

Technical Description

Pipe layer

RL 22 B
Litronic®

Engine output 97 kW/132 HP
Lifting power, max. 21,200 kg/46,700 lb
Operating weight 20,500 kg/45,200 lb



LIEBHERR

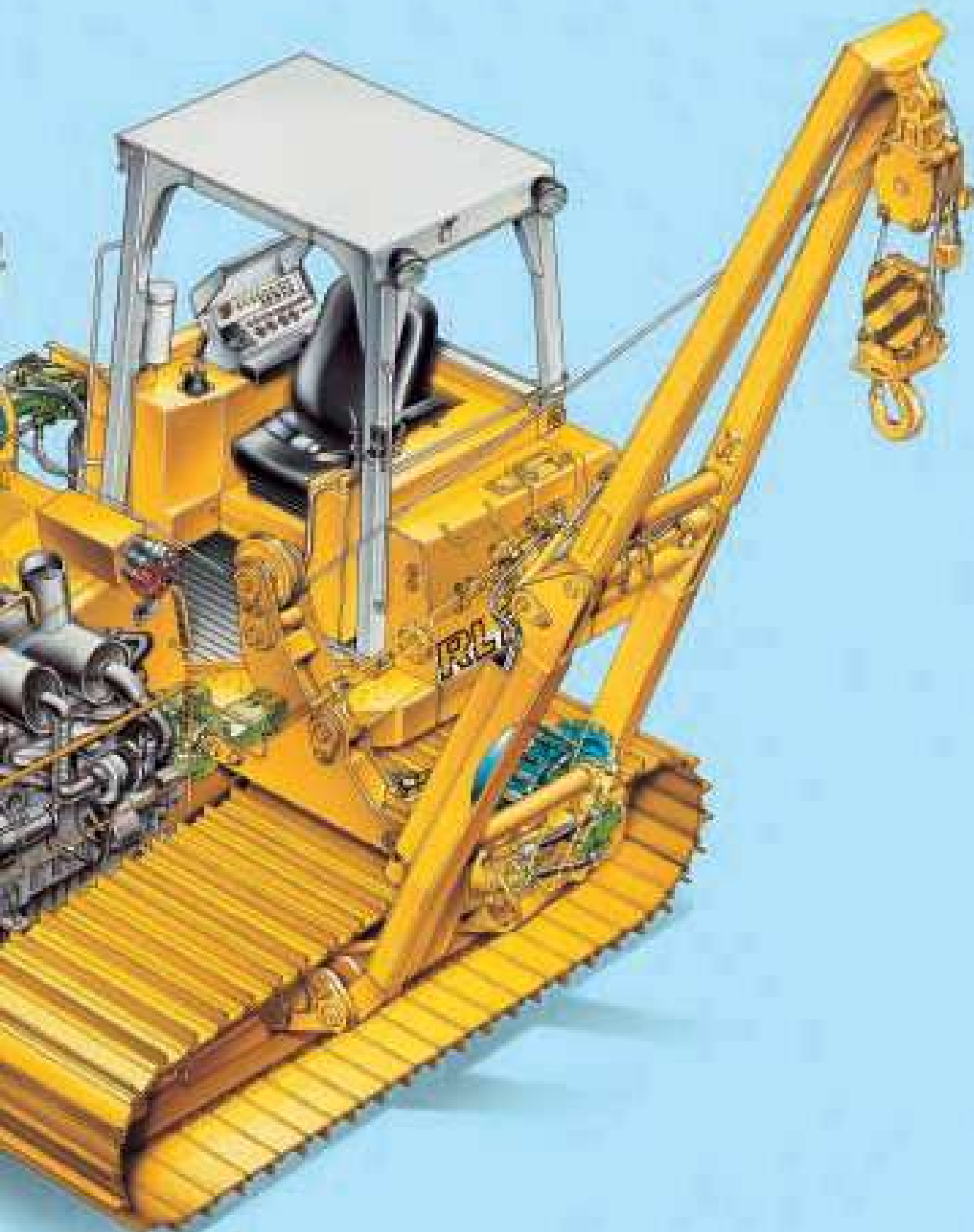
The Better Machine.

