



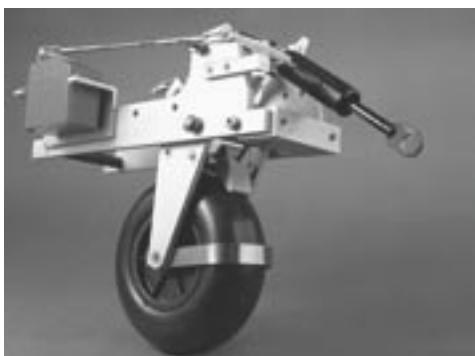
Electronic on-board starter for all common 7.5- 80cc heater plug and gasoline engines.

With the "FEMA electronic on-board starting system" a dream has come true for many innovative model makers. With the "FEMA on-board starter", internal combustion engines can be started by radio control - this is easy and safe and it is possible to start the engine on ground as well as in the air. For individual use there are two different variations of on-board starting systems:



Universal on-board starting system

At this variation only the starting device is attached directly to the internal combustion engine. The starter engine is placed separately from the internal combustion engine inside the fuselage, according to the main stress or to space requirements. A propeller shaft that is variable in length transmits the power from the starter engine to the starting device at the internal combustion engine.



Compact on-board starting systems

Different from the universal on-board starting system, the starting device and the starter engine of the compact on-board starter are attached directly to the internal combustion engine. Thus the internal combustion engine and the on-board starter form a compact unit. According to the available space it has to be decided individually for every model which one of the two variations can be used.



Retractable undercarriages

A retractable undercarriage is essential for scale and semi-scale models. The "FEMA retractable undercarriages" are being used successfully for years and have demonstrated their ability in flight practice. Mr Gardemin wrote in his test report about retractable undercarriages: **»FEMA retractable undercarriages are without any technical paraphernalia but they are designed 100% functional and sturdy.«** We still feel obliged to this statement, now and in future. **Although we delivery our undercarriages with wheel brake and in spring-loaded installation.**

FEMAwheels / Wheel axles

FEMAwheels with glass fibre reinforced rims and aluminium hubs are designed to meet the highest demands and are suited for engine models as well as for large scale gliders. The wheels are extremely resilient and have ideal damping features. Even the load of the model weight for several hours in midsummer temperatures does not lead to the dreaded flat tire. Despite their extreme stability, the wheels are very light. With FEMA wheels you don't have to worry about inflating the valves.



Universal balancing machine for propellers

The FEMA-balancing machine is world-wide the only one that lets you balance-out the propellers lengthways and sideways to the rotor blades. Due to the simple handling and to the high-precision display, every model maker can now balance-out exactly the propellers on his own.

Blade rotor heads for all common rotor blades.

This method balances-out the blades in exactly that position they have in flight. This device is also suitable for three- and multiple-rotor blades as well as for tail rotor blades.

Stock number	Item	Price in EURO/piece
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Balancing machine · blade rotor head

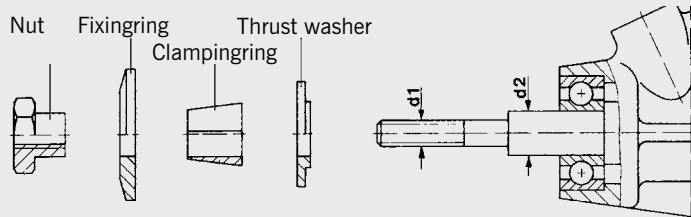
9270	Universal balancing machine for propellers of a diameter of 12" (300mm) to 40" (1000mm) and borings of 8.0/10.0/12.0 and 20 mm in diameter. The maximum hub thickness of the propeller is 48mm.	42,50
9280A	Blade rotor heads for all common rotor blades with a fastening boring of 3, 4, 5, 6 mm	54,50

Universal on-board starting systems for aviation engines

9500	Basic kit for 7.5-13.5cc engines* (adapter necessary)	186,50
9512	Basic kit for 15-35cc engines* (adapter necessary)	198,50

Technical information on-board starter

In addition to the basic kit, an adapter is necessary for each engine type, Adapters can be combined individually for internal combustion engines that are not listed above, Please state with your order thread = **d1** and diameter = **d2**



