

# INJECTOR VALVE SET

CRDI COMMON RAIL



CRDI

CRDI

INJECTOR  
VALVE SET

## F00RJ03556 CRDI Injector Valve Set Technical File

### Content

1. F00RJ03556 CRDI Injector Valve Set Introduction .....	3
1.1. F00RJ03556 CRDI Injector Valve Set Basic Information .....	3
1.2. F00RJ03556 CRDI Injector Valve Set Application Information .....	3
1.3. F00RJ03556 CRDI Injector Valve Set Specifications and Dimensions Parameters .....	3
1.4. F00RJ03556 CRDI Injector Valve Set Quality Control .....	3
1.5. F00RJ03556 CRDI Injector Valve Set Customized Service .....	4
1.6. F00RJ03556 CRDI Injector Valve Set Spare Parts & Packing List .....	5
1.7. F00RJ03556 CRDI Injector Valve Set Warranty Instructions .....	6
1.8. F00RJ03556 CRDI Injector Valve Set Storage Standard .....	6
2. F00RJ03556 CRDI Injector Valve Set Technical Support .....	7
2.1. F00RJ03556 CRDI Injector Valve Set Replacement Conditions .....	7
2.2. F00RJ03556 CRDI Injector Valve Set Installation Precautions .....	8
2.3. F00RJ03556 CRDI Injector Valve Set installation Steps .....	9
2.4. F00RJ03556 CRDI Injector Valve Set Technical Support Obtaining Methods .....	17
3. F00RJ03556 CRDI Injector Valve Set Purchase and Delivery .....	17
3.1. F00RJ03556 CRDI Injector Valve Set Purchase Payment Terms .....	17
3.2. F00RJ03556 CRDI Injector Valve Set Main Sales Market. ....	17
3.3. F00RJ03556 CRDI Injector Valve Set Declaration Requirements .....	17
3.4. F00RJ03556 CRDI Injector Valve Set Shipping Ways .....	17
3.5. F00RJ03556 CRDI Injector Valve Set Lead Time .....	17
3.6. F00RJ03556 CRDI Injector Valve Set Logistics Time for Destination Out of China's Areas .....	17
3.7. F00RJ03556 CRDI Injector Valve Set Packing .....	18
4. Company Information .....	19
4.1. Company Introduction .....	19
4.2. Contact Information .....	19
5. Copyright Statement .....	19

## F00RJ03556 CRDI Injector Valve Set Technical File

### 1. F00RJ03556 CRDI Injector Valve Set Introduction

The CRDI injector valve set is a crucial element of the injector system, consisting of the valve stem and valve cap. It is situated in the control room within the injector body and plays a pivotal role in regulating oil injection and return. This set is not only a core component but also susceptible to high damage rates.

#### Valve Cap Inspection:

Utilize a microscope to examine the contact surface between the valve cap and the ball for any indications of damage. If damage is identified, the valve cap should be promptly replaced.

#### Valve Stem Inspection:

Top of Valve Stem: Scrutinize the top of the valve stem for any surface damage. A change in the original silver color to white indicates damage, necessitating a replacement.

Contact Area with Injector: Similarly, inspect the valve stem's contact area with the injector for surface damage. Any change from the original silver color to white indicates the need for replacement.

#### 1.1. F00RJ03556 CRDI Injector Valve Set Basic Information

Title	F00RJ03556 CRDI Injector Valve Set China Made New
SKU	G1L10F00RJ03556

#### 1.2. F00RJ03556 CRDI Injector Valve Set Application Information

##### (1) F00RJ03556 CRDI Injector Valve Set Adapted Vehicle Information

Injector Part Number	Car Model	OE Number
0445120370	/	/

##### (2) F00RJ03556 CRDI Injector Valve Set Adapted injector Information

Injector Series	Injector Part Number	Universal Number	Universal Number	Pressure
CRIN3-18	0445120370	0445120387	/	1800

