⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public.
It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

IMPORTANT SAFETY NOTICE

There are special components used in this equipment which are important for safety. These parts are marked by ⚠ in the Schematic Diagrams, Circuit Board Diagrams, Exploded Views and Replacement Parts List. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire or other hazards. Do not modify the original design without permission of manufacturer.

■CENTRIFUGAL WASHING SYSTEM... World's First Innovative

(NO TANGLE, DAMAGE FREE LAUNDRY)

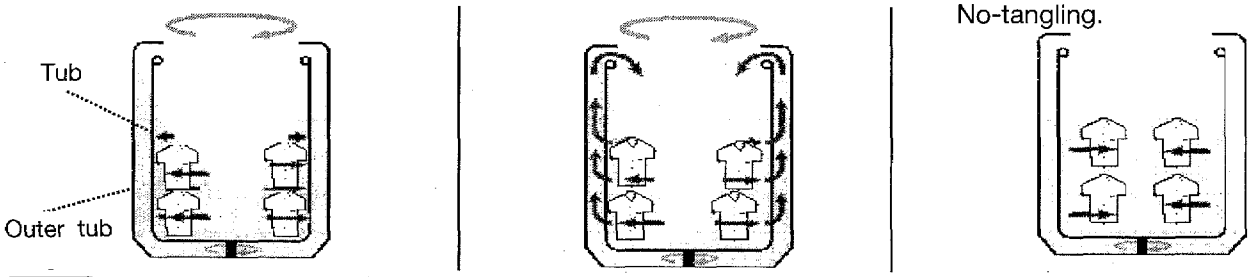
1) No tangles makes unloading easier.
2) Damage free washing makes clothes longer lasting.

● How it works

①Spinning wash-tub creates the centrifugal force.

②Washwater passes through clothes and removes dirt.

③While wash-tub spins, laundry does not move, Therefore No-tangling.



NOTE **Washwater does not come out from above outlet if water level shall be decided below Very Small (L2), Therefore repeat ON-OFF action of centrifugal force more frequently to keep enough washability.**

● Centrifugal/Normal Course (Wash-Process)

Laundry amount detector	
Fill Pro-cess	①Fill + Tub Rotate
	②Inertia Running
	③Brake Action
	④Whirling
	⑤Fill +Whirling
	⑥Fill
Wash Pro-cess	⑦Whirling
	⑧Centrifugal Washing
	⑨Inertia Running
	⑩Breake Action
	⑪Balance Control Whirling

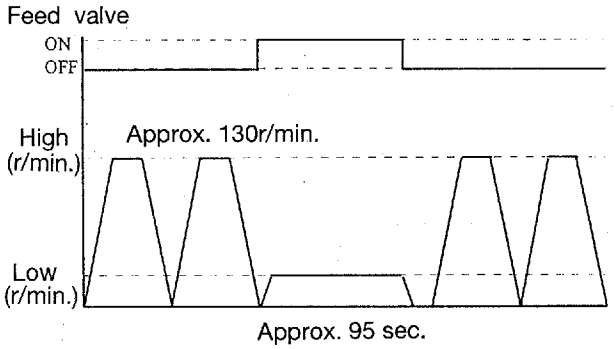
①After detect laundry amount, High-Rich Washwater shall be infiltrated to fabrics, if setting water level is Medium, Filling water to Small level with rotating the tub.
Incase of below Small level, Filling water to seted level with rotating the tub.

NOTE **Incase of opening the lid, It won't operate.If the lid opening over 3minutes, "U-12" is indicated.**

②&⑨...Cut circuit of Feed valve & Motor.
③&⑩...Cut circuit of Motorized drain valve for clutch and apply brake.
④&⑤...Rotate pulsator approx. 1 min. to dissolve detergent quickly.
(Final 20 sec. ...Filling water with whirling.)
⑥Incase of Medium water level ... Filling water to medium level.
Incase of below Small level ... Skip ④ to ⑥, Move to ⑦ process.
⑦Rotate pulsator approx. 30 sec. at initial stage of wash process to increase performance of detergent.
⑧Operate Centrifugal washing.
⑪Operate Balance control whirling to operate intermittent spin smoothly.

