



Service Manual

Chassis & Mast

EC35N, EC40N, EC45N
EC55N

A2EC4-60200-up

A2EC5-60200-up

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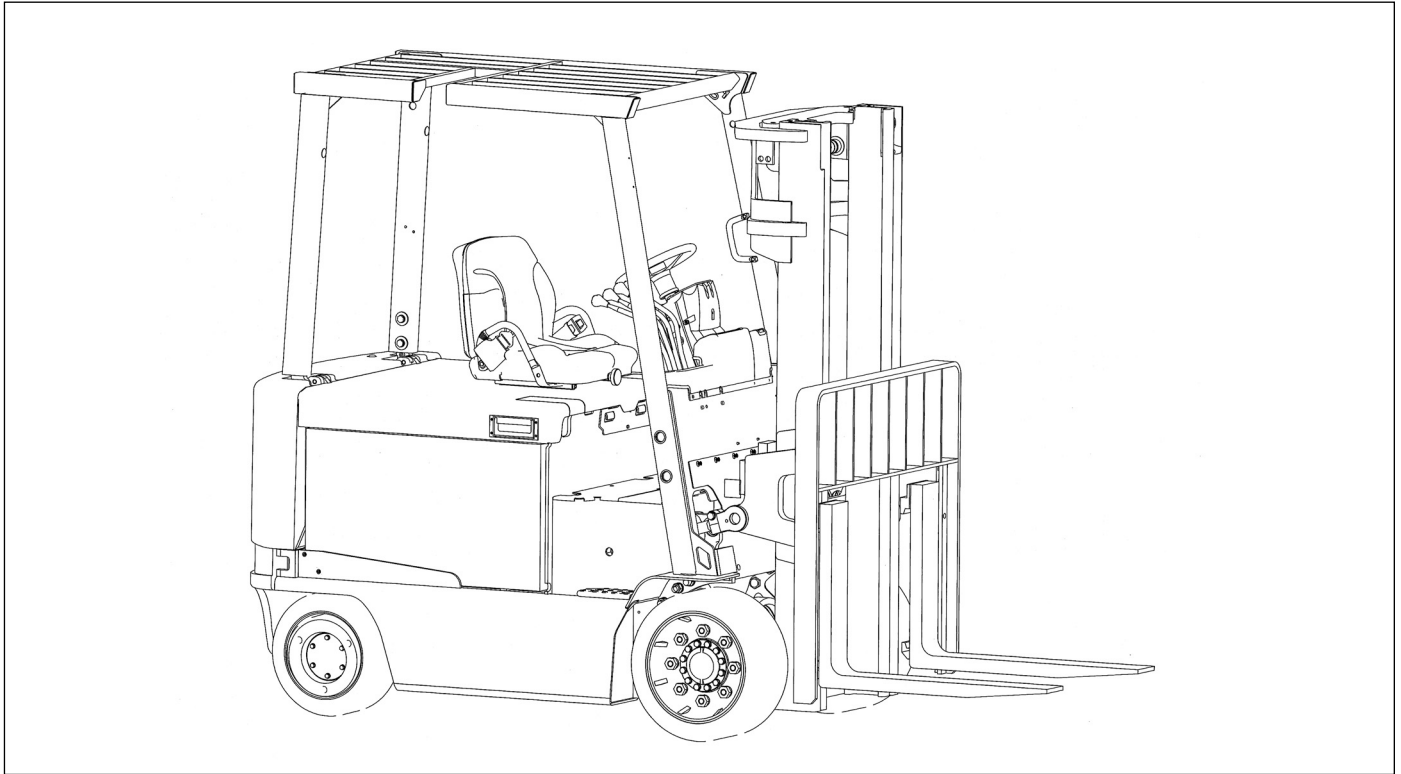
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Scope

This service manual deals with all components or systems of the Cat Lift Trucks, except for the electrical system, which is covered in a separate manual.

