

ORIGINAL INSTRUCTIONS - according to Directive 2006/42/EC, Annex I 1.7.4.1

**Magnum™ 250**

**Magnum™ 280**

**Magnum™ 310**

**Magnum™ 340**

**Magnum™ 380**

**Tractor**

*PIN ZERF08100 and above*

# OPERATOR'S MANUAL

**Part number 47824521**

2<sup>nd</sup> edition English

February 2015

*Replaces part number 47585604*



# Contents

---

## 1 GENERAL INFORMATION

Note to the owner.....	1-1
Engine tampering.....	1-2
Tractor intended use.....	1-2
Electro-magnetic compatibility (EMC).....	1-2
Manual scope.....	1-3
ISOBUS certification.....	1-4
Product identification.....	1-5
Manual storage.....	1-8
Machine orientation.....	1-9
Component Identification.....	1-10
Declaration of conformity.....	1-13
Selective Catalytic Reduction (SCR) system.....	1-15

## 2 SAFETY INFORMATION

Safety rules and signal word definitions.....	2-1
Safety rules - General.....	2-2
Safety rules - General maintenance safety.....	2-4
Safety rules - Wheels and tires.....	2-4
Safety rules - Driving on public roads and general transportation safety.....	2-4
Safety rules - Fire and explosion prevention.....	2-5
Safety rules - General battery safety.....	2-5
Safety rules - Hydraulic system safety.....	2-6
Safety rules - Passenger seat safety.....	2-6
Safety rules - Operator presence system.....	2-7
Safety rules - Power Take-Off (PTO).....	2-7
Safety rules - Reflectors and warning lights.....	2-7
Safety rules - Seat belts.....	2-7
Safety rules - Roll Over Protective Structure (ROPS).....	2-7
Safety rules - Cab protection.....	2-9
Safety rules - Air conditioning system.....	2-9
Safety rules - Personal Protective Equipment (PPE).....	2-9
Safety rules - Do Not Operate tag.....	2-9
Safety rules - Hazardous chemicals.....	2-9
Safety rules - Utility safety.....	2-10
Safety rules - Electrical storm safety.....	2-10
Safety rules - Mounting and dismounting.....	2-10
Safety rules - Working at heights.....	2-11
Safety rules - Lifting and overhead loads.....	2-11
Safety rules - Implements, tools and trailers.....	2-11
Safety rules - Roll over and tip over.....	2-12
Ecology and the environment.....	2-13
Safety signs.....	2-14
Selective Catalytic Reduction (SCR) exhaust treatment - Safety signs.....	2-27
Safety aspects.....	2-29
Noise levels.....	2-36

---

Vehicle vibration levels .....	2-37
Fire extinguisher.....	2-38
Emergency exit.....	2-39
Wheel wedges.....	2-40

### 3 CONTROLS AND INSTRUMENTS

#### ACCESS TO OPERATOR'S PLATFORM

Tractor access .....	3-1
Lower step.....	3-3

#### OPERATOR'S SEAT

Control identification.....	3-4
-----------------------------	-----

#### INSTRUCTOR'S SEAT

Overview .....	3-8
----------------	-----

#### FORWARD CONTROLS

Steering column .....	3-9
Front console .....	3-12
Pedal controls .....	3-14

#### LEFT-HAND SIDE CONTROLS

Emergency brake lever.....	3-16
Pneumatic trailer brake.....	3-16

#### RIGHT-HAND SIDE CONTROLS

Armrest console .....	3-17
Multi function handle .....	3-18
Minimum/maximum RPM throttles .....	3-23
Control panel .....	3-25
Remote valve controls.....	3-34
Joystick .....	3-35
Armrest compartment .....	3-37
Adjusting the armrest console.....	3-39

#### REARWARD CONTROLS

Fender console .....	3-40
Automatic temperature controls .....	3-43
Automatic temperature control system .....	3-46
Ventilation .....	3-47

#### OVERHEAD CONTROLS

Interior lamps .....	3-49
----------------------	------

#### EXTERIOR CONTROLS

Rear fender.....	3-50
------------------	------

Front hitch .....	3-52
-------------------	------

## **INSTRUMENT CLUSTER**

Overview .....	3-53
Gauges .....	3-54
Status and warning icons .....	3-55
Upper display .....	3-58
Lower display .....	3-62
Keypad .....	3-64
Setup menu .....	3-66
Rear tire radius chart .....	3-72
Adjust menu .....	3-73
Performance features .....	3-81

## **4 OPERATING INSTRUCTIONS**

### **COMMISSIONING THE UNIT**

Engine - Safety rules .....	4-1
-----------------------------	-----

### **STARTING THE UNIT**

Normal engine starting .....	4-3
Cold starting aids .....	4-7
Cold temperature operation .....	4-9

