

CHAPTER 76
ENGINE CONTROLS

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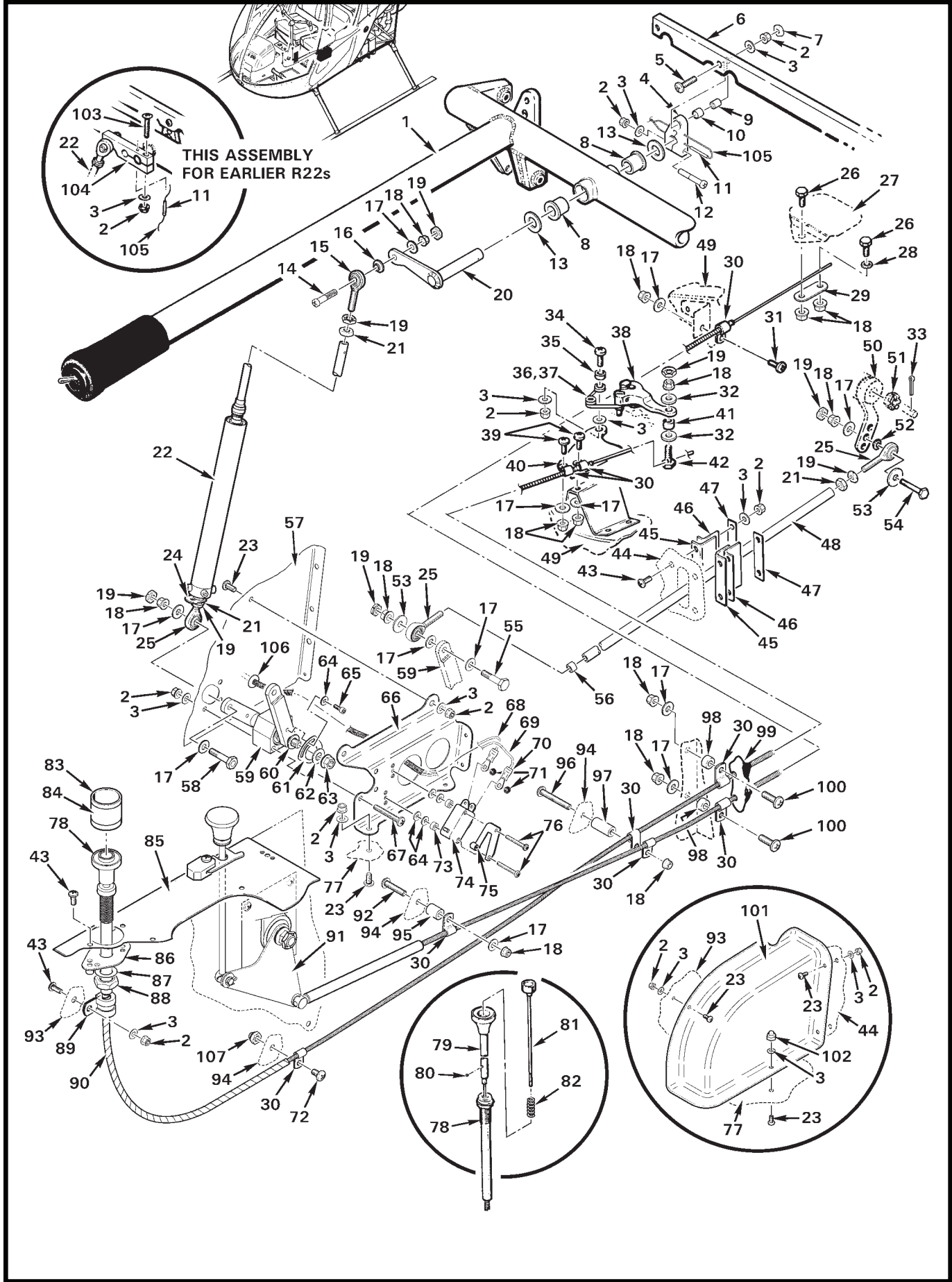


FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
ENGINE CONTROLS				
76-1-1	A758	Collective Assembly (Ref)		
2	MS21042L08	Nut	X	27
3	NAS1149FN816P	Washer	X	A/R
4	A325-1	Arm	X	3
5	MS27039C0810	Screw	X	3
6	B328-1	Connecting Rod	X	1
7	B330-6	Palnut	X	3
8	A139-1	Bearing	X	5
9	A105-5	Journal	X	3
10	04DU04	Bushing	X	3
11	MS16562-18	Roll Pin	X	4
12	A486-2	Screw	X	3
13	A141-16	Washer	X	5
14	A486-4	Screw	X	1
15	A127-3	Rod End	X	1
16	A341-1	Spacer	X	1
17	NAS1149F0332P	Washer	X	A/R
18	D210-3	Nut	X	16
19	B330-7	Palnut	X	A/R
20	C341-3	Arm Weldment	O	1
21	AN315-3R	Nut	X	A/R
22	A327-1	Overtravel Spring Assembly (Incl items 15, 19, 21, 24, and 25)	X	1
23	MS27039C0805	Screw	X	A/R
24	A697-2	Plate (Ref)		
25	A933-3	Rod End	X	A/R
26	A462-1	Fitting – Carburetor Heat	X	1
27	A562-1	Slider Valve (Ref)		
28	NAS1149F0316P	Washer	X	1
29	A696-3	Plate	X	1
30	AN742-3	Clamp	X	6
31	MS27039C1-06	Screw	X	1
32	NAS1149E0363R	Washer	X	2
33	MS24665-132	Cotter Pin	X	1
34	MS27039C0807	Screw	X	1
35	A130-13	Spacer	X	1
36	A071-2	Spring Assembly – Mixture Control (Incl items 2, 3, 34, 35, 37, and 40)	X	1