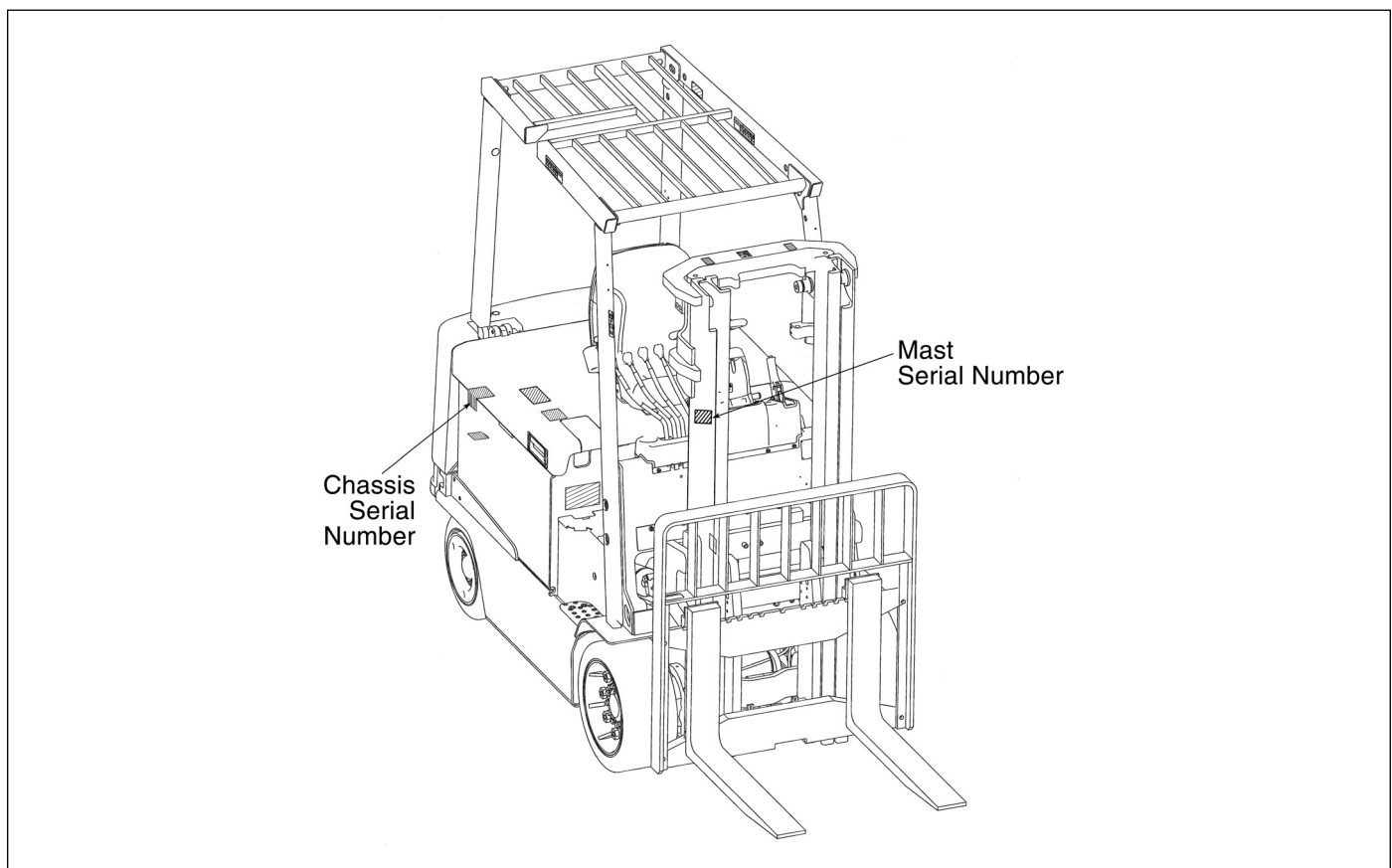
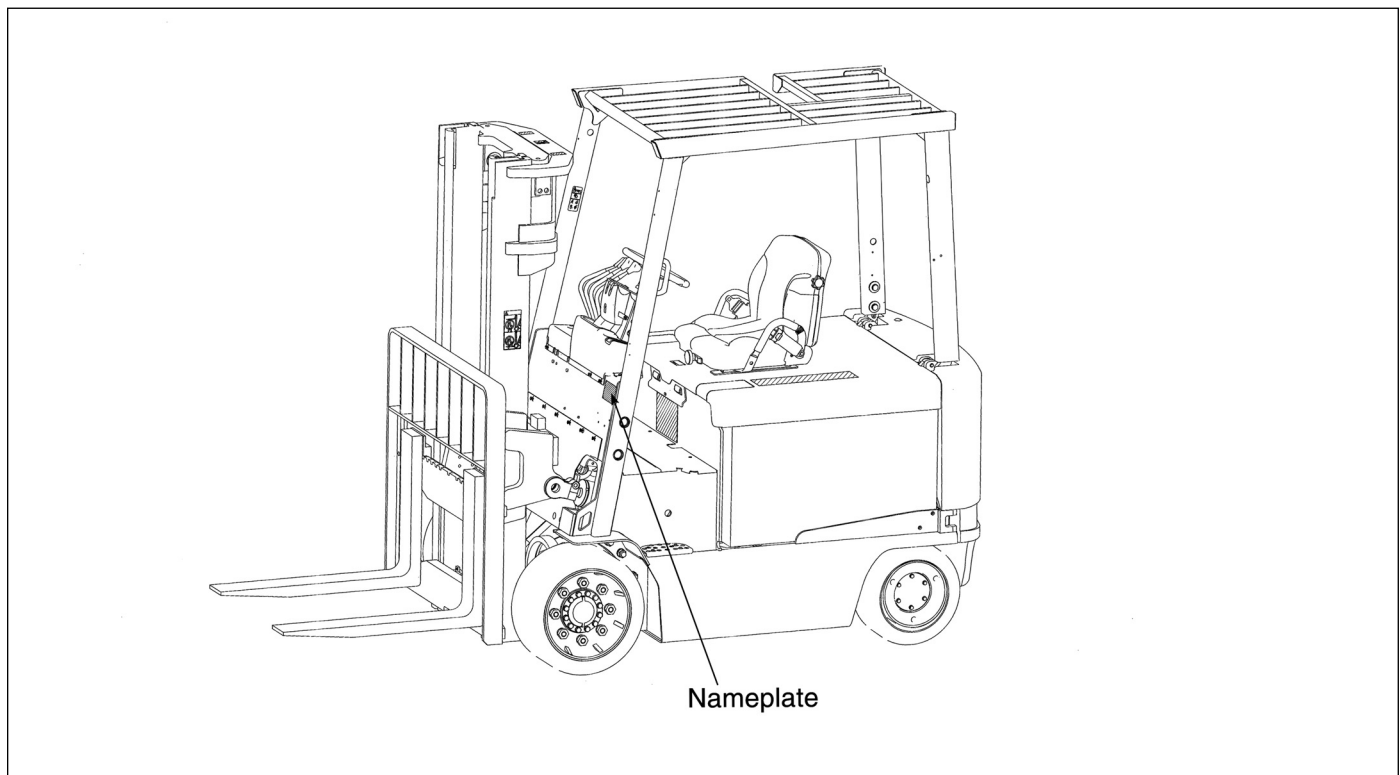