### **STOPPING THE UNIT**

Stopping the engine .....	4-11
---------------------------	------

### **MOVING THE UNIT**

<b>FULL POWERSHIFT TRANSMISSION</b> .....	4-13
Powershift transmission .....	4-13
Best practices for prolonged transmission life .....	4-14
Inching pedal and throttle .....	4-15
Powershift transmission controls .....	4-16
Upper display - Powershift transmission .....	4-19
Driving the Powershift vehicle .....	4-21
Setting default gears .....	4-26
Automatic Productivity Management (APM) .....	4-28
<b>CONTINUOUSLY VARIABLE TRANSMISSION (CVT)</b> .....	4-36
CVX brake, pedal and throttle operation .....	4-36
CVX controls .....	4-41
Upper display .....	4-46
CVX operation .....	4-48
Driving the CVX transmission .....	4-51
Transmission messages .....	4-56
<b>POWERSHIFT AND CVT TRANSMISSIONS</b> .....	4-58
Selective Catalytic Reduction (SCR) system .....	4-58
Engine idling or full catalyst messages .....	4-68
Mechanical Front Drive (MFD) .....	4-69
Differential lock system .....	4-72

---

Suspended axle .....	4-74
Ride control.....	4-78
Engine power boost .....	4-80
Constant engine speed.....	4-81
Suspended cab.....	4-84
Electronic end of row system.....	4-85

## PARKING THE UNIT

Automatic park lock.....	4-91
--------------------------	------

## 5 TRANSPORT OPERATIONS

### ROAD TRANSPORT

Tractor warning lamps.....	5-1
Safe transport speed .....	5-3

### SHIPPING TRANSPORT

Securing the tractor for shipping .....	5-4
---	-----

### RECOVERY TRANSPORT

Safety rules.....	5-5
Towing the tractor.....	5-6

## 6 WORKING OPERATIONS

### GENERAL INFORMATION

Overview .....	6-1
----------------	-----

### REAR POWER TAKE-OFF (PTO)

Safety rules.....	6-2
Connecting the Power Take-Off (PTO) .....	6-6
Interchangeable Power Take-Off (PTO) shaft .....	6-7
Rear Power Take-Off (PTO) operation .....	6-13
Power Take-Off (PTO) fender switch operation .....	6-17
Auto Power Take-Off (PTO) operation.....	6-18

### FRONT POWER TAKE-OFF (PTO)

Overview .....	6-21
Front Power Take-Off (PTO) operation.....	6-22

### REAR HITCH

Identification .....	6-25
Link adjustment.....	6-26
Hitch high clearance adjustment .....	6-30
Hydraulic links .....	6-33
Sway limiter adjustment .....	6-35
Automatic telescoping stabilizers.....	6-36

---

Lower link block adjustment .....	6-38
Mechanical float adjustment.....	6-40
Hitch operation .....	6-41
Hitch remote switch operation.....	6-46
Position control operation .....	6-48
Load control operation.....	6-50
Slip control operation .....	6-52
Hitch set point .....	6-54

## FRONT HITCH

Overview .....	6-56
Front hitch operation .....	6-57

## DRAWBARS AND TOWING ATTACHMENTS

Safety rules.....	6-64
Drawbar capacity/position .....	6-65
Adjusting the drawbar .....	6-67

## TRAILER HITCHES

Clevis and special drawbars.....	6-69
Automatic trailer hitch .....	6-71
Auto pickup hitch operation.....	6-74
Manual trailer hitch .....	6-76

## TRAILER BRAKING SYSTEMS

Safety rules.....	6-78
Trailer brake connections.....	6-79
Air pressure monitoring.....	6-80

## AUXILIARY CONNECTIONS

Auxiliary power and lighting .....	6-81
Cab power connections .....	6-83
Radar connection.....	6-84
Implement ISOBUS connector .....	6-85

## HYDRAULIC REMOTE CONTROL VALVES

Valve couplers and connections .....	6-86
Motor return circuit .....	6-90
Power beyond circuit .....	6-91
Flow capacity .....	6-92
Hydraulic transport lock .....	6-93
Operating the controls.....	6-94
Remote valve display screens.....	6-98
Remote hydraulic auto mode.....	6-101
Auto depth control .....	6-104
Joystick operation .....	6-106

---

## BALLASTING THE TRACTOR

Guidelines .....	6-109
Tire load and inflation charts .....	6-118
Weights, cast metal.....	6-120
Wheel slip and power hop performance .....	6-129

