

CHAPTER 67

FLIGHT CONTROLS

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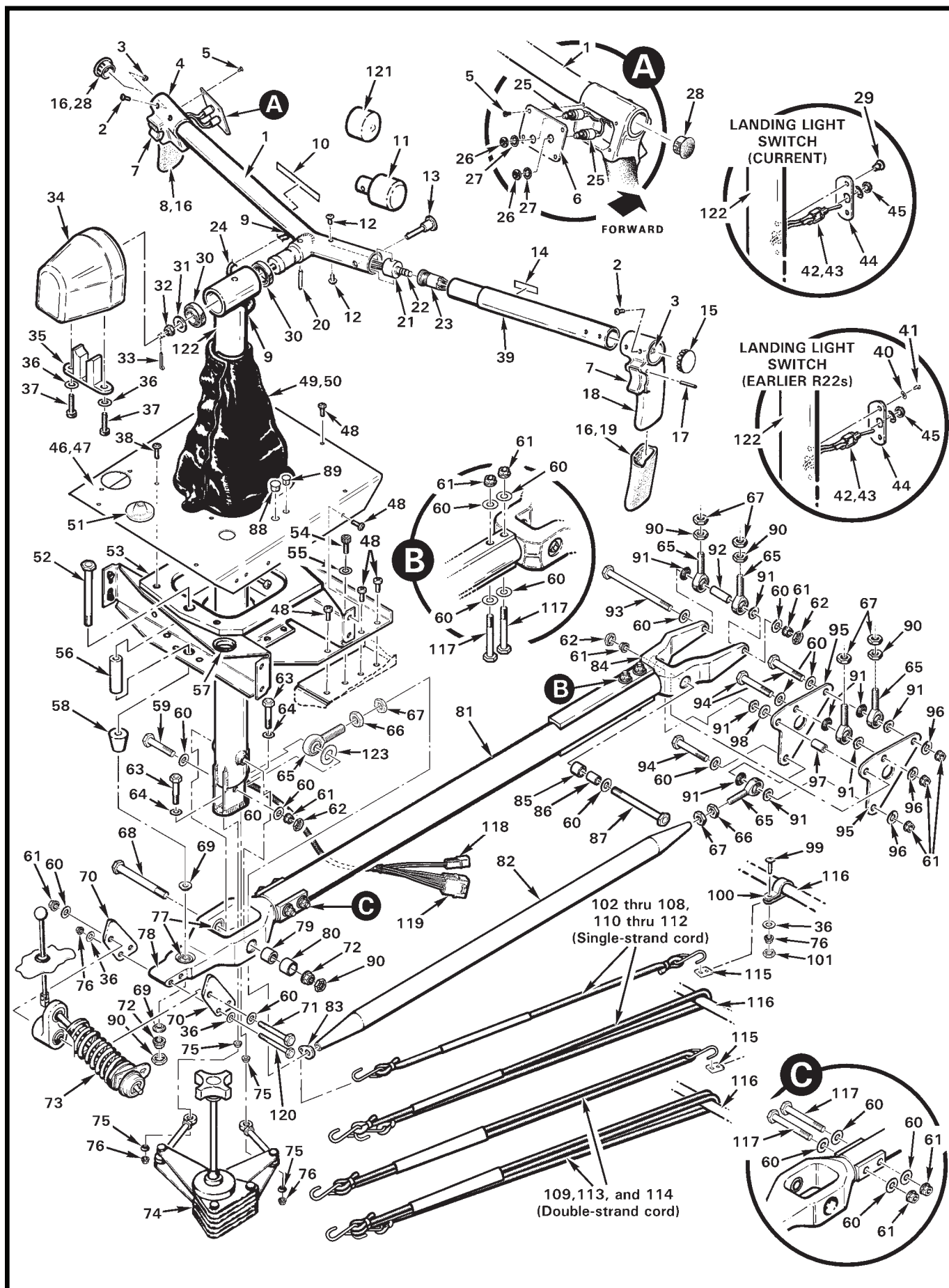


FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
		CYCLIC CONTROL SYSTEM*		
67-1-1	C058-5**	Grip Assembly – Cyclic (Incl items 2 thru 9, 12, 13, 15 thru 25, 28, and 39)	X	1
2	MS24694-S4	Screw	X	4
3	MS21042L08	Nut	X	4
4	D379-1	Grip (pilot)	X	1
5	MS24693-S2	Screw	X	4
6	C214-5	Plate – "Freq Xfer, User Freq"	X	1
7	U2-279	Trigger Switch	X	2
8	D379-2	Cover	X	1
9	MS35489-4	Grommet	X	2
10	A654-83	Decal – "Low-G Pushovers Prohibited" (earlier R22s)	X	1
11	C683-6	Damper (for use when co-pilot grip is removed; optional)	X	1
12	MS35206-241	Screw	X	2
13	B232-1	Pin	X	1
	B815-1	Pin (oversize; 0.1953/0.1973-inch dia hole)	X	1
	B815-2	Pin (oversize; 0.2170/0.2190-inch dia hole)	X	1
14	A654-43	Decal – "Solo From Right Seat Only" (earlier R22s)	X	1
15	B209-3	Plug (steel, 0.7813-inch dia)	X	1
16	B270-15	Adhesive	X	A/R
17	NAS1407N9L14	Pin	X	2
18	D690-1	Grip (co-pilot)	X	1
19	D690-2	Cover	X	1
20	B350-1	Spring Pin	X	1
21	A776-1	Mount	X	1
22	A781-1	Plug	X	1
	B158-2	Heat Shrink	X	A/R
23	TJT-120	Jack	X	1
	B158-2	Heat Shrink	X	A/R
	B158-3	Heat Shrink	X	A/R
24	B266-4	Sleeving	X	A/R
25	B227-2	Switch – Intercom ("Freq, Ch Sel", includes items 26 & 27)	X	2
	B158-6	Heat Shrink	X	A/R
26	B227-4	Dress Nut	X	1
27	B227-3	Lockwasher	X	1
28	2703	Hole Plug	X	1

NOTES * Ship S/N 2967 and subsequent.

** Ship S/N 2967 thru 4635. See Figure 67-7 for ship S/N 4636 and subsequent.

Continues

FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
CYCLIC CONTROL SYSTEM (Cont'd)				
67-1-29	SR-3035B	Rivet	X	2
30	A647-2	Bearing	X	2
31	A141-14	Washer	X	1
32	MS17825-4	Nut	X	1
33	MS24665-69	Cotter Pin	X	1
34	C683-9*	Damper (For R22s without previously installed damper, order items 35 thru 37.)	X	1
35	C683-5	Clamp	X	1
36	NAS1149F0332P	Washer	X	4
37	NAS1352-3-14	Screw	X	2
38	MS27039C0808	Screw	X	3
39	C058-9	Grip Assembly – Cyclic Removable (Ship S/N 2967 and subsequent. Includes items 2, 3, 7, 13, 15 thru 19, and 23.)	X	1
40	MS35333-36**	Washer	X	2
41	MS35206-212**	Screw (Use B270-10 adhesive on threads; superseded by item 29.)	X	2
42	C049-9	Switch Assembly – Landing Light (Includes item 43, wires, heat shrink, and connector as an assembled unit.)	X	1
43	TT13D2T04	Switch (Incl items 45 and 27)	X	1
44	B306-4	Mount	X	1
45	298D01A56	Dress Nut	X	1
46	A444-13	Cover (Ship S/N 2670 and subsequent.)	X	1
47	A444-11	Cover (Ship S/N 2670 and subsequent with HSI installed. Not shown.)	X	1
48	MS27039C0806	Screw	X	21
49	A677-4	Boot (With snaps; may replace A677-1 boot without snaps. Install using item 50.)	X	1
50	B270-14	Adhesive	X	A/R
51	A589-1	Guide (Ref, for item 73; see Figure 67-17)		
52	NAS6605-56	Bolt	X	1
53	A338-9	Box Assembly	O	1
54	NAS1352-08-8P	Screw	X	2
55	NAS1149FN816P	Washer	X	2
56	A130-6	Spacer (1.940-inch length)	X	1
57	NAS557-6A	Grommet	X	1
58	A339-1	Spacer	X	1

NOTES * Optional on ship S/N 2967 and prior.
 ** Earlier R22s.

Continues

FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
		CYCLIC CONTROL SYSTEM (Cont'd)		
67-1-59	NAS6604-8	Bolt	X	1
60	NAS1149F0432P	Washer	X	14
61	D210-4	Nut	X	11
62	B330-13	Palnut	X	3
63	NAS6603-10	Bolt	X	2
64	NAS620-10L	Washer	X	4
65	A101-4*	Rod End	X	6
66	B330-16	Palnut	X	2
67	AN316-5R	Nut	X	6
68	NAS1305-35	Bolt	X	1
69	A340-1	Spacer	X	2
70	A582-1	Plate	X	2
71	NAS1304-17	Bolt	X	1
72	D210-5	Nut	X	2
73	B056	Cyclic Spring Assembly (Ref, see Figure 67-17)		
74	A048	Cyclic Friction Assembly (Ref, see Figure 67-15)		
75	A341-1	Spacer	X	4
76	D210-3	Nut	X	6
77	A103-5	Bearing	O	2
78	A012-20	Pivot Assembly (includes [2] A103-5 spherical bearings)	X	1
79	C105-3	Journal (0.432 to 0.442-inch length)	X	1
80	08DU06	Bearing	O	2
81	A319-3	Torque Tube	X	1
82	A121-1*	Push-Pull Tube Assembly (Incl items 65 thru 67, and 83)	X	1
83	A697-6	Tab	X	1
84	A012-19	Yoke Assembly (includes [1] A103-4 spherical bearing)	X	1
85	06DU06	Bearing	X	1
86	A105-6	Journal	X	1
87	NAS1304-35	Bolt	X	1
88	2613	Hole Plug	X	1
89	2603	Hole Plug	X	1
90	B330-16	Palnut	X	5
91	A115-1	Spacer	X	8
92	A130-10	Spacer	X	1
93	NAS6604-44	Bolt	X	1

NOTES * Push-pull tube rod ends are installed with B270-21 protectant on threads.