Truck Models Covered

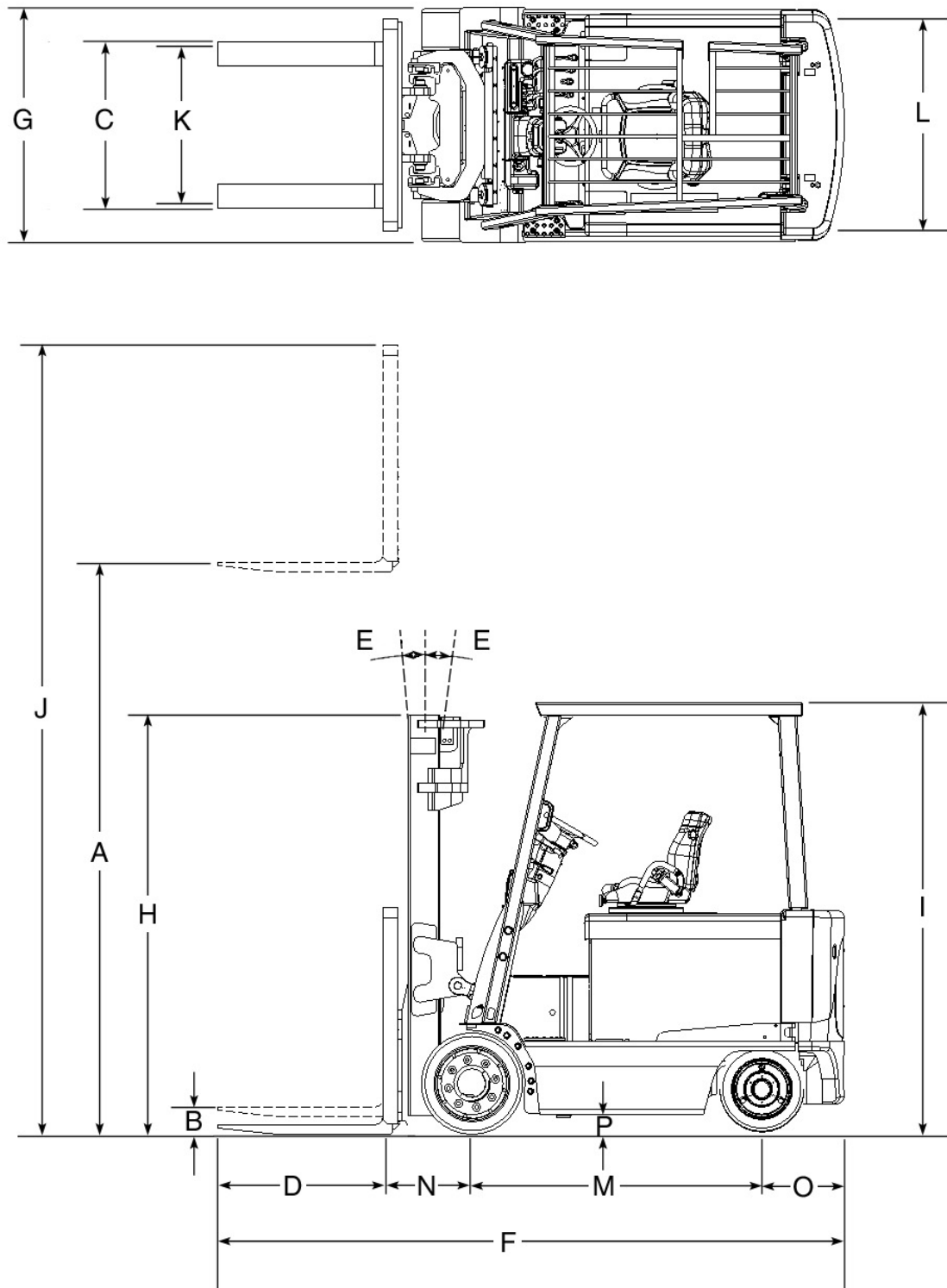
This service manual furnishes service and maintenance information for the following trucks.

