856C VHP/AWD
MOTOR GRADER TIER 4 FINAL CERTIFIED

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 in³ (6.7 L)

Fuel: Diesel
Fuel injection: Common Rail

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 in² (14 336 cm²)

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

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

<table>
<thead>
<tr>
<th>Type</th>
<th>All welded box</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Front section:</strong></td>
<td></td>
</tr>
<tr>
<td>Size</td>
<td>11.8 in x 11.8 in (300 mm x 300 mm)</td>
</tr>
<tr>
<td>Weight – each side</td>
<td>110.2 lb·ft (164 kg/m)</td>
</tr>
<tr>
<td><strong>Rear section:</strong></td>
<td></td>
</tr>
<tr>
<td>Size</td>
<td>10.2 in x 3.5 in (260 mm x 90 mm)</td>
</tr>
<tr>
<td>Weight – each side</td>
<td>82.9 lb·ft (123.4 kg/m)</td>
</tr>
</tbody>
</table>

### DRAWBAR

<table>
<thead>
<tr>
<th>Type:</th>
<th>“A” frame welded construction with center mounted circle turn motor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ball and circle</td>
<td>Shim adjustable</td>
</tr>
</tbody>
</table>

### MOLDBOARD

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

### ATTACHMENTS

#### SCARIFIER

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

#### REAR RIPPER

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

### CIRCLE

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

#### DOZER BLADE

<table>
<thead>
<tr>
<th>Type</th>
<th>Front mounted</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Width</strong></td>
<td>96.5 in (2 450 mm)</td>
</tr>
<tr>
<td><strong>Height</strong></td>
<td>34.3 in (870 mm)</td>
</tr>
<tr>
<td><strong>Lift above ground</strong></td>
<td>21.5 in (547 mm)</td>
</tr>
<tr>
<td><strong>Penetration</strong></td>
<td>7.2 in (183 mm)</td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>1,876 lb (851 kg)</td>
</tr>
<tr>
<td><strong>Includes front attachment group</strong></td>
<td></td>
</tr>
</tbody>
</table>

#### COUNTERWEIGHT

<table>
<thead>
<tr>
<th>Type</th>
<th>Front mounted</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Weight</strong></td>
<td>1,682 lb (763 kg)</td>
</tr>
</tbody>
</table>
**DIMENSIONS**

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

**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.

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

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CASE Construction Equipment is biodiesel-friendly.

NOTE: All engines meet current EPA emissions regulations. All specifications are stated in accordance with SAE Standards or Recommended Practices, where applicable.

Always read the Operator’s Manual before operating any equipment. Inspect equipment before using it, and be sure it is operating properly. Follow the product safety signs and use any safety features provided.