##### (3) F00RJ03556 CRDI Injector Valve Set Part Number Common Writing

F00RJ03556, FOO RJ03556, F 00R J03 556, F OOR J03 556, F00R J03 556, FOOR J03 556, FOORJ03556, F 00R J03556, F OORJ03556, F 00RJ03556, F OORJ03556, F00R J03556, FOORJ03556

#### 1.3. F00RJ03556 CRDI Injector Valve Set Specifications and Dimensions Parameters

CRDI Injector Valve Set Size: 11 cm\*18 cm\*3 cm

CRDI Injector Valve Set Box Size: 12cm\*19 cm\*4 cm

CRDI Injector Valve Set Net Weight: 0.02kg

CRDI Injector Valve Set Gross Weight: 0.05kg

CRDI Injector Valve Set Quality: China Made New

CRDI Injector Valve Set MOQ: 4PC

#### 1.4. F00RJ03556 CRDI Injector Valve Set Quality Control

##### (1) CRDI Injector Valve Set Testing

All parts of the CRDI injector valve set have undergone precision testing, high temperature testing, low temperature testing, withstand pressure testing, leakage testing, durability testing, and various working conditions testing.

##### (2) CRDI Injector Valve Set Inspection

The factory inspection of the CRDI injector valve set is undergone three inspections: full inspection, random inspection, and batch inspection. Different brands of test benches are used to test the same CRDI









injector valve set for more than three times for factory inspection, and the CRDI injector valve set 's installation and testing environment are progressed in dust-free workshop.

### (3) CRDI Injector Valve Set Installation

When matching the valve cap and valve steam, Shumatt strictly complies with the standard of valve cap and valve stem clearance technical indicators to ensure that each CRDI injector valve set meets the factory standards and use standards.

#### 1.5. F00RJ03556 CRDI Injector Valve Set Customized Service

(1) **CRDI Injector Valve Set Customized Service Coverage:** Meet the customized needs of OEM manufacturers for valve color and lustre, valve cap groove customization, valve cap lettering ,valve cap logo engraving, valve cap QR code engraving, CRDI injector valve set internal packaging, CRDI injector valve set external packaging and label customization needs.

No.	1	2
Image		
Name	Valve Cap Color And Lustre	Valve Cap Color And Lustre
Description	Customized 1000 pieces (white color is optional)	Customized 1000 pieces (purple red color is optional )
No.	3	4
Image		
Name	Valve Cap Groove Customization	Valve Cap Lettering, Logo Engraving, QR Code Engraving Customization
No.	5	6
Image		
Name	Valve Set Box	Valve Set Box
Description	Rectangle is optional	Cylindrical is optional
No.	7	8
Image		
Name	Valve Set Bag	Valve Set Label 7cm*5cm

#### (2) CRDI Injector Valve Set Customized Service Requirements:

The purchase of [customized CRDI injector valve set package](#) is no less than 100 pieces.

The purchase of [customized CRDI injector valve set groove](#) is no less than 100 pieces.

The purchase of [customized CRDI injector valve set](#) is no less than 1000 pieces.

The purchase of [customized CRDI injector valve cap engraving](#) is no less than 1000 pieces.

The purchase of [customized CRDI injector valve color](#) is no less than between 1000 -10000 pieces.






▲ When the customized pstemucts involve the need of specify logo, the OEM manufacturer is asked to



provide trademark authorization and the sample of logo image file.

⚠ Once the customized CRDI injector valve set is sold, it can not be returned or exchanged if there is no quality problems.

#### 1.6. F00RJ03556 CRDI Injector Valve Set Spare Parts & Packing List

No.	1	2
Image		
Name	CRDI Injector Valve Set	CRDI Injector Valve Set Anti-rust Paper
Description	CRDI injector valve set part number F00RJ03556	Prevent the CRDI injector valve set from rusting
No.	3	4
Image		
Name	CRDI Injector Valve Set Box (Rectangle )	CRDI Injector Valve Set Box (Cylindrical )
Description	Protect the CRDI injector valve set from being damaged by colliding	Protect the CRDI injector valve set from being damaged by colliding
No.	5	6
Image		/
Name	VCI Anti-rust Bag	/
Description	Prevent the CRDI injector valve set from rusting	/

- ⚠ Minors are prohibited from using the CRDI injector valve set, valve set anti-rust paper, valve assembly box, and VCI anti-rust bag to avoid personal injury.
- ⚠ The Valve Set box is recyclable and can be reused.
- ⚠ VCI anti-rust bag is non-degradable material, please dispose of it properly after use.

