FEATURES

In order to address the lack of fuel , the VIS Motorsport developed ***2 progressively stronger HPFP upgrade kits stages*** to suits everybody's build needs :

* ***stage 1 - 175bar - 55%*** more piston area
* ***stage 2 - 200bar+ - 75%*** more piston area

- Piston head optimized for ***ideal fuel flow direction***
- Piston surface hardened and ***heat treated in 3 diferent stages***
- It ***uses the OEM-style spring keeper*** and a ***redesigned piston tip end for more stability inside retainer***, ensures that will not weaken by constant contact with camfollower, ***tested at 12.000 rpm on testing bench***.
- ***Laser marked*** for better traceability and protecting from fake replica

FEATURES

- even a standard stock or Stage 1 car will see benefits from running these internals,not only do you ***extend the life of the N276 solenoid*** since it's not working as hard but you already have an upgraded HPFP ***giving you more headroom in your fueling system*** should you decide to do more modifications.
- ***simple install*** on stock car will give 10 bar rail pressure
- ***can sustain easy 600 hp+ and over 175 bar*** starting from our stg 1
- it's being ***tested now for over 5 years*** on many configurations and different hardware/software setups around the globe and have proven again and again the reliability and performance you can expect from each and every ***VIS Motorsport HPFP Upgrade kit.***

TECH FACTS:

- clearence at top of piston 0.001-0.00015
- deviation of circularity max 0.001mm
- 370-450hb before rectification
- nitrided at depth of 0.15-0.25
- hardness of hv10-760-860 kgf/mm2 after nitriding
- 34mocr11 STAS 791-1988 special aged steel

REQUIRED TOOLS FOR INSTALLATION

1 - 18MM 6POINT HEX LONG SOCKET
2 - RATCHET
3 - NON CHLORINATED CONTACT CLEANER
4 - SMALL AMOUNT OF OIL/ASSEMBLY LUBE
5 - BENCH VISE
6 - RUBBER/PLASTIC HAMMER
7 -12/13 OPEN END BOX WRENCH
8 - 10MM 6POINT HEX LONG SOCKET
9-LINT FREE CLOTH/MERCERIZED CLOTH

Installing the upgraded internals

1. Remove the electrical sensors (thrust sensor, n276) and external fuel valves from HPFP body as not to damage them in the process.

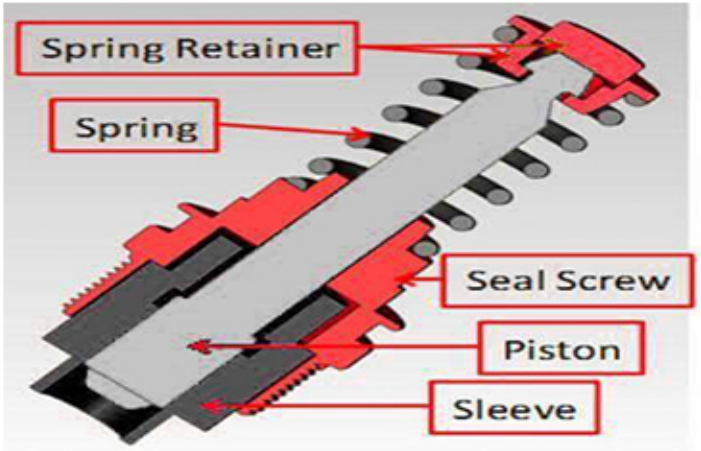
2. Place a piece of lint free fabric, or carboard etc. over the vice as not to damage/scratch HPFP body. Insert the HPFP body into the vice with the piston & spring facing up. Once the HPFP is secure in the vice, pull upwards on the spring and piston and it will come out of the HPFP body easily.

