

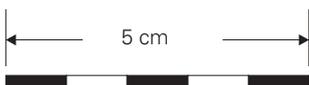
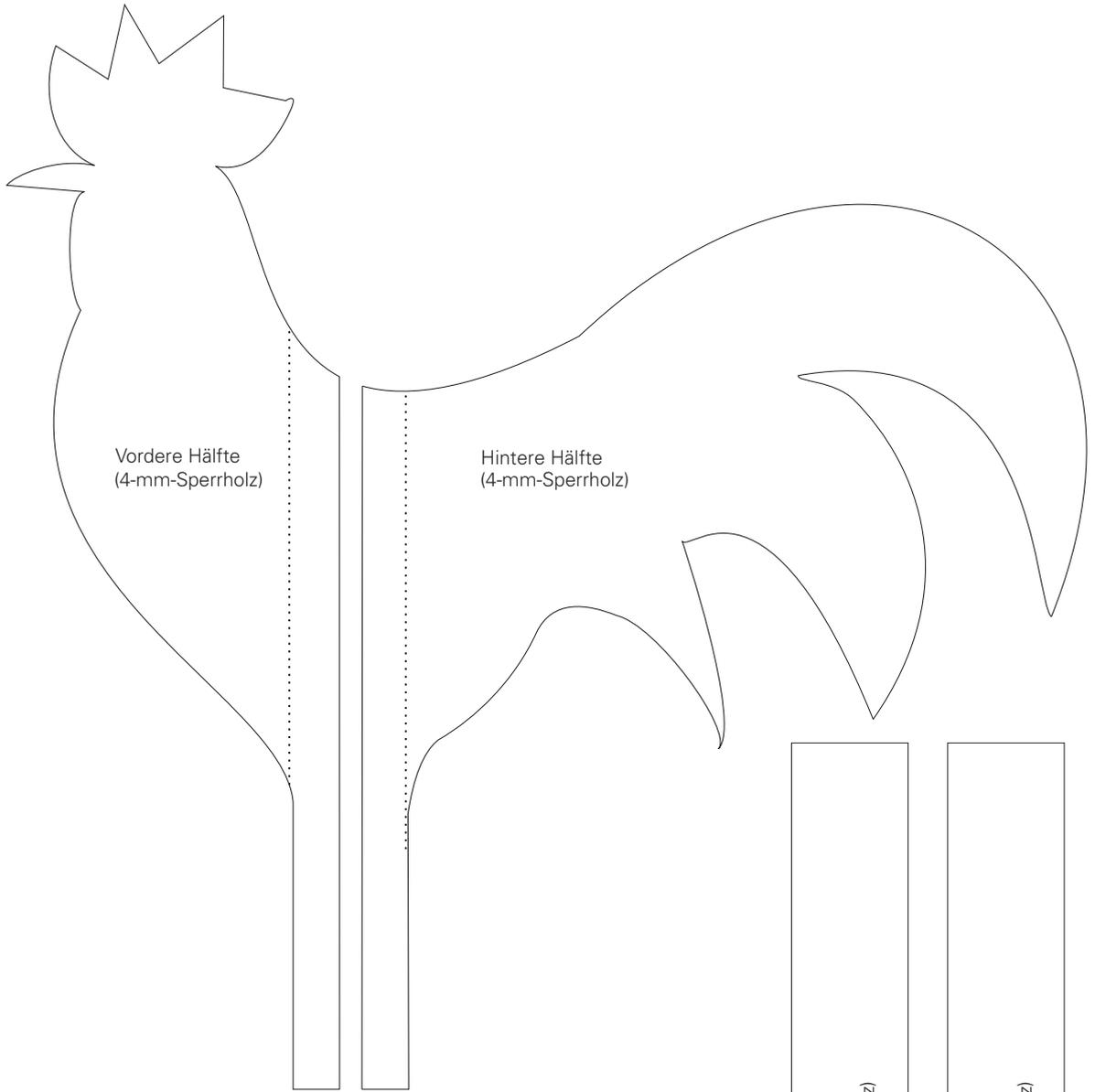
Uwe Wandrey

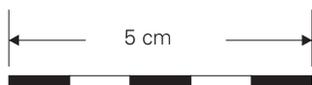
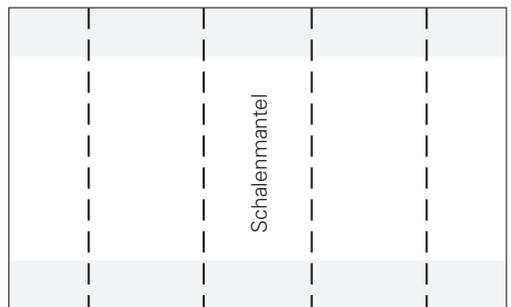
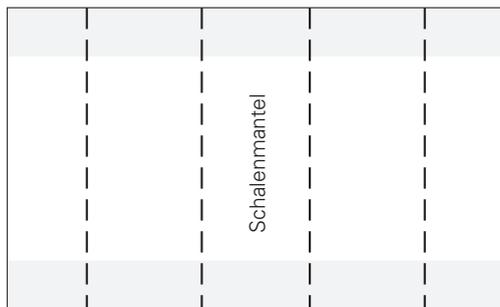
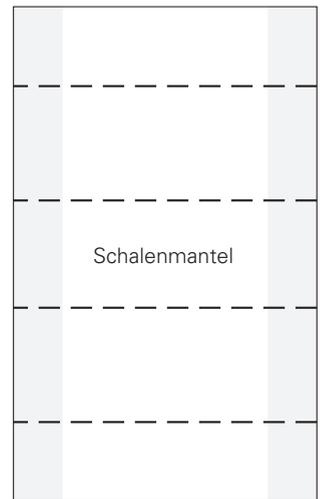
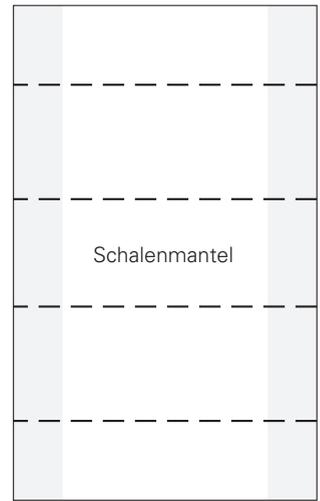
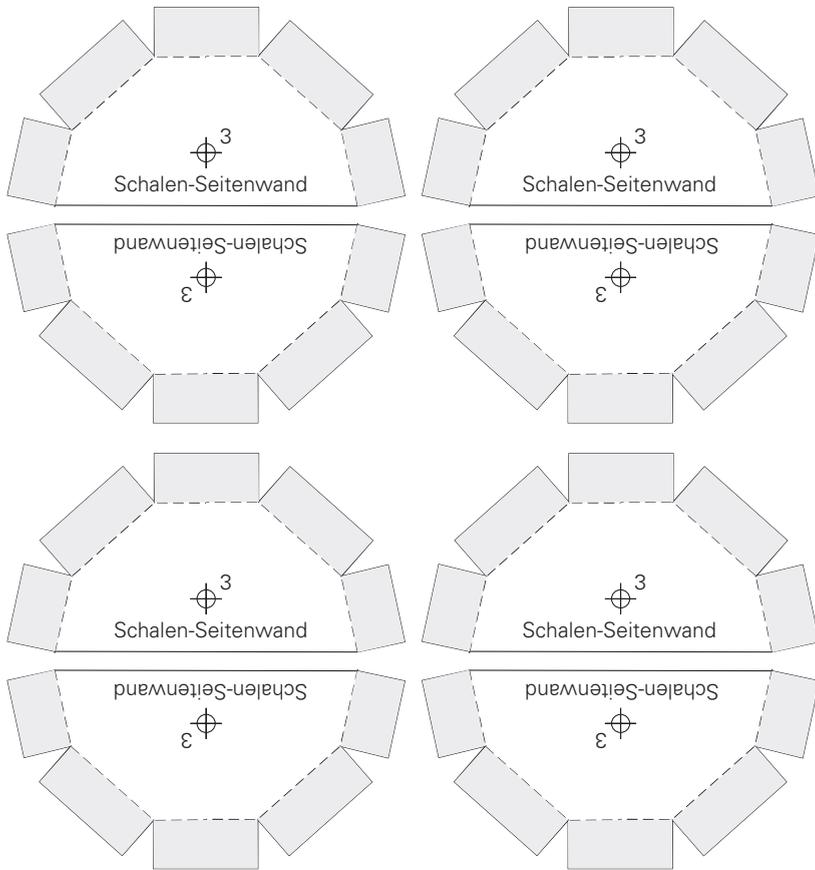
Baupläne: Werkstatt

Sonnen- und Windenergie

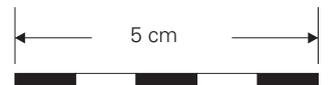
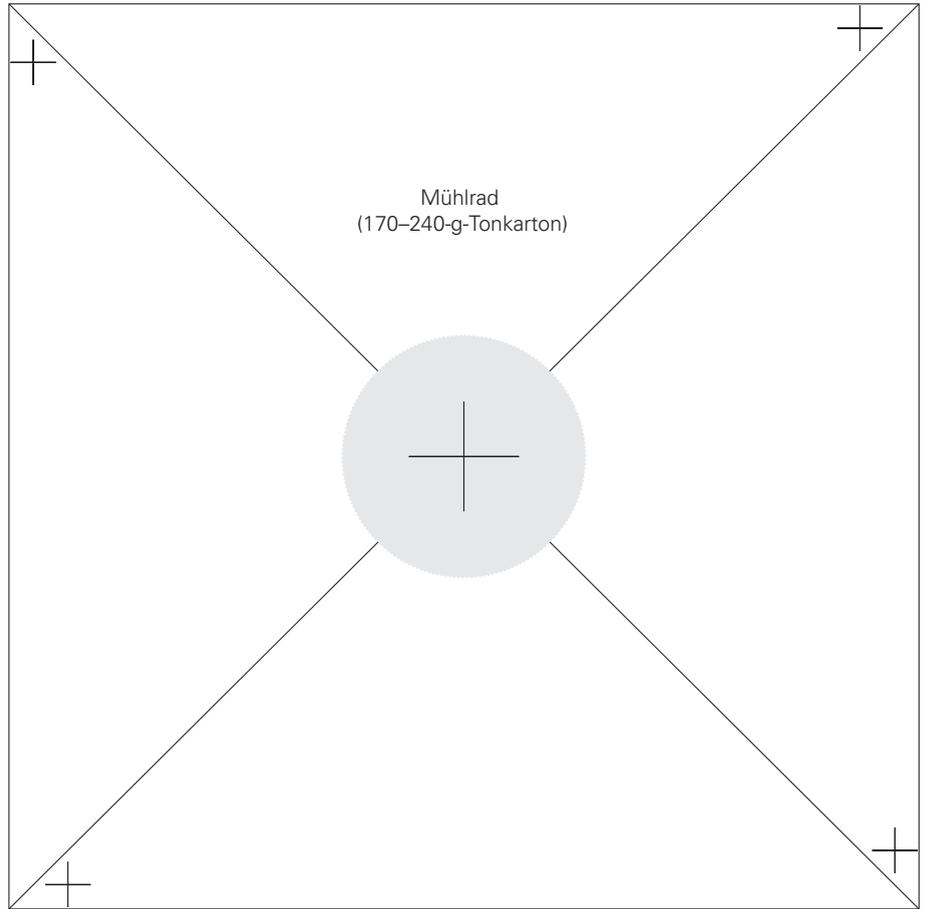
Von der Windmessstation über den
Propellerwagen bis zum Solarboot

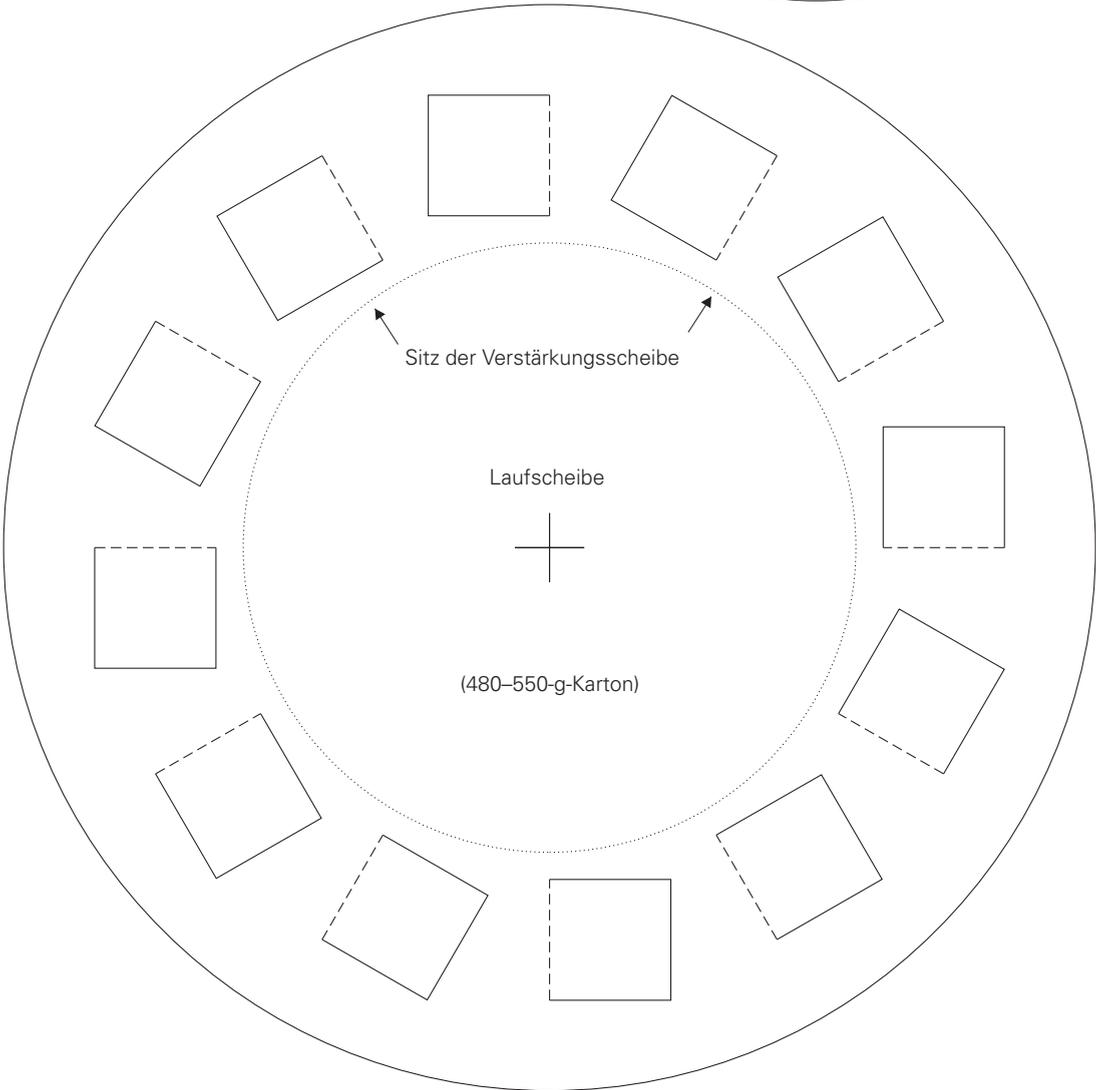
AT Verlag

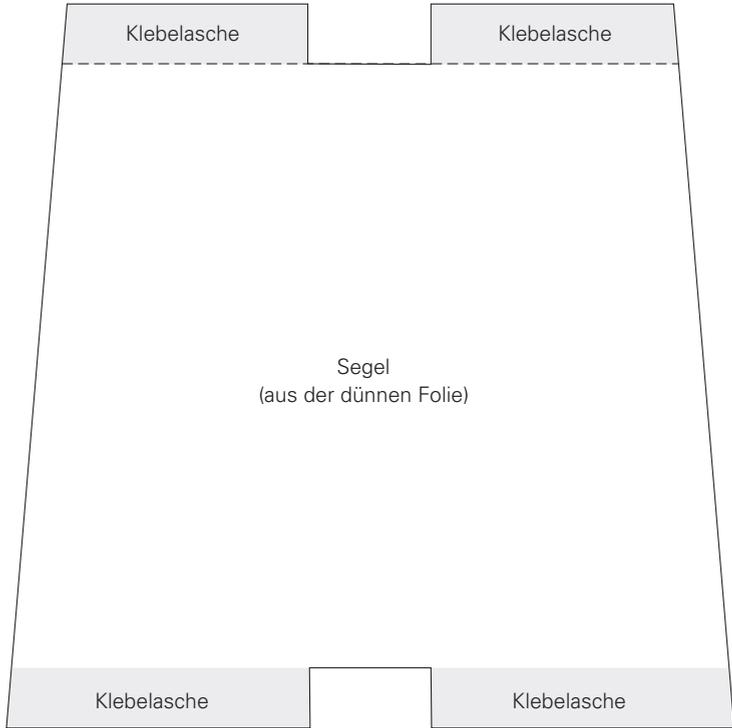
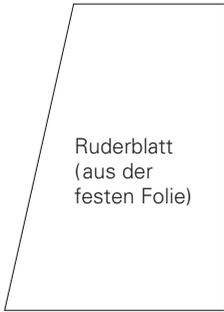


