

# **OPERATION MANUAL**

**Crawler Excavator**  
**R160LC-9**  
**R180LC-9**

# **HYUNDAI**

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## EC Declaration of conformity - update 04/01/'10

1. We hereby declare that the following machine comply with the machine directive 2006/42/EC, EMC-directive 2004/108/EC, Non-road mobile machinery emission directive 97/68/EC (amended by 2002/88/EC, 2004/26/EC, 2006/105/EC) and noise emission 2000/14/EC (amended by 2005/88/EC).

Excavator	Model :	*****
	Serial Nr. :	***

2. Manufacturer	Hyundai Heavy Industries Co. Ltd. 1 Chonha-Dong, Dong-Ku Ulsan The republic of Korea
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Authorized representative : Owner of the technical file for machine production. (TCF : Technical Construction File)	Hyundai Heavy Industries Europe N.V. Vossendal 11 2440 Geel Belgium
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3. Harmonized European directives :	EN474-1:2006 +A1:2009, EN474-5: 2006, EN ISO 12100-1:2003, EN ISO 12100-2:2003, EN ISO 2867:2008, EN ISO 7096:2008, EN ISO 6683:2008, EN ISO 2860:2008, EN ISO 6682:2008, EN ISO 3744:2009, EN 982:1996+A1:2008, EN ISO 3457:2008 EN ISO 2860:2008, EN ISO 7096:2008, ISO 5006: 2006
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4. Noise level :	
Certain n° :	e13*2000/14*2005/88*0059*08
Date :	2009-06-17
Conformity assessment procedure :	Attachment VIII following the periodical inspection on technical extended with "Information on the scope of delivery" by TÜV Rheinland.
Authorized entity :	Société Nationale de Certification et d'Homologation s.à r.l CE0499 11, route de Luxembourg 5230 Sandweiler Luxemburg
Engine power :	*** kW
Guaranteed sound power level :	*** dB (A)

5. Remarks

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Managing Director

Geel, Belgium

\*\*/\*\*/\*\*\*\*\*

## FOREWORD

This manual contains a number of instructions and safety recommendations regarding driving, handling, lubrication, maintenance, inspection and adjustment of the excavator.

The manual is to promote safety maintenance and enhance machine performance.

Keep this manual handy and have all personnel read it periodically.

If you sell the machine, be sure to give this manual to the new owners.

This machine complies with EC directive "2006/42/EC".

1. **Read** and **understand** this manual before operating the machine.

This operator's manual may contain attachments and optional equipment that are not available in your area. Please consult your local Hyundai distributor for those items you require.

Improper operation and maintenance of this machine can be hazardous and could result in serious injury or death.

Some actions involved in operation and maintenance of the machine can cause a serious accident, if they are not done in a manner described in this manual.

The procedures and precautions given in this manual apply only to intended uses of the machine.

If you use your machine for any unintended uses that are not specifically prohibited, you must be sure that it is safe for you and others. In no event should you or others engage in prohibited uses of actions as described in this manual.

2. **Inspect** the jobsite and **follow** the safety recommendations in the **safety hints** section before operating the machine.

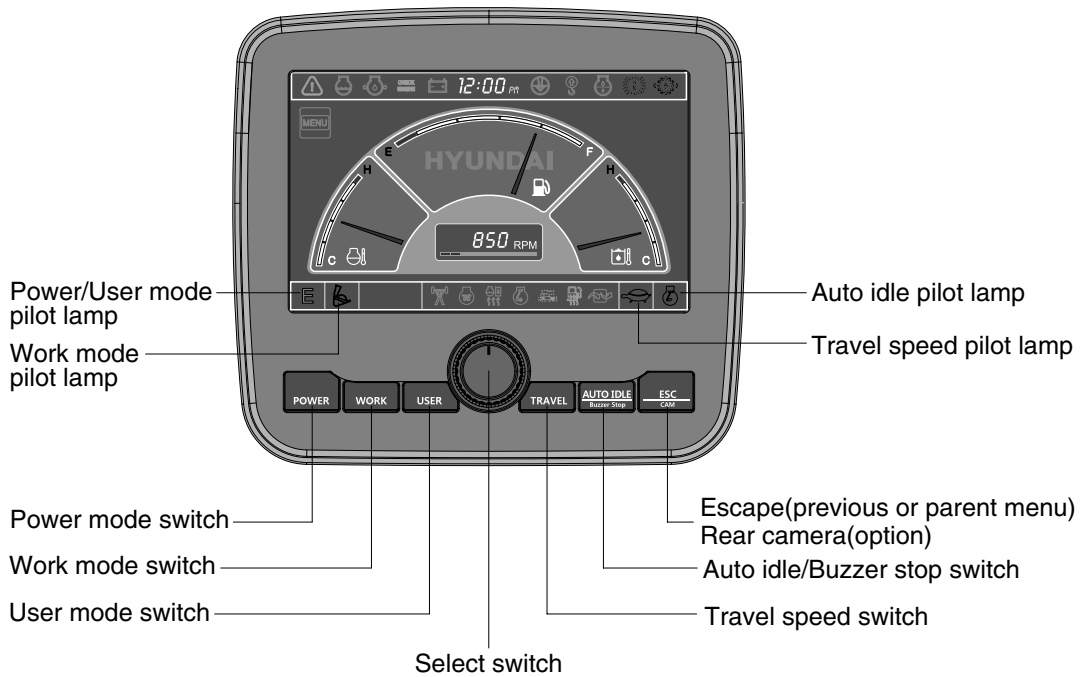
3. Use **genuine Hyundai spare parts** for the replacement of parts.

