

作成承認印

配布許可印



AF Zoom Micro-Nikkor ED 70-180/4.5-5.6D



PARTS LIST

修理部品表

Nikon | NIKON CORPORATION
Tokyo, Japan

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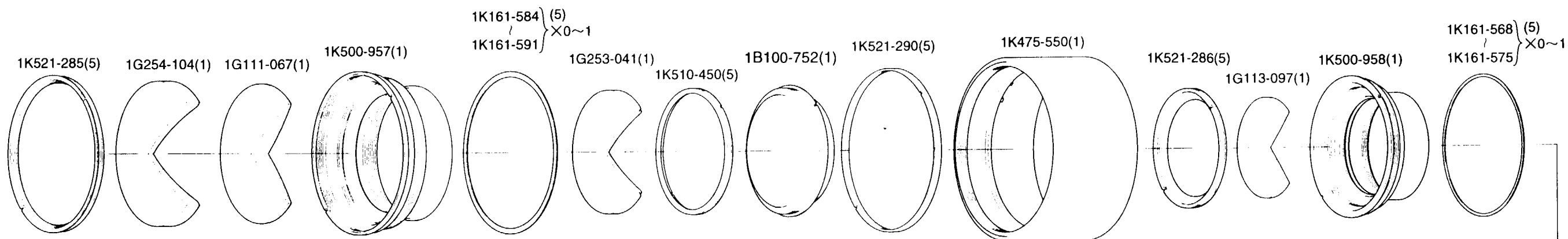
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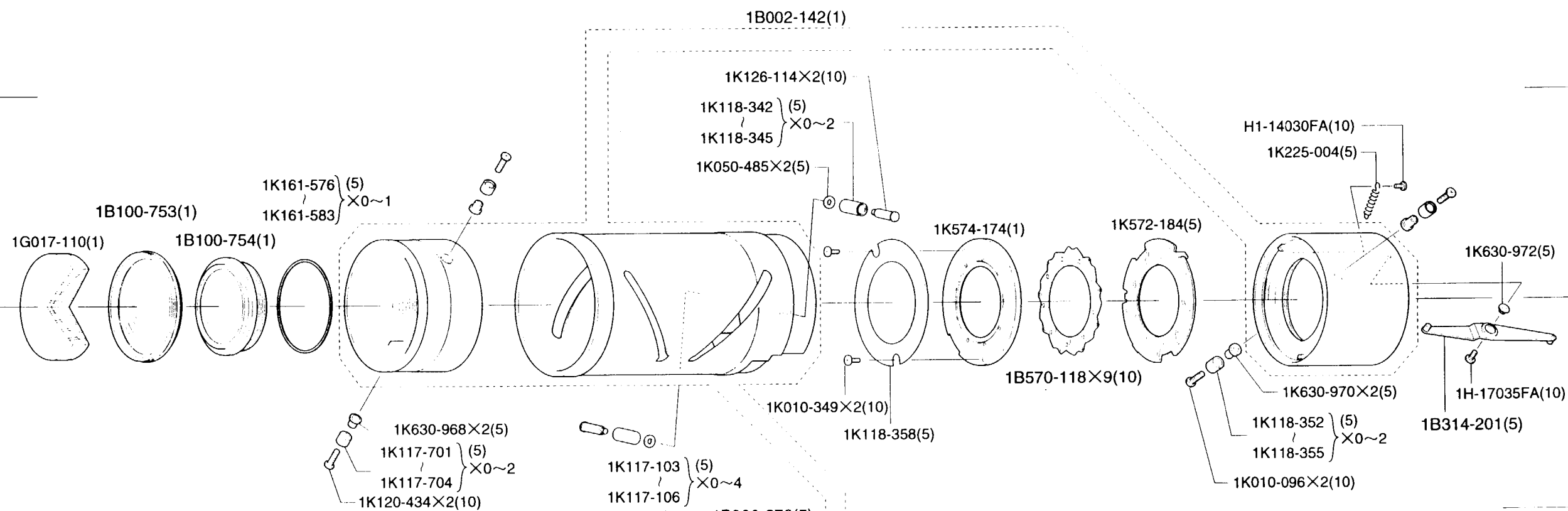
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AF Micro ED 70-180/4.5-5.6D JAA76351-R.3430.A

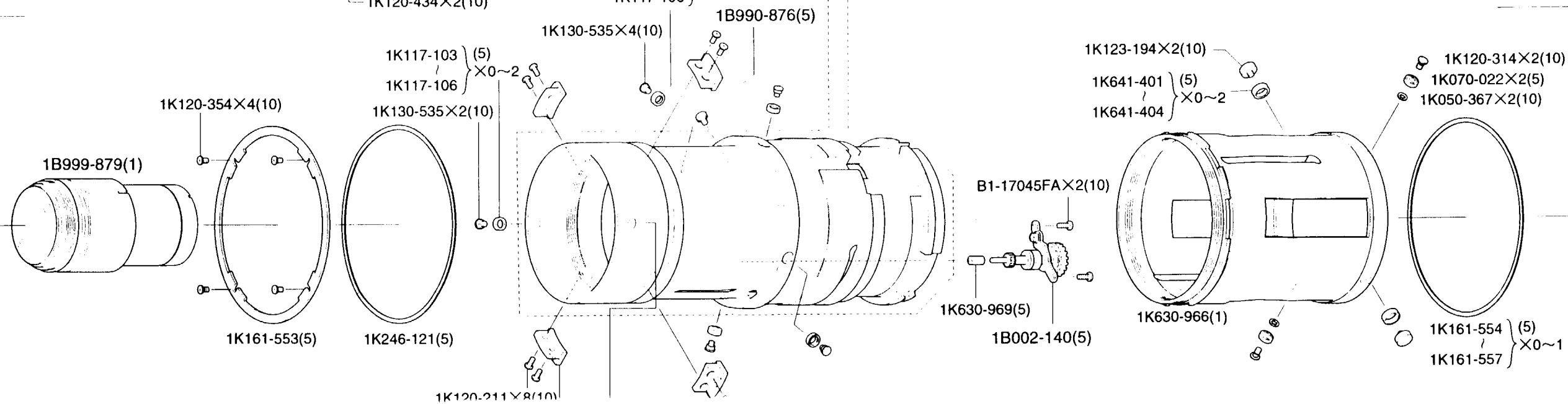
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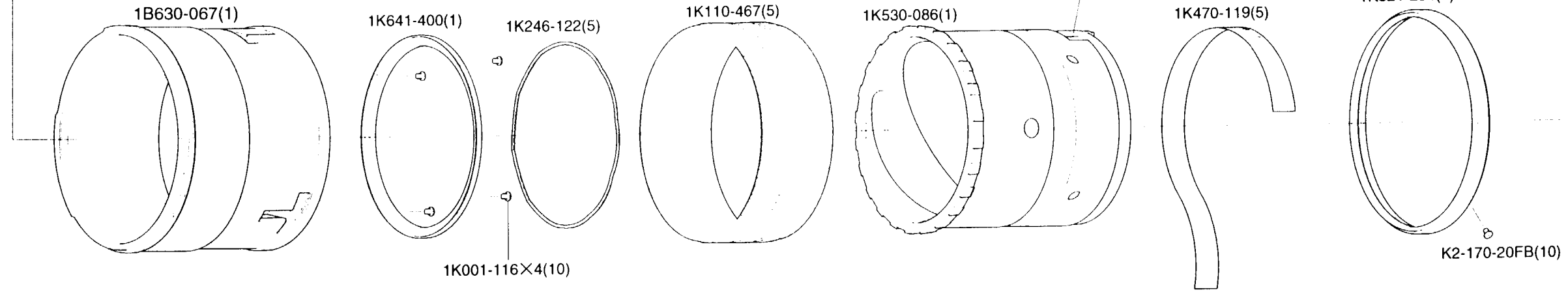
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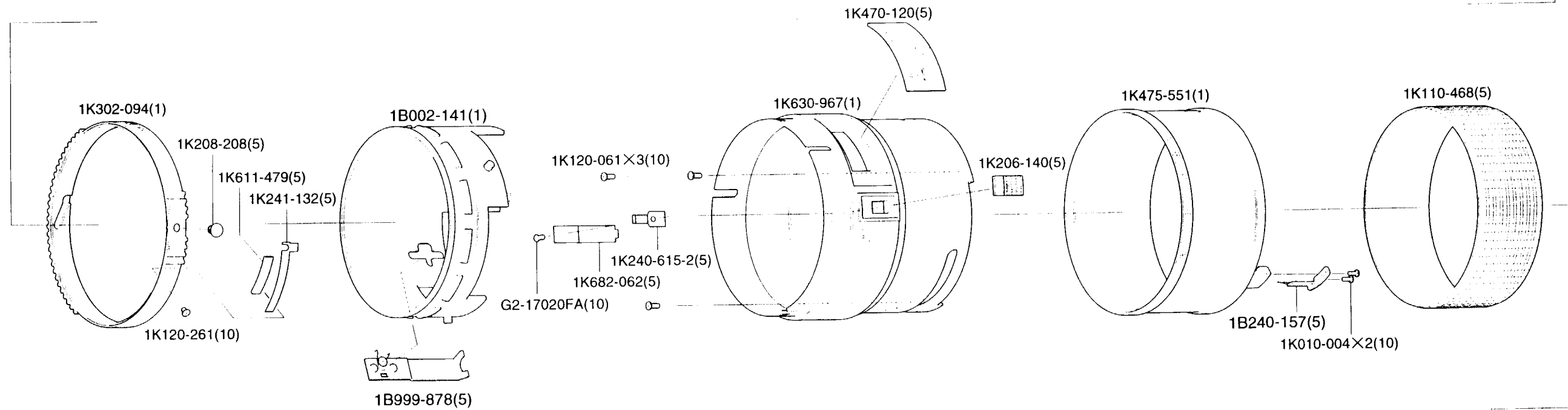
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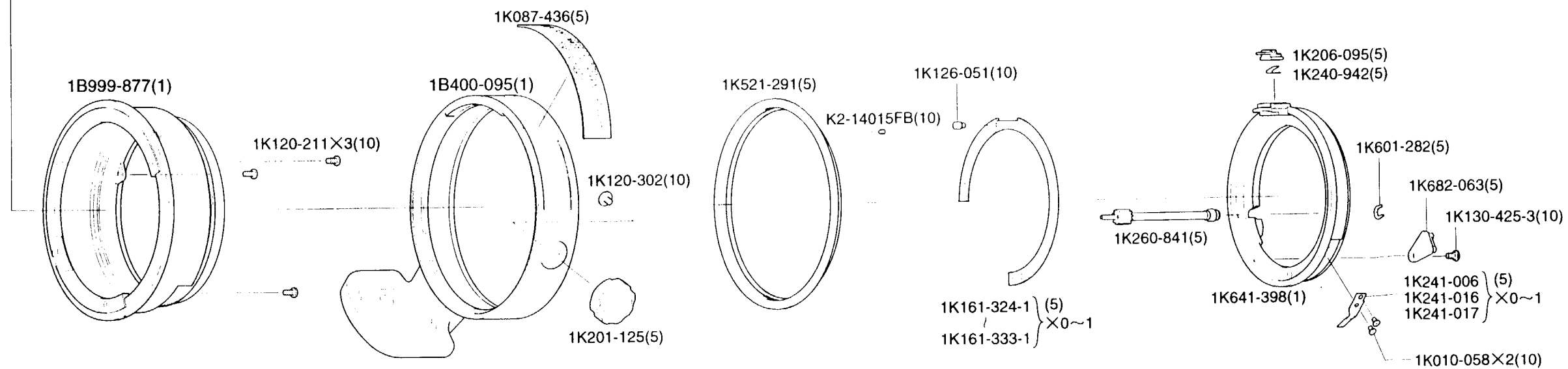
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AF Micro ED 70-180/4.5-5.6D JAA76351-R.3430.A

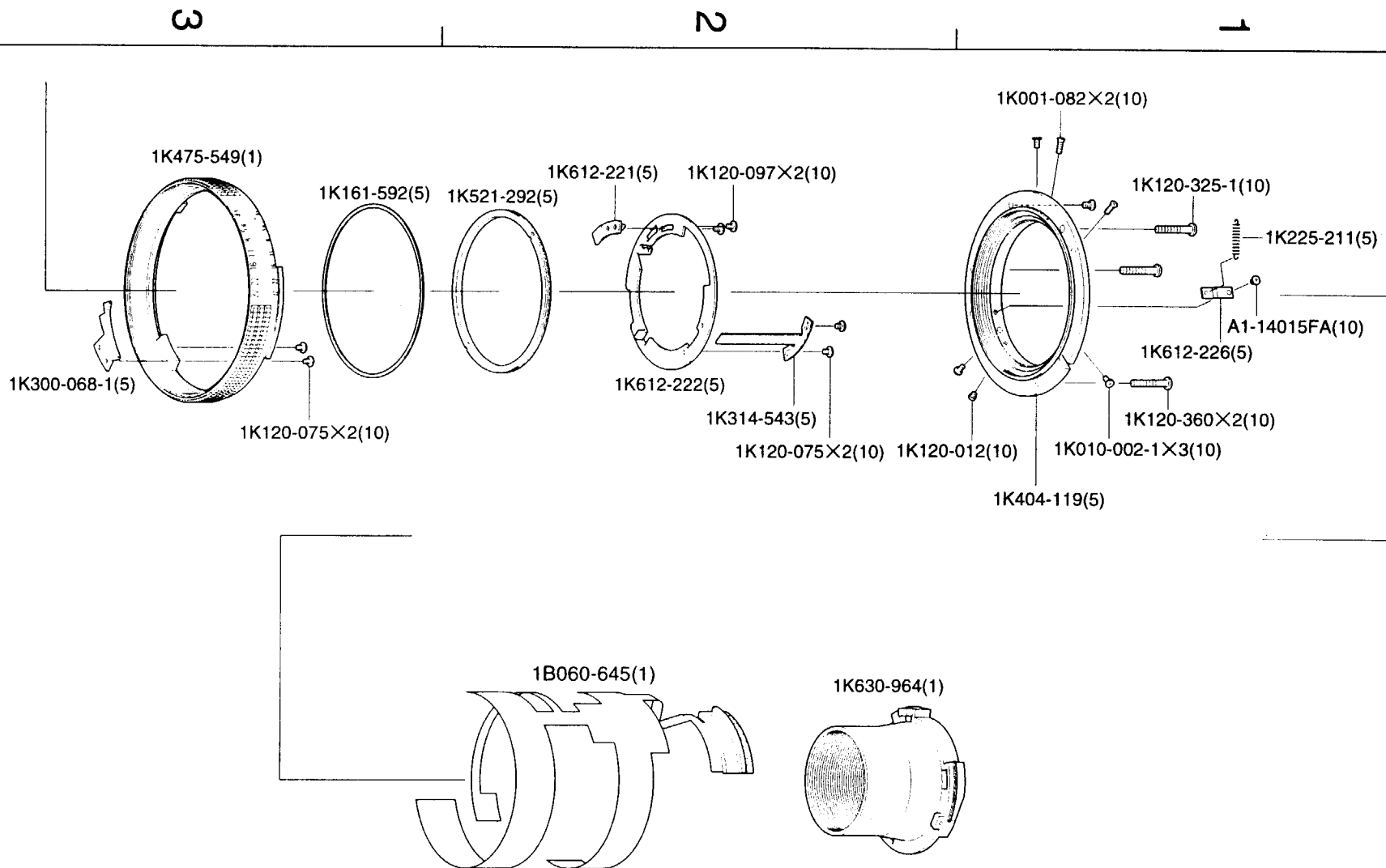


Fig.3

部品表 Parts List

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部品番号 Part No.	補助番号 Ckt No.	名 称 Name	1台分 個 数 Pcs. Per Unit	部組品番号 Assembly No.	参照 図番 Fig. No.	販売区分 Term of Delivery	備 考 Remarks	要求単位 Q'ty per order
1G111-067 (1G111-067)	G2	G 2 レンズ G2 LENS ELEMENT	1		1 A1	○		1
1G113-097 (1G113-097)	G6	G 6 レンズ G6 LENS ELEMENT	1		1 D1	○		1
1G247-069 (1G247-069)	G18	G 1 8 レンズ G18 LENS	1	1B999-879		○△		1
1G253-041 (1G253-041)	G3	G 3 レンズ G3 LENS ELEMENT	1		1 B1	○		1
1G254-104 (1G254-104)	G1	G 1 レンズ G1 LENS	1		1 A1	○		1
*1K001-082 (1K001-082)	129	S C R E W SCREW	2		3 A1	○		10
1K001-116 (1K001-116)	161	S C R E W SCREW	4		1 B2	○		10
*1K010-002-1 (1K010-002-1)	154	S C R E W SCREW	3		3 A1	○		10
*1K010-004 (1K010-004)	139	S C R E W SCREW	2		2 D2	○		10
*1K010-058 (1K010-058)	149	S C R E W SCREW	2		2 D3	○		10
*1K010-096 (1K010-096)	162	S C R E W SCREW	2		1 D2	○		10
1K010-349 (1K010-349)	141	S C R E W SCREW	2		1 C2	○		10
*1K050-367 (1K050-367)	142	ワッシャー WASHER	2		1 D3	○		10
1K050-485 (1K050-485)	135	ワッシャー WASHER	2		1 B2	○		5
*1K070-022 (1K070-022)	143	回転式ガイド環 TURN GUIDE RING	2		1 D3	○		5
1K087-436 (1K087-436)	166	銘板 NAME PLATE	1		2 B3	○		5

