Technical Description Wheel Loader

L 522

Bucket capacity **1,6 – 1,8 m³**
Operating weight **8,9 – 9,5 t**
Engine output **74 kW/101 hp**

Economical due to low operating costs

The Liebherr designed travel drive with two travel motors instead of a gearbox offers a high degree of economy and operator comfort. In addition this new stepless travel drive offers other advantages:

- **Low fuel consumption** – due to improved utilization of the available engine power
- **Reduced brake wear** – due to the use of hydrostatic travel drive, the wet multidisc brakes are virtually wear free
- **Reduced tire wear** – due to the sensitive drive system and the limited slip differentials fitted as standard equipment.

Safety and comfort

Good visibility of the front attachment throughout its full working range significantly improves operating safety.

A high degree of operator comfort is achieved by Liebherr due to:

- **Ease of operation of the travel drive and the working attachments and**
- **the new combination of oscillating axle and oscillating frame articulation.**

Parallelogram attachment geometry or Z-bar loader linkage

The wheel loader is better suited to operating requirements since it offers a choice between parallelogram geometry and Z-bar loader linkage. An integrated hydraulic quick change coupler is optional.

LIEBHERR

The Better Machine.

Diesel Engine

Deutz Diesel engine

Power output		
DIN/ISO 3046-1	74 kW (101 hp)	at 2300 RPM
Max. torque	342 Nm	at 1600 RPM
Displacement	4,1 l	
Bore/stroke	102/125 mm	

Air filter system — Dry air filter with main and safety element, maintenance indicator pre-cleaner

Electrical system

Operating voltage	24 V
Battery	2 x 88 Ah/12 V
Alternator	35 A

Travel Drive

Stepless hydrostatic travel drive

Design	Swash plate type variable flow pump and two variable axial piston motors in closed loop circuit
Filtering system	Suction filter for closed circuit
Control	Control of travel drive with travel and inching pedal. Stepless control of tractive force and travel speed via the inching pedal, independent of the engine RPM. The Liebherr joystick controls forward and reverse travel as well as speed range
Travel speed range	Speed range I – 8,0 km/h Speed range II – 20,0 km/h Speed range III – 32,0 km/h Foreward and reverse with size 20-24

Axles

Four wheel drive

Front axle	fixed
Rear axle	oscillating 6° oscillating angle to each side 480 mm oscillating stroke (all wheels remain in contact with the ground)
Differentials	Automatic limited slip differentials with 45 % locking value in both axles
Reduction gear	Planetary final drive in wheel hubs

Brakes

Service brake	Wear free service brake due to hydrostatic travel drive, applied to all four wheels and additional hydraulic brake system with wet disc brakes incorporated in front and rear axle
Parking brake	Mechanically applied disc brake in rear axle

The braking system meets the requirements of the EC guidelines 71/320.

Tires

Size selection	17,5-25 20-24 Tubeless radial or cross ply tires on multi part rims or deep well rims in size
Special tires	Please contact factory for special application tires

Steering

Design	Hydraulic servo power steering Central oscillating frame articulation with damper element
Articulation angle	40° (to each side)
Oscillating angle	8° (to each side)
Max. pressure	180 bar

Attachment Hydraulics

Gear pump

Max. flow	133 l/min
Max. pressure	220 bar
Cooling	Hydraulic oil cooling by thermostatically controlled fan and oil cooler
Filtration	Return line filter in the hydraulic reservoir
Control	Servo control with Liebherr joystick
Lift circuit	Lift, neutral, lower Float position via Liebherr joystick
Tilt circuit	Tilt back, neutral, dump Automatic bucket positioner with adjustable dig-in

Attachment

Geometry	Z-bar loader linkage or parallel linkage can be chosen
Bearings	sealed

Hydraulic cycle time at rated load	Parallel linkage	Z-bar linkage
Lift	6,3 sec	6,3 sec
Tilt	1,6 sec	1,0 sec
Lower (empty)	3,5 sec	3,5 sec

