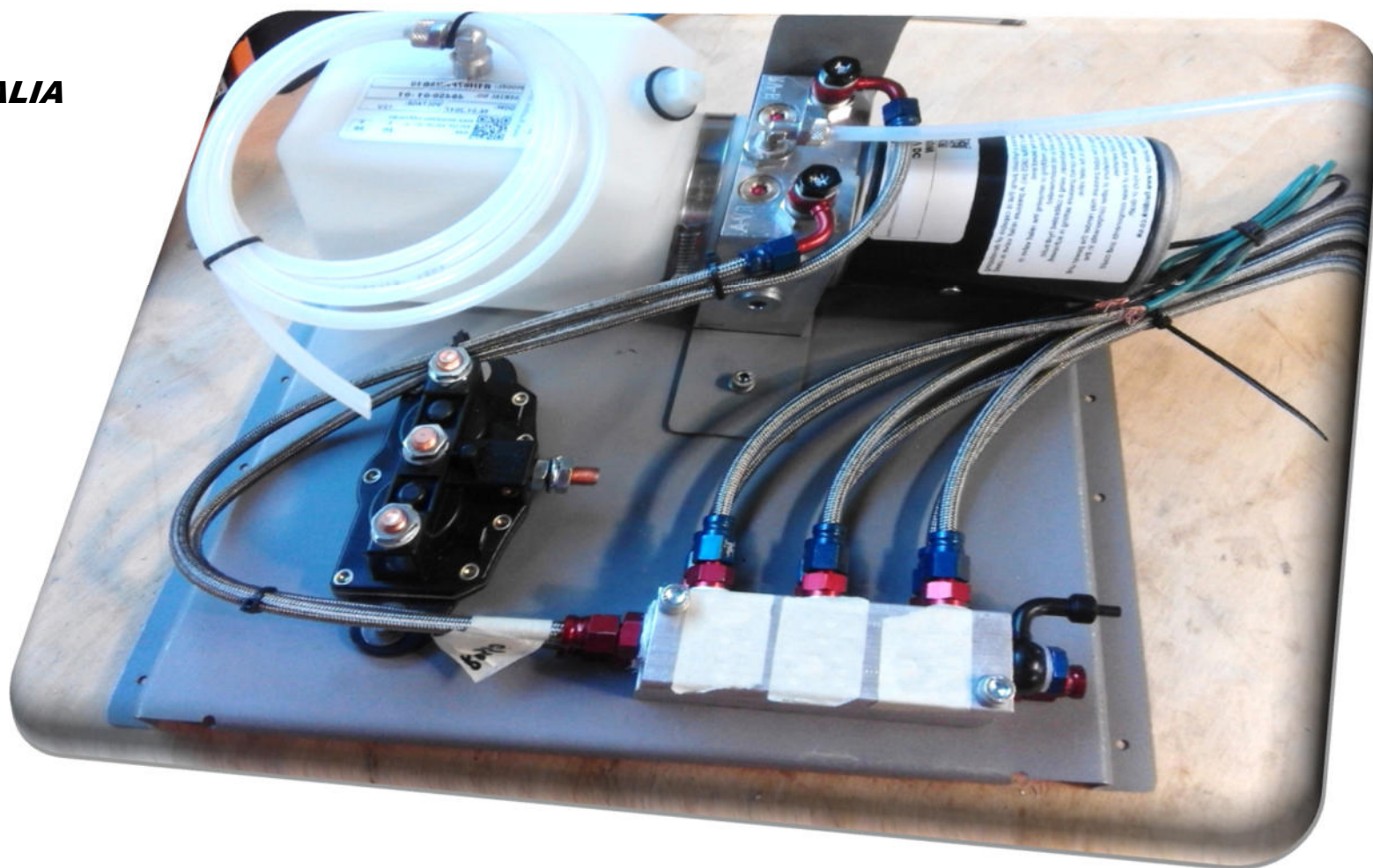




FLYING LEGEND ITALIA



fuselage - landing gear hydraulic system

FUSOLIERA – IMPIANTO IDRAULICO CARRELLI

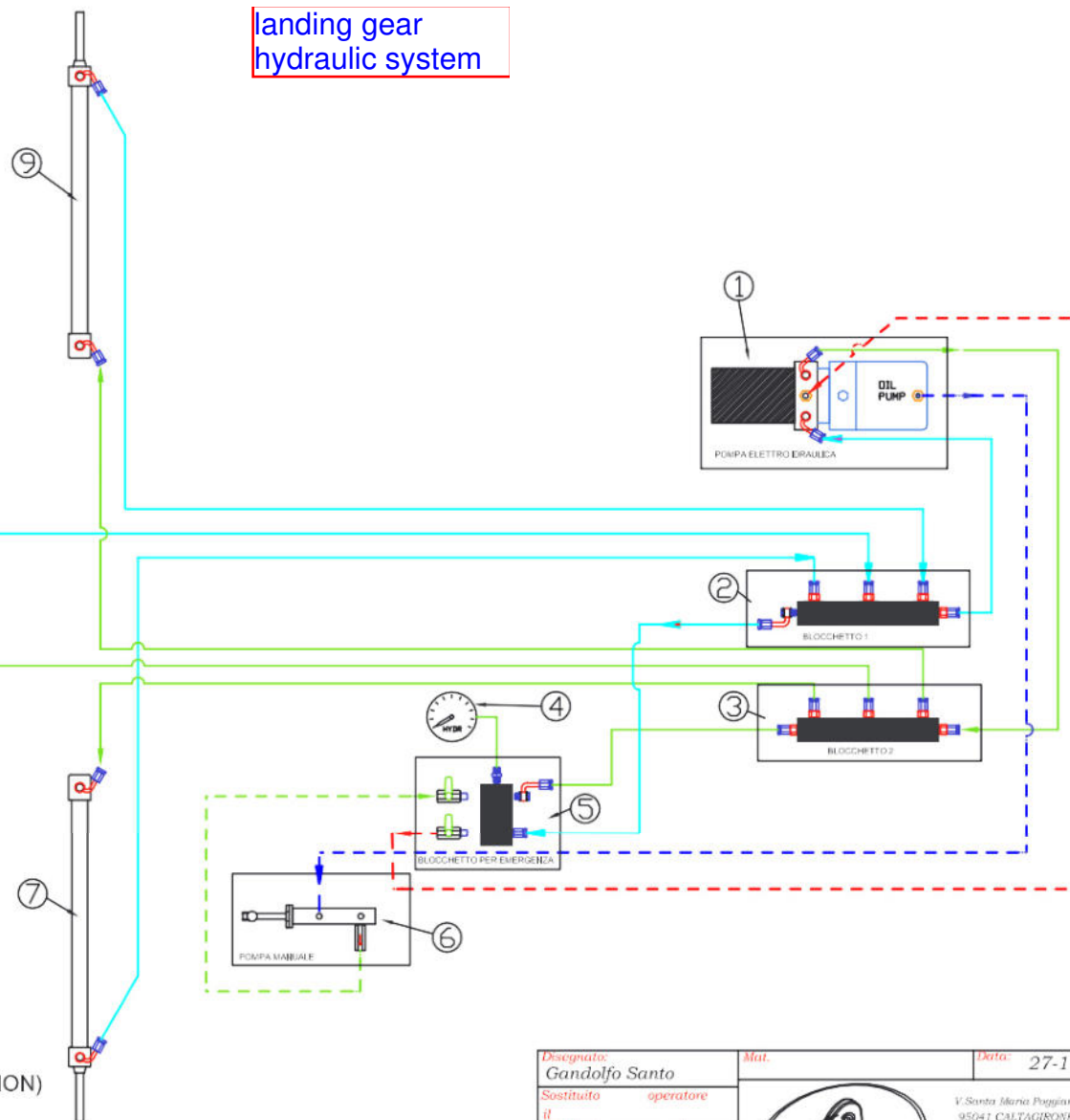
TUCANO REPLICA

REV. 0

N° PAGINE: 26

24/01/2018

TUCANO REPLICA HYDRAULIC LANDING GEAR



hydraulic pump

1. HIDRAULIC POWERPACK 12V ELETRIC MOTOR
2. 5 PORTS BLOCK (LANDIN GEAR UP) landing
3. 5 PORTS BLOCK (LANDIN GEAR DOWN)
4. HIDRAULIC PRESSURE GAUGE (OPTIONAL) gauge
5. LDC GEAR EMERGENCY VALVES (CLOSED ON NORMAL OPERATION) Idg
6. EMERGENCY HAND PUMP
7. LEFT GEAR CYLINDER
8. NOSE GEAR CYLINDER actuator
9. RIGHT GEAR CYLINDER

--- RILSAN 6X4
--- TEFLONRING

Disegnato: Gandolfo Santo	Mat.	Data: 27-11-2014
Sostituito il operatore	 V. Santa Maria Paggiaroli sn. 95041 CALTAGIRONE (CT) TEL.0933/40512 - FAX 40513 - 335/1269347/48 www.flyinglegend.it info@flyinglegend.it	PAG.1
Modificato il operatore		
Titolo:		
Modello:		
Scala:	Note:	

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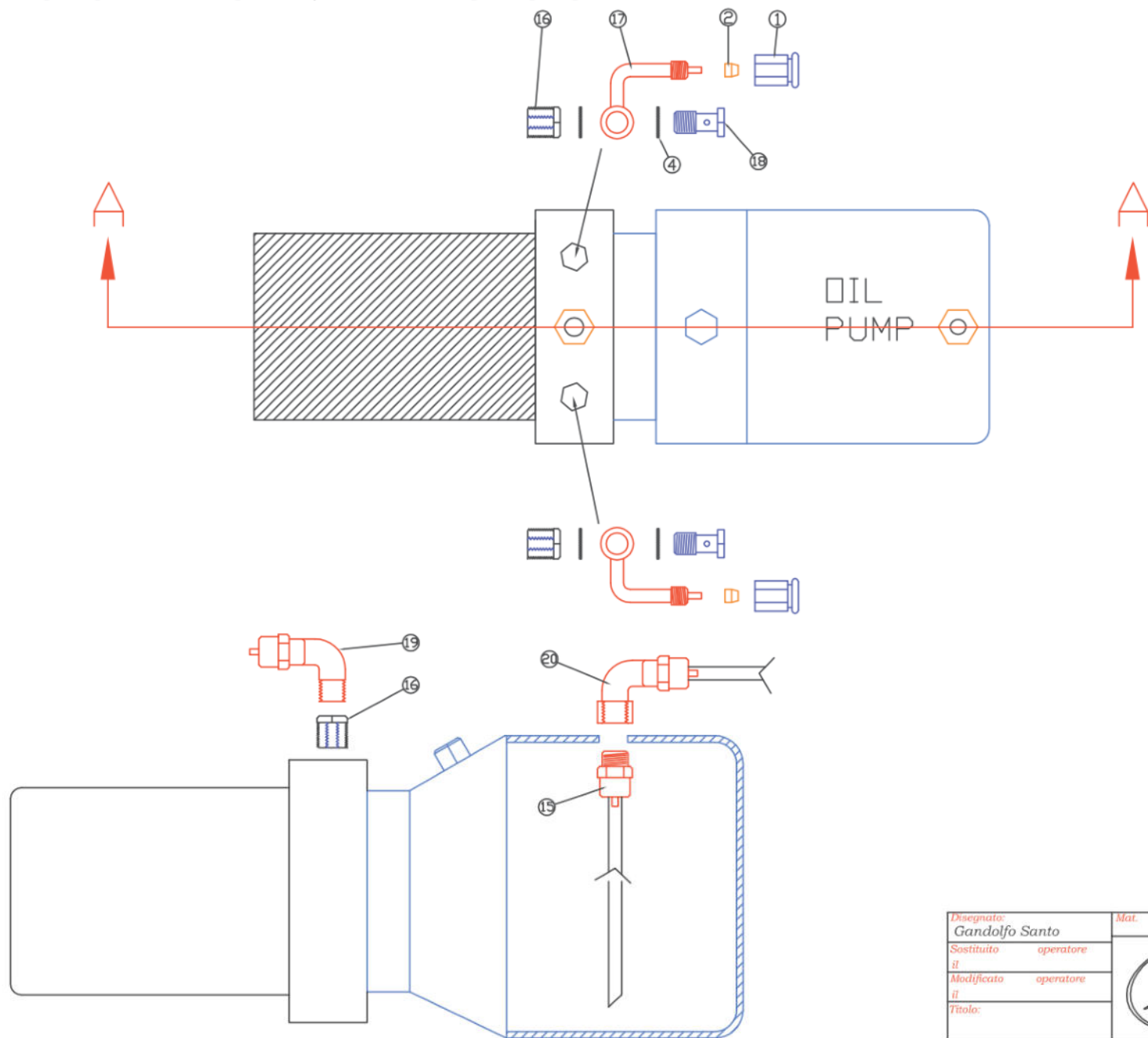
TUCANO REPLICA HYDRAULIC LANDING GEAR

1.	DADO ALLUMINIO PER RACCORDI RECUPERABILI	aluminum nut for reusable fittings	B16202AL	N.	20
2.	SEMICONO PER RACCORDO	hose fitting cone	B16201	N.	20
3.	RACCORDO MASCHIO FISSO M10x1	male fitting - straight M10x1	B16235AL	N.	10
4.	RONDELLA IN ALLUMINIO 10x14x1.5	aluminum washer 10x14x1.5	B22001AL	N.	30
5.	BLOCCHETTO EMERGENZA	emergency manifold		N.	1
6.	RIPARTITORE A 5 VIE	5 port distribution manifold		N.	2
7.	RACCORDO OCCHIO 90°	90° banjo eye fitting	B16220AL	N.	2
8.	BULLONE M10x1	M10x1 bolt	B19001AL	N.	2
9.	POMPA ELETTRICA	electric pump		N.	1
10.	SUPPORTO POMPA MANUALE	manual pump bracket		N.	1
11.	MINI SFERA MASC-FEM $\frac{1}{8}$ "	1/8" m-f ball valve		N.	2
12.	POMPA IDRAULICA MANUALE	manual hyd pump		N.	1
13.	CURVA M-M $\frac{1}{8}$ "	1/8" m-m bend		N.	1
14.	VALVOLA DI NON RITORNO F-F $\frac{1}{8}$ "	1/8" f-f check valve		N.	1
15.	RACCORDO MASCHIO RETTO RILSAM	male rilsan fitting - straight		N.	2
16.	RIDUZIONE DA $\frac{1}{4}$ " MASCHIO A $\frac{1}{8}$ " FEMMINA	1/4" male-1/8" female reduction		N.	3
17.	RACCORDO OCCHIO 90° D. 10 RECUPERAB	90° banjo eye fitting reusable nut	B16276AL	N.	8
18.	BULLONE $\frac{1}{8}$ " GAS CH 13	1/8" gas ch 13 nut	B19018AL	N.	8
19.	CURVA RILSAN MASCHIO $\frac{1}{8}$ "	1/8" male rilsan bend		N.	4
20.	CURVA RILSA FEMMINA $\frac{1}{8}$ "	1/8" female rilsan bend		N.	1
21.	TAPPO $\frac{1}{8}$ " MASCHIO	1/8" male cap		N.	1
22.	TUBO RILSAL 6X4	rilsan hose 6x4		MT.	5
23.	TUBO TRECCIATO	braided hose	A01010	MT.	15

