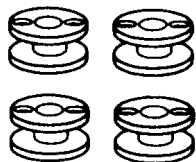
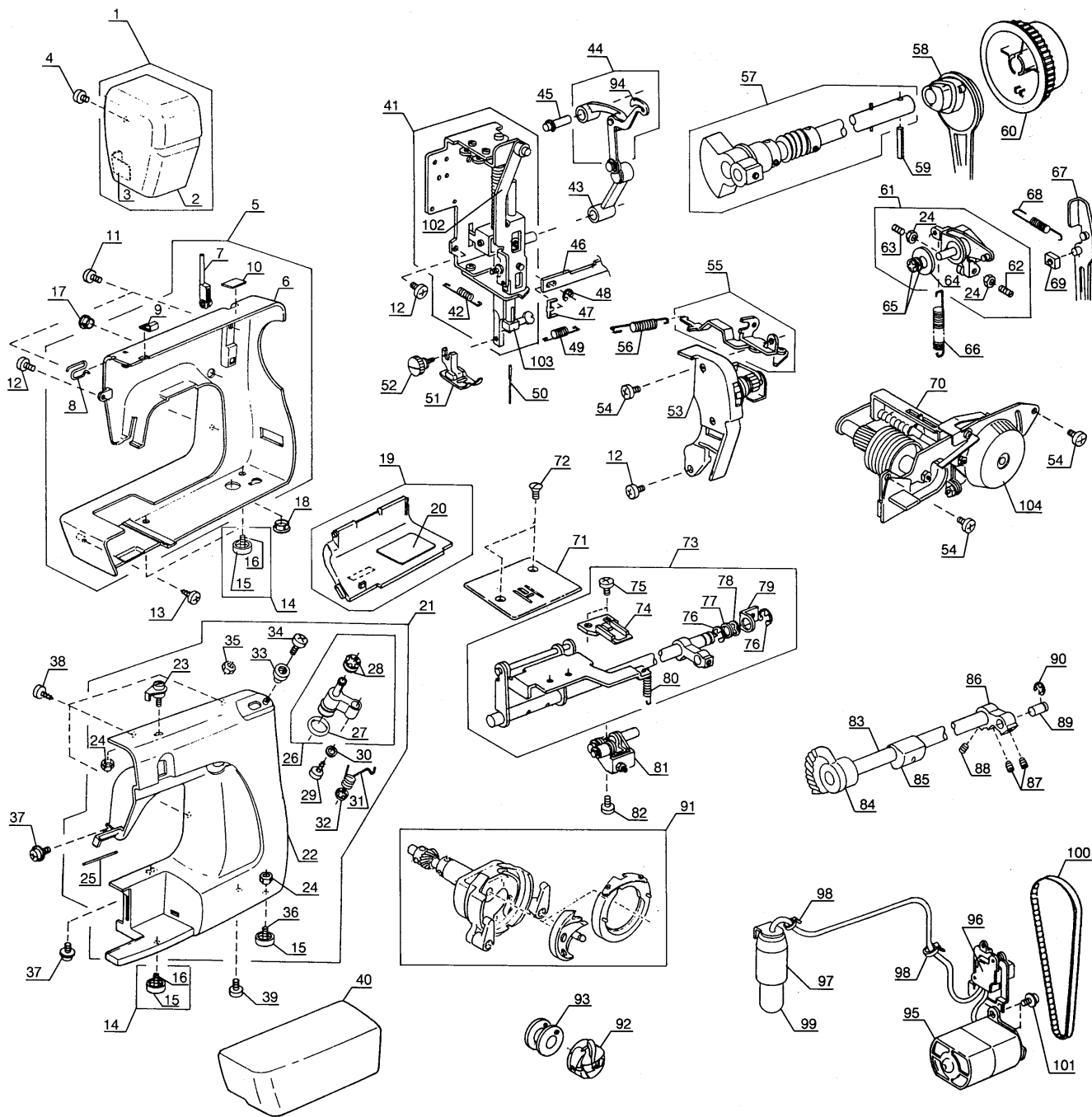
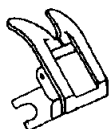


# PARTS & SERVICE MANUAL FOR MODEL 639 (GEM)

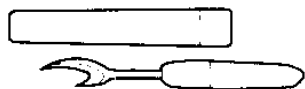
Specification code: 639701006 (STD, T-23051)  
639702085 (JAI, NH609)  
639702063 (JAI)  
639702074 (JUK)