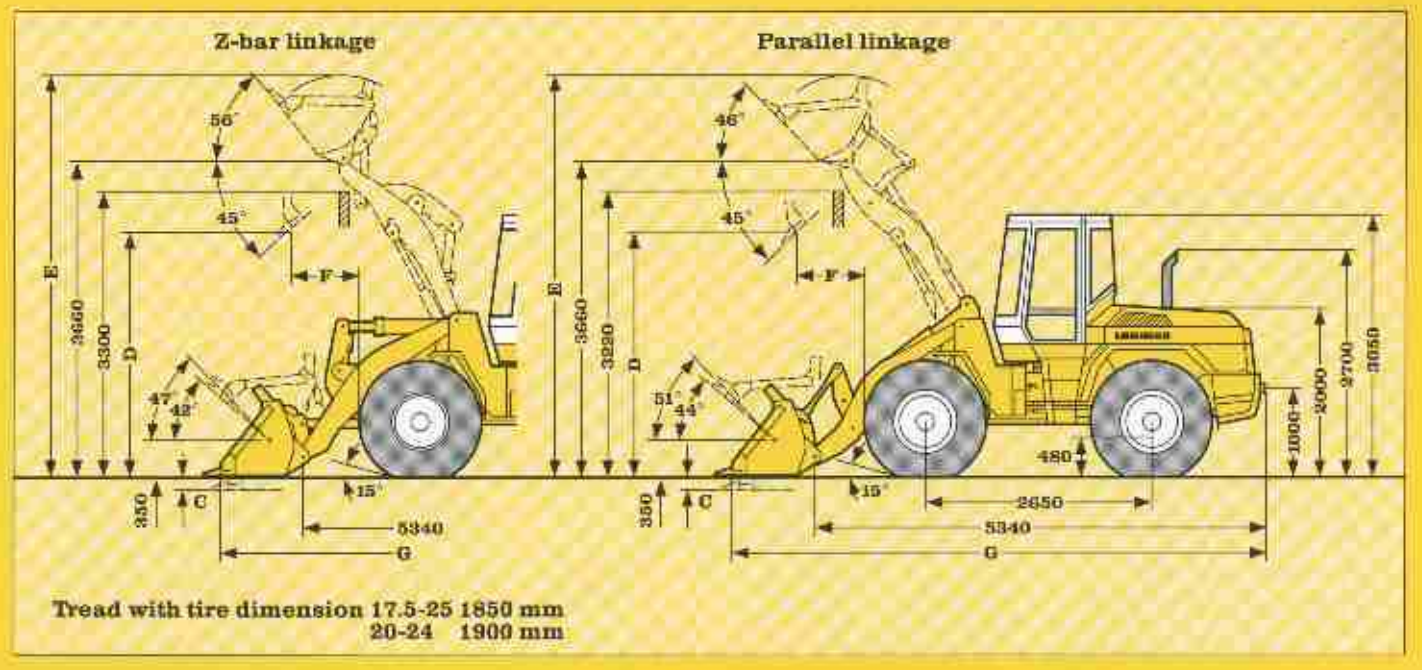
Operator's Cab

Design	The cab is resiliently mounted on the rear section, with built in ROPS/FOPS structure, tinted safety glass windows 2 doors open out, left door with a sliding window, adjustable steering column is standard equipment ROPS roll over protection per DIN/ISO 3471/SAE 1040C FOPS falling objects protection per DIN/ISO 3449/SAE J 231
Operator's seat	6-way adjustable, suspended seat equipped with right hand armrest and seatbelt. Seat is adjustable for operator's weight
Heating and ventilation system	Operator's cab with defroster, fresh air filter, circulation system and engine oil heater
Noise levels (86/662 EWG)	in the operators' cab = 77 dB(A) outside = 104 dB(A)

Capacities

Fuel tank	130 l
Engine oil (with filter change)	12,5 l
Travelgear	2,4 l
Front axle/wheel hubs	12,5/3,8 l
Rear axle/wheel hubs	12,5/3,6 l
Hydraulic tank	80 l
Hydraulic system, total	120 l

