12PSB-1 Fuel Injection Pump Test Bench

12 PSB series injection pump test bench is a new designed test bench based on the advanced foreign technology and modification. It adopts the most advanced technology of frequency conversion, with the advantages of wide speed regulation, steady performance, big output torque, ultra-low noise and protective multi-functions. The test bench uses the digital technology to indicate the rotation speed, oil-measuring counting and temperature of supplying oil clearly and reliably with high precise of control. The test bench also has compact structure of motor and work table. The main motor is connected with the dial directly, which ensures the assembly precise of the main shaft with the characteristics of high precise, low noise, good reliability and long life. The test bench is of ten sets of preset systems of rotation speed, which not only saves the times to adjust pumps, but also improves the working efficiency with rapid and convenient operation. It is the most ideal product for companies to produce and repair pumps and beans.

Features and Usage
- The main shaft adopts the frequency conversion to regulate speed, with the range of 0-4000 rpm.
- The oil-measuring counting and rotation speed is indicated by 4 digits.
- 10 sets of preset system of rotation speed.
- DC power of 12V/24V.
Tai An New Power Machine Co., Ltd
www.chinanewpower.com

- The structure is compact and steady.
- The shell is sprayed with the static electronics, elegant and fertile.
- The oil-collecting tank can rotate left-right, and be lift or lowered.
- The test bench is equipped with emergency stop switch.
- It adopts the frequency converter of high performance and reliability.
- It has the protect of lack-pressure, over-pressure, overheat, and overload.
- Ultra-low noises.

Application
The test bench is used for the injection pump manufacture and maintenance departments and research and teaching units to adjust and test pumps. The main adjusting items of the test bench are as follows:
1. Test capacity and uniformity of fuel supply in each cylinder of injection pump.
2. Test sealing performance of injection pump.
3. Test the supplying interval angel of injection pump.
5. Check working performance of air governor.
6. Measure oil return capacity of distribution pump.
7. Measure pressure compensator of distribution pump.
8. Do an experiment of the performance of electromagnetic valve of distribution pump.(12V/24V)
9. Check the advance angle of measuring advances.
10. Draw the dynamic curve of rack traveling device. (Optional)
## Main Technical Data

