

## Automatski tester dizni „SDR“/ Automatic injector tester „SDR“



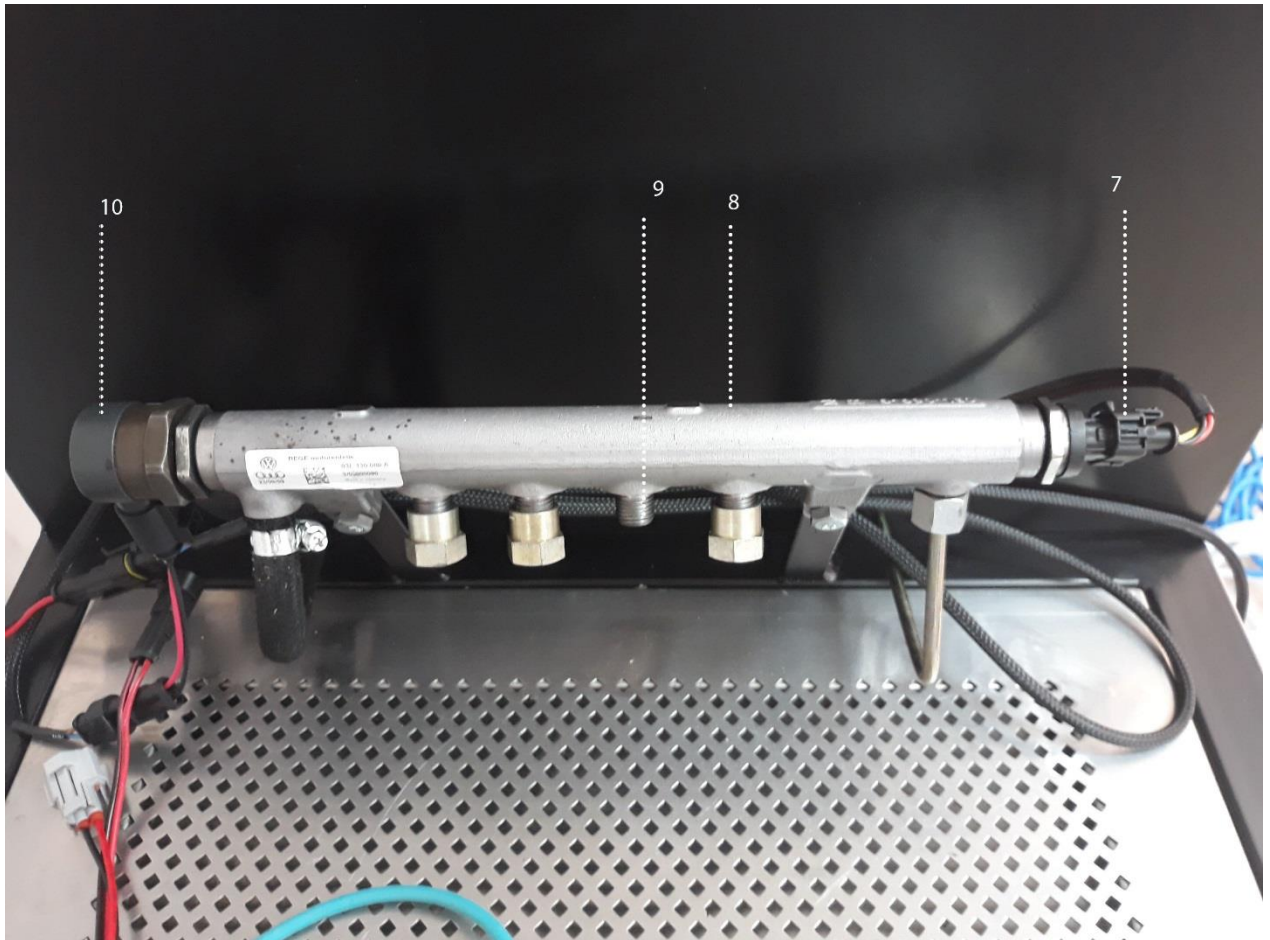
SDR MODEL 0610

**Srpski/English**

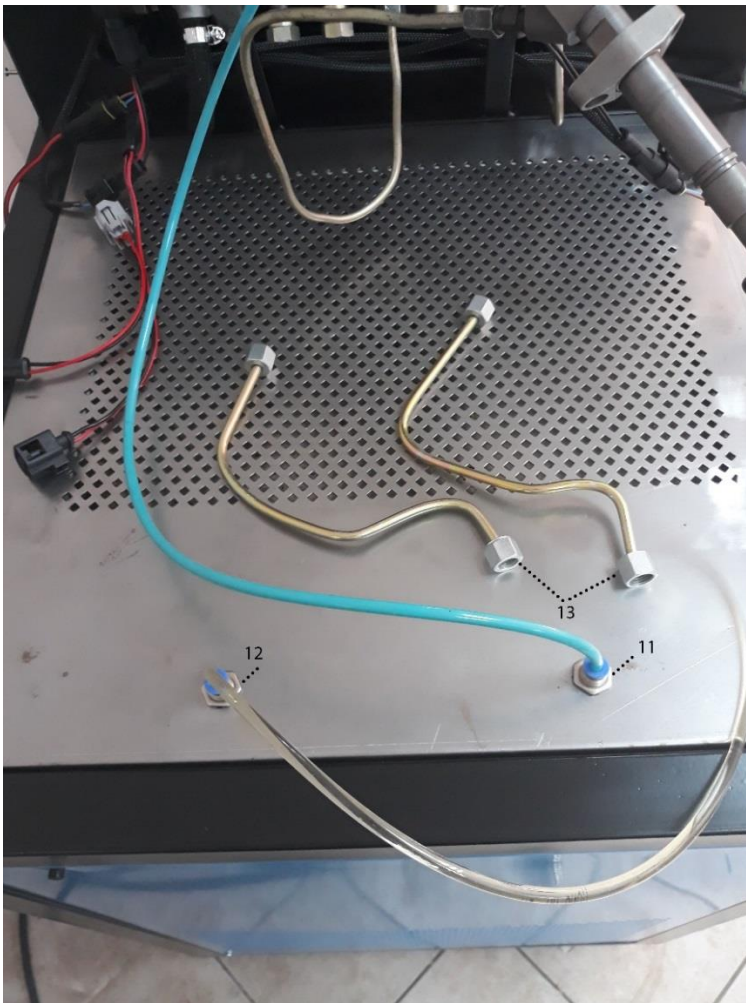
<b>Tehnički podaci / Technical data</b>	
Napon trofazne naizmjenične struje / Three-phase current nominal voltage	400V
Nominalna struja / Rated current	8A
Osigurač / FUSES	10A
Broj faza / Number of phases	3P-N-PE
Ulazna frekvencija / Input frequency	50Hz
<b>Nominalna snaga / Rated Power</b>	<b>3,2KW</b>
Radna temperatura / Operating temperature	5 C – 40 C
Stepen zaštite / Degree of protection	IP 22
Pritisak ulja / Oil pressure	180 MPa
Maksimalni broj obrtaja / Maximum rotational speed	1430
Upravljački napon / Control voltage	24VDC , 12VDC
Zapremina rezervoara ispitnog ulja / Capacity of testing oil tank	9 l
SDR (širina x visina x dubina) / Dimensions (W x H x D)	1150x1275x590mm
Težina SDR ( bez ispitnog ulja i ambalaže) /Weight (without oil and packaging)	120 KG
Uljani kolektor (visina x širina x dubina)	00000



1. Glavni prekidač napajanja - Main Power switch
2. Taster za hitno zaustavljanje „SVE STOP“ – „ALL STOP“ emergency stop push button
3. Tastatura – keyboard
4. LED indikator napajanja (Linux verzija) – Power LED indicator ( Linux version )  
Pokretanje PC računara ( Windows verzija) / PC start button ( Windows version)
5. Miš – Mouse
6. Monitor



- 7. Senzor pritiska Bosch 1800 – Pressure sensor Bosch 1800
- 8. Magistrala goriva – Fuel Rail
- 9. Spojnica za diznu – Injector connector
- 10. Regulator pritiska magistrale (DRV) – Rail pressure regulator ( DRV )



