# PUMA 130 CVT PUMA 145 CVT PUMA 160 CVT Tractors

# **OPERATOR'S MANUAL**

**Part Number 84479504** 

Ist edition English January 2012



# Contents

1	GENERAL INFORMATION		
	METRIC AND IMPERIAL UNITS ABBREVIATIONS		
	TO THE OWNER		
	PRODUCT IDENTIFICATION		
	ENGINE IDENTIFICATION		
	DRIVELINE IDENTIFICATION		
	CAB IDENTIFICATION ECOLOGY AND THE ENVIRONMENT	. 1-	٠/
	PROGRAMMING TRACTOR FUNCTIONS	. 1-	O.
	BEFORE OPERATING THE TRACTOR	. 1- 1 <sub>-</sub> 1	U.S
	INTERNATIONAL SYMBOLS		
	MACHINE STABILITY		
	INSTRUCTOR'S SEAT	1-1	6
	SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM	1-1	7
2	SAFETY INFORMATION  SAFETY PRECAUTIONS BEFORE DRIVING THE TRACTOR DRIVING THE TRACTOR OPERATING THE TRACTOR OPERATING THE P.T.O. OPERATING THE EXTERNAL CONTROLS SERVICING THE TRACTOR DIESEL FUEL PREVENTION OF FIRE OR EXPLOSION FIRE EXTINGUISHER PROTECTION OFFERED BY THE TRACTOR	. 2- . 2- . 2- . 2- . 2- . 2-1 2-1	234667901
3	INTENDED USE STATEMENT	2-1	5
	ACCESS TO OPERATOR'S PLATFORM INTRODUCTION CAB AIR FILTERS. IN CAB STORAGE (where fitted) CABLE AND WIRING ROUTING. MOBILE TELEPHONE USAGE IMPLEMENT MONITOR INSTALLATION CAB AIR PRESSURISATION MONITOR (where fitted).	. 3- . 3- . 3- . 3-	5 -6 -7 -7
	OPERATOR'S SEAT AIR SUSPENSION SEAT DELUXE SEAT BELT		
	INSTRUCTOR'S SEAT INSTRUCTIONAL SEAT (where fitted)	3-1	6
	FORWARD CONTROLS		

KEY- START SWITCH HAZARD WARNING LIGHT SWITCH. LIGHT-/ TURN LEVER FOLLOW ME HOME LIGHTS. WINDSHIELD WIPER AND WASHER CONTROLS ELECTRONIC PARK BRAKE CLUTCH/ INCHING PEDAL. FOOT BRAKES EXHAUST BRAKE (where fitted). STEERING COLUMN	3-17 3-18 3-19 3-20 3-24 3-24 3-25
LEFT-HAND SIDE CONTROLS HANDBRAKE	3-27
RIGHT-HAND SIDE CONTROLS INTEGRATED CONTROL PANEL	3-28
REARWARD CONTROLS SWITCHES ON C-PILLAR HYDRAULIC MASTER SWITCH HEATED SCREENS (where fitted) FAST STEERING SYSTEM (where fitted) BATTERY ISOLATOR SWITCH CLIMATE CONTROLS MANUAL TEMPERATURE CONTROL AUTOMATIC TEMPERATURE CONTROL (ATC).	3-30 3-31 3-32 3-34 3-35 3-36
OVERHEAD CONTROLS SWITCH PANEL WORKLIGHTS INTERIOR LIGHT	
INSTRUMENT CLUSTER INTEGRATED CONTROL UNIT. GAUGES INDICATOR AND WARNING LIGHTS DISPLAYS. KEYPAD BASIC KEYPAD ENHANCED SELECTING OR CHANGING THE DISPLAY SETTINGS ADJUST MENU CONFIGURE MENU PERFORMANCE MONITOR ARMREST COLOUR DISPLAY POP- UP SCREENS ON COLOUR DISPLAY PERFORMANCE MONITOR ON COLOUR DISPLAY PERFORMANCE MONITOR ON COLOUR DISPLAY PROGRAMMING THE DISPLAYS ALARM FUNCTIONS ACCESSING STORED ERROR CODES WARNING AND ADVISORY SYMBOLS	3-41 3-42 3-45 3-46 3-47 3-50 3-52 3-55 3-60 3-62 3-71 3-74 3-76

