



ENGINE - VHP

Model	F4HFE613Y*B005
	NEF 6 cyl. CR TAA 4V, Tier 4 Final
	The engine complies w/ 97/68/EC standards. Electronic control
Type	4-stroke, turbocharged and air-to-air cooled
Cylinders	6-cylinder in-line
Bore/Stroke	4.09 x 5.17 in (104 x 132 mm)
Displacement	409 in ³ (6.7 L)
Fuel	Diesel
Fuel injection	Common Rail
Cooling	Liquid
Horsepower @ 2100 RPM – ISO 14396/ECE R120:	
Gross	193/205/220 hp (144/153/164 kW)
Net	173/192 hp (129/142 kW)
Maximum torque @ 1400 RPM:	
	627 ft-lb (850 N-m)

DRIVETRAIN

Rear axle	Graziano, planetary
Differential	Hydraulic lock, operator controlled
Inboard brakes	Wet disc
Number of discs/brake	5
Brake surface area	2,225 in ² (14 336 cm ²)
Tandems:	
Type	Welded plate
Oscillation	15° each way
Front axle	High strength, welded steel
Oscillation	15° each direction
Wheel lean	20.3° left/right
Tires – standard	17.5 - 25 EM SGL TL Goodyear
Rims	1-piece 14/1.3 in x 25 in (38.1 mm x 635 mm)
Transmission type:	
	Direct drive countershaft Powershift w/ electronic shift control and inching pedal
Pump flow @ 2000 RPM	22.4 gpm (85 L/min)
Sump	Integral
Speeds	6 forward/3 reverse

Shifting	Single lever, bump style automatic electronic control
Diagnostics	On-board
Speeds:	
Forward:	mph (km/h)
1st	3.1 (5.0)
2nd	4.8 (7.7)
3rd	7.3 (11.8)
4th	11.1 (17.9)
5th	16.1 (26.0)
6th	23.6 (38.0)
Reverse:	mph (km/h)
1st	3.3 (5.4)
2nd	7.8 (12.6)
3rd	17.3 (27.9)

ELECTRICAL

Voltage	24 Volts, negative ground
Alternator	90 amp
Batteries	2 – Low-maintenance 1010 CCA – 100 Ah (20 hr rate)
Work lights:	
	Headlights – 2; Turn signals, front/rear; Stop/tail – 2; Rear mounted floods – 2; Front mounted floods – 2.
Backup alarm	Standard

OPERATOR ENVIRONMENT

ROPS/FOPS cab – SAE J231, ISO 3449; Cab equipped w/ two fully swinging doors for both side access, tinted safety glasses, front and rear sunshield, openable front windows; Adjustable operator's console – includes hydraulic control levers, steering wheel, indicator lights; Air suspension seat w/ 3 in (76 mm) retractable seat belt and movable armrests; Dome light; Inside rearview mirror; Outside rearview mirrors; Cup holder; Storage tray; 12-volt outlet; Radio ready – 12 Volt; Electrical master switch – automatic; Heater/ defroster/pressurizer; Sound suppression; Delphi AM/FM Radio w/ CD; Steps – left/right; Windshield wiper – front; Windshield washer – front; Coat hook; Storage box left and right; Throttle hand lever.

OPERATING WEIGHT

W/ 12 ft (3.66 m) moldboard, 17.5 - 25 EM SGL GY Goodyear tires, front counterweight, rear ripper – 5 teeth, 175 lb (79 kg) operator and full fuel:	
856C	33,966 lb (15 407 kg)
856C AWD	34,848 lb (15 807 kg)
Weight, front axle:	
856C	9,186 lb (4 167 kg)
856C AWD	9,407 lb (4 267 kg)
Weight, rear axle:	
856C	24,780 lb (11 240 kg)
856C AWD	24,441 lb (11 540 kg)
Blade pressure:	
856C	16,720 lb (7 519 kg)
856C AWD	17,006 lb (7 714 kg)