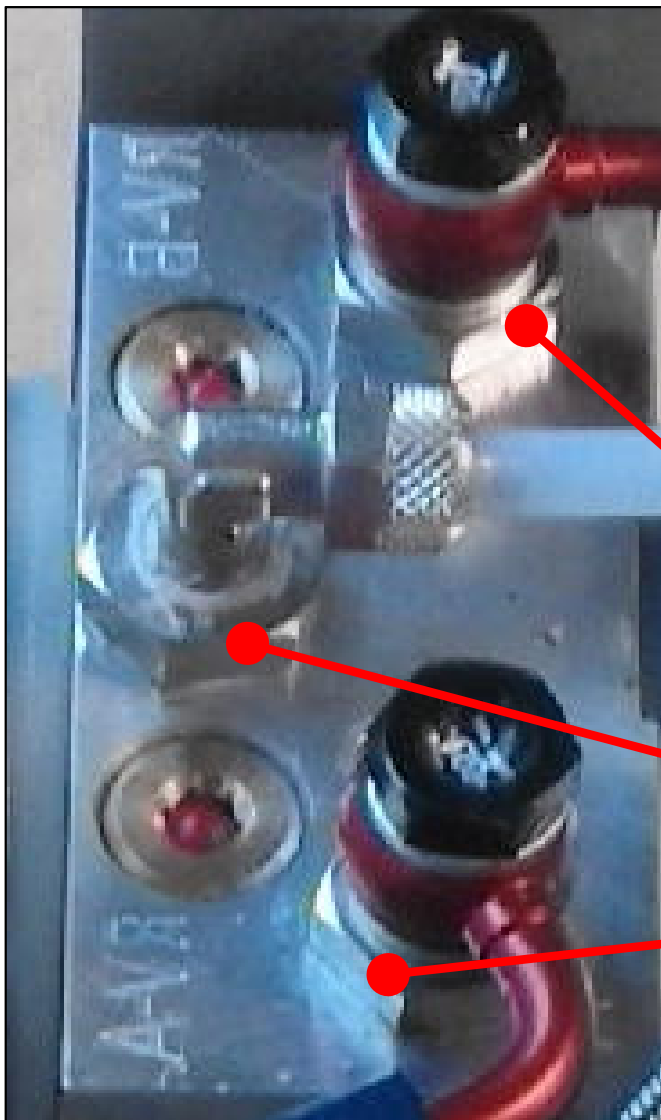
Disegnato: Gandolfo Santo	Mat.	Data: 27-11-2014
Sostituito il	operatore	 V. Santa Maria Poggiorelli sn. 95041 CALTAGIRONE (CT) TEL. 0933/40512 - FAX 40513 - 335/1269347-48 www.flyinglegend.it info@flyinglegend.it
Modificato il	operatore	
Titolo:		
Modello:		
Scala:	Note:	PAG.2

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1. HIDRAULIC POWERPACK 12V ELETRIC MOTOR



Disegnato: Gandolfo Santo	Mat.	Data: 07-11-2014
Sostituito il	operatore	 V. Santa Maria Paggiarelli - sn. 95041 CALTAGIRONE (CT) TEL. 0933/40512 - FAX 40513 - 335/1269347-48 www.flyinglegend.it info@flyinglegend.it
Modificato il	operatore	
Titolo:		
Modello:	Note:	
Scala:		
This drawing is Flying Legend S.r.l property and cannot be used in any way without written authorization		



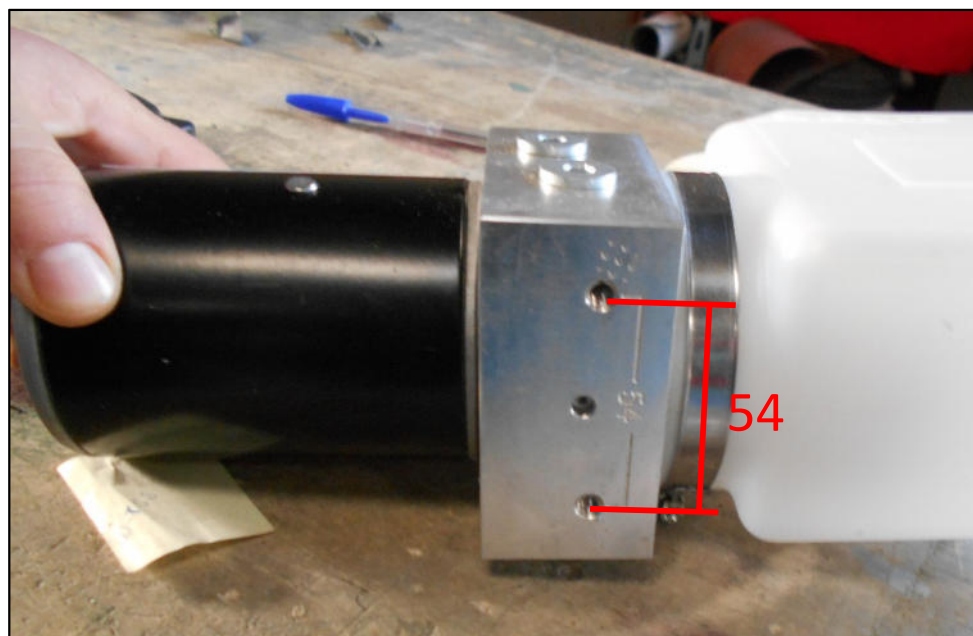
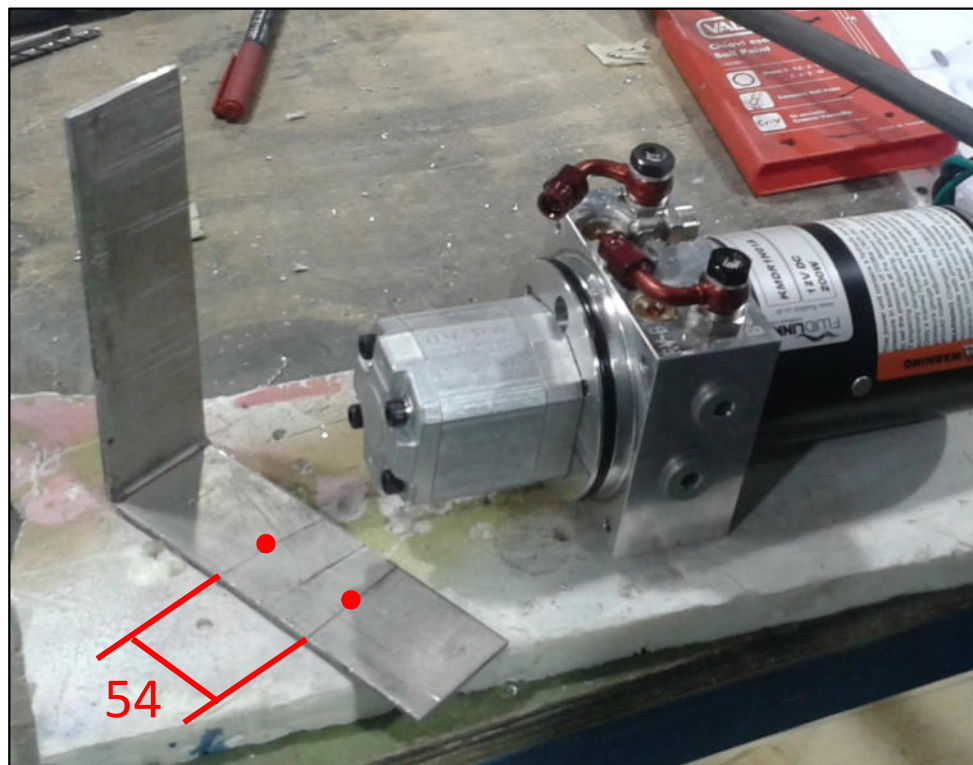
Riduzione da 1/4" maschio
ad 1/8" femmina

1/4" male - 1/8" female reduction

Innesto per pescaggio pompa di emergenza

[emergency pump draft connection](#)

