

## I.A.R.81 BoPi "Dive Bomber"

### CZ Historie:

V druhé polovině třicátých let vyráběla rumunská letecká továrna I.A.R. v licenci polské celokovové hornoplošné stíhačky PZL.11 a PZL.24. Protože bylo jasné, že hornoplošná koncepce stíhacích letounů zastarává a budoucnost moderních stíhacích letadel patří dolnoplošným stíhačkám se zatahovacím podvozkem a krytou kabinou, byl vytvořen konstrukční tým, který měl zkonstruovat takovou stíhačku. Pod vedením Iona Grosu byl za použití výrobní technologie PZL.24 zkonstruován nový stíhací letoun, označený I.A.R.80. Původně uvažovaný německý motor Jumo nebyl použit. První prototyp, který vzlétl 4. dubna 1939, byl poháněn čtrnáctiválcovým dvouhvězdicovým motorem I.A.R. 14K-IIc32 o výkonu 870 hp. Nový stíhač dosahoval podobných výkonů jako jiné moderní stíhačky té doby jako Hurricane, P-36, MS 406 a Bf 109D. Sériově byly produkovány různé verze, lišící se hlavně výzbrojí, od I.A.R.80A přes I.A.R.80C až ke stíhací-bombardovací verzi I.A.R.81C, navrženou na jaře 1941. Pro bitevní akce a hlavně střemhlavé bombardování byla určena verze I.A.R.81 BoPi. Ta byla vybavena výklopným závěsníkem pod trupem. Závěsník, podobně jako u německých Stuk umožňoval odhodit pumu ve střemhlavém letu tak, aby nezničila vrtuli. I.A.R.81 BoPi byl vyroben ve dvou sériích výrobních čísel 91-105 a 151-175. I.A.R.81C se stal nejpočetnější produkovanou subverzí (výr. čísla 300–450), vyráběl se od začátku roku 1943. Celkem bylo vyrobeno všech verzí I.A.R.80/81 patrně 450 ks. Výroba byla definitivně zastavena americkým náletem na továrnu I.A.R. v Brašově (stejně jako výroba Bf 109, která se tam právě rozbíhala). I.A.R.80/81 tvořily výzbroj stíhacích a bitevních jednotek rumunské armády od zapojení Rumunska do druhé světové války až do jejího konce. Prvních padesát kusů I.A.R.80 bylo zařazeno u bojových jednotek v době útoku na Sovětský svaz 22. června 1941. I.A.R.80/81 6. skupiny (61. a 62. letka) a 8. skupiny (41. a 60. letka) bojovaly v oblasti Stalingradu během podzimu 1942. 1. srpna 1943 prošly stíhačky I.A.R.80/81 při obraně ropných polí v Ploješti prvním těžkým bojem s B-24 Liberator USAAF (operace Tidal Wave) a některé Liberatory sestřelily. 10. června 1944 prošly úspěšně soubojem s P-38 Lightning 82. a 1. FG. (Američtí piloti chybně identifikovali I.A.R.80/81 jako Fw 190A). 24. srpna 1944 přešlo Rumunsko na stranu spojenců a nasadilo své I.A.R.80/81 s kokardami, pod vrchním sovětským velením, do bojů v Maďarsku. Posledními boji, úspěchy i ztrátami prošly I.A.R.80/81 nad Slovenskem a Moravou při osvobození Československa. V Rumunsku zbylé I.A.R.80/81 složily do padesátých let. Ještě v roce 1950 byly některé přestavěny na dvoumístné pokračovací cvičné letouny označované I.A.R.81DC.

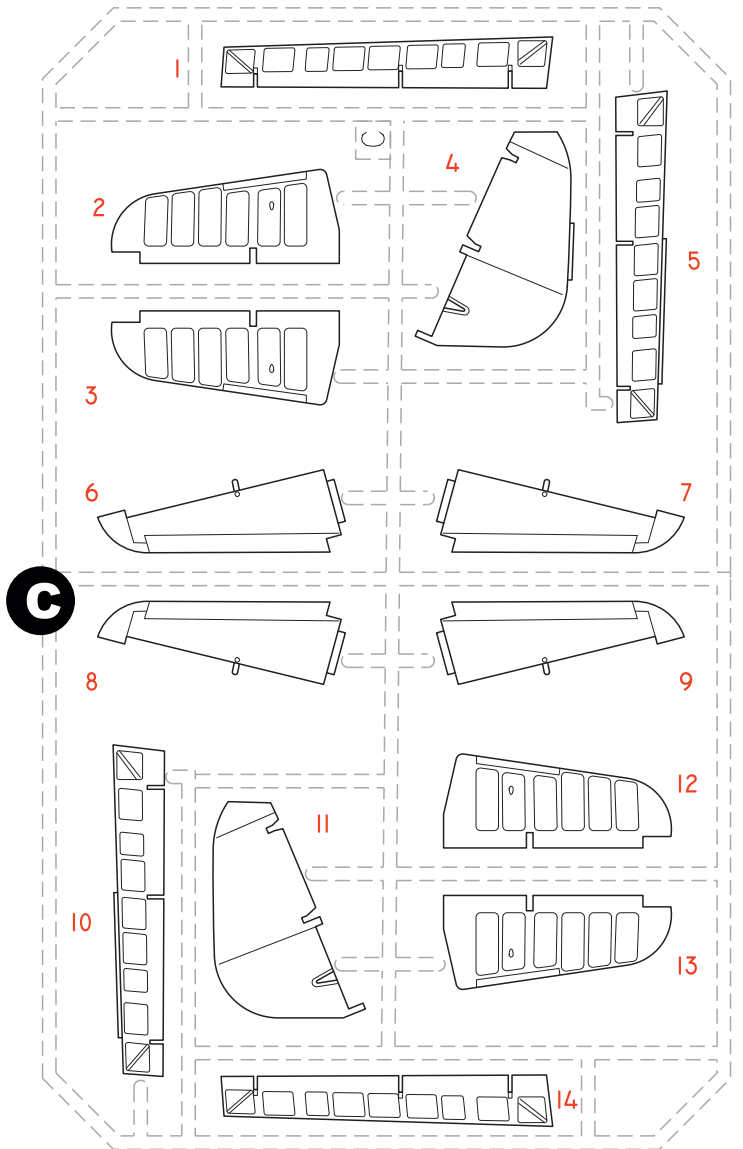
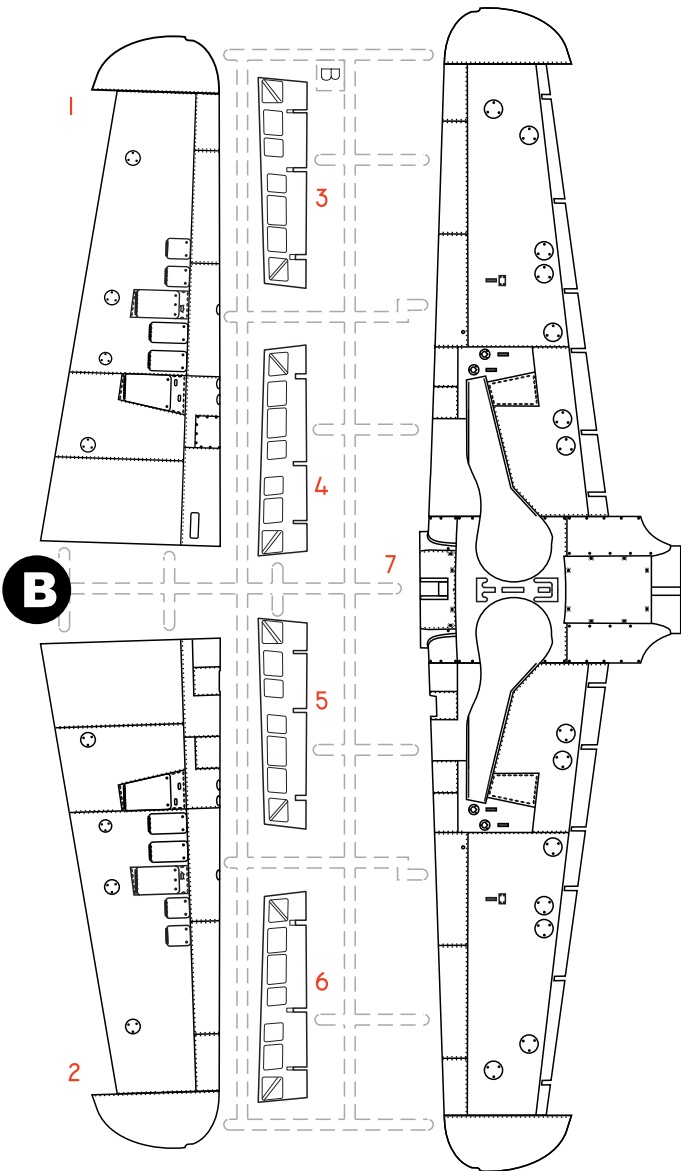
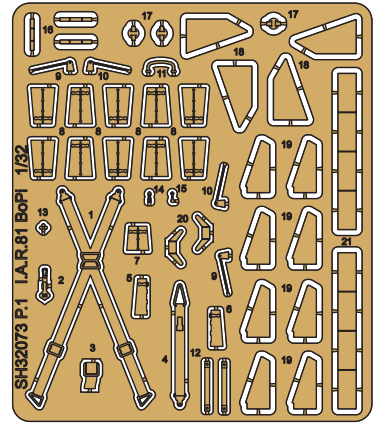
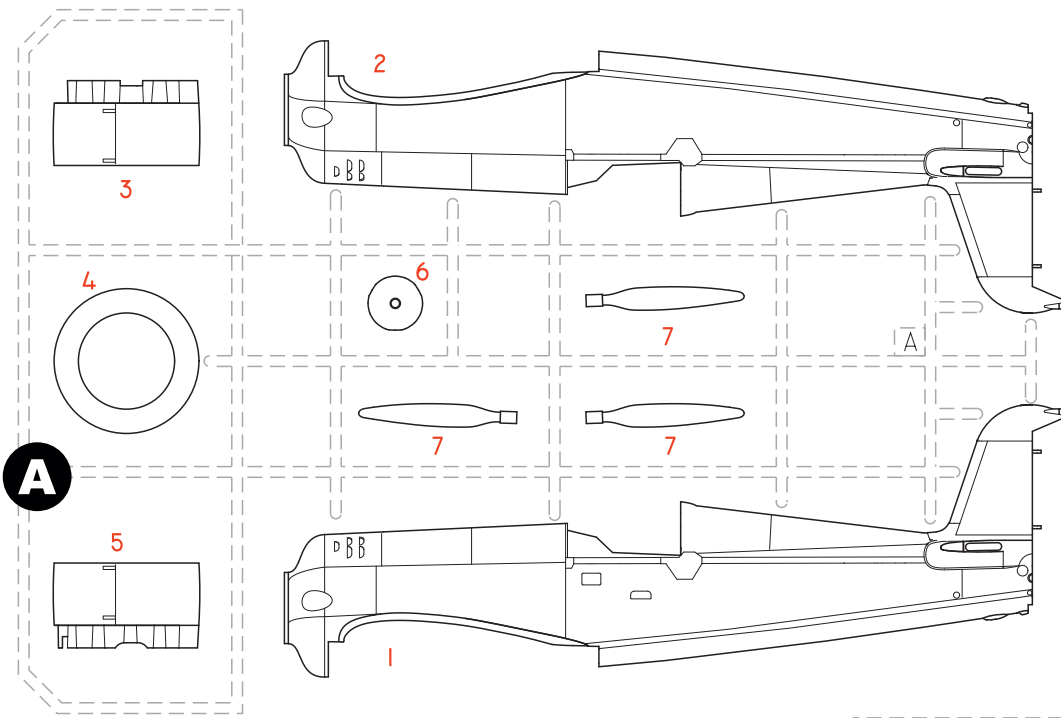
Rozpětí: 10,52 m, délka: 8,97 m, plocha křídla: 16,00 m<sup>2</sup>. Operační dostup 10 000 m, maximální rychlost při 5 000 m: 485 km/h. Zbraně: 6× kulomet FN-Browning ráže 7,92 mm. Pod křídlo mohly být zavěšeny přídavné palivové nádrže nebo bomby, pod trupem na speciální závěsník byla zavěšována bomba 250 kg.

### EN History:

In the late 1930s, the Polish PZL P.11 and P.24 all-metal, high wing fighter planes were produced under licence by I.A.R., Industria Aeronautica Romana. As it was quite clear that such type of design was nearing obsolescence and the future belongs to low wing fighters with retractable undercarriage and enclosed canopy, a design team led by Ion Grosu was formed with the aim to project a modern warplane of such sort. Using the P.24's fuselage structure, a new fighter plane was created and named the I.A.R.80. Originally, it was to be powered by a German Jumo engine, but as this power unit was never delivered, the first prototype airframe was fitted with the I.A.R. 14K-IIc32 fourteencylinder, double-row radial, delivering 870 hp and was taken aloft for the first time on April 9, 1939. The new fighter had performance approaching that of contemporary foreign designs like the Hurricane, P-36, MS 406 and Bf 109D. Various changes to weapons led to the I.A.R.80A, B and C sub-versions, and also the I.A.R.81C which was designed for fighter-bomber role during spring of 1941, although it served in both air interceptor and ground attack roles. Various versions of the I.A.R.80-81 were in the production, differing mainly by the type of armament, starting with the I.A.R.80A and through the I.A.R.80C to the final, fighter-bomber version I.A.R.81C which development began in the spring of 1941. For the ground attack and primarily for the dive bomber role, a special version was also designed called the I.A.R.81 BoPi, which was fitted with an underbelly bomb displacement gear, similar to that seen on the infamous Stuka aircraft. This type of bomb rack enabled the pilot to release the bomb during the dive and avoid the otherwise inevitable destruction of the propeller. The I.A.R.81 BoPi were produced in two blocks, with construction numbers 91-105 and 151-175. The I.A.R.81C was the most numerous sub-version to be produced (from no 300 to 450), deliveries starting early in 1943. Total production for I.A.R.80/81 series totalled around 450 units, but ceased (as well as the production of the Bf 109 type that only had just begun) after the American bombing of Brasov factory, on April 16th, 1944. The Romania Air Force's fighter and ground attack units were equipped with the I.A.R.80/81 type right from the beginning of the country's involvement in the Second World War and until the end of hostilities. Fifty I.A.R.80s were in service during the attack against the Soviet Union on June 22nd, 1941. 6th Group (61st and 62nd squadrons) and 8th Group (41st and 60th Squadrons) were engaged Stalingrad front during the autumn of 1942. August 1st, 1943 saw I.A.R.80 & 81s defending the Ploiesti oil plants from attack by USAAF B-24 Liberators, during "Operation Tidal Wave", when the Rumanian fighters downed some of the heavy bombers. On June 10th, 1944, I.A.R.81Cs from 6th Fighter Group confronted P-38 Lightnings belonging to the USAAF 82nd and 1st FG (American pilots mistakenly reported having fought Fw 190s). Rumania joined the Allied powers in August 1944, and changed back the national insignia worn by its aircraft from crosses to traditional blue, yellow and red roundels. Being under Soviet command, the I.A.R.80/81 units saw combat over Hungary and later also during the liberation of Czechoslovakia over the areas of Moravia and Slovakia, where they enjoyed and suffered their final victories and losses. Remaining airframes of the 80/81 type kept on serving in Romania until the 1950s, some of them also being rebuilt in 1950 to advanced trainer version known as the I.A.R.81DC.

