

## VP工业发电用柴油机的发展



旧机型



720/730/731/732/733



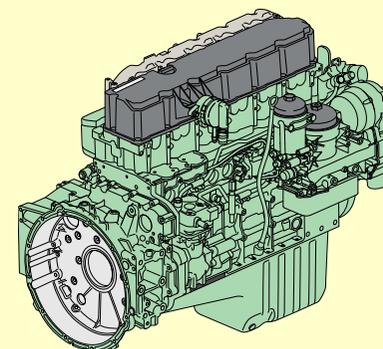
TAD1240/1/2



TAD940/941



TAD1640/1641/1642/TWD1643



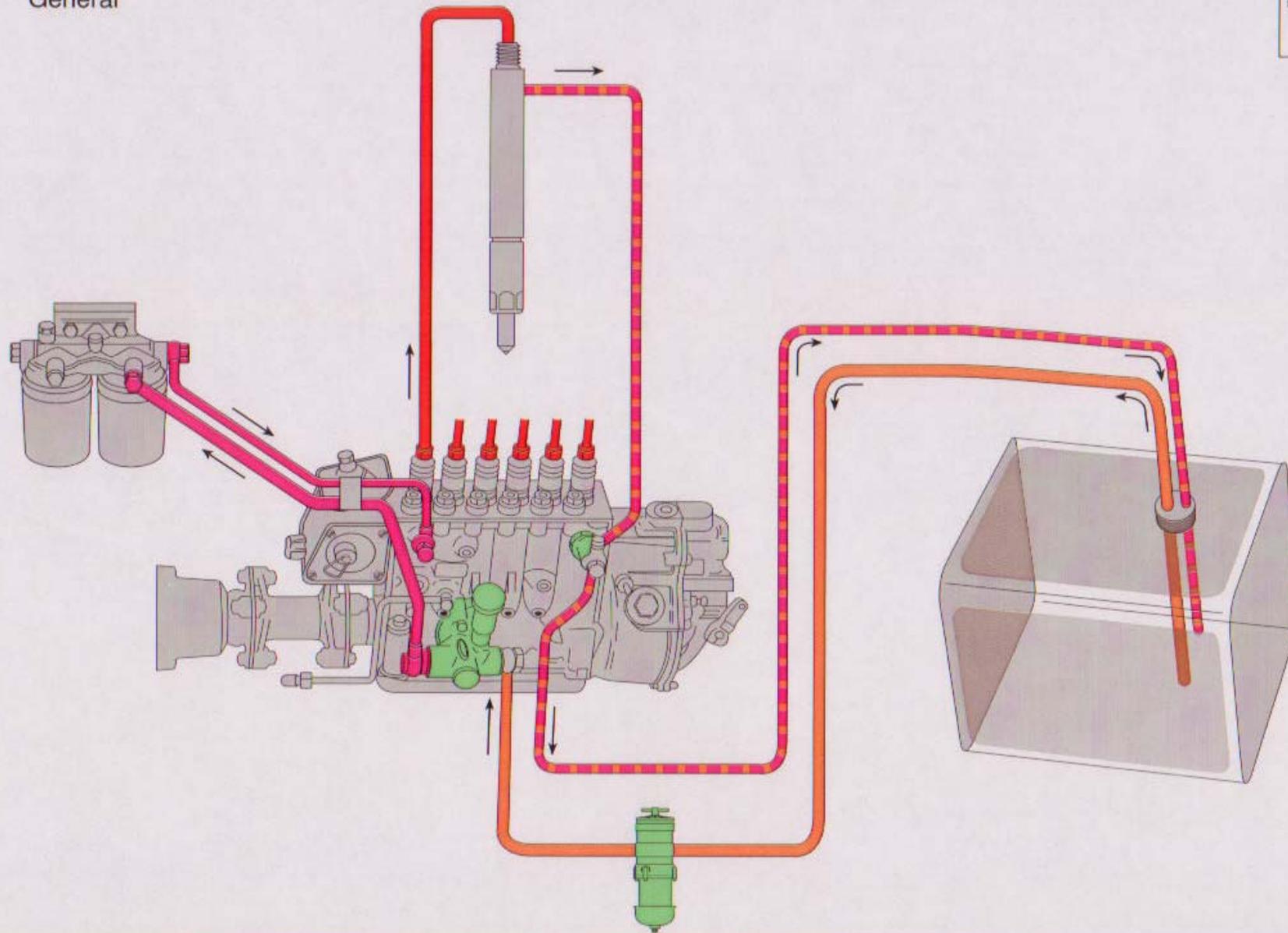
TAD734GE

## 目前销售的工业发电用柴油机

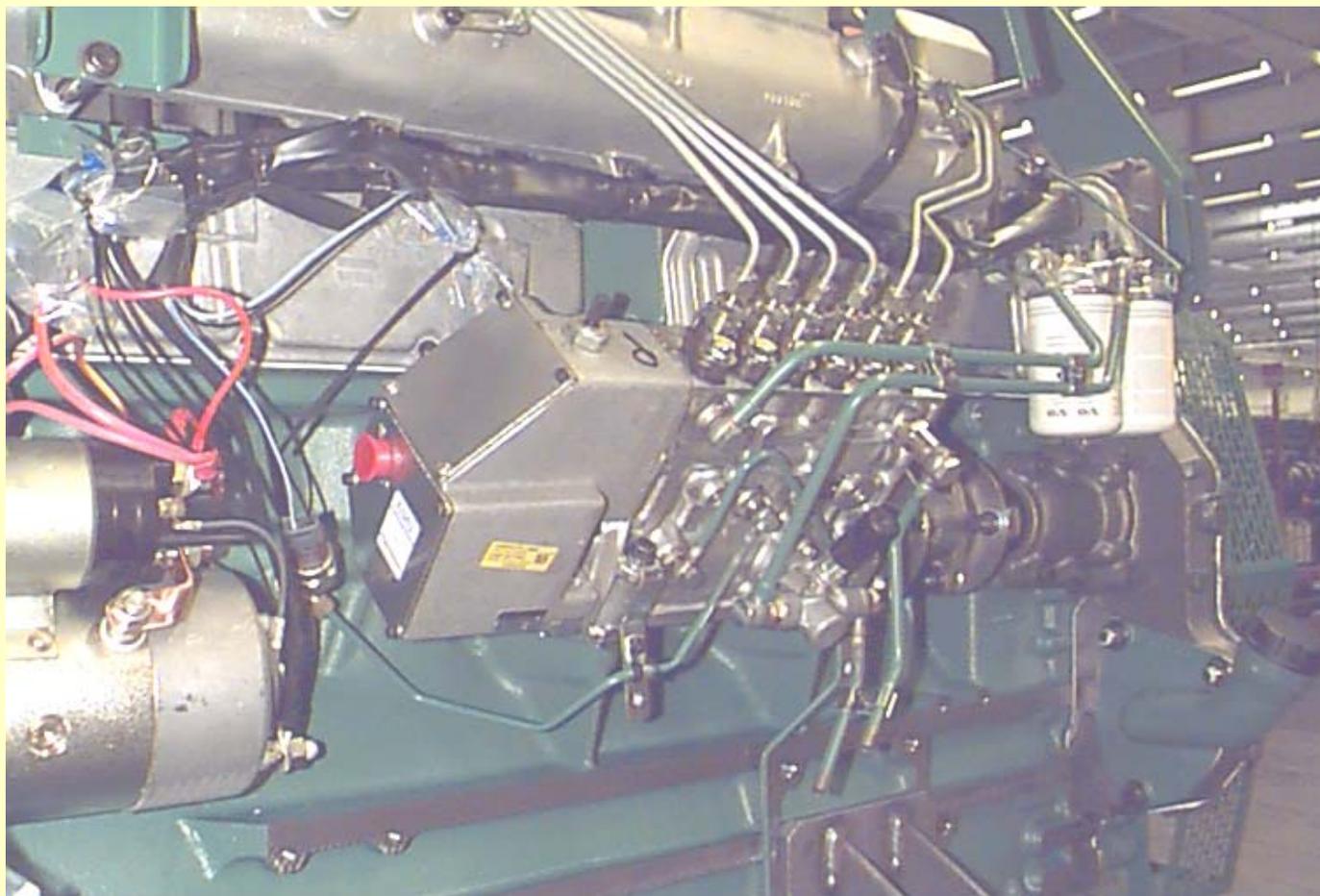
Engine	Prime power				Standby Power				Generator efficiency		Emission	
	hp	kWm	kWe	kVA	hp	kWm	kWe	kVA	%	TA-luft	EU Stage	EPA/CARB Tier
<a href="#">TD520GE</a>	102	75	68	85	113	83	76	94	91%	1	-	1
<a href="#">TAD530GE</a>	102	75	68	85	113	83	76	94	91%	-	2	-
<a href="#">TAD531GE</a>	120	88	80	100	131	96	87	109	91%	-	2	-
<a href="#">TAD532GE</a>	154	113	104	130	169	124	114	143	92%	-	2	-
<a href="#">TD720GE</a>	154	113	104	130	169	124	114	143	92%	1	-	1
<a href="#">TAD730GE</a>	154	113	104	130	169	124	114	143	92%	-	2	-
<a href="#">TAD731GE</a>	180	132	121	152	197	145	133	167	92%	-	2	-
<a href="#">TAD732GE</a>	220	162	149	186	243	179	165	206	92%	-	2	-
<a href="#">TAD733GE</a>	243	179	165	206	268	197	181	227	92%	-	2	-
<a href="#">TAD734GE</a>	295	217	200	250	328	241	222	277	92%	-	2	-
<a href="#">TAD940GE</a>	328	241	222	277	360	265	244	305	92%	1	2	-
<a href="#">TAD941GE</a>	381	280	260	326	419	308	286	358	93%	1	2	-
<a href="#">TAD1240GE</a>	409	301	280	350	450	331	308	385	93%	1 / 2	2	2
<a href="#">TAD1241GE</a>	439	323	300	375	481	354	329	412	93%	1 / 2	2	2
<a href="#">TAD1242GE</a>	479	352	327	409	526	387	360	450	93%	1 / 2	2	2
<a href="#">TAD1341GE</a>	369	271	252	315	405	298	277	346	93%	-	2	-
<a href="#">TAD1342GE</a>	412	303	282	352	453	333	310	387	93%	-	2	-
<a href="#">TAD1343GE</a>	442	325	302	378	484	356	331	414	93%	-	2	-
<a href="#">TAD1344GE</a>	481	354	329	412	529	389	362	452	93%	-	2	-
<a href="#">TAD1345GE</a>	528	388	361	451	558	410	381	477	93%	-	2	-
<a href="#">TAD1640GE</a>	533	392	368	461	586	431	405	506	94%	1	2	2
<a href="#">TAD1641GE</a>	585	430	404	505	643	473	445	556	94%	1	2	2
<a href="#">TAD1642GE</a>	660	485	456	570	729	536	504	630	94%	1	2	2
<a href="#">TVD1643GE</a>	729	536	504	630	811	596	560	700	94%	-	-	2