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Model</th>
<th>12PSB-1 7.5KW</th>
<th>12PSB-1 11KW</th>
<th>12PSB-1 15KW</th>
<th>12PSB-1 18.5KW</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>Rotation speed range of main shaft (rpm)</td>
<td>0-4000</td>
<td>0-3000</td>
<td>0-3000</td>
<td>0-3000</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>Motor output power (KW)</td>
<td>7.5</td>
<td>11</td>
<td>15</td>
<td>18.5</td>
</tr>
<tr>
<td>1</td>
<td>3</td>
<td>Pump output power (KW)</td>
<td>0.75</td>
<td>0.75</td>
<td>0.75</td>
<td>1.1</td>
</tr>
<tr>
<td>1</td>
<td>4</td>
<td>Height from center line of main shaft to work table (mm)</td>
<td>125</td>
<td>125</td>
<td>125</td>
<td>125</td>
</tr>
<tr>
<td>1</td>
<td>5</td>
<td>Rotation direction of main shaft</td>
<td>Positive, negative</td>
<td>Positive, negative</td>
<td>Positive, negative</td>
<td>Positive, negative</td>
</tr>
<tr>
<td>1</td>
<td>6</td>
<td>Testable cylinders of injection pump</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>1</td>
<td>7</td>
<td>Standard model of fuel injector</td>
<td>ISO7400A14-772</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>8</td>
<td>Oil measuring frequency</td>
<td>0-1000</td>
<td>0-1000</td>
<td>0-1000</td>
<td>0-1000</td>
</tr>
<tr>
<td>1</td>
<td>9</td>
<td>Capacity of oil tank (L)</td>
<td>&gt;50</td>
<td>&gt;50</td>
<td>&gt;50</td>
<td>&gt;50</td>
</tr>
<tr>
<td>1</td>
<td>10</td>
<td>Pressure of fuel system</td>
<td>High 0-4</td>
<td>0-4</td>
<td>0-4</td>
<td>0-4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Low 0-0.4</td>
<td>0-0.4</td>
<td>0-0.4</td>
<td>0-0.4</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>11</td>
<td>Supply oil capacity (L/min)</td>
<td>&gt;10</td>
<td>&gt;10</td>
<td>&gt;10</td>
<td>&gt;10</td>
</tr>
<tr>
<td>1</td>
<td>12</td>
<td>Temperature of fuel (℃)</td>
<td>40±2</td>
<td>40±2</td>
<td>40±2</td>
<td>40±2</td>
</tr>
<tr>
<td>1</td>
<td>13</td>
<td>Precise of fuel filter (μ)</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>1</td>
<td>14</td>
<td>Capacity of measuring cup (ml)</td>
<td>45</td>
<td>45</td>
<td>45</td>
<td>45</td>
</tr>
<tr>
<td>1</td>
<td>15</td>
<td>Pressure of airway</td>
<td>Positive 0-0.3</td>
<td>0-0.3</td>
<td>0-0.3</td>
<td>0-0.3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Negative -0.05-0</td>
<td>-0.05-0</td>
<td>-0.05-0</td>
<td>-0.05-0</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>16</td>
<td>DC voltage (V)</td>
<td>12/24</td>
<td>12/24</td>
<td>12/24</td>
<td>12/24</td>
</tr>
<tr>
<td>1</td>
<td>17</td>
<td>Overall dimension (m) (L×W×H)</td>
<td>2×0.8×1.8</td>
<td>2×0.8×1.8</td>
<td>2×0.8×1.8</td>
<td>2.4×1.2×1.8</td>
</tr>
<tr>
<td>1</td>
<td>18</td>
<td>Weight (Kg)</td>
<td>900</td>
<td>1050</td>
<td>1050</td>
<td>1050</td>
</tr>
</tbody>
</table>
708 Common Rail Test Bench

CRS-708 test bench is used for testing CR injector and CR pump, which use original BOSCH CR pump, it can reach 0-2000 bar pressure, oil measurement system adopts sensor measuring and display on the LCD screen. There are more than 400 CR injector standard data. It can test pump and injector of BOSCH, DENSO, DELPH, SIEMENS.

**MAIN FUNCTIONS:**
1. Industry computer, windows operating system;
2. Come with data base, can check, save, revise data and create new data.
3. Closed circle control, it can adjust rail pressure automatically, rail pressure is stable, tolerance: ±1 Mpa.
4. Can test the fuel delivered quantity and pressure of many types high pressure CR pump.
5. Can test start delivery quantity of CR injector.
6. Can test the max delivery quantity of CR injector.
7. Can test the Pre-injection delivery quantity of CR injector.
8. Can test the oil return quantity of CR injector.
9. Can test the oil injecting quantity evenness of different CR injector.
10. LCD monitor display rail pressure at real time.
11. Can check the performance of the CR pump solid valve.
13. Can test the performance of rail pressure sensor.
14. The drive signal pulse width and frequency can be adjusted.
15. The Injection times and injection time can be set freedom.
16. Has protection function of over pressure, stop automatically once rail pressure more than 1600 bar.
17. Can do running experiment of CR pump and CR injector.
18. Plexiglass protective doors, safer operation, easy observation.
CRI-200 test bench is the special device to test the performance of high-pressure common rail injector assembly, it adopts BOSCH original common rail pump to provide 0~2000 bar of rail pressure, it can test common rail injector of main producers (BOSCH, SIEMENS, DELPHI, DENSO).