The decisive economic factors of the RL 22 B Litronic:

1. The Liebherr diesel engine:
 - high operating availability
 - low engine speed
 - low fuel consumption
 - low emissions
2. The hydrostatic travel drive:
 - constant high efficiency
 - optimal overload protection
 - excellent precision steering
 - stepless adjustable speed
 - exact straight travel
 - high manoeuvrability all the way up to counter-rotation on the spot.
3. The innovative track frame concept:
 - low ground pressure even loaded
 - high stability
 - excellent climbing ability
 - low shock loads
4. The economical working attachments:
 - hydraulically driven winch
 - hydraulic boom adjustment
 - the standard working hydraulics can be used to drive a pipefacing machine or a welding generator.
5. The practical and comfortable working environment:
 - optimal visibility of the working area
 - single joystick control
 - optical warning devices
6. Mobility –
The RL 22 B with folding boom:
 - mounting and dismounting of the machine without auxiliary devices
 - dimensions allow easy transportation on public roads
 - easy job site transfer without dismounting the working attachment
 - ready for transport within 3 minutes



The advantage: total economical efficiency.



Functional design.

The pipelayer RL 22 B Litronic is a versatile machine, which meets all requirements for pipe-laying applications. This machine is conceived for applications requiring lifting capacity of up to 21,200 kg/46,700 lb.

A special feature of the RL 22 B Litronic is its asymmetric track frame, which is equipped with extremely wide track pads on the load side. This increases stability and maintains a low ground pressure even with load, ensuring safe working conditions on porous ditch edges.

The machine's extremely low center of gravity due to the working components integrated in the track frame (hydraulic motor and final drive) and its high ground clearance provides the machine optimal terrain manouverability.

The heart of the RL 22 B Litronic is a turbocharged Liebherr diesel engine with an output of 97 kW/132 HP. The sturdy Liebherr diesel engines with low emissions are very economical through their low specific fuel consumption.

Safe operation.

A decisive factor in pipelaying is precise control and the possibility to correct the machine's position. The RL 22 B Litronic's tracks are driven independently through the hydrostatic drive. The machine can accelerate and decelerate steplessly forwards and in reverse. The RL 22 B Litronic travel drive is controlled and monitored wear free by the Litronic system. Straight travel is ensured regardless of ground conditions as the speed of both tracks are continuously adjusted.

Thereby, the machine can lay pipes precisely along the ditch. Just one joystick controls all travel drive functions giving the operator freedom to concentrate on the work at hand. ROPS and FOPS are integrated into the cab to protect the operator. Rollover bars are thus unnecessary yielding optimal visibility of the working environment.



The versatile machine: effective pipelayi

**The working environment.
Functional control through a
single joystick.**



ng.

Welding and pipe facing.

With regards to economy, it is more important than ever for a construction machine to be in operation as many hours as possible each year. What could be better than using a pipe layer for additional tasks in pipelaying applications.

Through their innovative concept, Liebherr can equip the RL 22 B with a few additional attachments and turn it into the ideal machine for welding and pipefacing applications.

Welding

The RL 22 B Litronic load sensing working hydraulics can also be used for driving a welding generator – no additional diesel engine is required. Noise emissions are thereby reduced, fuel consumption is improved and maintenance of additional components is eliminated. The pipe layer boom can be equipped with a jib for a welding tent.

Pipefacing.

The RL 22 B Litronic was also designed as a basic machine for pipefacing. The special component for this task can also be driven by the installed working hydraulics. The hydrostatic travel drive and the single joystick control ensure precise and exact placement of pipes. The easy and inexpensive alternative to operate the RL 22 B Litronic as a pipefacing machine adds an important aspect to its functionality.



Welding generator.

The welding generator is powered by the pipelayer's nominal output.



Great economy: through versatile utilization.



Pipefacing.
The hydrostatic travel drive and the single joystick control allows exact placement of pipes.



Pipe transportation.

The track frame with cushioned suspension is the ideal prerequisite for transporting pipes from storage to the job site. The track frame absorbs ground shocks through the integrated pivot shaft and equilibrer bar reducing vibrations to the operator, the machine and the attached load.