General

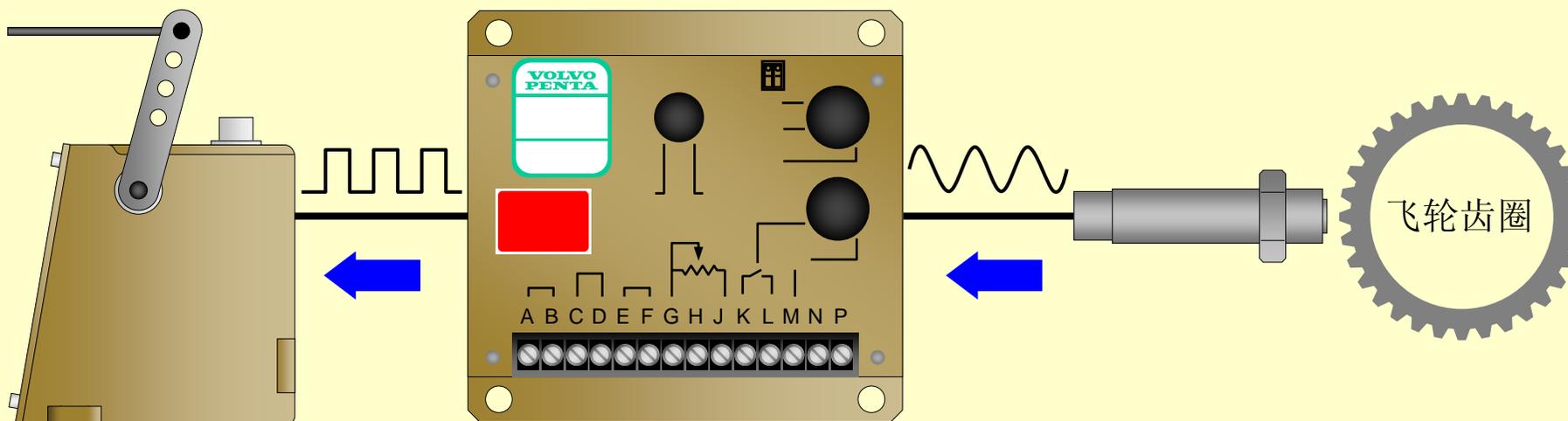
Basic Engine  
Structure  
Picture 9



## 电子执行器 - ACB275 系列



一个基本的GAC调速系统由三部分组成



**电子执行器**

与发动机的喷油泵  
连接

**电子转速控制单元**

将发动机即时转速与期望  
转速相比较, 向电子执行器  
发出更正信号.