## MECHANICAL FRONT DRIVE (MFD) AXLES

Front axle identification .....	6-132
Tire combinations and tread positions.....	6-133
Steering and oscillation stops .....	6-138
Tread and fender settings - Class 4.75 and 5.0 fixed front axles.....	6-140
Tread and fender settings - Class 4.75 and 5.0 saddle suspended front axles ..	6-143
Front wheel fenders .....	6-146
Front wheel fenders - Class 4.75 and 5.0 fixed and suspended axles .....	6-147

## REAR AXLE

Rear wheel installation .....	6-152
Rear wheel tread settings .....	6-154

## 7 MAINTENANCE

### GENERAL INFORMATION

Safety rules.....	7-1
Maintenance guidelines .....	7-2
Opening the hood .....	7-3
Closing the hood .....	7-4
Filling the fuel tank .....	7-5
Filling the Diesel Exhaust Fluid (DEF)/AdBlue® tank .....	7-7
Battery disconnect switch .....	7-9
Battery access and service.....	7-10
Tire and rim service.....	7-11
Tractor jacking points.....	7-13
Capacities .....	7-15
Consumables - Engine oil .....	7-16
Consumables - Transmission/hydraulic system fluid .....	7-17
Consumables - Diesel fuel .....	7-18
Consumables - Biodiesel fuels .....	7-19
Consumables - Diesel Exhaust Fluid (DEF)/AdBlue® .....	7-21
Consumables - Organic Acid Technology (OAT) coolant .....	7-23
Electrical component location .....	7-25
Lamps and bulbs .....	7-31
Maintenance chart notes .....	7-31
Maintenance summary decal.....	7-32

### MAINTENANCE CHART

Maintenance chart.....	7-33
------------------------	------

### At warning message display

Air filter service icon/message* .....	7-35
--	------

---

Water in fuel message.....	7-38
Transmission oil filter switch.....	7-40
Hydraulic oil filter switch.....	7-43

## First 10 to 50 hours

Wheel bolt torque.....	7-46
Weight bolt torque.....	7-47
Differential and planetary oil.....	7-48

## Every 10 hours or daily

Engine oil level.....	7-49
Transmission oil level.....	7-50
Engine coolant level.....	7-51
Air reservoir.....	7-51
Rear hitch and front axle.....	7-51

## Every 50 hours or weekly

Engine auxiliary fuel filter.....	7-52
-----------------------------------	------

## First 100 hours

Powershift transmission clutch calibration.....	7-54
---	------

## Every 100 hours

Front hitch.....	7-60
Front Power Take-Off (PTO) drive shaft.....	7-62

## Every 300 hours

Battery water level (Note B).....	7-63
Engine air intake and exhaust hoses.....	7-65
Engine coolant level - deaeration tank.....	7-67
Weight bolt torque.....	7-68
Front axle (Note A).....	7-69
Rear hitch (Note A).....	7-71
Fuel tank.....	7-73
Differential and planetary oil level (Note B).....	7-74
Transmission oil pressure.....	7-75
Front Power Take-Off (PTO) oil level.....	7-76

## Every 400 hours

Cab air filter*.....	7-77
----------------------	------

## Every 600 hours

Engine oil and filter*.....	7-80
Engine coolant antifreeze protection.....	7-83
Engine coolant hoses and clamps.....	7-83

---



Engine fuel filter* .....	7-85
Engine auxiliary fuel filter* .....	7-88
Fuel system bleeding .....	7-90
Changeable Power Take-Off (PTO) internal splines.....	7-91
Diesel Exhaust Fluid (DEF)/AdBlue® in-line filter .....	7-92
Front Power Take-Off (PTO) oil and filter* .....	7-93
Engine air precleaner* .....	7-95

### Every 1000 hours or annually

Pneumatic brake system dryer .....	7-96
Powershift transmission clutch calibration.....	7-97

### Every 1200 hours or annually

Differential and planetary oil .....	7-103
Engine air filters* .....	7-107

### Every 1500 hours

Transmission oil .....	7-110
Hydraulic oil filter* .....	7-113
Transmission oil filter* .....	7-114
Engine crankcase filter* .....	7-115

### Every 3000 hours

Secondary steering system.....	7-119
Engine valve adjustment (Note C).....	7-119

### Every 3600 hours

Diesel Exhaust Fluid (DEF)/AdBlue® supply module filter .....	7-120
---	-------

### Every 4000 hours or every four years

Engine coolant.....	7-123
---------------------	-------

### As required

Vehicle fire prevention .....	7-126
Cab air filter*.....	7-127
Grille screen and radiator area .....	7-130
Fuel tank vent filter .....	7-131
Transmission clutch and accumulator .....	7-131
Tire pressure .....	7-132
Fan belt .....	7-133
Diesel Exhaust Fluid (DEF)/AdBlue® tank .....	7-139
Remote valve collection bottle.....	7-141
Remote valve couplers .....	7-142
Emergency brake lever.....	7-143
Cab fabric and carpet.....	7-144

