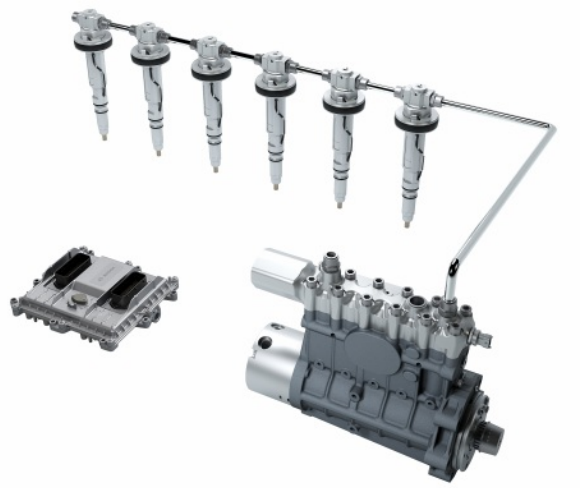
Diesel System Components



Features

- Modification of Common Rail systems
- Different modification levels available
- All hydraulic parts available

The geometry and characteristics of Diesel engine components are more dependent upon the application than those for gasoline engines. A single injector design will not fit all Diesel engines due to varying mechanical and nozzle geometry requirements. In addition, the injection system can vary from year to year even within the same make of car.
Bosch Motorsport uses the same Common Rail technology for racing that was developed for production vehicle applications. This includes both solenoid (magnetic) technology and the latest cutting-edge piezo technology.
Bosch Motorsport can offer a wide variety of modifications to fit the system to your specifications. These modifications include:

- Definition of suitable base components from other (or larger) engine applications.
- Adaptation of components for mating, fit and orientation to suit the selected application.
- Flow enhancement of injectors and rails.
- Injector nozzle adaptation (flow rate, number of holes, spray cone angle etc.).

Technical Specifications

Common Rail Pumps	CP1H, CP3, CP4	
Rails		Max. 6 cyl./bank
Pressure Sensors	RDS	Max. 2,400 bar
Injectors	CRI 2 (Solenoid), CRI 3 (Piezo)	
Pressure Control Valves	DRV	Max. 2,400 bar

Installation Notes

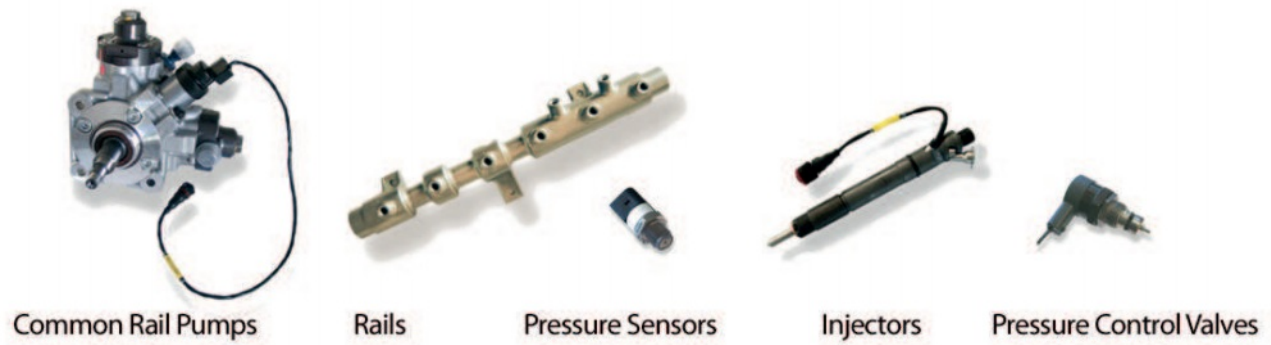
When contacting us for more information on our Diesel components, please have the following information ready so that we may best determine components required for your application:

- The base engine / the car where this engine originally is installed
- Model year and type of car / engine
- The base output level and the desired output level for the engine
- If it is originally equipped with Bosch components: the part numbers of the Bosch components
- Alternatively the car / engine manufacturer part number of the original injection system.

Legal Restrictions

The sale of this product in Mexico is prohibited. Due to embargo restrictions, sale of this product in Russia, Belarus, Iran, Syria, and North Korea is prohibited.

Dimensions



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Overview

Fuel Pressure Regulator Mini 2

- 5 to 8 bar
- 30 to 400 l/h reflow
- Adjusted at 105 l/h
- Aluminum housing
- All versions Methanol compatible

Fuel Pressure Regulator Mini 5

- 5 bar
- 15 to 220 l/h reflow
- Adjusted at 105 l/h
- Sheet steel housing

Fuel Pressure Regulator Mini A

- 2.2 to 3.5 bar/3.5 to 5 bar
- 15 to 220 l/h reflow
- Pressure adjustable
- Sheet steel housing

FPR Adaptor light

- Aluminum housing
- Fits to production type regulators and Motorsport regulators (FPR Mini 2, Mini 5, Mini A)
- Very light weight

Fuel Pressure Regulator Mini 2

Features

- 5 to 8 bar
- 30 to 400 l/h reflow
- Adjusted at 105 l/h
- Aluminum housing
- All versions Methanol compatible

Fuel pressure regulators are used to maintain constant fuel pressure at the injection valves.
We offer this regulator for gasoline as well as for methanol applications.
The main benefit of this regulator includes a higher pressure range and a higher return flow rate in comparison to the production type regulators.

Application

Pressure range	See ordering information
Reflow quantity	30 to 400 l/h
Fuel compatibility	Gasoline, E85, M100
Operating temperature	-40 to 120°C
Storage temperature	-40 to 100°C
Max. vibration	<600 m/s² at 5 to 250 Hz
Valve leakage	Q_{leck} [cm³/min] ≤ 9 (pneumatic) at p [kPa] = 0.8 x P_{nom}

Technical Specifications

Variations

Please see Ordering Information

Mechanical Data

Diameter	38.1+0.1-0.2 mm
Weight	Ca. 61 g
Mounting	Fastening with a clip

Connectors and Wires

Connector supply	Diam. 25 mm, O-ring 25x2.5
Connector reflow	Diam. 9.1 mm, O-ring 5x2.5

Installation Notes

Never run the regulator without the integrated filter.

Please oil O-rings lightly with clean and silicone free engine oil before you install the regulator.

Please make a leak test after you have installed the regulator.

When the pressure regulator is removed and will be reused, the O-rings must be tested for fractures.

Operation of the pressure regulator with a medium other than gasoline is not allowed.

Using the FPR Adaptor light F02U.V02.248-01, you can rebuild the regulator an inline type.

This pressure regulator is not designed for in-tank mounting.

Legal Restrictions

The sale of this product in Mexico is prohibited.
Due to embargo restrictions, sale of this product in Russia, Belarus, Iran, Syria, and North Korea is prohibited.

Ordering Information

Fuel Pressure Regulator Mini 2
Pressure Range 5.0 bar
Order number **F02U.V02.166-01**

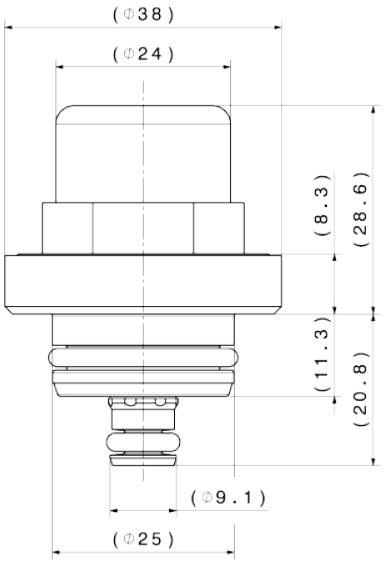
Fuel Pressure Regulator Mini 2
Pressure Range 6.0 bar
Order number **F02U.V02.168-01**

Fuel Pressure Regulator Mini 2
Pressure Range 7.0 bar
Order number **F02U.V02.170-01**

Fuel Pressure Regulator Mini 2
Pressure Range 8.0 bar
Order number **F02U.V02.171-01**

FPR Adaptor light
Order number **F02U.V02.248-01**

Dimensions



Complete dimensions on offer drawing at www.bosch-motorsport.com

Fuel Pressure Regulator Mini 5

Features

- 5 bar
- 15 to 220 l/h reflow
- Adjusted at 105 l/h
- Sheet steel housing

Fuel pressure regulators are used to maintain constant fuel pressure at the injection valves.
We modified this production type based regulator especially for motorsport use and increased the pressure level.
The main benefit of this regulator include the competitively priced high quality and the high return flow rate.

