

OPERATION MANUAL

Automatic Transmission Exchange Machine



The ATS 320 incorporates the latest microcomputer technology available today. This makes it the easiest and most accurate machine on the market. It calculates the total flow of the used ATF fluid being pumped out from the transmission and simultaneously pumps in the exact amount of new ATF fluid into the transmission. This process eliminates any possibility of over-filling the transmission.

Always wear protective devices for eyes and hands when operating the ATS Machine. Always set PARKING BRAKE and install fender covers when working on a vehicle.

Prior to servicing the vehicle, test drive the vehicle to ensure proper operation.

CONNECT MACHINE TO THE VEHICLE

Caution: Do not have shop air connected to the machine at this time.

- ⌘ Disconnect the transmission cooler line (at the radiator if possible).
- ⌘ Select the suitable adapters for the two disconnected open ends, attach the adapters, and connect the Supply and Drain hoses to the adapters.
- ⌘ Connect the 12 volt power cord to the vehicle's battery, red to positive - black to negative.
- ⌘ The ATS machine is automatically in circulate mode.

Pressure/Flow/Temperature Diagnosis

- ⌘ Start the vehicle.
- ⌘ Press **RESET** button on touch pad **once**.
- ⌘ Press the **PSI/C/TIME** button on the touch pad **once**, This will display the transmission pressure. If there is no pressure, switch the toggle switch



on the right hand side of the display panel / touch pad to reverse the flow into the machine (or turn the vehicle off, and reverse the hose connections).

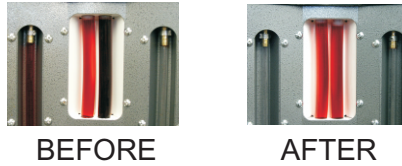
- ⌘ If the pressure reading is very low, make sure the vehicle transmission fluid is circulating. On the dipstick, it will say to check the level in Park or Neutral. On Chrysler mini-vans, select the highest pressure.
- ⌘ Check manufacturer's specifications according to the transmission in the vehicle (if the pressure is not normal - too high, too low, or fluctuating erratically - turn the vehicle off and discontinue transmission fluid exchange until problem has been identified and rectified).
- ⌘ Check the fluid level in transmission. Fill if low, and drain if over full (see Fill and Drain procedure on Page 2).
- ⌘ Press **PSI/C/TIME** button a **second** time to diagnose the fluid temperature.
- ⌘ Press **PSI/C/TIME** button a **third** time to diagnose the fluid flow volume. The number shown is in Liters/Min. *See conversion chart for US gal/min (page 4).

AUTOMATIC CLEANING AND EXCHANGE PROCEDURE

- ⌘ Ensure that the ATS machine has enough new fluid in the tank, and the used fluid tank has enough room to complete the fluid exchange.
- ⌘ Add transmission cleaner through the filler tube.
- ⌘ Press the **RESET** button.
- ⌘ Press the **PSI/C/TIME** button **4 times** in quick succession, to enter the Timer mode.
- ⌘ Key in the desired minutes for the cleaning cycle (10 minutes is suggested).
- ⌘ Press the **EXCHANGE** button, and key in the desired amount of fluid (Lit/QT) to be exchanged. (Check the vehicle fluid specifications, and add one or two extra Lit/QT for a thorough exchange).
- ⌘ Press **START**.
- ⌘ The machine will first go through the cleaning cycle, (the viewer will display the count down in minutes), and then the machine will automatically complete the exchange cycle (the viewer will display the countdown of the Lit/QT exchanged).
- ⌘ During the cleaning cycle, ensure that the parking brake is set, then, move the gear selector of the vehicle through the gears several times to ensure cleaning of the valve body.
- ⌘ The pump inside the ATS machine is microprocessor controlled, And it will match the old fluid flow with the new fluid flow (you may

hear the pump start and stop depending on the flow of the transmission).

- ⌚ The two visual tubes on the front panel will verify that all of the fluid is



- ⌚ After exchange process is completed, the machine will automatically return to circulate mode.
- ⌚ Check transmission fluid level. The proper level should be on the lower half of the acceptable range. Add the transmission conditioner/ treatment at this time. NOTE: The transmission fluid level will rise as the new ATF reaches operating temperature.
- ⌚ If adjustment is necessary, perform required task (either drain or fill to attain the correct level - Refer to “Fill/Drain Procedure Transmission Filter Change”).

NOTE: If desired, a transmission filter change can be completed at this time. Refer to “Fill/Drain Procedure Transmission Filter Change”.

After service you MUST test drive vehicle and THEN check fluid levels once again to ensure proper operating levels.

