Sheet 1 Number of sheets:11	ASW 15, ASW 15 B Technical Note No.22	*Alexander Schleicher* *Segelflugzeugbau* *6416 Poppenhausen*

Subject :

1. Reinforcement of elevator actuator bellcrank inside the fuselage.
2. Correction of the Operation Manual.

Effectivity :

All ASW 15s and ASW 15 Bs including its variants as motorgliders.

Compliance :

A. Action 1 :
At the latest after 100 take offs or 100 flying hours - whichever first occurs - after the inspection as directed by LBA AD-Note 81-265 has been accomplished and then in intervals of every 100 take offs or 100 flying hours until action 2 is accomplished. (TN no.21 is attached hereto).

B. Actions 2 and 3 :
Not later than April 1, 1983.

Reason :

Further to Schleicher Technical Note no.21 and LBA AD-Note 81-265 the owner of an ASW 15 B found a fatigue crack on the elevator actuator bellcrank inside the fuselage. An expertise ordered by the LBA concludes that an already existing smaller crack has been overlooked during the first inspection according to TN no.21 (LBA AD-Note 81-265) and has been found only during a second inspection after another 172 take offs when already 35 % of the cross area were cracked.

Action required :

1. Until accomplishment of action 2 (reinforcement of the elevator actuator bellcrank, see below) the elevator actuator bellcrank must be inspected according to the procedure of LBA AD-Note 81-265 (Schleicher Technical Note no.21).

2. After careful weighing of all arguments - especially taking into account the additional risks of the tricky repair situation -, the LBA and the Schleicher factory have agreed to call for the reinforcement of the elevator actuator bellcranks of all ASW 15s in service.
For this purpose the rudder must be derigged and the openings in the lower part of the fin spar have to be made according to drawing sheet no.1 of this TN.
The glue seams of the monocoque fin sandwich parts above both holes of the elevator support fittings must be made visible by carefully removing the polyester paint (see drawing sheets no.2 and 4 of this TN). Cut out these monocoque sandwich parts by exactly following the existing glue joints. The plywood rings on the inner side of the monocoque sandwich parts are also cut, but are <u>not</u>

removed (because of danger of delaminating the tubus core sandwich).
The 4 bolts M8 of the elevator hinge must be unscrewed (use heat gun, if necessary) and the whole fitting including the hinges must be taken out of the fin. Naturally, the push-rod in the fuselage has to be disconnected prior to this job.
The plywood doublers at the fin root rib - if delaminated - have to be removed. If necessary, new plywood doublers (part no. 150.11.0170 and 151.11.0171, see drawing sheets no.5 and 6 of this TN) have to be fitted in according to drawing sheets no. 2 and 3. Using the existing holes in the FRP rib new holes must be marked on the ply then must be drilled exactly and preserved with resin/hardener mixture before being fitted in.
It is recommended to use the stronger, reinforced doublers, part no.151.11.0171, on the lower side of the fin root rib for ASW 15 (serial numbers 15001 through 15183) - if these have not already been replaced on earlier occasions.
The elevator actuator bellcrank itself must be reinforced by an additionally installed tube (Ø12 x 1; steel St35BK or BKW) according to drawing sheet 151.35.1011 Ausführung IV (version IV). To do this properly, the paint has to be removed carefully at the welds (e.g. by sandblasting).
To guarantee minimum welding deformation (shrinkage) inert-gas shielded arc welding by use of 1.7324.0 welding wire must be applied. The ball bearing at the low end of the bellcrank needs not to be removed and a readjustment of the elevator control circuit is usually not necessary.
If new stronger plywood doublers have been used (ASW 15 only, not ASW 15 B), new longer bolts M8-8.8 must be used and cut to length prior to installation. For the correct assembly of the tailplane to the fuselage the whole glider must be rigged, as the tailplane must be aligned parallel to the wings. The control deflections have to be checked and adjusted, if necessary (see Operation Manual). The plywood rings (part no.150.11.C169; see drawing sheet no.4 of this TN) are glued on top of the existing ones inside the fuselage; preserve the inner surfaces and reglue the monocoque fin sandwich parts, which were cut out atthe beginning, in their former position and fill the joints carefully.
An additional piece of wood (see drawing sheet no.1 of this TN) is glued to the fin spar.

The openings in the spar are closed by overlap joint with plywood, 2mm thick, as can be seen on drawing sheet no.1; do not forget to preserve all internal surfaces before closing the openings.
All external repair areas must be repainted; the rudder must be reinstalled, connected to the controls and safetied.
For all internal preservation the following mixture is recommended

100 parts (in weight) of Epikote 162 (GE 162)
and 38 ±2 parts of Epikure 113 (Laromin C 260),

which is made to a glue mixture by adding Aerosil.

