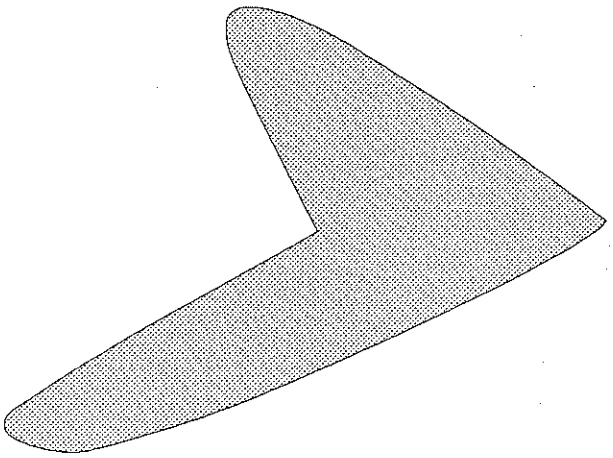
Laminar 13 & 14

User's Manual



® Laminar

I. Made in Europe

Congratulations..! Buying an *Icaro 2000* hang-glider -a first quallity product- you made the right choice,.

Icaro 2000 srl is the europe's leader in hang-gliders manufacturing, (more than 5,000 items maufactured & sold in a decade), successful both in competitions and in sales.

Icaro 2000 gliders are fully designed and manufactured -employing only first quality materials-, in our factory at Sangiano,.
All our models have passed the severe official certification tests in Germany and Switzerland

At our factory you'll be able to periodically check your glider, and to perform all the maintenance eventually you need.

So you will fly absolutely safe, without any worry : the spare parts are always available.

Have fun !....

ICARO 2000 Srl
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Telefon ++39 (332) 64 83 35 Fax 64 80 79

II. Table Of Contents

III. Introduction

During latest years hangliding has become increasingly safe.

Accidents have been rare, due to flight-schools becoming more serious, and the procedures requested to obtain handglider's certification becoming more demanding.

In Switzerland -for example-, the insurance risk of hangliding is the same as of winter sports. Notwithstanding these accidents do happen, many of which could be easily avoided by following a few simple rules.

A. *Keep risks to the minimum*

1. Attend a serious school.
2. Fly a glider suited to your level of ability.
3. Only fly when weather conditions are appropriate.
4. Always be well-trained for flying, avoiding too long intervals between one flight and the next : so your flying ability will gradually increase.
5. Be aware of when it's better not to fly : caution is a mark of intelligence not of cowardice.

A new risk may arise when you change type of glider.
In order to keep this risk low you need to gradually become familiar with your new glider following some rules.

B. *Learn by yourself*

1. Try repeatedly to assemble and disassemble your delta, as explained in the manual.
2. Be careful, since take-off sites are often crowded with people, so it's easy to become distracted : only if you always use *a system* you'll be able to assemble the glider well and safely.

C. *Assembly check and first flight.*

- Every authorized ICARO 2000 dealer must test fly your glider before delivery. Be certain that it has been done !
- He is also obliged to help you for your first time glider assembling. Assemble your glider in his presence, learn from him, follow the finall checks, and do your first flight with his help.
- We strongly recommend you to mount the wheels on your speedbar : this is absolutely essential for the first flights.

D. *High flights.*

- For the first high flight, always wait for the ideal weather conditions.
- Try the reaction of your glider, including the stall at an altitude of at least 150 meters.
- Fly your personal polar with your instruments.

IV. Fundamental Rules

1. After major repairs, after having removed the sail, or after a long period of not flying, always choose a site to fly from where it is possible to land immediately aftre take-off.
2. Do not change anything on your glider, and periodically check the trimming valuès shown in the table.
3. Only fly after having attended a good school, recognized by the federation. The owner's manual does not replace the check done by an authorized dealer. *This applies also to expert pilots.*
4. Never fly alone.
5. Before every take-off always do both an assembly check and a pre-flight check.
6. Only fly in places suited to hanggliding : it's your duty to know the limits of your glider.

V. General Limits

A. WING SPEED

When the wind 's speed is over 20 Km./h take-off become risky.
In these case always ask the more expert pilots about wind's strength and any further problem.

B. TURBULENCE

Negative loads must be avoided.
Do not fly in turbulent wind or on the leeward side of a mountain.

C. ACROBATIC FLYING

Acrobatic flight can be fatal and is therefore prohibited.
As acrobatic flighs we intend tight turning with a lateral inclination of more than 60 degrees, wavy flight, wingovers, looping, flying with the glider nose almost in the vertical position.

VI. Certification, Towing & Transport

All *ICARO 2000* hang gliders have both Swiss and German certification.

For the DHV German federation the Laminar models are included in classes 2 and 3 (high performance glider for expert pilots who have a B or C licence).

A. TOWING

Towing requires a particular pilot training and ability.
In this case is mandatory to mount the wheels on the speedbar.

B. TRANSPORT

A serious damage can be caused to the glider both during transport on the roof of the car and on the cableway.

A luggage rack well padded is necessary to avoid any damage caused by transport on top of the car.

We strongly suggest to support the gliders on the front side of the car too.

There are good carriers on the market -expressly made to carry your glider-, which can be easily assembled on normal luggage racks.
Ask you dealer for details.

To avoid any damage when carrying on the cableway it is advisible to be present when loading and unloading the glider.

VII. Assembling

There are basically two ways to assemble your glider.

- ON FRAME

This method protects the sail because it never touches the ground. The sail is not ruined by sharp stones or dirty ground.

- FLAT ASSEMBLY

This method is advisable in strong winds.

Warning

In the following, left and right are always referred to in respect to the direction of flight.

A. ON FRAME

Place the glider on the ground,

- In a light breeze : nose into the wind
- In a strong breeze : the nose must be perpendicular to the wind.

If the ground where you are assembling the glider is not flat, point the nose of the glider toward the top of the slope.

1. Open the bag and fix the speedbar with the push-pin and safety pin.
2. Thread the cord of the variable geometry in the clamp on the speed bar.
3. Turn the glider over and stand it on the control frame.

ASSEMBLING THE KINGPOST

4. Remove the glider bag and any remaining ties. Open the wings making sure that the end of the wings, protected by the tip covers, touch the ground.
5. Raise the kingpost,insert the kingpost cover with the top wires and attach the rear wire to keel.

MOUNTING THE WASHOUT STRUT

6. Insert the VTR washout strut in the opening of the sail on the end of the wing; it has to be inserted into the aluminium hole and firmly pushed until you reach the stop (be sure it is well inserted : you should hear it hitting against the stop)

7. Bend the washout strut by hand in its thinnest part, and at the same time tighten the aluminium washout strut lever, inserting two fingers (middle and ring finger) into the thin cord of the lever.

