

ZEXEL Ass'y No.	101609-3750
Bosch Ass'y No.	9 400 613 297
Bosch Typecode	
Engine Type	6BTAA
Manufacturer	KOMATSU
Edition date	14.01.05 (2)

1 Adjustment conditions

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
	Test oil		ISO4113 or {SAEJ96 7d}				
		1404 Test oil					
P	Test oil temperature	degC	40	40	45		
	Nozzle and nozzle holder		105780-8140				
	Bosch type code		EF8511/9A				
	Nozzle		105780-0000				
	Bosch type code		DN12SD12T				
	Nozzle holder		105780-2080				
	Bosch type code		EF8511/9				
P	Opening pressure	MPa	17.2				
P	Opening pressure	kgf/cm2	175				
	Injection pipe	mm	6-2-600				
		Outer diameter - inner diameter - length (mm)					
	Overflow valve		131424-3420				
P	Overflow valve opening pressure	kPa	255	221	289		
P	Overflow valve opening pressure	kgf/cm2	2.6	2.25	2.95		
P	Tester oil delivery pressure	kPa	255	255	255		
P	Tester oil delivery pressure	kgf/cm2	2.6	2.6	2.6		
	Direction of rotation (viewed from drive side)		R				
		Right					

2 Adjustment specification

2.1 Injection timing adjustment

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Direction of rotation (viewed from drive side)		R				
		Right					
P	Injection order		1-5-3-6-2-4				
S	Pre-stroke	mm	2.7	2.65	2.75		
S	Rack position		R=A				
		After adjusting injection quantity.					
P	Beginning of injection position		NO.1				
		Drive side					
S	Difference between angles 1	deg.	60	59.5	60.5		
		Cal 1-5					
S	Difference between angles 2	deg.	120	119.5	120.5		
		Cal 1-3					
S	Difference between angles 3	deg.	180	179.5	180.5		
		Cal 1-6					
S	Difference between angles 4	deg.	240	239.5	240.5		
		Cyl.1-2					
S	Difference between angles 5	deg.	300	299.5	300.5		
		Cal 1-4					

2.2 Injection quantity adjustment

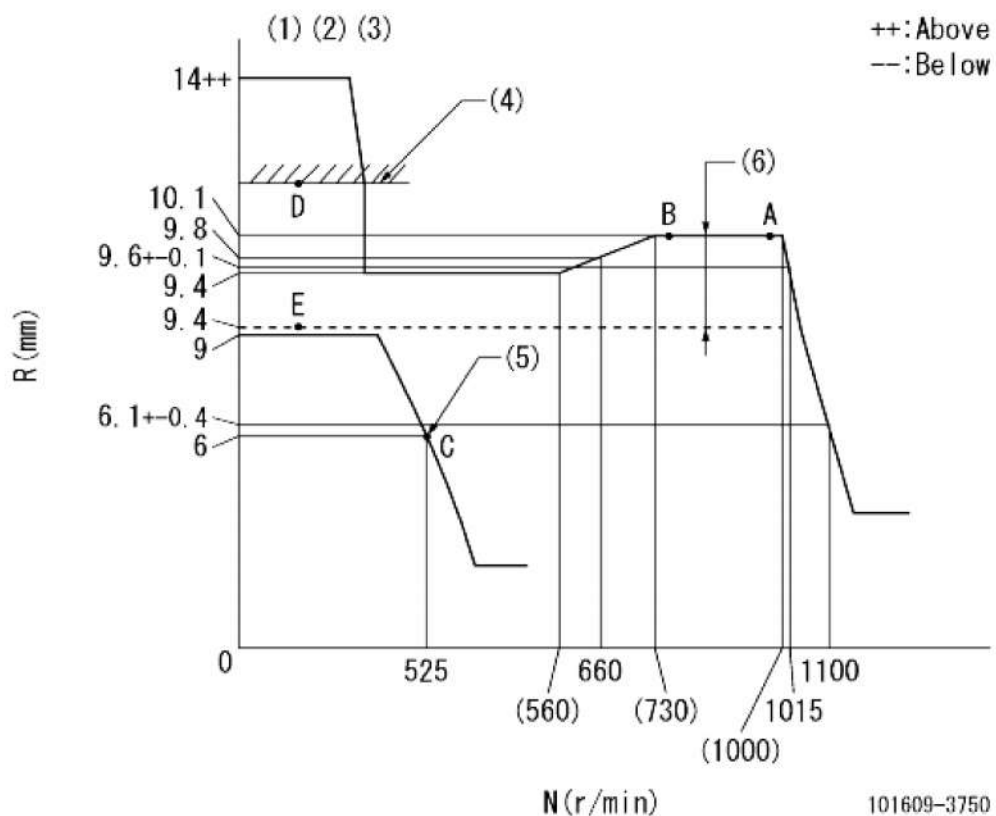
CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Adjusting point		A				
P	Rack position		10.1				
P	Pump speed	r/min	975	975	975		
S	Average injection quantity	mm3/st.	110	109	111		
S	Max. variation between cylinders	%	0	-2.5	2.5		
P	Basic		*				
P	Fixing the lever		*				
P	Boost pressure	kPa	38.7	38.7			
P	Boost pressure	mmHg	290	290			
CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Adjusting point		-				
P	Rack position		6.7+-0.5				
P	Pump speed	r/min	525	525	525		
S	Average injection quantity	mm3/st.	9.5	8.5	10.5		
S	Max. variation between cylinders	%	0	-15	15		
P	Fixing the rack		*				
P	Boost pressure	kPa	0	0	0		
P	Boost pressure	mmHg	0	0	0		
	Remarks						
Adjust only variation between cylinders; adjust governor according to governor specifications.							