部品表 Parts List

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部品番号 Part No.	補助番号 Ckt No.	名 称 Name	1 台 分 個 数 Pcs. Per Unit	部組品番号 Assembly No.	参照 図番 Fig. No.	販売区分 Term of Delivery	備 考 Remarks	要求単位 Q'ty per order
1K110-467 (1K110-467)	65	ゴムリング RUBBER RING	1		2 B2	○		5
1K110-468 (1K110-468)	71	ゴムリング RUBBER RING	1		2 D2	○		5
*1K115-817 (1K115-817)	183	スエード FLOCK PAPER	1		1 B2	○		5
1K117-103 (1K117-103)	103	ローラー D=4. 4 8 ROLLER D=4. 48	0-6		1 B2	○		5
1K117-104 (1K117-104)	103	ローラー D=4. 4 9 ROLLER D=4. 49	0-6		1 B2	○		5
1K117-105 (1K117-105)	103	ローラー D=4. 5 ROLLER D=4. 5	0-6		1 B2	○		5
1K117-106 (1K117-106)	103	ローラー D=4. 5 1 ROLLER D=4. 51	0-6		1 B2	○		5
*1K117-701 (1K117-701)	70	ローラー D=4. 5 ROLLER D=4. 5	0-2		1 B2	○		5
*1K117-702 (1K117-702)	70	ローラー D=4. 4 9 ROLLER D=4. 49	0-2		1 B2	○		5
*1K117-703 (1K117-703)	70	ローラー D=4. 4 8 ROLLER D=4. 48	0-2		1 B2	○		5
*1K117-704 (1K117-704)	70	ローラー D=4. 5 1 ROLLER D=4. 51	0-2		1 B2	○		5
1K118-342 (1K118-342)	134	ローラー D=4. 5 ROLLER D=4. 5	0-2		1 B2	○		5
1K118-343 (1K118-343)	134	ローラー D=4. 4 9 ROLLER D=4. 49	0-2		1 B2	○		5
1K118-344 (1K118-344)	134	ローラー D=4. 4 8 ROLLER D=4. 48	0-2		1 B2	○		5
1K118-345 (1K118-345)	134	ローラー D=4. 5 1 ROLLER D=4. 51	0-2		1 B2	○		5
1K118-352 (1K118-352)	167	ローラー D=4. 5 ROLLER D=4. 5	0-2		1 D2	○		5

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部品番号 Part No.	補助番号 Ckt No.	名 称 Name	1台分 個 数 Pcs. Per Unit	部組品番号 Assembly No.	参照 図番 Fig. No.	販売区分 Term of Delivery	備 考 Remarks	要求単位 Q'ty per order
1K118-353 (1K118-353)	167	ローラー D=4.49 ROLLER D=4.49	0-2		1 D2	○		5
1K118-354 (1K118-354)	167	ローラー D=4.48 ROLLER D=4.48	0-2		1 D2	○		5
1K118-355 (1K118-355)	167	ローラー D=4.51 ROLLER D=4.51	0-2		1 D2	○		5
1K118-358 (1K118-358)	158	カバーシート COVER SHEET	1		1 C2	○		5
*1K120-012 (1K120-012)	111	SCREW SCREW	1		3 A1	○		10
*1K120-028 (1K120-028)	115	SCREW SCREW	2		2 C1	○		10
*1K120-061 (1K120-061)	153	SCREW SCREW	3		2 C2	○		10
*1K120-075 (1K120-075)	100	SCREW SCREW	4		3 A2	○		10
*1K120-097 (1K120-097)	152	SCREW SCREW	2		3 A2	○		10
*1K120-211 (1K120-211)	130	SCREW SCREW	11		1 B2	○		10
*1K120-261 (1K120-261)	116	SCREW SCREW	1		2 B1	○		10
*1K120-302-1 (1K120-302)	132	SCREW SCREW	1		2 B2	○		10
*1K120-314 (1K120-314)	144	SCREW SCREW	2		1 D3	○		10
*1K120-325-1 (1K120-325)	105	SCREW SCREW	1		3 A1	○		10
*1K120-354 (1K120-354)	146	SCREW SCREW	4		1 A3	○		10
*1K120-360 (1K120-360)	107	SCREW SCREW	2		3 A1	○		10

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部品番号 Part No.	補助番号 Ckt No.	名 称 Name	1台分 個 数 Pcs. Per Unit	部組品番号 Assembly No.	参照 図番 Fig. No.	販売区分 Term of Delivery	備 考 Remarks	要求単位 Q'ty per order
1K120-433 (1K120-433)	102	SCREW SCREW	1			○		10
1K120-434 (1K120-434)	147	SCREW SCREW	2		1 B2	○		10
1K123-194 (1K123-194)	58	SCREW SCREW	2		1 C3	○		10
*1K126-051 (1K126-051)	96	SCREW SCREW	1		2 C3	○		10
1K126-114 (1K126-114)	133	SCREW SCREW	2		1 C2	○		10
*1K130-425-3 (1K130-425-1)	84	SCREW SCREW	1		2 D3	○		10
1K130-535 (1K130-535)	121	SCREW SCREW	6		1 B3	○		10
1K161-324-1 (1K161-324-1)	77	ワッシャー T=0.8 WASHER T=0.8	0-1		2 C3	○		5
1K161-325-1 (1K161-325-1)	77	ワッシャー T=0.05 WASHER T=0.05	0-1		2 C3	○		5
1K161-326-1 (1K161-326-1)	77	ワッシャー T=0.06 WASHER T=0.06	0-1		2 C3	○		5
1K161-327-1 (1K161-327-1)	77	ワッシャー T=0.07 WASHER T=0.07	0-1		2 C3	○		5
1K161-328-1 (1K161-328-1)	77	ワッシャー T=0.08 WASHER T=0.08	0-1		2 C3	○		5
1K161-329-1 (1K161-329-1)	77	ワッシャー T=0.09 WASHER T=0.09	0-1		2 C3	○		5
1K161-330-1 (1K161-330-1)	77	ワッシャー T=0.1 WASHER T=0.1	0-1		2 C3	○		5
1K161-331-1 (1K161-331-1)	77	ワッシャー T=0.2 WASHER T=0.2	0-1		2 C3	○		5
1K161-332-1 (1K161-332-1)	77	ワッシャー T=0.3 WASHER T=0.3	0-1		2 C3	○		5

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部品番号 Part No.	補助番号 Ckt No.	名 称 Name	1台分 個 数 Pcs. Per Unit	部組品番号 Assembly No.	参照 図番 Fig. No.	販売区分 Term of Delivery	備 考 Remarks	要求単位 Q'ty per order
1K161-333-1 (1K161-333-1)	77	ワッシャー T=0. 5 WASHER T=0.5	0-1		2 C3	○		5
1K161-553 (1K161-553)	53	押さえ板 RETAINER PLATE	1		1 A3	○		5
1K161-554 (1K161-554)	61	ワッシャー T=0. 3 WASHER T=0.3	0-1		1 D3	○		5
1K161-555 (1K161-555)	61	ワッシャー T=0. 2 WASHER T=0.2	0-1		1 D3	○		5
1K161-556 (1K161-556)	61	ワッシャー T=0. 1 WASHER T=0.1	0-1		1 D3	○		5
1K161-557 (1K161-557)	61	ワッシャー T=0. 0 5 WASHER T=0.05	0-1		1 D3	○		5
1K161-568 (1K161-568)	159	ワッシャー T=0. 0 5 WASHER T=0.05	0-1		1 D1	○		5
1K161-569 (1K161-569)	159	ワッシャー T=0. 0 6 WASHER T=0.06	0-1		1 D1	○		5
1K161-570 (1K161-570)	159	ワッシャー T=0. 0 7 WASHER T=0.07	0-1		1 D1	○		5
1K161-571 (1K161-571)	159	ワッシャー T=0. 0 8 WASHER T=0.08	0-1		1 D1	○		5
1K161-572 (1K161-572)	159	ワッシャー T=0. 0 9 WASHER T=0.09	0-1		1 D1	○		5
1K161-573 (1K161-573)	159	ワッシャー T=0. 1 WASHER T=0.1	0-1		1 D1	○		5
1K161-574 (1K161-574)	159	ワッシャー T=0. 2 WASHER T=0.2	0-1		1 D1	○		5
1K161-575 (1K161-575)	159	ワッシャー T=0. 3 WASHER T=0.3	0-1		1 D1	○		5
1K161-576 (1K161-576)	160	ワッシャー T=0. 0 5 WASHER T=0.05	0-2		1 A2	○		5
1K161-577 (1K161-577)	160	ワッシャー T=0. 0 6 WASHER T=0.06	0-2		1 A2	○		5

部品表 Parts List

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部品番号 Part No.	補助番号 Ckt No.	名 称 Name	1 台分 個 数 Pcs. Per Unit	部組品番号 Assembly No.	参照 図番 Fig. No.	販売区分 Term of Delivery	備 考 Remarks	要求単位 Q'ty per order
1K161-578 (1K161-578)	160	ワッシャー T=0. 07 WASHER T=0.07	0-2		1 A2	○		5
1K161-579 (1K161-579)	160	ワッシャー T=0. 08 WASHER T=0.08	0-2		1 A2	○		5
1K161-580 (1K161-580)	160	ワッシャー T=0. 09 WASHER T=0.09	0-2		1 A2	○		5
1K161-581 (1K161-581)	160	ワッシャー T=0. 1 WASHER T=0.1	0-2		1 A2	○		5
1K161-582 (1K161-582)	160	ワッシャー T=0. 2 WASHER T=0.2	0-2		1 A2	○		5
1K161-583 (1K161-583)	160	ワッシャー T=0. 3 WASHER T=0.3	0-2		1 A2	○		5
1K161-584 (1K161-584)	169	ワッシャー T=0. 05 WASHER T=0.05	0-1		1 B1	○		5
1K161-585 (1K161-585)	169	ワッシャー T=0. 06 WASHER T=0.06	0-1		1 B1	○		5
1K161-586 (1K161-586)	169	ワッシャー T=0. 07 WASHER T=0.07	0-1		1 B1	○		5
1K161-587 (1K161-587)	169	ワッシャー T=0. 08 WASHER T=0.08	0-1		1 B1	○		5
1K161-588 (1K161-588)	169	ワッシャー T=0. 09 WASHER T=0.09	0-1		1 B1	○		5
1K161-589 (1K161-589)	169	ワッシャー T=0. 1 WASHER T=0.1	0-1		1 B1	○		5
1K161-590 (1K161-590)	169	ワッシャー T=0. 2 WASHER T=0.2	0-1		1 B1	○		5
1K161-591 (1K161-591)	169	ワッシャー T=0. 3 WASHER T=0.3	0-1		1 B1	○		5
1K201-125 (1K201-125)	106	ノブ KNOB	1		2 B3	○		5
*1K206-095 (1K206-095)	74	E E ロックレバー EE LOCK LEVER	1		2 C3	○		5

部品表 Parts List

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部品番号 Part No.	補助番号 Ckt No.	名 称 Name	1台分 個 数 Pcs. Per Unit	部組品番号 Assembly No.	参照 図番 Fig. No.	販売区分 Term of Delivery	備 考 Remarks	要求単位 Q'ty per order
1K206-140 (1K206-140)	112	リミットSWレバー LIMIT SW LEVER	1		2 C2	○		5
1K208-208 (1K208-208)	95	釦 BUTTON	1		2 B2	○		5
*1K225-004 (1K225-004)	168	バネ SPRING	1		1 D2	○		5
*1K225-211 (1K225-211)	78	バネ SPRING	1		3 A1	○		5
*1K240-615-2 (1K240-615)	113	板バネ PLATE SPRING	1		2 B2	○		5
*1K240-942 (1K240-942)	75	板バネ PLATE SPRING	1		2 C3	○		5
*1K241-006 (1K241-006)	36	絞りクリックバネ T=0.1 APERTURE CLICKSPRING T=0.15	0-1		2 B3	○		5
*1K241-016 (1K241-016)	36	絞りクリックバネ T=0.1 APERTURE CLICKSPRING T=0.18	0-1		2 B3	○		5
*1K241-017 (1K241-017)	36	絞りクリックバネ T=0.2 APERTURE CLICK SPRING T=0.2	0-1		2 B3	○		5
1K241-132 (1K241-132)	93	板バネ PLATE SPRING	1		2 B1	○		5
1K246-121 (1K246-121)	117	ウエーブワッシャー WAVE WASHER	1		1 B3	○		5
1K246-122 (1K246-122)	180	ウエーブワッシャー WAVE WASHER	1		2 B1	○		5
1K260-841 (1K260-841)	79	カップリングギア COUPLING GEAR	1		2 C3	○		5
*1K300-086-1 (1K300-086)	21	平面カム FLAT CAM	1		3 A3	○		5
1K302-094 (1K302-094)	37	MF切替環 NF CHANGE RING	1		2 B2	○		1
1K314-543 (1K314-543)	60	曲げ板 BENT PLATE	1		3 A2	○		5

