ALTERNATIVE FUEL SYSTEMS

Prins

valve care DI

VALVECARE-DI SYSTEM MANUAL

SYSTEM VERSION	ValveCare-DI
DATE	23-11-2020
Revision version	v 1.2

1 TABLE OF CONTENTS

2 Manual updates / revision

Rev. nr	Rev. Date	Subject update
1.0	02-06-2020	First official release
1.1	10-09-2020	More detailed information; added DLM
1.2	06-10-2020	Added ValveCare-DI settings for 2 tank strategy [separate]

3 About this manual

This manual describes:

- Operation of the ValveCare-DI system
- System and components description
- General installation instructions
- Prins system integration
- Calibration setting (for Firmware 1055 ->)
- Service and maintenance
- General diagnostics

4 Safety instructions

- Always avoid direct contact between additive and skin, eyes or mouth. Always wear protective clothing and safety goggles during work or maintenance on the ValveCare-DI dosing system.
- If the additive comes in contact with the eyes, this may cause irritation. In this case rinse the eyes 10 to 15 minutes with water and seek medical attention.
- If the additive comes in contact with the skin, this may cause irritation. In this case wash the skin thoroughly with soap and rinse with plenty of water. Seek medical attention if the irritation persists.
- If the additive is swallowed, do not provoke vomiting. Rinse the mouth with water and drink 2 to 4 glasses of water. Then immediately seek medical attention.
- Observe the statutory national regulations when installing the device.
- Only competent and qualified persons are allowed to install, maintain and repair the dosing unit and peripheral equipment.
- When connecting or disconnecting electrical wiring, always switch off the power supply by disconnecting the vehicle's battery.
- Assembly of ValveCare-DI device with non-original parts, which have not been checked and recommended by Prins, is not allowed and may cause material damages for which Prins cannot be held liable.

This manual was developed by Prins Autogassystemen B.V.

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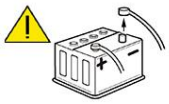
5 General instructions

The installation of the system shall be done in accordance with the installation manual provided by Prins Autogassystemen.

- This manual is based on Dutch regulations; always install the system in accordance with local regulations.
- Fitting and maintenance is only allowed by LPG engineers.
- Failure to follow the instructions in this manual can result in a poor or non-working LPG-installation or a dangerous situation.
- For maintenance instructions and filter registration also see the Driver's Guide.
- Prins Autogassystemen is not responsible for any damages to people or objects as a result of changes to Prins products.
- Power and fuses:
  - Make sure the ignition key is outside the car / windows open.
  - Be aware of central door locking, radio / telephone memory code and alarm system.
  - Always disconnect the battery when installing the ValveCare-DI system.
  - Do not place the fuse before having completed the installation of the system.



- ValveCare-DI dosing module
  - ValveCare-DI dosing module has to be configured with the Valve-Protector software.
  - Never disconnect the connectors, unless you have removed the main fuse.
- Prins AFC Software v2
  - Set the advanced calibration parameters like described in this document
  - For a MPI system run the import file from the Members Area.
- Harness and wiring:
  - The text on the wire explains the function of the wire.
  - The wire harnesses are mainly not model specific. Therefore it may be necessary to adjust the wire length.
  - Ensure maximum care is taken when connecting the wiring.
  - Ensure that it does not run near any of the ignition components.
  - Make sure there is no stretch on the wire harness.
  - Solder and insulate all electrical connections.
  - Make professional joints using solder and shrink sleeve.
- Hardware installation:
  - Always use this manual for installation instructions.
  - Thread all drilled holes with an anti-corrosion agent, after removing the chips.
  - Check components for gas leakage with a gas leak detection device after the installation. Also check for air and fluid leakage.
- Contact your local distributer for:
  - Homologation information.
  - Technical information
  - Sales information
- Warranty:
  - Register the components for warranty period after installation.

- Work safe:
  - WEAR SAFETY GOGGLES

6 Tool requirements

Cable diagnostic ValveCare-DI
099/040003

ValveCare-DI software

Prins Diagnostic program V2.0

Tool kit PDT Diagnose
191/020001

Hose cutter
099/520024/A

Compressed air & air gun

Soldering iron & soldering tin

Insulating tape & adhesive shrink sleeve

Basic workshop equipment/tools

7 Abbreviations and terms

7.1 Abbreviations

Abbreviations	Out written	Explanation
AD	Analog digital	Sensor input
AFC	Alternative Fuel Controller	LPG computer
DI	Direct injection	Fuel injection in cilinder chamber
DIG IN	Digital Input	Input of on / off signal (high / low)
MPI	Multi Point Injection	Fuel injection in inlet manifold
VSI	Vapour Sequential Injection	Gas conversion systems for engines
DLM	Direct LiquiMax	

7.2 Terms

Terms	Explanation
Prins AFC Software V2	Name of the calibration, service and diagnostic program

8 Introduction

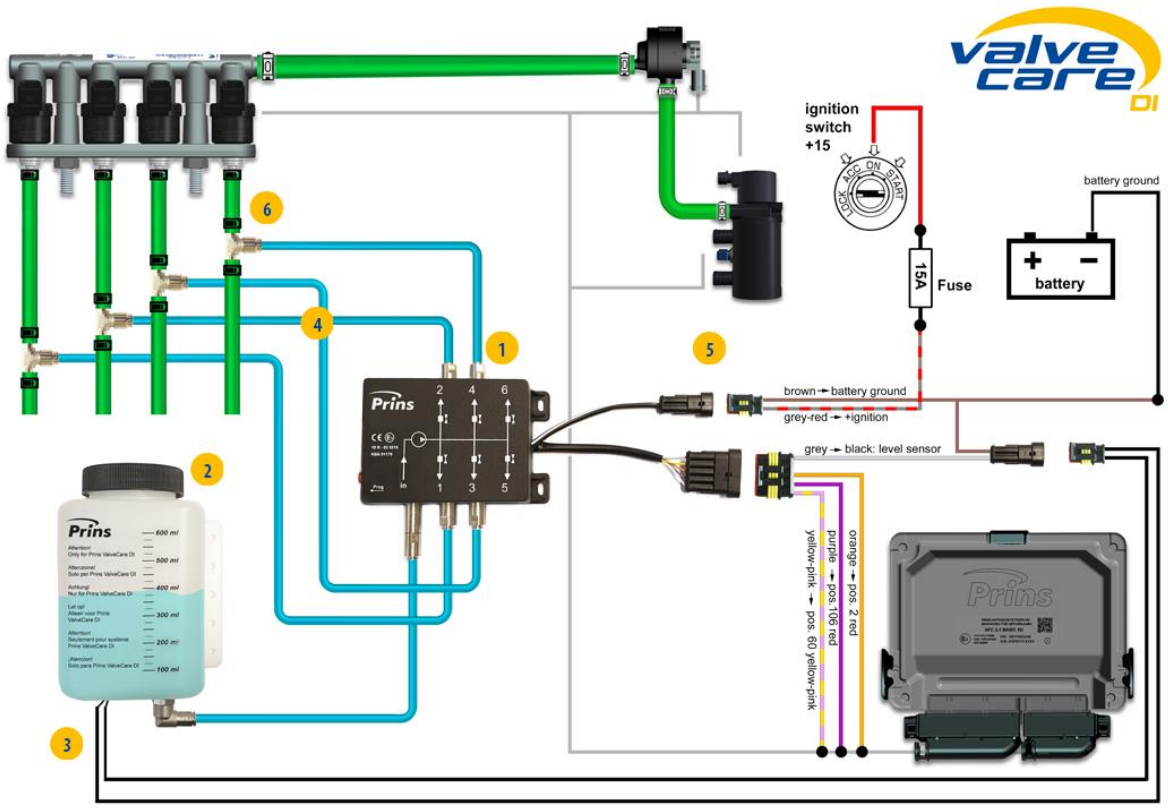
Despite the name ValveCare-di suggests that the system can only be installed with VSI-DI, it can certainly also be combined with VSI-2.0 MPI and Direct LiquiMax Gen3.
The ValveCare-DI system is a full electronic sequential regulated additive dosing system suitable for direct injected and port gas injected engines. It can be applied to VSI-2.0 (MPI), VSI-2.0 DI, VSI-3 DI and Direct LiquiMax. In combination with the highly effective Prins additive, the system will contribute to a cleaner combustion chamber and improved durability of valves and valve-seats against excessive wear.