8. Then position the bushing(?) of the lever on the washout strut, then pull the biggest cord attached to the end of the lever : after a click of the lever against the washout strut, the sail will tighten.

NOTE: it's important to bend the washout strut at 3/4 of its length, where the diameter is lower.

9. repeat the same procedure at the end of the other wing (for the first times, you can facilitate by opening the zip fastener situated in the lower part of the sail, just near the end of the aluminium tube)

INSERTING THE BATTENS

10. Red tipped battens are for the left wing, green for the right one.

11. Beginning from the center of the wing, insert the battens into their pockets until you can double secure the elastic cords.

FIXING THE CROSS

12. Locate the *leading eadge* near the keel, ensure that the nose plate with the black belt does not entangle near the keel-pocket and the securing belt; pull the cord until you can reach the small plate with the lock hole, and block it to the hollow of the keel's bolt by means of the spring button.

13. Take all the straight battens and insert them in their appropriate pockets under the sail.

FIXING THE FLOATING TIPS

14. Opening the zipper on the double sail at the end of the wing, the tips can be easily positioned putting the aluminium tube in the appropriate hole situated at the end of the leading edge; an elastic cord further helps this operation holding it blocked to the wing tube.

FIXING THE COMPENSATOR

15. Open the zipper of the double sail, take the spring catch of the compensator located on the lower part of the kingpost, and fix it to the slot in the crossbar.

Attention! For the Laminar 13 model this operation is extremely important because the belt with the spring catch acts as a stop to the crossbar thereby preventing the wing from closing.

16. Close the velcro of the sail around the keel, making sure it perfectly overlaps

FINAL OPERATIONS

17. Take the nose catch fixed to the bottom-front wires, and fix it with the push-pin to the nose of the glider. Fit the nose fairing.

Assembly is now complete : immediately do the assembly check.

B. FLAT ASSEMBLY

Put the glider on the ground, nose into the wind.

1. Open the glider bag, fix the speedbar into place.
2. Insert the cord of the variable geometry in the clamp fixed to the speedbar.
3. Turn the glider over so that the control bar is below.

FIXING THE FLOATING BAR

4. As above (see [14])

MOUNTING THE KINGPOST

5. Remove the velcro and open the wings a little: mount the kingpost as already described (see [4] and [5]) above

MOUNTING THE WASHOUT STRUT

6. As obove.

INSERTING THE BATTENS

7. As above.

FIXING THE CROSS

8. Fix the cross as above, but be craeful not to damage the double sail and the leading edge if there are stones on ther ground.
9. Take all the straight battens, insert them in their suitable pockets under the sail.

FIXING THE COMPENSATOR

10. As above.

FINAL MOUNTING

11. Lift the glider up from its nose and fix the front bottom wires, with the push-pin, to the nose.
12. Fit the nose fairing.

Assembly is now complete : immediately do the assembly check.

VIII. Assembly Check

Before every flight it's mandatory to do a systematic check of the glider. The best way to do it is to begin from the center of the glider, go towards the nose and then around the glider.

A. CHECKLIST :

1. The bolt and the nut of the harness belt are well-fixed : the safety belt is wrapped around the first belt and ound the keel.
2. The bolt's nut in the central crossbar is blocked.
3. The spring catch which holds the crossbar secured is attached.
4. The keel's nut bolt is blocked.
5. The speedbar is well-fixed : the push-pin are in place, the two socket head bolts which close the speedbar into the base bar and the laterals wires are inside the nylon block and do not protrude.
6. The nose catch push-pin is attached. The nut bolt of the quick pin nose catch is blocked.
7. The two nut bolts on the leading edge are blocked.
8. The nut bolt which secures the upper longitudinal lateral wire is blocked.
9. The nose fairing is well fitted .
10. The nut bolt of the crossbar is blocked. *The cord on the end of the wing is well fixed to the nylon cover of the fibreglass washout strut(?)*
11. The integrated washout lever tensions the sail, and the sail zipper is closed.
12. At this stage the sail, after the washout lever has been blocked, may not be flat but slightly clockwise or anticlockwise : In this case you must position the lever in such a way to make the end of the sail flat, otherwise the glider once in flight could turn slightly to one side.
13. The floating tip is correctely inserted in the end of the leading edge, and the zipper of the double sail is closed.
14. All the battens are fixed with a double secure to the elastic cords.
15. *The rear wires, bridles, and reflex bridles are free to move and the eyelets of the wires are free. (?)*
16. The rear wire from the kingpost to the keel is fixed to the keel plate well.
    - The plate of the crossbar keel is attached to the bolt and is well blocked to the push-pin which comes out of the keel.
    - The boltwhich crosses the keel securing the raer wires is blocked by the nut.
17. Carefully repeat check points from 10 to 15 on the other wing.

B. HEIGHT OF THE HARNESS FROM THE BAR

When doing the harness check, if you have a curved speedbar you must consider that at the moment you load the glider with your weight, the speedbar bends thereby straightening the curve, (the maximum displacement could be roughly 5 cm.).

If you therefore do a harness check of this type, allow the harness belt will be 5 cm. longer : in such a way -when in flight- you will have the correct distance from the speedbar of about 7-8 cm.

C. PRE-FLIGHT CHECK

1. Harness attached ?
2. Strenght and direction of the wind checked ?
3. Angle of nose correct ?
4. Wings levelled ?
5. Takeoff area free ?

IX. Hints & Tips

A. VARIABLE GEOMETRY

The Laminar is fitted with a very effective variable geometry.

Pulling on the variable geometry cord located on the bottom of the control bar, the crossbar is moved backwards thereby increasing the nose angle.

In this way the tension of the sail is increased.
Pulling in on the variable geometry improves the fall rate and the efficiency.
Not pulling in on the variable geometry,improves the handling. which is a great help during takeoff, landing and in the most difficult situations.

Variable geometry	cord on the bottom of the control
open	completely pulled in
closed	completely let out

B. TAKE-OFF

Before takeoff pull the cord of the variable geometry about 50 cm. so that the lower wires are not too loose, so you can better control the glider.

Only when there are strong termals at the takeoff area, it is preferable to have the variable geometry completely closed.

Small errors when taking off, as nose angle too open or takeoff speed too low are allowed : anyway you shoud always try to take off with a nose angle of about 15 degrees, and at a speed as high as you can (never lower than the stall speed !)