Technical Data



Tread with tire dimension 17.5-25 1850 mm
20-24 1900 mm

Standard bucket

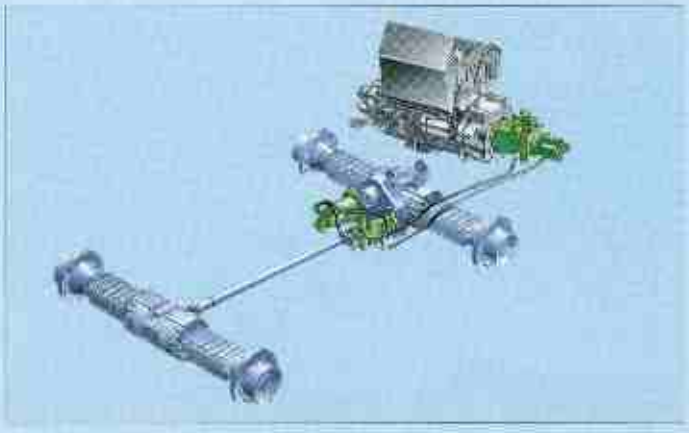
			Loader bucket with teeth [1] and cutting edge [2]			
	Attachment		Parallel linkage	Z-bar linkage	Parallel linkage	Z-bar linkage
	Bucket capacity heaped struck	 m^3 m^3	 1,6 1,3	 1,6 1,3	 1,8 1,5	 1,8 1,5
	Bucket width	mm	2490	2490	2490	2490
	specific material weight	t/m^3	1,8	1,8	1,6	1,6
D	Dump height at max. lift height and 45° discharge	mm	2840	2840	2750	2750
F	Reach at max. lift/at 2130 mm clearance and 45° discharge	mm	860/1380	860/1380	880/1400	880/1400
E	Max. operating height	mm	4665	4665	4725	4725
G	Overall length	mm	6340	6340	6420	6420
C	Digging depth	mm	70	70	70	70
	Turning radius Bucket in transport position	mm	5490	5490	5520	5520
	Lifting force (SAE)	kN	102	102	102	102
	Breakout force (SAE)	kN	85	102	78	95
*	Tipping load straight (SAE) articulated (35°) full turn (40°)	kg kg kg	6900 6250 6050	7140 6470 6270	6805 6165 5980	7050 6495 6390
**	Operating weight	kg	9100	9175	9235	9310

* Figures shown include lubricants, full fuel tank, tires size 20-24, L 2; ROPS/FOPS cab and operator.
** Different tires and optional equipment will change the operating weight and tipping load.
1) weld on tooth adaptors with exchangeable teeth
2) 3-piece, bolt on, reversible cutting edge
All figures stated above are also valid for the hydraulic quick change coupler.

Tire sizes	Width over tires mm	Ground clearance mm	Change of vertical dimensions mm	Change of operating weight kg	Change of static tipping load (40°) kg	
17.5-25, L 2	2350	465	− 15	− 325	−200	The use of additional counterweight or tire ballast is only recommended to improve stability on firm, level surfaces.
17.5 R 25, L 3	2350	455	− 25	− 190	− 175	
17.5 R 25, L 4, L 5	2370	490	+ 10	+ 425	+ 205	The use of both at the same time is not recommended and should be avoided.
20 R 24, L 2	2450	470	− 10	+ 40	+ 25	

Technical data and dimensions are in accordance with the ISO/SAE standards.

Technical Data



Stepless hydrostatic travel drive

No travel gearbox is needed with the new stepless hydrostatic travel drive. Using two travel motors the wheel loader moves smoothly, increasing or decreasing speed without jerks during speed changes. Stepless control of tractive force and travel speed via the inching pedal, independent of the engine RPM.

Z-bar Loader Linkage or Parallelogram Linkage

Depending upon job requirements, a Z-bar loader linkage or parallel linkage can be chosen. Integrated hydraulical quick coupler is optional.

More Benefits Through Advanced Techn

Safety and Operator Comfort

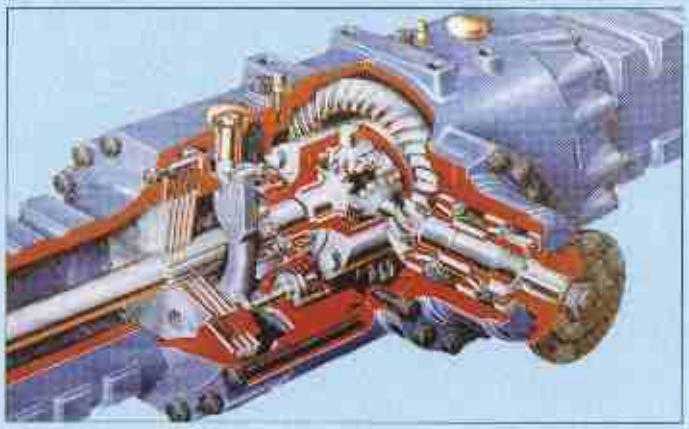
The cab increases operator safety and operator comfort: Fully adjustable steering column, Liebherr joystick lever, easy access into cab, unobstructed view of front attachments, optimum visibility to the rear over the rounded off engine cover.
Control of travel and working hydraulic with only one joystick lever assures increased safety and fatique free working conditions. The left hand always remains on the steering wheel.