- 11. Konektor povratnog goriva – Return fuel connector
- 12. Konektor ubrizganog goriva – Injected fuel connector
- 13. Cevi viskog pritiska za dizne – High pressure pipes for injector

## Srpski

- Skinite zadnje panele na mašini (odvrite šrafove i pazite na kablove za uzemljenje)
- Proverite sve spojeve creva i cevi pre prvog pokretanja mašine.
- Sipajte ~ 8L ispitnog ulja (kalibraciono ulje) u rezervoar koristeći crevo i levak kroz jedan od otvora na poklopcu rezervoara
- Spojite diznu sa odgovarajućom cevi viskog pritiska (13) na spojnicu za diznu(9) koja se nalazi na magistrali goriva (8)
- Na vrh dizne spojite kolektor i crevo za ubrizgano gorivo (12)
- Na povrat dizne spojite crevo za povrat goriva (11)
- Proverite da li su sva creva i cevi dovoljno stegnute da bi ste izbegli curenja i prskanja
- Spojite odgovarajući električni konektor na diznu ( El.Mag za elektro magnetne dizne / 150V za piezo dizne )
- Upalite mašinu na glavni prekidač (1)
- Posle nekoliko minuta upaliće se glavni ekran
- Izaberite opciju Common rail dizne (14 )
- U polje „MODEL“ ukucajte broj modela dizne, nakon izbora modela kliknite na „Continue“
- Kliknite na START da pokrenete automatsko testiranje dizne
- **UKOLIKO MAŠINA NE MOŽE DA POSTIGNE PRITISAK ZNAČI DA SE MOTOR OKREĆE U POGREŠNOM SMERU. ZAMENITE MESTA FAZAMA (BILO KOJE DVE FAZE) NA 3-FAZNOM UTIKAČU !**


## English

- Remove back panels on the machine (remove screws and be careful of grounding cables)
- Check all pipes and hoses connections before switching on the machine.
- Pour ~ 8L calibration fluid in to tank using hose trough the opening in the tank cover
- Connect the injector using appropriate high pressure pipe (13) to injector connector(9) which is on the fuel rail (8)
- Mount the fuel collector and injected fuel hose (12) on tip of the injector.
- Connect the Return fuel connector (11) on return fuel port on the injector
- Check if the all the hoses and high pressure pipe are tighten to avoid spray and leakage.
- Connect appropriate injectors electrical connector ( El.Mag for solenoid injectors / 150V for piezo injectors )
- Switch ON the machine on Main Switch (1)
- After few minutes Main Screen will appear
- Select Common rail injector (14 )
- In „MODEL“ type injector model number, after selecting model ,click to „Continue“
- Click on START sto start automatic testing procedure
- **IF THERE IS NO OIL PRESSURE MEANS THAT MOTOR ROTATION IS REVERSED. SWITCH POSITIONS OF ANY TWO LIVE WIRES (EXAMPLE : L2 AND L3 ) ON 3-PHASE PLUG !**

## Srpski

[ Injector Info: Bosch 0445110265 14V ] [ Pump: CP1 ]

[ Weight Mode ] [ Auto test ] [ Test Step: VE(6/6) ]



Speed(RPM) ← 600 = 0

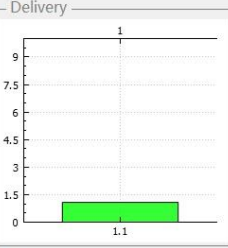
Pressured(MPa) ← 60 = 60

Temperature(°C) ← 40 = 30

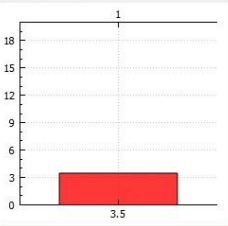
Count(T) ← 1000 = 822

<input type="checkbox"/> CLEAR	0.0 -- 0.0 mm <sup>3</sup> /H	24.4	✓
<input type="checkbox"/> Leak Test	0.0 -- 40.0 mm <sup>3</sup> /H	4.4	✓
<input type="checkbox"/> VL	8.5 -- 33.5 mm <sup>3</sup> /H	12.7	✓
<input type="checkbox"/> VL	28.5 -- 36.5 mm <sup>3</sup> /H	30.8	✓
<input type="checkbox"/> TL	11.4 -- 21.0 mm <sup>3</sup> /H	15.1	✓
<input type="checkbox"/> LL	1.9 -- 8.9 mm <sup>3</sup> /H	5.1	✓
<input type="checkbox"/> VE	0.3 -- 3.7 mm <sup>3</sup> /H		