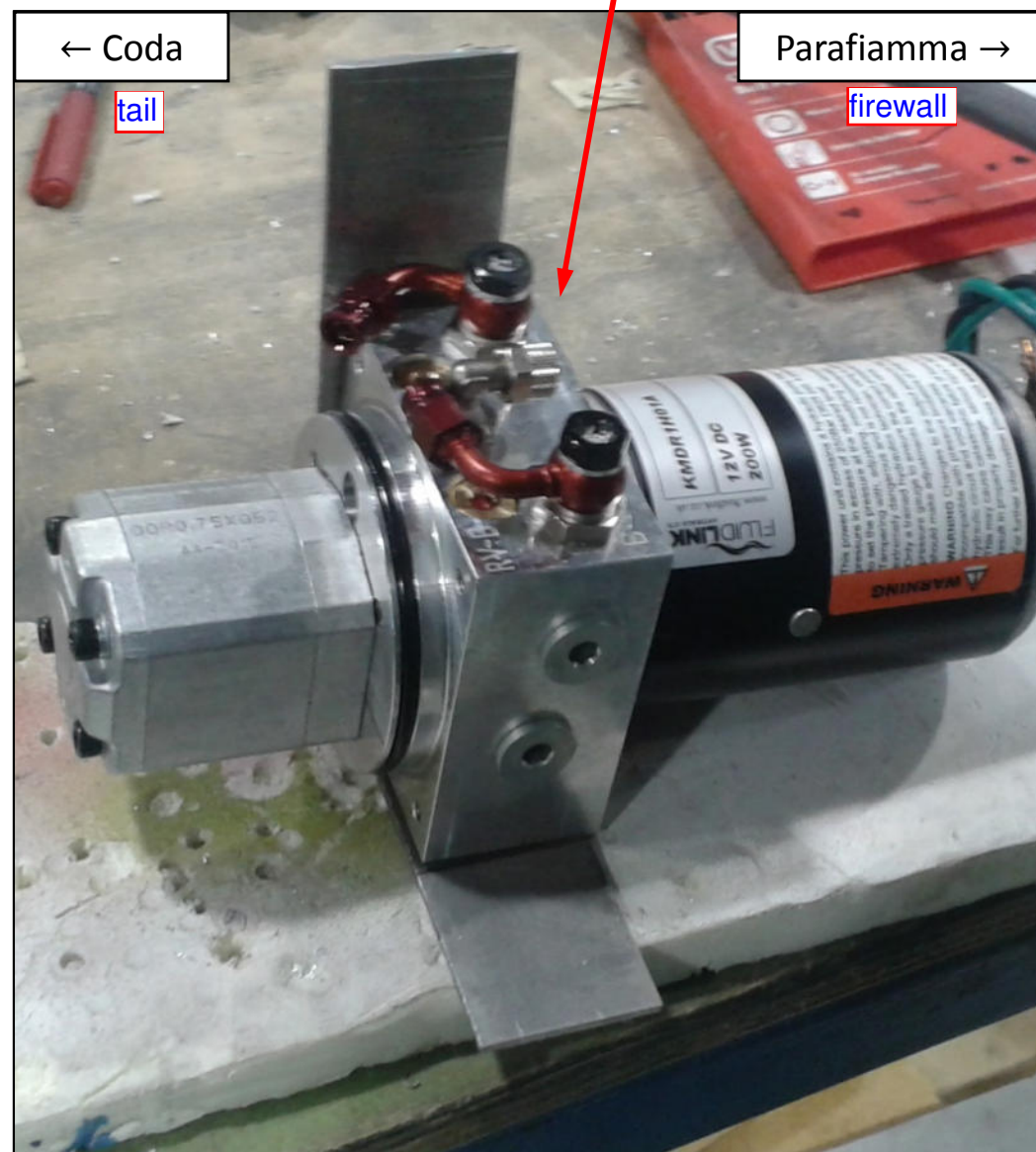


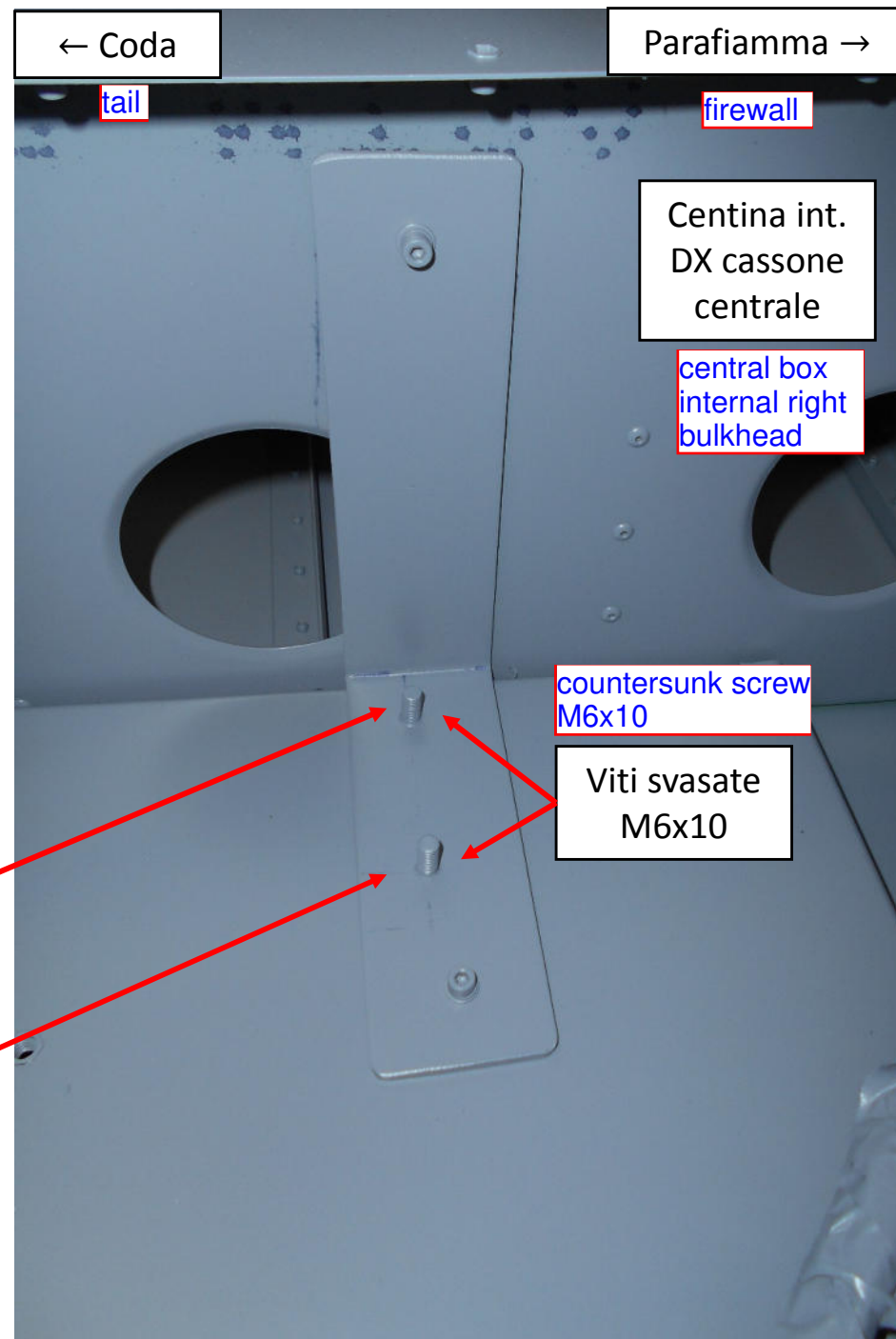
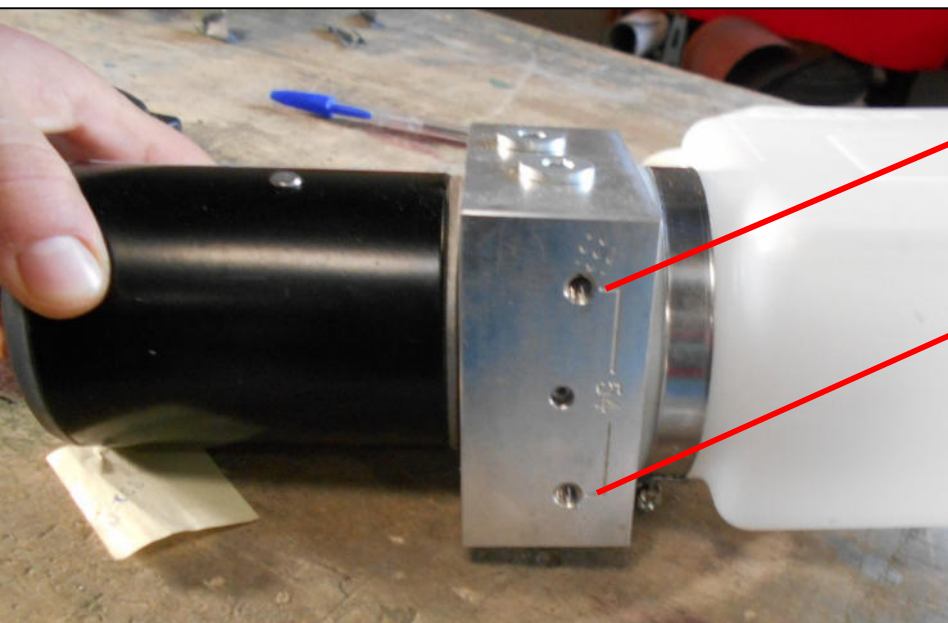


Fori aggancio staffa
[bracket mounting holes](#)

A battuta sul fianco della pompa

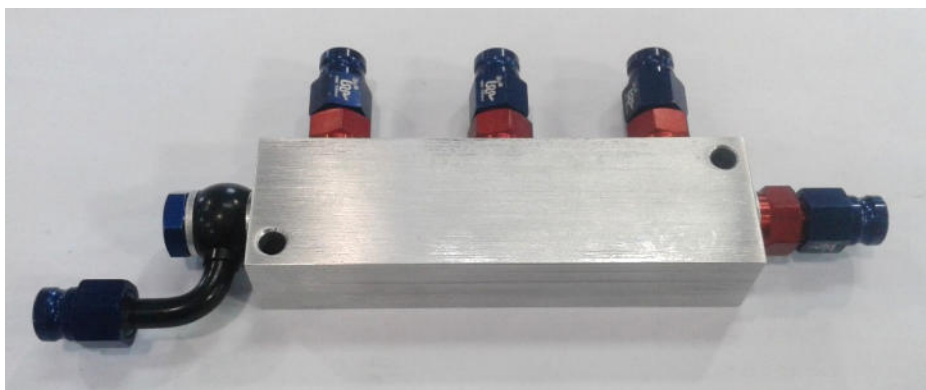
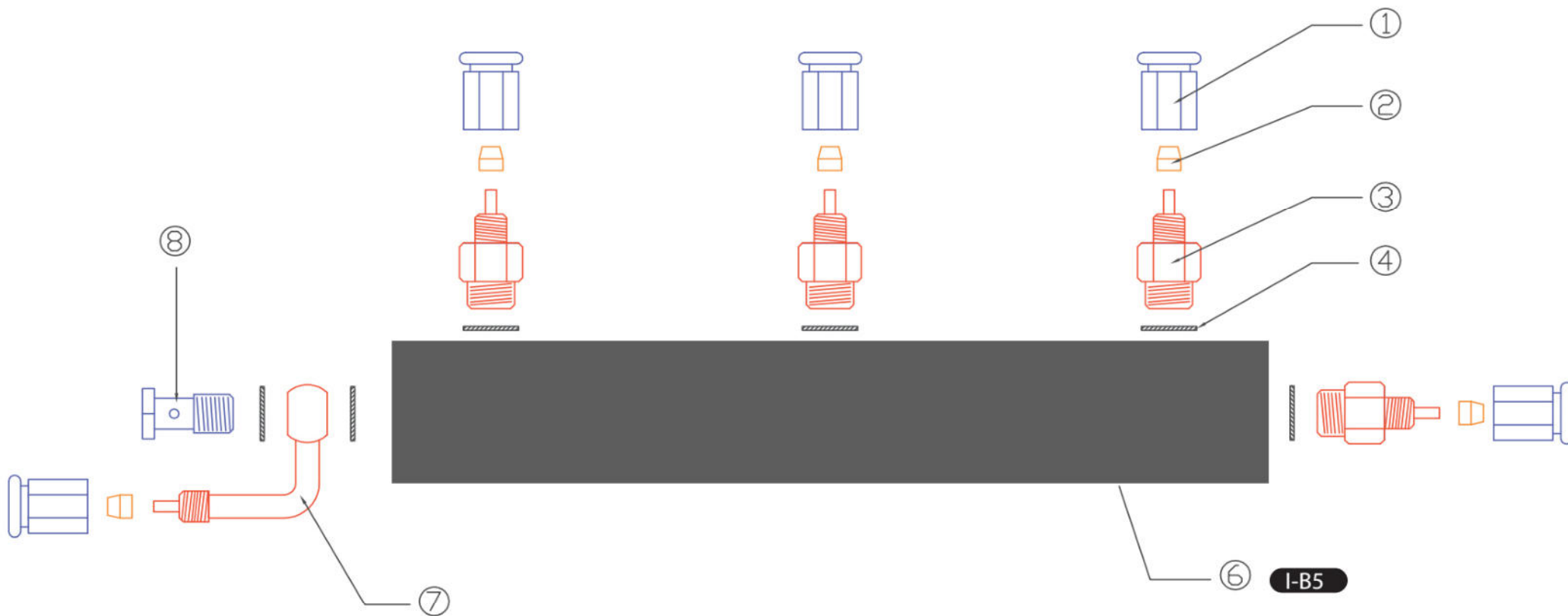
[place against the pump side](#)





2. 5 PORTS BLOCK (LANDIN GEAR UP)

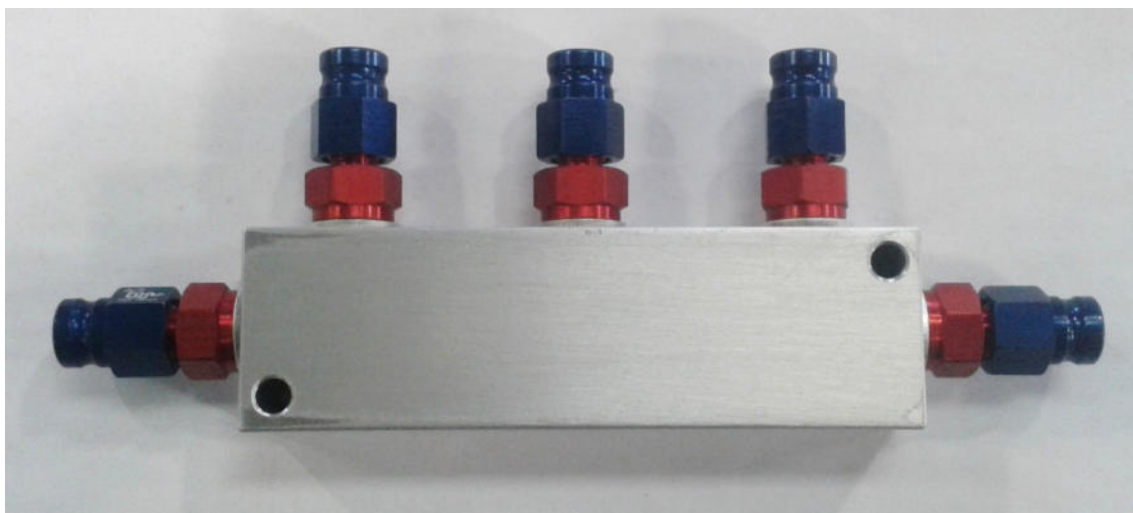
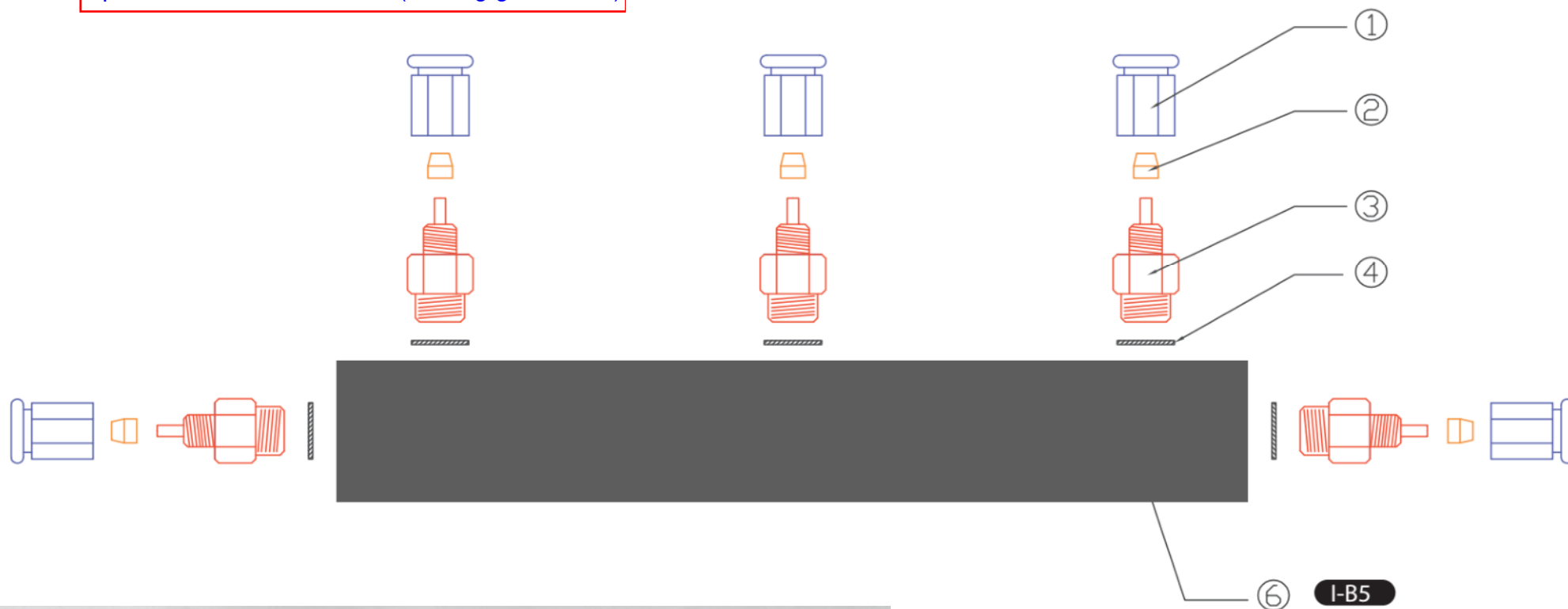
5 ports distribution manifold (landing gear up)



Disegnato: Gandolfo Santo	Mat.	Data: 07-11-2014
Sostituito <i>operatore</i>		V.Santa Maria Poggiarelli sn 95041 CALTAGIRONE (CT) TEL.0933/40512 - FAX 40513 - 335/1269347-48 www.flyinglegend.it info@flyinglegend.it
Modificato <i>operatore</i>		
Titolo:		
Modello:		
Scala:	Note:	PAG. 8
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3. 5 PORTS BLOCK (LANDIN GEAR DOWN)

