

ORIGINAL INSTRUCTIONS

PUMA® 185 CVX
PUMA® 200 CVX
PUMA® 220 CVX
PUMA® 240 CVX
Tractor - Tier 4B(final)
*PIN HACPU****JE501001 and above*

OPERATOR'S MANUAL

Part number 51518802

2nd edition English

October 2018

Replaces part number 48073013



Contents

1 GENERAL INFORMATION

Metric and imperial units abbreviations.....	1-1
To the owner.....	1-3
Electro-magnetic interference (EMC).....	1-5
Operator's manual storage	1-6
Product identification	1-7
Engine identification	1-8
Drive line identification	1-9
Cab identification	1-9
Product identification plate	1-10
Programming tractor functions	1-11
Before operating the tractor	1-12
International symbols.....	1-13
Machine stability.....	1-14
Selective Catalytic Reduction (SCR) system.....	1-18

2 SAFETY INFORMATION

Safety precautions.....	2-1
Safety decals	2-3
Safety rules.....	2-12
Burn prevention.....	2-19
Prevention of fire or explosions.....	2-20
Fire extinguisher.....	2-21
Protection offered by the tractor.....	2-22
Ecology and the environment	2-25
Hazardous substances	2-26
Emergency exit	2-27
Wheel chocks.....	2-28
Intended use statement	2-29
Instructor's seat.....	2-31

3 CONTROLS AND INSTRUMENTS

ACCESS TO OPERATOR'S PLATFORM

Introduction	3-1
Cab air filters	3-5
In cab storage (where fitted).....	3-6
Cable and wiring routing.....	3-7
Mobile telephone usage	3-7
Implement monitor installation.....	3-8
Cab air pressurisation control (where fitted).....	3-9

OPERATOR'S SEAT

Operator's seat	3-10
Air suspension seat deluxe.....	3-11
Air suspension seat with passive or Dynamic Damping System (DDS).....	3-16

Air suspension seat 'evolution active'	3-22
Seat belt	3-29

INSTRUCTOR'S SEAT

Instructional seat	3-30
--------------------------	------

FORWARD CONTROLS

Ignition key	3-31
Hazard lights switch	3-31
Lights and turn indicator lever	3-32
Windshield wiper and washer controls	3-33
Electronic parking brake	3-34
Anti-lock braking system ABS Operation	3-38
Clutch pedal	3-45
Foot brakes	3-45
Exhaust brake (where fitted)	3-49
Steering column	3-49

LEFT-HAND SIDE CONTROLS

Handbrake	3-50
-----------------	------

RIGHT-HAND SIDE CONTROLS

Integrated control panel	3-51
Multifunction Handle	3-52

REARWARD CONTROLS

Switches on C-pillar	3-53
Battery isolator switch (where fitted)	3-54
Heated screens (where fitted)	3-55
ISO bus functionality	3-56
Hydraulic master switch	3-57
Switches on right-hand trim	3-58
Advanced Steering Control activation switch	3-59
Variable Ratio Steering (VRS)	3-60
Autoguidance - Variable ratio steering	3-63
Variable ratio steering and Autoguidance symbols on color display (where fitted)	3-64

OVERHEAD CONTROLS

Switch panel work lights	3-65
Left-hand and right-hand outermost work light switch	3-66
Interior light	3-67
Climate controls	3-68
Manual temperature control	3-69
Automatic Temperature Control (ATC)	3-70

INSTRUMENT CLUSTER

Integrated control unit	3-72
-------------------------------	------

Gauges	3-72
Indicator and warning lights	3-73
Displays	3-76
Keypad basic	3-77
Keypad enhanced	3-78
Selecting or changing the display settings	3-80
Adjust menu	3-81
Configure menu	3-86
Performance monitor	3-89
Armrest color display	3-97
Pop-up screens on color display	3-98
Performance monitor on color display	3-103
Programming the displays	3-108
Alarm functions	3-111
Accessing stored error codes	3-113
Selective Catalytic Reduction (SCR) exhaust treatment - Overview	3-114
Warning and advisory symbols	3-124
Warning and advisory symbols	3-139

