

ZEXEL Ass'y No.	104741-8170
Bosch Ass'y No.	F 01G 09W 0C1
Bosch Typecode	
Engine Type	S4S
Manufacturer	MITSUBISHI HEAV
Edition date	04.11.10

**1 Adjustment conditions**

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
	Test oil		ISO4113orSAEJ967 d				
		1404 Test oil					
P	Test oil temperature	degC	45	45	50		
	Nozzle		105780-0060				
	Bosch type code		NP-DN0SD1510				
	Nozzle holder		105780-2150				
P	Opening pressure	MPa	13	13	13.3		
P	Opening pressure	kgf/cm2	133	133	136		
	Injection pipe		157805-7320				
P	Injection pipe	mm	2-6-450				
		Inside diameter - outside diameter - length (mm)					
	Joint assembly		157641-4720				
	Tube assembly		157641-4020				
P	Transfer pump pressure	kPa	20	20	20		
P	Transfer pump pressure	kgf/cm2	0.2	0.2	0.2		
	Direction of rotation (viewed from drive side)		R				
		Right					

**2 Adjustment specification****2.1 Full load delivery**

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	1000	1000	1000		
S	Average injection quantity	mm3/st.	44.2	43.7	44.7		
S	Difference in delivery	mm3/st.	3.5		3.5		
P	Basic		*				
P	Oil temperature	degC	50	48	52		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	400	400	400		
C	Average injection quantity	mm3/st.	40.9	35.4	46.4		
		About					
P	Oil temperature	degC	48	46	50		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	850	850	850		
C	Average injection quantity	mm3/st.	44.1	40.1	48.1		
		About					
P	Oil temperature	degC	50	48	52		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	1000	1000	1000		
C	Average injection quantity	mm3/st.	44.2	43.2	45.2		
C	Difference in delivery	mm3/st.	4		4		
P	Basic		*				
P	Oil temperature	degC	50	48	52		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	1125	1125	1125		
C	Average injection quantity	mm3/st.	41.8	35.8	45.8		
		About					
P	Oil temperature	degC	50	48	52		

**2.2 Governing**

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	1240	1240	1240		
S	Average injection quantity	mm3/st.	13.8	11.8	15.8		
S	Difference in delivery	mm3/st.	4		4		
P	Basic		*				
P	Oil temperature	degC	50	48	52		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
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P	Pump speed	r/min	1240	1240	1240		
C	Average injection quantity	mm <sup>3</sup> /st.	13.8	10.3	17.3		
C	Difference in delivery	mm <sup>3</sup> /st.	4.5		4.5		
P	Basic		*				
P	Oil temperature	degC	50	48	52		
<b>CAT</b>	<b>Designation</b>	<b>Unit</b>	<b>Set value</b>	<b>min.</b>	<b>max.</b>	<b>Actual values</b>	<b>OT</b>
P	Pump speed	r/min	1400	1400	1400		
C	Average injection quantity	mm <sup>3</sup> /st.	3		3		
P	Oil temperature	degC	50	48	52		

**2.3 Idle**

<b>CAT</b>	<b>Designation</b>	<b>Unit</b>	<b>Set value</b>	<b>min.</b>	<b>max.</b>	<b>Actual values</b>	<b>OT</b>
P	Pump speed	r/min	385	385	385		
S	Average injection quantity	mm <sup>3</sup> /st.	10.6	8.6	12.6		
S	Difference in delivery	mm <sup>3</sup> /st.	2		2		
P	Basic		*				
P	Oil temperature	degC	48	46	50		

<b>CAT</b>	<b>Designation</b>	<b>Unit</b>	<b>Set value</b>	<b>min.</b>	<b>max.</b>	<b>Actual values</b>	<b>OT</b>
P	Pump speed	r/min	275	275	275		
C	Average injection quantity	mm <sup>3</sup> /st.	35	35			
P	Oil temperature	degC	48	46	50		

<b>CAT</b>	<b>Designation</b>	<b>Unit</b>	<b>Set value</b>	<b>min.</b>	<b>max.</b>	<b>Actual values</b>	<b>OT</b>
P	Pump speed	r/min	385	385	385		
C	Average injection quantity	mm <sup>3</sup> /st.	10.6	8.1	13.1		
C	Difference in delivery	mm <sup>3</sup> /st.	2.5		2.5		
P	Basic		*				
P	Oil temperature	degC	48	46	50		

