# XF Series Diesel Pneumatic Tire Forklift

with capacities of 17,500 to 26,000lbs

*Making Material Handling Easier*
SINCE 1956

HANGCHA


**MONTACARGAS REMMOSA SA DE CV**

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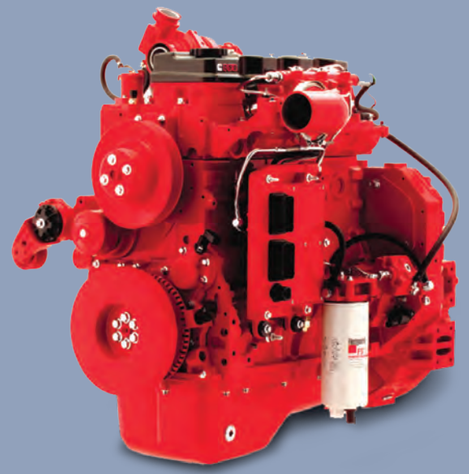
ISO9001 ISO14001

# Simple
# Smart
# Solid

## Diesel Powered HANGCHA Forklifts

Efficient, reliable solutions to meet your demands.



Hangcha uses the powerful 6.5l 6BG1 ISUZU diesel engine in our XF Series Diesel Pneumatic Tire Forklifts with a 17,500-22,000lb load capacity. These engines provide end-users with a reliable solution to maximize their operational efficiency.

The applied optimized exhaust muffler, intake muffler and the noise shield technologies are reduced 3dB at the driver's ear noise level.

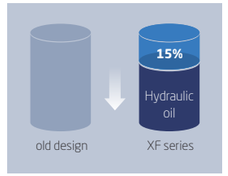
ISUZU

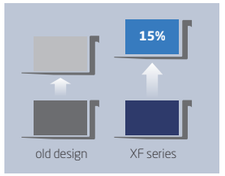
## Productivity

Thanks to a series of technological innovations, the efficiency of the truck is improved and energy consumption is reduced.

*By optimizing the transmission design, the maximum driving speed is increased by* ***20%***

The new efficient lighting system uses LEDs and a new type of reflector to reduce energy consumption. This significantly improves illumination performance while also prolonging operation time.




The new dynamic load sensing hydraulic steering system requires 15% less hydraulic oil while providing a 15% increase in lifting speed.

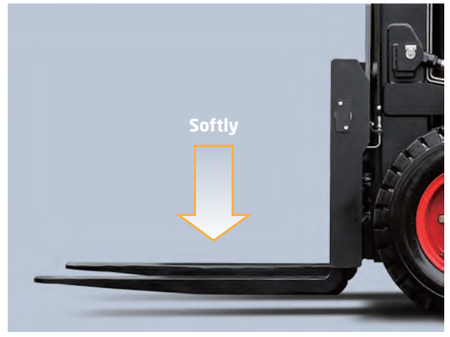
# Operator Comfort

*While developing the 17,500-22,000lb XF Series, comfort and ease of operation were carefully considered. The engineers decreased vibration levels by using a compound engine damper and full floating seat and cabin. The forklift was made more comfortable because a comfortable operator leads to increased operational productivity.*


The foot space is now 30% wider to significantly reduce operator fatigue. The new wide, non-slip step makes getting in and out of the forklift safe and easy.

The easy-to-operate levers provide total load handling operation. The armrest is provided to reduce fatigue. The optional electro-hydraulic proportional control system gives the forklift the ability to make load handling more sensitive and precise.


The mast was redesigned to provide broad forward visibility. This was done by relocating the hydraulic pipes of the fork positioner to the outside of the mast.




In addition to the soft landing system, the soft lifting system is adopted (front lifting cylinders of the full free lift 2 & 3 stage masts). As a result, the noise and shock of the mast significantly decrease when lowering materials.

# Comfortable Operation

1. The new relocated, easy-to-see LCD instrument display lets the operator check on all aspects of operational status with a glance.

2. The new automobile-style light/turn-signal stalk and the forward-reverse lever are ergonomically designed and arranged to improve comfort and productivity.

3. Only 90N of force is required to engage the parking brake.

4. The small-diameter steering wheel, with tilt adjustment, provides an optimal driving position for the operator. The superior responsiveness of the steering wheel optimizes maneuverability even in narrow spaces.