Wingspan: 10.52 m, length: 8.97 m, wing area: 16.00 m<sup>2</sup>. Operational ceiling 10,000 m, maximum speed at 5,000 m: 485 Km/h. Weapons: 6× 7.92 mm FN-Browning machine guns. Two droppable fuel tanks could be carried on racks under the wings in place of bombs, plus a 250 kg bomb on a central fuselage rack.

PHOTO-ETCHED Parts (L)



**SYMBOLS**



MOŽNOST VOLBY  
OPTIONAL  
NACH BELIEBEN  
OPTION



POUŽIT KYANOAKRYLÁTOVÉ LEPIDLO  
INSTANT CYANOACRYLATE GLUE  
ZYANOAKRYLATKLEBER  
COLLE CYANOACRYLATE



OHNOUT  
BEND  
BIEGEN  
COURBER



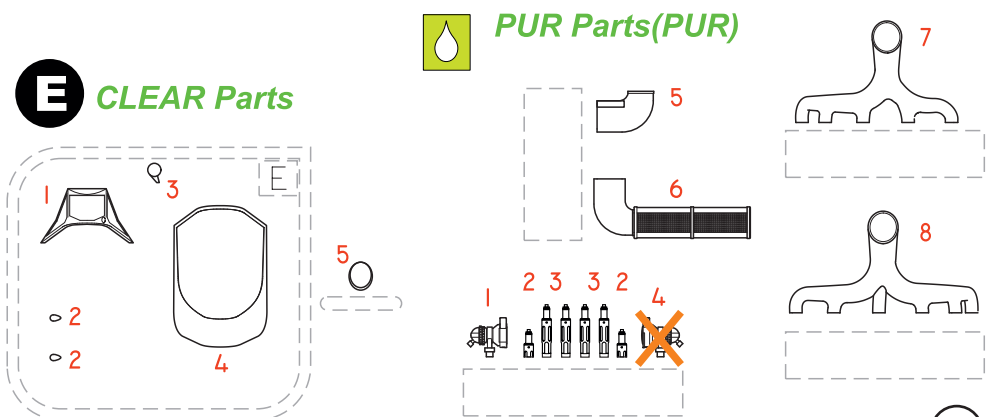
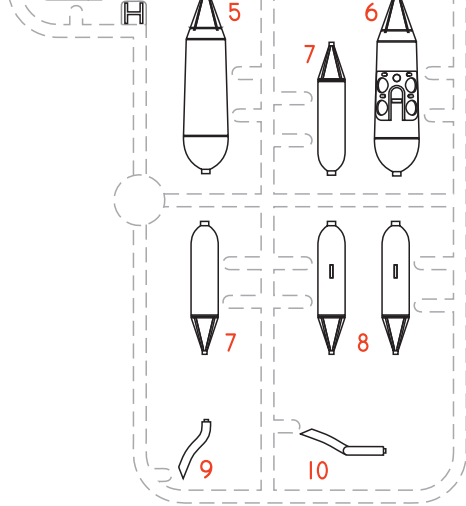
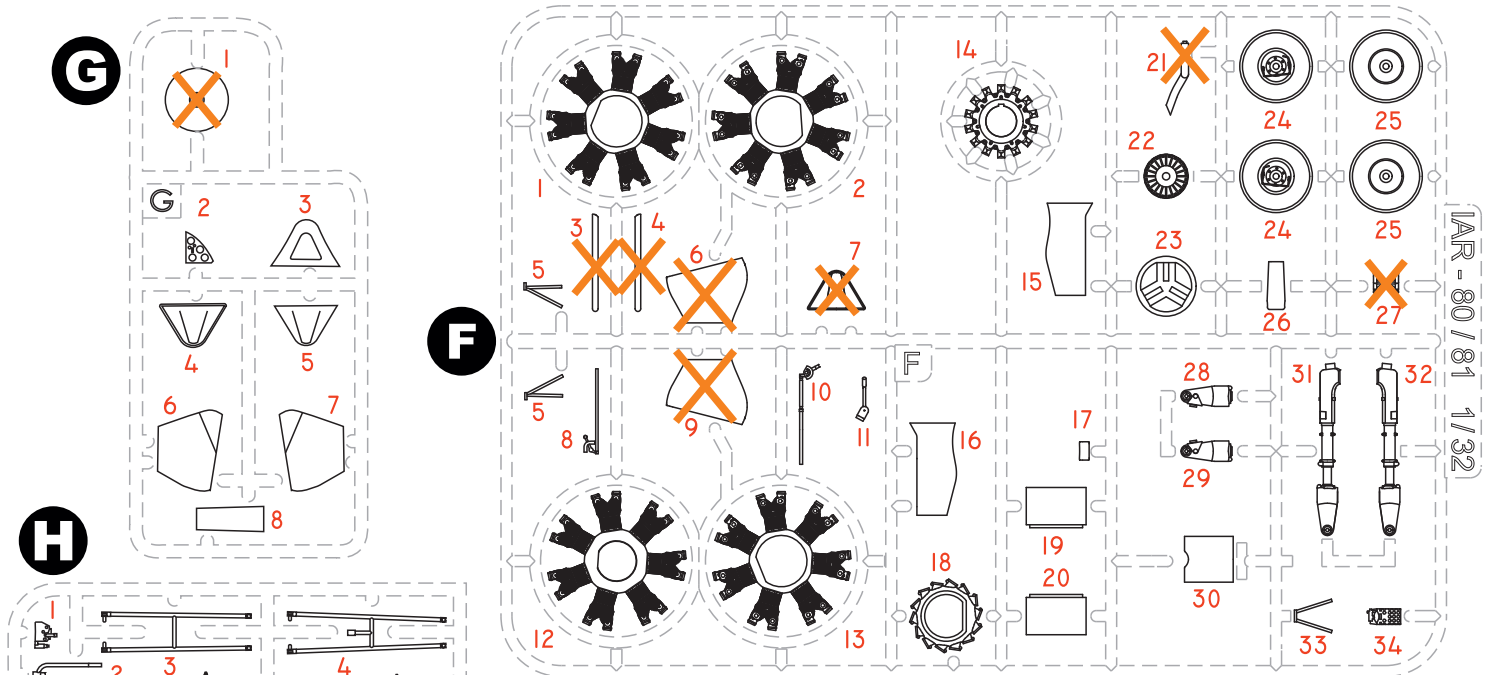
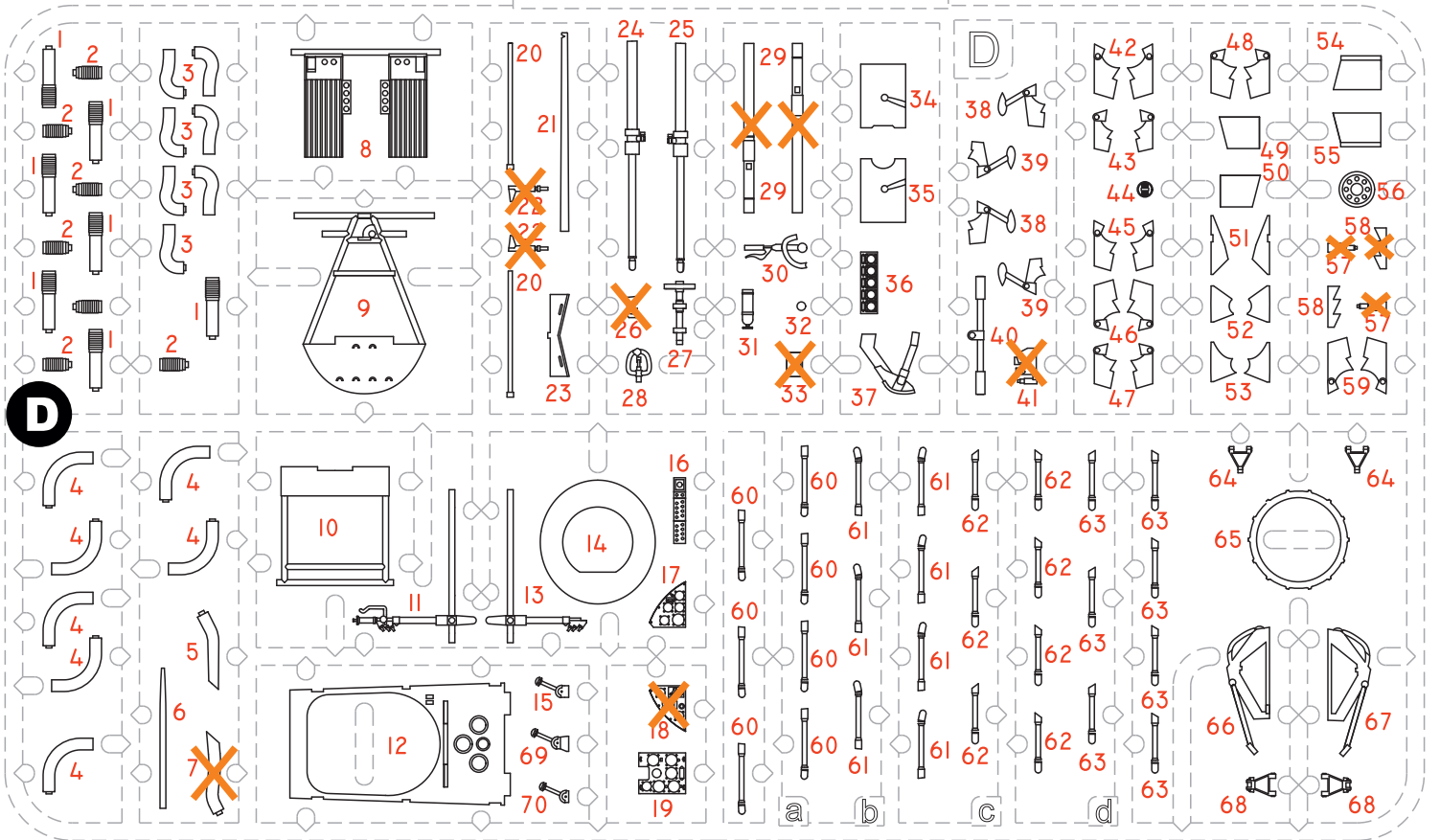
ZHOTOVIT NOVÉ  
SCRATCH BUILD  
FERTIGSTELLEN  
ACHEVER

