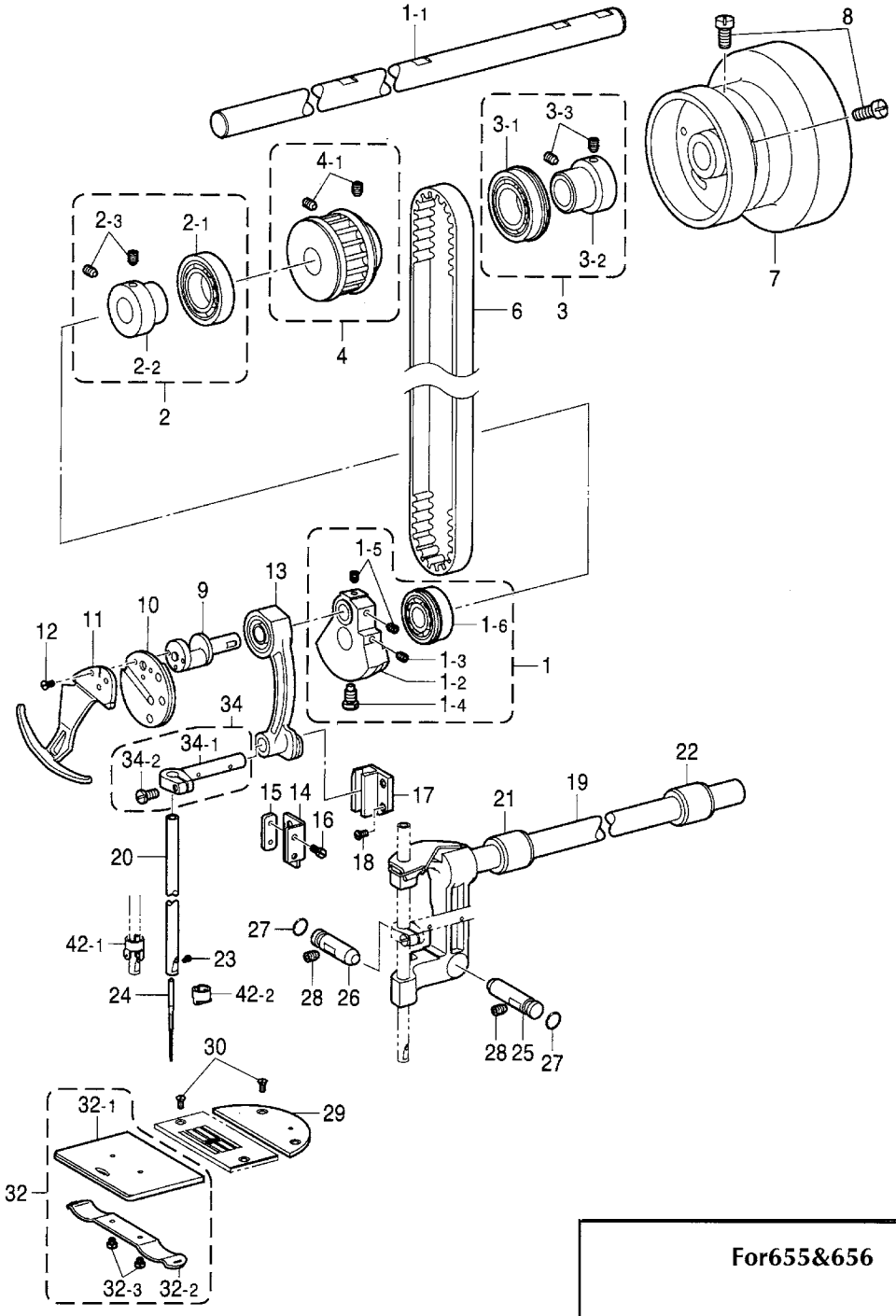
INSTRUCTION BOOK
PARTS CATALOGUE

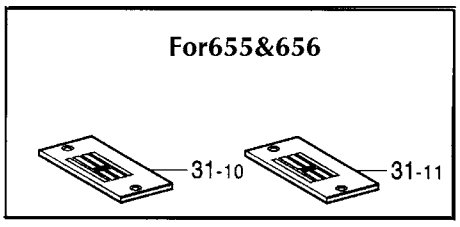
XI´AN TYPICAL INDUSTRIES CO., LTD.


50
51
50-1
12
11
13
53
52
57
56
24
15
14
25
POTION PARTS
23
22
3
2
9
6
9-4
9-6
9-5
9-7
8
7
4
5
9-2
9-3
9-1
10

A. Machine body

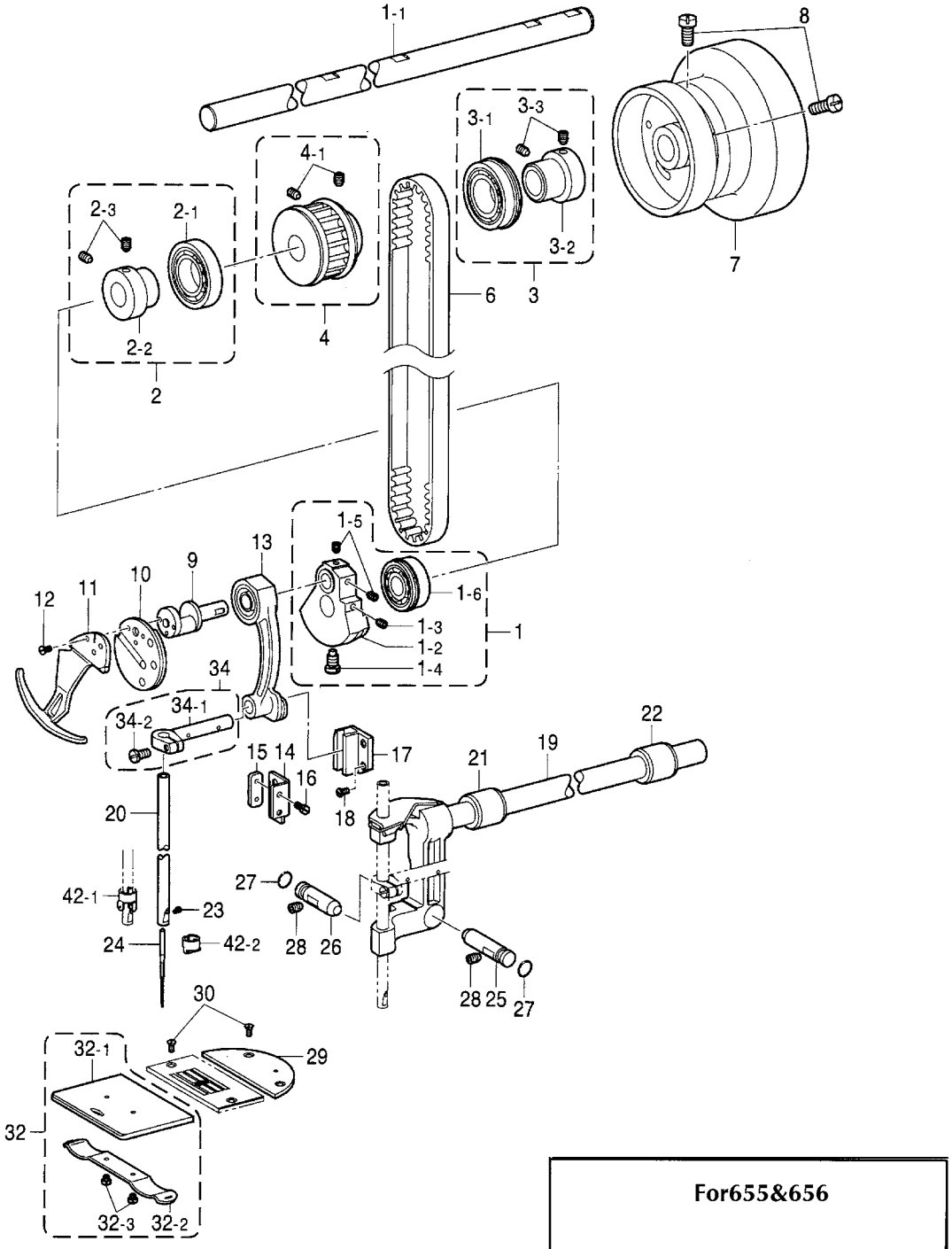
No.	Ret. No.	Description	Qt.
2	BX62004009	Knife, F – plate	1
3	B900868007	Screw, SM3. 57 – 40 × 5	1
4	BX56125009	Face plate	1
5	BX62002000	Packing, F – plate	1
6	BX09414009	Screw, flat SM3. 57 × 6	7
7	BX62001009	Thread guide	1
8	B908572008	Screw , flat SM3. 57	1
9	BX62090809	Thread take – up grard assy	1
9 – 1	BX62099909	Thread take – up guard	1
9 – 2	B952063001	Thread take – up guard cover	1
9 – 3	B952065001	Cover window	1
9 – 4	B969566009	Screw, SM3. 18 – 40 × 3	3
9 – 5	BX58095009	Washer, wave spring	1
9 – 6	BX62098909	Shoulder screw, SM4. 76	1
9 – 7	B085330878	Washer, plain M6. 35	1
10	B048429098	Screw, pan SM4. 37 – 40 × 10	2
11	BX57707009	Rear plate	1
12	B048429098	Screw, pan SM4. 37 – 40 × 10	7
13	BX57706000	Packing	1
14	B906661009	Rubber cap, 15. 5	1
15	B906289009	Rubber cap, 10. 5	1
		<For Belt cover>	
24	B085390878	Washer, plain M4. 76	3
25	B048399898	Screw, pan SM4. 76 – 32 × 12	3
26	B040600294	Screw, bind M4 × 8	2
50	BX57705009	Top cover assy	1
50 – 1	BX57703000	Packing	1
51	B048399898	Screw, pan SM4. 76 – 32 × 12	7
52	BX57702009	Patition plate	1
53	B048420298	Screw, pan AM4. 37 – 40 × 8	3
		<For Grounding wire>	
56	BX08365009	Washer	1
57	B048420447	Screw, pan SM4. 37 – 40 × 6	1
		″Option Parts″	
22	BX59296009	Thread guide, F	1
23	B996169009	Felt	1

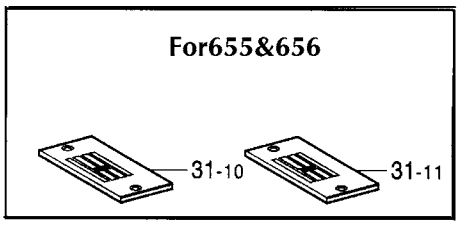

1-1
8
3-1
3-3
4-1
2-3
2-1
3-2
7
6
3
4
2-2
2
1-5
13
9
10
11
12
1-6
1-3
1-2
1-4
1
34
34-1
34-2
22
19
21
15
14
17
16
18
20
42-1
23
27
24
42-2
28
26
28
25
27
30
32-1
29
32
32-3
32-2


For655&656
31-10
31-11

B. Needle bar and thread take – up mechanism

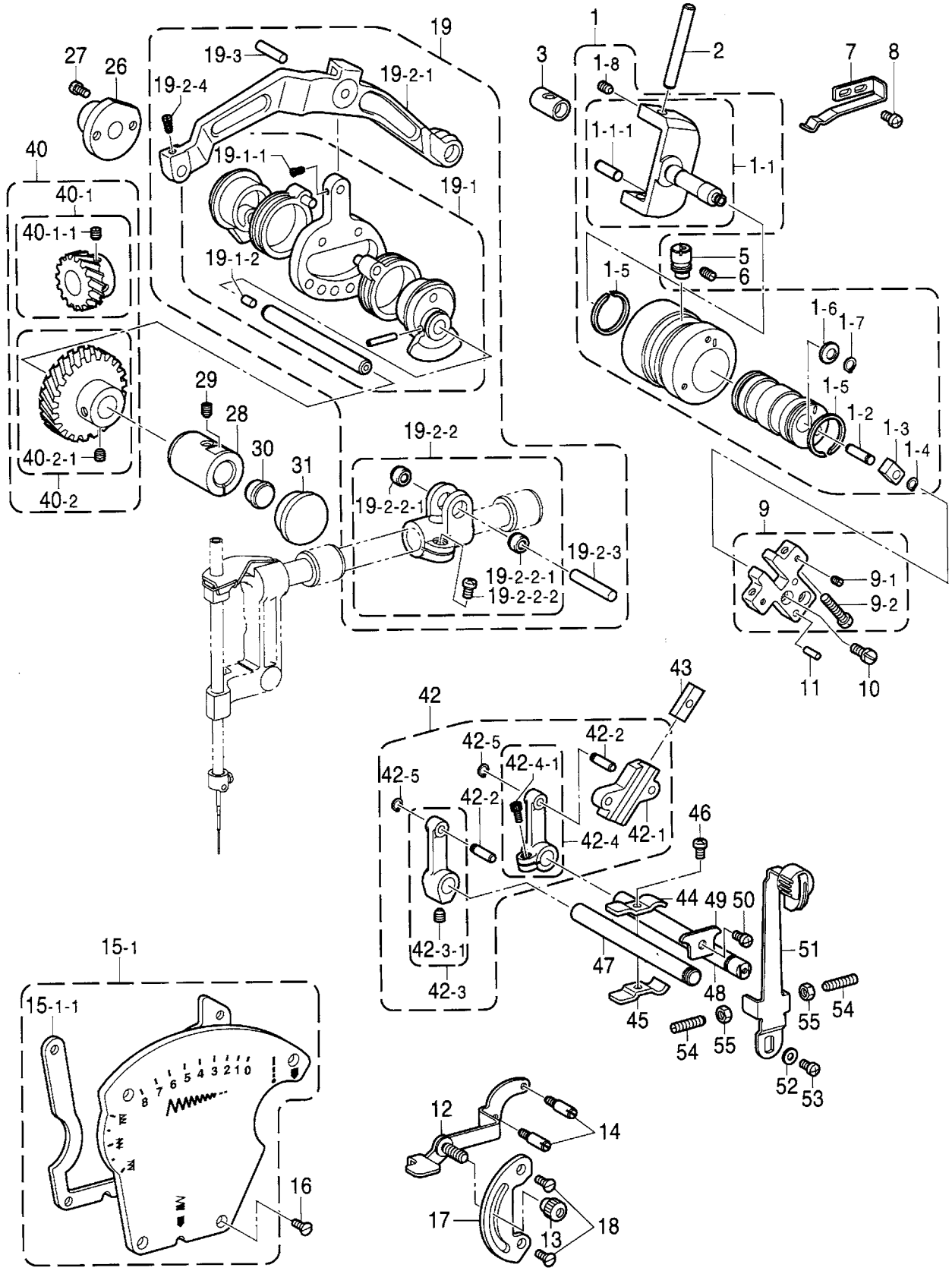
No.	Ret. No.	Description	Qt.
1	BX57701009	Upper shaft assy	1
1 – 1	BX57790009	Upper shaft	1
1 – 2	BX62083900	Thread take – up crank	1
1 – 3	B096339088	Set screw, socket(CP)SM6. 35	1
1 – 4	B906646009	Screw, SM7. 14 – 28	1
1 – 5	B096330488	Set screw, socket(CP) SM6. 35	2
1 – 6	B034808254	Ball bearing, 6202ZZNR	1
2	BX62082009	Bearing assy, M	1
2 – 1	BX85876009	Ball bearing, 6004ZZ	1
2 – 2	BX62081009	Bearing collar	1
2 – 3	B096330488	Set screw, socket(CP) SM6. 35	2
3	BX62070009	Bearing assy, R	1
3 – 1	BX72390009	Ball bearing, 6204ZZNR	1
3 – 2	BX62081009	Bearing collar	1
3 – 3	B096330488	Set screw, socket(CP) SM6. 35	2
4	BX62078009	Timing pulley assy, U	1
4 – 1	B096330488	Set screw, socket(CP) SM6. 35	2
6	BX56341009	Timing belt	1
7	BX57799009	pulley	1
8	BX77421008	Set screw, (CP) SM5. 95 – 28 × 14	2
9	BX62074009	Thread take – up lever shaft	1
10	BX62073009	Rotary take – up mounting plate	1
11	BX62060009	Rotary thread take – up lever	1
12	BX62069009	Screw, flat SM3. 57	3
13	BX62068009	Thread take – up lever set	1
14	BX62065009	Guide, N – bar connecting rod	1
15	BX62064009	Nut plate, SM4. 37	1
16	B905934009	Screw, SM4. 37	2
17	BX62063009	Clamp guide, needle bar	1
18	B905934009	Screw, SM4. 37	2
19	BX57798009	Needle bar bracket assy	1
20	BX62053909	Needle bar	1
21	BX62052000	Bush, F	1
22	BX62051000	Bush, R	1
23	B960557908	Set screw, SM3. 18	1
24	BX62850030	Needle, NM70····· <#10NM70>	1
25	BX62049009	Pin, F	1
26	BX62048009	Pin, R	1
27	B029005030	O ring, P5	2
28	B096390588	Set screw, socket(CP) SM4. 76	2
29	BX62047009	Auxiliary needle plate	1
30	BX62069009	Screw, flat SM3. 57	4
		<for 655&656>	
31 – 10	BX62046009	Needle plate and needle hole10. 2 × 1. 5mm	1
31 – 11	BX62045009	Needle plate and needle hole: 9. 8 × 1. 15mm	1


1-1
8
3-1
3-3
4-1
2-3
2-1
3-2
7
6
3
4
2-2
2
1-5
13
9
10
11
12
1-6
1-3
1-2
1-4
1
34
34-1
34-2
22
19
21
17
15
14
16
18
20
42-1
23
27
24
42-2
28
26
28
25
27
30
32-1
29
32
32-3
32-2


For655&656
31-10
31-11

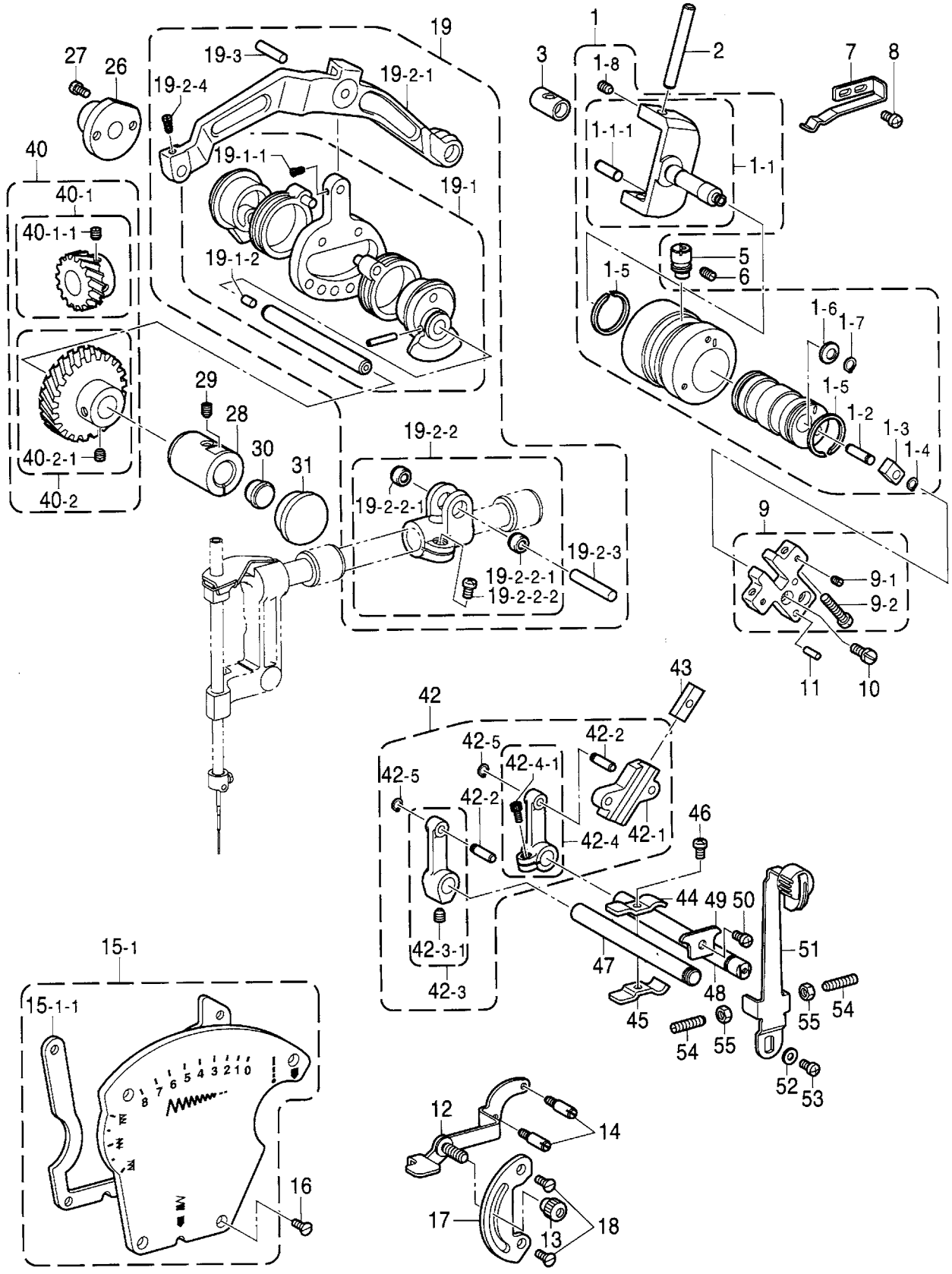
B. Needle bar and thread take – up mechanism

No.	Ret. No.	Description	Qt.
32	BX62042009	Slide plate assy	1
32 – 1	BX62041009	Slide plate	1
32 – 2	B996549009	Slide plate apring	1
32 – 3	B988339059	Screw, SM2.38	2
34	BX61021009	Needle bar clamp assy	1
34 – 1	BX62030009	Needle bar clamp	1
34 – 2	B965792009	Screw, SM4.37	1
42 – 1	BX62861009	Thread guide, N – bar	1
42 – 2	BX53160009	Thread guide	1
		″Option Parts″	
6	BX56341008	Timing belt	1
11	BX56114009	Rotary thread take – up lever	1
24	BX62739030	Needle, NM70 <Marked in #10NM70)	1
24	BX62739035	Needle, NM75 <Marked in #11NM75>	1
24	BX62739020	Needle, NM80 <Marked in #12NM80>	1
24	BX62850035	Needle, NM75 <Marked in #11NM75>	1
24	BX62850020	Needle, NM80 <Markde in #12NM80>	1


19
19-3
19-2-1
19-2-4
19-1-1
19-1
19-1-2
27
26
40
40-1
40-1-1
40-2-1
40-2
29
28
30
31
19-2-2
19-2-2-1
19-2-3
19-2-2-1
19-2-2-2
1
3
2
1-8
1-1-1
1-1
7
8
5
6
1-5
1-6
1-7
1-5
1-2
1-3
1-4
9
9-1
9-2
11
10
43
42
42-5
42-2
42-4-1
42-5
42-2
42-4
42-1
46
44
49
50
51
47
48
45
54
55
54
55
52
53
42-3-1
42-3
15-1
15-1-1
16
12
14
17
13
18

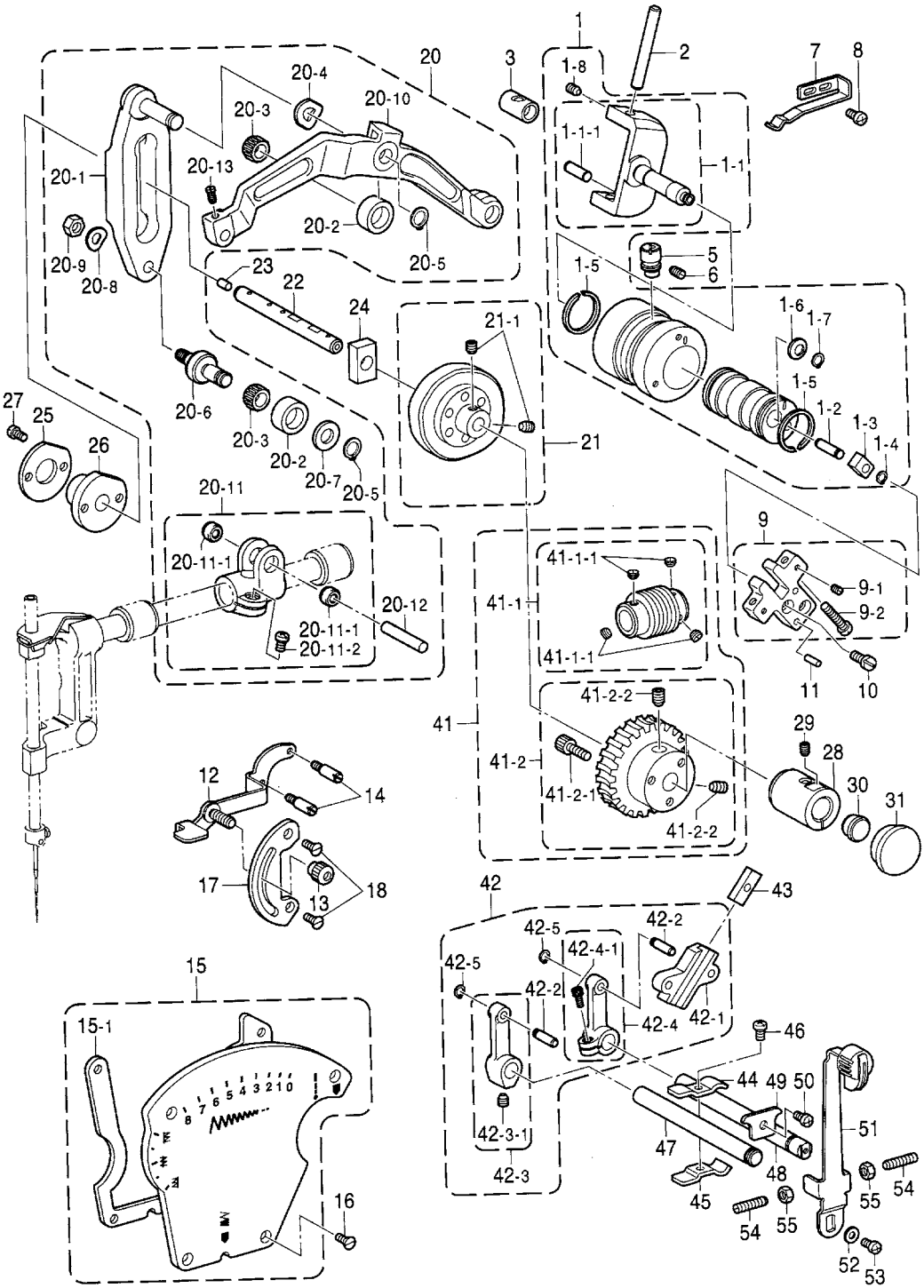
C1. Zigzag mechanism(655)

No.	Ret. No.	Description	Qt.
1	BX57779009	Zigzag regulator assy	1
1 – 1	BX57778009	Carrier assy	1
1 – 1 – 1	BX57776009	Pin, 5 × 15	1
1 – 2	BX57772009	Pin	1
1 – 3	BX57771009	Slide block	1
1 – 4	B062050968	Retaining ring, C5	1
1 – 5	BX57760000	Retaining ring	2
1 – 6	BX57754009	Washer, disk spring	1
1 – 7	B062040968	Retaining ring, C6	1
1 – 8	B098500574	Set screw, socket(FT) M5 × 5	2
2	BX57769009	Slider shaft	1
3	BX57768000	Slider	1
5	BX57767009	Positioning pin	1
6	B097399098	Set screw, (CP) SM4. 76 – 32 × 10	1
7	BX57766009	Postioning plate	1
8	B048429098	Screw, pan SM4. 37 – 40 × 10	2
9	BX57765009	Block assy, 8	1
9 – 1	B099431798	Set screw, (FT) SM3. 57	2
9 – 2	B048398098	Screw, pan SM4. 76 – 32 × 20	2
10	B905937006	Screw, SM4. 76	2
11	B064709600	Pin, taper 3 × 14	2
12	BX57763909	Change lever assy	1
13	BX57750009	Thumb nut	1
14	BX57759009	Stopper screw, SM3. 57	2
15 – 1	BX57758009	Decorative plate assy, 8	1
15 – 1 – 1	BX57756000	Packing	1
16	B952726009	Screw, flat SM4. 37	4
17	BX57755009	Lever plate	1
18	B952726009	Screw, flat SM4. 37	2
19	BX57749009	Zigzag assy, A: 2	1
19 – 1	BX57699009	Eccentric cam assy, 2	1
19 – 1 – 1	BX57697009	Set screw, SM3. 18	1
19 – 1 – 2	B951909000	Rubber cap, 3. 4	1
19 – 2	BX57696009	Zigzag connecting rod assy, A	1
19 – 2 – 1	BX57743009	Zigzag connecting rod	1
19 – 2 – 2	BX57742009	Zigzag joint assy	1
19-2-2-1	BX57730000	Bush	2