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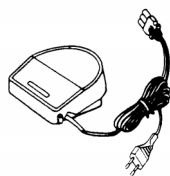
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Ref. No.	Part No.	Name	Ref. No.	Part No.	Name
1	639614001	Face plate (unit)	59	000023803	Spring pin
2	639008006	Face plate	60	639034001	Balance wheel
3	366076000	Face plate sticker	61	639607001	Feed regulator (unit)
4	000070012	Set screw	62	000114008	Set screw
5	639601005	Rear cover (unit)	63	648010009	Setscrew
6	639002103	Rear cover	64	735073003	Washer
7	639003001	Spool pin	65	000013800	Snap ring
8	639004002	Thread guide	66	639105004	Spring
9	738015006	Thread guide	67	639040000	Feed regulating rod
10	639111003	Spool pin sticker	68	639041001	Spring
11	000069616	Setscrew	69	639042002	Feed piece
12	000081005	Setscrew	70	639601007	Zigzag mechanism (unit)
13	000160607	Set screw	71	739008009	Needle plate
14	639613000	Rubber base (unit)	72	681009101	Set screw
15	639005003	Rubber base	73	639608002	Feed rock shaft (unit)
16	000115601	Set screw	74	639050003	Feed dog
17	653006101	Cap	75	735082005	Set screw
18	733003202	Cap	76	000002806	Snap ring
19	639624004	Bed cover (unit)	77	739100002	Washer
20	639112004	Sticker	78	000116309	Washer
21	639611008	Front cover (unit)	79	639052005	Feed rock shaft supporter
22	639074106	Front cover	80	639048008	Feed lifting spring
23	730501022	Thread guide plate (unit)	81	639609003	Feed lifting arm (unit)
24	000160102	Nut	82	000101703	Set screw
25	639075004	Thread guide	83	639035002	Lower shaft
26	639612009	Bobbin winder arm (unit)	84	735950003	Lower shaft gear (unit)
27	639078007	Bobbin winder ring	85	735061008	Feed lifting cam
28	000014409	Snap ring	86	639036003	Lower shaft arm
29	000121905	Set screw	87	000111304	Hexagon socket screw
30	000070506	Washer	88	000110107	Hexagon socket screw
31	639079008	Spring	89	639037004	Pin
32	000013903	Snap ring	90	000002507	Snap ring
33	652016101	Bobbin winder stopper	91	735610101	Shuttle race (unit)
34	000169503	Set screw	92	647515006	Bobbin case
35	000061205	Nut	93	102261000	Bobbin
36	000201003	Set screw	94	639503006	Thread take-up lever (unit)
37	000115205	Set screw	95	M-2090	Motor (unit)
38	000161309	Set screw	96	730507109	Machine socket (unit)
39	000101404	Set screw	97	654515019	Lamp socket (unit)
40	639007005	Extension table	98	000053008	Cord tie band
41	639602006	Presser bar base plate (unit)	99	000009102	Lamp 240V
42	639110002	Supporter spring (2)	100	639083005	Timing belt
43	639016007	Needle bar crank rod	101	000115504	Set screw
44	639622002	Needle bar crank pin (unit)	102	639013004	Needle bar supporter (unit)
45	731511006	Thread take-up lever pin (unit)	103	639603007	Needle bar (unit)
46	639072001	Zigzag rod	104	639068015	Pattern selector dial
47	639098003	Zigzag rod plate	105	102261000	Bobbin
48	000002105	Snap ring	106	731805000	Buttonhole foot
49	639017008	Supporter spring	107	647808009	Seam ripper
50	102408089	Needle	108	102408089	Set of needles
51	735503018	Presser foot (unit)	109	102403109	Felt
52	647112009	Thumb screw	110	639800110	Instruction book
53	639515001	Thread tension (unit)	111	C-2037-2	Foot control
54	810220003	Set screw			
55	639604008	Tension mounting plate (unit)			
56	639026000	Spring			
57	639605009	Upper shaft (unit)			
58	639623003	Crank rod (unit)			

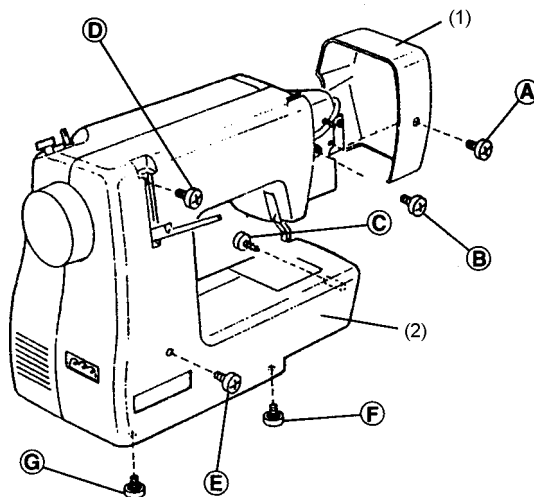
## TO CHANGE FACE PLATE, FRONT & REAR COVER

