

6 Steps should be taken before flying (비행전 순서)

- ① Make sure there are no other pilots flying with the same radio frequency as yours.

Interference can be very dangerous to all. (동일한 주파수로 비행하는 사람이 근처에 있는지 반드시 확인한다.)

주파수 간섭은 쌍방에 모두 매우 위험한 결과를 초래할 수 있다.)

- ② Extend the transmitter antenna. (송신기 안테나를 뽑는다.)

- ③ Put the throttle stick of the transmitter at low position and then turn on the transmitter.

(송신기 스로틀 스틱을 Low 위치에 두고, 조종기 전원을 "On" 시킨다.)

- ④ Put the hold key at on position. — This will prevent the main rotor from rotating abruptly in case that you put the throttle stick at high position inadvertently. (송신기 홀드키를 "On" 시킨다.)

— 실수로 송신기 스틱을 상단에 놓은 채 헬기 전원을 켜 경우 갑자기 메인로터가 고속으로 회전하는 것을 방지해준다.)

- ⑤ Connect the battery to the esc. (헬기의 배터리 컨넥터를 변속기에 연결한다.)

- ⑥ Wait until the ESC sets up itself with buzzing sound. (변속기의 부저음이 날 때 까지 기다린다.)

- ⑦ Move the elevator and aileron sticks of the transmitter and check up the swash movement.

(엘리베이터와 에일러론 스틱을 움직여 스와시가 제대로 동작하는지 확인한다.)

- ⑧ If everything goes all right, turn the hold key off. (모든 상태가 이상없으면 홀드키를 "Off"한다.)

- ⑨ Start the main rotor by moving the throttle stick up slowly.

(스로틀 스틱을 천천히 위로 움직여 메인로터를 구동시킨다.)

※ Refer to the transmitter manual for setting up hold key. (홀드키 세팅은 송신기 매뉴얼을 참조할것.)

7 Data Sheet, 120° CCPM (세팅 데이터)

- ① Choose the heli appointment (기체 종류 설정 : 헬기 지정)

- ② Swash type: 120° (스와시 타입 설정)

- ③ Setting up servo reverse function (서보 리버스 세팅)

Servo	Trottle	Aileron	Elevator	Rudder	Pitch
JR	Nor	Rev	Rev	Nor	Nor
Futaba	Nor	Rev	Nor	Nor	Nor

- ④ Setting up swash mixing (스와시 믹싱 세팅)

Aileron	Elevator	Pitch
-60	60	60

- ⑤ ATV (travel adjustment)

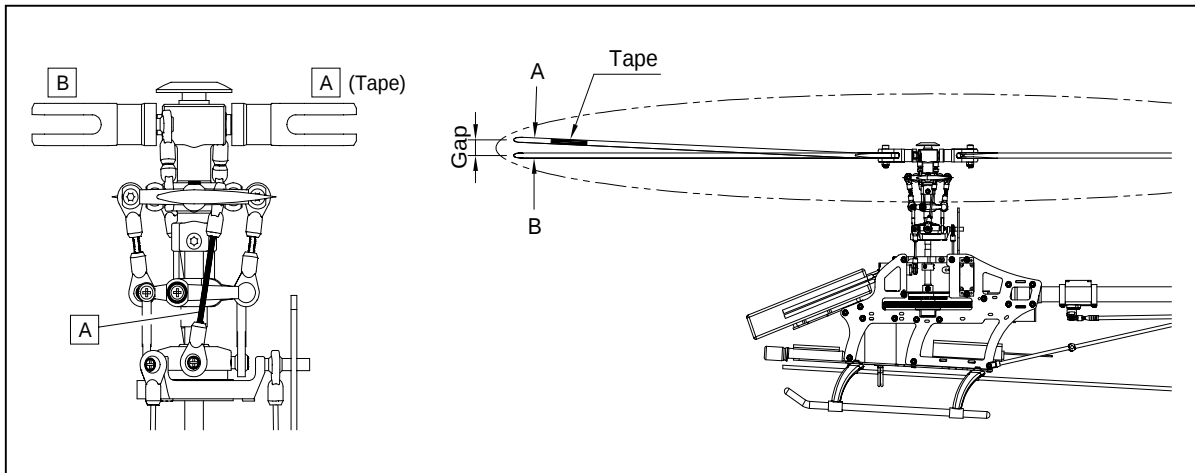
Trottle	Aileron	Elevator	Rudder	Pitch
100	100	100	145	100

※ When setting up rudder servo limits, please set ATV at 145%.

(러더 서보 리미트 설정시, ATV(트레버저스트) 값을 145%에 두고 리미트를 설정한다.)

8 Tracking adjustment (트레킹의 조정)

- ① Measure the pitch angle using a pitch gauge and make the angle same on both sides of the main rotor by adjusting the mixing arm control rod. (로터의 양각을 피치 게이지로 똑같이 켜다.)
- ② Apply the tracking tape to one of the rotor blades. (기준 로터를 선정하고, 트레킹 테이프를 붙인다.)
- ③ Start the main rotor and see if the rotor blades are tracking properly.
(로터를 회전시킨 후 로터가 상,하 이종으로 보이는지 확인한다.)
- ④ If the blade with the tracking tape is up, adjust the mixing control rod by turning its upper ball link counterclockwise (make a half-turn for each adjustment) until the blades are in track.
(트레킹 테이프를 붙인 기준로터가 위에 있을 경우, 믹싱암 컨트롤로드(Seesaw Mixing Arm to Swashplate)의 길이를 길게 한다.)
- ⑤ If the blade with the tracking tape is down, adjust the mixing control rod in reverse way.
(트레킹 테이프를 붙인 기준로터가 밑에 있을 경우, 믹싱암 컨트롤로드(Seesaw Mixing Arm to Swashplate)의 길이를 짧게 한다.)