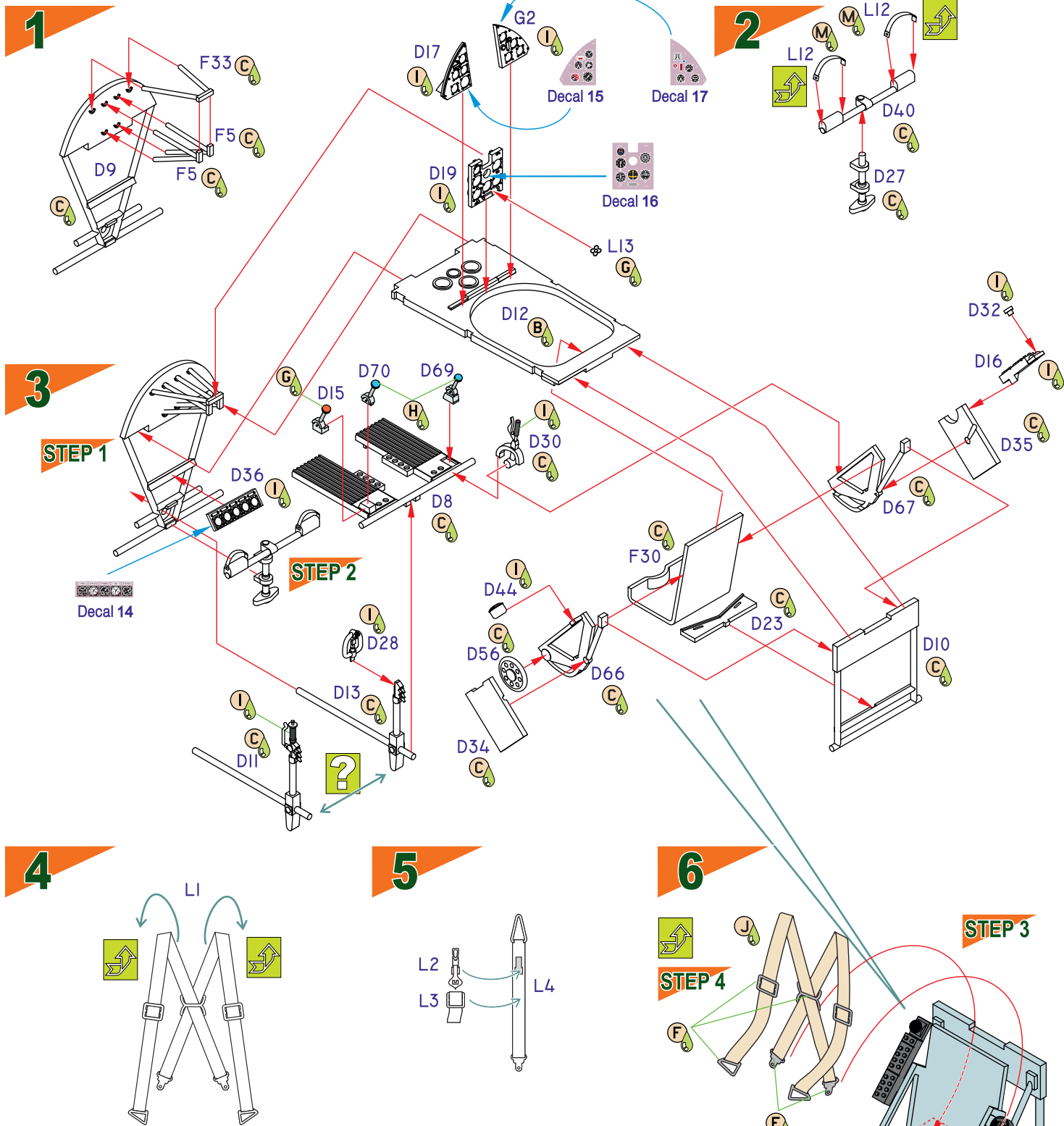


ŘEZAT/VRTAT  
CUT OFF/DRILL  
ENTFERNEN  
DETACHER

GSI **A**  
colours code

NATRÍT  
COLOUR  
FARBEN  
FEINDRE

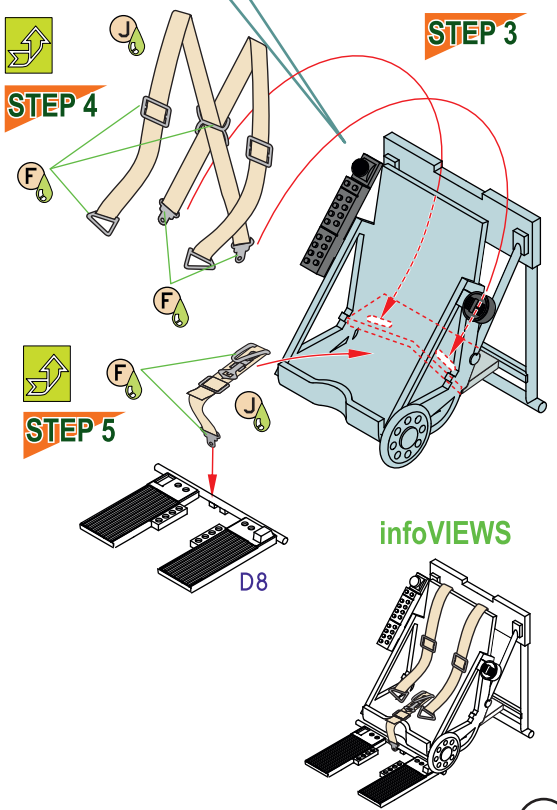




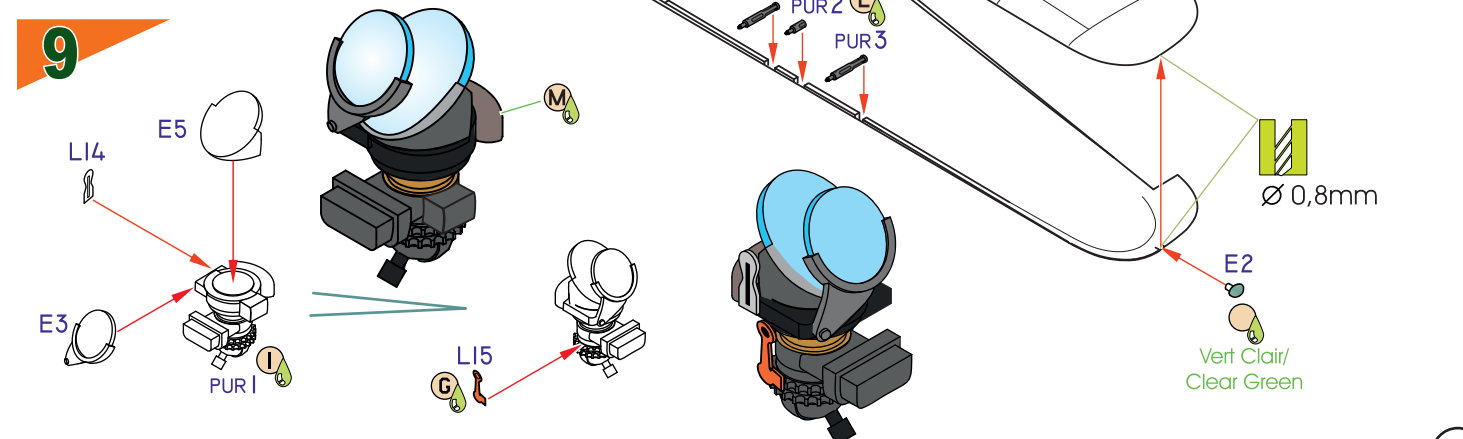
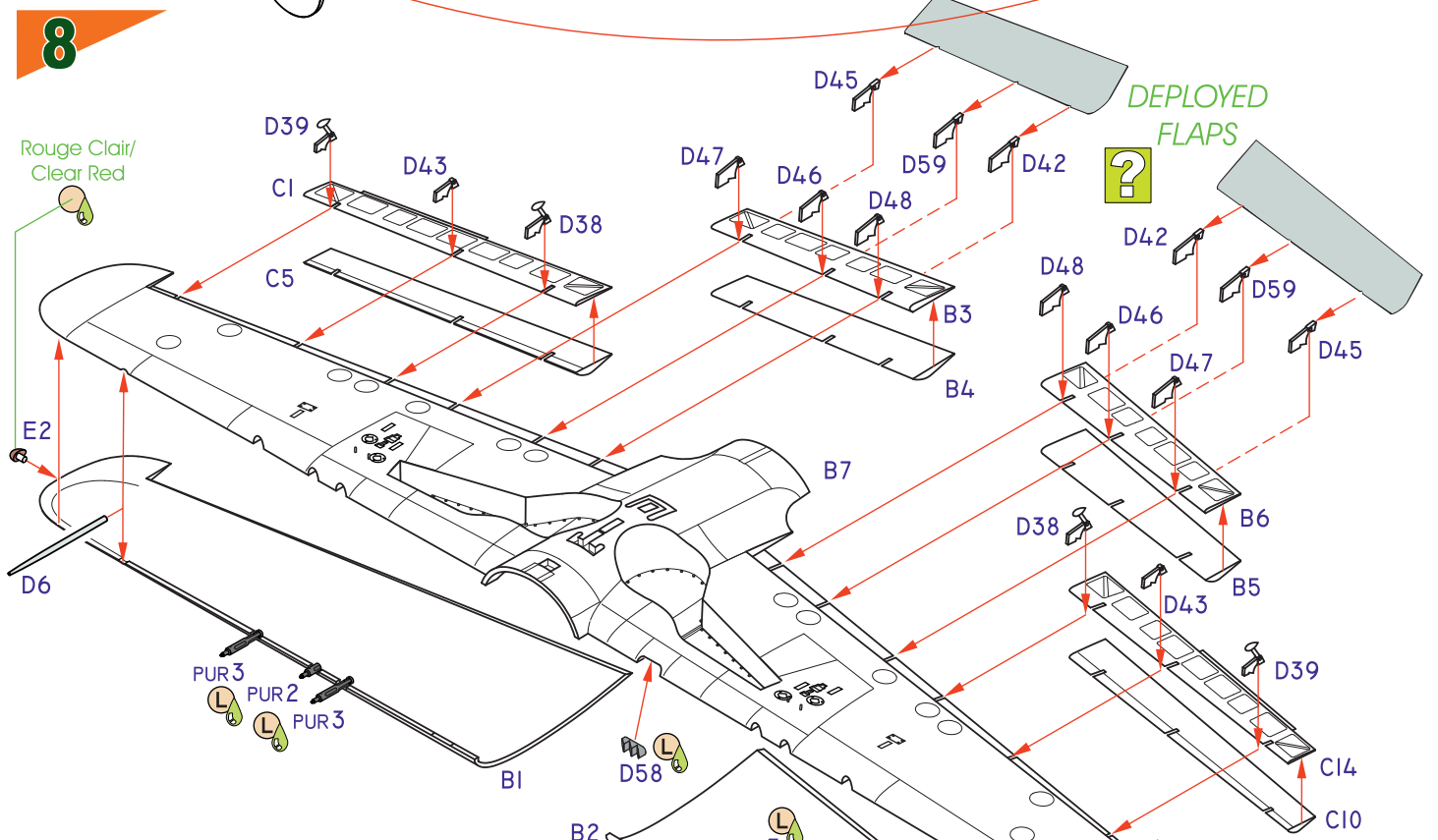
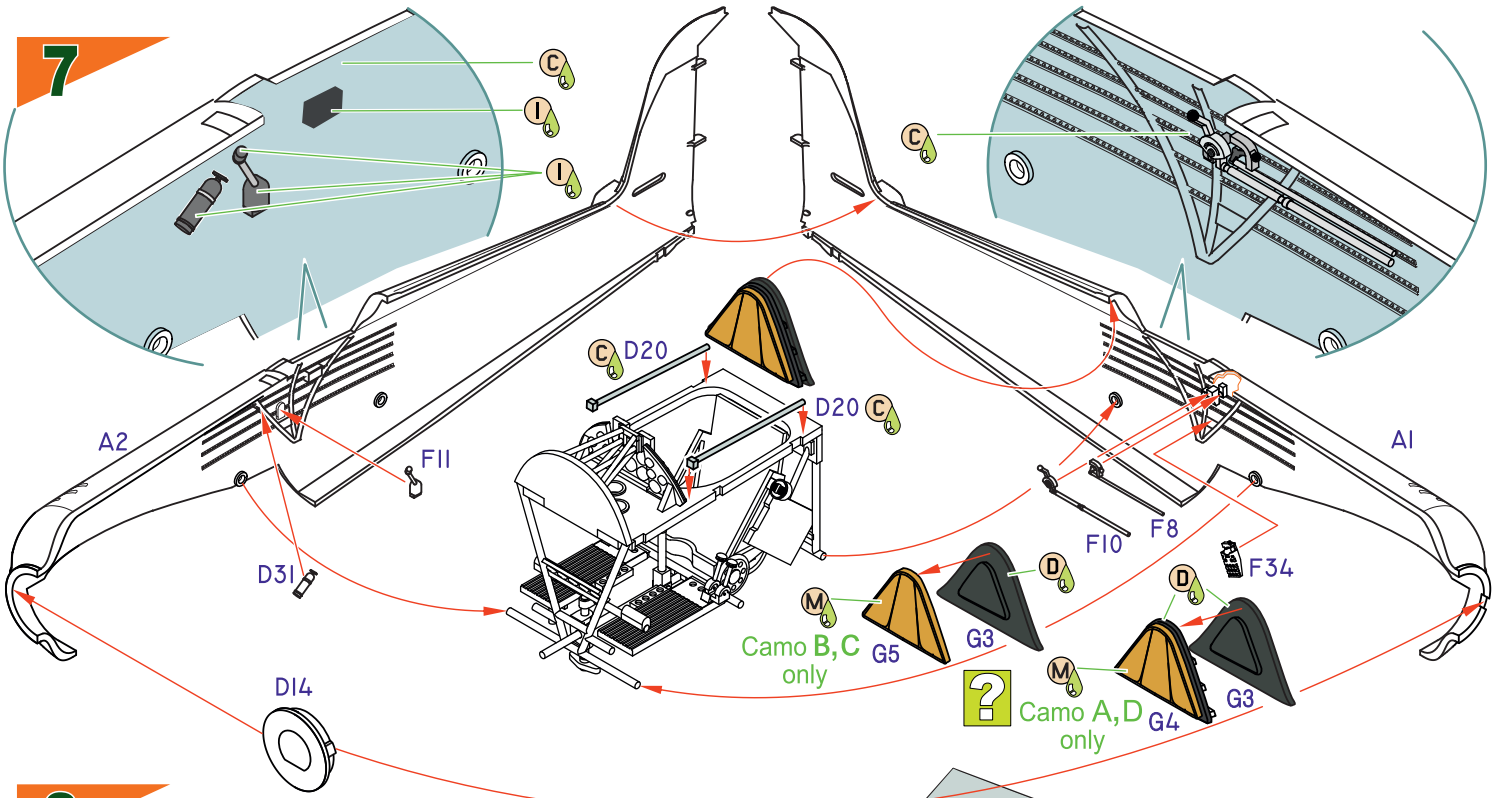
**Couleurs GUNZE / GUNZE Colour No.**

<b>A</b>	Tmavá zelená / Dark Green	H423/C423
<b>B</b>	Tmavá zemitá / Dark Earth	H72/C22
<b>C</b>	Nebeská modrá / Sky Blue	H314/C314
<b>D</b>	Černo zelená / Black Green	H65/C18
<b>E</b>	Matná bílá / Flat White	H11/C62
<b>F</b>	Přírodní kov / Natural Metal	H8/C8
<b>G</b>	Červená / Red	H3/C3
<b>H</b>	Modrá / Blue	H5/C5

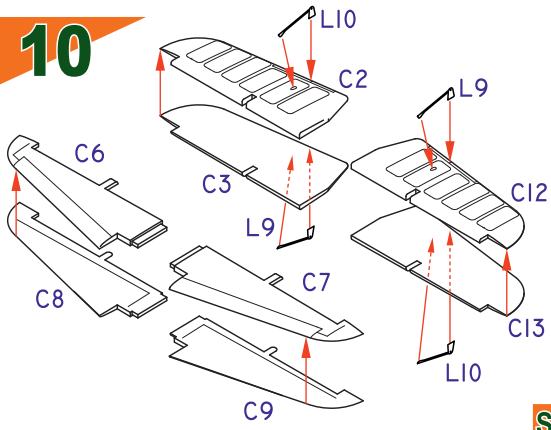
<b>I</b>	Černá / Black	H12/C33
<b>J</b>	Plátno / Sail	H85/C45
<b>K</b>	Černá pneu / Tire Black	H77/C137
<b>L</b>	Ocel / Steel	H18/C28
<b>M</b>	Kůže / Leather	H17/C29
<b>N</b>	Opálený kov / Burnt Iron	H76/C61
<b>O</b>	Chrom / Chrome Silver	MC211
<b>P</b>	Modro šedá / Blue Grey	H337/ C337
<b>Q</b>	Žlutá / Yellow	H329/329



