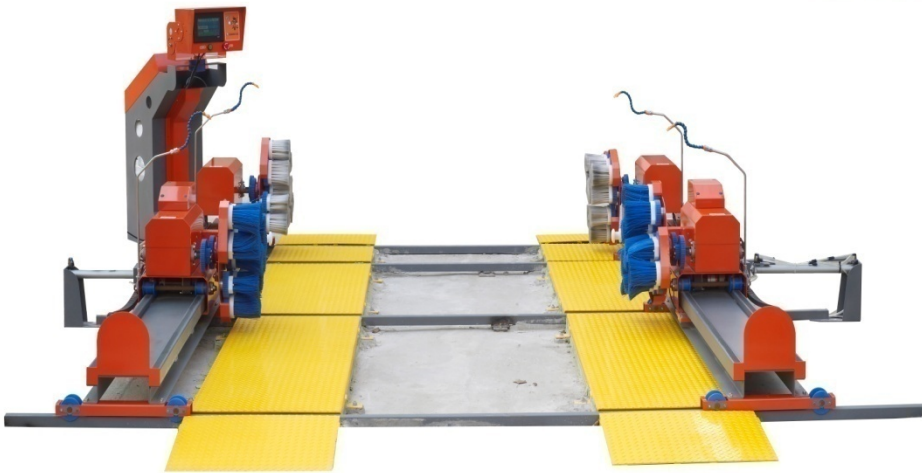


WHEEL WASH SYSTEM OPERATION MANUAL

Model: GNS-7000F



I . Product Features and Specifications

II . Preparations before Using

III . Washing Wheels

IV . Troubleshooting



I .Product Features and Specifications

1. Product Features

- It washes 4 car wheels at the same time
- It is capable of washing wheels with a size of 12" up to 20"
- It automatically washes wheels cleanly with the touch of a button
- You do not need to identify or enter the information on the make of the car
- It automatically senses the car and perform washing procedures according to its size
- Wash time and detergent dispensing time are easy to change
- It uses high-quality washing brushes and does not leave scratches on the wheel (except chrome-plated wheels)
- With a self-diagnosis screen integrated in the equipment, which displays an error code for a failure, the operator can easily communicate with the technical department of the manufacturer over the failure diagnosis and repair over the phone.

2. Product Specifications

Item	Description
Materials	Steel and others
External Size	3800(W) × 3800(L) × 800(H) mm (Washing Part)
Weight(Gross)	350kg
Washing Range	Wheel diameter 12 inch ~ 20 inch
Main Motor	380V, 50/60HZ X 1/4HP X 4 units
Wash Rotation Speed	120 RPM/Min
Feed Motor	DC 24V 40W X 2 units
Feed Motor Speed	240 RPM/Min
Power Source	380V 60Hz AC

3. Safety Instructions



Carefully read through the following safety instructions. It may cause serious injury or damage to the product unless they are strictly complied with.

- Operator should read through this manual and be familiar with the operation of the product.
- Do not apply overload to the product and be sure to connect product to the power source specified in this manual.
- Do not let children be near the product when it is in operation.
- Completely turn it off when the product is not in use.
- Make sure to use detergent only approved by us.
- Make sure to use genuine brushes only provided by us.
- Do not wear loose clothes or jewelry during operation. It may cause the operator to get caught in moving parts and serious injury.
- Product should be installed and operated on a flat surface.
- Do not move the product while it is in operation.
- Disconnect a power cable or a connecting cable by pulling the plug itself not a cable.
- For the safety of the operator, use genuine parts only supplied together with the product by the manufacturer. We shall not be liable for the failure and damage in the product caused by using the attachments modified or parts altered without our authorization.
- Inspect for damaged parts. Be sure not to operate the product with parts that are found damaged or defective. The damaged or defective parts should be replaced by the authorized technician only. If the power switch is found defective, do not use the product.

