	Ergo 30	Ergo 46	Ergo 60	Ergo Z230 Gas	Robbe Futura Millennium 60	Robbe Futura Super Sport	Robbe Futura SE		Hirobo GPH346	Challenge	Hirobo Shuttle RG	Hirobo Shuttle TS	Hirobo Shuttle ZX	Hirobo Shuttle ZXX	Hirobo Tsurugi XX
Cost	\$350.00	\$400.00	\$499.00	\$1,090.00	\$1,080 fl.2625?	fl.1400 (Quartel)	\$1,080.00 fl 2500 (Quartel)	\$1,100.00	\$399.00 fl.1355 wo engine	\$299.00 1985	\$650.00 1990 ofzo? \$569 (model airplane news)	\$250.00	fl.1295 met OSMax32 SX-H engine fl. 1389 met SX- HX. fl.600 wo engine	\$380-\$400 fl.1175 incl engine and 1 uur les (modelbouw.co m?); fl.1459+32SX-HX	\$620.00
Crash Index	\$56.39	\$56.39	\$76.98	\$78.00	\$98.27		\$98.27	\$98.95	\$49.73		\$45.39	\$51.96		\$51.96	\$97.59 This includes the yoke \$20.74
Ease of building Instructions Ease of repair	Easy Good Easy	Easy Good Easy	Easy Good Easy	Easy Good Easy	Moderate Ok Easy		Easy Ok Easy	Lots of pieces! Typical Hirobo Looks tough	moderate Ok moderate	easy ok easy	moderate Ok moderate	easy ok easy		easy ok easy	Moderate Fair Moderate
Parts Count Ball Bearing Count Canopy Material	Low Coming soon Tough Plastic	Low Coming soon Tough Plastic	Low Coming soon Tough Plastic	Low Coming soon Tough Plastic	Low High/Complete Plastic is standard. Fiberglass avail.		Low High/Complete Plastic/Glass and prepainted available	Very High Very High FRP	Medium High Plastic	low mediocre Plastic One Piece	Medium High fiber glass	low mediocre Plastic One Piece		low high (36 balls) Plastic One Piece	Low Very High Plastic 2 piece
Frames	Aluminum	Aluminum	Aluminum	Aluminum	Stacked Aluminium /Carbon avail.		Aluminium/Car bon available	Metal	Aluminum	Plastic	Aluminum	Plastic		Plastic	Aluminum
Tail Drive	Belt	Belt	Belt	Belt	Torque Tube/ Aluminium		Torque Tube/Aluminiu m	Torque Tube or Belt		Belt	Belt	Belt		Belt	Torque Tube Stainless Steel
Blades	Wood 550mm	Wood 560mm	Wood 680mm	Wood 680mmds	None included. Accepts up to 710mm		None / Will accept 710mm NHP710s recom. r=900mm	Wood	Wood	550mm Wood	None	550mm Wood		550mm Wood	660mm Wood
Tail Rotor Blades	Plastic	Plastic	Plastic	Plastic	None included. NHP 105mm are ideal.		None / NHP 105mm recommended	Plastic	Plastic	Plastic	Plastic	Plastic		Plastic	Plastic
Head	Metal hub/Plastic Grips	Metal hub/Plastic Grips	Metal hub/Plastic Grips	Metal hub/Plastic Grips	Metal/Plastic Grips		Metal/Plastic Grips	All Metal	All Metal	Metal Hub/Plastic Grips Z bend/Ball	All Metal	Metal Hub/Plastic Grips Z bend/Ball		Metal Hub/Plastic Grips	Metal /Composite very durable
Linkages Start System	Ball Links Hex w/one way bearing	Ball Links Hex w / one way bearing	Ball Links Hex w / one way bearing	Ball Links Pull Start	Ball Links Hex with one way bearing		Ball Links Hex / no one way bearing	All Ball Link 6mm one way bearing	All Ball Link 6mm one way bearing	Z bend/Ball Link Hex w/one way	All Ball Link	Z bend/Ball Link Hex w/one way		Z bend/Ball Link Hex w/one way	All Ball Link 6mm one way