Application

Pressure range	5 bar
Reflow quantity	15 to 220 l/h
Reference pressure connector	Diam. 5 mm, tube connector
Fuel compatibility	Gasoline (E85 or M15 with shortened lifetime)
Operating temperature	-40 to 120°C
Storage temperature	-40 to 100°C
Max. vibration	<600 m/s² at 5 to 250 Hz
Valve leakage	Q_{leck} [cm³/min] ≤ 9 (pneumatic) at p [kPa] = 0.8 x P_{nom}

Technical Specifications

Mechanical Data

Diameter	34.9 mm
Weight	48.5 g
Mounting	Fastening with a clip

Characteristic

Set pressure accuracy	±2 % at 105 l/h

Connectors and Wires

Connector supply	Diam. 25 mm, O-ring
Connector reflow	Diam. 9.15 mm, O-ring

Installation Notes

The tube connector at the housing can be used to supply reference pressure to the regulator. This can be atmospheric pressure, air box pressure or manifold pressure.

Never run the regulator without the integrated filter.

Please oil O-rings lightly with clean and silicone free engine oil before you install the regulator.

Please make a leak test after you have installed the regulator.

When the pressure regulator is removed and will be reused, the O-rings must be tested for fractures.

Operation of the pressure regulator with a medium other than gasoline is not allowed.

This pressure regulator is not designed for in-tank mounting.

Legal Restrictions

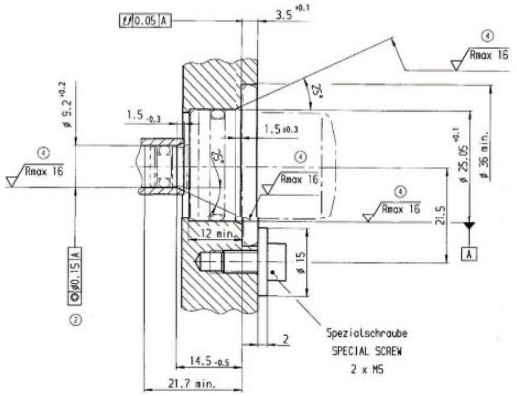
The sale of this product in Mexico is prohibited.
Due to embargo restrictions, sale of this product in Russia, Belarus, Iran, Syria, and North Korea is prohibited.

Ordering Information

Fuel Pressure Regulator Mini 5
Order number **0280.B02.722-03**

FPR Adaptor light
Order number **F02U.V02.248-01**

Dimensions



Fuel Pressure Regulator Mini A

Features

- 2.2 to 3.5 bar/3.5 to 5 bar
- 15 to 220 l/h reflow
- Pressure adjustable
- Sheet steel housing

Fuel pressure regulators are used to maintain constant fuel pressure at the injection valves.
This regulator based on a production type regulator was specially designed for motorsport applications. The main benefit of this regulator is the adjustability of the fuel pressure.

Application

Pressure range	2.2 to 3.5 bar 3.5 to 5.0 bar
Reflow quantity	15 to 220 l/h
Reference pressure connector	Diam. 5 mm, tube connector
Fuel compatibility	Gasoline, E85, M15
Operating temperature	-40 to 120°C
Storage temperature	-40 to 100°C
Max. vibration	<400 m/s^2 at 5 to 250 Hz
Valve leakage	Q_{leck} [cm^3/min] ≤ 9 (pneumatic) at p [kPa] = 0.8 x P_{nom}

Technical Specifications

Mechanical Data

Diameter	34.9 mm
Weight	58 g
Mounting	Fastening with a clip

Connectors and Wires

Connector supply	Diam. 25 mm, O-ring
Connector reflow	Diam. 9.15 mm, O-ring

Installation Notes

The tube connector at the housing can be used to supply reference pressure to the regulator. This can be atmospheric pressure, air box pressure or manifold pressure.

Never run the regulator without the integrated filter.

Please oil O-rings lightly with clean and silicone free engine oil before you install the regulator.

Please make a leak test after you have installed the regulator.

When the pressure regulator is removed and will be reused, the O-rings must be tested for fractures.

Operation of the pressure regulator with a medium other than gasoline is not allowed.

This pressure regulator is not designed for in-tank mounting.

Legal Restrictions

The sale of this product in Mexico is prohibited.
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Ordering Information

Fuel Pressure Regulator Mini A
Pressure Range 2.2 to 3.5 bar
Order number **B280.550.340-03**

Fuel Pressure Regulator Mini A
Pressure Range 3.5 to 5.0 bar
Order number **B280.550.341-04**

FPR Adaptor light
Order number **F02U.V02.248-01**

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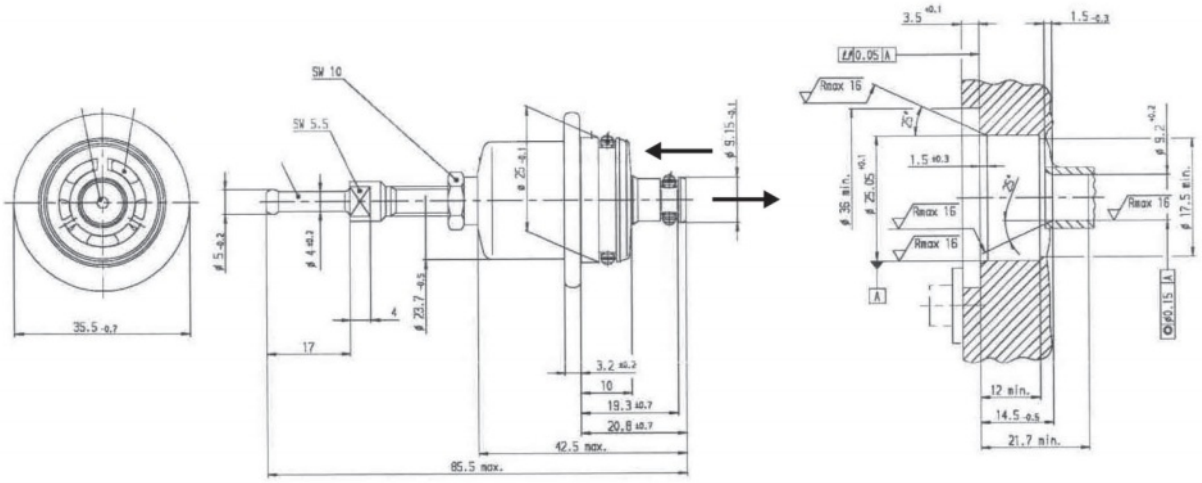
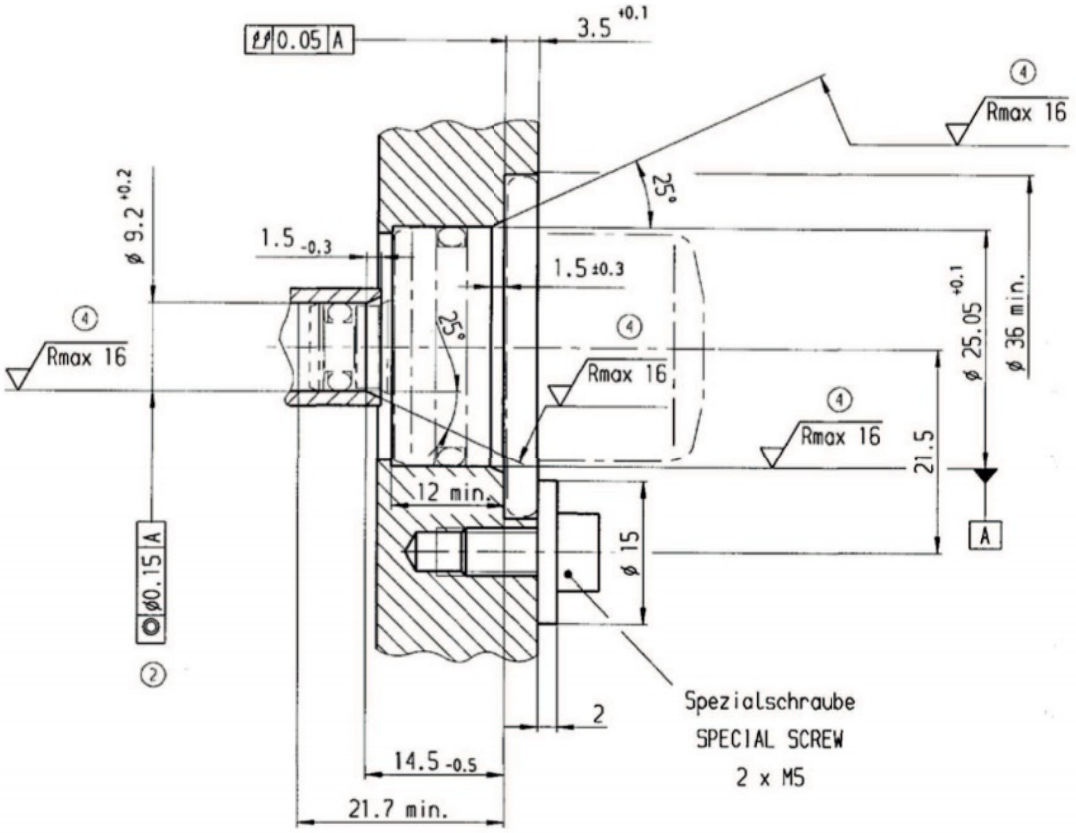
Dimensions