**2.4 Start**

<b>CAT</b>	<b>Designation</b>	<b>Unit</b>	<b>Set value</b>	<b>min.</b>	<b>max.</b>	<b>Actual values</b>	<b>OT</b>
P	Pump speed	r/min	100	100	100		
S	Average injection quantity	mm <sup>3</sup> /st.	54.8	49.8	59.8		
P	Basic		*				
P	Oil temperature	degC	48	46	50		
	Remarks						
		Full					

<b>CAT</b>	<b>Designation</b>	<b>Unit</b>	<b>Set value</b>	<b>min.</b>	<b>max.</b>	<b>Actual values</b>	<b>OT</b>
P	Pump speed	r/min	100	100	100		
C	Average injection quantity	mm <sup>3</sup> /st.	54.8	49.8	59.8		
P	Oil temperature	degC	48	46	50		
	Remarks						
		Full					

**2.5 Stop**

<b>CAT</b>	<b>Designation</b>	<b>Unit</b>	<b>Set value</b>	<b>min.</b>	<b>max.</b>	<b>Actual values</b>	<b>OT</b>
P	Pump speed	r/min	385	385	385		
C	Average injection quantity	mm <sup>3</sup> /st.	0	0	0		
P	Oil temperature	degC	48	46	50		
	Remarks						
		Magnet OFF at idling position					

**2.6 Overflow**

<b>CAT</b>	<b>Designation</b>	<b>Unit</b>	<b>Set value</b>	<b>min.</b>	<b>max.</b>	<b>Actual values</b>	<b>OT</b>
P	Pump speed	r/min	700	700	700		
C	Overflow quantity	cm <sup>3</sup> /min	420	290	550		
		About					
P	Oil temperature	degC	50	48	52		

**2.7 Pump chamber pressure**

<b>CAT</b>	<b>Designation</b>	<b>Unit</b>	<b>Set value</b>	<b>min.</b>	<b>max.</b>	<b>Actual values</b>	<b>OT</b>
P	Pump speed	r/min	700	700	700		
S	Pressure	kPa	530	501	559		
S	Pressure	kgf/cm <sup>2</sup>	5.4	5.1	5.7		
P	Basic		*				
P	Oil temperature	degC	50	48	52		
<b>CAT</b>	<b>Designation</b>	<b>Unit</b>	<b>Set value</b>	<b>min.</b>	<b>max.</b>	<b>Actual values</b>	<b>OT</b>
P	Pump speed	r/min	600	600	600		
C	Pressure	kPa	496	447	545		
		About					

C	Pressure	kgf/cm2	5.1	4.6	5.6		
		About					
P	Oil temperature	degC	50	48	52		
<b>CAT</b>	<b>Designation</b>	<b>Unit</b>	<b>Set value</b>	<b>min.</b>	<b>max.</b>	<b>Actual values</b>	<b>OT</b>
P	Pump speed	r/min	700	700	700		
C	Pressure	kPa	530	491	569		
C	Pressure	kgf/cm2	5.4	5	5.8		
P	Basic		*				
P	Oil temperature	degC	50	48	52		
<b>CAT</b>	<b>Designation</b>	<b>Unit</b>	<b>Set value</b>	<b>min.</b>	<b>max.</b>	<b>Actual values</b>	<b>OT</b>
P	Pump speed	r/min	800	800	800		
C	Pressure	kPa	549	500	598		
		About					
C	Pressure	kgf/cm2	5.6	5.1	6.1		
		About					
P	Oil temperature	degC	50	48	52		
<b>CAT</b>	<b>Designation</b>	<b>Unit</b>	<b>Set value</b>	<b>min.</b>	<b>max.</b>	<b>Actual values</b>	<b>OT</b>
P	Pump speed	r/min	1125	1125	1125		
C	Pressure	kPa	618	569	667		
		About					
C	Pressure	kgf/cm2	6.3	5.8	6.8		
		About					
P	Oil temperature	degC	50	48	52		