19
19-3
19-2-1
19-2-4
19-1-1
19-1
19-1-2
27
26
40
40-1
40-1-1
40-2-1
40-2
29
28
30
31
19-2-2
19-2-2-1
19-2-3
19-2-2-1
19-2-2-2
1
3
2
1-8
1-1-1
1-1
7
8
5
6
1-5
1-6
1-7
1-5
1-2
1-3
1-4
9
9-1
9-2
11
10
43
42
42-5
42-2
42-4-1
42-5
42-2
42-4
42-1
46
44
49
50
51
47
48
45
54
55
54
55
52
53
42-3-1
42-3
15-1
15-1-1
16
12
14
17
13
18

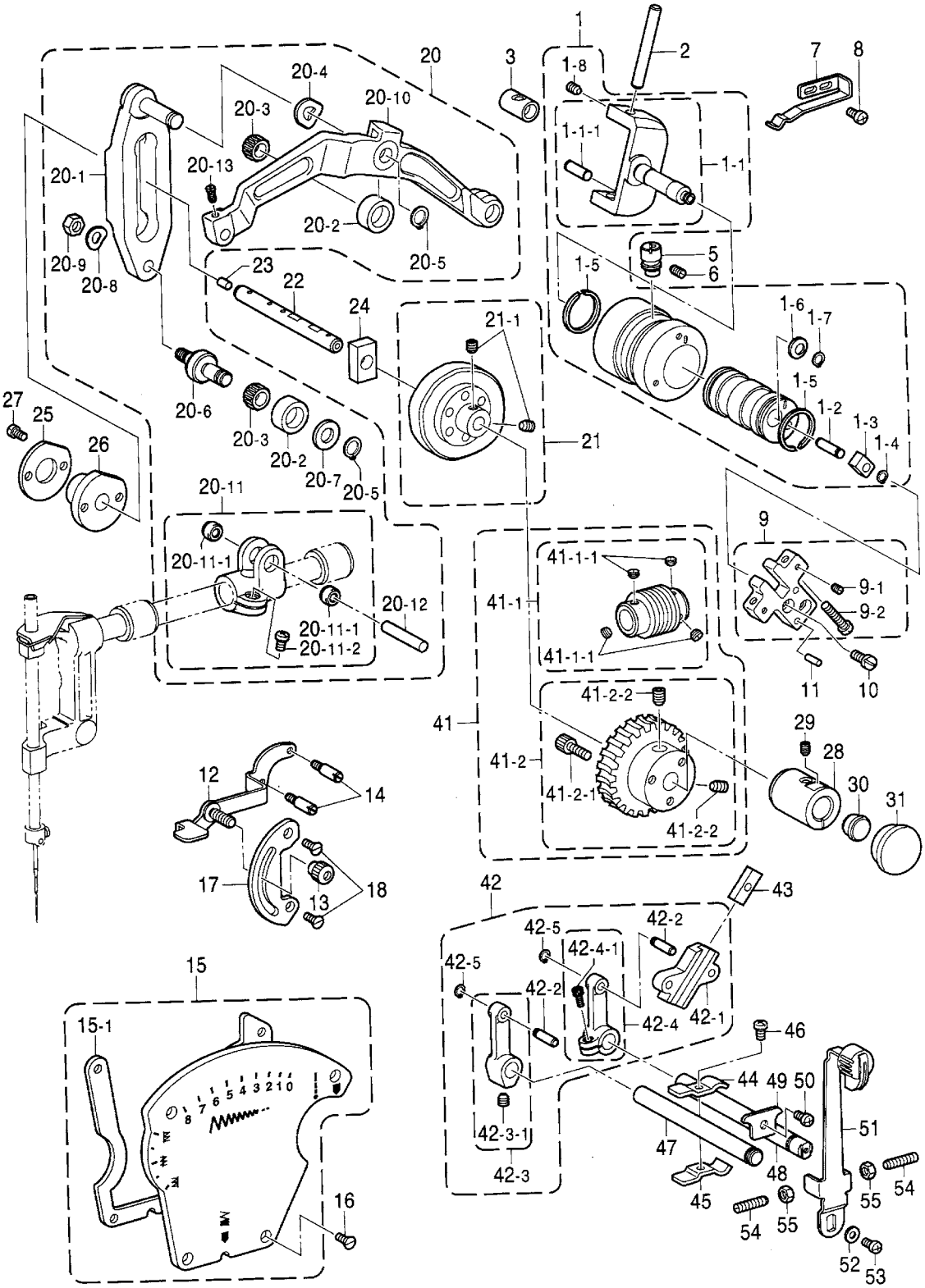
C1. Zigzag mechanism(655)

No.	Ret. No.	Description	Qt.
19-2-2-2	B048399098	Screw, pan SM4.76-32×10	1
19-2-3	BX66171009	Shaft	1
19-2-4	B965118009	Set screw, SM4.37	1
19-3	B957757009	Roller, F5×19.8	1
26	BX57725009	Bush, R	1
27	B048399098	Dcrew, pan SM4.76-32×10	2
28	BX57724009	Bush, F	1
29	B096339088	Set screw, socket (CP)SM6.35	1
30	B993176009	Rubber cap, 13.5	1
31	B959692009	Oil cap	1
40	BX57723009	Driving gear assy, 2	1
40-1	B952652009	Upper shaft gear assy	1
40-1-1	B905811009	Set screw, SM6.35	2
40-2	BX57722009	Rocker gear assy, N-bar	1
40-2-1	B987004009	Set screw. (CP) SM6.35	2
42	BX57714009	Zigzag regulator assy	1
42-1	BX57713009	Zigzag bracket	1
42-2	BX57772009	Pin	2
42-3	BX57712009	Zigzag arm assy, A	1
42-3-1	B096340478	Set screw, socket (CP) SM5.95-28×6	1
42-4	BX57600009	Zigzag arm assy, B	1
42-4-1	B092429088	Bolt, socket SM4.37×10	1
42-5	B062050968	Retaining ring, C5	2
43	BX57608009	Slide block	1
44	BX57607909	Stopper plate, U	1
45	BX57606909	Stopper plate, D	1
46	B048399498	Screw, pan SM4.76-32×16	1
47	BX57605009	Zigzag shaft, A	1
48	BX57604009	Zigzag shaft, B	1
49	BX57603009	Stopper plate	1
50	B048399098	Screw, pan SM4.76-32×10	1
51	BX57602009	Zigzag lever	1
52	B085390878	Washer, plain M4.76	1
53	B048399098	Screw, pan SM4.76-32×10	1
54	B906225909	Set screw, SM5.95-28×24	2
55	B900088006	Nut, SM5.95	2


1
2
3
7
8
20
20-4
20-3
20-10
20-13
20-1
20-2
20-5
20-9
20-8
1-8
1-1-1
1-1
23
22
24
21-1
21
1-5
5
6
1-6
1-7
1-2
1-3
1-4
20-6
20-3
20-2
20-7
20-5
27
25
26
20-11
20-11-1
20-12
20-11-1
20-11-2
41-1-1
41-1
41-1-1
9
9-1
9-2
11
10
41-2-2
41
41-2
41-2-1
41-2-2
29
28
30
31
12
14
17
18
13
42
43
42-5
42-2
42-5
42-4-1
42-2
42-4
42-1
46
44
49
50
51
42-3-1
42-3
47
48
45
54
55
54
55
52
53
15
15-1
16

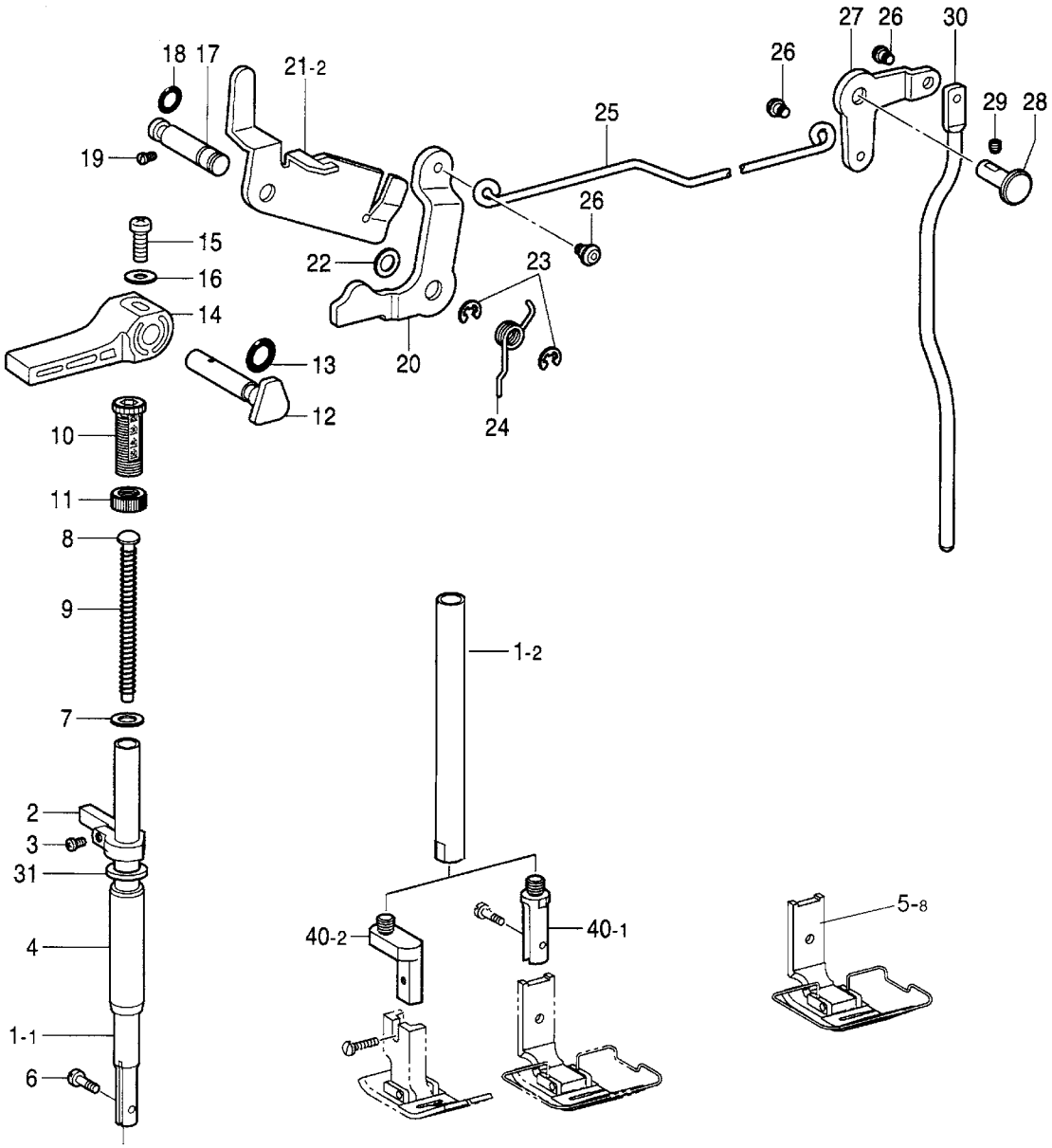
C2. Zigzag mechanism(656)

No.	Ret. No.	Description	Qt.
1	BX57779009	Zigzag regulator assy	1
1 – 1	BX57778009	Carrier assy	1
1 – 1 – 1	BX57776009	Pin, 5 × 15	1
1 – 2	BX57772009	Pin	1
1 – 3	BX57771009	Slide block	1
1 – 4	B062050968	Retaining ring, C5	1
1 – 5	BX57760000	Retaining ring	2
1 – 6	BX57754009	Washer, disk spring	1
1 – 7	B062040968	Retaining ring, C6	1
1 – 8	B098500574	Set screw, socket (FT) M5 × 5	2
2	BX57769009	Slider shaft	1
3	BX57768000	Slider	1
5	BX57767009	Postioning pin	1
6	B097399098	Set screw, (CP) SM4. 76 – 32 × 10	1
7	BX57766009	Positioning plate	1
8	B048429098	Screw, pan SM4. 37 – 40 × 10	2
9	BX57765009	Block assy, 8	1
9 – 1	B099431798	Set screw, (FT) SM3. 57	2
9 – 2	B048398098	Screw, pan SM4. 76 – 32 × 20	2
10	B905937006	Screw, SM4. 76	2
11	B064709600	Pin, taper 3 × 14	2
12	BX57763909	Change lever assy	1
13	BX57750009	Thumb nut	1
14	BX57759009	Stopper screw, SM3. 57	2
15	BX57758009	Decorative plate assy, 8	1
15 – 1	BX57756000	Packing	1
16	B952726009	Screw. flat SM4. 37	4
17	BX57755009	Lever plate	1
18	B952726009	Screw, flat SM4. 37	2
20	BX57739009	Zigzag assy, B: 4	1
20 – 1	BX57738009	Roller guide assy	1
20 – 2	BX57735009	Roller	2
20 – 3	BX57734000	Needle bearing	2
20 – 4	BX57733009	Washer, spring	1
20 – 5	B062020968	Retaining ring, C8	2
20 – 6	BX57732009	Eccentric shaft	1
20 – 7	BX57695009	Washer, thrust	1
20 – 8	B903093008	Washer, wave spring 6. 45	1
20 – 9	B950556008	Nut, SM6. 35	1
20 – 10	BX57731009	Zigzag connecting rod assy	1
20 – 11	BX57742009	Zigzag joint assy	1
20 – 11 – 1	BX57730000	Bush	2
20 – 11 – 2	B048399098	Screw, pan SM4. 76 – 32 × 10	1
20 – 12	BX66171009	Shaft	1
20 – 13	B965118009	Set screw, SM4. 37	1
21	BX57772009	Cam assy, 4	1
21 – 1	B096330488	Set screw, socket (CP) SM6. 35	2
22	BX57728009	Cam shaft	1
23	B968836909	Rubber cap, 4. 2	1


1
2
3
7
8
20
20-4
20-3
20-10
20-13
20-1
20-2
20-5
20-9
20-8
1-8
1-1-1
1-1
5
6
1-5
1-6
1-7
1-2
1-3
1-4
23
22
24
21-1
21
20-6
20-3
20-2
20-7
20-5
27
25
26
20-11
20-11-1
20-12
20-11-1
20-11-2
9
9-1
9-2
11
10
41-1-1
41-1
41-1-1
41
41-2-2
41-2
41-2-1
41-2-2
29
28
30
31
12
14
17
18
13
42
43
42-5
42-2
42-4-1
42-5
42-2
42-4
42-1
46
44
49
50
51
47
48
45
54
55
54
55
52
53
42-3-1
42-3
15
15-1
16

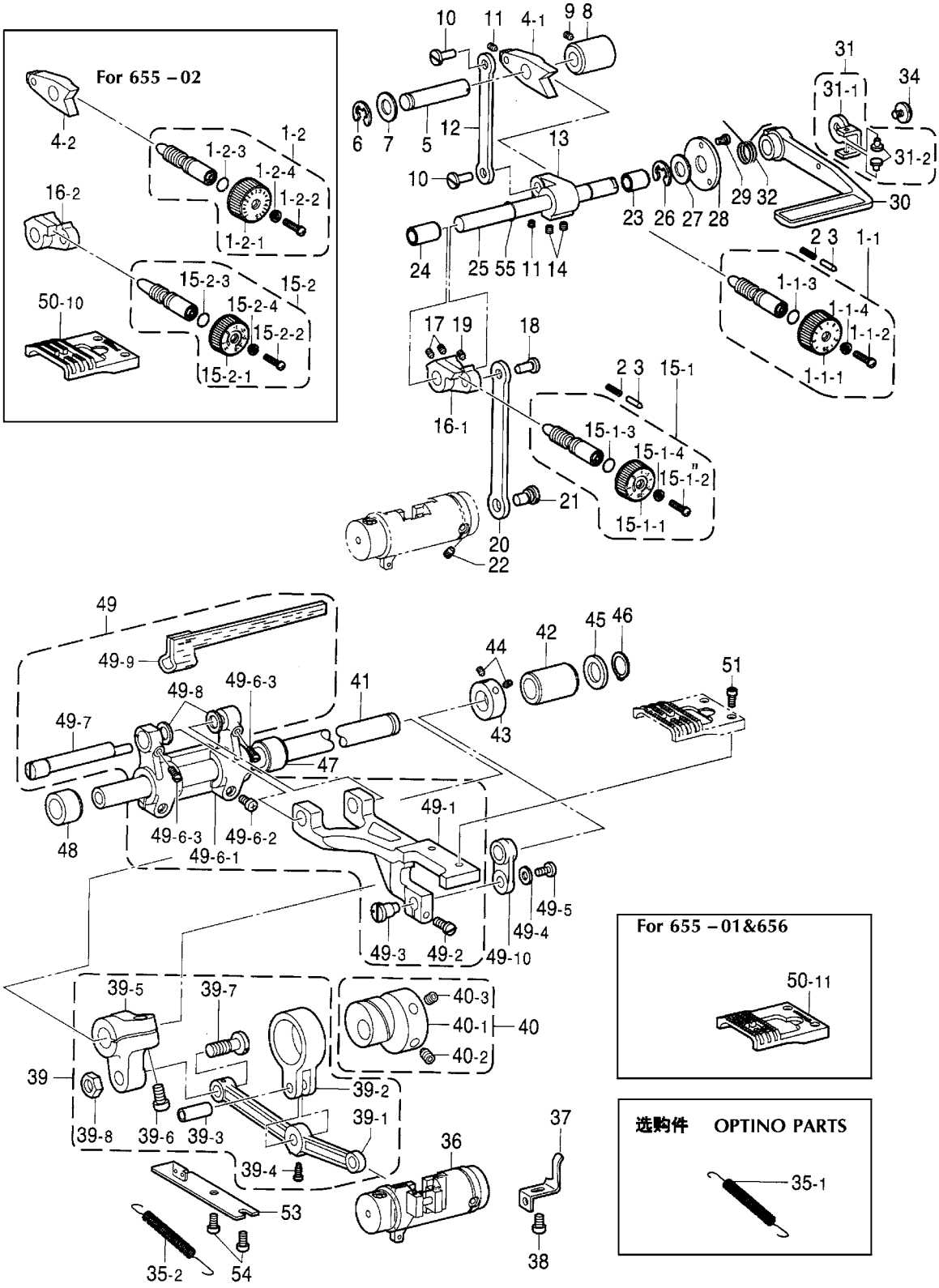
C2. Zigzag mechanism(656)

No.	Ret. No.	Description	Qt.
24	BX57727009	Slide block	1
25	BX57726009	Spacer	1
26	BX57725009	Bush, R	1
27	B048399098	Screw, pan SM4.76 −32 ×10	2
28	BX57724009	Bush, F	1
29	B096339088	Set screw, socket (CP) SM6.35	1
30	B993176009	Rubber cap, 13.5	1
31	B959692009	Oil cap	1
41	BX57719009	Worm wheel assy, 4	1
41 −1	BX57718009	Worm wheel assy	1
41 −1 −1	B905811007	Set screw, SM635 ×2.8	4
41 −2	BX57716009	Wheel assy	1
41 −2 −1	B092429878	Bolt, socket SM4.37 −40 ×12	3
41 −2 −2	B096339088	Set screw, socket (CP) SM6.35	2
42	BX57714009	Zigzag regulator assy	1
42 −1	BX57713000	Zigzag bracket	1
42 −2	BX57772009	Pin	2
42 −3	BX57712009	Zigzag arm assy, A	1
42 −3 −1	B096340478	Set screw, socket (CVP) SM5.95 −28 ×6	1
42 −4	BX57600009	Zigzag arm assy, B	1
42 −4 −1	B092429088	Bolt, socket SM4.37 ×10	1
42 −5	B062050968	Retaining ring, C5	2
43	BX57608009	Slide block	1
44	BX57607909	Stopper plate, U	1
45	BX57606909	Stopper plate, D	1
46	B048399498	Screw, pan SM4.76 −32 ×16	1
47	BX57605009	Zigzag shaft, A	1
48	BX57604009	Zigzag shaft, B	1
49	BX57603009	Stopper plate	1
50	B048399098	Screw, pan SM4.76 −32 ×10	1
51	BX57602009	Zigzag lever	1
52	B085390878	Washer, plain M4.76	1
53	B048399098	Screw, pan SM4.76 −32 ×10	1
54	B906225909	Set screw, SM5.95 −28 ×24	2
55	B900088006	Nut, SM5.95	2


18
17
21-2
19
25
26
27
26
30
29
28
15
16
14
22
20
23
24
13
12
10
11
8
9
7
2
3
31
4
1-1
6
1-2
40-2
40-1
5-8

D. Presser foot mechanism

No.	Ret. No.	Description	Qt.
1 – 1	BX62829009	Presser bar	1
2	BX62828009	Guide bracket, P – bar	1
3	B048429898	Screw, pan SM4. 37 – 40 × 12	1
4	BX62827000	Bush, P – bar	1
5 – 8	BX62811009	Presser foot assy W/F – G	1
6	B997050009	Screw, SM3. 57	1
7	B960603009	Washer	1
8	BX86360009	Spring guide	1
		<For 655 & 656>	1
9 – 1	BX62825009	Spring compression…… < Yellow>	1
9 – 2	BX62824009	Spring cpmpression…… < Bluing>	1
10	BX57796009	Adjusting screw, M16 W/scale	1
11	BX57795009	Adjusting nut, presser	1
12	BX79158009	Lifter crank	1
13	B029006030	O ring P4	1
14	BX79004009	Presser bar lifter	1
15	BX71059009	Screw, pan (S/P WA) M3. 5 × 12	1
17	BX64376009	Shaft, lifter lever	1
18	B029009430	O ring, PW1	1
19	BX09112009	Set screw, SM3. 57 – 40 × 6	1
20	B965520009	Lifter lever, P – bar	1
21	BX62823009	Tension release plate	1
22	B901347008	Washer	1
23	B062060768	Retaining ring, E4	2
24	BX64374009	Spring	1
25	BX57794009	Connecting rod, K – lifter	1
26	B965632909	Shoulder screw, socket SM4. 76	3
27	BX99949009	Knee lifter lever	1
28	BX07592009	Lifter are stud	1
29	B097399098	Set screw, (CP) SM4. 76 – 32 × 10	1
30	BX57793009	Knee lifter bar	1
31	B956514000	Cushion	1
		″Option Parts″	
1 – 2	BX50996009	Presser bar, U	1
40 – 1	BX50995009	Presser bar tip, A	1
40 – 2	BX50994009	Presser bar tip, B	1


For 655 – 02
4-2
1-2
1-2-3
1-2-4
1-2-2
1-2-1
16-2
15-2-3
15-2
15-2-4
15-2-2
15-2-1
50-10
10
11
4-1
9
8
6
7
5
12
13
10
31
31-1
34
31-2
29
32
30
23
26
27
28
24
25
55
11
14
2
3
1-1
1-1-3
1-1-4
1-1-2
1-1-1
17
19
18
16-1
2
3
15-1
15-1-3
15-1-4
15-1-2
15-1-1
21
20
22
49
49-9
49-8
49-6-3
41
49-7
47
44
42
45
46
43
51
48
49-6-3
49-6-2
49-6-1
49-1
49-5
49-4
49-3
49-2
49-10
For 655 – 01&656
50-11
39-5
39-7
40-3
40-1
40
40-2
39
39-2
39-8
39-6
39-3
39-1
39-4
36
37
53
35-2
54
38
选购件 OPTINO PARTS
35-1

E. Feed mechanism

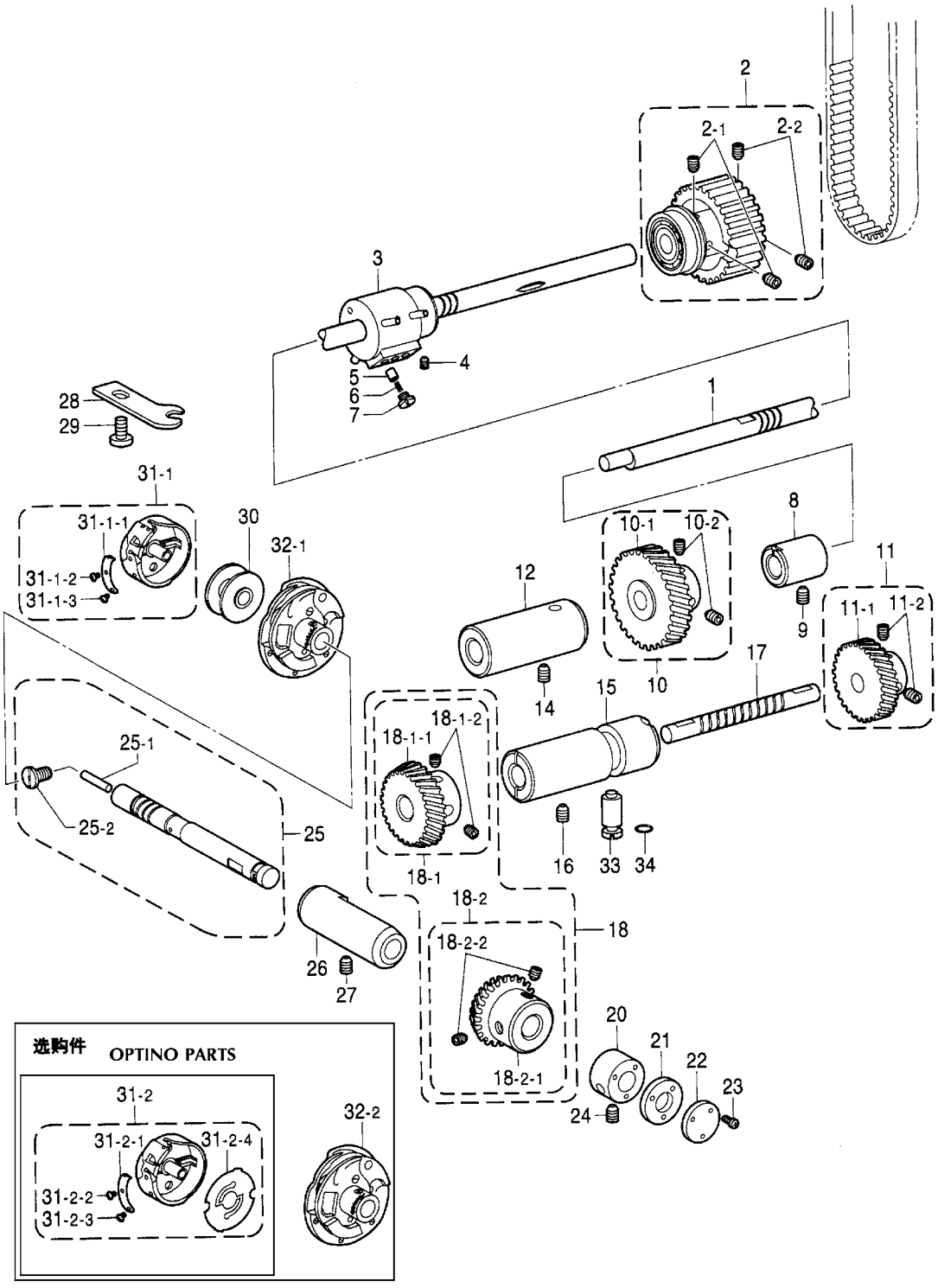
No.	Ret. No.	Description	Qt.
		< For 655 – 01&656>	
1 – 1	BX57792009	Stitch length dial assy, 2. 5	1
		····· < Marked in 2. 5>	
1 – 1 – 2	BX89596909	Screw, SM4. 76	1
1 – 1 – 3	B902561009	O ring	1
1 – 1 – 4	B968364008	Feed regulating supporter	1
1 – 2	BX79040009	Stitch length dial assy, 5	1
		····· < Marked in 5>	
1 – 2 – 1	BX89596909	Screw, SM4. 76	1
1 – 2 – 2	B902561009	O ring	1
1 – 2 – 3	B968364008	Feed regulating supporter	1
2	B900782009	Spring	2
3	B965608009	Positioning pin	2
		< For 655&GT656>	
4 – 1	BX62908009	Feed regulator assy	1
		< For 655 – 02>	
4 – 2	BX62906009	Feed regulator assy	1
5	BX62904009	shaft, F – regulator	1
6	B062020768	Retaining ring, E8	1
7	B085900978	Washer, plain S 10	1
8	BX62903000	Bush, F – regulator shaft	1
9	B098500574	Set screw, socket (FT) M5 ×5	1
10	B959702908	Connecting stud, 12. 5	2
11	B098500574	Set screw, socket (FT) M5 ×5	2
12	BX62902009	Connecting rod, U	1
13	BX62901009	Feed adjusting lever	1
14	BX87459009	Set screw, socket (FT) M6 ×6	2
		< For 655 – 01&656>	
15 – 1	BX57791009	Condense dial assy	1
		····· < Marked in 2. 5>	
15 – 1 – 1	BX62999009	Condense dial, 2. 5	1
15 – 1 – 2	B981652908	Screw, SM4. 76	1
15 – 1 – 3	B902561009	O ring	1
15 – 1 – 4	B968364008	Support plate	1
		< For 655 – 02>	
15 – 2	BX57780009	Condense dial assy	1
		····· < Marked in 5>	
15 – 2 – 1	BX62997009	Condense dial, 5	1
15 – 2 – 2	B981652908	Screw, SM4. 76	1
15 – 2 – 3	B902561009	O ring	1
15 – 2 – 4	B968364008	Support plate	1
		< For 655 – 01&656>	
16 – 1	BX62996009	Condense regulator, – 1	1
		< For 655 – 02>	
16 – 2	BX62995009	Condense regulator, – 3	1