**磁性转速传感器**

通过向转速控制单元  
发出频率信号来检测  
发动机转速

# VP柴油机EDC4——控制系统

TAD721/722

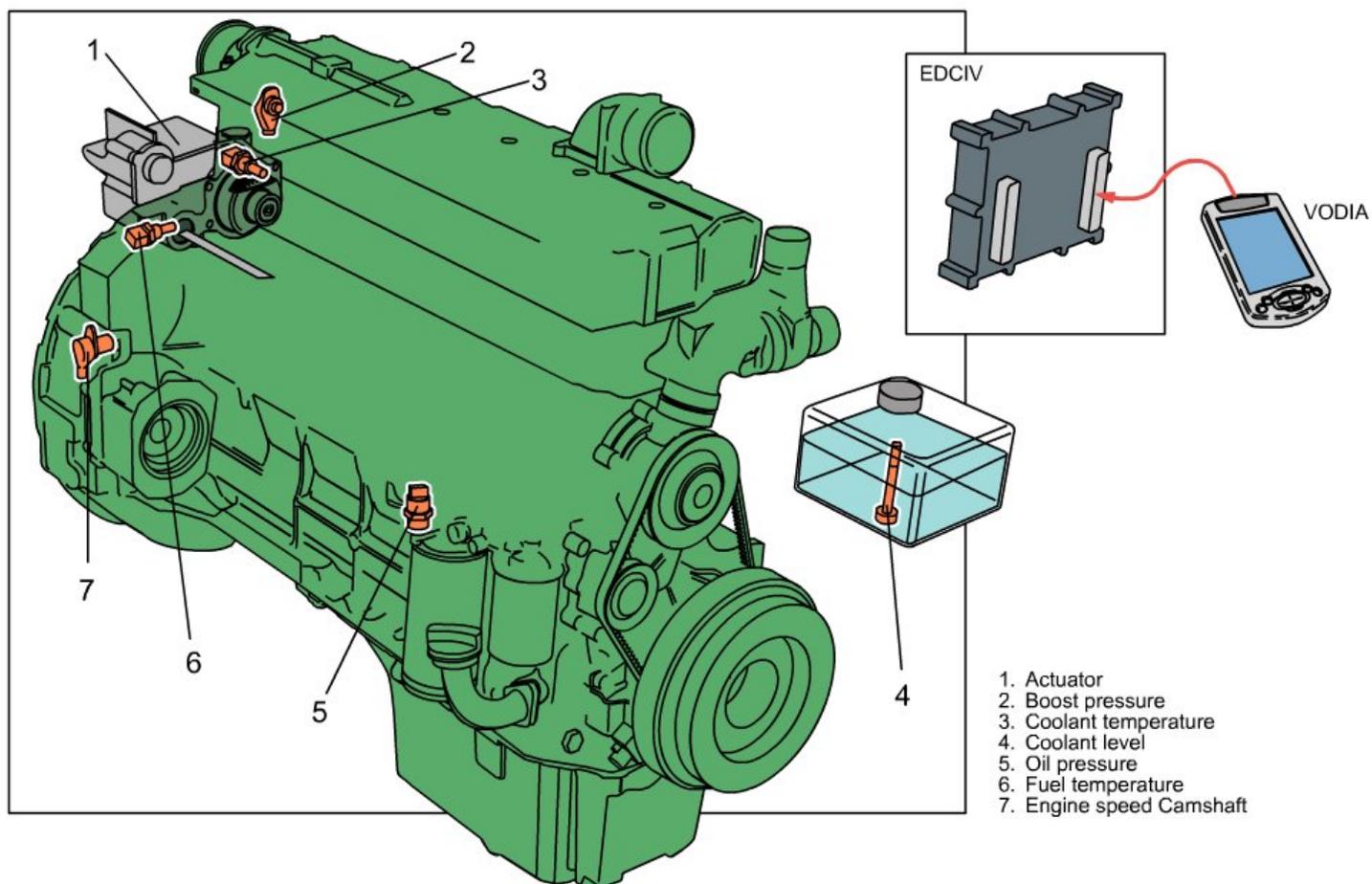
# EDC4



# VP柴油机基本知识介绍——控制系统

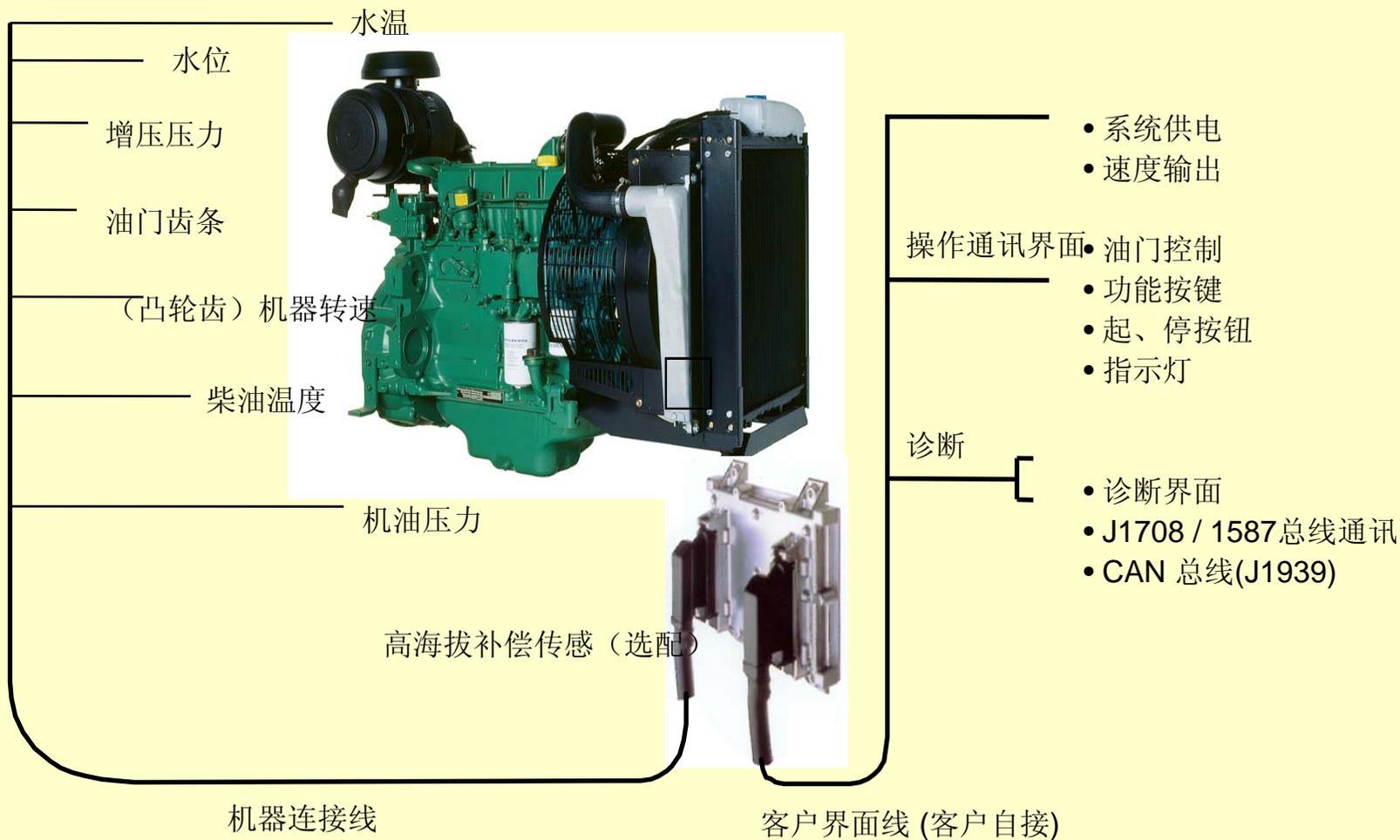
TAD721/722

## Main components and diagnostic interface



# VP柴油机基本知识介绍——控制系统

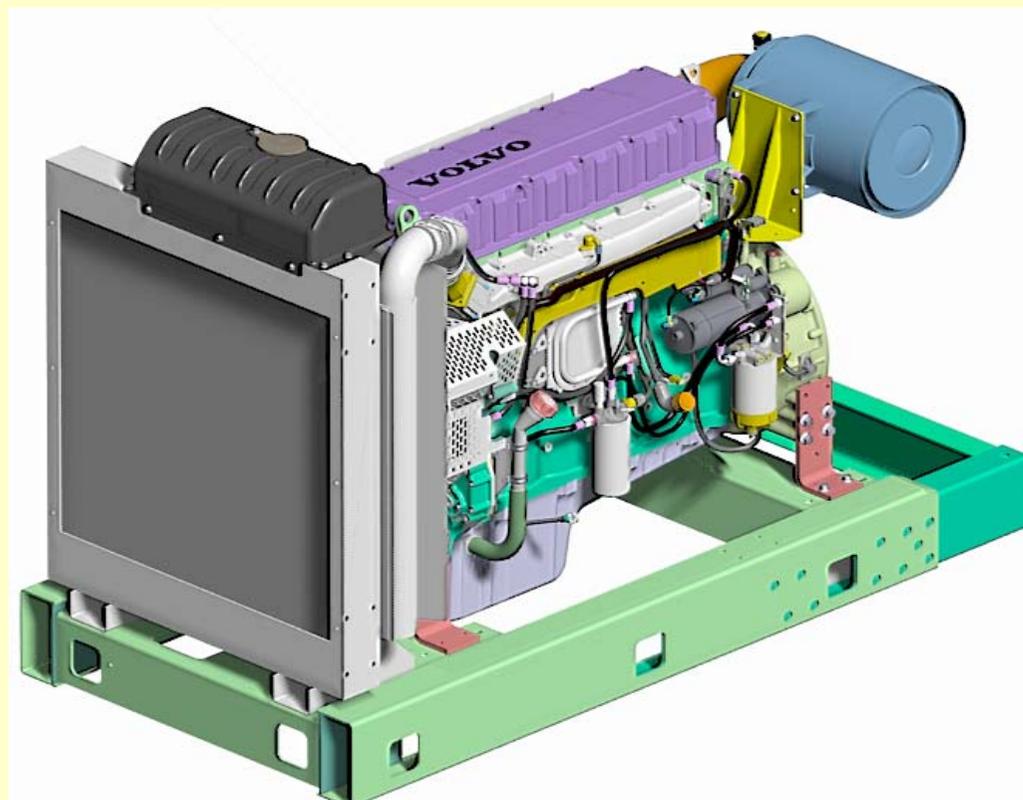
TAD721/722/732/733



## VP工业发电用柴油机-泵喷嘴系列

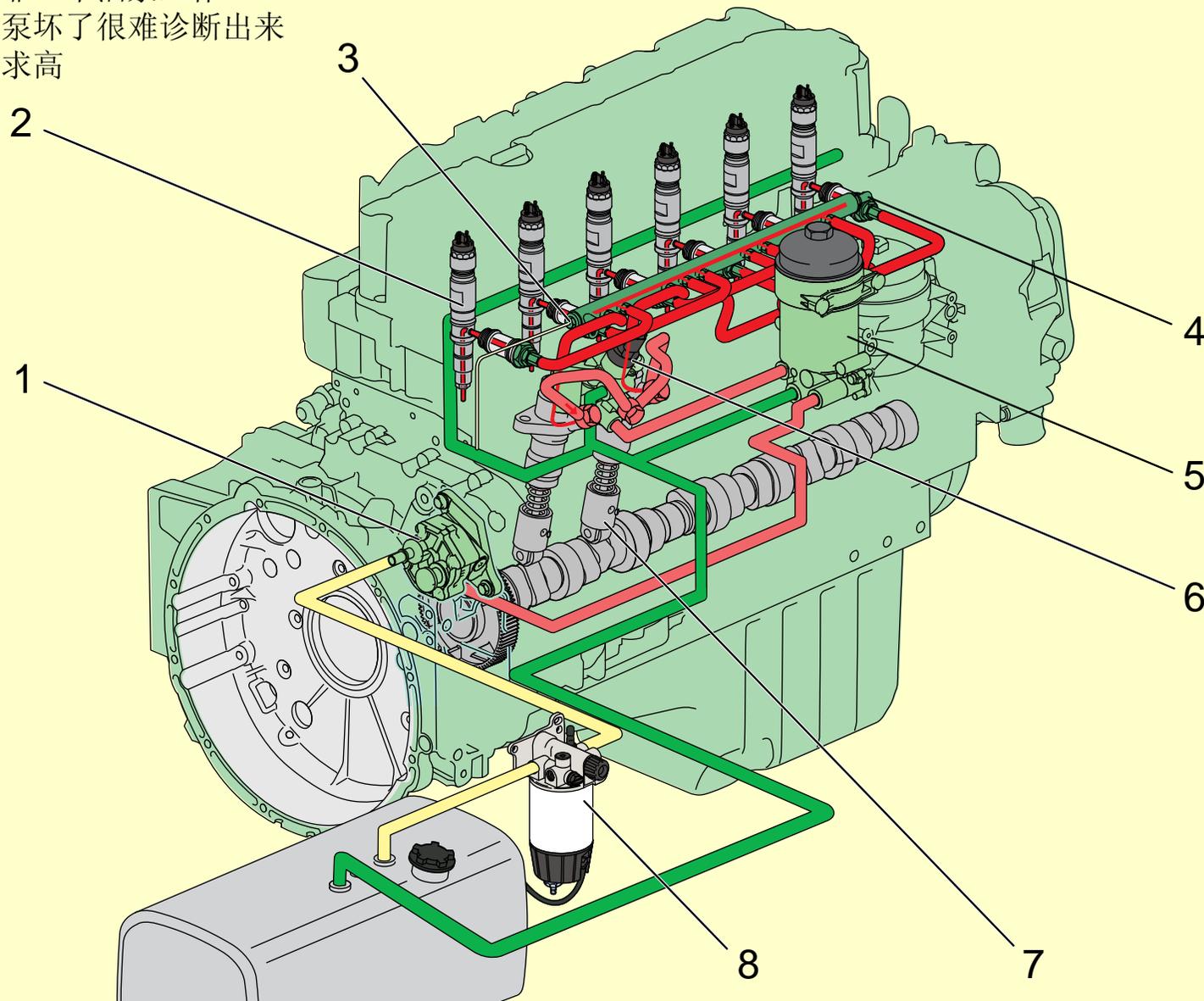
D9, D12, D16:  
泵喷嘴电喷系列

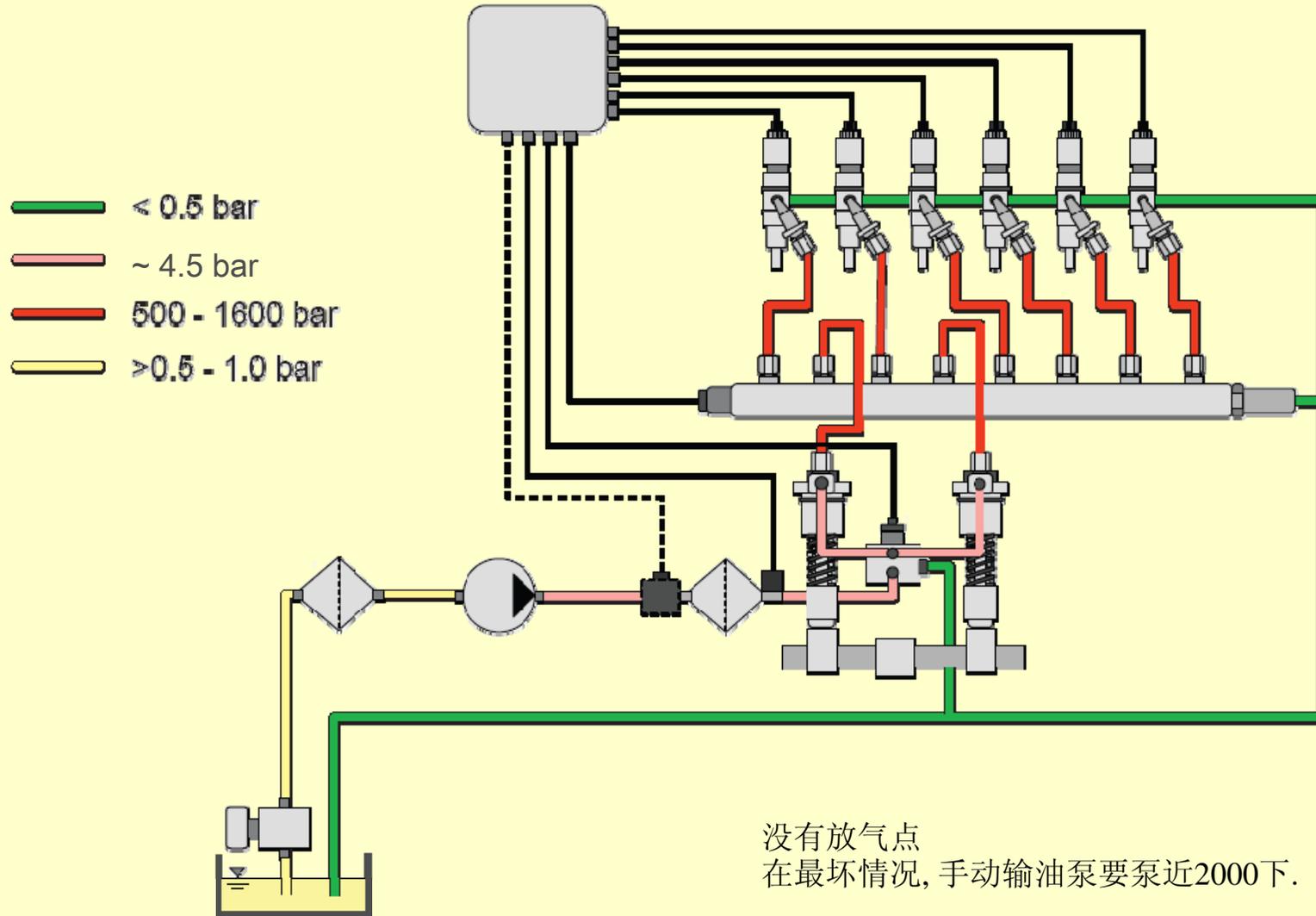