3. The amendments of the Operation Manual according to TN no.21 on page 22a (ASW 15) respectively on page 25a (ASW 15 B) - "During every annual inspection ..... according to TN no.21." - are cancelled and the cancellation has to be certified on page 3 of the Manual (Amendments to the Manual).

Material :

Steel tube Ø12 x 1, 300 mm long, steel St35BK or BKW;
Welding wire 1.7324.0;
2 plywood doublers 150.11.0169;
1 poplar wood piece 30 x 6 x 110 (mm);
1 plywood overlap 380 x 160 (mm), diagonal fibers, 2mm thick, according to DIN L 183, quality 2;
For ASW 15 (serial numbers 15001 through 15183), if necessary, 4 bolts M8 x 40 DIN 931-8.8 (20 mm without thread) and plywood doublers 151.11.0170 and 0171.

Weight & balance :

The increase of weight of 0,15kg (0,3lbs) is negligible as well as the influence on the C.G. of the glider. The difference of moment (referred to datum point) is about 0,5mkg (3,5 inlbs) tailheavy.

Notes :

1. Technical Note no.21 is no longer applicable when actions 2 and 3 of this TN no.22 are accomplished.
2. The repair according to this TN must only be accomplished by the manufacturer or by a licensed repair station.
3. Original materials and assistance for this repair is available with the Schleicher factory.

Drawings : For this TN the drawing no.151.35.1011 "Ausführung IV" (version IV) has been made (see drawing sheet no.7 of this TN).