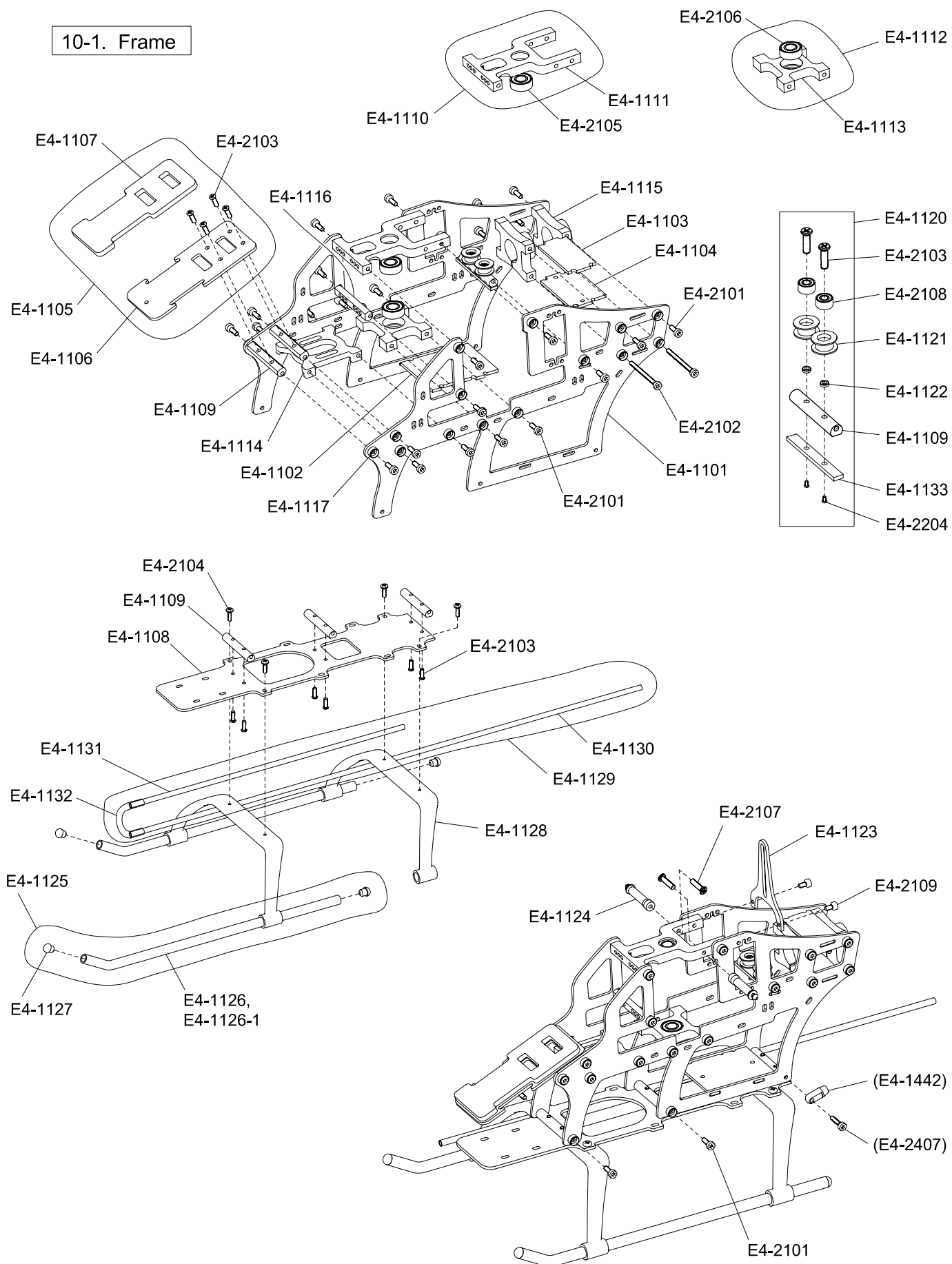


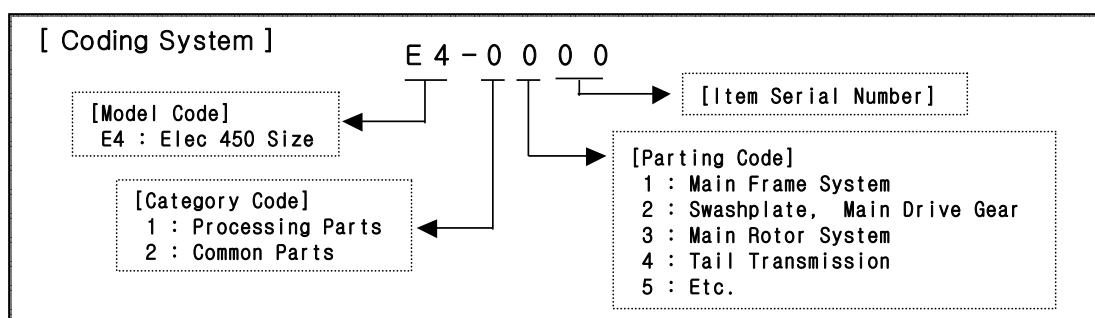
9 Selecting pinions (모터와 피니언 기어의 선정)