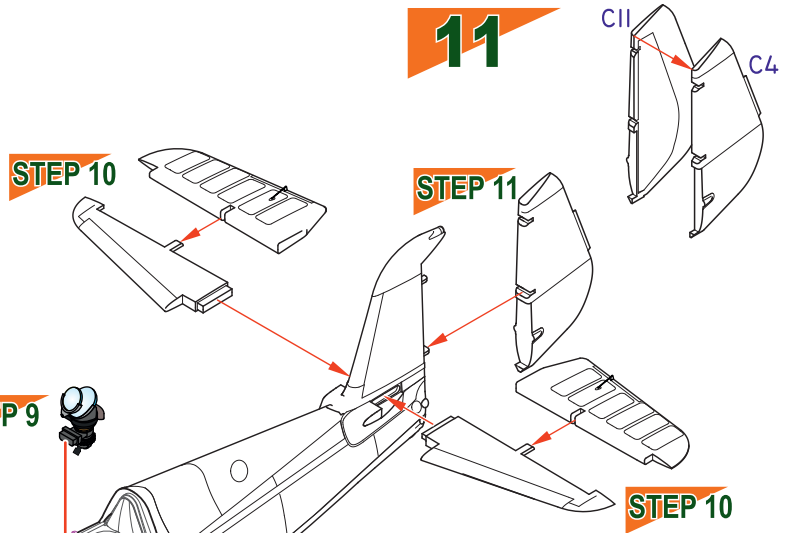
infoVIEWS



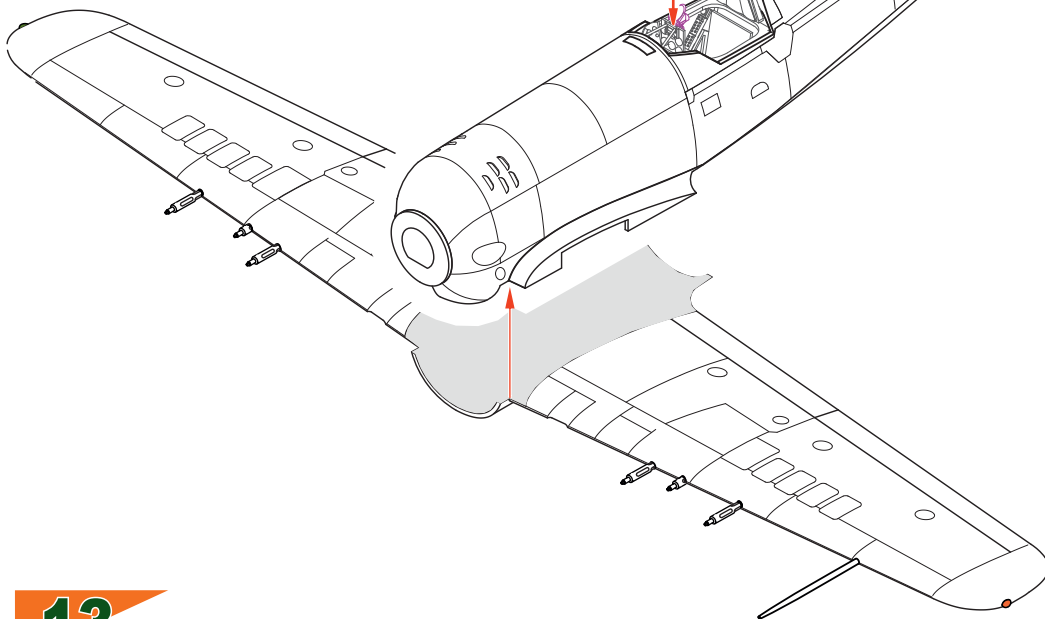
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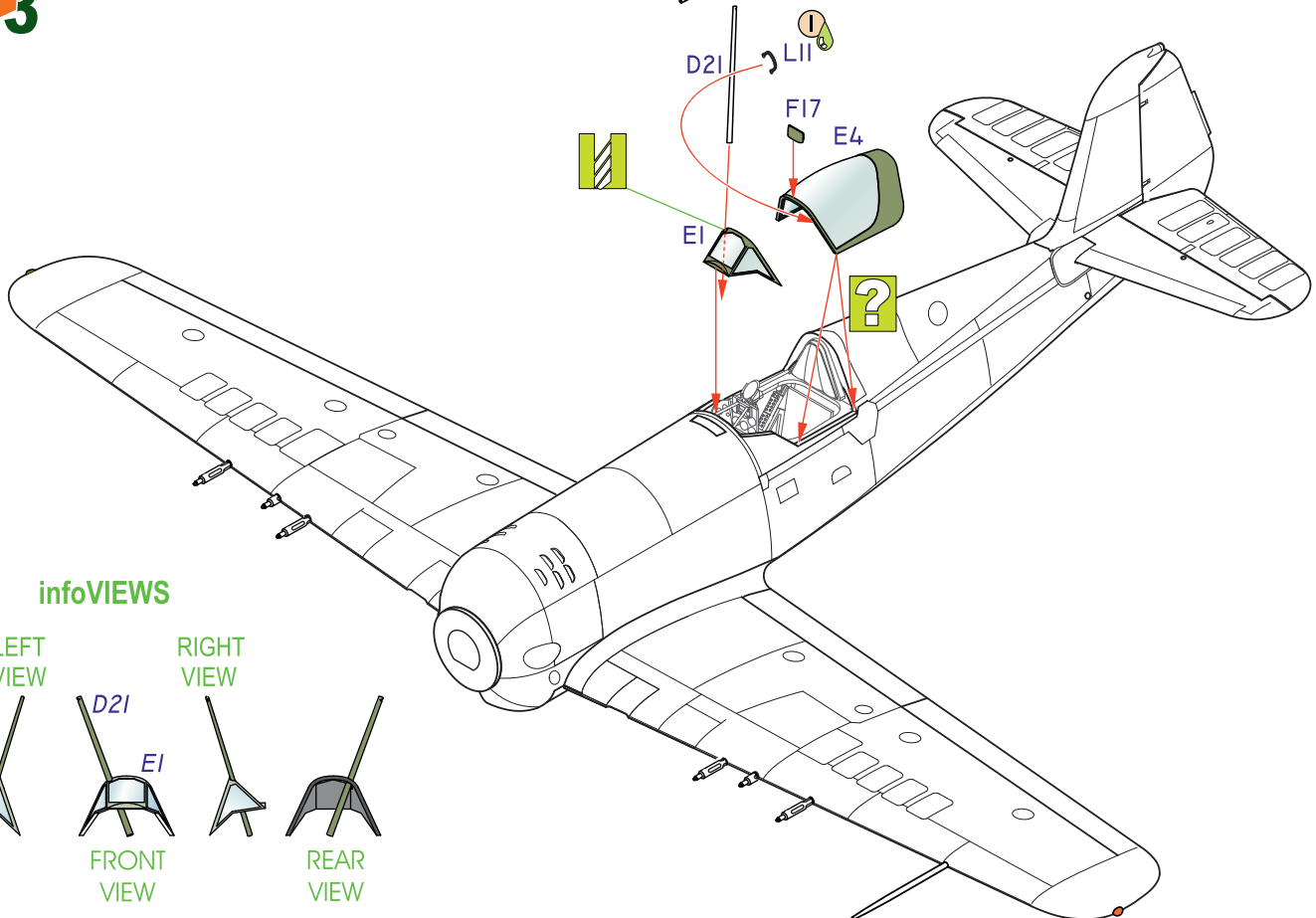
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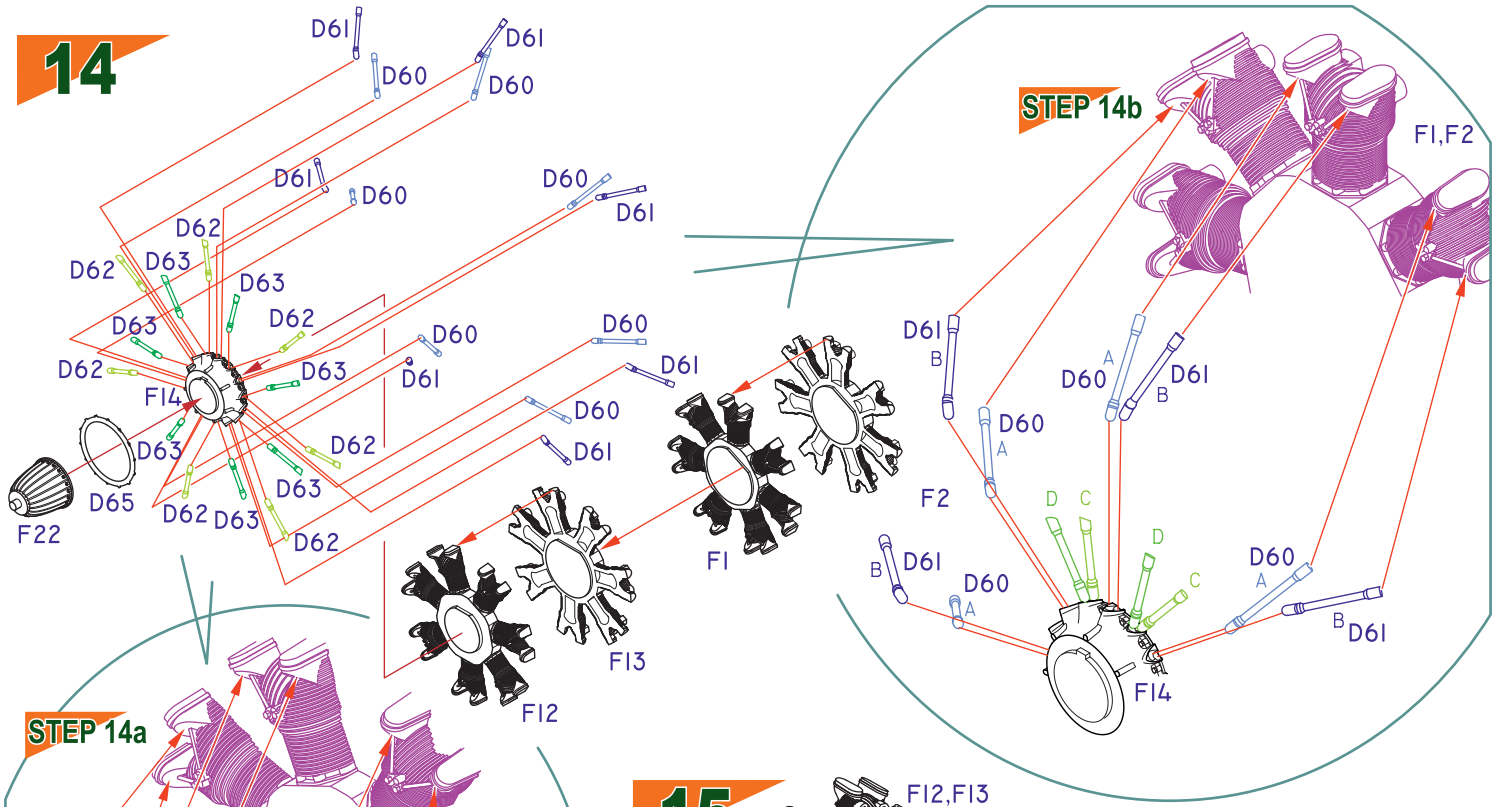
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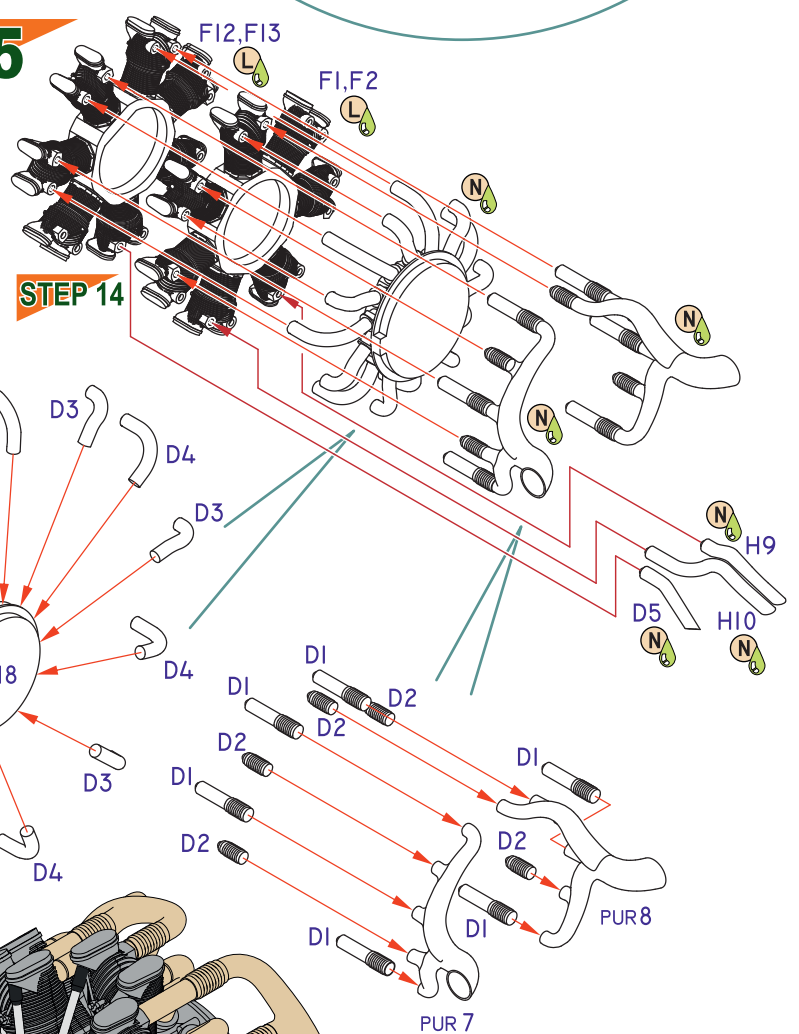
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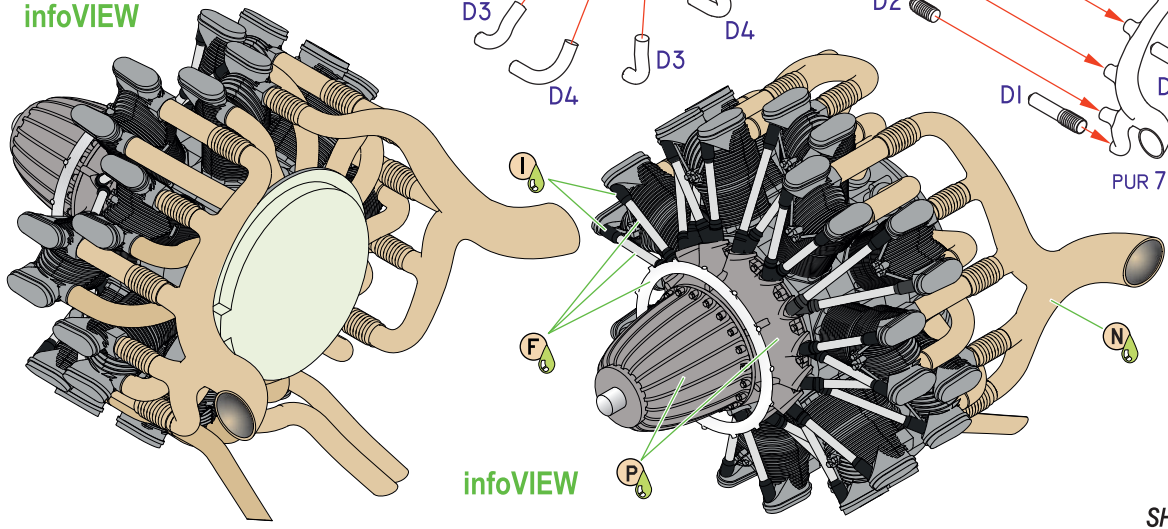
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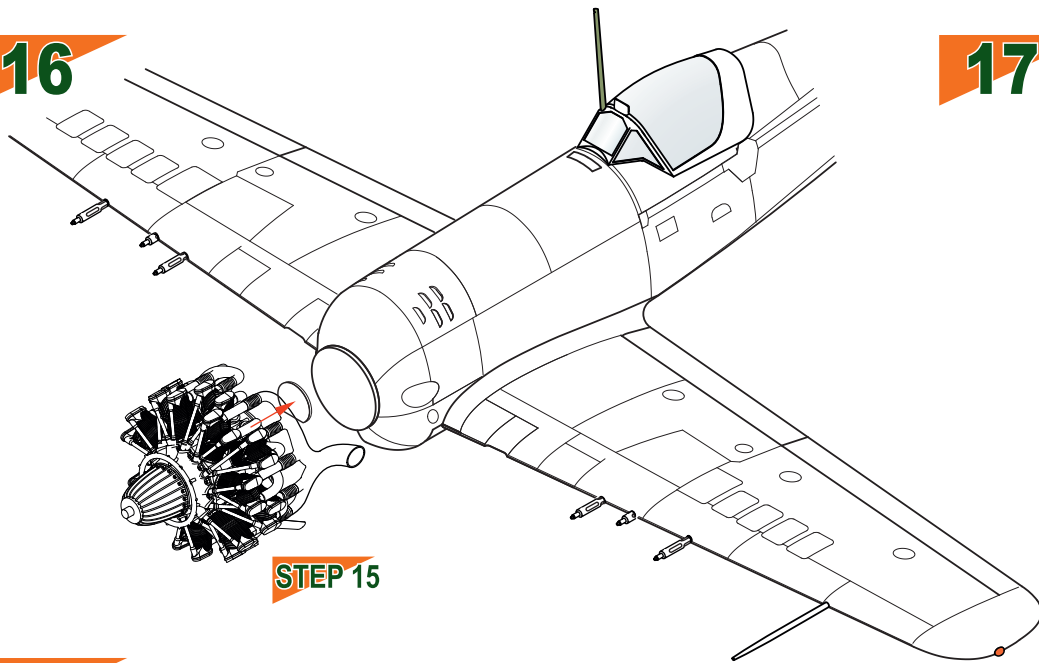
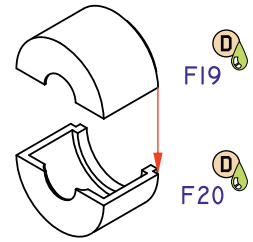
# 15



