VX Series
Diesel Forklift Trucks

17,000 / 17,500 / 19,000 lbs.

- Low cost of operation is derived from increased uptime, low maintenance and high productivity
- Designed for dependability in the most rigorous applications
- For use in high speed, high load, short shuttle applications
- Industry leading ergonomic features
# Truck Dimensions

**Engine Specifications (High Output)**

**Kubota 3.8L High Output Tier 4 Turbo Diesel Engine**

- Cylinders: I-4
- Displacement: 230 cu.in./3.8 liter
- Torque: 373 lb.ft. @ 1600 RPM
- Horsepower: 110 hp @ 2400 RPM
- Air Filtration: Two Stage, Dry Type
- Emission Control: DPF/SCR Control

**Engine Specifications (DOC - Diesel Oxidation Catalyst)**

**Kubota 3.8L DOC Tier 4 Final Turbo Diesel Engine**

- Cylinders: I-4
- Displacement: 230 cu.in./3.8 liter
- Torque: 227 (309) lb.ft. @ 1400 RPM
- Horsepower: 74 hp @ 2200 RPM
- Air Filtration: Two Stage, Dry Type
- Emission Control: DOC Control

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**INSIDE TURNING RADIUS**

FOR 90° STACKING AISLE, ADD OUTSIDE TURNING RADIUS (21), PLUS DIMENSION (22) PLUS LOAD LENGTH.

