BRITISH STANDARD

BS ISO
21308-2:2006

Road vehicles — Product data exchange between chassis and bodywork manufacturers (BEP) —

Part 2 : Dimensional bodywork exchange parameters

ICS 43.080.01

National foreword

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INTERNATIONAL STANDARD

ISO 21308-2

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Road vehicles — Product data exchange between chassis and bodywork manufacturers (BEP) —

Part 2: Dimensional bodywork exchange parameters

Véhicules routiers — Échange de données de produit entre les fabricants de châssis et de carrosseries (BEP) —

Partie 2: Paramètres dimensionnels d'échange de carrosserie

Reference number
ISO 21308-2:2006(E)

Contents

Page

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 21308-2 was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 6, *Terms and definitions of dimensions and masses*.

ISO 21308 consists of the following parts, under the general title *Road vehicles — Product data exchange between chassis and bodywork manufacturers (BEP)*:

— *Part 1: General principles*

— *Part 2: Dimensional bodywork exchange parameters*

— *Part 3: General, mass and administrative exchange parameters*

— *Part 4: Mapping to STEP application protocol 239*

Introduction

Truck chassis manufacturers deal with configurations of chassis in infinite numbers of possible combinations, and bodywork manufacturers produce highly customized superstructures on these chassis. Bodywork manufacturers build their superstructures on chassis of several different truck brands.

The production efficiency of a specific truck chassis and its body combinations can be greatly improved by achieving the correct technical and commercial information about the specific chassis communicated with the bodywork manufacturer in advance. The information has to be reliable and give the bodywork manufacturer confidence to prefabricate the body or the superstructure before the chassis is delivered. With uniform conditions, unambiguous dimensions and supplementary information can be established, transferred and correctly interpreted by the receiver. Increased information efficiency will improve the quality and reduce the lead times.

ISO 21308 specifies a system of codes to exchange specific data between chassis and bodywork manufacturers, providing a platform for efficient communication between the parties. The process of exchanging data in accordance with this part of ISO 21308 is irrelevant of IT sophistication degree. Any medium can be used, from fax or e-mail to a STEP protocol.

Exchanging codes in accordance with the ISO 21308 series of International Standards is useful in various situations, e.g. for design and manufacturing, technical specifications, technical drawings and leaflets.

This part of ISO 21308 uses the applicable definitions from the related ISO 612 and ISO 7656 and adds a number of dimensional codes, together with general, mass and administrative codes.

The codes provide the basic information level, and are also the basic input parameters for a data exchange system based on the STEP protocol.

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Road vehicles — Product data exchange between chassis and bodywork manufacturers (BEP) —

Part 2: Dimensional bodywork exchange parameters

1 Scope

This part of ISO 21308 provides a set of codes for the exchange of dimensional data between truck chassis manufacturers and bodywork manufacturers. It applies to commercial vehicles as defined in ISO 3833, having a maximum gross vehicle mass above 3 500 kg.

The process of exchanging the above information can involve:

— chassis manufacturer;

— chassis importer;

— chassis dealer;

— one or more bodywork manufacturers;

— bodywork component suppliers, e.g. manufacturers of demountable bodies, cranes and loading equipment, tipping equipment.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 612:1978, *Road vehicles — Dimensions of motor vehicles and towed vehicles — Terms and definitions*

ISO 1176, *Road vehicles — Masses — Vocabulary and codes*

ISO 3833, *Road vehicles — Types — Terms and definitions*

ISO 4130, *Road vehicles — Three-dimensional reference system and fiducial marks — Definitions*

ISO 7656:1993, *Commercial road vehicles — Dimensional codes*

ISO 21308-3 [1)], *Road vehicles — Product data exchange between chassis and bodywork manufacturers (BEP) — Part 3: General, mass and administrative parameters*

1) To be published.

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 612, ISO 1176, ISO 7656, ISO 21308-3, and the following definitions apply.

3.1
BEP-code
code to identify a unique measurement on the truck, to make the information exchange between chassis manufacturers and bodywork manufacturers easier without any confusion with other systems

NOTE BEP is an abbreviation of Bodywork Exchange Parameter.

3.2
left and right side
left side in the driving direction and right side in the driving direction

3.3
driven axle
driven axle marked with an X in the drawings

3.4
non-driven axle
axle, such as steered or tag axle, marked with an O in the drawings

3.5
front edge
most forward point of the truck as delivered from the chassis manufacturer

NOTE Usually, the front edge is the bumper.

3.6
gross vehicle mass
GVM
gross vehicle weight
GVW
technical or legal gross vehicle mass (weight) according to the legislation or regulations for the applicable region

NOTE See also ISO 21308-3 and ISO 1176.

4 Coding system

4.1 General

Each dimension given in this part of ISO 21308 is assigned a code, composed of the items given below.

4.2 BEP code

A prefix “BEP”, followed by a dash (-), shall be used to avoid confusion with other coding systems.

4.3 Type of dimension

Dimension codes are used to denote length, width and height measurements along the zero X-, Y- or Z-planes respectively, as defined in ISO 4130. They are also used to denote angle measurements.

A capital letter, which denotes the type of dimension, shall be given as follows:

— L – Length;

— W – Width;

— H – Height.

NOTE 1 The centre of the first front axle is chosen as a reference zero point for the length measurements. In some cases where it is convenient to use the rear axle as a reference, the first driven rear axle is used.

NOTE 2 The top of the chassis frame is chosen as the reference zero point for height measurements for objects connected to the chassis frame.

NOTE 3 The centre-line of the chassis is chosen as the reference zero point for width measurements.

NOTE 4 The height information, if dependent on the tyres, refers to the actual tyre equipment as described according to ISO 21308-3, if not otherwise stated.

If there is a need to differ between the dimension(s) on the right or left side, the BEP-code should be supplemented by R or L.

4.4 Numbering

4.4.1 General

Each item has a unique BEP-code consisting of the dimension type letter (see 4.3) and a three-digit sequential number, starting from 001.

The dimension codes for repeated vehicle items of the same kind on one vehicle, e.g. axles, cross-members, frame-mounted objects, etc., are differed by an added sequential number beginning with .1 counted from the front of the vehicle and rearwards.

For L codes, a positive value indicates that the item is located behind the axle. A negative value indicates that the item is located in front of the axle.

For H codes, a positive value indicates that the item is located above the top of the chassis frame. A negative value indicates that the item is located below the top of the chassis frame.

4.4.2 Numbering and type designation of frame-mounted objects

The same .n number shall be applied to a specific frame-mounted object in terms of L, H and W dimensions.

EXAMPLE Frame-mounted objects may be a fuel tank, referred to as BEP-L030.4, BEP-H030.4, and BEP-W.030.4, and a battery box, referred to as BEP-L030.5, BEP-H030.5, and BEP-W030.5.

For the frame-mounted objects, an optional coding (.t) may be added to describe the object type. The following abbreviation letters are reserved for the object types below:

— A – Air tank;

— B – Battery box;

— F – Fuel tank;

— H – Hydraulic tank;

— M – Exhaust muffler;

— S – Spare wheel;

— T – Tool box;

— U – Urea tank.

4.5 Code assignment and description

Clauses 5, 6, and 7 of this part of ISO 21308 show the assignment of each BEP-code together with a description of its applicability and limitations.

4.6 Priority

The column “Priority” shows the priority of the measurements, as follows:

— A – Essential;

— B – Useful.

4.7 Loading condition

The column “Loading” shows the load situation of the chassis, as follows:

— 1 – Unladen;

— 2 – Laden (design mass).

NOTE A dash (-) means that the field is not applicable.

4.8 Presented in

The column “Presented in” describes in which type of document the items can be presented, as follows:

— 2D – 2D drawing;

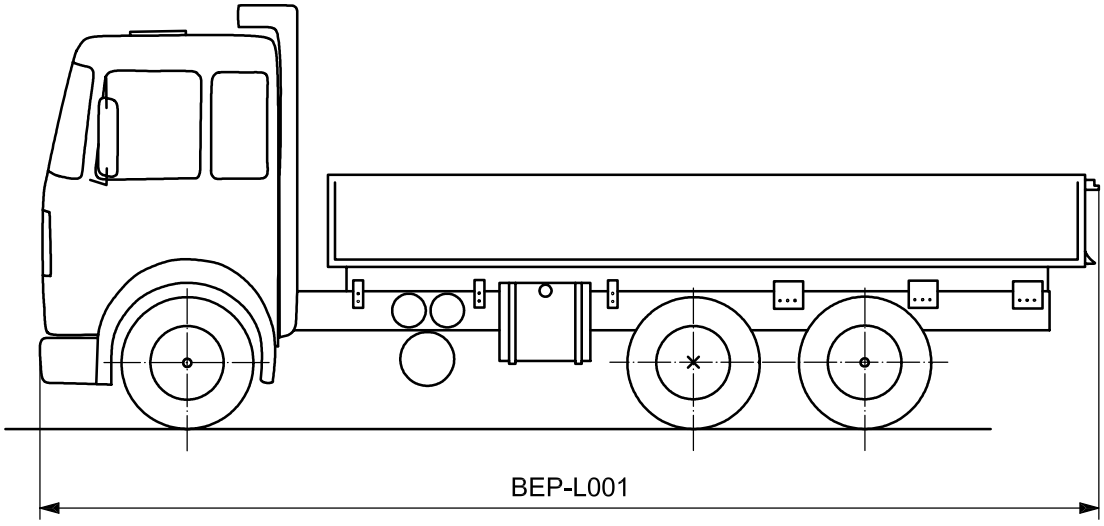
— 3D – 3D model;

— TD – Technical data sheet.

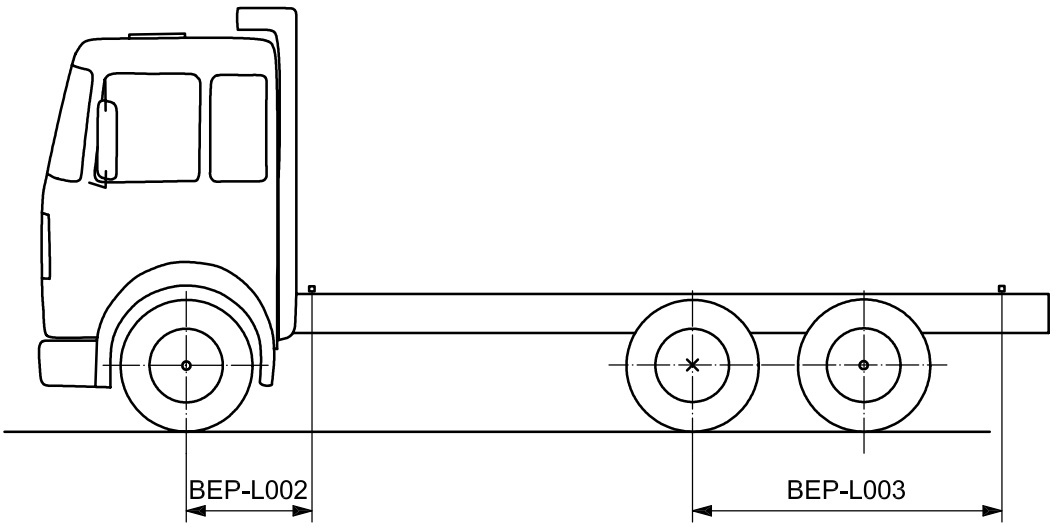
NOTE An empty field means that there is no specific recommendation for the presentation. It can be covered by any kind of document. A dash (-) means that the field is not applicable.

5 General dimensions

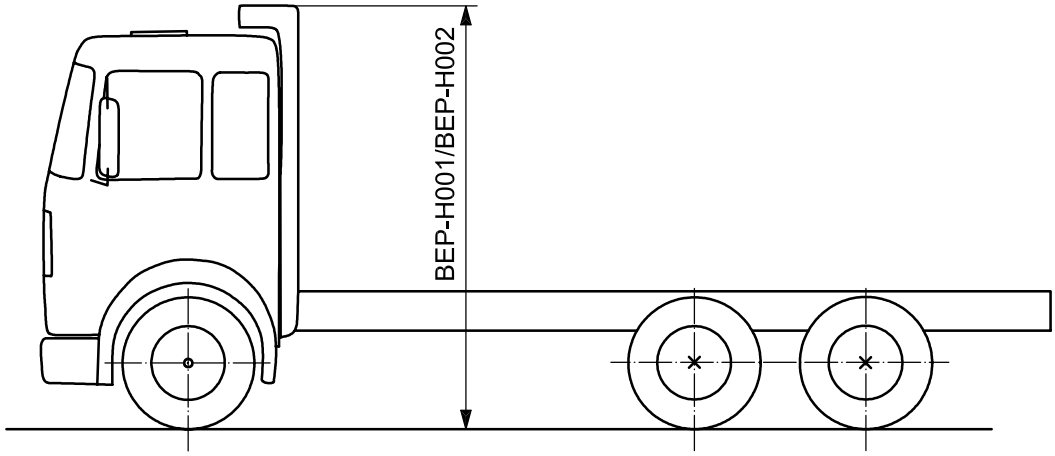
BEP-code	Assignment	Description	Priority	Loading	Presented in
BEP-L001	Overall length	Distance from front edge of vehicle to rear edge of vehicle, including accessories in both front and rear ends. NOTE See also ISO 612.	A	-	2D, 3D, TD



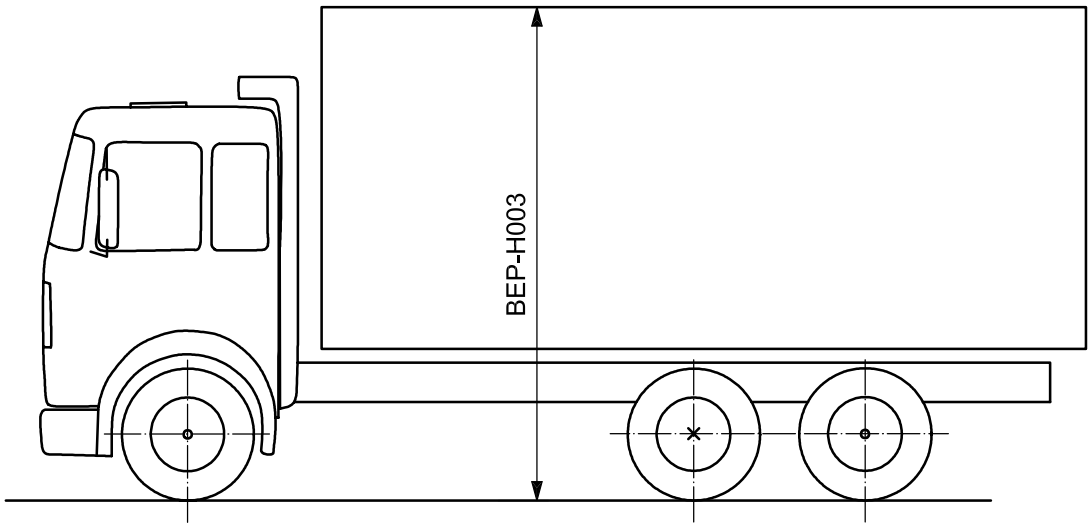
BEP-code	Assignment	Description	Priority	Loading	Presented in
BEP-L002	Front reference point for measuring	Distance from the centre of the first front axle to the front reference point for measuring. NOTE 1 Front reference point(s) for measuring is (are) defined by the chassis manufacturer. NOTE 2 If the reference points for right and left side member differ, then mark with .R or .L. NOTE 3 If the position of the reference point is in front of the axle, the value is negative.	A	-	2D, 3D, TD
BEP-L003	Rear reference point for measuring	Distance from the first driven rear axle to the rear reference point for measuring. NOTE 1 Rear reference point(s) for measuring is (are) defined by the chassis manufacturer. NOTE 2 If the reference points for right and left side member differ, then mark with .R or .L. NOTE 3 If the position of the reference point is in front of the axle, the value is negative.	A	-	2D, 3D, TD



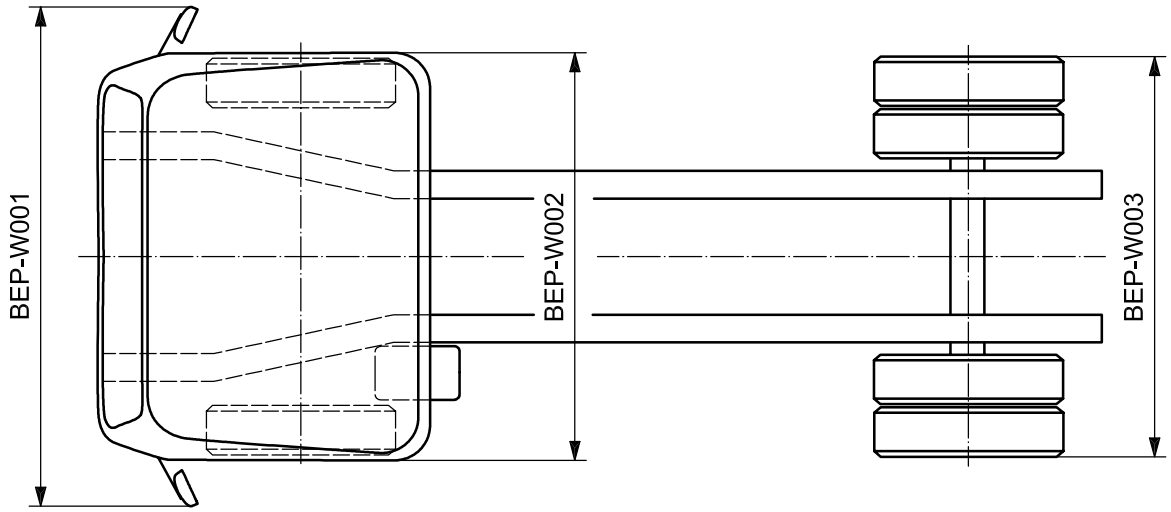
BEP-code	Assignment	Description	Priority	Loading	Presented in
BEP-H001	Maximum external height, unladen	Distance from ground to top of cab, including cab mounted parts, with the chassis unladen but in operating order. NOTE The roof hatch, if present, should be closed. All axles should be down. For pneumatic suspension, the highest driving position is assumed.	A	1	2D, 3D,TD
BEP-H002	Maximum external height, laden	Distance from ground to top of cab, including cab mounted parts, in laden condition. NOTE The chassis is laden up to "Technical gross vehicle mass". The roof hatch, if present, should be closed. All axles should be down. For pneumatic suspension, the highest driving position is assumed.	A	2	2D, 3D, TD



BEP-H003	Maximum overall height of vehicle, unladen	Distance from ground to the highest point of the vehicle including bodywork. NOTE For pneumatic suspension, the highest driving position is assumed.	A	1	2D, 3D, TD



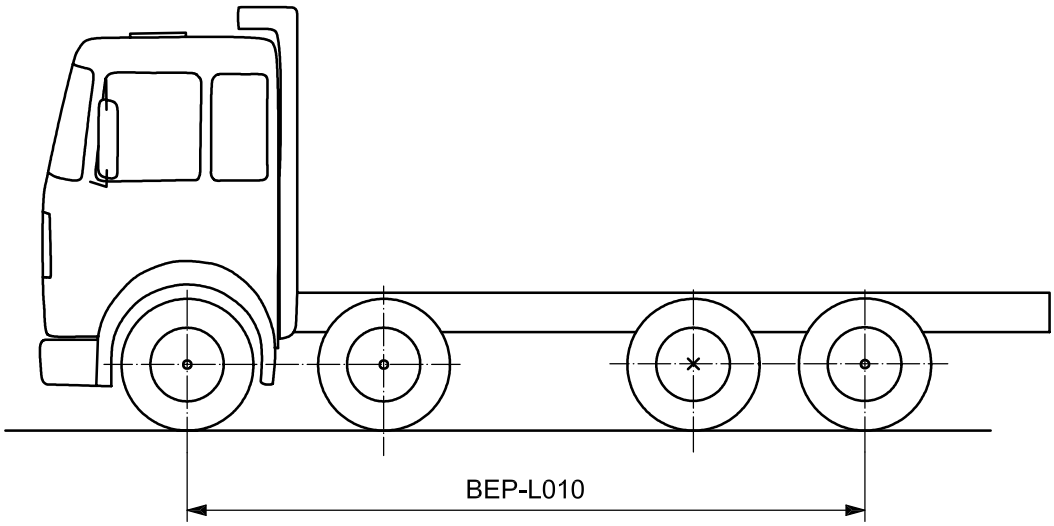
BEP-code	Assignment	Description	Priority	Loading	Presented in
BEP-W001	Overall width of chassis with cab	Maximum external width of the vehicle chassis. NOTE Rear-view mirrors in outermost position, lights, elastic mud flaps, tyre bulges in the road area and snow chains are included in the width stated. The bodywork is not taken into account.	A	-	2D, 3D, TD
BEP-W002	Width across cab	External width of cab. NOTE Mudguards and rear-view mirrors are disregarded.	A	-	2D, 3D, TD
BEP-W003.n	Width across wheels on *n*-th axle	External width across the wheels on the *n*-th axle. NOTE Projecting axle hubs and tyre bulges are disregarded.	A	-	2D, 3D, TD



