

Title (en)
Needle for sewing machine with slender eye

Title (de)
Nähmaschinennadel mit schlankem Öhr

Title (fr)
Aiguille de machine à coudre à chas mince

Publication
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Application
EP 00106097 A 20000330

Priority
DE 19921913 A 19990512

Abstract (en)
The sewing machine needle (1) has a narrow eye (18) which transits directly into a thread groove on the needle shaft. The ey (18) has an indentation (26) at the side with the thread groove (9) for a smaller cross section and reduced stress on the thread penetrating the fabric while stitching. The walls at the transit between the thread groove (9) and the eye (18) are sufficiently high from the groove base so that the sewing thread is not exposed, and is effectively held clear of the fabric workpiece. The walls of the needle eye have a total height, at least at one point (26) which is less than the height of a zone (27) between the needle point (3) and the eye (18). The eye walls have a constant height, at the indentation (26), with an increase at the en the indentation section. The indentation (26) has a constant radius (R), with a center (M) of the curvature pref. on a straight extension of the eye (18). The radius (R) is equal to two or three times the nominal needle thickness. The eye walls at the oppo sides to the indentation (26) are generally straight, and the eye walls against the indentation (26) are thicker than the walls the other side. The needle shaft (2) has a thread groove (9), which opens into the eye (18). The eye walls, at the transit betwe the thread groove (9) and the eye (18), define the transit zone, and they are straight and parallel to each other. The shaft (2) a hollowed neck (15), with a zone (14) offset to one side at it. The eye (18) is defined by rounded straps (23,29) on the center axis (4), with a rounding radius pref. equal to one-half the strap (23) thickness. The eye straps (23,29) are offset by a gap ac the center axis (4) which is at least 40% of the nominal needle thickness, and pref. 50%, measured at the unweakened zones of th needle shaft (2). Measured across the center axis (4), the straps (23,29) have a thickness of at least 40% of the nominal needle thickness and pref. 50%. The passage through the eye (18), between the straps (23,29) is on a straight line at an acute angle of ≤ 20 degrees to the center axis (4). At least one eye strap (29) has a concave base surface (31) on the side towards the sewi thread. The eye (18) has a length, along the center axis (4), which is less than twice the needle width of the unweakened shaft across the center axis (4), and pref. 1.5 times. The needle (1) height at the eye (18), across the center axis (4) and on the li into the eye (18), is less than the nominal needle thickness.

Abstract (de)
Eine insbesondere für hohe Arbeitsgeschwindigkeiten eingerichtete Nähmaschinennadel (1) weist ein schlankes Öhr (18) auf, das unmittelbar in eine über den Schaft laufende Fadenrinne übergeht. An der Seite der Fadenrinne (9) ist das Öhr mit einer Einbuchtung (26) versehen, die zu einem geringen Öhrquerschnitt und somit zu einer geringen Nahtgutbelastung beim Einstichvorgang führt. In dem Übergangsbereich von der Fadenrinne (9) zu dem Öhr (18) sind die diesen Bereich hier begrenzenden Wände gemessen vom Boden der Fadenrinne so hoch, dass der Nähzwirn (32) nicht exponiert wird und somit von dem Nähgut wirksam ferngehalten wird. <IMAGE>

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