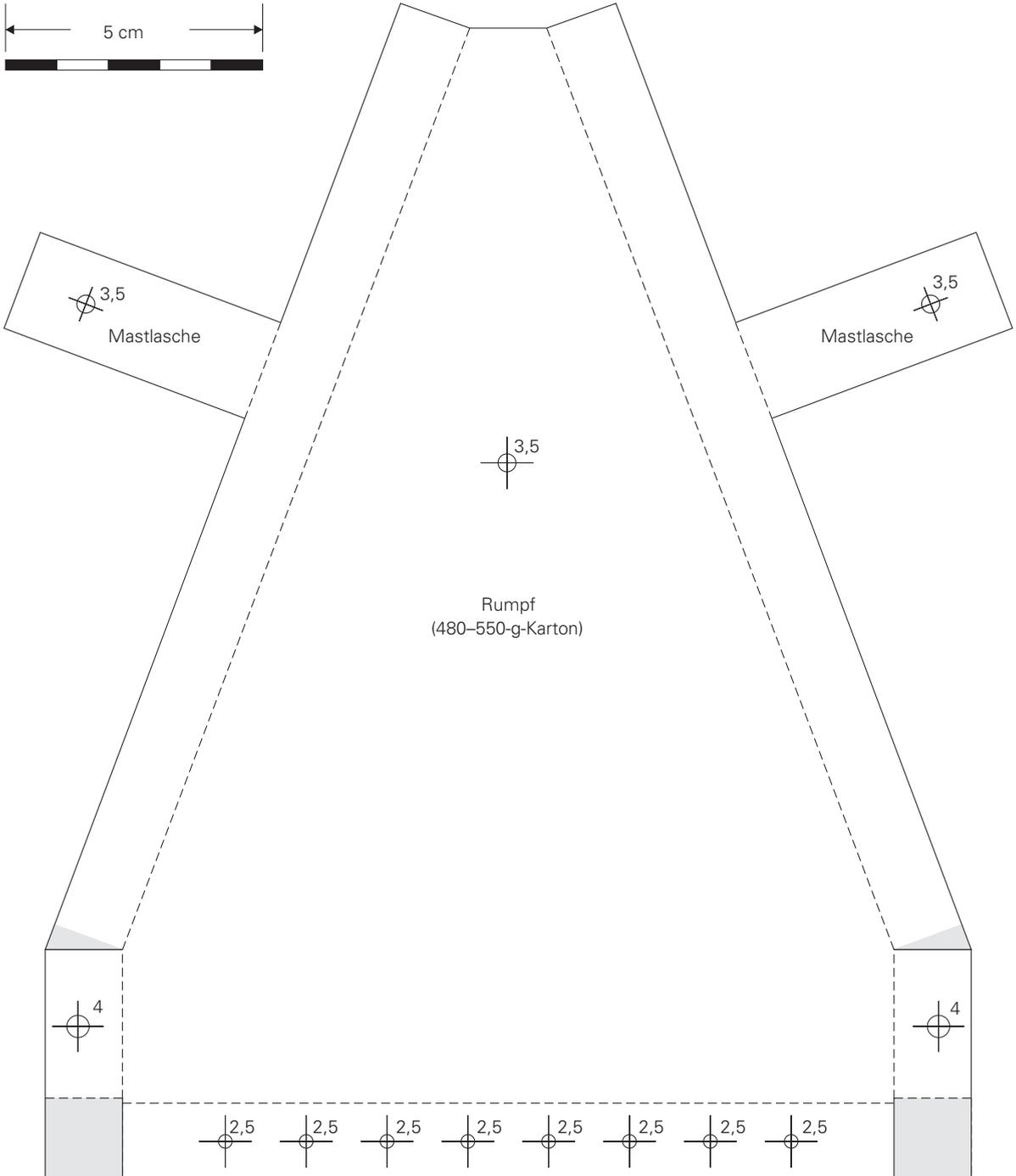
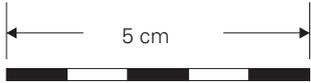
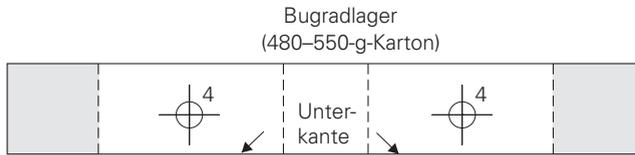


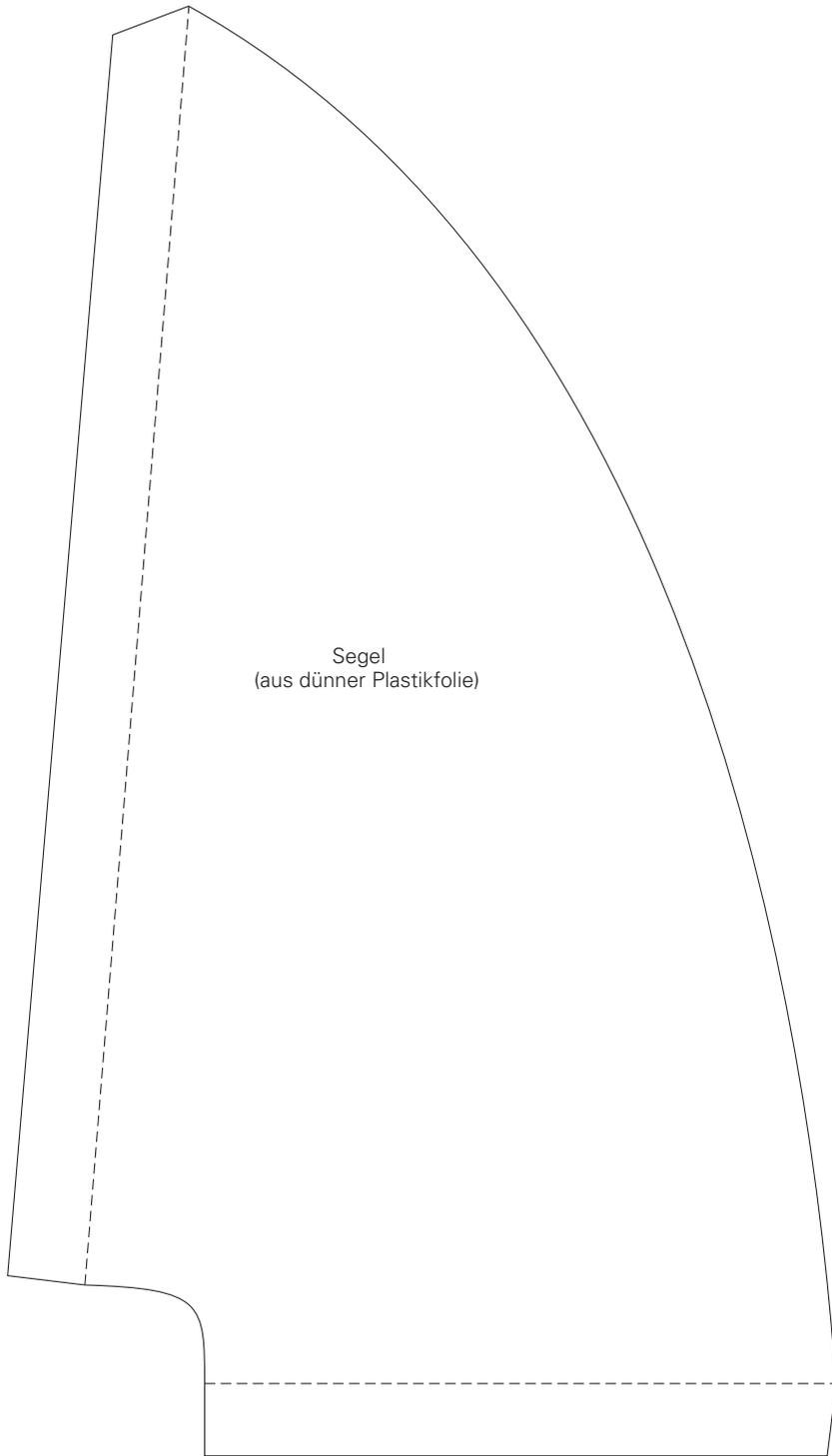
Ausschneideteile
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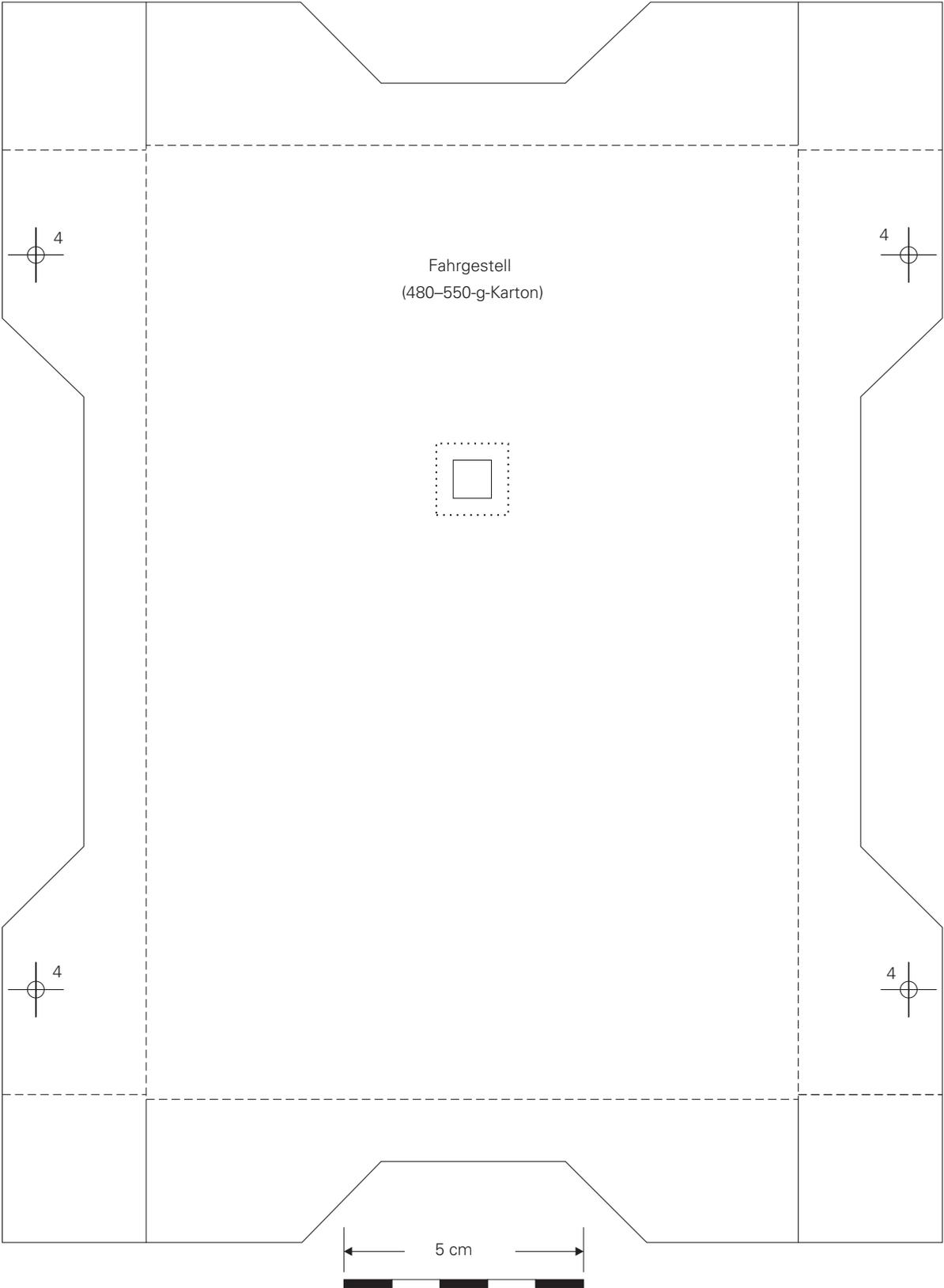


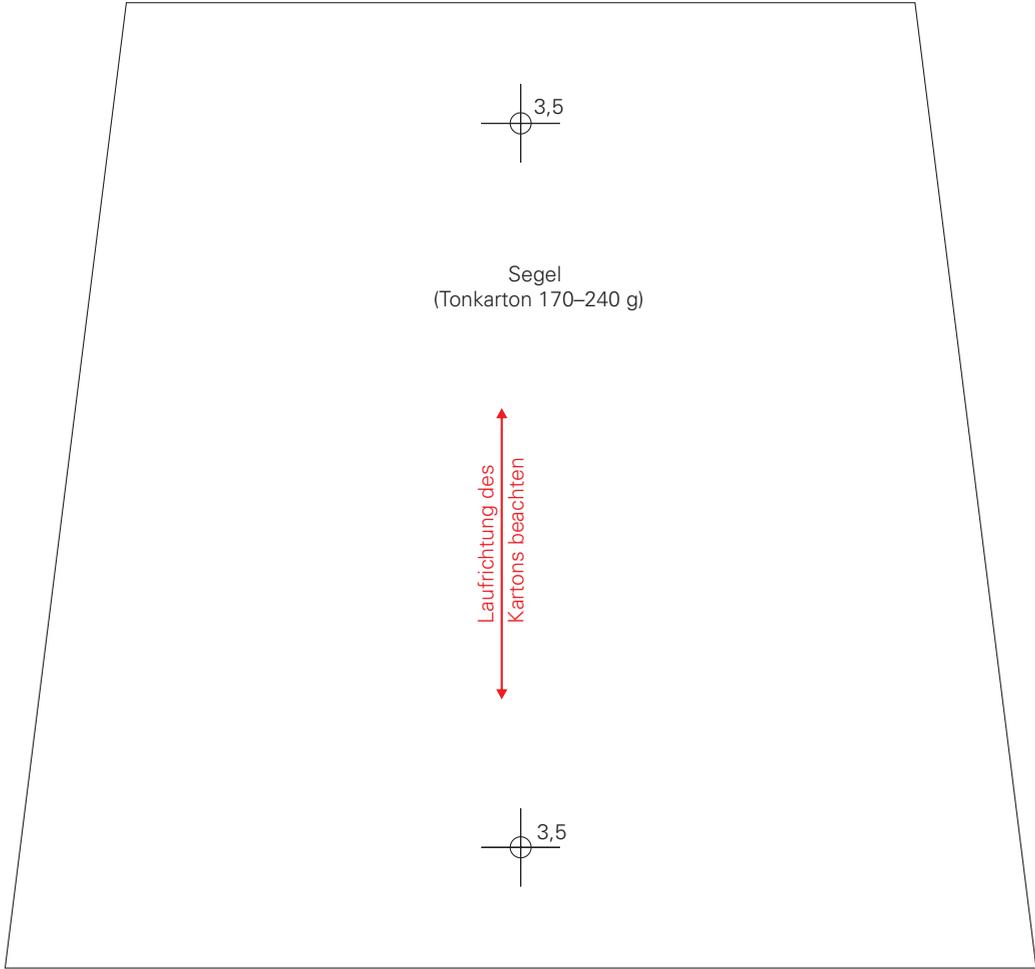
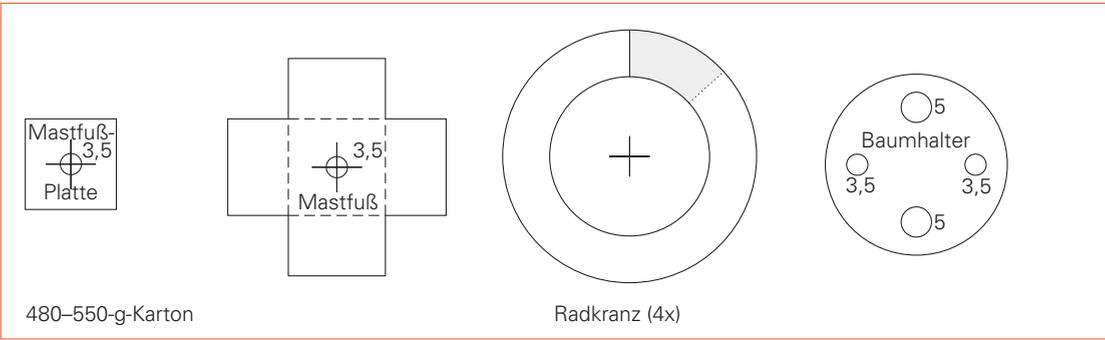


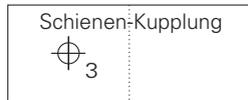
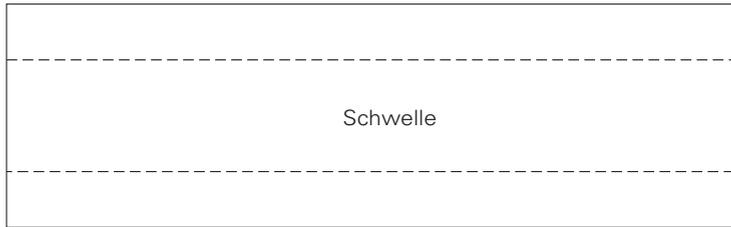
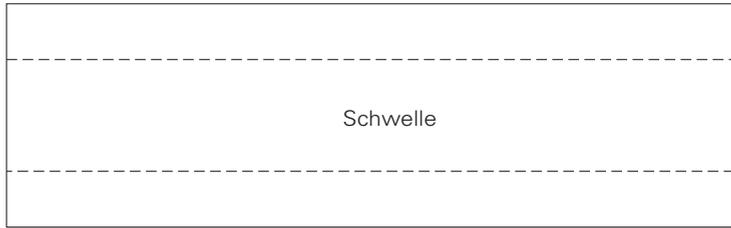
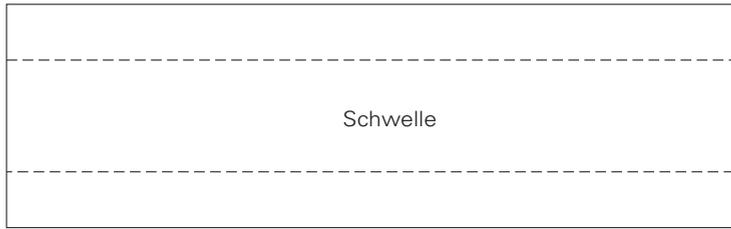




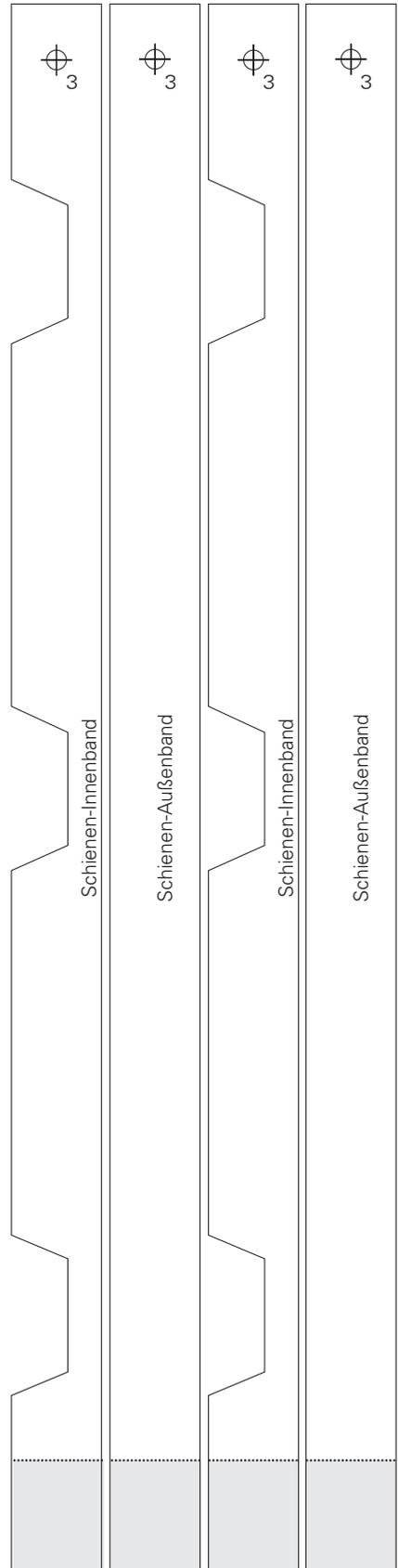
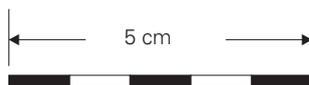
Segel
(aus dünner Plastikfolie)