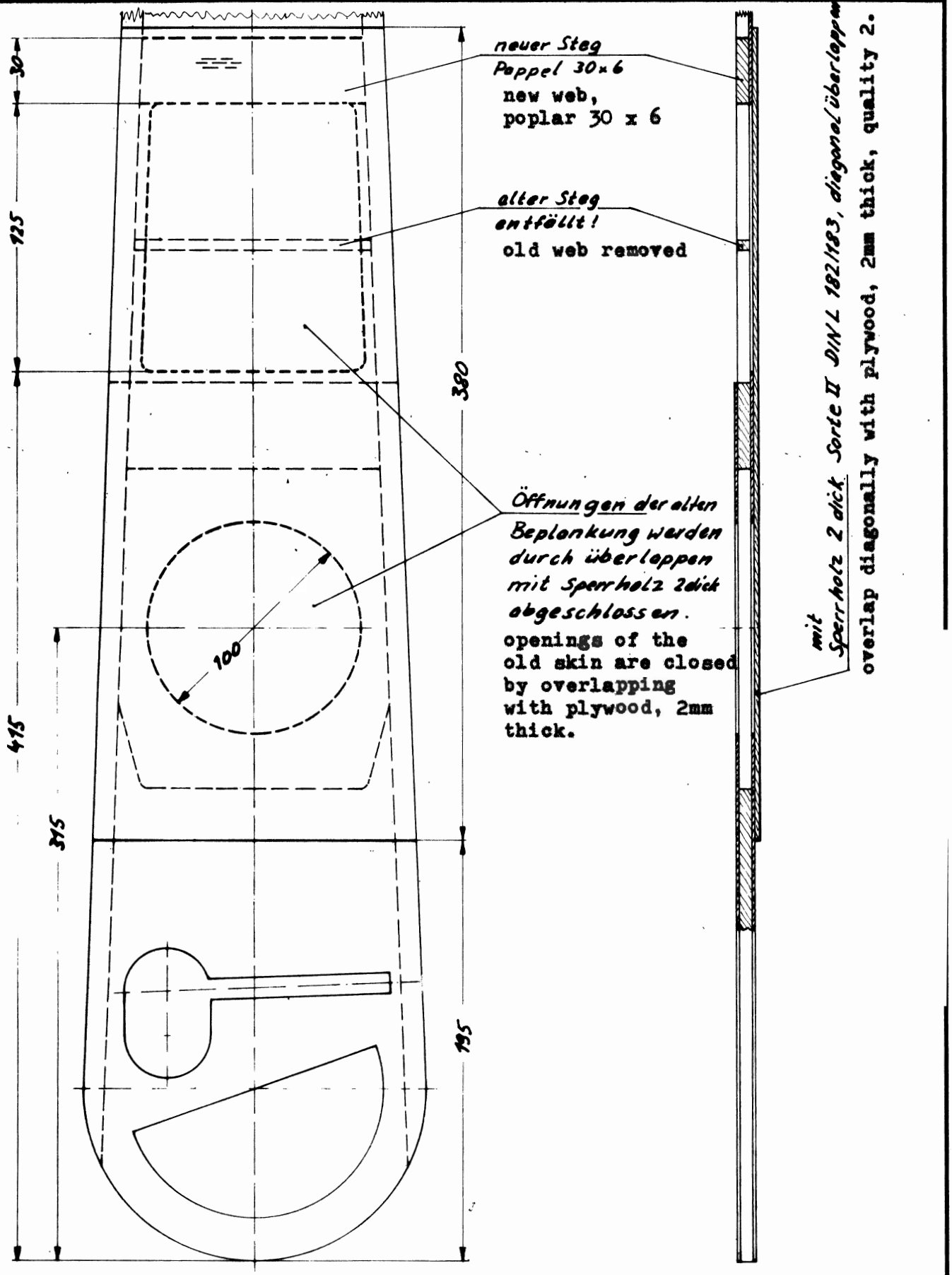
Poppenhausen, November 1, 1982

ALEXANDER SCHLEICHER
Segelflugzeugbau
Gerhard Waibel
Gerhard Waibel.

The German original of this TN has been approved by the LBA on November 10, 1982, and is signed by SCHMALJOHANN.

The translation has been done by best knowledge and judgement. In case of doubt the text of the German original is authoritative.

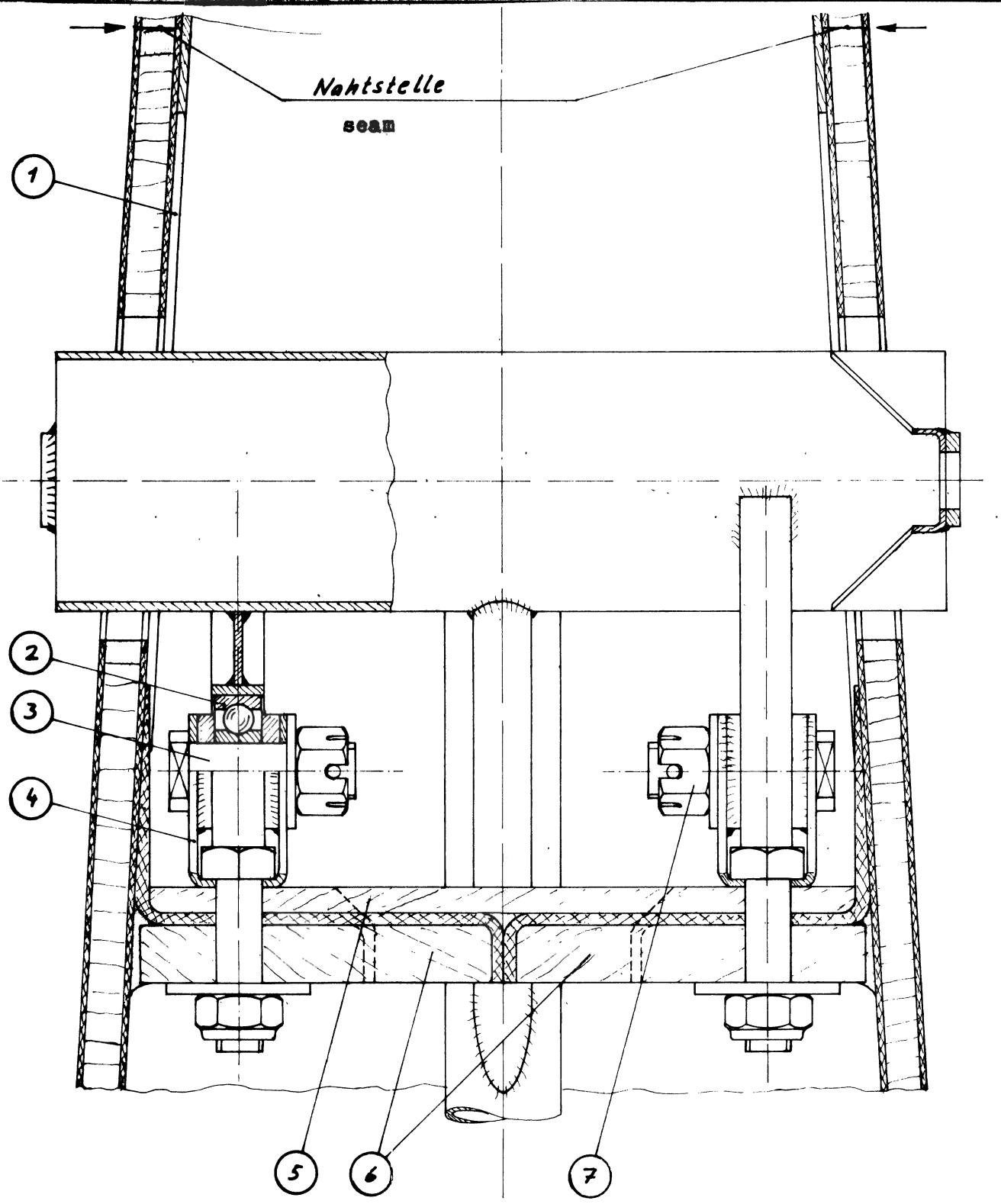
Drawing sheet no.1 Number of sheets: 11	ASW 15, ASW 15 B Technical Note No.22	Alexander Schleicher Segelflugzeugbau 6416 Poppenhausen