**EVALUATING RIGHT ANGLE AISLE WIDTH**

**HEAD CLEARANCE** (see chart above)

**Dimensions with seat in depressed position.**
## General Specifications GP170VX - Diesel, LPG

**1 Manufacturer**: Yale®

**2 Model designation**: GP170VX

**2a Powertrain – engine transmission**: Kubota 3.8L DOC Techtronix 332

**3 Load capacity**: 17,000 (8,000)

**4 Load center**: 24 (600)

**5 Drive power type**: gas, diesel, LPG

**6 Operation**: Diesel

**7 Step height (from ground to running board)**: 12.6 (321)

**7a Step height (between intermediate steps between running board and floor)**: 10.1 (256)

**8 Tires**: Pneumatic

**9 Number of wheels, front/rear (X = driven)**: 4X/2

### Dimensions

**10 Lift height, w/LBR (TOF) (rounded down)**: 219 (5565)

**11 Standard free lift height (rounded down)**: 4 (105)

**12 Fork carriage width – standard carriage**: 80 (2030)

**12b Fork spacing - std. carriage - min. inside to inside edge**: 2.6 (65)

**13 Fork dimensions**: 7.9 X 2.5 X 47.2 (200 X 65 X 1200)

**13a Fork carriage to DIN 15173. Class, A/B**: Class

**14 Fork spacing - std. carriage - max. outside to outside edge**: 18.7 (47.6)

**15 Mast tilt, forward / back**: 5 / 92

**16 Overall length (length to face of forks)**: 153 (3883)

**17 Overall width**: 88 (2239)

**18 Height of standard mast, lowered (rounded up)**: 156 (3962)

**19 Height of mast, extended w/o load backrest (rounded up)**: 266 (6739)

**20 Height to top of standard overhead guard (rounded up)**: 100 (2531)

**20a Height to top of cab (rounded up)**: 101 (2549)

**21 Mast tilt, forward / back**: 5 / 92

**22 Load distance (load face-center of wheel to face of forks– front overhang) 2-stage**: 23.6 (599.5)

**22a Load distance (load face-center of wheel to face of forks– front overhang) 3-stage**: 25.6 (650.5)

**22b Right angle stack (add length of load)**: 168 (4273)

**23 Right angle stack with pallets 42 in wide x 48 in long**: 216 (5492)

**24 90° intersecting aisle (with pallet W=42in, L=48in)**: 120 (3056)

### Performance

**25a Travel speed fwd, RL/NL mph (km/hr)**: 12.0/13.1 (19.3/21.1)

**25b Travel speed rev, RL/NL mph (km/hr)**: 11.9/12.8 (19.1/20.5)

**26a Lifting speed, standard 2-stage FFL RL/NL ft/min (m/sec)**: 67/67 (.34/.34)

**26a Lifting speed, optional 3-stage FFL RL/NL ft/min (m/sec)**: 77/65 (.39/.33)

**27 Lowering speed, standard 2-stage FFL RL/NL ft/min (m/sec)**: 81/73 (0.41/0.37)

**27a Lowering speed, optional 3-stage FFL RL/NL ft/min (m/sec)**: 87/89 (0.44/.34)

**28 Drawbar pull @ maximum RL/NL lbs (kg)**: 12000/7213 (5443/3272)

**28a Drawbar pull @ 1 mph RL/NL lbs (kg)**: 11445/7213 (5192/3272)

**28b Drawbar pull @ 3 mph RL/NL lbs (kg)**: 4444/7213 (2016/3272)

**29 Maximum gradeability RL/NL %**: 29/29

**29a Gradeability @ 1 mph RL/NL %**: 29/29

**29b Gradeability @ 3 mph RL/NL %**: 19/29

**30 Weight, standard truck NL lbs (kg)**: 24824 (11260)

**31 Weight, standard truck NL lbs (kg)**: 12022/12800 (5453/5806)

**32a Axle loading, static front/rear RL lbs (kg)**: 37509/4314 (17014/1957)

**32b Axle loading, static front/rear RL lbs (kg)**: 12002/12800 (5453/5806)

**33 Tire size – front**: 8.25 X 15 -14PR

**33 Tire size – rear**: 8.25 X 15 -14PR

**34 Wheelbase**: 96.5 (2450)

**35 Ground clearance under mast, laden**: 96.5 (2450)

**36 Ground clearance at center of wheelbase**: 6.8 (173)

**37 Ground clearance at center of wheelbase**: 10.0 (253)

**38 Brakes service – method of control/operation**: Hydraulic/Foot

**39 Brakes service – method of control/operation**: Mechanical/Hand

## Other tire options are available.

*Backtilt limited to 6 degrees with some mast options.

*Carriage is 80” wide; load backrest is 82” wide.

*Other tire options are available.

*Backtilt limited to 6 degrees with some mast options.

*Carriage is 80” wide; load backrest is 82” wide.
## General Specifications GP175VX - Diesel, LPG

### GENERAL

1. **Manufacturer**: Yale®
2. **Model designation**: GP175VX
3. **Powertrain – engine transmission**: Kubota 3.8L DOC Techtronix 332
4. **Load capacity**: 17,500 lbs (8,000 kg)
5. **Load center**: 36 (900 mm)
6. **Drive power type**: Diesel
7. **Operation**: Seated Rider
8. **Step height (from ground to running board)**: 12.6 (321 mm)
9. **Step height (between intermediate steps between running board and floor)**: 10.1 (256 mm)
10. **Tires**: Pneumatic

### DIMENSIONS

11. **Load capacity lbs (kg)**: 17,500 (8,000)
12. **Load center in (mm)**: 36 (900)
13. **Drive power type**: Diesel
14. **Operation**: Seated Rider
15. **Step height (from ground to running board)**: 12.6 (321)
16. **Step height (between intermediate steps between running board and floor)**: 10.1 (256)
17. **Tires**: Pneumatic

### PERFORMANCE

18. **Lift height, w/LBR (TOF) (rounded down)**: 219 (5565)
19. **Standard free lift height (rounded down)**: 4 (105)
20. **Fork carriage width – standard carriage**: 80° (20303 mm)
21. **Fork spacing - std. carriage - min. inside to inside edge**: 2.6 (65)
22. **Fork dimensions**: 73.8 (1900 mm)
23. **Mast tilt, forward / back**: 5 / 92
24. **Overall length**: 159 (4038 mm)
25. **Overall width**: 88 (2239)
26. **Height of standard mast, lowered (rounded up)**: 156 (3962)
27. **Height of mast, extended w/o load backrest (rounded up)**: 266 (6739)
28. **Height of mast, extended w/load backrest (rounded up)**: 270 (6847)
29. **Height to top of standard overhead guard**: 100 (2531)
30. **Height to top of cab**: 101 (2549)
31. **Towing coupling height**: 18.7 (476)
32. **Outer turning radius**: 19.7 (494)
33. **Inner turning radius**: 18.9 (479)
34. **Load distance (load face-center of wheel to face of forks– front overhang) 2-stage**: 23.6 (599.5)
35. **Load distance (load face-center of wheel to face of forks– front overhang) 3-stage**: 25.6 (650.5)
36. **Right angle stack**: 173 (4394)
37. **Right angle stack with pallets**: 221 (5613)
38. **90° intersecting aisle (with pallet W=42in, L=48in)**: 123 (3126)