4 OPERATING INSTRUCTIONS

COMMISSIONING THE UNIT

Refueling the tractor	4-1
-----------------------------	-----

STARTING THE UNIT

Starting the engine	4-3
Grid heater cold start aid (where fitted)	4-5
Fuel heater (where fitted)	4-5
Coolant immersion heater (where fitted)	4-6
Transmission oil heater (where fitted)	4-7
Boosting the battery	4-8

STOPPING THE UNIT

Stopping the engine	4-9
Automatic engine shut down with enhanced keypad (where fitted)	4-10

MOVING THE UNIT

Operating in cold temperatures	4-11
Low idle speed management	4-14
Reversible engine fan	4-15

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

Freeing a stuck tractor.....	5-2
Towing the tractor.....	5-3

6 WORKING OPERATIONS

GENERAL INFORMATION

Variable engine power management	6-1
Constant engine speed	6-3
Differential lock	6-6
Four wheel drive.....	6-8
Front axle suspension (where fitted)	6-10
HTS standard.....	6-12
Headland turn sequence - Quick guide.....	6-12
Recording and replaying	6-14
Explanation of symbols.....	6-17
Recording a sequence	6-19
Replaying a sequence.....	6-21
Headland function and color display screen.....	6-25
Deleting a sequence with color display.....	6-28
HTS advanced.....	6-29
Headland turn sequence	6-29
Universal symbols	6-30
Recording a sequence	6-33
Creating a sequence in standstill.....	6-38
Replaying a sequence.....	6-40
Saving a sequence	6-44
Edit a sequence	6-47
Recalling a sequence.....	6-51
Deleting a sequence.....	6-55
Headland turn sequence error codes.....	6-56

TRANSMISSION

CVT transmission operation.....	6-58
Transmission operation.....	6-58
Anti jack knife.....	6-59
Stationary control	6-61
Engine speed control	6-62
Shuttle lever	6-65
Transmission controls	6-67
Drive pedal	6-70
Programming maximum speed.....	6-71
Transmission display	6-73
Manual mode	6-74
Automatic mode	6-74
Transmission range lock.....	6-76
Speed matching	6-77
Pneumatic Trailer Brake Stabilization System	6-78
Fault codes	6-80

REAR POWER TAKE-OFF (PTO)

Power Take-Off (PTO) operating precautions	6-81
Changing the PTO output shaft	6-82
Attaching PTO driven equipment	6-83
PTO operation	6-84
PTO shiftable multi speed	6-89
Electronic PTO displays Electronic (where fitted)	6-91
External PTO controls	6-92
Auto PTO operation	6-94

FRONT POWER TAKE OFF

PTO operation	6-97
Auto PTO operation	6-100

REAR HITCH

Electronic Draft Control (EDC)	6-102
Settings and adjustments	6-106
Electronic Draft Control (EDC) operation	6-108
External hitch controls	6-114

FRONT HITCH

Settings and adjustments	6-116
Front hitch operation	6-119
External hitch controls	6-126
Front hitch management	6-127
Auxiliary front couplers (where fitted)	6-133
External controls for front couplers	6-135

ELECTRO-HYDRAULIC REMOTE CONTROL VALVES (where fitted)

Remote control valves	6-136
Settings and adjustments	6-144
Valve priority	6-150
Programming tractor functions	6-152
Connecting remote cylinders	6-159
Operating with remote valves	6-162
Joystick operation with a front loader	6-164
Mid mount remote valves	6-169
EHR implement control setting	6-171
External EHR controls	6-175
Transmission rear axle and hydraulic system oil level	6-176

HYDRAULIC POWER BEYOND PORT

Power beyond circuit	6-178
Power beyond valve - Static description	6-178
ISO Power beyond couplings	6-180

THREE POINT HITCH

Attaching three-point hitch equipment.....	6-181
Lift rod adjustment.....	6-183
Top link adjustment.....	6-186
Lower links.....	6-188
Quick hitch.....	6-189
Lower links.....	6-191

DRAWBARS AND TOWING ATTACHMENTS

Drawbars and towing attachments.....	6-195
Swinging drawbar.....	6-198
Automatic pickup hitch.....	6-201
Automatic pickup hitch.....	6-205
Rear trailer hitches.....	6-209