E. Feed mechanism

No.	Ret. No.	Description	Qt.
17	BX87459009	Set screw, socket (FT) M6×6	2
18	B959702908	Connecting stud, 12.5	1
19	B098500574	Set screw, socket (FT) M5×5	1
20	BX62994909	Connecting rod, F-regulator	1
21	BX03454008	Eccentric pin	1
22	B098500574	Set screw, socket (FT) M5×5	1
23	B968736900	Bush, dry L=20	1
24	BX85641900	Bush, dry L=12	1
25	BX62992009	Shaft, R-lever	1
26	B062020768	Retaining ring, E8	1
27	B085900978	Washer, plain S 10	1
28	B963506809	Spacer	1
29	B048430298	Screw, pan SM3.57-40×8	3
30	BX03736901	Reverse stitching lever	1
31	BX62745009	Lever guide assy	1
31-1	BX62744009	Lever guide	1
31-2	BX62743000	Rubber	2
32	BX03735009	Spring	1
33	B957978000	Nylon tube, L=13.5	1
34	B900599007	Screw, SM4.76	1
35-2	BX62736009	Spring, extension	1
36	BX62980009	Feed regulator assy	1
37	BX62961009	Stopper, F-regulator	1
38	B048390498	Screw, pan SM4.76-32×6	1
39	BX62987009	Connecting rod assy, side	1
39-1	BX62986009	Connecting rod, side	1
39-2	BX62985009	Connecting rod, F-driving	1
39-3	B990548009	Shaft	1
39-4	B957040009	Screw, SM3.18	1
39-5	BX62984009	Feed rocker arm	1
39-6	B048349498	Screw, pan SM5.95-28×16	1
39-7	B963501009	Shoulder screw, SM7.14	1
39-8	B906421008	Nut, SM7.14	1
40	BX62983009	L-feed eccentric wheel assy	1
40-1	BX62982009	Level feed eccentric wheel	1
40-2	B992257009	Set screw, socket SM5.95	1
40-3	B096349070	Set screw, socket (VCP) SM5.95-28×10	1
41	B629810009	Feed rocker shaft	1
42	BX62970009	Bush, R	1
43	B964529009	Set screw collar	1
44	B096340488	Set screw, socket SM5.95	2
45	B968482009	Spacer	1
46	B062990968	Retaining ring, external C11	1
47	BX62979000	Bush, M	1
48	BX62978000	Bush, L	1
49	BX62977909	Feed bar set	1
49-1	BX62976009	Feed bar	1
49-2	B905937006	Screw, SM4.76	1
49-3	BX62975009	Pin	1
49-4	B905949006	Washer, plain	1
49-5	B040440598	Screw, bind SM3.18-40×5	1
49-6	BX62973009	Feed rocker bracket arm assy	1
49-6-1	BX62972000	Feed rocker bracket arm	1
49-6-2	B048429898	Screw, pan SM4.37-40×8	2
49-6-2	B980110009	Set screw, (CP) SM4.37-40×8	2
49-7	BX62971009	Shaft, F-rocker bracket	1
49-8	BX62960009	Washer	2
49-9	BX62969000	Felt	1
49-10	BX62950009	Feed lifting link	1

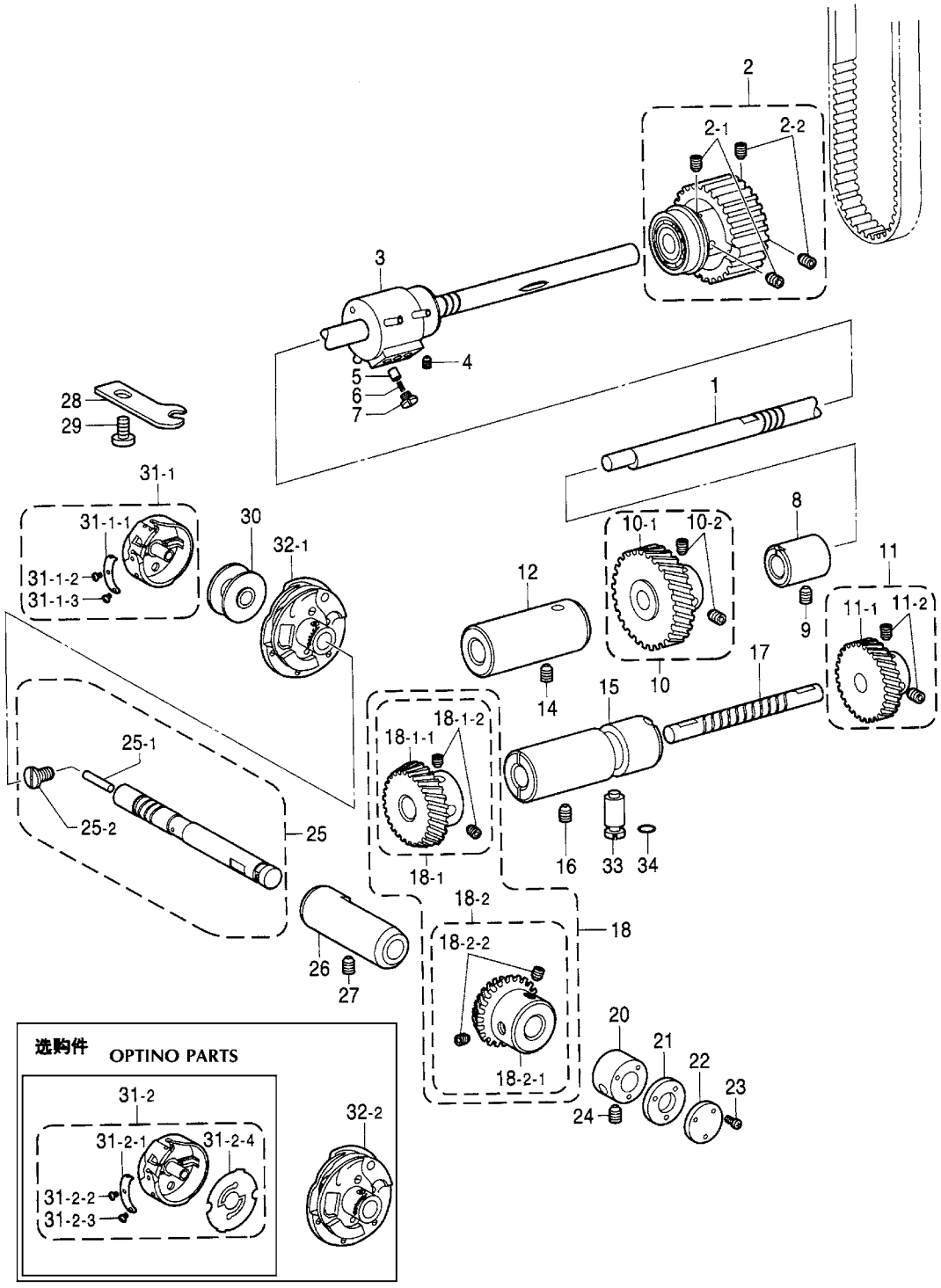
E. Feed mechanism

No.	Ret.	Description	Qt.
		< For 655 – 02>	
50 – 10	BX62965909	Feed dog, 8mm. P = 5	1
		< For 655 – 01&656>	
50 – 11	BX58675009	Feed dog, 8mm. P = 2. 5	1
51	BX03616009	Screw w/socket SM3. 18 × 7	2
53	BX62741009	Spring hook	1
54	B048420498	Screw, pan SM4. 37 – 40 × 6	2
55	BX77420009	O ring	1
		″Option Parts″	
35 – 1	BX62991009	Spring, extension	1


2
2-1
2-2
3
4
5
6
7
1
28
29
31-1
31-1-1
31-1-2
31-1-3
30
32-1
10-1
10-2
8
9
11
11-1
11-2
12
14
10
17
15
18-1-2
18-1-1
18-1
16
33
34
25-1
25-2
25
26
27
18-2
18
18-2-2
18-2-1
20
21
22
23
24
选购件
OPTINO PARTS
31-2
31-2-1
31-2-4
31-2-2
31-2-3
32-2

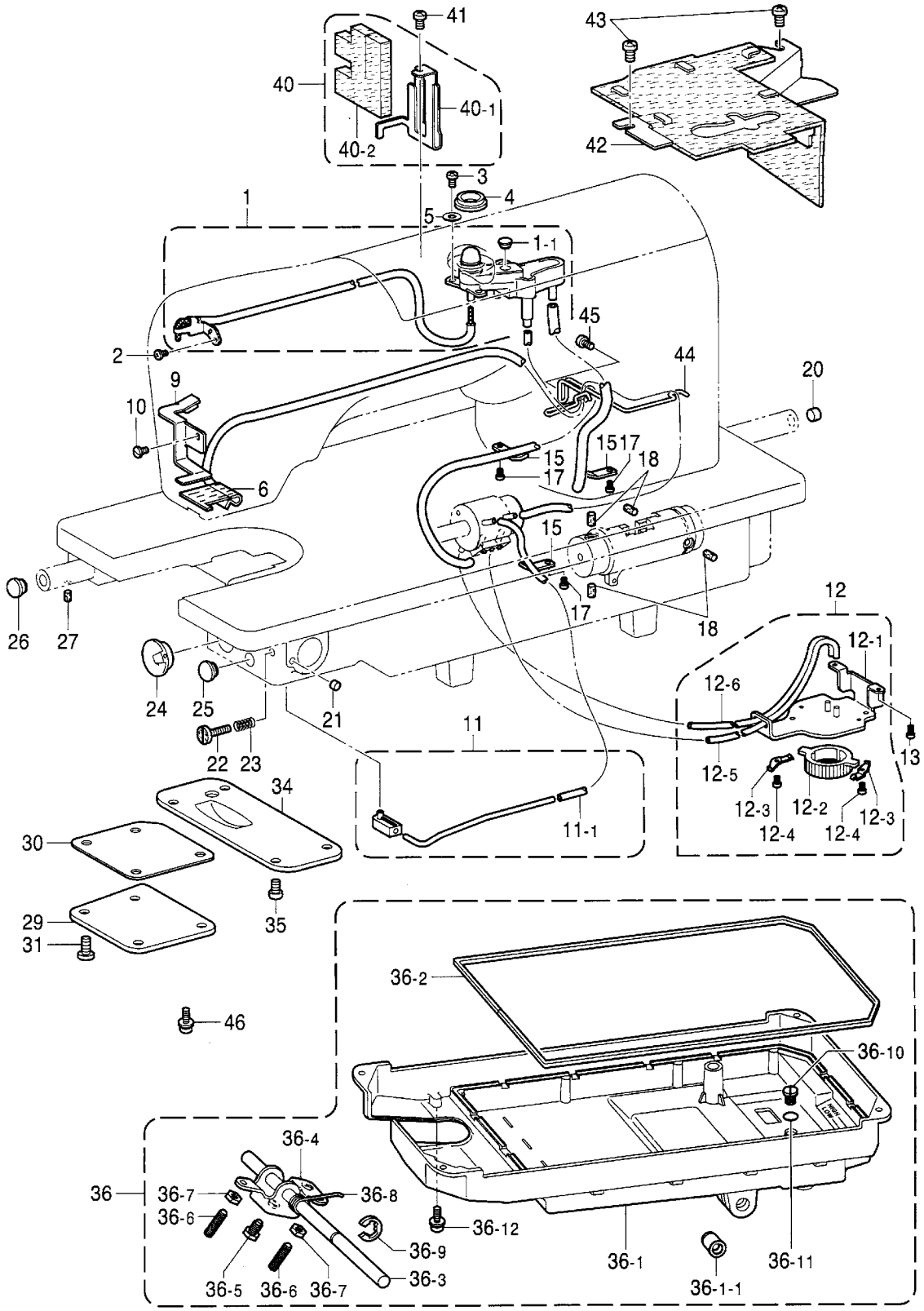
F. Rotary hook mechanism

No.	Ret. No.	Description	Qt.
1	BX62954009	Lower shaft	1
2	BX92952009	Timing pulley assy, D	1
2 – 1	B096330488	Set screw, socket (CP) SM6. 35	2
2 – 2	B096339088	Set screw, socket (CP) SM6. 35	2
3	BX62940009	Bush assy, R L – shaft	1
4	B097340490	Set screw, (CP) SM5. 95	1
5	B966235009	Plunger	3
6	BX72842009	Spring, compression	3
7	B998643008	Screw, SM6. 35 × 5	3
8	BX55446000	Bush, L – shaft	1
9	B097340490	Set screw, (CP) SM5. 95	1
10	BX62947909	Gear assy, L – shaft	1
10 – 1	BX62946909	Gear, L – shaft	1
10 – 2	B096330488	Set screw, socket (CP) SM6. 35	2
11	BX62945009	Driving gear assy, R – hook	1
11 – 1	BX62944009	Driving gear, R – hook	1
11 – 2	B096330488	Set screw, (CP) SM6. 35	2
12	BX62943000	Bush, F L – shaft	1
14	B097340490	Set screw, (CP) SM5. 95	1
15	BX62942000	Bush, D – shaft	1
16	B097340490	Set screw, (CP) SM5. 95	2
17	BX62941009	Driving shaft, R – hook	1
18 – 1	BX00784009	Bevel gear assy, D	1
18 – 1 – 1	B960728009	Bevel gear, D	1
18 – 1 – 2	B096330488	Set screw, socket (CP) SM6. 35	2
18 – 2	B927703009	Bevel gear assy, L – shaft	1
18 – 2 – 1	B960727009	Bevel gear	1
18 – 2 – 2	B096330488	Set screw, socket (CP) SM6. 35	2
20	BX62930009	Bush, F R – hook shaft	1
21	BX62939000	Packing	1
22	BX62938009	Cap	1
23	B048470398	Screw, pan SM2. 38 – 56 × 7	3
24	B097340490	Set screw, (CP) SM5. 95	1
25	BX62937009	Rotary hook shaft assy	1
25 – 1	BX62934000	Felt	1
25 – 2	B901937909	Screw, cap w/hole SM4. 37 – 40	1
26	BX62932009	Bush, R R – hook shaft	1
27	B097340490	Set screw, (CP) SM5. 95	1
28	BX62931009	B – case holder position bracket	1
29	B040430298	Screw, bind SM3. 57 – 40 × 8	1
30	B951952051	Bobbin	1
		< With 2 – hole>	
31 – 1	BX62920909	Bobbin case assy	1
31 – 1 – 1	BX01633009	Spring	1
31 – 1 – 2	B920389009	Screw	1
31 – 1 – 3	B927503009	Adjusting screw	1
32 – 1	BX62929109	Rotary hook assy, w/box: st	1
33	B958432809	Adjusting stud	1
34	B029007430	O ring, PW3	1


2
2-1
2-2
3
4
5
6
7
1
28
29
31-1
31-1-1
31-1-2
31-1-3
30
32-1
8
10-1
10-2
12
11
11-1
11-2
9
10
14
15
17
18-1-2
18-1-1
25-1
25-2
25
16
33
34
18-1
18-2
18
18-2-2
18-2-1
26
27
20
21
22
23
24
选购件 OPTINO PARTS
31-2
31-2-1
31-2-4
31-2-2
31-2-3
32-2

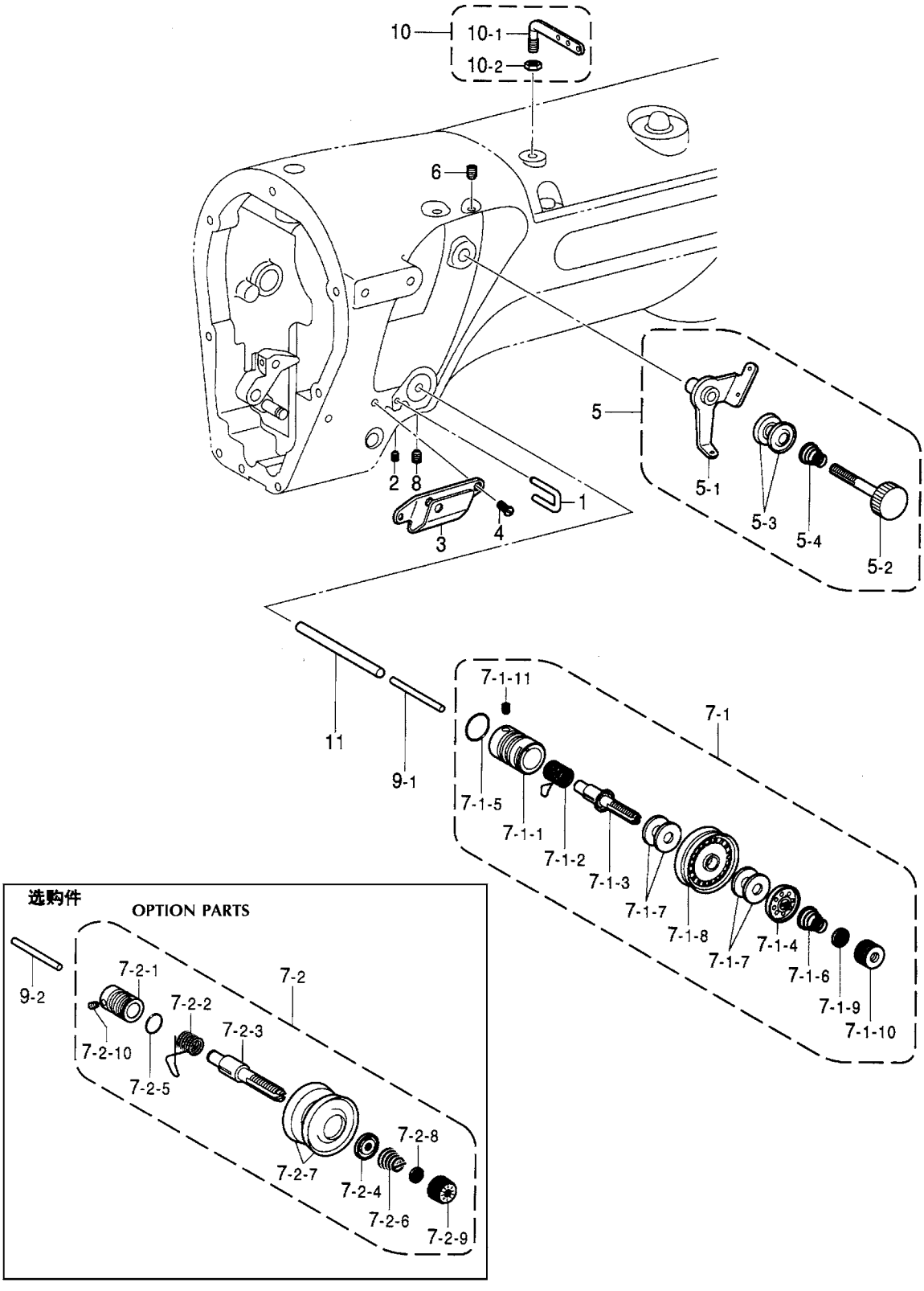
F. Rotary hook mechanism

No.	Ret. No.	Description	Qt.
		″Option Parts″	
10 – 2	BX62738009	Gear assy, L – shaft	1
10 – 2 – 1	B952071009	Gear, L – shaft	1
10 – 2 – 2	B096330488	Set screw, socket (CP) SM6.35	2
		< With 1 – hole>	
31 – 2	BX62732909	Bobbin case assy, OP	1
31 – 2 – 1	BX01633009	Spring	1
31 – 2 – 2	B920389009	Screw	1
31 – 2 – 3	B927503009	Adjusting screw	1
31 – 2 – 4	BX62807009	Spring, anti – spin	1
		< Following parts are use carbide for thir tips>	
32 – 2	BX59289109	Potary hook assy, HP w/box	1
		< For midium – weight materials>	
32 – 2	BX55084109	Potary hook assy, w/box; st	1
		< For stitch skipping of coarse light – weight materials>	
32 – 2	BX52439109	Potary hook assy, w/box	1


41
40
40-1
40-2
43
42
3
4
5
1
1-1
45
2
44
20
9
10
6
15
17
15 17
18
15
17
18
26
27
24
25
21
22
23
12
12-1
12-6
13
12-5
12-3
12-2
12-4
12-4
12-3
11
11-1
34
30
35
29
31
46
36-2
36-10
36-4
36
36-7
36-8
36-6
36-9
36-12
36-5
36-6
36-7
36-3
36-1
36-1-1
36-11

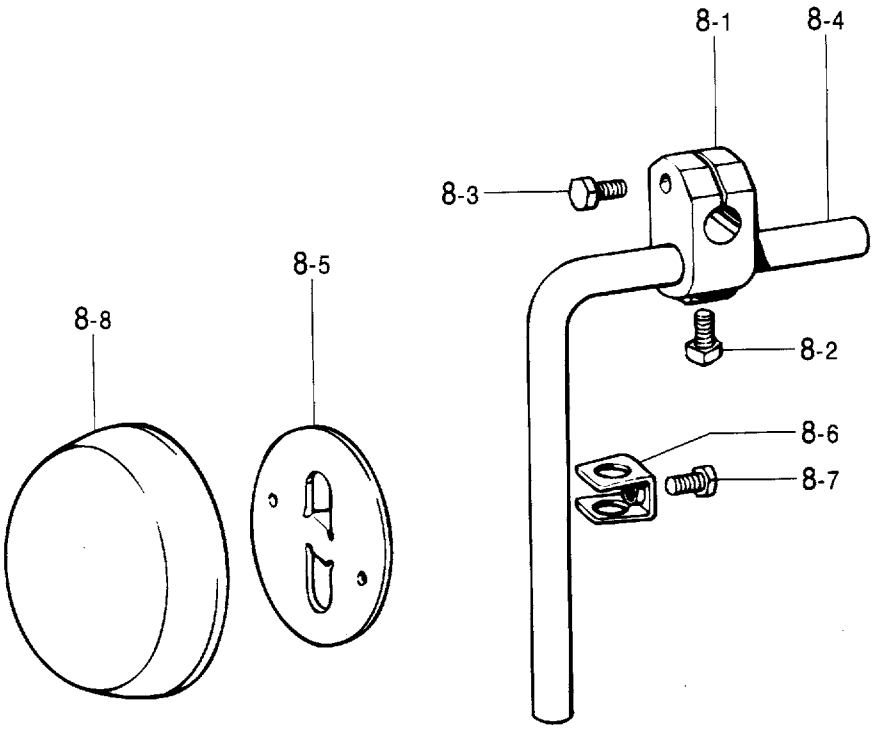
G. Lubrication

No.	Ret. No.	Description	Qt.
1	BX57788909	Oil case assy	1
1 – 1	B906650909	Rubber cap, 8	1
2	B040430498	Screw, bind SM3. 57 – 40 × 6	2
3	B048420298	Screw, pan SM4. 37 – 40 × 8	2
4	BX50572009	Oil sindow support	1
5	B990375008	Washer	2
6	BX62918009	Oil tube assy	1
9	BX62915009	Holder, felt	1
10	B900868007	Screw, SM3. 57 – 40 × 5	1
11	BX62914009	Oil pipe assy	1
11 – 1	BX62911000	Oil tube, L = 150	1
12	BX62800909	Oil filter assy	1
12 – 1	BX62809909	Setting bracket, filter	1
12 – 2	B966238909	Pump filter	1
12 – 3	B966236009	Spring	2
12 – 4	B048430498	Screw, pan SM3. 57 – 40 × 6	2
12 – 5	BX62911000	Oil tube, L = 150	1
12 – 6	BX03654000	Oil tube, L = 160	1
13	B048430298	Screw, pan SM3. 57 – 40 × 8	2
15	BX08453909	Cord holder	3
17	B048430498	Screw, pan SM3. 57 – 40 × 6	3
18	B962367009	Felt	4
20	BX80232000	Rubber cap, 5. 3	1
21	B962236909	Rubber cap, 4. 2	1
22	B965576009	Adjusting screw, SM4. 37 – 40 × 19	1
23	B994316009	Spring, compression	1
24	BX62804000	Oil cap	1
25	BX78847009	Rubber cap, 8. 5	1
26	B906650909	Rubber cap, 8	1
24	BX85782009	Felt	1
29	BX62802009	Gear cover, R – hook shaft	1
30	BX62890000	Packing, gear cover	1
31	B040429098	Screw, bind SM4. 37 – 40 × 10	4
34	BX62899009	Gear cover, L – shaft	1
35	B048420298	Screw, pan SM4. 37 – 40 × 8	4
36	BX62898009	Oil pan assy	1
36 – 1	BX62897000	Oil pan	1
36 – 1 – 1	B961532000	Bush	2
36 – 2	BX62896000	Packing, oil pan	1
36 – 3	BX62895009	Knee lifter shaft	1
36 – 4	BX01475009	Knee lifter	1
36 – 5	B964743009	Bolt, SM5. 95	1
36 – 6	B906225909	Set screw, SM5. 95 – 28 × 24	2
36 – 7	B900088006	Nut, SM5. 95	2
36 – 8	BX95221009	Spring, twist	1
36 – 9	B964817009	Retaining ring, E10	1
36 – 10	B960592009	Screw, SM7. 94 × 10	1
36 – 11	B029003030	O ring, P7	1
36 – 12	B058600204	Screw, pan (s/p washer) M4 × 8	1
40	BX57783009	Sponge assy	1
40 – 1	BX57782009	Holder plate	1
40 – 2	BX57781000	Sponge	1
41	B048420498	Screw, pan SM4. 37 – 40 × 6	1
42	BX56129000	Oil guard assy	1
43	B048420498	Screw, pan SM4. 37 – 40 × 6	2
44	BX57680009	Tube holder	1
45	B048420298	Screw, pan SM4. 37 – 40 × 8	1
46	B058600204	Screw, pan (s/p washer) M4 × 8	1


10
10-1
10-2
6
5
5-1
5-3
5-4
5-2
2
8
1
3
4
11
9-1
7-1-11
7-1
7-1-5
7-1-1
7-1-2
7-1-3
7-1-7
7-1-8
7-1-7
7-1-4
7-1-6
7-1-9
7-1-10
选购件
OPTION PARTS
9-2
7-2-1
7-2
7-2-2
7-2-3
7-2-10
7-2-5
7-2-7
7-2-8
7-2-4
7-2-6
7-2-9

