

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

# OPERATOR'S MANUAL

---

**T7.220**

**T7.235**

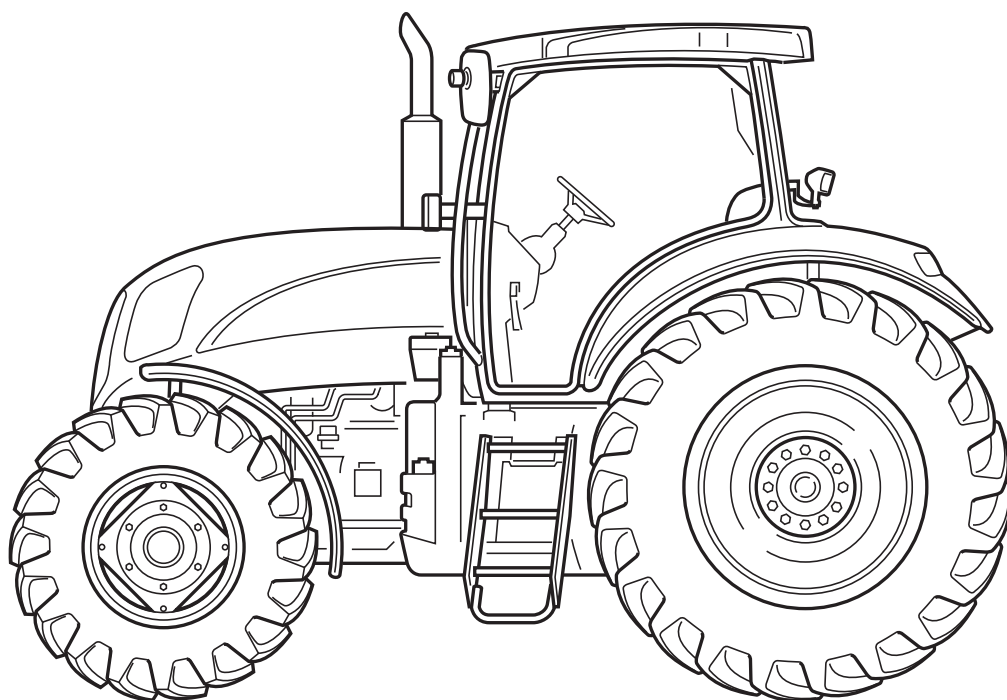
**T7.250**

**T7.260**

**T7.270**

Sidewinder II™

Auto Command - Power Command Tractors



**Part Number 84571713**

3rd edition English  
January 2012





## OPERATOR'S MANUAL



**T7.220 AutoCommand , T7.220 Power Command , T7.235 AutoCommand ,  
T7.235 Power Command , T7.250 AutoCommand , T7.250 Power Command ,  
T7.260 AutoCommand , T7.260 Power Command , T7.270 AutoCommand**

# Contents

---

## 1 GENERAL INFORMATION

CE DECLARATION OF CONFORMITY .....	1-1
METRIC AND IMPERIAL UNITS ABBREVIATIONS .....	1-3
TO THE OWNER .....	1-5
PRODUCT IDENTIFICATION .....	1-7
ENGINE IDENTIFICATION .....	1-8
DRIVELINE IDENTIFICATION .....	1-9
Part identification .....	1-9
CAB IDENTIFICATION .....	1-9
PRODUCT IDENTIFICATION PLATE .....	1-10
ECOLOGY AND THE ENVIRONMENT .....	1-11
NOISE LEVEL .....	1-12
PROGRAMMING TRACTOR FUNCTIONS .....	1-12
BEFORE OPERATING THE TRACTOR .....	1-13
INTERNATIONAL SYMBOLS .....	1-14
VIBRATION LEVEL INFORMATION SHEET .....	1-15
MACHINE STABILITY .....	1-16
INSTRUCTOR'S SEAT .....	1-20
SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM .....	1-21

## 2 SAFETY INFORMATION

SAFETY DECALS .....	2-1
SAFETY PRECAUTIONS .....	2-9
BEFORE DRIVING THE TRACTOR .....	2-10
DRIVING THE TRACTOR .....	2-11
OPERATING THE TRACTOR .....	2-12
OPERATING THE P.T.O. ....	2-14
OPERATING THE EXTERNAL CONTROLS .....	2-14
SERVICING THE TRACTOR .....	2-15
PREVENTION OF FIRE OR EXPLOSION .....	2-18
DIESEL FUEL .....	2-19
FIRE EXTINGUISHER .....	2-20
PROTECTION OFFERED BY THE TRACTOR .....	2-21
INTENDED USE STATEMENT .....	2-24
SAFETY ASPECTS .....	2-26