HYDRAULICS

System design	Closed center, load sensing
Hydraulic pump	Load sensing piston pump, variable displacement, pressure and flow compensated
Rated flow @ 2100 RPM	33.2 gpm (126 L/min)
Control valve	10 section
Side shift and pitch	Hydraulic
Saddle	5 positions
Diagnostic quick couplers	8

SERVICE CAPACITIES

Engine	3.3 gal (12.5 L)
w/ filter change	4.7 gal (18.5 L)
Fuel	73.4 gal (278 L)
Transmission	7.1 gal (27 L)
w/ filter change	6.6 gal (25 L)
Radiator	8.45 gal (32 L)
Hydraulic reservoir	23.8 gal (90 L)
Hydraulic system:	
856C	48.9 gal (185 L)
856C AWD	52.8 gal (200 L)
Circle gearbox	0.66 gal (2.5 L)
Rear axle center	9.5 gal (36 L)
Total axle	9.5 gal (36 L)
Tandem case, each	16.9 gal (64 L)

OTHER SPECIFICATIONS

Steering:	
Type	Open center/Reaction, w/o LS
Turns – lock-to-lock	10
Pump capacity @ 2100 engine RPM:	
	7 gpm (32 L/min)
Relief pressure	2,176 psi (150 bar) Integral w/ priority valve
Cylinder – 2:	
	2.0 in bore x 11.85 in stroke x 1.0 in rod dia. (50.8 mm x 301.0 mm x 25.4 mm)
Supplemental steering	Integral
Articulation:	
Type	Hydraulic actuated, no external stop
Range	28° left/right
Controls	Hydraulic

MAINFRAME

Type	All welded box
Front section:	
Size	11.8 in x 11.8 in (300 mm x 300 mm)
Weight – each side	110.2 lb-ft (164 kg/m)
Rear section:	
Size	10.2 in x 3.5 in (260 mm x 90 mm)
Weight – each side	82.9 lb-ft (123.4 kg/m)

DRAWBAR

Type:	
"A" frame welded construction with center mounted circle turn motor	
Ball and circle	Shim adjustable

MOLDBOARD

Type	High-carbon steel
Shape	Single radius curve
Length	12 ft 0 in (3 658 mm)
Height	23.7 in (603 mm)
Thickness	0.787 in (20 mm)
End bits	2, interchangeable
Blade pitch positions:	
Normal pitch	49°
Minimum pitch	34°
Maximum pitch	84°
Blade shift:	
Right	29.72 in (755 mm)
Left	25.39 in (645 mm)
Max. bank cutting angle:	
Right	100°
Left	112°
Max. ground penetration	19.7 in (500 mm)
Max. lift above ground	18.9 in (480 mm)

CIRCLE

Type	Welded construction
Diameter:	
Max. outside	69.0 in (1 260 mm)
Vertical member	63.0 in (1 600 mm)
Rotation	360°
Speed	2.02 RPM (12.1°/second)
Drive	Hydraulic motor
Type	Roller geroter
Displacement	6.1 in³/Rev. (0.10 L/Rev.)
Rated hydraulic flow	19.8 gpm (75 L/min)

ATTACHMENTS**SCARIFIER**

Type	Moldboard mounted
Width of cut	43.3 in (1 100 mm)
Teeth	6
Optional	11
Tooth spacing	9.05 in (230 mm)
Optional	4.5 in (114 mm)
Lift above ground	10.9 in (278 mm)
Max. penetration	7.95 in (202 mm)
Weight	617 lb (280 kg)
Includes front attachment group	

PUSH BLOCK

Type	Front mounted
Weight	1,084 lb (492 kg)