infoVIEW

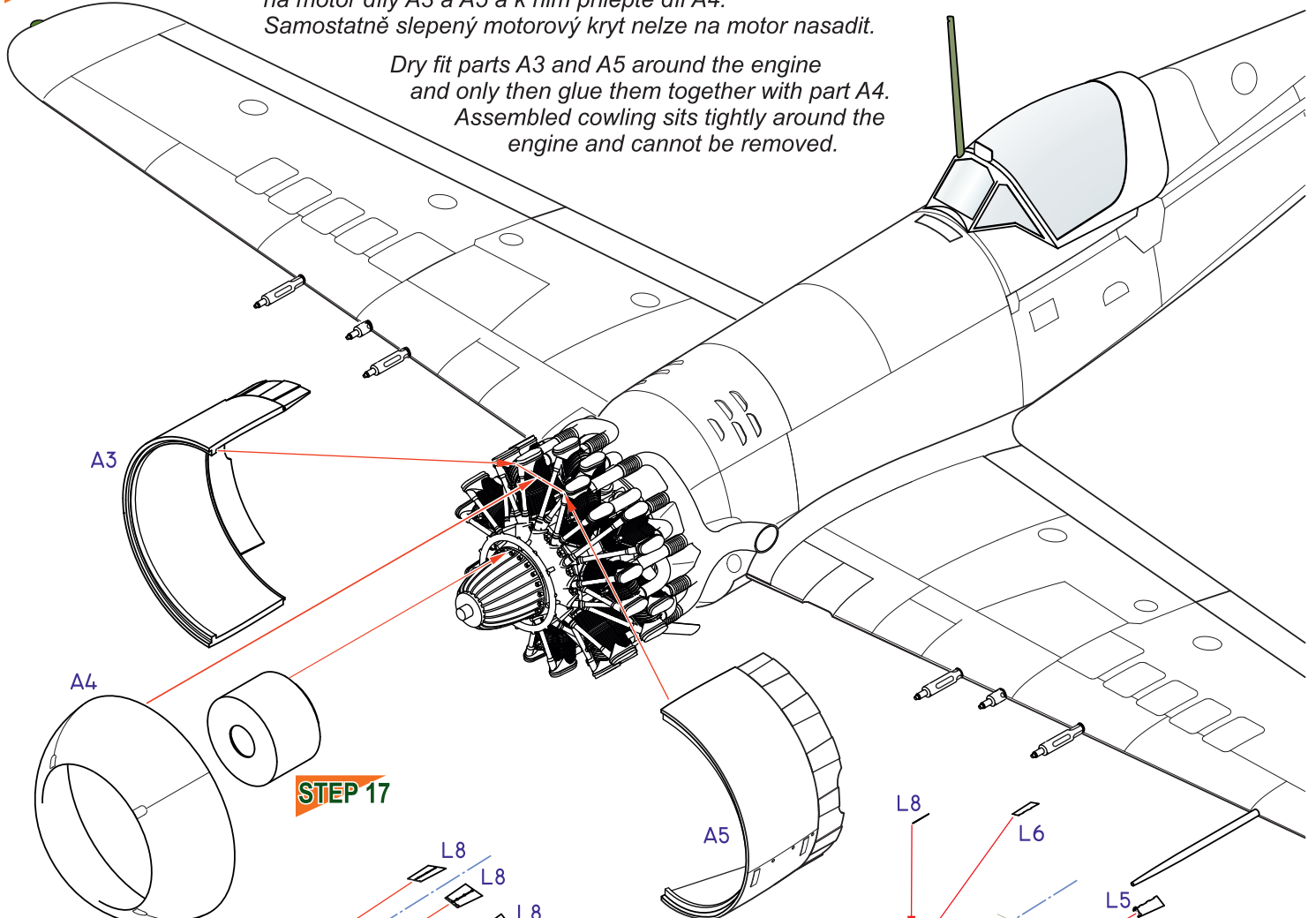
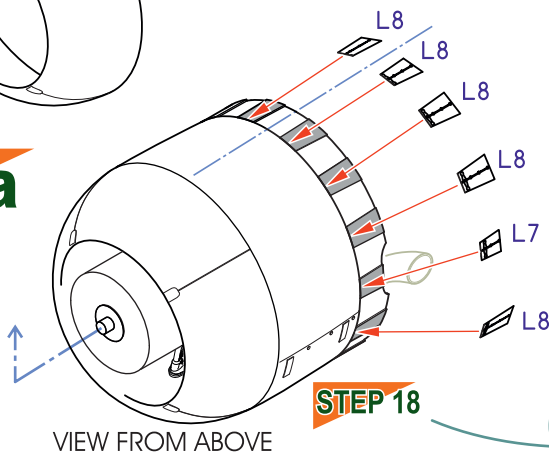


infoVIEW

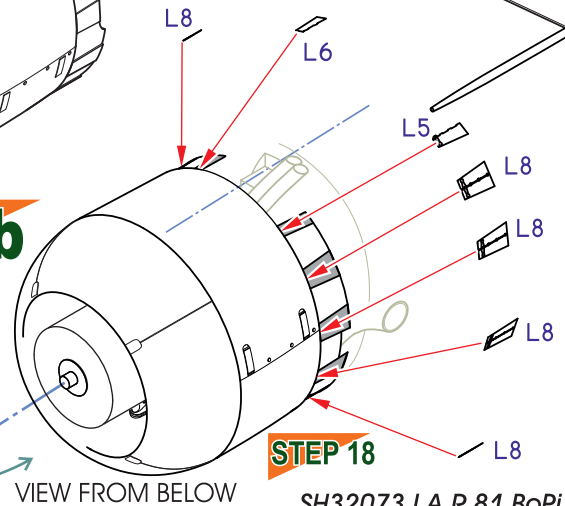
**16****STEP 15****17****18**

Při lepení motorového krytu nejprve nasadíte na motor díly A3 a A5 a k nim přilepte díl A4. Samostatně slepený motorový kryt nelze na motor nasadit.

Dry fit parts A3 and A5 around the engine and only then glue them together with part A4. Assembled cowling sits tightly around the engine and cannot be removed.

**STEP 17****19a****STEP 18**

VIEW FROM ABOVE

**19b****STEP 18**

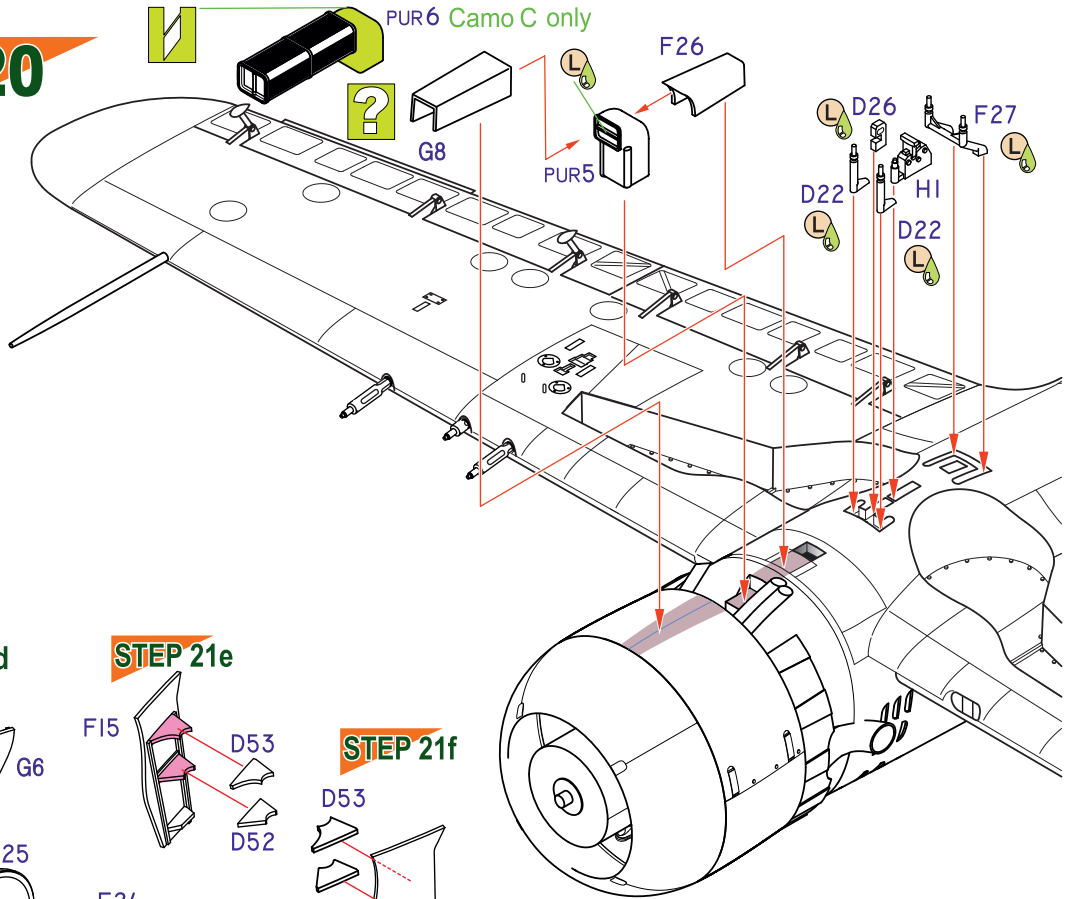
VIEW FROM BELOW



20

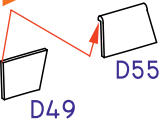


PUR6 Camo C only

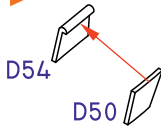


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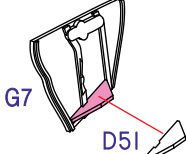
STEP 21a



