So you’re back for more… good.

In this issue of GEARS, we’re going to go through the valve body, TCM and solenoids of the JATCO RE5R05A. I’d like to thank Dalyn and Mike at WIT (Whatever It Takes) for the core and their help in getting this information: Thanks guys. Now let’s get started:

**The Valve Body**

For the most part this valve body is pretty simple, but if you look in a factory service manual, you’d discover there’s no valve body breakdown. The descriptions of the valves, springs and pistons are wrong, and there are more parts in the valve body than there are descriptions. I’m sure you can imagine how frustrating that could be, but never fear… ATRA is here!

Here’s what we did: After a completely disassembling and cleaning the case, I identified and traced the fluid passages (figure 1). This is a huge help when checking the valve body passages. I identified the valve body clutch passages (figure 2) and from there I was off to the races.

The trick to this is to separate the two halves and trace the worm tracks until you end up at the valve. Remember, there are only three types of valves: servo, regulator and switch, so once I had the names of the valves, identifying them was easier. And now, after many hours of sweat, blood and tears, ATRA and GEARS are proud to provide a complete valve body breakdown for the RE5R05A (figure 3a, 3b, 3c).

1. (a) Pressure Regulator Valve,
For over 20 years, transmission professionals have come to depend on RECON™ torque converters. We set the standard for the quality and dependability. RECON torque converters are remanufactured using Datum Plane Generation™, an innovative, proprietary process that ensures unsurpassed performance.

Best of all, RECON torque converters are brought to you exclusively from Axiom Automotive Technologies, the largest distributor of automatic transmission parts in the world.
Controlling the JATCO RE5R05A

(b) Pressure Regulator Plug, (c) Pressure Regulator Sleeve: Adjusts the oil discharged from the oil pump to the optimum levels (line pressure) for normal operation.

2. Front Brake Control Valve: When the front brake is applied, this valve adjusts line pressure to optimum levels (front brake pressure) and supplies it to the front brake. (In 1st, 2nd, 3rd, and 5th gears, it adjusts the clutch pressure.)

3. Accumulator Control Valve: Adjusts the pressure (accumulator control pressure) acting on the accumulator piston and low coast reducing valve for normal operation.

4. Pilot Valve A: Adjusts the line pressure and produces the constant pressure (pilot pressure) required

Figure 2

What Would Your Technician's Do With An Extra $4,000?

Finally, A Way To Reward Your Top-Notch Technicians With More Take-Home Pay . . . the Profit Tool Way!

Looking for a way to attract and retain the highly qualified technicians you need to conduct your business? Profit Tool can help . . . at no cost to your company!

Since 1988, tool reimbursement plans have been increasing technician TAKE-HOME pay by separating taxable wages (payment for TIME & SKILL) from reimbursable tool & business expenses. It's similar to reimbursing an employee for the business use of a personal car.

Here’s a sample of a technician with an hourly compensation of $20.00/hr.

<table>
<thead>
<tr>
<th>Profit Tool Comparison Chart</th>
<th>The Profit Tool Way</th>
</tr>
</thead>
<tbody>
<tr>
<td>Earnings</td>
<td>Company Pay $600.00</td>
</tr>
<tr>
<td></td>
<td>Company Check $660.79</td>
</tr>
<tr>
<td></td>
<td>Profit Tool Pay $658.34</td>
</tr>
<tr>
<td>Federal Taxes</td>
<td>200.00</td>
</tr>
<tr>
<td></td>
<td>146.19</td>
</tr>
<tr>
<td></td>
<td>N/A</td>
</tr>
<tr>
<td>F.I.C.A.</td>
<td>49.66</td>
</tr>
<tr>
<td></td>
<td>34.77</td>
</tr>
<tr>
<td></td>
<td>N/A</td>
</tr>
<tr>
<td>Medicare</td>
<td>11.00</td>
</tr>
<tr>
<td></td>
<td>8.13</td>
</tr>
<tr>
<td></td>
<td>N/A</td>
</tr>
<tr>
<td>State Taxes</td>
<td>4.00</td>
</tr>
<tr>
<td></td>
<td>2.86</td>
</tr>
<tr>
<td></td>
<td>N/A</td>
</tr>
<tr>
<td>Profit Tool Fee</td>
<td>40.86</td>
</tr>
<tr>
<td></td>
<td>349.53</td>
</tr>
<tr>
<td></td>
<td>11.99</td>
</tr>
<tr>
<td></td>
<td>N/A</td>
</tr>
<tr>
<td>Net</td>
<td>345.65</td>
</tr>
<tr>
<td></td>
<td>227.20</td>
</tr>
<tr>
<td></td>
<td>N/A</td>
</tr>
<tr>
<td>Take Home Pay</td>
<td>$480.60</td>
</tr>
<tr>
<td>Technician Weekly Savings</td>
<td>$76.11</td>
</tr>
<tr>
<td>Technician Annual Savings</td>
<td>$4,061.72</td>
</tr>
</tbody>
</table>