Vertical fin spar

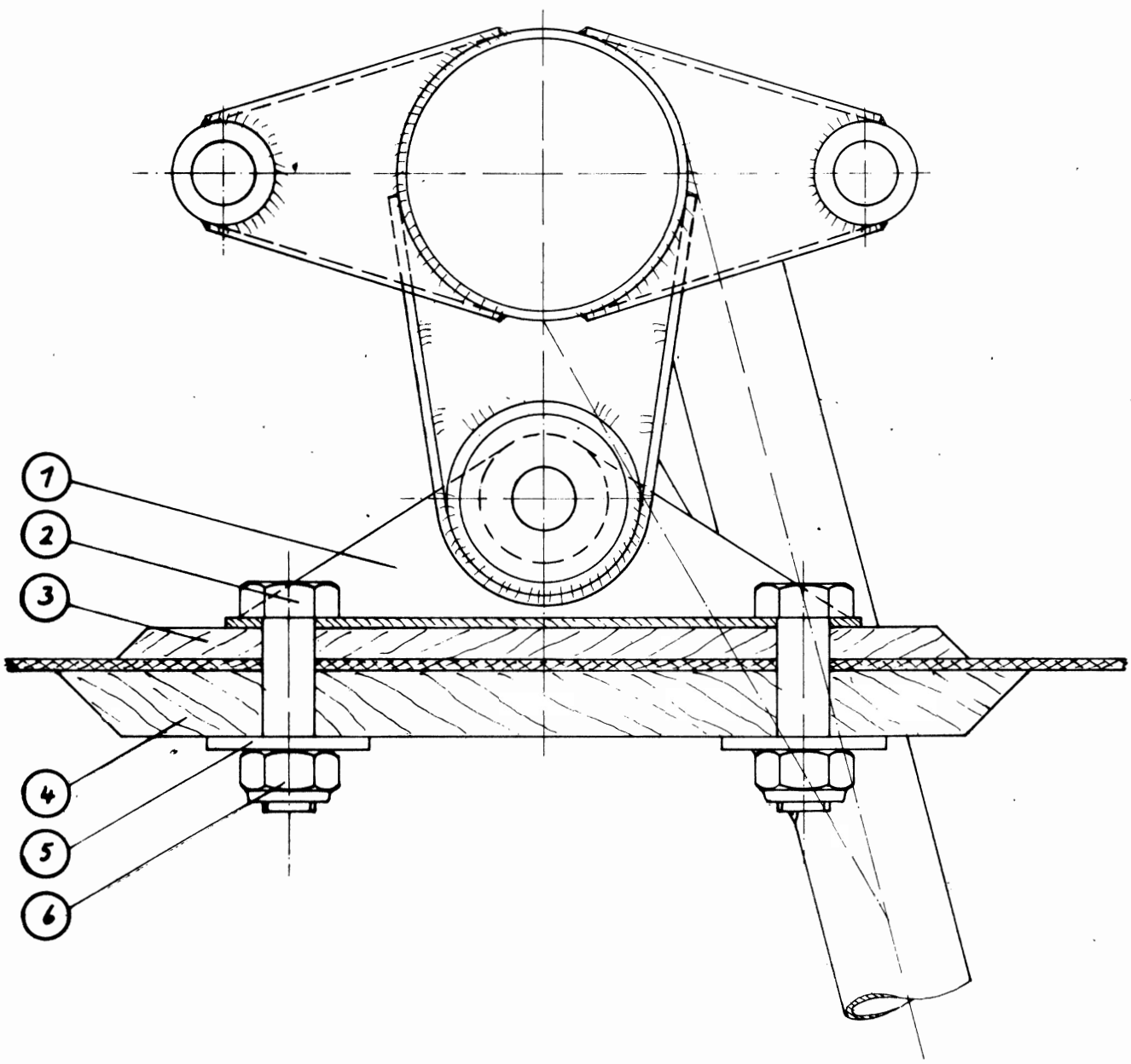
St.	Benennung	Lfd. Nr.	Werkstoff	Rohmaße Teil- oder DIN-Nr.	Bemerkung
1	Holm f. Seitenflosse			151.37.0021	