Motor turning force (모터의 회전력)	Proper pinions (적정 피니언의 기어수)	Remarks (비 고)	
		Beginner (초보자)	Expert (숙련자)
2500 kv	16T, 17 T	16T	17T
3000 kv	14T, 15 T	14T	15T
3550 kv	12T, 13 T	12T	13T

10 Part List

10-1. Frame

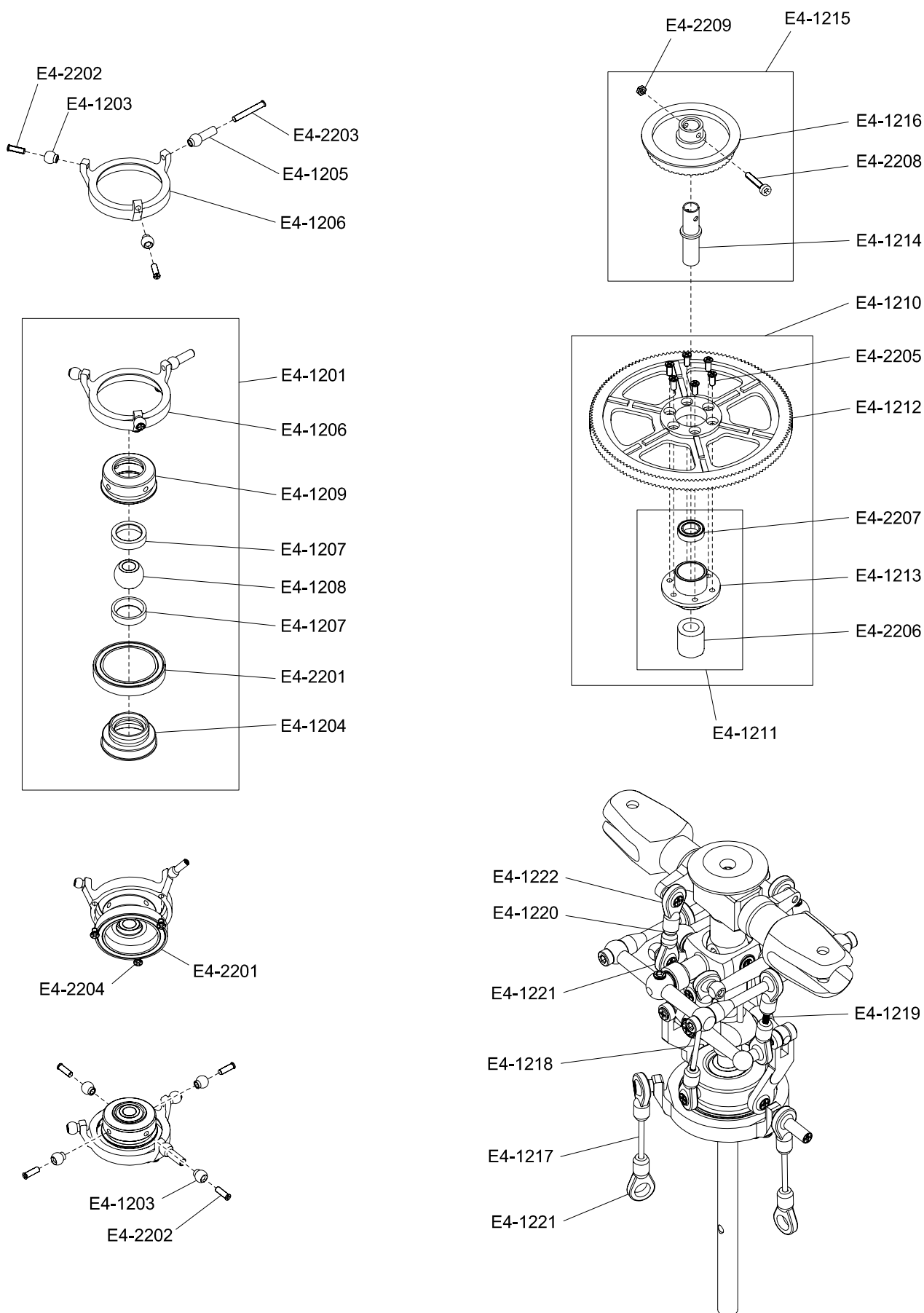




10-1. Frame

Item No.	Description	Quantity (Total)	Comments
E4-1101	Main Frame	2	
E4-1102	Radio Mount, 53mm	1	
E4-1103	Upper Gyro Mount, 17mm	1	
E4-1104	Lower Gyro Mount, 21mm	1	
E4-2101	Socket Head Bolt, 2x6mm	30 (32)	
E4-2102	Socket Head Bolt, 2x25mm	2	
E4-1105	Battery Mount Plate Set	1 set	
E4-1106	Battery Mount Plate, 65mm	1	
E4-2103	Flat Head Bolt, 2x6mm	12 (14)	
E4-1107	Foam, 63mm	1	
E4-1108	Main Frame Bottom Plate	1	
E4-2104	Self Tapping Screw, 2x7mm	4 (12)	
E4-1109	Frame Crossmember, 30mm	6	
E4-1110	Upper Bearing Block Set	1 set	
E4-1111	Upper Bearing Block	1	
E4-2105	Ball Bearing, #685zz	1	Size : $\phi 5 \times \phi 11 \times 4$
E4-1112	Lower Bearing Block Set	1 set	
E4-1113	Lower Bearing Block	1	
E4-2106	Ball Bearing, #MR115zz	1	Size : $\phi 5 \times \phi 11 \times 5$
E4-1114	Motor Mount	1	
E4-1115	Tail Boom Mount Clamp	2	
E4-1116	Servo Support, 30mm	1	
E4-1117	Socket Washer	32 (40)	
E4-1120	Belt Guide Pulley Set	1 set	
E4-1121	Belt Guide Pulley, $\Phi 9.5$	2	
E4-1122	Spacer, $\Phi 3.5 \times 0.7\text{mm}$	2 (4)	
E4-2107	Flat Head Bolt, 2x8mm	2	
E4-2108	Ball Bearing, #MR52zz	2 (18)	Size : $\phi 2 \times \phi 5 \times 2.5$
E4-1123	Antirotation Plate	1	
E4-2109	Socket Head Bolt, 2x5mm	2 (3)	
E4-1124	Body Catch	2	
E4-1125	Landing Skid Set (R & L)	1 set	
E4-1126	Landing Skid (R)	1	
E4-1126-1	Landing Skid (L)	1	
E4-1127	Landing Skid Cap	4	
E4-1128	Landing Strut	2	
E4-1129	Antenna Tube Set	1 set	
E4-1130	Antenna Tube (L)	1	
E4-1131	Antenna Tube (S)	1	
E4-1132	Silicon Tube	1	
E4-1133	Pulley Support, 33mm	1	
E4-2204	Flat Head Bolt, 2x3mm	2 (7)	