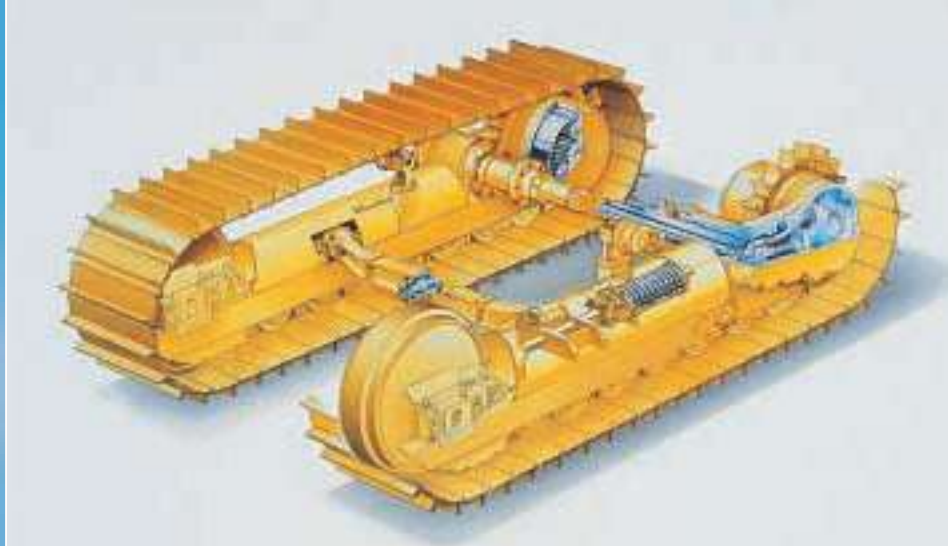
The stepless acceleration up to maximum speed provides the RL 22 B Litronic with smooth travel with low cycle times. The electronically controlled hydrostatic drive enables pick up, transportation and placement of pipes.

The pipe can be picked up and placed gently with the hydraulically driven winch and boom.



The machine for transportation: Safe and

The track frame concept.
The track frame's cushioned suspension absorbs impacts reducing vibrations to the operator and the machine.



easy.

Quick transportation.

A pipelayer in the RL 22 B Litronic class frequently changes job sites. Here, Liebherr also presents a unique concept. With folding boom and counterweight, no auxiliary devices are required for assembly or disassembly of the machine. Just the hydraulic boom has to be folded in, which can be done by the operator alone. The pipelayer with folding boom is ready to be loaded and moved.



More flexibility: with quicker job site tran



sfer.



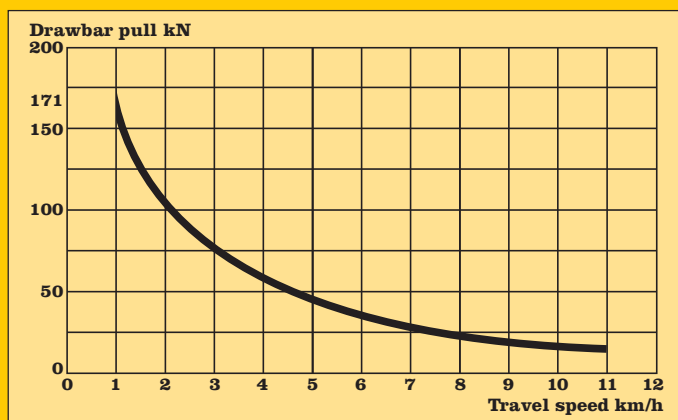
Engine

| | |
|------------------------|--|
| Liebherr Diesel engine | D 924 T-E |
| Output per ISO 9249 | 97 kW (132 HP) at 2000 RPM |
| Displacement | 6.7 l (409 cu.in) |
| Bore/stroke | 122/142 mm (4.8/5.59 in) |
| Design | 4 cylinder in-line, water-cooled, turbo-charged engine, individual cylinder heads, wet cylinder bushings, maintenancefree drive for fan and water pump |
| Injection | direct fuel injection with distributor injection pump, mechanical regulator |
| Fuel filtration | prefilter with water separator and fine filter micro element |
| Air filtration | combustion air pre-filter with automatic dust ejection, dry air filter system with main and safety element |
| Lubrication | pressurized lubrication system with main flow filters and integrated oil cooler, deep oil pan for inclinations, engine lubrication to an inclination of up to 45° to each side |
| Operating voltage | 24 V |
| Alternator | 55 A DC |
| Starter | 6.6 kW (9 HP) |
| Central fuse box | 35 A |