C. FLIGHT

The Laminar is one of the few high performance gliders that is very easy to fly : thanks to the efficient variable geometry system every pilot can adapt it to his own needs.
When flying at low speeds it is completely safe and pleasant to fly.

D. LANDING

When landing, it is advisable to completely let out the variable geometry, so the Laminar responds quickly to every manoeuvre.

Approach the landing field with an medium-high speed.
When you are near the ground slow down, then keep flying parallel to the ground, gradually pushing forward the bar.

At the right moment, push the bar completely forward and land on your feet.

X. Repair And Periodic Inspection

Every year, or after 100 flight hours,

- remove the sail and carefully check the frame
- replace all the bottom wires

Every two years

- replace all the wires.

Every five years

- have a check done by an authorized dealer or by our workshop (this check done by qualified personnel is obligatory in Germany).

Assemble and disassemble your glider with care, taking all the necessary time. Never do anything in a hurried way.
So you are sure everything has been done in a safe way ,and furthermore your glider will last longer.

- After a crash (heavy landing) you must carefully check your glider. Check particulary the part of the glider that has been hit by the crash.
- Replace the damaged parts with original parts only. If you have any doubt about the damaged parts call ICARO 2000 agent, or our workshop. We will be pleased to advise you.
- Periodically check the curve of your battens with the supplied drawing, (even it's really difficult to deform ergal-made battens).
- The wires must be periodically checked for any anomalies.
- Dirty parts must be cleaned with hot water.
- A wet glider must be dried before storing.
- When opening the glider pay attention the sail does'nt get dirty.
- Landing in the sea water with the glider is not allowed, because the salt causes oxidization on all metallic parts. If your glider falls into the sea, you must disassemble any tubes, bolts, wires, metallic parts and rinse them with fresh water.

XI. Trimming

During the assembly of your glider, the sail has to be perfectly mounted on the frame, in such a way that the tension on the sail is perfectly symmetrical.
The tension of the sail is regulated by means of cords fixed on the washout strut, and by means of elastic cords fiximg the battens.

If the glider does not fly straight, pls check :

- the shape of the battens using the drawing supplied
- if the tension of the sail on the left washout strut is the same as on the right
- The nylon stopper with the hole located at the end of the leading edge must give a perfect inclination to the the washout strut.

If the glider goes towards

- the right, turn the nylon stopper on the right leading edge 10 mm clockwise
- If instead it goes to the left, do the same on the left leading edge.

It is possible to change the trim speed by moving the kingspost into one of the 6 holes on the keel.
Moving the kingpost forwards causes the glider to fly faster (and vice versa)

A. Disassembling the leading edge's end

If you need to transport your glider and shorten as possible (4.15 m) its packing, you have to :

1. remove from the end of the wing's tube, the spine stretching the sail
2. push the button on the top of the tube, and slip it off (you'll find it on the 14 model roughly at 120 cm from the end, on the 13 model roughly at 95 cm)
3. fold the sail -as usual- just after the end of the shortened wing, paying attention to protect in advance the tube's end wit rubbery material

Notice : when you re-assemble the wing's end , be sure to check the spring button is sticking out from the wing's tube

Aniway is not advisable to shorte the wing, except if absolutely necessary, because both the sail and the internal mylar are the more deteriorating the more they are folded

ELENCO COMPONENTI LAMINAR

codice	qty	descrizione
		TUBI ALLUMINIO LAVORATI
S1.06.LAM13	2	Crossbar Laminar 13 (meta')
S1.06.LAM14	2	Crossbar Laminar 14 (meta')
S1.02.LAM13	1	B.E. ant. dx Laminar 13
S1.01.LAM13	1	B.E. ant. sx Laminar 13
S1.03.LAM13	1	B.E. finale sx Laminar 13
S1.04.LAM13	1	B.E. finale dx Laminar 13
S1.02.LAM14	1	B.E. ant. dx Laminar 14
S1.01.LAM14	1	B.E. ant. sx Laminar 14
S1.03.LAM14	1	B.E. finale sx Laminar 14
S1.04.LAM14	1	B.E. finale dx Laminar 14
S1.05.LAM13	1	Chiglia Laminar 13
S1.05.LAM14	1	Chiglia Laminar 14
S1.11.LAMI	1	Speedbar Laminar
S1.09.LAMI	2	Montante profilato Laminar
S1.13.LAMI	1	Torre profilata Laminar
65.5.LAMI	2	Tips Laminar
		STECCONI & STECCHE
S3.04SL883	2	Steccone Laminar 883
S3.05.LAM13	1	Stecche set completo Laminar 13
S3.05.LAM14	1	Stecche set completo Laminar 14
		PARTICOLARI ACCIAIO
02.06.02	1	Squadretta gancio naso
02.07.876506	1	Grillo gancio naso 0876506
02.10.01	3	Molla x montante profilato
02.10.03	2	Molla per B.E.
02.10.04	1	Molla montante G.V.
02.10.07	1	Molla chiglia doppia
02.11.31	1	Piastr.inox post.chiglia
02.12.01	2	Bozzello violino g.v.(1204)
02.12.03	1	Microbozzello (5501901)
02.12.05	1	Bozzello Cross (5505000)
02.13.01	1	Moschettone chiglia (2-480)
02.13.02	1	Moschettone cross (2-333)
08.01.22	1	push-pin naso mm 22
08.01.32	2	push-pin trapezio mm 32
		PARTICOLARI ALLUMINIO
03.01.01	1	Piastra naso svasata
03.01.02	1	Piastra naso fresata

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ELENCO COMPONENTI LAMINAR

03.01.16	2	Piastra cross corta I019/16 L.14
03.01.28	2	Piastra cross media I019/28 L.13
03.02.	1	Gancio per naso alluminio
03.04.04	2	Piastra cross mm. 4
03.04.05	1	Piastra cross mm. 5
03.10.	1	Strozzascotta gr. 5621108
03.11.03	2	Giunto top montante
03.14.01	2	Giunto base montante
03.14.02	2	Giunto speedbar
03.15.	1	Snodo inf. torre
	2	Leve steccone integrate

PARTICOLARI PLASTICA & GOMMA

04.01.PROF	1	Tappo torre profilata
04.03.01	2	Angolo trapezio nylon
04.03.02	2	Lunette fermocavo
05.02.26	2	Manopole speed. Mentasti
	2	Bussoletta cavi laterali sotto