Wet Disc Brakes

The wet, oil cooled brakes are integrated in the axles. These fully enclosed brakes, together with the hydrostatic drive, are virtually wear free.

Limited-Slip Differentials

The automatic acting multi-disc limited slip differential in both axles are standard on Liebherr wheel loaders and assure improved tractive force under severe ground conditions and reduced tire wear.



Off-Road Driving

New combination of oscillating axle and oscillating frame articulation assures increased operator comfort and travel stability by absorbing pinching motions and reducing cab oscillation.

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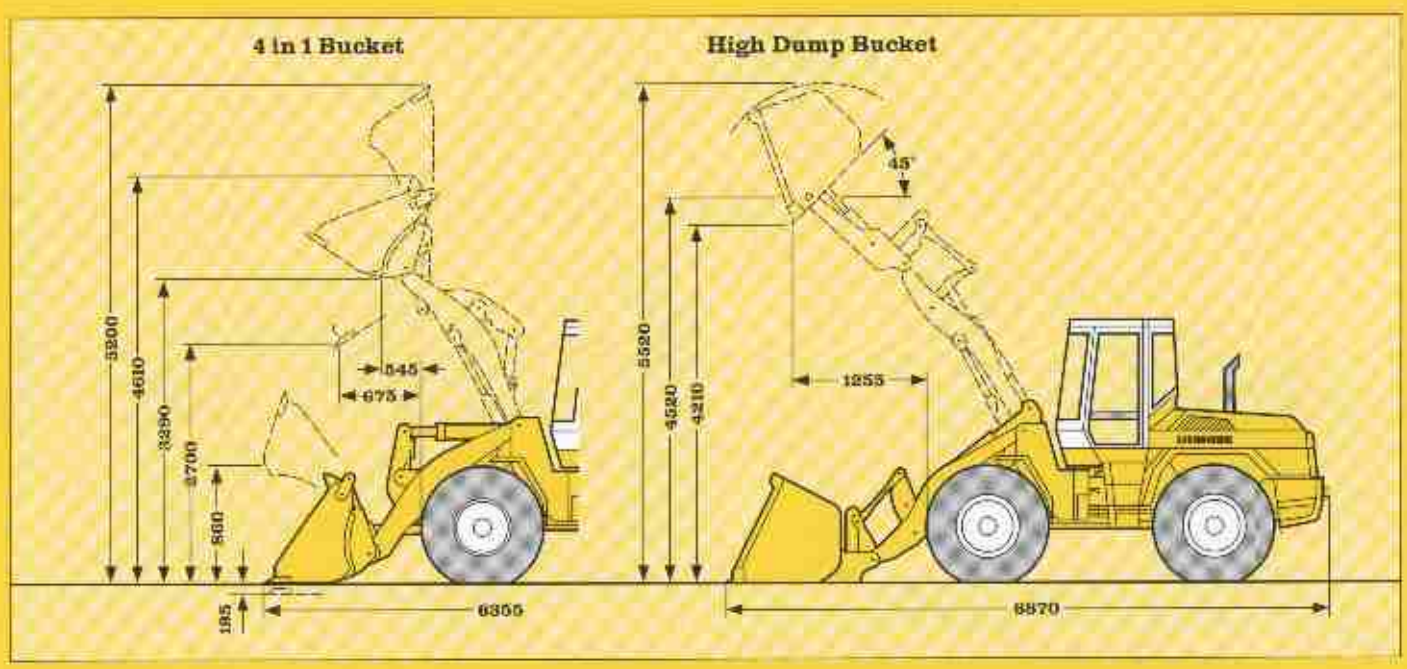


