



作成承認印	配布許可印
	

AF Zoom-Nikkor 28-105/3.5-4.5D IF



PARTS LIST

修理部品表

Nikon | NIKON CORPORATION
Tokyo, Japan

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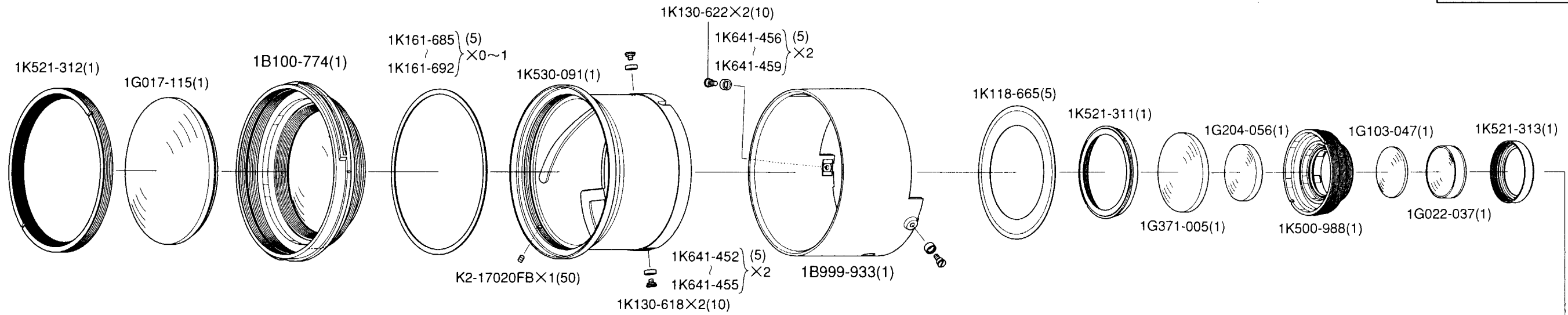
A