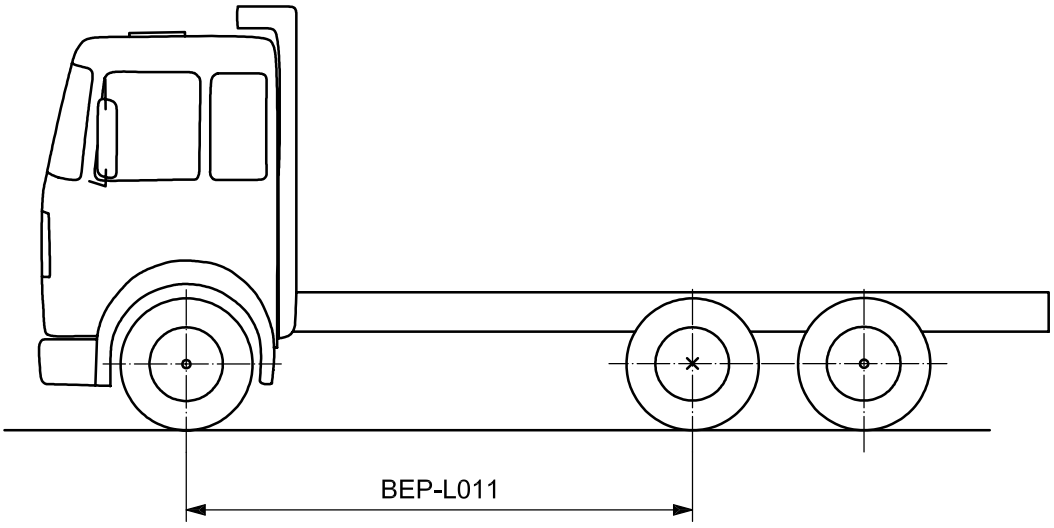
6 Chassis related dimensions

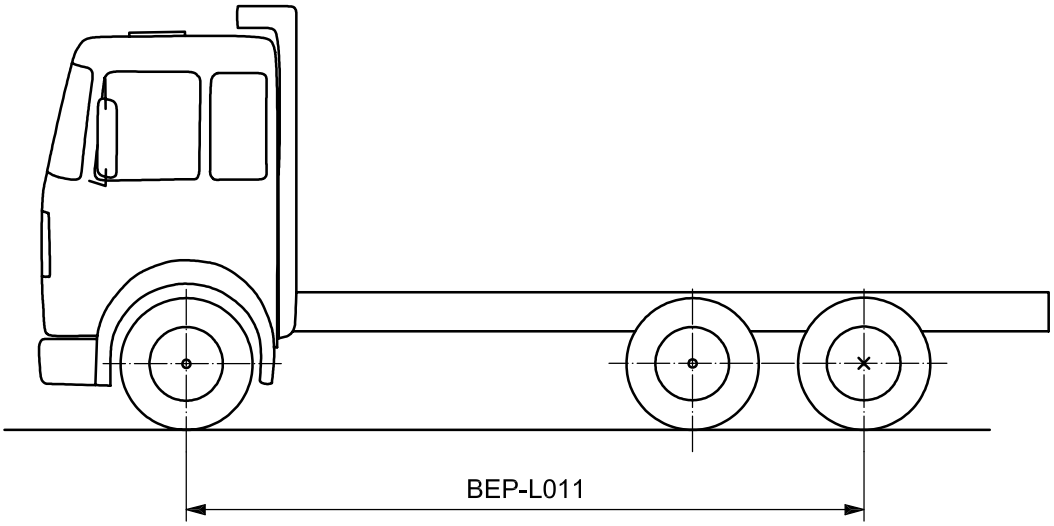
6.1 Axle and wheel related dimensions

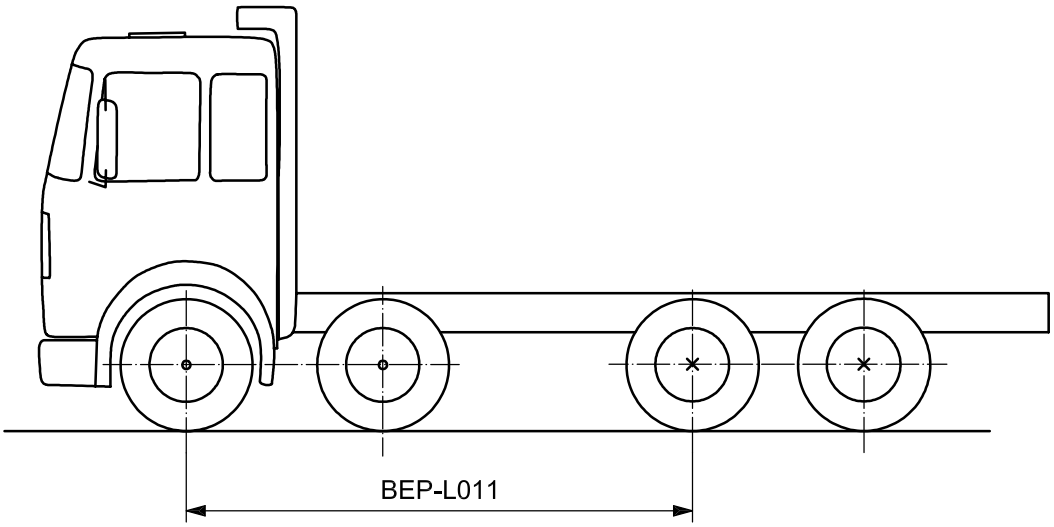
BEP-code	Assignment	Description	Priority	Loading	Presented in
BEP-L010	Total wheel base	Distance between centre of first front axle to the centre of the last axle.	A	-	2D, 3D, TD



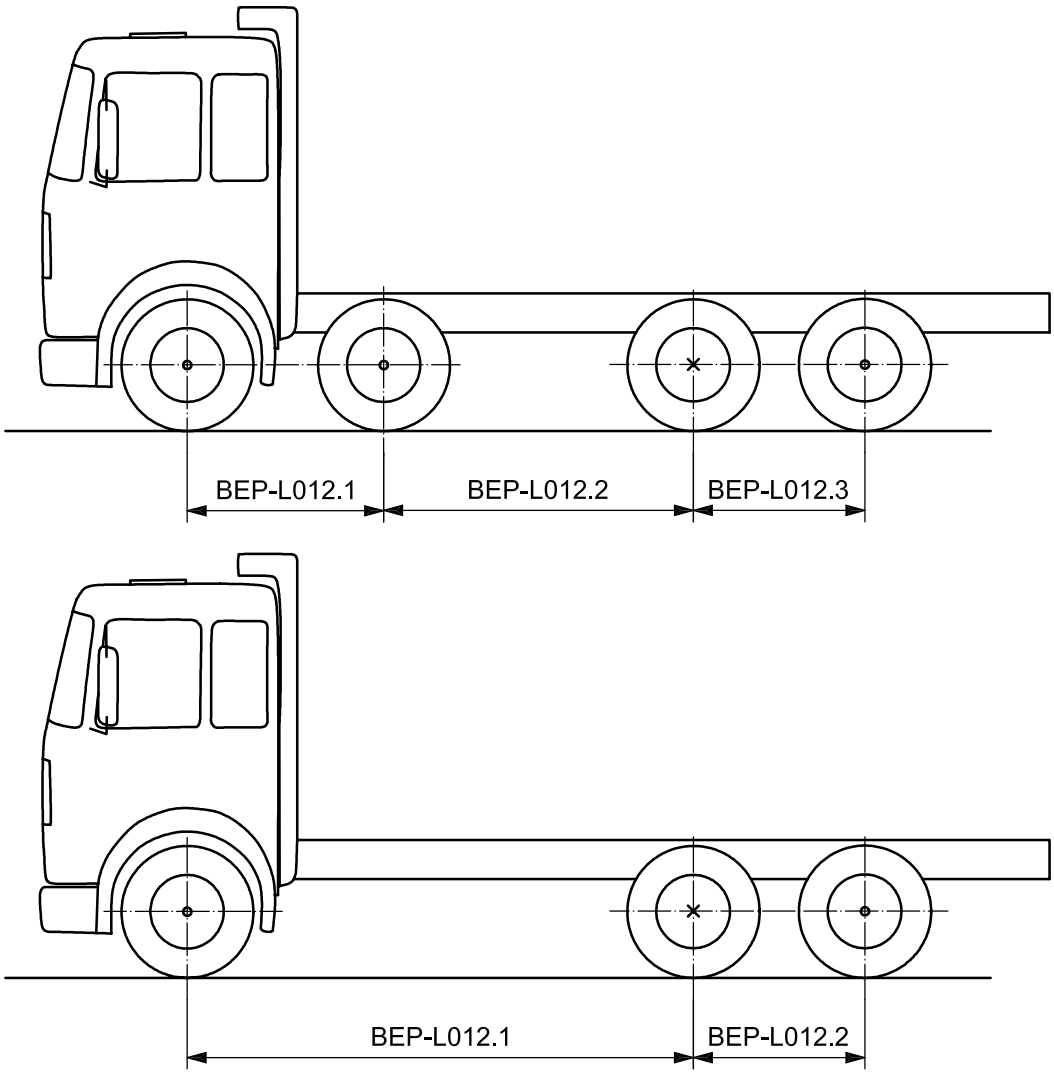
BEP-code	Assignment	Description	Priority	Loading	Presented in
BEP-L011	Configuration wheel base	Distance between centre of first front axle to the centre of first driven rear axle. NOTE If the vehicle is not symmetrical, different values for right and left hand side apply. Then mark with .R or .L, e.g. BEP-L011.L.	A	-	2D, 3D, TD





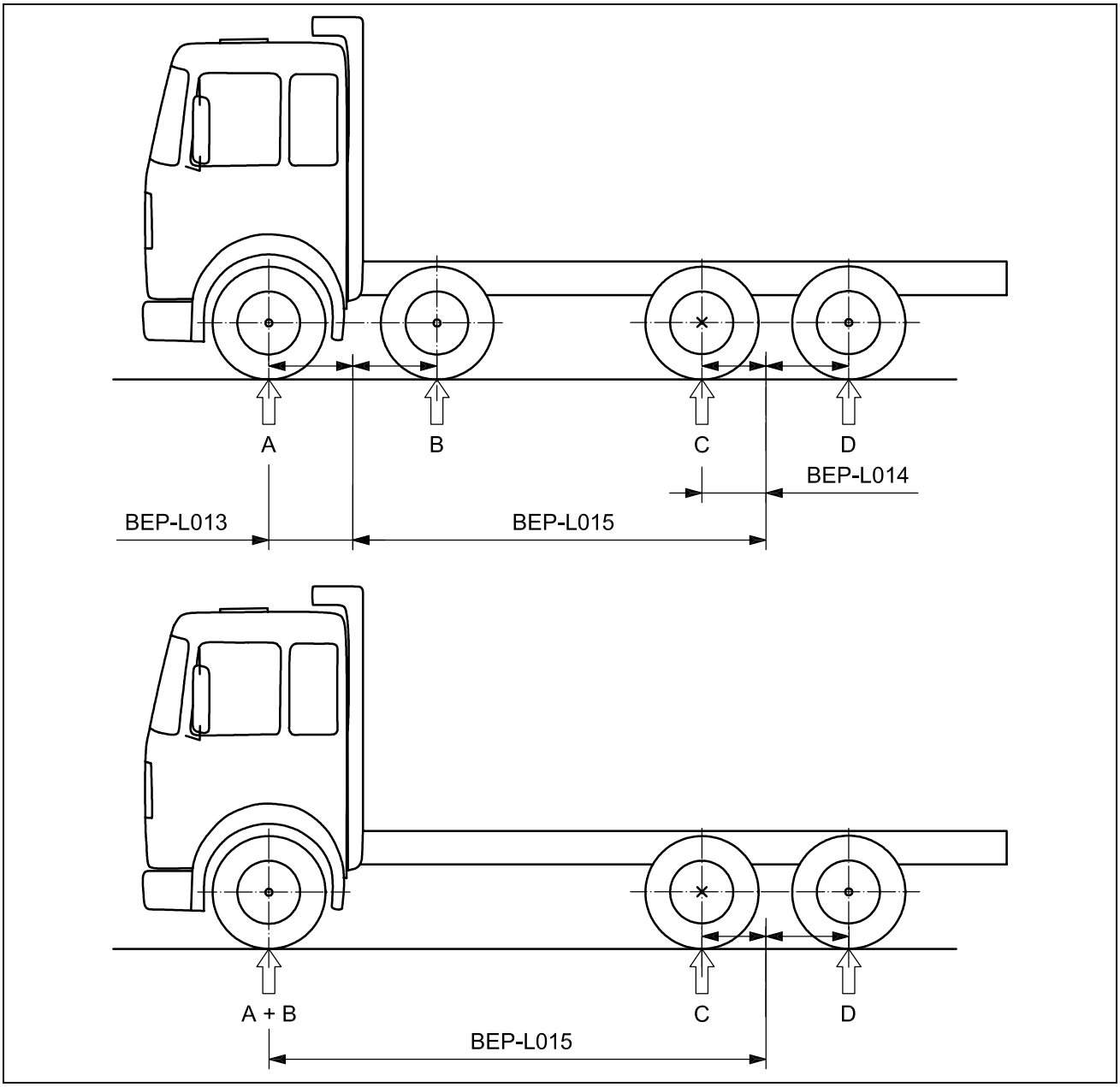


BEP-code	Assignment	Description	Priority	Loading	Presented in
BEP-L012.n	Wheel space from n to n+1 axle	Distance between centre of wheels on n-th and (n+1)-th axles.	A	-	2D, 3D, TD

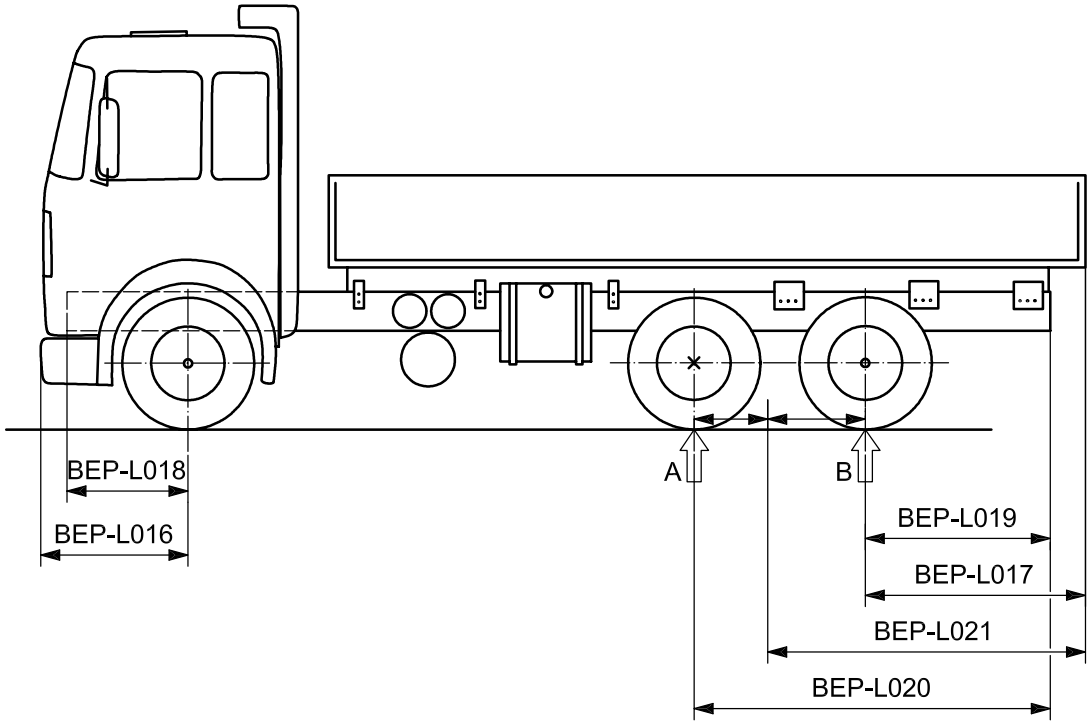


BEP-code	Assignment	Description	Priority	Loading	Presented in
BEP-L013	Theoretical wheel base of front axle combination	Distance between first front axle to calculated mass line of front axle combination.	A	2	2D, TD
BEP-L014	Theoretical wheel base of rear axle combination	Distance between first driven rear axle to calculated mass line of rear axle combination.	A	2	2D, TD
BEP-L015	Theoretical wheel base	Distance between the calculated mass lines of front and rear axle combinations. NOTE 1 For a single axle, either in the front or in the rear, the calculated mass line is identical to the axle centre line. NOTE 2 If there is an axle combination either in the front or rear, the calculated mass line is the calculated line between the axles where the load from the axles is focused. NOTE 3 For air suspension systems with electronic control, the calculated mass line is variable while driving. EXAMPLE A, B, C, D may have the following distribution, shown in the figures below: A = 50 %, B = 50 %, C = 60 %, D = 40 %	A	2	2D, TD

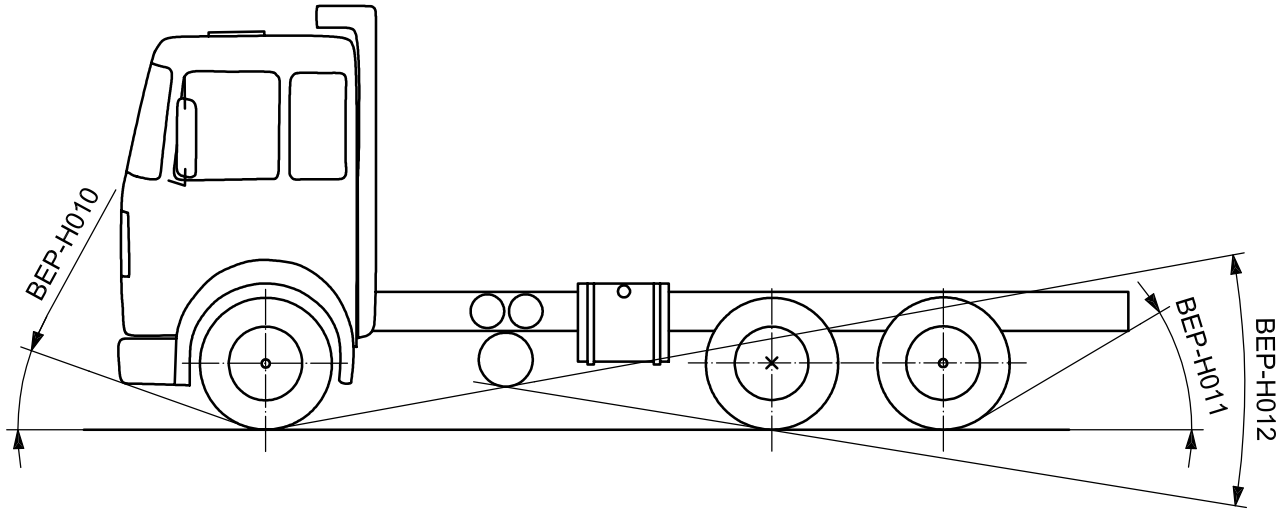
BEP-code	Assignment	Description	Priority	Loading	Presented in



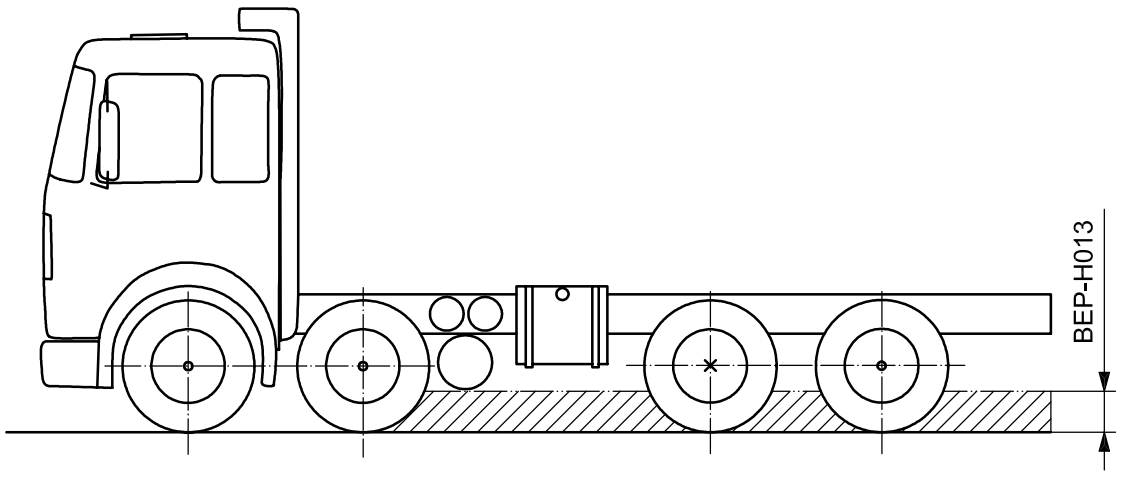
BEP-code	Assignment	Description	Priority	Loading	Presented in
BEP-L016	Front vehicle overhang	Distance between front edge of vehicle and centre of wheel on first axle.	A	-	2D, 3D, TD
BEP-L017	Rear vehicle overhang	Distance between centre of last axle and rearmost part of vehicle.	A	-	2D, 3D, TD
BEP-L018	Front frame overhang	Distance from foremost edge of front frame to centre of first front axle.	A	-	2D, 3D, TD
BEP-L019	Rear frame overhang	Distance between the centre of last axle to rearmost edge of frame side member.	A	-	2D, 3D, TD
BEP-L020	Rear frame overhang from first driven rear axle	Distance between the centre of first driven rear axle to rearmost edge of frame side member.	A	-	2D, 3D, TD
BEP-L021	Technical overhang length	Distance between calculated mass lines of rear axle combination and rearmost edge of vehicle or bodywork. EXAMPLE A and B may have the following distribution: A = 60 %, B = 40 %	B	2	2D, 3D, TD

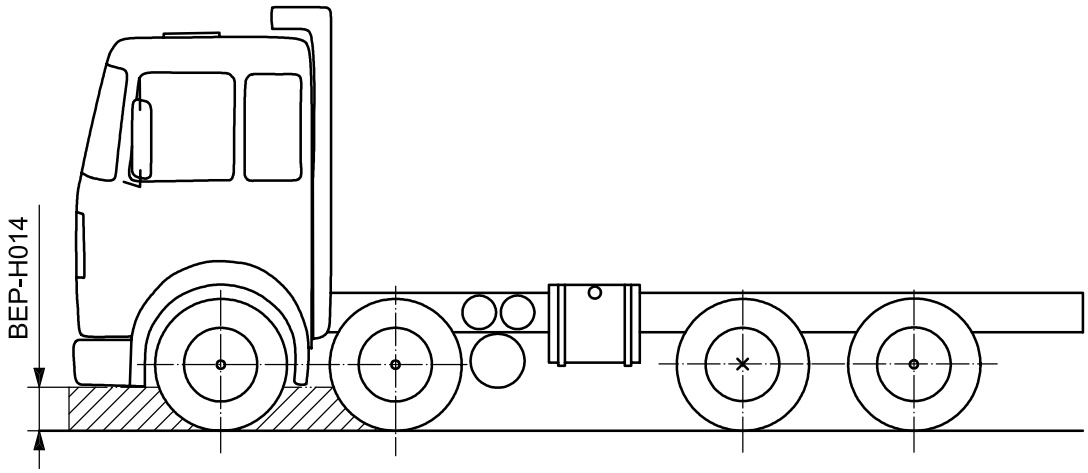
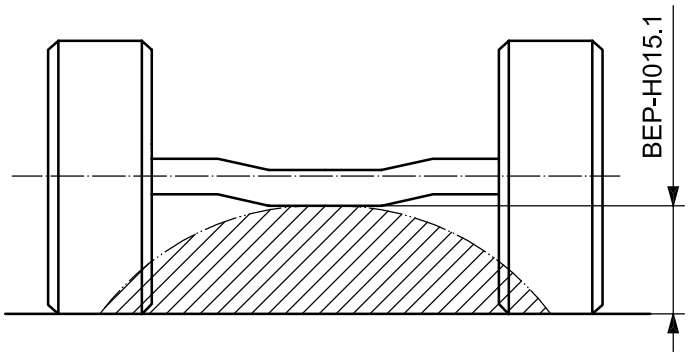


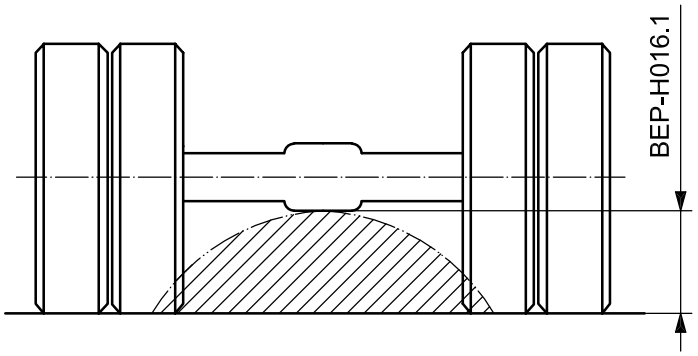
BEP-code	Assignment	Description	Priority	Loading	Presented in
BEP-H010	Approach angle	Angle between the tangent of the rolling radius of the tyres and the lowest fixed point of the vehicle in front of the axle, for technical front axle mass. NOTE Chassis loaded to permitted axle masses. For pneumatic suspension, the drive position is assumed. Additional tyre springing should be taken into account.	B	2	2D, 3D, TD
BEP-H011	Departure angle	Angle between the tangent of the rolling radius of the tyres and the lowest fixed point of the vehicle behind the axle, for technical rear axle mass. NOTE Chassis loaded to permitted axle masses. For pneumatic suspension, the drive position is assumed. Additional tyre springing should be taken into account.	B	2	2D, 3D, TD
BEP-H012	Ramp angle	See ISO 612 and ISO 7656.	B	2	2D, 3D, TD