出自于同一设计理念，  
外形基本一致，  
通用零部件比较多

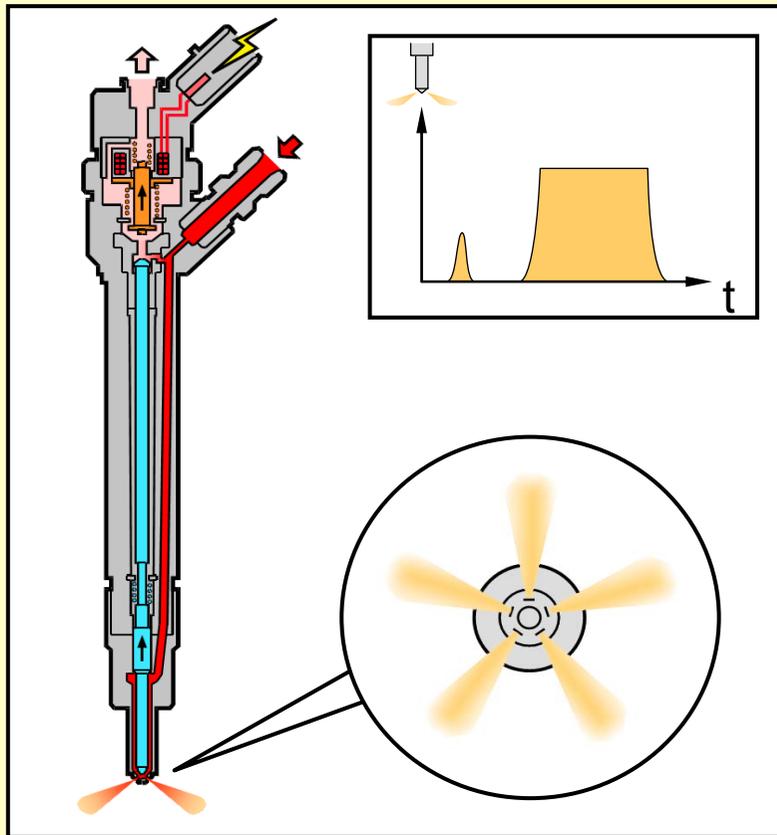


- **1993年**            **D12A**，来自沃尔沃卡车
- **1998年**            **D12C**，沃尔沃编达开始应用该发动机
- **2003年**            **D9**发动机推向市场
- **2004年**            **D16**发动机推向市场
- **2008年**            **TAD734GE**高压共轨发动机推出
- **2009年**            **D13**发动机推向市场

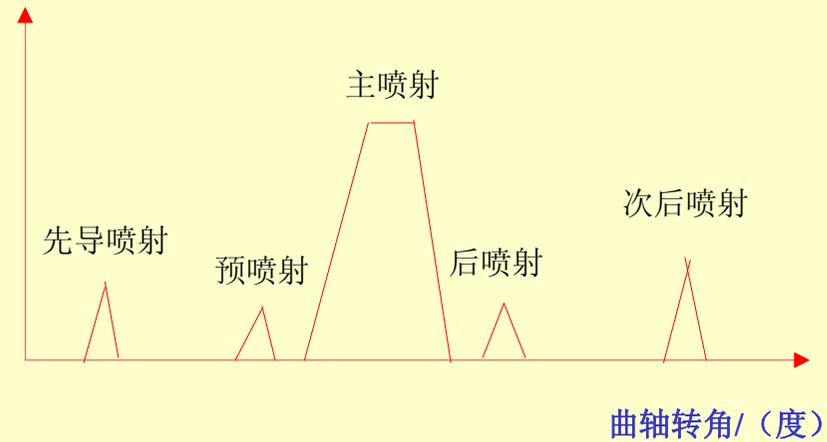
双高压油泵(油压最高1600)  
发动机只靠一个油泵工作  
如果一个泵坏了很难诊断出来  
对燃油要求高







