

# Koolhoven FK.41 Kora Models resin kit

## Monoplane sports plane, taxi plane

Scale 1:72

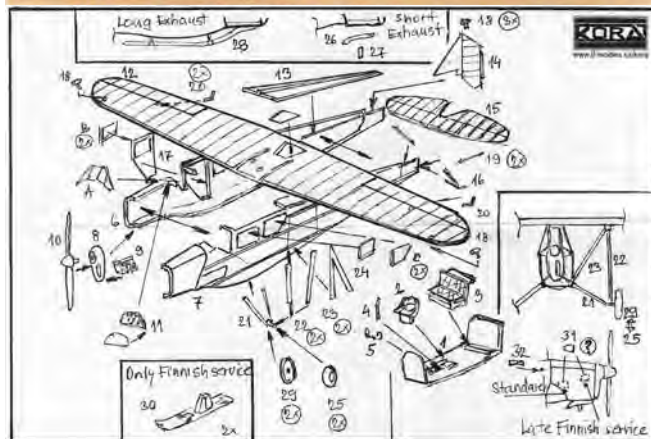
The Koolhoven F.K.41 PH-AJZ was the last F.K.41 built by Koolhoven in the Netherlands and had its maiden flight in January 1935. It was the third F.K.41 entering service with the Nationale Luchtvaart School (National Aviation School). The three-seat aircraft was very well equipped, amongst others with complete blind flying equipment. It was stationed on Schiphol and was mainly used for the training of candidate KLM pilots. It was the only F.K.41 equipped with an inverse suspended 130 hp Gipsy Major I engine built in the Netherlands. In May 1940 the PH-AJZ was heavily damaged on the Ypenburg airfield and has been scrapped finally by the Germans in 1941.

The AP-AJZ had a different appearance from the earlier F.K.41's and the Desoutters Mk.I and Mk.II. Major differences were the typical Koolhoven fin with the round leading edge as was also present on other Koolhovens and the windshield. I have found three pictures of this specific F.K.41.

The kit comes in a small carton box and contains the resin parts, two copies of the clear plastic vacuum formed windscreen and a transparent sheet for the cabin windows, an instruction sheet, a sheet with a



three view drawing and painting instructions, a print for the instrument panel and a decal sheet. It also contains resin skis, allowing the construction of an



**Koolhoven FK.41 – „Dutch service“**

Heinrich konstruktér Frederick (Fritz) Koolhoven štál vďaka ve sínu avšak slavnému krajanu A.G.Fokkeru. Práve j jeho konstrúcie sa dokázaly presadiť. Zpočiatku v kategórii, ktoré u Fokkera spomínali, v oblasti ľahkých športových letadiel. Prvým úspechom na tomto poli bol Koolhoven FK.41. Jeho prvý let vzlietol v roku 1928. U nás táto letovka bola postavená, jej údaje však nie sú známe, ale istota na jeho vývoji má svoj výraz. Práve v roku 1929 bol vydaný patentársky list Marcel Desoutters, ktorý s letovkou „dvoj“ čelom, štandardné obdĺžnikové křídlo. Prvá séria Desoutters MK.I. Dôvodmi bola pohľadná motoren Cirrus Hermes III. Tieto varianty vznikli 28 kusov a nich 19 odobral britský aeroplánovú spoločnosť. Jed. Následovne druhá séria Desoutters Mk.II Sports Coupe, ktorá bola pohľadná motoren De Havilland Gipsy III. Tieto varianty vznikli 30 kusov. Letovka nikdy nejeden s týmito, ale byt prevažne exportovaný do zahraničí: najmä do Belgicka, Anglicka a na Nový Zéland. Letovka exportovaný do Dánska „D.V.-E107“ a súčasťou stavieb štávu do Melbourne v roku 1934. Tieto letovky sa používali najmä prepravnými Dánskeho Cervenoho kríže do Fínska.