### FACE PLATE (1)

1. Remove or tighten set screw (A).

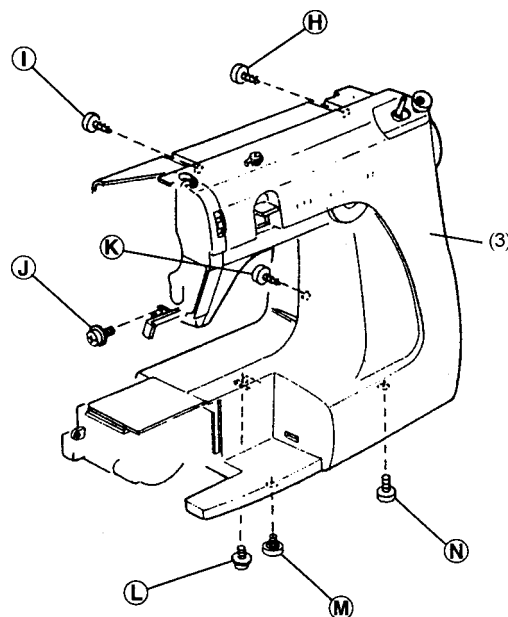
### REAR COVER (2)

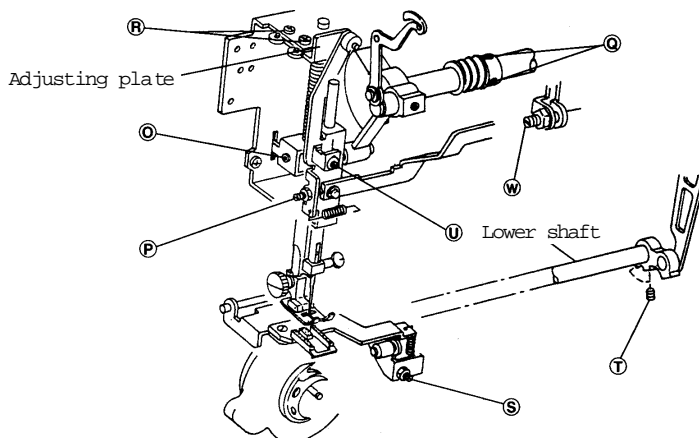
1. Remove face plate.
2. Remove set screws (A), (C), (D), (E), (F) and (G).  
Set screw (A) and (G) have rubber cushion.



### FRONT COVER(3)

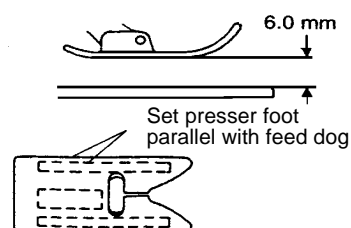
1. Remove face plate and rear cover.
2. Remove set screws (H), (I), (K), (M) and (N).  
Loosen set screws (J) and (L).  
Set screw (M) has rubber cushion.





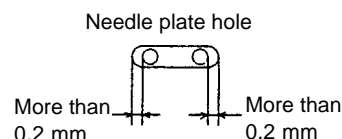
#### O. ADJUSTMENT OF PRESSER BAR HEIGHT AND ANGLE

- \* When presser foot lifter is raised, open space between the needle plate and presser foot should be 6.0 mm for standard adjustment.
  - \* The angle of presser foot should be parallel with the feed dog.
1. Remove face plate.  
Raise the presser foot lifter.
  2. Loosen set screw (O) and move the presser bar up and down for adjustment of the presser bar height.



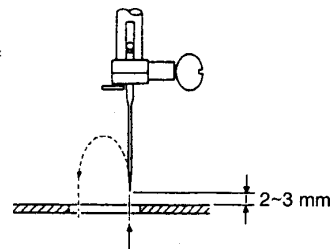
#### P. ADJUSTMENT OF NEEDLE DROP POSITION

- \* When Machine is set the maximum zigzag width, the clearance between needle and needle plate hole should be more than 0.2 mm. Also, when machine is set at straight stitch sewing, The needle should drop at center needle position.
1. Remove face plate.  
Adjust the needle drop position with set screw



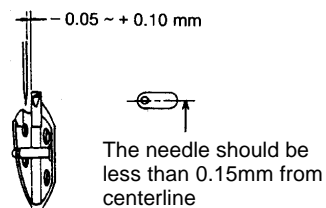
#### Q. ADJUSTMENT OF LATERAL NEEDLE SWING

- \* When needle bar is raised from the right needle position for zigzag stitching, the starting point of the lateral swing should be in range of 2.0 ~ 3.0 mm above the surface of needle plate.
1. Remove front cover.  
Set the maximum zigzag width.
  2. Loosen two screws (Q) on upper shaft worm gear. (Hold one of screws with screwdriver in order to prevent upper shaft worm gear from turning and turn the balance wheel toward you to adjust.)