	COMMISSIONING THE UNIT TRACTOR REFUELLING	. 4-1
	STARTING THE UNIT STARTING THE ENGINE GRID HEATER COLD START AID (where fitted) FUEL HEATER (where fitted) COOLANT IMMERSION HEATER (where fitted) TRANSMISSION OIL HEATER (where fitted) BOOSTING THE BATTERY	. 4-4 . 4-5 . 4-5 . 4-6
	STOPPING THE UNIT STOPPING THE ENGINE	. 4-8
	MOVING THE UNIT OPERATING IN COLD TEMPERATURES REVERSIBLE ENGINE FAN	
5	TRANSPORT OPERATIONS  PREPARING FOR ROAD TRANSPORT  CARRYING THE TRACTOR ON A TRANSPORTER  SECURE THE HIGH VISIBILITY ROOF PANEL	
	RECOVERY TRANSPORT TOWING THE TRACTOR	. 5-2
6	WORKING OPERATIONS  GENERAL INFORMATION  VARIABLE ENGINE POWER MANAGEMENT  CONSTANT ENGINE SPEED.  DIFFERENTIAL LOCK  FOUR WHEEL DRIVE  FRONT AXLE SUSPENSION (where fitted)  AUTOMATED HEADLAND FUNCTIONS  QUICK GUIDE.  EXPLANATION OF SYMBOLS.  RECORDING AND RE-PLAYING  RECORDING A SEQUENCE  RE-PLAYING A SEQUENCE  HEADLAND FUNCTION AND COLOUR DISPLAY SCREENS  DELETING A SEQUENCE WITH COLOUR DISPLAY	. 6-3 . 6-6 . 6-8 6-10 6-11 6-13 6-14 6-17 6-19 6-23
	TRANSMISSION TRANSMISSION OPERATION	6-27

DRIVE PEDALENGINE SPEED CONTROL	. 6-28
SHUTTLE LEVER	. 6-31
TRANSMISSION CONTROLS	. 6-32
PROGRAMME THE MAXIMUM SPEED	
ANTI JACK KNIFE TRANSMISSION DISPLAY	
MANUAL MODE	. 6-38
AUTOMATIC MODEERROR CODES	
LIKKOK GODEG	. 0-40
REAR POWER TAKE-OFF	
P.T.O. OPERATING PRECAUTIONSCHANGING THE P.T.O. OUTPUT SHAFT	6-41
ATTACHING P.T.O. DRIVEN EQUIPMENT	6-41
P.T.O. OPERATION. TWO-SPEED P.T.O. SYSTEM	
THREE-SPEED P.T.O. SYSTEM	
GROUND DRIVE P.T.O. (where fitted)	
EXTERNAL P.T.O. CONTROLSAUTO P.T.O. OPERATION	
FRONT POWER TAKE OFF	
P.T.O. OPERATIONAUTO P.T.O. OPERATION	
7.6 1 6 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
REAR HITCH	
ELECTRONIC DRAFT CONTROL	
ELECTRONIC DRAFT CONTROL OPERATION	. 6-67
EXTERNAL HITCH CONTROLS	6-73
FRONT HITCH	
SETTINGS AND ADJUSTMENTS	
HITCH OPERATIONAUXILIARY FRONT COUPLERS (where fitted)	6-78
EXTERNAL HITCH CONTROLS	
HYDRAULIC REMOTE CONTROL VALVES	
REMOTE CONTROL VALVES	
CONNECTING REMOTE CYLINDERS	6-92
HYDRAULIC OIL LEVEL WHEN USING REMOTE HYDRAULIC EQUIPMENT	6-94
ELECTRO-HYDRAULIC REMOTE CONTROL VALVES (where fit	tod)
REMOTE CONTROL VALVES (WHERE III	,
SETTINGS AND ADJUSTMENTS	6-103
SETTING THE REMOTE VALVE PRIORITY	
CONNECTING REMOTE CYLINDERS	