NOTES

Continues

FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
ENGINE CONTROLS (Cont'd)				
76-1-37	A930-1	Spring	X	1
38	—	Arm – Carburetor Mixture (Ref)		
39	MS27039C1-07	Screw	X	2
40	A929-2	Bracket	X	1
41	A130-48	Spacer (0.200-inch length; lube with A257-1 grease)	X	1
42	A462-4	Fitting – Mixture	X	1
43	MS27039C0806	Screw	X	29
44	A233	Firewall (Ref)		
45	A595-2	Seal (Teflon, white)	X	2
46	A595-1	Seal (neoprene, black)	X	2
47	A597-1	Cover	X	2
48	B364-1	Push-Pull Tube – Throttle (21.20-inch length)	X	1
49	A057-2	Air Box Assembly (Ref)		
50	—	Arm – Throttle (carburetor, Ref)		
51	—	Nut (carburetor arm, Ref)		
	A257-1	Grease	X	A/R
52	NAS1149F0363P	Washer	X	4
53	A141-17	Washer	X	2
54	NAS6603-10	Bolt	X	A/R
55	NAS6603-9	Bolt	X	1
56	A130-54	Spacer ([2] maximum)	X	A/R
57	A292-1	Keel Panel (LH, Ref)		
58	NAS6603-8	Bolt	X	1
59	D756-2	Bellcrank Assembly (Incl items 60 thru 63)	X	1
60	NAS620-416L	Washer	X	1
61	A607-2	Cam	X	1
62	NAS1149F0432P	Washer	X	2
63	D210-4	Nut	X	1
64	NAS1149FN432P	Washer	X	5
65	91251A017	Screw	X	1
66	A607-3	Support	X	1
67	MS27039C0818	Screw	X	3
68	-2488	Wire (Ref, order KI-218-1 if not previously installed)		
69	-2487	Wire (Ref, order KI-218-1 if not previously installed)		
70	B260-1	Terminal	X	2
71	—	Screw (with lockwasher)	O	2
72	MS27039C1-05	Screw	X	1

NOTES

Continues

FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
ENGINE CONTROLS (Cont'd)				
76-1-73	A130-14	Spacer	X	2
74	V3-1	Switch (Incl item 71)	X	1
75	JV-5	Actuator	X	1
76	MS35206-220	Screw	X	2
77	A015-3	Skin (Ref)		
78	A522-12	Mixture Control (Incl items 79 thru 82, 87, and 88)	X	1
79	A-641R12	Inner Wire (includes knob)	X	1
	A702A*	Knob (red)	O	1
80	R5190*	1/8" Ball	X	1
81	A642A*	Plunger	O	1
82	LC042E7*	Spring	O	1
83	A950-1	Guard – Mixture Control (Incl item 84)	X	1
84	A654-45	Decal (guard instructions)	X	1
85	A444	Panel Assembly (Ref)		
86	A518-2	Cover	X	1
87	—	Washer	O	1
88	—	Nut	O	1
89	MS21919WDG6	Clamp	X	1
90	B161-4	Spirap	X	A/R
91	D334-5	Bellcrank Assembly (Ref, see Figures 76-9 and 76-17)		
92	MS27039C1-14	Screw	X	1
93	A293-2	Keel Panel (RH, Ref)		
94	A292-2	Keel Panel (RH, Ref)		
95	A130-35	Spacer	O	1
96	MS27039C1-20	Screw	X	1
97	A130-26	Spacer	X	1
98	A130-21	Spacer	X	2
99	B270-5	Sealant (one quart)	X	A/R
100	MS27039C1-09	Screw	X	2
101	A606-1**	Cover (clear polycarbonate)	X	1
102	B340-4	Nut	X	2
103	AN525-832R16	Screw	X	1
104	C342-1	Arm	X	1
105	MS20995C32	0.032-inch dia. Safety Wire	X	A/R
106	MS35489-4	Grommet	X	1
107	B340-8	Nut	X	1

NOTES * ACS Products part no.
 ** Revision I and prior were fiberglass.

