ON-ROAD

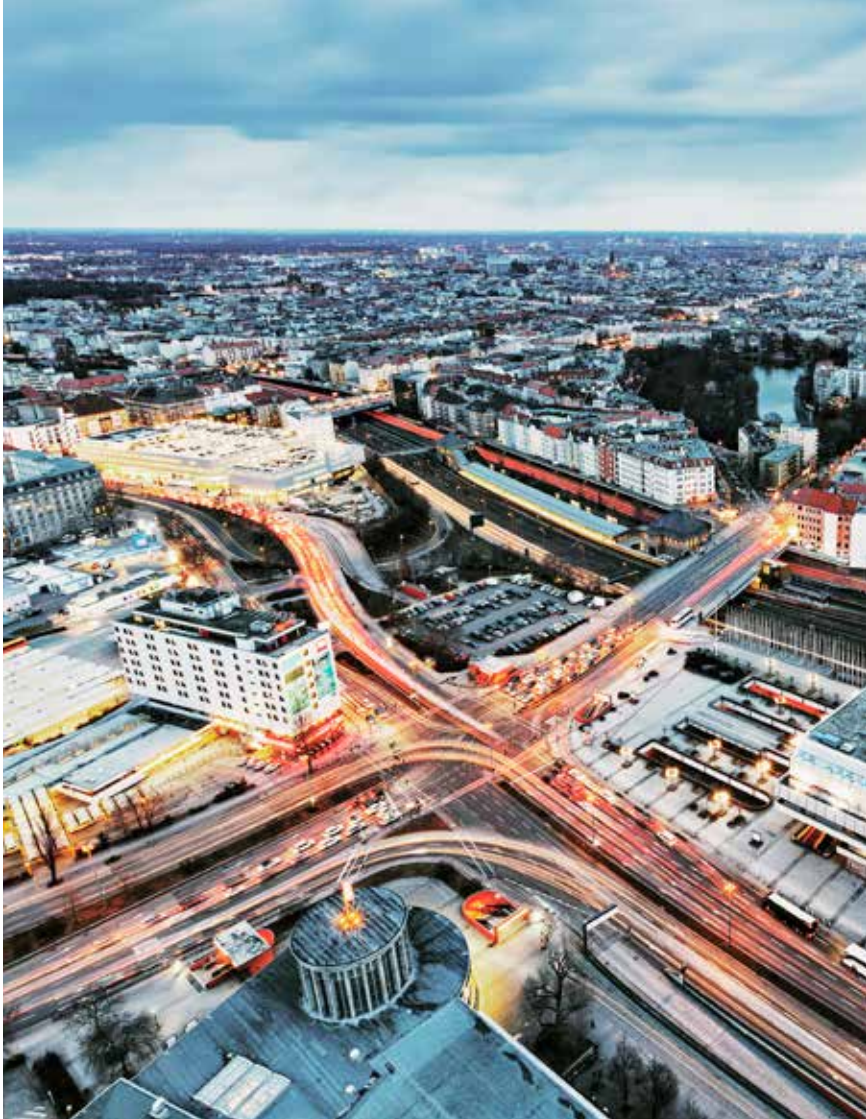
Engines and Components

MAN Engines

OPTIMUM DRIVE SOLUTIONS

For buses, trucks and special-purpose vehicles, MAN Engines offers efficient diesel and gas engines in a wide power range as well as innovative and high-quality driveline components such as axles and transfer cases.

MAN Engines is your reliable partner and provides you the optimal technical and commercial solution according to your specific requirements.



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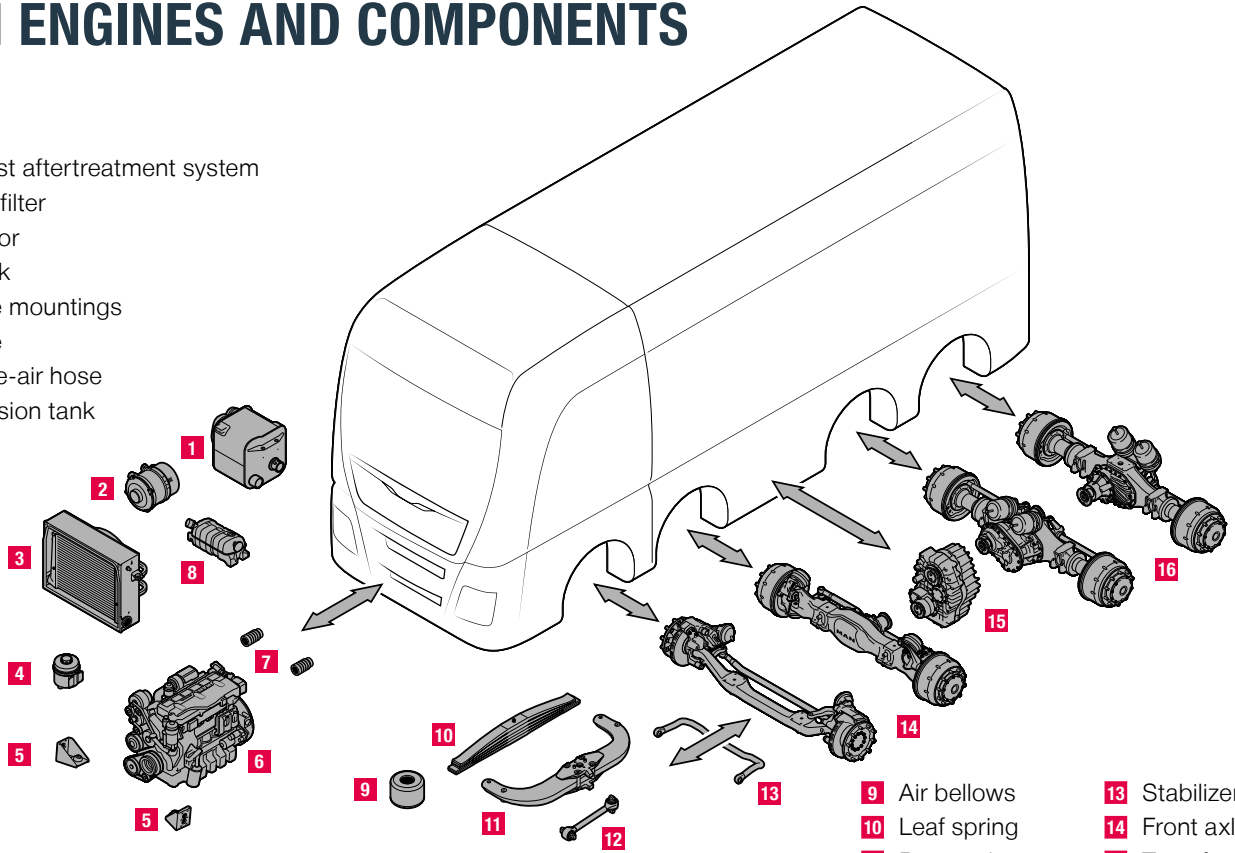

