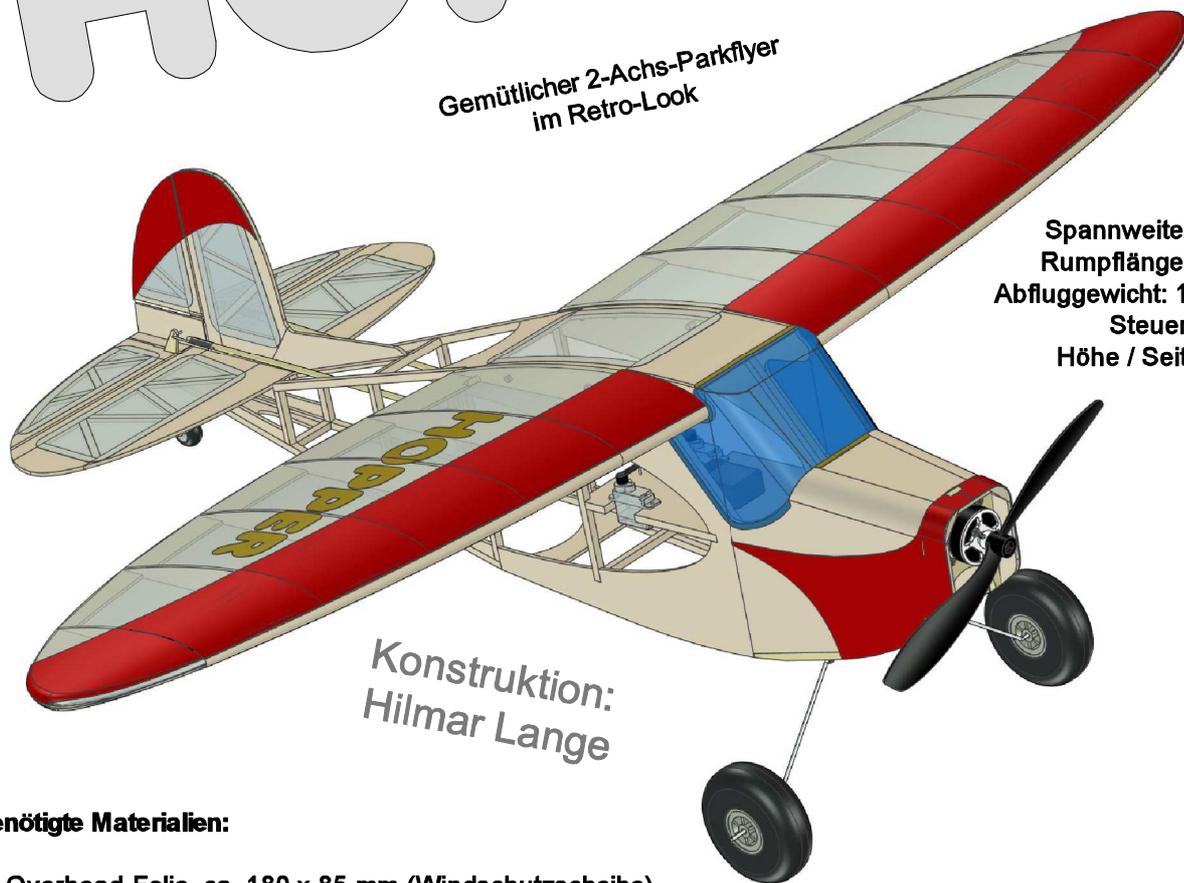


HOPPER

Gemütlicher 2-Achs-Parkflyer
im Retro-Look



Spannweite: 792 mm
Rumpflänge: 572 mm
Abfluggewicht: 170-190 g
Steuerung über
Höhe / Seite / Motor

Konstruktion:
Hilmar Lange

Benötigte Materialien:

- 1x Overhead-Folie, ca. 180 x 85 mm (Windschutzscheibe)
- 6x weiches Vlies-Scharnier (2x Seitenrudder, 4x Höhenrudder)
- 1x Messingdraht Ø 1,5 mm / Länge 40 mm (Höhenruderverbinder)
- 8x Neodym-Magnet: Ø 3 mm x 6 mm (Flügelarretierung)
- 1x Messingrohr Ø 4 mm x Ø 3,1 mm / Länge 71,5 mm (Flügelsteckung im Rumpf)
- 2x Messingrohr Ø 4 mm x Ø 3,1 mm / Länge 62 mm (Flügelsteckung in den Tragflächen)
- 1x CFK-Rundstab Ø 3 mm / Länge 195 mm (Flügelverbinder)
- ABS-Rohr Ø 2 mm x Ø 1,0 mm / Länge 50 mm + Länge 42 mm (Heckfahrwerks-Führung)
- Stahldraht Ø 0,8 mm / Länge 125 mm (Heckfahrwerksdraht)
- Stahldraht Ø 0,8 mm / Länge 188 mm (4x 47 mm für L-förmige Anlenkungsdrähte)
- 4x Blechschraube 2,9 x 6,5 für Fahrwerksdraht-Befestigung
- Stahldraht Ø 1,5 mm / Länge 330 mm (inklusive etwas Übermaß) für Fahrwerksdraht
- etwas Klettband für Akku-Befestigung
- ORALIGHT Bügelfolie (Vorschlag: transparent und rot, jeweils 0,5 m)
- ORASTICK Bügelfolie für den Schriftzug (Vorschlag: orange)

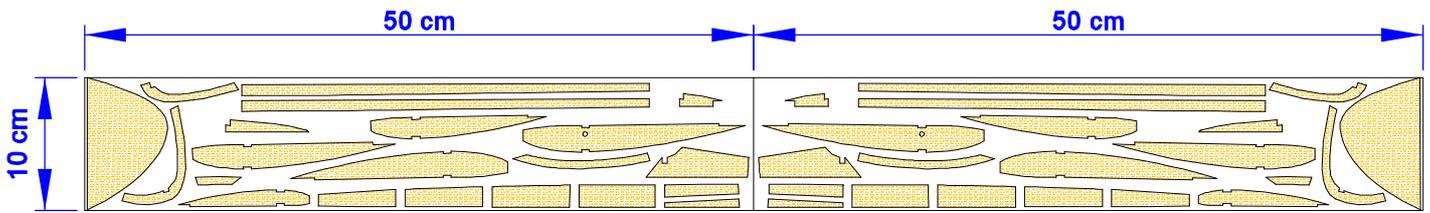
sowie Holz gemäß Auflistung auf Seite 2

RC-Komponenten und Teile:

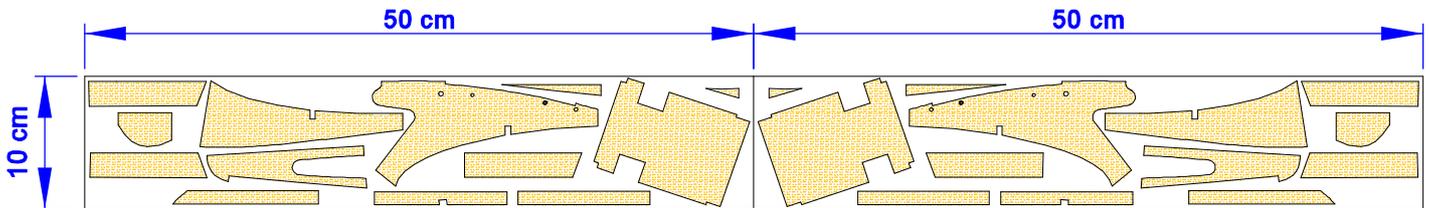
- 2 Servos à 4,8 g, z.B. Hitec HS-40
- BL-Motor 15 g (T-Motor AT 2202-32 KV 2200)
- Regler ab 12 Ampere (z. B. Volta 15A)
- Propeller 6x4" oder 6x5" GWS Slowfly (Bezug: RC-Factory)
- Empfänger mit mindestens 3 Kanälen
- 2S LiPo 450 mAh
- Haupträder Ø 60 mm: Aero-Naut #735333
- 1 Heckrad, Ø ca. 15-17 mm



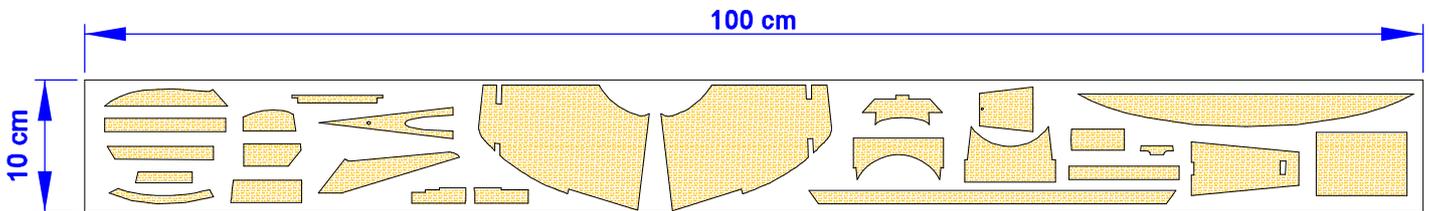
Holzbedarf bei platzsparender Teile-Anordnung:



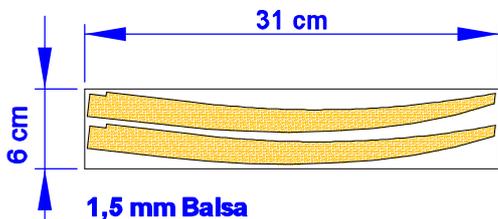
1 Brettchen 2 mm Balsa (mittelhart / ca. 20 g pro Brettchen)
 Tipp: die Bauteile sind zur Hälfte spiegelbildlich angeordnet.



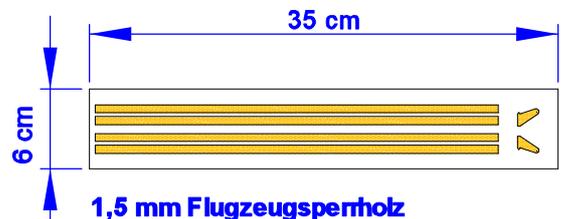
1 Brettchen 2 mm Balsa (mittelhart / ca. 20 g pro Brettchen)
 Tipp: die Bauteile sind zur Hälfte spiegelbildlich angeordnet.



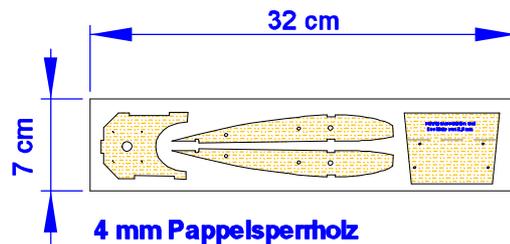
1 Brettchen 2 mm Balsa (mittelhart / ca. 20 g pro Brettchen)



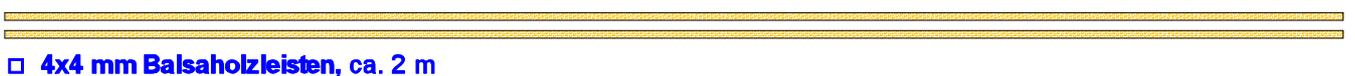
1,5 mm Balsa
 (hart / ca. 40 g pro 1-m-Brettchen)



1,5 mm Flugzeugsperrholz



4 mm Pappelsperholz



□ 4x4 mm Balsaholzleisten, ca. 2 m



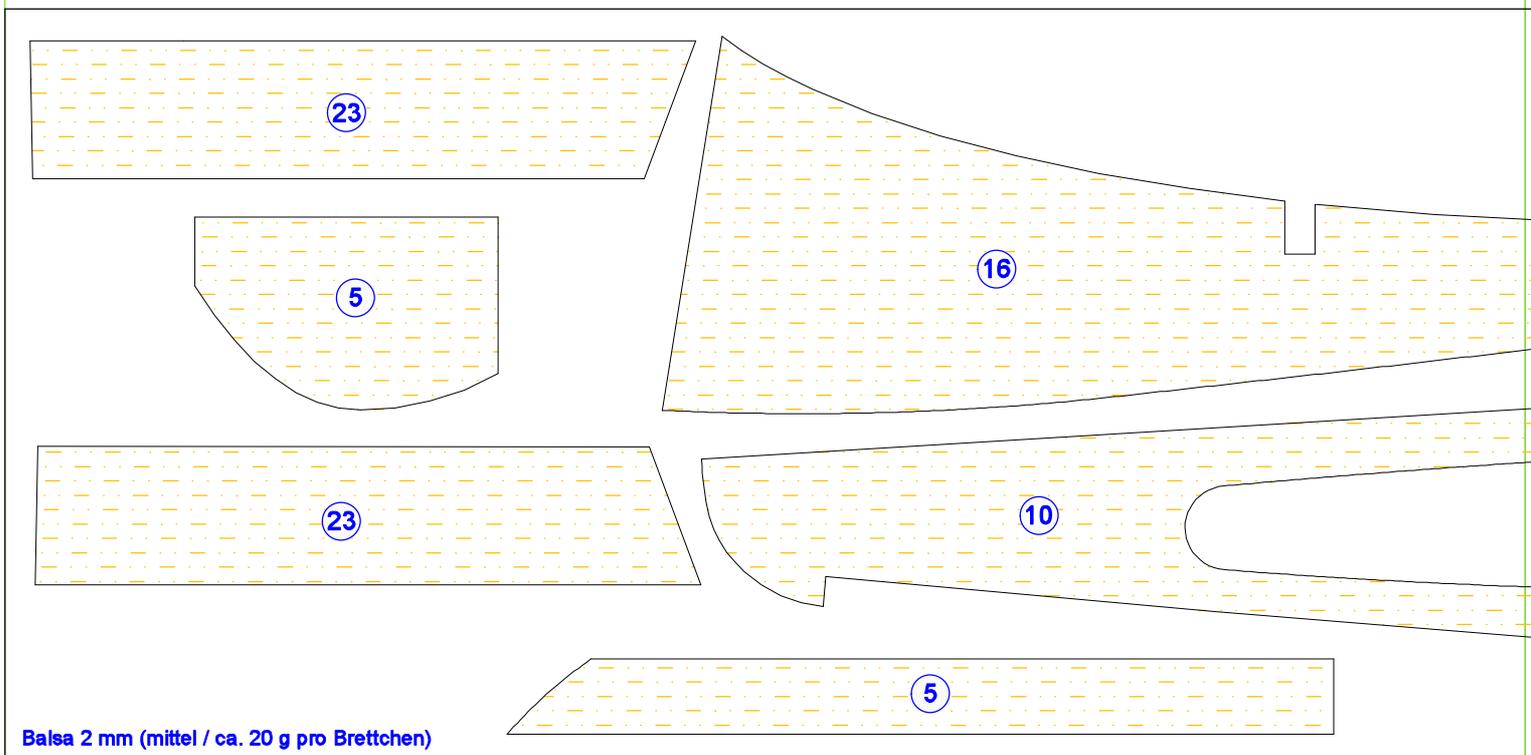
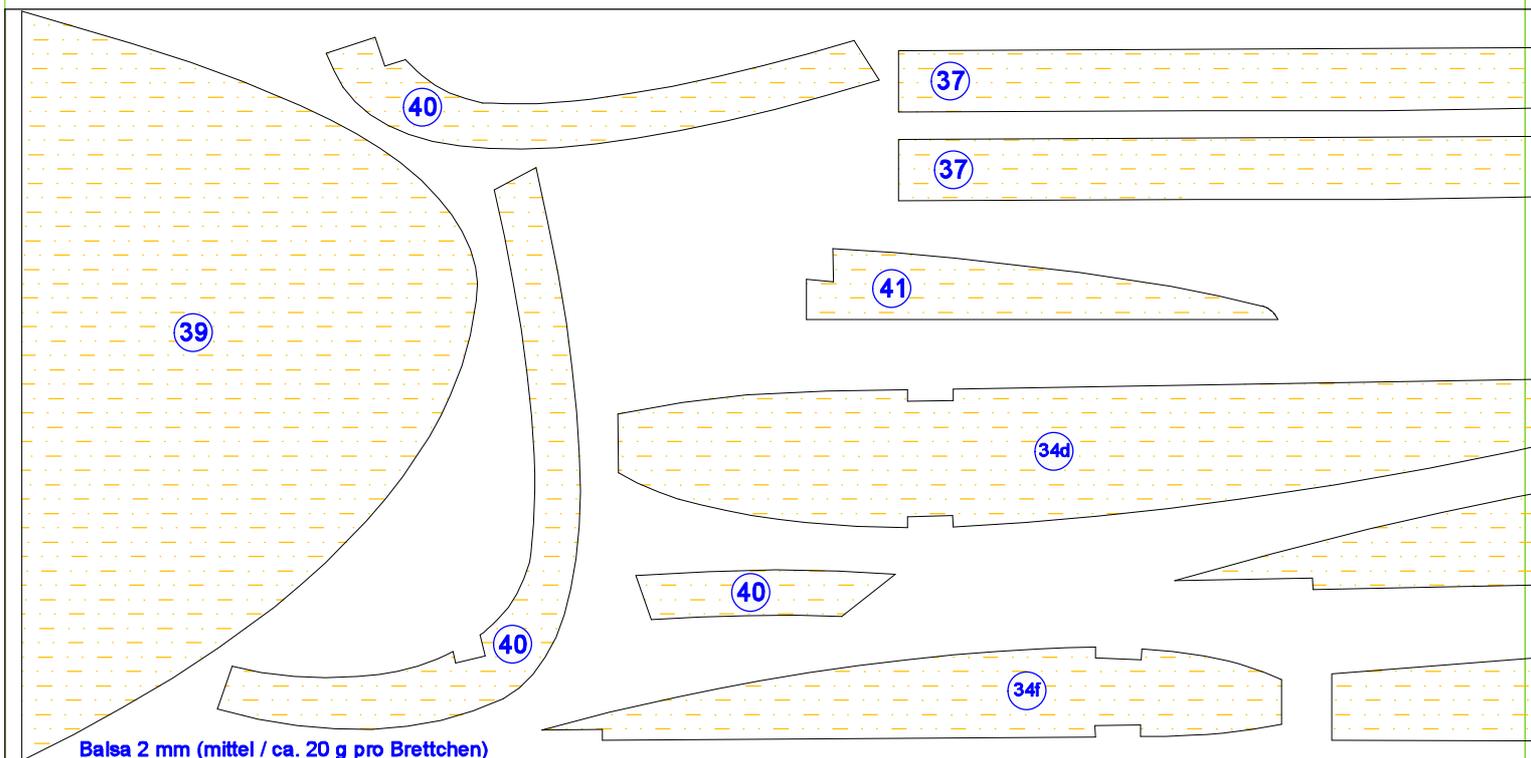
2x4 mm Balsaholzleisten, ca. 1 m

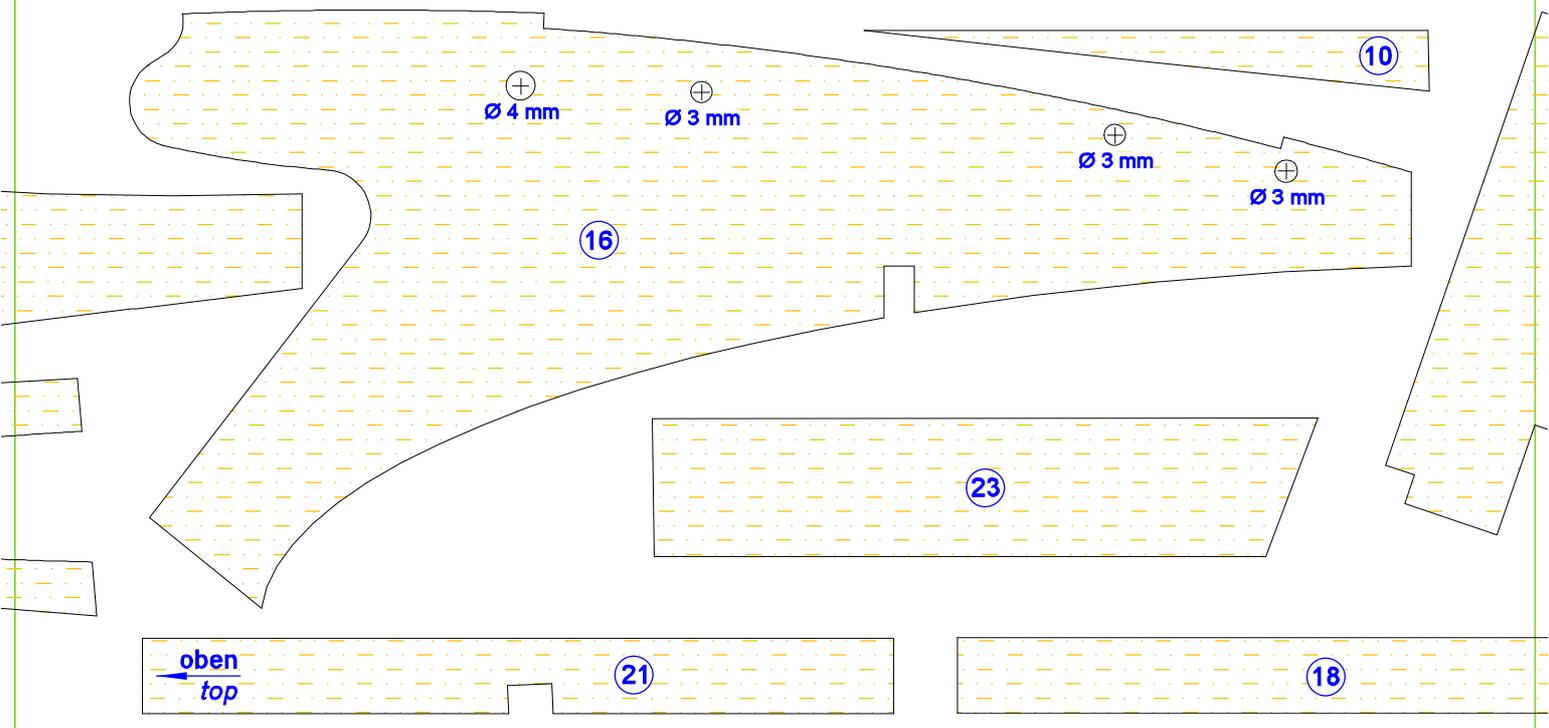
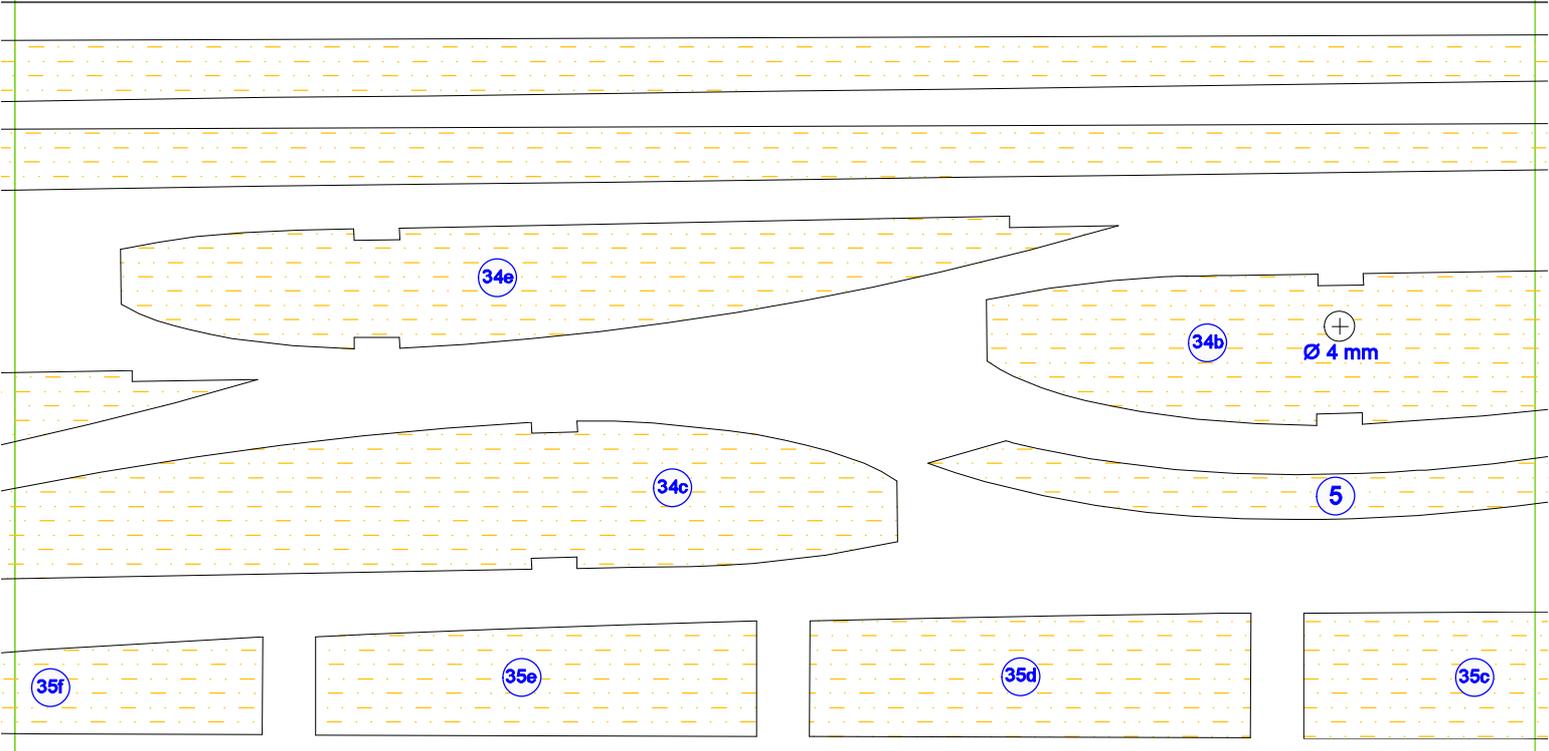