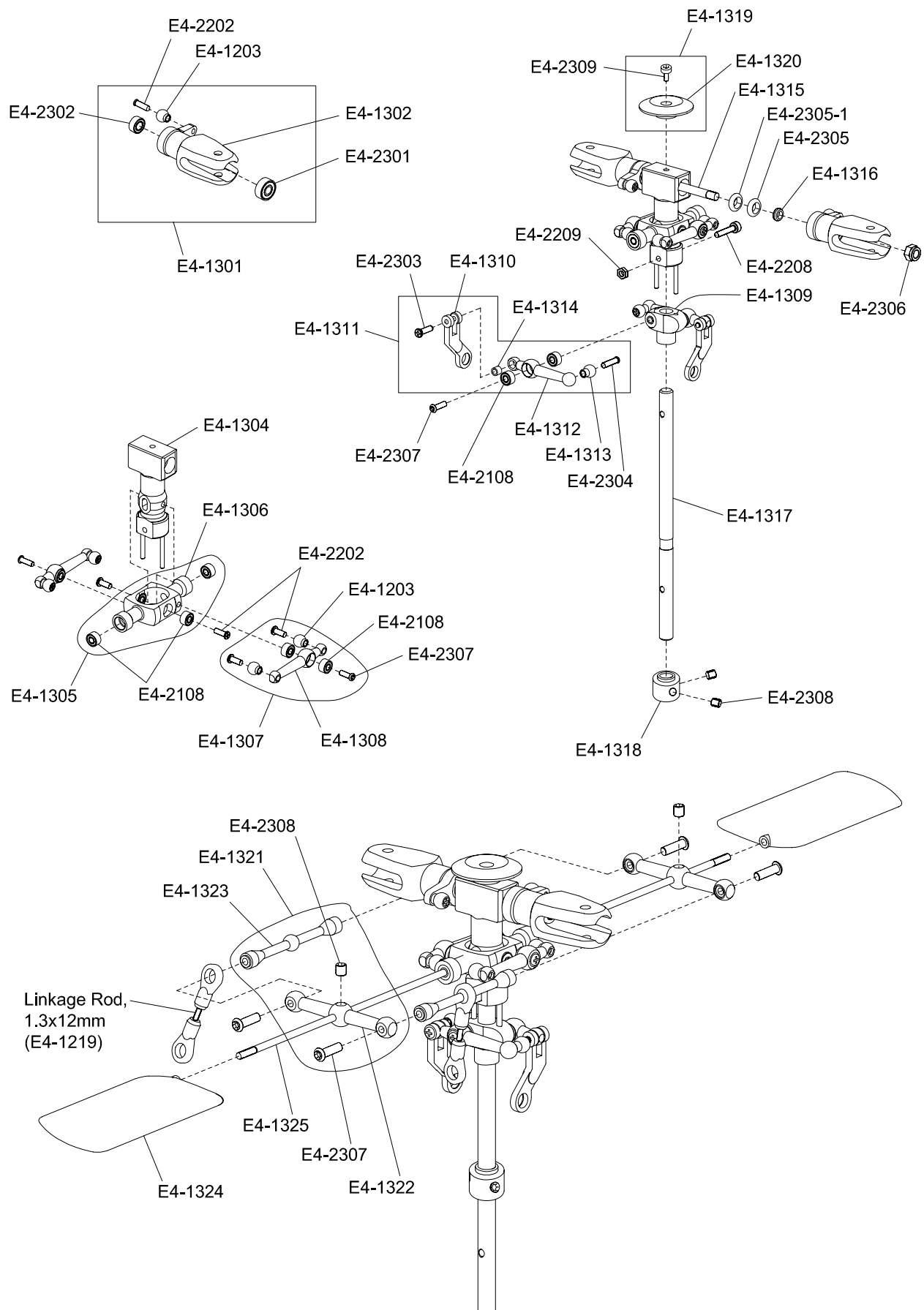
10-2. Gear, Swashplate



10-2. Gear, Swashplate

Item No.	Description	Quantity (Total)	Comments
E4-1201	Swashplate Assembly	1 set	
E4-1202	Swashplate Set	1 set	
E4-2201	Ball Bearing, #6704zz	1	Size : $\phi 20 \times \phi 27 \times 4$
E4-1203	Linkage Ball, $\phi 4.7 \times 4.5 \text{mm}$	6 (16)	
E4-2202	Countersunk Screw, 2x7mm	6 (18)	
E4-1204	Swashplate Base	1	
E4-1205	Linkage Ball, $\phi 4.7 \times 12 \text{mm}$	1	
E4-2203	Countersunk Screw, 2x14mm	1	
E4-1206	Swashplate	1	
E4-2204	Flat Head Bolt, 2x3mm	3 (7)	
E4-1207	Swashplate Ball Guide	2	
E4-1208	Swashplate Ball	1	
E4-1209	Swashplate Cap	1	
E4-1210	Main Drive Gear Set	1 set	
E4-1211	Autorotation Case Set	1 set	
E4-1212	Main Drive Gear, 150T	1	
E4-2205	Flat Head Bolt, 2x5mm	6	
E4-1213	Autorotation Case	1	
E4-2206	One-way Bearing, #HF0612	1	Size : $\phi 6 \times \phi 10 \times 12$
E4-1214	One-way Sleeve	1	
E4-2207	Ball Bearing, #MR106zz	1	Size : $\phi 6 \times \phi 10 \times 3$
E4-1215	Main Dive Pulley Set	1 set	
E4-1216	Main Drive Pulley, 51T	1	
E4-2208	Socket Head Bolt, 2x11mm	2	
E4-2209	Nut, 2mm	1 (4)	
E4-1217	Linkage Rod, $\phi 1.3 \times 23 \text{mm}$	3	
E4-1218	Linkage Rod, $\phi 1.3 \times 31 \text{mm}$	2	
E4-1219	Linkage Rod, $\phi 1.3 \times 12 \text{mm}$	2	
E4-1220	Linkage Rod, $\phi 1.3 \times 10 \text{mm}$	2	
E4-1221	Ball Link (L), 13.5mm	16 (18)	
E4-1222	Ball Link (S), 11.5mm	2	