Continues

FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
CYCLIC CONTROL SYSTEM (Cont'd)				
67-1-94	NAS6604-15	Bolt	X	3
95	A958-1 *	Bellcrank (Originally installed on R22 helicopter S/N 0256, 0301, 0350, 0351, and 0357 and subsequent.)	X	2
95	A175-1	Bellcrank (Refer to MM § 8.111 to replace with A958-1 bellcranks, as required.)	X	2
96	B332-441	Lockwasher	X	3
97	A130-8	Spacer (0.63-inch length)	X	1
98	NAS1149F0463P	Washer	X	1
99	MS27039C1-08	Screw	X	1
100	AN742D12	Clamp	X	1
101	B330-7	Palnut	X	1
102	A918-1 **	Elastic Cord (0.25-inch dia, load 6 lb)	X	1
103	A918-2 **	Elastic Cord (0.25-inch dia, load 8 lb)	X	1
104	A918-3 **	Elastic Cord (0.25-inch dia, load 10 lb)	X	1
105	A918-4 **	Elastic Cord (0.25-inch dia, load 12 lb)	X	1
106	A918-5 **	Elastic Cord (0.25-inch dia, load 14 lb)	X	1
107	A918-6 **	Elastic Cord (0.25-inch dia, load 16 lb)	X	1
108	A918-7 **	Elastic Cord (0.25-inch dia, load 18 lb)	X	1
109	A918-8 **	Elastic Cord (0.25-inch dia, double strand; load 20 lb)	X	1
110	A918-9 ***	Elastic Cord (0.25-inch dia, load 12 lb)	X	1
111	A918-10 ***	Elastic Cord (0.25-inch dia, load 14 lb)	X	1
112	A918-11 ***	Elastic Cord (0.25-inch dia, load 16 lb)	X	1
113	A918-12 ***	Elastic Cord (0.25-inch dia, double strand; load 18 lb)	X	1
114	A918-13 ***	Elastic Cord (0.25-inch dia, double strand; load 20 lb)	X	1
115	A697-2	Plate	X	1
116	A315-1	Support (Ref)		
117	NAS6604-21	Bolt	X	4
118	B263-12	Housing (small)	X	1
	B263-1	Pin	X	2
119	B263-20	Housing (large)	X	1
	B263-1	Pin	X	9
120	NAS6603-18	Bolt	X	2
121	A959-5	End Cap (for use when co-pilot grip is removed)	X	1
122	A320-1	Cyclic Stick Assembly	X	1
123	A214-11	Washer (install either side of rod end [item 65])	X	1
NOTES * Required equipment if tailcone has a B379-1 or -3 bracket installed. ** Load measured when stretched to operating length of 20.1 inches. *** Load measured when stretched to operating length of 43.4 inches.				

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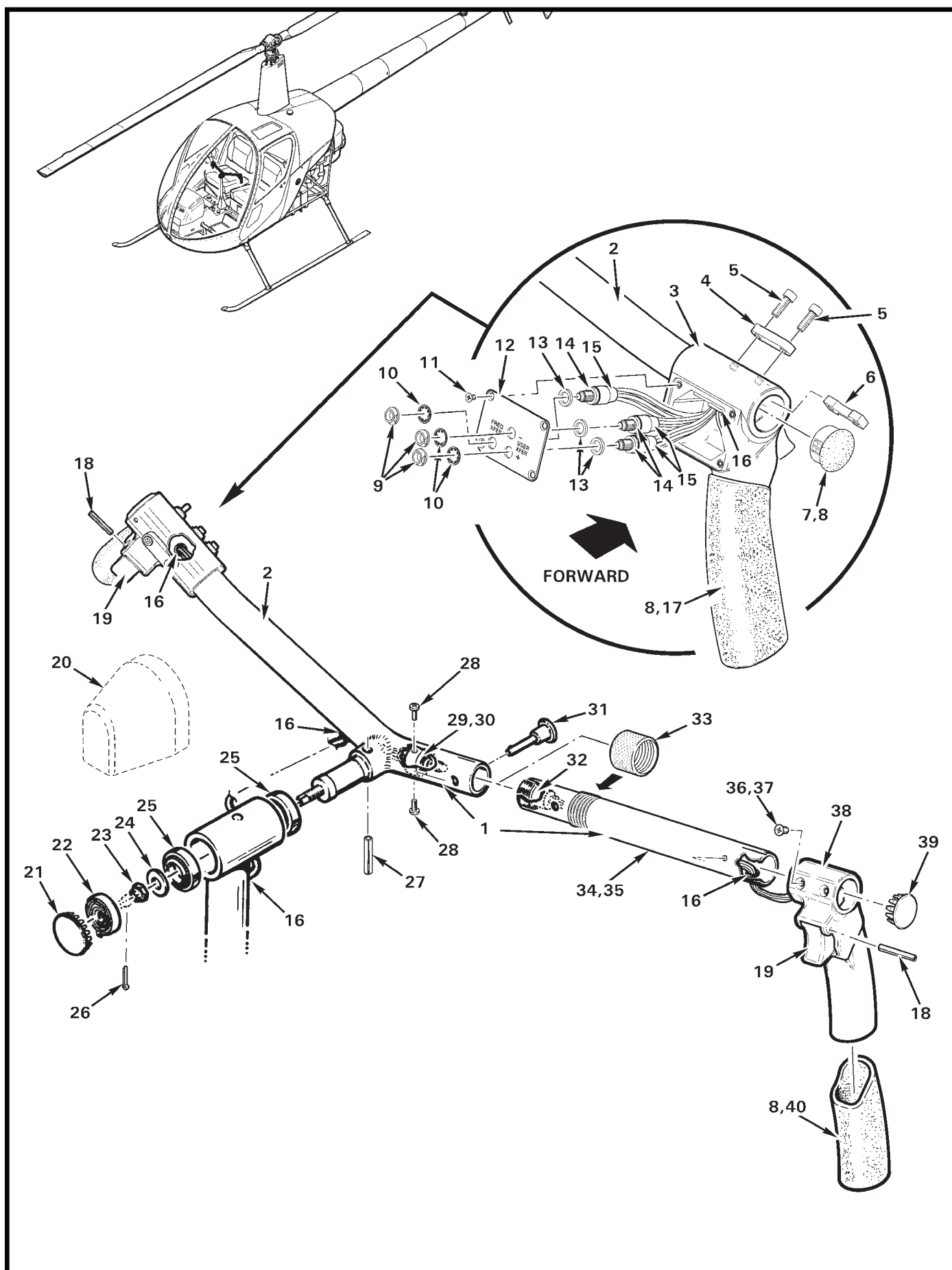


FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
		CYCLIC GRIP ASSEMBLY		
67-7-1	C058-5*	Grip Assembly – Cyclic (Incl items 2 thru 8, 11, 12, 14 thru 19, 27 thru 34, and 36 thru 40)	X	1
2	A756-18	Grip Weldment	X	1
3	D379-1	Grip	X	1
4	D443-5	Bar	X	1
5	NAS1352-08-8	Screw	X	2
6	D443-3	Block Assembly	X	1
7	2703	Hole Plug (install using item 8)	X	1
8	B270-15	Adhesive	X	A/R
9	B227-4	Dress Nut	X	1
10	B227-3	Lockwasher	X	1
11	MS24693-S1	Screw	X	4
12	C214-23	Plate	X	1
13	94773A770	Washer	X	1
14	B227-2	Switch Assembly (Incl items 9, 10, and 13)	X	3
15	B158-6	Heat Shrink	X	A/R
16	MS35489-4	Grommet	X	4
17	D379-2	Cover (install using item 8)	X	1
18	NAS1407N9L14	Pin	X	2
19	U2-279	Trigger Switch	X	2
20	C683-9	Damper (Ref, see Figure 67-1)		
21	B209-4	Plug	X	1
22	D684-1	Spring	X	1
23	MS17825-5	Nut	X	1
24	A141-40	Washer	X	1
25	A647-2	Bearing	X	2
26	MS24665-69	Cotter Pin	X	1
27	B350-1	Spring Pin	X	1
28	MS35206-241	Screw	X	2
29	A776-1	Mount	X	1
30	A781-1	Plug	X	1
31	B232-1	Pin	X	1
32	TJT-120	Jack	X	1
33	A321-22	Collar	X	1
34	A321-21	Tube	X	1

NOTES * Ship S/N 4636 and subsequent.

Continues

FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
CYCLIC GRIP ASSEMBLY (Cont'd)				
67-7-35	C058-9	Grip Assembly – Co-Pilot (Incl items 8, 18, 19, 31 thru 34, and 36 thru 40; for spares)	X	1
36	MS24694-S3	Screw	X	2
37	MS21042L08	Nut	X	2
38	D690-1	Grip	X	1
39	B209-3	Plug	X	1
40	D690-2	Cover (install using item 8)	X	1
NOTES				