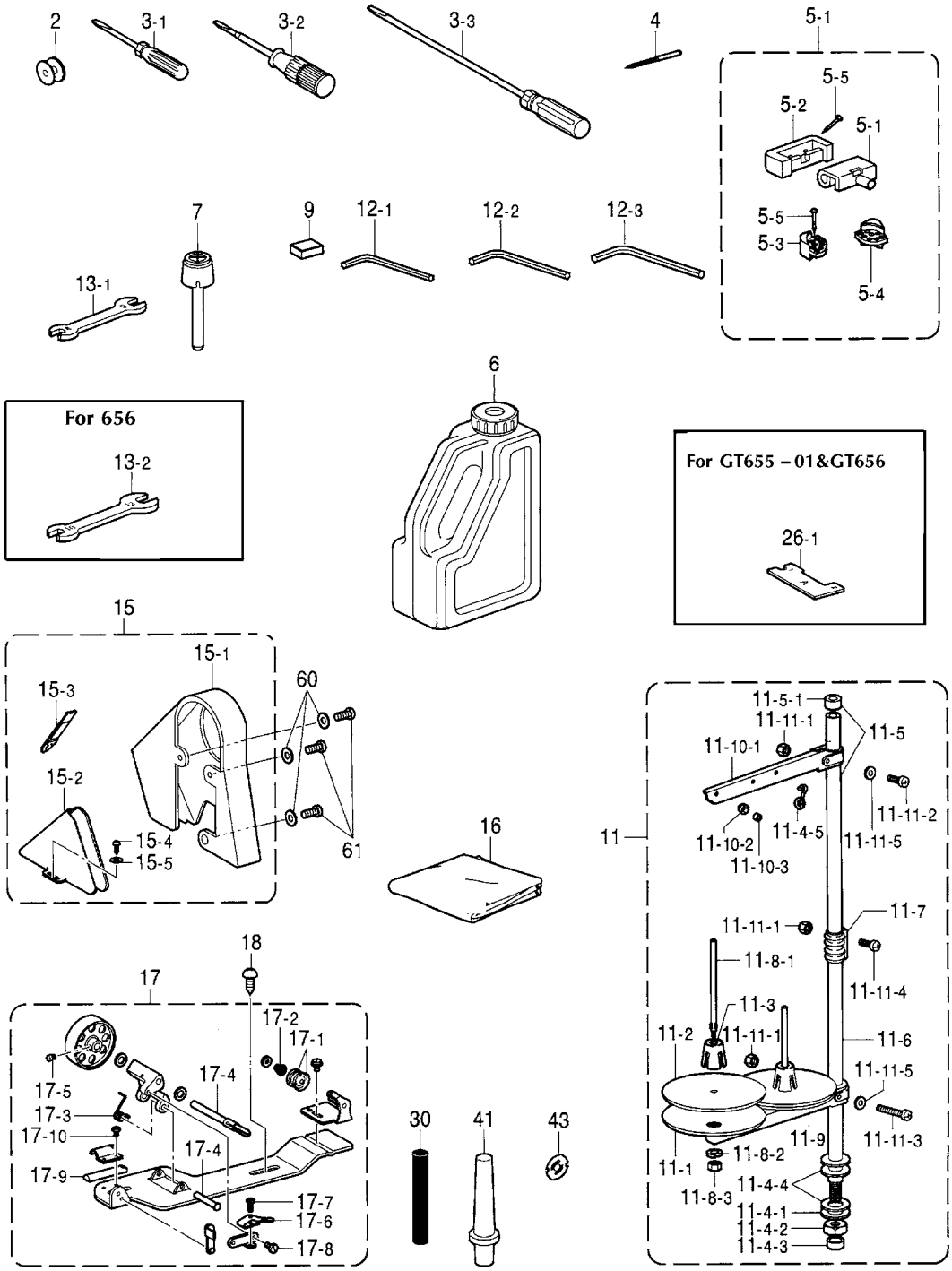
H. Threading mechanism

No.	Ret. No.	Description	Qt.
1	BX61682009	Thread guide	1
2	B097431698	Set screw, (CP) SM3. 57	1
3	BX62032009	Thread guide	1
4	B908572008	Screw, flat SM3. 57	2
5	BX62031909	Pre – tension assy	1
5 – 1	BX62020909	Thread guide shaft assy	1
5 – 2	BX08498009	Pre – tension stud	1
5 – 3	B966506009	Disc, thread guide	2
5 – 4	B956548009	Spring, B: pre – tension	1
6	B096420488	Set screw, socket (CP)SM4. 37	1
7 – 1	BX62027009	Thread tension assy	1
7 – 1 – 1	BX62026009	Thread tension bracket	1
7 – 1 – 2	BX62025009	Thread take – up spring	1
7 – 1 – 3	BX62024009	Tension stud	1
7 – 1 – 4	BX62023009	Disc presser, tension	1
7 – 1 – 5	B029096230	O ring, S14	1
7 – 1 – 6	BX62022009	Spring, tension	1
7 – 1 – 7	BX62021000	Felt	4
7 – 1 – 8	BX62010009	Rotary disc	1
7 – 1 – 9	B959962009	Stopper, ML	1
7 – 1 – 10	BX62730009	Tension nut	1
7 – 1 – 11	B900608006	Set screw, SM3. 57	1
8	BX90641009	Set screw, socket SM5. 95	1
9 – 1	BX09691000	Tension release pin	1
10	BX70505009	Thread retainer assy	1
10 – 1	B960583009	Thread retainer	1
10 – 2	B950557007	Nut, SM5. 95	1
11	BX62018000	Tension release stud	1
		″Option Parts″	
7 – 2	BX59202009	Thread tension assy	1
7 – 2 – 1	BX62026009	Thread tension bracket	1
7 – 2 – 2	BX04840009	Thread take – up spring	1
7 – 2 – 3	B994188009	Tension stud	1
7 – 2 – 4	B951205009	Disc presser, tension	1
7 – 2 – 5	B029096230	O ring, S14	1
7 – 2 – 6	B906585009	Spring, tension: M	1
7 – 2 – 7	B965664009	Disc, tension	2
7 – 2 – 8	BX98669009	Washer	1
7 – 2 – 9	BX79078009	Tension nut	1
7 – 2 – 10	B900608006	Set screw, SM3. 57	1
9 – 2	BX59201000	Tension release pin	1


8-1
8-4
8-3
8-5
8-8
8-2
8-6
8-7

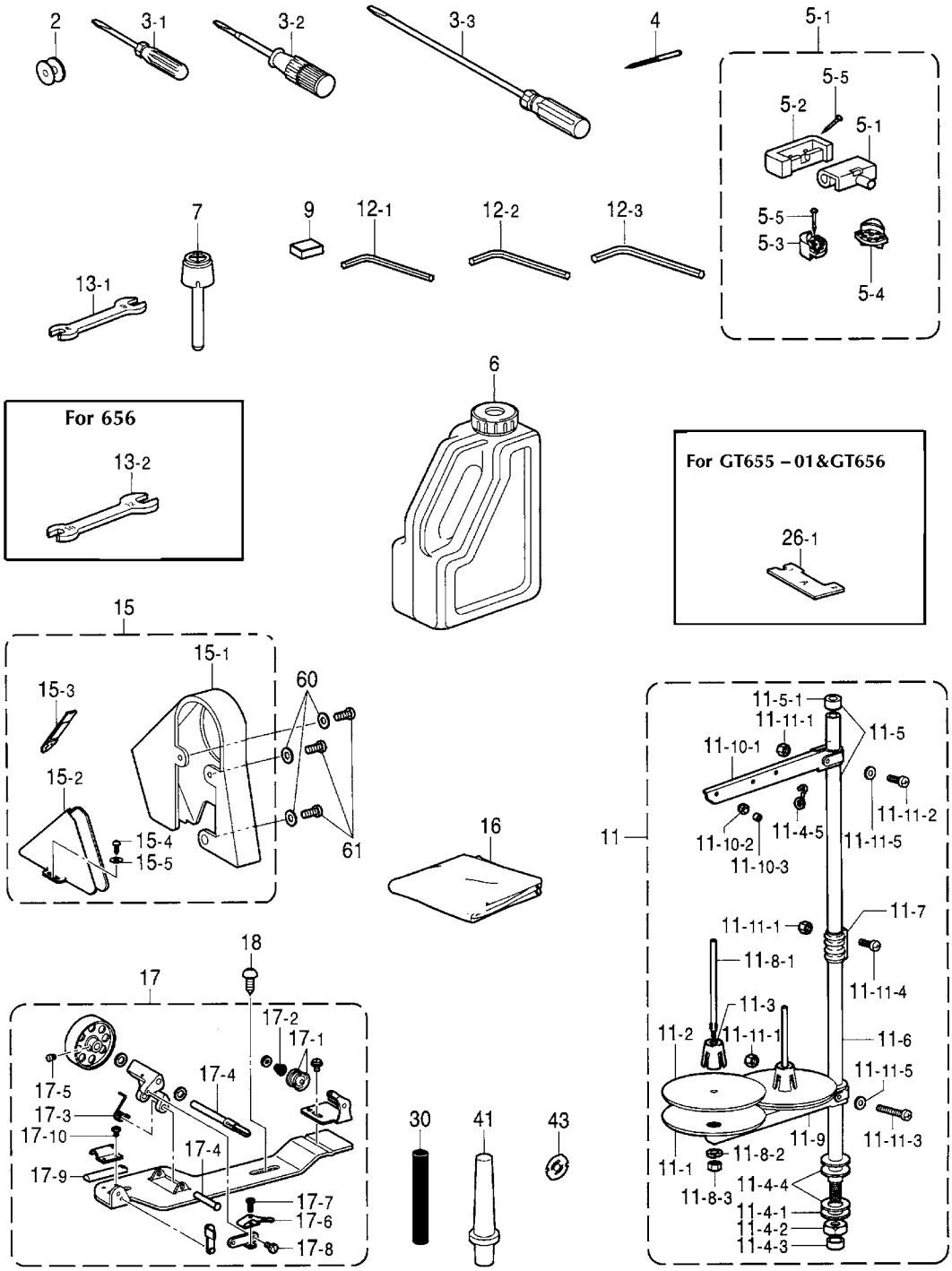
J. Knee lifter mechanism

No.	Ret. No.	Description	Qt.
8	BX76352009	Knee lifter assy	1
8 – 1	B964071009	Bracket, K – lifter	1
8 – 2	B900647009	Bolt, square SM7. 94	1
8 – 3	B093348097	Bolt, SM5. 95 × 20	1
8 – 4	B906491008	Knee lifter bar	1
8 – 5	BX76354009	Knee lifter plate	1
8 – 6	B996143009	Stopper, K – lifter plate	1
8 – 7	B990023009	Bolt, SM5. 95 – 28 × 8	1
8 – 8	BX79225009	Cover, K – lifter plate	1


2
3-1
3-2
3-3
4
5-1
5-5
5-2
5-1
5-5
5-3
5-4
7
9
12-1
12-2
12-3
13-1
6
For 656
13-2
For GT655 – 01&GT656
26-1
15
15-1
15-3
60
15-2
15-4
15-5
61
16
18
17
17-2
17-1
17-5
17-4
17-3
17-10
17-4
17-9
17-7
17-6
17-8
30
41
43
11
11-5-1
11-11-1
11-10-1
11-5
11-11-2
11-10-2
11-4-5
11-11-5
11-10-3
11-11-1
11-7
11-8-1
11-11-4
11-3
11-2
11-11-1
11-6
11-11-5
11-9
11-11-3
11-1
11-8-2
11-8-3
11-4-4
11-4-1
11-4-2
11-4-3

Z. Accessories

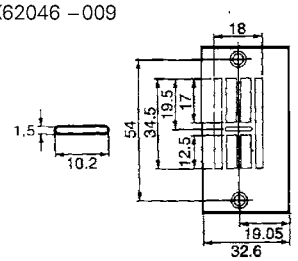
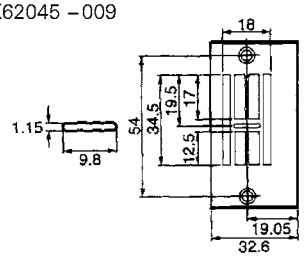
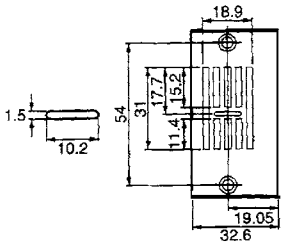
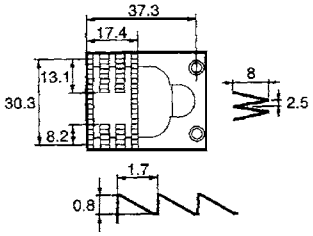
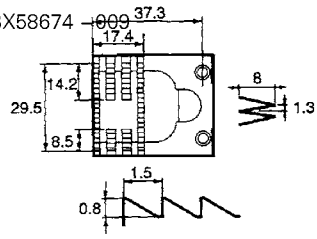
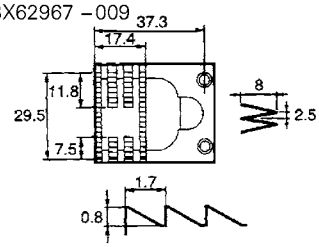
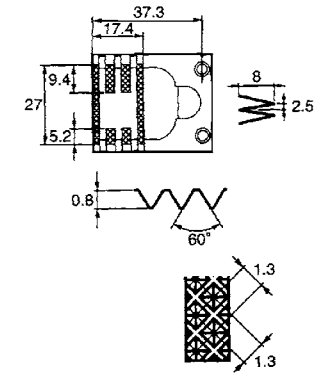
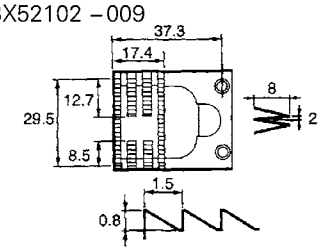
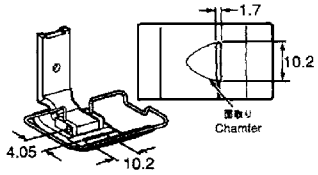
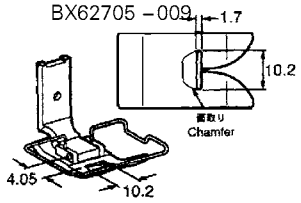
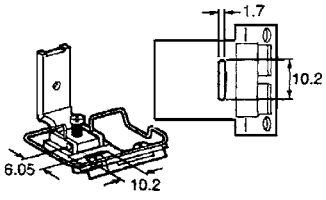
No.	Ret. No.	Description	Qt.
2	B951952059	Bobbin	2
3 – 1	B968667009	Screw driver, 1.9 × 52	1
3 – 2	B992273009	Screw driver, 3.4 × 70	1
3 – 3	BX93336009	Screw driver, 4.7 × 250	1
4 – 1	BX62850630	Needle assy, NM70	1
		····· <#10 NM70>	
4 – 1 – 1	BX62850030	Needle NM70	4
5	BX20082808	Rubber hinge assy	1
5 – 1	B967228009	Head hinge	2
5 – 2	B967190001	Rubber cushion	2
5 – 3	BX55743909	Head cushion, L	2
		····· <For left side>	
5 – 4	BX55743908	Head cushion, R	2
		····· <For right side>	
5 – 5	B901396000	Nail	4
6	BX55447009	Oil tank assy	1
7	BX01476000	Lifter complying bar, knee	1
9	B998585000	Magnet	1
11	BX08347608	Cotton stand assy, 2DR	1
11 – 1	BX59827009	Spool stand base	2
11 – 2	B950928000	Spool mat	2
11 – 3	BX59828009	Spool cushion	2
11 – 4	BX08333009	Pipe(D)& screw set, B	1
11 – 4 – 1	B950804008	Washer, plain 16	1
11 – 4 – 2	BX72462009	Nut, U5/8 – 28	1
11 – 4 – 3	B950936000	Column cap	1
11 – 4 – 4	BX09005000	Rubber washer	2
11 – 4 – 5	BX08363909	Spring	1
11 – 5	BX60460009	Column pipe w/cap	1
11 – 5 – 1	B950936000	Column cap	1
11 – 6	B954998007	Column pipe, D	1
11 – 7	B950937007	Column joint	1
11 – 8	BX89312009	Spool & screw set	2
11 – 8 – 1	B950931008	Spool shaft, B	2
11 – 8 – 2	B082050864	Washer, spring 2 – 5	2
11 – 8 – 3	B089500904	Nut, 1 M5	2
11 – 9	BX08332008	Spool holder, 2	1
11 – 10	BX08324008	Thread hanger assy, 2	1
11 – 10 – 1	BX08323008	Thread hanger, 2	1
11 – 10 – 2	B950927000	Thread hanger base	2
11 – 10 – 3	B968110001	Thread bush	2
11 – 11	BX60469009	Spool shaft & screw set, A	1
11 – 11 – 1	B089500904	Nut, 1 M5	4
11 – 11 – 2	B048509604	Screw, pan M5 × 14	1
11 – 11 – 3	B048507504	Screw, pan M5 × 35	1
11 – 11 – 4	B048509604	Screw, pan M5 × 14	2
11 – 11 – 5	B084050974	Washer, plain S5	2
12 – 1	B968008009	Hexagonal wrench, 2	1
12 – 2	B956985009	Hexagonal wrench, 2.5	1


2
3-1
3-2
3-3
4
5-1
5-5
5-2
5-1
5-5
5-3
5-4
7
9
12-1
12-2
12-3
13-1
6
For 656
13-2
For GT655 – 01&GT656
26-1
15
15-1
15-3
60
15-2
15-4
15-5
61
16
18
17
17-2
17-1
17-5
17-4
17-3
17-10
17-4
17-9
17-7
17-6
17-8
30
41
43
11
11-5-1
11-11-1
11-10-1
11-5
11-11-2
11-10-2
11-4-5
11-11-5
11-10-3
11-11-1
11-7
11-8-1
11-11-4
11-3
11-2
11-11-1
11-6
11-11-5
11-9
11-11-3
11-1
11-8-2
11-8-3
11-4-4
11-4-1
11-4-2
11-4-3

Z. Accessories

No.	Ret. No.	Description	Qt.
12 – 3	B968389009	Hexagonal wrench, 3	1
13 – 1	B900223009	Wrench, 8 × 9	1
		< For 656>	
13 – 2	B903320009	Wrench, 10 × 12	1
15	BX62017009	Belt cover assy	1
15 – 1	BX62016009	Belt cover	1
15 – 2	B963256009	Belt cover, D	1
15 – 3	BX73847009	Lid, L: B – cover(D)	1
15 – 4	B900444008	Wood screw, round M5. 5 × 20	2
15 – 5	B085350978	Washer, plain S 5. 56	2
16	BX75378089	Head cover	1
17	BX62015990	Bobbin winder assy	1
17 – 1	B965664007	Disc, tension	2
17 – 2	B900609009	Tension spring	1
17 – 3	B993141009	Spring	1
17 – 4	BX62014009	shaft, B – winder	1
17 – 5	B900744008	Set screw, (FT) SM4. 3 × 75	1
17 – 6	B900454008	Bobbin presser	1
17 – 7	B900453009	Screw, SM3. 18 – 40 × 14	1
17 – 8	B900451009	Shoulder screw, SM3. 18	1
17 – 9	B900448009	Stopper, B – winder wheel	1
17 – 10	BX71024009	Screw, pan SM3. 57 – 40 × 3. 5	1
18	B900444008	Wood screw, round M5. 5 × 20	2
		< For 655 – 01 & 656>	
26 – 1	BX62012009	Timing gauge, A 8mm	1
30	BX62825009	Spring, compression····· < Yellow colors>	1
33	BX53160009	Thread guide	1
41	BX62747009	Head rest	1
43	BX62807009	Spring, anti – spin	1
60	B085390878	Washer, plain M 4. 76	3
61	B048399818	Screw, pan SM4. 76 – 32 × 12	3

Ga1. Gauge Parts List

zigzag width	Needle plate	Feed dog	Presser foot assy
8mm	BX62046 -009  BX62045 -009  BX56188 -009 	BX58675 -009  BX58674 -009  BX62967 -009  BX62965 -909  BX52102 -009 	BX62811 -009  BX62705 -009  BX52150 -009 

INDEX

INDEX

INDEX

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 operation before operating the machine so that you will know how to use it correctly.

SAFFTY INSTRUCTIONS

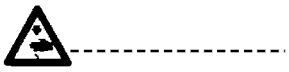
1. Safety indications and their meanings

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.

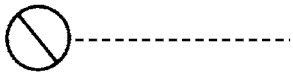
Indications

⚠ 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 somehting 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 in safety

⚠ CAUTION

Environmental requirenments

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 +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° to 35° during use.
Temperatures which are lower or higher than this may cause problems with correct operation.

The relative humidity shoule 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 sunlinght 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 38kg. The installation should be carried out by two or more people.

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

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.

All cords should be secured at least 25 mm away from any moving parts. Furthermore, do not excessively bend the cords or secure them too firmly with staples, otherwise there is the danger that fire or electric shocks could occur.

Install the belt covers to the machine head and motor.

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

Be sure to wear protective goggles and gloves when handling the lubricating oil, so that no oil gets into your eyes or onto your skin, otherwise inflammation can result.
Furthermore, do not drink the oil under any circumstances, as it can cause vomiting and diarrhoea.
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.

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

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.

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

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

* When using a clutch motor, the motor will keep turning even after the power is switched off as a result of the motor´ s inertia. Wait until the motor stops fully before starting work.

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

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

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.

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

Cleaning

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

* When using a clutch motor, the motor will keep turning even after the power is switched off as a result of the motor´ s inertia. Wait until the motor stops fully before starting work.

Be sure to wear protective goggles and gloves when handing the lubricating oil, so that no oil gets into your eyes or onto your skin, otherwise inflammation can result.

Furthermore, do not drink the oil under any circumstances, as it can cause vomiting and diarrhoea.

Keep the oil out of the reach of children.

Maintenance and inspection

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

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

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 maintenancd
- When replacing consumable parts such as the rotary hook

* When using a clutch motor, the motor will keep turning even after the power is switched off as a result of the motor´ s inertia. Wait until the motor stops fully before starting work.

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

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 unjury may result.

Use only the proper replacement parts as specified by our company.

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

Any problems in machine operation which result from unauthorized modifications to the machine will not be covered by the warranty.

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.

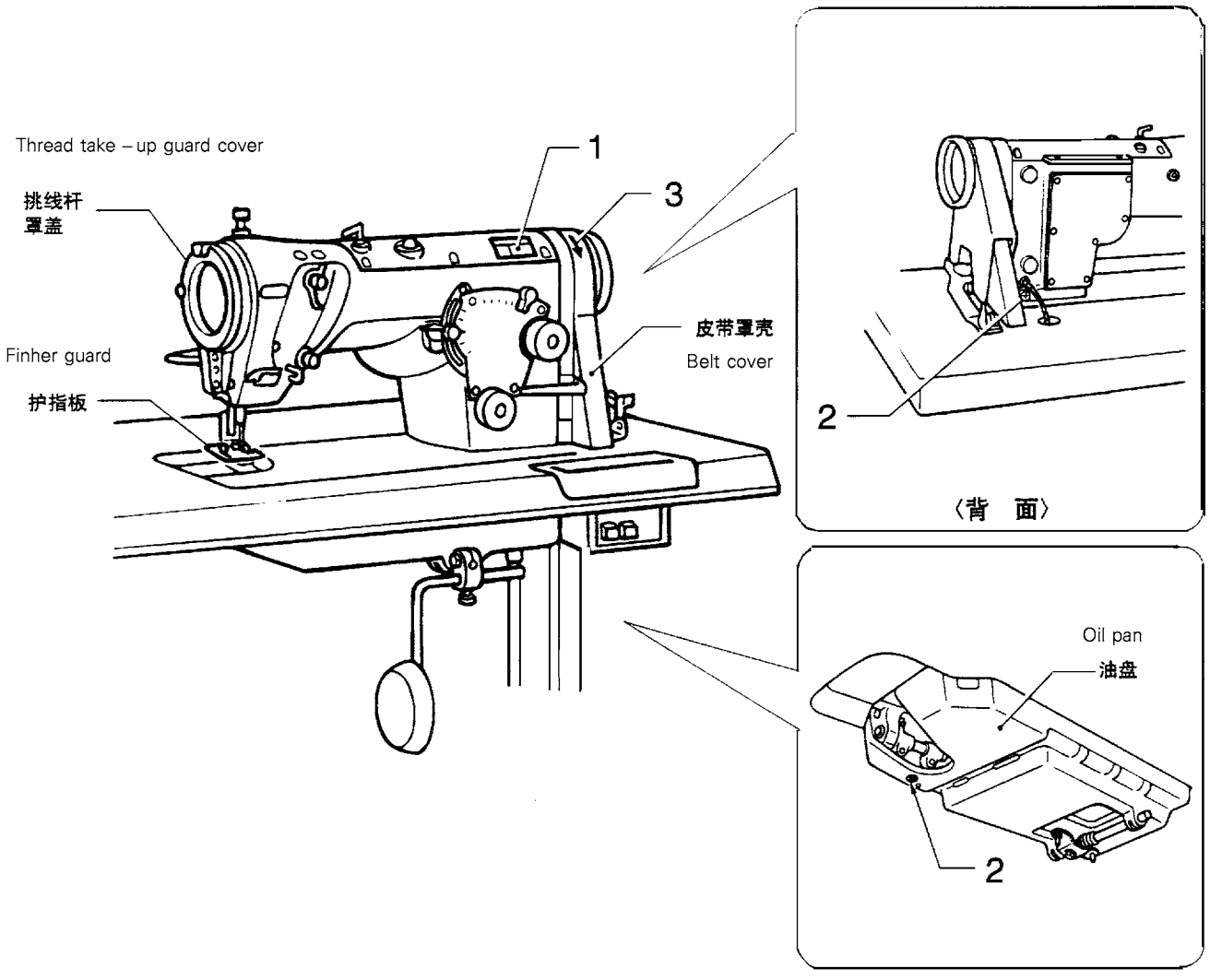
1 

• 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.