5. The automobile-style suspended pedals provide a more ergonomic, operator-centered experience.

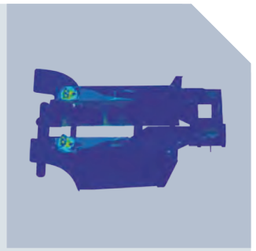
# Reliability

By focusing on enhancing reliability and reducing downtime, the XF Series is able to increase productivity for the end-users.

The patented plated-fin aluminum radiator is used to increase cooling and improved the forklift's capability in harsh, hot environments.

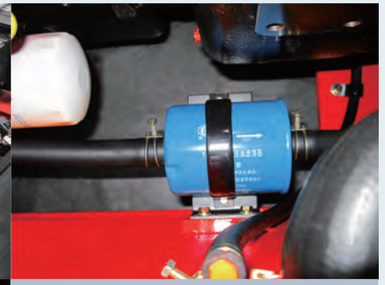

Dampening pads are placed where the chassis meets the steering axle, engine, torque converter, and overhead guard. The suspension seat also comes standard. This is all included in the design to reduce the amount of vibration to the operator and increase operator comfort.

The chassis, mast, and front/rear axle are designed to be strong. These components are also made with durable components. This is all done to increase the safety and reliability of the truck when for use in high strength applications.



The controllers, relays, and safety fuses are all placed in the dust and water-free controller box. The main electronic components are also waterproof. This allows the operator to use the forklift in wet environments.

The new stamped air cleaner, with a double sealed safety filter, is durable, corrosion-free and vibration-resistant. This provides better filtration efficiency and lowers intake resistance.

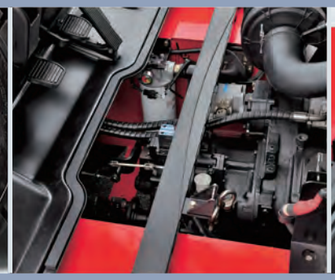


The battery is located above the fuel tank in a battery box. An adiabatic plate is placed between the box and the fuel tank to prolong the battery's working life.

The brake and steering hydraulic systems are separated to prevent interference between each other and increase reliability.

The gearbox oil is fed through a return oil filter and multi-valve to improve the cleanliness of the hydraulic oil and improve the systems working life.

# Easy Maintenance



Designed for easy inspection and servicing. The XF Series' quick and easy maintenance reduces downtime and operational costs.

The location of the air filter allows for easy reach and replacement when the filter needs to be changed.

The brake drum is installed outside of wheel hub allowing for easy removal and installation of the brake shoes.

The engine oil level dipstick, hydraulic filter, and water separator are easy to reach, and allow for easy maintenance.

The gas spring support for the front cover of the radiator auto-opens when the rear cover of the radiator is opened.

# Safety

*A wide range of technology is applied to ensure absolute safety for both the operator and those in the vicinity.*

There's an energy accumulator in the braking system. This allows for the brakes to continue to function after the engine is shut off.

There is a locking mechanism found on the engine hood, damper, and parking brake for the operator's safety.


1. The Operator Presence Sensing System incorporates a lifting, tilting, and traveling stop function. When the operator leaves the seat, the system automatically locks the lifting/tilting functions and disables the forklift from traveling to ensure safety.

2. The throttling device locks the mast in place if there is a hydraulic failure. This adds to the operational safety of the truck.

# Standard Specification

## Transmission

- / Suspension Transmission
- / Oil Filter
- / Dipstick
- / Oil Cooler
- / Non-Asbestos Brakes
- / Wet Brakes

## Steering

- / Full Hydraulic Power Steering
- / Smaller Diameter Steering Wheel
- / Adjustable Steering Wheel
- / Steering Axle Shock Absorber

## Chassis

- / Skidproof Pedal
- / Rubber Pedal
- / Engine Hood Spring

## Control

- / Power Steering
- / Suspension Pedal
- / Integrated Combination Switch
- / Parking Brake

## Hydraulic

- / Dynamic Load Sending Control Valve
- / Hydraulic Oil Filter
- / Tilt Cylinder Self-Lock Valve
- / Hydraulic Oil Dipstick
- / Accumulator
- / Hydraulic Oil Radiator

## Truck

- / Traction Device
- / Hand Grip
- / Standard Seat
- / Floating/Waterproof Overhead Guard
- / Rearview Mirror
- / Air Pneumatic Tires
- / Fan Protector
- / Boot for Tilt Cylinder