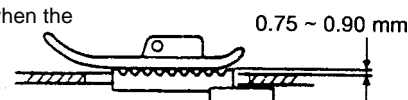
#### R. THE CLEARANCE BETWEEN NEEDLE AND THE TIP OF SHUTTLE HOOK

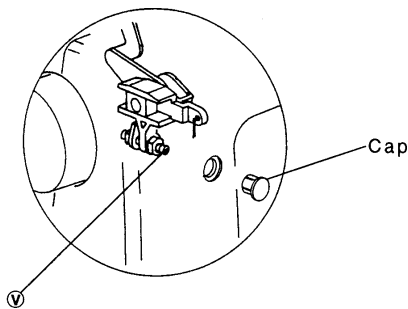
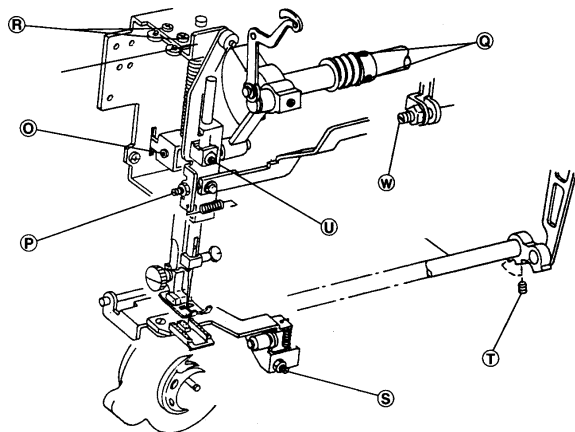
- \* The clearance between the needle and the tip of shuttle hook should be -0.05 to + 0.10 mm.
1. Remove face plate.  
Set the maximum zigzag width and the needle drop position at left position.
  2. Loosen two set screws (R) and move the adjusting plate in front and rear for adjustment of clearance.



#### S. ADJUSTMENT OF FEED DOG HEIGHT

- \* The highest position of the feed dog should be 0.75 - 0.90 mm above the needle plate when the presser foot is lowered with its maximum presser.
1. Open bed cover.
  2. Insert or loosen the set screw (S) for adjustment.

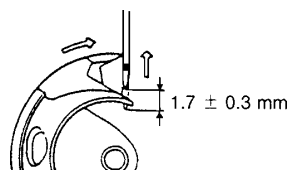




#### T. ADJUSTMENT OF HOOK TIMING

- \* The height of needle from its lowest point of travel should be in range of  $1.7 \pm 0.3$  mm when the tip of shuttle hook meets exactly the left side of needle at the left needle position with maximum zigzag width.

1. Remove front cover.  
Set the pattern selector dial at maximum zigzag width and needle drop position is at "LEFT".
2. Loosen two set screws (T) and raise the needle bar 1.7 mm from its lowest point.
3. Turn the hand wheel toward you to meet the tip of shuttle hook at left side of needle. Tighten two set screws (T) after setting.

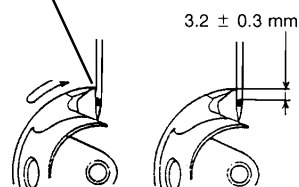


#### U. ADJUSTMENT OF NEEDLE BAR HEIGHT

- \* When the tip of shuttle hook meets exactly the left side of needle at the left needle position with maximum zigzag width, the distance between the upper edge of needle eye and top surface of hook should be in the range of  $3.2 \pm 0.3$  mm.

1. Remove face plate.  
Set the pattern selector dial at maximum zigzag width and left needle position.
2. Loosen set screw (U) and move the needle bar up and down for adjustment.

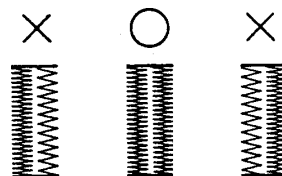
The tip of shuttle hook meets the left side of needle



#### V. ADJUSTMENT OF BUTTONHOLE FEED BALANCE

- \* When sewing buttonhole, there should not be much feeding difference between the right and left side rows. The standard is 9 - 12 stitches in the right side row against 10 stitches in the left row.

1. Remove the cap (d) on rear cover.
2. Adjust the feed balance with set screw (V).  
If the left side row is coarser than the right side row, turn set screw (V) to the right.  
If the right side row is coarser, turn set screw (V) to the left.



#### W. ADJUSTMENT OF RIGHT SIDE ROW BUTTONHOLE ZIGZAG WIDTH (TO ADJUST CUTTING WIDTH)

- \* When buttonhole stitch is sewn, left and right side rows zigzag width should be same size.

1. Remove front cover.  
If both left and right rows are uneven zigzag width, adjust set screw

NOTE: Make sure the cutting space is enough with seam ripper.