>>>CHARACTERISTIC
1. Main motor drive adopts the frequency change to adjust the speed.
2. It is installed BOSCH original common rail pump to provide 0~2000 bar of rail pressure.
3. The drive signal can be adjusted.
5. The rail pressure can be tested in real time, it contains the high-pressure protection function.
6. Pulse and frequency of the injector drive signal can be adjusted.
7. The injection time can be setted.
8. Dimension (MM): 1200×800×1600;
9. Weight: 400KG

>>> FUNCTION
1. Test the max. oil quantity of high-pressure common rail injector.
2. Test the cranking oil quantity of high-pressure common rail injector.
3. Test the backflow oil quantity of high-pressure common rail injector.
4. Test the average oil quantity of high-pressure common rail injector.
5. Set the high-pressure common rail injector’ injection state and oil quantity measurement.

>>> Technical Parameter
1. Test frequency of injector: 50-3000rpm;
2. Pulse width: 0.1-200ms;
3. Test injection time: 1-300s;
4. Rail pressure: 0-200mpa;
5. Graduate: 120ML;
6. Input power: AC 380V/50HZ/3Phase or 220V/60HZ/3Phase or on request;
7. Fuel temperature: 40°C;
8. Overall dimension: 1200MM×800MM×1600MM;
9. Weight: 400KG.
EP200 common rail test bench

EP-200 test bench is our latest independent researched special device to test the performance of high-pressure common rail injector, controlled by industrial computer, Windows operating system. The oil quantity is measured by sensor and displayed on computer screen. All data can be searched and saved. It adopts BOSCH original common rail pump to provide 0~1600 bar of rail pressure. The rail pressure can be adjusted automatically. It can test common rail injector of BOSCH, SIEMENS, DELPHI, DENSO. Advanced technology, steady performance, precise measurement and convenient operation.

CHARACTERISTIC
1. Controlled by industrial computer in real time, Windows operating system.
2. Oil quantity is measured by sensor and displayed on 10.4 tactile LCD screen;
3. More than 400 kinds of injectors data can be searched and used.
4. Data can be searched and saved.
5. It is installed BOSCH common rail pump to provide 0~1600 bar of rail pressure.
6. Rail pressure can be tested in real time, it contains the high-pressure protection function
7. Pulse and frequency of the injector drive signal can be adjusted.
8. Injection time can be setted.
10. Precise measurement, easy operation, low noise.
FUNCTION
1. Test injector brands: BOSCH, SIEMENS, DELPHI, DENSO.
2. Test 1 piece of injector.
3. Test the pre-injection oil quantity of common rail injector.
4. Test the max. oil quantity of common rail injector.
5. Test the cranking oil quantity of common rail injector.
6. Test the backflow oil quantity of common rail injector.
7. Test the average oil quantity of common rail injector.
8. Test the seal performance of common rail injector.
9. Data can be searched and saved.
10. Clean the common rail injector.

TECHNICAL PARAMETER
1. Pulse width: 0.1~20ms
2. Continuous injection times: 0~1000
3. Fuel temperature: 40±2℃
4. Rail high pressure: 0~1600 bar
5. Test oil filtered precision: 5μ
6. Input power: 380V/50hz/3phase or 220V/60hz/3phase
7. Rotation speed: 0~3000RPM
8. Oil tank capacity: 16L
9. Overall dimension (MM): 865×775×1430
10. Weight: 300KG.
12PSB-2 Injection Pump Test Bench

FUNCTIONS
1. Measurement of each cylinder's delivery at various rotation speeds;
2. Checking of each cylinder's injection time with static state;
3. Checking of the mechanical speed governors;
4. Checking of the electromagnetic valve of distributor pumps;
5. Checking of the pneumatic speed governors' positive pressure performance;
6. Checking of the pneumatic speed governor's vacuum performance;
7. Measurement of the reflux delivery of distributor pumps;
8. Measurement of the distributor pump's body internal pressure;
9. Checking of sealing of fuel injection pump body;