II .Preparations before using

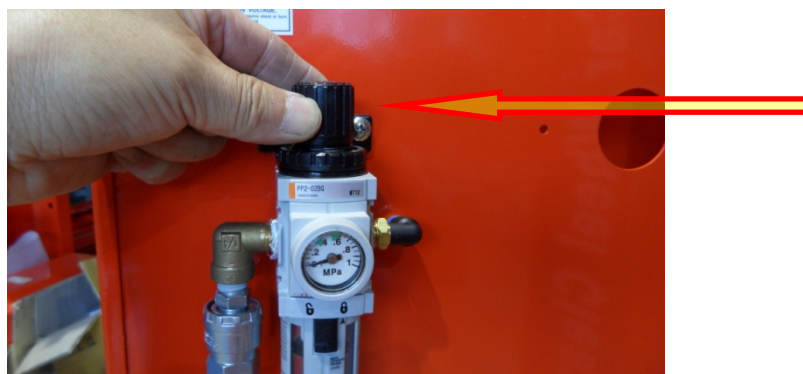
Check the following points before starting the operation of the product.

1. Power to the control panel



The touch screen will be on automatically when the main power is switched on.

2 Air pressure



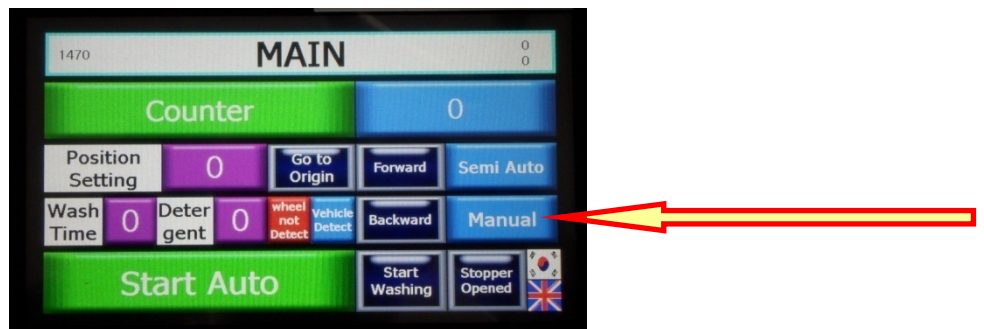
Lift the knob on the air pressure regulator slightly and turn it clockwise until it sets to 6~7 bar.(If the needle of the gauge is not going up, please check if the compressor is working)

3 Detergent

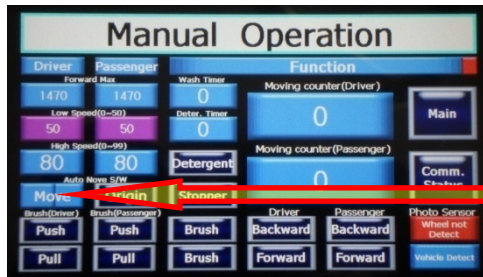


Dilute the detergent provided by us with water in the ratio of 1 to 2 and open the valve at the bottom of the detergent tank at 45 degrees.

4 Operation status of individual part



Touch "Manual" button as pointed by an arrow mark and the screen will be changed as shown below



- A. Press "Move" button and the brush(driver) will start first and then brush(passenger) in 2 seconds and both brushes will stop at the rear end.
- B. Press "Origin" button to move both brushes back at the same time to the original positions, where each of them initially started, and stop.
- C. Press "Push(Driver)" button to move the air cylinder(driver) forward inside and "Pull" button to return it to the original position. (The brush(passenger) button is also functioning in the same way)
- D. Press "Detergent" button to supply detergent through the detergent discharge tube and press the button one more time to stop supplying.
- E. Press "Washing Wheel" button on the top to rotate brushes clockwise and press it one more time to stop rotating. Press "Washing Wheel" button at the bottom to rotate brushes counterclockwise and press it one more time to stop rotating.
- F. Press and hold "Forward(Driver)" button, then the brushes move backward, and press and hold "Backward(Driver), then the brushes slowly move forward. (This is also applied to the movement of the brushes (Passenger) in the same way)
- G. Press "Main" to move to the previous screen and press "Start Auto" button to start operation.
- H. Press "Comm. Status" to move to the Communication Status screen on which you can check the current communication status of the product as shown below.