CAVI

S6.01.LAM13	2	Cavo sotto lat. Laminar 13
S6.04.LAM13	1	Cavo sotto long. Laminar 13
S6.05.LAM13	1	Cavo sopra lat. Laminar 13
S6.06.LAM13	1	Cavo sopra long. Laminar 13
S6.07.LAM13	1	Cavo antidrappo Laminar 13
S6.08.LAM13	1	Cavo fermo crossbar Laminar 13
S6.01.LAM14	2	Cavo sotto lat. Laminar 14
S6.04.LAM14	1	Cavo sotto long. Laminar 14
S6.05.LAM14	1	Cavo sopra lat. Laminar 14
S6.06.LAM14	1	Cavo sopra long. Laminar 14
S6.07.LAM14	1	Cavo antidrappo Laminar 14
S6.08.LAM14	1	Cavo fermo crossbar Laminar 14

SACCHE, CORDE, CINGHIE, PROTEZIONI

S10.01LAM13	1	Sacca delta Laminar 13
S10.01LAM14	1	Sacca delta Laminar 14
S10.02	1	Sacca stecche
S10.03	2	Sacca finale ala
S10.07	4	Velcro
S10.08XS45	1	Cinghia aggancio
S10.09.01	1	Cinghietta appoggio crossbar
S10.09.LAMI	1	Cingh. fermo crossbar Laminar
S10.11.LAM13	1	Cinghia crossbar g.v. L. 13
S10.11.LAM14	1	Cinghia crossbar g.v. L. 14

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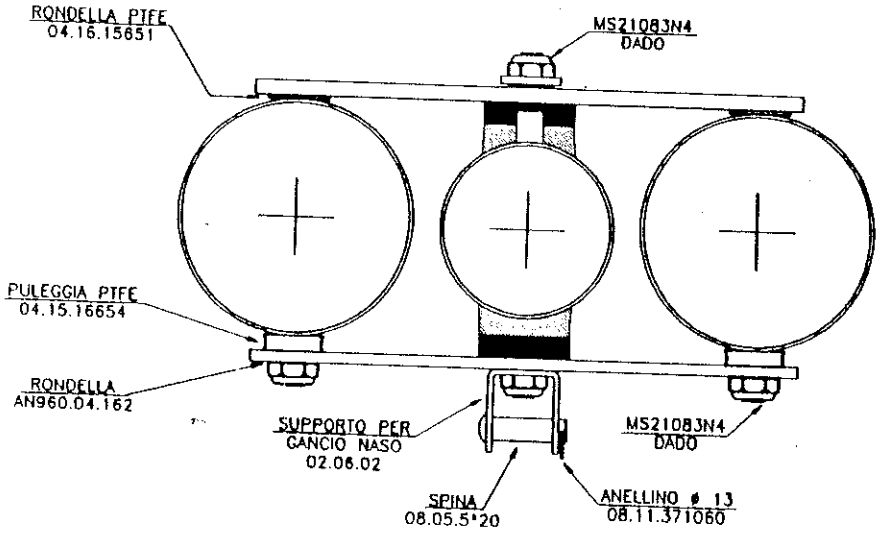
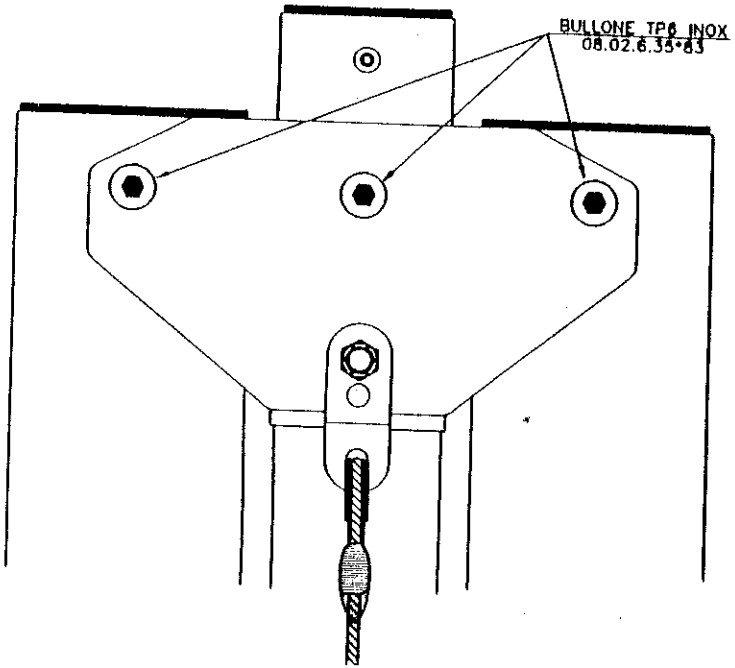
ELENCO COMPONENTI LAMINAR

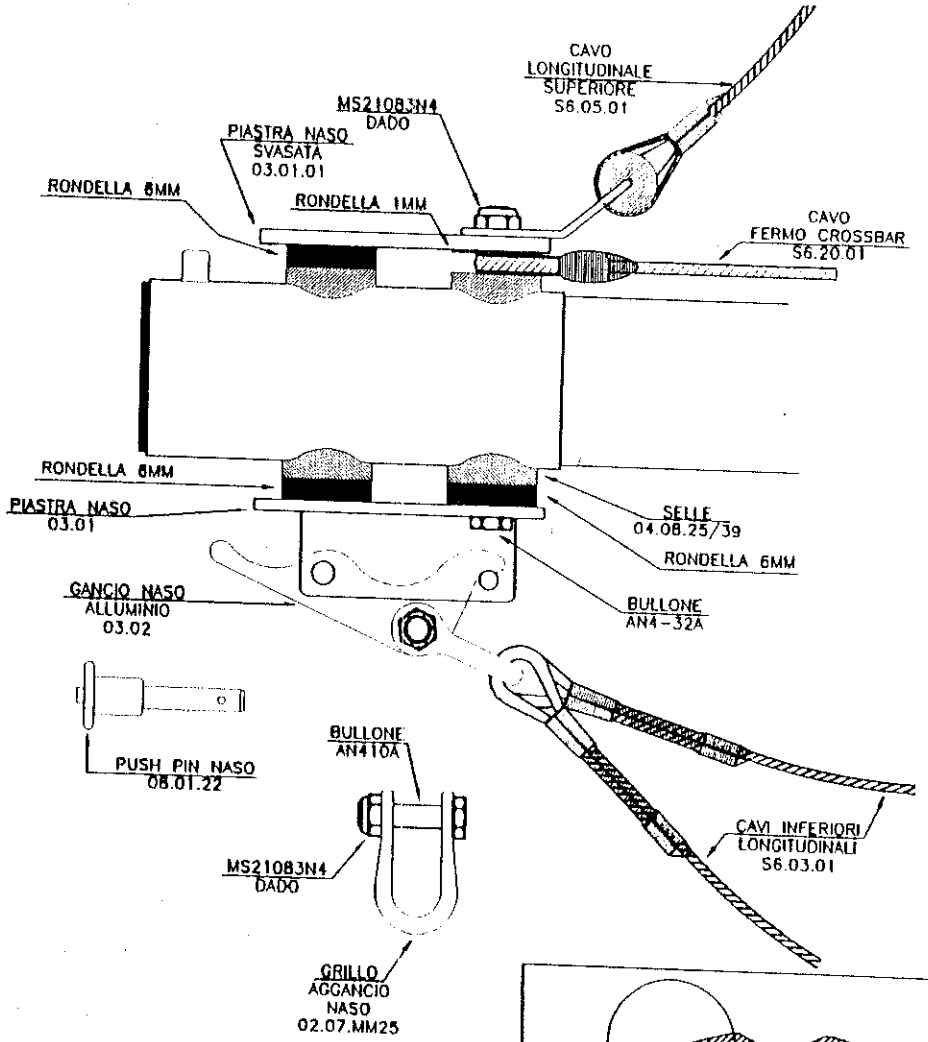
S10.11.13DHV	1	Cinghia crossbar g.v. L. 13 DHV
S10.12.13DHV	1	Corda compensatore L. 13 DHV
S10.12.14DHV	1	Corda compensatore L. 14 DHV
S10.13.LAM13	1	Corda cross diam. 5 L. 13
S10.13.13DHV	1	Corda cross diam. 5 L. 13 DHV
S10.13.LAM14	1	Corda cross diam. 5 L. 14
S10.20.LAM13	2	Mylar irrigid. B.E. L. 13
S10.20.LAM14	2	Mylar irrigid. B.E. L. 14
S10.21.LAMI	2	Prot. Mylar B.E. - cross
S10.22.LAMI	1	Protezione trapezio
S10.24.LAMI	1	Protezione torre velcro elastica
S10.27.LAMI	1	Protezione chiglia neoprene
S10.30.LAMI	1	Protezione top trapezio Laminar
S10.31.LAMI	2	Protez. B.E. finale