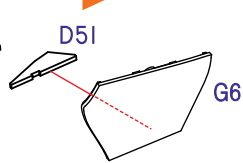
STEP 21b



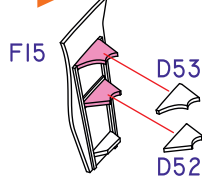
STEP 21c



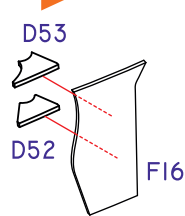
STEP 21d



STEP 21e

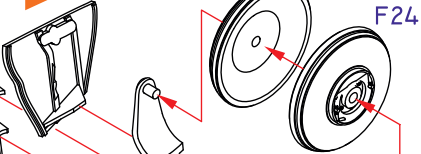


STEP 21f

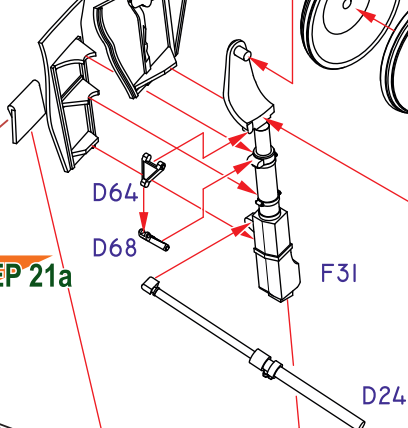


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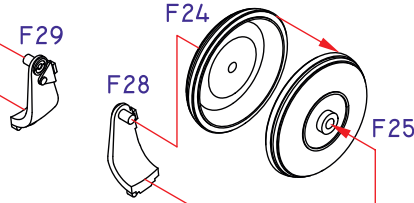
STEP 21c



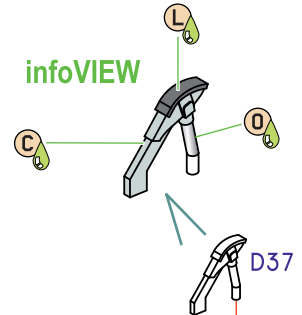
STEP 21e



STEP 21a



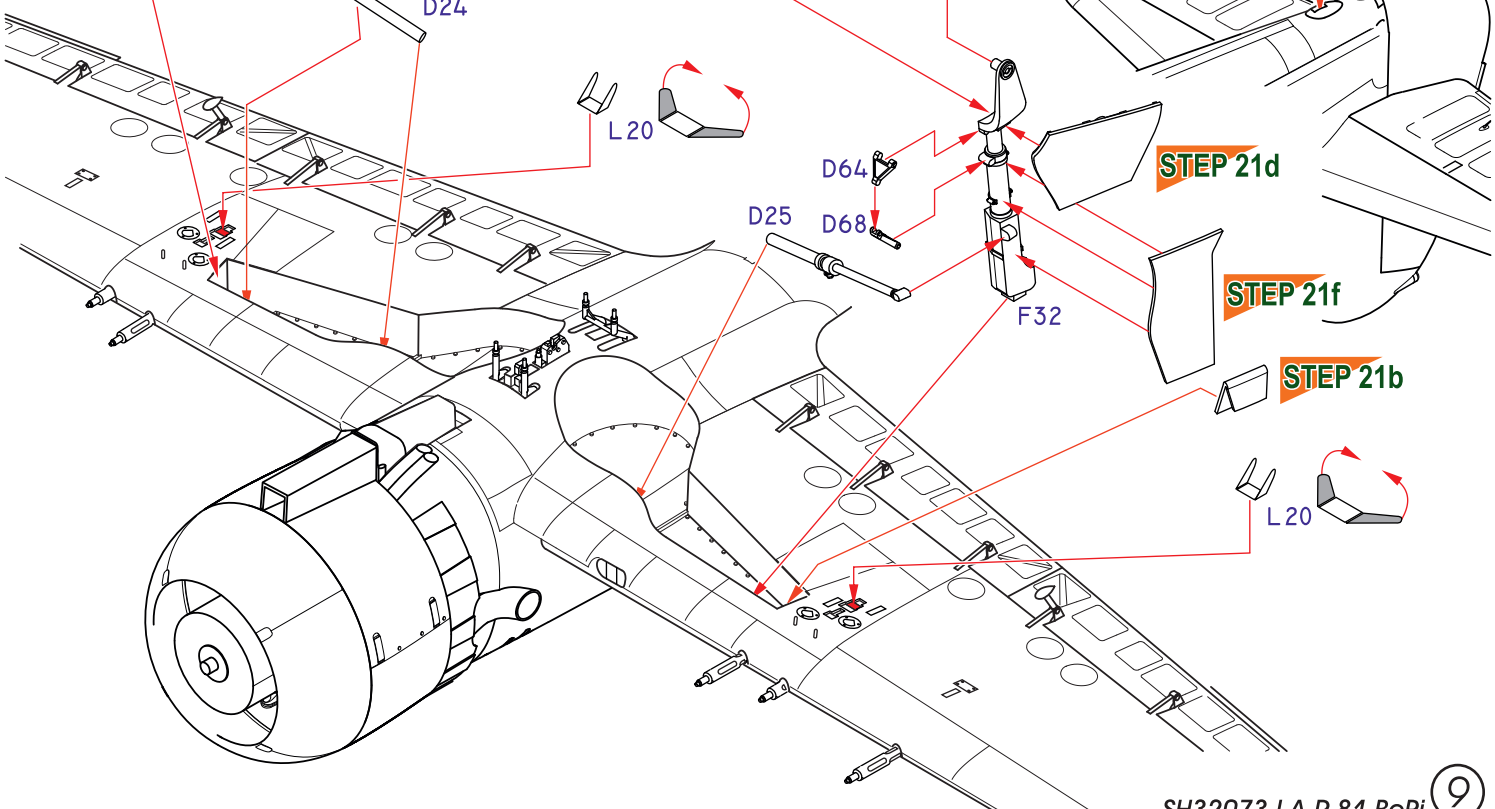
infoVIEW



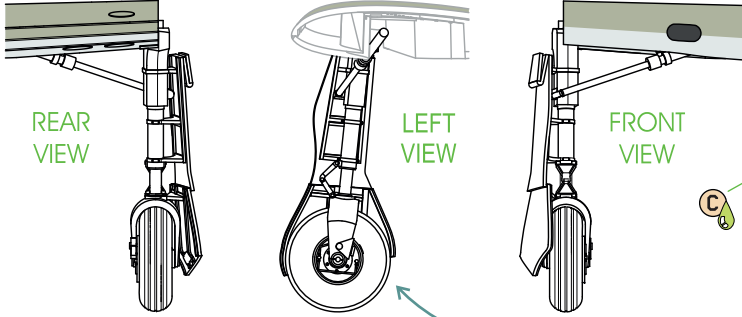
STEP 21d

STEP 21f

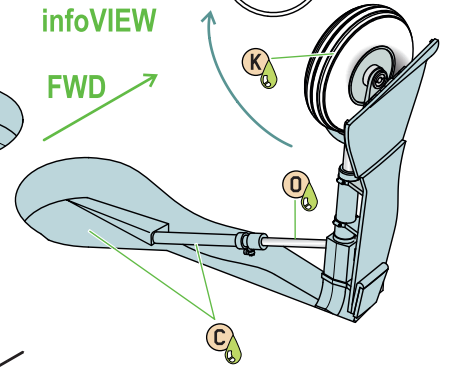
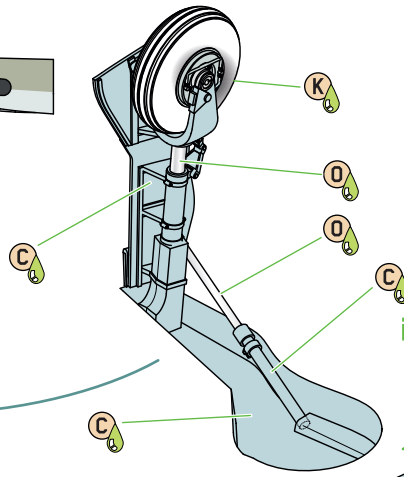
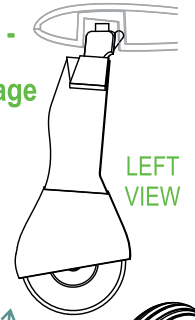
STEP 21b