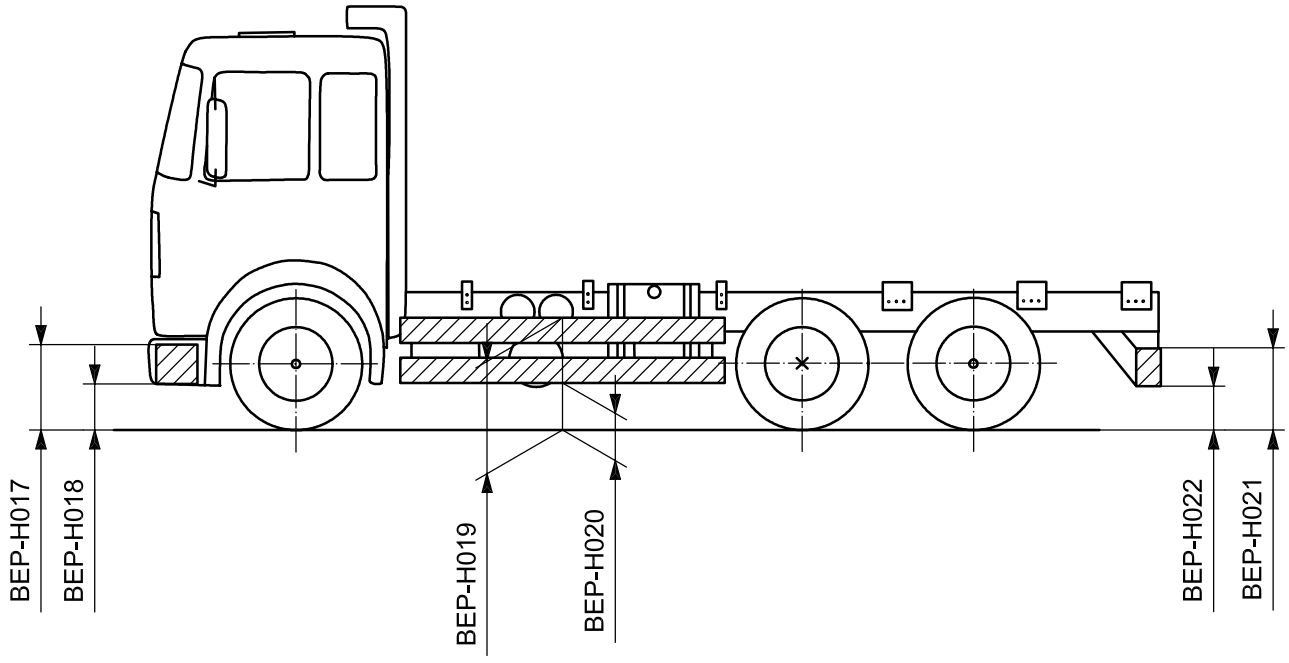
BEP-H013	Ground clearance, rear part	Distance between the ground and the lowest fixed point between the centre of the last front axle and the rearmost part of the chassis. NOTE Chassis loaded to permitted axle masses. For pneumatic suspension, the drive position is assumed. Additional tyre springing should be taken into account.	A	2	2D, 3D, TD



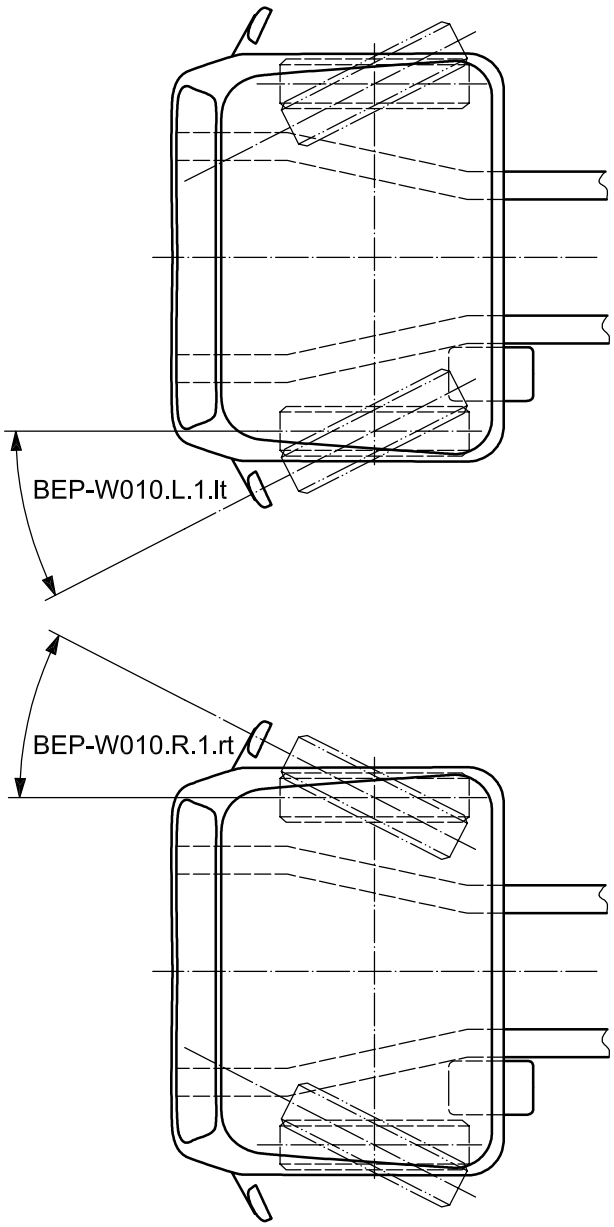
BEP-code	Assignment	Description	Priority	Loading	Presented in
BEP-H014	Ground clearance, front part	Distance between the ground and the lowest fixed point between the front part of the chassis and the centre of the last front axle. NOTE Chassis loaded to permitted axle masses. For pneumatic suspension, the drive position is assumed. Additional tyre springing should be taken into account.	A	2	2D, 3D, TD
					
BEP-H015.n	Ground clearance, front axle(s)	Smallest vertical dimension between vehicle front axle(s) and ground level. NOTE Chassis loaded to permitted axle masses. For pneumatic suspension, the drive position is assumed. Additional tyre springing should be taken into account.	A	2	2D, 3D, TD
					

BEP-code	Assignment	Description	Priority	Loading	Presented in
BEP-H016.n	Ground clearance, rear axle(s)	Smallest vertical dimension between vehicle rear axle(s) and ground level. NOTE Chassis loaded to permitted axle masses. For pneumatic suspension, the drive position is assumed. Additional tyre springing should be taken into account.	A	2	2D, 3D, TD
					

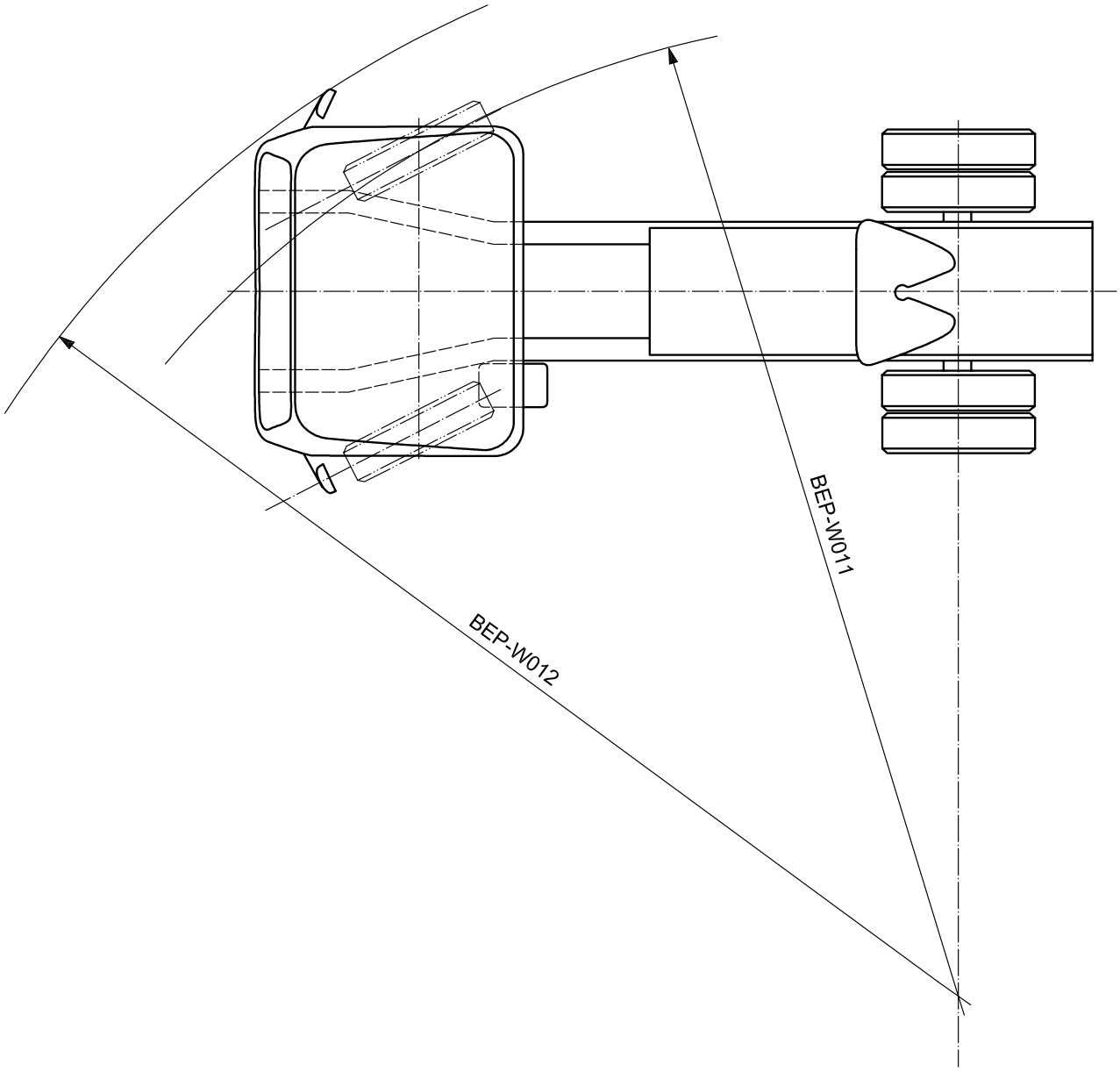
BEP-code	Assignment	Description	Priority	Loading	Presented in
BEP-H017	Front under-run protection, upper	Distance between the ground and the uppermost part of the front under-run protection.	A	1	2D, 3D, TD
BEP-H018	Front under-run protection, lower	Distance between the ground and the lowest part of the front under-run protection.	A	1	2D, 3D, TD
BEP-H019.n	Side under-run protection(s), upper	Distance between the ground and the uppermost part of the side under-run protection. NOTE The distance is measured at the centreline of the side under-run protection.	A	1	2D, 3D, TD
BEP-H020.n	Side under-run protection(s), lower	Distance between the ground and the lowest part of the side under-run protection. NOTE The distance is measured at the centreline of the side under-run protection.	A	1	2D, 3D, TD
BEP-H021	Rear under-run protection, upper	Distance between the ground and the uppermost part of the rear under-run protection.	A	1	2D, 3D, TD
BEP-H022	Rear under-run protection, lower	Distance between the ground and the lowest part of the rear under-run protection.	A	1	2D, 3D, TD



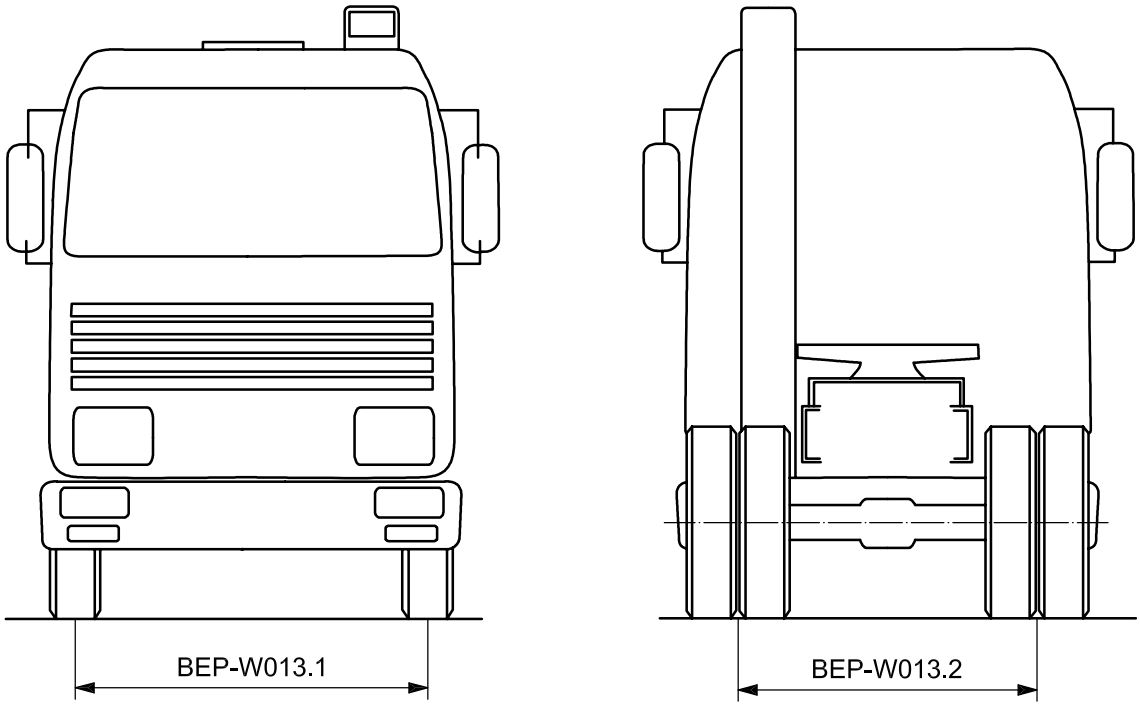
BEP-code	Assignment	Description	Priority	Loading	Presented in
BEP-W010.n	Steering angle	Maximum steering angle of wheels. NOTE L/R for left or right side, n for *n*-th steerable axle, lt/rt for left or right turn. EXAMPLE BEP-W010.R.2.rt means right side, second steerable axle, right turn.	B	1	2D, 3D, TD



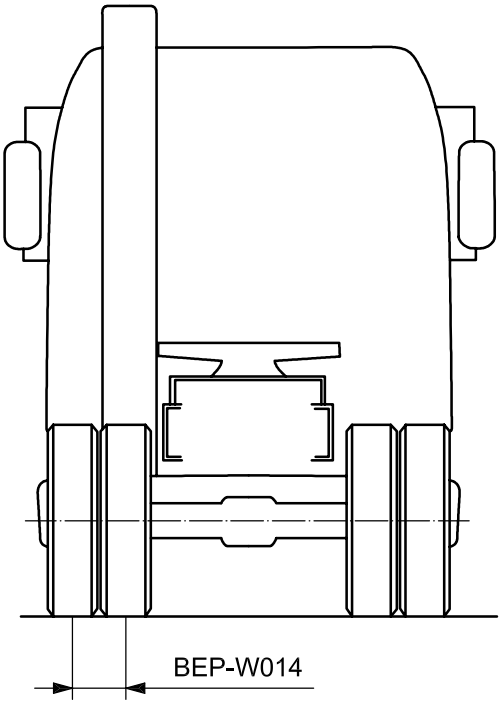
BEP-code	Assignment	Description	Priority	Loading	Presented in
BEP-W011	Turning circle diameter	The diameter of the circle described by the 'centre' of the tyre of the outer steered wheel at the first front axle at maximum steering angle. NOTE If there is a difference between left hand and right hand turning circle, it is marked with .R or .L - e.g. BEP-W011.L.	A	2	TD
BEP-W012	Clearance circle diameter	The diameter of the circle described by the outer edge of the vehicle at maximum steering angle. NOTE The outer edge includes external equipment, e.g. mirrors. If there is a difference between left hand and right hand turning circle, it is marked with .R or .L - e.g. BEP-W012.L.	A	2	TD



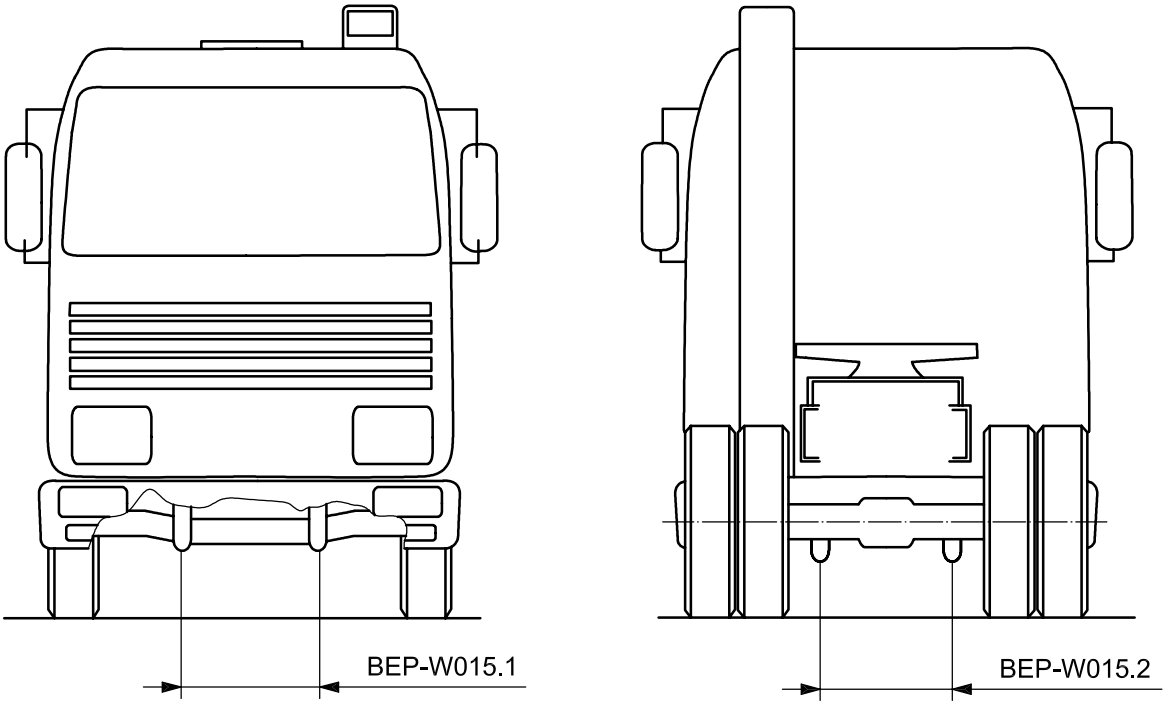
BEP-code	Assignment	Description	Priority	Loading	Presented in
BEP-W013.n	Track	Distance between centres of the tyres of the n-th axle. NOTE In case of twin tyres, the centre between the two centres of the tyres on the same side is used.	A	1	2D, 3D, TD



BEP-W014.n	Twin tyre distance	Distance between the centres of the two tyres of the n-th axle on one side.	B	1	2D, 3D, TD



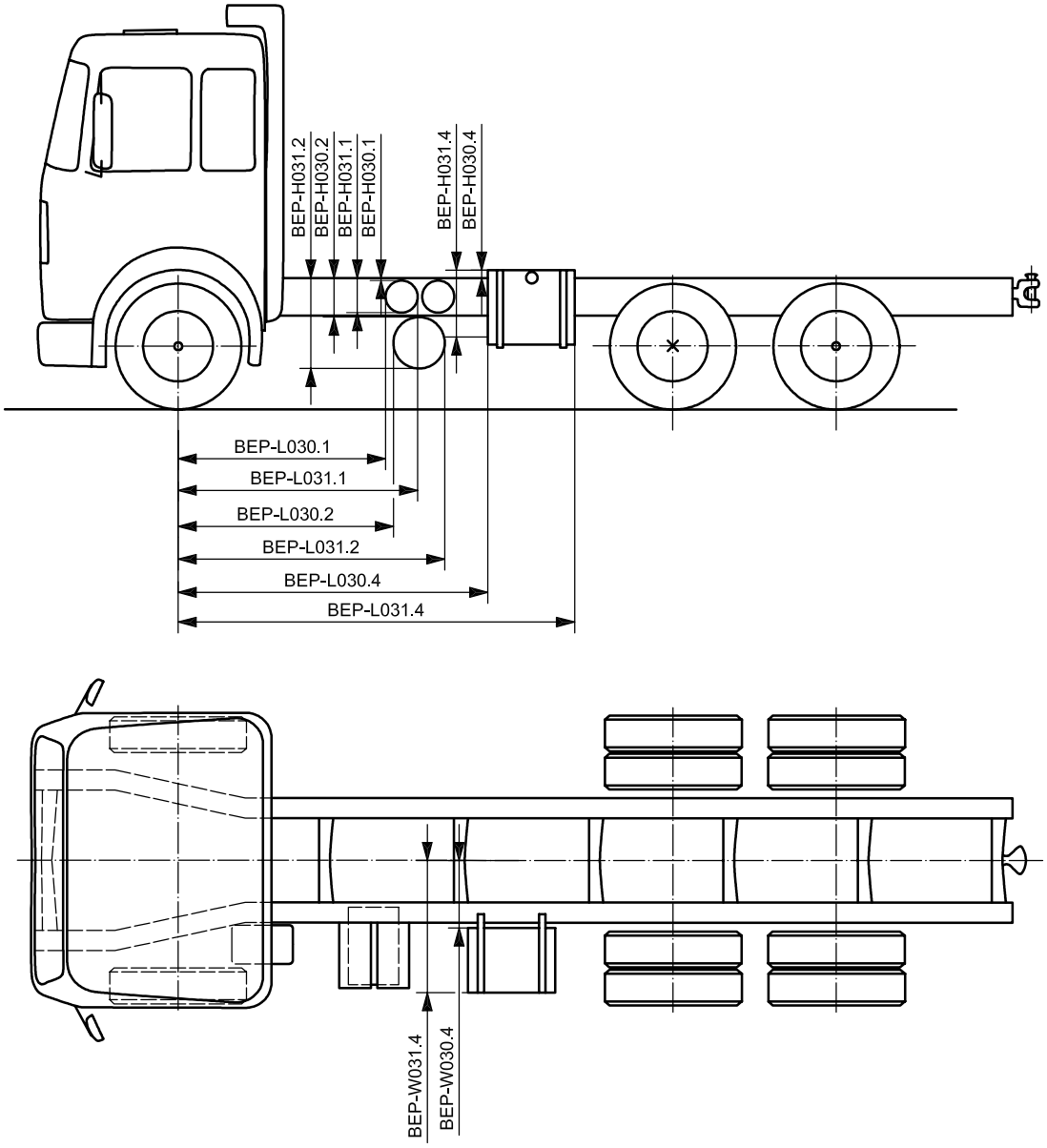
BEP-code	Assignment	Description	Priority	Loading	Presented in
BEP-W015.n	Spring track distance	Distance between the centreline of springs at the *n*-th axle.	B	1	2D, 3D, TD