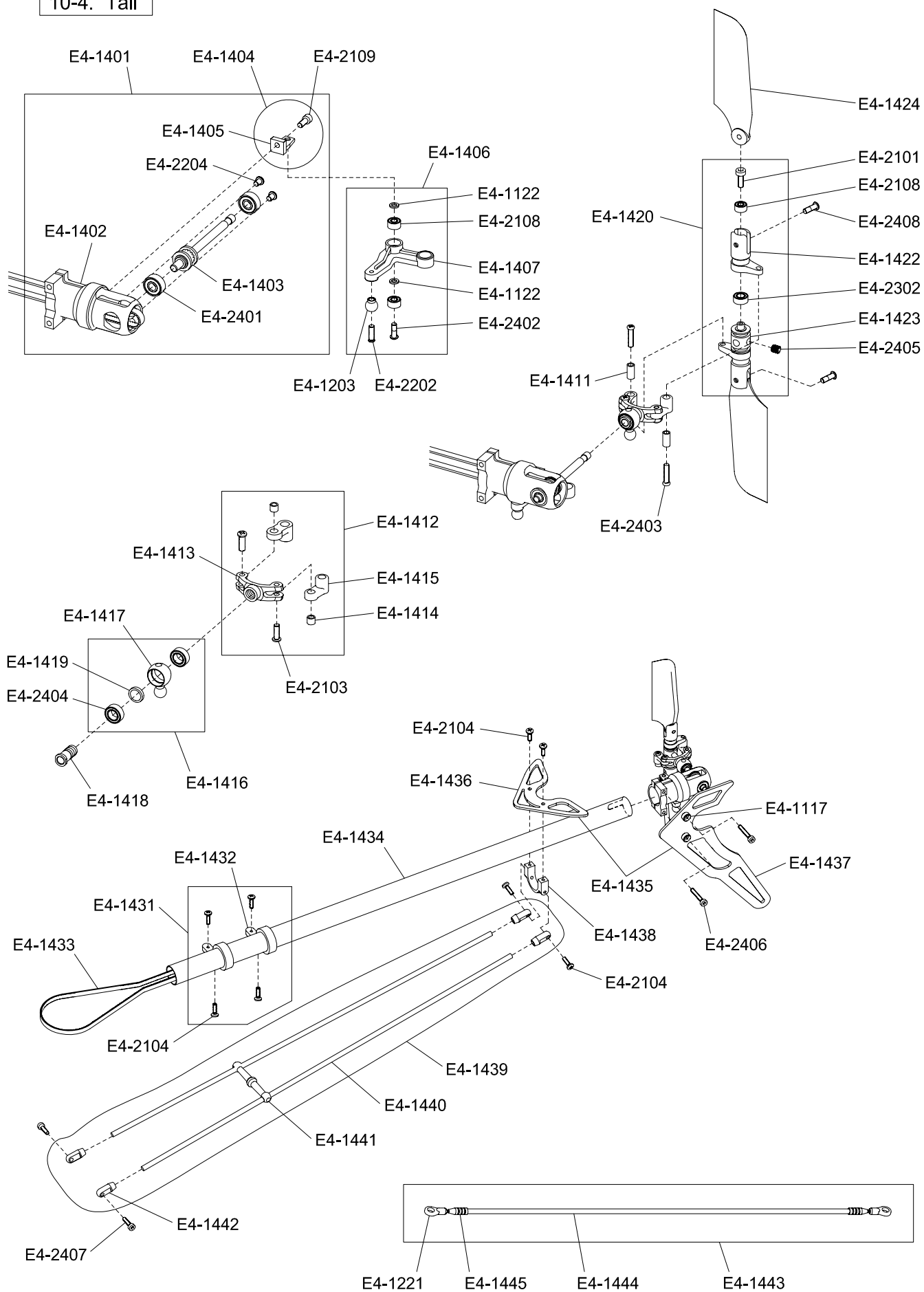
10-3. Rotor



10-3. Rotor

Item No.	Description	Quantity (Total)	Comments
E4-1301	Main Blade Holder Set	2 sets	
E4-1302	Main Blade Holder	2	
E4-2301	Ball Bearing, #693zz	2	Size : $\phi 3 \times \phi 8 \times 4$
E4-2302	Ball Bearing, #MR63zz	2 (4)	Size : $\phi 3 \times \phi 6 \times 2.5$
E4-1203	Linkage Ball, $\phi 4.7 \times 4.5 \text{mm}$	6 (16)	
E4-2202	Countersunk Screw, 2x7mm	8 (18)	
E4-1304	Main Rotor Hub	1	
E4-1305	Seesaw Set	1 set	
E4-1306	Seesaw	1	
E4-2108	Ball Bearing, #MR52zz	12 (18)	Size : $\phi 2 \times \phi 5 \times 2.5$
E4-1307	Seesaw Mixing Arm Set	2 sets	
E4-1308	Seesaw Mixing Arm	2	
E4-2307	Button Head Bolt, 2x7mm	8	
E4-1309	Washout Base	1	
E4-1310	Washout Link	2	
E4-2303	Flat Head Bolt, 1.7x7mm	2	
E4-1311	Washout Arm Set	2 sets	
E4-1312	Washout Arm	2	
E4-1313	Linkage Ball, $\phi 4.7 \times 5.5 \text{mm}$	2	
E4-2304	Countersunk Screw, 2x8mm	2	
E4-1314	Spacer Collar, $\phi 3 \times 2.3 \text{mm}$	2	
E4-1315	Feathering Shaft	1	
E4-2305	O-Ring (Hard)	2	
E4-2305-1	O-Ring (Soft)	2	
E4-1316	Spacer, $\phi 5 \times 1.7 \text{mm}$	2	
E4-2306	Nylon Nut, 3mm	2 (4)	
E4-1317	Main Shaft	1	
E4-2208	Socket Head Bolt, 2x11mm	2	
E4-2209	Nut, 2mm	1 (4)	
E4-1318	Main Shaft Lock	1	
E4-2308	Set Screw, 3x3mm	4 (5)	
E4-1319	Head Button Set	1 set	
E4-1320	Head Button	1	
E4-2309	Socket Head Bolt, 2x4mm	1	
E4-1321	Flybar Control Arm Set	2 sets	
E4-1322	Flybar Control Arm	2	
E4-1323	Flybar Arm Spacer	2	
E4-1324	Flybar Paddle	2	
E4-1325	Flybar, 210mm	1	

10-4. Tail



10-4. Tail

Item No.	Description	Quantity (Total)	Comments
E4-1401	Tail Drive Set	1 set	
E4-1402	Tail Housing	1	
E4-1403	Tail Pulley	1	
