621F
721F
Tier 4
Wheel Loader

OPERATOR'S MANUAL

Part number 47558866
1st edition English
December 2013

CASE CONSTRUCTION

MidWestTech | Case 621F, 721F Tier 4 Wheel Loader Operator's Manual | Publication 475...
Order the manual at mid-west-tech.com >

Contents

1 GENERAL INFORMATION

Note to the owner 1-1
Operator's manual and Quick Reference Guide storage 1-3
Machine orientation 1-5
Machine components 1-6
Note to the Owner 1-8
Product identification 1-9
Electro-Magnetic Compatibility (EMC) 1-11

2 SAFETY INFORMATION

Safety rules 2-1
Safety rules — California Proposition 65 Warning 2-2
Personal safety 2-3
Safety rules - Utility safety 2-4
Safety rules 2-5
Safety rules 2-6
Safety rules 2-7
Safety rules - Operating precautions 2-8
Safety rules - Maintenance precautions 2-10
Safety rules - Fuel handling 2-11
Safety rules - Burn prevention 2-12
Safety rules 2-13
Safety rules 2-14
Safety rules - Support strut and service link 2-15
Safety signs 2-17

3 CONTROLS AND INSTRUMENTS

ACCESS TO OPERATOR'S PLATFORM

Proper entry and exit 3-1

OPERATOR'S SEAT

Overview 3-2

FORWARD CONTROLS

Front console 3-7
Steering column 3-8
Pedal controls 3-10
Parking brake 3-12

LEFT-HAND SIDE CONTROLS

Transmission controls 3-13
Joystick steering 3-15

MidWestTech | Case 621F, 721F Tier 4 Wheel Loader Operator's Manual | Publication... Order the manual at mid-west-tech.com >

RIGHT-HAND SIDE CONTROLS

Overview 3-17
Two function valve 3-19
Three function valve 3-23
Four function valve 3-27
Wrist rest 3-29

EXTERIOR CONTROLS

Hood switch and master disconnect 3-30

INSTRUMENT CLUSTER

Overview 3-34
Status and warning icons 3-35
Display settings 3-47
Keypad 3-49
Operator preferences 3-59

SIDE CONSOLE

Overview 3-69
Switch operations 3-70
Climate controls 3-75

CLIMATE CONTROLS

Cab air louvers 3-77
Windows 3-79

4 OPERATING INSTRUCTIONS

COMMISSIONING THE UNIT

Before starting the engine 4-1
Run in period of a new machine 4-2

STARTING THE UNIT

Starting the engine 4-3
Operating in extreme temperatures 4-5
Cold temperature operation 4-6
Transport/service link 4-9

STOPPING THE UNIT

Stopping the engine 4-12

MOVING THE UNIT

Before operating the transmission 4-14
Ride control 4-15
Control levers 4-16
Auxiliary forward, neutral, reverse (F-N-R) switch 4-21
Automatic mode 4-25

Order the manual at mid-west-tech.com >

Loader functions 4-27

5 TRANSPORT OPERATIONS

RECOVERY TRANSPORT

Safety rules 5-1
Transporting the machine 5-2
Travelling on public roads 5-5
Moving a disabled machine 5-8

6 WORKING OPERATIONS

LOADER OPERATIONS

Operating tips 6-1
Changing loader attachments 6-4
Coupling to the attachment 6-6
Uncoupling the attachment 6-9
Joystick operation 6-13

7 MAINTENANCE

GENERAL INFORMATION

Servicing 7-1
Support strut for loader lift arm 7-5
Releasing pressure in the hydraulic system 7-7
Fluids and lubricants 7-9
Biodiesel fuel - Biodiesel fuels 7-16
Selective Catalytic Reduction (SCR) system 7-20
Selective Catalytic Reduction (SCR) exhaust treatment - Basic instructions 7-23

MAINTENANCE CHART

Maintenance Chart 7-24

Daily inspection

General 7-26

Every 10 hours

Engine oil 7-30

Every 50 hours

Bucket/attachment grease fittings 7-31
Grease machine and attachments 7-32
Hydraulic oil level 7-34
Transmission oil level 7-35
Engine coolant 7-36

MidWestTech | Case 621F, 721F Tier 4 Wheel Loader Operator's Manual | Publication... Order the manual at mid-west-tech.com >

LEFT-HAND SIDE CONTROLS

Transmission controls

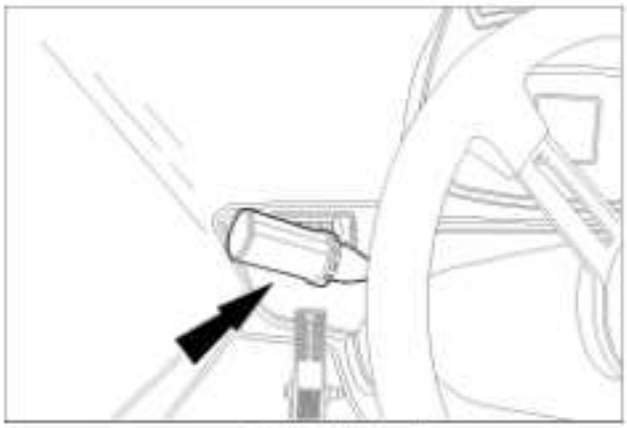
Transmission control lever

The transmission control lever is used to shift the transmission gears from first through fourth gear. Turn the transmission control lever away from you to select a higher gear. Turn the lever toward you to select a lower gear. This control lever is also used to put the transmission in FORWARD, NEUTRAL, and REVERSE (F-N-R).

