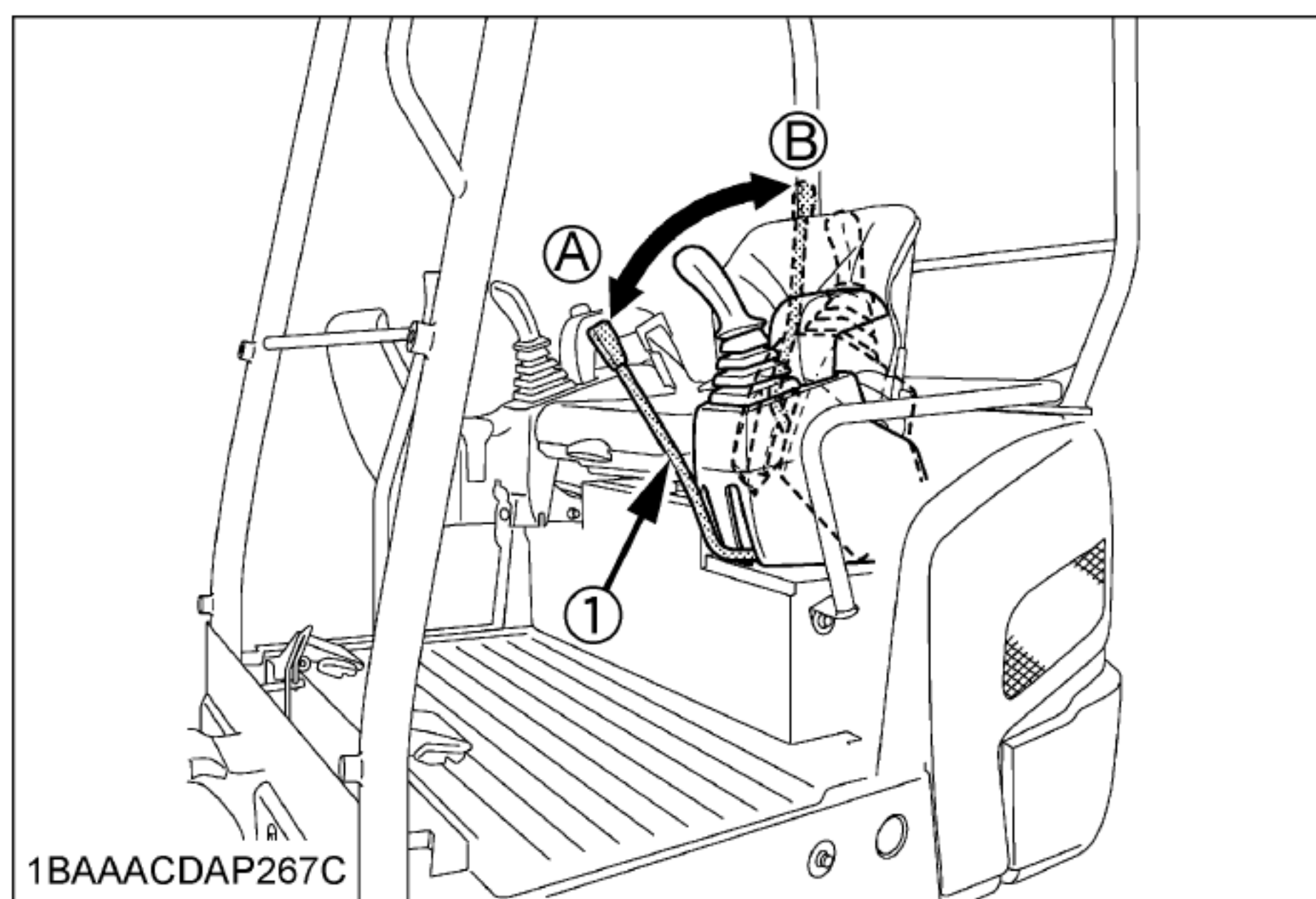


STARTING PROCESS

BEFORE STARTING THE ENGINE, MAKE SURE THAT ALL THE LOCK LEVERS ARE IN THE “LOCK” POSITION AND ALL CONTROL LEVERS AND PEDALS ARE IN THEIR NEUTRAL POSITIONS. ENSURE THAT THE SEATBELT IS FASTENED CORRECTLY AND THE AREA AROUND THE EXCAVATOR IS CLEAR.



(1) Pilot control lock lever
(A) "Unlock"
(B) "Locked"

1. PULL THE LOCK LEVER (LEFT SIDE WITH THE RED END) ALL THE WAY BACK TO THE LOCK POSITION.
2. MAKE SURE THE THROTTLE IS IN THE LOWEST POSITION (TOWARDS THE PICTURE OF THE TURTLE).
3. PUSH THE ENGINE STOP BUTTON DOWN (BACK RIGHT, RED BUTTON WITH THE WORD “STOP” ON THE TOP).
4. TURN THE KEY TO THE “START” POSITION. *
5. BRING THE THROTTLE TO THE HIGHEST POSITION (TOWARDS THE PICTURE OF THE RABBIT). **
6. LOWER THE LOCK LEVER (THIS WILL ACTIVATE ALL CONTROLS).

* IN COLDER TEMPERATURES, IT IS BEST TO ACTIVATE THE GLOW PLUGS PRIOR TO STARTING THE ENGINE. THIS IS DONE BY TURNING THE KEY TO THE “RUN” POSITION (THE GLOW PLUG INDICATOR WILL LIGHT UP ON THE PANEL). LEAVE IN THIS POSITION FOR ROUGHLY 30 SECONDS. AFTER THE 30 SECONDS, TURN THE KEY TO THE “START” POSITION. IF IT’S NOT TURNING OVER, REPEAT THE GLOW PLUG PROCESS.

