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## ***1. Safety Instruction***

### **1-1. Purpose**

This equipment is full automatic oil exchanger to exchange inside oil of Auto Transmission totally. The amount of exchanged oil is indicated to 7ℓ after power on, and it is possible to adjust per 0.5ℓ. You can find out trouble by checking oil temperature.

Caution ! You should not use this equipment until you read and understand this manual fully.

### **1-2. Warnings & Cautions**

- ① Don't use this equipment except for the person full understanding this manual.
- ② Be careful to burns because of handling used oil with high-temperature.
- ③ In case of skin contact with A.T.F oil, you should clean with soapy water because it can cause inflammation.
- ④ You can't use this equipment such as engine oil, gasoline, light oil and kerosene etc except for A.T.F oil.
- ⑤ Contact the selling agent immediately in case of mal-function of operating panel or abnormal noise of motor after power off.
- ⑥ Keep main body and reservoir clean.
- ⑦ Fix caster's brake under operation.
- ⑧ Don't remodel this equipment.
- ⑨ Exchange A.T.F after fixing moisture penetrated part in case of confirmed car with milky colored oil due to moisture penetration.
- ⑩ In case moisture is penetrated into the body of exchanger, you should power plug off from the wall socket because of cause to a fire or electric shock .
- ⑪ You should power cord out during non-operation.

## 2. Introduction

### 2-1. Characters

- ① It is possible to full exchange of A.T.F in the inside Auto Transmission such as cooler, convert and hose line, and this prevent from automission's damage and power drops by residual A.T.F.
- ② In spite of reverse connection of INPUT and OUTPUT between transmission and oil exchange, the direction is changed to right flow automatically.
- ③ It is possible to apply to the car without dipstick.
- ④ Before full automatic operation, you need just set the amount of oil for exchange and push the button, "START".
- ⑤ You can do manual adjstment after oil exchange.
- ⑥ The consumption of new oil is less because it is designed to start new oil's injection after discharge 1ℓ of used oil .
- ⑦ It is possible to choose any kinds of new fluid what users need.
- ⑧ It is possible to change oil of transmission for the large-sized bus and trucks,

### 2-2. Specification

Product		Fully Automatic A.T.F Exchanger
Model		AUTO-2010 II
Power		AC 100V / 50-60Hz
Pump		Trochoid Pump
Capacity(P/P)		4.5ℓ/ min/1,800rpm
Tank	New Oil	22 ℓ or Fail or Drum
Capacity	Old Oil	22 ℓ or Drain Tank
Size		(W) 535 × (D) 510 × (H) 1,100 mm
Weight		about 80 kg

### 3. Functional Description of Operating Panel



- |                                 |   |
|---------------------------------|---|
| 1. SET 20ℓ :                    | Set button for residual amount, 20ℓ.<br>(Push for 10seconds after checking residual amount of new oil)                                    |
| 2. REFILL NEW FLUID :           | Alarm lamp for shortage of new oil<br>(Lamp on if the amount of oil is below 8ℓ)  |
| 3. SET AMOUNT :                 | Window for setting amount of discharged old oil<br>(Initial set point is 7ℓ)  |
| 4. NEW FLUID :                  | Window for the amount of new oil  |
| 5. OLD FLUID :                  | Window for the amount of old oil  |
| 6. TEMPERATURE :                | Window for temperature of old oil   |
| 7. UP :                         | Button for setting up the amount of oil for exchange  |
| 8. DOWN :                       | Button for setting down the amount of oil for exchange  |
| 9. CLEAR :                      | Set button for windows of new oil injection and old oil discharge to 00.0   |
| 10. DISCHARGE :                 | Button for manual discharge of used oil to the vessel, and operate at<br>at only CIRCULATION MODE   |
| 11. INJECTION :                 | Button for manual injection of new oil to the vessel, and operate at<br>at only CIRCULATION MODE  |
| 12. CIRCULATION MODE :          | Led lamp on after power on during circulation   |
| 13. EXCHANGE MODE :             | Led lamp on after pushing start button during oil exchange  |
| 14. CHANGE IN/OUT PORT :        | Button for return the direction of oil line automatically in case of reverse<br>connection between oil line of transmission and exchanger |
| 15. START & STOP :              | Button for start, temporary stop and re-start of oil exchange after setting   |
| 16. Pressure Gauge :            | Gauge for the transmission pressure   |
| 17. Pressure Regulating Valve : | Valve for adjusting speed of old oil  |