Adapters for 7,5-35 cc aviation engines

9532	OS-Max -FS60/61, 70, 80, 90/91 (4-stroke engine), OS Max 61/91 FX (2-stroke engine).....	20,00
9537	Saito FA 40, FA 45, FA 50, FA 65, FA 80 (4-stroke engine).....	20,00
9540	OS-Max-FS 120, FS 200S (4-stroke engine), OS-Max-90/91, 104RX, 140 RX (2-stroke engine)	20,00
9541	Saito FA 90/91, 100, 120, 150, 180, 220 (4-stroke engine).....	20,00
9543	OS-Max FS 52 (4-stroke engine), Laser-70 (2-stroke engine)	20,00

Compact on board starting systems for helicopter-/car-engines

9400A	Compact on board starter for Zenoah G 230/260 RC..... Suitable for all helicopters of the brand »VARIO« and »Aero-Tec«	308,00
9420A	Compact on board starter for Zenoah G 230/260 PU, G 231/260 PUH..... ZG-23/26 Flugmotoren, ZG 231/26 Heliengines, ZG-26 EI	242,00
9421A	Compact on board starter for Zenoah G 200, Titan ZG-20.....	228,50

Compact on-board starting systems for naval aviation engines

9613A	Compact on-board starter for Titan ZG-23/26 SLM (Zenoah G-230/260 PUM).....	208,00
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Compact on-board starting systems for aviation engines

9710A	Compact on-board starter for OS-Max FT120/160 (replaces Stock No 9518A)	218,00
9711	Compact on-board starter for OS-Max FF 320 (Pegasus)	236,50
9713A	Compact on-board starter for Zenoah G 230/260 PU / ZG-23/26 SL, ZG-26 EI.....	192,00
9714	Compact on-board starter for Zenoah G 380 PU / ZG-38 SL.....	192,00
9715A	Compact on-board starter for Zenoah G 200 PU / ZG-20 SL.....	192,00
9724	Compact on-board starter for Zenoah G 620 PU / ZG-62 SL.....	239,50
9725	Compact on-board starter for Zenoah G 450 PU / ZG-45 SL	239,50
9730A	Compact on-board starter for Zenoah G 800 PU / ZG -80 SL.....	338,00
9732	Compact on-board starter for Saito FG-57T (does not fit the »TS-Version«)	424,00

Accessories for on-board starters

9592B	Electronic current regulator for 1 heater plug, weight 40 g.....	76,50
9593B	Electronic current regulator for 1-2 heater plugs, weight 50 g.....	84,00
9594B	Electronic current regulator for 1-4 heater plugs, weight 60 g.....	98,50

