

Clinic ladys getting lunch togeather.



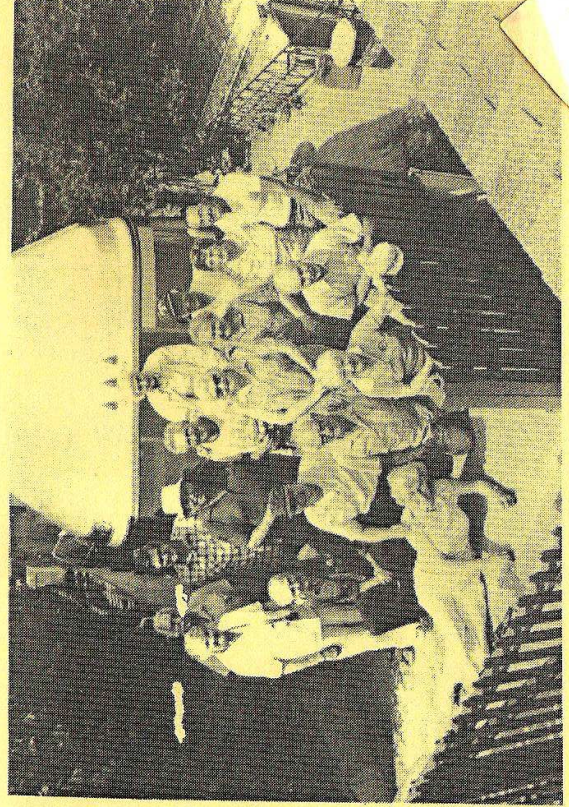
Clinic partisapants gathering at lunch.

WHALES ON WHEELS

5537 Pioneer Road
Boulder, Colorado 80301

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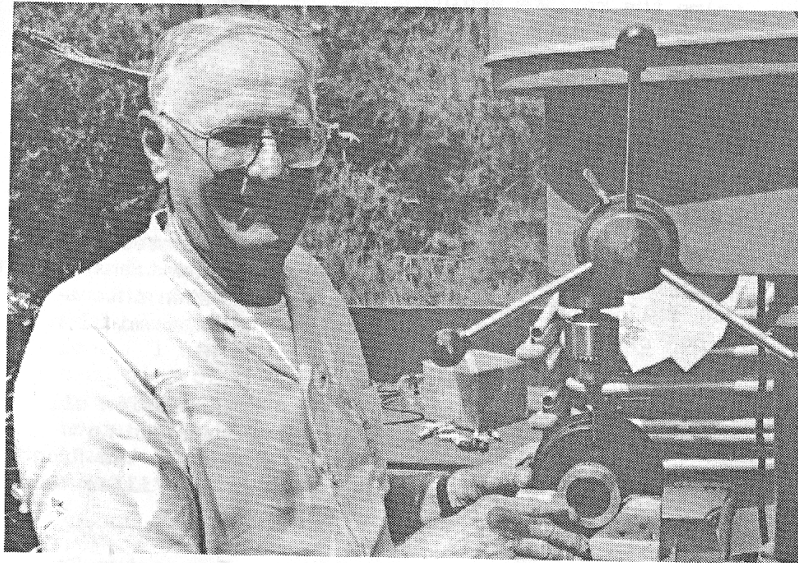
GROUP ULTRA VAN is dedicated to the preservation and
use of ULTRA Vans. This 22 foot unique motor home was
designed by David Peterson and built in Kansas until
1970. About 360 units were built.

COVER PHOTO: Transmission clinic partisapants
gather in front of Bob Franz's ULTRA in Art Ellers
front yard.

Opposit page: Art Eller the clinic "instructor".

DAVID PETERSON HAS CATARACT SURGERY

It's been two months since David had a cataract
operation. This has slowed him down quite abit when
it comes to reading and writing. He doesn't like to
be slowed down, but is accepting the situation.
Maybe a card to him would cheer him up.



TRANSMISSION CLINIC

Art Eller did it again at his home in the hills of
Los Angeles. A transmission rebuilding clinic was
held on April 10, 11 and 12th. The group stayed in
the ULTRAS, Arts home and elsewhere. About twenty
people showed up. With breakfast, lunches and
dinner and lots of socializing. The official program
started Monday morning. Art took an overhauled auto-
matic transmission and took it apart and put it back
together. Everyone watched, took notes and asked alot
of questions. Monday night dinner was a great pot
luck. Tuesday and Wednesday were spent working on
their own transmissions that they had brought with
them. Eight transmissions in all were rebuilt in
the three day session. Some had to be redone after
testing but with Arts watchfull eye, all went well.

COOLING THE CORVAIR AUTOMATIC TRANSMISSION

BY ART ELLER

Cooling the automatic transmission is especially important for the ULTRA Van motor home and some Forward Control vehicles. Such applications are using the maximum engine output most of the time which means that this maximum effort is also being transferred through the converter and the transmission to the rear wheels. The converter involves a lot of fluid friction which means heat. Over 90% of transmission heat is actually coming from the converter. It is this heat that we must get rid of!

Evidence of transmission overheating:

If you have oil coming out of the vent located at the top of the round front cover, you have the transmission too full of oil and the oil is being beaten into a froth or the oil is starting to boil. Transmission oil starts to boil between 290 to 300° F.

Another evidence of overheating is transmission oil burping out of the top of the filler tube and into the engine compartment. If you have oil on the front inside of the sheet metal shroud below the filler tube, I'll bet your transmission is boiling.

How Can You Monitor the Transmission Temperature?:

Of course the answer is a temperature gauge that will measure the pan temperature all the time. I have two identical gauges: One monitors the pan temperature of my engine oil, the second, the temperature of my transmission oil in the pan. Such gauges are available with the necessary sensor. Be sure the gauge can read to at least 300° F.

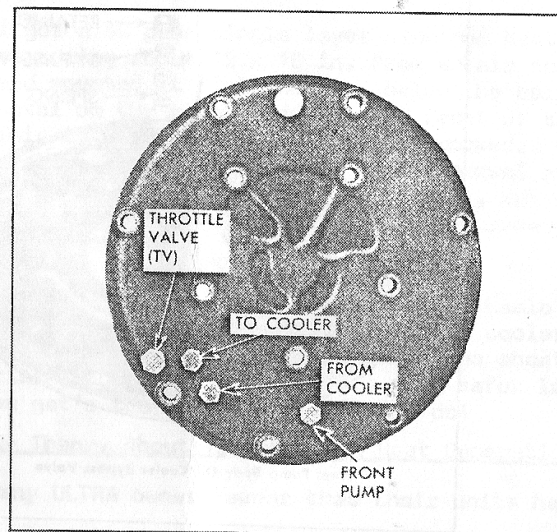
When mounting the sensors, be sure you check before drilling that the projecting sensor bulb will not hit inner workings. My transmission location is on the rear left hand side of the vertical pan wall, so it misses the valve body inside.

Personal History of ULTRA Van Temp Problems on #364:

We took delivery of our 1968 ULTRA as the second owner at 6 P.M. in Walnut Creek on a Wednesday evening. It had 17,500 miles on it and the owner told us the transmission had just been rebuilt. We didn't ask why!

My two sons and I had to be in school the next morning in Los Angeles at 8 A.M. I, as an engineering instructor, and the boys were in high school and junior high school respectively. We started the 360 miles home in a blinding rain storm. Within the first 20 minutes the driver's windshield wiper arm blew away. Stopped, removed and installed the right hand arm on left and continued. Quickly discovered all the water leaks. Stopped the bad one's with chewing gum!

Somewhere around Bakersfield, while my son was driving, I went back and opened the engine doors. This was the first time I had ever been right on top of a fully loaded engine as it pushed the vehicle down the road. I was amazed to smell and see oil flowing down each side of the transmission and blowing onto the exhaust. We stopped at Gorman and bought a can of transmission oil. Not too much was needed to top off the transmission. We continued on home arriving without further events at about 2 A.M.



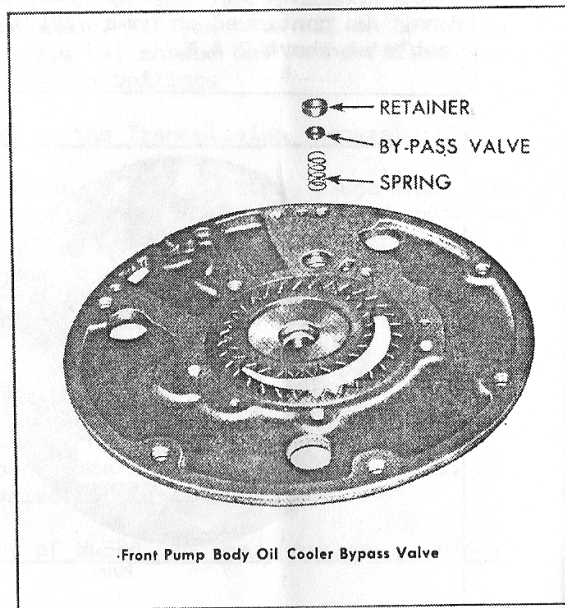
-Front Pump Cover Plug Identification

Fig 1.

Shortly thereafter, I installed my temperature system. I found the temperature would slowly creep up 100-150- 200- 250 and then stop around 285 or 290. Any hard pull and it would almost hit 300. I always had oil in the engine compartment.

Trying To Cool The Oil:

As an added cost option G.M. provided a trans cooler in their Forward Control vehicles. This consisted of a special front pump plate with a bypass valve built into it (see Fig. 2) and a front plate that has four (4) holes drilled and tapped for 1/8" pipe fittings (see Fig. 1). The bypass valve permits normal operation of the trans if the cooler plugs up or if you don't want to use the cooler. I found such a special front pump plate and front cover and installed them on my van. I made the cooler out of an air conditioning heat exchanger and installed it



In the large engine air duct on the right rear of the ULTRA. I was ready for our next trip. Watched that oil temp. gauge climb almost as before. Oil was still boiling on the hard pull. I made up six "U" shaped metal heat radiators and spot welded them to the underside of the trans. pan. That didn't help. I moved the heat exchanger from the air tunnel to the inside of the right rear wheel well thinking the air motion created by the wheel would give the necessary heat exchange. It was still over heating. I added a dash controlled blower that blew on the heat exchanger in the wheel well. I was still overheating.

In the mean-time, trying to get more hill climbing capability, I did a Christy Barden! I installed 3.89 differential gears and had the torque converter opened up and the tips of the turbine clipped off. This was to increase my stall speed from about 850 to 900 up to 1200 r.p.m. By so doing, the engine operated higher up on it's torque curve when hunkered down to min. speed climbing up that 7 or 8% grade. This all worked, but now I've got more heat problems because the converter is less efficient and producing more than normal heat.

Final Solution:

I got a 10 pass single layer aluminum heat exchanger measuring about 12 x 18 in. from an air conditioner and mounted it flat one inch below the belly sheet metal on the right side just in front of the axle. This is a vulnerable spot but it worked. Now my temperature hovers around 150% on the normal straight away but will climb to 200 on a hard pull, but no further. The trans. temperature follows very closely my engine oil temperature.

I did a similar installation on Lou Laslo's ULTRA but installed a large commercial oil cooler flat behind the right rear wheel where the sheet metal is rising toward the rear. This is a safer location and he get's the same temperatures I do!

My Theory About Transmission Heat Generation:

Many ULTRA owners swear that their units have never

heated. Some have temperature gauges and swear the oil never gets hotter than 175°. Others have had my experience.