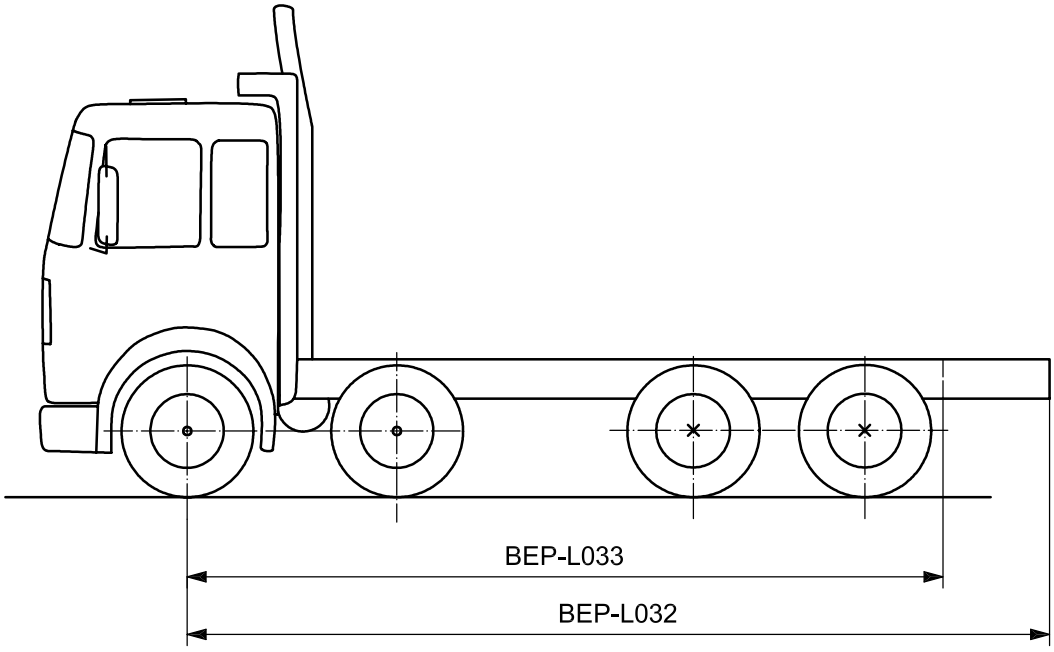
6.2 Chassis frame related dimensions

BEP-code	Assignment	Description	Priority	Loading	Presented in
BEP-L030.n.t	Start of chassis-mounted object, length	Distance between the centre of the first front axle and the foremost part of the n-th object mounted on the chassis. NOTE 1 Add .R or .L (if applicable) to specify the mounting side, related to the centreline of the chassis. NOTE 2 It is applicable to objects both inside and outside the chassis frame. NOTE 3 Optional object type coding (.t), see 4.4.2. EXAMPLE Air tank, fuel tank, battery box, electrical and electronic interface, pneumatic interface, exhaust parts, side under-run protection, etc.	A	-	2D, 3D, TD
BEP-L031.n.t	End of chassis-mounted object, length	Distance between the centre of the first front axle and the rearmost end of the n-th object mounted on the chassis. NOTE 1 Add .R or .L (if applicable) to specify the mounting side, related to the centreline of the chassis. NOTE 2 It is applicable to objects both inside and outside the chassis frame. NOTE 3 Optional object type coding (.t), see 4.4.2. EXAMPLE Air tank, fuel tank, battery box, electrical and electronic interface, pneumatic interface, exhaust parts, side under-run protection, etc.	A	-	2D, 3D, TD
BEP-H030.n.t	Start of chassis-mounted object, height	Distance from the top of chassis frame to the highest part of the n-th object mounted on the chassis. NOTE 1 Add .R or .L (if applicable) to specify the mounting side, related to the centreline of the chassis. NOTE 2 It is applicable to objects both inside and outside the chassis frame. NOTE 3 Optional object type coding (.t), see 4.4.2. NOTE 4 Positive values indicate above top of chassis, and negative values indicate below top of chassis. EXAMPLE Air tank, fuel tank, battery box, electrical and electronic interface, pneumatic interface, exhaust parts, side under-run protection, etc.	A	-	2D, 3D, TD
BEP-H031.n.t	End of chassis-mounted object, height	Distance from the top of chassis frame to the lowest part of the n-th object mounted on the chassis. NOTE 1 Add .R or .L (if applicable) to specify the mounting side, related to the centreline of the chassis. NOTE 2 It is applicable to objects both inside and outside the chassis frame. NOTE 3 Optional object type coding (.t), see 4.4.2. NOTE 4 Positive values indicate above top of chassis, and negative values indicate below top of chassis. EXAMPLE Air tank, fuel tank, battery box, electrical and electronic interface, pneumatic interface, exhaust parts, side under-run protection, etc.	A	-	2D, 3D, TD
BEP-W030.n.t	Start of chassis-mounted object, width	Distance from the centreline of chassis frame to the nearest part of the n-th object mounted on the chassis. NOTE 1 Add .R or .L (if applicable) to specify the mounting side, related to the centreline of the chassis. NOTE 2 It is applicable to objects both inside and outside the chassis frame. NOTE 3 Optional object type coding (.t), see 4.4.2. EXAMPLE Air tank, fuel tank, battery box, electrical and electronic interface, pneumatic interface, exhaust parts, side under-run protection, etc.	A	-	2D, 3D, TD

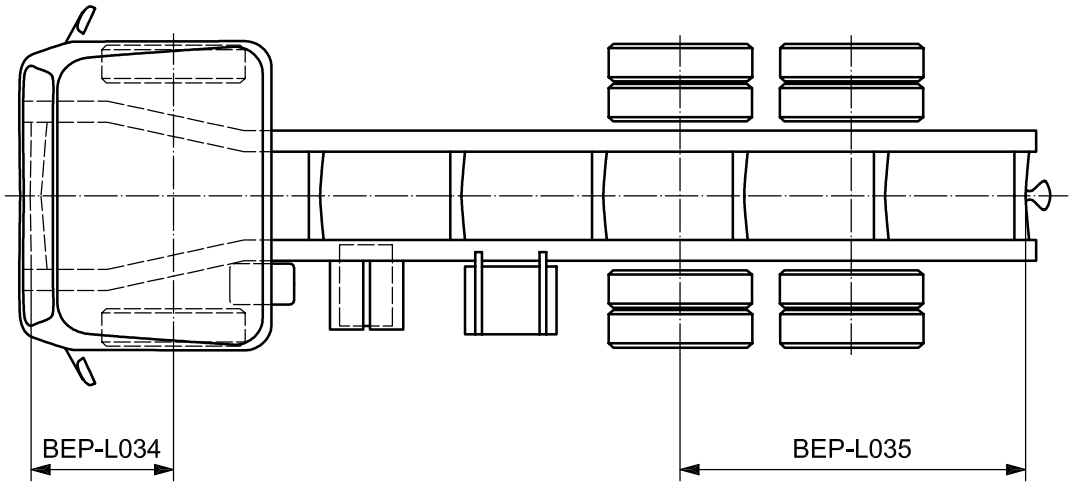
BEP-code	Assignment	Description	Priority	Loading	Presented in
BEP-W031.n.t	End of chassis-mounted object, width	Distance from the centreline of chassis frame to the furthest part of the *n*-th object mounted on the chassis. NOTE 1 Add .R or .L (if applicable) to specify the mounting side, related to the centreline of the chassis. NOTE 2 It is applicable to objects both inside and outside the chassis frame. NOTE 3 Optional object type coding (.t), see 4.4.2. EXAMPLE Air tank, fuel tank, battery box electrical and electronic interface, pneumatic interface, exhaust parts, side under-run protection, etc.	A	-	2D, 3D, TD



BEP-code	Assignment	Description	Priority	Loading	Presented in
BEP-L032	Length of frame from centre of first front axle	Distance between the centre of the first front axle and the rear end of the chassis.	B	-	TD
BEP-L033	Minimum length of frame from centre of first front axle	Minimum distance between the centre of the first front axle and the rear end of the chassis. NOTE The shortest possible chassis frame overhang on the rear end recommended by the chassis manufacturer. This is to enable bodywork designers to establish the chassis cut off-point whilst allowing sufficient space for cleating at the rear of the chassis frame. EXAMPLE Cutting the overhang behind the spring hanger bracket.	B	-	TD

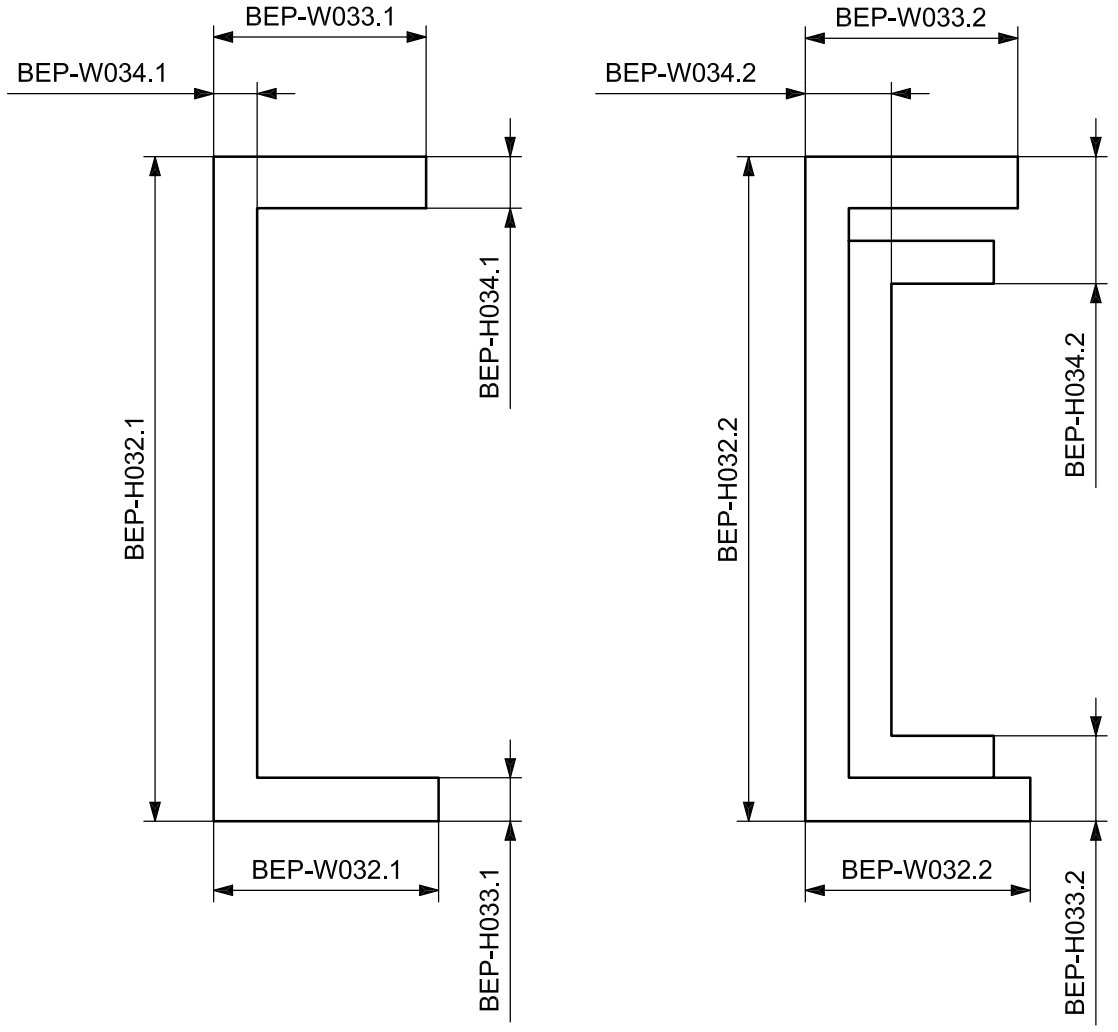


BEP-code	Assignment	Description	Priority	Loading	Presented in
BEP-L034	Front edge of front cross-member	Distance from front edge of front cross-member to centre of first front axle.	A	-	2D, 3D, TD
BEP-L035	Towing member reference position	Distance from centre of the first driven rear axle to rear cross-member mounting surface for trailer couplings. NOTE In case of several rear cross-members, they can be marked BEP-L035.1, BEP-L035.2.	A	-	2D, 3D, TD

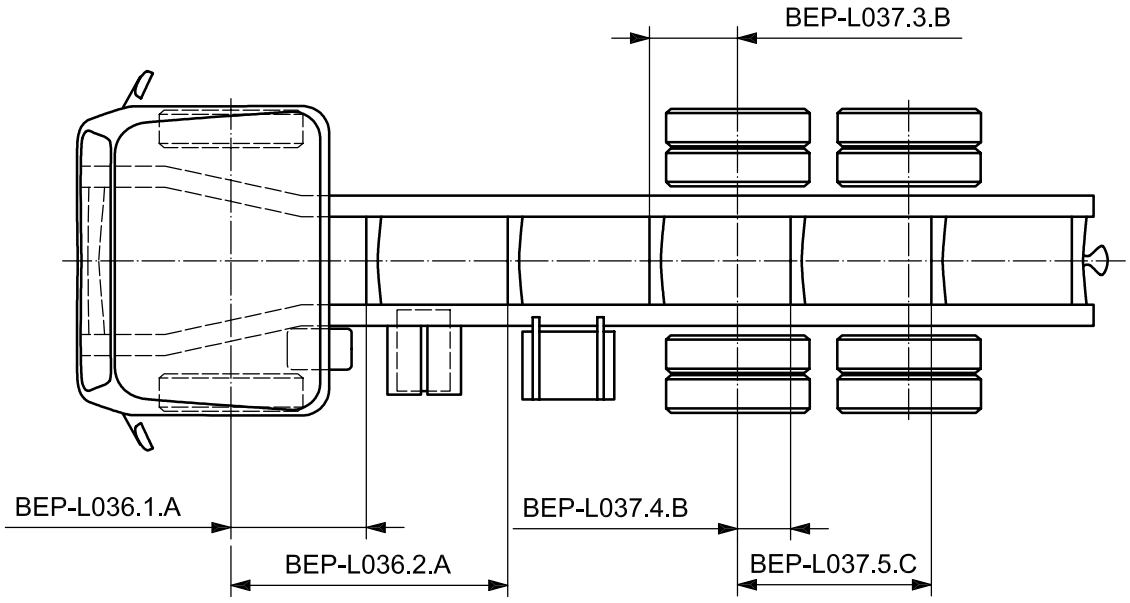


BEP-code	Assignment	Description	Priority	Loading	Presented in
BEP-H032.n	Frame side member profile height	Height of the *n*-th frame side member profile.	A	-	2D, 3D, TD
BEP-H033.n	Frame side member profile bottom thickness	Thickness of the *n*-th frame side member profile bottom.	A	-	2D, 3D, TD
BEP-H034.n	Frame side member profile top thickness	Thickness of the *n*-th frame side member profile top.	A	-	2D, 3D, TD
BEP-W032.n	Frame side member profile bottom width	Width of the *n*-th frame side member profile bottom.	A	-	2D, 3D, TD
BEP-W033.n	Frame side member profile top width	Width of the *n*-th frame side member profile top.	A	-	2D, 3D, TD
BEP-W034.n	Frame side member profile waist thickness	Thickness of the *n*-th frame side member profile waist.	A	-	2D, 3D, TD

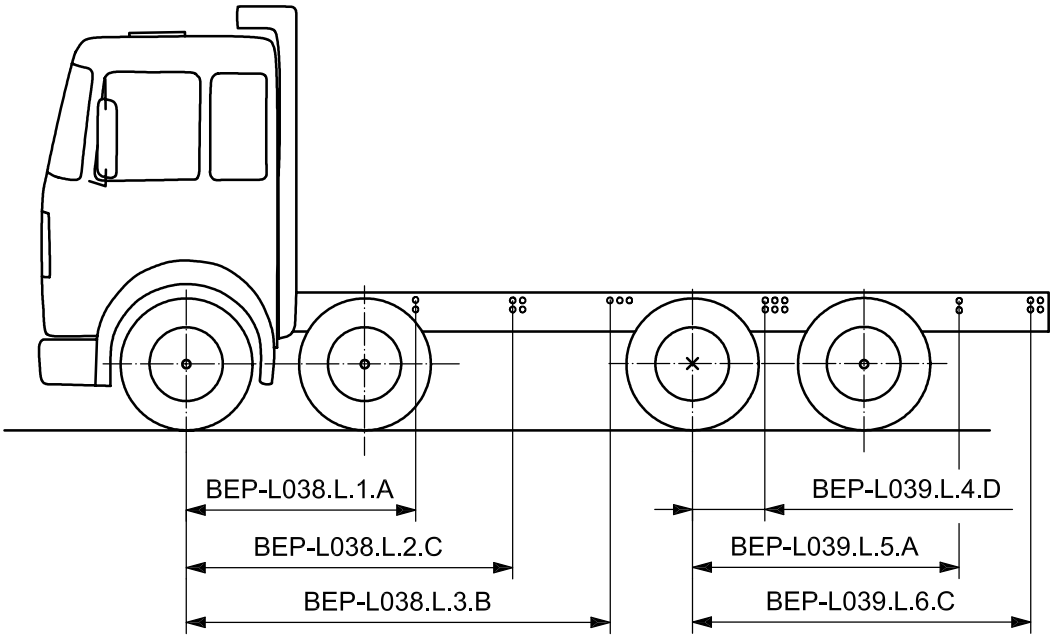
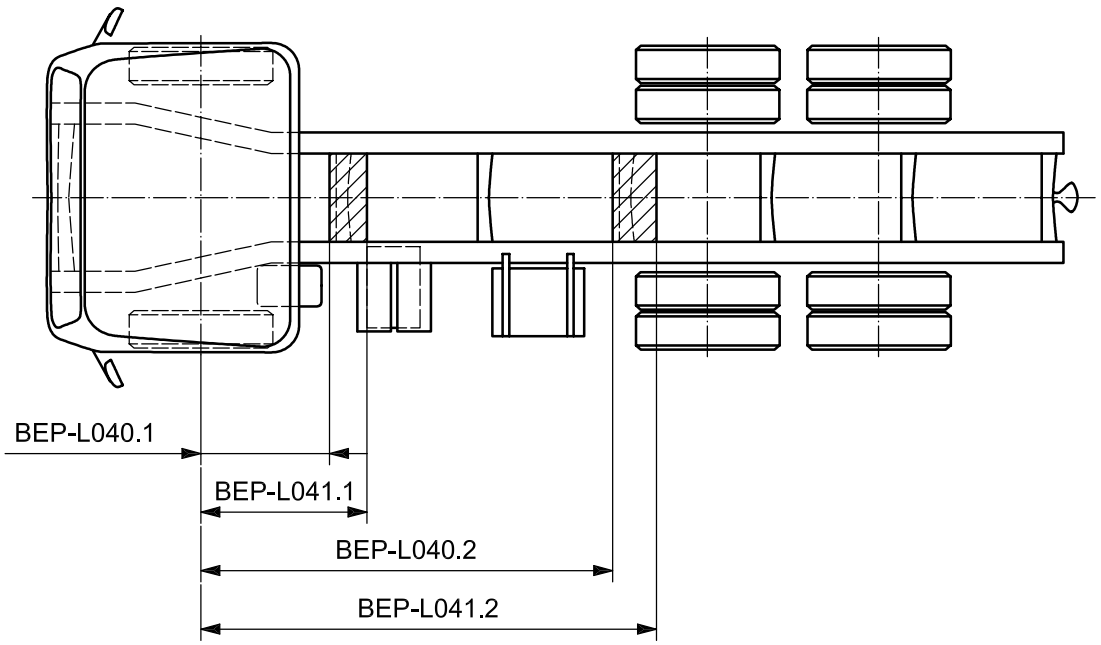
NOTE 1 Some common profiles are shown below. Further profile alternatives can be defined by the chassis and bodywork manufacturers.
NOTE 2 For positioning of frame profile members, see BEP-L048 and related codes.
NOTE 3 Frame re-inforcements can be communicated as stand-alone objects, see BEP-H052 and related codes.

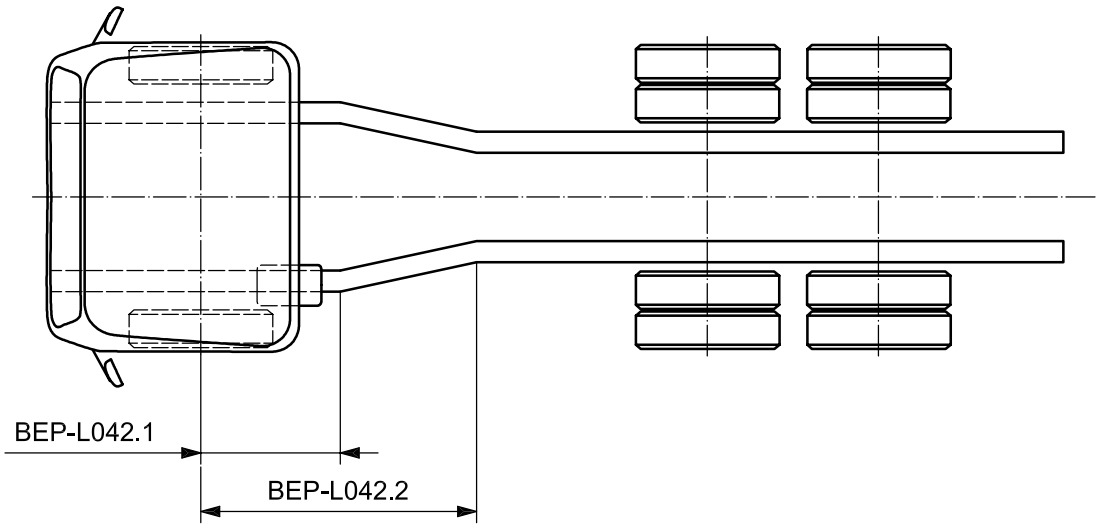
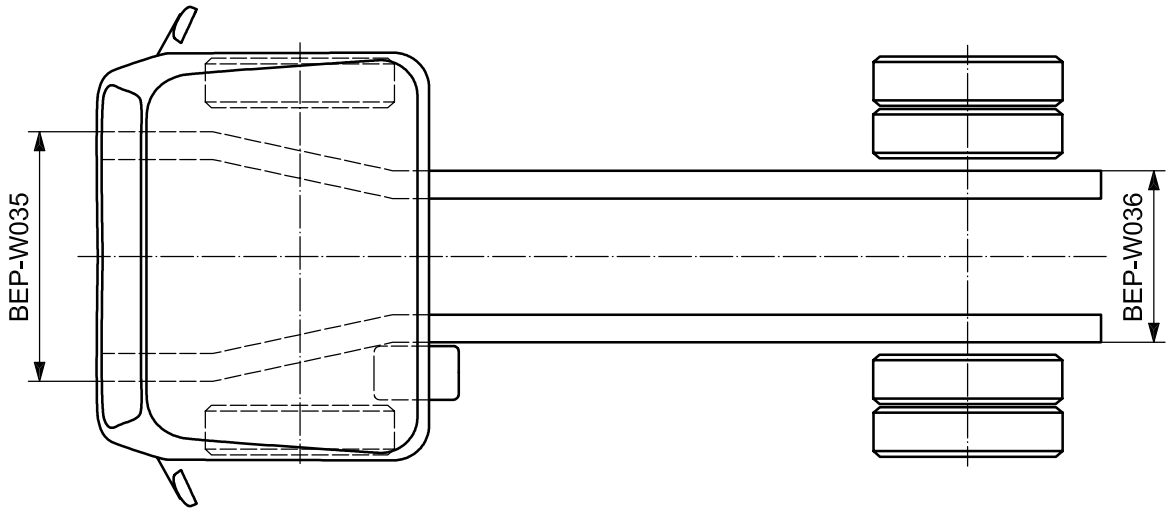


BEP-code	Assignment	Description	Priority	Loading	Presented in
BEP-L036.n.t	Distance to the front edge of the n-th front intermediate cross-member	Distance from the centre of the first front axle to the front edge of the n-th intermediate cross-member on the centre-line of the chassis. NOTE 1 Each cross-member is identified by a number (n). NOTE 2 When the value is negative, the position of the cross-member is in front of the axle. If it is positive, the position is behind the axle. NOTE 3 The cross-members are defined in different types (t), specified with e.g. A, B, C, etc. Each definition of type includes the description of the exact position and profile of each cross-member. EXAMPLE BEP-L036.2.A means second cross-member, type A.	A	-	2D, 3D, TD
BEP-L037.n.t	Distance to the front edge of the n-th rear intermediate cross-member	Distance from the centre of the first driven rear axle to the front edge of the n-th intermediate cross-member on the centre-line of the chassis. NOTE 1 Each cross-member is identified by a number (n). NOTE 2 When the value is negative, the position of the cross-member is in front of the axle. If it is positive, the position is behind the axle. NOTE 3 The cross-members are defined in different types (t), specified with e.g. A, B, C, etc. Each definition of type includes the description of the exact position and profile of each cross-member. EXAMPLE BEP-L037.5.C means fifth cross-member, type C.	A	-	2D, 3D, TD