**Kamufáž:**  
**A) Koolhoven FK.41 „PH-AJZ“** ze stavu *Nationale Luchtvaartschool (NLS)* na konci tridsiatych let. Letovka bol ošetrovaný pri nemeckom nájazde na letisko Ypenburg 10.5.1940. Celý letovka bol v aluminiové farbe. Spodná časť trupu bola v tmavej modrej farbe. Rámenní křídly štandardné křídlo v hornej časti. Vrták bol v čiernej farbe. Spodná vrtáková kľučka bola v hornej časti. Na trupu bola biela maskovacia „PH-AJZ“. Na křídle bola čierná maskovacia „PH-AJZ“. Na motorovce boli písmo v národných farbách. Letovka mali dlhú výšku a malú kľučku.  
**B) Koolhoven FK.41 „Black 969“** kým letovka ze stavu *LFA (Luchtvaartafdeeling)* jara 1940. Letovka bol celý ve svetle modrej farbe (LFA kľučka - FS 02189). Vrták bola čierná. Spodná vrtáková kľučka bola v hornej časti. Rámenní křídly štandardné křídlo v hornej časti. Vysvetlenie ovplyvnilo, na letiskách na kľučku a trupu. Puhlybiť časť motorovky bola označená s číselným letovka. Číslo 2896, bola na trupu. Letovka mali štandardnú výšku a malú kľučku.  
**TOTO SCHEMA PATRI DO KATEGORIE „WHAT IF“!!!**

**Doporučená literatura:**  
 F. Koolhoven 12.1938  
<http://www.nationaleluchtvaart.nl/verhaal/11-koolhovenkoolhoven-fk-41-c-20.html>  
[http://www.kapiteel.org/verhaal/Desoutters\\_Mk-II](http://www.kapiteel.org/verhaal/Desoutters_Mk-II)  
<http://www.kgk.com/verhaal/Desoutters>  
<http://www.avia.nl/verhaal/Desoutters.html>  
 Archiv KORA Models  
 letovka

**A) Koolhoven FK.41 „PH-AJZ“** from *Nationale Luchtvaartschool (NLS)* end of thirties. This plane was destroyed during German air raid on airfield Ypenburg 10.5.1940. Whole plane was painted in aluminium colour. Lower part of fuselage was in dark blue colour. The frame of the cockpit was in colour of metal. The propeller was in black colour. White masticulation „PH-AJZ“ was on the fuselage. Black masticulation „PH-AJZ“ was on the wing. Stripes in national colours were on the moving part of rubber. This aircraft had long exhaust and small wheels.  
**B) Koolhoven FK.41 „Black 969“** was courier plane of *LFA (Luchtvaartafdeeling)* in spring 1940. Whole aircraft was painted in light blue colour (LFA kľučka - FS 02189). The frame of the cockpit was in colour of metal. The propeller was in black colour. The propeller colour had aluminium tip. Dutch national stripes were on six positions on wing and fuselage. Moving part of rubber was in national colours. Black number „969“ was on the fuselage. This aircraft had long exhaust and small wheels. **THIS SCHEME IS ONLY „WHAT IF“ CATEGORY!!!!**

imaginary Finnish version and the decal sheet contains Dutch LVA markings with orange triangles to construct a “what-if” version of the plane as could have been existed when the aircraft had been requisitioned by the air force in 1939-1940 (which it never was).



The drawing on the instruction sheet shows the location of the parts, but is not always clear, especially for mounting the undercarriage struts.

Wesselink & Postma (ref. 1 and 2) give the dimensions of the FK 41. I have also used some photographs of the Desoutter Mk.II, provided by the Stichting Koolhoven Vliegtuigen.

	<i>Ref.</i>	<i>1:72</i>	<i>model</i>
<i>Span</i>	10.50 m	145.8 mm	158.5 mm (109%)
<i>Length</i>	7.80 m	108.3 mm	114.2 mm (105%)
<i>Height</i>	2.44 <sup>1</sup> m	33.9 mm	33.0 mm (97%)
<i>Engine</i>	De Havilland Gipsy Major I 130 hp		
<i>Crew</i>	1/2		

The length and span are too large, the height is quite all right. Span and length are identical to those of the Dujin Desoutter models.

