

Control box quick reference sheet

PC360LCI-11

Serial No. 91535 and up

Brackets [-***] found on this sheet indicate the relevant page in the Operation and Maintenance Manual.
 *Step * refer to the step numbers found in the "When using the Intelligent Machine Control for the first time" part of this sheet.

Facing angle compass
[8-Rough digging mode]

When the design surface is tapped, the facing angle of the bucket blade edge against the design surface is displayed.

Design surface
[8-Travel mode]

Highlighted when tapped, and facing angle compass is enabled for this surface.

Zoom in and zoom out keys
[8-Travel mode]

Zoom in
Returns to original scale
Zoom out

Auto/Manual switch
Step 9 [3-EXPLANATION OF COMPONENTS]
Manual → Semi-auto

Auto/manual switch is also installed to R.H. work equipment control lever.
*It may not be installed by the specification.

Blade edge selection button
[8-Rough digging mode]

Select measurement position of distance between bucket edge and design surface.

Audio guidance button
[8-Rough digging mode]

Control surface offset
[8-Semi-auto mode]
Design surface offset
[8-Travel mode]

Control surface offset: +0.500m
Design surface offset: +0.500m

Surface control is enabled against the surface from each surface which is at equal distance. (Surface to be controlled is shown with dotted line.)
Move entire design surface in vertical direction. (Surface which is moved is shown with full line.)

Distance between blade edge and design surface (Light bar)
[8-Rough digging mode]

Distance between blade edge and design surface (Numerical value display)
[8-Rough digging mode]

Display mode selection
Step 9 [8-Travel mode]

*This switches the display without affecting the accuracy of control.

Travel mode
[8-TRAVEL MODE]

Rough digging mode
[8-ROUGH DIGGING MODE]

Fine digging mode
[8-FINE DIGGING MODE]

Screen selector button
[8-Rough digging mode]
Setting 1 → Setting 2 → Setting 3

The screen is switched for each saved setting. Only 2 settings can be saved for the travel mode.

Bucket Shortcut
[8-Control Box]
* This is shown only in the Travel mode.


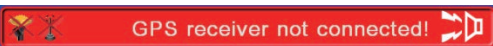



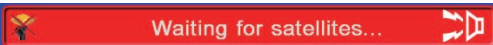
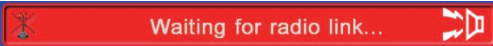

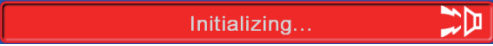
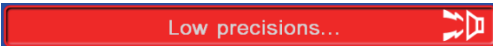








Main menu Step 8, Step 1 [7-CONTROL BOX]

GNSS communication state check button Step 5, Step 7 [8-CHECK GNSS COMMUNICATION STATUS]





Blade edge position confirmation button Step 7 [8-Blade edge position information]



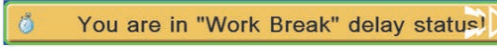
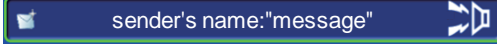
When a design surface is tapped in the finish digging mode, the angle between the design surface and the bucket bottom surface is displayed.

Symbol list of control box

Cautions (warning displays) [3-TROUBLES AND ACTIONS]		
 Komatsu controller not connected!	*	There is a communication error between ICT sensor controller and the control box.
 GPS receiver not connected!	*	There is a communication error between the GNSS receiver and the control box.
 Tilt Bucket Sensor Offline!	*	There is a communication error with tilt sensor for the bucket.
 Sensors are invalid	*	MC sensors are not connected or failed.
 No GPS localization...	*	Project file does not have a base point file in it or the number of base point in the base point file is insufficient.
 Waiting for satellites...	*	The system is acquiring satellites. Wait for a while.
 Waiting for radio link...	*	While communication is made with GNSS base station, GNSS base station is turned OFF or the cable of the radio device has trouble.
 Waiting to initialize...	*	The blade edge accuracy is low.
 Initializing...	*	The blade edge accuracy is better than "Waiting to Initialize..." but still low.
 Low precisions...		The blade edge accuracy set by "GNSS" is low.
 Out of design area...		The blade cutting edge of the hydraulic excavator is out of the design surface.
 High CPU Load - Check Data	*	A load of CPU becomes high.
 Avoidance Area Breach!		The hydraulic excavator is in the avoidance area.
 Auto/Manual Selector Switch Stuck		The auto/manual switch is stuck.
 Auto/Manual Selector Switch Error 1		The auto/manual switch wiring has hot short circuit.
 Auto/Manual Selector Switch Error 2		The auto/manual switch wiring has hot short circuit.
 ICT System Short Circuit		The ICT system output has ground fault.
 Tilt Bucket Sensor Power Short Circuit		The tilt bucket sensor power supply has ground fault.

When a caution marked with "*" is displayed, the mode will not be switched from MANUAL to Semi-AUTO.

Semi-AUTO mode [8-SEMI-AUTO MODE]	
	Waiting Semi-AUTO mode
	Operating Semi-AUTO mode
 Semi-AUTO mode *Goes out in a few seconds.	 MANUAL mode *Goes out in a few seconds.

Site Link [3-TROUBLES AND ACTIONS]	
	Site Link server is not connected.
	No operator is set in site link menu.
	A delay state is set in the site link menu.
	Message is sent from another terminal.

When using the INTELLIGENT MACHINE CONTROL

* This sheet is not a substitute for the Operation and Maintenance Manual. Read the Operation and Maintenance Manual thoroughly. You must understand it completely before using this sheet. Brackets [*-***] found on this sheet indicate the relevant page in the Operation and Maintenance Manual.

* Perform the procedures after completing the "Checks before starting" for the base machine. [1-READ THIS MANUAL]

* The control box touch panel may not respond if you wear gloves. [1-SAFETY INFORMATION]

* When opening or closing the front window, adjust the control box position to prevent the front window from hitting the box. [2-PRECAUTIONS FOR OPERATION]

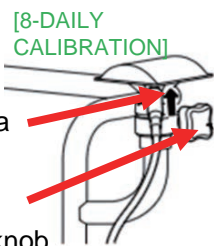
* If a failure is suspected, refer to the troubleshooting pages in the EXECUTIONS section of the Operation and Maintenance Manual. [8-TROUBLESHOOTING]

1. Check the equipment

1. Check the GNSS antenna and cables

Check if the GNSS antenna marks on the left and right handrails are aligned, and there is no looseness at ① and ②.

- ① Antenna cable
- ② Antenna mounting knob



[8-DAILY CALIBRATION]

2. Check the GNSS radio device

Check that your radio device is properly connected.
*The radio device may differ depending on worksite.



(Example of connection)

[8-DAILY CALIBRATION]

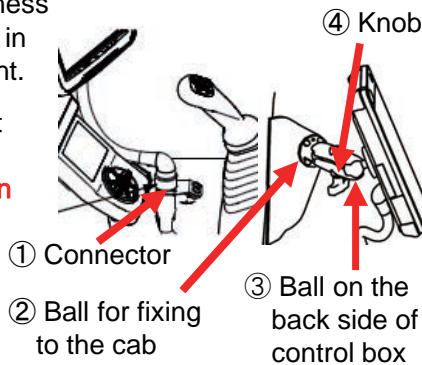
3. Check the control box

[3-OPERATION]

(1) Check for looseness at locations ① to ③ in the figure on the right.

(2) Turn ④ to adjust to a proper position.

* Adjust to a position where interference with the right work equipment control lever operation can be avoided.



- ① Connector
- ② Ball for fixing to the cab
- ③ Ball on the back side of control box
- ④ Knob

2. Start and check the system

4. Start the control box

[8-DAILY CALIBRATION]

(1) Turn the starting switch of the machine to ON position.

(2) The control box screen automatically starts. The initial screen is displayed as shown in the figure on the right, and the voice signal sounds.

* Do not turn the starting switch to OFF position while the screen is started.

[3-START CONTROL BOX]

(3) Start the engine.




5. CHECK the GNSS communication state

[8-CHECK GNSS COMMUNICATION STATE]



✗ Initializing ○ Receiving

If the state does not change from as shown , refer to the Operation and Maintenance Manual to take necessary actions.

* You may have to wait 15 to 20 minutes.



If bucket or bucket teeth has been replaced or bucket teeth are worn, perform setting procedures I and II before proceeding to step 6.

6. Accuracy diagnosis of IMU (Inertial Measurement Unit)

[7-MACHINE MONITOR]

This menu is available on the machine monitor.

* Be sure to perform diagnosis with the machine placed on a stable surface, which does not cause shaking when the upper structure is swung.
* Wait for 5 minutes after turning the starting

(1) Press ① to display the main menu.

(2) Display MC setting tab ②, and select IMU adjustment ③.

(3) Select Adjustment diagnosis ④, and perform diagnosis by following the screen.

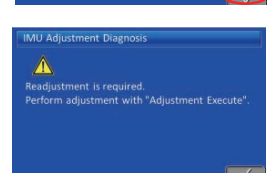
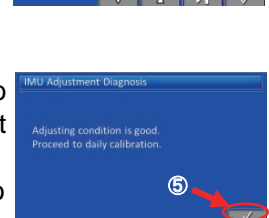
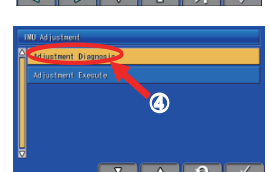
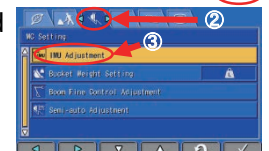
* Visually check that the upper structure is parallel with the tracks before and after the swing.

(4) When the message appears to inform that the state of adjustment is good, press ⑤ to return to the screen of (3), and then proceed to step 7.

Note

If a "readjustment needed" message is displayed, refer to the Operation and Maintenance Manual to perform readjustment.

* This adjustment is necessary for the IMU unit maintenance but does not indicate a failure of the IMU unit.



When using the INTELLIGENT MACHINE CONTROL

7. Confirm and correct the blade edge position [8-DAILY CALIBRATION]

This menu is available on the control box.

* Be sure to confirm that the GNSS communication state is receiving  (see step 5).

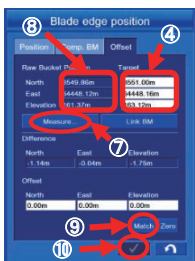
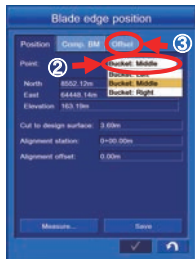
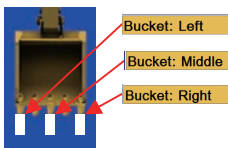
(1) Move all the work equipment cylinders to the stroke end position.

* Other than the boom LOWER side.

(2) Tap on ① to display the blade edge information screen.

(3) Tap on ② and select a blade edge position, which is to be used as the base point, from the list. Under normal conditions, select Bucket: Middle.

Note



(4) Tap on ③ to display "Offset" tab.


(5) Tap on the "Target" field ④, input the coordinates of the base point to which the blade edge is placed by using numeric keys ⑤, and tap on ⑥.

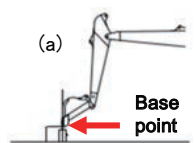
(6) Place the bucket blade edge at the measured base point. See Fig.(a).

(7) Tap on ⑦ to execute automatic measurement of the blade edge coordinates. The measured values are displayed in "Raw Bucket Position" field ⑧.

(8) Tap on ⑨ to start automatic calculation of the correction amount to make the blade edge coordinates match with the base point.

*When this button is pressed, all values are corrected. Correction can also be done by manually inputting each value.

(9) Press ⑩ to save the settings. Settings and values in "Target" field will not be stored when  is pressed.



3. Preparing for a construction

8. Perform setting of the project file (construction execution data) [8-DAILY CALIBRATION]

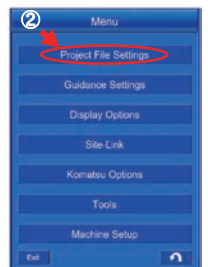
This menu is available on the control box.

(1) Tap on ① to display the main menu.

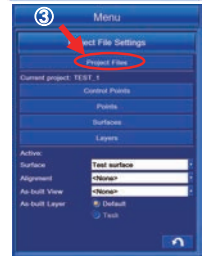


8. Perform setting of the project file (construction execution data) (continued)

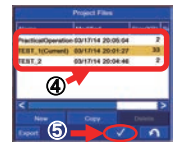
(2) Tap on ② to display "Project File Settings" screen.



(3) Tap on ③ to display "Project Files" selection screen.



(4) Select a project file from ④ by tapping on the desired file (the file is highlighted), and tap on ⑤.



(5) Tap on the Return button a few times to return to the screen of (1).

Note


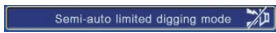
If a desired project file is not found in ④, copy a file from a USB memory device.



4. When performing construction

9. Start the construction

(1) Construction can now be performed in manual mode.

(2) When ① is pressed,  is displayed at ② for a few seconds, and  is continuously displayed.

(3) This enables construction to be performed in semi-auto mode.

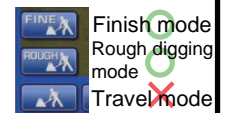
* The mode cannot be switched to semi-auto under the following conditions:

- In L mode or B mode.
- A lever is operated.
- An error is detected.
- Display mode selection button ③ on the screen indicates travel mode.

① Auto/Manual switch



②



5. End the construction

10. End the work [3-METHOD FOR SHUTTING DOWN CONTROL BOX]

Turn the key to OFF position. The control box automatically stops.

*Never turn the key to ON position before the screen goes out.

Bucket and teeth settings

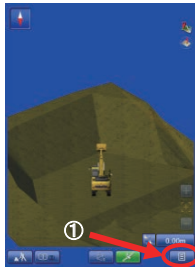
Perform procedure I if the bucket has been replaced, or procedure II if the teeth have been replaced, before proceeding to Step 6.

I Bucket setting

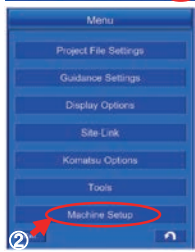
Perform this after the bucket has been replaced.

[7-BUCKET CONFIGURATION]

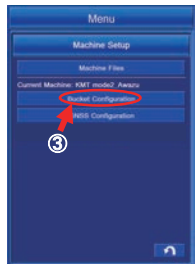
(1) On the control box, tap on ① to display the main menu.



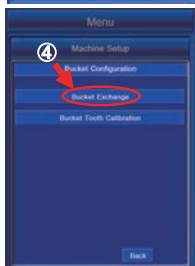
(2) Tap on ② to display "Machine Setup" screen.



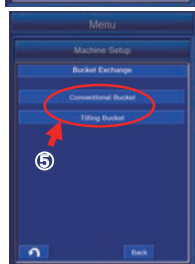
(3) Tap on ③ to display "Bucket Configuration" screen.



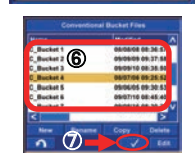
(4) Tap on ④ to display "Bucket Exchange" screen.



(5) Tap on the type of your bucket in ⑤ to display the Bucket Files selection screen.



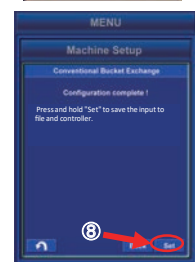
(6) Select a bucket file from ⑥ by tapping on the desired file (the file is highlighted), and tap on ⑦.



Note

If a desired project file is not found in ⑥, copy a file from a USB memory device.

(7) Continue with setting by following the screen.

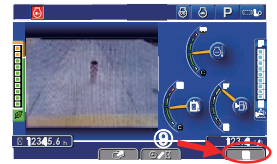


(8) Keep tapping ⑦ until the screen changes, and save the settings.

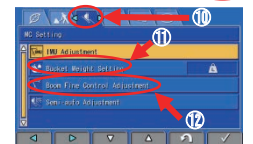
I Settings to be performed after replacement of bucket (continued)

The following menu is available on the machine monitor.

(1) Press ⑨ to display the main menu.



(2) Display MC setting tab ⑩, and select Bucket weight setting ⑪.



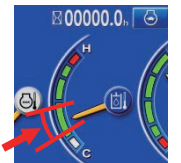
(3) Select the appropriate bucket weight in accordance with the bucket used.



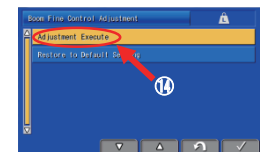
Note

	Guide of bucket weight	
	3.2m arm	4.0m arm
weight Heavy	2050kg - 2500kg	1900kg - 2350kg
weight Medium	1650kg - 2049kg	1500kg - 1899kg
weight Light	1000kg - 1649kg	900kg - 1499kg

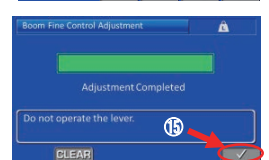
(4) Bring the hydraulic oil temperature to range ⑬, which is 40 to 60°C.



(5) Display the MC settings tab as described in (1) and (2), and select boom fine control adjustment ⑭.



(6) Press ⑭ and perform the adjustment by following the screen.



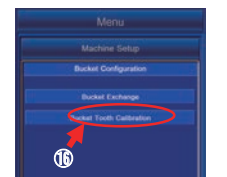
(7) When "Adjustment completed" is displayed, press ⑮ and proceed to the next item.

II Bucket teeth setting

[7-BUCKET CONFIGURATION]

Perform this after the bucket teeth have been replaced or are worn.

(1) Complete the procedure up to Step I (3), and tap on ⑯.



(2) Tap on ⑰ to enter the length of the tooth.

(3) Continue with setting by following the screen.



(4) When the "Configuration complete!" message is displayed, hold down ⑱ (min. 0.5 seconds).



Functions of the INTELLIGENT MACHINE CONTROL

2 automated functions enable to perform digging and grading without worrying about digging into the design surface.

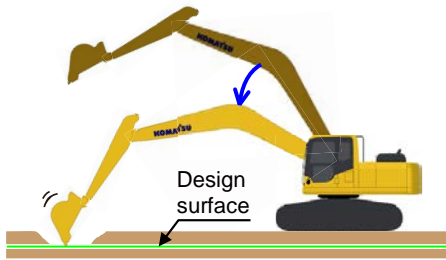
1. Auto stop control

[Outline]

The work equipment is automatically stopped when the bucket reaches the design surface during boom LOWER, bucket CURL or bucket DUMP operation.

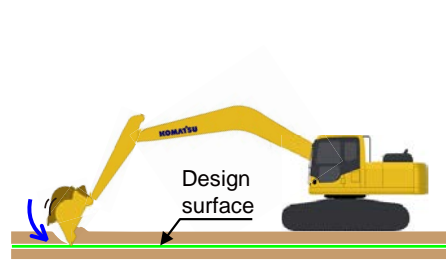
- ⇒The design surface is not damaged
- ⇒The bucket edge can be easily positioned

Example of boom stop



Lever operation: Boom LOWER
Automatic control: Boom stop

Example of bucket stop



Lever operation: Bucket CURL
Automatic control: Bucket stop

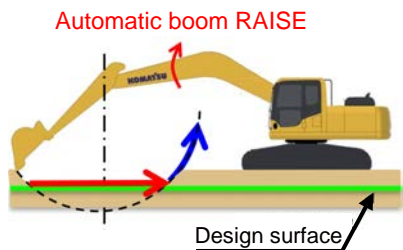
2-1. Auto grade assist

[Outline]

When the arm is operated, the boom automatically rises so that the bucket does not dig deeper than the design surface.

- ⇒Rough digging can be performed without worrying about the design surface
- ⇒During finishing,
 - Work can be performed by operating only the arm control lever (Example 1)
 - By using combined operation of boom LOWER lever control and arm lever control, the blade edge can be moved along the design surface within the entire movable range (Example 2)

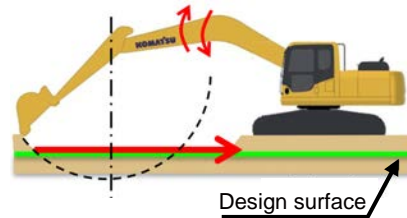
Example 1



Lever control: Arm CURL
Automatic control: Boom RAISE

Example 2

Automatic boom RAISE + Boom LOWER amount control



Lever control: Arm CURL + Boom LOWER
Automatic control: Boom RAISE +
Boom LOWER amount control



Warning

For safe usage of the machine, thoroughly read the Operation and Maintenance Manual and use the machine in accordance with the manual.

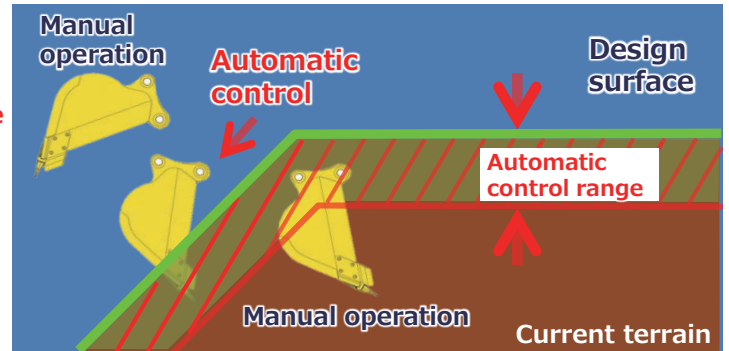
This machine is equipped with **Semi-auto mode**.

When using the Semi-auto mode, pay attention to the following.

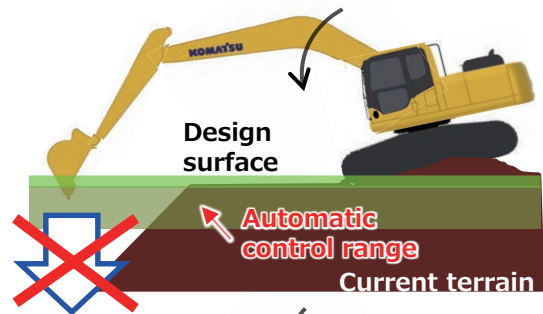
Semi-auto mode only operates for the work equipment.

Travel and swing operations are controlled according to your lever operation.

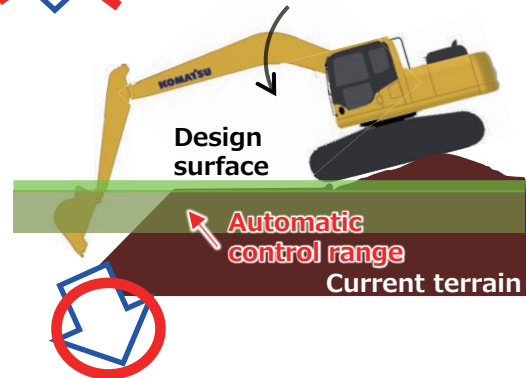
1. When the bucket end is within the automatic control range, the work equipment is automatically stopped so that it does not dig deeper into the design surface. **The bucket will not move lower than the design surface even if you operate the lever to lower the work equipment downward.**
 - * If the work equipment is operated away from (upward) the design surface, it always moves **according to your lever operation**.
 - * The work equipment will not move unless the work equipment control lever is operated.



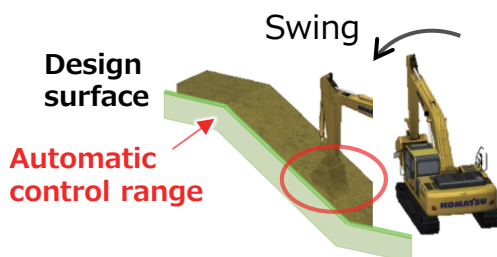
2. When the design surface is higher than the current terrain and the bucket end is within the automatic control range, **you cannot lower the bucket to the ground in order to support the machine when pitching forward. Observe the precautions for operation, and do not rush when operating the machine.**



- * When the bucket end exceeds the automatic control range, due to machine pitching forward, you can lower the work equipment according to your lever operation.

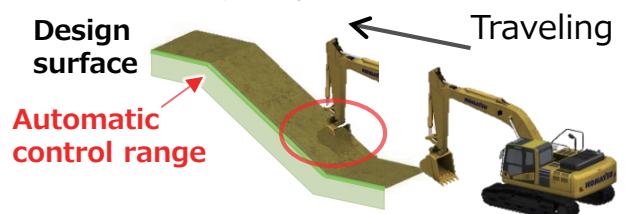


3. Swing operation and Work equipment operation
Automatic control is actuated during Swing operation
The work equipment may rise unexpectedly or shocks may occur when operating work equipment control lever after swinging.



4. Travel operation and Work equipment operation
Automatic control is actuated at the moment of stopping of travel

The work equipment may rise unexpectedly or shocks may occur when work operating equipment control lever after traveling. If you drive the machine in semi-auto limited digging mode, the mode automatically changes to the Manual mode.

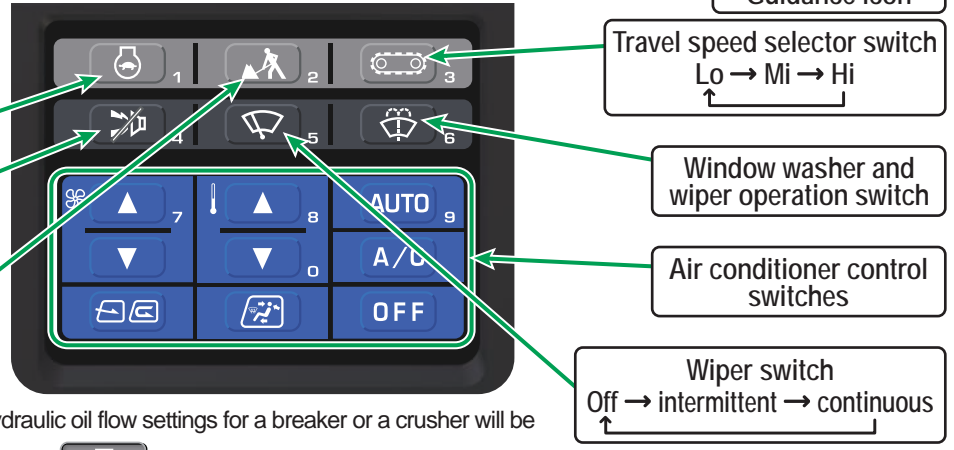
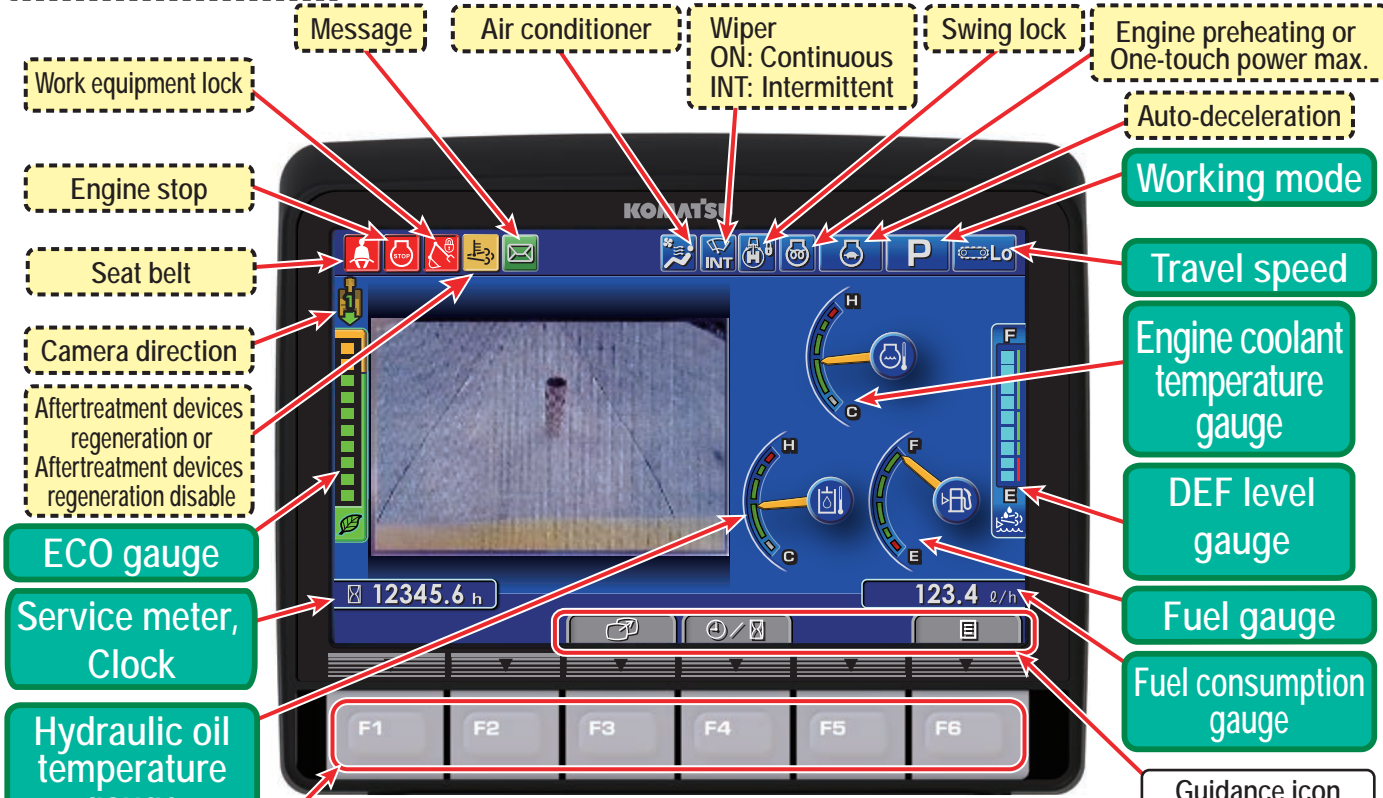


MULTI-COLOR MONITOR QUICK REFERENCE SHEET

WARNING
 This sheet easily explains how to read each display shown on the machine monitor. Before reading this sheet, always read the Operation and Maintenance Manual thoroughly and make sure that you understand the content

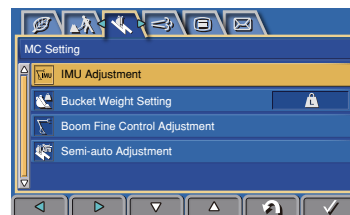
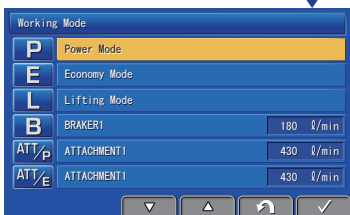
Normal display

Displayed only when function is selected or display condition is met



Hydraulic oil flow settings for a breaker or a crusher will be done at "Attachment" in the "user menu". (for details, see the Operation and Maintenance Manual) (*1)

By pressing this switch, screen changes as shown.



On this machine, MC Setting is added to the user menu of the multicolor monitor. Press the (F6 key), and use (F1 and F2 keys) to select the (MC setting tab). With this menu, important settings for the semi-auto mode of this machine can be performed. For details, refer to the Operation and Maintenance Manual . [7-MC SETTING]

CAUTION If the monitor gives a warning display, check the displayed location as soon as possible and carry out the necessary maintenance. The monitor display does not guarantee the condition of the machine. Do not rely only on the monitor display for maintenance and checks of the machine; always carry out visual checks.

SYMBOL TABLE

Action level

Displays the severity of abnormality having occurred in the machine. Refer to the following table and take required remedy. Check error list by pressing F5 and then call your Komatsu distributor.

Severity	Action level	Required action
High	L04	Stop the engine immediately, and ask your Komatsu distributor to perform the inspection and maintenance.
	L03	Stop the operation, move the machine to a safe place, stop the engine, and ask your Komatsu distributor to perform the inspection and maintenance.
	L02	Stop the work and run the engine at medium speed with no load or stop it.
Low	L01	Some functions may be restricted from use, but the machine can operate. When you finish the operation, always have the inspection and maintenance performed.

Caution (Warning)

	Engine coolant overheat		Battery charge voltage low
	Hydraulic oil overheat		Water separator full of water
	Electric system abnormality		Engine oil level low
	Hydraulic system abnormality		Engine coolant level low
	KDPF system abnormality		Air cleaner clogging
	KDPF soot accumulation high		Engine stop at DEF system overheat
	Engine system abnormality		A/C system abnormality
	Abrupt engine stop by auto idling stop		Intelligent Machine Control equipment abnormality
	Engine oil pressure low		Intelligent Machine Control system abnormality
	Engine overrun		Caribration abnormality
	DEF system abnormality		Trouble at start of IMU
	DEF level low		Cylinder reset (Not performed yet)

Guidance icon

	Switching to camera screen		Back to previous screen		Current abnormality list
	Switching clock and service meter		Confirmation		User menu
	Move to next page		Move to left item		Move to next item
	Move to previous page		Move to right item		Move to previous item

Maintenance item

Standard replacement interval	
500h	Engine oil change
500h	Engine oil filter change
1000h	Fuel main filter change
500h	Fuel prefilter change
1000h	Hydraulic oil filter change
1000h	Hydraulic oil tank breather change
1000h	Damper case oil check or refilling
2000h	Final drive case oil change
1000h	Swing machinery case oil change
5000h	Hydraulic oil change
2000h	KCCV filter change
4500h	KDPF filter cleaning
4500h	Fuel doser cleaning
1000h	DEF tank breather change
2000h	DEF filter change
4500h	DEF tank cleaning

Working mode

P	Power mode	Setting of high-efficiency and powerful operation
EO	Economy mode	Setting of low-cost operation with less fuel consumption
L	Fine control mode	Setting of optimum work equipment speed for the work
B	Breaker mode (with attachment piping)	Setting of preset optimum flow rate (see reverse page *1)
ATT/P	Attachment mode (Power) (with attachment piping)	Setting of preset flow rate optimum for high-efficiency and powerful operation (see reverse page *1)
ATT/E	Attachment mode (Economy) (with attachment piping)	Setting of preset flow rate optimum for operation with less fuel consumption (see reverse page *1)

Indicator

	There is unread message (Green)		Engine stop
	There is message need to reply (Blue)		Work equipment lock
	Air conditioner		Lock lever auto lock release SW on
	Wiper intermittent		Aftertreatment devices regeneration
	Wiper continuous		Aftertreatment devices regeneration disable
	Swing lock		Auto-deceleration
	Engine preheating		Travel Low speed
	One-touch Power max		Travel Mid speed
	Seat belt		Travel High speed