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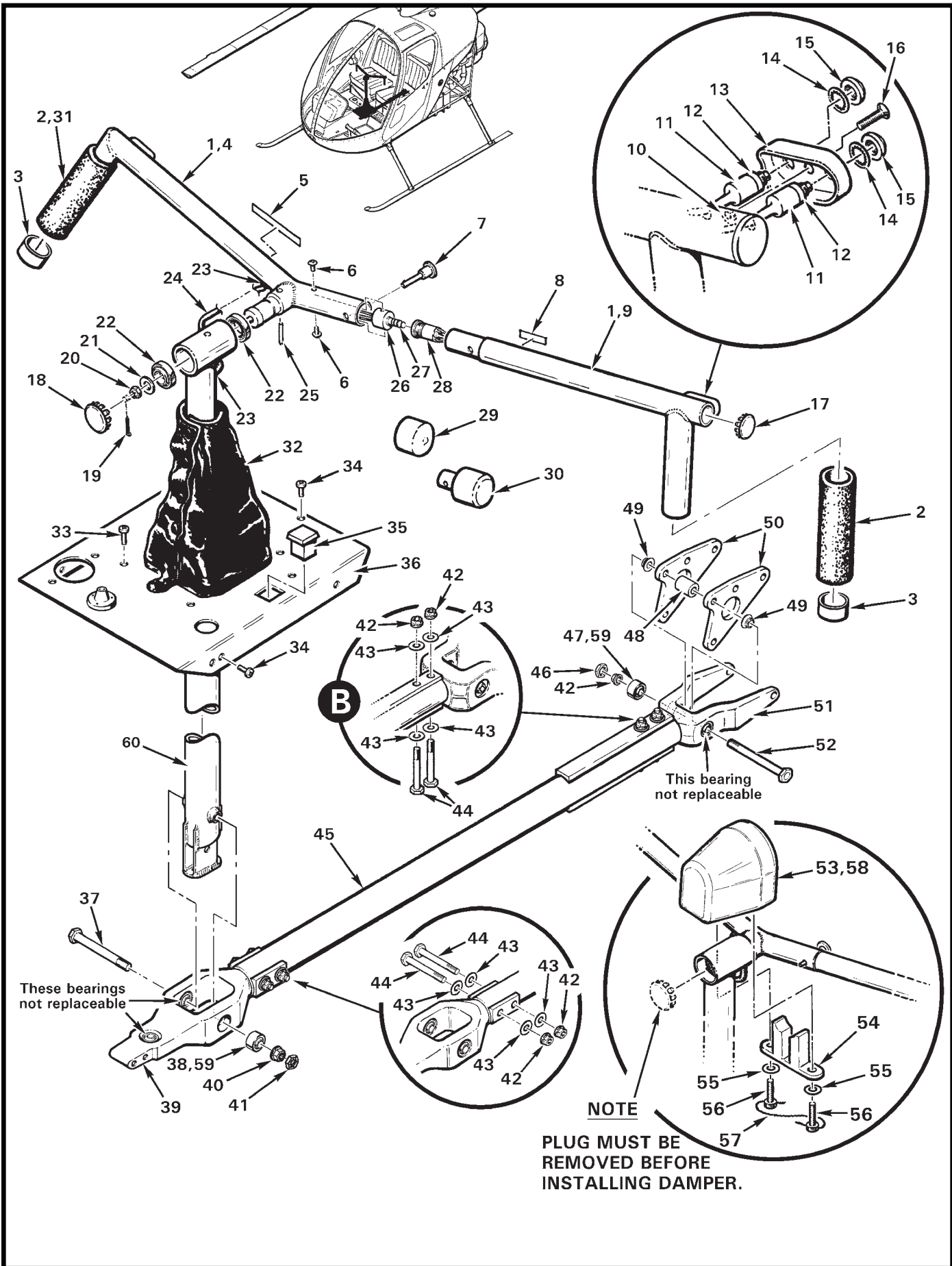


FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
		CYCLIC CONTROL SYSTEM*		
67-11-1	A012-9	Grip Assembly – Cyclic (Incl items 2 thru 19, 11 thru 13, 16, 17, 23 thru 28, and 31)	X	1
2	A601-2	Grip (install using item 31)	X	2
3	A959-6	Cap	X	2
4	A756-1	Cyclic Grip (RH [pilot], Ref; includes item 10)	O	1
5	A654-83	Decal – “Low-G Pushovers Prohibited”	X	1
6	MS35206-241	Screw	X	2
7	B232-1	Handle Pin	X	1
	B815-1	Pin – Oversize (0.1953/0.1973-inch dia hole)	X	1
	B815-2	Pin – Oversize (0.2170/0.2190-inch dia hole)	X	1
8	A654-43	Decal – “Solo From Right Seat Only”	X	1
9	A756-2	Cyclic Grip (LH [co-pilot], plain; includes item 10)	X	1
10	NAS1329H08K75L	Rivnut	X	1
11	B158-6	Heat Shrink	X	A/R
12	B227-2	Switch (COM, includes items 14 and 15)	X	4
13	A216-1	Housing	X	2
14	B227-3	Lock Washer	X	1
15	B227-4	Dress Nut	X	1
16	MS24693-S51	Screw	X	2
17	SS51334	Hole Plug	X	1
18	SS51149	Plug	X	1
19	MS24665-69	Cotter Pin	X	1
20	MS17825-4	Nut	X	1
21	A141-14	Washer	X	1
22	A647-2	Bearing	X	2
23	MS35489-4	Grommet	X	2
24	B266-4	Sleeving (expandable)	X	A/R
25	B350-1	Spring Pin	X	1
26	A776-1	Mount	X	1
27	A781-1	Connector Plug	X	1
28	TJT-120	Connector Jack	X	2
29	A959-5	End Cap (for use when co-pilot grip [item 9] is removed)	X	1
30	C683-6	Damper (for use when co-pilot grip [item 9] is removed; optional)	X	1
31	B270-15	Adhesive	X	A/R
32	A677-4	Boot (with snaps; may replace A677-1 boot without snaps)	X	1

NOTES * Ship S/N 2966 and prior. See also Figure 67-1.

Continues

FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
CYCLIC CONTROL SYSTEM (Cont'd)				
67-11-33	MS27039C0808	Screw (Ref)	X	4
34	MS27039C0806	Screw (Ref)		
35	FP-161	Plug	X	1
36	A444-1	Cover (ship S/N 0001 thru 2570, includes item 35)	X	1
	A444-7	Cover (ship S/N 2571 thru 2599, includes item 35)	X	1
	A444-9	Cover (ship S/N 2600 thru 2966, includes item 35)	X	1
37	NAS1305-35	Bolt (do not substitute)	X	1
38	A103-5	Bearing (install using item 59)	X	3
39	A177-4	Pivot (Ref)		
40	D210-5	Nut	X	1
41	B330-16	Palnut	X	1
42	D210-4	Nut	X	5
43	NAS1149F0432P	Washer	X	8
44	NAS6604-21	Bolt	X	4
45	A319-3	Torque Tube Assembly	X	1
46	B330-13	Palnut	X	1
47	A103-4	Bearing (install using item 59)	X	2
48	A130-8	Spacer	X	1
49	A137-1	Spacer	X	2
50	A175-1	Bellcrank (low-gross weight ships)	X	1
	A958-1	Bellcrank (high-gross weight ships)	X	1
51	A176-4	Yoke (Ref)		
52	NAS1304-35	Bolt (do not substitute)	X	1
53	C683-8	Damper (Ref, no longer available; see Figure 67-1)		
54	C683-5	Clamp	X	1
55	NAS1149F0332P	Washer	X	2
56	NAS1352-3H14	Screw	X	2
57	MS20995C32	0.032-inch dia Safety Wire	X	A/R
58	B414-1	Damper Installation (Ref, no longer available; see Figure 67-1)		
59	B270-10	Adhesive	X	A/R
60	A320-1	Cyclic Stick Assembly	X	1
NOTES				

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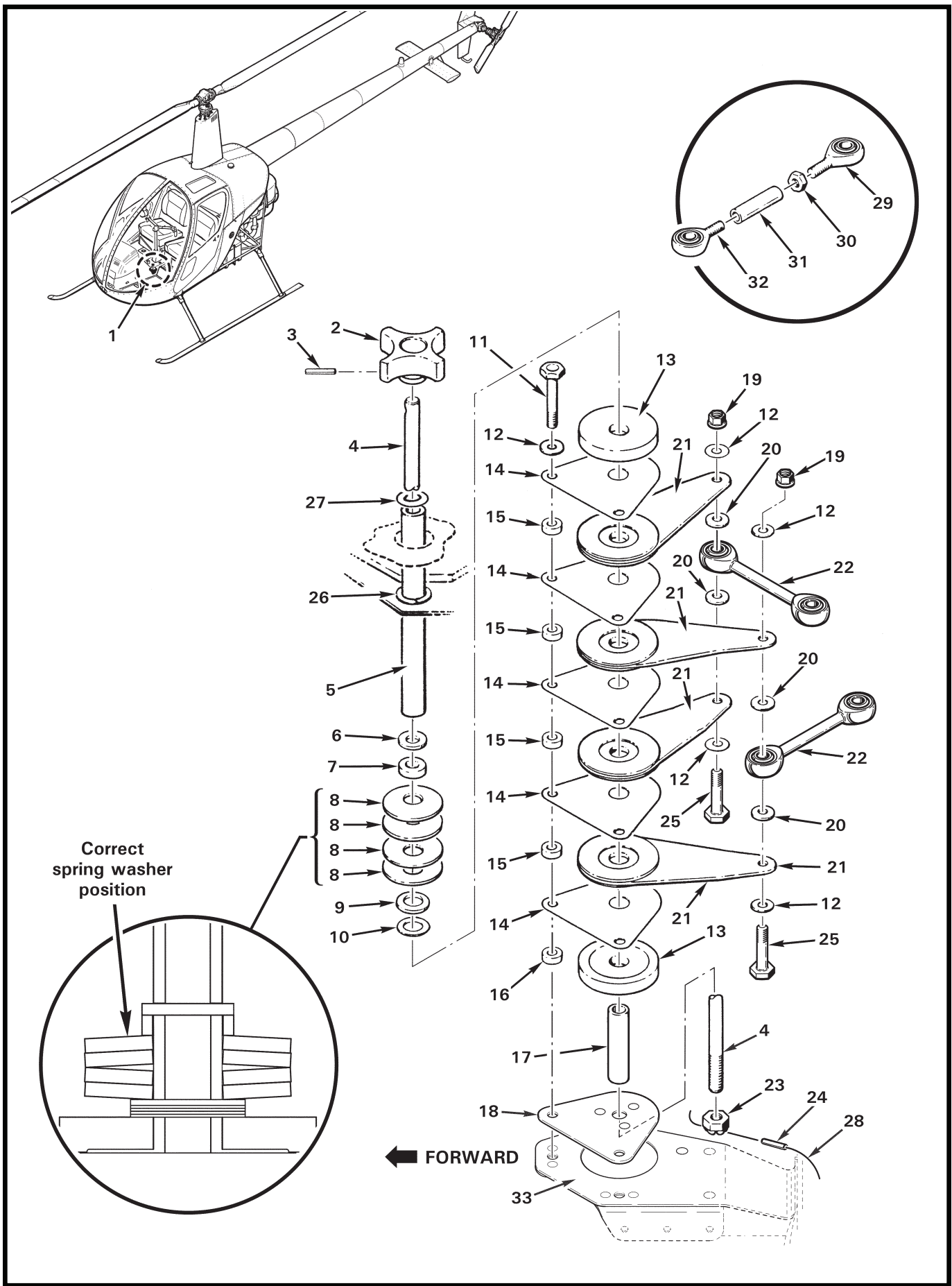


FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
		CYCLIC FRICTION ASSEMBLY		
67-15-1	A048-1	Cyclic Friction Assembly (Incl items 4 thru 25)	X	1
2	A499-2*	Knob	X	1
3	MS16562-35*	Spring Pin	X	1
4	A494-1	Shaft	X	1
5	A130-19*	Spacer	X	1
6	NAS1149F0463P	Washer	X	1
7	A130-18*	Spacer	X	1
8	A478-1	Spring Washer (stacked as shown)	X	4
9	NAS1149F0632P	Washer	X	1
10	NAS1149D0616J	Washer	X	A/R
11	NAS6603-15	Bolt	X	2
12	NAS1149F0332P	Washer	X	6
13	A497-1	Washer (recessed surface towards item 14)	X	2
14	A496-3	Plate	X	5
15	A130-20	Spacer	X	8
16	A130-21	Spacer	X	2
17	A105-10	Journal	X	1
18	A496-2	Plate (Ref)		
19	MS21042L3	Nut	X	2
20	NAS1149F0363P	Washer	X	4
21	A048-2	Arm Assembly	X	4
22	B564-1	Link	X	2
23	MS17825-4	Nut	X	1
24	MS16562-14	Spring Pin	X	1
25	NAS6603-9	Bolt	X	2
26	NAS557-6A	Grommet	X	1
27	NAS1149F0432P	Washer (or NAS1149F0463P for proper friction)	X	A/R
28	MS20995C32	0.032-inch dia Safety Wire	X	A/R
29	A127-3	Rod End (male)	X	2
30	AN315-3R	Nut	X	2
31	A430-2	Tube	X	2
32	A498-1	Rod End	X	2
33	A500-1	Support Assembly	O	1
NOTES * Ships before S/N 0428 require all noted items when any one is ordered, unless previously accomplished.				