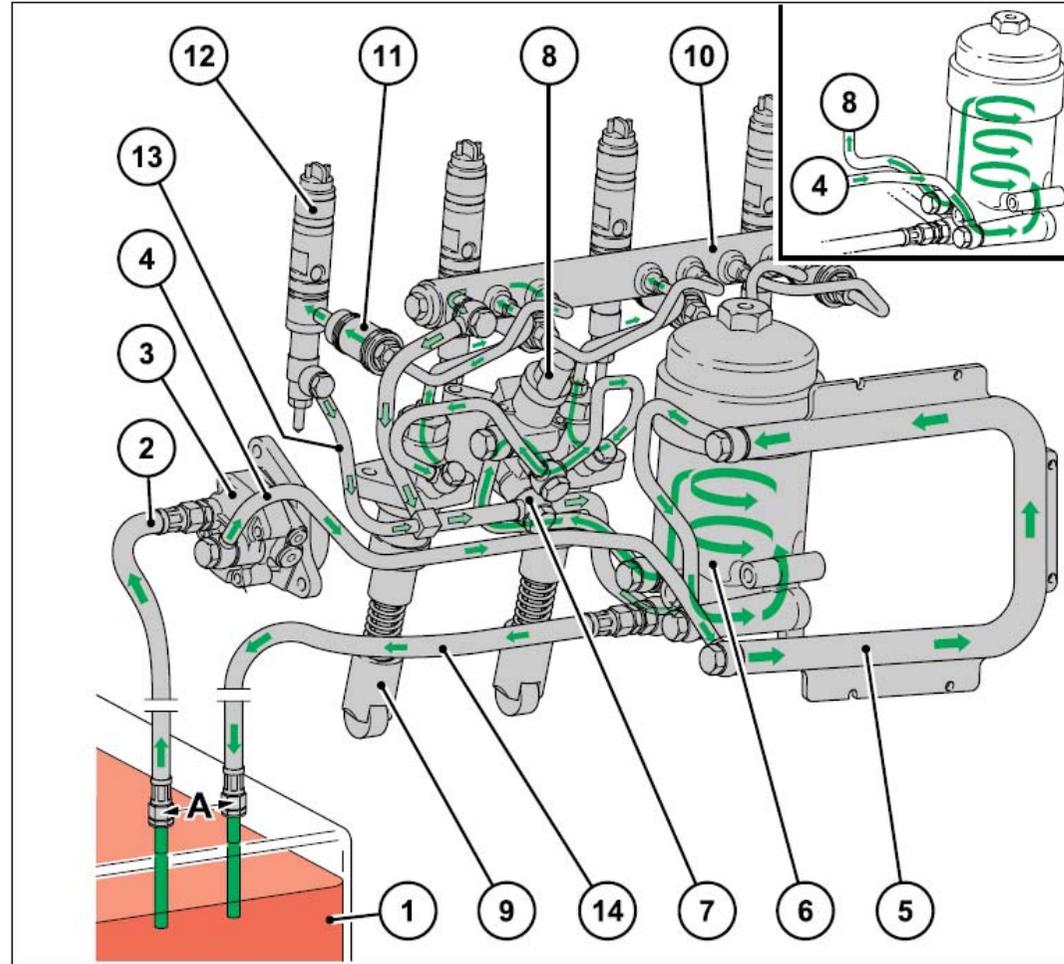
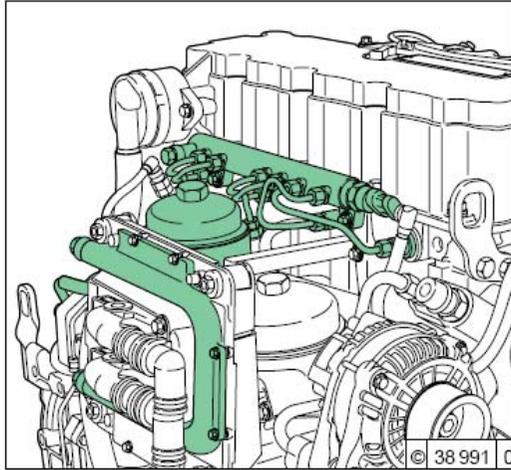
针阀升程  $h$



喷射方式	作用效果
先导喷射	进行预混合燃烧，可降低可吸入颗粒物
预喷射	缩短主喷射的着火延迟，降低 $\text{NO}_x$ 和燃烧噪声
后喷射	促进扩散燃烧，降低颗粒物
次后喷射	排气温度升高，通过供给还原剂，进行后处理，降低 $\text{NO}_x$ 和颗粒物

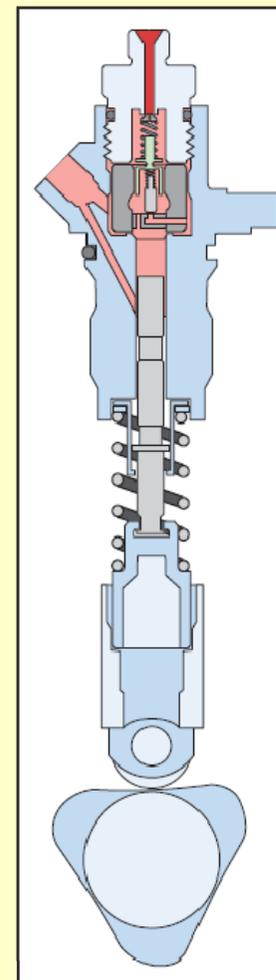
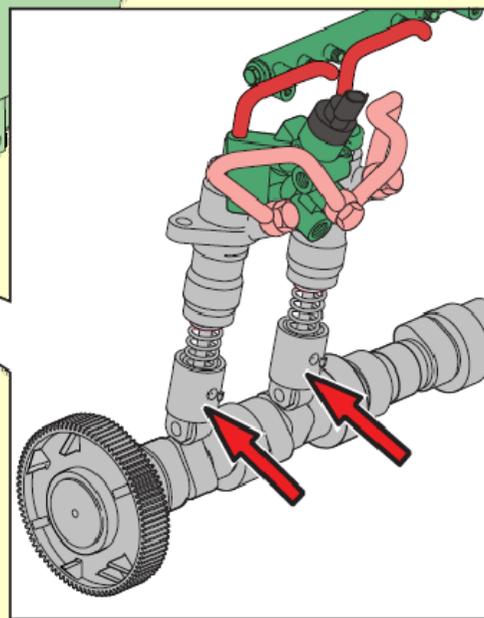
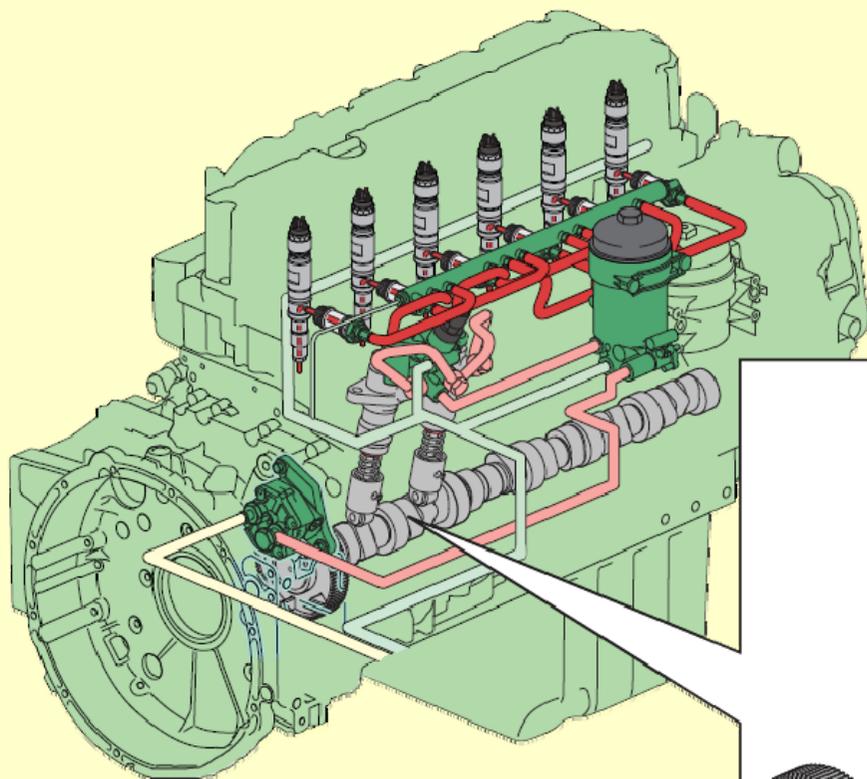
双燃油泵  
 在喷油器开启前, 燃油压力最低250 Bar  
 最高压力1600 Bar  
 很难排空气 – 没有排空气点(目前来说)