B

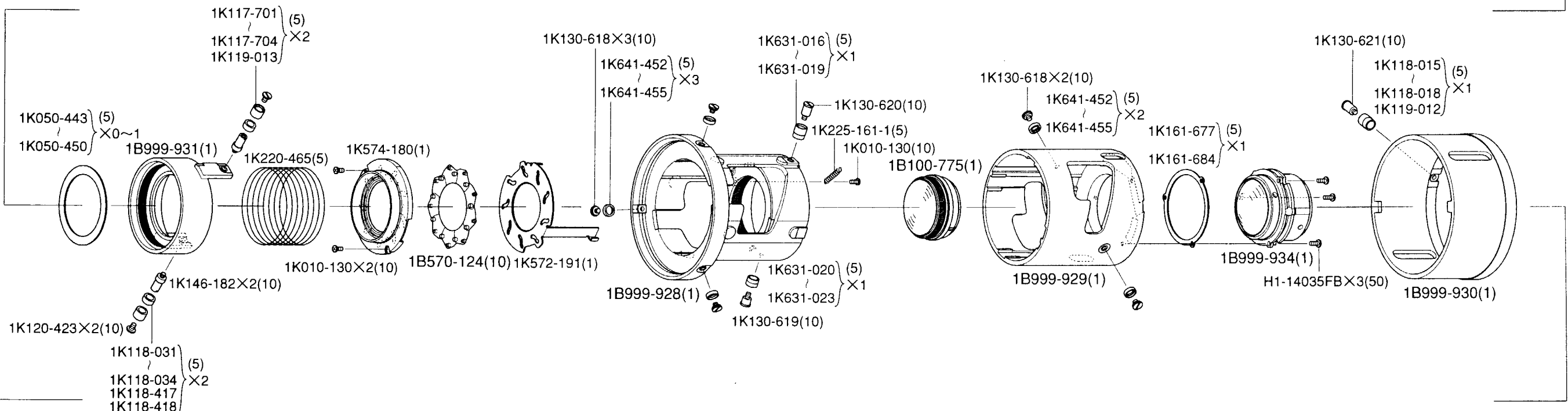
C

D

1



2



3

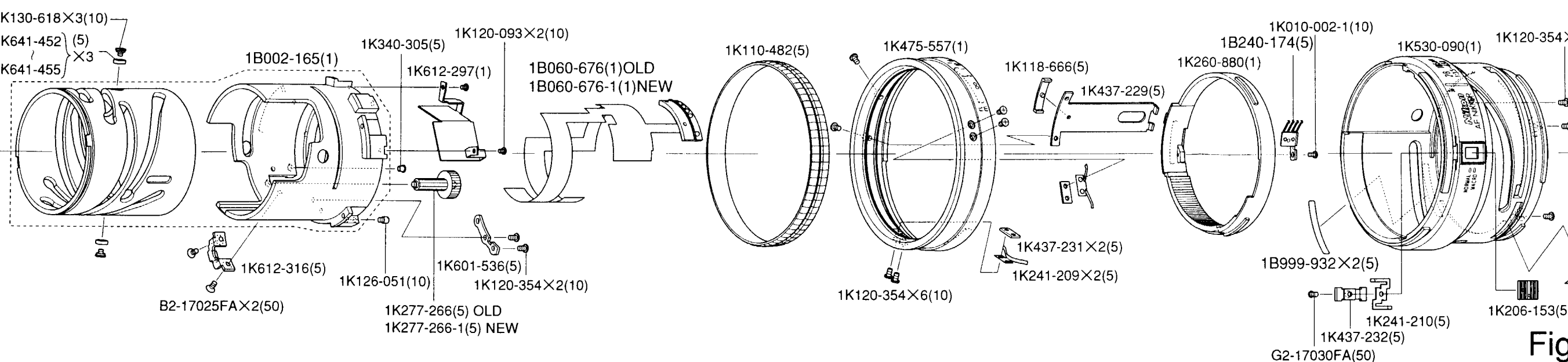


Fig.1

B

AF 28-105/3.5-4.5D JAA76651-R.3468.A

A

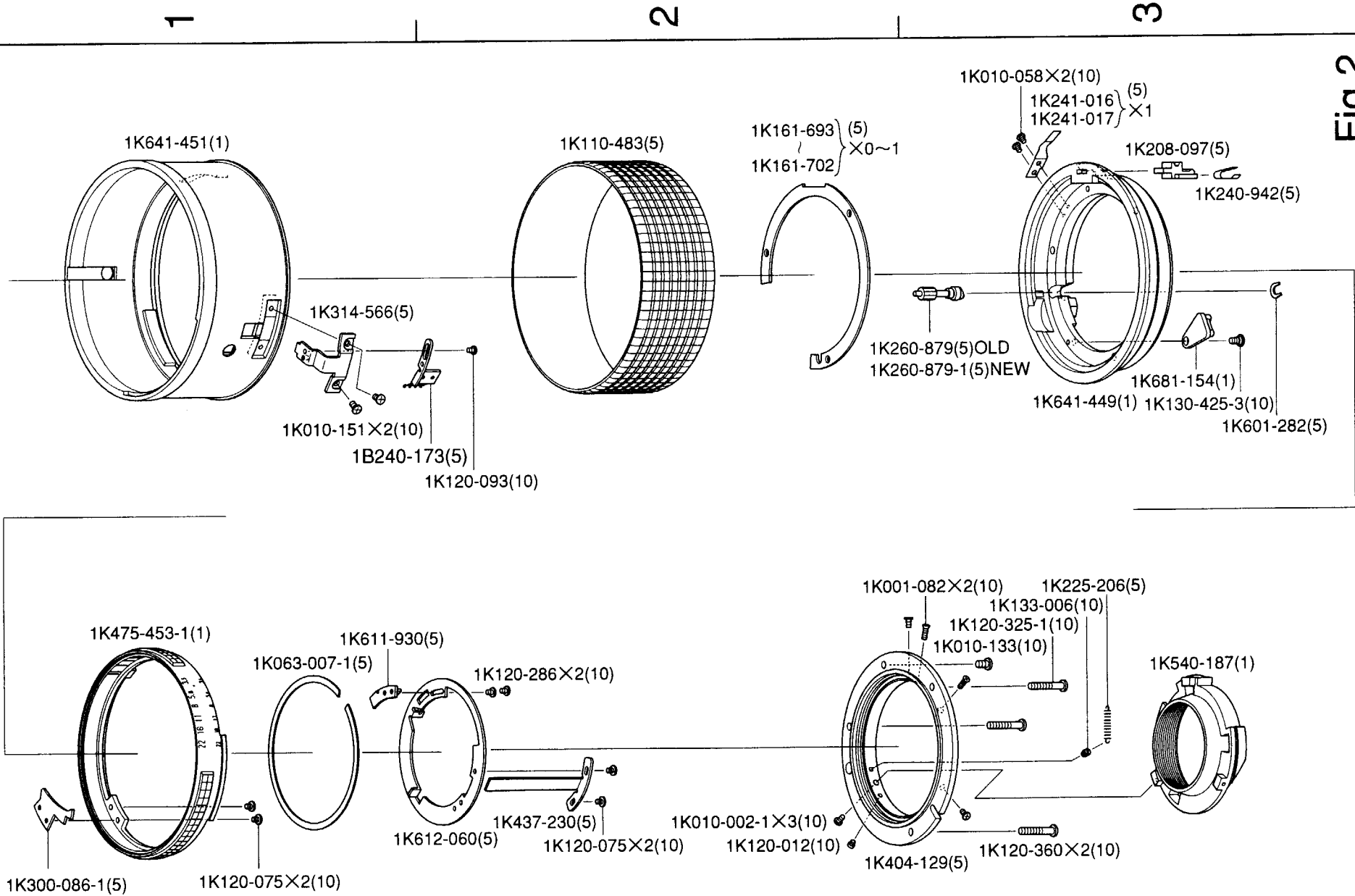


Fig.2

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
1G103-047 (1G103-047)	G6	G6レンズ G6 LENS ELEMENT	1		1 D1	○		1
1G204-056 (1G204-056)	G5	G5レンズ G5 LENS ELEMENT	1		1 D1	○		1
1G371-005 (1G371-005)	G4	G4レンズ G4 LENS ELEMENT	1		1 C1	○		1
*1K001-082 (1K001-082)	113	SCREW SCREW	2		2 A3	○		10
*1K010-002-1 (1K010-002-1)	102	SCREW SCREW	4		2 A2	○		10
*1K010-058 (1K010-058)	95	SCREW SCREW	2		2 B3	○		10
*1K010-130 (1K010-130)	97	SCREW SCREW	3		1 A2	○		10
*1K010-133 (1K010-133)	106	SCREW SCREW	1		2 A3	○		10
*1K010-151 (1K010-151)	124	SCREW SCREW	2		2 B1	○		10
*1K050-443 (1K050-443)	57	ワッシャー T=0.05 WASHER T=0.05	0-1		1 A2	○		5
*1K050-444 (1K050-444)	57	ワッシャー T=0.06 WASHER T=0.06	0-1		1 A2	○		5
*1K050-445 (1K050-445)	57	ワッシャー T=0.07 WASHER T=0.07	0-1		1 A2	○		5
*1K050-446 (1K050-446)	57	ワッシャー T=0.08 WASHER T=0.08	0-1		1 A2	○		5
*1K050-447 (1K050-447)	57	ワッシャー T=0.09 WASHER T=0.09	0-1		1 A2	○		5
*1K050-448 (1K050-448)	57	ワッシャー T=0.1 WASHER T=0.1	0-1		1 A2	○		5
*1K050-449 (1K050-449)	57	ワッシャー T=0.2 WASHER T=0.2	0-1		1 A2	○		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
*1K050-450 (1K050-450)	57	ワッシャー T=0.3 WASHER T=0.3	0-1		1 A2	○		5
*1K063-007-1 (1K063-007)	101	ワッシャー WASHER	1		2 A1	○		5
1K110-482 (1K110-482)	37	ゴムリング RUBBER RING	1		1 B3	○		5
1K110-483 (1K110-483)	63	ゴムリング RUBBER RING	1		2 B2	○		5
*1K117-701 (1K117-701)	133	ローラー D=4.5 ROLLER D=4.5	0-2		1 A2	○		5
*1K117-702 (1K117-702)	133	ローラー D=4.49 ROLLER D=4.49	0-2		1 A2	○		5
*1K117-703 (1K117-703)	133	ローラー D=4.48 ROLLER D=4.48	0-2		1 A2	○		5
*1K117-704 (1K117-704)	133	ローラー D=4.51 ROLLER D=4.51	0-2		1 A2	○		5
*1K118-015 (1K118-015)	78	ローラー D=4.5 ROLLER D=4.5	0-1		1 D2	○		5
*1K118-016 (1K118-016)	78	ローラー D=4.49 ROLLER D=4.49	0-1		1 D2	○		5
*1K118-017 (1K118-017)	78	ローラー D=4.48 ROLLER D=4.48	0-1		1 D2	○		5
*1K118-018 (1K118-018)	78	ローラー D=4.51 ROLLER D=4.51	0-1		1 D2	○		5
*1K118-031 (1K118-031)	135	ローラー D=4.5 ROLLER D=4.5	0-2		1 A2	○		5
*1K118-032 (1K118-032)	135	ローラー D=4.49 ROLLER D=4.49	0-2		1 A2	○		5
*1K118-033 (1K118-033)	135	ローラー D=4.48 ROLLER D=4.48	0-2		1 A2	○		5
*1K118-034 (1K118-034)	135	ローラー D=4.51 ROLLER D=4.51	0-2		1 A2	○		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
1K118-417 (1K118-417)	135	ローラー D=4. 47 ROLLER D=4.47	0-2		1 A2	○		5
1K118-418 (1K118-418)	135	ローラー D=4. 46 ROLLER D=4.46	0-2		1 A2	○		5
1K118-665 (1K118-665)	67	シート SHEET	1		1 C1	○		5
1K118-666 (1K118-666)	111	ストッパーゴム STOPPER RUBBER	1		1 C3	○		5
1K119-012 (1K119-012)	78	ローラー D=4. 52 ROLLER D=4.52	0-1		1 D2	○		5
1K119-013 (1K119-013)	133	ローラー D=4. 52 ROLLER D=4.52	0-2		1 A2	○		5
*1K120-012 (1K120-012)	108	SCREW SCREW	1		2 A2	○		10
*1K120-075 (1K120-075)	100	SCREW SCREW	4		2 A1	○		10
*1K120-093 (1K120-093)	127	SCREW SCREW	3		2 B2	○		10
*1K120-286 (1K120-286)	92	SCREW SCREW	2		2 A2	○		10
*1K120-325-1 (1K120-325)	105	SCREW SCREW	1		2 A3	○		10
*1K120-354 (1K120-354)	121	SCREW SCREW	11		1 B3	○		10
*1K120-360 (1K120-360)	104	SCREW SCREW	2		2 A3	○		10
*1K120-423 (1K120-423)	91	SCREW SCREW	2		1 A2	○		10
*1K126-051 (1K126-051)	96	SCREW SCREW	1		1 B3	○		10
*1K130-425-3 (1K130-425-1)	123	SCREW SCREW	1		2 B3	○		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
1K130-618 (1K130-618)	81	SCREW SCREW	9		1 B1	○		10
1K130-619 (1K130-619)	93	SCREW SCREW	1		1 B2	○		10
1K130-620 (1K130-620)	98	SCREW SCREW	1		1 C2	○		10
1K130-621 (1K130-621)	103	SCREW SCREW	1		1 D2	○		10
1K130-622 (1K130-622)	119	SCREW SCREW	2		1 B1	○		10
*1K133-006 (1K133-006)	87	SCREW SCREW	1		2 A3	○		10
1K146-182 (1K146-182)	80	SCREW SCREW	2		1 A2	○		10
1K161-677 (1K161-677)	58	ワッシャー T=0.05 WASHER T=0.05	0-1		1 C2	○		5
1K161-678 (1K161-678)	58	ワッシャー T=0.06 WASHER T=0.06	0-1		1 C2	○		5
1K161-679 (1K161-679)	58	ワッシャー T=0.07 WASHER T=0.07	0-1		1 C2	○		5
1K161-680 (1K161-680)	58	ワッシャー T=0.08 WASHER T=0.08	0-1		1 C2	○		5
1K161-681 (1K161-681)	58	ワッシャー T=0.09 WASHER T=0.09	0-1		1 C2	○		5
1K161-682 (1K161-682)	58	ワッシャー T=0.1 WASHER T=0.1	0-1		1 C2	○		5
1K161-683 (1K161-683)	58	ワッシャー T=0.2 WASHER T=0.2	0-1		1 C2	○		5
1K161-684 (1K161-684)	58	ワッシャー T=0.3 WASHER T=0.3	0-1		1 C2	○		5
1K161-685 (1K161-685)	86	ワッシャー T=0.05 WASHER T=0.05	0-1		1 B1	○		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
1K161-686 (1K161-686)	86	ワッシャー T=0.06 WASHER T=0.06	0-1		1 B1	○		5
1K161-687 (1K161-687)	86	ワッシャー T=0.07 WASHER T=0.07	0-1		1 B1	○		5
1K161-688 (1K161-688)	86	ワッシャー T=0.08 WASHER T=0.08	0-1		1 B1	○		5
1K161-689 (1K161-689)	86	ワッシャー T=0.09 WASHER T=0.09	0-1		1 B1	○		5
1K161-690 (1K161-690)	86	ワッシャー T=0.1 WASHER T=0.1	0-1		1 B1	○		5
1K161-691 (1K161-691)	86	ワッシャー T=0.2 WASHER T=0.2	0-1		1 B1	○		5
1K161-692 (1K161-692)	86	ワッシャー T=0.3 WASHER T=0.3	0-1		1 B1	○		5
1K161-693 (1K161-693)	125	ワッシャー T=0.8 WASHER T=0.8	0-1		2 B2	○		5
1K161-694 (1K161-694)	125	ワッシャー T=0.05 WASHER T=0.05	0-1		2 B2	○		5
1K161-695 (1K161-695)	125	ワッシャー T=0.06 WASHER T=0.06	0-1		2 B2	○		5
1K161-696 (1K161-696)	125	ワッシャー T=0.07 WASHER T=0.07	0-1		2 B2	○		5
1K161-697 (1K161-697)	125	ワッシャー T=0.08 WASHER T=0.08	0-1		2 B2	○		5
1K161-698 (1K161-698)	125	ワッシャー T=0.09 WASHER T=0.09	0-1		2 B2	○		5
1K161-699 (1K161-699)	125	ワッシャー T=0.1 WASHER T=0.1	0-1		2 B2	○		5
1K161-700 (1K161-700)	125	ワッシャー T=0.2 WASHER T=0.2	0-1		2 B2	○		5
1K161-701 (1K161-701)	125	ワッシャー T=0.3 WASHER T=0.3	0-1		2 B2	○		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 Qty per order
1K161-702 (1K161-702)	125	ワッシャー T=0.5 WASHER T=0.5	0-1		2 B2	○		5
1K206-153 (1K206-153)	145	レバー LEVER	1		1 D3	○		5
*1K208-097 (1K208-097)	75	EEロックレバー EE LOCK LEVER	1		2 B3	○		5
1K220-465 (1K220-465)	62	バネ SPRING	1		2 A2	○		5
*1K225-161-1 (1K225-161-1)	130	バネ SPRING	1		1 C2	○		5
*1K225-206 (1K225-206)	84	バネ SPRING	1		2 A3	○		5
*1K240-942 (1K240-942)	76	クリックバネ CLICK SPRING	1		2 B3	○		5
*1K241-016 (1K241-016)	36	クリックバネ CLICK SPRING	0-1		2 B3	○		5
*1K241-017 (1K241-017)	36	クリックバネ CLICK SPRING	0-1		2 B3	○		5
1K241-209 (1K241-209)	134	クリックバネ CLICK SPRING	2		1 C3	○		5
1K241-210 (1K241-210)	146	クリックバネ CLICK SPRING	1		1 D3	○		5
1K260-879 (1K260-879)	71	カップリングギア COUPLING GEAR	1		2 B3	○	S/N 200001~	5
1K260-879-1 (1K260-879-1)	71	カップリングギア COUPLING GEAR	1		2 B3	○	S/N 250001~	5
1K260-880 (1K260-880)	114	セグメントギア SEGMENT GEAR	1		1 D3	○		1
1K277-266 (1K277-266)	72	アイドルギア IDLE GEAR	1		1 B3	○	S/N 200001~	5
1K277-266-1 (1K277-266-1)	72	アイドルギア IDLE GEAR	1		1 B3	○	S/N 250001~	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
*1K300-086-1 (1K300-086)	21	平面カム FLAT CAM	1		2 A1	○		5
1K314-566 (1K314-566)	70	ズームキー ZOOM KEY	1		2 B1	○		5
1K340-305 (1K340-305)	73	ブッシュ BUSH	1		1 B3	○		5
*1K404-129 (1K404-129)	30	バヨネットマウント BAYONET MOUNT	1		2 A3	○		5
1K437-229 (1K437-229)	22	キー KEY	1		1 C3	○		5
1K437-230 (1K437-230)	94	絞りレバー APERTURE LEVER	1		2 A2	○		5
1K437-231 (1K437-231)	138	押さえ板 RETAINER PLATE	2		1 C3	○		5
1K437-232 (1K437-232)	144	押さえ板 RETAINER PLATE	1		1 D3	○		5
*1K475-453-1 (1K475-453)	28	絞り環 APERTURE RING	1		2 A1	○	S/N 刻印	1
1K475-557 (1K475-557)	26	距離環 FOCUS INDEX RING	1		1 C3	○		1
1K500-988 (1K500-988)	41	G 6. 7. 8 レンズ室 G6. 7. 8 LENS HOUSING	1		1 D1	○		1
1K521-311 (1K521-311)	42	押さえ環 RETAINER RING	1		1 C1	○		1
1K521-312 (1K521-312)	43	押さえ環 RETAINER RING	1		1 A1	○		1
1K521-313 (1K521-313)	48	押さえ環 RETAINER RING	1		1 D1	○		1
1K530-090 (1K530-090)	27	社銘環 NAME RING	1		1 D3	○		1
1K530-091 (1K530-091)	51	丸環 RING	1		1 B1	○		1

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
1K540-187 (1K540-187)	39	後部保護環 REAR GROUP PROTECTOR RING	1		2 A3	○		1
1K572-191 (1K572-191)	33	矢草 APERTURE ACTION PLATE	1		1 B2	○		1
1K574-180 (1K574-180)	34	蜂の巣 BLADE MOUNTING RING	1		1 B2	○		1
*1K601-282 (1K601-282)	126	ワッシャー WASHER	1		2 B3	○		5
1K601-536 (1K601-536)	74	ギア取付板 GEAR INSTALL BAR	1		1 B3	○		5
*1K611-930 (1K611-930)	23	3.1レバー 3.1 LEVER	1		2 A1	○		5
*1K612-060 (1K612-060)	60	絞り連動環 APERTURE COUPLING RING	1		2 A2	○		5
1K612-297 (1K612-297)	115	FPC実装板 FPC MOUNT PLATE	1		1 B3	○		1
1K612-316 (1K612-316)	69	曲げ板 BENT PLATE	1		1 A3	○		5
1K631-016 (1K631-016)	79	ローラー D=4.5 ROLLER D=4.5	0-1		1 C2	○		5
1K631-017 (1K631-017)	79	ローラー D=4.49 ROLLER D=4.49	0-1		1 C2	○		5
1K631-018 (1K631-018)	79	ローラー D=4.48 ROLLER D=4.48	0-1		1 C2	○		5
1K631-019 (1K631-019)	79	ローラー D=4.51 ROLLER D=4.51	0-1		1 C2	○		5
1K631-020 (1K631-020)	99	ローラー D=4.5 ROLLER D=4.5	0-1		1 B2	○		5
1K631-021 (1K631-021)	99	ローラー D=4.48 ROLLER D=4.48	0-1		1 B2	○		5
1K631-022 (1K631-022)	99	ローラー D=4.49 ROLLER D=4.49	0-1		1 B2	○		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
1K631-023 (1K631-023)	99	ローラー D=4.51 ROLLER D=4.51	0-1		1 B2	○		5
1K641-449 (1K641-449)	29	指標環 INDEX RING	1		2 B3	○		1
1K641-451 (1K641-451)	59	ズーム環 ZOOM RING	1		2 B1	○		1
1K641-452 (1K641-452)	112	ローラー D=4.48 ROLLER D=4.48	0-9		1 B1	○		5
1K641-453 (1K641-453)	112	ローラー D=4.51 ROLLER D=4.51	0-9		1 B1	○		5
1K641-454 (1K641-454)	112	ローラー D=4.5 ROLLER D=4.5	0-9		1 B1	○		5
1K641-455 (1K641-455)	112	ローラー D=4.49 ROLLER D=4.49	0-9		1 B1	○		5
1K641-456 (1K641-456)	131	ローラー D=3.9 ROLLER D=3.9	0-2		1 B1	○		5
1K641-457 (1K641-457)	131	ローラー D=3.89 ROLLER D=3.89	0-2		1 B1	○		5
1K641-458 (1K641-458)	131	ローラー D=3.88 ROLLER D=3.88	0-2		1 B1	○		5
1K641-459 (1K641-459)	131	ローラー D=3.91 ROLLER D=3.91	0-2		1 B1	○		5
*1K681-154 (1K681-154)	61	絞りカムレバー APERTURE CAM LEVER	1		2 B3	○		1
*B2-17025FA (B2-17025FA)	88	SCREW SCREW	2		1 A3	○		50
*G2-17030FA (G2-17030FA)	147	SCREW SCREW	1		1 D3	○		50
*H1-14035FB (H1-14035FB)	137	SCREW SCREW	6		1 D2	○		50
*K2-17020FB (K2-17020FB)	129	SCREW SCREW	1		1 B1	○		50

部組品表 Assembly 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	大部組品番号 Main Assembly No.	参照 図番 Fig. No.	備考 Remarks	要求単位 Qty per order
1B002-165 (1B002-165)	B1	固定筒部組 FIXED TUBU UNIT	1		1 A3		1
1B060-676 (1B060-676)	B2	FPC部組 FPC UNIT	1		1 B3	S/N 200001~	1
1B060-676-1 (1B060-676-1)	B2	FPC部組 FPC UNIT	1		1 B3	S/N 250001~	1
1B100-774 (1B100-774)	B3	G3レンズ室部組 G3 LENS HOUSING UNIT	1		1 A1		1
1B100-775 (1B100-775)	B4	G9.10.11レンズ室部組 G9.10.11 LENS HOUSING UNIT	1		1 C2		1
1B240-173 (1B240-173)	B7	ズームブラシ部組 ZOOM BRUSH UNIT	1		2 B2		5
1B240-174 (1B240-174)	B8	距離ブラシ部組 DISTANCE BRUSH UNIT	1		1 D3		5
1B570-124 (1B570-124)	B5	羽根部組 BLADE UNIT	9		1 B2		10
1B999-928 (1B999-928)	B15	固定筒部組 FIXED TUBU UNIT	1		1 B2		1
1B999-929 (1B999-929)	B19	固定筒部組 FIXED TUBU UNIT	1		1 C2		1
1B999-930 (1B999-930)	B20	丸環部組 RING UNIT	1		1 D2		1
1B999-931 (1B999-931)	B28	2群摺動枠部組 2ND SLIDING FRAM UNIT	1		1 A2		1
1B999-932 (1B999-932)	B37	クリックバネ部組 CLICK SPRING UNIT	1		1 D3		5
1B999-933 (1B999-933)	B38	丸環部組 RING UNIT	1		1 C1		1
1B999-934 (1B999-934)	B48	G12-16レンズ室部組 G12-16 LENS HOUSING UNIT	1		1 D2		1
1G017-115 (1G017-115)	G1.2	G1.2レンズ G1.2 LENS	1		1 A1		1