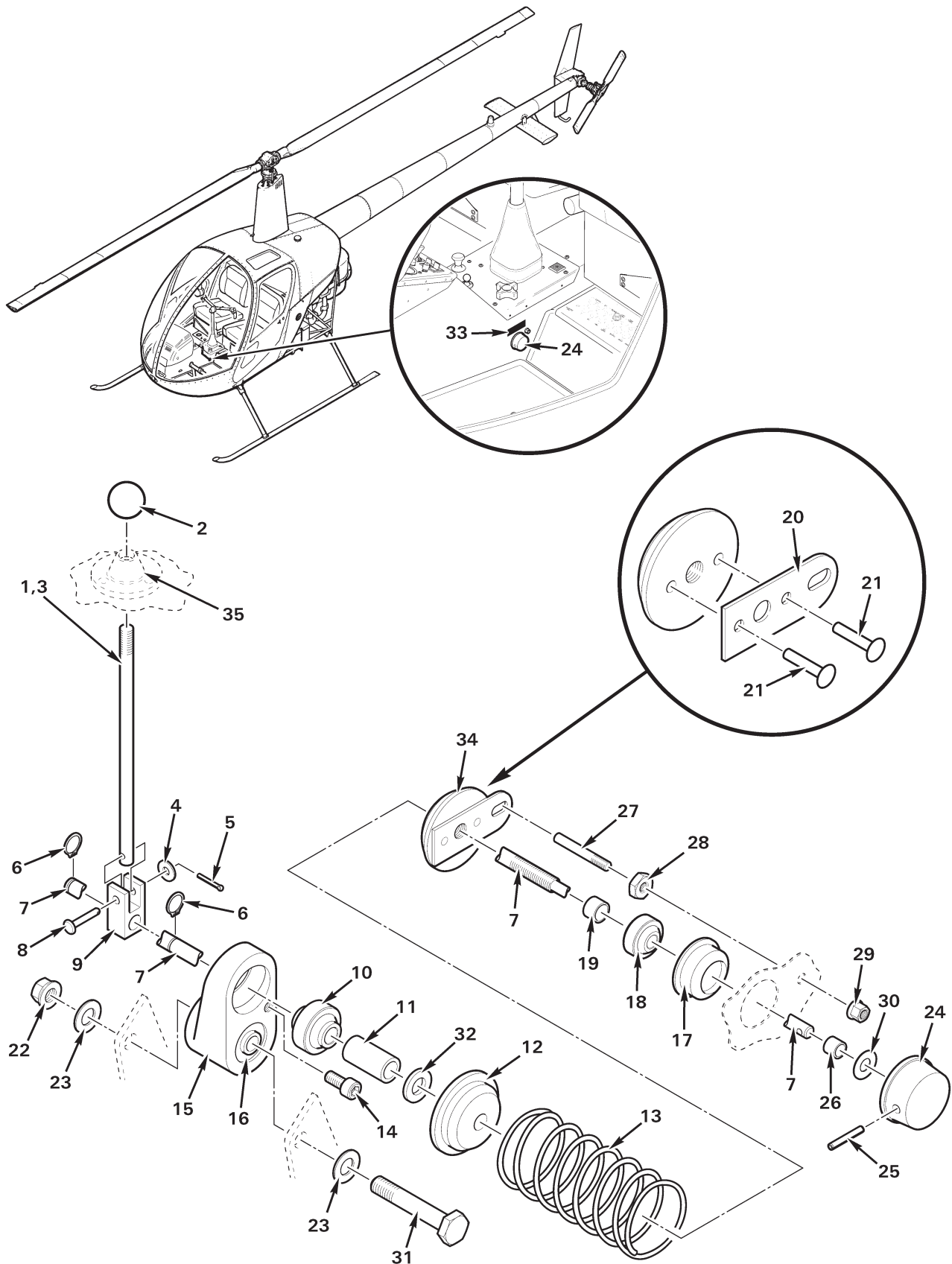


FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
		ADJUSTABLE CYCLIC SPRING ASSEMBLY		
67-17-1	B056-1 *	Cyclic Spring Assembly (Incl items 3 thru 21, and 34)	X	1
	B056-2 *	Cyclic Spring Assembly (Incl items 3 thru 21, and 34)	X	1
2	4901-1032	Knob	X	1
3	A587-2	Stem	X	1
4	NAS1149FN432P	Washer	X	1
5	MS24665-151	Cotter Pin (or MS24665-132) ;	X	1
6	MS16624-1025	Retaining Ring (or MS16624-2025)	X	2
7	A585-2	Shaft	X	1
8	MS20392-1C13	Pin	X	1
9	A586-2	Fork	X	1
10	B303-1	Bearing	X	1
11	A588-1	Spacer (fill cavity with item 36)	X	1
12	A583-1	Cap (fill cavity with item 36)	X	1
13	A618-1	Spring – Cyclic (primer, 10.7 in.-lb for B056-1 assembly) . . .	X	1
	A618-2	Spring – Cyclic (black, 14.5 in.-lb for B056-2 assembly) . . .	X	1
14	A594-2	Screw (or NAS1352-08LE6P)	X	1
15	A581-1	Arm	X	1
16	C647-17	Bearing (Ref)		
17	A584-1	Bearing Support	X	1
18	A104-3	Bearing	X	1
19	A130-46	Spacer	X	1
20	A594-1	Tab	X	1
21	MS20470AD3-7	Rivet	X	2
22	D210-4	Nut	X	1
23	NAS1149F0432P	Washer	X	2
24	A483-1	Knob	X	1
25	MS16562-27	Spring Pin	X	1
26	A130-45	Spacer	X	1
27	B160-1	Pin	X	1
28	B301-8	Nut (or AN340-8)	X	1
29	D210-08	Nut	X	1
30	NAS1149D0316J	Washer (or AN960PD10L)	X	A/R
31	NAS1304-17	Bolt	X	1
32	NAS1149F0463P	Washer (Only on primered spring; refer to R22 MM for proper shimming at this location, [2] maximum.)	X	A/R
NOTES * B056-1, -2 with KI-41 kit replaces A056-1, -2 for ship S/N 0002 thru 0549.				
Continues				

FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
		ADJUSTABLE CYCLIC SPRING ASSEMBLY (Cont'd)		
67-17-33	A654-63	Decal (cyclic trim adjust)	X	1
34	A583-2	Cap (Requires items 20 and 21; fill cavity with item 36.) . . .	X	1
35	A589-1	Guide (Ref)		
36	A257-1	Grease	X	A/R
NOTES				

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FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
COLLECTIVE CONTROL SYSTEM				
67-21-1	A758-6	Stick Assembly (RH [pilot] assembly. Includes items 36, 46, 50, 52, 55, 57 thru 59, 60 [A038-6], 81, 83, 87, 92, 93, 95, and 103.)	X	1
2	A758-5	Stick Assembly (LH [co-pilot] removable assembly. Includes items 55, 56, 82, 94, and 95.)	X	1
	A758-7	Stick Sub-Assembly (RH [pilot] assembly, provision for governor. Includes items 36, 46, 50, 52, 55, 57 thru 59, 60, 80, 81, 87, 92, 93, 95, and 103.)	X	1
3	A101-4	Rod End	X	10
4	B330-16	Palnut	X	10
5	AN316-5R	Nut	X	10
6	A143-4	Sleeve (push-pull tube)	X	1
7	MS27039C0806	Screw	X	13
8	A437-2	Tab	X	1
9	NAS1149FN816P	Washer	X	9
10	MS21042L08	Nut	X	9
11	A343-1	Strut	X	2
12	B330-13	Palnut	X	10
13	D210-4	Nut	X	10
14	NAS1149F0432P	Washer	X	A/R
15	NAS6604-8	Bolt	X	2
16	NAS1149F0532P	Washer	X	2
17	NAS6604-21	Bolt	X	1
18	A214-3	Washer	X	3
19	A347-5	Strut Assembly	X	1
20	A115-1	Spacer	X	4
21	NAS6604-17	Bolt	X	3
22	A121-5*	Push-Pull Tube Assembly (Incl items 3 thru 5, [2] of each) . . .	X	1
23	A121-7*	Push-Pull Tube Assembly (Incl items 3 thru 6, [1] of each) . . .	X	2
24	A121-3*	Push-Pull Tube Assembly (Incl items 3 thru 5, [1] of each) . . .	X	1
25	NAS1149F0463P	Washer	X	2
26	A337-1	Jackshaft Assembly	X	1
27	NAS6604-7	Bolt	X	2
28	NAS6604-23	Bolt	X	1
29	MS27039C0822	Screw	X	2
30	MS27039C0812	Screw	X	2

NOTES * Push-pull tube rod ends are installed with B270-21 protectant on threads.