Delivery



Return Oil



Keyboard (F1) Setting (F2) Search (F3) Solenoid Valve (F4) Start Oil (F5) Stop (F6) Return Windows (F7) Print (F8)

1 → Speed(RPM) ← 600 = 0

2 → Pressured(MPa) ← 60 = 60

3 → Temperature(°C) ← 40 = 30

4 → Count(T) ← 1000 = 822

- 1 **Speed (RPM)** – Brzina okretaja motora ( samo za verzije masine sa frekventnim regulatorom VFD )
- 2 **Pressure (MPa)** – Pritisak u sistemu ( gornja vrednost je zadata a donja je trenutna izmerena). Pritisak je iskazan u MPa , za vrednosti u BARima je x10 npr. 60 MPa = 600 Bara
- 3 **Temperature** – Temperatura ispitnog ulja u rezervoaru. Gornje je zadata vrednost za paljenje ventilatora hladnjaka i koja može da se menja u podešavanjima programa, donje je trenutno izmerena vrednost ( Ukoliko trenutna izmerena vrednost ulja pređe 45 stepeni, potrebno je ugaziti masinu i sačekati ulje da se ohladi. )
- 4 **Count (T)** – dužina testa dizne ( u sekundama ili otkucajima u zavisnosti od testa )

## Srpski

	isključivanje testa	merenje preliva	merenje ubrizganog goriva	refer. vred. za ispravnu diznu	izmerena količina goriva	
1	<input checked="" type="checkbox"/>	CLEAR	0.0 -- 0.0 mm <sup>3</sup> /H	24.4	✓	
2	<input type="checkbox"/>	Leak Test	0.0 -- 40.0 mm <sup>3</sup> /H	4.4	✓	
3	<input type="checkbox"/>	VL	8.5 -- 33.5 mm <sup>3</sup> /H	12.7	✓	
4	<input type="checkbox"/>	VL	28.5 -- 36.5 mm <sup>3</sup> /H	30.8	✓	
5	<input type="checkbox"/>	TL	11.4 -- 21.0 mm <sup>3</sup> /H	15.1	✓	
6	<input type="checkbox"/>	LL	1.9 -- 8.9 mm <sup>3</sup> /H	5.1	✓	
7	<input type="checkbox"/>	VE	0.3 -- 3.7 mm <sup>3</sup> /H			

Dizna se testira u 6 koraka ( prelazak na sledeći tekst je automatski)

- svaki test se može uključiti/isključiti klikom na kocku pored naziva testa

1. **CLEAR** – Čišćenje dizne i izbacivanje vazduha iz creva sistema merenja
2. **LEAK TEST** – Test curenja i statičkom preliva neaktivne dizne pod pritiskom
3. **VL - Full Load** - Puno opterećenje dizne
4. **VL - Full Load** - Puno opterećenje dizne (suprotan smer)
5. **LL - Idle** - stanje mirovanja tkz. Ler
6. **VE - PreInjection** - Test Predubrizgavanja
7. **TL - Part Load** - Delimično (srednje) opterećenje