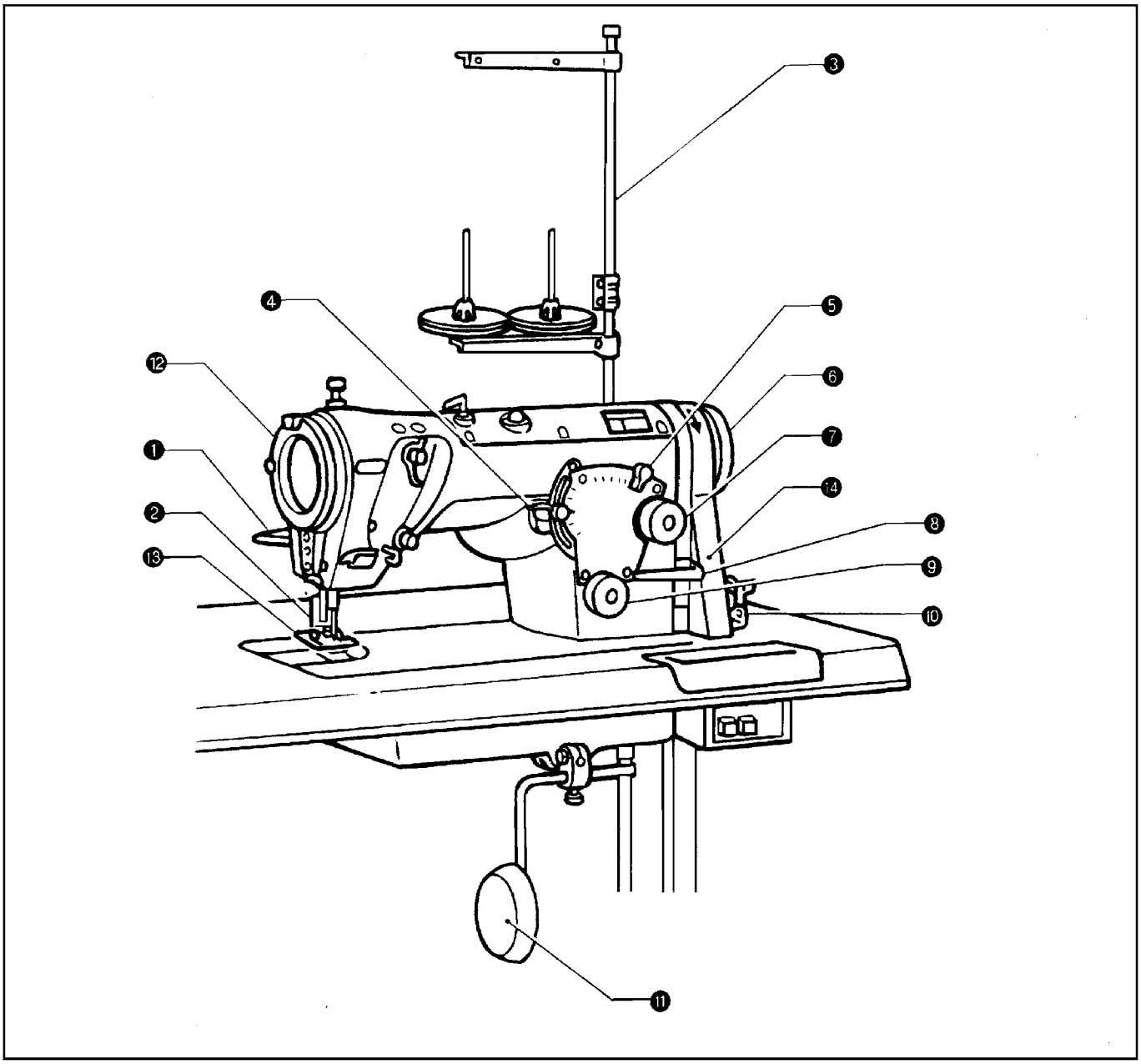
2 

• Direction of operation

3



1. NAMES OF MAJOR PARTSP



(1) Presser bar lifter lever

(2) Presser foot

(3) Cotton stand

(4) Change lever

(5) Zigzage lever

(6) Machine pulley

(7) Feed adjustment dial

(8) Reverse lever

(9) Condense dial

(10) Bobbin winder

(11) Knee lifter assembly

Safety devices

(12) Thread take – up guard cover

(13) Finger guard

(14) Belt cover

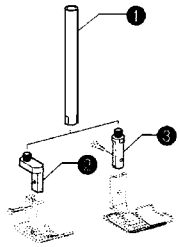
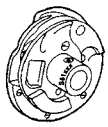
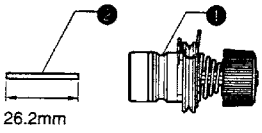
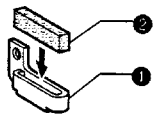
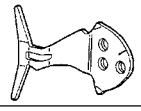
2. MACHINE SPECIFICATIONS

. **655**

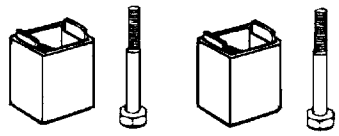
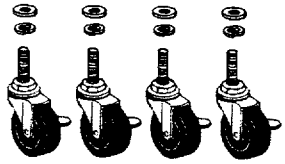
. **656**

		655		656
		01	02	03
Maximum stitch length		2. 5mm	5mm	2. 5mm
Sewing pattern		Plain zigzag (wide)	Plain zigzag(wide)	3 – step zigzag
		655 – 01 	655 – 02 	656 
Max. zigzag width		8mm		
Max. sewing speed		5, 000rpm		
Thread take – up lever		Rotary thread take – up		
Needle bar stroke		33. 3mm		
Feed dog height		1mm		
Presser foot height	Presser bar lifter	6mm		
	Knee lifter	10mm		
Presser foot pressure		20 – 60N		
Needle		Schmetz SY1965 Nm 70/10		
Use		For light – weight materials ~ medium – weight materials		

3. Optional parts

Part name		Part code
	Presser bar U	BX50996 –009
	Presser bar tip A	BX50995 –009
	Presser bar tip B	BX50994 –009
	Rotary hook (Carbide reinforced hook tip)	BX59289 –109
	Rotary hook (for medium –weight materials)	BX55084 –109
	Rotary hook (for sweing coarse light –weight materials)	BX52439 –109
	Thread tension assembly (for lock stitchers)	BX59202 –009
	Tension release pin	BX59201 –009
	Thread guide F(for coarse meterials)	BX59296 –009
	Felt	B996169 –009
	Thread take –up lever (for plain zigzag and tape attaching)	BX56114 –009
Tension gauge set		B927188 –909

Work table parts

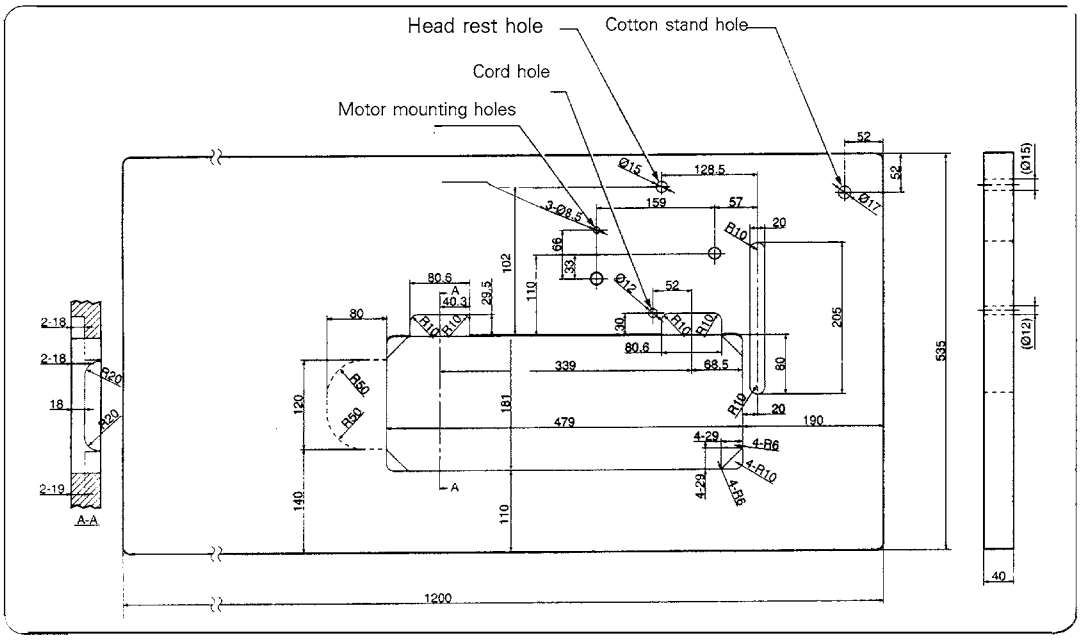
Part name		Part code
	Specer set	B927506 –001
	Caster set	B927509 –009

4. TABLE AND MOTOR

Table processing diagram

• The top of the table shoule be 40mm in thickness and shoule be strong enough to hold the weight and withstand the vibration of the sewing machine.

• Drill holes as indicated in the illustration below.



Motor

⚠ CAUTION

All cords which are connected to the motor should be secured at least 25mm away from any moving parts. Furthermore, do not excessively bend the cords or secure them too firmly with staples, otherwise there is the danger that fire or electric shocks could occur.

Install the correct belt cover which corresponds to the motor being used.

Motor

• Select the correct motor from those listed in the above table.

• Refer to the instruction manual for the motor for details on installing and using the motor.

Power	Motor
Single – phase	2 – pole, 400 W motor
Three – phase	2 – pole, 400 W motor

<Motor pulley and V – belt>

• Select the correct motor pulley and V – belt by referring to the table below to suit the power frequency of your area.

* However, depending on the installation position of the motor, the V – belt size may differ from that given in the table.

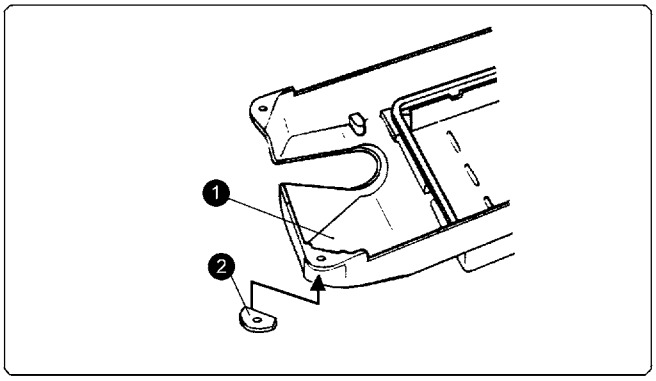
Pulley O. D(mm)		65	70	75	80	85	90	95	100	105	110	115	120
Belt size(inches)		M42			M43			M44				M45	
Sewing speed(r p m)	50Hz	2500		3000		3500			4000		4500		5000
	6Hz	3000		3500		4000		4500		5000			

5. INSTALLATION

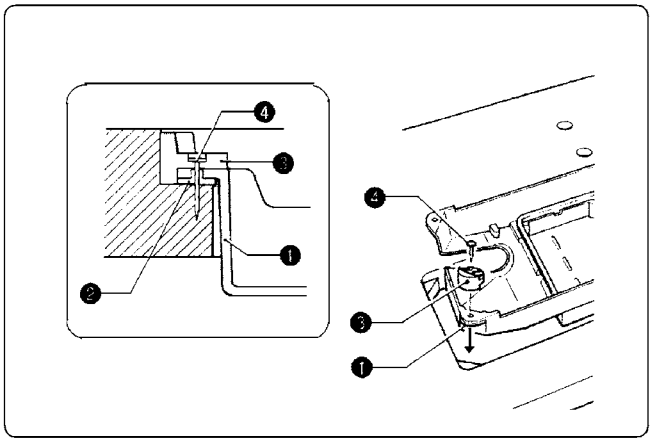
⚠CAUTION

- The sewing machine should only be installed by a qualified technician.
- Ask your dealer or a qualified electrician for any electrical work that may need to be done.
- The sewing machine weights more than 38kg. The installation should be carried out by two or more people.
- Do not connect the power cord until installation is complete, otherwise the machine will operate if the treadle is depressed by mistake, which could result in injury.
- 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.
- Install the belt cover to the machine head.

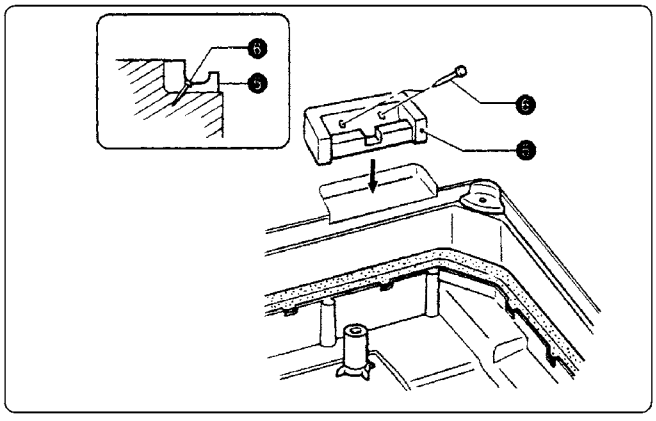
5 – 1. Installing the oil pan



1. Insert the two black head cushions (2) into the right – side corners of the oil pan (1) (when looking at the oil pan (1) from the direction shown in the illustration).

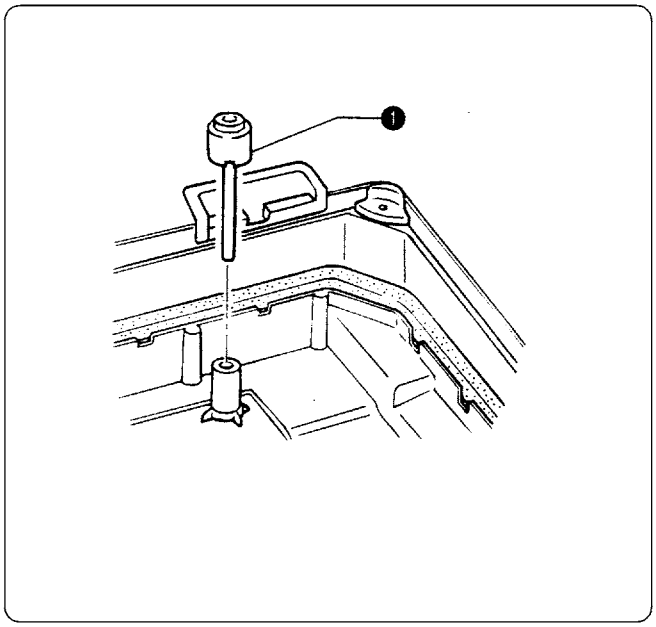


2. Insert the two white head cushions (3) into the left – side corners of the oil pan (1).
3. Fit the oil pan (1) into the table grooves.

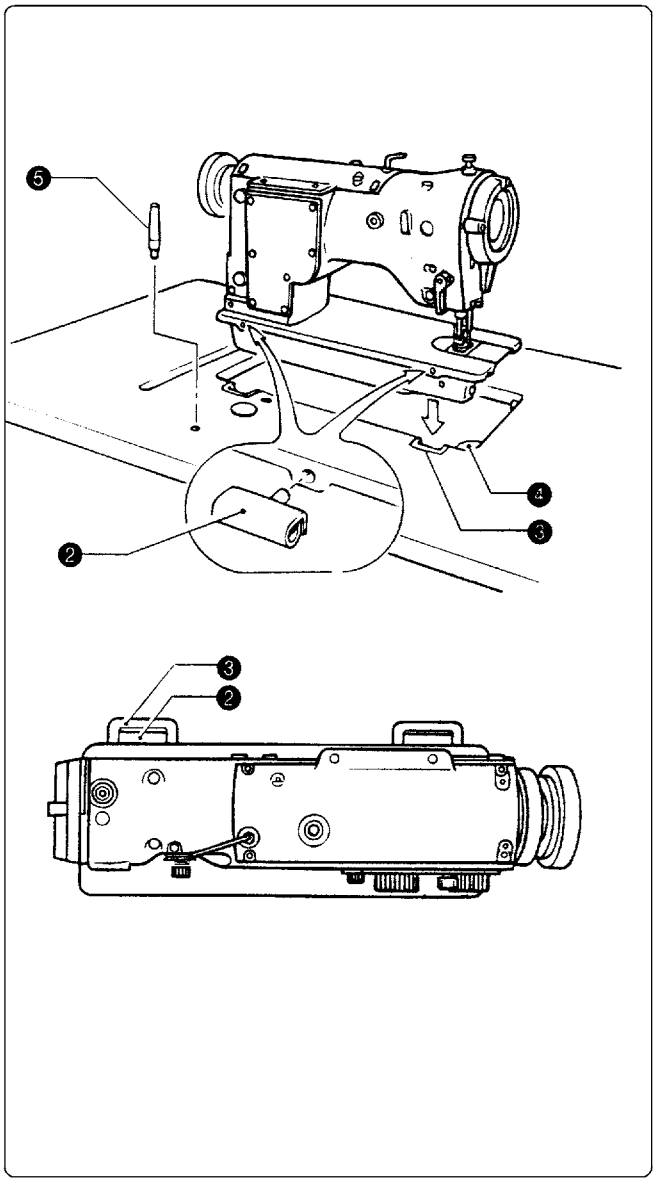


4. Insert the rubber cushions (4) into the notches in the table, and then secure them with the four nails (5).

5 – 2. Installing the machine head



1. Insert the knee lifter complying bar(1).

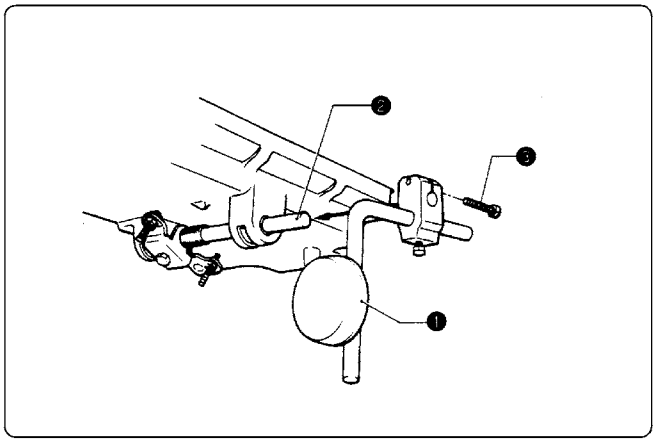


2. Insert the two hinges(2)into the holes in the machine bed.
3. Clamp the hinges(2)onto the rubber cushions(3)in the work table, and then place the machine head onto the head cushions(4)which are on top of the oil pan corners.
4. Tap the head rest(5) into the table hole.

Note:

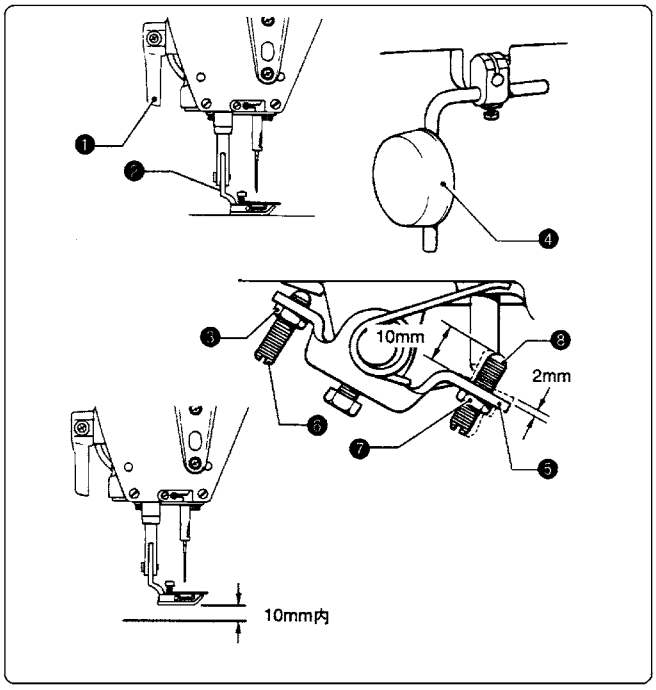
Tap the head rest securely into the table hole.
If the head rest is not pushed in as far as it will go, the machine head will not be sufficiently stable when it is tilted back.

5 –3. Installing the knee lifter plate



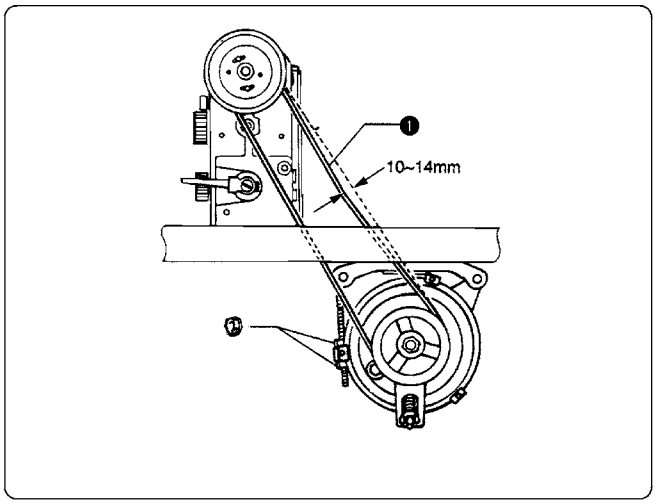
Place the knee lifter assembly(1)onto the knee lifter bar(2)on the oil pan, and then secure it by tightening the bolt(3).
* Adjust the position of the knee lifter plate(1) so that it is easy to use.

5 –4. Adjusting the knee lifter



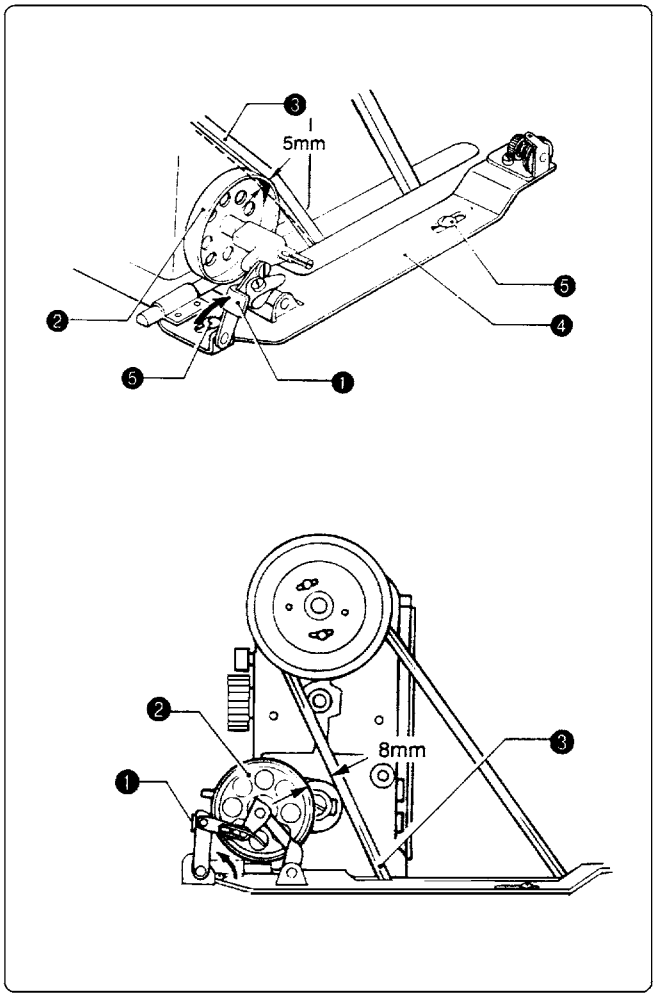
1. Turn the machine pulley so that the feed dog is below the top of the needle plate.
2. Lower the presser foot(2)by using the presser bar lifter(1)
3. Loosen the nut(3).
4. Turn the screw(6)to adjust so that the amount of play in the knee lifter(5)is approximately 2 mm when the knee lifter plate(4)is gently pressed.
5. Securely tighten the nut(3).
6. Lossen the nut(7).
7. Turn the screw(8)until the distance between the end of the screw(8)and the knee lifter(5)is approximately 10 mm .
8. Turn the adjusting screw(8)to adjust so that the presser foot(2)is at the desired position within a distance of 10 mm of the needle plate when the knee lifter plate(4)is fully pressed.
9. After adjustment is completed, securely tighten the nut (7)

5 –5. Installing the belt



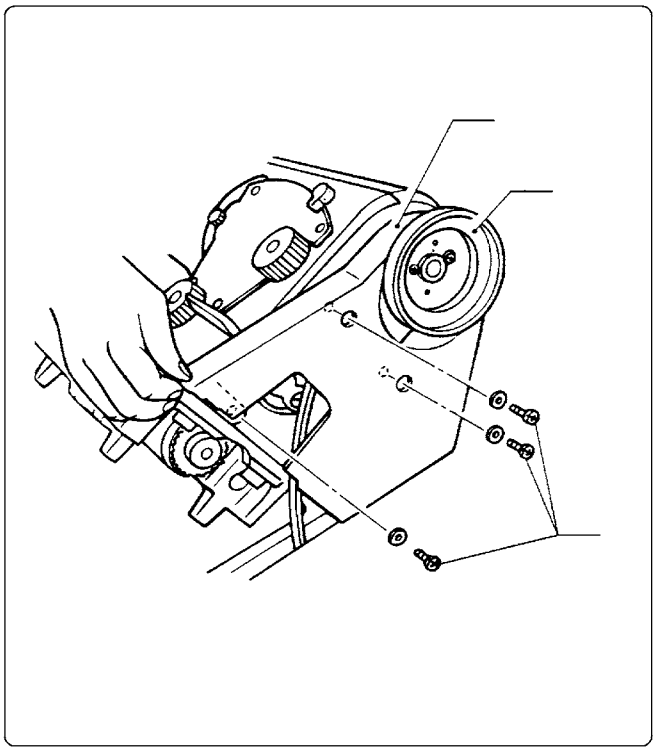
1. Tilt back the machine head, and then place the belt(1)onto the motor pulley and the machine pulley.
2. Turn the two nuts(2)to adjust so that there is 10 –14mm of deflection in the V –belt(1)when it is pressed at the midway point with a point with a force of 5 N.

5 – 6. Installing the bobbin winder

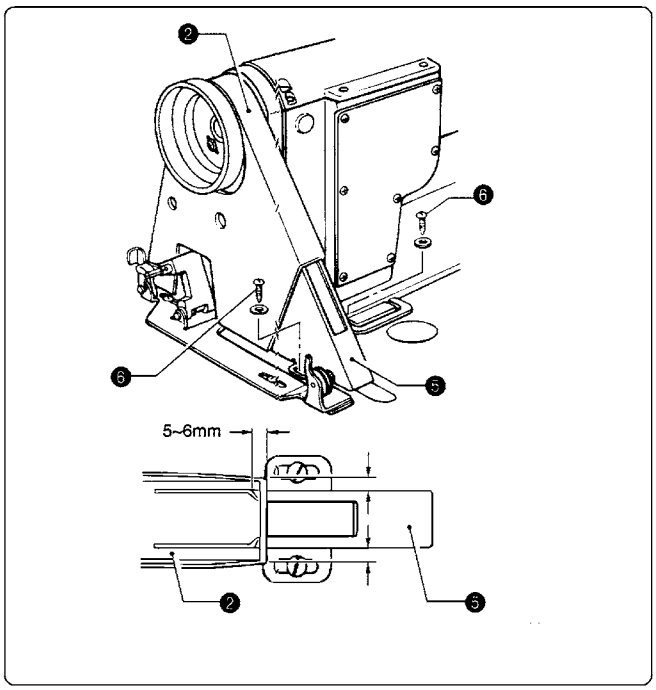


1. Push dowm the bobbin presser arm(1)as far as it will go.
2. Place the bobbin winder wheel(2)so that it pushes the belt (3)by approximately 5 mm , and then place the bobbin winder (4)so that it is parallel with the belt hole in the work table.
3. Install the bobbin winder(4)to the work table with the two screws(5).
4. Pull the bobbin presser arm(1)back and check that there is approximately 8 mm of clearance between the bobbin winder wheel(2)and the belt(3).

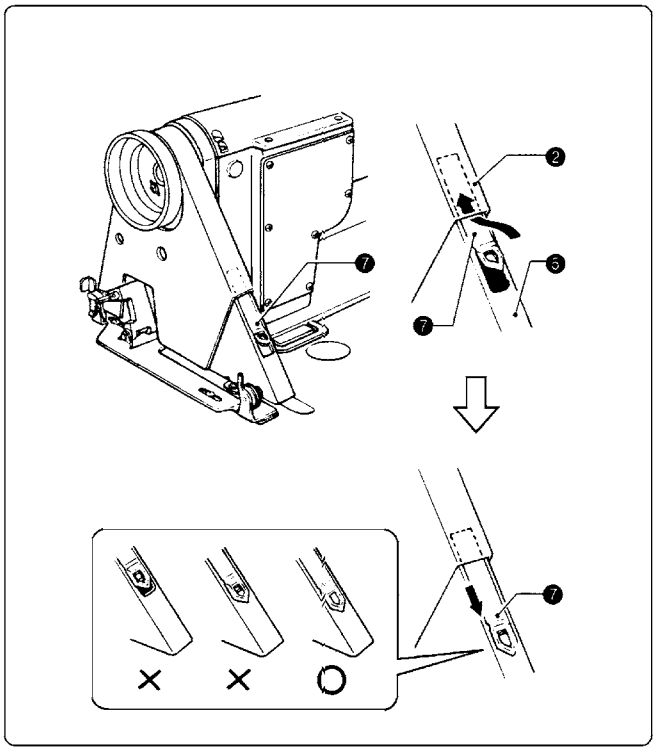
5 – 7. Installing the belt cover



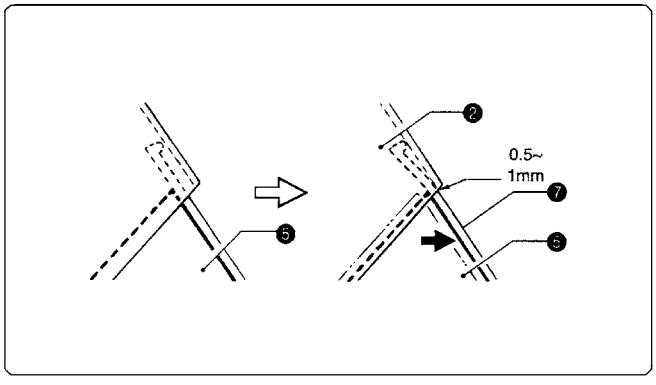
1. Tilt back the machine head.
2. Fit the belt cover(2)onto the machine pulley(3), and tighten it with the three screws(4)as shown in the illustration.