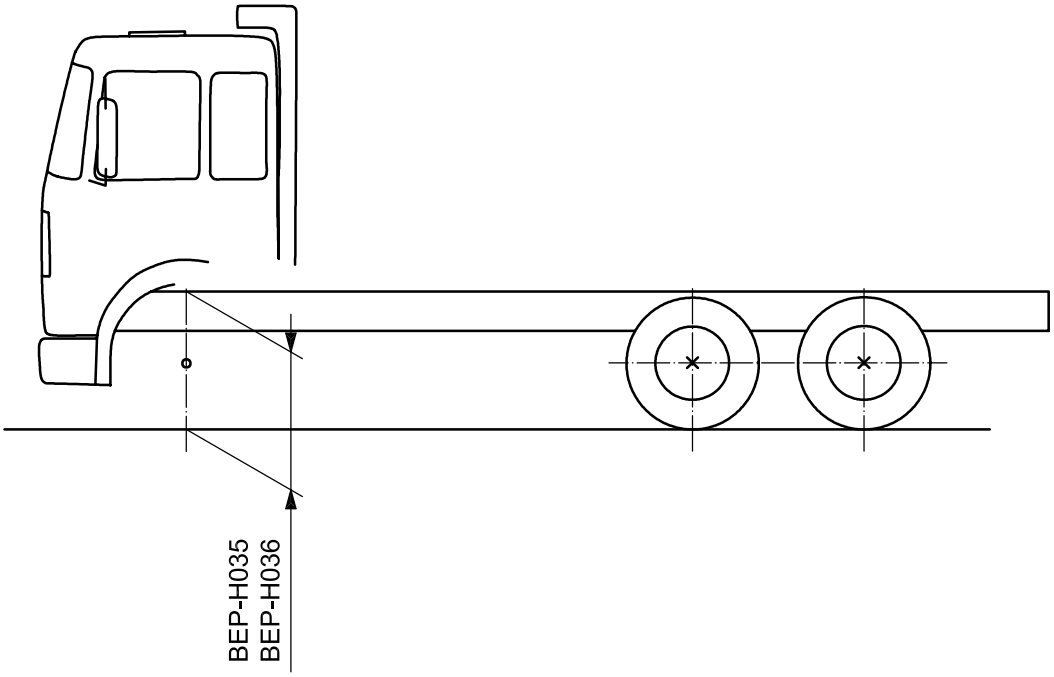


BEP-code	Assignment	Description	Priority	Loading	Presented in
BEP-L038.n.t	Distance to the hole pattern in the front part of frame	Distance from the centre of the first front axle to the index point for positioning, of the n-th hole pattern in frame. NOTE 1 If the values for right and left side member differ, then mark with .R or .L. NOTE 2 A negative value indicates that the hole-pattern is in front of the axle. A positive value indicates that it is behind the axle. NOTE 3 A unique number (n) identifies each hole pattern. NOTE 4 The hole patterns are defined in different types (t), specified e.g. with A, B, C, etc. Each definition of type includes the description of: — index point for positioning; — hole dimension; — hole shape (cylindrical, oblong, etc.); — hole type (drilled, punched, etc.); — relative positions including transformation information; — x, y, z-position relative to the given value and their tolerance. EXAMPLE BEP-038.L.2.A means left side-member, hole pattern 2, type A.	A	-	2D, 3D, TD
BEP-L039.n.t	Distance to the hole pattern in the rear part of frame	Distance from the centre of the first driven rear axle to the index point for positioning, of the n-th hole pattern in frame. NOTE 1 If the frame side members are not symmetrical, different values for right and left hand side apply, marked with .R or .L. NOTE 2 If the value is negative, the position of the hole-pattern is in front of the axle. If it is positive, the position is behind the axle. NOTE 3 A unique number (n) identifies each hole pattern. NOTE 4 The hole patterns are defined in different types (t), specified e.g. with A, B, C, etc. Each definition of type includes the description of: — index point for positioning; — hole dimension; — hole shape (cylindrical, oblong, etc.); — hole type (drilled, punched, etc.); — relative positions including transformation information; — x, y, z-position relative to the given value and their tolerance. EXAMPLE BEP-L039.L.4.C means left side-member, hole pattern 4 on the rear part of the frame, type C.	A	-	2D, 3D, TD

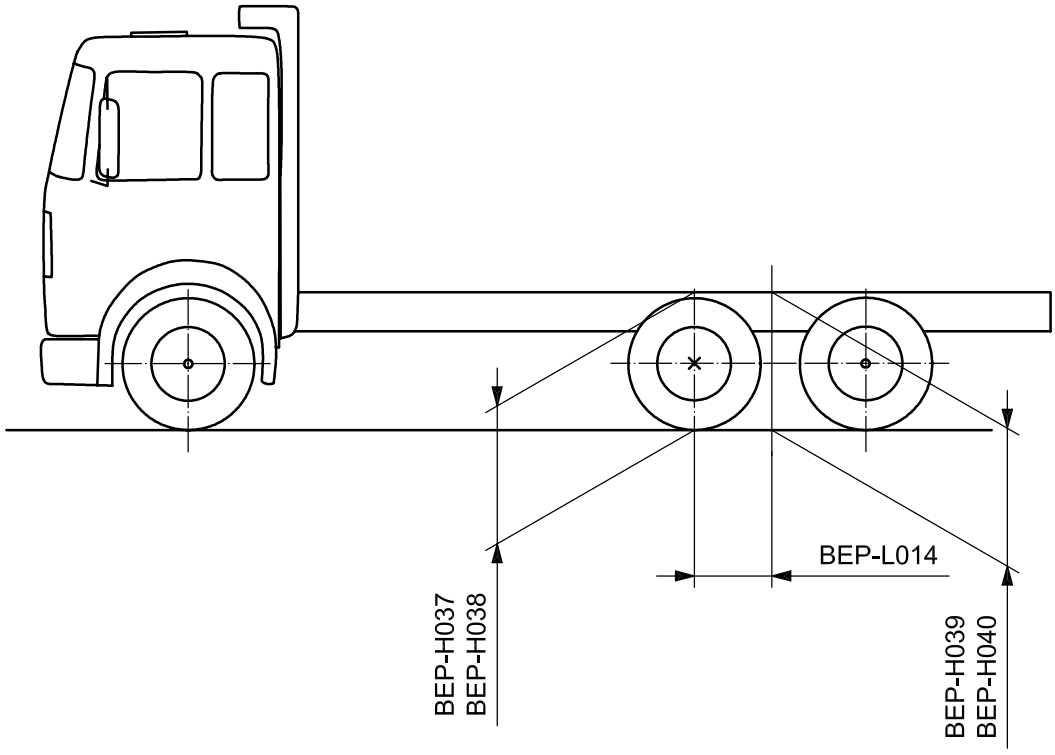
BEP-code	Assignment	Description	Priority	Loading	Presented in
					
BEP-L040.n	Start of restricted area within frame	Distance between the centre of the first front axle and the beginning of the n-th restricted area within the chassis frame. NOTE This is to avoid conflict with sensitive equipment.	A	-	TD
BEP-L041.n	End of restricted area within frame	Distance between the centre of the first front axle and the end of the n-th restricted area within the chassis frame. NOTE To avoid conflict with sensitive equipment.	A	-	TD
					

BEP-code	Assignment	Description	Priority	Loading	Presented in
BEP-L042.n	First front axle centre to n-th bend in frame	Distance between centre of wheel on first front axle and n-th bend in frame (if behind the cab).	A	-	2D, 3D, TD
					
BEP-W035	Width of frame at front area	External width of frame in front area of the vehicle.	A	-	2D, 3D, TD
BEP-W036	Width of frame at rear area	External width of frame in rear area of the vehicle.	A	-	2D, 3D, TD
					

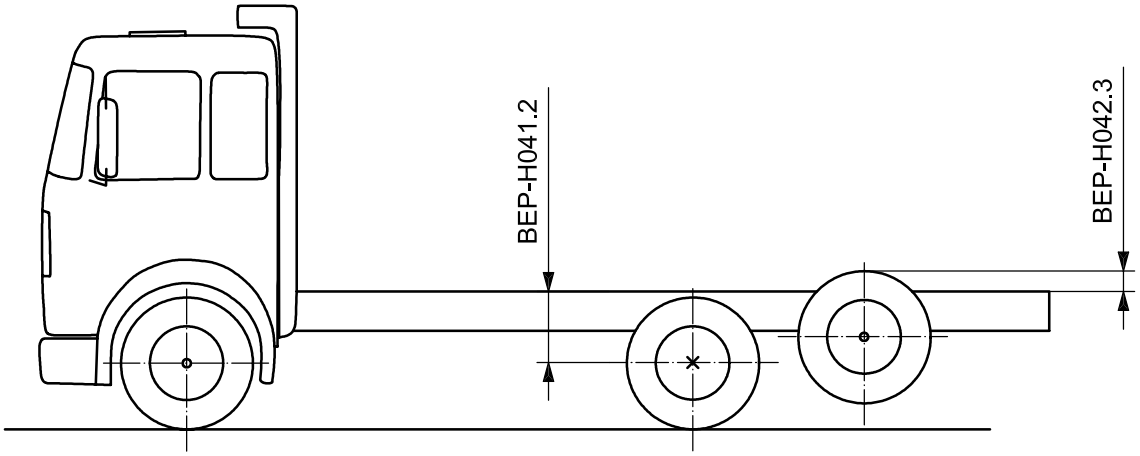
BEP-code	Assignment	Description	Priority	Loading	Presented in
BEP-H035	Height of frame, unladen, front	Distance from top edge of frame to ground measured at the first front axle, unladen condition. NOTE Any sub-frame fitted is disregarded. Loading corresponds to unladen mass. For pneumatic suspension, the highest driving position is assumed.	A	1	2D, 3D, TD
BEP-H036	Height of frame, laden, front	Distance from top edge of frame to ground measured at the first front axle, laden condition. NOTE Any sub-frame fitted is disregarded. The chassis is loaded up to "technical gross vehicle mass". For pneumatic suspension, the highest driving position is assumed. Additional tyre springing from the nearest axle should be taken into account.	A	2	2D, 3D, TD



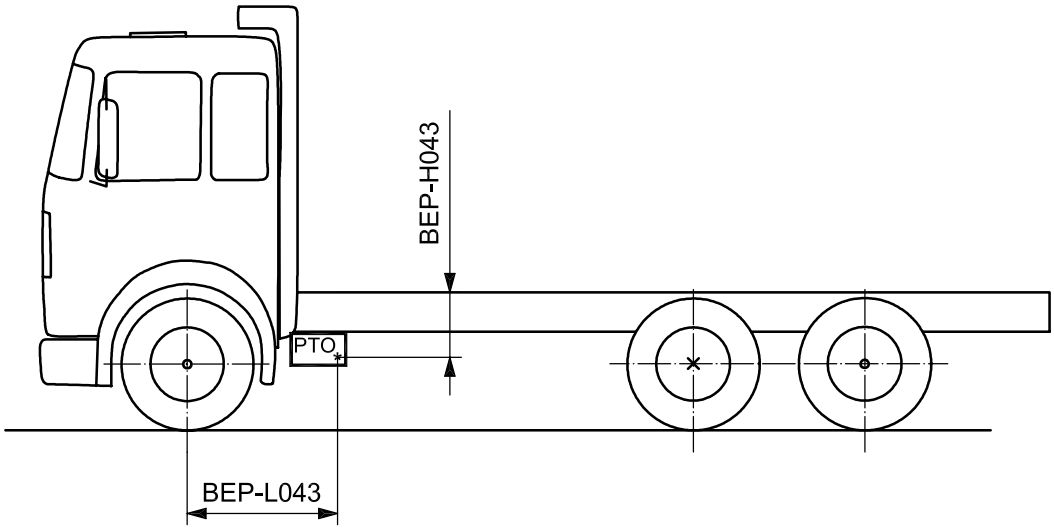
BEP-code	Assignment	Description	Priority	Loading	Presented in
BEP-H037	Height of frame over first driven rear axle, unladen	Distance from top edge of frame to ground measured at the first driven axle, unladen conditions. NOTE Any sub-frame fitted is disregarded. Loading corresponds to unladen mass. For pneumatic suspension, the highest driving position is assumed.	A	1	2D, 3D, TD
BEP-H038	Height of frame over first driven rear axle, laden	Distance from top edge of frame to ground measured at the first driven axle, laden conditions. NOTE Any sub-frame fitted is disregarded. The chassis is loaded up to "technical gross vehicle mass". For pneumatic suspension, the highest driving position is assumed. Additional tyre springing should be taken into account.	A	2	2D, 3D, TD
BEP-H039	Height of frame at theoretical rear wheel base, unladen	Distance from top edge of frame to ground measured at the theoretical wheelbase, unladen conditions. NOTE Any sub-frame fitted is disregarded. Loading corresponds to unladen mass. For pneumatic suspension, the highest driving position is assumed.	A	1	2D, 3D, TD
BEP-H040	Height of frame at theoretical rear wheel base, laden	Distance from top edge of frame to ground measured at the theoretical wheel base, laden conditions. NOTE Any sub-frame fitted is disregarded. The chassis is loaded up to "technical gross vehicle mass". For pneumatic suspension, the highest driving position is assumed. Additional tyre springing should be taken into account.	A	2	2D, 3D, TD

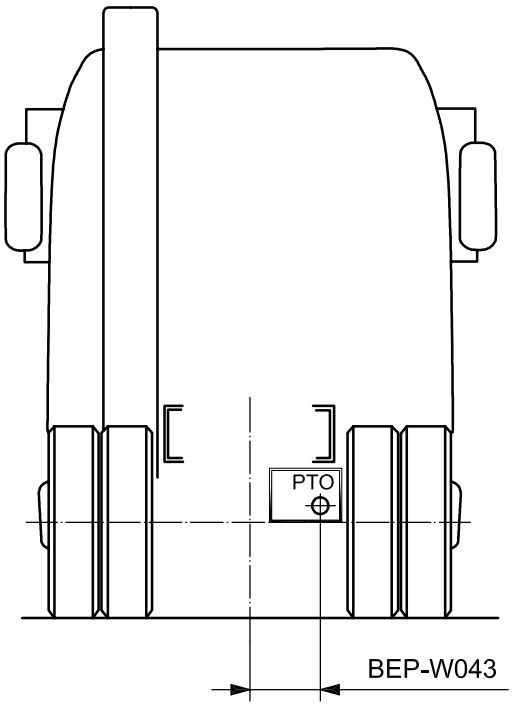


BEP-code	Assignment	Description	Priority	Loading	Presented in
BEP-H041.n	Wheel centre to top of frame	Height of wheel centre to top of chassis frame for the n-th axle. NOTE The chassis is loaded up to "technical gross vehicle mass". For pneumatic suspension, the highest driving position is assumed. Additional tyre springing from the nearest axle should be taken into account.	A	2	2D, 3D, TD
BEP-H042.n	Top of wheel to top of frame	Highest wheel position relative to top of chassis frame for the n-th axle, taking into account maximum bounce. NOTE 1 This code is used to specify the clearance needed in a worst case condition. NOTE 2 Positive values indicate above top of chassis, and negative values indicate below top of chassis. NOTE 3 If different for right and left side, then mark with .R or .L.	A	-	2D, 3D, TD

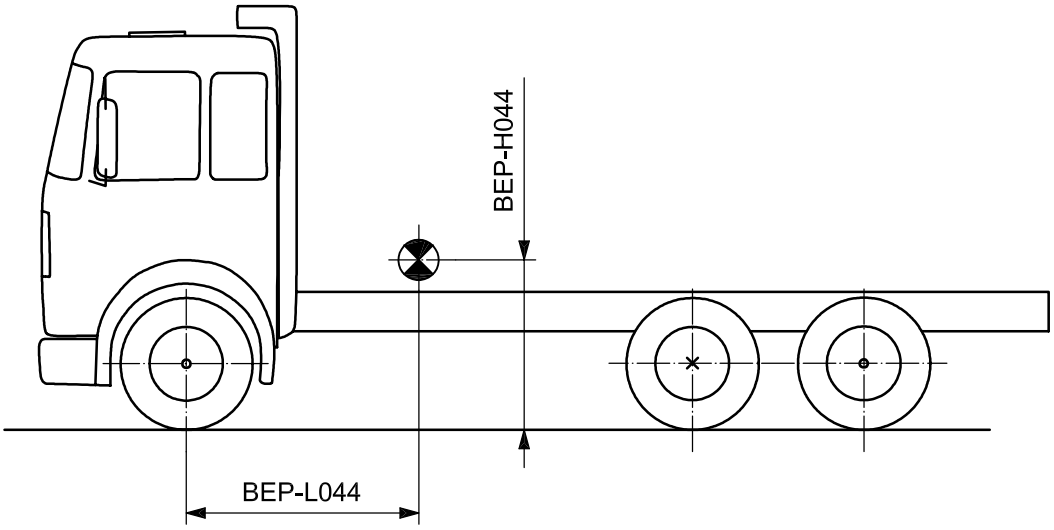


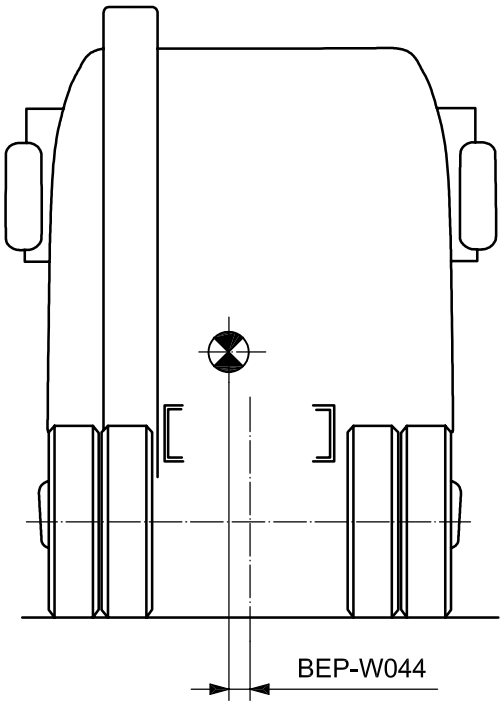
BEP-code	Assignment	Description	Priority	Loading	Presented in
BEP-L043.n	PTO longitudinal position	Distance between the centre of the first front axle and the reference point of the n-th Power Take-Off. NOTE The reference point is dependent on the PTO type.	A	-	2D, 3D, TD
BEP-H043.n	PTO vertical position	Distance between the top of the chassis frame and the reference point of the n-th Power Take-Off. NOTE 1 The reference point is dependent on the PTO type. NOTE 2 Positive values indicate above top of chassis, and negative values indicate below top of chassis.	A	-	2D, 3D, TD
BEP-W043.n	PTO lateral position	Distance between the centreline of chassis frame and the reference point of the n-th Power Take-Off. NOTE 1 The reference point is dependent on the PTO type. NOTE 2 Add .R or .L (if applicable) to specify the mounting side, related to the centreline of the chassis.	A	-	2D, 3D, TD



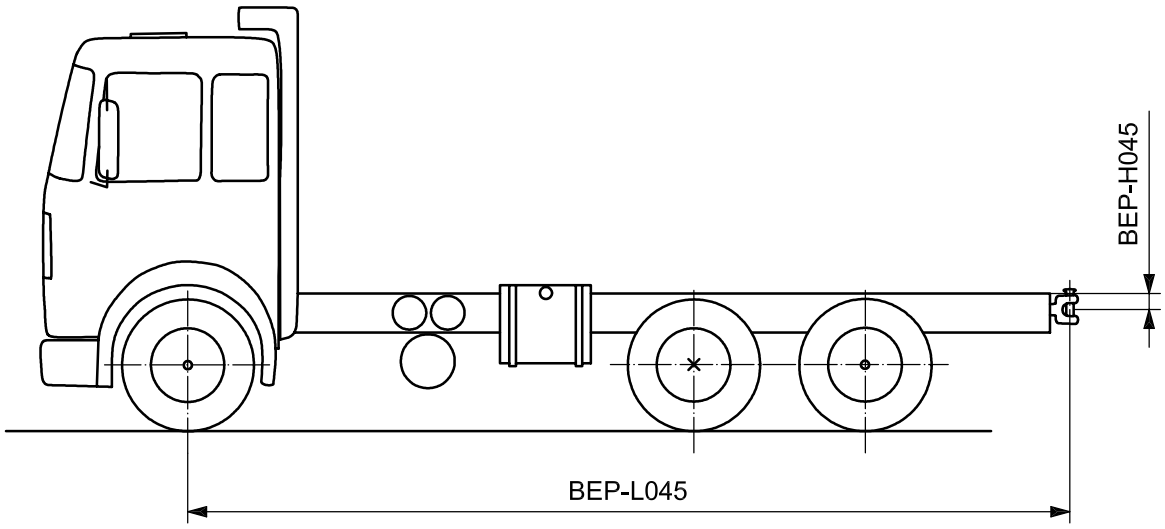


BEP-code	Assignment	Description	Priority	Loading	Presented in
BEP-L044	Centre of gravity of chassis, longitudinal	Theoretically calculated centre of gravity of chassis measured from the centre of the first front axle.	A	-	2D, 3D, TD
BEP-H044	Centre of gravity of chassis, vertical	Theoretically calculated centre of gravity of chassis, measured from the ground surface.	A	-	2D, 3D, TD
BEP-W044	Centre of gravity of chassis, lateral	Theoretically calculated centre of gravity of chassis, measured from the centreline of the chassis.	A	-	2D, 3D, TD

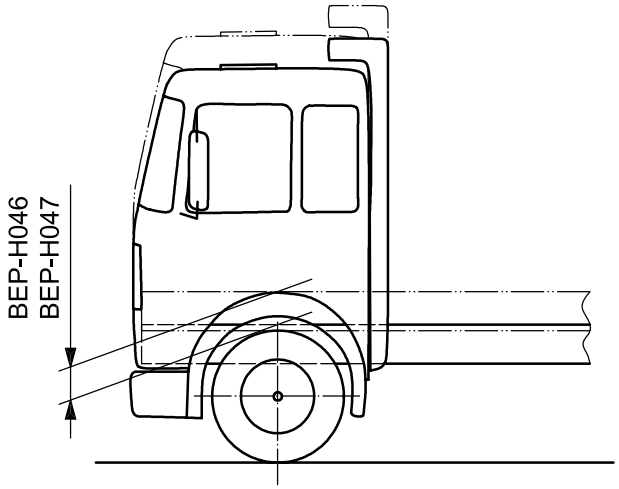


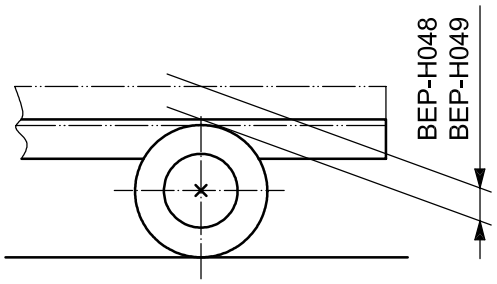


BEP-code	Assignment	Description	Priority	Loading	Presented in
BEP-L045.n	Length to coupling pin centre	Distance from the centre of the first front axle of vehicle to centre axis of the trailer coupling pin. NOTE In case of several couplings, the distances can be marked BEP-L045.1, BEP-L045.2.	A	-	2D, 3D, TD
BEP-H045.n	Height to coupling pin centre	Distance from top chassis frame to centre axis of the trailer coupling pin. NOTE In case of several couplings, the distances can be marked BEP-H045.1, BEP-H045.2.	A	-	2D, 3D, TD