We expressly point out that Hyundai will not accept any responsibility for defects resulting from non-genuine parts or non workmanlike repair.

In such cases Hyundai cannot assume liability for any damage.

Continuing improvements in the design of this machine can lead to changes in detail which may not be reflected in this manual. Consult Hyundai or your Hyundai distributor for the latest available information for your machine or for questions regarding information in this manual.

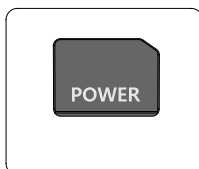
## 5) SWITCHES



21093CD45

※ When the switches are selected, the pilot lamps are displayed on the LCD. Refer to the page 3-7 for details.

### (1) Power mode switch






21093CD45A

- ① This switch is to select the machine power mode and selected power mode pilot lamp is displayed on the pilot lamp position.
  - P : Heavy duty power work.
  - S : Standard power work.
  - E : Economy power work.
- ② The pilot lamp changes E → S → P → E in order.

### (2) Work mode switch

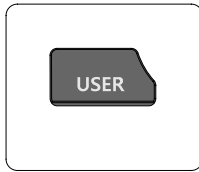


21093CD45C

- ① This switch is to select the machine work mode, which shifts from general operation mode to optional attachment operation mode.
  -  : General operation mode
  -  : Breaker operation mode (if equipped)
  -  : Crusher operation mode (if equipped)
  - Not installed : Breaker or crusher is not installed.

※ Refer to the page 4-6 for details.

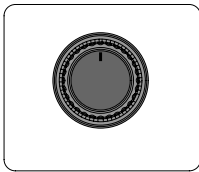
### (3) User mode switch



21093CD45D

- ① This switch is used to memorize the current machine operating status in the MCU and activate the memorized user mode.
  - Memory : Push more than 2 seconds.
  - Action : Push within 2 seconds.
  - Cancel : Push this switch once more within 2 seconds.
- ② Refer to the page 3-12 for another set of user mode.

### (4) Select switch



21093CD45E

- ① This switch is used to select or change the menu and input value.
- ② Knob push
  - Long (over 2 sec) : Return to the operation screen
  - Medium (0.5~2 sec) : Return to the previous screen
  - Short (below 0.5 sec) : Select menu
- ③ Knob rotation  
This knob changes menu and input value.
  - Right turning : Down direction / Increase input value
  - Left turning : Up direction / Decreased input value

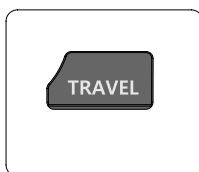
### (5) Auto idle/ buzzer stop switch





21093CD45F

- ① This switch is used to activate or cancel the auto idle function.
  - Pilot lamp ON : Auto idle function is activated.
  - Pilot lamp OFF : Auto idle function is cancelled.
- ② The buzzer sounds when the machine has a problem.  
In this case, push this switch and buzzer stops, but the warning lamp blinks until the problem is cleared.

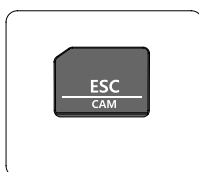
### (6) Travel speed control switch



21093CD45G

- ① This switch is used to select the travel speed alternatively.
  -  : High speed
  -  : Low speed