(Note: You are required to contact the authorized technician in this screen)



III. Washing Wheels

1 How to operate main screen



- A. "Counter", "Position Setting" "Vehicle Detect", "Stopper Opened" or "0" button in purple background next to the "Position Setting" button is not in use.
- B. The number displayed in the blue button on the top right next to "Counter" button means the accumulated number of equipment use.
- C. You can set "Wash Time". Press the purple button next to "Wash Time", resulting in popping up a numeric keypad, and enter wash time in the keypad you want to set and then press "ENT" to confirm. You can also change wash time by doing the same. (Wash time starts from 2 seconds increasing by 1 second up to 10 seconds but odd numbers only should be entered beyond 10 seconds)
- D. You can also set the detergent time. Press the purple button next to "Detergent" button, resulting in popping up a numeric keypad, and enter detergent time in the keypad you want to set and then press "ENT" to confirm. (Detergent time can be set freely without restriction)
- E. Press "Go To Origin" to stop operation and return brushes to their original positions.
- F. Press "Forward" button to move brushes manually
- G. Press "Backward" button to move brushes back to their original positions.
- H. "Semi Auto" is the mode you can operate the brushes of the equipment semi-automatically when you know the distance between the wheels of a vehicle by pressing the corresponding button to the distance between the wheels on the semi-automatic screen and then "Start Washing" button.
- I. "Wheel Not Detect" button, as the most important part of this equipment, tells users that the equipment is ready to operate when it is red but that the sensor is defective and automatic operation cannot be started when it turns to blue.
- J. Press the Korean flag on the bottom left of the screen for menu in Korean language or the Union Jack in English.
- K. Press "Start Auto" button to move to Automatic Operation screen and start washing.



Automatic Operation screen shows the progress of the operation according to the sequence of work flow in order of, from the top left side, "Brush Moving", "Push", "Washing", "Washing Completed" and "Returning". And the operation status can be also monitored according to the background color of "Operating" button on the right (Red means normal operation) and "Wheel Sensor" button will display "Wheel Not Detect" when a failure occurs.

- L. "Start Washing" button in black background on the bottom right of the screen is not in use and "Main" button is pressed when to forcibly stop operation of washing and go back to "Main" screen.

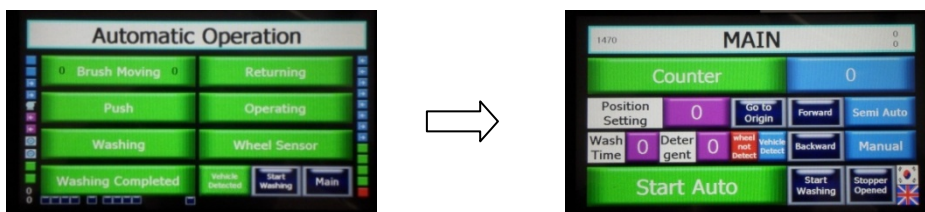
1. Automatic Operation



A. When the front wheels of a vehicle moved to the stop position after the vehicle entered the equipment, the driver is asked to put the car in neutral (N position) and take his/her foot off the brake. The vehicle is now ready to start wheel washing.

※Note: Make sure to get rid of foreign objects such as vinyl, etc. attached to the bottom of the vehicle before starting washing. (It may cause malfunction of the equipment when detected by a sensor)

B. Press "Start Auto" button on the "Main" screen. The screen will be changed as shown in the picture below (left) and it starts wheel washing automatically. After washing process is completed, the screen moves back to "Main" screen (right) automatically for next wheel washing.



2. Semi Auto Operation



Press "Semi Auto" button on the "Main" screen when the front wheels of a vehicle moved to the stop position after the vehicle entered the equipment. The screen will be changed as shown in the picture below (left). Press "Start Washing" after entering the distance between wheels of the vehicle, and the equipment automatically performs the same process as done in the automatic operation mode.

※ **Note: Make sure to remove objects such as vinyl, etc. attached to the bottom of the vehicle before starting washing.**
(It may cause malfunction of the equipment when detected by a sensor)



3. Manual Operation



As a temporary way you can use when the sensor is found defective, press "Start Auto" after pressing and holding "Forward" button on the "Main" screen until brushes are moving forward to the center of the rear wheels of a vehicle. From that point, the equipment will automatically perform the same process as done in the automatic operation mode.