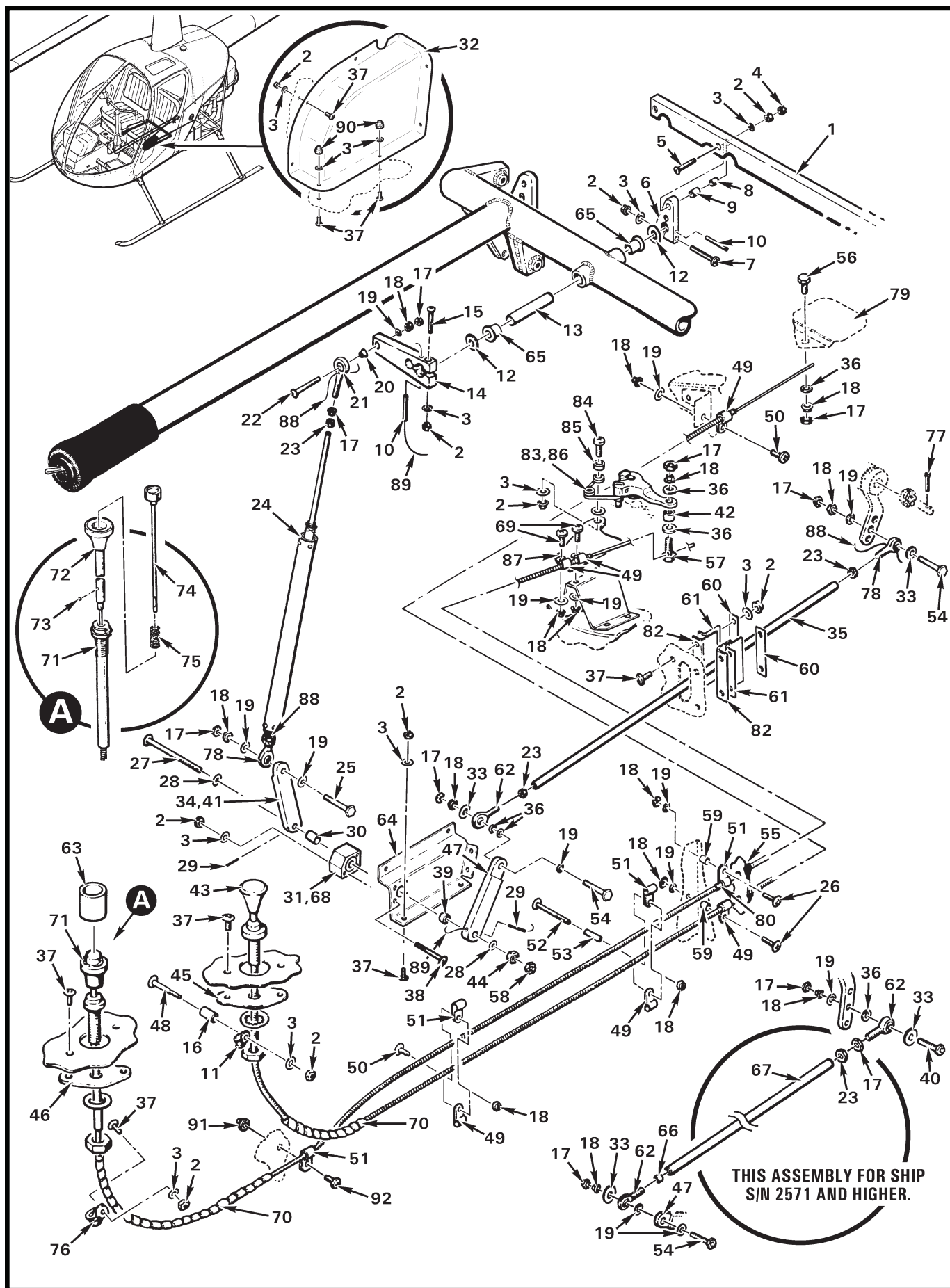


FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
ENGINE CONTROLS				
76-5-1	B328-1	Connecting Rod	X	1
2	MS21042L08	Nut	X	27
3	NAS1149FN816P	Washer	X	A/R
4	B330-6	Palnut	X	3
5	MS27039C0810	Screw	X	3
6	A325-1	Arm	X	3
7	A486-2	Screw	X	3
8	A105-5	Journal	X	3
9	O4DU04	Bushing	X	3
10	MS16562-18	Roll Pin	X	4
11	MS21919WDG4	Clamp	X	1
12	A141-16	Washer	X	5
13	A335-1	Torque Tube	X	1
14	C342-1	Arm Assembly – Throttle	X	1
15	MS27039C0816	Screw	X	1
16	A130-34	Spacer	X	1
17	B330-7	Palnut	X	A/R
18	D210-3	Nut	X	16
19	NAS1149F0332P	Washer	X	A/R
20	A341-1	Spacer	X	1
21	A759-1	Rod End – Throttle	X	1
22	A486-1	Screw	X	1
23	AN315-3R	Nut ([2] with item 35, [1] with item 67)	X	A/R
24	A327-1	Overtravel Spring Assembly (Incl items 17, 21, 23, and 78) . .	X	1
25	NAS6603-8	Bolt	X	1
26	MS27039C1-09	Screw	X	2
27	NAS6604-30	Bolt	X	1
28	NAS1149F0432P	Washer	X	2
29	MS16562-15	Roll Pin	O	2
30	A130-30	Spacer	O	1
31	A605-1	Housing (Ref)		
32	A606-1	Cover	X	1
33	A141-17	Washer	X	2
34	D756-2	Arm Assembly (Incl items 27 thru 31, 39, 41, 44, 47, and 68)	X	1