stock number	Item	price in Euro
9400/04	starter motor speed 480 with bevel, 12 teeth	42,50
9400/07	small parts kit	8,50
9400/08	fan wheel with reconditioning	62,50
9400/10	Coupling	52,50
9400/11	thrust washer	6,50
9400/12	free wheeling gear 76 teeth, m=0,8 mm, HFL 1226	68,50
9400/15	engine holder plate	18,50
9400/16	gearbox support with bevel 10 teeth, m=0,8 and aluminium gear 76 teeth, m=0,5	68,50
9410/12	free wheeling gear 76 teeth, m=0,8 mm, HFL 1226	62,50
9420/04	starter motor speed 480 with bevel, 12 teeth	39,50
9420/07	small parts kit	8,50
9420/08	engine support plate	32,50
9420/12	free wheeling gear 76 teeth, m=0,8 mm HFL 1226	62,50
9420/15	engine holder plate	18,50
9420/16	gearbox support with bevel 10 teeth, m=0,8 mm and al-gear 76 teeth, m=0,5 mm	68,50
9421/07	small parts kit	8,50
9500/01	support, 2 units	22,50
9500/02	plate for bevel bearing	20,00
9500/03	bearing	14,50
9500/05	free wheeling gear 60 teeth, m=0,8 mm, HF 1616	39,50
9500/06	bevel, 10 teeth, m=0,8 (pinion)	18,50
9500/07	coupling, SW 25 mm	39,50
9500/12	small parts kit	8,50
9512/01	support, 2 units	24,50
9512/02	plate for bevel bearing	24,00
9512/05	free wheeling gear 76 teeth, m=0,8 mm, HF 1616	48,50
9512/12	small parts kit	8,50
9514/01	plate for bevel bearing	32,00
9514/12	small parts kit	8,50
9515/07	cardan shaft, 5/6 mm	32,50
9518/03	plate for bevel bearing	38,50
9518/05	bolt 58/61,5 mm, 2 units	28,50
9518/07	coupling, SW 32 mm	46,00
9520/01	engine support plate	38,50
9520/02	nut M8x1 left	4,00
9524/04	free wheeling gear 76 teeth, m=0,8 mm, HF 2016	52,50
9530/02	nut M7x22 mm	6,50
9530/03	nut M8x22 mm	6,50
9530/04	nut 1/4« UNF-28x22 mm	6,50
9530/05	nut 5/16« UNF-24x22 mm	6,50
9530/07	nut 3/8« UNF-24x22 mm	9,50
9530/11	holder disc 24 mm for engines tu 13,5 ccm	5,00
9530/12	holder disc 30 mm for engines from 15 ccm	6,50
9530/21	clamping ring, 7 mm drill-hole	6,50
9530/22	ctamping ring, 8 mm drill-hole	6,50
9530/23	ctamping ring, 9,5 mm drill-hole	6,50
9530/24	clamping ring, 10 mm drill-hole	6,50
9530/26	ctamping ring, 12 mm drill-hole	9,50
9530/31	thrust washer, 7 mm drill-hole	6,50
9530/32	thrust washer, 8 mm drill-hole	6,50
9530/33	thrust washer, 9,5 mm drill-hole	6,50
9530/34	thrust washer, 10 mm drill-hole	6,50
9530/35	thrust washer, 12 mm drill-hole	9,50

stock number	Item	price in Euro
9560/04	micro switch, 16A	4,00
9560/07	board switch, 16A	4,00
9570/01	starter motor Speed 500 with gearbox, 1=5,5	68,50
9570/02	gearbox single, 1=5,5	36,00
9570/03	bevel, 12 teeth, m=0,5 mm, suitable to all gearboxes	6,50
9570/04	al-gear with output shaft, 66 teeth, m=0,5 mm	24,50
9575/03	starter engine Speed 600 with bevel, 12 teeth, m=0,5 mm	36,50
9580/01	starter motor speed 480 with gearbox, 1=6,33	68,50
9580/02	gearbox single, i=6,33	36,00
9580/04	Al-gear with output shaft, 76 teeth, m=0,5 mm	24,50
9580/05	starter motor speed 480 with bevel, 12 teeth, m=0,5 mm	42,50
9613/12	small parts kit	8,50
9710/01	engine support plate (replaces the engine support plate for OS-Max No.1060)	42,50
9710/12	small parts kit	8,50
9711/01	plate for bevel bearing	34,50
9711/12	small parts kit	8,50
9712/07	coupling, SW 38mm	52,50
9713/02	gearbox support with bevel 10 teeth, m=0,8 mm and al-gear 66 teeth, m=0,5 mm	68,50
9713/04	carrier for electric motor	12,50
9713/12	small parts kit	8,50
9714/02	gearbox support with bevel 10 teeth, m=0,8 mm and al-gear 66 teeth, m=0,5 mm	68,50
9714/04	carrier for electric motor	12,50
9714/12	small parts kit	8,50
9715/02	gearbox support with bevel 10 teeth, m=0,8 mm and al-gear 66 teeth, m=0,5 mm	68,50
9715/04	carrier for electric motor	12,50
9715/12	small parts kit	8,50
9724/01	engine support plate	38,50
9724/03	nut M 10x1	14,50
9724/04	bevel support plate	34,50
9724/05	bevel bearing	18,50
9724/06	Coupling	54,50
9724/07	carrier for electric motor	18,50
9724/09	al-gear with 90 teeth, m=0,8 mm	24,50
9724/12	small parts kit	10,50
9725/03	nut M 8x1	9,50
9725/06	Coupling	54,50
9725/12	small parts kit	10,50
9730/01	engine support	82,50
9730/03	nut M 10x1	16,50
9730/04	bevel support plate	52,00
9730/05A	free wheeling gear, 76 teeth, m=0,8 mm, HF1826	78,50
9730/06A	Coupling	62,50