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Adjusting point		D				
P	Rack position		10.3++				
P	Pump speed	r/min	100	100	100		
S	Average injection quantity	mm ³ /st.	90	85	95		
P	Fixing the lever		*				
P	Boost pressure	kPa	38.7	38.7			
P	Boost pressure	mmHg	290	290			
P	Rack limit		*				

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Adjusting point		E				
P	Rack position		9.4				
P	Pump speed	r/min	100	100	100		
S	Average injection quantity	mm ³ /st.	50	45	55		
P	Fixing the lever		*				
P	Boost pressure	kPa	0	0	0		
P	Boost pressure	mmHg	0	0	0		

2.3 Governor adjustment

Name _____



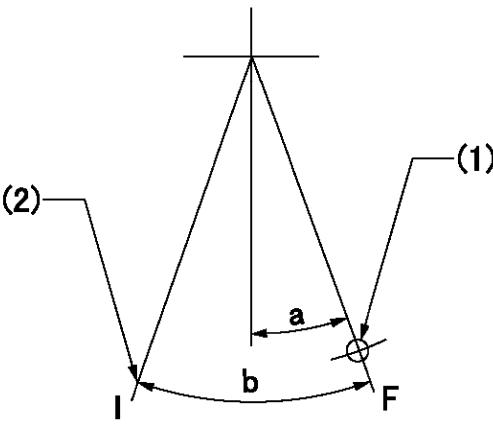
K=12 BCL=(0.7)mm	<p>N: Pump speed R: Rack position (mm)</p> <p>(1) Target notch: K (2) Tolerance for racks not indicated: ± 0.05 mm. (3) It is not necessary to supply hydraulic pressure because the specification is for the hydraulic A CT normally ON. (4) RACK LIMIT (5) Set idle sub-spring (6) Boost compensator stroke: BCL</p>
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2.4 Boost compensator adjustment

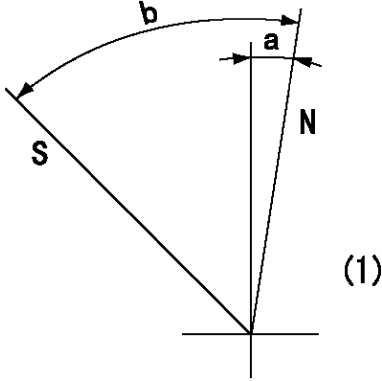
CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	850	850	850		
P	Rack position		9.4				
S	Boost pressure	kPa	10	8.7	11.3		
S	Boost pressure	mmHg	75	65	85		

CAT	Designation	Unit	Set value	min.	max.	Actual values	OT
P	Pump speed	r/min	850	850	850		
P	Rack position		(10.1)				
S	Boost pressure	kPa	25.3	25.3	25.3		
		About					
S	Boost pressure	mmHg	190	190	190		
		About					