※ **Note: Make sure to check both driver and passenger seats to confirm that brushes are placed properly at the center of wheels before starting wheel washing.**

IV. Troubleshooting

This chapter describes possible causes and solutions to the problems occurred by user's mistakes or part defects while the product is in use, and so operators are required to be familiar with this chapter for proper handling of the problems and to contact the authorized technician if the problem is remained unsolved.

1. The product is not working after pressing "Start Auto" button

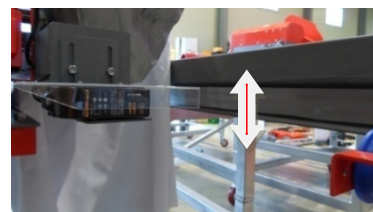
Causes: Sensor error/ Backward limit is ON state



Operation of the product is normal when the background color of "Wheel Not Detect" button pointed by an arrow is in red, but it is not when it turns to blue.

※Solution: Check first whether the background color of the button marked by an arrow turns to red when shining with a reflector. If it turns to red, the sensor is normal but if not, it is defective and should be replaced with a new one.

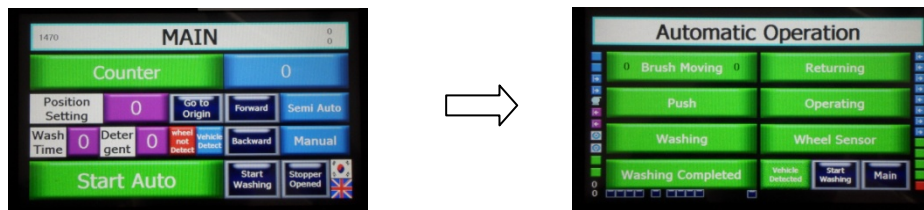
The background color changes when the angle of the sensor is not properly aligned. Align the sensor's angle correctly to make the background color of the button, pointed by an arrow in the picture, turn to red by slowly moving it up and down little by little.



As for the limit sensor, the plate should be placed on the limit sensor (proximity sensor) as shown in the picture on the left. When the plate is out of place as shown in the picture on the right, the product is not working. In this case, the problem can be solved by pressing "Manual" button on the "Main" screen and "Pull" button of the corresponding brush side on the "Manual Operation" screen. The problem occurs when the pressure of the air compressor goes down to the point lower than the required level.

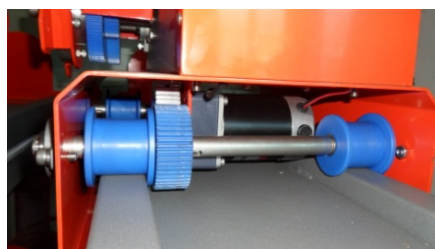


2. The product is not working even after pressing "Start Auto" button and changing the screen to "Automatic Operation".



Causes: Defective moving motor / Gear detached from the moving motor

The problem is caused by the defect in the moving motor or the detachment of the gear from the motor as the fixing device becomes loose. Check first if the gear is attached properly to the motor. If it is found it is attached to the motor, it indicates the motor itself is defective and to be replaced with a new one.