---

Seat belt .....	7-144
-----------------	-------

## STORAGE

Preparing for storage .....	7-145
Removal from storage .....	7-146

## ELECTRICAL SYSTEM

Radio or audio system .....	7-147
Battery removal and installation .....	7-148
Auxiliary battery connections .....	7-150
Headlight .....	7-151
Flood and work light .....	7-152
Fender tail light and warning light .....	7-152
Roof front warning and work light .....	7-153
Roof rear warning light .....	7-154
Rotating beacon light .....	7-155
Number plate light .....	7-155
Interior light .....	7-156

## 8 TROUBLESHOOTING

### ALARM(S)

Display warnings overview .....	8-1
Display warnings - Level 1 .....	8-2
Display warnings - Level 2 .....	8-4
Display warnings - Level 3 .....	8-7
Display warnings - Level 4 .....	8-9

### SYMPTOM(S)

Engine symptoms .....	8-11
Transmission symptoms .....	8-13
Hydraulic symptoms .....	8-14
Hitch symptoms .....	8-15
Brake symptoms .....	8-16
Cab environment symptoms .....	8-16
Electrical power system symptoms .....	8-17

## 9 SPECIFICATIONS

Engine specifications .....	9-1
Power train specifications .....	9-2
Operating speeds .....	9-5
Vehicle dimensions and shipping weight .....	9-6
Maximum operating weight .....	9-12

## 10 ACCESSORIES

Farming system displays .....	10-1
Rear view mirrors .....	10-2
Chemical tank mounting .....	10-4
General accessories .....	10-6

---

# 1 - GENERAL INFORMATION

## Note to the owner

This manual contains important information about the safe operation, adjustment and routine maintenance of your Magnum series tractor. The manual is divided into 10 chapters as outlined in the table of contents. Refer to the index at the end of this manual for locating specific items about your tractor.

Do NOT operate or permit anyone to operate or service this machine until you or the other persons have read this manual. Use only trained operators who have demonstrated the ability to operate and service this machine correctly and safely.

This Operator's Manual is to be stored in the manual compartment behind the operator's seat in the vehicle. Make sure this manual is in good condition. Contact your dealer to obtain additional manuals.

Your CASE IH dealer will instruct you in the general operation of your new equipment. Your dealer's staff of factory-trained service technicians will be glad to answer any questions that may arise regarding the operation of your machine. They will also provide any after-sales service you may need, and genuine CASE IH parts, your guarantee of quality and match.

## Engine tampering

The fuel system, exhaust after-treatment system, and engine on your machine are designed and built to government emissions standards. Tampering by dealers, customers, operators, and users is strictly prohibited by law.

Failure to comply could result in government fines, rework charges, invalid warranty, legal action, and possible confiscation of the machine until rework to original condition is completed. Engine service and/or repairs must be done by a certified technician only!

## Tractor intended use

Magnum series tractors with standard equipment and authorized attachments, are intended to be used for customary farming, land leveling and related agriculture operations (intended use). Installation of utility (dozer) blades, tile plows, or push bars on the tractor is not recommended. Any tractor damage resulting from the installation and/or use of such equipment is not covered by the tractor warranty.

Consult an authorized dealer or CNH Industrial America LLC on changes, additions or modifications that can be required for this machine to comply with various regulations and safety requirements. Unauthorized modifications will cause serious injury or death. Anyone making such unauthorized modifications is responsible for the consequences.

The tractor is not designed for light/heavy forestry applications; usage is prohibited for forestry applications.

The tractor is not designed for front end loader operation.

Do not use this machine for any purpose or in any manner other than as described in the manual, decals, or other product safety information provided with the machine. These materials define the machine's intended use.

Use in any other way is considered as contrary to the intended use. The manufacture accepts no liability for any damage or injury resulting from this misuse and these risks must be born solely by the user.

## Electro-magnetic compatibility (EMC)

This machine complies strictly with the European Regulations on electro-magnetic emissions. However, interference may arise as a result of add-on equipment which may not necessarily meet the required standards. As such interference can result in serious malfunction of the unit and/or create unsafe situations, you must observe the following:

- Ensure that each piece of non- CASE IH equipment installed on the machine bears the CE mark.
- The maximum power of emission equipment (radio, telephones, etc.) must not exceed the limits imposed by the national authorities of the country where you use the machine.
- The electro-magnetic field generated by the add-on system should not exceed **24 V/m** at any time and at any location in the proximity of electronic components.