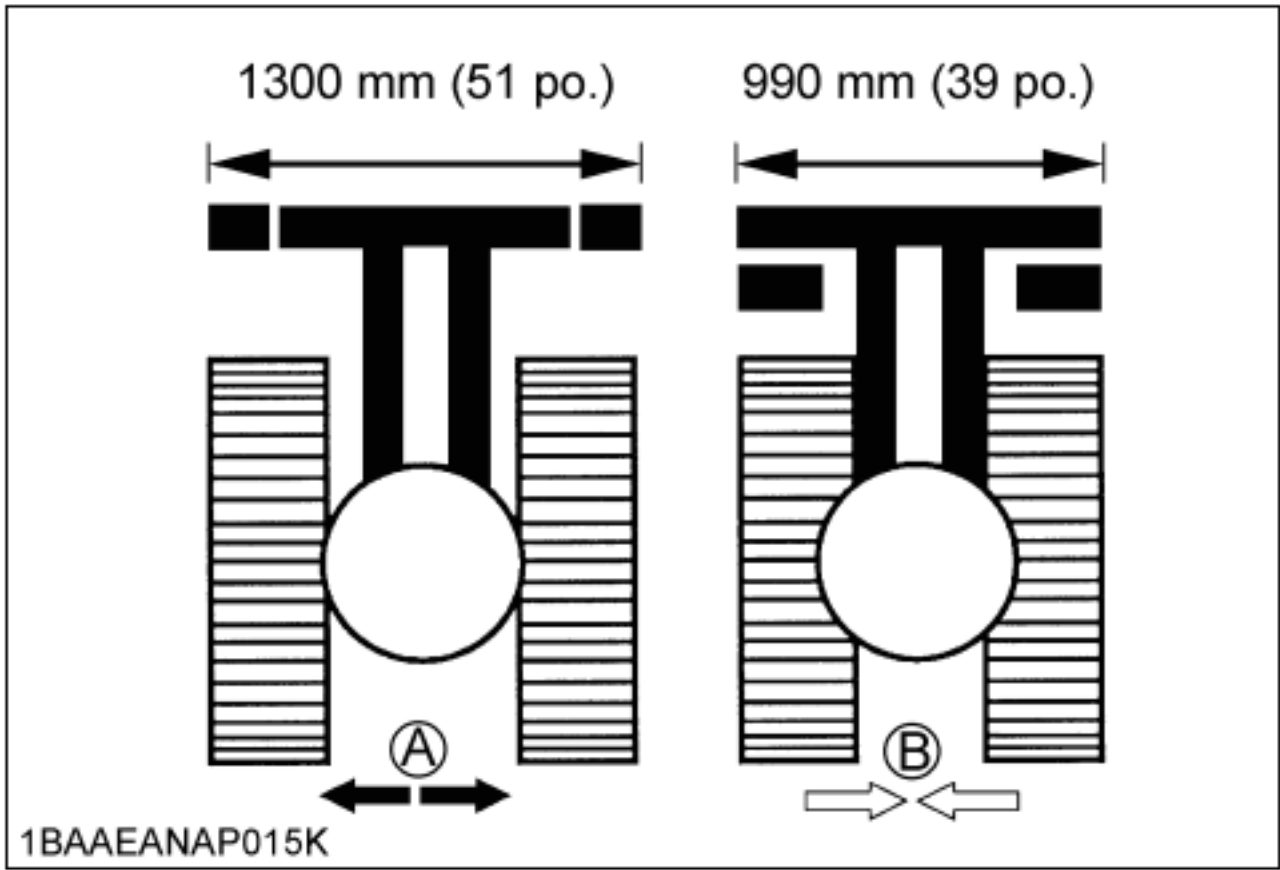
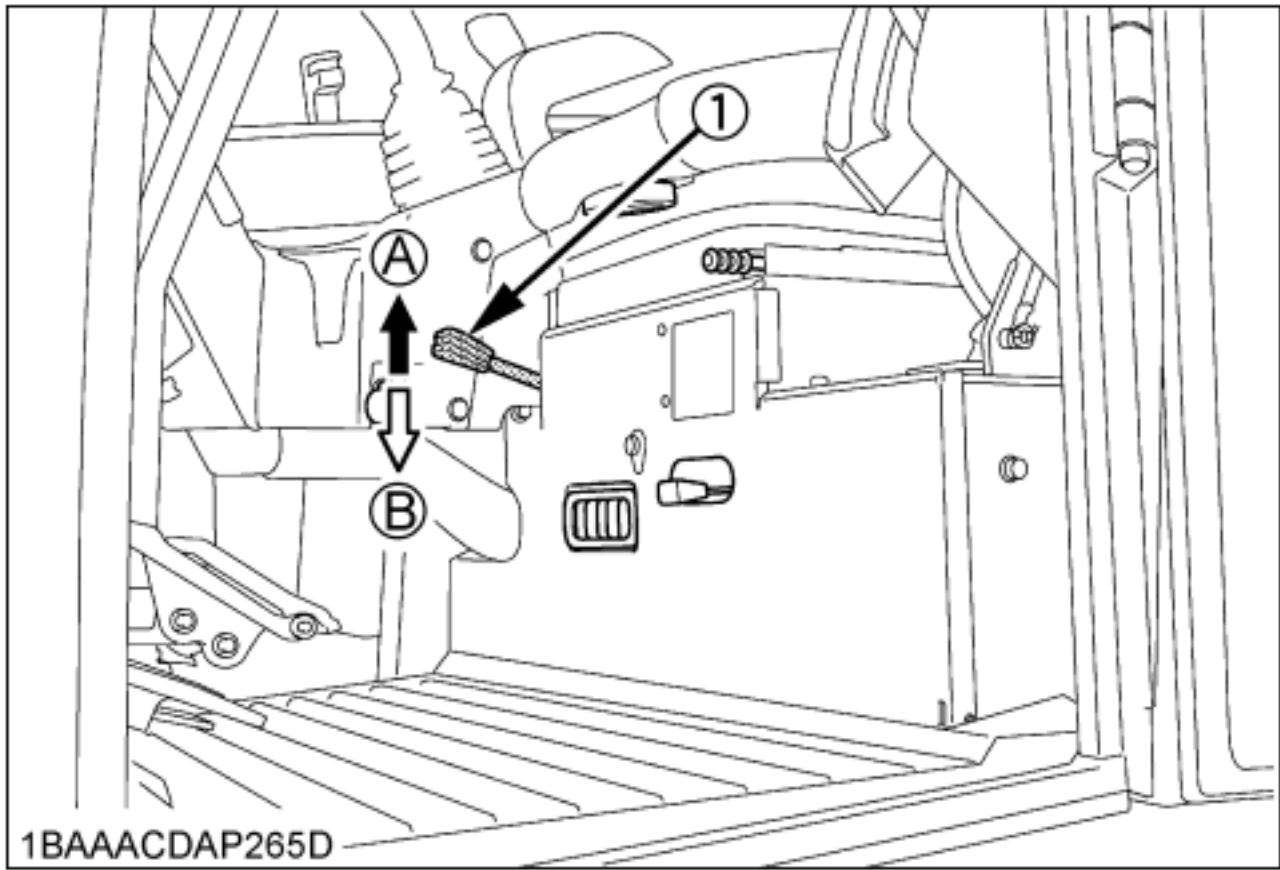
** THE MACHINE IS BUILT TO ALWAYS RUN ON FULL THROTTLE. OPERATING THE MACHINE ON LOW THROTTLE CAN CAUSE DAMAGE TO THE HYDRAULIC PUMP.