Truck Model	Serial Number
EC35N	A2EC4-60200-up
EC40N	A2EC4-60200-up
EC45N	A2EC4-60200-up
EC55N	A2EC5-60200-up

Nameplate and Serial Number Locations



Dimensions



GENERAL INFORMATION

Dimensions Chart

Ref#	Truck Model	EC35N	EC40N	EC45N	EC55N
A	Maximum Lift	4650 (183)	4650 (183)	5055 (199)	5320 (209)
B	Free Lift	150 (5.9)	150 (5.9)	160 (6.3)	160 (6.3)
C	Maximum Fork Spacing (outside to outside)	1060 (41.5)	1060 (41.5)	1060 (41.5)	1060 (41.5)
D	Fork Length	1220 (48)	1220 (48)	1220 (48)	1220 (48)
E	Tilt Angle (forward/backward)	6° / 8°	6° / 8°	6° / 8°	6° / 8°
F	Overall Length	3640 (143.3)	3691 (145.3)	3746 (147.5)	3912 (154.0)
G	Overall Width (outside of tires)	1270 (50.0)	1270 (50.0)	1315 (52.0)	1420 (55.9)
H	Overall Height (to top of mast, lowered)	2270 (89.5)	2270 (89.5)	2350 (92.5)	2120 (83.5)
I	Overall Height (to top of overhead guard)	2341 (92.2)	2341 (92.2)	2341 (92.2)	2341 (92.2)
J	Overall Height (to top of mast, extended)	4550 (179.1)	4550 (179.1)	4115 (162.0)	4125 (162.4)
K	Tread (front)	1040 (41.0)	1040 (41.0)	1065 (42.0)	1116 (44.0)
L	Tread (rear)	965 (38.0)	965 (38.0)	965 (38.0)	965 (38.0)
M	Wheelbase	1575 (62.0)	1575 (62.0)	1575 (62.0)	1720 (67.7)
N	Front Overhang	450 (17.7)	450 (17.7)	465 (18.3)	480 (18.9)
O	Rear Overhang	395 (16)	446 (18)	486 (19)	492 (19)
P	Underclearance (at center of wheelbase)	106 (4.2)	106 (4.2)	106 (4.2)	106 (4.2)

Unit: mm (in.)