The Prins ValveCare-DI dosing module contains special software to communicate with the Prins AFC.

8.1 Highlights

- Ideal distribution by electronic regulated sequential feed into the combustion chamber
- Suitable for both turbo and non-turbo engines
- Easily refillable additive-reservoir
- Self-diagnosis on inbuilt components
- Only additive consumption during running on LPG

9 System overview



1) Dosing unit
2) Additive-reservoir
3) Low level indicator
4) Additive feed lines
5) Super Seal connectors for easy fitting and integrating into the Prins system
6) Additive feed line connection

10 General operation

The ValveCare-DI system only injects additive during running on LPG. The electronically operated dosing unit sequentially divides the additive in equal quantities, depending on the LPG consumption (higher LPG consumption -> more additives). The additive is injected per cilinder. It is transported via a PTFE hose, connected to the LPG injector hose, or directly into the inlet manifold with separate nozzles.
The additive reservoir can be fitted separately from the dosing unit for an easier and more user friendly installation.

The additive is highly effective and protects valves, valve seats, injectors and the combustion chambers against excessively pollution and wear.
The consumption of the additive has a ratio of 1 litre additive on 1000 litre LPG.
After 100l gas the injected additive should be 100ml.

In case the additive reservoir is empty, the Prins switch will indicate a blue exclamation mark (blinking), and the engine can run another 4 hours on LPG.

After 4 hours the engine only runs on petrol and the exclamation mark and will be active. Filling up the additive-reservoir will make driving on LPG possible again.

Blue exclamation mark blinks

ValveCare-DI additive level is low -> 4 hours LPG mode left.
Fill-up the additive-reservoir with ValveCare-DI additive

Blue exclamation mark constantly on
Prins logo blinking
Beep sound audible

Engine only runs on petrol
Fill-up the additive-reservoir with ValveCare-DI additive

Caution!

Do not use or mix other additive with the original Blue Prins ValveCare-DI additive. Use of other additive can harm the system and warranty will expire directly

Before assembling or working on the ValveCare dosing system, all safety regulations must be observed.

11 Hardware

11.1 Dosing module

Fit the dosing unit in a proper location, taking in mind that on both sides of the dosing unit, additive feed lines come out. These feed lines have to be connected to the gas supply lines between injector rail and manifold.

Part numbers

- 099/040010 4 cylinder divider
- 099/040011 6 cylinder divider

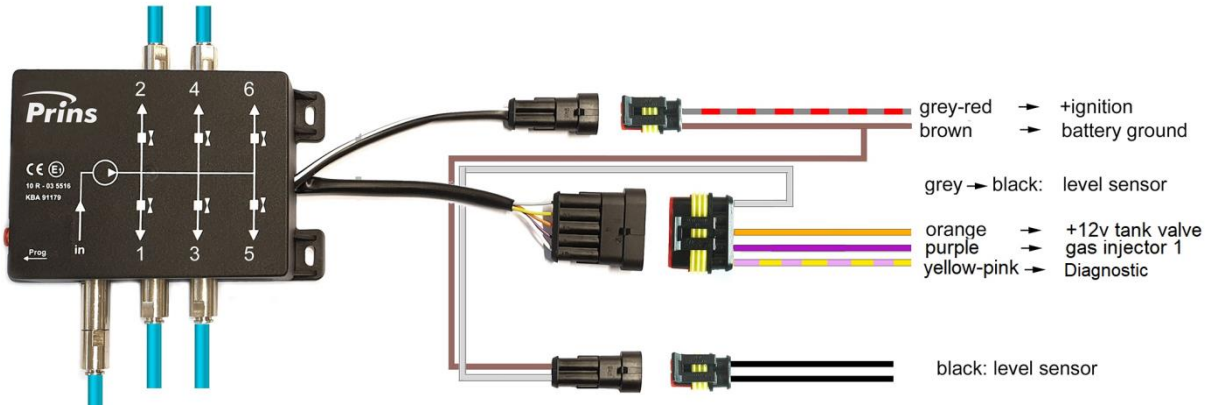
11.2 Wiring loom

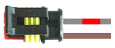
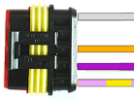
The wiring loom has 3 super seal connectors for connecting the dosing unit and additive reservoir. The other ends should be connected (soldered) to the Prins wiring loom/car wiring, according to the electrical diagram.

Add the extra 1K8 resistor for the VSI-2.0 MPI systems, like described in the wiring diagram.

Part number

- Wiring loom 191/130032



Connector	ValveCare-DI Wiring		Connection	Remark
2 pole 	Grey	Red	12Volt ignition wire (+15)	Add a 15 amp fuse
	Brown		Battery ground	
4pole 	Grey		Additive level sensor	
	Orange		+12V Tank off valve	Gas system active
	Purple		Gas injector pulse or RPM	Engine load / RPM
	Yellow	Pink	Diagnostic input for AFC	Interface to AFC
2 pole 	Grey		Additive reservoir Level sensor	
	Brown			

Attention

Always disconnect the battery ground, before working on the electrical system.

Insulate all soldered connections with adhesive shrink sleeves or vulcanisation tape.

11.3 Resistor

Add the extra 1K8 resistor for the VSI-2.0 MPI systems, like described in the wiring diagram.

Part number

- 091/000035

11.4 Additional white wiring module (DLM Gen3)

Some DLM Gen3 wiring looms do not have wire 60. Check if the wire is available in the main connector. Order the wiring module and install it like described in the wiring diagram.

Part number

- Tyco 191/140049
- Bosch 191/140036

11.5 Additive reservoir

Fit the reservoir in an easy to access location in the engine compartment. The car owner should easily find and have access and refill the reservoir.

Part number

- 099/040009

11.6 Mirror leaflet

To inform the driver

Part number

- 099/200040

11.7 ValveCare-DI Additive Fluid

The additive is highly effective and protects valves, valve seats, injectors and the combustion chambers against excessively pollution and wear.
The consumption of the additive has a ratio of 1 litre additive on 1000 litre LPG.
After 100l gas the injected additive should be 100ml.
Only use Prins ValveCare-DI fluid. Warranty will be void if any other liquid is used.

Part number

- 099/040001 1 litre bottle
- 099/200040 12x1 litre bottles

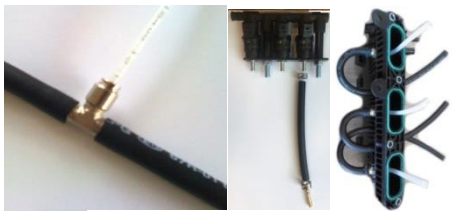
Remark!

No bottles of ValveCare-DI are standard supplied in the kit. Order the fluid separately.

11.8 Nipples and hose connections

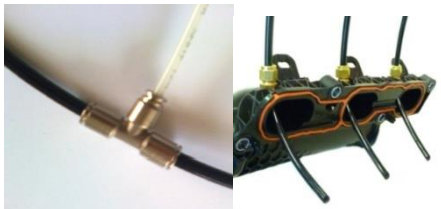
11.8.1 Variants

Choose the correct type of mounting kit, depending on the used gas feed line between the gas injectors and the manifold.



5mm and 6mm rubber gas and PTFE feed hose

Cut the 5mm LPG hose at a suitable position.
Insert the additive T-piece and secure it using suitable clip collars.
Connect the additive hose into the push-fit connector of the correct output on the module.



6mm nylon gas feed hose

Cut the nylon hose.

Insert the additive T-piece and secure it using suitable clip collars.
Connect the additive hose into the push-fit connector of the correct output on the module.