## Power

- / Large Capacity Aluminum Radiator
- / Whirlwind Air Cleaner
- / Safety Filter
- / Highly Efficient Intake Muffler
- / Highly Efficient Exhaust Muffler
- / Overhead Gaurd Exhaust System

## Electronics

- / Highly Efficient LED Headlights & Taillights
- / Maintenance Free Battery
- / Combination Controller
- / LCD Display
- / Neutual Switch
- / Hour Meter
- / Fuel Gauge
- / Water Temperature Gauge
- / Strobe Light
- / Pre-Heat Indicator
- / Charging Indicator
- / Engine Fuel Pressure Warning
- / Oil Temperature
- / Horn
- / Reverse Alarm
- / Air Filter with Jam Sensor
- / Emergency Cut Off
- / Operator Presence Sensing System (OPS)

## Mast

- / Limited Free Lift 2 Stage Mast
- / Standard Forks
- / Standard Fork Carriage
- / Mast Speed Limiting Valve
- / Load Safety Valve
- / Soft Landing System
- / Soft Lifting System
- / Side Roller
- / Fork Positioner

# Options

- / Full Cabin
- / Cabin Heater
- / Front Window with Wiper
- / Solid Pneumatic Tire
- / Non-Marking Tire
- / Full Suspension Seat
- / Fire Extinguisher
- / Special Colors
- / Counterweight Grill
- / Air Pre-Cleaner
- / Radiator Screen
- / Fan Protector
- / Auxiliary Hydraulic Valve
- / Electro-Hydraulic Proportional Control System
- / Front Working Light
- / Rear Working Light
- / Full Free Lift 2 Stage Mast
- / Full Free Lift 3 Stage Mast
- / Various Special Forks
- / Wider Fork Carriages
- / Wider Load Backrest
- / Various Specialty Attachments

