Technical Description
Pipe layer

RL 422
Litronic®

Engine output 97 kW / 132 HP
Lifting power, max. 20,000 kg/44,100 lb
Operating weight 19,600 kg/43,200 lb

Litronic® – a system comprised of intelligent electronics and functional hydraulics – it monitors, controls, regulates and coordinates all functions of the hydrostatic travel drive.

Versatile – the hydrostatic travel drive provides agility through turns and counterrotation and is unrivaled in difficult and steep terrain. Its rear installed welding generator and hydraulic power supply for pipe facing machine make the pipe layer a universal machine. The hinged boom does not have to be removed for transport.

Stable – the asymmetric tracks make it possible to carry heavy loads, at a basic machine width of only 3 m.

Precise – the hydrostatically driven hoist winch permits stepless regulation of working speed as well as exact and powerful load handling.

Easy to operate – simple and precise control of all travel and steering movements with only one travel lever. The hoist winch and the boom cylinders are controlled with one joystick.

Safe to operate – the robust Liebherr engine with low engine speed and tested hydraulic components assure long service life. Extensive safety devices offer effective damage protection for all components.

Environmentally friendly – low exhaust and noise emission values already conform to more rigid future regulations and reduce stress on the environment.

Easy to service – low maintenance effort sets new standards for pipe layers. All maintenance points on the basic machine are on the right hand side of the engine.

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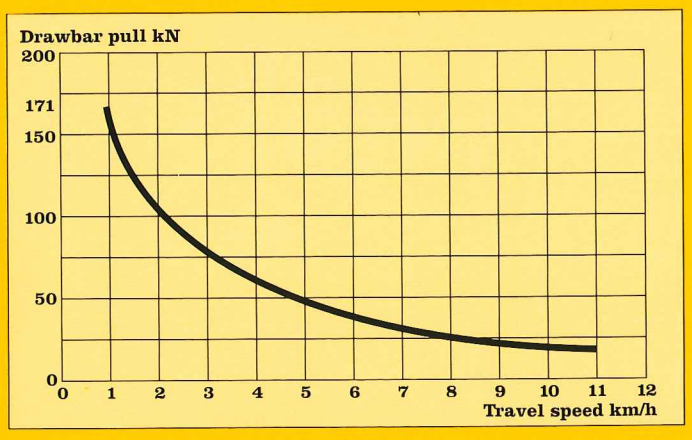
The Better Machine.

Engine

Liebherr Diesel engine	D 904 T
Output per DIN/ISO 3046	97 kW (132 HP) at 2000 RPM
Displacement	5.6 l (342 cu.in)
Bore/stroke	115/135 mm (4.53/5.32 in)
Design	4 cylinder in-line, water-cooled, turbo-charged engine, individual cylinder heads, wet cylinder bushings, maintenance-free drive for fan and water pump
Injection	direct fuel injection with in-line 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	5.4 kW (7.3 HP)
Central fuse box	60 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