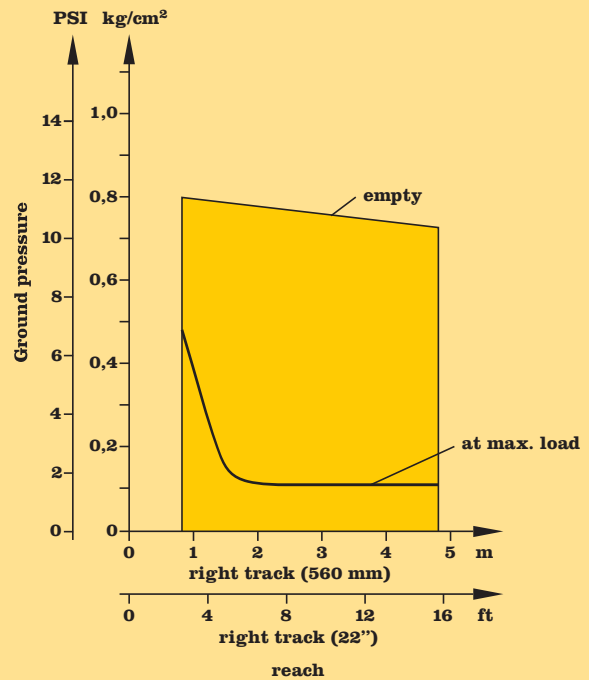
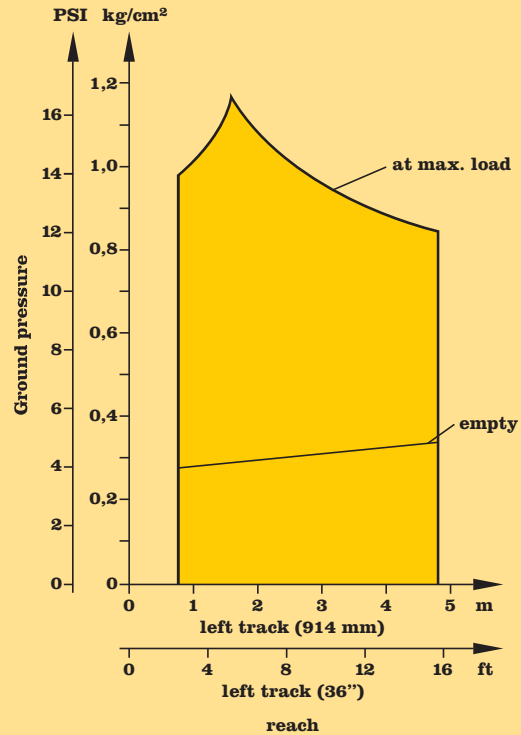
Travel Drive

| | |
|-------------------------|--|
| Design | independent hydrostatic drive of travel gear |
| Pump flow | max. 154 l/min (40 gpm) |
| Max. pressure | adjusted to 420 bar (6090 PSI) |
| Travel speed | 0 - 11 km/h (0 to 6.8 mph) infinitely variable, forward and reverse |
| Steering | hydrostatic |
| Service brake | hydrostatic |
| Parking/emergency brake | automatic multi disc brake in final drives |
| Cooling system | hydraulic oil cooler with separate cooling circuit with gear pump and front mounted cooler |
| Filter system | cartridge fine filters in the cooling circuit |
| Final Drive | 2-stage planetary reduction gear |



Track Frame

| | |
|---------------------|--|
| Design | maintenance-free crawler travel gear |
| Mount | fixed over premounted support axles and bridge |
| Chains | sealed, chain tension via spring loaded tensioner and hydraulic cylinders, single grouser pads |
| Chain links | 47 |
| Sprockets | 9 replaceable segments |
| Track rollers | 8 |
| Carrier rollers | 2 |
| Ground contact area | 4.31 m ² (6,680 sq.in.) |
| Ground pressure | 0.48 kg/cm ² (6.83 PSI) |



Technical Data



Travel Control

| | |
|---|--|
| 1 Joystick lever | with electronic control for all travel functions: travel direction, speed, steering and counter-rotation |
| Low speed range | for the total joystick deflection range for the travel speed from 0 – 5 km/h (0 to 3.1 mph) |
| Electronic engine speed sensing control | electronic regulation assures a constant balance between travel speed and necessary drawbar pull through engine speed sensing avoiding engine overload, even in partial load range |
| Straight line travel | electronically controlled |
| Parking/emergency brake | automatically applied after the joystick lever is put in neutral position |
| Safety lever | inactivates complete travel and working hydraulic circuit and automatically activates parking brake |
| Emergency shut off | push button on instrument panel immediately activates parking and emergency brake |