BULLONERIA

6,35x83 sv	3	bullone naso mm 83 svasato
AN4-32A	1	bullone naso mm 83
AN4-7A	1	bullone naso mm 23
08.05.5x20	1	spina naso mm 20
AN4-14A	1	bullone centro crossbar mm 39
08.02.6x87.sv	2	bullone centro crossbar svasato mm 87
08.02.6x80.sv	2	bullone centro crossbar svasato mm 80
08.02.Z	1	cinghia crossbar mm 6.35x54
08.05.440	1	spina tappo chiglia mm 4x40
AN5-30A	2	bullone crossbar ala mm 78
AN4-12A	2	bullone crossbar ala mm 32
08.02.6x75	2	bullone crossbar ala mm 75
08.02.6x40br	2	brugola angolo trapezio mm 40
08.05.5x20	1	spina giunto trapezio mm 20
AN3-25A	1	bullone bozzello chiglia mm 68
MS24694S55	2	bullone leva steccone mm 22
AN4-14A	1	bullone cinghia aggancio mm 39
AN5-30A	1	bullone trapezio mm 78
AN43B-23A	1	bullone chiglia-torre mm 73
MS20392-C25	1	spina base torre mm 20
08.08.4x16	2	autofilettanti bozzello chiglia
MS20392-2-C63	2	spina fermo steccone mm 63
MS21083-N4	8	dado basso
MS21044-N4	3	dado alto
MS21083-N5	3	dado basso
MS21045	3	dado leva steccone
08.03.6MM	6	dado inox mm 6
08.11.371060	4	anellino 13x1