CHARACTERISTICS
1. Changing frequency and rotation speed, low fall of rotation speed and high output torque;
2. Rotation speed, count, temperature, air pressure and advance angle are displayed in digits mode;
3. Seven kinds of rotation speeds presetting;
4. Built-in air resource;
5. Constant temperature controlled;
6. The functions of over voltage, overload and short circuit protection;
7. Operating position: arbitrary side of the two work sides of the test stand;
8. High measurement precision, ultra low noise
<table>
<thead>
<tr>
<th>TECHNICAL PARAMETERS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Adjustable rotation speed range</td>
<td>0~4000RPM</td>
</tr>
<tr>
<td>Double series of graduates</td>
<td>45CC, 150CC</td>
</tr>
<tr>
<td>Volume of oil tank</td>
<td>60L</td>
</tr>
<tr>
<td>Temperature stabilization</td>
<td>40±2℃</td>
</tr>
<tr>
<td>Test oil filtering unit</td>
<td>5μ</td>
</tr>
<tr>
<td>DC. Supply</td>
<td>12/24V</td>
</tr>
<tr>
<td>Feed pressure</td>
<td>0<del>0.4MPa (low), 0</del>4MPa (high)</td>
</tr>
<tr>
<td>Air pressure (MPa)</td>
<td>-0.03~0.3</td>
</tr>
<tr>
<td>3-phase power supply</td>
<td>380V/50Hz or on request</td>
</tr>
<tr>
<td>Flywheel inertia's moment</td>
<td>0.8kg·m²</td>
</tr>
<tr>
<td>Center height</td>
<td>125mm</td>
</tr>
<tr>
<td>Output power</td>
<td>7.5kw, 11kw,15kw,18.5kw or on request</td>
</tr>
<tr>
<td>Overall dimensions (mm)</td>
<td>1800×960×1750</td>
</tr>
<tr>
<td>Net weight (kg)</td>
<td>900</td>
</tr>
</tbody>
</table>
Atomizing Injector Test Bench

Main technical parameters:
1. pressure reservoir volume: 600 cubic meters
2. Y132M804KW motor
3. fuel tank capacity: 20 L
4. pressure gauges: the range of type 040MPa Accuracy Class 1.5
5. water filter: QLS10
6. The accuracy of 6 pressure sensor is not greater than or equal to 5
7. Taiwan SA converter
8. dimensions: in order to prevail in kind
9. The 9 test stand weight: 600KG
CRS-100 test bench

CRS-100 test bench is our latest independent researched special device to test the performance of high-pressure common rail pump and injector, it can test common rail pump and injector of BOSCH, SIEMENS, DELPHI and DENSO. It simulates the injection principle of common rail motor completely and the main drive adopts the most advanced speed change by frequency change. High output torque, ultra low noise, rail pressure stable. It tests the common rail pump by flow meter sensor with more precise and stable measurement. Pump speed, injection time, pulse frequency, injection pulse width, oil measurement and rail pressure are all controlled by industrial computer by real time. The data is also obtained by computer. 19 LCD screen display makes the data more clear. The rail pressure adopts resist-vibration pressure gauge and it displays clear. Advanced technology, steady performance, precise measurement and convenient operation. CR-100 can fulfill the remote assistance by internet and make the maintenance easy to operate.
CHARACTERISTIC
1. Main drive adopts the speed change by frequency change.
2. Controlled by industrial computer in real time, Windows operating system. Fulfill the remote assistance by internet and make the maintenance easy to operate.
3. Oil quantity is measured by sensor and displayed on 19LCD.
4. Drive signal can be adjusted
5. Percentage of drive signal can be adjusted.
6. Rail pressure can be tested in real time and controlled automatically, it contains the high-pressure protection function.
7. Data can be searched, printed and made into database.
8. Pulse and frequency of the injector drive signal can be adjusted.
9. Injection time can be setted.
11. Oil temperature is controlled by forced-cooling system.
12. Plexiglass protective door, easy operation, safe protection.
13. Measure the flux of common rail pump by flow meter sensor.