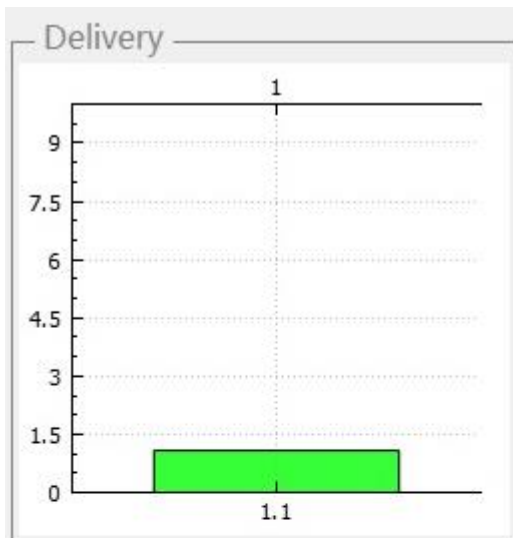
Strelica na gore pored naziva testa znaci merenje preliva , strelica na dole znaci merenje ubrizganog goriva

Srednja kolona je referentna vrednost za ispravnu diznu tj. Granice u kojima mora biti količina goriva ako je ispravna dizna.

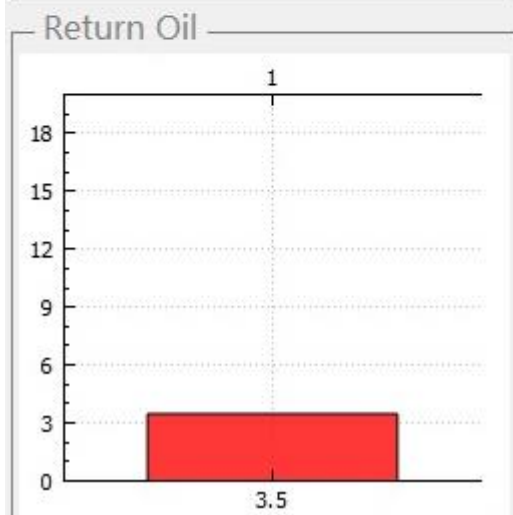
Treća kolona je izmerena količina goriva trenutno testirane dizne.



## Srpski



**Delivery** predstavlja trenutno izmerenu vrednost ubrizganog goriva.



**Return oil** predstavlja trenutno izmerenu vrednosti povratnog goriva ( preliv).

## English

[ Injector Info: Bosch 0445110265 14V ] [ Pump: CP1 ]  
 [ Weight Mode ] [ Auto test ] [ Test Step: VE(6/6) ]

The screenshot displays the diagnostic software interface. At the top, it shows injector and pump information, and the current test step is VE(6/6). The main area is divided into four parameter control panels: Speed (RPM) with a target of 600 and a measured value of 0; Pressure (MPa) with a target of 60 and a measured value of 60; Temperature (°C) with a target of 40 and a measured value of 30; and Count (T) with a target of 1000 and a measured value of 822. Below these panels is a table of test results for various steps: CLEAR, Leak Test, VL, VL, TL, LL, and VE. The VE step is highlighted with a dashed orange border. To the right of the table are two bar charts: 'Delivery' showing a value of 1.1 and 'Return Oil' showing a value of 3.5. At the bottom, there is a function key bar with icons for Keyboard (F1), Setting (F2), Search (F3), Solenoid Valve (F4), Start Oil (F5), Stop (F6), Return (F7), and Print (F8).

Test Step	Range (mm³/H)	Value	Status
CLEAR	0.0 -- 0.0	24.4	✓
Leak Test	0.0 -- 40.0	4.4	✓
VL	8.5 -- 33.5	12.7	✓
VL	28.5 -- 36.5	30.8	✓
TL	11.4 -- 21.0	15.1	✓
LL	1.9 -- 8.9	5.1	✓
VE	0.3 -- 3.7		

This image shows a close-up of the parameter control panels from the screenshot above. Numbered callouts point to specific elements: 1 points to the Speed (RPM) panel, 2 points to the Pressure (MPa) panel, 3 points to the Temperature (°C) panel, and 4 points to the Count (T) panel.