OPERATING WITH REMOTE VALVES	. 6-120
JOYSTICK OPERATION WITH A FRONT LOADERMID MOUNT REMOTE VALVES	6 125
EXTERNAL FHR CONTROLS	6-127
EXTERNAL EHR CONTROLS	6-128
	00
LIVERALILIO DOMER REVONE DORT	
HYDRAULIC POWER BEYOND PORT	0.400
HYDRAULIC POWER BEYOND FOR EXTERNAL SERVICES	. 6-130
THREE POINT HITCH	
ATTACHING THREE-POINT HITCH EQUIPMENT	
LIFT ROD ADJUSTMENT	
TOP LINK ADJUSTMENTFLEXIBLE LINK END ADJUSTMENT	. 6-13/
QUICK HITCH	
LINKAGE STABILISER ADJUSTMENT	6-141
DDAMDADO AND TOMINIO ATTACIMAENTO	
DRAWBARS AND TOWING ATTACHMENTS	C 111
DRAWBARS AND TOWING ATTACHMENTS	
OWINGING DIVAWDARG	. 0-1-1
TRAILER BRAKING SYSTEMS	
AIR-OPERATED TRAILER BRAKES	
TRAILER BRAKE BIAS CONTROL	
HYDRAULIC TRAILER BRAKES	
THE TOTAL CONTROL OF THE TOTAL	. 0 104
NAMES TO A OLGAD II LOTA ASALT	
WHEEL TRACK ADJUSTMENT	0.455
FRONT WHEEL TRACK ADJUSTMENTFRONT WHEEL ALIGNMENT	
STEERING STOPS	
FRONT AXLE OSCILLATION STOPS	. 6-159
FRONT FENDERREAR WHEEL TRACK ADJUSTMENT	
FLANGE TYPE AXLE (where fitted)	
BAR TYPE AXLE (where fitted)	
DUAL REAR WHEELS (where fitted)	. 6-170
BALLASTING AND TYRES	
BALLASTING AND TYRES	. 6-173
IRON WEIGHTS (where fitted)	
LIQUID BALLAST	
TYRE INFLATIONTYRE PRESSURES AND PERMISSIBLE LOADS	. 6-181
TYRE PRESSURES AND PERMISSIBLE LOADS	. 6-182
AUXILIARY POWER CONNECTIONS	
DIAGNOSTIC SOCKET	. 6-184
TRAILER SOCKET ELECTRICAL	. 6-184
ELECTRICAL POWER CONNECTORS	
INTERNAL POWER CONNECTORS	0-185 6-197
	. U-101

## 7 MAINTENANCE

GENERAL INFORMATION	7.4
INTRODUCTION	/-1 7-2
BIODIESEL FUEL - Biodiesel fuels	7-4
ENGINE OIL CHANGE	7-5
PROTECTIVE DEVICESLUBRICANTS AND COOLANTS	/-/ 7 <sub>-</sub> 0
TRACTOR JACKING POINTS	7-11
GENERAL SPECIFICATIONS	7-11
CAPACITIES	7-12
NAAINITENIANIOE OLIABT	
MAINTENANCE CHART  Maintenance Chart	7 12
Maintenance Chart	1-13
WHEN THE WARNING LAMP LIGHTS	
CHANGE ENGINE AIR CLEANER OUTHER ELEMENT	7-15
DRAIN FUEL SYSTEM WATER SEPARATOR	7-16
CHECK BRAKE FLUID LEVEL	7-17
EVERY 10 HOURS OR EACH DAY	
CHECK ENGINE COLLANT LEVEL	
CHECK ENGINE OIL LEVELCHECK REMOTE CONTROL VALVE DRAIN BOTTLES	7-19 7-19
CHECK WINDSCREEN WASHER RESERVOIR	7-20
DRAIN AIR RESERVOIR ON AIR OPERATED TRAILER BRAKE	7-20
FIRST 50 HOURS SERVICE OPERATIONS	7.04
SERVICE OPERATIONS	/-21
EVERY 50 LIQUES	
EVERY 50 HOURS  CLEAN CAB AIR FILTER	7 23
CLEAN SCR COVER AIR DUCTS	
CLEAN COOLER SECTION	7-25
ALL GREASE FITTINGS	7-26
CHECK TYRE PRESSURES AND TYRE CONDITION	7-33 7-33
EVERY 100 HOURS	
INSPECT POLY V-BELT	7-34
INSPECT COMPRESSOR DRIVE BELT.	7-34
EVERY 300 HOURS	_
CHECK BATTERY FLUID LEVELADJUST HANDBRAKE	
CHECK TRANSMISSION/REAR AXLE AND HYDRAULIC OIL LEVEL	7-30 7-37
CHECK 4WD FRONT AXLE DIFFERENTIAL AND HUBS OIL LEVEL	7-38
CHECK FRONT P.T.O. GEARBOX OIL LEVEL	7-38