Optional Manual Cleaning and Exchange Procedures

***Caution: Do not have shop air connected to the machine during this process!**

- ⌚ Add cleaning solution through dipstick tube. Start vehicle.
- ⌚ Check fluid level in transmission. Press **RESET** once on the ATS machine. Press the **PSI/C/TIME** button **4 times** in quick succession. Key in the desired time in minutes for the cleaning cycle. Press **START**.
- ⌚ The ATS will count down the minutes entered, and will be in circulate mode when the countdown clock is finished. NOTE: If desired, a transmission filter change can be completed at this time. Refer to “Fill/Drain Procedure Transmission Filter Change”
- ⌚ To exchange fluid, press the **EXCHANGE** button on the key pad.
- ⌚ Key in the quantity of Lit/QT you want to exchange (refer to the vehicles specifications for capacity, and add 1 to 2 Lit/QT to ensure a thorough exchange).
- ⌚ Press the **START** button. The Lit/QT will start counting down in the viewer window. The pump inside the ATS machine is microprocessor controlled, and it will match the old fluid flow with the new fluid flow (you may hear the pump start and stop depending on the flow of the transmission).

- ⌚ The two visual tubes on the front panel will verify that all of the fluid is exchanged (the old and new fluid tubes will be the same color. Note the picture diagram).
- ⌚ After the exchange process is completed, the machine will automatically return to the circulate mode.
- ⌚ Check the transmission fluid level. The proper level should be on the lower half of the acceptable range. Add the transmission conditioner / treatment at this time. NOTE: The transmission fluid level will rise as the new ATF reaches operating temperature.
- ⌚ If an adjustment is necessary, perform the required task (either drain or fill to attain the correct level, Refer to “Fill/Drain Procedure Transmission Filter Change”).

Process is Complete.

After service you MUST test drive vehicle and THEN check fluid levels once again to ensure proper operating levels.

DRAINING THE USED FLUID TANK

- ⌚ Connect shop air supply to the air nipple on the machine, put the drain hose (grey hose on the back of the ATS machine) into a waste oil tank, and open the ball valve at the end of the drain (grey) hose.
- ⌚ When the used fluid tank is empty, close ball valve, reconnect hose to storage hanger, and disconnect air supply.
- ⌚ To set the drain tank pressure: An air regulator is located in the large bottom pocket of the machine. Pull out the pressure regulator knob, and turn it clockwise to increase pressure, or counter clockwise to decrease the pressure. (The correct pressure is 7 - 8 PSI).

FILL / DRAIN PROCEDURE TRANSMISSION FILTER CHANGE

- ⌚ Filter change is recommended according to manufacturers suggestion or when fluid is discolored.
- ⌚ With the engine running, press the **DRAIN** button on the touch pad. Enter the amount of fluid to be drained (2 to 3 Lit/QT is usually sufficient to drain the pan). The display is in tenths of a Lit/QT.
- ⌚ Press **START**.
- ⌚ The viewer will display the count down of the fluid being drained.
- ⌚ The ATS machine will return to circulate mode after the desired amount of fluid has been drained.
- ⌚ Turn the vehicle off, and remove the transmission pan and the filter.
- ⌚ Inspect for wear and metal particulate.
- ⌚ Replace the filter and pan.
- ⌚ **Do Not Start Engine**
- ⌚ Press the **FILL** button, and enter 4 to 5 Lit/QT of fluid to add.

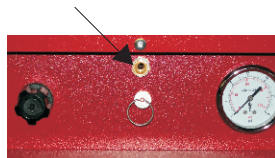
- ⌘ Press **START**, and the ATS machine will refill the transmission pan. The viewer display will count down of the fluid as it is being pumped into the transmission.
- ⌘ If you wish to complete a fluid exchange at this time, press **EXCHANGE**, key in the desired amount of fluid to be exchanged.
- ⌘ **Start the vehicle now**, let the vehicle run for 10 - 15 seconds, **THEN** press **START** on the touch pad. The ATS machine will complete the exchange and return to circulate mode when completed.
- ⌘ Check the fluid level when complete, and FILL or DRAIN to the correct level.

SEALED TRANSMISSIONS EXCHANGE SERVICE

- ⌘ Hook the ATS machine to a proper transmission cooler line. Install the injection adapter (ATS-FI), to either the drain or fill line. Add cleaning solution to the injection adapter. Start the vehicle, and set gear selector into proper position for pump activation.
- ⌘ Allow cleaner to circulate for the desired time, and complete an exchange service.
- ⌘ Always check for correct fluid level in the transmission when completed with the exchange service.
- ⌘ If adding fluid conditioner or treatment, turn vehicle off, disconnect the ATS - FI adapter, drain the adapter, fill with treatment, and reconnect the ATS - FI adapter to the exchange line. Start the vehicle.
- ⌘ In circulate mode, press the PSI / C /TIME button **TWICE** and observe the fluid temperature. Check the vehicle manual for correct operating temperature (usually between 120 - 140 F, or 50 - 60 C).
- ⌘ When the fluid is at normal operating temperature, check the fluid level at the level indicator on the side of the transmission. If low, use the **FILL** procedure of the ATS machine to attain the correct fluid level in the transmission.