Set to 1kg/cm<sup>2</sup> for the cars without Dipstick

18. NEW OIL FLOW INDICATOR : Window for new oil

19. OLD OIL FLOW INDICATOR : Window for old oil

## ***4. Preparations***

### **(1) Automobile Check**

- ① Fasten side brake completely after stop the car at even place.
- ② Set SELECTOR LEVER to "P", and warm up for 10 - 15 minutes.
- ③ Change the gear from "P" to "1" step by step with pushing brake pedal during idle state, and then return to "N".
- ④ Check flow rate by dipstick.

### **(2) Oil Exchanger check**

- ① Plug in the power supply, then power on.
- ② Check the led lamp is "CIRCULATION MODE".
- ③ Check the amount of new oil in the tank by opening back door.
  - ☞ If residual the amount of new oil is less than 8ℓ, supplement new oil fully by pushing the button, "SET 20ℓ".
  - ☞ Lamping and buzzer means that residual amount of oil in new oil tank is less than 8ℓ.  
In this case, fill reservoir, 20ℓ up new oil, and then push the button, "SET 20ℓ" for 10 secs.

#### **※ Assembly of New Oil Tank**

Open back door, and connect to new oil tank after jointing suction hose to long pipe.

#### **※ Change the new oil tank, and push the button, "SET 20ℓ" for 10seconds.**

(It follows that residual amount, 20ℓ is filled, and start down count as the amount of exchanged new oil)

- ④ Empty the tank for used oil.

## 5. Oil Exchange

### 5-1. Connecting Method between Oil Line and Oil Exchanger of Transmission

The transmission and oil cooler are connected by the hose, "OUT" , discharged to cooler, and the hose, 'IN', returned to cooler from mission.

- ① Remove any one what you can easily.
- ② Select and connect proper adapter.
- ③ Connect to INPUT and OUTPUT hoses of exchanger.

### 5-2. Connection Checkup to Oil Line and Oil Exchanger of Transmission

- ① Start the vehicle.
  - ② In case pressure gauge is increas, check if the position of check-ball is upside on the window for used oil.
  - ③ If ② is OK, start oil exchange because it means proper connection between oil line of transmission and oil exchanger.
  - ④ If ② is not satisfied, it means reverse connection between oil line of transmission and oil exchanger.
  - ⑤ Push the button "CHANGE IN/OUT PORT", then it is returned to proper connection automatically.  
(You don't need to change hose connect-ion after vehicle stop)
  - ⑥ If the check-ball's position of pressure gauge is still downside on the windows for used oil after pushing button seveal times, you should stop oil exchange because it means mal-function in the car.
- ※ Don't exchange oil until the pressure of transmission is less than 0.5 kg/cm2 by pressure gauge.
- ※ If oil temperature is higher than 100℃ , change oil after fixing.

### 5-3. Oil Exchange

#### ○ Cautions !

Adjust the pressure to 1 kg/cm<sup>2</sup> by PRV, pressure regulating valve on the cars without oil dipstick

- ① The basic value is set to 7ℓ on the window, "SET AMOUNT".
- ② Push the button "UP" or "DOWN" to set the oil amount for exchange.
  - ☞ The oil amount for exchange is set by adding about 1 - 1.5ℓ to guide line of ch.6 after 20,000 - 30,000 km driving.
- ③ Push the button, "START"
  - ☞ It is designed to start new oil injection after discharge 1ℓ of used oil.
- ④ It sounds the noise of buzzer after finishing oil exchange.
- ⑤ Check the oil amount of transmission by dipstick, then stop an engine.

#### ※ Adjustment of Manual Operation

The shortage or over injection, indicated by dipstick, can be occurred from the influence of oil viscosity or mission's pressure or air bubble etc after finishing exchange.

In these cases, you can adjust by the two button of "MANUAL".

- ☞ In case of shortage, push the button, "INJECTION".
- ☞ In case of over injection, push the button, "DISCHARGE".