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MAN PRODUCTS FOR OEMS

As a global system provider MAN offers exclusively to **original equipment manufacturers** (OEMs):

Engines
- Diesel engines
  in the power range from 118 kW to 471 kW
- Gas engines
  in the power range from 206 kW to 235 kW

Engine Accessories
- Engine mounting parts
- Intake system
- Exhaust system
- Electronic parts
- Cooling systems

Axles and Accessories
- Suspension mounting parts
- Stabilisers
- Shock absorbers
- Suspension parts

Transfer Cases and Accessories
- Mounting parts
- Connectors
- Control valves

The excellent MAN products have been tested and optimized in large-scale series production of MAN's own trucks and buses. MAN ensures a reliably perfect interaction of the entire driveline.

BENEFITS

- Worldwide MAN service network and global parts availability
- Resource-saving operation and sustainable production
- Engines with impressive operational smoothness and extensive range of outputs
- Extreme durable and reliable components in lightweight design
- High and stable quality through volume production and established processes
- Experience in large-scale series production technology
- System provider with competent installation support by MAN engineers

ENGINE OVERVIEW FOR SPECIAL-PURPOSE VEHICLES

Diesel engines

Engine model		D0834	D0836	D1556	D2066	D2676	D3876
Euro 6e	kW	118–162	184–235	243–294	–	316–375	396–471
	hp	160–220	250–320	330–400	–	430–510	540–640
Euro 5	kW	118–162	184–235	–	235–324	353–397	–
	hp	160–220	250–320	–	320–440	480–540	–

Alternative engines without torque reduction or emission standard on demand.

Typical applications

- Fire fighting vehicles
- Road sweepers
- Truck modification
- All terrain vehicles

HOW TO READ THE TABLES

Engine abbreviations

D = Diesel engine
L = with exhaust turbocharging and intercooling
F = front installation
IL = in-line

Additional information

SCRT® is a registered trademark of HJS Emission Technology GmbH and Johnson Matthey PLC.
CRT® is a registered trademark of Johnson Matthey PLC.
Nominal rating: The maximum engine rating is according to ISO 1585 89/491 EEC.
Length, width and height: For detailed examination of installation request installation drawing from factory.
Dry weight: Average weight of engine ready for installation.

D0834

D0834

In-line engines

Exhaust gas status		Euro 6e			Euro 5		
Engine model		**LFL AS**	**LFL AR**	**LFL AQ**	**LFL 83**	**LFL 84**	**LFL 85**
Cylinders		IL4	IL4	IL4	IL4	IL4	IL4
Displacement	l	4.6	4.6	4.6	4.6	4.6	4.6
Exhaust gas aftertreatment		SCRT® only	SCRT® only	SCRT® only	SCR only	SCR only	SCR only
Nominal rating	kW (hp)	118 (160)	140 (190)	162 (220)	118 (160)	140 (190)	162 (220)
at speed	rpm	2 300	2 300	2 300	2 300	2 300	2 300
Maximum torque	Nm	600	750	850	600	750	850
at speed	rpm	1 000–1 850	1 200–1 750	1 300–1 800	1 000–1 850	1 200–1 750	1 300–1 800
Minimum fuel consumption	g/kWh	196	196	196	198	198	198
Length	mm	1 135	1 135	1 135	980	980	1 053
Width	mm	922	922	922	878	878	878
Height	mm	940	940	940	930	930	924
Dry weight	kg	485	485	485	483	483	483

D0836

D0836

In-line engines

Exhaust gas status		Euro 6e			Euro 5		
Engine model		**LFL BK**	**LFL BJ**	**LFL BI**	**LFL 86**	**LFL 87**	**LFL 88**
Cylinders		IL6	IL6	IL6	IL6	IL6	IL6
Displacement	l	6.9	6.9	6.9	6.9	6.9	6.9
Exhaust gas aftertreatment		SCRT® only	SCRT® only	SCRT® only	SCR only	SCR only	SCR only
Nominal rating	kW (hp)	184 (250)	213 (290)	235 (320)	184 (250)	213 (290)	235 (320)
at speed	rpm	2 200	2 200	2 200	2 300	2 300	2 300
Maximum torque	Nm	1 050	1 050	1 250	1 050	1 150	1 250
at speed	rpm	1 200–1 600	1 200–1 600	1 300–1 700	1 200–1 600	1 200–1 700	1 300–1 700
Minimum fuel consumption	g/kWh	195	195	195	195	195	195
Length	mm	1 238	1 238	1 238	1 238	1 238	1 238
Width	mm	914	914	914	914	914	914
Height	mm	946	946	946	946	946	946
Dry weight	kg	599	599	599	594	594	594