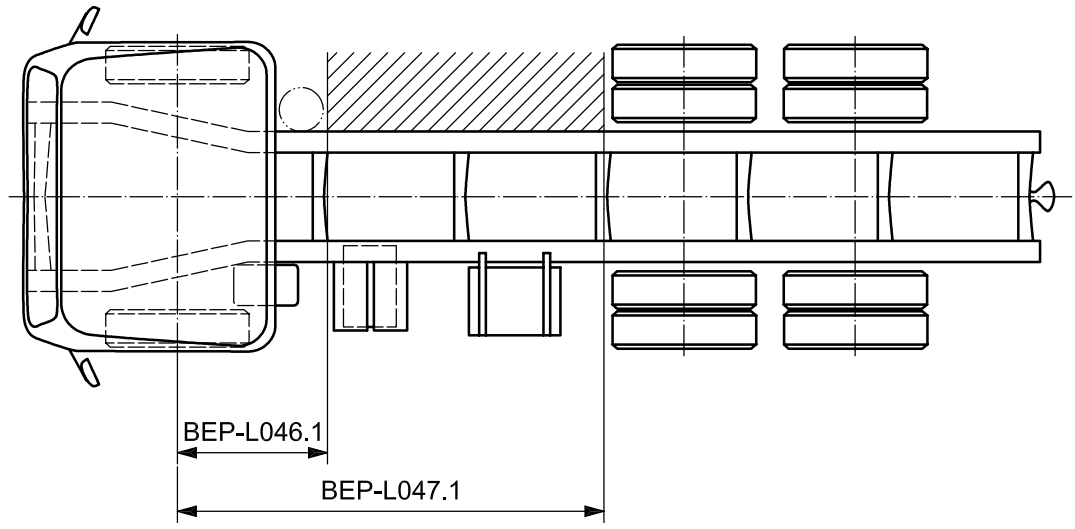


BEP-code	Assignment	Description	Priority	Loading	Presented in
BEP-H046	Raising from driving position, front	Height change between driving position and topmost raised position, measured at the first front axle centreline.	A	-	2D, 3D, TD
BEP-H047	Lowering from driving position, front	Height change between driving position and lowest lowered position, measured at the first front axle centreline.	A	-	2D, 3D, TD
BEP-H048	Raising from driving position, rear	Height change between driving position and topmost raised position, measured at the first rear axle centreline.	A	-	2D, 3D, TD
BEP-H049	Lowering from driving position, rear	Height change between driving position and lowest lowered position, measured at the first rear axle centreline.	A	-	2D, 3D, TD

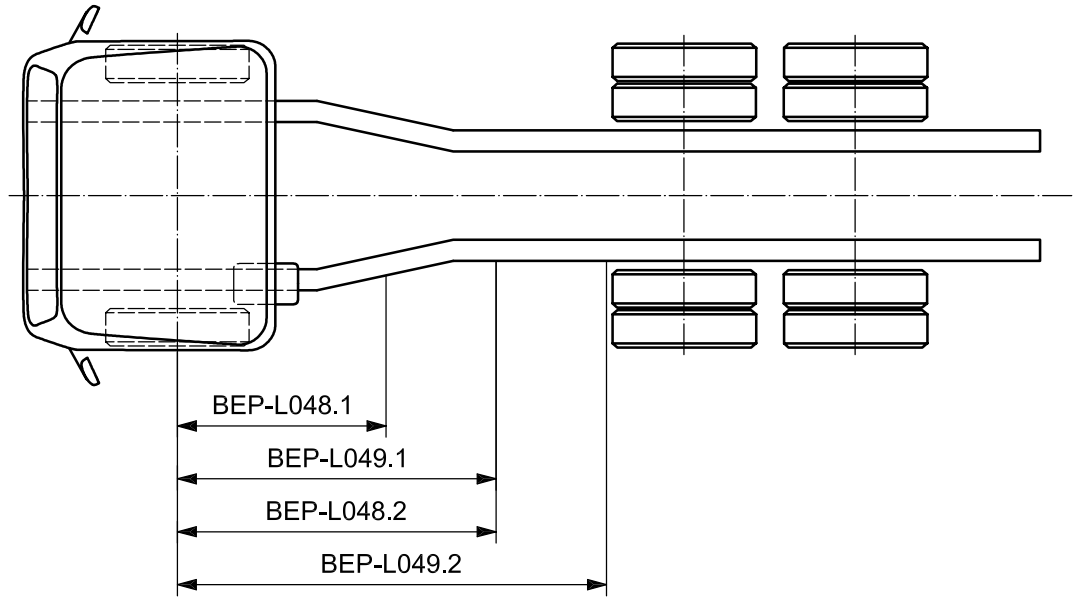




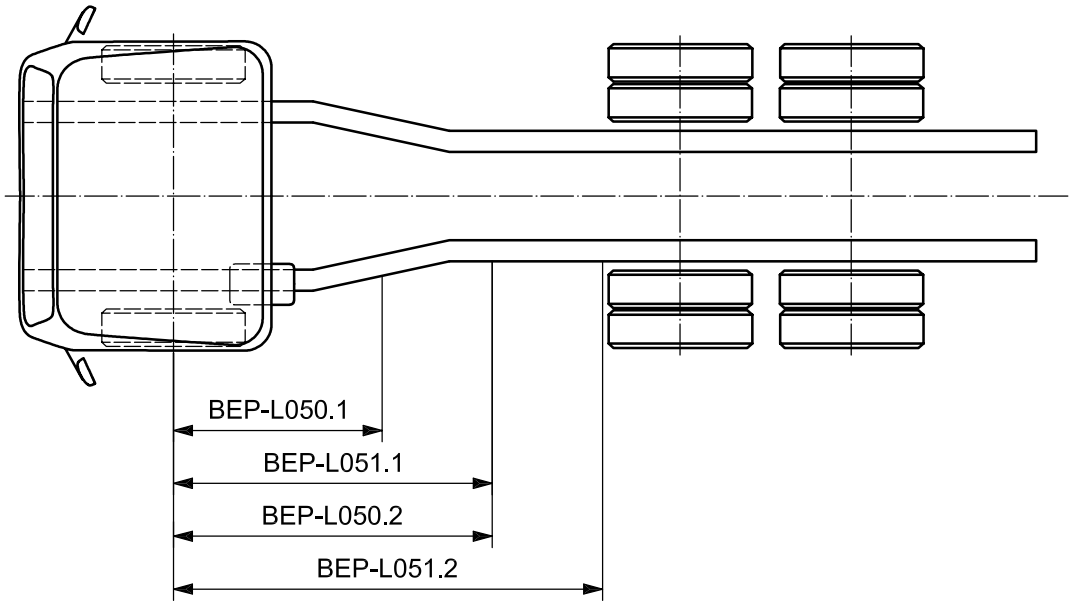
BEP-code	Assignment	Description	Priority	Loading	Presented in
BEP-L046.n	Start of available space zone, length	Start of a zone of at least 500 mm length available space on the outside of the chassis frame for use by the bodywork manufacturer, measured from the centre of the first front axle.	A	-	2D, 3D, TD
BEP-L047.n	End of available space zone, length	End of a zone of at least 500 mm length available space on the outside of the chassis frame for use by the bodywork manufacturer, measured from the centre of the first front axle.	A	-	2D, 3D, TD



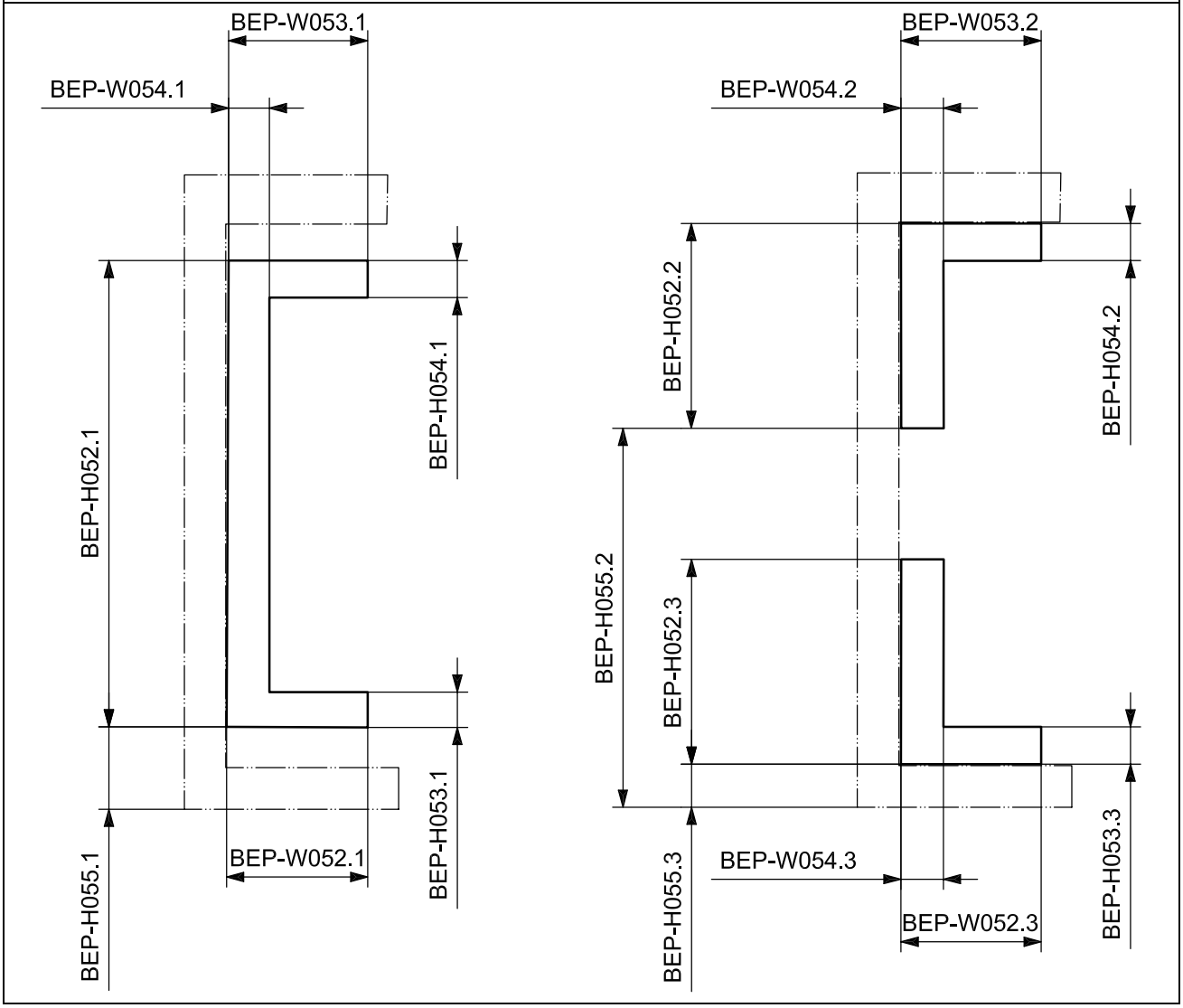
BEP-L048.n	Start of *n*-th frame side member profile	Start of the *n*-th frame side member profile, measured from the centre of the first front axle. NOTE See H032, etc., for coding of frame side member profile dimensions.	A	-	2D, 3D, TD
BEP-L049.n	End of *n*-th frame side member profile	End of the *n*-th frame side member profile, measured from the centre of the first front axle. NOTE See H032, etc., for coding of frame side member profile dimensions.	A	-	2D, 3D, TD



BEP-code	Assignment	Description	Priority	Loading	Presented in
BEP-L050.n	Start of *n*-th frame re-inforcement profile	Start of the *n*-th frame re-inforcement profile, measured from the centre of the first front axle. NOTE See H052, etc., for coding of frame re-inforcements.	A	-	2D, 3D, TD
BEP-L051.n	End of *n*-th frame re-inforcement profile	End of the *n*-th frame re-inforcement profile, measured from the centre of the first front axle. NOTE See H052, etc., for coding of frame re-inforcements.	A	-	2D, 3D, TD

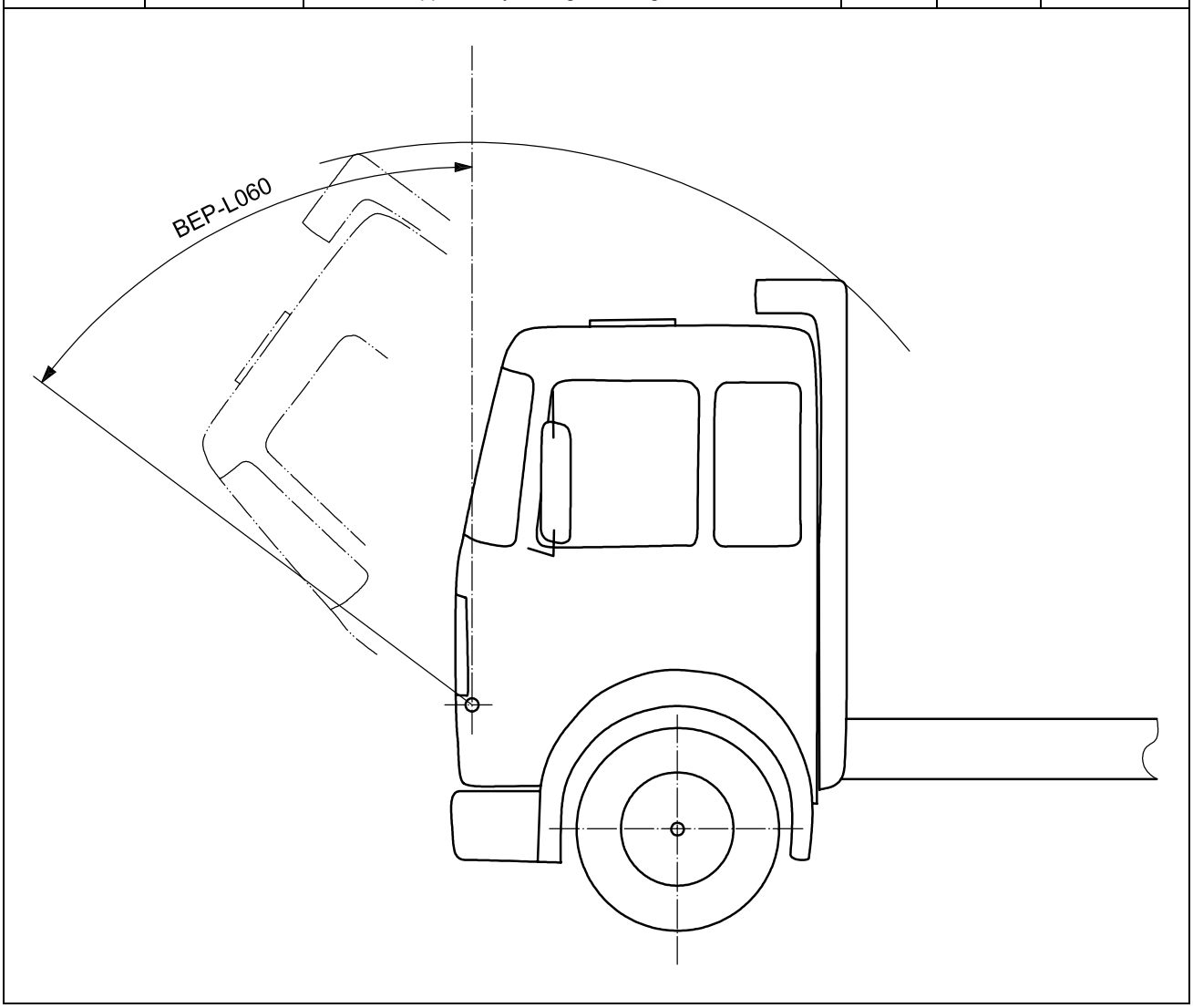


BEP-code	Assignment	Description	Priority	Loading	Presented in
BEP-H052.n	Frame re-inforcement profile height	Height of the *n*-th frame re-inforcement profile.	A	-	2D, 3D, TD
BEP-H053.n	Frame re-inforcement bottom thickness	Thickness of the *n*-th frame re-inforcement profile bottom.	A	-	2D, 3D, TD
BEP-H054.n	Frame re-inforcement top thickness	Thickness of the *n*-th frame re-inforcement profile top.	A	-	2D, 3D, TD
BEP-H055.n	Frame re-inforcement distance to frame bottom	Distance from the bottom of the *n*-th frame re-inforcement to frame bottom.	A	-	2D, 3D, TD
BEP-W052.n	Frame re-inforcement bottom width	Width of the *n*-th frame re-inforcement profile bottom.	A	-	2D, 3D, TD
BEP-W053.n	Frame re-inforcement top width	Width of the *n*-th frame re-inforcement profile top.	A	-	2D, 3D, TD
BEP-W054.n	Frame re-inforcement waist thickness	Thickness of the *n*-th frame re-inforcement profile waist.	A	-	2D, 3D, TD
NOTE For positioning of frame profile re-inforcements, see BEP-L050 and related codes.					

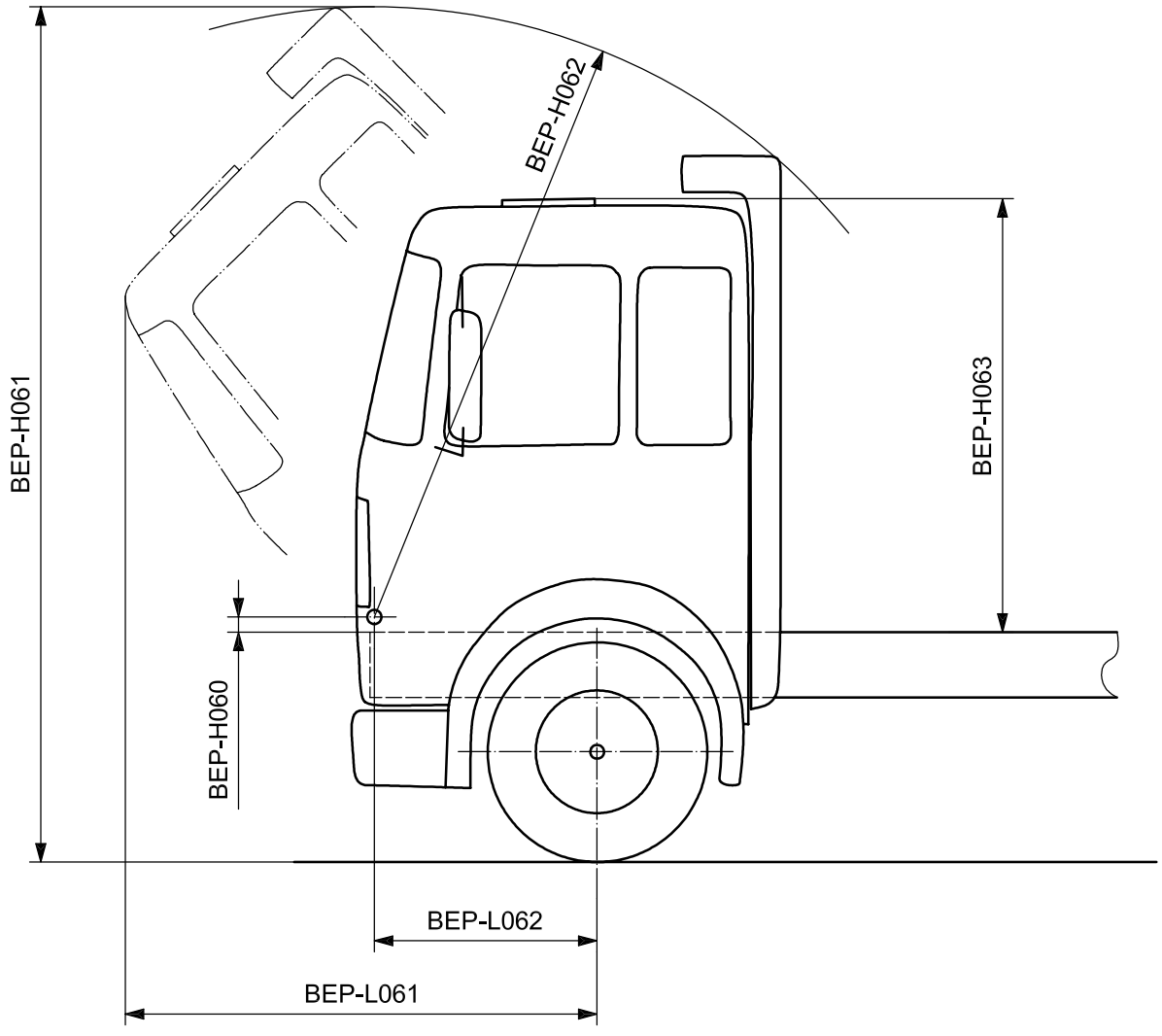


6.3 Cab related dimensions

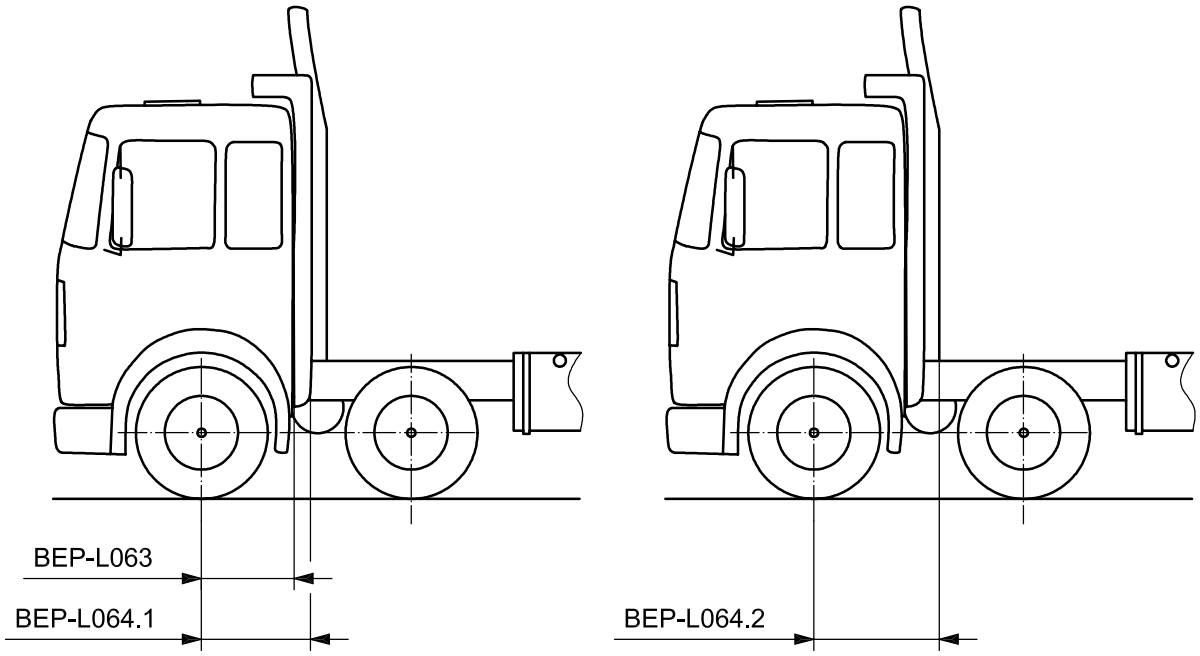
BEP-code	Assignment	Description	Priority	Loading	Presented in
BEP-L060	Cab tilt angle	Maximum tilt angle from driving position. NOTE Applies only to hinged driving cab.	A	-	2D, 3D, TD



BEP-code	Assignment	Description	Priority	Loading	Presented in
BEP-L061	Front axle to cab tilt into servicing position	Distance from the centre of the front axle to an x-plane touching the foremost point of the cab in the servicing maximum tilt position.	B	-	2D, 3D, TD
BEP-L062	Driving cab hinge point, longitudinal	Distance measured from centre of the first front axle to hinge point.	A	-	2D, 3D, TD
BEP-H060	Driving cab hinge point, vertical	Distance measured from upper edge of frame to hinge point. NOTE Positive values indicate above top of chassis, and negative values indicate below top of chassis.	A	-	2D, 3D, TD
BEP-H061	Maximum overall height, tilt cab servicing	Vertical distance between the ground and the topmost point of the cab during tilting. NOTE The roof hatch, if present, should be closed. For pneumatic suspension, the driving position is assumed.	B	1	2D, 3D, TD
BEP-H062	Cab tilt radius	Radius described by the outer cab contour during the tilting process. The dimension relates to the measured cab hinge point.	A	-	2D, 3D, TD
BEP-H063	Cab height from frame	Distance from top of frame to top of cab roof.	A	-	2D, 3D, TD