OPERATING NOTES AND TIPS

- DO NOT CRUSH OR COMPACT MATERIAL WITH A DROPPING ACTION OF THE BUCKET, AND AVOID USING SIDE SWEEPS TO MOVE EARTH PILES. THIS WILL CAUSE PREMATURE WEAR ON THE BUSHINGS AND CAN CAUSE DAMAGES THAT ARE NOT COVERED UNDER THE RENTAL DAMAGE WAIVER.
- DO NOT HIT THE DOZER BLADE WITH THE BOOM CYLINDER. MAKE SURE THAT THE BOOM IS AWAY FROM THE DOZER BLADE WHILE DOING DEEP EXCAVATION. IF NECESSARY, SWING THE MACHINE AROUND SO THAT THE DOZER BLADE IS AT THE OPPOSITE END OF THE SHOVEL SIDE WHILE DIGGING.
- ENSURE THAT DIESEL FUEL LEVELS ARE ALWAYS MONITORED. RUNNING THE MACHINE OUT OF FUEL WILL REQUIRE A SERVICE CALL TO CORRECT; WHICH IS NOT COVERED UNDER THE RENTAL DAMAGE WAIVER.

TRACK ADJUSTMENT

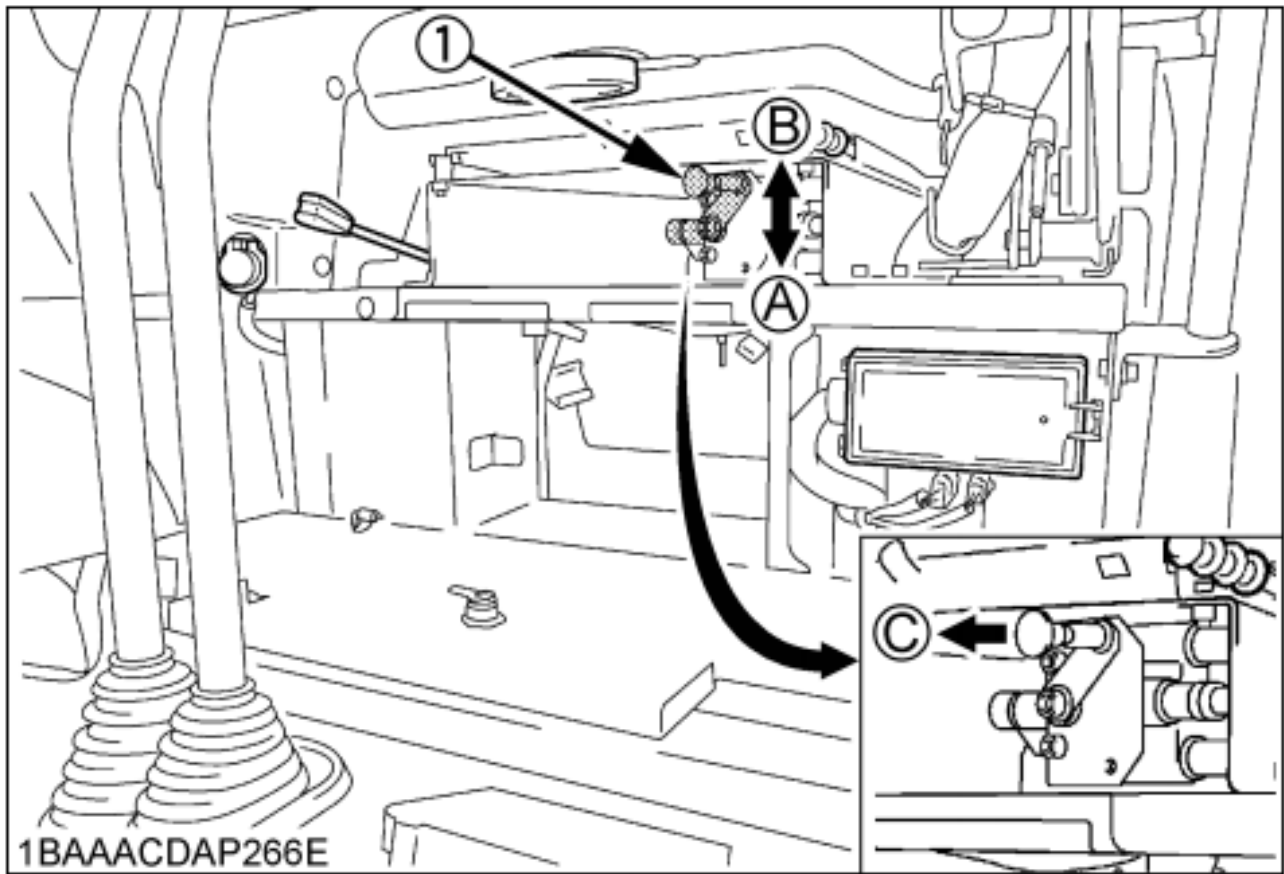
THE TRACKS CAN BE SET AT THE **NARROW WIDTH OF 39"** OR THE **STANDARD WIDTH OF 51"**. WHEN CHANGING THE TRACK WIDTH, SET THE TRACK WIDTH FULLY, STANDARD OR NARROW. IF NOT, THE EXCAVATOR MAY UNINTENTIONALLY MOVE.