## **1.7. F00RJ03556 CRDI Injector Valve Set Warranty Instructions**

### **(1) CRDI Injector Valve Set Warranty Conditions and Instructions**

It is necessary to provide pictures, videos, or test reports detected by the CRDI injector valve set inspection equipment when the valve set is abnormal during use as evidence to feed back to the salesman.

Abnormal conditions are properly explained such as: 1. Smoke, 2. Engine shake, 3. Difficulty starting the engine, 4. Engine noise, 5. Oil leakage and other abnormal conditions.

The above condition may also be affected by other components of the injector. If it is confirmed by our company to be a piston problem, it is within the scope of the subsidy.

### **(2) CRDI Injector Valve Set Warranty Coverage**

Within 15 days after customer receives the **F00RJ03556** CRDI injector valve set, if there is a performance failure and the piston has no appearance damage, customer can choose to replace it;

If the **F00RJ03556** CRDI injector valve set has performance problems during the warranty period (6-12 months), and it is confirmed that it is piston's problems after being tested, you can contact our salesmen to replace the same model for free;

If the piston is confirmed to be fault-free, the piston will be returned.

### **(3) CRDI Injector Valve Set Out of Warranty Coverage**

- ① The warranty period has expired, not covered by warranty.
- ② CRDI injector valve set failure caused by high temperature, high pressure, humidity, rain and snow, saline-alkali land, earthquake, and used in abnormal environment.
- ③ CRDI injector valve set damage caused by man-made reasons (throwing, strong magnetic field magnetization, set fire).
- ④ CRDI injector valve set failure or injector damage caused by non-injector design, technology, manufacturing, quality and other issues.
- ⑤ CRDI injector valve set failure due to system pressure exceeding system approved pressure.
- ⑥ CRDI injector valve set failure caused by impurities (water, lead, aluminum powder, iron powder, sulfide) in the system fuel exceeding the standard requirements.
- ⑦ CRDI injector valve set failure caused by not installing according to the tightening torque specified in the vehicle engine maintenance manual (the tightening torque is too large or too small).
- ⑧ CRDI injector valve set failure caused by not following the installation angle specified in the injector maintenance manual.
- ⑨ CRDI injector valve set failure caused by not following the cleaning requirements specified in the injector maintenance manual.
- ⑩ CRDI injector valve set failure caused by failure to replace consumable parts as specified in the injector maintenance manual.

## **1.8. F00RJ03556 CRDI Injector Valve Set Storage Standard**

### **(1) Choose a Suitable Storage Place**

The warehouse and cargo yard where the CRDI injector valve set is stored should be kept clean and dry, and away from the factory buildings that generate harmful gases and dust; do not mix with acid, alkali, salt and other substances; the storage place should have a good drainage system; the cargo yard should be flattened with gravel or furnace ash etc. to enhance the water permeability of the surface layer to keep the reservoir area dry.

### **(2) Strict Requirements of Warehousing**

Strict inspections should be carried out when the CRDI injector valve sets are put into storage, the surface cleaning work should be done well to remove water traces, oil stains, ash and other dirt, remove the rust and do anti-rust treatment in time. Packaged CRDI injector valve set must be protected from damage.

### **(3) Keep The Warehouse Dry And Preventing Moisture**

The relative humidity is usually below 70% for the CRDI injector valve set placed in the room, and the corrosion of the CRDI injector valve set is significantly reduced.

CRDI injector valve set must be stored in the warehouse, and they are forbidden to store in the same warehouse with commodities with high water content.