### PTW.

39. **Weight, standard truck NL**: 26782 (12148)
40. **Axle loading, static front/rear NL**: 11367/15415 (5156/6992)
41. **Wheelbase**: 96.5 (2450)
42. **Ground clearance under mast, laden**: 6.8 (173)
43. **Ground clearance at center of wheelbase**: 10.0 (253)
44. **Brakes service – method of control/operation**: Hydraulic/Foot
45. **Brakes park – method of control/operation**: Mechanical/Hand

### WHEELS & TIRES

46. **Tire size – front**: 8.25 X 15
47. **Tire size – rear**: 8.25 X 15
48. **Wheelbase**: 96.5 (2450)
49. **Ground clearance under mast, laden**: 6.8 (173)
50. **Ground clearance at center of wheelbase**: 10.0 (253)
51. **Brakes service – method of control/operation**: Hydraulic/Foot
52. **Brakes park – method of control/operation**: Mechanical/Hand

### OTHER SPECIFICATIONS

53. **Battery type**: Maintenance Free
54. **Battery volts/cold cranking amps**: 12V / 1010 X 2
55. **Engine manufacturer/type**: Kubota 3.8L DOC
56. **Engine power @ governed speed (hp): 74 (55) @ 2200RPM
57. **Torque @ rated RPM (ft. lbs): 227 (309) @ 1400RPM
58. **Number of cylinders/displacement**: I-4/1575
59. **Gear change type**: Electronically Controlled Powershift
60. **Transmission: number of speeds forward/reverse**: 3F / 2R
61. **Fuel tank – capacity**: 19.8 (74.8 gal)
62. **Working pressure for attachments**: 2250 (155 psi)
63. **Oil flow for attachments**: 24 (93 gal/min)
64. **Towing coupling type**: Pin
65. **Hydraulic tank – capacity (drain & refill)**: 18.7 (70.9 gal)

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1. **Other tire options are available.**
2. **Backtilt limited to 6 degrees with some mast options.**
3. **Carriage is 80" wide, load backrest is 82" wide.**
### General Specifications GP190VX - Diesel, LPG