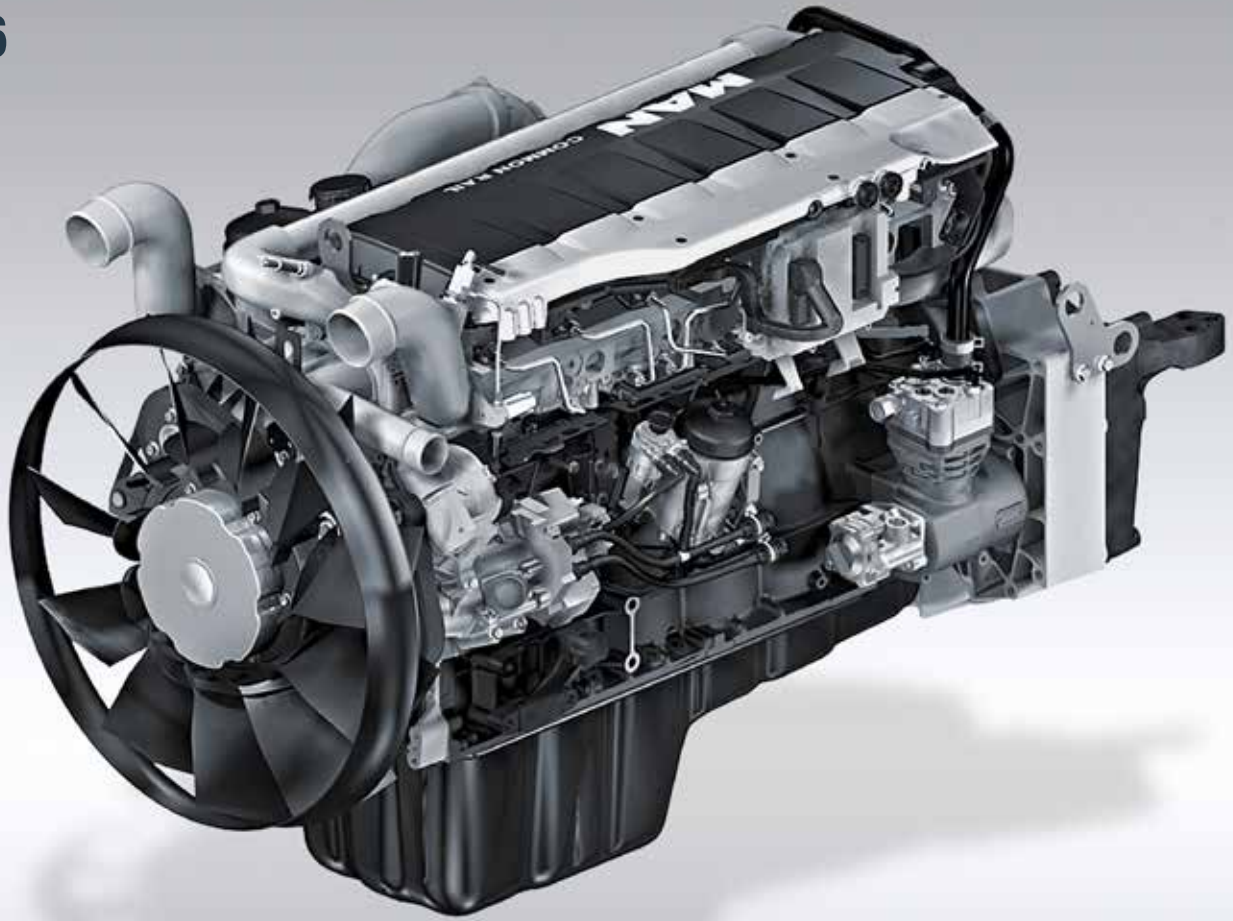
D1556

D1556

In-line engines

Exhaust gas status		Euro 6e		
Engine model		**LF 19**	**LF 18**	**LF 17**
Cylinders		IL6	IL6	IL6
Displacement	l	9.0	9.0	9.0
Exhaust gas aftertreatment		SCRT®	SCRT®	SCRT®
Nominal rating	kW (hp)	234 (330)	265 (360)	294 (400)
at speed	rpm	1 800	1 800	1 800
Maximum torque	Nm	1 600	1 700	1 800
at speed	rpm	1 000–1 400	1 000–1 450	1 000–1 500
Minimum fuel consumption	g/kWh	186	186	186
Length	mm	1 631	1 135	1 135
Width	mm	813	813	813
Height	mm	1 141	1 141	1 141
Dry weight	kg	858	858	864

D2066



D2066

In-line engines

Exhaust gas status		Euro 5			
Engine model		**LF 43**	**LF 42**	**LF 41**	**LF 40**
Cylinders		IL6	IL6	IL6	IL6
Displacement	l	10.5	10.5	10.5	10.5
Exhaust gas aftertreatment		SCR	SCR	SCR	SCR
Nominal rating	kW (hp)	235 (320)	265 (360)	294 (400)	324 (440)
at speed	rpm	1 900	1 900	1 900	1 900
Maximum torque	Nm	1 600	1 800	1 900	2 100
at speed	rpm	1 000–1 400	1 000–1 400	1 000–1 400	1 000–1 400
Minimum fuel consumption	g/kWh	187	187	186	186
Length	mm	1 530	1 530	1 530	1 530
Width	mm	827	827	827	827
Height	mm	1 124	1 124	1 124	1 124
Dry weight	kg	975	975	975	975

D2676

D2676

In-line engines

Exhaust gas status		Euro 6e			Euro 5	
Engine model		**LF AJ**	**LF AI**	**LF AF**	**LF 07**	**LF 06**
Cylinders		IL6	IL6	IL6	IL6	IL6
Displacement	l	12.4	12.4	12.4	12.4	12.4
Exhaust gas aftertreatment		SCRT®	SCRT®	SCRT®	SCR	SCR
Nominal rating	kW (hp)	316 (430)	346 (470)	375 (510)	353 (480)	397 (540)
at speed	rpm	1 800	1 800	1 800	1 900	1 900
Maximum torque	Nm	2 200	2 400	2 600	2 300	2 500
at speed	rpm	930–1 350	930–1 350	930–1 350	1 050–1 400	1 050–1 350
Minimum fuel consumption	g/kWh	179,5	179,5	179,5	188	188
Length	mm	1 530	1 530	1 530	1 530	1 530
Width	mm	827	827	827	827	827
Height	mm	1 124	1 124	1 124	1 124	1 124
Dry weight	kg	1 047	1 047	1 047	1 000	1 005