EVERY 600 HOURS  CHANGE ENGINE OIL AND FILTER  CHANGE FUEL PRE-FILTER AND FUEL FILTER ELEMENT  CHANGE ENGINE AIR CLEANER OUTHER ELEMENT  CHANGE CHARGE PUMP AND GEAR PUMP OIL FILTER  CHECK ENGINE AIR INTAKE CONNECTIONS  CHECK TRANSMISSION OIL COOLER PIPE COUPLINGS  CLEAN DEF/ AdBlue INLINE FILTER	. 7-41 . 7-42 . 7-43 . 7-44 . 7-45
EVERY 1200 HOURS OR ANNUALLY CHANGE CAB AIR FILTERS. CHANGE MAIN OIL FILTER CARTRIDGE. CHANGE TRANSMISSION/ REAR AXLE AND HYDRAULIC OIL. CHANGE 4WD DIFFERENTIAL OIL. CHANGE 4WD PLANETARY HUB OIL CHANGE FRONT P.T.O. GEARBOX OIL GREASE REAR AXLE SHAFT BEARING	. 7-47 . 7-48 . 7-49 . 7-50 . 7-50
EVERY 1200 HOURS OR EVERY 2 YEARS CHECK BATTERY FLUID LEVEL CHANGE DEF/ AdBlue INLINE FILTER. CHANGE ENGINE AIR CLEANER INNER ELEMENT. CHECK VALVE TAPPET CLEARANCE CHANGE ENGINE COOLANT FLUID CHANGE AIR BRAKE DRIER RESERVOIR CHANGE POLY V-BELTS.	. 7-53 . 7-54 . 7-55 . 7-56 . 7-60
EVERY 1800 HOURS OR EVERY 2 YEARS CHANGE ENGINE BREATHER FILTER	. 7-63
EVERY 3600 HOURS OR EVERY 2 YEARS CHANGE DEF/ AdBlue MAIN FILTER	. 7-64
EVERY 36 MONTHS SERVICE AIR CONDITIONER SYSTEM CHECK BATTERY FLUID LEVEL	
GENERAL MAINTENANCE CLEANING THE TRACTOR. FUEL SYSTEM PRE- FILTER AND WATER TRAP. BLEEDING FUEL INJECTION SYSTEM. CHECK BRAKE PEDAL LATCHING/UNLATCHING ADJUST CAB SUSPENSION (where fitted) HEADLIGHT AND WORKLAMP ADJUSTMENT. BULB REPLACEMENT. FUSES AND RELAYS. PROTECTING ELECTRONIC AND ELECTRICAL SYSTEMS DURING BAT CHARGING OR WELDING. BATTERY REMOVAL AND INSTALLATION	. 7-70 . 7-71 . 7-72 . 7-73 . 7-74 . 7-78 TERY