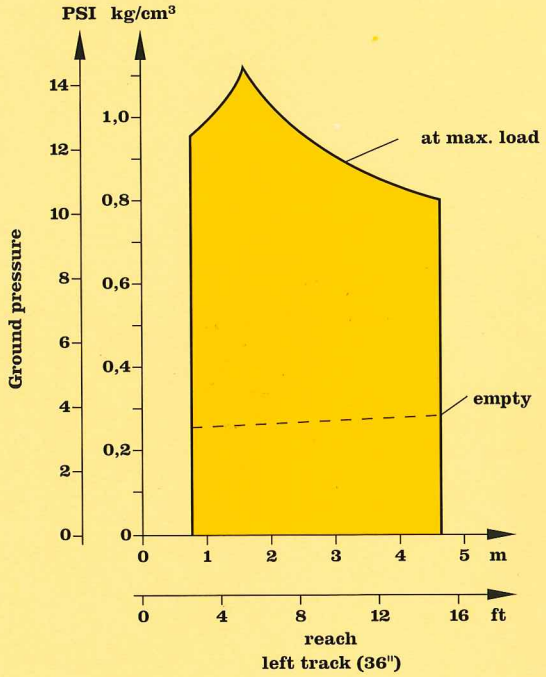


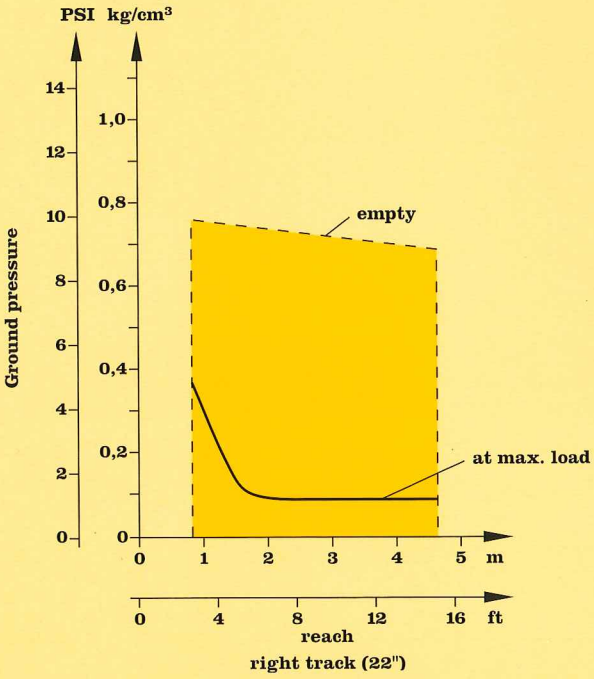
Final Drive

Concept	2-stage planetary reduction gear with hydraulic travel motor directly flanged to travel gear
Design	compact unit, protected and integrated into the track roller frame

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 screw type segments
Track rollers	8
Carrier rollers	2
Ground contact area	4.31 m² (6680 sq.in.)
Ground pressure	0.45 kg/cm² (6.4 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 – 4.6 km/h (0 to 2.9 mph)
Electronic engine speed sensing control	electronic regulation assures a constant balance between travel speed and neccessary 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

Working 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

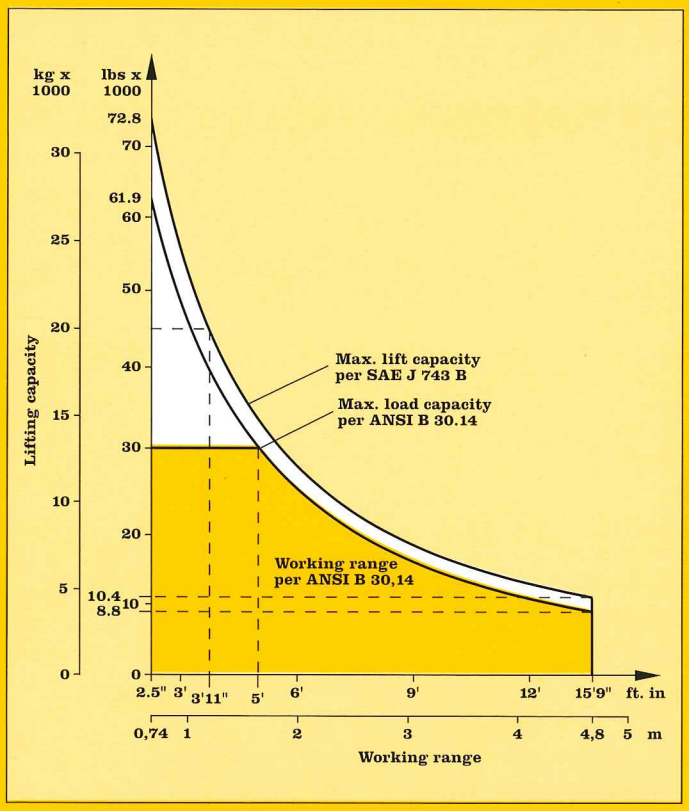
Hoist winch	driven by variable flow hydraulic pump, control valve block and variable oil motor in closed circuit. Brake valve helps to sensitively lower the load over total speed range, when the control lever is in neutral, a spring-loaded disk brake holds the load safely in any position
Drum diameter	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 0 – 33 m/min. stepless (0 to 108 ft) down 0 – 33 m/min. stepless (0 to 108 ft)
Safety device	free fall control
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 2820 kg (6200 lbs.), 6 individual weights, each 430 kg (950 lbs.), total weight 5400 kg (11,900 lbs.) removable