TECHNICAL PARAMETER
Injection testing frequency 50~3000 rpm
Pulse width 0.1~200 ms
Continuous injection times 0~1000
Fuel temperature 40±2℃
Supply oil quantity of common rail injector 0~200cc/min 0.5%
Rail high pressure 0~2000 bar
Test oil filtered precision 5μ
Input power 380V/50hz/3phase or 220V/60hz/3phase
Rotation speed 0~4000RPM
Oil tank capacity 60L
Flywheel inertia’s moment 0.8KG.M2
Center height 125MM
Output power 15KW
Overall dimension (MM) 1600×650×1300;
Weight 800 kg
<table>
<thead>
<tr>
<th>Common Rail Injector</th>
<th>Common Rail Pump</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. test brands: BOSCH, SIEMENS, DELPHI, DENSO</td>
<td>1. test brands: BOSCH, SIEMENS, DELPHI, DENSO</td>
</tr>
<tr>
<td>2. test 2 pieces of injectors at a time.</td>
<td>2. test the sealing of common rail pump.</td>
</tr>
<tr>
<td>3. test the max. oil quantity of high-pressure common rail injector</td>
<td>3. test the internal pressure of common rail pump</td>
</tr>
<tr>
<td>4. test the cranking oil quantity of high-pressure common rail injector</td>
<td>4. test the proportional electromagnetic valve of common rail pump</td>
</tr>
<tr>
<td>5. test the backflow oil quantity of high-pressure common rail injector</td>
<td>5. test the input pressure of common rail pump</td>
</tr>
<tr>
<td>6. test the average oil quantity of high-pressure common rail injector</td>
<td>6. test the flux of common rail pump</td>
</tr>
<tr>
<td>7. set the high-pressure common rail injector's injection state and oil quantity measurement.</td>
<td>7. measure the rail pressure in real time</td>
</tr>
<tr>
<td>8. Data can be searched, printed and made into database.</td>
<td>8. Data can be searched, printed and made into database.</td>
</tr>
</tbody>
</table>
Natural gas Injectot Test Bench

Application:
1. Test the product quality of the fuel metering valve;
2. Test the Drip, angle and atomization of the fuel metering valve;
3. Test the amount of fuel injection and evenness;
4. Physical and Chemical Cleaning for the fuel metering valve with choke and fault
Control platform features:
1 can detect the Bosch, Denso, Delphi, Siemens and other brands of common rail injector.
2 can be detected Bosch CP1 is CP2.2, CP3, and Denso HP3 HP0 high-pressure pump.
3 rail pressure control hardware circuit using the BOSCH Group Proportional valve control amplifier made to ensure the stability of the control accuracy;
4 injector driver circuit BOSCH, sine wave PWM low-power pulse width modulation drive circuit to improve the stability of the current waveform to achieve accurate test requirements.
5 Support high-speed solenoid valve common rail injector, and CRIN-III high-pressure common-rail piezoelectric crystal technology of common rail injector, the maximum drive 6 injector (optional);
6 built-in 600 one hundred kinds of common rail injector standard test data
7 The rail pressure level of alarm protection.
8 According to the measured amount of fuel injection and oil return system can automatically assess whether the injector qualified. According to test results, print the test data report.
9 Support Internet remote control, the implementation of remote operations assistance (optional)
10 system with permissions operating level, to prevent general operator misuse, use more secure.
11 is equipped with a key to restore the system to prevent the system data lost
due to misuse.

12 the amount of oil system flow type is more accurate.

13 control system built-in Embedded oscilloscope, a better understanding of the injector under working conditions, have to drive pulse width of the turn-on voltage current, and maintain the voltage and current waveforms (optional)

**Application functions**

1 high-pressure fuel supply amount of testing;
2 high-pressure fuel supply pressure test;
3 rail high-pressure test (pressure);
4 common rail injector sealing performance test;
5 common rail injector pre-injection fuel test;
6 common rail injector idle smooth test;
7 Testing of common rail injector calibration point fuel injection quantity;
8 Common Rail Injector full load point fuel injection amount of the test;
9 Common Rail Injector opening pressure test;
10 can simultaneously test six fuel injector (the number of tests, according to customer requirements)
11 injector high-speed run-in functions.
12 high-pressure pump run-in function.
13 test high-pressure oil pump fuel pump pressure (detection of pump performance)
14 test high-pressure pump cavity pressure (detection pump performance)