Installation Recommendation

FPR Adaptor light

Features

- Aluminum housing
- Fits to production type regulators and Motorsport regulators (FPR Mini 2, Mini 5, Mini A)
- Very light weight

This adaptor offers the opportunity to convert a rail pressure regulator into an inline pressure regulator. The adaptor is able to hold a production type regulator as well as a motorsport regulator. Delivery without regulator.

Application

Fuel compatibility	Gasoline, E85/M100
Operating temperature range	-40 to 120°C
Storage temperature range	-40 to 100°C
Max. vibration	<600 m/s^2 at 5 to 250 Hz

Technical Specifications

Mechanical Data

Diameter	50 mm
Heigth	55 mm
Weight	92 g
Mounting	Screw fastening with M6 screws into housing or M5 screws through housing

Connectors and Wires

Connector supply	2 x M14 x 1.5
Connector reflow	M14 x 1.5

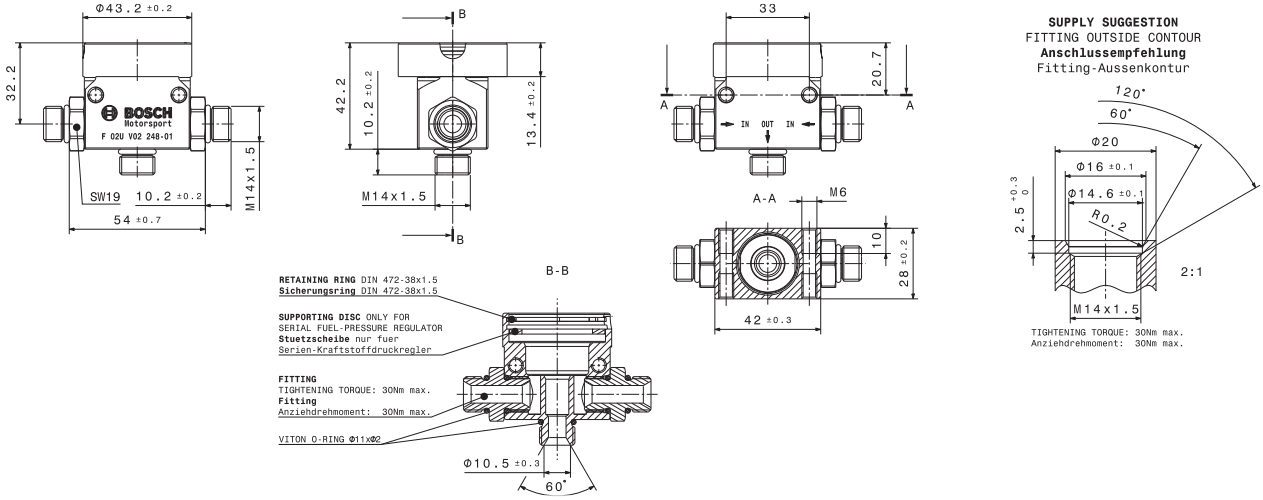
Legal Restrictions

The sale of this product in Mexico is prohibited. Due to embargo restrictions, sale of this product in Russia, Belarus, Iran, Syria, and North Korea is prohibited.

Ordering Information

FPR Adaptor light
Order number **F02U.V02.248-01**

Dimensions



Overview

Fuel Pump FP 165-E

- >165 l/h
- Max. 6 bar
- 700 g
- Fuel lines screwed
- Internal pre-filter on suction side with 300 µm

Fuel Pump FP 200-7

- >200 l/h
- Internal pressure limiting valve
- 750 g
- Fuel lines screwed
- Internal pre-filter on suction side with 300 µm

Fuel Pump FP 200-E

- >200 l/h
- No internal pressure limiting valve
- 750 g
- Fuel lines screwed
- Internal pre-filter on suction side with 300 µm

HP Fuel Pump HDP 5

- Max. 1.1 cm^3/rot_{cam}
- 200 bar
- 780 g
- Integrated Flow Control Valve
- Internal Pressure Relief Valve

Fuel Pump FP 165-E

Features

- >165 l/h
- Max. 6 bar
- 700 g
- Fuel lines screwed
- Internal pre-filter on suction side with 300 µm

The FP 165-E is an inline roller cell pump for the installation outside the fuel tank (installation in tank not proven).
It is capable of providing <165 l/h at 6 bar. Bio-fuel and Diesel can be delivered up to E100 (shortens lifetime!).
The FP 165-E is a production type fuel pump, combining good quality at a low price.

Application

Fuel pressure	0.5 up to 6 bar
Delivery rate at 5 bar and 22°C	190 l/h at 4.3 bar
Pressure limiting valve	8 to 10.0 bar rel.
Fuel compatibility	Up to E100 with shorter lifetime
Diesel compatibility	Given
Operating temperature range	-40 to 80°C ≤90°C for ≤5 h over 1.000 h lifetime ≤105°C for ≤1 h over 50 h lifetime
Storage temperature range	-40 to 60°C
Max. vibration IEC 60068-2-34	10 Hz 19,4 $(m/s^2)^2/Hz$ 300 Hz 0,654 $(m/s^2)^2/Hz$ 1.000 Hz 0,059 $(m/s^2)^2/Hz$

Technical Specifications

Mechanical Data

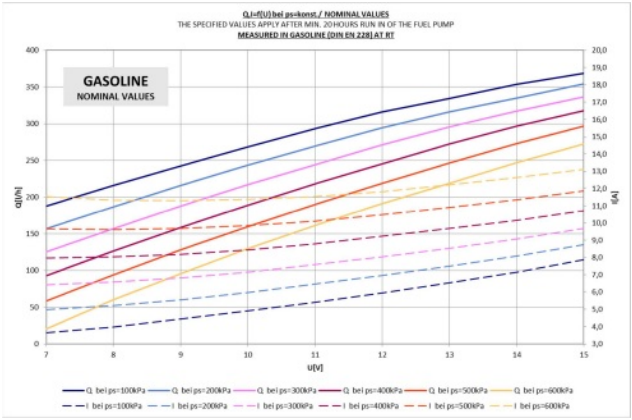
Diameter	60 mm
Length	162.6 mm
Weight	700 g
Mounting	Clamping

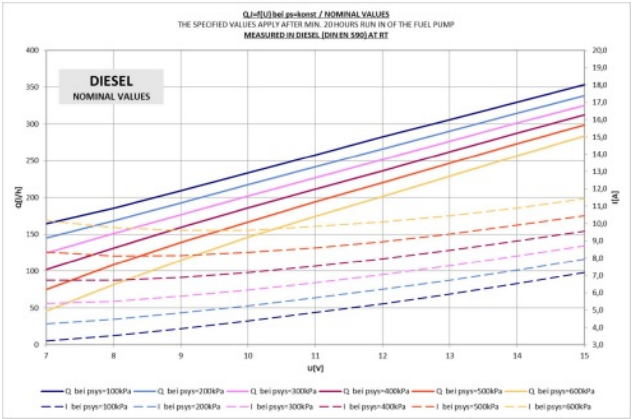
Electrical Data

Supply voltage	6 to 15 V
Operating voltage	13 V (26 V for 60 s)
Load current at 5 bar and 22°C	<14 A

Characteristic

Color	Silver
Non-return valve	Internal
Overpressure valve	Internal





Connectors and Wires

Electrical connector	+M4/-M5
Electrical mating connector	with ring wire M4 and M5
Mechanical connector intake side	M14x1.5
Mechanical connector pressure side	M12x1.5

Installation Notes

Up to E100 with shorter lifetime

For technical reasons the values may vary.