Continues

FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
		COLLECTIVE CONTROL SYSTEM (Cont'd)		
67-21-31	A329-1	Bearing Block Assembly	X	1
32	NAS6604-18	Bolt	X	1
33	A431-1	Knob	X	1
34	A332-2	Lever	X	1
35	NAS1352-08-12P	Screw	X	1
36	A139-1	Bearing	X	3
37	A105-6	Journal (0.625-inch length)	X	1
38	NAS6604-11	Bolt	X	1
39	A141-3	Washer	X	2
40	A105-3	Journal (0.522 to 0.525-inch length)	X	2
41	NAS6604-30	Bolt	X	1
42	A141-20	Washer	X	2
43	B0500-022-S	Belleville Washer	X	2
44	NAS1352-4-24P	Screw	X	1
45	NAS6603-5	Bolt	X	1
46	NAS1149F0332P	Washer	X	6
47	NAS1149F0432P	Washer (or NAS1149F0463P as required)	X	A/R
48	A333-1	Stop	X	1
49	A130-4	Spacer (0.250-inch length)	X	1
50	D210-3	Nut	X	3
51	B330-7	Palnut	X	3
52	NAS6603-6	Bolt	X	2
53	A678-1	Boot (includes item 85, install using item 86)	X	2
54	A680-2	Ring – Collective Boot (RH stick)	X	1
55	A601-1	Grip (install using item 87)	X	2
56	A959-1	End Cap (collective, LH)	X	1
57	A959-2	End Cap	X	1
58	B328-1	Connecting Rod Assembly (Ref)		
59	B263-32	Housing	X	1
	B263-1	Pin	X	2
60	A038-5*	Spring Assembly – Collective (weak; includes items 51, 61 thru 68, and 71)	X	1
	A038-6*	Spring Assembly – Collective (standard; includes items 51, 61 thru 68, and 73)	X	1
	A038-7	Spring Assembly – Collective (strong; includes items 51, 61 thru 68, and 74)	X	1
NOTES * A038-5 spring assembly replaces A038-2 assembly, A038-6 spring assembly replaces A038-1, -3, and -4 assemblies. A429-1, -2, and -4 collective springs are available for replacement on earlier R22s with A038-1, -2, -3, and -4 spring assemblies.				

Continues

FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
		COLLECTIVE CONTROL SYSTEM (Cont'd)		
67-21-61	B292-3	Rod End (left-hand thread)	X	1
62	MS21042L06	Nut	X	3
63	NAS1149FN632P	Washer	X	3
64	A426-5	Cap – Upper (left-hand thread)	X	1
65	A428-1	Rod	X	3
66	A426-6	Cap – Lower	X	1
67	AN315-3R	Nut	X	3
68	A127-3	Rod End	X	1
69	A429-1 *	Spring – Collective (90 in.-lb, silver; 3.40 inches free length) . .	X	1
70	A429-2 *	Spring – Collective (35 in.-lb, chromate; 3.83 inches free length)	X	1
71	A429-3	Spring – Collective (weak; 50 in.-lb, gray; 3.70 inches free length)	X	1
72	A429-4 *	Spring – Collective (70 in.-lb, black; 3.50 inches free length) . .	X	1
73	A429-5	Spring – Collective (standard; 50 in.-lb, gold; 4.05 inches free length)	X	1
74	A429-8	Spring – Collective (strong; 71 in.-lb, white; 3.75 inches free length)	X	1
75	A429-10	Spring – Collective (114 in.-lb, chromate; 3.55 inches free length, for spares)	X	1
76	B162-3	Clipnut	X	1
77	A231-4	Anchor	X	1
78	A473-1	Guard	X	1
79	A205-1	Fork Assembly	X	1
80	C342-1	Arm	X	1
81	B280-1	Switch Assembly	X	1
82	A795-7	Pin Assembly	X	1
83	B247-5	Governor Assembly (Ref, see Figure 96-21)		
84	A680-1	Ring (LH stick)	X	1
85	MS3367-5-0	Ty-Rap	X	2
86	B270-14	Adhesive	X	A/R
87	B270-15	Adhesive	X	A/R
88	AN525-832R16	Screw	X	1
89	A327-1	Overtravel Spring Assembly (Ref, see Figure 76-1)		
90	MS20995C32	0.032-inch dia Safety Wire	X	A/R
91	MS16562-18	Spring Pin	X	1

NOTES * A038-5 spring assembly replaces A038-2 assembly, A038-6 spring assembly replaces A038-1, -3, and -4 assemblies. A429-1, -2, and -4 collective springs are available for replacement on earlier R22s with A038-1, -2, -3, and -4 spring assemblies.

Continues

FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
COLLECTIVE CONTROL SYSTEM (Cont'd)				
67-21-92	A654-79	Decal — "Gov, On-Off"; "Throttle Open"	X	1
93	A654-7	Decal — "Friction Increase"	X	1
94	A654-6	Decal — "Throttle Open"	X	1
95	A654-21	Decal — "No Stowage Keep Area Clear"	X	2
96	B227-5	Locking Ring	X	1
97	B252-4	Mount (install using item 87)	X	1
98	B227-5	Lockwasher	X	1
99	B227-4	Dress Nut	X	1
100	A017	Swashplate Assembly (Ref, see Figure 67-29)		
101	A012-2	Cyclic Pivot Assembly (Ref, see Figure 67-1)		
	A012-14	Cyclic Pivot Assembly (Ref, see Figure 67-1)		
102	C341-3	Arm Weldment (Ref, see Figure 76-1)		
103	A006	Main Rotor Gearbox (Ref, see Figure 63-1)		
104	A467-1	Support Assembly – Collective Spring Assembly (Ref)		
105	V3-1	Switch (Ref, hourmeter; see Figure 96-25)		
106	V3-1	Switch (Ref, low RPM horn; see Figure 96-25)		
107	A486-4	Screw	X	1
108	A341-1	Spacer	X	1
109	A327-1	Overtravel Spring Assembly (Ref, see Figure 76-1)		
		* * *		
110	KI-180	Removable Collective Stick Retaining Pin Field Modification Kit (Incl items 82, 111, and 112)	X	1
111	A139-1	Bearing (not shown)	X	1
112	MS16562-25	Spring Pin (not shown)	X	1
NOTES				

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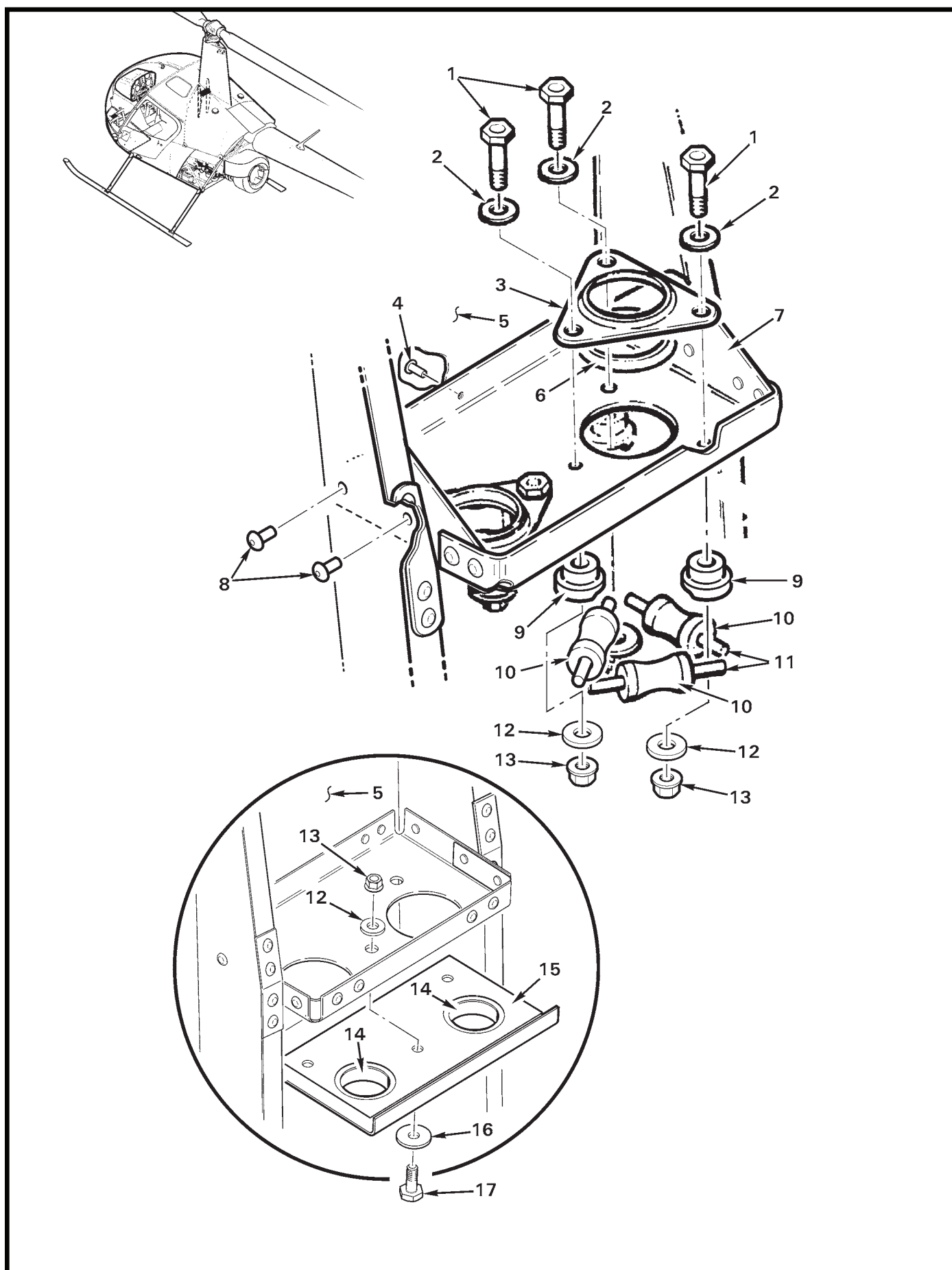


FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
		A121-7 PUSH-PULL TUBE GUIDE INSTALLATION		
67-27-1	NAS6603-7	Bolt	X	6
2	NAS1149F0332P	Washer	X	6
3	C439-8	Retainer	X	2
4	MS20470AD3	Rivet (forward, at A259 bulkhead assembly)	X	3
5	A259	Bulkhead Assembly (Ref)		
6	C439-9	Bushing	X	2
7	B439-1	Guide Assembly – Push-Pull Tube (Incl items 1 thru 3, 6, 9, and 10 thru 13)	X	1
8	MS20470AD4	Rivet	X	4
9	C439-3	Spacer	X	6
10	C439-4	Roller	X	6
11	C439-5	Pin	X	6
12	NAS1149F0363P	Washer	X	6
13	D210-3	Nut	X	6
14	A230-2	Bushing	X	2
15	A432-1*	Guide Assembly – Push-Pull Tube (Ref, superseded by item 7)		
16	A141-17	Washer	X	3
17	AN3-4A	Bolt	X	3
18	KI-130*	Guide Installation Kit (Incl items 4 [3], 7, and 8 [6])	X	1
NOTES * Ship S/N 0002 thru 2799.				