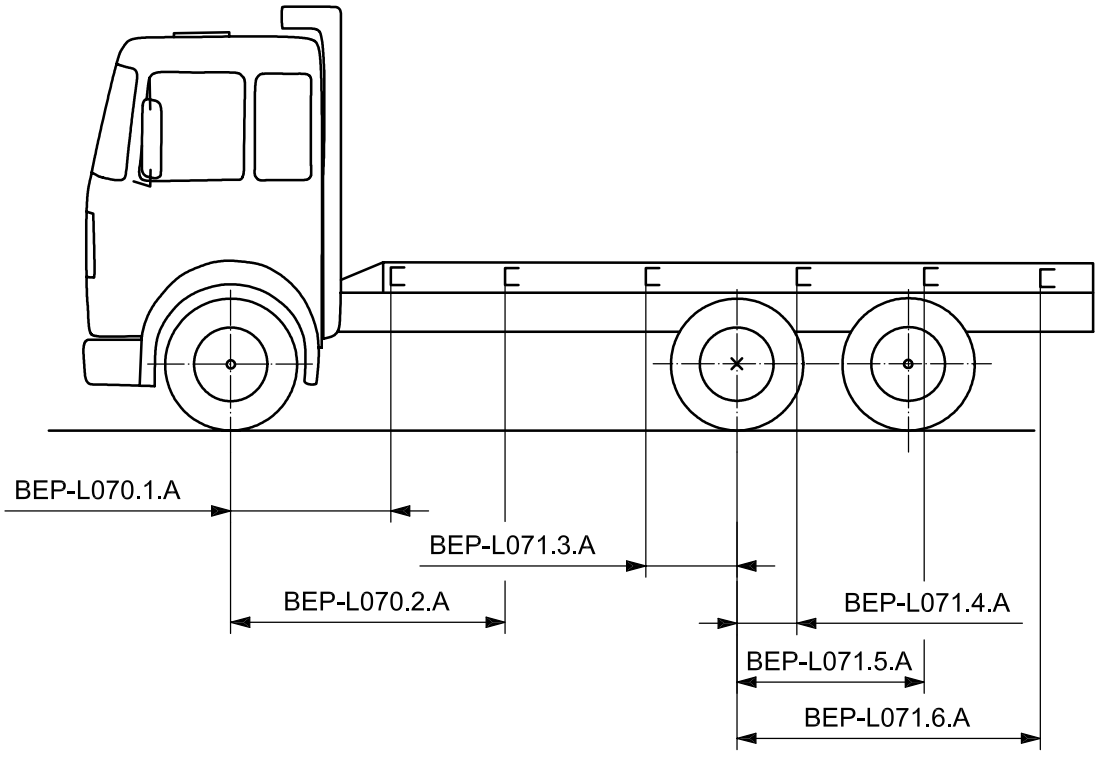
BEP-code	Assignment	Description	Priority	Loading	Presented in
BEP-L063	End of cab	Distance between the centre of the first front axle and the rear end of the cab.	A	-	2D, 3D, TD
BEP-L064.n	End of cab-mounted object	Distance between the centre of the first front axle and the rearmost end of the n-th object mounted on the cab. NOTE If the values for right and left side member differ, then mark with .R or .L. EXAMPLE Lights, deflectors, air intake.	A	-	2D, 3D, TD



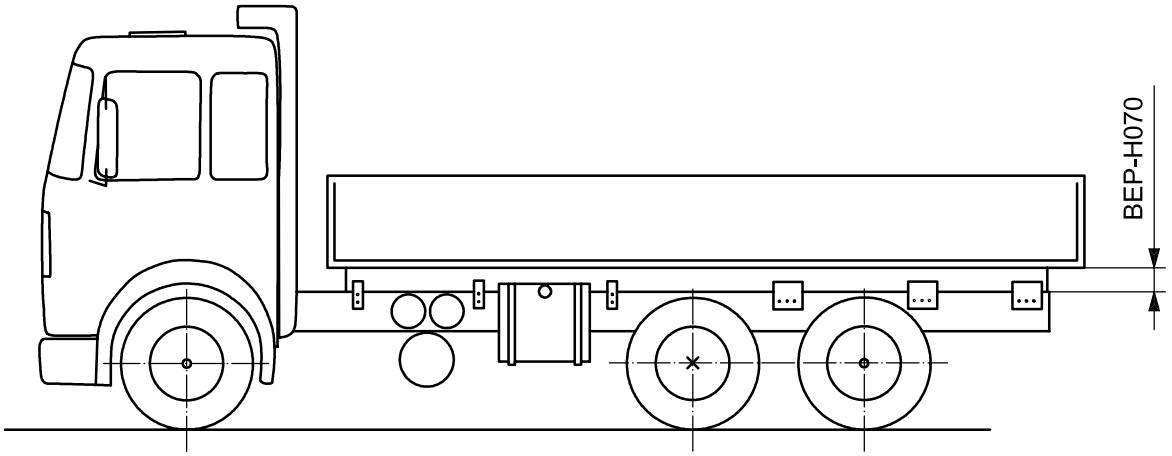
7 Bodywork related dimensions

7.1 Sub-frame related dimensions

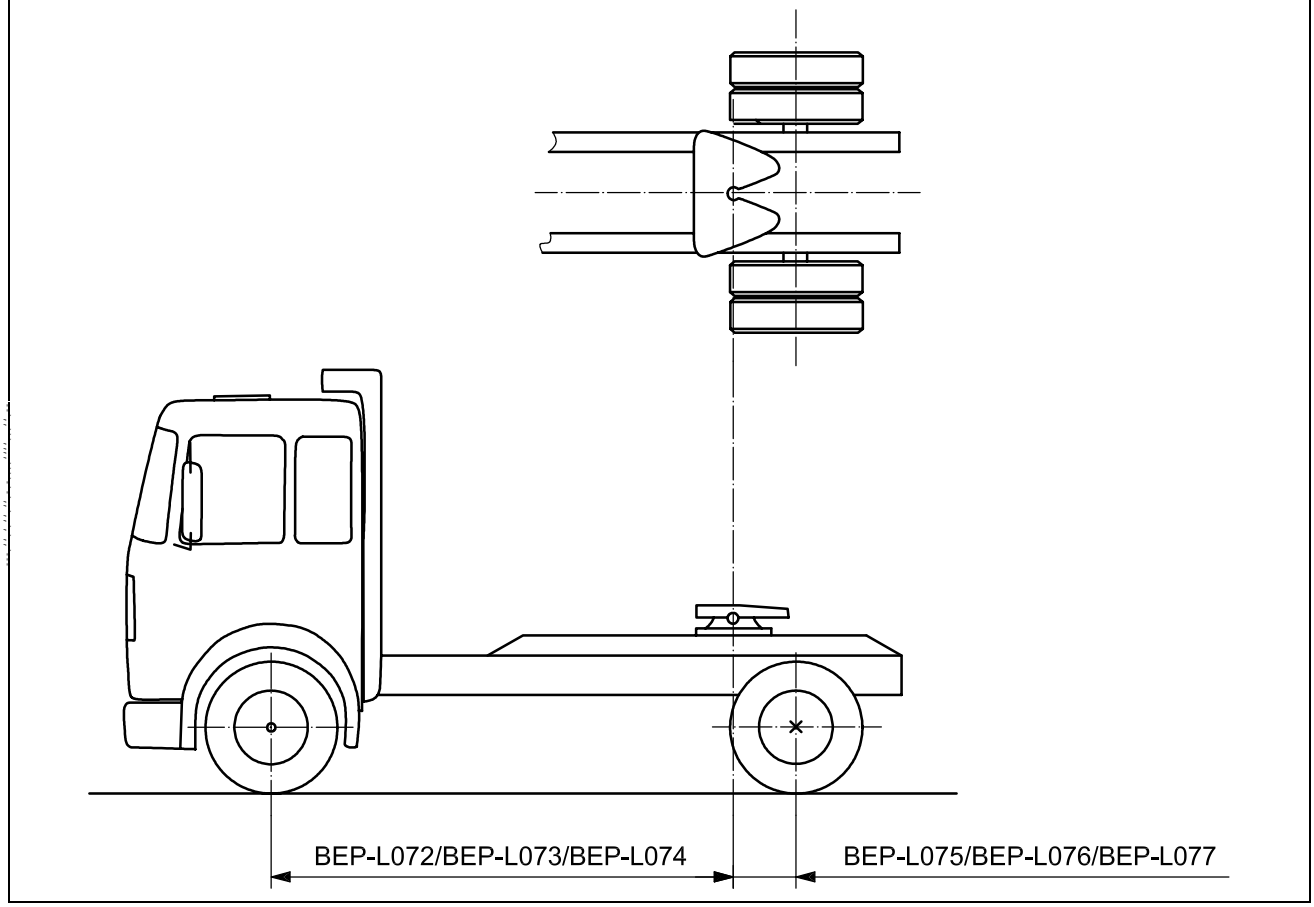
BEP-code	Assignment	Description	Priority	Loading	Presented in
BEP-L070.n.t	Distance to the n-th cross-member in sub-frame, front	Distance from the centre of the first front axle to the n-th cross-member front edge in sub-frame. NOTE 1 Each cross-member is identified by a number (n). NOTE 2 A negative value indicates that the cross-member is in front of the axle. A positive value indicates that it is behind the axle. NOTE 3 The cross-members are defined in different types (t), specified with e.g. A, B, C, etc. Each definition of type includes the description of the exact position and profile of each cross-member, shown in generic document. EXAMPLE BEP-L070.2.A means second cross-member, type A.	B	-	2D, 3D, TD
BEP-L071.n.t	Distance to the n-th cross-member in sub-frame, rear	Distance from the centre of the first driven rear axle to the n-th cross member front edge in sub-frame. NOTE 1 Each cross-member is identified by a number (n). NOTE 2 A negative value indicates that the cross-member is in front of the axle. A positive value indicates that it is behind the axle. NOTE 3 The cross-members are defined in different types (t), specified with e.g. A, B, C, etc. Each definition of type includes the description of the exact position and profile of each cross-member, shown in generic document. EXAMPLE BEP-L071.5.A means fifth cross-member behind the rear axle, type A.	B	-	2D, 3D, TD



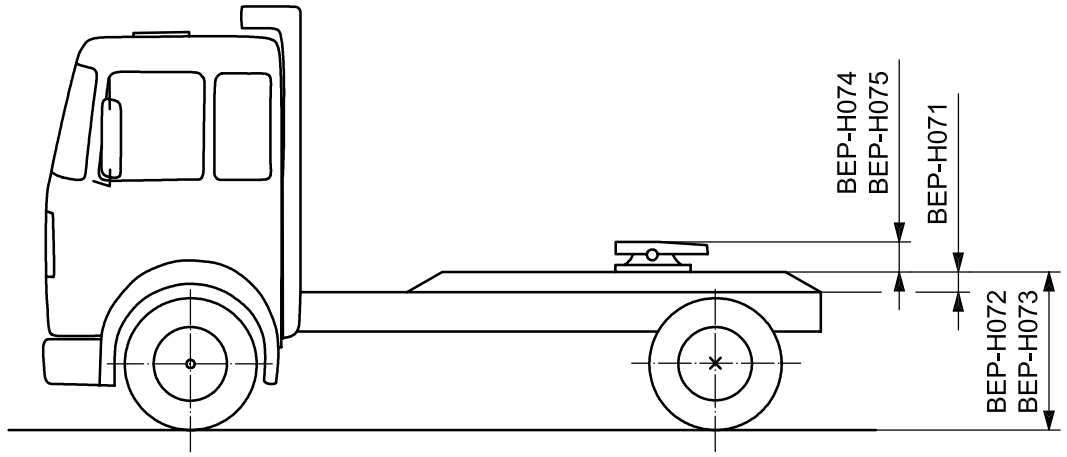
BEP-code	Assignment	Description	Priority	Loading	Presented in
BEP-H070	Sub-frame height	Height of sub-frame profile.	A	-	2D, 3D, TD



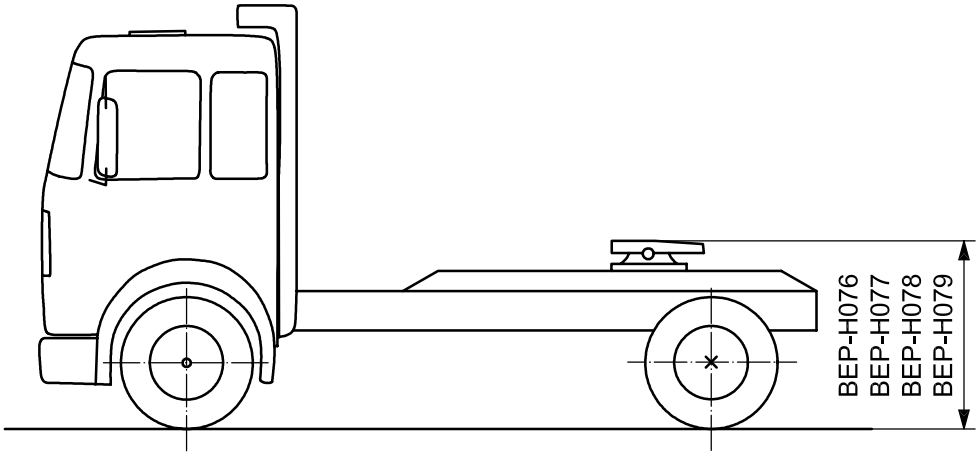
BEP-code	Assignment	Description	Priority	Loading	Presented in
BEP-L072	Distance to fifth-wheel kingpin from front axle, foremost	Distance from centre of the first front axle of vehicle to centre of fifth-wheel kingpin coupling, foremost position.	A	-	2D, 3D, TD
BEP-L073	Distance to fifth-wheel kingpin from front axle, nominal	Distance from centre of the first front axle of vehicle to centre of fifth-wheel kingpin coupling, nominal position.	A	-	2D, 3D, TD
BEP-L074	Distance to fifth-wheel kingpin from front axle, rearmost	Distance from centre of the first front axle of vehicle to centre of fifth-wheel kingpin coupling, rearmost position.	A	-	2D, 3D, TD
BEP-L075	Distance to fifth-wheel kingpin from rear axle, foremost	Distance from centre of the first driven rear axle of vehicle to centre of fifth-wheel kingpin coupling, foremost position.	A	-	2D, 3D, TD
BEP-L076	Distance to fifth-wheel kingpin from rear axle, nominal	Distance from centre of the first driven rear axle of vehicle to centre of fifth-wheel kingpin coupling, nominal position.	A	-	2D, 3D, TD
BEP-L077	Distance to fifth-wheel kingpin from rear axle, rearmost	Distance from centre of the first driven rear axle of vehicle to centre of fifth-wheel kingpin coupling, rearmost position.	A	-	2D, 3D, TD



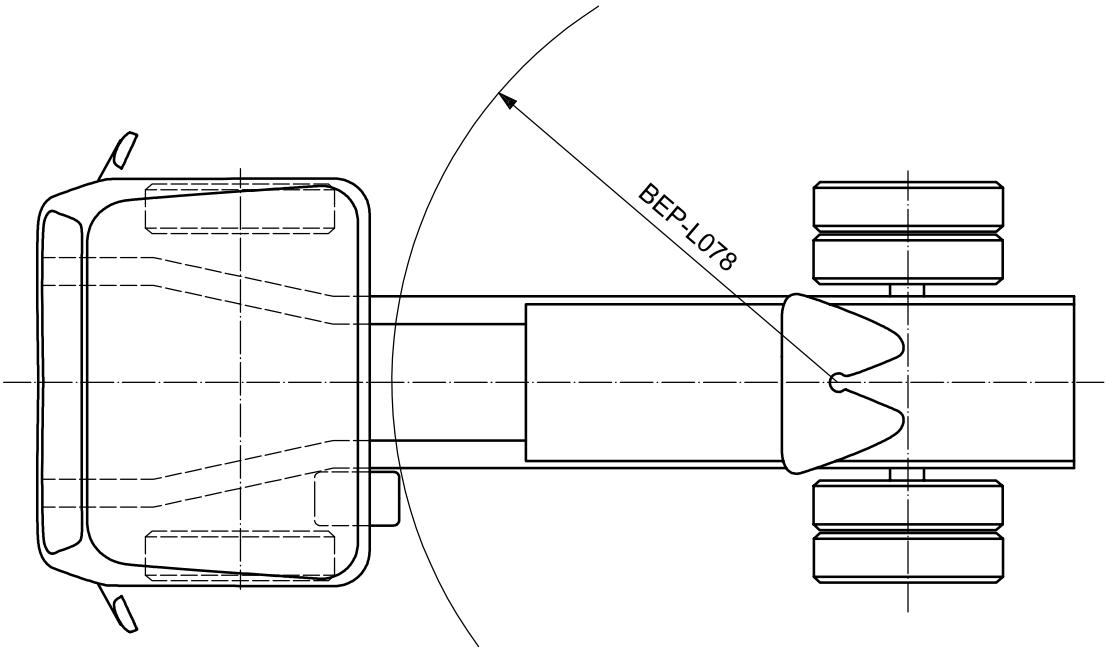
BEP-code	Assignment	Description	Priority	Loading	Presented in
BEP-H071	Fifth wheel sub-frame	Height of fifth wheel sub-frame measured from top edge of frame to top edge of sub-frame.	A	-	2D, 3D, TD
BEP-H072	Fifth wheel sub-frame top height without coupling, unladen	Height from ground to top edge of fifth-wheel coupling sub-frame with the vehicle unladen.	A	1	2D, 3D, TD
BEP-H073	Fifth wheel sub-frame top height without coupling, laden	Height from ground to top edge of fifth wheel coupling sub-frame with the vehicle laden.	A	2	2D, 3D, TD
BEP-H074	Height of fifth-wheel coupling, uppermost position	Height of fifth-wheel coupling above sub-frame, uppermost position.	A	-	2D, 3D, TD
BEP-H075	Height of fifth-wheel coupling, lowest position	Height of fifth-wheel coupling above sub-frame, lowest position.	A	-	2D, 3D, TD



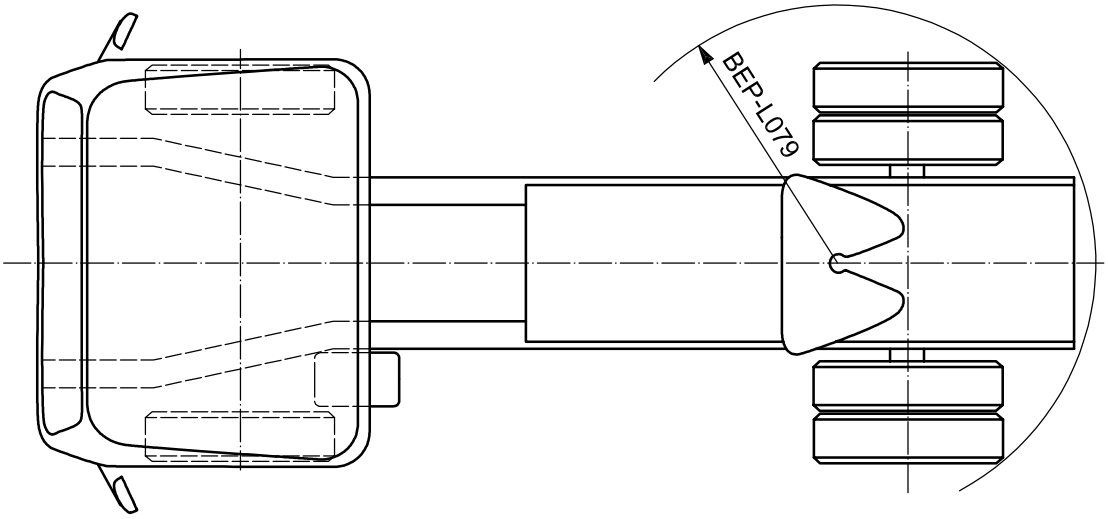
BEP-code	Assignment	Description	Priority	Loading	Presented in
BEP-H076	Fifth-wheel coupling above ground, unladen, uppermost position	Distance from top edge of fifth wheel coupling, in uppermost position, to ground in unladen condition.	B	1	TD
BEP-H077	Fifth-wheel coupling above ground, unladen, lowest position	Distance from top edge of fifth wheel coupling, in lowest position, to ground in unladen condition.	B	1	TD
BEP-H078	Fifth-wheel coupling above ground, laden, uppermost position	Distance from top edge of fifth wheel coupling, in uppermost position, to ground in laden condition.	B	2	TD
BEP-H079	Fifth-wheel coupling above ground, laden, lowest position	Distance from top edge of fifth wheel coupling, in lowest position, to ground in laden condition.	B	2	TD



BEP-code	Assignment	Description	Priority	Loading	Presented in
BEP-L078	Fifth wheel coupling pin to cab	Distance between the centre of the fifth wheel coupling pin and the nearest object behind the cab. NOTE In case of adjustable position, the foremost position (BEP-L072) is used.	A	-	TD

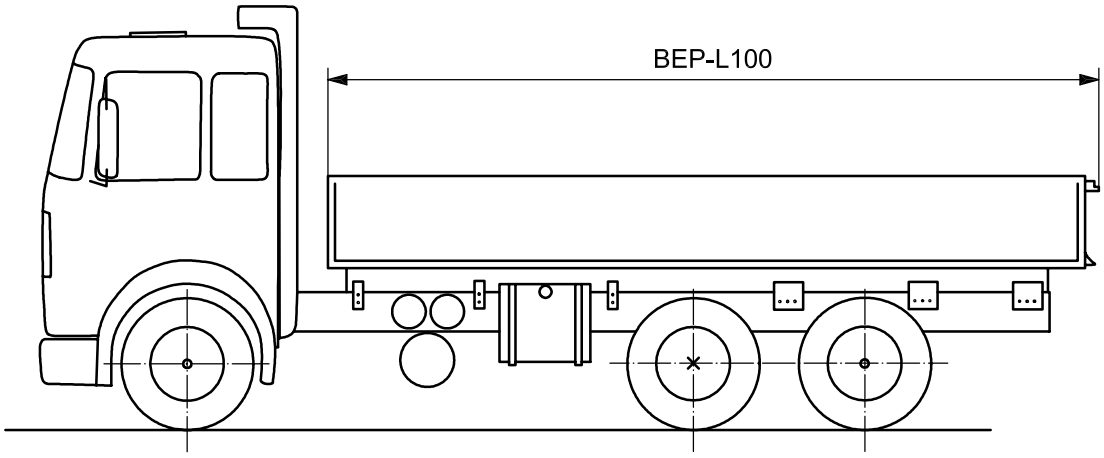


BEP-code	Assignment	Description	Priority	Loading	Presented in
BEP-L079	Fifth wheel coupling pin to the furthest obstacle on the towing vehicle	Distance between the centre of the fifth wheel coupling pin and the furthest obstacle at rear of the towing vehicle, taken as a radial dimension. NOTE 1 This is the necessary free space on a trailer. NOTE 2 In case of adjustable position, the foremost position (BEP-L072) is used.	A	-	TD