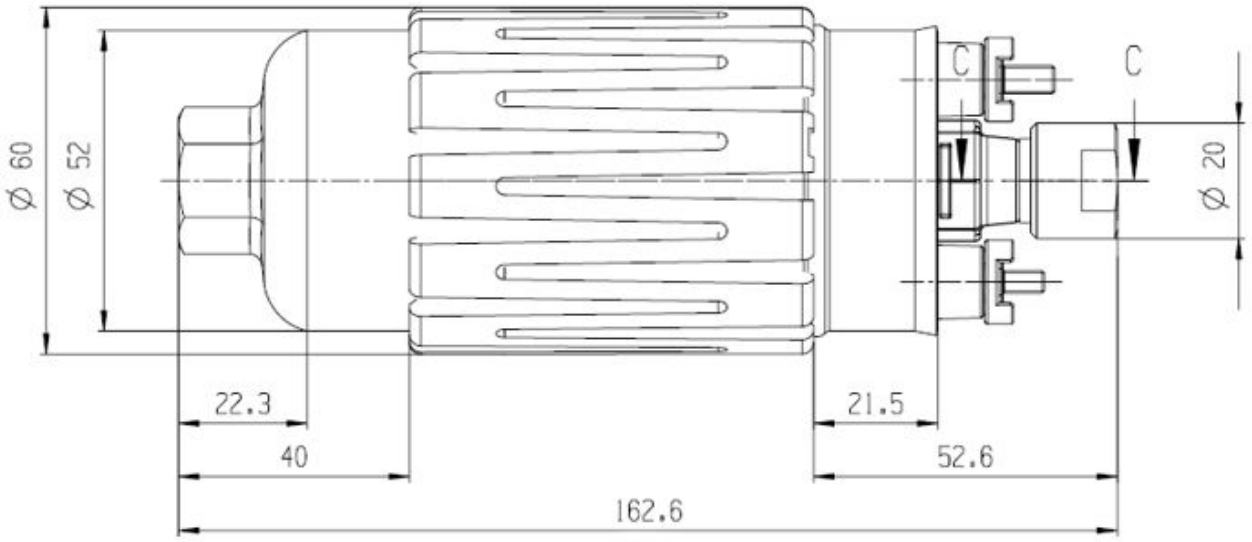
Please use within the specified limit values only.

Please find further application hints in the offer drawing at our homepage.

Ordering Information

Fuel Pump FP 165-E
Order number **F.02U.V03.137-01**

Dimensions



Fuel Pump FP 200-7

Features

- >200 l/h
- Internal pressure limiting valve
- 750 g
- Fuel lines screwed
- Internal pre-filter on suction side with 300 µm

The FP 200-7 is an inline roller cell pump for the installation outside the fuel tank (installation in the tank is not proven).
It is capable of providing 200 l/h at 7 bar. Bio-fuel can be delivered up to E100 (shortens lifetime!).
The FP 200-7 is compatible with Gasoline and Diesel fuel. It is the replacement for the 0580.254.044 aftermarket fuel pump with higher performance.

Application

Fuel pressure	Up to 7,5 bar
Gasoline delivery rate at 5 bar and 22°C	>220 to 270 l/h
Diesel delivery rate at 7 bar and 22°C	>185 to 235 l/h
Pressure limiting valve	8,0 to 10,0 bar
Fuel compatibility	Up to E100 with shorter lifetime
Diesel compatibility	Given
Operating temperature range	-40 to 80°C ≤90°C for ≤5 h over 1.000 h lifetime ≤105°C for ≤1 h over 50 h lifetime
Storage temperature range	-30 to 60°C
Max. vibration IEC 60068-2-34	10 Hz 19,4 $(m/s^2)^2/Hz$ 300 Hz 0,654 $(m/s^2)^2/Hz$ 1.000 Hz 0,059 $(m/s^2)^2/Hz$

Technical Specifications

Mechanical Data

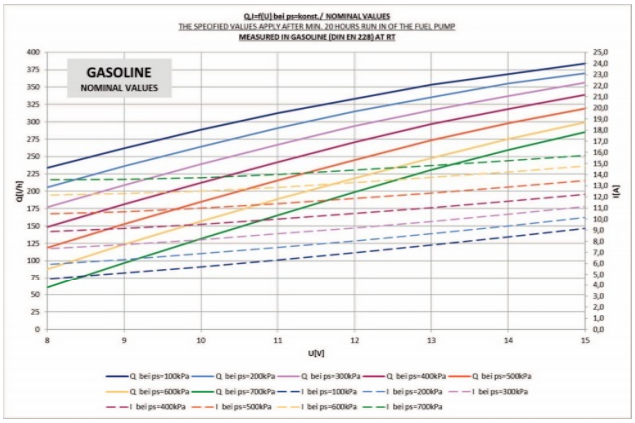
Diameter	60 mm
Length	197 mm
Weight	750 g (864 g incl. cable kit)
Mounting	Clamping

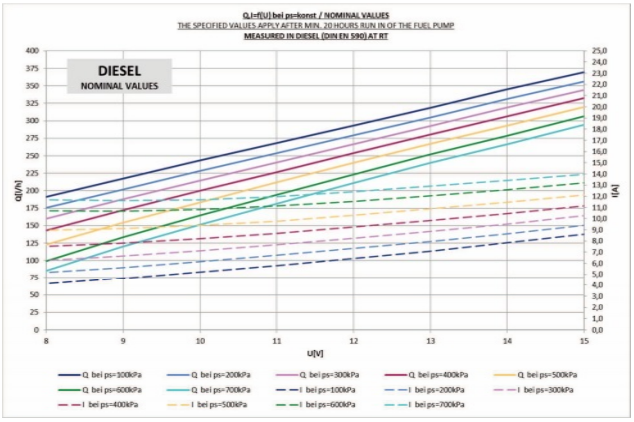
Electrical Data

Supply voltage	6 to 15 V (26 V for 60 s)
Operating voltage	13 V
Load current at 5 bar and 22°C	≤ 17 A

Characteristic

Color	Silver
Non-return valve	External
Fuel filtering	External, on pressure side
Over-pressure valve	Internal





Connectors and Wires

Electrical connector	+M4/-M5
Electrical mating connector	With ring wire M4 and M5
Mechanical connector intake side	M18x1.5

Mechanical connector pressure side	M12x1.5

Installation Notes

- Up to E100 with shorter lifetime
- For technical reasons the values may vary.
- Please use within the specified limit values only.
- Please find further application hints in the offer drawing at our homepage.

Legal Restrictions

The sale of this product in Mexico is prohibited. Due to embargo restrictions, sale of this product in Russia, Belarus, Iran, Syria, and North Korea is prohibited.

Ordering Information

Fuel Pump FP 200-7
Order number **F.02U.V03.136-01**

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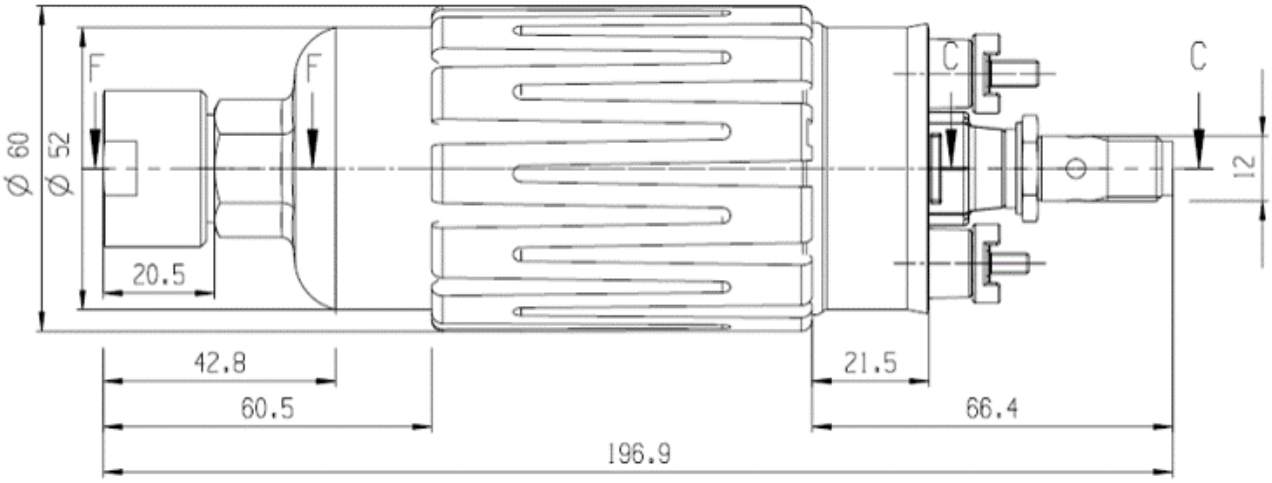
Dimensions



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Fuel Pump FP 200-E

Features

- >200 l/h
- No internal pressure limiting valve
- 750 g
- Fuel lines screwed
- Internal pre-filter on suction side with 300 µm

The FP 200-E is an inline roller cell pump for the installation outside the fuel tank (installation in the tank is not proven).
It is capable of providing 200 l/h at 8 bar. Bio-fuel can be delivered up to E100 (shortens lifetime!).
The FP 200-E is compatible with Gasoline and Diesel fuel.