Direct manifold m5

Direct LiquiMax Gen3
Direct LiquiMax applications

Drill a 4.2 mm hole into the manifold. Tap an M5 thread into this hole. Screw in the additive jet, using thread sealant paste. The length of the thread can be sawn down if required. The end of the jet should not touch the wall inside the manifold.

Remark!

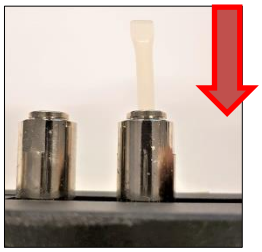
Cut the PTFE (white) and Nylon (black) hose whit a sharp knife of hose cutter in a perfect 90 degree angle. This is Necessary for a proper fitting in the coupling and prevents any damages to the internal coupling seals.

11.8.2 3 – 5 cilinder engine

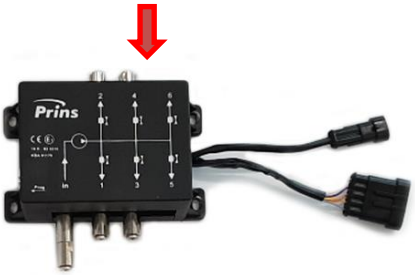
Remark!

In case of a 3 or 5 cylinder engine, outlet 4 and 6 should not be used. In the ValveCare-DI software, the right settings should be made. Prins advises to use a small piece of 4mm PA hose, melted together, to plug of the unused outlet. This prevents dirt entering the unused outlet plug.

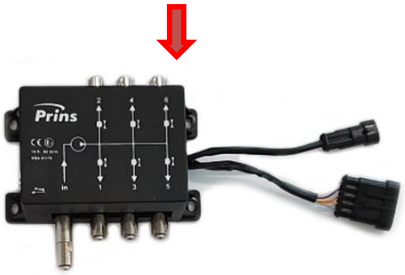
Melt a small piece of the PA hose together



Insert the blocked hose in outlet 4 or 6



3 cilinder engine
Protect the 4 th outlet



5 cilinder engine
Protect the 6th outlet

11.9 3 & 4 Cylinder sets

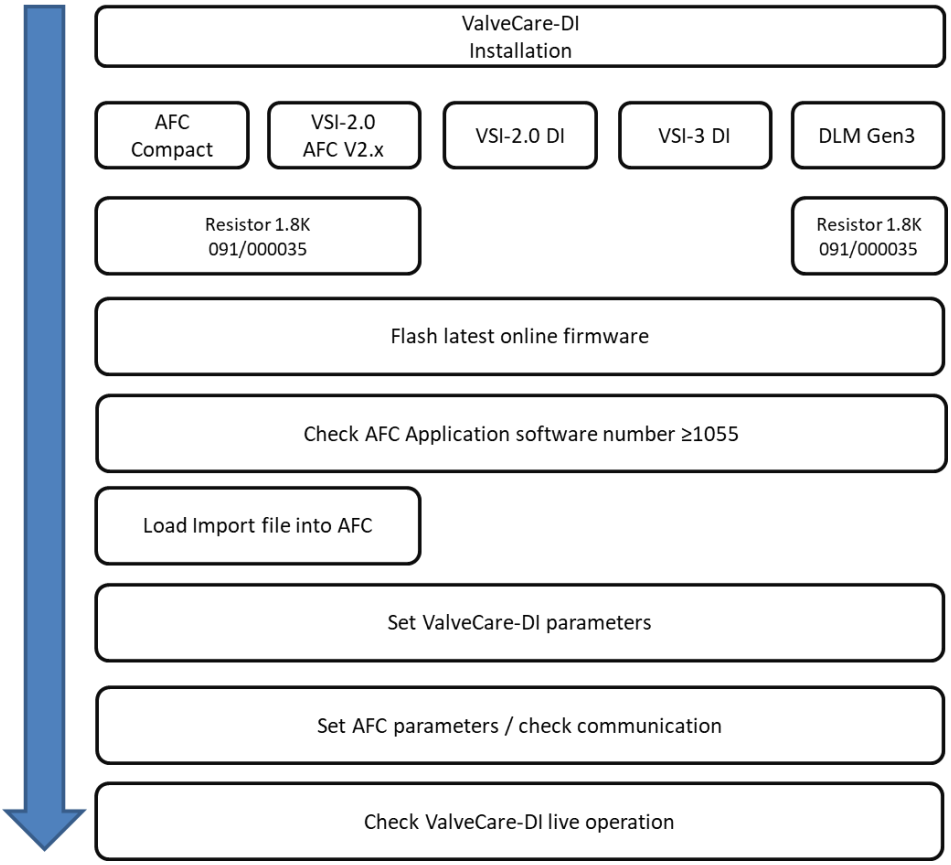
	KIT	MOUNTING KIT
Inlet Manifold connection		
	199/040110	**199/040010**
Hose/PTFE connection		
	199/040111	**199/040011**
Nylon connection		
	199/040112	**199/040012**

11.10 5 & 6 Cylinder sets

	KIT	MOUNTING KIT
Inlet Manifold connection		
	199/040113	**199/040013**
Hose/PTFE connection		
	199/040114	**199/040014**
Nylon connection		
	199/040115	**199/040015**

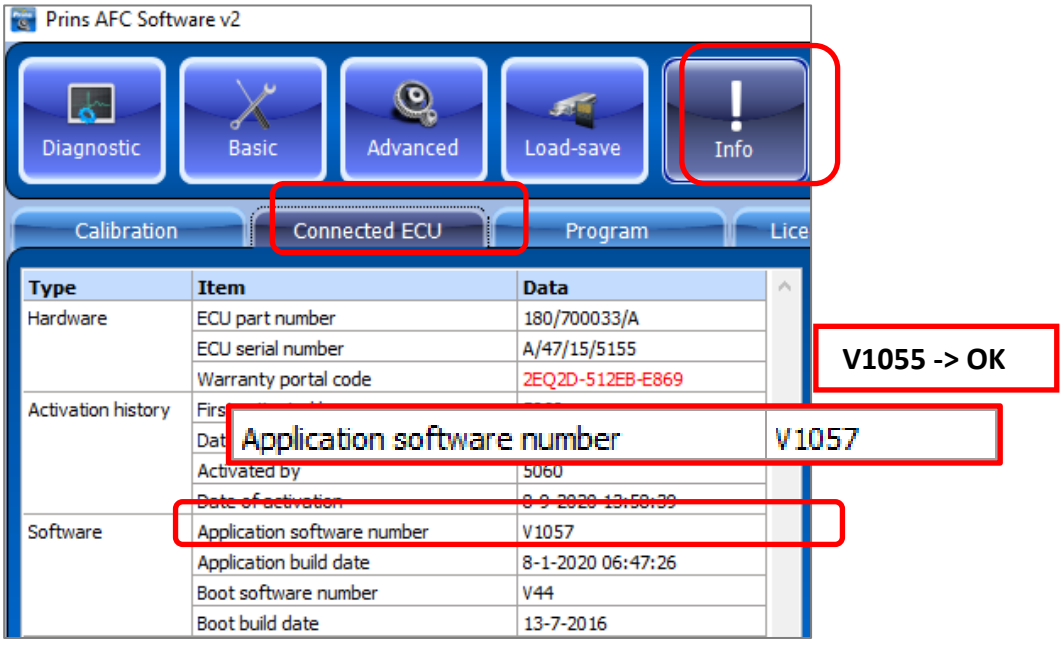
12 Prins LPG system integration

12.1 Installation flow



12.2 Supported software

ValveCare-DI is supported from Application software number 1055. Check this version before installing the ValveCare-DI system. When the software number does not match, flash the AFC with the latest online firmware.
Contact your importer / distributer when the Application software number still does not match.