Failure to comply with these rules will render the CASE IH warranty null and void.

## Manual scope

### Introduction to this manual

This manual gives information for use of your CASE IH machine, as intended and under the conditions foreseen by the manufacturer during normal operation and routine service and maintenance. This manual does not contain all the information related to periodical service, converting and repairs to be carried out by professional service personnel. For some of the latter activities, there may be a need for appropriate facilities, technical skills, and/or tools which are not supplied with the machine.

The manual is divided into sections as outlined in the General Table of Contents Page(s). Refer to the Detail Index at the end of this manual for locating specific items about your CASE IH machine.

### Scope and required training level

This manual gives information for use of your CASE IH machine, as intended and under the conditions foreseen by the manufacturer during normal operation and routine service and maintenance.

Normal operation consists of use of the CASE IH machine for the purpose intended by the manufacturer by an operator that is:

- Familiar with the CASE IH machine and the mounted or towed equipment.
- Complying with the information for operation and safe practices, as specified by the manufacturer in this manual and by the signs on the machine.

Normal operation includes:

- The preparation and storage of the CASE IH machine
- Swinging components into work position and vice versa
- Adding or removing ballast
- Picking up and setting off mounted or towed equipment
- The adjustment and setting of the CASE IH machine and equipment for the specific condition of the field and/or the crop.

Routine service and maintenance consists of activities that must be done daily in order to maintain its proper function by an operator that is

- Familiar with CASE IH machine characteristics
- Complying with the information for routine service and safe practices, as specified by the manufacturer in this manual and by the signs on the CASE IH machine. Routine service includes activities such as fueling, cleaning, washing, topping up fluid levels, greasing, and replacing consumable articles such as lamp bulbs.

This manual does not contain all the information related to periodical service, converting and repairs to be carried

out by CASE IH professional service personnel. For some of the latter activities, there may be a need for appropriate facilities, technical skills, and/or tools which are not supplied with the CASE IH machine.

Periodical service consists of activities that must be done at defined intervals:

- By trained personnel familiar with the CASE IH machine characteristics.
- By trained personnel complying with the information for periodical service and safe practices, as partly specified by the manufacturer in this manual and in other company literature.
- In order to maintain the expected life time of the CASE IH machine. Periodical service includes activities such as changing oil from the engine, hydraulic circuits or transmission, or other substances or components that need periodical exchange.

Converting consists of activities that must be done:

- By professional service personnel familiar with the CASE IH machine characteristics
- Complying with the information for converting, as partly specified by the manufacturer in this manual, in assembly instructions, or in other company literature
- In order to rebuild the CASE IH machine in a configuration which is appropriate for a specific crop or soil condition (e.g., installation of dual wheels etc.)

Repair (and dismantling) consists of activities that must be done:

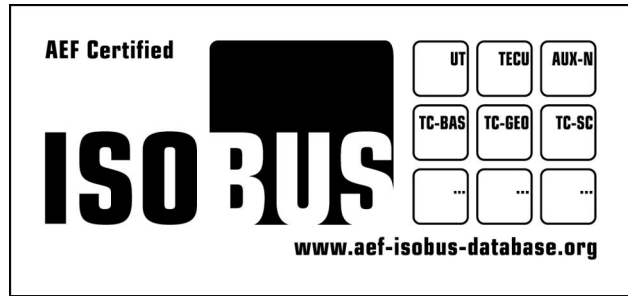
- By professional service personnel familiar with the CASE IH machine characteristics
- Complying with the information for repair, as specified by the manufacturer in the CASE IH dealer's service manual.
- In order to restore the proper function of the CASE IH machine after a failure or degradation of performance when scrapping or dismantling the CASE IH machine.

Read this manual before you start the engine or operate this CASE IH machine. If any information in this manual is not understood, or if you need more information or assistance, contact your CASE IH dealer.

All persons training to operate, or who will be operating this CASE IH machine, should be old enough to possess a valid local vehicle operating permit (or other applicable local age requirement) and must have demonstrated the ability to operate and service the CASE IH machine correctly and safely.

## ISOBUS certification

The Agricultural Industry Electronics Foundation (AEF) certified label indicates that various system components are in compliance with the ISOBUS 11783 standard. The software in your tractor ISOBUS control module – the Tractor Electronic Control Unit (TECU) – has been independently tested and received basic TECU certification.



RAIL14TR02690AA 1

**Buy Now**



Our support email:

[ebooklibonline@outlook.com](mailto:ebooklibonline@outlook.com)