Pegae Compatible	Yes *Part #1045	Yes	Yes	No	Yes		Yes	yes #1039	yes	Yes		Yes		Yes	Yes
Fins	specify for Ergo Plastic	Plastic	Plastic	Plastic	Plastic/Carbon		Plastic / Carbon	Plastic	Plastic	Plastic	Plastic	Plastic		Plastic	Plastic
Engine	.30ci=5cc?	.46=7.5cc?	.6ci=10cc?	2.3ci=38cc?	3d fins available Nova Rossi C.60 (.60ci=10cc). 10-15cc mogelijk	10cc	3d available Super Tigre 90, 10 cc		OSMax46FX-H (fl.475)		OSmax.32SX-H		OSMax.32 SX-H (5.23cc?) (fl.600) OSMax.32SX-HX (fl. 689)	OSMax.32 SX-H (5.23cc?) (fl.600) OSMax.32SX-HX (fl. 689)	
Fuel Tank	Front	Front	Front		Rear, 620ml		Front, 600ml	Rear	Rear	Rear	Rear	Rear	(II. 669)	Rear, 250 cc=20 minutes flying	Rear
Main Shaft	10mm	10mm	10mm	10mm	10mm/ Same as Futura SE		10mm	10mm	10mm	8mm	8mm	8mm		8mm	10mm
Axle/Spindle	5mm solid	5mm solid	8mm	8mm	8mm		8mm	8mm	6mm solid	5mm Solid	6mm solid	5mm Solid		5mm Solid	Yoke and 8mm spindle are integrated
Weight	7 1/2 WAG	73/4 WAG	103/4	13 WAG	10 1/4 (4.8kg vliegklaar?)		10 1/2	4800g.	3500g.		2950g.	2350g.		2400g.	10 lbs
Visibility Comments Worthwile upgrades	Good	Good	Excellent	Excellent	Very good Excellent Kit - Constant Drive Excellent Kit - Constant Drive Tail Standard. Very rigid and designed for 3d. Stock paddles are very quick. Single reduction gear drive transmits more power to the blades. Easy to see rear tank. W: Millenium is successor of Futura and Contest. Single step step Step Step Step Step Step Step Step S		Very good My personal favorite helicopter. Constant Drive Tail Standard Double reduction belt drive is very easy to install and isolates vibration. Rear facing engine makes glow plug access a snap. W: Double step gear. Millenium is its successor. Metal Horizontal Fin mount has a better grip on the tail boom. 3D Carbon fins are lighter and IMHO better looking That's it. No more. Lots of metal stuff available, but not	Very Good	Good	Fair Comes with training gear, special head and a certificate for free partsup to \$50	Fair full 3D seems possible - there are settings for it. Mild 3D has been reported.	Fair		Fair	Very Good If the spindle bends, the entire yoke must be replaced. Normally this part isn't damaged. Please take this into consideration when comparing the crash index to other machines. The yoke is \$20.74 and is included in the crash index.

	Kalt Baron 30	Kalt Mercury CCPM	Kyosho Nexus Deluxe	Kyosho Nexus Standard (<1997)	Kyosho Nexus 30S (~1995)	Kyosho Concept 30SE,DX	Kyosho(Taya) 49BB ARF Includes Engine and Muffler. 8'98	Taya Raptor 30cc	Taya Concept 46VR (< 1997)	MyStar TSK 30	MyStar TSK 46	MyStar TSK 60	MyStar TSK 60V2	MyStar Gas	TSK K1600 Blackstar 60 DL	TSK K2000 Blackstar 32cc Gas DL
Cost	\$299.00	\$880.00	\$420.00	\$260.00	fl.550 ex engine (modelbouw.com). Also saw f600 offers incl. engine		\$380.00	fl.995 inc engine- no recently more expensive:fl.1035 ? (vasco)/fl 935 at helicopter.nl kit: \$245. 29Balls: \$340. 49BB kit DM 589 at http://www. bodos-bastel- ecke.de		\$450.00	\$497.00	\$648.00	\$825.00	?		