<table>
<thead>
<tr>
<th><strong>GENERAL</strong></th>
<th><strong>SPECIFICATIONS</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Manufacturer</strong></td>
<td>Yale®</td>
</tr>
<tr>
<td><strong>Model designation</strong></td>
<td>GP190VX</td>
</tr>
<tr>
<td><strong>Powertrain – engine transmission</strong></td>
<td>Kubota 3.8L DOC Techtronix 332, Kubota 3.8L High Output Techtronix 332</td>
</tr>
<tr>
<td><strong>Load capacity</strong></td>
<td>19,000 (9,000)</td>
</tr>
<tr>
<td><strong>Load center</strong></td>
<td>24 (600)</td>
</tr>
<tr>
<td><strong>Drive power type: gas, diesel, LPG</strong></td>
<td>Diesel</td>
</tr>
<tr>
<td><strong>Operation</strong></td>
<td>Seated Rider</td>
</tr>
<tr>
<td><strong>Step height (from ground to running board)</strong></td>
<td>12.6 (321)</td>
</tr>
<tr>
<td><strong>Step height (between intermediate steps between running board and floor)</strong></td>
<td>10.1 (256)</td>
</tr>
<tr>
<td><strong>Tires</strong></td>
<td>Pneumatic</td>
</tr>
<tr>
<td><strong>Number of wheels, front/rear (X = driven)</strong></td>
<td>4X/21</td>
</tr>
<tr>
<td><strong>Lift height, w/LBR (TOF) (rounded down)</strong></td>
<td>219 (5565)</td>
</tr>
<tr>
<td><strong>Standard free lift height (rounded down)</strong></td>
<td>4 (105)</td>
</tr>
<tr>
<td><strong>Fork carriage width – standard carriage</strong></td>
<td>80 (2030)</td>
</tr>
<tr>
<td><strong>Fork spacing - std. carriage - min. inside to inside edge</strong></td>
<td>2.6 (65)</td>
</tr>
<tr>
<td><strong>Fork spacing - std. carriage - max. outside to outside edge</strong></td>
<td>78.3 (1990)</td>
</tr>
<tr>
<td><strong>Height to top of standard mast, lowered (rounded up)</strong></td>
<td>156 (3958)</td>
</tr>
<tr>
<td><strong>Height of mast, extended w/o load backrest (rounded up)</strong></td>
<td>266 (6739)</td>
</tr>
<tr>
<td><strong>Height of mast, extended w/load backrest (rounded up)</strong></td>
<td>270 (6847)</td>
</tr>
<tr>
<td><strong>Height to top of standard mast, lowered (rounded up)</strong></td>
<td>100 (2531)</td>
</tr>
<tr>
<td><strong>Height to top of cab (rounded up)</strong></td>
<td>101 (2549)</td>
</tr>
<tr>
<td><strong>Height to top of cab (rounded up)</strong></td>
<td>18.7 (476)</td>
</tr>
<tr>
<td><strong>Outer turning radius</strong></td>
<td>14.3 (362)</td>
</tr>
<tr>
<td><strong>Load distance (load face-center of wheel to face of forks– front overhang) 2-stage</strong></td>
<td>23.6 (599.5)</td>
</tr>
<tr>
<td><strong>Load distance (load face-center of wheel to face of forks– front overhang) 3-stage</strong></td>
<td>25.6 (650.5)</td>
</tr>
<tr>
<td><strong>Right angle stack (add length of load)</strong></td>
<td>170 (4323)</td>
</tr>
<tr>
<td><strong>Right angle stack with pallets 42in wide x 48in long</strong></td>
<td>218 (5542)</td>
</tr>
<tr>
<td><strong>90° intersecting aisle (with pallet W=42in, L=48in)</strong></td>
<td>121 (3085)</td>
</tr>
<tr>
<td><strong>Travel speed fwd, RL/NL mph (km/hr)</strong></td>
<td>11.9/13.0 (19.2/21.0), 13.4/14.4 (21.5/23.2)</td>
</tr>
<tr>
<td><strong>Travel speed rev, RL/NL mph (km/hr)</strong></td>
<td>11.8/12.7 (19.1/20.5), 10.7/11.5 (17.2/18.5)</td>
</tr>
<tr>
<td><strong>Lifting speed, standard 2-stage LFL RL/NL ft/min (m/sec)</strong></td>
<td>54/67 (.27/.34) IV A, 78/89 (40/34)</td>
</tr>
<tr>
<td><strong>Lifting speed, optional 3-stage FFL RL/NL ft/min (m/sec)</strong></td>
<td>50/67 (.26/.34) 75/89 (38/.34)</td>
</tr>
<tr>
<td><strong>Lowering speed, standard 2-stage LFL RL/NL ft/min (m/sec)</strong></td>
<td>67/81 (0.37/0.41)</td>
</tr>
<tr>
<td><strong>Lowering speed, optional 3-stage FFL RL/NL ft/min (m/sec)</strong></td>
<td>77/65 (0.39/0.30)</td>
</tr>
<tr>
<td><strong>Drawbar pull @ maximum RL/NL lbs (kg)</strong></td>
<td>12000/7213 (5443/3272), 12000/7213 (5443/3272)</td>
</tr>
<tr>
<td><strong>Maximum gradeability RL/NL %</strong></td>
<td>27/29, 27/29</td>
</tr>
<tr>
<td><strong>Maximum gradeability @ 1 mph RL/NL %</strong></td>
<td>25/29, 27/29</td>
</tr>
<tr>
<td><strong>Maximum gradeability @ 3 mph RL/NL %</strong></td>
<td>10/29, 18/29</td>
</tr>
<tr>
<td><strong>Weight, standard truck NL lbs (kg)</strong></td>
<td>25857 (11729)</td>
</tr>
<tr>
<td><strong>Axle loading, static front/rear NL lbs (kg)</strong></td>
<td>11693/14162 (5304/6424), 40179/4678 (18225/2122)</td>
</tr>
<tr>
<td><strong>Battery type</strong></td>
<td>Maintenance Free</td>
</tr>
<tr>
<td><strong>Engine manufacturer/type</strong></td>
<td>Kubota 3.8L DOC, Kubota 3.8L High Output Techtronix 332</td>
</tr>
<tr>
<td><strong>Engine power @ governed speed hp (kw)</strong></td>
<td>74 (55) @ 2200RPM, 110 (82) @ 2400RPM</td>
</tr>
<tr>
<td><strong>Torque @ rated RPM ft. lbs (N-m)</strong></td>
<td>227 (309) @ 1400RPM, 373 (275) @ 1600 RPM</td>
</tr>
<tr>
<td><strong>Number of cylinders/displacement No./cc (ci)</strong></td>
<td>1-4/3769 (230)</td>
</tr>
<tr>
<td><strong>Gear change type</strong></td>
<td>Electronically Controlled Powershift</td>
</tr>
<tr>
<td><strong>Transmission: number of speeds forward/reverse</strong></td>
<td>3F / 2R</td>
</tr>
<tr>
<td><strong>Fuel tank – capacity gal (liters)</strong></td>
<td>19.8 (74.8)</td>
</tr>
<tr>
<td><strong>Working pressure for attachments psi (bar)</strong></td>
<td>2250 (155)</td>
</tr>
<tr>
<td><strong>Oil flow for attachments gal/min (l/min)</strong></td>
<td>24 (93)</td>
</tr>
<tr>
<td><strong>Towing coupling type</strong></td>
<td>Pin</td>
</tr>
<tr>
<td><strong>Hydraulic tank – capacity (drain &amp; refill) gal (liters)</strong></td>
<td>18.7 (70.9)</td>
</tr>
</tbody>
</table>