部品表 Parts List

JAA76351-R. 3430. A

部品番号 Part No.	補助番号 Ckt No.	名 称 Name	1台分 個 数 Pcs. Per Unit	部組品番号 Assembly No.	参照 図番 Fig. No.	販売区分 Term of Delivery	備 考 Remarks	要求単位 Q'ty per order
*1K404-119 (1K404-119)	30	バヨネットマウント BAYONET MOUNT	1		3 A1	○		5
1K470-119 (1K470-119)	120	距離目盛シール FOCUS INDEX SEAL	1		2 C1	○		5
1K470-120 (1K470-120)	156	アクリル窓 ACRYLIC WINDOW	1		2 C2	○		5
1K475-549 (1K475-549)	28	絞り環 APERTURE RING	1		3 A3	○		1
1K475-550 (1K475-550)	38	丸環 RING	1		1 C1	○		1
1K475-551 (1K475-551)	67	ズーム環 ZOOM RING	1		2 C2	○		1
1K500-957 (1K500-957)	40	レンズ室 LENS HOUSING	1		1 A1	○		1
1K500-958 (1K500-958)	43	レンズ室 LENS HOUSING	1		1 D1	○		1
1K510-450 (1K510-450)	64	押さえ環 RETAINER RING	1		1 B1	○		5
1K521-284 (1K521-284)	25	押さえ環 RETAINER RING	1		2 D1	○		5
1K521-285 (1K521-285)	41	押さえ環 RETAINER RING	1		1 A1	○		5
1K521-286 (1K521-286)	45	押さえ環 RETAINER RING	1		1 C1	○		5
1K521-288 (1K521-288)	50	押さえ環 RETAINER RING	1	1B999-879		○△		5
1K521-290 (1K521-290)	57	押さえ環 RETAINER RING	1		1 C1	○		5
1K521-291 (1K521-291)	127	押さえ環 RETAINER RING	1		2 B3	○		5
1K521-292 (1K521-292)	63	押さえ環 RETAINER RING	1		3 A2	○		5

部品表 Parts List

JAA76351-R. 3430. A

部品番号 Part No.	補助番号 Ckt No.	名 称 Name	1台分 個 数 Pcs. Per Unit	部組品番号 Assembly No.	参照 図番 Fig. No.	販売区分 Term of Delivery	備 考 Remarks	要求単位 Q'ty per order
1K530-086 (1K530-086)	27	リード溝環 READ GROOVE RING	1		2 C1	○		1
1K572-184 (1K572-184)	33	矢車 APERTURE ACTION PLATE	1		1 C2	○		5
1K574-174 (1K574-174)	34	蜂の巣 BLADE MOUNTING RING	1		1 C2	○		1
*1K601-231-1 (1K601-231)	181	カバーシート COVER SHEET	2			○		5
*1K601-282 (1K601-282)	119	ワッシャー WASHER	1		2 D3	○		5
*1K611-478 (1K611-478)	94	曲げ板 BENT PLATE	1		2 B1	○		5
1K612-221 (1K612-221)	23	3. 1 レバー 3.1 LEVER	1		3 A2	○		5
1K612-222 (1K612-222)	59	曲げ板 BENT PLATE	1		3 A2	○		5
1K612-226 (1K612-226)	90	バネ掛け板 SPRING HOOKING PLATE	1		3 A1	○		5
1K630-964 (1K630-964)	39	後部保護環 REAR GROUP PROTECTOR RING	1		3 B2	○		1
1K630-966 (1K630-966)	55	直進溝筒 STRAIGHT GROVE TUBE	1		1 C3	○		1
1K630-967 (1K630-967)	69	丸筒 TUBE	1		2 C2	○		1
1K630-968 (1K630-968)	72	ガイド環 GUIDE RING	2		1 B2	○		5
1K630-969 (1K630-969)	76	カラー COLLAR	1		1 C3	○		5
1K630-970 (1K630-970)	81	ガイド環 GUIDE RING	2		1 D2	○		5
1K630-972 (1K630-972)	165	カラー COLLAR	1		1 D2	○		5

部品表 Parts List

JAA76351-R. 3430. A

部品番号 Part No.	補助番号 Ckt No.	名 称 Name	1 台 分 個 数 Pcs. Per Unit	部組品番号 Assembly No.	参照 図番 Fig. No.	販売区分 Term of Delivery	備 考 Remarks	要求単位 Q'ty per order
1K641-398 (1K641-398)	29	指標環 INDEX RING	1		2 C3	○		1
1K641-400 (1K641-400)	157	丸環 RING	1		2 B1	○		1
1K641-401 (1K641-401)	145	ローラー D=6 ROLLER D=6	2		1 C3	○		5
1K641-402 (1K641-402)	145	ローラー D=5.99 ROLLER D=5.99	2		1 C3	○		5
1K641-403 (1K641-403)	145	ローラー D=5.98 ROLLER D=5.98	2		1 C3	○		5
1K641-404 (1K641-404)	145	ローラー D=6.01 ROLLER D=6.01	2		1 C3	○		5
1K682-060 (1K682-060)	68	ブロック BLOCK	4		1 B3	○		5
1K682-062 (1K682-062)	114	曲げ板 BENT PLATE	1		2 B2	○		5
1K682-063 (1K682-063)	62	平レバー FLAT LEVER	1		2 D3	○		5
*A1-14015FA (A1-14015FA)	150	S C R E W SCREW	1		3 A1	○		10
*B1-17045FA (B1-17045FA)	148	S C R E W SCREW	2		1 C3	○		10
*G2-17028FA (G2-17028FA)	140	S C R E W SCREW	1		2 B2	○		10
*H1-14030FA (H1-14030FA)	131	S C R E W SCREW	1		1 D2	○		10
*H1-17035FA (H1-17035FA)	178	S C R E W SCREW	1		1 D2	○		10
*K2-14015FB (K2-14015FB)	155	S C R E W SCREW	1		2 B3	○		10
*K2-17020FB (K2-17020FB)	123	S C R E W SCREW	1		2 D1	○		10

部組品表 Assembly List

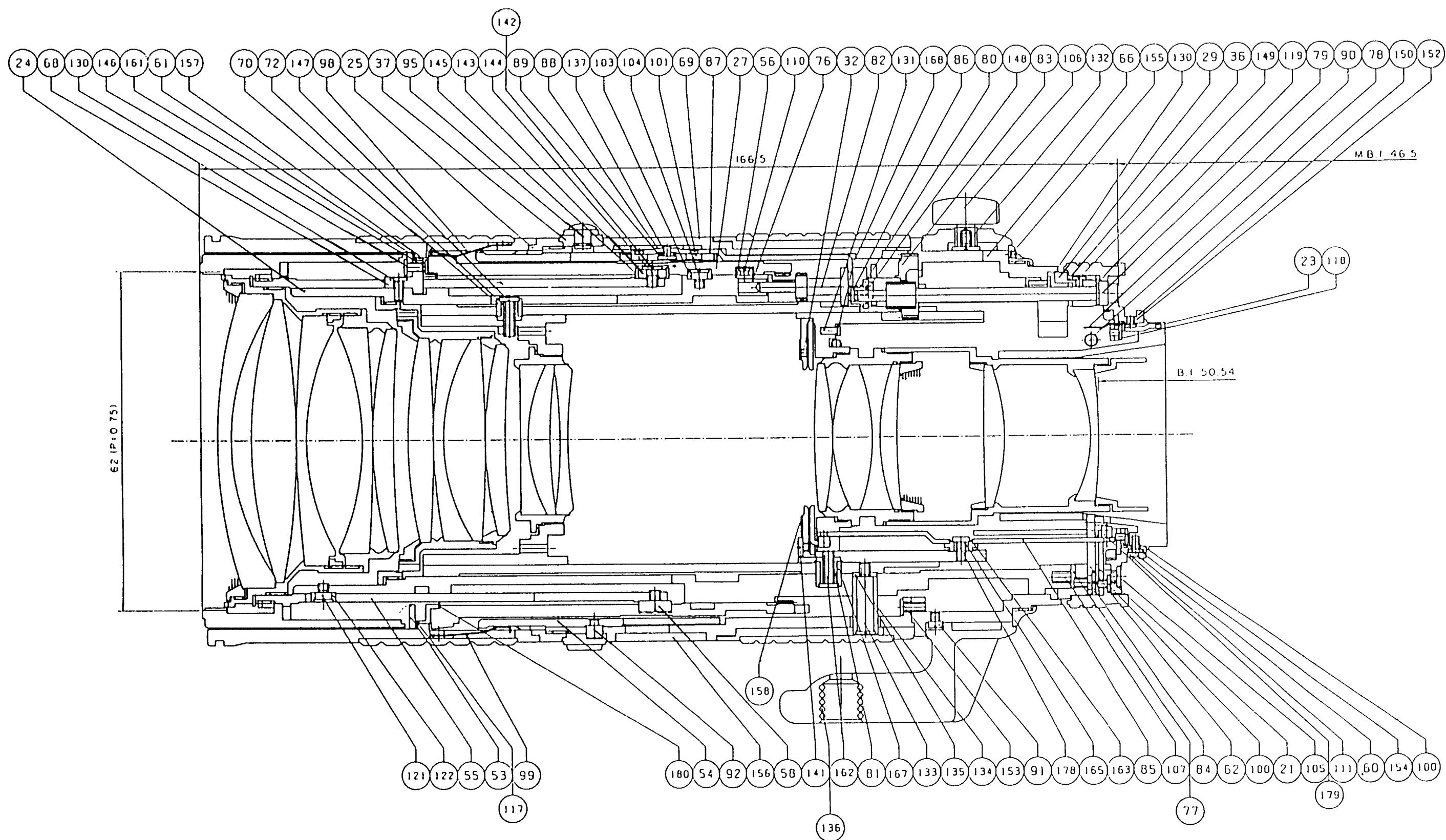
JAA76351-R. 3430. A

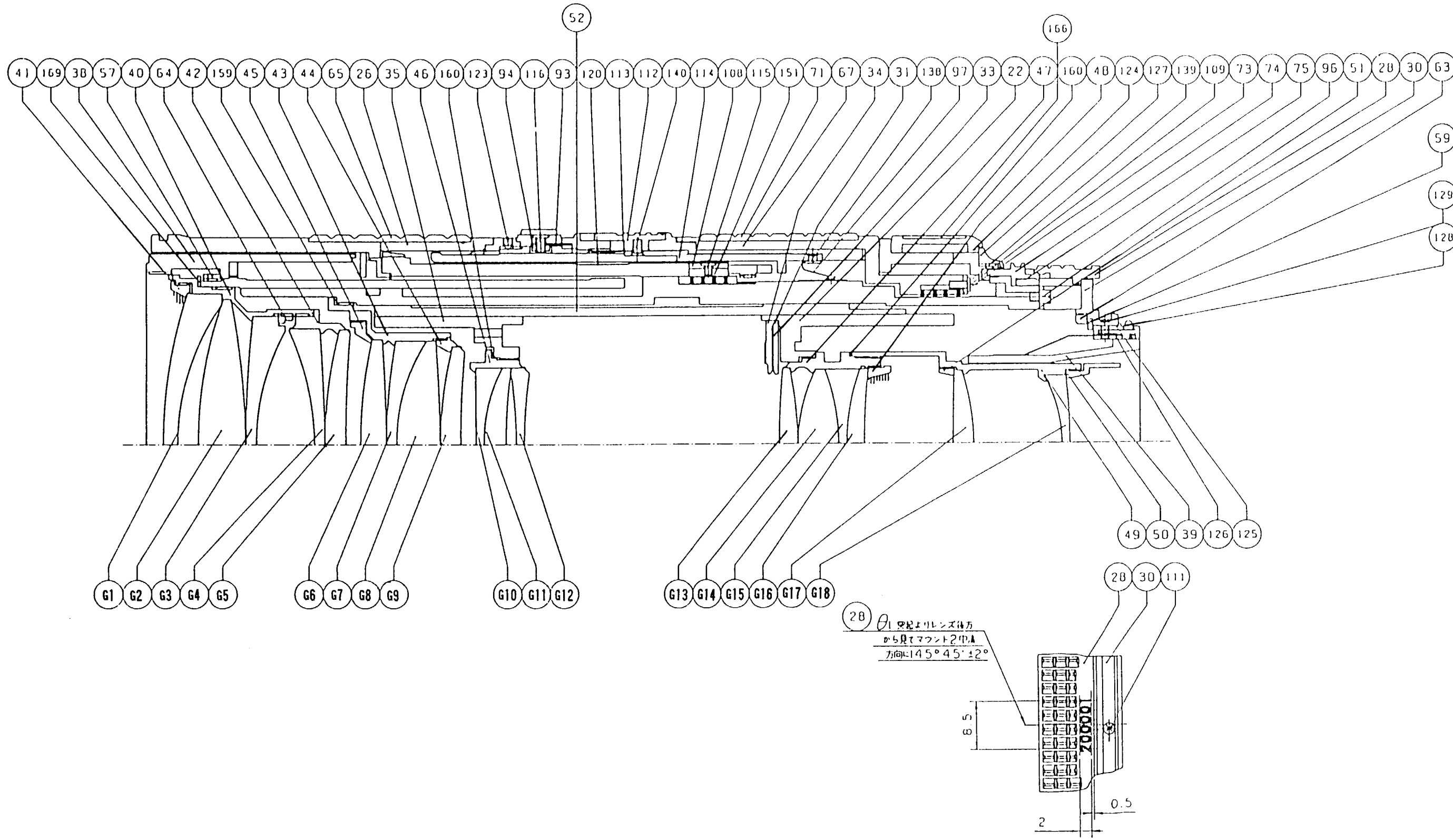
部品番号 Part No.	補助番号 Ckt No.	名 称 Name	1台分 個 数 Pcs. Per Unit	大部組品番号 Main Assembly No.	参照 図番 Fig. No.	備 考 Remarks	要求単位 Q'ty per order
1B002-140 (1B002-140)	B7	ギア部組 GEAR UNIT	1		1 C3		5
1B002-141 (1B002-141)	B12	丸環部組 RING UNIT	1		2 B2		1
1B002-142 (1B002-142)	B13	カム環部組 CAM RING UNIT	1				1
1B060-645 (1B060-645)	B14	メインFPC部組 MAIN FPC UNIT	1		2 B2		1
1B100-752 (1B100-752)	B1	G 4, G 5 レンズ室部組 G4.G5 LENS HOUSING UNI	1		1 C1		1
1B100-753 (1B100-753)	B2	G 9 レンズ室部組 G9 LENS HOUSING UNIT	1		1 A2		1
1B100-754 (1B100-754)	B3	G 1 0, 1 1, 1 2 レン G10.11.12 LENS	1		1 A2		1
1B240-156 (1B240-156)	B8	距離エンコーダブラシ部 FOCUS ENCODER BRUSH UN	1		2 C1		5
1B240-157 (1B240-157)	B9	ズームブラシ部組 ZOOM BRUSH UNIT	1		2 D2		5
1B314-201 (1B314-201)	B16	シーソーレバー部組 SEESAW LEVER UNIT	1		1 D2		5
1B400-095 (1B400-095)	B15	三脚座部組 TRIPOD SOCKET UNIT	1		2 B3		1
1B570-118 (1B570-118)	B5	羽根部組 BLADE UNIT	9		1 C2		10
1B630-067 (1B630-067)	B10	丸環部組 RING UNIT	1		2 A1		1
1B999-876 (1B999-876)	B26	制限ゴム部組 LIMIT RUBBER UNIT	1		1 B3		5
1B999-877 (1B999-877)	B28	指標環部組 INDEX RING UNIT	1		2 A3		1
1B999-878 (1B999-878)	B29	曲げ板部組 BENT PLATE UNIT	1		2 B2		5

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- P 1 5 -

組立図 Structure of the Lens





INSPECTION OF ENCODER SIGNAL

※Use an F70 (N70) camera body and AF nikkor lens inspection program for F70/N70 to display encoder signal on the computer monitor when making an inspection.