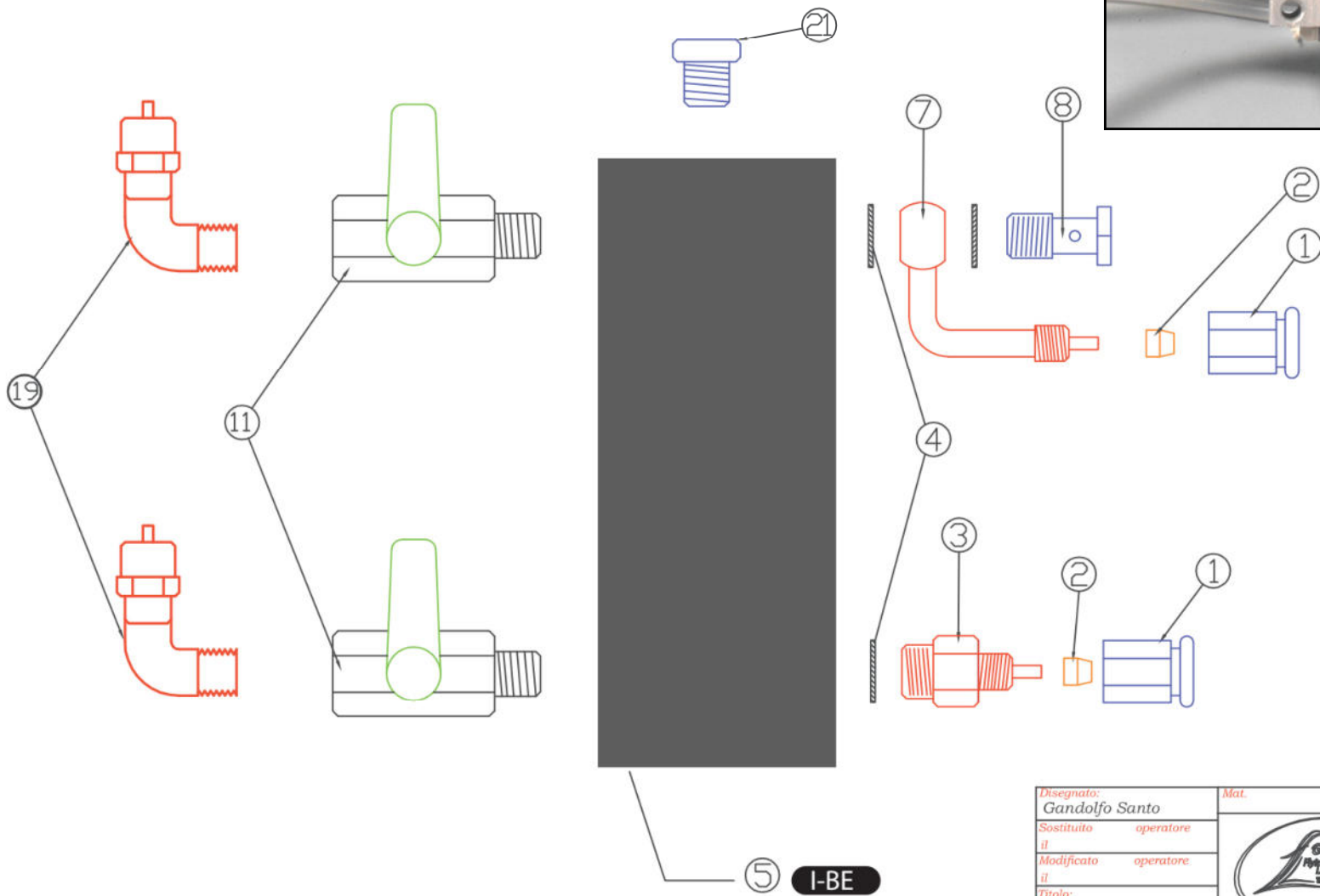
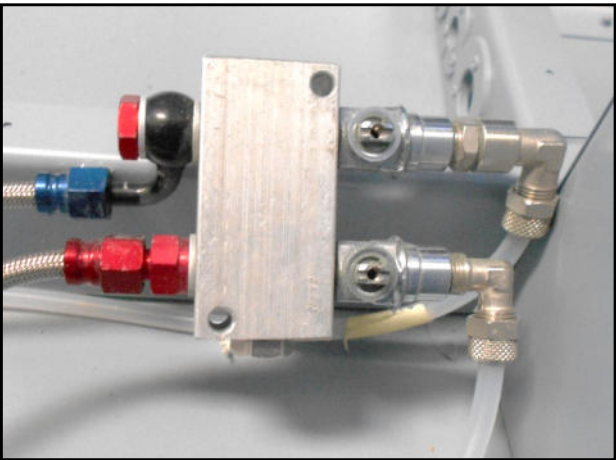
5 ports distribution manifold (landing gear down)



Disegnato: Gandolfo Santo	Mat.	Data: 07-11-2014
Sostituito il	operatore	 V. Santa Maria Poggiorelli sn 95041 CALTAGIRONE (CT) TEL. 0933/40512 - FAX 40513 - 335/1269347-48 www.flyinglegend.it info@flyinglegend.it
Modificato il	operatore	
Titolo:		
Modello:	Note:	
Scata:		
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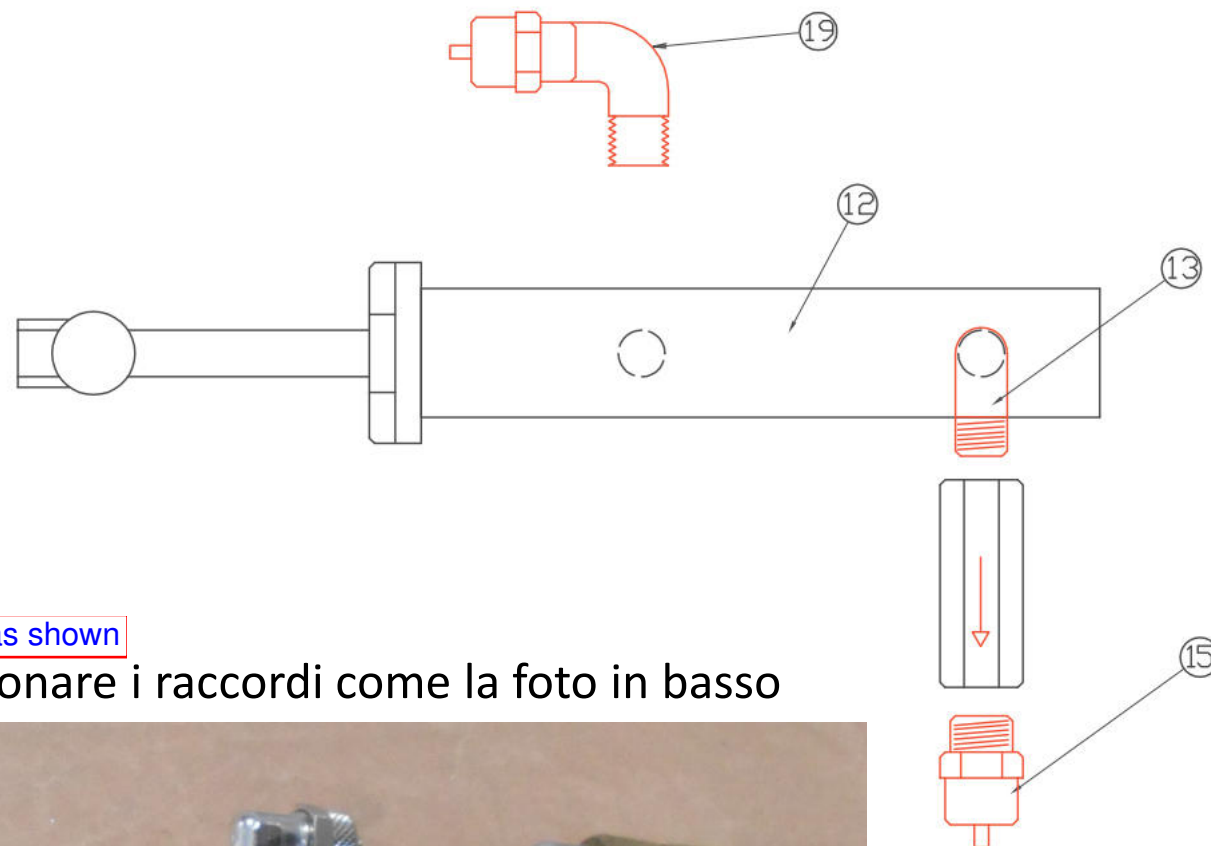
5. LDC GEAR EMERGENCY VALVES (CLOSED ON NORMAL OPERATION)

ldg



Disegnato: Gandolfo Santo	Mat.	Data: 27-11-2014
Sostituito il operatore		V.Santa Maria Poggiorelli sn 95041 CALTAGIRONE (CT) TEL.0933/40512 - FAX 40513 - 335/1269347-48 www.flyinglegend.it info@flyinglegend.it
Modificato il operatore		
Titolo:		
Modello:		
Scala:	Note:	
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6. EMERGENCY HAND PUMP

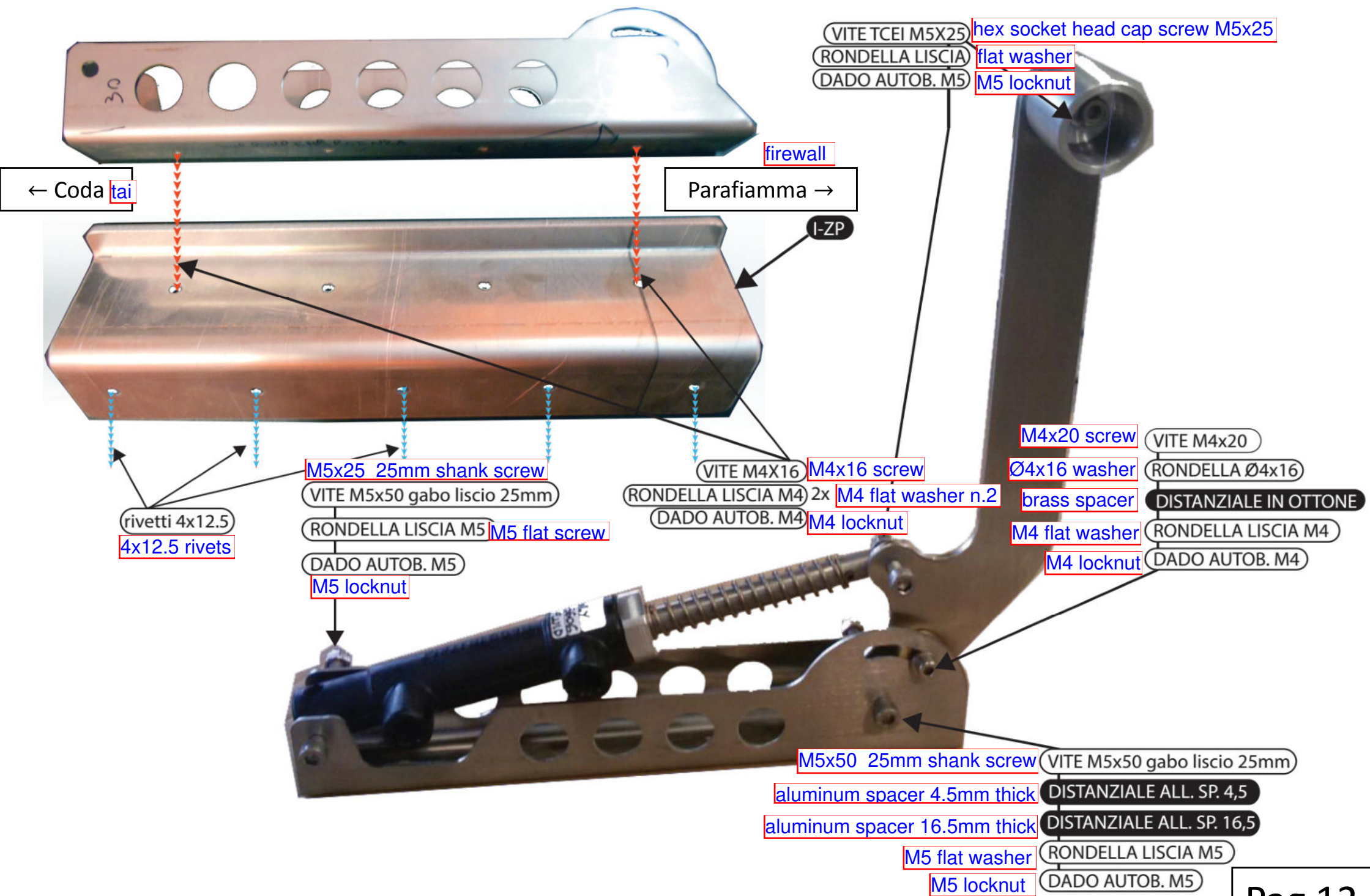


caution: position fittings as shown

Attenzione: direzionare i raccordi come la foto in basso



Disegnato: Gandolfo Santo	Mat.	Data: 07-11-2014
Sostituito il operatore		V. Santa Maria Poggiarelli sn 95041 CALTAGIRONE (CT) TEL. 0933/40512 - FAX 40513 - 335/1269347-48 www.flyinglegend.it info@flyinglegend.it
Modificato il operatore		
Titolo:		
Modello:		
Scala:	Note:	PAG. 11
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aluminum spacer
4.5mm thick