Ø 3 mm Buchenrundstab, ca. 1 m

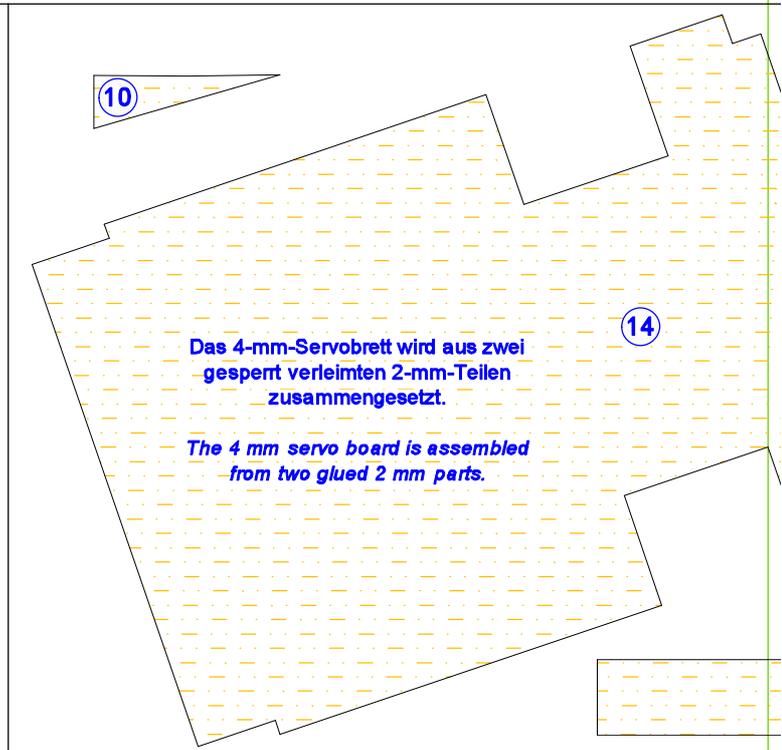
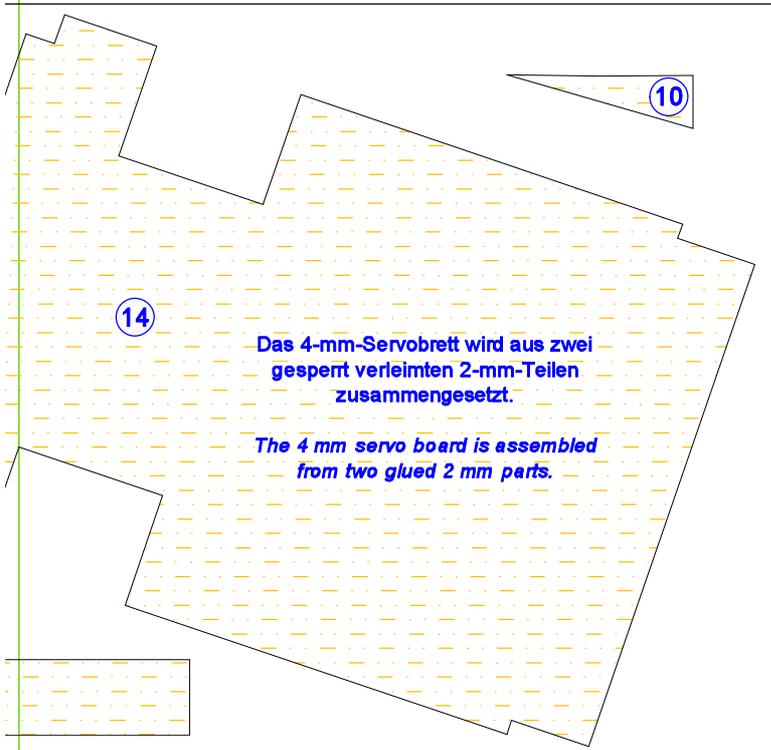
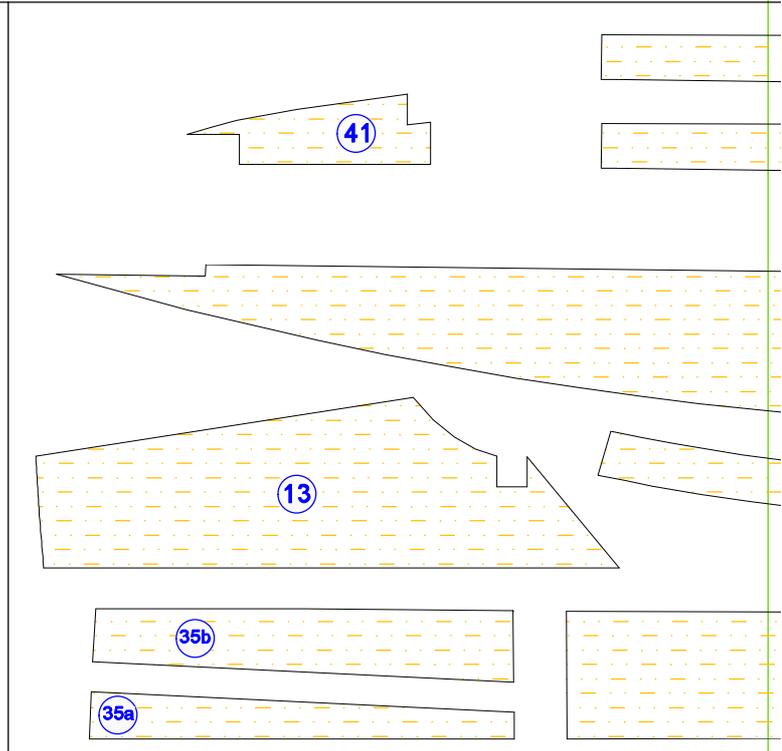
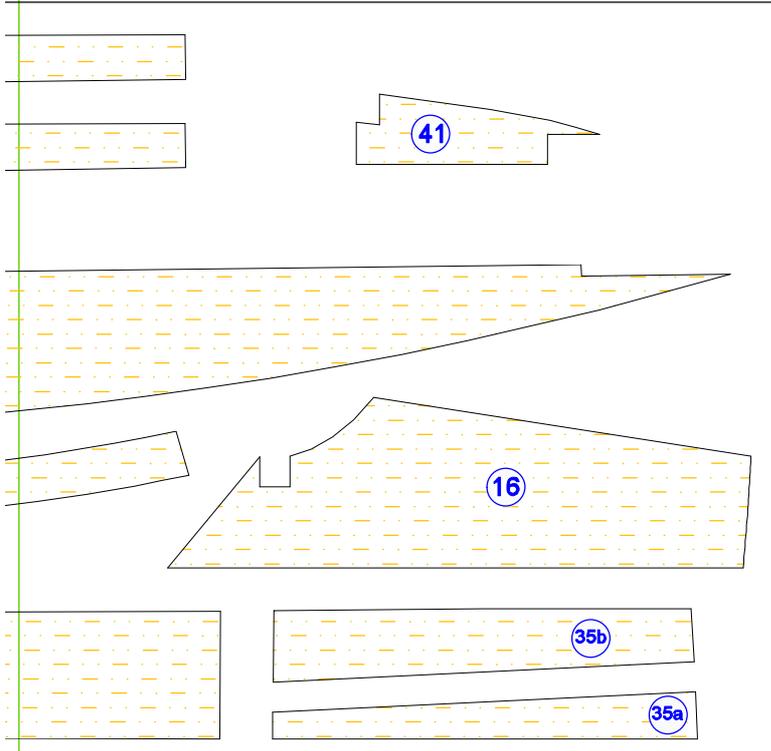
Jedes Bauteil besitzt eine Nummer, die dem dazugehörigen Baustufenfoto entspricht. Am Besten sortieren Sie die Teile nach dem Aussägen zu ihrer passenden Bauplanseite.

Each part has a number that corresponds to its construction stage picture. It is best to sort the parts after sawing them out to their matching page of the plan.





oben
top



⊕
Ø 4 mm

34b

34e

5

34c

35c

35d

35e

35f

10

⊕
Ø 3 mm

⊕
Ø 3 mm

⊕
Ø 3 mm

⊕
Ø 4 mm

13

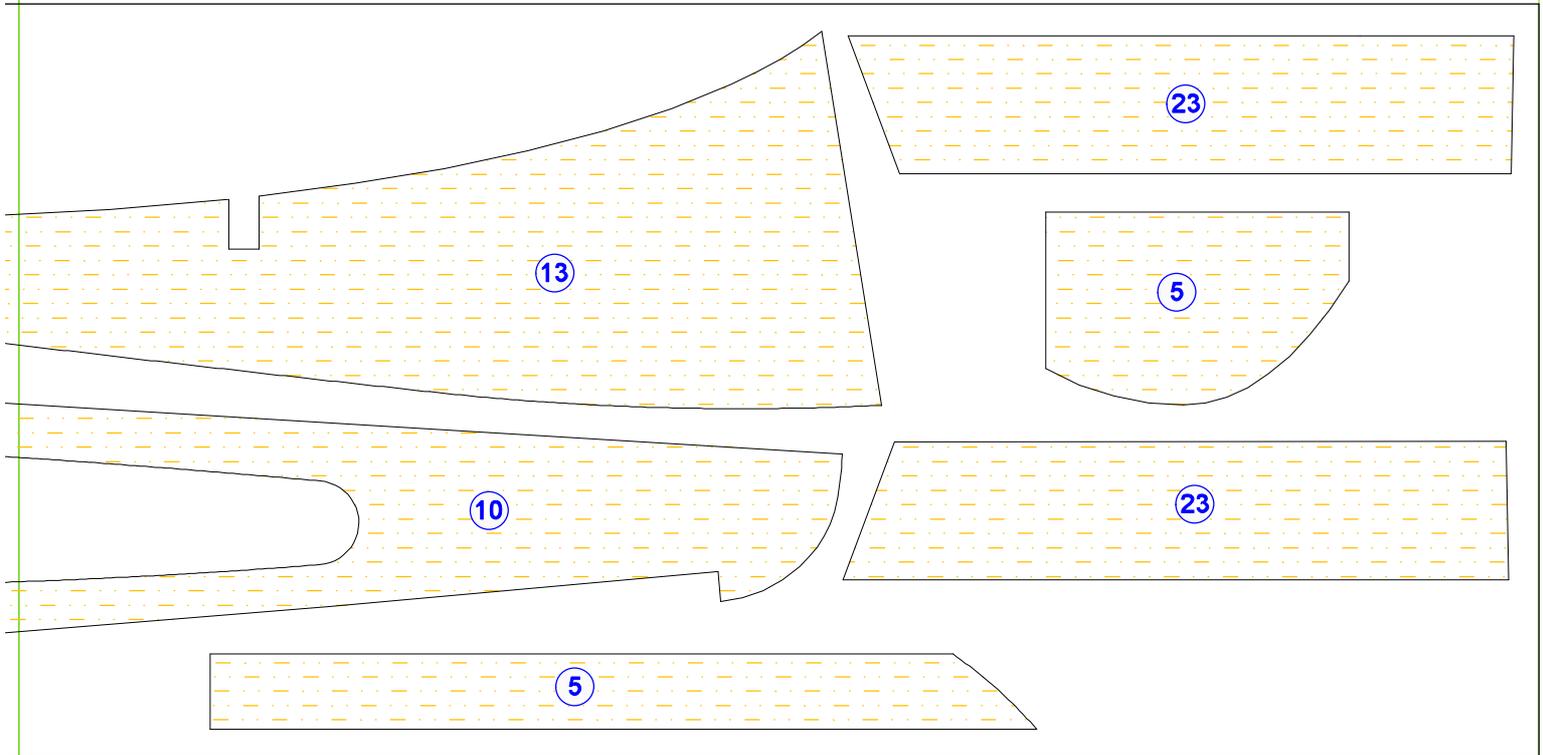
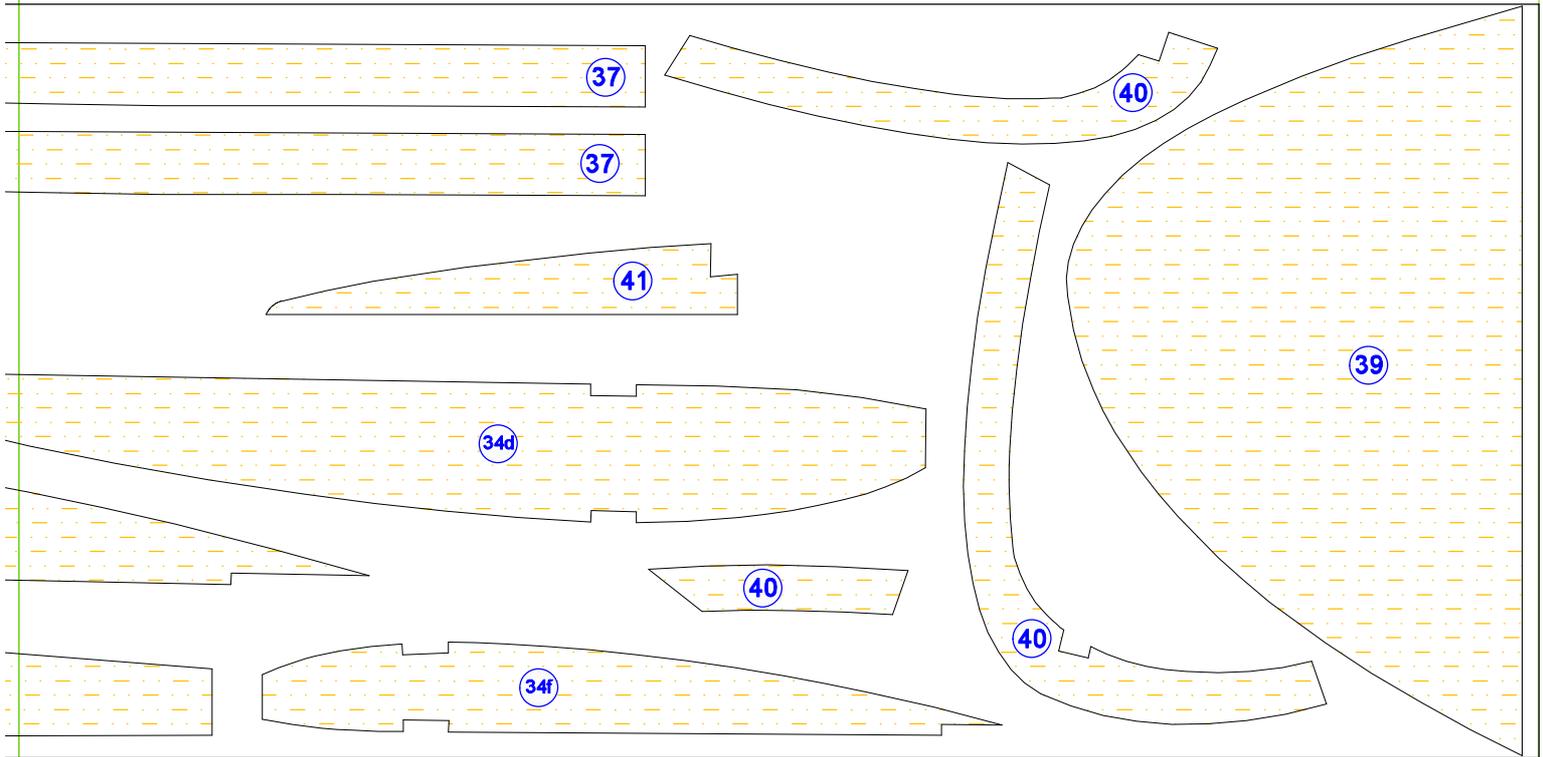
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18

21

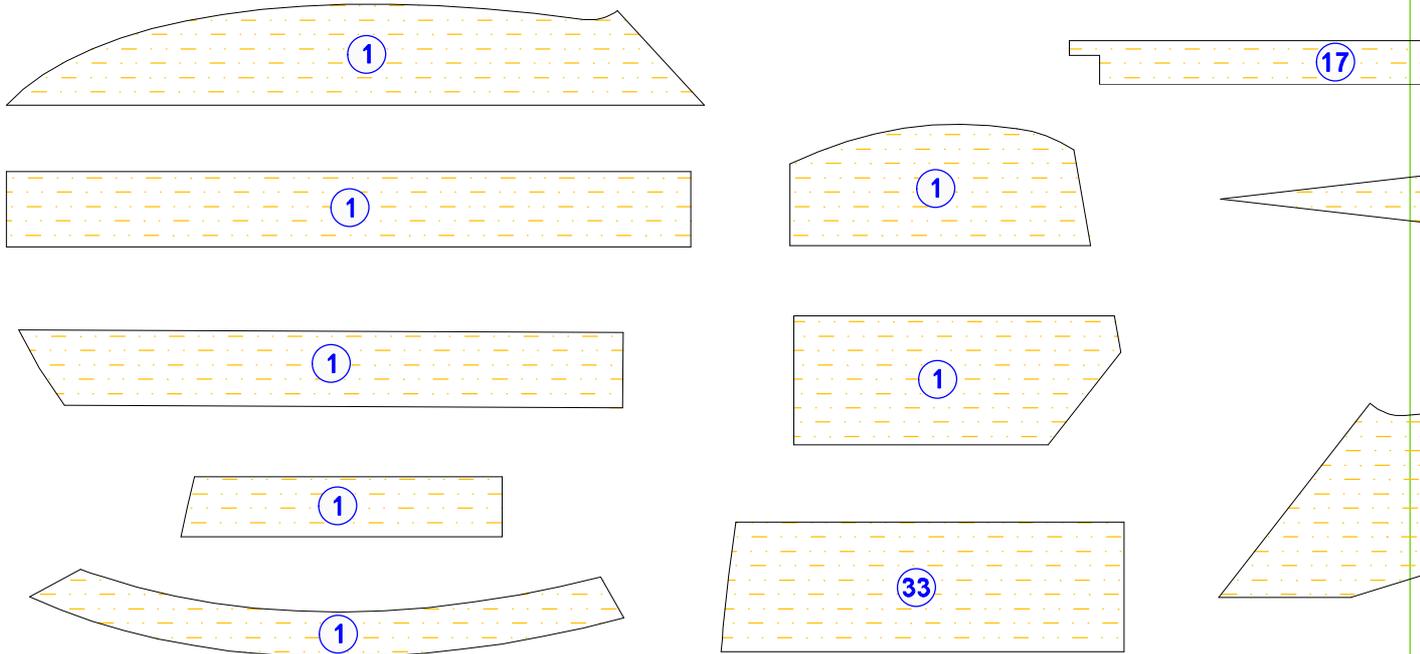
oben
top →





Jedes Bauteil besitzt eine Nummer, die dem dazugehörigen Baustufenfoto entspricht. Am Besten sortieren Sie die Teile nach dem Aussägen zu ihrer passenden Bauplanseite.

Each part has a number that corresponds to its construction stage picture. It is best to sort the parts after sawing them out to their matching page of the plan.

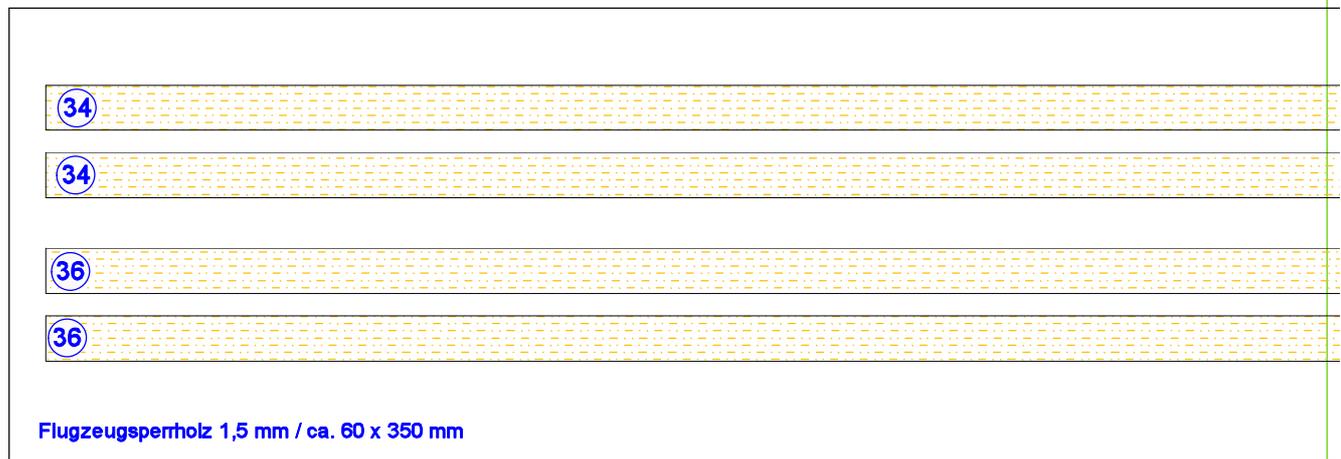
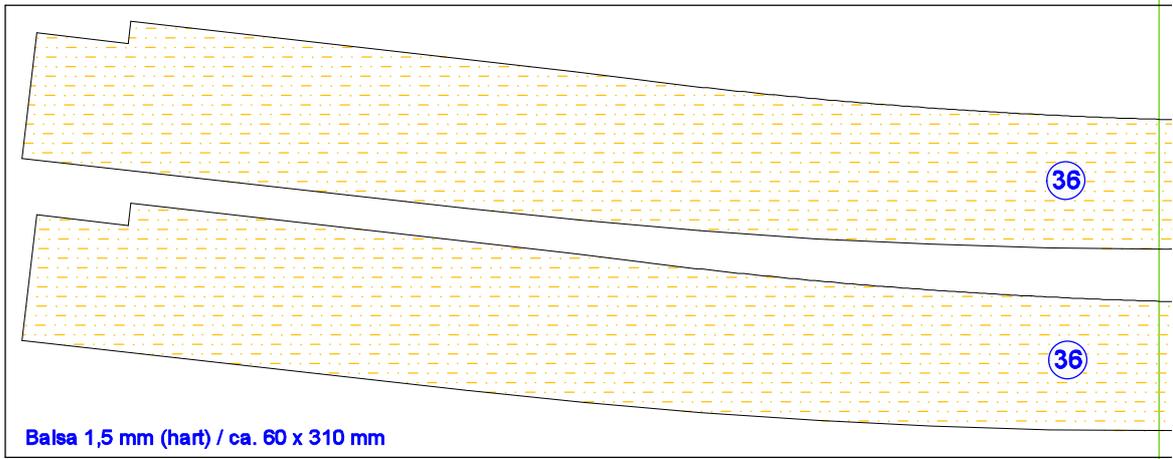
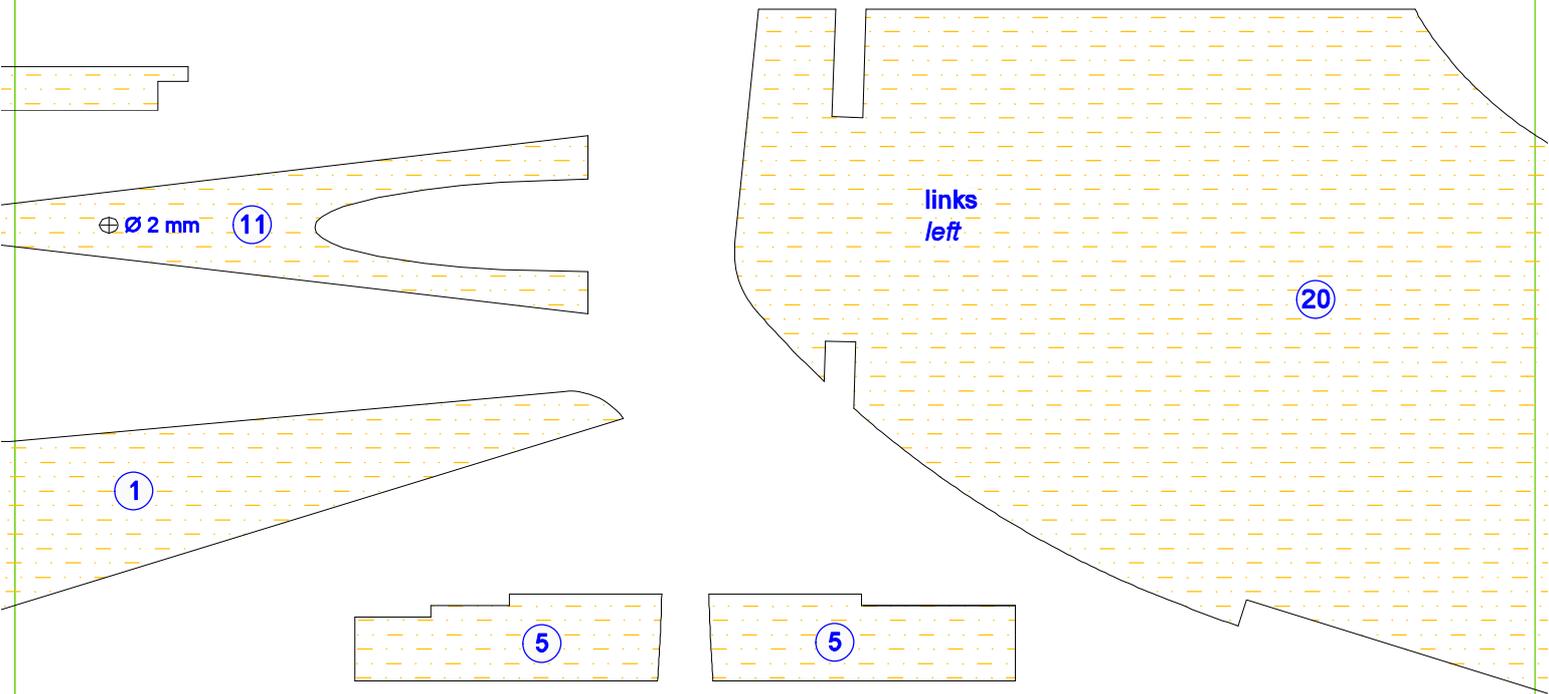


