Claims

1. A double-side or one-side machine tool comprising

a preferably annular first working disk (14, 140) which is fastened to a first support disk (10, 100), and comprising

a counter bearing element, wherein the first working disk (14, 140) and the counter bearing element can be driven to rotate relative to each other by at least one drive shaft,

wherein a working gap (18, 180) is formed between the first working disk (14, 140) and the counter bearing element to machine both sides or one side of flat workpieces, and

wherein first clamping means (20) are provided to clamp the first working disk (14, 140) with a clamping surface (26) facing away from the working gap (18, 180) against a clamping surface (24) of the first support disk (10, 100) facing the first working disk (14, 140),

characterized in that

decoupling means are provided for partially decoupling the first working disk (14, 140) from the first support disk (10, 100),

wherein the decoupling means comprise at least one bearing (32) arranged between the clamping surfaces (24, 26) of the first working disk (14, 140) and the first support disk (10, 100),

wherein the at least one bearing (32) comprises at least one rolling bearing (32), and

wherein the first clamping means (20) comprise clamping screws (20) with which the first support disk (10, 100) is clamped with its clamping surface (24) against the clamping surface (26) of the first working disk (14, 140).

2. The double-side or one-side machine tool according to any one of the preceding claims, characterized in that the decoupling means comprise elastic prestressing means (30) for elastically prestressing the first clamping means (20).

3. The double-side or one-side machine tool according to claim 2, characterized in that the elastic prestressing means (30) comprise elastic spring washers (30) which are each arranged between a screw head (22) of the clamping screws (20) and a surface (28) of the first support disk (10, 100) facing away from the first working disk (14, 140).

4. The double-side or one-side machine tool according to any one of the preceding claims, characterized in that the decoupling means comprise a decoupling intermediate layer between the first working disk (14, 140) and the first support disk (10, 100), in particular a sliding intermediate layer or an intermediate layer for thermal decoupling.

5. The double-side or one-side machine tool according to any one of the preceding claims, characterized in that the material of the first working disk (14, 140) has a lower coefficient of thermal expansion than the material of the first support disk (10, 100).

6. The double-side or one-side machine tool according to any one of the preceding claims, characterized in that the counter bearing element is formed by a preferably annular second working disk (16, 160), wherein the first and second working disk (16, 160) are arranged coaxially relative to each other, wherein the working gap (18, 180) is formed between the first and second working disk (14, 140, 16, 160) to machine both sides or one side of flat workpieces.

7. The double-side or one-side machine tool according to any one of the preceding claims, characterized in that the second working disk (16, 160) is fastened to a second support disk (12, 120), in that second clamping means are provided for clamping the second working disk (16, 160) with a clamping surface facing away from the working gap (18, 180) against a clamping surface of the second support disk (12, 120) facing the second working disk (16, 160), and in that decoupling means are also provided for at least partially decoupling the second working disk (16, 160) from the second support disk (12, 120).

8. The double-side or one-side machine tool according to any one of the preceding claims, characterized in that a pressure volume (300) is arranged between the first support disk (10, 100) and the first working disk (14, 140), said pressure volume being connected to a pressure fluid supply which is actuable in such a way that a pressure is built up in the pressure volume (300), which generates a predetermined deformation of the first working disk (14, 140).

9. The double-side or one-side machine tool according to any one of the preceding claims, characterized in that temperature-controlling channels (220, 280) are provided for

controlling the temperature of the first working disk (14, 140), which are connected to a temperature-controlling fluid supply.

10. The double-side or one-side machine tool according to claims 8 and 9, characterized in that the temperature-controlling channels (220, 280) are arranged within the first working disk (14, 140), such that the temperature-controlling channels (220, 280) are arranged closer to the working gap (18, 180) than the pressure volume (300), and that the temperature-controlling channels (220, 280) are not connected to the pressure volume (300).

11. The double-side or one-side machine tool according to any one of either of claims 9 and 10, characterized in that the first working disk (14, 140) is formed from two preferably annular disks which are connected to one another and between which the temperature-controlling channels (220, 280) are formed, wherein one of the disks borders the working gap (18, 180) and the other of the disks has the clamping surface for clamping against the clamping surface of the first support disk (10, 100).