(1) Track width change lever

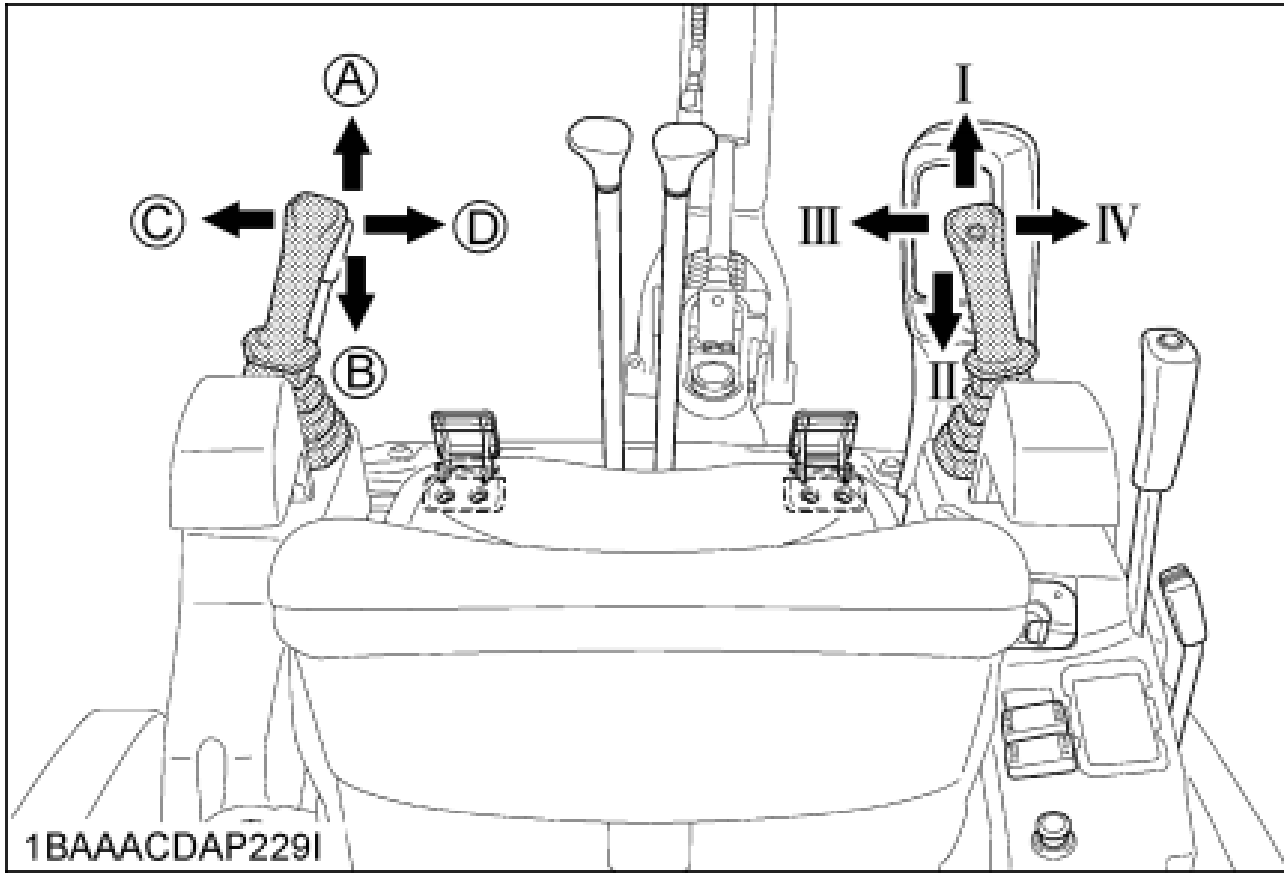
(A) "Increase"
(B) "Reduce"