4 in 1 Bucket

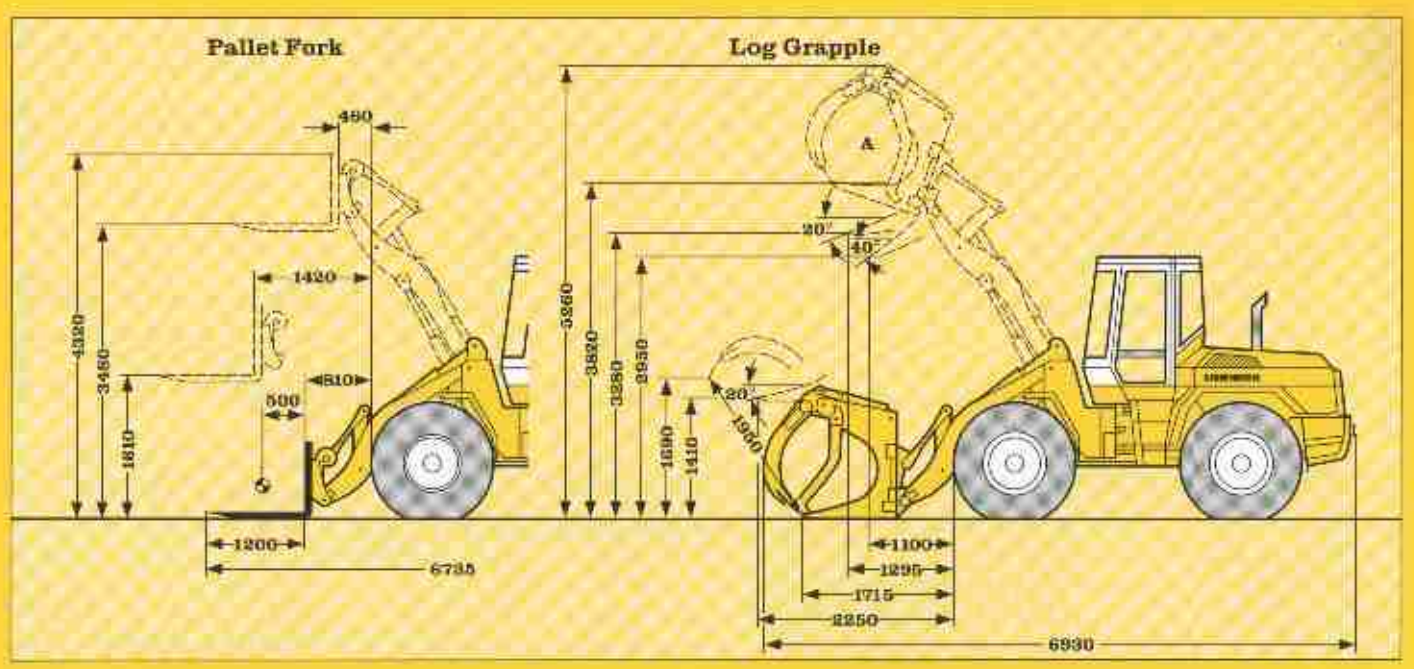
		4 in 1 Bucket	
	Geometry	Parallel linkage	Z-bar linkage
	Bucket capacity heaped struck	 m³ m³	 1,4 1,17
	Bucket width	mm	2500
	specific material weight	t/m³	1,8
	Turning radius Bucket in transport position	mm	5440 / 5455
*	Tipping load straight (SAE) full turn (40°)	kg kg	6190 / 6440 5440 / 5660
	Tire dimension		20-24
**	Operating weight	kg	9850 / 9930

High Dump Bucket (Parallel linkage)

		High Dump Bucket
	Bucket capacity	m³	3,0
	Bucket width	mm	2700
	specific material weight	t/m³	0,8
	Turning radius Bucket in transport position	mm	5740
*	Tipping load straight (SAE) full turn (40°)	kg kg	5144 5420
	Tire dimension		20-24
**	Operating weight	kg	9990

* Figures shown include lubricants, full fuel tank, tires size 20-24, L 2; ROPS/FOPS cab and operator.
** Different tires and optional equipment will change the operating weight and tipping load.
All figures stated above are also valid for the hydraulic quick change coupler.