**2.8 Timer**

<b>CAT</b>	<b>Designation</b>	<b>Unit</b>	<b>Set value</b>	<b>min.</b>	<b>max.</b>	<b>Actual values</b>	<b>OT</b>
P	Pump speed	r/min	700	700	700		
S	Timer stroke	mm	1.3	1.1	1.5		
P	Basic		*				
P	Oil temperature	degC	50	48	52		
<b>CAT</b>	<b>Designation</b>	<b>Unit</b>	<b>Set value</b>	<b>min.</b>	<b>max.</b>	<b>Actual values</b>	<b>OT</b>
P	Pump speed	r/min	600	600	600		
C	Timer stroke	mm	0.8	0.2	1.4		
		About					
P	Oil temperature	degC	50	48	52		
<b>CAT</b>	<b>Designation</b>	<b>Unit</b>	<b>Set value</b>	<b>min.</b>	<b>max.</b>	<b>Actual values</b>	<b>OT</b>
P	Pump speed	r/min	700	700	700		
C	Timer stroke	mm	1.3	0.9	1.7		
P	Basic		*				
P	Oil temperature	degC	50	48	52		
<b>CAT</b>	<b>Designation</b>	<b>Unit</b>	<b>Set value</b>	<b>min.</b>	<b>max.</b>	<b>Actual values</b>	<b>OT</b>
P	Pump speed	r/min	1125	1125	1125		
C	Timer stroke	mm	2.1	1.6	2.5		
P	Oil temperature	degC	50	48	52		

**2.9 Magnet**

<b>CAT</b>	<b>Designation</b>	<b>Unit</b>	<b>Set value</b>	<b>min.</b>	<b>max.</b>	<b>Actual values</b>	<b>OT</b>
C	Max. applied voltage	V	8	8	8		
P	Test voltage	V	13	12	14		

**2.10 Compensator****2.10.1 Load-timer adjustment**

<b>CAT</b>	<b>Designation</b>	<b>Unit</b>	<b>Set value</b>	<b>min.</b>	<b>max.</b>	<b>Actual values</b>	<b>OT</b>
P	Pump speed	r/min	1000	1000	1000		
S	Average injection quantity	mm3/st.	36.3	35.8	36.8		
S	Timer stroke TA	mm	1	0.8	1.2		
P	Basic		*				
P	Oil temperature	degC	50	48	52		
<b>CAT</b>	<b>Designation</b>	<b>Unit</b>	<b>Set value</b>	<b>min.</b>	<b>max.</b>	<b>Actual values</b>	<b>OT</b>
P	Pump speed	r/min	1125	1125	1125		
C	Average injection quantity	mm3/st.	36.3	35.3	37.3		
C	Timer stroke TA	mm	2.1	1.6	2.5		
		About					
C	Timer stroke variation dT	mm	0	0	0		
		About					
P	Oil temperature	degC	50	48	52		
<b>CAT</b>	<b>Designation</b>	<b>Unit</b>	<b>Set value</b>	<b>min.</b>	<b>max.</b>	<b>Actual values</b>	<b>OT</b>

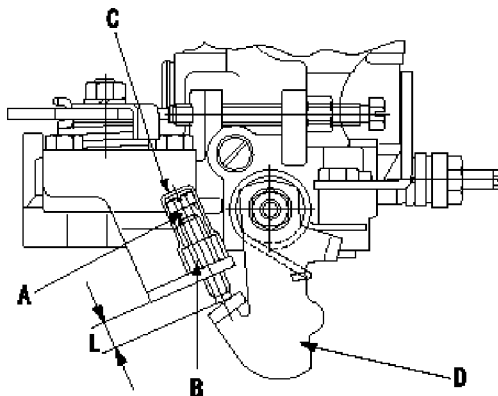
P	Pump speed	r/min	1125	1125	1125		
C	Average injection quantity	mm <sup>3</sup> /st.	33.3	32.3	34.3		
C	Timer stroke TA	mm	1.1	0.1	2.1		
C	Timer stroke variation dT	mm	1	1	1		
		About					
P	Oil temperature	degC	50	48	52		

## 2.11 Additional device adjustment

### 2.11.1 Additional device 1

Name	STARTING I/Q ADJUSTMENT
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L=7.4~11.1mm



T1=6~9N-m(0.6~0.9kgf-m)  
L=7.4~11.1mm

Starting Q decrease lever adjustment

(a) Screw

(B) Nut (SW10)

(C) Cap

(D) Stop lever

(1) Adjust using the screw so that the standards are satisfied, then fix using the nut. (Torque to T1 after adjustment)

(2) Screw protrusion: L

## 3 Assembly dimension

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
S	K dimension	mm	3.3	3.2	3.4		
S	KF dimension	mm	5.8	5.7	5.9		
S	MS dimension	mm	2.5	2.4	2.6		
S	Pre-stroke	mm	0.1	0.08	0.12		
S	Control lever angle alpha	deg.	25	21	29		
S	Control lever angle beta	deg.	26	21	31		
		About					