## 3 CONTROLS/INSTRUMENTS

### ACCESS TO OPERATOR'S PLATFORM

INTRODUCTION .....	3-1
USER PLATFORM - Localisation overview .....	3-5
CAB AIR FILTERS .....	3-7
IN CAB STORAGE (where fitted) .....	3-8
CABLE AND WIRING ROUTING .....	3-9
MOBILE TELEPHONE USAGE .....	3-10
IMPLEMENT MONITOR INSTALLATION .....	3-11
CAB AIR PRESSURISATION MONITOR (where fitted) .....	3-11

### OPERATOR'S SEAT

AIR SUSPENSION SEAT .....	3-13
AIR SUSPENSION SEAT DELUXE .....	3-15

---

ARMREST CONTROLS.....	3-20
SEAT BELT.....	3-21
<b>INSTRUCTOR'S SEAT</b>	
INSTRUCTIONAL SEAT (where fitted).....	3-22
<b>FORWARD CONTROLS</b>	
KEY- START SWITCH.....	3-23
HAZARD WARNING LIGHT SWITCH.....	3-23
LIGHT-/ TURN LEVER.....	3-24
FOLLOW ME HOME LIGHTS.....	3-24
WINDSHIELD WIPER AND WASHER CONTROLS.....	3-25
SHUTTLE LEVER.....	3-26
ELECTRONIC PARK BRAKE.....	3-29
CLUTCH/ INCHING PEDAL.....	3-33
FOOT THROTTLE PEDAL.....	3-33
FOOT BRAKES.....	3-34
EXHAUST BRAKE (where fitted).....	3-35
STEERING COLUMN.....	3-36
ADJUSTABLE AIR VENTS.....	3-36
<b>LEFT-HAND SIDE CONTROLS</b>	
HANDBRAKE.....	3-37
<b>RIGHT-HAND SIDE CONTROLS</b>	
INTEGRATED CONTROL PANEL.....	3-38
INTEGRATED CONTROL PANEL.....	3-39
HAND THROTTLE.....	3-40
Multi Function Handle.....	3-41
Armrest controller Tractor Multi-Function (TMF) - Operating.....	3-41
<b>REARWARD CONTROLS</b>	
SWITCHES ON C-PILLAR.....	3-42
HYDRAULIC MASTER SWITCH.....	3-43
HEATED SCREENS (where fitted).....	3-44
FAST STEERING SYSTEM (where fitted).....	3-45
BATTERY ISOLATOR SWITCH.....	3-47
CLIMATE CONTROLS.....	3-48
MANUAL TEMPERATURE CONTROL.....	3-50
AUTOMATIC TEMPERATURE CONTROL (ATC).....	3-51
<b>OVERHEAD CONTROLS</b>	
SWITCH PANEL WORKLIGHTS.....	3-52
RADIO/CASSETTE/CD PLAYER (where fitted).....	3-53
INTERIOR LIGHT.....	3-54
<b>INSTRUMENT CLUSTER</b>	
ANALOGUE/ DIGITAL INSTRUMENT CLUSTER.....	3-55
GAUGES.....	3-55
INDICATOR AND WARNING LIGHTS.....	3-56

---

DISPLAYS .....	3-58
TRANSMISSION DISPLAY .....	3-60
TRANSMISSION DISPLAY .....	3-61
KEYPAD ENHANCED .....	3-63
SELECTING OR CHANGING THE DISPLAY SETTINGS .....	3-65
GROUND SPEED CALIBRATION .....	3-66
PERFORMANCE MONITOR .....	3-69
ARMREST COLOUR DISPLAY .....	3-76
POP- UP SCREENS ON COLOUR DISPLAY .....	3-78
PERFORMANCE MONITOR ON COLOUR DISPLAY .....	3-84
PROGRAMMING THE DISPLAYS .....	3-87
ALARM FUNCTIONS .....	3-90
ACCESSING STORED ERROR CODES .....	3-92
WARNING AND ADVISORY SYMBOLS .....	3-93