NOTES

Continues

FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
ENGINE CONTROLS (Cont'd)				
76-5-35	A336-1	Push-Pull Tube – Throttle (17.85-inch length, O-320 engine) . .	X	1
	A336-2	Push-Pull Tube – Throttle (18.25-inch length, O-360 engine) . .	X	1
36	NAS1149F0363P	Washer	X	4
37	MS27039C0806	Screw	X	29
38	MS27039C0818	Screw	X	3
39	A130-29	Spacer	O	1
40	NAS6603-10	Bolt	X	1
41	A609-1	Arm	O	1
42	A130-48	Spacer (0.200-inch length; lube with A257-1 grease)	X	1
43	A522-2	Control – Carburetor Heat (ship S/N 2570 and prior; includes nut and lockwasher)	X	1
44	D210-4	Nut	X	1
45	A518-1	Cover	X	1
46	A518-2	Cover	X	1
47	A609-3	Arm	O	1
48	MS27039C0812	Screw	X	1
49	AN742-3	Clamp	X	6
50	MS27039C1-06	Screw	X	1
51	AN742-4	Clamp	X	4
52	MS27039C1-18	Screw	X	1
53	A130-17	Spacer	X	1
54	NAS6603-9	Bolt ([2] with item 35, [1] with item 67)	X	A/R
55	B270-5	Sealant (one quart)	X	A/R
56	A462-1	Fitting – Carburetor Heat	X	1
57	A462-4	Fitting – Mixture	X	1
58	B330-13	Palnut	X	1
59	A130-21	Spacer	X	2
60	A597-1	Cover	X	2
61	A595-1	Seal (neoprene, black)	X	2
62	A933-3	Rod End	X	A/R
63	A950-1	Guard – Mixture Control	X	1
64	A607-1	Support	X	1
65	A139-1	Bearing	X	5
66	A130-54	Spacer ([2] maximum)	X	A/R
67	B364-1	Push-Pull Tube – Throttle (21.20-inch length; ship S/N 2571 and subsequent)	X	1

NOTES

Continues

FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
ENGINE CONTROLS (Cont'd)				
76-5-68	MS27647-4	Bearing – Throttle	O	1
69	MS27039C1-07	Screw	X	2
70	B161-4	Spirap	X	A/R
71	A522-3*	Mixture Control (Incl items 72 thru 75)	X	1
72	A-641R	Inner Wire (includes knob; O-320 engine)	X	1
	A-641R1	Inner Wire (includes knob; O-360 engine)	X	1
	A702A**	Knob (red)	O	1
73	R5190**	1/8" Ball	X	1
74	A642A**	Plunger	O	1
75	LC042E7**	Spring	O	1
76	MS21919WDG6	Clamp	X	1
77	MS24665-132	Cotter Pin	X	1
78	A759-2	Rod End	X	A/R
79	A562-1	Slider Valve (Ref)		
80	A701-1	Foil Tape	X	A/R
81	A758-6	Collective Stick Assembly (Removable LH; includes items 1 thru 10, 12 thru 15, and 65. See also Figure 67-21.)	X	1
82	A595-2	Seal (Teflon, white)	X	2
83	A071-2	Spring Assembly – Mixture Control (Incl items 2, 3, and 84 thru 87)	X	1
84	MS27039C0807	Screw	X	1
85	A130-13	Spacer	X	1
86	A930-1	Spring	X	1
87	A929-2	Bracket	X	1
88	MS20995C20	0.020-inch dia Safety Wire	X	A/R
89	MS20995C32	0.032-inch dia Safety Wire	X	A/R
90	B340-4	Nut	X	2
91	B340-8	Nut	X	1
92	MS27039C1-05	Screw	X	1

NOTES * Ship S/N 2570 and prior, 2665 and subsequent.
 ** ACS Products part no.