Implement Hydraulic

| | |
|---------------------|---|
| Hydraulic system | on demand (load sensing) control, swash plate type displacement pump and pressure cut-off for hoist winch and adj. boom cylinder drive |
| Max. pump flow | max. 156 l/min (41 gpm) |
| Pressure limitation | adjusted to 280 bar (4060 PSI) |
| Control valve | 2 spool segments |
| Filter system | return filter with magnetic rod in hydraulic tank |
| Control | single servo-assisted joystick level for hoist winch and adj. boom cylinder, safety lever prevents inadvertent movement, free fall device makes it possible to lower the load in case of danger |



Working Attachment

| | |
|---------------------------------|---|
| Hoist winch | driven by variable flow hydraulic pump, control valve block and variable oil motor. Brake valve helps to sensitively lower the load over total speed range, when the control lever is in neutral, a spring-loaded disk brake holds the load safely in any position |
| Drum diameter | 248 mm (10") |
| Drum length | 349 mm (1' 2") |
| Flanged wheel diameter | 416 mm (1' 4") |
| Cable diameter | 16 mm (5/8") |
| Cable length | 55 m (180 ft) |
| Hook block | 3 sheave |
| Hook speed in 1. cable position | up – 33 m/min. stepless (0 to 108 ft) down 0 - 33 m/min. stepless (0 to 108 ft) free fall control |
| Safety device | |
| Adjustable boom control | through hydraulic cylinder, the lifting and lowering speed of the boom and the hook block can be changed steplessly, drives are fully independent and can be actuated at the same time. A check valve keeps the boom leakage free in any position and prevents uncontrolled boom drop in case of loss of pressure |

Adjustable boom cylinder

| | |
|-----------------|-----------------|
| Piston diameter | 120 mm (4.5") |
| Rod diameter | 60 mm (2.5") |
| Stroke | 1080 mm (3' 4") |

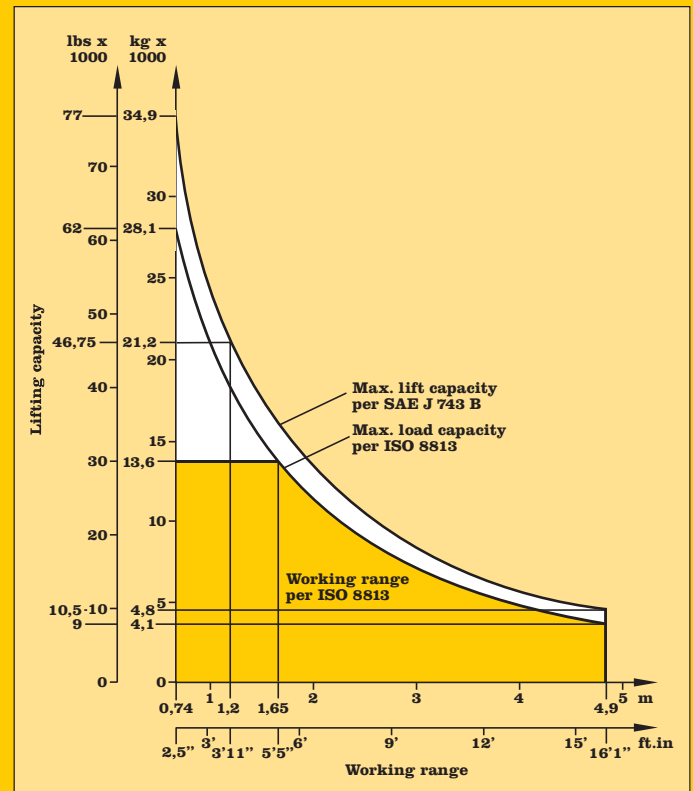
Boom

| | |
|--------|---|
| Design | box-type welded structure made of highly resilient, grain refined steel |
|--------|---|

| | |
|------------|--|
| Fixed boom | length 4740 mm (15' 7") welded box sectioned |
|------------|--|

| | |
|-------------|---|
| Hinged boom | length 4740 mm (15' 7") welded box sectioned center hinge for transport, in working position, hinge is hydraulically locked, it is folded in or out by an auxiliary cylinder, hook block does not have to be removed for transport |
|-------------|---|

| | |
|---------------|--|
| Counterweight | installed on the right hand side of the machine. It serves as the base for the hoist winch. Fixed mounted weight 2850 kg (6300 lbs.), 6 individual weights, each 430 kg (950 lbs.), total weight 5400 kg (11,900 lbs.) removable |
|---------------|--|