### General

The fuselage of the model shows some differences with the photographs of the PH-AJZ. Most important one is the location and shape of the door. The kit has a with a corner cut off door at the starboard side, while the real one has a rectangular door at the left side. Behind the cowling at the left side a shape has been modeled which is only present on the



Desoutter Mk.II (see appendix). Then the lowest “stringer” is modeled quite low, it should be closer to the lower edge of the cabin windows. And the aft edge of the cowling has a single curve, and not a S-shape. Finally, the windshield has a different shape from the one present in the kit. The middle window is not rectangular, but has a triangular shape.



### Parts preparation

The parts are of good quality, no air bubbles, but rather a lot flash. I have removed them from the sprues and have cleaned them well. I lost one of the very small parts, a push-pull rod cum control horn for one of the ailerons. No big problem anyhow, because, although small, these parts are far too crude; I will model them with styrene card and metal wire.

A part indicated on the instruction sheet, the long exhaust tube 28, is not included in the kit, and has to be made from scratch.



### Fuselage

First thing done was to update the fuselage halves to the correct configuration. I have first glued the door in the starboard fuselage half and have removed the lower “stringer” from both fuselage halves and the rectangular shape from the port half. I have cut a door opening of 9.5 x 13 mm in the port fuselage half. Next I have cut a correctly shaped aft edge for the cowling from 0.4 mm styrene, curved it slightly and glued behind the moulded part of the cowling. I have applied ample putty on the joints. When that had been sanded in shape I have opened up the rear of the cowling sides



a bit.

I have cut the new door opening of 9.5 x 13 mm in the port side of the fuselage and have enlarged the window in the old starboard door to the same height of the rear window and have widened it until it reached the frame tubes moulded with the inside of the cabin walls. I have made the new "stringers" from 0.4 x 0.5 mm strip and have glued them approximately on the height shown in the photographs.



I have removed the cabin ceiling from the fuselage halves (the lower side of the wing has the moulded ceiling details) The new door has been produced from 0.5 mm styrene sheet material and 0.4 x 0.5 mm strip.



The lower corner of the side windshield panel is by far too low compared to the picture evidence; there it reaches only until the lower edge of the cabin windows. So I have corrected that with a piece of 0.5 mm styrene. The configuration in the kit is typical for the F.K.41 Desoutter Mk.II.



I have painted the parts which compose the cabin interior: floor, rudder bar and control stick dark grey, walls light grey seat cushions leather, seat belts tan and belt buckles aluminium, after which the parts have been glued in place. Also the inner side of the cabin walls and the lower side of the wing have been painted light grey.



The instrument panel has been painted dark grey and the printed dials have been glued behind it. Although they will probably hardly be visible in the cowling, I have painted the two engine cylinders aluminium and their support dark grey.



After a dry fit of the cabin interior I have glued it in the fuselage and have glued the fuselage halves together. The underside of the fuselage needed quite some putty and sanding to make it flat. I have also adjusted the contour of the underside of the cowling somewhat.



I have glued the cylinders in the cowling front part and have glued it to the fuselage. The placement of the cowling needed to be adjusted carefully to ensure a correct fit of the cowling to the fuselage and to avoid exposing the lower part of the cylinders.

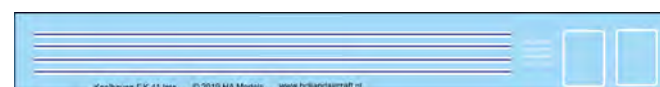


I have mounted the fuselage top panel and the middle part of the elevator on the fuselage and have mounted the fin and elevator assembly on top of it.



## Decals

The photographs of the PH-AJZ in the silver grey- dark blue outfit show clearly a white-blue-white striping between the upper and lower part of the fuselage sides and show also a white printed "KOOLHOVEN" text on the port side of the cowling. This is missing on the decal sheet, as is the white border around the door. I have drawn these missing objects on CoralDraw



and have ordered a print with my regular decal printer, Arctic Decals.