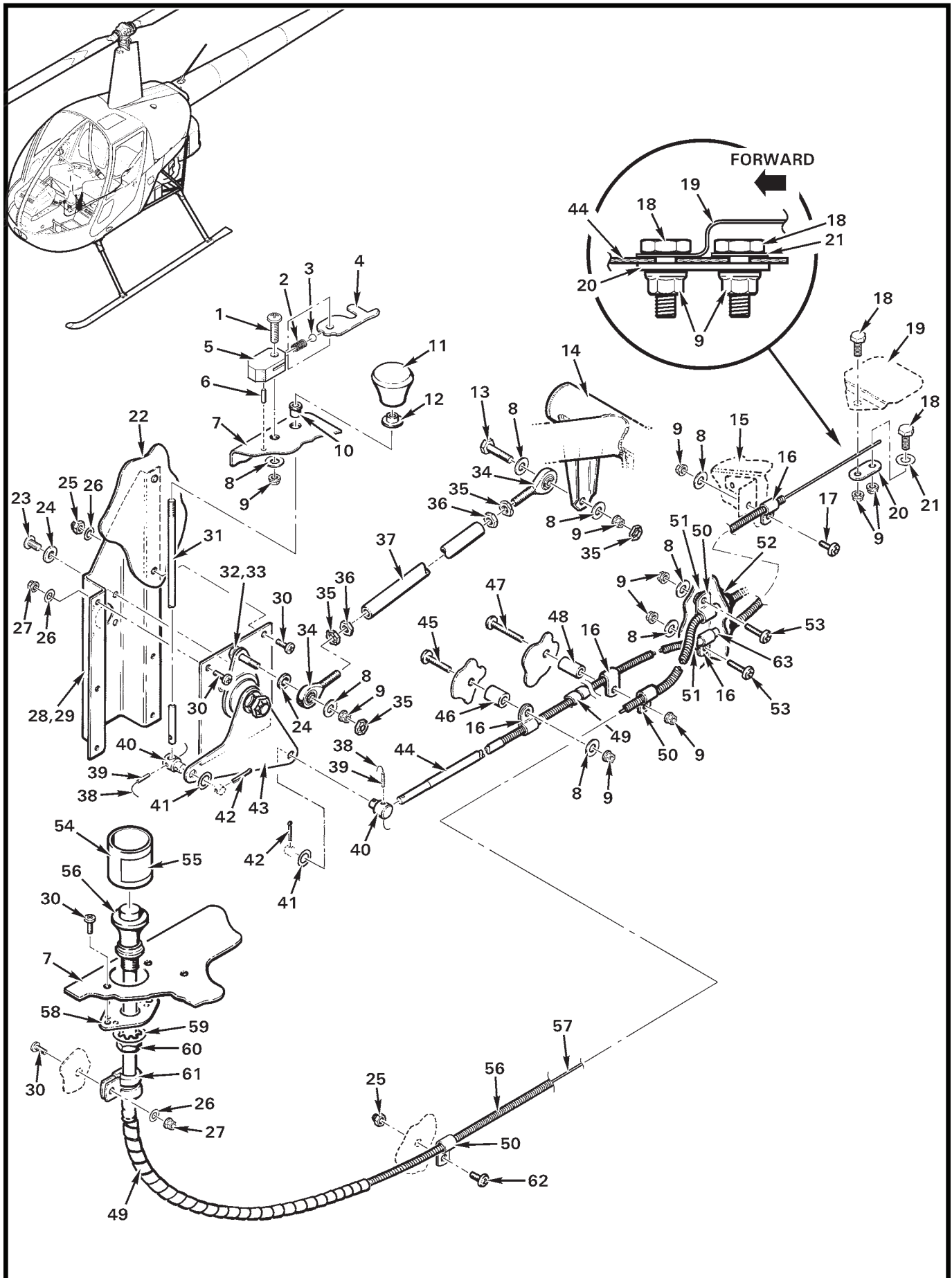


FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
CARB HEAT ASSIST AND MIXTURE CONTROL*				
76-9-1	MS27039C1-11	Screw	X	1
2	D774-3	Spring	X	1
3	B208-1	Ball	X	1
4	D333-7	Catch	X	1
5	D333-8	Block	X	1
6	MS16562-23	Spring Pin	X	1
7	A444	Cover – Cyclic (Ref)		
8	NAS1149F0332P	Washer	X	7
9	D210-3	Nut	X	9
10	2010	Bushing	X	1
11	3704-SE	Knob	X	1
12	D333-5	Collar	X	1
13	NAS6603-6	Bolt	X	1
14	A758	Collective Stick (Ref)		
15	A057	Air Box Assembly (Ref)		
16	AN742-3	Clamp	X	4
17	MS27039C1-06	Screw	X	1
18	A462-1	Bolt	X	2
19	A562-1	Valve (Ref)		
20	A696-3	Plate	X	1
21	NAS1149F0316P	Washer	X	1
22	A292	Keel Panel (RH, Ref)		
23	A142-4	Screw	X	2
24	NAS1149F0363P	Washer	X	3
25	B340-4	Nut	X	A/R
26	NAS1149FN816P	Washer	X	A/R
27	MS21042L08	Nut	X	A/R
28	B368-3	Stiffener (cabin heater installed, Ref)		
29	B368-4	Stiffener (cabin heater <u>not</u> installed, Ref; not shown)		
30	MS27039C0806	Screw	X	A/R
31	A587-4	Stem	X	1
32	NAS6603-7	Bolt	X	1
33	AN960PD10L	Washer	X	1
34	A933-3	Rod End	X	2
35	B330-7	Palnut	X	2

NOTES * Ship S/N 2665 and subsequent.