E4-2401	Ball Bearing, #MR83zz	2	Size : $\phi 3 \times \phi 8 \times 3$
E4-2204	Flat Head Bolt, 2x3mm	2 (7)	
E4-1404	Tail Pitch Lever Mount Set	1 set	
E4-1405	Tail Pitch Lever Mount	1	
E4-2109	Socket Head Bolt, 2x5mm	1 (3)	
E4-1406	Tail Pitch Lever Set	1 set	
E4-1407	Tail Pitch Lever	1	
E4-1122	Spacer, $\phi 3.5 \times 0.7 \text{mm}$	2 (4)	
E4-2108	Ball Bearing, #MR52zz	4 (18)	Size : $\phi 2 \times \phi 5 \times 2.5$
E4-2402	Button Head Bolt, 2x8mm	3	
E4-1203	Linkage Ball, $\phi 4.7 \times 4.5 \text{mm}$	1 (16)	
E4-2202	Countersunk Screw, 2x7mm	1 (18)	
E4-1411	Spacer Collar, $\phi 3 \times 6.1 \text{mm}$	2	
E4-2403	Countersunk Screw, 2x10mm	2 (3)	
E4-1412	Tail Pitch Plate Set	1 set	
E4-1413	Tail Pitch Plate	1	
E4-2103	Flat Head Bolt, 2x6mm	2 (14)	
E4-1414	Spacer Collar, $\phi 3 \times 2.6 \text{mm}$	2	
E4-1415	Tail Pitch Link	2	
E4-1416	Tail Pitch Slider Set	1 set	
E4-1417	Tail Pitch Slider	1	
E4-2404	Ball Bearing, #MR74zz	2	Size : $\phi 4 \times \phi 7 \times 2.5$
E4-1418	Tail Slide Sleeve	1	
E4-1419	Spacer, $\phi 6 \times 0.4 \text{mm}$	1	
E4-1420	Tail Rotor Assembly	1 set	
E4-1422	Tail Blade Holder	2	
E4-2302	Ball Bearing, #MR63zz	2 (4)	Size : $\phi 3 \times \phi 6 \times 2.5$
E4-2101	Socket Head Bolt, 2x6mm	2 (32)	
E4-1423	Tail Center Hub	1	
E4-2405	Set Screw, 3x2.9mm	1	
E4-1424	Tail Rotor Blade	2	
E4-1431	Tail Servo Mount Set	1 set	
E4-1432	Tail Servo Mount	2	
E4-2104	Self Tapping Screw, 2x7mm	8 (12)	
E4-1433	Tail Drive Belt	1	
E4-1434	Tail Boom, Alumium	1	
E4-1435	Tail Fin Set	1 set	
E4-1436	Tail Horizontal Fin	1	
E4-1437	Tail Vertical Fin	1	
E4-1117	Socket Washer	2 (40)	
E4-2406	Socket Head Bolt, 2x13mm	2	
E4-1438	Tail Fin Mount	1	