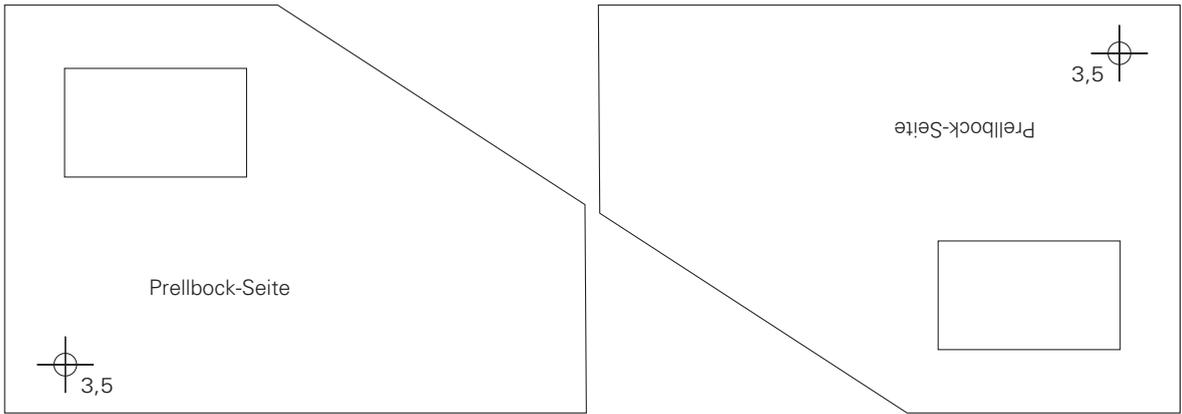




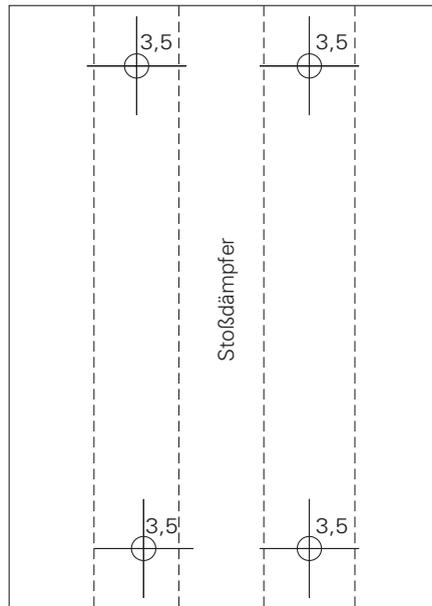
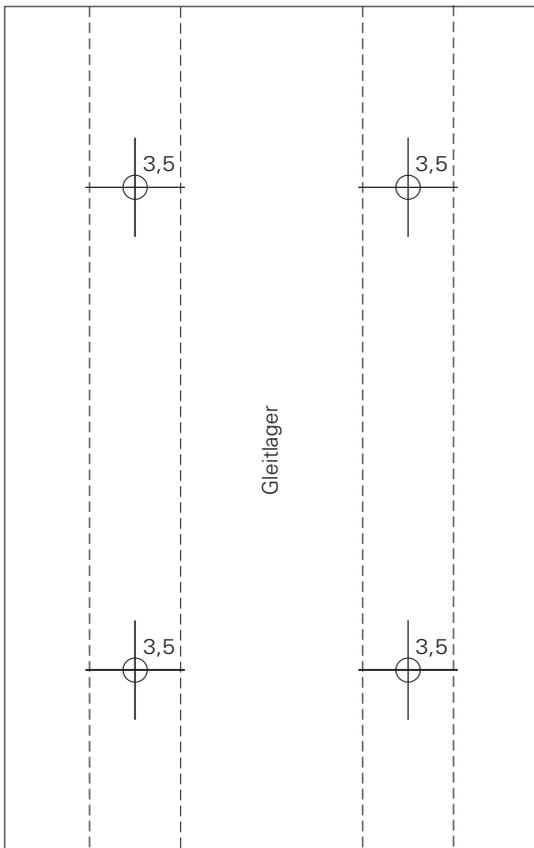


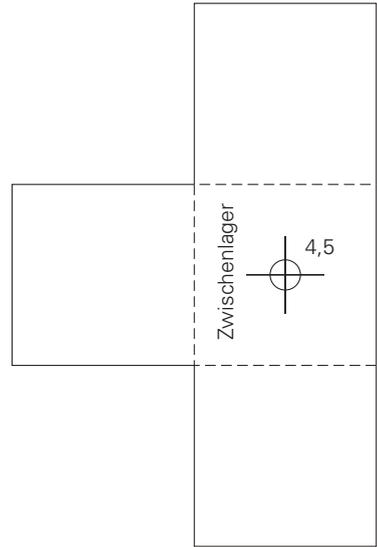
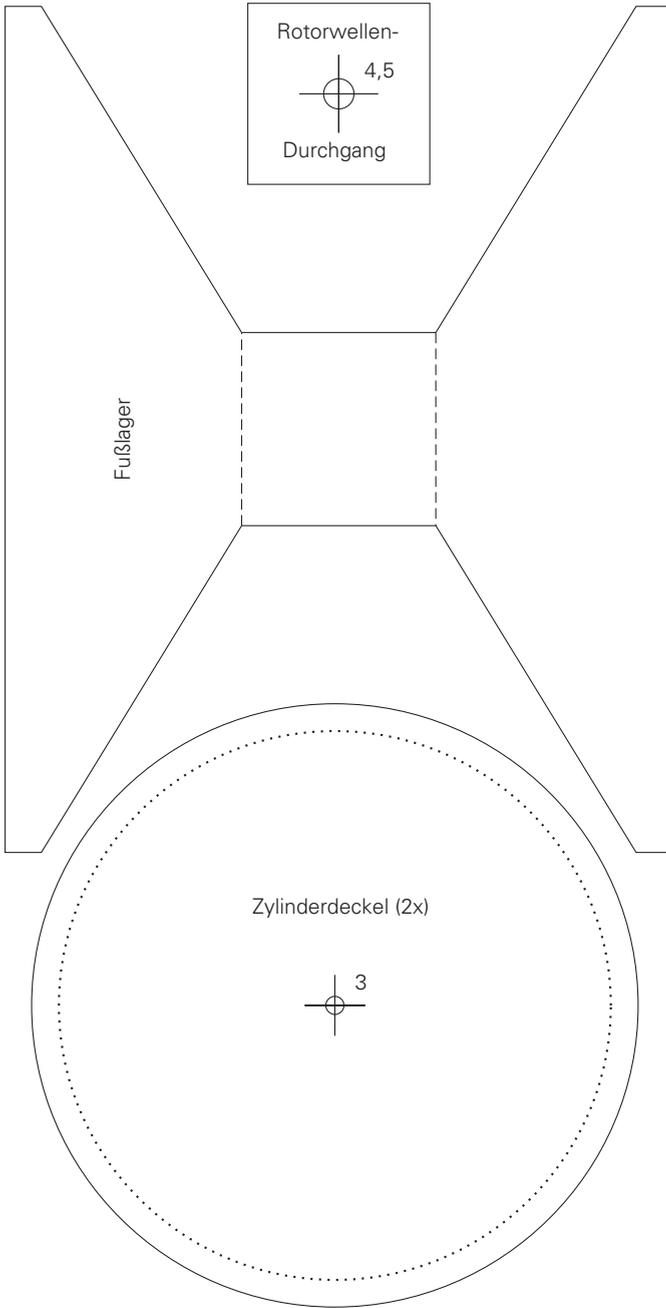
Ausschneideteile aus
480-550-g-Karton



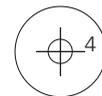
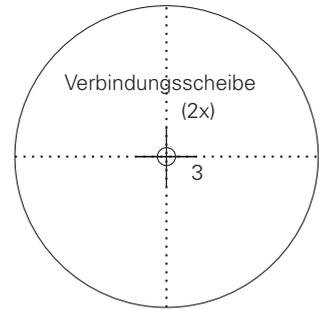


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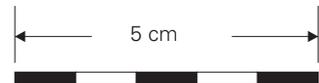


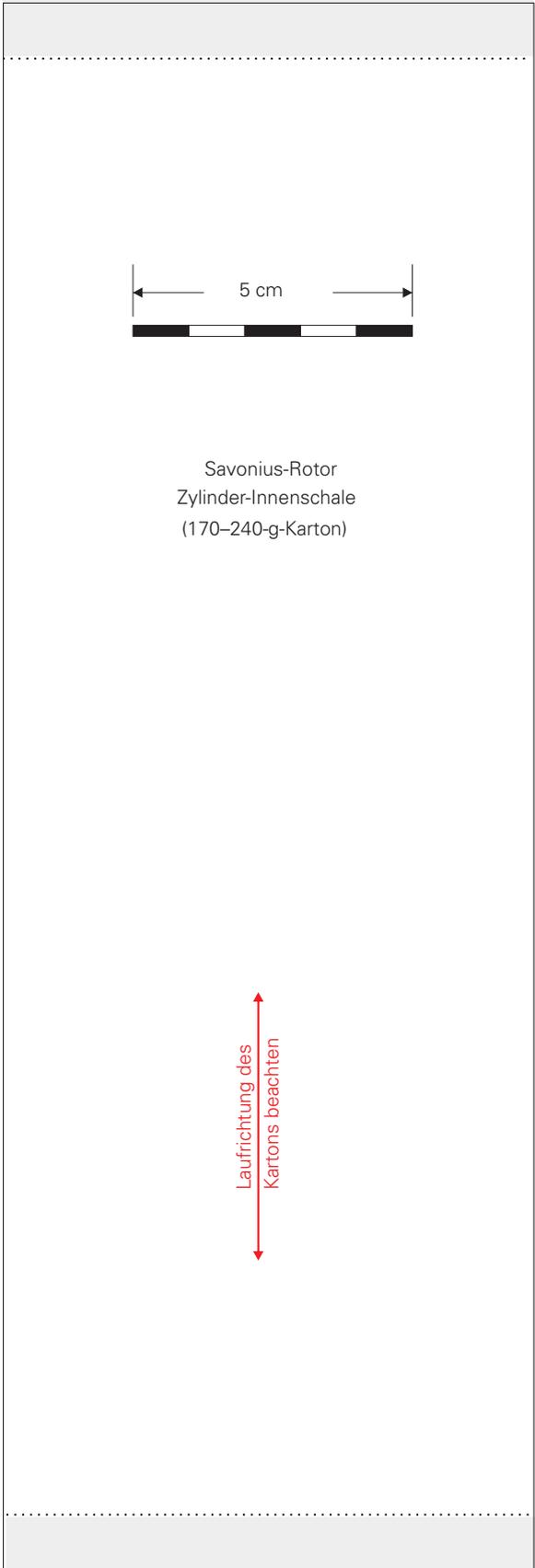
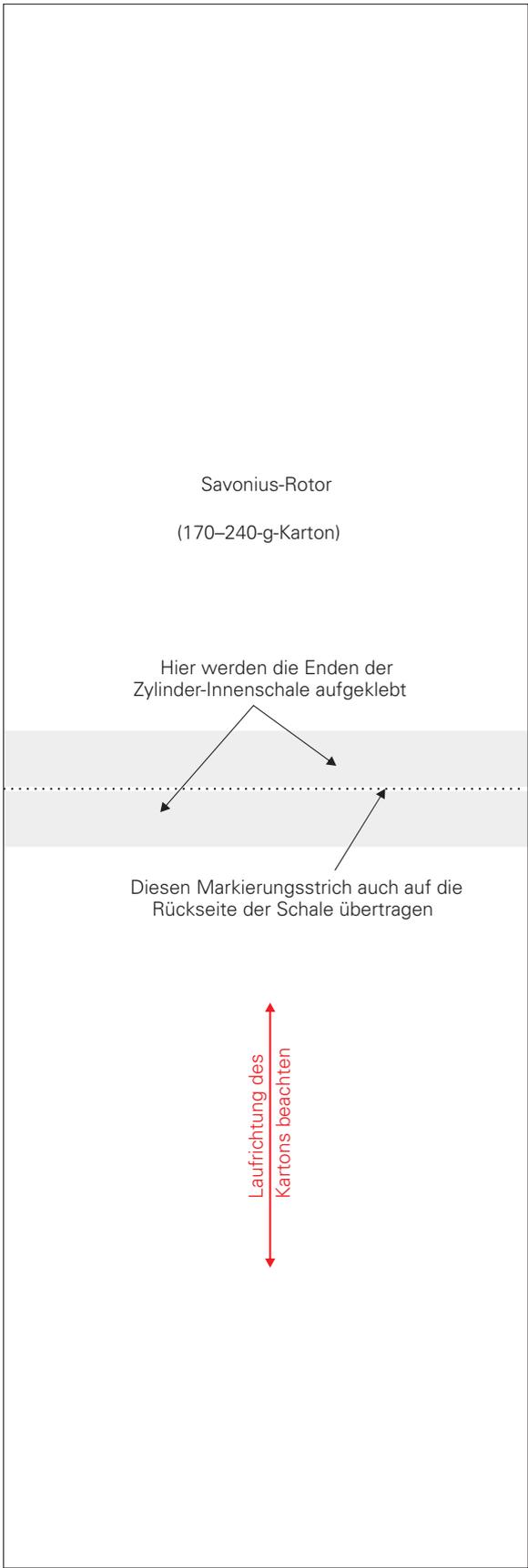


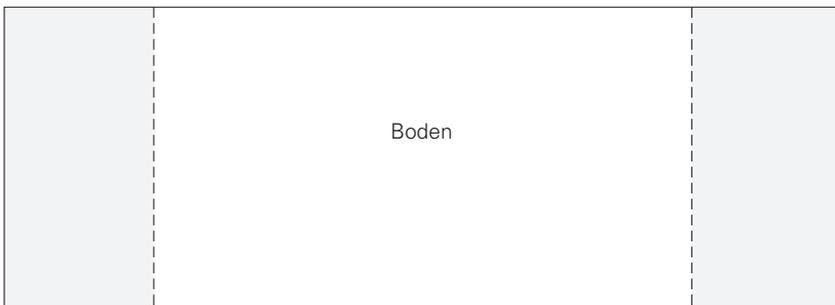
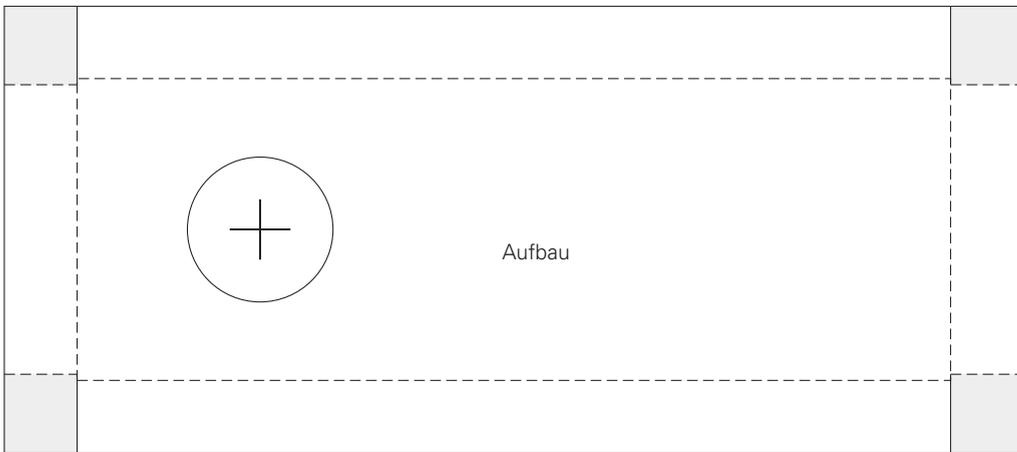
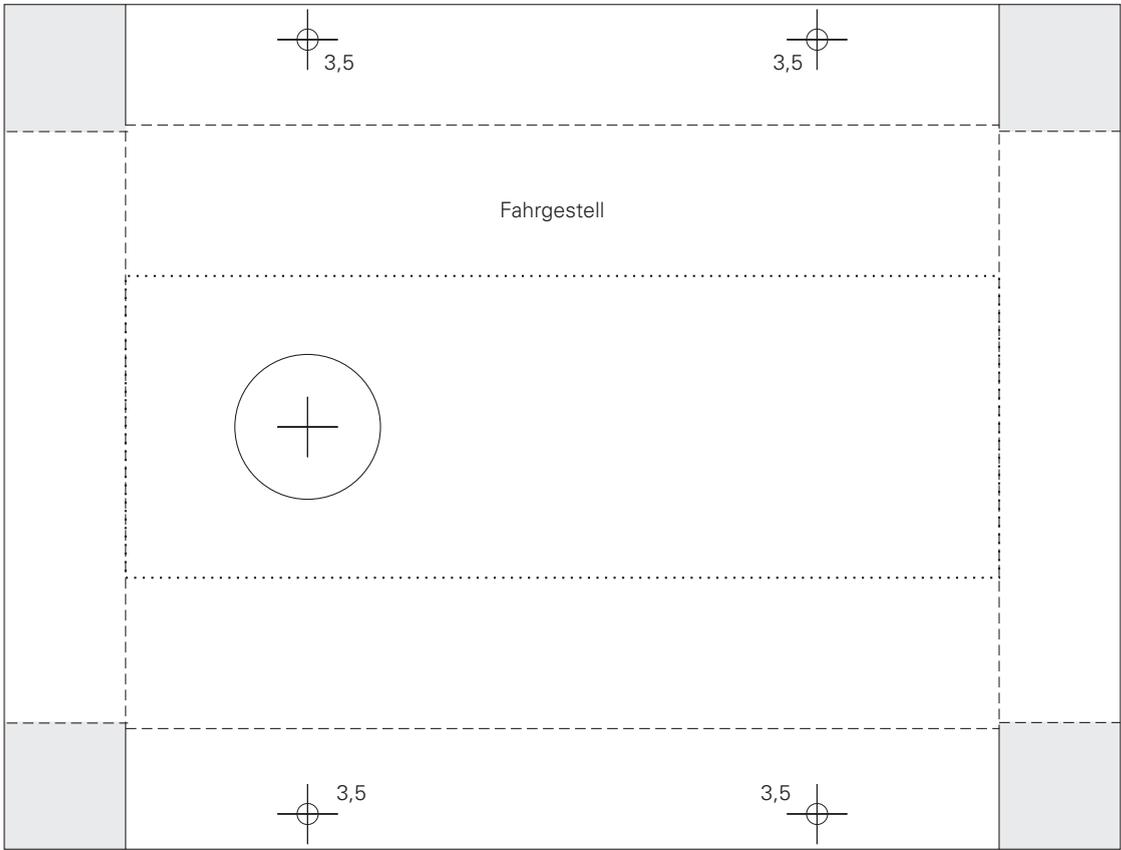
Ausschneideteile auf dieser Seite
480–550-g-Karton, wo nicht anders
angegeben.



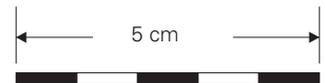
Unterlegscheibe (8x)
aus Tetrapack-Karton

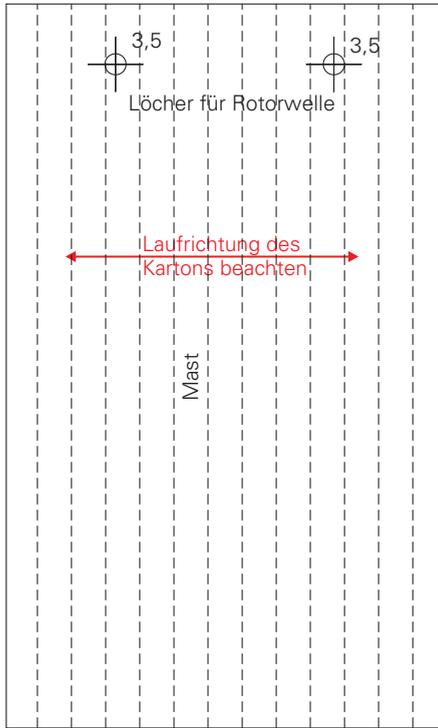






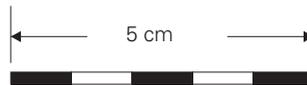
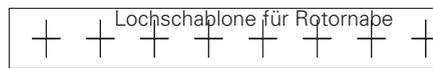
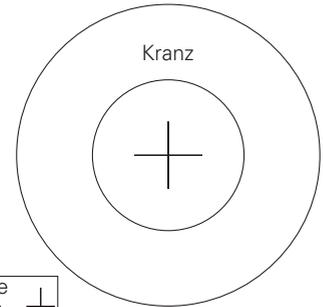
Ausschneideteile
aus 480–550-g-Karton



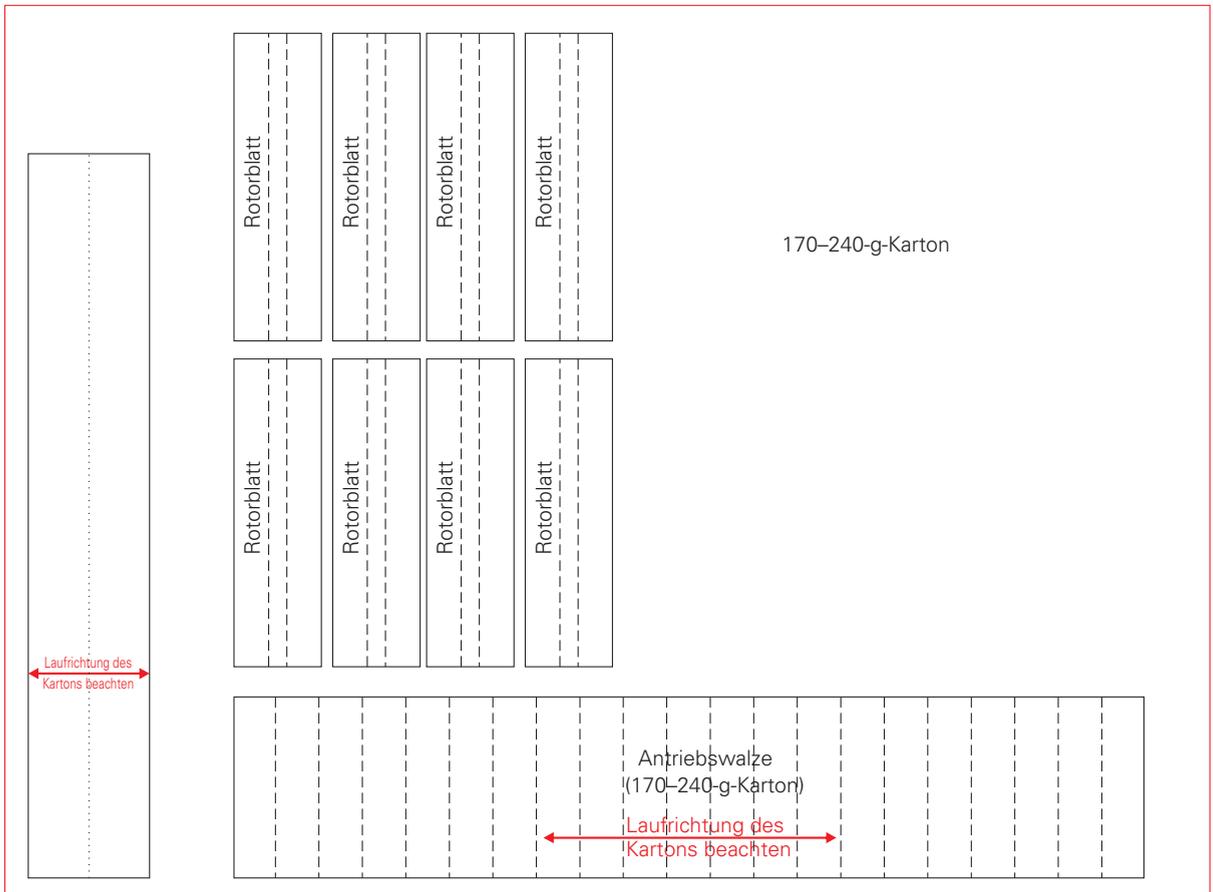


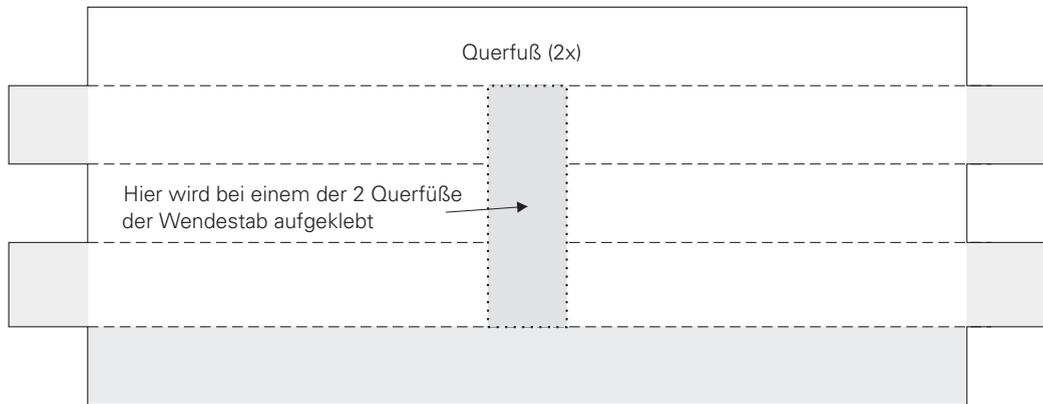
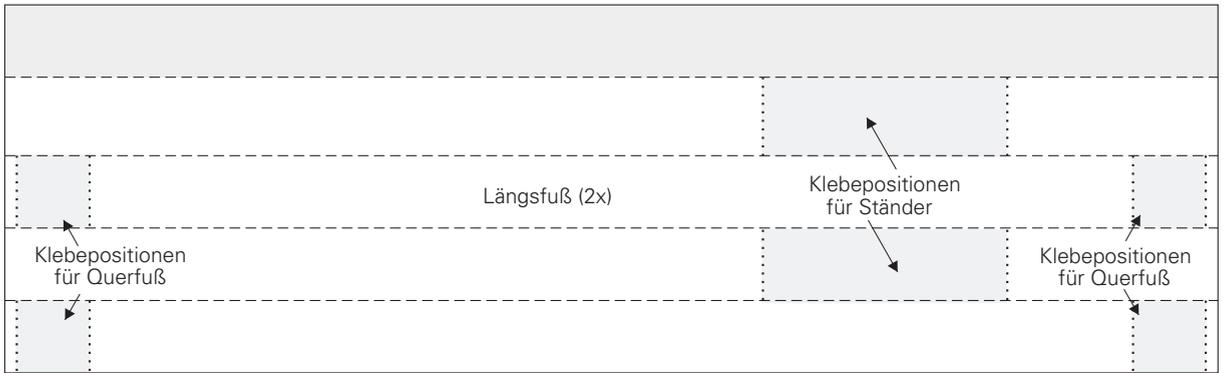
Laufrichtung des Kartons für Lochkranz beachten

Ausschneideteile aus 480–550-g-Karton

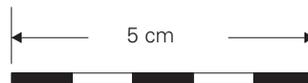


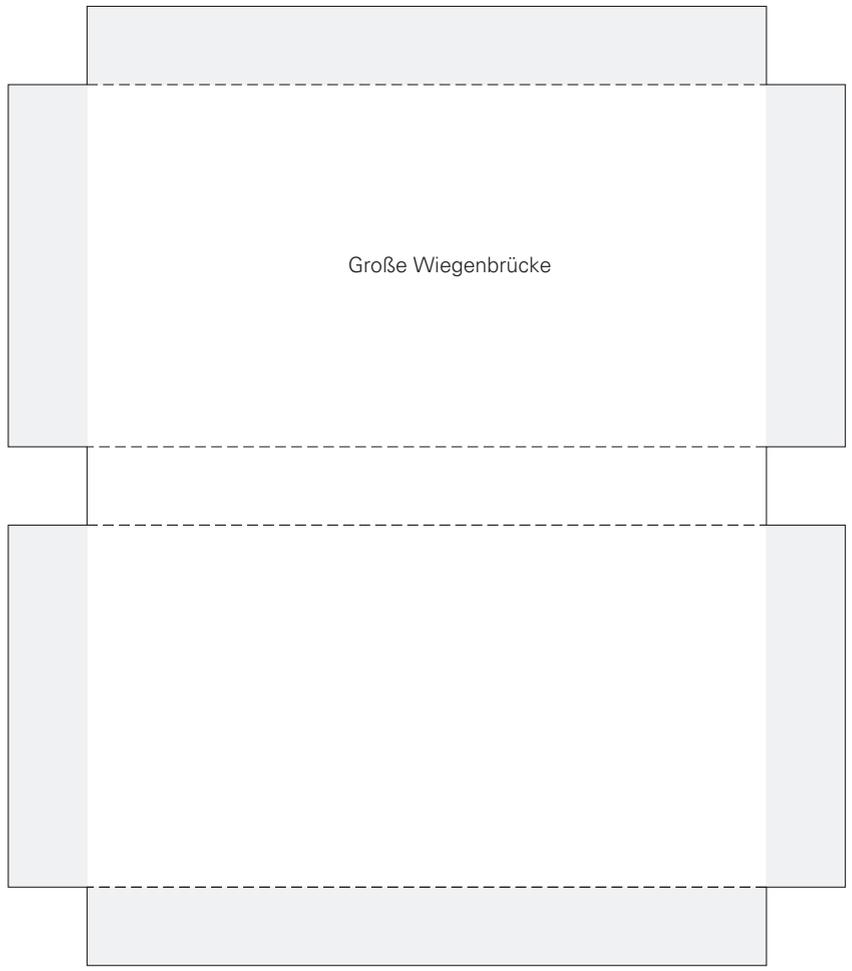
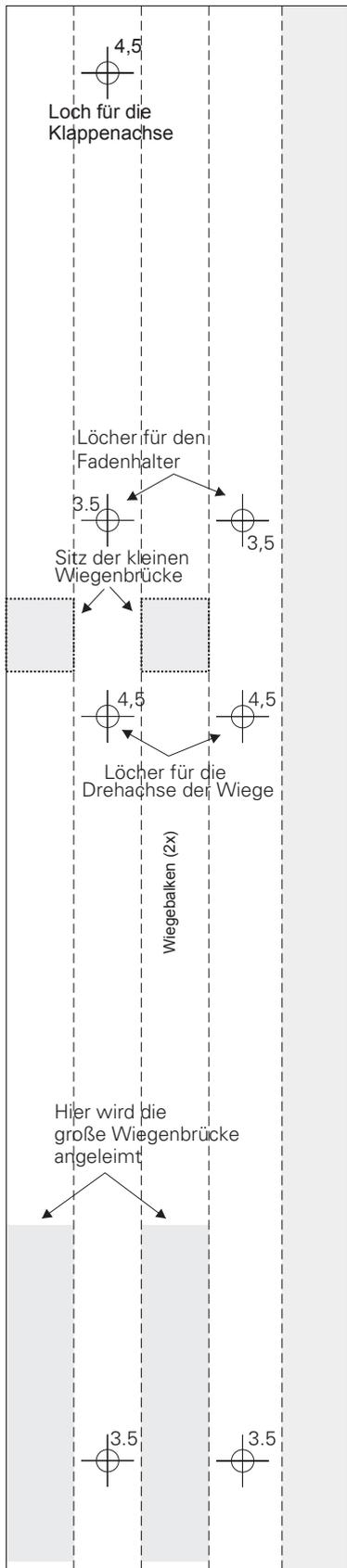
Unterlegscheibe (6x) aus Tetrapack-Karton



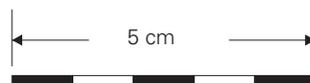


Ausschneideteile
aus 480–550-g-Karton

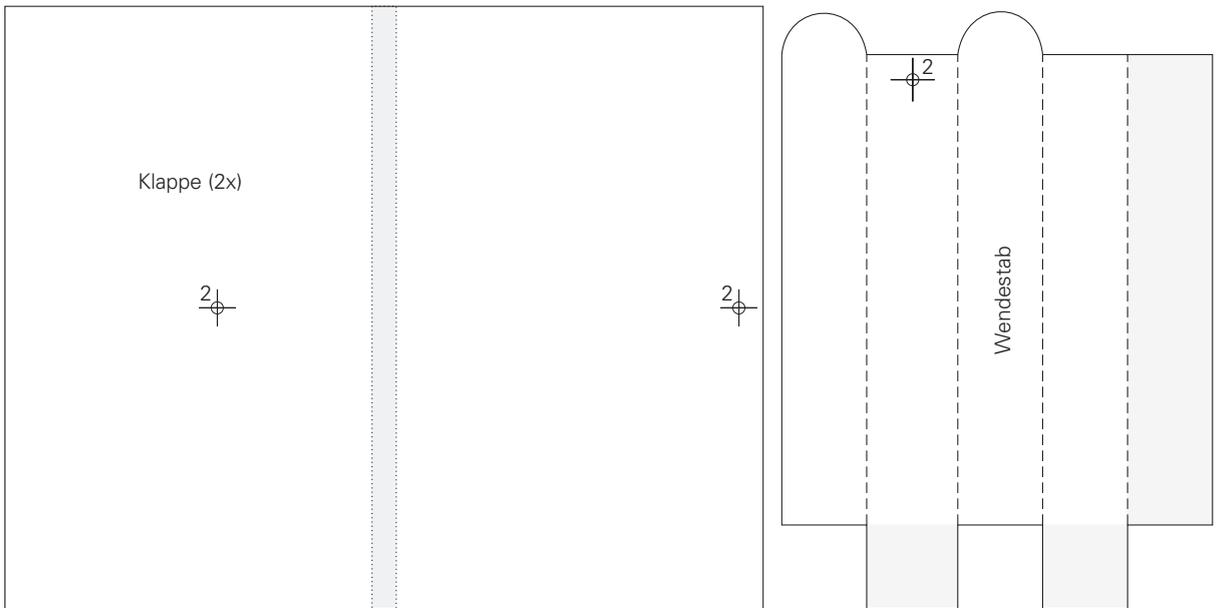
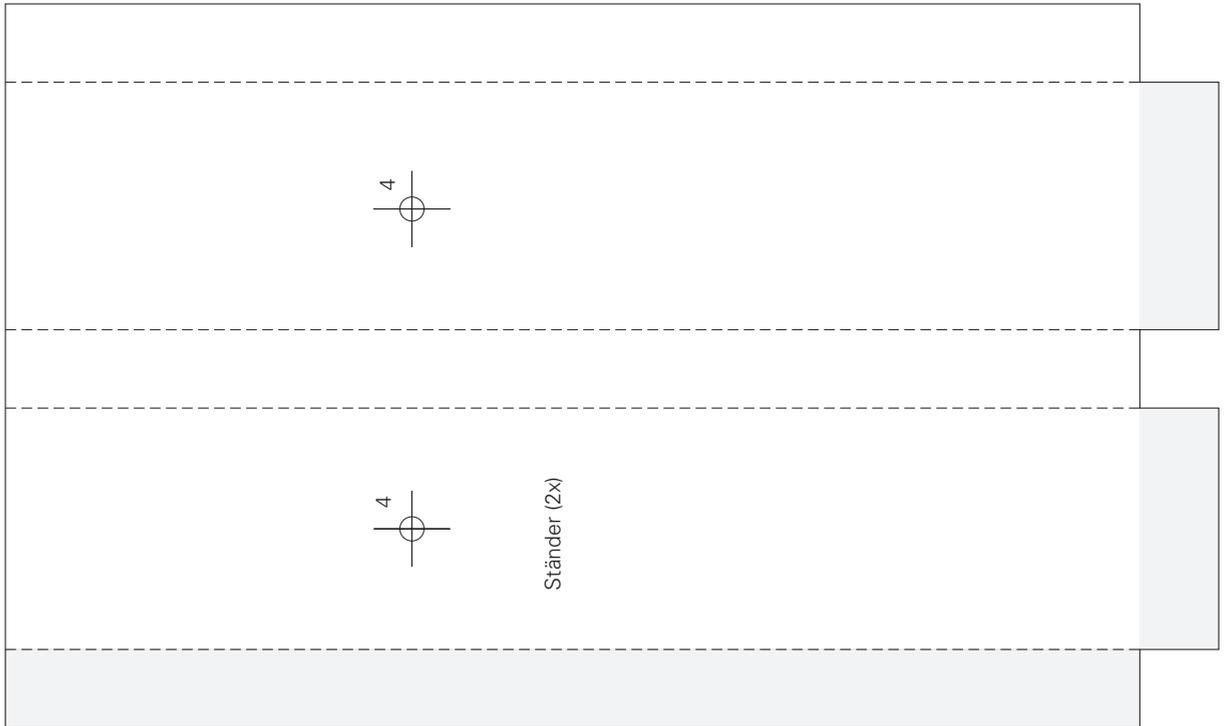




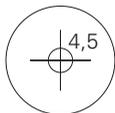
Beim Zusammenbau Geodreiecke benutzen



Ausschneideteile aus 480–550-g-Karton

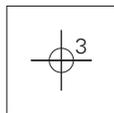


Ausschneideteile aus 480–550-g-Karton

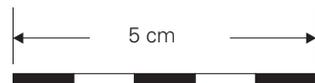


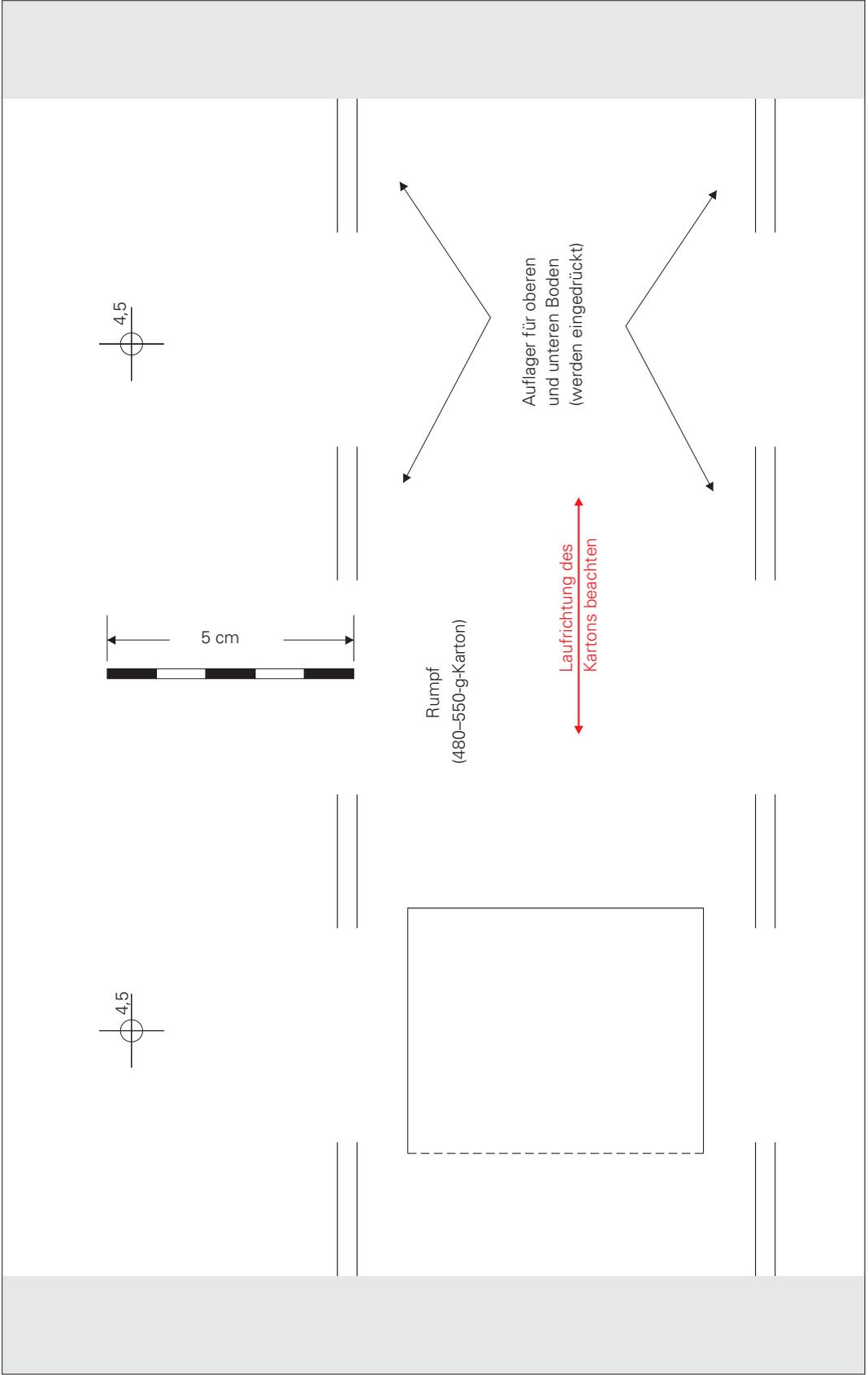
Unterlegscheibe (6x)

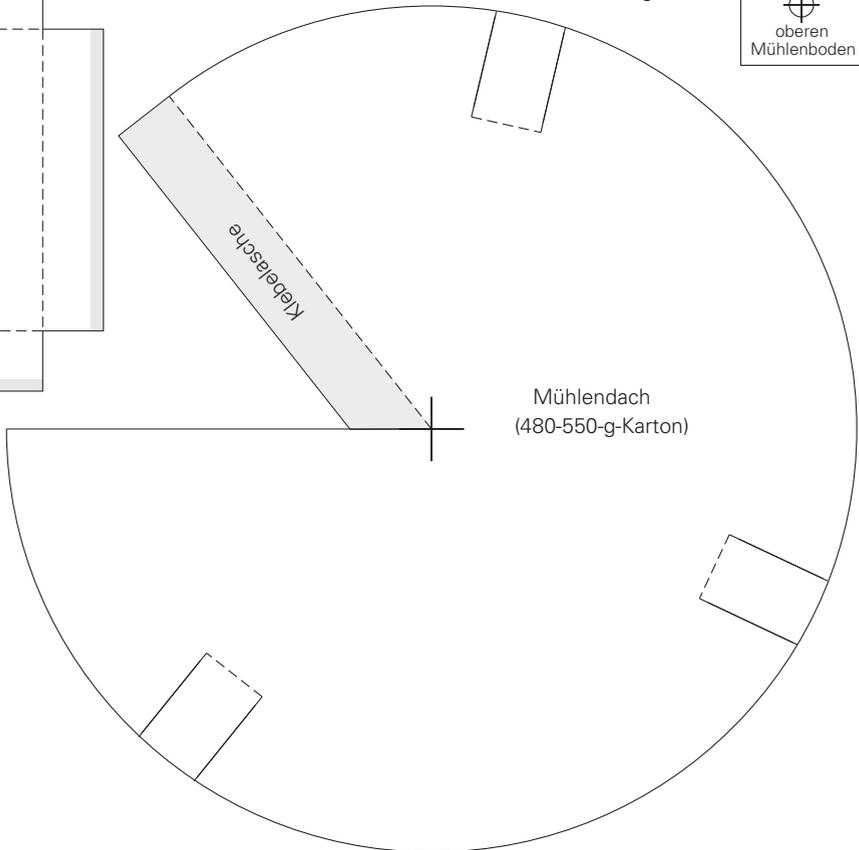
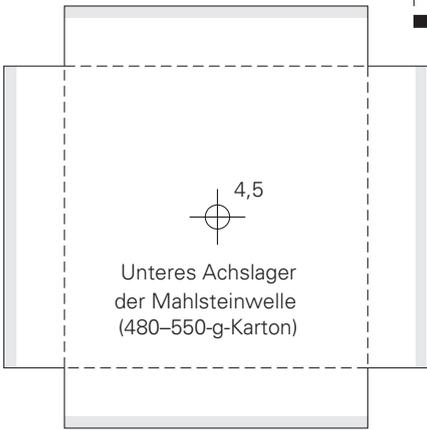
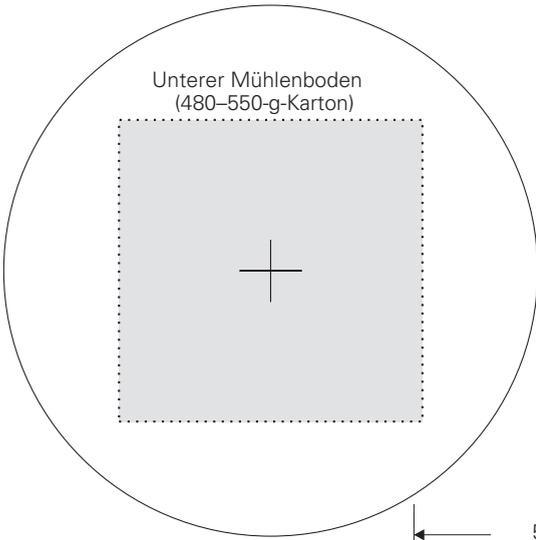
(beide aus Tetrapack-Karton)

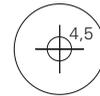
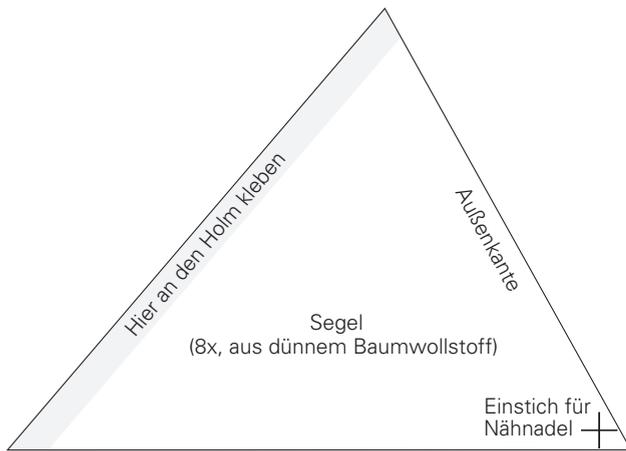


Stopper (2x)

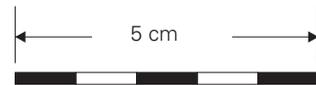








Unterlegscheibe (2x)
aus Tetrapack-Karton



boden auf den Auflagern ruht. (Bild 20 a)

Schritt 16: Einen 5 mm dicken Stopfenabschnitt als Abstandhalter und eine Unterlegscheibe über die Windradwelle schieben und diese in ihr vorderes Lagerloch am Zylinder stecken. Von innen nah an der Rumpfwand durch das zweite Zahnrad schieben und dann durch das hintere Lagerloch.

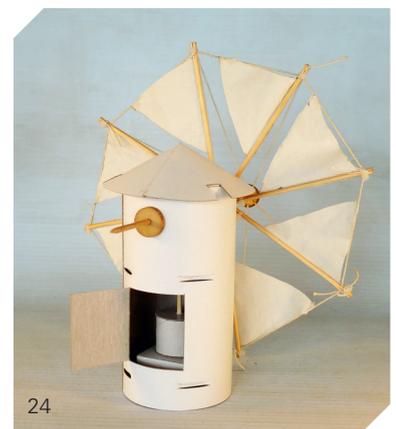
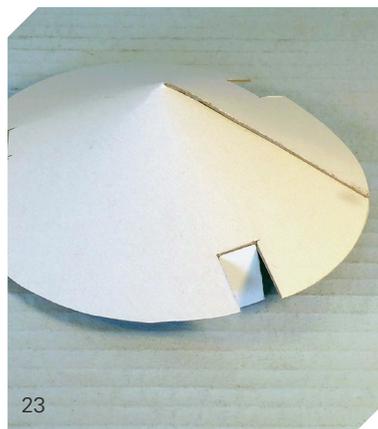
Dort ebenfalls eine Unterlegscheibe und einen zweiten Stopfenabschnitt (5 mm dick) als Sicherung aufziehen.

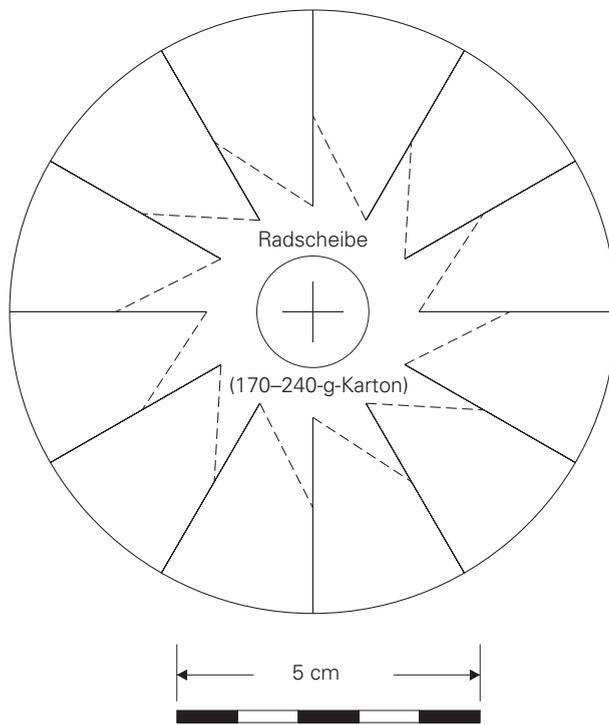
Schritt 17: Jetzt das Zahnrad auf der Windradwelle so verschieben, dass es zwischen die Zähne des anderen Zahnrads greift. Der Berührungspunkt für beide Zahnräder liegt gleich weit von ihrer Welle entfernt. (Bild 22) Nun das Windrad mit

der Hand drehen und prüfen, ob sich der Mahlstein in dem Achslager dreht und sich auf ihm reibt.

Schritt 18: Jetzt noch das Dach ausschneiden, zusammenkleben und auf den Rumpf setzen. Fertig ist die Mühle! (Bild 23 und 24)

Tipp: Bei stärkerem Wind ein kleines Gewicht unten in den Mühlenboden legen und die Tür unbedingt schließen!





unter großen Glasflächen von der Sonne erhitzt und strömt durch ein sehr hohes Kaminrohr in die kalte schwerere Außenluft. Im Rohr dreht sich eine Turbine, die wiederum einen Stromgenerator antreibt.

Unser Sonnenrad ist einfach zu bauen und ein schöner Anblick am sonnigen Fenster. Doch es dreht sich auch ohne Sonnenstrahlen – wenn wir zum Beispiel unsere warmen Hände um den Kegel wölben.

Material:

- 1 Bogen schwarzer Tonkarton, DIN-A4, 170–240 g (für den Kegel)
- 1 halber Bogen beliebig farbiger Tonkarton, 170–240 g (für das Rad)
- 1 Stopfnadel
- 1 Fingerhut
- 1 Kunststoffstopfen
- Alleskleber

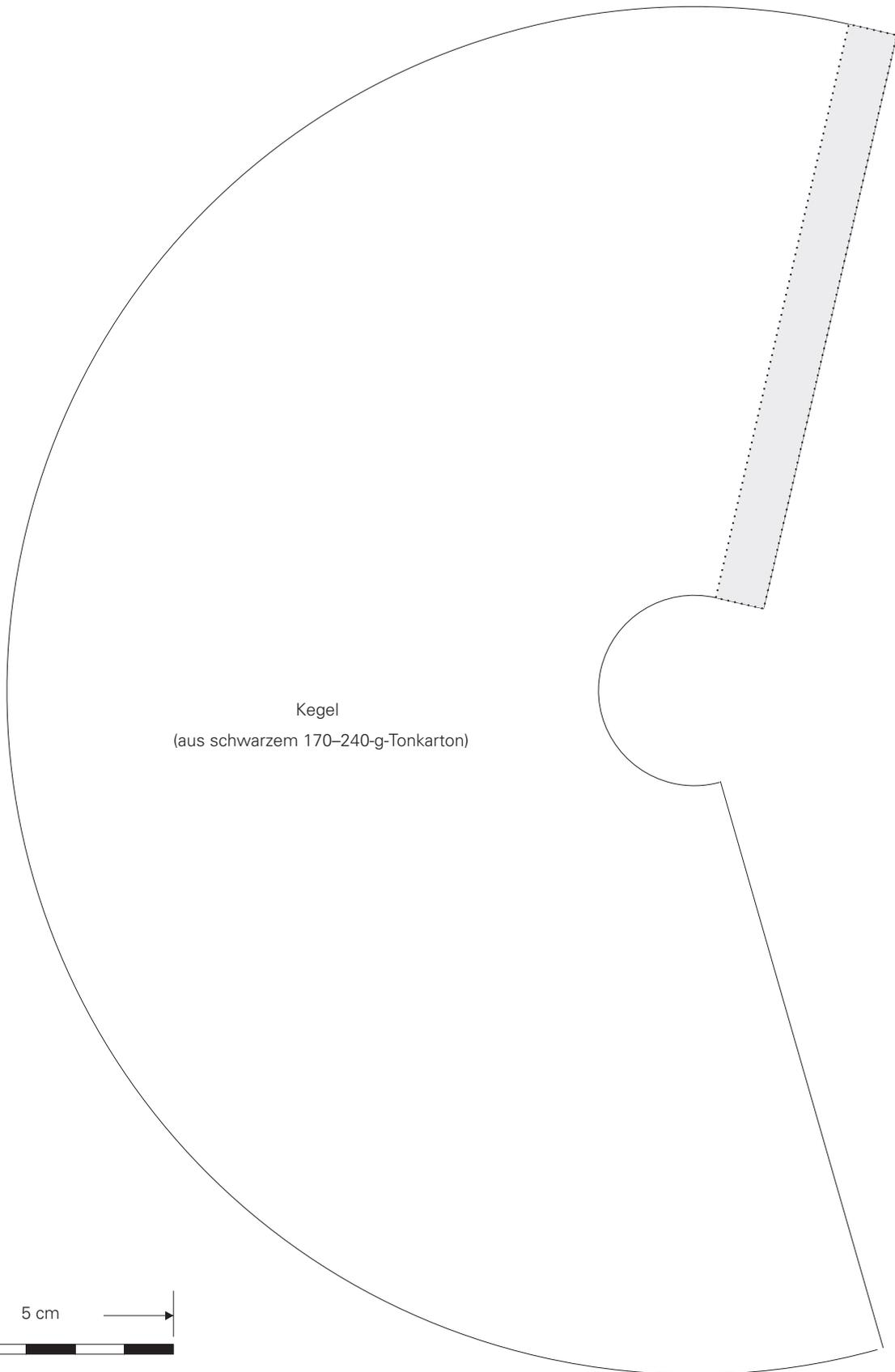
Werkzeug:

- Stift
- Lineal
- Zirkel
- Cutter
- Papierschere
- Nagelschere

Schritt 1: Die geraden Kanten des ausgeschnittenen Kegels mit dem Kleber verbinden. (Während des Klebens zur Kontrolle den Kunststoffstopfen in die Öffnung halten. Er soll stramm sitzen.) Der Absorber des Sonnenrades ist fertig. (Bild 1)

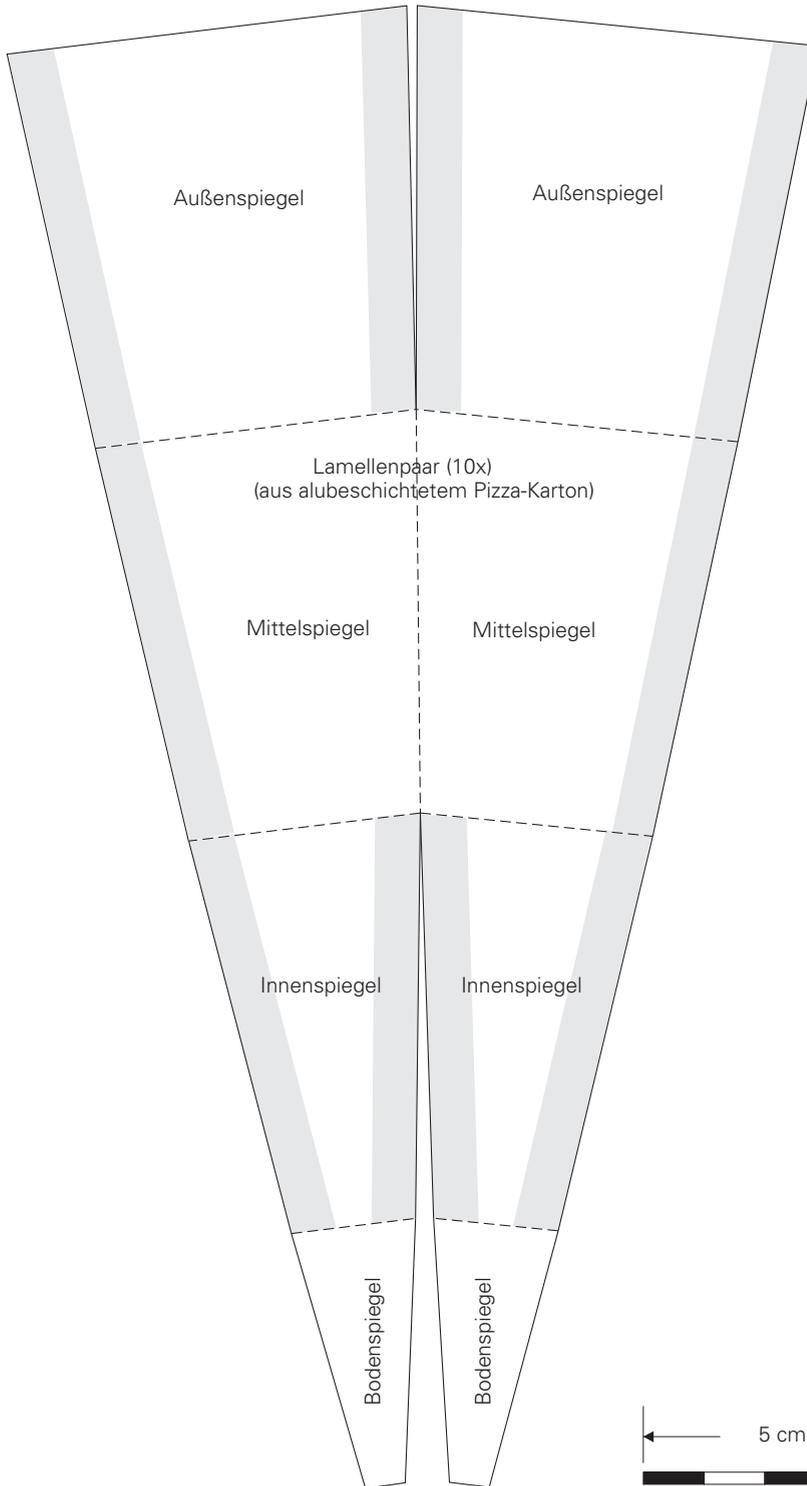
Schritt 2: Nun eine etwa 1,5 cm dicke Scheibe vom Stopfen abschneiden und durch seine Mitte die Stopfnadel stechen. Das Lager des Sonnenrades ist fertig. (Bild 2)