REAR RIPPER

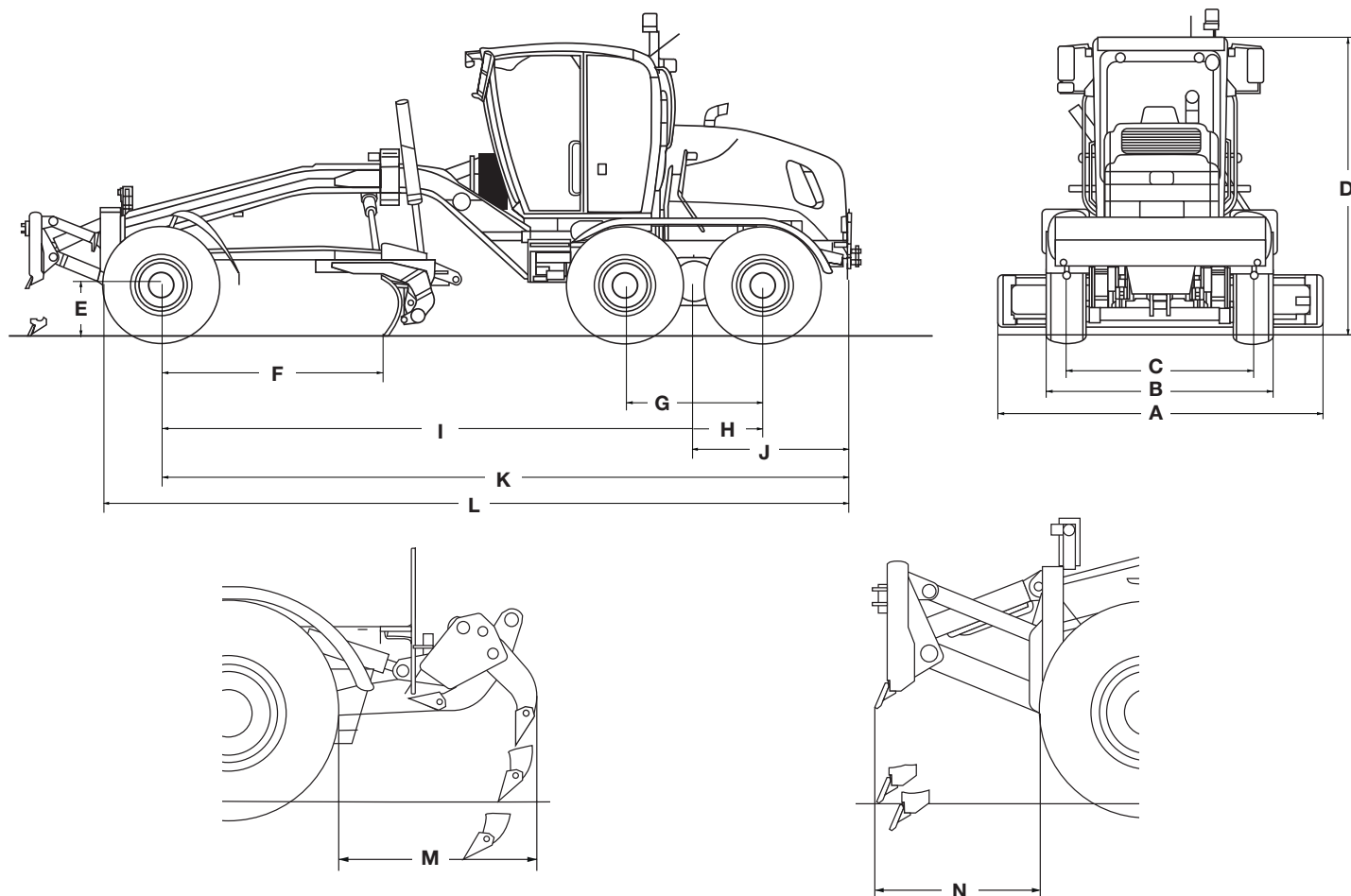
Type	Parallel
Ripper teeth	3
Optional	5
Scarifier teeth	5
Optional	9
Width of cut	89.3 in (2 268 mm)
Lift above ground:	
Ripper teeth	14.4 in (367 mm)
Scarifier teeth	27.67 in (703 mm)
Max. penetration:	
Ripper teeth	14.6 in (371 mm)
Scarifier teeth	9.43 in (252 mm)
Weight:	
3 Teeth	1,753 lb (795 kg)
5 Teeth	1,167 lb (732 kg)

DOZER BLADE

Type	Front mounted
Width	96.5 in (2 450 mm)
Height	34.3 in (870 mm)
Lift above ground	21.5 in (547 mm)
Penetration	7.2 in (183 mm)
Weight	1,876 lb (851 kg)
Includes front attachment group	

COUNTERWEIGHT

Type	Front mounted
Weight	1,682 lb (763 kg)



Line drawings are for illustrative purpose only and may not be exact representation of unit.