D3876

D3876

In-line engines

Exhaust gas status		Euro 6e		
Engine model		**LF 17**	**LF 18**	**LF 16**
Cylinders		IL6	IL6	IL6
Displacement	l	15.3	15.3	15.3
Exhaust gas aftertreatment		SCRT® only	SCRT® only	SCRT® only
Nominal rating	kW (hp)	396 (540)	427 (580)	471 (640)
at speed	rpm	1 800	1 800	1 800
Maximum torque	Nm	2 700	2 900	3 000
at speed	rpm	900–1 380	900–1 380	900–1 400
Minimum fuel consumption	g/kWh	183	183	183
Length	mm	1 747	1 747	1 747
Width	mm	890	890	890
Height	mm	1 178	1 178	1 178
Dry weight	kg	1 345	1 345	1 345

ENGINE OVERVIEW FOR BUSES

Diesel engines						Gas engines
Engine model		**D0836**	**D1556**	**D2066**	**D2676**	**E1856**
Euro 6e	kW	184–213	206–265	–	316–375	206–235
	hp	250–290	280–360	–	430–510	280–320
EEV	kW	–	–	235–324	324–371	–
	hp	–	–	320–440	440–505	–

Alternative engines without torque reduction or emission standard on demand.

Typical applications

- Midi buses
- City buses
- Intercity buses
- Coaches
- Airport buses

HOW TO READ THE TABLES

Engine abbreviations

D = Diesel engine
E = Gas engine
L = with exhaust turbocharging and intercooling
O = for buses
H = rear installation
F = front installations
IL = in-line

Additional information

SCRT® is a registered trademark of HJS Emission Technology GmbH and Johnson Matthey PLC. CRT® is a registered trademark of Johnson Matthey PLC.
Nominal rating: The maximum engine rating is according to ISO 1585 89/491 EEC.
Length, width and height: For detailed examination of installation request installation drawing from factory.

D0836

D0836

In-line engines

Exhaust gas status		Euro 6e	
Engine model		**LOH 90**	**LOH 91**
Cylinders		IL6	IL6
Displacement	l	6.9	6.9
Exhaust gas aftertreatment		SCRT® only	SCRT® only
Nominal rating	kW (hp)	184 (250)	213 (290)
at speed	rpm	2 200	2 200
Maximum torque	Nm	1 050	1 150
at speed	rpm	1 200–1 600	1 200–1 700
Minimum fuel consumption	g/kWh	195	195
Length	mm	1 286	1 286
Width	mm	801	801
Height	mm	979	979
Dry weight	kg	669	669

D1556

D1556

In-line engines

Exhaust gas status		Euro 6e		
Engine model		**LOH 18**	**LOH 17**	**LOH 16**
Cylinders		IL6	IL6	IL6
Displacement	l	9.0	9.0	9.0
Exhaust gas aftertreatment		SCRT® only	SCRT® only	SCRT® only
Nominal rating	kW (hp)	206 (280)	234 (330)	265 (360)
at speed	rpm	1 800	1 800	1 800
Maximum torque	Nm	1 200	1 400	1 600
at speed	rpm	800–1 600	1 000–1 400	1 000–1 550
Minimum fuel consumption	g/kWh	188	188	188
Length	mm	1 334	1 334	1 334
Width	mm	1 084	1 084	1 084
Height	mm	1 068	1 068	1 068
Dry weight	kg	882	882	882

D2066

D2066

In-line engines

Exhaust gas status		EEV			
Engine model		**LOH 37**	**LOH 38**	**LOH 39**	**LOH 40**
Cylinders		IL6	IL6	IL6	IL6
Displacement	l	10.5	10.5	10.5	10.5
Exhaust gas aftertreatment		SCR	SCR	SCR	SCR
Nominal rating	kW (hp)	235 (320)	265 (360)	294 (400)	324 (440)
at speed	rpm	1 900	1 900	1 900	1 900
Maximum torque	Nm	1 600	1 800	1 900	2 100
at speed	rpm	1 000–1 400	1 000–1 400	1 000–1 400	1 000–1 400
Minimum fuel consumption	g/kWh	187	187	186	186
Length	mm	1 438	1 438	1 438	1 438
Width	mm	851	851	851	851
Height	mm	990	990	990	990
Dry weight	kg	986	986	986	986

D2676

D2676

In-line engines

Exhaust gas status		Euro 6e			EEV		
Engine model		**LOH 47**	**LOH 48**	**LOH 49**	**LOH 34**	**LOH 28**	**LOH 26**
Cylinders		IL6	IL6	IL6	IL6	IL6	IL6
Displacement	l	12.4	12.4	12.4	12.4	12.4	12.4
Exhaust gas aftertreatment		SCRT®	SCRT®	SCRT®	SCR	PM-KAT	PM-KAT
Nominal rating	kW (hp)	375 (510)	346 (470)	316 (430)	353 (480)	371 (505)	324 (440)
at speed	rpm	1 800	1 800	1 800	1 900	1 900	1 900
Maximum torque	Nm	2 600	2 400	2 200	2 300	2 300	2 100
at speed	rpm	930–1 400	930–1 350	930–1 350	1 000–1 400	1 000–1 400	1 000–1 400
Minimum fuel consumption	g/kWh	179,5	179,5	179,5	188	191	190
Length	mm	1 512	1 512	1 512	1 438	1 630	1 630
Width	mm	957	957	957	851	894	894
Height	mm	1 040	1 040	1 040	990	1 057	1 057
Dry weight	kg	1 047	1 081	1 081	1 001	1 110	1 110

E1856

E1856

In-line engines

Exhaust gas status		Euro 6e	
Engine model		**LOH 03**	**LOH 04**
Cylinders		IL6	IL6
Displacement	l	9.5	9.5
Exhaust gas aftertreatment		–	–
Nominal rating	kW (hp)	235 (320)	206 (280)
at speed	rpm	1 900	1 900
Maximum torque	Nm	1 400	1 200
at speed	rpm	900–1 500	900–1 500
Minimum fuel consumption	MJ/kWh	8.9	8.9
Length	mm	1 318	1 318
Width	mm	1 081	1 081
Height	mm	1 068	1 068
Dry weight	kg	882	882