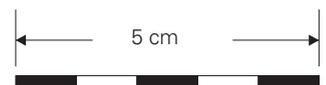
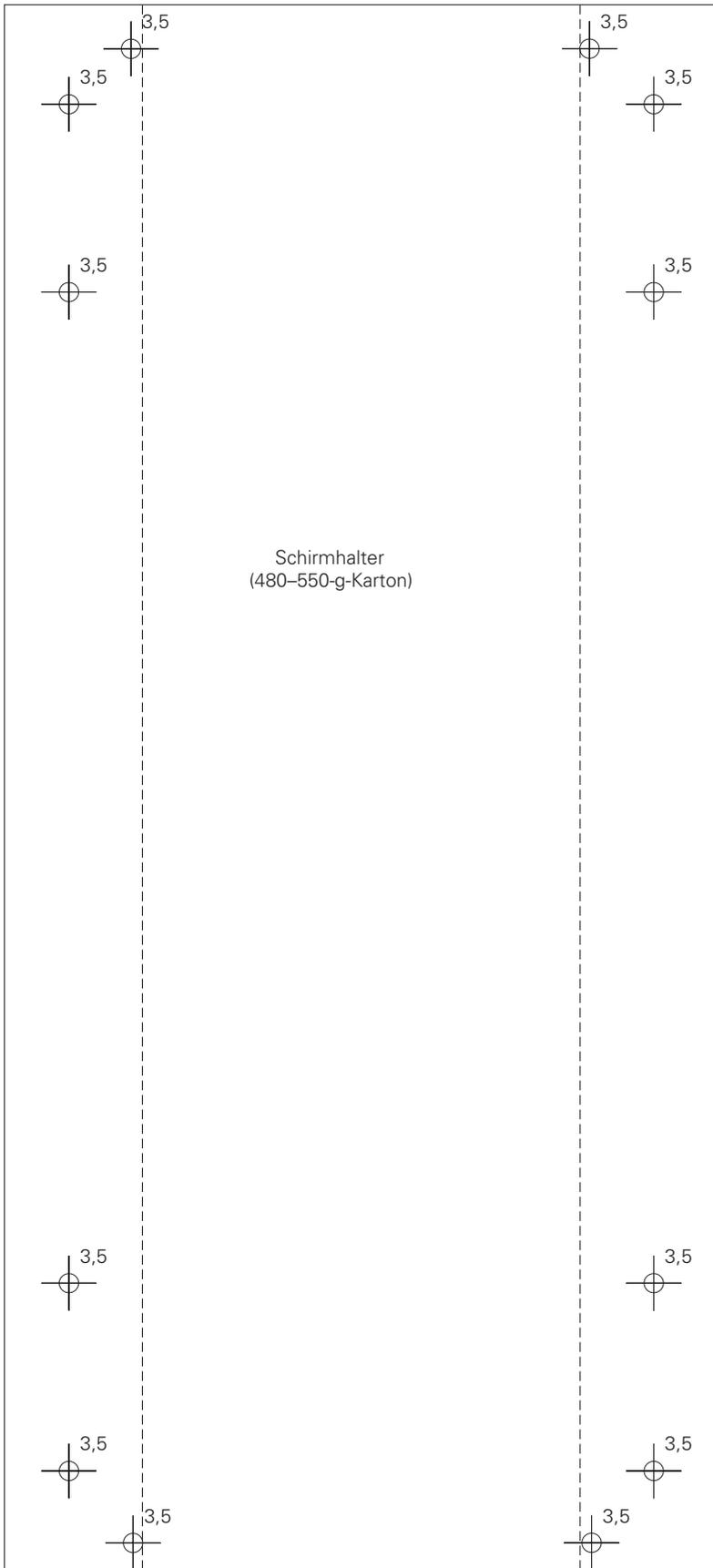
Dieses jetzt mit der Spitze nach oben in die Kegelspitze einschieben. Sollte es nicht fest genug sitzen, dann mit etwas Alleskleber fixieren.

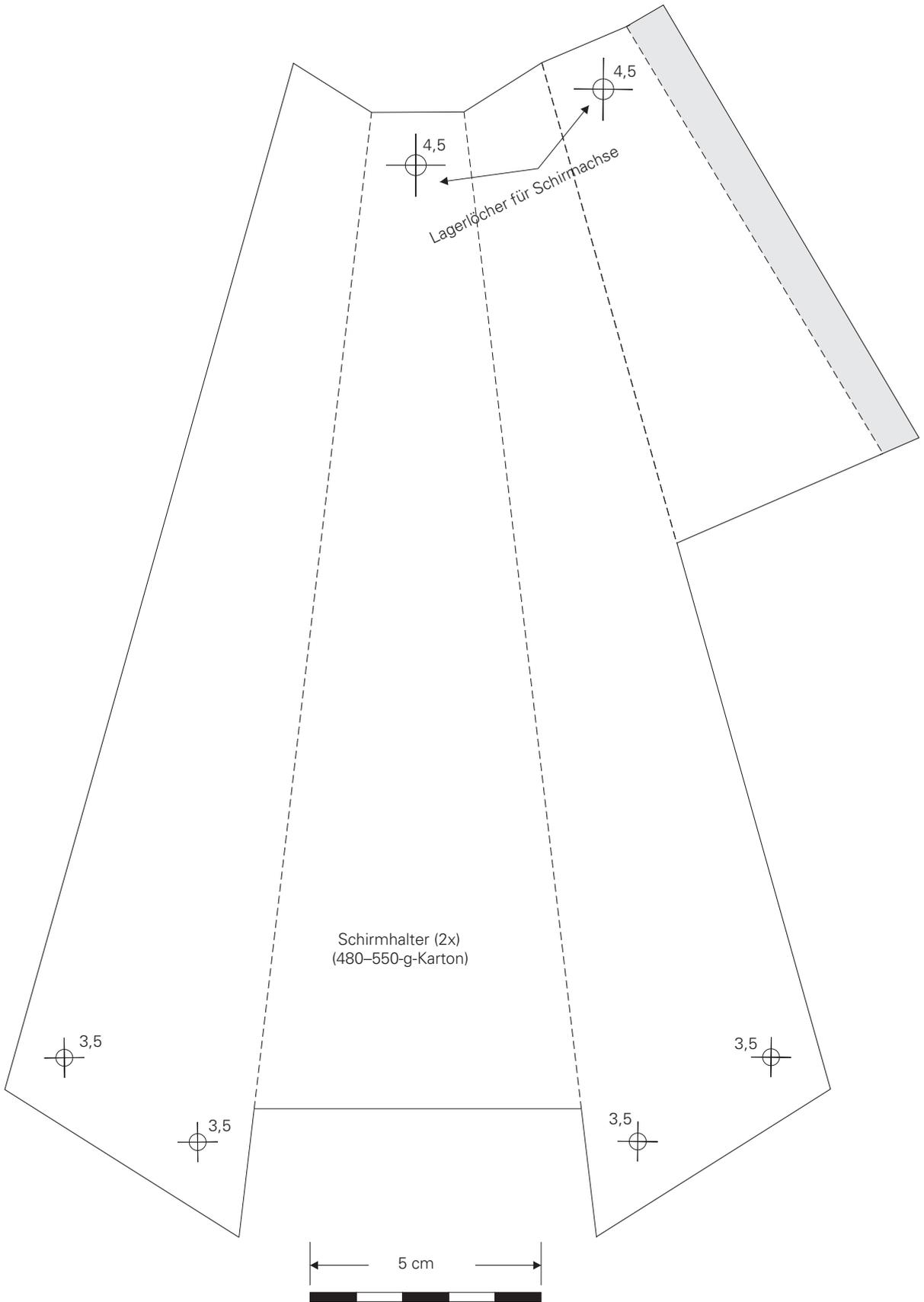


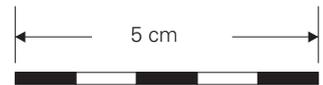
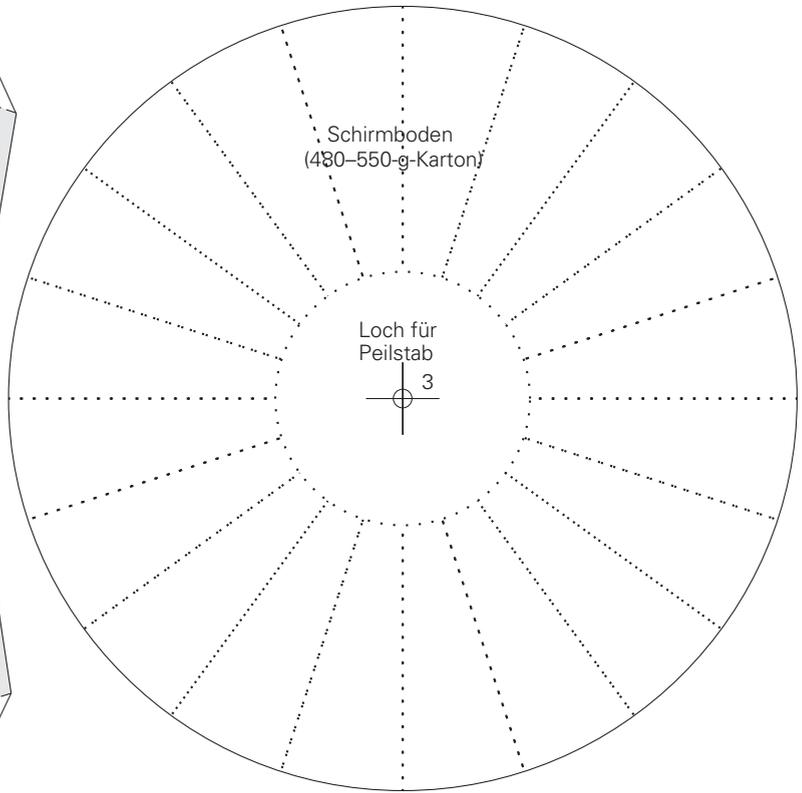
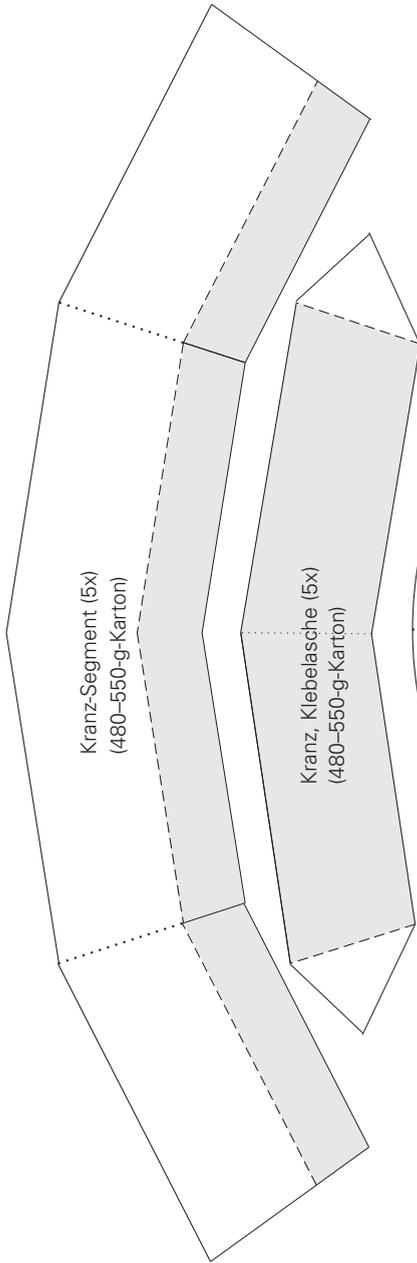
Kegel
(aus schwarzem 170–240-g-Tonkarton)

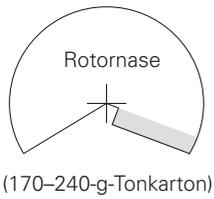
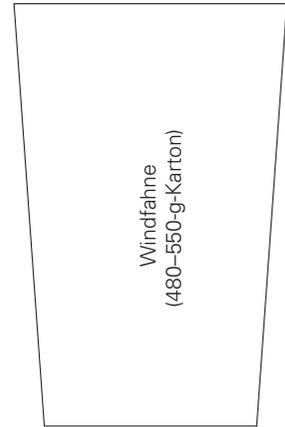
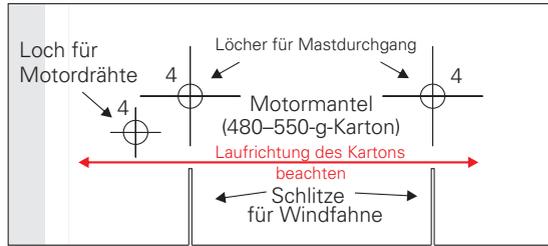
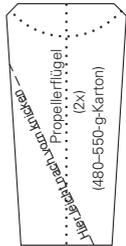