Crash Index Ease of building	\$70.85 easy	\$97.55 easy	\$70.52 easy	\$57.27 easy	as nexus standard?		\$47.66 Easy	Easy		\$53.72 Moderate to Hard	\$60.89 Moderate to Hard	\$77.34 Moderate to Hard	\$77.34 Moderate to Hard	~\$80? As TSK 60		
Instructions Ease of repair	Good easy	Good easy	ok easy	ok easy			Good Easy	ok easy		ok Moderate to Hard	ok Moderate to Hard	ok Moderate to Hard	ok Moderate to Hard			
Parts Count Ball Bearing Count Canopy Material Frames	low Fairly High Tough Plastic One Piece Plastic	low High Fiberglass	low Fairly High Tough Plastic One Piece Plastic	low low Tough Plastic One Piece Plastic	18 ball bearings		Low High One Pc Plastic	low Very high=49!! plastic, ugly.Concept canopy fits Plastic?	fiber-fortified	High Very High Fiberglass	High Very High Fiberglass	High Very High Fiberglass	High Very High Fiberglass		Aluminium	
Tail Drive	Wire	Belt	Wire	Wire			Belt	Belt	plastic	Aluminum ("metal") Belt	Aluminum	Aluminum	Aluminum Torque Tube	 Belt	Adminian	
Blades	550mm wood	Up to 700mm	520mm Wood	520mm Wood	600mm		Wood 550mm w/4mm bolts	625 mm	622 mm	None (550/620mm needed)	None	None	None	720mm Fiberglass		900mm(!!)
Tail Rotor Blades Head	Plastic Metal Hub/Plastic Grips	Plastic Metal Hub/Plastic Grips	Plastic Plastic	Plastic Plastic	107mm 		Plastic Plastic	plastic? Plastic?		Plastic All Metal, antirotation (autogyro)	Plastic All Metal	Plastic All Metal	Plastic All Metal	All Metal (Aluminium)		
Linkages	Ball Links	Ball Links	Z bend/Ball Link	Z bend/Ball Link			Ball Links			Ball Links	Ball Links	Ball Links	Ball Links			
Start System	6mm Hex	6mm Hex	Cone	Cone			6mm Hex w/one way bearing	Hex		6mm Hex w/one way bearing	6mm Hex w/one way bearing	6mm Hex w/one way bearing	6mm Hex w/one way bearing	Pull starter		
Pegae Compatible Fins Engine	Yes Plastic	Yes Plastic	Yes Plastic	Yes Plastic	 OS-32H(fl.200)		Yes Plastic Thunder tiger 36ABC	carbon Thundertiger 30ABC standard. Webra35FH possible (1.4HP!).	46=7.5cc? 1.62PK @16000rpm	Yes Plastic .3ci=5cc?	Yes Plastic	Yes Plastic	Yes Plastic .6ci=10cc?	24cc		32cc
Fuel Tank Main Shaft	Rear 10mm Hollow	Rear 10mm	Rear 8mm	Rear 8mm			Rear 10mm	Rear, 2oz. 10mm hardened		Rear, 300cc 10mm	Rear 10mm	Rear 10mm	Rear 10mm	Rear		
Axle/Spindle Weight	5mm 61/4 WAG	Solid 10 1/4	5mm Flapping 6 3/4 WAG	5mm Solid 61/2 WAG	2800 g		5mm Solid 6 1/2 lbs. (2850g)	5mm? 2850g (6.25lbs) "FULLY equiped"	3100 g	5mm Solid 6 3/4 WAG (3kg?)	5mm Solid 7 1/4 WAG	7mm Solid 10 1/2 WAG	7mm Solid 10 1/2 lbs (4662g)	12 pounds wo blades		
Visibility	fair	good	fair	fair			Good for a 30 (W:???)	-de-lan		Fair	Good	Very Good	Very Good			
Comments Worthwile upgrades					head lasts only short. many problems with durability?			one of the few .30 helis that can make nice autogyro landings. Capable of airobatics std muffler is	webra motor; std							
поличие upgraues					neau:			noisy; tiger motor dies in midflight; fuel tubing is cheap (replace!), blade covering gets loose.	muffler is very noisy							

	Vario Kobold	Vario Sky Fox	Vario Sky	Vigor Belt Drive	XCell MA 30	XCell MA 60	XCell MA Gas	XCell MA	XCell MA	XCell MA Pro II	XCell MA	XCell MA
	SFr. 670 \$470 fl.990	SFr. 408 fl.1750 (10cc) fl.1120 (7.5cc)	Dragon				Graphite	Custom 60	Graphite 46		Graphite 60	Graphite 60 SE
Cost	\$469.42 fl.990 (quartel)			\$899	\$365.00	\$450.00	\$1,050.00	\$608.00	\$659.00	\$1,380.00	\$899.00	\$1,020.00
Crash Index	?			\$96.19	\$71.29	\$74.68	\$80.76	\$76.84	\$94.32	\$95.10	\$90.70	\$94.22
Ease of building				Easy	Moderate to Hard	Moderate to Hard	Moderate to Hard	Moderate to Hard	Moderate to Hard	Moderate to Hard	Moderate to Hard	Moderate to Hard
Instructions Ease of repair				Good Easy	Excellent Moderate to Hard	Excellent Moderate to Hard	Excellent Moderate to Hard	Excellent Moderate to Hard	Excellent Moderate to Hard	Excellent Moderate to Hard	Excellent Moderate to Hard	Excellent Moderate to Hard
Parts Count Ball Bearing Count				Low All except elevator bellcranks	High Mediocre	High High	High High	High High	High High	High High	High High	High High
Canopy Material Frames	plastic?	Aluminium		Tough Plastic Aluminum	Plastic 2 piece Stacked Aluminum	Plastic 2 piece Stacked Aluminum	Fiberglass Graphite	Fiberglass Stacked Aluminum	Fiberglass Graphite	Fiberglass Graphite	Fiberglass Graphite	Fiberglass Graphite
Tail Drive Blades Tail Rotor Blades	750mm	Torque tube? GRP (plastic?)		Belt None Plastic	Wire 550mm Wood Plastic	Wire 648mm Wood Plastic	Torque Tube 710mm Wood Plastic	Torque Tube 690mm Wood Plastic	Torque Tube 580mm Wood Carbon	Torque Tube 690mm Carbon Carbon	Torque Tube 690mm Wood Carbon	Torque Tube None Carbon
Head		Metal + Plastic?		Metal hub/Plastic Grips	Plastic	Plastic	Plastic	Plastic	Plastic	All Metal	Plastic	All Metal
Linkages Start System		Cone?		Ball Links Hex w / one way bearing	Ball Link Cone	Ball Link Cone	Ball Link Pull Start	Ball Link Cone	Ball Link Cone	Ball Link Cone	Ball Link Cone	Ball Link Cone
Pegae Compatible				Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Fins				Plastic	Plastic	Plastic	Plastic	Plastic	Plastic	Light weight Carbon, Large Horizontal.	Plastic	Light weight Carbon
Fuel Tank	10cc	Webra WM edition			Front	Front	Front	Front	Front	Rear	Front	Front
Main Shaft Axle/Spindle Weight Visibility	4.5kg = 9.92 pounds	Rear		Front 20 oz. 10mm 8mm 10 1/2	10mm 8mm 71/4 Lbs=3220g Pretty good	10mm 8mm 9 1/2 Lbs. Very Good	10mm 8mm 12 1/2 Lbs. Very Good	10mm 8mm 9 3/4 Lbs Very Good	10mm 8mm 7 lbs. Good	10mm 8mm 9 1/2 lbs. Very Good	10mm 8mm 9 1/2 lbs. Very Good	10mm 8mm 9 1/2 lbs. Very Good
Comments Worthwile upgrades	two-step gear?	two-step gear?	two-step gear?	Very Good This is a very nice flying machineThe design is beautiful and it should be a popular kit.								