OVERFLOW VENT

- ⌘ Air will vent out of this port.
 - ⌘ If used tank is overfilled used fluid will be expelled to protect internal parts.
- Always empty used fluid tank after each use.**



TROUBLE SHOOTING ERROR CODES

Error Code	Diagnosis	Remedy
Er "0" There is NO Pressure on the FILL side	<ul style="list-style-type: none"> ⌘ Machine may have run out of oil ⌘ Pressure sensor is not working ⌘ Pressure line has come off 	<ul style="list-style-type: none"> ⌘ Fill new tank & repeat procedure ⌘ Call Tech Support
Er "1" Fill pressure is too High connected	<ul style="list-style-type: none"> ⌘ Not connected to vehicle properly ⌘ Some vehicles may require the fill line to be connected directly to transmission not through cooler ⌘ Making sure transmission is circulating ⌘ Contaminated Cooler 	<ul style="list-style-type: none"> ⌘ Make sure both lines are coupled properly ⌘ If Supply line is into transmission cooler, reconnect to exit side of cooler so you are pumping directly into transmission, not through the cooler
Er "3" No signal from optical sensor	<ul style="list-style-type: none"> ⌘ Optical sensor failure ⌘ Electrical motor failure 	<ul style="list-style-type: none"> ⌘ Call Tech-Support Line
Er "5" Drain Pressure is too HIGH	<ul style="list-style-type: none"> ⌘ Possible problem with the transmission 	<ul style="list-style-type: none"> ⌘ Call Tech-Support Line
Er "6" pressure is too LOW	<ul style="list-style-type: none"> ⌘ ATS machine may be connected to the vehicle incorrectly ⌘ Transmission oil level low ⌘ Possible problem with transmission ⌘ Transmission filter may be plugged ⌘ Sensor line pinched ⌘ Pressure sensor not working 	<ul style="list-style-type: none"> ⌘ Press PSI button on Drain touch pad - if "0" pressure, refer to pg. 2 of manual ⌘ Switch the blue & black hoses ⌘ Make sure transmission is operating properly ⌘ Call Tech-Support Line
A ⁷ d If this appears after keying in a function & pressing start	<ul style="list-style-type: none"> ⌘ Poor battery terminal connections, not receiving enough power to perform function 	<ul style="list-style-type: none"> ⌘ Make sure connectors are making good contact to battery
Er ⁷	<ul style="list-style-type: none"> ⌘ Temperature sensor malfunction, The machine will continue to work 	<ul style="list-style-type: none"> ⌘ Change sensor for accurate exchange

QUICK REFERENCE

- ⌚ To drain fluid from transmission - press drain, quantity of fluid to be drained, then press START
- ⌚ To fill transmission - press FILL, quantity of fluid, then press START
- ⌚ Pressure reading - press the PSI/C/TIME button and the pressure will be displayed on the touch pad viewer
- ⌚ To check transmission oil temperature - press 2 times on the PSI/C/TIME button and the temperature will be displayed
- ⌚ To check transmission flow - press 3 times on the PSI/C/TIME button and the volume will be displayed
- ⌚ To use auto exchange feature, immediately after keying in the desired minutes of cleaning, press the Exchange button and the desired volume, then press START
- ⌚ To set cleaning circulate timer - press the PSI/C/TIME button 4 times in quick succession, key in desired time, then press START - a clock will count down in the viewer
- ⌚ To exchange transmission fluid - press the exchange button once then the quantity of fluid to be exchanged from the transmission, then press Start
- ⌚ If error has been made during any of the above procedures, Press the RESET button - then perform procedure again

ATS BACK FLUSH MAINTENANCE

A Monthly Service

- 1) Attach an open-end hose fitting to long black hose.
- 2) Place the hose either in the filler neck or in a bucket.
- 3) Hook up the machine to 12-volt power, press FILL then 1.0 Start. Repeat this three times. Then press the flow selector switch and repeat three times.
- 4) Connect air to the machine, and then press DRAIN-5-Start. Repeat this three times. Then press the flow selector Switch then press DRAIN-5-Start. Repeat this three times.

FLUID FLOW CONVERSION CHART

Liters/min	US gal/min	Liters/min	US gal/min
1.5	.39	3.9	1.03
1.6	.42	4.0	1.05
1.7	.45	4.1	1.08
1.8	.47	4.2	1.11
1.9	.50	4.3	1.14
2.0	.53	4.4	1.16
2.1	.55	4.5	1.19
2.2	.58	4.6	1.21
2.3	.61	4.7	1.24
2.4	.63	4.8	1.27
2.5	.66	4.9	1.29
2.6	.69	5.0	1.32
2.7	.71	5.1	1.35
2.8	.74	5.2	1.37
2.9	.77	5.3	1.40
3.0	.79	5.4	1.42
3.1	.82	5.5	1.45
3.2	.85	5.6	1.48
3.3	.87	5.7	1.50
3.4	.90	5.8	1.53
3.5	.92	5.9	1.56
3.6	.95	6.0	1.58
3.7	.98	6.1	1.61
3.8	1.00	6.2	1.64

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Technical Support Line 1-888-467-4142