12.3 Advanced Calibration parameters

Check and set the ValveCare-DI parameters like described in the table below

ID	Name	ValveCare	ValveCare-DI	Unit	Remark
25764	System AdditiveDosingUnitT ype	ValveCare	ValveCare DI		
563	AD 4 Sensor Selection	ValveCare	ValveCare		Only VSI-2.0 MPI
6316	Spare input 3 Function	ValveCare	ValveCare		Only DI systems
1751	ValveCare Bottle Time Max	200	5000	hr	
1750	ValveCare Bottle Time Min	5	0	hr	
9309	ValveCare Enable	Yes	Yes		Only DI systems
7428	ValveCareBottleEmptyTime	4	4	hr	

12.4 Add 1K8 resistor (MPI engines)

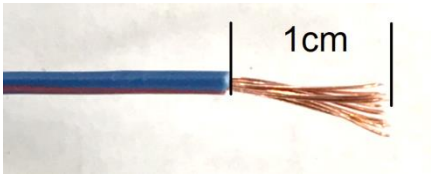
12.4.1 Needed parts

Resistor 1,8K Ohm [091/000035]

2x 15 cm wires

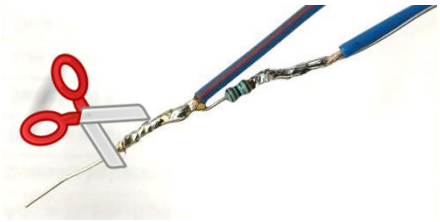
shrink sleeve with glue

12.4.2 Solder the 1K8 resistor



Remove isolation 1 cm

Solder the wires



Cut the resistor wires (7mm)

Result

Add the shrink sleeve

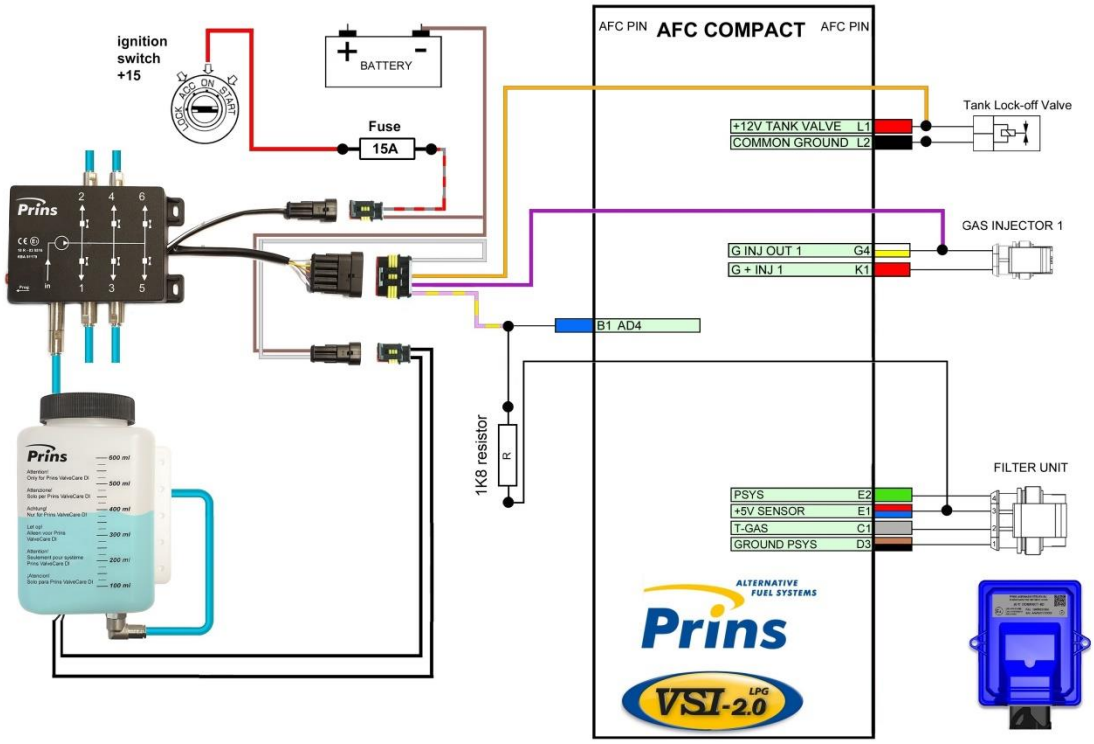
Shrink the sleeve and solder the resistor wires onto the wiring loom

12.5 VSI-2.0 MPI – AFC Compact

12.5.1 Additional parts

- Resistor 1,8K Ohm [091/000035]

12.5.2 Wiring diagram

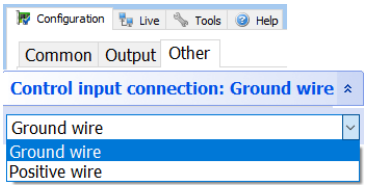


12.5.3 Connections ValveCare-DI

ValveCare-DI Wiring		Connection to AFC				Remark
		Wire	Pin	Color		
Orange		+12V Tank off valve	L1	Red		
Purple		G INJ OUT 1	G4	White	yellow	Gas injector 1 switched ground
Yellow	Pink	AD4 - Resistor	B1	Blue		Diagnostic input for AFC
		+5V SENSOR	E1	Green		Add 1K8 resistor; extend with wires

12.5.4 Specific ValveCare-DI setting

Configuration	Value	Comment
Expert modes – Other- Control input connection	Ground wire	Gas injector is ground switched



12.5.5 Prins AFC Software V2 setting

Online Firmware and Import file

Load the latest online firmware into the AFC. Check Application software number. (≥1055).
Download the import file (ppcf) from the members Area – Diagnostic Software – ValveCare.
Use the Prins AFC Software v2 to import the file into the AFC.

Set Advanced Calibration Parameters

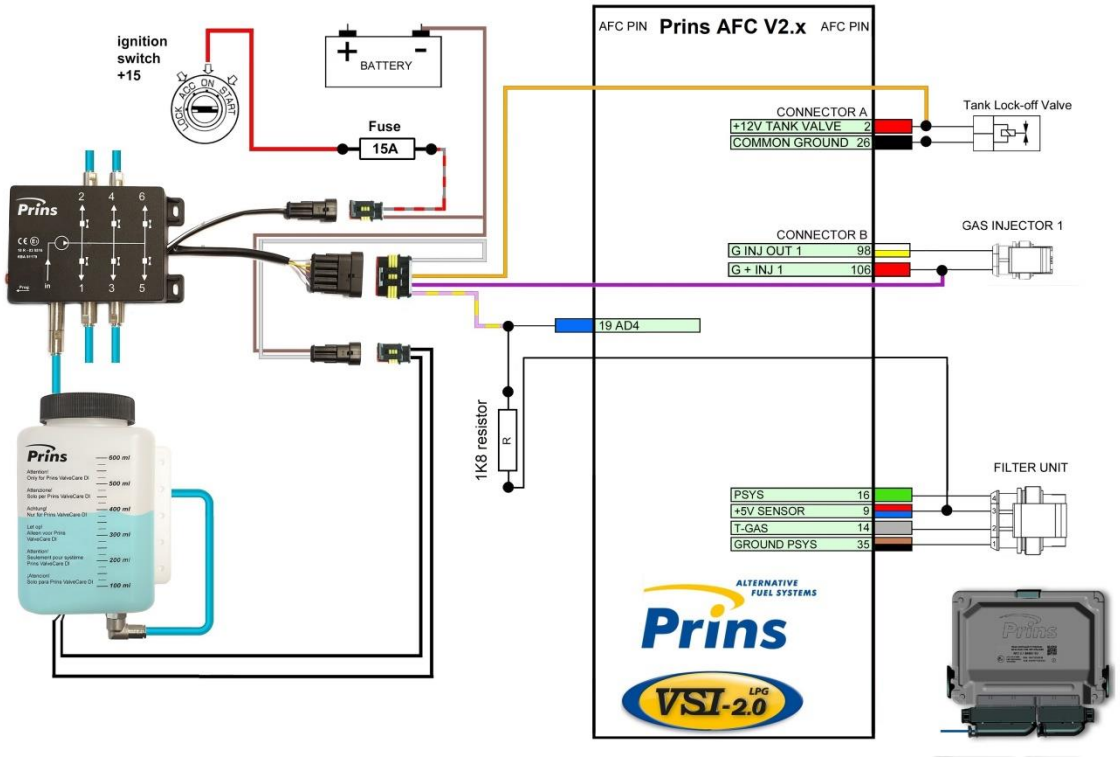
ID	Name	Value	Unit	Remark
563	AD4	ValveCare	-	
25764	SystemAddittiveDosingUnitType	ValveCareDI	-	