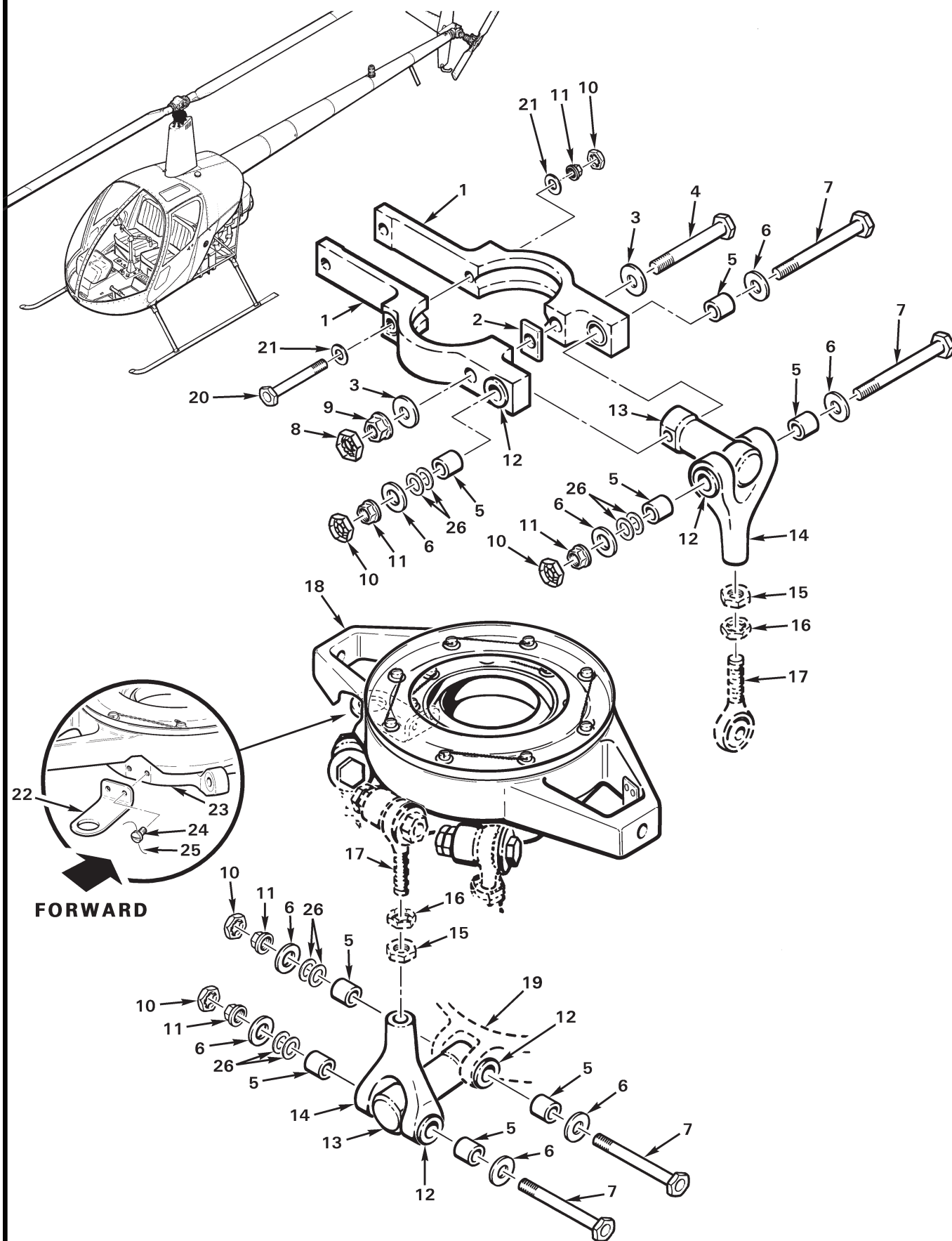


FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
		SWASHPLATE INSTALLATION*		
67-29-1	A203-8	Yoke Half Assembly (includes A203-9 yoke and item 12) . . .	X	2
	A203-9	Yoke Half (Ref)	O	1
2	A210-1	Key	X	1
3	NAS1149F0532P	Washer	X	2
4	NAS6605-28	Bolt	X	1
5	A105-17	Journal (0.436-inch O.D. x 0.526-inch length)	X	8
6	A141-43	Washer	X	8
7	NAS6604-31	Bolt	X	4
8	B330-16	Palnut	X	1
9	D210-5	Nut	X	1
10	B330-13	Palnut	X	5
11	D210-4	Nut	X	5
12	C648-2	Bearing	X	8
13	A204-1	Arm (Ref, see Figure 67-33)	X	2
14	A205-9	Fork Assembly (includes A205-10 fork and item 12)	X	2
	A205-10	Fork (Ref)	O	1
15	AN316-5R	Nut (Ref, see Figure 67-33)		
16	B330-16	Palnut (Ref, see Figure 67-33)		
17	B163-1	Rod End (Ref, see Figure 67-33)		
18	A017-2	Swashplate Assembly (Ref, see Figure 67-33)		
19	A283-5	Mast Assembly (Ref; see Figure 63-1)		
20	NAS6604-24	Bolt	X	1
21	NAS1149F0432P	Washer	X	2
22	B769-1	Bracket – Magnetic Pickup (subsequent ship S/Ns)	X	1
23	A198-4	Swashplate – Lower (Ref)		
24	NAS1352N08-6	Screw (apply A257-9 anti-seize to threads)	X	2
25	MS20995C20	0.020-inch dia Safety Wire	X	A/R
26	A117-45**	Shim (thickness = 0.016-inch)	X	A/R
	A117-46**	Shim (thickness = 0.020-inch)	X	A/R
	A117-47**	Shim (thickness = 0.025-inch)	X	A/R
		* * *		
27	KI-2207	R22-series A017-1 Swashplate Installation Kit Instructions (see www.robinsonheli.com for complete kit contents)	X	1
28	R8245	A283-5 Mast Tube Upgrade Kit (For A006-1 to -6 upgrades. Includes items 5 thru 7, 10, 11, and 26.)	X	A/R
NOTES * Original equipment on ship S/N 3540 and subsequent. ** Select a combination of [4] shims to provide 0.001–0.005-inch maximum axial play in joint.				

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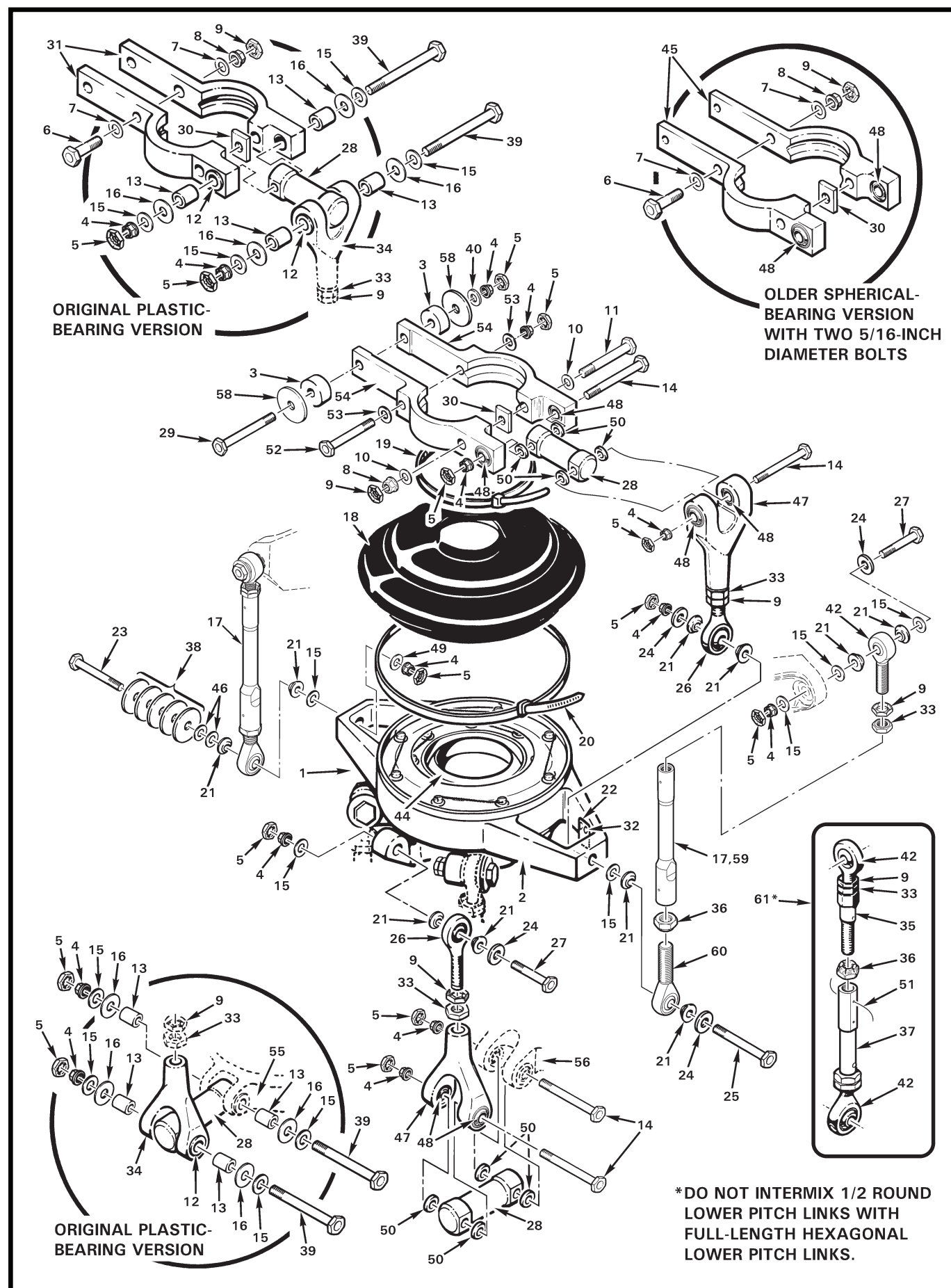


FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
		SWASHPLATE INSTALLATION*		
67-33-1	KI-2207	R22-series A017-1 Swashplate Installation Kit Instructions (See www.robinsonheli.com for complete kit contents. Also, see Figure 67-29.)	X	1
2	A017-2	Swashplate Assembly (Includes items 22 and 32, upper and lower swashplates, item 44, and all internal components.)	X	1
3	A255-1	Counter Weight (1.10-inch O.D.)	X	A/R
	A255-2	Counter Weight (1.90-inch O.D.)	X	A/R
4	D210-4	Nut	X	14
5	B330-13	Palnut	X	12
6	NAS6605-8	Bolt	X	1
7	NAS1149F0532P	Washer	X	2
8	D210-5	Nut	X	2
9	B330-16	Palnut	X	4
10	NAS1149F0532P**	Washer (or NAS1149F0563P)	X	2
11	NAS6605-28	Bolt	X	1
12	A139-1	Bearing	X	4
13	A105-11	Journal (0.374-inch O.D. x 0.547-inch length)	X	4
14	NAS1304-28	Bolt	X	4
15	NAS1149F0432P	Washer	X	A/R
16	A141-3	Washer	X	8
17	A258-5	Pitch Link Assembly (Incl items 9, 33, 36, 42, 59, and 60) . .	X	2
18	A480-1	Boot	X	1
19	MS3367-7-9	Ty-Rap	X	1
20	MS3367-6-0	Ty-Rap	X	1
21	A115-1	Spacer	X	18
22	A769-3	Interrupter – Magnetic Pickup	X	1
23	NAS6604-22	Bolt	X	1
24	A214-3	Washer	X	8
25	NAS6604-27	Bolt	X	1
26	B163-1	Rod End	X	2
27	NAS6604-17	Bolt	X	6
28	A204-1	Arm – Scissor	X	2
29	NAS6604-15 to -31	Bolt**	X	1
30	A210-1	Key	X	1
31	A203-1	Yoke Half Assembly (with A139-1 bearing, Ref; superseded by item 45)		
NOTES * Original equipment on Ship S/N 3539 and prior. ** Select hardware which, after correct torque is applied, exposes 2 to 4 threads beyond nut.				
Continues				

FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
		SWASHPLATE INSTALLATION (Cont'd)		
67-33-32	MS20470AD3-8	Rivet	X	2
33	AN316-5R	Nut	X	2
34	A205-1	Fork Assembly (includes A205-2 fork and item 12)	X	2
	A205-2	Fork (Ref)		
35	A258-2	Fitting	X	1
36	21FKF-616	Nut	X	1
37	A258-3	Link (Ref, to replace order item 41)		
38	AN970-4	Washer ([5] required at this location)	X	5
39	NAS6604-30	Bolt	X	4
40	NAS1149F0432P	Washer (or NAS1149F0463P)	X	A/R
41	A258-4	Pitch Link Sub-Assembly (Includes items 9 [1], 33 [1], 37, 42 [1], and rivet.)	X	1
42	B163-1	Rod End	X	1
43	A769-2	Interrupter (Optional; for use with Strobex Model 135M-10 series, not shown.)	X	1
44	B149-1	Swashplate Ball Assembly (Ref, see Figure 67-37)		
45	A203-5	Yoke Half Assembly (Ref, includes A203-4 yoke half and item 48. Superseded by item 54.)		
	A203-4	Yoke Half (Ref)		
46	NAS1149F0432P	Washer ([2] required at this location)	X	2
47	A205-3	Fork Assembly (includes A205-4 fork and item 48)	X	1
	A205-4	Fork (Ref, fork only)	O	1
48	B115-1	Bearing	X	2
49	NAS1149F0432P	Washer (select washer(s) which, after correct torque is applied, exposes 2 to 4 threads beyond nut; [1] minimum)	X	A/R
50	A130-47	Spacer (0.438-inch OD x 0.097-inch length)	X	8
51	MS20995C32	0.032-inch dia Safety Wire	X	A/R
52	NAS6604-24	Bolt	X	1
53	NAS1149F0432P	Washer	X	2
54	A203-7	Yoke Half Assembly (includes A203-6 yoke half and item 48)	X	2
	A203-6	Yoke Half (Ref, yoke half only)	O	1
55	A283-2	Mast Assembly (Ref, earlier R22s)		
56	A283-4	Mast Assembly (Ref, see Figure 63-1)		
57	NAS1149F0432P	Washer (select washer(s) which, after correct torque is applied, provides proper thread engagement; [1] minimum)	X	A/R
58	AN970-4	Washer	X	A/R
NOTES				
				Continues

FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
		SWASHPLATE INSTALLATION (Cont'd)		
67-33-59	A258-6	Barrel Assembly	X	1
60	D173-5	Rod End	X	1
61	A258-1	Pitch Link Assembly (Ref, no longer available. A258-5 pitch link assembly [item 17] directly replaces A258-1 pitch link assembly, and may be installed singly or in pairs; there is no weight change.)		
NOTES				

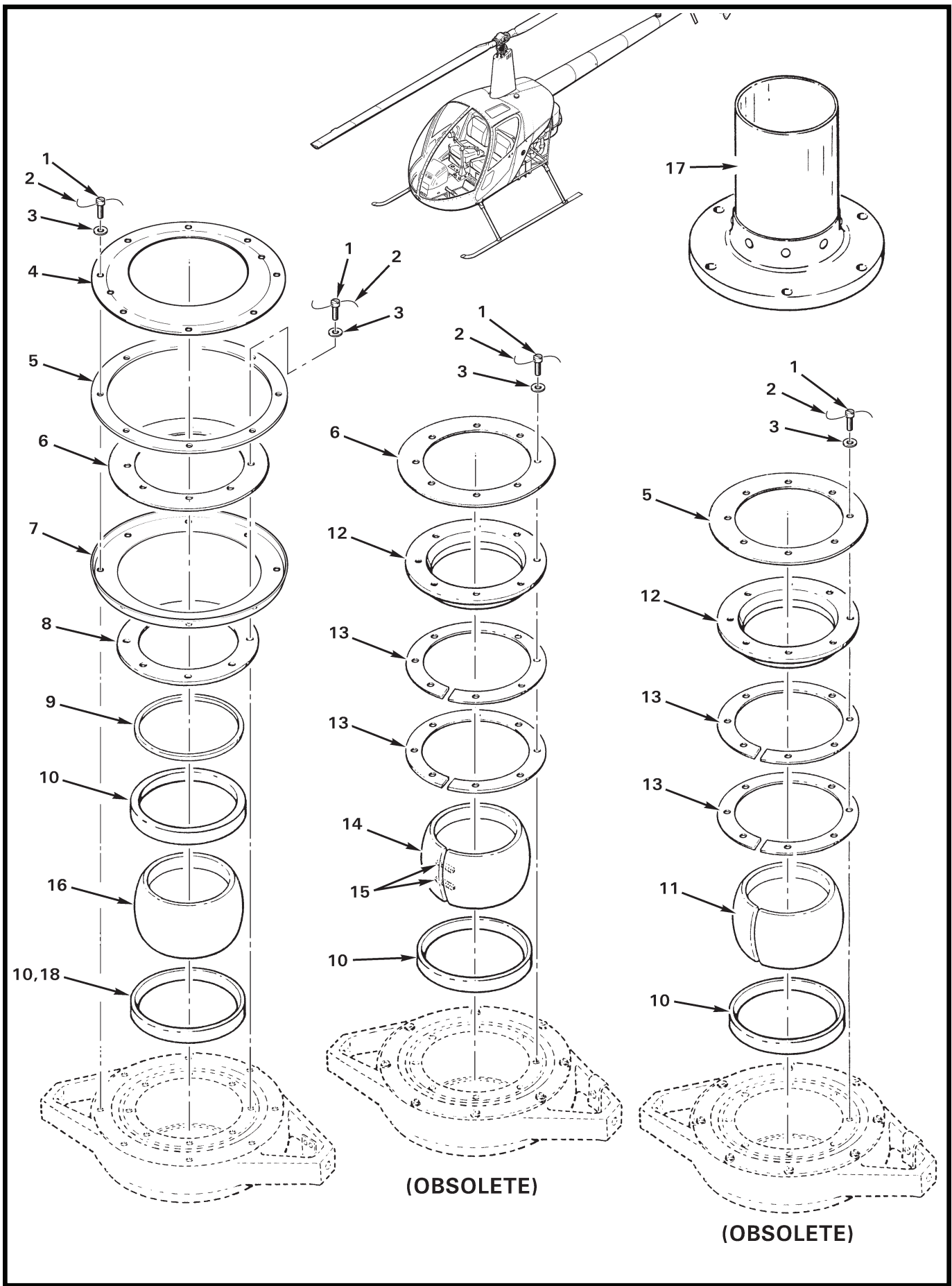


FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
		SWASHPLATE BALL INSTALLATION		
67-37-1	AN503-8-8	Screw	X	8
2	MS20995C20	0.020-inch dia Safety Wire	X	A/R
3	NAS1149FN832P	Washer	X	8
4	B419-1	Guard – Swashplate Boot	X	1
5	A200-1	Retainer	X	1
6	A218-1	Shield	X	1
7	A206-1	Retainer	X	1
8	A200-2	Retainer	X	1
9	A209-1	Spacer (0.215-inch)	X	1
	A209-2	Spacer (0.210-inch)	X	1
	A209-3	Spacer (0.205-inch)	X	1
	A209-4	Spacer (0.200-inch)	X	1
	A209-5	Spacer (0.195-inch)	X	1
	A209-6	Spacer (0.190-inch)	X	1
	A209-7	Spacer (0.185-inch)	X	1
	A209-8	Spacer (0.180-inch)	X	1
	A209-9	Spacer (0.175-inch)	X	1
	A209-10	Spacer (0.170-inch)	X	1
	A209-11	Spacer (0.165-inch)	X	1
	A209-12	Spacer (0.160-inch)	X	1
	A209-13	Spacer (0.155-inch)	X	1
	A209-14	Spacer (0.150-inch)	X	1
	A209-15	Spacer (0.220-inch)	X	1
	A209-16	Spacer (0.225-inch)	X	1
	A209-17	Spacer (0.230-inch)	X	1
	A209-18	Spacer (0.235-inch)	X	1
	A209-19	Spacer (0.240-inch)	X	1
	A209-20	Spacer (0.245-inch)	X	1
	A209-21	Spacer (0.250-inch)	X	1
	A209-22	Spacer (0.255-inch)	X	1
10	A202-2	Sleeve Assembly (Teflon-lined; one or two required)	X	A/R
11	A201-1 *	Ball (blue Turcite, Ref; no longer available)		
12	B116-2 **	Sleeve Assembly (Ref)		
13	B117-1	Shim (0.016-inch)	X	1
	B117-2	Shim (0.020-inch)	X	1
NOTES * Use B149-1 aluminum ball with A202-2 Teflon-lined sleeve assemblies, A209 spacers, and A200-2 retainer. ** Parts no longer available. Use A202-2 Teflon-lined sleeve assembly with A200-2 retainer and A209 spacers.				