DIMENSIONS	856C	856C AWD
A. Blade width	12 ft 0 in (3 658 mm)	12 ft 0 in (3 658 mm)
B. Distance between outside edges of tires	8 ft 4 in (2 549 mm)	8 ft 5 in (2 555 mm)
C. Wheel tread – rim 14/1.3 x 25 – one piece rim	6 ft 11 in (2 094 mm)	6 ft 11 in (2 094 mm)
D. Height to top of cab – low profile	10 ft 4 in (3 150 mm)	10 ft 4 in (3 150 mm)
E. Tire radius – when static	1 ft 11 in (584 mm)	1 ft 11 in (584 mm)
F. Blade base	8 ft 3 in (2 504 mm)	8 ft 3 in (2 504 mm)
G. Distance between tandem axles	5 ft 2 in (1 573 mm)	5 ft 2 in (1 573 mm)
H. Distance between tandem center and wheel	2 ft 7 in (787 mm)	2 ft 7 in (787 mm)
I. Wheelbase	20 ft 3 in (6 023 mm)	20 ft 3 in (6 023 mm)
J. Distance between tandem center and rear end of machine	5 ft 10 in (1 785 mm)	5 ft 10 in (1 785 mm)
K. Distance between front axle and rear end of machine	25 ft 5 in (7 808 mm)	25 ft 5 in (7 808 mm)
L. Overall length – without ripper or front attachment	30 ft 3 in (9 371 mm)	30 ft 3 in (9 371 mm)
M. Distance between rear tires and rear ripper	5 ft 9 in (1 755 mm)	5 ft 9 in (1 755 mm)
N. Distance between front tires and front dozer blade	5 ft 0 in (1 532 mm)	5 ft 0 in (1 532 mm)
Outside tire turning radius	23 ft 11 in (7 300 mm)	23 ft 11 in (7 300 mm)
Ground clearance – rear axle	14.9 in (379 mm)	14.9 in (379 mm)
Ground clearance – front axle	21.8 in (554 mm)	21.8 in (554 mm)

NOTE: All units equipped with 17.5 - 25 EM SGL TL Goodyear tires, ROPS cab with heater and A/C, std. battery, full fuel, 175 lb (79 kg) operator. Specifications per ISO 7134.

STANDARD EQUIPMENT

OPERATOR ENVIRONMENT

See page 1

ENGINE

F4HFE613Y*B005 NEF 6 cyl. CR TAA 4V
turbocharged diesel
Tier 4 Final Certified
Temperature controlled cooling fan
SCR only exhaust gas after-treatment
Charge air cooler
Air intake grid heater
Common rail electronic fuel injection
Hydraulic driven cooling fan
Auto idle
Cold start up to -19°C
Air cleaner/pre-cleaner with scavenge line
and safety element
Variable fan speed

DRIVETRAIN

Hydraulic differential lock
Immobilization disc brake on transmission
Powershift transmission with 6 Forward and
3 Reverse speeds with integrated torque
converter
Caliper parking brake on transmission
Hydraulic dual circuit brake system
Hydrostatic front wheel drive D.C.V.
Electronic Drove Control Volume and
hydraulic differential – FWD version only
Internal gearing:
Covered, Backlash-free and maintenance
free slewing ring operation on 360°
Hydrostatic power steering
Circle drive without overload clutch
Rear axle with automatic/manual gear shifting
Transmission with automatic/manual
gear shifting