- 5 **Speed (RPM)** – Motor rotation speed (only for versions with VFD)
- 6 **Pressure (MPa)** – RAIL pressure (Upper value is SET value, bottom is measured pressure). Pressure is in MPa , for value in BAR is x10 for example. 60 MPa = 600 Bar.
- 7 **Temperature** – Oil temperature inside the fuel tank. Upper value (in this example 40) is set value to start Cooling fan and it is adjustable in SETTINGS. Bottom value (in this example 30) is measured temperature (If measured temperature is beyond 45 C, you need to shut down and wait for oil to cool down.
- 8 **Count (T)** – Duration of the test (in seconds or injector strokes)

## English

	test ON/OFF	back flow	injected fuel	ref. val. for fully functional inj.	measured fuel	
1	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	0.0 -- 0.0 mm <sup>3</sup> /H	24.4	✓
2	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	0.0 -- 40.0 mm <sup>3</sup> /H	4.4	✓
3	<input checked="" type="checkbox"/>		<input type="checkbox"/>	8.5 -- 33.5 mm <sup>3</sup> /H	12.7	✓
4	<input checked="" type="checkbox"/>		<input type="checkbox"/>	28.5 -- 36.5 mm <sup>3</sup> /H	30.8	✓
5	<input checked="" type="checkbox"/>		<input type="checkbox"/>	11.4 -- 21.0 mm <sup>3</sup> /H	15.1	✓
6	<input checked="" type="checkbox"/>		<input type="checkbox"/>	1.9 -- 8.9 mm <sup>3</sup> /H	5.1	✓
7	<input checked="" type="checkbox"/>		<input type="checkbox"/>	0.3 -- 3.7 mm <sup>3</sup> /H		

Injector is tested in 6 steps ( switch to next test is automatic)

Each test can be turned off and on by clicking on the button (test ON/OFF)

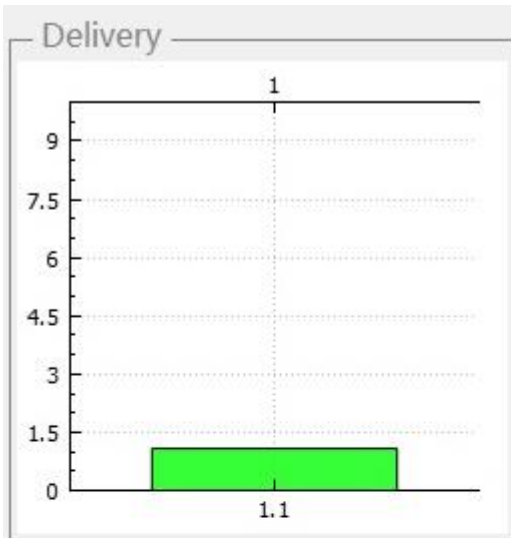
8. **CLEAR** – Clearing the injector and air from the measuring system
9. **LEAK TEST** – Testing leakage and back flow of inactive injector under max.pressure
10. **VL - Full Load** – Injector under full load (back flow)
11. **VL - Full Load** – Injector under full load (injected fuel)
12. **LL - Idle** – Idle test
13. **VE – Pre-Injection** – Pre-injection test
14. **TL - Part Load** – Part Load test

Arrow „ UP “ means that back flow test , Arrow „UP“ means that injected fuel is tested.

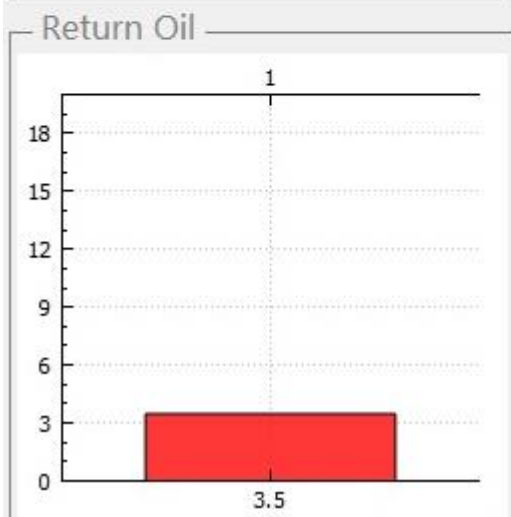
Middle column are reference values for fully functional injector. For injector that is working correctly, injected fuel must be inside this range.

Third column is actual measured fuel for tested injector.

English



**Delivery** is currently injected fuel



**Return oil** is backflow fuel currently being measured  
(only relevant in LEAK and VL backflow test)