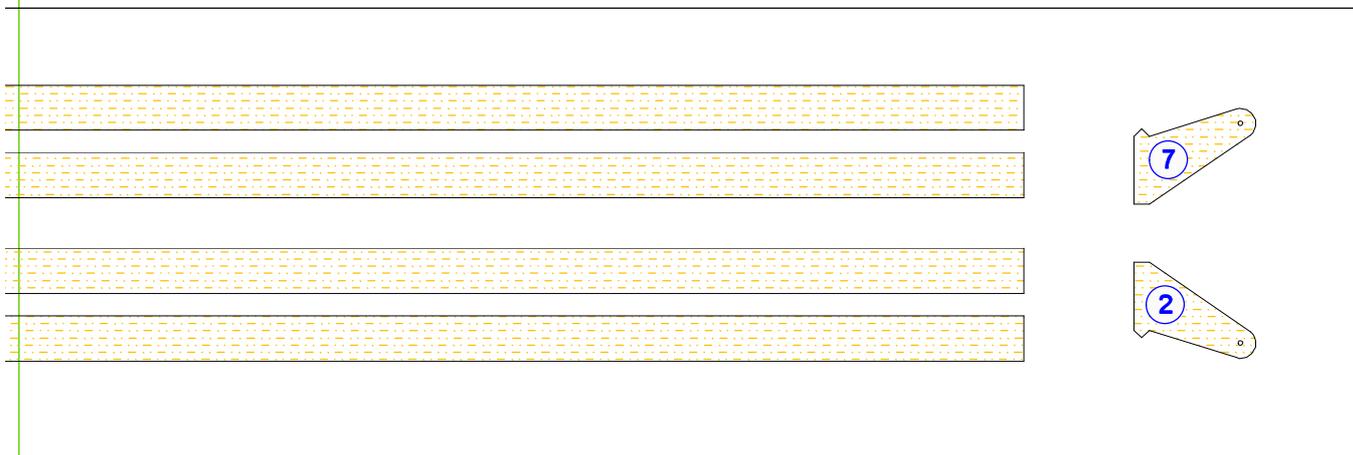
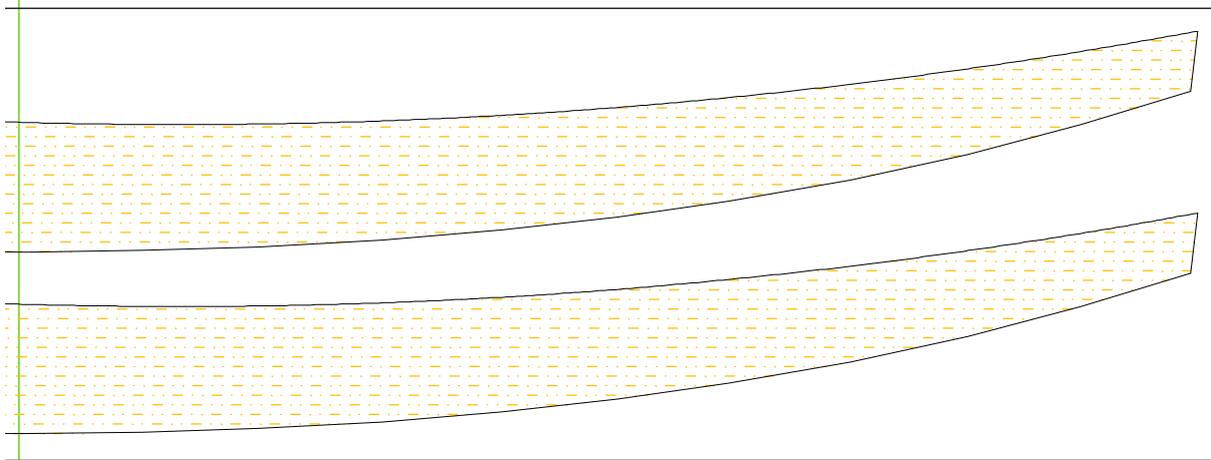
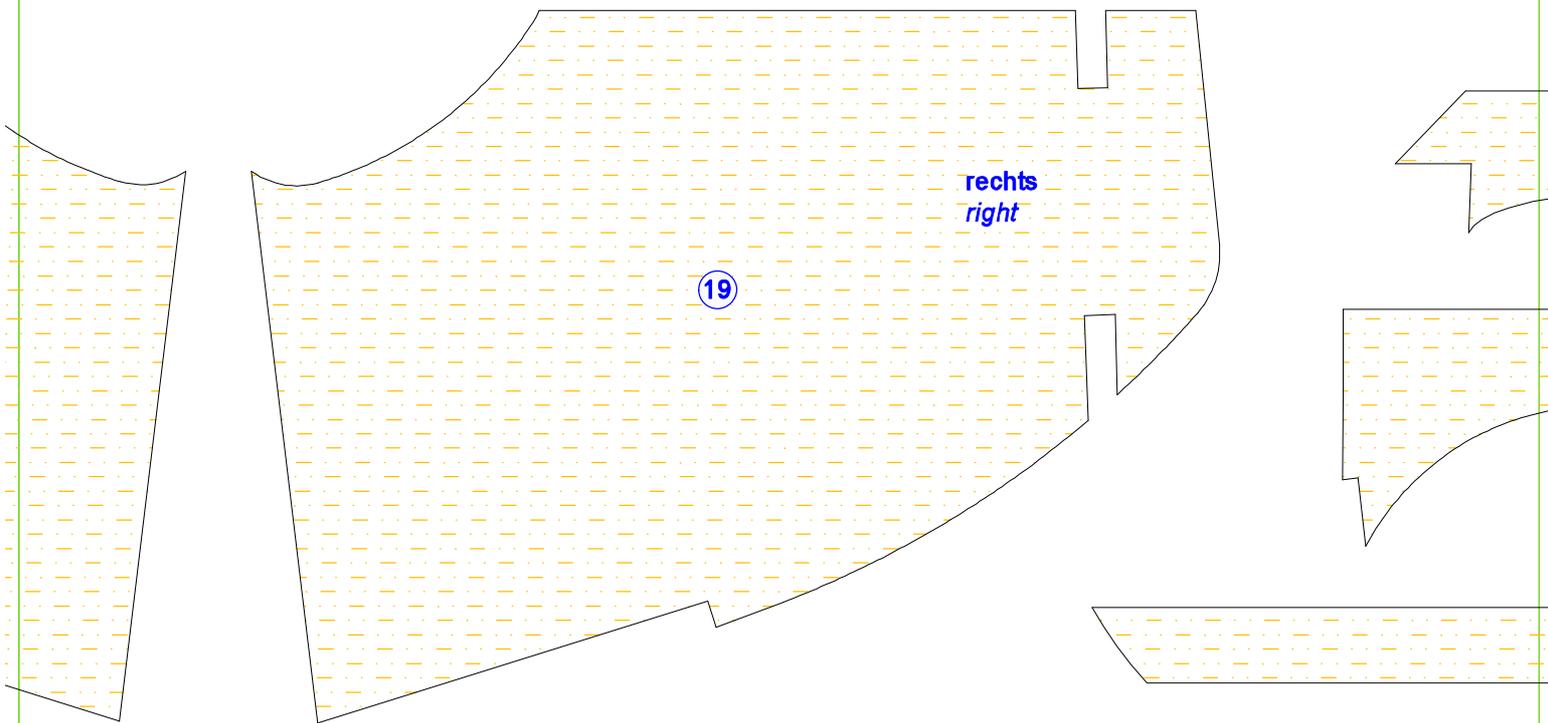
Balsa 2 mm (mittel / ca. 20 g pro Brettchen)

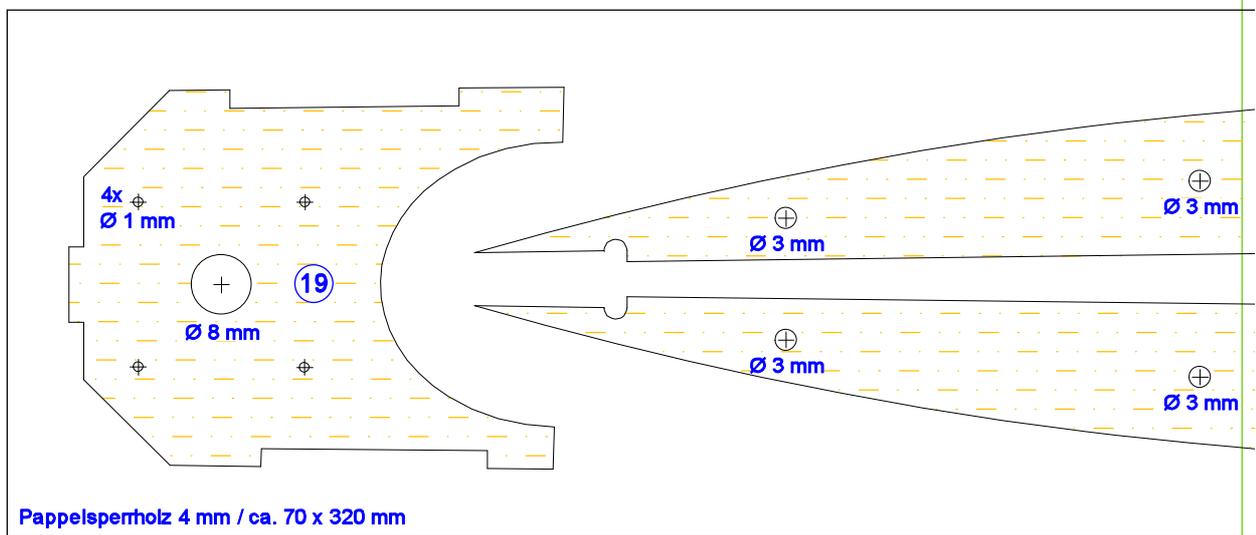
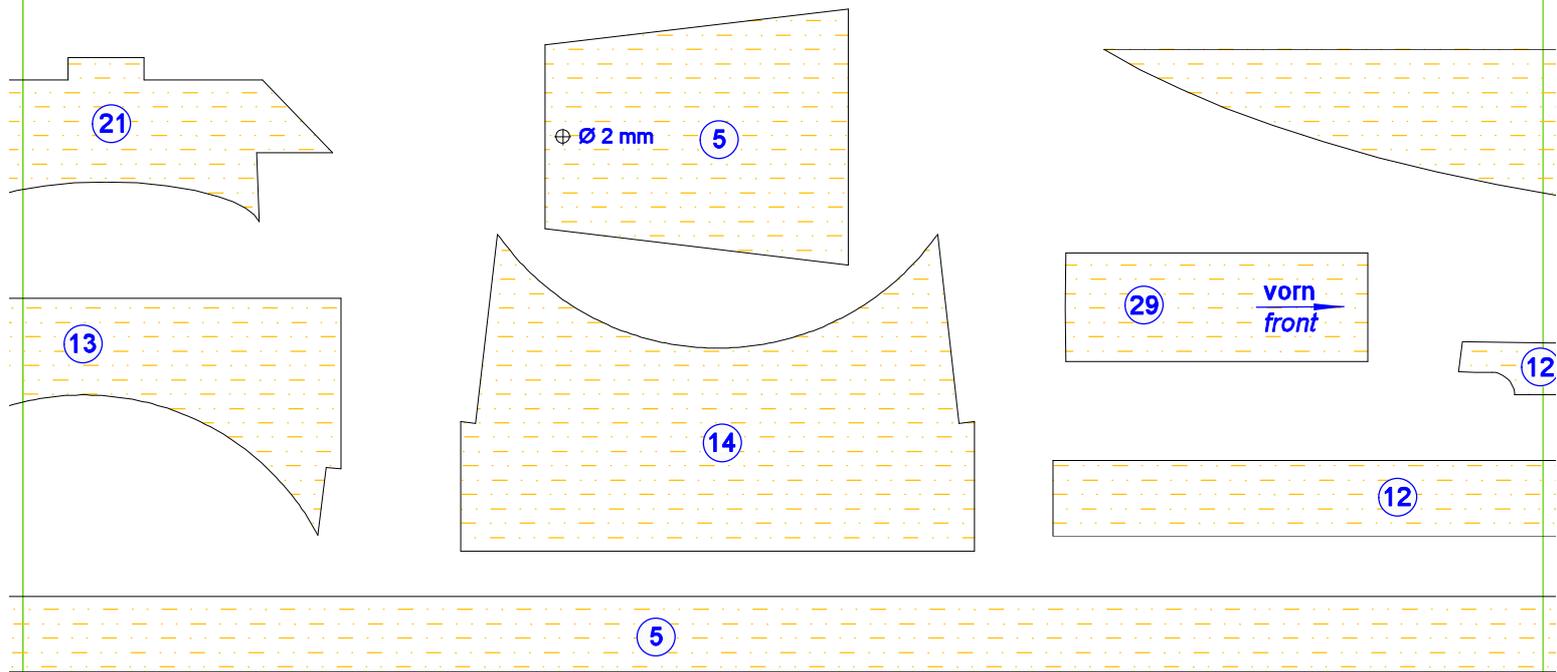


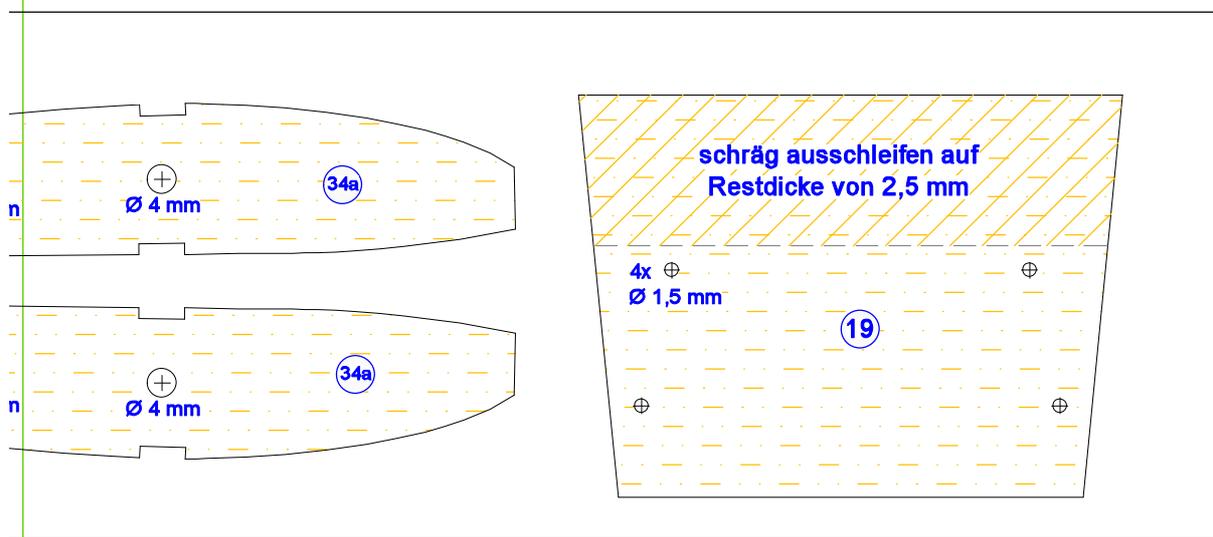
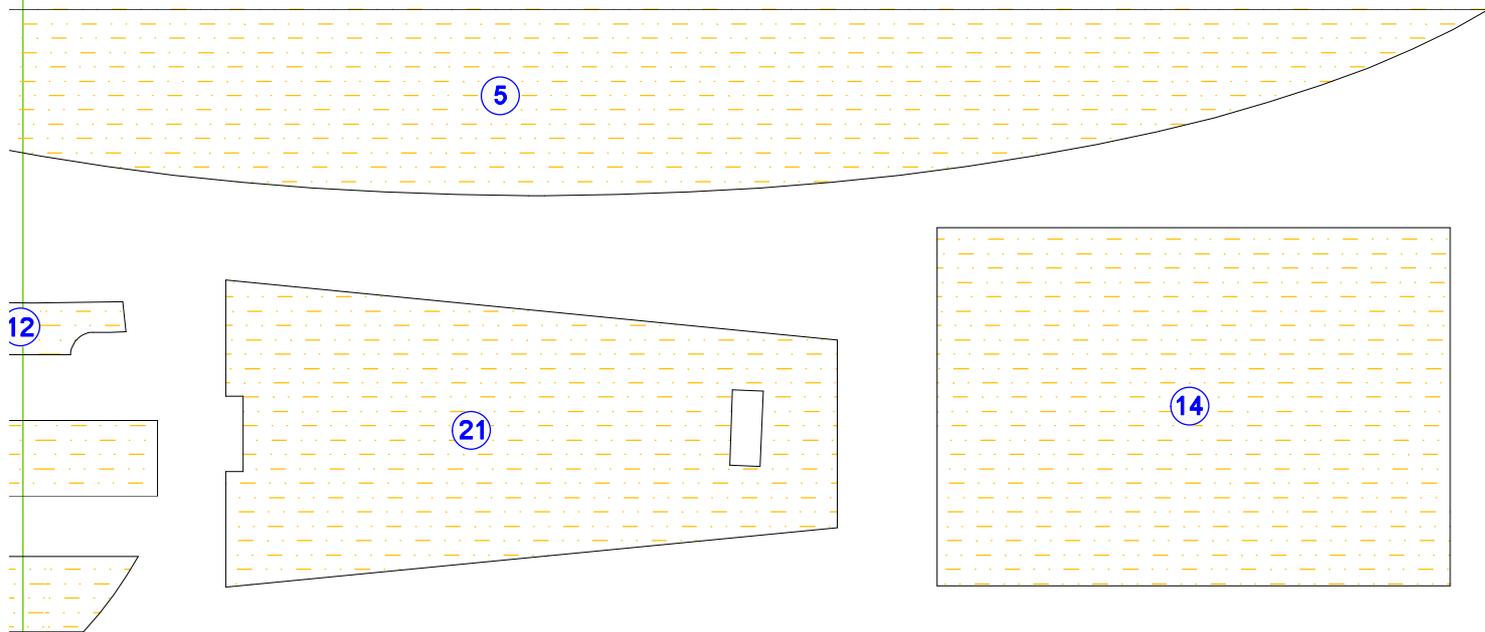
Kabinenverglasung
aus Klarsichtfolie
Stärke max. 0,2 mm

clear film (office supply)



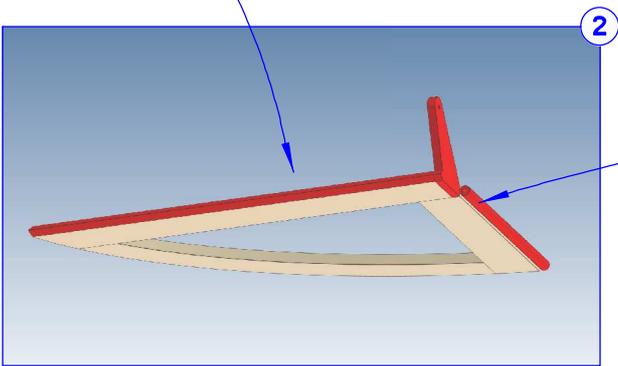
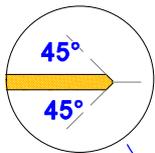
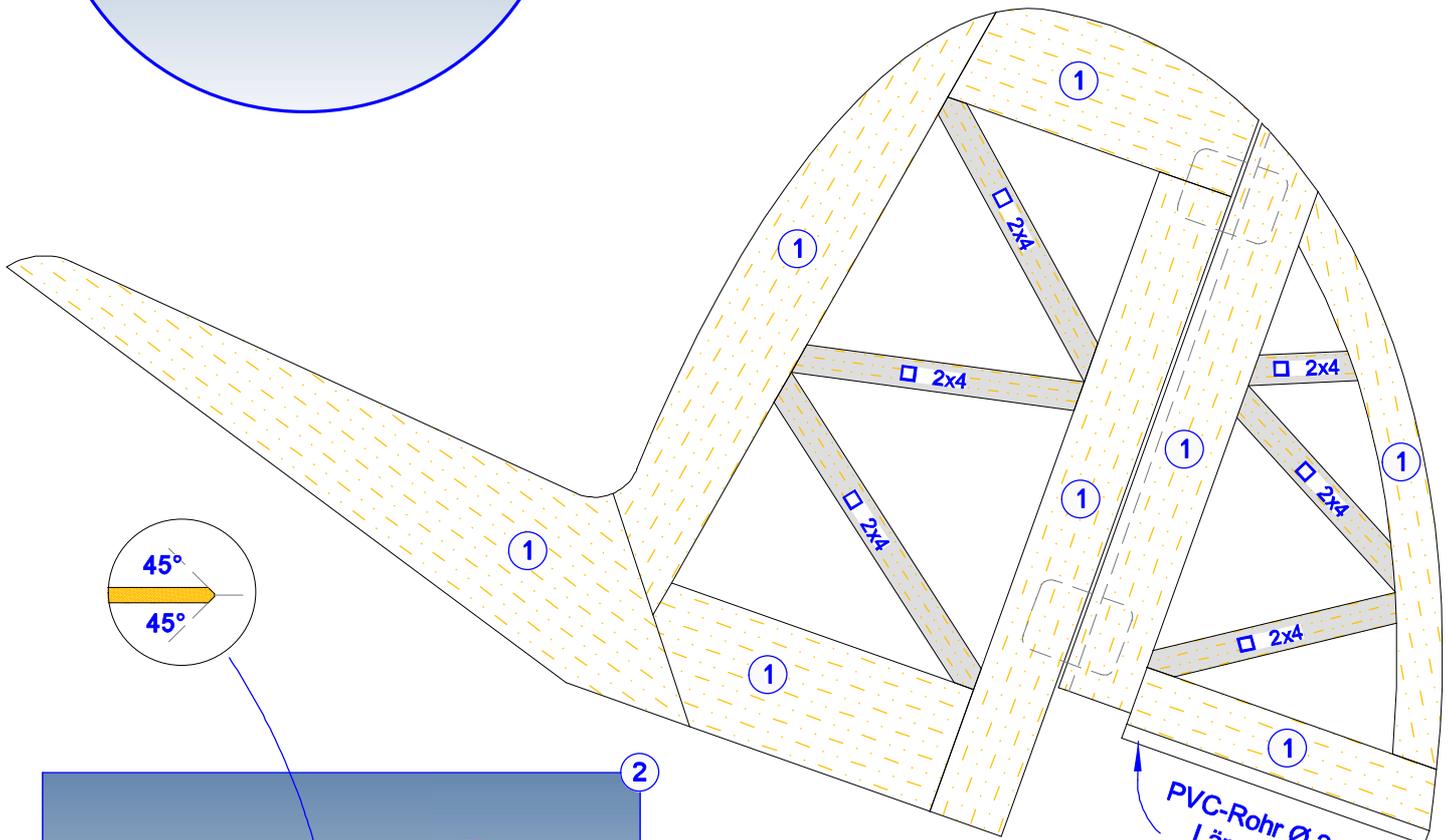
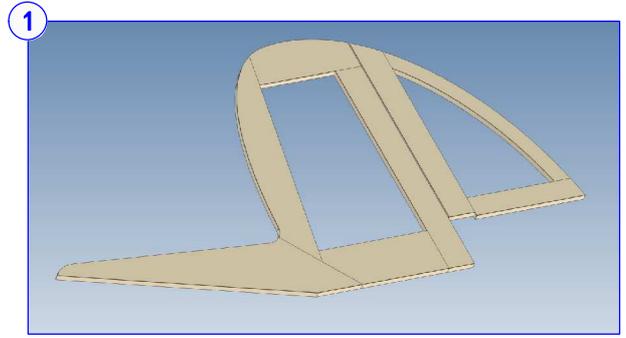
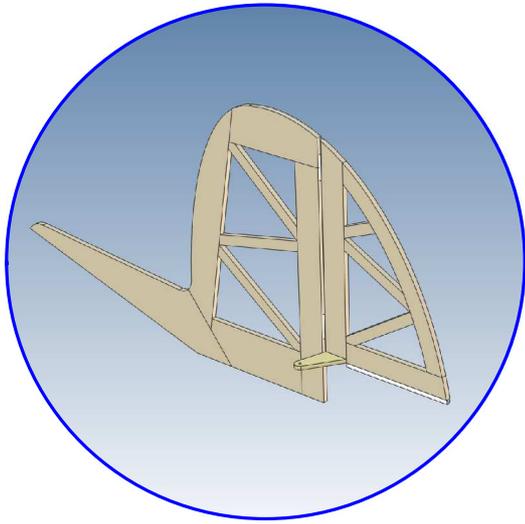