## 4 OPERATING INSTRUCTIONS

### COMMISSIONING THE UNIT

TRACTOR REFUELLING .....	4-1
--------------------------	-----

### STARTING THE UNIT

STARTING THE ENGINE .....	4-3
GRID HEATER COLD START AID (where fitted) .....	4-4
FUEL HEATER (where fitted) .....	4-5
COOLANT IMMERSION HEATER (where fitted) .....	4-5
TRANSMISSION OIL HEATER (where fitted) .....	4-6
TRANSMISSION - Operating Cold weather .....	4-7
BOOSTING THE BATTERY .....	4-8

### STOPPING THE UNIT

STOPPING THE ENGINE .....	4-9
AUTOMATIC ENGINE SHUTDOWN .....	4-9
AUTOMATIC ENGINE SHUTDOWN WITH ENHANCED KEYPAD (where fitted) ....	4-10

### MOVING THE UNIT

OPERATING IN COLD TEMPERATURES .....	4-11
REVERSIBLE ENGINE FAN .....	4-13
FULL POWERSHIFT TRANSMISSION .....	4-14
TRANSMISSION OPERATION .....	4-14
DRIVING THE TRACTOR .....	4-15
TRANSMISSION Powershift - Operating .....	4-17
SPEED MATCHING .....	4-22
PROGRAMMING REVERSE GEAR RATIOS .....	4-23
CREEPER GEARS (where fitted) .....	4-25

## 5 TRANSPORT OPERATIONS

### PREPARING FOR ROAD TRANSPORT

CARRYING THE TRACTOR ON A TRANSPORTER .....	5-1
SECURE THE HIGH VISIBILITY ROOF PANEL .....	5-1

---

## RECOVERY TRANSPORT

TOWING THE TRACTOR .....	5-2
--------------------------	-----

## 6 WORKING OPERATIONS

### GENERAL INFORMATION

VARIABLE ENGINE POWER MANAGEMENT .....	6-1
CONSTANT ENGINE SPEED .....	6-3
DIFFERENTIAL LOCK .....	6-7
FOUR WHEEL DRIVE .....	6-9
FRONT AXLE SUSPENSION (where fitted) .....	6-11
AUTOMATED HEADLAND FUNCTIONS .....	6-12
QUICK GUIDE .....	6-12
RECORDING AND RE-PLAYING .....	6-14
EXPLANATION OF SYMBOLS .....	6-18
RECORDING A SEQUENCE .....	6-19
RE-PLAYING A SEQUENCE .....	6-21
HEADLAND FUNCTION AND COLOUR DISPLAY SCREENS .....	6-25
DELETING A SEQUENCE WITH COLOUR DISPLAY .....	6-28

### TRANSMISSION

TRANSMISSION OPERATION .....	6-29
Command - Operating .....	6-30
TRANSMISSION Powershift - Operating Ground speeds .....	6-31
DRIVE PEDAL .....	6-36
ENGINE SPEED CONTROL .....	6-37
SHUTTLE LEVER .....	6-38
SPEED MATCHING .....	6-39
TRANSMISSION CONTROLS .....	6-40
PROGRAMME THE MAXIMUM SPEED .....	6-42
STATIONARY CONTROL .....	6-45
ANTI JACK KNIFE .....	6-46
MANUAL MODE .....	6-47
AUTOMATIC MODE .....	6-48
CRUISE MODE .....	6-50
P.T.O. MODE .....	6-53
ERROR CODES .....	6-54

### REAR POWER TAKE-OFF

P.T.O. OPERATING PRECAUTIONS .....	6-55
CHANGING THE P.T.O. OUTPUT SHAFT .....	6-55
ATTACHING P.T.O. DRIVEN EQUIPMENT .....	6-56
P.T.O. OPERATION .....	6-57
TWO-SPEED P.T.O. SYSTEM .....	6-62
MULTI-SPEED, SHIFTABLE P.T.O. .....	6-64
ELECTRONIC P.T.O. SYSTEM Electronic (where fitted) .....	6-67
EXTERNAL P.T.O. CONTROLS .....	6-68
Auto PTO operation .....	6-70

### FRONT POWER TAKE OFF

---

P.T.O. OPERATION.....	6-73
AUTO P.T.O. OPERATION .....	6-75
FRONT HITCH FRONT HITCH MANAGEMENT .....	6-77

## REAR HITCH

ELECTRONIC DRAFT CONTROL .....	6-81
SETTINGS AND DISPLAY .....	6-85
ELECTRONIC DRAFT CONTROL OPERATION .....	6-87
EXTERNAL HITCH CONTROLS .....	6-92