A. Move the control lever away from you for FORWARD.

B. The center position of the control lever is NEUTRAL.

C. Move the control lever toward you for REVERSE.



RDPHTO89HL1188AL 1

Using the steering column transmission lever

All the following steps are required in order to use the steering column transmission lever:

1. Service brake pressure must be at operating pressure.
2. Transmission control lever must be in neutral.
3. Push down on the bottom of the parking brake switch to release the parking brake switch.

NOTE: *If the parking brake was NOT set when the machine was turned OFF, the parking brake switch must be cycled at step 3.*

4. Place the transmission control lever in either FORWARD or REVERSE to move the machine.

MidWestTech | Case 621F, 721F Tier 4 Wheel Loader Operator's Manual | Publication... Order the manual at mid-west-tech.com >

Maintenance action	Change fluid	Cleaning	Grease	Check	Replace	Storing	Drain fluid	Adjust	Page no.
Every 1500 hours									
Change front and rear axle oil								■	7-71
Transmission fluid and filter				■					7-73
Selective catalytic reduction system - Replace supply module filter			■						7-75
Calibrating the gear box								■	7-76
Transmission declutch pressure adjustment								■	7-78
Every 2000 hours									
Hydraulic oil and filters				■					7-79
Engine coolant				■					7-81
Engine air filters					■				7-83
Frame and cab - lubricate		■							7-85
Engine valve clearance	■								7-86
Every 3000 hours									
Selective catalytic reduction system - Replace supply module filter					■				7-87
As required									
Fuel pre-filter								■	7-89
Selective catalytic reduction system - Clean tank filter			■						7-90
Air conditioning condenser			■						7-92
Height control and return to travel								■	7-93
Return to dig								■	7-95
Parking brake	■								7-98
Secondary steering	■								7-102
Cab service	■								7-103
ELECTRICAL SYSTEM									
Battery service			■						7-107
Battery electrolyte level	■								7-110
Auxiliary battery connections	■								7-111
Battery removal and installation					■				7-113
Fuses and relays					■				7-114
Work lights					■				7-120
Driving lights					■				7-122
Additional features	■								7-123

MidWestTech | Case 621F, 721F Tier 4 Wheel Loader Operator's Manual | Publication... Order the manual at mid-west-tech.com >

8 - SPECIFICATIONS

General specifications

621F Engine Specifications

Model	FPT F4HFE613Z, Tier 4a certified
Type	4-stroke, turbocharged, air-to-air cooled
Cylinders	6
Bore / Stroke	**104 mm (4.11 in)** x **132 mm (5.20 in)**
Displacement	**6.7 l (411 in³)**
Fuel Injection	Electronic
Horsepower	
Maximum power (peak)	
Gross	**128 kW (172 Hp) @ 1800 RPM**
Net	**121 kW (162 Hp) @ 2000 RPM**
Standard power (peak)	
Gross	**116 kW (156 Hp) @ 1800 RPM**
Net	**111 kW (149 Hp) @ 2000 RPM**
Economy power (peak)	
Gross	**99 kW (133 Hp) @ 1500 RPM**
Net	**93 kW (125 Hp) @ 1500 RPM**
Torque (maximum)	
Standard power range	
Gross	**719 N·m (530 lb ft) @ 1300 RPM**
Net	**689 N·m (508 lb ft) @ 1000 RPM**
Maximum power range	
Gross	**730 N·m (538 lb ft) @ 1600 RPM**
Net	**692 N·m (510 lb ft) @ 1600 RPM**
Economy power range	
Gross	**715 N·m (527 lb ft) @ 1200 RPM**
Net	**689 N·m (508 lb ft) @ 1200 RPM**
Economy engine speeds (4 speed and 5 speed transmissions)	
Machine idled (alternate low idle)	**670 - 730 RPM**
Machine idled (cold weather alternate accelerated low idle)	**1170 - 1230 RPM**
Electrical	
Batteries	2 - **12 V**
Alternator	**65 A**
Voltage	**24 V**

MidWestTech | Case 621F, 721F Tier 4 Wheel Loader Operator's Manual | Publication... Order the manual at mid-west-tech.com >