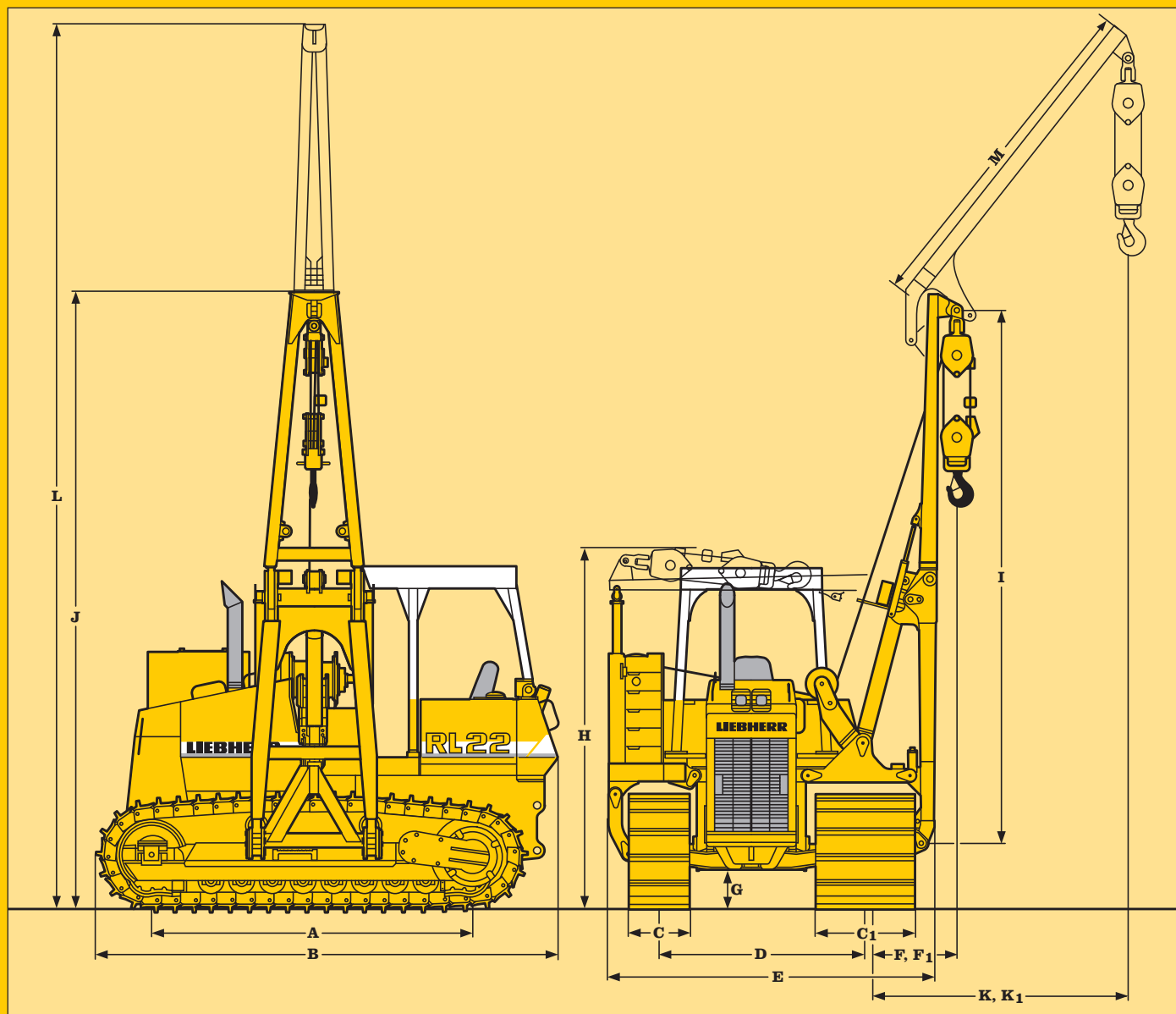
Operator's Platform

| | |
|-----------------|--|
| Mount | resiliently mounted |
| Operator's seat | fully adjustable swing seat, adjustable to operator weight |
| Monitor | comprehensive instrument panel on the right hand side of the operator's seat |



Service Fluids

| | |
|--------------------|-----------------|
| Fuel tank | 310 l (82 gal) |
| Cooling system | 52 l (14 gal) |
| Engine oil | 18 l (5 gal) |
| Gear box | 2.5 l (0.6 gal) |
| Hydr. tank | 178 l (47 gal) |
| Final drives, each | 13 l (3.5 gal) |