If you listen to ULTRA'S, Corvair cars or Forward Controls start to move with automatic transmissions, some you hear only the exhaust and motor noise. On others you hear a sandy sound like sand in a pan being sloshed around. My theory is that the quiet ones will not heat but the sandy sounding ones will over heat. I'm sure it is coming from the converter and represents fluid motion with excessive friction and heat generation. Next time you are with a number of Corvair equipped vehicles, listen for this sound.

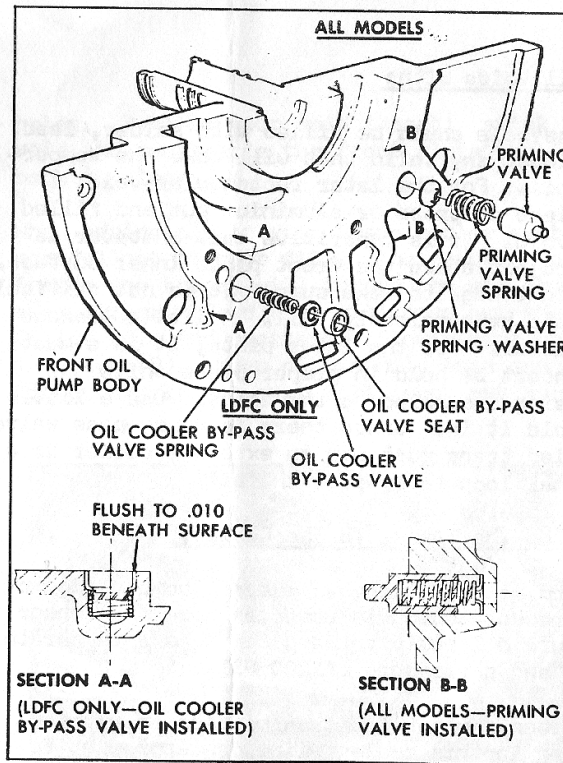
How to Convert Your Standard Automatic So You Can Add A Cooler:

At the second automatic transmission rebuilding session we held for ULTRA members in 1985, we traced out the oil routing and came up with a simple method of altering the standard transmissions.

First, the front plate (Fig. 1) has to have two holes drilled and tapped for the "To cooler" and "From cooler" lines to the outside heat exchanger. Find the smooth round spots between the two existing plugs. Mark the centers and drill and tap for a 1/8" pipe fitting. Do not tap too deep or the fittings will screw in too far!!

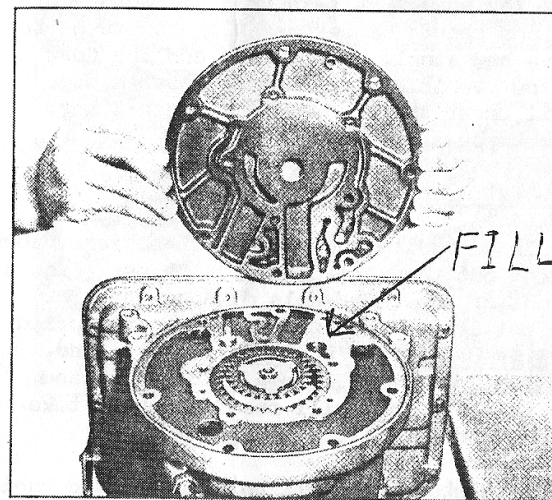
The second requirement is to fill the small void (Fig. 4) that will be right behind the cooler exit in the front plate. This void normally shunts the hot oil coming back from the converter directly down into the pan. Even as you drill and install an external cooler, if this void isn't filled, the oil will not go to the cooler, but continue un-cooled to the pan.

Early transmissions (1960 to 1963) have a deep key-hole shaped void and no priming valve. Later transmission (1964 to 1969) have a flat rectangular (3/4 x 1/2") void about 1/8" deep and the priming valve (Fig. 3). Most ULTRA van's have the later transmission unless it has been replaced.



-Front Pump Body and Components

Fig 3.



-Installing Front Pump Cover

Fig 4.