Drawing sheet no.2 Number of sheets: 11	ASW 15, ASW 15 B Technical Note No.22	Alexander Schleicher Segelflugzeugbau 6416 Poppenhausen



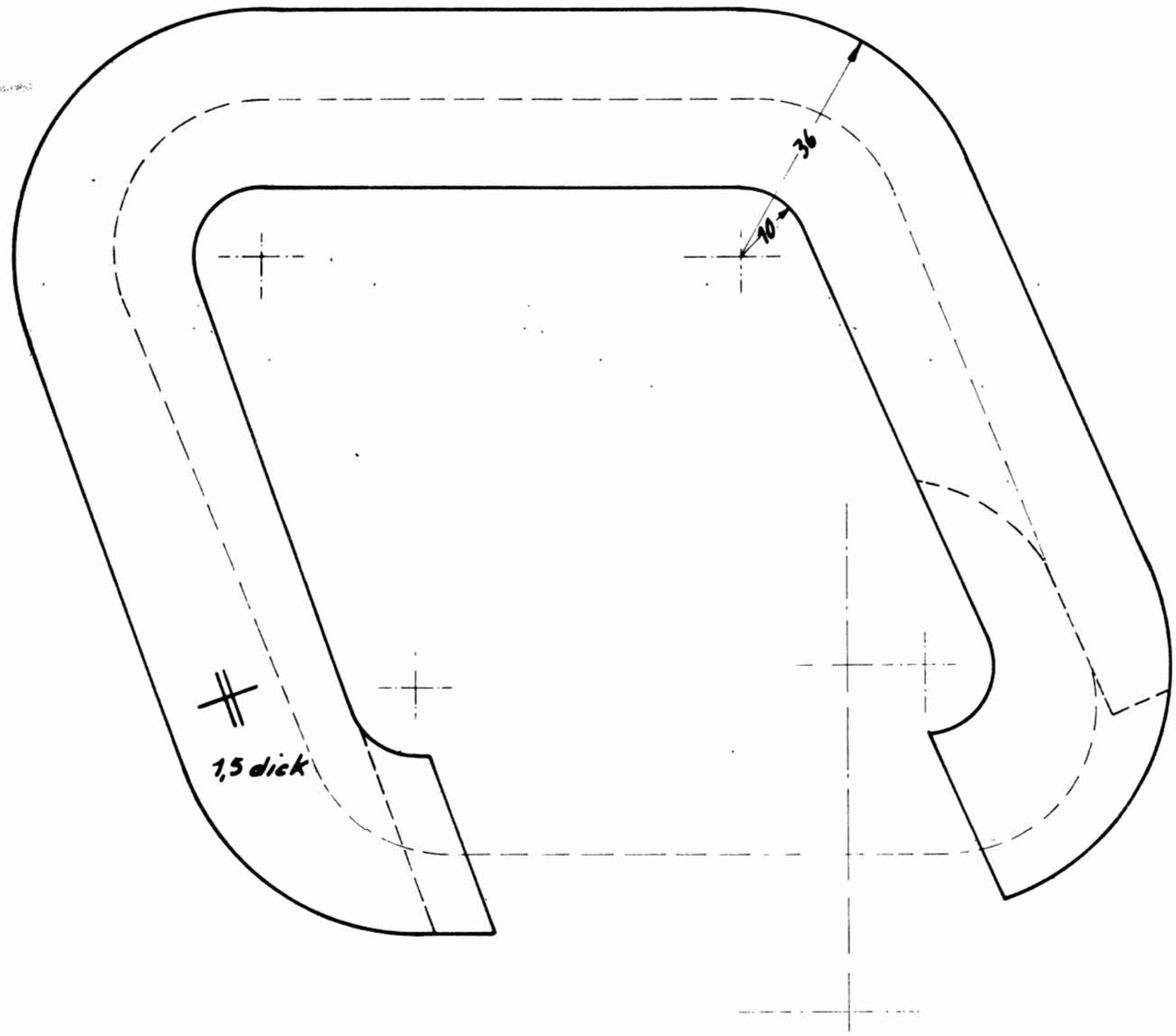
St.	Benennung	Lfd. Nr.	Werkstoff	Rohmaße Teil- oder DIN-Nr.	Bemerkung
2	Kronenmutter M10	7		LN 9345	
2	Aufleimer f. Pe. Ru.-Lagerung unten	6		150. 11. 0171	
1	Aufleimer f. Pe. Ru.-Lagerung oben	5		150. 11. 0170	
2	Lagerbock f. Pe. Ru.-Antrieb	4		150. 35. 0006	
2	Bundbolzen III f. Pe. Ru.-Lagerung	3		150. 35. 0004	
2	Rillenkugellager	2		6000 - 2Z	
2	Verstärkung f. Pe. Ru. Austritt	1		150. 11. 0169	