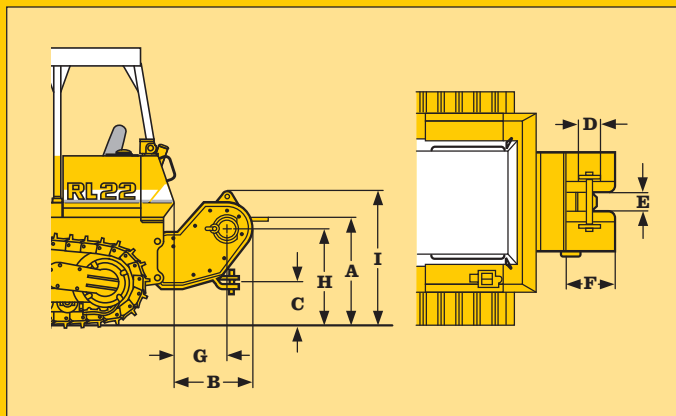
| | mm/ft-in |
|--|-------------|
| A Track on ground | 2925/ 9' 7" |
| B Total length | 4175/13' 8" |
| (track length) | |
| C Ground pad width - right hand side | 560/ 24" |
| C1 Ground pad width - left hand side | 914/ 36" |
| D Track gauge | 1882/ 6' 2" |
| E Transport width | 2980/ 9' 9" |
| F Hook radius, min. | 735/ 2' 5" |
| F1 Hook radius, max. | 4810/15' 9" |
| G Ground clearance | 370/ 1' 3" |
| H Transport height | 3265/10' 2" |
| I Boom length | 4740/15' 7" |
| J Total height, max. | 5490/18' 0" |
| K Hook radius w. boom head member, min. | 2485/ 8' 2" |
| K1 Hook radius w. boom head member, max. | 7770/25' 6" |
| L Total height w. boom head member, max. | 8084/26' 6" |
| M Length boom head member | 3000/ 9'10" |

Basic Machine Contents

- Pipe layer RL 22 with Liebherr Diesel engine D 924 T-E
- Chain D5B, single grouser track pads 914/560 mm (36"/24") 47 links, sealed
- Canopy
- Hoist winch
- Counter weight 5,400 kg (11,900 lb)
- Installation kit for boom
- Boom fixed, hinged 4,740 mm (15' 7")

Dimensions

Cable winch



Pulling power, max.:

Cable speed:

Cable thickness:

Cable length:

Weight:

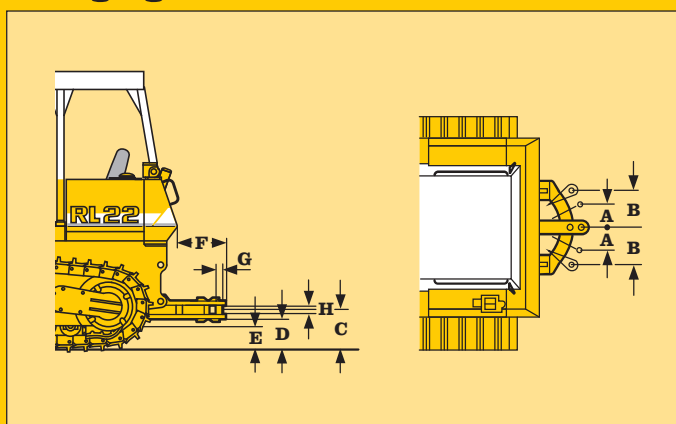
300 kN (30.6 t)/67,500 lb
0 – 96 m/min. (0 – 315 ft)
stepless
22 mm (7/8")
50 m (164 ft)
1200 kg (2650 lb)

Dimensions

mm/ft-in

| | | |
|---|-----------------------|------------|
| A | Height, cable run | 1140/3' 9" |
| B | Added length | 670/2' 2" |
| C | Height, towing device | 530/1' 9" |
| D | Drum diameter | 210/ 8.5" |
| E | Coiling width | 230/ -9" |
| F | Flange diameter | 460/1' 6" |
| G | Radius, drum center | 440/1' 5" |
| H | Height, drum center | 1025/3' 4" |
| I | Total height | 1355/4' 5" |

Swinging drawbar



Movable version

Weight:

200 kg (441 lb)

Dimensions

mm/ft-in

| | | |
|---|------------------------|-----------|
| A | Off-center, min. | 230/ 9" |
| B | Excentre, max. | 439/1' 5" |
| C | Hook height | 439/1' 5" |
| D | Ground clearance | |
| | Lower edge of tow hook | 364/1' 2" |
| E | Ground clearance | |
| | Tow hook suspension | 317/1' 0" |
| F | Added length | 375/1' 3" |
| G | Pin diameter | 45/ 1.5" |
| H | Jaw width | 90/ 3.5" |