AXLE OVERVIEW

Axles for special-purpose vehicles

Axle type		Max. axle load [t]
Front axle	Straight axle beam	9.2/10.0
	Dropped axle beam	3.4/4.8/6.3/7.5/8.2/9.2/10.0
	Planetary hub reduction	6.3/9.0–9.5/11.0
	HydroDrive	9.2
Leading axle		8.2
Trailing axle		7.5/8.2/9.0/10.5
Rear axle	Planetary hub reduction	7.8/9.5/13.0/16.0
	Hypoid	6.8/8.7/11.0/11.5/13.0

Axles for buses

Axle type		Max. axle load [t]
Front axle	Independent suspension	8.0
	Dropped axle beam	7.5/8.2/9.2
Trailing axle	Steerable	6.3/7.5/8.2
	Independent suspension	8.5
Rear axle	Hypoid	8.7/11.0/13.0
102" width Axles	Front axle	7.2/8.2
	Rear axle	13.0

Typical applications

- Buses
- Truck modifications
- All-terrain vehicles
- Agricultural trailers

HOW TO READ THE TABLES

Engine abbreviations

V = front axle
H = rear axle
A = air
L = leaf (Suspension)
D = disc
T = drum
L = left (Steering)
R = right

Additional information

All axles can be fitted with ABS. Only fit rims and tyres approved by MAN. Pneumatic brake cylinders are included in delivery.

AXLES FOR SPECIAL-PURPOSE VEHICLES

Non-driven Front Axles

Top choice for quality and engineering: the non-driven, steered MAN front axles stand out with their modern design and minimal net weight in relation to the maximum admissible axle load. Your profit: more loading capacity.

VOK-05

Benefit from our range with variations for every purpose. Front axles are available as dropped stub axles, as a straight axle beam and axles with a dropped axle beam.

Non-driven front axles

Characteristics		Straight axle beam		Dropped axle beam	
Axle model		**VO-09**	**VO-10**	**VOK-03**	**VOK-05**
Maximum axle load	t	9.2	10.0	3.4	4.8
Suspension		L	L	L	L
Wheel size	inch	22.5	22.5	17.5	17.5
Number of wheel bolts		10	10	6	6
Brake type		T/D	D	D	D
Drive through		–	–	–	–
Steering		L/R	L/R	L/R	L/R
Maximum steering wheel angle (inside/outside)		49°/32°45'	49°/32°45'	50°/33°55'	50°/33°49'
Weight without wheels	kg	450	458	211	237
Connecting dimension disc wheel	mm	2 397	2 369/2 447	2 197	2 193
Overall width without tyres	mm	2 495	2 526/2 544	2 288	2 282

AXLES FOR SPECIAL-PURPOSE VEHICLES

Non-driven front axles

Characteristics		Dropped axle beam				
Axle model		**VOK-06**	**VOK-07**	**VOK-08**	**VOK-09**	**VOK-10**
Maximum axle load	t	6.3	7.5	8.2	9.2	10.0
Suspension		L	L	A/L	L	L
Wheel size	inch	19.5	22.5	22.5	22.5	22.5
Number of wheel bolts		8	10	10	10	10
Brake type		D	D	D	T	D
Drive through		–	–	–	–	–
Steering		L/R	L/R	L/R	L/R	L
Maximum steering wheel angle (inside/outside)		52°/32°51'	49°/32°45'	49°/32°45'	49°/32°45'	49°/32°45'
Weight without wheels	kg	346	411–431	448–479	440–457	448
Connecting dimension disc wheel	mm	2 337	2 379	2 379	2 397	2 379
Overall width without tyres	mm	2 455	2 478	2 478	2 492	2 492

AXLES FOR SPECIAL-PURPOSE VEHICLES

Planetary Hub Reduction Front Axles

The perfect answer for more drive. The driven planetary hub reduction front axles are a class of their own: extremely heavy duty, low weight, high efficiency and large ground clearance. Also ideal for all-wheel vehicles.

VP-11

You have a choice of first-class alternatives. MAN planetary hub reduction front axles come as a single driven axle and as a drive-through axle for a tandem front axle, so that together with MAN planetary hub reduction rear axles, again with and without drive-through, an 8 x 8 all-wheel vehicle can be configured. A differential lock plays its part whenever maximum traction is needed. Short stopping distance is no problem for drum or disk brakes with automatic brake shoe adjustment. The brake cylinders are operated pneumatically.

Planetary hub reduction front axles

Characteristics

Axle model		VP-06	VP-09	VPD-09	VP-11	VPD-11
Maximum axle load	t	6.3	9.0–9.5	9.0–9.5	11.0	11.0
Suspension		L	L	L	L	L
Wheel size	inch	20/22.5	20/22.5	20/22.5	20	20
Number of wheel bolts		10	10	10	10	10
Brake type		D	T	T	T	T
Drive through		–	–	with	–	with
Steering		L/R	L/R	L/R	L/R	L/R
Maximum steering wheel angle (inside/outside)		41°/31°04'	42°/34°45'	30°15'/27°08'	40°/32°12'	31°6'/27°30'
Weight without wheels	kg	529	738	840	834	931
Connecting dimension disc wheel	mm	2 222	2 329	2 329	2 339	2 339
Overall width without tyres	mm	2 359	2 470	2 470	2 488–2 549	2 488–2 549
Transmission ratios		4.11/4.59/5.06/ 5.70/6.48	3.25/3.63/4.00/ 4.33/4.50/4.83/ 5.33/6.00/6.82	3.25/3.63/4.00/ 4.33/4.50/4.83/ 5.33/6.00/6.82	5.33/6.00/6.82	5.33/6.00/6.82

AXLES FOR SPECIAL-PURPOSE VEHICLES

Front Axles with HydroDrive

The MAN HydroDrive shows its strengths on wet ascents and descents or when starting in poor conditions. At lower speeds, the hydraulically driven front wheels improves traction with almost the same low axle weight as a non-driven front axle.

MAN HydroDrive axles are the best decision if you want to use the advantage of an all-wheel driven vehicle when starting off or driving slowly on difficult terrain occasionally.