TRAILER BRAKING SYSTEMS

Trailer brake release switch.....	6-216
Air-operated trailer brakes (Universal type).....	6-217
Air-operated trailer brakes (UK type).....	6-220
Air-operated trailer brakes (Italian type).....	6-221
Auxiliary air supply connector (where fitted).....	6-222
Hydraulic trailer brakes (Universal type - Dual line).....	6-223
Hydraulic trailer brakes (Universal type - Single line).....	6-226
Hydraulic trailer brakes (Italian type).....	6-227

WHEEL TRACK ADJUSTMENT

Front wheel track adjustment.....	6-228
Front wheel alignment.....	6-233
Steering stops.....	6-234
Front axle oscillation stops.....	6-235
Front wheel fenders.....	6-236
Rear wheel track adjustment.....	6-238
Flange type axle (where fitted).....	6-238
Bar type axle (where fitted).....	6-242
Dual rear wheels (where fitted).....	6-249

BALLASTING AND TIRES

Ballasting and tires.....	6-252
Iron weights (where fitted).....	6-255
Liquid ballast.....	6-258
Tire inflation.....	6-260
Tire pressures and permissible loads.....	6-261

AUXILIARY POWER CONNECTIONS

Diagnostic socket.....	6-263
Trailer electrical socket.....	6-264
Electrical power connectors.....	6-265

Internal power connectors	6-265
External power connectors	6-267
ISO bus classes	6-269
ISO bus functionality	6-271
Reconfigurable inputs for ISO Bus function	6-279

7 MAINTENANCE

GENERAL INFORMATION

Introduction	7-1
Fuel requirement - Diesel fuel	7-2
Fuel - Storage, handling and transport	7-2
Biodiesel fuel	7-3
Engine oil change	7-5
Protective devices	7-6
Tractor jacking points	7-8
Engine oils	7-9
General specifications	7-10
Capacities	7-11
Organic Acid Technology (OAT) coolant	7-12

MAINTENANCE CHART

Maintenance chart	7-13
-------------------------	------

WHEN THE WARNING LAMP LIGHTS

Change the engine air cleaner outer element	7-15
Drain the fuel system water separator	7-16
Check the brake fluid level	7-17

EVERY 10 HOURS OR EACH DAY

Check the engine coolant level	7-18
Check the engine oil level	7-19
Check the 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	7-22
Clean the SCR cover air ducts	7-24
Clean the cooler section	7-25
All grease fittings (except rear axle)	7-26
Check the front and the rear wheel nuts	7-33
Check the tire pressures and the tire condition	7-33

EVERY 100 HOURS

Inspect the poly V-belt	7-34
-------------------------------	------

Inspect the compressor drive belt	7-35
---	------

EVERY 300 HOURS

Check the battery fluid level	7-36
Check the transmission oil level, the rear axle oil level and the hydraulic oil level	7-38
Adjust the hand brake	7-39
Check the front PTO gearbox oil level	7-39
Check the 4WD front axle differential oil level and the hubs oil level	7-40

EVERY 600 HOURS

Change engine oil and filter	7-41
Change the first stage fuel filter and the fuel filter element	7-43
Change the engine air cleaner inner element	7-45
Change the hydraulic charge pump oil filter and the transmission oil filter	7-46
Check the air intake system	7-47
Check the transmission oil cooler pipe couplings	7-48
Change the DEF/AdBlue® main filter	7-48

EVERY 1200 HOURS OR ANNUALLY

Change the cab air filters	7-49
Change the hydraulic suction pump oil filter	7-50
Change the 4WD differential oil	7-51
Change the 4WD planetary hub oil	7-52
Change the front PTO gearbox oil	7-52
Grease the rear axle shaft bearing	7-53

EVERY 1200 HOURS OR EVERY 2 YEARS

Change the Diesel Exhaust Fluid (DEF)/AdBlue® suction filter	7-54
Change the engine air cleaner inner element	7-55
Check the valve tappet clearance	7-56
Change the air brake drier reservoir	7-56
Change the poly V-belts	7-57
Change the transmission oil, the rear axle oil and the hydraulic oil	7-59

