Claims

1. An overhead conveying device (01, 30) for integration into an assembly plant for transporting vehicle components (31) by means of a conveying device (33) that is arranged on the overhead conveying device (01, 30), comprising a supporting framework (03, 38), said supporting framework (03, 38) having a length of more than 5 m and a width of more than 2 m, and the conveying device (33) being mountable on the supporting framework (03, 38), and the supporting framework (03, 38) and the conveying device (33) forming a conveying corridor (32) in which the vehicle components (31) can be transported from an input point to an output point, and the supporting framework (03, 38) being mounted on the floor (47) of the assembly plant by bearing means, and the bearing means forming, between the underside of the supporting framework (03, 38) and the surface of the floor (47), a free space that is suitable for component assembly and/or for component transport and that is accessible on foot and/or on wheels,

characterized in that

at least one bearing means is designed in the manner of a column gantry (39, 48), said column gantry (39, 48) comprising at least two support columns (21, 40, 41) whose lower ends are attached to the floor (47) of the assembly plant, and at least one transverse bridge (08, 42) being mounted between two support columns (21, 40, 41) in each case, and the supporting framework (03, 38) being arranged on the upper side of the transverse bridge (08, 42).

2. The overhead conveying device according to claim 1, characterized in that a separating plane extends between the column gantries (39, 48) and the supporting framework (03, 38), fixing means, by means of which the supporting framework (03, 38) can be fixed to the column gantries (39, 48), crossing the separating plane.

3. The overhead conveying device according to claim 2, characterized in that at least one transverse bridge (42) of the column gantries is wider than the supporting framework (38), the supporting framework (38) being positionable relative to the transverse bridge (42) by displacement in the separating plane.

4. The overhead conveying device according to any of the claims 1 to 3, characterized in that the support columns (21, 40, 41) and/or the transverse bridge (08, 42) of the column gantry (39, 48) are produced from tubular material having a closed tubular cross-section.

5. The overhead conveying device according to claim 4, characterized in that the upper ends of the support columns (40, 41) and/or the lateral ends of the transverse bridge (42) are miter-cut, the surfaces of the end cross-sections of the support columns (40, 41) coming into flush contact with the surfaces of the end cross-sections of the transverse bridge (42).

6. The overhead conveying device according to claim 4 or 5, characterized in that the upper ends of the support columns (40, 41) and the lateral ends of the transverse bridge (42) are welded to each other in a welded seam (45).

7. The overhead conveying device according to any of the claims 1 to 6, characterized in that the support columns (40, 41) are designed in two parts, said two parts (40a, 40b, 41a, 41b) of the support column (40, 41) being connectable to each other in a connecting point (46).

8. The overhead conveying device according to any of the claims 1 to 7, characterized in that fastening straps (44) are provided on the upper side of the transverse bridge (42), the supporting framework (38) being connectable to the transverse bridge (42) at the fastening straps (44).

9. The overhead conveying device according to any of the claims 1 to 8, characterized in that the supporting framework (03, 38) is designed to be self-supporting and can be transported in preassembled form.

10. The overhead conveying device according to any of the claims 1 to 9, characterized in that the supporting framework (38) comprises at least two lateral parts (35, 36, 49, 50) that extend parallel to the longitudinal axis of the supporting framework and limit the cross-section of a conveying corridor (32) to the right and to the left.

11. The overhead conveying device according to claim 10,
characterized in that
the conveying device (33) is mountable between the two lateral parts (35, 36, 49, 50) of the supporting framework (03, 38) and limits the cross-section of the conveying corridor (32) from the top.

12. The overhead conveying device according to claim 10 or 11,
characterized in that
a maintenance walkway (12) is arranged on at least one lateral part (49, 50) along the longitudinal side of the conveying device (33).

13. The overhead conveying device according to any of the claims 10 to 12,
characterized in that
the supporting framework (03, 38) comprises at least one floor part (37, 51) that limits the cross-section of the conveying corridor (32) from below.

14. The overhead conveying device according to any of the claims 1 to 13,
characterized in that
the supporting framework (03, 38) is designed in the manner of a spatial truss that comprises longitudinally and transversely oriented and diagonal and upright interconnected supporting beam elements (04, 05, 06, 07).

15. The overhead conveying device according to claim 14,
characterized in that
the supporting beam elements (04, 05, 06, 07) have a closed tubular cross-section.

16.The overhead conveying device according to any of the claims 1 to 15,
characterized in that
the supporting framework (03, 38) is formed by a welded structure.

17.The overhead conveying device according to any of the claims 1 to 16,
characterized in that
in addition to at least one column gantry (39, 48), at least one free-standing support pillar and/or at least one wall bracket and/or at least one freely suspended traction element is provided on the overhead conveying device (01, 30) as another bearing means for bearing the supporting framework (03, 38).

The invention claimed is:

1. An overhead conveying device (**01**, **30**) for integration into an assembly plant for transporting vehicle components (**31**) by means of a conveying device (**33**) that is arranged on the overhead conveying device (**01**, **30**), comprising:

a supporting framework (**03**, **38**), said supporting framework (**03**, **38**) having a length of more than 5 m and a width of more than 2 m, and

the conveying device (**33**) being mountable on the supporting framework (**03**, **38**), and

the supporting framework (**03**, **38**) and the conveying device (**33**) forming a conveying corridor (**32**) in which the vehicle components (**31**) can be transported from an input point to an output point, and

the supporting framework (**03**, **38**) being mounted on the floor (**47**) of the assembly plant by bearing means, and

the bearing means forming, between the underside of the supporting framework (**03**, **38**) and the surface of the floor (**47**), a free space that is suitable for component assembly and/or for component transport and that is accessible on foot and/or on wheels,

characterized in that at least one bearing means is designed in the manner of a column gantry (**39**, **48**), said column gantry (**39**, **48**) comprising

at least two support columns (**21**, **40**, **41**) whose lower ends are attached to the floor (**47**) of the assembly plant, and

at least one transverse bridge (**08**, **42**) being mounted between two support columns (**21**, **40**, **41**) in each case, and the supporting framework (**03**, **38**) being arranged on the upper side of the transverse bridge (**08**, **42**).