Installing the upgraded internals

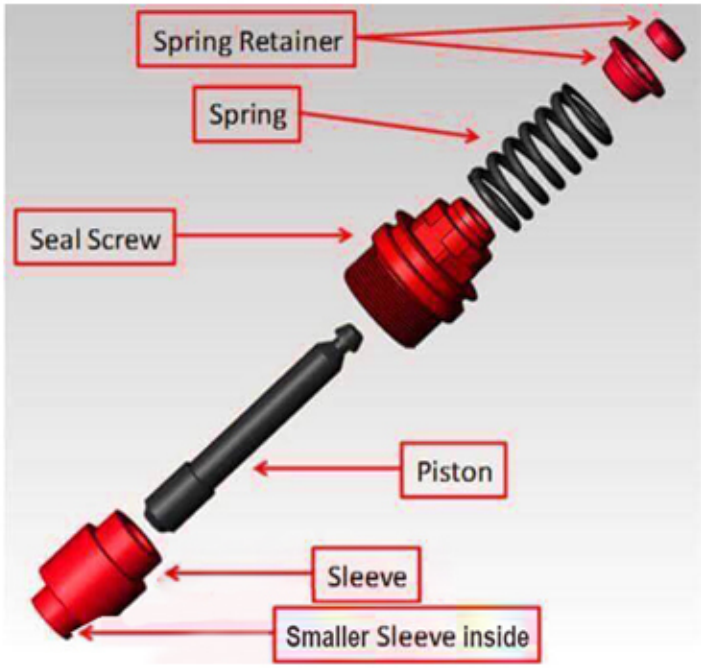
3. After removing the spring and piston your HPFP should look as per pic

Installing the upgraded internals

4. Clean the 18mm deep socket of all debris and dirt before use. Remove the OEM seal housing from the HPFP body using the 18mm socket. Place the OEM seal housing on your clean and dirt free work surface



5. Clean the OEM seal housing and inside the HPFP body. Once all OEM parts are clean, apply the fresh oil to your new VIS piston and VIS sleeve. Your VIS piston and VIS sleeve are now ready to be installed into the OEM seal housing. Ensure the VIS piston and VIS sleeve are as shown in pic (note position of oil hole in VIS sleeve to ensure correct assembly).With smaller end of sleeve in front inserted in pump and oil hole lube to the spring side. Install VIS piston and VIS sleeve assembly in to the OEM seal housing and place on your clean and dirt free work surface.



Installing the upgraded internals

6. *You will be reusing the OEM retainer on your new VIS assembly. To remove the retainer from your OEM piston, secure the deep 10mm socket into the vice. Place the retainer and piston into the 10mmm socket as shown in pic. Gently tap the piston from above, ensuring the piston remains vertical. After a few taps, you should be able to remove the retainer from the piston.*

NOTE: *the retainer may look like a one-piece part, but it is actually in two parts – a tappet in the centre of the retainer. In step 6 the idea is to gently knock the tappet part way through the retainer. The OEM distance from the surface of the retainer to the surface of the tappet is approx. 2mm. To release the retainer off the OEM piston, the tappet will be knocked through the retainer to reach approximately 3mm. Tap lightly, and check after a couple of taps to see if the retainer can be released off the piston.*

Installing the upgraded internals

7. Once you have assembled your VIS piston, VIS sleeve and OEM seal housing correctly, you can now install the OEM spring and OEM retainer on to the VIS piston. Secure the spring first over the piston onto the OEM seal housing. To install the retainer, gently compress the spring and slide the retainer on. The tappet is still at approximately 3mm off the retainer from when it was removed in step 6. To secure the retainer onto your VIS piston, you will be knocking the centre of the retainer back to the OEM measurement of 2mm which is covered in step 8.

Installing the upgraded internals

8. Gently compress the spring, and slide in the open end of the 13mm spanner to sit between the spring and the underside of the retainer. Place the spanner so that it is supported by the vice. There shouldn't be any contact between the rest of the spring, piston, seal housing assembly and the vice. Gently tap the centre of the tappet so that it reduces back down to the OEM measurement of 2mm to secure it on to the piston.

DON'T TAP TOO HARD OR USE A LARGE HAMMER,YOU WILL BREAK THE PISTON AND WASTE YOUR MONEY AND TIME !

Installing the upgraded internals

9. With the retainer correctly secured onto the piston, the assembly is now ready to be installed back into the HPFP body. Tighten the seal housing back into the HPFP to the correct torque spec using the deep 18mm socket.

Installing the upgraded internals

10. HPFP is now ready for reinstallation into engine.

Common reasons that can lead to damage :

1. Fuel pump not properly secured to engine. Even if just one bolt is loose, it will damage the hpfp piston
2. The piston retainer cap on top of the spring not properly seated.
3. Damaged fuel pump oil seal.

FUELS AND THEIR VAPORS ARE HIGHLY FLAMMABLE.
ENSURE SUFFICIENT AIR SUPPLY !

WE EXCLUDE ANY LIABILITY FOR DAMAGE WHICH OCCURS DUE TO ANY IMPROPER HANDLING.