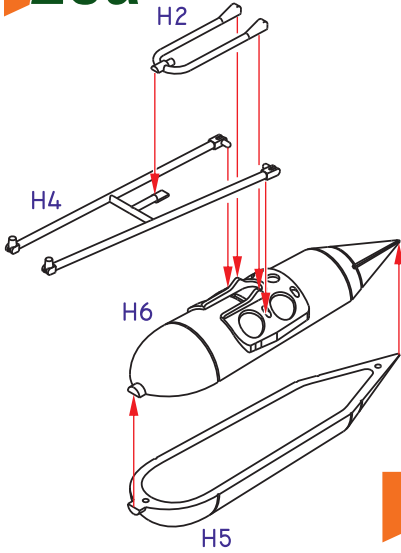
infoVIEWS - starboard undercarriage leg



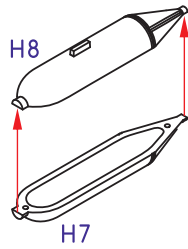
infoVIEW - port undercarriage leg



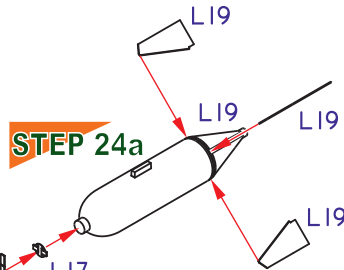
23a



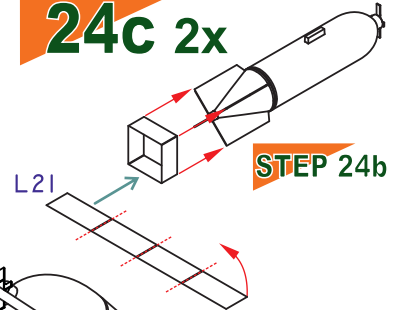
24a 2x



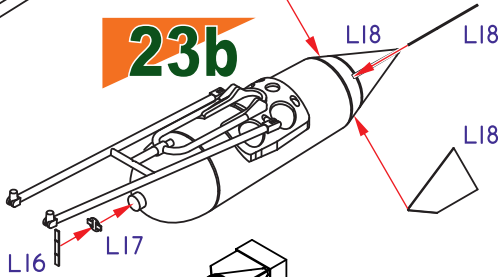
24b 2x



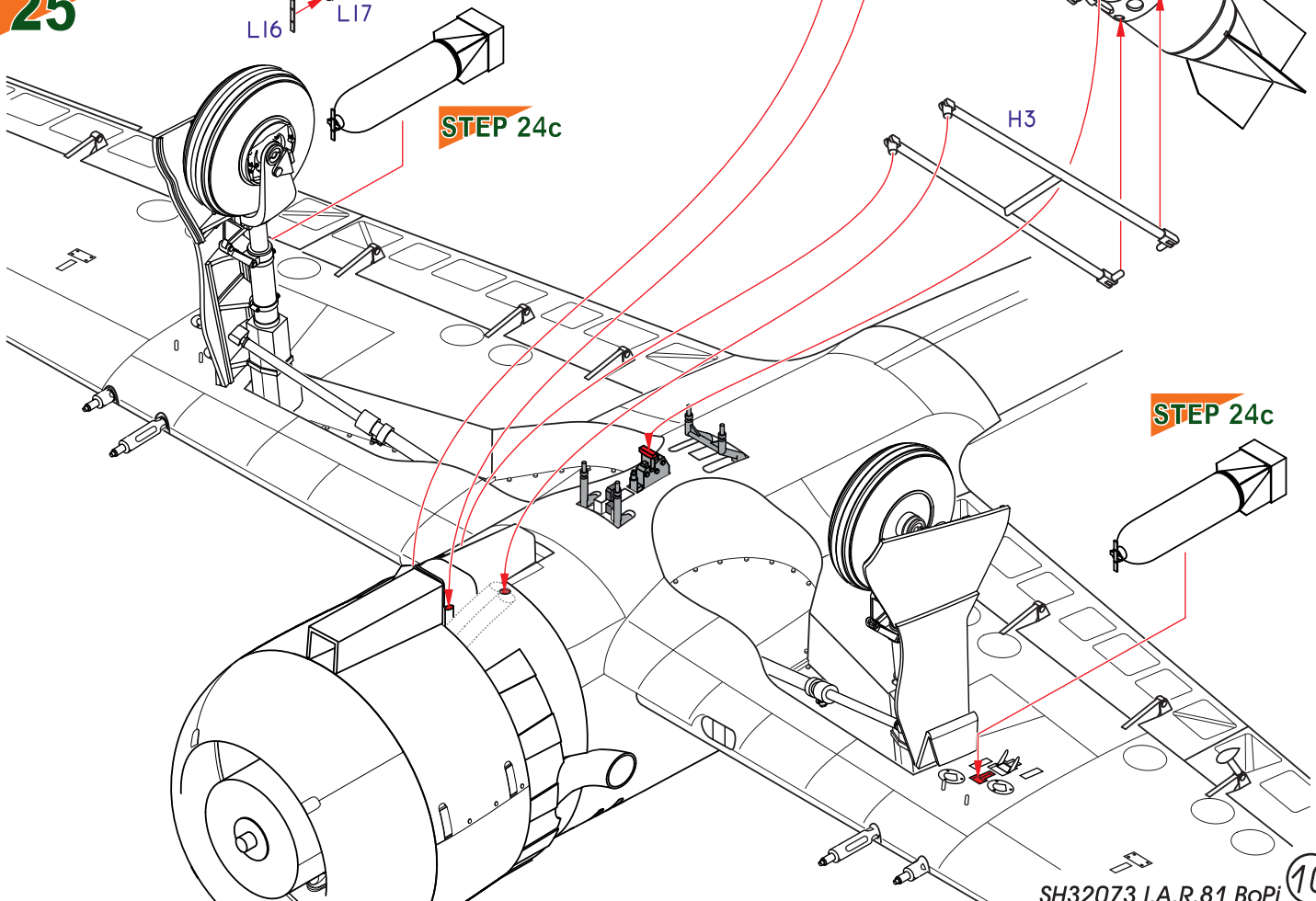
24c 2x



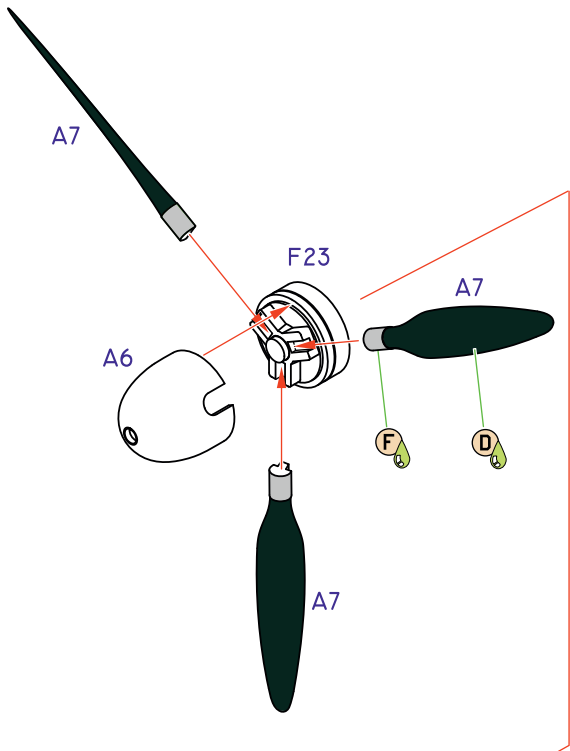
23b



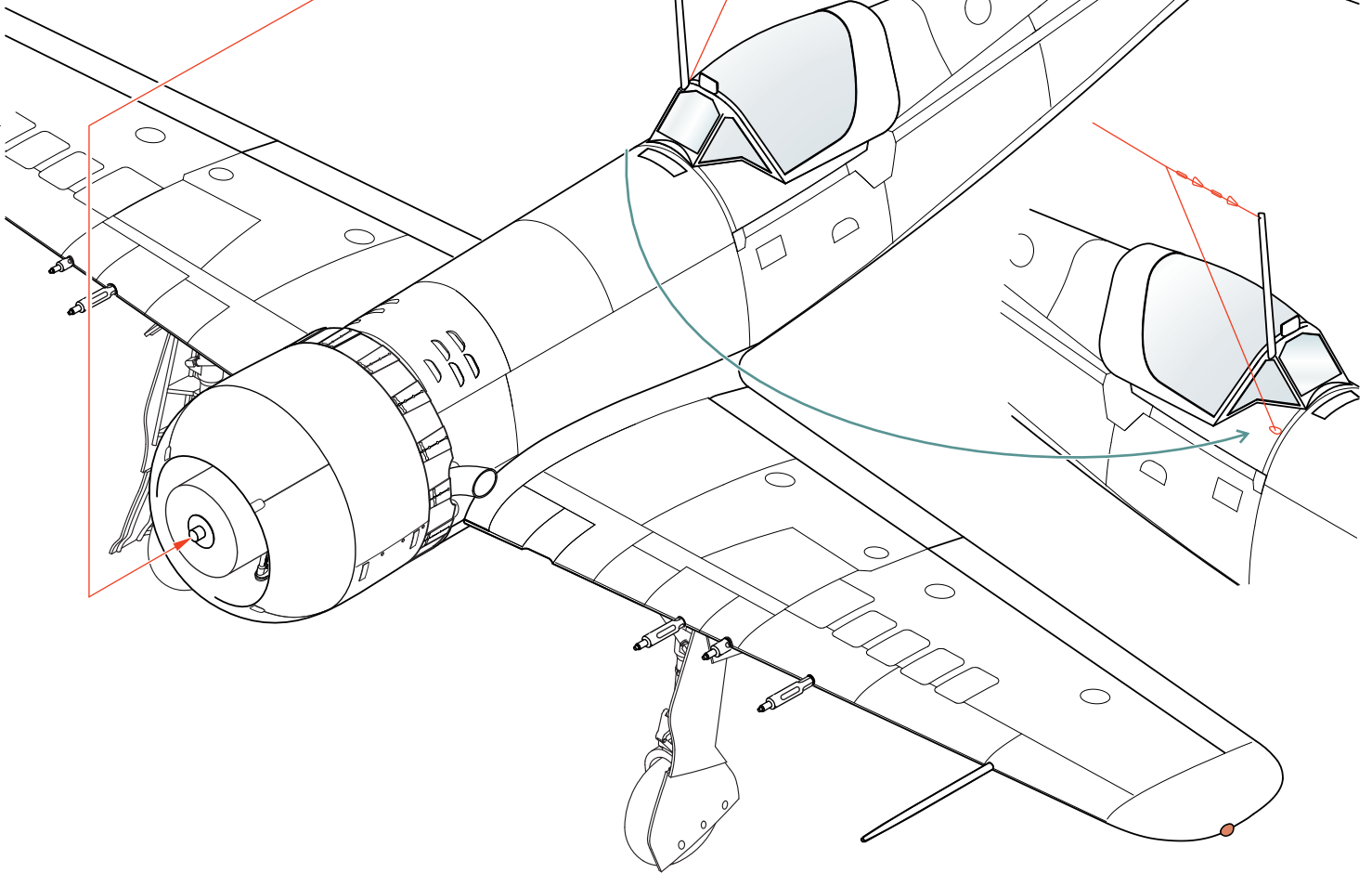
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# 26



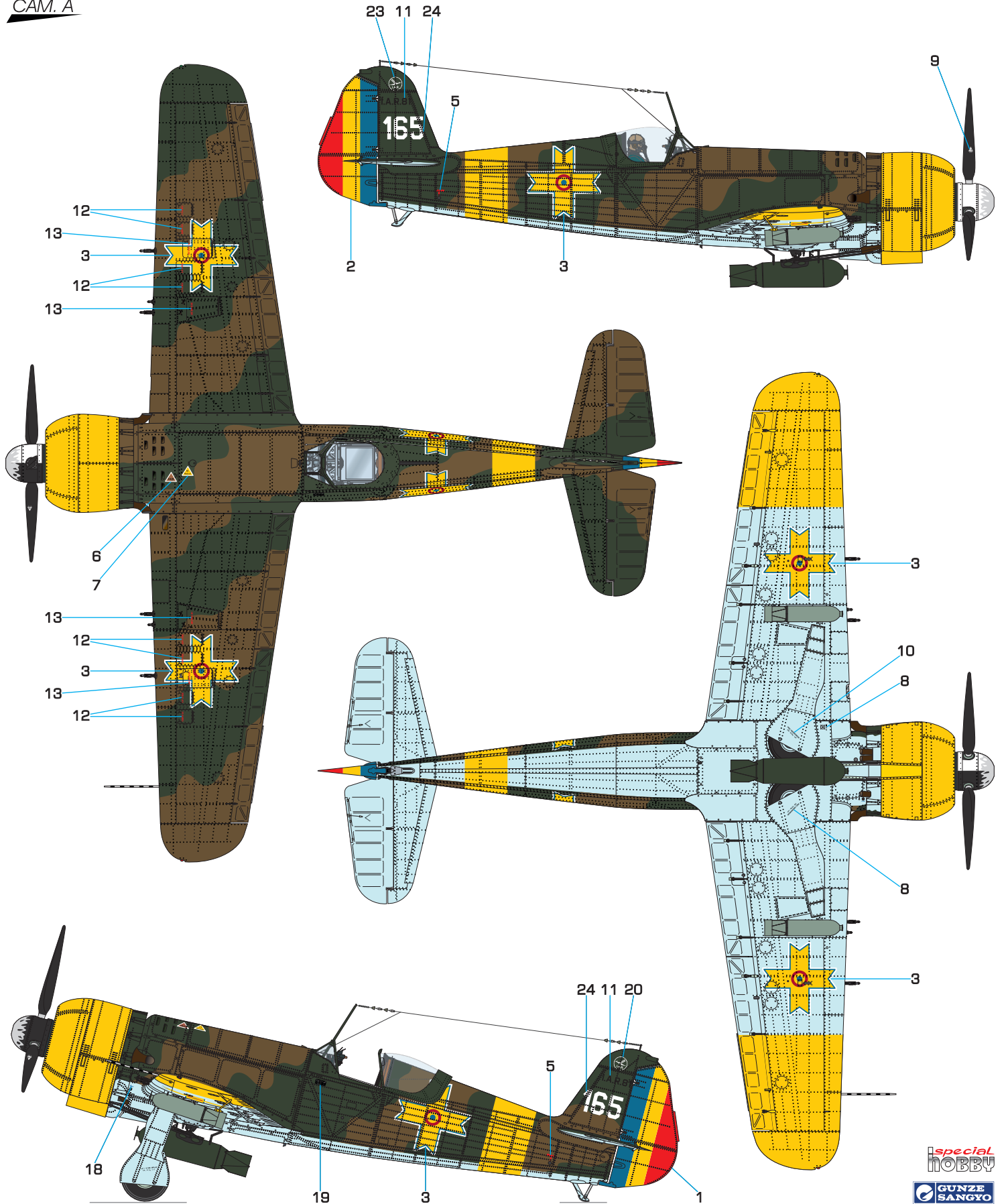
# 27



I.A.R.81 BoPi, No 165, Escadrila 59 Vanatoare BoPi, Grupul 6 Vanatoare, Flotila 2 Vanatoare, základna Targșor, podzim 1942. Vrtulový kužel stroje No. 165 byl v přední části olétán na kov.

I.A.R.81 BoPi, No 165, operated by Escadrila 59 Vanatoare BoPi, Grupul 6 Vanatoare, Flotila 2 Vanatoare, based at Targșor, Autumn 1942. Note the chipped paint on the spinner revealing the metal underneath.

CAM. A



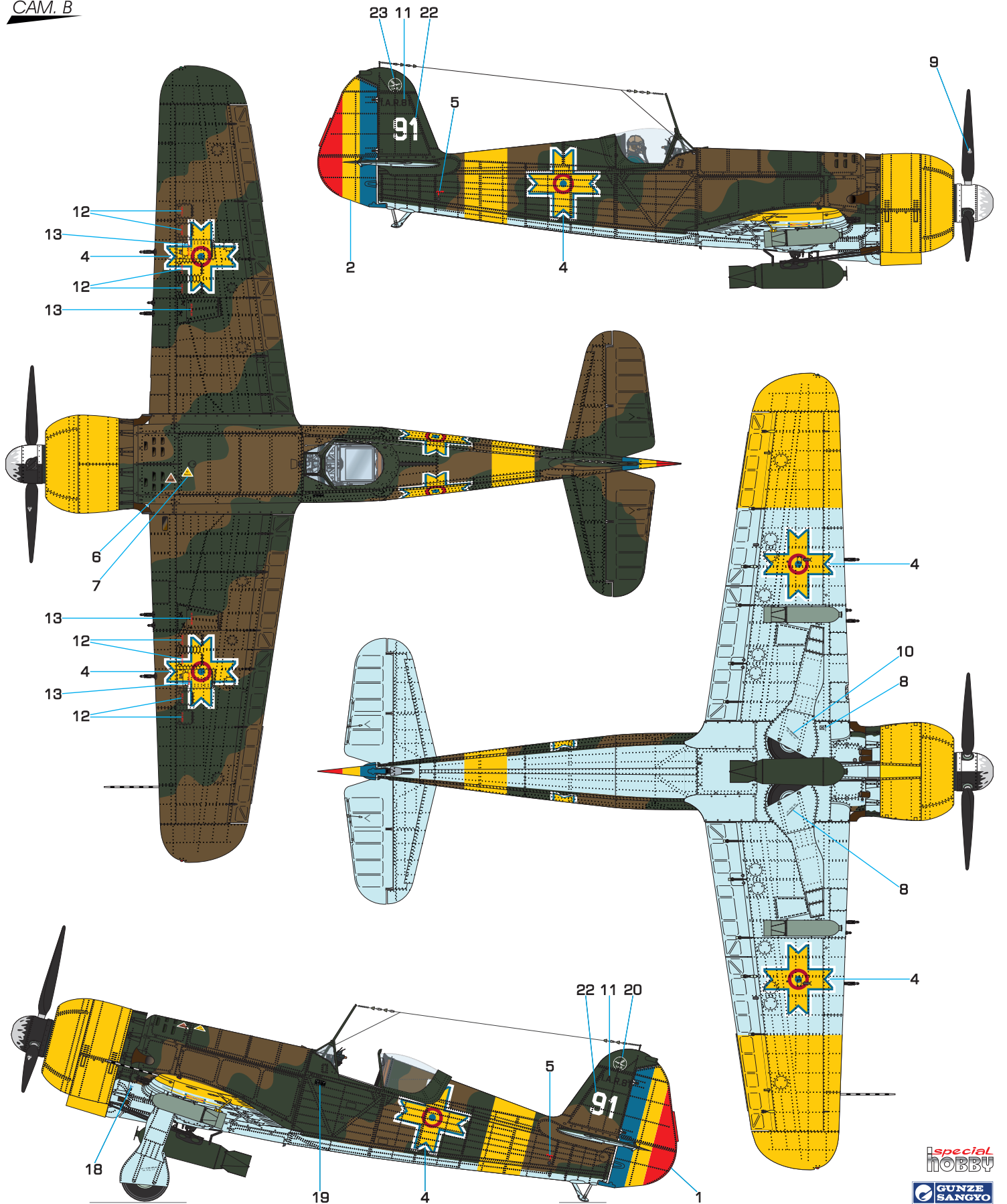
- |   |  |  |   |  |   |   |
|---|--|--|---|--|---|---|
|  Černá<br>Black<br>H12/ C33 |  Tmavá zelená<br>Dark Green<br>H73/ C23 |  Tmavá zemitá<br>Dark Earth<br>H72/ C22 |  Nebeská modrá<br>Sky Blue<br>H314/ C314 |  Žlutá<br>Yellow<br>H4/ C4 |  Šedá<br>Grey<br>H70/ C60<br>RLM02 |  Bílá<br>White<br>H1/ C1 |
|---|--|--|---|--|---|---|



I.A.R.81 BoPi, No 91, Escadrila 59 Vanatoare BoPi, Grupul 6 Vanatoare, Flotila 2 Vanatoare, základna Targisor, podzim 1942.