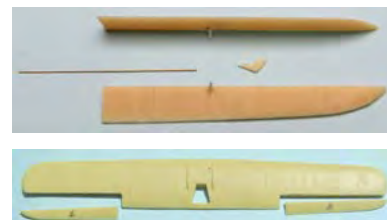


The decal sheet also presents the rudder decals as blue-white-red from the top instead of red-white-blue, so I have painted the correct colours on the rudder.

## Wing

I have separated the ailerons from the wing with a razor blade saw; I will mount them in deflected position.

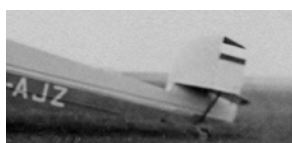
To replace the rather crudely modeled aileron control horns cum push-pull rod (and the one copy I had lost in cleaning it) I have cut control rods from 0.5 mm styrene sheet and have glued them to the ailerons. I will use a piece of 0.2 mm brass for the push-pull rods.



I have filled the holes for the navigation lights in the wing leading edge with putty. On the photos of the PH-AJZ no lights were visible<sup>2</sup>.

## Tail and control surfaces

I have separated rudder and elevator halves from the vertical and horizontal tail plane with a razor blade saw; I will mount them in deflected position.



According to the photographs of the PH-AJZ the horizontal tail plane is not placed on top of the aft fuselage, as reproduced on the model, but slightly higher on the fin. So I have removed the stabilizer halves from the middle piece and have glued this piece to the fuselage top. To align the tail pane well, such that the elevator hinge line would be straight I have glued some pieces of styrene to the root of the stabilizer halves and sanded the root until a correct fit to the fin. I have assembled stabilizer halves and fin before gluing them to the fuselage.



Another detail that is not correct is the fin leading edge. The photographs clearly show a curved leading edge, typical for some Koolhovens, while the documentation shows a leading edge that is almost straight and the leading edge of the actual part is really straight.

I have copied the leading edge of the part on a piece of 0.5 mm styrene and have sketched the leading edge according to the photographs on it. After cutting out the piece I have glued it to the resin part and have camouflaged the joint with putty. I have done this correction only after mounting the tail assembly to the fuselage. It would have been easier to do it on the fin alone.



On the photographs only control horns on the lower surface of the elevator halves can be seen, so I assume they were also equipped with a push-pull rod. Again, I have made the control horns from a piece of 0.5 mm styrene sheet and the rods from 0.2 mm brass. Although this is not visible on the photographs, I have assumed the rudder controls were the same as on the Desoutters; the triangular plate covering the cable exit is also moulded with this kit of the F.K.41. The control horns have been cut from 0.5 mm styrene too.

## Painting

I had first considered to paint the tower part of the fuselage French blue (Humbrol 14), but judged this to be too light, so I have switched to Midnight blue (Humbrol 15). Three layers were required to get sufficient covering. The top of the fuselage and the tail planes have been painted with Vallejo Model Air aluminium. After the first coat of aluminium some corrections on the nose and the fin had to be made with putty, sanding and a new coat of paint. The wing has also been painted aluminium.



Alle struts have been painted Midnight blue, except the main undercarriage struts; these have been painted aluminium.

I have produced the long exhaust, which was not included in the kit, but shown on the instruction sheet, from 0.8 styrene rod, bending it in the shape fitting under the fuselage. The front end has been cut to fit smoothly to the underside of the cowling,



in the aft end I have drilled a hole of 0.4 mm. The supports, made of 0.4 x 0.5 mm strip, will be cut to size before mounting it under the fuselage.

### Final assembly



I have glued the instrument panel in the cockpit with Kristal Klear and have cut the cabin windows trial and error and the trapezoid window in the wing to the correct size. They have been glued in place with Kristal Klear too.