FCU

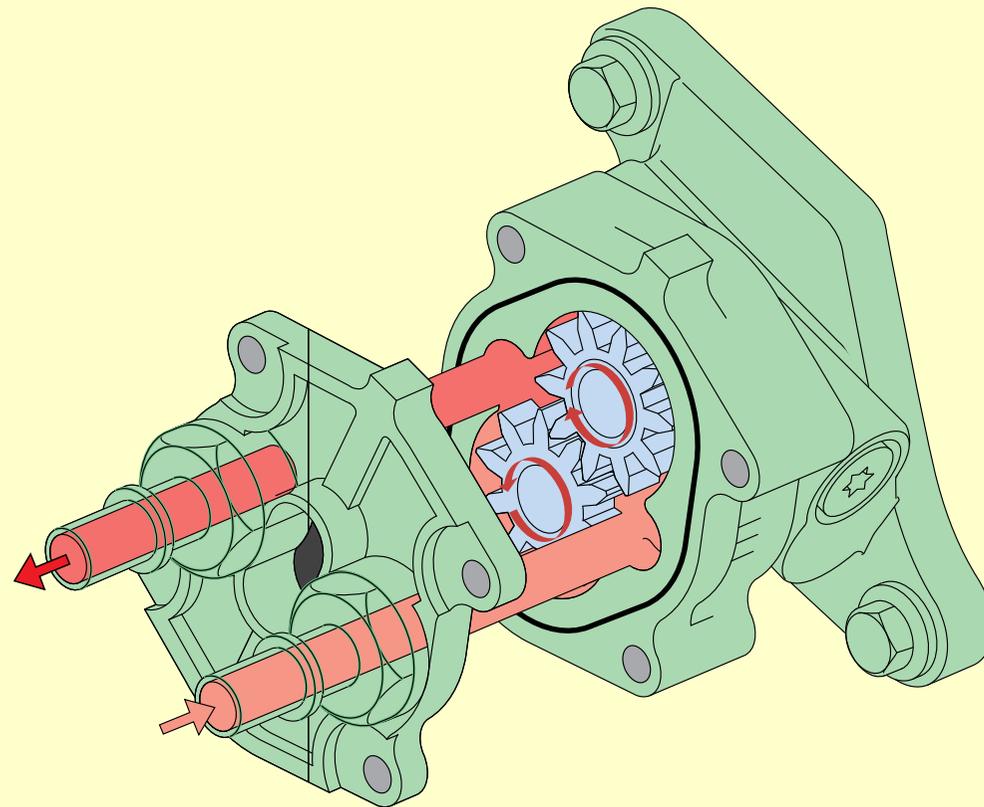
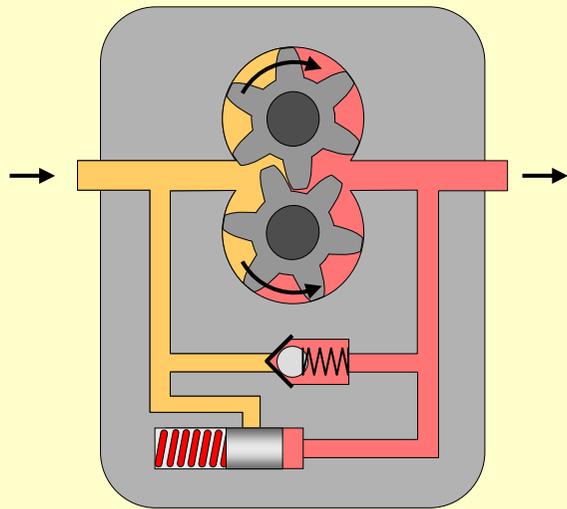


- 1 Fuel container
  - 2 Line to fuel pump
  - 3 Fuel pump
  - 4 Line to fuel filter
  - 5 Fuel cooling for engine control unit  
(without cooler, upper right in diagram)
  - 6 Fuel filter
  - 7 Line to injection pumps
  - 8 Fuel to control unit
  - 9 Tappet rollers on camshaft
  - 10 DCRail
  - 11 Injection line to injection valve
  - 12 Injectors
  - 13 Fuel leak oil line
  - 14 Return line to container
- A Keep distance as large as possible

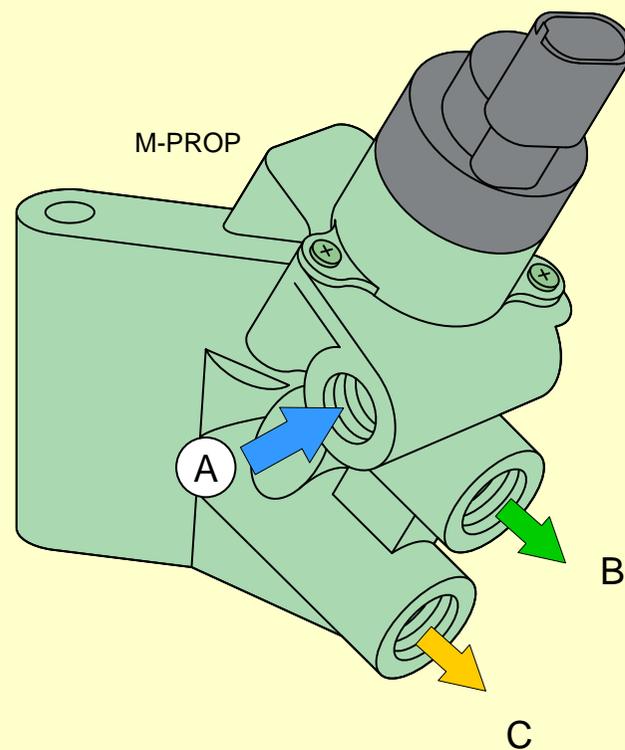
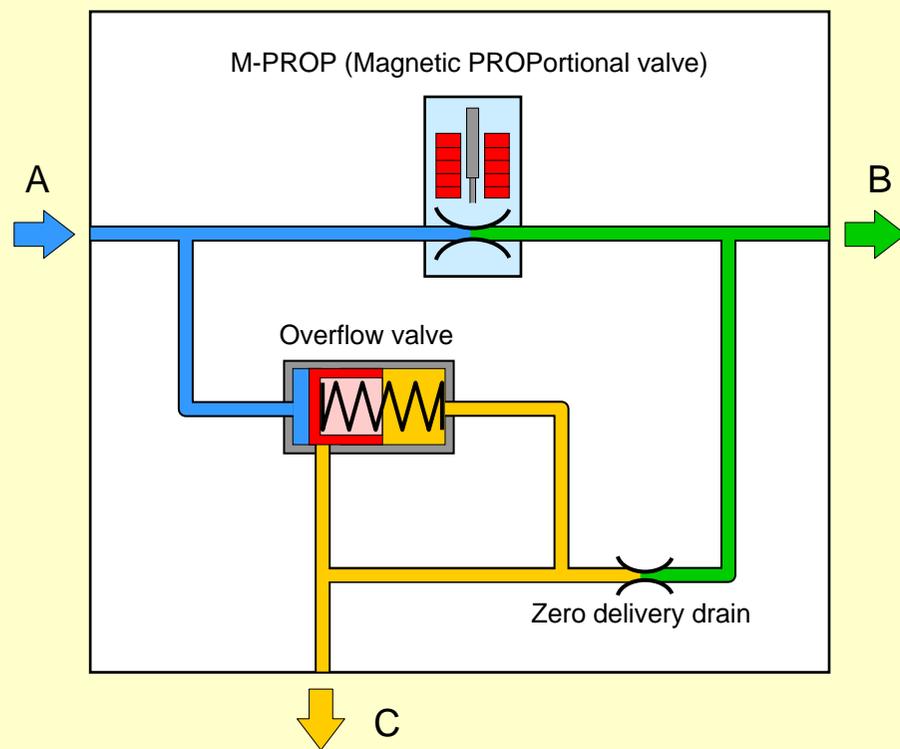
双泵  
三波形凸轮  
安装相隔60度