Inspection method

- Start the AF nikkor lens inspection program for F70/N70 and select “ 1. READING OF LENS ENCODER SIGNAL”. Make inspection according to instructions as shown on the display.
- Encoder signals should be as described in the table below when the zoom and distance scale are set to specified positions.

MF mode

Zoom ring Distance scale position	f = 7 0 mm			f = 8 5 mm			f = 1 3 5 mm			f = 1 8 0 mm		
	Encoder signal											
	1	2	3	1	2	3	1	2	3	1	2	3
∞	D 7 h	6 6 h	7 3 h	6 2 h	6 6 h	7 3 h	7 2 h	6 6 h	7 3 h	9 3 h	6 6 h	7 3 h
0. 8 m	D 7 h	7 8 h	7 3 h									
Most close distance position	D 7 h	F C h	7 3 h									

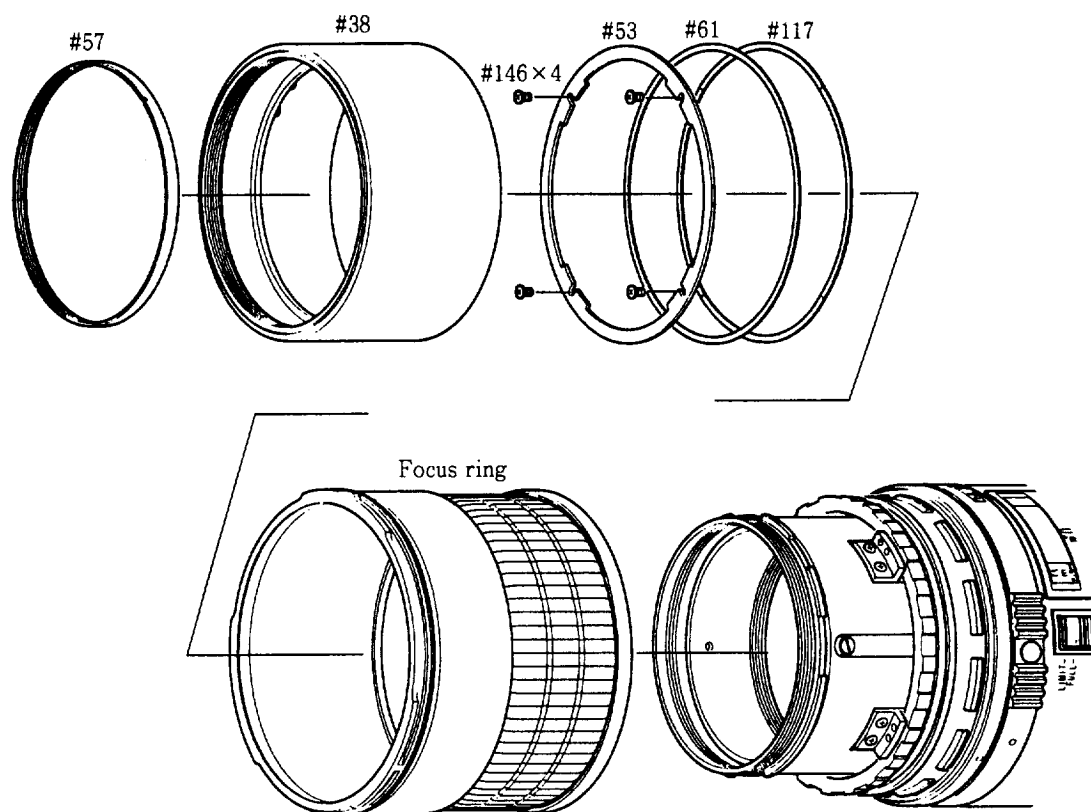
AF mode

Zoom ring Distance scale position	f = 7 0 mm			f = 8 5 mm			f = 1 3 5 mm			f = 1 8 0 mm		
	Encoder signal											
	1	2	3	1	2	3	1	2	3	1	2	3
∞	D 7 h	6 4 h	7 3 h									

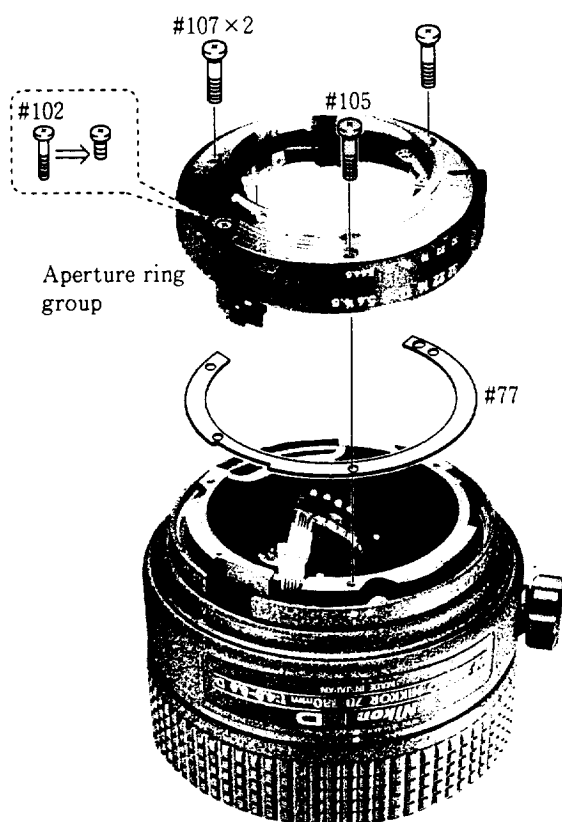
◎If encoder signal values are different from those shown in the table, following causes must be considered.

Distance brush is mounted in the wrong position, distance brush or FPC is defective, encoder patterns on the FPC are contaminated, or the FPC is fixed in the wrong position.

RING #38, FOCUS RING



APERTURE RING GROUP

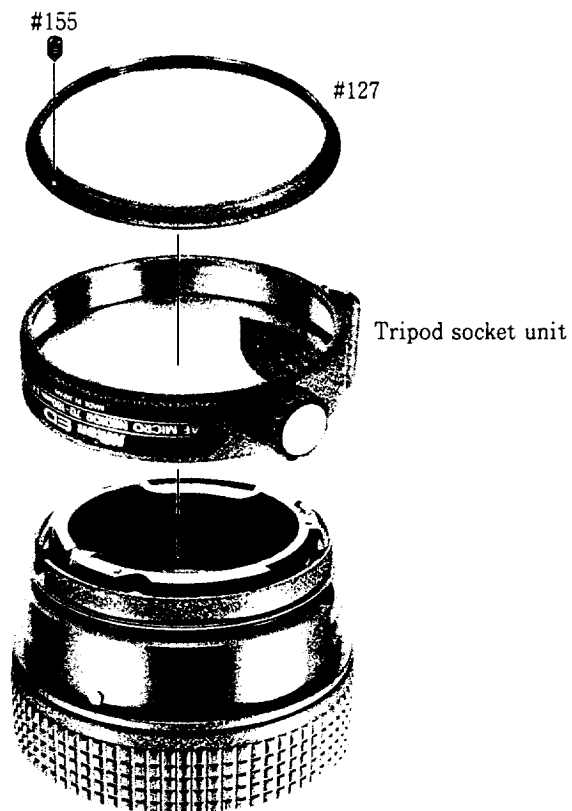


《Reference》

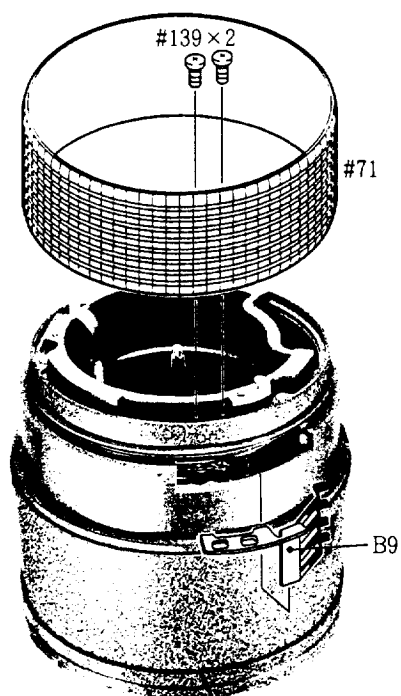
For the purpose of increasing its strength, 4 screws are used for further fixing the aperture ring of lens and the bayonet mount. In order to make its disassembly easy, by following the procedures explained below, it is possible to remove the aperture ring as a unit.

- ① Prepare the screw M2 in the length of around 4 mm as a temporary screw.
- ② Remove the screw #102 and replace to the temporary screw.
- ③ Remove the screw #105 and 2 pieces of the screw #107.
- ④ Then, the bayonet mount and the aperture ring together can be readily removed from the body.