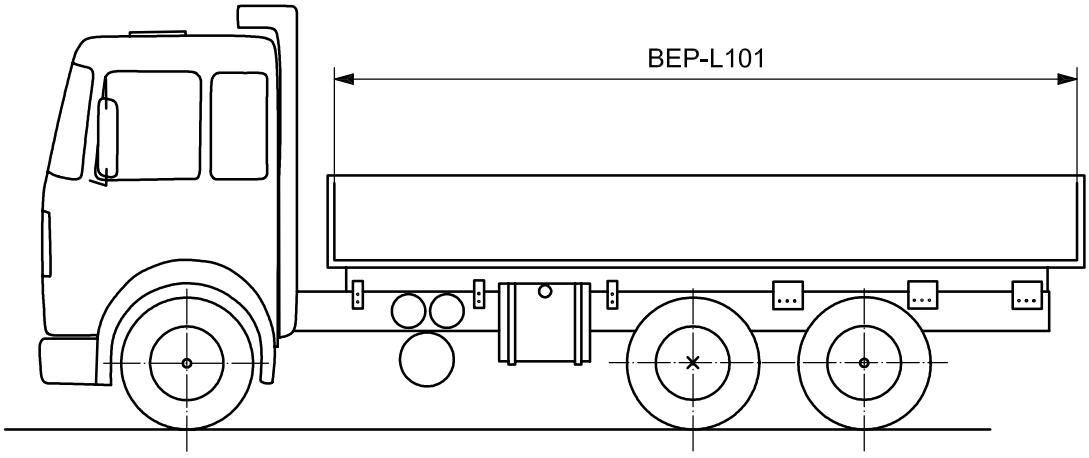


7.2 Bodywork dimensions

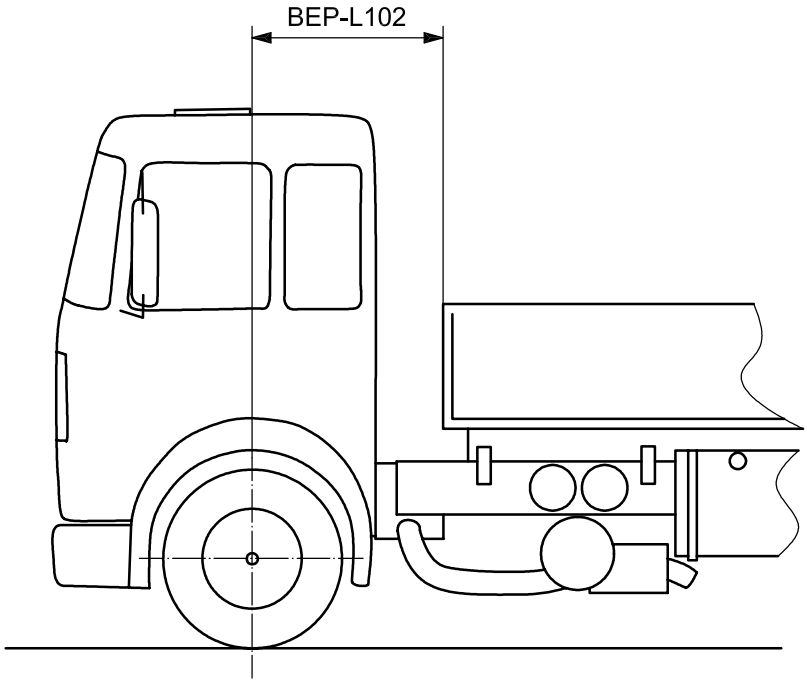
BEP-code	Assignment	Description	Priority	Loading	Presented in
BEP-L100	Length of bodywork	Distance between the front and rear outermost points of a bodywork.	A	-	2D, 3D, TD



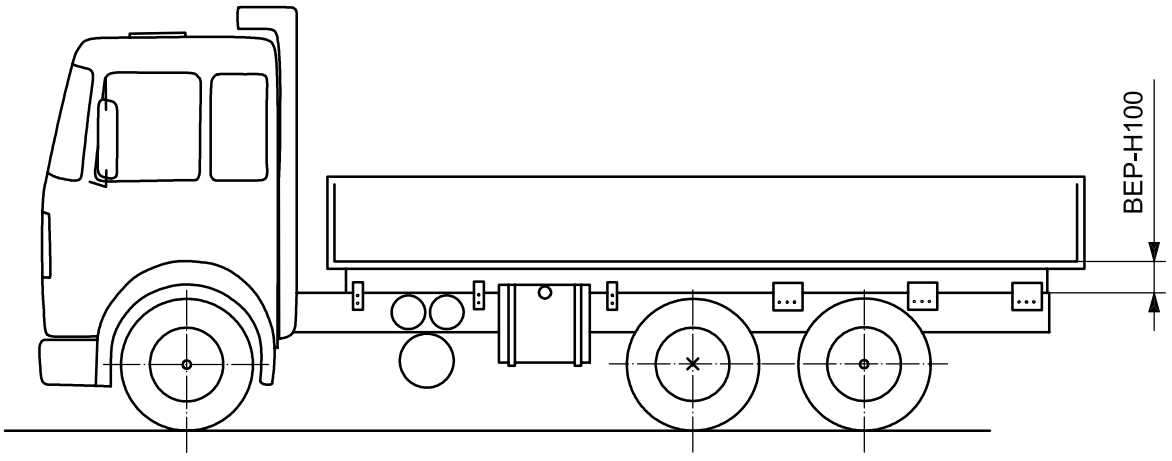
BEP-L101	Interior length of bodywork	Interior distance between the front and rear boards.	A	-	2D, 3D, TD

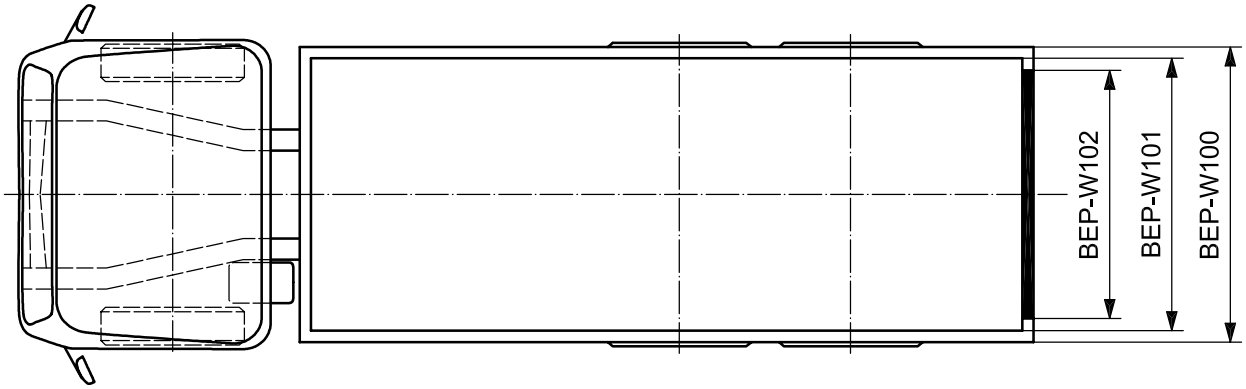
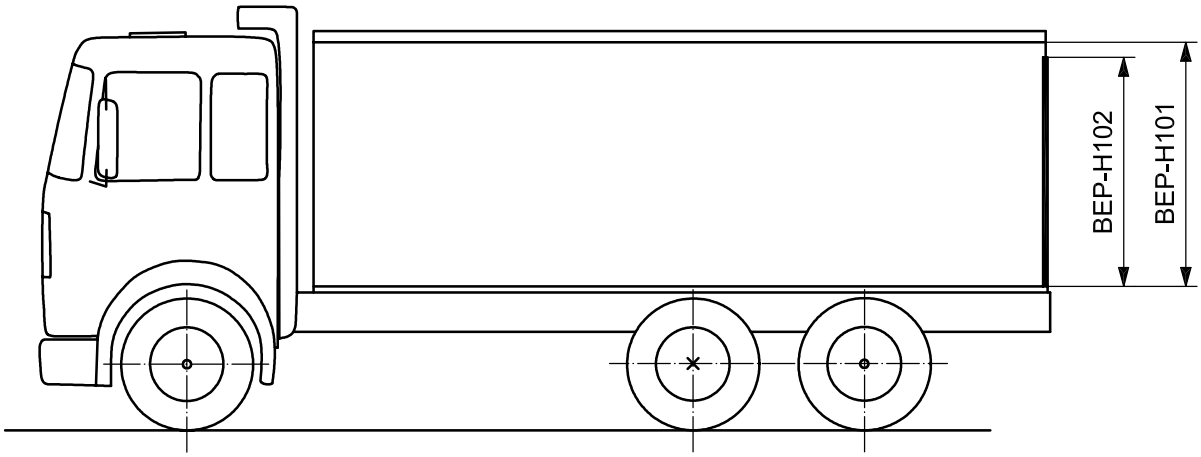


BEP-code	Assignment	Description	Priority	Loading	Presented in
BEP-L102	Distance from first front axle to bodywork	Minimum distance from the centre of the first front axle to the front edge of the bodywork. NOTE Longitudinal movements should be taken into account.	A	-	2D, 3D, TD

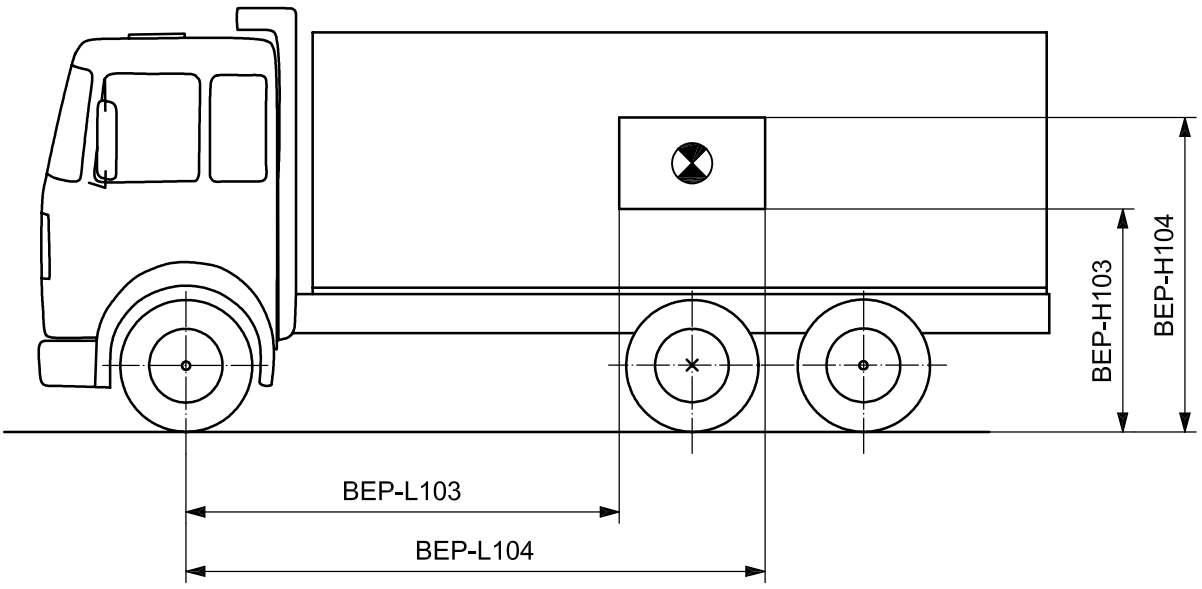


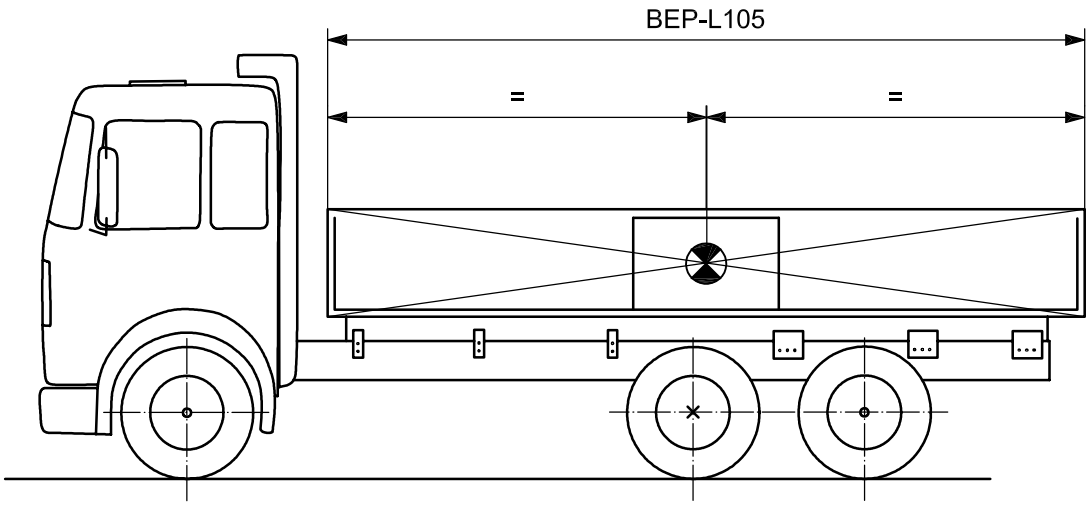
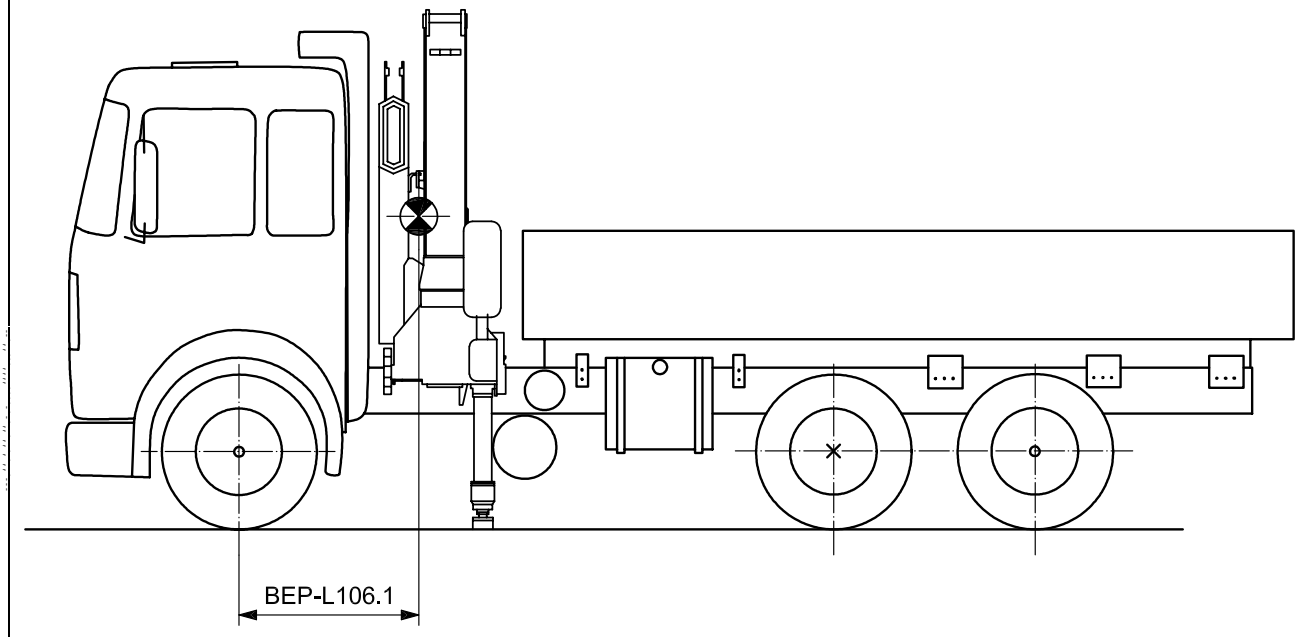
BEP-H100	Load deck height from top of chassis frame	Distance from top of chassis frame to body floor.	B	-	TD



BEP-code	Assignment	Description	Priority	Loading	Presented in
BEP-W100.n	Exterior width of bodywork	Distance between the left and right outermost points of bodywork. EXAMPLE Crane, tipper, box(es) in any combination.	A	-	2D, 3D, TD
BEP-W101	Interior width of bodywork	Interior distance between the left and right side boards.	B	-	TD
BEP-W102.n	Body access opening width	Interior width of the access opening to the body. NOTE 1 In case of several access openings, mark as BEP-W102.1, BEP-W102.2 etc. NOTE 2 Applies also to side and roof openings.	B	-	TD
					
BEP-H101	Interior height of bodywork	Interior distance between the floor and ceiling of the bodywork.	B	-	TD
BEP-H102.n	Body access opening height	Interior height of the access opening to the body. NOTE 1 In case of several access openings, mark as BEP-H102.1, BEP-H102.2, etc. NOTE 2 Applies also to side openings.	B	-	TD
					

BEP-code	Assignment	Description	Priority	Loading	Presented in
BEP-H103	Centre of gravity of body, lowest	Theoretically calculated lowest centre of gravity of body, measured from the ground surface. NOTE When calculating centre of gravity of body, technical gross vehicle mass and axle loads shall be taken into account.	B	2	TD
BEP-H104	Centre of gravity of body, topmost	Theoretically calculated topmost centre of gravity of body, measured from the ground surface. NOTE When calculating centre of gravity of body, technical gross vehicle mass and axle loads shall be taken into account.	B	2	TD
BEP-L103	Centre of gravity of body, foremost position	Theoretically calculated foremost centre of gravity of body, measured from the centre of the first front axle. NOTE When calculating centre of gravity of body, technical gross vehicle mass and axle loads shall be taken into account.	B	2	TD
BEP-L104	Centre of gravity of body, rearmost position	Theoretically calculated rearmost centre of gravity of body, measured from the centre of the first front axle. NOTE When calculating centre of gravity of body, technical gross vehicle mass and axle loads shall be taken into account.	B	2	TD



BEP-code	Assignment	Description	Priority	Loading	Presented in
BEP-L105	Maximum body length referring to the centre of gravity, rearmost position	Maximum body length referring to the centre of gravity, in ideal circumstances, with an even load distribution.	B	-	TD
					
BEP-L106.n	Centre of gravity of bodywork objects	Distance between the centre of the first front axle and the centre of gravity of major bodywork components. EXAMPLE Cranes, tail lifts, tipping gear, cooling and heating systems, fifth wheel.	B	-	2D, 3D, TD
					

Annex A
(informative)

Corresponding codes

A.1 Comparison of BEP codes and other coding systems

A.1.1 Length codes

BEP Code	ISO 7656:1993 code	ISO 612:1978 code	Comments
BEP-L001	ISO-L103	ISO-6.1.1	
BEP-L012.n	ISO-L401	ISO-6.4.1	
BEP-L016	ISO-L405	ISO-6.6	
BEP-L017	ISO-L412	ISO-6.7	
BEP-L019	ISO-L418		
BEP-L060	ISO-L409		
BEP-L061	ISO-L408		*ISO-L408 considers the distance from the front bumper while BEP-L051 from the centre of the front axle.*
BEP-L072	ISO-L434	ISO-6.21.2	*1) ISO standards refer to the touching front end of the vehicle, while BEP codes refer to the centre of the front axle.* *2) ISO standards do not consider an adjustable position fifth wheel, while BEP codes do.*
BEP-L073	ISO-L434	ISO-6.21.2	
BEP-L074	ISO-L433	ISO-6.19.1	*ISO standards do not consider an adjustable position of the fifth wheel, while BEP codes do.*
BEP-L075	ISO-L433	ISO-6.19.1	
BEP-L078	ISO-L435		
BEP-L079	ISO-L422		
BEP-L100	ISO-L513		*ISO-L513 does not consider any closing devices and hardware. BEP-L080 includes these.*
BEP-L101	ISO-L517	ISO-6.15	*ISO-6.15 represents the three maximum internal dimensions of body and not just the length of bodywork.*
BEP-L102	ISO-L514		*1) ISO-L514 considers the distance from the foremost point of the vehicle body while BEP-L082 considers the distance from the centre of the first front axle.* *2) ISO-L514 does not consider any closing devices and hardware. In BEP-L082 this is not specified.*

A.1.2 Height codes

According to ISO 7656:1993, the letter "A" represents the maximum authorized total mass and the letter "K" means complete vehicle kerb mass.

BEP Code	ISO 7656:1993 code	ISO 612:1978 code	Comments
BEP-H001	ISO-H100 K		
BEP-H002	ISO-H113 A		
BEP-H003		ISO-6.3	
BEP-H010	ISO-H117 A	ISO-6.10	
BEP-H011	ISO-H118 A	ISO-6.11	
BEP-H012	ISO-H147 A	ISO-6.9	
BEP-H013	ISO-H157 A	ISO-6.8	*The ISO "ground clearance" definition is only one and is not divided into front/rear/between axles.*
BEP-H014	ISO-H157 A	ISO-6.8	
BEP-H015	ISO-H157 A	ISO-6.8	
BEP-H016	ISO-H157 A	ISO-6.8	
BEP-H035	ISO-H420 K	ISO-6.12	
BEP-H036	ISO-H419 A	ISO-6.12	
BEP-H037	ISO-H422 K	ISO-6.12	
BEP-H038	ISO-H421 A	ISO-6.12	
BEP-H045	ISO-H425 A ISO-H426 K	ISO 6.18.2	*BEP-H045 considers the distance from the top of chassis frame, while in ISO the distance is measured from the supporting plane.*
BEP-H061	ISO-H404 K		
BEP-H076	ISO-H424 K	ISO-6.20	*ISO does not consider a rising fifth wheel while BEP codes do.*
BEP-H077	ISO-H424 K	ISO-6.20	
BEP-H078	ISO-H423 A	ISO-6.20	
BEP-H079	ISO-H423 A	ISO-6.20	
BEP-H100	ISO-H502 K		*BEP-H080 refers to the distance from top of chassis frame, while ISO-H502 considers the distance from the supporting surface.*
BEP-H102.n	ISO-H511		

A.1.3 Width codes

BEP Code	ISO 7656:1993 code	ISO 612:1978 code	Comments
BEP-W001	ISO-W103	ISO-6.2	*BEP-W001 does not take into account the bodywork. ISO-6.2, instead does not include rear-view mirrors, lights, elastic mud flaps, tyre bulges in the road area and snow chains.*
BEP-W003	ISO-W403		*1) ISO-W403 does not include the deflected part of the tyre walls immediately above the point of contact with the ground, but does not specify whether axle hubs are included.* *2) BEP-W003 states that axle hubs are disregarded, but does not specify whether the deflected part of the tyre walls immediately above the ground is included.*
BEP-W011		ISO-6.31	*BEP-W011 considers only the external wheel, while ISO-6.31 also takes into account the inner wheel.*
BEP-W012		ISO-6.32	*BEP-W012 considers only the outer edge, while ISO-6.32 also takes into account the inner edge.*
BEP-W013.n	ISO-W401 ISO-W402	ISO-6.5	*Referring to the drawing, ISO-W401 is equivalent to BEP-W013.1, while ISO-W402 may be compared with BEP-W013.2.*
BEP-W015.n	ISO-W404 ISO-W405		*Referring to the drawing, ISO-W404 is equivalent to BEP-W015.1, while ISO-W405 may be compared with BEP-W015.2.*
BEP-W036	ISO-W406		
BEP-W100.n	ISO-W501		
BEP-W101	ISO-W502	ISO-6.15	*ISO-6.15 represents the three maximum internal dimensions of body and not just the width of bodywork.*
BEP-W102.n	ISO-W504 (ISO-L508)		*ISO-L508 is the side cargo door opening width.*

Annex B
(informative)

Useful tools and related electronic documents

Supplementary information, updates and support tools of this standard will be posted on the ISO Standards Maintenance web site as they become available.

Bibliography

[1] ISO 2416:1992, *Passenger cars — Mass distribution*

[2] ISO 3832:2002, *Passenger cars — Luggage compartments — Method of measuring reference volume*

[3] ISO 4131:1979, *Road vehicles — Dimensional codes for passenger cars*

[4] ISO 7237:1993, *Caravans — Masses and dimensions — Vocabulary*

[5] ISO 7237:1993/Amd 1:2001, *Caravans — Masses and dimensions — Vocabulary — Amendment 1*

[6] Swedish Standard SS 3642, *Road vehicles — Interface between truck chassis and superstructure*

[7] Directive 97/27/EEC

[8] Directive 96/53/EEC

[9] Directive 70/156/EEC

Index

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