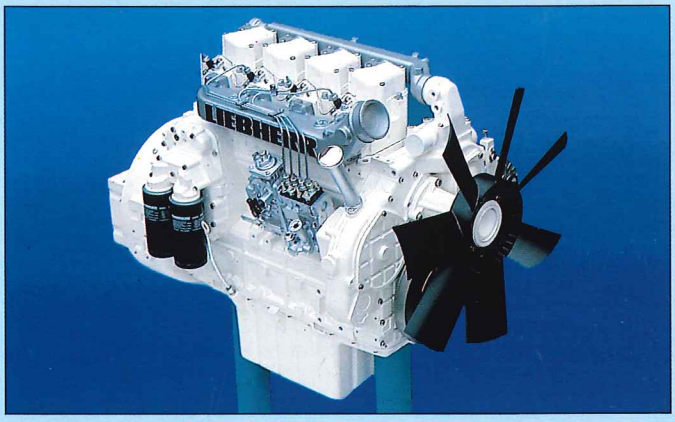


Operator's Platform

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

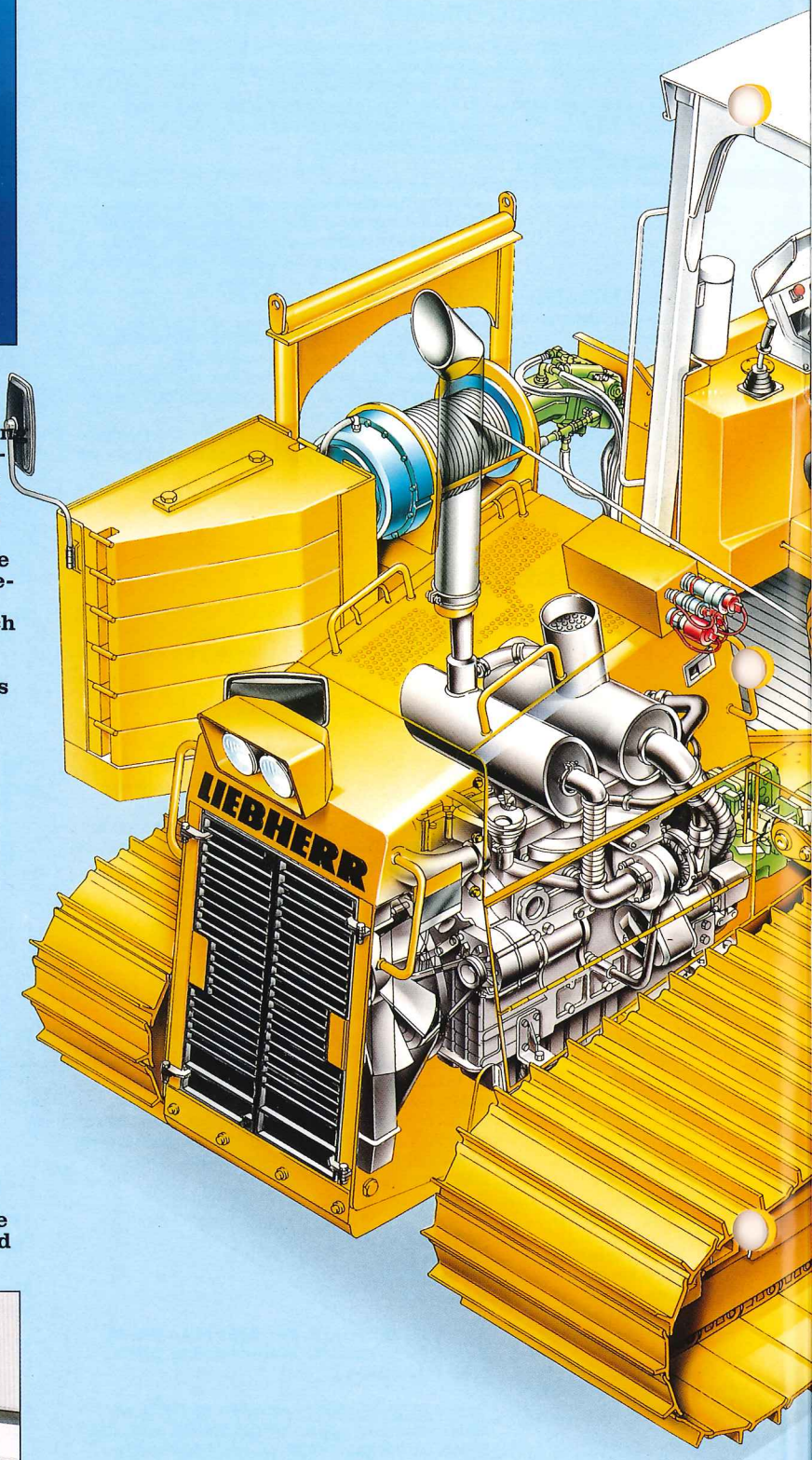
Service Fluids

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)



Liebherr Diesel engine

The robust, water-cooled, turbo-charged Liebherr Diesel engine was specifically developed to assure long service life in severe construction machinery applications. Superior power reserves and maximum engine torque assure continuous high output in all job situations. The low engine speed lowers fuel consumption and emission.
All serviceable components are on the right hand side of the engine. Cooling fan and water pump are maintenance-free and guarantee high operating safety.
The electronic engine speed sensing regulation, which operates independent of ambient temperature influences, guarantees maximum utilization of available engine horsepower and protects all drive components from overload.