I have applied the decal to the fuselage and wings before assembly of wing and undercarriage, because afterwards they are quite difficult, if not impossible, to reach. The ALPS printed stripes and the "KOOLHOVEN" on the nose were easy to apply, the registration decal from the kit was more difficult. Firstly because the dash between PH and AJZ was printed separately, so I almost lost these minute things, secondly because the numbers referring to the building instructions were printed in between and almost on top of the decals. Between the A and the J of the wing decal the Kora logo was proudly showing that the decals were for their F.K.41 kit, which led to tearing of the J when adjusting the decal. Again to save space, the Z was printed separately from AJ. A pity, just to save 50 eurocents or so on the printing costs. Also, the Kora decals are quite fragile, so they are easily damaged. I should have covered them with an extra layer of liquid decal film beforehand.



I have first applied the decals on the starboard side of the fuselage, letting them set and treating them several times with Sol. When they had well dried I have applied the port side, first the striping and registration and, when that had dried, the white lining of the door, which I had cut it out around the outline. After treating the door lining decal with Set and Sol and letting it dry, I have cut out the inner part with a new, sharp scalpel blade. This worked very well.



I have repaired the damage to the white and black lettering with a bit of paint and have sealed the decals with Microscale satin varnish. When that had thoroughly dried, I have glued the wing on top of the fuselage. There was a small gap between the wing and the top of the fuselage. I have closed that with Vallejo putty and have retouched the joint and some minor damage with aluminium paint.



### Windshield

As the original windshield in the kit, which was equal to that of the Desoutter Mk.II, was not correct, and as I had modified the nose according to the correct windshield shown in the photographs of the PH-AJZ, I had to produce a new windshield. As I had done before, I have first cut that from cardboard, fitting it on the assembled model. As usually is the case, that did not work at once. The picture at the right illustrates the history. I first have estimated the proportions of the front window from the photographs and have scaled those for the distance between nose and wing leading edge of the model. I assumed that the top of the window frame was straight (top). Fitting it a gap showed at the top of the side windows. Closing it required further attempts. Now it appeared that the width of the front window could not be made to fit properly with the nose, a consequence that the nose of the part in the kit had been made to fit the wider front window of the Desoutter. I could however estimate the slope of the rear part of the side windows. This led to the next template. Fitting this one, again a gap between windscreen and wing underside showed. Closing it gave the final configuration shown at the bottom.



I have copied this template on a piece of transparent plastic, scoring the corner lines with a knife. From the front this looked all right, but at the left side the lower corner was too low and at the right a rather large gap appeared between the cabin wall and the windscreen.



So I have made a copy from this windscreen with the correct fit to the cabin walls (it took me two attempts to get it right) and have glued it in place. I have mounted it and have filled the gaps between nose and windshield with white glue. I have painted the frame of the windshield with Vallejo Model Air aluminium. In the process the white outline of the door got slightly damaged, which I have corrected with white paint.



### ***Undercarriage and wing struts***

Each side of the main undercarriage legs is built up from three parts, which have only a well-defined attachment location at the wing side. On the fuselage side there are only some superficial marking casted with the part. I have made these a bit wider and deeper with a 1.4 mm drill.



Assembling the undercarriage leg was not easy; both the vertical strut and the V-strut have to be attached at the same time, which means controlling four attachment point at once. The solution that I have devised for my Koolhoven F.K.43 is better, with an eyelet through which the wheel axle passes<sup>3</sup>. After quite some vain attempts I managed to get it right. Assembling the rear spar wing struts did not pose any problem. Apparently I still



learned something from it, because the leg at the other side went a lot easier. I have put the model on its legs and measured the height of the wing tips over the surface. The difference was less than half a millimeter.



I have shortened the brass shaft of the tail wheel and have mounted it in the 0.5 mm hole under the fuselage. I have given it a slight deflection. At the same time I have produced the two stabilizer support rods from 0.5 mm styrene rod and have glued them in place.

### ***Last details***



I have painted the long exhaust pipe steel, have shortened the attachment strips and have glued it under nose and fuselage. I have also mounted a piece of 0.25 mm metal wire in the cooling opening in the nose, a characteristic feature of the Gipsy engines. The propeller has been glued in place with Kristal Klear.