# 17500-22000lb XF Series Mast:

| Type | Model | Max. Fork Height | Overall Height | | Free Lift Without Backrest | Load Distance, Centre of Drive Axle to Fork | Tilt Range | Load Capacity | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Lowered | Extended Without Backrest | | | FWD/BWD | Load Capacity at 24" Double Tire | |
| | | | | | | | | 17500 | 22000 |
| | | in | in | in | in | in | (°) | lb | lb |
| Limited Free Lift 2 Stage Mast | X80M250 | 98 | 96 | 146 | 7.8 | 28.1 | 6/12 | 17500 | / |
| | X80M270 | 106 | 100 | 154 | 7.8 | 28.1 | 6/12 | 17500 | / |
| | X80M300 | 118 | 106 | 166 | 7.8 | 28.1 | 6/12 | 17500 | / |
| | X80M330 | 130 | 112 | 178 | 7.8 | 28.1 | 6/12 | 17500 | / |
| | X80M350 | 138 | 116 | 185 | 7.8 | 28.1 | 6/12 | 17500 | / |
| | X80M360 | 142 | 118 | 189 | 7.8 | 28.1 | 6/12 | 17500 | / |
| | X80M400 | 157 | 126 | 205 | 7.8 | 28.1 | 6/12 | 17500 | / |
| | X80M430 | 169 | 134 | 217 | 7.8 | 28.1 | 6/6 | 17500 | / |
| | X80M450 | 177 | 138 | 225 | 7.8 | 28.1 | 6/6 | 17500 | / |
| | X80M480 | 189 | 144 | 237 | 7.8 | 28.1 | 6/6 | 17500 | / |
| | X80M500 | 197 | 148 | 244 | 7.8 | 28.1 | 6/6 | 17500 | / |
| | X80M550 | 217 | 159 | 265 | 7.8 | 28.1 | 3/6 | 16314 | / |
| | X80M600 | 236 | 169 | 285 | 7.8 | 28.1 | 3/6 | 15432 | / |
| | X80M650 | 256 | 181 | 307 | 7.8 | 28.1 | 3/6 | 12787 | / |
| | X100M250 | 98 | 102 | 160 | 7.8 | 28.6 | 6/12 | / | 22000 |
| | X100M270 | 106 | 106 | 168 | 7.8 | 28.6 | 6/12 | / | 22000 |
| | X100M300 | 118 | 112 | 179 | 7.8 | 28.6 | 6/12 | / | 22000 |
| | X100M330 | 130 | 118 | 191 | 7.8 | 28.6 | 6/12 | / | 22000 |
| | X100M350 | 138 | 122 | 199 | 7.8 | 28.6 | 6/12 | / | 22000 |
| | X100M360 | 142 | 124 | 203 | 7.8 | 28.6 | 6/12 | / | 22000 |
| | X100M400 | 157 | 132 | 219 | 7.8 | 28.6 | 6/12 | / | 22000 |
| | X100M430 | 169 | 140 | 231 | 7.8 | 28.6 | 6/6 | / | 22000 |
| | X100M450 | 177 | 144 | 238 | 7.8 | 28.6 | 6/6 | / | 22000 |
| | X100M480 | 189 | 150 | 250 | 7.8 | 28.6 | 6/6 | / | 22000 |
| | X100M500 | 197 | 154 | 258 | 7.8 | 28.6 | 6/6 | / | 22000 |
| | X100M550 | 217 | 165 | 278 | 7.8 | 28.6 | 3/6 | / | 19872 |
| | X100M600 | 236 | 175 | 297 | 7.8 | 28.6 | 3/6 | / | 17637 |
| | X100M650 | 256 | 187 | 317 | 7.8 | 28.6 | 3/6 | / | 14771 |
| Full Free Lift 2 Stage Mast | X80U230 | 91 | 93 | 138 | 45 | 28.3 | 6/12 | 17500 | / |
| | X80U250 | 98 | 96 | 146 | 49 | 28.3 | 6/12 | 17500 | / |
| | X80U270 | 106 | 100 | 154 | 53 | 28.3 | 6/12 | 17500 | / |
| | X80U300 | 118 | 106 | 166 | 59 | 28.3 | 6/12 | 17500 | / |
| | X80U330 | 130 | 112 | 177 | 65 | 28.3 | 6/12 | 17500 | / |
| | X80U360 | 142 | 118 | 189 | 71 | 28.3 | 6/12 | 17500 | / |
| | X80U400 | 157 | 126 | 205 | 79 | 28.3 | 6/12 | 17500 | / |
| | X100U230 | 91 | 98 | 151 | 38 | 29.3 | 6/12 | / | 220000 |
| | X100U250 | 98 | 102 | 159 | 42 | 29.3 | 6/12 | / | 22000 |
| | X100U270 | 106 | 106 | 167 | 45 | 29.3 | 6/12 | / | 22000 |
| | X100U300 | 118 | 112 | 179 | 51 | 29.3 | 6/12 | / | 22000 |
| | X100U330 | 130 | 118 | 191 | 57 | 29.3 | 6/12 | / | 22000 |
| | X100U360 | 142 | 124 | 203 | 63 | 29.3 | 6/12 | / | 22000 |
| | X100U400 | 157 | 131 | 218 | 71 | 29.3 | 6/12 | / | 22000 |
| Full Free Lift 3 Stage Mast | X80N450 | 177 | 108 | 227 | 58 | 29.9 | 6/6 | 15432 | / |
| | X80N480 | 189 | 112 | 239 | 62 | 29.9 | 6/6 | 15432 | / |
| | X80N500 | 197 | 116 | 250 | 63 | 29.9 | 6/6 | 14330 | / |
| | X80N550 | 217 | 122 | 268 | 71 | 29.9 | 3/6 | 13448 | / |
| | X80N600 | 236 | 128 | 286 | 78 | 29.9 | 3/6 | 12346 | / |
| | X80N650 | 256 | 139 | 309 | 87 | 29.9 | 3/6 | 11023 | / |
| | X80N700 | 276 | 146 | 327 | 94 | 29.9 | 3/6 | 9259 | / |
| | X100N450 | 177 | 112 | 238 | 51 | 31.3 | 6/6 | / | 18739 |
| | X100N480 | 189 | 116 | 250 | 55 | 31.3 | 6/6 | / | 18739 |
| | X100N500 | 197 | 120 | 258 | 59 | 31.3 | 6/6 | / | 18078 |
| | X100N550 | 217 | 126 | 278 | 65 | 31.3 | 3/6 | / | 16976 |
| | X100N600 | 236 | 132 | 297 | 71 | 31.3 | 3/6 | / | 15432 |
| | X100N650 | 256 | 143 | 317 | 82 | 31.3 | 3/6 | / | 13669 |
| | X100N700 | 276 | 150 | 337 | 89 | 31.3 | 3/6 | / | 11464 |