General Information (Standard Models)

			Truck Model				
			Units	EC35N	EC40N	EC45N	EC55N
Standard Controller			GE SX Controller				
Standard Simplex Mast Size			meters	3.3	3.3	3.3	2.9
Service Weight (standard axle)	Without Battery	kg (lb)	4581 (10099)	4833 (10656)	5677 (12516)	6448 (14215)	
	With Max. Battery		6849 (15099)	7101 (15656)	7945 (17516)	8716 (19215)	
Work Performance	Rated Capacity/ Load Center		kg/mm (lb/in.)	3500/500 (7000/24)	4000/500 (8000/24)	4500/600 (10,000/24)	5500/600 (12,000/24)
	Maximum Fork Height		mm (in.)	4650 (183)	4650 (183)	5055 (199)	5320 (209)
	Lift Speed (Rated Load)	36V	m/sec. (fpm)	0.25 (50)	0.22 (43)	0.20 (39)	0.17 (33)
		48V		0.31 (64)	0.34 (67))	0.25 (49)	0.21 (41)
	Lowering Speed (rated load)			0.54 (106)		0.56 (110)	
	Tilt Angle (forward/backward)		degrees	6° / 8°			
Free Lift		mm (in.)	150 (5.9)		160 (6.3)		
Traveling Performance	Travel Speed (Without Load)	36V	km/h	14.0 (8.7)	13.8 (8.6)	13.7 (8.5)	13.6 (7.3)
		48V	(mph)	17.0 (10.6)	16.9 (10.5)	15.8 (10.3)	16.6 (10.3)
	Minimum Turning Radius		mm (in.)	2214 (87)	2258 (89)	2294 (90)	2468 (97)
Power Train	Traction Motor Output	36V	60min.	15.3 (11.4)			
		48V	HP(kW)	20.9 (15.5)			
	Transfer Gear	Type		Spur			
		Ratio		5.131			
	Reduction Gear	Type		Spiral Bevel			
		Ratio		4.571			
	Differential	Axle Housing		Banjo			
		Gear Type/	Gears	Straight Bevel/2			
		Number	Pinions	Straight Bevel/2			

GENERAL INFORMATION

				Truck Model	
				Units	EC35N thru EC55N
Power Steering System	Type			Dynamic Load Sense	
	Turning Angle	Inside	Degrees	82°	
		Outside		59°	
	Steering Wheel Diameter		mm (in.)	328 (13)	
	Cylinder Minimum Test Pressure		kgf/cm ² (psi) [kPa]	120 (1706) [11,768]	
Brake System	Service Brake	Type		Self-Adjusting Duo-Servo	
		Inside Drum Diameter	mm (in.)	317.5 (12.50)	
		Lining Thickness	mm (in.)	10 (0.39)	
		Master Cylinder ID	mm (in.)	Primary 31.75 (1.25) Secondary 19.05 (0.75)	
		Wheel Cylinder ID		31.75 (1.250)	
	Park Brake	Type		Mechanical, Mounted on Front Wheels	
		Lever Operating Effort	kgf (lbf) [N]	25 to 30 (55 to 66) [245 to 295]	
Traveling System	Mounting	Front Wheels		Fixed Type	
		Rear Wheels		Center Pivot Type	
	Wheel Alignment	Oscillation Angle	Degrees	3°	
		Camber		1°	

GENERAL INFORMATION

				Truck Model				
				Units	EC35N	EC40N	EC45N	EC55N
Hydraulic System	Hydraulic Pump	Type		Gear				
		Make		Haldex - Barnes				
		Model		W1500				
		Displacement	cc (cu in.)	38 (2.32)				
		Make		Husco International				
	Control Valve	Model		5000CC Sectional Valve				
		Relief Pressure	kgf /cm ² (psi) [kPa]	Aux	155 (2250) 15513			
				Lift Tilt	197 (2850) 19650			
	Flow Regulator Valve	Type		Variable				
		Regulated Flow Rate	liter (cu.in.) / min	100 (6100)		115 (7018)		
	Lift Cylinders	ID	mm (in.)	60 (2.36)		70 (2.75)		
		Stroke		1650 (64.96)				
	Tilt Cylinders	ID		100 (3.937)				
		Stroke		120 (4.724)				
Hydraulic Tank Capacity (Approx)		liter (US gal.)	Liter 48 (12.7)					
Mast and Forks	Mast Model			CJ type				
	Flange ID X flange back thickness X flange front thickness X web thickness	Outer		118x28x24x13 (4.6x1.1x0.9x0.5)			130x30x26x15 (5.1x1.2x1.0x0.6)	
		Inner, Middle		118x24x24x12 (4.6x0.9x0.9x0.47)			130x26x26x13 (5.1x1.0x1.0x0.5)	
	Main Rollers	Bearing		Ball Bearing				
		Diameter x Width, mm (in.)		118x32 (4.65x1.26)			130x34 (5.12x1.34)	
	Side Rollers	Bearing		Lubricating type needle roller bearing				
		Diameter x Width, mm (in.)		52x36 (2.05x1.42)				
	Lift Chains			BL834			BL1034	
	Forks (length x width x thick), mm (in.)			1220x150x50 (48x6x2)				
	Fork Spread (outer width), mm (in.)			1060 (41.5)				
Battery	Voltage			36 / 48				
	Amp Hours (6 hr. rate)		36V	1760				
			48V	1540				
	Compartment Dimensions	Height	mm (in.)	590 (23.22)				
		Length		1003 (39.5)				
		Width		1156 (45.5)				
	Weight (Min/Max)		kg (lb)	1500 / 2268 (3400 / 5000)		1650 / 2268 (3600 / 5000)		1800 / 2268 (3975 / 5000)