CONTROL PATTERN



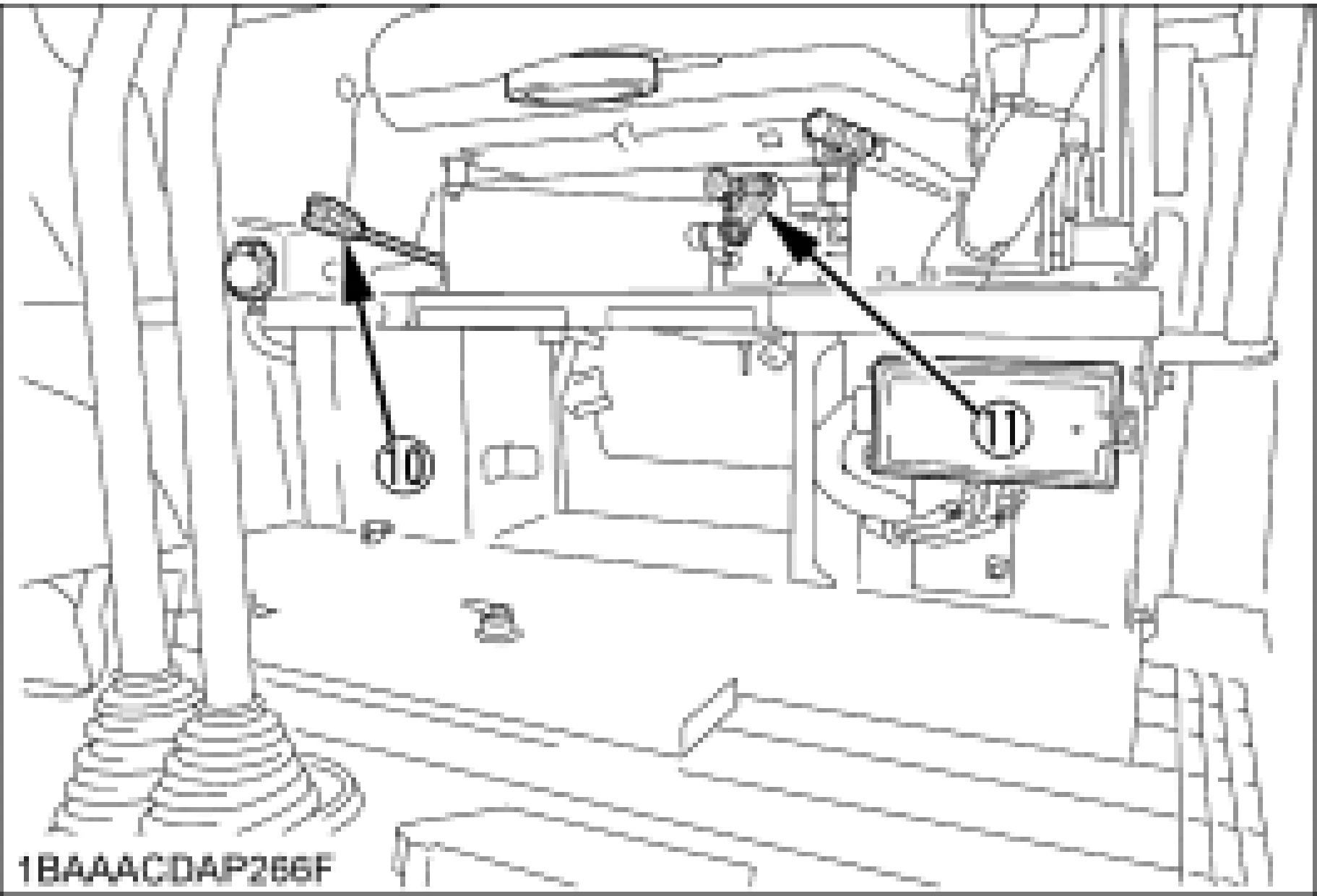
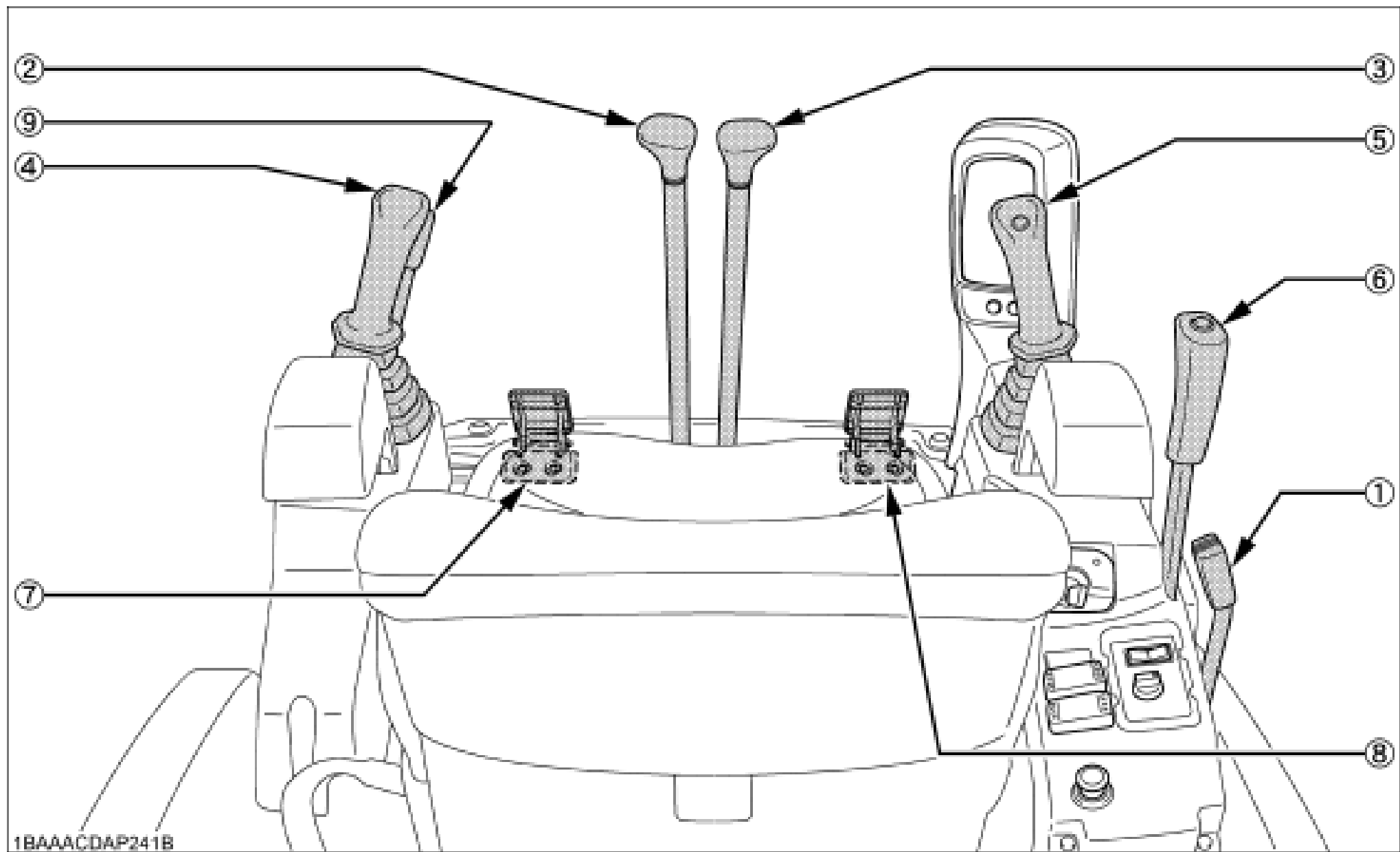
(1) Pattern selector lever
(Two Pattern Selection System:TPSS)
(A) "Pattern A"
(B) "Pattern B"
(C) Pull to unlock