作成承認印

配布許可印



AF Zoom-Nikkor 28-105/3.5-4.5D IF

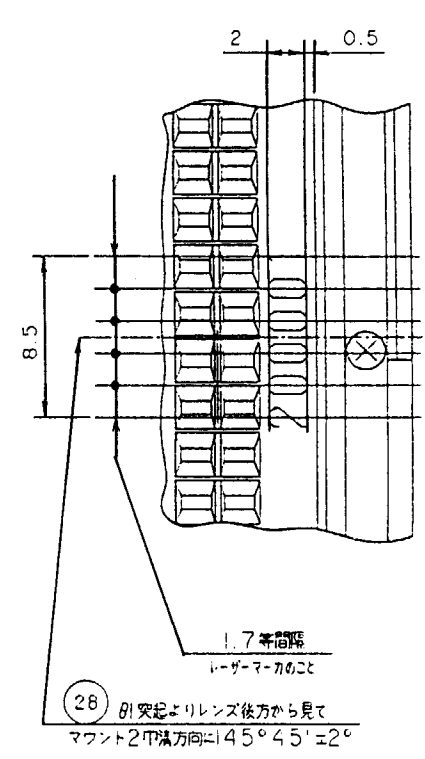
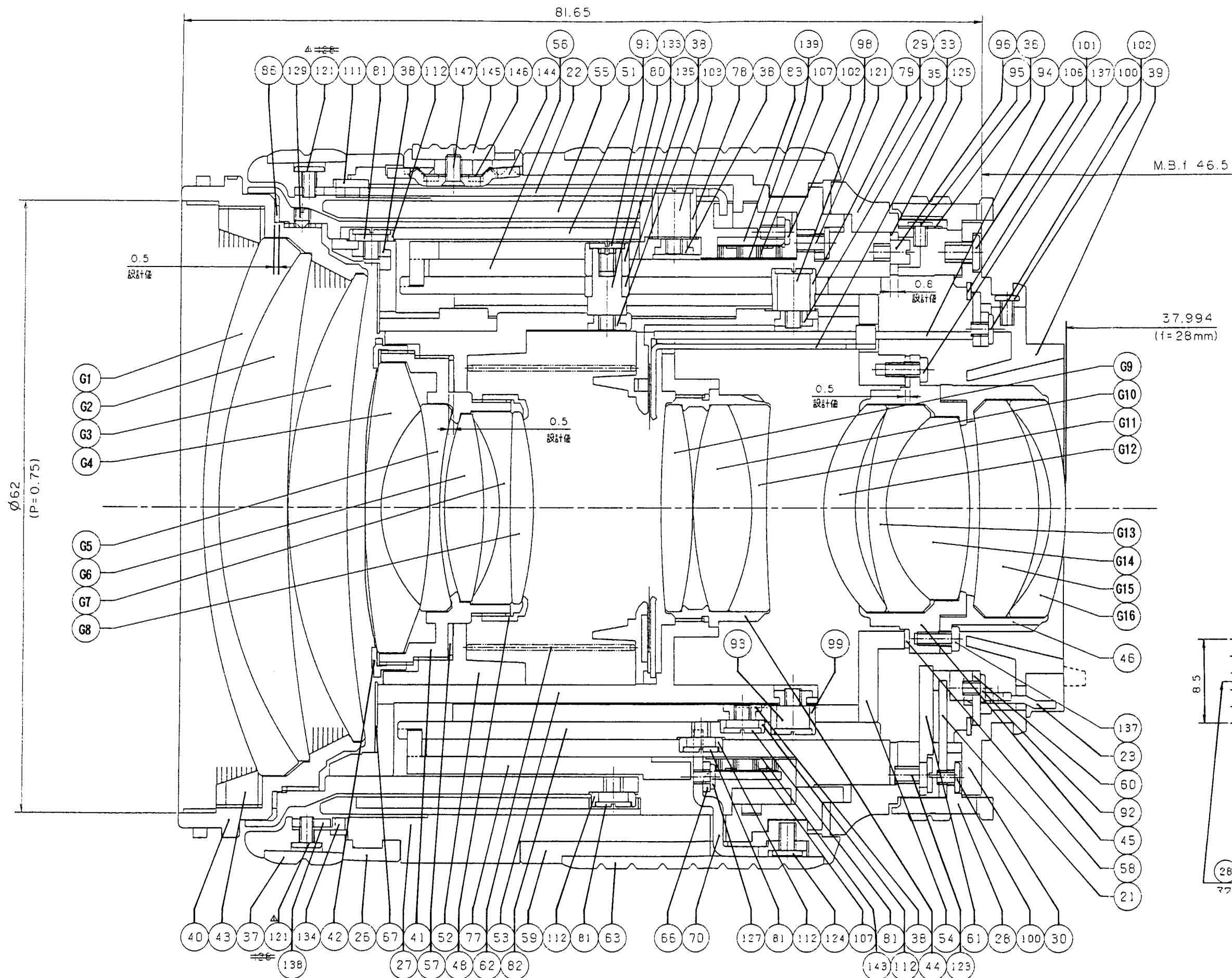


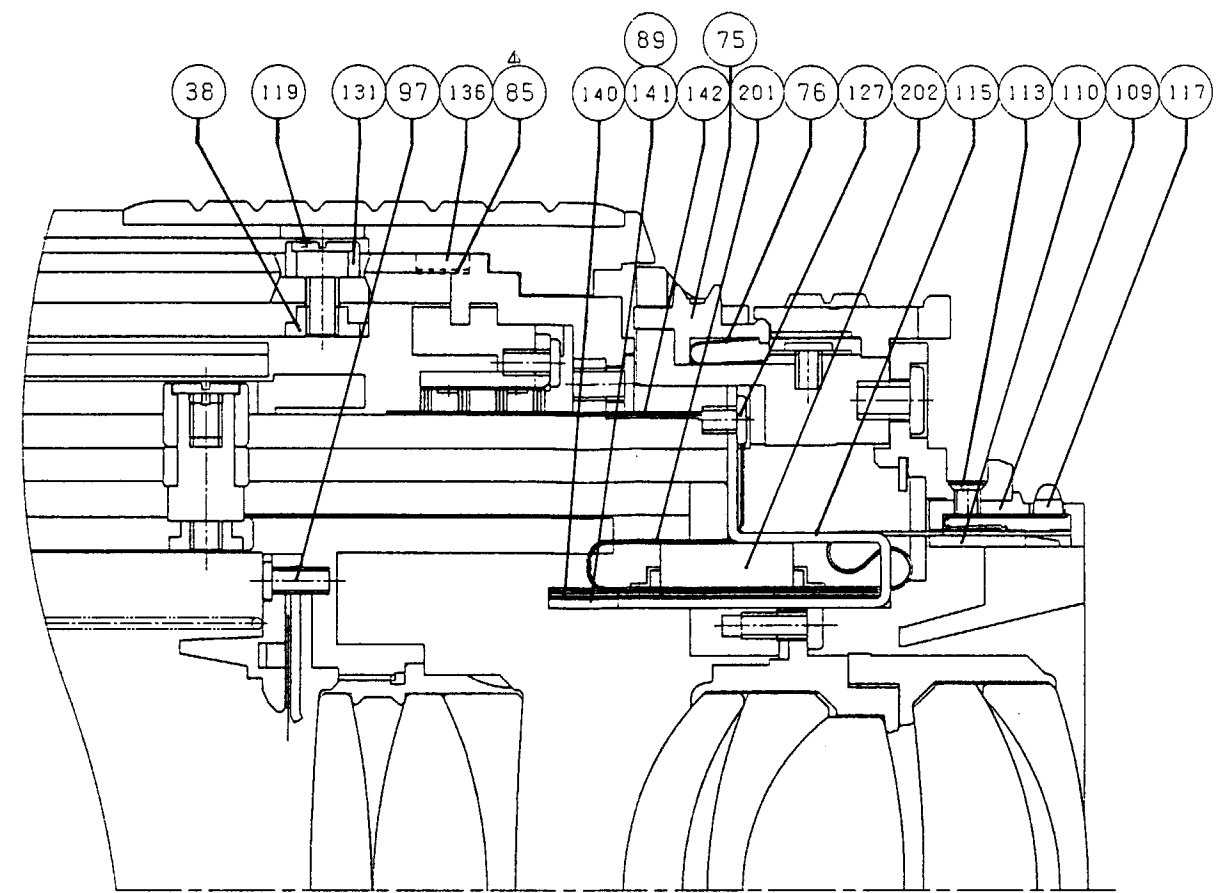
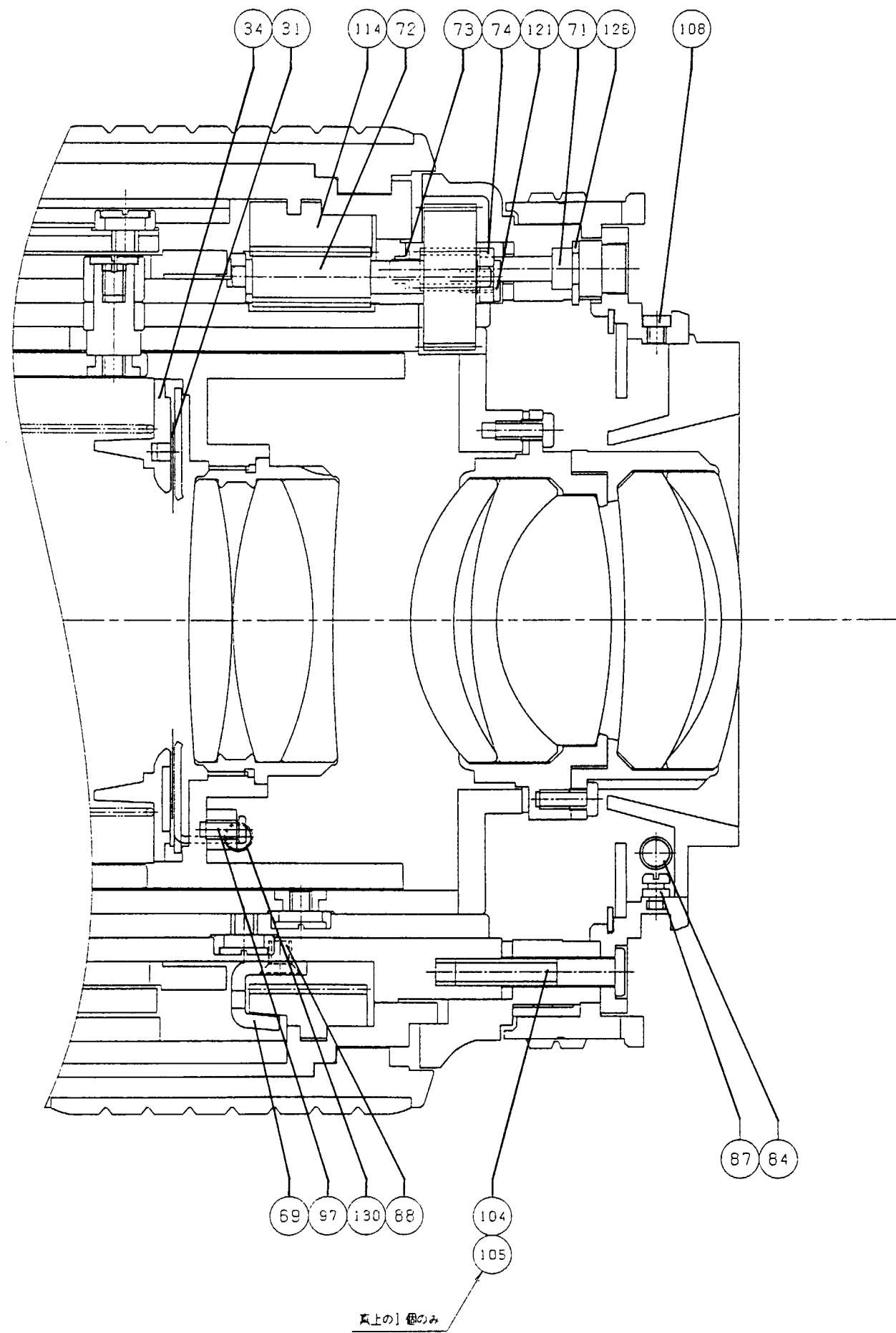
REPAIR MANUAL

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Tokyo, Japan

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組立図 Structure of the Lens





DISASSEMBLING / ASSEMBLING / ADJUSTMENT

※ Prior to disassembly / assembly

- ① Due to any failure mode appearing on the image if removing the 4th lens group unit from the main lens and putting the 4th lens group back onto the same position of the main lens straight away, any adjustment to the optical axis on the 4th lens group shall be necessarily performed.

If there is found any lens' optical axis to be necessarily adjusted, make sure to repair and to adjust it in any facilities the adjuster for optical axis is installed. In case it is conducted in anywhere other than such facilities, make sure to disassemble / assemble the 4th lens group unit without removing it from the main lens.

In addition, any data in terms of the adjuster for optical axis such as where to install, when to settle, how to adjust or so shall be provided later on.

- ② The aspheric lens composite type is employed for this applicable lens.

Make sure to use the A-level dustcloth for cleaning on the R1 side of this applicable G4 lens.

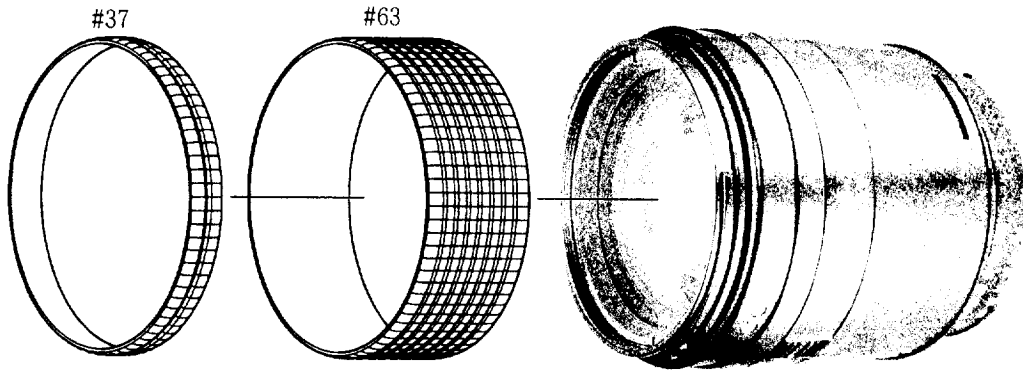
In addition, for cleaning any lens other than this applicable one, it is no problem with the conventional way to do so.

<Reference>

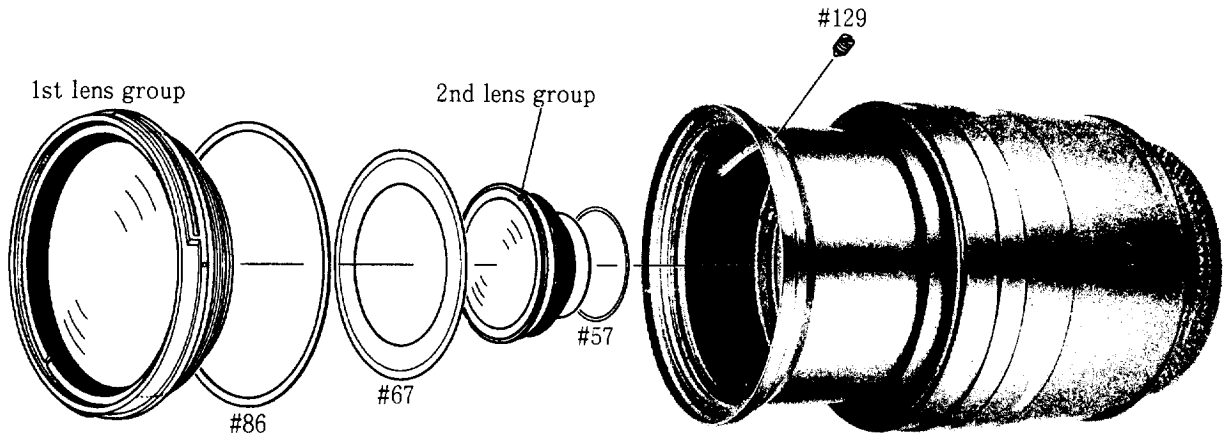
The technical information No. L(AF)-970060 shall be referable.

