## ENGINE

**Make and model**: Cummins QSX 15  
**Emissions Standard**: EPA Tier 4f/EU Stage IV  
**Displacement**: 15 l (915 in³)  
**Bore and Stroke**: 137 x 169 mm (5.39 in x 6.65 in)  
**Gross Horsepower, SAE J1995**: 306 kW (410 hp)  
**Net Horsepower, SAE J1349/ISO 9249**: 276 kW (370 hp)  
**Rated rpm**: 2000  
**Max. Torque**: 1825 Nm (1346 lb-ft) @ 1400 rpm  
**Air Cleaner**: Cummins Filtration Direct Flow™, dry type, with dash-mounted electronic service indicator  
**Cold-Starting Aid**: Ether start

## ELECTRICAL

**Voltage**: 24 V  
**Number of batteries**: 4  
**Battery capacity**: 1920 CCA  
**Alternator rating**: 105 A  
**Lights**: 10 total; cab mounted (2F & 2R), 2F grill, 2R fuel tank, 1 boom, 1 winch mounted

## COOLING

**Type**: Suction-type variable-speed fan, hydraulically driven with perforated engine side sheets and heavy duty louvered front grill  
**Engine coolant rating**: -50 deg C to +40 deg C  
(-58 deg F to +104 deg F)

## HYDRAULICS

**Type**: Open-center hydraulic system with fixed-displacement multiple piston and gear pumps  
**System relief pressure**: 35 MPa (5215 psi); counterweights 12 MPa (1,790 psi)  
**Control**: Two lever for winch, two lever for counterweight

## OPERATOR STATION

**ROPS**: ROPS (ISO 3471 - 2008)  
**FOPS**: FOPS (ISO 3449 - 2005)

## OPERATING WEIGHTS

**Base Weight with standard equipment, boom 7,315 mm, Cab ROPS/FOPS, full fuel tank, and 79-kg (175 lb) operator**: 65 580 kg (144579 lb)

## OPTIONAL COMPONENTS

**Track Shoes**: 508 mm (20 in) -193.2 kg (426 lb)
POWERTRAIN

**TD-85R Extra**

**Transmission**
Single stage 410 mm (16 in) torque converter with a 2.523:1 stall ratio drives to transmission through a double universal joint. Modular, countershaft type power shift transmission, electro-hydraulic control. Preset travel speed selection and autodownshift.

**Steering**
Exclusive 2-speed geared steering module provides gradual turns while maintaining full power to both tracks plus conventional clutch-brake performance for tight or pivot turns. Coupled to 3-speed transmission, the 2-speed steering provides 6 speeds forward and 6 reverse. The left hand joystick controls transmission and steering drive for up and down shifting, steering, Hi/Lo selection and LH/RH gradual geared turn.

**Final drives**
Double-reduction planetary type final drives mounted independently of track frames for isolation from shock loads.

**Total ratio**
11.57 to 1

TRAVEL SPEEDS – LIFTING CAPACITY

**SB-85R Extra**

<table>
<thead>
<tr>
<th>Gear</th>
<th>Range</th>
<th>Forward</th>
<th>Reverse</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>km/h (mph)</td>
<td>km/h (mph)</td>
</tr>
<tr>
<td>1st</td>
<td>Low</td>
<td>3.1 (1.9)</td>
<td>3.7 (2.3)</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>4.0 (2.5)</td>
<td>4.8 (3.0)</td>
</tr>
<tr>
<td>2nd</td>
<td>Low</td>
<td>5.2 (3.2)</td>
<td>6.2 (3.9)</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>6.6 (4.1)</td>
<td>7.9 (4.9)</td>
</tr>
<tr>
<td>3rd</td>
<td>Low</td>
<td>8.1 (5.0)</td>
<td>9.6 (6.0)</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>10.3 (6.8)</td>
<td>12.2 (7.6)</td>
</tr>
</tbody>
</table>

**Brakes**
Service
Spring applied hydraulically released multi-disc wet brakes. Foot pedal piloted control.

Parking
The steering brakes also act as service and parking brakes. Service brakes are locked automatically when the transmission safety lever is actuated or when the engine is cut off.