Continues

FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
CARB HEAT ASSIST AND MIXTURE CONTROL* (Cont'd)				
76-9-36	AN315-3R	Nut	X	2
37	A336-1	Push-Pull Tube	X	1
38	MS20995C20	0.020-inch dia Safety Wire	X	A/R
39	MS16562-4	Spring Pin	X	2
40	D333-3	Fitting (install using A257-1 grease)	X	2
41	NAS1149F0432P	Washer	X	2
42	MS24665-210	Cotter Pin	X	2
43	D334-5	Bell Crank Assembly – Carb Heat Assist (Ref)		
44	C522-8	Control – Carb Heat	X	1
45	MS27039C1-14	Screw	X	1
46	A130-35	Spacer	X	1
47	MS27039C1-20	Screw	X	1
48	A130-26	Spacer	X	1
49	B161-4	Spirap	X	A/R
50	AN742-4	Clamp	X	3
51	A130-21	Spacer	X	2
52	B270-5	Sealant	X	A/R
53	MS27039C1-09	Screw	X	2
54	A950-1	Guard (Incl item 55)	X	1
55	A654-45	Decal	X	1
56	A522-12	Control – Fuel Mixture (Incl items 57, 59, and 60)	X	1
57	A-641R	Inner Wire (O-320 engine)	X	1
	A-641R1	Inner Wire (O-360 engine)	X	1
58	A518-2	Cover	X	1
59	—	Lockwasher (Ref)		
60	—	Nut (Ref)		
61	MS21919WDG6	Clamp	X	1
62	MS27039C1-05	Screw	X	1
63	A701-1	Tape – Foil	X	A/R

NOTES * Ship S/N 2665 and subsequent.

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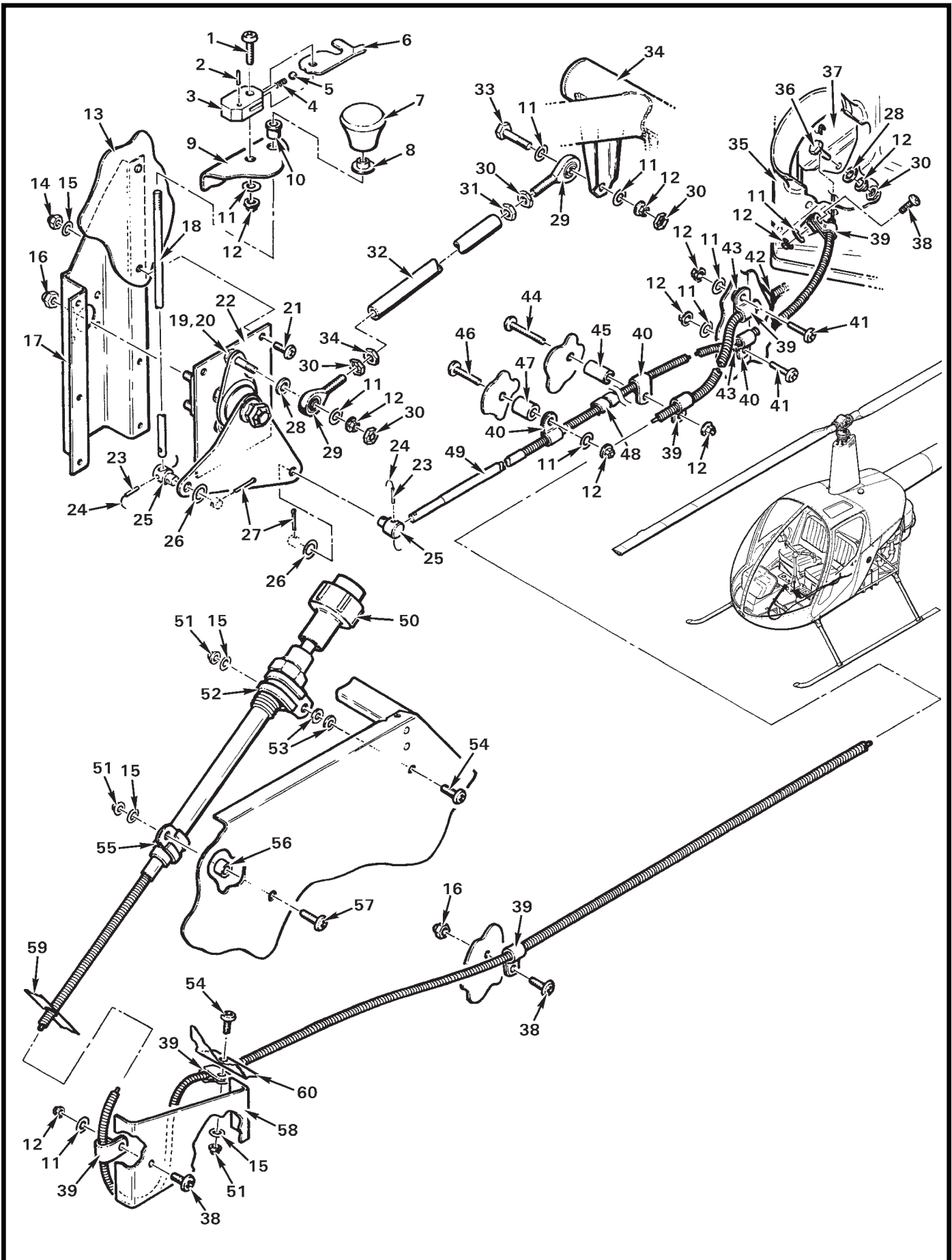


FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
		CARB HEAT ASSIST* AND VERNIER MIXTURE CONTROL**		
76-13-1	MS27039C1-11	Screw	X	1
2	MS16562-23	Spring Pin	X	1
3	D333-8	Block	X	1
4	D774-3	Spring – Carb Heat Catch	X	1
5	B208-1	Ball	X	1
6	D333-7	Catch	X	1
7	3704-SE	Knob	X	1
8	D333-5	Collar	X	1
9	A444	Cover – Cyclic (Ref)		
10	2010	Bushing	X	1
11	NAS1149F0332P	Washer	X	9
12	D210-3	Nut	X	9
13	A292-2	Keel Panel (RH, Ref)		
14	B340-4	Nut	X	4
15	NAS1149FN816P	Washer	X	7
16	B340-8	Nut	X	4
17	B368-3	Stiffener (Ref, cabin heater installed)	O	1
	B368-4	Stiffener (Ref, cabin heater not installed; not shown)	O	1
18	A587-4	Stem	X	1
19	NAS6603-7	Bolt	X	1
20	NAS1149D0316J	Washer	X	1
21	MS27039C0806	Screw	X	4
22	D334-2	Bellcrank Assembly (Ref, no longer available. Superseded by item 43 in Figure 76-9.)		
23	MS16562-4	Spring Pin	X	2
24	MS20995C20	0.020-inch dia Safety Wire	X	A/R
25	D333-3	Fitting	X	2
26	NAS1149F0432P	Washer	X	2
27	MS24665-210	Cotter Pin	X	2
28	NAS1149F0363P	Washer	X	2
29	A933-3	Rod End	X	2
30	B330-7	Palnut	X	4
31	AN315-3R	Nut	X	2
32	A336-1	Tube	X	1
33	NAS6603-6	Bolt	X	1

NOTES * Ship S/N 2571 and subsequent.
 ** Ship S/N 2571 thru 2664.

Continues

FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
CARB HEAT ASSIST* AND VERNIER MIXTURE CONTROL** (Cont'd)				
76-13-34	A758-6	Collective Stick Assembly (RH [pilot], Ref; see Figure 67-21)		
35	C057	Air Box Assembly (Ref)		
36	A462-1	Fitting	X	1
37	A562-1	Slider Valve (Ref)		
38	MS27039C1-06	Screw	X	3
39	AN742-4	Clamp	X	6
40	AN742-3	Clamp	X	3
41	MS27039C1-09	Screw	X	2
42	B270-5	Sealant (one quart)	X	A/R
43	A130-21	Spacer	X	2
44	MS27039C1-18	Screw	X	1
45	A130-17	Spacer	X	1
46	MS27039C1-14	Screw	X	1
47	A130-35	Spacer	X	1
48	B161-4	Spirap	X	A/R
49	C522-8	Control – Carb Heat	X	1
50	B522-1**	Mixture Control (see Figure 76-1 for aft end)	X	1
	A522-3	Mixture Control (or A522-12; for all other ship S/Ns)	X	1
51	MS21042L08	Nut	X	3
52	MS21919WDG11	Clamp	X	1
53	NAS1149FN832P	Washer	X	2
54	MS27039C0807	Screw	X	2
55	MS21919WDG9	Clamp	X	1
56	A130-37	Spacer	X	1
57	MS27039C0809	Screw	X	1
58	A407-1	Beam – Floor (Ref)		
59	A371-1	Stiffener (Ref)		
60	A359-1	Stiffener (Ref)		

NOTES * Ship S/N 2571 and subsequent.
 ** Ship S/N 2571 thru 2664.

