

# Navistar Diagnostic Tools

**Turbo Training DOES NOT sell software! This is informational only.**

**Items that are required to diagnose IH electronic engines and multiplexed dashboards:**

1. Engine Diagnostic Software – the current software is ServiceMaxx. Service Assistant, (Saint) or Master Diagnostics (MD Fleet) are both obsolete but still usable on earlier trucks.
2. Multiplexed Dashboard diagnostic software- Diamond Logic Builder. Intune is obsolete but still usable on earlier trucks.
3. Service manuals on disc, now called On Command, see below
4. Communications cable to connect your laptop to the truck (Nexiq USB Link2 or similar)
5. EGED and EGES Diagnostic forms for your engine (there are 75 total for all engines)
6. Optional: ABS, Allison, and Instrument panel software, see below

**On Command** (service manuals, formerly called ISIS)

On Command is IH's complete service manual covering engine repair, chassis service, and diagnostics on all engines back to the 1980's, it also includes electrical schematics from 1998 up. Schematics for pre-98 trucks are available on paper only.

There are three types of OnCommand-

- **USB jump Drive Version** (previously DVD all service info, some service bulletins, no IKnow letters)
- **Online Fleet** with CYY password (above with more info, bulletins, and IKnow letters)
- **Online Dealer** with DYY password (dealer level, full everything)

**USB jump Drive Version** available from your IH dealer parts dept. at a cost of about \$300-500. Your IH parts guy probably won't know anything about it. The part number has changed several times in the last few years, try part number 0000314661, 314661:lss, I55.300.00, S00235R5, or ONCOMMANDDVD. (Yes, that was the part number!) It is not unusual for dealer parts depts. to deny this software exists or refuse to sell it to you, try another IH dealer if this happens.

If you are a large fleet or gov't agency, you should subscribe to OnCommand (ISIS) online, which gives you not only service information but current TSI letters and most important, IKnow letters. **IKnow letters may be some of the most important information when repairing later trucks as they are letters regarding pattern failures and part updates.**

If you are a large fleet, approach your dealer to purchase an *On Command* online subscription (using a CYY password), the fee is approximately \$1200/yr. Your truck specification guy should also put this in the bid when trucks are purchased (subscriptions for both On Command and ServiceMaxx).

**Model Year Labeling:**

**IH does not label engines per VIN year for service info like most cars and other trucks do. IH labels engines by Emissions Year Series rather than VIN year. IH also releases an emissions**

series with the following model year, such as a 2004 emissions engine is not found in a 2004 VIN truck but rather a 2005 VIN truck.

- For trucks with Vins 2000 through 2004, use the 2003 service manual (DT466E non EGR engine)
- **EPA04:** For trucks with Vins 2005-2007, use the 2004 service manual (DT466 and DT570 engines with EGR that are painted blue)
- **EPA07:** For '07 emission trucks with Vins 2008-2010 use the 2007 service manual (MaxxForce 9, 10, DT engines)
- **EPA10:** For '10 emission trucks with Vins 2011 up, use the 2010 service manual (MaxxForce 9, 10, DT engines)
- **EPA13:** the names change again to N9 and N10 (570CI) and the 466 CI engine is dropped.

You can easily identify your engine by the engine serial number plate on the valve cover:

- DTE ('95-'04 VIN) ESN- 1,000,000
- EPA04 DTEGR ('05-'07VIN) ESN- 2,000,000
- EPA07 MaxxForce DT, 9, 10 (2008-2010VIN) ESN- 3,000,000
- EPA10 MF DT (2010 Emissions) -3,300,000 (2011+ VIN)
- EPA13 N9, N10- (HD-OBID, with SCR-DEF, 2014+ VIN) 3,540,000

### Diagnostic Equipment:

Nexiq [www.nexiq.com](http://www.nexiq.com) is now the supplier and all software is distributed through various warehouses such as Chalk's Truck Parts (800-231-5061) or your local IH dealer.

**Engine Diagnostic Software:** (note you will also need a communications cable, see below)

- **ServiceMaxx** is the current software for engine diagnostics. PN 828009 \$650 list plus \$300.00 per year subscription fee. All of these softwares do a great job at the factory level for diagnostics. They access data and diagnostics on all IH electronic engines- 1994 to current T444E, VT365, DT466E, 530E, DT466 (EGR), DT570, HT570, VT275, and all MaxxForce engines. This software does not work with Cat, Cummins, or other engines. ServiceMaxx has somewhat of a steep learning curve, casual users be forewarned, and has a lot of glitches in it. I suggest the **Nexiq USB Link2** communications cable for this program. TurboTraining's MaxxForce DT book has considerable information on learning to use ServiceMaxx.
- **Master Diagnostics** AKA MD32 or MD Fleet (discontinued) will access late engine pids (2008 up with DPF) but will not access DPF pids used for diagnosing aftertreatment systems. Master Diagnostics (MD Fleet), and Service Assistant (SAINT) are excellent OE softwares, but may not access the exhaust aftertreatment PIDS on 2008 up trucks.
- **Service Assistant for IH Trucks** AKA Saint (discontinued) was a revised version of MD. It will access late engine pids (2008 up with DPF) and aftertreatment systems but may not give full diagnostics on 2008 up MaxxForce engines.

