Technical Description
Hydraulic Excavator

R 996
Litronic®

Operating Weight with Backhoe Attachment 1,452,800 lb
Operating Weight with Shovel Attachment 1,482,827 lb
Engine Output 3000 hp
Bucket Capacity 39.2–43.1 yd³
Shovel Capacity 37.9–44.4 yd³

LIEBHERR

Technical Data

Engine

2 Cummins diesel engines
- Rating per SAE J 1995 — 3000 hp at 1800 RPM
- Model — K 1800 E
- Type — 16 cylinder V-engine, water-cooled, direct injection, turbo-charged, after-cooler
- Displacement — 3069 cu in
- Bore/Stroke — 6.26/6.26 in

Air cleaner — dry-type air cleaner with pre-cleaner, with automatic dust ejector, primary and safety elements
Fuel tank — 3440 gal
Electrical system
- Voltage — 24 V
- Batteries — 8 x 170 Ah/12 V
- Alternator — 2 x 24 V/150 Amp

Engine idling — sensor controlled

Hydraulic System

Hydraulic pumps for attachment and travel drive — 8 variable flow axial piston pumps
- Max. flow — 8 x 222 gpm
- Max. hydr. pressure — 4640 PSI

Hydraulic pumps for swing drive — 4 reversible swash plate pumps, closed-loop circuit
- Max. flow — 4 x 109 gpm
- Max. hydr. pressure — 5076 PSI

Pump regulation — electro-hydraulic, pressure compensation, flow compensation, automatic oil flow optimizer
Hydraulic tank capacity — 1215 gal
Hydraulic system capacity — 2166 gal
Hydraulic oil filter — filtration of entire return flow, 1 high pressure filter for each main pump
Hydraulic oil cooler — 2 separate coolers, 4 temperature controlled fans driven via hydraulic piston motors
Electronic engine speed sensing — over the entire engine RPM range
Lubrication — central lubrication system

Hydraulic Controls

Servo circuit — independant, electric over hydraulic proportional controls of each function
- Emergency control — via accumulator for all attachment functions with stopped engine

Power distribution — via monoblock control valves with integrated primary relief valves and flanged on secondary valves for travel
- Flow summation — to attachment and travel drive

Control functions
- Attachment and swing — proportional via joystick levers
- Travel — proportional via foot pedals or hand levers
- Bottom dump bucket — proportional via foot pedals

Operation with one engine possible

Swing Drive

Hydraulic motor — 4 Liebherr axial piston motors
Swing gear — 4 Liebherr planetary reduction gears
Swing ring — Liebherr, sealed triple roller swing ring, internal teeth
Swing speed — 0–3.5 RPM
Swing-Holding brake — hydraulically released, maintenance-free, multi-disc brakes integrated in each swing gear

Uppercarriage

Design — torque resistant designed upper frame in box type construction for superior strength and durability
Attachment mounting — parallel longitudinal main girders in box-section construction
Catwalks — on the right side with a hydraulically driven access ladder, additional emergency ladder in front of the cab

Service Flap

Design — hydraulically actuated service flap, easily accessible from ground level to allow:
- fuel fast refill
- hydraulic oil refill
- engine oil quick change
- splitterbox oil quick change
- swing gearbox oil quick change
- swing ring gearing grease barrel refilling via grease filter
- attachment/swing ring bearing grease barrel refilling via grease filter
- windshield washer water refilling

Quick coupler upon request

Technical Data

Operator's Cab

Design	resiliently mounted, sound insulated, large windows for all-around visibility, integrated falling object protection FOPS
Operator's seat	suspended, body-contoured with shock absorber, adjustable to operator's weight
Cabin windows	0.8 in tinted armored glass for front window and left hand side windows, all other windows in tinted safety glass, high pressure windshieldwasher-system with 20 gal watertank, sun louvers on all windows in heavy duty design
Heating system/ Air conditioning	heavy duty, high output air conditioner and heater unit
Cabin pressurization	ventilation unit with filters
Controls	joystick levers integrated into armrest of seat
Monitoring	via LCD-Display, data memory
Automatic engine shut off	in case of low engine oil pressure or low coolant level
Destroking of main pumps	in case of engine overheating or low hydraulic oil level
Safety functions	additional gauges with constant display for: engine speed, hourmeter, engine oil pressure, coolant temperature and hydraulic oil temperature