Application

Fuel pressure	Max. 8,0 bar
Gasoline delivery rate at 8 bar and 22°C	>200 l/h
Diesel delivery rate at 7 bar and 22°C	>180 l/h
Pressure limiting valve	Without. Subsequent assembly possible on pressure side by customer
Fuel compatibility	Up to E100 with shorter lifetime
Diesel compatibility	Given
Operating temperature range	-40 to 80°C ≤90°C for ≤5 h over 1.000 h lifetime ≤105°C for ≤1 h over 50 h lifetime
Storage temperature range	-30 to 60°C
Max. vibration IEC 60068-2-34	10 Hz 19,4 $(m/s^2)^2/Hz$ 300 Hz 0,654 $(m/s^2)^2/Hz$ 1.000 Hz 0,059 $(m/s^2)^2/Hz$

Technical Specifications

Mechanical Data

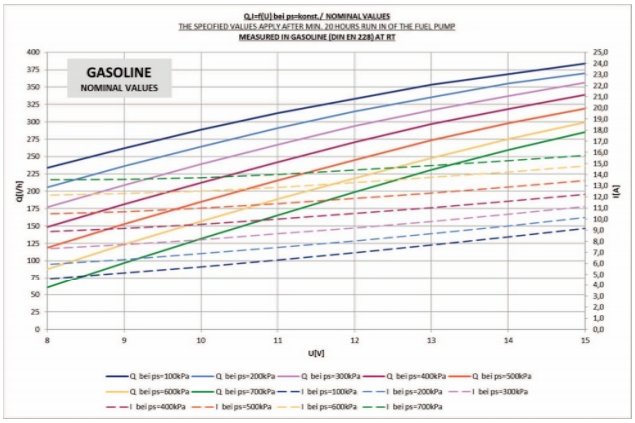
Diameter	60 mm
Length	197 mm
Weight	750 g (864 g incl. cable kit)
Mounting	Clamping

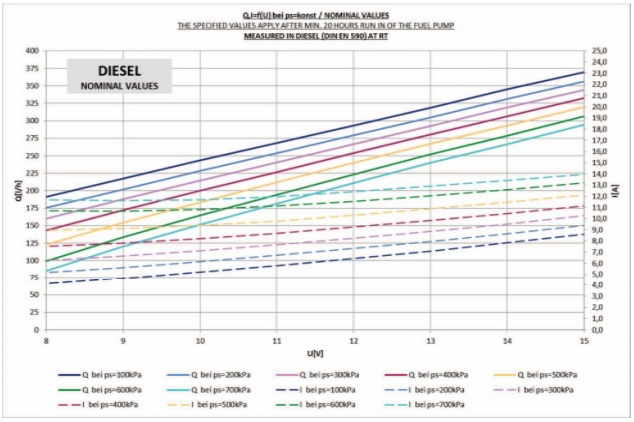
Electrical Data

Supply voltage	6 to 15 V (26 V for 60 s)
Operating voltage	13 V
Load current at 8 bar and 22°C	< 20 A

Characteristic

Color	Silver
Non-return valve	External
Fuel filtering	External, on pressure side
Over-pressure valve	Without





Connectors and Wires

Electrical connector	+M4/-M5
Electrical mating connector	With ring wire M4 and M5
Mechanical connector intake side	M18x1.5

Mechanical connector pressure side	M12x1.5

Installation Notes

- Up to E100 with shorter lifetime
- For technical reasons the values may vary.
- Please use within the specified limit values only.
- Please find further application hints in the offer drawing at our homepage.

- Be careful, there is no over-pressure valve inside.

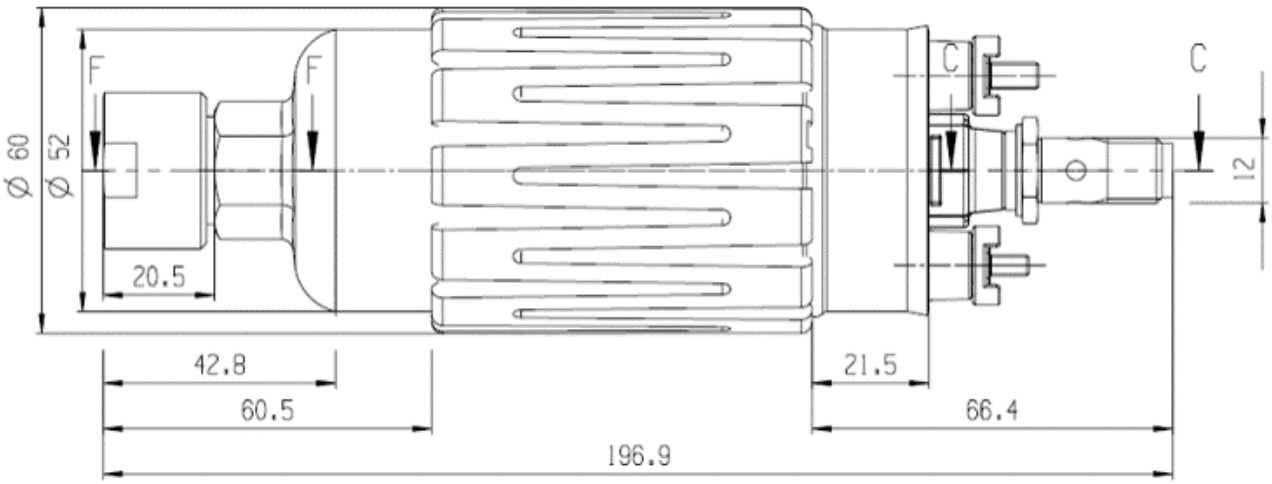
Legal Restrictions

The sale of this product in Mexico is prohibited. Due to embargo restrictions, sale of this product in Russia, Belarus, Iran, Syria, and North Korea is prohibited.

Ordering Information

Fuel Pump FP 200-E
Order number **0580.B00.12U-50**

Dimensions



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HP Fuel Pump HDP 5

Features

- Max. 1.1 cm^3/rot_{cam}
- 200 bar
- 780 g
- Integrated Flow Control Valve
- Internal Pressure Relief Valve

The HDP 5 is a compact high pressure single piston pump. The design allows achieving a big delivery volume as well as high efficiency, as needed in motorsport applications. Modifications in the number of cam lobes and cam lifts allow different flow requirements to be addressed.
The HDP 5 is equipped with an internal pressure relief valve to limit the maximum fuel pressure. It does not require a fuel return line into the fuel tank.
The pump has an integrated demand control for metering the amount of fuel supplied into the high pressure fuel system. It can be ordered with a compact connector or a motorsport connector.
Depending on the requirements of your engine (e.g. fuel consumption over rotation ratio) we recommend different types of tappets, piston springs and cam profiles. Please notice: Fuel delivery and maximum driveshaft speed depend on cam profile and type of tappet.