- STUDY CONTROL LEVER PATTERN A AND CONTROL LEVER PATTERN B. THEN CHOOSE THE ONE WHICH IS MOST FAMILIAR.
- FAMILIARIZE YOURSELF WITH THE PATTERN ON LOW THROTTLE (UNTIL COMFORTABLE). ENSURE THAT YOU ARE NOT PERFORMING WORK WHILE ON LOW THROTTLE, THIS IS JUST TO GET USED TO THE CONTROLS.
- BEFORE CHANGING PATTERNS,, BE SURE TO STOP THE ENGINE.
- LOCK THE PANEL ONCE SELECTED TO AVOID UNINTENTIONAL PATTERN CHANGES.



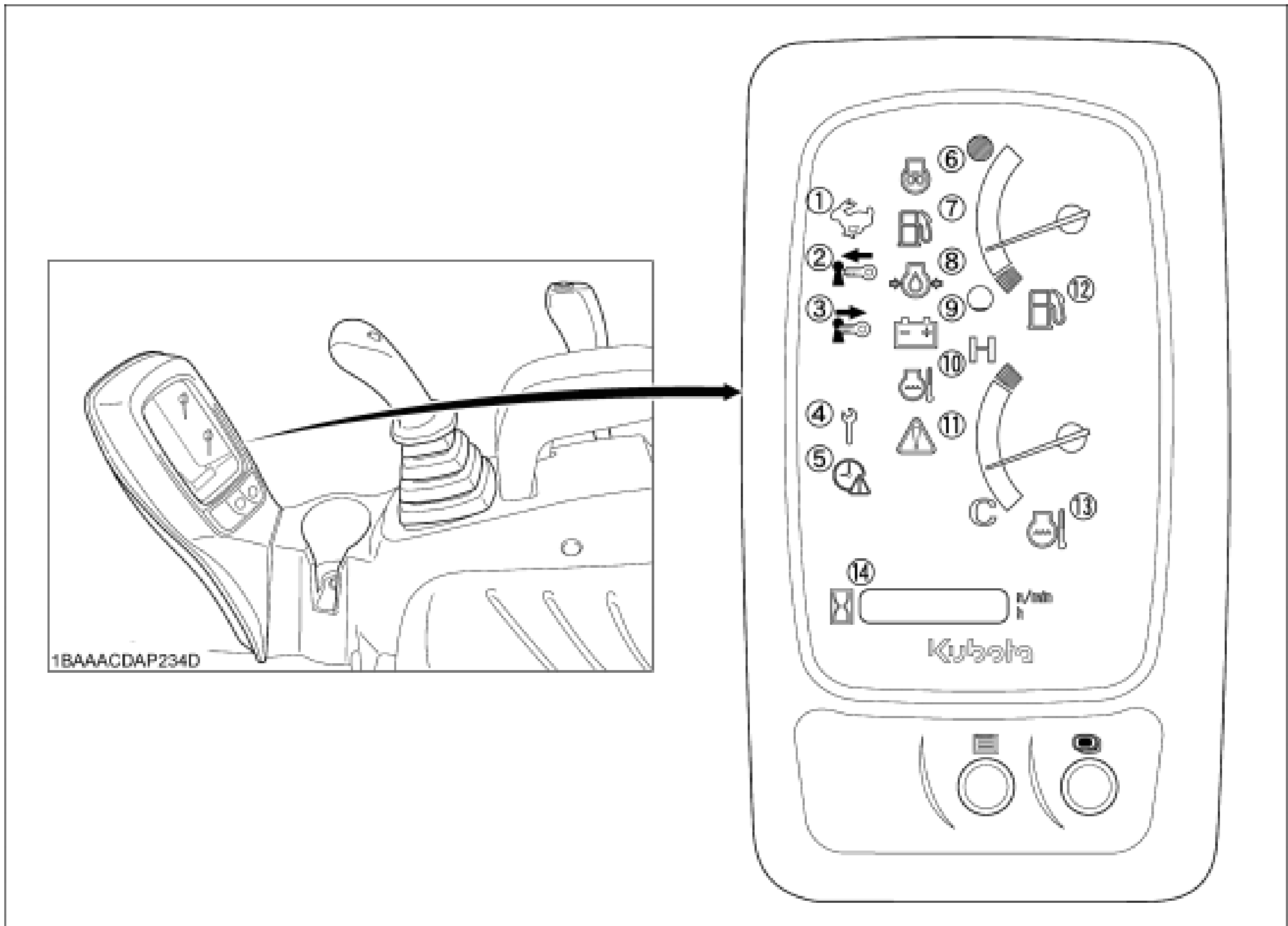
Lever Position		Pattern A	Pattern B
Attachment Control Lever (Left)	A	Boom down	Arm up
	B	Boom up	Arm crowd
	C	Swing left	Swing left
	D	Swing right	Swing right
Attachment Control Lever (Right)	I	Arm up	Boom down
	II	Arm crowd	Boom up
	III	Bucket crowd	Bucket crowd
	IV	Bucket dump	Bucket dump