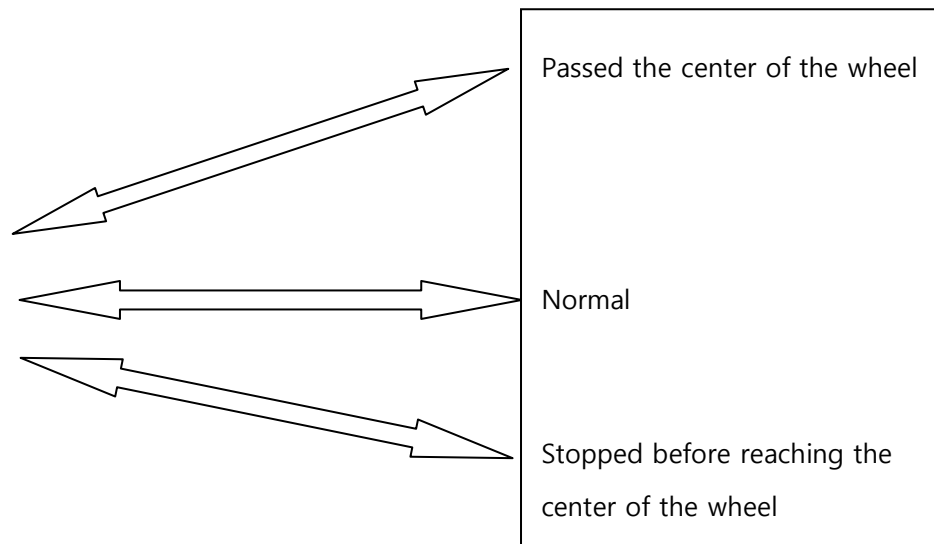
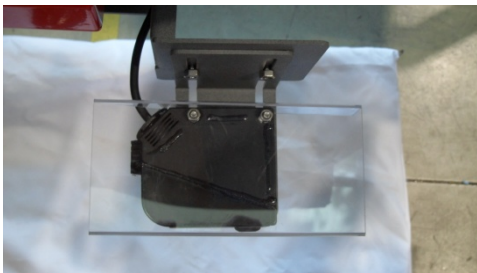


3. Brush stopout of the center of the wheels, or start working before reaching the center of the wheels after brushes were moved after pressing "Start Auto" button.

※ Caution: In this case, the product should be immediately stopped by pressing the emergency switch or turning off the main power switch to avoid damage to the vehicle.

Cause: Deformation in the reference point of the sensor

This problem can be caused by an external shock, which is applied while in use or due to the loose fixing bolt, and solved by adjusting the angle correctly.



- A. The sensor is in a twisted position as shown in the picture above if it stops after passing the center of the wheels. In this case, turn it about 1~2mm in the direction of the arrow.
- B. The sensor is in a twisted position as shown in the picture above if it stops before reaching the center of the wheels. In this case, turn it about 1~2mm in the opposite direction of the arrow.
- C. In case of A and B above, repeat the alignment until it stops right at the center of the wheels. The more it become close to the center of the wheels, the less turning is required.

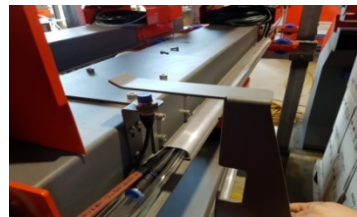
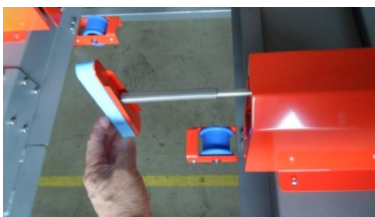
4. Brush does not move toward the vehicle after the brush stops at the center of the wheels after pressing "Start Auto" button.
5. Brush does not return to its original position after wheel washing is completed.

Causes: The switch of forward limit or backward limit is ON state or wires are broken down

Limit switch for vehicle width detection has been turned off. It should be ON position after the width of the vehicle is detected by the vehicle width detection lever. This problem occurs when the switch is turned ON or when wires are broken down due to an external interference.

Solutions: connect broken wires and tape them if the wires were found broken down, or try to push and pull the vehicle width detection lever gently, or press "Pull" button on the "Manual Operation" screen as described in troubleshooting 1 above to make the backward limit sensor to be positioned in the picture below.

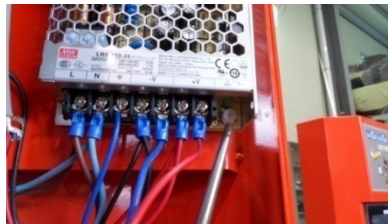
If the problem is remained unsolved after applying above measures, the limit sensor is defective, and to be replaced with a new one.



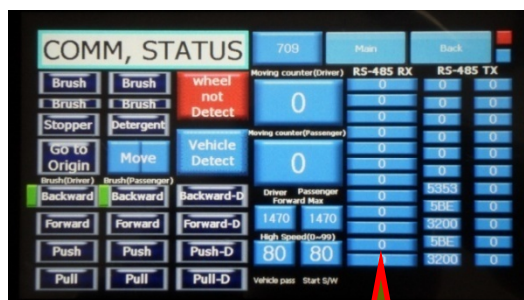
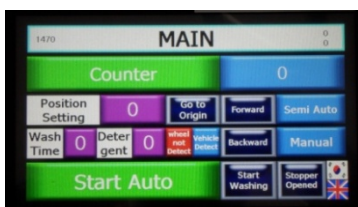
6. The product is not working properly due to the reason other than ones described above.