12.6 VSI-2.0 MPI – AFC V2.x

12.6.1 Additional parts

- Resistor 1,8K Ohm [091/000035]

12.6.2 Wiring diagram

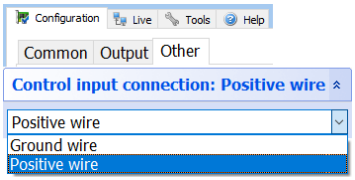


12.6.3 Connections ValveCare-DI

ValveCare-DI Wiring		Connection to AFC				Remark
		Wire	Pin	Color		
Orange		+12V Tank off valve	CONA 2	Red		
Purple		G + INJ 1	CONB 106	Red		Gas injector 1 +12V switched
Yellow	Pink	AD4	CONA 19	Blue		Diagnostic input for AFC
		+5V	CONA 9	Red	blue	Add 1K8 resistor; extend with wires

12.6.4 Specific ValveCare-DI setting

Configuration	Value	Comment
Expert modes – Other- Control input connection	Positive wire (default)	Gas injector is +12V switched



12.6.5 Prins AFC Software V2 setting

Online Firmware and Import file

Load the latest online firmware into the AFC. Check Application software number. (≥1055).
Download the import file (ppcf) from the members Area – Diagnostic Software – ValveCare.
Use the Prins AFC Software v2 to import the file into the AFC.

Set Advanced Calibration Parameters

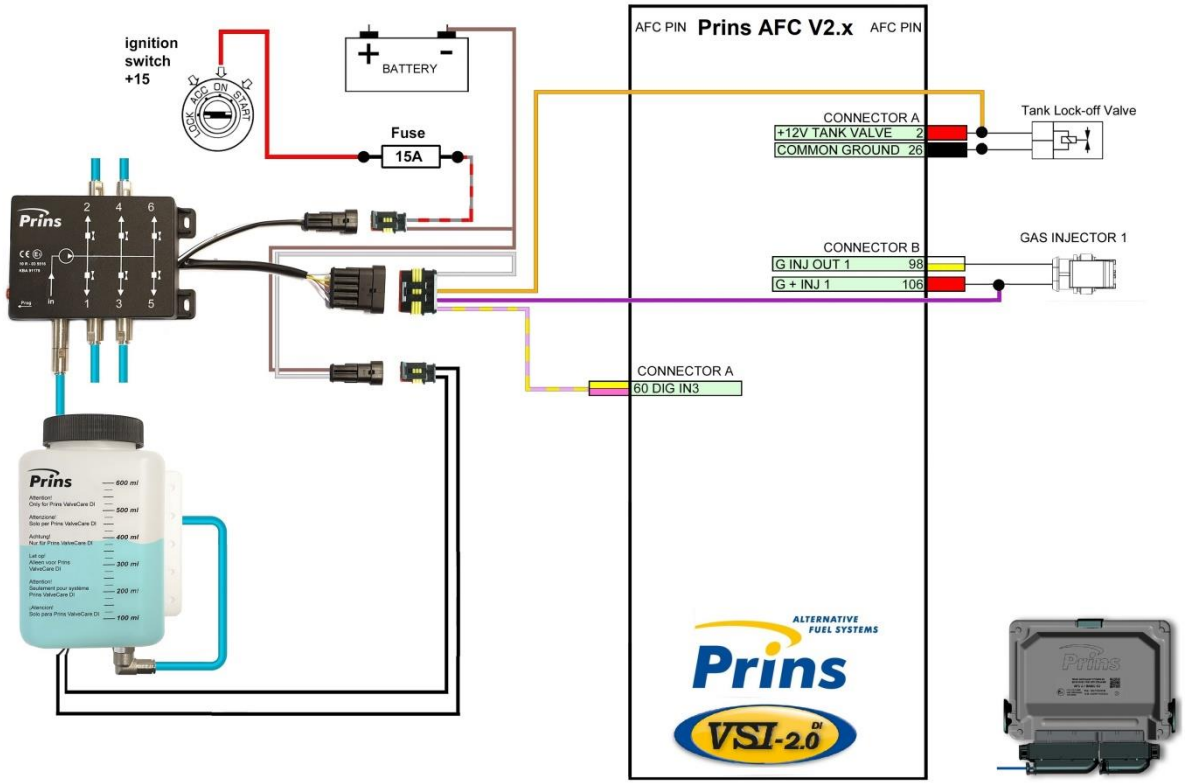
ID	Name	Value	Unit	Remark
563	AD4	ValveCare	-	
25764	SystemAddittiveDosingUnitType	ValveCareDI	-	

12.7 VSI-2.0 DI – AFC V2.x

12.7.1 Additional parts

- No additional parts needed to install the ValveCare-DI system

12.7.2 Wiring diagram

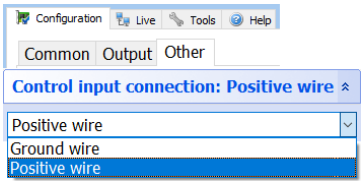


12.7.3 Connections ValveCare-DI

ValveCare-DI Wiring		Connection to AFC				Remark
		Wire	Pin	Color		
Orange		+12V Tank off valve	CONA 2	Red		
Purple		G + INJ 1	CONB 106	Red		Gas injector 1 +12V switched
Yellow	Pink	DIG IN3	CONA 60	Yellow	Pink	Diagnostic input for AFC

12.7.4 Specific ValveCare-DI setting

Configuration	Value	Comment
Expert modes – Other- Control input connection	Positive wire (default)	Gas injector is +12V switched



12.7.5 Prins AFC Software V2 setting

Online Firmware

Load the latest online firmware into the AFC. Check Application software number. (≥1055).

Set Advanced Calibration Parameters

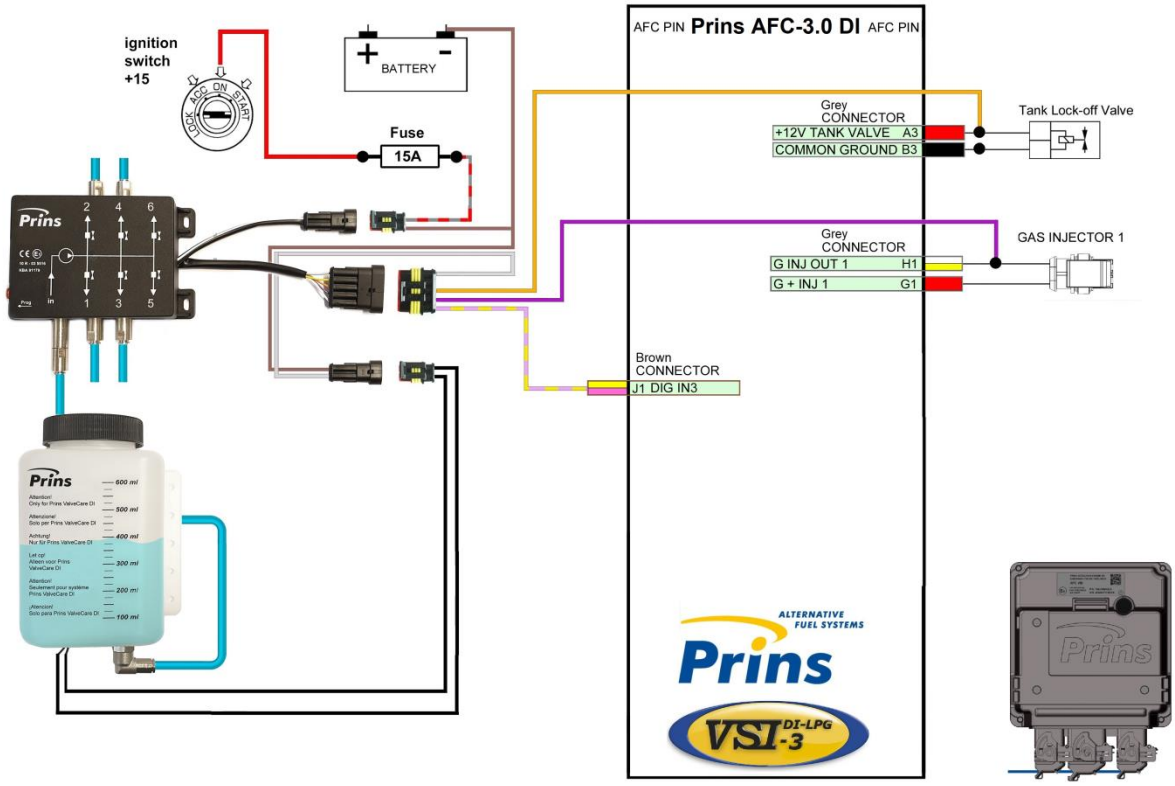
ID	Name	Value	Unit	Remark
6316	Spare input 3 Function	ValveCare	-	
9809	ValveCare Enable	Yes	-	
25764	SystemAddittiveDosingUnitType	ValveCareDI	-	