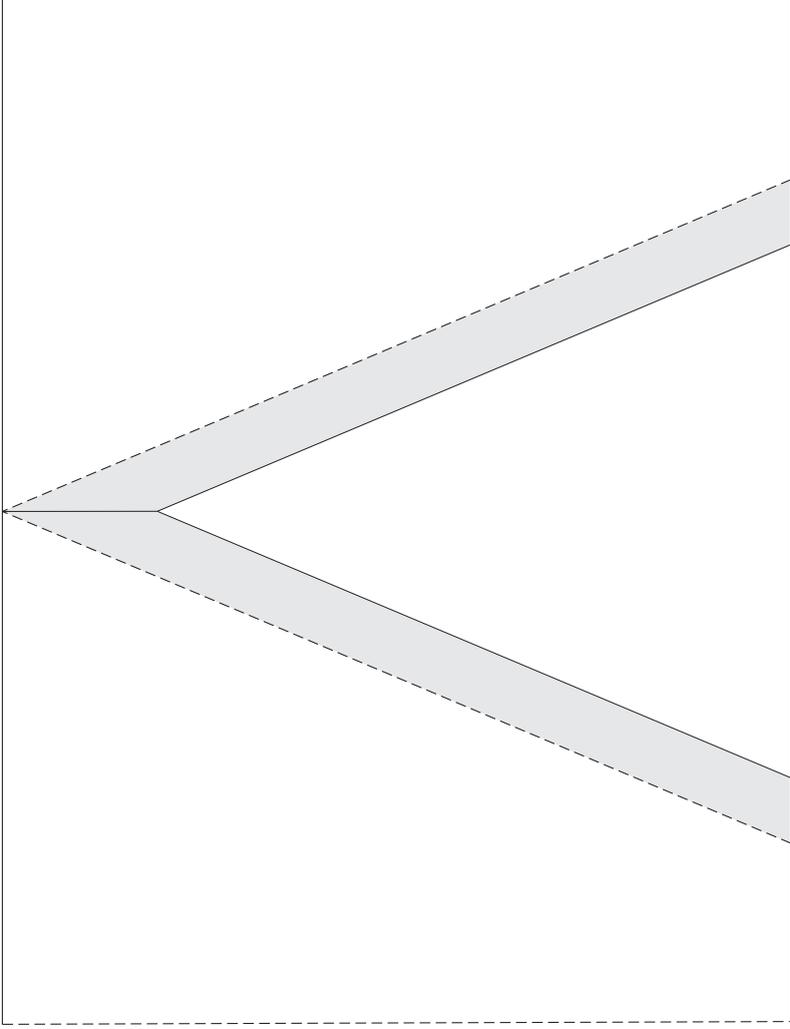




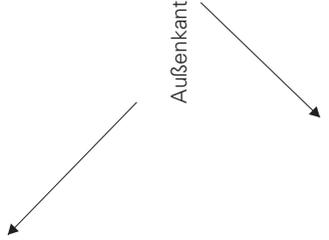


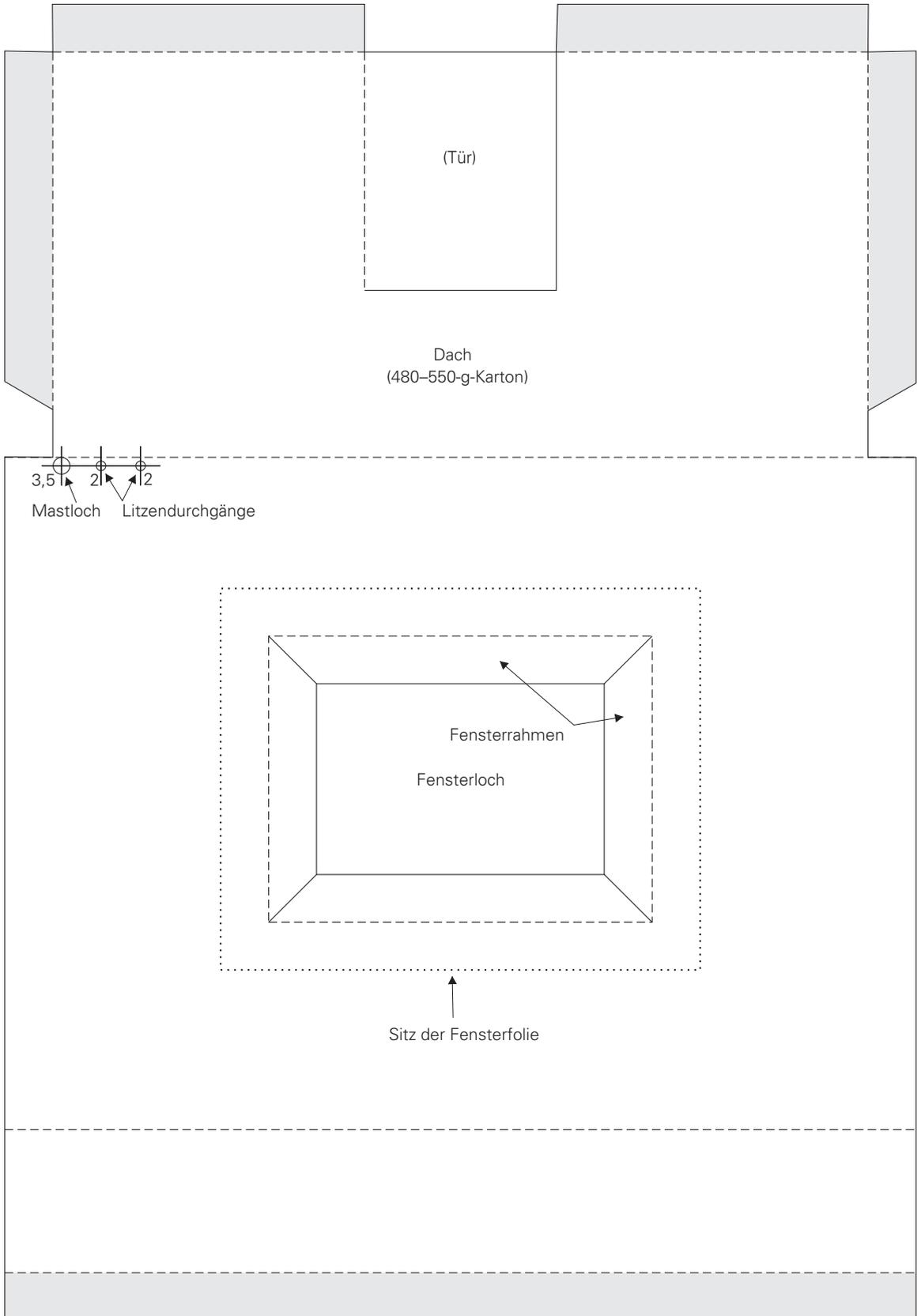


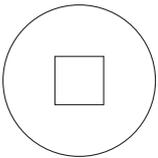
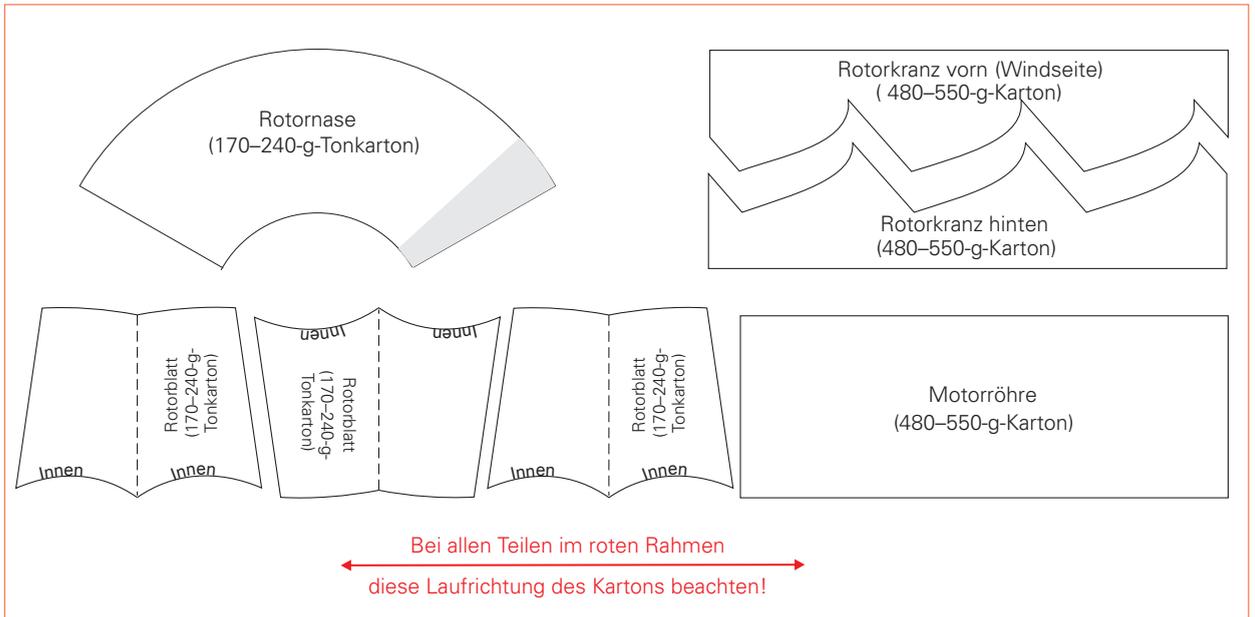
Boden mit Wänden
(480-550-g-Karton)



Außenkanten des Bodens schließen mit den Kanten des DIN A4-Kartons ab



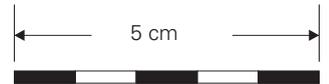


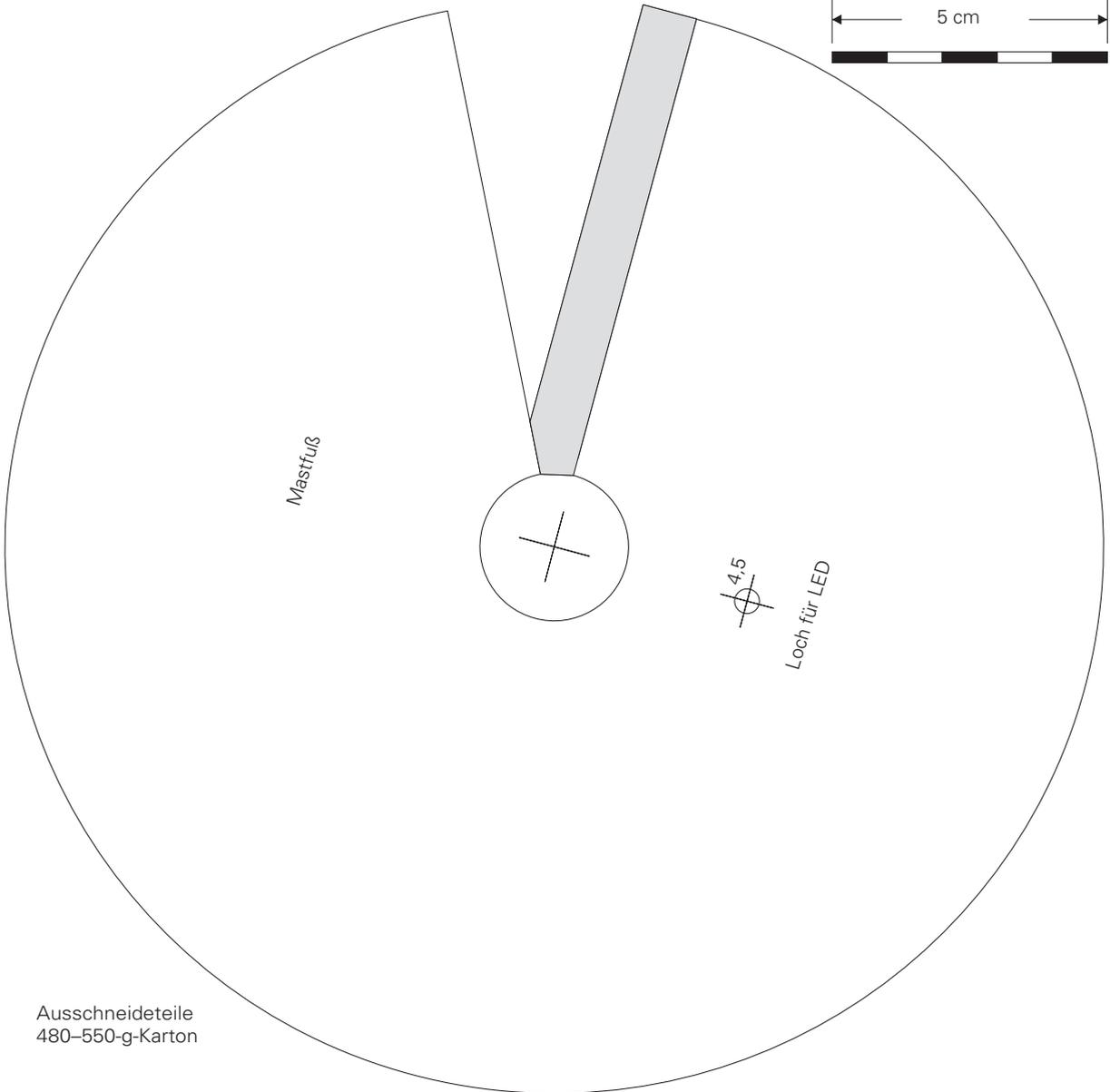


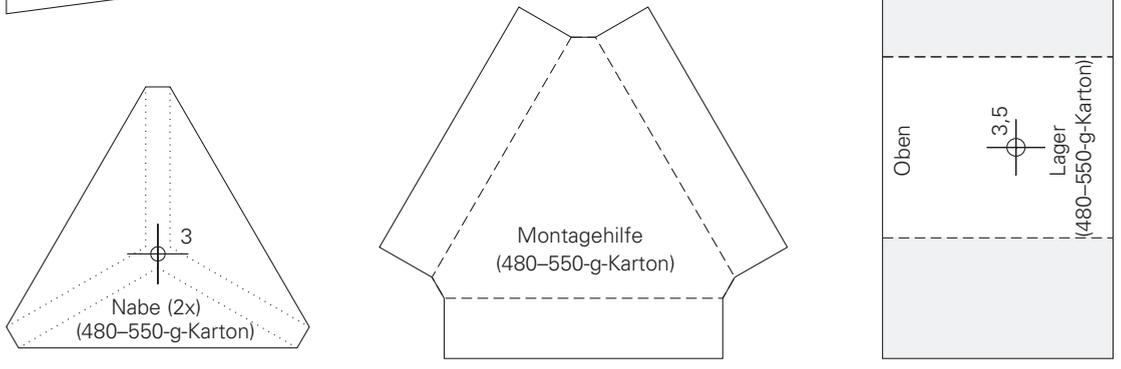
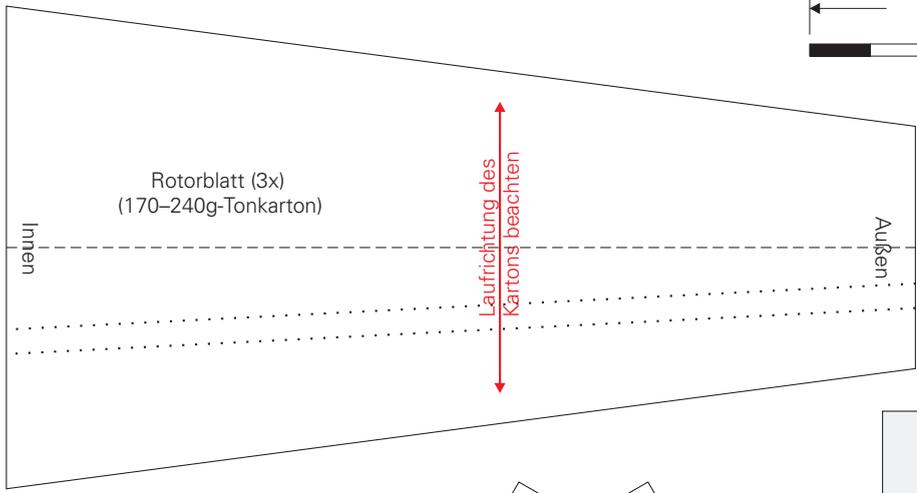
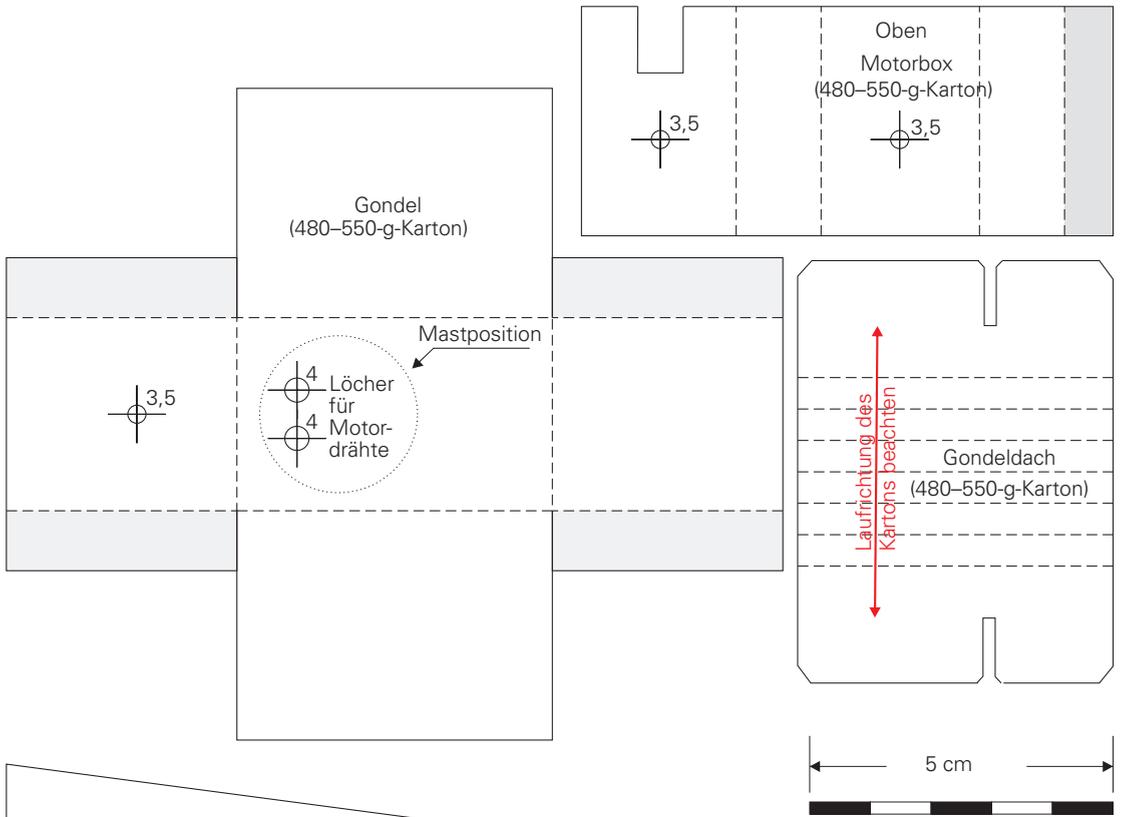
Verschlusskappe
(480–550-g-Karton)

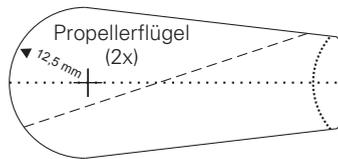
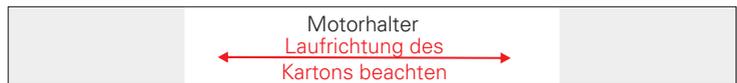
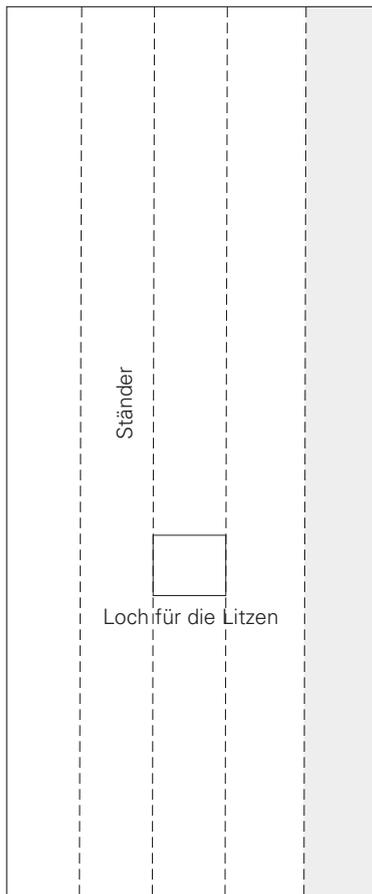
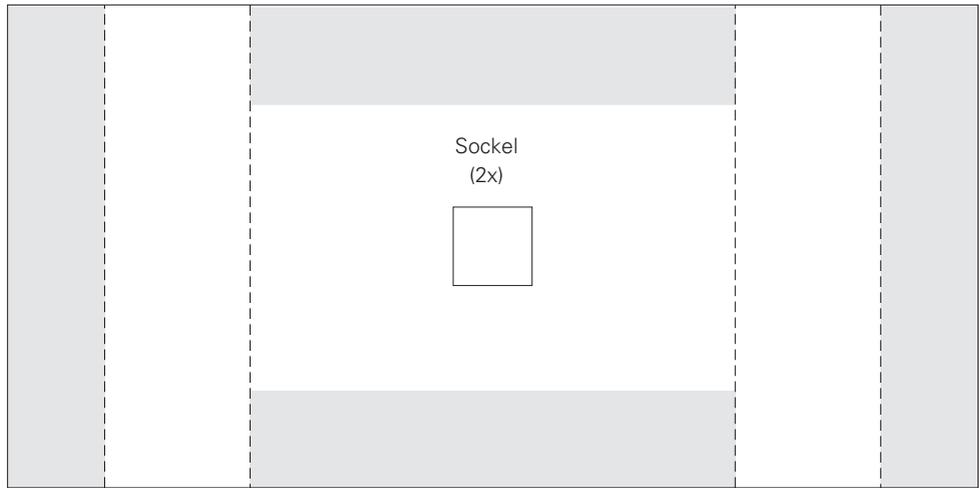


LED-Träger
(480–550-g-Karton)