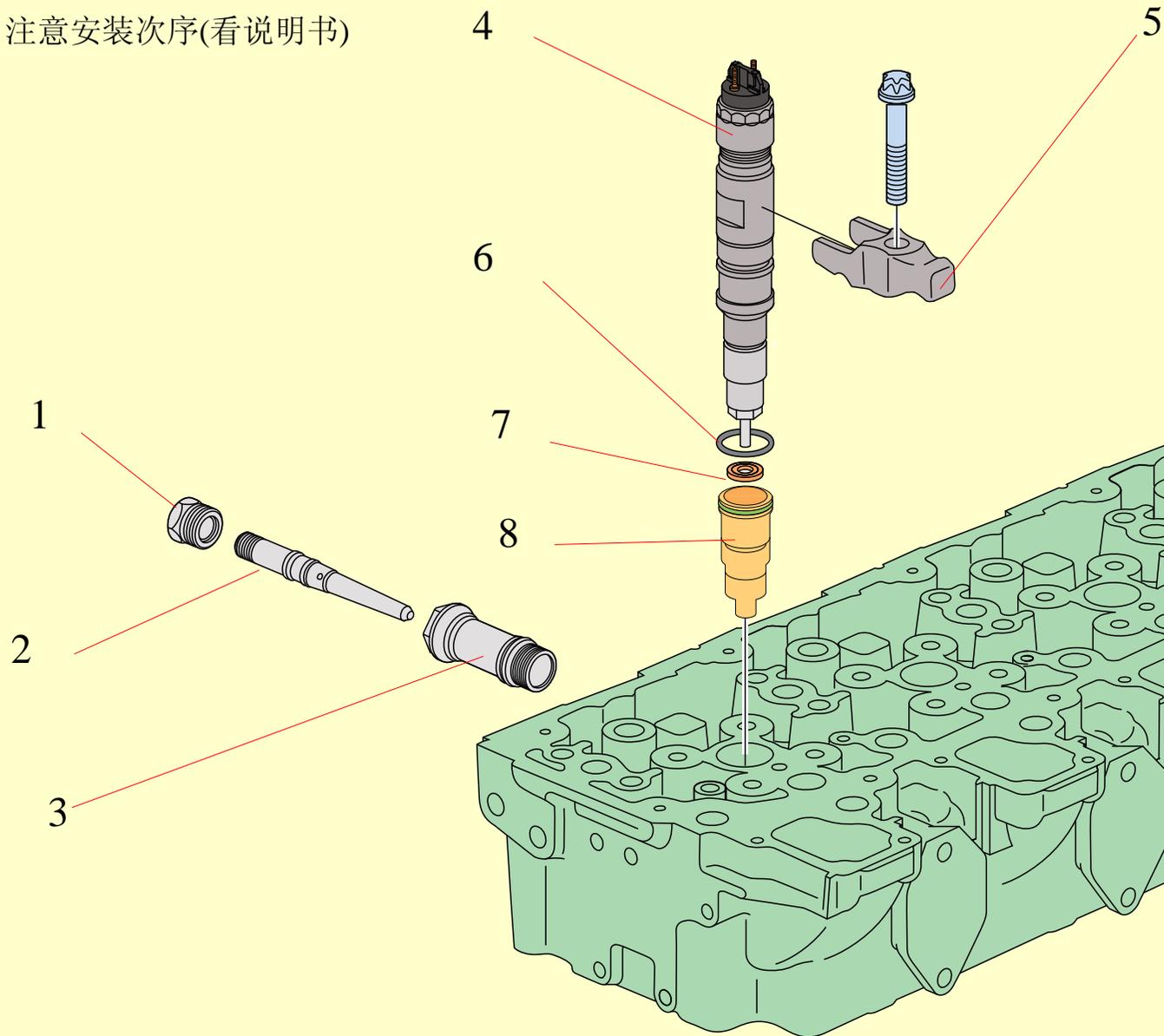
溢流阀不可更换



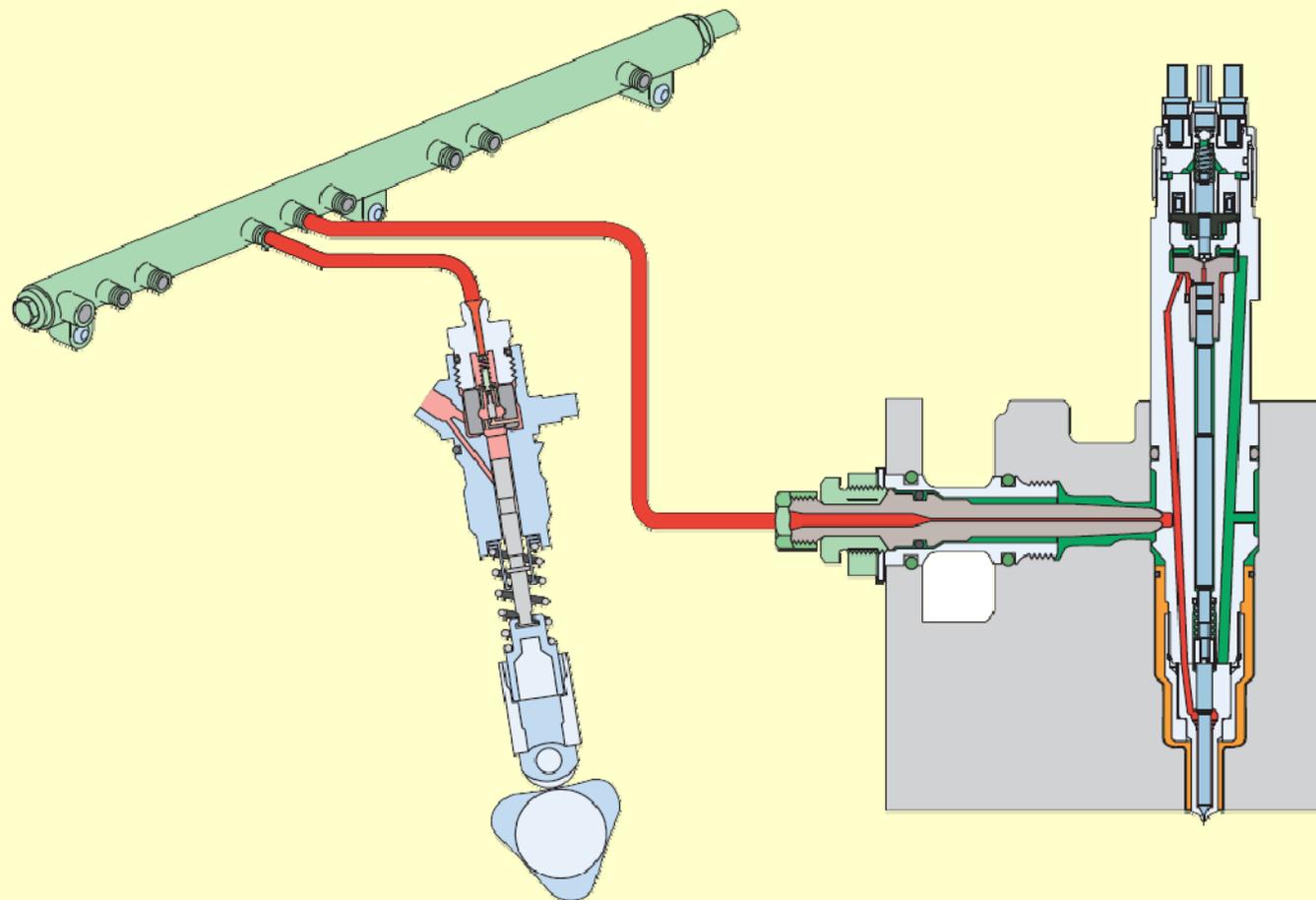
断电时开度最大

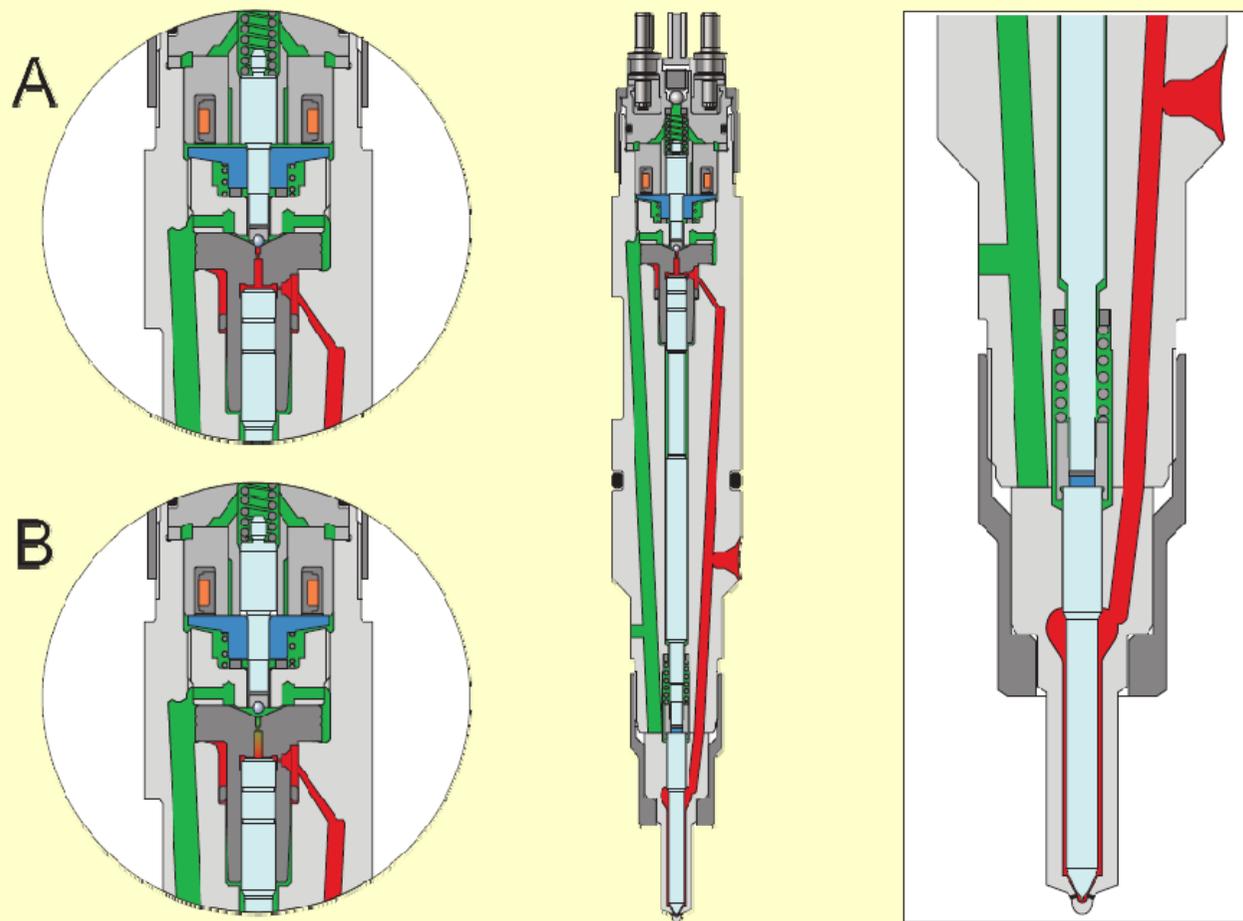


注意安装次序(看说明书)

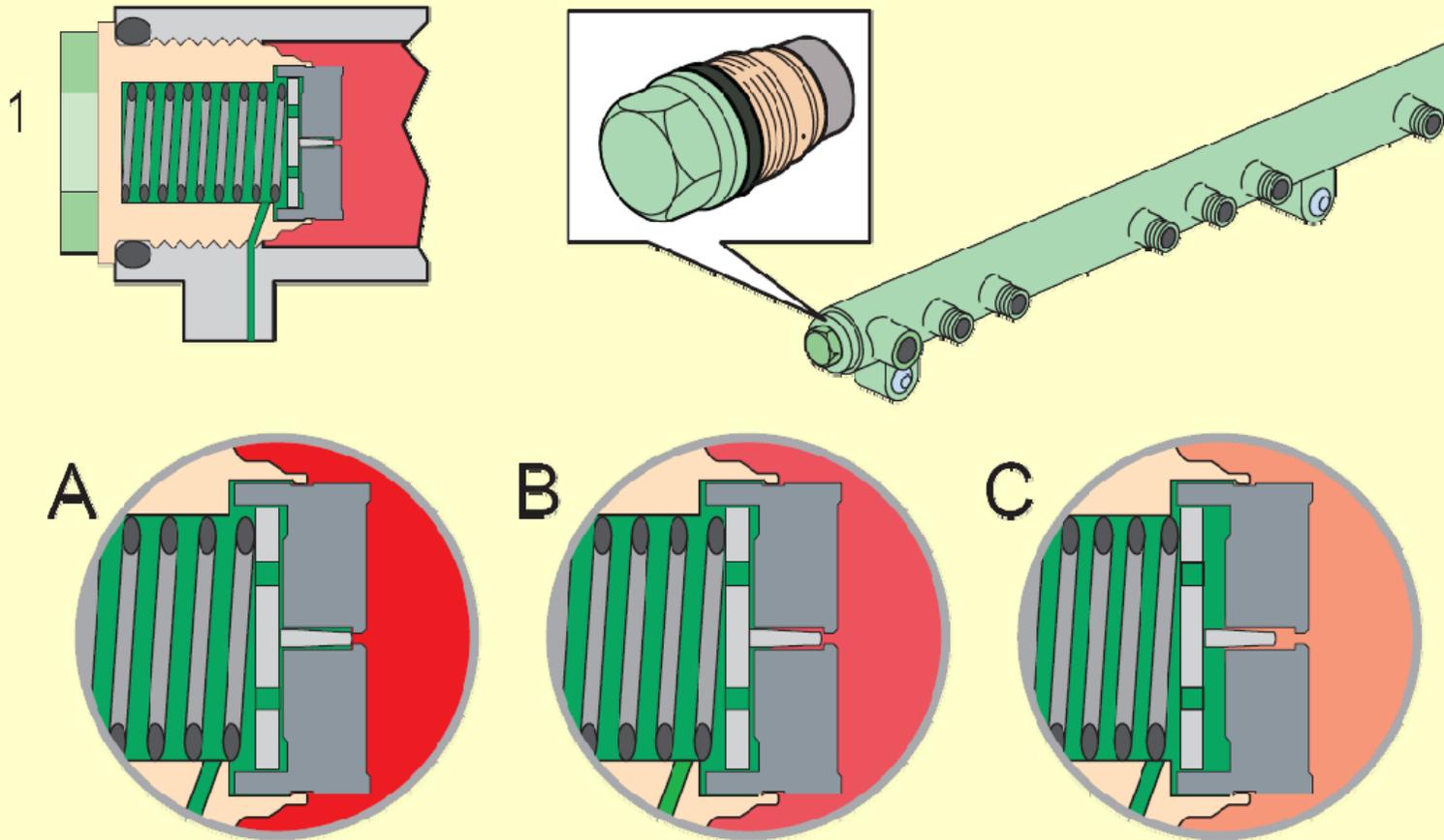


喷油器由Bosch生产, 不能拆开修理