VH-09

Front axles with HydroDrive

Characteristics		Straight axle beam	Dropped axle beam
Axle model		**VH-09**	**VHK-09**
Maximum axle load	t	9.2	9.2
Suspension		L	L
Wheel size	inch	22.5	22.5
Number of wheel bolts		10	10
Brake type		D	D
Drive through		–	–
Steering		L/R	L/R
Maximum steering wheel angle (inside/outside)		49°/32°45'	49°/32°45'
Weight without wheels	kg	450	450
Connecting dimension disc wheel	mm	2 397	2 397
Overall width without tyres	mm	2 492	2 492
Transmission ratios		–	–

AXLES FOR SPECIAL-PURPOSE VEHICLES

Leading and Trailing Axles

Whenever it is a question of more payload, MAN leading and trailing axles are your first choice. Let your needs guide you to the solution. The non-driven axles come in variations for every purpose: steered or rigid, raisable, single- or twin-tyred.

LOL-08

Leading axles				Trailing axles			
Characteristics		**Rigid**	**Steerable**	**Rigid**		**Steerable**	
Axle model		**LOL-08**	**LOL-08**	**NO-08**	**NOK-10-Z**	**NOL-07**	**NOL-08**
Maximum axle load	t	8.2	8.2	8.2	10.5	7.5	9.0
Suspension		A	A	A	A	A	A
Wheel size	inch	22.5	22.5	22.5	22.5	22.5	22.5
Number of wheel bolts		10	10	10	10	10	10
Brake type		D	D	D	D	D	D
Drive through		–	–	–	–	–	–
Steering		L/R	L/R	–	–	L	L
Maximum steering wheel angle (inside/outside)		–	21°/14°34'	–	–	23°/18°	19°/15°30'
Weight without wheels	kg	438	494	407	430	471	471
Connecting dimension disc wheel	mm	2316	2379	2316	1776	2430	2379
Overall width without tyres	mm	2408	2493	2408	2398	2525	2478

AXLES FOR SPECIAL-PURPOSE VEHICLES

Planetary Hub Reduction Rear Axles

Built for on- and off-road with their ample ground clearance, high traction power and extremely heavy duty capability, MAN planetary hub reduction rear axles are the all-rounders among the axles. They are used in commercial vehicles of every kind.


HP-1352

Planetary hub reduction rear axles can serve as a single driven axle and as a drive-through axle for axle tandems. Configurations of an 8 x 8 all wheeler are possible with driven MAN planetary hub reduction front axles (with drive-through and without).

Planetary hub reduction rear axles

Characteristics		Single tyres				
Axle model		**HP-0728-E**	**HP-1333-E**	**HP-1342-E**	**HP-1353-E**	**HPD-1372-E**
Maximum axle load	t	7.8	13	13	13	13
Suspension		A	L	L	L	L
Wheel size	inch	19.5/20/22.5	20/22.5	22.5	20/22.5	20/22.5
Number of wheel bolts		8	10	10	10	10
Brake type		D	T	T	T	T
Drive through		–	–	–	–	with
Steering		–	–	–	–	–
Maximum steering wheel angle (inside/outside)		–	–	–	–	–
Weight without wheels	kg	506	745	814	828	908
Connecting dimension disc wheel	mm	2 221	2 314	2 314	2 314	2 314
Overall width without tyres	mm	2 357	2 474	2 474	2 474	2 474
Transmission ratios		4.12/4.59/5.07/ 5.70/6.48	3.25/3.63/4.00 4.33/4.83/5.33/ 6.00/6.82	3.25/3.63/4.00 4.33/4.50/4.83/ 5.33/6.00/6.82	3.25/3.63/4.00 4.33/4.83/5.33/ 6.00/6.82	3.25/3.63/4.00 4.33/4.50/4.83/ 5.33/6.00/6.82

AXLES FOR SPECIAL-PURPOSE VEHICLES

Planetary hub reduction rear axles

Characteristics		Twin tyres				
Axle model		**HP-0928**	**HP-1333**	**HP-1352**	**HP-1652**	**HPD-1353**
Maximum axle load	t	9.5	13	13	16	13
Suspension		A	A/L	A/L	L	A/L
Wheel size	inch	20/22.5	20/22.5	20/22.5	20/22.5	20/22.5
Number of wheel bolts		8	10	10	10	10
Brake type		D	T	T	T	T
Drive through		–	–	–	–	with
Steering		–	–	–	–	–
Maximum steering wheel angle (inside/outside)		–	–	–	–	–
Weight without wheels	kg	500	745	805	847	828
Connecting dimension disc wheel	mm	1 773	1 776	1 776	1 776	1 776
Overall width without tyres	mm	2 195	2 285	2 285	2 357	2 285
Transmission ratios		4.12/4.59/5.07/ 5.70/6.48	3.25/3.63/4.00 4.33/4.83/5.33/ 6.00/6.82	3.25/3.63/4.00 4.33/4.83/5.33/ 6.00/6.82	4.33/4.83/5.33/ 6.00/6.82	3.25/3.63/4.00 4.33/4.83/5.33/ 6.00/6.82

Planetary hub reduction rear axles

Characteristics		Twin tyres	
Axle model		**HPD-1382**	**HPD-1682**
Maximum axle load	t	13	16
Suspension		A/L	L
Wheel size	inch	20/22.5	20/22.5
Number of wheel bolts		10	10
Brake type		T	T
Drive through		with	with
Steering		-	-
Maximum steering wheel angle (inside/outside)		-	-
Weight without wheels	kg	892	940
Connecting dimension disc wheel	mm	1 776	1 776
Overall width without tyres	mm	2 285	2 357
Transmission ratios		3.25/3.63/4.00 4.33/4.83/5.33/ 6.00/6.82	4.33/4.83/5.33/ 6.00/6.82

AXLES FOR SPECIAL-PURPOSE VEHICLES

Hypoid Rear Axles

You could hardly wish for more convenience and cost-effectiveness: available as single drive and drive-through for tandem axles, MAN hypoid rear axles set standards, especially in long-haul transport.

MAN hypoid axles offer high load carrying capability and wide-ranging performance as well as low net weight. Their low-loss and noiseless drive, is built to impress.