What To Fill Voids With:

The early keyhole could be filled with solder, lead, bondo or almost any solid that will take the temperature and oil. For the later rectangular void, I prefer a piece of brass or aluminium cut and filled to fit in void. It is imperative that whatever is used not project above the front plate inner surface. Use a straight edge to make sure. It is not critical that the void be completely full. A little leakage will not matter. For the later plate, it is a must that the insert be held in proper place while the plate is being assembled to the trans. Use a little epoxy to hold it in. Since there is no by-pass valve, this modified trans must use an external cooler or a pipe external loop to by-pass the oil.

Connecting Up The Trans. To The Cooler:

Use standard metal fittings. Where a combination of metal and rubber tubing is used, be sure the rubber is high pressure oil resistant and can take a temperature of 100° F. and a pressure of 200 PSI.

Caution! When you put the transmission in reverse, the pressure in this coolant line can approach 170 to 200 PSI. The hose must take this pressure and the connections should be secured with double garter clamps. I've had single clamps slip and the hose pops off. Your vehicle stops and you have a huge puddle of oil under the van/car. It doesn't harm the trans, but you aren't going anywhere.

In The Car/ULTRA Adaptation:

It is possible to modify the two items mentioned above without taking out the transmission. As per (Fig. 6), drop the front of the trans-axle down so that the front plate bolts can be remove and the plate pried out. DO NOT TAKE THE PUMP PLATE OUT! If you do, most of the inside guts will come sliding out and then you're in a fix that will require you to take the trans. out and bench it for reassembly.

With the front plate off, drill and tap the two cooler

holes. Make up your void insert; stick it into the void and reassemble the front plate and trans-axle back in place.

When adding oil to your trans cooler system be very careful not to over fill. The rotating elements inside the trans. will thrash the oil into foam if over filled. Said foam will come out the vent and filler tube and overheat. Slowly heat up the trans in drive (D). When oil is hot, then add as per dip stick. If you over fill, suck out surplus.

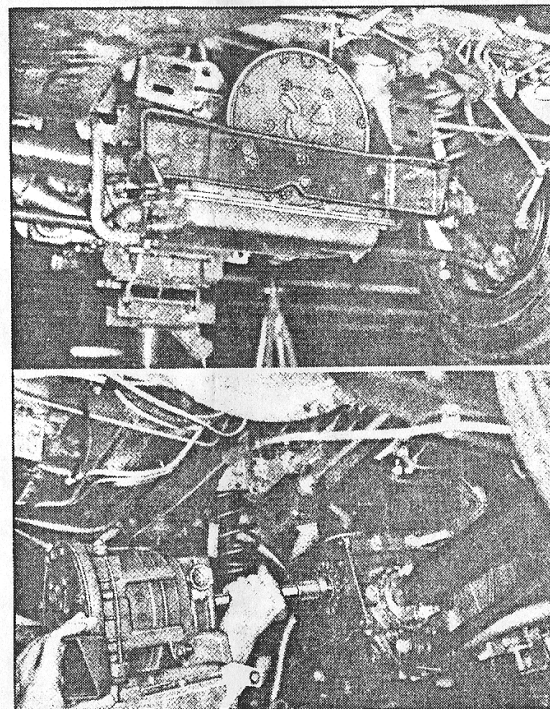
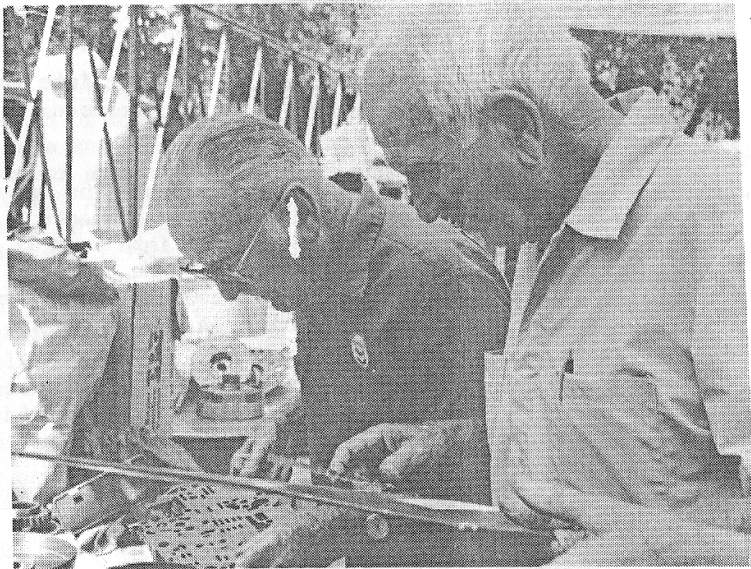