1. DISASSEMBLING

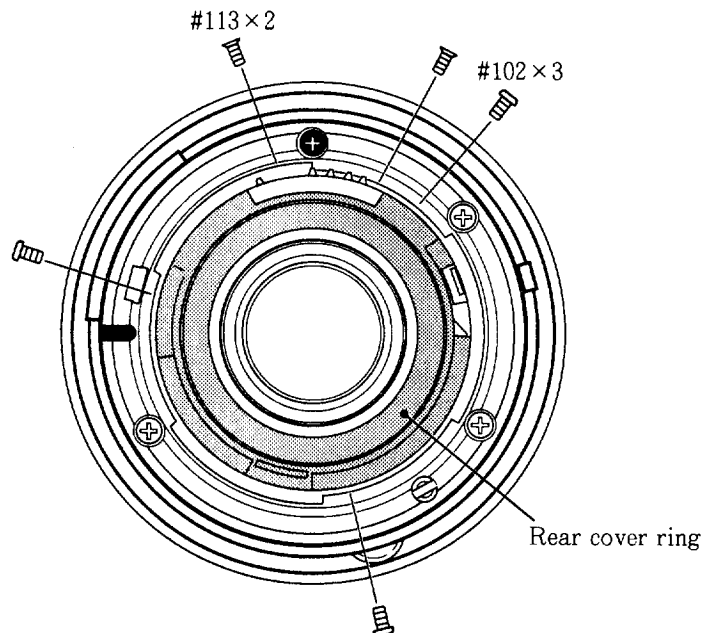
RUBBER RING #37, #63



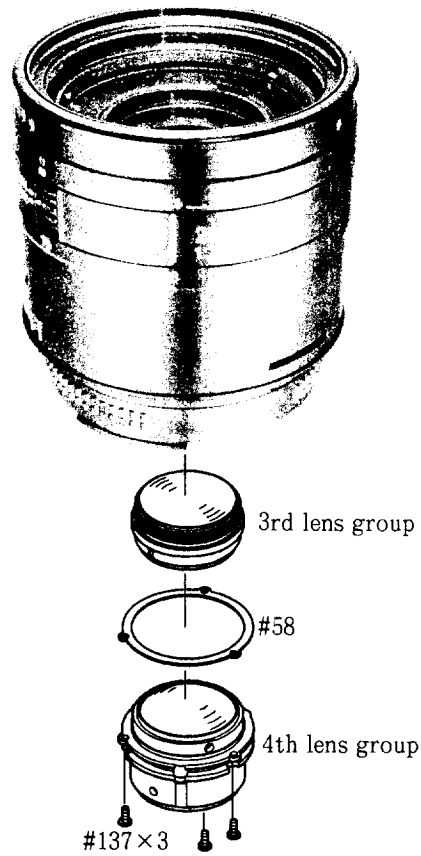
1st~2nd LENS GROUP



REAR COVER RING



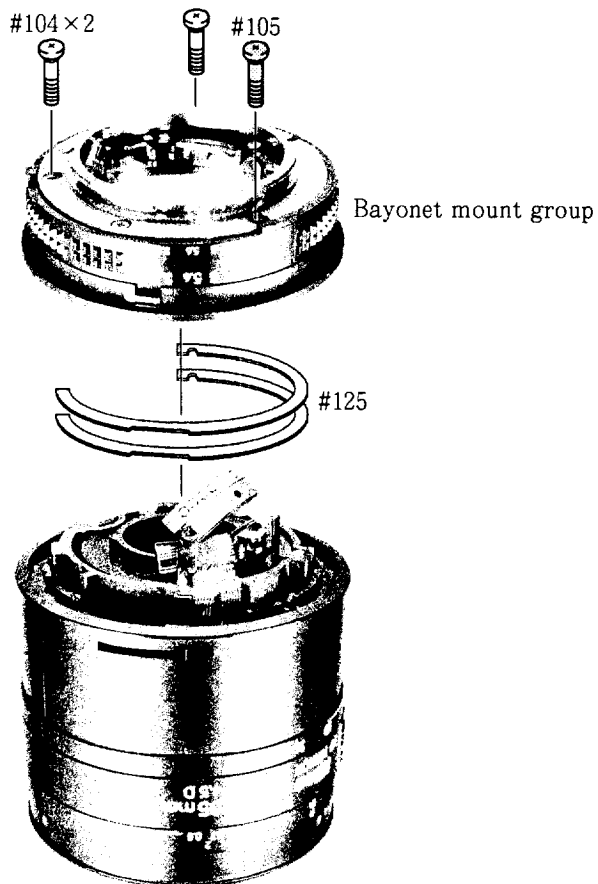
3rd~4th LENS GROUP



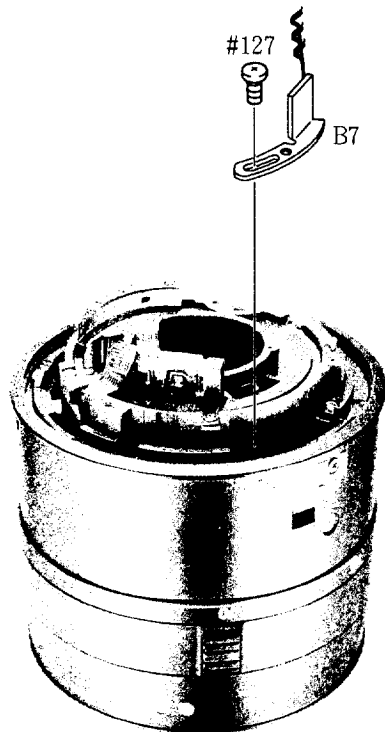
Note : At the completion of a series of repair work after removing the 4th lens group, the adjustment of optical axis on the 4th lens group shall be necessarily performed.

Make sure not to remove the 4th lens group in anywhere other than where the optical axis adjuster is installed.

BAYONET MOUNT GROUP

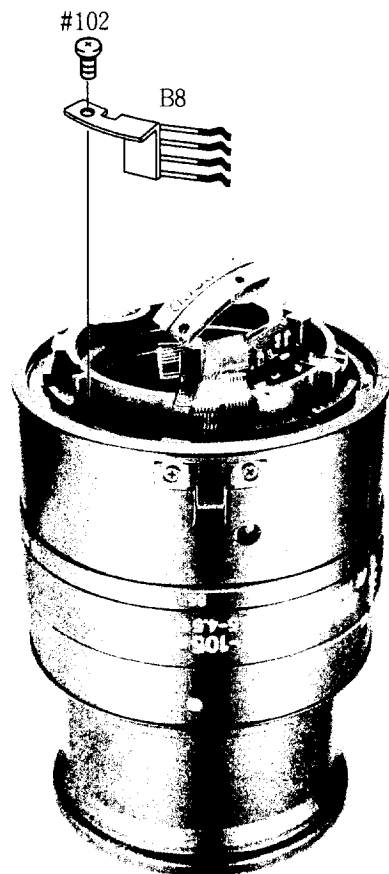


ZOOM ENCODER BRUSH



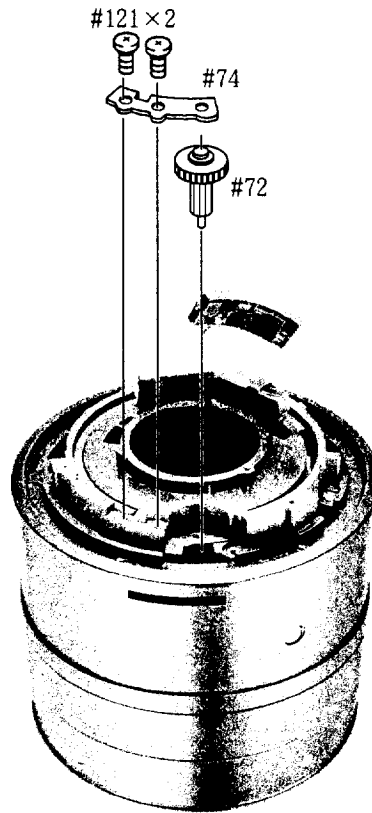
- Rotate the zoom ring to the WIDE position and then remove it.

DISTANCE ENCODER BRUSH

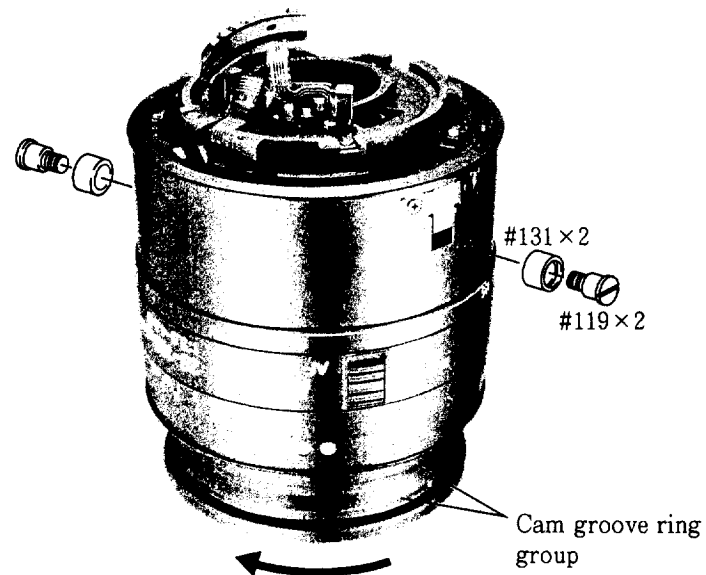


- Set the zoom ring to the TELE position. Also, set the MACRO's changeover switch to the MACRO side. Then, rotate the focus ring to the limit on closest distance side and then remove the brush.

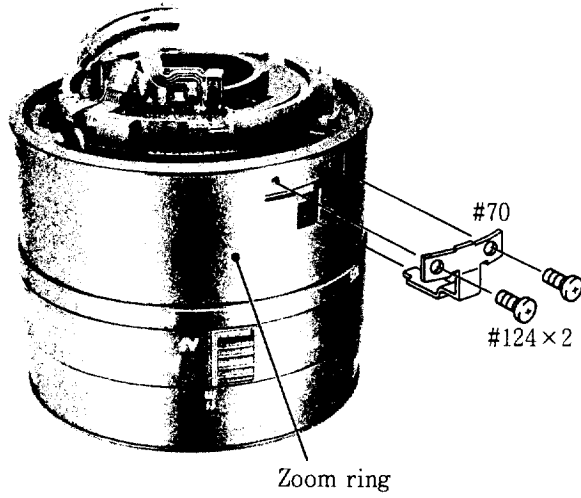
AF GEAR



CAM GROOVE RING GROUP

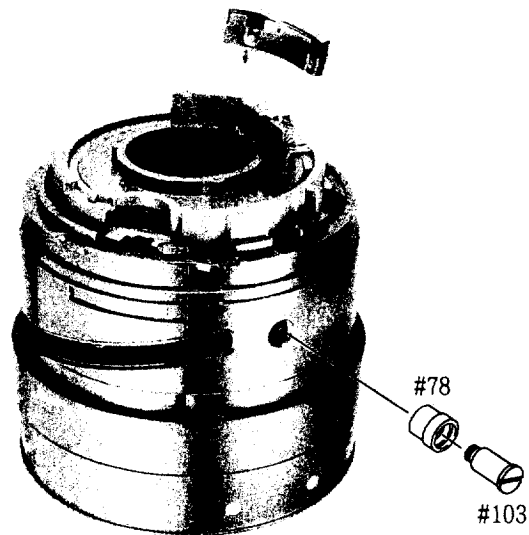


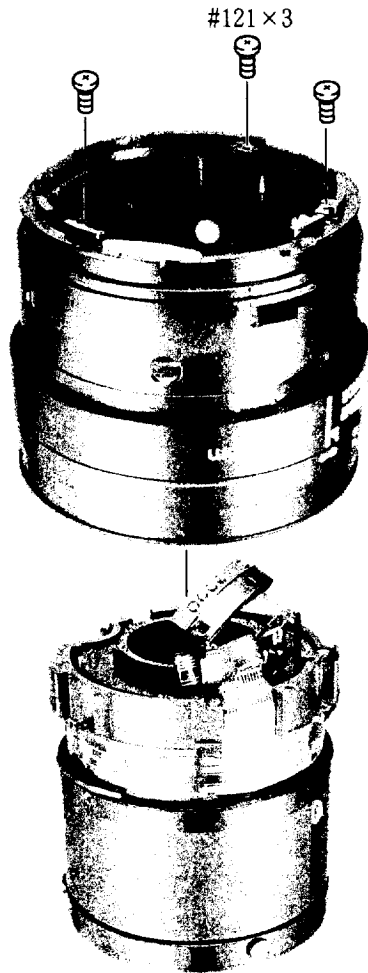
ZOOM KEY #70, ZOOM RING



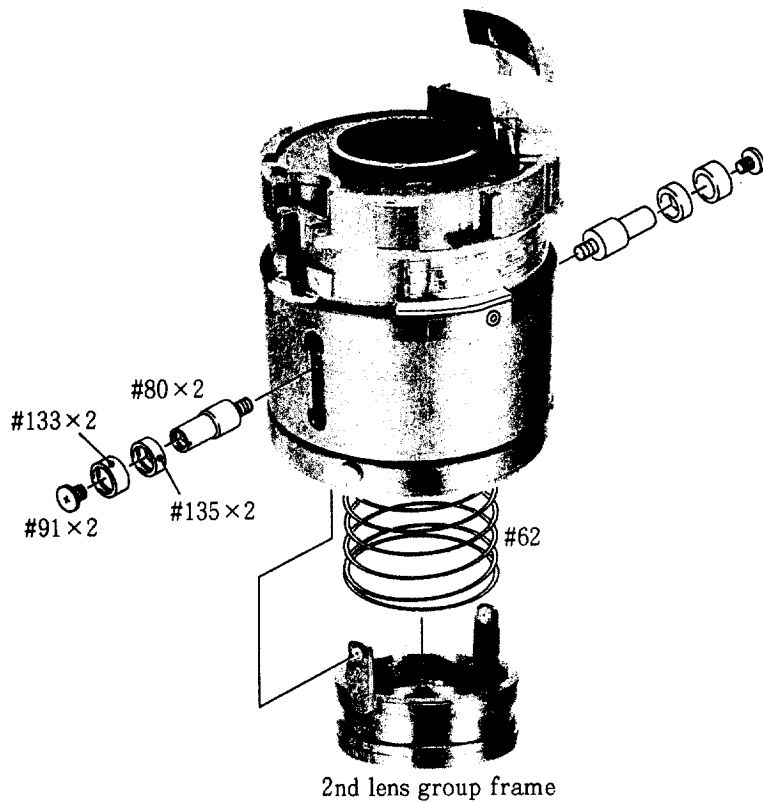
- ① Remove the zoom key #70.
- ② Rotate the zoom ring clockwise and remove it.