1. Other tire options are available.
2. Backtilt limited to 6 degrees with some mast options.
3. Carriage is 80” wide, load backrest is 82” wide.

4. **Note:** Dimensions and capacities are rounded to the nearest whole number.
## GP170-190VX Mast dimensions

<table>
<thead>
<tr>
<th></th>
<th>Overall Lowered Height</th>
<th>Overall Extended Height</th>
<th>Free-Lift (TOF)</th>
<th>Approx. Total Wt. of Std. Equipped Truck</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>w/ Load Backrest</td>
<td>w/ Load Backrest</td>
<td>w/ Load Backrest</td>
<td>w/ Load Backrest</td>
</tr>
<tr>
<td></td>
<td>in (mm)</td>
<td>in (mm)</td>
<td>in (mm)</td>
<td>in (mm)</td>
</tr>
<tr>
<td></td>
<td>GP170VX with NL</td>
<td>GP175VX with NL</td>
<td>GP190VX with NL</td>
<td></td>
</tr>
<tr>
<td></td>
<td>lbs (kg)</td>
<td>lbs (kg)</td>
<td>lbs (kg)</td>
<td></td>
</tr>
<tr>
<td><strong>2-Stage Limited Free-Lift (LFL) Mast</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>140 (3565)</td>
<td>117 (2962)</td>
<td>191 (4850)</td>
<td>186 (4725)</td>
<td>4 (105)</td>
</tr>
<tr>
<td>179 (4656)</td>
<td>137 (3462)</td>
<td>231 (5850)</td>
<td>226 (5725)</td>
<td>4 (105)</td>
</tr>
<tr>
<td>219 (5565)</td>
<td>156 (3962)</td>
<td>270 (6850)</td>
<td>265 (6725)</td>
<td>4 (105)</td>
</tr>
<tr>
<td><strong>3-Stage Full Free-Lift (FFL) Mast</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>181 (4615)</td>
<td>107 (2702)</td>
<td>240 (6077)</td>
<td>235 (5952)</td>
<td>56 (1440)</td>
</tr>
<tr>
<td>234 (5965)</td>
<td>125 (3152)</td>
<td>293 (7427)</td>
<td>288 (7302)</td>
<td>74 (1890)</td>
</tr>
<tr>
<td><strong>Heavy Duty 2-Stage Limited Free-Lift (LFL) Mast</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>179 (4656)</td>
<td>137 (3462)</td>
<td>231 (5850)</td>
<td>226 (5725)</td>
<td>4 (105)</td>
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<tr>
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<td>156 (3962)</td>
<td>270 (6850)</td>
<td>265 (6725)</td>
<td>4 (105)</td>
</tr>
<tr>
<td><strong>Heavy Duty 3-Stage Full Free-Lift (FFL) Mast</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>258 (6565)</td>
<td>133 (3362)</td>
<td>317 (8037)</td>
<td>312 (7912)</td>
<td>82 (2090)</td>
</tr>
</tbody>
</table>