Attachments

Basic machine

| | Standard | Option |
|---|----------|--------|
| Towing hitch rear | ● | |
| Towing lug front | ● | |
| Battery compartment lockable | ● | |
| Filling with oil SAE 10 | | ● |
| Filling with oil SAE 30 | | ● |
| Refuelling pump electrical | | ● |
| Belly pans heavy duty | ● | |
| Cold start device ether | | |
| Cold start device glow plug | ● | |
| Radiator coarse mesh | ● | |
| Radiator guard 2-piece, hinged | ● | |
| Liebherr Diesel engine | ● | |
| Fan – hydraulically driven | | |
| Fan – gear drive | ● | |
| Fan guard | | ● |
| Engine oil cooler | ● | |
| Engine doors perforated | | ● |
| Engine doors hinged, lockable | ● | |
| Lugs for crane lifting | | ● |
| Bumper front | ● | |
| Special paint | | ● |
| Fuel water separator | ● | |
| Fuel water separator with electric heater | | ● |
| Air filter dry-type, dual step | ● | |
| Precleaner with automatic dust ejector | ● | |
| Preheater for engine electric | | ● |
| Tool kit in batteries compartment | ● | |

Travel drive

| | | |
|-------------------------------|---|--|
| Parking brake automatic | ● | |
| Function control automatic | ● | |
| Control – single lever | ● | |
| Load limit control electronic | ● | |
| Travel control electronic | ● | |
| Travel control 2-speed | ● | |
| Hydrostatic travel drive | ● | |
| Emergency stop | ● | |
| Oil cooler | ● | |
| Final drives planetary gears | ● | |
| Safety lever | ● | |

Undercarriage

| | | |
|-----------------------------------|---|---|
| Track shoes extreme service (ESS) | | |
| Track frame closed | ● | |
| Sprocket segments bolt-on | ● | |
| Master link 2 piece | | ● |
| Track guide center part | | ● |
| Tracks oil lubricated | | ● |
| Undercarriage standard | ● | |
| Pivot shaft separate | ● | |

Electric system

| | | |
|----------------------------------|---|---|
| Starter motor 6,6 kW | ● | |
| Starter motor 9 kW | | |
| Working lights rear 2 units | ● | |
| Working lights front 2 units | ● | |
| Working lights side 2 units | ● | |
| Battery main switch electric | ● | |
| Batteries, heavy duty cold start | ● | |
| On-board system 24 V | ● | |
| Alternator 55 V | ● | |
| Alternator 80 A | | |
| Back-up alarm | | ● |
| Horn | ● | |

Operator's cab

| | Standard | Option |
|----------------------------------|----------|--------|
| Operator's seat 6-way adjustable | ● | |
| ROPS-canopy | ● | |
| ROPS/FOPS-cab sound suppressed | | ● |
| Protective grid for canopy rear | | |

Instruments – Indicators

| | | |
|--------------------------------|---|--|
| Battery charging | ● | |
| Hour meter | ● | |
| Electronic control | ● | |
| Speed range | ● | |
| Engine oil pressure | ● | |
| Water temperature | ● | |
| Oil pressure cooling circuit | ● | |
| Oil level final drives | ● | |
| Fuel level | ● | |
| Contamination hydraulic filter | ● | |
| Contamination air filter | ● | |
| Cold start Diesel engine | ● | |

Implement hydraulic

| | | |
|--|---|---|
| Control group boom | ● | |
| Control group hoist winch | ● | |
| Control group rear winch | | ● |
| Control group generator 75 kVA | | ● |
| Control group generator + pipe facing | | ● |
| Variable flow pump, load sensing | ● | |
| Oil filter with strainer in hydraulic tank | ● | |
| Hydraulic servo control | ● | |

Attachments

| | | |
|-------------------------------|--|---|
| Drawbar rear hinged | | ● |
| Drawbar rear rigid | | ● |
| Boom 2-piece foldable 4750 mm | | ● |
| Boom single piece 4750 mm | | ● |
| Boom single piece 6000 mm | | |
| Boom single piece 7000 mm | | |
| Boom single piece 7320 mm | | |
| Boom jib | | ● |
| Counter weight | | ● |
| Rear winch | | ● |