Cause: Unstable communication system

Open the rear panel of the communication box and check if the green LED of SNP is ON state. If it is in OFF position, it is due to momentary overvoltage.



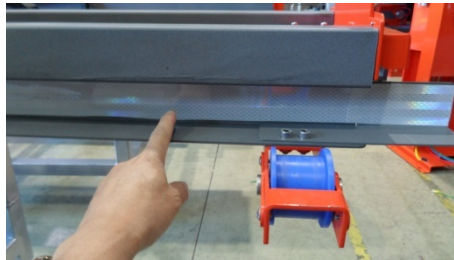
You can check the status of RS485 RX in the "COMM, STAU" screen. Press "Manual" button on the "Main" screen and then 'Comm Status' button on the "Manual Operation" screen sequentially as shown in the pictures below. You can find all the boxes under RS485 RX on the "COMM, STATUS" screen shown with "0"s as pointed by a red arrow, which indicates that the communication status is bad, and you are required to contact the manufacturer for technical support.



7. Other items to be frequently checked

Perform inspections regularly for the items as shown in the pictures below to keep the product working in the optimal conditions.

- A. Keep the reflector clean for the sensor to recognize the light.



- B. As a valve controlling "Pull" and "Push" speed of brushes, you can control the pressure by pressing "Pull" and "Push" button on the "Manual Operation" screen. Turn it clockwise to slow down the speed and counterclockwise to speed up



- C. Comb the brushes when the strands of them are tangled and twisted and replace them with new ones by unscrewing 2 bolts with a hexagon L-wrench in case they are severely worn out.



8. Product Warranty

Thanks for choosing Wheel Wash System from Yusung E&G.

This product was manufactured through the strict quality control and inspection process. We provide product warranty in accordance with the General Regulation on Consumer Dispute Resolution for Consumer Damages by item notified by the Fair Trade Commission as follows. Please contact our customer service center if the product is found defective.

■Purchase Information

Product Information	Product Name	Wheel Wash System	Model Name (S/No.)	GNS-7000F (S/No.:)
Customer Information	Company Name		Tel No.	
Purchase Information	Date purchase		Warranty Period	One year from the date of purchase
Dealer Information	Name		Tel No.	
	Address			

■Free Warranty

- ◆Free warranty service will be applied to the failure in the performance and function of the product within warranty period (one year from the date of purchase) occurred in a normal use.
- ◆The warranty term is valid starting 3 months (product shelf life) after shipment date from the manufacturer in case the date of purchase is not determined.
- ◆Warranty period by item

Item	Type of Damage	Warranty Period (Complete unit)	Warranty Period (Individual item)	Warranty after repair
Main body	Product failure in a normal use	1 year	1 year	3months
Accessories		1 year	6 months	Not Applicable
Consumables		Not Applicable		

Part retention period is 5 years from the date of production stop.

▣ Chargeable Warranty

◆Request for service not considered as product failure
In case a customer requests service due to its poor operation experience (simple change in setting and adjustment, etc.)
In case a customer requests data entry to the product
◆In case a failure occurs due to a negligence of a customer
Failure or damage to the product due to user's careless handling (caused by fall, impact, damage, excessive operation, etc.)
Failure or damage caused by repair or modification done by a customer or a third person other than a person authorized by the manufacturer
Failure or damage caused by using cables or optional items other than components authorized by the manufacturer
◆In other cases
Failure or damage caused by natural disasters (fire, salt, flood, etc.)
In case the life of consumable goods comes to an end

All contents and images contained in this manual are subject to change, add or delete without prior notice for further product improvement.

◆Manufacturer	전화/팩스
YUSUNG E&G 5, Wicheon 2-gil, Nongong-eup, Dalseong-gun, Daegu, Korea HTTP://www.yusungeng.com	TEL. 053-627-5744 FAX. 053-627-5746