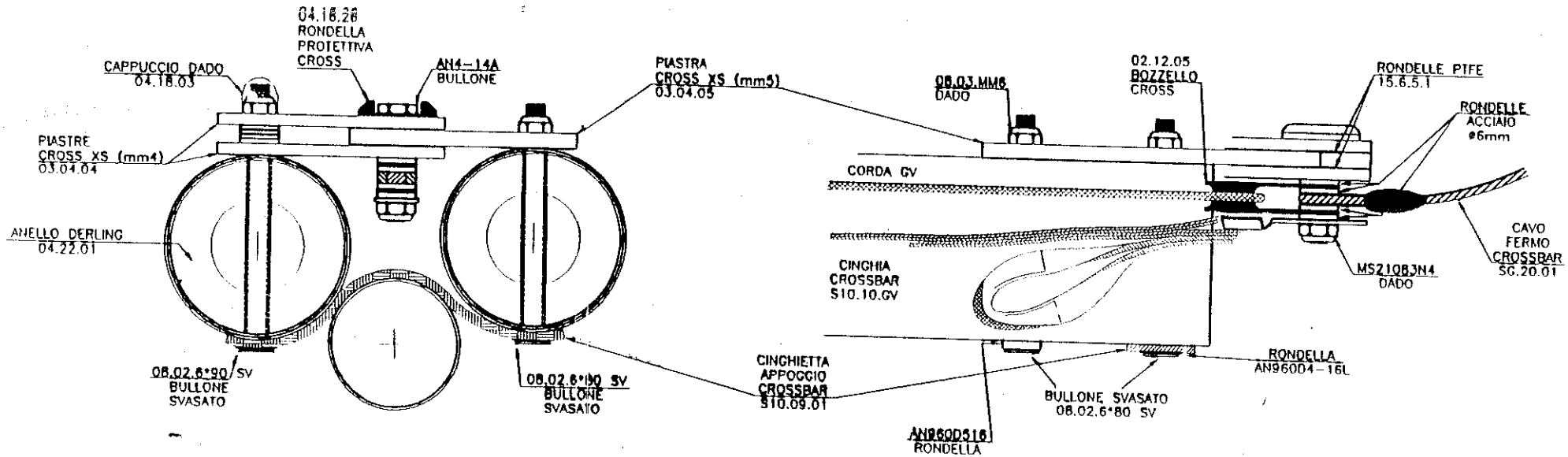


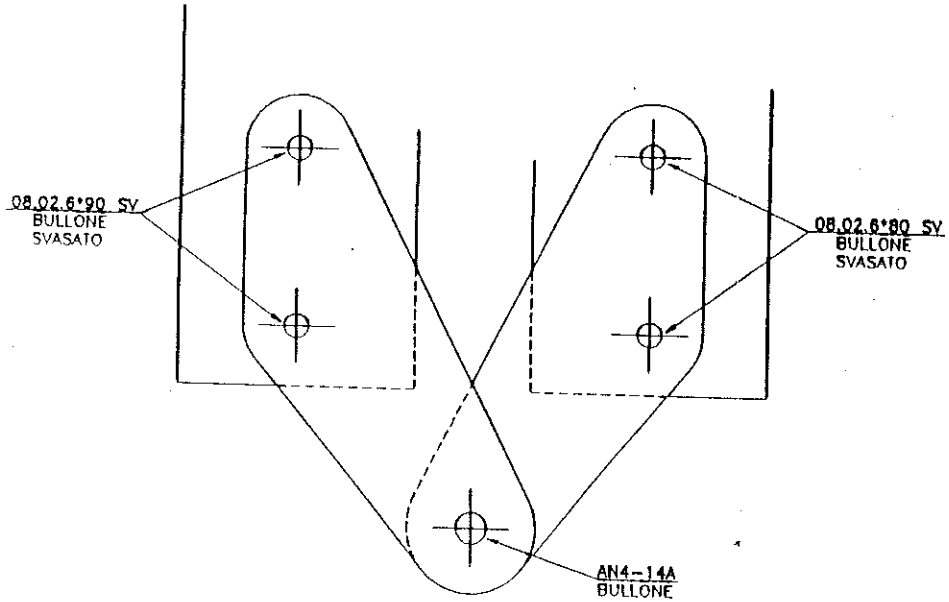




ICARO 2000
SANGIANO (VA) Tel. 0332/648335 Fax 648079

DELTA	LAMINAR	
OGGETTO	GRUPPO NASO	N°
MATERIALE		DATA 15/09/93
NOTE		SCALA 1:2

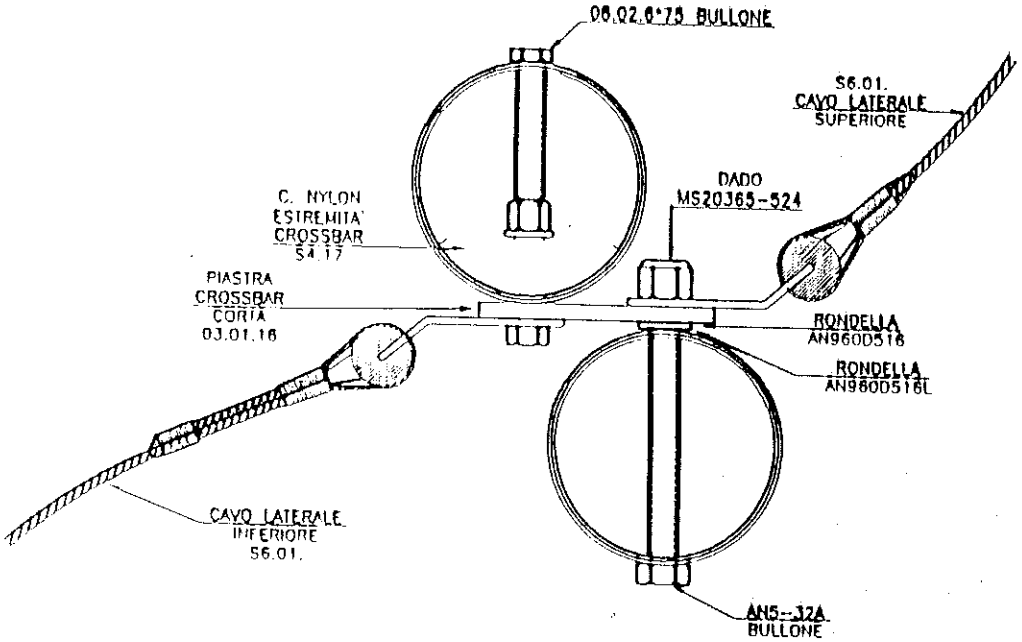


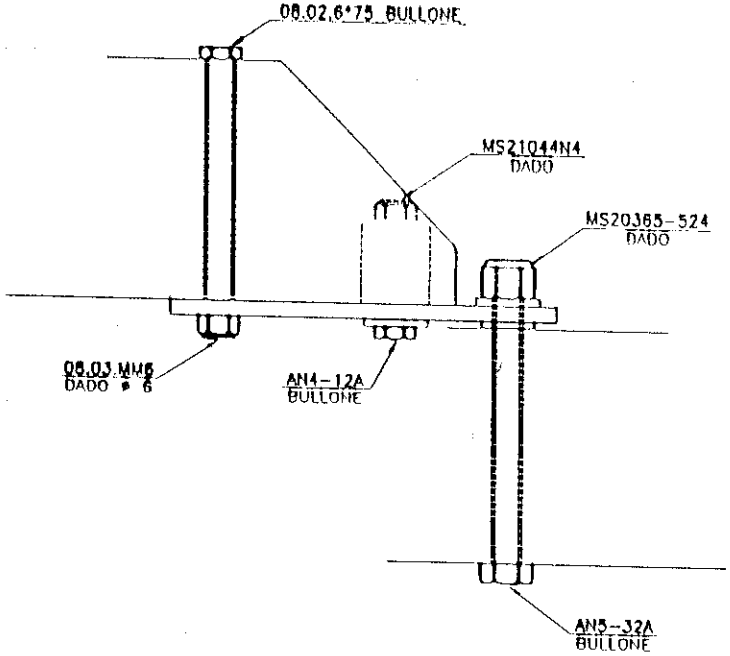


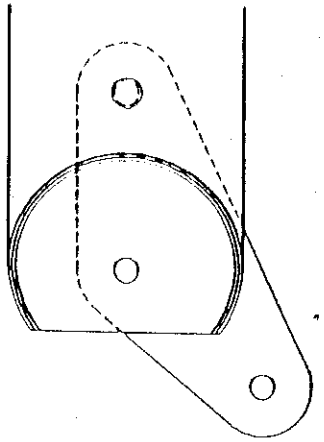
ICARO 2000

SANGIANO (VA) Tel. 0332/648335 Fax 648079

DELTA LAMINAR	
OGGETTO Giunzione centro XBar	N°
MATERIALE	DATA 15/09/93
NOTE	SCALA 1:2