■Underflow Rinse for Centrifugal Washing

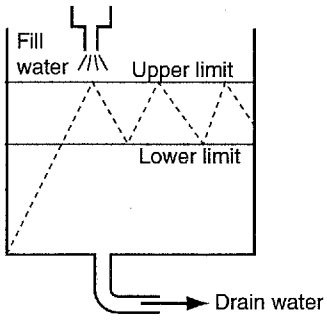
Underflow rinse for centrifugal washing shall be combined High and Low speed rotation of the spinning washtub. During High speed rotation, It shall not be filled water to prevent water leakage from upper surface of the tub.
It shall be filled water and operated motorized drain valve to drain water approx. 90 sec. during Low speed rotation of the spinning washtub.



● Underflow Rinse (Fill + Drain Control)

Detect water level movement with Water level detector during underflow rinse process, Motorized drain valve shall be operated to drain water when water level become upper limit. Also, Cut off the motorized drain valve circuit to close the drain valve when water level become lower limit.

NOTE **Incase filling amount has more over than draining amount, Cut off filling circuit until water level become lower limit to prevent overflow problem.**



■Improvement of washability for Whirling wash method

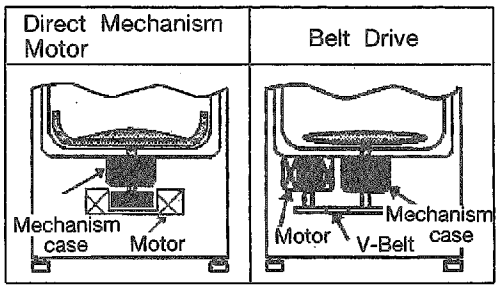
①Fill & Tub Rotating action
Same as Normal course of Centrifugal Washing System

②Fill & Whirling action
Incase water level has set over medium water level, Fill & Whirling action shall be operated after Fill & Tub Rotating action.
Incase water level has set below small water level, This process has omitted.

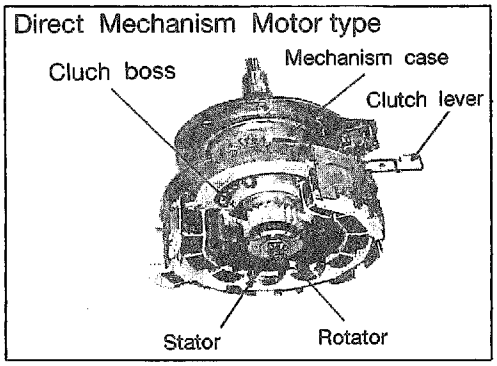
③Tub Rotating action during wash process
To increase washability more thoroughly, Operate Tub Rotating action approx. 33 sec. to equalize detergent-rich of washwater.

Laundry amount detector	
Fill Process	①Fill + Tub Rotate
	Inertia Running
	Brake Action
	②Fill +Whirling
	Fill
Wash Process	Whirling detects water splashing (30")
	③Tub Rotate (33")
	Inertia Running
	Brake action
	Whirling
	Balance Control Whirling

■Direct Mechanism Motor driving-type



Previous washing machine using belt drive operation. Direct Mechanism Motor driving does not using V-Belt. Thereby combined between Motor and Mechanism case to convey efficiently. Together with development of Inverting motor. It shall be decreased power consumption.



● Structure

Inverting motor shall be mounted to bottom portion of the Mechanism case, And the rotator shall be installed to same shaft of the wash and spin shaft.

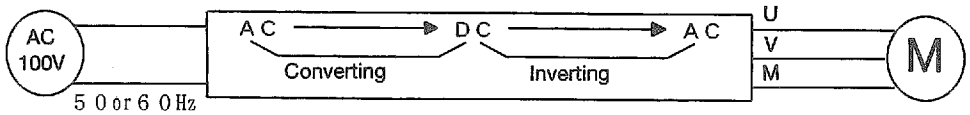
Apply electric power to the stator to occur magnetic strength, Thereby the rotator shall be rotated.