UNDERCARRIAGE

**SB-85R Extra**

**Suspension**
Rigid type

**Tracks**
Large deep-heat-treated, sealed, and lubricated track links and through-hardened, sealed, and lubricated rollers for maximum wear resistance

**Track Gauge**
2600 mm (8 ft 6 in)

**Track Shoe Width**
915 mm (36 in)

**Chain**
Sealed and lubricated

**Shoes, Each Side**
46

**Track Rollers, Each Side**
8

**Track Length on Ground**
3980 mm (13 ft 1 in)

**Ground Contact Area**
68 774 cm² (10,660 sq in)

**Ground Pressure**
93.5 kPa (13.56 psi)

**Track Pitch**
250 mm (9.86 in)

**Sprocket segments, each side**
3

SERVICEABILITY

**SB-85M Extra**

**Refill capacities**

<table>
<thead>
<tr>
<th>Component</th>
<th>Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuel Tank</td>
<td>700 l (184.9 US gal)</td>
</tr>
<tr>
<td>Cooling System</td>
<td>68 l (17.96 US gal)</td>
</tr>
<tr>
<td>Engine Oil</td>
<td>49 l (13.1 US gal)</td>
</tr>
<tr>
<td>Transmission System</td>
<td>270 l (72 US gal)</td>
</tr>
<tr>
<td>Final drive, each side</td>
<td>84 l (22.4 US gal)</td>
</tr>
<tr>
<td>Hydraulic Reservoir</td>
<td>195 l (52 US gal)</td>
</tr>
</tbody>
</table>
## MACHINE DIMENSIONS

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A</strong> Overall Height - ROPS</td>
<td>4100 mm (13 ft 5 in)</td>
<td></td>
</tr>
<tr>
<td><strong>B</strong> Overall Height - FOPS cab</td>
<td>3940 mm (12 ft 11 in)</td>
<td></td>
</tr>
<tr>
<td><strong>C</strong> Overhang, min</td>
<td>1220 mm (4 ft)</td>
<td></td>
</tr>
<tr>
<td><strong>D</strong> Operating length</td>
<td>5770 mm (18 ft 11 in)</td>
<td></td>
</tr>
<tr>
<td><strong>E</strong> Width of tractor (counterweight extended)</td>
<td>5860 mm (19 ft 3 in)</td>
<td></td>
</tr>
<tr>
<td><strong>H</strong> Hook height max w/ std boom</td>
<td>7440 mm (24 ft 5 in)</td>
<td></td>
</tr>
<tr>
<td><strong>N</strong> Length track on ground</td>
<td>3980 mm (13 ft 1 in)</td>
<td></td>
</tr>
<tr>
<td><strong>O</strong> Width of tractor counterweight / boom removed</td>
<td>3855 mm (12 ft 8 in)</td>
<td></td>
</tr>
<tr>
<td><strong>P</strong> Track gauge</td>
<td>2600 mm (8 ft 6 in)</td>
<td></td>
</tr>
</tbody>
</table>

## PIPELAYING EQUIPMENT

- **Boom length std/optional**: 7,315 mm / 9,000 mm (24 ft / 29 ft 6 in)
- **Counterweights**: Adjustable hydraulically controlled 4pcs / 9360 kg (20,635 lb)
- **Live power**: continuous power to pipelayer winches independent of torque converter
- **Winch transmission**: operated independently or simultaneously sliding gear planetary, 2 speed for raising, 2 speed for lowering
- **Drums diameter (hook & boom)**: 338 mm (13.3 in) / 338 mm (13.3 in)
- **Wire rope length (inside flanges)**
  - **hook/boom**: 108 m (354 ft 4 in) / 74 m (242 ft 9 in)
- **Wire rope diameter**: 22.2 mm (7/8 in)
- **Hook speed**:
  - **raise 1st**: 11.3 m/min (37.4 ft/min)
  - **raise 2nd**: 18.7 m/min (61.4 ft/min)
  - **lower 1st**: 11.1 m/min (36.4 ft/min)
  - **lower 2nd**: 20.4 m/min (66.9 ft/min)
- **max lifting capacity per SAE 743B**: 100 t (220,460 lb)
**ENGINE**
Cummins QSX15, Tier 4/EU Stage IV, emission certified, turbocharged, high pressure injection (HPI), 370 HP (276 kW)
Air cleaner, Cummins Filtration Direct Flow, dry type, with exhaust aspirated primary, precleaner and electronic service indicator
Coolant filter conditioner
Filters oil, full flow and by-pass with replaceable elements
Antifreeze, -34°F (-37°C)
Cooling module; includes radiator, transmission oil cooler, hydraulic oil / fan drive oil cooler, fuel cooler, charge air cooler; isolation mounted
Exhaust pipe extension
Fan, hydraulically driven, suction type, variable speed
Filters, transmission, hydraulic system, fuel system
Strainers, fuel and hydraulic tanks
Water separator, fuel system