Drawing sheet no.3 Number of sheets : 11	ASW 15, ASW 15 B Technical Note No.22	Alexander Schleicher Segelflugzeugbau 6416 Poppenhausen



St	Benennung	Lfd. Nr	Werkstoff	Rohmaße Teil: oder DIN-Nr	Bemerkung
4	Sechskantmutter M8	6		DIN 985 - 6	
4	Scheibe 8,4	5		DIN 9021 - St.	
2	Auflaimer f. Pendel- Ruder - Lagerung unten	4		150. 11. 0171	
1	Auflaimer f Pendel- Ruder - Lagerung oben	3		150. 11. 0170	
4	Sechskantschraube M8 x 40	2		DIN 931 - 8.8	auf 30 lang gekürzt
2	Lagerbock f Antrieb Hö. Ru.	1		150 35 0006	

Drawing sheet no.4 Number of sheets: 11	ASW 15, ASW 15 B Technical Note No.22	Alexander Schleicher Segelflugzeugbau 6416 Poppenhausen

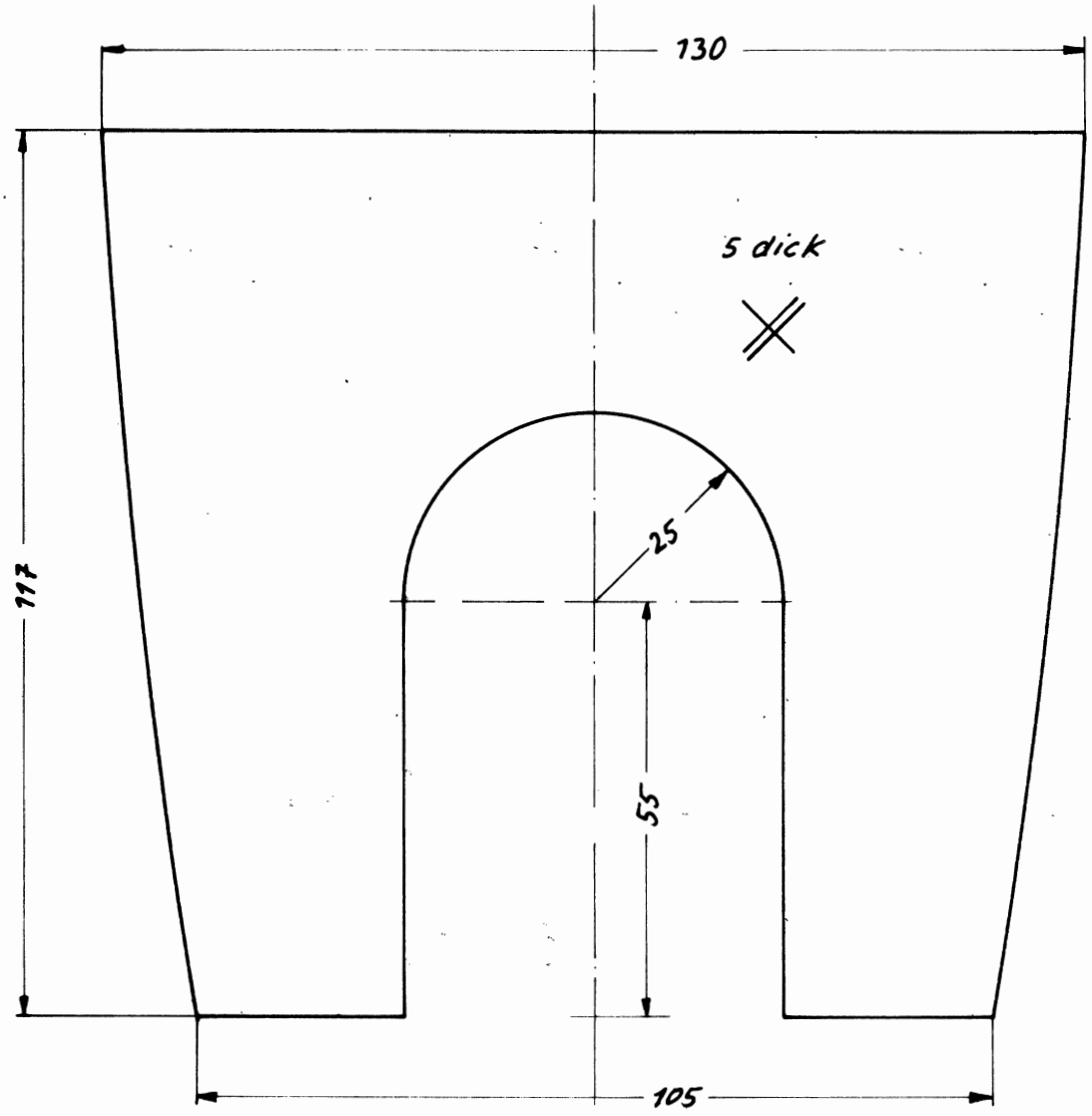