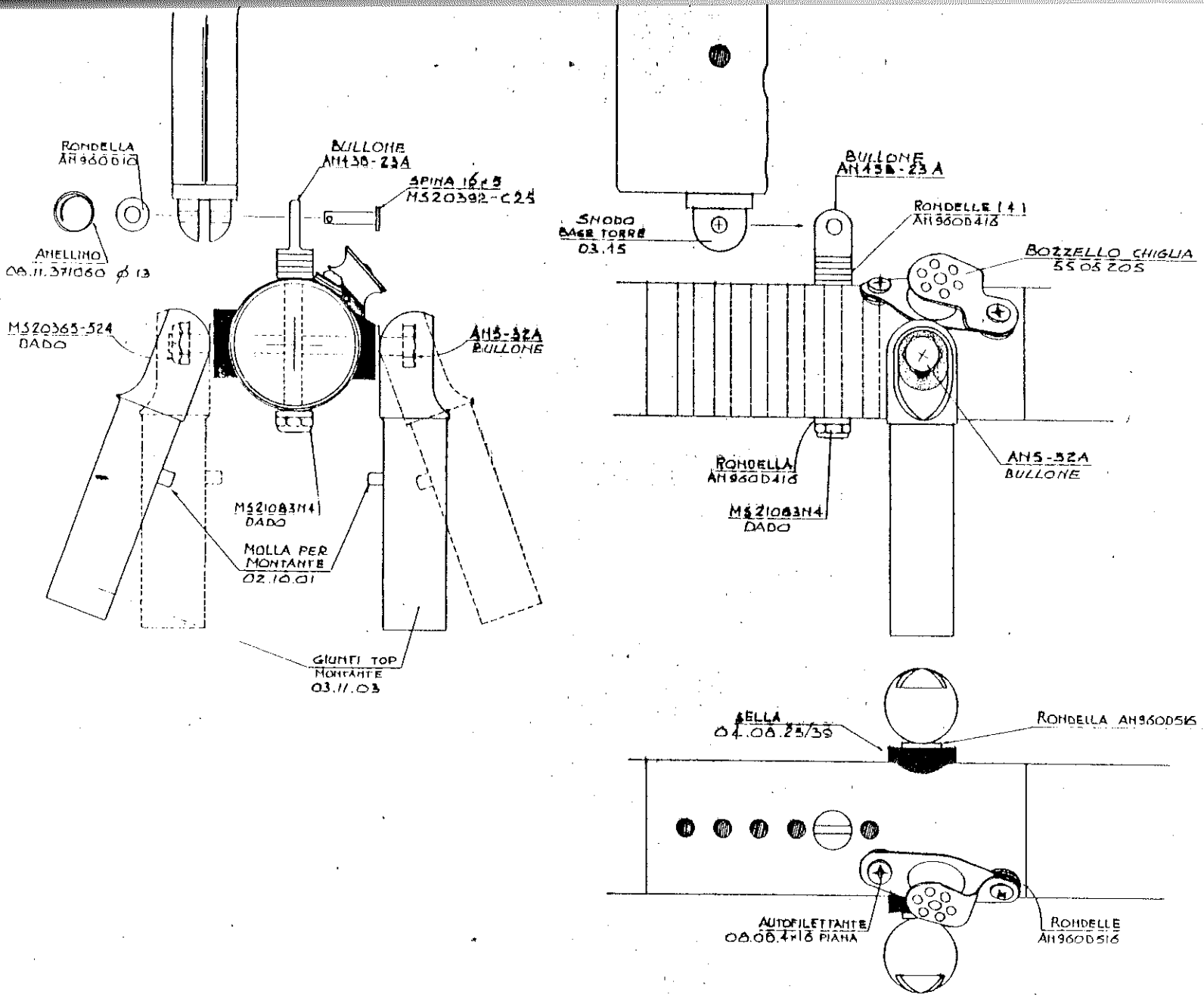






ICARO 2000
SANGIANO (VA) Tel. 0332/648335 Fax 646079

DELTA LAMINAR	
OGGETTO Giunzione XBar-Ala	N°
MATERIALE	DATA 13/10/93
NOTE	SCALA 1:2



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S.T.I.
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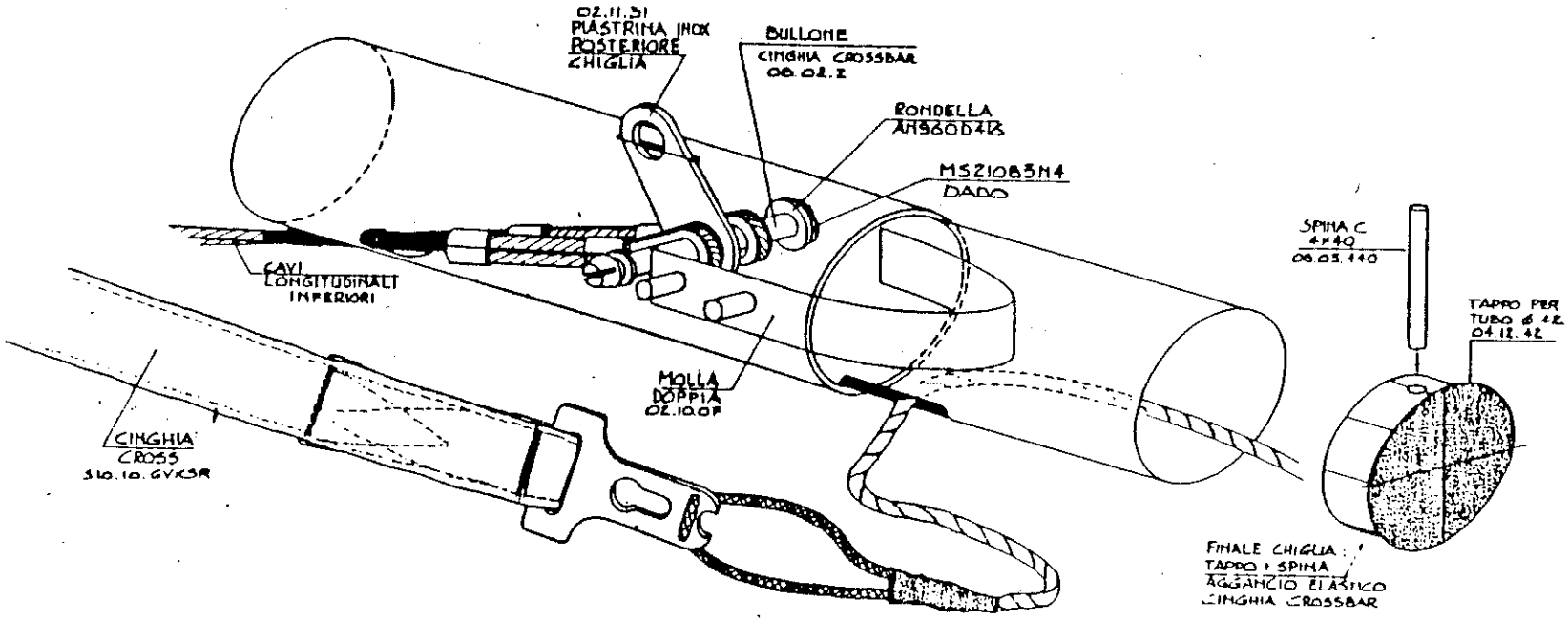
ATTACCO TORRE - TRAPEZIO CHIG