EXTERNAL PART

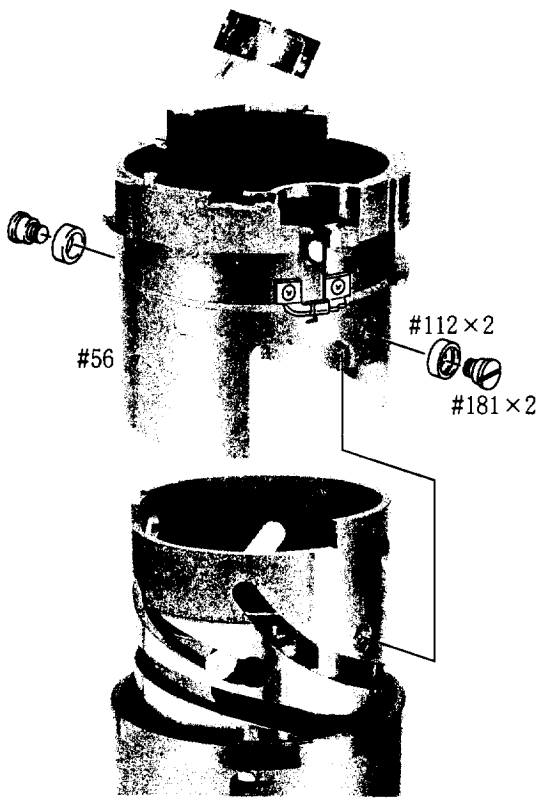




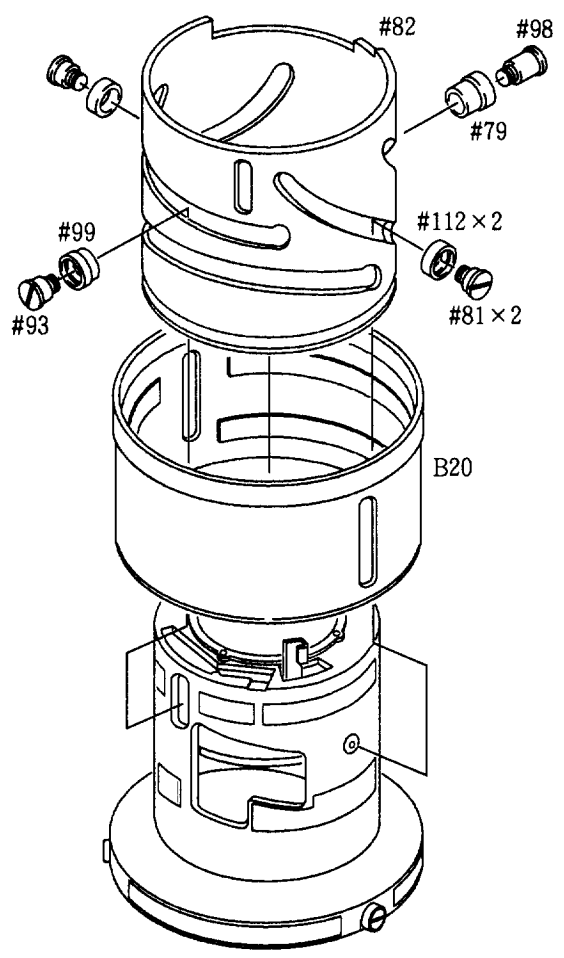
2nd LENS GROUP FRAME



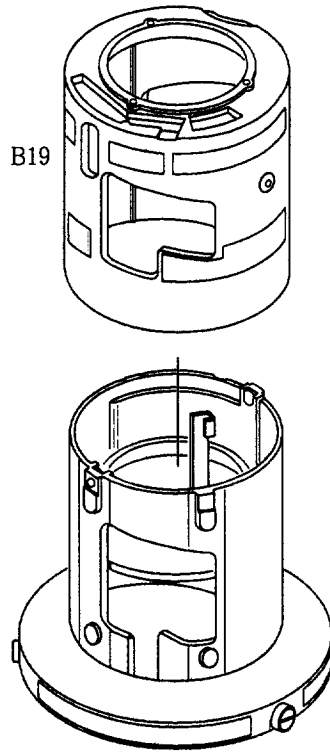
CAM GROOVE RING GROUP



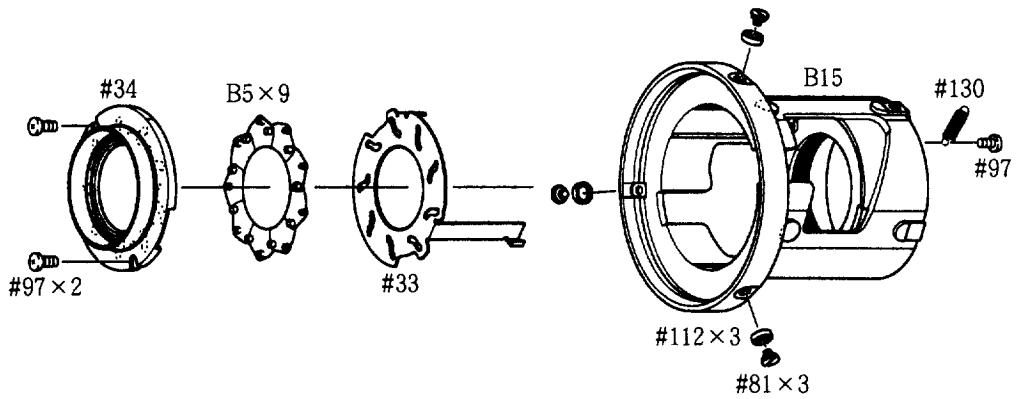
CAM RING #82



STRAIGHT GROOVE RING

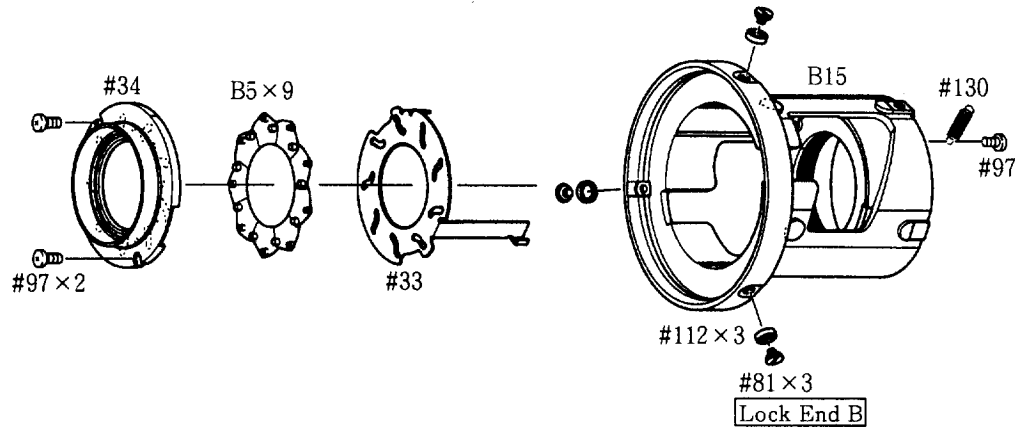


APERTURE BLADE HOUSING GROUP

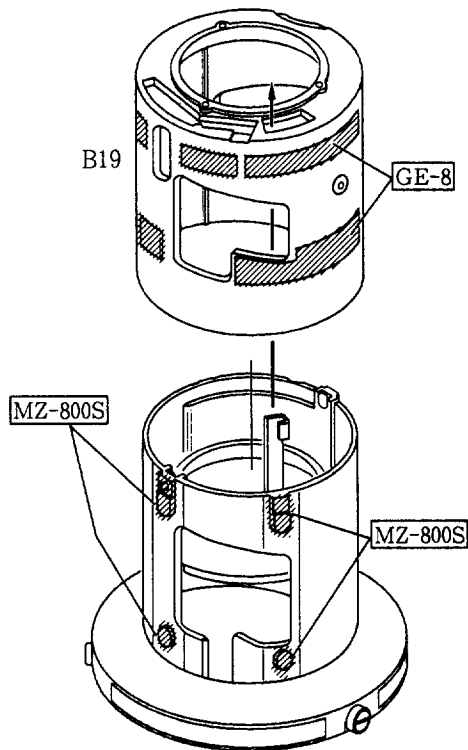


2. ASSEMBLING / ADJUSTMENT

APERTURE BLADE HOUSING GROUP

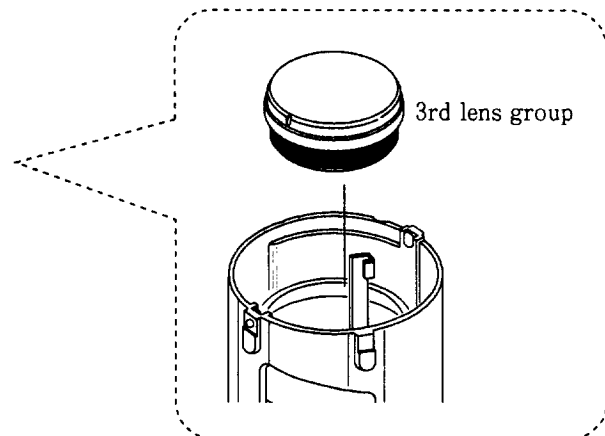


STRAIGHT GROOVE RING

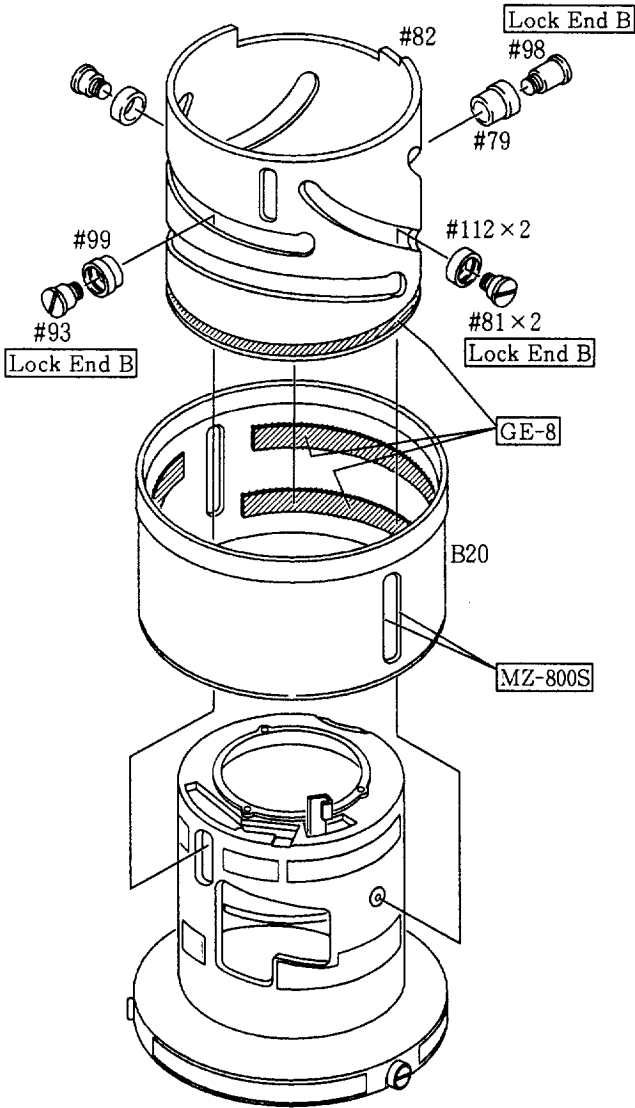


- Apply the MZ-800S to the 4 lead grooves inside the B19.

Note : In case the operation is kept on doing without removing the 4th lens group unit, make sure to mount the 3rd lens group unit now.