This drawing serves as stencil !

Zeichnung dient als Schablone!

St.	Benennung	Lfd. Nr.	Werkstoff	Rohmaße Teil- oder DIN-Nr.	Bemerkung
2	Verstärkung		Sperrholz, Sorte II	DIN L 182/183	

Drawing sheet no.5 Number of sheets: 11	ASW 15, ASW 15 B Technical Note No.22	Alexander Schleicher Segelflugzeugbau 6416 Poppenhausen

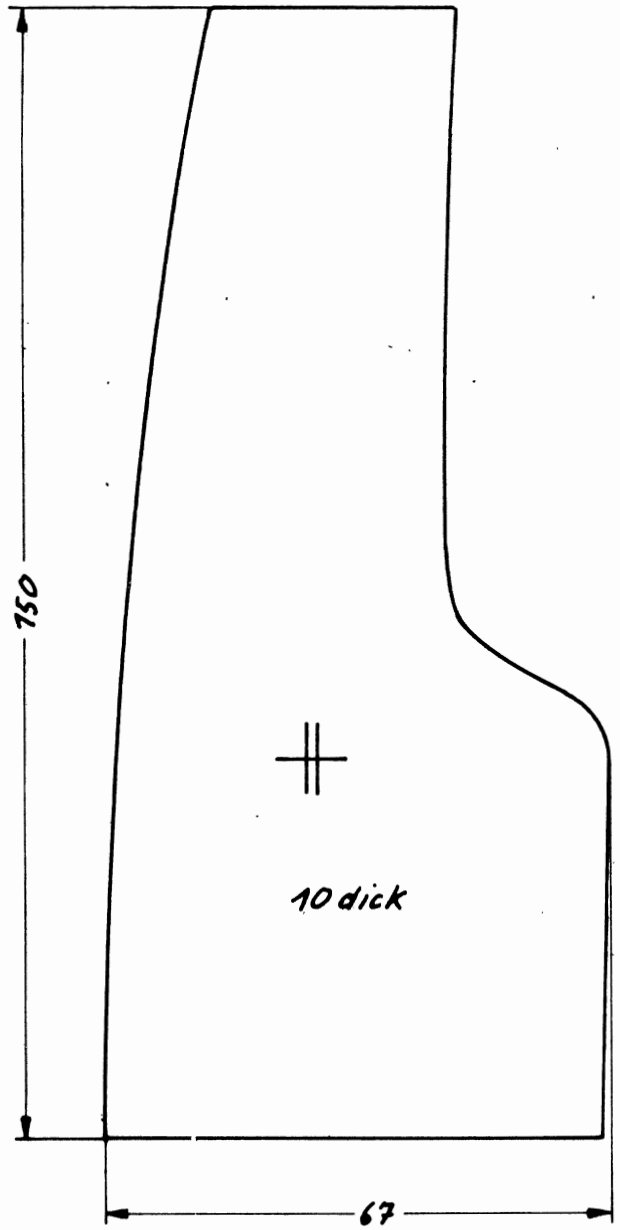


This drawing serves as stencil !

Zeichnung dient als Schablone !

St.	Benennung	Lfd. Nr.	Werkstoff	Rohmaße Teil- oder DIN-Nr.	Bemerkung
1	Aufleimer		Sperrholz, Sorte II	DIN L 182/183	

Drawing sheet no.6 Number of sheets: 11	ASW 15, ASW 15 B Technical Note No.22	Alexander Schleicher Segelflugzeugbau 6416 Poppenhausen