*RL = Rated Load  NL = No Load

Note: GP170-190VX use standard 8.25 x 15 x 14 PR pneumatic drive tires @ 82.0 inch (2082 mm) overall width.

### Options

- Powertrain protection system with engine shutdown
- Premium monitoring package
- Integral sideshifter, and integral sideshifting fork positioner
- Accumulator
- Keyless start (with auxiliary key switch)
- LED brake and back-up lights
- Headlights and rear drive lights with halogen bulbs
- Headlights and rear drive lights with LED bulbs
- Traction speed limiter
- Return-to-set tilt
- Integral operator’s cab
- Rear drive handle with horn button
- Swivel full-suspension vinyl and cloth seats
- High-visibility non-cinch seat belt with or without interlock
- Foot Directional Control pedal
- Impact monitor
- Operator password
- Alarm-reverse actuated 82-102 Db(A) – self-adjusting
- LED amber strobe light - keyswitch activated
- Solid and radial tires
- 4 function (2 aux) hydraulic control valve
- 5° forward/6° backward tilt
- UL type DS
- Fire extinguisher
- Lifting eyes
- Kubota 3.8L High Output Engine (110 HP)
**Yale® Veracitor® GP-VX Series**

The Veracitor® GP170-190VX truck is designed to meet and exceed your materials handling application requirements with excellent performance and low hourly cost of operation.

**Engines**

The Kubota 3.8L High Output Tier 4 Final turbo diesel engine and the standard Kubota 3.8L DOC Tier 4 Final turbo diesel engine both utilize a two piece cylinder block for outstanding durability while reducing engine noise. Cylinders are cast into the block for optimum durability and cooling efficiency. Cylinder heads feature a helical, 4-valve “Crossflow” design within each cylinder to create additional airflow into the cylinder for added power. The turbocharger is of a simple design, but uses a variable waste-gate to ensure the proper amount of boost at all engine speeds. Both engines are certified to EPA Tier 4 Final emissions standards.

**Fuel System**

The Kubota 3.8L DOC Tier 4 Final turbo diesel, and the Kubota 3.8L High Output Tier 4 Final turbo diesel engine fuel systems utilize an electronically controlled, high-pressure common-rail fuel system that sends five separate fuel deliveries per fuel injection power stroke for maximum power and efficiency while reducing the noise levels. The 3.8L High Output engine features a cooled exhaust to be re-burned, which helps reduce emissions. A Diesel Particulate Filter (DPF) captures particulates or “soot” and oxidizes the material to eliminate smoke from the exhaust. A separate display module is furnished to monitor and control the emissions system. The standard Kubota 3.8L DOC Tier 4 Final Turbo diesel engine features a maintenance free emissions system and requires no DPF or SCR.

**Transmissions**

The standard Techtronix 332 transmission features three speeds forward and two speeds in reverse for excellent gradeability and drawbar pull while allowing top travel speeds for maximum productivity. Auto Deceleration feature is accomplished through the controlled application of the clutch packs. Controlled power reversals are managed by precisely regulating engine speed to reduce driveline stress during directional changes. Inching is controlled electronically. This transmission also features electronic shift control, smooth electronic inching, neutral start switch, and anti-restart protection. A single pedal controls both inching and braking. Optional dual inch/brake pedals are available for operators who prefer this design. A 100 mesh suction and 10 micron return line filtration protect the transmission from abrasive contaminants.