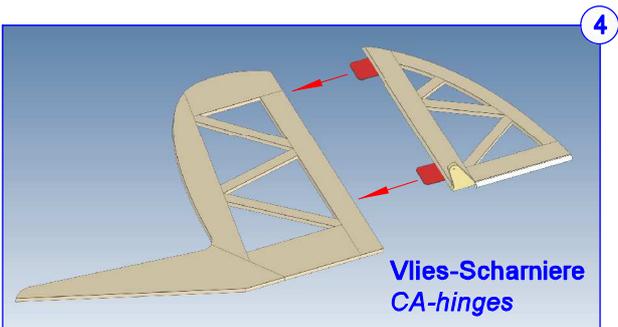
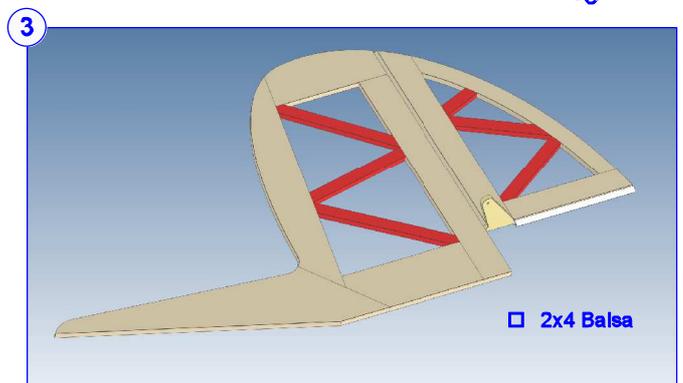


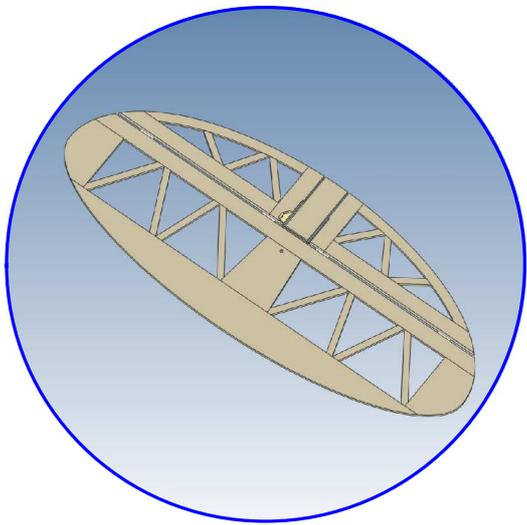
Setzen Sie die vier Bohrungen in Bauteil (19) erst **nach** dem Biegen des Fahrwerksdrahtes (S. 30/31), damit Sie sie genau in die Eckpunkte des Drahtes bohren können.

*Place the four holes in part (19) **after** you have bent the gear wire (page 30-31) so that you can drill them exactly into the corner points of the wire.*

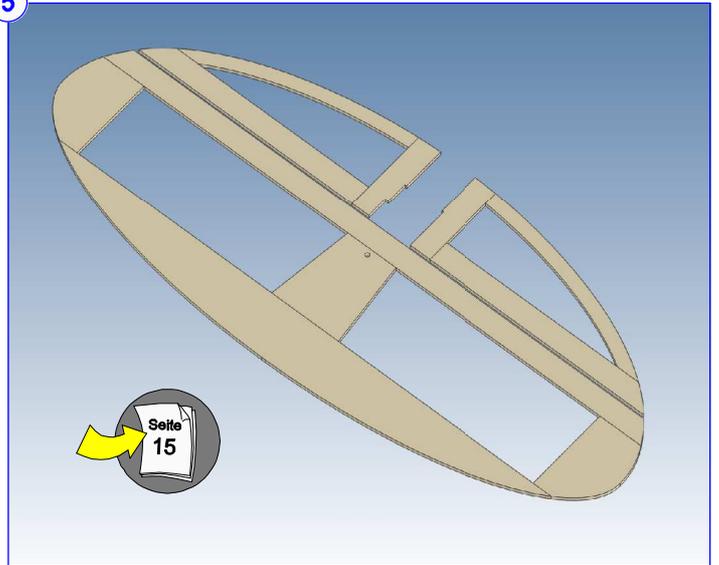


PVC-Rohr Ø 2 mm /
Länge 42 mm /
(innen-Ø 1 mm)
PVC-tube

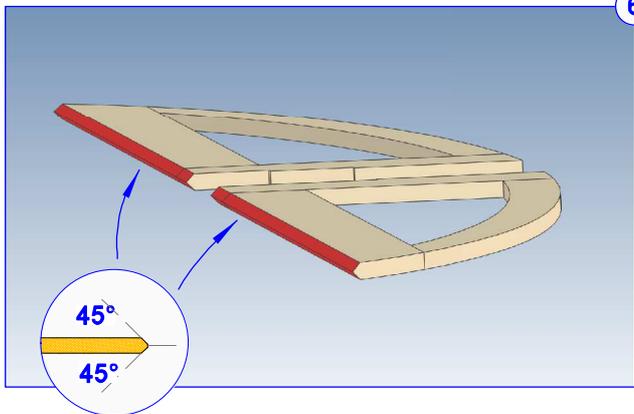




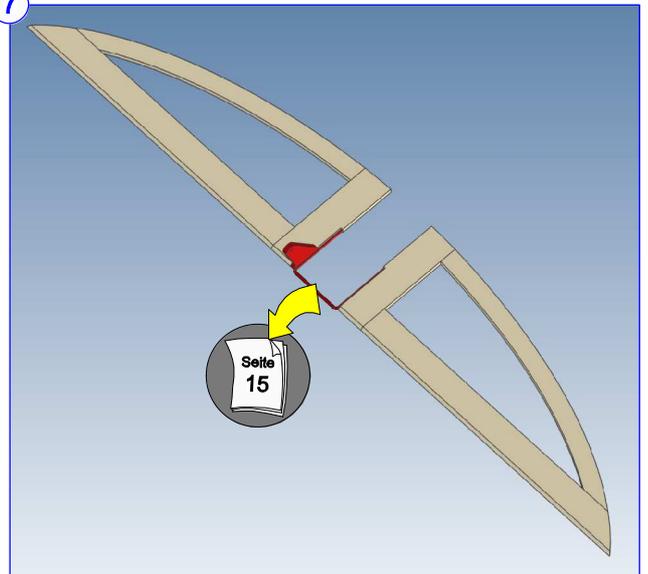
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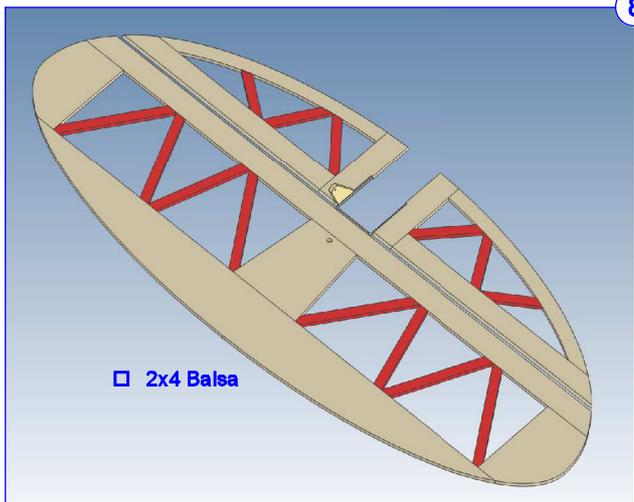
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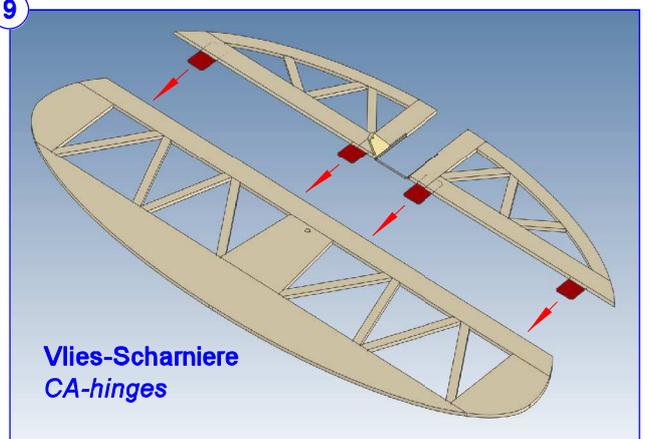
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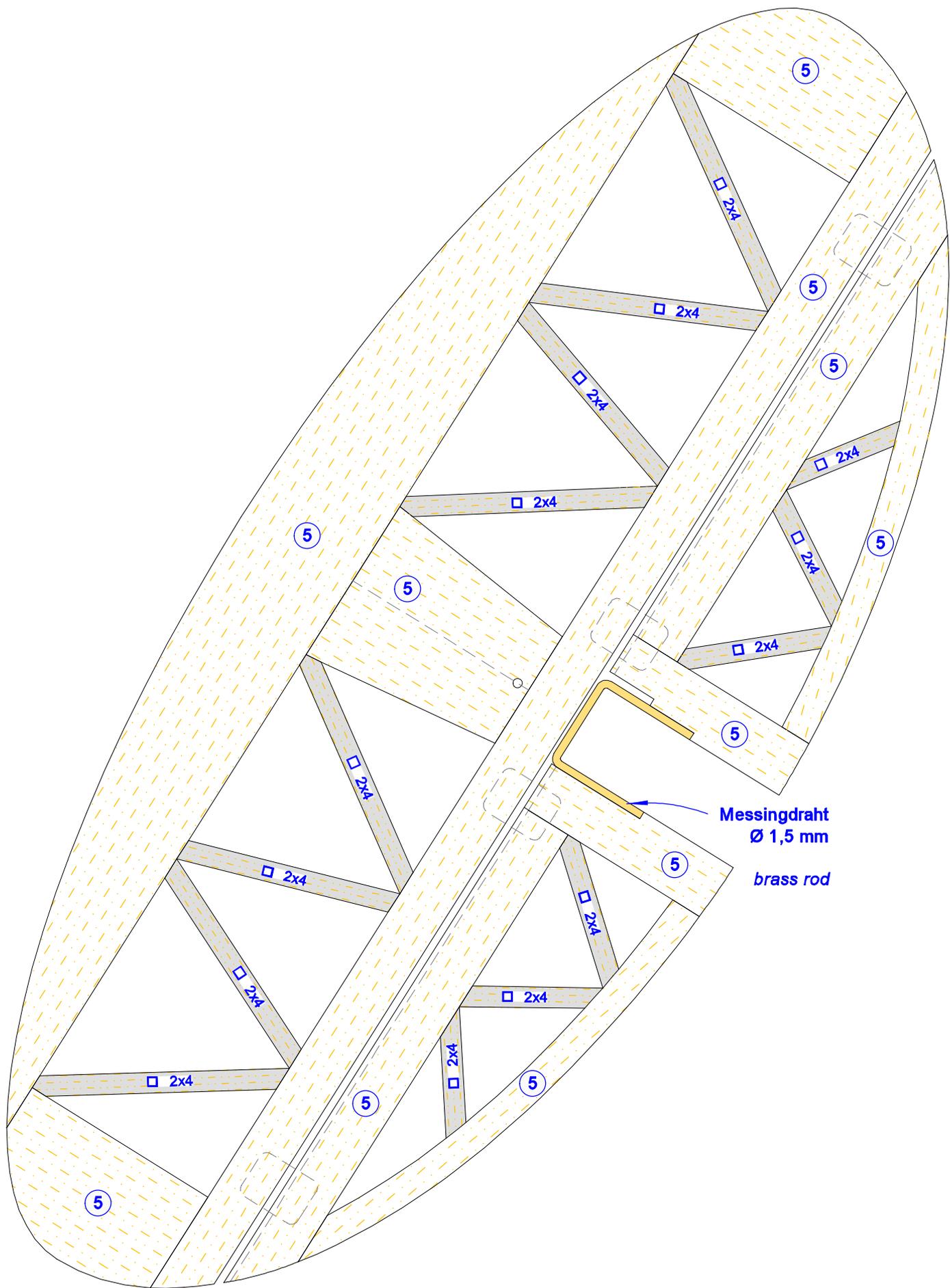


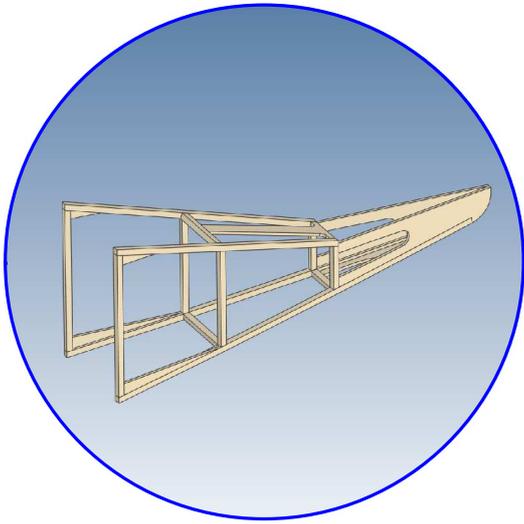
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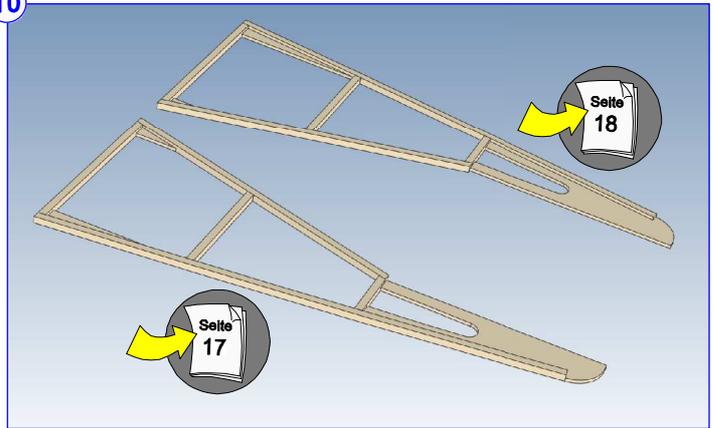
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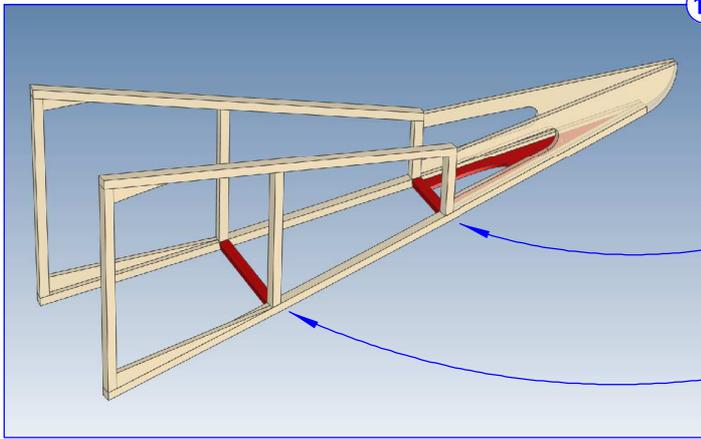




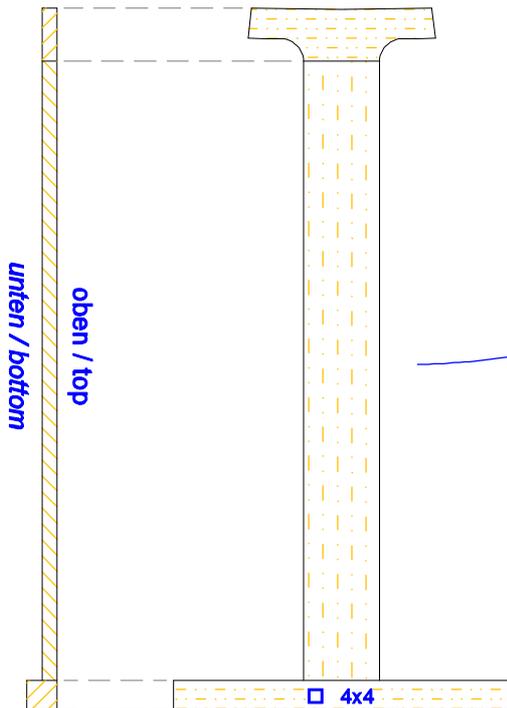
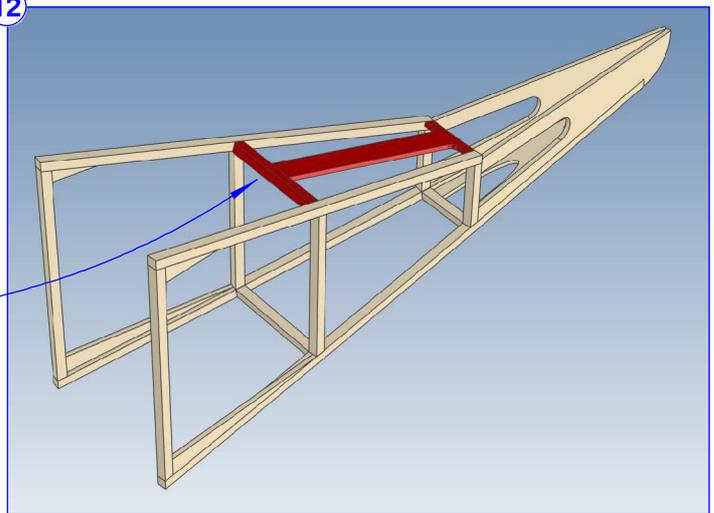
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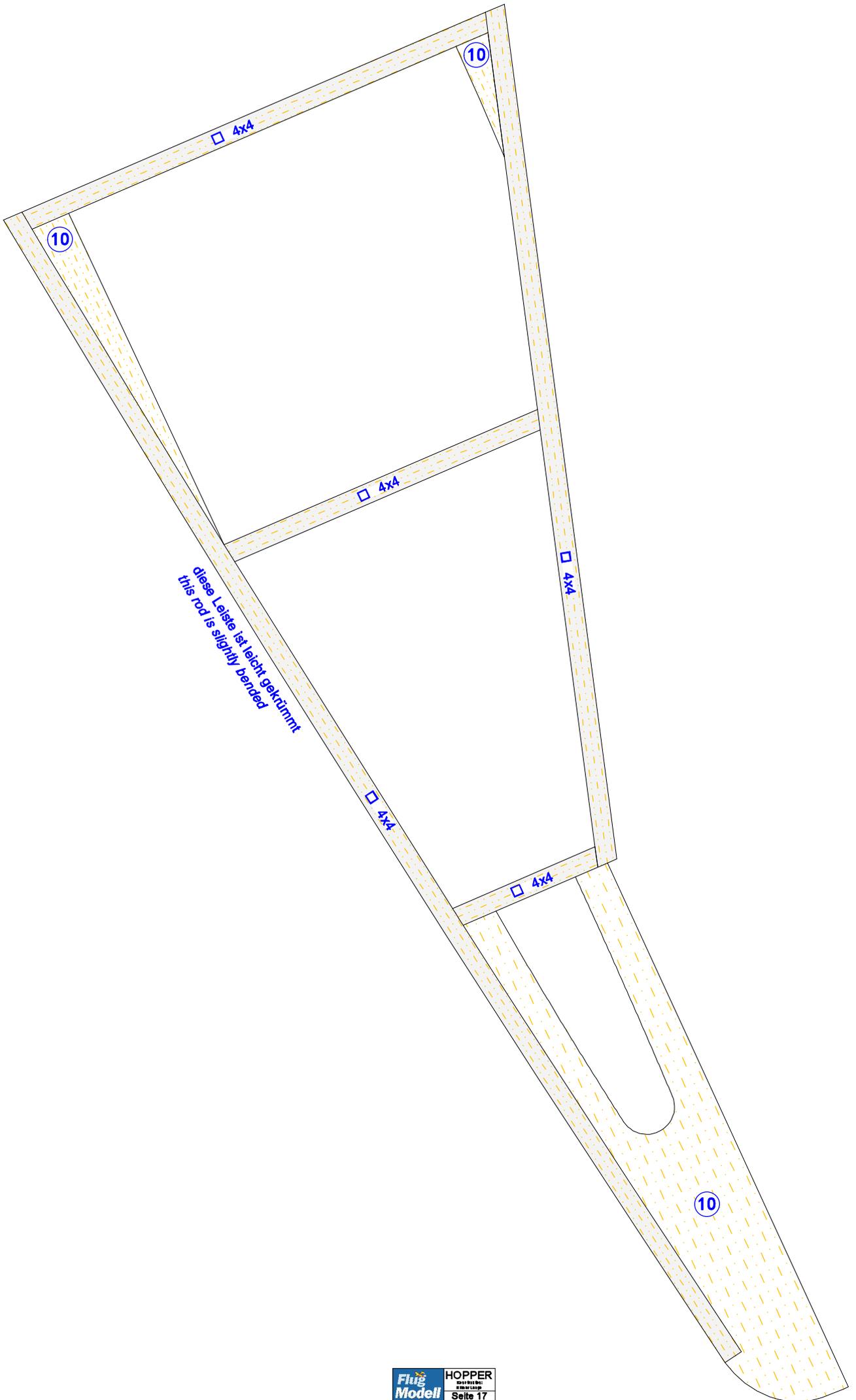


