Embodiments~~It is the object~~ of the present invention seek to provide a chisel holder and a chisel holder system having a chisel holder and a base part, by means of which the loads occurring in the fastening shank can be reduced or transmitted optimally to a base part.

~~According to the invention, said object is achieved by means of a chisel holder, comprising a body region having a chisel receiving opening which is open at least toward a chisel insertion side of the body region and a fastening shank which extends from a supporting side of the body region and which has a shank longitudinal axis, wherein on the fastening shank there are provided, on a first side, a fastening element loading region and, on a second side situated opposite in relation to the shank longitudinal axis, a supporting region with supporting surface regions which are inclined relative to one another and adjoin one another in a transition region extending in the direction of the shank longitudinal axis.~~

~~It is also provided here that the transition region is formed in the manner of a depression, and/or that at least one supporting surface region is formed so as to protrude at least in regions radially outward in relation to the shank longitudinal axis beyond a main outer circumferential surface of the fastening shank.~~According to a first aspect of the present invention, there is provided a chisel holder, comprising: a body region having a chisel-receiving opening which is open at least toward a chisel insertion side of the body region, a fastening shank which extends from a supporting

side of the body region and which has a shank longitudinal axis and a main outer circumferential surface, wherein on the fastening shank there are provided, on a first side, a fastening element loading region and, on a second side situated opposite in relation to the shank longitudinal axis, a supporting region with supporting surface regions which are inclined relative to one another and adjoin one another in a transition region extending in the direction of the shank longitudinal axis, wherein the fastening shank is formed, in the region of its main outer circumferential surface, with a round outer circumferential contour, wherein the transition region is formed in the manner of a depression, and/or wherein at least one supporting surface region is formed so as to protrude at least in regions radially outward in relation to the shank longitudinal axis beyond the main outer circumferential surface of the fastening shank.

In a departure from the substantially planar embodiment of the first transition region between the two

supporting surface regions, such as is known from the prior art, it is the case ~~according to a first aspect~~ of the chisel holder according to the first aspect of the invention that a depression-like, that is to say inwardly recessed transition region is provided. It has been found that this may leads to an improved distribution of the loading or stresses in the fastening shank when a load is exerted on the fastening element loading region from the other side by a fastening element and when, during milling operation, from the body region adjoining the fastening shank, there is likewise introduced a load which is introduced into the fastening shank and transmitted via the supporting surface regions thereof to a base part.

According to ~~the aspect of~~ the chisel holder in embodiments of~~according to~~ the invention which is alternatively or else additionally to be provided, at least one supporting surface region protrudes outward at least in regions such that, here, a configuration of said supporting surface region can be realized which is substantially independent of the geometric configuration of the fastening shank itself. In this way, too, it is possible to realize an optimized adaptation to the occurring loads, while at the same time it is made considerably easier to machine the chisel holder in said region in order to provide the required precision of the supporting surface region.

The transition region may for example be provided at least in regions by a concave depression, that is to say a

thereof, and which subject said fastening shank to shear and torsion loading in the region adjoining the body region, as low as possible, it is proposed that a longitudinal central axis of the chisel-receiving opening and the shank longitudinal axis are inclined relative to one another at an angle of 6° to 24°, preferably approximately 12°. Said angle has proven to be particularly advantageous because it has been found that, during milling operation, the forces acting on a chisel are generally not oriented parallel to the longitudinal axis thereof and are consequently also not oriented in the direction of the longitudinal axis of the chisel-receiving opening, but rather are inclined slightly relative thereto. Said inclination can be allowed for by the angled configuration of the shank longitudinal axis relative to the longitudinal axis of the chisel-receiving opening.

According to a further embodiment~~advantageous aspect~~, it is possible for the fastening shank to comprise a fastening element loading region a fastening element loading surface, and for the shank longitudinal axis and a surface normal of the fastening element loading surface to be inclined relative to one another at an angle of 50° to 65°, preferably approximately 62.5°. As a result of said relatively shallow angled configuration of the surface normal of the fastening element loading surface relative to the shank longitudinal axis, it is achieved that a force exerted approximately also in the direction of said surface normal on the fastening

element loading surface via a fastening element is inclined as little as possible relative to the shank longitudinal axis, that is to say exerts a load on said shank to the greatest possible extent in the direction of the longitudinal axis thereof. It is also possible for transverse loads in the shank to be reduced, but nevertheless for such an orientation of a fastening element formed for example as a stud bolt to be ensured, by virtue of engagement with the fastening element being generated when the chisel holder is inserted into a base part.

According to a second~~further~~ aspect~~, the object mentioned in the introduction is achieved by means of~~ of the present invention, there is provided a chisel holder system with a chisel holder~~ constructed preferably~~ according to the first aspect of the invention and with a base part having a fastening shank receiving opening, which is open at least toward a counterpart supporting side, and a fastening element receiving opening, which is open toward the fastening shank receiving opening, wherein a fastening element which can be moved in order to exert load on the fastening element loading region is received in the fastening element receiving opening, wherein, in the fastening shank receiving opening, there is provided a counterpart supporting region with counterpart supporting surface regions which adjoin one another in a further transition region which extends in the direction of a fastening shank receiving opening longitudinal axis.