12.8 VSI-3 DI – AFC 3.0 DI

12.8.1 Additional parts

- No additional parts needed to install the ValveCare-DI system

12.8.2 Wiring diagram

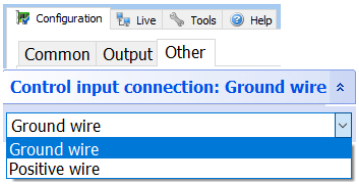


12.8.3 Connections ValveCare-DI

ValveCare-DI Wiring		Connection to AFC				Remark
		Wire	Pin	Color		
Orange		+12V Tank off valve	Grey A3	Red		
Purple		G INJ OUT 1	Grey H1	White	yellow	Gas injector 1 switched ground
Yellow	Pink	DIG IN3	Brown J1	Yellow	Pink	Diagnostic input for AFC

12.8.4 Specific ValveCare-DI setting

Configuration	Value	Comment
Expert modes – Other- Control input connection	Ground	Gas injector is ground switched



12.8.5 Prins AFC Software V2 setting

Set Advanced Calibration Parameters

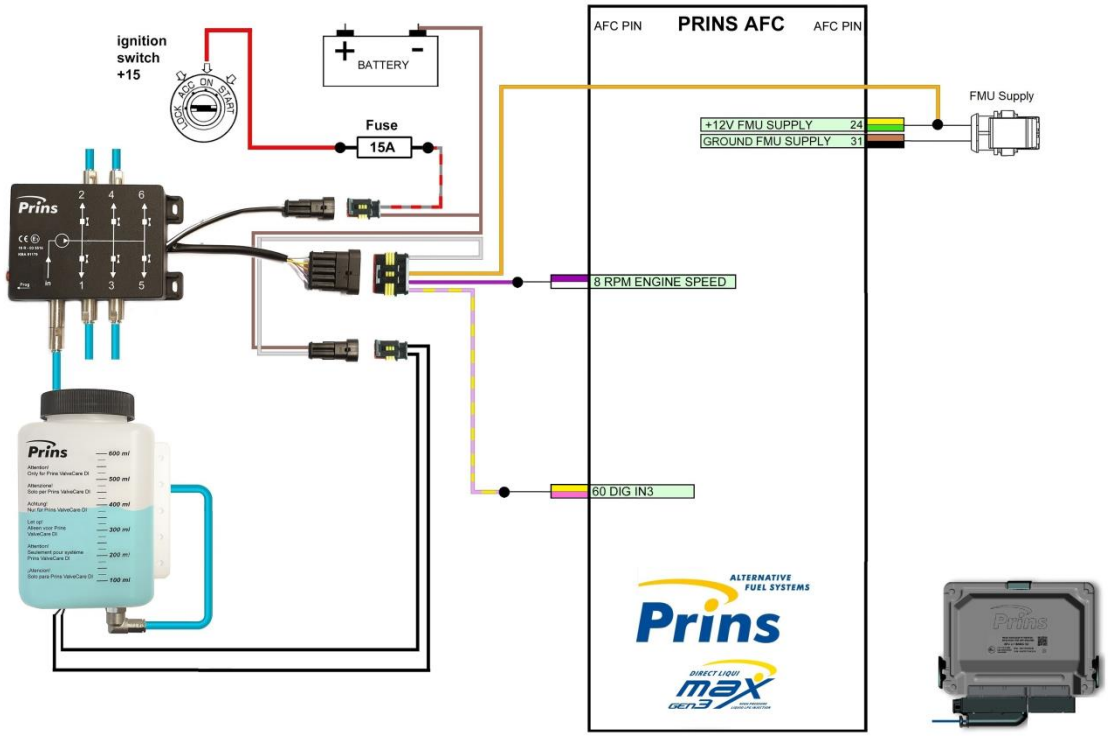
ID	Name	Value	Unit	Remark
6316	Spare input 3 Function	ValveCare	-	
9809	ValveCare Enable	Yes	-	

12.9 Direct LiquiMax Gen3

12.9.1 Additional parts

- No additional parts needed to install the ValveCare-DI system

12.9.2 Wiring diagram



12.9.3 Connections ValveCare-DI

ValveCare-DI Wiring		Connection to AFC				Remark
		Wire	Pin	Color		
Orange		+12V FMU SUPPLY	CONA 24	Yellow	green	
Purple		RPM	CONA 8	Purple	White	Engine speed signal
Yellow	Pink	DIG IN3	CONA 60	Yellow	Pink	Diagnostic input for AFC

12.9.4 Specific ValveCare-DI setting

Configuration	Value	Comment
Common - Operation mode	RPM	Engine speed is used
Common - Number of pulse		Additive injected after this number of pulses. Set this value. After 100l gas the injected additive should be 100ml.
Expert modes – Other - RPM adjust		Choose the value to match the engine speed
Expert modes - Other - Control input connection	Ground / Positive	Check if the RPM is stable; Change this value to get a stable RPM

12.9.5 Prins AFC Software V2 setting

Online Firmware

Load the latest online firmware into the AFC. Check Application software number. (≥1055)

Set Advanced Calibration Parameters

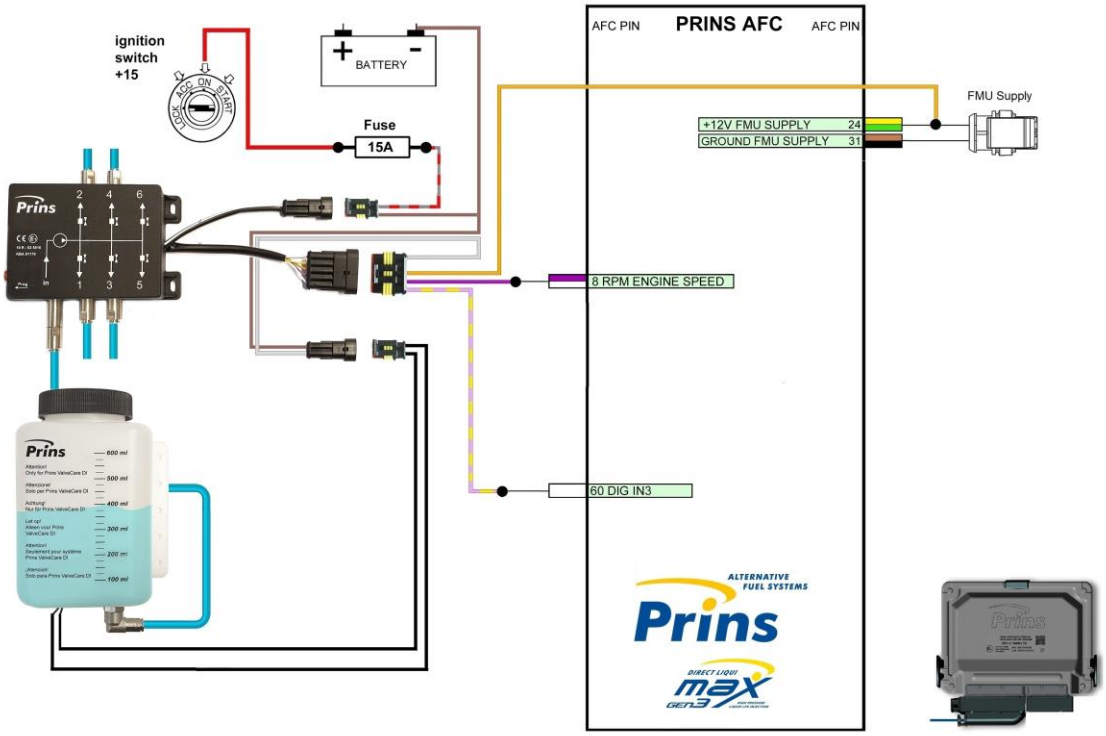
ID	Name	Value	Unit	Remark
6316	Spare input 3 Function	ValveCare	-	
9809	ValveCare Enable	Yes	-	
25764	SystemAddittiveDosingUnitType	ValveCareDI	-	