HYDRAULICS

Closed center, load sensing hydraulic system
Controls for all functions
10 section control valve
Hydraulic moldboard side shift and pitch
5-position saddle
12 ft x 23.7 in (3 658 x 603 mm) moldboard
8 hydraulic diagnostic quick couplers
Front and rear piping for hydraulic attachment
Moldboard support no scarifier
Oscillating front axle with hydraulic
lean adjustment
Oscillating tandem axle with automatic
no-spin differential
Hydraulic circle turn – 360°
Hydraulic system lock valves for blade lift,
blade shift, front wheel lean, blade pitch,
articulation and special equipment, scarifier
– optional, and rear ripper – optional
Lock valve lift cylinder blade
Load sensing hydraulic system with
variable displacement pump with boost
function – activated by foot switch – for
higher hydraulic function speed

TIRES

17.5 - 25 EM SGL TL Goodyear

INSTRUMENTS

Analog displays/Gauges:
Fuel level; Engine coolant temperature;
Transmission oil temperature;
Hydraulic oil temperature.
Monitor Functions:
Hour meter; Automatic trans indication;
DEF/Ad blue level indication; Floating – if
activated; FWD aggressive mode; Error
prompt; Park brake message; Clutch
engagement status; Vehicle moving – yes/
no; Engine speed; Travel speed; Current
gear selection; FNR indication; Clock; Trip
computer; Fuel consumption; Fuel level
percentage; Oil pressure; Coolant
temperature; Engine oil temperature;
Transmission oil temperature; Hydraulic oil
temperature; Turbocharger air temperature;
Differential lock indicator; Gear selection
indicator; Engine diagnostics; Transmission
diagnostics; Keypad diagnostics; UCM
diagnostics; Speed limit module; Support
for different severities – White/Yellow/Red;
System voltage; Error reporting; Warning
prompts; Indicator warning lamps – main
warning, parking brake, low brake
pressure, low steering pressure, Pre-glow,
high beams, turn signals, hazard lights,
low fuel.

ELECTRICAL

2 – Heavy-duty batteries – 1010 CCA
Battery main switch
Electronic Systems Monitor
Horn
Alternator – 90 amp
Backup alarm
Headlights
2 – Turn signals front
2 – Tail lights with turn signals, brake lights
Flood lights – cab mounted

OTHER

Front counterweight
Rear counterweight
Front fender with hinged mudflaps
Rear fender
Wheel chocks x 2
Standard tooling
Drive Shaft Maintenance Free
Rear Ripper Maintenance Free
Dozer Maintenance Free

TELEMATICS

CASE SiteWatch™ Telematics – includes
hardware and a 3-yr Advanced
data subscription

OPTIONAL EQUIPMENT

MOLDBOARDS

11 ft x 23.6 in (3 355 x 600 mm), single radius curve
13 ft x 23.7 in (3 962 x 603 mm), single radius curve
Extensions – 2 ft (610 mm)
Front Float Control
Moldboard Float Control – Hydraforce/ HF22484-03
Lift cylinder/side shift accumulators
Lift cylinder accumulators
Moldboard with overload clutch
Moldboard side plates left/right

OPERATOR ENVIRONMENT

Front windows openable with rear window defroster
Lower front wiper/washers
Rear windshield washer
Air conditioning
Low Profile Cab
Radio
Air suspension seat, heated, moveable arm rests

HYDRAULICS

Rear ripper hydraulic predisposition
Environment friendly hydraulic oil panolin

TIRES

17.5 R25 XTLA G2 Michelin
17.5 R25 XHA Michelin

ELECTRICAL

2 – Front mounted working lights
2 – Floodlights at moldboard
2 – Floodlights at articulation
Snow wing lighting package
Backup alarm
Beacon

OTHER

Bidirectional engine cooling fan
Cold weather package
Fire extinguisher
Strobe light
Tool box – without tools
Deluxe tool box – with tools
Tire inflator kit
Spare wheel
Spare wheel support
Slow moving vehicle sign
Rear pull hook
Equipment on road
On road approval
Speed Limitation 20 km/h
Speed Limitation 25 km/h

ATTACHMENTS

Front pull hook
Front counterweight – 1,682 lb (763 kg)
Rear counterweight – 557.7 lb (253 kg)
Front dozer blade
Moldboard scarifier
Moldboard ripper
Front push plate
Front support and lift cylinder
Rear ripper with 3 or 5 teeth with or without protective device