With sideshifter minus 1102lbs,with integral sideshifter minus 882lbs

# XF Series Pneumatic Forklift 17,500-26,000lb Specification

| | | | | | | |
|---|---|---|---|---|---|---|
| Distinguishing Marks | 1.1 | Manufacturer | | HANGCHA GROUP CO.,LTD. | | |
| | | HCFA Model | | FD80 | FD100 | FD120 |
| | 1.2 | Manufacturer's Type Designation | | CPCD80-XW41B | CPCD100-XW41B | CPCD120-XXW41 |
| | 1.3 | Drive: electric (battery or mains), diesel, petrol, fuel gas | | Diesel | Diesel | Diesel |
| | 1.4 | Operator Type: hand, pedestrian, standing, seated, order-picker | | Seated | Seated | Seat |
| | 1.5 | Rated Capacity/Rated Load | Q (lb) | 17500 | 22000 | 26000 |
| | 1.6 | Load Centre Distance | c(in) | 24 | 24 | 24 |
| | 1.8 | Load Distance, centre of drive axle to fork | x(in) | 28 | 29 | 29 |
| | 1.9 | Wheelbase | y(in) | 102 | 110 | 110 |
| Weight | 2.1 | Service Weight | lb | 26455 | 30423 | 31526 |
| | 2.2 | Axle Loading, laden front/rear | lb | 39639/4453 | 47432/5015 | 53131/4850 |
| | 2.3 | Axle Loading, unladen front/rear | lb | 10626/15829 | 14175/16248 | 13713/17813 |
| Tires & Chassis | 3.1 | Tires: solid rubber, superelastic, pneumatic, polyurethane | | Pneumatic | Pneumatic | Pneumatic |
| | 3.2 | Tire Size, front | | 9.00-20-14PR | 9.00-20-14PR | 9.00-20-14PR |
| | 3.3 | Tire Size, rear | | 9.00-20-14PR | 9.00-20-14PR | 9.00-20-14PR |
| | 3.5 | Wheels， number front rear (x = driven wheels) | | 4x/2 | 4x/2 | 4x/2 |
| | 3.6 | Tread, front | $b_{10}$ (in) | 64.1 | 64.1 | 64.1 |
| | 3.7 | Tread, rear | $b_{11}$ (in) | 66.9 | 66.9 | 67.8 |
| Dimensions | 4.1 | Tilt of Mast/Fork Carriage Forward/Backward | α/β(°) | 6/12 | 6/12 | 6/12 |
| | 4.2 | Height, mast lowered | $h_1$ (in) | 106.3 | 112.2 | 118.1 |
| | 4.3 | Free Lift | $h_2$ (in) | 7.9 | 7.9 | 7.9 |
| | 4.4 | Lift | $h_3$ (in) | 118 | 118 | 118 |
| | 4.5 | Height, mast extended | $h_4$ (in) | 165.2 | 178.9 | 185.2 |
| | 4.7 | Height of Overhead Guard | $h_6$ (in) | 101.6 | 101.6 | 101.6 |
| | 4.8 | Seat Height | $h_7$ (in) | 59.3 | 59.3 | 59.3 |
| | 4.12 | Coupling Height | $h_{10}$ (in) | 19.9 | 19.9 | 19.9 |
| | 4.19 | Overall Length | $l_1$ (in) | 216 | 226 | 230 |
| | 4.20 | Length to Face of Forks | $l_2$ (in) | 157 | 167 | 171 |
| | 4.21 | Overall Width | $b_1$(in) | 85.2 | 85.2 | 85.2 |
| | 4.22 | Fork Dimensions | s/e/l (in) | 3.0x6.3x59.1 | 3.1x6.3x59.1 | 3.1x7.9x59.1 |
| | 4.23 | Fork Carriage DIN 15173, class/type A, B | | IV A | IV A | / |
| | 4.24 | Fork-Carriage Width | $b_3$ (in) | 78.7 | 78.7 | 78.7 |
| | 4.31 | Ground Clearance, laden, mast | $m_1$ (in) | 7.3 | 7.3 | 9.8 |
| | 4.32 | Ground Clearance, centre of wheelbase | $m_2$ (in) | 13.3 | 13.3 | 13.3 |
| | 4.34.1 | Aisle Width for Pallets 39" x 47" Crossways | Ast (in) | 221.9 | 231.2 | 235.4 |
| | 4.34.2 | Aisle width for pallets 31.5" x 47" Lengthways | Ast (in) | 229.7 | 239.1 | 243.3 |
| | 4.35 | Turning Radius | Wa (in) | 146.9 | 155.1 | 159.1 |
| | 4.36 | Internal Turning Radius | $b_{13}$ (in) | 53.1 | 55 | 55 |
| Performance Data | 5.1 | Travel Speed, laden/unladen | mph | -/17.7 | -/17.7 | -/16.7 |
| | 5.2 | Lift Speed, laden/unladen | ft/min | 86.6/- | 65/- | 70.9/- |
| | 5.3 | Lowering Speed, laden/unladen | ft/min | 89.6/- | 89.6/- | 89.6/- |
| | 5.5 | Drawbar Pull, laden/unden | N---ibf | 65000/45000 | 65000/49000 | 65000/49000 |
| | 5.7 | Gradeability, laden/unladen | % | >20/- | >20/- | >20/- |
| | 5.10 | Service Brake | | Hydraulic | Hydraulic | Hydraulic |
| Combustion Engine | 7.1 | Engine Manufacturer/Type | | ISUZU BB-6BG1TRC-06 | ISUZU BB-6BG1TRC-06 | ISUZU BB-6BG1TRC-06 |
| | 7.2 | Engine Power according to DIN ISO 1585 | HP | 131 | 131 | 131 |
| | 7.3 | Rated Speed | r/min | 2200 | 2200 | 2200 |
| | 7.4 | No. of Cylinders/Displacement | (-)/($in^3$) | 6/396.3 | 6/396.3 | 6/396.3 |
| | | Transmission Manufacturer | | OKAMURA | OKAMURA | HANGCHA |
| Additional Data | 10.1 | Operating Pressure for Attachments | bar | 195 | 195 | 215 |
| | 10.2 | Oil Volume for Attachments | l/min | 57 | 57 | 180 |
| | 10.8 | Towing Coupling, type DIN 15170 | | Pin | Pin | Pin |