**DRIVETRAIN**
Brakes, wet, multiple disc, closed type, spring applied hydraulically released
Decelerator - right foot pedal, and brake - center foot pedal
Steering, planetary type, 2 speed, left hand single lever control (joystick)
Torque converter, single stage
Transmission, power shift, 3 speeds forward, 3 reverse combined with 2 speed steering provides 6 speeds forward, 6 reverse

**OPERATOR’S ENVIRONMENT**
Cab, 6-sided, w/sound suppression, air recirculation system, lights: 2 front and 1 side (LH), 4 wipers w/washers, dome light, inside mirror, roof window and emergency hatch (approved according to FOPS - SAE J231)
Seat, air suspension type, fabric cover, adjustable with arm rest
Seat belt (SAE J386) - 3” wide, retractable
Sun visor for front cab window
Tools compartment

**BOOM**
Lifting capacity - 100 000 kg (220,460 lb) with counterweights extended (per SAE J743B)
Boom kickout, uppermost position
Boom welded type, box-section structure, length 7315 mm (24’)
Brake, hook lowering, auxiliary
Emergency hook lowering system
Load capacity indicator, mechanical, on boom frame

**INSTRUMENTATION**
Gauges: fuel level, engine coolant temperature, engine oil pressure, torque converter oil temp., voltmeter, hourmeter, brake lock, emergency hook lowering, joystick control display
Warning lights: air cleaner filter, transmission oil filter, hydraulic oil filter, transmission/clutch oil low pressure, counterweights extended, hook top limit position, boom top limit position
Audible & visual warning system: low engine coolant level, low engine oil pressure, coolant high temperature, hydraulic oil high temperature

**ELECTRICAL**
Alarm, back-up
Alternator 105 A
Batteries, (4) 12 V, 1920 CCA, maintenance free, cold start
Horn, electric
Light, boom
Lights w/guards, 2 front, 2 rear, tractor mounted
Starting, 24 V
Starting aid - air grid heater
Receptacle, starting/charging

**GUARDS**
Engine hood, solid, sloped
Engine side doors, hinged, perforated type
Final drive seal guard
Guards: crankcase - hinged with front pull hook, fan, radiator, transmission
Radiator guard doors, two-piece, louvered, hinged

**UNDERCARRIAGE**
Track adjusters, hydraulic
Track chain guides, integral
Track chain, sealed and lubricated (LTS) with split master link, 46 links
Track frames: 8 roller, 2700 mm (106”) gauge, non-oscillating type, lifespan lubricated rollers and idlers
Track shoes, 915 mm (36”)

**OTHER STANDARD EQUIPMENT**
Bumper, front
Counterweights, adjustable, hydraulically controlled 4-blocks and 2-counterweight frames (total weight extendable - 12350 kg)
Drawbar, fixed
Ecological drains for engine oil, radiator coolant and hydraulic oil
Manuals, parts and operator’s
Rear access platform
Winch transmission (two separate winches for hook and boom with hydrostatic drive system and planetary transmission)
OPTIONAL EQUIPMENT SB-85R Extra

WORKING ATTACHMENTS
Boom, welded type, box-section structure length - 7315 mm (24’)
with electronic load limit indicator
Boom, welded type, box-section structure length - 9000 mm (29’ 6”)
with or without electronic load limit indicator
Hook pulley block limit switch, uppermost position

OPERATOR’S ENVIRONMENT
Air conditioner/heater/pressurizer/defroster, under seat mounted, behind roof mounted A/C condenser
Heater/pressurizer/defroster
ROPS, for use with standard Cab
For use with cab:
• AM/FM CD radio
• Lights for cab, 2 rear
• Mirrors, 2 pcs, exterior, cab mounted RH & LH
• Sun visors (2), additional, for side door windows

GUARDS
Engine hood, perforated
Sprocket, dirt/rock deflector
Track roller guard

ADDITIONAL OPTIONS
Beacon light, rotating
Light, winch cab mounted
Maintenance tool kit, 17 items in a metal box
1000 h maintenance package (filters)
1500 h maintenance package (filters)
2000 h maintenance package (filters)
Starting/charging receptacle plug assembly with cable
(required to jump start or charge batteries)
Vandalism protection

SFR
Export packing, drive-on/drive-off, machine on the trailer
Export packing, drive-on/drive-off, machine on the railway wagon

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