Continues

FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
67-37-13	B117-3	Shim (0.025-inch)	X	1
	B117-4	Shim (0.032-inch)	X	1
	B117-5	Shim (0.040-inch)	X	1
	B117-6	Shim (0.050-inch)	X	1
	14 A201-2*	Ball Assembly (blue Turcite ball, Ref; no longer available.)		
	15 C0180-024-1120S*	Spring (Ref)		
	16 B149-1	Ball – Aluminum (requires A202-2 Teflon-lined sleeve)	X	1
	17 B491-1	Tube Assembly	X	1
	18 B270-11	Adhesive/Sealant (Loctite 277, 1.69 oz)	X	A/R
SWASHPLATE BALL INSTALLATION (Cont'd)				

NOTES * Use B149-1 aluminum ball with A202-2 Teflon-lined sleeve assemblies, A209 spacers, and A200-2 retainer.

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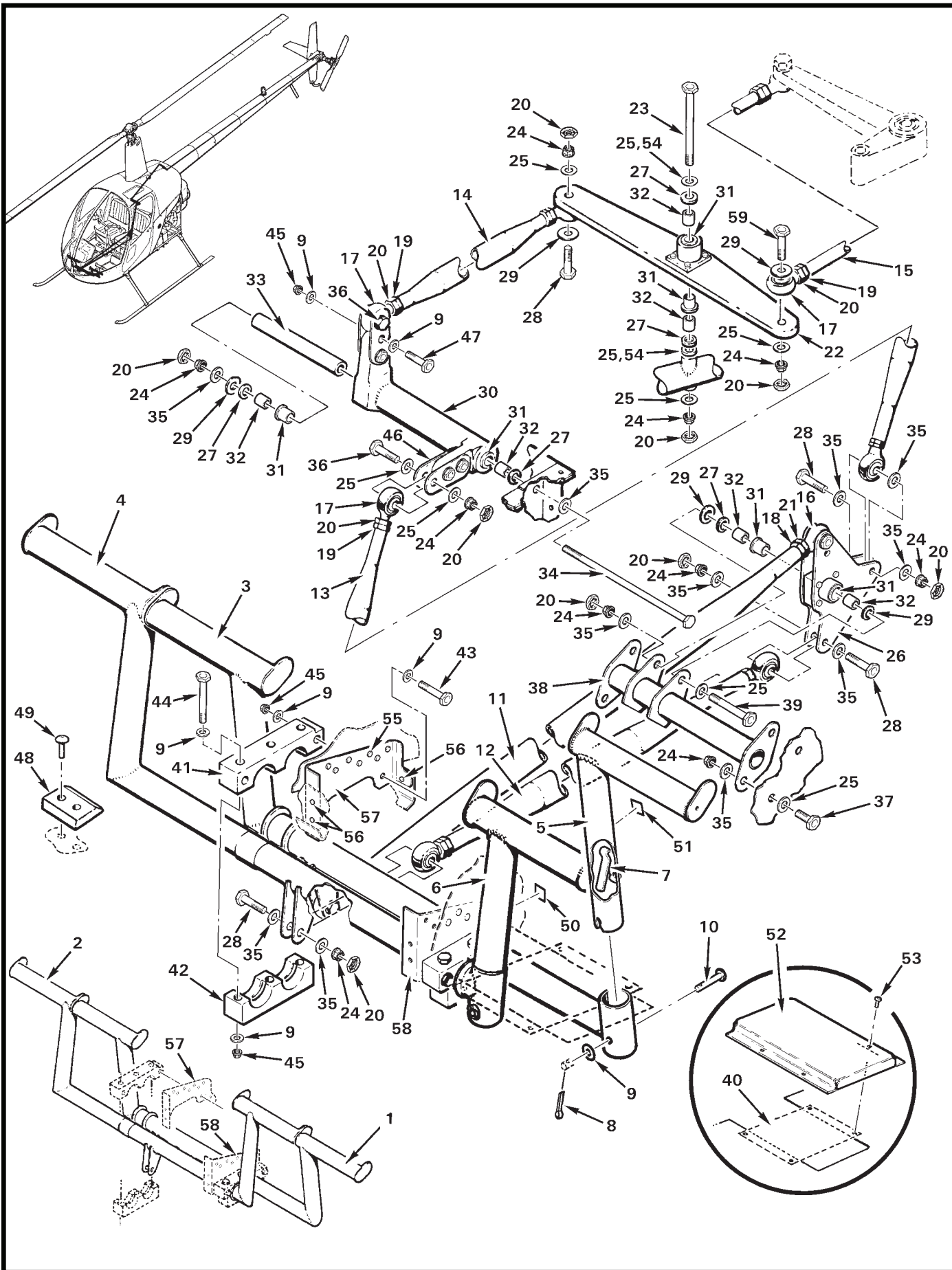


FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
		TAIL ROTOR CONTROL SYSTEM		
67-41-1	A330-1	Pedal Assembly (LH, standard)	X	1
2	A330-2	Pedal Assembly (RH, standard)	X	1
3	A755-1	Pedal Assembly (LH, removable; includes items 5, and 8 thru 10)	X	1
4	A755-2	Pedal Assembly (RH, removable; includes items 6, and 8 thru 10)	X	1
5	A755-3	Pedal Assembly (LH, removable; includes items 7, and 50) . .	X	1
6	A755-4	Pedal Assembly (RH, removable; includes items 7, and 51) . .	X	1
7	A795-4	Pin Assembly	X	2
8	MS24665-132	Cotter Pin	X	2
9	NAS1149D0316J	Washer	X	22
10	MS20392-2C33	Flathead Pin	X	2
11	A121-9	Push-Pull Tube Assembly – Upper Forward (Incl items 16, 18, and 21)	X	1
12	A121-11	Push-Pull Tube Assembly – Lower Forward (Incl items 16, 18, and 21)	X	1
13	A121-13	Push-Pull Tube Assembly – Vertical (Incl items 17, 19, and 20)	X	1
14	A121-15	Push-Pull Tube Assembly – To Intermediate Bellcrank (Incl items 17, 19, and 20)	X	1
15	A121-17	Push-Pull Tube Assembly – Tailcone (Incl items 17, 19, and 20)	X	1
16	A101-4	Rod End	X	4
17	A127-4	Rod End	X	6
18	AN316-5R	Nut	X	4
19	AN316-4R	Nut	X	6
20	B330-13	Palnut	X	18
21	B330-16	Palnut	X	4
22	A331-1	Bellcrank Assembly	X	1
23	NAS1304-38	Bolt (or NAS1304-40 [with item 54], as required for clearance)	X	1
24	D210-4	Nut	X	20
25	NAS1149F0432P	Washer	X	26
26	A317-1	Bellcrank Assembly	X	1
27	A141-3	Washer	X	6
28	NAS6604-9	Bolt (or NAS1304-9)	X	7
29	A214-3	Washer (next to rod end)	X	4
30	A316-1	Bellcrank	X	1

NOTES

Continues

FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
		TAIL ROTOR CONTROL SYSTEM (Cont'd)		
67-41-31	A139-1	Bearing	X	6
32	A105-3	Journal (0.522 to 0.525-inch length)	X	6
33	A130-12	Spacer (3.540 to 3.550-inch length)	X	1
34	AN4-51A	Bolt	X	1
35	NAS1149F0463P	Washer	X	1
36	NAS6604-7	Bolt (or NAS1304-7)	X	4
37	NAS6604-2	Bolt (or NAS1304-2)	X	4
38	A315-1	Support Assembly – Tail Rotor Bellcrank	X	1
39	NAS6604-19	Bolt (or NAS1304-19)	X	1
40	A412-1	Cover (LH and RH; Ref)		
41	A318-1 *	Bearing Block – Upper	O	2
42	A318-2 *	Bearing Block – Lower	O	2
43	NAS6603-13	Bolt (or NAS1303-13)	X	4
44	NAS6603-20	Bolt (or NAS1303-20)	X	6
45	D210-3	Nut	X	10
46	A555-1	Plate – Bellcrank Assembly	X	4
47	NAS6603-7	Bolt (or NAS1303-7)	X	4
48	A793-1	Stop – Pedal	X	1
49	MS20470AD5	Rivet	X	2
50	A654-51	Decal – “R”	X	1
51	A654-50	Decal – “L”	X	1
52	B236-1	Cover (for removable pedals)	X	1
53	MS27039C0806	Screw	X	4
54	NAS1149F0463P	Washer (For use with NAS6604-40 bolt; [2] maximum. Exchange for item 25 as required for clearance.)	X	A/R
55	MS20470AD4	Rivet	X	18
56	MS20470AD3	Rivet	X	6
57	A359-2	Support (RH)	X	1
58	A359-1	Support (LH)	X	1
59	NAS6604-9**	Bolt (or NAS1304-9, orient up or down as required)	X	1
		* * *		
60	KI-81	Removable Foot Pedal Locking Pin Installation Kit (Replaces A795-1 clip. Includes items 7 and 8.)	X	1

NOTES * Items 41 and 42 are matched set. When replacing, order A318-1-2.

 ** In this location bolt may be installed either direction to provide 0.12-inch minimum clearance at flex plate and scroll.