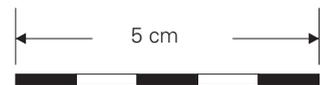


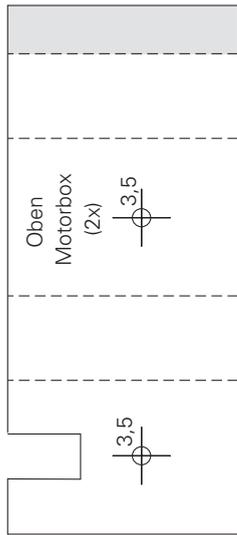




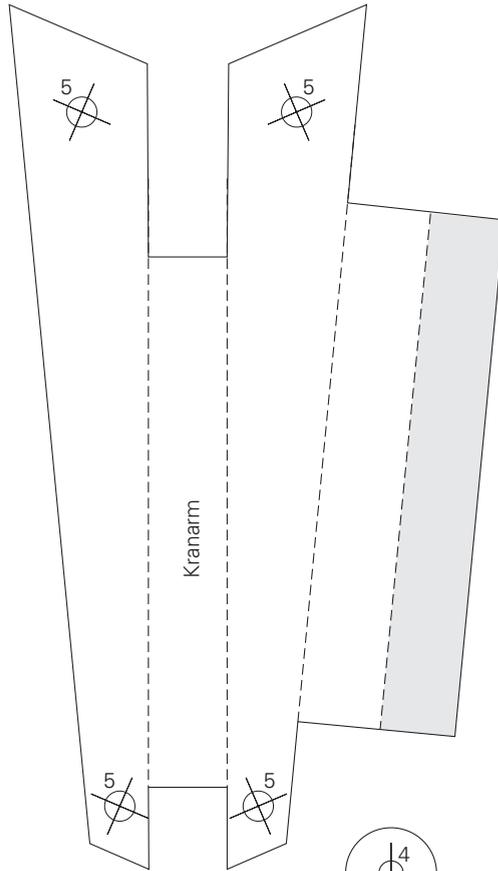


Ausschneideteile aus 480–550-g-Karton



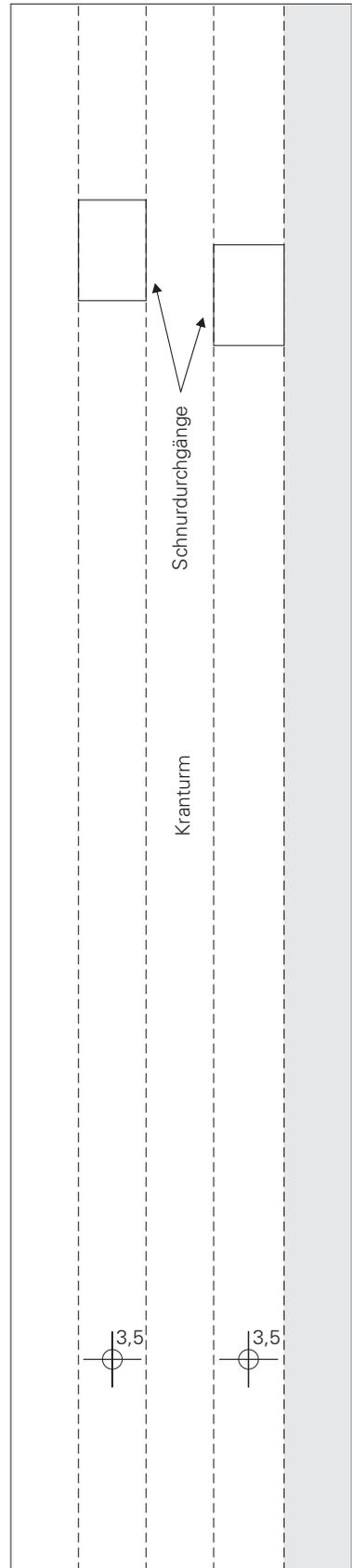
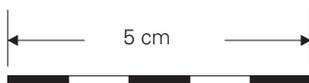


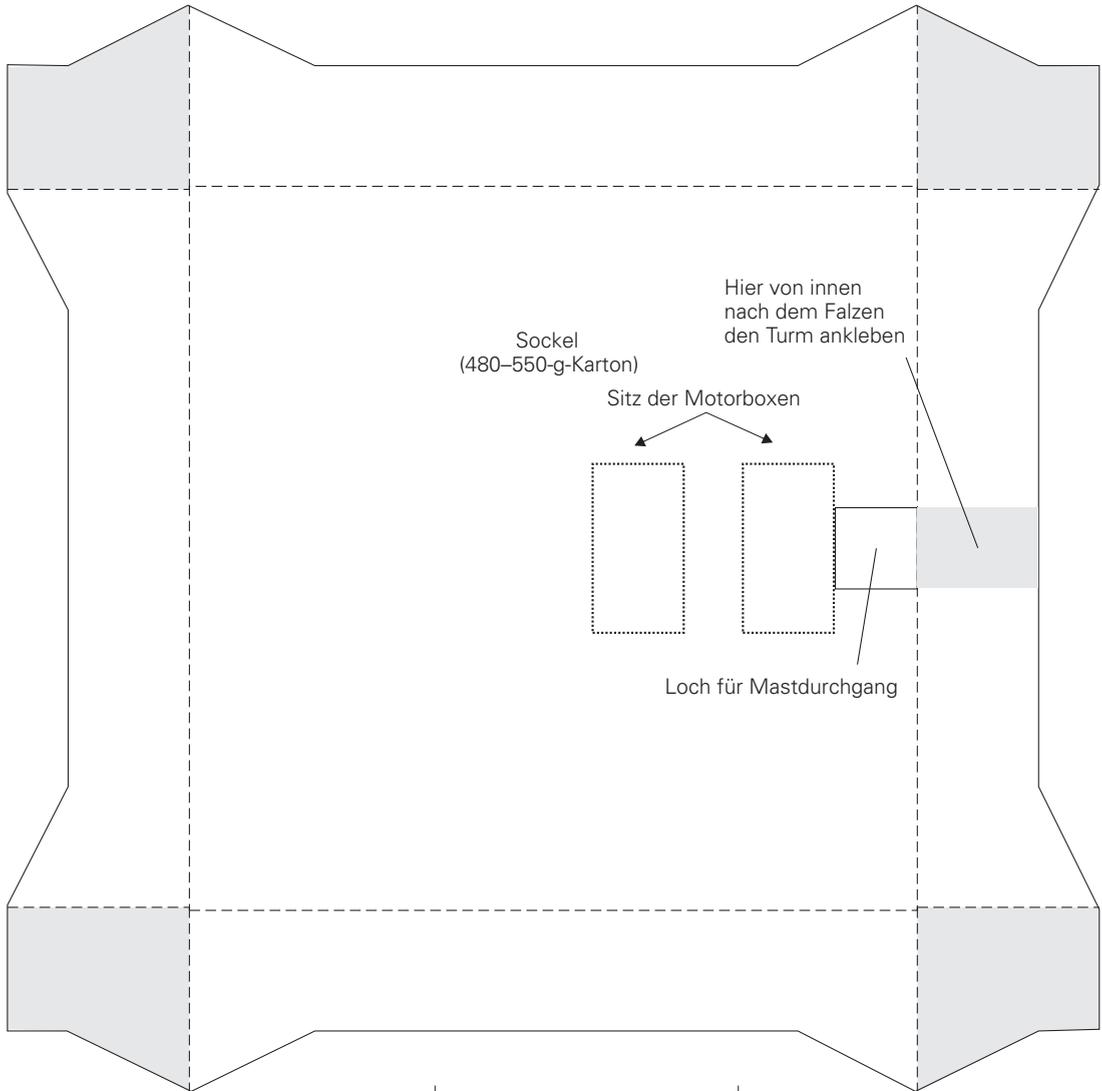
Schnurrollen-Scheibe (4x)



Unterlegscheibe (2x)

Ausschneideteile
480-550-g-Karton





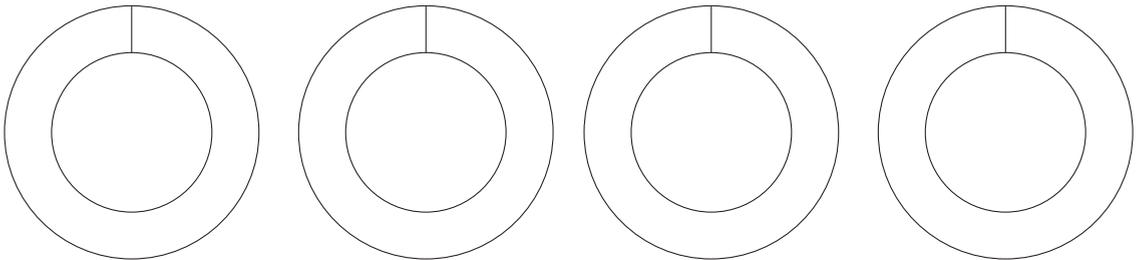
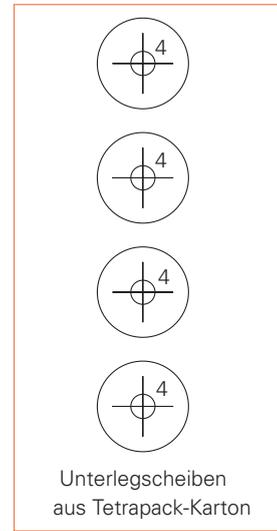
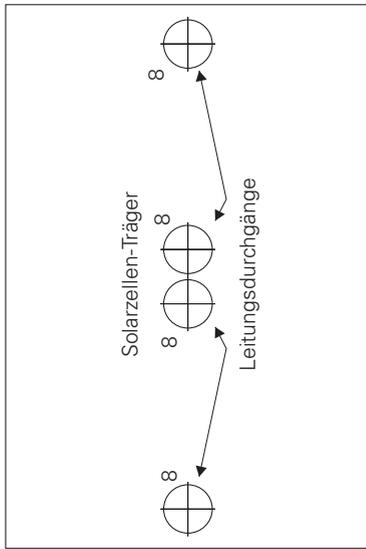
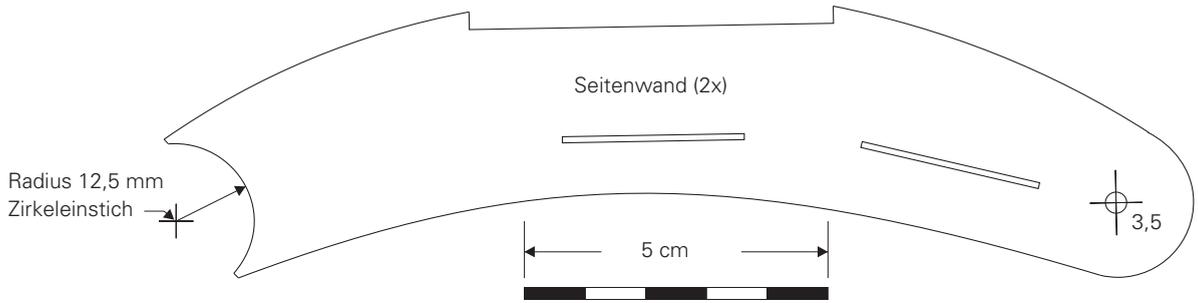
Sockel
(480-550-g-Karton)

Sitz der Motorboxen

Hier von innen
nach dem Falzen
den Turm ankleben

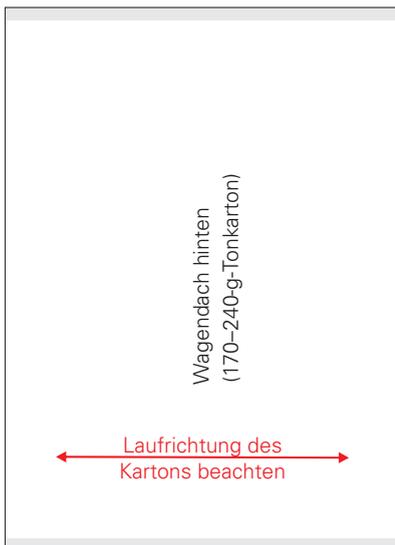
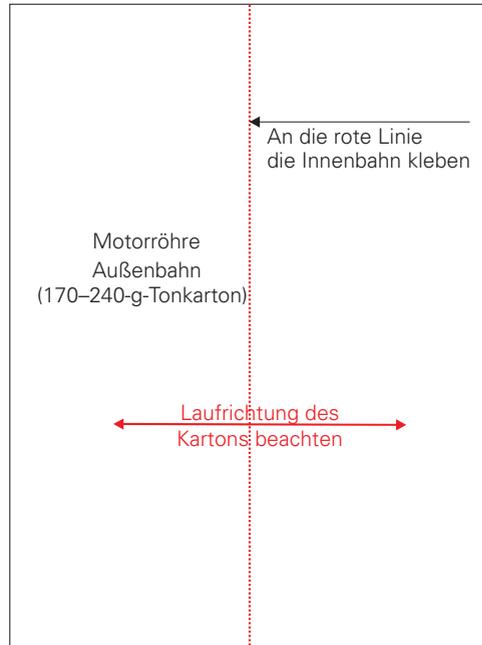
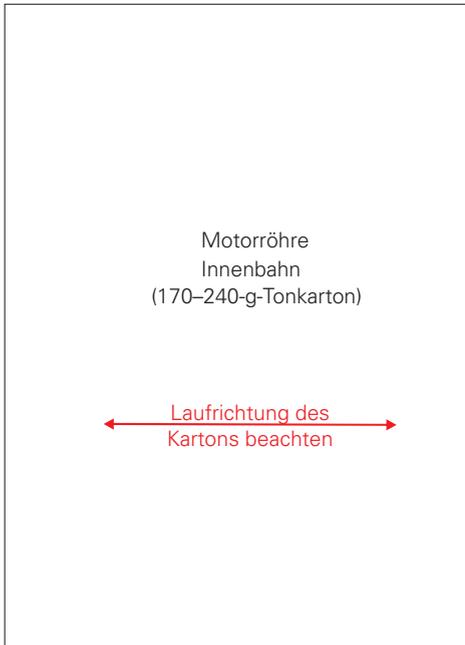
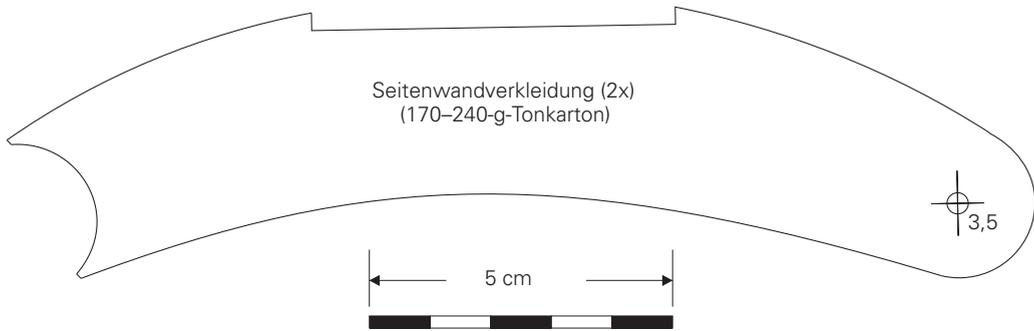
Loch für Mastdurchgang



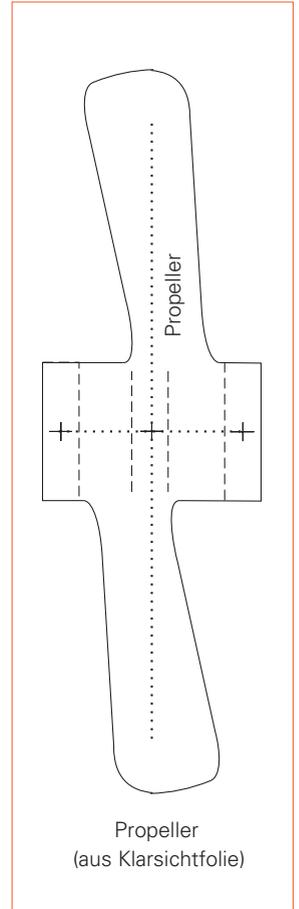
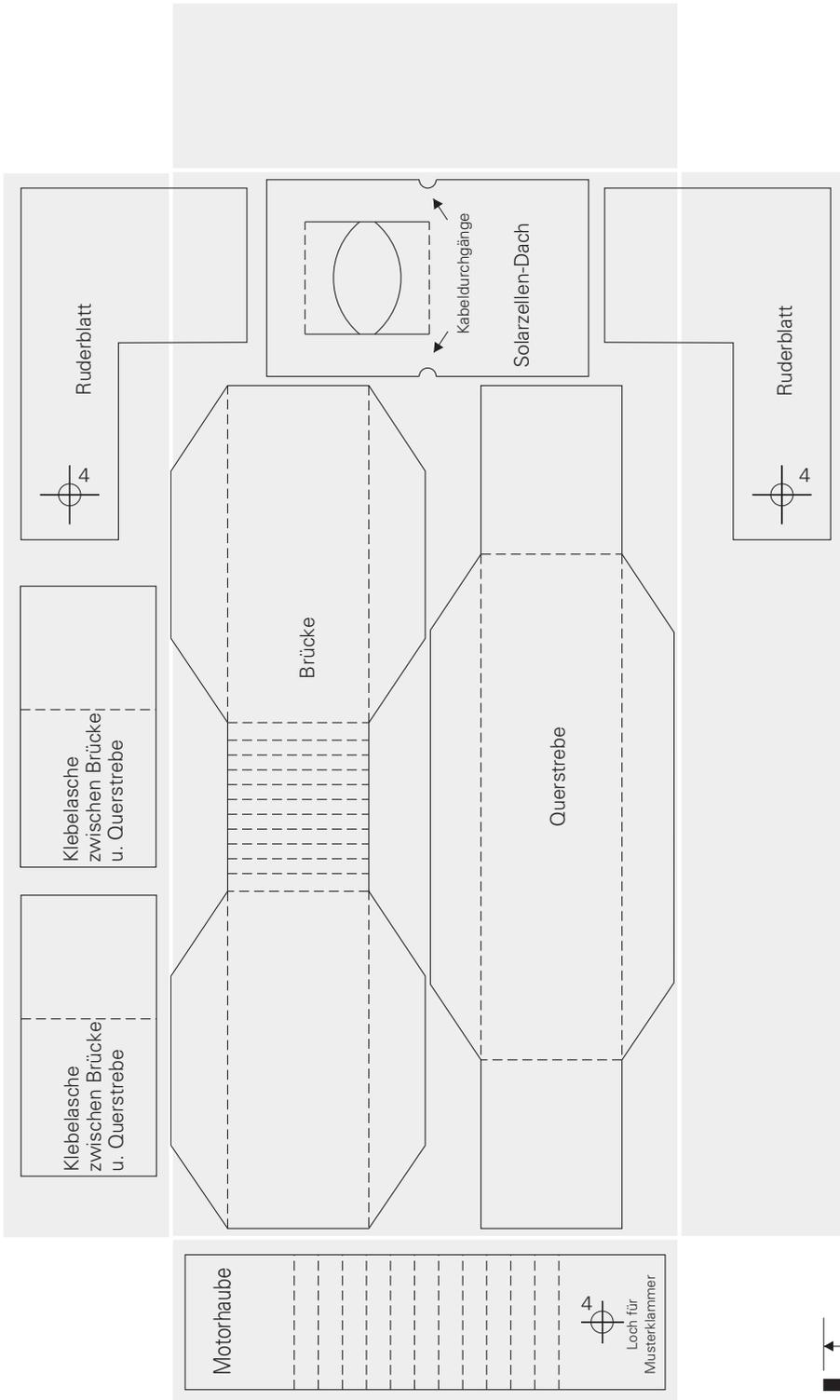


Radkränze für das Fahrzeug als Solar-Schienenbahn

(Ausschneideteile aus 480–550-g-Karton,
Unterlegscheiben aus Tetrapack-Karton)



Die grauen Flächen geben die aufgeklappte Tetrapack-Hälfte wieder



Propeller
(aus Klarsichtfolie)