阀在1800巴时打开  
打开后维持约600巴压力



## 博士公司的流量限制器

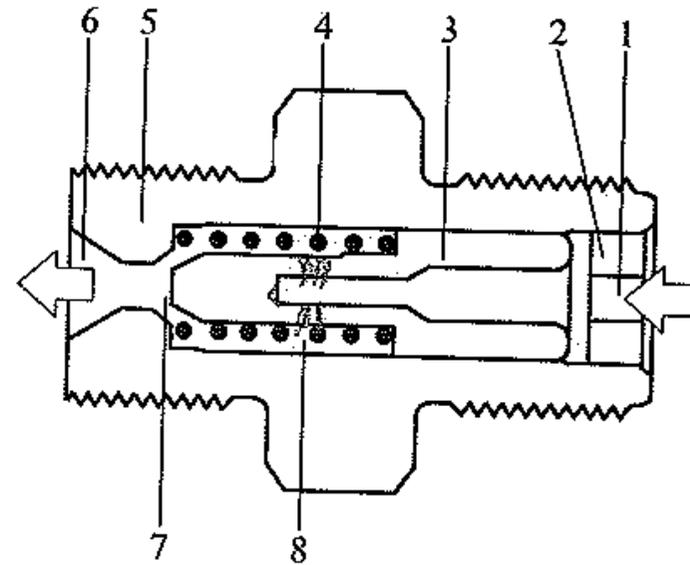
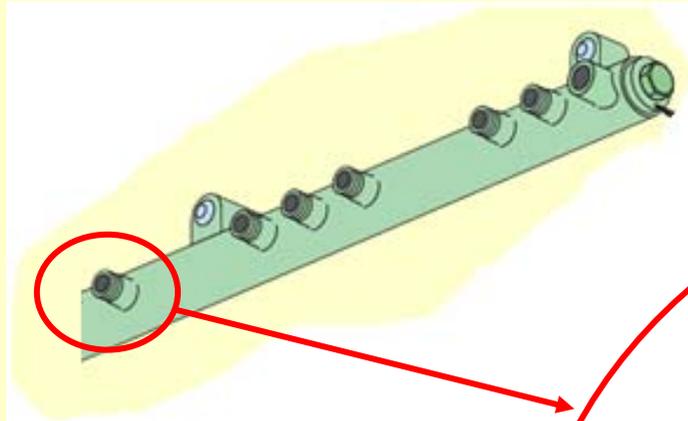


图 1-12 流量限制阀

- 1—油轨端接头 2—锁紧垫圈 3—柱塞 4—压力弹簧  
5—外壳 6—喷油器端接头 7—阀座面 8—节流孔

## 另一种流量限制器