	STORAGE TRACTOR STORAGE PREPARATION FOR USE AFTER STORAGE	7-85 7-85
8 -	TROUBLESHOOTING	
	FAULT CODE RESOLUTION INTRODUCTION	. 8-1
	ALARM(S) FAULT CODES AND SYMBOLS	. 8-2
	SYMPTOM(S)  ENGINE  TRANSMISSION  HYDRAULICS  THREE POINT HITCH  BRAKES  CAB. ELECTRICAL SYSTEM	. 8-5 . 8-5 . 8-6 . 8-6 . 8-7
9 ;	SPECIFICATIONS GENERAL DIMENSIONS MAXIMUM OPERATING ANGLE MAXIMUM OPERATING WEIGHTS TRACTOR WEIGHTS CAPACITIES ENGINE FUEL SYSTEM AIR CLEANER SYSTEM COOLING SYSTEM TRANSMISSION REAR POWER TAKE-OFF FRONT POWER TAKE OFF HYDRAULIC SYSTEM THREE POINT HITCH REMOTE CONTROL VALVES THREE POINT HITCH FRONT FRONT REMOTE VALVE COUPLERS BRAKES STEERING ELECTRICAL EQUIPMENT MINIMUM HARDWARE TIGHTENING TORQUES	9-4 9-5 9-5 9-6 9-7 9-7 9-8 9-8 9-8 9-9 9-10 9-12 9-12 9-12 9-13 9-13
10	ACCESSORIES RADIO (where fitted) EXTERNAL REAR VIEW MIRRORS. AUXILIARY HEADLIGHTS ROTATING BEACON. FRONT- END LOADER FIXATION POINTS	10-1 10-3 10-4

1′	Service re	cord 1st 50	DECLARA hour, Own hour, Deal	er copy	 	 11-1 11-3

## 1 - GENERAL INFORMATION

## METRIC AND IMPERIAL UNITS ABBREVIATIONS

Typical applications	Metric unit		Imperial uni		
	Name	Symbol	Name	Symbol	
Area (Land area)					
	hectare	ha	acre	ac	
	square meter	m²	square foot	ft²	
			square inch	in²	
	square millimeter	mm²	square inch	in²	
Electricity					
	ampere	Α	ampere	Α	
	volt	V	volt	V	
	microfarad	μF	microfarad	μF	
	ohm	Ω	ohm	Ω	
Force					
	kilonewton	kN	pound	lb	
	newton	N	pound	lb	
Force per length					
	newton per meter	N/m	pound per foot	lb/ft	
			pound per inch	lb/in	
Frequency					
	megahertz	MHz	megahertz	MHz	
	kilohertz	kHz	kilohertz	kHz	
	hertz	Hz	hertz	Hz	
Frequency - Rotational					
	revolution per minute	r/min	revolution per minute	r/min <sup>a</sup>	
		rpm		rpm	
Length					
	kilometer	km	mile	mi	
	meter	m	foot	ft	
	centimeter	cm	inch	in	
	millimeter	mm	inch	in	
	micrometer	μm			
Mass				T	
	kilogram	kg	pound	lb	
	gram	g	ounce	OZ	
	milligram	mg			
Mass per Mass				Ī	
	milligram per kilogram	mg/ kg			
Power					
	kilowatt	kW	horsepower	Нр	
	watt	W	Btu per hour	Btu/hr	
			Btu per minute	Btu/min	
Pressure or stress (Force)	· · · · · · · · · · · · · · · · · · ·				
	kilopascal	kPa	pound per square inch	psi	
			inch of mercury	inHg	
	pascal	Pa	inch of water	inH2O	
	megapascal	MPa	pound per square inch	psi	

Typical applications	Metric unit		Imperial unit				
	Name	Symbol	Name	Symbol			
Temperature (other than T	Temperature (other than Thermodynamic)						
	degrees Celsius	°C	degrees Fahrenheit	°F			
Time	Time						
	hour	h	hour	h			
	minute	min	minute	min			
	second	S	second	s			
Torque (includes Bending I	moment, Moment of force, ar						
	newton meter	N m	pound foot	lb ft			
			pound foot	lb in			
Velocity							
	kilometer per hour	km/h	mile per hour	mph			
	meter per second	m/s	foot per second	ft/s			
	millimeter per second	mm/s	inch per second	in/s			
	meter per minute	m/min	foot per minute	ft/min			
Volume (includes Capacity)							
	cubic meter	m³	cubic yard	yd³			
				cu yd			
	liter	I	cubic inch	in³			
	liter	I	US gallon	US gal			
			UK gallon	UK gal			
			US quart	US qt			
			UK quart	UK qt			
	milliliter	ml	fluid ounce	fl oz			
Volume per time (includes	Discharge and Flow rate)						
	cubic meter per minute	m³/min	cubic foot per minute	ft³/min			
	liter per minute	l/min	US gallon per minute	US gal/min			
	milliliter per minute	ml/min	UK gallon per minute	UK gal/min			
Sound power level and So			· · · · · · · · · · · · · · · · · · ·	<u>.                                      </u>			
•	decibel	dB	decibel	dB			