CONTROL IDENTIFICATION



- (1) THROTTLE LEVER (2) DRIVE LEVER (LEFT) (3) DRIVE LEVER (RIGHT) (4) ATTACHMENT CONTROL LEVER (LEFT)
- (5) ATTACHMENT CONTROL LEVER (RIGHT) (6) DOZER CONTROL LEVER (7) AUX PORT PEDAL (8) BOOM SWING PEDAL
- (9) LOCK LEVER (UNLOAD LEVER) (10) TRACK WIDTH CHANGE LEVER (11) TPSS LEVER

PANEL LIGHT IDENTIFICATION



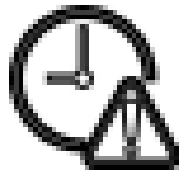
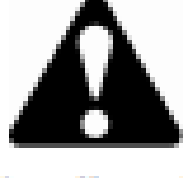

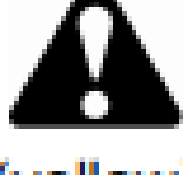
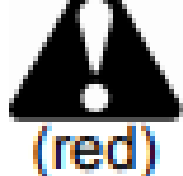

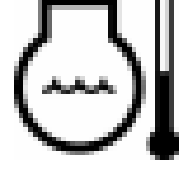

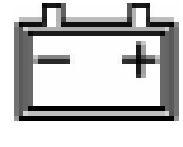
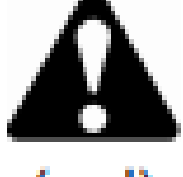
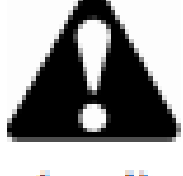
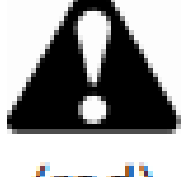
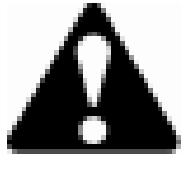
- (1) SPEED INDICATOR
- (2) INSERT KEY
- (3) PULL OUT KEY
- (4) PERIODIC MAINTENANCE CHECK
- (5) CLOCK SETTING REQUEST
- (6) GLOW PLUG
- (7) LOW FUEL WARNING
- (8) ENGINE OIL PRESSURE WARNING
- (9) BATTERY CHARGE
- (10) COOLANT TEMPERATURE WARNING
- (11) WARNING
- (12) FUEL GAUGE
- (13) COOLANT TEMPERATURE GAUGE
- (14) LCD DISPLAY

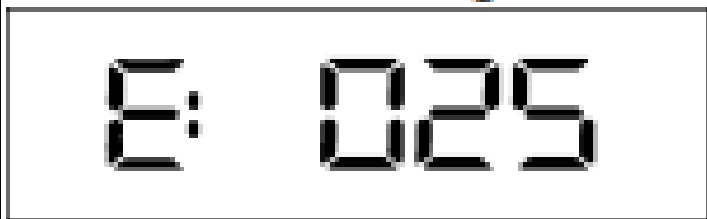
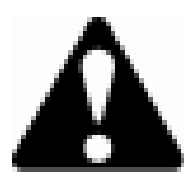
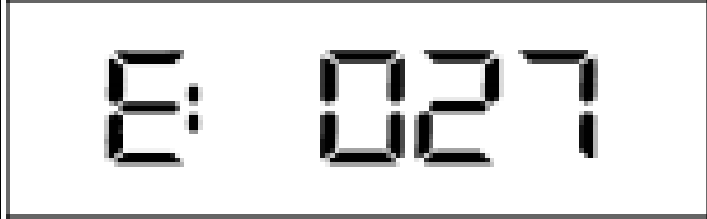
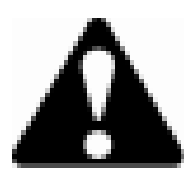
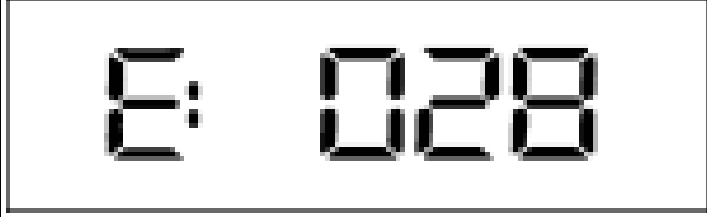
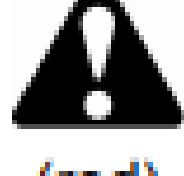

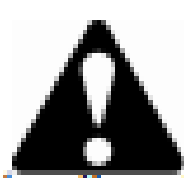
TROUBLESHOOTING

Hydraulic System	Boom, arm, bucket, drive, swing and dozer power is too low	Hydraulic oil level too low	* Add oil
		Leakages of hoses and / or joints	*Replace hose or joint
Drive System	Swing motor and front attachment does not work	Lock lever in "LOCK" position	*Bring lock lever into "UNLOCK" position
	Deviation of drive direction	Blocked through stones	* Remove
		Track too loose or too tight	* Adjust accordingly
	Drive lever does not move	Lock lever in "LOCK" position	* Bring lock lever into "UNLOCK" position