Attachment



Log Grapple

Operating load	kg	3000
Grapple diamenter (A)	m³	1,0
Grapple weight	kg	1000
Grapple width	mm	1570
Turning radius	mm	5060
Tire dimension		20-24
Operating weight	kg	9200

Pallet Fork

Fork length	mm	1200	
Fork carriage width	mm	1880	
max. fork spread	mm	1740	
Tipping load (DIN 24094)* articulated 35° full turn 40°	 kg kg	 4500 4390	 4650 4535
Turning radius	mm	5280	5280
Tire dimension		17,5-25	20-24
Operating weight	kg	8600	8900

* Standard safety factor for rated load: 2,00 for uneven ground
1,25 for even ground

Attachment

Standard equipment

- Optional parallel or choise of Z-bar linkage
- Hydraulic servo control
- ROPS/FOPS cab, insulated against sound, tinted windows
- Engine oil heater with defroster and ventilation system
- Adjustable steering column
- Wash/wipe system front rear
- Suspended 6-way adjustable seat with seat belt
- Working lights front/rear
- Lockable doors and engine hood
- Emergency steering system
- Limited slip differentials
- Mudguards with rubber edge
- Air filter system with safety element and precleaner
- Automatic bucket positioner
- Floating position
- Towing device
- Toolbox with tool kit
- Operator's bag

Instrument panel with gauges:
- Engine oil temperature
- Fuel gauge
- Hourmeter
- Speedometer

Optical warning lights:
- Engine oil pressure
- Engine overheat
- Parking brake
- Hydraulic oil temperature
- Air filter contamination
- Battery charger
- Flow indicator for emergency steering

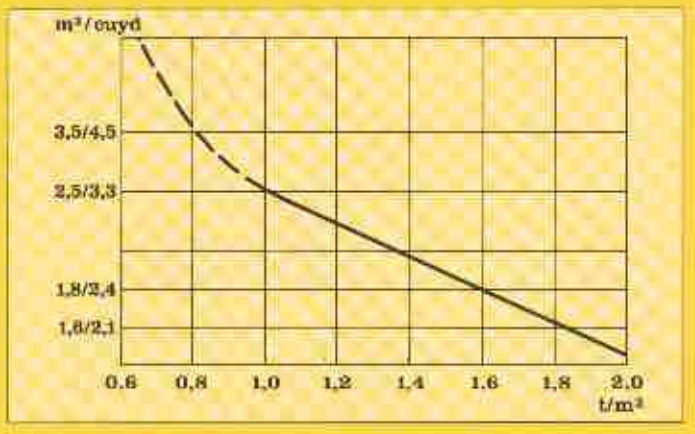
Acoustical warning device for:
- Engine oil pressure
- Engine overheat
- Hydraulic oil temperature

Indicator lights:
- Forward travel
- Reverse travel
- Turn indicator
- Preheat
- Travel speed range I – II – III
- High beam

Optional Equipment

- Buckets with and without teeth or with reversible cutting edge
- 4 in 1 Bucket
- Pallet carrier and fork
- High dump bucket
- Snow plough
- Road sweeper
- Log grapple
- Hydraulic quick change coupler
- 3rd and 4th hydraulic circuit
- Air cushioned comfort seat
- 20 km/h speed limiter
- Radio
- Air conditioning
- Pressure ventilation
- Beacon
- Back up alarm
- Country specific versions

Bucket selection



1,6 m³ bucket for normal to hard to loosen material, general earthmoving application.

1,8 m³ bucket for normal and stockpile material. With teeth or 3 part reversible cutting edge.

Material densities-loose t/m³

Gravel,	moist	1.9
	dry	1.6
	wet, 6–50 mm	2.0
	dry, 6–50 mm	1.7
	crushed stone	1.5
Sand,	dry	1.5
	moist	1.8
	wet	1.9
Gravel and sand,		
	dry	1.7
	wet	2.0
Sand and clay		1.8
Clay,	natural	1.6
	dry	1.4
	wet	1.65
Clay and gravel		
	dry	1.4
	wet	1.6
Earth,	dry	1.3
	wet excavated	1.6
Topsoil		1.1
Decomposed rock 50 % rock, 50 % earth		1.7
Basalt		1.95
Granite		1.8
Limestone,		
	hard	1.65
	soft	1.55
Gypsum, broken		1..
Coke		0.5
Slag, broken		1.8
Coal		1.1
Sandstone		1.6
Slate		1.75
Bauxite		1.4

Standard or optional attachments may vary, depending on country.

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With compliments: