

CANON REPAIR MANUAL

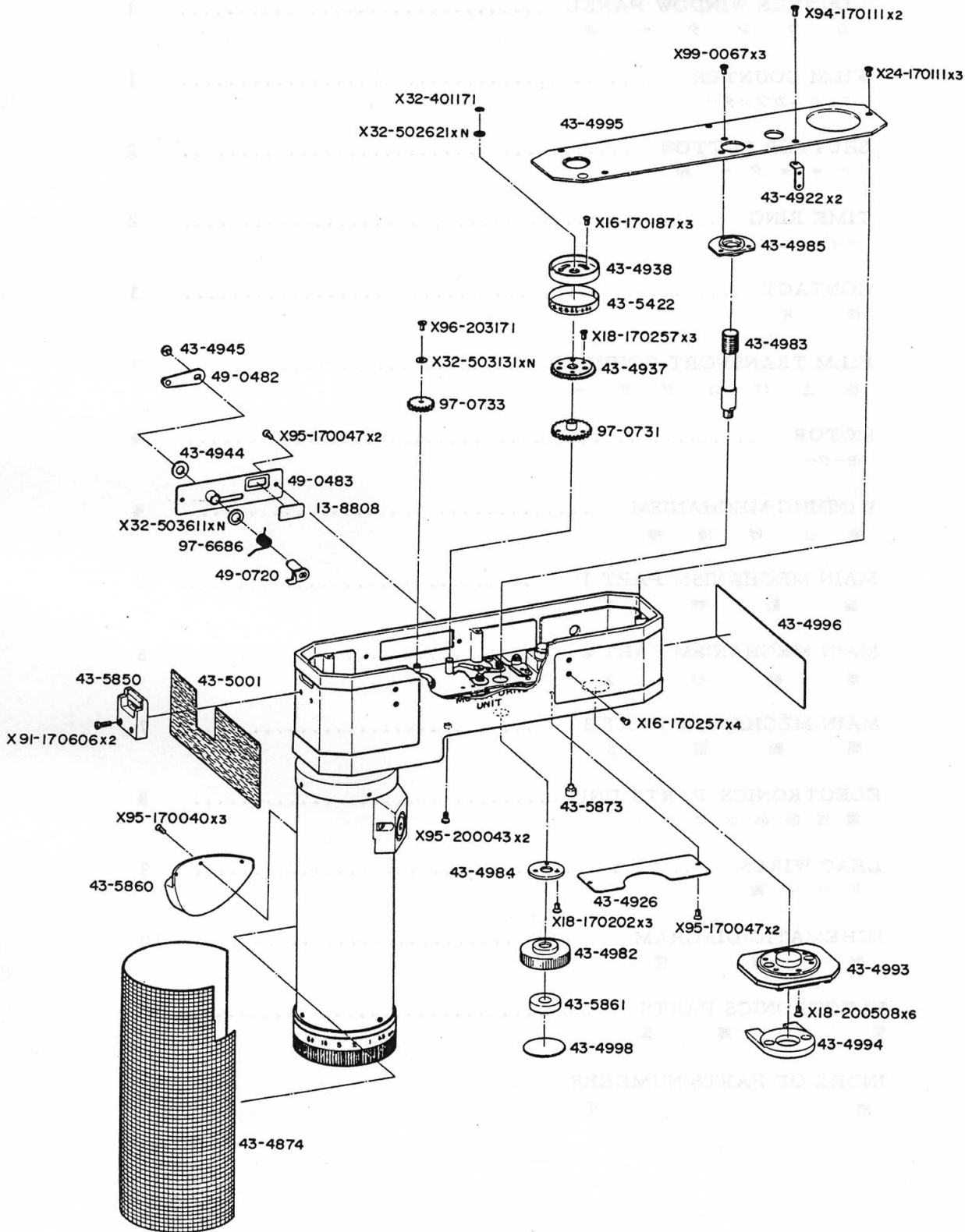
CANON MOTOR DRIVE UNIT
(REF. NO. 5-19141)

CANON INC. JAPAN

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EXPLODED VIEW
of
CANON MOTOR DRIVE UNIT



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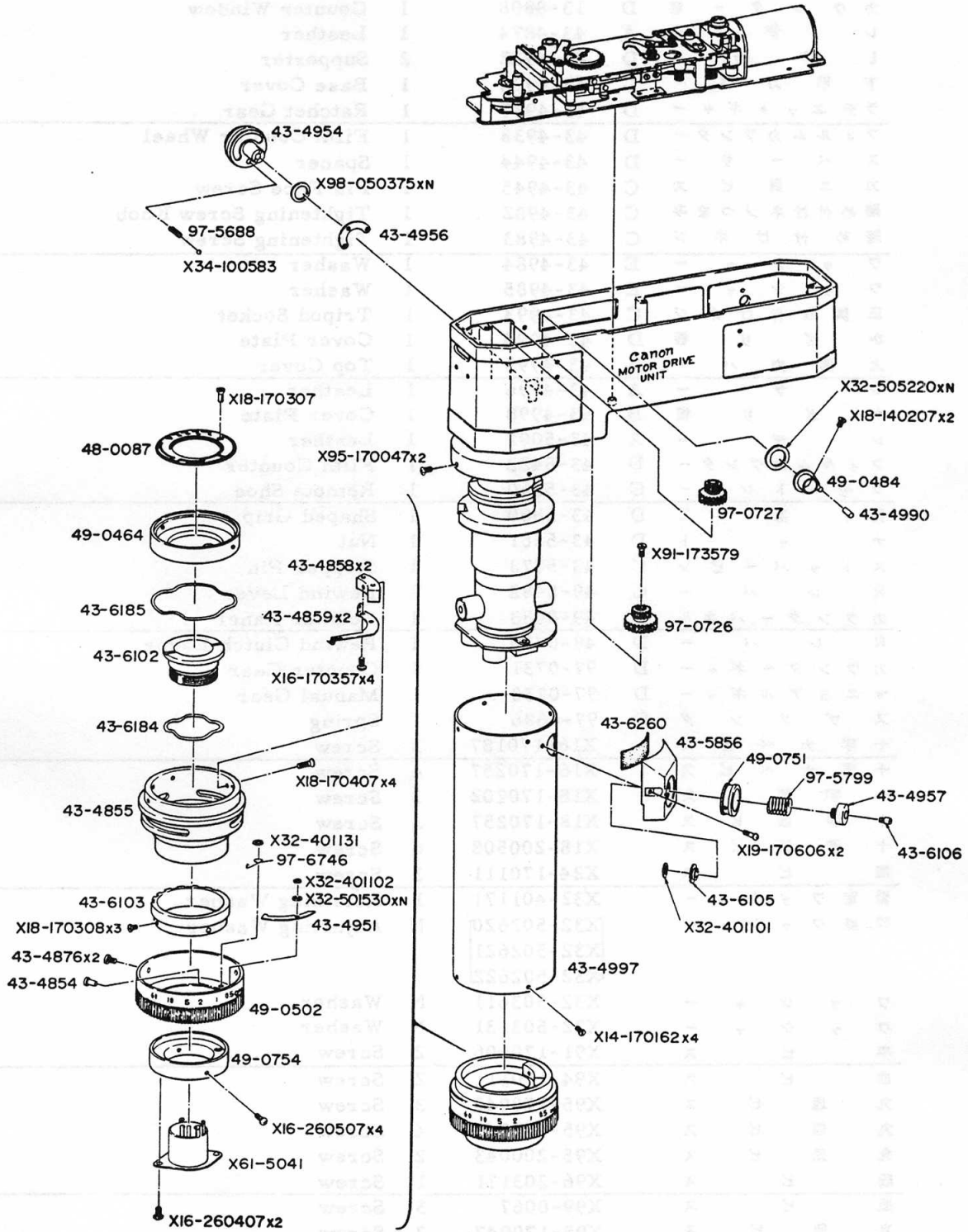
PARTS LIST

COUNTER WINDOW PANEL & FILM COUNTER

カウンター 窓 フィルム カウンター

部 品 名 称	CLASS	PARTS NO.	QTY.	DESCRIPTION
カウ ン タ ー 窓	D	13-8808	1	Counter Window
レ ザ ー	A	43-4874	1	Leather
L 字 金 具	D	43-4922	2	Supporter
下 部 カ バ ー	C	43-4926	1	Base Cover
ラ チ エ ッ ト ギ ャ ー	D	43-4937	1	Ratchet Gear
フ ィ ル ム カ ウ ン タ ー	D	43-4938	1	Film Counter Wheel
ス ペ ー サ ー	D	43-4944	1	Spacer
カ ニ 目 ビ ス	C	43-4945	1	Pin Face Screw
締 め 付 け ネ ジ つ ま み	C	43-4982	1	Tightening Screw Knob
締 め 付 け ネ ジ	C	43-4983	1	Tightening Screw
ワ ッ シ ャ ー	E	43-4984	1	Washer
ワ ッ シ ャ ー	E	43-4985	1	Washer
三 脚 取 付 け ネ ジ	C	43-4993	1	Tripod Socket
か ざ り 板	D	43-4994	1	Cover Plate
上 部 カ バ ー	B	43-4995	1	Top Cover
レ ザ ー	A	43-4996	1	Leather
か ざ り 板	B	43-4998	1	Cover Plate
レ ザ ー	A	43-5001	1	Leather
フ ィ ル ム カ ウ ン タ ー	D	43-5422	1	Film Counter
リ モ ー ト シ ュ ー	C	43-5850	1	Remote Shoe
指 当 て	D	43-5860	1	Shaped Grip
ナ ッ ト	D	43-5861	1	Nut
ス ト ッ パ ー ビ ン	C	43-5873	1	Stopper Pin
R レ バ ー	C	49-0482	1	Rewind Lever
カ ウ ン タ ー パ ネ ル	D	49-0483	1	Counter Panel
R レ バ ー	D	49-0720	1	Rewind Clutch Lever
カ ウ ン タ ー ギ ャ ー	D	97-0731	1	Counter Gear
マ ニ ュ ア ル ギ ャ ー	D	97-0733	1	Manual Gear
ス プ リ ン グ	D	97-6686	1	Spring
十 字 ナ ベ ビ ス		X16-170187	3	Screw
十 字 ナ ベ ビ ス		X16-170257	4	Screw
十 字 皿 ビ ス		X18-170202	3	Screw
十 字 皿 ビ ス		X18-170257	3	Screw
十 字 皿 ビ ス		X18-200508	6	Screw
皿 ビ ス		X24-170111	3	Screw
緊 定 ワ ッ シ ャ ー		X32-401171	1	Retaining Washer
調 整 ワ ッ シ ャ ー		X32-502620	N	Adjusting Washer
		X32-502621		
		X32-502622		
ワ ッ シ ャ ー		X32-503611	N	Washer
ワ ッ シ ャ ー		X32-503131	N	Washer
平 ビ ス		X91-170606	2	Screw
皿 ビ ス		X94-170111	2	Screw
丸 皿 ビ ス		X95-170040	3	Screw
丸 皿 ビ ス		X95-170047	4	Screw
丸 皿 ビ ス		X95-200043	2	Screw
段 ビ ス		X96-203171	1	Screw
皿 ビ ス		X99-0067	3	Screw
丸 皿 ビ ス		X95-170047	2	Screw

EXPLODED VIEW of CANON MOTOR DRIVE UNIT



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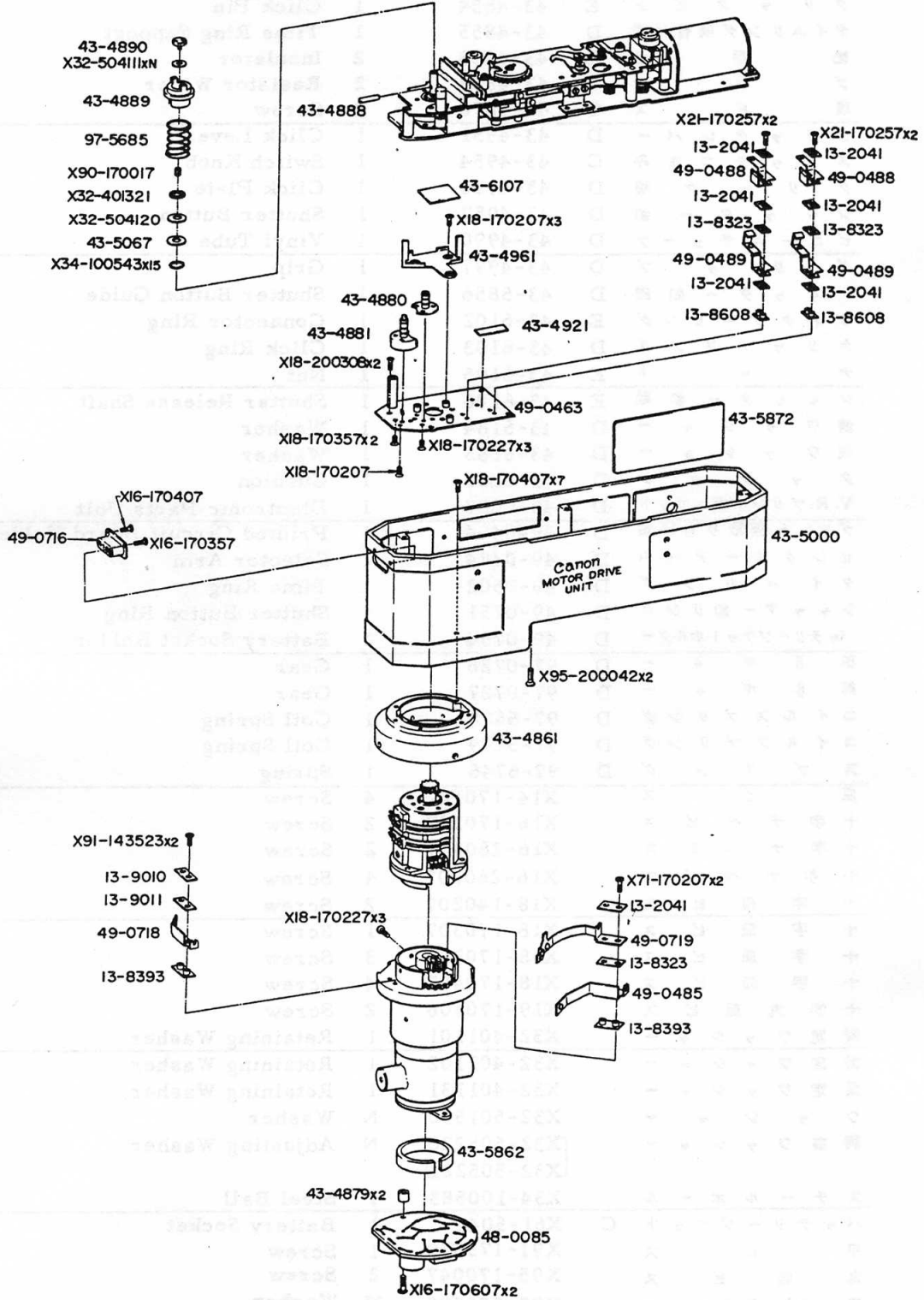
PARTS LIST

SHUTTER BUTTON & TIME RING

シャッター鉤 タイムリング

部 品 名 称	CLASS	PARTS NO.	QTY.	DESCRIPTION
ク リ ッ ク ピ ン	E	43-4854	1	Click Pin
タイムリング取付け環	D	43-4855	1	Time Ring Support
絶 縁 台	E	43-4858	2	Insulator
ブ ラ シ	C	43-4859	2	Resistor Wiper
段 ビ ス	C	43-4876	2	Screw
ク リ ッ ク レ バ ー	D	43-4951	1	Click Lever
ス イ ッ チ つ ま み	C	43-4954	1	Switch Knob
ク リ ッ ク 板	D	43-4956	1	Click Plate
シャッター鉤	D	43-4957	1	Shutter Button
ビニールチューブ	D	43-4990	1	Vinyl Tube
グ リ ッ プ	D	43-4997	1	Grip
シャッター鉤座	D	43-5856	1	Shutter Button Guide
コネクターリング	E	43-6102	1	Connector Ring
ク リ ッ ク リ ン グ	D	43-6103	1	Click Ring
ナ ッ ト	E	43-6105	1	Nut
シャッター鉤軸	E	43-6106	1	Shutter Release Shaft
波 ワ ッ シ ャ ー	D	43-6184	1	Washer
波 ワ ッ シ ャ ー	D	43-6185	1	Washer
ク ッ シ ョ ン	D	43-6260	1	Cushion
V.R.プリント板ユニット	D	48-0087	1	Electronic Parts Unit
プリント板取り付け環	D	49-0464	1	Printed Circuit Board Holder
セレクターアーム	D	49-0484	1	Selector Arm
タイムリング	D	49-0502	1	Time Ring
シャッター鉤リング	D	49-0751	1	Shutter Button Ring
バッテリーソケットホルダー	D	49-0754	1	Battery Socket Holder
第 5 ギ ャ ー	D	97-0726	1	Gear
第 6 ギ ャ ー	D	97-0727	1	Gear
コイルスプリング	D	97-5688	1	Coil Spring
コイルスプリング	D	97-5799	1	Coil Spring
ス プ リ ン グ	D	97-6746	1	Spring
皿 ビ ス		X14-170162	4	Screw
十 字 ナ ベ ビ ス		X16-170357	2	Screw
十 字 ナ ベ ビ ス		X16-260407	2	Screw
十 字 ナ ベ ビ ス		X16-260507	4	Screw
十 字 皿 ビ ス		X18-140207	2	Screw
十 字 皿 ビ ス		X18-170307	1	Screw
十 字 皿 ビ ス		X18-170308	3	Screw
十 字 皿 ビ ス		X18-170407	4	Screw
十 字 丸 皿 ビ ス		X19-170606	2	Screw
緊 定 ワ ッ シ ャ ー		X32-401101	1	Retaining Washer
緊 定 ワ ッ シ ャ ー		X32-401102	1	Retaining Washer
緊 定 ワ ッ シ ャ ー		X32-401131	1	Retaining Washer
ワ ッ シ ャ ー		X32-501530	N	Washer
調 整 ワ ッ シ ャ ー		X32-505220	N	Adjusting Washer
		X32-505221		
ス テ ー ル ボ ー ル		X34-100583	1	Steel Ball
バッテリーソケット	C	X61-5041	1	Battery Socket
平 ビ ス		X91-173579	1	Screw
丸 皿 ビ ス		X95-170047	2	Screw
ワ ッ シ ャ ー		X98-050375	N	Washer

EXPLODED VIEW of CANON MOTOR DRIVE UNIT



PARTS LIST

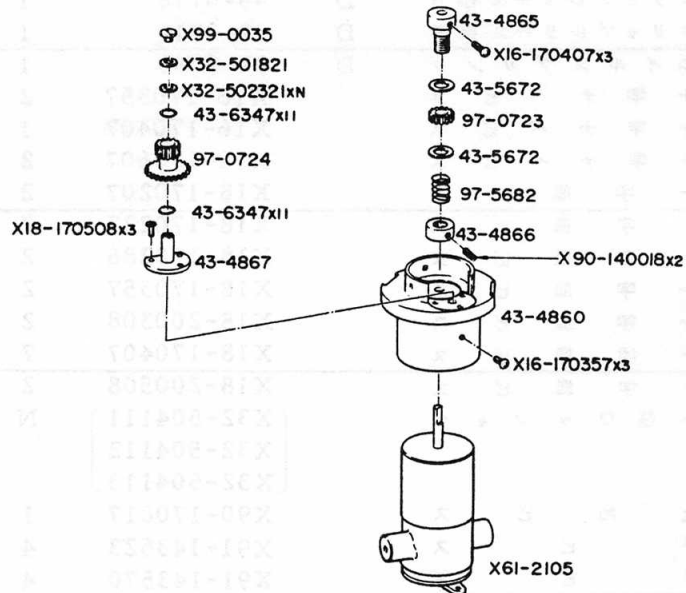
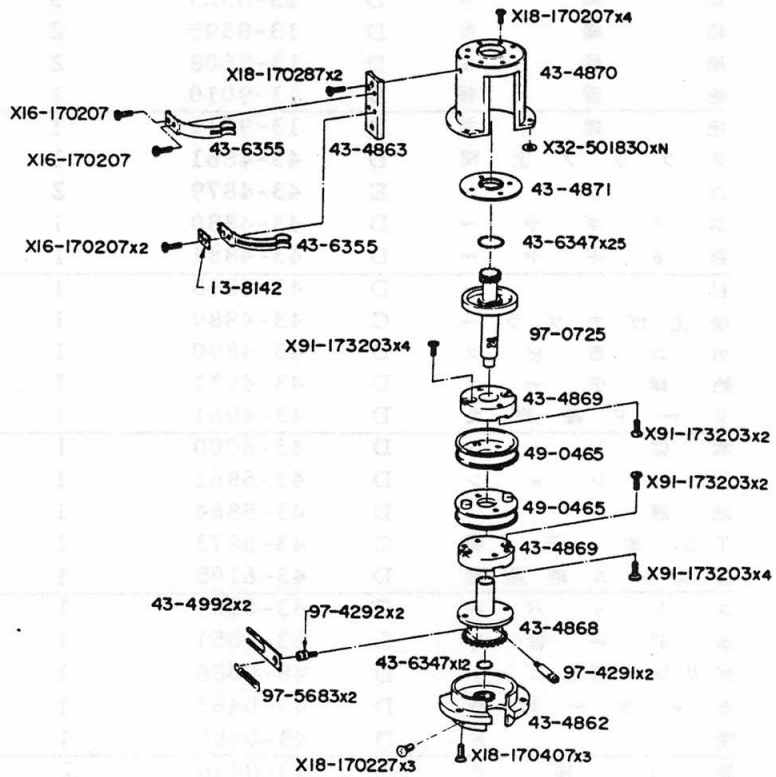
CONTACT & FILM TRANSPORT COUPLER

接片

巻上げカプラー

部 品 名 称	CLASS	PARTS NO.	QTY.	DESCRIPTION
絶縁板	D	13-2041	7	Insulator
絶縁板	D	13-8323	3	Insulator
絶縁台	D	13-8393	2	Insulator Base
絶縁台	D	13-8608	2	Insulator Base
絶縁板	D	13-9010	1	Insulator
絶縁板	D	13-9011	1	Insulator
グリップ上筒	D	43-4861	1	Upper Grip Holder
カラ	E	43-4879	2	Collar
第5ギヤ	D	43-4880	1	Gear
第6ギヤ	D	43-4881	1	Gear
ピン	D	43-4888	1	Pin
巻上げカプラー	C	43-4889	1	Film Transport Coupler
カニ目ビス	D	43-4890	1	Pin Face Screw
絶縁テープ	D	43-4921	1	Insulator Tape
リード線押え	D	43-4961	1	Lead Clamp
本体ケース	D	43-5000	1	Body Case
クッション	D	43-5862	1	Cushion
絶縁テープ	D	43-5864	1	Insulator
T.S. 表示板	C	43-5872	1	Indicator Plate
ビニール絶縁紙	D	43-6108	1	Vinyl Insulator
ストップバー	D	43-6264	1	Stopper
ボディ番号	C	43-6551	1	Body No. Plate
プリント板ユニット	D	48-0085	1	Electronic Parts Unit
モーター地板	D	49-0463	1	Motor Base Plate
接片	D	49-0485	1	Contact
静止接片	D	49-0488	2	Contact
可動接片	D	49-0489	2	Contact
コネクタ	C	49-0716	1	Connector
グリップリリース接片	D	49-0718	1	Grip Contact
グリップリリース接片	D	49-0719	1	Release Contact
コイルスプリング	D	97-5685	1	Coil Spring
十字ナベビス		X16-170357	2	Screw
十字ナベビス		X16-170407	1	Screw
十字ナベビス		X16-170607	2	Screw
十字皿ビス		X18-170207	2	Screw
十字皿ビス		X18-170227	7	Screw
十字皿ビス		X18-170286	2	Screw
十字皿ビス		X18-170357	2	Screw
十字皿ビス		X18-200308	2	Screw
十字皿ビス		X18-170407	7	Screw
十字皿ビス		X18-200508	2	Screw
調整ワッシャー		X32-504111	N	Adjusting Washer
		X32-504112		
		X32-504113		
止めビス		X90-170017	1	Screw
平ビス		X91-143523	4	Screw
平ビス		X91-143570	4	Screw
丸皿ビス		X95-200042	2	Screw

EXPLODED VIEW of CANON MOTOR DRIVE UNIT



PARTS LIST

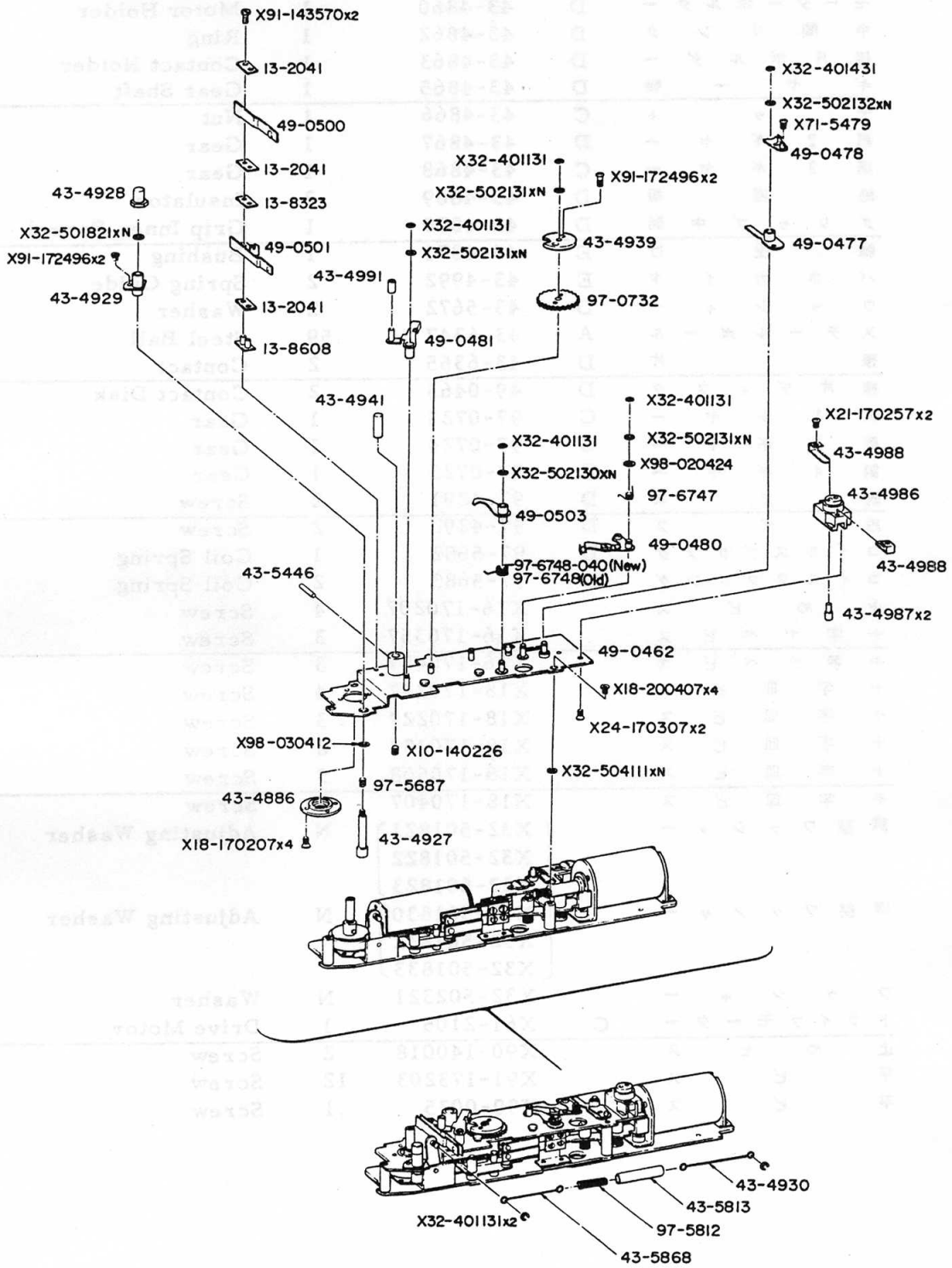
MOTOR & WINDING MECHANISM

モーター

巻上げ機構

部 品 名 称	CLASS	PARTS NO.	QTY.	DESCRIPTION
絶 縁 板	D	13-8142	1	Insulator
モーターホルダー	D	43-4860	1	Motor Holder
中間リング	D	43-4862	1	Ring
接片ホルダー	D	43-4863	1	Contact Holder
ギヤ軸	D	43-4865	1	Gear Shaft
ナット	C	43-4866	1	Nut
第 2 ギヤ	D	43-4867	1	Gear
第 3 ギヤ	C	43-4868	1	Gear
絶 縁 板	D	43-4869	2	Insulator
グリップ中筒	D	43-4870	1	Grip Inner Barrel
軸受け	E	43-4871	1	Bushing
バネガイド	E	43-4992	2	Spring Guide
ワッシャー	D	43-5672	2	Washer
スチールボール	A	43-6347	59	Steel Ball
接片	D	43-6355	2	Contact
接片ディスク	D	49-0465	2	Contact Disk
第 1 ギヤ	C	97-0723	1	Gear
第 2 ギヤ	C	97-0724	1	Gear
第 4 ギヤ	C	97-0725	1	Gear
段ビス	D	97-4291	2	Screw
段ビス	D	97-4292	2	Screw
コイルスプリング	D	97-5682	1	Coil Spring
コイルスプリング	D	97-5683	2	Coil Spring
止めビス		X16-170207	4	Screw
十字ナベビス		X16-170357	3	Screw
十字ナベビス		X16-170407	3	Screw
十字皿ビス		X18-170207	4	Screw
十字皿ビス		X18-170227	3	Screw
十字皿ビス		X18-170287	2	Screw
十字皿ビス		X18-170508	3	Screw
十字皿ビス		X18-170407	3	Screw
調整ワッシャー		X32-501821	N	Adjusting Washer
		X32-501822		
		X32-501823		
調整ワッシャー		X32-501830	N	Adjusting Washer
		X32-501832		
		X32-501833		
ワッシャー		X32-502321	N	Washer
ドライブモーター	C	X61-2105	1	Drive Motor
止めビス		X90-140018	2	Screw
平ビス		X91-173203	12	Screw
平ビス		X99-0035	1	Screw

EXPLODED VIEW of CANON MOTOR DRIVE UNIT



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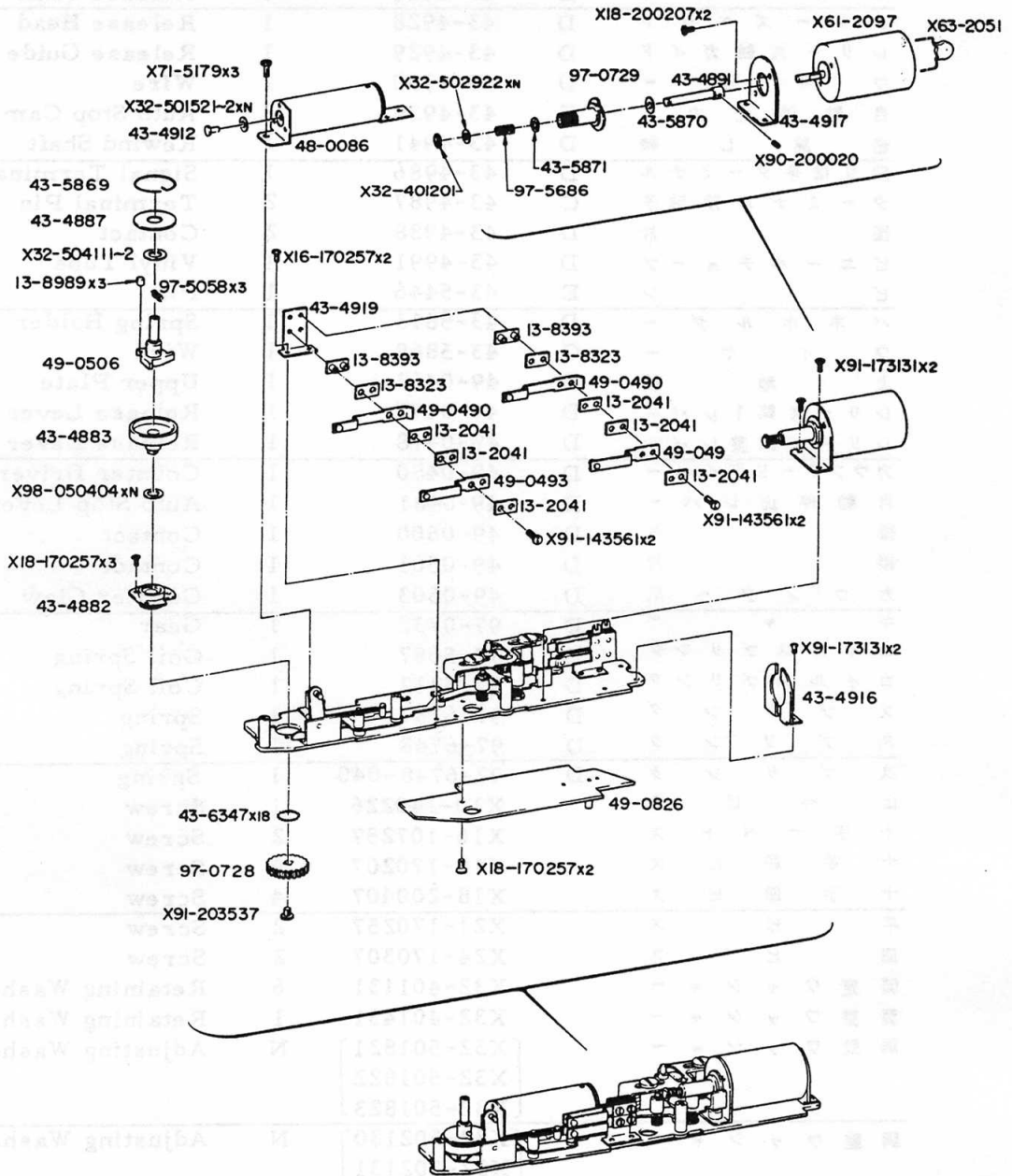
PARTS LIST

MAIN MECHANISM PARTS 1

駆動部 1

部 品 名 称	CLASS	PARTS NO.	QTY.	DESCRIPTION
絶 縁 板	D	13-2041	3	Insulator
絶 縁 板	D	13-8323	1	Insulator
絶 縁 台	D	13-8608	1	Insulator Base
軸 受 け	D	43-4886	1	Bushing
レ リ ー ズ 軸	D	43-4927	1	Release Shaft
レ リ ー ズ ヘ ッ ド	D	43-4928	1	Release Head
レ リ ー ズ 軸 ガ イ ド	D	43-4929	1	Release Guide
ワ イ ヤ ー	D	43-4930	1	Wire
自 動 停 止 カ ム	E	43-4939	5	Auto Stop Cam
巻 戻 し 軸	D	43-4941	1	Rewind Shaft
絞 り 信 号 タ ー ミ ナ ル	D	43-4986	1	Signal Terminal
タ ー ミ ナ ル 接 触 子	C	43-4987	2	Terminal Pin
接 片	D	43-4988	2	Contact
ビ ニ ー ル チ ュ ー ブ	D	43-4991	1	Vinyl Tube
ピ ン	E	43-5446	1	Pin
バ ネ ホ ル ダ ー	D	43-5813	1	Spring Holder
ワ イ ヤ ー	C	43-5868	1	Wire
上 地 板	D	49-0462	1	Upper Plate
レ リ ー ズ 第 1 レ バ ー	D	49-0477	1	Release Lever
レ リ ー ズ 調 整 レ バ ー	D	49-0478	1	Release Lever
カ ウ ン タ ー ド ラ イ バ ー	D	49-0480	1	Counter Driver
自 動 停 止 レ バ ー	D	49-0481	1	Auto Stop Lever
接 片	D	49-0500	1	Contact
接 片	D	49-0501	1	Contact
カ ウ ン タ ー 爪	D	49-0503	1	Counter Claw
ギ ャ ー	D	97-0732	1	Gear
コ イ ル ス プ リ ン グ	D	97-5687	1	Coil Spring
コ イ ル ス プ リ ン グ	D	97-5812	1	Coil Spring
ス プ リ ン グ	D	97-6747	1	Spring
ス プ リ ン グ	D	97-6748	1	Spring
ス プ リ ン グ	D	97-6748-040	1	Spring
止 め ビ ス		X10-140226	1	Screw
十 字 ナ ベ ビ ス		X16-107257	2	Screw
十 字 皿 ビ ス		X18-170207	4	Screw
十 字 皿 ビ ス		X18-200407	4	Screw
平 ビ ス		X21-170257	2	Screw
皿 ビ ス		X24-170307	2	Screw
緊 定 ワ ッ シ ャ ー		X32-401131	6	Retaining Washer
緊 整 ワ ッ シ ャ ー		X32-401431	1	Retaining Washer
調 整 ワ ッ シ ャ ー		X32-501821	N	Adjusting Washer
		X32-501822		
		X32-501823		
調 整 ワ ッ シ ャ ー		X32-502130	N	Adjusting Washer
		X32-502131		
		X32-502132		
ワ ッ シ ャ ー		X32-50411	N	Washer
平 ビ ス		X71-5479	1	Screw
平 ビ ス		X91-143570	2	Screw
平 ビ ス		X91-172496	4	Screw
ワ ッ シ ャ ー		X98-020424	1	Washer
ワ ッ シ ャ ー		X98-030412	1	Washer

EXPLODED VIEW of CANON MOTOR DRIVE UNIT



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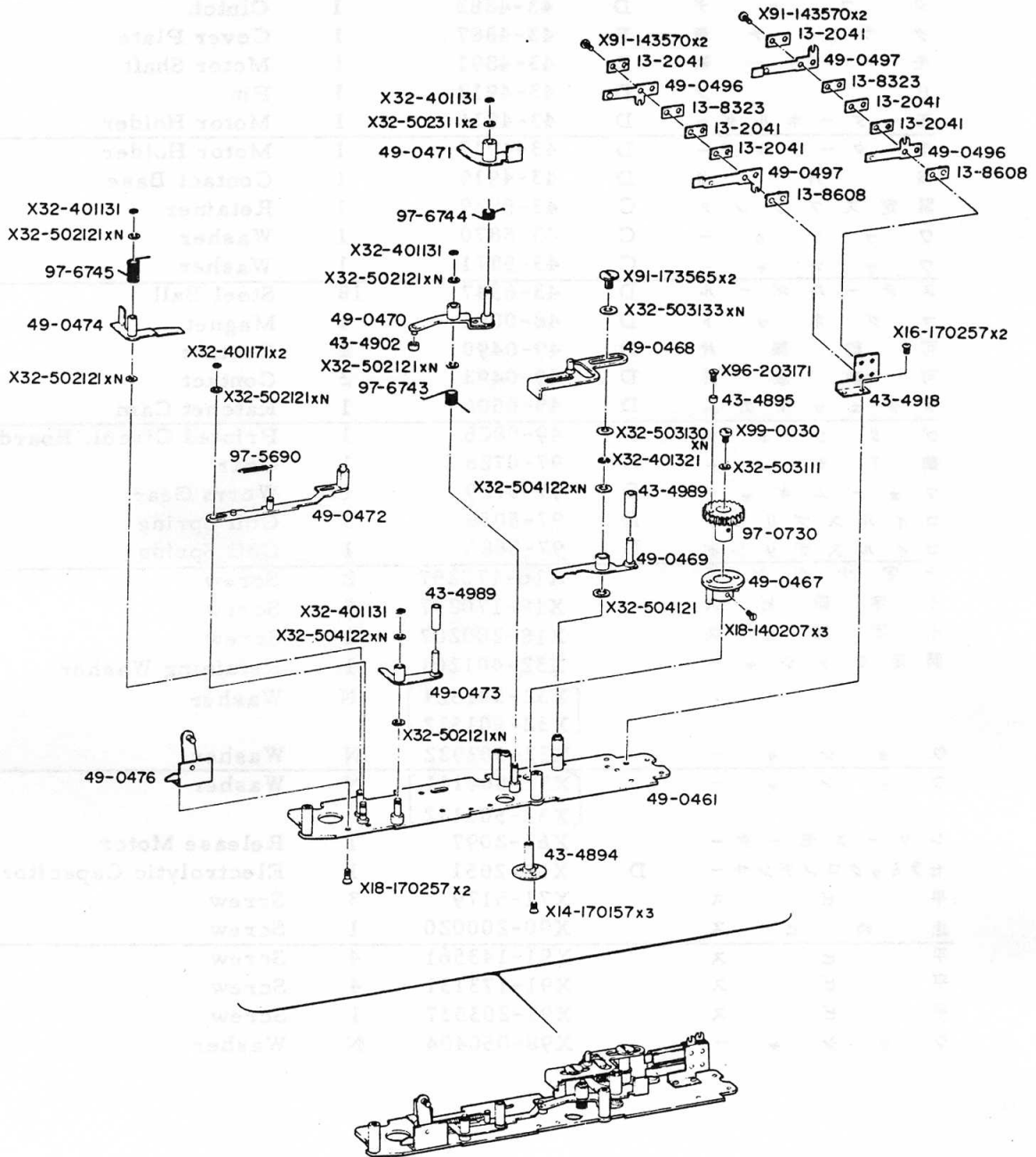
PARTS LIST

MAIN MECHANISM PARTS 2

駆動部 2

部品名称	CLASS	PARTS NO.	QTY.	DESCRIPTION
絶縁板	D	13-2041	6	Insulator
絶縁板	D	13-8323	2	Insulator
絶縁台	D	13-8393	2	Insulator
クラッチローラー	D	13-8989	3	Clutch Roller
ベアリング	D	43-4882	1	Clutch Holder
クラッチ	D	43-4883	1	Clutch
クラッチ蓋	E	43-4887	1	Cover Plate
モーター軸	D	43-4891	1	Motor Shaft
ピン	D	43-4912	1	Pin
モーターホルダー	D	43-4916	1	Motor Holder
モーターホルダー	D	43-4917	1	Motor Holder
接片台	D	43-4919	1	Contact Base
緊定スプリング	C	43-5869	1	Retainer
ワッシャー	C	43-5870	1	Washer
ワッシャー	C	43-5871	1	Washer
スチールボール	D	43-6347	18	Steel Ball
マグネット	D	48-0086	1	Magnet
可動接片	D	49-0490	2	Contact
可動接片	D	49-0493	2	Contact
ラチェットカム	D	49-0506	1	Ratchet Cam
プリント基板	D	49-0826	1	Printed Circuit Board
第7ギヤ	C	97-0728	1	Gear
ウォームギヤ	D	97-0729	1	Worm Gear
コイルスプリング	D	97-5058	3	Coil Spring
コイルスプリング	D	97-5686	1	Coil Spring
十字ナベビス		X16-170257	2	Screw
十字皿ビス		X18-170257	5	Screw
十字皿ビス		X18-200207	2	Screw
緊定ワッシャー		X32-401201	1	Retaining Washer
		X32-501521	N	Washer
		X32-501522	N	Washer
ワッシャー		X32-502922	N	Washer
ワッシャー		X32-504111	N	Washer
		X32-504112	N	Washer
リリースモーター		X61-2097	1	Release Motor
セラミックコンデンサー	D	X63-2051	1	Electrolytic Capacitor
平ビス		X71-5179	3	Screw
止めビス		X90-200020	1	Screw
平ビス		X91-143561	4	Screw
平ビス		X91-173131	4	Screw
平ビス		X91-203537	1	Screw
ワッシャー		X98-050404	N	Washer

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PARTS LIST

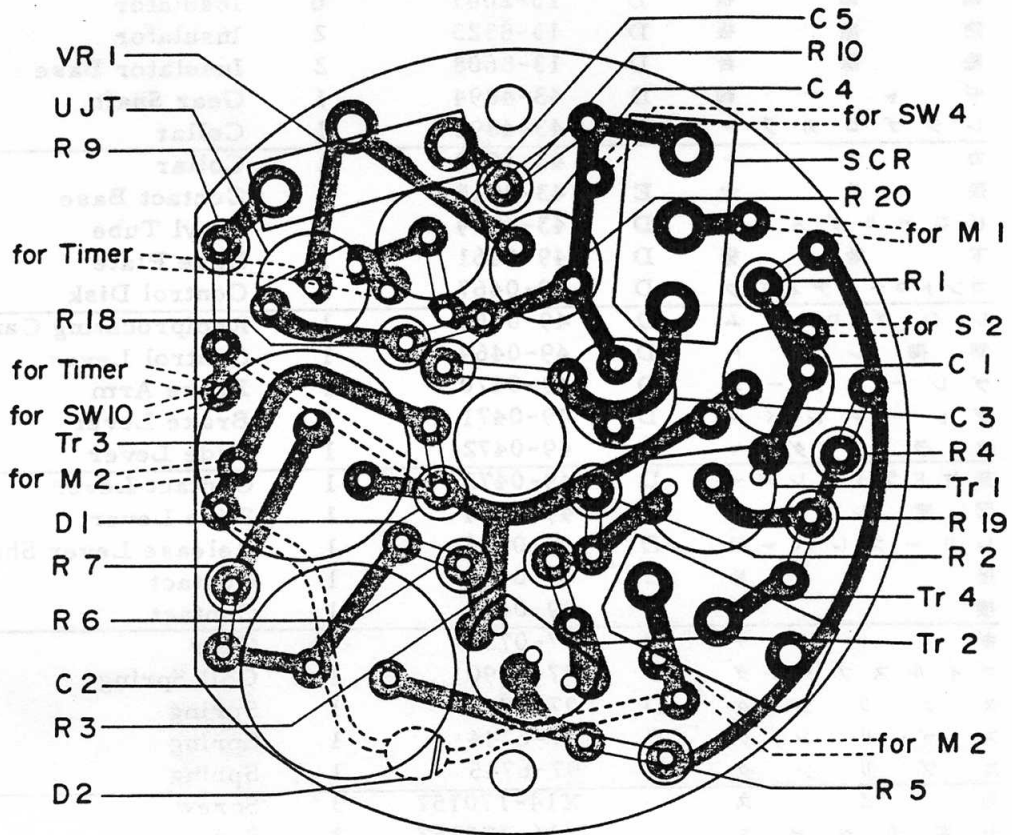
MAIN MECHANISM PARTS 3

駆動部 3

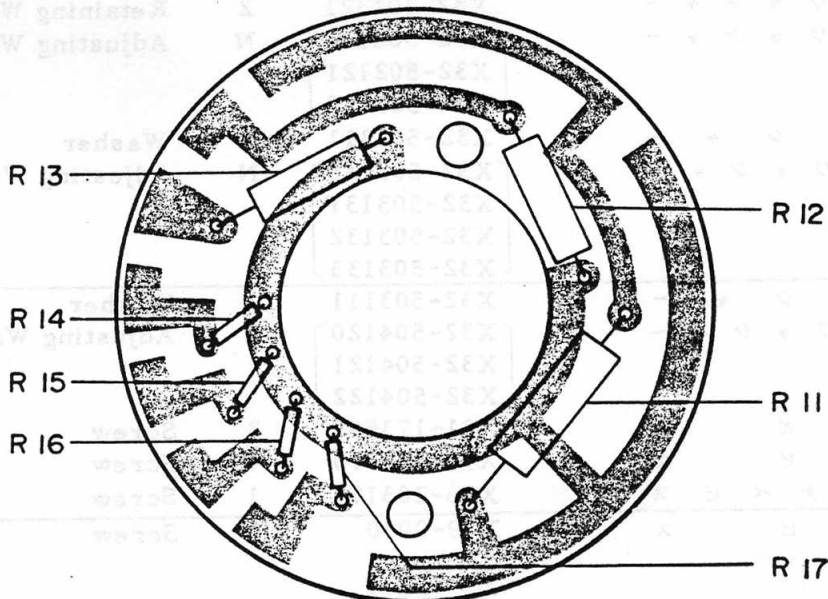
部品名称	CLASS	PARTS NO.	QTY.	DESCRIPTION
絶縁板	D	13-2041	6	Insulator
絶縁板	D	13-8323	2	Insulator
絶縁台	D	13-8608	2	Insulator Base
ギヤ軸	D	43-4894	1	Gear Shaft
レシプロカラー	E	43-4895	1	Collar
カラ		43-4902	1	Collar
接片台	E	43-4918	1	Contact Base
ビニールチューブ	D	43-4989	2	Vinyl Tube
下地板	D	49-0461	1	Base Plate
コントロールディスク	D	49-0467	1	Control Disk
レシプロカム	D	49-0468	1	Reciprocating Cam
制御レバ	D	49-0469	1	Control Lever
ブレーキアーム	D	49-0470	1	Brake Arm
ブレーキレバ	D	49-0471	1	Brake Lever
スライダ	D	49-0472	1	Slide Lever
接片ドライブレバ	D	49-0473	1	Contact Lever
緊定レバ	D	49-0474	1	Slide Lever
レリーズレバ軸	D	49-0476	1	Release Lever Shaft
接片	D	49-0496	1	Contact
接片	D	49-0497	1	Contact
ギヤ	D	97-0730	1	Gear
コイルスプリング	D	97-5690	1	Coil Spring
スプリング	D	97-6743	1	Spring
スプリング	D	97-6744	1	Spring
スプリング	D	97-6745	1	Spring
皿ビス		X14-170157	3	Screw
十字ナベビス		X16-170257	2	Screw
十字皿ビス		X18-140207	3	Screw
十字皿ビス		X18-170257	2	Screw
緊定ワッシャ		X32-401131	4	Retaining Washer
緊定ワッシャ		X32-401171	2	Retaining Washer
緊定ワッシャ		X32-401321	2	Retaining Washer
調整ワッシャ		X32-502120	N	Adjusting Washer
		X32-502121		
		X32-502122		
ワッシャ		X32-502311	2	Washer
調整ワッシャ		X32-503130	N	Adjusting Washer
		X32-503131		
		X32-503132		
		X32-503133		
ワッシャ		X32-503111	1	Washer
調整ワッシャ		X32-504120	N	Adjusting Washer
		X32-504121		
		X32-504122		
平ビス		X91-173565	2	Screw
平ビス		X91-143570	4	Screw
十字ナベビス		X96-203171	1	Screw
平ビス		X99-0030	1	Screw

CANON MOTOR DRIVE UNIT

ELECTRONICS PARTS UNIT



48-0085



48-0087

NO SCALE

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PARTS LIST

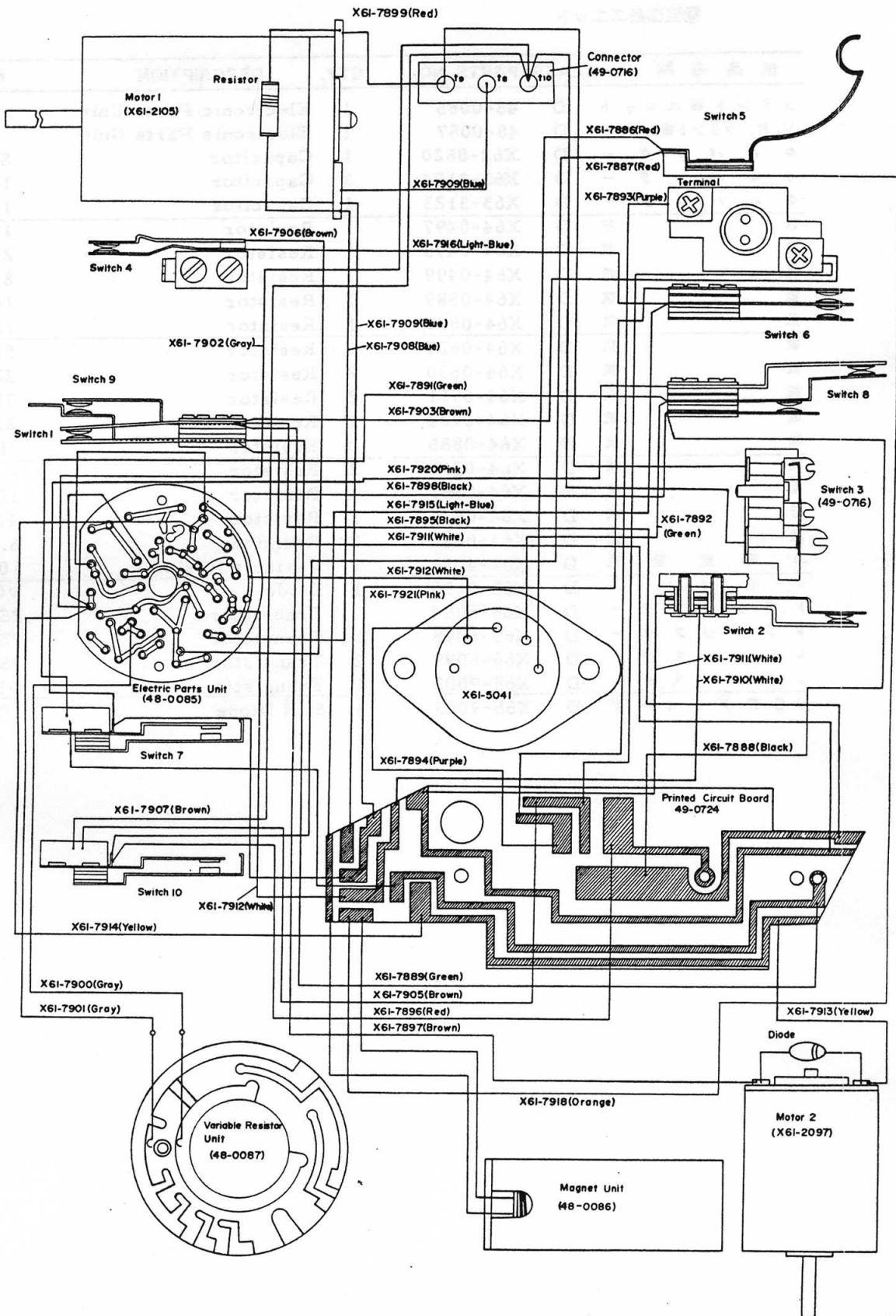
ELECTRONICS PARTS UNIT

電気部品ユニット

部 品 名 称	CLASS	PARTS NO.	QTY.	DESCRIPTION	REMARKS	
プリント板ユニット	D	48-0085	1	Electronic Parts Unit		
V.R. プリント板ユニット	D	48-0087	1	Electronic Parts Unit		
キ ャ パ シ タ -	D	X62-8820	1	Capacitor	SRC47X	
キ ャ パ シ タ -	D	X63-3104	3	Capacitor	16V, 1 μ F	
キ ャ パ シ タ -	D	X63-3123	1	Capacitor	16V, 47 μ F	
抵	抗	D	X64-0497	1	Resistor	16.5K Ω
抵	抗	D	X64-0498	1	Resistor	27K Ω
抵	抗	D	X64-0499	1	Resistor	82K Ω
抵	抗	D	X64-0589	1	Resistor	165K Ω
抵	抗	D	X64-0609	1	Resistor	1M Ω
抵	抗	D	X64-0627	1	Resistor	560 Ω
抵	抗	D	X64-0630	2	Resistor	220 Ω
抵	抗	D	X64-0711	2	Resistor	33K Ω
抵	抗	D	X64-0722	1	Resistor	2.9K Ω
抵	抗	D	X64-0885	2	Resistor	1K Ω
抵	抗	D	X64-0886	2	Resistor	4.7K Ω
抵	抗	D	X64-0887	1	Resistor	10K Ω
抵	抗	D	X64-0888	1	Resistor	470 Ω
抵	抗	D	X64-0896	2	Resistor	6.8K Ω
半 固 定 抵	抗	D	X64-4013	1	Variable Resistor	10K Ω
ダ イ オ ー ド	D	X65-5106	1	Diode	VO6B	
ト ラ ン ジ ス タ -	D	X65-6084	1	Transistor	2SB492	
ト ラ ン ジ ス タ -	D	X65-6098	1	Transistor	2SC1013	
ト ラ ン ジ ス タ -	D	X65-6099	2	Transistor	2SA568	
ト ラ ン ジ ス タ -	D	X65-9002	1	Transistor	D13T1	
S C R ダ イ オ ー ド	D	X65-9003	1	SCR Diode	1RC5	

CANON MOTOR DRIVE UNIT

WIRING DIAGRAM



NO SCALE

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PARTS LIST

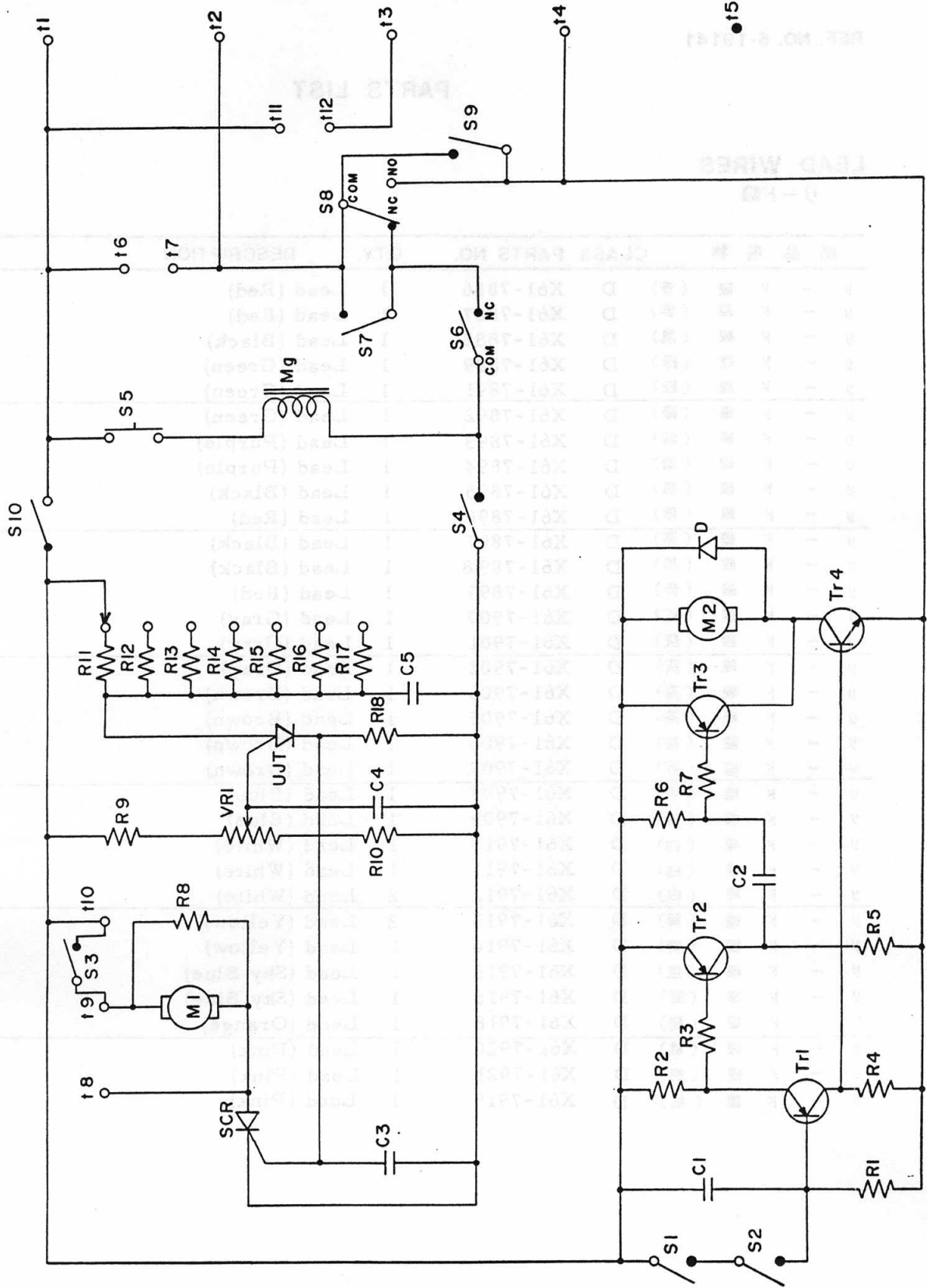
LEAD WIRES

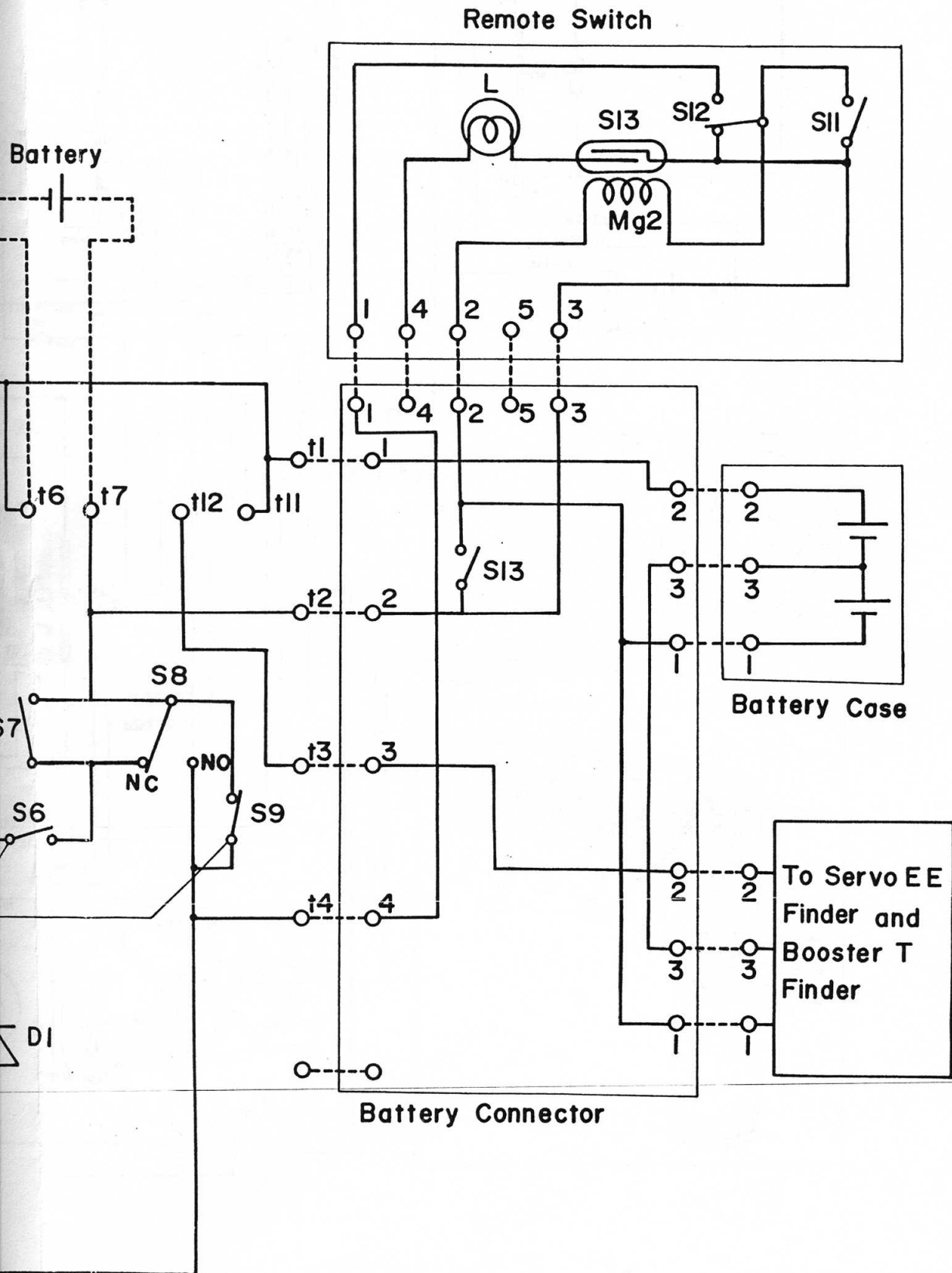
リード線

部 品 名 称		CLASS	PARTS NO.	QTY.	DESCRIPTION
リ	フ 線 (赤)	D	X61-7886	1	Lead (Red)
リ	フ 線 (赤)	D	X61-7887	1	Lead (Red)
リ	フ 線 (黒)	D	X61-7888	1	Lead (Black)
リ	フ 線 (緑)	D	X61-7889	1	Lead (Green)
リ	フ 線 (緑)	D	X61-7891	1	Lead (Green)
リ	フ 線 (緑)	D	X61-7892	1	Lead (Green)
リ	フ 線 (紫)	D	X61-7893	1	Lead (Purple)
リ	フ 線 (紫)	D	X61-7894	1	Lead (Purple)
リ	フ 線 (黒)	D	X61-7895	1	Lead (Black)
リ	フ 線 (赤)	D	X61-7896	1	Lead (Red)
リ	フ 線 (茶)	D	X61-7897	1	Lead (Black)
リ	フ 線 (黒)	D	X61-7898	1	Lead (Black)
リ	フ 線 (赤)	D	X61-7899	1	Lead (Red)
リ	フ 線 (灰)	D	X61-7900	1	Lead (Gray)
リ	フ 線 (灰)	D	X61-7901	1	Lead (Gray)
リ	フ 線 (灰)	D	X61-7902	1	Lead (Gray)
リ	フ 線 (茶)	D	X61-7903	1	Lead (Brown)
リ	フ 線 (茶)	D	X61-7905	1	Lead (Brown)
リ	フ 線 (茶)	D	X61-7906	1	Lead (Brown)
リ	フ 線 (茶)	D	X61-7907	1	Lead (Brown)
リ	フ 線 (青)	D	X61-7908	1	Lead (Blue)
リ	フ 線 (青)	D	X61-7909	1	Lead (Blue)
リ	フ 線 (白)	D	X61-7910	1	Lead (White)
リ	フ 線 (白)	D	X61-7911	1	Lead (White)
リ	フ 線 (白)	D	X61-7912	2	Lead (White)
リ	フ 線 (黄)	D	X61-7913	2	Lead (Yellow)
リ	フ 線 (黄)	D	X61-7914	1	Lead (Yellow)
リ	フ 線 (空)	D	X61-7915	1	Lead (Sky Blue)
リ	フ 線 (空)	D	X61-7916	1	Lead (Sky Blue)
リ	フ 線 (橙)	D	X61-7918	1	Lead (Orange)
リ	フ 線 (桃)	D	X61-7920	1	Lead (Pink)
リ	フ 線 (桃)	D	X61-7921	1	Lead (Pink)
リ	フ 線 (桃)	D	X61-7919	1	Lead (Pink)

CANON MOTOR DRIVE UNIT

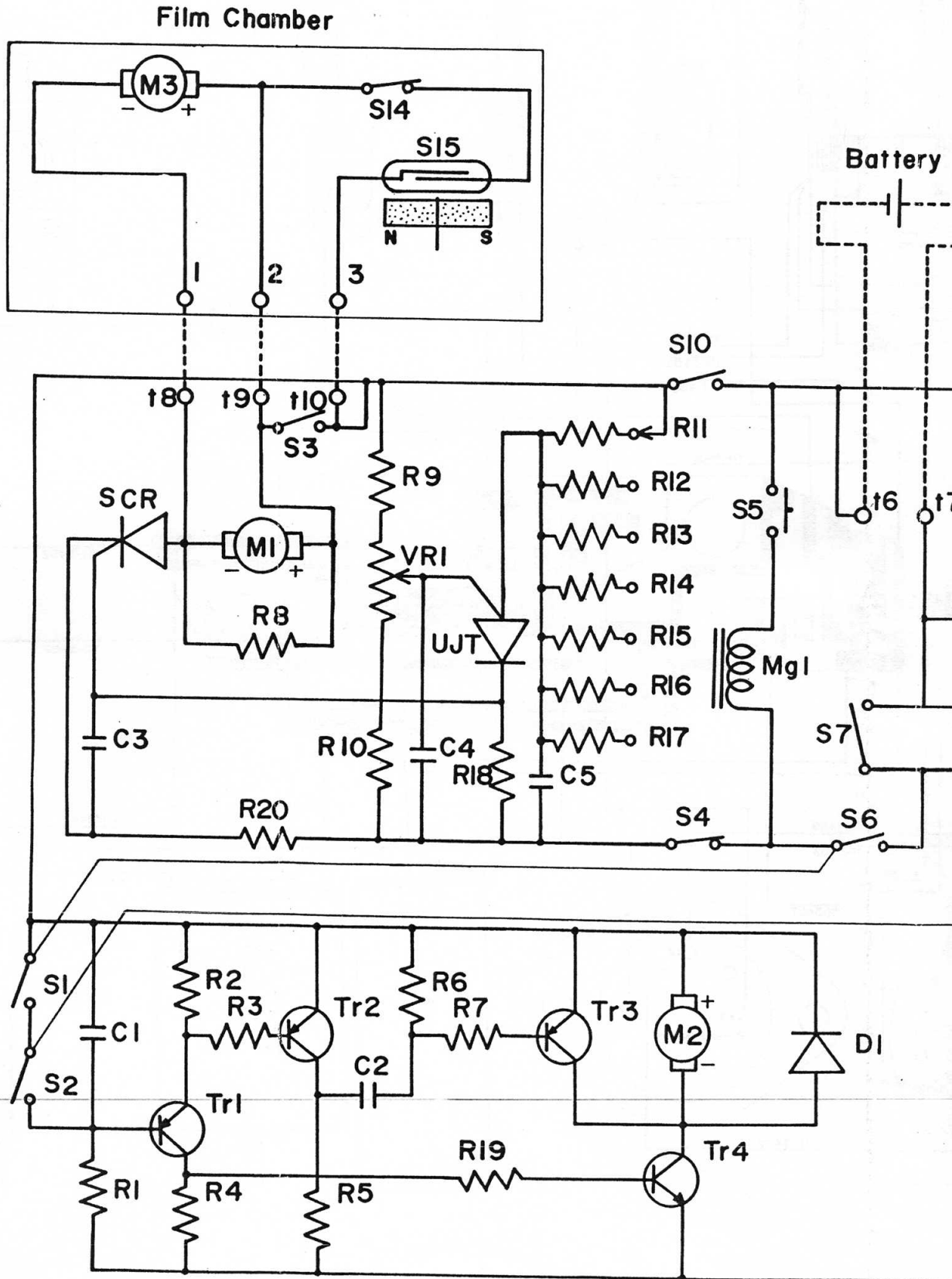
SCHEMATIC DIAGRAM





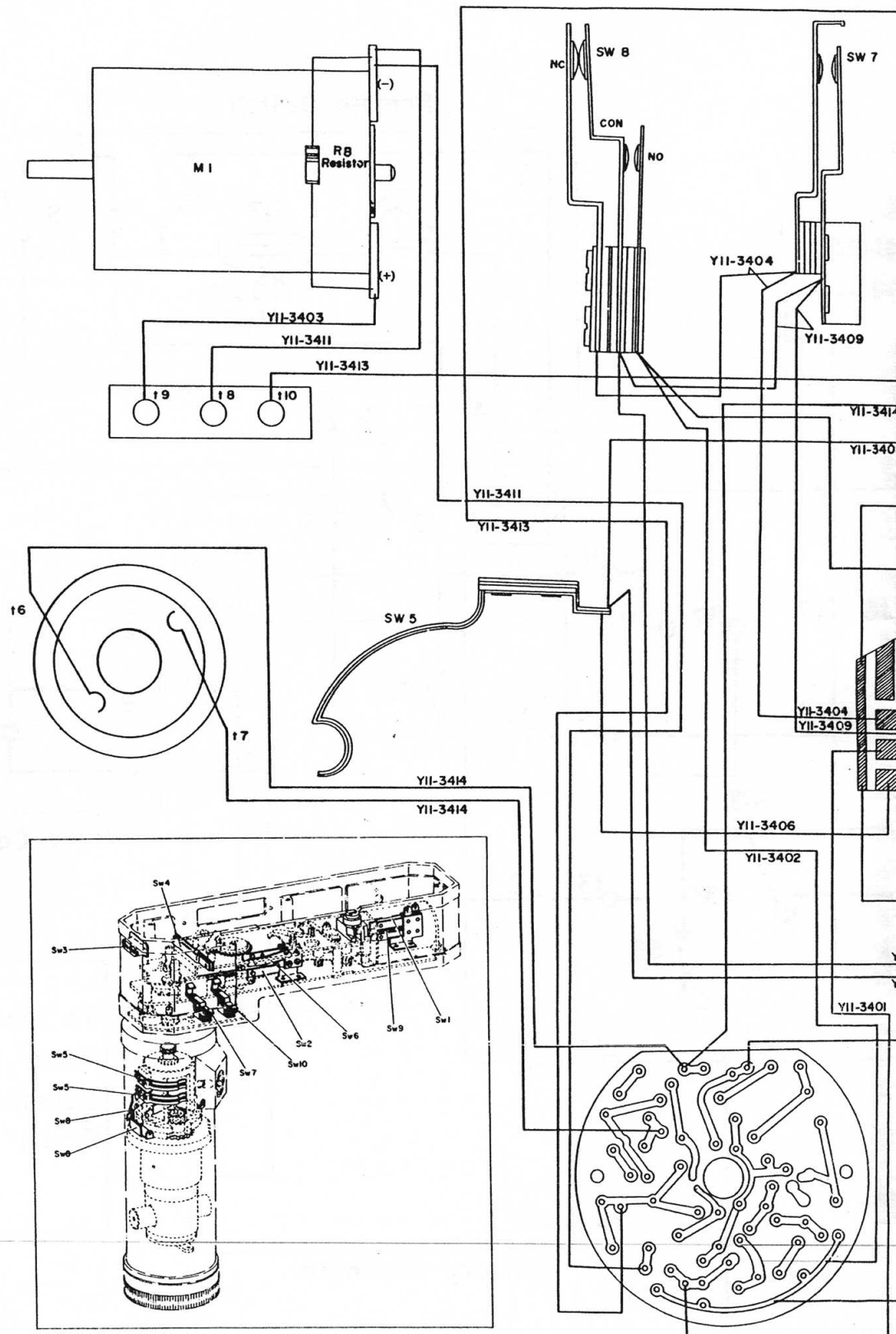
CANON MOTOR DRIVE UNIT

SCHEMATIC DIAGRAM



CANON MOTOR DRIVE UNIT

WIRING DIAGRAM



NO SCALE

PARTS LIST

ELECTRONICS PARTS & LEAD WIRES

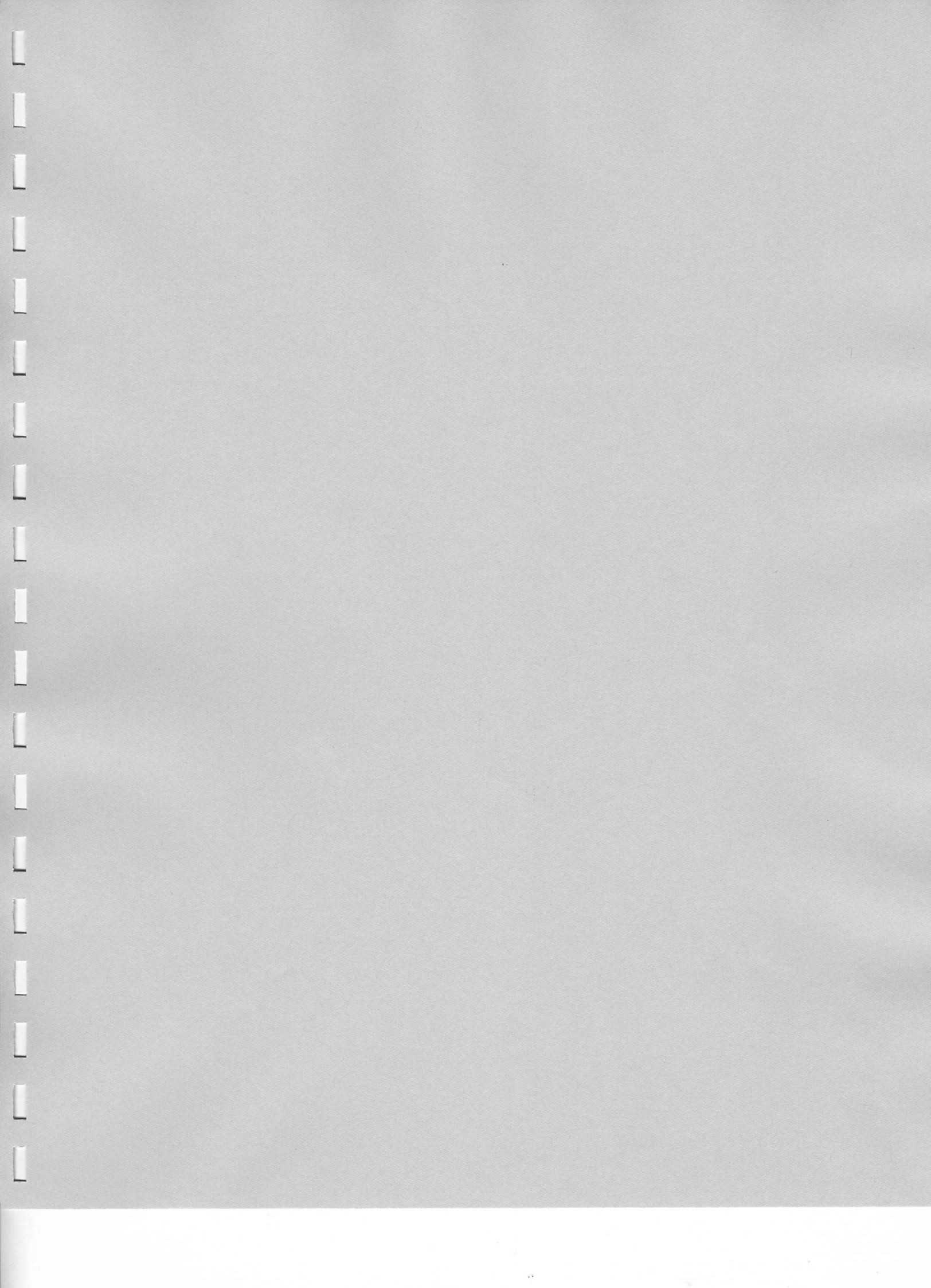
電気部品

リード線

部品名称	CLASS	SYMBOL	PARTS NO.	QTY.	DESCRIPTION	REMARKS
バッテリーソケット	C	t1~t5	X61-5041	1	Battery Socket	
プリント板	D	t6~t7	49-0724	1	Printed Circuit Board	
コネクタ	C	t8~t10	49-0716	1	Connector	
ターミナル接触子	D	t11~t12	43-4987	1	Terminal Pin	
接片	D	S1	49-0496	1	Contact	
接片	D	S1	49-0497	1	Contact	
接片	D	S2	49-0490	1	Contact	
接片	D	S2	49-0493	1	Contact	
コネクタ	C	S3	49-0716	1	Connector	
接片	D	S4	49-0500	1	Contact	
接片	D	S4	49-0501	1	Contact	
接片	D	S5	43-4864	2	Contact	
ブレキ接片	D	S6	49-0721	1	Contact	
発動接片	D	S6	49-0722	1	Contact	
発動接片	D	S6	49-0723	1	Contact	
静止接片	D	S7	49-0488	1	Contact	
可動接片	D	S7	49-0489	1	Contact	
接片	D	S8	49-0485	1	Contact	
グリップレリーズ接片	D	S8	49-0718	1	Contact	
グリップレリーズ接片	D	S8	49-0719	1	Contact	
接片	D	S9	49-0496	1	Contact	
接片	D	S9	49-0497	1	Contact	
接片	D	S10	49-0488	1	Contact	
接片	D	S10	49-0489	1	Contact	
マグネット	D	Mg	48-0086	1	Magnet	
トランジスタ	D	Tr1	X65-6099	1	Transistor	2SA568
トランジスタ	D	Tr2	X65-6099	1	Transistor	2SA568
トランジスタ	D	Tr3	X65-6084	1	Transistor	2SB492
トランジスタ	D	Tr4	X65-6098	1	Transistor	2SC1013
ドラングスタ	C	M1	X61-2105	1	Drive Motor	
レリーズモータ	C	M2	X61-2097	1	Release Motor	
SCRダイオード	D	SCR	X65-9003	1	SCR Diode	IRC5
トランジスタ	D	UJT	X65-9002	1	Transistor	D13T1
ダイオード	D	D	X65-5106	1	Diode	VO6B
キャパシタ	D	C1	X63-3104	1	Capacitor	16V, 1 μ F
キャパシタ	D	C2	X63-3123	1	Capacitor	16V, 47 μ F
キャパシタ	D	C3	X63-3104	1	Capacitor	16V, 1 μ F
キャパシタ	D	C4	X63-3104	1	Capacitor	16V, 1 μ F
キャパシタ	D	C5	X62-8820	1	Capacitor	SRC47X
抵抗	D	R1	X64-0497	1	Resistor	12K Ω
抵抗	D	R2	X64-0885	1	Resistor	1K Ω
抵抗	D	R3	X64-0894	1	Resistor	2.2K Ω
抵抗	D	R4	X64-0885	1	Resistor	1K Ω
抵抗	D	R5	X64-0896	1	Resistor	6.8K Ω
抵抗	D	R6	X64-0627	1	Resistor	560 Ω
抵抗	D	R7	X64-0226	1	Resistor	220 Ω
抵抗	D	R8	X64-0886	1	Resistor	4.7K Ω
抵抗	D	R9	X64-0886	1	Resistor	4.7K Ω
抵抗	C	R10	X64-0887	1	Resistor	10K Ω
抵抗	D	R11	X64-0762	1	Resistor	100 Ω

PARTS LIST

部 品 名 称				CLASS SYMBOL	PARTS NO.	QTY.	DESCRIPTION	REMARKS		
抵		抗	D	R12	X64-0722	1	Resistor	3.3KΩ		
抵		抗	D	R13	X64-0497	1	Resistor	12KΩ		
抵		抗	D	R14	X64-0498	1	Resistor	27KΩ		
抵		抗	D	R15	X64-0499	1	Resistor	82KΩ		
抵		抗	D	R16	X64-0589	1	Resistor	165KΩ		
抵		抗	D	R17	X64-0609	1	Resistor	1MΩ		
抵		抗	D	R18	X64-0887	1	Resistor	10KΩ		
抵		抗	D	R19	X64-0226	1	Resistor	220KΩ		
抵		抗	D	R20	X64-0226	1	Resistor	220KΩ		
半	固	定	抵	抗	D	VR1	X64-4013	1	Variable Resistor	10KΩ
リ	-	フ	線	(白)	D	Y11-3401	Lead (White)			
リ	-	フ	線	(黒)	D	Y11-3402	Lead (Black)			
リ	-	フ	線	(赤)	D	Y11-3403	Lead (Red)			
リ	-	フ	線	(桃)	D	Y11-3404	Lead (Pink)			
リ	-	フ	線	(橙)	D	Y11-3406	Lead (Orange)			
リ	-	フ	線	(黄)	D	Y11-3407	Lead (Yellow)			
リ	-	フ	線	(緑)	D	Y11-3409	Lead (Green)			
リ	-	フ	線	(空)	D	Y11-3410	Lead (Sky Blue)			
リ	-	フ	線	(白)	D	Y11-3411	Lead (Blue)			
リ	-	フ	線	(紫)	D	Y11-3412	Lead (Purple)			
リ	-	フ	線	(茶)	D	Y11-3413	Lead (Brown)			
リ	-	フ	線	(灰)	D	Y11-3414	Lead (Gray)			



CANON REPAIR GUIDE

CANON MOTOR DRIVE UNIT
(REF. NO. 5-19141)

CANON INC. JAPAN

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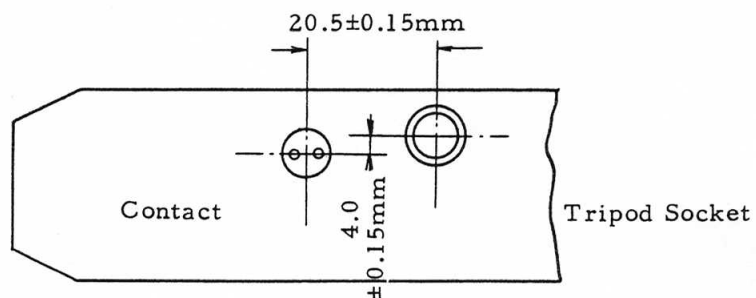
Introduction

The motor drive unit can be used on any Canon F-1, and photograph is possible in consecutive mode up to 36 exposures as well as in single mode.

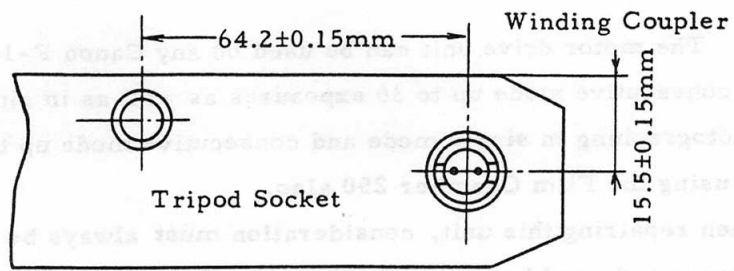
Photographing in single mode and consecutive mode up to 250 exposures is also possible by using the Film Chamber 250 also.

When repairing this unit, consideration must always be given to interchangeability with camera and combination with other accessories.

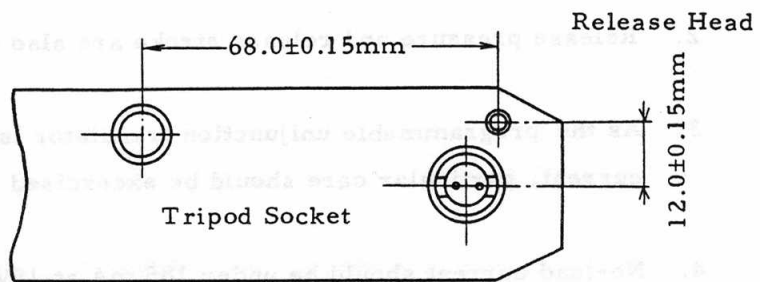
1. Since the winding torque is one of the critical points, it must be checked carefully.
2. Release pressure and release stroke are also important checking points.
3. As the programmable unijunction transistor is easily damaged by excess current, particular care should be exercised when repairing.
4. No-load current should be under 185 mA at 15V.
5. A variable power supply capable of supplying up to 15V at 2A should be used to check the unit.
6. Contact Position



7. Winding Coupler Position

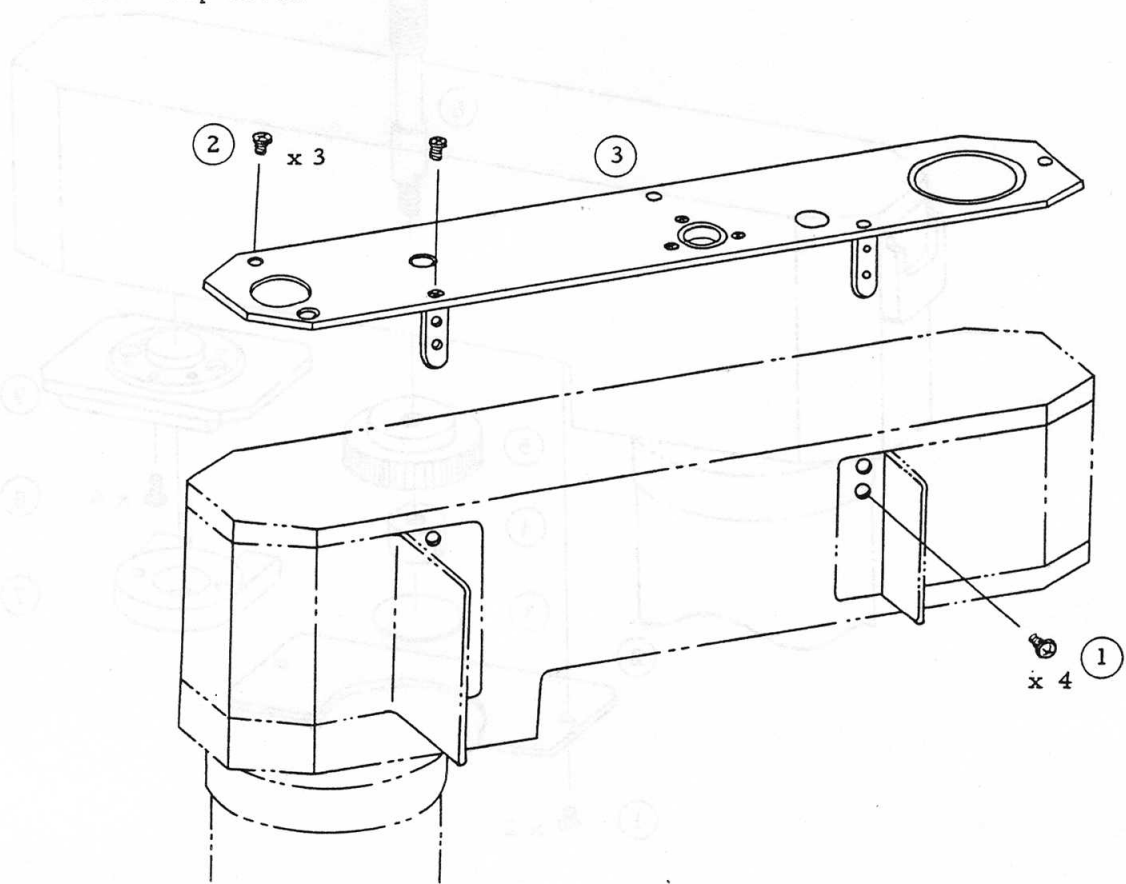


8. Release Head Position



1. Disassembly

1.1 Top Cover



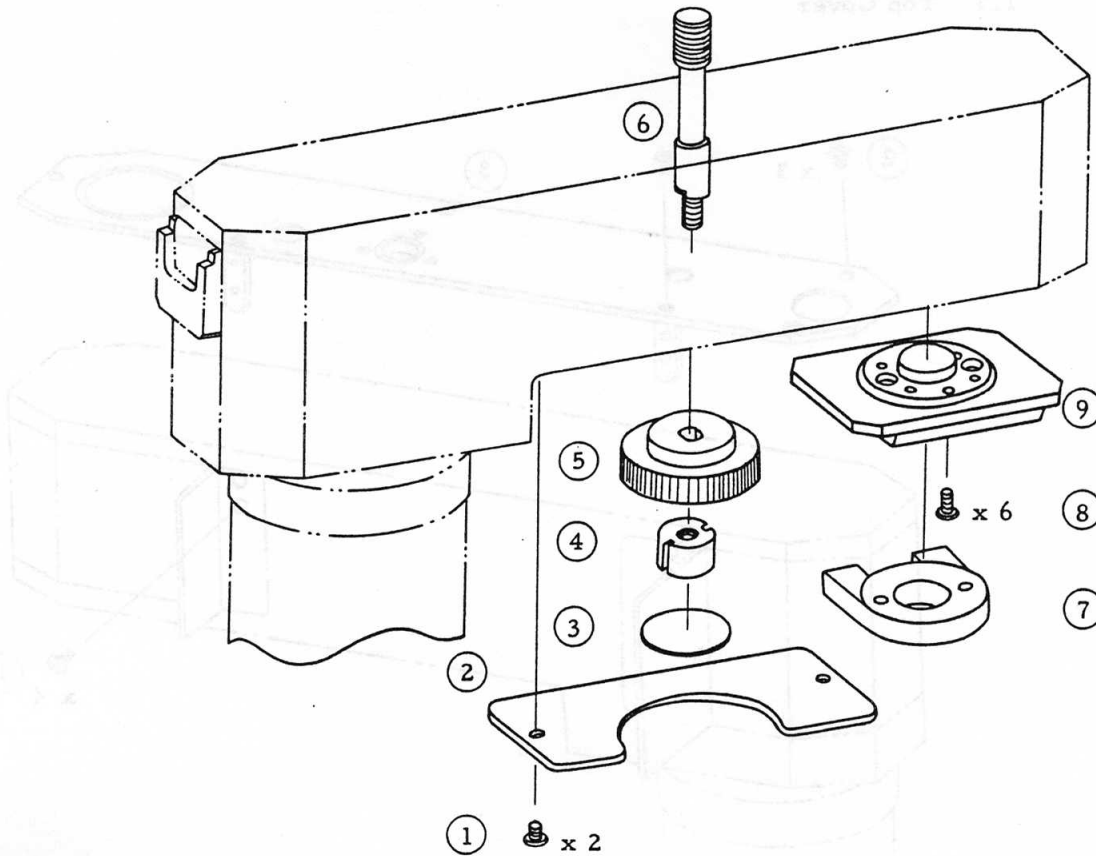
Remove the parts in the following sequence.

1	<u>Screw x 4</u>	2	<u>Screw x 3</u>	3	<u>Top Cover</u>
	X16-170257		X24-170111		43-4995

Note 1. Screw (X16-170257) is located under the leather.

2. For removing only the Top Cover, take off Screws (X94-170111).

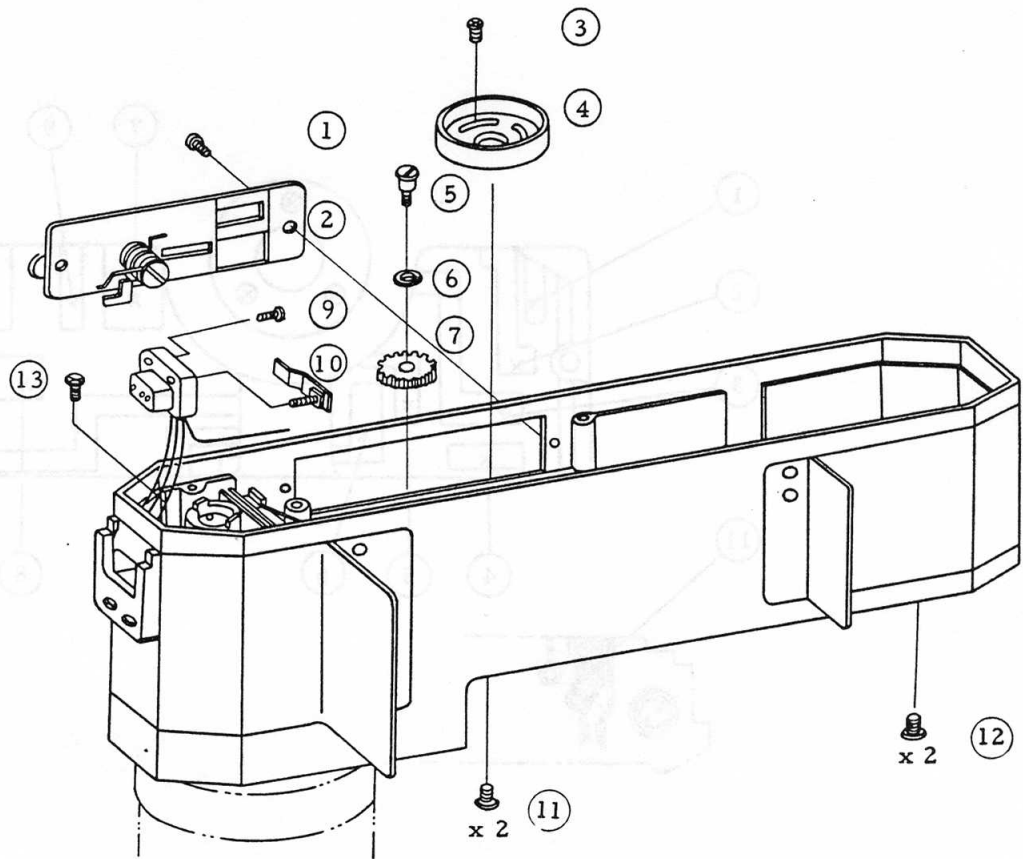
1.2 External Parts



Remove the parts in the following sequence.

- | | | | |
|--------------------------|----------------------------------|-------------------------------------|--|
| 1. Tightening
Screw | 1 <u>Screw x 2</u>
X95-170047 | 2 <u>Base Cover</u>
43-4926 | 3 <u>Cover Plate</u>
43-4998 |
| 2. Tripod Socket
Base | 4 <u>Nut</u>
43-5861 | 5 <u>Tightening Knob</u>
43-4982 | 6 <u>Tightening Screw</u>
43-4983 |
| | 7 <u>Cover Plate</u>
43-4994 | 8 <u>Screw x 6</u>
X18-200508 | 9 <u>Tripod Socket Base</u>
43-4993 |

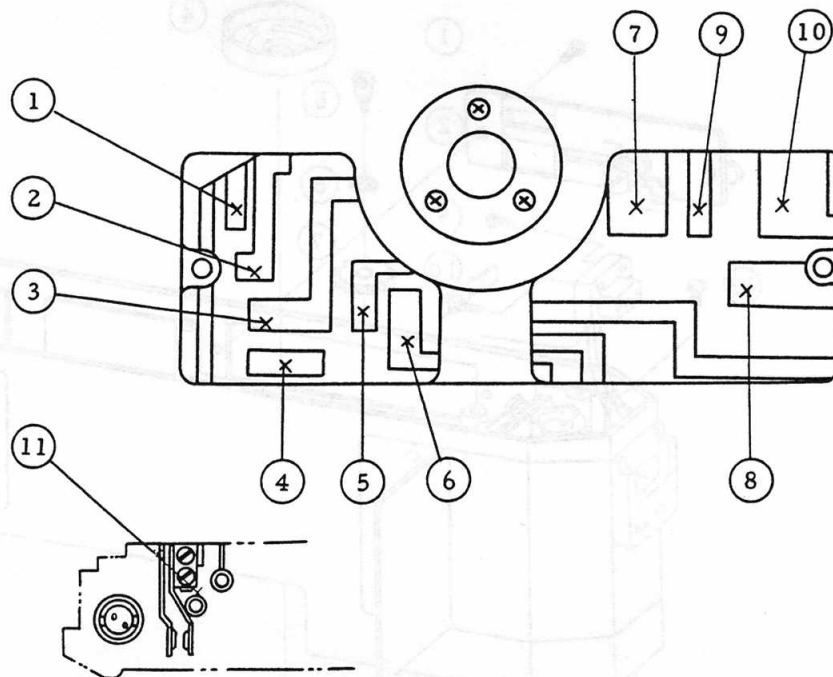
1.3. Release Unit



- | | | | | | |
|----|--------------------------------|----|---|----|---------------------------------|
| 1 | <u>Screw x 2</u>
X95-170047 | 2 | <u>Counter Panel Unit</u> | 3 | <u>Screw x 3</u>
X91-172494 |
| 4 | <u>Film Counter</u> | 5 | <u>Screw</u>
X96-203171 | 6 | <u>Washer x n</u>
X32-5031~3 |
| 7 | <u>Manual Gear</u>
97-0733 | 8 | <u>Disconnect Leads (See Para. 1.4)</u> | | |
| 9 | <u>Screw</u>
X16-170357 | 10 | <u>Screw</u>
X16-170407 | 11 | <u>Screw x 2</u>
X95-20043 |
| 12 | <u>Screw x 2</u>
X18-200508 | 13 | <u>Screw</u>
X18-170307 | | |

Note: Screw (X96-203171) is a left hand screw.

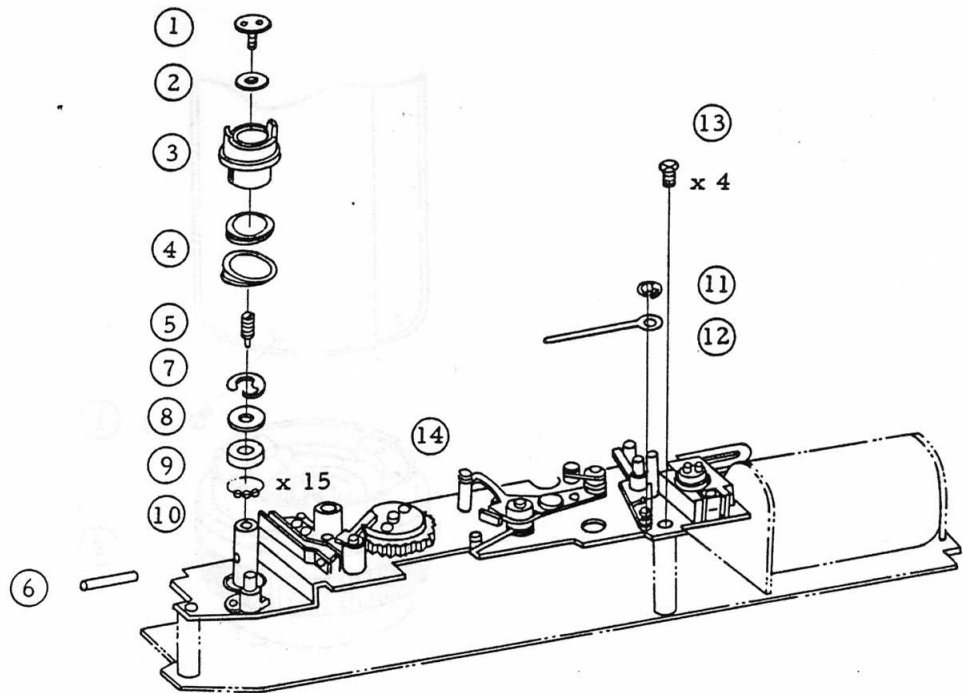
1.4 Electrical Leads



Disconnect the leads in the following order.

1	<u>Blue</u>	2	<u>Pink</u>	3	<u>White</u>	4	<u>Orange</u>
	X61-7909		X61-7919		X61-7912		X61-7918
5	<u>Green</u>	6	<u>Yellow</u>	7	<u>Purple</u>	8	<u>Black</u>
	X61-7890		X61-7914		X61-7894		X61-7888
9	<u>Brown</u>	10	<u>Red</u>	11	<u>Brown</u>		
	X61-7905		X61-7896		X61-7906		

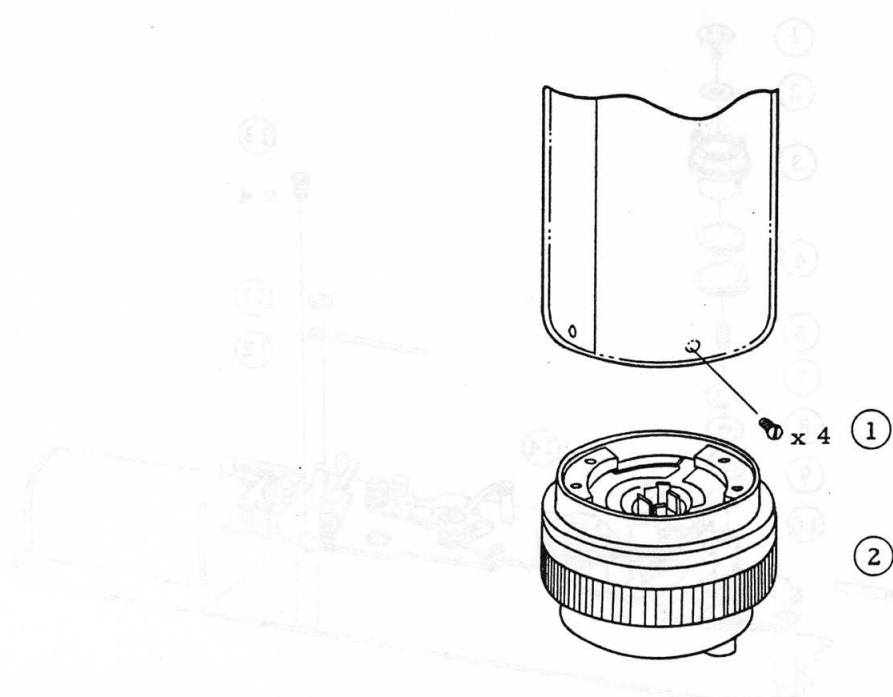
1.5 Upper Plate



Remove the parts in the following order

- | | | | |
|----|--|----|---------------------------------------|
| 1 | <u>Pin Face Screw</u>
43-4890 | 2 | <u>Washer x n</u>
X32-50411~3 |
| 3 | <u>Film Transport Coupler</u>
43-4889 | 4 | <u>Spring</u>
97-5685 |
| | | 5 | <u>Screw</u>
X91-170017 |
| 6 | <u>Pin</u>
43-4888 | 7 | <u>Retaining Washer</u>
X32-401321 |
| | | 8 | <u>Washer x n</u>
X32-504120~2 |
| 9 | <u>Steel Ball Holder</u>
43-5067 | 10 | <u>Steel Ball x 15</u>
X34-100543 |
| 11 | <u>Retaining Washer</u>
X32-401131 | 12 | <u>Wire</u>
43-4930 |
| | | 13 | <u>Screw x 4</u>
X18-200307 |
| 14 | <u>Upper Plate</u>
49-0462 | | |

1.6 Timer Dial Unit

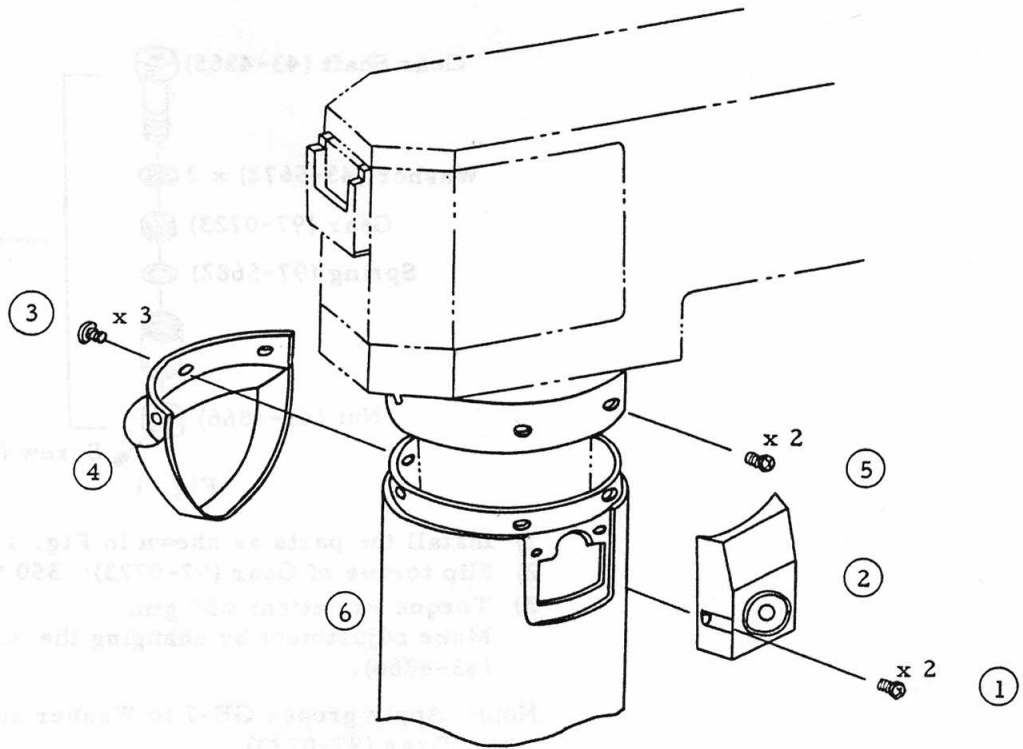


Remove the unit in the following order.

- 1 Screw x 4
X14-170157
- 2 Timer Dial Unit
- 3 Unsolder the leads

Note: Screw (X14-170157) is located under the leather.

1.7 Grip Cover



Remove the parts in the following order.

- | | | | |
|---|-------------------|---|----------------------------|
| 1 | <u>Screw x 2</u> | 2 | <u>Release Button Unit</u> |
| | X95-170045 | | |
| 3 | <u>Screw x 3</u> | 4 | <u>Shaped Grip</u> |
| | X95-170040 | | 43-5860 |
| 5 | <u>Screw x 2</u> | | |
| | X95-170046 | | |
| 6 | <u>Grip Cover</u> | | |
| | 43-4997 | | |

2. Replacement and Adjustment

2.1 Gears (97-0723) 1. Adjustment of Gear (97-0723) and (97-0724)

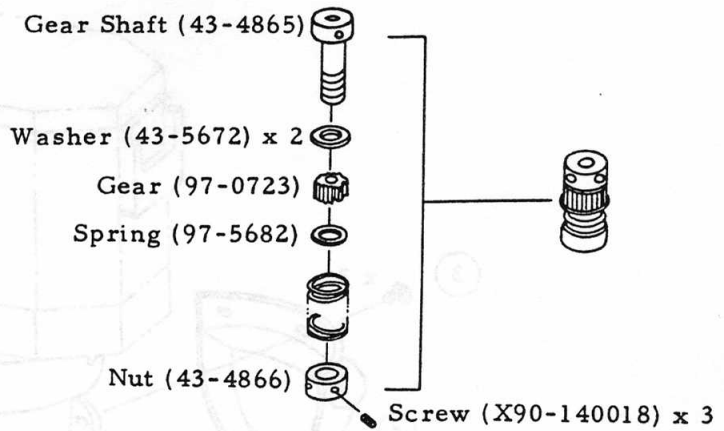


Fig. 1

- 1) Install the parts as shown in Fig. 1.
- 2) Slip torque of Gear (97-0723): 350 ~ 400 g.cm
- 3) Torque variation: ± 50 gm.
Make adjustment by changing the position of Nut (43-4866).

Note: Apply grease GE-7 to Washer and the inner face of Gear (97-0723)

2. Installation and adjustment of Gear (97-0724)

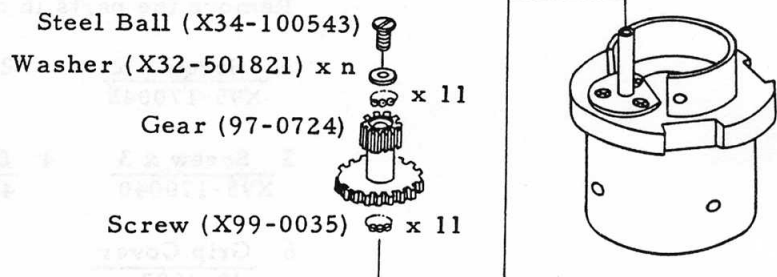


Fig. 2

- 1) Install the parts as shown in Fig. 2.
- 2) Vertical play of Gear (97-0724): 0.05 ~ 0.15mm
Make adjustment by installing Washer (X32-501821) x n

Note 1. Screw (X99-0035) is a left hand screw.

Note 2. Eleven Steel Balls are used for each the upper and lower parts.

Note 3. Apply GE-7 to the steel balls.

2.2 Gears (43-4868),
(97-0725) and
Coupling Switch
Gear Case

1. Installation and adjustment of Gears (43-4868), and
(97-0725)

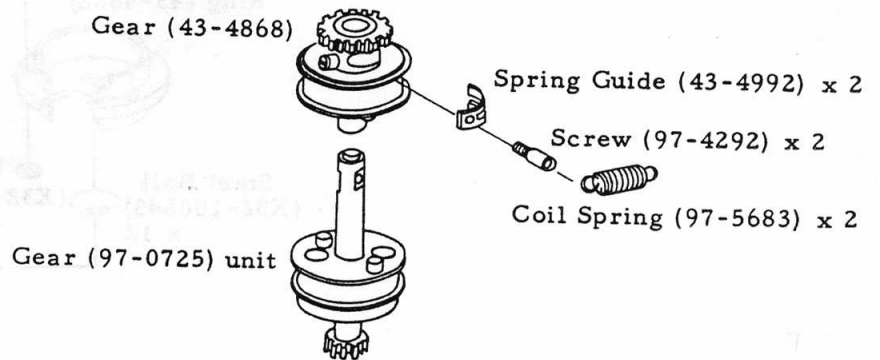


Fig. 3

- 1) Install the parts as shown in Fig. 3.
- 2) Coupling torque: 600 ± 20 g.cm
The exact coupling torque is decided by winding torque. See Para. 2. 12. 5.
Make adjustment by selecting Coil Spring (97-5683).

Note 1. Apply GE-7 to the following parts; Spring Guide, screw (97-4292) and Gear (97-0725) shaft.

2. Seal Screw (97-4292) with bonding agent.

2. Assembly of Coupling Switch Gear Case.

- 1) Install the parts as shown in Fig. 4.
- 2) Vertical play of Gear (43-4868) and Gear (97-0725):
0.05 ~ 0.15mm
Make adjustment by installing Washers (X32-501831 ~ 3) x n.
- 3) Apply contact cleaner such as Electro lube-2G to the Contact Disks.

Note 1. Number of Steel Balls to be used;
25 for bearing of Gear (97-0725) and 12 for Ring.

2. Apply GE-7 to the steel balls.
3. Apply Diabond (bonding agent) to Screws after installation.

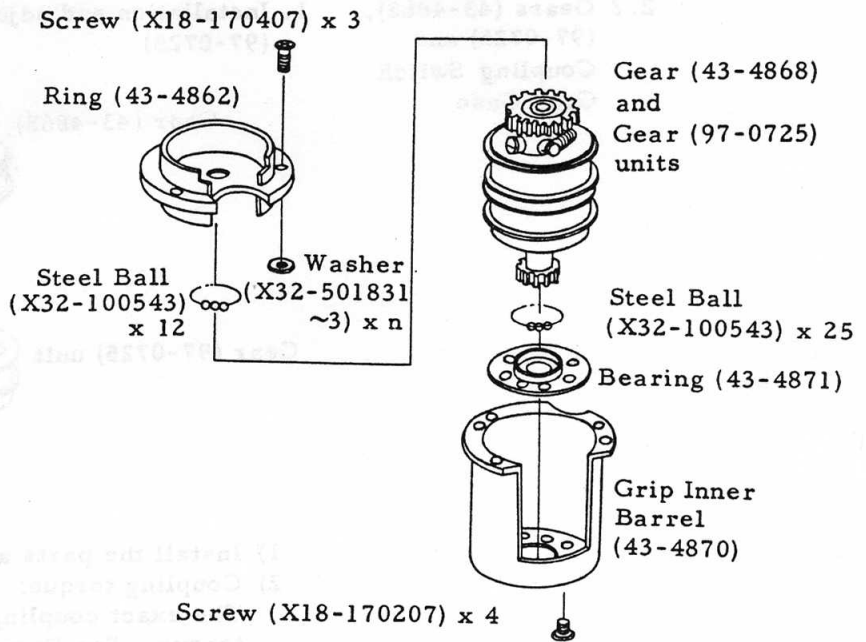


Fig. 4

2.3 Winding Motor and Electric Parts Unit

1. Installation and adjustment of Winding Motor (M1).

- 1) Install the parts as shown in Fig. 5.
- 2) The soldered part of the minus terminal of Winding Motor must be at Gear (97-0724) side.
- 3) Fit the notched part of Cushion (43-5862) to that of the Motor Holder (Fig. 5)
- 4) For soldering, see the schematic diagram. (Repair Manual)

Note 1. Apply MoS₂ grease to Gear (97-0726) shaft and engaging part of each Gear.

2. Screw (X91-173579) is a left hand screw.

3. Screw (X16-170407) must tighten against the flat part of Motor shaft. See Fig. 6.

2. Installation of Electric Parts Unit

- 1) Install the parts as shown in Fig. 5.
- 2) The notched part of Electric Parts Unit must be fitted to that of Motor Holder. See Fig. 6.
- 3) Reference should be made to the schematic diagram (Repair Manual)

Note 1. The Flat side of the Electric Parts Unit must be aligned with the notch in the Motor Holder, and the leads placed on that side also.

Screw (X18-170207)

Lead Clamp (43-4961)

Screw (X91-173579)

Gear (97-0726)

Screw (X18-170307) x 4

Motor Base Plate (49-0463)

Coupling Switch Gear Case

Screw (X18-170207) x 3

Motor Shaft

Gear Shaft

Fig. 6

Gear (97-0723) Unit

Screw (X91-143522) x 2

Screw (X16-170407) x 3

Gear (97-0724)

Motor Holder Unit

Cushion (43-5862)

Screw (X10-170257)

Winding Motor (M₁)

(+)

(-)

Collar (43-4879)

Electric Parts Unit

Screw (X16-170607) x 2

Fig. 5

2.4 Shutter Button stroke and arrangement of Leads

1. Adjustment of Shutter Button stroke

- 1) The Release Button stroke must fulfill the following standards.

The reference is the top of the release button.

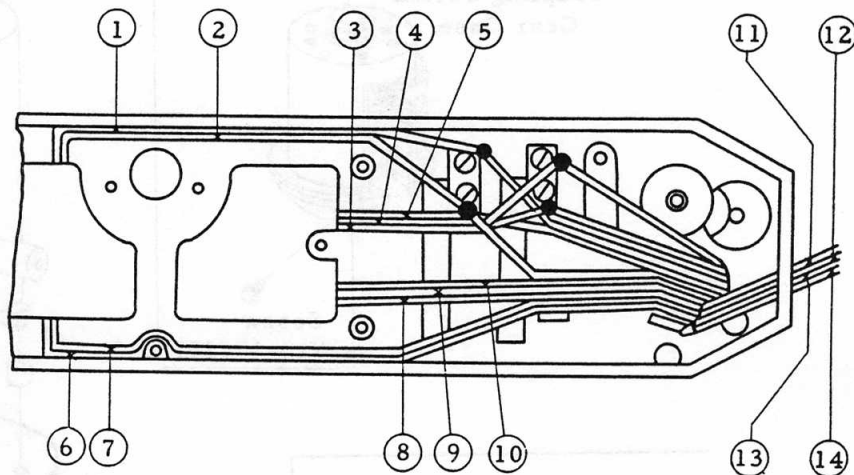
	Standards	Adjustment
Release contact ON	1.0 $\begin{matrix} +0.3 \\ -0 \end{matrix}$ mm	Bend the contact
Winding contact ON	0.5 $\begin{matrix} +0.3 \\ -0.3 \end{matrix}$ mm	Bend the contact
Total stroke of Release Button	2.0 \pm 0.3mm	

2. Arrangement of Leads

- 1) Place double stick tape where the leads are to be placed.
- 2) Arrange the leads and press against the tape.

Fig. 7

Circle mark: Solder connection



No.	Color	No.	Color	No.	Color
1	Red	6	Purple	11	Red
2	Brown	7	Black	12	Blue
3	Green	8	Orange	13	Grey
4	Pink	9	Yellow	14	Brown
5	Blue	10	White		

2.5 Gear (97-0730)
and Slide Lever

1. Installation of Gear (97-0730)

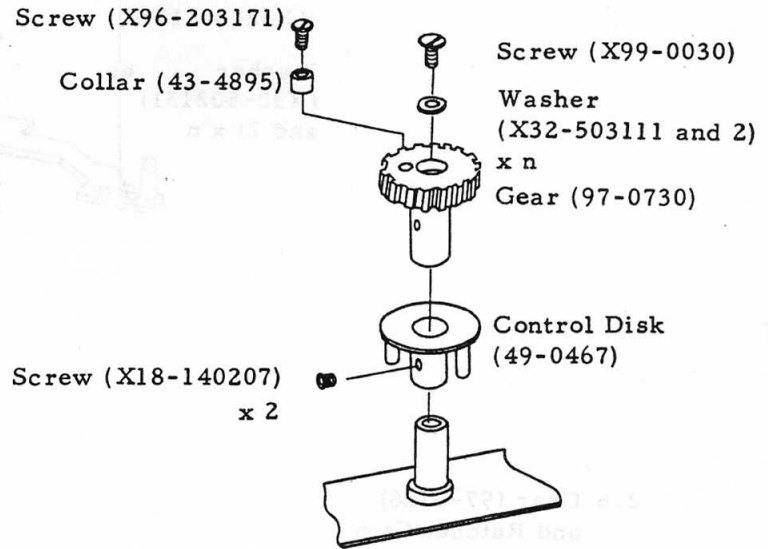


Fig. 8

- 1) Control Disk and Gear (97-0730) installation
Install them so the set screw holes are aligned
(the short stud of Control Disk aligned with the
Collar.) See Fig. 8.
- 2) Vertical play of Gear (97-0730): 0.05 to 0.15mm
Make adjustment by installing Washer
(X32-503111) x n.
- 3) Install the parts as shown in Fig. 8.

Note 1: Apply GE-7 to the bearing part of Gear
(97-0730).

2: Screw (X96-203171) is a left hand screw.

2. Installation of Slide Lever

- 1) Install the parts as shown in Fig. 9.
- 2) Vertical play of Slide Lever 0.05 to 0.15mm
Make adjustment by installing Washer (X32-502131
and 2) x n.

Note: Apply MoS₂ grease to the sliding part.

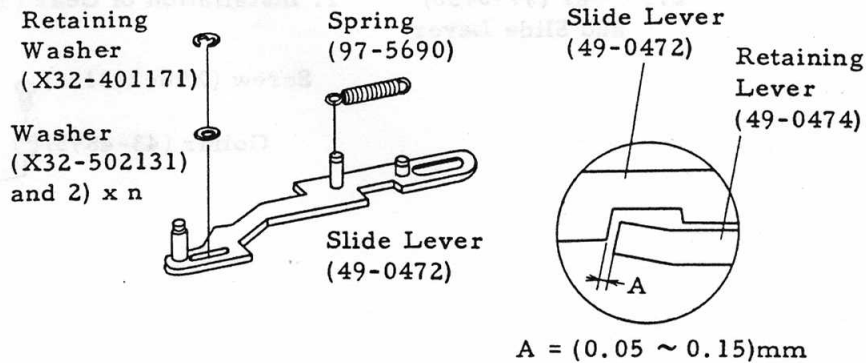


Fig. 9

2.6 Gear (97-0728) and Ratchet Cam

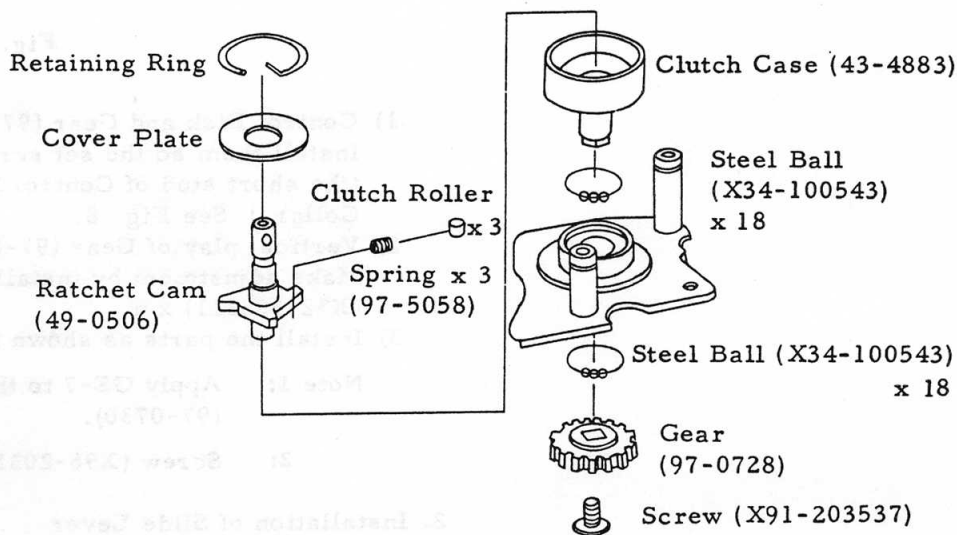


Fig. 10

1. Install the parts as shown in Fig. 10.

Note 1. 18 Steel Balls are used for both the upper and lower parts.

2. Apply GE-7 to the balls.

3. Apply a bonding agent to Screw (X91-203537) hole. Don't apply it to the screw head.

2. Installation of Ratchet Cam

1) Install the parts as shown in Fig. 10.

2) Apply a small amount of Launa 40 to the bearing part of Ratchet Cam.

Note: Turn the flat face of Cover Plate (43-4887) up.

2.7 Release Motor

1. Installation of Motor shaft

- 1) Install the shaft as shown in Fig. 11-B.
- 2) Screw (X90-20020) must be fastened against the flat of Release Motor (M₂) shaft.

Note : Apply a bonding agent to the hole of Screw (X90-20020).

2. Installation of Brake Disk

- 1) Install the parts as shown in Fig. 11-A.
- 2) Apply GE-7 to the following parts; Motor Shaft (43-4891) and Washers (43-5870) and (43-5871).
- 3) Slip torque of Brake Disk (97-0729) 20 to 25 g.cm
Make adjustment by installing Washer (X32-502922).

3. Installation and adjustment of Release Motor (M₂)

- 1) Install the parts as shown in Fig. 11-B.
- 2) The following standards must be fulfilled. See Fig. 11-C.
 - a) Clearance 1 turn before the brake disc engages with brake lever: $a = (0.1 \sim 0.2)\text{mm}$
 - b) Clearance between Release Motor (M₂) and Brake Lever: $b = \text{over } 0.2\text{mm}$
 - c) Gear (97-0730) and Worm Gear must be well meshed and revolution must be smooth.

Note: Make adjustment of items a), b) and c) by aligning the Release Motor mounting position.

- 3) Soldering of Leads (See the schematic diagram in the Repair Manual).

Note: Fix Cushion (43-6126) with Diabond, a bonding agent.

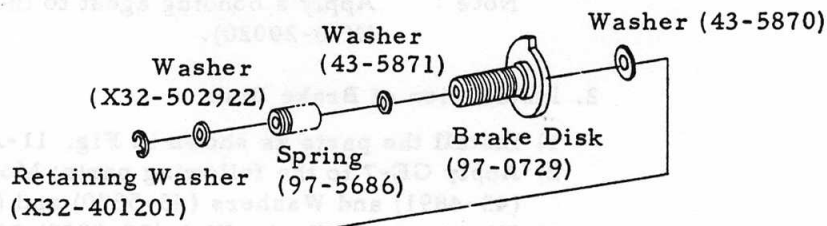


Fig. 11-A

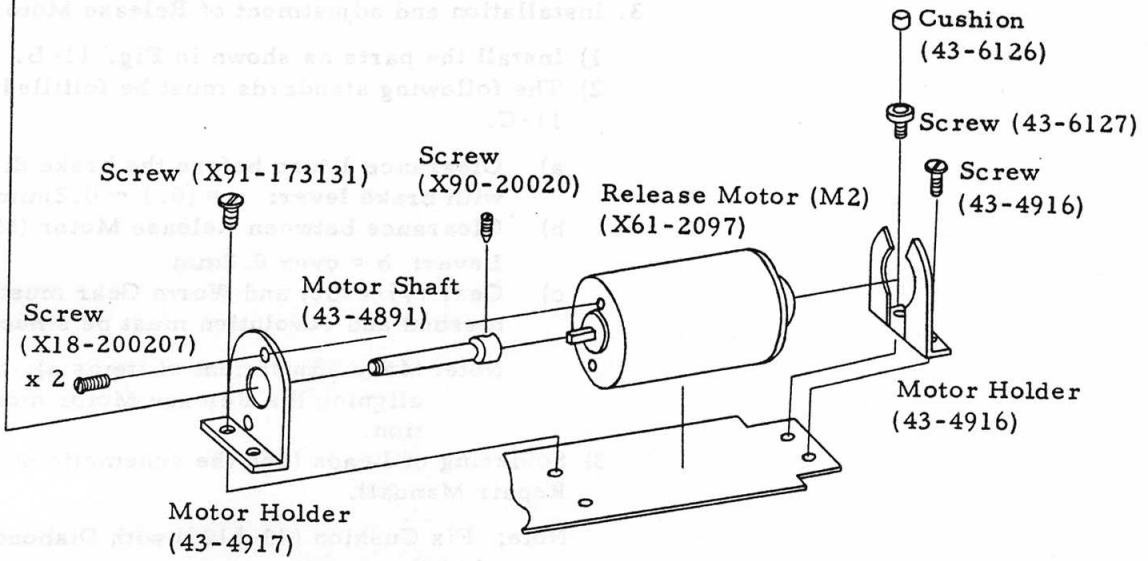


Fig. 11-B

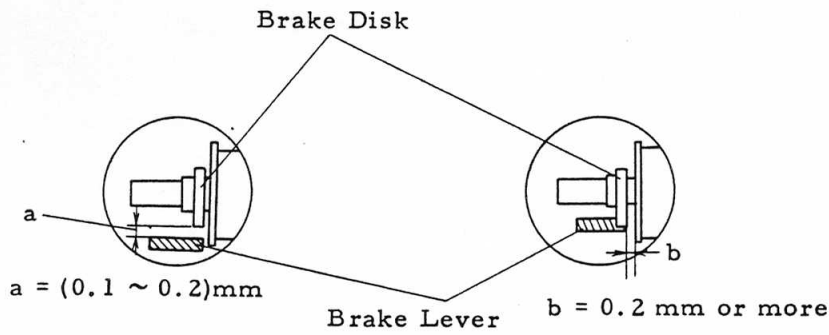


Fig. 11-C

2.8 Magnet

1. Installation of Magnet

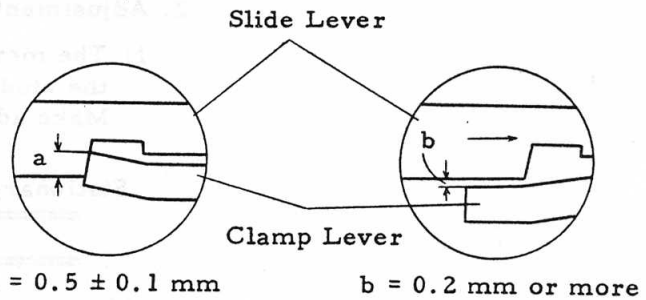
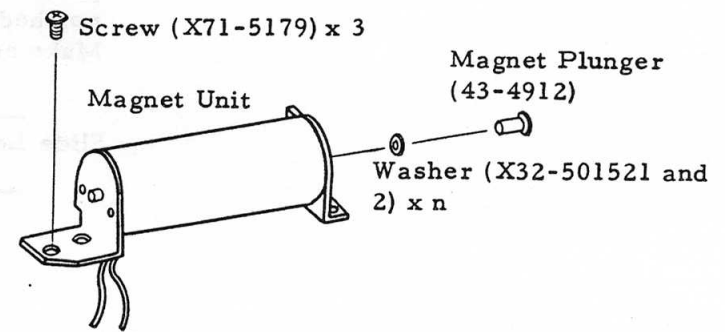


Fig. 12

- 1) Install the parts as shown in Fig. 12.
- 2) The following standards must be fulfilled:
Make adjustment by magnet mounting position and by installing Washer (X32-501521 and 2) x n.
 - (1) Engagement of Clamp Lever (49-0474) and Slide Lever (49-0472), "a": $0.5 + 0.1$ mm
 - (2) Disengaged separation of Clamp Lever and Slide Lever, "b": Over 0.2 mm
- 3) Soldering of Leads (See the schematic diagram in the Repair Manual.)

Note: Polarity is not important.

2.9 Adjustment of Switch Timing

1. Adjustment of Contacts for starting and stopping M1, and for starting M2.

- 1) All moving contacts for M1 start and stop, and M2 start must always be in contact with the Control Lever stud (Fig. 13)
Make adjustment by bending the contacts.

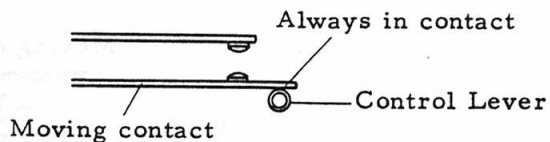


Fig. 13

- 2) The moving contact for starting and stopping M1, and starting M2 "makes" $0.5 \begin{smallmatrix} +0.1 \\ -0 \end{smallmatrix}$ mm this side of the position where Clamp Lever (49-0474) enters the notched part of Slide Lever (49-0472). (Fig. 14) Make adjustment by bending each fixed contact.

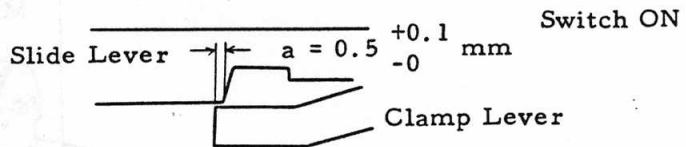


Fig. 14

2. Adjustment of Contact for M2 stop

- 1) The moving contact should always be in contact with the stud of Control Lever (49-0469). (Fig. 15) Make adjustment by bending the moving contact.

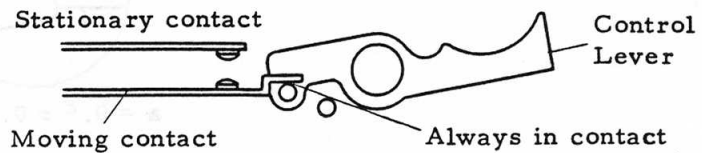


Fig. 15

- 2) The contact makes 5 to 5-1/4 turns before where the Brake Disk (97-0729) engages with Brake Lever (49-0471). (Fig. 16) Make adjustment by bending the stationary contact.

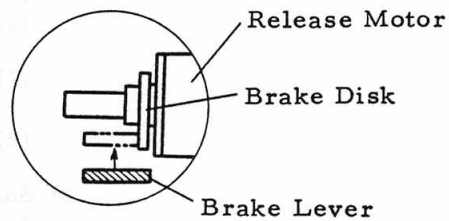


Fig. 16

3. Contact for prevention of M2 stoppage

- 1) When Control Lever (49-0469) is fully operated (Fig. 17), clearance between the moving contact and stationary contact must be 0.5 ± 0.1 mm ("a" part in Fig. 17) This contact must open as M2 stop contact closes. Make adjustment by bending the stationary contact.

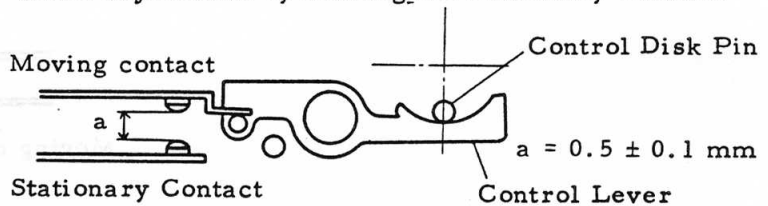
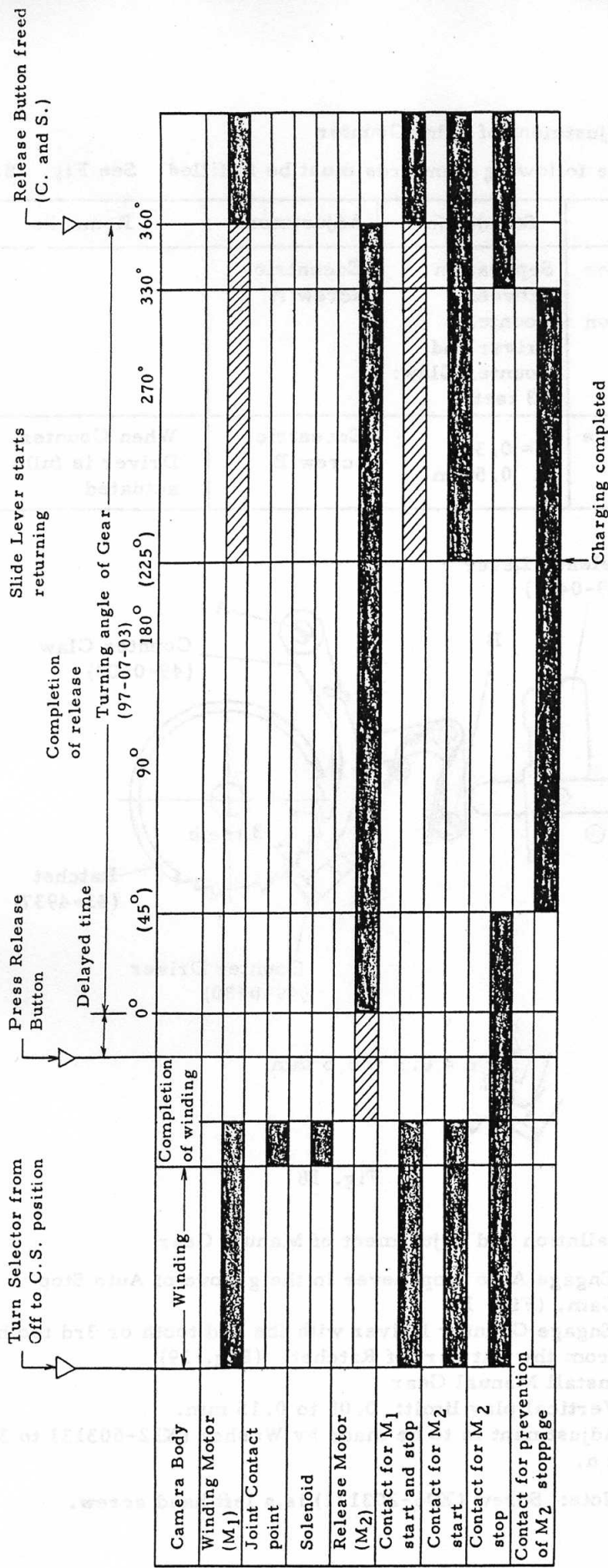


Fig. 17

2.10 Working Diagram



Note: C: Consecutive
S: Single

2.11 Parts related to Film Counter

1. Adjustment of Film Counter

The following standards must be fulfilled. See Fig. 18.

	Standards	Adjustment	Remarks
Counter Claw position	Separation between Counter Driver and Counter Claw: 3 teeth	Eccentric screw A	
Advance per cycle	$c = 0.3 \sim 0.5 \text{ mm}$	Eccentric screw B	When Counter Driver is fully actuated

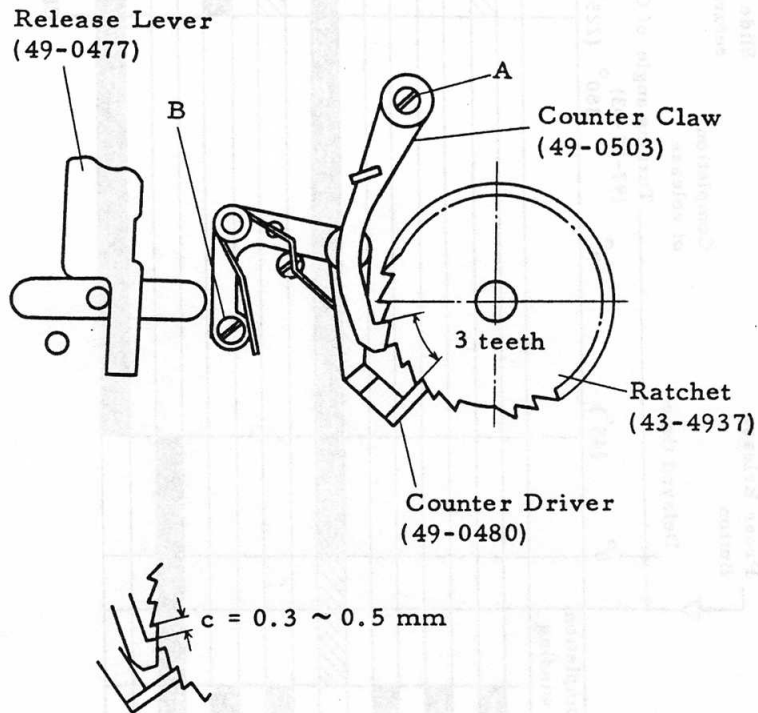


Fig. 18

2. Installation and adjustment of Manual Gear

- 1) Engage Auto Stop Lever in the groove of Auto Stop Cam. (Fig. 19)
- 2) Engage Counter Driver with the 2nd tooth or 3rd tooth from the flat part of Ratchet. (Fig. 19)
- 3) Install Manual Gear

Vertical play limit: 0.05 to 0.15 mm.
Adjustment is to be made by Washer (X32-503131 to 3) x n.

Note: Screw (X96-203171) is a left hand screw.

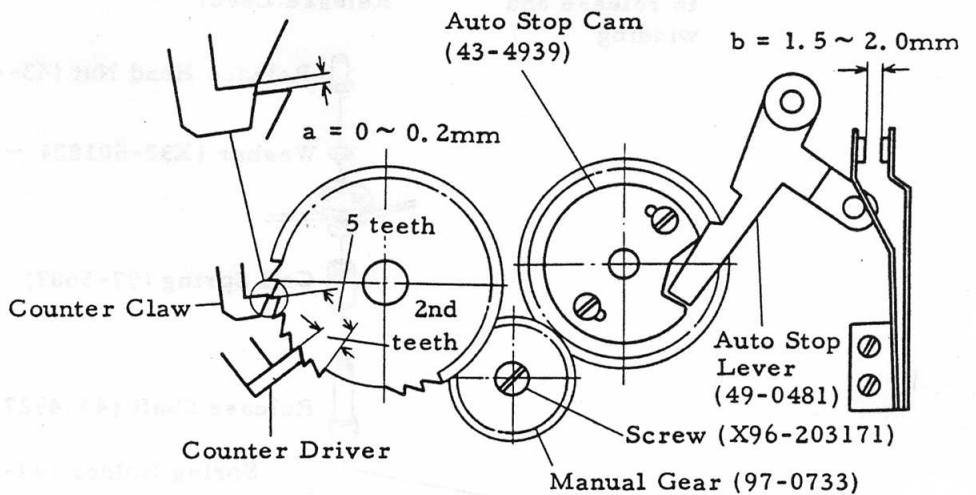


Fig. 19

3. Adjustment of automatic stop position

When Counter Claw engages with 5th tooth (or 6th tooth) from the flat part of Ratchet, the Auto Stop Lever drops in the groove of the Auto Stop Cam. (Fig. 19)

Make adjustment by changing the position of the Auto Stop Cam. Limit: $a = 0$ to 0.2 mm

4. Adjustment of Auto Stop Contact

1) Separation between the contacts when Auto Stop Lever engages in Auto Stop Cam, "a": 1.5 to 2.0 mm
See Fig. 19.

Make adjustment by bending the stationary contact.

2) When Counter Claw is advanced by 2 or 3 teeth from the engaged position of Auto Stop Lever, the contact makes.

Make adjustment by bending the stationary contact.

5. Adjustment of Counter Tape setting position

1) Engage Auto Stop Lever in the groove of Auto Stop Cam.

2) Set "0" on the Counter Tape to the index mark.
Adjustment is made by changing the position of the tape.

Note: When Film Counter is set to F.C. the Counter Tape shouldn't move.

2.12 Parts related to release and winding

1. Installation and adjustment of parts related to Release Lever

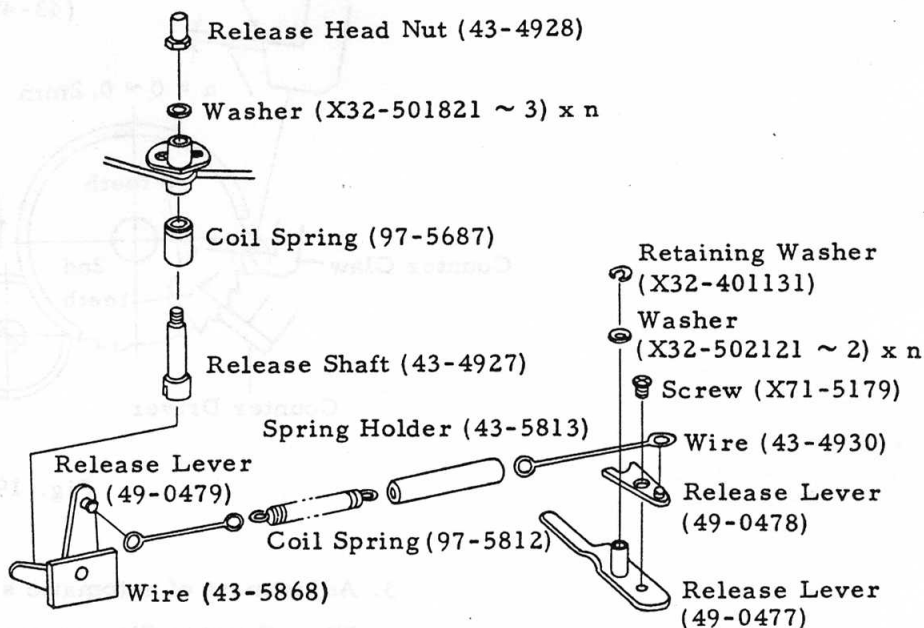


Fig. 20

- 1) Install the parts as shown in Fig. 20.
- 2) The vertical play of Release Lever (49-0477) should be between 0.05 and 0.15 mm. Make adjustment by installing washers (X32-502121 ~ 2) x n.
- 3) No slack should be present in the part between Release Lever (49-0477) and Release Lever (49-0479). Make adjustment by changing the position of Release Lever (49-0378).

2. Adjustment of release total stroke

- 1) At the maximum position above the camera mounting face (Top Cover surface), the distance "A" should be $2.1 \begin{smallmatrix} +0.2 \\ -0 \end{smallmatrix}$ mm. See Fig. 21.

Make adjustment by installing Washers (X32-501821 ~ 3) x n.

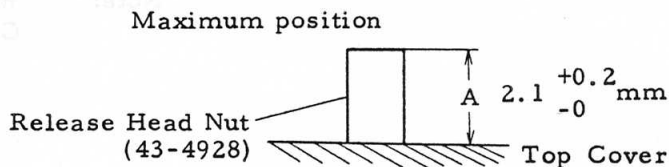


Fig. 21

3. Adjustment of release

1) Release Stroke Check

The unit must cycle completely even when its stroke is limited to 0.8 mm. Install the winding stopper tool (Service Tools Instructions OE-014), put a rod in the hole to restrict the movement of the release lever and push the release button. The unit should make a complete cycle. (Power Supply - 9V)
Adjustment is made by selecting Coil Spring (97-5812).

2) Release Pressure Check

The release pressure must be over 685 g. With the winding stopper tool installed, check with a tension gauge and an attachment to give the release lever a flat surface to work against. The gauge should be held vertical and at a pressure of 685 g before pushing the release button. (See Service Tools Instruction OE-014)

4. Adjustment of height of Film Transport Coupler

It must be over 2.0 mm above the camera mounting face.
(Top Cover surface). Make adjustment by installing Washer (X32-504111 ~ 3) x n. Refer to Para.

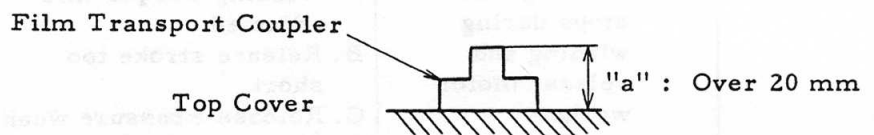


Fig. 22

5. Adjustment of winding torque

1) Dynamic torque of Film Transport Coupler must be at least 2.9 kg or more at 9V.

To adjust the winding torque, select Coil Spring (97-5683). (Para. 2.1)

6. Power requirements for idling

1) It must be 185 mA or less at 15V.

3. Troubleshooting Chart (Refer to Repair Manual for Schematic Diagram)

Trouble	Possible Cause	Remedy
3.1 Winding		Remedy will be not be listed if it is obvious (Replace, Clean, etc.)
1. No winding	A. Battery discharged B. Switch Sw 6 bad C. UJT (Put) faulty PUT=Programmable Unijunction Transistor D. SCR defective E. Winding Motor defective	B. Clean and adjust (Para. 2.9.1) E. Replace motor (Para. 2.3)
2. Winding Speed is not consistant	A. SCR faulty B. Winding Motor commutator	B. Replace motor (Para. 2.3)
3. Winding motor stops during winding cycle	A. Winding Torque weak B. Battery is discharged	A. Adjust (Para. 2.12.5)
4. Winding Motor stops during winding and release motor works	A. Winding Torque mis-adjusted B. Release stroke too short C. Release Pressure weak D. Camera release pressure too high	A. Adjust (Para. 2.12.5) B. Adjust (Para. 2.12.2) C. Adjust (Para. 2.12.3) D. Adjust: (F-1 Repair Guide, Para. 2.8.2)
5. Release motor does not stop even after the shutter is released	A. Switch S 1 does not close B. Switch S 2 does not close C. Poor Soldering of C-1 D. Tr-1 or Tr-4 is faulty	A. Adjust (Para. 2.9) Note: Motor drive switch timing is explained in the General Section of the Service Manual also. B. Adjust (Para. 2.9)
6. Timer setting has no effect on cycle rate	A. Put, UJT faulty B. SCR faulty C. Capacitor C 5 faulty	A. Replace Note: Programmable Unijunction Transistors (PUT) are easily damaged be excess current
3.2 Release		
1. Shutter does not release after winding is complete	A. Release stroke short B. Camera Release Pressure is too high C. Release Pressure is weak D. Brake Disk faulty	A. Adjust (Para. 2.12.2) B. Adjust (F-1 RG Para. 2.8.2) C. Adjust (Para. 2.12.3) D. Replace (Para. 2.7.2)

Trouble	Possible Cause	Remedy
2. Shutter release is very slow, but the release motor can be heard turning	A. Motor Shaft is loose and release motor is slipping inside it	A. Adjust (Para. 2.7.2)
3. Release Head cycles continuously	A. Magnet Plunger (43-4912) does not operate smoothly so the clamp lever doesn't hold the slide lever	A. Replace Plunger (Para. 2.8.1)
4. Release Motor does not run	A. S-1 doesn't open B. Motor is bad	A. Adjust (Para. 2.9.1) B. Replace (Para. 2.7.3)
5. Film Counter doesn't show count correctly	A. Release Pressure is weak B. Camera release pressure is too high C. Winding torque is weak D. Release Stroke too short E. Film Counter feed is misadjusted	A. Adjust (Para. 2.12.3) B. Adjust (F-1 RG Para. 2.8.1) C. Adjust (Para. 2.9.2) D. Adjust (Para. 2.12.2) E. Adjust (Para. 2.11.1)