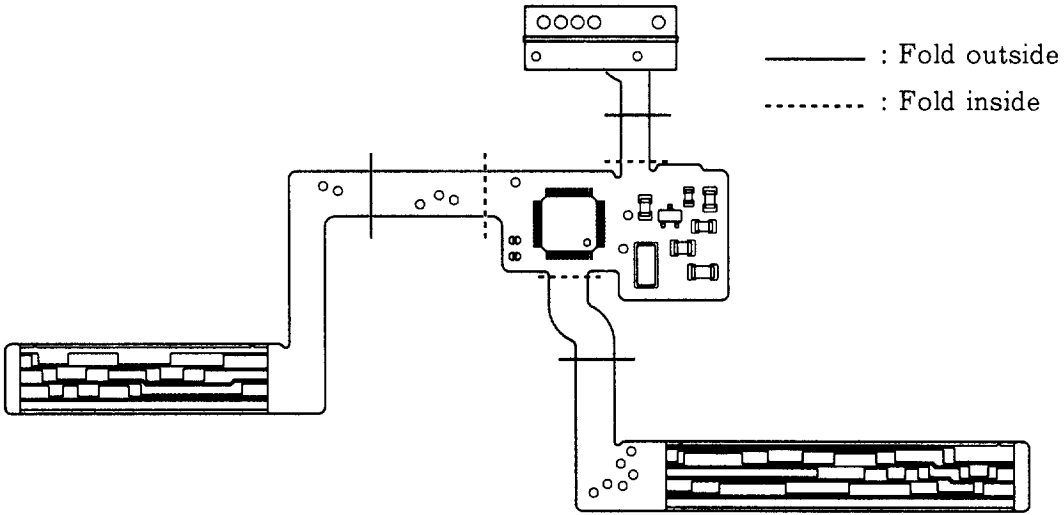


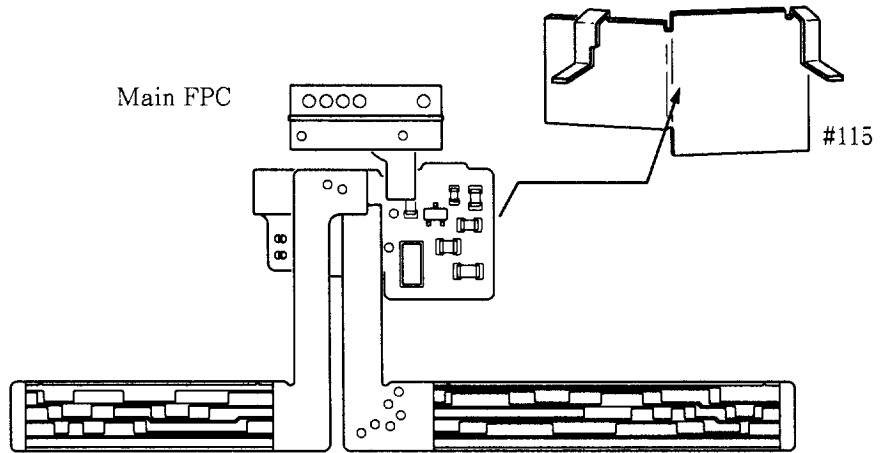
CAM RING #82



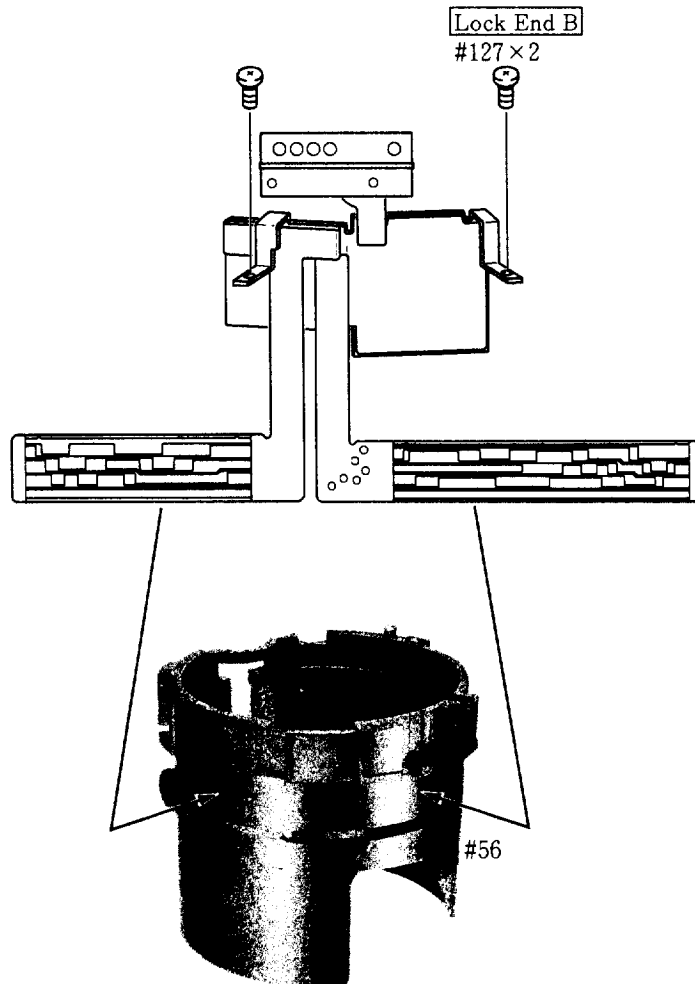
- Apply the grease GE-8 to the 6 cam grooves on the cam ring #82.

MAIN FPC

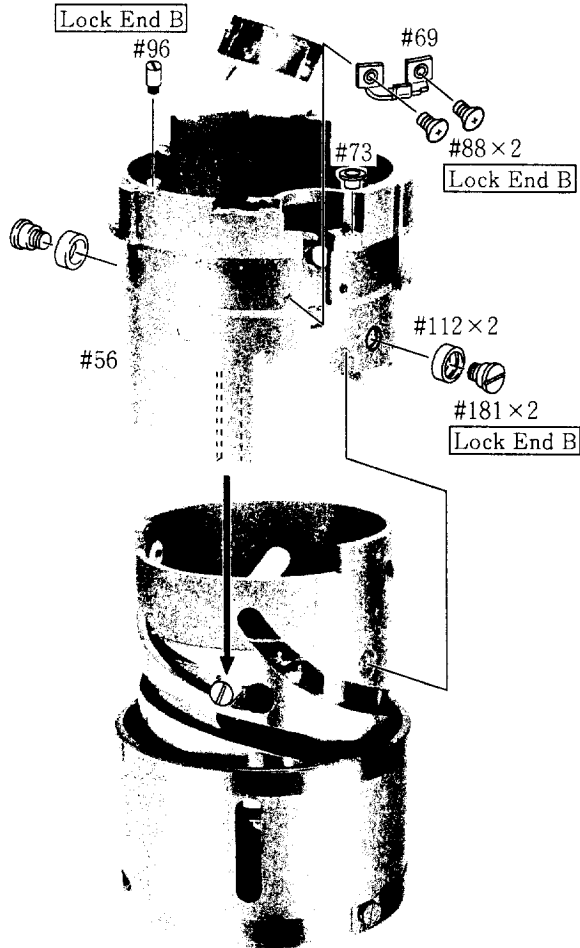




ATTACH THE MAIN FPC

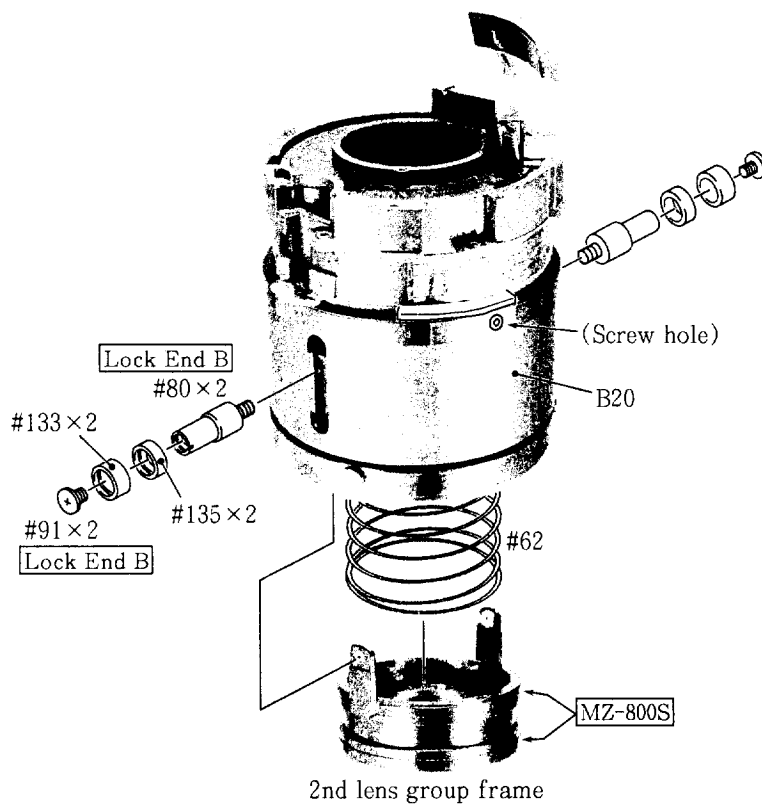


CAM GROOVE RING GROUP



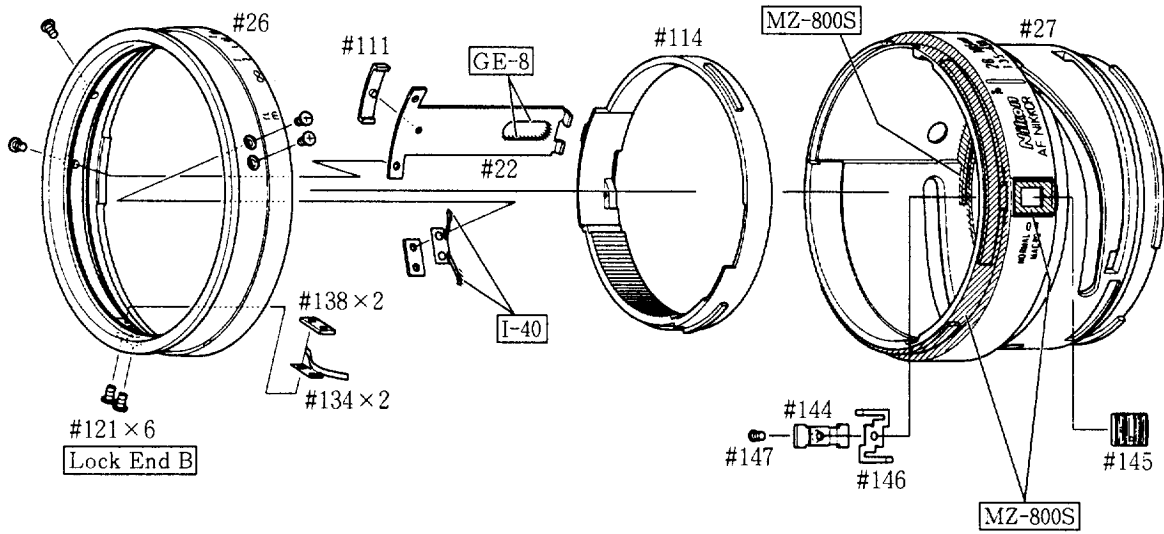
- Apply the grease MZ-800S to two cam grooves and to a straight groove inside the cam groove ring #56.

2nd LENS GROUP FRAME

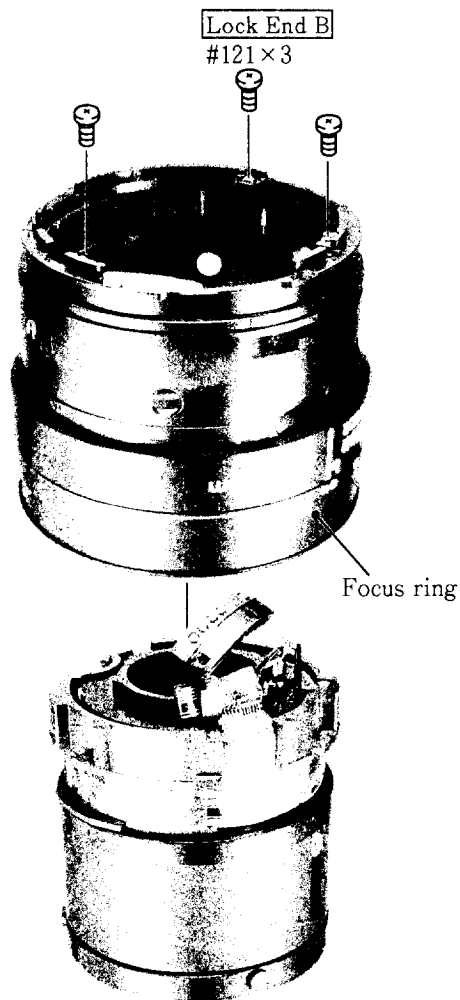


- Set the B20 as it is shown in the left figure. Then, fix the 2nd lens group unit to it.

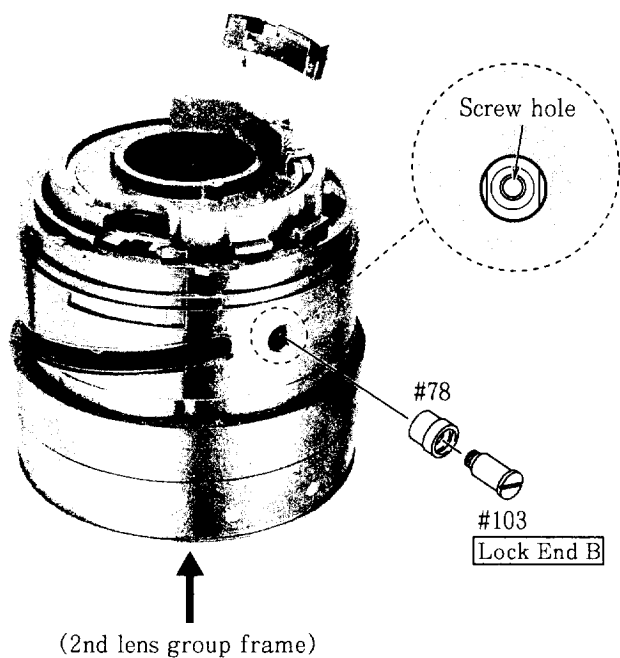
INDEX RING #27, FOCUS RING #26



ASSEMBLING EXTERNAL PART

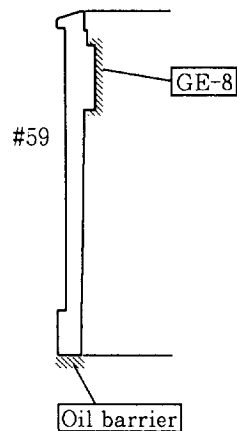
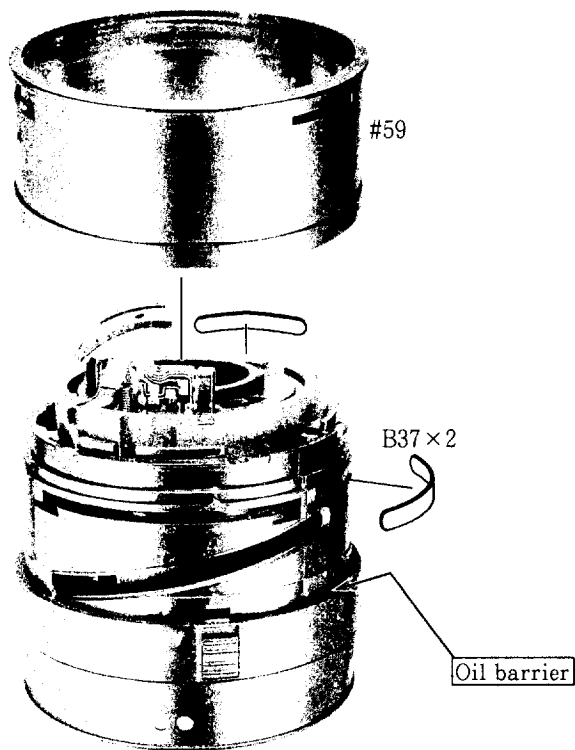


- Set the focus ring to the infinity position to readily fix.