## FRONT HITCH

SETTINGS AND ADJUSTMENTS .....	6-94
HITCH OPERATION.....	6-97
AUXILIARY FRONT COUPLERS (where fitted).....	6-103
EXTERNAL HITCH CONTROLS .....	6-105

## ELECTRO-HYDRAULIC REMOTE CONTROL VALVES (where fitted)

REMOTE CONTROL VALVES .....	6-106
SETTINGS AND ADJUSTMENTS .....	6-113
SETTING THE REMOTE VALVE PRIORITY.....	6-118
CREATING TIMER PROGRAMMES.....	6-119
CONNECTING REMOTE CYLINDERS .....	6-126
OPERATING WITH REMOTE VALVES .....	6-128
JOYSTICK OPERATION WITH A FRONT LOADER.....	6-130
MID MOUNT REMOTE VALVES .....	6-132
EXTERNAL EHR CONTROLS .....	6-133
HYDRAULIC OIL LEVEL WHEN USING REMOTE HYDRAULIC EQUIPMENT .....	6-134

## HYDRAULIC POWER BEYOND PORT

HYDRAULIC POWER BEYOND PORT FOR EXTERNAL SERVICES .....	6-136
Power beyond - Static description.....	6-136
ISO POWER BEYOND COUPLINGS .....	6-138

## THREE POINT HITCH

ATTACHING THREE-POINT HITCH EQUIPMENT .....	6-139
LIFT ROD ADJUSTMENT .....	6-141
TOP LINK ADJUSTMENT .....	6-143
FLEXIBLE LINK END ADJUSTMENT .....	6-145
QUICK HITCH .....	6-146
LINKAGE STABILISER ADJUSTMENT .....	6-148

## DRAWBARS AND TOWING ATTACHMENTS

DRAWBARS AND TOWING ATTACHMENTS .....	6-152
SWINGING DRAWBARS.....	6-154
AUTOMATIC PICK-UP HITCH .....	6-157
REAR TOW HITCH.....	6-160

## TRAILER BRAKING SYSTEMS

AIR-OPERATED TRAILER BRAKES .....	6-166
AIR-OPERATED TRAILER BRAKES (Italy only).....	6-170
TRAILER BRAKE BIAS CONTROL .....	6-171

---

AUXILIARY AIR SUPPLY CONNECTOR (where fitted).....	6-171
HYDRAULIC TRAILER BRAKES .....	6-172
HYDRAULIC TRAILER BRAKES (Italy only).....	6-173

## WHEEL TRACK ADJUSTMENT

FRONT WHEEL TRACK ADJUSTMENT .....	6-174
FRONT WHEEL ALIGNMENT .....	6-177
STEERING STOPS .....	6-178
FRONT AXLE OSCILLATION STOPS .....	6-178
FRONT FENDER.....	6-179
REAR WHEEL TRACK ADJUSTMENT .....	6-181
FLANGE TYPE AXLE (where fitted) .....	6-181
BAR TYPE AXLE (where fitted) .....	6-185

## BALLASTING AND TYRES

BALLASTING AND TYRES .....	6-191
IRON WEIGHTS (where fitted).....	6-194
LIQUID BALLAST .....	6-197
TYRE INFLATION .....	6-199
TYRE PRESSURES AND PERMISSIBLE LOADS .....	6-200

## AUXILIARY POWER CONNECTIONS

DIAGNOSTIC SOCKET .....	6-202
TRAILER SOCKET ELECTRICAL .....	6-202
ELECTRICAL POWER CONNECTORS .....	6-203
INTERNAL POWER CONNECTORS .....	6-203
EXTERNAL POWER CONNECTORS .....	6-205

## 7 MAINTENANCE

### GENERAL INFORMATION

INTRODUCTION .....	7-1
FUEL REQUIREMENT .....	7-2
BIODIESEL FUEL .....	7-4
ENGINE OIL CHANGE .....	7-6
PROTECTIVE DEVICES .....	7-7
LUBRICANTS AND COOLANTS .....	7-9
TRACTOR JACKING POINTS .....	7-11
GENERAL SPECIFICATIONS.....	7-12
CAPACITIES .....	7-13