Hoist gear

The hoist gear on the RL 422 pipe layer is equipped with a Carco H 110 cable winch with planetary reduction, disk brake and free fall device. It is driven by the standard load sensing displacement pump and a fixed displacement oil motor.

Operator's platform

The pipe layer RL 422, a universal machine, is utilized for various tasks. To assure safe operation with often changing operating personnel, simple control is important. The RL 422 is controlled with only 2 levers: one travel lever for all travel and steering functions and one joystick for hoist winch and boom control.

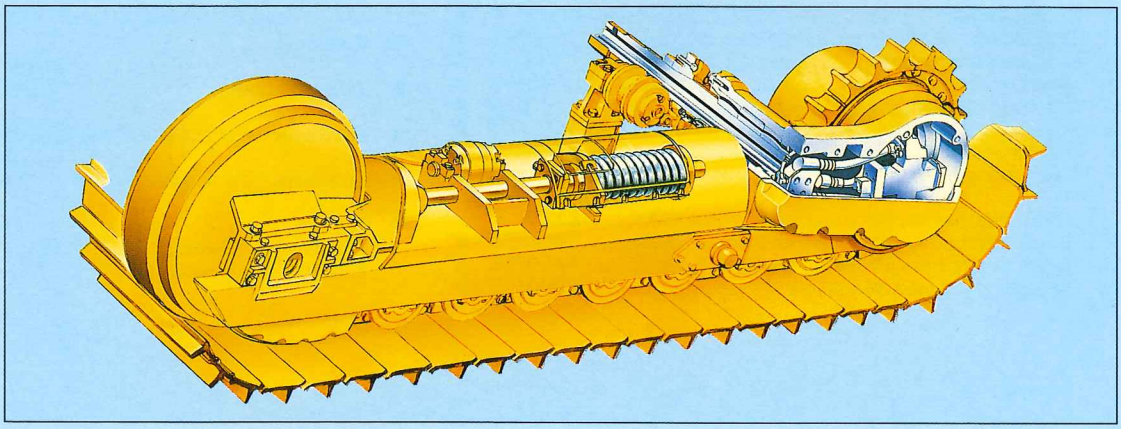
More Benefits Through Advanced Techno

Transport

Smaller pipe layers must often be transported on public roads and it is important that the machine is compact. The RL 422 can be fitted with a hinged boom, making it possible to transport the 3 m wide machine without having to remove the boom.

Track frame

Due to the hydrostatic travel drive, the planetary gear with flanged-on oil motor can be integrated as a compact unit into the track frame. The connection between travel gear and basic machine is formed by a support axle and a fixed cross beam. By changing the length of these components, the track gauge can be changed to any width. The RL 422 has an assymetric gauge, 914 mm wide track pads are mounted on the side of the boom, which assures a higher tipping load and significantly reduces ground pressure.



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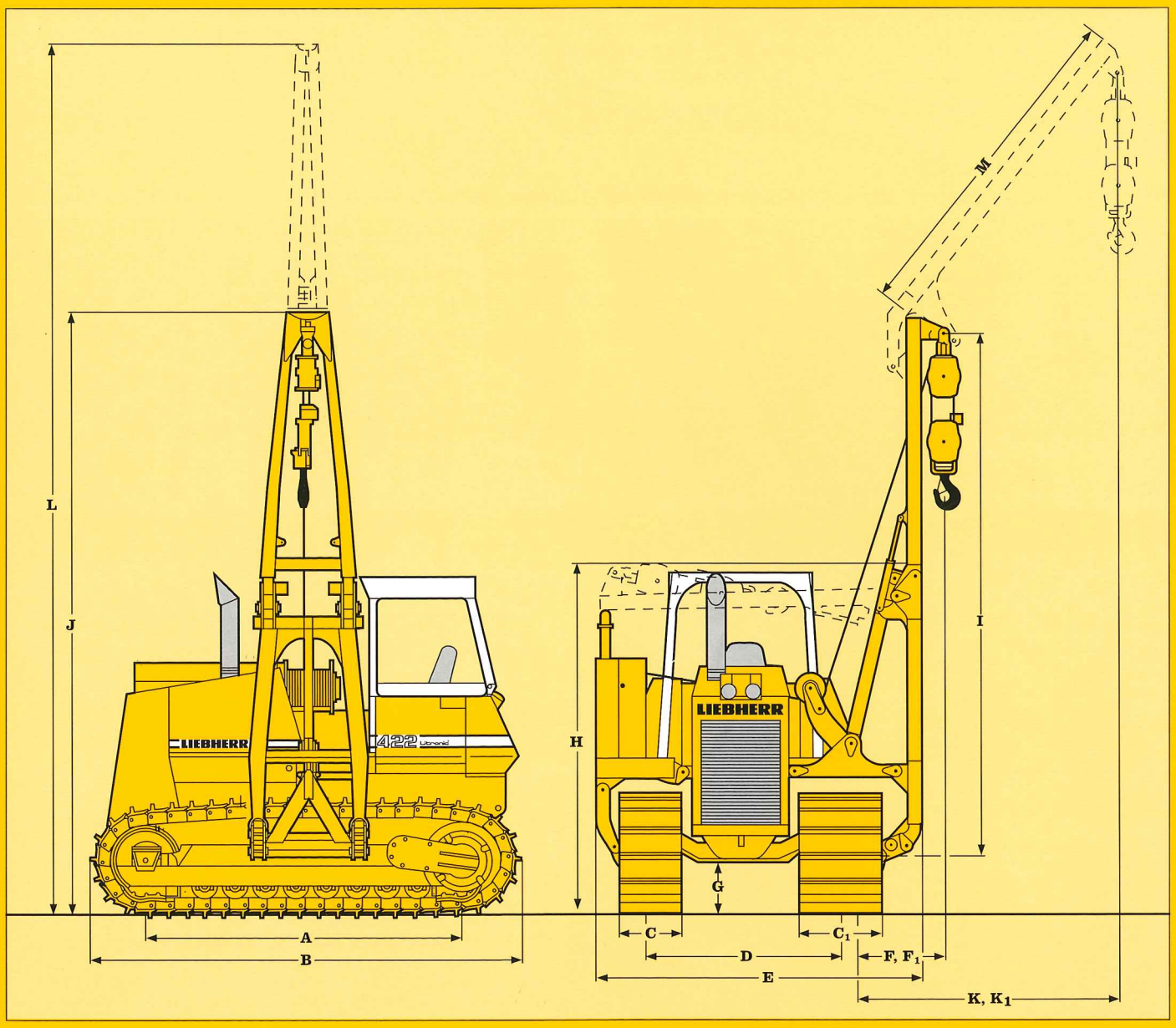


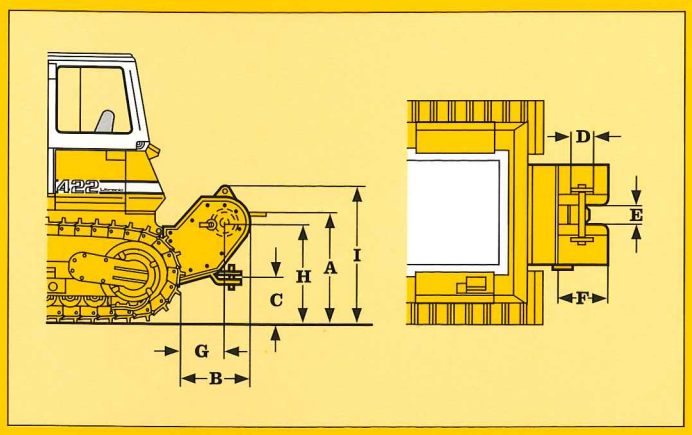
		mm/ft-in
A	Track on ground	2925/ 9' 7"
B	Total length (track length)	3910/12'10"
C	Ground pad width – right hand side	560/ 24"
C1	Ground pad width – left hand side	914/ 36"
D	Track gauge	1882/ 6' 2"
E	Transport width	2980/ 9' 9"
F	Hook radius, min.	730/ 2' 5"
F1	Hook radius, max.	4600/15' 1"
G	Ground clearance	370/ 1' 3"
H	Transport height	3100/10' 2"
I	Boom length	4740/15' 7"
J	Total height, max.	5490/18' 0"
K	Hook radius w. jib head member, min.	2116/ 6'11"
K1	Hook radius w. jib head member, max.	7405/24' 4"
L	Total height w. jib head member, max.	8084/26' 6"
M	Length jib head member	3000/ 9'10"

Basic Machine Contents

- Pipe layer RL 422 with Liebherr Diesel engine D 904 T
- Chain D5B, single grouser track pads 914/560 mm (36"/24") 47 links, sealed
- Canopy
- Hoist winch
- Counter weight 5400 kg (11,900 lb)
- Installation kit for boom
- Boom fixed 4740 mm (15' 7") or hinged 4740 mm (15' 7")

Dimensions

Cable winch

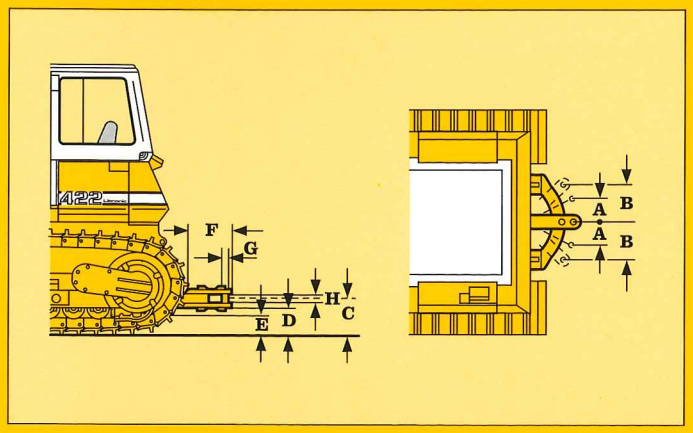


Pulling power, max.:	300 kN (30.6 t)/ 67,500 lb
Cable speed:	0 – 96 m/min. (0 – 315 ft) stepless
Cable thickness:	22 mm (7/8")
Cable length:	50 m (164 ft)
Weight:	1200 kg (2650 lb)

Dimensions

		mm/ft-in
A	Height, cable run	1140/3' 9"
B	Added length	635/2' 1"
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	405/1' 4"
H	Height, drum center	1025/3' 4"
I	Total height	1355/4' 5"
J	Hook radius	465/1' 6"

Swinging drawbar



Movable version
Weight: 310 kg (685 lb)

Dimensions

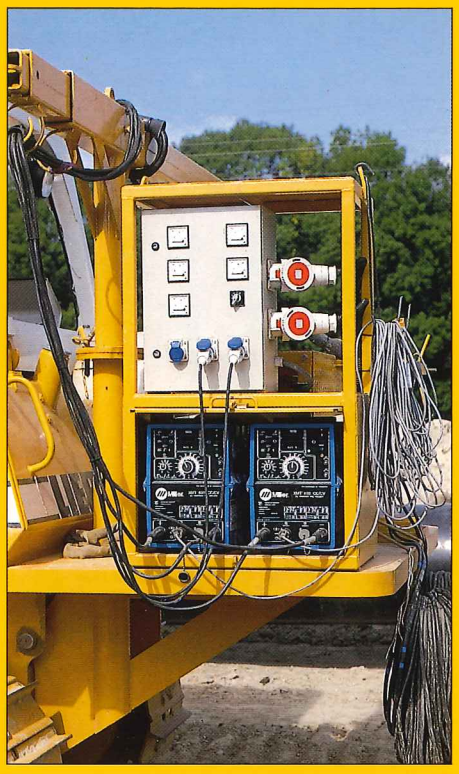
		mm/ft-in
A	Off-center, min.	230/ 9"
B	Excentre, max.	439/1' 5"
C	Hook height	439/1' 5"
D	Ground clearance Lower edge of tow hook	364/1' 2"
E	Ground clearance Tow hook suspension	317/1' 0"
F	Added length	340/1' 1"
G	Pin diameter	45/ 1.5"
H	Jaw width	90/ 3.5"

Special installations

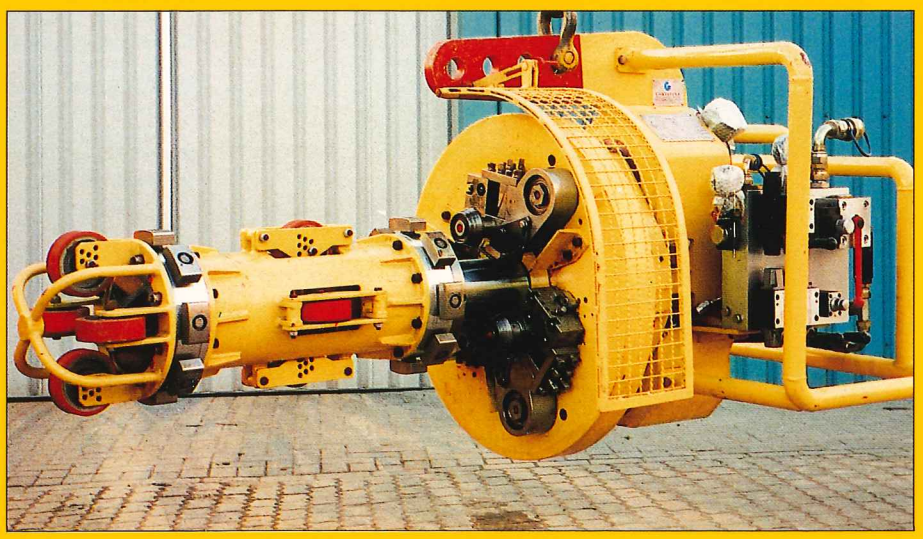
- Jib head member 3000 mm/9'10", hook radius max. 2 t/4500 lbs in the total working range
- Operators cab
- Added floodlights, front
- Electric refueling pump
- Fan protection
- Sealed and lubricated tracks
- Chain guide, center
- Installation kit – cable winch
- Cable winch
- Cable guide pulley for cable winch
- Tow hook, fixed
- Tow hook, movable
- Special paint, one color or multi-colored
- Hydr. drive for welding generator
- Hydr. drive for pipe facing machine

Attachments

Additional installations



In order to be able to utilize the pipe layer as a universal machine for various tasks, a welding generator can be installed on the rear, and it is also driven by the standard working hydraulic system, with electronically monitored speed regulation. In addition, hydraulic drives for pipe facing machines or for a loading crane can be installed without any problems.



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