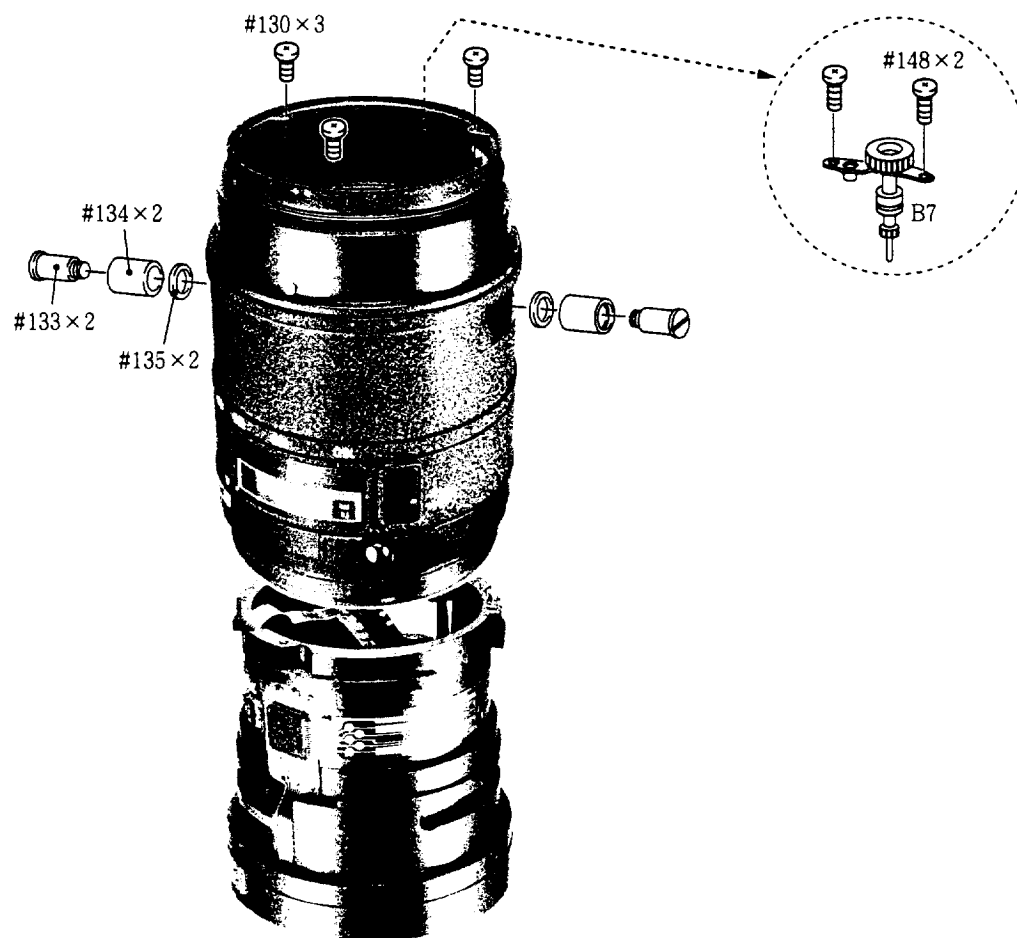
TRIPOD SOCKET UNIT



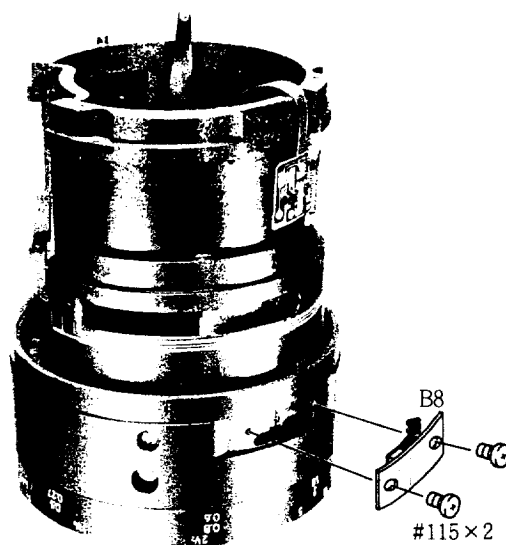
ZOOM ENCODER BRUSH, RUBBER RING #71



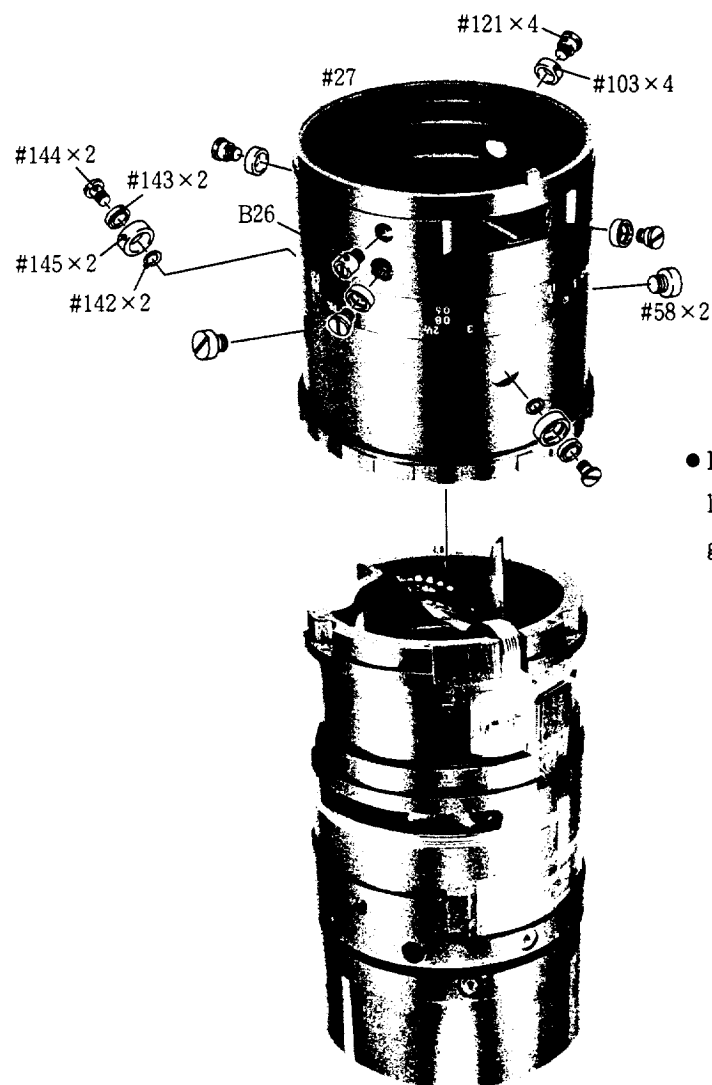
ZOOM RING, INDEX RING GROUP



DISTANCE ENCODER BRUSH

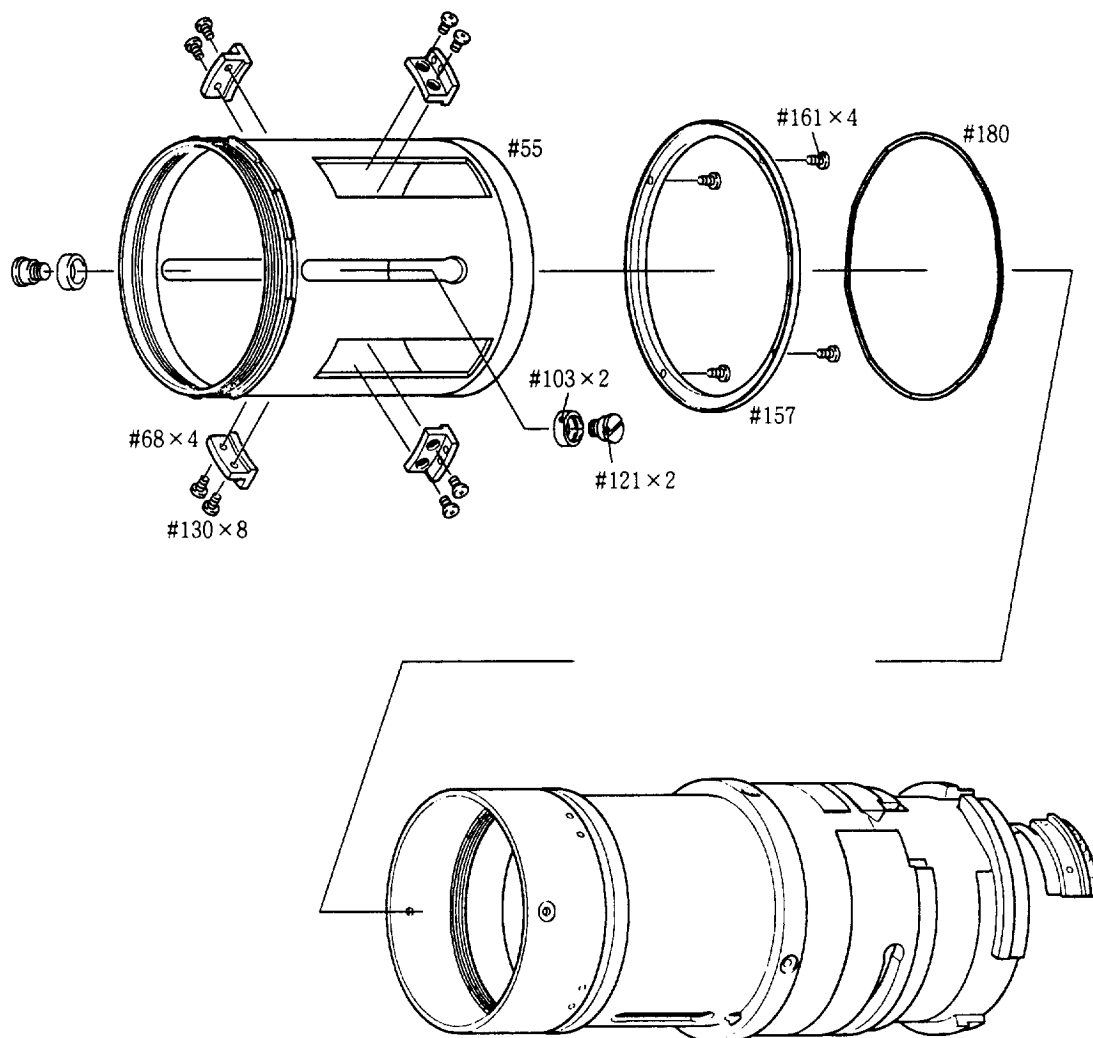


LEAD GROOVE RING #27

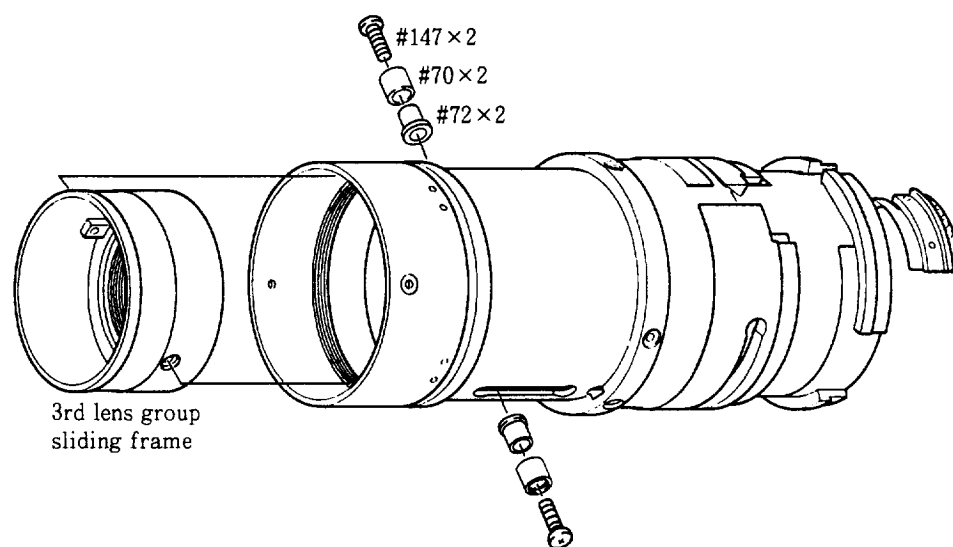


- Rotate the lead groove barrel #27, let the hole position to meet each guide roller to remove them.