12.10 Direct LiquiMax Gen3 [Without additional wire]

12.10.1 Additional parts

- 1x wiring module [Tyco 191/140049 - Bosch 191/140036]

12.10.2 Wiring diagram



12.10.3 Connections ValveCare-DI

ValveCare-DI Wiring		Connection to AFC				Remark
		Wire	Pin	Color		
Orange		+12V FMU SUPPLY	CONA 24	Yellow	green	
Purple		RPM	CONA 8	Purple	White	Engine speed signal
Yellow	Pink	DIG IN3	CONA 60	White		Diagnostic input for AFC; *Add wiring module

12.10.4 Specific ValveCare-DI setting

Configuration	Value	Comment
Common - Operation mode	RPM	Engine speed is used
Common - Number of pulse		Additive injected after this number of pulses. Set this value. After 100l gas the injected additive should be 100ml.
Expert modes – Other - RPM adjust		Choose the value to match the engine speed
Expert modes - Other - Control input connection	Ground / Positive	Check if the RPM is stable; Change this value to get a stable RPM

12.10.5 Prins AFC Software V2 setting

Online Firmware

Load the latest online firmware into the AFC. Check Application software number. (≥1055)

Set Advanced Calibration Parameters

ID	Name	Value	Unit	Remark
562	AD 3 Sensor Selection	ValveCare	-	
9809	ValveCare Enable	Yes	-	
25764	SystemAddittiveDosingUnitType	ValveCareDI	-	

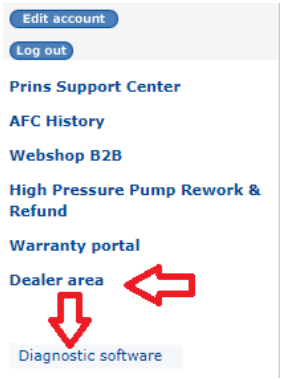
13 ValveCare-DI software and settings

All ValveCare-DI modules purchased from Prins have default Prins settings and a special Prins communication software. Please follow the steps to make the system suitable for the Prins system

13.1 ValveCare-DI Software download

Download ValveCare-DI configuration tool.

Press this Link to visit the download page



ValveCare Software :

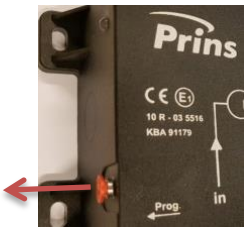
Software	Date	Release	Download
ValveCare Configuration Tool	01-2016	v1.3.5.1	Download
ValveCare-DI Configuration Tool	05-2020	v4.0.1.2	Download
Import file for VSI-2.0 MPI platform (AFC V2.x & AFC Compact) When ValveCare-DI is used for the VSI-2.0 MPI platform (AFC V2.x & AFC Compact), download the import file (ppcf). Use the Prins AFC Software v2 to import the file into the AFC. Without import, DTC 93 ValveCare lost communication will appear.	09-2020	v1.1	Download

Install the software

Use the wizard that guides you through.

13.2 Connection to laptop

Remove the red plug.



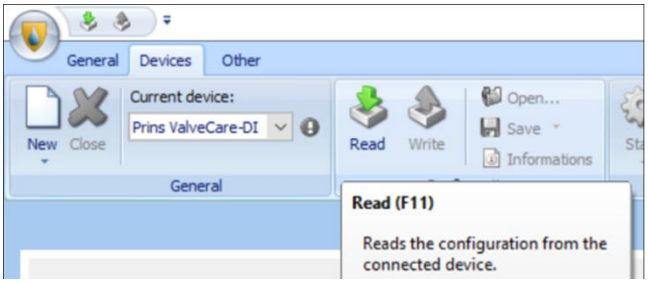
Connect the CABLE DIAGNOSTIC VALVECARE-DI into dosing unit

099/040003/A

Start the engine

Open the Valve Protector software

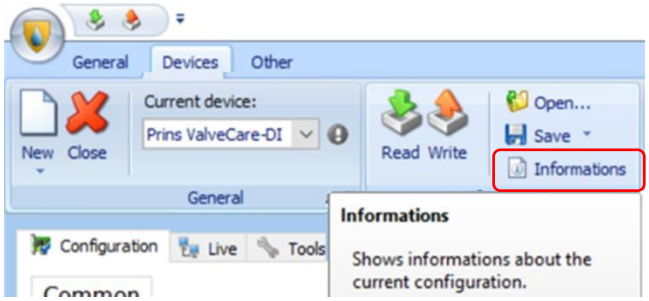
Press F11 to read the ValveCare-DI setting



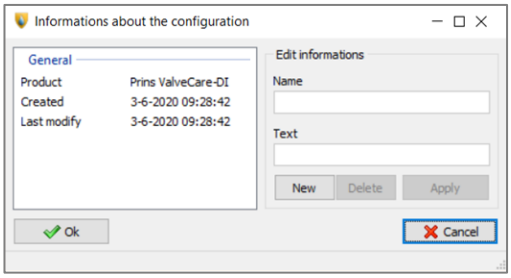
13.3 Check ValveCare-DI software version

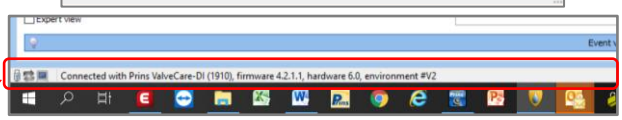
Check the software version

Devices -> Informations



Prins ValveCare-DI





13.4 Set ValveCare-DI parameters [Configuration]

Remark! Only the discussed parameters/settings have to be changed.
All other parameters/settings should stay “default”

Set the common parameters:

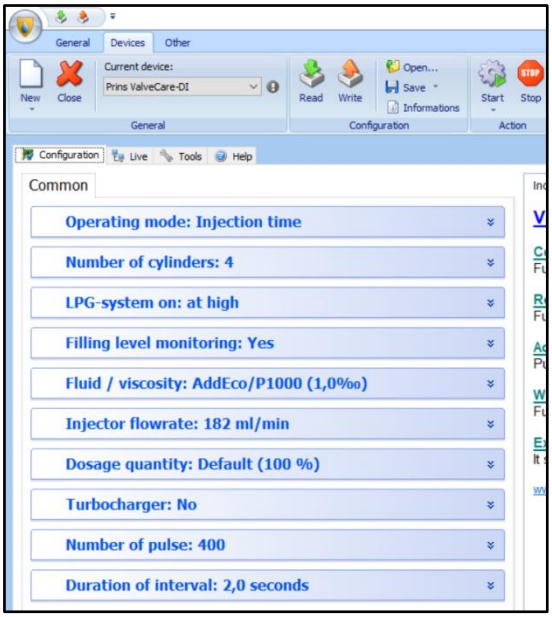
- Number of cilinders
- Injector flow fate
- Turbo charger