**Cooling System**

The cooling system employs a modular radiator system, with sections for engine coolant, transmission oil, and engine intake (charge) air. An 18” diameter blade pusher-type fan provides cooling air flow. A permanently lubricated water pump and a high capacity, cross-flow radiator ensure rapid heat dissipation. The sealed cooling system operates at a pressure of 15 psi and includes a coolant recovery tank for visual inspection of coolant level. The radiator is soft-mounted for excellent durability.

**Drive Axle**

The drive axles are designed to withstand heavy loads and absorb shocks. The wheel hubs rotate on large tapered roller bearings. The drive shaft transmits rotational torque to the drive axle from the engine and transmission. Transmission torque is distributed through planetary gear reduction and an industrial hypoid ring gear and pinion assembly.

The drive axle is a “self contained” assembly that is isolated from the transmission by the drive shaft and heavy duty rubber isolators. The axle shafts utilize a “rolled fillet” root spine design for increased resistance to torsional stress. A magnetic sump plug is used to collect any metal particles that are circulating in the axle oil, preventing component wear.

**Oil-cooled wet disc brakes**

Oil-cooled wet disc brakes are standard and internal to the axle for better protection against the elements. These low pedal effort brakes require no adjustments and very little maintenance, yet provide an extremely long service life.

Metered hydraulic oil pressure is used to actuate the wet disc brakes via a brake-pedal actuated modulating valve. This system yields consistent pedal travel for optimum control. Independent, hand adjustable parking brake with pushbutton release has an audible alarm to indicate when the operator has left the truck without applying the parking brake.

**Hydraulic System**

Hydraulic Power Steering

Hydraulic Power Steering (hydrostatic steering) provides responsive control and eliminates mechanical linkages for reduced surface shock and simplified maintenance. The steering wheel is 12 inches in diameter with a textured surface grip and spinner knob, and requires only four turns lock-to-lock. The center mounted steer cylinder is located within the confines of the steer axle for protection.

**Steer Axle**

Constructed of cast ductile iron and mounted on phenolic bushings, allows the steer axle excellent stability and axle articulation. The steer axle system features tapered spindle bearings and non-adjustable tie rod ends for durability.

**Chassis**

Designed by state-of-the-art finite element methods, the chassis features inch-thick frame members and contains a rugged, unitized frame structure with a low step for simple entrance to the operator’s compartment. Ergonomically designed overhead guard is bar type for excellent visibility and reduced noise. Gull wing doors on both the right and left sides provide excellent service access.

**Operator’s Compartment**

The operator compartment features Accutouch miniliever, electro-hydraulic controls integrated into the operator’s right-side armrest allowing superior ergonomic actuation. Automotive-style pedal arrangement with a large, single inch/brake pedal is standard. Rubber floor mat reduces noise and vibration. The floorplate can be removed without tools for excellent service access. Low step height and a convenient hand grip provide easy entry and exit to and from the truck.

**Intellix VSM**

Intellix VSM acts as a master truck controller, providing extensive monitoring and control of truck functions and systems. CANbus technology reduces wiring complexity and enables comprehensive communications between truck systems. The ergonomically positioned dash display transmits continual feedback to the operator and allows for communication of service codes. Comprehensive on-board diagnostics enable quick and easy troubleshooting. The electrical system features sealed connectors and Hall Effect sensors for superior dependability.

**Yale® Masts**

Yale masts are available in Simplex LFL (Limited Free Lift) and Triplex FFL (Full Free Lift) models. The mast features pre-lubed and sealed full-radius load rollers that resist the forward, rearward and lateral forces. Side-thrust wear pads allow for periodic adjustments for lateral clearances. The rolled mast channels are made of high-strength steel to provide resistance to flaring of the channel flanges. 80” wide hook-type carriages are standard equipment, providing great visibility and handles a wide variety of forks and attachments.

The optional heavy duty mast provides a solution for users in extreme applications that require heavy attachment use or frequently moved maximum rated loads.