DISTANZIALE ALL.
SP. 4,5

aluminum spacer
16.5mm thick

DISTANZIALE ALL.
SP. 16,5

I-AP

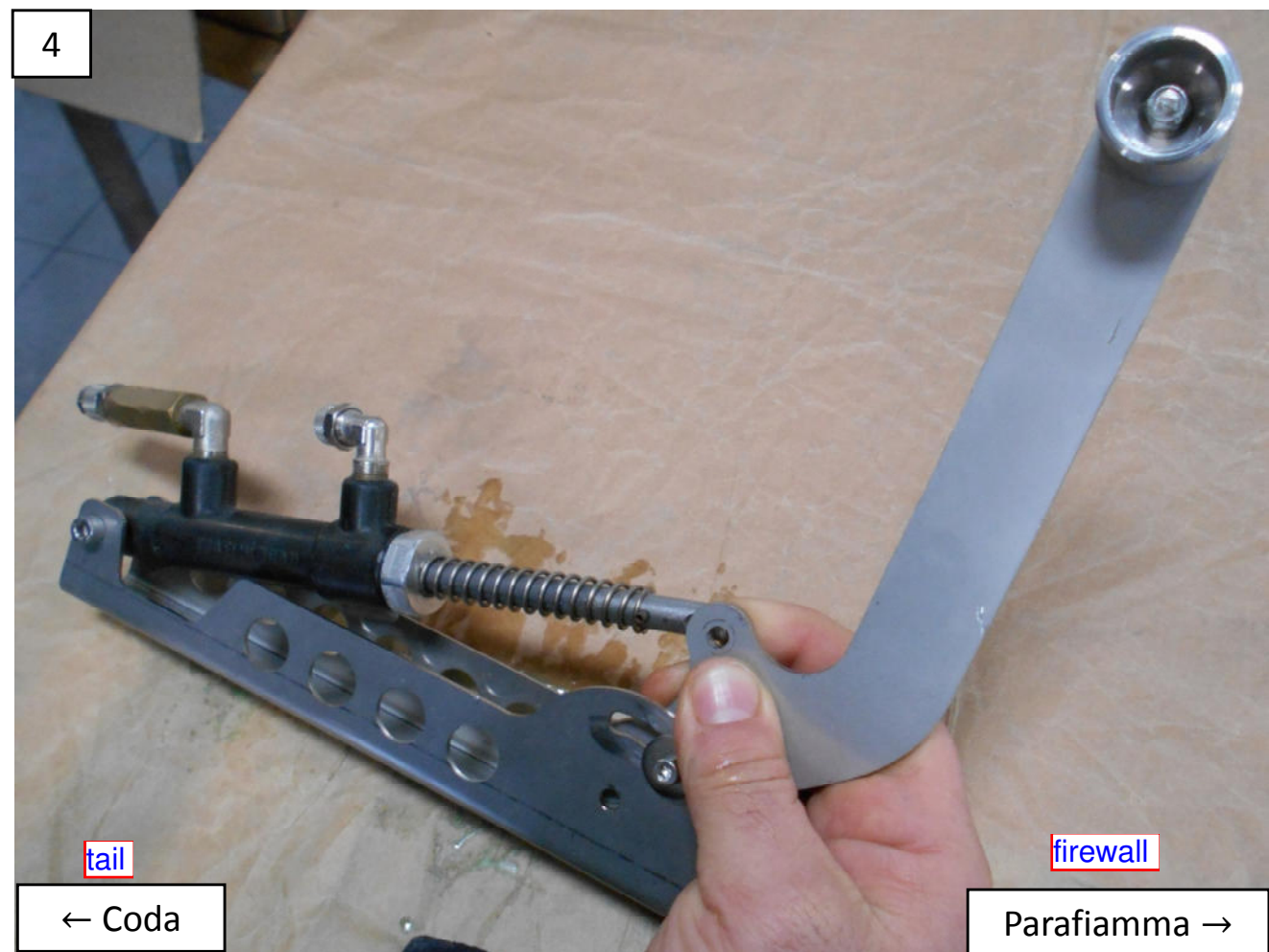
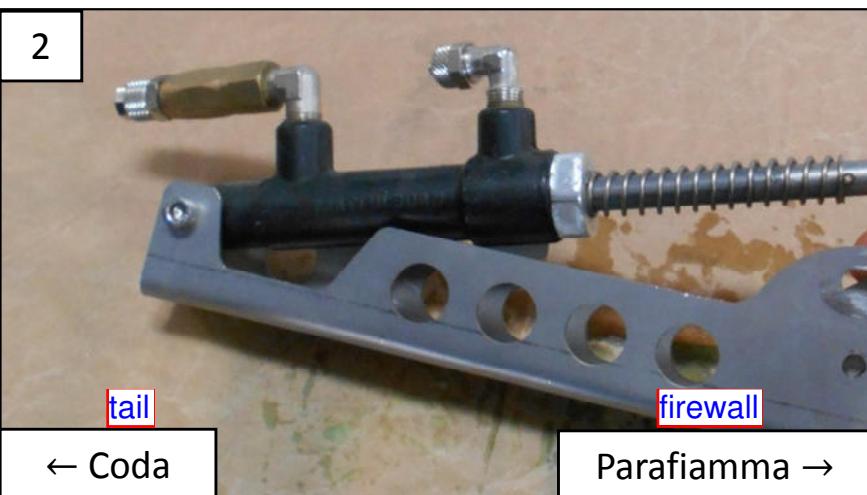
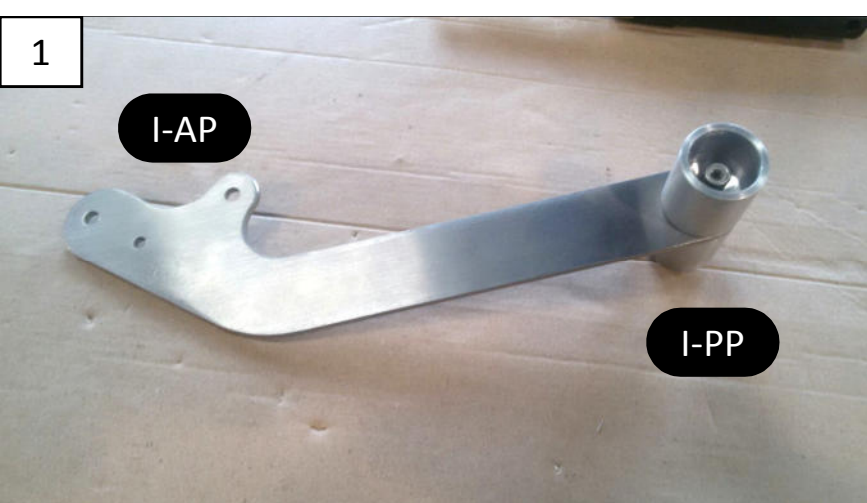
I-PP

I-SP

POMPA MANUALE

manual pump

DISTANZIALE IN OTTONE
brass spacer





L'ALTEZZA DEI DUE LATI DEL PIANETTO È DIVERSA: IL LATTO PIÙ ALTO DEVE ESSERE QUELLO VICINO ALL'ORDINATA 4

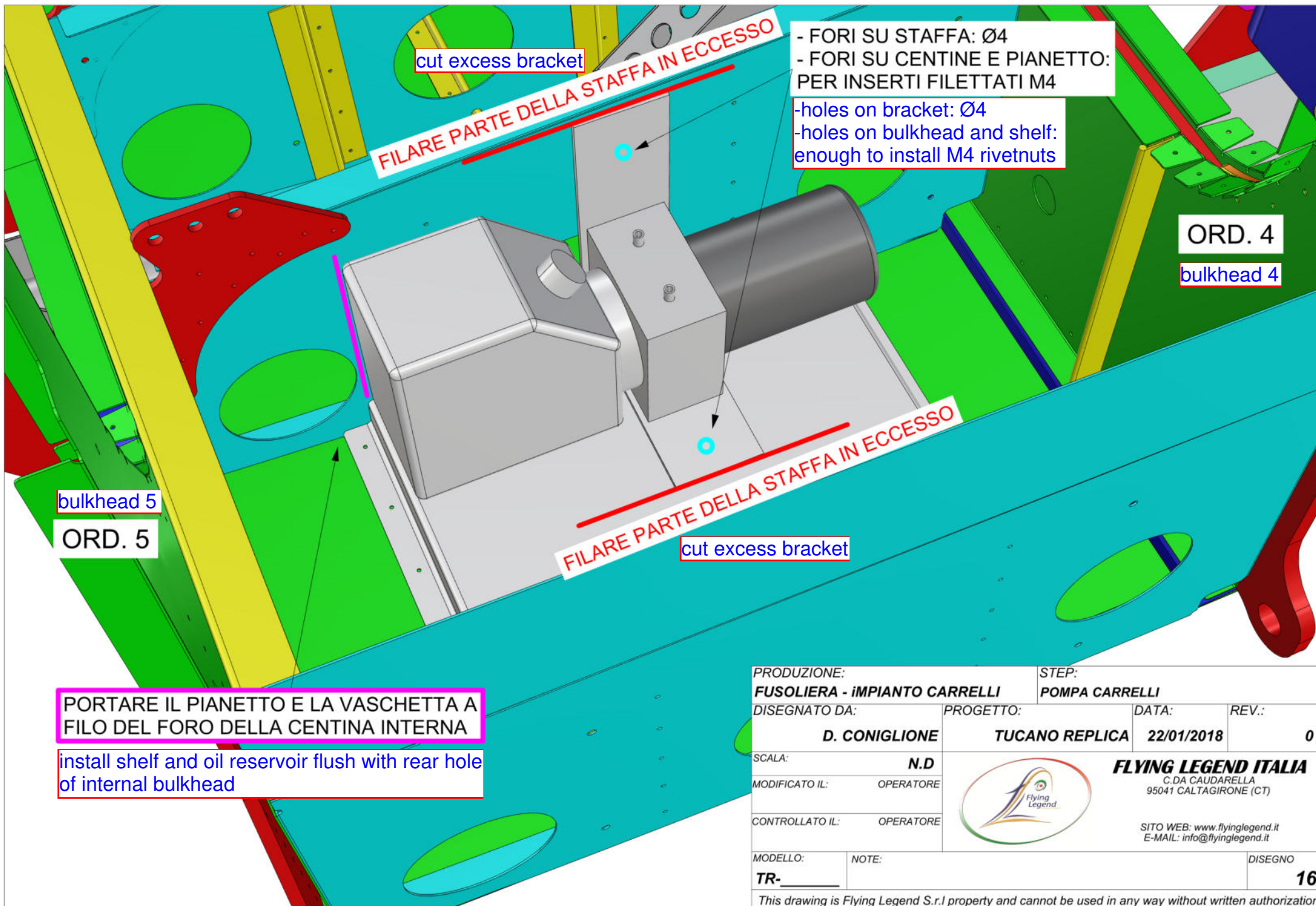
front and rear sides of the shelf have different height: higher side goes toward bulkhead 4

drill holes onto the central box bottom skin

RIPASSARE I FORI SULLO SKIN FONDO CASSONE

PRODUZIONE: FUSOLIERA - IMPIANTO CARRELLI		STEP: PIANETTO POMPA CARRELLI	
DISEGNATO DA: D. CONIGLIONE	PROGETTO: TUCANO REPLICA	DATA: 22/01/2018	REV.: 0
SCALA: N.D	 FLYING LEGEND ITALIA C.DA CAUDARELLA 95041 CALTAGIRONE (CT)		
MODIFICATO IL: OPERATORE			
CONTROLLATO IL: OPERATORE	SITO WEB: www.flyinglegend.it E-MAIL: info@flyinglegend.it		
MODELLO: TR-	NOTE:	DISEGNO 15	

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central box
right-center bulkhead

CENTINA CENTRALE DX
CASSONE CENTRALE

electric pump
POMPA ELETTRICA

← REAR

INSERTO FILETTATO Ø4
VITE Ø4x16
VITE Ø4x10
RONDELLA LISCIA Ø4
RONDELLA SPACCATA Ø4

M4 rivet nut
M4x16 screw
M4x10 screw
Ø4 flat washer
Ø4 split lock washer

INVERTER

INSERTO FILETTATO Ø5
VITE Ø5x25
RONDELLA LISCIA Ø5x25
RONDELLA SPACCATA Ø5

M5 rivet nut
M5x25 screw
Ø5x25 flat washer
Ø5 split lock washer

hex socket head cap M5x50
flat washer
split lock washer
M5 rivet nut

VITE TCEI M5X50
RONDELLA LISCIA
RONDELLA SPACCATA
INSERTO FILETTATO M5

FRONT →

COLLETTORE A 5 VIE «UP» 5 ports distribution manifold "up"
COLLETTORE A 5 VIE «DOWN»
5 ports distribution manifold "down"

central box - central right bulkhead

CENTINA CENTRALE DX CASSONE CENTRALE

5 ports manifolds:
M5 rivet nut

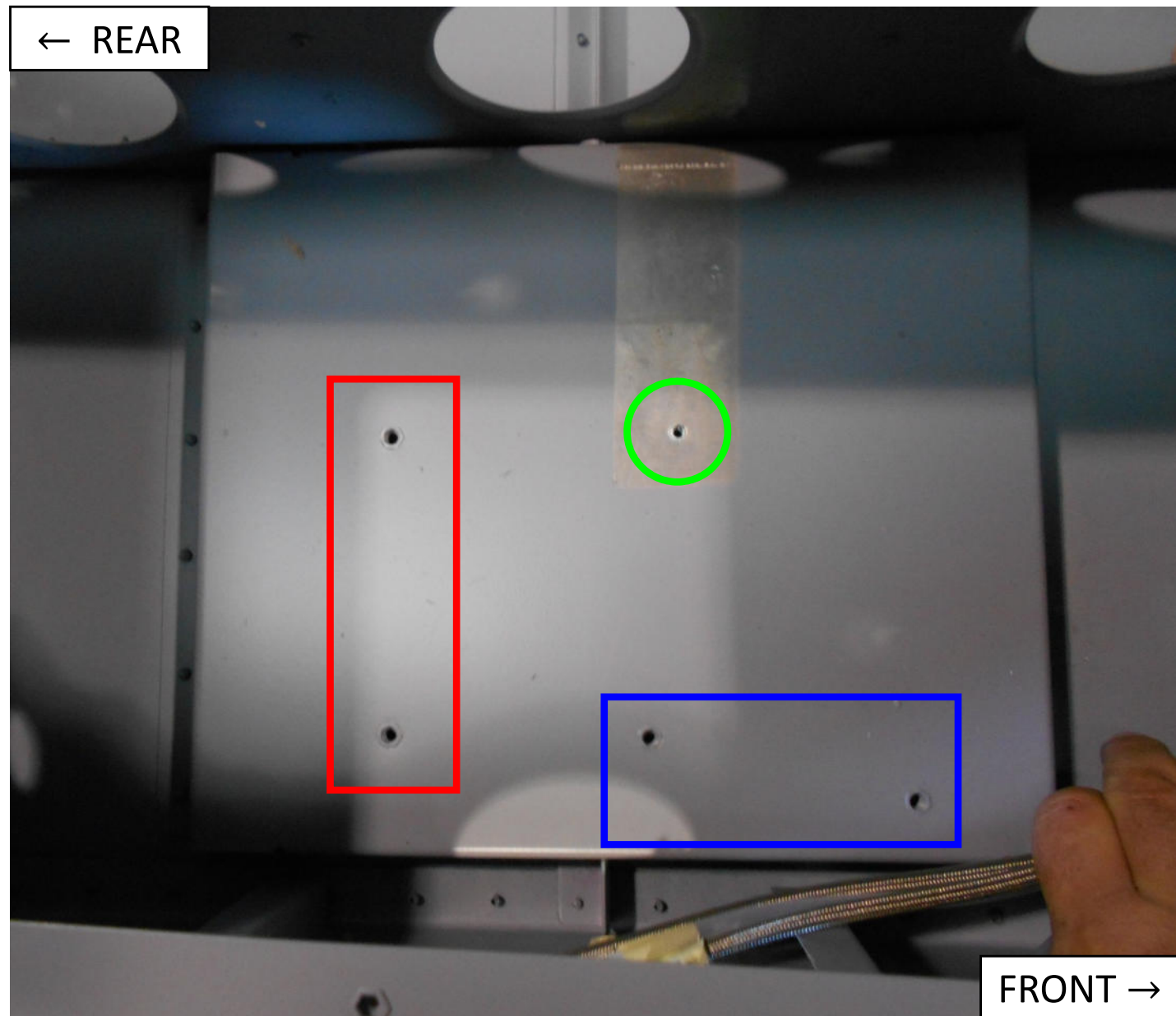
COLLETTORI A 5
VIE: INSERTI
FILETTATI M5