Application

For high pressure manifold injection or gasoline direct injection

Technical Specifications

Mechanical Data

Mass flow	Please see extra sheet
Efficiency	Please see extra sheet
Body design	Series
Flow capacity and max. engine speed	Depending on cam profile
Nominal pressure Standard version	200 bar
Weight	Approx. 780 g
Supply pressure	4 to 7 bar
Operating temperature	-40 to 120°C
Storage temperature	-40 to 70°C
Compatible fuels	Unleaded fuels, E22, E85, M15
Fuel temperature	80°C, short term 130°C
Max. vibration	300 m/s^2

Possible customization	
Rev B (iPRV)	500 bar or customization
Rev C (EVO)	= Rev B + reduced internal restrictions + introduction of EVO parts (outlet valve)
Rev D (Piston)	= Rev C + bigger piston diameter
Flange hole circle diameter	66 mm or 75 mm
Flange orientation	free
Electrical connector orientation	45° or customization
Hydraulic connection design	M14 x 1.5 or customization
Hydraulic connection orientation	LP 240° or customization, HP 180°, or customization

Connectors and Wires

Electrical connector design
Motorsport wire + open end
Motorsport wire + motorsport connector

Installation Notes

- Mounting on cylinder head or adapter flag.
- Available cam profiles on request.
- Select the cam profile on fuel consumption requirements.
- Avoid interference with FCV and hydraulic connections at flange orientation.
- Avoid interference with flange at electrical connector orientation.
- Please specify the electrical connector design and the wire length with your order.

Legal Restrictions

The sale of this product in Mexico is prohibited. Due to embargo restrictions, sale of this product in Russia, Belarus, Iran, Syria, and North Korea is prohibited.

Ordering Information

Standard version
Motorsport wire + compact connector
Order number **0261.520.08F-01**

Standard version
Motorsport wire + motorsport connector
Order number **F02U.V03.542-01**

Rev B (iPRV)
Order number **on request**

Rev C (EVO)
Order number **on request**

Rev D (Piston)
Order number **on request**

Accessories

Flat tappet (26 mm)
Order number **F02U.V01.156-01**

Roller tappet (26 mm)
Order number **F02U.V01.163-01**

Overview

Injection Valve EV 14

- Flow rate at 3 bar: up to 1,000 g/min (n-heptane)
- Max. 8 bar
- Conical spray or 2-spray
- With or without extension
- Spray angle 15 to 85°

HP Injection Valve HDEV 5.2

- Flow rate at 100 bar: up to 2,000 g/min (n-heptane)
- Max. 350 bar (higher on request)
- Up to 20 holes
- Spray angle 8 to 20°

Injection Valve EV 14

Features

- Flow rate at 3 bar: up to 1,000 g/min (n-heptane)
- Max. 8 bar
- Conical spray or 2-spray
- With or without extension
- Spray angle 15 to 85°

EV 14 injection valves are the latest revision of the EV 6 injection valve technology. EV 14 xT are the latest revision of the EV 12.
EV 14 is designed for a wide range of flow rates and spray patterns. Compact size and three standard versions simplify mounting in a variety of applications.

Technical Specifications

Mechanical Data

System pressure	Max. 5 bar (8 bar for motorsport use)
Weight	≤ 30 g
Installation lengths	33.6, 48.65 or 60.65 mm
Fuel input	Top-feed injector
Operating temperature	-40 to 110°C
Permissible fuel temperatures	≤ 70°C
Climate-proof corresponding to saline fog test DIN 50 021	
Housing design	Compact (K), Standard (S), Long (L)
Spray type	C (Conical Spray) or E (2-Spray)
Flow rate at 3 bar (n-heptane)	151 to 1,462 cm^3/min 103.5 to 1,000 g/min
Spray angle α	15 to 85°
Bent angle γ	0 to 15°
Coil resistance	See variations
Fuel compatibility	E85 Use with different media is not permitted.

Electrical Data

Power supply	6 to 16.5 V

Connectors and Wires

Connectors	Jetronic, Sumitomo, Motorsport connectors

Installation Notes

Please ask for more information before ordering.

Legal Restrictions

The sale of this product in Mexico is prohibited. Due to embargo restrictions, sale of this product in Russia, Belarus, Iran, Syria, and North Korea is prohibited.

Ordering Information

EV 14 ES, 116 g/min n-heptane
Order number **0280.158.200**

EV 14 CL, 150 g/min n-heptane
Order number **0280.158.107**

EV 14 ES, 150 g/min n-heptane
Order number **0280.158.013**

EV 14 CKxT, 237 g/min n-heptane
Order number **0280.158.038**

EV 14 EL, 237 g/min n-heptane
Order number **0280.158.116**

EV 14 CS, 387 g/min n-heptane
Order number **B280.436.038-09**

EV 14 CS, 387 g/min n-heptane
Order number **B280.436.038-10**

EV 14 ESxT, 429 g/min n-heptane
Order number **0280.158.123**

EV 14 CS, 503 g/min n-heptane
Order number **B280.436.038-08**

EV 14 CS, 503 g/min n-heptane
Order number **B280.436.038-07**

EV 14 CKxT, 670 g/min n-heptane
Order number **0280.158.040**

EV 14 CS, 670 g/min n-heptane
Order number **B280.436.487-01**

EV 14 ES, 697 g/min n-heptane
Order number **B280.436.469-01**

Accessories

Clip for locking bush of plastic
Order number **2431.314.021**

Clip for locking bush of steel
Order number **2431.314.018**

Dimensions

Variations of Production Type Valves

Part No.	0280.158.200	0280.158.107	0280.158.013	0280.158.038	0280.158 116
Flow rate/min	116 g/170 cm^3	150 g/219 cm^3	150 g/219 cm^3	237 g/347 cm^3	237 g/347 cm^3
Type	E	C	E	C	E
Housing	S	L	S	KxT	L
α	15°	20°	19°	20°	22°
γ	90°	0°	0°	0°	5°
δ	0°	0°	90°	0°	90°
Resistance	12 Ohm	12 Ohm	12 Ohm	12 Ohm	12 Ohm

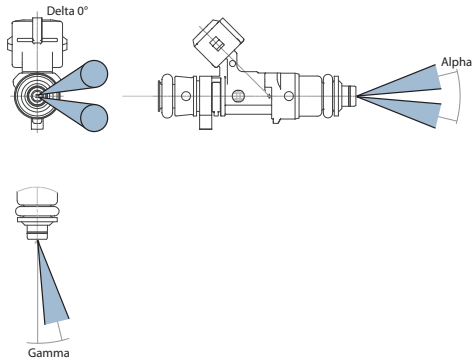
Part No.	0280.158.123	0280 .158.040
Flow rate/min	429 g/627 cm^3	670 g/980 cm^3
Type	E	C
Housing	SxT	KxT
α	25°	30°
γ	0°	0°
δ	90°	0°
Resistance	12 Ohm	12 Ohm

Variations of Motorsport Type Valves

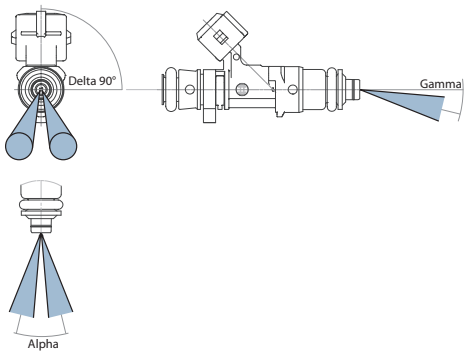
Part No.	B280.436.038-07	B280.436.038-08	B280.436.038-09	B280.436.038-10	B280.436.487-01
Flow rate/min	503 g/736 cm^3	503 g/736 cm^3	387 g/566 cm^3	387 g/566 cm^3	670 g/980 cm^3
Type	C	C	C	C	C
Housing	S	S	S	S	S
α	70°	25°	70°	25°	30°
γ	0°	0°	0°	0°	0°
δ	-	-	-	-	0°
Resistance	12 Ohm	12 Ohm	12 Ohm	12 Ohm	12 Ohm

Further variations are available on request.