- ⑥ Remove hoses from the automobile, then connect oil hose of automission to original state for finishing the work.
- ⑦ Power off after oil exchange.

#### ※ Adjustment by Manual Operation

The shortage or over injection, indicated by dipstick, can be occurred from the influence of oil viscosity or transmission's pressure or air bubble etc after finishing exchange.

In these cases, you can adjust by the two button of "MANUAL".

- ☞ In case of shortage, push the button, "INJECTION".
- ☞ In case of over injection, push the button, "DISCHARGE".



## 6. The Regulated amount of Oil as Model of a Car

(Unit : ℓ)

Hyundai, Kia Motors			SPORTAGE		0 6
ATOS		0 4	FRAGIO		0 6
EXCEL		0 6	SABLE		1 4
SCOOP		0 6	RIO(SF)		0 6
ELANTRA		0 6	CASTA		0 6
ACCENT		0 7	VISTO		0 5
AVANTE(XG)		0 7	OPTIMA(LEGAL)		0 8
TIBURON		0 7	CARNIVAL	gasoline	0 9
MARCIA	0 2	0 6		diesel	0 8
	2.5	0 8		LPG	0 7
	Taxi	0 6	RETONA		0 6
SONATA		0 6	SORENTO		
SONATA DO		0 6	CARENSE	gasoline	0 8
EF SONATA	1.8	0 7		diesel	0 8
	2.5	0 8		LPG	0 5
GRANDEUR		0 6			
GRANDEUR(XG)	4 steps	0 8	Daewoo Motors		
	5 steps	0 9	TICO/MATIZ		0 4
GALLOPER		0 6	RANOS		1 0
NEW GRANDEUR	2.0/2.4	0 7	CIERO		0 6
	2.5	0 8	REGANZA		0 6
	3	0 8	PRINCE		0 6
	3.5	0 8	BUROEM		0 7
STAREX		0 7	ESPERO		0 7
GRACE		0 7	ACADIA		0 7
SANTAMO		0 6	REZZO		0 9
TERACAN	2.5	0 8	MAGNUS		0 7
	3.5V6	1 1	CALOS		0 7
RAVITA	1.5	0 7	Ssangyong Motors		
	1.8	0 8			
BERNA		0 7			
SANTAFE			MUSSO 602		1 0
ECOUS			MUSSO 601		0 9
CLICK			CHAIRMAN		0 8
TRAZET(XG)			KORANDO 321		1 0
PRIDE		0 5	KORANDO VAN		1 0
AVELLA		0 6	REXTON		1 0
CAPITAL		0 7	MUSSO SPORTS		1 0
CONCORD		0 7			
SEPIA		0 7	Samsung Motors		
SEPIA II		0 5			
CREDOS		0 7	SM518		0 7
POTENTIA 2.2		0 8	SM525		0 9
POTENTIA 3.0		0 7	SM520V		0 9
ENTERPRISE		0 8	SM3		

## 7. Troubleshooting

Trouble	Cause	Measures
Power supply	Improper connection to the power cord	Proper connection
	Cutting a fuse off	Change the fuse
	Connection to control PCB board	A/S
	Poor goods	
Supply of new oil	Low flowrate because of low oil temperature and high viscosity	Increase oil temperature Store at indoors or the place higher than 0°C during winter
	Oil leakage	A/S
	Improper connection between a input hose of new oil and a coupler	Proper connection
	Empty new oil tank	Supplement new oil
	Motor or pump trouble	A/S
The flowrate doesn't indicate	Poor flowmeter	A/S

## ***8. Quality Guarantees***

### **8-1. Guarantees**

We would give free check and maintenance in case of malfunction within 1 year.

But, we cannot guarantee to trouble cause from the belows ;

- ① User's misuse
- ② User's remodeling or conversion
- ③ Force majors such as a fire, an earthquake, storm and flood damage etc.
- ④ Exhaustable spare parts

Cautions ! The purpose of this equipment should be restricted to only oil exchange  
We cannot guarantee to the trouble caused from the other purpose.

### **8-2. A/S**

- Guarantee period : 12 months after purchasing
- Phone number : 82-31-432-5634
- Fax number : 82-31-498-5695