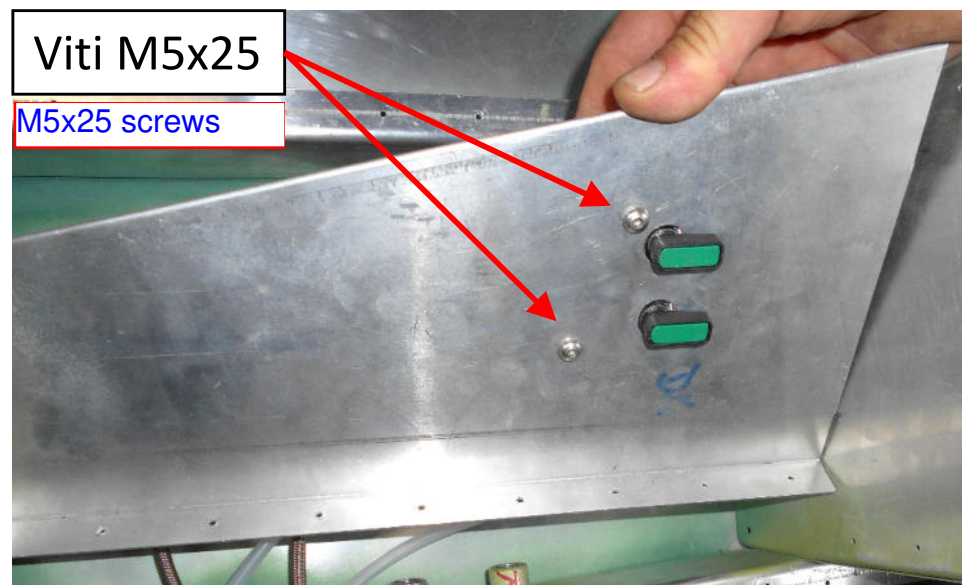
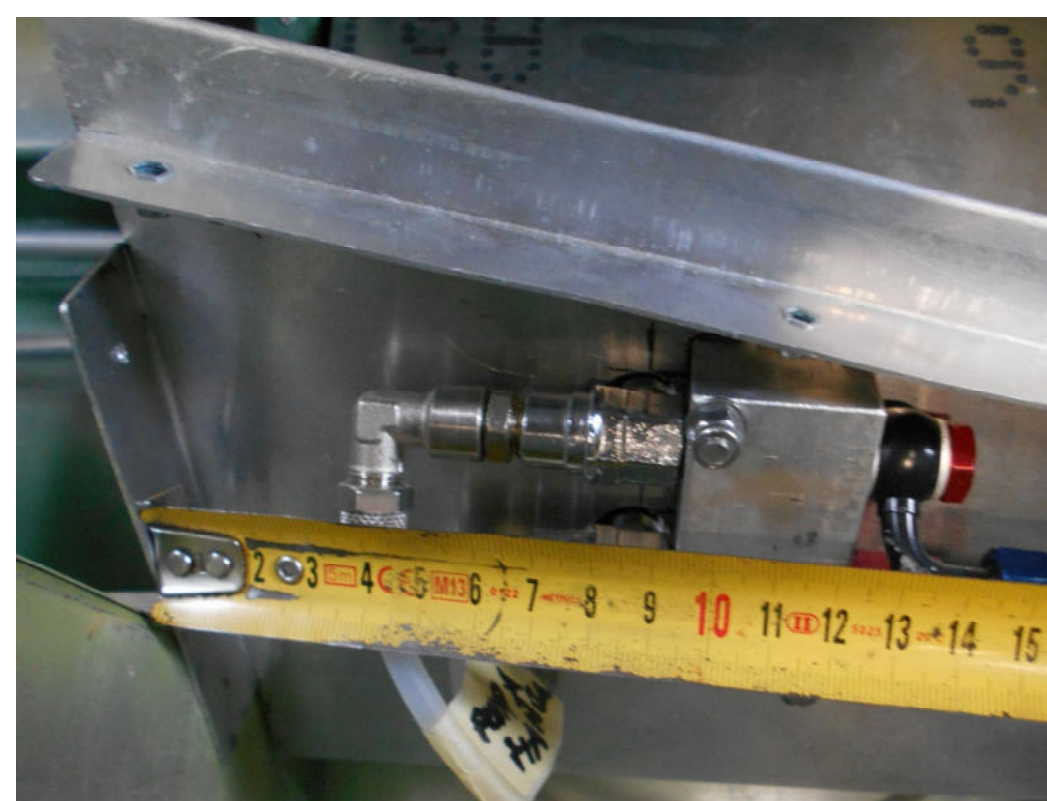
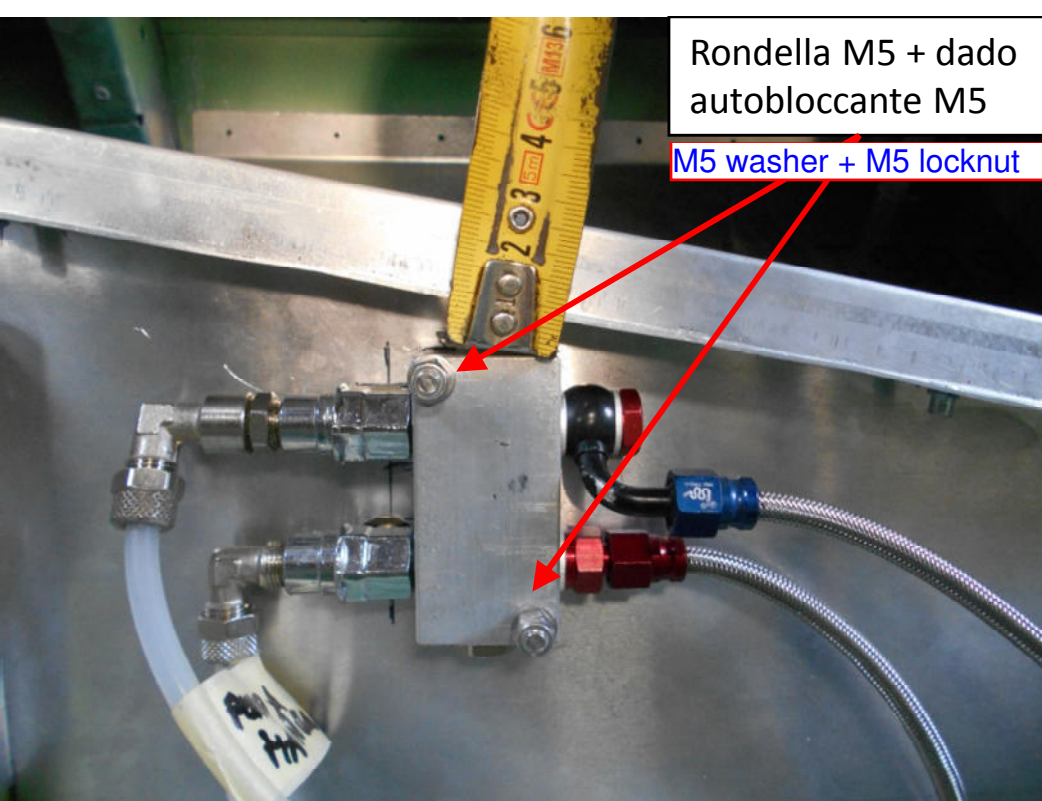
inverter switch:
M5 rivet nut

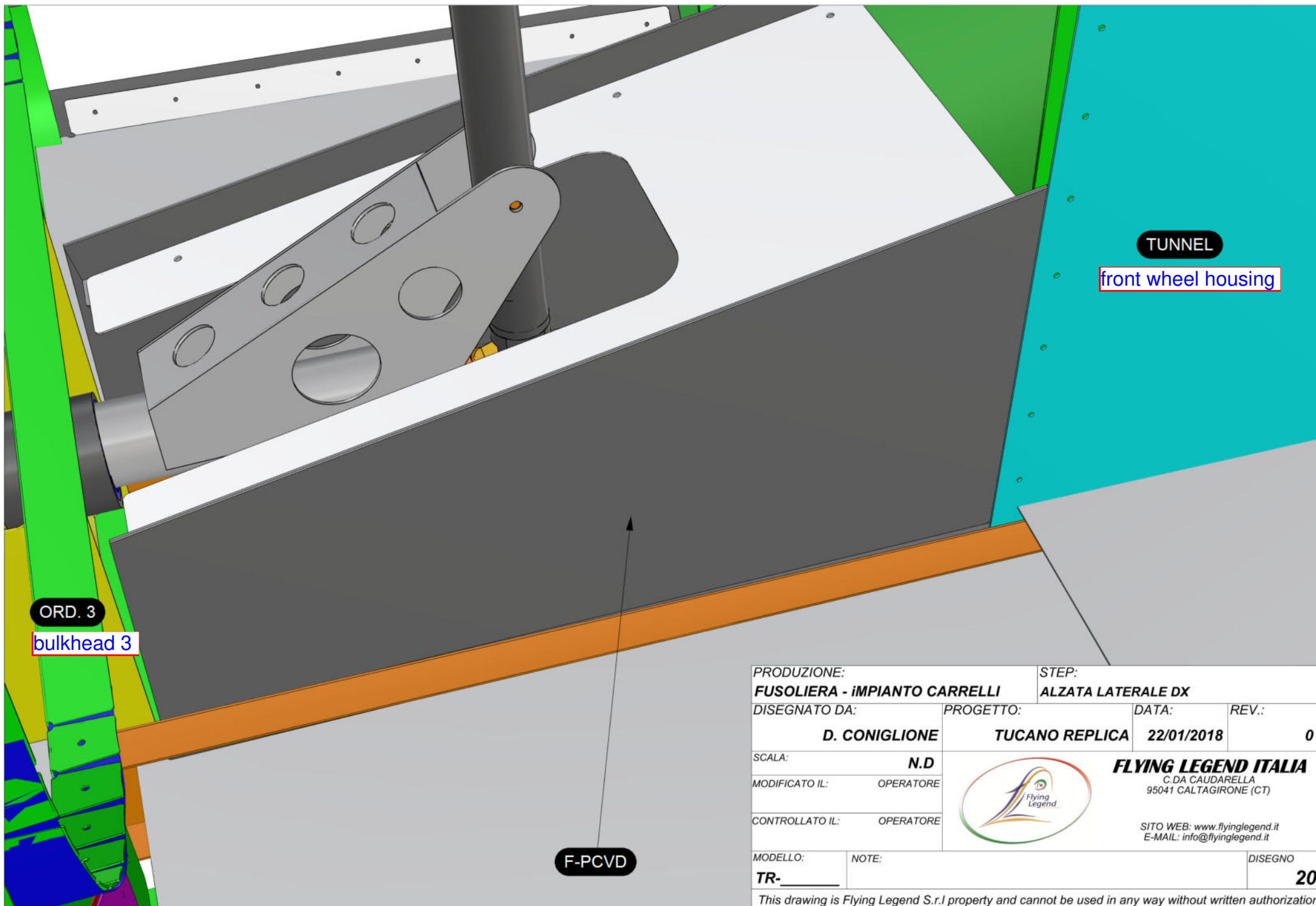
INVERTER:
INSERTI
FILETTATI M5

pump suport bracket:
M4 rivet nut

STAFFA
SUPPORTO
POMPA: INSERTI
FILETTATI M4







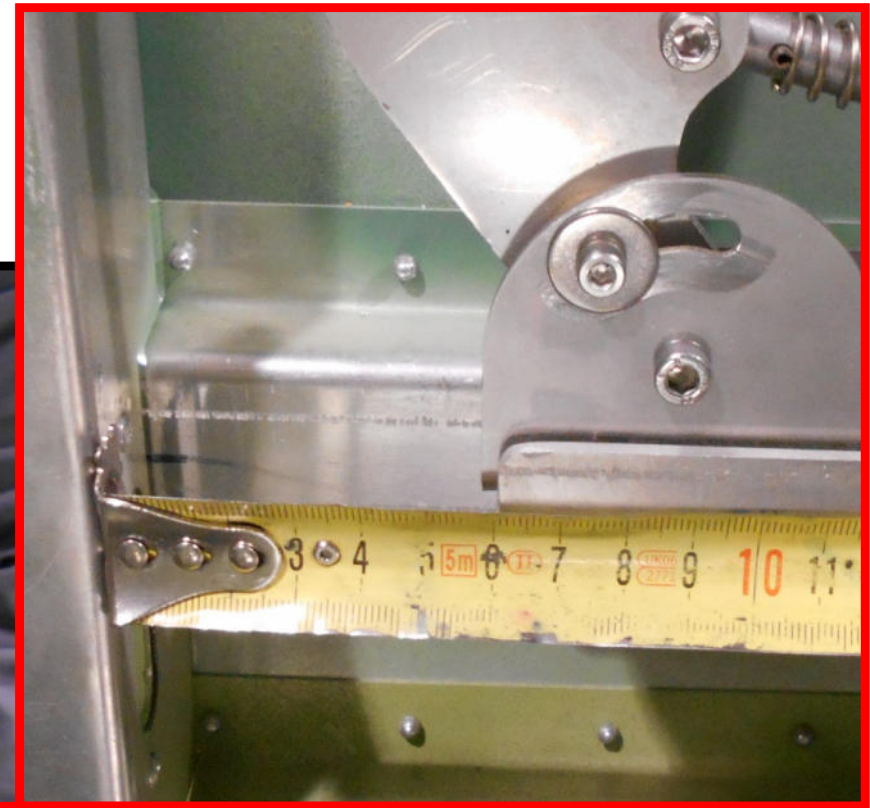
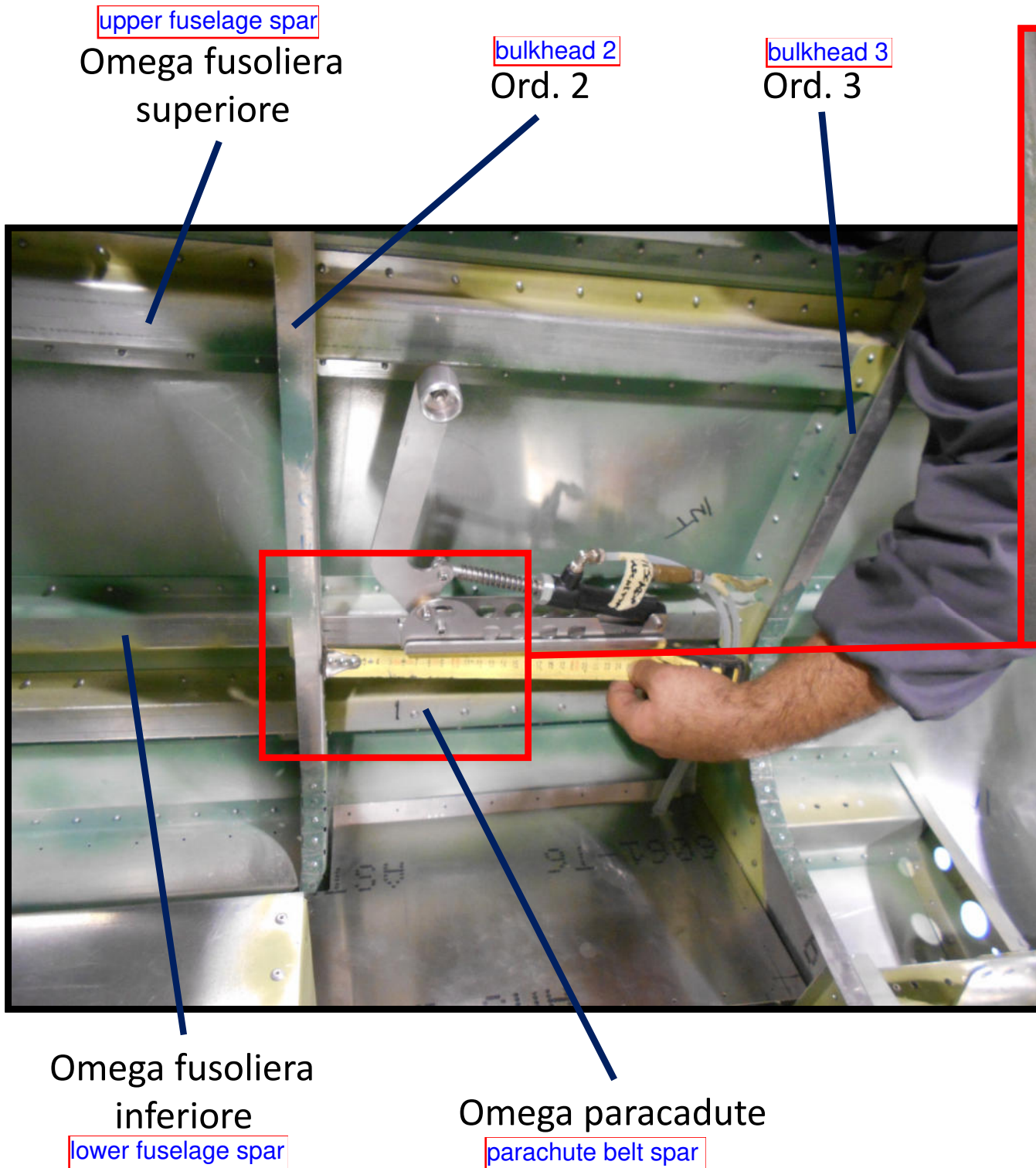
PRODUZIONE: FUSOLIERA - IMPIANTO CARRELLI		STEP: ALZATA LATERALE DX	
DISEGNATO DA:	PROGETTO:	DATA:	REV.:
D. CONIGLIONE	TUCANO REPLICA	22/01/2018	0
SCALA:	N.D		
MODIFICATO IL:	OPERATORE		
CONTROLLATO IL:	OPERATORE		
MODELLO:	NOTE:		DISEGNO
TR-			20