**(4) Stack Properly**


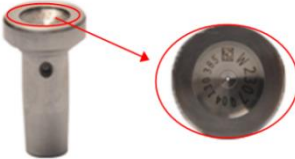
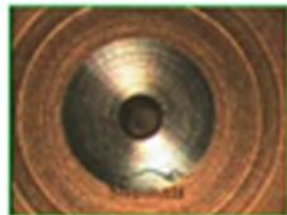
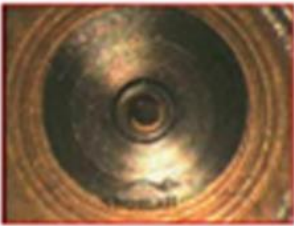
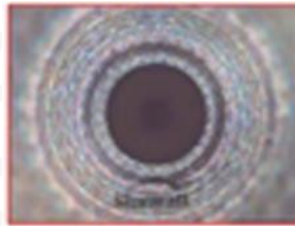

After the CRDi injector valve set is exposed to rain, the corrosion rate will increase significantly. The purpose of sealing is to isolate the CRDi injector valve set from rainwater and humid air, so the warehouse window should be checked in time to avoid rainwater entering the warehouse.

If the CRDi injector valve set package is damaged, it should be repaired or replaced; when the package is damp, the packaging material should be dried; if the original anti-corrosion and oil applied at the factory is found to be damaged or dried up, it should be cleaned and re-applied oil in time.

- ⚠ It is forbidden to leave the CRDi injector valve set exposed in the air for a long time.
- ⚠ It is forbidden to store acid, alkali, salt and other substances together with the CRDi injector valve set.
- ⚠ The unpacked CRDi injector valve set must be rust-proof during secondary storage.

**2. F00RJ03556 CRDi Injector Valve Set Technical Support****2.1. F00RJ03556 CRDi Injector Valve Set Replacement Conditions****(1) Valve Cap**


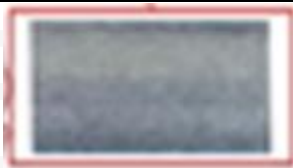

Under the microscope, magnify 20 times to check that the oil inlet hole of the valve cap and the oil return hole of the bonnet are not worn, grooved, scratched, damaged, rusted or dented.

No.	1	2	3
Image			
Description	CRDi injector valve set oil inlet hole location	CRDi injector valve set oil return hole location	The oil inlet and oil return holes of the CRDi injector valve set are free of wear, grooves, scratches, damage, rust, dents, which do not need to be replaced
No.	4	5	6
Image			
Description	The CRDi injector valve set oil hole is recessed and needs to be replaced	The CRDi injector valve set oil hole is worn and needs to be replaced	The CRDi injector valve set oil hole is punched and needs to be replaced

- ⚠ The wear of the top oil return hole causes the oil return to be too large and the leaking injector cannot inject oil.
- ⚠ The oil inlet hole on the side is blocked, causing the injector to fail to establish the pressure chamber and the injector cannot work normally
- ⚠ Wear of the oil chamber of the valve cap will cause fuel injector failure. In severe cases, the fuel injector will not work properly.

## (2) Valve Stem

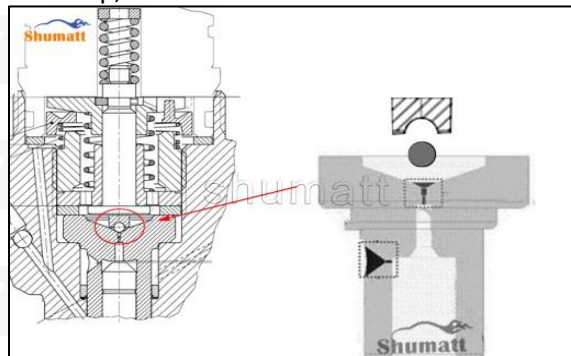
Magnify 20 times under a microscope to check whether the valve stem is worn, the surface is not smooth, discolored, or rusty.

No.	1	2	3
Image			
Description	The valve stem is worn out and needs to be replaced	The valve stem surface is not smooth and colorless, and it needs to be replaced	The valve stem is rusty and needs to be replaced

- ⚠ The excessive clearance between the valve stem wear, housing and the valve cap will causes injector lag.
- ⚠ The valve stem lag will cause the injector to start the solenoid to start, and the oil needle can not return quickly after the nozzle is opened.
- ⚠ Check the injector components before replacing the CRDI injector valve set according following the injector service manual to avoid further damage to the CRDI injector valve set after replacement.