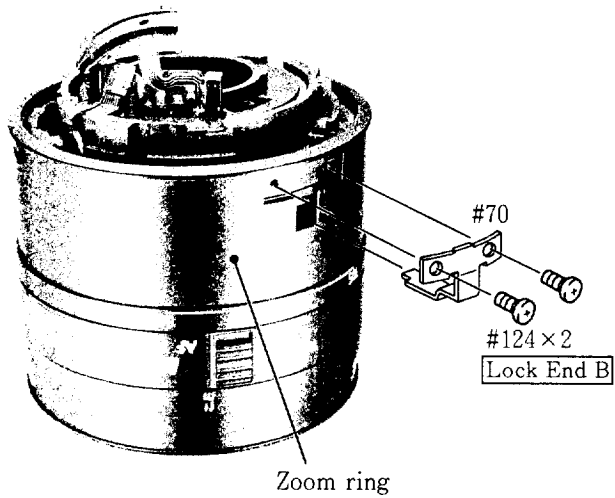


- ① As shown in the left picture, set the focus ring to touch the limit on the infinity side.
- ② Rotate the 2nd lens group housing and set it meet a screw hole as shown in the figure.
- ③ Drive #78 and #103 and then fix them to the 2nd lens group housing.

ZOOM RING #59



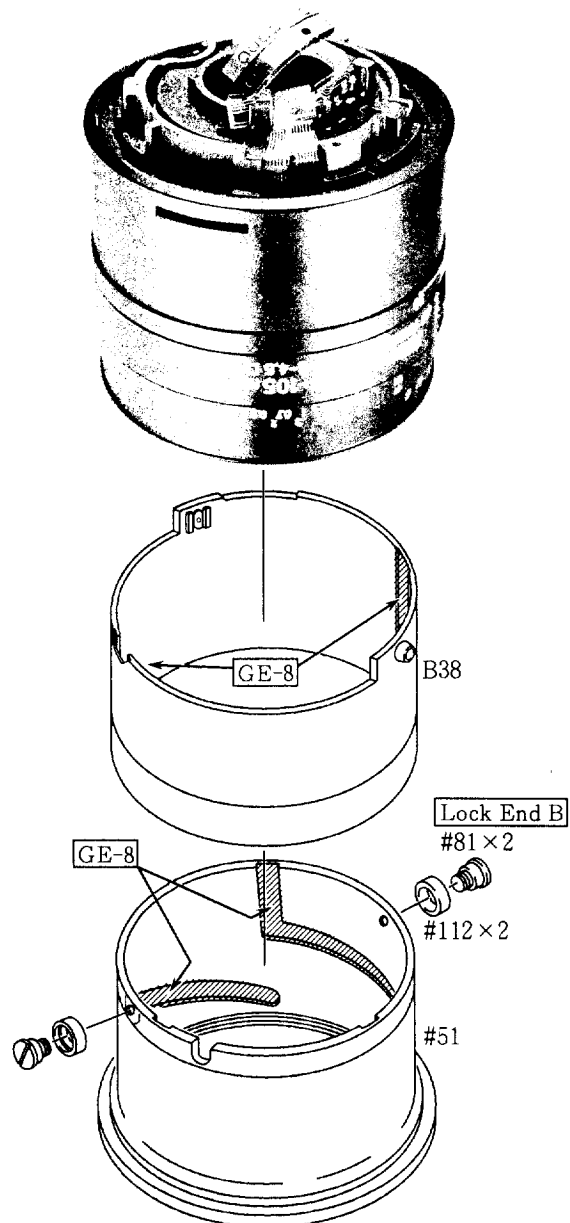
ZOOM KEY #70

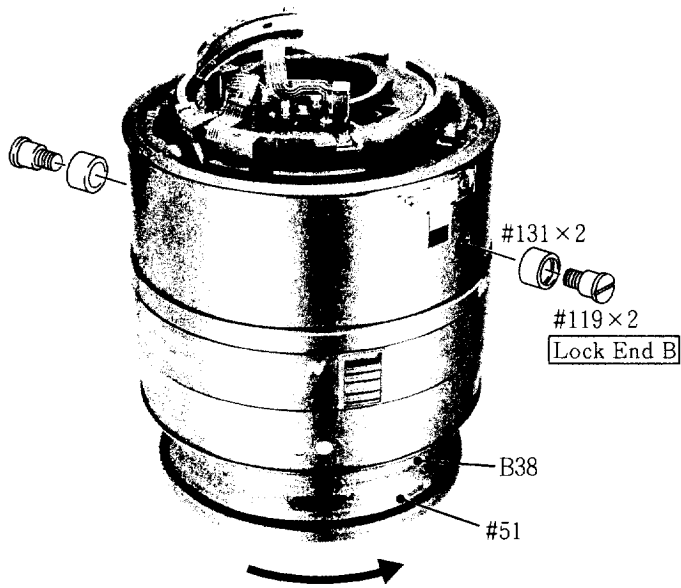


① As shown in the left picture, rotate the zoom ring and then set its graduation to meet 28 mm on the index.

② Attach the zoom key #70.

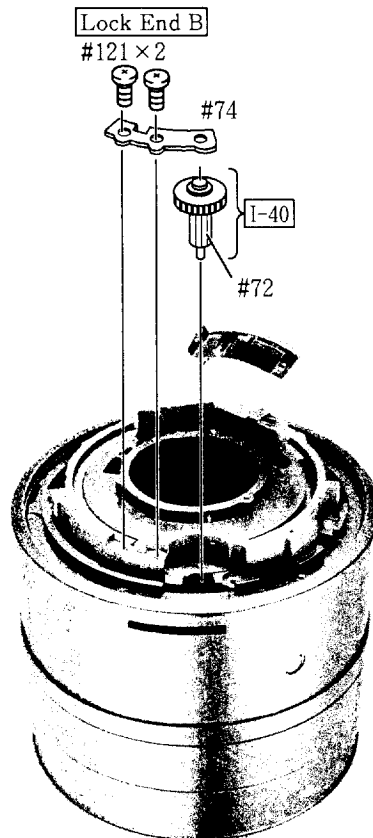
CAM GROOVE RING GROUP



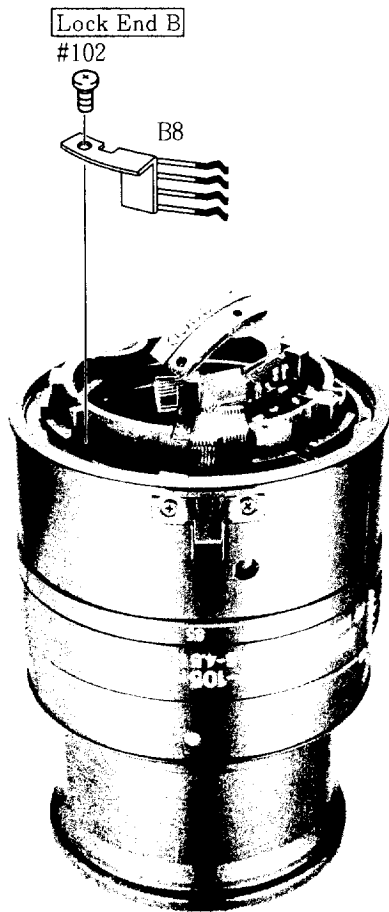


- Set the zoom ring to the 28 mm position. Then, drive B38 and #51 in the arrow direction and fit a screw hole position.

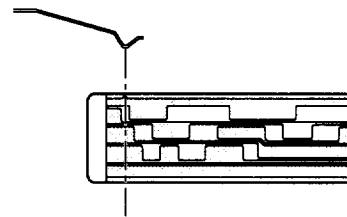
AF GEAR



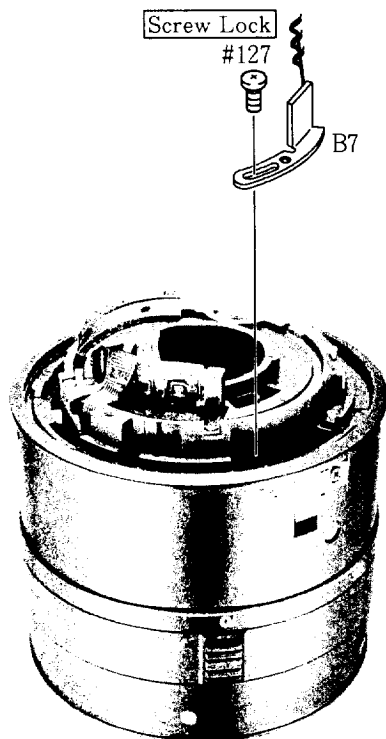
ADJUSTMENT OF DISTANCE ENCODER BRUSH POSITION



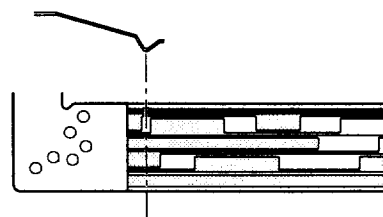
- ① Set the zoom ring to the TELE end position.
Also, set the MACRO changeover switch to 'MACRO'.
Then, rotate the focus ring to the limit on closest distance side.
- ② Attach the brush B8.
Then, tentatively fix the screw #102.
- ③ Drive the focus ring until it touches the limit on the infinity side.
- ④ As shown in the figure below, set the brush tip to contact the line.
- ⑤ Drive the screw #102.
Also, drive the focus ring several times and then check where the brush is.



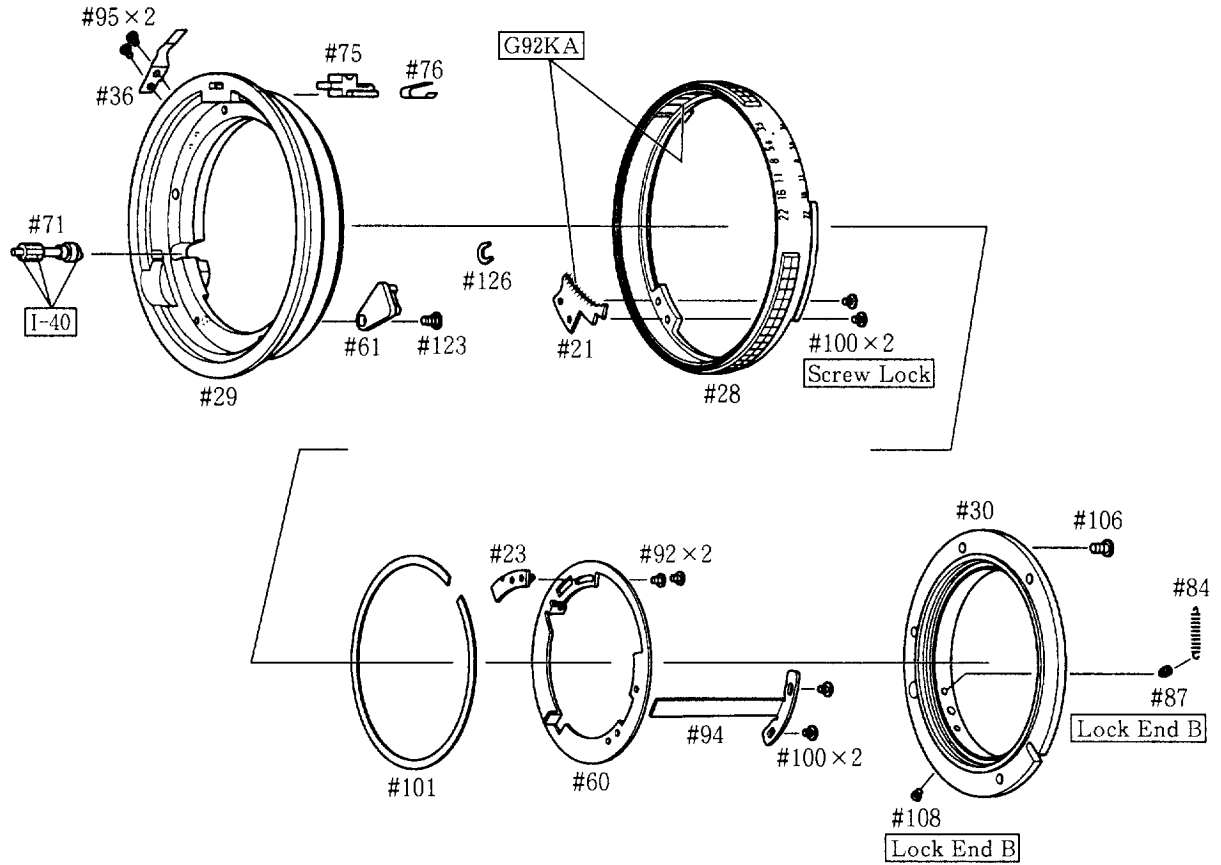
ADJUSTMENT OF ZOOM ENCODER BRUSH POSITION



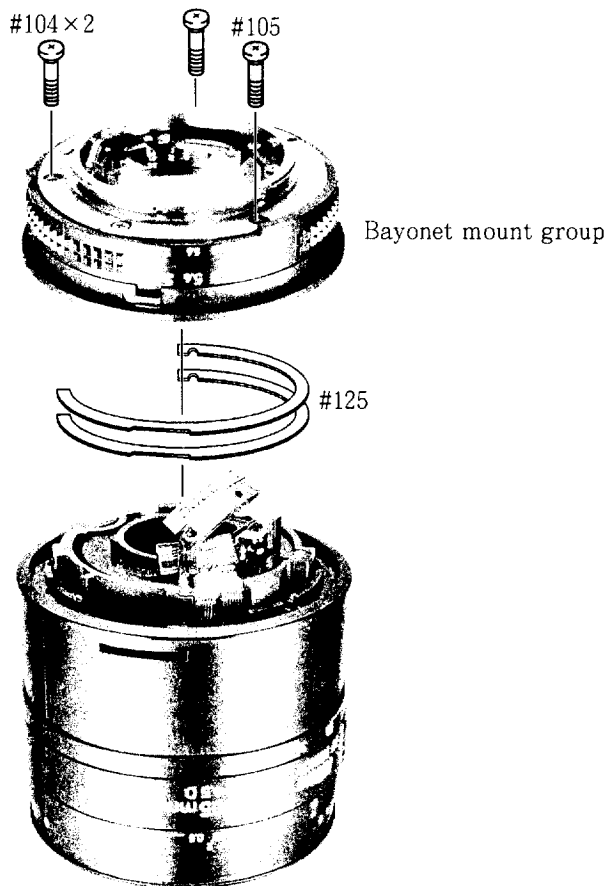
- ① Drive the zoom ring until it touches the limit on WIDE position.
- ② Attach the brush B7.
Then, tentatively fix the screw #127.
- ③ Drive the zoom ring until it touches the limit on the TELE side.
- ④ As shown in the figure, set the brush tip to contact the line.
- ⑤ Drive the screw #127.
Also, drive the zoom ring several times and then check where the brush is.
- ⑥ Fix the screw #127 by the Screw Lock.