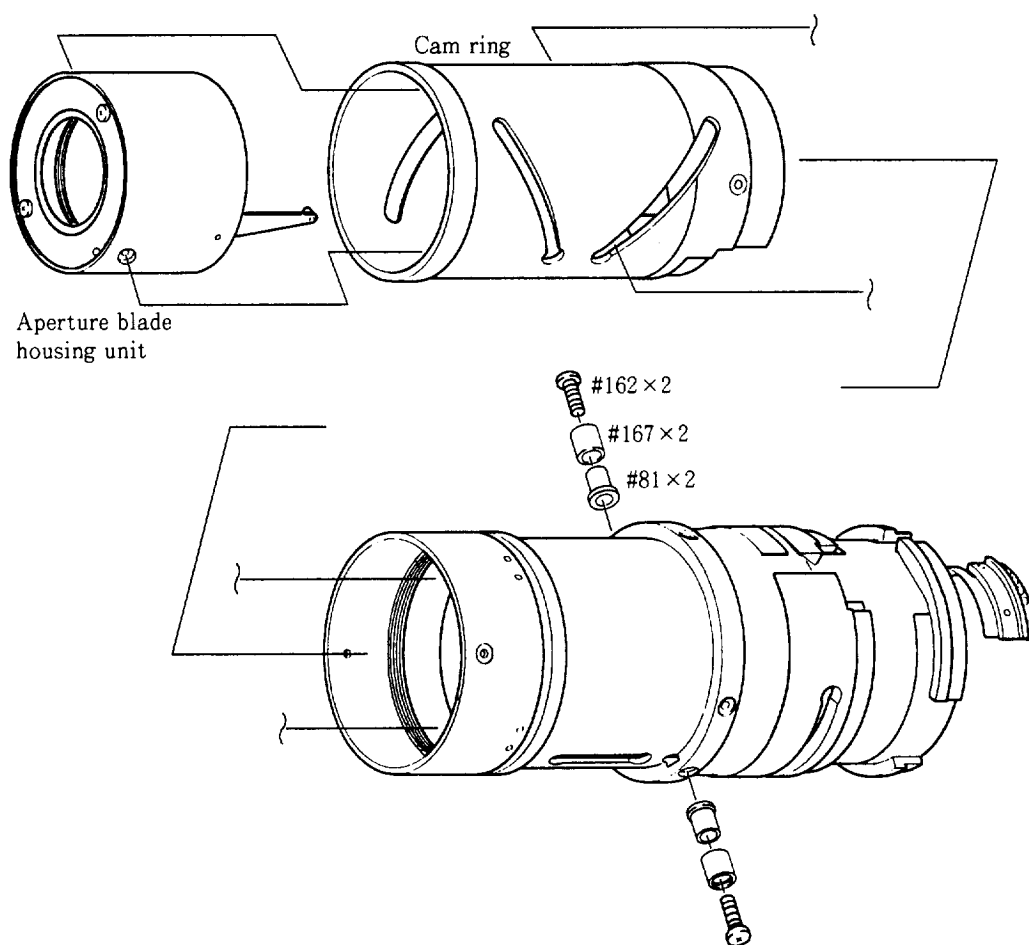
STRAIGHT GROOVE RING #55



3rd LENS GROUP SLIDING FRAME

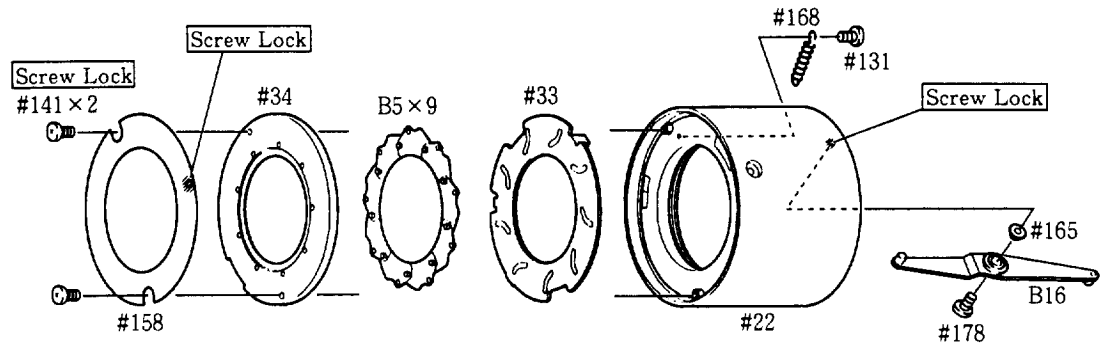


CAM RING, APERTURE BLADE HOUSING UNIT

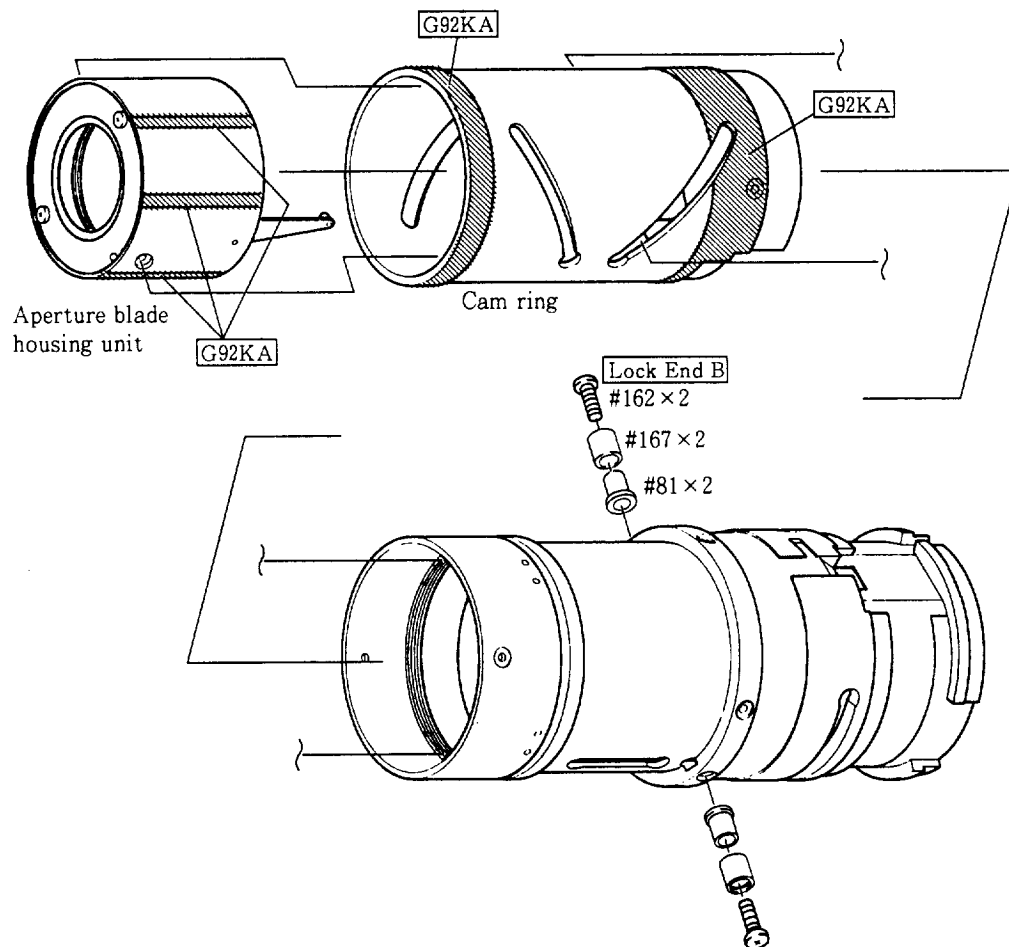


2. ASSEMBLING/ADJUSTMENT

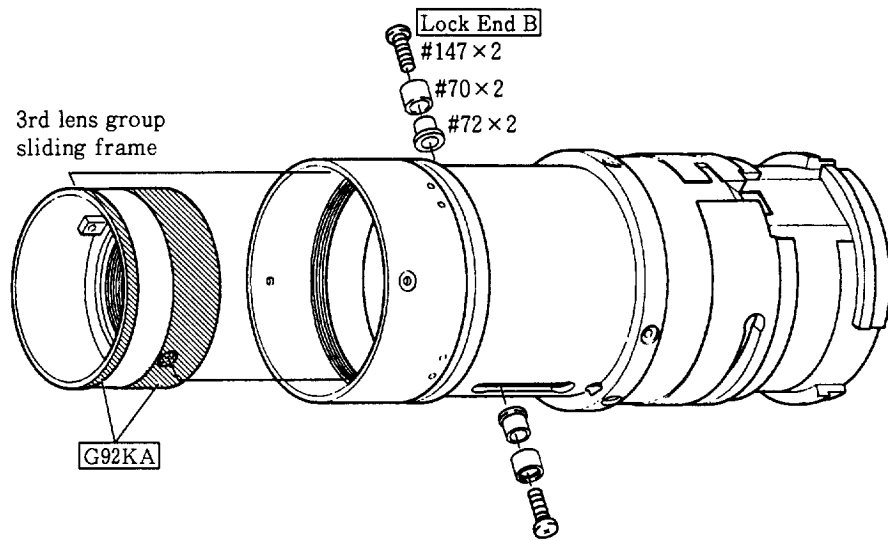
APERTURE BLADE GROUP



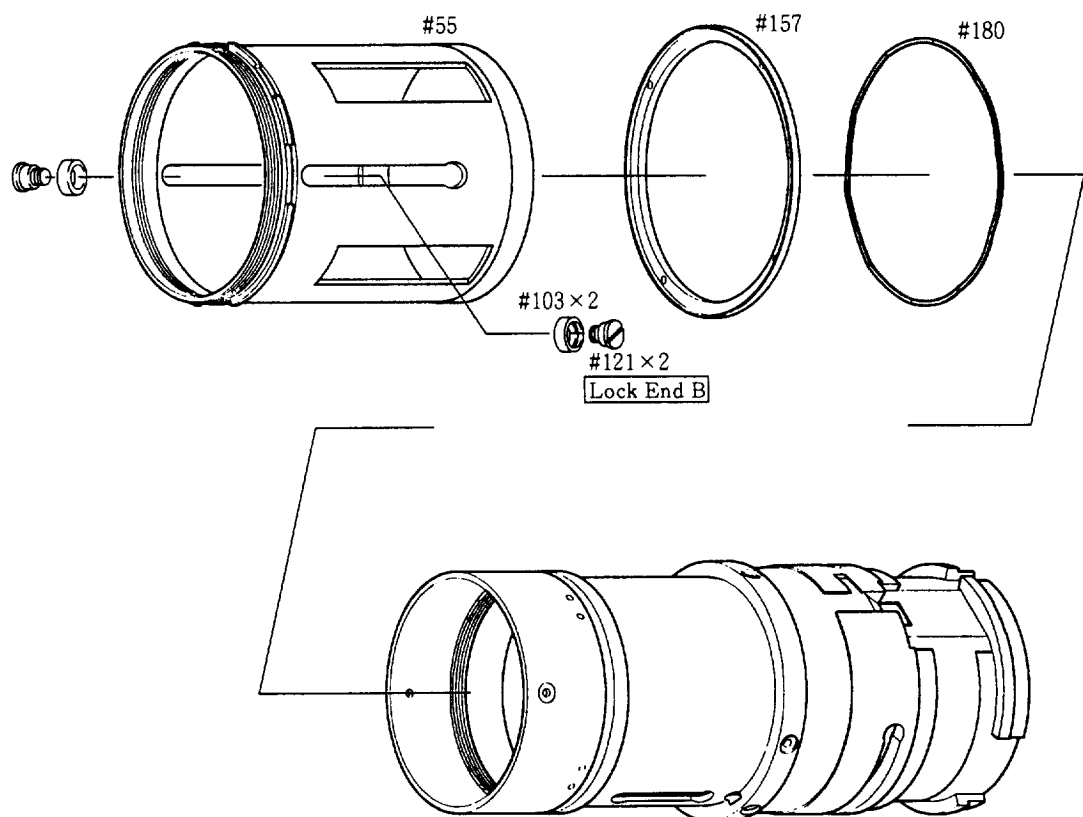
CAM RING, APERTURE BLADE HOUSING UNIT

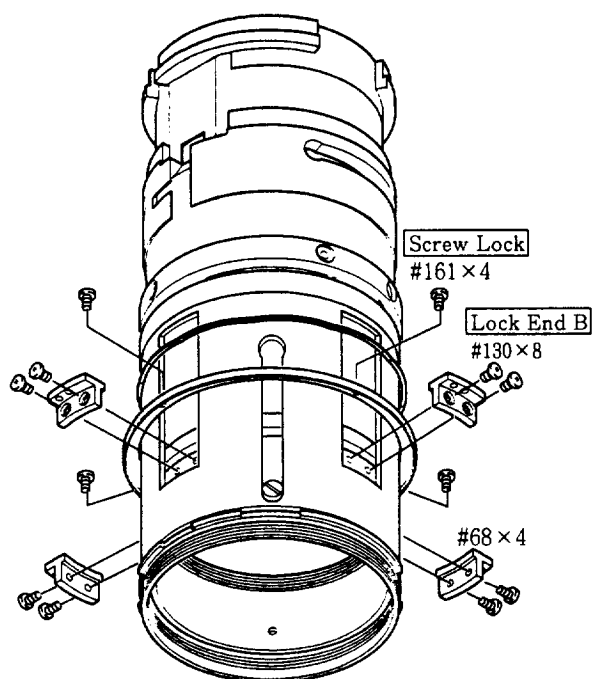


3rd LENS GROUP SLIDING FRAME

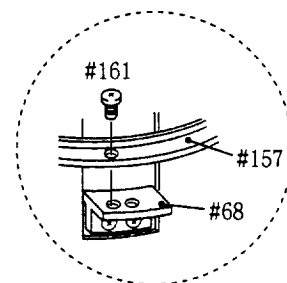


STRAIGHT GROOVE RING #55

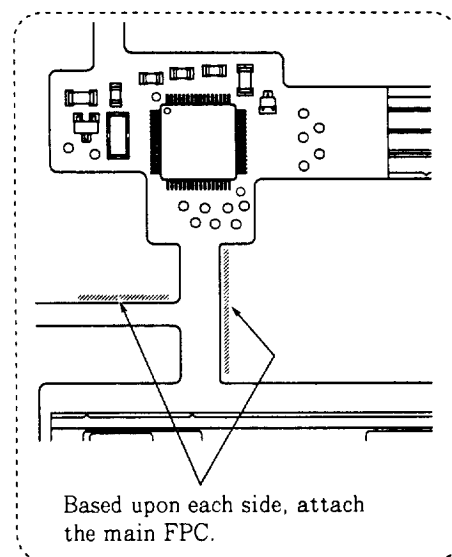
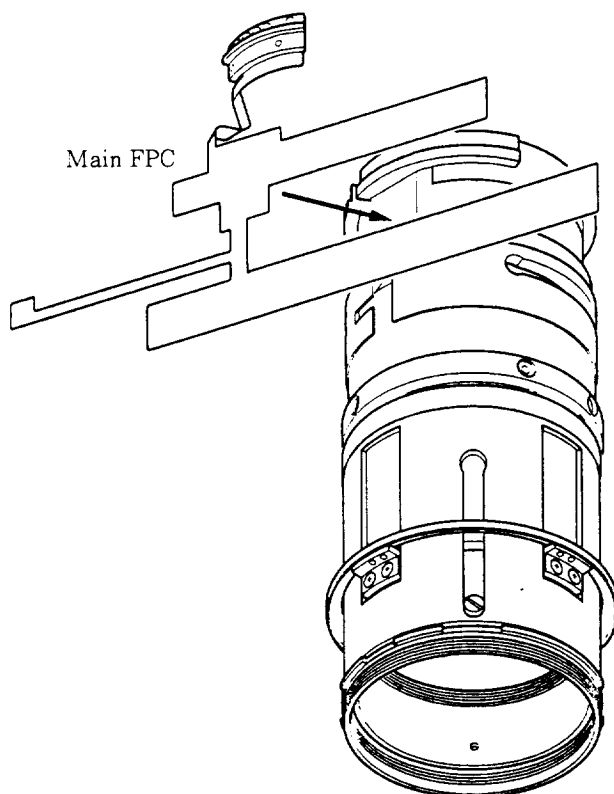




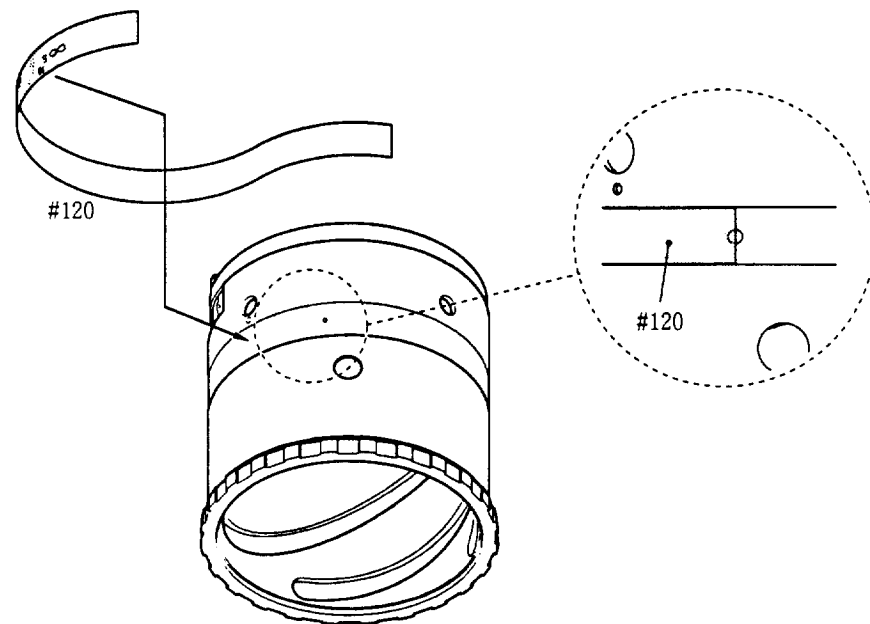
Note : Be sure to fix 4 pieces of the screw #161 as advised below.



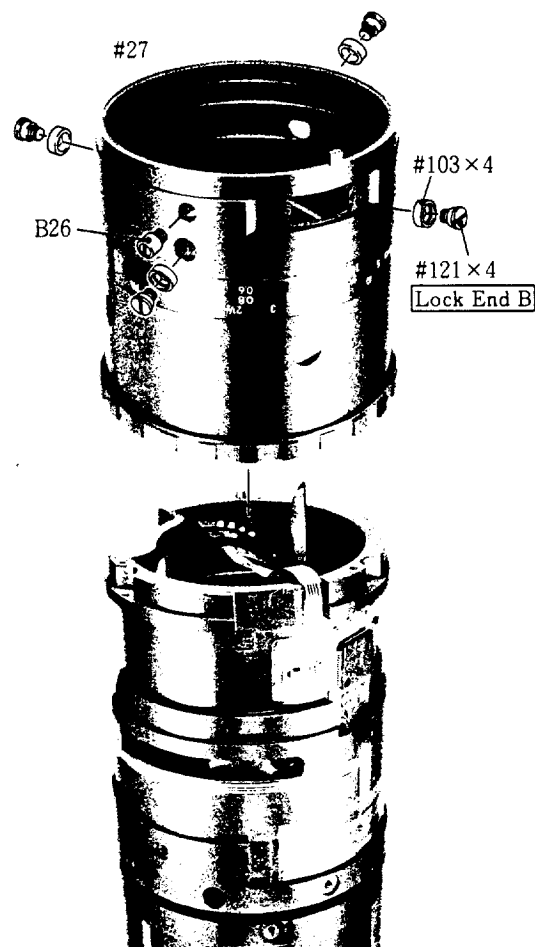
MAIN FPC



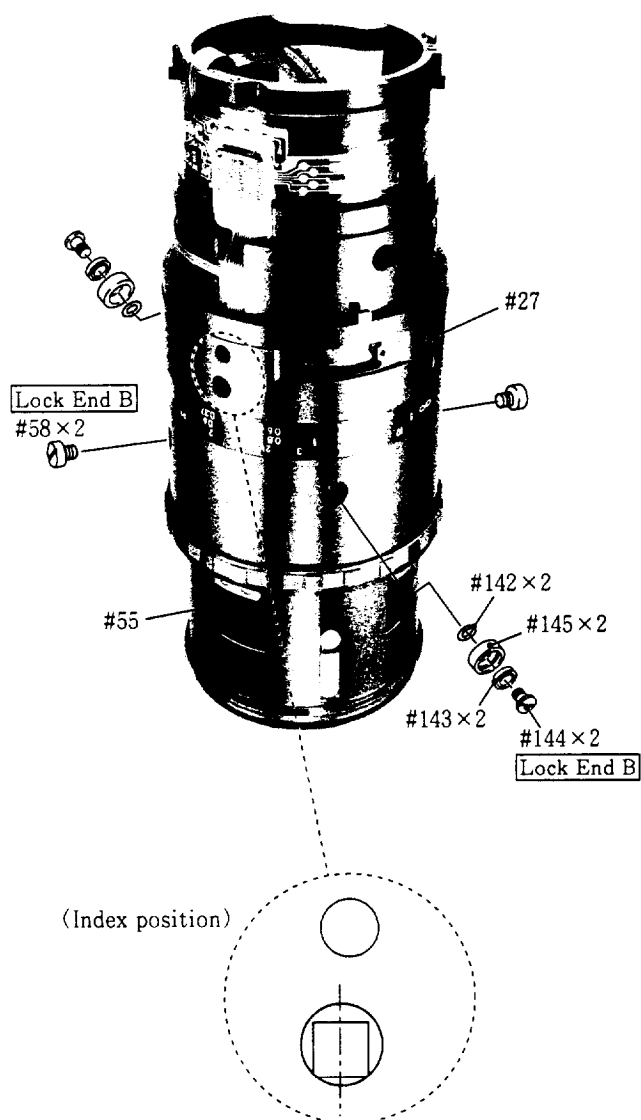
ADHESION OF THE DISTANCE SCALE



LEAD GROOVE RING #27



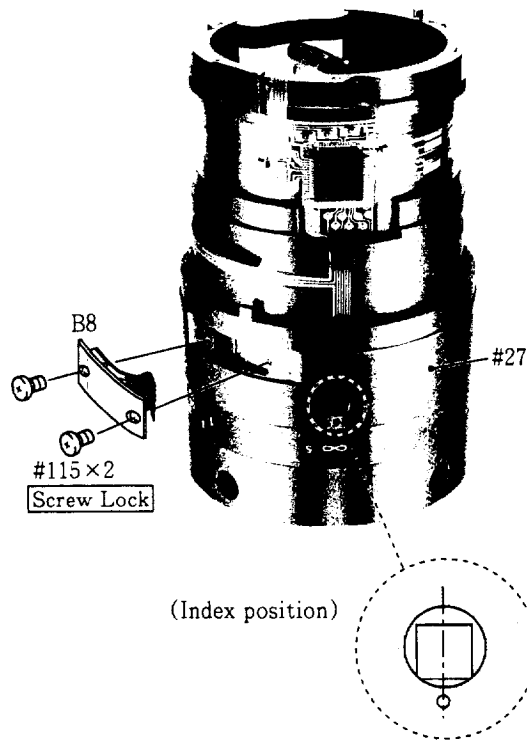
- Apply the grease G92KA to each lead groove and the gear area inside the lead groove barrel #27.



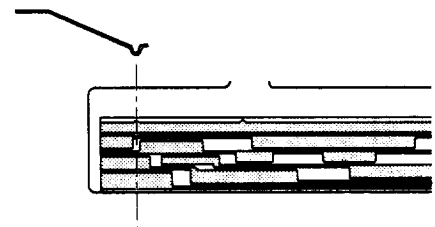
① Rotate #27 and let the hole to meet the index position as shown left.

② Let #55 to meet the screw hole in order to fix the guide roller.