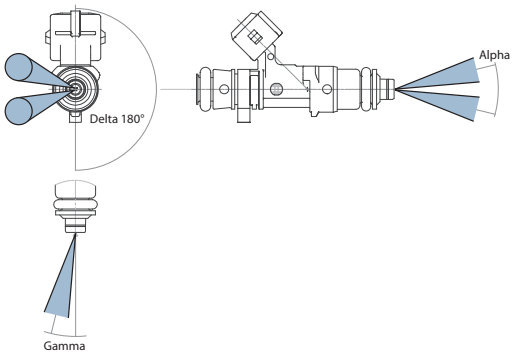
Spray bent to the „right“, Delta=0°



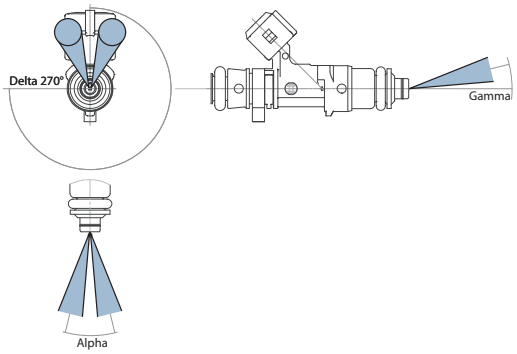
Spray bent „down“ (away from electr. connector), Delta=90°



Spray bent to the „left“, Delta=180°

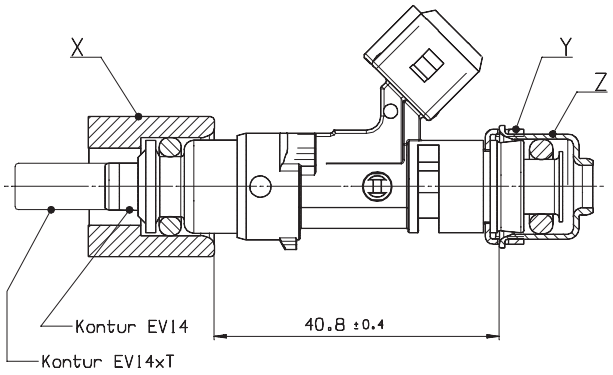


Spray bent „up“ (towards electr. connector), Delta=270°

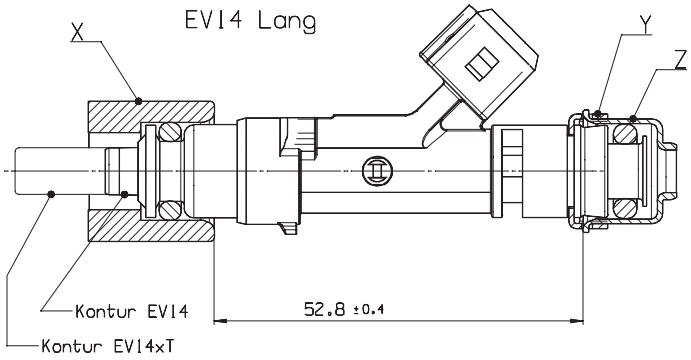


Delta Angles

EV14 Standard



EV14 Lang



Max. 2° Winkelabweichung zwischen Ventil-Achse und Aufnahmebohrung an Fuel Rail bzw. Saugrohr zulaessig.

MAX. 2° ANGLE DEVIATION IS PERMISSIBLE BETWEEN THE INJECTOR AXIS AND THE FUEL RAIL CUP, RESPECTIVELY TO THE INTAKE MANIFOLD.

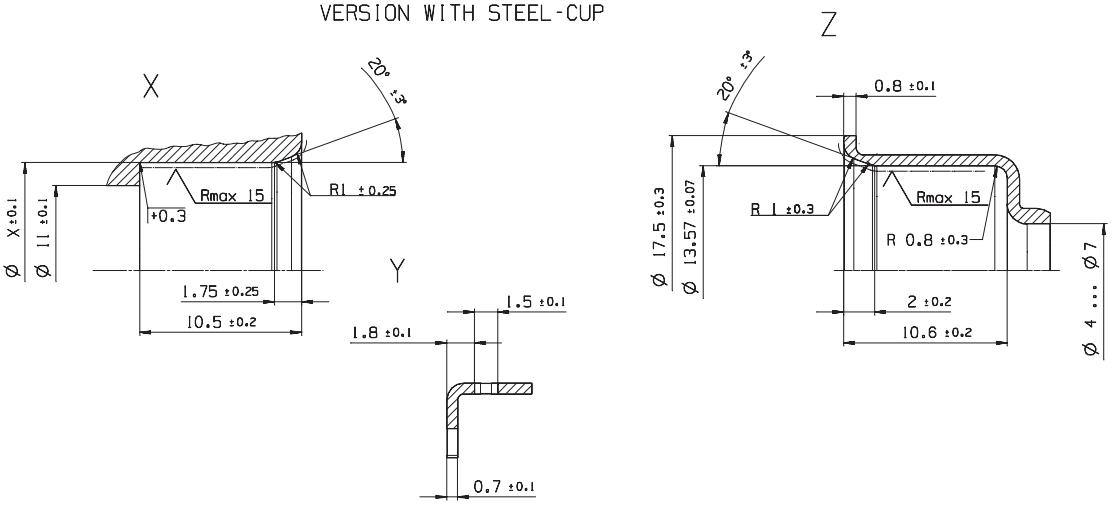
X= Ø 14:
FOR STANDARD APPLICATIONS
(AVERAGE O-RING SQUEEZE AT NOMINAL
VALUE AND AXIAL ASSEMBLY: APP. 7%)
MAX. 2° ANGLE DEVIATION IS PERMISSIBLE BETWEEN
THE INJECTOR AXIS AND THE FUEL RAIL CUP,
RESPECTIVELY TO THE INTAKE MANIFOLD.

Fuer Standardanwendungen
(mittlere O-Ring Verpressung
bei axialem Einbau und Nennmassen: ca. 7%)
Max. 2° Winkelabweichung zwischen Ventil-Achse und
Aufnahmebohrung an Fuel Rail bzw. Saugrohr zulaessig.

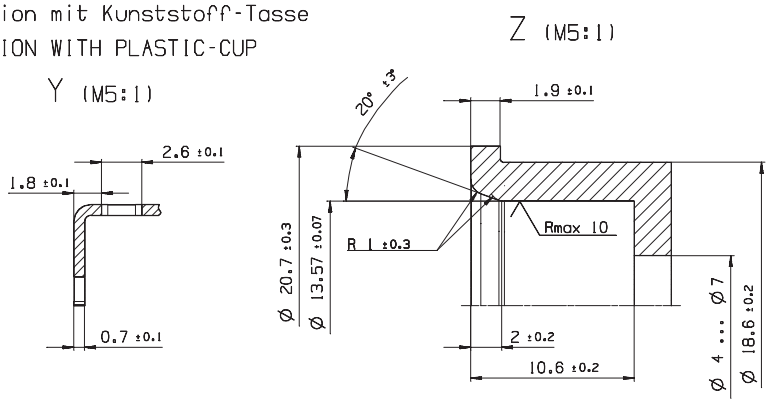
X= Ø 13.6:
FOR APPLICATIONS WITH EXTENDED REQUIREMENTS
E. G. TURBO APPLICATION, EXPOSED INSTALLATION
(AVERAGE O-RING SQUEEZE AT NOMINAL
VALUE AND AXIAL ASSEMBLY: APP. 14%,
NOTE HIGHER ASSEMBLY FORCES)
MAX. 1° ANGLE DEVIATION IS PERMISSIBLE BETWEEN
THE INJECTOR AXIS AND THE FUEL RAIL CUP,
RESPECTIVELY TO THE INTAKE MANIFOLD.

Fuer Anwendungen mit erhoehten Anforderungen,
z. B. Turboapplikation, exponierter Einbau
(mittlere O-Ring Verpressung bei axialem Einbau
und Nennmassen: ca. 14%,
hoehere Einbaukraefte beachten)
Max. 1° Winkelabweichung zwischen Ventil-Achse und
Aufnahmebohrung an Fuel Rail bzw. Saugrohr zulaessig.

Version mit Stahl-Tasse
VERSION WITH STEEL-CUP



Version mit Kunststoff-Tasse
VERSION WITH PLASTIC-CUP



Mounting Instructions

HP Injection Valve HDEV 5.2

Features

- Flow rate at 100 bar: up to 2,000 g/min (n-heptane)
- Max. 350 bar (higher on request)
- Up to 20 holes
- Spray angle 8 to 20°

The HDEV 5.2 is a high pressure injector, which is developed to be used as a port or a direct injector. The function of the HDEV 5.2 is both to meter out the fuel and to obtain a well-defined mixture of fuel and air. It is an inward opening solenoid injector which is optimized regarding very short opening and closing times which ensures a very stable linearity at short injection times.
The benefit of this injector is a high spray variability concerning spray angle and spray shape. Also the flow rate can be defined in a big range. Bosch offers the spray targeting design according to the individual customer requirements.
If your application conditions will not match the listed performance data, please ask for consultancy at Bosch Motorsport. In addition to the specific designed sample, Bosch offers cost effective production HDEV 5.2 on request.