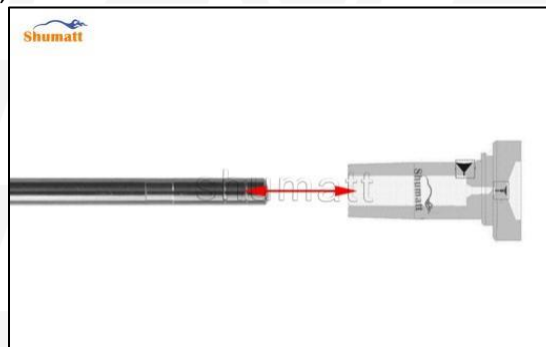
## 2.2. F00RJ03556 CRDI Injector Valve Set Installation Precautions

- (1) Clean the CRDI injector valve set in an ultrasonic cleaner for 3-5 minutes before installation, so as to make the stains, dust, rust-proof oil oxides, paraffin base, naphthenic base, intermediate base, salt, lead naphthenate, zinc naphthenate, sodium petroleum sulfonate, barium petroleum sulfonate, calcium petroleum sulfonate, tallow diamine trioleate, rosinamine on the surface of the CRDI injector valve set fall off.
- (2) Use compressed air to clean the cleaning fluid attached to the surface of the CRDI injector valve set after cleaning, and clean it up to the standard of use.
- (3) When installing the steel ball and ball seat, pay attention to the steel ball should close tightly to the oil return hole at the top of the valve cap, as shown below:



Pic No.1

- (4) When installing the valve stem, make sure that the valve stem and the bonnet must ensure that the valve stem can move smoothly in it, as shown below:



Pic No.2



- (5) When installing the CRDi injector valve set, the oil inlet position should be 180° between the oil inlet position of the injector body.

⚠ If the injector steel ball and the ball seat are not installed in accordance with the standard, it may cause serious damage to the CRDi injector valve set.

### 2.3. F00RJ03556 CRDi Injector Valve Set installation Steps

- (1) Use the special installation tools for the sealing ring and support ring in (CRT029) to put them into the injector body, as shown in figure 1



Figure 1

- (2) Place the valve set into the injector and install the valve assembly into place using the special tools in (CRT029), as shown in figure 2



Figure 2

- (3) Take out the buffer spring steel ball and ball seat and set them aside, as shown in figure 3



Figure 3

- (4) Place the armature travel adjustment gasket into the injector, as shown in figure 4



Figure 4

- (5) Place the armature core into the injector, as shown in figure 5



Figure 5

- (6) Place the lower plate into the injector, as shown in figure 6



Figure 6

- (7) Place the lock nut into the injector, as shown in figure 7



Figure 7

- (8) Use the special tool for locking nuts in (CRT029) to tighten the locking nuts to 65 Nm, as shown in figure 8



Figure 8

- (9) Insert the armature, as shown in figure 9



Figure 9

- (10) Press the armature plate downward so that the opening buffer stroke adjustment gasket can be stuck in the slot on the armature core, as shown in figure 10



Figure 10

- (11) Insert the armature stroke adjustment shim, as shown in figure 11



Figure 11

- (12) To measure the stroke without buffer spring, steel ball and ball seat, use the CRT220 tool (Tool No. 1), as shown in figure 12



Figure 12



(13) Install the measuring tool on the injector and reset it to zero, as shown in figure 13



Figure 13

(14) After installing the buffer spring, steel ball and ball seat, install the measuring tool. The value displayed by the measuring tool is the buffer stroke value (15-45um). If it is greater than the normal value, reduce the buffer stroke adjustment gasket. If it is less than the normal value, thicken the buffer stroke adjustment gasket, as shown in figure 14