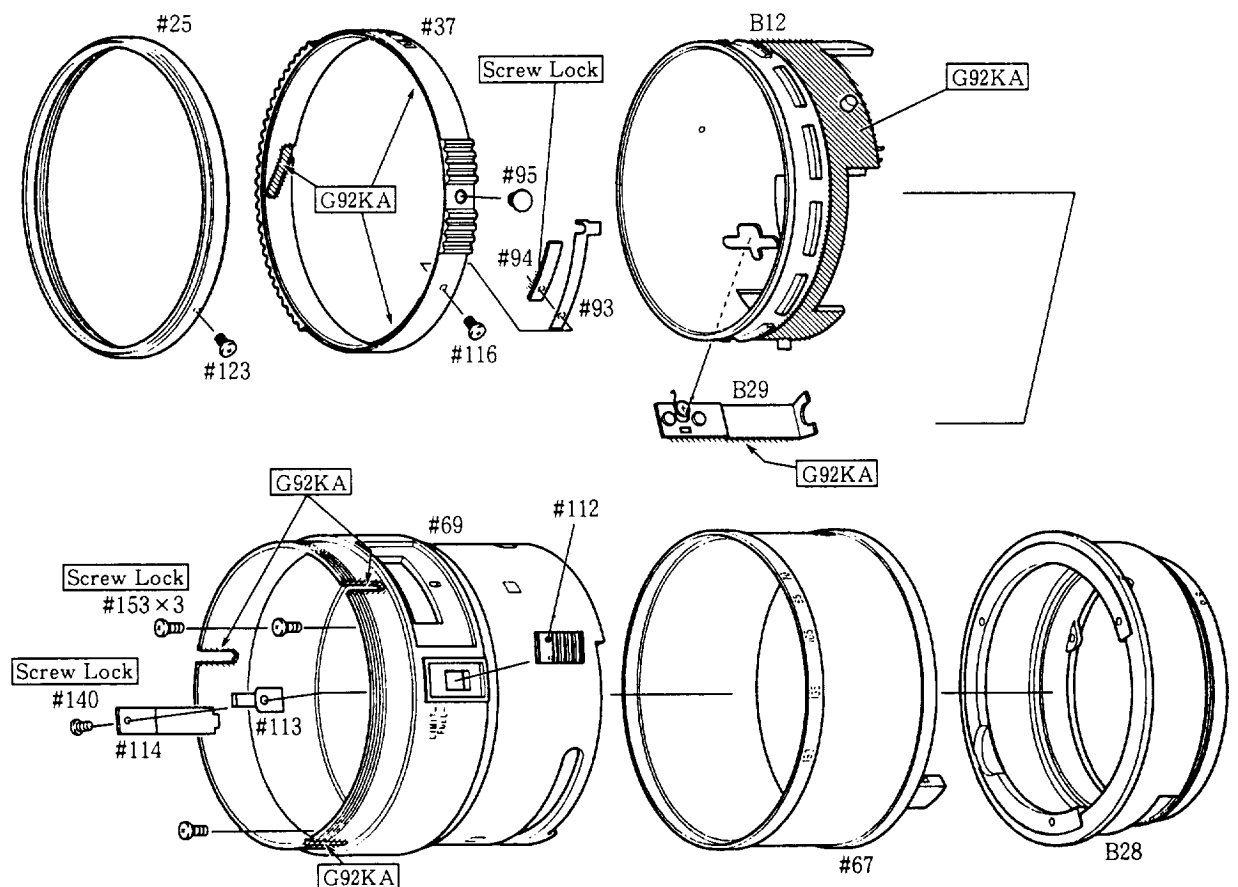
ADJUSTMENT OF DISTANCE ENCODER BRUSH POSITION

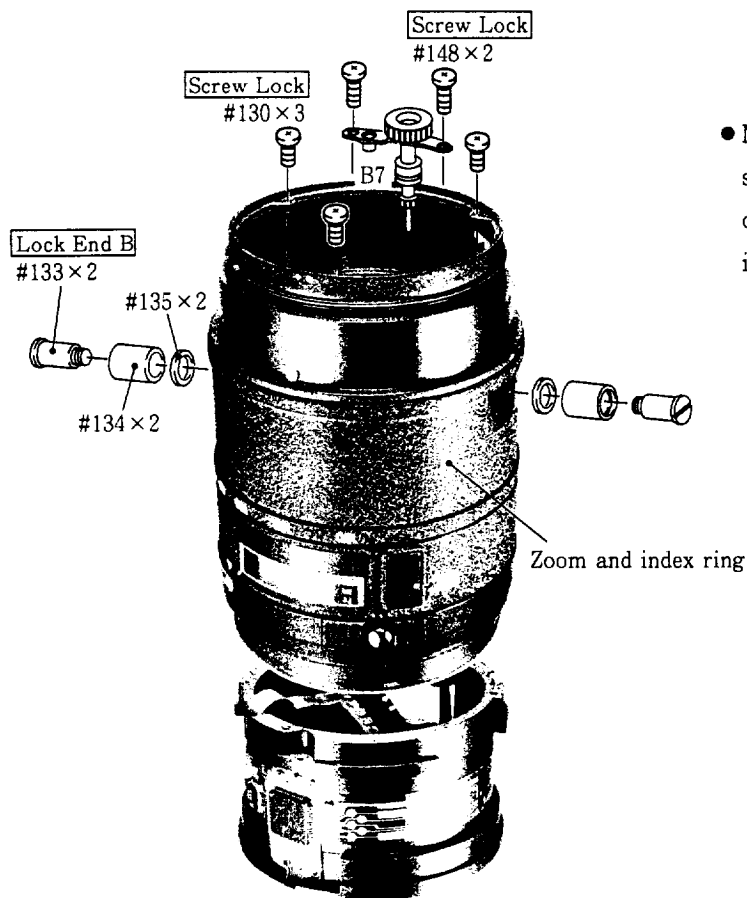


- ① Rotate #27 to let its hole to meet the index position as shown left.
- ② Unfasten screws #115×2 and let the brush tip come into contact with the line as shown in the figure.
- ③ Fasten screws #115×2 and turn the #27 several times to check the location of the brush.
- ④ Secure screws #115×2 using Screw Lock.



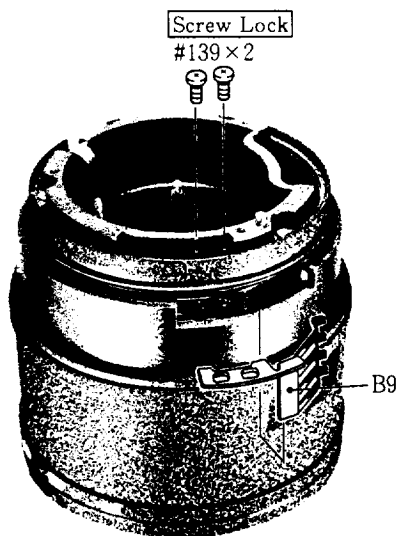
ZOOM RING, INDEX RING GROUP



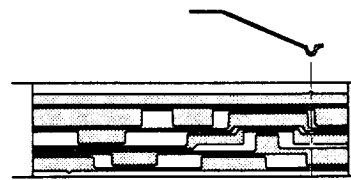


- Mount the gear unit B7 on the A-M switching lever inside the combination of zoom and index ring, and then fix it onto the lens barrel unit.

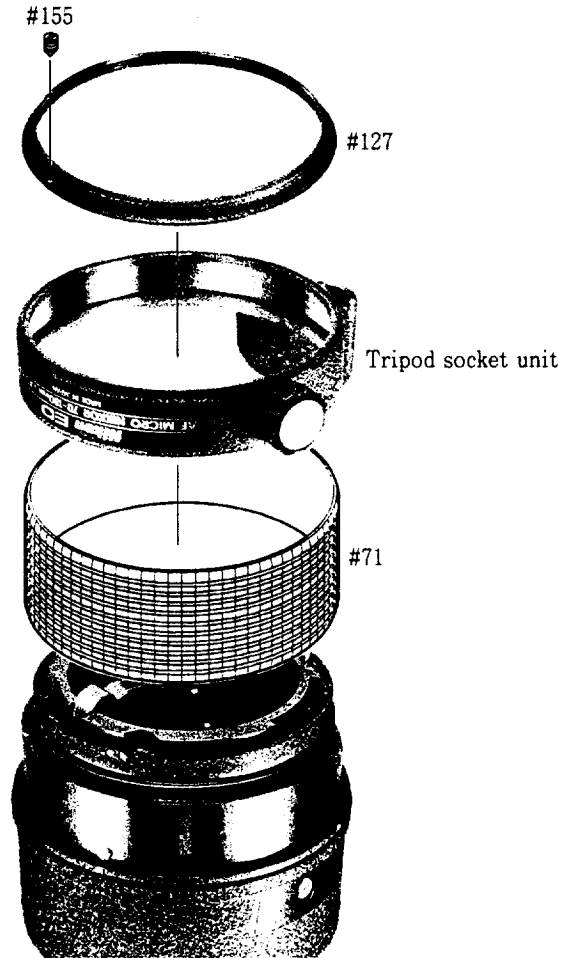
ADJUSTMENT OF ZOOM ENCODER BRUSH POSITION



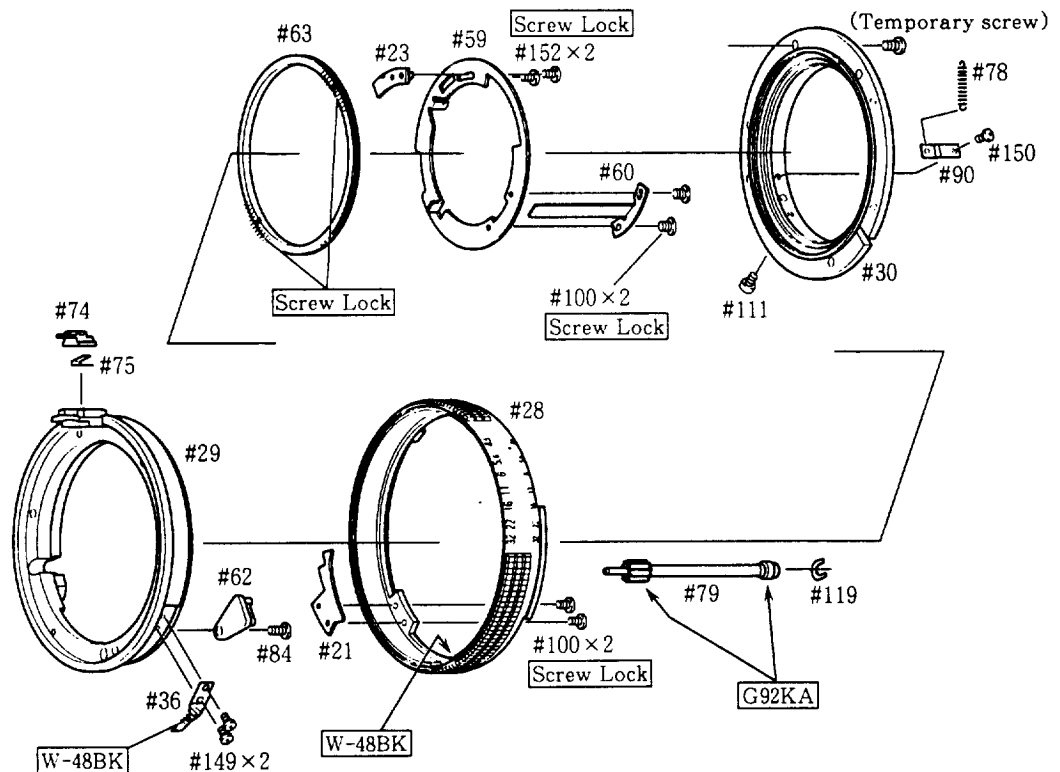
- ① Contact the zoom ring with the stopper of the WIDE side.
- ② Unfasten screws #139×2 and let the brush tip come into contact with the line as shown in the figure.
- ③ Fasten screws #139×2 and turn the zoom ring several times to check the location of the brush.
- ④ Secure screws #139×2 using Screw Lock.



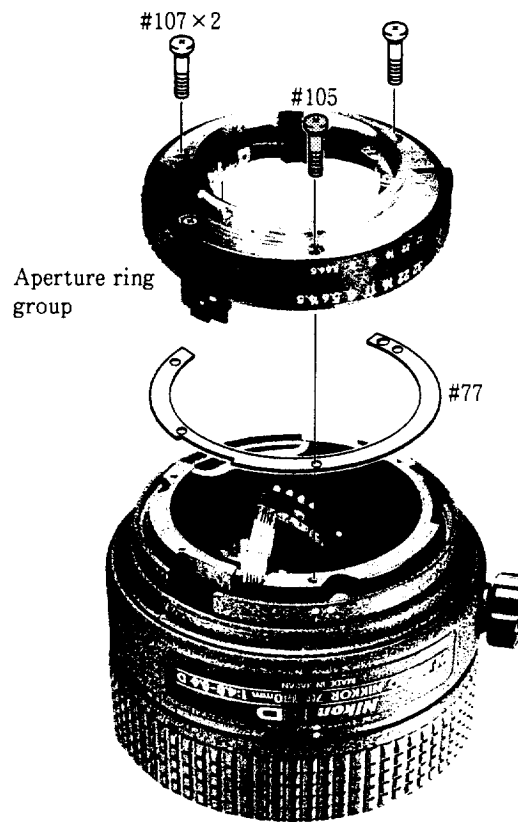
TRIPOD SOCKET UNIT, RUBBER RING #71



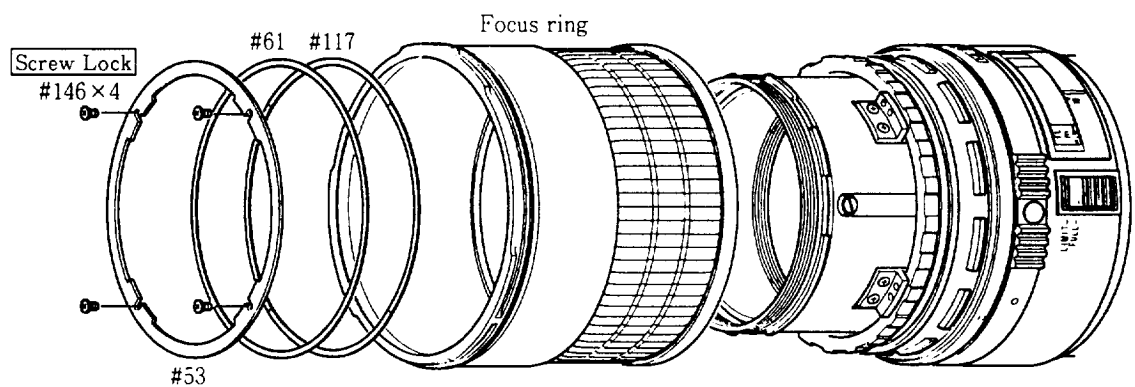
BAYONET MOUNT, APERTURE RING



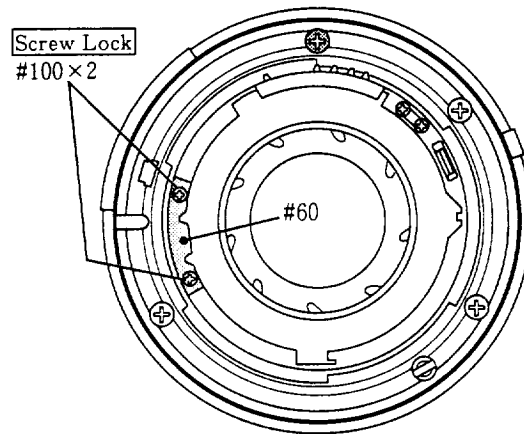
APERTURE RING GROUP



FOCUS RING



ADJUSTMENT OF APERTURE OPENING



- ① Turn the zoom ring until it stops at the Wide side stopper.
- ② Unfasten screws #100×2 and move part #60 to adjust the aperture diameter.