### MAINTENANCE CHART

Maintenance Chart .....	7-14
-------------------------	------

### WHEN THE WARNING LAMP LIGHTS

CHANGE THE ENGINE AIR CLEANER OUTER ELEMENT .....	7-16
DRAIN FUEL SYSTEM WATER SEPARATOR.....	7-17

### EVERY 10 HOURS OR EACH DAY

CHECK ENGINE COOLANT LEVEL.....	7-18
---------------------------------	------

---



CHECK ENGINE OIL LEVEL.....	7-19
CHECK REMOTE CONTROL VALVE DRAIN BOTTLES.....	7-19
CHECK WINDSCREEN WASHER RESERVOIR.....	7-20
DRAIN AIR RESERVOIR ON AIR OPERATED TRAILER BRAKE.....	7-20

## FIRST 50 HOURS

SERVICE OPERATIONS.....	7-21
-------------------------	------

## EVERY 50 HOURS

CLEAN THE CAB AIR FILTER.....	7-23
CLEAN THE SCR COVER AIR DUCTS.....	7-25
CLEAN THE COOLER SECTION.....	7-26
ALL GREASE FITTINGS.....	7-27
CHECK FRONT AND REAR WHEEL NUTS.....	7-34
CHECK TYRE PRESSURES AND TYRE CONDITION.....	7-34

## EVERY 100 HOURS

INSPECT POLY V-BELT.....	7-35
INSPECT COMPRESSOR DRIVE BELT.....	7-35

## EVERY 300 HOURS

CHECK BATTERY FLUID LEVEL.....	7-36
CHECK TRANSMISSION/REAR AXLE AND HYDRAULIC OIL LEVEL.....	7-38
ADJUST HANDBRAKE.....	7-39
CHECK FRONT P.T.O. GEARBOX OIL LEVEL.....	7-39
CHECK 4WD FRONT AXLE DIFFERENTIAL AND HUBS OIL LEVEL.....	7-40

## EVERY 600 HOURS

CHANGE ENGINE OIL AND FILTER.....	7-41
CHANGE FUEL PRE-FILTER AND FUEL FILTER ELEMENT.....	7-43
CHANGE THE ENGINE AIR CLEANER OUTER ELEMENT.....	7-44
CHANGE CHARGE PUMP OIL FILTER.....	7-45
CHANGE CHARGE PUMP AND GEAR PUMP OIL FILTER.....	7-46
CHECK ENGINE AIR INTAKE CONNECTIONS.....	7-47
CHECK TRANSMISSION OIL COOLER PIPE COUPLINGS.....	7-48
CLEAN DEF/ AdBlue INLINE FILTER.....	7-48

## EVERY 1200 HOURS OR ANNUALLY

CHANGE CAB AIR FILTERS.....	7-49
CHANGE MAIN OIL FILTER CARTRIDGE.....	7-50
CHANGE TRANSMISSION/ REAR AXLE AND HYDRAULIC OIL.....	7-51
CHANGE 4WD DIFFERENTIAL OIL.....	7-52
CHANGE 4WD PLANETARY HUB OIL.....	7-53
CHANGE FRONT P.T.O. GEARBOX OIL.....	7-53
GREASE REAR AXLE SHAFT BEARING.....	7-54

## EVERY 1200 HOURS OR EVERY 2 YEARS

CHECK BATTERY FLUID LEVEL.....	7-55
CHANGE DEF/ AdBlue INLINE FILTER.....	7-56
CHANGE ENGINE AIR CLEANER INNER ELEMENT.....	7-57
CHANGE ENGINE BREATHER FILTER.....	7-58
CHECK VALVE TAPPET CLEARANCE.....	7-58