And enrollment is easy! Profit Tool is easily compatible with all types of payroll systems. It takes less than 10 minutes on any standard payroll software. And there are ZERO "out of pocket" expenses for either your company or your technicians! More pay for your technicians - reduced expense for your company, making you more money - a true "win - win".

Check out all Profit Tool and Tools Plus has to offer at: www.proftoolplan.com and www.toolexchange.biz

Or call Larry for details. 1-530-362-1207

P.S. Ask Larry about the ATRA members discount.

24  GEARS March 2007
What does Morse®
Hy-Vo® Chain Offer
You and Your
Transmission
Customers?

• Quality
• Technology
• Performance
• Application Coverage
• Technical Support
• Availability
• Packaging
• Value

Morse® Hy-Vo® Chain Offers You and Your Customers True Value and Complete Coverage for All Your Applications.

Call or write Carol Dupke Lee for a list of authorized Morse® product distributors and product information.
(248) 754-0182 Fax: (248) 754-0551
cdupke@morse.bwauto.com
Controlling the JATCO RE5R05A

5. Pilot Valve B: Adjusts the line pressure and produces the constant pressure (pilot pressure) required for shifting.
6. Low Coast Brake Switching Valve: During engine braking, this valve supplies the line pressure to the low coast brake reducing valve.
7. Low Coast Brake Reducing Valve: When the low coast brake is applied, this valve adjusts the line pressure to optimum levels (low coast brake pressure) and supplies it to the low coast brake.
10. Torque Converter Lubrication Valve: Operates during lockup to switch the torque converter, cooling and lubrication systems’ oil paths.
11. Torque Converter Regulator Valve: To prevent too much pressure from reaching the torque converter, line pressure is adjusted to optimum levels; this is called torque converter operating pressure.
12. High and Low Reverse Clutch Control Valve: When the high and low reverse clutch is applied, this valve adjusts line pressure to optimum levels (high and low reverse clutch pressure) and supplies it to the high and low reverse clutch.
13. Input Clutch Control Valve: When the input clutch is applied, this valve adjusts line pressure to optimum levels (input clutch pressure) and supplies it to the input clutch.
14. Direct Clutch Control Valve: When the direct clutch is applied, this valve adjusts line pressure to optimum levels (direct clutch pressure) and supplies it to the direct clutch.
15. Direct Clutch Piston Switching Valve: Operates in 4th gear and switches the direct clutch coupling capacity.
16. (a) TCC Control Valve, (b) TCC Control Plug, (c) TCC Control Sleeve: Applies or releases the converter clutch. By performing the lockup operation transiently, it provides a smooth converter clutch apply.
17. Cooler Bypass Valve: Allows excess oil to bypass cooler circuit without being fed into it.
18. Line Pressure Relief Valve: Discharges excess oil from line pressure circuit.
19. Front Lubrication Valve: Allows lubrication from the Cool and Pump to flow into the front half of the transmission.
20. Manual Valve: Sends line pressure to each circuit according to the selector position. The circuits that don’t receive line pressure drain back to the sump.

As you can see, without the right diagram or breakdown, the potential for problems is enormous.

The TCM

The TCM is actually the complete transmission computer system; that is, it combines the TCM, pressure switch-
What are you really selling your customers? Performance? Reliability? Peace of mind? The truth is, when someone comes to you with a transmission problem, they want it fixed quickly and cost effectively with as few worries and hassles as possible. That’s exactly what Precision International, the worldwide leader in quality-tested domestic and foreign transmissions, delivers.