Item No.	Description	Quantity (Total)	Comments
E4-1439	Tail Boom Brace Set	1 set	
E4-1440	Tail Boom Brace, $\Phi 3 \times 263 \text{mm}$	2	
E4-1441	Tail Brace Support	1	
E4-1442	Tail Brace Connector	4	
E4-2407	Socket Head Bolt, 2x8mm	2 (8)	
E4-1443	Tail Control Rod Set	1 set	
E4-1444	Tail Control Rod, $\Phi 3 \times 263 \text{mm}$	1	
E4-1445	Tail Control Rod End	2	
E4-1221	Ball Links (L), 13.5mm	2 (18)	

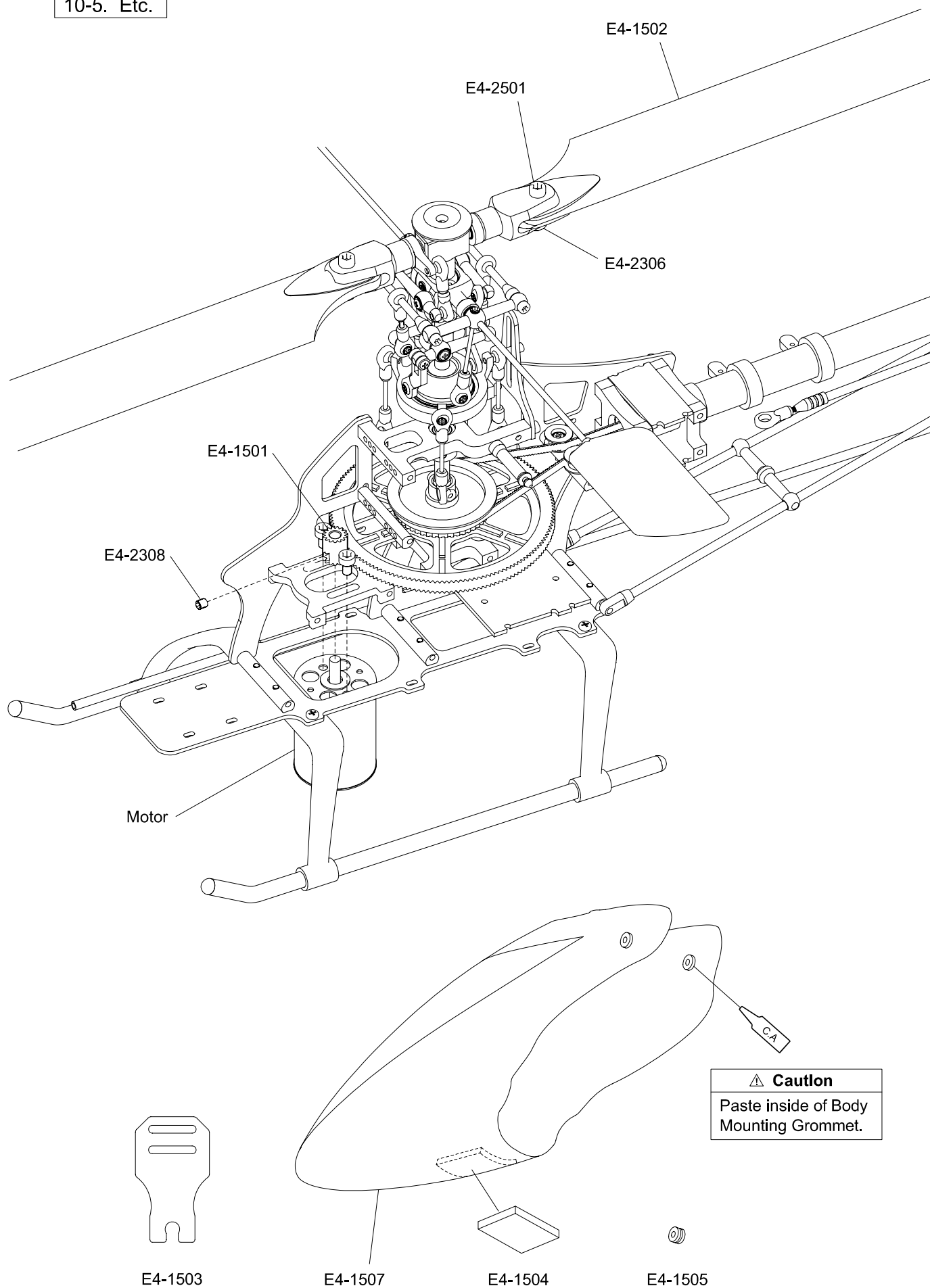
10-5. Etc.

Item No.	Description	Quantity (Total)	Comments
E4-1501	Motor Pinion Gear (11T & 13T) or (14T & 16T)	1 set	Complete with drive motor
E4-2308	Set Screw, 3x3mm	1 (5)	
E4-1502	Main Blade, 325mm	2	
E4-1503	Main Blade Foam Holder	1	
E4-2501	Socket Head Bolt, 3x15mm	2	
E4-2306	Nylon Nut, 3mm	2 (4)	
E4-1504	Body Rubber	1	
E4-1505	Body Mounting Grommet	2	
E4-1506	Decal, Small	1	
E4-1507	Body	1	

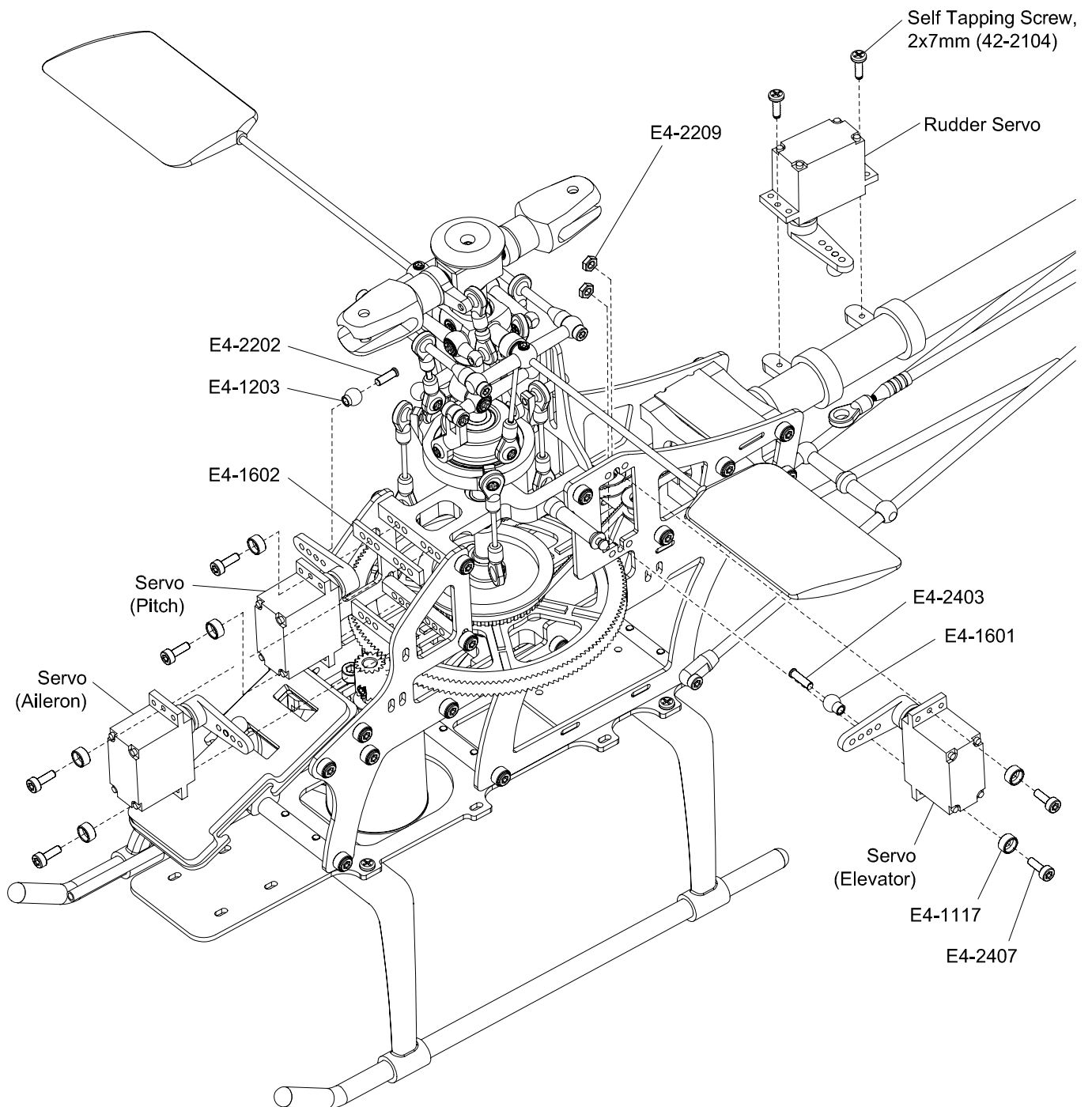
Servo

Item No.	Description	Quantity (Total)	Comments
E4-1601	Linkage Ball, $\Phi 4.7 \times 7 \text{mm}$	1	
E4-2403	Countersunk Screw, 2x10mm	1 (3)	
E4-1602	Servo Plate, 28mm	2	
E4-1117	Socket Washer	6 (40)	
E4-2407	Socket Head Bolt, 2x8mm	6 (8)	
E4-1203	Linkage Ball, $\Phi 4.7 \times 4.5 \text{mm}$	3 (16)	
E4-2202	Countersunk Screw, 2x7mm	3 (18)	
E4-2209	Nut, 2mm	2 (4)	

10-5. Etc.



Servo



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