---

CHANGE ENGINE COOLANT FLUID .....	7-59
CHANGE AIR BRAKE DRIER RESERVOIR .....	7-63
CHANGE POLY V-BELTS .....	7-64

## EVERY 3600 HOURS OR EVERY 2 YEARS

CHANGE DEF/ AdBlue MAIN FILTER .....	7-65
--------------------------------------	------

## EVERY 36 MONTHS

SERVICE THE AIR CONDITIONER SYSTEM .....	7-65
CHECK BATTERY FLUID LEVEL .....	7-67

## GENERAL MAINTENANCE

CLEANING THE TRACTOR .....	7-69
FUEL SYSTEM PRE- FILTER AND WATER TRAP .....	7-71
BLEEDING THE FUEL INJECTION SYSTEM .....	7-71
CHECK BRAKE PEDAL LATCHING/UNLATCHING .....	7-72
ADJUST CAB SUSPENSION (where fitted) .....	7-73
ADJUST AUTOMATIC PICK- UP HITCH .....	7-74
TRANSMISSION CLUTCH CALIBRATION .....	7-75
TRANSMISSION - Check .....	7-76
HEADLIGHT AND WORKLAMP ADJUSTMENT .....	7-81
BULB REPLACEMENT .....	7-82
FUSES AND RELAYS .....	7-86
PROTECTING THE ELECTRONIC AND ELECTRICAL SYSTEMS DURING BATTERY CHARGING OR WELDING .....	7-91
BATTERY REMOVAL AND INSTALLATION .....	7-92

## STORAGE

TRACTOR STORAGE .....	7-93
PREPARATION FOR USE AFTER STORAGE .....	7-94

## 8 TROUBLESHOOTING

### FAULT CODE RESOLUTION

INTRODUCTION .....	8-1
--------------------	-----

### ALARM(S)

FAULT CODES AND SYMBOLS .....	8-2
-------------------------------	-----

### SYMPTOM(S)

ENGINE .....	8-4
TRANSMISSION .....	8-5
HYDRAULICS .....	8-5
THREE POINT HITCH .....	8-6
BRAKES .....	8-6
CAB .....	8-7
ELECTRICAL SYSTEM .....	8-7

## 9 SPECIFICATIONS

GENERAL DIMENSIONS .....	9-1
FRAME AND CAB - General specification .....	9-1
CAPACITIES .....	9-4
TRANSMISSION - Capacity .....	9-5
FRONT AXLE - Capacity .....	9-5
ENGINE .....	9-6
TRANSMISSION .....	9-7
REAR POWER TAKE-OFF .....	9-8
FRONT POWER TAKE OFF .....	9-8
HYDRAULIC SYSTEM .....	9-9
THREE POINT HITCH .....	9-12
REMOTE CONTROL VALVES .....	9-13
THREE POINT HITCH FRONT .....	9-13
BRAKES.....	9-14
STEERING .....	9-14
ELECTRICAL EQUIPMENT .....	9-15
MINIMUM HARDWARE TIGHTENING TORQUES .....	9-16

## 10 ACCESSORIES

EXTERNAL REAR VIEW MIRRORS.....	10-1
AUXILIARY HEADLIGHTS .....	10-2
ROTATING BEACON.....	10-3

## 11 FORMS AND DECLARATIONS

Service record 1st 50 hour, Owner copy .....	11-3
Service record 1st 50 hour, Dealer copy .....	11-5

---



For your better and easier understanding of the document you'll find original text reproduced hereafter together with some notes.

Clause of 2006/42/EC Annex II	EN EC Declaration of conformity According to Directive 2006/42/EC.
1.A.1	We, [1]
1.A.2	Represented by Guiseppe Gavioli CNH Europe Holding S.A. 13, Rue Aldringen L- 1118 Luxembourg
1.A.3	declare under our sole responsibility, that the product: Agricultural tractor Trade Name: [2] Model: [3] Type: [4] Serial Number: [5]
1.A.4	to which this declaration relates, fulfils all the relevant provisions of the Directive 2006/42/EC, amended by [6]
1.A.7	For the relevant implementation of the provisions of the Directive, the following (harmonised) standards have been applied:  • ISO 26322-1 part 1 or 2 Other standards: see Operators Manual
1.A.9	Place and date of the declaration: [7]
1.A.10	Name and signature of the authorised person: [8]

## HEALTH AND SAFETY RELATED STANDARDS APPLIED TO YOUR TRACTOR

- ROPS PROTECTION is certified according to **EN 15694**.
- FOPS level on your tractor cab is certified according to **OECD Code 10**.
- HVAC (Heating, ventilation Air Conditioning) CAB is certified Category 1 according to **EN 15695-1**.
- HV (Heating, ventilation) cab is certified Category 1 according to **EN 15695-1**.
- NOISE EMISSION LEVELS are rated according to **77/311/EC**.
- VIBRATION LEVELS are rated according to **78/764/EEC**.

**NOTE:** See safety section 2 in this manual for further explanation and details on above mentioned standards and specific terminology.

Thank you so much for reading.  
Please click the “Buy Now!”  
button below to download the  
complete manual.



After you pay.

You can download the most  
perfect and complete manual in  
the world immediately.

Our support email:

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