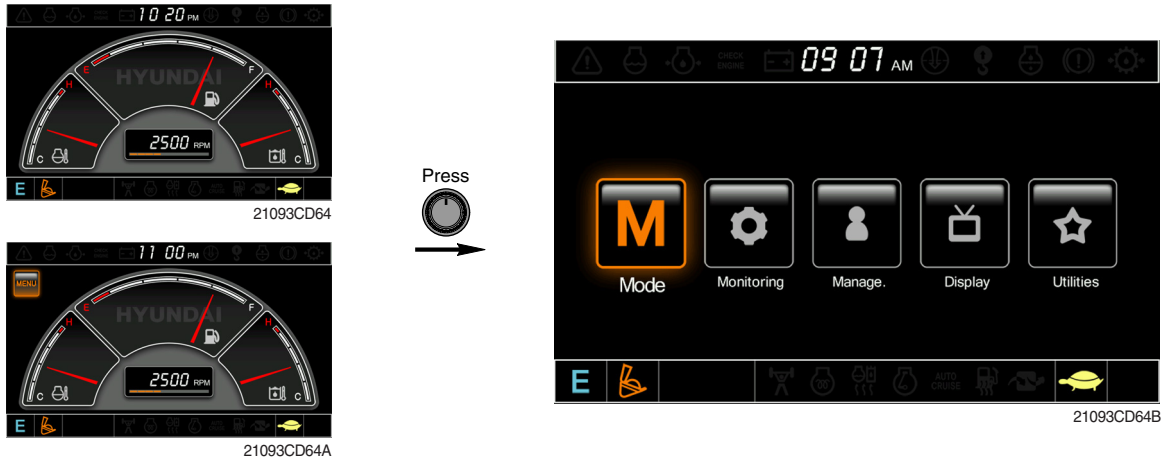
### (7) Escape/Camera switch



21093CD45H






- ① This switch is used to return to the previous menu or parent menu.
- ② In the operation screen, pushing this switch will display the view of the camera on the machine (if equipped).  
Please refer to page 3-22 for the camera.
- ③ If the camera is not installed, this switch is used only ESC function.

## 6) MAIN MENU



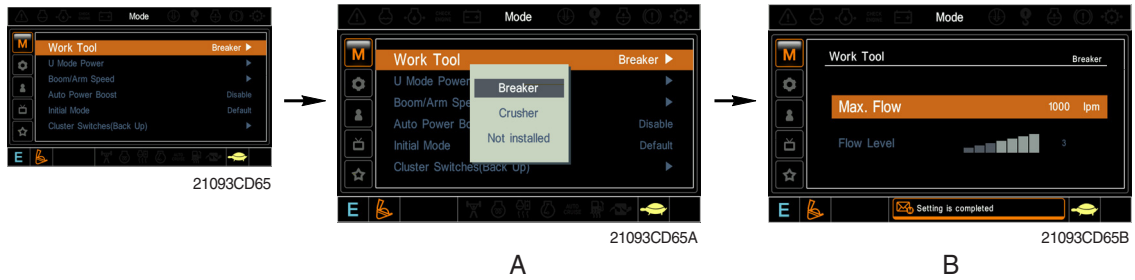
※ Please refer to select switch, page 3-10 for selection and change of menu and input value.

### (1) Structure

No	Main menu	Sub menu	Description
1	 Mode 21093CD64D	Work tool U mode power Boom/Arm speed Auto power boost Initial mode Cluster switch (back up)	Breaker, Crusher, Not installed User mode only Boom speed, Arm speed Enable, Disable Default, U mode Switch function
2	 Monitoring 21093CD64E	Active fault Logged fault Delete logged fault Monitoring (analog) Monitoring (digital) Operating hours	MCU, Engine ECM MCU, Engine ECM All logged fault delete, Initialization canceled Machine information Switch status, Output status Operating hours for each mode
3	 Management 21093CD64F	Maintenance information Machine security Machine Information A/S phone number Service menu	Replacement, Change interval oils and filters ESL mode setting, Password change Cluster, MCU, Engine, Machine A/S phone number, A/S phone number change Power shift, Hourmeter, Replacement history, Update
4	 Display 21093CD64G	Display item Clock Brightness Unit Language Screen type	Engine speed, Tripmeter A, Tripmeter B, Tripmeter C Clock Manual, Auto Temperature, Pressure, Flow, Date format Korean, English, Chinese A type, B type
5	 Utilities 21093CD64H	Tripmeter DMB Entertainment Camera setting Message box	3 kinds (A, B, C) DMB select, DAB select, Channel scan, Exit Play MP4, codec. Basic direction, Display switching, Full screen Record for fault, attachment etc.

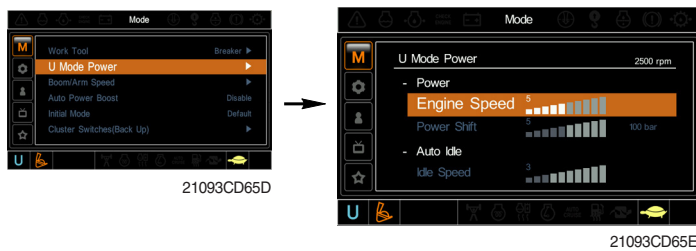
## (2) Mode setup

### ① Work tool



- A : Select one installed optional attachment.
  - B : Max flow - Set the maximum flow for the attachment.  
 Flow level - Reduce the operating flow from maximum flow.  
 Breaker - Max 7 steps, Reduced 10 lpm each step.  
 Crusher - Max 4 steps, Reduced 20 lpm each step.
- ※ The flow level is displayed with the work mode pilot lamp.