Fig 6.

-Removing Powerglide from Vehicle



Photos of members rebuilding their automatic transmissions.



Art Ellers back yard mechanics "Class room".



CLASSIFIED

FOR SALE: 1969 ULTRA Van Motor Home, SN 410, 64K miles, good condition, paint removed for painting, good windshields, 1½ set spare windshields, 140 HP engine, 110 HP spare engine. Many spare parts, new carpet, new drapes and upholstery. \$5800.00 with spare parts, \$5200.00 without spare parts.

Tom Silvey
(317) 335-3772

#100 1966 ULTRA Van, 455 Olds front wheel drive, automatic transmission. Dash and roof air, 62,000 miles. Paint excellent, interior sharp. \$8500.

Steve Harrison, Harrison Ford, Inc.
Jefferson, Iowa, 50129
(515) 386-2121 or
1800 255-2255 Ext. 3434

#292 ULTRA Van, engine recently overhauled, new differential, bearings and seals, electronic ignition, C.B. All new radials, new carpeting, excellent upholstery and exterior, air conditioned. \$7500.

Jack W. Moore
13203 Emerald Dr. NW
Gig Harbor, WA 98335
(206) 857-6906

#357 1968 ULTRA Van, 455 Olds Toro rear drive, Professionally converted. All new radials this past summer. Oversized fridge. Completely remodeled inside. Roof air conditioner. 110 volt. Paint stripped, looks like Air Stream. Nice coach for \$7500.

Bill and Bobbi Hull
310 Polk
Charleston, Illinois 61920
(217) 348-1750

1968 ULTRA Van, 41,000 original miles, 140 HP., 4 carb engine, heads ported and polished, new seals, burns regular gas. Roof air, instant hot water system, straight body, aircraft aluminum bumpers. Most up-

dates from Club done. \$6500.

Russel E. Day
19207 Larch Way S
Alderwood Manor, WA 98036
(206) 672-7550

#518 ULTRA Van, 350 C.I. V/8, 3 speed auto, very good condition, minor TLC needed. (Drapes) 10,000 miles on complete rebuilt engine, 110,000 total miles. New radial tires, two new H.D. Sears batteries. Brakes rebuilt, new starter, original wall heater, interior and exterior is white, roof air, 110 V. (no generator), 3 tank system (all good condition), windshield and all glass is good. Photos available. \$7995.00

Stan Gotter
541 N. Brighton
Burbank, California 91506
(818) 846-0064

For Sale by Bill Binney #295

1. 110 H.P. cylinder heads (fresh rebuild) 8.1:1 comp. ratio. \$200 a pair
2. 110 engine rebuilt. \$950 exchange
3. 140 engine rebuilt. \$1250. exchange
4. 3.55:1 automatic transaxle (late) Good used \$100

Call Bill at (619) 363-6424

1969 ULTRA Van #465 Corvair powered motor home, recent beige Imron paint, equipped with roof air conditioner and 2.5 KW generator. \$8000.

Pete Koehler
(313) 478-0906

WANTED: ULTRA Van manual or xerox of. Also any literature dealing with ULTRA Van or xerox copies.

Jim Zimmerman
1020 Newport #1
Long Beach, Ca. 93420