All control surfaces have been mounted in deflected position, elevator down, rudder right and aileron in a left roll position. I have made the push-pull rods for the ailerons and elevator from 0.25 mm metal wire and the rudder control cables from 0.06 mm black painted fishing line. The door has been mounted in open position to show a bit of the cabin interior. Last addition has been to add a pitot tube of 0.4 mm brass tube to the leading edge of the port wing.

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### ***Summary***

The model is relatively easy to build, if no adaptations are made. However, in that case the model will not resemble the original PH-AJZ very well; the differences in windshield, door shape and position, stabilizer position and fin are too apparent. Introducing these modifications gave most problems in fitting the new windshield to the fuselage, casted for the Desoutter Mk.II configuration. It would be welcome if at a reissue of the kit the fuselage and tail configuration would be adapted.

Below I have included some pictures of the completed model.











## References

1. T. Wesselink & T. Postma, *De Nederlandse Vliegtuigen, Alle vliegtuigen ooit in Nederland ontworpen en gebouwd*, p. 70, Unieboek B.V., Bussum, 1982
2. T. Wesselink & T. Postma, *Koolhoven, Nederlands vliegtuigbouwer in de schaduw van Fokker*, pp. 63-64, ISBN 90 228 3890 0, 1981
3. D. Top, *Frits Koolhoven en zijn Vliegtuigproductie*, pp. 60-64, 1996

## Appendix Pictures, drawings and some additional documentation of the Koolhoven F.K.41/Desoutter Mk.II

### Modifications & corrections

M = modification, C = correction

Change	Location/part	Modification or correction
C01	Cockpit	Height of wall under side windscreen panes increased.
C02	Cockpit	Shape of windscreen changed; new windscreen.
C03	Cabin	Right side door removed, window

Change	Location/part	Modification or correction
		enlarged.
C04	Cabin	Left side door added.
M01	Engine	Metal bar in cooling opening added
C05	Engine	Long exhaust produced
C06	Engine	Shape rear edge of cowling changed
C07	Fuselage	Lower "stringer" removed, new

Change	Location/part	Modification or correction
		stringer added in higher position.
M02	Wing	Ailerons cut loose.
M03	Wing	Aileron control horns and push-pull rods added.
C08	Wing	Removal of navigation lights.
M04	Decals	White-blue-white striping, white Koolhoven logos and white door contour added
M05	Tail	Control surfaces cut loose.
C09	Tail	Move location of stabilizer to the fin.
C10	Tail	Fin curved leading edge.
M06	Tail	Rudder control cables added
M07	Tail	Stabilizer support struts added

### Paint table

HE = Humbrol enamel, VMA = Vallejo Model Air, VMC = Vallejo Model Color, RA = Revell Aqua

Code	Colour	Where
H15	Midnight blue	Lower part of fuselage, landing gear struts, wing struts
H33	Black	Tip of control stick
H62	Leather	Cabin seat cushions
H74	Linen	Seat belts
H123	Dark grey	Floor, rudder bar, control stick, instrument panel
H129	Light grey	Cabin walls, bench and seat details
RA36178	Tank grey	Tires
VMC70.846	Mahogany brown	Propeller
VMA71.036	Mahogany	Propeller
VMA 71.062	Aluminium	Wing, tail, upper part of fuselage, seat belt buckles, main landing gear legs, tail struts
VMA71.065	Steel	Exhaust

### Photographs



[Source:, ref. 1]



[Source: ref. 2]



[Source: ref. 3]

**Pictures and documents of the F.K.41 Desoutter Mk.II provided by the Stichting Koolhoven Vliegtuigen**



<sup>1</sup> Estimated from photograph.

<sup>2</sup> On all photographs of the F.K.41's and Desoutters in my possession only one picture of the Dessoutter Mk II in Finnish service showed navigation lights.

<sup>3</sup> See <http://www.hollandaircraft.nl/K14b%20FK%2043.pdf>