● Inverting control

Inverting motor : Change frequency to change rotation speed of the motor.

Converting alternative current to direct current once, And Inverting DC to AC again.

Using this theory to make desired frequency to control motor rotating speed.



Output of desired frequency

■Motorized Drain valve (2 Types)

(1) For change mode (Wash and Spin process)

a) Wash to Spin process

Turn on the Motorized Drain Valve to pull the clutch lever inward. Thereby clutch gear shall be opened and operated spin process.

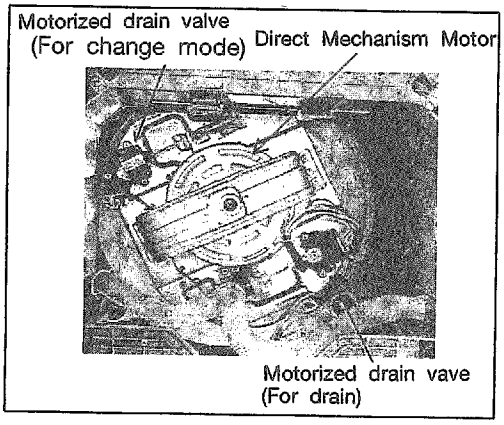
Turn on conditions:

"Washtub spins process, Spin process, Drain process"

b) Return to Wash process

Turn off the Motorized Drain Valve and clutch lever come out to outward.

Thereby clutch gear shall be contacted and operated wash process.



(2) For drain water

Turn on the Motorized Drain Valve to open the valve packing.

Turn on conditions :

"Drain process, Spin process"

■Water flow against laundry amount

Water flow shall be changed to Gentle to prevent grow up of bubble.
Incase desired Normal, Self setting and speedy course of Whirling wash style, Also water level has over small level, Once laundry amount has detected again during 30 sec. After whirling has started.
And then, Operating time of Shower rinse has changed against laundry amount rank (A, B, C and D) which is detected in this time.

Water level	Laundry amount	Water flow	Judge	Water level	Laundry amount	Water flow	Judge
High	Rated laundry amount	Normal	A	Small (L1)	Rated amount	Normal	C
	Medium laundry amount	Medium	A		Small amount	Gentle	D
	Small laundry amount	Slightly Gentle	B				
	Extra small laundry amount	Gentle	C				
Medium	Over rated amount	Strong	B	V.Small (L2)	Rated amount	Normal	D
	Rated amount	Normal	B				
	Small amount	Medium	B				
	Extra small amount	Gentle	C				

■Shower Rinse

The shower rinse dislodges detergent from the fibers, and the full-tub rinse of the powerful Double cascade whisks it away. Shower rinse function has operated Normal, Self setting and Speedy course of whirling wash style only.

〈Water supply amount = 15L/min.〉

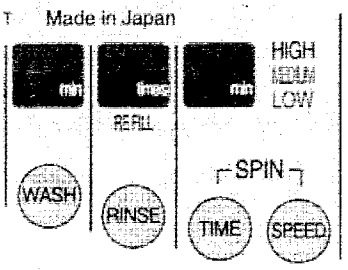
Course	Laundry Amount	Operating Time	Water Amount
Normal Self-setting	A	60sec.	15L
	B	50sec.	13L
	C・D	30sec.	8L
Speedy	—	20sec.	3L

● Operating time & Water amount of Shower rinse

1) Operating time has changed against laundry amount to the Shower rinse efficiency.
2) Operating time has decided against judged laundry amount during wash process.
(See above subject figure)

■Spinning Speed Control

It is possible to one of three spinning speed against pressing button.
Use this function against kinds of fabrics of laundry.
High : Approx. 850r/min.
Med :Approx. 500r/min.
Low : Approx. 300r/min.



● Rated spin speed of each course

1) High : Normal, Self setting, Blanket, Speedy and Soak course
2) Med : Home Dry Care course