IF YOU FEEL THAT YOU CAN NOT PROPERLY INSTALL THIS PRODUCT, WE HIGHLY RECOMMEND YOU TAKE THE VEHICLE TO A QUALIFIED AND EXPERIENCED AUTOMOTIVE TECHNICIAN !

GENERAL INFORMATION

- Don't hold on the spring mounted plunger or haul at it
- Don't open screw joints
- Exchange brass joints after done twice assembling/reassembling
- Don't apply a DC voltage to the valve

MOUNTING INSTRUCTION

- Mind cleanliness of the joints
- Mount pump vertically, to avoid scratches in the cylinder head
- Always tighten opposite screws equally alternating. Never one complete and then the other side. This could lead to stress and leakage

-After the assembling run the engine for 2-3 minutes and check for leakage

FUEL PUMP BREAK IN PROCEDURE

BEFORE STARTING THE ENGINE,PLEASE PRIME THE NEW PUMP BY OPENING AND DOOR CLOSING,UNTIL THE ELECTRIC FUEL PUMP UNDER THE BACK SEAT STOPS, REPEAT ONE MORE TIME IF YOU HEAR AIR BEEING PUSHED THROUGH.

- PRIME FUEL PUMP/DOOR OPEN/CLOSE
- LET THE ENGINE IDLE FOR 5 MINUTES
- REV THE ENGINE TO 1500RPM 1 MINUTE
- LET THE ENGINE IDLE 1 MINUTE
- REV THE ENGINE TO 2500RPM 1 MINUTE
- LET THE ENGINE IDLE 1 MINUTE
- DRIVE THE CAR FOR NEXT 100KM/MILES OF JUST REGULAR DRIVING WHILE FLUCTUAITING THE RPM'S FROM 1000-5000,ONLY USE LOW BOOST SETTING WHILE DOING THESE ,YOU REPEAT THESE STEPTS FOR 3 CYCLES AND AFTER YOU CHECK WITH EQUIPMENT YOU HAVE, IF ARE THERE ANY ERRORS CODE RELATED TO FUEL PUMP,AND CHECK IN PRESSURE WIDE OPEN THROTTLE,IF YOUR REQUESTED PRESSURE MEETS ACTUAL PRESSURE,IF YOU DON'T HAVE EQUIPMENT TO DO THIS,JUST WATCH FOR KEY SIGNS OF FUEL CUTS

AT FIRST SIGN OF FUEL CUT YOU NEED TO REPEAT BREAK IN PROCEDURE

DISCLAIMER

YOU ARE MODIFYING THE OEM FUEL SYSTEM DESIGN,BY DOING THIS YOU ARE CHANGING THE OPERATIONAL PARAMETERSTHAT COULD CAUSE FUEL SYSTEM, MOTOR,OR DRIVE TRAIN DAMAGE,AND COULD ALSO VOID YOUR AFTERMARKET OR FACTORY WARRANTY.

BEFORE INSTALLING,YOU SHOULD CHECK FOR WEAR ON THE EXISTING CAMSHAFT LOBE AND FOLLOWER,IF WORN CAMSHAFT MUST BE REPLACED,THE FOLLOWER IS STRONGLY RECOMANDED TO BE INSTALLED NEW.

WE WILL NOT ACCEPT ANY CLAIMS DUE TO IMPROPER INSTALLATION,OR FOR CAMSHAFT OR FOLLOWER FAILURES,OR FOR ANY DAMAGE TO THE INTERNAL KIT OF THE FUEL PUMP,ENGINE OR AUTOMOBILE AS A RESULT OF THESE FAILURES.

ALL WARRANTIES OF ANY KIND,WHETHER EXPRESS,IMPLIED,STATUTORY,FITNESS FOR APARTICULARY PURPOSE,OR MERCHANTABILITY,ARE EXPRESSLY DISCLAIMED.

THE CUSTOMER RELEASES THE COMPANY FROM ALL RESPONSIBILITY AND LIABILITY AND WAIVES ANY AND ALL CLAIMS AGAINST FOR ANY PERSONAL INJURY,PROPRETY DAMAGE OR DAMAGE TO THE PRODUCT ITSELF.

YOUR ACCEPTANCE OF SUCH RISK AND WAIVER OF SUCH CLAIMS IS GIVEN THROUGH YOUR INSTALLATION OF THIS PART.

Thank You for purchasing VIS MOTORSPORT INTERNALS UPGRADE KIT