SCALA



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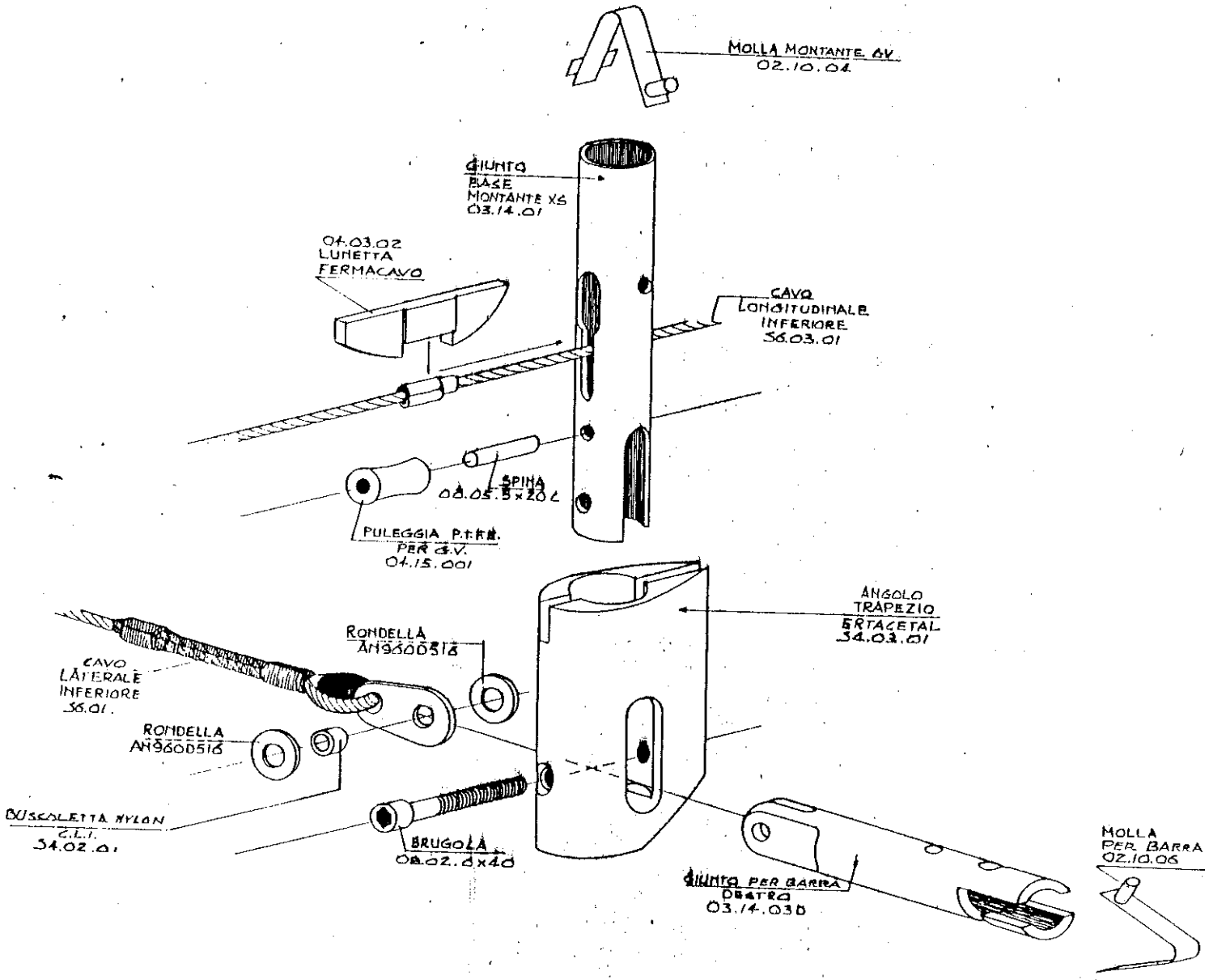
LAMINAR

ATTACCO POSTERIORE CHIGLIA



[redacted] ICARO 2.000
S.r.l.
[redacted]
TRAPEZIO: GRUPPO ANT. D
SCALA

NACHTRAG ZUR LISTE GEPRÜFTER GERÄTE SCHWEIZ

Schweiz. Hängegleiter-Verband SHV Fédération Suisse du Vol Libre FSVL

TPZ Nummer	Prüf-stelle	Hersteller Land	Gerät-bezeichn.	Segel-fläche	Min/Max Pilotgew.	Gerät-gewicht	Bemerkungen
118/94 mod.	VDT	ICARO 2000 Italien	Laminar 14 modifiziert	14,17 m^2	60/110 kg	32 kg	CH Vertretung Oskar Marthaler Taifun Delta 4710 Balsthal

ABERKANNTE PRÜFUNGEN

TPZ Nummer	Gerät Hersteller	durch wen Grund

Datum: 15.November 1994

Unterschrift: .....

GEHT AN : ALLE SHVKLUBS, VORSTAND SHV, EXPERTEN SHV, BZL, VDT

DATI TECNICI / TECHNICAL DATA

Laminar

	U.M.	MOD 13	MOD 14
SUPERFICE ALARE / SAIL AREA	MQ/SQ M	13,2	14,4
ANGOLO NASO / NOSE ANGLE	GRADI/DEG	130°	130
APERTURA ALARE / WINGSPREAD	M	10,02	10,40
ALLUNGAMENTO / ASPECT RATIO		7,60	7,51
DOPPIA SUPERFICE DOUBLE SURFACE AREA	%	86	86
STECCHE (SOPRA + SOTTO) BATTENS (UPPER SAIL + LOWER SAIL)	N	21+4	23+4
PESO (CON SACCA DI TRASPORTO) WEIGHT (PACKING BAG INCLUDED)	KG	31	33,5
PESO PILOTA (MINIMO E MASSIMO) PILOT WEIGHT (MIN / MAX)	KG	55/85	75/110
LUNGHEZZA SACCA DI TRASPORTO PACKING BAG LENGTH	M	4,98	5,20
LUNGHEZZA SACCA DELTA CORTO SHORT-PACKED LENGTH	M	4,15	4,15

Certificazione Svizzera SHV & Tedesca DHV
Swiss-certification SHV & German DHV

ICARO 2000

oltre 5000 deltaplani venduti