Only DLM

- Control input connection [RPM]
- RPM adjust
- Number of pulses

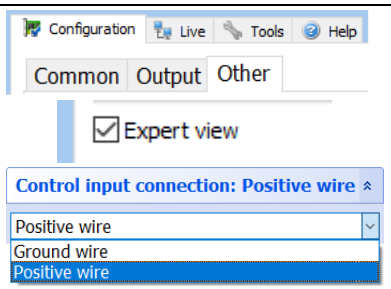
2 tank strategy only (separate)

- LPG-system on: Permanent

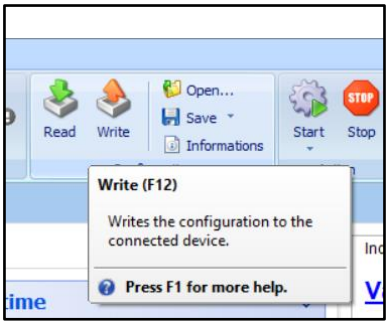


Set the Control input connection:
(Expert modes – Other)

- AFC Compact Pro -> Ground
- VSI-2.0 - AFC V2.x -> Positive
- VSI2.0-DI -> Positive
- VSI-3 DI -> Ground
- DLM -> Ground / Positive (HAL RPM)



Press F12 [Write] to save the parameters in the memory of the dosing module.



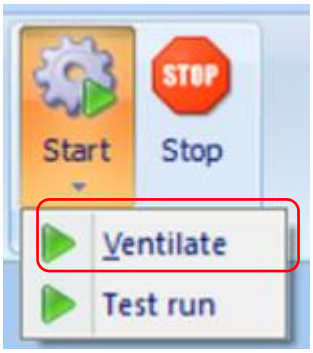
Remark! **Remark:** data gets lost in when not writing to the memory!

13.5 Ventilate lines

- After the first switch over to LPG, the system will ventilate automatically.
- The additive feed line between the reservoir and dosing module needs to be completely filled with the additive.
- In case of air bubbles, use the ventilation function in the software.

Start the engine and switch over to LPG to activate the ValveCare-DI system

Manual ventilation function

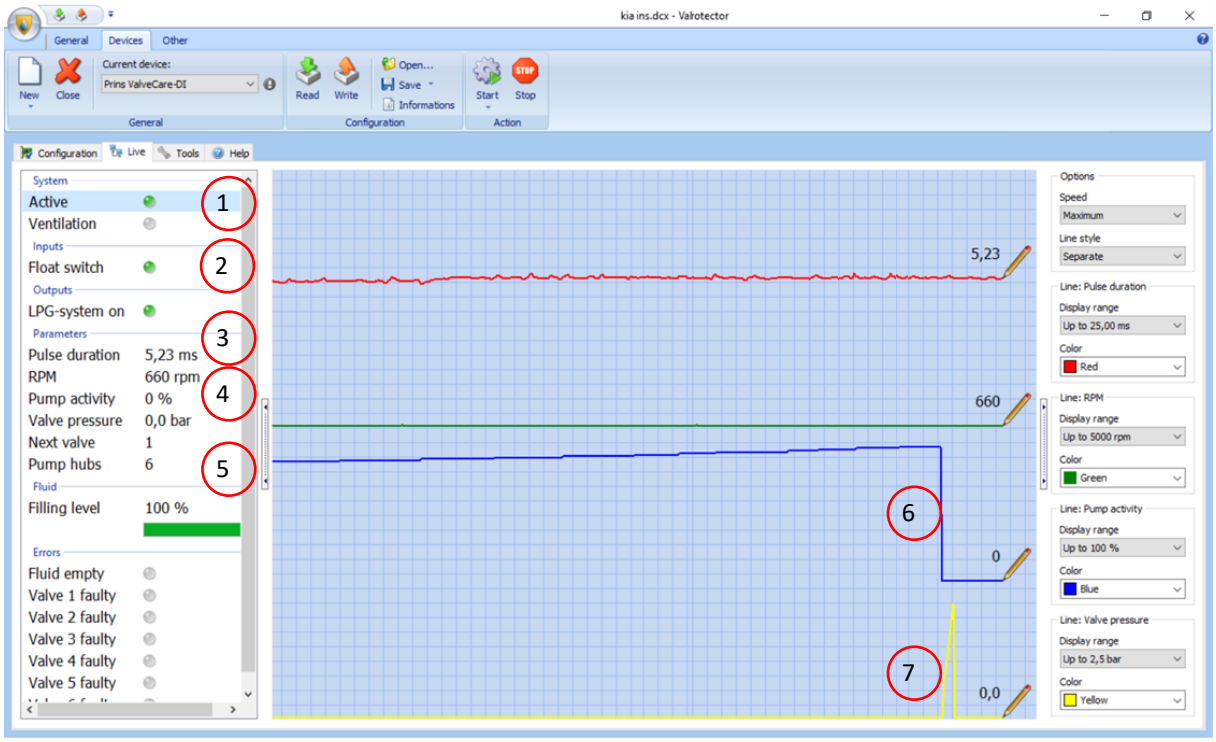


Remark!

In case the system does not measure pressure built up during operation, the system automatically start the bleeding process.

13.6 ValveCare-DI system check [Live]

Parameters and values are shown at the left side of the “Live data”.
At the right the parameters are shown in graph.



1) Indication if the ValveCare-DI unit is active (green = active)
2) Indication if the additive level is okay or low (green = additive level okay)
3) Injection time LPG injector (sanity check)
4) Pump activity -> goes up to 100% -> at 100% one dosage of additive is injected to the selected outlet [Pomp hubs].
5) Cilinder outlet additive active.
6) Pump activity -> counter goes up till 100% -> than the system injects an additive dosage.
7) Additive pressure inside the dosing module -> the yellow spike is an injection moment.

Attention! The filling level is full (100%) or empty -> the system has no linear level sensor/indication but only a reservoir empty detection.

13.7 Tools

13.8 Flash Module ValveCare-DI module

14 Service and maintenance

14.1 Check

- Prins advises to check the system:
- For leakage
- Consumption (additive level should go down over a period of time)
- Mountings
- Condition of brackets
- Wiring
- General state
- Clean the components when they are very dirty.

14.2 Refill the reservoir

The additive reservoir can be re-filled at all times.

Only refill with the original blue ValveCare-DI additive. If any other additive is used, Prins can no longer guarantee a proper operation and warranty shall expire directly.

Attention! The additive can damage rubber or plastic parts. Immediately rinse with plenty of water in case off any additive is spilled.

15 Trouble shooting

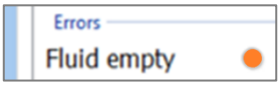
15.1 ValveCare-DI module

15.1.1 Instable RPM – DLM

Instable RPM with DLM Gen3 system -> Check the setting .in Expert modes - Other - Control input connection Ground / Positive Change this value to get a stable RPM.

15.1.2 Fluid empty unless enough fluid in reservoir

The error 'Fluid empty' can appear when no pressure can be build up during the ventilation sequence.



15.2 Prins AFC Software V2

15.2.1 Process parameters

No.	Name	Description
1744	ValveCare status	To check the status of the ValveCare-DI system
4823	ValveCare Communication	to check the diagnostic connection from the ValveCare-DI module to the AFC

15.2.2 DTC

Read out the diagnostic trouble codes with the Prins AFC Software v2. The AFC3.0 DI monitors the DTC via spare input 3 or AD4.

DTC nr	Description		Possible solution
89	ValveCare bottle empty	Critical	Refill the additive container.
90	ValveCare pump error	Critical	Check supply, ground and diagnostic wire of the ValveCare pump.
93	ValveCare lost communication	Critical	Check setting / set calibration parameter [6316] Spare input 3 Function to ValveCare AFC Compact & AFC v2.1 MPI: check resistor Check diagnostic connection between ValveCare unit and AFC.
251	ValveCare pump untested	Non-critical	Check all input signals of the dosing unit. Check if all signal od ValveCare-Di are correct.