# 26,000lb XF Series Mast:

| Type | Model | Max. Fork Height | Overall Height | | Free Lift Without Backrest | Load Distance, Centre of Drive Axle to Fork | Tilt Range | Load Capacity |
|---|---|---|---|---|---|---|---|---|
| | | | Lowered | Extended Without Backrest | | | FWD/BWD | Load Capacity at 24" Double Tire |
| | | in | in | in | in | in | (°) | lb |
| Wide View Mast | XX120M270 | 106.3 | 112.2 | 173.4 | 7.9 | 29.1 | 6/12 | 26000 |
| | XX120M300 | 118.1 | 118.1 | 185.2 | 7.9 | 29.1 | 6/12 | 26000 |
| | XX120M330 | 129.9 | 124.0 | 197.0 | 7.9 | 29.1 | 6/12 | 26000 |
| | XX120M360 | 141.7 | 129.9 | 208.9 | 7.9 | 29.1 | 6/12 | 26000 |
| | XX120M400 | 157.5 | 139.8 | 224.6 | 7.9 | 29.1 | 6/12 | 26000 |
| | XX120M430 | 169.3 | 145.7 | 236.4 | 7.9 | 29.1 | 6/6 | 26000 |
| | XX120M450 | 177.2 | 149.6 | 244.3 | 7.9 | 29.1 | 6/6 | 26000 |
| | XX120M480 | 189.0 | 155.5 | 256.1 | 7.9 | 29.1 | 6/6 | 26000 |
| | XX120M500 | 196.9 | 159.4 | 264.0 | 7.9 | 29.1 | 6/6 | 26000 |
| | XX120M550 | 216.5 | 171.3 | 283.7 | 7.9 | 29.1 | 3/6 | 23152 |
| | XX120M600 | 236.2 | 181.1 | 303.3 | 7.9 | 29.1 | 3/6 | 19845 |
| | XX120M650 | 255.9 | 192.9 | 323.0 | 7.9 | 29.1 | 3/6 | 16537 |

With sideshifter minus 1102lbs,with integral sideshifter minus 882lbs