HYD-1370

Hypoid rear axles

Characteristics		Hypoid			
Axle model		**HY-0718**	**HY-0925**	**HY-1130**	**HY-1133**
Maximum axle load	t	6.8	8.7	11	11.5
Suspension		A	A/L	A	A/L
Wheel size	inch	17.5	17.5	19.5	22.5
Number of wheel bolts		6	6	8	10
Brake type		D	D	D	D
Drive through		–	–	–	–
Steering		–	–	–	–
Maximum steering wheel angle (inside/outside)		–	–	–	–
Weight without wheels	kg	302	398	472	590
Connecting dimension disc wheel	mm	1 682	1 717	1 768	1 776
Overall width without tyres	mm	1 860	1 938	2 032	2 032
Transmission ratios		3.08/3.36/3.70/ 4.11/4.63/5.29	3.08/3.36/3.70/ 4.11/4.63/5.29	3.08/3.36/3.70/ 4.11/4.63/5.29	2.85/3.08/3.36/ 3.70/4.11/4.63/ 5.29

AXLES FOR SPECIAL-PURPOSE VEHICLES

Hypoid rear axles

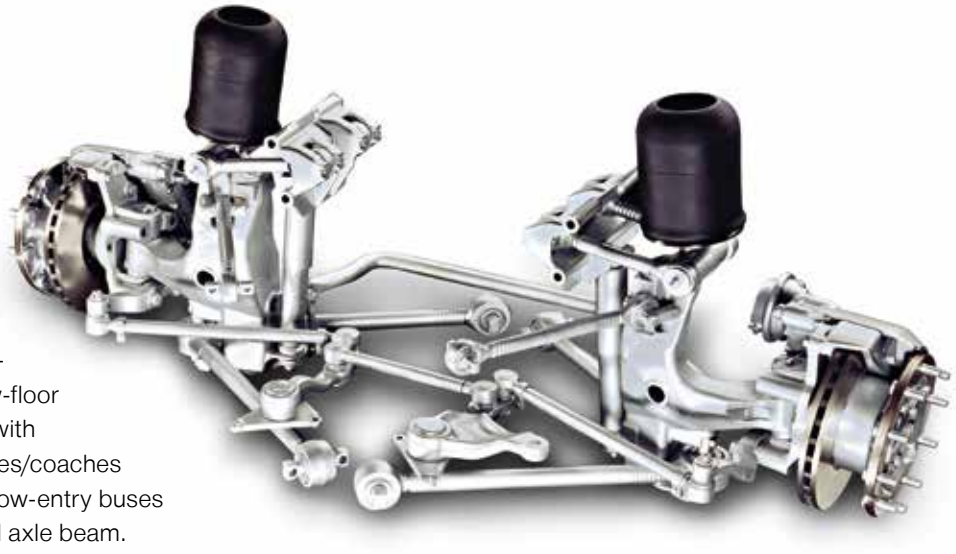
Characteristics		Hypoid			
Axle model		**HY-1344**	**HY-1350**	**HYD-1160**	**HYD-1370**
Maximum axle load	t	13	13	11.5	13
Suspension		A/L	A/L	A/L	A/L
Wheel size	inch	22.5	22.5	22.5	22.5
Number of wheel bolts		10	10	10	10
Brake type		D	D/T	D	D/T
Drive through		–	–	with	with
Steering		–	–	–	–
Maximum steering wheel angle (inside/outside)		–	–	–	–
Weight without wheels	kg	668	680	695	787
Connecting dimension disc wheel	mm	1 776	1 776	1 776	1 776
Overall width without tyres	mm	2 032	2 032	2 032	2 032
Transmission ratios		2.31/2.53/ 2.71/2.85	2.53/2.73/2.85/ 3.08/3.36/3.70/ 4.11/4.63/5.29	2.85/3.08/3.36/ 3.70/4.11/4.63/ 5.29	3.08/3.36/3.70/ 4.11/4.63/5.29

AXLES FOR BUSES

Non-driven Front Axles

Top choice for quality and engineering: the non-driven, steered MAN front axles stand out with their modern design and minimal net weight in relation to the maximum admissible axle load. Your profit: more loading capacity.

Benefit from our range with variations for every purpose. Front axles are available as dropped stub axles also for low-floor vehicles, as a straight axle beam, and with independent wheel suspension for buses/coaches offering extra comfort. A speciality for low-entry buses are the VOK-07-B axles with a dropped axle beam.



VOS-08-B

Non-driven front axles

Characteristics		Independent suspension			
Axle model		**VOS-08-B**	**VOK-07-B**	**VOK-08-B**	**VOK-09-F**
Maximum axle load	t	8.0	8.2	7.5	9.2
Suspension		A	A	A	A/L
Wheel size	inch	22.5	22.5	22.5	22.5
Number of wheel bolts		10	10	10	10
Brake type		D	D	D	T
Drive through		–	–	–	–
Steering		L/R	L/R	L/R	L
Maximum steering wheel angle (inside/outside)		50°/32°07'	54°/40°25'	50°/36°37'	49/32°45'
Weight without wheels	kg	360	451	470	440
Connecting dimension disc wheel	mm	variable	2 396/2 447	2 397	2 397
Overall width without tyres	mm	variable	2 526/2 544	2 488	2 495

AXLES FOR BUSES

Trailing Axles

Whenever it is a question of a little more payload, there is demand for MAN trailing axles. Let your needs guide you to the solution. The non-driven axles come in variations for every purpose: steered or rigid, raisable, single- or twin-tyred.