Figure 14

(15) Reset the measuring tool to zero, as shown in figure 15



Figure 15

- (16) The value reached by pressing the gauge rod is the armature stroke (45-55um). If it is greater than the normal value, reduce the armature stroke adjustment gasket. If it is less than the normal value, thicken the armature stroke adjustment gasket, as shown in figure 16



Figure 16

- (17) Replace the measuring tool with the CRT220 tool (Tool No. 5) and reset to zero, as shown in figure 17



Figure 17

- (18) Measure the distance from the inner plane to the outer plane of the solenoid valve and record it as A (5510), as shown in figure 18



Figure 18

- (19) Measure the distance from the injector end armature plate plane to the remaining air gap adjustment gasket again and record it as B (5498), as shown in figure 19



Figure 19

- (20) Residual air gap = A data - B data. The value of the residual air gap is 45-55Nm. If it is greater than the normal value, reduce the residual air gap stroke adjustment gasket. If it is less than the normal value, thicken the residual air gap stroke adjustment gasket, as shown in figure 20



Figure 20

- (21) Place the solenoid valve spring into the injector, as shown in figure 21



Figure 21

(22) Place the solenoid valve spring adjustment gasket into the injector, as shown in figure 22



Figure 22

(23) Tighten the solenoid valve to a 45 degree angle, as shown in figure 23



Figure 23

(24) Use an open-end wrench to tighten the solenoid valve cap to 35 Nm, as shown in figure 24



Figure 24



## 2.4. F00RJ03556 CRDI Injector Valve Set Technical Support Obtaining Methods

- (1) CRDI Injector Valve Set Technical Data: <https://www.crdiinjectorvalveset.com/download/>
- (2) CRDI Injector Valve Set Videos: <https://www.crdiinjectorvalveset.com/videos/>
- (3) CRDI Injector Valve Set Encyclopedia: <https://www.crdiinjectorvalveset.com/category/news/encyclopedia/>

## 3. F00RJ03556 CRDI Injector Valve Set Purchase and Delivery.

### 3.1. F00RJ03556 CRDI Injector Valve Set Purchase Payment Terms

**Payment Terms:** T/T, PayPal, Alipay, WeChat

**⚠ Please contact our salesmen for specific payment information.**

### 3.2. F00RJ03556 CRDI Injector Valve Set Main Sales Market.

**CRDI Injector Valve Set main sales markets:** Asia, Europe, North America, South America, Africa etc.

### 3.3. F00RJ03556 CRDI Injector Valve Set Declaration Requirements

Shumatt can assist customers to provide the following documents for import customs clearance: contract, invoice, packing list, bill of lading, insurance policy, certificate of origin, etc.

### 3.4. F00RJ03556 CRDI Injector Valve Set Shipping Ways

**Destination in China areas:** SF Express, Debon Express, the corresponding logistics company can be provided according to customer requirements in special cases.

**Destinations out of China's areas:** DHL, UPS, FedEx, TNT air, ocean or other shipping methods required by customers.

### 3.5. F00RJ03556 CRDI Injector Valve Set Lead Time

**Lead time:** Send out within 3 – 7 working days after receiving payment(Except for special pstemucts and special cases).

### 3.6. F00RJ03556 CRDI Injector Valve Set Logistics Time for Destination Out of China's Areas

**DHL Logistics Time:**

Country or Region of Departure	Hong Kong, China	Other Countries or Regions of Asia	Australia and New Zealand	Europe	America	Other Countries
China's Mainland	7 Days	7 Days	8 Days	8 Days	8-12 Days	7-10 Days

### UPS Logistics Time:Country or Region of Departure: China's Mainland

Country of Destination	Estimated Arrival Time	Country of Destination	Estimated Arrival Time	Country of Destination	Estimated Arrival Time
Japan	3 Days	UK	5-7 Days	Egypt	5-7 Days
Turkey	5-7 Days	Singapore	3 Days	Switzerland	5-7 Days
Bahrain	5-7 Days	Latvia	7-10 Days	New Zealand	7-10 Days
Sri Lanka	5-7 Days	Thailand	3 Days	Austria	5-7 Days
Romania	5-7 Days	Vietnam	3-5 Days	Estonia	5-7 Days
Malaysia	3-5 Days	Israel	5-7 Days	Mexico	7-10 Days
France	5-7 Days	America	5-7 Days	United Arab Emirates	5-7 Days
Italy	5-7 Days	Netherlands	5-7 Days	Bengal	7-10 Days
Lebanon	5-7 Days	Philippine	3-5 Days	Greece	7-10 Days
South Korea	3 Days	Spain	5-7 Days	Myanmar	5-7 Days
Canada	5-7 Days	Germany	5-7 Days	Saudi Arabia	7-10 Days

Portugal	5-7 Days	Australia	5-7 Days	South Africa	7-10 Days
Denmark	5-7 Days	Belgium	5-7 Days	Ukraine	7-10 Days
India	7-10 Days	Qatar	7-10 Days	Poland	5-7 Days
Indonesia	3-5 Days	Morocco	7-10 Days	Pakistan	7-10 Days
Kuwait	7-10 Days	/	/	/	/

⚠ The logistics time is for reference only, subjects are according to the actual arrival.

### 3.7. F00RJ03556 CRDI Injector Valve Set Packing

**Domestic Express Packaging:** Usually wrapped in waterproof scotch tape, such as picture No.1.

**International Express Packaging:** Wrapped with waterproof yellow tape After wrapping the black protective film, such as picture No. 2.

**Pallet Shipping:** Use fumigation free and recycling trays that meet export requirements, and use white wrapping protective film to wrap and bind with cable ties for the outside, such as picture No. 3,  
Also, the pstemucts can be packaged according to customers' requirements.

- ⚠ The packing tray is made of plastic and can be recycled.
- ⚠ Transparent tape, yellow tape, black wrapping protective film, white wrapping protective film are non-degradable materials, please dispose of them properly.
- ⚠ Minors are prohibited from using transparent tape, yellow tape, black wrapping protective film, and white wrapping protective film to avoid personal injury.

No.	Image	Name	Description
1		Domestic Express Packaging	Wrapped by Transparent tape
2		International Express Packaging	Wrapped with yellow tape after wrapping black protective film
3		Pallet Shipping	Use pallet that meet export requirements, and use white wrapping protective film to wrap and bind with cable ties

#### 4. Company Information



Pic No.3

##### 4.1. Company Introduction

**Chinese Name:** 深圳市舒马特科技有限公司

**English Name:** Shenzhen Shumatt Technology Co., Ltd

**Common Rail Diesel Injector Manufacturer:** Shenzhen Shumatt Technology Co., Ltd

**Mob Phone/WeChat:** +86-13410541523

**HK Telephone:** +852-67653519

**Telephone:** +86-755-23215133

**Shenzhen Office:** 11-12, Floor 14, Building 13, Qinchengda Building, Exit A, Honglang North Subway Station, Bao'an District, Shenzhen, China's Mainland

**Shenzhen Office:** Exit C, Qiao Touxu Metro Station, NO. 66 Chongqing Road, Fuhai Avenue, Bao'an District, Shenzhen, China Mainland

**Hong Kong Office:** Jianfa Street Industrial Zone, Tuen Mun, New Territories, Hong Kong, China

**After-sales Service Address:** Please contact our salesmen to obtain and provide the corresponding product maintenance reasons (Reference: [1.7. F00RJ03556 CRDI Injector Valve Set Warranty Instructions](#))

##### 4.2. Contact Information

Name	WeChat/ WhatsApp
Ruby	+86-13410541523

#### 5. Copyright Statement

The material on this file "[F00RJ03556 CRDI Injector Valve Set Technical File](#)" is the property of Shenzhen Shumatt Technology Co., Ltd and is protected by international copyright laws. The content is allowed to be cited for non-profit purposes, and please indicate the source: "Reprinted from [www.crdiinjectorvalveset.com](#)" to respect the content supplier's labor results. Copying, reproducing, redistributing, modifying, publishing, transmitting without permission is strictly prohibited. We reserve the right to pursue legal action against those who use the content illegally.