Trouble		Cause	Solution
Engine	Starting difficulties	Lock levers in "UNLOCK" position	* Bring lock lever into "LOCK" position
		Fuel is too viscous	* Check fuel tank and filter * Remove impurities and water * If necessary, replace filter
		Air or water in the fuel system	* Remove water from the fuel tank * Check fuel pipe joint bolts and nuts for looseness * Purging of the fuel system (for fuel filter and injection pump see "PURGING OF THE FUEL SYSTEM" in the chapter "OTHER ADJUSTMENTS AND REPLACEMENTS".)
		Oil viscosity is too high the engine runs sluggishly in winter	* Pour hot water over the radiator
		Battery is almost dead; insufficient compression	* Recharge battery
	Insufficient engine power	Low fuel level	* Check fuel and add if necessary
		Clogged air cleaner	* Clean the air filter element
	Engine suddenly stops	Low fuel level	* Check fuel and add if necessary * Purge the fuel system
	Abnormal exhaust gas colour	Poor fuel	* Use high quality fuel
		Too much engine oil	* Drain engine oil to prescribed oil level
	Water temperature in red zone (Overheating)	Defective seal of the water pump	* Replace
		Worn or torn fan belt	* Adjust or replace
		Thermostat is defect	* Replace
		Coolant level too low	* Fill to prescribed level
		Radiator grill or fins are clogged	* Clean
		Coolant is contaminated with rust from the cylinder head or crank case	* Replace coolant fluid and add anti-rust
		Defective radiator cap (Evaporation)	* Replace
		Corroded coolant pipes	* Clean
		Continuous operation under full load	* Reduce load
		Cylinder head gasket is damaged (Coolant loss)	* Replace
		Engine oil level too low	* Fill to prescribed level
		Maladjustment of fuel injection	* Readjust ignition timing
		Use of poor fuel	* Use prescribed fuel

	LCD display	LED	Problem / Error	Solution #1	Solution #2
1	<p>CAN system error</p>		The Controller Area Network (CAN) has developed a fault. Measured values may be incorrect and switches may not function.	The machine can be started and driven. Do not perform any work with the machine.	Inform your KUBOTA dealer immediately.
2	<p>Feed fuel</p>		This message appears when the fuel level is low and prompts the operator to refuel.	---	Refuel the excavator.
3	<p>Periodic check soon (notice)</p>		This message appears 10 hours before the periodic check interval. This message means that the regular service is due shortly.	Operate the machine as usual.	Ask your KUBOTA dealer about the relevant parts. Run the maintenance procedure.
4	<p>Periodic check passed (warning)</p>		This message means that the regular service is due.	The machine can be operated but service must be carried out urgently.	Ask your KUBOTA dealer about the relevant parts. Run the maintenance procedure.
5	<p>Warning temperature rising</p>		The temperature of the coolant is higher than normal.	Operate the machine only with reduced loads until the temperature is normal again.	---

	LED Display	LED	Problem / Error	Solution #1	Solution #2
9	Clock setting request No display item		Power was interrupted and the clock now has to be set again.	In order to set the clock, press the user setting switch.	---
10	---	---	---	---	---
11	Raise the control lever lock No display item	 (yellow)	This message indicates a step in a procedure.	Raise the lock lever (unload lever); the indicator goes out.	---
12	Pull out the key No display item		The key must be pulled out.	Pull out the key.	---
13	Lower the control lever lock No display item	 (yellow)	This message indicates a step in a procedure.	Lower the lock lever (unload lever); the indicator goes out.	---
14	Oil pressure too low E: 014	 (red) + 	The engine oil pressure is too low.	Stop the engine immediately. The engine may have developed a fault.	Inform your KUBOTA dealer immediately.
15	Overheat E: 015		The machine is overheated and must cool off by idling.	Allow the machine to cool off by idling. Do not switch the engine off as the coolant could then boil over.	Clean the radiator and check the coolant. Refill the radiator with coolant by its boiled-over amount. Unclog the radiator and other components before use again. Check also the hydraulic system for oil leak and other troubles. If an oil leak is found, immediately contact your local dealer for repair.
16	Charging system error E: 016	 (red) + 	The charging system has developed a fault.	Check the V-belt. When the V-belt is OK, let the engine run until the indicator goes out.	If the indicator does not go out, inform your KUBOTA dealer immediately.
17	Fuel sensor error E: 017	 (red)	The fuel sensor has developed a fault; the fuel gauge does not appear in the display.	Press the display selector switch to return to the default display.	Inform your KUBOTA dealer immediately.
18	Water temperature sensor error E: 018	 (red)	The coolant temperature sensor has developed a fault; the coolant temperature gauge does not appear in the display.	Press the display selector switch to return to the default display. The functions of the machine are stable but overheating cannot be excluded.	Inform your KUBOTA dealer immediately.
19	---	---	---	---	---
20	Lever lock system error E: 020	 (red)	The electrical system in the lock lever (unload lever) has developed a fault.	The engine can be started but the machine cannot be set in motion.	Inform your KUBOTA dealer immediately.
21	Travel 2 speed system error E: 021	 (red)	The electrical system in the travel speed has developed a fault.	The machine can only be set in motion at low speed.	Inform your KUBOTA dealer immediately.

	LCD Display	LED	Problem / Error	Solution #1	Solution #2
25	<p>Overvoltage</p> 	 (red)	<p>This is a warning that a higher voltage (from a 24-V battery, for example) is being applied to the electric circuit, or that there is a problem with the alternator.</p>	<p>Switch the engine off immediately and check the battery and the alternator. Restart the engine.</p>	<p>If the indicator lights up again after restarting, inform your KUBOTA dealer immediately.</p>
26	---	---	---	---	---
27	<p>External 5-V system error</p> 	 (red)	<p>The 5-V sensor supply line has developed a system fault. The main functions are not available.</p>	<p>The machine can be started and driven. Do not perform any work with the machine.</p>	<p>Inform your KUBOTA dealer immediately.</p>
28	<p>External 12-V system error</p> 	 (red)	<p>The 12-V sensor supply line has developed a system fault. The main functions are not available.</p>	<p>The machine can be started and driven. Do not perform any work with the machine.</p>	<p>Inform your KUBOTA dealer immediately.</p>
29	<p>Starting the engine</p> 	 (yellow)	<p>This message indicates a step in a procedure.</p>	<p>Start the engine; the indicator goes out.</p>	---