3. Return the machine head to the upright position.
4. Insert belt cover D (5) into the belt clver (2) so that there is an overlap of 5 to 6 mm and so that the sides of belt cover D (5) do not touch the belt cover (2). Then provi sionally secure belt cover D (5) with the two screws(6).

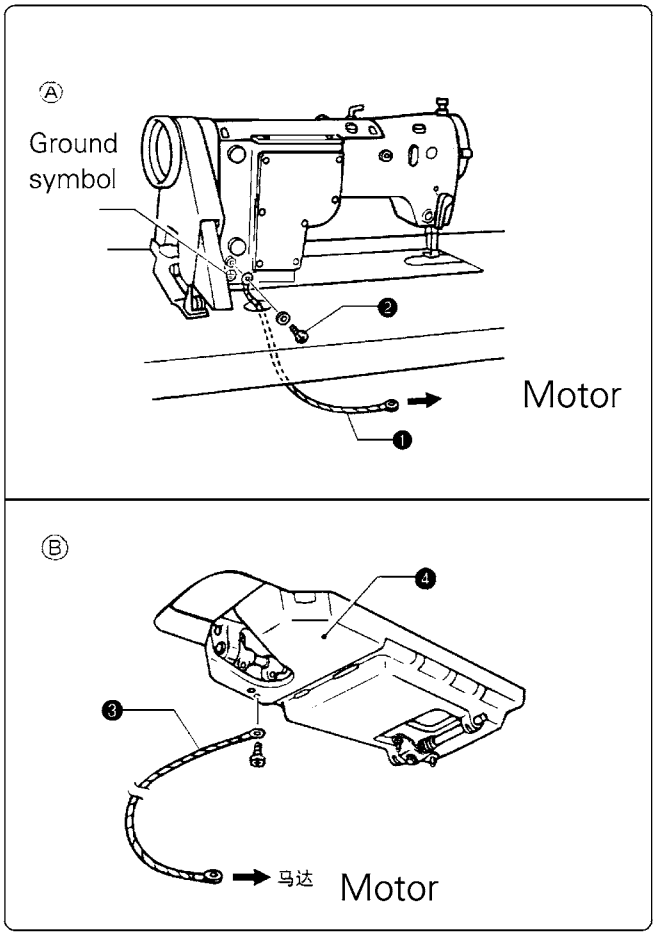


5. Insert the cover(7) of belt cover D(5) in between the belt cover(2) and belt coverD(5), and then place it into the groove of belt coverD(5).
6. Slide the cover(7) down along the groove of belt cover D (5) as far as it will go.



7. Pull belt cover D (5) toward you until there is a clearance of 0. 5mm to 1mm between the belt cover(2)and the cover (7) of belt D (5).
8. Fully tighten the two screws(6).

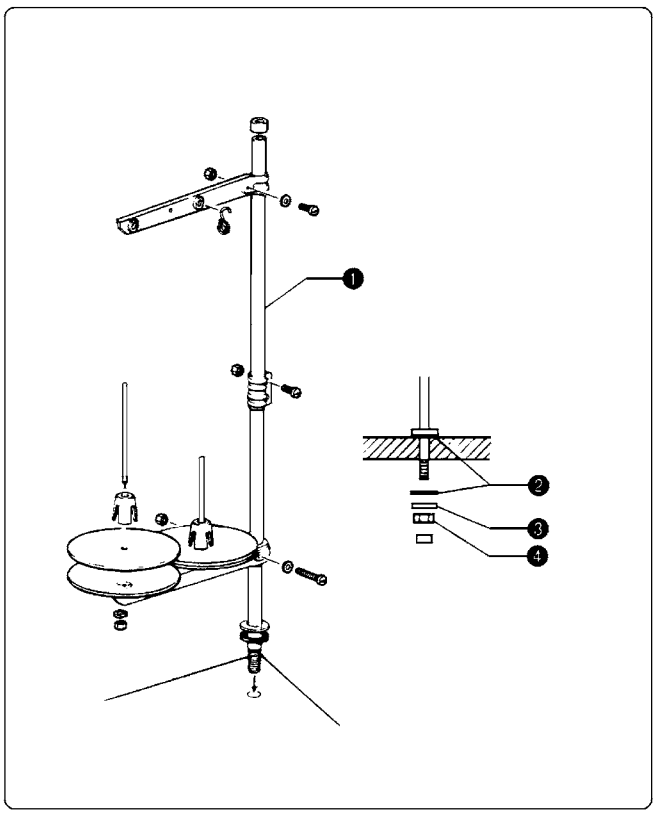
5 –8. Ground Wire Connections



Use the correct type of ground wire.
(A) Connect the ground wire (in the plastic bag) to the sewing machine head and motor.
1. Secure the ground wire (1) to the sewing machine head with screw (2). (The attachment location is indicated by a ground symbol.)
2. Pass the ground wire (1) through the hole in the table.
3. Connect the ground wire (1) to the motor in accordance with the instructions in the instruction manual for the mo tor.

(B) Connect the ground wire (3) to the oil pan (4) and motor in accordance with the instructions in the instruction manual for the motor.
(The attachment location is indicated by a ground symbol.)

5 –9. Installing the cotton stand



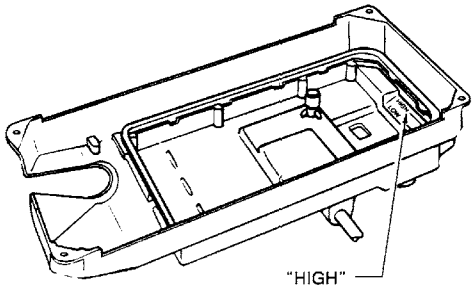
Assemble the cotton stand (1) while referring to the cotton stand instruction manual, and then install the cotton stand (1) to the far right corner of the work table.
* Securely tighten the nut (4) so that the rubber cushion (2) and the washer (3) are securely clamped and so that the cotton stand does not move.

5 – 10. Lubrication

⚠ CAUTION

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

Be sure to wear protective goggles and gloves when handling the lubricating oil, so that no oil gets into your eyes or onto your skin, otherwise inflammation can result.
Furthermore, do not drink the oil under any circumstances , as it can cause vomiting and diarrhoea. Keep the oil out of the reach of children.



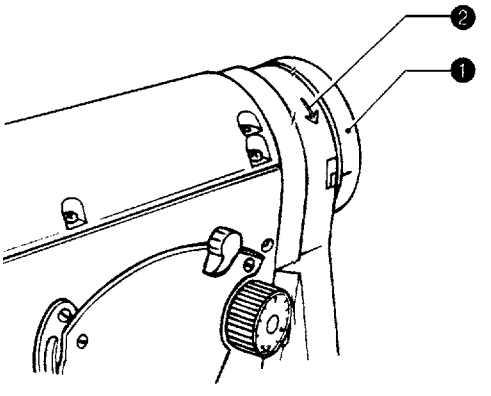
- Use only the lubricating oil Specified by our company.
  Tilt back the machine head and slowly pour in lubricating oil until the oil level reaches the ˝HIGH˝ mark.

* If the oil level drops below the ˝LOW˝ mark, add more lu bricating oil.

5 – 11. Checking the machine pulley rotating direction

⚠ CAUTION

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



1. Insert the power cord plug into the wall outlet, and then turn on the power switch.
2. Depress the treadle slightly and check that the machine pulley(1)starts to turn in the direction of the arrow(2).

* If the direction of rotation is reversed, change the direction of rotation to the correct direction while referring to the in struction manual for the motor.

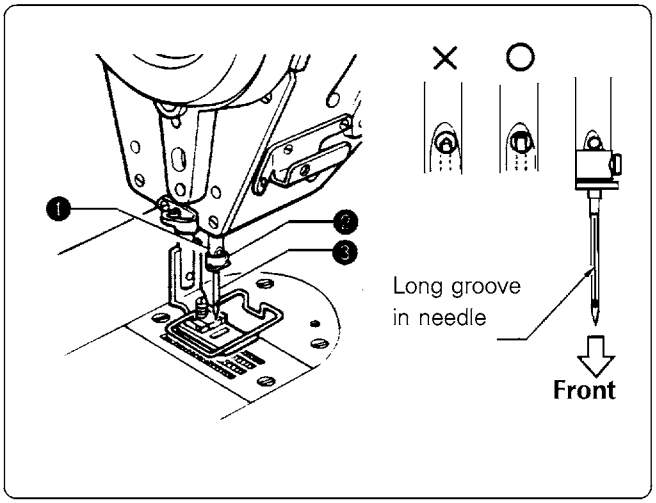
6. PREPARATION BEFORE SEWING

6 – 1. Installing the needle

⚠ CAUTION

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

* When using a clutch motor, the motor will keep turning even after the power is switched off as a result of the motor´s inertia. wait until the motor stops fully before starting work.



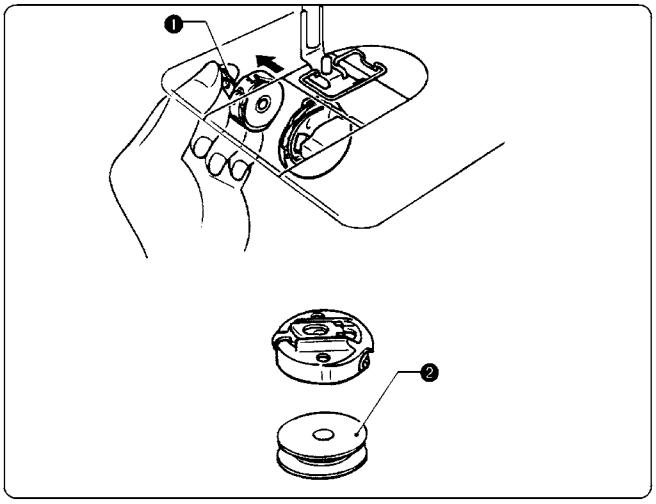
1. Turn the machine pulley to move the needle bar (1) to its highest position.
2. Loosen the screw (2).
3. Insert the needle (3) in a straight line as far as it will go, marking sure that the long groove on the needle is toward the front, and then securely tighten the screw(2).

6 – 2. Removing the bobbin case

⚠ CAUTION

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

* When using a clutch motor, the motor will keep turning even after the power is switched off as a result of the motor´s inertia. Wait until the motor stops fully before starting work.

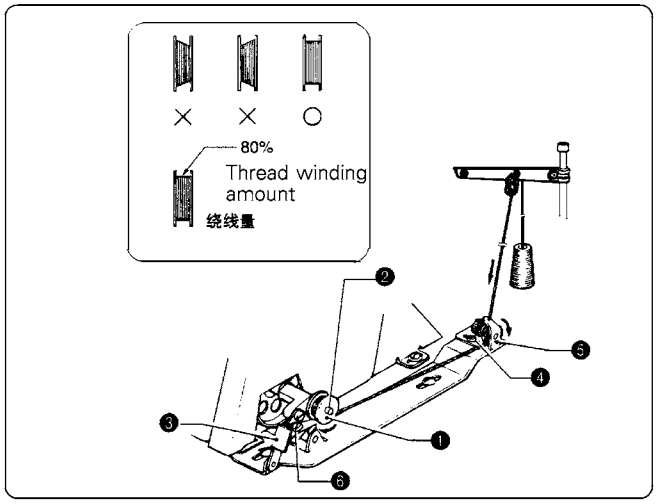


1. Turn the machine pulley to raise the needle until it is above the needle plate.
2. Pull the latch (1) of the bobbin case upward and then re move the bobbin case.
3. The bobbin (2) will come out when the latch (1) is re leased.

6 –3. Winding the lower thread

⚠ CAUION

Do not touch any of the moving parts or place any objects against the machine while winding 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 time around the bobbin (1) in the direction indicated by the arrow.
4. Push down the bobbin presser arm (3).
5. Raise the presser foot with the presser foot lifter.
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.

＊If the thread cannot be wound on evenly, loosen the screw (4) and move the bobbin winder guide (5) to the side where

＊Turn the adjustment screw (6) to adjust the bobbin winding amount.

- To increase the winging amount: Tighten the screw.
- To decrease the winding amount: Loose the screw.

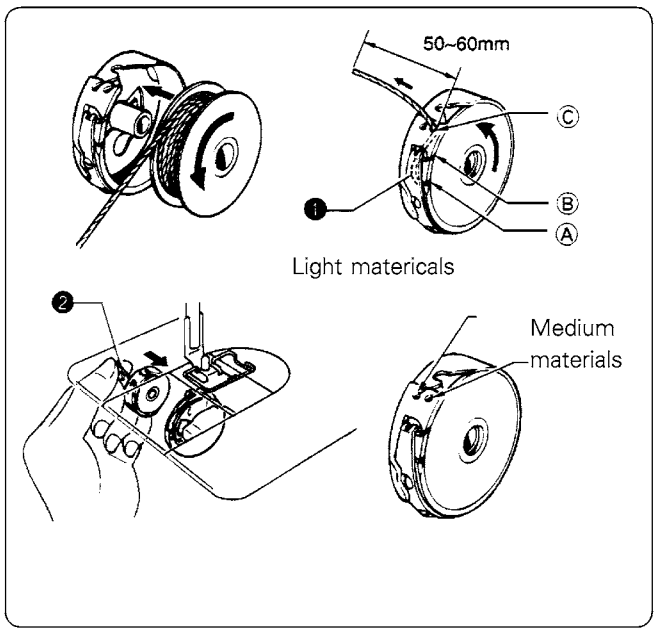
Note: The amount of thread wound onto the bobbin should be a maximum of 80% of the bobbin capacity.

6 –4. Installing the bobbin case

⚠ CAUTION

Turn off the power switch before installing the bobbin case, otherwise the machine may operate if the treadle is pressed by mistake, which could result in injury.

＊When using a clutch motor, the motor will keep turning even after the power is switched off as a result of the motor´s inertia. Wait until the motor stops fully before starting work.



1. Turn the machine pulley to raise the needle until it is above the needle plate.
2. Hold the bobbin so that the thread spools out counter clockwise, and place the bobbin into the bobbin case.
3. Pass the thread through slot A and hook it under the thread guide C.

Pass the thread back through slot B and hook it out from thread guide C.

＊Use thread guide C shown in the illustration in accordance with the type of material being sewn.

5. Check that the bobbin rotate counterclockwise when the thread is pulled out.
6. While holding the latch (2) of the bobbin case, insert the bobbin case into the rotary hook.

6 – 5. Threading the upper thread

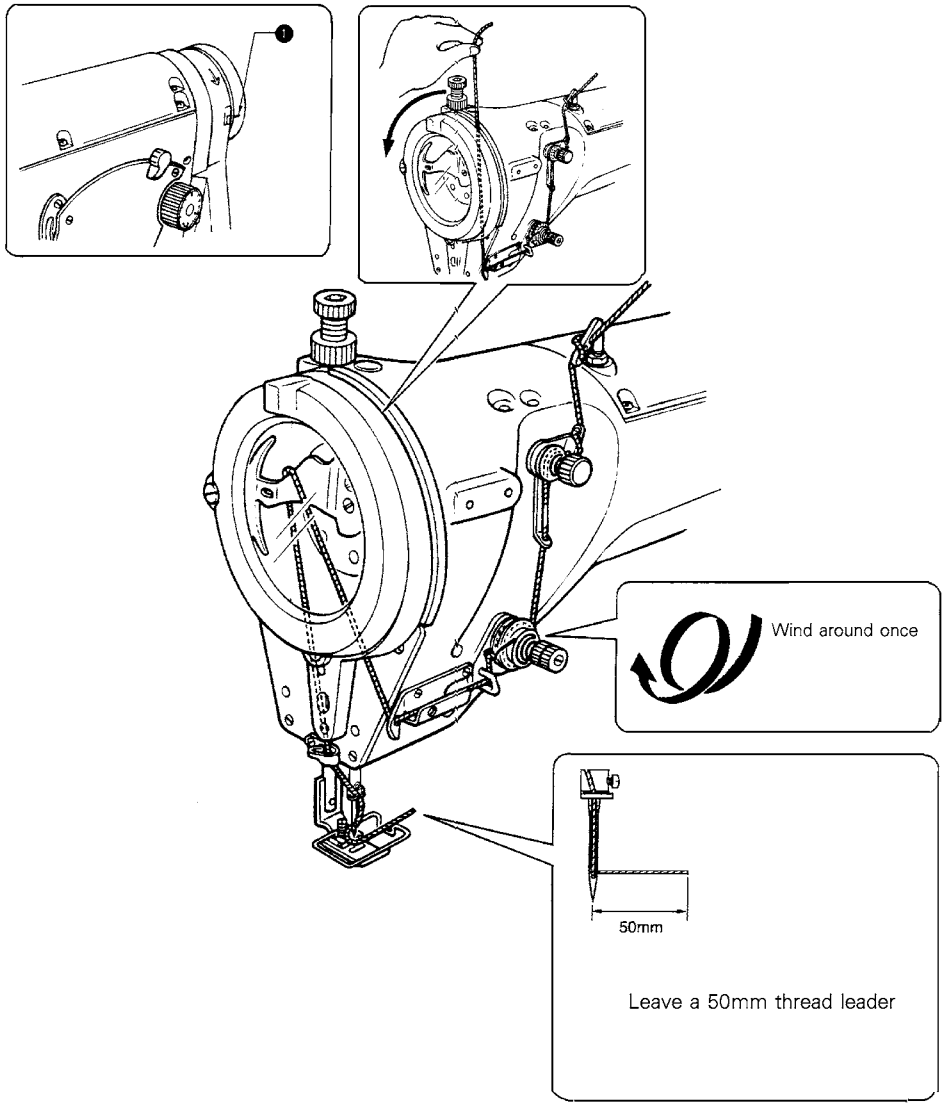
⚠ CAUTION

Turn off the power switch before threading the upper thread, otherwise the machine will operate if the treadle is pressed by mistake, which could result in injury.

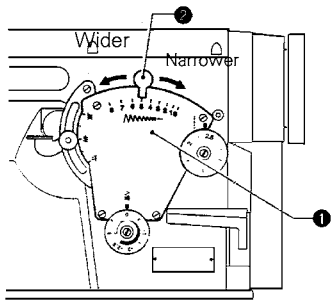
* When using a clutch motor, the motor will keep turning even after the power is switched off as a result of the motor´s inertia. Wait until the motor stops fully before starting work.

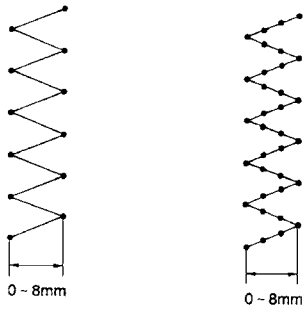
Turn the machine pulley to align the reference line (1) in the machine pulley with the index mark on the belt cover.

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



6 – 6. Adjusting the zigzag width





655 656

Note

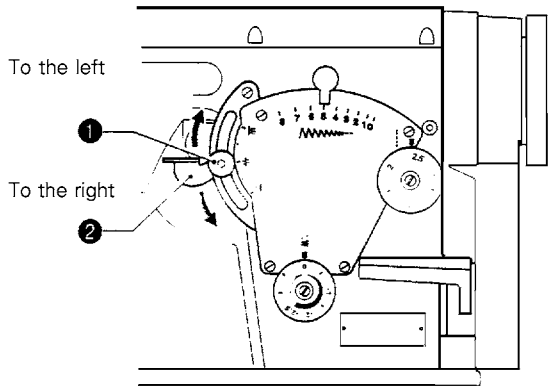
- Stop the sewing machine before adjusting the zigzag width.
- Raise the needle above the material when adjusting the zigzag width. If the zigzag width is adjusted while the needle is piercing the material, the needle may bend.

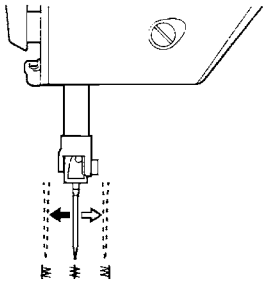
The numbers on the scale of the decorative plate (1) indicate the zigzag width in mm.
Move the zigzag lever (2) to the left or right to align the indicator mark with the desired number.

* The scale should be used as a guide only. The width of the finished zigzag seam may vary depending on the type and thickness of the material. Adjust while viewing the finished width.

Zigzag width
655 656
0 – 8mm

6 – 7. Adjusting the needle position





Left reference line

Center reference line

Right reference line

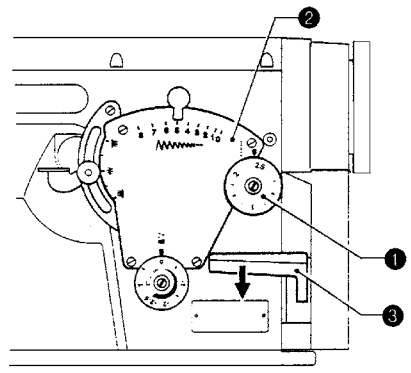
Max. zigzag width

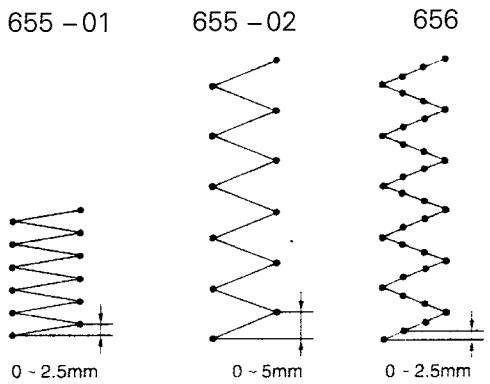
Note

- Stop the sewing machine before adjusting the needle position.
- Raise the needle above the material when adjusting the needle position. If the needle position is adjusted while the needle is piercing the material, the needle may bend.

1. Loosen the thumb nut (1).
2. Move the change lever (2) up or down to move the position of the thumb nut (1) in order to adjust the needle pposi tion.
   - If the thumb nut (1) is moved toward the mark (upward), the needle will move to the left (toward the left reference line).
   - If the thumb nut (1) is moved toward the mark (downward), the needle will move to the right (toward the right reference line).
3. Tighen the thumb nut (1).

6 – 8. Adjusting the stitch length





Turn the feed adjustment dial (1) until the desired stitch length number is aligned with the index mark (2) above the dial.

- The larger the number, the longer the stitch length will be.
- When turning the feed adjustment dial (1) from a larger setting to a smaller setting , it will be easier to turn the dial if the reverse stitching lever (3) is pushed to the halfway – down position.

* 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.

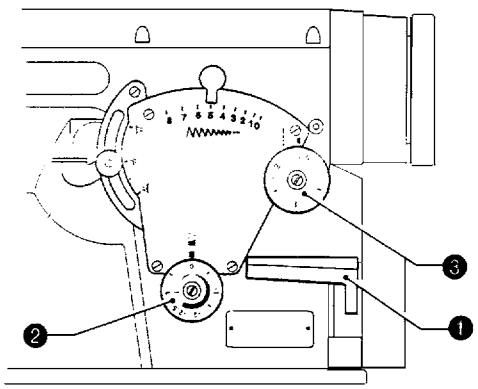
Stitch length	
655 –01, 656	655 –02
0 ~2. 5mm	0 ~5mm

6 – 9. Cautions when replacing gauge parts

The following must be observed at all times

When replacing gauge parts (presser foot, needle plate and feed dog), care must be taken to adjust these parts so that they operate correctly together. If settings such as zigzag width, needle position and stitch length are not appropriate for the gauge parts used, the needle may strike the needle plate and break, or the feed dog may touch the needle plate and be damaged during sewing machine operation. In order to prevent things like this from happening , turn the machine pulley by hand after adjusting the zigzag width, needle position and stitch length, and check that none of the gauge parts touch the needle plate before carrying out sewing.

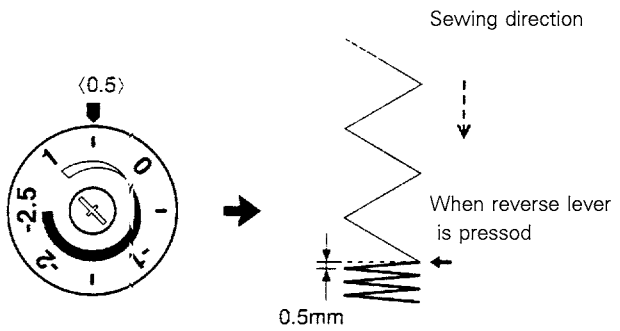
6 – 10. Backtacking



- Backtack stitches with short stitch lengths can be sewn easily during sewing just by pressing the reverse lever (1). This is useful for preventing fraying of the seam at the sewing end.
- Before sewing, turn the condense dial(2) to the left or right to set the stitch length for these shorter backtack stitches.

* 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 materila being sewn. Adjust while looking at the finished stitches.

Stitch length	
655 –01, 656	655 –02
–2. 5 ~1mm	–5 ~2mm

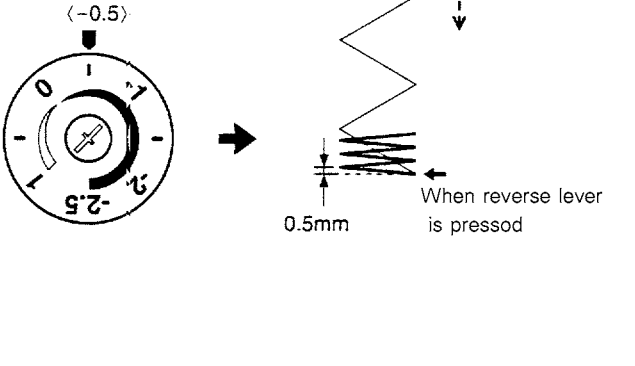


Sewing condensed stitches

- When the condense (2) is set to a positive number, backtack stitches with a stitch length that matches the dial setting will be sewn in the normal sewing direction while the reverse lever is pressed.
- If the condense dial (2) is set to ″0″, backtack stitches will be sewn without the material being fed while the reverse lever is pressed.

Note:

The condense dial (2) cannot be set to a number which is greater than the setting on the feed adjustment dial (3).



Backtacking

When the condense dial (2) is set to a negative number, backtack stitches with a stitch length that matches the dial setting will be sewn in the reverse sewing direction while the reverse lever is pressed.

Note:

It is not possible to sew stitches which are longer than the stitch length set using the feed adjustment dial (3).

7. SEWING

⚠ CAUTION

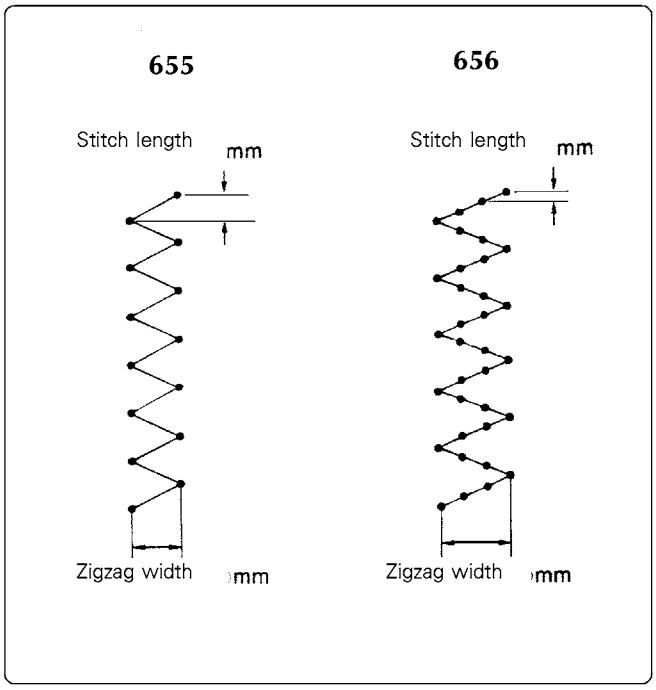
Attach all safety devices before using the sewing machine. If the machine is used without these devices attached, injury may result.