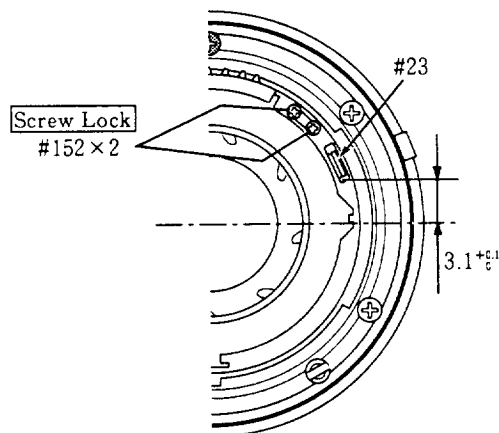
As a guide to adjustment, the full aperture (f/4.5) should be the same size as the inside aperture of part #33.

- Aperture diameter should be within the allowable range when the diaphragm ring is rotated forward and backward.
- Aperture lever should be within the allowable range when the aperture lever is snapped by your finger.

- ③ After adjustment, secure screws #100×2 using Screw Lock.

Aperture setting	Inscribed circle diameter (mm)	Tolerance (mm)
4.5	24.79	26.47 ~ 23.31
5.6	19.68	22.09 ~ 17.53
8	13.86	15.56 ~ 12.35
11	9.75	11.37 ~ 8.36
16	6.91	8.06 ~ 5.92
22	4.83	5.63 ~ 4.14
32	3.41	3.98 ~ 2.92

ADJUSTMENT OF APERTURE LEVER POSITION

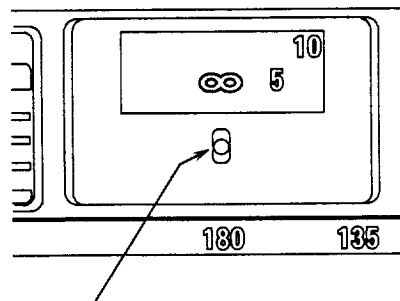


Unfasten screws #152×2 to adjust the position of the aperture lever #23 so that it comes into the rated value of $3.1^{+0.1}$ to bring the aperture diameter within rated value at full aperture.

After adjustment, fix screws #152×2 using Screw Lock.

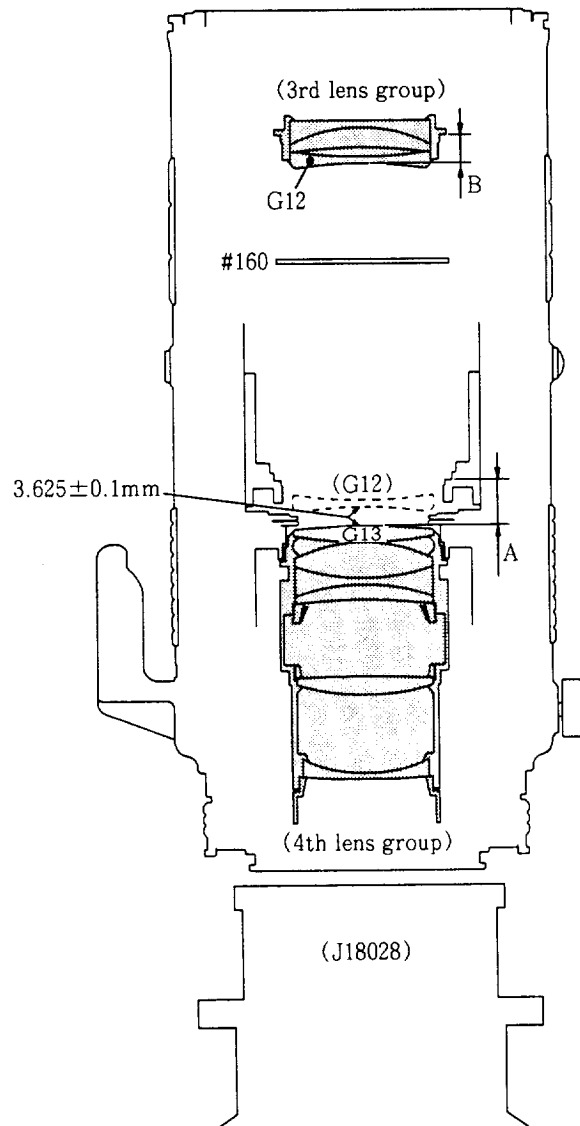
Reference : When adjusting the rated value of $3.1^{+0.1}$, set the aperture ring to f/4.5 and mount the tool J18004-1 on the bayonet mount. It becomes much easier to adjust if you mount the aperture lever #23 based on the groove of the tool as a reference.

HOW TO TAKE DISTANCE BETWEEN EACH 2nd, 3rd AND 4th LENS



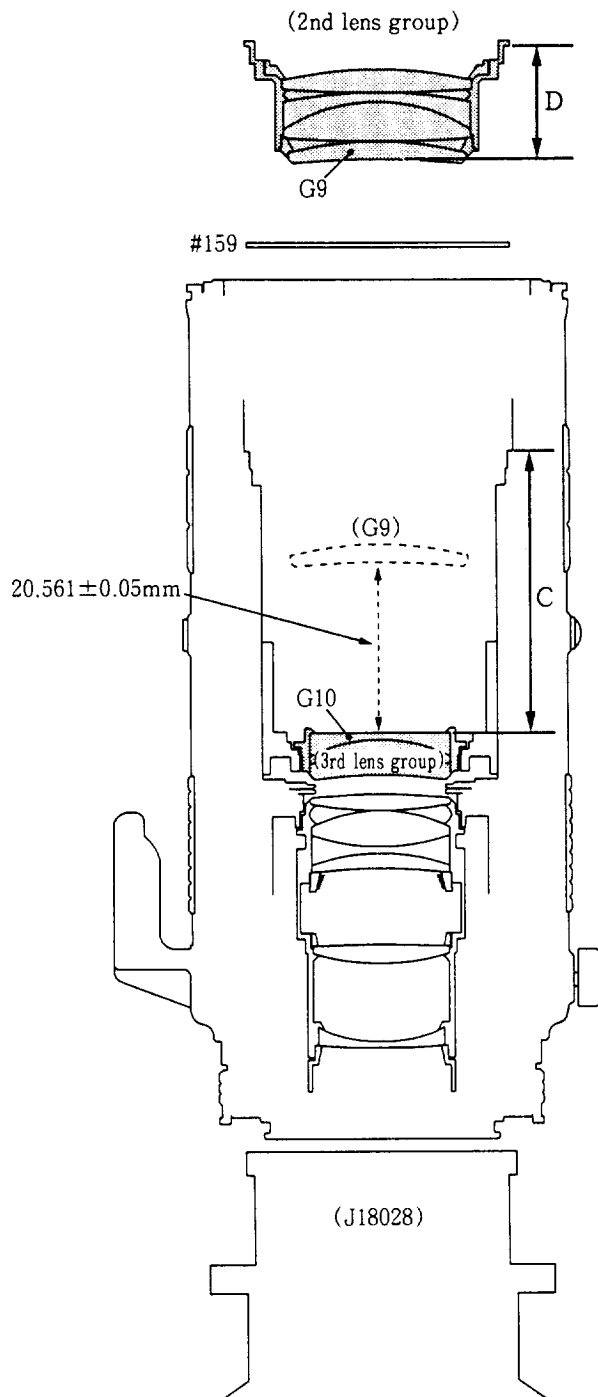
Put the hole position on another's.

- ① Rotate the focus ring to set it to the infinite position, where meets the hole position after removing the acrylic window.
- ② Set the zoom ring to 180 mm and its aperture to open.



- ③ Fix the 4th lens group, settle it on the back focus stand J18028, and then set it onto the flat table for the digital micrometer.
- ④ Measure the distance A by with the digital micrometer as shown in the left figure.
- ⑤ As well as the above, measure the distance B by with the digital micrometer.
- ⑥ Calculate in accordance with the formula below. (size : mm)

$$A - (3.625 + B) = \text{the thickness of washer \#160.}$$
- ⑦ Fix the washer #160 and the 3rd lens group together.



⑧ Measure the distance C by with the digital micrometer.

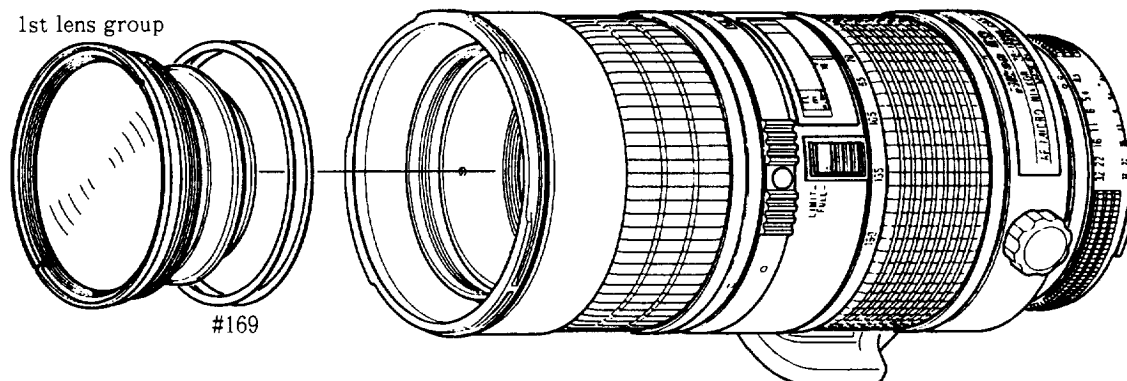
⑨ Measure the distance D by with the digital micrometer.

⑩ Calculate in accordance with the formula below. (size : mm)

$$C - (20.561 + D) = \text{the thickness of washer \#159.}$$

⑪ Fix the washer #159 and the 2nd lens group together.

1st LENS GROUP



ADJUSTMENT OF SHIFT FOCUS (TELE AND WIDE)

1. Align the ∞ mark on focus ring to index. Set aperture to full aperture.
2. Read the value on both Wide and Tele sides respectively.
3. Calculate the following equation.

$$(A - B) \div 3.0 = C$$

A=Value of Tele side (mm)

B=Value of Wide side (mm)

C=Amount (mm) of adjustment of 1st lens
group washer #169

4. Adjust the thickness of washer #169 by the value C calculated from the above equation.

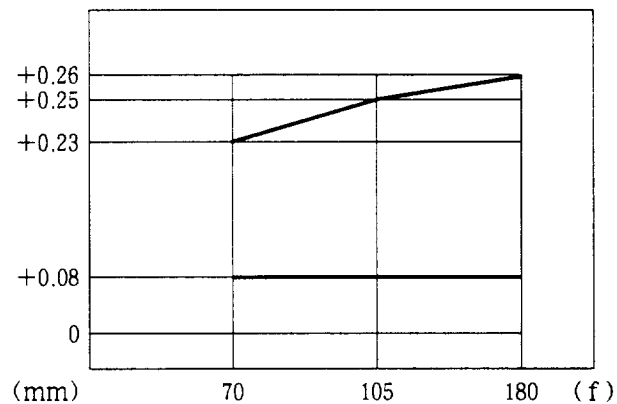
If the value C is positive, thicken the washer by the value, and if negative, thin the washer.

Note : Insert thin washer between thick washers when mounting washer #169.

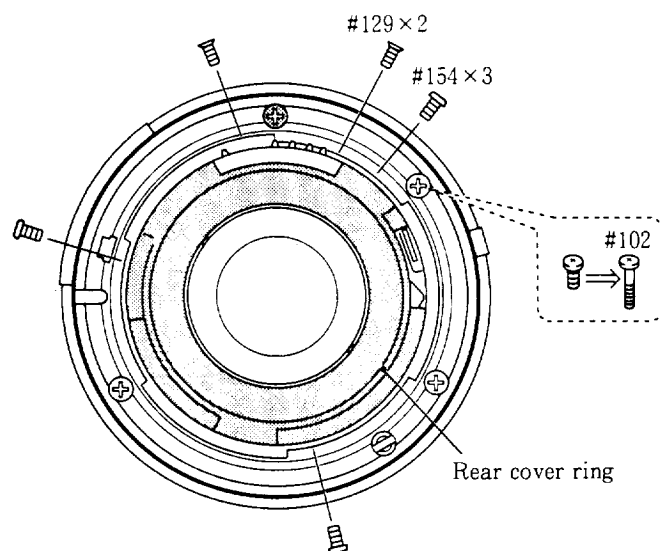
ADJUSTMENT OF BACK FOCUS

1. Align the ∞ mark on focus ring to index. Set aperture to full aperture.
 2. Readout values at either Wide or Tele side.
 3. Remove the aperture ring.
 4. If the value is above the standard, increase the thickness of the washer, otherwise decrease it.
 5. Confirm that the value is within the standard range.
- (Refer to page L16.)

Focal length (f)	Standard (mm)
70 mm	+0.08 ~ +0.23
105 mm	+0.08 ~ +0.25
180 mm	+0.08 ~ +0.26

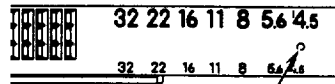


REAR COVER RING



Note : Remove the temporary screw, replace it to the screw #102 and fix it.

ATTACHING METER COUPLING SHOE



Make hole on this
concave portion

- (1) Take out aperture ring #28.
- (2) Make a hole ($\phi 1.1$) at the concave portion of aperture ring.

Mount meter coupling shoe on the aperture ring and make another hole ($\phi 1.1$) based on the hole of meter coupling shoe.

Meter coupling shoe	1K406-011	× 1
Screw	1K010-002-1	× 2

- (3) Mount meter coupling shoe.
- (4) Assembling.

INSPECTION OF ENCODER SIGNAL

※Use an F70 (N70) camera body and AF nikkor lens inspection program for F70/N70 to display encoder signal on the computer monitor when making an inspection.

Inspection method

- Start the AF nikkor lens inspection program for F70/N70 and select " 1. READING OF LENS ENCODER SIGNAL". Make inspection according to instructions as shown on the display.
- Encoder signals should be as described in the table below when the zoom and distance scale are set to specified positions.

MF mode

Zoom ring Distance scale position	f = 7 0 mm			f = 8 5 mm			f = 1 3 5 mm			f = 1 8 0 mm		
	Encoder signal											
	1	2	3	1	2	3	1	2	3	1	2	3
∞	D 7 h	6 6 h	7 3 h	6 2 h	6 6 h	7 3 h	7 2 h	6 6 h	7 3 h	9 3 h	6 6 h	7 3 h
0 . 8 m	D 7 h	7 8 h	7 3 h									
Most close distance position	D 7 h	F C h	7 3 h									

AF mode

Zoom ring Distance scale position	f = 7 0 mm			f = 8 5 mm			f = 1 3 5 mm			f = 1 8 0 mm		
	Encoder signal											
	1	2	3	1	2	3	1	2	3	1	2	3
∞	D 7 h	6 4 h	7 3 h									

◎If encoder signal values are different from those shown in the table, following causes must be considered.

Distance brush is mounted in the wrong position, distance brush or FPC is defective, encoder patterns on the FPC are contaminated, or the FPC is fixed in the wrong position.