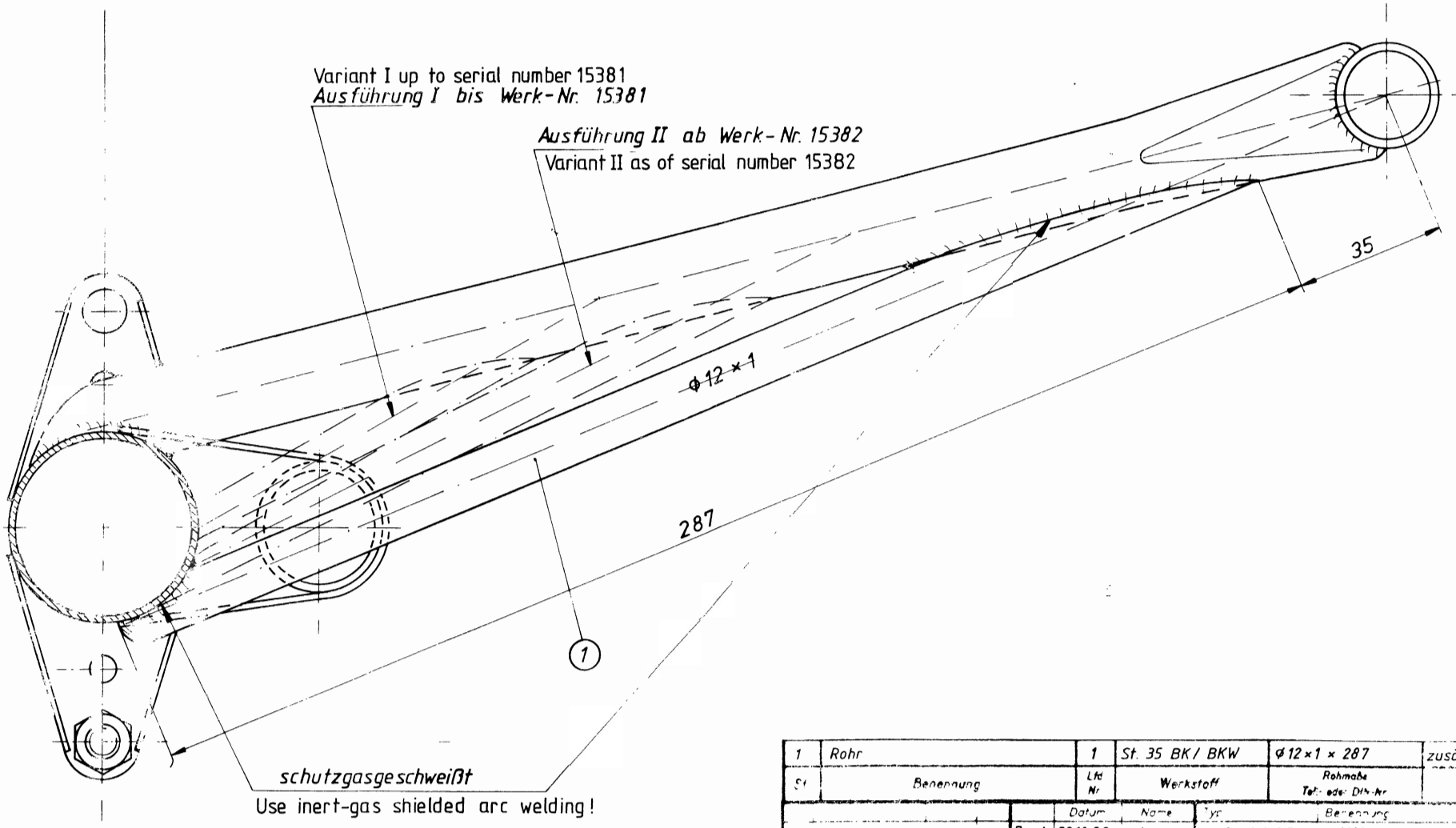
This drawing serves as stencil !

Zeichnung dient als Schablone !

St.	Benennung	Lfd. Nr.	Werkstoff	Rohmaße Teil- oder DIN-Nr.	Bemerkung
2	Aufleimer		Sperrholz, Sorte II	DIN L 182/183	

Ausführung IV

Variant IV



St	Benennung	Lfd Nr	Werkstoff	Rohmaße Tafel- oder DIN-Nr	zusätzlich Bemerkung
1	Rohr	1	St. 35 BK / BKW	ϕ12×1 × 287	

	Datum	Name
Bearb	29.10.82	Juw
Gepru		
Norm		

Typ Benennung

ASW 15 mittlerer
ASW 15B Pendelruderbeschlag

1:1

A Schleicher
Segelflugzeugbau
6416 Poppenhausen

Zeichnungsnummer L-272
151.35.1011 TM 2?

Ersatz für: Änderung Datum Nr. Ursp.

Ers. gl. Nr. vom 6.7.73