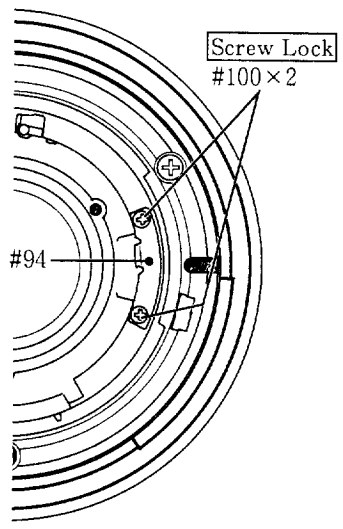
APERTURE RING, BAYONET MOUNT GROUP



ASSEMBLING BAYONET MOUNT GROUP



ADJUSTMENT OF APERTURE OPENING



① Unfasten screws #100×2 and move part #94 to adjust the aperture diameter.

Note : Make sure that the aperture diameter differs when the zoom ring is set to 28mm and to 105mm.

- 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.

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

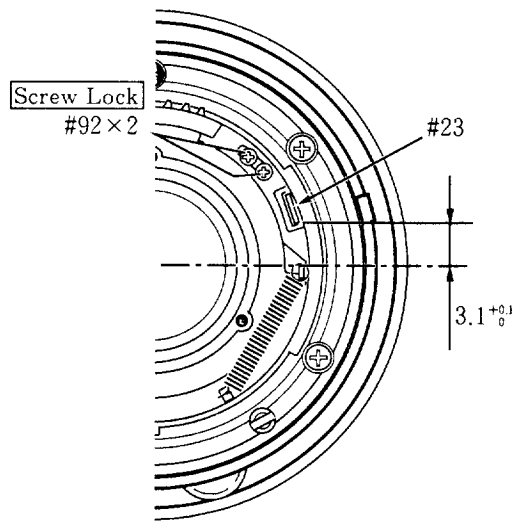
When the zoom ring is set to 28 mm :

Aperture setting	Inscribed circle diameter (mm)	Tolerance (mm)
3.5	16.18	17.79 ~ 15.01
4	13.86	16.07 ~ 12.79
5.6	9.27	11.94 ~ 8.44
8	6.48	8.46 ~ 5.98
11	4.58	6.21 ~ 3.93
16	3.22	4.43 ~ 2.80
22	2.28	3.11 ~ 1.97

When the zoom ring is set to 105 mm :

Aperture setting	Inscribed circle diameter (mm)	Tolerance (mm)
3.5	17.90	20.26 ~ 16.75
4	16.50	18.04 ~ 14.35
5.6	12.29	13.40 ~ 9.48
8	8.56	9.44 ~ 6.67
11	6.01	7.00 ~ 4.43
16	4.23	4.93 ~ 3.12
22	2.98	3.47 ~ 2.20

ADJUSTMENT OF APERTURE LEVER POSITION

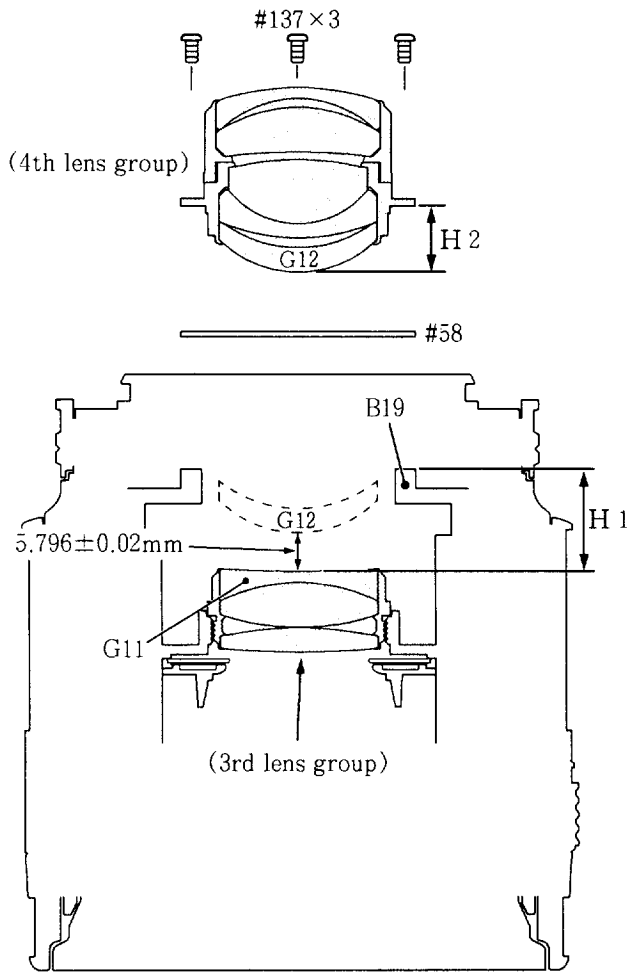


Unfasten screws #92×2 to adjust the position of the aperture lever #23 so that it comes into the rated value of $3.1^{+0.1}$ to bring the aperture diameter within rated value at full aperture.

After adjustment, fix screws #92×2 using Screw Lock.

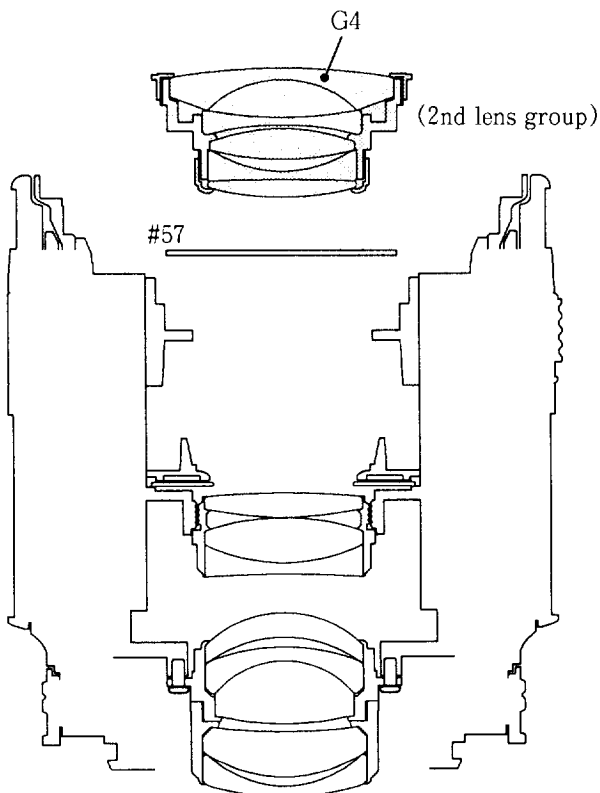
Reference : When adjusting the rated value of $3.1^{+0.1}$, set the aperture ring to f/3.5 and mount the tool J18004-1 on the bayonet mount. It becomes much easier to adjust if you mount the aperture lever #23 based on the groove of the tool as a reference.

HOW TO TAKE A GAP BETWEEN G11 AND G12 LENSES



- ① Mount the 3rd lens group unit on the lens barrel.
- ② Set the zoom ring to touch the limit on Wide side. Then, set the lens on the flat table for the digital micrometer.
- ③ Measure the H1 gap shown in the left figure by with the digital micrometer.
- ④ Measure the H2 gap shown in the left figure by with the digital micrometer.
- ⑤ Calculate in accordance with the following formula in the size of mm.
 $5.796 - (H1 - H2) =$ the thickness of washer #58 drawn.
- ⑥ Mount the washer #58 on the 4th lens group unit.

2nd LENS GROUP

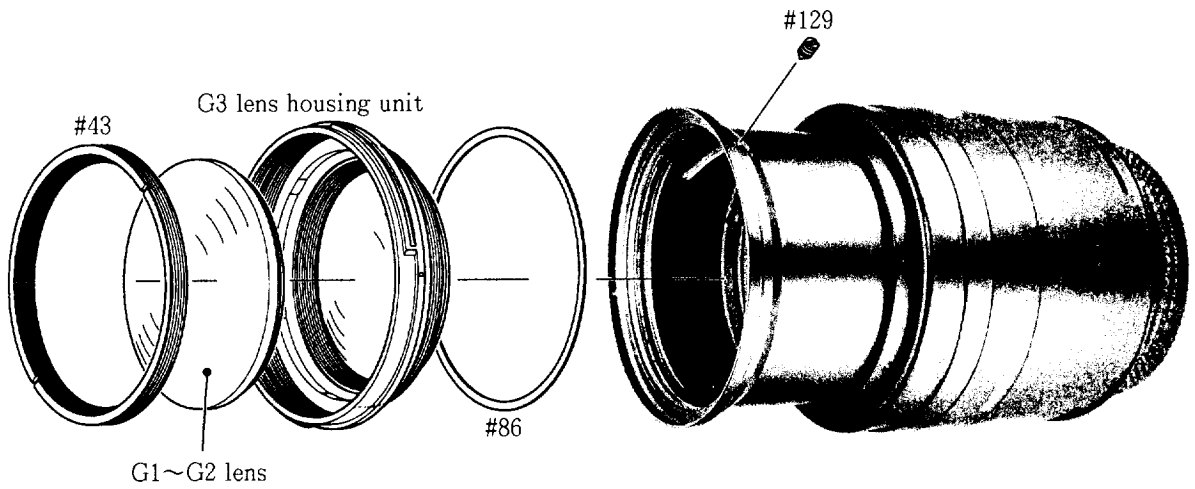


Note : The aspheric lens is employed on the G4 R1 side of 2nd lens group unit.
 For cleaning on the surface of G4 lens, use the A-level dustcloth.
 For your information, the technical information No. L(AF)-970060 shall be referable.

SHEET #67



G1~G3 LENS GROUP



ADJUSTMENT OF BACK FOCUS

※Using the F.F.D adjustment software, input each measured value and calculate each washer's adjusted thickness in order to display them on the PC screen.

Then, adjust each shift of focus to the both of Tele and Wide sides at the same time.

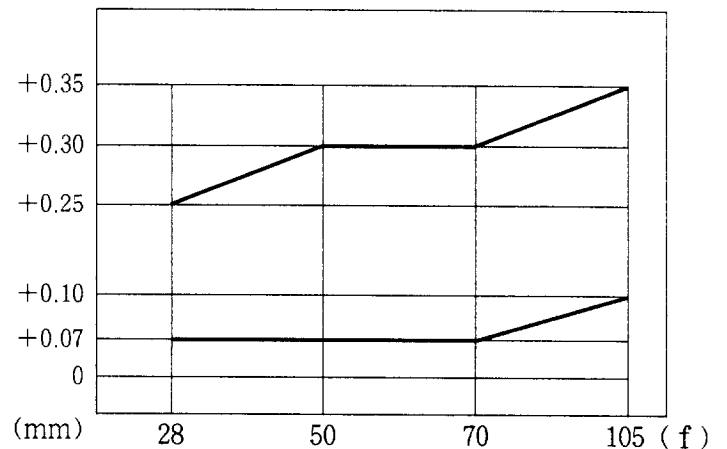
How to adjust

- Start up the F.F.D adjustment software J18298 and enter each measured value in accordance with the instructions on PC displays.

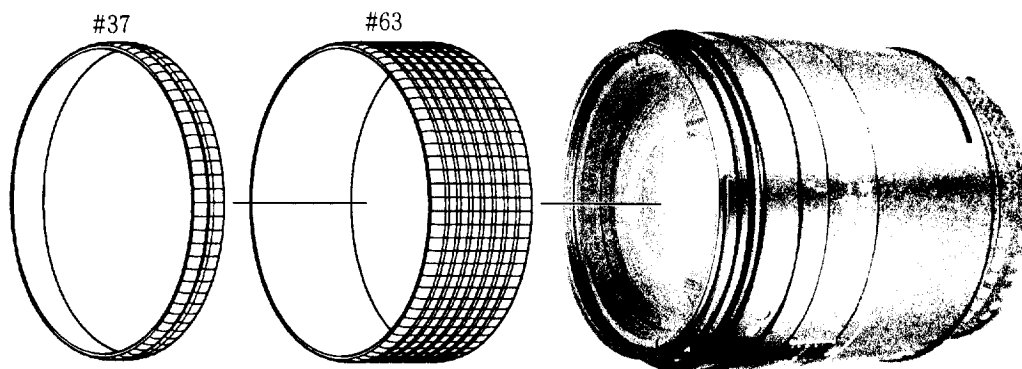
According to the calculated results on the display, adjust each washer's thickness of the first lens group's washer #86, the second lens group's washer #57 and the mount's washer #125.

For the procedure (s), refer to the pages of L19, 21 and 22.

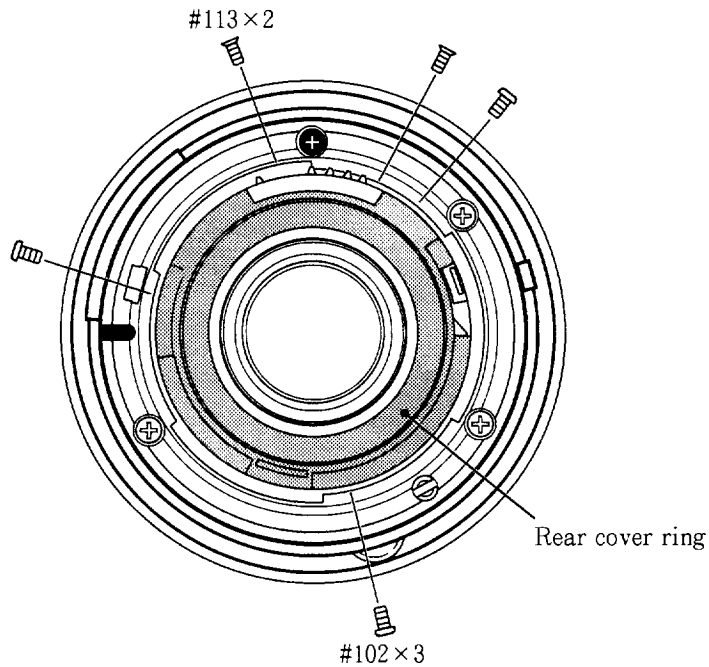
Focal length (f)	Standard (mm)
28 mm	+0.07 ~ +0.25
50 mm	+0.07 ~ +0.30
70 mm	+0.07 ~ +0.30
105 mm	+0.10 ~ +0.35



RUBBER RING #37, #63

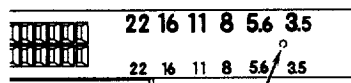


REAR COVER RING



ATTACHING METER COUPLING SHOE

- (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.



Make hole on this concave portion

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.

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