EVERY 2 YEARS

Change the air conditioning receiver drier	7-60
--	------

EVERY 1800 HOURS OR EVERY 2 YEARS

Change the engine breather filter	7-61
---	------

EVERY 3600 HOURS OR EVERY 2 YEARS

Change the DEF/AdBlue® main filter	7-61
--	------

EVERY 3600 HOURS OR EVERY 4 YEARS

Change the engine coolant fluid	7-62
---------------------------------------	------

GENERAL MAINTENANCE

Cleaning the tractor	7-66
Fuel system water separator	7-68
Bleeding the fuel system	7-68
Hydraulic system hoses	7-69
Brake Pedal	7-69
Cab suspension, if equipped	7-70
Adjust the automatic pickup hitch	7-71
Headlight adjustment	7-72
Work light adjustment	7-72
Bulb replacement	7-73
Fuses and relays	7-75
Protecting the electronic and electrical systems during battery charging or welding ..	7-87
Battery removal and installation	7-88

STORAGE

Tractor storage	7-90
Removing the machine from storage	7-90

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	8-6
Three-point hitch	8-6
Brakes	8-7
Cab	8-7
Electrical system	8-8

9 SPECIFICATIONS

General dimensions	9-1
General dimensions	9-1
Minimum turn radius	9-3
Axle dimension	9-4
Maximum permissible operating weights	9-5
Tractor weights	9-5
Capacities	9-6
Transmission - Capacity	9-6
Front axle system - Capacity	9-6
Engine	9-7
Transmission	9-8

Rear Power Take-Off (PTO)	9-9
Front Power Take-Off (PTO).....	9-10
Hydraulic system	9-11
Three-point hitch	9-13
Remote control valves.....	9-13
Three-point hitch	9-13
Brakes	9-14
Steering.....	9-14
Electrical equipment.....	9-15
Minimum hardware tightening torques	9-16

10 ACCESSORIES

Radio (where fitted).....	10-1
External rear view mirrors	10-2
Border marker plates	10-4
Auxiliary headlights	10-5
Rotating beacon	10-5
Front-end loader fixation points	10-6

11 FORMS AND DECLARATIONS

Service record 1st 50 hour, Owner copy	11-1
Service record 1st 50 hour, Dealer copy	11-3
Telematics module declaration of conformity.....	11-4

1 - GENERAL INFORMATION

Metric and imperial units abbreviations

Typical applications	Metric unit		Imperial unit	
	Name	Symbol	Name	Symbol
Area (Land area)				
	hectare	ha	acre	ac
	square meter	m ²	square foot	ft ²
			square inch	in ²
	square millimeter	mm ²	square inch	in ²
Electricity				
	ampere	A	ampere	A
	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 ^a
		rpm		rpm
Length				
	kilometer	km	mile	mi
	meter	m	foot	ft
	centimeter	cm	inch	in
	millimeter	mm	inch	in
	micrometer	μm		
Mass				
	kilogram	kg	pound	lb
	gram	g	ounce	oz
	milligram	mg		
Mass per mass				
	milligram per kilogram	mg/ kg	parts per million	ppm
Power				
	kilowatt	kW	horsepower	Hp
	watt	W	Btu per hour	Btu/hr
			Btu per minute	Btu/min
Pressure or stress (Force per area)				
	kilopascal	kPa	pound per square inch	psi
			inch of mercury	inHg
	pascal	Pa	inch of water	inH ₂ O
	megapascal	MPa	pound per square inch	psi
	millibar	mbar		
	bar	bar		

1 - GENERAL INFORMATION

Typical applications	Metric unit		Imperial unit	
	Name	Symbol	Name	Symbol
Temperature (other than thermodynamic)				
	degrees Celsius	°C	degrees Fahrenheit	°F
Time				
	hour	h	hour	h
	minute	min	minute	min
	second	s	second	s
Torque (includes bending moment, moment of force, and moment of a couple)				
	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	m ³	cubic yard	yd ³
				cu yd
	liter	l	cubic inch	in ³
	liter	l	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	m ³ /min	cubic foot per minute	ft ³ /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 sound pressure level				
	decibel	dB	decibel	dB
Water hardness				
	German hardness	°dH	English hardness	°e
	French hardness	°fH	parts per million	ppm

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

Buy Now



Our support email:

ebooklibonline@outlook.com