FLYING LEGEND ITALIA
C.DA CAUDARELLA
95041 CALTAGIRONE (CT)

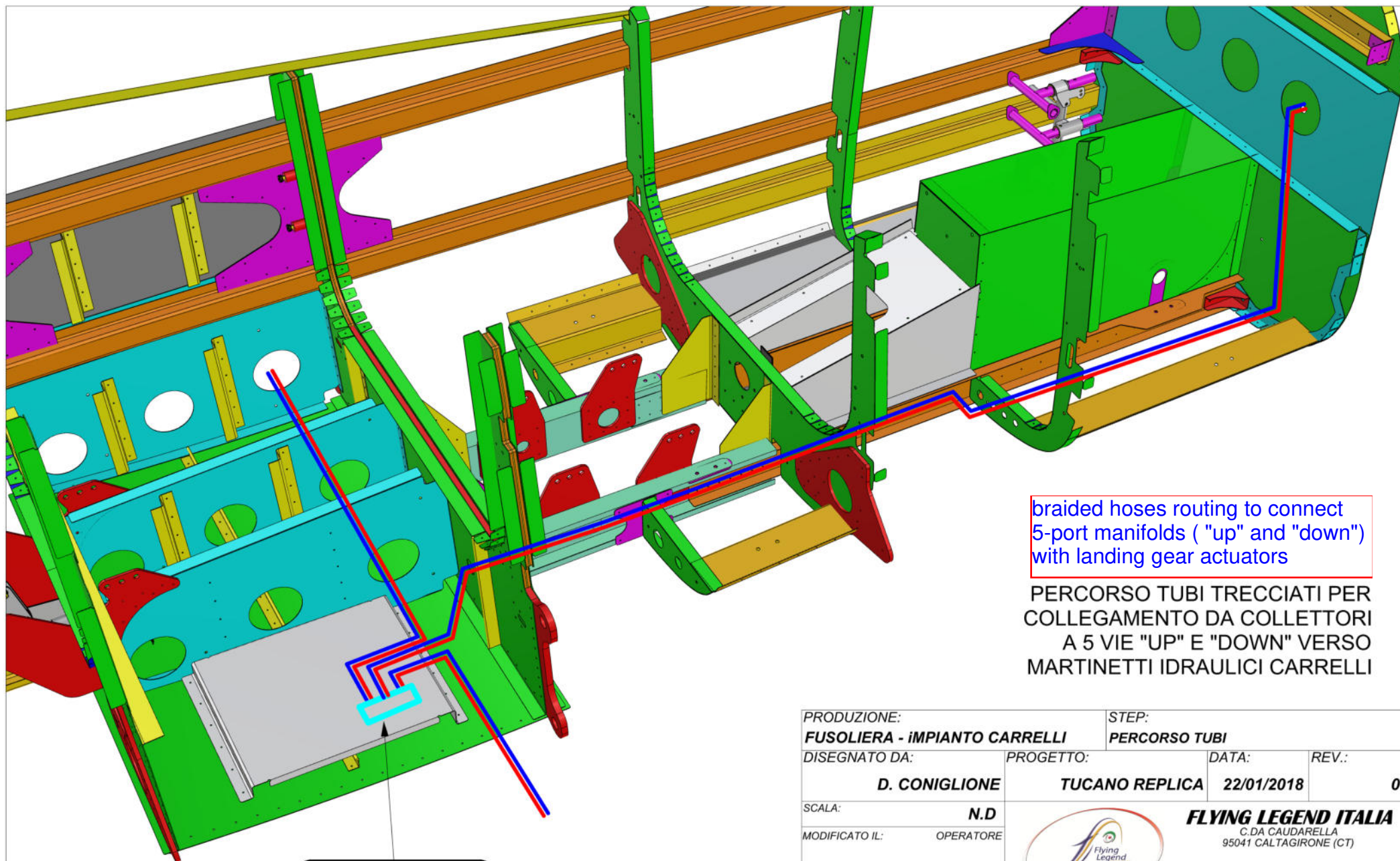
SITO WEB: www.flyinglegend.it
E-MAIL: info@flyinglegend.it

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La pompa va distanziata dall'anima dell'ordinata 2 di 6cm ed i fori della Z della pompa devono cadere al centro dell'omega

pump must be mounted 6cm rearward from bulkhead 2 web, mounting holes of the bracket must be drilled on spar's centerline



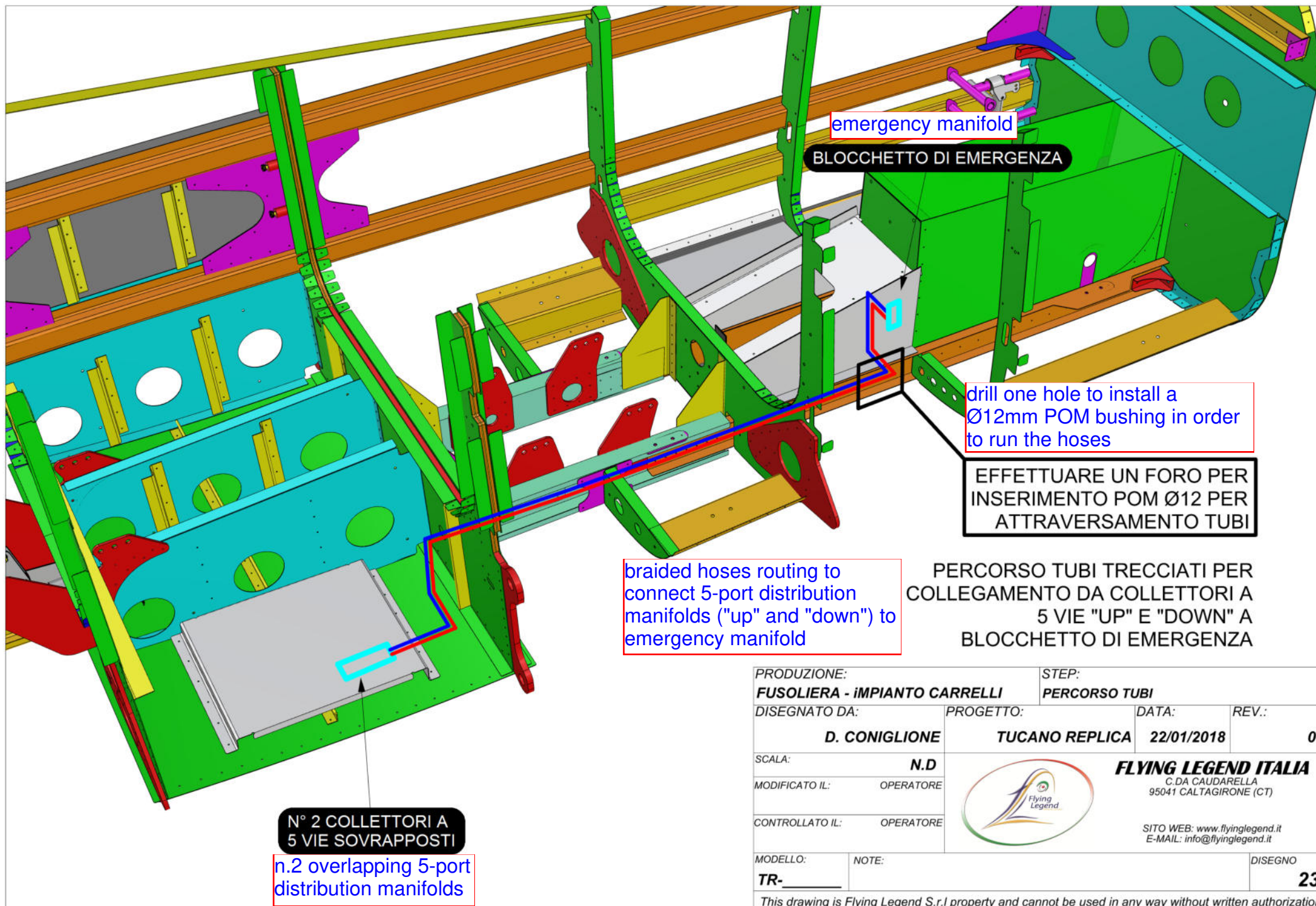
braided hoses routing to connect
5-port manifolds ("up" and "down")
with landing gear actuators

PERCORSO TUBI TRECCIATI PER
COLLEGAMENTO DA COLLETTORI
A 5 VIE "UP" E "DOWN" VERSO
MARTINETTI IDRAULICI CARRELLI

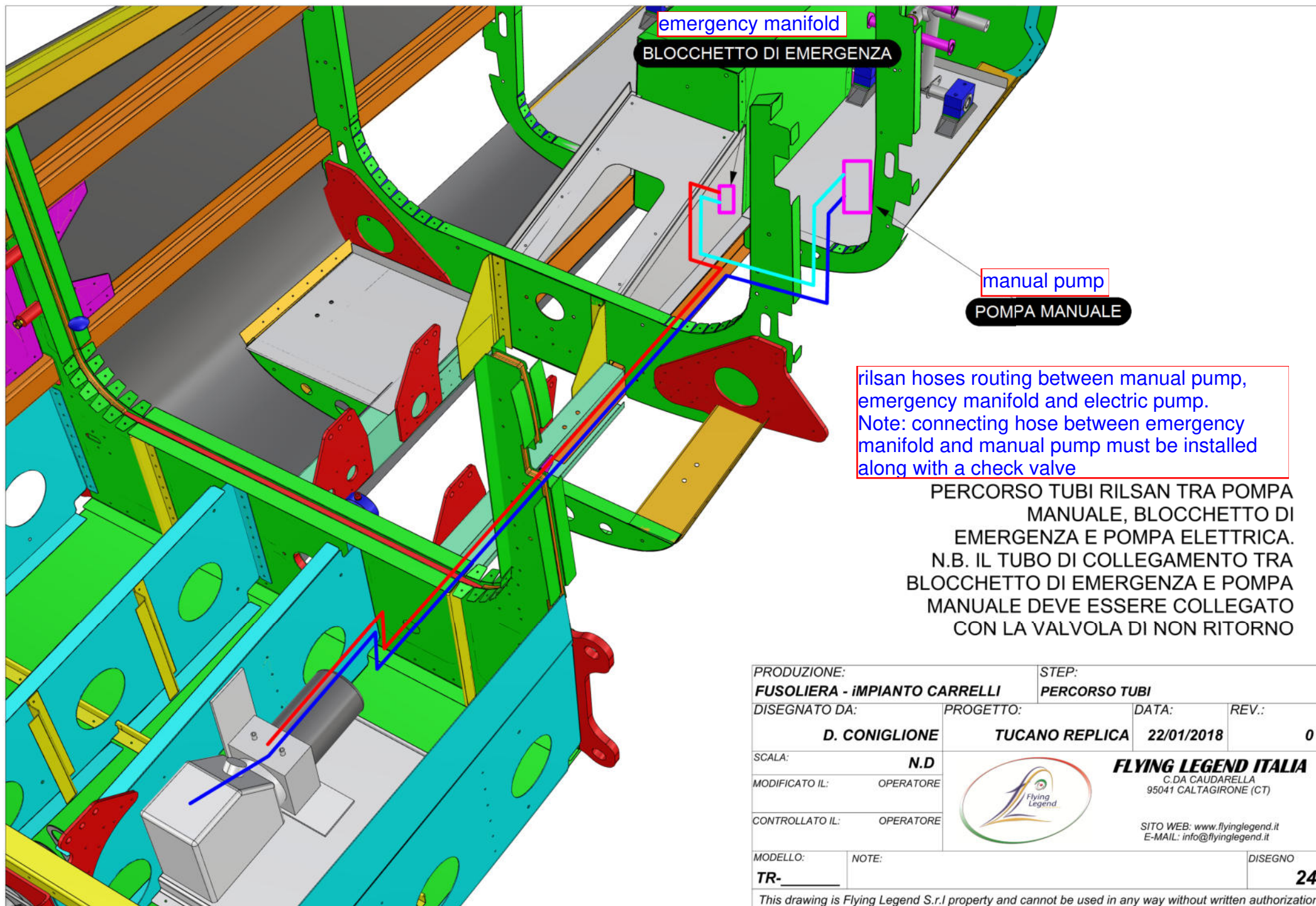
N° 2 COLLETTORI A
5 VIE SOVRAPPosti

n.2 overlapping
5-port distribution
manifolds

PRODUZIONE: FUSOLIERA - IMPIANTO CARRELLI		STEP: PERCORSO TUBI	
DISEGNATO DA: D. CONIGLIONE		PROGETTO: TUCANO REPLICA	
		DATA: 22/01/2018	
		REV.: 0	
SCALA: N.D		 FLYING LEGEND ITALIA C.DA CAUDARELLA 95041 CALTAGIRONE (CT) SITO WEB: www.flyinglegend.it E-MAIL: info@flyinglegend.it	
MODIFICATO IL: OPERATORE			
CONTROLLATO IL: OPERATORE			
MODELLO: TR-_____		NOTE: <	