I.A.R.81 BoPi, No 91, operated by Escadrila 59 Vanatoare BoPi, Grupul 6 Vanatoare, Flotila 2 Vanatoare, based at Targisor, Autumn 1942.

CAM. B



Černá  
Black  
H12/ C33

Tmavá zelená  
Dark Green  
H73/ C23

Tmavá zemitá  
Dark Earth  
H72/ C22

Nebeská modrá  
Sky Blue  
H314/ C314

Žlutá  
Yellow  
H4/ C4

Šedá  
Grey  
H70/ C60  
RLM02

Bílá  
White  
H1/ C1

SH32073 I.A.R.81 BoPi

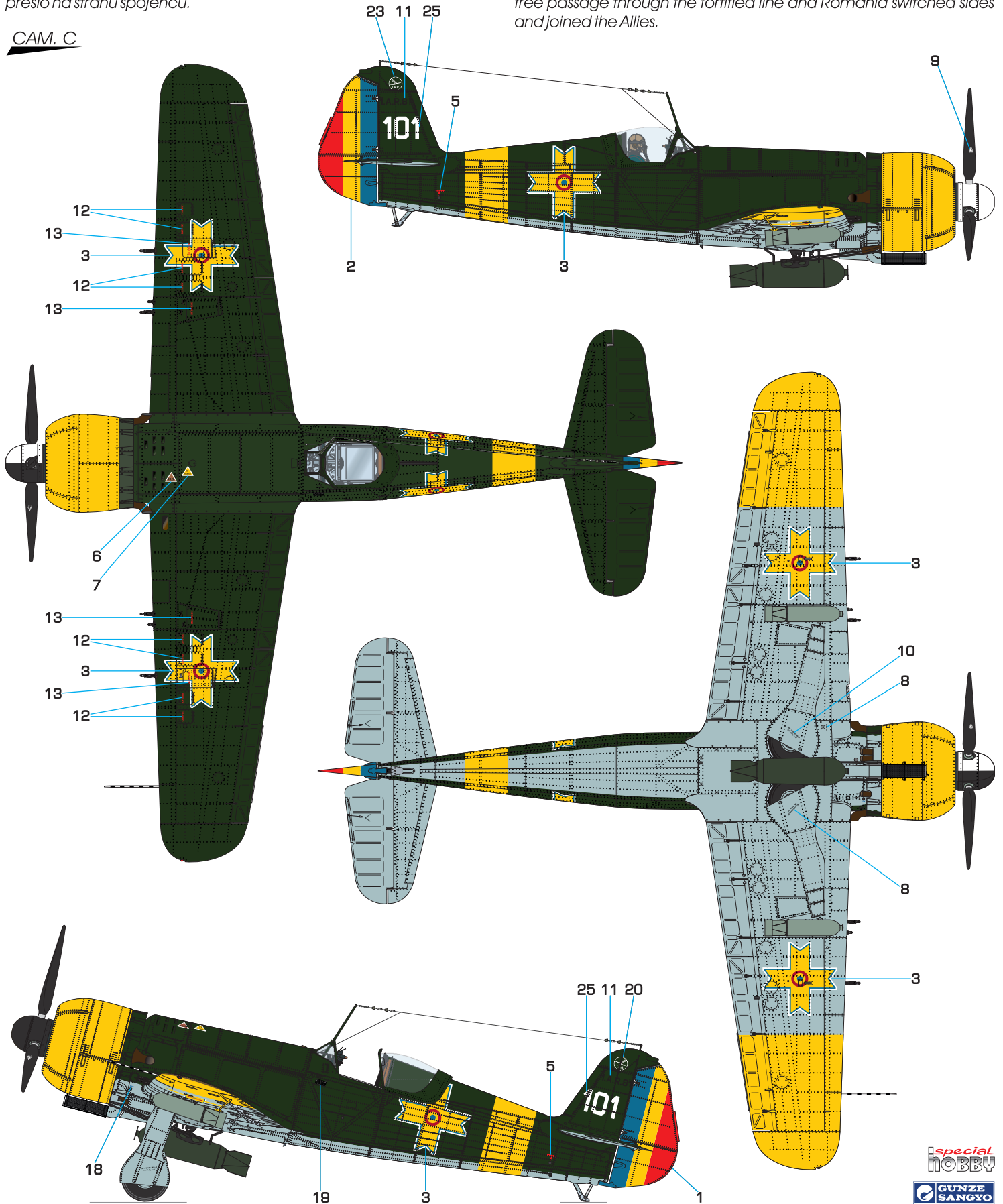
13

special  
HOBBY  
GUNZE  
SANGYO

I.A.R.81 BoPi, No 101, Escadrila 45 Vanatoare BoPi, základna Urleasca, srpen 1944. Na začátku srpna 1944 tento letoun pilotoval při náletech na sovětská vojska útočící na opevněnou linii Foscani pilot Adj.Sef.Av Vasile Mirila. Paradoxem je, že na konci srpna 1944 byl vojskům Rudé armády umožněn touto linií průchod a Rumunsko přešlo na stranu spojenců.

I.A.R.81 BoPi, operated by No 101, Escadrila 45 Vanatoare BoPi, based at Urleasca, August 1944. In the early days of August 1944, Adj.Sef.Av Vasile Mirila flew at the controls of No.101 engaging Red Army forces attacking the fortified Foscani line. The paradox is, however, that at the end of the month, the Red Army was granted free passage through the fortified line and Romania switched sides and joined the Allies.

CAM. C



Černá  
Black  
H12/ C33

Olivově zelená  
Olive Green  
H423/ C123  
possibly RLM 64 or 83  
FS34083 or FS33070

Světle modrá  
Light Blue  
H417/ C117  
RLM 76 or Sky Blue  
FS36473 or FS35550

Žlutá  
Yellow  
H4/ C4

Šedá  
Grey  
H70/ C60  
RLM02

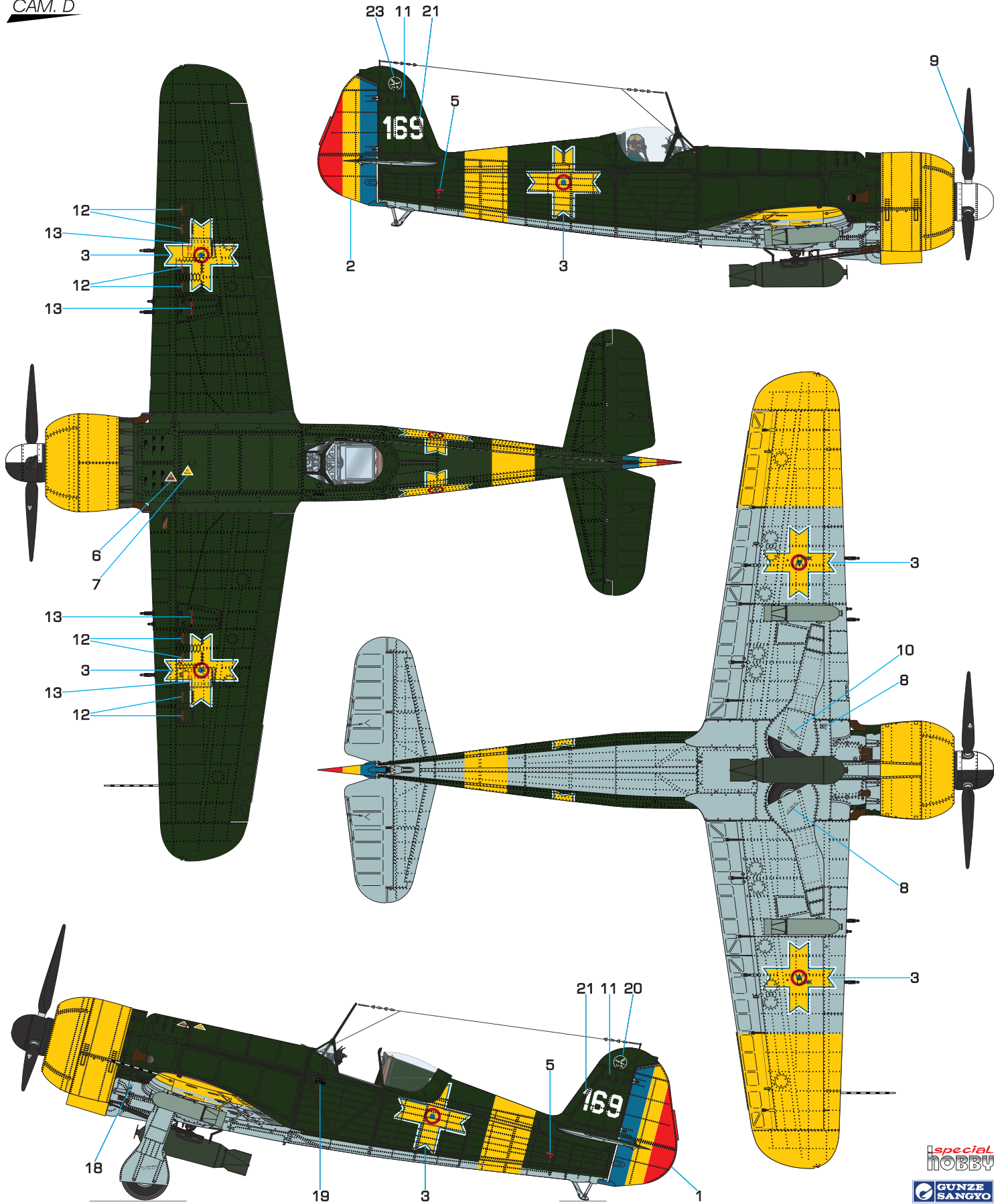
Bílá  
White  
H1/ C1

SH32073 I.A.R.81 BoPi

14

special  
HOBBY  
GUNZE  
SANGYO

CAM. D



Černá  
Black  
H12/ C33

Olivově zelená  
Olive Green  
H423/ C123  
possibly RLM 64 or 83  
FS34083 or FS33070

Světle modrá  
Light Blue  
H417/ C117  
RLM 76 or Sky Blue  
FS36473 or FS35550

Žlutá  
Yellow  
H4/ C4

Šedá  
Grey  
H70/ C60  
RLM02

Bílá  
White  
H1/ C1



# PERFECTION IN EVERY DETAIL



**Q32282 1/32**  
**I.A.R.80A/81**

Early Mainwheels for  
Special Hobby / Azur From kits



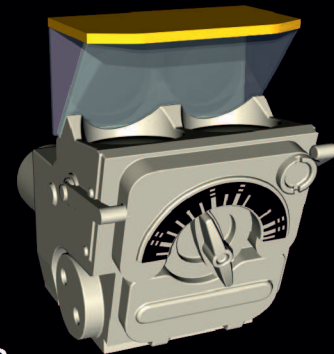
**Q32283 1/32**  
**I.A.R.80A/81**

Mid Production Mainwheels  
for Special Hobby / Azur From kits



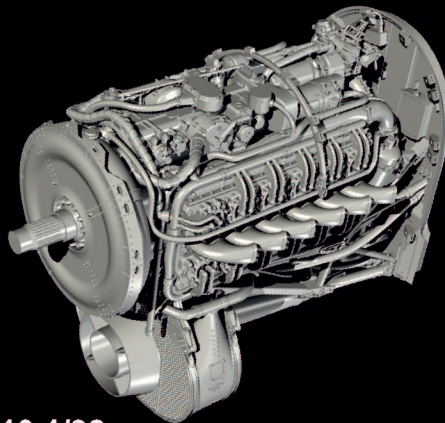
**Q32291 1/32**  
**I.A.R.81C**

Late Mainwheels for  
Special Hobby / Azur / From kit



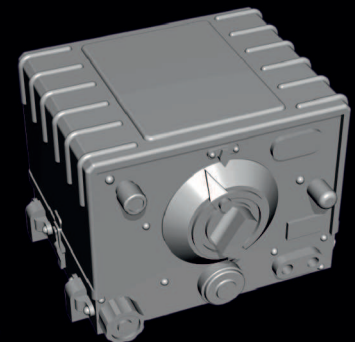
**Q32247 1/32**  
**Gyro gunsight Mk.II**

For late Tempest and other fighters  
for Special Hobby / Pacific Coast kits



**Q325110 1/32**  
**Hawker Tempest Mk.V**

Engine Set for Special Hobby kit



**Q32276 1/32**  
**Yak-3**  
RSI 4  
Radio Receiver

## USE CMK TOOLS AND WEATHERING PIGMENTS FOR YOUR KITS

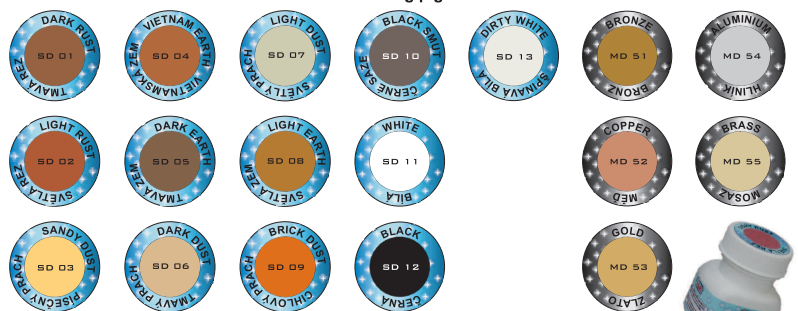
*H1010 handle for our saws  
– priceless tool for resin  
parts adjustment*



*H1011 CMK sanding stick  
– four different grits  
of sanding papers on  
one sanding stick*

### Star Dust

weathering pigments



*All of the above items can be found and ordered  
via our official website and e-shop .....*

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**WWW.CMKKITS.COM**