Turn off the power switch at the following times, otherwise the machine may operate if the treadle is pressed by mistake, which could result in injury.

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

* When using a clutch motor, the motor will keep turning even after the power is switched off as a result of the motor´s inertia. Wait until the motor stops fully before starting work.

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



1. Make any adjustments which may be required, such as zigzag width and stitch length.
   - Zigzag width (Refer to P. 57.)
   - Needle position (Refer to P. 57.)
   - Stitch length (Refer to P. 58.)
2. Turn on the power switch.
3. Depress the treadle to start sewing.

8. THREAD TENSION

8 – 1. Adjusting the thread tension

⚠ CAUTION

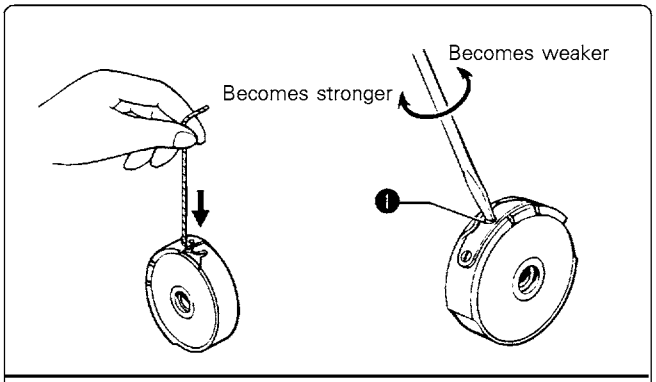
Turn off the power switch before removing or inserting the bobbin case, otherwise the machine may operate if the treadle is pressed by mistake, which coule result in injury.

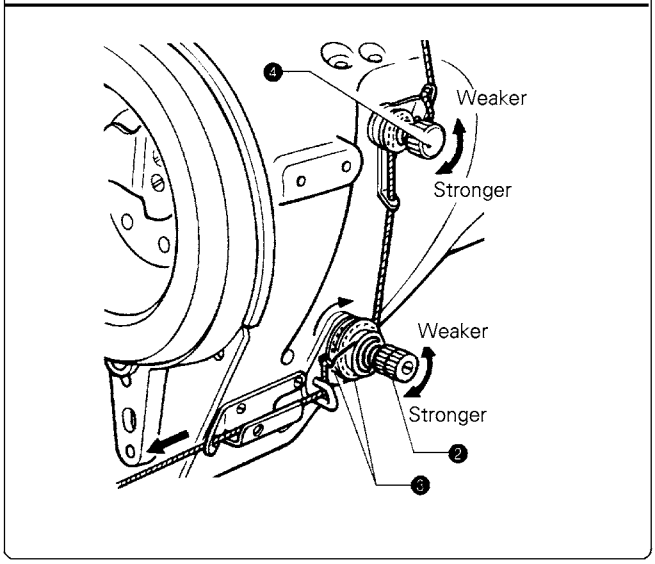
* When using a clutch motor, the motor will keep turning even after the power is switched off as a result of the motor´s inertia. Wait until the motor stops fully before starting work.

Good even stitches

Upper thread tension too weak or
lower thread tension too strong

Upper thread tension too string or
lower thread tension too weak





Lower thread tension

Turn the thread tension screw (1) to adjust the lower thread tension so that the bobbin drops by its own weight with no resistance when the end of the thread is held.

Upper thread tension

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

1. Lower the presser foot.
2. Adjust by turning the thread tension nut (2).
3. After adjusting the upper thread tension, pull the upper thread in the direction of the arrow and check that the rotary disc (3) turns together with the upper thread.

* If it does not turn, tighten the pre – tension (4).

Note:

If the tension of the pre – tension (4) is too weak the thread will slip and the rotary disc (3) will not rotate. The pre – tension (4) should be adjusted to as weak a tension as possible while still allowing the rotary disc (3) to rotate smoothly.

8 – 2. Adjusting the presser foot pressure

Correct Stitches

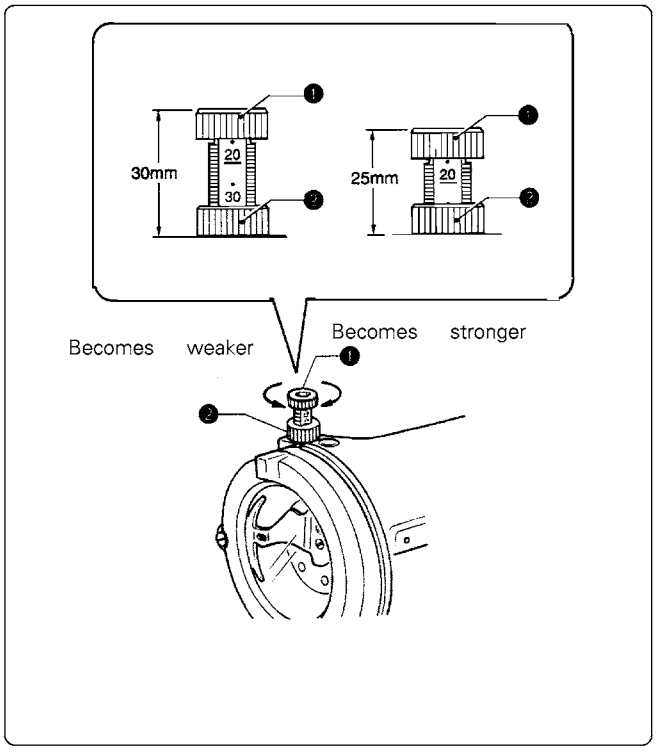
Skipped stitches occur

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.
- The scale on the adjustment screw (1) indicates the height of the adjustment screw (1), and shoule be use as a guide to adjustment. (Refer to the following page.)

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

Relationship between adjustment screw height and presser foot pressure (guide)

Spring			Adjustmen screw height	Presser foot pressure	Adjustment range
standand part	BX62824009	Black	25mm	40N	20 – 60N
Accessory part	BX62825009	Yellow	25mm	23N	10 – 30N

* Models 655 – 01 and 656 include an accessory spring which allows fine adjustments to be made for weaker presser foot pressures. Use whichever of the two springs are best suited to the material being sewn, while referring to the above table.
Refer to P. 70 for details on replacing the spring.
<Removal>
Refer to steps 1 to 5.
<Installation>
Refer to steps 5 to 9.

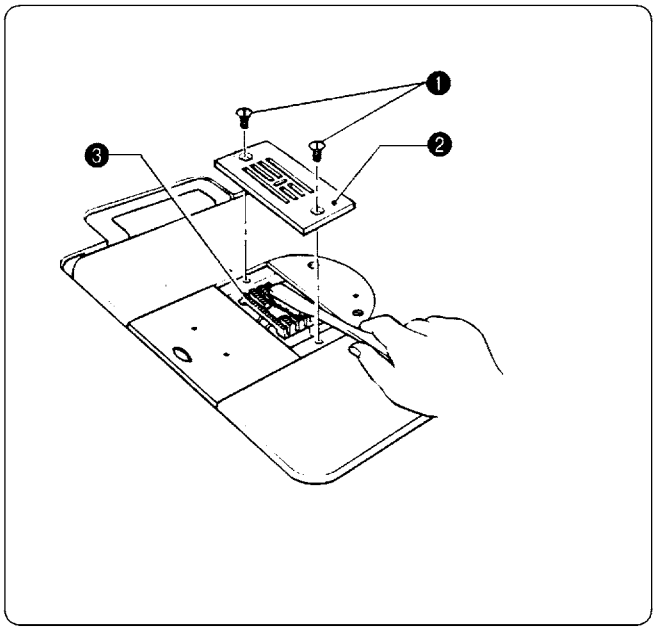
9. CLEANING

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

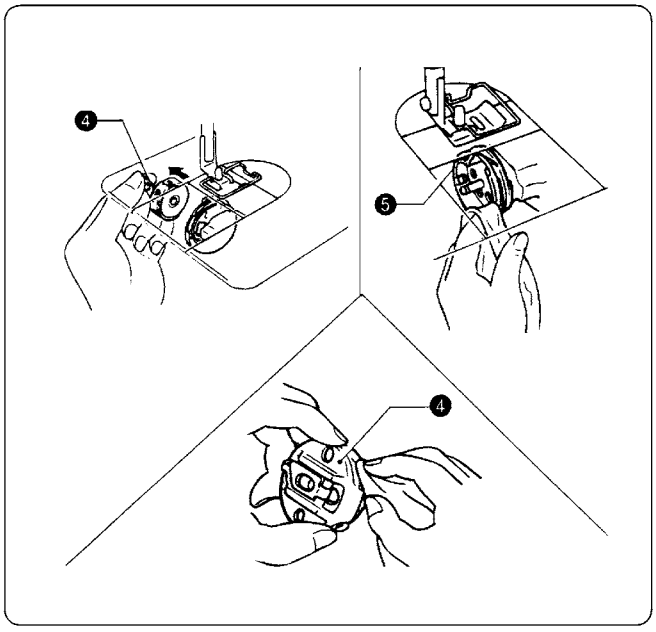
⚠CAUTION

Turn off the power switch before carrying out cleaning, otherwise the machine may operate if the treadle is pressed by mistake, which could result in injury.
＊When using a clutch motor, the motor will keep turning even after the power is switched off as a result of the motor´s inertia. Wait until the motor stops fully before starting work.

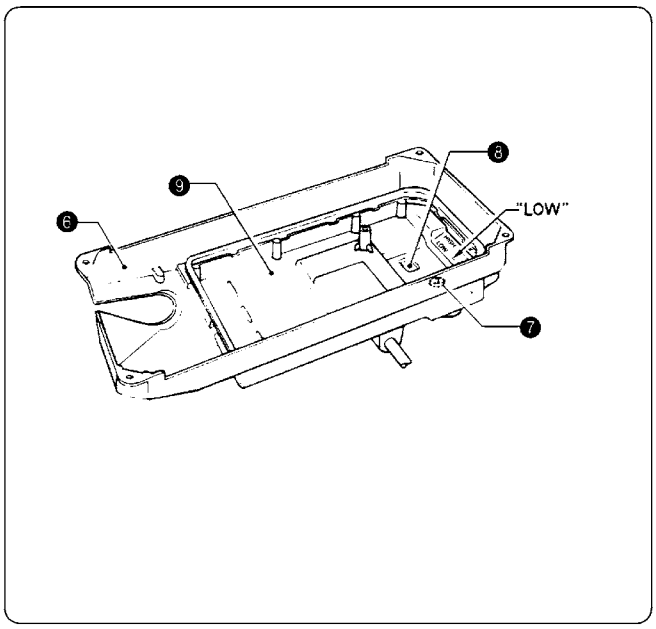
Be sure to wear protective goggles and gloves when handling the lubricating oil, so that no oil gets into your eyes or onto your skin, otherwise inflammation can result.
Furthermore, do not drink the oil under any circumstances, as it can cause vomiting and diarrhoea. Keep the oil out of the reach of children.



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).

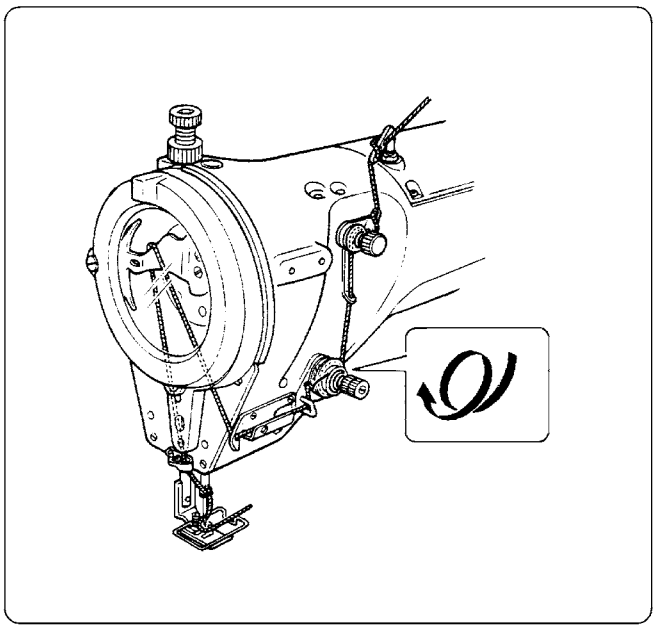


5. Remove the bobbin case (4).
6. Wipe off any dust from the rotary hook (5) with a soft cloth, and check that there is no damage to the rotary hook (5).
7. Remove the bobbin from the bobbin case (4) and clean the bonnin case (4) with a cloth.
8. Insert the bobbin into the bobbin case (4), and then place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



10. Clean the oil sump (6) with a cloth.
11. If the oil level drops below the LOW mark, add more lu – bricating oil.
- Use only the lubricating oil specified by our company.
- If the lubricating oil is contaminated, remove the oil cap screw (7) and drain the oil.
- Clean off any dirt on the collection magnet (8)and in the oil pan (9).

12. Return the machine head to its original position.



13. Check that the rotary hook lubrication amount is correct. (Refer to page 69.)If it is not correct, re – adjust.
14. Replace the needle if it is bent or it the tip is broken.
15. Check that the upper thread is threaded correctly.
16. Carry out a test sewing.

10. STANDARD ADJUSTMENTS

⚠CAUTION

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

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

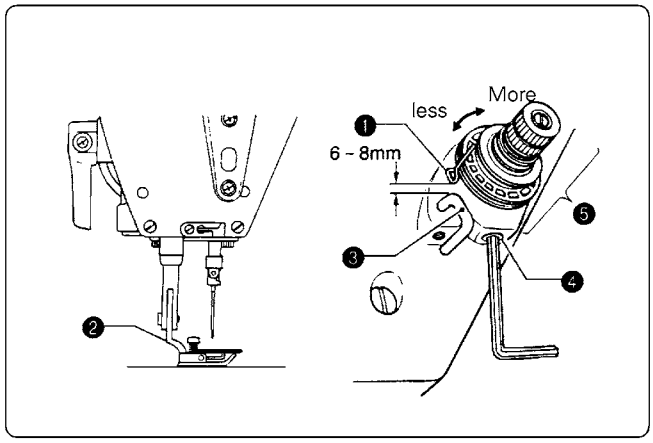
If any safety devices have been removed, be absolutely sure to re – install them to their original positions and check that they operate correctly before using the machine.

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.

* When using a clutch motor, the motor will keep turning even after the power is switched off as a result of the motor´ s inertia. Wait until the motor stops fully before starting work.

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

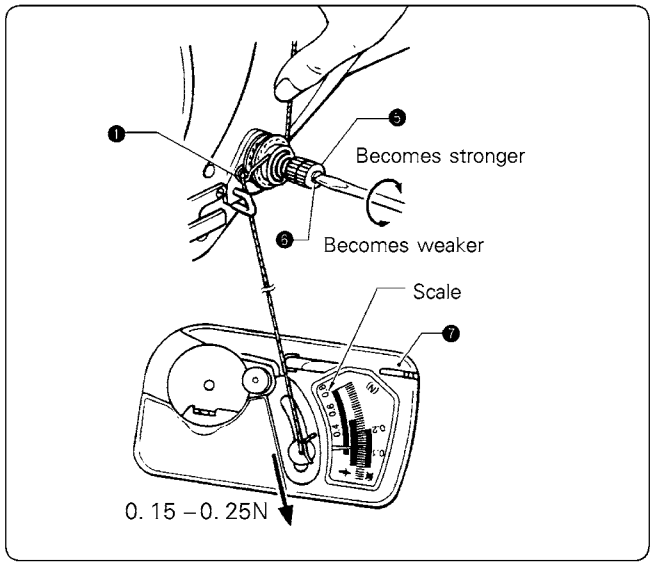
10 – 1. Adjusting the thread tension spring



●Thread tension spring position

The standard position of the thread tension spring (1) is 6 – 8 mm 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 tension spring tension

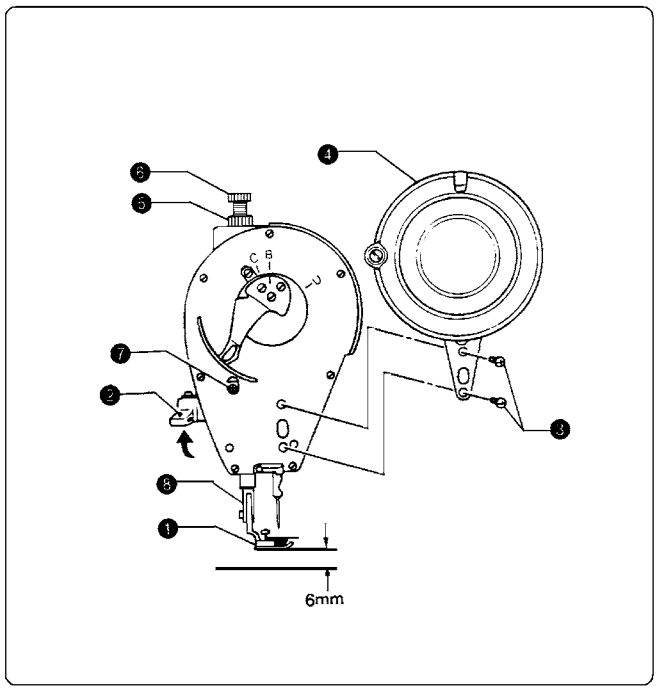
The standard tension of the thread tension spring (1) 0. 15 to 0. 25 N.

1. Press the upper thread slightly above the thread tension bracket (5) with a finger to stop the thread spooling out.
2. Pull the upper thread down until the thread tension spring (1) starts to move down, and measure the tension of thethread tension spring (1) at this point.
3. Insert the tip of a screwdriver into the groove in the thread tension stud (6) and turn it to adjust the tension of the thread tension spring (1).

Note:

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

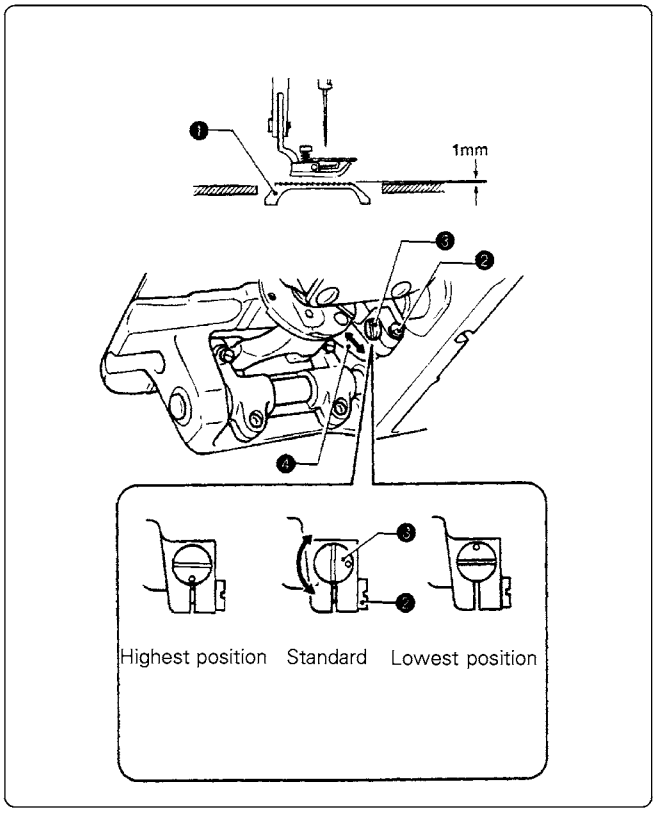
10 – 2. Adjust the presser foot height



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

1. Loosen the two screws (3) and then remove the thread take – up guard (4).
2. Loosen the nut (5) of the adjustment screw (6), and then turn the adjustment screw (6) so that there is no pressure applied to the presser foot.
3. Raise the presser bar lifter lever (2). The presser foot (1) will also rise.
4. Loosen the screw (7) and move the presser bar (8) up and down to adjust the height of the presser foot (1) to 6 mm.
5. Tighten the bolt(7).
6. Adjust the presser foot pressure using the adjustment screw (6), and then tighten the nut (5). (Refer to page 62.)
7. Install the thread take – up guard (4) with the two screws (3).

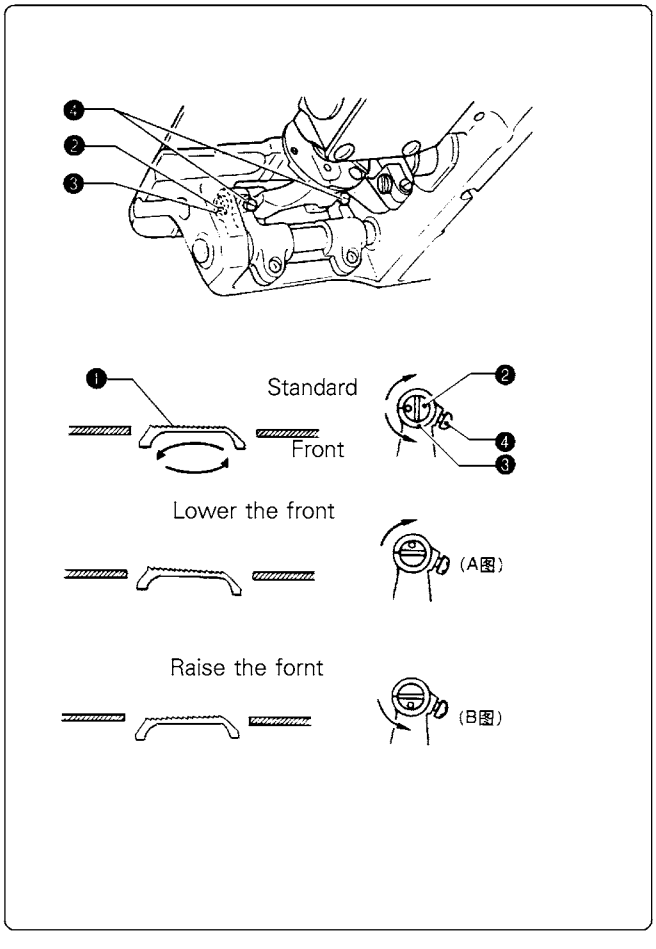
10 –3. Adjusting the feed dog height



The standard height when the feed dog (1) is at its highest position above the needle plate is 1 mm.

1. Turn the machine pulley to move the feed dog (1) to its highest position above the needle plate.
2. Tilt back the machine head.
3. Loosen the pin (2).
4. Turn the pin(3) to move the feed bar (4)up and down in order to adjust the height.
5. Securely tighten the screw (2).

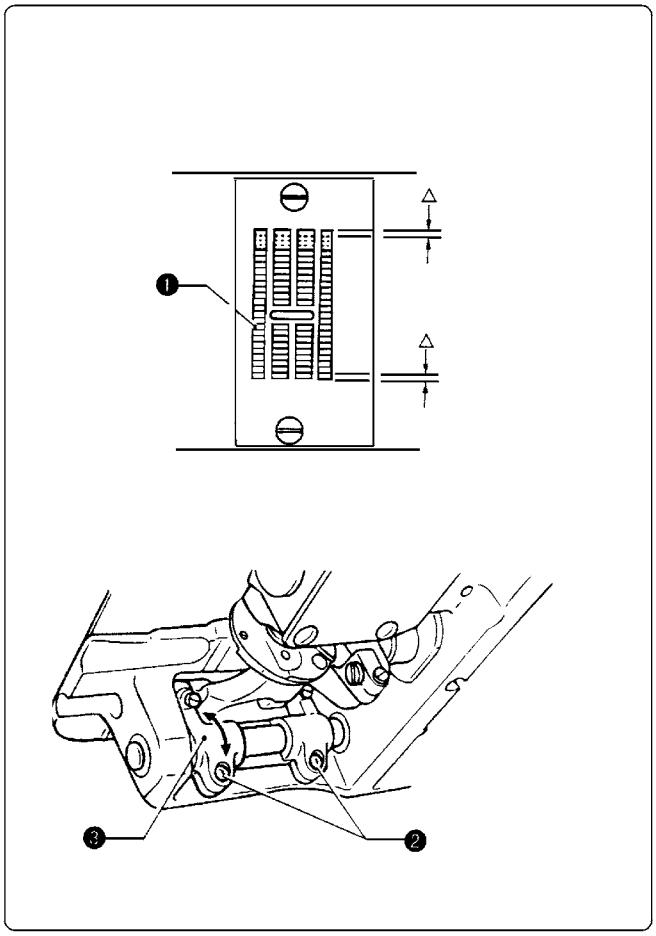
10 –4. Adjusting the feed dog angle



The standard angle for the feed dog (1) is for the top of the needle plate and the top of the feed dog (1) to be parallel when the feed dog (1) is at its maximum height above the needle plate. (with the O mark on the feed bracket shaft (2) aligned with the mark on the feed rocker bracket arm (3)).

1. Turn the machine pulley to move the feed dog (1) to its highest position above the needle plate.
2. Tilt back the machine head.
3. Loosen the two set screws (4).
4. Turn the feed bracket shaft (2) in the direction of the arrow within a range of 90° with respect to the standard position.
   - Tilting the feed dog (1) so that the front is lowered tends to prevent puckering(gathering). (Figure A)
   - Tilting the feed dog (1) so that the front is raised tends to prevent material from slipping (uneven material feeding). (Figure B)
5. Securely tighten the set screws (4). When the angle of the feed dog (1) is adjusted, the height and forward/back position of the feed dog (1) will also change and will need to be readjusted.

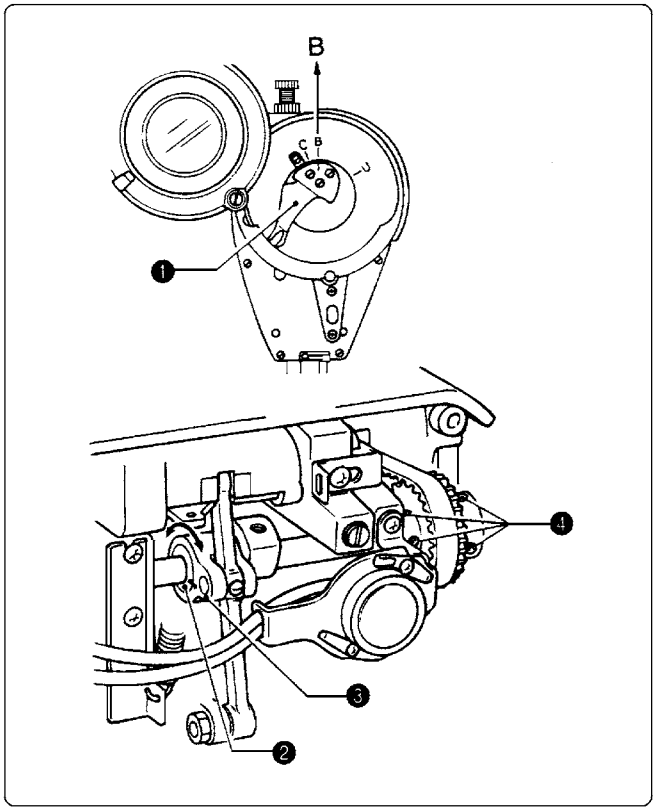
10 – 5. Adjusting the forward/back position of the feed dog



The clearance between the feed dog and the needle plate should be the same at the front and back of the feed dog (1) when the feed dog (1) is moved to its furthest forward and furthest back positions by turning the machine pulley.

1. Tilt back the machine head.
2. Loosen the two screws (2).
3. Turn the feed rocker bracket arm (3) to adjust the forward/back position of the feed dog (1).
4. Securely tighten the two screws (2).