### Glossary

Acronym	Definition
DEF	Diesel Exhaust Fluid
ISO	International Organization for Standardization
MSDS	Material Safety Data Sheet
NOx	Nitrogen Oxide
PPE	Personal Protective Equipment
SCR	Selective Catalytic Reduction
ULSD	Ultra Low Sulfur Diesel
%	Percent
<	Less than
>	Greater than

### TO THE OWNER

#### GENERAL INFORMATION

This Manual has been prepared to assist you in the correct procedure for running- in, driving and operating and for the maintenance of your new tractor. Read this Manual carefully. Your tractor is intended for use in normal and customary agricultural applications.

If at any time you require advice concerning your tractor, do not hesitate to contact your authorised dealer. He has factory trained personnel, genuine manufacturers' parts and the necessary equipment to carry out all your service requirements.

The specification are provided for your information and guidance. For further information concerning your tractor and equipment, consult your authorised dealer.

All data given in this manual is subject to production variations. Dimensions and weight are approximate only. The illustrations do not necessarily show tractors in standard condition or imply that these features are available in all countries. For exact information about any particular tractor, please consult your authorised dealer.

Your tractor has been designed and built to give maximum performance, economy and ease of operation under a wide variety of operating conditions. Prior to delivery, the tractor was carefully inspected, both at the factory and by your dealer to ensure that it reaches you in optimum condition. To maintain this condition and ensure trouble-free operation, it is important that the routine services, as specified on page **7-13** of this Manual, are carried out at the recommended intervals.

### **OPERATORS MANUAL STORAGE**

The Operators Manual supplied with your tractor is an important source of information and should be stored safely.

The manual is written specifically for your tractor so it is important that you make a note of the print number and issue date which can be found on the cover. In the event the manual is lost or damaged it can be replaced with the correct version.

A storage pocket for the Operators Manual can be found on the rear of the seat. The manual should be kept in this pocket at all times when not in use.

#### **ABOUT THIS MANUAL**

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

Read and understand; keep it in good condition and always safely store it in the provided pocket in the back of your seat for later easy retrieval. This manual does not contain all the information related to periodical service, converting and repairs to be carried out by professional service personnel.

The Table of Contents page(s) are provided to have an overview of main manual's topics. A detailed alphabetic index is available at the end of this manual for locating specific items.

#### Normal operation

- Normal operation means the use of the tractor for the purpose intended by the manufacturer by an operator familiar with the tractor and the mounted or towed equipment and complying with the information for operation and safe practices, as specified by the manufacturer in this manual and by the decals on the tractor and the equipment.
- Normal operation includes the preparation and storage of the tractor, swinging components into work position and vice versa, adding or removing ballast and picking up and setting off attachments.
- Normal operation includes the adjustment and setting of the tractor and equipment, for the specific condition of the field and/ or the crop.

#### Routine service

Routine service and maintenance means activities
that must be done daily by an operator familiar with
the tractor characteristics and complying with the information for routine service and safe practices, as
specified by the manufacturer in this manual and by
decals on the tractor, in order to maintain its proper
function. Routine service includes activities such as
fueling, cleaning, washing, topping up fluid levels,
greasing, replacing of consumable articles such as
lamp bulbs.

### Converting, periodical service and repair

- Periodical service means activities that must be done at defined intervals by trained personnel familiar with the tractor characteristics and which are 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 tractor.
- Converting means activities that must be done by professional service personnel familiar with the tractor characteristics and 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 fit the tractor to a specific configuration.
- Repair means activities that must be done by professional service personnel only familiar with the

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