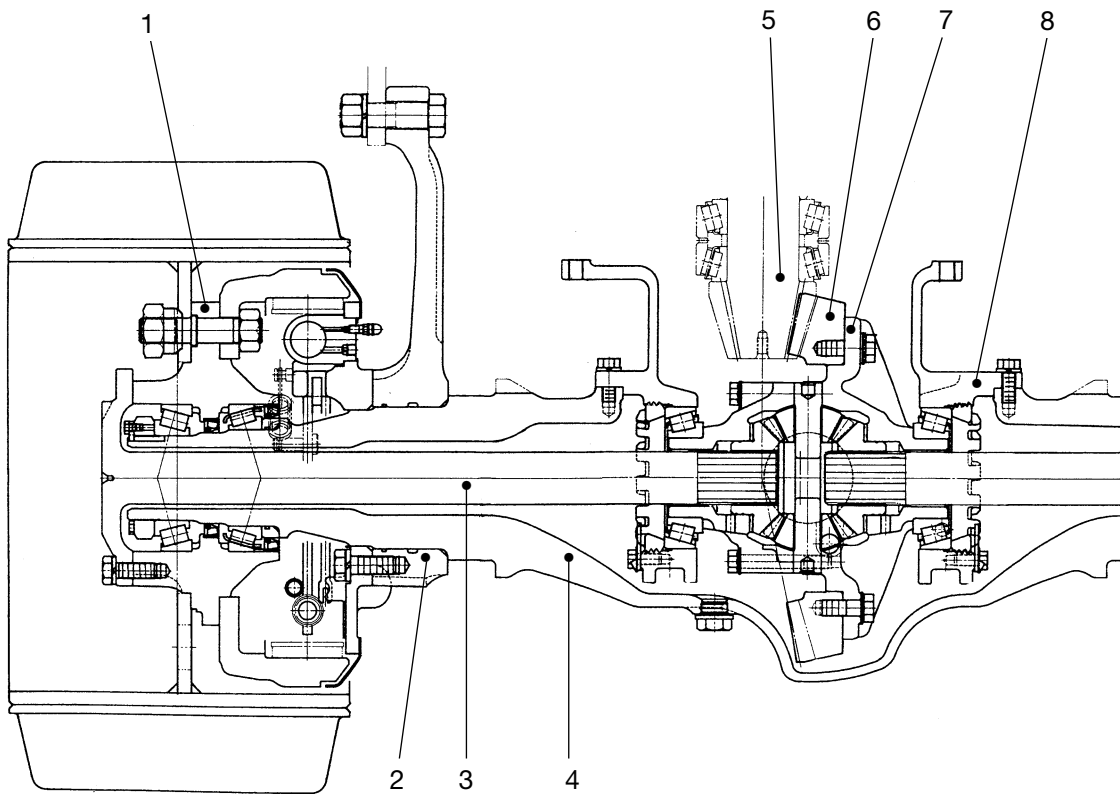
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Specifications

Items		Truck Models	EC35N thru EC55N
Reduction	Gear type		Spiral bevel gear
	Reduction ratio		4.571
Differential	Housing type		Banjo type
	Type and number of gears	Large Small	Straight bevel gear x 2 Straight bevel gear x2
Running Gear	Front axle type		Full-floating axle tube type
	Suspension	Front wheel	Frame fixing type

Structure



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Sequence

- 1 Front wheel hub drum
- 2 Front axle support
- 3 Axle shaft
- 4 Axle housing
- 5 Reduction bevel pinion
- 6 Reduction bevel gear
- 7 Differential case
- 8 Differential carrier

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