Undercarriage

Design	3-piece undercarriage, box type structures for center piece and side frames, stress relieved
Hydraulic motor	2 axial piston motors per side frame
Travel gear	Liebherr reduction gear
Travel speed	0–1.4 mph
Parking brake	spring engaged, hydraulically released wet multi-disc brakes for each travel motor, maintenance-free
Track components	maintenance-free combined pad-link, heavy duty track shoes
Track rollers/ Carrier rollers	7/3
Automatic track tensioner	pressurized hydraulic cylinder with accumulator, maintenance free
Transport	undercarriage side frames are removable

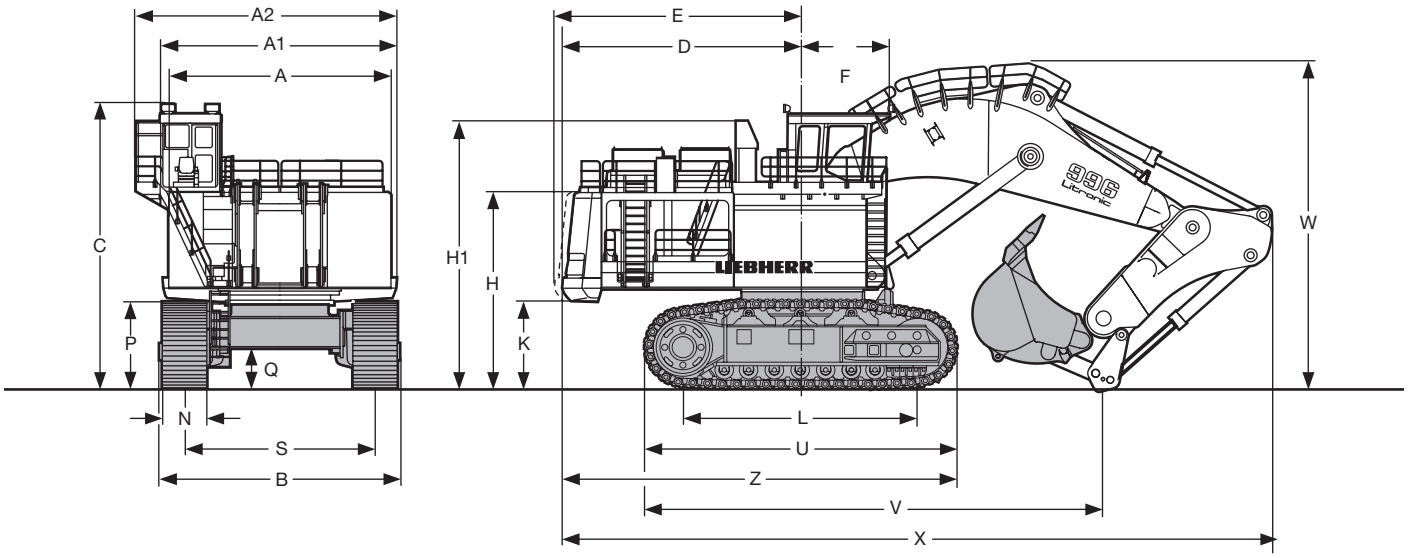
Central Lubrication System

Type	Lincoln Centromatic lubrication system for the entire attachment and swing ring
Grease pumps	2 Lincoln Powermaster pumps with switch over function, plus 1 separate pump for swing ring teeth
Capacity	158.5 gal bulk container for attachment and swing ring, separated 21 gal grease drum for swing ring teeth

Attachment

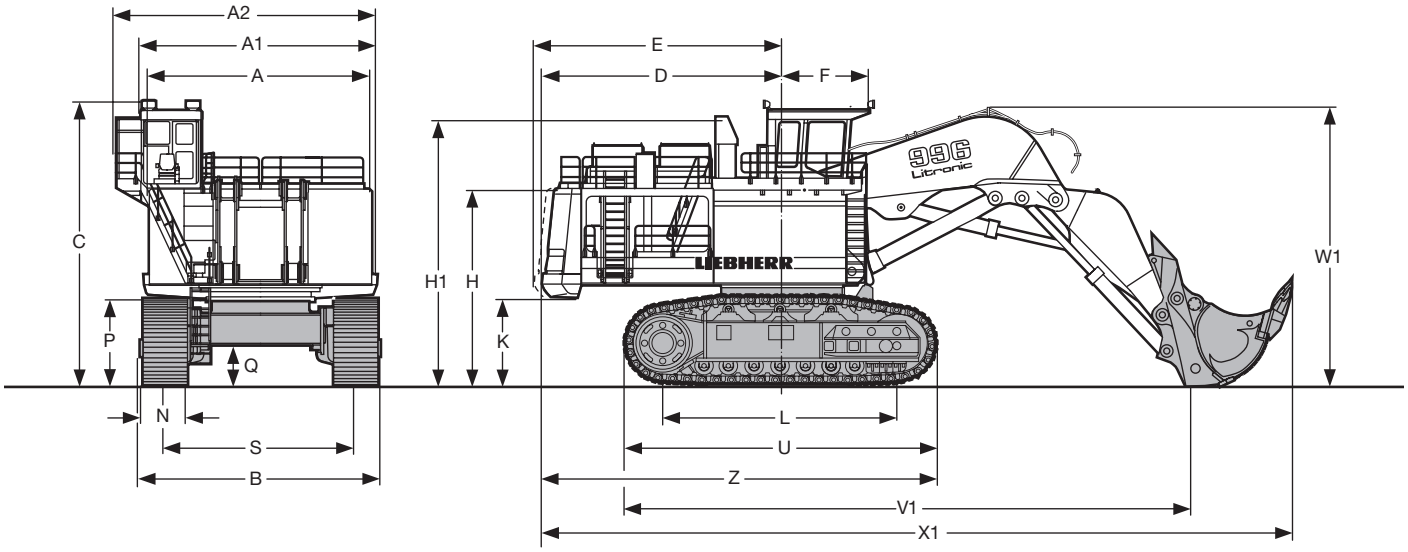
Design	box type structure with large steel castings in all high-stress areas
Pivots	sealed with double side centering with 1 single floating pin per side, all bearings with wear resistant, steel bushings, bolts hardened and chromium-plated
Hydraulic cylinders	Liebherr design, all cylinders located in well protected areas
Hydraulic connections	pipes and hoses equipped with SAE split flange connections
Kinematics	Liebherr parallel face shovel attachment geometry

Dimensions



	ft in
A	22’11”
A1	24’ 4”
A2	27’ 1”
B	25’ 1”
C	29’ 9”
D	24’ 9”
E	25’ 7”
F	9’ 1”
H	20’ 7”
H1	27’10”
K	9’ 4”

	ft in
L	24’ 7”
U	32’ 9”
P	9’ 9”
Q	4’ 8”
S	19’ 8”
N	55”
W	32’
V	47’ 1”
X	74’ 1”
Z	40’10”



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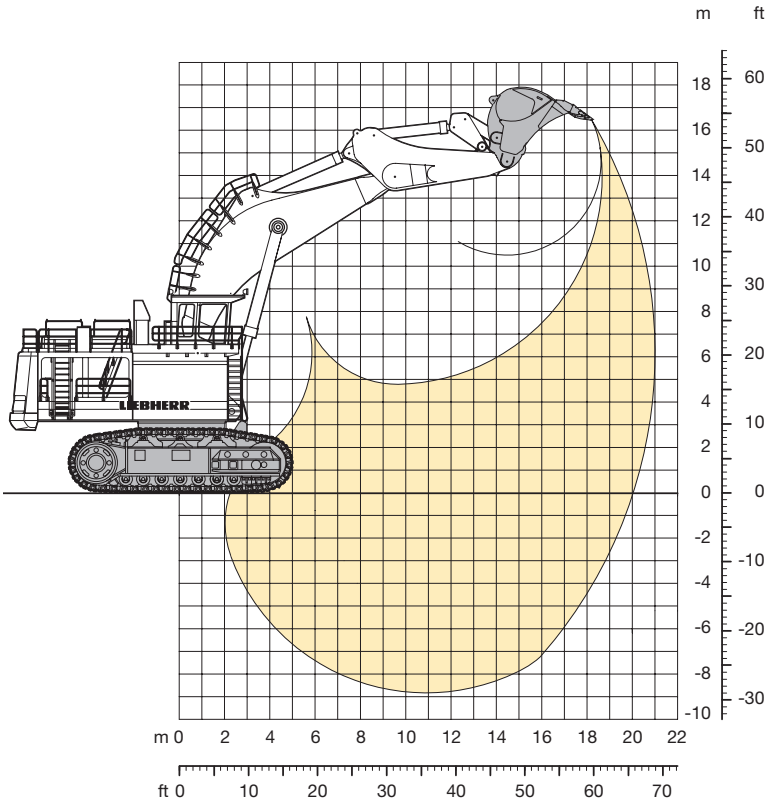
F	9’ 1”
H	20’ 7”
H1	27’10”
K	9’ 4”

	ft in
L	24’ 7”
U	32’ 9”
P	9’ 9”
Q	4’ 8”
S	19’ 8”
N	55”
W1	27’10”
V1	58’ 4”
X1	76’11”
Z	40’10”

Backhoe Attachment

with Gooseneck Boom 38’6”



Digging Envelope

Stick	16’ 4”
Max. reach at ground level	65’ 7”
Max. teeth height	54’ 5”
Max. dump height	34’ 5”
Max. digging depth	28’10”
Max. digging force	337,100 lb
Max. breakout force	375,300 lb

Operating Weight and Ground Pressure

The operating weight includes the basic machine with backhoe attachment and bucket 43.1 yd³.

Pad width	in	55
Weight	lb	1,452,800
Ground pressure	PSI	39.97

Bucket

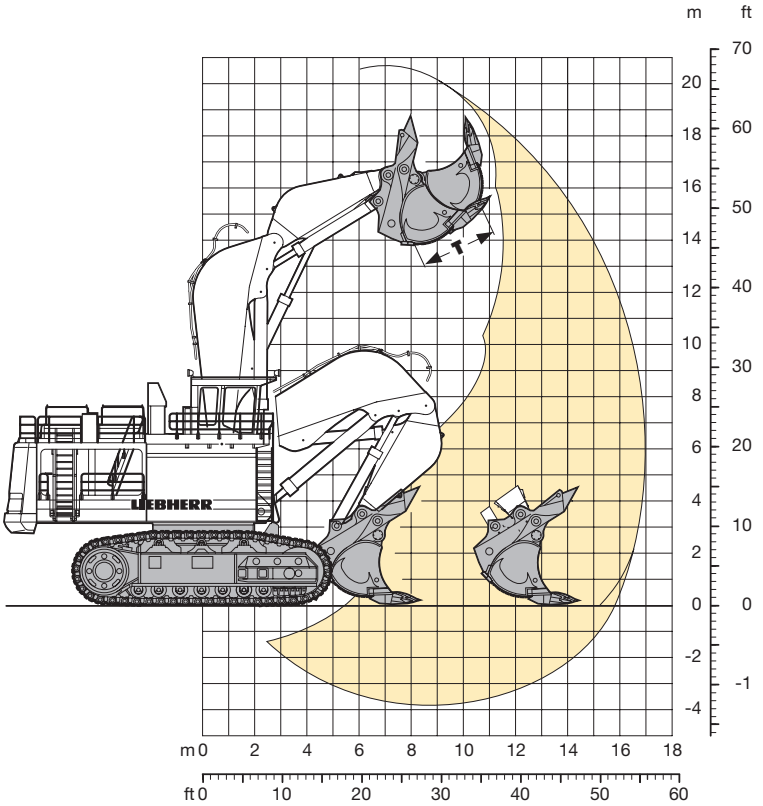
Cutting width SAE	in	189”[1)]	189”[1)]
Capacity SAE heaped	yd³	39.2	43.1
Weight	lb	85,980	90,760
Suitable for material up to a specific weight of	lb/yd³	3700	3000
Wear kit level		II	II

[1)] Bucket with delta cutting edge and tooth system Posilok size S 145.
Level II: For rock which is not detoriorated or cracked.

Additional buckets on request.

Shovel Attachment

with Shovel Boom 26’3”



Digging Envelope

Shovel stick	16’ 4”
Max. reach at ground level	51’ 2”
Max. dump height	46’11”
Max. crowd length	21’
Bucket opening width T	110”
Crowd force at ground level	440,450 lb
Max. crowd force	525,850 lb
Max. breakout force	428,100 lb

Operating Weight and Ground Pressure

The operating weight includes the basic machine with shovel attachment and bottom dump bucket 44.4 yd³.

Pad width	in	1400/55
Weight	lb	1,482,827
Ground pressure	PSI	40.82

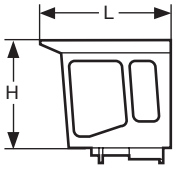
Bottom Dump Bucket

Cutting width SAE	in	185”[1)]	217”[1)]
Capacity SAE heaped	yd³	37.9	44.4
Weight	lb	118,160	130,950
Suitable for material up to a specific weight of	lb/yd³	3700	3000
Wear kit level		II	II

[1)] Bottom dump bucket with delta cutting edge and tooth system Posilok size S 145
Level II: For rock which is not deteriorated or cracked.

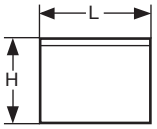
Additional bottom dump buckets on request.

Component Dimensions and Weights



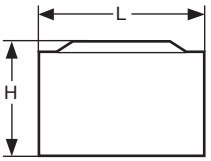
Cab

L	Length	ft in	10’ 6”
H	Height	ft in	9’ 6”
	Width	ft in	6’ 3”
	Weight	lb	6,200



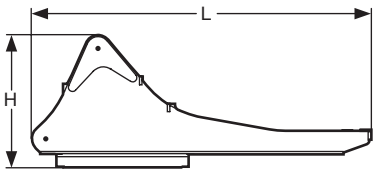
Cab Elevation with Fuel Tank

L	Length	ft in	13’ 7”
H	Height	ft in	10’ 2”
	Width	ft in	8’10”
	Weight	lb	17,650



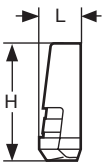
Powerpack Modules (two)

L	Length	ft in	17’ 4”
H	Height	ft in	11’11”
	Width	ft in	6’ 9”
	Weight	lb	2 x 48,500



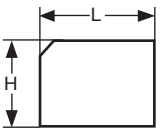
Rotation Deck (with swing ring, swing gears and control valve bracket)

L	Length	ft in	32’
H	Height	ft in	13’11”
	Width	ft in	14’
	Weight	lb	183,200



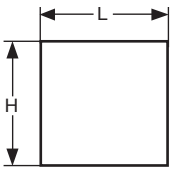
Counterweight

L	Length	ft in	4’ 1”
H	Height	ft in	11’ 3”
	Width	ft in	24’ 2”
	Weight	lb	132,300



Hydraulic Oil Cooling
with hydraulic tank without hydraulic oil

L	Length	ft in	13’10”
H	Height	ft in	10’ 2”
	Width	ft in	6’11”
	Weight	lb	17,650



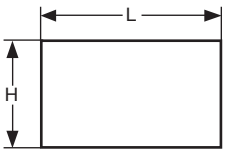
Compartment Panel (two)

L	Length	ft in	13’ 7”
H	Height	ft in	10’ 2”
	Width	ft in	3’ 1”
	Weight	lb	2 x 3,300

Hydraulic Oil

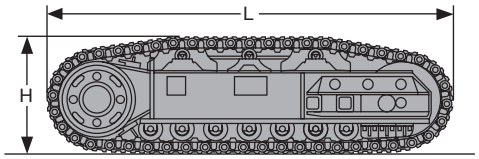
	Weight	lb	17,640

Component Dimensions and Weights



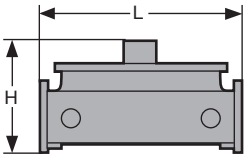
Miscellaneous

L	Length	ft in	14’ 9”
H	Height	ft in	8’ 6”
	Width	ft in	6’ 7”
	Weight	lb	11,100



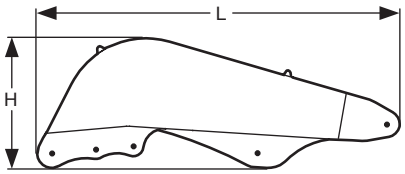
Side Frame (two)