2. The overhead conveying device according to claim **1**, characterized in that a separating plane extends between the column gantries (**39**, **48**) and the supporting framework (**03**, **38**), fixing means, by means of which the supporting framework (**03**, **38**) can be fixed to the column gantries (**39**, **48**), crossing the separating plane.

3. The overhead conveying device according to claim **2**, characterized in that at least one transverse bridge (**42**) of the column gantries is wider than the supporting framework (**38**), the supporting framework (**38**) being positionable relative to the transverse bridge (**42**) by displacement in the separating plane.

4. The overhead conveying device according to claim **1**, characterized in that the support columns (**21**, **40**, **41**) and/or the transverse bridge (**08**, **42**) of the column gantry (**39**, **48**) are produced from tubular material having a closed tubular cross-section.

5. The overhead conveying device according to claim **4**, characterized in that the upper ends of the support columns (**40**, **41**) and/or the lateral ends of the transverse bridge (**42**) are miter-cut, the surfaces of the end cross-sections of the support columns (**40**, **41**) coming into flush contact with the surfaces of the end cross-sections of the transverse bridge (**42**).

6. The overhead conveying device according to claim **4**, characterized in that the upper ends of the support columns (**40**, **41**) and the lateral ends of the transverse bridge (**42**) are welded to each other in a welded seam (**45**).

7. The overhead conveying device according to claim **1**, characterized in that the support columns (**40, 41**) are designed in two parts, said two parts (**40***a*, **40***b*, **41***a*, **41***b*) of the support column (**40, 41**) being connectable to each other in a connecting point (**46**).

8. The overhead conveying device according to claim **1**, characterized in that fastening straps (**44**) are provided on the upper side of the transverse bridge (**42**), the supporting framework (**38**) being connectable to the transverse bridge (**42**) at the fastening straps (**44**).

9. The overhead conveying device according to claim **1**, characterized in that the supporting framework (**03**, **38**) is designed to be self-supporting and can be transported in preassembled form.

10. The overhead conveying device according to claim **1**, characterized in that the supporting framework (**38**) comprises at least two lateral parts (**35**, **36**, **49**, **50**) that extend parallel to the longitudinal axis of the supporting framework and limit the cross-section of a conveying corridor (**32**) to the right and to the left.

11. The overhead conveying device according to claim **10**, characterized in that the conveying device (**33**) is mountable between the two lateral parts (**35**, **36**, **49**, **50**) of the supporting framework (**03**, **38**) and limits the cross-section of the conveying corridor (**32**) from the top.

12. The overhead conveying device according to claim **10**, characterized in that a maintenance walkway (**12**) is arranged on at least one lateral part (**49**, **50**) along the longitudinal side of the conveying device (**33**).

13. The overhead conveying device according to claim **10**, characterized in that the supporting framework (**03**, **38**) comprises at least one floor part (**37**, **51**) that limits the cross-section of the conveying corridor (**32**) from below.

14. The overhead conveying device according to claim **1**, characterized in that the supporting framework (**03**, **38**) is designed in the manner of a spatial truss that comprises longitudinally and transversely oriented and diagonal and upright interconnected supporting beam elements (**04**, **05**, **06**, **07**).

15. The overhead conveying device according to claim **14**, characterized in that the supporting beam elements (**04**, **05**, **06**, **07**) have a closed tubular cross-section.

16. The overhead conveying device according to claim **1**, characterized in that the supporting framework (**03**, **38**) is formed by a welded structure.

17. An overhead conveying device (**01**, **30**) for integration into an assembly plant for transporting vehicle components (**31**) by means of a conveying device (**33**) that is arranged on the overhead conveying device (**01**, **30**), comprising:

a supporting framework (**03**, **38**), said supporting framework (**03**, **38**) having a length of more than 5 m and a width of more than 2 m, and the conveying device (**33**) being mountable on the supporting framework (**03**, **38**), and the supporting framework (**03**, **38**) and

the conveying device (**33**) forming a conveying corridor (**32**) in which the vehicle components (**31**) can be transported from an input point to an output point, and

the supporting framework (**03**, **38**) being mounted on the floor (**47**) of the assembly plant by a bearing, and

the bearing forming, between the underside of the supporting framework (**03**, **38**) and the surface of the floor (**47**), a free space that is suitable for component assembly and/or for component transport and that is accessible on foot and/or on wheels,

characterized in that at least one bearing is designed in the manner of a column gantry (**39**, **48**), said column gantry (**39**, **48**) comprising

at least two support columns (**21**, **40**, **41**) whose lower ends are attached to the floor (**47**) of the assembly plant, and

at least one transverse bridge (**08**, **42**) being mounted between two support columns (**21**, **40**, **41**) in each case, and the supporting framework (**03**, **38**) being arranged on the upper side of the transverse bridge (**08**, **42**).