An optimization of the force transmission interaction

Claims

1. A chisel holder, comprising:

- a body region having a chisel-receiving opening which is open at least toward a chisel insertion side of the body region,

- a fastening shank which extends from a supporting side of the body region and which has a shank longitudinal axis and a main outer circumferential surface,

wherein on the fastening shank there are provided, on a first side, a fastening element loading region and, on a second side situated opposite in relation to the shank longitudinal axis, a supporting region with supporting surface regions which are inclined relative to one another and adjoin one another in a transition region extending in the direction of the shank longitudinal axis, wherein the fastening shank is formed, in the region of its main outer circumferential surface, with a round outer circumferential contour,

wherein the transition region is formed in the manner of a depression,

and/or

wherein at least one supporting surface region is formed so as to protrude at least in regions radially outward in relation to the shank longitudinal axis beyond the main outer circumferential surface of the fastening shank.

2. The chisel holder as claimed in claim 1,
wherein the transition region is provided at least in regions by a concave depression.

3. The chisel holder as claimed in claim 1 or 2,
wherein at least one supporting surface region , in the direction from its circumferential end region remote from the transition region toward its circumferential end region proximate to the transition region, approaches the radial level of the main outer circumferential surface.

4. The chisel holder as claimed in claim 1, 2 or 3,
wherein at least one supporting surface region , at its circumferential end region remote from the transition region, merges in a stepped and/or curved manner into the main outer circumferential surface, and/or wherein at least one supporting surface region , in its axial end region proximate to the body region and/or in its axial end region remote from the body region, merges in a stepped and/or curved manner into the main outer circumferential surface.

5. The chisel holder as claimed in one of claims 1 to 4,
wherein the supporting surface regions and/or the transition region are formed so as to be

substantially symmetrical in relation to a holder central plane.

6. The chisel holder as claimed in one of claims 1 to 5, wherein at least one supporting surface region is formed so as to be curved around the shank longitudinal axis.

7. The chisel holder as claimed in claim 6, wherein both supporting surface regions have the same radius of curvature and/or curvature central point.

8. The chisel holder as claimed in one of claims 1 to 7, wherein the fastening shank is formed, in the region of its main outer circumferential surface, with a circular, oval or elliptical outer circumferential contour.

9. The chisel holder as claimed in one of claims 1 to 8, wherein a longitudinal central axis of the chisel-receiving opening and the shank longitudinal axis are inclined relative to one another at an angle of 6° to 24°, preferably approximately 12°.

10. The chisel holder as claimed in one of claims 1 to 9,

wherein the fastening element loading region comprises a fastening element loading surface , and in that the shank longitudinal axis and a surface normal of the fastening element loading surface are inclined relative to one another at an angle of 50° to 65°, preferably approximately 62.5°.

11. A chisel holder system, comprising:

- a chisel holder as claimed in one of the preceding claims,
- a base part having a fastening shank receiving opening, which is open at least toward a counterpart supporting side, and a fastening element receiving opening, which is open toward the fastening shank receiving opening, wherein a fastening element which can be moved in order to exert load on the fastening element loading region is received in the fastening element receiving opening,

wherein, in the fastening shank receiving opening , there is provided a counterpart supporting region with counterpart supporting surface regions which adjoin one another in a further transition region which extends in the direction of a fastening shank receiving opening longitudinal axis.

12. The chisel holder system as claimed in claim 11,

wherein the further transition region is formed in the manner of a projection.

13. The chisel holder system as claimed in claim 11 or 12, wherein the further transition region is formed at least in regions by a convex projection.

14. The chisel holder system as claimed in one of claims 11 to 13, wherein the further transition region is of complementary design to the transition region .

15. The chisel holder system as claimed in one of claims 11 to 14, wherein at least one counterpart supporting surface region is formed so as to protrude at least in regions radially inward in relation to the fastening shank receiving opening longitudinal axis beyond a main inner circumferential surface of the fastening shank receiving opening.

16. The chisel holder system as claimed in claim 15, wherein at least one counterpart supporting surface region protrudes, at least in its circumferential end region proximate to the further

transition region, beyond the main inner circumferential surface, and, in the direction of its circumferential end region remote from the further transition region, approaches the radial level of the main inner circumferential surface.

17. The chisel holder system as claimed in claim 15 or 16, wherein at least one counterpart supporting surface region, at least in its axial end region proximate to the counterpart supporting side and/or in its axial end region remote from the counterpart supporting side, merges in a stepped and/or curved manner into the main inner circumferential surface.

18. The chisel holder system as claimed in one of claims 11 to 17,
wherein the fastening shank receiving opening is formed with a circular inner circumferential contour in the region of its main inner circumferential surface and/or in the region of its counterpart supporting surface regions.

19. The chisel holder system as claimed in one of claims 11 to 18,
wherein the fastening shank receiving opening

longitudinal axis and a fastening element receiving opening longitudinal axis are inclined relative to one another at an angle of 50° to 65°, preferably approximately 62.5°.