2.5 Speed control lever angle

Name	
a=7deg+-5deg b=26deg+-5deg	
aa=77mm	F: Full speed I: Idle (1) Use hole at R = aa (middle hole) (2) Stopper bolt setting

2.6 Stop lever angle

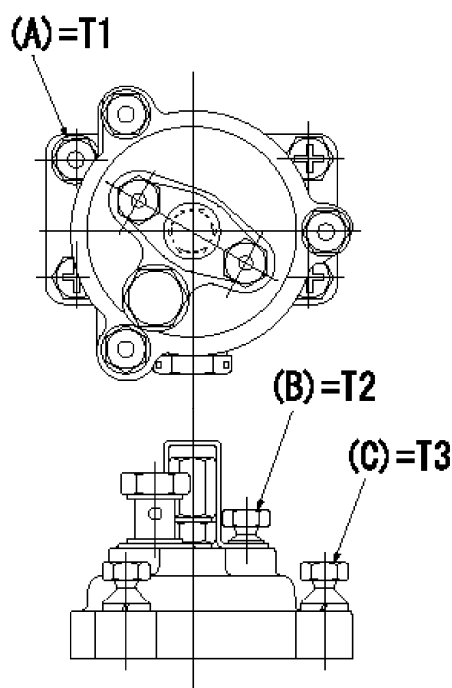
Name	
a=0deg+-5deg b=53deg+-5deg	
	N: Pump normal S: Stop the pump. (1) No return spring

2.7 Additional device adjustment**2.7.1 Additional device 1**

Name	I/P WITH LOAD PLUNGER ADJ
h=2.7+-0.01mm c=5deg30min+-30min	Adjusting procedure for load plunger equipped pump with RSV (cam lock) governor (see service information S.I. 434 for details). At cam lift h+-0.01, set the camshaft c deg from the * mark in accordance with the timing adjustment procedure. 2. Align the flyweight's timing tooth position and the lock pin groove and then fully tighten the flyweight to the camshaft. Then, remove the lock pin. 3. Adjust the maximum variation between cylinders and injection quantity. 4. Adjust using the pre-stroke adjusting shim so that the pre-stroke value is the value for 4/4 load (standard point A). 5. After adjusting the pre-stroke, reconfirm that the injection quantity and the maximum variation between cylinders are as specified. 6. At delivery, again fix the flyweight using the lock pin.

2.7.2 Additional device 2

Name	TAMPER PROOF
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T1=7.16~9.12N-m(0.73~0.93kgf-m)
 T2=2.9~4.4N-m(0.3~0.45kgf-m)
 T3=2.9~4.4N-m(0.3~0.45kgf-m)

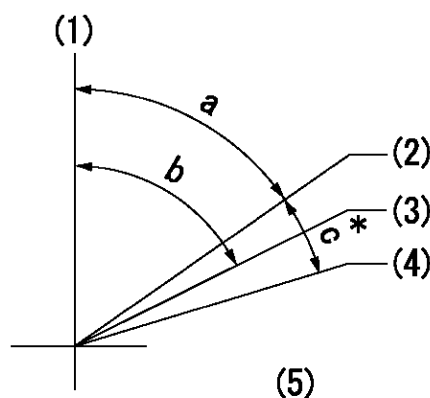
Tamperproofing-equipped boost compensator cover installation procedure

- (1)After adjusting the governor and the boost compensator, tighten to the specified torque to break off the bolt heads.
 (Tightening torque $T = T1$ maximum)
 (2)After adjusting the governor and the boost compensator, tighten to the specified torque to break off the bolt heads.
 (Tightening torque $T = T2$)
 (3)After adjusting the governor and the boost compensator, tighten to the specified torque to break off the bolt heads.
 (Tightening torque $T = T3$)

2.8 Timing setting

Name	
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a=55deg48min+/-3deg
 b=55deg48min+/-3deg13min48sec
 c=5deg30min+/-30min



aa=11deg
 bb=0deg
 cc=2.7+/-0.01mm

- (1)Pump vertical direction
 (2)Key groove position for No. 1 cylinder's cam lift $h = cc$ (at BTDC aa).
 (3)Key groove position for No. 1 cylinder's beginning of injection (at point A after injection quantity adjustment).
 (4)Position of the key groove of the No. 1 cylinder at B.T.D.C. bb (fix the governor flyweight at this position for delivery).
 (5)B.T.D.C.: aa