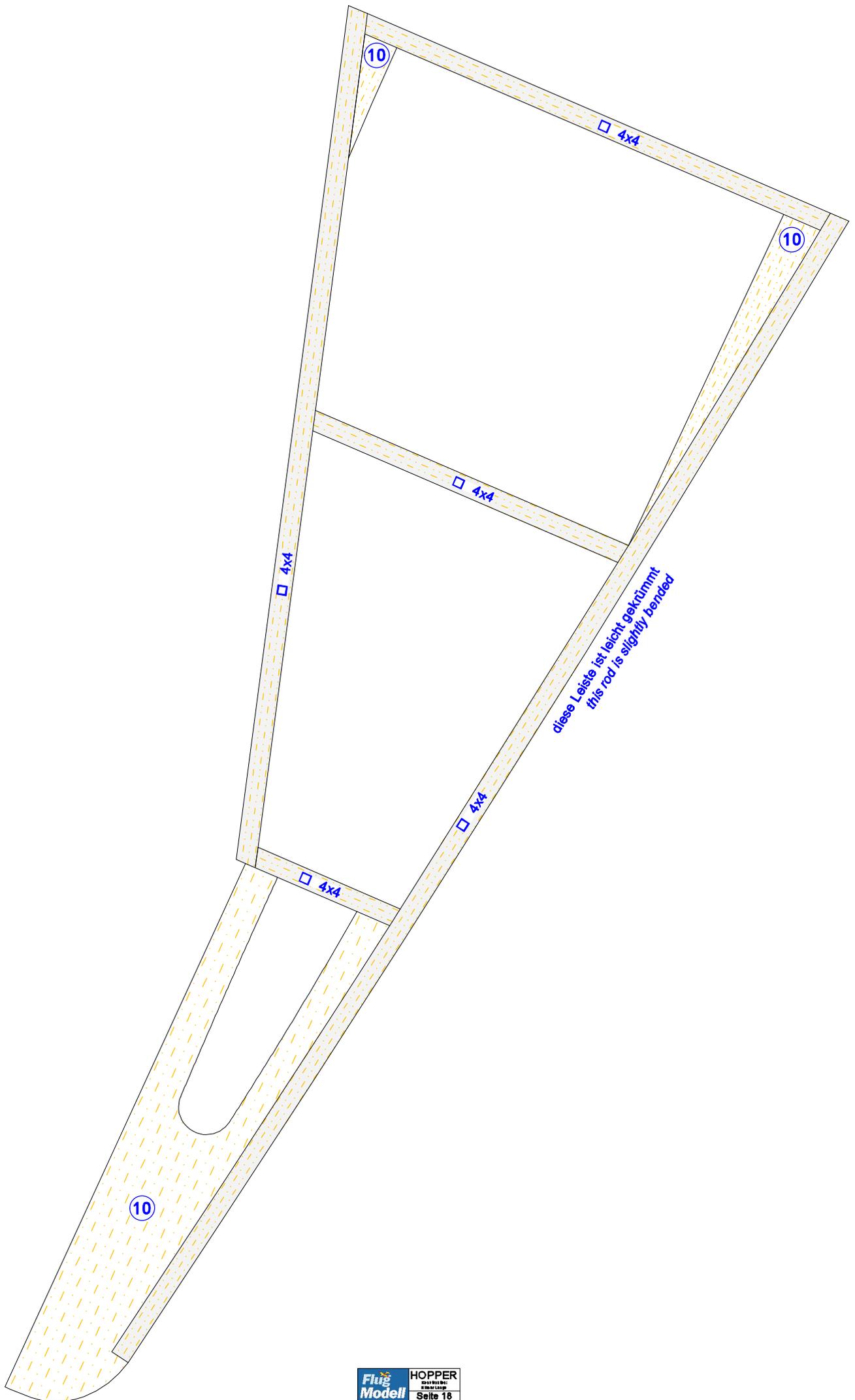
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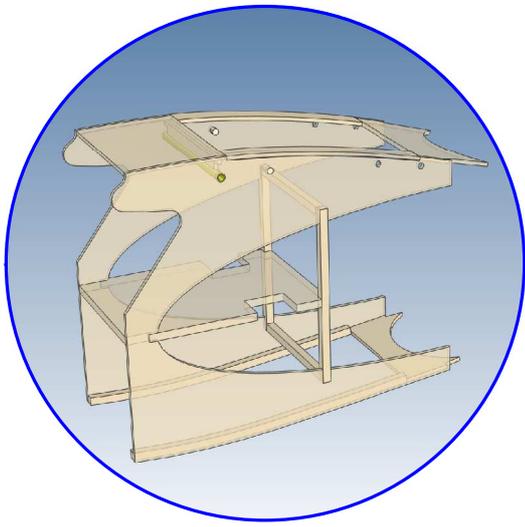


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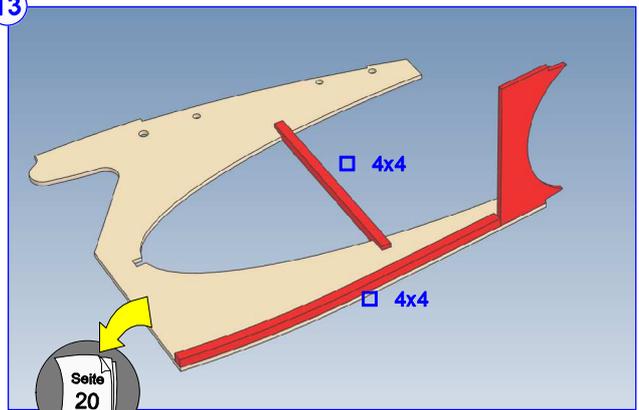




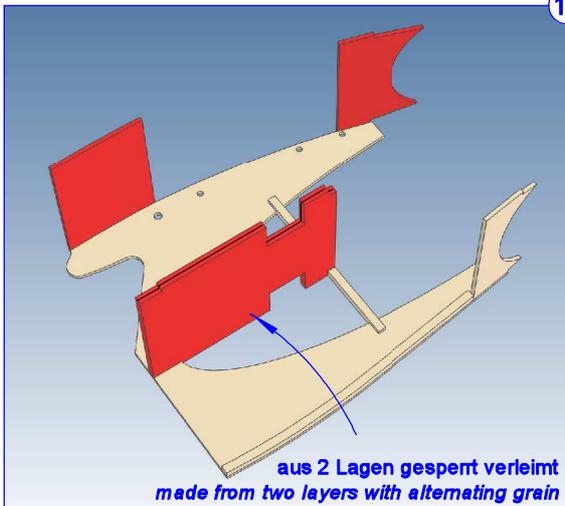




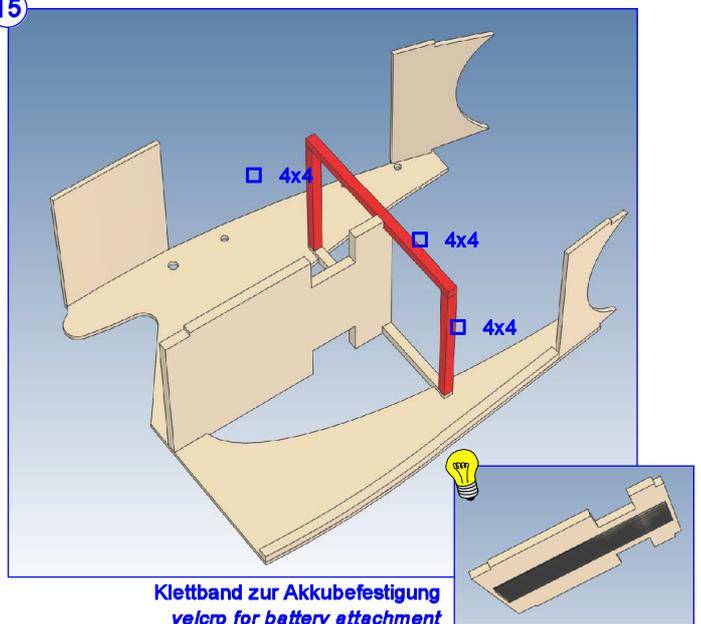
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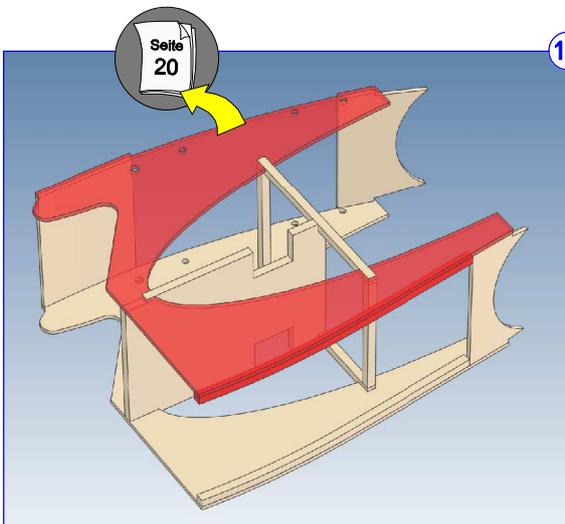
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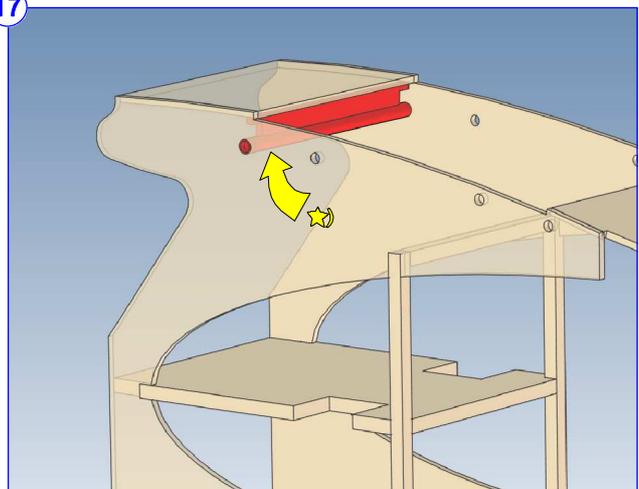
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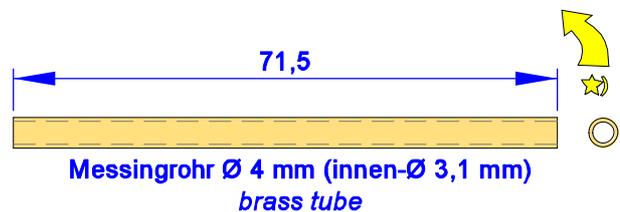
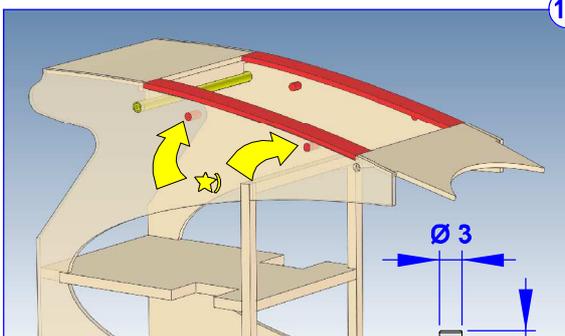
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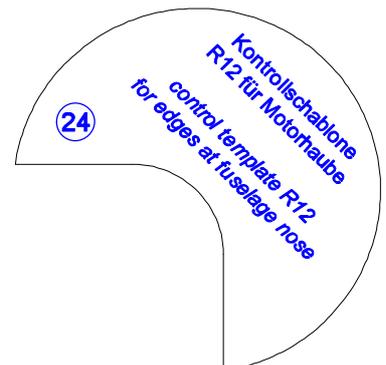
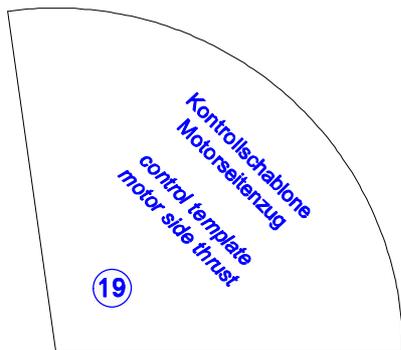
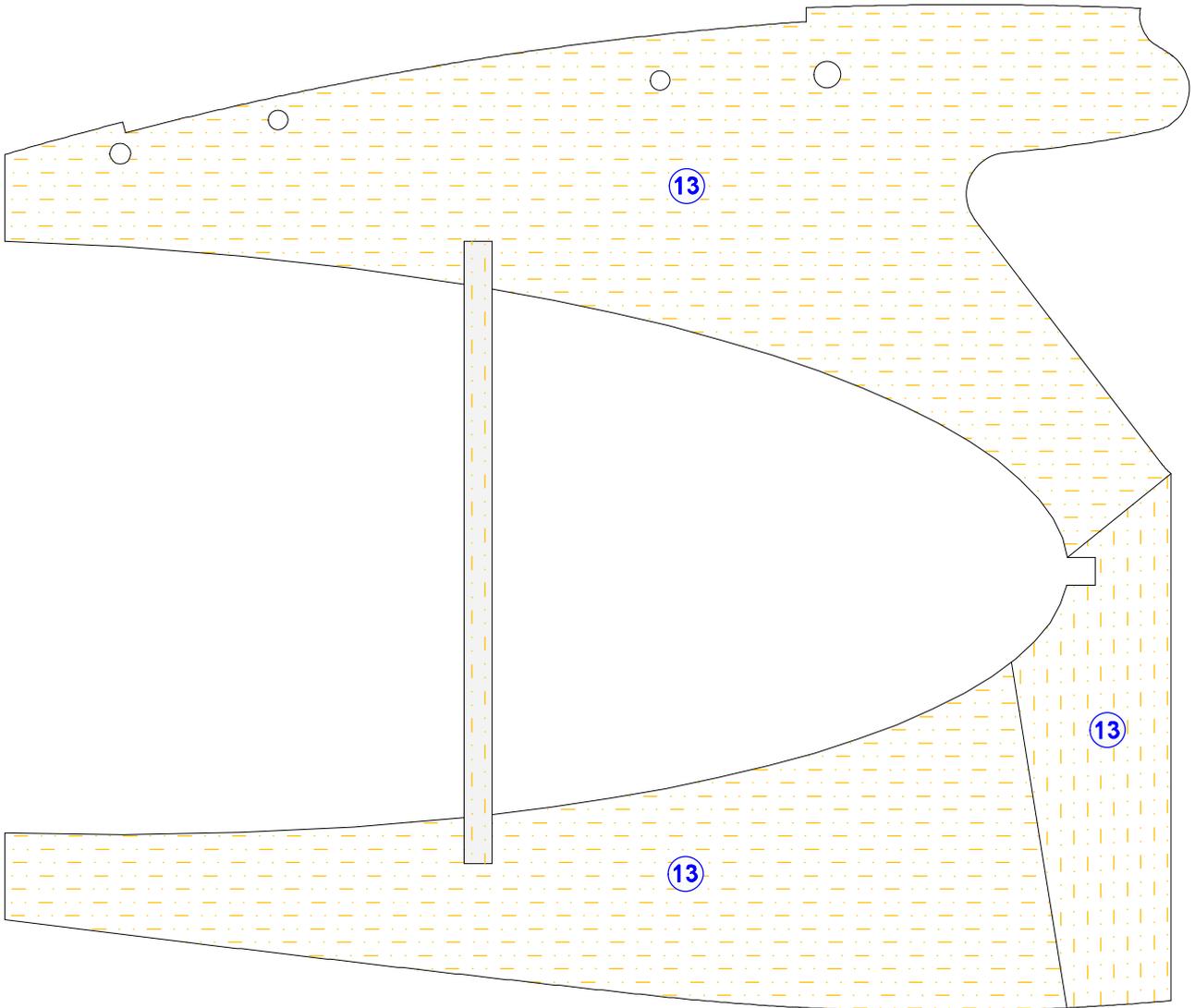
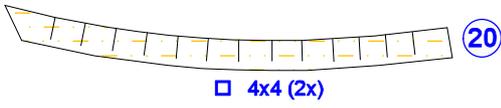
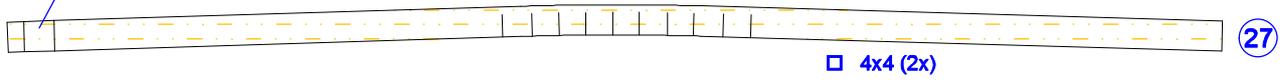
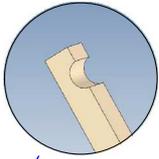


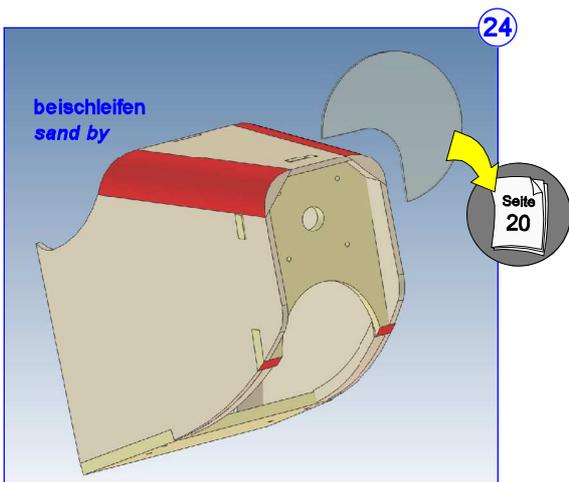
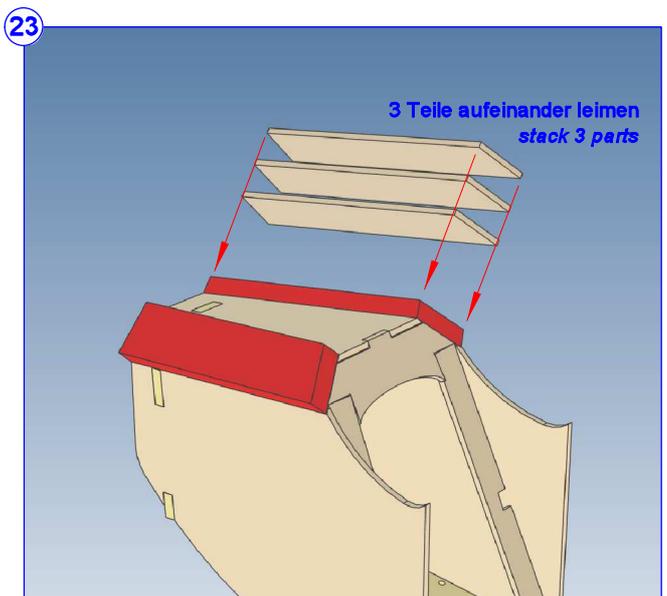
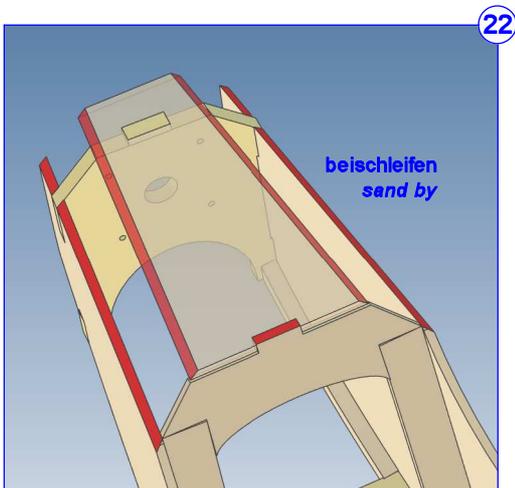
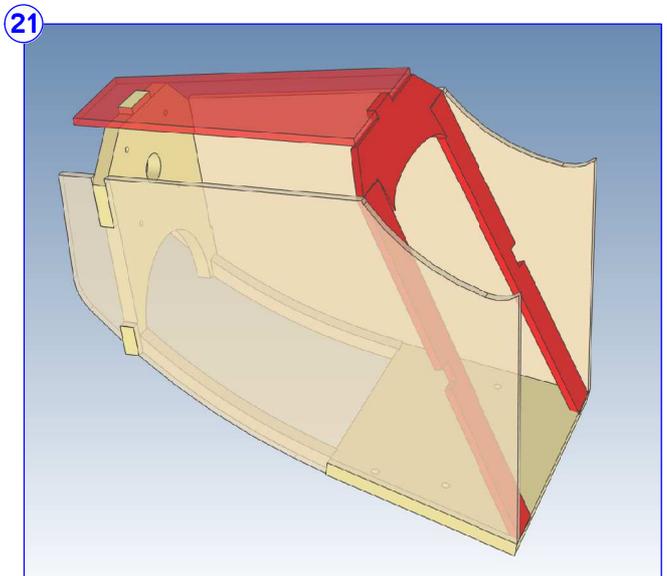
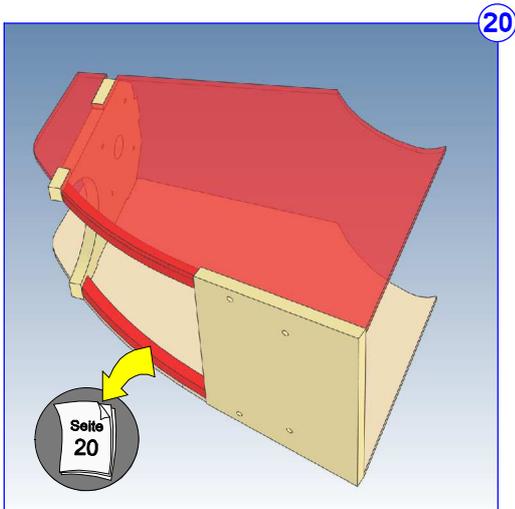
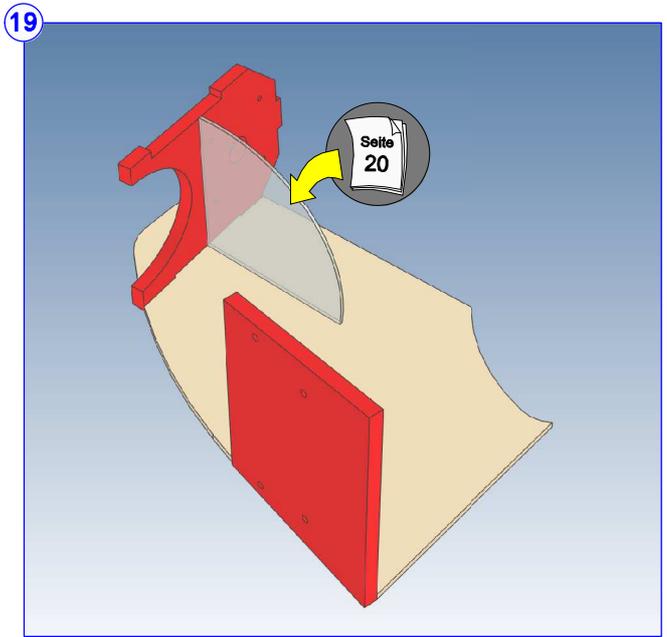
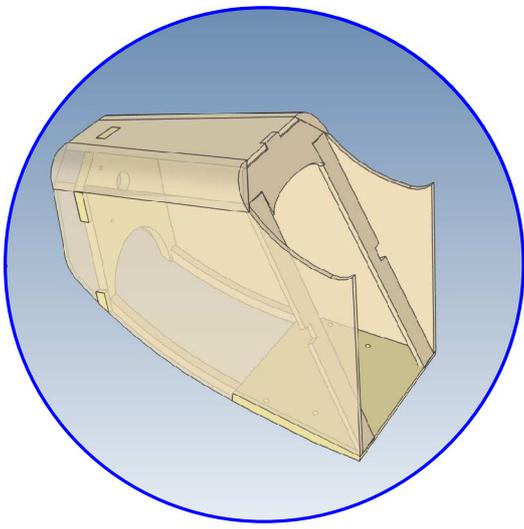
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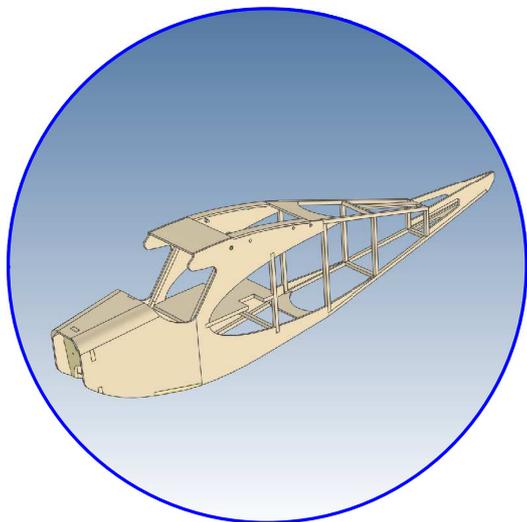


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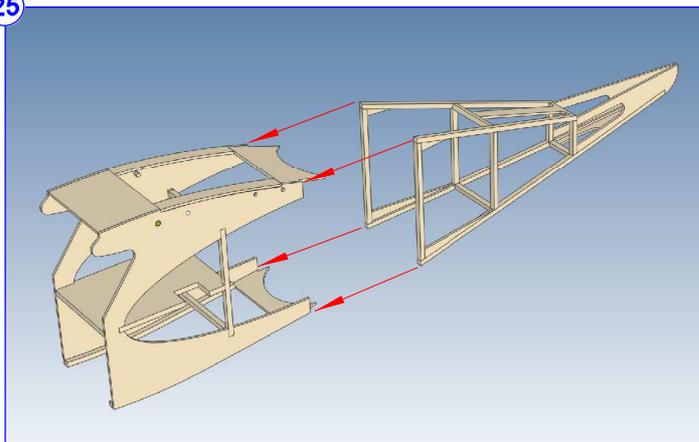




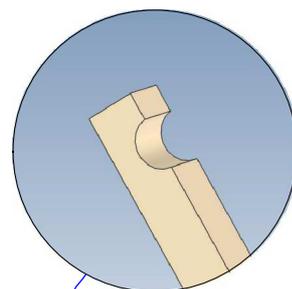
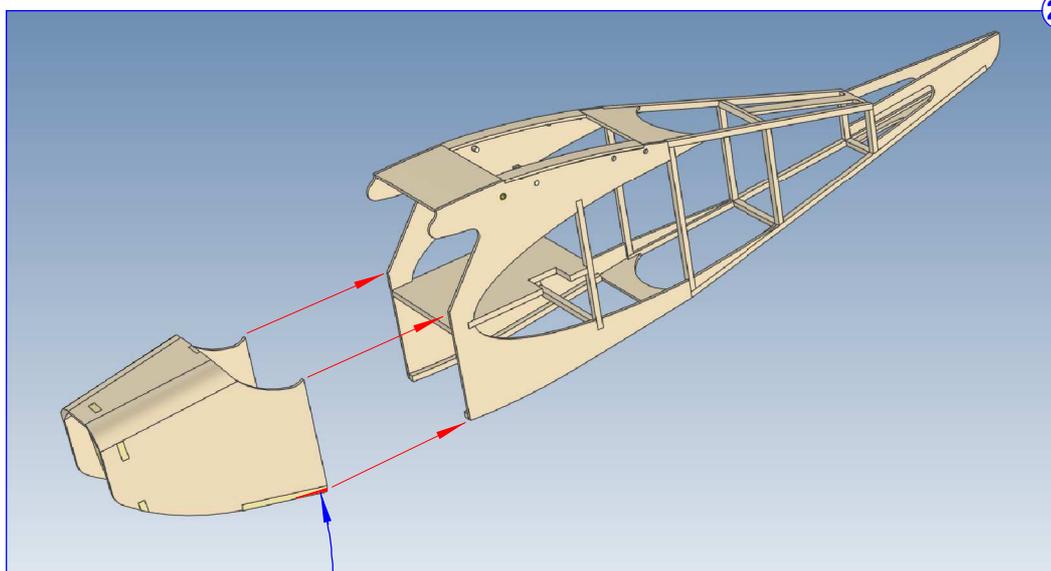




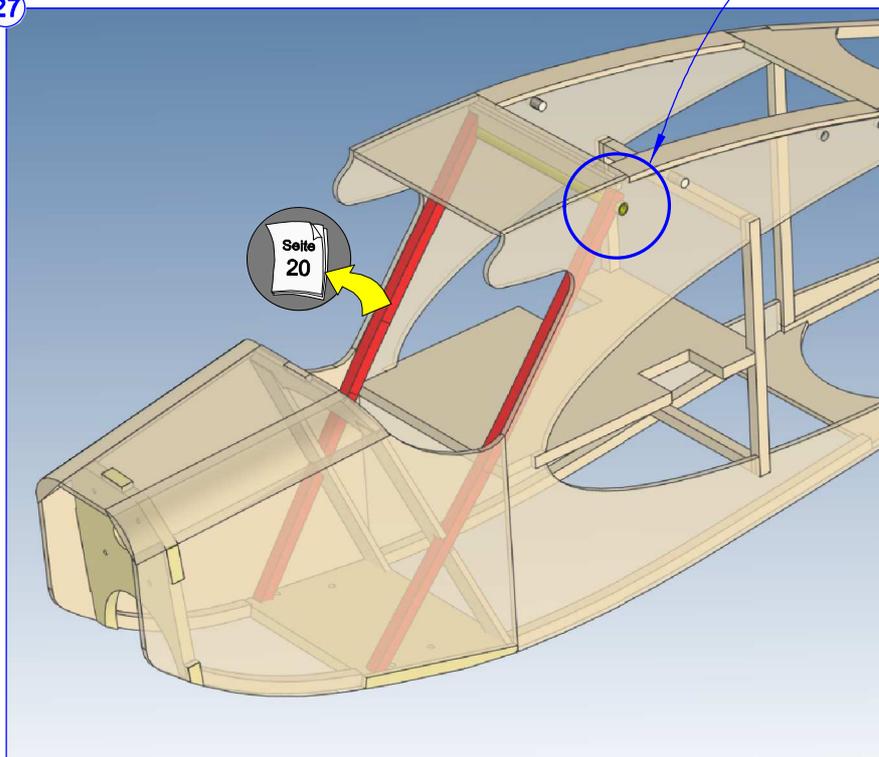
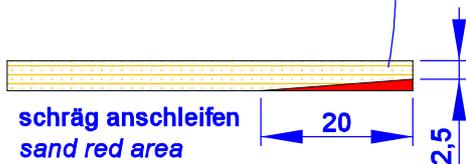
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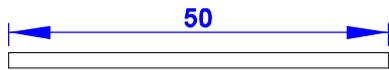
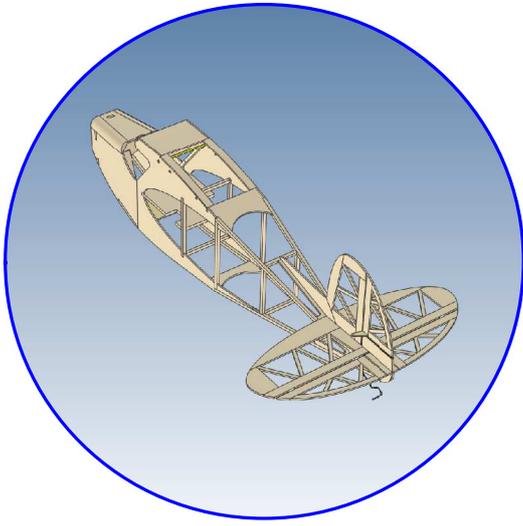


26

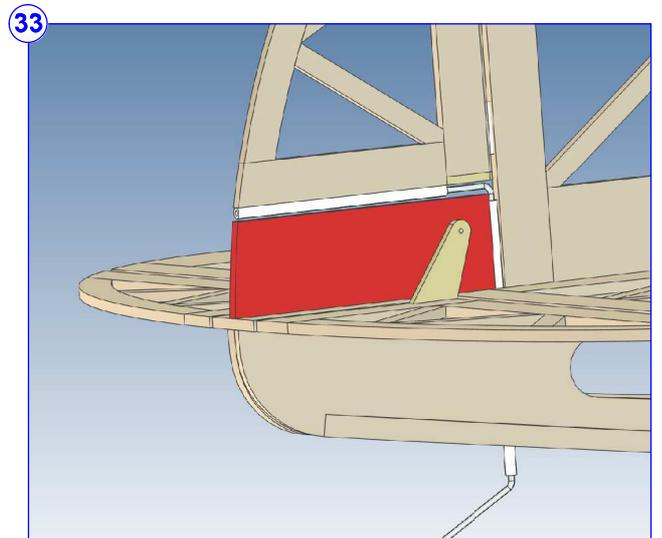
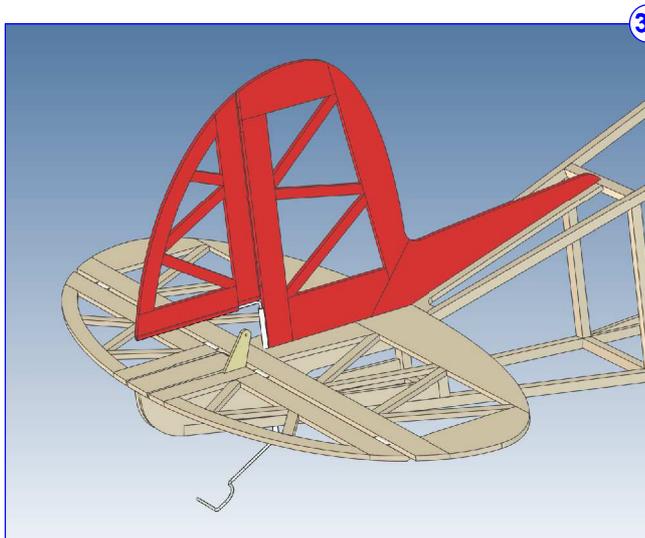
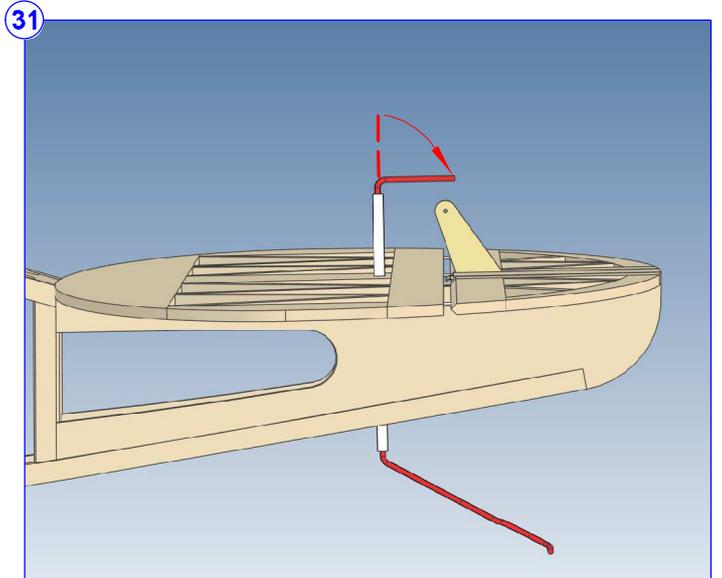
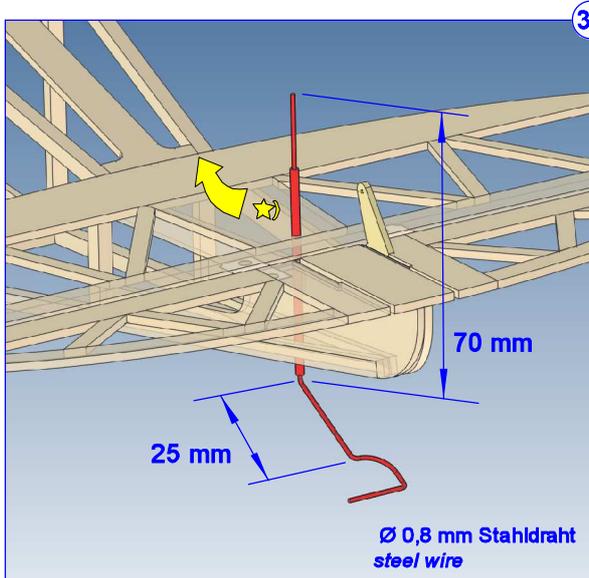
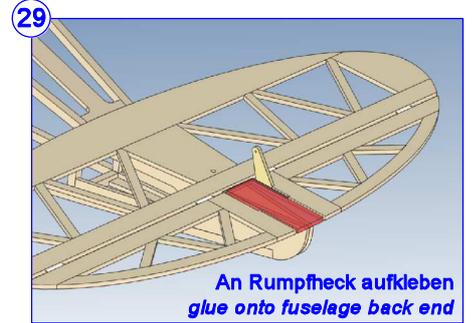
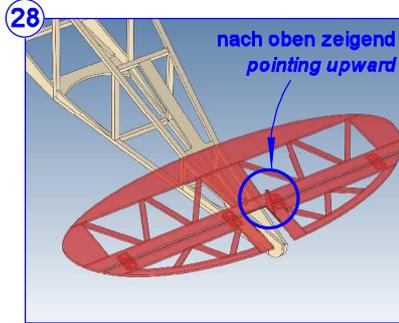


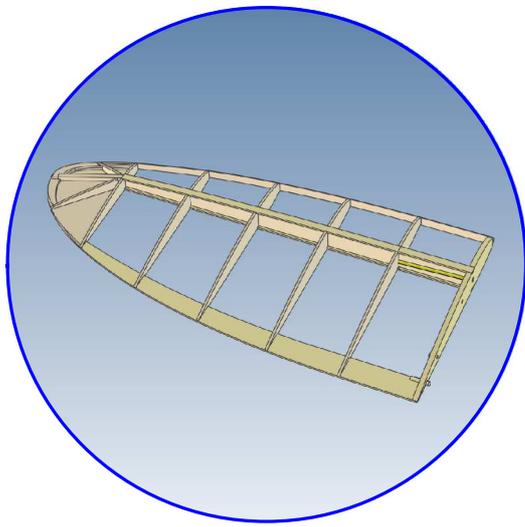
27



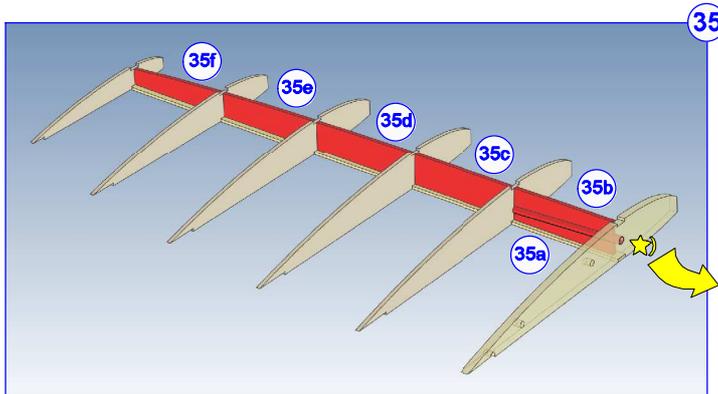
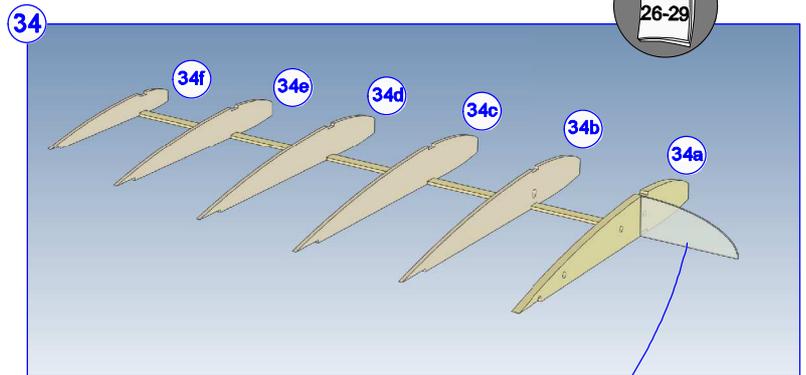


ABS-Rohr \varnothing 2 mm
ABS-tube

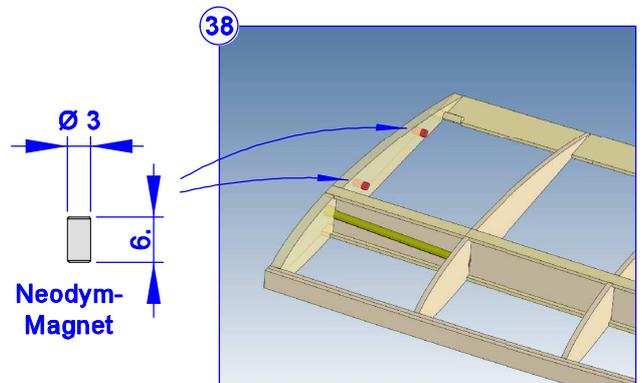
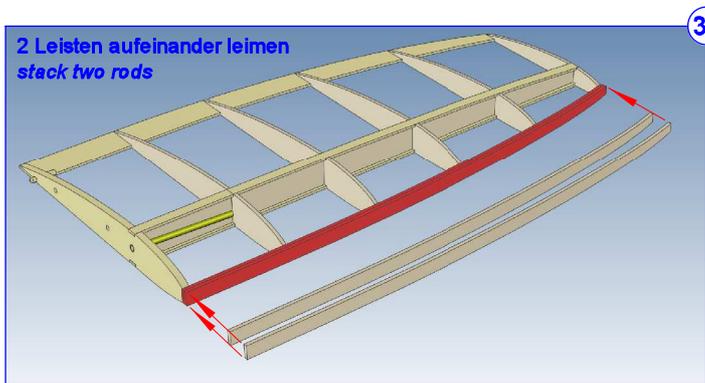
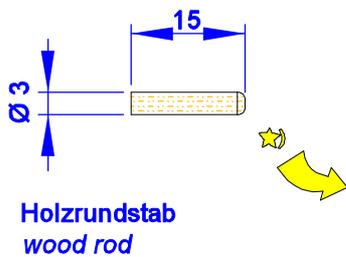
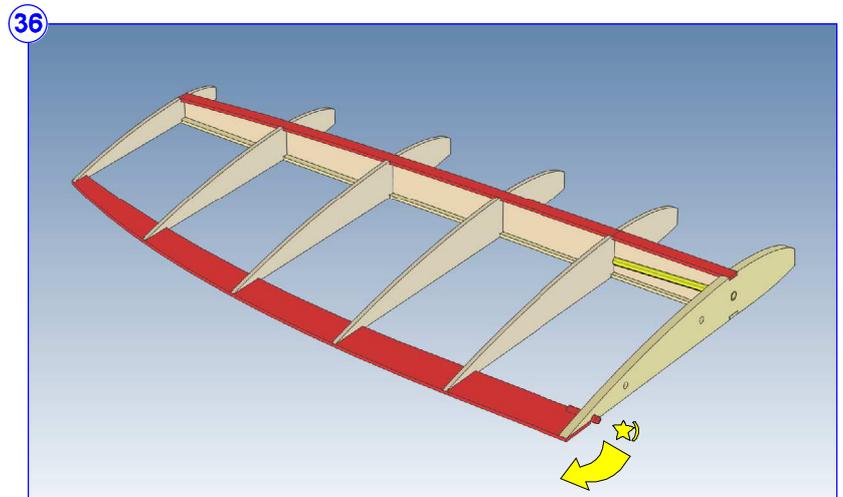
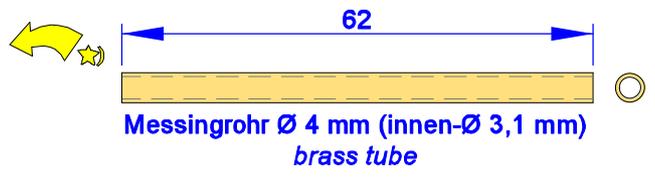




Seiten
26-29



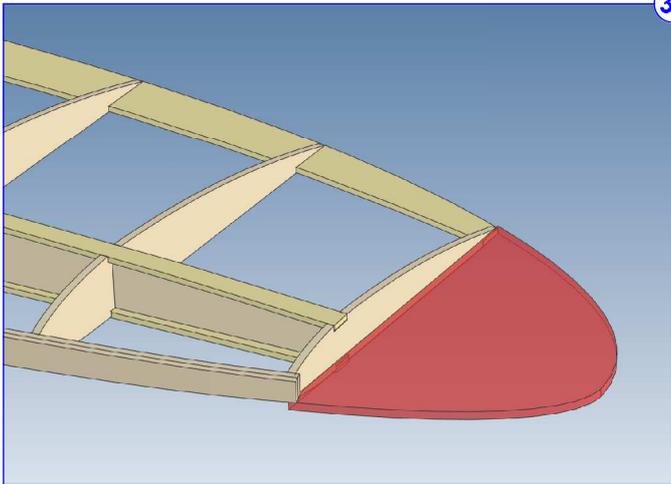
Kontrollschablone 3°
für Wurzelrippe
angle template for root rib



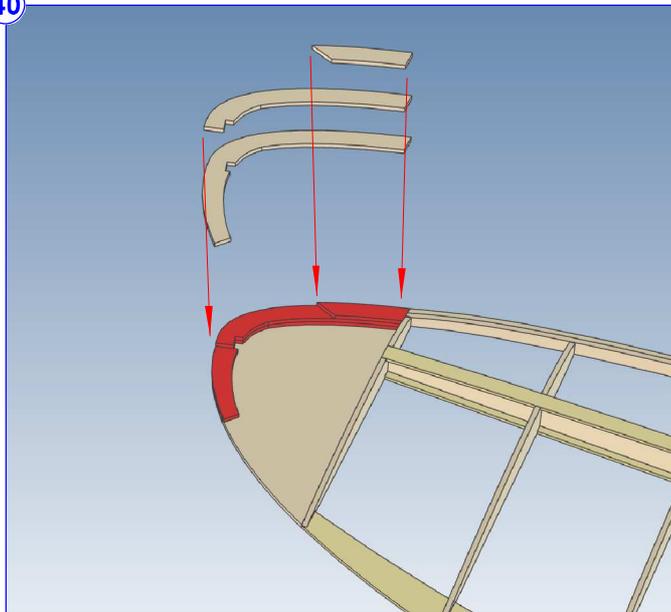
Polarität passend zum Rumpf
beachten!

polarity must match the fuselage
magnets!

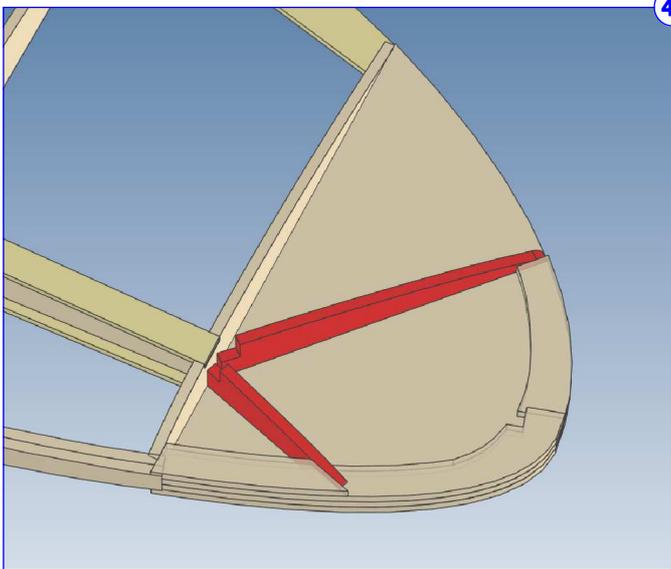
39



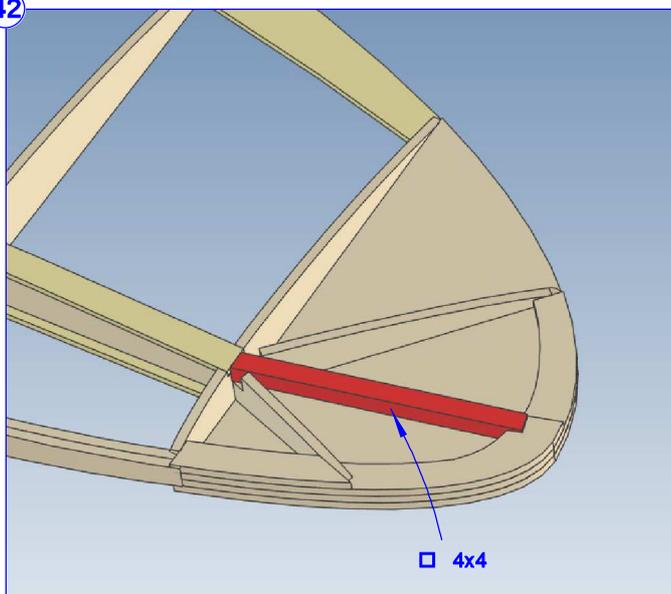
40



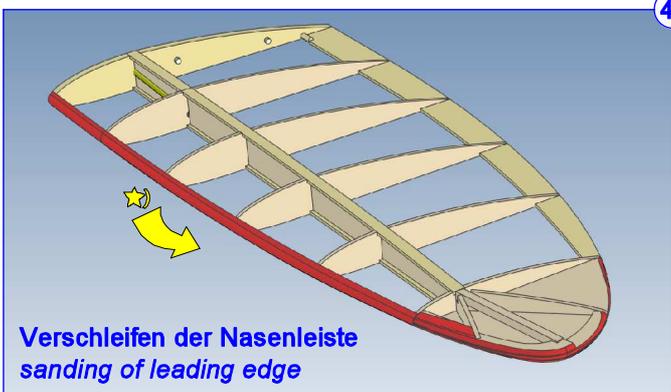
41



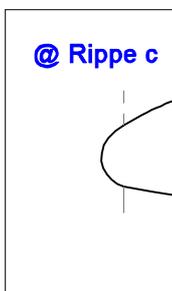
42



43



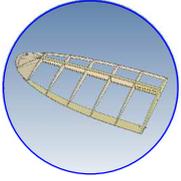
Verschleifen der Nasenleiste
sanding of leading edge



@ Rippe c

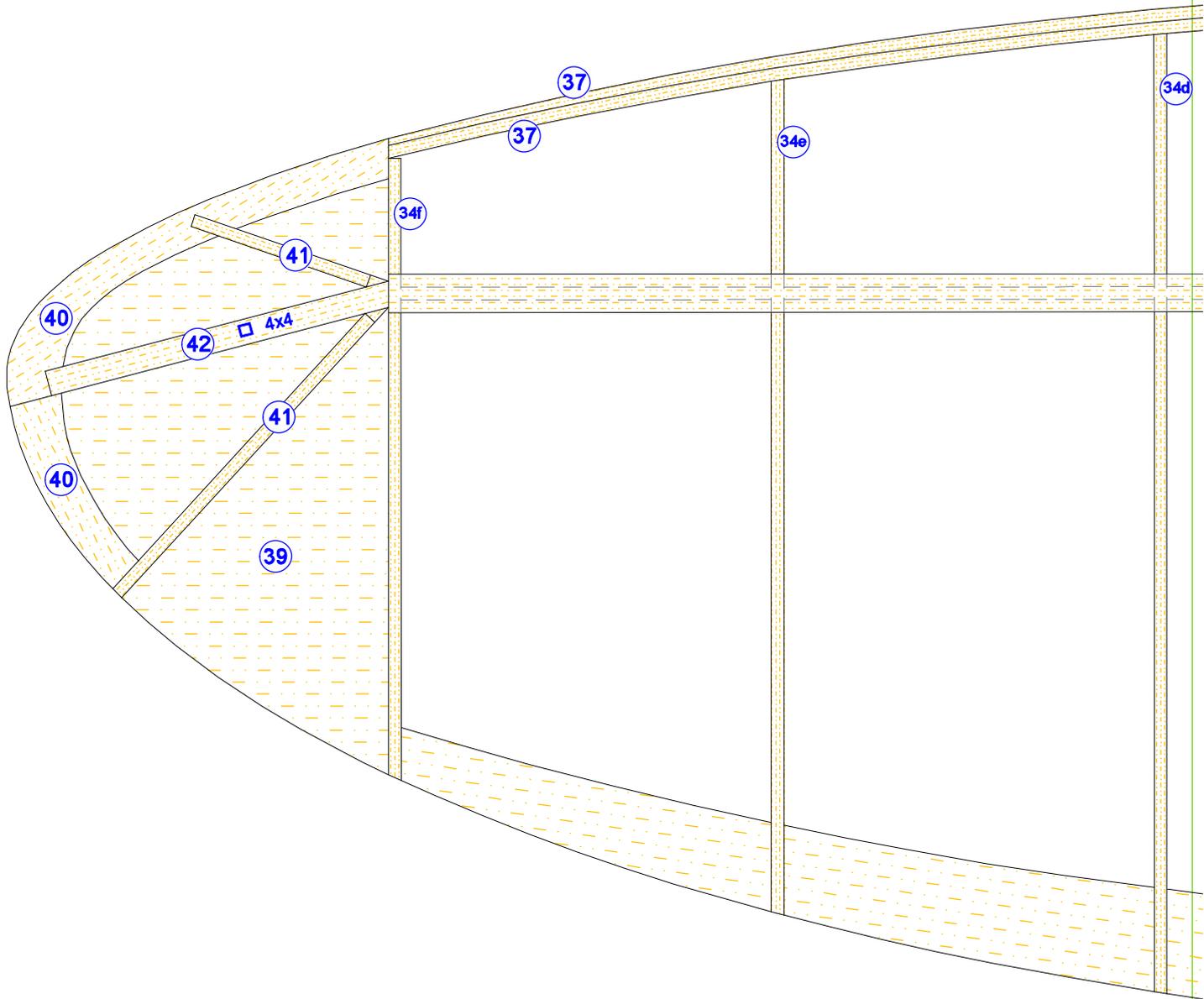
Nasenleisten-
Kontrollschablone

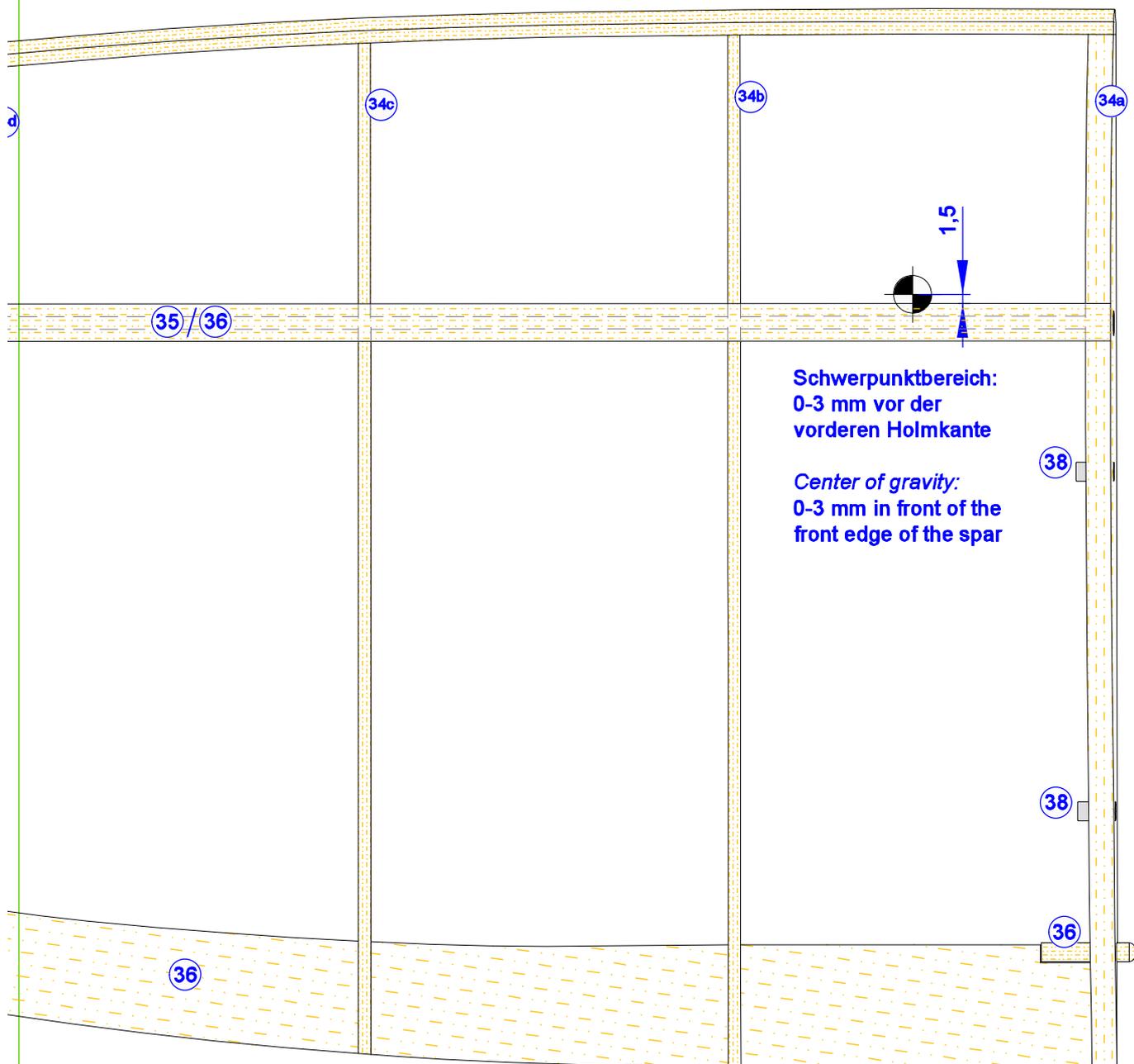
check leading
edge contour
with template

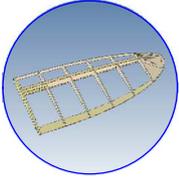


Hilfsdarstellung für den Bau der linken Flügelhälfte

Control drawing for the left wing assembly

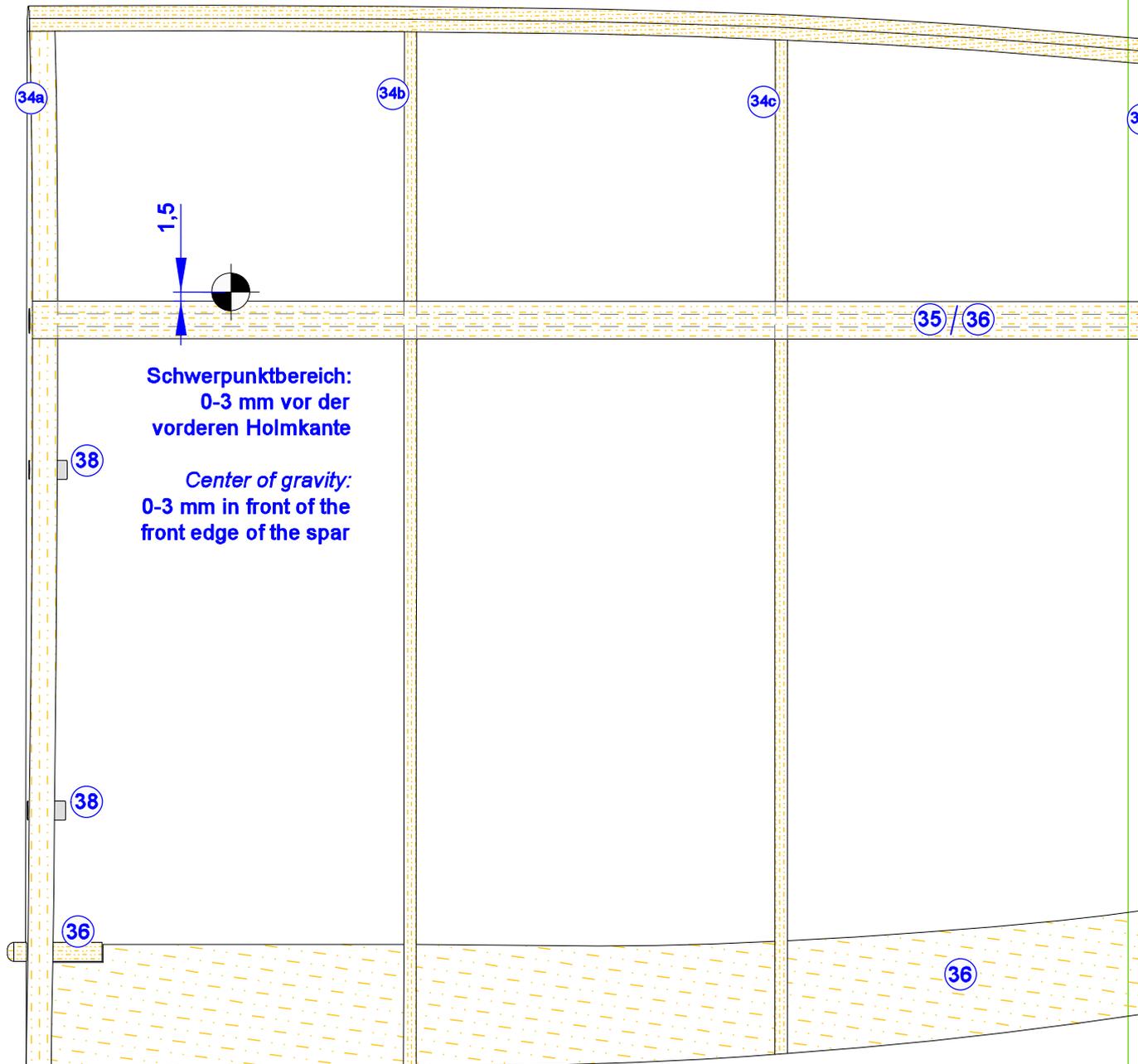


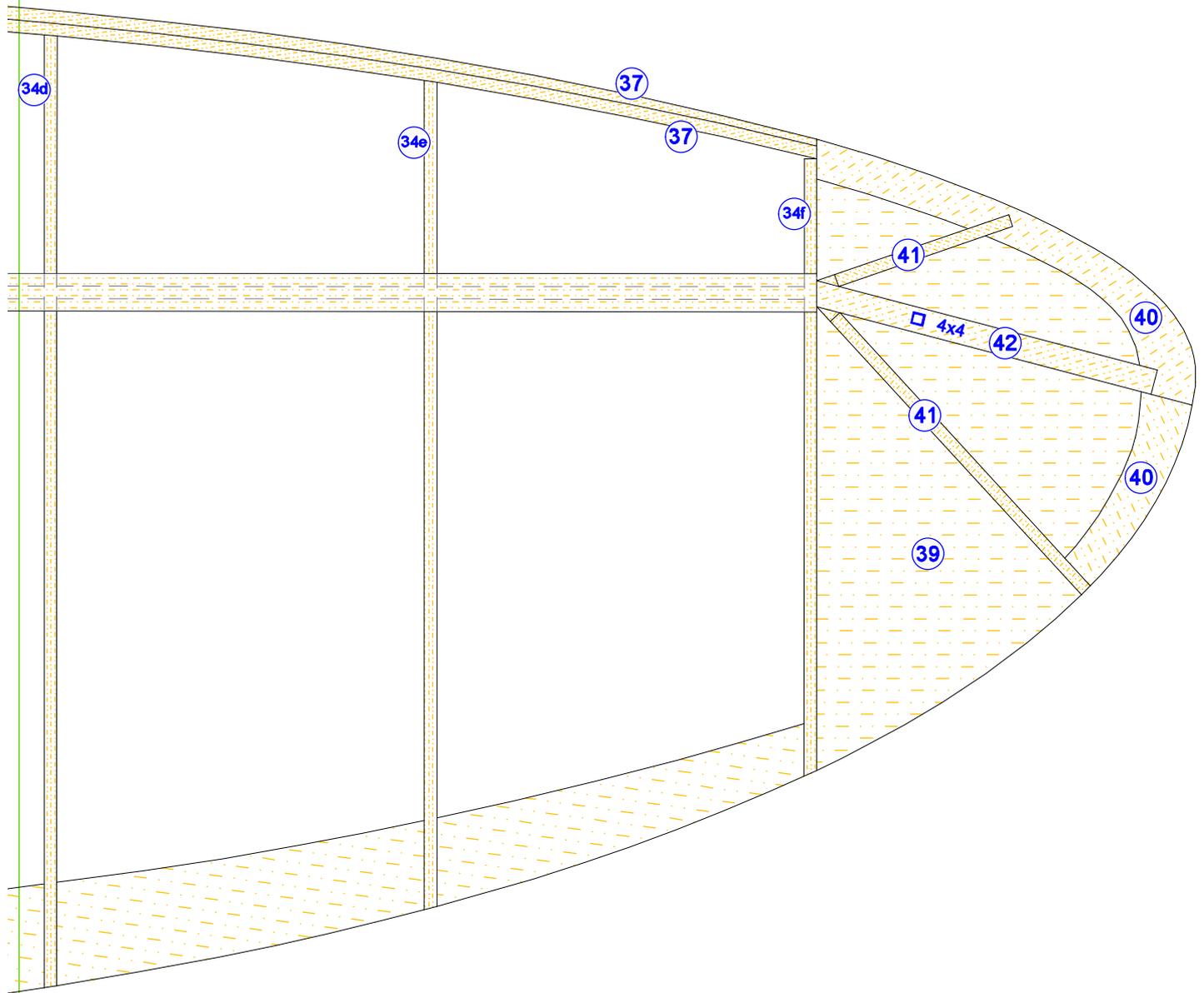


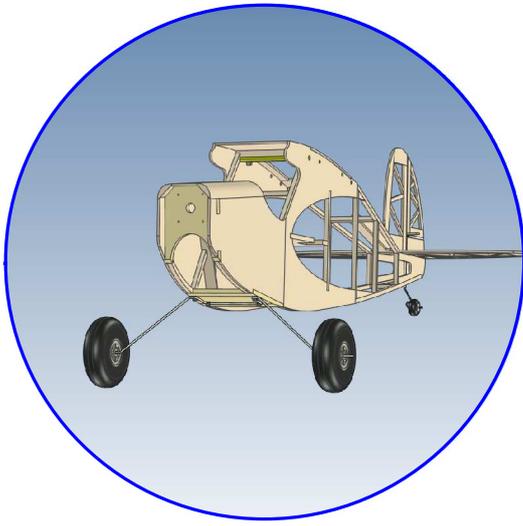


Hilfsdarstellung für den Bau der rechten Flügelhälfte

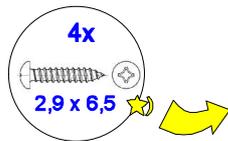
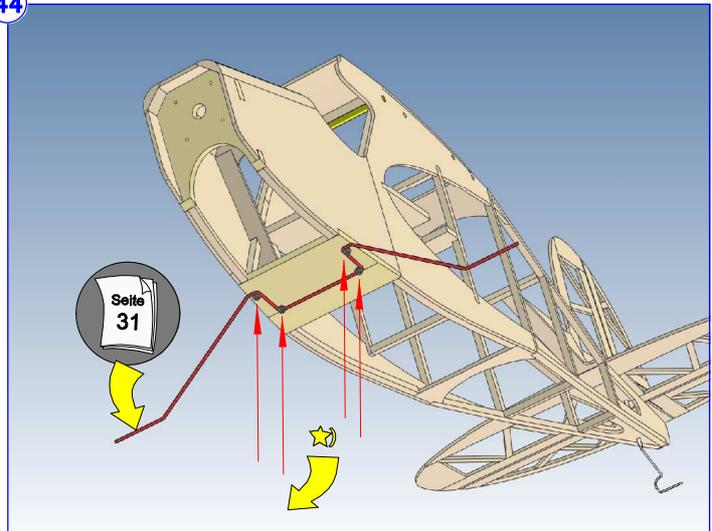
Control drawing for the right wing assembly







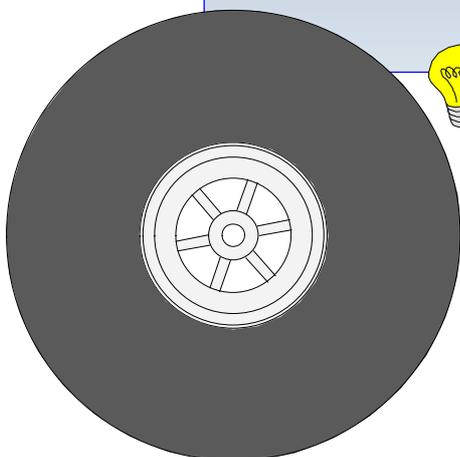
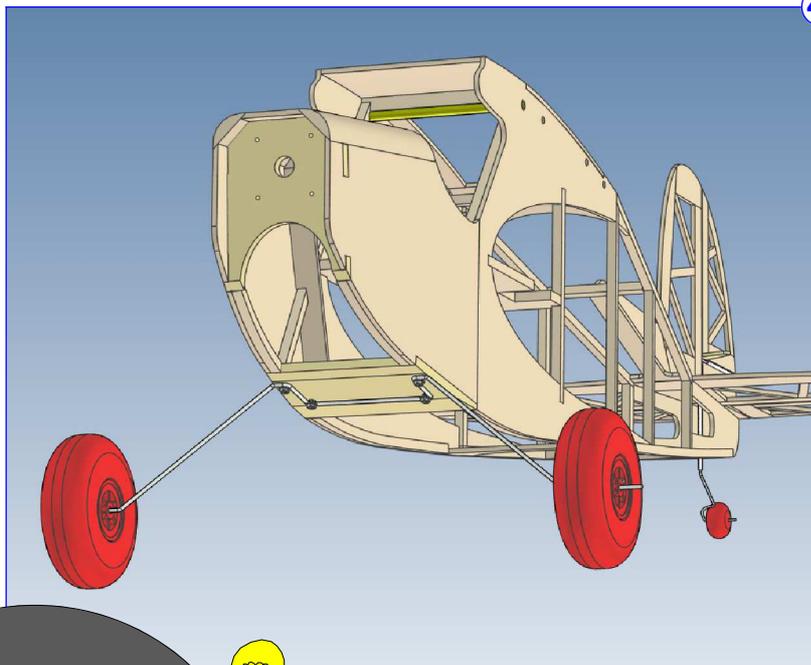
44



Drehen Sie die Schrauben gerade so weit fest, dass sich das Fahrwerk von Hand entnehmen und wieder einsetzen lässt.

Tighten the screws just enough to hold the gear wire in place. You can now take it off and put it back on without using tools.