10 – 6. Adjusting the needle and feed mechanism timing

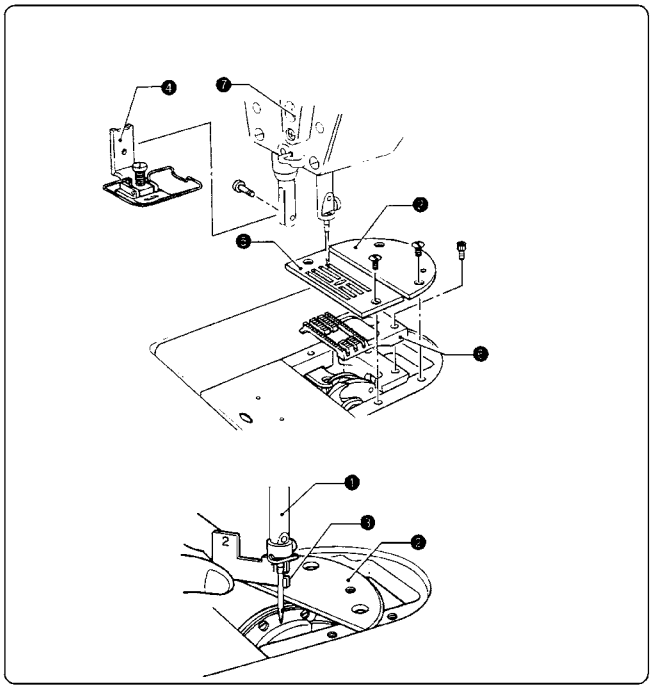


The ○mark on the eccentric cam (2) should be aligned with the ○mark on the eccentric cam (3) when the reference line on the thread take – up lever (1) is aligned with the B mark on the face plate.

1. Tilt back the machine head.
2. Align the reference line on the thread take – up lever (1) with the B mark on the face plate.
3. Loosen the four screws (4).
4. Turn the eccentric cam (2) to align the mark with the mark on the eccentric cam (3).
5. Securely tighten the four screws (4).

＊If the needle and feed timing has been adjusted, you should also adjust the needle and rotary hook timing. (Refer to page 68.)

10 –7. Adjusting the needle bar height



When the needle bar (1) is at its lowest position, the distance from the top of the auxiliary needle plate (2) to the bottom edge of the needle bar (1) should be the same as the height of accessory timing gauge1 (3).

1. Remove the presser foot (4), needle plate (5), auxiliary needle plate (2) and feed dog(6).
2. Place the auxiliary needle plate (2) on the needle plate in stallation surface of the machine bed.
3. Turn the machine pulley to move the needle bar (1) to its lowest position.
4. Loosen the screw (7).
5. Move the needle bar (1) up or down to adjust the distance from the top of the auxiliary needly plate (2) to the bottom edge of the needle bar (1) so that it is the same as the height of accessory timing gauge 1 (3).

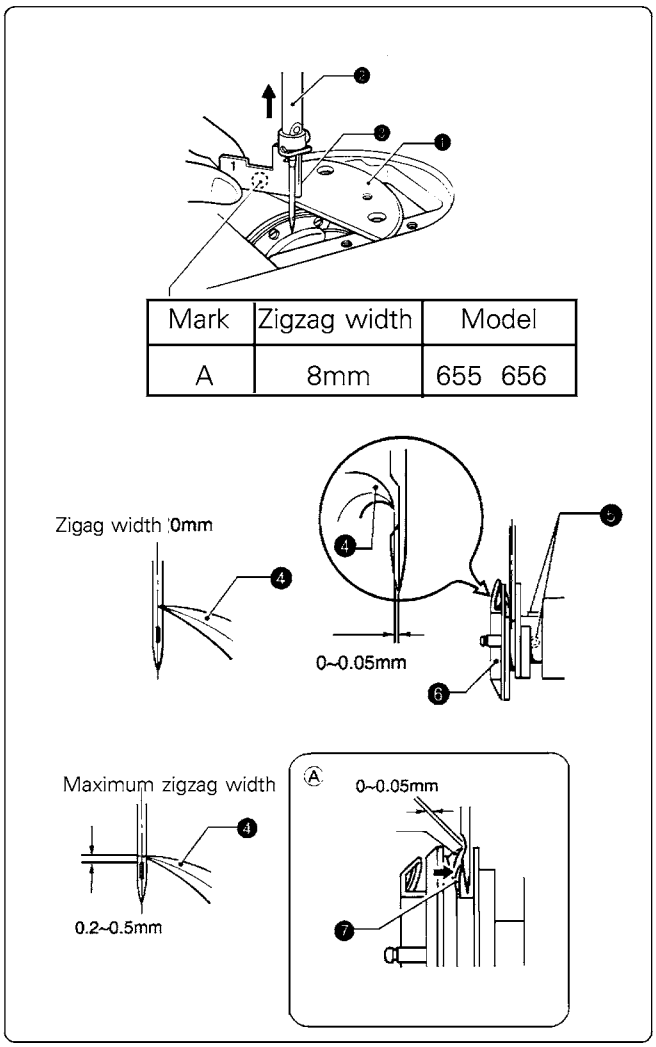
Note:

The needle plate (5) and the auxiliary needle plate (2) are of different thicknesses, so be sure to use the auxiliary needle plate (2).

6. Securely tighten the screw (7).
7. Install the presser foot (4) needle plate (5), auxiliary nee dle plate (2)and feed dog (6).

＊When adjusting the needle bar height, be sure to adjust the needle and rotary hook timing also. (Refer to page 68.)

10 –8. Needle and rotary hook timing



Mark	Zigzag width	Model
A	8mm	655 656

1. Set the zigzag width to ″0″ , and set the needle position to the center reference line. (Refer to P. 57.)
2. Remove the presser foot, needle plate, auxiliary needle plate and feed dog. (Refer to P. 68.)
3. Place the auxiliary needle plate (1) on the needle plate installation surface of the machine bed.
4. Turn the machine pulley to move the needle bar (2) from its lowest position, and check the following when the distance from the top of the auxiliary needle plate (1) to the bottom edge of the needle bar (2) is the same as the height of accessory timing gauge 2 (3).

・The tip of the rotary hook (4) should be aligned with the center of the needle.

・The distance from the tip of the rotary hook (4) to the needle should be 0 to 0. 05 mm.

Note:

The needle plate and the auxiliary needle plate (1) are of different thicknesses, so be sure to use the auxiliary needle plate (1).

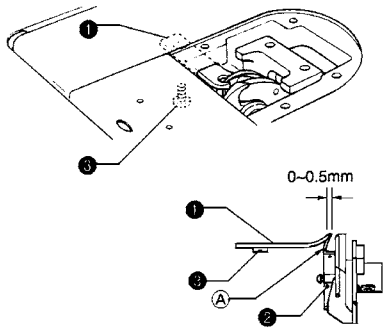
5. If the above are not correct, loosen the two screws (5) and adjust the position of the rotary hook (6). After adjustment, securely tighten the two screws (5).
6. Set the zigzag width to the maximum setting.
7. Turn the machine pulley to move the needle to its furthest left position so that the tip of the rotary hook (4) is aligned with the center of the needle, and check that the distance from the upper dege of the needle hole to the tip of the rotary hook (4) is 0. 2 to 0. 5 mm at this time.

＊If the distance is not correct, adjust the height of the needle bar. (Refer to page 68.)

8. If the needle deflection occurs when sewing material with joints , bend the needle guard (7) in the direction of the arrow as shown in the illustration so that it touches the needle.

＊After this, check that the clearance between the tip of the rotary hook (4) and the needle is 0 to 0. 05mm.

10 – 9. Hook stopper position

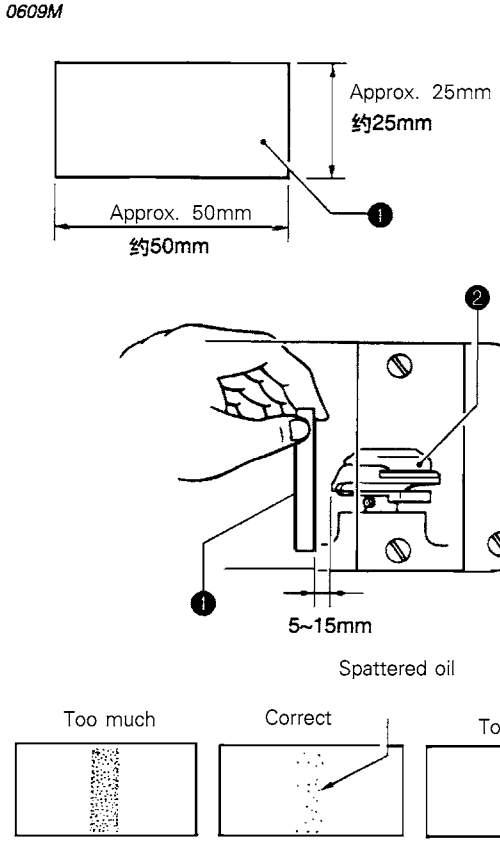


Adjust so that the end of the rotary hook holder (1) is 0 to 0.5 mm back from end (A) of the inner rotary hook (2).
* The end of the rotary hook holder (1) must never extend to the right of end (A) of the inner rotary hook (2).
1. Loosen the screw (3) and adjust the position of the rotary hook holder (1).
2. Securely tighten the screw (3).

10 – 10. Adjusting the rotary hook lubrication amount

⚠CAUTION

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.

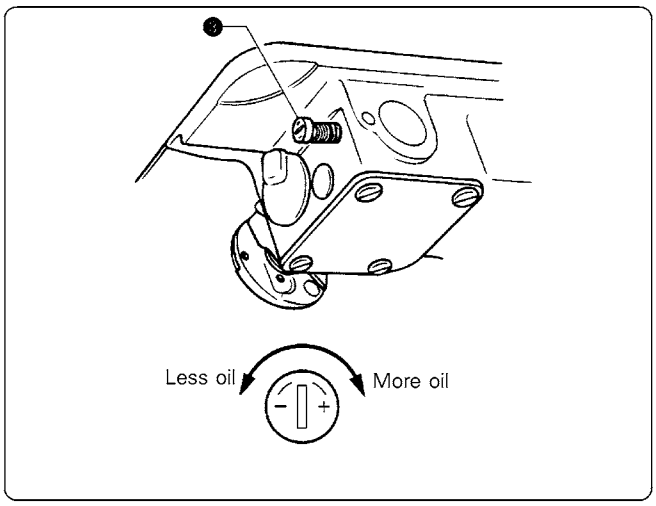


• Use the following procedure to check the amount of oil being supplied to the rotary hook when replacing the rotary hook or when changing the sewing speed.

Check the lubrication amount

1. Run the machine at the normal sewing speed for approxi – mately 1 minute without sewing any material (following the same start/stop pattern as when actually sewing).
2. Place the lubrication amount check sheet (1) to the left of the rotary hook (2) and hold it there. Then run the sewing machine at the normal sewing speed for 10 seconds. (Any type of paper can be used as the lubrication amount check sheet (1).)
3. Check the amount of oil which has spattered onto the sheet.

* Be sure to repeat this operation three to four times to check average lubrication amounts.

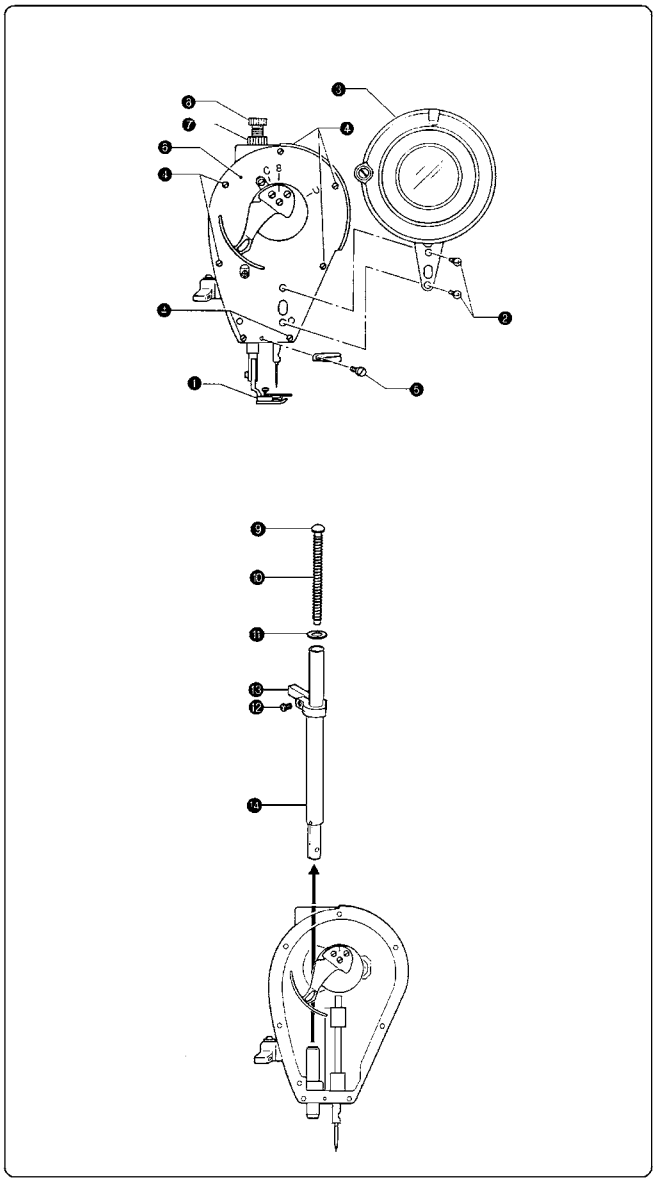


Adjusting the lubrication amount

1. Tilt back the machine head.
2. Turn the lubrication adjustment screw (3) to adjust the lubrication amount.
3. Return the machine head to the upright position.
4. Check the lubrication amount again according to the procedure given in "Checking the lubrication amount" above.
   * Turn the lubrication adjustment screw (3) and check the lubrication amount repeatedly until the lubrication amount is correct.
5. Check the lubrication amount again after the sewing machine has been used for approximately two hours.

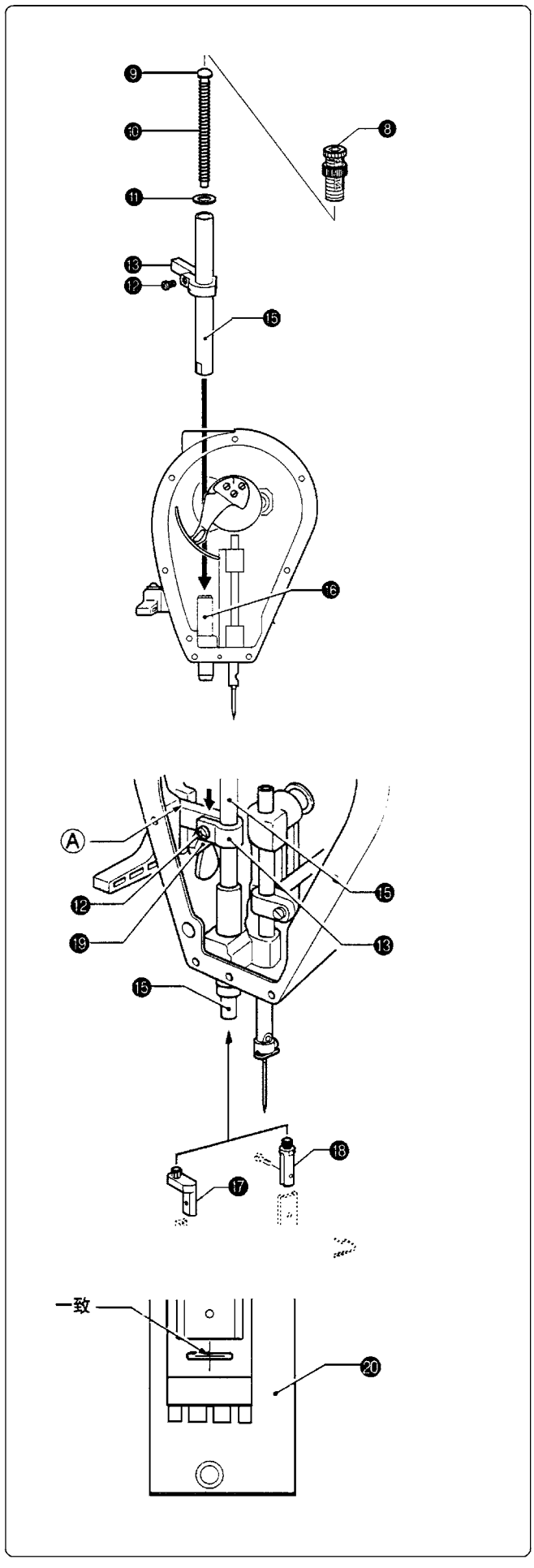
11. INSTALLING OPTIONAL PARTS

11 – 1. Presser bar U and presser bar tip



<Removal>

1. Remove the presser foot(1).
2. Remove the two wcrews (2), and then remove the thread take – up guard (3).
3. Remove the seven screws (4) and the screw (5), and then remove the face plate (6).
4. Loosen the nut (7), and then unscrew and remove the ad justment screw (8).
5. Remove the spring guide (9), spring (10) and washer(11)
6. Loosen the screw (12), and then remove the guide bracket (13).
7. Pull the presser bar (14) up to remove it.



<Installation>

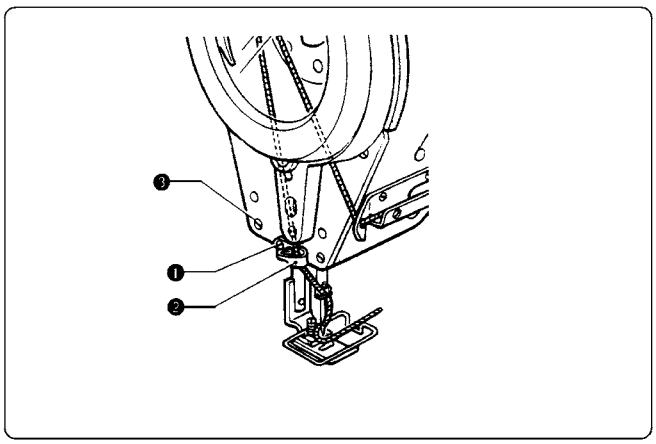
1. Pass presser bar U (15) through the bushing (16) from above.
2. Use a spanner or similar tool to securaly tighten presser bar tip A (17) or presser bar tip B (18) into presser bar U (15)
3. Fit the guide bracket (13) into presser bar U (15) and the groove in the arm , and provisionally secure it in place with the screw (12).
4. Install the presser foot to presser bar tip A (17) or presser bar tip B(18).
5. Install the washer (11), spring guide (9) and spring (10).
6. Tighten the adjustment screw (8).
7. Loosen the screw (12), align the presser foot with the groove in the needle plate (20), and then carry out the adjustment in ˝Adjusting the presser foot height˝. (Refer to P. 65.)

＊When tightening the screw (12), lower the guide bracket (13) until it is touching the lifter lever (19), and then tighten the screw (12).

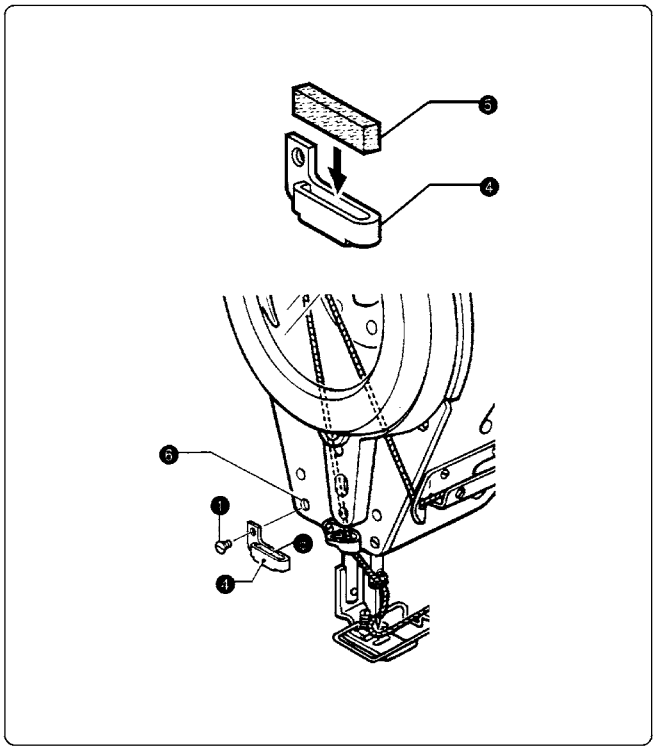
8. Install the face plate (6) with the screws (4) and the screw (5).
9. Install the thread take－up guard (3) with the screws(2)

11 – 2. Thread guide F

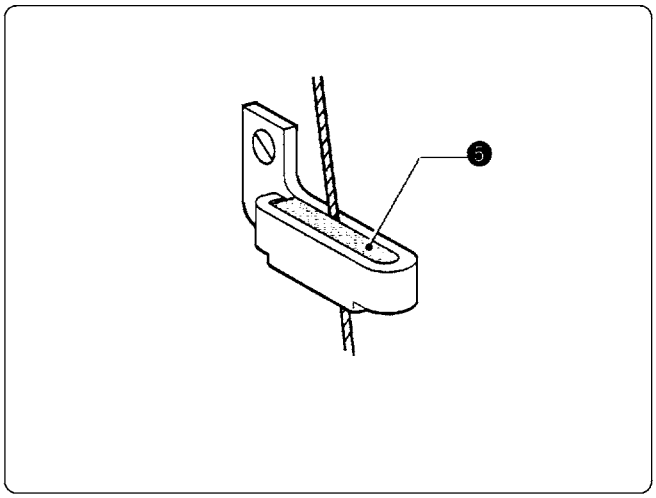
• Thread guide F prevents flapping of the upper threa, which can otherwise cause skipped stitches and thread breakages when sewing coarse materials.



1. Remove the screw (1), and then remove the standard thread guide (2).
2. Remove the screw (3) which is securing the face plate.



3. Install the felt (5) to thread guide F(4).
4. Use the screw (1) which was installing the standard thread guide (2) to install thread guide F(4) to the hole (6) left by the screw (3).



<Threading the upper thread>
Pass the upper thread through the rear side of the felt (5).

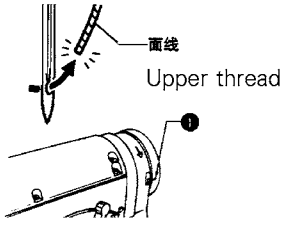
12. TROUBLESHOOTING

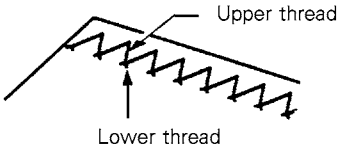
• Please check the following points before calling for repairs or service.
• If the following suggestions do not solve the problem, turn off the machine power supply and contact your nearest service center.

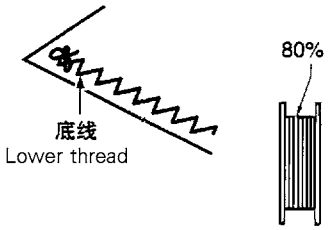
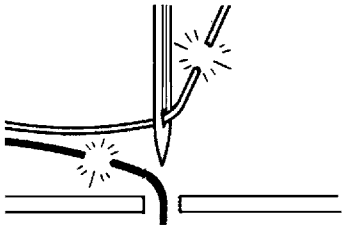
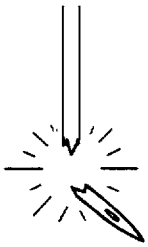
12 – 1. Machine head

⚠ CAUTION

Turn off the power switch and disconnect the power cord before carrying out troubleshooting, otherwise the machine will operate if the treadle is pressed by mistake, which could result in injury.
＊When using a clutch motor, the motor will keep turning even after the power is switched off as a result of the motor´s inertia. Wait until the motor stops fully before starting work.

Problem	Possible cause
1. Upper thread is not tight 	• Is the upper thread tension too wead, or is the lower thread tension too strong? Adjust the upper thread tension or lower thread tension.
2. Lower thread is not tight. 	• Is the lower thread tension too weak, or is the upper thread tension too strong? Adjust the lower thread tension or upper thread tension.
3. Skipped stitches occur while sewing 	• 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 needle and rotary hook timing incorrect? Adjust the height of the needle bar. Adjust the clearance between the needle and the rotary hook. • Is the thread tension spring too weak? Adjust the tension of the thread tension spring.
4. Skipped stitches at sewing start  Thread unravelling at sewing start  Upper thread	• Are the thread take – up spring tensions too strong? Reduce the tension of the thread take – up springs. • Is the thread tension spring operating range too large? Lower the position of the thread tension spring. • Is the needle too wide? Try using a needle with a count that is one lower than the current needle. • Is the reference line (1) on the machine pulley aligned with the mark on the belt cover at the sewing start? Align the reference line (1) on the machine pulley with the mark on the belt cover at the sewing start. • Is the length of thread trailing out from the needle hole too short? Align the reference line (1) on the machine pulley with the mark on the belt cover at the sewing start, and then pull out 50 mm of thread from the needle hole.

Problem	Possible cause
5. Uneven seam 	• Is the presser foot pressure too weak? Adjuste the presser foot pressure. • Is the feed dog too low? Adjust the feed fog height. • Is the bobbin scratched? If the boobin is damaged , smooth it with an oiled grindstone or replace it.
6. Horizontal thread tightening not balanced 	• Is the upper thread tension or lower thread tension too strong or to weak? Adjust the upper thread tension or lower thread tension. • Does the rotary disc rotate smoothly? Adjust the pre – tension. • Is the tension of the thread take – up spring correct? Adjust the tension of the thread take – up spring. • Is the stroke of the thread take – up spring sorrect? Adjust the position of the thread take – up spring. • Is the needle and rotary hook timing correct? Adjust the needle and rotary hook timing. • Is the needle and rotary hook timing correct? Adjust the height of the needle bar. Adjust the clearance between the needle and the rotary hook. • Is the thread too thick for the needle? Use the correct needle or the correct thread. • Is the rotary hook, bobbin case, thread take – up lever or some other part in the thread path damaged? Repair the damage, or replace the part with a new one.
7. Large degree of puchering (excess tension) 	• Is the upper thread tension too strong? Mark the upper thread tension as weak as possible. • Is the lower thread tension too strong? Mark the lower thread tension as weak as possible. • Is the point of the needle broken? If the point of the needle is broken , replace the needle. • Is the needle too thick? Replace with as thin a needle as possible. • Are the thread take – up spring tensions too strong? Mark the thread take – up spring tension as weak as pos sible. • Is the thread tension spring operating range too large? Lower the position of the thread tension spring to as low a position as possible. • Is the presser foot pressure too strong? Adjust the presser foot pressure. • Is the sewing machine running too fast? Check that an appropriate motor pulley (puter diameter) which matches the maximum sewing speed and frequency is being used. If an incorrect motor pulley is being used, replace the motor pulley. • Is the angle of the feed dog incorrect? Tilt the front of the feed dog down slightly.

Problem	Possible cause
8. Lower thread is tangled at the sewing start 	• 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 bobbin turning smoothly? If the bobbin is not turning smoothly, replace the bobbin. • Is a bobbin other than the light –alloy bobbins specified by our company being used? Use only bobbins which sre specified by our company.
9. Upper and lower threads are breaking. 	• 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 needle properly threaded? If it is incorrect, thread the needle correctly. • 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 tension spring operating range is too small? Adjust the position of the thread tension spring. • Is the needle and rotary hock timing incorrect? Adjust the height of the needle bar. Adjust the clearance between the needle and the rotary hock. • Is the thread too thick for the needle? Use the correct needle or the correct thread. • Is the rotary hook, bobbin case, thread take – up lever or some other part in the thread path damaged? Repair the damage, or replace the part with a new one.
10. Broken needles 	• 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. • Is the needle and rotary hook timing incorrect? Adjust the height of the needle bar. Adjust the clearance between the needle and the rotary hook. Caution • 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. • Futhermore, we recommend that through steps be taken to account for such needles to comply with product liability regulations.

● Besides adjusting stitch, please laypeople don´t debug or maintaine.

● Parts are subject to changes in design without prior notice.

XI´AN TYPICAL INDUSTRIES CO., LTD.

Add: No. 1 Taibai South Road,
Xi´an, P. R. China –710068
Tel : +86 –29 –8279091 8279150
Fax : +86 –29 –8249715 8245215
E –mail: typical@ chinatypical. com
Http: www. chinatypical. com
Http: www. globalsources. com

2003. 06. 28