Application

Application at 100 bar (typical)	308 to 2,000 g/min
Fuel input	Top-feed injector
Fuel	Gasoline
Operating pressure	Up to 350 bar (higher on request)
Operating temperature range	-31 to 130°C
Storage temperature range	-40 to 70°C
Max. vibration	600 m/s²

Technical Specifications

Mechanical Data

Weight w/o wire	68 g
Diameter body	20.7 mm
Diameter nozzle	7.5 mm
Length	87 mm
Flow rate at 100 bar (n-heptane)	up to 2,000 g/min
Number of holes	4 to 20 holes
Spray type	Multi hole
Spray angle overall	110° (typical)
Spray angle single beam	8 to 20°
Static flow tolerance	±4 %
Dynamic flow tolerance	±6 % at ti = 1.5 ms
Leakage	≤2.5 mm³/min at 23°C

Electrical Data

Booster supply	65 V
Booster current	13.4 A
Booster time	480 µs
Power supply	12 V
Pick up current	9.4 A
Pick up time	704 µs
Hold power supply	12 V
Hold current	3.7 A hysteresis 0.8 A
Coil resistance	1,500 mOhm (ambient temp.)

Connectors and Wires

Mating connector Compact	D261.205.359-01
Connector Jetronic (wire)	D261.205.288-01
Connector motorsport (wire)	On request
Pin 1	Pos
Pin 2	Gnd

Installation Notes

The injector has to be supplied by a Bosch Motorsport Power Stage Unit (e.g. HPI 5 or HPI 1.16).

Listed electrical values may vary according to the application.

The injector can be cleaned (mechanically or chemically), if the tip will not be damaged.

Do not use supersonic cleaning.

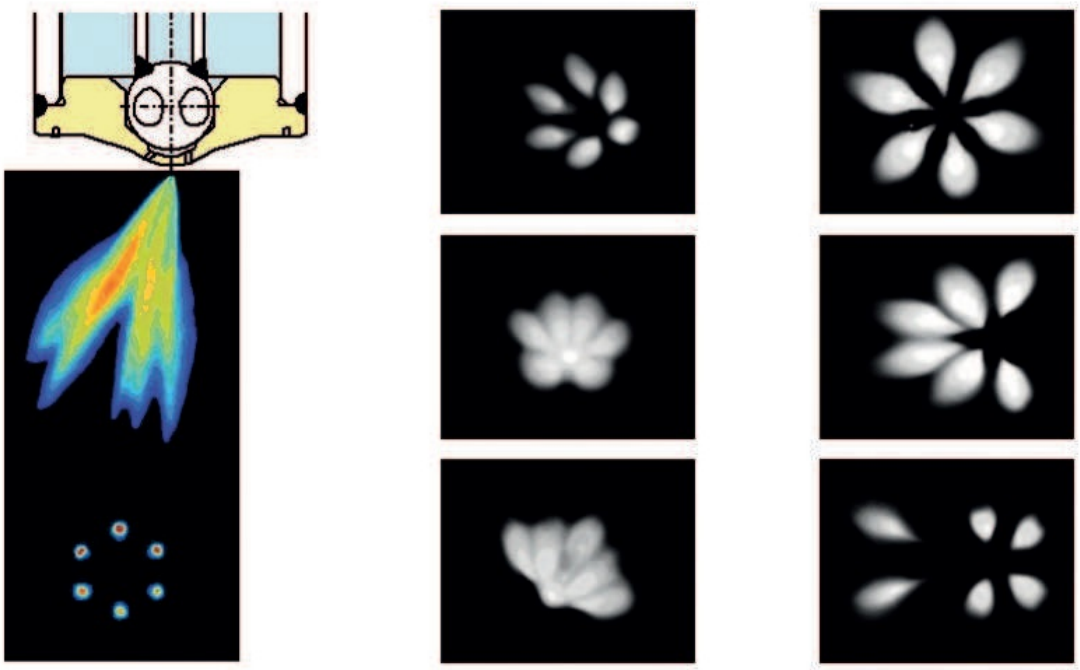
Legal Restrictions

The sale of this product in Mexico is prohibited. Due to embargo restrictions, sale of this product in Russia, Belarus, Iran, Syria, and North Korea is prohibited.

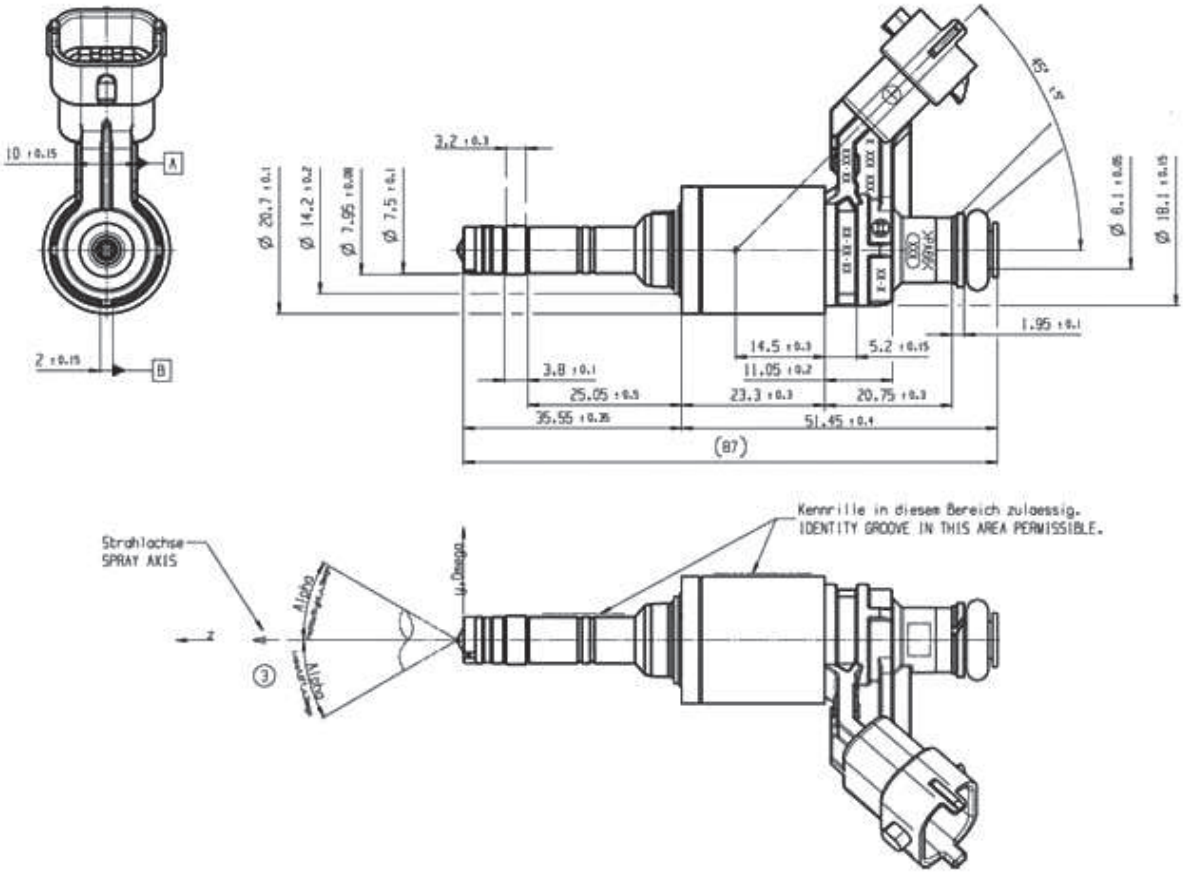
Ordering Information

HP Injection Valve HDEV 5.2
Order number **on request**

Dimensions



Spray variations, further variations on request


10 ±0.15
A
2 ±0.15
B
3.2 ±0.3
Ø 20.7 ±0.1
Ø 14.2 ±0.2
Ø 7.95 ±0.08
Ø 7.5 ±0.1
65° ±5
Ø 8.1 ±0.05
Ø 18.1 ±0.15
1.95 ±0.1
14.5 ±0.3
5.2 ±0.15
3.8 ±0.1
11.05 ±0.2
25.05 ±0.5
23.3 ±0.3
20.75 ±0.3
35.55 ±0.35
51.45 ±0.4
(87)
Kennrille in diesem Bereich zulaessig.
IDENTITY GROOVE IN THIS AREA PERMISSIBLE.
Strahlachse
SPRAY AXIS
Alpha
Alpha
+/- Omega
z
3