**State of the part**
The whatever make, model or year transmission you’re working on, we’ve got the best parts and kits to fix it. All are cross-checked against the latest OEM specs (with changes noted and made). All are OE quality or better. And all are guaranteed to work. Plus, our huge inventory virtually assures immediate delivery.
We also offer outstanding tech assistance and support, including [www.transmissionkits.com](http://www.transmissionkits.com) – our hot new website with video seminars, question and answer forums, complete parts information and much more – that can help you troubleshoot and solve virtually any transmission repair problem.

**The road to success**
So keep your customers humming along. Spec only transmission parts and repair kits from Precision International and give them the quality and reliability they expect plus the peace of mind you both deserve. For more information, call or visit us online.

[www.transmissionkits.com](http://www.transmissionkits.com)
Controlling the JATCO RE5R05A

es, input speed sensors and the TR sensor connector and Solenoid connector, and bolts onto the valve body. This is becoming a common practice: almost all manufacturers seem to be heading in this direction. In a few years, there probably won’t be anyone with a TCM that mounts outside the transmission.

So let’s start with the pressure switches, located on the bottom of the TCM (figure 4). The switches act just like every other GM pressure switch; nothing too special there. Unfortunately, if one or more of the pressure switches fail, you’re going to have to replace the TCM. There is an upside though: you’ll get the pressure switches and the input speed sensors free when you buy the TCM (figure 5)!

Pressure Switch 1 (FR/B): Detects any fault in the front brake hydraulic pressure. When it detects a problem, it puts the system into failsafe mode.

Pressure Switch 2 (LC/B): Detects any fault in the low coast brake hydraulic pressure. When it detects a problem, it puts the system into failsafe mode.

Pressure Switch 3 (I/C): Detects any fault in the input clutch hydraulic pressure. When it detects a problem, it puts the system into failsafe mode.

Pressure Switch 4: This unit doesn’t have a Pressure Switch 4… yet.

Pressure Switch 5 (D/C): Detects any fault in the direct clutch hydraulic pressure. When it detects a problem, it puts the system into failsafe mode.

Pressure Switch 6 (HLR/C): Detects any fault in the high and low reverse clutch hydraulic pressure. When it detects a problem, it puts the system into failsafe mode.

The Solenoids

There are seven (7) solenoids (figure 6) on the valve body:

1. Line Pressure Solenoid
2. Low Coast Brake Solenoid
3. Direct Clutch Solenoid
4. Front Brake Control Solenoid
5. Input Clutch Control Solenoid
6. High/Low Clutch Control Solenoid
7. Torque Converter Clutch Solenoid

All of the solenoids operate and connect directly to the TCM. All of the solenoids except the TCC solenoid have 3.3 ohms resistance. The TCC solenoid has 23 ohms resistance. The TCM controls all of them using a duty cycled signal.

When checking solenoid operation you’ll need a CAN adapter for your scan tool or an interface adapter that checks the solenoid operation.

When checking the solenoid operation via your scan tool the data will read in amps. All of the solenoids operate between 0.0-0.8 amps.

Something interesting to look at is the operating range for these solenoids. For example, the TCC solenoid will run at 0.2-0.4 amps during slip and 0.4-0.7 amps when it’s fully locked up.

The input clutch, front brake, direct clutch, and high and low clutch solenoids operate at 0.6-0.8 amps while disengaging the clutches (solenoids energized), and 0.0-0.05 amps when the clutches are engaged (solenoids de-energized).

That’s enough for now; in the next issue of GEARS, we’ll cover some of the internal components and rebuild tips… until next time…
Remember that Old-Time Service?

Whatever It Takes Does!!!

WIT distributes a complete line of quality new, used, & remanufactured Automatic & Standard Transmission Parts. Service is the Cornerstone of our Company!

LOCATIONS

Atlanta, GA
Charlotte, NC
Cincinnati, OH
Dallas, TX
Knoxville, TN
Jackson, MS
Louisville, KY
Nashville, TN
Orlando, FL
Scranton, PA
Sheffield, AL
St. Louis, MO
Tampa, FL

UPS Shipping
1 Day
2 Day
3 Day
4 Day
5 Day

Source Date: 3/6/06