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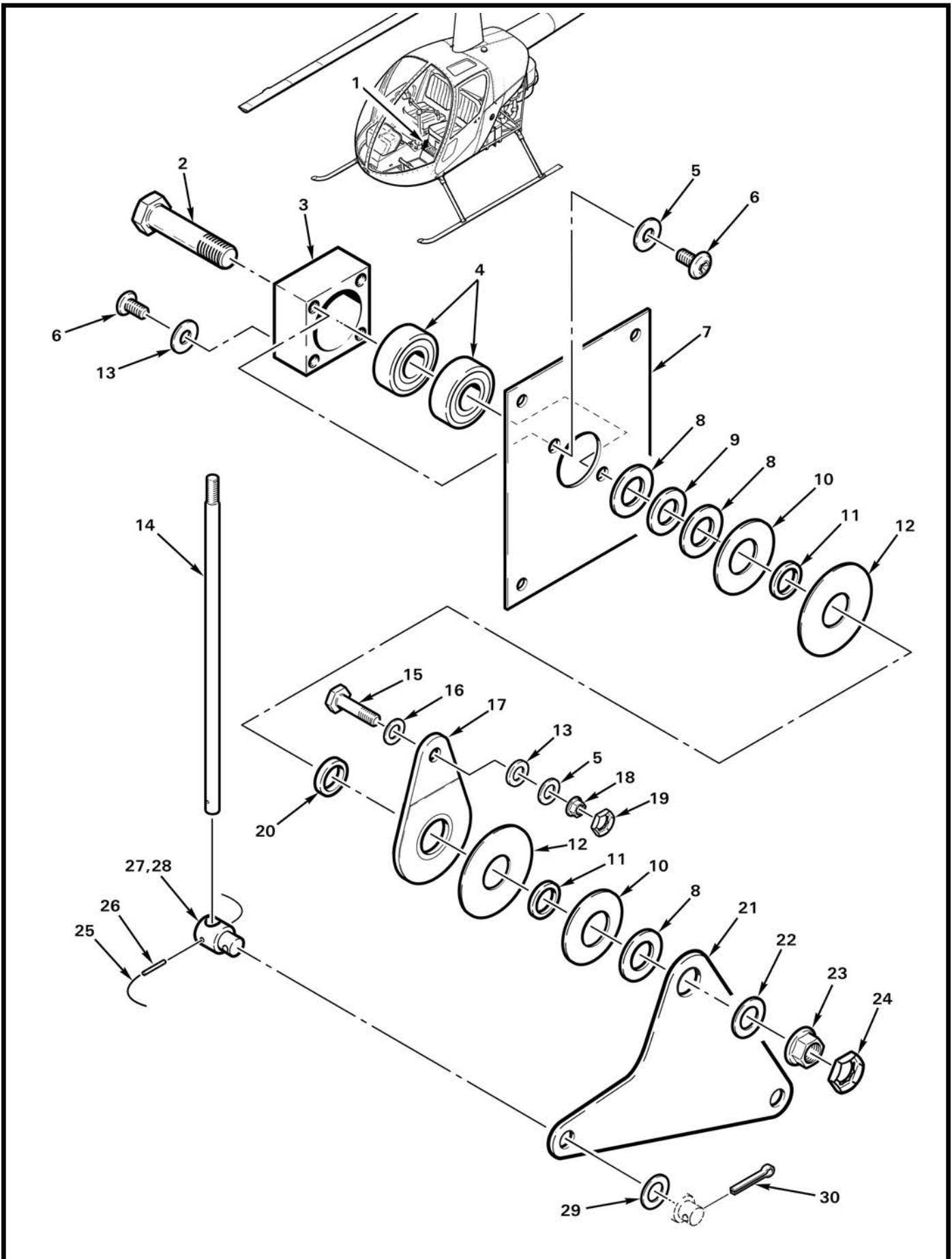


FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	PARTS AVAIL	QTY PER ASSY
CARB HEAT ASSIST BELLCRANK ASSEMBLY				
76-17-1	D334-5	Carb Heat Assembly (Incl items 2 thru 30)	X	1
2	NAS6606-16	Bolt	X	1
3	D333-10	Block	X	1
4	A647-12	Bearing	X	2
5	NAS1149F0332P	Washer	X	3
6	A142-4	Screw	X	4
7	D333-11	Plate	X	1
8	A141-16	Washer	X	3
9	NAS1149F0663P	Washer	X	1
10	B1000-035-S	Spring Washer	X	2
11	B250-5*	Journal (or -6, -7, -10, -12)	X	2
12	A141-35	Washer	X	2
13	NAS1149F0363P	Washer	X	3
14	A587-4	Stem	X	1
15	NAS6603-7	Bolt	X	1
16	NAS1149D0316J	Washer	X	1
17	B249-7	Arm Assembly	X	1
18	D210-3	Nut	X	1
19	B330-7	Palnut	X	1
20	B250-8	Journal	X	1
21	D333-1	Bellcrank	X	1
22	NAS1149F0632P	Washer	X	1
23	D210-6	Nut	X	1
24	B330-19	Palnut	X	1
25	MS20995C20	0.020-inch dia Safety Wire	X	A/R
26	MS16562-4	Spring Pin	X	1
27	D333-3	Fitting (install using item 28)	X	1
28	A257-1	Grease	X	A/R
29	NAS1149F0432P	Washer	X	1
30	MS24665-210	Cotter Pin	X	1

NOTES * If applicable, place thickest journal on bearing side of stack.

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