L	Length	ft in	32’ 9”
H	Height	ft in	9’ 9”
	Width over travel drive	ft in	8’11”
	Width without travel drive	ft in	7’ 4”
	Weight	lb	2 x 258,000



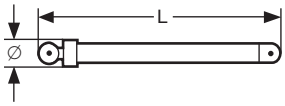
Undercarriage Central Girder

L	Length	ft in	13’ 1”
H	Height	ft in	8’10”
	Width	ft in	15’ 1”
	Weight	lb	88,200



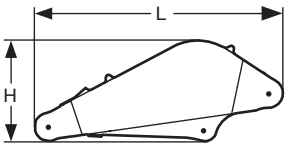
Shovel Boom

L	Length	ft in	28’ 4”
H	Height	ft in	10’10”
	Width	ft in	11’
	Weight	lb	130,400



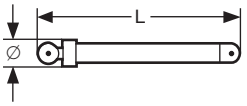
Hoist Cylinder (two)

L	Length	ft in	17’10”
Ø	Diameter	in	24”
	Weight	lb	2 x 13,050



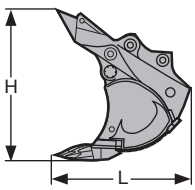
Shovel Stick

L	Length	ft in	18’ 5”
H	Height	ft in	7’ 6”
	Width	ft in	11’
	Weight	lb	59,850



Crowd Cylinder (two)

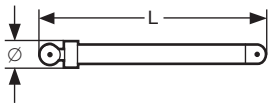
L	Length	ft in	12’ 9”
Ø	Diameter	in	19”
	Weight	lb	2 x 7,560



Bottom Dump Bucket (including clam cylinders)

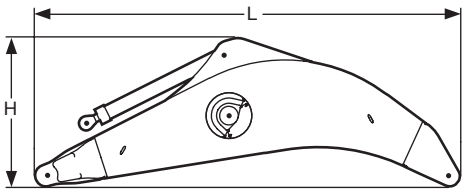
Cutting width	in	185”	217”
Capacity	yd^3	37.9	44.4
L Length	ft in	15’3”	15’3”
H Height	ft in	14’9”	14’9”
Width	ft in	15’5”	18’
Weight	lb	129,850	141,000

Component Dimensions and Weights



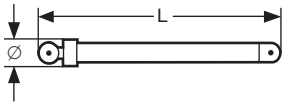
Bucket Tilt Cylinder (two)

L	Length	ft in	15’ 5”
Ø	Diameter	in	19”
	Weight	lb	2 x 8,090



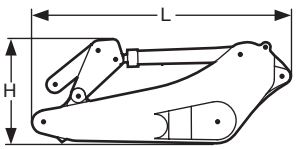
Gooseneck Boom with Two Stick Cylinders

L	Length	ft in	41’
H	Height	ft in	14’ 9”
	Width	ft in	9’ 2”
	Weight	lb	152,000



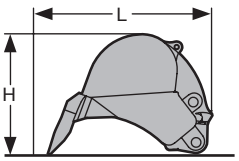
Hoist Cylinders (two)

L	Length	ft in	17’10”
Ø	Diameter	in	24”
	Weight	lb	2 x 13,360



Stick with Two Bucket Cylinders

L	Length	ft in	24’ 7”
H	Height	ft in	9’10”
	Width	ft in	8’ 2”
	Weight	lb	92,594



Backhoe Buckets

Cutting width	in	189”	189”
Capacity	yd^3	39.2	43.1
L Length	ft in	15’ 3”	15’ 3”
H Height	ft in	10’ 4”	10’10”
Width	ft in	15’11”	15’11”
Weight	lb	86,000	90,760

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