45



2x Leichttrad 60/20 mm (14g)
Aero-Naut Art.-Nr.: 735333



Achsdurchmesser
mit mehreren Lagen
Schrumpfschlauch
aufdicken

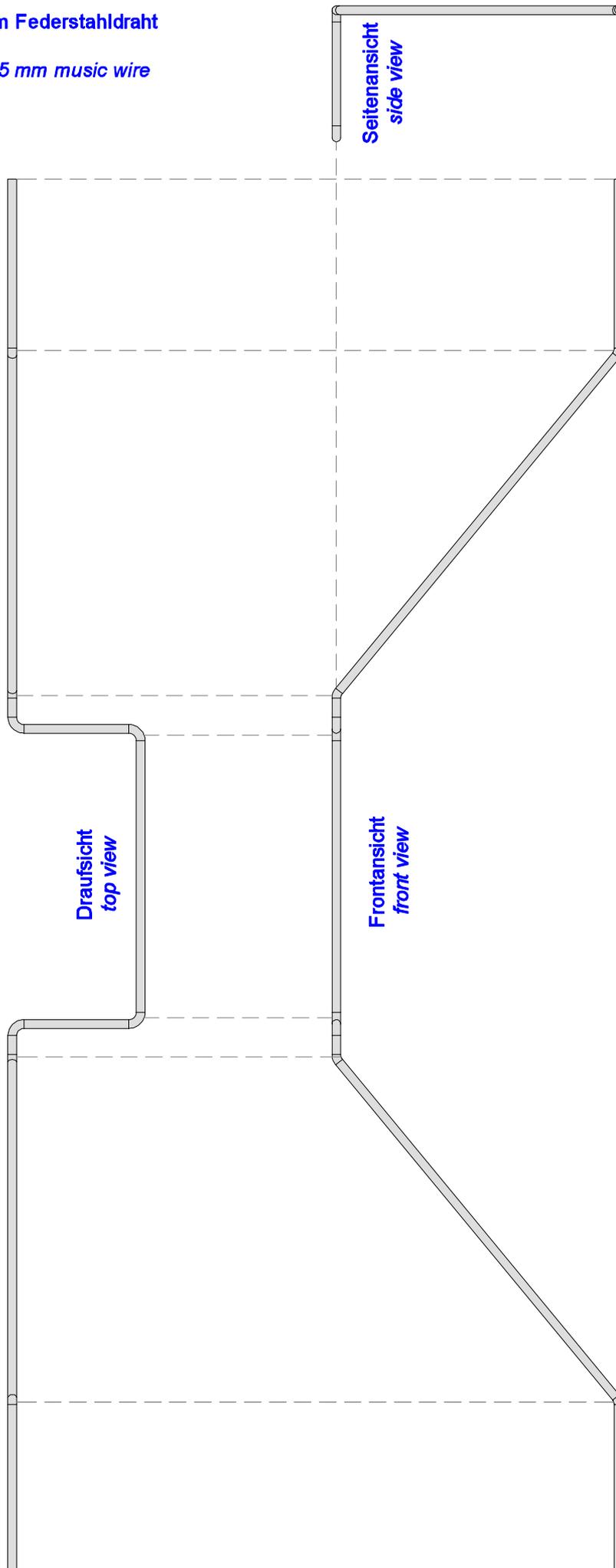
*fit axle diameter
with several layers
of shrinking tube*

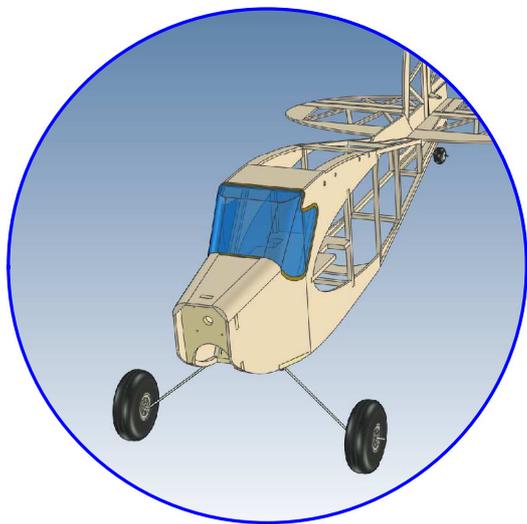


Leichttrad
Ø 15 - 17 mm

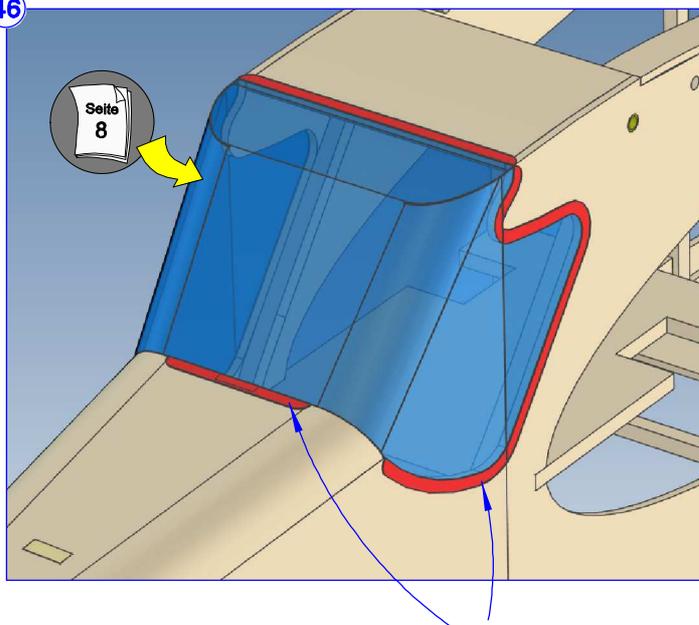
Hauptfahrwerk aus 1,5 mm Federstahldraht

landing gear, bent from 1,5 mm music wire





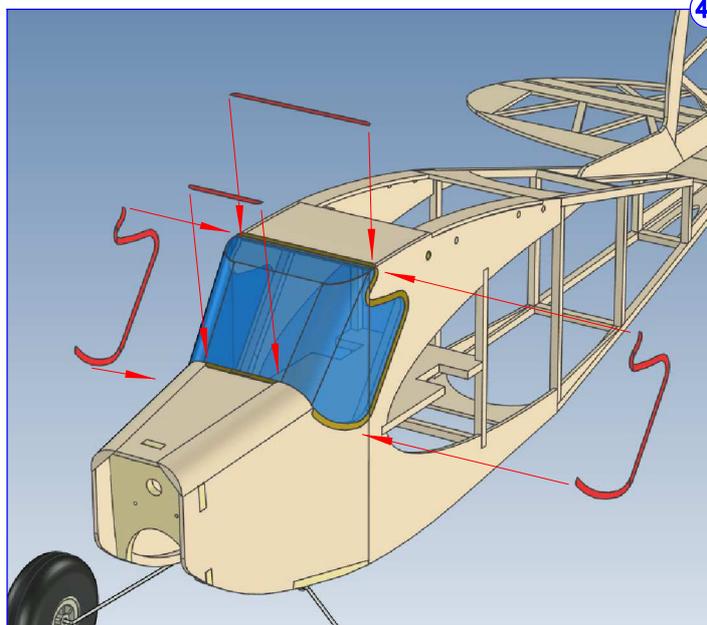
46



Verglasung am roten Bereich
mit Kontakkleber ankleben

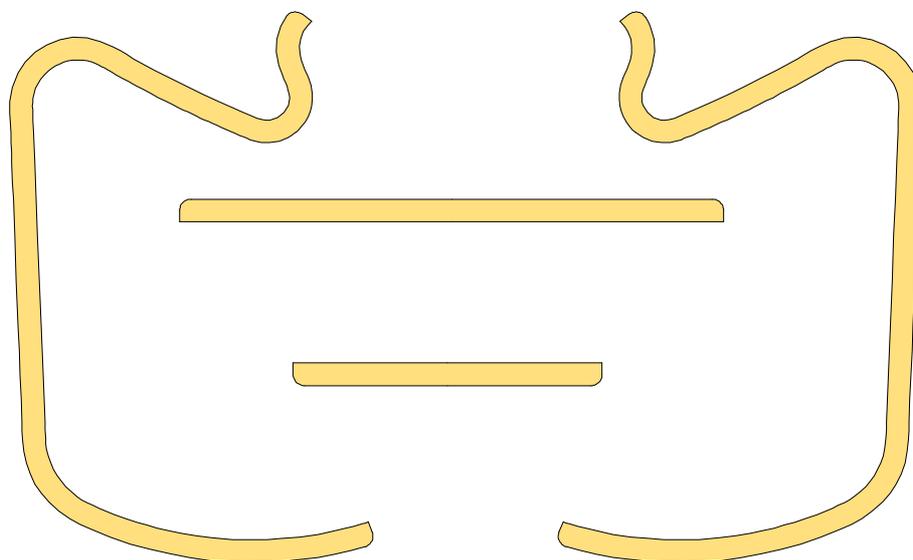
*install window with contact
glue onto red area*

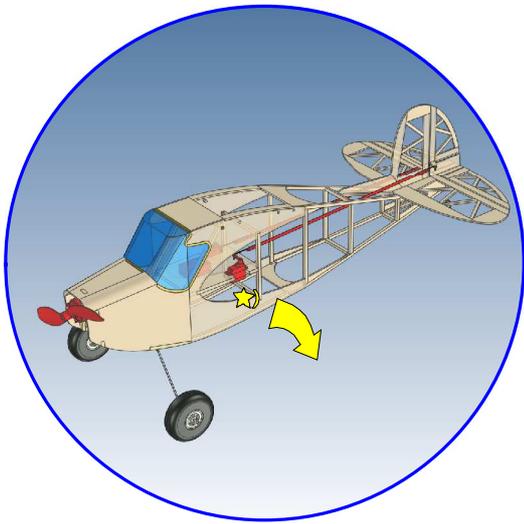
47



Kaschieren der Klebeflächen
mit Bügel- oder Klebefolie

*Cover the visible glue areas
with colored film*



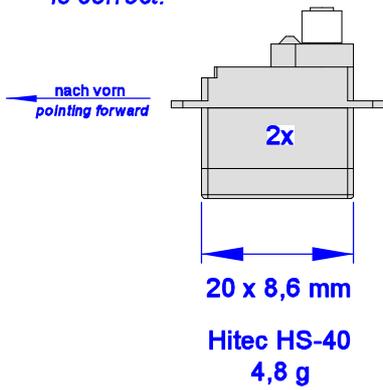


Sekundenkleber und
Schrumpfschlauch
CA + shrink tube

nach
oben gebogen
bent upwards

Einbauichtung der Servos
beachten, damit die Gestängelänge
stimmt

*note the installation direction of the
servos so that the length of the rods
is correct.*



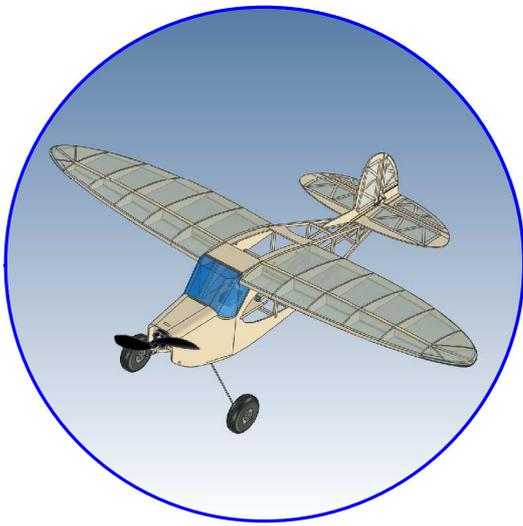
Holzrundstab Ø 3 mm
wood rod

CFK-Stab oder Rohr, Ø 3 mm,
als Flügelverbinder
connect wings to fuselage with
CFK-rod or tube, Ø 3 mm

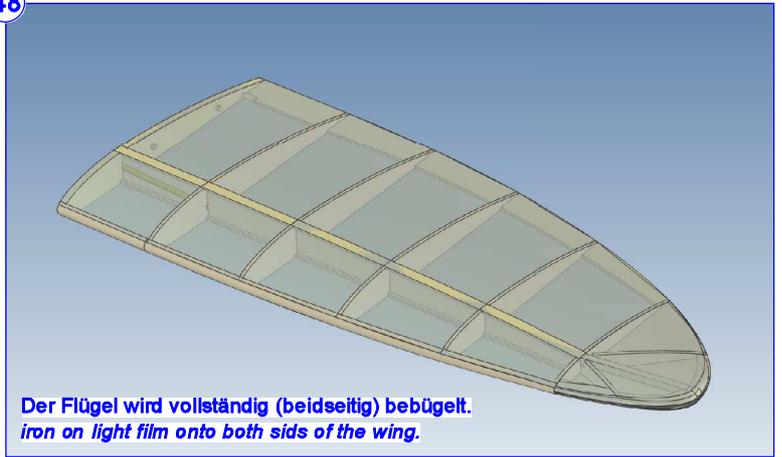


Ein Tropfen UHU por
hindert die Gestänge
daran, aus den
Anlenkungen zu rutschen.

*A drop of contact glue
prevents the rods from
slipping out of the horns.*



48



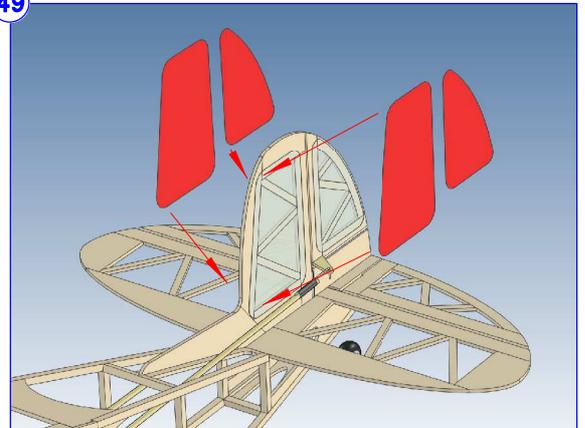
Der Flügel wird vollständig (beidseitig) bebügelt.
iron on light film onto both sides of the wing.



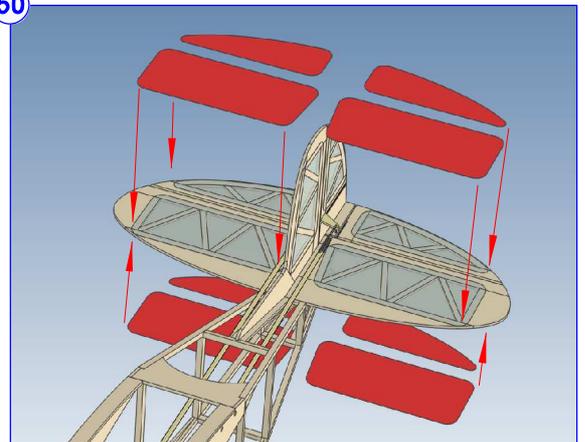
Oralight:
 iron on
 at 145°C

Der Rumpf wird nur an den gezeigten Stellen mit
 Bügelfolie (ORALIGHT) bezogen.
The fuselage is only ironed-on in the places shown.

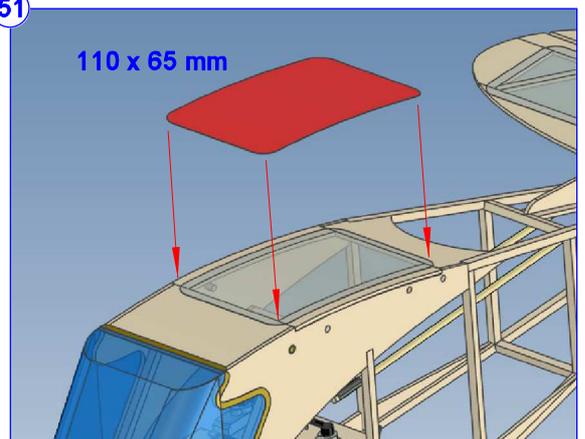
49



50



51



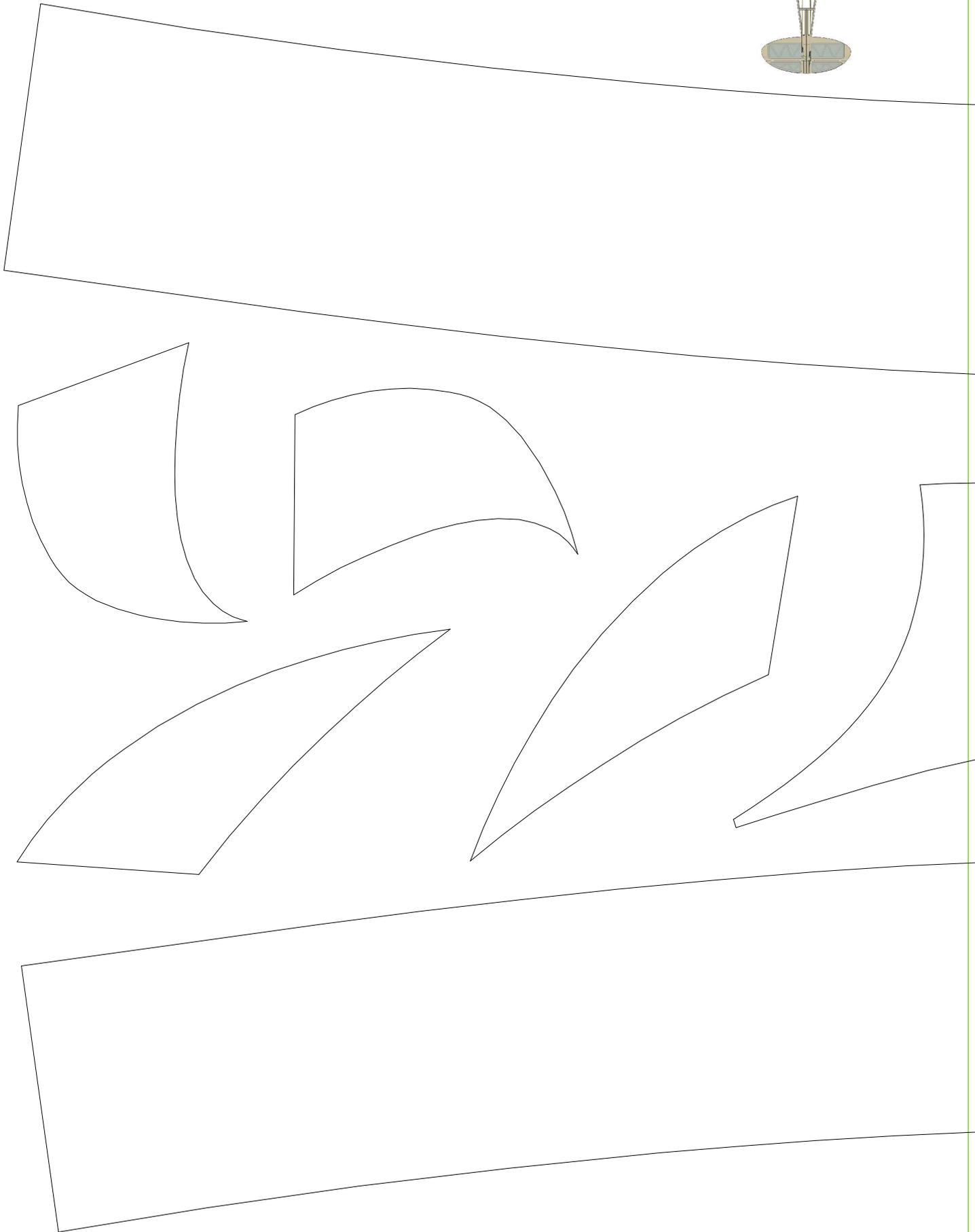
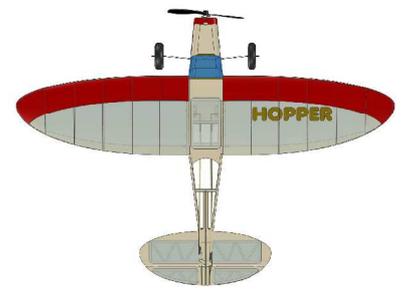
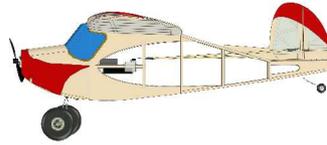
Bügelfolie für
 Rippenfeld
 Seitenflosse
 2x

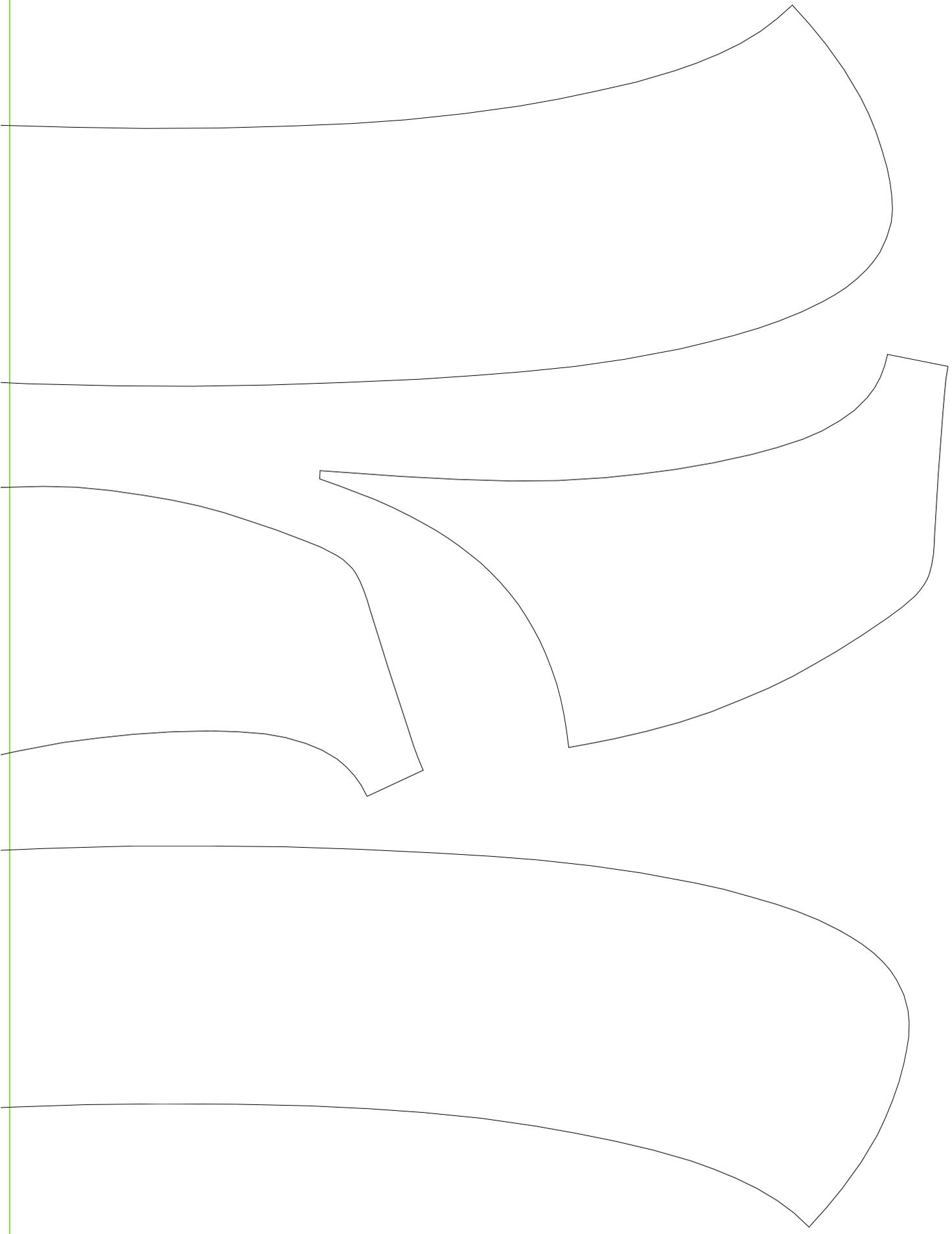
Bügelfolie für
 Rippenfeld
 Seitenruder
 2x

Bügelfolie für
 Rippenfeld
 Höhenruder
 4x

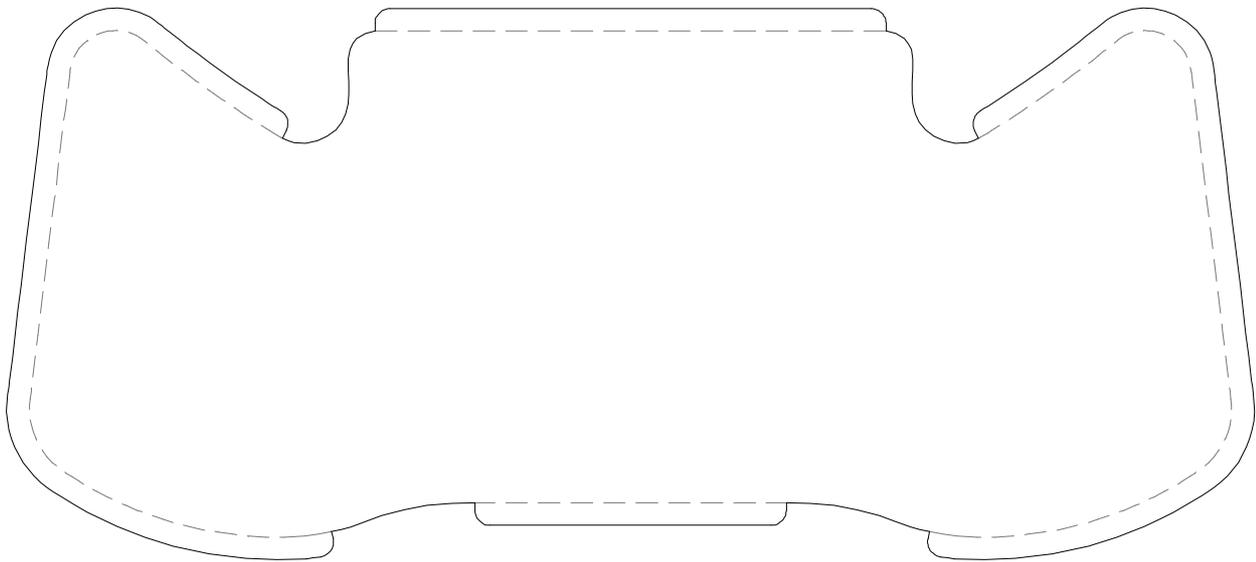
Bügelfolie für
 Rippenfeld
 Höhenflosse
 4x

Designvorschlag:
Schneidkonturen der roten Dekor-Elemente
cutting contours of the red decals





alternative Kabinenverglasung



Hinweise vor dem Einfliegen:

*Things to check
before you fly:*



Justieren Sie den Schwerpunkt auf 1,5 mm vor der Holm-Vorderkante durch passende Positionierung des Akkus. Bei Verwendung der vorgeschlagenen Komponenten liegt der Akku auf dem Fahrwerksspannt, bei stärkerem (schwereren) Motor hängt er unter dem Servobrett.

Balance the center of gravity 1,5 mm ahead of the front edge of the spar. Therefore the battery can be placed either on the landing gear plate or hanging under the servo-board, using velcro tape.



Höhenruder-
ausschlag:
+- 12 mm

Seitenruderausschlag:
+- 22 mm

Wichtiger Hinweis:
prüfen Sie sorgfältig, dass beide Flügelhälften auf dem ebenen Baubrett aufliegen ohne zu kippen. Eventuelle Verzüge müssen sprichwörtlich ausgebügelt werden, sonst lässt sich das Modell nicht steuern!

Beruhigen Sie die genannten Maximalausschläge mit 30% EXPO. HOPPER fliegt weich gesteuert mit nur etwa 5 mm Ruderausschlag.

Important:
check both wing halves thoroughly for being even and plane at their bottom surface. The slightest twist will cause problems in steering control!

Calm down the maximum deflections mentioned with 30% EXPO. HOPPER flies smoothly with only about 5 mm rudder deflection.