NOL-06-B

Trailing axles

Characteristics		Independent suspension	Steerable		
Axle model		**NOS-08**	**NOL-06-B**	**NOL-07-B**	**NOL-08-B**
Maximum axle load	t	8.5	6.3	8.2	7.5
Suspension		A	A	A	A/L
Wheel size	inch	22.5	22.5	22.5	22.5
Number of wheel bolts		10	10	10	10
Brake type		D	D	D	T
Drive through		–	–	–	–
Steering		L/R	R	R	L
Maximum steering wheel angle (inside/outside)		–	18°30'/15°6'	16°/15°	18°30'/15°6'
Weight without wheels	kg	460	504	515	510
Connecting dimension disc wheel	mm	variable	2 384	2 414	2 379
Overall width without tyres	mm	variable	2 483	2 493	2 471

AXLES FOR BUSES

Hypoid Rear Axles

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HY-1350-B

Hypoid rear axles

Characteristics		Hypoid		
Axle model		**HY-0925-F**	**HY-1130-B**	**HY-1350-B**
Maximum axle load	t	8.7	11	13
Suspension		L/A	A	A
Wheel size	inch	17.5	19.5	22.5
Number of wheel bolts		6	8	10
Brake type		D	D	D/T
Drive through		–	–	–
Steering		–	–	–
Maximum steering wheel angle (inside/outside)		–	–	–
Weight without wheels	kg	403	468	681–707
Connecting dimension disc wheel	mm	1 717	1 768	1 796
Overall width without tyres	mm	1 938	2 026	2 052
Transmission ratios		3.73/4.10	3.42/3.73/ 4.10/4.56/ 5.00/5.63	2.73/3.15/3.42/ 3.73/4.10/ 4.56/5.67

AXLES FOR BUSES

102" Axles

To be able to deal perfectly with local requirements, MAN manufactures axles in the USA since 1999, which are adapted especially on the needs of the American market.

102" width axles

Characteristics		Front axles		Rear axles
Axle model		**VOK-07-F**	**VOK-08-F**	**HY-1350-F**
Maximum axle load	t	7.2	8.2	13
Suspension		A	A	A
Wheel size	inch	22.5	22.5	22.5
Number of wheel bolts		10	10	10
Brake type		D	D	D
Drive through		–	–	–
Steering		L	L	–
Maximum steering wheel angle (inside/outside)		53°/37°46'	53°/37°46'	–
Weight without wheels	kg	503	523	753
Connecting dimension disc wheel	mm	2 499	2 499	1861
Overall width without tyres	mm	2 591	2 591	2177
Transmission ratios		–	–	4.10/4.56

TRANSFER CASES FOR SPECIAL-PURPOSE VEHICLES

Transfer cases

Type		G102, G103	G172, G173	G252, G253
Maximum input torque road/off-road	Nm	9 000/5 600	16 000/9 700	22 000/14 000

G253

All-round power for all-wheel vehicles: MAN transfer cases deliver full power to all axles. With their well-balanced weight, compact construction and high reliability they demonstrate their superior performance in the most difficult conditions.
MAN transfer cases come in variations with engageable front-axle drive or for permanent all-wheel drive with speed compensation between front and rear axle and pneumatic differential lock.

MAN transfer cases are low in weight, and their installation is simplified by an enlarged shaft spacing and smaller connecting angle in the drive shaft. The optimized gearing and reinforcement of the case reduce the emission of noise. It is equiped with a filter to ensure long oil change intervals.

Changing of the road/off-road gear and of the differential lock is pneumatically driven, as is engaging and disengaging of the front axle.

The gear wheels immerse in oil and lubricate all points in operation. The power takeoff is lubricated by a built-in oil pump. The inside of the case features multi-lip shaft packing rings that are protected against damage from the exterior by a narrow air gap and extra metal rings with a labyrinth-like sealing effect.

Additional information
All transfer cases are designed for use with commercial vehicles. When used for other purposes, appropriate technical harmonization will be necessary. Maximum operating temperature is 120 °C, shortterm (max. 30 min) 130 °C. If the temperature rating is constantly exceeded because of high performance requirements or arduous conditions of operation, an oil cooler (cooler package) is necessary. Technical details on request.

TRANSFER CASES FOR SPECIAL-PURPOSE VEHICLES

Transfer cases

Performance characteristics

Type designation		G102/G103		G172/G173			G252/G253		
Maximum input torque road (off-road)	Nm	9 000 (5 600)		16 000 (9 700)			22 000 (14 000)		
Maximum drive torque for power takeoff	Nm	–		8 000			8 000		
Transmission ratio road gear		0.983		1.007			0.981		
Transmission ratio offroad gear		1.607		1.652			1.583		
Torque offset front/rear axle		1 : 2.6	–	1:3.2	1:2.2	–	1:3.2	1:2.2	–
Engageable front axle		–	✓	–	–	✓	–	–	✓
Maximum haulage weight road (offroad) [1)]	t	36 (24)		60 (42)			100 (55)		
Maximum engine rating	kW (hp)	220 (300)		380 (520)			550 (750)		
Weight with oil without (with) power takeoff	kg	151/142		340–350 (373–383)			396–403 (429–436)		
Oil quantity	l	5.2–5.5		5.8–7.0			8.5–9.3		
Port for power steering pump optional		–		✓			✓		

Transfer cases

Dimensions

Type designation		G102/G103	G172/G173	G252/G253
Total height	mm	624	740	740
Case width	mm	378	519	519
Case length top (down)	mm	336 (289)	366 (303)	405 (350)
Total length flange to flange	mm	351	415	415
Shaft spacing vertical	mm	300	350	350
Shaft offset horizontal	mm	40	60	60
Spacing case edge front/takeoff flange front	mm	140	156	156
Spacing case edge front/takeoff flange rear	mm	211	259	259
Spacing case edge/drive flange	mm	46	35	32
Spacing case edge front/power takeoff flange	mm	–	562	601
Drive flange	KV Ø mm	155	180	180
Takeoff flange to rear axle	KV Ø mm	155	180	180
Takeoff flange to front axle	KV Ø mm	155	155	155
Power takeoff flange	KV Ø mm	–	155	155
Power takeoff on request		–	✓	✓

THE FUTURE IS BATTERY CONCEPTS. TRANSFORMATION IS NOW.

MAN Truck and Bus is currently shaping its transformation into a provider of sustainable transport solutions.
As a business unit of MAN Truck and Bus, we at MAN Engines and Components are guided by Group's know-how and continue to develop existing MAN products into suitable solutions for you. Our motivation is that our products can also help your applications to be sustainable. With our e-truck production in Munich, our own battery production in Nuremberg, our research and development at both locations and our excellent cooperation with respected universities and institutes, we have already started on the path to tomorrow.

Let's discuss your ideas and possible individual solutions for you.

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