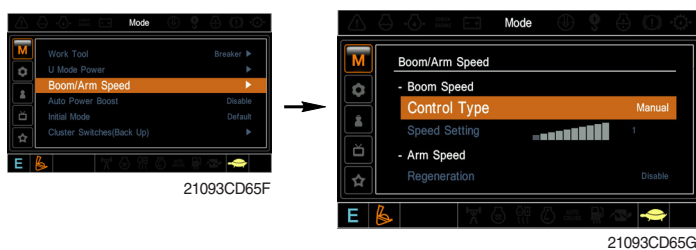
### ② U mode power



- Engine high idle rpm, auto idle rpm and pump torque (power shift) can be modulated and memorized separately in U-mode.
- U-mode can be activated by user mode switch.

Step (█)	Engine speed (rpm)	Idle speed (rpm)	Power shift (bar)
1	1650	800	0
2	1700	850	3
3	1750	900	6
4	1800	950 (low idle)	9
5	1850	1000 (decel rpm)	12
6	1900	1050	16
7	1950	1100	20
8	2000	1150	26
9	2050	1200	32
10	2100	1250	38

### ③ Boom/Arm speed



- **Boom speed**
  - Control type
    - Manual - Boom up speed is fixed as set steps.
    - Auto - Boom up speed is automatically adjusted as working conditions by the MCU.
  - Speed setting - Boom up speed is increased as much as activated steps.
- **Arm speed**
  - Regeneration - Arm regeneration function can be activated or cancelled.
    - Enable - Arm in speed is up.
    - Disable - Fine operation.



Diesel Engines

ABS	Agco-Sisu
Akasaka	Baudouin
BMW	Bukh
Caterpillar	CHN 25/34
Cummins	Daihatsu
Detroit	Deutz
Doosan-Daewoo	Fiat
Ford	GE
Grenaa	Guascor
Hanshin	Hatz
Hino	Honda
Hyundai	Isotta
Isuzu	Iveco
John-Deere	Kelvin
Kioti	Komatsu
Kubota	Liebherr
Lister	Lombardini
MAK	MAN B&W
Mercedes	Mercruiser
Mirrlees BS	Mitsubishi
MTU	MWM
Niigata	Paxman
Perkins	Pielstick
Rolls / Bergen	Ruggerini
Ruston	Scania
Shibaura	Sisu-Valmet
SKL	Smit-Bolnes
Sole	Stork
VM-Motori	Volvo
Volvo Penta	Westerbeke
Wichmann	Yanmar

Machinery

ABG	Airman
Akerman	Ammann
Astra	Atlas Copco
Atlas Weyha.	Atlet
Bell	Bendi
Bigjoe	Bobcat
Bomag	BT
Carelift	Case
Caterpillar	Cesab
Challenger	Champion
Claas	Clark
Combilift	Crown
Daewoo-Doosan	Demag
Deutz-Fahr	Dressta

Machinery

Drott	Dynapack
Extec	Faun
Fendt	Fiat
Fiatallis	Flexicoil
Furukawa	Gehl
Genie	Grove-gmk
Halla	Hamm
Hangcha	Hanix
Hanomag	Hartl
Haulpack	Hiab
Hidromek	Hino truck
Hitachi	Hyster
Hyundai	IHI
Ingersoll-rand	JCB
JLG	John-Deere
Jungheinrich	Kalmar
Kato	Kioti
Kleeman	Kobelco
Komatsu	Kramer
Kubota	Lamborghini
Landini	Liebherr
Linde	Link-belt
Manitou	Massey-Ferg.
Mccormick	MDI-Yutani
Mitsubishi	Moxy
Mustang	Neusson
New-Holland	Nichiyu
Nissan	OK
OM-Pimespo	others-tech
Pel-Job	PH-mining
Poclain	Powerscreen
Same	Samsung
Sandvik	Scania
Schaefer	Schramm
Sennebogen	Shangli
Shibaura	Steiger
Steinbock	Steyr
Still	Sumitomo
Super-pac	Tadano
Takeuchi	TCM
Terex	Toyota
Valpadana	Venieri
Versatile	Vogele
Volvo	Weidemann
Wirtgen	Yale
YAM	Yanmar