PRODUZIONE: FUSOLIERA - IMPIANTO CARRELLI		STEP: PERCORSO TUBI	
DISEGNATO DA:	PROGETTO:	DATA:	REV.:
D. CONIGLIONE	TUCANO REPLICA	22/01/2018	0
SCALA:	 FLYING LEGEND ITALIA C.DA CAUDARELLA 95041 CALTAGIRONE (CT)		
MODIFICATO IL:			
CONTROLLATO IL:			
MODELLO:	NOTE:	SITO WEB: www.flyinglegend.it E-MAIL: info@flyinglegend.it	
TR-		DISEGNO	23
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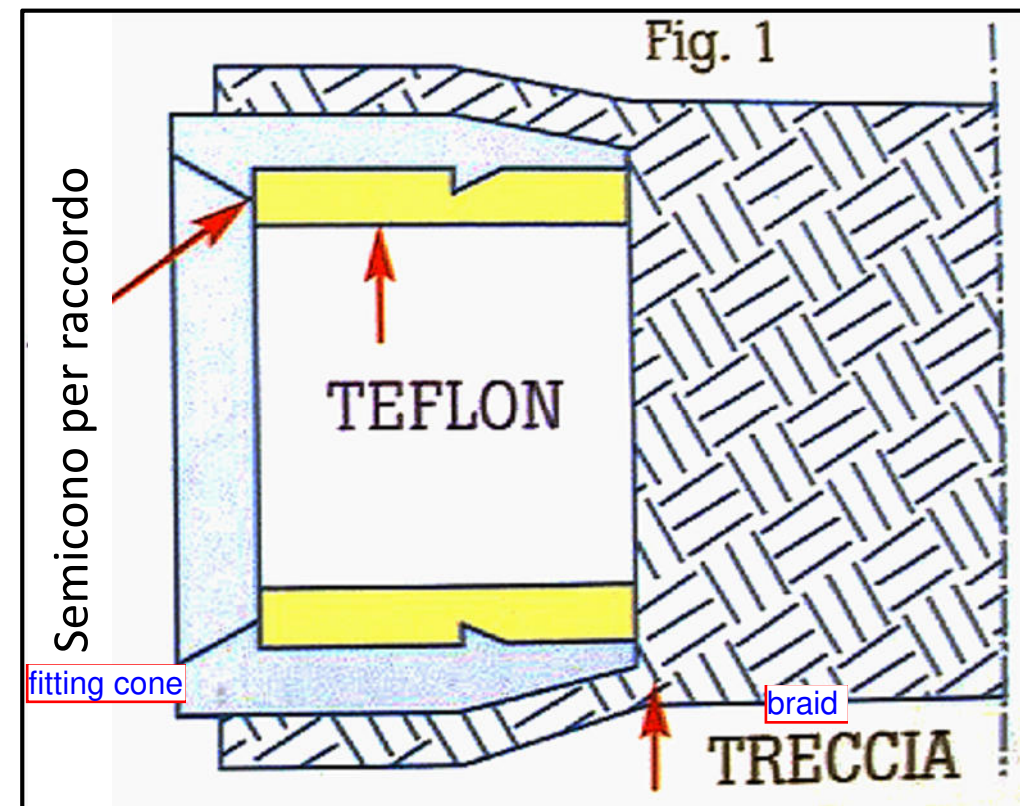


mounting instructions for reusable fittings

ISTRUZIONI DI MONTAGGIO PER LA RACCORDERIA RECUPERABILE

- 1 ▶ Utilizzare per il taglio del tubo Ø int. 1/8" la pinza PT010 o la tagliatubi UT014. In mancanza di tali attrezzi si può usare un seghetto a denti fini avendo cura di avvolgere il tubo nel punto di taglio con del nastro. Infilare i 2 dadi di montaggio nel tubo.
- 2 ▶ Ricreare la circonferenza del foro del tubo per mezzo dell'attrezzo UT012. using tool UT012 round up the opening of the hose after cutting
- 3 ▶ Spingere IL CONO METALLICO fino all'estremità A (vedi figura 1). push the metallic cone all the way in (see fig.1)
- 4 ▶ Lubrificare i filetti. lubricate threads
- 5 ▶ Stabilire l'esatto orientamento prima del serraggio (facendo un segno di riferimento). establish the correct position before tightening (make a reference mark)
- 6 ▶ Stringere a 0,8 Kg (8 Nm). tighten at 0.8Kg (8Nm)
- 7 ▶ Avvitare alternativamente i due filetti di un quarto di giro fino a raggiungere l'esatta posizione. NON SUPERARE 10 Nm con i raccordi in lega di alluminio e i 15 Nm con i raccordi in acciaio.
- 8 ▶ Attenzione, effettuare il collaudo al termine del montaggio! caution, test the hose and fitting at the end of the assembly

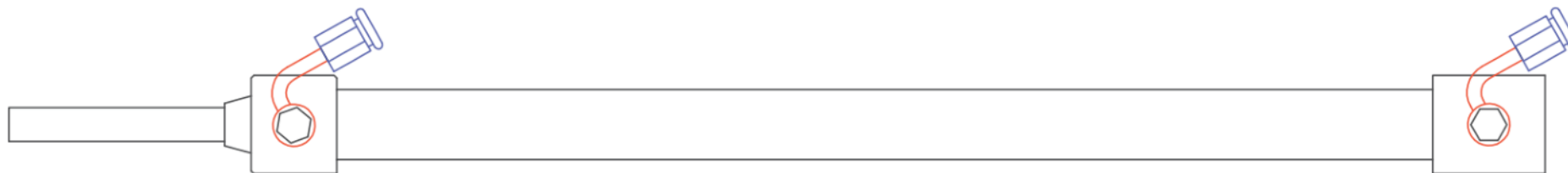
1-to cut the hose (Ø 1/8" internal) use either PT010 plier or UT014 cutter. in lack of these tools a fine toothed saw can be used, remembering to use some masking tape on the cutting point. insert the two mounting nuts.



7-tighten the two nuts at each end, by a quarter turn alternatively, until correct position is reached. DO NOT EXCEED 10Nm with aluminum fittings and 15Nm with steel fittings

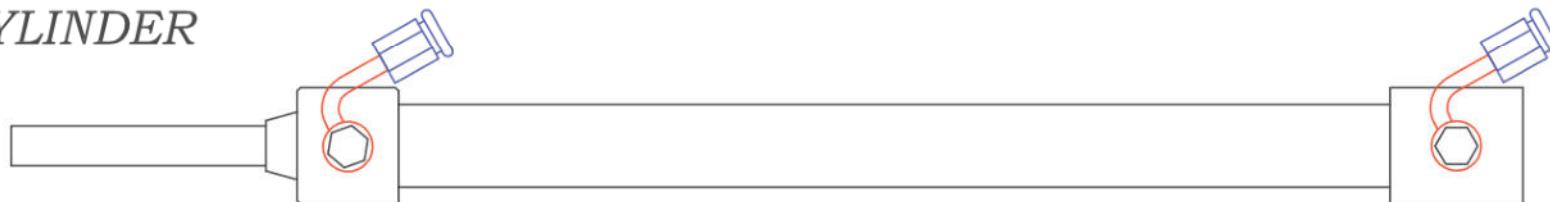
left main gear actuator

7. LEFT GEAR CYLINDER



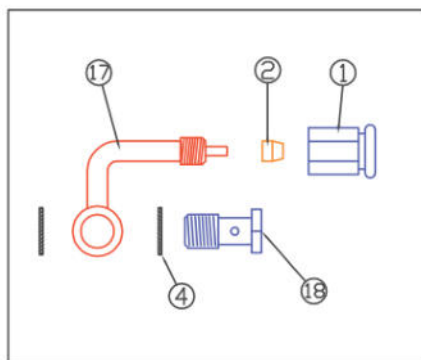
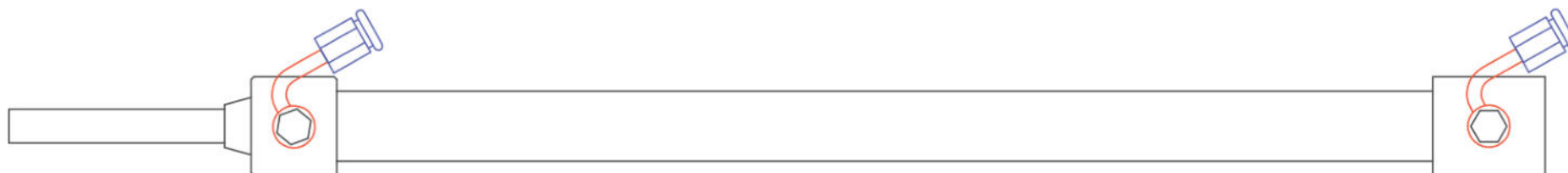
nose gear actuator

8. NOSE GEAR CYLINDER



right main gear actuator

9. RIGHT GEAR CYLINDER



Disegnato: Gandolfo Santo	Mat.	Data: 07-11-2014
Sostituito il Modificato il Titolo:	 V. Santa Maria Poggiarelli sn 95041 CALTAGIRONE (CT) TEL. 0933/40512 - FAX 40513 - 335/1269347-48 www.flyinglegend.it info@flyinglegend.it	PAG. 26 This drawing is Flying Legend S.r.l property and cannot be used in any way without written authorization
Modello:		
Scala:		

Per qualsiasi dubbio nell'esecuzione delle operazioni contenute in questo ciclo di produzione, fare riferimento al manuale "Informazioni generali sulla costruzione"

	START PRODUCTION DATE ____/____/____		MODEL	TR -
	PRODUCTION CYCLE: FUSELAGE – GEAR SYSTEM REV. 0 - 24/01/2018		DRAWING	REV. 0
			CONTROLLED	DATE ____/____/____ SIGNATURE
	END PRODUCTION DATE ____/____/____		APPROVED	DATE ____/____/____ SIGNATURE

M	STEP	DESCRIPTION	TABLE	✓	WORKED HOURS	OPERATOR
	1	Prepere the electric pump by assembling the three reduction in the upper part of the pump.	2, 3, 4			
	2	Realize the hole for the drain on the upper side of the cup and assembly the fittings (90° ELBOW AND COUPLING) to insert the Rilsan pipe.	2, 3, 5			
	3	Place the pump to the "L" support and take some reference points to identify the area where do to the holes. Drill the support gradually until ø 6 according to the reference point taken.	6			
	4	Countersink the holes used to stop the pump on the support from the F-PSP side towards the pump, clean from any burrs and stop the two elements with two countersunk head rivets M6x10.	6, 7			
	5	Assembly two manifold of 5 with male fitting (B16235AL) M10x1 and aluminum washer M10x14x1.5, to distinguish "UP" and "DOWN".	2, 8, 9			
	6	Assembly the emergency support with valves, cap 1/8", and elbows towards the cup.	2, 10			
	7	Assembly the Rilsan fittings (2 elbows + 1 unidirectional check valve + 1 threaded fitting) on the manual pump.	2, 11			
	8	Assembly the pump support (I-SP) to "Z" (I-ZP) and subsequently, assembly the emergency pump handle to the support	12, 13, 14			
	9	Place the item F-PSP (F-PSP) inside the central box to the right. Place it at the central rib next to the hole used to pass the aileron control rod. Drill abd cleco at ø 3,2 mm.	15			

Per qualsiasi dubbio nell'esecuzione delle operazioni contenute in questo ciclo di produzione, fare riferimento al manuale "Informazioni generali sulla costruzione"

M	STEP	DESCRIPTION	TABLE	✓	WORKED HOURS	OPERATOR
	10	Place the pump on the item F-PSP. Place the support to the central rib and make sure that the plastic tank does not exit from the item. Identify the area where you can do two holes on the support (the first towards the box rib, the second towards the item) to stop it. Drill at $\varnothing$ 2.4 and cleco. (NOTE 1)	15, 16			
	11	Mark on the item (F-PSP) the position of the manifold with 5 ways and of the inverter. Mark the part of the item in contact with the rib, front and rear.	17, 18			
	12	Remove the item (F-PSP) and drill the holes of the items previously marked (inverter and manifold). Drill the holes to the right size to insert the threaded nutserts M5 (do not insert them now).	Da 15 a 18			
	13	Drill the support at $\varnothing$ 4 and enlarge the holes of the rib and on the item gradually till you get the right size for the threaded nutsert M4 (do not insert them now)	16, 17, 18			
	14	Clean from any burrs the bottom of the central box, on the support, on the item F-PSP and on the central box rib and stop with the threaded nutserts M4/M5.	Da 15 a 18			
	15	Remove the valve handles from the item (I-BE) and place this last one inside the item (F-PCVD). Pay attention to the volume and the size and drill the holes to pass the valve handles and the holes to stop the support.	10, 19, 20			
	16	Clean from any burrs, stop the emergency support (I-BE) to the item F-PCVD e place this last one to the fuselage.	10, 19, 20			
	17	Assembly the emergency manual pump to the lower omega of the fuselage between the bulkhead 2 and 3. Re-drill the holes of the "Z" to the omega until $\varnothing$ 4 and cleco.	12, 21			
	18	Pass the braided hose to the inner side of the fuselage to connect the manifolds to the hydraulic wing pistons and to the front gear paying attention to the system drawing. Mark the manifold hose up and down.	1, 8, 9, 22			
	19	Pass the braided hoses from the manifolds to the item (I-BE) and the Rilsan pipe from the electric pump to the manual pump and the emergency valve (including that which connects the two elements). Pay attention to the system drawing.	1, 3, 8, 9, 10, 12, 23, 24			

NOTA 1 –It might be necessary to trim the emergency pump support to guarantee its right position near the rib of the central box.

Per qualsiasi dubbio nell'esecuzione delle operazioni contenute in questo ciclo di produzione, fare riferimento al manuale "Informazioni generali sulla costruzione"

M	STEP	DESCRIPTION	TABLE	✓	WORKED HOURS	OPERATOR
	20	Pass the braided hose from the 5 way manifolds to the electric pump. Pay attention to the system drawing	1, 17			
	21	Connect the braided hose to the nipples of the 5 ways manifolds: do first the down manifold and after the up ones. Connect at the end the threaded fitting (B16235AL) to the emergency item (I-BE) Pay attention to the system drawing. (NOTE 2)	1, 8, 9, 10, 21			
	22	Connect the ends of the braided hoses to the elbow fittings (AN822): electric pump, emergency item (I-BE), 5 ways manifold up. Pay attention to the system drawing. (NOTE 2)	1, 3, 4, 6, 21			
	23	Connect the Rilsan hose to the various elements following the drawing scheme.	1, 3, 6, 7, 25			
	24	Assembly the various items (electric pump, the two manifolds 5 ways, emergency support, inverter) in their lodge and stop with the right hardware. Rivet the manual pump to the fuselage.	12, 17, 18, 19			
	25	Save the components necessary to connect the hose to the hydraulic gear piston and give them to the supervisor for later assembly.	2, 26			

NOTE 2 – Remember to insert the self locking nuts before the half –cone and do not insert them inside the metallic cover of the braided hose, but inside the hose. The cover of the hose will then cover the half-cone.