**Dashboard/Chassis Diagnostic Software:** (note you will also need a communications cable, see below)

- **Diamond Logic Builder** PN 828005 \$775, Multiplexed dashboard diagnostic software for later IH trucks from 2001 up: models 3200, 4100, 4200, 4300, 4400, 7400, 7500, 7600, 7700, 8500, 8600, etc. Intune was the old multiplexed software, which was replaced many years ago with Diamond Logic Builder, which is the new multiplexed software. Instrument Panel Cluster

(IPC) is good for 4700/4900 series from '97-02. The multiplexed trucks after that use DLB (or INTUNE, if you happen to have an old copy). This program also has a steep learning curve. Turbo Training has about 100 pages of information on learning it in the IH Multiplexing book.

- **IPC-** Instrument Panel Cluster Diagnostic Software PN 850042 \$350 for '97-01 MD and HD data-driven dash (these trucks read dash info from the J1708 data stream but are not fully multiplexed dashboards). This includes all '97-2002 4700, 4800, and 4900 models.
- **Allison Doc** for Allison Transmissions: \$695, works almost all comm cables (except for late Gen4 reflashing) diagnosticinnovations.com Software is compatible with most comm cables for diagnostics. If you need to do reflashing of Allison controllers, you will need the Dearborn DPA4USB cable kit for flashing the later Gen 5 Allison controllers used from about 2006 on up. <http://diagnosticinnovations.com>
- **Hydraulic ABS** diagnostic software PN 850044 \$325 for 1998-2002 4700 series trucks
- **Hydraulic ABS** diagnostic software for NGV (2002 up 4200/4400 trucks) Use Wabco Toolbox software, call 800-328-6657 to order.
- **Bendix Air ABS:** Download the free program from <http://www.bendix.com/en/> or Bendix.com. You will also need any of the following comm cables.

**Communications Cables:** You will need at least one, and it depends on what you're working on to determine which cable(s) you'll need. **The cable with the least communications issues is the Nexiq USB Link2.** The only oddball applications are reflashing late Allison computers, and late Cummins service, which are both cable-specific programs.

**Generic type RP1210 compliant cables which work with most software, see the specific software requirements for what is required:**

- **Nexiq USB Link 2** (PN 124032 USB-Link, [www.nexiq.com](http://www.nexiq.com)) Works well and is the preferred choice for most fleets. It is also available in wireless.
- **Nexiq USB Link** (PN 125032 USB-Link, [www.nexiq.com](http://www.nexiq.com)) Discontinued and replaced by the USB Link 2, works well and is the preferred choice for most fleets. It is also available in wireless.
- **For 2016 up trucks you will need a 500K capable cable with a green 9 pin connector.**

I'll forewarn you of what's coming in the future: As software becomes more complex, each software will require its own comm cable due to ever changing communications protocols. This has already happened with Allison Gen5 and Cummins, and is likely to become more widespread. Enjoy the time being where one cable does nearly everything, because that time will end in the future.

**Other diagnostic tools you may need:**

- Breakout box for 2005 up DT466/570 EGR engines: 96 pin DLC2 systems, ZTSE 4582A \$1343
- Breakout box for 2008 up MaxxFace 9, 10, DT, \$3-5000 available from your dealer.
- Breakout box for Navpak Engines ZTSE 4445 \$1502 ('98 -2004 single module ECM)
- Breakout box for '94-97 (3 box system) use a Ford car (pre-1995) 60 pin breakout box, available from SPX/OTC or Ebay cheap.
- Breakout box for ESC (Multiplex computer) ZTSE 4477

## **Other engine specific tools you'll need for each engine family:**

**Note that DT466E and DT466 (EGR) are two completely different engines with a changeover date around 2005 model year. Most 2004 trucks have the DTE engine even though IH labels the EGR engine as 2004!**

### **DT466E/530E, 1996-2004:**

- Turbo Training's Tips and Tricks book for DT466E/530E
- ServiceMaxx, MD Fleet or Service Assistant, and a comm cable (see above)
- Diagnostic sheets available in ONCommand (EGEDXXX)
- Injector sleeve replacement tools from Iron-Tite call Rich at 440-526-0151
- Fuel suction test quick disconnect: The female Compucheck coupler can be purchased from your IH dealer under P/N 3376859 \$24.93 Compucheck fitting PN's- IH PN# Female ZTSE 4526 Parker PN#PD 242 Male- ZTSE 4542 Parker PN# PD343 Male straight ZTSE 4692
- Compression adapters from Lang Tools or Star Products in WI

### **DT466/570 EGR, MaxxFORCE 9, 10, DT 2005 up:**

- Turbo Training Tips and Tricks book for DT466/570/MaxxFORCE 9, 10, DT
- ServiceMaxx, MD Fleet or Service Assistant, and any RP1210 compliant comm cable
- ZTSE 4655 ICP fitting test kit
- Diagnostic sheets available in ONCommand (EGEDXXX)
- Fuel Test quick disconnect: The female Compucheck coupler can be purchased from your IH dealer under P/N 3376859 \$24.93 Compucheck fitting PN's- IH PN# Female ZTSE 4526 Parker PN#PD 242 Male- ZTSE 4542 Parker PN# PD343 Male straight ZTSE 4692
- To properly access ECM/IDM voltages and use the Diag Sheets, you'll need breakout box ZTSE 4582A
- Use a vacuum bleeder to remove air from the cooling system (Air Lift)
- ZTSE 4725 HP oil "puck" tool (needed, but not required)
- Compression adapter from Lang Tools Part #TU-15-79